OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 3, 1964 Volume 808 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1964

Examiner affirmed	239
Examiner affirmed in part	31
Examiner reversed	91
Total	361

Reissue Applications—Foreign Priority

A "claim" for the benefit of an earlier filing date in a foreign country under 35 U.S.C. 119 must be made in a reissue application even though such a claim was made in the application on which the original patent was granted. However, no additional certified copy of the foreign application is necessary. The procedure is similar to that for "Continuing Applications" in the last paragraph of MPEP 201.14(b).

The heading on printed copies will not be carried forward to the reissue from the original patent. Therefore, it is important that the file wrapper be endorsed under "Claims Foreign Priority."

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

Handling of Mail Orders for Printed Copies of Patents and Trademark Registrations

In the OFFICIAL GAZETTE of December 27, 1960, the Patent Office gave notice of a new service for handling mail orders for patent copies which read, in part, as follows:

> Effective immediately, all regular and special service copy orders containing Patent Office coupons *only* may be addressed to:
>
> Box 9
> U.S. Patent Office
> Washington, D.C. 20231
>
> Orders received in this way will be processed through the Mail Room the same day as they are received and thus will be assured of priority handling. This service applies to coupon orders only and does not include orders charged to Deposit Accounts, nor to letters containing lists of numbers or orders for other services of the Office; they must of necessity be handled in the regular manner.

Mail other than that which was intended by the Patent Office to be received at Box 9, under the provisions of the foregoing notice is being addressed and delivered to Box 9. This has adversely affected the service planned for handling patent and trademark copy orders without benefiting addressees in the speedier handling of other matter sent to Box 9.

Effective October 27, 1964, all mail received at Box 9, the content of which is not limited exclusively to patent and trademark coupons, will be returned to the sender.

Publication of Portions of Applications

1. The Notice of July 28, 1964, 804 O.G. 813, announced that portions of the disclosures of applications will be published in the OFFICIAL GAZETTE under certain conditions. The following constitutes instructions to Examiners and other employees of the Office in carrying out this practice.

2. *a.* A request for publication must be received while the application is pending and not under final rejection. It must state that the application is to be available to the public when published and must be accompanied by a formal abandonment of the application, which may be qualified to take effect on publication. A specific portion of the disclosure, and, in cases having drawings, a figure of the drawing must be designated.

b. A representative claim, if sufficiently detailed, should be used as the portion of the disclosure to be published. Otherwise, a specific portion of the specification, consonant with the selected figure should be designated in the request. Such specific portion, when necessary, may be taken from the brief summary of the invention, omitting unessential details and theoretical matters.

3. In no event will a request for publication avoid abandonment of an application for failure to respond to an outstanding Office action awaiting response by the applicant, but such abandonment will not prevent publication.

4. The papers are initially referred to the Examiner for consideration of (*a*) the formalities of the request, (*b*) whether or not there should be a publication, and (*c*) the nature of the material to be published as explained in paragraphs 5, 6 and 7 below. The Examiner will prepare a letter to be signed by a Primary Examiner to be sent to the applicant through the attorney or agent. In those cases ready for publication, the letters will be mailed to the applicants and the files, including the drawing, forwarded to the Issue and Gazette Branch. The papers will be entered in the file in the Examining Group. In those cases where it has been determined not to publish, the letters will be mailed but the correspondence, including the original request, will not become part of the record in the application file. These papers will be kept on file in the Office of the Group Supervisor.

5. If the Examiner finds that the request for publication does not comply with the requirements (see paragraph 2), the letter will advise applicant of the defects.

6. If the disclosure sought to be published appears to the Examiner to be purely fanciful, or inoperative or incomplete,

New Applications Received During September 1964

Patents	7,119
Designs	424
Plant Patents	4
Reissues	20
Total	7,567

Issue—November 3, 1964

Patents	1193	No. 3,154,787 to	No. 3,155,979, incl.
Designs	31	No. 199,483 to	No. 199,513, incl.
Reissues	3	No. 25,673 to	No. 25,675, incl.
Total	1227		

publication should be denied by the Examiner; likewise, if the publication of *such disclosure* is deemed to be of no value or if it is fully met by readily available prior art. However, questions of patentability over the prior art should not be considered. If the Examiner recommends that there be no publication for any reason, the letter to the applicant mentioned in paragraph 4 will simply state that it has been determined not to publish any portion of the disclosure, without giving any reasons. The reasons, however, should be stated in a separate memorandum which together with the paper requesting publication will be filed as set forth in the last sentence of paragraph 4.

7. If the request for publication is not defective and the Examiner has not determined to recommend adversely, the material to be published must be considered as explained in paragraph 2. The letter prepared by the Examiner and sent to the applicant will state that the request for publication has been approved and an abbreviature will be published in the OFFICIAL GAZETTE. The letter will also indicate the classification of the abbreviature based on the material to be published.

8. The Issue and Gazette Branch will arrange for publication in the OFFICIAL GAZETTE of the selected material. This will appear in a separate section with a suitable heading stating that the portions of the applications are published and the complete files are available to the public upon written request. The selected material will be headed with the name of the applicant, and assignee if any, the title and classification of the invention, serial number and filing date of the application, the number of sheets of drawing and the number of pages of the original specification, and the date of publication.

9. After publication of the selected material, the files are returned to the Examining Group. Mounted copies of the publications will be prepared by the Service Branch of the Office of Patent Classification for use in the Examining Group and the in Public Search Room or Scientific Library.

10. In an application awaiting action by the Office in which a request for publication is filed, further action on the application by the Examiner will be suspended pending processing of the request. In the event that publication is not approved, suspension of action will be automatically lifted.

11. Care must be taken by the Examiner not to refer to these publications as patents or as applications. They may be designated and cited as follows:

Brown, abbreviature of application Serial No.----------. Published ----------, ------ O.G. ------ (List classification as usual)

These abbreviatures will be used as printed publications effective only from the date of publication in the OFFICIAL GAZETTE.

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

Concur: Oct. 13, 1964.
C. A. KALK,
Director of Administration.

Disclaimers

2,871,592.—*Winfred J. Polzin*, Thiensville, Wis. IDENTIFICATION BRACELET. Patent dated Feb. 3, 1959. Disclaimer filed Aug. 3, 1964, by the assignee, *Will Ross, Inc.*

Hereby enters this disclaimer to claim 2 of said patent.

3,001,711.—*Robert Frohman*, Gardena, Calif. TRANSISTOR ADDER CIRCUITRY. Patent dated Sept. 26, 1961. Disclaimer filed July 31, 1964, by the assignee, *The National Cash Register Company.*

Hereby enters this disclaimer to claims 4, 5 and 6 of said patent.

3,106,809.—*Frederick F. Forthmann, Jr.*, Washington Township, Bergen County, N.J. WEB MATERIAL SEVERING, FOLDING AND PACKING DEVICE. Patent dated Oct. 15, 1963. Disclaimer filed Aug. 4, 1964, by the inventor.

Hereby enters this disclaimer to claims 3 and 4 of said patent.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Examination of Applications

The following amended rule is adopted to take effect on publication. The text of this rule was published in the Federal Register for June 2, 1964 (29 F.R. 7150), and all persons who desired to were invited to submit written data, views arguments or suggestions in connection with the proposed rule. The rule is being adopted as proposed after full and careful consideration of all the material submitted.

Section 1.101 of Title 37 CFR (Patent Rule 101) is amended by deleting paragraph (b) thereof and replacing it with new paragraph (b) reading as follows:

§ 1.101 *Order of examination.*

* * * * * *

(b) Applications which have been acted upon by the Examiner, and which have been placed by the applicant in condition for further action by the Examiner (amended applications) shall be taken up for action in such order as shall be determined by the Commissioner.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: September 21, 1964.
J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 64-9887; Filed, Sept. 29, 1964, 8:46 a.m.]

Published 29 F.R. 13470, September 30, 1964

Citation of References

[807 O.G. 782]

To simplify listing of references on PO-98, changes are to be made, effective immediately, in the arrangement and content of the citation of references by the Examiner. The resulting uniformity will also benefit a new system to be implemented in November whereby a copy of each reference cited by the Examiner will be placed in the application file.

The data required by Rule 107 will be given in this sequence:

U.S. Patent No.[1]	Month and Year	Last Name of Patentee	Class and Subclass
Re. 20,707	10/57	Ubehholde	266—46
3,112,123	2/63	Hoy	9—1
Foreign Ref. No.[2]	**Month and Year of Reference**	**Country[3]**	**Class and Subclass**
1,079,430	11/57	France	13—51
368,387	12/41	Great Britain	66—43

Other References: Listed as in the past but arranged alphabetically by author or, if no author is given, by title.

Oct. 14, 1964.

RICHARD A. WAHL,
Acting Superintendent of the Examining Corps.

[1] U.S. Patents.—In strict numerical order regardless of whether Reissue, Design, etc., preceded by the customary abreviations such as "Re.," "D.," etc.
[2] Foreign References.—In strict numerical order under each country.
[3] Country.—List alphabetically.

Adjudicated Patents

(D.C. Tex.) Blanchard and Mulloy Patent No. 2,212,997 (137—536), for safety valve. Claim 3 *Held* valid and infringed. *Blanchard* v. *Texsteam Corp.*, 232 F. Supp. 259; 141 USPQ 656.

(D.C. Mass.) Brandano Patent No. 2,981,228 (119—2), for display tank for shellfish. Claims 1 to 5 *Held* invalid. *Brandano* v. *Handman*, 232 F. Supp. 427; 142 USPQ 351.

(D.C. Maine) Haughtaling Patent No. 3,035,572 (128—533), for vibrator, *Held* invalid. *Magic Fingers, Inc.* v. *Auger*, 232 F. Supp. 372; 142 USPQ 207.

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

Classification Order No. 364

Classification Order No. 364, dated September 30, 1964, incorporates changes in the following classes:

15, BRUSHING, SCRUBBING AND GENERAL CLEANING
51, ABRADING
76, METAL TOOLS AND IMPLEMENTS, MAKING
83, CUTTING
146, VEGETABLE AND MEAT CUTTERS AND COMMINUTORS
161, STOCK MATERIAL AND MISCELLANEOUS ARTICLES

The above changes will be incorporated in the Manual of Classification replacement pages dated October 1964.

R. A. WAHL,
Acting Superintendent, Examining Corps.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 1, 1964

Commencing With This Issue the Oldest Actual Filing Dates for Cases Awaiting Action Are Given in Column 1 (New) and Column 2 (Amended)

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action (1) New	(2) Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	1-31-63	6-28-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	7-13-64	9-28-53
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5- 8-63	8-12-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming.	3-31-58	1-27-54
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	8-30-62
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	4-29-63	8-22-62
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	8-26-64	9- 7-56
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	11-30-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	11- 4-58
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	2- 6-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	1-10-63	12-11-53
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing; Computation and Conversion; Storage Devices and Related Art.	4-16-57	2-10-53
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	6-10-54
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	4-22-64	8-21-61

Total number of pending applications (excluding Designs)	212,033
Total number of Design applications pending	5,795
Total number of applications awaiting action (excluding Designs)	135,475
Total number of Design applications awaiting action	2,483
Date of oldest new application awaiting action	April 16, 1957
Date of oldest amended application awaiting action	Feb. 10, 1953

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,429,972 to 2,431,669, inclusive

Plant Patents ..... Numbers 766 to 767, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action (1) New	(2) Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 6-63	11-28-62
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner. Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	7- 3-62	3- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner. Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	1-18-63	5-11-59
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	3- 3-58
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	8- 9-64	8-17-61
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	2-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	6-10-64	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner. Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	6- 5-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner. Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	6-16-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	7-30-59
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing, Geometrical Instruments.	11-29-62	7-19-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner. Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-19-63	1-13-58
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10-16-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner. Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-22-64	6-11-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner. Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner. Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	4- 1-63	9- 5-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner. Industrial Arts; Household, Personal and Fine Arts.	12- 5-60	2- 5-64

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

LEWIS E. WALKUP *v.* HAROLD G. GREIG

No. 7053. Decided June 11, 1964

[51 CCPA —; 332 F.2d 800; 141 USPQ 777]

1. INTERFERENCE—REDUCTION TO PRACTICE—EVIDENCE.

In connection with the building and testing by one Carlton, in work done on xerography, of a brush type development machine relied on by Walkup as a reduction to practice, and with respect to statements in testimony pointed to by Walkup in urging that witnesses to the operation of the machine "recognized a significant new achievement," *Held* that the "statements, made in testimony taken during interference proceedings in January 1961, do not appear to be entitled to the same weight as the statements made more nearly contemporaneously with the experiments in 1950 which indicate there was serious doubt at that time that the Carlton experiments demonstrated the brush developer was practical."

2. SAME—SAME—DELAY IN FILING APPLICATION—CONDUCT SUBSEQUENT TO EXPERIMENTS.

"Walkup asserts that the forty months delay after Carlton's experiments before filing the Walkup application is without significance and cites *Schnick* v. *Fenn*, 47 CCPA 1174, 277 F.2d 935, 125 USPQ 567, for the proposition that once reduction to practice has been found, the question of abandoned experiment no longer exists. While the latter proposition is obviously correct it is not applicable here because the evidence in the record concerning Carlton's experiments at best leave it extremely doubtful that those experiments constituted a reduction to practice and compel a finding that Walkup has not sustained his burden of proof. Moreover, it is well established that subsequent conduct with respect to the invention is properly to be considered where there is doubt that the activities relied upon constitute a reduction to practice. *Conner* v. *Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56."

APPEAL from the Patent Office. Interference No. 89,802.

AFFIRMED.

Norman E. Schrader, W. Houston Kenyon, Jr., (*Richard K. Parsell, Kenyon & Kenyon*, of counsel) for appellant.

A. Russinoff for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Walkup, junior party in Interference No. 89,802, appeals from the decision of the decision of the Board of Patent Interferences awarding priority of invention of the eight counts therein to Greig, senior party. Walkup states here that he seeks reversal of the Board's decision as to counts 1 to 7, but not count 8. Accordingly the appeal is dismissed as to that count.

Greig is involved on the basis of his Patent No. 2,811,465, having a filing date of April 30, 1952, and assigned to Radio Corporation of America, hereafter RCA. The counts correspond to claims of that patent copied in Walkup application Serial No. 401,811, filed January 4, 1954, and owned by the Xerox Corporation, which was formerly the Haloid Company, hereafter Haloid.[1]

Greig took no testimony to prove conception and reduction to practice prior to his filing date and thus is restricted to that date.

[1] The name Haloid applied at the time of the events described in the testimony.

Walkup took testimony and relied on certain activities which took place between August 25 and September 5, 1950, as proving conception and actual reduction to practice.

The counts are directed to a device for use in the reproduction of visual images by the process of xerography. Testimony for Walkup shows that xerography involves the use of a base plate of conductive material coated with a thin layer of photoconductive material which is relatively insulating in darkness and relatively conductive when illuminated. The entire exposed area of the photoconductive coating is first given a uniform electrical charge in the darkness, which charge remains as static electricity. Then a light image of the item to be reproduced is made to fall on the surface of the photoconductive layer with the result that the illuminated areas of the layer become relatively conductive and the charges on those areas pass through the layer to the underlying base plate and discharge to ground. The non-illuminated areas continue to be non-conductive, and the charges there remain in place on the surface of the photoconductive layer. There is thus created on the photoconductive layer a pattern of electrostatic charges corresponding to the applied light image, which pattern is referred to in the counts as a "latent electrostatic charge image."

The latent electrostatic charge image is developed by turning it into a material and visible image. To accomplish that, a finely-divided pigmented electroscopic powder of opposite polarity to the charges on the photoconductive surface is transported into the field of attraction of those charges. The particles, called toner, are attracted to and held on only the charged area of the plate. Subsequently, the toner image is transferred to another surface, as to paper. In another form of xerography, the toner is not applied to the plate bearing the latent image, but is applied directly to a paper web placed on the plate after its exposure, the toner being held on the paper by the electrostatic charges on the plate acting through the paper.

The counts relate to a development device for conveying toner particles into the field of attraction of the latent image to develop a material image from the latent image. In general, the device embodies a cylindrical member having a surface which is capable of retaining toner means received from supply means and is rotated into contact with the image bearing surface. The construction is brought out more specifically by counts 1 and 7 which are representative and read:

1. A device for applying electroscopic developer material to a record receiving medium bearing a latent electrostatic charge image to be developed, said device comprising a cylindrical member presenting a peripheral surface capable of retaining a quantity of electroscopic material thereon, means for uniformly distributing a quantity of electroscopic developer material on said surface, and means for bringing said surface into contact with the surface of the record receiving medium.

7. A device for applying electroscopic developer powder to a record receiving medium bearing a latent electrostatic charge image to be developed, said device comprising a cylindrical roller member having a surface provided with a multiplicity of small pits substantially uniformly distributed about said surface, means for applying a quantity of electroscopic developer powder to said roller, said powder being received and held by an electrostatic attractive force in said pits, and means for passing the record receiving medium into intimate rolling contact with said roller member whereby to transfer, through electrostatic attraction greater than said first mentioned attractive force, portions of said developer powder from said roller onto selected areas of said record receiving member corresponding to said charge image.

In 1950, Battelle Memorial Institute was conducting research on xerography under the sponsorship of Haloid. The work was carried on in the Graphic Arts Division of Battelle under the direction of one William T. Reid, and Walkup was assistant supervisor of that division in charge of the work done on xerography.

Prior to August and September of 1950, Walkup had been active in work on a technique of xerographic development known as "cascade." He describes cascade development as employing a mixture of small dust-like particles of toner, which it is desired to deposit in charged image areas, and larger bead or marble-like particles called "carrier," which are predominately of spherical shape. The mixture tumbles or slides across a sloping image-bearing plate under the influence of gravity. The particles and toner have such properties, described as "tribo-electrical" relationship, that the toner particles will have a polarity causing them to detach themselves from the carrier particles in charged portions of the image-bearing articles and be attracted to the photo-conductive surface.

For conception of the different type of development of the invention in issue, referred to as brush development, Walkup relies on a June 14, 1950 entry in his laboratory notebook which reads:

It has been known an [sic] used that a granular material can be used as a vehicle for developer powder both in the development and the cleaning of a xerographic plate. If a lot of developer powder is mixed with the larger granular material then the resulting mixture is rich in powder and if it is cascaded over a plate carrying an electrostatic image some of its powder will be given to the image and the image "developed." If, on the other hand, there is little or no powder mixed with the granular material it will be poor or "lean" in powder. If the granular material is cascaded over the plate it will take powder off of the plate. This removal of the powder from the plate is used in cleaning the residual image off of the plate.

The basically new idea suggested here consists in substituting fine fibers, as of a brush or fur, for the granular material. In this capacity, the fibers of the brush should work in a manner similar to action of the granular cleaner. Thus a soft brush should clean a plate, and a brush loaded with powder should "develop" a plate. For either use the brush or fiber element may take a number of physical forms of which a cylinder with the fibers extending out approximately radially is typical and perhaps desirable. Departures from the radial direction may be desirable so that the fiber touches the plate as a line rather than as a point.

• • • • • • • •

In using the brush as a developer powder will have to be added to the brush as it is used up. A simple means of placing powder on the brush might be to have the brush pass over and rub against a mass of developer powder.

In August 1950, one Carlton was working on an assignment by Walkup to build and test apparatus for determining the feasibility of using a rotary brush for cleaning xerographic plates which had become dirty in use. Carlton interrupted that work, from August 25 to September 5, 1950, to build and test the brush type development machine relied on here by Walkup as a reduction to practice. The development machine was made by modifying the brush-type cleaning machine, using the same brush comprising fur wrapped around a wooden cylinder.

The most nearly contemporaneous record of the August–September experiments, as noted by the Board, is that set out in an entry made by Carlton in his notebook under date of October 13, 1950. There Carlton illustrates a rotatably-mounted cylindrical brush underlying an advancing plate and contacting the under side of the plate with movement opposite to the direction of the plate. The portion of the brush diametrically opposite the plate contacts the upper surface of

a body of material in a container with an open top, which container is labeled "Powder." Carlton's description of that apparatus and its operation follows:

• • • a preliminary trial of fur development was made because it may be more practical to use with a continuous xerographic process, and possibly it may be simpler for all xerographic development. Good images were developed with the fur but they were not as dense as those developed by the cascade method.

• • • • • • • •

The fur is mounted on a wooden cylinder which rotates slowly while the plate passes over it. The fur speed is variable from 110 r.p.m. to 440 r.p.m. The brush is 3 inches in diameter. The plate is pushed through by hand. The distance between the plate and the brush is determined by the height of guide bars above the fur. This distance is changed by placing spacers under the guide bars. The wooden cylinder is electrically insulated from ground and therefore it is possible to apply a potential to the fur. The beater at the right of the cylinder rotates eight times as fast as the fur and its tips have a linear speed twice that of the fur. Its purpose is to reverse the lay of the fur so the fur goes to the xerographic plate in the direction of rotation. Rubbing the plate turns the fur over and electrostatic attraction pulls the developer powder out of the fur. The developer is added to the fur by brushing it in a pan of powder under the fur. This is not a satisfactory method of adding powder to the brush but no other simple way of adding powder was available.

The plate was passed over the fur at several speeds. At high speeds the image was very light; at low speeds the image was darker. Very slow plate travel causes slightly darker images and a faint background. A plate travel of two inches per second is satisfactory.

The brush speed should be 120 r.p.m. Slower [sic] speed causes powder to be thrown from the fur by centrifugal force. Some of this powder lands on the plate and forms a dark background.

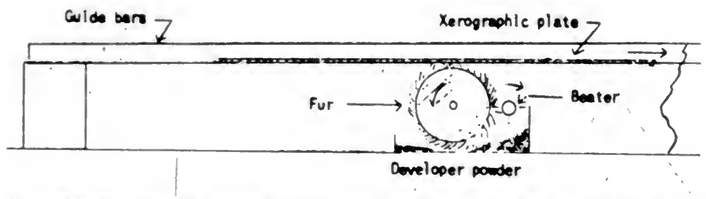
The selenium surface of the xerographic plate should be mounted about 5/16 inch above the surface of the wood roller. If mounted higher, light images are formed and the letters are thinner than on the original. If mounted lower, the image is light and there is background. However, the entire black area of the original reproduces black.

A potential applied to the fur acts the same as biasing the plate during cascade development. A positive potential will prevent development and a negative potential will cause excessive background.

A new rabbits [sic] fur and a used one were tried. Originally the fur came from the same pelt. The old fur had cleaned 11- by 14-inch plate 1500 times. The new fur developed a better image than the old fur. This may mean that a long haired fur will work better than a short haired fur.

Development with fur will be practical for a Xerox Copier if it is possible to develop a denser image.

On January 12, 1951, Battelle submitted to its sponsor, Haloid, a monthly report on work conducted for Haloid in Battelle's laboratories during September 1950. The description of the work in that report is similar to Carlton's notebook description. A sketch, reproduced in part below, is included in the report as a representation of the equipment used during the tests:



A small section of copy is included in the report as a sample of the xerographic copy produced by Carlton.

The record does not show any significant activity with respect to brush development by Haloid or Battelle between the time of Carl-

ton's experiments in 1950 and the preparation of the Walkup application, filed in January 1954, even though both organizations continued rather extensive work on other aspects of xerography during that period. The major activity appears to be Haloid's suggesting a form of brush developing equipment to IBM (International Business Machines), a licensee of Haloid, in a letter written in June of 1953. However, the brush developer described in that letter differed from Carlton's experimental model in several respects, the principal one being that the brush is in the form of an endless belt rather than a rotary cylinder. Also, the toner was fed by gravity from a hopper and the brush moved in the same direction as the element carrying the latent image.

The Board pointed out that Walkup has made no claim to diligence coupling the filing of his application with conception before Grieg's filing date. It concluded that the controversy must be determined on "the single issue" of reduction to practice on the basis of the experiments performed between August 25 and September 5, 1950. Walkup refers to such statement of the Board, quoting it in part, without questioning its correctness. We think the Board's statement of the issue is correct.

It was the Board's conclusion that Walkup failed to prove his case by the necessary preponderance of the evidence. In arriving at that decision, it gave consideration to Carlton's testimony, the notebook description of Carlton's work and the report to Haloid on that work along with the comments of other witnesses, and it referred to the conduct of Walkup, Battelle and Haloid subsequent to that work. Such consideration led the Board to conclude that Walkup had not provided satisfactory proof of a reduction to practice on the basis of Carlton's experiments.

Consideration of the record in light of the arguments of the parties leads us to the conclusion that Walkup has not met his burden of proving reduction to practice by a preponderance of the evidence.

In the first place, the entries in Carlton's notebook do not demonstrate that the experiments described therein met with such success as to constitute a reduction to practice. Thus, the operation is described as a "preliminary test" of fur development and the extent of the work indicates it was no more than that. The entire project of adapting the brush cleaning machinery and testing apparently amounted to only a short interruption, involving no more than 43 hours of Carlton's time, to the brush cleaning project. Carlton's testimony indicates he made from 20 to 100 copies on the machine. In contrast, he testified that, in making a plate life check with the fur cleaning machine to determine how the xerographic plate would stand up during brush cleaning, he had conducted 1500 operations and "apparently made quite a few runs prior to that, also." That Carlton was not without reservations whether his experiments demonstrated the practicability of brush development, is indicated by the following statements:

> This is not a satisfactory method of adding powder to the brush but no other simple way of adding powder was available.
>
> • • • • • • • • •
>
> Development with fur will be practical for a xerox copier *if it is possible to* develop a denser image. [Emphasis supplied.]

The Battelle report to Haloid likewise fails to substantiate Walkup's case for reduction to practice. In the first place, the report concludes with the following comment:

> A number of improvements will be necessary before brush development is practical. However, the results of these preliminary experiments are promising. Additional work should be done to improve the results obtained and to devise better means of feeding powder to the brush.

Further, the Board characterized the sample of xerographic copy including in the report [2] as "pale, partial and erratic." Walkup disputes that evaluation, stating that the sample is clear and completely legible and "differs only from the adjacent mimeographed material [the mimeographed textual matter on the sheet to which the sample is pasted] in that the black areas are lighter and in some places are not continuous, though the discontinuities are so slight that legibility is not impaired." He urges that the samples prove that Carlton's device "actually performed the function for which it was designed."

From our own inspection we agree that the samples are legible, but it seems to us that their over all quality was correctly evaluated by the Board. Walkup's own argument concedes the existence of lightness and discontinuities in the black areas, as is plainly the case. Additionally, the last sentence of Carlton's description of the experiments that produced the samples, made nearly contemporaneously with those experiments, shows that he himself considered a "denser image" necessary for a "practical device." We see no clear error in the factual evaluation of the exhibits below.

Also Walkup's witness Greaves stated that the samples were undoubtedly sections cut from larger samples. So far as the record is concerned, the two samples before us may have been cut from a single larger copy of the "perhaps anywhere from 20 to 100" copies which Carlton testified he made, thus leaving it open to question whether the other copies included portions of even equal quality. Additionally, it is not clear whether any of the copies produced by the experiments were uniformly of even equal quality to the small samples even though it seems apparent that the function for which the device in issue was designed was to produce satisfactory reproductions of the entire sheet or copy rather than of just a subsequently selected portion thereof.

[1] Walkup urges that the officers of Haloid who witnessed the operation of Carlton's machine "recognized a significant new achievement" and points to testimony of Dessauer, executive vice president in charge of research and development, and Clark, manager of Haloid's physics research department. The most favorable comment of Clark referred to seems to be the following:

> • • • I remember it quite well because it was a pleasant surprise, I think, to them and they were eager to show it to us that this worked so well. It was definitely an interesting new development. I had known that in the past they had been able to develop images with hand brushes, but the fact that this worked was very much an achievement and was kind of an event, and it also opened our eyes to some mechanisms of development.[3]

Dessauer commented as follows:

> Most of the results looked promising, and it was clear that this was a very feasible method of developing xerographic plates.

Those statements, made in testimony taken during interference proceedings in January 1961, do not appear to be entitled to the same weight as the statements made more nearly contemporaneously

[2] Two copies of the report, and thus two sample sections of copy, are in the record as exhibits.

[3] Clark also said the demonstration of the machine was "kind of an occasion because this was a pet idea of Lewis Walkup's and he was delighted to perform." The Board regarded that comment as "very strange when it is recalled that Walkup, himself, was not present at any of the tests."

with the experiments in 1950 which indicate there was serious doubt at that time that the Carlton experiments demonstrated the brush developer was practical.

Walkup urges that Carlton's tests "established the utility of a brush developer at least for purposes of manual xerographic copy-making in a dark room." He takes the position that statements indicating hope or doubt concerning some additional areas of utility, as in continuous or automatic xerographic machinery are not evidence of a lack of "conviction of success" as to manual copying. That argument is not supported by the record since the statements indicating doubt of practical utility referred to hereinabove are not limited to automatic machines. Rather, the statements indicate doubt or uncertainty of the practicality of the machine tested, a manual machine. Likewise, any doubt as to the quality of the copies obviously is chargeable directly to the manual machine that produced them.

Another indication that the device tested was not satisfactory lies in Carlton's testimony. Thus, he described the "fur brush method" as "much dirtier than the cascade operation," stating also:

> Well, when the brush was dipping some toner was also being put into the air. So, I got pretty black during those operations.

[2] Walkup asserts that the forty months delay after Carlton's experiments before filing the Walkup application is without significance and cites *Schnick* v. *Fenn*, 47 CCPA 1174, 277 F.2d 935, 125 USPQ 567, for the proposition that once reduction to practice has been found, the question of abandoned experiment no longer exists. While the latter proposition is obviously correct it is not applicable here because the evidence in the record concerning Carlton's experiments at best leave it extremely doubtful that those experiments constituted a reduction to practice and compel a finding that Walkup has not sustained his burden of proof. Moreover, it is well established that subsequent conduct with respect to the invention is properly to be considered where there is doubt that the activities relied upon constitute a reduction to practice. *Conner* v. *Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56.

When Haloid did disclose brush development to its licensee in June 1953, the apparatus, as shown in Walkup Exhibit 14, embodied an endless belt rather than the rotating cylinder of the Carlton 1950 experiments, and the fur was moved in the same direction as the plate being developed instead of in the opposite direction as in the experimental apparatus. That apparatus is also disclosed in the Walkup application in which the disclosed structure most like the experimental device differs from that device by providing rotation of the cylindrical brush in the opposite direction. We agree with the Board that those circumstances indicate that it may well have been experimental work done after 1950, and not disclosed by Walkup's evidence, that convinced Haloid that brush development was worth promoting or filing a patent application on. In any event, the activities subsequent to Carlton's experiments do nothing to relieve the serious doubt inherent in the record that such experiments satisfied Walkup or the others involved of the practicality of the subject matter here in issue.

We are familiar with *Tansel* v. *Higonnet et al.*, 42 CCPA 732, 215 F.2d 457, 103 USPQ 58; *Leichsenring, Jr.* v. *Freeman*, 26 CCPA 1153, 103 F.2d 378, 41 USPQ 478; *Mergenthaler Linotype Co.* v. *Press Pub. Co.*, 57 Fed. 502; *In re Hartop*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419; *Hildreth* v. *Mastoras*, 257 U.S. 27, in addition to *Schnick* v. *Fenn*, relied on by appellant, some of which have nothing whatsoever to do with the issue of reduction to practice. We repeat here what has been said so many, many times: each case must be decided on its own facts.

The decision is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting, with whom RICH, *J.*, joins.

The majority opinion seems to depart from the established legal principles regarding what is necessary for an inventor to prove in order to establish a reduction to practice. In the majority opinion this departure is somewhat obscured by and confused with the question of the burden of proof which must be met by a junior party. Here certain facts are well established by a clear preponderance of the evidence. The record establishes that during the period between August 25 and September 5, 1950, certain tests were run by Carlton under Walkup's direction. There is no question of proof as to what these tests demonstrated. Thus, as I see it, the only issue here is whether as a matter of law these tests established a reduction to practice.

This court recently reviewed the legal requirements as to what is required to establish a reduction to practice and in *Schnick* v. *Fenn*, 47 CCPA 1174, 1180–81, 277 F.2d 935, 125 USPQ 567 said:

> • • • we do not believe that an actual reduction to practice necessarily requires the making of a commercially acceptable embodiment • • • *Tansel* v. *Higonnet et al.*, 42 CCPA 732 • • •, if the testing of it shows that it will perform its intended function. The amount of testing necessary depends upon the facts of the particular case, *Lustig* v. *Legat*, 33 CCPA 991 • • •.
>
> • • • we know of no precedent which requires that proven methods of mass producing a device must exist before a reduction to practice is established. On the contrary, we believe the law to be that reduction to practice is proved when there is corroborated testimony that the device actually performed the function for which it was designed. • • •.

Here the invention in issue relates to an improved device for applying a known electroscopic developer powder to a known record receiving medium which carries a latent electrostatic charge image. The proofs are abundantly clear that such a device was constructed and tested under appellant's direction. The majority finds, however, that Carlton's notebook entries "do not demonstrate that the experiments described therein met with such success as to constitute a reduction to practice."

The majority opinion states:

> • • • That Carlton was not without reservations whether his experiments demonstrated the practicability of brush development, is indicated by the following statements:
>
> This is not a satisfactory method of adding powder to the brush but no other simple way of adding powder was available.
>
> Development with fur will be practical for a xerox copier *if it is possible to develop a denser image*. [Emphasis added by majority.]

In discussing the Batelle report to Haloid, the majority finds that it "fails to substantiate Walkup's case for reduction to practice," apparently because of the concluding comment in the report that:

> A number of improvements will be necessary before brush development is practical. However, the results of these preliminary experiments are promising.

Additional work should be done to improve the results obtained and to devise better means of feeding powder to the brush.

The majority also adopts the view of the Board as to the *quality* of the samples which it characterized as being "pale, partial and erratic." There is no dispute concerning the fact as to the quality of the samples. The issue, however, is whether the admittedly imperfect samples are evidence of a reduction to practice in which a fur covered cylindrical roller actually transferred the developer powder to the record receiving medium and whether as a result of this transfer the latent electrostatic charge image was in fact developed.

Here the invention at issue involves the discovery of what appears to be a previously unknown electrostatic phenomenon which was embodied in the device tested. It is my opinion as a matter of law that it is without significance that the machine "operated with something less than commercial printing quality." Cf. *Tansel* v. *Higonnet et al.*, 42 CCPA 732, 215 F.2d 457, 103 USPQ 58.

In the *Tansel* case this court characterized the invention as "a fundamental advance in the printing art whereby text or copy * * * is composed direct on film." (42 CCPA at 734.) Higonnet rested upon his record date, a French filing on June 2, 1945. Tansel's rather crude machine was built beginning in 1943 and final successful testing thereof culminated in January 1946. This court held that Tansel had reduced the invention to practice in and by his machine, Exhibit 59, despite the fact that the initial photoelectric controls were changed midway of the tests to slower and less efficient mechanical controls to avoid "contact bounce." This court held

> The capacity to perform in the manner intended for the machine in issue, though only in a crude way, is sufficient to discharge the inventor's burden of proof for actual reduction to pracice. * * * (p. 740)

The positions previously taken by this court in *Schnick* v. *Fenn*, supra, and in the *Tansel* case have recognized the principle stated in section 129 of Robinson, Treatise on the Law of Patents, that:

> Reduction to Practice does not Require Mechanical Perfection or Incapability of Improvement.
>
> * * * it is not necessary that the art or article should be mechanically perfect. Mechanical perfection is the achievement of the artisan rather than the inventor, and does nothing to develop or to illustrate the idea of the invention. Possibilities of greater excellence in shape, location, arrangement, material, or adjustment do not affect the fact that the inventor has produced a practically operative means, and all such possibilities are legally embraced in what the inventor already has accomplished. Nor is it necessary that the invention, as a means, should be incapable of further improvement by the exercise of additional inventive skill * * *.

In considering whether the tests run on Carlton's laboratory machine amounted to a reduction to practice of the invention at issue, the evidence clearly shows that only a *single scientific fact* needed to be established by these tests in order to convince men skilled in the art that the machine "actually performed the function for which it was designed." This fact was whether development would occur with reasonable clarity when the device was used in the manual making of prints. All that remained to be determined, beginning on August 25, 1950, was whether the same brush which had been used previously for cleaning the plates when supplied with powder, and rotated in contact with the same or similar xerographic plates bearing a latent electrostatic charge image, would transfer the powder to the plate so as to develop its latent image with reasonable clarity.

This is the fact which I would find was clearly demonstrated in the Carlton tests of August 25–September 5, 1950.

The Board's characterization of the copy matter actually produced in Carlton's tests as "pale, partial and erratic," overlooks the fact that the copy matter actually is clean, completely legible, affords good contrast between white and black areas, and is almost completely free from background smudging. I would therefore accept these samples as proof that Carlton's device "actually performed the function for which it was designed" within the principle stated in *Schnick* v. *Fenn*, supra.

The indication of a standard of excellence by which to evaluate the results of a proven reduction to practice which runs through the majority opinion will, it seems to me, but further confuse the legal issue as to what constitutes sufficient proof of a reduction to practice. The premise of the majority seems to me to ignore what has long been the rule as stated by this court in *Leichsenring, Jr.*, v. *Freeman*, 26 CCPA 1153, 1158, 103 F.2d 378, 41 USPQ 478, that it was sufficient if:

> It was clearly demonstrated * * * that appellant's device involved the generic principle, and that it worked for a sufficient period of time to show that the application of the principle solved the problem. * * *

Certainly, we should not here ignore the sound principle stated in *Mergenthaler Linotype Co.* v. *Press Pub. Co.*, 57 Fed. 502, 506 (C.C.S.D.N.Y. 1893), that

> * * * It would certainly be a novel doctrine to deny to an inventor the fruits of a broad invention because the machine which first embodied it was rudimentary in character and failed to do as good work as improved machines made subsequently. None of the great inventions could survive such a test. Ten years after the invention of Howe, the machine first made by him would hardly have satisfied the least exacting sewing woman. The Dodds and Stephenson locomotive would, only a short time after its construction, have been discarded as behind the age even by the savages of Tasmania. The telephone of Bell is not the perfected telephone of commerce, the Morse telegraph is looked upon today as an interesting antique. And yet, it would be an unheard of proposition to withhold from these illustrious men the credit they deserve because their machines were crude at first and were improved afterwards. * * *

I would, therefore, apply to the proofs here the legal principle stated by the Supreme Court in *Hildreth* v. *Mastoras*, 257 U.S. 27, 34 (1921):

> * * * It is not necessary, in order to sustain a generic patent, to show that the device is a commercial success. The machine patented may be imperfect in its operation; but if it embodies the generic principle, and works, that is, if it actually and mechanically performs, though only in a crude way, the important function by which it makes the substantial change claimed for it in the art, it is enough. * * *

The foregoing observations would lead me to a reversal of the appealed decision.

U.S. Court of Customs and Patent Appeals

VERNON C. APPLEGATE AND JOHN H. HOWELL v. OTTO SCHERER, HEINZ FRENSCH, AND GERHARD STAHLER

No. 7095. Decided June 11, 1964

[51 CCPA —; 332 F.2d 571; 141 USPQ 796]

1. INTERFERENCE—CONCEPTION—ORIGINALITY—*Smith* v. *Bousquet* DISTINGUISHED. In connection with appellants' reliance on *Smith* v. *Bousquet*, 27 CCPA 1136, 111 F.2d 157, 45 USPQ 347, *Held* that "the important distinction is that Smith and Bousquet were independent inventors pursuing their work

separately, a situation which bears no parallel to the one here where one party communicated the totality of the invention defined in the count to the other, whether it be called a 'conception' or by any other name."

2. SAME—ORIGINALITY—AWARD OF PRIORITY.

"It is evident, * * *, that in an originality case the issue is not who is the *first* or *prior* inventor, but who *made* the invention. Applications 'interfere' when one applicant gets the invention from the other, by fair means or foul, as well as when each makes the invention independently. In awarding 'priority' to the *sole* inventor in an originality or derivation case, it should be realized that this is merely the employment of patent law jargon which is not to be taken literally. It might be well on the next revision of the statutes to use language suited to all situations so that the Board does not have to make an award of 'priority' where no issue of priority exists."

3. SAME—CONCEPTION—ORIGINALITY.

"Appellants seem to propose that there cannot *be* a conception of an invention of the type here involved in the absence of knowledge that the invention will *work*. Such knowledge, necessarily, can rest only on an actual reduction to practice. To adopt this proposition would mean, as a practical matter, that one could never communicate an invention thought up by him to another who is to try it out, for, when the tester succeeds, the one who does no more than exercise ordinary skill would be rewarded and the innovator would not be. Such cannot be the law. A contrary intent is implicit in the statutes and in a multitude of precedents."

APPEAL from the Patent Office. Interference No. 90,131.

AFFIRMED.

Ernest S. Cohen for appellants.

Robert D. Spille (*Henry W. Koster, Curtis, Morris & Safford*, of counsel) for appellees.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Patent Interferences in favor of the junior party to interference No. 90,131, Scherer, Frensch and Stähler (herein "Scherer"), who are involved on their application Serial No. 714,028, filed February 10, 1958.

The senior party-appellants, Applegate and Howell (herein "Applegate"), are involved on their application Serial No. 652,316, filed April 11, 1957.

The invention is defined in the following single count:

A method for controlling sea lampreys which comprises adding to a body of water inhabited by said lampreys 3-trifluoromethyl-4-nitrophenol.

The Scherer application is assigned to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, of the Federal Republic of Germany, whose New York representative was Progressive Color Company. The Applegate application is assigned to the Government of the United States, represented by the Department of the Interior.

By way of background, for several decades the sea lamprey had been causing havoc in the Great Lakes to commercial and game fish. The Fish and Wildlife Service of the Department of the Interior, under the direction of Applegate and Howell, was engaged in a large-scale screening program, seeking chemical compounds which would control the sea lamprey without undue harm to desirable fish species. The scheme was to treat streams where the lamprey spawn with a chemical which would destroy the larvae.

Prior to the invention here involved, as the result of examining thousands of compounds, 3-bromo-4-nitrophenol had been found to

be efficacious. This fact was disclosed in the December 17, 1955, issue of Chemical Week. Thereafter Progressive Color Company wrote a letter to the Fish and Wildlife Service on December 29, 1955 (Mr. L. C. Balling to Mr. Applegate), saying:

In various publications—specifically we refer to the December 17th issue of "Chemical Week"—we have observed comments on the difficulty encountered in finding a suitable chemical compound for the elimination of lampreys. We have also noted that your endeavors heretofore for an effective control of lampreys have focused on a chemical compound, viz, 3-bromo-4-nitrophenol, but because of the very high cost of this material your agency is still looking for an effective agent which perhaps could be procured at a reasonable cost.

For your guidance we would like to mention that we are the representatives of Farbwerke Hoechst A.G., Frankfurt (Main), West Germany, one of the largest chemical manufacturers in that country and have communicated with them on this subject. The Pesticide Department of Farbwerke Hoechst has advised us that the production of 3-bromo-4-nitrophenol is rather difficult and for that reason are unable to offer it to us. However, they believe that a similar chemical compound namely 3-trifluoromethyl-4-nitrophenol may even be more effective for the purpose you have in mind, and in the event you are interested in this matter we would be very glad to furnish you with free samples of this material. In the affirmative please be kind enough and let us hear from you indicating at the same time what quantities you wish to receive for conducting the necessary tests.

Applegate replied to this letter on January 19, 1956, as follows:

I wish to thank you for your letter of December 29, 1955 in which you offer to provide us with a sample of 3-trifluoromethyl-4-nitrophenol for testing as a candidate sea lamprey larvicide.

Due to financial limitations and personnel shortages, we have not been accepting further substances for testing. These restrictions have forced us to limit our laboratory work exclusively to tests of the several substances which have shown some promise as specific sea lamprey larvicides. However, since we are interested in exploring the structures related to 3-bromo-4-nitrophenol, and since the substance you offer is similar to this compound, we feel that it would be advantageous to work it into our program.

Only a small quantity of about three to four grams would be required for our preliminary screening tests. If you can arrange to have this amount of 3-trifluoromethyl-4-nitrophenol shipped to us, we will be glad to explore its possibilities as a specific larvicide.

In February 1956, the sample was delivered, it was tested, found to be effective, the patent applications followed, and the interference was declared.

Both parties are in agreement with the Board's view that the sole issue is originality, or, who made the invention. Scherer contends that the subject matter of the count was fully disclosed to Applegate in the letter from Progressive Color Company of December 29, 1955, by reason of which fact Applegate did not make the invention. The Board so held. In support of its decision, the Board pointed out that Applegate (called as a witness by Scherer, the only party taking testimony) testified that before the date of the letter he did not know of the chemical of the count. The gist of the Board's opinion is contained in the following paragraph:

There is no doubt that the Scherer et al. letter of December 29, 1955 (Exh. 3) was a conception of the invention of the count. The letter names the chemical as a substitute for the bromo-compound, which had been added to water, for the elimination of sea lampreys (Applegate et al. Exh. 6). This is all that the count requires. It is sufficient if an inventor is able to make a disclosure which would enable a person of ordinary skill in the art to practice the disclosure without extensive research or experimentation; *In re Tansel*, 45 CCPA 834, 253 F.2d 241, 730 O.G. 283, 117 USPQ 188. We conclude, therefore, that the aforementioned letter amply meets the test of conception set forth in *In re Tansel*, supra, and so constitutes a full disclosure of the invention

of the count in late December, 1955. This date is well prior to Applegate et al's. record date.

In view of the disclosure to him of a complete conception of the invention of the count, the Board found, as a corollary, that the reduction to practice by Applegate, by the tests which demonstrated effectiveness for the intended purpose, inured to the benefit of Scherer, citing several precedents including this court's decision in *Shumaker* v. *Paulson*, 30 CCPA 1156, 136 F.2d 700, 58 USPQ 279.

Applegate's attack on the decision below is on the theory that Scherer did not conceive the invention; and to show that Scherer had no conception the further theory is propounded that under the law there could not be a conception until there was a reduction to practice, which reduction to practice was by Applegate who, therefore, was the first to conceive. Not having a conception of the invention, it is argued, Scherer could not communicate the invention to Applegate and therefore Applegate did not derive the invention from Scherer, as the Board held he did. The case principally relied on to support this theory, which appears also to have been relied on heavily before the Board, is *Smith* v. *Bousquet*, 27 CCPA 1136, 111 F.2d 157, 45 USPQ 347.

[1] The Board correctly pointed out that *Smith* v. *Bousquet* was not a case involving an issue of originality. Recently, in *Albert* v. *Slatin*, 49 CCPA 1343, 305 F.2d 891, 134 USPQ 296, we expressed agreement with views of the Board of Patent Interferences characterizing *Smith* v. *Bousquet* as an unusual type of case, the Board saying, "In this type of research the inventor's mind cannot formulate a completed invention until he finally performs a successful experiment." We do not consider the instant situation to be of that type. In any event, the important distinction is that Smith and Bousquet were independent inventors pursuing their work separately, a situation which bears no parallel to the one here where one party communicated the totality of the invention defined in the count to the other, whether it be called a "conception" or by any other name.

It appears to us that appellants, as is too often the case, are relying on paragraphs lifted from a discussion of one situation to argue for a certain decision in an entirely different situation. An originality or derivation case, which this is, is quite unlike a case involving independent inventors, between whom true "priority" must be decided.[1]

[3] Appellants seem to propose that there cannot *be* a conception of an invention of the type here involved in the absence of knowledge that the invention will *work*. Such knowledge, necessarily, can rest only on an actual reduction to practice. To adopt this proposition would mean, as a practical matter, that one could never communicate an invention thought up by him to another who is to try it out, for, when the tester succeeds, the one who does no more than exercise ordinary skill would be rewarded and the innovator would not be. Such cannot be the law. A contrary intent is implicit in the statutes and in a multitude of precedents.

[1] The Board's opinion herein twice speaks of the issue as "priority" and, of course, expresses its decision as an award of "priority" to Scherer, which is a mere formality compelled by 35 U.S.C. 135 which treats all interferences as involving an issue of priority. [2] It is evident, however, that in an originality case the issue is not who is the *first* or *prior* inventor, but who *made* the invention. Applications "interfere" when one applicant gets the invention from the other, by fair means or foul, as well as when each makes the invention independently. In awarding "priority" to the *sole* inventor in an originality or derivation case, it should be realized that this is merely the employment of patent law jargon which is not to be taken literally. It might be well on the next revision of the statutes to use language suited to all situations so that the Board does not have to make an award of "priority" where no issue of priority exists.

Thinking of the matter in this light and asking *who* made the invention, clearly it was Scherer who had the thought and not Applegate who merely made the test.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

GEORGE E. HALL, JR. *v.* LOUIS B. TAYLOR

No. 7158. Decied June 11, 1964

[51 CCPA —; 332 F.2d 844; 141 USPQ 821]

1. INTERFERENCE—CONSTRUCTIVE REDUCTION TO PRACTICE—RIGHT TO MAKE.

"We find in the *Draeger* opinion [32 CCPA 1217, 150 F.2d 572, 66 USPQ 247] what we consider the key to determining whether a disclosure supports a claim for interference purposes • • • viz, does the disclosure *teach the gist of the invention* defined by the claim? While we realize that all limitations of a claim must be considered in deciding what invention is defined, it is futile merely to compare *quantitatively* range limits and numbers set out in counts with range limits and numbers disclosed in an allegedly supporting specification. Closer scrutiny is required to get at the essence of what invention the count purports to define."

2. SAME—SAME—SAME.

"• • • we think the Taylor parent application teaches the 'gist of the invention' defined by the counts. Appellant asserts 'criticality' in the *combination* of three parameters specifically recited in the counts. However, we, as did the Board, have searched the record in vain to find it and we agree with the Board that 'Hall refers to these limitations as critical without showing exactly how they are critical.' Assuming, arguendo, that the process practiced as claimed in the counts is optimum, we do not consider the ranges of the parameters disclosed in Taylor's parent application *so broad* and the ranges recited in the counts *so narrow* that the *counts define a different invention*. We therefore hold that Taylor's parent application supports the counts."

3. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—PRINTING COSTS.

"Prior to printing the record appellant moved to strike portions requested by Taylor, including the complete contents of the file wrapper of Hall's application Serial No. 467,021 and several papers filed by Taylor before the Board of Interferences. We denied the motion subject to taxing printing costs for such portion at the time of final decision. We find that such portion was unnecessarily included in the printed record. The cost of printing thereof accordingly is assessed against appellee."

APPEAL from the Patent Office. Interference No. 91,634.

AFFIRMED.

Bernhard R. Swick for appellant.

Oscar L. Spencer, George R. Jones (*Mark Levin* of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences of the United States Patent Office awarding priority of the subject matter of the five counts of Interference No. 91,634 to the junior party Louis B. Taylor.

Taylor is involved in the interference on his application Serial No. 9,440, filed February 19, 1960. George E. Hall, Jr., the senior party, is involved in the interference on his Patent No. 2,919,222 [1]

[1] Its five claims were copied by Taylor in the latter's application Serial No. 9,440 to provoke this interference.

issued on December 29, 1959, on application Serial No. 467,021, filed November 5, 1954.

Taylor relies for priority on an earlier filed application Serial No. 393,522, filed November 20, 1953, of which 9,440 is a continuation-in-part. Since neither party took testimony and both parties rely only on their filing dates, the sole issue is whether Taylor's 1953 application supports the counts.[2]

The invention relates to paper making and particularly to a process wherein pulp slurry called "furnish," pretreated with calcium silicate pigment as filler, is sheeted into paper web on the wire screens of a paper-making machine. The essence of the invention is using a particular kind of calcium silicate while maintaining the slurry within a specific pH range.

Counts 1 and 2 are representative:

1. In a process for the manufacture of paper, wherein a furnish is prepared, the step which comprises adding to said furnish a hydrated calcium silicate pigment having an SiO_2/CaO mol ratio limited by a maximum value of about 5:1 and a bound water content limited by a maximum value of about 10% by weight of said pigment and adjusting the pH to a value within the range of about 4.5–6.5.

2. A process according to claim 1 wherein the bound water content of said pigment added to said furnish is about 3.5% by weight of said pigment.

Counts 3 and 4, analogous to counts 1 and 2, respectively, claim the *paper furnish* per se. Count 5 claims *paper product* made with the furnish defined in count 3.

The Board describes the invention thus:

Papers produced from furnish containing hydrated calcium silicate filler are characterized by a high opacity, good whiteness or brightness and a desirable increase in bulk. The drawback to certain of these calcium silicate fillers lies in their alkalinity. Usually the pH of the furnish is adjusted [before adding calcium silicate] to between 4.5 and 6.5 [by adding alum] to produce a web of the desired strength. • • • but the alkalinity of certain calcium silicates requires additional alum or other neutralizing agent to reset the pH after the addition of the calcium silicate filler. • • •

The invention, corresponding to the subject matter of the counts, is based on the discovery by Hall that if a calcium silicate pigment having an SiO_2/CaO mol ratio not greater than 5:1 and a bound water content (chemically bound water or water of hydration) of not more than 10 weight percent based on the weight of the pigment, is employed as a filler in a paper furnish, the quantity of alum or other neutralizing agent required to adjust pH of the paper furnish is substantially reduced. • • •

The Board held, one member dissenting, that Taylor's parent application supported the counts since they "read on the parent application," notwithstanding the Primary Examiner's earlier ruling to the contrary.[3]

We first consider Taylor's parent application. It says (all emphasis ours):

This invention relates to a pigment-filled paper and method of producing the same.

• • • • • • •

According to this invention it has been found that paper of high brightness, opacity, and smoothness may be prepared by adding a finely divided hydrated amorphous calcium silicate or other alkaline earth metal silicate to a slurry of wood pulp which is maintained at a *pH in the range of 4 to 9.2* • • •.

An amorphous hydrated calcium silicate having an average ultimate particle size less than 0.1 micron, a *bound water content of about 3 to about 15 percent by weight*, and a free water content of about 4 or 5 percent by weight has been found to be particularly suitable for use in the present invention. • • • Best results are obtained when the *mole ratio of SiO_2 to CaO* in the calcium silicate is *preferably in the range 2:1 to 4:1*. However, other silicates in which this ratio is as low as 1:1 may be used.

The application further states that it is desirable to process certain woods in acid medium (pH less than 7).

The Board in comparing the count limitations with Taylor's parent application disclosure said:

The first limitation in said counts is that the hydrated calcium silicate must have an SiO_2/CaO mol ratio "limited by a maximum value of about 5:1." • • • [Taylor's parent application discloses] an SiO_2/CaO ratio of 2:1 to 4:1 • • •. Further, a specific silicate having a 3.3:1 ratio is shown • • •. These values are below the maximum of 5:1 in the counts and hence we hold that the first limitation reads on the counts. [We assume the Board meant the first limitation of the counts reads on the parent application disclosure.]

The second limitation is that said hydrated calcium silicate must have a "bound water content limited by a maximum value of about 10% by weight of said pigment." In • • • the parent Taylor application, • • • a bound water content of 3 to about 15 percent by weight is disclosed (in hydrated calcium silicate). Although that part of the range above 10% does not read on the counts, we hold that the counts read on the disclosed part of the range below 10%. Furthermore, the parent case disclosure of 3–15% is manifestly a specific disclosure of 3%, which clearly reads on the counts, and this is sufficient support for priority purposes. • • • [We assume here the Board meant the counts read on the disclosure of from 3% to something below 10% though the disclosure goes to 15%.]

The third limitation is that the pH of the paper furnish must be adjusted within the range of about 4.5–6.5, i.e. after the addition of the calcium silicate. • • • [The] parent Taylor application • • • [teaches] that the pH of the pulp slurry should be at least 4 but not above 9.2. This broad range encompasses the narrow range of 4.5 to 6.5 in the counts and we therefore hold that the counts read on the parent Taylor application. *Wemple et al.* v. *Pierce et al.*, 22 CCPA 1064, 1935 CD 428, 75 F.2d 998, 25 USPQ 37 and *Becket* v. *Arness*, 27 CCPA 1251, 1940 CD 589, 112 F.2d 1011, 46 USPQ 48. In both cases cited, the Court of Customs and Patent Appeals found support for the narrower ranges of the counts in the broader encompassing ranges in the applications in question. In the latter cases, the court recognized no criticality in the narrower ranges of the count, it is noted.

Similarly, *we find no criticality* in the three range limitations expressed in counts 1, 3 and 5. [Emphasis ours.]

The Board further pointed out with regard to the claimed pH range that Hall's patent says in one example "an acid pH" is desired, from which the Board concluded that the precise range of the count, 4.5–6.5, is not "critical."

As to counts 2 and 4 the Board said:

Taylor contends • • • that the disclosure of "bound water content of about 3 to about 15 percent by weight" on pages 1 and 2 of his parent application • • • is a disclosure of a hydrated calcium silicate having a bound water of about 3 percent by weight. We agree wtih this contention. Taylor next contends that disclosures of "about 3" and "about 3.5" are insignificantly different and that therefore "about 3 percent by weight" in the parent Taylor application corresponds to the limitation "about 3.5 percent by weight" in the count. Taylor urges • • • that "this is particularly true in view of the meaning which must be placed upon 'about 3.5%' set forth in counts 2 and 4." The following statement is referred to by Taylor and appears in • • • the Hall patent:

> "As the bound water is further reduced, less reduction in the alum is noted until at or about 3.5% bound water content a maximum reduction of the alum requirement, is reached. In fact, below about 5% bound water

[2] Both parties argue the merits of whether or not Taylor's *1960* application supports the counts. Both the Examiner, in a decision on motion, and the Board held it does. We consider such issue to be here irrelevant since, as correctly noted by the Board, "In order for Taylor to prevail in this proceeding, he must show that the counts read on his *parent* application • • •." [Emphasis ours.] Further, the Board earlier in its opinion said, "this parent application of Taylor was the very basis for the declaration of the instant interference • • •. If this were not the case, the Taylor involved application [filed in 1960] would have been rejected on the Hall patent since the effective date of the latter is *prior* to the filing date of the involved Taylor application."

[3] Taylor filed a motion under Rule 235 to shift the burden of proof to Hall on grounds that Taylor's parent application supports the counts. The motion was denied, the Examiner holding that the parent Taylor application disclosed no "embodiment" setting forth the parameters of the counts and thus did not support the counts.

(or above a calcining temperature of 500° C.) very little reduction in alum requirement is noted."

In view of this statement, it is obvious to us that the limitation of "about 3.5%" bound water is not critical * * * and therefore it is our opinion that the expression "about 3.5%" in the counts reads on a hydrated calcium silicate having about 3 percent bound water which, as we have held supra, is disclosed in the parent Taylor application.

Appellant argues that "Although the parent application [of Taylor] contains disclosures of a scope which embraces the specific compositions recited by the claims in issue as well as a large number of other compositions, if a clear basis for the specific compositions set forth in the interference counts cannot be found in the broad and comprehensive disclosure of the parent application, the filing date of the parent application cannot be relied on": that "the broad range set forth in * * * [Taylor's parent] application overlaps one end of the counts [and] does not make it a disclosure of the limitations of the counts where the application *fails to teach the gist of the invention*" (emphasis ours); that the gist of the invention defined by the counts is the "*combination* of limitations" nowhere found in an embodiment in Taylor's parent application; and that "one skilled in the art would not be taught the invention defined by these five counts by the disclosure in the Taylor [parent] application and that, therefore, Taylor has no right to make the * * * counts * * *."

Further appellant challenges the Board's reliance on this court's decision in *Den Beste* v. *Martin*, 45 CCPA 798, 252 F.2d 302, 116 USPQ 584, for the proposition "In order for Taylor to prevail in this proceeding, he must show that the counts read on his parent application; he is not required to show that the counts would have been patentable to him in the parent case."

[1] Notwithstanding appellant's arguments, we find no reversible error in the Board's decision. We have considered the precedents cited by appellant, particularly *Prutton* v. *Fuller and Johnson*, 43 CCPA 831, 230 F.2d 459, 109 USPQ 59, and *In re Draeger and Shewell*, 32 CCPA 1217, 150 F.2d 572, 66 USPQ 247. We find in the *Draeger* opinion what we consider the key to determining whether a disclosure supports a claim for interference purposes—the key which appellant himself recognizes—viz, does the disclosure *teach the gist of the invention* defined by the claim? While we realize that all limitations of a claim must be considered in deciding what invention is defined, it is futile merely to compare *quantitatively* range limits and numbers set out in counts with range limits and numbers disclosed in an allegedly supporting specification. Closer scrutiny is required to get at the essence of what invention the count purports to define.

In the *Draeger* opinion, after considering all the facts, this court concluded:

Appellants' application as filed *fails to teach the gist of the invention* here involved, and they should not now be permitted, on said disclosure, to extract from an issued patent, claims obviously based upon the disclosure of a critical element *not even hinted at in their specification.* * * *

* * * * * * *

In the instant case * * * the ranges in the appealed claims are so different from the ranges disclosed by appellants that it is obvious that *the inventions are different.* [Emphasis ours.]

[2] Applying a similar rationale to the instant case, we think the Taylor parent application teaches the "gist of the invention" defined by the counts. Appellant asserts "criticality" in the *combination* of three parameters specifically recited in the counts. However, we, as did the Board, have searched the record in vain to find it and we agree with the Board that "Hall refers to these limitations as critical without showing exactly how they are critical." Assuming, arguendo, that the process practiced as claimed in the counts is optimum, we do not consider the ranges of the parameters disclosed in Taylor's parent application *so broad* and the ranges recited in the counts *so narrow* that the *counts define a different invention.* We therefore hold that Taylor's parent application supports the counts.

[3] Prior to printing the record appellant moved to strike portions requested by Taylor, including the complete contents of the file wrapper of Hall's application Serial No. 467,021 and several papers filed by Taylor before the Board of Interferences. We denied the motion subject to taxing printing costs for such portion at the time of final decision. We find that such portion was unnecessarily included in the printed record. The cost of printing thereof accordingly is assessed against appellee.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ELMER L. TARBOX

No. 7369. Decided June 11, 1964

[51 CCPA —; 332 F.2d 574; 141 USPQ 827]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"EXERCISING DEVICE."

Upon review of appellant's application entitled "Exercising Device," *Held* that "* * *, we are obliged, under 35 U.S.C. 103, to sustain the Board's rejection of the appealed claim because the prior art clearly demonstrates that the subject matter would have been obvious to a person of ordinary skill in the art at the time the invention was made."

APPEAL from the Patent Office. Serial No. 803,641.

AFFIRMED.

Cecil L. Wood for appellant.

Clarence W. Moore (*L. E. Parker* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of the only claim remaining in appellant's application Serial No. 803,641, filed April 2, 1959, for Exercising Device.

The device is attached to a person's arm or leg for use in developing the muscles thereof. A form of the device is shown in the following elevational view, FIGURE 4, of the application:

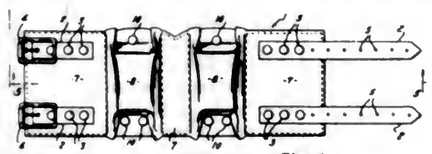


Fig. 4

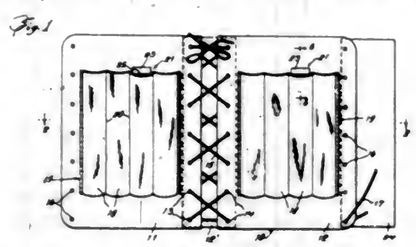
In the drawing a relatively wide band 1 comprises coextensive inner and outer thicknesses, the latter, designated 7, stitched together.

The inner thickness may be of sheep skin having its fur exposed to provide a cushion for engagement with a limb of a user while the outer thickness is shaped to provide a pair of pockets 8 which are generally rectangular and are spaced apart transversely of the band. A weight conforming to the shape of the pockets is disposed in each pocket. The sides of the pockets are secured by stitching and the ends by rivets 10 although snap fasteners may be substituted for the rivets to permit removal of the weights. Two pairs of straps 2 are riveted to opposite ends of the band so that it may be secured around an arm or leg of a user. The device may be applied in such manner that the pockets, with their weights, are positioned on opposite sides of the arm or leg.

The references relied on are:

Waller, 2,241,833, May 13, 1941.
Whitelaw, 2,832,334, April 29, 1958.
Martin (British), 572, November 15, 1890.

Waller discloses an exercising device which holds weights and is adapted to be laced onto a user's forearm or just above the ankle. An elevational view of the device before it is applied to the arm or leg of a user is shown in FIGURE 1 of the patent reproduced below:



Formed between leather sheets 11 and sheets 19 of resilient material are a plurality of pockets in which elongated weights 21 are retained by means of the latter sheets contracting around a reduced end portion of the weights.

Whitelaw relates to a therapeutic device which may be used in exercising certain joint muscles of the human arm. The device includes a sling adapted to cradle a user's forearm, which sling is provided with a padding of corresponding size and includes a pair of straps securing it to the arm.

The British patent discloses an anklet or spat which is provided with a plurality of pockets for carrying or storing coins. Positive closures in the form of buttons and straps are provided on the pockets.

In his brief, appellant sets out the elements of the appealed claim, with emphasis where indicated, as follows:

8. A weighting device for attachment to an arm or a leg, for use in exercising it, comprising:

(*a*) a flexible band having relatively narrower straps for adjustably and removably securing it about an arm or leg;

(*b*) the band having a *pair* of rectangular pockets, *closed at their ends*, arranged transversely thereof intermediate its ends;

(*c*) and a pair of weights each received in one of the pockets;

(*d*) the band comprising inner and outer thickness of non-elastic material, coextensive with each other, *having the pockets formed between them*, and *having cushioning means on one side of said inner thickness, coextensive therewith*, adapted to be disposed between the weights and an arm or leg;

(*e*) the pockets being spaced longitudinally relative to the band whereby the device is adapted to be applied to an arm or a leg with the weights *on opposite sides, rearwardly thereof, and with the straps positioned forwardly*, so that the device is substantially balanced and may be worn comfortably.

The Examiner's rejections of the claim as unpatentable over Waller alone, or Waller in view of the British and Whitelaw patents, were affirmed by the Board. It was recognized that Waller does not meet all the recitations of the claims, but the differences were not regarded as involving any changes of an unobvious nature.

Appellant emphasizes that the Waller device is adapted to be laced on the user's body and does not comprise "a flexible band having relatively narrow straps," and further points to the recitations which he italicizes in the claim, reproduced above, as distinguishing over Waller. Reliance on Whitelaw and the British patent is questioned on the allegation that the former is from a "remotely analogous art," and the latter is not intended for use as an exercising medium.

It is true that appellant's exercising device, as defined in the appealed claim, distinguishes from the Waller device. However, the record convinces us that appellant's invention would have been obvious to a person of ordinary skill in the art in view of the references of record.

Thus, we think the substitution of straps for the laces of Waller is clearly suggested by Whitelaw and the British patent. Both of those references, which use such straps in an analogous manner for securing bands about an arm or leg, would normally be considered by a person of ordinary skill in the art seeking to develop an exercising device of the Waller type. The pockets of Waller, being formed between sheets 11 and 19, it would be no more than an obvious modification in design to use, in place of the latter sheet, another leather sheet coextensive with the leather sheet 11, and cooperating with it in the same manner to enclose the weights.

We are unable to find anything unobvious in employing but a single pair of individual pockets in lieu of the two groups of pockets in Waller. Neither would it be unobvious to a person skilled in the art to close the pockets of Waller at the top and with positive closures such as the buttons or straps shown for closing pockets in a similar environment in the British patent.

The cushioning means on the inner surface of the strap is clearly suggested by similar cushioning means, or padding, coextensive with the Whitelaw straps on the side which engages the arm of the users.

[1] We do not question the utility or attractiveness of appellant's device. However, we are obliged, under 35 U.S.C. 103, to sustain the Board's rejection of the appealed claim because the prior art clearly demonstrates that the subject matter would have been obvious to a person of ordinary skill in the art at the time the invention was made.

The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE KEMPER M. HAMMELL

No. 7201. Decided June 11, 1964

[51 CCPA —; 332 F.2d 796; 141 USPQ 832]

1. PATENTABILITY—DOUBLE PATENTING—REJECTION FOR LACK OF PATENTABLE DISTINCTION OVER INTERFERENCE COUNTS.

"It is a well established practice to reject claims in an application related

to another application in interference over the counts of the interference, and to suspend action pending the award of priority. The reason for it is to provide a service to the applicant so that he may take corrective action by putting all of the conflicting claims in one application before a patent issues containing only part of them. If the applicant does not want the service, he may press for a decision in any of his pending applications."

2. SAME—SAME—SAME—REVIEW OF REJECTION.

"It appears that appellant here seeks to test the correctness of the 'double patenting' rejection over the claims of the commonly assigned Carlson application in interference. We agree with appellant that no issue of estoppel or election of one application at the expense of another is here presented. It seems clear that appellant has the right to appeal the 'double patenting' rejection without foregoing the Carlson application."

3. SAME—SAME—SAME.

The claims on appeal *Held* properly rejected for lacking patentable distinction over claims of a copending, commonly owned, application, in interference.

APPEAL from the Patent Office. Serial No. 687,217.

AFFIRMED.

William Hintze (*Truman S. Safford, Curtis, Morris & Safford, Marshall M. Holcombe*, of counsel) for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals holding the claims of application Serial No. 687,217 [1] unpatentable.

The invention relates to self-locking electrical terminals for connecting the ends of a pair of wires, and particularly to tapered tabs of small size made from sheet metal. The flat tabs are tapered at an angle of about 3 to 4 degrees between the sides of the tab in order that the receptacle-entering end of the tab is narrower than the wire-connected end. The receptacle, connected through a ferrule to the bared end of an insulated conductor, is adapted to be forced on the tab to bring the angled sides into a force-fit frictional connection. In addition, a pair of flanges on the receptacle provides spring elements serving to confine the tab on insertion and to press it into contact with the bottom portion of the receptacle engaging the underside of the tab.

Claim 3 is illustrative of the invention claimed and reads as follows:

A receptacle for electrical connection with a substantially flat contact blade having converging sides comprising a web having a contact surface thereon, overhanging spring members extending from opposed sides of said web, the ends of said members overlying said web to engage the blade yieldingly with said contact surface, the longitudinal side portions of said web being bowed to extend from the portion of said web including said contact surface, first downwardly and outwardly and then into integral continuity with the respective spring members, said receptacle converging away from the mouth thereof so that the receptacle side walls converge to receive therebetween the blade sides in a tight fit.

The five claims have been considered below and in the briefs on appeal as falling into two separate groups.

Appellant's brief summarizes the rejections as follows:

In the posture the case now assumes claims 1 and 2 stand rejected as being cross-readable with claims of a later filed commonly owned application of one Carlson, Serial No. 475,733, the Carlson claims being counts of an Interference No. 88,609, with a third party interferant; and claims 3, 4 and 5 as being unpatentable over the same Carlson claims in view of secondary reference patents to Stiles—735,839; Hayes—2,579,739 or Batcheller—2,820,212. During the motion period of interference 88,609, appellant and the common owner brought claims 1 and 2 forward in the interference while requesting interference to be declared with the third party interferant.

[1] Filed September 30, 1957, for "Electrical Connector."

A preliminary question presented is whether claims may properly be rejected for lacking patentable distinction over claims of a copending application. In other words, can there be "double patenting" without a patent? Appellant states it this way:

It thus becomes clear that *no patent has yet been issued on the subject matter of appealed claims 1 and 2.* The Carlson claims (and the adverse interferant's claims) in interference are still in application form and the interference has not yet been terminated. Obviously, as no monopoly has as yet been granted, there can be no extension of it; nor has any inventor been issued the first patent on the subject matter. [Emphasis present.]

The Examiner cited sections 305, 305.02(a), and 822.01 of the Manual of Patent Examining Procedure as authority for the rejections based on the claims of the Carlson application. The Solicitor points out that in the case of *In re Stanley*, 41 CCPA 956, 214 F.2d 151, 102 USPQ 234,

• • • this court expressly approved the Patent Office practice (as authorized by the manual) of rejecting claims for lack of patentable distinction over claims of the common assignee's earlier filed application. Moreover, this court indicated that the Examiner has a duty to follow that practice in an appropriate case.

[1] It is a well established practice to reject claims in an application related to another application in interference over the counts of the interference, and to suspend action pending the award of priority.[2] The reason for it is to provide a service to the applicant so that he may take corrective action by putting all of the conflicting claims in one application before a patent issues containing only part of them. If the applicant does not want the service, he may press for a decision in any of his pending applications. The facts presented in *Ex parte Bullier*, 1899 C.D. 155, 88 O.G. 1161, are similar to those here present. There the claims were rejected in view of similarity to counts in an interference and action was suspended on the ex parte application pending the outcome of the interference. The Assistant Commissioner said:

The possibility, however, that the Examiner may be mistaken in holding that the claims in this case are not patentable over the invention shown by the other party to the interference must be contemplated just as the rules providing for appeals contemplate the possibility of mistake in rejecting claims on references. The applicant should be allowed to contest that question at the present time instead of being compelled to wait until the interference is decided. The question to be determined is of the same kind as if a decision had been rendered against this applicant in that interference, and it would be unjust to him to cause him the delay when the matter can be settled at the present time.

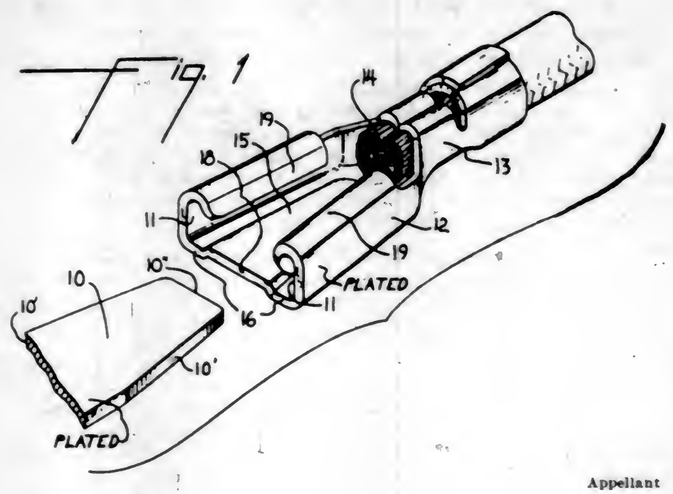
[2] It appears that appellant here seeks to test the correctness of the "double patenting" rejection over the claims of the commonly assigned Carlson application in interference. We agree with appellant that no issue of estoppel or election of one application at the expense of another is here presented. It seems clear that appellant has the right to appeal the "double patenting" rejection without foregoing the Carlson application.

The issue here presented, therefore, is whether a patentable dis-

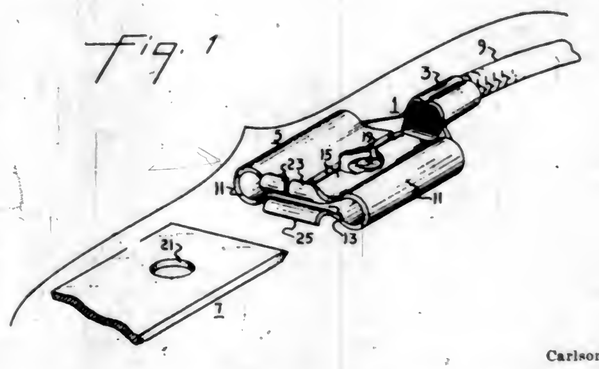
[2] See Glascock and Stringham, Patent Soliciting and Examining (Pacot, 1934) § 139, and cases there cited. See also Stringham, Double Patenting (Pacot, 1933) § 2858.

tinction exists between the claims on appeal and those in Carlson. *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22; *In re Simmons*, 50 CCPA 990, 312 F.2d 821, 136 USPQ 450.

An understanding of the differences between the instant invention and that of Carlson is aided by reference to the drawings.



Appellant



Carlson

Appellant points out that claim 1 on appeal calls for spring members which extend "downwardly at their ends toward said web to terminate in free end edges overlying said web." On the other hand, appellant states that "Carlson's side walls are circular and terminate in end portions which extend horizontally at their ends towards one another for a considerable length, almost to meet."

As to claim 2, appellant notes that "planar side wall portions" are required.

The Board said, with respect to claim 1:

> We consider the term "at their ends" not to be restricted to those parts of said spring members located at the very tip ends thereof, but to be broad enough to encompass considerable extents of said members inwardly of said tip ends, which in Carlson may be taken as the flat portions 15 together with the upwardly directed parts inwardly thereof extending to the highest level of the clip entity depicted in FIGURE 3. In this sense, the end portions of the spring members so taken clearly extend downwardly toward the web and terminate in free end edges that overlie the latter. * * * the engagement with the blade called for in claim 1 is recited in terms broad enough to pertain to the spring members considered as a whole, and this is the case in Carlson.

While the Board's statement points out similarity of *disclosure*, it is the *claims* of Carlson which must be considered. *In re Greenlee*, 42 CCPA 926, 222 F.2d 739, 106 USPQ 104. Claim 8 of the Carlson application includes "opposed side wall portions" connected by an integral web, with "inwardly directed flanges extending from said side wall portions and overhanging said web." We agree with the Board that the spring members of appellant's device as claimed are patentably indistinct from those claimed in Carlson. The spring members grasp the tab and clamp it between the base web and the ends of the spring members in each case. In order to clamp the tab, the spring members obviously "extend downwardly" to some extent.

As noted by the Solicitor, appellant discloses *planar* side walls *converging* within a specific angular range in both the clip and tab to achieve a force fit with minimum effort, and that "Appellant's claim 1 sets forth neither the planar side walls nor the convergence of the walls." Claim 2, which calls for "substantially planar" side walls, does not set forth the convergence of the walls. Therefore, as the Solicitor states, "whether the side wall is planar or curved is merely a matter of choice between structures obvious to one skilled in the art * * *." We find nothing unobvious in making side walls "substantially planar." Therefore, we will sustain the rejection of claims 1 and 2 over the claims of the Carlson application.

Claims 3, 4 and 5 are rejected as unpatentable over the allowed claims of Carlson in view of any one of the following patents:

Stiles, 735,839, August 11, 1903.
Hayes, 2,579,739, December 25, 1951.
Batcheller, 2,820,212, January 14, 1958.

The Stiles patent discloses a tapered element clamped in a correspondingly tapered receptacle to provide a wedge-fit mechanical and electrical contact.

The Hayes patent discloses a "tapered notch" which cooperates with downwardly extending tips of the receptacle to perform a clamping function.

The Batcheller patent discloses an electrical connector having converging walls for receiving and clamping tapered elements.

Claims 3, 4 and 5 define the spring members only as overhanging, but differ from claims 1 and 2 in reciting the tapered configuration of the receptacle. The Board did not find the converging taper patentably significant in view of the secondary references, each of which shows tapered elements clamped by converging walls. The Board said:

> Taking Stiles as exemplary of the subsidiary references, this patent clearly discloses that connectors having tapered receptacles and correspondingly tapered pins for cooperation with said receptacles are an old and known expedient in the art.

Appellant argues that the tapered connector of claims 3, 4 and 5 is "of a class and nature completely different from that disclosed by Carlson." Again, it is important to note that only the *claims* of Carlson may be relied on here, in spite of appellant's consideration of the "teachings" of the entire disclosure.

It is true that the Carlson claims are not limited to tapered connectors, but in view of the presence of the wedge-fit taper concept in the secondary references, we are not satisfied that such a limitation

defines an unobvious variation over the connector claimed in Carlson.

[3] Accordingly, the decision of the Board of Appeals is affirmed.

AFFIRMED.

In the United States Patent Office Before the Board of Appeals

EX PARTE EWALD ZEMLA AND JOSEPH EGGER

Appeal No. 230-93. Decided July 31, 1964

1. PATENTABILITY—REFERENCES—EFFECTIVE DATE OF UNITED STATES PATENT IS PRIORITY DATE OF CORRESPONDING FOREIGN APPLICATION—35 USC 102(e) AND 119 READ TOGETHER.

"Section 119 refers to two applications for the same invention stemming from the same inventor, one a first application filed in a foreign country and the other a later application filed in the United States. To avoid complicated qualifying statements, it will be assumed that the two applications are the same, if they are not the statements made apply only to the extent they are the same. Section 119 provides that under the specified circumstances, and subject to the requirements of the second paragraph which are not in question here, the second application, filed in the United States, '*shall have the same effect*' as it would have if filed in the United States on the date on which the application was filed in the foreign country. This language is plain; it gives the application the status of an application filed in the United States on a particular date. Section 102(e) provides that a patent may not be obtained if the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant. This paragraph makes the filing date of a U.S. patent the effective date as a reference. It refers to an application filed in the United States, and since section 119 provides that the application shall have the same effect as if filed in this country on a particular date, these two provisions must be read together and the filing date of the foreign application becomes the effective date of the United States reference patent. Thus it necessarily follows that the patent relied on by the Examiner may be used for all that it discloses as of the date that the same disclosure was made in a foreign country under the Convention."

APPEAL from the Examiner of Group 430 (J. P. Strizak), Serial No. 806,659.

AFFIRMED.

Michael S. Striker, for appellants.

Before FRIEDMAN and KREEK, *Examiners-in-Chief* and ANDREWS, *Acting Examiner-in-Chief*.

KREEK, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 59 to 66, all the claims remaining in this application.

Claim 59 is illustrative.

59. An electric wrist watch, comprising a hollow watch case, a substantially horseshoe-shaped member having an annular chamber and being accommodated in said watch case so as to define with the latter a second chamber which is at least partially surrounded by said annular chamber; a current operated watch mechanism mounted in said second chamber; and a unitary electrical assembly mounted in said annular chamber.

The reference of record relied upon is:

Gisiger-Stahli et al., 3,032,651, May 1, 1962. (Filed June 16, 1958.)

Appellants have said very little as to how their claims define patentable subject matter over the disclosure of the patent relied on by the Examiner. The main thrust of their argument is to the effect that their claims are directed to subject matter patentably distinct from the claimed subject matter of the patent.

We note from an examination of the Gisiger-Stahli et al. patented file that the patentees filed papers claiming priority dates in Switzerland of July 2, 1957 and Feb. 28, 1958, both earlier than the April 16, 1958 priority date claimed by appellants.

An examination of the certified copy of the Swiss application filed February 28, 1958, reveals that it is a substantial duplicate of the application filed in this country on June 16, 1958 on which the patent matured. This brings up the question as to whether or not the date of February 28, 1958, is available against the appellants herein. Our conclusion is that the priority date of February 28, 1958 governs.

Our conclusion is arrived at simply by considering sections 102(e) and the first paragraph of Section 119 of the statute together. These portions of the statute read:

"102. A person shall be entitled to a patent unless—

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent,"

"119. An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; but no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing."

[1] Section 119 refers to two applications for the same invention stemming from the same inventor, one a first application filed in a foreign country and the other a later application filed in the United States. To avoid complicated qualifying statements, it will be assumed that the two applications are the same, if they are not the statements made apply only to the extent they are the same. Section 119 provides that under the specified circumstances, and subject to the requirements of the second paragraph which are not in question here, the second application, filed in the United States, "*shall have the same effect*" as it would have if filed in the United States on the date on which the application was filed in the foreign country. This language is plain; it gives the application the status of an application filed in the United States on a particular date. Section 102(e) provides that a patent may not be obtained if the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant. This paragraph makes the filing date of a U.S. patent the effective date as a reference. It refers to an application filed in the United States, and since section 119 provides that the application shall have the same effect as if filed in this country on a particular date, these two provisions must be read together and the filing date of the foreign application becomes the effective date of the United States reference patent. Thus it necessarily follows that the patent relied on by the Examiner may be used for all that it discloses as of the date that the same disclosure was made in a foreign country under the Convention.

The above interpretation of the statute was given in *Sperry Rand Corp.* v. *Knapp-Monarch Co.*, 127 USPQ 193.

In our opinion, claim 59 is not patentable over the Gisiger-Stahli et al. disclosure. The patentee, like appellants, seek to incorporate a number of electrical components in the small space afforded by a wrist watch. While it is true that the patent does not disclose an electric watch this is considered of no significance herein for two reasons. (1) It is merely an introductory statement of use or environment without any structural significance. (2) Electric watches are admittedly old.

The chamber of the patent (FIG. 13) housing electrical elements 103—109 is a horse-shoe shaped member having an annular chamber in the same sense as appellants and it defines and partially surrounds a second chamber which houses a watch mechanism. It would be obvious to use an electrically operated watch mechanism instead of a spring wound watch movement. The circuit elements 103—109 are mounted on the printed circuit board which covers the opening in which the circuit elements are housed, thus conforming to the last limitation of the claim.

Thus we will sustain the rejection of claim 59.

The remaining claims are not considered patentable over the patent disclosure for similar reasons. Thus, we do not consider the recitation of "a pillar plate" as recited in claim 61 to structurally define anything different than the body of the insulating crevice 62 of the patent. Nor is it significant that the covered member is horse-shoe shaped. As defined in claim 61 this would require no more than that the back cover plate be slightly dimpled in the outline of the horse-shoe shaped member. It is not seen that this would produce any new or unexpected result.

Therefore we will sustain the rejection of claims 60 to 66 as being unpatentable over the patent.

The decision of the Examiner is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,420,403, W. B. Stoddard, Jr., ELECTRODEPOSITION OF IRON, **filed** May 11, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–634–HW. *William J. Ehlen et al.* v. *Eldon Industries, Inc. et al.*

2,505,603, J. E. Brandenberger, PROCESS FOR THE MOLDING IN THEIR OWN PACKING OF FUSIBLE OR THERMOPLASTIC PRODUCTS, **filed** May 22, 1964, D.C., W.D. Pa. (Pittsburgh), Doc. 64–548, *The Borden Company* v. *Clearfield Cheese Co., Inc.*

2,554,844, L. M. Swift, CASING COLLAR LOCATOR, **filed** May 14, 1964, D.C., N.D. Tex. (Wichita Falls), Doc. 7–74, *Dresser Industries, Inc.* v. *Mike Rathman Logging Co.*

2,567,687, G. B. Benander, TROUBLE LIGHT WITH REFLECTOR, GUARD, AND TRIO-PART HANDLE, **filed** May 14, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–496, *Standard Portable Products, Inc.* v. *Aetna Mfg. Co.*

2,609,466, I. S. Blonder, THERMORELAY ELEMENT, **filed** May 21, 1964, D.C., S.D. Fla. (Miami), Doc. 64–321, *Isaac S. Blonder* v. *Thurow Electronics, Inc. et al.*

2,635,860, I. McLeod, CENTRIFUGAL MIXING DEVICE, **filed** May 13, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–487, *Premier Mill Corp.* v. *Turbon Process Equipment, Inc.*

2,677,145, J. C. Adams, CARPET SECURING DEVICE, **filed** May 15, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–667–HW, *Roberts Consolidated Industries, Inc.* v. *Tiger Products, Inc. et al.*

2,787,738, J. H. Hisle, STARTING MECHANISM, **filed** May 19, 1964, D.C., E.D. Ky. (Lexington), Doc. 1581, *Mid-States Enterprises, Inc. et al.* v. *Electronic Controls, Inc.*

2,826,253, Wright and Swofford, BORE WALL CLEANER, **filed** May 18, 1964, D.C., E.D. Tex. (Tyler), Doc 988, *Marvin K. Swofford et al.* v. *The Flexcel Company.*

2,872,203, C. W. Hedstrom, CONVERTIBLE AND FOLDABLE BABY VEHICLES, **filed** May 13, 1964, D.C. Mass. (Boston), Doc. 63–379–F, *Hedstrom Union Company* v. *Child World, Inc.* **Same, filed** Aug. 25, 1964, D.C., S.D.N.Y., Doc. 64/2615, *Hedstrom Union Co.* v. *Grow-Rite Corp.*

2,918,251, D. A. Epp, OUTLET STRUCTURE FOR IRRIGATION PIPES, **filed** May 18, 1964, D.C. Nebr. (Omaha), Doc. 755 L, *Henderson Mfg. Co.* v. *Gustav Thieszen et al.*

2,938,676, G. H. Magrath, TOP DRIVE SPINNING SPINDLE, **filed** May 15, 1964, D.C. Mass. (Boston), Doc. 63–386–F, *George H. Magrath* v. *Draper Corporation.*

2,967,649, B. G. Mack, PACK HARNESS, **filed** May 14, 1964, D.C., W.D. Mo. (Kansas City), Doc. 14992–1, *Himalayan Industries et al.* v. *Nelson Sales Company.*

2,970,783, D. A. Cheyette, COMPOSITE WEARING PARTS FOR CRUSHERS AND THE LIKE, **filed** May 19, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–137, *Nordberg Manufacturing Company* v. *Allis Chalmers Manufacturing Company.*

2,992,609, J. H. Roozee, INKING ROLLER SYSTEM, **filed** May 21, 1964, D.C., W.D. Mich. (Grand Rapids), Doc. 4763, *Vandercook & Sons, Inc.* v. *The Challenge Machinery Company.*

3,118,340, U. Iwerks, PANORAMIC MOTION PICTURE CAMERA ARRANGEMENT, **filed** May 22, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c883, *Walt Disney Productions* v. *Fred A. Niles Communication Center, Inc. et al.*

3,120,706, Turchi and Lieb, DENTAL DRILL WITH COLLET, **filed** May 28, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–562, *Star Dental Mfg. Co., Inc.* v. *Union Broach Co., Inc.*

3,134,633, J. G. Hatfield, PLUG CONTACTOR, **filed** May 26, 1964, D.C., W.D. Va. (Roanoke), Doc. 64–C–50–R, *AMP, Incorporated* v. *Virginia Panel Corporation.* **Same, filed** May 26, 1964, D.C., M.D.N.C. (Greensboro), Doc. C–76–WS–64, *AMP, Incorporated* v. *Electronics Data Controls Corporation.* **Same,** Doc. C–77–G–64, *AMP, Incorporated* v. *Tech Panel Co., Inc.* **Same,** Doc. C–78–G–64, *AMP, Incorporated* v. *Futronics, Incorporated.* **Same,** Doc. C–79–G–64, *AMP, Incorporated* v. *Adams-Millis Corporation.* **Same,** Doc. C–80–G–64, *AMP, Incorporated* v. *Cam Corporation.*

Des. 190,918, T. D. Poulsen, DOLL, **filed** May 26, 1964, D.C., S.D.N.Y., Doc. 64/1619, *Dam Things Establishment* v. *Bijou Toys, Inc.*

Des. 196,173, A. Lapin, BUILDING, **filed** May 18, 1964, D.C. Hawaii (Honolulu), Doc. 2277, *The International House of Pancakes Commissary* v. *The Doghouse, Honolulu, Inc.*

Des. 197,616, G. W. Dunbar, GAME RACEWAY, **filed** May 26, 1964, D.C., S.D.N.Y., Doc. 64/1613, *Kusan, Inc.* v. *Payton Products, Inc.*

REISSUES

NOVEMBER 3, 1964

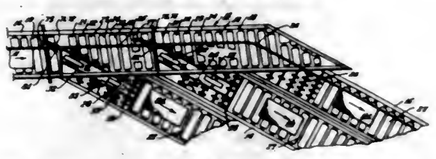
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,673
CONTAINER SORTING APPARATUS

Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Original No. 3,018,873, dated Jan. 30, 1962, Ser. No. 804,779, Apr. 7, 1959. Application for reissue Jan. 13, 1964, Ser. No. 348,313

10 Claims. (Cl. 198—38)



1. In a conveyor system wherein a plurality of classes of containers are advanced in indifferent order along a main roller conveyor in essentially end to end abutting relation, a container sorter for continuously and selectively diverting such containers by classes onto a plurality of branch conveyors so that each such branch conveyor will contain only containers of a predetermined class, said sorter comprising a main conveyor section in alignment with said main roller conveyor so as to receive containers therefrom, a plurality of branch conveyor sections mounted at substantially less than right angles with respect to said main conveyor section and in container receiving relation thereto, a first friction wheel mounted beneath said main conveyor section in slantwise relation to the path of travel of containers moving along said main conveyor section and in general alignment with the longitudinal axis of the leading branch conveyor section, means for raising and lowering said first friction wheel from an inoperative position in which its uppermost surface lies below the bearing surface of said main conveyor section to an operative position in which its upper surface lies in container contacting position, whereby when said first friction wheel is in the operative position the leading end of a container contacted thereby will be diverted onto said leading branch conveyor section, a second friction wheel mounted beneath said leading branch conveyor section in alignment with said first friction wheel and lying just beyond the adjacent side edge of said main conveyor section, said second friction wheel having its uppermost surface positioned to frictionally engage the bottom surface of a container as it is diverted onto said branch conveyor section by said first friction wheel, power means for rotating said first and second friction wheels, container sensing means in advance of said first friction wheel for actuating said raising and lowering means so as to move said first friction wheel from the inoperative to the operative position when a container advancing along said main conveyor section is of the class to be diverted onto the said leading branch conveyor section, means operative to return said first friction wheel to the inoperative position upon movement of the diverted container onto the said leading branch conveyor section and before the next succeeding container moving along said main conveyor section reaches a position overlying said first friction wheel, and means operative to override said last named means and maintain said first friction wheel in the operative position in the event the container next succeeding the diverted container is of the same class as the diverted container.

25,674
VARIABLE RESISTOR DEVICE

Wilbur T. Hardison, Victor G. Mathison, Richard E. Caddock, and Marian E. Bourns, all of Riverside, Calif., assignors to Bourns, Inc.

Original No. 3,069,646, dated Dec. 18, 1962, Ser. No. 119,608, June 26, 1961. Application for reissue Dec. 4, 1963, Ser. No. 337,118

26 Claims. (Cl. 338—143)



1. Variable resistor means comprising:

first means, comprising supporting means, constructed and arranged to be supported on a panel by insertion through an aperture in the panel and adapted to be secured thereto by clamping action on opposite sides of the panel, said supporting means comprising a stud having a passage extending through at least that portion of the supporting means that is adapted to extend through the panel;

second means, comprising a generally cylindrical rotatable shell having means defining an axis with the shell mounted upon and adapted for axial rotation upon said first means at the front of the panel;

third means, comprising first and second potentiometer components disposed within said rotatable shell, said components comprising a compound helical resistance element and a contact device and one component movable relatively to the other incident to rotation of said shell and a first of said components being affixed to said first means and the second component being arranged for coactive relative movement with respect to the first of the components by rotation of said shell; and

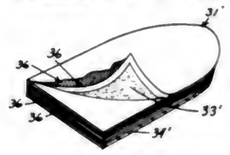
fourth means, comprising electrical connection means including a plurality of electric conductors electrically connected respectively to said contact device and first and second end portions of said resistance element and extending through said passage for access at the rear of the panel.

25,675
LINT REMOVING DEVICE

Renée du Bonnet, previously known as Renée B. Neal, 906 Park Ave., Apt. 3, New York, N.Y.

Original No. 3,056,154, dated Oct. 2, 1962, Ser. No. 727,569, Apr. 10, 1958. Application for reissue Oct. 1, 1963, Ser. No. 313,137

2 Claims. (Cl. 15—104)



2. A disposable lint remover for lifting off and removing foreign particles and lint from a surface to be cleaned, comprising a mitten-like base member adapted to surround a portion of the hand including the tips of fingers thereof, said member being formed of flexible sheet material and having opposed spaced sheet portions joined to each other only at the sides and one end, said one end being narrowed to conform to the fingers of the user, one of said portions having a layer of adhesive adhered to the major portion of the outer surface thereof, and a protective covering which is separate and separable from the base member overlying said adhesive layer and strippably adhered thereto, said protective covering having substantially the same shape as the base member, the lint remover remaining substantially flat before, during and after use.

PATENTS

GRANTED NOVEMBER 3, 1964

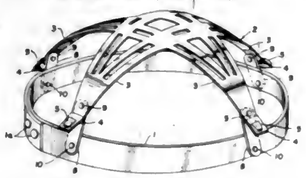
GENERAL AND MECHANICAL

3,154,787
SHOULDER STRAP PAD
Jack Newman, 336 Scranton Ave., Lynbrook, N.Y.
Filed Jan. 10, 1964, Ser. No. 336,936
4 Claims. (Cl. 2—2)



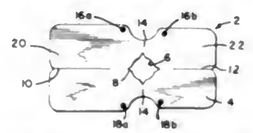
1. A shoulder strap pad comprising a pair of opposed flat flexible pad members, means for securing said pad members together about the peripheral edges thereof while leaving opposed surface portions of said pad members in unsecured relation to each other, one of said pad members being formed with a pair of slots located adjacent each of the ends thereof for threading a garment strap therethrough to dispose a pair of spaced strap portions thereof between said pad members and to locate a strap portion intermediate said pair of strap portions on the outer surface of said slotted pad member and between the innermost slots of said pairs of slots, and soft. flexible, elongated friction pad means secured to the upper surface of said slotted pad member between said innermost slots whereby to provide for frictional contact between the upper surface of said friction pad means and the underside of the intermediate portion of said garment strap.

3,154,788
SAFETY HAT ADJUSTABLE SUSPENSION
Jack N. Simpson (Greenfields), Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1963, Ser. No. 251,357
2 Claims. (Cl. 2—3)



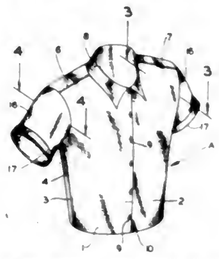
1. In combination with a safety, head-covering element, a suspension for said element comprising a spider-like element of flexible material for encircling the crown portion of the wearer's head, said suspension being provided with a plurality of radially outwardly extending, integral legs whose integral end portions extend angularly outwardly to form an obtuse angle with respect to said legs, said end portions having readily detachable fastening elements for connection to the interior surface of said head-covering element, a plurality of links, each having one end pivotally connected to a leg portion adjacent the end thereof and interiorly of the suspension, a headband, the other end of said links being pivotally connected to circumferentially spaced portions of said headband, said headband having overlapping ends, means for adjusting the amount of overlap of said end portions of the headband sufficiently so that upon variation of the circumference of the headband to increase or decrease the size thereof, said links will pivot clockwise or counterclockwise about their pivotal connections with the suspension and headband sufficiently to permit a wide range of adjustment of headband size without disturbing the spacing between the legs of said suspension.

3,154,789
DISPOSABLE EXAMINATION GARMENT
Edward Lewis, Jr., 5800 Beech Ave., Bethesda 14, Md.
Filed Mar. 25, 1963, Ser. No. 267,473
4 Claims. (Cl. 2—104)



1. A disposable examination garment especially adapted for covering the upper torso of a female examinee comprising an essentially rectangular sheet having side edges and front and rear end edges thereto said sheet further having a head receiving aperture intermediate the ends thereof, said sheet being folded along a line perpendicular to the longitudinal centerline thereof in coincidence with said aperture to form front and back covering portions thereto, said front portion having a preformed slit disposed along the longitudinal centerline thereof and extending from said front edge upwardly and terminating at a point spaced substantially below the front edge of said aperture to divide the lower part of said front portion into two independently movable panels, and fastening means integral with said garment positioned adjacent said side edges thereof and connecting the side edges of the front portion to corresponding side edges of the back portion to close the side edges of said garment, said garment when donned by a female examinee being disposed so that the upper end of said elongated opening terminates proximate the examinee's breast area and said fastening means are disposed adjacent the axillary portion of the breast.

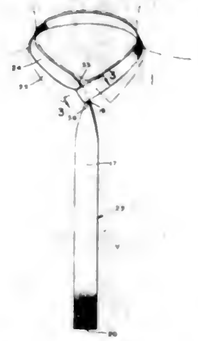
3,154,790
APPAREL WITH REMOVABLE SLEEVES
Isaac Rosenberg, 7569 Oxford Drive, Clayton 5, Mo.
Filed June 29, 1962, Ser. No. 206,415
5 Claims. (Cl. 2—126)



1. An apparel garment comprising a body portion having a pair of front panels and a back panel, said front panels being secured to said back panel along a pair of

seams, said back and front panels being attached in such manner to have a pair of opposite arm holes which are so located to accommodate the arms of the wearer, said panels being turned in around the entire periphery of the arm holes in the provision of arm hole encircling flaps, continuous arm hole encircling pieces of tape each being stitched together at its ends to form an endless element, said pieces of tape being turned in around their outer margins to form in-turned flaps, the latter being respectively stitched to the armhole encircling flaps so that a substantial portion of each of the pieces of tape will extend inwardly from the margin of the arm hole in the provision of free-swinging annular flaps, a pair of sleeve members provided for removable securement to the body portion at said arm holes, a first zipper element being annularly secured to and extending around the annular flaps of each of said arm holes by lines of stitches which are free of the back and front panels except for the intervention of the annular flaps, and a second zipper element being operatively secured to each of said sleeve members for companion attachment to said first zipper element, said second zipper element having a slide element.

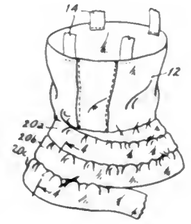
3,154,791
NECKTIE
Ricardo A. Serrano, 7308 Melrose Ave., Los Angeles, Calif.
Filed Oct. 12, 1961, Ser. No. 144,690
2 Claims. (Cl. 2—148)



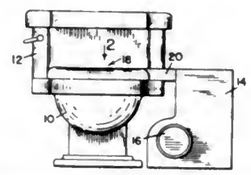
1. A simulative four-in-hand necktie comprising a long flattened band, an end portion of the band being folded back upon the band along a fold line with the side edges of said end portion being coincident with the side edges respectively of that portion of the band upon which said end portion is folded, said end portion being stitched to the band along a stitch line spaced from said fold line and extending at an acute angle with respect to said fold line to form a loop which opens to a frusto-conical configuration on an axis extending transversely of the band, said loop defining an upper opening thereof and a lower opening thereof, said lower opening being smaller in diameter than the width of the band whereby when one end of the band is passed through the loop to form a noose to pass around the wearer's neck and to present a front portion hanging vertically from the loop, the band will be constricted in the loop.

3,154,792
METHOD OF MAKING A BOUFFANTE GARMENT
David J. Lobel, 4 Tulip St., Cedarhurst, N.Y.
Filed Nov. 6, 1961, Ser. No. 150,564
1 Claim. (Cl. 2—243)

A method for forming a bouffante garment comprising forming an elongated length of material free from seams and tapered at each end, marking said length of material at guide points for forming a spiral of desired size, orienting said length of material in a spiral of increasing diameter with the edges of said length of material in overlapping relationship and with said guide markings in alignment, and stitching adjacent edges of the spiralled length of material together and contemporaneously shirring the material.

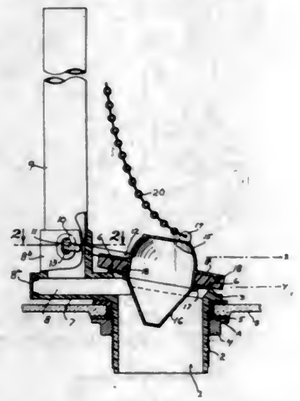


3,154,793
AUTOMATIC TOILET UNIT
Milton H. Congdon, 120 Alverson Ave., Providence, R.I.
Filed Jan. 22, 1963, Ser. No. 253,211
5 Claims. (Cl. 4—7)



1. An automatic toilet seat construction comprising the combination with a conventional toilet bowl and flush tank of a new and improved toilet seat hinged to the toilet bowl, said toilet seat being hollow and arranged in normal position on the toilet bowl to be raised and lowered, and having a front portion and a rear portion, an enclosure adapted to be mounted on the floor adjacent the seat, said enclosure containing a water source and a source of air, means to heat the water, means to heat the air, a conduit in the enclosure for the heated air, a conduit on the seat leading to the interior portion of said hollow seat, said conduits being in alignment when the seat is down, flexible hoses leading into said hollow toilet seat adjacent the hinge of the seat, the hollow toilet seat forming a chamber for the heated air, orifices at the inside of the toilet seat at the front portion thereof and at the rear portion thereof, said orifices generally pointing in a direction toward each other and being adapted to direct streams of heated air in a direction diametrically across the toilet seat front to rear and vice-versa, and nozzles connected to said pipes, there being a nozzle adjacent the forward portion of the seat and another nozzle adjacent the rearward portion of the seat at the inside edges of the seat, said nozzles pointing in the direction of the stream of heated air, control means on said casing, valves for said pipes and said conduit, said control means operating said valves for opening and closing the same, and means providing for a time sequence first of the heated water to operate for a predetermined period of time and then to shut off and for the air to operate for a predetermined period of time thereafter, with means to then shut it off.

3,154,794
FLUSH VALVE
Armand E. Antunez, Jr., 20123 E. Sierra Madre Ave., Glendora, Calif.
Filed Feb. 25, 1963, Ser. No. 260,569
1 Claim. (Cl. 4—57)



A flush valve comprising:

(*a*) a body structure formed of plastic material and including a vertical portion having at its upper end an inclined valve seat and forming thereunder a vertical drain passage, a lateral portion defining a radial passage communicating with said drain passage, and an upstanding tubular boss on said lateral portion defining diametrically disposed journal recesses;

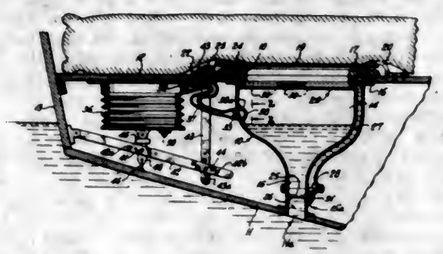
(*b*) a hollow float structure including complementary upper and lower cup-shaped plastic members cemented together at their rims, the upper cup member having a flange of greater diameter than said valve seat, the lower cup member having a flange of lesser diameter;

(*c*) a seal ring disposed between and retained by said flanges, said seal ring being formed of a soft elastomer whereby said seal ring readily conforms to said valve seat and being at least as large as said seat;

(*d*) and a pair of arms integral with said upper cup member and its flange, said arms extending laterally and terminating in inturned pivot elements of smaller diameter than said journal recesses and fitting loosely therein, said arms having limited yieldability to permit spreading for insertion of said pivot elements into said journal recesses, said arms positioning said float for movement to place said seal ring in engagement with said seat.

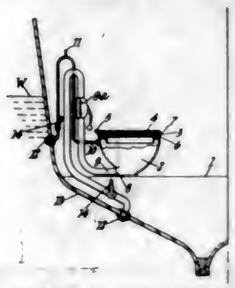
3,154,795
MARINE TOILET
Philip H. Burn, 2167 Chestnut St., Camp Hill, Pa.
Filed Mar. 7, 1962, Ser. No. 178,171
9 Claims. (Cl. 4—77)

3. A toilet mounted in a boat and comprising a well rising from the boat bottom to a height above the boat water line, the well having as its upper section a toilet bowl having a first duct leading from the bowl to an opening in the boat bottom, said duct having therein first check-valve means effective to permit discharge of the bowl contents out the bottom of the boat and to resist inflow of water from the bottom of the boat into the bowl, a bowl cover movable when open to closed position, a second duct communicating between water at the bottom of the boat and the upper part of the bowl and including second check-valve means directionally effective to resist discharge of water to the bottom of the boat but to permit admission of water to the top of the bowl, and pneumatic-flushing means for the well including reciprocable means operated in a first stroke while the cover is in closed position for increasing above normal air pressure in the well above the water level therein to a flushing air pressure such as to flush the well



through the first duct by way of said first check-valve means, the reciprocable means on its return stroke reducing below normal the air pressure in the well to permit closure of said first check-valve means and opening said second check-valve means so that fresh water will be admitted into the bowl and discharged at the upper part thereof.

3,154,796
WATER CLOSETS
Ewen Anthony Bruce, 1 Appleford Cottages, Chale Green, Isle of Wight, England
Filed Sept. 27, 1963, Ser. No. 312,055
6 Claims. (Cl. 4—90)

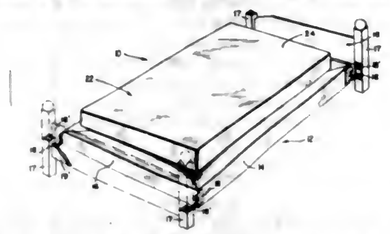


1. A water closet comprising a bowl, a lid for sealing the bowl in an airtight manner, said bowl having an inlet connected to a water supply and a discharge outlet, and a pump mounted wherever convenient for discharging excrement from the bowl and creating a partial vacuum therein such as will cause spontaneous entry of flushing water through the inlet into the bowl.

3,154,797
COMBINATION MATTRESS AND BED BOTTOM
Henry H. Lovette, 2431 English Road, High Point, N.C.
Filed Oct. 10, 1962, Ser. No. 229,612
5 Claims. (Cl. 5—320)

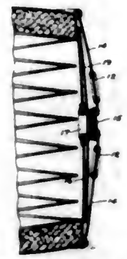
1. A unitary mattress and spring structure for assembly to head and foot boards to complete a bed without side rails and spring supporting slats, comprising in combination, a rectangularly shaped spring, a rectangularly shaped mattress supported on said spring, a unitary fabric casing enclosing said spring and mattress permanently holding them in fixed relation, said casing having a fold extending inwardly about the complete periphery of said mattress and between the mattress and spring for retaining articles

of bed clothing in position with respect to one another and with respect to said mattress and spring, and brackets



fixed to the corners of said spring outside said fabric casing and projecting outwardly for attachment to head and foot boards.

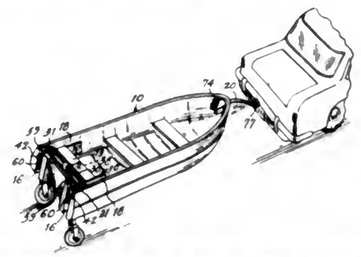
3,154,798
MEANS TO FACILITATE GERMICIDAL TREATMENT OF MATTRESSES
Irving F. Harris, Belvedere, and Emil Wachter, Burlingame, Calif., assignors to Simon Mattress Manufacturing Company, San Francisco, Calif., a corporation of California
Filed May 7, 1962, Ser. No. 192,680
2 Claims. (Cl. 5—347)



1. In a mattress having a side panel, an area in said side panel formed of loosely woven material to permit free passage of air to and from the interior of the mattress, a grommet defining an opening in said area to permit the insertion of a germicide spray nozzle, a panel of ticking material covering said area and forming a pocket, said pocket having an opening and a zipper for closing the opening, a plurality of spaced grommets defining openings through said covering, and a pervious germicide impregnated pad contained in said pocket and coextensive with the area of loosely woven material whereby breathing of the mattress must occur through said pad.

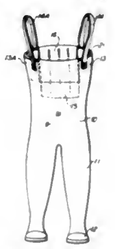
3,154,799
RETRACTIBLE RUNNING GEAR FOR BOAT TRAILERS
Jerzy G. Jalowiecki, 1715 De Seve St., Montreal, Quebec, Canada
Filed Apr. 22, 1963, Ser. No. 274,451
11 Claims. (Cl. 9—1)

7. The combination of a boat hull having a continuous unbroken outer hull surface, a pair of inwardly extending recesses in the stern of said hull in parallel spaced apart relationship and terminating in downwardly slanting inner end wall portions, and a pair of wheel accommodating wells at each side of the interior of said hull in parallel relationship; and a retractible running gear comprising, a supporting channel mounted within and extending across the interior of said boat hull adjacent the stern, a pivot shaft supported for rotation on said channel and spanning the interior of said hull, manually operable shaft rotating means mounted on said supporting channel and operatively connected to said pivot shaft, a pair of wheel supporting assemblies fixedly mounted one at each end of said pivot shaft and being adapted for rotation about an upward fixed arc between a first retracted position with said assemblies fitting wholly within said



boat hull interior wells to a second fully extended position exteriorly of said hull with said wheel supporting assemblies fitting within said boat hull stern recesses and bearing against said stern recessed inner end wall portions.

3,154,800
LIFE SAVING WADERS
Carl Arthur Anderson, 234 Dean St., Providence, R.I.
Filed Feb. 18, 1963, Ser. No. 259,106
2 Claims. (Cl. 9—343)

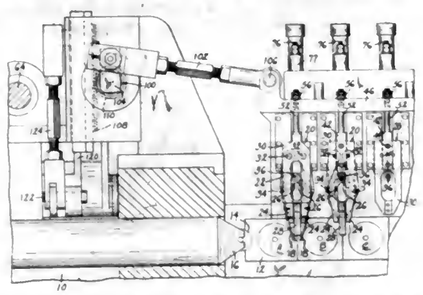


2. Lifesaving waders comprising integrally formed limb and body enclosing portions, said body portion terminating in an entrance opening beneath arm pit height, and straps for holding the waders in position, buoyant air containing sections at the upper part of the body portion in substantially opposed and spaced apart relationship, each of said sections comprising a plurality of air containing cells formed by a flap folded over from the upper edge of the body portion and interiorly thereof and means by which said flap adheres to the body portion at the free edges thereof and at areas between cells, means through which air may be introduced into the sections, and a bleeder opening between the cells.

3,154,801
TRANSFER MECHANISM WITH MEANS TO OPERATE FINGERS INDEPENDENTLY OF MOVEMENT OF TRANSFER HEAD
Erwin B. Byam, Wolcott, Conn., assignor to Textron Inc., Providence, R. I.
Filed Mar. 7, 1962, Ser. No. 178,148
7 Claims. (Cl. 10—12)

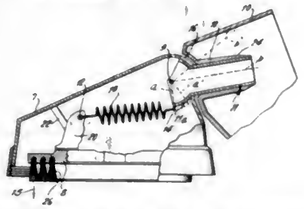
1. In a header or like mechanism having a frame, a die bed carried by the frame and having a plurality of dies in its face, means for transferring blanks between adjacent dies, comprising in combination a transfer head slidably mounted on the frame for movement along the line of the dies, a plurality of lift plates slidably mounted in said transfer head for reciprocation toward and from the dies, a pair of cooperating gripper fingers pivotally mounted on each of said lift plates, a pair of links pivoted between said transfer head and each pair of gripper fin-

gers, means for reciprocating said transfer head, and independent means associated with each of said lift plates



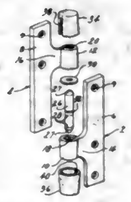
for independently reciprocating said lift plates and concurrently operating said gripper fingers.

3,154,802
FLOOR POLISHER
Rudolf Hanschitz, Reichenbach (Fils), and Wilhelm Taft, Stuttgart-Feuerbach, Germany, assignors to Firma Electrostar G.m.b.H., Reichenbach (Fils), Germany
Filed Jan. 29, 1963, Ser. No. 254,736
Claims priority, application Germany, Jan. 30, 1962, E 22,311
4 Claims. (Cl. 15—49)



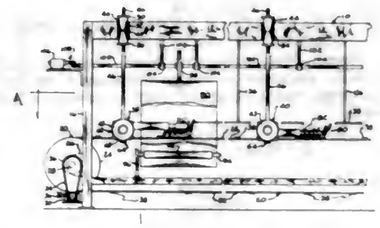
1. A floor polisher comprising a head, a single polisher disc mounted for rotation about a substantially vertical axis within said head, a handle pivotally connected to said head for lifting and lowering movement about a substantially horizontal axis, and spring means connected between said handle and said head adjacent the pivotal connection of said handle to said head urging said head downwardly with a uniform force independently of the pivoting of said handle in respect to said head.

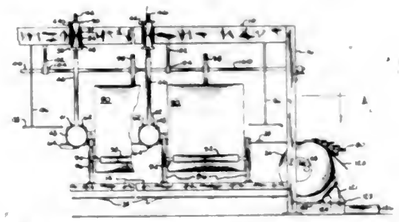
3,154,803
HINGE ASSEMBLY
John S. Parsons, West Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 14, 1961, Ser. No. 131,274
1 Claim. (Cl. 16—148)



A hinge assembly including a pair of sheet metal hinge leaves each having a mounting portion and a rolled knuckle portion connected to the mounting portion, the knuckle portions having aligned pintle-receiving bores therein and providing outer surfaces of generally frustoconical configuration having a taper diverging toward the adjacent ends of the knuckle portions, a pintle positioned in said bores and providing a pivotal connection between the hinge leaves, caps on the knuckle portions having frustoconical inner surfaces complementary to the outer surfaces of the knuckle portions, and substantially uniform coatings of adhesive between the complementary surfaces of the knuckle portions and the caps to bond the same together.

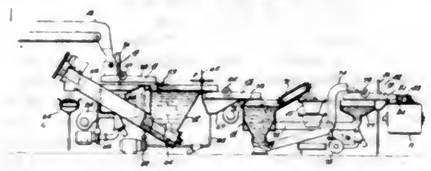
3,154,804
APPARATUS FOR REMOVING MEAT FROM BONES
Bernard T. Hensgen, Highland Park, and Donald Kenneth Jewell, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 3, 1961, Ser. No. 100,234
8 Claims. (Cl. 17—1)





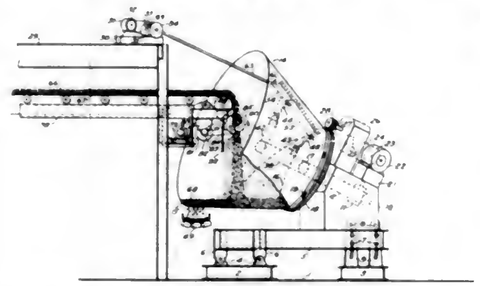
1. An apparatus for recovering meat from bones which comprises: conveying means adapted to convey a bone having residual meat adhering thereto along a given path; a plurality of spaced brushing means positioned above said conveying means along said path; cutting means positioned above said conveying means in advance of at least one of said brushing means, said brushing and cutting means being adapted to collectively contact and strip substantially all of the residual meat from said bone; and receiving means to collect the meat stripped from said bone by said tools.

3,154,805
APPARATUS FOR DEBONING COOKED POULTRY
Walter Warren Egee, Wallingford, Pa., and Edward R. Thomas, Haddonfield, N.J., assignors to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed Nov. 17, 1961, Ser. No. 153,111
8 Claims. (Cl. 17—1)



1. Apparatus for deboning precooked fowl comprising; mechanical means including resilient means operable to exert an impact force on the fowl and frictionally rub across the surface of the fowl to cause separation of the bone, skin and meat of the fowl, a first receptacle containing a liquid flotation medium of lower specific gravity than the bone and higher specific gravity than the meat and skin, a first vibrating shaker positioned intermediate said mechanical means and said first receptacle to receive the bone, skin and meat from said mechanical means and operable to disperse the same freely over the surface of the liquid flotation medium in said first receptacle, means for withdrawing the gravity segregated bone from the bottom of said first receptacle, a second receptacle containing a liquid flotation medium of lower specific gravity than the meat but higher specific gravity than the skin, conveyor means for transfering the floated meat and skin components from said first to said second receptacle, means for discharging the floated skin from the upper part of said second receptacle, and means for withdrawing the gravity segregated meat from the bottom of said second receptacle.

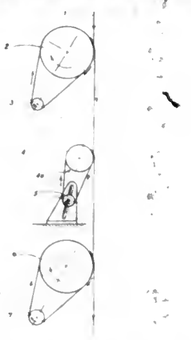
3,154,806
PELLETIZING APPARATUS
Percy Lea Steffensen, Cornwall, Pa., assignor to Bethlehem Steel Company, a corporation of Pennsylvania
Filed Nov. 29, 1956, Ser. No. 625,150
7 Claims. (Cl. 18—1)



1. A pelletizing apparatus for moist pulverulent material comprising a frusto-conical drum, said drum being open at its wide end and closed at its narrow end, the depth of the drum from its wide end to its narrow end being approximately one-half to two-thirds of its diameter at its wide end, the included angle of the drum being approximately 40°–54° adjacent its open end and approximately 60° adjacent its closed end, and the axis of rotation of the drum being inclined upwardly approximately 16° to 31° from horizontal.

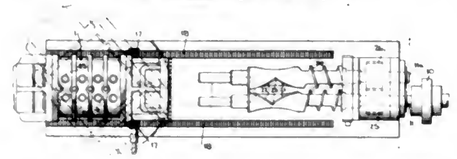
3,154,807
APPARATUS AND PROCESS FOR STRETCHING TEXTILE THREADS OF SYNTHETIC LINEAR POLYAMIDES
Kurt Müller, Domat, Ems, and Max Armin Tissi, Ittigen, Bern, Switzerland, assignors to Inventa A.G. fuer Forschung und Patentverwertung, Zurich, Switzerland
Filed Oct. 18, 1961, Ser. No. 145,819
Claims priority, application Switzerland Oct. 21, 1960
7 Claims. (Cl. 18—1)

1. An apparatus for cold stretching and subsequent hot stretching of threads of synthetic linear polyamides in a single continuous working operation for the production of threads of high quality and considerable strength, which comprises, in combination, two conveyor devices for the threads consisting of rotating rollers, the first acting as the lead-in device, and the second, rotating at higher speed, acting as the stretching and draw-off device; a non-rotating cylinder arranged between said two conveyor devices acting simultaneously as a heating and breaking device over which the thread is guided, said non-rotating cylinder having an uneven surface finish; a guide roll arranged parallel to the heating roller for guiding the thread in a



manner to forestall contact with the entire periphery; and means for adjusting said guide roll relative to the heating roller.

3,154,808
CONTINUOUS INTERNAL STIFF-GEL MIXER
Edwin H. Ahlefeld, Jr., and Arnold J. Baldwin, Woodbridge, Peter Hold, Milford, Walter A. Rapetski, Orange, and Hans R. Scharer, Wallingford, Conn., assignors to Farrel Corporation, a corporation of Connecticut
Filed May 15, 1962, Ser. No. 194,814
11 Claims. (Cl. 18—2)



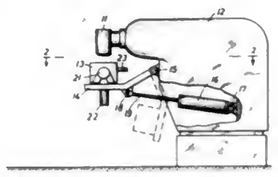
1. A continuous internal mixer comprising a barrel forming two laterally interconnecting substantially cylindrical and mutually parallel chambers having at one end a common discharge orifice, bladed rotors located in said chambers, means for receiving the material to be mixed and stuffing it under pressure into said chambers at a location spaced from said discharge orifice, means for rotating said rotors, each of said rotors having a blade with a cross section that is substantially like that of a Banbury-type blade and having a portion that twists away from its direction of rotation and a portion that twists in the opposite direction, the length and twist ratio between said oppositely twisting portions of said blade being such that when said chambers contain said material the average of the axially directed forces applied to the latter by said blades is insufficient to force the material through said orifice, whereby the overall axial travel of said material through said chambers is dependent on the rate at which it is received by the first named means.

3,154,809
APPARATUS FOR THE MANUFACTURE OF SHAPED BODIES OUT OF THERMOPLASTIC MATERIAL
Stefan Fischer, Lohmar, near Cologne, Germany
Filed Oct. 16, 1961, Ser. No. 145,196
Claims priority, application Germany Oct. 20, 1960
6 Claims. (Cl. 18—5)

1. An apparatus for forming hollow objects comprising:

(*a*) means for extruding tubular material in workable form periodically downward,

(*b*) a plurality of mold means adapted to be positioned to receive said tubular material periodically,
(*c*) each of said mold means being mounted on a table,
(*d*) cylinders on each of said tables to open and close each of said mold means,
(*e*) hinge means at one end of each of said tables



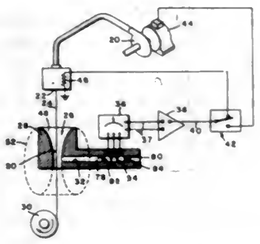
whereby each of said tables may be pivoted about a horizontal axis,
(*f*) and activating means whereby each said table and each said mold means may be pivoted to said first position to receive said tubular material and to a second position away from said first position,
(*g*) each of said mold means and each of said tables being equi-spaced about the said means for extruding said tubular material.

3,154,810

DENIER MONITORING AND CONTROL SYSTEM

Ronald Horne, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,512
7 Claims. (Cl. 18—8)



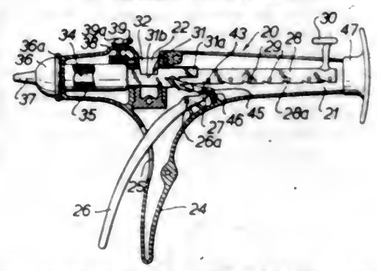
1. Denier monitoring apparatus comprising in combination:
(*a*) means defining an axially elongated monitoring orifice having an entrance portion and a further portion,
(*b*) strand handling means feeding a strand axially through said orifice from said entrance portion to said further portion,
(*c*) means defining an air passage having one end communicating with said further portion and having another end communicating with the atmosphere,
(*d*) airflow detection means positioned within said air passage,
(*e*) the cross-sectional area of said orifice continuously decreasing from a larger area at said entrance portion to a reduced area at said further portion.

3,154,811

MOBILE MEANS FOR PLASTICIZING AND APPLYING THERMOPLASTIC MATERIALS AND INCLUDING INJECTION MOLDING AND EXTRUSION

Reginald H. Gardener, Edmonton, Alberta, Canada, assignor to Northwest Industries Limited, Edmonton, Alberta, Canada

Filed Feb. 14, 1962, Ser. No. 173,283
2 Claims. (Cl. 18—12)



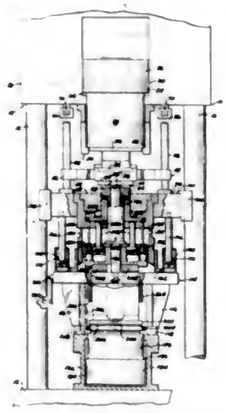
1. In a portable gun for injection molding and extruding thermoplastic material which, under the influence of heat and pressure, is reduced to its plasticated condition, said gun including a hollow casing provided with a handle, the combination of:
(*a*) a hollow barrel of essentially uniform internal diameter throughout its length;
(*b*) electrical heating means surrounding only said barrel along substantially its entire extent;
(*c*) an adjustable thermostatic switch controlling said heating means;
(*d*) a nozzle detachably secured in axial tandem alignment at the forward end of said barrel;
(*e*) a material hopper secured in axial tandem alignment at the rearward end of said barrel, said hopper being provided with a radial inlet opening through which said thermoplastic material is introduced into said barrel;
(*f*) a ram, slidable through said hopper, and into said barrel as far as said nozzle, the forward end of said ram being of uniform cross-section, the rearward end of said ram being bifurcated and being provided with a plurality of transverse pins bridging said fork and disposed along the length thereof and spaced a substantial distance apart, and a plurality of notches extending upwardly from the bottom surface of said bifurcated portion, said notches being disposed along the length thereof and spaced in alternate array from said transverse pins, whereby said ram may be actuated manually to be propelled forwardly in a series of substantially long discrete stepwise advances;
(*g*) manually actuatable means engageable with said pins to propel said ram in a forward direction in order rapidly to eject the plasticated thermoplastic material from said barrel by a minimal number of strokes of said manually actuatable means before said material can chill and revert to its solid state in said nozzle while being injected into a mold through said nozzle;
(*h*) means biased automatically to engage said notches to prevent rearward movement of said ram;
(*i*) means manually actuatable to engage said means (*h*) to disengage said means (*h*) from said notches to permit rearward movement of said ram;
said means (*g*), (*h*) and (*i*) being physically disconnectable from said ram to permit said ram to be automatically pushed back in response to a predetermined excess pressure generated by the expansion of said plasticated thermoplastic material in said barrel against the face of said ram.

3,154,812

HYDRAULIC BRIQUETTING PRESS

John Haller, 18500 Sheldon Road, Northville, Mich.

Filed Mar. 7, 1962, Ser. No. 178,055
11 Claims. (Cl. 18—16.7)



1. A hydraulic briquetting press for pressing externally flanged workpieces from powdered material, comprising
a press frame having a lower presss bed and an upper press head,
a die table reciprocably mounted on said press frame,
a die mounted on said die table and having a die bore therein,
a base member connected to said press frame,
a reciprocatory hydraulic die table supporting motor mounted on said base member in yielding sustaining relationship with said die table,
a lower main ram,
a lower outer punch-supporting reciprocatory hydraulic motor mounted on said lower main ram and reciprocable relatively to said lower main ram,
a tubular lower outer punch mounted in said die bore and operatively connected to said punch-supporting motor,
a lower inner punch mounted on said lower main ram in telescoping relationship with said outer punch,
a lower main reciprocatory hydraulic motor mounted on said press bed in yielding supporting relationship with said lower main ram,
an upper main reciprocatory pressing motor reciprocably mounted on said press head,
and an upper pressing punch mounted on said upper pressing motor in telescoping relationship with said die bore.

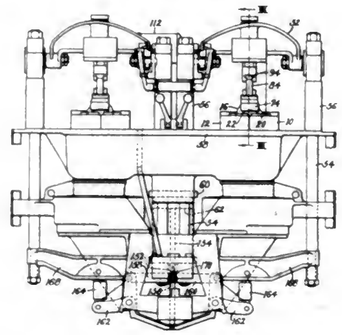
3,154,813

MACHINE FOR MOLDING SOLES ONTO SHOE BOTTOMS

Denis Charles Fagan and Cyril Harry James, both of Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

Filed Oct. 17, 1961, Ser. No. 154,918
2 Claims. (Cl. 18—17)

1. A two station machine for bottoming shoes mounted on their lasts having in each station a pressure means comprising a toe presser foot and a heel presser foot constructed and arranged to apply clamping pressure to a shoe and its last, respectively, a carrier in each station for the pressure means therein, a pressure head in each station for mounting the carrier, parallel shafts in each station for mounting the pressure head therein, a crosshead common to the two stations of the machine, means for securing the shafts in each station to the common crosshead, a first piston and cylinder assembly for actuating the crosshead thereby to advance the pressure means in each station in unison to a predetermined intermediate position in which the pressure means in each station is spaced from but adjacent to a shoe and its last mounted in the machine, means for arresting the pressure heads in said intermediate position, a wedge in each station interposed between the pressure head and the carrier and arranged to advance the pressure means from said intermediate position to



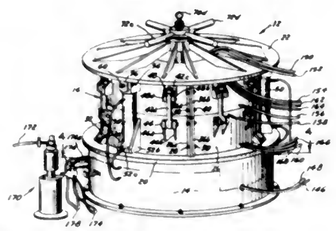
a pressure applying position, a lever in each station mounted in the pressure head and arranged to operate the wedge, and a second piston and cylinder assembly positioned between the two stations of the machine and having the second cylinder connected to the lever in one station and the second piston connected to the lever in the other station, the arrangement being such that pressurizing the second cylinder causes concomitant operation of the wedges thereby to apply uniform clamping pressure to the pressure means in each station of the machine.

3,154,814

TIRE CURING APPARATUS

Louis T. Fike, Lodi, Calif., assignor to Super Mold Corporation of California, Lodi, Calif., a corporation of California

Filed Apr. 30, 1963, Ser. No. 277,420
10 Claims. (Cl. 18—18)



1. Tire curing apparatus, comprising:
a lower matrix formed with a cavity that receives the lower part of a tire to be cured, said matrix having heat generating means surrounding said cavity;
a coaxial upper matrix formed with a cavity that receives the upper part of a tire to be cured, said upper matrix having heat generating means surrounding said cavity, and said upper matrix being vertically removable from said lower matrix for admitting and discharging a tire to be cured;
quick-releasable securing means interposed directly between said matrices that when engaged retain said matrices secured against relative vertical movement,

said upper matrix being removable from said lower matrix when said securing means are disengaged;

a plurality of at least three vertically extending fluid pressure-actuated jack means, each having a cylinder rigidly secured to said lower matrix and a vertical shaft reciprocally extending from the upper end of said cylinder;

universal joint connection means interposed between the upper portion of each of said shafts and said upper matrix that permit universal pivoting of said upper matrix relative to said shafts but restrain lateral movement of said upper matrix relative to said shafts;

quick-releasable lock means operatively associated with said connection means, said lock means when disengaged permitting said upper matrix to be removed from said shafts and said lock means when engaged cooperating with said connection means to secure said shafts to said upper matrix whereby said shafts effect vertical movement of said upper matrix; and

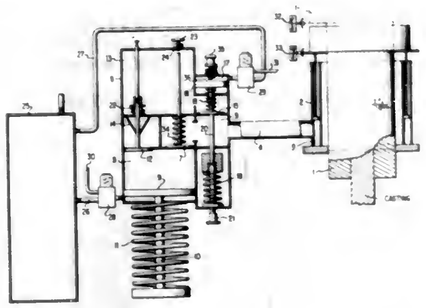
control means for said jack means operable to urge said shafts downwardly and thereby draw said matrices together while maintaining said matrices registered whereby said securing means may be engaged prior to a curing operation, said control means also being operable after said curing operation to urge said shafts upwardly and thereby lift said upper matrix free of said tire and said lower matrix.

3,154,815

APPARATUS FOR ACCOMPLISHING MOLD MOVEMENT IN CONTINUOUS CASTING MACHINES

Hans Bierl, Uster, Switzerland, assignor to Erik Allan Olsson, Kusnacht, Switzerland

Filed Nov. 22, 1961, Ser. No. 154,283
Claims priority, application Sweden Dec. 13, 1960
8 Claims. (Cl. 18—26)



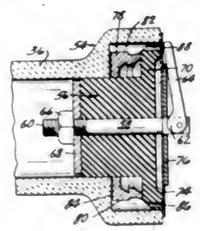
1. In combination, a mold open at opposite ends, and means for reciprocating said mold in the casting direction wherein the movement of the mold in the casting direction is augmented by the force of at least a part of the weight of the mold, said means comprising a fluid pressure cylinder, a piston reciprocable in said cylinder and secured to said mold, a pressure fluid reservoir, duct means connecting said reservoir to one part of said cylinder at one side of said piston to permit flow of pressure fluid into and out of said cylinder for moving said piston and secured mold against and in the direction of casting respectively, an inflow valve and an outflow valve controlling said flow of pressure fluid into and out of said cylinder, and means for controlling operation of said valves including means operable to simultaneously close the inflow valve and open the outflow valve, the displacement of pressure fluid in said cylinder resulting from mold movement in the casting direction causing opening of said outflow valve and thereby controlling the velocity of movement of the mold in the casting direction.

3,154,816

CLOSED MOLDS FOR CASTING GASKETS ON PIPE ENDS

George C. Harrison, Roseville, and Carl F. Gaetke, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 8, 1959, Ser. No. 818,643
1 Claim. (Cl. 18—30)



A closed mold mountable in the bell end of a pipe section for casting a sealing gasket in situ therein which bell end has inside and outside surfaces, said mold comprising axially spaced outer and inner end portions, the inner end portion being of smaller diameter than the outer end portion, for insertion into the main length of pipe section beyond the bell end thereof, said outer end portion being of enlarged diameter for engagement with the inside surface of the bell end of said pipe section adjacent the end thereof, an annular member disposed between said outer and inner end portions in concentric spaced relation to the inside wall surface of said bell providing a gasket forming cavity between said inner and outer end portions, said inner and outer end portions including radially expansible peripheries for frictionally engaging the inside wall surfaces of the main pipe length and the bell respectively, said outer end portion having access and vent openings therethrough communicating with the space formed between said annular member and the inside wall surface of said bell for the intrusion of gasket forming casting resin thereinto and the expulsion of gases therefrom.

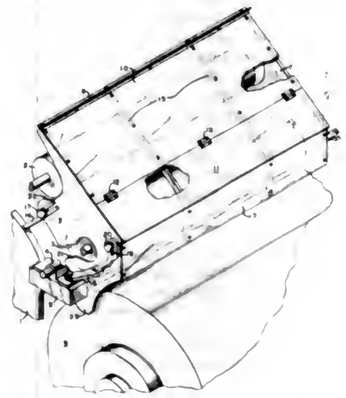
3,154,817

COVER FOR TEXTILE MACHINE

Maximilian Muenz, 15 Axe St., Ballston Spa, N.Y.

Filed Jan. 30, 1963, Ser. No. 254,869
3 Claims. (Cl. 19—98)

1. In combination, a textile carding machine comprising a frame, rolls movably supported on roll carrying shafts journaled to said frame, a transparent plastic cover assembly comprising connected transparent top, rear and side panels, clamping means coupled to said side panels for adjustably supporting said assembly with respect to said machine and a metal strip detachably connected to said side panels at the upper ends thereof, said top panel including a first section detachably connected to said metal strip and a portion of said side walls and a second section hingedly connected to said first section so that said second section may be swung upwardly to expose the space below, and said rear panel being detachably connected to said side panels at a zone remote from said metal strips.

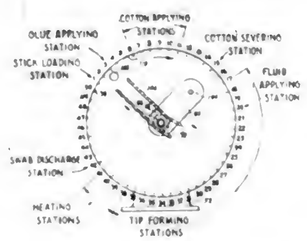


3,154,818

SWAB MANUFACTURING APPARATUS

Edward M. Nagle, New York, N.Y., assignor, by direct and mesne assignments, to Equitable Capital Corporation, New York, N.Y., a corporation of New York

Filed Mar. 28, 1960, Ser. No. 17,898
16 Claims. (Cl. 19—145.3)



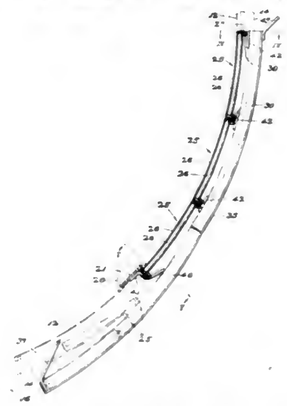
9. For a swab manufacturing apparatus having a conveyor for supporting an arrested stick carrying an adhesive on one end and for moving said stick through a path of movement with a plurality of work stations disposed therealong, applying means including guide means with a first portion at one group of work stations for guiding a web of a fibrous substance into the path of movement of the adhesive carrying end of said stick and in spaced relation thereto with a portion of said web extending beyond said adhesive carrying end, said guide means then causing said adhesive carrying end to engage and to secure said web thereto thereby permitting said stick to carry said web along said path of movement, and said guide means including a second portion at a second group of work stations for causing the extending portion of said web to fold over said adhesive carrying end thereby substantially covering said adhesive carrying end with the folded web, and swab-forming means at a subsequent group of work stations and including stick-rotating means for rotatably forming the swab after the fibrous web has been folded over the adhesive carrying end of the stick.

3,154,819

REFUSE VEHICLE BODY SIDE DOOR STRUCTURE

Robert J. Walter, Kenmore, N.Y., assignor to Truck Equipment Co., Inc., Buffalo, N.Y.

Filed Feb. 26, 1963, Ser. No. 261,099
6 Claims. (Cl. 20—19)



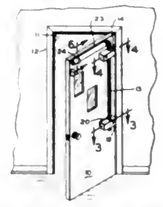
1. In a sectional door structure for a refuse vehicle body having a door opening therein, track means extending along opposite sides of said door opening and extending substantially below the door opening, said track means comprising flanges spaced outwardly from said vehicle body and extending toward each other, door sections each having lateral projections at its upper and lower corners for engagement between said flanges and said body, the lower portions of said flanges being spaced from said body sufficiently to accommodate a plurality of door sections in generally stacked relation with the projections of the lowermost section retained by said flanges, said sections being manually movable individually upwardly with the lateral projections thereof retained by said flanges, a plurality of retaining plate members spaced inwardly of said flanges medially between said flanges and said body whereby a door section may be moved upwardly between said flanges and said plate members then inwardly toward said body and downwardly to dispose the upper and lower lateral projections thereof between said plate members and said body to retain the door section in closing position with respect to said door opening.

3,154,820

STRAIGHTENING DEVICE

Arthur A. Schaaf, 2000 Bible Road, Lima, Ohio

Filed July 19, 1962, Ser. No. 211,043
1 Claim. (Cl. 20—38)



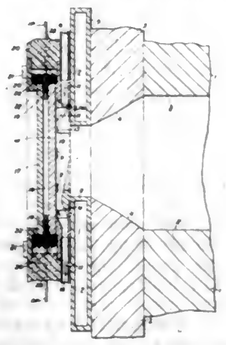
An apparatus for straightening generally flat, rectangular panels, said apparatus comprising, in combination, a torsion bar having a regular polygonal cross section extending along one side of such panel, said torsion bar being shorter than said side of such panel, a pressure arm connected at one end of said torsion bar and extending generally perpendicularly thereto, an adjusting block

mounted on such panel, said adjusting block defining a torsion bar engaging recess which has a complementary polygonal cross section relative to said polygonal cross section of said torsion bar, said adjusting block preventing rotation of the lower end of said torsion bar after initial positioning of said torsion bar within such recess, and means for fastening the other end of said pressure arm to said panel.

3,154,821
INSPECTION WINDOW ARRANGEMENTS

Peter Weker, Bicknacre, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Sept. 20, 1961, Ser. No. 139,521
Claims priority, application Great Britain, Oct. 13, 1960, 35,170/60
3 Claims. (Cl. 20—40.5)

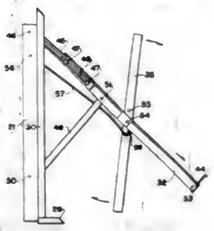


1. In a furnace or like structure the interior of which is to be inspected from the exterior thereof, a wall portion having a port; two substantially transparent sheets; means mounting said sheets on said wall portion in spaced relation to one another to close said port and to provide a window therefor, the spacing of said sheets providing a flow space between said sheets; means for directing cooling fluid to flow through said flow space; and means for covering the inner surface of the one of said transparent sheets which is innermost with respect to said wall portion with a thin substantially uniform film of substantially transparent liquid.

3,154,822
WINDOW CONSTRUCTION

George T. Smith, Washington, Conn., assignor to The Great Northwestern Connecticut Window Corporation, a corporation of Connecticut

Filed Sept. 3, 1963, Ser. No. 306,234
6 Claims. (Cl. 20—42)

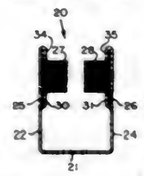


1. A window comprising, in combination, a rectangular structural frame having side, top and bottom members, a rectangular swing frame within said structural frame having side, top and bottom members, slide brackets slidably fixed to the upper portions of the side members of said swing frame, said slide brackets being pivotally fixed to the upper portions of the side members of said structural frame, links pivotally fixed between an upper portion of each side member of said swing frame and a lower portion of each side member of said structural frame, said swing frame pivoting inward with the pivotally secured slide brackets and said swing frame sliding downward along said slide brackets as said links pivot inward and downward from said structural frame, and a rectangular glazed frame having side, top and bottom members being pivotally secured within said swing frame at the centers of said side members of said glazed frame and said swing frame whereby said glazed frame may be reversed within said swing frame when said swing frame is pivoted inward to slide downward along said slide brackets.

3,154,823
CHANNEL CONSTRUCTION

Robert C. Horton, Pittsford, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York

Filed Jan. 29, 1963, Ser. No. 254,672
5 Claims. (Cl. 20—69)

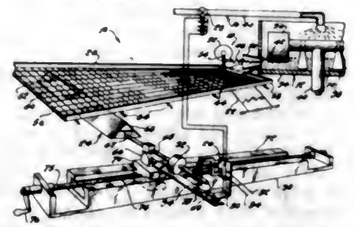


1. A pile seal comprising a generally U-shaped core of thin sheet metal material having a base portion and a pair of arms that project from the base at opposite edges thereof and that have confronting surfaces, and a pair of strips of stiff pile fabric mounted wholly on the inner confronting surfaces of the arms respectively with their piles continuously confronting each other, each of said fabric strips being formed with a stiffened backing having pile-free opposite marginal edges and clamped along one marginal edge thereof under a turned-over edge of the arm, each of said arms also being formed with a plurality of tongues that are spaced from each other along the length of the arm, the other marginal edge of each of said strips being clamped against said inner arm surfaces beneath portions of said tongues.

3,154,824
MOLDABILITY CONTROLLER

Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan

Filed Aug. 21, 1961, Ser. No. 132,904
21 Claims. (Cl. 22—89)



11. Transfer means for removing granular material or the like from a container through an opening in the container, comprising an annular flange around the opening in the container, a resilient auger extending through the annular flange into the container, and means for rotating the auger.

15. Apparatus for controlling the moldability of granular material including means for adding an additive to and mixing an additive with the granular material including a container, a screen having progressively larger openings therethrough from one end to the other thereof positioned adjacent the container for receiving a sample of granular material from the muller, means for transferring a substantially continuous sample of granular material from the muller onto said one end of the screen, means for feeding the granular material from said one end of the screen toward the other, and means positioned beneath the screen at a predetermined position responsive to the weight of granular material falling through the screen at the predetermined position in a predetermined time for controlling the means for adding an additive to the granular material within the muller.

3,154,825
FASTENER WITH SHARP BASE

Alan K. Edelberg, Chelmsford, Mass., Jacob S. Kamborian, Sr., 133 Forest Ave., West Newton, Mass., and Jacob S. Kamborian, Jr., 49 Fay Lane, Needham Heights 94, Mass.; said Edelberg assignor to said Kamborian, Sr.

Filed June 23, 1961, Ser. No. 119,082
4 Claims. (Cl. 24—73)

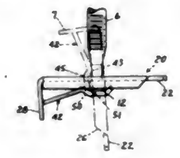


4. A fastener comprising: a strand of wire having a portion formed into a rigid, inflexible arcuate planar base section that lies on a circle; cutting means comprising at least one sharp edge formed on substantially all of the outer periphery of the base section; and a shank section connected to the base section having a center line that coincides with the center of curvature of the arcuate base section and that is disposed at right angles to the plane of the base section.

3,154,826
FASTENING DEVICE

Laurence H. Flora, North Olmsted, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 17, 1962, Ser. No. 166,901
6 Claims. (Cl. 24—73)

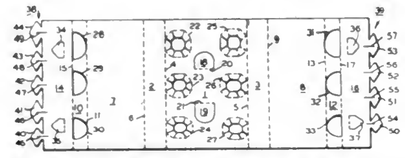


1. A fastener comprising a base for engagement with the surface of a supporting panel, and a resilient arm carried by the base and extending from one end of the fastener in the same general direction as said base, said arm being spaced from said base so that the base extends generally intermediate the supporting panel and the arm in the assembled snap-fastening position of the fastener, said base having an elongated slot extending from one end of the fastener and disposed genera'ly beneath said arm for receiving therethrough a protuberance on the shank portion of a stud or the like, said arm having spaced shoulders thereon for coacting engagement with the protuberance on the shank portion of said stud so that upon initial installation of said fastener the protuberance may pass freely through the elongated slot in said base and into camming engagement with an adjacent one of said shoulders, said protuberance acting to resiliently bias said arm outwardly away from said base until the protuberance passes beyond said last mentioned shoulder and into abutting engagement against the other of said shoulders, whereupon the arm yieldably snaps back in the general direction toward said base, and thereafter by pivotal movement of the fastener relative to said stud the protuberance is disposed between said shoulders and in overlying relationship with the elongated slot in said base in the final installed position of said fastener.

3,154,827
INTERLOCKING FASTENER

Hermond G. Gentry, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio

Filed June 19, 1963, Ser. No. 288,935
5 Claims. (Cl. 24—204)

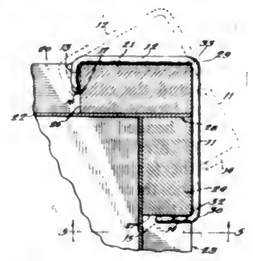


1. An arrangement for interlocking adjacent edges of a pair of yieldable substantially coplanar panels, said arrangement comprising a pair of locking tabs formed on said edge of one of said panels and disposed in spaced relation to each other, abutment shoulders formed respectively on said locking tabs and extending into the space therebetween, there being a medial longitudinal slit formed in each of said locking tabs with the outer end thereof spaced from the outer tip of the tab, a complementary locking tab formed on said edge of the other of said panels and disposed in the space between said pair of tabs, a pair of abutment shoulders formed respectively on opposite edges of said complementary locking tab for engaging said abutment shoulders on said pair of locking tabs thereby to secure said panels against substantial relative movement, and a medial longitudinal slit formed in said complementary locking tab with the outer end thereof spaced from the outer tip of the tab.

3,154,828
CRATE FASTENER

James R. Bonde, Glen Ellyn, Ill., assignor to Accurate Wire Forming Inc., Melrose Park, Ill., a corporation of Illinois

Filed July 13, 1961, Ser. No. 123,716
7 Claims. (Cl. 24—261)



3. A crate fastener for the cleated panels of a panel type crate comprising an L-shaped member having two legs disposed substantially perpendicular to each other and formed of a single length of wire stock, each leg con-

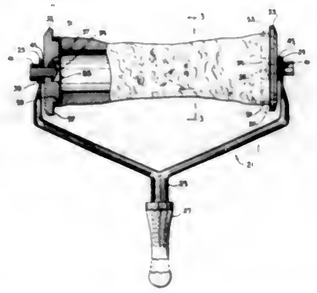
sisting of a single span of wire, one of said legs comprising an anchor leg and the other comprising a span leg for spanning the joint between the cleats of two adjacent crate panels, the outer ends of both legs being bent so that each one will hook over the remote edge of its respective cleat, the bent end of said anchor leg being substantially parallel to said span leg, and the bent end of said span leg being in the form of an open loop formed in a plane which is substantially perpendicular to the axis of said span leg, and including a straight foot portion which is adapted to ride along the surface of its respective cleat in the course of application.

3,154,829
TRANSFORMER COVER LOCKING DEVICE
William M. Pahel and Rudolph E. Adams, Lynchburg, Va., assignors to H. K. Porter Company, Inc., Lynchburg, Va., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,923
1 Claim. (Cl. 24—279)



In a compression loop clamping band assembly for locking together a pair of members encompassed thereby by drawing the ends of the looped band toward one another to reduce the circumference of the band and thereby exert compression on the members, a clamping band locking device comprising, in combination, a pair of anchors each of which has a base plate portion provided at one end thereof with an upstanding cradle structure, said base plate portions being fixedly secured to the outer surface of the clamping band at opposite ends thereof so that the cradle structures are disposed in facing relation when the band is in loop form, each of said cradle structures having an upstanding substantially centrally apertured front wall having a portion proximate the top thereof indented into overlying relationship relative to its base plate portion and a pair of sidewalls extending rearward from and rigidly interconnecting the side edges of the front wall to the base plate, a pair of cylindrical pieces disposed respectively within different ones of said cradle structures with their axes parallel to one another and extending transversely of said cradle structures, each of said cylindrical pieces being of diameter sufficiently small so that the cylindrical surface thereof simultaneously engages the rear face of the cradle front wall and the top face of the base plate while at least partially underlying the indented top portion of the front wall, the axial length of each of the cylindrical pieces being somewhat less than the clear distance between the inside faces of said cradle sidewalls to thereby restrain said cylindrical piece from appreciable rotation except about its axis, said cylindrical pieces being each provided with a bore extending diametrically completely therethrough with one of said bores being threaded to receive the threads of a bolt and the other of said bores being smooth-walled and of larger diameter than that of the threaded bore, and a headed bolt having a threaded shank projected freely through the smooth-walled bore cylindrical piece and the facing apertured front walls of said cradle structure and threaded through the threaded bore cylindrical piece, the diameter of said bolt shank being substantially smaller than the aperture in said cradle structures front walls in a top to bottom direction, the arrangement being such that when said bolt is turned to move the anchor front walls toward each other to reduce the circumference of the band, said cylindrical pieces are respectively confined by said indented portions of the front walls of said cradles against upward movement therein and so are free to counter-rotate about parallel axes fixed relatively to their respective cradles, thereby permitting the bolt shank to freely move through the apertures in said cradle front walls without inducing any bending stresses in the bolt shank.

3,154,830
EMBOSSED ROLLER DEVICE FOR SIMULATING NATURAL STONES
Edward Juchniewicz, 32 Hawkins St., New Britain, Conn.
Filed Feb. 18, 1963, Ser. No. 259,132
5 Claims. (Cl. 25—1)



1. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, at least one of said mounting means providing an adjustable positioner for the corresponding end of said roller when mounted thereon, said adjustable positioner including means for eccentrically mounting said mounting means to its respective arm, said eccentric mounting means consisting of spaced apertures formed in said mounting means along a radial line and a member adapted for positioning in one of said apertures and an aperture formed in one of said arms to rotatively interconnect said end bell to said arm.

3,154,831
TILE AND PAN HANDLING APPARATUS
Walter L. Pehoski, St. Paul, Minn., assignor, by mesne assignments, to Perl-Tile Company, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 10, 1962, Ser. No. 243,434
5 Claims. (Cl. 25—2)

1. An apparatus separating tile pans from tile formed therein in connection with a stack of tile laden pans having in combination,

a carriage,

means supporting said carriage for vertical movement,

a carriage moving means carried by said first mentioned means,

said carriage comprising retractable pan receiving means and supporting oscillating means for said pan receiving means,

means supporting said stack of tile laden pans forwardly of said carriage supporting means,

a supporting member rearwardly of said carriage supporting means comprising a vibrating means and a tile removing means,

a pan removing means in connection with said supporting member,

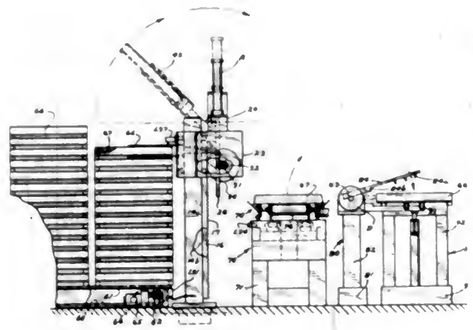
manual means energizing said apparatus,

means in connection with said stack supporting means arranged with said carriage supporting means to position said carriage in alignment with the uppermost of said tile laden pans to commence a cycle of operation when said apparatus is initially energized,

means on said carriage engaged by the uppermost of said tile laden pans to actuate said pan receiving means to receive said uppermost of said tile laden pans,

said actuated tile receiving means actuating said carriage moving means to raise said carriage,

said raised carriage actuating said oscillating means to oscillate rearwardly said pan receiving means and said tile laden pan in connection therewith inverting said pan,



said oscillating means upon completion of its cycle of oscillation actuating said carriage moving means to lower said carriage and deposit said tile laden pan carried by said tile pan receiving means onto said supporting member,

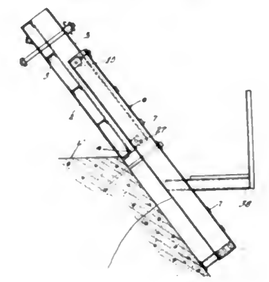
means on said supporting member engaged by said carriage to actuate simultaneously said pan receiving means and said vibrating means, said pan receiving means retracting to release said tile laden pan on said supporting member,

said retracted pan receiving means actuating said carriage moving means to raise said carriage and simultaneously to actuate said pan removing means to engage said pan,

said raised carriage actuating said oscillating means to oscillate forwardly said pan receiving means and simultaneously deactivating said vibrating means and actuating said pan removing means to remove said pan from said supporting member, and

said oscillated pan receiving means actuating said carriage moving means to lower said carriage in position to commence a new cycle of operation and simultaneously actuating said tile removing means to remove said tile from said supporting member.

3,154,832
CANTILEVER FORM FOR CASTING CONCRETE
Everett L. Weidner, Coraopolis, Pa., assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 9, 1962, Ser. No. 208,369
5 Claims. (Cl. 25—131)



1. A cantilever form for use in the pouring of concrete wall structures comprising

a panel having a concrete confining face and a rear face;

a vertical structural section on the rear face with a first pivot pin opening above the vertical center of the panel and having a second pivot pin opening below the vertical center of the panel near the lowermost edge thereof;

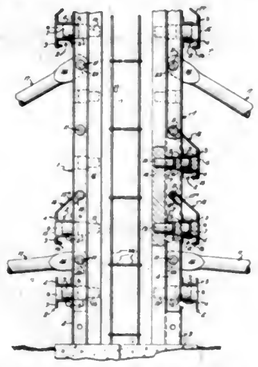
a stiff-back having a length greater than the vertical height of the panel having first and second pin openings therethrough spaced equally to the spacing of the pivot pin openings in said vertical structural sections whereby the first openings in both members or the second openings in both members may be selectively brought into alignment, the second pivot pin opening being remote from either end of the stiff-back;

a pivot pin removably passed through one of and near the middle thereof, the first opening being close to the upper end of the stiff-back the two aligned sets of openings connecting the stiff-back and panel for relative arcuate movement, the removable pin enabling the pivot to be in either of the first or second pin openings whereby the pivotal connection of the stiff-back with the panel may be selectively shifted from above the vertical center of the panel to a point below the vertical center of the panel and close to its lower edge, the second pivot pin opening in the structural member on the panel being so positioned that approximately half the length of the stiff-back projects below the panel when the pivot pin is engaged in the second opening of the structural member on the panel and the opening near the middle of the stiff-back while the upper end of the stiff-back is above the center of the panel, and a removable transverse adjusting screw in the upper end of the stiff-back, the structural member on the back of the panel having a nut secured thereto above the center of the panel with which said screw may be engaged.

3,154,833
CONCRETE WALL FORM
Stanley M. Kimball, 2020 Milvia St., Berkeley, Calif.
Filed Dec. 6, 1962, Ser. No. 242,803
10 Claims. (Cl. 25—131)

1. A nonferrous metal girder having at least one pair of opposed parallel sides; a plurality of permanent magnets fixed to said girder at spaced points thereon on a predetermined modulus; a plurality of armatures fixed

to said girder immediately adjacent said magnets, said armatures being flush with one of said sides and the



ends of said magnets being flush with the opposite side of said girder.

3,154,834
DEVICE FOR PREPARING BODIES FOR BURIAL
Wallace N. Racine, 8258 NE. Holladay, Portland, Oreg.
Filed Mar. 21, 1961, Ser. No. 97,251
5 Claims. (Cl. 27—21)



4. A device for preparing a body for burial, comprising
(*a*) a pair of closed shoulder loops of flexible, substantially nonstretchable strap material,
(*b*) connecting means joining the shoulder loops together substantially at a common point,
(*c*) foot loop means of substantially non-stretchable material,
(*d*) elongated compression strap means of flexible, substantially non-stretchable material interconnecting the foot loop means and the shoulder loops substantially at said common point, and
(*e*) adjustment means associated with the compression means for varying the effective length thereof to vary the distance between the foot loop means and shoulder loops,
(*f*) the shoulder loops being adapted to receive the arms of a body therethrough and to be engageable one over each of the shoulders of the body with said common connecting point positioned substantially on the longitudinally center line of the body between the shoulders and feet of the body,
(*g*) the foot loop means being adapted to engage under the forward portions of the feet of the body and to extend toward the shoulders of the body,
(*h*) the compression means being adapted to extend between the foot loop means and said common connecting point, whereby to extend inwardly of the sides of the body,
(*i*) and the adjustment means functioning to draw the shoulder loops and foot loop means toward each other to apply a compressive force between the shoulders and feet of the body to draw the shoulders toward the feet and to draw the feet into position substantially normal to the legs and to draw the legs and feet toward each other.

3,154,835
APPARATUS AND METHOD FOR YARN TEXTURIZING
Oscar J. Palma, Chapel Hill, and James H. Abbott, Jr., Cary, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,379
5 Claims. (Cl. 28—1)

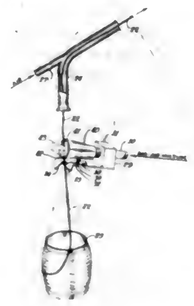


1. An apparatus for texturizing a running length of continuous filament thermoplastic yarn comprising a blade assembly having at least one pair of opposed blades having sharpened edge portions, one of said blades being positioned to effect a sudden clockwise change of direction in said yarn path, the other of said blades being positioned to effect a sudden counter-clockwise change in direction of said yarn path, each of said blade portions being disposed at the apex of the angle described by the changes in direction of the yarn path, said edge portions of said pair of blades lying in intersecting planes having a common perpendicular, whereby a yarn passing under tension between said blade edges is subjected to a false-twist to provide a high-bulk yarn.

4. In a method of texturizing a running length of thermoplastic yarn characterized by the steps of continuously passing said yarn about a first blade edge through a sudden change in direction, thence passing said yarn about a second blade edge through a sudden change in direction of opposite sense to that change in direction about said first blade edge; the improvement comprising, imparting a false-twist to said yarn intermediate said first and second blade edges to thereby improve the bulking action of said blade edges on said yarn.

3,154,836
METHOD AND APPARATUS FOR HANDLING CONTINUOUS FILAMENTARY MATERIAL
Harry J. Hoag, Jr., San Jose, and John R. Meidinger, Palo Alto, Calif., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,093
11 Claims. (Cl. 28—64)

10. Apparatus for the supervised advancement of a continuous length of filamentary material comprising a supply of said filamentary material, tractive means spaced from said supply for continuously withdrawing and advancing said material therefrom, and open flame producing means located in advance of said tractive means and positioned to continuously apply a concentration of heat



across a short length of the path of travel of said filamentary material at a temperature sufficient to sever said material when it is advanced at a rate less than a predetermined rate.

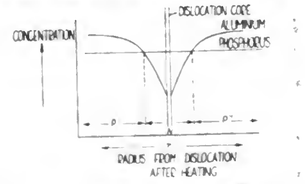
3,154,837
METHOD FOR THE MANUFACTURE OF PILE FABRICS
George de Mestral, Nyon, Switzerland, assignor to International Velcro Company, Estab., Nyon, Switzerland, a corporation of Liechtenstein
Original application May 9, 1958, Ser. No. 734,347, now Patent No. 3,009,235, dated Nov. 21, 1961. Divided and this application Mar. 21, 1961, Ser. No. 105,846
1 Claim. (Cl. 28—72)



A method for the manufacture of a separable fastener member comprising weaving a base fabric including warp and weft yarns and supplemental yarns forming a loop pile on said base fabric, utilizing as said supplemental yarns a multifilament synthetic resinous material having a twist in a predetermined direction, weaving each of said supplemental yarns in a predetermined zig-zag pattern such as substantially to untwist said supplemental yarn in every other loop formed consecutively from each of said supplementary yarns, whereby to separate the filaments in each of such untwisted loops into discrete loops, and stabilizing said fabric to maintain said discrete loops in separated condition.

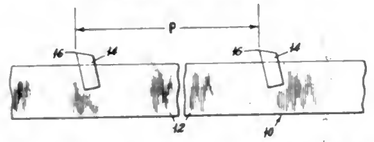
3,154,838
PRODUCTION OF P-N JUNCTIONS IN SEMICONDUCTOR MATERIAL
Ronald Bullough and Ronald Charles Newman, Earley, Reading, James Wakefield, Beenham, near Reading, Robert Lindsay Rouse, Caversham, Reading, and John Bernard Willis, Sulhamstead Hill, near Reading, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 18, 1960, Ser. No. 15,934
Claims priority, application Great Britain Mar. 26, 1959
4 Claims. (Cl. 29—25.3)

1. A process for producing a body of semiconductor material of substantially mono-crystalline structure having junctions therein of small cross-sectional area between regions of said material of opposite conductivity type consisting in producing said body containing defects, said defects being line edge dislocations, said body also containing homogeneously as solutes both oxygen together with at least one each of impurity activators characteristic of opposite conductivity type, the concentration of impurity activator characteristic of one conductivity type being initially predominant whereby to cause said body to display said one conductivity type, heating said body in controlled manner and at a selected temperature whereby to cause oxygen at each of said defects to combine with and render inactive at least part of said initially



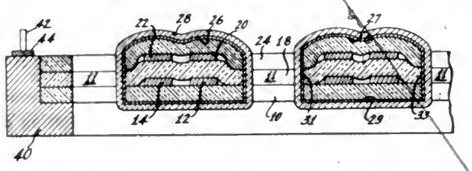
predominant impurity acivator thereat, and so cause consequent preferential diffusion of said initially predominant impurity activator from a region proximate to said defect thereunto, whereby to produce around each of said defects a region of opposite conductivity type to that of said body and produce thereby said junctions between said regions.

3,154,839
BANDSAW BLADE
Edward J. Kleber, Jr., and Edward R. Majka, Niagara Falls, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed July 26, 1961, Ser. No. 127,042
2 Claims. (Cl. 29—95)



1. A bandsaw blade for cutting large carbon-graphite stock material comprising a thin, flexible, metallic strip, at least one edge of which has joined thereto an equally spaced series of teeth formed of a hard material, each of said teeth having a sharpened cutting edge protruding above the edge of, and being wider than said metallic strip, said teeth being secured on said blade so as to present an effective end relief angle of between about 15 degrees and 25 degrees, said teeth being spaced apart on said metallic strip to provide a tooth pitch of at least about 4 inches and to cut a very thin smooth kerf in said stock material and to substantially eliminate wobbling and wandering of said blade and whereby no powder or dust of said stock material is accumulated in the kerf of said stock material during the cutting thereof.

3,154,840
METHOD OF MAKING A MAGNETIC MEMORY
Rabah Shahbender, Syria, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 6, 1960, Ser. No. 34,246
8 Claims. (Cl. 29—155.5)



1. A method of making a magnetic memory comprising the steps of applying to one surface of a first sheet

of insulator material which is formed with apertures through the sheet, a plurality of leads, each lead lying on an area of the sheet located between an adjacent pair of apertures and extending in a direction at a substantial angle to an imaginary line joining the centers of said pair of apertures so that the leads bypass and do not intersect the apertures; placing a second sheet of insulator material similar to the first on said one surface of the first sheet with the apertures in the two sheets aligned; sealing the two sheets together; and applying a film of magnetic material of the type which is capable of assuming two remanent states over both exposed surfaces of insulator material and the walls of the aligned apertures so as to form a plurality of magnetic elements, each of tubular cross section, and each passing through a pair of apertures and surrounding at least one of the leads.

3,154,841
METHOD OF MANUFACTURE OF ARTICLE OF JEWELRY

George Krikorian, Barrington, R.I., assignor to Coro, Inc. of Rhode Island, Providence, R.I., a corporation of Rhode Island

Filed Apr. 17, 1961, Ser. No. 103,350
1 Claim. (Cl. 29—160.6)

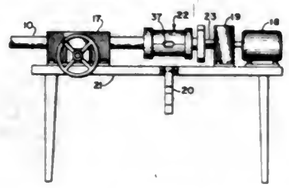


In a method of making an article of jewelry, comprising the steps of forming an ornamental body with socket elements that are disposed in random spaced relation and each of which has a central opening formed therein that extends through a projection that is formed on the rear side thereof, placing an ornament having a bore formed therein in each of said socket elements so that the bore in said ornament is aligned with the opening in said socket element, inserting a headed pin through the aligned opening and bore, locating the head of said pin in engagement with the outer surface of the associated ornament, severing the opposite end of said pin so that it projects just beyond said projection, and upsetting said projection and said pin so that said ornament is firmly locked in said socket element between the head of said pin and the upset end thereof.

3,154,842
PIPE COUPLING CHUCK AND REMOVAL APPARATUS

Leo D. Reel, 625 West Bldg., Houston, Tex.

Filed July 31, 1961, Ser. No. 127,947
8 Claims. (Cl. 29—240)



4. In an apparatus for removing a pipe coupling from a pipe, the combination of;

a specimen engaging chuck having,

an inturned end portion adapted for abutting engagement of a coupling shoulder,

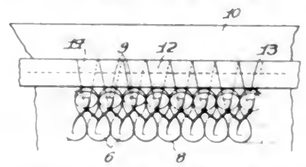
and drive train engaging means adapted for rotation of said chuck whereby abutment between said inturned end and said coupling shoulder will rotate said coupling relative to said pipe;

means to drive said drive train engaging means; and means to secure said pipe from rotation.

3,154,843
METHOD OF FABRICATING SLIDE FASTENERS

Toshiaki Takagi, Minami-ku, Osaka-shi, Japan, assignor to Nippon Shinpu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Jan. 8, 1962, Ser. No. 164,857
Claims priority, application Japan, Jan. 12, 1961, 36/943
3 Claims. (Cl. 29—410)

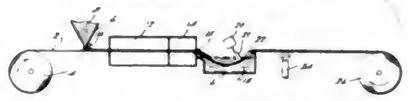


1. A method of manufacturing slide fasteners comprising winding a first strip of flat rectangular material about a first mandrel of circular cross-section in a helical path, removing said wound strip from said first mandrel, stretching said helically wound strip in an axial direction for obtaining a first twisted strip, winding said first twisted strip about a second mandrel of rectangular cross-section in a helical path in a direction opposite to the path about the first mandrel for forming a first spiral fastener component having crease bent portions provided by the corners of said second mandrel, removing said first component from said second mandrel, winding a second strip of flat rectangular material about a mandrel identical to said first mandrel in a helical path opposite to that of the first strip, removing said second helically wound strip from said mandrel, stretching said second helically wound strip in an axial direction, for obtaining a second twisted strip and winding said second stretched helically wound strip about a mandrel identical to said second mandrel in a helical path opposite to that of the first strip about said second mandrel for forming a second spiral fastener component having crease bent portions provided by the mandrel of rectangular cross-section, removing said second component from said mandrel, securing the first spiral fastener component to one side edge of a base article to be fastened, and securing the second spiral fastener component to the other side edge of the base article with said components being made engageable and disengageable by the manipulation of a slider cooperably associated therewith.

3,154,844
PROCESS FOR MAKING COMPOSITE BEARINGS

Charles H. Sayre, Ypsilanti, and Edward J. Lewis and James W. O'Brien, Greenville, Mich., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan

Filed Dec. 9, 1960, Ser. No. 74,801
6 Claims. (Cl. 29—420)



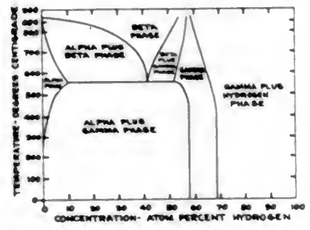
1. The method of making a composite strip suitable for the manufacture of bearings and the like comprising the steps of providing a hard metal backing strip and a substantially uniformly mixed powder blend consisting essentially of from about 96% to about 99% irregular shaped copper powder having a particle size less than about 100 mesh of which up to about 60% thereof has a particle size less than about 325 mesh, and from about

1% to about 3% lead powder and from about 0% to about 1% tin powder having a particle size less than about 100 mesh; superposing a relatively uniform layer of said powder blend on said backing strip, sintering said layer in a reducing atmosphere at a temperature ranging from about 1750° F. to about 1800° F., and thereafter cooling the sintered said layer in a reducing atmosphere to a temperature ranging from about 725° F. to about 850° F. forming a composite strip including a sintered porous matrix tenaciously bonded to said backing strip, immersing said composite strip in a molten lead-tin bearing alloy at a temperature ranging from about 725° F. to about 850° F., relatively vibrating said composite strip and said molten bearing alloy at a frequency of at least about 3,000 cycles per minute causing infiltration and substantially complete filling of the pores of said porous matrix, said molten bearing alloy consisting essentially of from about 2% to about 4% tin and the balance lead, and thereafter removing the excess of said bearing alloy from said composite strip and rapidly cooling said composite strip.

3,154,845
METHOD OF FABRICATING A FUEL ELEMENT

Massoud T. Simnad, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,962
8 Claims. (Cl. 29—470)



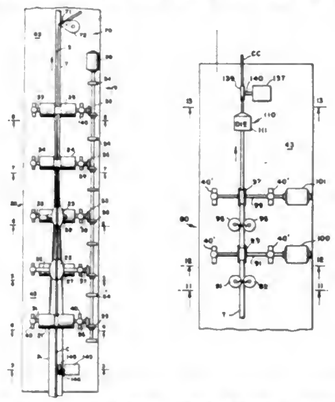
1. An improved method of fabricating a metal-clad fuel body containing a hydride, which method comprises the steps of forming a solid fuel body from a mixture of nuclear fuel and hydride-forming metal, providing a metal sheath around at least one surface of said fuel body, said metal sheath being structurally stable at a hydriding temperature between about 700° C. and about 900° C. and permeable to hydrogen at said hydriding temperature, said metal sheath being applied to said fuel body in a manner to provide an interference fit with said fuel body after hydriding, hydriding said hydride-forming metal of said fuel body with said metal sheath applied therearound at said hydriding temperature by passing hydrogen purified of hydride-rate depressing contaminants into contact therewith, controlling the hydriding rate so as to prevent excessive cracking of said fuel body, maintaining said hydrogen in contact with said fuel body until a desired degree of hydriding has been effected, and then cooling the hydrided fuel body to ambient temperature to provide a hydride-containing fuel body having a metal sheath disposed partially therearound.

3,154,846
METHOD OF FORMING A COMPOSITE CONDUCTOR

Robert W. Alexander, Ayre, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 31, 1960, Ser. No. 53,075
6 Claims. (Cl. 29—470.5)

1. In the method of forming a composite conductor having a core of relatively hard, non-ductile material and a sheath of relatively softer and more ductile material affixed about said core which includes drawing through a given path an indefinite length of said core material in the form of elongated body and an indefinite length of said sheathing material initially in the form of a tape, and acting on said sheathing material in sequence along said path, first to form said tape into a tube enclosing said core by folding said tape lengthwise about said core using rollers that both feed and form the tape and join-

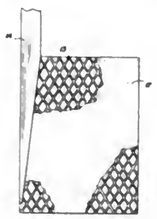


ing the edges formed thereby, and secondly using a drawing die to reduce said tube to affix said sheath about said core, the improvement which includes controlling the rate of acting on said tape, first to form said tube and second to reduce said tube in relation to the rate at which said conductor is drawn from the drawing die reducing said tube to bold the linear rate of said sheathing material in tape form entering said given path in a fixed ratio with respect to the linear rate at which said conductor is withdrawn from said given path.

3,154,847
METHOD OF WELDING SILVER ELEMENTS

Christopher L. C. Chapman, Sutton, and Norman Norris, Norbiton, England, assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Filed Jan. 19, 1959, Ser. No. 787,573
Claims priority, application Great Britain, Jan. 20, 1958, 1919/58
1 Claim. (Cl. 29—494)



A process for joining together elements of metallic silver having formed thereon, upon exposure to the atmosphere, a coating of silver sulfide which is resistant to pressure-bonding, comprising the steps of bringing said elements together and forming an assembly therefrom, heating said assembly in the temperature range of about 300° to 500° C. in air and simultaneously subjecting said assembly to a pressing operation at a pressure of about 0.1 to 1 ton per cm.^{2}, the heat treatment and pressing operation being carried out for about 15 to 20 seconds.

material similar to the first on said one surface of the first sheet with the apertures in the two sheets aligned; sealing the two sheets together; and applying a film of magnetic material of the type which is capable of assuming two remanent states over both exposed surfaces of insulator material and the walls of the aligned apertures so as to form a plurality of magnetic elements, each of tubular cross section, and each passing through a pair of apertures and surrounding at least one of the leads.

3,154,841
METHOD OF MANUFACTURE OF ARTICLE OF JEWELRY

George Krikorian, Barrington, R.I., assignor to Coro, Inc. of Rhode Island, Providence, R.I., a corporation of Rhode Island

Filed Apr. 17, 1961, Ser. No. 103,350
1 Claim. (Cl. 29—160.6)

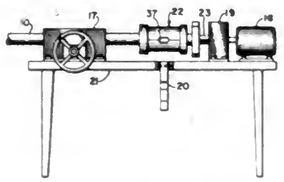


In a method of making an article of jewelry, comprising the steps of forming an ornamental body with socket elements that are disposed in random spaced relation and each of which has a central opening formed therein that extends through a projection that is formed on the rear side thereof, placing an ornament having a bore formed therein in each of said socket elements so that the bore in said ornament is aligned with the opening in said socket element, inserting a headed pin through the aligned opening and bore, locating the head of said pin in engagement with the outer surface of the associated ornament, severing the opposite end of said pin so that it projects just beyond said projection, and upsetting said projection and said pin so that said ornament is firmly locked in said socket element between the head of said pin and the upset end thereof.

3,154,842
PIPE COUPLING CHUCK AND REMOVAL APPARATUS

Leo D. Reel, 625 West Bldg., Houston, Tex.

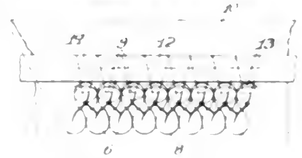
Filed July 31, 1961, Ser. No. 127,947
8 Claims. (Cl. 29—240)



4. In an apparatus for removing a pipe coupling from a pipe, the combination of;
a specimen engaging chuck having,
an inturned end portion adapted for abutting engagement of a coupling shoulder,
and drive train engaging means adapted for rotation of said chuck whereby abutment between said inturned end and said coupling shoulder will rotate said coupling relative to said pipe;

joint-stock company of Japan

Filed Jan. 8, 1962, Ser. No. 164,857
Claims priority, application Japan, Jan. 12, 1961, 36/943
3 Claims. (Cl. 29—410)

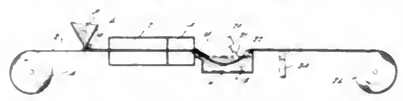


1. A method of manufacturing slide fasteners comprising winding a first strip of flat rectangular material about a first mandrel of circular cross-section in a helical path, removing said wound strip from said first mandrel, stretching said helically wound strip in an axial direction for obtaining a first twisted strip, winding said first twisted strip about a second mandrel of rectangular cross-section in a helical path in a direction opposite to the path about the first mandrel for forming a first spiral fastener component having crease bent portions provided by the corners of said second mandrel, removing said first component from said second mandrel, winding a second strip of flat rectangular material about a mandrel identical to said first mandrel in a helical path opposite to that of the first strip, removing said second helically wound strip from said mandrel, stretching said second helically wound strip in an axial direction, for obtaining a second twisted strip and winding said second stretched helically wound strip about a mandrel identical to said second mandrel in a helical path opposite to that of the first strip about said second mandrel for forming a second spiral fastener component having crease bent portions provided by the mandrel of rectangular cross-section, removing said second component from said mandrel, securing the first spiral fastener component to one side edge of a base article to be fastened, and securing the second spiral fastener component to the other side edge of the base article with said components being made engageable and disengageable by the manipulation of a slider cooperably associated therewith.

3,154,844
PROCESS FOR MAKING COMPOSITE BEARINGS

Charles H. Sayre, Ypsilanti, and Edward J. Lewis and James W. O'Brien, Greenville, Mich., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan

Filed Dec. 9, 1960, Ser. No. 74,801
6 Claims. (Cl. 29—420)

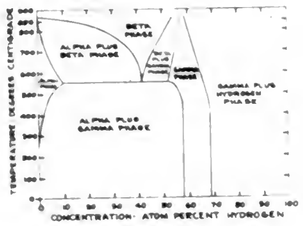


1. The method of making a composite strip suitable for the manufacture of bearings and the like comprising the steps of providing a hard metal backing strip and a substantially uniformly mixed powder blend consisting essentially of from about 96% to about 99% irregular shaped copper powder having a particle size less than about 100 mesh of which up to about 60% thereof has a particle size less than about 325 mesh, and from about 850° F. forming a composite strip including a sintered porous matrix tenaciously bonded to said backing strip, immersing said composite strip in a molten lead-tin bearing alloy at a temperature ranging from about 725° F to about 850° F., relatively vibrating said composite strip and said molten bearing alloy at a frequency of at least about 3,000 cycles per minute causing infiltration and substantially complete filling of the pores of said porous matrix, said molten bearing alloy consisting essentially of from about 2% to about 4% tin and the balance lead, and thereafter removing the excess of said bearing alloy from said composite strip and rapidly cooling said composite strip.

3,154,845
METHOD OF FABRICATING A FUEL ELEMENT

Massoud T. Simnad, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,962
8 Claims. (Cl. 29—470).



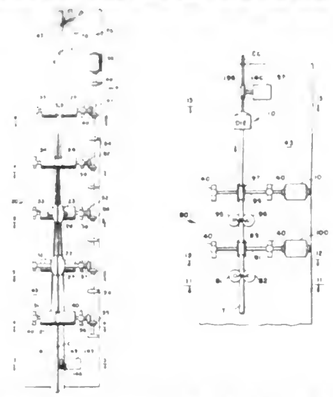
1. An improved method of fabricating a metal-clad fuel body containing a hydride, which method comprises the steps of forming a solid fuel body from a mixture of nuclear fuel and hydride-forming metal, providing a metal sheath around at least one surface of said fuel body, said metal sheath being structurally stable at a hydriding temperature between about 700° C. and about 900° C. and permeable to hydrogen at said hydriding temperature, said metal sheath being applied to said fuel body in a manner to provide an interference fit with said fuel body after hydriding, hydriding said hydride-forming metal of said fuel body with said metal sheath applied therearound at said hydriding temperature by passing hydrogen purified of hydride-rate depressing contaminants into contact therewith, controlling the hydriding rate so as to prevent excessive cracking of said fuel body, maintaining said hydrogen in contact with said fuel body until a desired degree of hydriding has been effected, and then cooling the hydrided fuel body to ambient temperature to provide a hydride-containing fuel body having a metal sheath disposed partially therearound.

3,154,846
METHOD OF FORMING A COMPOSITE CONDUCTOR

Robert W. Alexander, Ayre, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 31, 1960, Ser. No. 53,075
6 Claims. (Cl. 29—470.5)

1. In the method of forming a composite conductor having a core of relatively hard, non-ductile material and using rollers that both feed and form the tape and join-

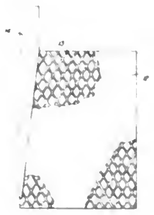


ing the edges formed thereby, and secondly using a drawing die to reduce said tube to affix said sheath about said core, the improvement which includes controlling the rate of acting on said tape, first to form said tube and second to reduce said tube in relation to the rate at which said conductor is drawn from the drawing die reducing said tube to hold the linear rate of said sheathing material in tape form entering said given path in a fixed ratio with respect to the linear rate at which said conductor is withdrawn from said given path.

3,154,847
METHOD OF WELDING SILVER ELEMENTS

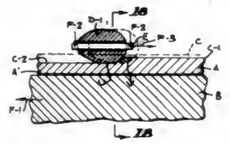
Christopher L. C. Chapman, Sutton, and Norman Norris, Norbiton, England, assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Filed Jan. 19, 1959, Ser. No. 787,573
Claims priority, application Great Britain, Jan. 20, 1958, 1919/58
1 Claim. (Cl. 29—494)



A process for joining together elements of metallic silver having formed thereon, upon exposure to the atmosphere, a coating of silver sulfide which is resistant to pressure-bonding, comprising the steps of bringing said elements together and forming an assembly therefrom, heating said assembly in the temperature range of about 300° to 500° C. in air and simultaneously subjecting said assembly to a pressing operation at a pressure of about 0.1 to 1 ton per cm.^{2}, the heat treatment and pressing operation being carried out for about 15 to 20 seconds.

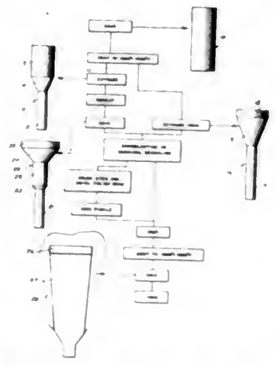
3,154,848
APPARATUS AND METHOD FOR FORMING CLOSE TOLERANCE TUBING
Vernon R. Powell, Long Beach, Calif., assignor to Eastwood Acceptance Corp., Los Angeles, Calif.
Filed Jan. 17, 1961, Ser. No. 84,744
26 Claims. (Cl. 29—516)



1. A method of transforming stock tubing formed of a cold workable metal capable of strain hardening to close tolerance tubing of a lesser wall thickness and improved physical characteristics both longitudinally and transversely, comprising the steps of: removably gripping a first end of said stock tubing and holding the same in a fixed position; moving a first elongate rigid body through said stock tubing until one end of said body is disposed adjacent the second end of said stock tubing; removably connecting said second end of said stock tubing to said adjacent end of said first body; moving said first body longitudinally relative to said fixed position to exert a first tensional force on said stock tubing; rotating said first body relative to said fixed position to exert a torsional twist on said stock tubing; positioning a plurality of circumferentially spaced hard surfaces about said stock tubing; moving each of said hard surfaces into contact with the exterior surface of said stock tubing; exerting a force on each of said hard surfaces to cause the same to apply a second radially directed force to said stock tubing to indent the surface of said stock tubing and define a pressure area thereon; moving each of said hard surfaces longitudinally relative to said first body with a third longitudinally directed force; moving said hard surfaces about said stock tubing with a fourth circumferentially extending force to sequentially subject the exterior surface of said stock tubing to said pressure areas, with the combined magnitude of said first, second, third and fourth forces and said torsional twist being sufficiently great to cause permanent elongation and thinning of the side walls of said stock tubing, which elongation and thinning is accompanied by a strain-hardening of said metal defining said stock tubing in a helical pattern; ceasing to apply said first, second, third and fourth forces and said torsional twist to said stock tubing after it has been transformed to close tolerance tubing of a desired wall thickness; allowing said close tolerance tubing to contract longitudinally and expand radially; disconnecting said second end of said tubing from said adjacent end of said elongate body; removing said elongate body from the confines of said tubing; releasing said grip of said first end of said tubing; and carrying out said steps within a temperature range which permits strain hardening of said metal defining said tubing when it is subjected to sufficient force to permanently deform the same.

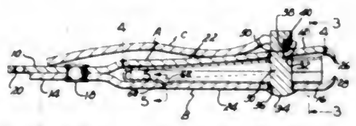
3,154,849
METAL FORGING PROCESS
George D. Dolch, Jr., Euclid, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 18, 1961, Ser. No. 83,574
2 Claims. (Cl. 29—528)

1. In a method of hot working a metal article in which said article is shaped at an elevated temperature, the steps of dipping said article into a slurry containing a resinous binder which is capable of being burned off without carbonization, said binder being selected from the group consisting of acrylic resins, cellulose ethers, and polymerized polyethylene glycols, a liquid solvent for said binder, and ceramic particles having an average particle size below about 300 mesh, said ceramic particles containing silica and lead oxide in at least partially vitrified



form, and not working the resulting coated article at a temperature above the fusion range of said particles but below the melting point of the metal to thereby drive off said solvent, burn off said binder, fuse said ceramic particles, and provide a lubricating film on said article during said hot working.

3,154,850
NAIL CLIPPER WITH RECEIVER FOR CLIPPINGS
Tsutomu Okuno, 20 4-chome, Kataecho Ikunoku, Osaka, Japan
Filed Dec. 27, 1962, Ser. No. 247,653
2 Claims. (Cl. 30—28)



1. For use with a nail clipper having first and second elongate members that are rigidly connected at first ends thereof and tapering away from one another toward their second ends which support opposing cutting blades, a rod extending from a second member through an opening formed in said first member, and with a handle movably supported from said rod for moving the second ends of said first and second members towards one another to clip a nail interposed between said blades; a nail clippings receptacle in which clippings are deposited, said receptacle having:

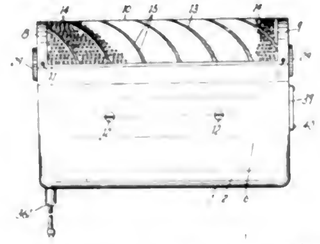
(*a*) first and second elongate legs which taper outwardly from one another to be removably disposed in a space between said first and second nail clipper members, with a forward end portion of each of said legs having a longitudinally extending passage formed therein that terminates in an opening for removably engaging said rod, said first leg being slightly wider than said second leg;

(*b*) resilient means for connecting the rear end portions of said legs;

(*c*) pairs of first and second flanges that extend towards one another from longitudinal sides of said legs, which pairs of flanges are in frictional contact and of such dimensions that major portions thereof overlap one another, with the width between the external surfaces of said first pair of flanges being such that said receptacle may be completely disposed within the confines of said space between said nail clipper members; and

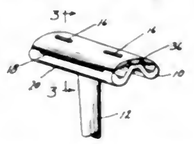
(*d*) means projecting from one of said legs for removably engaging a recess formed in that one of said nail clipper members most adjacent said means, which means and said rod cooperatively prevent inadvertent displacement of said receptacle from said nail clipper.

3,154,851
ELECTRIC SHAVER
Carl E. Erickson, 678 Carroll Drive, Moraga, Calif.
Filed July 30, 1962, Ser. No. 213,219
15 Claims. (Cl. 30—41.5)



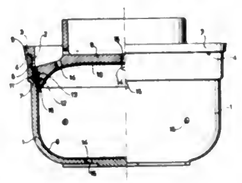
6. In a razor, a housing of generally rectangular form having forwardly projecting laterally spaced flanges, said housing also having a curved inner edge and inwardly curved side portions merging into said curved inner edge portion providing a handpiece portion which has a chamber therein, a foraminate fixed cutter and shield unit of curved cross section extending between said flanges, a blade unit comprising a tubular shaft rotatably mounted on said flanges of said housing and opening therethrough, a plurality of oval disk-like blades mounted on said shaft in inclined relation to its axis and in laterally spaced parallel relation to each other and in coacting relation to said cutter and shield unit, said blades having continuous peripheral shearing edges and having their major diameters inclined longitudinally of said shaft in a common plane passed through the shaft, said major diameters being of such a length that when multipled by the cosine of the angle of inclination of the blades gives a dimension greater than the spacing between adjacent blades measured along the axis of said shaft so that the sweep of the ends of a major diameter of one blade laterally across said cutter and shield unit overlaps the sweep of the opposite ends of adjacent blades longitudinally of said cutter and shield unit, a motor mounted in said housing, and driving connections for said motor to said blade shaft disposed within said housing.

3,154,852
ONE-PIECE SAFETY RAZOR
Edward B. Westlake, Jr., 307 Lincoln Ave., Havertown, Pa.
Filed Nov. 29, 1961, Ser. No. 155,740
5 Claims. (Cl. 30—51)



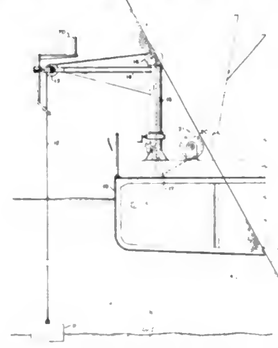
1. In a safety razor, a guard plate, a cover plate, a razor blade locating pin integral with one of said plates projecting therefrom, the other of said plates being provided with an aperture snugly receiving said pin, at least one bead formed on said pin and at least one bead formed on at least one side wall of said aperture whereby a portion of said pin may be snap fitted within said aperture.

3,154,853
CHEESE MOLD
Willem Dubbeld, Karel Doormanstraat 228, Rotterdam, Netherlands
Filed Oct. 7, 1963, Ser. No. 314,121
1 Claim. (Cl. 31—44)



A cheese mold for making cheese comprising a lower cup element, a follower element slidably received therein, both elements having openings therethrough, pre-shaped inner linings of fabric made of synthetic resin, the shape of the linings corresponding respectively to the inner shape of each mold element, and a ring being connected to an edge of each of the said inner linings, said rings being capable of clampingly bearing upon an edge of the lower cup element and of the follower element respectively.

3,154,854
SHIP CONTROL APPARATUS
Howard L. Shatto, Jr., Palos Verdes, James Ronald Dozier, Whittier, and Benjamin L. Goepfert, West Covina, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1961, Ser. No. 143,319
5 Claims. (Cl. 33—1)



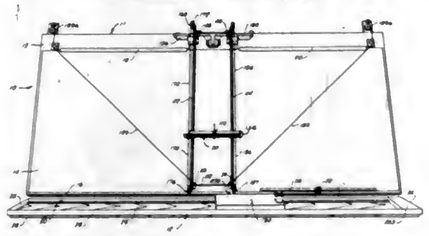
3. A system for measuring the angular displacement of a vessel from a desired location, said system comprising: a guide line having one end anchored below the desired location of the vessel, the other end of said line passing over a support sheave disposed on said vessel and being secured to a tension means disposed on the vessel, said tension means maintaining a constant tension on said guide line; a tiltmeter support pivotally mounted to rotate about the axis of said support sheave and a second axis at a right angle thereto and intersecting the axis of said sheave, a tiltmeter disposed on said support, the center of gravity of said tiltmeter and tiltmeter support being at the intersection of the said axes; and engaging means disposed on the tiltmeter support to engage the portion of said guide

line between said anchored end and said vessel and position said tiltmeter to substantially align it with said guide line.

3,154,855
APPARATUS FOR PLOTTING SEISMIC DATA

Charles R. Pelton, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Jan. 16, 1962, Ser. No. 166,613
17 Claims. (Cl. 33—18)



1. Apparatus for automatically plotting the depth, displacement and dip of subsurface interfaces from seismograms recorded at two spaced shot points comprising:

a work surface frame for supporting a work-sheet upon which the reflecting interfaces are to be graphically plotted;

first and second arms extending over the work surface frame and pivotally connected thereto;

a plotting shoe extending between the first and second arms;

the plotting shoe having coupling means interconnecting the plotting shoe and the arms for permitting the plotting shoe to move along the arms and for maintaining the plotting shoe at right angles to the arms;

elongated support means for supporting a pair of seismograms having seismic event time marks thereon;

first and second reference marks moveable relative to the support means for registration with the respective seismic event time marks; and

first and second servo systems operatively connected to said first and said second reference marks, respectively, said first and second servo systems adapted for driving the plotting shoe to positions on the first and second arms corresponding to the positions of the first and second reference marks, respectively, on the elongated support means,

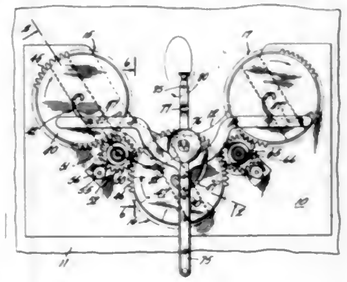
whereby the true location and dip of the reflecting subsurface strata will be automatically located by the position of the plotting shoe.

3,154,856
DRAWING INSTRUMENT

Milton A. Saunders, 433 Grove St., Westfield, N.J.

Filed Feb. 23, 1961, Ser. No. 91,031
11 Claims. (Cl. 33—30)

1. In an ellipsograph comprising a base member and a guide member supporting a marking instrument, a first pair of members separately rotatably mounted about a common axis on said base member, one of said pair having a cam and the other a cam follower pin, means for restricting rotational movement of said pin relative to said member on which it is mounted, means for adjusting the relative position of the one with the other of the pair about their common axis thereby to change the distance between the pin and said axis, a second pair of members separately rotatably mounted about a second common axis on said base member removed from said first axis, one of said second pair having a cam and the other a second cam follower pin, means for restricting rotational movement of said second pin relative to said member on which it is mounted, means for adjusting the relative position of the one with the other of said second pair about their common axis thereby to change the distance between the pin and said axis, said pins slidingly engaging said guide member, said two pairs being rotatable in concert with each other thereby to describe an ellipse, means for rotating in concert the cam-containing members of each

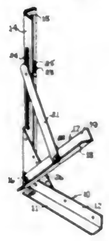


pair relative to the pin-supporting members of each pair, thereby to adjust simultaneously the distance of each pin from its axis of rotation, and means for adjusting the position of one of said pair relative to the other of said pair about their common axis thereby to change the distance of the pin from the axis without changing the relative position of the members of the other pair and thereby keeping the other pin at the same radial distance from its axis of rotation.

3,154,857
ADJUSTABLE CARPENTER'S SQUARE

Permil N. Nelson, Galesburg, Ill., assignor to Lynn H. Ewing, Rock Island, Ill.

Filed May 28, 1962, Ser. No. 198,374
1 Claim. (Cl. 33—93)



An adjustable carpenter's square comprising

(*a*) a base leg angularly disposed with respect to a perpendicular leg,

(*b*) said base leg providing along one edge an elongated flange depending therefrom and adapted to engage an edge of a work piece so as to position said perpendicular leg at right angles thereto,

(*c*) an angle arm pivotally connected to the vertex of the angularly disposed base leg and perpendicular leg and having a collapsed position and an extended position where it is angularly positioned between said base leg and perpendicular leg to describe a pre-selected angle therebetween,

(*d*) said angle arm providing along one edge thereof an elongated lateral flange extending in a plane perpendicular to said base leg and adapted for nesting relation with respect to the lateral flange of said base leg when said arm is in its collapsed position and for engaging the edge of a work piece so as to angularly position said perpendicular leg relative thereto when it is moved angularly between said base and said perpendicular leg,

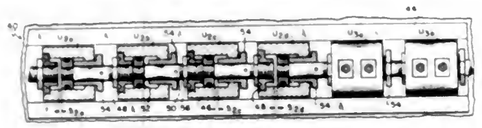
(*e*) a positioning arm pivotally connected at one end to said angle arm and slidably connected to said perpendicular leg for positioning said angle arm in a pre-selected angled position relative to said base leg and said perpendicular leg, and

(*f*) means for latching said positioning arm to said perpendicular leg in a selected position for releasably latching said angle arm in a preselected angle position.

3,154,858
DIFFERENCE GAGE

Robert C. Benton and Roger R. Whitehouse, State College, Pa., assignors to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1962, Ser. No. 216,653
5 Claims. (Cl. 33—125)

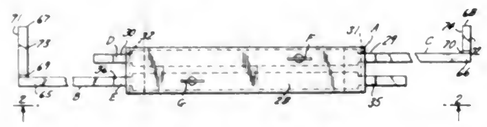


1. In a numerical control system, a binary code reader having a binary pneumatic output consisting of a plurality of air lines, a sensor for sensing a reference point on a moving machine element, a positioning device for positioning the sensor into a precisely adjusted position relative to the path of the reference point, said positioning device comprising a consecutive series of binary sets of gage units arranged in tandem and each unit consisting of a plunger carrying cylinder, means through which a relatively low air pressure is introduced into corresponding ends of the cylinders, and means connecting the binary pneumatic output lines to the other ends of the cylinders for simultaneously shifting selected plungers, each cylinder characterized by a relatively inexact absolute length and provided with a precise means of adjustment for precalibration and wear, said means of adjustment for each cylinder of a set comprising a threaded bushing adjusted so as to yield a difference between extended and retracted positions of the plunger reading to one decimal place which is a different decimal place than yielded from the units of the other sets, whereby the binary units of each set combine so that they aggregate as a portion of the decimal reading and in terms of only the one decimal place, the number of sets of gage units yielding a total gage reading of the positioning device complete to that number of decimal places desired.

3,154,859
MEASURING DEVICE

Edmund P. Grabowski, Brooklyn, N.Y., assignor to Monitor Tool & Finding Co., Brooklyn, N.Y., a partnership

Filed Mar. 26, 1962, Ser. No. 182,371
7 Claims. (Cl. 33—143)

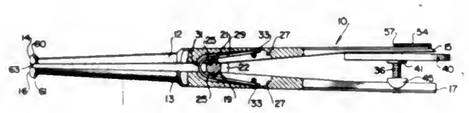


6. A measuring device comprising an inverted U-shaped metal carrier having open sides and integral rectangular top and end walls with inturned short feet, superimposed parallel upper short and lower elongated slots in the end walls, rectangular cross section reciprocable measuring bars sliding on said feet and held in said lower slots, U-shaped springs having oblique side legs with horizontal base and end portions having reduced width end portions projecting through said upper slots and offset screw members in said top wall pressing down said springs against said bars and angle members mounted on the outer ends of said bars, having vertical legs attached to the ends of the bars and horizontal legs extending parallelly from the ends of the bars.

3,154,860
MICROMETER CALIPERS

Charles H. Bodner, 19401 Mesa Drive, Orange, Calif.

Filed Sept. 19, 1961, Ser. No. 139,180
6 Claims. (Cl. 33—148)

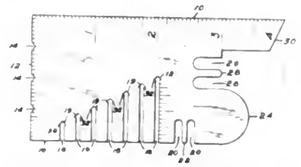


1. A bore micrometer caliper for use in the precision measurement of bore diameters, said caliper comprising a pair of elongated generally straight rigid arms located on the opposite sides of fulcrum means positioned between the midlength portions of said arms, one end of said arms having rounded feeler surfaces on their remote exterior faces adapted to be simultaneously engaged with diametrically opposed surfaces of a bore wall, means including spring means urging the feeler surface ends of said arms to pivot away from one another and the opposite outer ends of said arms toward one another while holding said arms resiliently assembled and pressed firmly against the opposite sides of said fulcrum means, adjustable rotary means socketed between the adjacent interior portions of the outer ends of said arms at points spaced substantially the same distance from said fulcrum means as are said feeler surfaces and effective to force said outer ends apart when rotated in one direction and permitting said spring means to pivot the feeler surface ends apart when rotated in the opposite direction, and scale means supported at the outer ends of said arms and operatively connected with said rotary means for indicating the diameter of a bore with precision when said feeler surfaces are in light contact therewith.

3,154,861
SEWING AID

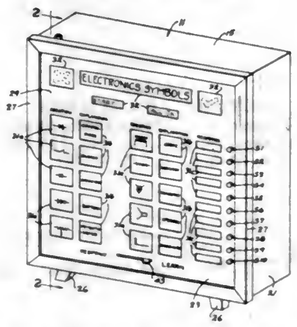
Julia Rubenstein, 33 Washington Square W., New York 11, N.Y.

Filed June 20, 1962, Ser. No. 203,832
2 Claims. (Cl. 33—190)



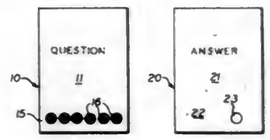
1. A sewing aid comprising a single flat plate-like structure including a ruled edge and a side edge in spaced parallel relationship to said ruled edge, said side edge having a series of cutting notches formed therein, extending toward said ruled edge, each of said notches having a terminal end defining an arrow head, said arrow head having a base portion extending beyond the area defined by the remaining portion of said notch, and said notches progressively increasing in length.

3,154,862
EDUCATIONAL DEVICE
Fred W. Culpepper, Jr., Norfolk, Va., assignor to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed Nov. 30, 1962, Ser. No. 241,300
22 Claims. (Cl. 35—9)



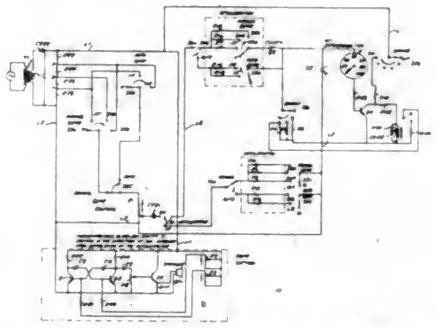
1. A teaching machine comprising a panel having thereon a first series of representations of items to be taught, a second series of representations in explanation of the items of the first series and visually coded therewith, and a third series of representations corresponding to the second series but presented visually at random relative to the first and second series; masking means shiftable between a learn position exposing said first and second series and masking said third series and a respond position exposing said first and third series and masking said second series; a plurality of switches, one associated with each representation of said third series; indicating means; control means comprising an electric circuit including program means for interconnecting said switches in said circuit in accordance with the sequence of representations in said third series relative to the sequence of representations in said first series; and means responsive to shifting of said masking means into its respond position for energizing said control means whereby the indicating means is energized when said switches are actuated in a sequence which matches the representations of said first series with the representations of said third series.

3,154,863
TEACHING MEANS
Frank B. La Prelle, New York, N.Y., assignor to Ed-U-Cards Manufacturing Corporation, Long Island City, N.Y., a corporation of New York
Filed Dec. 18, 1962, Ser. No. 245,504
3 Claims. (Cl. 35—9)



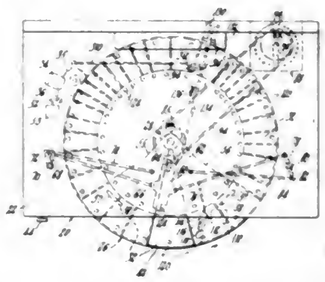
2. A teaching device comprising: a question member; a question area on said question member; a key area on said member containing a plurality of differently colored key marks, including some marks of different shades of a pre-selected color; an answer member; an answer area on said answer member; and a code area on said answer member adapted for positioning with respect to said key area on said question member, said code area containing openings revealing a pre-selected color of the key area on the question member when the correct answer member is selected, whereby depending on the key matched by said code area the propriety of the answer on the answer area may be determined and partially correct answers may be indicated.

3,154,864
VEHICLE SIMULATOR
Anatolijus Jazbutis, Jamestown, N.Y., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1961, Ser. No. 93,538
13 Claims. (Cl. 35—11)



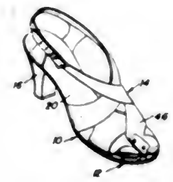
1. In an automobile simulator having a simulated accelerator, a simulated brake, a simulated transmission shifting device and a simulated speedometer in the form of a voltmeter; a capacitor connected in parallel with said voltmeter; a charging circuit and a discharging circuit alternatively connectable to said capacitor; means controlled by said accelerator for controlling the alternative connection of said capacitor to said charging and discharging circuits; said charging circuit including a voltage source, means controlled by said shifting device and means controlled by said accelerator for determining the maximum potential charge of said capacitor from said source, and means controlled by said shifting device for controlling the rate of charge of said capacitor from said source; said discharging circuit including means controlled by said shifting device and means controlled by said brake for controlling the rate of discharge of said capacitor.

3,154,865
AUTOMATIC WORK TABLE
John W. Conner, 18 Skyline Drive, Wellesley, Mass., assignor of nineteen-fiftieths to Joseph W. Vincent, Wellesley, Mass., four-fiftieths to Warren G. Reed, Newton, Mass., and one-fiftieth to Richard J. Butze, Wellesley, Mass.
Filed Jan. 4, 1962, Ser. No. 164,370
29 Claims. (Cl. 35—13)



1. An automatic work table for the performance by an operator of a series of part operations upon a work assembly built up of a series of parts having, in combination a work table providing a work area for said assembly, a conveyor having compartments each adapted to store a part identified for use in connection with one of said operations, said conveyor being movable by steps to different positions in which individual selected compartments are presented in a position accessible to the operator in the sequence in which the identified part operation is to be performed, moving means operatively connected to the conveyor for effecting said stepped movement in said sequence, an instruction device having a series of visual instruction presentation elements activated to present adjacent said area for visual inspection by the operator individual visual guidance instructions concerning each said part operation, and means coupling said conveyor means with said instruction device for actuating said instruction device in synchronism with the stepped movements of said conveyor to cause the appropriate visual instruction presentation element to be activated when a selected compartment of the conveyor is moved to said operator accessible position.

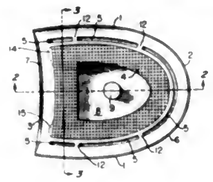
3,154,866
SHOE CONSTRUCTION WITH DETACHABLE COMPONENTS
Jennie Laufbahn, 2260 Bronx Park E., New York, N.Y., assignor of twenty-five percent each to Anne Blackstein and Charles Gass, both of Bronx, N.Y., and twenty-five percent to Louis Reiter, Brooklyn, N.Y.
Filed Apr. 10, 1962, Ser. No. 186,401
12 Claims. (Cl. 36—2.5)



1. A shoe comprising a sole and an upper, a continuous strip mounted peripherally on the sole with the top of the strip being slightly below the top surface of the sole, said strip having longitudinally spaced inwardly opening notches therein communicating with the inner edge thereof, said upper including an inturned peripheral edge having depending headed fasteners for horizontal interlocking engagement with the edges of the notches in the strip thereby detachably securing the uppers to the sole, the upper surface of the inturned edge of the upper being substantially flush with the top surface of the sole.

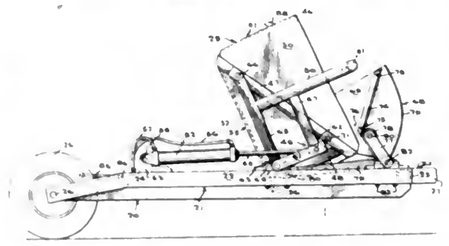
3,154,867
SHOE HEEL CONTAINING GROOVES AROUND INSERT
Thom C. Strope, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed May 23, 1962, Ser. No. 197,004
8 Claims. (Cl. 36—35)

1. A heel having a raised edge around the edges of the attaching surface thereof and a groove adjacent the side and back portions terminating at a point on each side adjacent the breast edge thereof, said groove having a plurality of ribs transversely of the side portions thereof and being continuous from a point at one side adjacent the back portion of said heel along the said back portion to a point on the other side adjacent said back portion, the attaching surface of said heel within said groove having an insert composed of a relatively hard plastic adhered to



the outer rubber portions along the bottom surface of the insert and along said ribs.

3,154,868
SCRAPER WITH PARALLELOGRAM LINKAGE CONNECTING BUCKET TO FRAME
Arnold Buchli, Rte. 2, Ashland, Wis.
Filed Oct. 31, 1962, Ser. No. 234,360
1 Claim. (Cl. 37—129)



An earth moving scraper comprising a frame, a plurality of ground engaging wheels mounted on said frame, a load carrying bucket having a floor, a ground engaging blade on the forward edge of said floor, an apron pivotally mounted on the front of said bucket and providing a closure for the forward end thereof, said bucket being movable between a plurality of positions including:

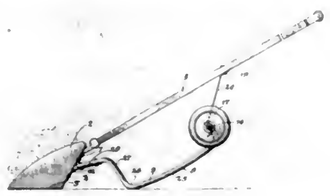
a lowered digging position wherein said floor is substantially parallel to said frame,

a carrying position wherein said floor is substantially coplanar with said frame,

an elevated dumping position in which said floor is in an acute angle relationship with said frame, and means connecting said frame and said bucket for movement of said bucket from said carrying position to said digging position and to said dumping position and maintaining said bucket floor substantially parallel to said frame at all points intermediate said digging and said carrying positions, said means including: parallelogram linkage systems comprising a foremost and a rearmost link on each side of said bucket, the forward ends of said links being fixedly pivotally mounted on the frame substantially in a first plane, said first plane being substantially coplanar with said frame, the rearward ends of said links being fixedly pivotally mounted on said bucket substantially in a second plane, said second plane being substantially parallel to said floor, said links being substantially the same length, said links being substantially parallel in said digging and carrying positions, said rearmost links being in an obtuse angle relationship with said foremost links when said bucket is in said dumping position, means for stopping the foremost links as they become coplanar with the frame, power means attached to the rearmost links only and mounted on said frame for moving said bucket and said parallelogram linkage system

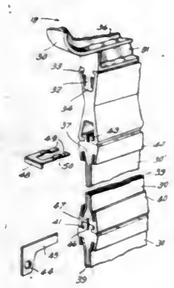
whereby as said links become substantially coplanar with said frame, the foremost links cease rotating and the rearmost links continue rotating as said bucket assumes the dumping position.

3,154,869
LOAD HANDLING DEVICE
Anthony C. Pyrak, 208 Fairways Blvd., Buffalo, N.Y.
Filed Jan. 18, 1963, Ser. No. 252,371
6 Claims. (Cl. 37—130)



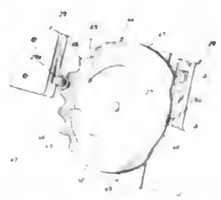
1. A load handling device comprising, in combination,
a load gathering scoop having a handle attached thereto and extending rearwardly therefrom,
an elongate cradle assembly pivotally attached at one end thereof to said scoop,
said cradle assembly being movable between a first position extending rearwardly from said scoop and underlying said handle and a second position oblique to said handle in underlying and supporting relation to said scoop,
said cradle assembly including a step portion extending rearwardly and downwardly from the point of pivotal attachment between cradle and scoop to engage with a supporting surface simultaneously with said scoop with the cradle assembly in said first position thereof, and a rocker portion extending upwardly as well as rearwardly from such point of supporting surface engagement, and wheel means attached to that end of said rocker portion remote from said scoop.

3,154,870
SIGN ASSEMBLY
Philip Hopp, New York, N.Y., George H. Woods, Fairfield, Conn., and Alban Gifford Jackson, New York, N.Y., assignors to The Hopp Press, Inc., New York, N.Y., a corporation of New York
Filed Sept. 10, 1962, Ser. No. 222,730
5 Claims. (Cl. 40—128)



1. A sign assembly including in combination a panel, upper and lower edges of said panel, first arms extending from said lower edge in opposed relationship towards each other with their free ends spaced to define a groove, second arms extending from said upper edge outwardly in directions away from each other, said first and second arms being constructed and arranged whereby the groove formed by said first arms can receive second arms of a like panel, a display frame, a spacer bar, fastening means removably attaching said spacer bar to said display frame, top and bottom edges on said spacer bar, third arms extending from said top edge in opposed relationship towards each other with their free ends spaced to define a groove for receiving said fastening means, fourth arms extending from said bottom edge in opposed relationship toward each other with their free ends spaced to define a groove receiving said second arms and first and second vertical slots provided in said upper and lower edges respectively of said panel and wedge member inserted in said second slot of said panel and in the first slot of the like panel the second arms of which are received in the grooves of said first arms.

3,154,871
ANIMATED DISPLAY SIGN
Clement P. Salla, 358 Islington Ave. N., Islington, Ontario, Canada
Filed Oct. 19, 1961, Ser. No. 146,222
1 Claim. (Cl. 40—130)



An animated display sign comprising a holder, a display sign removably supported by said holder, said sign having coloured indicia thereon coloured in two colours which are deficient in the distinguishing hues of each other, first and second coloured light casting devices including first and second light sources respectively, said first light casting device being adapted to cast light corresponding substantially to one of said colours on a surface of said sign, said second light casting device being adapted to cast light corresponding substantially to the other of said colours on said surface of said sign, and a switching device connected in circuit with said light sources, said switching device being adapted to switch said light sources on and off in the following repeated sequence of steps:

(*a*) said first light source flashing alternately with said second light source a predetermined number of times,
(*b*) said second light source on and said first light source out,
(*c*) both said first and said second light sources on,
(*d*) said first light source on and said second light source out,
(*e*) said second light source on and said first light source out,

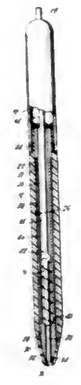
the time intervals between flashes of said first light source and flashes of said second light source and between flashes of said second light source and flashes of said first light source in step (*a*) being susbtantially equal, being sufficient to convey the impression of animation of the sign to an observer, and being substantially less than the duration of each of steps (*b*), (*c*), (*d*) and (*e*), the durations of illumination of said first light source and said second light source in step (*a*) being substantially equal, being sufficient to convey the impression of animation of the sign to an observer and being substantially less than the duration of each of steps (*b*), (*c*), (*d*) and (*e*), the durations of steps (*b*), (*c*), (*d*) and (*e*) all being substantially equal, and the duration of step (*a*) being about twice the duration of any one of steps (*b*), (*c*), (*d*) or (*e*), said switching device comprising a cam, means for rotating said cam, two microswitches, said cam having a cam surface and a cam edge, one of said microswitches being operated by said cam surface, the other of said microswitches being operated by said cam edge, and first electrically conductive means connecting one terminal of each of said light sources and adapted to be connected to one side of a source of electrical energy, said other microswitch having two contacts, one of said contacts being adapted to be connected to the other side of said source of electrical energy, the other of said contacts being electrically connected to the another terminal of said first light source, said one microswitch having first, second and third contacts, said first and second contacts being electrically connected in one position of said one microswitch, said first and third contacts being electrically connected in another position of said one microswitch, said first contact being adapted to be connected to said other side of said source of electrical energy, said second contact being electrically connected to said other contact, said third contact being electrically connected to another terminal of said second light source, said cam edge comprising a plurality of notches followed by a first smoothly curved portion, a generally straight portion and a second smoothly curved portion, said cam surface extending for part of the length of each of said second smoothly curved portion and said plurality of notches, in a rotation of said cam the contacts of said other microswitch being closed only during engagement of said other microswitch with said cam surface, said first and second contacts being closed only during engagement of said one microswitch with said straight portion and with said notches, said first and third contacts being closed only during engagement of said one microswitch with said smoothly curved portions and the raised portions between said notches, said colours being red and green.

3,154,872
TAMPER-PROOF MARKINGS FOR REFLECTING STRUCTURES
Orville J. Nordgren, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,228
3 Claims. (Cl. 40—135)



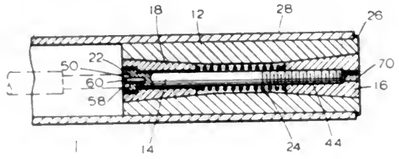
1. In a reflex-reflecting sheet structure having, at least in one portion thereof, a continuous back reflector and a compact monolayer of transparent beads thereover and transparently bonded in optical connection therewith, the improvement characterized by the feature that said continuous back reflector is a specular-reflecting metallic reflector provided with semi-specular pigmented legend markings no greater than about 1/64 inch in width on a minor portion thereof, said markings being such that they exhibit a total intensity of specular reflection in the visible spectrum on the order of 40–90% the total intensity of specular reflection in the visible spectrum exhibited by said highly specular metallic reflector, whereby said legend markings are visible to the naked eye of an observer viewing the front face of said reflex-reflecting structure under daytime diffuse-lighting conditions, but become visibly indistinct to the observer when the face of the structure is viewed under reflex-reflecting conditions.

3,154,873
TUBULAR ARTICLE WITH POCKET
Warren Shea, Jersey City, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed Jan. 4, 1960, Ser. No. 147
1 Claim. (Cl. 40—334)



A two piece display barrel for a pen or the like, comprising a hollow transparent outer casing, and an inner member having a diameter and length permitting insertion within the hollow outer casing, said outer casing provided with an inner surface having an inwardly extending taper terminating in a stop engaging the inner member, said inner member provided with an outer surface having an outwardly extending shoulder engaging the inner surface of the outer casing; said stop and said shoulder creating a hollow pocket between the casing, member, shoulder, taper, and stop, for containing display material visible through the transparent outer casing.

3,154,874
GUN LOCK
Albert R. Stewart, 4920 Wilshire Blvd., Lincoln, Nebr.
Filed Mar. 26, 1963, Ser. No. 268,534
1 Claim. (Cl. 42—1)



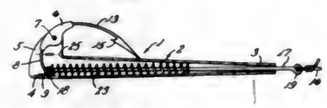
In a gun lock, the combination which comprises a sleeve having longitudinally positioned slots extending transversely therethrough, said sleeve having oppositely tapering inner surfaces in two longitudinally spaced areas thereof, two opposed cones with tapering outer surfaces positioned in said sleeve to coact with the respective tapering inner surfaces thereof, a lock bolt threaded in one of the cones and having means engageable with the other cone in a manner for moving the cones to expand the sleeve in a gun barrel, and resilient means for actuating the cones to positions for allowing the sleeve to contract, and means for actuating the lock bolt.

3,154,875
COMBINED ROD HOLDER AND HOOK SETTING DEVICE
Albert M. Biddison, P.O. Box 52, Chatsworth, Calif.
Filed July 5, 1963, Ser. No. 292,995
4 Claims. (Cl. 43—15)



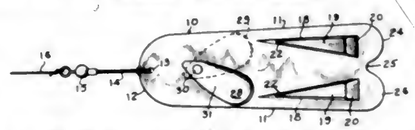
1. A combined rod holder and hook setting device, comprising:
elongated support means;
a base member having forward and rearward ends and secured to the upper end of said means;
a support member pivotally mounted on said base member at a location vertically spaced thereabove, said support member being pivotal about an axis between cocked position wherein it is adjacent and generally parallel to said base member and released position wherein its forward end is tilted upwardly relative to said base member;
spring means on said members yieldably urging said support members to its released position;
holder means adapted to removably receive the handle of a rod to support the same, said means being pivotally mounted on said support member for limited angular movement about a pivotal axis oriented substantially parallel to and located forwardly of the pivotal axis of said support member;
a latching arm mounted on said base member intermediate said base and support members for movement between latching and released positions, said arm being spring biased toward its latching position;
a keeper mounted on said support member and engageable with said latching arm in the latching position thereof to releasably retain said support member in its cocked position, said keeper being automatically engaged with said latching arm when said support member is pivoted to its cocked position against the biasing force of said spring means;
and a trigger on said latching arm adapted to engage said holder means, said trigger being responsive to downward pivoting of the forward end of said holder means relative to said support member to move said latching arm to its released position and thereby release said support member for movement to its released position under the action of said spring means.

3,154,876
FISHHOOK
John A. O'Neil, Akron, Ohio
(2484 Bimini Lane, Fort Lauderdale, Fla.)
Filed Feb. 15, 1962, Ser. No. 173,442
1 Claim. (Cl. 43—37)



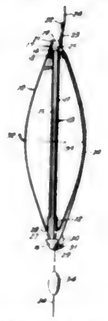
A weedless fishhook, comprising
(1) an axial body,
(2) a support on said body having a pivot laterally offset from said body,
(3) a bow supported on said pivot and having
(*a*) an outer barbed end, and
(*b*) an inner end, and
(4) means for freely selectively opening and closing said bow with respect to said body, comprising
(*a*) a generally axially extending pull means connected to said inner bow-end, and
(*b*) a spring in said body acting on the junction of said inner bow-end and said pull means and normally biasing said barbed end closed,
said bow having a portion between said pivot and inner end adapted to supportingly engage said body in the open position of said bow.

3,154,877
FISHING LURE
Daniel S. Mutti, Rte. 1, Box 13, McGregor, Minn.
Original application Jan. 15, 1960, Ser. No. 2,647, now Patent No. 3,081,573, dated Mar. 19, 1963. Divided and this application Jan. 3, 1963, Ser. No. 249,254
4 Claims. (Cl. 43—42.51)



1. A fishing lure comprising a relatively flat body of stiff material having a forward end adapted for connection with a leader, said body being at least as wide at the rear end as at the forward end and having smooth, unbroken side edges substantially from end to end of said body, said body having angularly formed stamped slots wholly spaced inwardly from said side edges, the material stamped from said slots forming elongated tongues extending longitudinally of the lure and having forwardly extended pointed ends to provide fish hooks, such hooks being offset from said body.

3,154,878
DEEP WATER FISHING BOBBER
Jerome D. Ekstrand, 3669 S. 4400 West, Salt Lake City, Utah
Filed Oct. 29, 1962, Ser. No. 233,532
10 Claims. (Cl. 43—44.88)



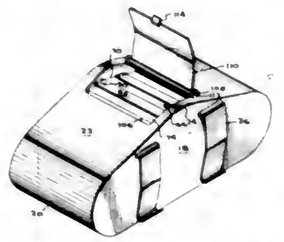
1. A deep water fishing bobber comprising a buoyant bobber body, a channel extending through said body, a plug member extending through said channel for limited longitudinal sliding movement therein, an enlarged tip on one end of said plug member external of said body, line locking means on said tip, an enlarged head on the opposite end of said plug member, a collar member at the same end of said body, said head being adapted to engage said collar member upon sliding movement in the direction of said collar, an eye member at the same end of said body to guide fish line through said collar between said collar wall and plug head and means at the tip end of said plug member to control the position of said plug head relative to said collar.

3,154,879
INSTANT SPINOUT HOOK REMOVER
Donald W. Crooke, 511 21st Ave. S., Nampa, Idaho
Filed Aug. 27, 1963, Ser. No. 304,993
1 Claim. (Cl. 43—53.5)



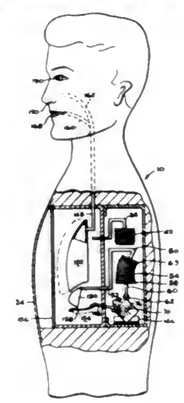
A fishhook remover comprising an elongated spindle having a tapered end adapted to be inserted into the mouth of a fish for engagement with a first line portion connected to said fishhook, the opposite end of said spindle terminating in spaced inner and outer flanged portions and an intermediate hub portion defining a spool for receiving another portion of said line, there being a notch in the inner of said flanged portions adjacent said spindle and adapted to receive an intermediate portion of said line, and a nob rotatably secured to said spool adjacent the endmost of said flanged portions, whereby said fishhook may be removed from the mouth of a fish by manually holding said nob and pulling on a further portion of said line extending from said spool to rotate said spindle and wind said fishhook and said first line portion thereon.

3,154,880
CONTAINER
Floyd R. Campbell, 1123 W. 49th North, Wichita, Kans., assignor of forty-five percent to Ervin L. Cunningham, Wichita, Kans.
Filed Apr. 30, 1963, Ser. No. 276,861
2 Claims. (Cl. 43—57.5)



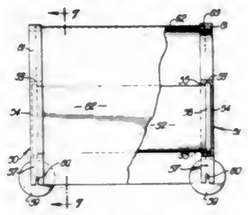
1. A lure carrier for fishing lures of the type including a hook portion having a shank and a lure body attached to the shank, the lure carrier comprising:
(*a*) an elongated, substantially rectangular casing having a bottom wall, front and rear side walls, rounded end walls, and converging top walls extending upwardly each end wall and meeting in an apex portion;
(*b*) belt clips attached to the casing rear side wall;
(*c*) a pair of substantially cylindrical idler rollers each having a stub axle projecting outwardly from opposite ends thereof;
(*d*) the casing side walls having pairs of inwardly opening bores formed therein adjacent the end walls to receive the idler rollers' stub axles such that the idler rollers are rotatably mounted between the side walls;
(*e*) a substantially cylindrical main actuating roller of enlarged diameter with respect to the idler rollers, having a stub axle projecting outwardly from one end thereof and an elongate axle projecting outwardly from its other end;
(*f*) the casing rear side wall having a centrally disposed, inwardly opening bore therein to receive the actuating roller stub axle and the front wall having a coaligned transverse opening therein to receive the elongate axle therethrough;
(*g*) a turning knob secured to the elongate axle whereby the actuating roller is adapted for turning;
(*h*) a belt trained about the rollers;
(*i*) transverse rigid slats secured at spaced locations on the belt;
(*j*) transverse resilient slats overlying each of the rigid slats and secured at their ends to the rigid slats whereby hooks of fishing lures may be inserted between the resilient and rigid slats with the lure bodies supported thereabove; and
(*k*) the apex portion having an access opening thereabove aligned vertically with the actuating roller.

3,154,881
ANIMATED DOLL
Charles A. Elwell, Los Angeles County, Calif., assignor to Product Design & Development Corporation, Beverly Hills, Calif., a corporation of Nevada
Filed Dec. 28, 1960, Ser. No. 79,004
4 Claims. (Cl. 46—9)



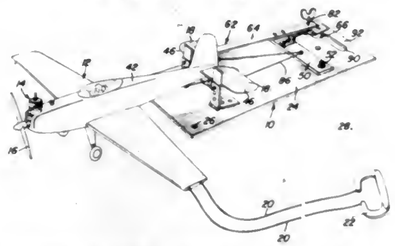
1. In a model of the character described, the improvement comprising in combination therewith: a pair of flexible surfaces simulating different normally pulsating organic tissues, internal inanimate means for rhythmically flexing said individual surfaces each at a different rate, timing means for correlating the two rhythms to approximate natural physiological pulsations of the respective organic tissues represented, and at least one, externally curved element representing an eye and disposed for free rotation between "open" and "closed" positions, said element being weighted so as automatically to rotate to "closed" position upon the model being horizontally disposed, and operative means responsive to flexing of one of said surfaces for intermittently rotating the eye to "open" position upon each pulsation of said surface while the model remains generally horizontal.

3,154,882
TOY VEHICLE ADAPTED FROM A BEVERAGE CAN
Edgar L. La Bossiere, Los Angeles, Calif., assignor to Garal Mfg. Corp., Lynwood, Calif., a corporation of California
Filed Dec. 19, 1960, Ser. No. 76,864
6 Claims. (Cl. 46—11)



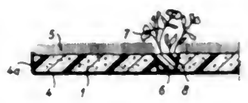
3. In combination with a beverage can having rims at opposite ends: a flexible resilient cap of unitary molded material for each end of the can, each cap having a continuous flange surrounding the rim of the corresponding can end, and forming a shallow recess in which the entire rim is received, the end edges of the flange lying in a plane located adjacent but behind the can rim with the can end seated in the recess, each cap having a series of tabs extending inwardly from the end edges of the cap flange to snap over and lock behind the can rim, each cap having a pair of spaced integrally formed projections extending laterally beyond the can, and a pair of operative wheels for each cap having coaxial axle means mounted by the respective projections.

3,154,883
MODEL AIRPLANE LAUNCHING ANCHOR
William A. Gardella, 7428 Coolidge, Center Line, Mich.
Filed May 6, 1963, Ser. No. 278,289
8 Claims. (Cl. 46—78)



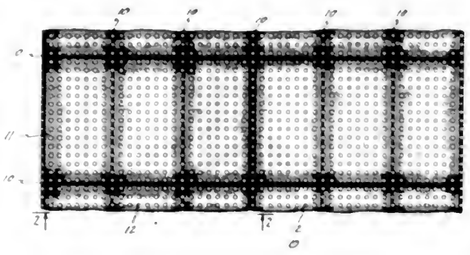
2. A model airplane launching anchor comprising a base plate, elongated retaining means pivotally secured at one end to said plate for movement about an axis generally paralleling the medial plane of said plate and extending transversely of the longitudinal extent of said retaining means and movement between a lowered inoperative position generally paralleling said plate and an upstanding operative position adapted to engage the leading edges of a pair of airfoil members projecting outwardly of opposite sides of the fuselage of said airplane, an operator mounted on said base independently of said retaining means and for movement between first and second positions, means operatively connecting said operator and retaining means for movement of said retaining means between said operative and inoperative positions in response to movement of said operator between said first and second positions respectively, movable and releasable latch means supported from said base plate and operable to retain said operator in said first position and therefore said retaining means against movement from said operative position, said releasable latch means including means adapted to be engaged and moved by a movable control surface of said airplane to a position releasing said operator and thereby said retaining means for movement toward its inoperative position.

3,154,884
DEVICE FOR FACILITATING SOWING AND PROTECTING PLANTS REARED FROM THE SEEDS
Sion Segre Amar and Guido Sasso, both of 111 Via Torino, Nichelino, Turin, Italy
Filed Aug. 8, 1961, Ser. No. 130,096
Claims priority, application Italy, Aug. 12, 1960, 636,863; Oct. 1, 1960, 17,211/60; Dec. 22, 1960, 22,308/60; May 5, 1961, 8,691/61
2 Claims. (Cl. 47—1)



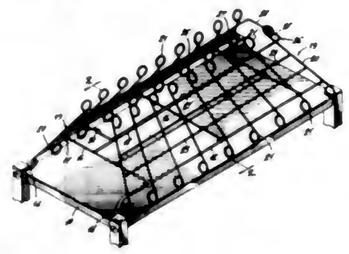
1. As a new product of manufacture a seed carrier composed of a sheet of regenerated cellulosic sponge adapted to be laid over the soil and having seeds adhesively adhered to the surface thereof in predetermined spaced positions, said cellulosic sponge being capable of absorbing water and swelling in the presence of moisture and of disintegrating at a slow rate to permit the roots from the germinated seeds to enter the soil over which the sheet is laid, said sheet carrying inserts composed of the same material as the sheet, said inserts having adhered thereto seeds of a kind different from those carried by said sheet.

3,154,885
COMPOSITION AND APPARATUS FOR AIR PURIFICATION
Raymond R. Waterman, Easton, and Wilbur S. Taylor, Norwalk, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 17, 1962, Ser. No. 188,236
12 Claims. (Cl. 47—26)



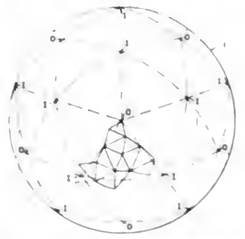
1. An air purifying composition comprising from about 2 to about 5 parts by weight of a purifying agent selected from the group consisting of orthophenylenediamine, alkylated diphenylamines having 8 to 9 carbon atoms in the alkyl groups, N,N'-di-sec.-octyl-p-phenylenediamine, zinc dibutyldithiocarbamate and polymerized 2,2,4-trimethyl-1,2-dihydroquinoline in from about 1 to about 2 parts by weight of an unvulcanized water-insoluble elastomer, which elastomer serves as a weather resistant semipermeable reservoir permitting the release and regeneration of the purifying agent upon exposure of the composition to air containing ozone and other air pollutants.

3,154,886
CANOPY
Earl F. Hamilton, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Apr. 1, 1963, Ser. No. 269,505
5 Claims. (Cl. 47—44)



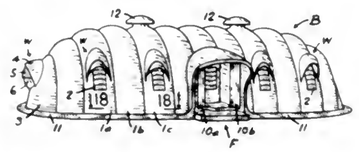
1. A canopy, comprising
(*a*) a pair of longitudinally extending runners having downwardly projecting ends,
(*b*) a bank of longitudinally spaced members fixedly connected to each of said pair of runners and extending above and below said runners,
(*c*) the members in each bank of members being spaced from each other along their lengths and converging upwardly from their associated runner toward the upper ends of the members in said other bank of members, and
(*d*) means mounted on said banks of members and extending longitudinally and inwardly of each of said banks of members for releasably interconnecting said banks of members to each other in an inwardly stressed condition.

3,154,887
RANDOM PATTERN RADOME STRUCTURE
Clarence J. Schmidt, Cuyahoga Falls, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Dec. 4, 1959, Ser. No. 857,347
5 Claims. (Cl. 50—52)



1. In a substantially spherically shaped enclosure the combination of
a plurality of basic frames rigidly connected and defining an enclosure assembly,
each respective basic frame defined by two legs and a base line outlining one of five similar imaginary spherical isosceles triangles which five triangles with the apices of their legs joined at a common point together define one of twelve similar imaginary spherical pentagons which pentagons together define an imaginary spherical dodecahedron of the size desired for said enclosure,
each respective basic frame of said enclosure assembly comprising
a plurality of structural segments representing consecutive arcs with the terminals of the segments defined by points on the surface of said imaginary spherical dodecahedron and with each segment lying in a different plane,
a first group of said structural segments defining one side of said respective basic frame by being joined in end to end relation originating from the apex of the legs of said one imaginary spherical isosceles triangle and directed substantially along one leg with each segment crossing said one leg at an angle,
a second group of said structural segments defining the other side of said respective basic frame by being joined in end to end relationship and defining exactly the same relationship to the other leg of said one spherical isosceles triangle as said first group of said structural segments defines with said one leg,
a third group of said structural segments defining substantially one half the base to said respective basic frame by being joined in end to end relationship and connecting the end of said first group of structural segments defining said one side of said respective basic frame at the point of bisection of the base line to said one imaginary spherical isosceles triangle,
a fourth group of said structural segments defining substantially the other half of said base of said respective basic frame by being joined in end to end relationship and defining the opposite relationship to said other half of said base line of said one imaginary spherical isosceles triangle as said third group of said structural segments defines with said one half of said base line, and
means connecting said plurality of said basic frames rigidly together along common edges to complete said enclosure assembly with each of said respective basic frames disposed with one of said sides and bases being along each leg and each base line respectively of each of said isosceles triangles of at least one of said spherical pentagons to provide said enclosure assembly substantially spherically shaped.

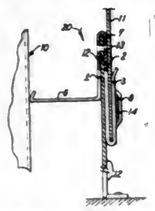
3,154,888
BUILDING CONSTRUCTION
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa.
Filed Mar. 23, 1960, Ser. No. 17,167
12 Claims. (Cl. 50—52)



1. A fixed shelter supported on land for protection against violent warfare forces, comprising at least an outer, thin shell means, said shell means having an intermediate roof portion, a floor in contiguous relationship with opposing portions of said shell means to form a substantially total enclosure therewith, said shell means comprised substantially of cementitious material, reinforcing strand means of material for resisting tensional and shearing forces embedded in said shell means, said shell means having a multiplicity of corrugations arranged in uniformly spaced relationship, the side edges of each of said corrugations being in contiguous relationship with those of adjoining corrugations throughout substantially their entire lengths, each of said corrugations having an outwardly bowed arcuate curvature across substantially its entire width, said shell means being at least two stories high, having a lower story and an upper story, at least said lower story being below the

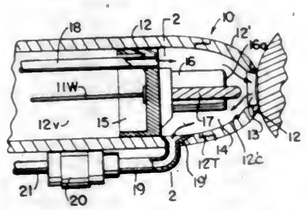
ground line, said lower story having a cementitious, arched, thin shell ceiling spanning the interior of said shelter, said ceiling having arched ceiling corrugations that are connected to said corrugations in said shell means, each of said arched ceiling corrugations having an outwardly bowed arcuate curvature across substantially its entire width, said bowed curvature of each of said arched ceiling corrugations being bowed outwardly from said lower story, said upper story including a second floor in spaced, opposed relationship with and above said ceiling, and the intermediate space between said ceiling and said second floor having a filler of earth disposed therein.

3,154,889
SPACER CLIP FOR HOLDING INSULATION ABOUT A VESSEL
Paul S. Monroe, Chatham, N.J., assignor to Halcon International, Inc., a corporation of Delaware
Filed July 31, 1961, Ser. No. 128,129
5 Claims. (Cl. 50—160)



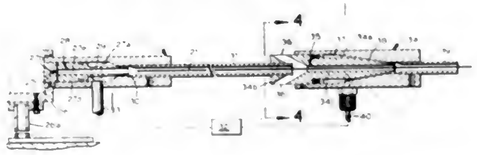
4. An insulated vessel which comprises: a vessel, at least two partially overlapping sheets of sheathing around and concentric to said vessel, a plurality of spacer clips, said clips being adapted to engage the top edge of a first sheet of sheathing and the bottom edge of a second sheet of sheathing, and having projecting therefrom a spacer bar adapted to maintain said sheathing a fixed distance from said vessel, and a belt adapted to engage said spacer clips and bring said spacer bars into contact with said vessel.

3,154,890
ULTRASONIC TOOL
Jerome H. Lemelson, 8–B Garfield Apts., Metuchen, N.J.
Filed Apr. 13, 1961, Ser. No. 102,751
21 Claims. (Cl. 51—59)



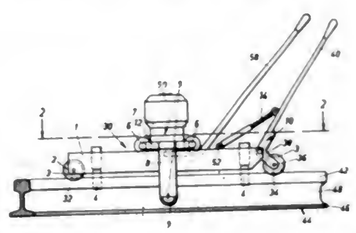
1. An ultrasonic apparatus comprising a housing with an aperture applicable to a workpiece positioned generally adjacent the aperture, means for effecting a fluid seal between the wall of the housing circumscribing the aperture and said workpiece to seal off the aperture, an ultrasonic vibration means supported within the housing and disposed in spaced relation to the aperature for directing energy generated thereby at the surface of said workpiece, means for coupling energy to the ultrasonic vibration means, a duct communicating with the interior of the housing, a source of coupling liquid including a liquid pressurizing means operatively connectable to said duct, a control means operative for regulating the flow of liquid through said duct into said housing for establishing a liquid column in contact with the ultrasonic vibration means and the surface of said workpiece and for removing said liquid from said housing, permitting removal of the housing from the work without flowing liquid over the workpiece.

3,154,891
APPARATUS FOR GRINDING FLEXIBLE CORD
Robert H. Weisgerber, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 8, 1963, Ser. No. 314,759
4 Claims. (Cl. 51—103)



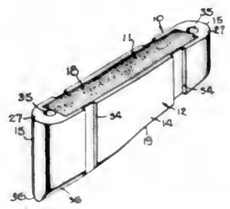
1. In a centerless grinding machine having a grinding throat for grinding a long flexible cord, the combination therewith of a workpiece driver comprising a body having a straight passage extending therethrough, said passage aligned with the grinding throat for passage of the cord therethrough, said body having a helical passage connectable to a source of fluid under pressure and terminating in the straight passage to create a vortex therein for rotation of the cord.

3,154,892
APPARATUS FOR GRINDING RAILS
Ernst Krüger, Essen, Germany, assignor to Elektro-Thermit G.m.b.H., Essen, Germany
Filed Mar. 4, 1963, Ser. No. 262,568
Claims priority, application Germany Mar. 13, 1962
5 Claims. (Cl. 51—178)



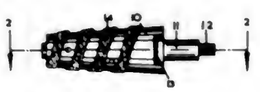
3. A device for grinding rail structures and the like, comprising a frame, roller means on said frame adapted to ride over a rail structure, a grinding machine carried on said frame including a rotary disc extending downwardly from said frame and rotatably supported in a position for operating on the area of the rail between the head and foot portion thereof, means for shifting the grinding machine with the disc laterally, and means for adjusting said grinding machine with said disc vertically, said means for shifting said grinding machine laterally including a yoke formed on said frame, said grinding machine being mounted in said yoke for lateral displacement therewith, means on said frame for guiding said yoke back and forth laterally, and a crank arm pivotally connected to said frame having a portion connected to said yoke whereby rocking of said crank arm is effective to shift said yoke with said machine.

3,154,893
HONING ELEMENT
Donald K. Greenberg, Rockford, and Kenneth H. Casson, Winnebago, Ill., assignors to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed Aug. 6, 1963, Ser. No. 306,404
9 Claims. (Cl. 51—204)



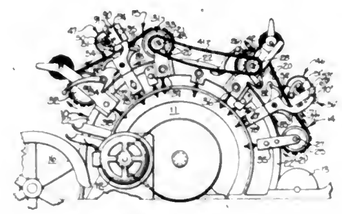
1. A honing element having, in combination, a generally rectangular stick of bonded abrasive, a solid bar of rigid non-resilient material such as metal underlying said stick and having a flat top surface lying in direct contact with the bottom of the stick over substantially the full length and width thereof, said bar having a channel extending along at least one side substantially throughout the length of the bar, and a casing molded around the sides and ends of said stick and said bar and filling said channel to thereby lock said stick and bar together with the working face of said stick and the bottom of said bar exposed, said casing being composed of material such as plastic which will wear away with said working face in a honing operation.

3,154,894
TOOL FOR DRESSING THE SURFACE OF A CONICAL HOLE
John Campbell Francis Dawkins, Staplehurst, Tonbridge, England, assignor to Diagrit Electrometallics Limited, Tonbridge, England
Filed Jan. 24, 1961, Ser. No. 84,615
Claims priority, application Great Britain, Oct. 4, 1960, 33,952/60
3 Claims. (Cl. 51—206)



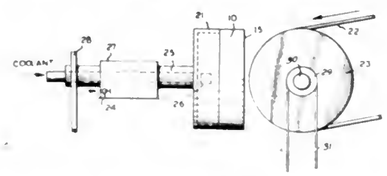
1. A rotary tool for dressing the surface of a conical hole in a vitreous work-piece comprising a body portion of circular cross-section, said body portion being conical with the paper towards its operative end, the taper being at the same angle as the final conical hole in the work-piece is to have, an abradant land of diamond dust integral with said body, said abradant land being in the form of a spiral helix the winding of which is in the direction so that when said tool is rotated, the helix will be rotated in its unscrewing direction so that binding of the tool in the work-piece is avoided and a flow of the ground particles away from the cutting zone is promoted, said tool having a longitudinal bore, said bore closed at the operative end of the tool and adapted at its other end to receive a supply of a coolant, and said tool provided with a duct leading from said bore to a part of the outer conical surface of said tool circumferentially spaced from said land for conveying the coolant to the cutting zone.

3,154,895
APPARATUS FOR GRINDING DUAL FLATS ON CARDS
Robert Bain Jenkins, Sr., P.O. Box 1160, Gastonia, N.C.
Filed June 12, 1963, Ser. No. 287,389
5 Claims. (Cl. 51—243)



2. In a card-flat grinding apparatus having a bearing member, a grinding roll journaled on said bearing member, a stand member adapted to be secured in a fixed position on a card machine, and said members having mating flat bearing surfaces thereon and also having flat outer surfaces thereon; the combination therewith of a guide plate fixed to the flat outer surface of said bearing member and extending adjacent the outer surface of said stand member, means on said stand member for guiding said plate in a path parallel to said bearing surfaces, and said last-named means being operable to maintain the bearing surface of said bearing member in engagement with the bearing surface of said stand member.

3,154,896
ABRADING HONEYCOMB METAL
Dirck J. Olton, Loudonville, and William A. Fazioli, Troy, N.Y., assignors to Norton Company, Troy, N.Y., a corporation of Massachusetts
Filed July 30, 1962, Ser. No. 213,300
2 Claims. (Cl. 51—328)

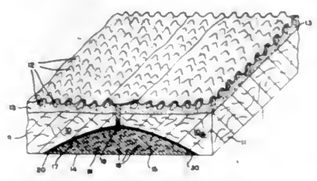


1. A method for abrading a transverse section of thin-wall honeycomb metal which comprises:
(*a*) Rotating the section of honeycomb metal;
(*b*) Contacting the section of honeycomb metal along a complete diameter thereof as it rotates with a moving coated abrasive surface; and
(*c*) Continuously flushing said honeycomb section with coolant along said diameter during contact with said abrasive.

3,154,897
SPLICED COATED ABRASIVE BELT
Robert N. Howard, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 27, 1961, Ser. No. 155,036
5 Claims. (Cl. 51—399)

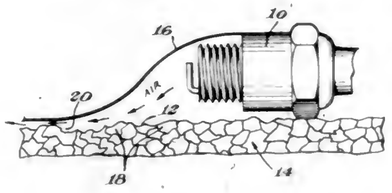
1. A spliced strip of flexible abrasive-coated sheet material comprising a backing sheet having first and second surfaces and abrasive grains firmly affixed to the first surface thereof by a binder adhesive, and having a joint

uniting two complementary abuttingly juxtaposed ends, the sheet material immediately adjacent each of said ends being contoured in such a manner that said first surface is essentially undisturbed and that said second surface is tapered toward each of said ends to define a single hollowed-out space across the entire width of said strip, said space being occupied by a thin, strong flexible tear-resistant composite backup strip, said strip comprising



a layer of strong synthetic fibers at least a substantial number of which extend across the line of abutment and lie generally crosswise of the belt, and a layer of fine strong synthetic fibers aligned parallel to the length of the belt, said layers being impregnated and firmly adhered to each other and to said ends by a flexible cured, hardened film-forming material extending between and firmly adhered to said ends.

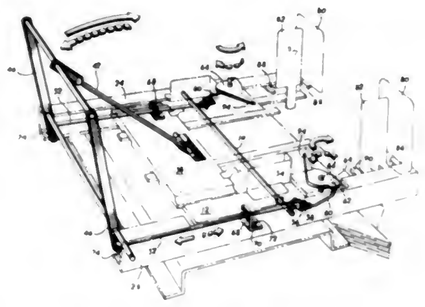
3,154,898
SKIN PACKAGING
Earl F. Engles, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,938
9 Claims. (Cl. 53—30)



1. A method of packaging an article, said method comprising the steps of placing the article on a generally heat shrinkable foamed backing, heating a film skin compatible with said backing to a temperature sufficient to soften said film, shrinking at least a portion of the surface cells of said backing through the use of heat, drawing a vacuum from between said film and said backing to bring said film around and over said article and adjacent said backing generally around the periphery of said article, and maintaining said vacuum until said skin is heat sealed to said backing where they engage one another around the periphery of said article.

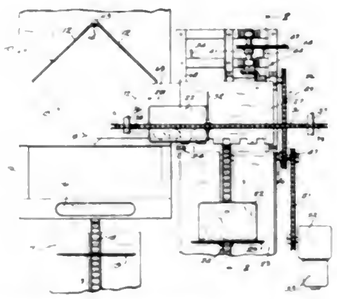
3,154,899
PACKAGING DEVICE
Thagrus A. Burns, 2216 Butler Road, Fort Wayne, Ind.
Filed May 17, 1961, Ser. No. 110,704
5 Claims. (Cl. 53—190)

3. A packaging device comprising a support member having two spreading means located one on each side of said support member for pivotal movement thereon, packaging means including container support means and a pushing means having engagement with material to be packaged and effecting translation thereof relatively to said support member, operating means for reciprocating said pushing means and also for simultaneously pivoting said two spreading means, a pivotal mounting for said support member about which the support member is



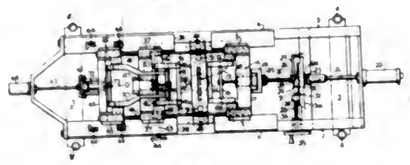
tipped in one direction together with said spreading means to displace a package therewith, and means providing compound movement of said operating means associated with said spreading means to provide pivotal movement of said spreading means within two transverse planes one of which includes the plane of said support member.

3,154,900
INFEED CONVEYOR FOR THE PREWRAP TABLE OF WRAPPING MACHINE
William F. Stremke, 4527 E. Calle del Norte, Phoenix, Ariz., and William F. Stremke, Jr., 3329 S. Springfield Ave., and Roman R. Pazderski, 3844 S. 15th Place, both of Milwaukee, Wis.
Filed Apr. 16, 1962, Ser. No. 187,496
4 Claims. (Cl. 53—206)



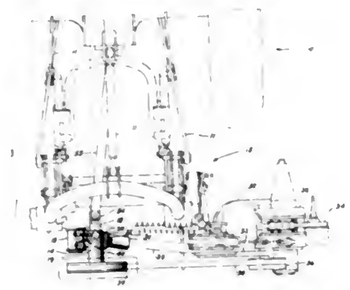
1. Package wrapping apparatus comprising:
(*a*) a manual prewrap station including means to position a stack of wrapping sheets,
(*b*) infeed conveyor means for feeding unwrapped packages of various lengths in spaced sequence toward said station and for depositing said packages successively at said station,
said infeed conveyor means further comprising:
(*c*) means for depositing said packages at a predetermined position with respect to the stack to facilitate the wrapping thereof,
(*d*) means for adjusting the infeed conveyor means with respect to said station and in the direction of movement of said infeed conveyor means to properly position the package with respect to the stack of wrapping sheets regardless of the length of the package.

3,154,901
MACHINE FOR DIVIDING PLASTIC TUBES FILLED WITH FLUID INTO VENDABLE CONTAINERS
Henry Milton Hayward, 19 Euston Road, Rydalmere, near Sydney, New South Wales, Australia, assignor of one-half to Leslie Alfred Humphrey, Rydalmere, New South Wales, Australia
Filed Aug. 2, 1962, Ser. No. 214,315
Claims priority, application Australia, Aug. 7, 1961, 7,762/61
6 Claims. (Cl. 53—373)



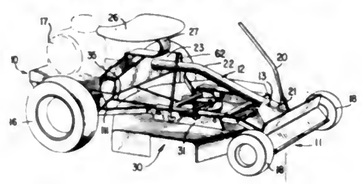
1. Machine for dividing plastic tubes filled with fluid into vendable containers, said machine consisting of two bed members mounted on a base, two saddles longitudinally slidably mounted on plates fixed to the bed members, a frame on each saddle, two pairs of journal pins mounted on each frame said pairs of journal pins having interengaging gears thereon and pairs of arms fixed thereto, each pair of arms having a tube gripping jaw fixed to and between them, one jaw of each pair having a limb thereon and a bridge connected to each limb, a pneumatic cylinder fixed to each frame, a plunger in each cylinder having a plunger rod connected to the adjacent bridge, means to actuate the plungers to open and close the jaws and means to intermittently reciprocate the saddles along the plates; an electric fusing unit for fusing a seam across a tube held by the tube gripping jaws, said electric fusing unit being located between the two pairs of tube gripping jaws, means to move said electric tube fusing unit into and out of fusing engagement with a tube held by the two pairs of tube gripping jaws and to actuate the electric apparatus of said tube fusing unit, and means to synchronize the operations of the several parts.

3,154,902
MOWER
Lawrence M. Halls, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 9, 1962, Ser. No. 215,839
5 Claims. (Cl. 56—25)



1. A mower comprising a frame adapted to be moved over the ground in a forward direction, a pintle carried by said frame, a sleeve member journalled on said pintle for pivotal movement about the axis of the pintle, a yoke member mounted on said sleeve member for pivotal movement relative thereto about an axis perpendicular to the axis of said pintle, said yoke member having a generally vertical planar surface thereon, a drag bar extending generally transverse to the direction of travel of said frame and having one end disposed laterally to one side of said frame, a cutterbar mounted on said one end of the drag bar and extending laterally beyond said one end of the drag bar, a mower driving head mounted on said drag bar and drivingly connected to said cutterbar, said driving head including a driven pulley, a plate having at least one generally vertical planar surface, means rigidly mounting said plate on the end of said drag bar opposite said one end with the generally vertical planar surface of the plate perpendicular to the axis of said drag bar, means releasably clamping said plate to said yoke member with the generally vertical planar surface of the plate abutting said generally vertical planar surface of the yoke member in a selective one of a plurality of angular positions relative to the axis of said drag bar thereby mounting said drag bar on said yoke member for angular adjustment about the axis of the drag bar to vary the fore-and-aft tilt of the cutterbar, a journal box mounted on said yoke member for pivotal movement relative thereto toward and away from said driven pulley, a drive pulley journalled in said journal box, an endless belt trained around said drive pulley and said driven pulley for driving said mower driving head from said drive pulley, adjustment means interconnected between said journal box and said yoke member for selectively pivoting said journal box toward and away from said driven pulley to adjust the tension of said endless belt, and means locking said journal box rigid with said yoke member to maintain constant tension on said endless belt.

3,154,903
CUTTER UNIT SUSPENSION ARRANGEMENT FOR POWER MOWERS
William R. Smith, McDonough, Ga., assignor to McDonough Power Equipment, Inc., McDonough, Ga., a corporation of Georgia
Filed Oct. 31, 1962, Ser. No. 234,468
12 Claims. (Cl. 56—25.4)

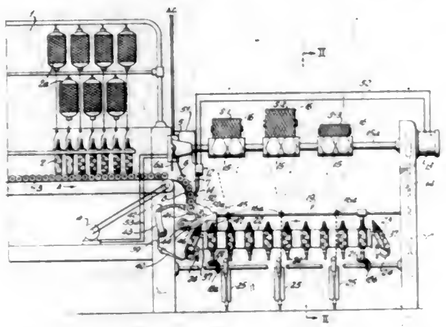


1. A power mower comprising in combination a traction unit including a carriage supported between a pair of traction wheels and a motor mounted on said carriage operably connected to said traction wheels,
a steering unit,
a longitudinal frame member extending between and interconnecting said steering unit with said traction unit, said longitudinal frame member including a pivotal connection to one of said units,
a cutter unit including
a housing,
a vertical shaft journalled in said housing,
a cutting blade on one end of said shaft and
a drive coupling to said motor on the other end of said shaft,
suspension means for said cutter unit comprising
a pair of front arms extending forwardly of said housing,
means pivotally connecting the forward end of said front arms to said steering unit,
a pair of rear arms extending rearwardly of said housing,
chains connecting the rearward ends of said rear arms to said traction unit so that when said frame member pivots about its pivotal connection to one of

said units the chain between one of said rear arms and said traction unit swings about an arc to elevate the rear edge portion of said cutter unit and pivots said cutter unit about said means connecting said front arms to said steering unit in an upward direction,

and means for effecting relative rotation of said front and said rear arm pairs in opposite directions to change the relative vertical position of said cutter unit with respect to said tractor.

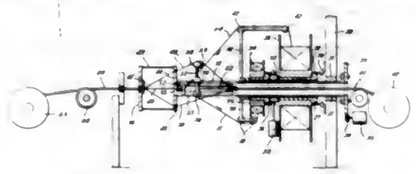
3,154,904
YARN SPINNING AND WINDING APPARATUS
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Jan. 13, 1961, Ser. No. 82,625
Claims priority, application Germany Jan. 14, 1960
6 Claims. (Cl. 57—1)



1. A yarn winding machine for automatically spinning and winding yarn into yarn packages from bobbins of material, comprising spinning apparatus having spindles for spinning said material into yarn and winding the same onto spinning cops, winding apparatus having spindles for winding yarn from said spinning cops into said yarn packages, conveying and storing means for transferring said spinning cops from said spinning apparatus to said winding apparatus, drive means for driving said conveying and storing means, and control means responsive to the absence of cops in said conveying and storing means and operably connected to said drive means for actuating the latter to drive said conveying and storing means when said control means is in responded condition due to said absence of cops, the winding capacity of the spindles of said winding apparatus per unit of time being from one to eighty times the maximum spinning capacity of the spindles of said spinning apparatus, comparing spindle by spindle.

3,154,905
CABLE CONDUCTOR REPLACEMENT APPARATUS
Thomas D. Grafton, Pasadena, and Lawrence D. Zepernick, Houston, Tex., assignors, by mesne assignments, to Vector Cable Company, Houston, Tex., a corporation of Texas
Filed June 27, 1962, Ser. No. 205,760
6 Claims. (Cl. 57—3.5)

1. Apparatus for replacing a strand from a wound assembly of strands comprising: a closing die, means mounting said closing die for rotation about its axis, means for guiding the wound assembly along a linear path to said closing die, means in advance of said closing die for diverting at least one strand from the assembly to a discard position, means for feeding a replacement strand through said closing die with the remainder of the assembly, spool means mounted about said guiding means for receiving the discard strand and for supplying the replacement strand, said guiding means being positioned along the center axis of said spool means, and means mounted for rotation about said guiding means for directing the replacement strand from said spool means to said feeding means and for winding the discard strand on said spool means, said directing and winding means both being rotated about said guiding means at the same speed.



3,154,906
APPARATUS FOR FALSE-TWISTING THERMOPLASTIC YARN
Leendert van Assendelft and James Watt Ijsbrand, Heljnis, Arnhem, Pieter Klaas Noordenbos, Ede, and Hendrik Wormsbecher, Arnhem, Netherlands, assignors to N.V. Onderzoekingsinstituut Research, Arnhem, Netherlands, a corporation of the Netherlands
Filed Nov. 22, 1960, Ser. No. 71,081
Claims priority, application Netherlands Dec. 1, 1959
11 Claims. (Cl. 57—34)

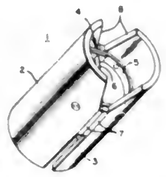


1. In an apparatus for imparting a curl to yarn, a false-twisting device comprising a flexible endless belt, means for driving said endless belt, and means for guiding the yarn to be false-twisted into contact with said endless belt, a portion of said yarn guiding means defining a surface, which surface is positioned adjacent said endless belt on the side of said belt opposite to that which is contacting said yarn so that said belt is precluded from bending under pressure exerted on said belt by said yarn.

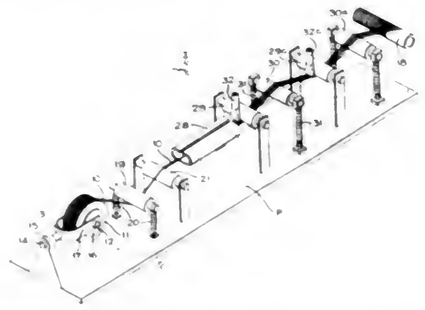
3,154,907
YARN COLLECTING DEVICE
Don E. Fisher, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware
Filed July 5, 1963, Ser. No. 292,919
9 Claims. (Cl. 57—34)

7. A yarn packaging device comprising in combination:
(*a*) a pivotal spool,
(*b*) a member for forming a yarn package therearound provided with means at one end thereof for connection to a driving means and receiving means at its opposite end thereof for receiving said pivotal spool,
(*c*) said pivotal spool including a pair of juxtaposed semi-cylindrical members being pivotally connected therebetween and having one end thereof adapted for mounting within said receiving means of said member and for collecting yarn at its opposite end,

(*d*) hinge means pivotally connecting said pair of juxtaposed semi-cylindrical members,
(*e*) recess means formed in said pair of juxtaposed semi-cylindrical members at the yarn collecting end thereof,
(*f*) said yarn collecting end of said pair of juxtaposed semi-cylindrical members normally projecting outwardly from said member, and
(*g*) resilient biasing means secured on and positioned between and intermediate the ends of said pair of juxtaposed semi-cylindrical members for biasing said pair of juxtaposed semi-cylindrical members against said receiving means of said member to lock said spool therein.

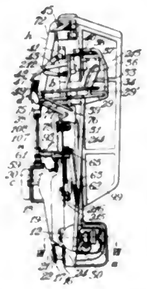


3,154,908
APPARATUS FOR TREATING GLASS ROVING
William H. Cilker, Los Gatos, and William A. Shrode, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 10, 1961, Ser. No. 125,915
5 Claims. (Cl. 57—35)



2. In an apparatus for applying resin reinforced glass fiber roving to an object, means rotatably mounting a spool of roving which has fibers treated with a binding agent, means for exerting a pull on said roving to remove it from said spool, a heater disposed between said spool and said pulling means, means for guiding the roving through said heater at a predetermined elevation, a first guide roller disposed between said pulley and said heater and having a roving-receiving guide surface disposed at a different elevation than said predetermined elevation so that the roving will be bent to loosen the binding agent from the fibers before it enters said heater, means resiliently mounting said first roller for movement in a direction to tension the roving, a second guide roller disposed on the downstream side of said heater and having a roving-receiving guide surface disposed at a different elevation than said predetermined elevation so that heated roving leaving said heater will be tensioned and spread on said guide surface, and means for applying uncured resin to the fibers of said roving to condition the fibers for application to an object.

3,154,909
APPARATUS FOR AUTOMATICALLY EXCHANGING BOBBINS IN SPINNING MACHINES
Yukio Urano, Nishinomiya-shi, Shinichi Hamahata, Nishishigino, Joto-ku, Osaka-shi, Tamotsu Yosano, Suita-shi, and Teruo Fujihara, Ikuno-ku, Osaka-shi, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan, and Kanegafuchi Kikai Kogyo Kabushiki Kaisha, Hyogo-ken, Japan, a corporation of Japan
Filed May 23, 1960, Ser. No. 31,198
Claims priority, application Japan, Sept. 26, 1959, 34/30,784; Oct. 17, 1959, 34/33,019, 34/33,020; Feb. 5, 1960, 35/5,410
7 Claims. (Cl. 57—52)



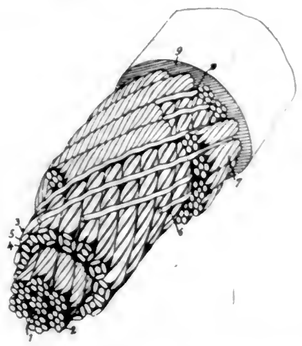
1. An apparatus for automatically exchanging bobbins on a spinning machine, said spinning machine having a ring rail, a plurality of spindles each removably carrying a bobbin having a head, a plurality of spinning means for spinning yarn, each of said spinning means being associated with one of said bobbins, and means for guiding said yarn onto said bobbins whereby empty bobbins are wound with yarn until they are full, said apparatus comprising auto-counter means for indicating when said bobbins are full, means responsive to said auto-counter means for stopping the operation of said spinning machine, means for lowering said ring rail, doffing means for removing each of the full bobbins from said spindles, automatic bobbin exchanger means for replacing each of the doffed full bobbins with an empty bobbin, means to restart said spinning machine when said empty bobbins are replaced, and conveying means for carrying said full bobbins away from the spinning machine, said doffing means comprising a catcher having a top and a bottom and having means in said bottom for gripping the head of one of said bobbins, a reversed T-shaped lever having a crossbar with two ends and an integral arm intermediate said ends extending perpendicularly from said crossbar, one end of said crossbar being pivotally connected to said catcher adjacent its bottom, the other end of said crossbar being pivotally connected to said apparatus, a connecting lever having two ends, a crank disc having a periphery, one end of said connecting lever being pivotally connected to said crossbar, the other end of said connecting lever being pivotally connected to the periphery of said crank disc, means for rotating said crank disc, an auxiliary lever having two ends, one end of said auxiliary lever being slidingly connected to the end of said integral arm remote from said crossbar, the other end of said auxiliary lever being pivotally connected to said catcher adjacent its top, a cam plate having a camming groove therein, a cam roller rotatably connected to said auxiliary lever intermediate its ends, said cam roller being maintained in cam-following engagement with said camming groove, a stop roller rotatably connected to said crossbar intermediate its ends, a first oscillating lever having two ends, one end of said first oscillating lever being pivotally connected to said apparatus, said first oscillating lever being elastically biased in rolling relationship with said

stop roller, a second oscillating lever having two ends, one end of said second oscillating lever being pivotally connected to said apparatus, the other end of said second oscillating lever having a pick-off plate fixed thereto, a connecting rod having two ends, one end of said connecting rod being pivotally connected to said first oscillating lever and the other end of said connecting rod being pivotally connected to said second oscillating lever, whereby said pick-off plate is maintained in contact with a full bobbin held by said catcher and as said crank disc is rotated said full bobbin is moved up and away from its spindle, and means for releasing said full bobbin from said catcher.

3,154,910
STRANDED SPIRAL ROPE

Alfred Dietz, 30 Damaschkestrasse, Neustadt, near Coburg, Germany

Filed May 3, 1962, Ser. No. 192,156
Claims priority, application Germany May 5, 1961
2 Claims. (Cl. 57—149)



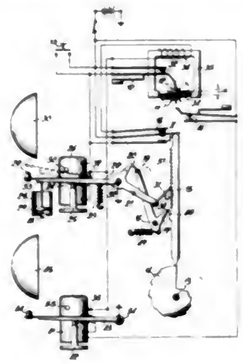
1. A rope comprising, in combination:
(*a*) a rope core formed of at least one spirally twisted strand,
(*b*) a layer of outer spirally twisted strands surrounding the core and spirally wound about the core in a direction opposite to that of the core, the outer strands defining lateral spaces therebetween,
(*c*) supporting wires running parallel to the outer strands and arranged between each two of adjacent ones of the outer strands between the core and the strands for maintaining the lateral spaces, each supporting wire and the two adjacent outer strands defining circumferentially spaced and radially extending gaps of dovetailed cross section, and
(*d*) a plastic sheathing completely surrounding the layer of outer strands and having projections extending into and filling said gaps down to the supporting wires.

3,154,911
STRIKING MECHANISMS FOR CLOCKS

Oswald Tschudin, Hauptstrasse 18, Weil am Rhein, Germany

Filed June 19, 1963, Ser. No. 289,785
Claims priority, application Germany June 22, 1962
9 Claims. (Cl. 58—38)

1. A striking work for clocks comprising in combination:
(*a*) a rotatable cam disc having sectors of progressively varying radii;
(*b*) a movable toothed sensing rack cooperating with said cam disc, said rack having an initial position relatively remote from said cam disc and a plurality of positions relatively close to said cam disc and determined by the angular position of said cam disc;
(*c*) means for resetting said rack in successive steps to said initial position thereof from any of said plurality of positions thereof including an electromagnet, an armature operatively related to said electromagnet, a pivotable lever operated by said armature and means providing a resetting force for said lever;

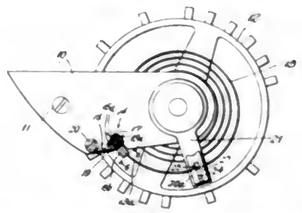


(*d*) a striker under the control of said lever;
(*e*) a sound emitting body arranged in the path of movement of said striker;
(*f*) a latch cooperating with the teeth of said rack; and
(*g*) abutment means under the control of said lever for maintaining said latch out of engagement with the teeth of said rack when said rack is in said initial position thereof and said armature is spaced from said electromagnet.

3,154,912
MEANS FOR MOUNTING AND REGULATING THE OUTER END OF A SPIRAL SPRING

David Pinkas, 51 Wall St., Norwalk, Conn.

Filed Jan. 22, 1963, Ser. No. 253,122
12 Claims. (Cl. 58—113)

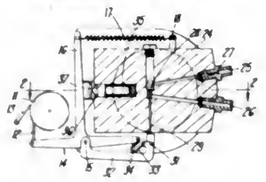


1. Means for mounting and controlling a spiral spring in an instrument having a rotor connected to the inner end of said spring comprising a bridge supporting the rotor and having a slot therein, opening in the top surface thereof, a clip on the outer end portion of said spring disposed in said slot in said bridge, and a regulator arm mounted on the bridge to pivot about the axis of the rotor, said arm having a portion projecting from the side of the bridge and having a readily releasable means having a portion depending from the underside of the arm for embracing a portion of the spring for regulating the effective length of said spring and an actuator connected to said readily releasing means and overlying said arm, said clip and said actuator being exposed and accessible to release said spring from the bridge and arm prior to the removal of said bridge and regulator arm from the instrument.

3,154,913
MEANS FOR MAINTAINING THE MOTION OF A TRAIN OF WHEELWORK

William Hamilton Shortt, Exeter, England, assignor to Devon Instruments Limited, Exeter, England, a British company

Filed Apr. 2, 1962, Ser. No. 184,316
Claims priority, application Great Britain July 21, 1961
4 Claims. (Cl. 60—7)

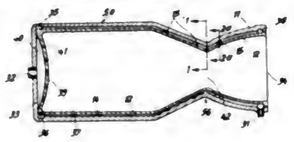


1. Apparatus for periodically re-energizing a maintaining spring for a train of wheelwork, which apparatus comprises a maintaining spring, a chamber, a member responsive to gas pressure in the chamber, means for connecting a pressure gas supply to the chamber, an energy-storing device, coupling means for coupling the energy-storing device to the maintaining spring for the re-energizing of the maintaining spring, an operative connection between the said device and the pressure-responsive member whereby the device can be energized by the pressure-responsive member, a gas outlet from the chamber, an outlet valve controlling the said gas outlet, valve-operating means operable to close the outlet valve so that gas pressure builds up in the chamber and causes the pressure-responsive member to energize the energy-storing device and operable to open the outlet valve to release the gas pressure in the chamber, thereby permitting the energy-storing device to give up its energy to the maintaining spring, and control means operatively connected to the valve-operating means and responsive to de-energization of the maintaining spring, the said control means causing the valve-operating means to open the outlet valve when the maintaining spring has become de-energized to a predetermined extent and to close the outlet valve when the maintaining spring has been energized.

3,154,914
ROCKET ENGINE CONSTRUCTION

Karl Stöckel, Ottobrunn, Munich, Germany, assignor to Bolkow-Entwicklungen Kommanditgeselischaft, Ottobrunn, near Munich, Germany

Filed Dec. 8, 1960, Ser. No. 74,706
Claims priority, application Germany Dec. 12, 1959
14 Claims. (Cl. 60—35.6)

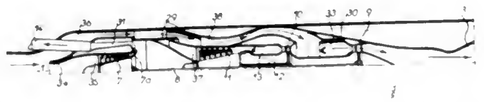


1. A rocket combustion chamber for liquid fuels comprising a jacket of two superimposed walls, the inner wall being provided with angularly spaced projecting ribs defining cooling channels therebetween, said ribs extending longitudinally along the complete length of said inner wall, said cooling channels being of substantially rectangular configuration, said inner wall having a thickness smaller than 2 mm., the width of said channels measured between ribs being less than 2 mm. the height of said channels measured from the inner wall to the top of the adjacent rib being larger than the width of said cooling channels and the width of said cooling channels being substantially equal to the thickness of said inner wall measured from the interior of said inner wall to said cooling channels.

3,154,915
TURBINE JET ENGINE

Konrad Eichholtz, Dammarie-les-Lys, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

Filed Feb. 5, 1962, Ser. No. 171,212
Claims priority, application France, Feb. 6, 1961, 851,793
4 Claims. (Cl. 60—35.6)

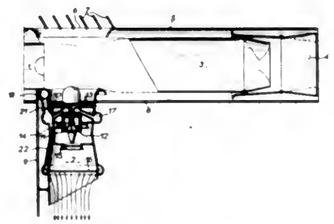


1. A jet propulsion power plant comprising a duct with an air intake at one end thereof and a nozzle at the other end thereof, and, inside said duct: a motive gas generator adapted to suck air from said intake and discharge motive gas, a turbine-compressor assembly mechanically independent of said gas generator, the compressor of said assembly being adapted to suck air from said intake and to discharge outside said duct while the turbine of said assembly is adapted to be fed with motive gas from said gas generator and to exhaust toward said nozzle, a conduit by-passing said gas generator and adapted to lead air from said intake to a point intermediate said gas generator and said turbine, a combustion chamber connected with the inlet of said turbine and adapted to be fed with air from said by-pass conduit, and first valve means for selectively directing air from said intake into said gas generator or said by-pass conduit and combustion chamber.

3,154,916
PROPULSIVE AND LIFTING CONVERTIBLE JET ENGINE UNIT

Konrad Eichholtz, Dammarie-les-Lys, Seine et Marne, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

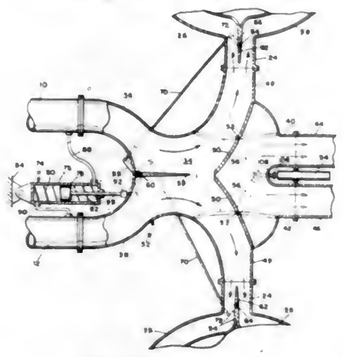
Filed July 26, 1962, Ser. No. 212,592
Claims priority, application France, Aug. 4, 1961, 870,098
8 Claims. (Cl. 60—35.54)



1. A jet propulsion engine of the kind having in cooperative combination an air-intake casing, a rotary air-driving machine and a gas-expansion nozzle, said engine comprising a stationary front duct portion which includes said air-intake casing, a stationary rear duct portion which includes said gas-expansion nozzle, a pivotable central duct portion which includes said rotary machine and which is coextensive in normal configuration with said stationary duct portions and intermediate the same, said central duct portion being pivotally linked to said stationary front duct

portion about a transverse axis through the lower part of the connecting section of said front and central duct portions, and non-pivotable means external to said pivotable duct portion for supplying driving power to said rotary machine therein.

3,154,917
DIVERTER FOR DUCTED FAN AIRCRAFT
David Williamson, Cardiff, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Apr. 15, 1963, Ser. No. 273,195
6 Claims. (Cl. 60—35.54)



5. In an aircraft having ducted fans, turbine means connected to said fans to drive the fans, and a plurality of gas generating sources for operation of said turbine means, a gas flow diverter comprising:

a chamber having inlets for connection to said gas generating means and outlets for generally straight-through gas flow;

lateral ducts extending from said chamber between said inlets and outlets;

diverter valve means in said chamber operable to close said lateral ducts and said outlets selectively;

said lateral ducts having bifurcated gas distributing portions communicating with one of said turbine means;

selector valves in said bifurcated portions and being operable to close either portion selectively;

blocking valve means in said chamber adjacent said inlets;

pressure differential sensing means adjacent said inlets to detect differences in pressure therebetween;

actuating means interconnecting said sensing means with said blocking valve means to block an inlet at which a pressure drop is detected;

said selector valves being coupled to said blocking valves to close one side of each of said bifurcated portions when one of said inlets is blocked;

and lock-out means connected between said diverter valves and said pressure differential sensing means to prevent operation of said blocking valve when the diverter valves are closing said lateral ducts.

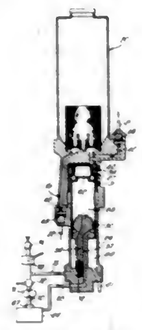
3,154,918
GAS TURBINE PLANT
Sven-Olof Kronogård, Goteborg, Sweden, assignor to Ab Volvo, Goteborg, Sweden, a corporation of Sweden
Filed Mar. 12, 1962, Ser. No. 178,884
5 Claims. (Cl. 60—39.16)

3. A gas turbine power plant comprising a first turbine, a compressor driven by said first turbine, a combustion chamber, means for conveying air compressed by said compressor to said combustion chamber and for conveying combustion gases from said combustion chamber as motive fluid to said first turbine, a second turbine including a rotatable guide wheel and a turbine wheel, means for conveying gases leaving said first turbine to said second turbine, a planetary gearing comprising a stationary planet carrier, at least two planet wheels journalled in said carrier and meshing with each other, a first sun gear meshing with one of said planet wheels and a second sun gear meshing with the other of said planet wheels, a gear wheel meshing with one of said planet wheels, said guide wheel and said turbine wheel of said second turbine being



connected one to each of said sun gears, an output shaft connected to said gear wheel, a free-wheel device provided between said first sun gear and said guide wheel and permitting transfer of torque from said guide wheel to said turbine wheel of said second turbine via said planetary gearing, a brake for said guide wheel and a clutch device for connecting said turbine wheel via said planetary gearing to said guide wheel to drive said guide wheel in the same direction as said turbine wheel.

3,154,919
OIL DISCHARGE PUMP FOR A GAS TURBINE ENGINE
John Michael Storer Keen, Allestree, James Reginald Simpson, Littleover, and Geoffrey Alan Kenneth Pope, Etwall, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Feb. 7, 1963, Ser. No. 256,874
4 Claims. (Cl. 60—39.08)



4. In a gas turbine engine comprising rotatable members, shafting on which said rotatable members are mounted, a first and a second bearing in which said shafting is journalled, combustion equipment, a source of fuel, and a fuel pump; an oil discharge pump, said oil discharge pump comprising a cylinder, a first and a second piston mounted within said cylinder, a first spring disposed between first and second pistons and urging said first piston towards a predetermined position, in which there is a first space in the cylinder to one side of the first piston, a second spring disposed between said second piston and an adjacent end of the cylinder, and urging said second piston towards a location in which it is spaced both from the first piston and from said adjacent end of the cylinder, a second space being defined between said second piston and said end of the cylinder, a first oil inlet duct and a first oil outlet duct both of which communicate with said first space, first oil inlet valve which controls flow through the first oil inlet duct and which is urged towards the open position, a first oil outlet valve which controls flow through the first oil outlet duct and which is urged towards the closed position, a second oil inlet duct and a second oil outlet duct both of which communicate with said second space, a second oil inlet valve which controls flow through the second oil inlet duct and which is urged towards the open position, and a second oil outlet valve which controls flow through the second oil outlet duct and which is urged towards the closed position, means for causing said fuel pump, which communicates with the other side of said first piston, to pump fuel under high pressure to the other side of said first piston to move said first piston and thus decrease the size of said first space, such movement of the first piston increasing the pressure of the oil in the first oil inlet and first oil outlet ducts so as to close the first oil inlet valve, open the first oil outlet valve, and force a shot of oil out through the first oil outlet duct, to said first bearing, movement of the first piston also causing movement of the second piston, and thus decreasing the size of said second space so as to close the second oil inlet valve, open the second oil outlet valve, and force a shot of oil out through the second oil outlet duct to said second bearing.

3,154,920
CATALYTIC IGNITER
Dudley Owen Nash and John P. Selmeier, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Nov. 30, 1961, Ser. No. 156,088
8 Claims. (Cl. 60—39.82)



1. In a high velocity, continuous flow, combustible gas stream:

a flameholder having spaced walls creating a region of local flow turbulence therebetween;

a support member including a hollow, generally rectangular body portion arranged at right angles to the gas stream and having an opening therein permitting the flow of combustible gases therethrough, and at least one leg portion extending from said body portion;

ignition means retained in said body portion, said ignition means comprising a flow-permeable catalytic element;

refractory material interspersed between the catalytic element and the body portion to prevent contact therebetween;

and means attaching said support member to the flameholder so that said body portion is outside the region of local turbulence and a stream of cooling gases flows between the support member and the flameholder.

3,154,921
FLUID PRESSURE SYSTEM AND CONTROL
John A. Junck and James E. Scheidt, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 19, 1962, Ser. No. 167,273
2 Claims. (Cl. 60—52)

1. In a fluid pressure control for a vehicle hydraulic steering system having at least one steering jack which operates to steer the vehicle at a rate determined by the pressure of the working fluid applied thereto, the combination comprising;

a source of hydraulic working fluid;

a first pump disposed to draw fluid from said source and deliver it to a first chamber;

a second pump disposed to draw working fluid from said source and deliver it to a second chamber;

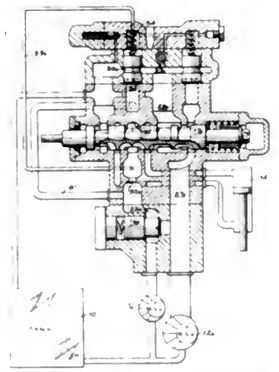
check valve means disposed between the first and second chambers and operative to form communication therebetween in response to the pressure in the first chamber exceeding that in the second chamber by a predetermined amount;

a third chamber in communication with the second chamber through a restrictive orifice;

selector valve means communicating with the third chamber, the steering jack, and the first chamber;

relief valve means hydraulically disposed between said selector valve means and said source;

said selector valve means having one position in which the third chamber communicates with the steering



jack and the first chamber communicates with said relief valve whereby the pressure in said first chamber is prevented from building up and opening said check valve, such that only the fluid from said second pump is directed to the steering jack, resulting in a relatively slow vehicle steering rate;

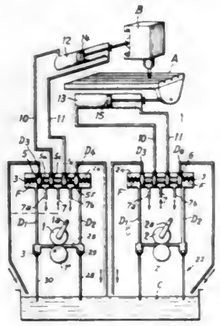
said selector valve having another position in which communication is established between the third chamber and the steering jack, and communication between the first chamber and said relief valve is blocked whereby pressure builds up in said first chamber causing said check valve to open and the output of said first pump to combine with that of said second pump in operating the steering jack, and thereby give rise to a relatively fast steering rate; and

means responsive to a pressure drop across the orifice between the second and third chambers of a magnitude in excess of a predetermined value to relieve fluid from the second chamber and thereby maintain the steering pressure constant.

3,154,922
HYDRAULIC CONTROL ARRANGEMENT FOR MOVING ELEMENTS OF A MACHINE TOOL
Rolf Glaser, Rorschach, Switzerland, assignor to Starrfrasmaschinen AG., Rorschacherberg, Switzerland
Continuation of abandoned application Ser. No. 626,371, Dec. 5, 1956. This application Feb. 8, 1962, Ser. No. 171,916
6 Claims. (Cl. 60—52)

1. A fluid actuated control for displacing parts such as machine elements of a machine tool comprising a working cylinder, a piston displaceable in said working cylinder operably connectable to a machine element to shift the aforesaid element in accordance with displace-

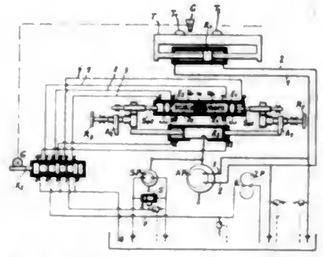
ment of said piston, and means for applying a first fluid under pressure to said working cylinder selectively to alternate sides of said piston to displace said piston to shift the machine element, including a control element having a sliding control valve therein for controlling the direction of the first fluid to the respective sides of said working cylinder, and a rotatable hand crank operated fluid pump connected to said control element and rotatable in one direction for supplying a second fluid to shift the control valve to cause said first fluid to be directed to one side of said piston in said working cylinder and to move said piston and machine element in one direction, said hand operated fluid pump being rotatable in an opposite direction for supplying said second fluid to shift said control valve to cause said first fluid to be



directed to the other side of said piston to move said piston and machine element in an oposite direction, drain-off lines provided for said control element, said drain-off lines delivering the first fluid returned from said working cylinder directly back to a reservoir, respective pipe means communicating said hand crank operated fluid pump with said control element for selectively delivering second fluid to opposite ends of said control element, and respective return pipe line means for said second fluid operably connected with said control element and cooperating with said respective pipe means, each of said respective return pipe line means being in fluid flow communication with its associated pipe means during such time as second fluid is flowing through said associated pipe means for displacing said control valve.

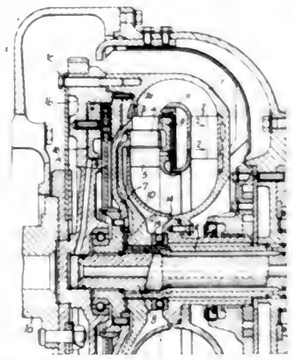
3,154,923
HYDRAULIC DRIVE FOR PRODUCING LINEAR INTERMITTENT RECIPROCATORY MOTIONS OF A MACHINE TOOL
Fritz Wegerdt, Scherzachstrasse 2, Weingarten, Wurttemberg, Germany
Filed July 27, 1962, Ser. No. 212,814
Claims priority, application Germany, July 29, 1961, W 30,437
10 Claims. (Cl. 60—52)

1. A hydraulic drive for producing linear intermittent reciprocatory motions of a machine tool, comprising a reciprocatory hydraulic working motor having opposite working surfaces and said motor being adapted to move the tool, a source of working pressure medium having an adjustable volumetric output, a hydraulically operated reversing device movable between two positions and cooperating with said source to cause flow of said medium from the source to opposite working surfaces of said motor alternately for reciprocating the latter, an auxiliary source of pressure medium of constant volume, means for producing a reversing control impulse at a predetermined position of the machine tool during its movement in each direction, a predistributing slide valve movable between two positions in response to an impulse for directing flow of pressure medium between the auxiliary source and reversing device to cause movement thereof, and a time relay having a time constant rendered operative in response to movement of the slide valve to at least one of



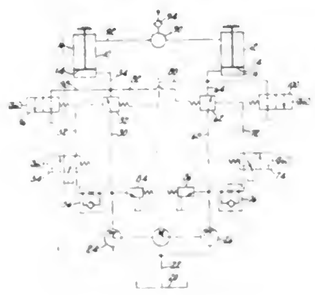
the positions for delaying flow of pressure medium between the auxiliary source and reversing device for the duration of the time constant, and means for adjusting the time delay constant of the relay in inverse ratio to the volumetric output of the source of working pressure.

3,154,924
HYDRODYNAMIC TORQUE CONVERTER
Sven-Olof Kronogård, Goteborg, Sweden, assignor to AB Volvo, Goteborg, Sweden, a corporation of Sweden
Filed Dec. 22, 1959, Ser. No. 861,300
Claims priority, application Sweden, Dec. 23, 1958, 11,998/58
1 Claim. (Cl. 60—54)



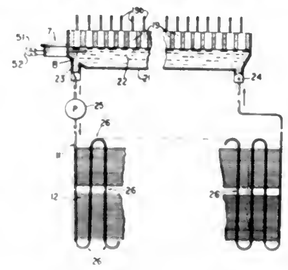
A hydrodynamic torque converter comprising a rotatable shell forming part of an annular chamber for receiving a working fluid, an annular core in said chamber, said annular chamber and core defining a closed toroidal fluid flow path, said toroidal flow path comprising a first radially extending bladed portion whose width increases in the direction of fluid flow, a second radially extending bladed portion having flat walls, and unbladed inner and outer bend portions interconnecting said first and second radially extending portions, said inner and outer unbladed bend portions being formed with a contraction in the direction of fluid flow and said rotatable shell forming also the outer boundary wall of the toroidal flow path at said outer bend portion, an input shaft connected to said shell for rotating the same, said input shaft being located at the side of said annular chamber closest to said first radially extending portion of said toroidal flow path, impeller blades secured to said shell and constituting the blading of said second radially extending portion of said toroidal flow path, a turbine disc mounted for rotation coaxially with said input shaft, a first rim of turbine blades secured to said turbine disc and constituting part of the blading of said first radially extending portion of said toroidal flow path, said first rim of blades having an inlet directed radially inwards, an output shaft connected directly to said turbine disc, a reactor disc mounted for rotation coaxially with said input shaft and located intermediate said turbine disc and said first radially extending portion of said toroidal flow path, reactor blades secured to said reactor disc and which are also located in said first radially extending portion of said toroidal flow path and radially inwards of said first rim of turbine blades, said annular core having one element thereof secured to the tips of the blades of said first turbine blade rim and extending radially inwards beyond the tips of said reactor blades, a second rim of turbine blades located in said first radially extending portion of said toroidal flow path, said second rim of turbine blades being carried by said radially inward extending element of said core and being located radially inward of said reactor blades, and a rotatable shroud carried by said second rim of turbine blades, said shroud forming that part of said annular chamber represented by the outer boundary wall of said fluid flow path at the inner bend portion thereof and which serves to deflect the fluid flow axially in the direction away from said turbine disc thereby establishing a corresponding axial thrust having a direction counter to and compensating the axial thrust established on said turbine disc.

3,154,925
POWER PLANTS
Raymond A. De Vita, Winchester, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Jan. 9, 1963, Ser. No. 250,362
3 Claims. (Cl. 60—97)



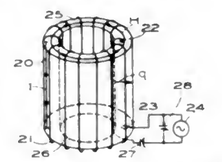
1. In a power plant comprising a pair of hydraulic motors adapted to act simultaneously, a pump for each of said motors having inlet and outlet passages with the inlet passage connected to a fluid reservoir, a pair of throttle valves each controlling the supply of pressure fluid from a pump to a motor and having a valve element movable between an open position in which pressure fluid is supplied to the motor and a closed position in which the supply of fluid is prevented, a pair of delivery lines for supplying fluid from each pump outlet, and means for operating the valve element of each throttle valve connected for response to the pressure of the fluid in the delivery passage of the valve and the pressure of the fluid in the opposite hydraulic motor for urging the valve element toward its closed position in accordance with the fluid pressure in the opposite motor and to urge the valve element in the opposite direction in accordance with the pressure in its delivery passage.

3,154,926
COOLING BLANKET
Max L. Hirschhorn, 5601 13th Ave., Brooklyn 19, N.Y.
Filed Sept. 25, 1962, Ser. No. 226,092
4 Claims. (Cl. 62—3)



3. A cooling blanket comprising:
heat insulated means for conducting a fluid coolant,
a fluid coolant in said means,
heat conductive means and means thermally connecting the heat conductive means to the coolant,
said heat conductive means being generally distributed throughout a plane of the blanket.

3,154,927
HEAT PUMPS
Ralph Simon, Columbus, Ohio, assignor to Battelle Memorial Institute, Columbus, Ohio, a corporation of Ohio
Filed Feb. 17, 1964, Ser. No. 345,486
13 Claims. (Cl. 62—3)

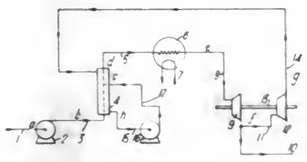


1. Apparatus for pumping heat unidirectionally comprising: an essentially annular member of material for which the Ettingshausen effect figure of merit is substantial; means for providing an alternating magnetic field in the member in a direction orthogonal to its radial direction; and means for providing in the member an alternating current of the same frequency and substantially the same phase as in the magnetic field and in a direction orthogonal thereto; heat thus being pumped in the member in the direction orthogonal to the magnetic field and to the current.

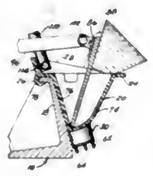
3,154,928
GASIFICATION OF A LIQUID GAS WITH SIMULTANEOUS PRODUCTION OF MECHANICAL ENERGY
Alexander Harmens, Purley, Surrey, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
Filed Mar. 6, 1963, Ser. No. 263,187
Claims priority, application Great Britain Apr. 24, 1962
5 Claims. (Cl. 62—53)

1. A method of gasifying a liquefied gas to a desired delivery pressure and obtaining mechanical energy which comprises raising the pressure of the liquefied gas to a pressure substantially higher than the desired delivery pressure, passing the pressurized liquefied gas in heat exchange with a first heating fluid and thereafter with a second heating fluid so that the pressurized liquefied gas is converted into high pressure gas, expanding the high pressure gas to the

desired delivery pressure in an expansion machine so that mechanical energy is produced, delivering a part of said expanded gas, passing a part of said expanded gas to a second expansion machine and expanding it further to a relatively low pressure so that mechanical energy is produced, using the expanded gas of relatively low pressure as the first heating fluid so that it condenses, raising the pressure of the condensate formed to the pressure of the pressurized liquefied gas and adding said pressurized condensate to the pressurized liquefied gas.

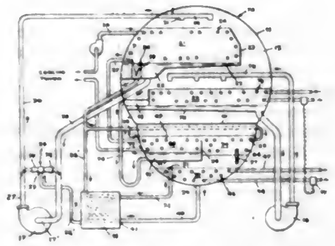


3,154,929
AUTOMATIC ICE CUBE MAKING APPARATUS
Alfred E. Little, Glendale, Mo., assignor, by mesne assignments, to White-Rodgers Company, a corporation of Missouri
Filed June 5, 1961, Ser. No. 114,955
12 Claims. (Cl. 62—137)



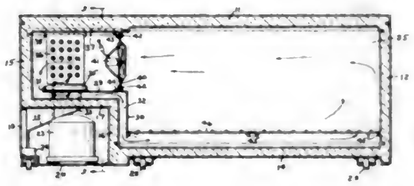
4. Ice cube making apparatus including an elongated ice cube forming tray comprising a row of ice forming cavities of generally rectangular form in plan in which the front and rear walls of the cavities diverge upwardly from a longitudinal bottom line of junction and in which the rear walls are flat, a longitudinally arranged ejector plate having a continuous upper bar portion extending along and above said row of cavities and projecting slightly beyond said row of cavities at each end, said ejector plate including a row of articulated, downwardly extending, flat blades each entering a cavity and extending downward therein to the line of junction of said front and rear cavity walls, support means for said tray, means pivotally mounting said ejector plate in a manner to effect the pivoting thereof about the lower edges of said blades on a longitudinal axis coincident with said junction line of said cavity walls, said means comprising a pair of upright arms, one at each end of said tray, pivotally supported at their lower ends on pivots mounted on extensions of said suppotrt means which are in axial alignment with said cavity wall junction line, and said arms being rigidly attached at their upper ends to said projecting ends of said bar portion of said ejector plate, and means for oscillating said ejector plate including a driving motor, a crank driven by said motor, and a generally horizontal connecting rod pivotally connected at one end to said crank and at its other end to said bar portion of said ejector plate at an intermediate point along its length.

3,154,930
REFRIGERATION APPARATUS
David Aronson, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,368
18 Claims. (Cl. 62—148)



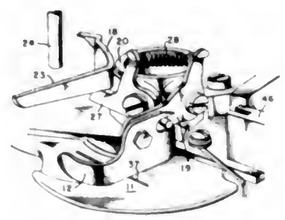
1. An absorption refrigeration machine of the vacuum type connected to form a closed saline solution circulatory system comprising; a first horizontally disposed elongated shell defining a higher pressure chamber, a generator cooperating with said shell holding a supply of strong solution, and a condenser disposed in and cooperating with said higher pressure shell to receive vaporized refrigerant from the generator to be condensed therein, a second horizontally disposed elongated shell defining a lower pressure chamber, an absorber cooperative with said second elongated shell and holding weak solution, and an evaporator positioned in and cooperative with said lower pressure shell and arranged to pass refrigerant vapors to the absorber, said second shell being positioned with relation to the first shell to permit a gravity flow of weak solution from the absorber to the generator, conduit means communicating the weak solution holding portion of said absorber with the generator for conducting said gravity flow of weak solution, and pumping means including a pump having a suction connected to said absorber and to said generator respectively and receiving streams of solution therefrom, said pump having a discharge outlet connected to said absorber and passing said solution thereto.

3,154,931
REFRIGERATOR AIR CIRCULATING ARRANGEMENT
Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Company, doing business as Victory Metal Manufacturing Corporation, Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed June 21, 1963, Ser. No. 289,645
2 Claims. (Cl. 62—279)



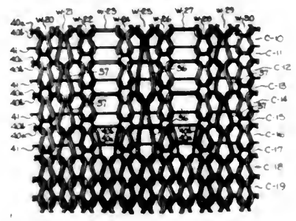
1. A refrigerator apparatus comprising in combination,
(*a*) a thermally insulated refrigerated compartment formed by front, back, top, bottom and end walls one of which has a door fitted therein for providing access to the compartment interior, a portion of said compartment bottom wall at one end thereof being vertically upwardly offset from the remaining major portion of the bottom wall and forming an insulated horizontal platform extending from front to back of the compartment and from the said one end inward to the upper end of a vertically extending insulated wall which latter is joined at its lower end to the said major portion of the bottom wall,
(*b*) an L-shaped member extending from front to back of the compartment and having a horizontal leg disposed in above-lying substantially parallel planar spaced relation to said insulated horizontal platform with one end of said leg terminating short of the proximate compartment end wall, and having a vertical leg disposed in laterally spaced substantially parallel planar relation to said insulated wall extending vertically downward from said horizontal platform with one end of said leg terminating above the said major portion of the bottom wall, said L-shaped member forming a duct extending from front to back of the compartment with said insulated platform and vertically extending wall,
(*c*) a cooling coil extending substantially from front to back of the compartment, downward substantially from the top wall to the horizontal leg of the said L-shaped member, and spaced inward from the end wall proximate to the end of said horizontal leg,
(*d*) blower means positioned above the horizontal leg of said L-shaped member between said cooling coil and the major portion of said compartment effective to draw air from the top region of the compartment and blow the same across the cooling coil and downward into the aforesaid duct for discharge back into the compartment at the lower end of the duct and across the entire bottom surface of the compartment, and
(*e*) horizontal open rack means spaced above the compartment bottom for supporting articles to be refrigerated to thereby insure free circulation of cooled air emerging from the duct uniformly across the bottom of and upward through the compartment.

3,154,932
YARN HOLDING DEVICE
Noble T. King, Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,706
4 Claims. (Cl. 66—145)



1. A device for holding a filament, comprising a supporting member, a leaf spring attached at one end thereof to the supporting member, the other end of said leaf spring having an edge thereof in engagement with said supporting member and extending at an angle therefrom, resilient means engaging the leaf spring for urging said edge of said leaf spring into engagement with the supporting member, and means movably mounted on the supporting member for engaging and moving the filament into a position between said leaf spring and said supporting member.

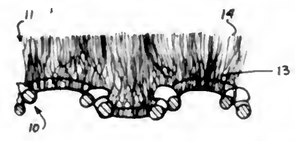
3,154,933
SOCK HAVING A BULKY KNIT CUFF
Otis W. Holder, Mount Airy, N.C., assignor to Patent-Hose Corporation, Burlington, N.C., a corporation of North Carolina
Filed Apr. 26, 1962, Ser. No. 190,286
14 Claims. (Cl. 66—172)



13. A stretchable mock rib stocking cuff comprising
(*a*) repeated groups of four successive courses wherein each course of each group has a predetermined number of wales and including
(1) alternating single courses knit of body yarn,
(2) intervening single courses knit of stretchable yarn,
(3) certain adjacent wales of each course being formed of normal stitch loops, and
(4) single wales positioned between said certain adjacent wales having a single elongated body yarn draw stitch therein with body yarn and stretchable yarn floats extending therebehind.

14. A stretchable mock rib stocking cuff comprising
(*a*) repeated groups of four successive courses each having a predetermined number of wales and including
(1) alternating single courses knit of body yarn,
(2) intervening single courses knit of stretchable yarn,
(3) certain adjacent wales of each course being formed of normal stitch loops,
(4) certain single wales positioned between said certain adjacent wales having a single elongated body yarn draw stitch therein with body yarn and stretchable yarn floats extending therebehind, and
(5) other single wales positioned between others of said certain adjacent wales having a pair of elongated body yarn draw stitches therein.

3,154,934
PILE FABRIC
Daniel Frishman, Andover, Mass. (% Malden Ltd., 46 Stafford St., Lawrence, Mass.)
Filed Oct. 27, 1960, Ser. No. 65,510
5 Claims. (Cl. 66—194)

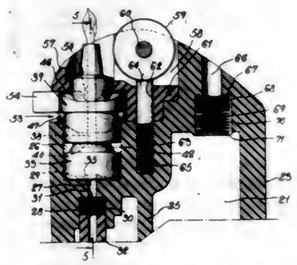


1. A stretchable pile fabric comprising a fabric backing formed of yarn of between 200 and 900 denier and capable of being stretched to at least approximately one and one half times its original unstretched length having a high elongation and recovery said yarn being substantially relaxed when said fabric is in an unstretched condition and a pile formed on said backing of a multiplicity of uniformly distributed staple fibers formed as loops with the bights of said loops interlocked with said

backing and the free ends of sad loops extending angularly from the plane of said backing.

3,154,935
DISPOSABLE GAS OPERATED CIGARETTE LIGHTER

John E. Ayres, 1563 Skytop Drive, Mountainside, N.J.
Filed Aug. 17, 1961, Ser. No. 132,047
16 Claims. (Cl. 67—7.1)

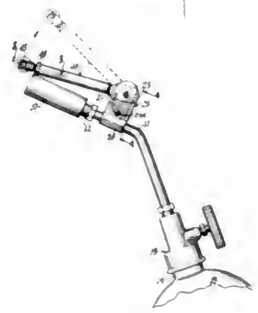


1. In a gas operated cigarette lighter, the combination comprising a body having a closed chamber formed therein, said chamber being adapted to receive and confine under pressure a supply of an inflammable gas producing fuel in liquid form, said body having a discharge passageway communicating with the chamber formed therein, said passageway having an outlet in an outer surface of the body and an inlet in an inner surface of the body, a choke located in the inlet of the discharge passageway, said choke comprising a body of resilient material having a thread extending therethrough, a valve insert of resilient material mounted on the body at the outlet of the discharge passageway, said insert including a flexible web portion extending over and spaced above said outlet, said web portion being vertically movable into and out of sealing engagement with a surface of the body surrounding the outlet of the discharge passageway and having at least one opening extending therethrough in offset relation to said outlet, a valve-operating member rotatably mounted on the body and being vertically movable between a raised and a lowered position relative to the body by rotation of said member, said valve-operating member including a stem portion extending downwardly into engagement with the flexible web portion, said stem portion forcing the flexible web portion of the valve in sealing engagement with the surface of the body when the valve-operating member is in its lowered position, said valve-operating member also having a passageway extending therethrough and communicating with the opening in the flexible web portion of the valve insert, a cover piece mounted on the body and engaging with the valve-operating member, said cover piece holding the valve-operating member in place and having an opening through which an upper end of the valve-operating member extends and spark producing means carried by the cover piece adjacent the outlet end of the discharge passageway extending through the valve-operating member.

3,154,936
LIGHTER FOR BOTTLED-GAS TORCHES

Frank Primich and Robert J. Neidigh, Crown Point, Ind., assignors to Products Research and Development Corporation, Gary, Ind., a corporation of Indiana
Filed Dec. 31, 1963, Ser. No. 334,768
4 Claims. (Cl. 67—20.1)

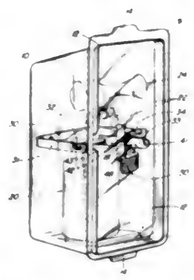
3. In a torch lighter of the class described, a pyrophoric igniter head of the flint-and-wheel type including a sparking wheel and a yoke mount therefor, said mount having a threaded stem with an internal bore aligned with said wheel and containing a pyrophoric element engaging the wheel; and supporting means for the igniter head comprising an elongated tube having means at the outer end for coaxial threaded engagement of the stem whereby the latter may be displaced about the common axis of the stem and tube; means on said stem for locking the same and the igniter head in positions of adjustment as aforesaid; and means for attaching said tube to a tubular torch part and comprising a clamp adapted to



seize said torch part, said clamp having opposed flat face portions apertured to receive a pivot member, said tube having its inner end flattened and apertured, a pivot member engaged in the apertures of said tube and clamp to secure the same for relative pivotal movement, said pivot member being adjustable to vary the frictional engagement of the flattened end by the clamp, the clamp having a second adjustable securing means for varying the tightness of seizure of the torch part.

3,154,937
LOCKED EMERGENCY ALARM STATION

Charles E. Graham Reeves, Summit, N.J., assignor to Falcon Alarm Company, Inc., Springfield, N.J., a corporation of New Jersey
Filed Dec. 13, 1962, Ser. No. 244,331
8 Claims. (Cl. 70—63)



1. An alarm station comprising a box adapted to receive a portable alarm device, said box having a body and a cover engaged with the body but removable to give immediate access to said alarm device,

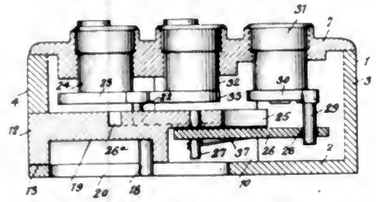
frangible means held within the box body,

holding means carried by the cover and engageable with said frangible means,

means to secure said holding means to the cover to prevent removal of the cover from the box body except on application of manual force sufficient to break said frangible means, said holding means being formed to hold the cover on the box when said securing means is in place and being formed to permit removal of the cover while the holding means remains engaged with said frangible means when said securing means is absent.

3,154,938
LOCK FOR A SEQUENTIAL LOCKING SYSTEM

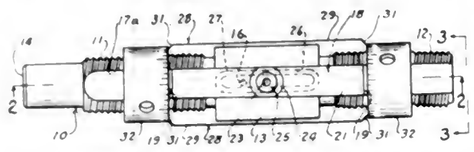
Louis H. Cohen, Seaford, N.Y., assignor to Phelps Time Recording Lock Corp., New York, N.Y., a corporation of New York
Filed Nov. 17, 1961, Ser. No. 153,000
5 Claims. (Cl. 70—134)



1. A lock for inclusion in a sequential locking arrangement comprising, a casing, a bolt movable to advanced or retracted position relative to the casing, a groove in the bolt, a first lock cylinder, a setting cam operable thereby, said cam having a pin for engagement in the groove when said setting cam is in bolt-release position, an interlock cam engaging the setting cam and when in a definite position holding the setting cam against rotative movement with its pin out of the groove, a second cylinder for controlling the operation of the interlock cam, a third cylinder, a bolt-engaging cam carried thereby and operative to move the bolt when permitted by the unlocked positions of the setting and interlock cams and the entry of the pin into the groove.

3,154,939
ADJUSTABLE AIR GAUGING MANDREL

Karnig H. Dabanian, 13137 Balfour, Huntington Woods, Mich., and William H. Kirk, 1109 W. Selfridge, Clawson, Mich.
Filed Oct. 8, 1962, Ser. No. 229,043
6 Claims. (Cl. 73—37.9)



1. A gauging member for use in a fluid gauge system, said member comprising

(*a*) a substantially cylindrical body member,

(*b*) a plurality of longitudinal annularly spaced radially extending slots provided in said body member,

(*c*) said slots being longitudinally tapered with respect to the axis of said body member,

(*d*) a shoe member longitudinally slidably carried in each of said slots,

(*e*) said shoe members each having a tapered bottom surface engaging in said slot whereby as said shoe member is moved longitudinally with respect to said body member radially inward and outward displacement of said shoe member is produced,

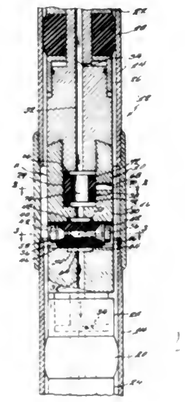
(*f*) means selectively adjusting and locking said shoe members in a predetermined longitudinal position with respect to said body member,

(*g*) said body member being provided with a fluid inlet and a central chamber communicating therewith, and

(*h*) at least one of said shoes being provided with a radially extending orifice communicating with said central chamber.

3,154,940
WELL TOOL WITH PRESSURE RESPONSIVE VALVE

Glenn L. Loomis, P.O. Box 728, Pasadena, Tex.
Filed June 12, 1962, Ser. No. 201,929
14 Claims. (Cl. 73—40.5)



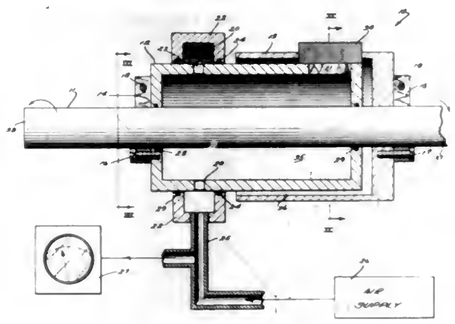
1. A pressure responsive valve mechanism comprising a body member having a bore therein and a flow passage for fluid under pressure, said bore having at least two ends with at least one of the ends open, said flow passage extending in said body member transversely of said bore and opening to said bore intermediate the ends of said bore, said bore having walls on each side of the opening of said passage thereto defining spaced annular valve seats, a cylindrically shaped valve element carried in said bore with its ends supported in sealing engagement in said spaced annular valve seats, said cylindrically shaped valve element being made from a resilient material having an elastic memory whereby a predetermined pressure of fluid in said flow passage deforms the valve element off of at least one of said valve seats and permits flow from said passage between said valve element and the valve seat outwardly of said bore.

3,154,941
TORSION METER

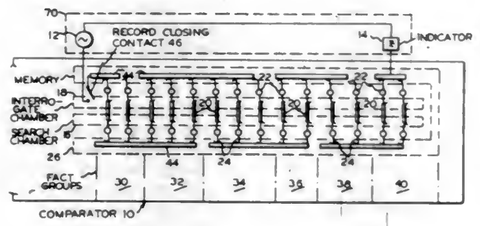
Carl M. Westbrook, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 6, 1961, Ser. No. 93,580
4 Claims. (Cl. 73—136)

1. An apparatus for measuring the twist of a shaft comprising, a first member adapted to be mounted on the shaft in a position radially outside the shaft, a second member adapted to be mounted on the shaft at a position radially outside the shaft and axially spaced from the first member, means defining a fluid outlet orifice in the first member having a passage for supplying a flow of fluid thereto, a shoe member on the second member restricting flow from said orifice and changing in position relative to said outlet orifice with relative twist of the shaft for changing the resistance offered by said shoe member to flow of fluid through said outlet orifice, and means adjustably securing said shoe member on said second member accommodating adjusting the position of

said shoe member in a circumferential direction relative to said first member and relative to said outlet orifice, said shoe member adjustably movable in a first direction for increasing fluid flow through said orifice and in a second direction for decreasing fluid flow through said orifice whereby the operating range of fluid flow through the outlet orifice can be selected in accordance with the expected range of twist the shaft will encounter during operation.

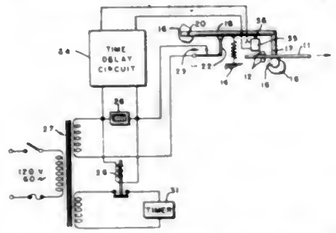


3,154,942
INFORMATION RETRIEVAL APPARATUS
Joseph A. Lino, 6656 10th Ave. N., St. Petersburg, Fla.
Filed Apr. 8, 1963, Ser. No. 271,110
3 Claims. (Cl. 73—156)



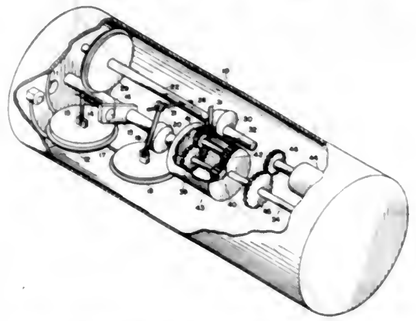
1. Information retrieval apparatus for punched type records comprising a search chamber for inserting a punched record containing information to be searched, an interrogate chamber for inserting one of a plurality of punched records containing information to be retrieved upon comparison with said record in the search chamber, separately arranged conducting means between the search chamber and the interrogate chamber for each hole of the punched record, fact-group memory means including brush contacts forming a completed conductive path through a source of current and an indicator means from the interrogate chamber to the search chamber, said memory means connecting said conducting means and said brush contacts of each fact-group in a generally parallel arrangement, and further connecting each fact-group in a generally series arrangement, said record in the search chamber tending to reduce said parallel paths to a series path through the brush contacts, conducting means and memory means, and said record in the interrogate chamber completing the reduction of the parallel paths to said series path.

3,154,943
SLUB DETECTOR
Lewis C. Garrett, Durham, N.C., and Hunter S. Woodbery, Decatur, Ala., assignors to Monsanto Company, a corporation of Delaware
Original application Dec. 8, 1959, Ser. No. 858,166. Divided and this application Nov. 6, 1962, Ser. No. 235,803
5 Claims. (Cl. 73—160)



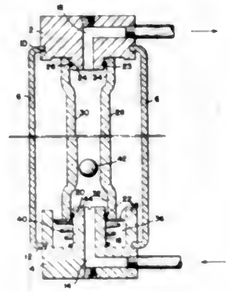
1. A slub detector, comprising a fixed element, a movable element, means connected to the movable element for urging said movable element toward the fixed element to sense a yarn passing therebetween, means connected to the movable element for sensing movement of said movable element away from said fixed element, and delay means connected to the movable element for moving said movable element away from the fixed element after the sensing element has remained actuated for a predetermined time interval.

3,154,944
SENSING FLIGHT CONDITIONS
Carl E. Johanson, Davenport, Iowa, assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 15, 1960, Ser. No. 22,568
6 Claims. (Cl. 73—182)



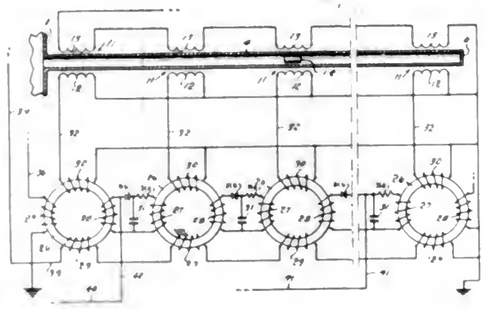
1. An instrument for providing a signal representing the state of a flight condition which can be measured in terms of altitude pressure in the circumstance in which the ratio of indicated altitude pressure to actual altitude pressure has a predetermined relation to indicated Mach number other than one, which comprises first means for producing a first signal proportional in value to indicated altitude pressure, second means for producing a second signal proportional in value to the differential between measured dynamic pressure and indicated altitude pressure, means responsive to said first and second signals for producing a third signal which varies as a function of Mach number, means responsive to altitude pressure for producing a fourth signal, means responsive to the sum of said first signal and a composite of said third and fourth signals for producing a compensated flight condition signal.

3,154,945
FLOWMETER
Eugene P. Busillo, Huntingdon Valley, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed May 26, 1961, Ser. No. 112,845
4 Claims. (Cl. 73—209)



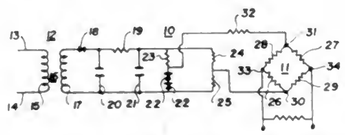
1. A flowmeter comprising a pair of mounting members having portions extending towards each other provided with flow passages, annular packing rings located in external grooves in said portions of the mounting members, a metering tube having end portions arranged to surround and seal against said annular packing rings, a spring surrounding said portion of one of the mounting members axially beyond the corresponding end of the tube and reacting between the last mentioned member and the adjacent end of the tube to urge it towards the other mounting member, and a washer located between said spring and the adjacent end of the tube, said washer having a loose fit on the mounting member portion surrounded by said spring but having an opening sufficiently small not to clear the adjacent annular packing ring.

3,154,946
DIGITAL REMOTE POSITION INDICATOR
Vincent Ordorica, Brooklyn, Fred Moritz, Forest Hills, and Lionel Leavitt, Flushing, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Wilmington, Del., a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 83,047
10 Claims. (Cl. 73—313)



1. An indicating mechanism of the character described comprising a display counter; a sensing unit, means by which said sensing unit is adapted to be coupled to an element the varying position of which is to be measured and by which the condition of said sensing unit is varied in accordance with varying positions of said element; a magnetic shift register operatively associated with said sensing unit; a pulse generator by which set pulses and drive pulses are generated at a predetermined frequency; an inhibitor gate through which drive pulses are adapted to be imparted to said display counter, each drive pulse imparted to said display counter being operative to advance said counter one increment; an "and" gate through which set pulses are adapted to be imparted to said magnetic shift register; means through which said drive pulses are also imparted to said magnetic shift register; said drive pulses imparted to said magnetic shift register being operative to sequentially advance set signals through said shift register; said "and" gate being operative to prohibit the imparting of a new set pulse to said shift register until a previously imparted set pulse has been cleared out of said shift register; said inhibitor gate being operative to permit or prohibit the imparting of drive pulses to said display counter; and means by which said set pulses are operative through said shift register to cause said sensing unit, under certain conditions thereof in accordance with element postion, to impart an inhibit signal to said inhibitor gate to stop the further imparting of drive pulses to said counter.

3,154,947
LINEAR SOLID STATE TEMPERATURE DETECTORS
Emil J. Poshadel, Mount Lebanon, and George E. Phillips, Crafton, Pa., assignors, by mesne assignments, to Hagan Controls Corporation, a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,593
6 Claims. (Cl. 73—362)

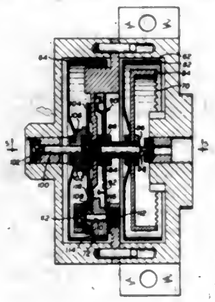


1. A linear solid state temperature detector comprising a temperature responsive bridge having at least one resistance which varies substantially linearly with temperature, an input bridge having a substantially fixed voltage output which varies from linearity substantially opposite in amount and direction from the output of the temperature sensitive bridge, said temperature responsive bridge receiving its entire input from the input bridge, a source of voltage connected to said input bridge and an output measuring device receiving the output from the temperature sensitive bridge.

3,154,948
ALTIMETER
John H. Andresen, Jr., Hewitt, N.J., assignor to Astek Instrument Corp., Armonk, N.Y., a corporation of New York
Filed Jan. 14, 1963, Ser. No. 251,204
6 Claims. (Cl. 73—386)

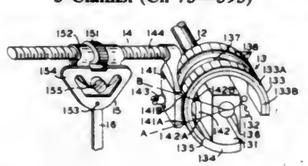
2. An altimeter comprising a rotatable shaft, altitude responsive means operatively connected to said shaft for rotating said shaft one revolution for a change of 10^n increments of altitude wherein n is an integer, a pointer fixed to said shaft for turning therewith, a face dial disposed in operative relation with said pointer and bearing indicia indicating that one rotation of said pointer represents said 10^n increments of altitude, a rotatable drum bearing indicia indicating one complete revolution thereof represents a change of 10^{n+1} increments of altitude, a second rotatable drum bearing indicia indicating one complete revolution thereof represents a change of 10^{n+2} in-

crements of altitude, continuously acting reduction drive means connecting said shaft to said first drum for continuously driving the said first drum at one-tenth the angular speed of said shaft, and intermittently operable drive means connecting said first drum to said second drum



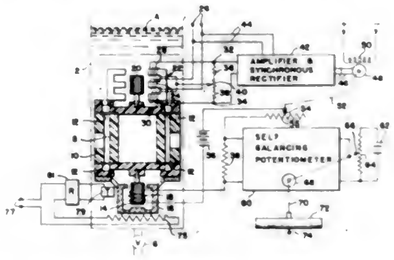
for rotating said second drum one-tenth of a revolution during a preselected one-tenth revolution of said first drum and for holding said second drum against rotation through the other nine-tenths of a revolution of said first drum.

3,154,949
TEMPERATURE COMPENSATOR AND MEASURING INSTRUMENT INCORPORATING THE SAME
Lawrence Emerson Smith, Waterbury, and Philip Edward Rowland, Southbury, Conn., assignors to The Bristol Company, Waterbury, Conn., a corporation of Connecticut
Filed Aug. 22, 1960, Ser. No. 50,976
5 Claims. (Cl. 73—393)



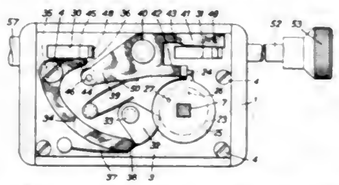
1. In a measuring apparatus for providing a representation of a variable quantity, means responsive to said variable quantity for providing an output representative thereof and which is characterized by being subject to errors of a first kind proportional to ambient temperature and by being subject to errors of a second kind proportional to both ambient temperature and a second variable, output means responsive to said variable-quantity-responsive means for providing a representation of said variable quantity, said output means including a movable input member, a rotatable element mounted for rotation about an axis through an arc representative of the output of said variable-quantity-responsive means, an arcuate bimetallic member removably connected adjacent to one end thereof to said element and rotatable therewith about said axis, an elongated link, means connecting said link to said input member and movable longitudinally along said link for adjusting the effective length thereof, and means connecting said link to said bimetallic member and movable along the latter for selectively adjusting the effective length of said bimetallic member included between said rotatable element and said link, said bimetallic member being mounted to rotate said link about said axis in response to a given change in ambient temperature in the direction opposite to that in which said element is rotated in response to said change in ambient temperature, whereby errors of said first and second kind are substantially eliminated.

3,154,950
APPARATUS FOR SPECIFIC GRAVITY MEASUREMENTS
Charles W. Hargens III, Enfield, and George A. Smith, Philadelphia, Pa., assignors to Louis Forman, Jenkintown, Pa.
Filed Nov. 14, 1955, Ser. No. 546,479
7 Claims. (Cl. 73—453)



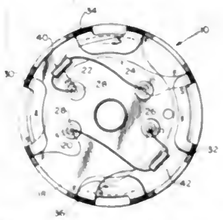
1. In combination, a container for a liquid, a member, means locating said member in liquid in the container and mounting it for vertical movement under the buoyant action of the liquid, said means providing substantially no restraint to said member against vertical movement in a limited range, electromagnetic means of balanceable magnetic circuit type providing an electrical signal of relationship of the position of said member to a predetermined position thereof within said limited range, phase sensitive means receiving said signal and providing a reversible direct current output indicative of the position of said member relative to said predetermined position, means positionable by said output and reversible therewith in accordance with the last mentioned position, electrommagnetic means for applying directly to said member a vertical magnetic force balancing the buoyant action of the liquid to locate said member substantially in said predetermined position, and means indicating the magnitude of said force when the means positionable by said output has a position corresponding to the location of said member in said predetermined position, so that the indication of the magnitude of said force at that time is a measure of the specific gravity of said liquid.

3,154,951
MOVIE CAMERA RELEASING AND TIMING DEVICE
Jean-Paul Vuilleumier and Pierre-Frédéric Pfister, both of Sonceboz, Bern, Switzerland, assignors to Societe Industrielle de Sonceboz, Sonceboz, Switzerland, a joint-stock company
Filed June 19, 1961, Ser. No. 117,963
Claims priority, application Switzerland, June 17, 1960, 6,971/60
6 Claims. (Cl. 74—3.54)



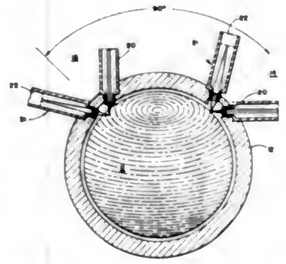
2. A camera releasing and timing device comprisnig a casing, timing means mounted in said casing, setting means operatively connected to said timing means to set said timing means from a position of rest to different control positions, releasing plunger means including an actuating section and a control section movable one with respect to the other, first locking means mounted on said casing and engageable with said control section to lock said control section in an operative position, second locking means operatively connected with said first locking means and with said timing means and mounted on said casing for locking said timing means in said position of rest, said first and second locking means being operatively connected with said setting means whereby said first locking means permits movement of said control section to an inoperative position and said second locking means locks said timing means in said position of rest, when said setting means is set at said rest position, lever means mounted on said casing having a first portion for engaging said actuating section to maintain same in said inoperative position when said control section is locked in said operative position by said first locking means and a second portion operatively connected to said first portion and to said setting means to move said first portion into and out of engagement with said actuating section upon movement of said setting means from said rest position to one of said different control positions.

3,154,952
GYROSCOPE FLEXLEAD CONNECTIONS
Robert J. Cohen, Wyckoff, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,567
4 Claims. (Cl. 74—5)



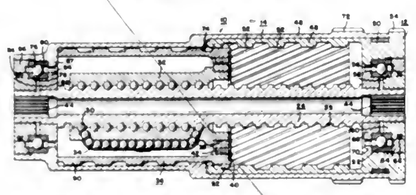
1. A pickoff and torquer assembly for a gyroscope rotor comprising first and second terminals, a pair of torquer coils connected in series between said terminals, and a pair of pickoff coils connected together in series between said terminals and in parallel with said torquer coils whereby only two flexleads are required to connect the torquer and pickoff coils to an external circuit.

3,154,953
GYROSCOPIC CONTROL APPARATUS
Ralph D. Ormsby, Ann Arbor, Mich., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 24, 1961, Ser. No. 133,644
9 Claims. (Cl. 74—5.6)



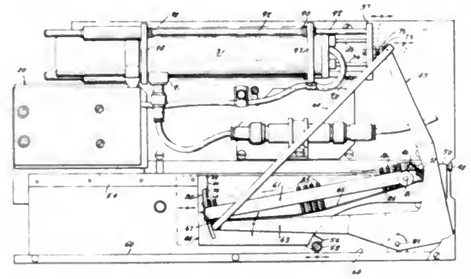
1. In apparatus of the class described: a support; a spherically shaped rotor universally supported by said support and adapted to be rotated about a spin axis; and means for measuring relative rotation between said rotor and said support about any axis at an angle to said spin axis, said measuring means comprising a plurality of latitude lines on said rotor, each of said lines having radiative portions and non-radiative portions and said radiative portions and non-radiative portions of said lines being arranged about said rotor so that each of said lines has a characteristic coding to permit the identification thereof, and pickoff means adapted to sense radiation from said rotor including means for producing signals indicative of radiation sensed thereby.

3,154,954
MECHANICAL ROTARY ACTUATORS
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 8, 1962, Ser. No. 193,186
3 Claims. (Cl. 74—89)



1. A screw and nut actuator of the rotary type including, relatively rotatable, coaxial output and reaction members having telescopically arranged portions, a screw shaft supported in said output and reaction members for rotation relative thereto, a nut having threaded engagement with said screw shaft, a skirt attached to said nut and coaxial with said output and reaction members, helical means interconnecting said skirt with each of said output and reaction members, and means for connecting said reaction member to a fixed support whereby rotation of said screw shaft will impart rotation to said output member.

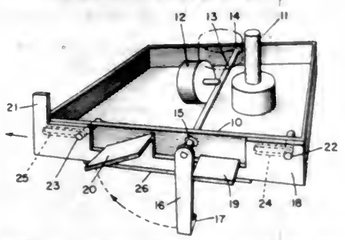
3,154,955
MICROWAVE RECEIVER TRACKING MECHANISM
Arling W. Ryberg, Scotia, N.Y., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 16, 1961, Ser. No. 96,118
4 Claims. (Cl. 74—107)



1. In a microwave instrument containing a tunable electrical unit with tuning means operable through a control rod: mechanism for positioning said control rod comprising a drive, a pivoted follower having one portion coacting with said rod, an elongated support element, an adjustable cam strip mounted along said element and in juxtaposition with a second portion of said follower to predeterminedly operate said control rod for tuning the unit, a member operatively displaceable by

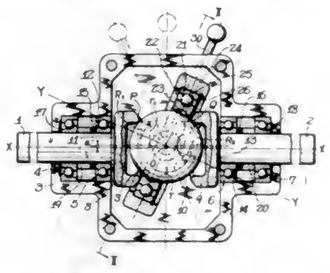
said drive, and means for mounting said element and strip on said member in adjustable relationship therewith for variably presetting the orientation of said element and strip on said member to establish said cam strip into an optimum overall tuning relation with the elecrical unit for the microwave instrument.

3,154,956
DOUBLE CAM DEVICE
George H. Eash, Beverly Hills, Calif., assignor to Catamaran Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 24, 1962, Ser. No. 225,821
4 Claims. (Cl. 74—107)



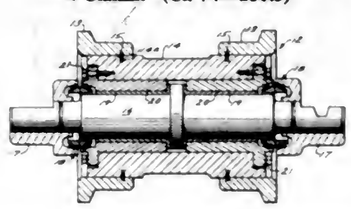
1. A double cam device for moving a first member into tight engagement with a second member wherein said first member is mounted on a rotatable shaft and said second member is mounted on a frame supporting said shaft, comprising: a laterally extending arm mounted on said rotatable shaft; a slide plate mounted for sliding movement on said frame and having first and second cam means positioned such that initial movement of said slide plate causes said first cam means to engage said arm close to its point of connection to said shaft to effect a large swinging movement of said arm, further movement of said slide plate causing said second cam means to engage the far end portion of said arm to cause an additional smaller swinging movement of said arm, whereby initial movement of said first member towards said second member is large and the final engaging movement thereof into tight engagement with said second member is relatively small.

3,154,957
INFINITELY VARIABLE SPEED CHANGE GEAR UTILIZING A BALL
Manabu Kashihara, 12 Karahashi-Hanazono-cho, Minami-ku, Kyoto, Japan
Filed Oct. 3, 1962, Ser. No. 228,181
Claims priority, application Japan, Oct. 16, 1961, 36/37,455, 36/37,456
3 Claims. (Cl. 74—198)



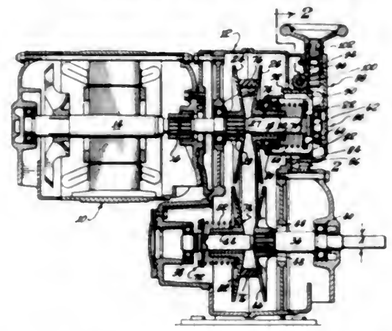
1. Infinitely variable speed change gear comprising a driving shaft and a driven shaft arranged coaxially; a dish-shaped driving wheel provided on an end of the driving shaft; a dish-shaped driven wheel provided on that end of the driven shaft which confronts the driving wheel; a single ball arranged between the driving wheel and the driven wheel, the ball being arranged in contact with the driving wheel at a single point and with the driven wheel at a single point respectively and with its center at a definite point near the common axis of the driving shaft and the driven shaft; a bearing member, having inner and outer races for maintaining contact between the ball and the driving and driven wheels and also for adding two other contact points for the ball, the inner race of said bearing being adapted to provide the latter two contact points so as to provide a spinning axis for the ball; a supporting member for supporting the bearing so as to be swivelable about the center of the ball; and an operating means for swiveling the supporting member for changing the inclination of said spinning axis.

3,154,958
TRACK ROLLER WITH A REPLACEABLE RIM
Wilfred C. Cadwell, Washington, Raymon A. Oberlander, Morton, and Dale J. Wright, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 6, 1962, Ser. No. 214,909
4 Claims. (Cl. 74—230.3)



1. A track roller comprising a shaft, a hardened steel cylindrical hub member mounted for rotation about said shaft, at least one hardened steel cylindrical rim member mounted on said hub member in press fit relationship therewith, a retaining groove formed on said hub member arranged to overlie a matching groove formed on said rim member and split ring retaining means arranged in said grooves between said hub member and said rim member for preventing relative axial movement therebetween.

3,154,959
VARIABLE SPEED DRIVE
Bernhard N. Palm, Newport Beach, Calif., assignor to Electra Motors, Inc., Anaheim, Calif., a corporation of California
Filed Aug. 27, 1962, Ser. No. 219,390
4 Claims. (Cl. 74—230.17)



1. In a variable speed V-belt drive of the type described and embodying a driving shaft, a driven shaft, V-sheave halves mounted on each shaft, at least one

sheave half being mounted on its respective shaft for free relative rotation and axial translation, and coiled helical springs exerting axial thrusts on each free sheave half tending to move those halves on their respective shafts toward their respective other halves;

the combination of a spring seat member affixed to at least one of said shafts,

a spring seat member affixed to the free sheave half that is on said one shaft,

the spring seated on said spring seat members forming the driving torque connection between said one shaft and its associated free sheave half,

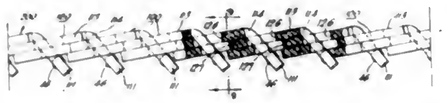
at least one of said spring seat members having an annular groove co-axial with the shaft and with walls defining a tapered groove section in a radial plane, said groove taking an end of the associated spring, the taper of said groove contracting in the direction of axial thrust of said spring,

a notch in one wall of said annular groove extending radially from said wall and having at least one notch wall extending in a direction toward said groove wall and acutely angled in that direction away from a line radial with respect to the groove axis,

the spring end having a radially extending end portion entering said notch, and the groove wall opposite said one groove wall being conical in form with its conical elements at an acute angle to the groove axis, said angle opening in an axial direction opposite to the direction of axial spring thrust,

whereby excessive driving torque forces said spring end radially against said opposite wall of the annular groove and tends to move that spring end against the direction of spring thrust to allow the radially extending portion of the spring end to move out of said notch.

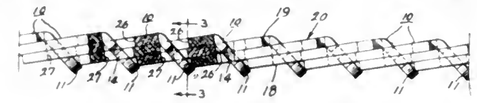
3,154,960
DRIVE BELTS
Clifford Allen Creswell, Lancaster, Pa., assignor to The Arbee Corporation, Manheim, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1963, Ser. No. 314,408
7 Claims. (Cl. 74—233)



1. An endless belt comprising a plurality of links arranged in superimposed successive overlapping relation, each of said links having at least one aperture and at least one integral fastening means, said integral fastening means comprising a locking tab and a constricted neck portion at one end of said link, each of said integral fastening means composed of the same material as the link and extending through the aperture in the succeeding link to secure said plurality of links together in overlapping relation, and anti-pull through means in each of said links comprising a stiffening means in said locking tab, said stiffening means extending substantially transverse to the longitudinal axis of said link whereby said locking tab of the preceding link is prevented from inadvertently pulling through the aperture in the succeeding link.

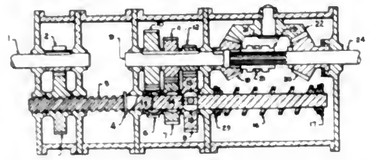
3,154,961
DRIVE BELTS
Clifford A. Creswell, Lancaster, Pa., assignor to The Arbee Corporation, Manheim, Pa., a corporation of Pennsylvania
Filed July 31, 1962, Ser. No. 213,667
7 Claims. (Cl. 74—234)

1. An endless belt comprising a plurality of links arranged in superimposed successive overlapping relation, each of said links having a longitudinally tapered body portion and at least two longitudinally aligned apertures, an integral fastening means comprising a constricted neck portion and a locking tab connected to said body portion through said neck portion, said integral fastening means composed of the same material as the link and longi-



tudinally aligned with said apertures, said integral fastening means extending through a forward aperture in the succeeding link, and a trailing aperture in the next succeeding link whereby said plurality of links are secured together in overlapping relation to thereby form an endless belt.

3,154,962
AUTOMATIC GEAR MECHANISMS
Ram Krishna Mukherjee, 2 Raja Peary Mohan Road, Uttarpara, Dist. Hooghly, West Bengal, India
Filed June 15, 1962, Ser. No. 202,809
Claims priority, application Great Britain, Feb. 6, 1962, 4,579/62
2 Claims. (Cl. 74—337)

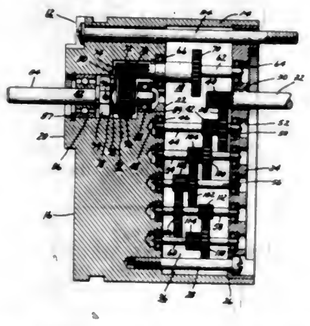


1. An automatic gear mechanism comprising a driving shaft connected to an engine, an axially slidable intermediate shaft, a pinion fixed on the driving shaft in gear connection with a pinion having an internal thread in mesh with an external thread on one end of the axially slidable intermediate shaft, a helical spring mounted on the other end of the said intermediate shaft, a driven shaft, a set of varying diameter pinions fixedly mounted on the driven shaft, a set of gradually varying diameter pinions loosely mounted on the said intermediate shaft and in constant mesh with the first-mentioned varying diameter pinions, spring loaded depressible keys mounted in a slot of the intermediate shaft by corresponding keyways in hubs of the said loosely mounted pinions, the loosely mounted pinions being selectively locked to the axially slidable intermediate shaft by engaging the spring loaded depressible keys, and gearing to connect the said driven shaft to a machine for transmission of power from the engine.

3,154,963
MINIATURE GEAR MECHANISM
William S. Caley, Markle, and Jack D. Harshman, Fort Wayne, Ind., assignors to Bowmar Instrument Corporation, Fort Wayne, Ind.
Filed July 16, 1962, Ser. No. 209,836
18 Claims. (Cl. 74—421)

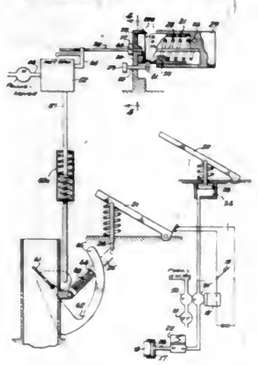
1. A miniature gear mechanism comprising: a housing having shell means and end wall means joined to said shell means and forming a first cavity therewith, said end wall means having an exterior surface and an interior surface facing said first cavity, said end wall means having a second cavity formed in said interior surface and communicating with said first cavity, said end wall means having a third cavity formed in said exterior surface and communicating with said second cavity; a gear train disposed in said first cavity and including a final shaft with

first gear means thereon in said first cavity and having one end extending into said second cavity; first bearing means supporting said final shaft at a point spaced from said one end thereof thereby defining an outboard portion of said final shaft between said first bearing means and said one end, said outboard portion having second gear means thereon in said second cavity; an output shaft in said third cavity and extending outwardly beyond said



exterior surface, said output shaft having third gear means thereon meshing with said second gear means and driven thereby; and second bearing means in said third cavity supporting said output shaft; said third cavity having a diameter greater than that of said second bearing means and said third gear means thereby to permit insertion therein of said second bearing means and output shaft with said third gear means thereon from said exterior surface of said end wall means.

3,154,964
TORQUE CONVERTER
Douglas R. Lewis, P.O. Box 1128, Atascadero, Calif.
Filed Jan. 29, 1960, Ser. No. 5,478
4 Claims. (Cl. 74—472)



1. In a system of torque transmission including a variable torque converter having mechanically pressurized elements and a governed airbreathing prime-mover, control apparatus comprising:

a governor operatively conjoined with a variable metering means for the prime-mover intake, said governor varying the intake-metering means according to a predetermined control relation with the prime-mover;

a pilot-responsive link to the variable metering means for the prime-mover intake which link in motion from a rest position overrides the governor control of said metering means thereby permitting non-automatic intake metering;

a pilot-responsive governor-adjusting circuit operatively associated with said governor so as to permit establishment of a plurality of discrete values of automatic control relation between the governor and the prime-mover;

an on-off fuel valve between a fuel supply and the prime-mover fuel intake;

pilot-responsive fuel valve on-off control circuit operatively associated with said fuel valve;

a pilot-controlled retractable detent which renders fuel valve position dependent upon actuation of said link which dependent fuel valve position is "on" when the detent is at one position and which dependent fuel valve position is "off" when said detent is at any other possible position;

a mechanical pressure accumulator vented so as to exert its stored pressure against elements of the system, said accumulator having an automatic function dependent upon the actuation of an unloading valve between said accumulator and a variable pressure generator;

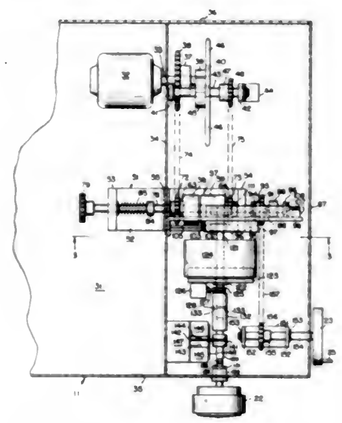
a pilot-responsive mechanical pressure generator arranged serially with an unloading valve and said accumulator so as to create and increase mechanical pressure in and through said accumulator when appropriate;

an unloading valve functionally situated between said accumulator and said generator so as to permit accumulation of generated pressure and relief of accumulated pressure when appropriate;

pilot-responsive unloading valve control circuit operatively associated with said unloading valve;

pilot-controlled retractable detent which can render unloading valve function dependent upon actuation of said link which dependent unloading valve function is to relieve accumulator pressure when said detent is at one position and which dependent unloading valve function is to retain accumulator pressure when said detent is at any other possible position.

3,154,965
DRIVE MECHANISM FOR MICROFILM READER-PRINTER
John J. Fennessy, 133 Thurston Road, Rochester 19, N.Y.
Filed Aug. 15, 1962, Ser. No. 217,222
12 Claims. (Cl. 74—472)



1. In a film viewing and printing unit of the type in which film is rotated from one rotating reel to another

past a projector lens, a mechanism for rotating said reels, comprising

(*a*) a rotatable drive shaft connected to one of said reels to transmit its rotation thereto,

(*b*) a variable speed, reversible electric motor for rotating said drive shaft,

(*c*) means including a first clutch operable to connect and disconnect, respectively, said drive shaft and said motor,

(*d*) a manually rotatable shaft, for rotating said drive shaft independently of said motor,

(*e*) means including a second clutch operable to connect and disconnect, respectively, said drive shaft and said manually rotatable shaft,

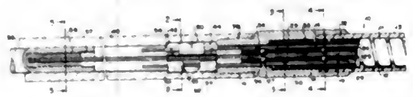
(*f*) a manually rotatable control shaft reciprocable manually in its axial direction,

(*g*) clutch control means operative upon the rotation of said control shaft in one direction to cause said first and second clutches, respectively, to connect said drive shaft and said motor, and to disconnect said drive shaft and the first-named manually rotatable shaft, and vice versa upon the rotation of said control shaft in the opposite direction,

(*h*) motor speed control means connected to said control shaft to increase and decrease, respectively, the speed of said motor upon the rotation of said control shaft in opposite directions, respectively, and

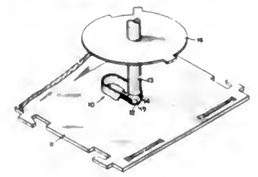
(*i*) means responsive to the axial movement of said control shaft from one to the other of its extreme positions of reciprocation to reverse the direction of rotation of said motor, and operative upon the axial movement of said control shaft to a position intermediate its extreme positions, to interrupt the operation of said motor.

3,154,966
BALL BEARING PUSH-PULL CABLE
Otto J. Bratz, Adrian, Mich., assignor to American Chain & Cable Company, Inc., a corporation of New York
Filed Jan. 26, 1960, Ser. No. 4,715
8 Claims. (Cl. 74—501)



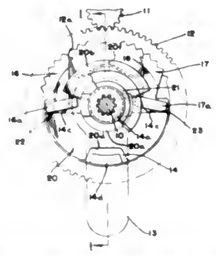
1. A push-pull cable assembly comprising a flexible tubular casing, a flexible core strip extending through said tubular casing and axially movable therein, a pair of flexible ball race strips extending through said tubular casing on opposite sides of said core strip in spaced substantially parallel face-to-face relation therewith, a pair of flexible ball cage strips extending through said tubular casing between the respective race strips and the core strip, retaining means at each end of the cable assembly holding said race and cage strips within said casing, a multiplicity of rounded protuberances formed integrally in and spaced longitudinally along each of said cage strips and extending from opposite faces thereof alternately toward said core strip and the adjacent race strip, said protuberances serving to space the respective cage strips substantially midway between the core strip and the corresponding race strips, each of said cage strips having a multiplicity of holes formed therein, each of said holes being disposed substantially centrally in the space between and adjacent pair of protuberances, and bearing balls disposed in the respective holes in each cage strip in rolling engagement with the core strip and the race strip on opposite side thereof.

3,154,967
SHAFT POSITIONING DEVICE
Elmo W. Voland, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,693
9 Claims. (Cl. 74—527)



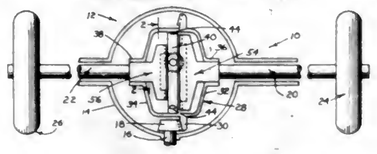
1. An indexing means for an axially movable shaft, said indexing means comprising: grooves cut in said shaft; a base, said base having apertures cut therethrough, said indexing means further comprising unitarily formed bowed means having a pair of free ends, said free ends having a pair of dependencies extending from a side thereof penetrating said base through said apertures, means on said dependencies for clutching said dependencies to said base, and gripping means connected to said bowed means falling within one of said grooves of said shaft to position the same upon axial movement thereof through said base.

3,154,968
ROTARY ACTUATOR MECHANISM
Frank Z. Daugherty, Kent, Ohio, assignor to Ametek, Inc., a corporation of Delaware
Filed May 26, 1961, Ser. No. 113,023
11 Claims. (Cl. 74—625)



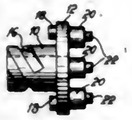
1. In a rotary actuator having a drive motor unit providing power for a rotary output shaft adapted to be connected to an actuated device, a manual override mechanism comprising: an output shaft; a member rotatably mounted on the output shaft and drivable by a shaft of the motor unit, said member including an annular flange provided with an internal circumferential series of serrations coaxial with the output shaft; means fixed on the output shaft within the annular flange forming a spaced pair of pawl seats equi-spaced radially from the shaft; a pair of pawls pivotally seated in respective seats extending toward the flange; means normally biasing the free ends of the pawls into contact with the serrations; the pawls being adapted under the bias of the last said means for a driven engagement with said serrations, one upon rotation of said member in one direction and the other upon rotation in the other direction; a manually rotatable control member mounted for rotation coaxially of said output shaft; cooperating means on said control member and on the respective pawls adapted to release positively upon manual rotation of the control member in opposite directions a respective one of said pawls which would tend to drive the first said member; and lost motion connection means between said output shaft and control member.

3,154,969
SEMI-LOCKING DIFFERENTIAL
Oliver E. Saari, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,887
13 Claims. (Cl. 74—715)



1. A device comprising first and second shaft means coaxially aligned with the end surfaces thereof in spaced relation, first and second face gear means mounted respectively on said first and second shaft means adjacent the end surfaces thereof, said face gear means being located with the active surfaces of each gear means facing a plane transverse to the axis of the shaft means and intermediate the ends thereof, carrier means adapted to be driven for rotative movement on an axis coincident with the axis of said first and second shaft means, at least two sets of pinion means spacedly mounted for rotative movement on and for rotative movement with said carrier means in cooperation with said first and second spaced face gear means, each of said sets of said pinion means comprising first and second pinions cooperable respectively with said first and second face gear means, said first and second pinions being mounted on axes which are in skew relationship to the axis of said first and second spaced gear means and said pinions having parallel planes of rotation, said first and second pinions each having a hand and each being located in the proper quadrant for that hand relative to its mating face gear means and in correct meshing relationship thereto to provide an opposite sense of rotation therebetween when viewed from the axis of rotation of the face gear means from the toothed side of the face gear means, coupling means for said first and second pinions to transmit power therebetween and thereby between said first and second face gear means.

3,154,970
PLANET CARRIER FOR PLANETARY GEAR
Willi Gebhardt and Kurt Zerbst, both of Schweinfurt (Main), Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Nov. 15, 1961, Ser. No. 166,728
4 Claims. (Cl. 74—750)



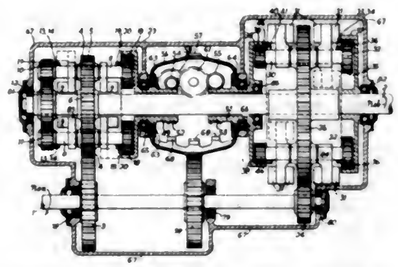
1. A planet carrier for the planetary gear of a multiple speed bicycle hub and the like comprising;

(*a*) a substantially circular flange member;

(*b*) a bearing sleeve member coaxial with said flange member and projecting therefrom in one axial direction; and

(*c*) a plurality of pin-shaped projections spaced from said sleeve member and extending from said flange member in both axial directions, the projections extending in one of said axial directions constituting bearing means for the planet wheels of said planetary gear, said flange member, bearing sleeve member, and projections constituting a unitary metal structure having flow lines in the metal of said structure, said flow lines conforming to the external shape of said structure.

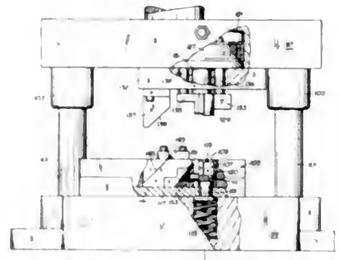
3,154,971
INFINITELY VARIABLE MECHANICAL TORQUE CONVERTER
Paul Cicin, Argentinierstrasse 26, Vienna, Austria
Filed July 23, 1959, Ser. No. 829,150
Claims priority, application Austria, July 24, 1958, A 5,230/58
11 Claims. (Cl. 74—751)



1. Infinitely variable mechanical torque converter comprising, in combination, a drive shaft; a driven shaft; a first epicyclic gear unit, and a second epicyclic gear unit, each of said units driven with different rotational speed from said drive shaft and each of said units including a first gear fixed on said driven shaft, a second gear free rotating with regard to drive shaft, rotary planetary carrier means operatively connected to and driven from said drive shaft, planetary shaft means turnably mounted on said carrier means (for rotation) and including centrifugal weight means exerting a turning moment on said planetary shaft means during rotation of said planetary carrier, two planetary gears turnably mounted on said planetary shaft means and respectively meshing with said first gear connected to said driven shaft and with said second gear free rotating with regard to driven shaft, and two one-way coupling means for coupling said shaft means to said planetary means respectively for transmitting turning force only in one direction; and differential transmission means operatively connecting said second gear of said first unit to said second gear of said second unit and including a planetary carrier member operatively connected to said drive shaft and driven from the same, all transmission ratios in said epicyclic gear units and in said differential transmission gear means connecting the two units being such that the projection of each of these couplings in said units generally remain permanently contacted in any transmission ratio between drive shaft and driven shaft, so that the driving impulse of the centrifugal weight means is transmitted on to the driven shaft, whereas the braking impulse of contrary direction is diverted from the driven shaft, and over the differential transmission means either transmitted on to the other epicyclic unit in order to reconvey its centrifugal weight means into initial position, or to reconduct the energy into the driven shaft, so that the moment of rotation is varied in accordance with a load torque acting on the driven shaft.

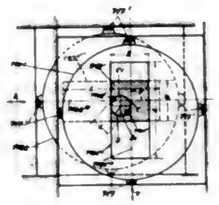
3,154,972
METHOD AND APPARATUS FOR FORMING A CHISEL TYPE CUTTER LINK
Albert Neumeier, Milwaukie, and Russell B. Johnson and Robert J. Krause, Portland, Oreg., assignors to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed May 15, 1961, Ser. No. 110,192
17 Claims. (Cl. 76—112)

1. The method of cold forming a saw chain cutter link with a cutter portion including a toe portion and a shank portion forming a substantially right angle bend with a sharp exterior corner, comprising the steps of first forming a flat metal blank having a body portion and a cutter portion protruding from an edge of said body portion, then partially bending the toe portion relative to the shank portion of the cutter portion to substantially one half the final cutter portion angle, then upsetting said



cutter portion to increase the thickness of the corner portion resulting from the said partial bending step and to form the final cutter portion angle bend with a sharper exterior corner, then grinding a cutting edge on such portion than that resulting from said partial bending.

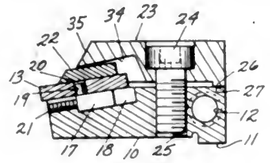
3,154,973
METHOD AND APPARATUS FOR THE BALANCE CENTERING OF ROTORS
Heinrich Hack, Darmstadt, Germany, assignor to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a corporation of Germany
Continuation of application Ser. No. 522,335, July 15, 1955. This application Jan. 4, 1961, Ser. No. 81,665
Claims priority, application Germany July 16, 1954
36 Claims. (Cl. 77—5)



1. The method of balance-centering a rotor, wherein a journal is provided for rotation of the rotor to be balanced, which comprises rigidly mounting the rotor on holding means in a fixed position relative thereto, rotating the rotor and holding means as a rigid unit in said journal, continuously rotating and radially displacing during such continuous rotation the holding means and rotor as a unit relative to said journal to shift the axis of rotation of said unit into coincidence with the inertia axis of the unit, and during such continuous rotation compensating the unbalance forces created by the radial displacement of said unit to establish a given balance condition about the displaced axis of rotation, and machining the rotor about the displaced axis of rotation said displacement of axis of rotation of said unit being independent of the axis of the tool performing said machining.

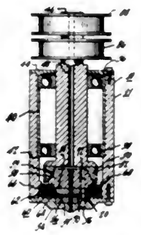
3,154,974
CUTTING TOOL
Walter J. Greenleaf, R.D. 3, Meadville, Pa.
Filed Mar. 23, 1962, Ser. No. 183,325
6 Claims. (Cl. 77—58)

6. A cutting tool having an indexable throw away polygonal bit, of length less than any other dimension and with top and bottom end faces and side edges defining symmetrically disposed points which may successively be brought into cutting position as the bit is indexed and a hole at the center of the end faces and equally spaced from said points, a body having a bottom seat for the bit and having edge seats projecting above and converging toward the rear of the bottom seat for engaging side edges



of one of the points of the bit, a keyway in the body below the bottom seat and extending toward the rear of the bottom seat between said edge seats, a key in the keyway below the bottom seat, a projection on the key extending above the bottom seat into said hole in the bit, and means for moving the key along the keyway.

3,154,975
APPARATUS FOR POINTING AND SEVERING WIRES OR PINS
John Anthony Chase, Nutley, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 26, 1961, Ser. No. 85,014
6 Claims. (Cl. 78—1)

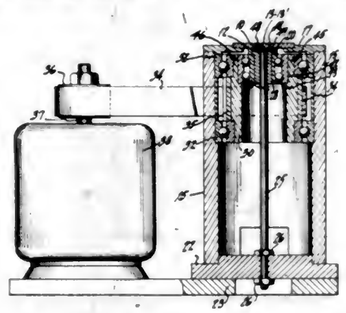


1. Apparatus for pointing and cutting a wire comprising a pair of dies having respective surfaces in contacting face-to-face relation, a wire receiving bore in each die, said bores being normally in registry, said bores being of smaller diameter at the contacting surfaces of said dies and increasing in diameter away from said contacting surfaces to form tapered walls, the edges of said bores in said contacting surfaces being wire cutting means, and the tapered walls of said bores being wire pointing means, and means for moving one die with respect to the other in a spiral of increasing radius while maintaining the faces of the said dies in contact for causing said bore edges to cut a wire extending through said bores, and for causing said tapered walls to point each end of said cut wire.

3,154,976
WIRE SHAPING APPARATUS
John A. Chase, Nutley, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,226
10 Claims. (Cl. 78—13)

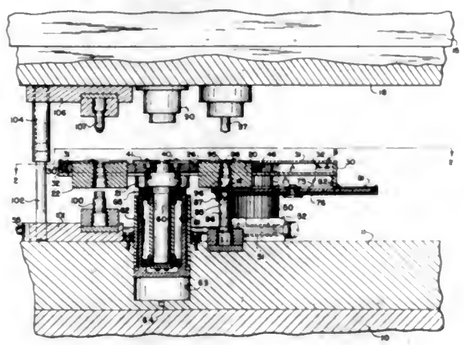
1. Apparatus for chamfering the end of a wire comprising a housing, a die fixedly mounted in said housing, a second die slidably mounted in said housing, said dies having a face-to-face contact, there being a wire receiving hole through each of said dies, one of said holes having a funnel-shaped section for chamfering the end of a wire therein, and means for moving said slidably mounted die

with respect to said fixedly mounted die in an orbital path for causing the tapered wall of said funnel-shaped



section to engage successive peripheral portions of the end of said wire therein.

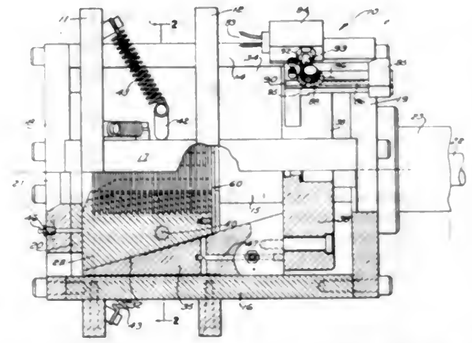
3,154,977
PRESS
Alfred W. Schultz, Cleveland Heights, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio
Filed Apr. 18, 1962, Ser. No. 188,464
8 Claims. (Cl. 78—13)



1. In a press having a linearly movable first member provided with a first tool, a stationary second member provided with a second tool in alignment with said first tool and a die having an aperture extending therethrough, said tools and die cooperating to perform a dieing operation on a workpiece and means for effecting linear movement of the first member toward and from said second member, apparatus supporting a die comprising: a die carrier; means for supporting said die carrier between said first and second members for rotation about an axis parallel with the direction of linear movement of the first member and for linear movement lengthwise of the axis of rotation of said die carrier; means for moving said die carrier along the path of said linear movement in the direction toward the first member; and means for intermittently rotating said die carrier successively in the same direction.

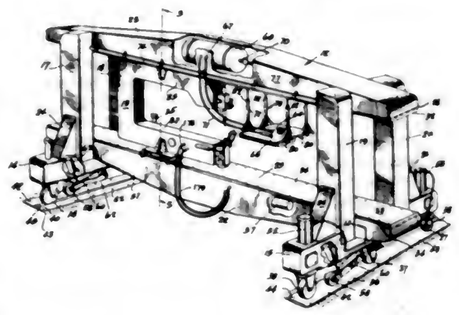
3,154,978
TUBE POINTER
Ellery L. Baker, Warwick, R.I., assignor to United Wire & Supply Corporation, a corporation of Rhode Island
Filed July 9, 1962, Ser. No. 208,502
8 Claims. (Cl. 78—15)

1. A tube pointer comprising a housing having an open end, a plurality of pairs of opposite work engaging jaw members movably mounted in said housing, means to guide said jaw members for radial movement toward a common axis extending through said open end, means to simultaneously move said jaw members relative to said housing toward said common axis, said jaw members each having generally V-shaped surfaces partially embracing the work and positioned at intervals lengthwise of said axis which surfaces of the jaw members complement each other to encircle said axis and provide an axially extend-



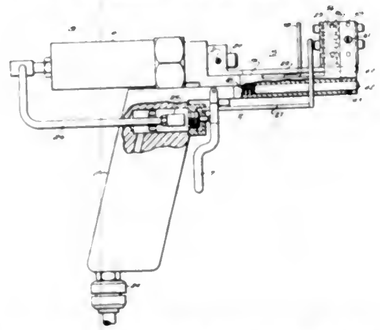
ing opening for the reception of the work, said opening varying as to diameter depending on the position of said jaw members relative to said housing, said jaw members having a plurality of intermeshing leaves at their adjacent edges which slide one upon the other as movement of the jaw members occurs toward and from said axis whereby as the work is being compressed by said jaw members, exuding of the work between the jaw members is prevented.

3,154,979
METAL WORKING MACHINE
Thayer S. Crispin, Malibu, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed June 7, 1957, Ser. No. 664,432
4 Claims. (Cl. 78—49)



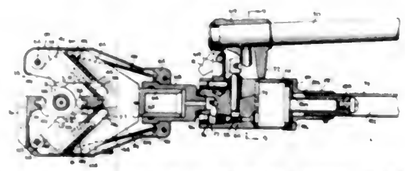
1. A metal fabricating machine comprising: a heavy frame having horizontal upper and lower load-bearing members and spaced-apart vertical end posts at each of the ends of the members; relatively light fabricating tool means encompassed by the frame and adapted to exert high working loads along a vertical axis; pressure means in alignment with said tool means for directly transmitting said loads to the frame; said tool means being adapted for insertion into and removal from the frame through either of the openings between the end posts.

3,154,980
WIRE STRIPPING APPARATUS
Robert L. Hayden, Wakefield, Mass., Emile G. Langlois, Atkinson, N.H., and David C. Starkweather, Andover, Mass., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 14, 1963, Ser. No. 258,432
19 Claims. (Cl. 81—9.51)



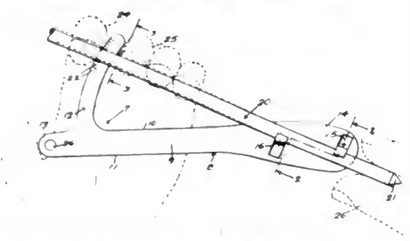
1. Apparatus for stripping insulation from wire and the like comprising:
a stationary base including a pistol-shaped hand-grip member,
movable cam means mounted on said base,
first means mounted on said base and responsive to the movement of said cam means for circumferentially severing the insulation from a wire inserted in said apparatus,
second means mounted on said base and responsive to the movement of said cam means for pulling said wire from the severed insulation, and
actuating means mounted on said base and including an air cylinder for driving a pneumatically controlled spring-returned piston, said piston being connected to and effecting movement of said cam means initially in a first direction and subsequently in a second opposite direction.

3,154,981
COMPRESSION TOOL
Walter R. McDurmont, Birmingham, Ala., assignor to Anderson Electric Corporation, Birmingham, Ala., a corporation of Alabama
Filed June 8, 1961, Ser. No. 115,625
10 Claims. (Cl. 81—15)



1. A crimping tool for crimping an elongate malleable metal connector on a cable or the like and deforming the connector so that in its final crimped condition it is of generally cruciform shape in transverse cross section, said tool comprising first and second opposed pairs of male crimping dies, each having a nose portion for biting into a connector, single rigid means with all of said dies mounted thereon for relative movement toward and away from one another with the dies of the first pair working in a direction generally perpendicular to the dies of the second pair, and with said dies being movable from an open retracted position wherein they are relatively spaced for reception of a connector toward one another for crimping the connector, said mounting means automatically providing a sidewise entry for a connector on a cable or the like between one of the dies of the first pair and one of the dies of the second pair whenever the dies are in their said open position whereby the connector on the cable or the like may be located between all four of the dies when the dies are in their said open position by relative sidewise movement of the mounting means and the connector, means for effecting relative movement of said dies simultaneously toward one another for gripping the connector at four positions spaced around the connector and for applying pressure to the dies to cause them to bite into said connector and effect deformation of said connector to generally cruciform shape, means to keep each die substantially equidistant from its respective two adjacent dies throughout the simultaneous movement thereof, and means responsive to increase in pressure of the dies on the connector to a predetermined value for automatically relieving the pressure to terminate the crimping operation independently of the extent of die movement.

3,154,982
ARROW STRAIGHTENER
Milton F. McQueary, Box 1213, Delta, Utah
Filed May 4, 1962, Ser. No. 192,440
2 Claims. (Cl. 81—15)

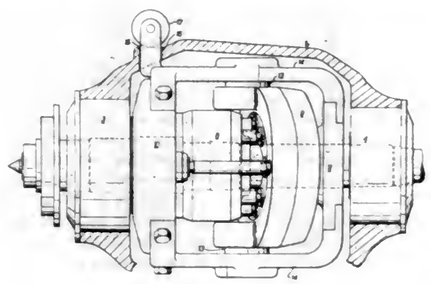


1. An arrow straightener comprising an elongated bar having a front side, an upper edge, and a lower edge, an arm extending upwardly from said upper edge adjacent one end of the bar and having a front side disposed coplanar with the front side of the bar, a first lug and a second lug carried by said bar and projecting outwardly from said front side remote from said arm, said first lug having a downwardly facing lug seat, said second lug being disposed between said first lug and said arm and having an upwardly facing lug seat offset downwardly from and disposed parallel to the lug seat of said first lug, said lug seats being laterally spaced from the front sides of said bar and arm for supporting an arrow shaft spaced from the bar and arm, the lug seats of said first lug and second lug, respectively, being adapted to engage over and under parts of the arrow shaft adjacent an end of the arrow for supporting the arrow on the arrow straightener with another part of the arrow extending across the front side of said arm, and means inscribed on the front side of the arm for visually indicating a bend in the part of the arrow located between the arm and said lugs when the arrow is rotated in the lug seats about its axis.

3,154,983
MACHINE TOOL DRIVES
Donald Firth and Roger Harvey Yorke Hancock, East Kilbride, Glasgow, Scotland, assignors to Council for Scientific and Industrial Research, London, England, a corporate body
Filed May 1, 1963, Ser. No. 287,165
Claims priority, application Great Britain, May 7, 1962, 17,393/62
9 Claims. (Cl. 82—28)

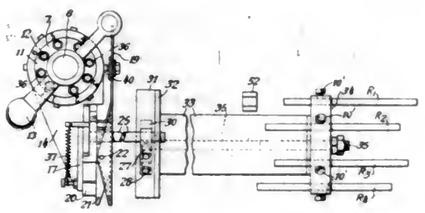
9. Lathe headstock drive comprising a headstock, a headstock spindle; a thrust bearing in said headstock

supporting said headstock spindle without axial float; an hydrostatic swash plate motor on said headstock spindle including a rigid yoke member for uniting the relatively



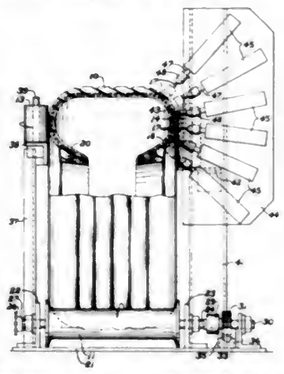
non-rotatable components of said motor; a torque reaction member projecting radially from said rigid yoke member, and resilient abutment means on said headstock for engaging said torque reaction member.

3,154,984
INDEXING OR TABULATING MECHANISMS
Henry Waymouth, Jubilee Works, Kings Road, Godalming, England
Filed Feb. 27, 1962, Ser. No. 176,061
Claims priority, application Great Britain Mar. 8, 1961
10 Claims. (Cl. 82—34)



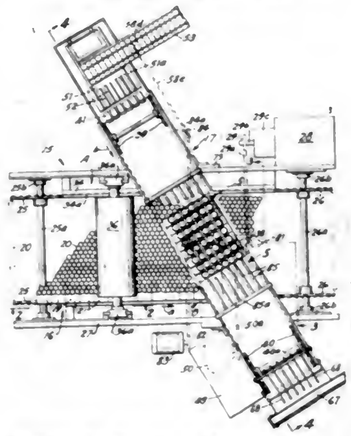
1. Pre-setting mechanism for lathes or like machine tools having a bed, a feed screw and a saddle and in which two sets of measurements, each transverse relatively to the other set, are so associated when pre-set that each predetermined measurement in one set is operative only in conjunction with a predetermined measurement in the other set, comprising, in combination, a rotatable carrier securable to and movable longitudinally with the saddle of a lathe and pre-settable about a longitudinal axis of rotation, stop rods on the carrier parallel to said axis of rotation and spaced around the carrier on a circle concentric with the axis of rotation, each stop rod being pre-settable in position lengthwise of the carrier, a stop on the lathe bed engaged by the end of any of the stop rods in turn to terminate a cutting operation, transverse pre-setting means securable to the lathe feed screw and adjustable rotationally, said transverse pre-setting means including circular adjustable parallel rings each having on its periphery a stop pin, a limit stop adjustable transversely so as to lie in the plane of rotation of the pin on any one of the rings, and mechanical connections between the said rotatable stop rod carrier and the said limit stop of substantially constant ratio of movement.

3,154,985
AIRCRAFT TIRE VENTING APPARATUS
Otto E. Hermanns, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 20, 1962, Ser. No. 189,065
9 Claims. (Cl. 83—2)



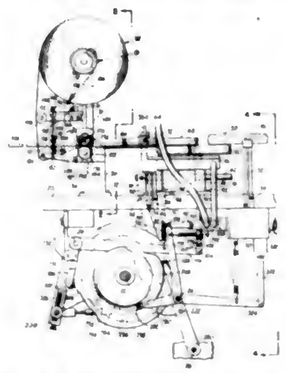
1. An apparatus to provide passageways for the escape of gaseous materials from within the carcass of a rubber vehicle tire comprising means to support a tire for rotation about its axis, tire piercing means supported for movement to and from pentrating contact with the sidewall of a supported tire, indexing means operable to rotate the supported tire a predetermined part of one revolution upon each actuation, means responsive to movement of said piercing means from penetrating contact with the supported tire to initiate operation of said indexing means, and means responsive to completion of operation of indexing movement of said indexing means to initiate operation of said piercing means.

3,154,986
DOUGH CUTTER
Francis R. Reid, Pleasure Ridge Park, Ky., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 145,872
11 Claims. (Cl. 83—123)



1. A machine for forming individual wafers of dough from a blanket of dough, comprising a plurality of side-by-side, hollow and upright dough cutters with unobstructed ends and each of said cutters having a continuous top cutting edge and inwardly protruding dough-supporting edge means spaced below said edge, means mounting and producing movement of said cutters between a first dough-receiving station and a second wafer-discharging station, means applying a dough blanket onto said cutters and pressing the dough against said cutting edges and completely into said cutters at said first station to define a plurality of wafers each in a respective cutter, a plurality of upstanding plungers beneath the cutters at said second station and being movable upwardly against the wafers and through the cutters to lift the wafers from the cutters, and means for removing the wafers from the plungers.

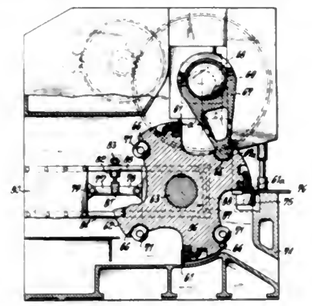
3,154,987
TOBACCO WEB SEVERING MACHINE HAVING A RECIPROCATING ROLLER COOPERATING WITH A FIXED KNIFE IN BOTH DIRECTIONS OF TRAVERSE
Sigurd Clausen, Brooklyn, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 25, 1961, Ser. No. 105,459
6 Claims. (Cl. 83—152)



1. A web feed mechanism, a base plate and a knife therein, said knife integral with said plate, feed means comprising suctional means in said mechanism for feeding the leading end of a continuous web of filmy or limp material to a position beyond said knife, suctional supports for said material on opposite sides of said knife, said knife abutting said supports, said knife having a cutting edge projecting slightly above the top surface of said supports, a cutting roller attached to said feeding means, and other means for reciprocating said cutting roller back and forth across said knife, while engaging said knife on each traverse, to insure the complete severance of said section from said web, said feed means comprising also a pair of coacting web feed rollers which cooperate in transporting said material across said knife, other means responsive to said reciprocation for driving said web feed rollers during a first portion only of the forward movement of said carriage, said other means comprising a rack on said carriage and a gear on one of said web feed rollers, and means for disengaging said racks from said gear during a second portion of said forward movement of said carriage.

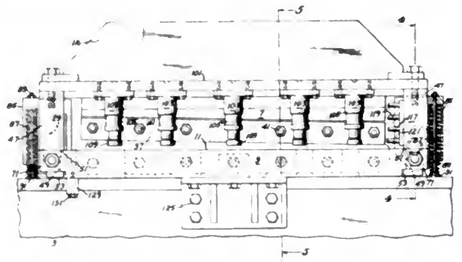
3,154,988
SHEET METAL SHEARS
Karl Greis, St. Ingbert, Saar, Germany, assignor to Verwaltungsgesellschaft Moeller und Neumann Offene Handelsgesellschaft, St. Ingbert, Saar, Germany
Filed Sept. 20, 1961, Ser. No. 139,399
7 Claims. (Cl. 83—216)

1. In an apparatus for trimming the edges of metal sheets, a conveying means for said sheets and trimming shear means disposed on opposite sides of said conveying means for progressive step by step shearing of the edges of said sheet, each of said shear means including a fixed knife and a movable cooperating knife operable in one direction during a cutting stroke to shear the edge of said sheet and in the opposite direction during the



return stroke, means to move said movable knife laterally toward said fixed knife at substantially right angles to the path of cutting movement prior to the cutting stroke and in the opposite direction away from said fixed knife and the cut edge of said sheet during the return stroke and means to adjust the spacing between said fixed and movable knives.

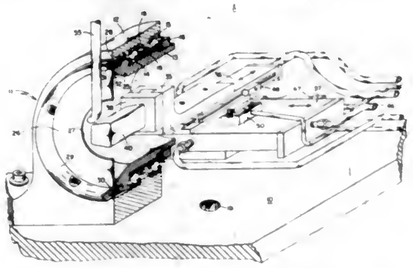
3,154,989
SHEAR ATTACHMENT FOR PRESS BRAKES AND THE LIKE
Eugene W. Pearson, Orinda, and Rolland A. Richardson, Alameda, Calif., assignors to Pacific Industrial Manufacturing Co., a corporation of California
Filed Feb. 2, 1959, Ser. No. 790,683
5 Claims. (Cl. 83—390)



1. A shear attachment for press brakes or the like having a lower support of substantial length and a ram of comparable length reciprocally movable with respect to said lower support, said shearing attachment comprising a bed assembly adapted to rest on said lower support, said bed assembly including a bed plate of substantial length and having a rear edge in substantially the plane of said press brake ram when said bed assembly is installed on said lower support, and means for supporting a shear knife along said rear edge; an upper knife holder assembly, including a ram of the flat plate type and an upper knife affixed thereto, means for reciprocally mounting said upper knife holder assembly to said bed assembly to permit of reciprocating movement of said upper knife ram in substantially the plane of said press brake ram, said mounting means including a side wall at each end of said bed plate; hold-down means for holding work to said bed plate for shearing, said hold-down means including a hold-down beam spanning the distance between said

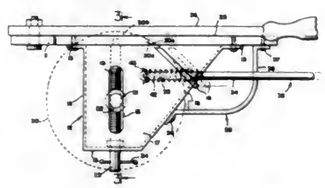
side walls and affixed thereto, a plurality of hold-down cylinder assemblies suspended from said hold-down beam, each of said cylinder assemblies including a cylinder affixed to said beam, said hold-down beam having a flow passage to each of said cylinders for connection of said cylinders to a source of fluid pressure; and means for stabilizing said shearing attachment on the lower support of a press brake.

3,154,990
SLICING APPARATUS HAVING A ROTARY INTERNAL PERIPHERAL FACED SAW BLADE
William C. Woods, Lynn, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,102
3 Claims. (Cl. 83—414)



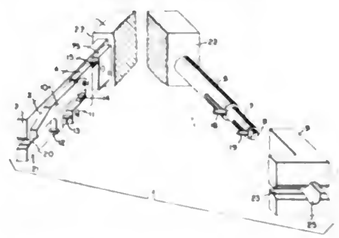
1. Slicing apparatus including a hollow cylindrical arbor having openings at each end, an arbor support for supporting said arbor for rotation about its axis, driving means engaging the outer periphery of said arbor for rotating the arbor, a saw blade mounting at one open end of the said arbor for attaching an annular saw blade having its cutting edge at its inner periphery, work support means adapted to extend through the other open end of the arbor into the arbor for positioning a portion of the work piece to be cut within the opening defined by the inner periphery of the saw blade, means for advancing the work support means relative to the arbor in a direction parallel to the axis of the arbor to position each portion of the work piece in succession within the opening defined by the inner periphery of the saw blade, and feeding means for providing relative movement between the arbor and the work support means in a direction perpendicular to the axis of the arbor whereby the portion of the work piece within the opening defined by the inner periphery of the saw blade is fed into cutting engagement with the cutting edge of the annular saw.

3,154,991
DISC TRIMMING MACHINES
William J. Durtschi, 231 W. Maple St., Stockton, Ill.
Filed June 7, 1963, Ser. No. 286,403
6 Claims. (Cl. 83—451)



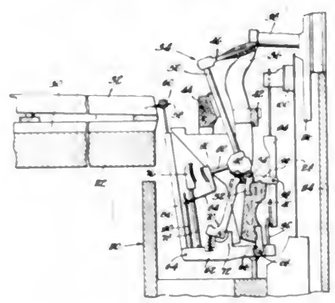
1. A machine for sequentially cutting off portions of a circular disc along chords of equal length with respect to the circle defining the circumferential edge of the disc wherein the disc has a hole in the center thereof, comprising a shears positioned in a vertical plane, a horizontal plate adjacent to and lying substantially in the plane of the top edge of one leg of the shears, the plate having a slot therein substantially at right angles to said one leg, a support for said plate rigid with the plate, the plate and the support together constituting a rigid frame, means rigidly securing said frame to said one leg, a spindle slidably mounted in said slot, positioning means for advancing or retarding the spindle along said slot, the disc being adapted to be mounted on said plate with said spindle registering in said hole and being adapted to be positioned by said positioning means with a portion of the disc extending between both legs of the shears to have a first chordal cut made therethrough by the shears, the disc being adapted to be rotated in one direction after said first chordal cut has been made to bring the disc into position for the next sequential cut, and means for automatically releasably locking the disc in said position for the next chordal cut by the shears when the disc has been rotated into said last-named position and for similarly automatically releasably locking the disc in each subsequent sequential position for additional chordal cuts upon rotation of the disc in said direction, said last-named means including a vertical guide plate positioned at an angle to said one leg and slidably mounted on said first-named plate, means constraining the guide plate to movement in a straight line toward or away from the disc, resilient means normally urging the guide plate into contact with the circumferential edge of the disc, the automatic releasable locking of the disc in the position for the next chordal cut being achieved by contacting of the guide plate with the edge of the preceding chordal cut.

3,154,992
PIVOTED CUTTER FOR RUNNING YARN LINE
Edward Theodore Sahlin, Fairfield Crest, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 25, 1962, Ser. No. 168,729
5 Claims. (Cl. 83—587)



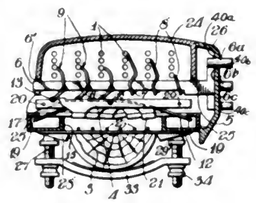
1. An improved yarn handling mechanism for maintaining a running yarn line in an operative relationship to (1) the inlet end of a portable air-aspirated yarn sucker gun device and (2) a yarn cutter device, and then actuatable for substantially simultaneously cutting the running yarn line and causing the cut end of the incoming yarn line to be inserted into the inlet end of the yarn sucker gun device for tensioning and take-up of the cut end of the incoming yarn line, said mechanism comprising a housing having an open end and an open channel extending through opposite sides of the housing and extending inwardly from the said open end, a movable assembly mounted in said housing and comprising a member slidably mounted in said housing for reciprocation in the direction of the plane defined by the said open channel and perpendicular to said open end and positioned adjacent said open channel and having an open channel coinciding with the open channel of said housing and constructed and arranged to guide and position a yarn line moving therethrough, said member provided with structure defining a recess for engaging, supporting, and for maintaining the inlet end of a portable yarn sucker gun device insertable through said open end in operative association and alignment with and adjacent to a moving yarn line guided in the channel of said member, said assembly and member being movable in said housing from a first position to a third position through a second position by movement of the end of a yarn sucker gun device inserted and engaged in said recess and urged against said structure of said member to displace the same in the housing, a stationary yarn cutter mechanism mounted in said housing in operative relationship adjacent to a moving yarn line guided by said channel in said housing, said cutter mechanism constructed and arranged to cooperate with said movable assembly upon movement thereof so that movement of said assembly from said first position to said second position renders said cutter mechanism operative to cut the yarn line, and movement of the assembly to said third position from said second position actuates the cutter mechanism to cut the yarn line adjacent said area of engagement and support of said open channel, and reset means for returning said assembly and member to said first position which movement renders said cutter mechanism inoperative upon withdrawal of said end of said yarn sucker gun device from said recess.

3,154,993
BRIDLE WIRE
Clifford W. Andersen, Chicago, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Feb. 25, 1963, Ser. No. 260,392
12 Claims. (Cl. 84—240)



1. In a piano action assembly, the combination comprising: a whip mounted to swing about a first pivot axis; a hammer butt mounted to swing about a second pivot axis spaced from said first pivot axis; a flexible bridle strap member fixed at one end relative to said hammer butt and perforated with a hole adjacent the other end to receive a bridle wire member; and a bridle wire member secured at one end to said whip to extend toward a position adjacent said hammer butt, said bridle wire member having a free end portion for passing through said hole, a medially disposed strap-locating portion providing a formation enlarged in at least one radial direction whereby to prevent migration of said strap member along said wire member in a direction away from said free end portion, and a deflected portion disposed intermediate said strap-locating portion and said free end portion, said deflected portion being slanted in a direction generally transverse said strap member whereby to prevent migration of said strap member along said wire member in a direction toward said free end portion.

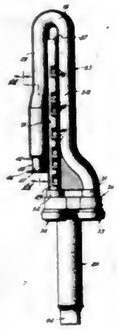
3,154,994
CHORD FORMING DEVICE FOR STRING INSTRUMENTS
Richard Blohm, Oldenburg, Germany, assignor to Köstler & Co., Nauheim, Kreis Gross-Gerau, Germany, a company of Germany
Filed July 3, 1962, Ser. No. 207,318
Claims priority, application Germany, July 8, 1961, K 44,194
4 Claims. (Cl. 84—317)



1. A device for forming varying chords on string instruments comprising a housing for attachment to the instrument neck, depressible coupling slides extending through one side wall of said housing and across said housing interior transversely of said instrument neck, the ends of the coupling slides opposite the ends extending through the housing wall being loosely supported in slots formed in the housing wall whereby the coupling slides can move back and forth across said housing interior when depressed, a bundle of rotatable shafts supported within housing above said coupling slides and extending parallel to said instrument neck, driver levers connected to the shafts, means on said coupling slides which contact said driver levers whereby when the slides are depressed the shafts are rotated, pressure levers extending across the housing interior below said coupling slides to lie transversely of said instrument neck, said pressure levers being pivotably supported at one end within the housing whereby the free ends can move vertically therein, motion locking means connected with said shafts and said pressure levers whereby when said shafts are rotated by the driver levers the motion locking means depresses the pressure levers to a locked position, string contacting members affixed to the free ends of said pressure levers which apply pressure to the strings when the pressure levers are depressed by said motion locking members, and spring means connected with said pressure levers for urging the pressure levers upwardly.

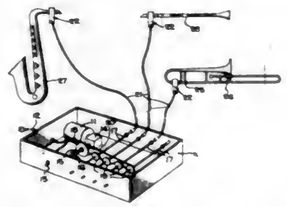
3,154,995
MUSICAL TOY
James O. Kuhn, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,235
6 Claims. (Cl. 84—381)

1. A musical toy comprising,
a drone tube having means for producing a musical tone upon the introduction thereto of air under pressure greater than atmospheric pressure,
a chanter tube having means for producing a variable musical tone upon the introduction thereto of air under pressure greater than atmospheric pressure,
a wind box,
means connecting said tubes to said wind box,
a flexible, substantially airtight bag connected to said wind box,
a mouthpiece connected to said wind box, and
valve means in said wind box selectively positionable in two positions,
in a first position said valve means connecting said mouthpiece to said bag, and



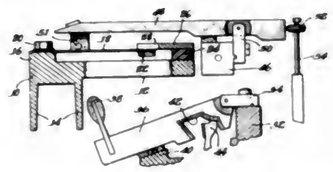
in a second position said valve means connecting said bag to said drone tube and said mouthpiece to said chanter tube.

3,154,996
MUSICAL INSTRUMENT
Joseph J. Krilanovich, 6324 Lankershim Blvd., North Hollywood, Calif.
Filed Apr. 12, 1960, Ser. No. 21,838
15 Claims. (Cl. 84—401)



1. In wind-type musical instruments wherein the different notes produced are dependent on the effective length of the instrument air column as determined by the conventional manually operated playing control means for said instrument, that improvement comprising adjustable means forming an unobstructed part of the instrument air column for varying the effective length of the air column, power driven means for operating said last-named means to vary the length of said instrument air column rapidly and thereby the frequency of the produced note to either side of the note actually played by the musician, said power driven means including housing means enclosing the movable components thereof to assure that the moving components operate independently of and without possibility of interference from the musician or by contact with nearby objects, and there being a plurality of similarly constructed instruments interconnected to common power driven means for varying the lengths of their respective air columns independently of the manipulation of the manually operated playing control means by the musician playing each instrument, and means for operating the drives to the means for varying the lengths of the air column of the different instruments including means for gradually varying the phase operating relationship thereof thereby to vary the phase relation of the produced vibrato of the different instruments.

3,154,997
REED WITH CURVED TAPER
Harald E. W. Bode, North Tonawanda, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Oct. 3, 1962, Ser. No. 228,103
6 Claims. (Cl. 84—408)

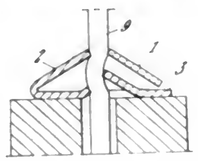


1. A vibratory reed for use as in a musical instrument comprising a base adapted to be secured to a mounting surface, and a flat tongue having lateral and longitudinal dimensions extending freely out from said base, said tongue having a curved inward taper extending out from said base merging into substantially parallel edges, said curved taper comprising a substantial portion of the total length of said tongue and having a length greater than the transverse dimension of said tongue.

ERRATUM

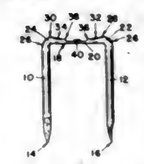
For Class 84—478 see:
Patent No. 3,155,000

3,154,998
FORMWORK LOCK HAVING TWO PARALLEL LOCKING SLOTS
Sven Elof Andersson, Lidabergsgatan 38, Norrkoping, Sweden
Filed Mar. 28, 1962, Ser. No. 183,290
4 Claims. (Cl. 85—36)



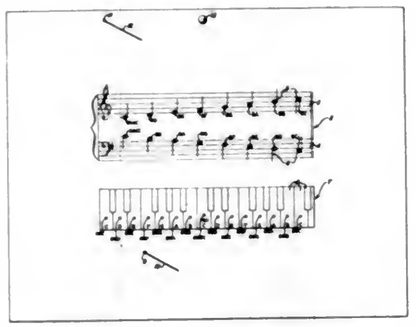
1. A formwork lock for cooperation with a formwork stay, said lock comprising a rectangular plate having a tapered, wedge-shaped longitudinal slot therein, said slot having straight edges and a maximum width which is greater than the width of such a stay, said plate being bent along the center line of the slot so that the portions of the plate on each side of the slot form in cross-section two upper arms lying at an obtuse angle with one another, and the edges of the slot in cross-section forming an acute angle with one another, said plate also being bent along a further line parallel to the center line of the slot to form a third arm underlying said upper arms so that said three arms form in said cross-section an isosceles triangle, said third arm constituting the base of said triangle and having therein a further wedge-shaped slot correspondingly tapered and parallel to the first-mentioned slot and one edge of said further slot, as seen in plan, lying inside the corresponding edge of the first-mentioned slot and being bent inwards toward the inside of the triangle and lying closer to the first-mentioned slot than the other edge of said further slot.

3,154,999
SELF SETTING FLEXIBLE HEAD STAPLE
William H. Stewart, % King Mfg. Co., Jaffrey, N.H.
Filed Sept. 14, 1961, Ser. No. 138,065
5 Claims. (Cl. 85—49)



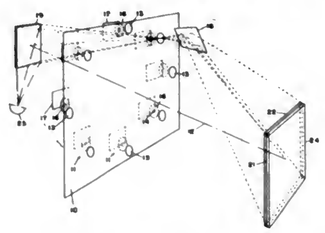
1. A driven cable staple of generally U shape comprising a pair of spaced generally parallel legs and a connecting bridge connecting one end of said legs, the other free ends of said legs being sharpened to form penetrating points, said connecting bridge being centrally depressed, forming a flat, wide, deformable portion for contact with a cable to be secured to an object, said deformable portion being thin relative to the thickness of said legs whereby it is capable of deflecting upward under contact with said cable, a pair of spaced raised striking heads at the ends of said connecting bridge, said heads being generally aligned with the legs, and said striking heads being provided with inwardly and downwardly slanting hammer contact surfaces extending from a generally central location of said striking heads toward said deformable portion and merging therewith, said central locations of the driving heads being generally aligned with the axis of said legs, whereby a hammer blow is directed centrally of said legs straight down to the sharpened points, said slanting hammer contact surfaces gradually rising relative to the object to be held as the thin, wide, flat deformable portion contacts the cable to be secured, whereby when the thin, flat, deformable portion is stopped in its downward progression by the cable and is deflected upward the top central portion thereof then extends substantially in a line with the striking heads at the upper surface thereof, limiting any further penetration of the points and stopping hammer blows on the striking head.

3,155,000
VISUAL AID-ASSOCIATION IDENTIFICATION DEVICE
Moshe Gnatt, 2906 Brighton 12th St., Brooklyn 35, N.Y.
Filed July 2, 1962, Ser. No. 206,745
2 Claims. (Cl. 84—478)



1. Portable and compact visual aid identification device for learning without supervision the fundamental positional correlation between respective notes of a musical staff and corresponding keys of a piano for sounding such notes when the piano is played, which comprises a panel board having a visual representation of a musical staff with individual notes depicted thereon on one face of the panel board and a visual representation of at least a portion of a piano keyboard with simulated individual piano keys for achieving such notes depicted thereon on said face, an energizable circuit means containing an electrically operable signal means therein and having a pair of contact terminal leads for closing said circuit means to operate said signals means, a plurality of musical staff contact positions for one of said leads each disposed on said face at a corresponding note and a plurality of piano key contact positions for the other of said leads each disposed on said face at a corresponding simulated piano key, and a plurality of sub-circuit means each connecting a respective musical staff note contact position with the corresponding piano key contact position for closing the circuit means to said signal means only when one of the leads is placed at a respective musical staff note contact position and the other of the leads is placed simultaneously at a corresponding counter-part piano key contact position connected by the same sub-circuit means, said musical staff including an upper horizontally disposed treble staff portion depicting from left to right in ascending order the respective notes middle C, D, E, F, G, A, B, and high C, as well as a lower horizontally disposed bass staff portion correspondingly positioned directly below said upper treble staff portion in parallel relation therewith and depicting from left to right in descending order the respective notes middle C, B, A, G, F, E, D, and low C, and said piano keyboard including a plurality of piano keys depicting from left to right in ordinal sequence by designating indicia the respective counter-part piano scale notes low C, D, E, F, G, A, B, middle C, D, E, F, G, A, B, and high C, said keyboard being horizontally disposed directly below said staff in spaced parallel relation thereto, the contact positions of the piano key scale notes of the sequence low C, D, E, F, G, A and B being series connected respectively by separate sub-circuit means with the corresponding contact positions of the counter-part lower staff notes of the sequence low C, D, E, F, G, A and B, the contact positions of the piano key scale notes of the sequence D, E, F, G, A, B and high C being series connected respectively by separate sub-circuit means with the corresponding contact positions of the counter-part upper staff notes of the sequence D, E, F, G, A, B and high C, and the contact position of the piano key scale note middle C being series connected by a common sub-circuit means with the corresponding contact positions of both the counter-part lower and upper staff notes middle C.

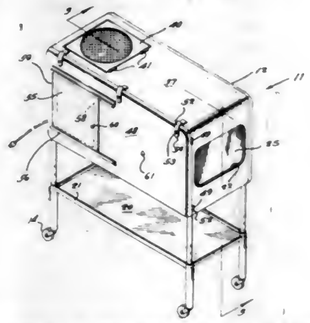
3,155,001
APPARATUS FOR MAKING CORRECTED COLOR SEPARATIONS
Benjamin L. Sites, Elmhurst, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 13, 1961, Ser. No. 116,776
8 Claims. (Cl. 88—24)



1. Apparatus for producing corrected, primary color separation transparencies or the like directly from a multicolor subject comprising, a multiple number of optical as-

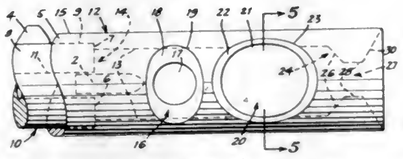
semblies, each including a color separating element, for creating a corresponding number of light images of the subject in selected spectral color bands, said optical assemblies having common conjugate focal planes wherein the respective light images are superimposed, means associated with each optical assembly for controlling the overall intensity of the respective light images in accordance with predetermined intensity factors, and selectively operable means for controlling the projection of the respective images in predetermined selected groups.

3,155,002
MOVABLE PROJECTOR AND SCREEN COMBINATION
Angelo M. Sorrentino, 7351 Dorcas St., Philadelphia, Pa.
Filed Dec. 15, 1961, Ser. No. 159,653
1 Claim. (Cl. 88—28)



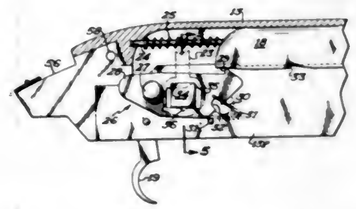
A sound motion picture exhibiting device comprising a horizontally elongated housing having a plurality of wheeled telescopically adjustable supporting legs, said housing having a ventilated rear portion adapted to receive a sound motion picture projector, and inwardly offset screen supporting frame mounted in the forward end wall of said housing, a translucent viewing screen mounted in said frame and adapted to display pictures projected from said projector, said housing being provided with a removable side wall affording access to the interior of the housing when removed, said housing being formed with a recess in the rear portion of its top wall, a layer of sound-insulating material in the recess, a sound reproducing loud speaker unit hinged on a transverse horizontal axis to the forward margin of said recess and being normally receivable in said recess in a horizontal position, said loud speaker unit being rotatable to an upstanding forwardly facing substantially vertical position, and hinged link means connecting a side margin of the loud speaker unit to a side margin of the recess and being adapted to support the loud speaker in said upstanding position.

3,155,003
FIREARM ACCESSORY FOR ATTACHMENT TO MUZZLE OF BARREL
John H. Ruth, 229 Lawrence St., Columbia, Pa.
Filed Apr. 18, 1962, Ser. No. 188,388
11 Claims. (Cl. 89—14)



1. In a firearm having a rifled barrel and a trigger, an elongated housing extending from the firearm barrel and having a central cylindrical chamber of a diameter greater than the diameter of the rifled portion of said barrel and connected to the chamber defined by the rifled portion of said barrel, said housing defining an end chamber spaced from the rifled portion of said barrel and connected to said central chamber and having a diameter smaller than the diameter of said central chamber, a first pair of oppositely disposed ports spaced from said rifled portion of said barrel, and a second pair of oppositely disposed ports of a larger area than said first pair disposed between said first pair of ports and said end chamber, the ports in each said pair having walls flaring outwardly from the interior of said housing and being centered on axes perpendicular to the longitudinal axis of said barrel and perpendicular to a plane containing the trigger of said firearm, said housing defining a solid peripheral wall at positions lying in and immediately adjacent said plane containing said trigger.

3,155,004
SINGLE SHOT OR SEMI-AUTOMATIC FIREARM
Roy E. Weatherby and Fred L. Jennie, both of 271 Firestone Blvd., South Gate, Calif.
Filed Jan. 10, 1963, Ser. No. 250,549
4 Claims. (Cl. 89—128)

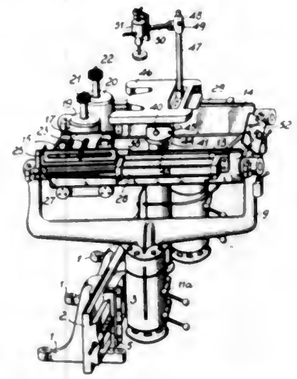


1. A firearm having a semi-automatic repeating action comprising in combination, a receiver affording a housing for said action, a chambered barrel fitted to said receiver, said receiver and barrel assembly being mounted in a butt stock and fore-end assembly, a magazine for retaining a quantity of loaded ammunition to be fed automatically to the chamber in the barrel when the said action is adjusted for semi-automatic firing, a trigger mechanism cooperating with a hammer mounted within the receiver, a breech bolt slidably mounted with respect to said receiver, shift means for selectively changing to single shot operation and back to semi-automatic operation at the option of the shooter, said shift means including a latch bar and actuator member, said latch bar including a hole therein provided with a locking notch disposed for engaging said actuator member and means for selectively engaging said bolt, take down means for releasably engaging said receiver and barrel assembly with the butt-stock and fore-end assembly and a safety mechanism having a locking lever associated therewith whereby said action may be rendered inoperable.

3,155,005
ROTARY HEAD MACHINE TOOLS
Antonio Guerra, Genoa, Italy (% Dr. Guido Modiano, Via Meravigli 16, Milan, Italy)
Filed Sept. 17, 1962, Ser. No. 223,944
Claims priority, application Italy, Nov. 11, 1961, 660,495
6 Claims. (Cl. 90—15)

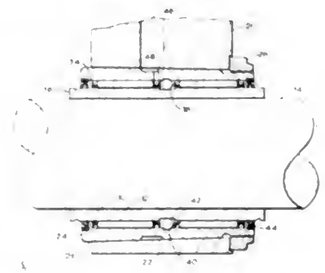
1. A rotary head machine tool, comprising a frame with a baseplate, substantially horizontal guiding means on said baseplate, a number of first slides mounted on said guiding means, a first individual column on each of first slides, supporting means on said first column, rails on said supporting means, said rails extending in a crosswise direction with respect to said first column, a second slide on said rails, a cutting head mounted

on said second slide, another column, on said baseplate means connected to said other column for



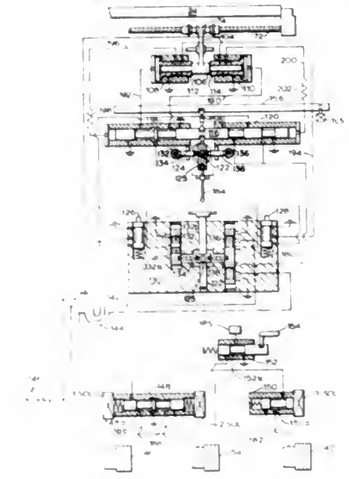
axially and rotationally controlling said other column, a platform on said other column, and means for clamping the workpiece on said platform.

3,155,006
ARBOR SUPPORT BUSHING FOR A MACHINE TOOL
Walter Schroeder, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed June 18, 1962, Ser. No. 203,371
2 Claims. (Cl. 90—20.5)



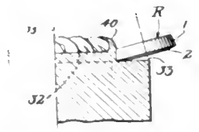
1. In a machine tool having a rotatable arbor extending through a supporting member, an arbor bushing comprising in combination:
(*a*) a tapered bore through said supporting member,
(*b*) a bushing having a tapered external surface and a cylindrical bore therethrough having an annular groove therearound,
(*c*) means to pull said bushing axially into said bore for mating contact therebetween,
(*d*) a sleeve received through said cylindrical bore and having an annular groove around the outer surface thereof, said bushing and sleeve annular groove being of different widths,
(*e*) anti-friction means to hold said sleeve rotatably concentric within said retaining member bore, and
(*f*) a plurality of balls receiving between said annular grooves for free movement therearound relative to said bushing and sleeve whereby said balls limit axial movement of said sleeve in said bushing in accordance with the difference in width of said annular grooves.

3,155,007
AUTOMATIC MACHINE TOOL CONTROL MECHANISM
Lewis A. Dever and Charles Herfurth, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,361
12 Claims. (Cl. 90—21)



1. In a machine tool of the type having a plurality of slides to effect relative movement between a workpiece and a tool along a plurality of axes, the mechanism comprising:
(*a*) a drive shaft,
(*b*) means selectively operable to rotate said drive shaft,
(*c*) a brake operable when applied to stop rotation of said drive shaft,
(*d*) a timer operable when set off to apply said brake for a predetermined period of time to stop rotation of said drive shaft,
(*e*) a plurality of reversing clutches, each of said reversing clutches selectively engageable to connect said drive shaft to one of the slides for movement thereof, and
(*f*) means responsive to movement of one of said slides automatically to effect disengagement of the one of said reversing clutches engageable to connect said one slide to said drive shaft for movement thereof and to set off said timer.

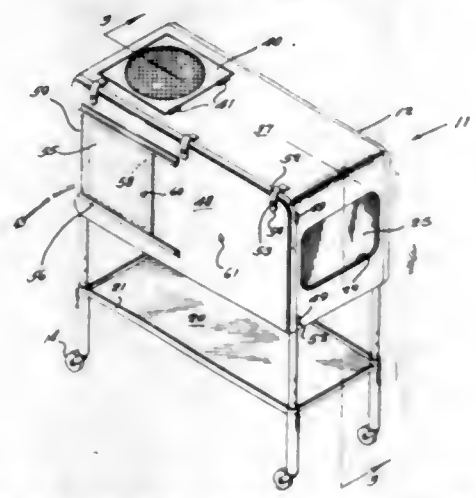
3,155,008
METAL WORKING
Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 21, 1962, Ser. No. 196,055
5 Claims. (Cl. 90—24)



1. In a method of peeling surface metal from a blank comprising the steps of:
taking a blank having a surface of finite thickness to be peeled from the body of the blank;

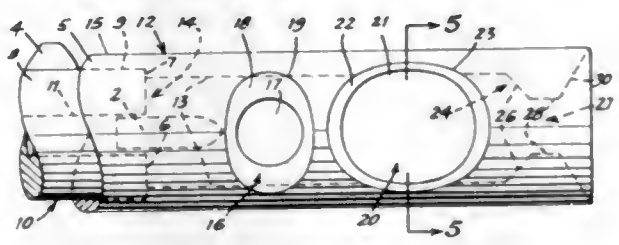
semblies, each including a color separating element, for creating a corresponding number of light images of the subject in selected spectral color bands, said optical assemblies having common conjugate focal planes wherein the respective light images are superimposed, means associated with each optical assembly for controlling the overall intensity of the respective light images in accordance with predetermined intensity factors, and selectively operable means for controlling the projection of the respective images in predetermined selected groups.

3,155,002
MOVABLE PROJECTOR AND SCREEN COMBINATION
Angelo M. Sorrentino, 7351 Dorcas St., Philadelphia, Pa.
Filed Dec. 15, 1961, Ser. No. 159,653
1 Claim. (Cl. 88—28)



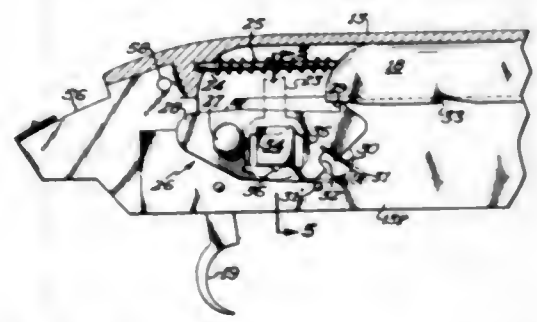
A sound motion picture exhibiting device comprising a horizontally elongated housing having a plurality of wheeled telescopically adjustable supporting legs, said housing having a ventilated rear portion adapted to receive a sound motion picture projector, and inwardly offset screen supporting frame mounted in the forward end wall of said housing, a translucent viewing screen mounted in said frame and adapted to display pictures projected from said projector, said housing being provided with a removable side wall affording access to the interior of the housing when removed, said housing being formed with a recess in the rear portion of its top wall, a layer of sound-insulating material in the recess, a sound reproducing loud speaker unit hinged on a transverse horizontal axis to the forward margin of said recess and being normally receivable in said recess in a horizontal position, said loud speaker unit being rotatable to an upstanding forwardly facing substantially vertical position, and hinged link means connecting a side margin of the loud speaker unit to a side margin of the recess and being adapted to support the loud speaker in said upstanding position.

3,155,003
FIREARM ACCESSORY FOR ATTACHMENT TO MUZZLE OF BARREL
John H. Ruth, 229 Lawrence St., Columbia, Pa.
Filed Apr. 18, 1962, Ser. No. 188,388
11 Claims. (Cl. 89—14)



1. In a firearm having a rifled barrel and a trigger, an elongated housing extending from the firearm barrel and having a central cylindrical chamber of a diameter greater than the diameter of the rifled portion of said barrel and connected to the chamber defined by the rifled portion of said barrel, said housing defining an end chamber spaced from the rifled portion of said barrel and connected to said central chamber and having a diameter smaller than the diameter of said central chamber, a first pair of oppositely disposed ports spaced from said rifled portion of said barrel, and a second pair of oppositely disposed ports of a larger area than said first pair disposed between said first pair of ports and said end chamber, the ports in each said pair having walls flaring outwardly from the interior of said housing and being centered on axes perpendicular to the longitudinal axis of said barrel and perpendicular to a plane containing the trigger of said firearm, said housing defining a solid peripheral wall at positions lying in and immediately adjacent said plane containing said trigger.

3,155,004
SINGLE SHOT OR SEMI-AUTOMATIC FIREARM
Roy E. Weatherby and Fred L. Jennie, both of 271 Firestone Blvd., South Gate, Calif.
Filed Jan. 10, 1963, Ser. No. 250,549
4 Claims. (Cl. 89—128)

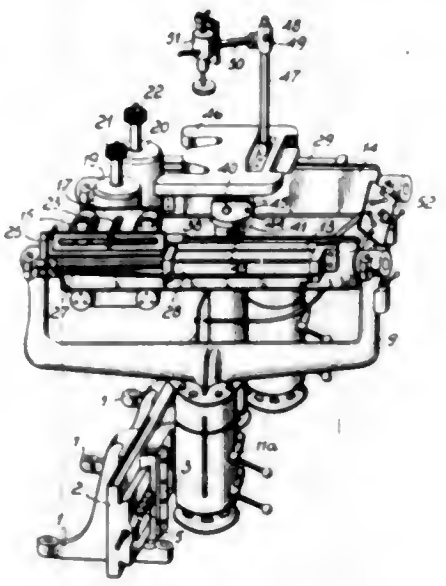


1. A firearm having a semi-automatic repeating action comprising in combination, a receiver affording a housing for said action, a chambered barrel fitted to said receiver, said receiver and barrel assembly being mounted in a butt stock and fore-end assembly, a magazine for retaining a quantity of loaded ammunition to be fed automatically to the chamber in the barrel when the said action is adjusted for semi-automatic firing, a trigger mechanism cooperating with a hammer mounted within the receiver, a breech bolt slidably mounted with respect to said receiver, shift means for selectively changing to single shot operation and back to semi-automatic operation at the option of the shooter, said shift means including a latch bar and actuator member, said latch bar including a hole therein provided with a locking notch disposed for engaging said actuator member and means for selectively engaging said bolt, take down means for releasably engaging said receiver and barrel assembly with the butt-stock and fore-end assembly and a safety mechanism having a locking lever associated therewith whereby said action may be rendered inoperable.

3,155,005
ROTARY HEAD MACHINE TOOLS
Antonio Guerra, Genoa, Italy (% Dr. Guido Modiano, Via Meravigli 16, Milan, Italy)
Filed Sept. 17, 1962, Ser. No. 223,944
Claims priority, application Italy, Nov. 11, 1961, 660,495
6 Claims. (Cl. 90—15)

1. A rotary head machine tool, comprising a frame with a baseplate, substantially horizontal guiding means on said baseplate, a number of first slides mounted on said guiding means, a first individual column on each of first slides, supporting means on said first column, rails on said supporting means, said rails extending in a crosswise direction with respect to said first column, a second slide on said rails, a cutting head mounted

on said second slide, another column, on said base-plate means connected to said other column for

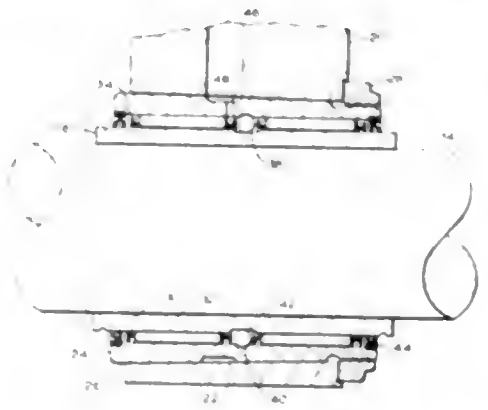


axially and rotationally controlling said other column, a platform on said other column, and means for clamping the workpiece on said platform.

3,155,006
ARBOR SUPPORT BUSHING FOR A MACHINE TOOL

Walter Schroeder, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed June 18, 1962, Ser. No. 203,371
2 Claims. (Cl. 90—20.5)



1. In a machine tool having a rotatable arbor extending through a supporting member, an arbor bushing comprising in combination:

(*a*) a tapered bore through said supporting member,

(*b*) a bushing having a tapered external surface and a cylindrical bore therethrough having an annular groove therearound,

(*c*) means to pull said bushing axially into said bore for mating contact therebetween,

(*d*) a sleeve received through said cylindrical bore and having an annular groove around the outer surface thereof, said bushing and sleeve annular groove being of different widths,

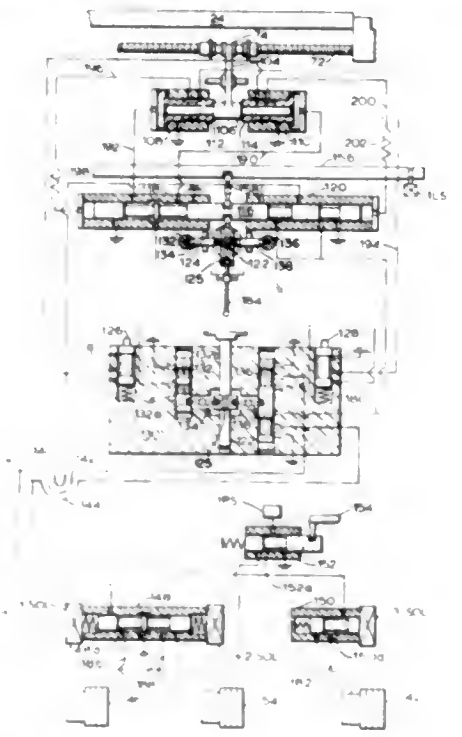
(*e*) anti-friction means to hold said sleeve rotatably concentric within said retaining member bore, and

(*f*) a plurality of balls receiving between said annular grooves for free movement therearound relative to said bushing and sleeve whereby said balls limit axial movement of said sleeve in said bushing in accordance with the difference in width of said annular grooves.

3,155,007
AUTOMATIC MACHINE TOOL CONTROL MECHANISM

Lewis A. Dever and Charles Herfurth, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed May 28, 1962, Ser. No. 198,361
12 Claims. (Cl. 90—21)



1. In a machine tool of the type having a plurality of slides to effect relative movement between a workpiece and a tool along a plurality of axes, the mechanism comprising:

(*a*) a drive shaft,

(*b*) means selectively operable to rotate said drive shaft,

(*c*) a brake operable when applied to stop rotation of said drive shaft,

(*d*) a timer operable when set off to apply said brake for a predetermined period of time to stop rotation of said drive shaft,

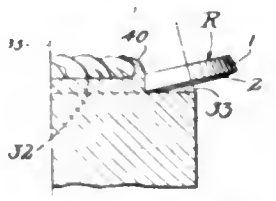
(*e*) a plurality of reversing clutches, each of said reversing clutches selectively engageable to connect said drive shaft to one of the slides for movement thereof, and

(*f*) means responsive to movement of one of said slides automatically to effect disengagement of the one of said reversing clutches engageable to connect said one slide to said drive shaft for movement thereof and to set off said timer.

3,155,008
METAL WORKING

Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio

Filed May 21, 1962, Ser. No. 196,055
5 Claims. (Cl. 90—24)



1. In a method of peeling surface metal from a blank comprising the steps of:

taking a blank having a surface of finite thickness to be peeled from the body of the blank;

taking a roller having a peripheral conical surface and causing relative motion between roller and blank in a first direction to cause the roller to rotate while simultaneously causing relative motion between roller and blank in a second direction normal to first said direction so that with said motions the conical roller surface will serially engage along a path with metal constituting said blank surface;

said second direction of motion causing the conical roller surface to exert a force on the blank surface metal, the direction of force application being the same as said second direction of motion;

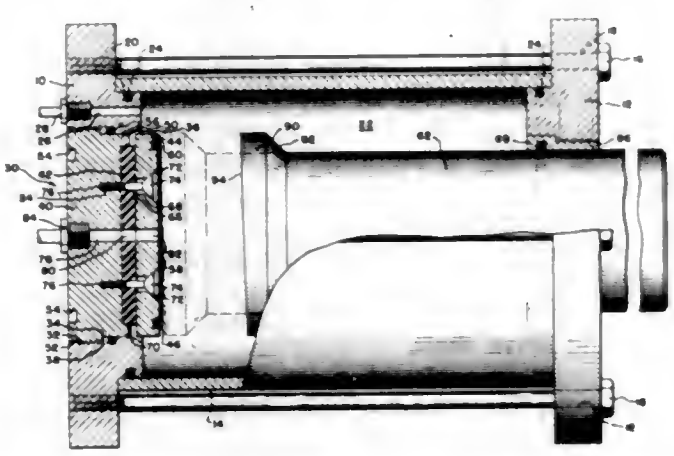
said engagement and said force causing metal of the blank surface along said path to shear in the direction of application of said force and only at the innermost point of contact between the conical roller surface and the blank and also causing plastic flow of the surface metal away from the blank past the conical roller surface in a direction transverse to the direction of the force application.

3,155,009

HIGH ENERGY ACTUATOR APPARATUS

Josef K. Murek, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Aug. 3, 1961, Ser. No. 129,120
2 Claims. (Cl. 91—25)



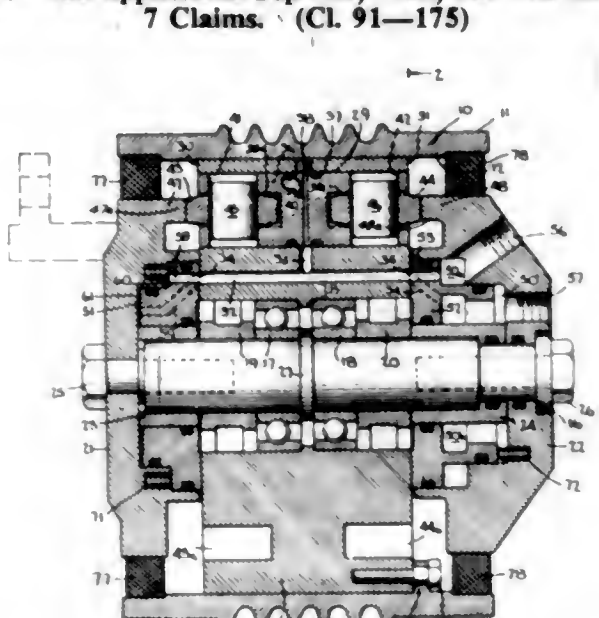
1. An actuator comprising means defining a wall, a thrust member having a head portion with a surface, a base member having a surface, seal means positioned between said surfaces to provide a pressure seal therebetween about a portion of said head portion surface, a plurality of bores through said base member and having countersunk portions adjacent said base member surface, a member removably positioned on said wall, a body of elastic material positioned intermediate said removable member and base member, screw fasteners having shanks of lesser diameters than the diameters of said bores and countersunk heads, said shanks being positioned through said bores and said body in threaded engagement with said removable member to secure together said removable member, said body, and said base member and position said countersunk heads below said base member surface in engagement with said countersunk portions, said thrust member and said base member being cooperable to effect said pressure seal, means establishing an actuating pressure, means for applying said actuating pressure to said thrust member to exert a set force urging said thrust member toward said base member to maintain said pressure seal, and means for applying a triggering force to said thrust member to overbalance said set force to eliminate said pressure seal and release said actuating pressure upon said portion of said head portion surface, whereby said thrust member is impelled from said base member to produce output thrust.

3,155,010

ROTARY HYDRAULIC APPARATUS

John H. Johnson and Arthur S. Irwin, Jamestown, N.Y., assignors to Marlin-Rockwell Corporation, Jamestown, N.Y., a corporation of Delaware

Continuation of application Ser. No. 807,613, Apr. 20, 1959. This application Sept. 18, 1962, Ser. No. 224,322
7 Claims. (Cl. 91—175)



1. A hydraulically driven motor comprising a separate cylindrically shaped cylinder block having opposite sides and supported for rotation about an axis, said cylinder block having a plurality of circumferentially spaced cylinder bores extending parallel to the axis of the cylinder block, a pair of pistons end to end in each of said bores, separate fluid supply passage means for each respective cylinder bore extending parallel to the axis of said cylinder block from the side of said cylinder block to said cylinder bore for transferring fluid therebetween, cam means on each side of said cylinder block for operating respective pistons with each cam means having a plurality of cam lobes less than the number of cylinder bores for actuating each pair of pistons through a plurality of strokes for each rotation of the cylinder block, valve means engaging one side of said cylinder block and having a pair of supply and discharge passages for each cam lobe on one side to deliver and receive fluid on each stroke of a respective pair of pistons and separable annular supply and exhaust chambers formed on the side of the valve means opposite to said cylinder block for producing substantially uniform annular sealing pressure against said cylinder block, said pistons rotating said cylinder block by the reaction forces between said lobes and said cylinder block created by the fluid pressure acting on said pistons.

3,155,011

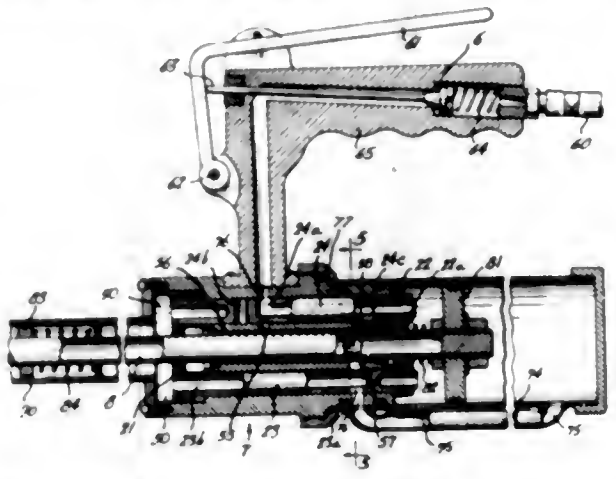
RECIPROCATIVE PRUNING SAW

Ronald E. Hyskell, Seattle, Wash., assignor to Husky Manufacturing, Inc., Seattle, Wash., a corporation of Washington

Filed June 27, 1960, Ser. No. 38,933
6 Claims. (Cl. 91—341)

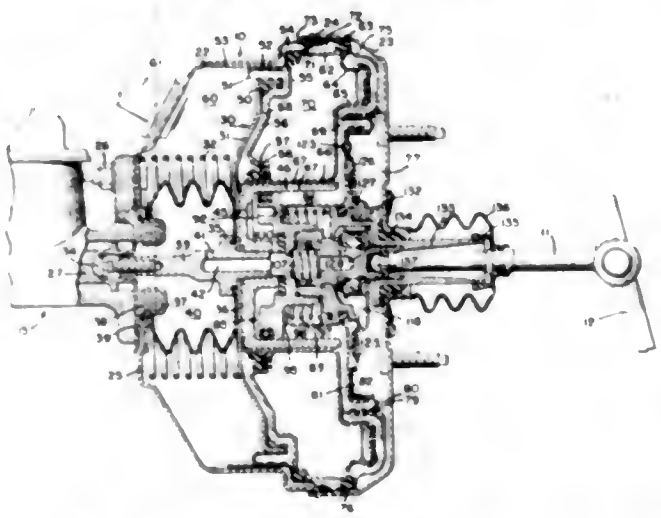
1. In a pruning saw, a saw-reciprocating rod, a motor housing including a pneumatic cylinder into which said rod extends, a piston mounted on said rod and fitting slidably within said cylinder, a valve body adjacent to said cylinder and having three bores extending generally parallel to said rod and a passage through which said rod extends with a central portion of a width exceeding the width of said rod, a source of air under pressure connected to said valve body, two valve elements extending through two of said bores, respectively, a valve plug movable into and from the third bore to close same

or to open it, means connecting said valve elements and said valve plug for conjoint reciprocative movement, one such valve element being ported for communication between said pressure source and the central portion of the rod passage when the valve plug is withdrawn from its bore, and further ported for communication between said pressure source and the adjacent end of said cylinder when said valve plug is closing its bore, the other valve



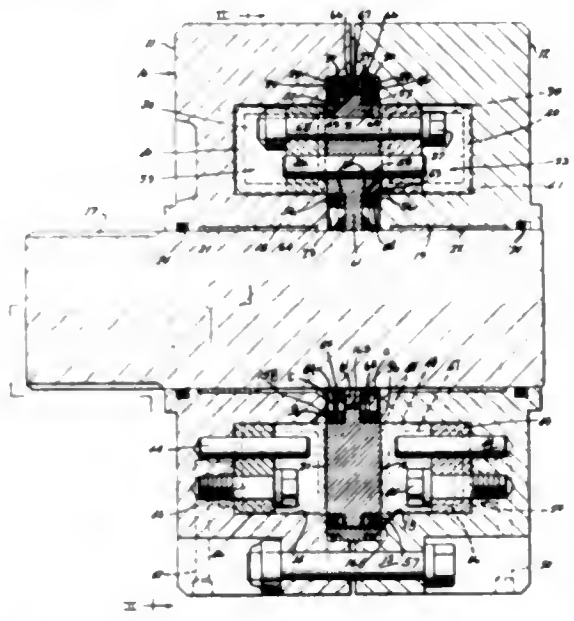
element being ported for communication between the central portion of the rod passage and the opposite end of said cylinder when the valve plug is withdrawn from its passage, and having a duct affording a relief passage from the remote end of the cylinder when said valve plug is closing its bore, and means carried by said rod and engageable with said valve elements to shift them by predetermined movement of said piston.

3,155,012
FLUID PRESSURE MOTOR MECHANISM
David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,406
16 Claims. (Cl. 91—391)



1. A fluid pressure motor mechanism comprising a casing having a pair of pressure responsive elements and a pair of walls cooperating with said casing and said elements to form alternately low pressure and high pressure chambers, said high pressure chambers communicating with each other and said low pressure chambers communicating with each other, one of said low pressure chambers communicating with a source of low pressure, a valve mechanism normally connecting said high pressure chambers to said low pressure chambers and movable to connect said high pressure chambers to a source of higher pressure to actuate said pressure responsive elements, a normally stationary axially movable unit carrying a part of said valve mechanism and having oppositely facing pressure surfaces subject respectively to pressures in said low pressure source and to the same pressure as said high pressure chambers to hold said unit stationary in a normal position, said pressure responsive elements being connected to each other and having a radially inner rigid member in abutting relationship with said unit, said valve mechanism including a manually operable member having lost motion connection with said unit, whereby, upon a failure of said valve mechanism to establish differential pressures in said chambers, movement of said manually operable member will move said unit to actuate said rigid radially inner member.

3,155,013
ROTARY ACTUATOR
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed June 12, 1961, Ser. No. 116,372
14 Claims. (Cl. 91—409)



1. In a rotary actuator, a housing having an annular actuator chamber therein having rectangular walls, a shaft rotatably journalled within said housing in inwardly spaced relation with respect to said actuator chamber, said housing having a continuous slot therein opening from said shaft to said chamber, a disk on said shaft extending through said slot and into said chamber, a pair of aligned stationary abutments mounted within said chamber on opposite sides of said disk, sealing means sealing said abutments to said chamber and disk, a pair of aligned wings extending from opposite sides of said disk and secured thereto, means sealing said wings to said chamber, said wings with said abutments dividing said chamber into two pairs of working chambers of increasing and decreasing volume, said disk having a reduced cross-sectional area portion within said slot and having internal cylindrical faces in general alignment with the inner margin of said chamber, and double faced sealing means in said reduced cross-sectional area portion for sealing said disk to said slot comprising a sealing ring on opposite sides of said disk and having right angled sealing faces, one of said sealing faces having sealing engagement with said internal cylindrical wall of said disk and the other of said sealing faces having sealing engagement with the wall of said slot, a retainer for each sealing ring, and means pressurizing said retainers to maintain said sealing rings in sealing engagement with said slot and disk.

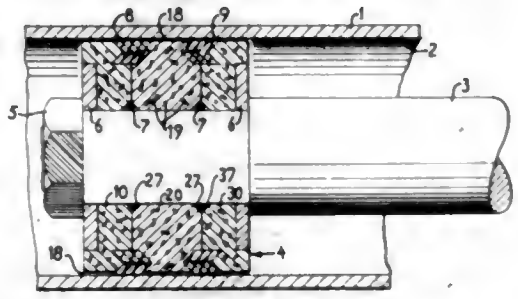
ERRATUM

For Class 92—39 see:
Patent No. 3,155,019

3,155,014
PLASTIC PISTON

Orville Ferdnand Genz, Elmwood Park, Ill., assignor to Garlock, Inc., Palmyra, N.Y., a corporation of New York

Filed Jan. 23, 1961, Ser. No. 84,317
3 Claims. (Cl. 92—244)

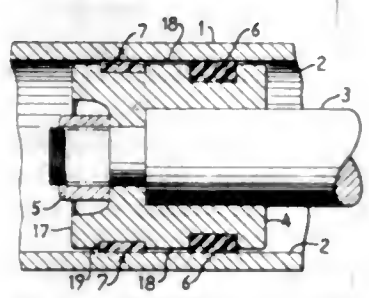


1. A piston assembly attached to a piston rod for being reciprocated in a cylinder comprising at least two body members having a diameter less than the inside diameter of the cylinder when the piston assembly and cylinder are at environmental temperature, packing rings carried by the piston assembly in contact with the wall of the cylinder, said body members being formed of a plastic material having a higher degree of thermal expansion than the material of the cylinder, said body members being adapted to expand into engagement with the wall of the cylinder in response to an increase in the operating temperature.

3,155,015
PISTON BEARING-REINFORCED PLASTIC WEAR RING

Orville Ferdnand Genz, Elmwood Park, Ill., assignor to Garlock, Inc., Palmyra, N.Y., a corporation of New York

Filed Jan. 30, 1961, Ser. No. 85,932
4 Claims. (Cl. 92—249)



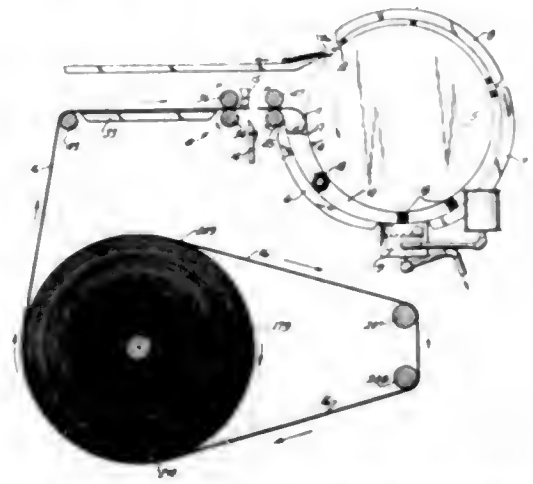
4. A piston for a fluid pressure cylinder, sealing means disposed on the piston, an annular groove formed around the piston between said sealing means and a source of fluid pressure in a cylinder, and a wear ring formed of plastic material reinforced with unoriented fibers carried by the groove, the inside diameter of said wear ring being greater than the diameter of the groove, said wear ring being formed with longitudinal grooves in the outer surface thereof.

3,155,016
MACHINE FOR MAKING PAPER STICKS

Joseph S. Pellicone, Jericho, Edwin N. Dejewski, New York, and Salvatore Lo Piccolo, Jericho, N.Y., assignors to Chesebrough-Pond's Inc., Long Island City, N.Y., a corporation of New York

Filed Jan. 24, 1963, Ser. No. 253,650
29 Claims. (Cl. 93—1)

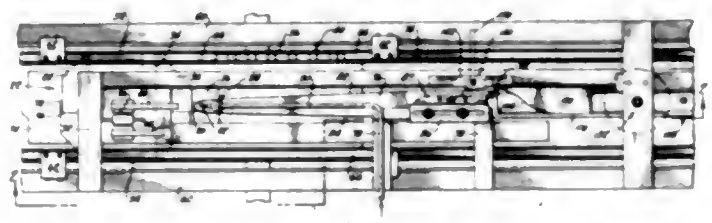
1. In a machine for forming paper sticks by tightly rolling and compacting sections of paper web, a drum arranged to rotate continuously on a fixed horizontal axis, a series of rigid and unyielding sector members disposed around the periphery of the drum but extending less than the full circumference thereof, the width of the sector members being approximately the same as the drum face, means for supporting each of the sector members in fixed but independently adjustable position spaced from the face of the drum, the intake end of the series being spaced farther from the drum than the delivery end of the series and providing a reducing channel which has a gradually smaller thickness from one end to the other regardless of the diameter of paper stick which the machine is to produce, means for feeding successive sections of paper of uniform length and partially curled to the intake end of the series of sector members, and means for removing rolled and compacted paper sticks from the delivery end thereof.



3,155,017
APPARATUS FOR SEALING ENDS IN IMPERVIOUS BAGS

Alfred B. Haslacher, deceased, late of San Francisco, Calif., by Robert L. Haslacher, administrator, Palo Alto, Calif., assignor to Mabel L. Haslacher

Filed Jan. 18, 1963, Ser. No. 252,524
23 Claims. (Cl. 93—27)



1. An apparatus for sealing bags having at least a thermoplastic inside surface and a bottom closure formed by a diamond fold providing outwardly extending flaps having confronting overlapping edges extending across said bottom comprising: conveyor means formed for transporting said bags in successive order along a first path of movement parallel to said edges and a second path of movement at right angles to said edges, a heat sealing device having a heating element positioned in said first path of movement for bonding said flaps together along the length thereof, and means in said path of movement and having a member adapted for providing a bead of thermoplastic material along the jointure of the inner of said flap edges.

3,155,018
FORMER FOR THE PRODUCTION OF TUBING

Rolf Kirsten, Nellingen, near Esslingen, and Helmut Wurst, Winnenden, Germany, assignors to Höfliger & Karg, Waiblingen, Baden-Wurttemberg, Germany, a firm of Germany

Filed Sept. 12, 1962, Ser. No. 223,214
Claims priority, application Germany Sept. 16, 1961
9 Claims. (Cl. 93—82)

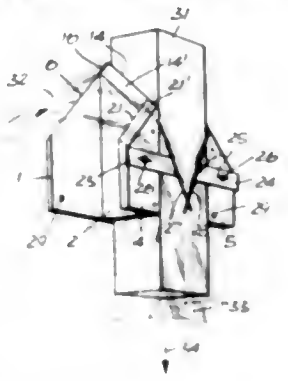
1. A former for molding a strip of sheet material into a tubular shape comprising

a plate disposed about each of three sides of an imaginary channel and defining a channel open at one longitudinal side thereof and having a rear side and

a front side adapted to feed a strip of sheet material into said channel, and

said plate disposed at the rear side of said channel having an end face inclined upwardly in the direction of movement of said strip of sheet material, in order to guide and mold said strip into a tubular shape during its movement toward and through said channel,

said plates disposed at the front side of said channel having an end face inclined downwardly in the direction of movement of said strip of sheet material,



a pair of guide members secured to said respective plates disposed opposite each other adjacent the open longitudinal side of said channel and extending from said plates over the open longitudinal side of said channel,

said guide members being adapted to move the longitudinal edges of said strip of said sheet material into overlapping position,

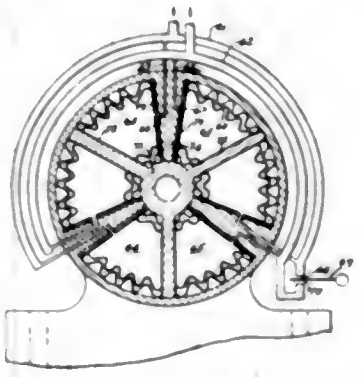
a tubular mandrel disposed in said channel and having its longitudinal axis coincide with the longitudinal axis of said channel, and

said tubular mandrel having a cross-section slightly smaller than that of said channel in order to provide a gap between the outer surface of said mandrel and the inner surface of said channel for feeding said strip of sheet material through said gap and along and about said mandrel.

3,155,019
HOT GAS SERVO SYSTEM HAVING ROTARY ACTUATOR

Paul M. Stiglic, Wickliffe, and Daniel J. Shramo and Charles R. Hehmeyer, Willoughby, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed May 6, 1960, Ser. No. 27,384
3 Claims. (Cl. 92—39)



3. A rotary actuator comprising in combination:

(*a*) a housing having means defining an internal chamber;

(*b*) a shaft rotatably mounted on said housing and extending into said housing;

(*c*) a vane carried by said shaft and separating the chamber into two compartments;

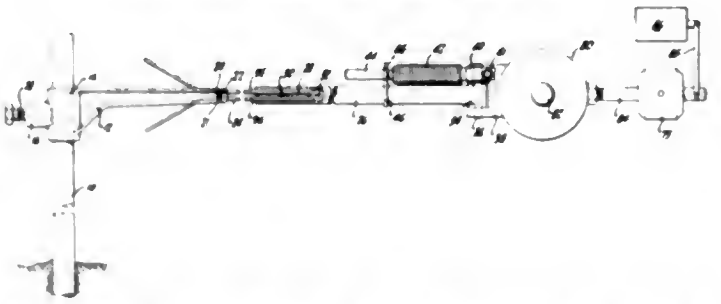
(*d*) a pair of pressurizable bellows means, each of spaced-apart double-wall construction, respectively disposed in each of said compartments, respectively operative between opposite sides of said vane and said chamber-defining means, each of said bellows means respectively having a bonded connection to one lateral side of said vane independent of that of the other and to an opposed wall of said chamber defining means; and

(*e*) a pair of separate conduits respectively communicating through said opposed walls with the interior of said bellows means, each comprising the sole fluid communication therewith, and each adapted to be connected to a pressurized fluid source.

3,155,020
LEVELING CONTROL SYSTEM FOR ROAD BUILDING MACHINES

Raymond A. Gurries, San Jose, and John Curlett, Los Gatos, Calif., assignors to Gurries Manufacturing Co., San Jose, Calif., a corporation of California

Filed May 9, 1961, Ser. No. 108,902
15 Claims. (Cl. 94—39)

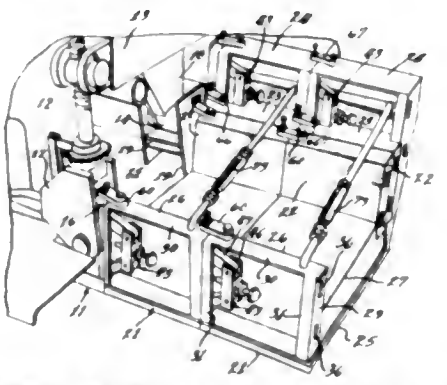


4. A wire fork assembly for controlling the vertical tool height of a road building machine in accordance with a ground supported grade-wire extending along the path of movement of said road building machine, said wire fork assembly comprising: a control member rotatably mounted to said road building machine for limited angular displacement about an axis parallel to said grade wire, said control member being operative to actuate control means for selectively raising and lowering said vertical tool height in response to an angular position about said axis; a sleeve support mounted to said control shaft, a horizontally extending sleeve swivelly connected to said sleeve support for swiveling about a vertical axis; a closely wound extension coil spring connected between said sleeve support and said sleeve for normally centering said sleeve about an axis perpendicular to said control member; and a wire fork supported by said sleeve and operative to engage said grade wire.

3,155,021
EXTENSIONS FOR BITUMINOUS FINISHERS

James F. Sauer, Aurora, James J. Gebhardt, Jr., Lisle, and Earl D. Martenson, North Aurora, Ill., assignors to Barber-Greene Company, Aurora, Ill., a corporation of Illinois

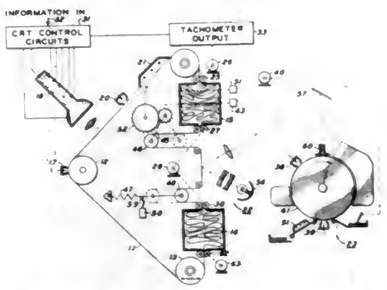
Filed June 15, 1961, Ser. No. 117,314
5 Claims. (Cl. 94—45)



1. In an asphalt finisher, a screed member, an extension member removably connected to said screed mem-

ber for extending the length of said screed member, said screed member and extension member each having registrable apertured portions when said members are in abutting engagement with each other, the apertures of said apertured portions each having an inwardly extending flange along the margin thereof, a clamping member loosely fitting through the apertures of said apertured portions and having outwardly facing hook-like portions engageable with said flanges along the margins of said apertured portions of said screed member, and a clamping screw threaded in said clamping member between the outwardly facing hook-like portions thereof and having engagement with said extension member and turnable to bring said screed member and clamping member into abutting engagement with each other and to hold said members in abutting engagement with each other.

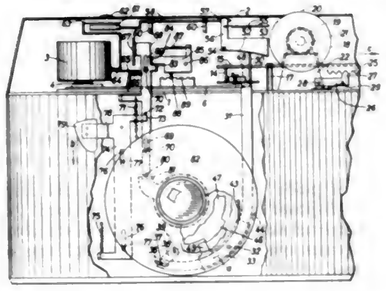
3,155,022
BUFFER FOR ELECTRONIC DISPLAY READOUT
Frederick A. Schwertz, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 31, 1963, Ser. No. 284,561
6 Claims. (Cl. 95—1.7)



4. Output apparatus for electronic displays comprising in combination:
(*a*) a buffer component comprising:
(1) a continuous photosensitive deformable member;
(2) means to form a deformation image of an electronic display on said member;
(3) means to project said image;
(4) means to erase said image; and
(*b*) a permanent record forming component for receiving images projected from said buffer component and multiply printing said images comprising:
(1) a xerographic reproducing member,
(2) means to form latent electrostatic images on said reproducing member corresponding to images projected from said buffer component;
(3) means to develop said latent electrostatic image formed on said reproducing member; and
(4) means to form a plurality of final permanent record images corresponding to said latent electrostatic images.

3,155,023
AUTOMATIC CAMERAS
Dieter Maas, Munich, and Dieter Engelsmann, Unterhaching, near Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Oct. 8, 1962, Ser. No. 228,839
Claims priority, application Germany, Oct. 11, 1961, A 38,543, A 38,544
17 Claims. (Cl. 95—10)

2. In a camera to which a plurality of objectives are adapted to be interchangeably connected, in combination, a pair of means cooperating to automatically set a first exposure-determining factor in accordance with the lighting conditions, said pair of means including a light meter means having a movable member which assumes positions determined by the lighting conditions and a scanning means for scanning the movable member of the light meter means; moving means operatively connected to one of said pair of means for moving the same relative to the other of said pair of means; actuating means engaging said moving means for actuating the same; manually operable means for setting into the camera a second exposure-determining factor, said manually operable means being operatively connected to said actuating means for actuating the latter to influence said moving means for changing the position of said one of said pair of means rela-

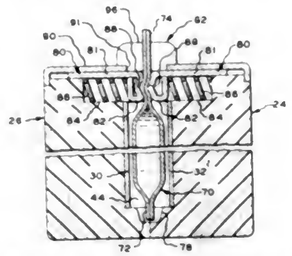


tive to the other of said pair of means to compensate for the second factor which is manually introduced into the camera; and means carried by the interchangeable objectives and engaging said actuating means for moving the latter to influence said moving means for changing the position of said one of said pair of means relative to the other of said pair of means according to the largest aperture which can be provided by the particular objective which is attached to the camera, said actuating means including an elongated lever which is supported for shifting as well as turning movement, said manually operable means being operatively connected to said lever for turning the same and means which is carried by each of the interchangeable objective cooperating with said lever for both shifting and turning the same.

3,155,024
PHOTOGRAPHIC APPARATUS
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Original application Nov. 28, 1956, Ser. No. 624,787. Divided and this application May 19, 1961, Ser. No. 116,640
6 Claims. (Cl. 95—13)

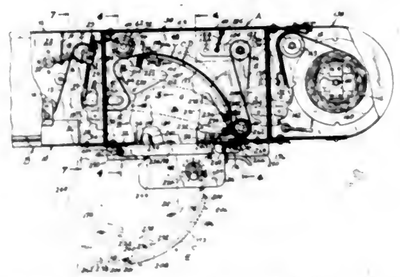
1. Photographic apparatus for exposing and processing photosensitive sheet materials, said apparatus comprising, in combination:
a housing providing an exposure chamber and a processing chamber located adjacent and communicating with one another;
means for positioning a photosensitive sheet comprising first and second portions within said housing with said first portion located in position for exposure within said exposure chamber and said second portion located within said processing chamber;
means for positioning a second sheet comprising first and second portions superposable, respectively, with said first and second portions of said photosensitive sheet, within said apparatus with said first portion of said second sheet located apart from said first portion of said photosensitive sheet and said second

portion of said second sheet located within said processing chamber;
a first pair of juxtaposed members for engaging said photosensitive and second sheets intermediate said processing and exposure chambers and preventing the passage of light from one of said chambers to the other;



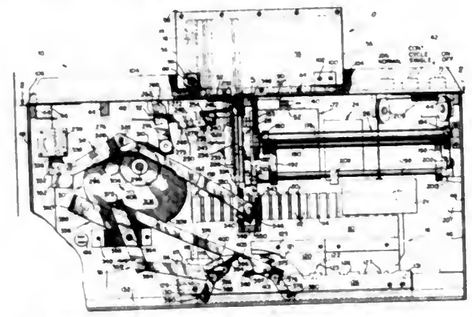
a second pair of juxtaposed members for engaging said photosensitive and second sheets at the entrance to said processing chamber to prevent the admission of light into said processing chamber and distribute a fluid reagent in a layer between said first portions of said sheets during and in response to withdrawal movement of said first portions in superposition between and in engagement with said members of said second pair from said processing chamber; and
means including at least an opening in said housing communicating with said processing chamber permitting a container carrying said fluid reagent to be introduced into said processing chamber between said second portions of said sheets and thereafter withdrawn from said processing chamber from between said second portions of said sheets;
the last-mentioned means including means associated with said opening for closing said opening against the admission of light into said processing chamber and engaging said container during withdrawal thereof for discharging the fluid contents of said container between said second portions of said sheets.

3,155,025
AUXILIARY CONTACT PRINTER UNIT FOR PHOTOGRAPHIC PRINTING MACHINE
Karl J. Kallenberg, Minneapolis, Minn., assignor to Pako Corporation, Minneapolis, Minn.
Filed Oct. 9, 1961, Ser. No. 143,791
7 Claims. (Cl. 95—77.5)



1. In a device for contact printing indicia on photographic strip print paper, a casing having an open bottom and an opening for receiving print paper, means for intermittently supplying strip print paper to said casing via said opening, a lamp housing having an arcuate negative support, an exposure lamp mounted in said lamp housing substantially equidistant from the surface of the arcuate negative support, a first pressure roller mounted on the upper end of said lamp housing, a second pressure roller mounted on the lower end of said lamp housing, a first friction tendency drive roller carried by said casing and in engagement with said first pressure roller for moving print paper extending therebetween and from said casing opening, a second friction tendency drive roller carried by said casing and in engagement with said second pressure roller for moving print paper therebetween, which paper comes from said first friction tendency drive roller, means for rotating said first and second friction tendency drive rollers the diameter of said first drive roller being greater than the diameter of said second drive roller, to thereby produce an unsupported loop of print paper upon the negative support during the movement of paper from said first friction tendency drive roller to said second friction tendency drive roller, the loop of paper taken up by said second friction tendency drive roller when the paper is stopped at said first friction tendency drive roller, means for pivotally mounting said lamp housing on said casing to allow said lamp housing to be swung up into said casing through said open bottom to bring said pressure rollers into contact with said respective friction tendency drive rollers and position the print paper which has been positioned in said casing upon a negative mask mounted on said negative support whereby upon the operation of said lamp the print paper upon a negative on said negative support is exposed.

3,155,026
PHOTOGRAPHIC APPARATUS
Harold A. Backus, Wynnewood, and Frank A. Ruhmann, Philadelphia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 31, 1960, Ser. No. 32,730
17 Claims. (Cl. 95—73)

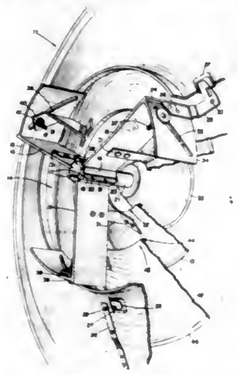


7. Photographic printing apparatus comprising,
(*a*) a light-tight enclosure including an exposure area therein,
(*b*) a photographic work piece magazine,
(*c*) a negative magazine,
(*d*) a light source for said apparatus,
(*e*) means mounting said light source for automatic movement angularly about a plane parallel with said exposure area,
(*f*) means for simultaneously moving one or more work pieces from said work piece magazine to said exposure area,
(*g*) means for moving a negative bearing one or more negative images from said negative magazine into said exposure area,
(*h*) each of said negatives including means operably engageable with said light source mounting means effective to cause said light source to move angularly about a plane parallel with said work piece whereby discrete elemental portions of said exposure area may be illuminated when said light source is energized,

(*i*) means for registering the image or images of said negative with respective ones of said work pieces in contact printing relationship in said exposure area, and

(*j*) means to energize said light source to expose said work pieces to said negative thus to produce a latent image of said negative on said one or more work-pieces, at the discrete areas to which said light source has been moved.

3,155,027
ADJUSTABLE AIR DIFFUSER
Lloyd G. Dayus, 7 Hunthill Court, Islington, Ontario, Canada
Filed Nov. 29, 1962, Ser. No. 240,907
8 Claims. (Cl. 98—40)



1. Air diffuser apparatus and comprising:

(*a*) an annular outer wall forming an air entry port defining a flow path for air;

(*b*) a support frame having radial arms located in said air entry port within said flow path and fastened in fixed relation thereto;

(*c*) at least one frusto-conical air flow baffle member oriented to deflect air flowing therearound mounted on said frame in fixed relation co-axial with said port and defining an air space therebetween;

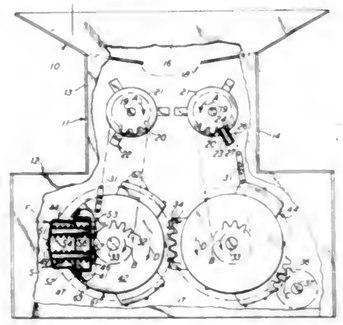
(*d*) at least one frusto-conical air director located within said air space between said outer wall and said baffle member and rotatable relative thereto for adjustment thereof;

(*e*) strut members extending upwardly from said director along axes parallel with said flow path, bearing means located on said strut members;

(*f*) arcuate guide means fastened to said radial arms of said frame and in fixed relation to said port disposed circumferentially about the central axis of said director and said port and supporting said bearing means for rotation of said director as aforesaid.

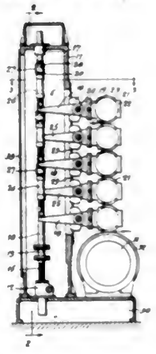
3,155,028
TRASH CRUSHER
Donald J. Morgenson, Racine, Wis., assignor to Shatter King Mfg. Co., Inc., Racine, Wis., a corporation of Wisconsin
Filed Jan. 30, 1963, Ser. No. 255,039
9 Claims. (Cl. 100—96)

1. A trash crusher comprising a pair of cylinders disposed in parallel and spaced-apart relation, vanes extending along the lengths of each of said cylinders and having a width extending around predetermined portions of the circumference of each of said cylinders and being spaced therearound, angularly shaped means on the radially outer surfaces of each of said vanes for pulling trash to a position between said cylinders, yielding means operatively interposed between said cylinders and said vanes for yieldingly urging said vanes radially outwardly on said cylinders, each of said cylinders including a cylinder portion in the space intermediate every two of said vanes and being of a circumferential length sub-



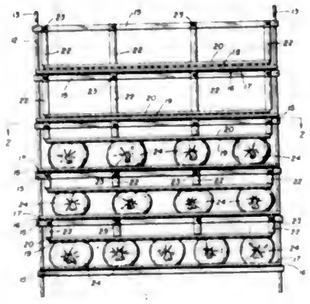
stantially equal to said width of each of said vanes, and means for rotating said cylinders in synchronization to have each of said vanes on the respective said cylinders meet with a respective said cylinder portion for crushing trash between each of said vanes and each of said cylinders.

3,155,029
CALENDERS
Rex Thomas, Terrasse Vaudreuil, Quebec, Canada, assignor to Dominion Engineering Works Limited, Montreal, Quebec, Canada
Filed Dec. 24, 1962, Ser. No. 246,784
Claims priority, application Canada Nov. 22, 1962
6 Claims. (Cl. 100—170)



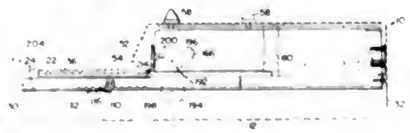
1. A roll stack calender including vertically movable shafts, means for raising and lowering said shafts, valve controlled fluid pressure actuated nip-pressure regulating roll supporting means connected between said shafts and one or more of the calender rolls located above the bottom or king roll, said nip-pressure regulating means being operable independently of said shafts to apply upward pressure to the connected roll to decrease the load or nip-pressure at the nip between said roll and the next lower roll and being also operable independently of said vertically movable shafts to apply downward pressure to the connected roll to increase the load or nip-pressure at said nip, said calender being further characterized in that downward movement of said shafts results in upward movement of all the calender rolls connected to said shafts through the agency of said nip-pressure regulating roll supporting means.

3,155,030
MULTIPLE HAM PRESS
Adolph D. Curtis, Box 1394, Pueblo, Colo.
Filed Jan. 24, 1964, Ser. No. 340,095
5 Claims. (Cl. 100—194)



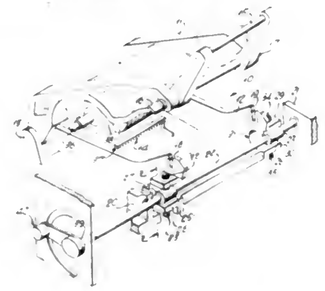
1. A ham press for applying pressure to a plurality of hams comprising: two spaced-apart, vertical hanger members; a plurality of rectangular horizontal spring frames secured to and extending between said hanger members in vertically spaced relation; perforated shelf trays resting upon said spring frames for receiving and supporting a plurality of hams thereon; a perforated pressure plate positioned over each shelf tray and adapted to rest upon the hams carried by the latter; and spring means carried by said spring frames and exerting a downward pressure on the pressure plate positioned therebelow.

3,155,031
PRINTING AND DIGITAL CODING MACHINE
Wallace W. Ingves, Reading, Mass., and Charles J. Manuel, Durham, N.H., assignors to Babco Products, Inc., Danvers, Mass., a corporation of Massachusetts
Filed Mar. 16, 1962, Ser. No. 180,183
6 Claims. (Cl. 101—19)



1. A sales form imprinting and encoding machine comprising a housing having a forward horizontal surface and a slotted opening in said housing above said horizontal surface, a tray supported on said forward housing surface, said tray carrying a sales invoice form and a coded credit card in superposed relation, guide means on said forward surface in which said tray is movable to an operating position within said housing, an embossing roller mounted adjacent said slotted opening and positioned to contact said coded credit card, a first group of die bars having vertically opposed punches and dies, said die bars longitudinally disposed and laterally aligned within said housing, punches in said first group adapted to be biased into the coded indicia of said credit card as said tray moves into said housing whereby the affected die bars move longitudinally in cooperation with said tray, tab members positioned above the said housing, said tab members connected to a second group of die bars having punches and dies laterally spaced from said first die bar group, each of the punches and dies of said second group movable to an operating position in response to the manual movement of said tab members, a camming plate positioned above said punches, and lever means acting in conjunction with said camming plate to depress said punches into said dies whereby said sales invoice form carried by said tray is encoded.

3,155,032
PAPER GAP CONTROL IN HIGH SPEED BED AND PLATEN PRESSES
Carmine J. Antonucci, Uniondale, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Dec. 11, 1961, Ser. No. 158,491
4 Claims. (Cl. 101—45)



1. In a high speed printer apparatus having

a base portion and a frame portion including pivotable means to pivot the frame portion relative to the base portion,

a plurality of printer hammer means supported on a base portion of the apparatus,

a surface spaced from said hammer means and supported by a frame portion to define a space for passage of a medium on which characters are printed,

and space control means to adjust the magnitude of said space for receiving a predetermined thickness of said medium,

said space control means comprising a shaft extending between first and second points spaced apart from each other on said frame portion,

journal means on said base portion contiguous with said spaced apart points to support said shaft,

first and second cam means fixed to said shaft at said first and second spaced apart points,

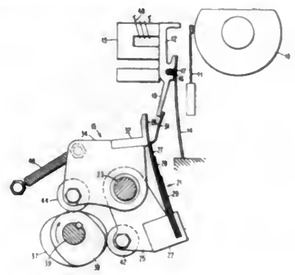
support means on said frame portion to support the opposite end of said frame portion from said pivotable means against said first and second cam means,

and means attached to said shaft to adjust the rotatable position of said shaft for controlling the gap between said plurality of printing hammer means and said surface spaced from said hammer means.

3,155,033
PRINT HAMMER DRIVE MECHANISM
Roland D. Nelson and Donald K. Rex, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 29, 1961, Ser. No. 113,201
9 Claims. (Cl. 101—93)

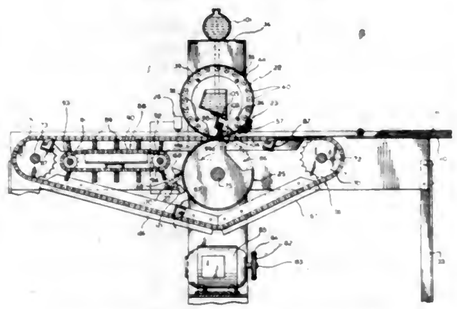
1. For use in a high speed printer which includes an array of aligned print hammers with one hammer for each print position of the printer, a hammer drive mechanism for firing each hammer individually, comprising: an elongated pivotally mounted bail; an array of parallel leaf springs mounted in cantilever fashion on the bail there being a spring for each hammer, each spring being positioned in line with and extending toward a hammer, the distal end of each spring adapted to overlap a portion of its as-

sociated hammer in its loaded position; and a spring reset assembly mounted adjacent the bail to stop each



spring in its unloaded position, the assembly and the bail cooperating to reset the springs to their loaded position.

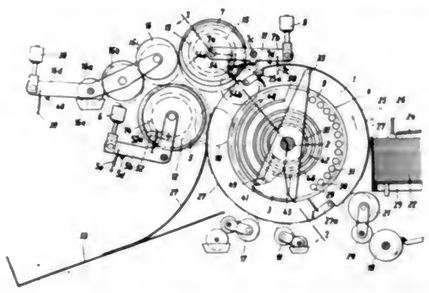
3,155,034
SILK SCREEN PRINTING PRESS
George W. Reinke, Barrington, Ill., assignor to Rineglas, Inc., a corporation of Illinois
Filed Nov. 1, 1961, Ser. No. 149,332
8 Claims. (Cl. 101—120)



1. A silk screen printing press comprising, an elongated non-rotatable drum having a plurality of longitudinally extending and circumferentially spaced silk screen supporting freely rotatable rollers, a rotatably driven silk screen driving member at each end of said drum, a frame attachable to said driving members for mounting said silk screen about said drum and in tension engagement over said silk screen supporting rollers, whereby rotation of said driving members drives said silk screen about the drum, a lower printing roller for supporting paper to be printed in engagement with said silk screen, means for feeding paper between said drum and roller, and means for forcing ink through the silk screen and onto the paper.

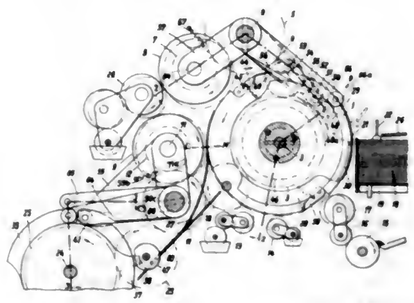
3,155,035
ROTARY OFFSET PRINTING MACHINE FOR SELECTIVE PRINTING
Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzenbader Strasse 21, Berlin-Grunewald, Germany
Filed Nov. 8, 1962, Ser. No. 236,312
Claims priority, application Germany, Nov. 9, 1961, R 31,433
18 Claims. (Cl. 101—142)

1. An offset printing machine, comprising, in combination, rotary main cylinder means; first and second holding means mounted spaced from each other on said main cylinder means for holding a printing form having a plurality of text sections, and a copy sheet in circumferentially spaced positions on the periphery of said main cylinder means; at least one offset roller mounted for movement between an inoperative position, and an operative position cooperating with said main cylinder means; operating means for moving said offset roller between said positions; and control means connected to said operating means for moving said offset roller in timed relation with the rotation of said main cylinder means between said inoperative and operative positions and including selector means having a plurality of manually



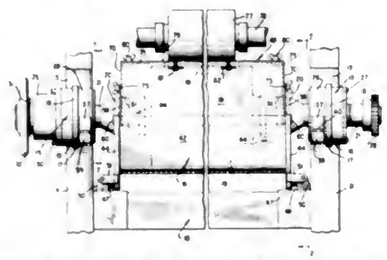
operated selector elements respectively correlated with said text sections for selecting a plurality of said text sections irrespective of the spacing and positions of said text sections of the printing form for printing so that said offset roller is moved by said operating means to said operative position only when a selected section of the printing form is located opposite said offset roller whereby the latter receives copies of selected sections of said printing form, and then cooperates in said operative position with said main cylinder means to make a corresponding imprint on the copy sheet.

3,155,036
ROTARY OFFSET PRINTING MACHINE FOR PRINTING SELECTED SECTIONS OF A PRINTING FORM
Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Nov. 8, 1962, Ser. No. 236,309
Claims priority, application Germany, Nov. 9, 1961, R 31,432
15 Claims. (Cl. 101—144)



1. An offset printing machine comprising, in combination, main cylinder means; first and second holding means mounted spaced from each other on said main cylinder means for holding a printing form having a plurality of text sections, and a copy sheet in circumferentially spaced positions on the periphery of said main cylinder means; a first offset roller; first operating means for moving said first offset roller between an operative position cooperating with said main cylinder means along a first printing line, and an inoperative position; a second offset roller; second operating means for moving said second offset roller between an operative position cooperating with said main cylinder means along a second printing line, and an inoperative position; first control means connected to said first operating means and driven in timed relation with said main cylinder means for moving said first offset roller to said operative position thereof when a first section of said printing form passes said first printing line whereby a copy of said first section is made on said first offset roller, and for moving said first offset roller to said operative position thereof when a first portion of said copy sheet passes said first printing line during a first revolution of said main cylinder means; and second control means connected with said second operating means and driven in timed relation with said main cylinder means and being mounted for selective angular positioning relative to the same for moving said second offset roller to said operative position thereof when a second selected text section of said printing form passes said second printing line during a first revolution of said main cylinder means whereby a copy of said second section is made on said second offset roller, and for moving said second offset roller to said operative position thereof during a second revolution of said main cylinder means when a second portion of said copy sheet passes said printing line whereby separate imprints representing said first and second selected text sections of said printing form are made on said first and second portions of said copy sheet.

3,155,037
APPARATUS FOR APPLYING FLUID TO A WEB SUCH AS INTAGLIO PRINTING MACHINES
Lawrence H. Haskin, Jr., Richmond, Va., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Jan. 8, 1962, Ser. No. 164,764
16 Claims. (Cl. 101—364)



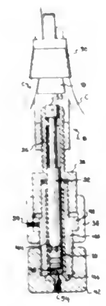
1. In a machine for applying fluid to a web, a pair of frame sides having notches therein forming pockets and rollerways leading from the pockets, rollable bearing cartridges engaging within the pockets and rollable therefrom upon the rollerways, releasable abutment means engaging the bearing cartridges to normally maintain them within the pockets, a cylinder having supporting shaft ends journaled for rotation within the bearing cartridges, a trough underlying said cylinder and having end walls provided with recesses receiving lower portions of the shaft ends and spaced normally somewhat therefrom, a bed structure beneath said trough and between the frame sides, roller means on the trough and engaging the bed structure and supporting the trough on the bed structure, the axes of the roller means and bearing cartridges being parallel, and releasable stop means on the bed structure engageable with the trough to normally hold the same fixed upon the bed structure and allowing the same to roll on the bed structure when the bearing cartridges are released to roll upon said rollerways, said lower portions of the shaft ends dropping into supported engagement within said recesses of the end walls when said bearing cartridges roll from the ends of said rollerways.

3,155,038
DETONATING FUSE
John M. Smith, Simsbury, Conn., assignor to The Ensign-Bickford Company, Simsbury, Conn., a corporation of Connecticut
Filed Sept. 21, 1962, Ser. No. 225,299
5 Claims. (Cl. 102—27)



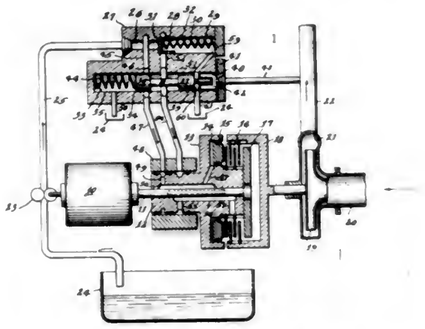
1. An explosive detonation fuse comprising a continuous core of high explosive contained within a textile sheath, said core being a mixture of particles of pentaerythritol tetranitrate having a screen analysis of 100 percent particles which pass through a 30 mesh screen 35 percent (±10 percent) particles which pass through a 325 mesh screen and 65 percent (±10 percent) particles which collect on a 325 mesh screen arranged in a concentration of at least 20 grains per foot of cord length.

3,155,039
SAFETY PLUG FOR EXPLOSIVE CARTRIDGE
William F. Broske, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 2, 1962, Ser. No. 206,767
4 Claims. (Cl. 102—38)



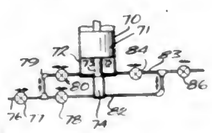
1. A plug for use in an explosively-operated tool comprising: a cylindrical member having a primer-receiving means in one end thereof, a primer in said primer-receiving means, a plurality of projections extending from said plug and surrounding said means, said projections having high compressive strength in a longitudinal direction but being relatively flexible in a transverse direction so that they can be bent out of the way prior to firing the cartridge.

3,155,040
BOOSTER PRESSURE CONTROL FOR LIQUID SYSTEMS
Wilbur F. Shurts, Winnebago, and Joseph B. Snoy, Rockford, Ill., assignors to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed May 15, 1962, Ser. No. 194,783
5 Claims. (Cl. 103—35)



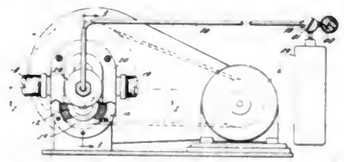
1. A booster pressure control for a liquid system supplied by an external pressure source comprising a booster pump interposed between the source and system, a constant speed power source, an hydraulically actuated, friction plate clutch engageable to provide a driving connection between the power source and booster pump, and an hydraulic system including an oil pump, first passage means connecting the oil pump to the clutch for applying engaging pressure thereto, a pressure regulating valve for determining the maximum clutch engaging pressure in the first passage means, second passage means connecting the pressure regulating valve outlet to the clutch plates for constantly supplying cooling oil thereto, and means responsive to pressure variations on the discharge side of the booster pump and operatively associated with the first passage means to bleed the pressure therein and reduce the clutch engaging pressure as the pressure in the liquid system approaches a determined value.

3,155,041
PRESSURE APPARATUS
Donald C. Green, Russell Township, Geauga County, Ohio, assignor to Mansfield-Green, Inc., Solon, Ohio, a corporation of Ohio
Filed May 16, 1963, Ser. No. 291,593
4 Claims. (Cl. 103—37)



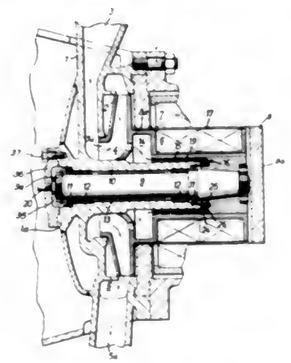
1. A pressure pump apparatus comprising, a closed circuit for circulation of a pressure fluid, a reservoir of pressure fluid, a pump joined to said reservoir for forwarding said pressure fluid to a pressure point subject to testing, a pumping plunger in said pump having stepwise decreasing diameters, a pump housing conforming to said plunger, access and exit conduits to each stepwise section of said housing, an outlet conduit connected to said pump for conducting the combined flows from each of said sections as a unit enlarged volume to said pressure point, a modified check valve in each access conduit, a modified check valve in the outlet conduit, means for manipulating desired modified check valves to by-pass desired pressures to other pump sections.

3,155,042
FLUID CONTROLLED VARIABLE OUTPUT PUMP
Gilbert R. Funk, Waukesha, Wis., assignor to Waukesha Foundry Company, Waukesha, Wis., a corporation of Wisconsin
Filed Aug. 17, 1959, Ser. No. 834,229
10 Claims. (Cl. 103—42)



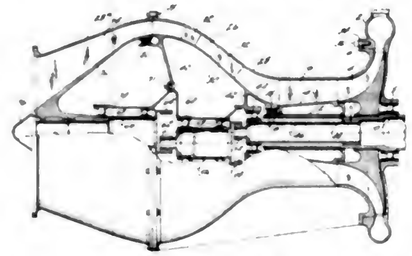
1. In a pump having a seat and provided with inlet and outlet bypass ports opening to said seat, the combination with, a floating valve and piston movable to and from the seat, a cylinder in which said piston is reciprocable, a source of fluid under pressure, said source being independent of said pump, and manually operable fluid pressure control means for variably subjecting the floating piston to pressure from said source in varying amount.

3,155,043
CENTRIFUGAL PUMPS
Franz Klaus, Blumenfeldstrasse 18, Bochum, Germany
Filed Mar. 24, 1961, Ser. No. 98,089
Claims priority, application Germany, Mar. 28, 1960, K 40,277
9 Claims. (Cl. 103—87)



1. In a centrifugal pump, the combination comprising: a pump casing having an elongated tube communicating with the interior thereof, a drive unit including a rotor sealed from the exterior, a hollow pump impeller receiving a liquid to be pumped and delivering the same, a shaft journalled in said tube and projecting from one end thereof, being sealed from the exterior and defining a bearing space between shaft and tube, means surrounding said tube and securing said rotor and said impeller onto the projecting end of said shaft, and for defining a pump chamber communicating with said impeller, said securing means further defining an axial clearance space extending along an outer portion of said tube and communicating with said pump chamber, said securing means and said tube further defining a radial clearance space communicating with both, said bearing space and said axial clearance space and having a larger cross-section than said axial clearance space, and a pressurized, lubricating and sealing liquid in said bearing space, the pressure of said sealing liquid being slightly above the pressure of the liquid to be pumped existing at the entrance of said axial bearing space to said pumping chamber so as to allow mixing of said liquids in said radial clearance space and further allowing for centrifugal action urging any liquid mixture outwardly in radial direction away from said bearing space.

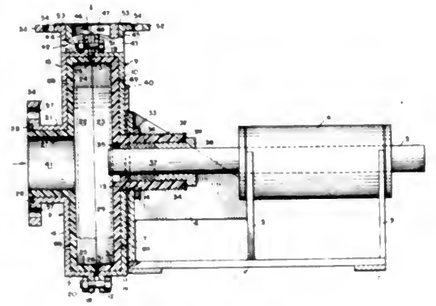
3,155,044
PUMP INDUCERS
Frank Lattanzio, West Hartford, and Frank W. Reichenbacher, East Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 12, 1960, Ser. No. 21,835
6 Claims. (Cl. 103—88)



1. The combination with a centrifugal pump having an impeller with a central spline and a surrounding casing, of an inducer assembly for delivering fluid under pressure to said pump, including an outer casing attached to the pump casing, an inner casing within said outer casing and spaced therefrom to define therebetween an annular passage for directing fluid to the impeller, a rotor mounted in said inner casing and having vanes extending into the annular passage, struts downstream of the rotor and extending between the inner and outer casings to support the inner casing, and driving means for the rotor positioned within said inner casing and including a first shaft journalled in said inner casing and having a spline meshing with the central spline on the impeller, a gear carried by the rotor and reduction gear means supported by the inner casing between the shaft and the gear, said outer casing including a separable casing extension surrounding the rotor and removable from the remainder of the casing for access to the rotor, said reduction gear means including a first gear on said shaft, a second shaft journalled in said inner casing in offset parallel relation to said first shaft, said second shaft having an internal gear in mesh with the first gear, said second shaft also having an external gear thereon and said gear on the rotor meshing with said external gear.

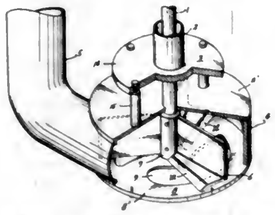
3,155,045
WEAR RESISTANT PUMPS
Walter H. Lown, 2209 Live Oak, San Angelo, Tex.; George W. Lown, executor of said Walter H. Lown, deceased, and Delmont D. Brown, 333 S. Main St., North Baltimore, Ohio
Filed Nov. 13, 1961, Ser. No. 151,616
2 Claims. (Cl. 103—103)

1. A centrifugal pump for pumping abrasive and corrosive fluids comprising a pair of opposing, hollow, round, metal casing members forming a casing chamber of a centrifugal pump; a multi-vane, rotary, centrifugal pump impeller rotatably mounted in said casing chamber; a metal, cylindrical, pump inlet sleeve on one of said metal casing members and extending outwardly therefrom opposite the radial center portion of said impeller; a circular flange extending radially outwardly from the outer edge of said pump inlet sleeve, and adapted to be used to couple said sleeve to a flanged pipe; the other of said metal casing members having a hole opposite the radial center portion of said impeller; a semicylindrical, metal, pump outlet member on the radially outer portion of each of said casing members, said semicylindrical members being in opposing relationship and forming a cylindrical, casing passage directed tangentially with reference to said pumping chamber; a pair of opposing, round, hollow liners, each with a semicylindrical wall portion in opposing relationship to the other wall portion and directed tangentially from the radial outer portions and forming a cylindrical, fluid discharge, liner passage extending tangentially from the centrifugal pumping chamber formed by said opposing, round, hollow liners; a cylindrical sleeve liner extending outwardly from the radial center portion of a side of one of said round, hollow liners; said hollow liners being seated in said metal casing members, said semi-cylindrical wall portions being seated in said cylindrical casing passage, and said liner sleeve being seated in said metal, inlet sleeve; outwardly-directed flanges about the periphery of the opposing edges of said round, hollow liners and semicylindrical wall portions; means holding said metal casing members in rigid, opposing relationship; means on said metal casing members and said metal, semicylindrical, pump outlet members pressing against said liner flanges and holding the liner flanges in abutting, fluid-tight contact; a second, hollow, sleeve projecting outwardly from said round, hollow liner



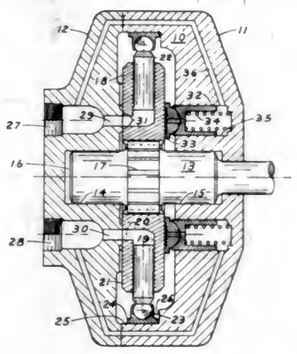
through said hole in said casing member; said hollow liners, flanges thereon, said semicyclindrical wall portions, and said liner sleeve and second sleeve being made of an abrasion-resistant and corrosion-resistant synthetic resin selected from the group consisting of abrasion-resistant polyalkylene ether glycol-polyurethane resin and abrasion-resistant polyester-urethane resin; an impeller drive shaft coupled to said impeller and extending through said second sleeve; packing means in said second sleeve providing a fluid-tight seal about said drive shaft; threads on the outer surface of said second sleeve, and a nut threaded on said threads and holding said liner on which said second sleeve is mounted in position in the corresponding metal casing member; said impeller covered by a coating of said synthetic resin; said metal, inlet sleeve having an annular recess in the radially inner part of the axial outer edge thereof; said cylindrical, liner sleeve having on the axial outer portion thereof threads on the radial outer side thereof, and a spanner lock nut threaded on said las.-mentioned threads tightly against said metal inlet sleeve in said recess to hold said hollow liner on which said liner sleeve is located in the corresponding metal casing member; said spanner lock nut having an axial thickness less than the axial depth of said recess whereby said spanner lock nut is recessed relative to the axial outer face of said flange on said metal inlet sleeve.

3,155,046
CENTRIFUGAL NONCLOGGING PUMP
James E. Vaughan, Elma, Wash., assignor to Vaughan Co., Inc., Elma, Wash.
Filed Apr. 23, 1962, Ser. No. 189,627
5 Claims. (Cl. 103—103)



1. A centrifugal pump for pumping a mixture of liquid and stringy solid material suspended in such liquid, comprising a housing having a cylindrical peripheral wall with a discharge aperture therein, a closed end and an open end, an end plate extending across and secured on the open end of said housing, a discharge duct extending upward from such discharge aperture in said peripheral housing wall to a location a substantial distance above said housing, a rotary shaft in said housing extending substantially perpendicular to said end plate, and an impeller secured on said shaft, rotatable thereby and including radially disposed impeller blades, each blade being of angle cross section and having a first flange disposed in a plane substantially parallel to the axis of said shaft and extending radially from such axis and a second flange projecting in the direction of rotation of said impeller from the edge of said first flange adjacent to said end plate and disposed close to said end plate, said end plate having therein arcuate intake apertures concentric with said shaft and spaced apart circumferentially to enable material to be pumped to enter said housing therethrough, and the edge of said second flange of each impeller blade cooperating with one edge of each intake aperture to sever by the interaction of such edges stringy material extending through such an intake aperture in said end plate.

3,155,047
POWER TRANSMISSION
Adolf Keel, 164 California Ave., Highland Park, Mich.
Filed Mar. 15, 1962, Ser. No. 179,924
4 Claims. (Cl. 103—161)



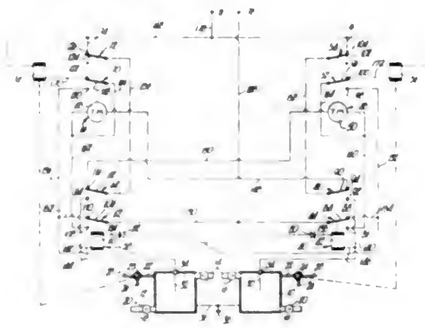
1. In a hydraulic pump or motor of the radial piston type the combination of a housing having a drive shaft journalled therein, a cylinder block mounted slidably on said drive shaft and keyed to it for positive rotation, means forming a stationary plane valving surface on the interior of said housing at right angles to the drive shaft axis, port openings on said stationary valving surface to permit flow of fluid to and from said cylinder block, a rotary valving surface on said cylinder block on the side facing said stationary valving surface on the interior of the housing, axially slidable fluid pressure responsive bearing means also on the interior of the housing but opposite to said stationary valving surface, said axial bearing means slidably engaging the cylinder block and urging it toward said stationary valving surface in opposition to the forces tending to separate the rotating cylinder block from the stationary valving surface, said axial bearing means being divided into two separate sections, one section acting in opposition to separating forces existing in the valving area of one port opening on said stationary valving surface and being in direct and uninterrupted communication with this port opening, and the second section acting in opposition to separating forces existing in the valving area of a second port opening on said stationary valving surface and being in direct and uninterrupted communication with that second port opening.

3,155,048
SIMPLEX LIQUID HANDLING APPARATUS HAVING IMPROVED ELECTRODE TYPE CONTROL SYSTEM
Robert Mandelbaum and Frank G. Weis, Kansas City, Mo., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 16, 1961, Ser. No. 145,343
6 Claims. (Cl. 103—241)



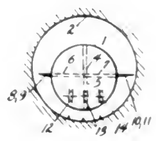
1. Material handling apparatus which comprises a closed material receiving vessel; inlet means connected to said vessel and adapted to be coupled to a source of material to be handled so as to permit the flow of material only in the direction of said vessel; vent means connected to said vessel; conduit means connected to said vessel and adapted to be coupled to a source of fluid under pressure; valve means operably associated with said vent means and conduit means of said vessel, said valve means having a normal position that permits communication between said vessel and said vent means and precludes communication with said conduit means, said valve means being shiftable to an alternate position wherein communication is established between said vessel and said conduit means and wherein communication with said vent means is precluded; means connected to said valve means for effecting the selective shifting of said valve means to the alternate position when said means is actuated; sensing means disposed within said vessel so as to be contacted by the material therein when a preselected level of material accumulation has been reached; outlet means connected to said vessel so as to permit the flow of material therefrom; circuit means electrically connected to said valve shifting means so that said valve shifting means is actuated in response to the energization of said circuit means, said circuit means being energized in response to said accumulated material contacting and grounding said sensing means and being maintained in an energized state when said sensing means continues to be grounded due to the fouling thereof; a first timing circuit electrically connected to said circuit means, said first timing circuit being actuated a preselected period of time after the energization of said circuit means, said preselected period of time corresponding to the period required to effect the discharge of a substantial portion of accumulated material from said material receiving vessel; said actuated first timing circuit effecting the deactuation of said valve shifting means to thereby return said valve means to the normal position and normally effecting the deenergization of said circuit means; and a second timing circuit being alternately rendered effective and ineffective for preselected periods of time as long as said sensing means continues to be grounded and in response to the continued energization of said circuit means whereby said valve shifting means is alternately actuated and deactuated for corresponding periods of time and the material handling apparatus is alternated between a material receiving state and a material ejecting state.

3,155,049
DUPLEX LIQUID HANDLING APPARATUS HAVING IMPROVED ELECTRODE-TYPE CONTROL SYSTEM
Robert Mandelbaum and Frank G. Weis, Kansas City, Mo., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 16, 1961, Ser. No. 145,344
6 Claims. (Cl. 103—241)



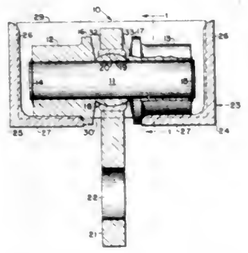
1. Material handling apparatus which comprises a pair of closed material-receiving vessels; a vent for each of said vessels; a conduit connected to each of said vessels and adapted to be coupled to a source of fluid under pressure; valve means disposed in the respective conduits and vents of each of said vessels; each of said valve means having a normal position that permits communication between each of said vessels and the associated vent and precludes communication with said associated conduit, said valve means being shiftable to an alternate position that permits communication between each of said vessels and the associated conduit and precludes communication with said associated vent; inlet means connected to each of said vessels and adapted to be coupled to a source of material to be handled so as to permit the flow of material only in the direction of said corresponding vessel; outlet means connected to each of said vessels so as to permit the flow of material therefrom; means connected to each of said valve means for effecting the selective shifting thereof; sensing means disposed within each of said vessels so as to be contacted and grounded by the material therein when a preselected level of material accumulation has been reached; circuit means connected to said valve shifting means for each vessel so that the corresponding one of said shifting means is actuated in response to the energization of said circuit means connected thereto; said circuit means being energized when the accumulated material within the corresponding vessel makes contact with and grounds the sensing means of that vessel and being maintained in an energized state when said sensing means continues to be grounded due to the fouling thereof; time delay circuits electrically connected to each said circuit means and being actuated thereby along with the corresponding one of said shifting means in response to the energization of said circuit means; each of said time relay circuits including means electrically connected to said corresponding one of said shifting means so as to effect the deactuation of said corresponding shifting means after being actuated for a preselected period of time; said preselected period of time corresponding to the period required to effect the discharge of a substantial portion of accumulated material from a vessel after the valve means associated with that vessel has been shifted to the alternate position; each of said time delay circuits also including means electrically connected to said circuit means so as to effect the deenergization of said corresponding circuit means concomitantly with the deactuation of said corresponding shifting means under normal conditions and in the absence of the fouling of said corresponding sensing means; at least a portion of said circuit means and said time delay circuit of each of the vessels defining a path for energizing current for said circuit means of the other of the vessels so that the actuation of the shifting means of the other vessel and the ejection of accumulated material therefrom can be effected subsequent to the lapse of the preselected period of time and notwithstanding the fouling of the material sensing means of the one vessel, the energization of said circuit means for the other vessel simultaneously interrupting the energizing path for the circuit means of the one vessel so that the ejection of material therefrom is transiently precluded.

3,155,050
AIR-CUSHION SUPPORTED VEHICLES
Theodore Hafner, 1501 Broadway, New York 36, N.Y.
Filed Dec. 11, 1962, Ser. No. 244,858
3 Claims. (Cl. 104—138)



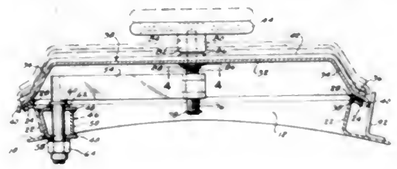
1. In a vehicular transportation system, an outer tubular means forming a conduit, an inner tubular means forming a vehicle of tubular cross-section and mounted in said conduit spaced therefrom by a pre-determined peripheral gap separating said vehicle substantially over its entire circumference from said conduit, means on said vehicle for feeding air from at least one of its ends at least to the bottom of said peripheral gap, gap measuring means supported on said vehicle in a number of positions arranged substantially symmetrical with respect to the axis of said vehicle and a number of guiding flaps also supported on said vehicle in positions substantially symmetrical with respect to the axis of said vehicle under control of said gap measuring means to maintain said vehicle in a substantially predetermined position with respect to said conduit.

3,155,051
TROLLEY HANGER
Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Sept. 29, 1961, Ser. No. 141,808
1 Claim. (Cl. 105—155)



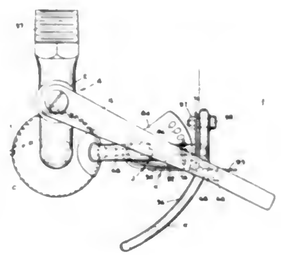
A trolley hanger comprising:
(A) a split trackway adapted to be secured to an overhead surface, said trackway having:
(1) a pair of longitudinal rail members disposed adjacent one another,
(*a*) each member having a flat support surface,
(2) the two flat support surfaces being spaced apart and forming a groove between the facing edges thereof,
(B) an elongated shaft,
(C) a pair of rollers fixed one to each end of said shaft,
(1) each of said rollers resting on one each of said flat support surfaces of said rail members and having an enlarged inner flange,
(*a*) extending into said groove, and,
(*b*) engaging the facing edge of its respective support surface,
whereby said shaft and rollers are constrained against lateral or twisting movement relative to said trackway,
(*c*) and having frustro-conical inner faces to form limiting surfaces,
(D) a first inner bearing race fixedly joined to said shaft between said inner flanges
(1) said first race having a spherical outer surface configuration of wide portions removed for fixed abutting retention between said two flanges,
(E) a second outer bearing race about said first race, having an inner annular surface conforming to the spherical configuration of said first race, and being rotatably moveable about said first race,
(1) said second race being narrower than said first race and thereby being free to rotate within the limits of said inner faces of said rollers,
(F) a load supporting member joined to and depending from said second race member,
(1) said member being narrower, measured parallel to said shaft, than said second race, and
(2) being independent of restraining members other than the load,
whereby said load supporting member may be moved longitudinally along said trackway, may be freely swung laterally on said first race about any horizontal axis within the limits of said inner flange faces, and may be rotated freely about its vertical longitudinal axis within the limits of said inner flange faces.

3,155,052
HATCH COVER FOR RAILWAY CARS
John L. Carney, Jr., St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 29, 1963, Ser. No. 284,226
17 Claims. (Cl. 105—377)



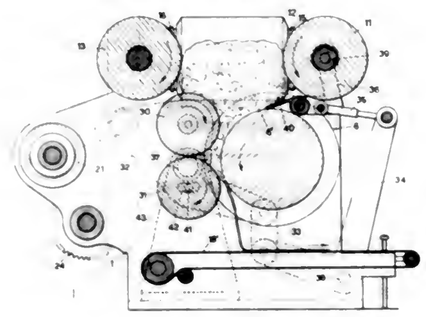
1. In a railway car, a roof having an elongate hatch opening, an elongate hatch cover normally seated over the hatch opening for covering the opening, a generally vertically extending member adjacent each end of the elongate hatch cover on which the hatch cover is mounted for up and down movement relative to the hatch opening, means operatively connected to each vertically extending member to raise and lower the hatch cover, and a pair of generally horizontally extending arms beneath the hatch cover for supporting each vertical member, said arms having inner ends pivotally connected to the associated vertical member and outer ends mounted for back and forth movement, the arms adapted to move in a toggle action from one side of a dead center position to the other side thereof for opening and subsequently closing the hatch cover, the arms being generally parallel when in the dead center position.

3,155,053
DEVICE FOR DISPENSING SEMI-SOLID SUBSTANCES
Louis A. De Vito and Pasquale M. De Vito, both of 25 Somerset St., Garfield, N.J.
Filed Apr. 11, 1963, Ser. No. 272,319
6 Claims. (Cl. 107—8)



1. A device for dispensing semi-solid material in shaped form comprising a mold having an opening extending through the mold wall thereof, a flow line communicating through said opening with the interior of the mold, a valve positioned in the flow line, a knife turnably carried by said mold for sweeping across the interior thereof from initial position on one side of the mold to a starting, material-cutting position on the opposite side of the mold and return, a handle connected to said valve, and transmission means including resilient means related to the handle and the knife for urging the knife from said starting, material-cutting position to initial position and for closing the valve.

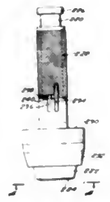
3,155,054
MACHINE FOR KNEADING RAISED DOUGH
Leonida Malavasi, Via Temperanza 9, Milan, Italy
Filed July 17, 1962, Ser. No. 210,447
Claims priority, application Italy, Mar. 21, 1962, 5,535/62
2 Claims. (Cl. 107—12)



1. A device for kneading raised dough, comprising, in combination,
a main kneading roller,
a first auxiliary kneading roller and a second auxiliary kneading roller,
a first rocker arm, carrying said two auxiliary rollers in superposed relationship, and pivoted intermediate its ends in a position intermediate between the axes of said auxiliary rollers,
a second rocker arm pivoted intermediate its ends in a position on the opposite side of the pivotal point of said first rocker arm with respect to the vertical diametrical plane of said main kneading roller and below the horizontal diametrical plane thereof,
a third rocker arm pivoted about one of its ends in a position on the opposite side of the pivotal point of said first rocker arm with respect to the vertical diametrical plane of said main kneading roller and above the upper horizontal tangent plane thereof,
doctor means oscillably mounted about the free end of said third rocker arm and adapted to cooperate with the upper portion of the peripheral surface of said main kneading roller,
linking means between said first and said second rocker arms,
linking means between said second rocker arm and a point of said third rocker arms intermediate its ends,
means for imparting a rocking movement to said first rocker arm so as alternatingly to bring either of said auxiliary rollers in generally tangential relationship with said main kneading roller and said doctor means towards and away of said first auxiliary roller, and
means for independently rotating said main kneading roller and said first auxiliary roller.

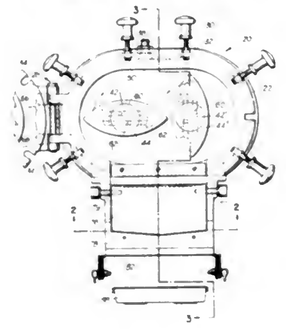
3,155,055
PATTY SHELL FORMING DEVICE
Arcinae Nishkian, 703 Pico Blvd., Santa Monica, Calif.
Filed Aug. 10, 1960, Ser. No. 48,681
5 Claims. (Cl. 107—15)

1. Apparatus for forming a plurality of shapes of patty shells, comprising:
a mold having a downwardly tapered dough-receiving cavity;
and a molding tool having a vertical plunger formed at its lower portion with a downwardly tapered head configured to enter said mold cavity to a desired maximum depth, a sleeve slidably telescopically encompassing said plunger and formed with a cutter at its lower portion that engages and severs said dough around said mold cavity after said head enters said mold cavity, and restraining means operatively



interposed between said plunger and said sleeve to limit the depth said head assumes within said mold cavity between said maximum depth and a lesser depth.

3,155,056
PLASTIC OR DOUGH MIXING APPARATUS
Richard N. Smith, Fairfield, Conn., and Joseph A. Zang, Rockville Centre, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 26, 1959, Ser. No. 836,206
9 Claims. (Cl. 107—36)

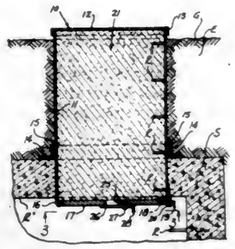


6. A dough developer, said developer comprising a closed pressurized chamber having two ends, said chamber having at least two dough mixing elements therein, means for mounting and rotating said elements with respect of one to another and with respect of both to said chamber, to produce a pressure of a first substantially uniform predetermined value in a first space extending from one to another of said ends in said chamber, and to produce a pressure of a second substantially uniform predetermined value, substantially lower than said first value, in a second space extending from one to another of said ends in said chamber, said second space opposed to said first space in said chamber, and an egress port, said port communicating with said chamber of said second lower pressure value, whereby to deliver dough from said chamber of lowered pressure.

3,155,057
SECONDARY ESCAPE HATCH ATTACHMENT FOR UNDERGROUND FALLOUT OR BLAST SHELTERS
Richard Donald Ayres, Baltimore, Md., assignor to Raymar Construction Co., Inc., Baltimore, Md.
Filed May 2, 1962, Ser. No. 191,805
1 Claim. (Cl. 109—1)

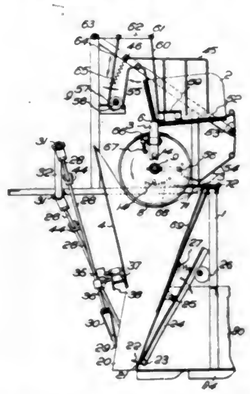
A second escape hatch for underground fallout or blast shelters comprising a hollow rectangular metal body, one open end of which is adapted to extend through an opening in the roof of the shelter and the other open end above

the ground, a peripherally flanged metal cover loosely fitted over the end above the ground, a double thickness angle iron flange movable along the exterior of said body, said flange being adapted to rest on the shelter roof, means fixing said flange to the body after initial adjustment to seat the flange on the shelter roof surrounding the opening, a piano type hinge extending the full width of one side of the bottom opening, a downwardly opening bottom closure carried by said hinge completely closing the open bottom end of said body, quick release latch



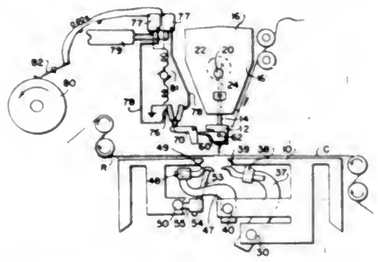
means carried by said bottom closure on the side opposite said hinge securing said bottom closure in closed position, said bottom closure having a centrally disposed relatively small opening therein, a plate pivoted to the underside of said bottom closure movable to open and close said relatively small opening, a handle on said plate to facilitate pivoting thereof, escape rungs positioned interiorly of said body on the side adjacent said latch means, and sand completely filling said body when said bottom closure and said relatively small opening are closed.

3,155,058
MACHINE FOR THE PLANTING OF RICE SEEDLINGS
Angelo Valdi, 19 Via Piave, Pavia, Italy
Filed Feb. 6, 1961, Ser. No. 87,323
7 Claims. (Cl. 111—3)



1. A machine for planting seedlings which comprises a frame, a hopper for seedlings at the upper portion of the frame, said hopper having an opening at its lower end for the passage of the seedlings, a gripper at said opening for gripping the seedlings, a drum below said opening with means for rotating the same, said gripper being mounted on said drum, means associated with said drum and with the gripper for closing the gripper when it receives a seedling from the hopper and for opening the gripper when the gripper is in position above an outlet chute, a stripper plate mounted on the drum adjacent to the periphery of the drum, said plate surrounding the gripper, means for moving the stripper plate toward the drum on closing movement of the gripper and for moving said plate away from the drum upon the opening of the gripper to cause the stripper plate to engage parts of a seedling held by the gripper and to force the seedlings away from the gripper, an outlet chute located below the drum and adapted to receive the seedlings when they are released from the gripper, a holder at the lower end of the chute to retain the seedlings, means for moving said holder out of the chute and releasing said holder, a reciprocating planting rod on said frame and connected to the chute, the lower end of said rod being operative at the lower end of the chute and adapted to contact said released seedling and implant it.

3,155,059
MACHINE FOR PRODUCING CUT AND UNCUT PILE
Clifford Aldine Bryant, Dalton, Ga., assignor to Cabin Crafts, Inc., Dalton, Ga., a corporation of Georgia
Original application Jan. 7, 1960, Ser. No. 1,037, now Patent No. 3,132,612, dated May 12, 1964. Divided and this application Mar. 14, 1963, Ser. No. 265,279
6 Claims. (Cl. 112—79)

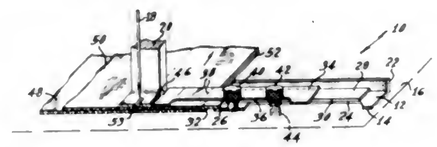


1. In a tufting machine, a bank of yarn-carrying needles, means to reciprocate said needle bank, two banks of loopers to form pile of different characteristics, each bank having a looper adapted to cooperate with each needle, said loopers being rockably mounted forwardly of and rearwardly of the needle with respect to the direction of work movement, a plurality of needle holding means movably mounted on said reciprocating means and each holding a group of one or more needles, means adapted to act selectively as the needle bank descends to move said needle holding means individually and selectively to determine which of the two loopers that cooperate with each needle shall catch and retain the yarn, and means to shift one of said banks of loopers laterally with respect to the direction of work movement as said bank rocks.

3,155,060
STRAIGHT SEAM GUIDE ATTACHMENT
Abe Brenner, 255 W. 23rd St., New York, N.Y.
Filed July 1, 1963, Ser. No. 292,023
6 Claims. (Cl. 112—153)

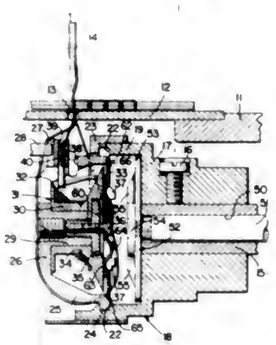
1. A straight seam guide for attachment to the bed of a sewing machine comprising first, second and third members, said second member being movable relative to the other members and to the bed of a sewing machine, guide means on said second member to engage an adjacent edge and to guide a plurality of overlying fabrics to be sewn and to limit the location of the seam thereof, guide means on said first member to guide said second member for movement relative thereto, said third member having a flat undersurface covering and flatly overlying

and engaging the upper adjacent surface of one of the plurality of fabrics to retain the same flat with its edge in engagement with said guide means, said third member including means to indicate the location of said guide means and the location of the seam on said fabrics, and



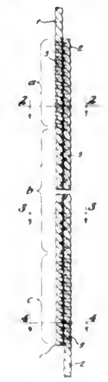
means cooperable with said members to lock the same against relative movement and against movement relative to the bed of a sewing machine, the height of said guide means being substantially equal to that of the thickness of the overlying fabrics when the same are retained flat by said third member.

3,155,061
THREAD CONTROLLING DEVICE FOR LOCK STITCH SEWING MACHINE LOOP TAKER
Gregory Goebel, Morris Plains, and Martin W. Heine, Summit, N.J., assignors to The Singer Company, a corporation of New Jersey
Filed Apr. 1, 1963, Ser. No. 269,477
6 Claims. (Cl. 112—181)



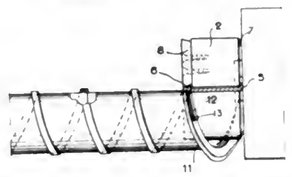
1. A loop taker for a lock stitch sewing machine having a circularly moving body portion formed with an annular bearing raceway, a cup-shaped bobbin case having a rim formed with an annular bearing surface complemental to said body portion bearing raceway, a thread carrying bobbin journaled within said cup-shaped bobbin case, a thread replenishing member disposed between said loop taker body portion and said bobbin case, means shiftably supporting said thread replenishing member axially of said loop taker toward and away from said bobbin case, a thread path controlling disk, means supporting said thread path controlling disk relatively to said bobbin case with the periphery of said disk seated against said bobbin case rim to prevent admission onto said bobbin of a thread loop being manipulated by said loop taker, and means on said thread replenishing member for effecting a deformation of said disk and a shift of said disk periphery into spaced relation from said bobbin case rim when said thread replenishing member is shifted toward said bobbin case so as to direct a thread loop being manipulated by said loop taker onto said bobbin.

3,155,062
JOINING CORD ENDS
Herman Westmijze, Velp, and Leendert Ploeger, Arnhem, Netherlands, assignors to N.V. Onderzoekingsinstituut Research, Arnhem, Netherlands, a corporation of the Netherlands
Filed Nov. 15, 1962, Ser. No. 238,830
Claims priority, application Netherlands Nov. 30, 1961
3 Claims. (Cl. 112—412)



1. A cord fabric comprising a pair of cord ends laid parallel in opposing directions and a stitched seam joining said ends, said seam being formed of a first section on which the stitches are looped about one of said cords and penetrate the body of said other cord, a second section of zig-zag stitches penetrating both cords, and a third section in which the stitches are looped about one of said cords and penetrate the body of the other said cord.

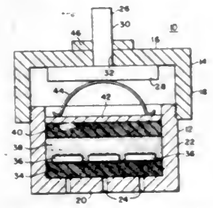
3,155,063
MACHINE FOR MAKING SPIRAL PIPE
Eino Kalervo Maikki and Valentin Silde, Helsinki, Finland, assignors to Erikoisputki Oy, Helsinki, Finland
Filed Sept. 13, 1960, Ser. No. 55,737
Claims priority, application Finland, Nov. 5, 1959, 1798/59, Patent 33,915
3 Claims. (Cl. 113—35)



1. A machine for forming helical lock seam pipe from elongated strip material having preformed marginal edges providing along one edge of the strip a straight flange extending substantially normal to the strip to one side thereof and along the other edge a folded-over flange forming a channel open to the other side of the strip and adapted to receive said straight flange when said helical lock seam is being formed, said machine comprising, in combination, a machine frame; a pair of rollers mounted on said frame turnable about substantially parallel axes and spaced from each other so as to be adapted to pull said strip material fed between said rollers in a direction substantially normal to the axes thereof, one of said rollers being located at the straight flange side of said strip material and forming between that roller end which faces the machine frame and said machine frame an annular space for receiving said straight flange along one edge of said strip material, the width of said one roller equalling the distance between said preformed marginal edges of

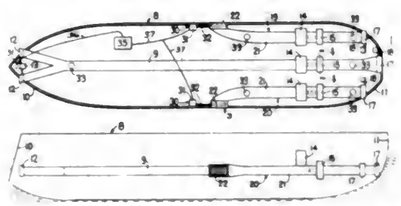
said strip material so that said folded-over flange abuts against the other end of said one roller; ring-like guide means fixed to said machine frame and extending about the other of said rollers, the inner diameter of said guide means substantially equalling the diameter of the pipe to be formed, said guide means having a narrow guide face in form of a single helical convolution of the pipe being formed, said guide face starting from a point, which when viewed in feed direction of said strip material, is located back of the rollers adjacent to the line of contact of the rollers near that marginal edge of the strip material which faces the machine frame and terminating at a point, which when viewed in feed direction, is located in front of the rollers adjacent to the line of contact of the rollers near the opposite edge of the strip material; short second guide means fixed to and extending along the terminal end of said ring-like guide means and forming with the latter a guide slot for receiving the straight flange of the strip material convoluted only once about said other roller and guiding said straight flange into the channel formed by the folded-over flange; and an outwardly widening frusto-conical seam folding means forming an extension of said one roller and cooperating with that portion of the other roller which is adjacent to said frusto-conical seam folding means for forcing said folded-over flange with said straight flange located therein against the outer surface of the formed pipe and into a lock seam, said other roller terminating approximately at that point where the lock seam is formed so that the finished pipe can leave the machine in a direction obliquely inclined to the roller axes.

3,155,064
FUSION MOLD FIXTURE ASSEMBLY
Harlan R. Gates, Millbrook, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 15, 1961, Ser. No. 152,390
3 Claims. (Cl. 113—99)



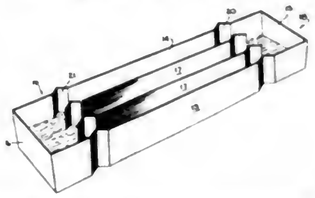
1. A fixture assembly for maintaining the separate components of a semiconductor device in contiguous relation for the fusing thereof into a unitary body comprising, a cup member, a cap member, said cup member having a bottom wall and an annular side wall, said cap member having a top wall and an annular side wall, the outside diameter of the annular side wall of the cup member being equal to the inside diameter of the annular side wall of the cap member, screw threads disposed on the top outer periphery of the annular side of the cup member and the lower inside periphery of the annular side of the cap member, said screw threads being cooperatively engageable whereby the cap member is joined onto the cup member, the top surface of the cap member having an aperture centrally disposed therein, a plunger, said plunger having a stem portion and a flat head portion, said stem portion extending through said aperture, said flat head portion being disposed within the cavity defined by the walls of the cap member and cup member when they are joined by said cooperatively engaged threads, an inverted U shaped spring disposed within the cavity formed by the walls of the cup and cap member, a first spacer disk having a top and a bottom surface disposed within the cavity defined by the walls of the cap member and cup member, the vertex of said inverted U shaped spring being in contact with the flat head portion of the plunger and the ends of the two legs of the inverted U shaped spring being in contact with the upper surface of the spacer disk, a second disk having a top and a bottom surface disposed within the cavity defined by the walls of the cup and cap member, the bottom surface of said disk being in contact with the bottom wall of the cup member, the first disk, the second disk and the annular wall of the cup member defining a cavity into which is placed the components of a semiconductor device, and at least one bore passing through the bottom wall of the cup member.

3,155,065
SHIP STABILIZER
Louis Strumskis, P.O. Box 101, Sparr, Fla.
Filed May 3, 1963, Ser. No. 277,858
5 Claims. (Cl. 114—122)



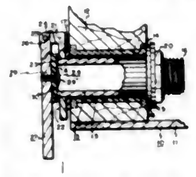
1. A ship stabilizer of the character described, comprising three water conducting tubes mounted within the hull of a ship, one of the said tubes extending from the bow to the stern of the said ship, and each of the two remaining tubes mounted on each side of the said ship, and each tube having a mechanically controlled water inlet and a water outlet having a plurality of blades therein, and a propeller of the multi-blade type mounted within each one of the said tubes, and a power unit operating each propeller, and the mechanical mechanism of each water inlet on the side of the said ship being automatically operated by a gyroscope, thereby providing automatic stabilization of the said ship.

3,155,066
SHIP STABILIZER
Sheldon B. Field, Floral Park, N.Y., assignor to John J. McMullen Associates, Inc., a corporation of New York
Filed Apr. 3, 1962, Ser. No. 184,719
4 Claims. (Cl. 114—125)



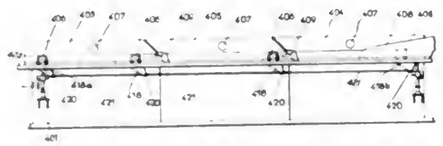
3. A ship stabilizer comprising a rectangular tank to be partially filled in a free surface condition with a fluid, said tank adapted to be positioned horizontally and at right angles to the ship stabilizing axis, and a plurality of parallel spaced plates mounted from bottom to top along the long axis of said tank, said plates defining a plurality of fluid passageways, at least one of said passageways having a substantially constant transverse dimension at substantially all points thereof, and wherein the end portions of said plates are deformed to a V shape.

3,155,067
AUTOMATIC DRAIN VALVE FOR BOATS
Harold R. Gillette, 292 E. 2nd N., Vernal, Utah, assignor of fifty percent to Glen H. Cooper, Vernal, Utah
Filed June 10, 1963, Ser. No. 286,846
3 Claims. (Cl. 114—185)



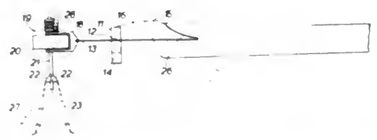
1. Automatic drain valve structure for boats including, in combination, a hollow body, compression means disposed upon hollow body for sealingly securing said hollow body in position through the existing drain hole of a boat transom, a flange integrally affixed to and about said hollow body proximate the rearmost extremity thereof, a valve plate, a flat, resilient valve gate secured to said valve plate at the inner surface thereof and proximate said rearmost extremity of said hollow body and aligned with said hollow body, means pivotally securing said valve plate to said flange, means for spring-loading said valve plate against said valve body, said valve plate extending beneath said valve body and being adapted for movement away from said flange and against the spring pressure of said spring-loading means for selectively withdrawing said valve gate away from said valve body under water pressure, and wherein said structure includes spring means disposed between said valve plate and the adjacent surface of said valve gate.

3,155,068
METHOD AND MEANS FOR CLOSING AND LOCKING MOVABLE PANELS AND RETRACTABLE BEARING MEMBERS, NOTABLY FOR SHEDS, SHIPHOLDS AND THE LIKE
Henri Kummerman, Paris, France, assignor to International Mac Gregor Organization (I.M.G.O.), Monte Carlo, Monaco, a corporation of Monaco
Filed Feb. 20, 1962, Ser. No. 174,486
Claims priority, application France Mar. 1, 1961
15 Claims. (Cl. 114—203)



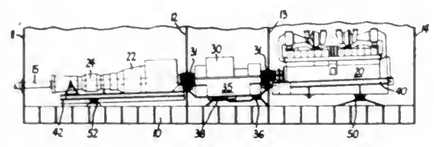
1. A movable closing arrangement comprising multiple cover panels for a hatch-like top aperture of an enclosed space, panel runways provided along edges of said aperture, sealing means adjacent said runways onto which said panels may be lowered for effecting sealing joints and from which they may be lifted to open the sealing joints, said panels having rollers movable over said runways and said runways being formed with orifices into which said rollers may descend for lowering of the panels, pivoted double armed bell-crank lever members fulcrumed intermediate the arms thereof beneath said runways, one arm of each one of said lever members being formed with a platform-like surface movable upwards and downwards in one of said orifices and engageable by one of said rollers for raising and lowering the panels relative to said sealing means, horizontally movable unitary drag link means pivotally connected to the other arms of all said lever members along each one of two opposite sides of said aperture, power control means operatively connected to said drag link means to actuate the latter in opposite directions for moving said lever members in unison, dogging means associated with each one of said lever members, and catch means carried by said rollers respectively and engaged by said dogging means when said panels are in their lowered positions to lock the latter tightly on said sealing means.

3,155,069
MOORING ARRANGEMENTS FOR SHIPS
John William Ross and Kenneth William Hopkins, London, England, assignors to B.P. Tanker Company Limited, London, England, a British joint-stock corporation
Filed Aug. 13, 1963, Ser. No. 301,870
Claims priority, application Great Britain, Aug. 17, 1962, 31,642/62
8 Claims. (Cl. 114—230



1. A mooring arrangement for a ship comprising a fixed member, a floatable member adapted to absorb energy when said member is tilted about a horizontal axis, a longitudinally extending member adapted to support, in use, said floatable member between said fixed member and the ship, means for flexibly connecting said floatable member to said longitudinally extending member so that the floatable member is capable for rotating about a horizontal axis, and means connectible with said floatable member in vertically spaced relation to said horizontal axis, for attaching the ship to said floatable member so that when, in use, the ship tends to move in a direction away from the floatable member, said floatable member may be caused to rotate by said attaching means about said horizontal axis to allow such movement with absorption of energy.

3,155,070
DRIVE SYSTEM AND MOUNTING FOR MULTIPLE MARINE ENGINES IN SHIPS
Oskar Jebens and Ulrich Wagner, Hamburg, Germany, assignors to Wagner-Hockdruck-Dampfturbinen-Gesellschaft, Hamburg, Germany, a corporation of Germany
Filed July 15, 1963, Ser. No. 295,161
Claims priority, application Germany, July 21, 1962, W 32,648; Aug. 22, 1962, W 32,820
17 Claims. (Cl. 115—.5)



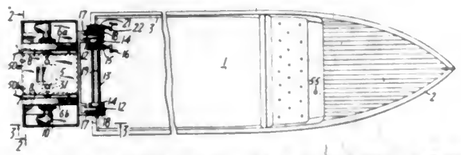
1. In an arrangement of power transmission elements and engines for ships having a plurality of separate engines transmitting power to a common propellor shaft by means of articulated power transmission elements, the combination which comprises a main frame for at least a portion of said power transmission elements, means for supporting said main frame directly on hull portions of said ship, individual engine-supporting frames for at least

a portion of said separate engines, cardanic pivot means for supporting one end of each of said engine-supporting frames on said main frame for angular and translating movement with respect thereto, articulated support means for supporting the opposite end of each said engine-supporting frame on said hull portions of said ship, and articulated torque transmission means interconnecting said engines with said transmission elements and adapted for accommodating angular and translating movements therebetween.

3,155,071
MARINE PROPULSION SYSTEM

Horace J. Buttner, New Canaan, Conn., assignor to Textron Inc., Byram, Conn., a corporation of Rhode Island

Filed Apr. 25, 1961, Ser. No. 105,419
8 Claims. (Cl. 115—16)



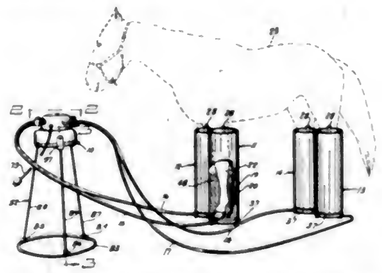
1. A jet propulsion system for a boat having a floating structure with a bottom, side walls, a transverse rear wall and a longitudinal axis, comprising a motor mounted in said floating structure adjacent said rear wall and having a drive shaft disposed transversely of said longitudinal axis and extending from opposite ends of said motor, a rotary pump at each of the opposite ends of the motor and having a rotatable casing having a discharge opening and a rotor connected to and driven by said drive shaft, each of said pumps having an intake passage opening through the bottom of said structure and two discharge passages, a first of said discharge, passages extending from said pump directly through said rear wall and discharging a jet rearwardly of said boat whereby the discharge of water from said pumps exerts a forward thrust on said boat, the second of said discharge passages opening through the bottom of the boat and directed forwardly whereby the discharge of water from the pumps exerts a rearward thrust on the boat, the discharge passages of one pump being spaced laterally from those of the other pump, each said pump casing being rotatable between a forward drive position in which discharge of water from said opening is through said first discharge passage directed rearwardly of said boat and a reverse drive position in which discharge of water from said opening is through said second discharge passage directed forwardly of said boat, unitary means for co-ordinating the control of both of said pumps, said system including said motor and pumps being disposed in a space between said side walls and adjacent said rear wall having a lesser extent in the direction of said longitudinal axis than in a direction transverse of said longitudinal axis.

3,155,072
LIQUID MASSAGE TURBULATOR FOR CONDITIONING HORSES' LEGS

Walter F. Owens, 10157 Morley St., Detroit 4, Mich.

Filed Oct. 22, 1962, Ser. No. 232,080
3 Claims. (Cl. 119—1)

1. An animal hydrotherapeutic apparatus comprising:
at least one flexible elongated boot having a length and cross section substantially conforming to the leg of an animal for holding a massage medicated liquid for massaging the leg of the animal inserted into the boot;
a base on one end of said boot and having a hoof support and a plurality of air passages for conveying air under pressure into the massage liquid for turbulating the same; and



an external horizontal inlet means connected intermediate the edge of said base for supplying air under pressure into said air passages below said boot.

3,155,073
CATTLE GATE

Marvin Grenz, Napoleon, N. Dak.

Filed Mar. 5, 1962, Ser. No. 177,663
6 Claims. (Cl. 119—98)

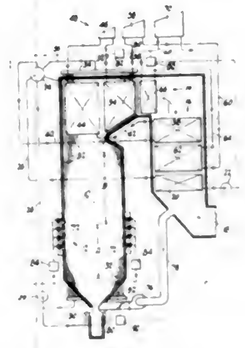


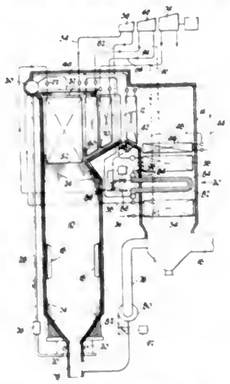
1. An animal gate comprising in combination:
(*a*) an upright open framework having a pair of vertical side bars disposed in spaced relation and fixedly joined with an upper pair of horizontal bars and a lower pair of horizontal bars disposed from said upper pair;
(*b*) a pair of stanchion bars engaging said upper and lower pair of horizontal bars in horizontal sliding relation therewith;
(*c*) a control lever rotatably mounted on one of said vertical side bars and having first and second pivot points oppositely disposed from the point of rotatable mounting;
(*d*) a pair of upper and lower linking networks each including a pivot support on said one of said vertical side bars remote from said point of rotatable mounting of said control lever, said upper and lower linking networks being pivotally connected between said first and second pivot points on said control lever and the nearest one of said pair of stanchion bars for producing horizontal movement thereof;
(*e*) and an adjustable link disposed adjacent each of said pairs of upper and lower linking networks respectively and pivotally connected to the other one of said pair of stanchion bars at one end of said links and to said corresponding upper and lower linking networks, said stanchion bars moving alternately towards and away from each other as said control lever is rotated between a first and second predetermined position.

3,155,074
VAPOR GENERATOR

William H. Clayton, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 27, 1961, Ser. No. 162,328
8 Claims. (Cl. 122—479)





1. A vapor generator operating on the double reheat cycle and having the characteristic that the percentage of the total heat absorption of the unit which is accounted for by the high pressure reheat increases with decrease in load from the maximum load while the percentage accounted for by the low pressure reheater decreases as the load is decreased from the maximum and including a furnace having primary fluid carrying tubes on its walls, means introducing fuel and air into said furnace, said means being operative to adjust the zone of combustion in the furnace toward and away from the furnace outlet, high pressure reheater means and low pressure reheater means disposed in the combustion gas path in series with regard to combustion gas flow with these reheater means being located such that the low pressure reheater is effected primarily by the characteristics of the combustion gas streams at a location downstream of the high pressure reheater means, means operative to recirculate combustion gases to the furnace in a manner to increase the heat content of the gases with an increase in the quantity of gases recirculated and means for controlling the adjustment of the zone of combustion predominantly in response to the high pressure reheater temperature with varying load and means for simultaneously controlling the recirculation of gases to the furnace predominantly in response to the low pressure reheater temperature.

3,155,075
VAPOR GENERATOR

Elno M. Powell, Bloomfield, and Willburt W. Schroedter, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

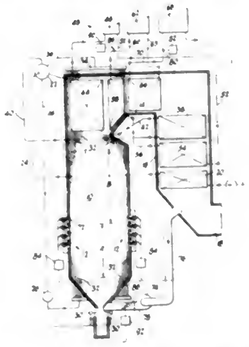
Filed Dec. 27, 1961, Ser. No. 162,329
6 Claims. (Cl. 122—479)

1. A vapor generating unit operating on the double reheat cycle, said cycle having the characteristic that of the total heat absorption of the generator the percentage required by the high pressure reheat increases relative to that of the low pressure reheat as the load decreases comprising a furnace fired with a suitable fuel and having primary fluid carrying tubes on its walls, a passageway extending therefrom for the conveyance of combustion gases, a high pressure and a low pressure reheater disposed in said gas passageway, the high pressure reheater having its major portion spaced well downstream of at least the major portion of the low pressure reheater and disposed so at least a vast majority of the gas stream passes thereover, other heat exchange surface disposed in the passageway between these portions, and means for controllably reintroducing into the furnace combustion gases that have traversed said reheaters and in a manner operative to increase the heat content of the gases traversing said reheaters, the downstream portion of the high pressure reheater being such that the gas recirculation control is more effective with relation thereto than with the low pressure reheater whereby the tendency of the reheat temperatures to vary relative to each other is compensated for at least in part.

3,155,076
POWER PLANT INSTALLATION

William H. Clayton, Windsor, and Willburt W. Schroedter, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 27, 1961, Ser. No. 162,330
8 Claims. (Cl. 122—479)



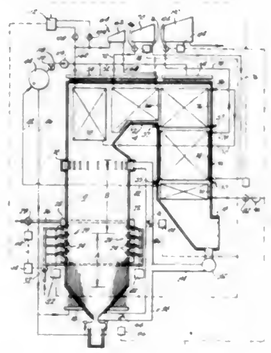
1. In a power plant installation a vapor generator operating in the double reheat cycle, said generator including an elongated furnace having heat exchange tubes on its walls and having a combustion gas outlet, means firing said furnace in a manner such that the zone of combustion may be regulatingly moved toward and away from said outlet, a high pressure and a low pressure reheater means disposed so that combustion gases generated in said furnace pass thereover, means for regulatingly introducing combustion gases which have traversed said reheater means into said furnace at a location such as to increase the heating effect of the combustion gases passing over the reheaters over what it would be without said recirculation,

said high pressure and low pressure reheaters being positioned in the gas stream so that the control effect obtained by gas recirculation is substantially greater on the high pressure reheater than on the low pressure reheater while the control effect obtained by adjusting the zone of combustion with relation to the furnace outlet is substantially greater on the low pressure reheater than on the high pressure reheater means operative to vary the recirculation of the combustion gases directly and predominantly in accordance with the temperature of the high pressure reheat vapor and means operative to vary the zone of combustion directly and predominantly in accordance with the temperature of the low pressure reheat vapor.

3,155,077
POWER PLANT ORGANIZATION AND METHOD OF OPERATION

William H. Clayton, Jr., Windsor, and Ronald B. Knust, Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 247,908
10 Claims. (Cl. 122—479)



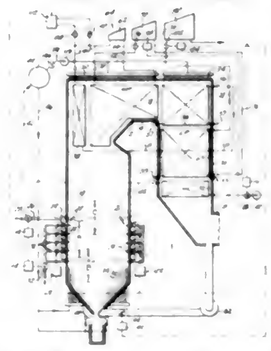
6. In a forced through-flow supercritical vapor generator operated on the double reheat cycle and having the walls of the furnace lined with tubes that form part of the through-flow circuit of the vapor generator with the furnace having an outlet adjacent one end and being fired at a location remote therefrom, the improved method of operation comprising regulating the pressure and temperature of the primary vapor by regulating the firing rate and the flow through the primary circuit, reheating said primary vapor a first time by passing it in heat exchange relation with the combustion gas stream produced by the burning of fuel in the furnace and reheating this vapor a second time by passing it in heat exchange relation with said gas stream at an effective location downstream of that for said first reheat, imparting heat to the primary fluid from the gas stream at a location intermediate said reheat locations, introducing into the furnace combustion gases which have traversed said reheat locations at a first location where it is effective to decrease the heat absorption in said first reheat and increase the heat absorption in the second reheat and at a second location where it is effective to increase the heat absorption of both reheats increasing that of the first reheat to a lesser extent than that of the second reheat, introducing a substantial quantity of these gases at said first location at maximum load and decreasing this introduction of gas while increasing the introduction of gas at the second location as the load is decreased.

3,155,078
DOUBLE REHEAT POWER PLANT ARRANGEMENT

William H. Clayton, Jr., Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 247,931
9 Claims. (Cl. 122—479)

I. A supercritical forced through-flow vapor generator operating on the double reheat cycle and having the characteristic that as the load decreases from maximum the percentage of the total heat absorption of the unit required by the high pressure reheat increases substantially in relation to that required by the low pressure reheat and including a fluid cooled furnace having a combustion gas outlet and having firing means remote therefrom, a through-flow circuit through which the primary fluid is forced and including tubular members on the walls of the furnace, a high pressure reheater disposed to receive the preponderance of its heat input by radiation, a convection low pressure reheater disposed in the stream of combustion gases issuing from the furnace, means for regulating the firing rate and the flow of primary fluid through the through-flow circuit in a manner to maintain the outlet conditions of the primary fluid at their desired value with varying load, and means for regulating the high pressure and low pressure reheat temperature with varying load to maintain these reheat temperatures at their desired value, including means for introducing cool combustion gases into the furnace at a location to increase the heat content of the gas stream egressing from the furnace and means, in-



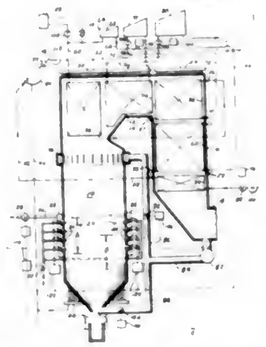
dependent of the firing rate, operative to adjust the temperature of the gases egressing from the furnace, means operative to simultaneously regulate the introduction of cool combustion gases into the furnace and the adjustment of the temperature of the combustion gases passing from the furnace to maintain the temperature of the two reheats at their desired value throughout a substantial load range.

3,155,079
SUPERCRITICAL VAPOR GENERATOR POWER PLANT SYSTEM

William H. Clayton, Jr., Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 247,993
18 Claims. (Cl. 122—479)

1. A forced through-flow supercritical vapor generator operating on the double reheat cycle and having the characteristic that as the load decreases the percentage of the total heat absorption required by the high pressure reheat increases while that required by the low pressure reheat remains generally constant or decreases, including a furnace into which fuel is introduced and burned and which has an outlet through which the combustion gases thus generated pass, a through-flow circuit through which the primary fluid is passed and including tubular members disposed on the furnace walls, high pressure reheat means and low pressure reheat means positioned in the stream of combustion gases egressing from the furnace with the effective location of the high pressure reheat means being downstream relative to gas flow of the low pressure reheat means and with primary heat exchange surface forming part of the through-flow circuit being positioned

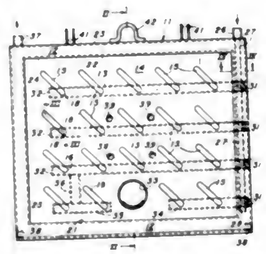


in the gas stream intermediate these locations, a tempering gas system and a gas recirculation system associated with said furnace, means operative to controllably increase the quantity of tempering gases introduced into the furnace and the quantity of recirculation gases introduced into the furnace as the load on the unit decreases including means responsive to the low pressure reheat temperature to control the introduction of tempering gases and means responsive to the high pressure reheat temperature to control the introduction of the recirculation gases.

3,155,080
FORCED CIRCULATION WATER-COOLED DOOR

Ottwin L. Braun, Pittsburgh, Pa., assignor to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania

Filed Oct. 2, 1961, Ser. No. 142,276
1 Claim. (Cl. 122—498)

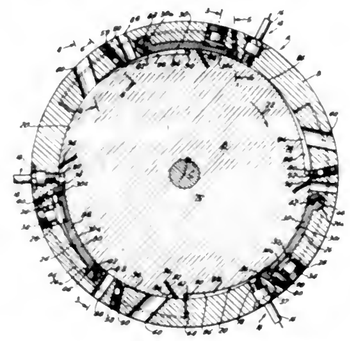


A water-cooled open-hearth furnace door with a top, bottom and sides and having inner and outer faces, said door comprising an inner plate and an outer plate in fixed spaced relation, each plate having a peripheral inwardly-extending flange spaced from the other and joined at its edge to the other to hold the plates in spaced relation and provide a jacket between the plates with a hollow flange around the inner face of the inner plate, a plurality of tubes projecting from the inner plate into the area surrounded by said hollow flange and providing means for retaining refractory over the inner plate in the area surrounded by the hollow flange, each of said tubes having one open end passing through the inner plate to the jacket, a plurality of closed water conducting structural channels on that face of the inner plate which confronts the outer plate, the other end of each tube terminating in one of said water conducting channels, a water inlet pipe, connections from said pipe and opening into one end of each of the several channels for conducting water from the inlet pipe to the channels, and an outlet pipe leading from the space between the plates whereby water is introduced from the inlet pipe, through the connections and channels, the tubes, jacket, and the outlet pipe in the order named.

3,155,081
ROTARY INTERNAL COMBUSTION ENGINE

Frank A. Gonzalez, 50 Park Ave., New York, N.Y.

Filed Feb. 28, 1961, Ser. No. 92,304
7 Claims. (Cl. 123—15)



1. In a rotary internal combustion engine comprising a stator and a rotor rotatable relative thereto, said stator having a plurality of firing station, said rotor having a plurality of separated recesses defining firing chambers movable into registration with said firing stations, means for supplying a combustible mixture to said firing chambers and for exhausting products of combustion therefrom, said stator having compression parts adjacent corresponding firing stations and movable into said rotor recesses when the latter are in registration with the corresponding firing stations for compressing said mixture in said recesses; the improvement which comprises gas-communication means in said stator, operatively connected between a given compression part and an inlet station on said stator displaced in the direction of rotation of said rotor from and in communication with a firing station other than the one corresponding to said given compression part, for causing exhaust gases from said other firing station to urge said given compression part toward said rotor.

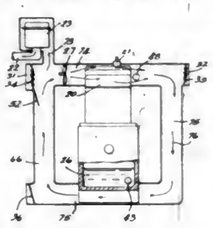
3,155,082
CLIMATIC CONTROL APPARATUS FOR AN AIR COOLED ENGINE

Harry W. Roorda and John A. Gresch, Waukesha, and Ray D. Beard, West Allis, Wis., assignors to Wisconsin Motor Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 13, 1962, Ser. No. 216,522
6 Claims. (Cl. 123—41.05)

1. Climatic control apparatus for an air cooled engine having an inductive air intake, an engine cylinder which heats up during the course of engine operation and an oil reservoir, said apparatus comprising a shroud about the engine defining air passages to said inductive air intake, said cylinder and said reservoir, a blower to circulate air through at least some of said passages, a fresh air intake into said shroud, an exhaust outlet from said shroud,

shutters for selectively opening and closing said intake and outlet, thermostat means responsive to cylinder temperature, thermostat means responsive to oil temperature

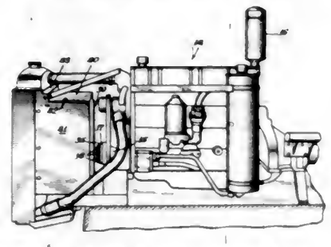


and shutter operators operatively connected to said thermostats for sequentially actuating said shutters in stages responsive to the temperature of the engine cylinder and the oil.

3,155,083
LOW SILHOUETTE ENGINE

Tommy A. Middlesworth, Hinsdale, Ill., and Wendell E. Dorsett, Albany, Ga., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Oct. 4, 1962, Ser. No. 228,494
6 Claims. (Cl. 123—41.49)



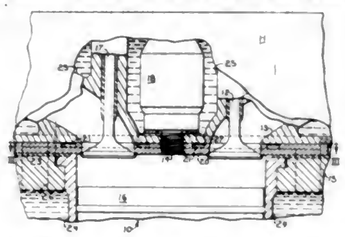
1. An engine having a closed circuit fluid cooling system; an engine crankshaft extending outwardly from the engine; a circular blowing-type fan secured to said crankshaft; a circular screen co-extensive with and secured to said fan to rotate therewith; said cooling system including a radiator having a core; said radiator and engine being mounted with respect to each other such that they are spaced apart a substantial distance along the direction of the engine crankshaft; a shroud secured to said radiator and forming a closed duct between said fan and said radiator core, the free end of said duct having a circular opening, formed therein, dimensioned such that said rotating screen forms a cover for said opening.

3,155,084
COOLING MEANS FOR INTERNAL COMBUSTION ENGINES

George B. Grim, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Mar. 28, 1962, Ser. No. 183,090
6 Claims. (Cl. 123—41.77)

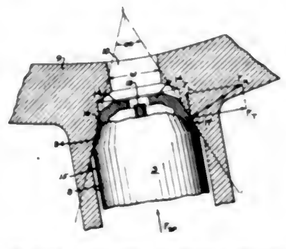
1. A cooling arrangement for an internal combustion engine having a combustion chamber formed in a cylinder block and valve means and precombustion means arranged in a cylinder head thereof in communicating relationship with said chamber for driving said engine comprising a substantially flat insert member arranged between said head and said block, said insert member forming passage means of substantially uniform cross-section with said head arranged to closely surround lower portions of said valve means and lower portions of said precombustion means, said lower portions comprising "hot spots" of said engine, said passage means communicating with coolant chamber means formed in said head arranged in surrounding relationship with said valve means and said precombustion means and chamber means formed in said block for circulating a coolant through said passage means.



3,155,085
INTERNAL COMBUSTION ENGINE WITH SPARK PLUG SUBJECT TO HIGH TEMPERATURE OPERATING CONDITIONS

Charles Jones, Paramus, and Robert E. Mount, Pine Brook, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,589
6 Claims. (Cl. 123—169)



1. In an internal combustion engine subject to high operating temperatures, the combination of

(*a*) a metal housing, a portion of which forms a wall of the engine combustion chamber,

(*b*) said chamber wall having a spark plug pilot that is cylindrical throughout a portion of its length and restricted in cross-sectional area at its end adjacent to the chamber to form a conical seat concentric with the pilot, the conical seat being spaced from said combustion chamber,

(*c*) a spark plug freely mounted for limited lateral adjustment within the pilot, said plug including a metal cylinder terminating in a frustro-conical portion at the firing end of the plug and corresponding in cone angle to said conical seat for making a metal-to-metal sealing fit therewith,

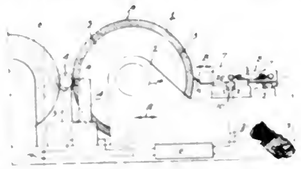
(*d*) and means interconnecting said spark plug and housing for holding said plug in the pilot and forcing it into firm sealing engagement with said conical pilot seat, and for causing variation of the plug seating force in accordance with adjustment of said means, said holding means allowing limited transverse movement of the plug within the pilot for centering on the conical seat and thereby correcting slight misalinement of the plug and pilot axes,

(*e*) the common slope of said pilot seat and corresponding frustro-conical portion forming a sharp acute angle with respect to the longitudinal axis of the pilot seat and having an optimum value whereby the longitudinal force component tending to cause bulging of the chamber wall in close proximity to the combustion chamber is materially less than the required sealing force normal to the pilot seat, and a comparatively large cone seat surface area is provided for effective pressure sealing and high rate of heat transfer from the plug-tip region of the metal cylinder to the housing wall.

3,155,086
TRUING AND FEEDING METHOD AND APPARATUS FOR GRINDING MACHINES

Curt Inge Örnehage, Lidkoping, Sweden, assignor to Lidkopings Mekaniska Verkstads Aktiebolag, Lidkoping, Sweden, a corporation of Sweden

Filed Mar. 5, 1963, Ser. No. 262,979
Claims priority, application Sweden Mar. 10, 1962
11 Claims. (Cl. 125—11)

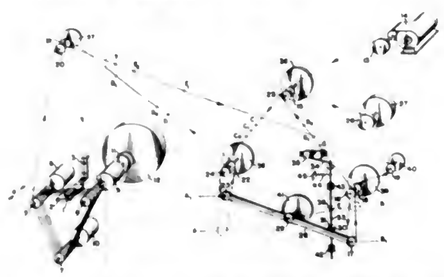


1. In a grinding machine including a rotatably mounted grinding wheel having a grinding surface, a support member, a truing device movable between a rest limit position at one side of the grinding surface and a reversing limit position at the opposite side of the grinding surface, said truing device adapted to engage said grinding surface during actuation between limit positions to true the grinding surface and feed means for effecting relative movement of the grinding wheel and support member; a control member having a circumferential control surface adapted to be engaged by the truing device during movement thereof between limit positions, sensing means cooperable with said control surface and the feed means to sense the changes in the diameter of said control surface effected by the truing device and to actuate the feed means to cause a predetermined relative movement of the grinding wheel and support member thereby to compensate for the changes effected by the truing device.

3,155,087
MACHINE FOR SAWING SAMPLES OF BRITTLE MATERIALS

Bertrand Alain Dreyfus, Sevres, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, France

Filed Dec. 4, 1961, Ser. No. 157,319
Claims priority, application France Dec. 7, 1960
4 Claims. (Cl. 125—21)

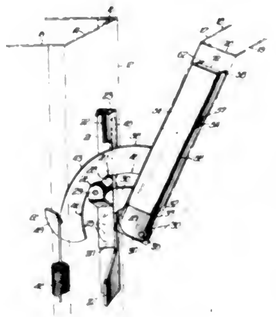


1. In a machine for sawing samples of a material comprising a reciprocating wire array for sawing material, said array comprising a plurality of wire guides and a single wire passing a plurality of times over said guides, a feeder spool for said wire, a control motor energized to rotate at a speed slower than that of said feeder spool and connected to said feeder spool, said control motor acting as a brake and feed regulator, a receiver spool for said wire, a constant torque drive motor for rotating said receiver spool, means for electrically controlling said constant torque drive motor for a tendency to rotate at a speed higher than the stretch of the wire will permit, a constant torque reversible motor driving at least one of said wire guides thus defining a rotary reciprocating guide, and means including a toggle member carrying said wire for causing said reversible motor to reverse.

3,155,088
REMOVABLE OVEN DOOR AND HINGE ASSEMBLY

Roy Hailey Barber, Cleveland, Tenn., assignor to Hardwick Stove Company, Cleveland, Tenn., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,523
8 Claims. (Cl. 126—191)



1. In combination, a structure defining an oven compartment with a front opening, an oven door for said opening, a hinge support carried by said structure, a hinge assembly guide having spaced portions and pivoted near its lower end on said hinge support, a hinge roller carried by said structure, a hinge member pivoted between said spaced portions of said hinge assembly guide and having an arcuate edge with a notched portion, a spring coacting with said hinge member and yieldingly urging the arcuate edge of said hinge member into cooperation with said roller, a generally channel shaped hinge holder secured to said door and slideable over said hinge assembly guide and having a locking slot therein, and a locking lug rigid with said hinge member and engageable in said locking slot to lock the door against removal from said hinge assembly guide, movement of said door about the hinge support for said hinge assembly guide to position where the notched portion of said arcuate edge of said hinge member is presented to said roller causing said spring to pivot said hinge member about its pivot between the spaced portions of the hinge assembly guide to release the locking lug on said hinge member from said locking slot for removal of the door from said hinge assembly guide.

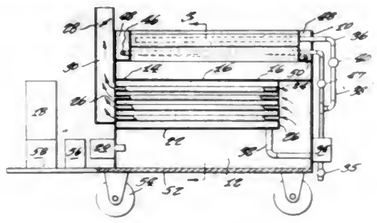
3,155,089
PORTABLE SNOW MELTING AND SNOW DISPOSAL UNIT

William H. Hoyt, 193 Ivy St., Oyster Bay, N.Y.

Filed Feb. 8, 1962, Ser. No. 171,983
6 Claims. (Cl. 126—343.5)

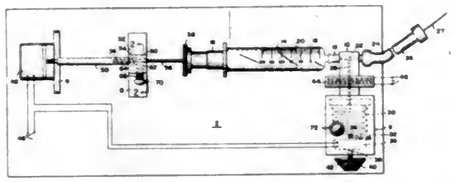
1. A mobile snow melting unit comprising a wheel supported frame, a boiler housing on said frame, including a hot-water boiler, a snow-receiving tank superposed over said boiler housing, the bottom of said tank constituting the top of said boiler housing, a continuous

snow-receiving trough within said tank extending at least the entire perimeter thereof, the bottom of said trough being vertically spaced above the bottom of said tank, a plurality of parallel angle bars each of inverted V-shape secured between a pair of opposed inside walls of said trough, a water spray pipe positioned within each angle bar, a heater pipe within said trough, a drain pipe connected to said heater pipe, openings in said tank bottom for the discharge of water directly into said boiler, over-flow openings in the inside wall of said trough, a pump, a conduit connecting the bottom of said boiler to the inlet of said pump, a discharge conduit on said pump, and separate conduit means each including a control valve for connecting the discharge conduit to said spray pipes and



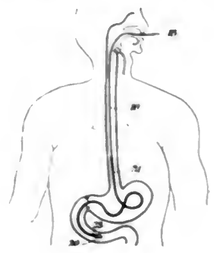
to said heater pipe, whereby water heated by said boiler will be pumped through said spray pipes to be discharged into snow within said tank to melt the same, and at the same time, water heated by said boiler will be pumped through said heater pipe to melt the snow within said trough by heat transfer therewith, the water passing through said heater pipe being discharged through the drain pipe, the water supplied to said boiler by the melted snow flowing from the trough over-flow openings into said tank and through the tank bottom openings into said boiler, being in part re-circulated to said tank and in part pumped through said heater pipe, for ultimate discharge through said drain pipe exteriorly of said snow melting unit.

3,155,090
HYPODERMIC SYRINGE OPERATING MEANS
John W. Holter, Gulph Mills, Pa., assignor to The Holter Company, Bridgeport, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1962, Ser. No. 165,368
3 Claims. (Cl. 128—2)



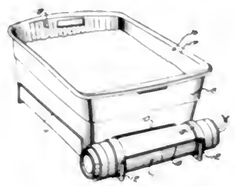
1. Apparatus for automatically injecting a liquid into a fluid system at a controlled pressure comprising a syringe containing said liquid and including a piston for discharging said liquid therefrom, an injector connected to said syringe for injecting said liquid into said system, a drive motor operatively connected to advance said piston so as to discharge liquid from said syringe, and means responsive to pressure variations of said discharged liquid above and below a predetermined pressure for automatically interrupting and resuming the advancement of said piston whereby said liquid is injected at a controlled pressure.

3,155,091
DIAGNOSTIC DEVICE FOR THE DETECTION AND LOCATION OF THE SITES OF INTERNAL ANATOMICAL ABNORMALITIES
Gerald Nissenbaum, Jersey City, N.J., and Jonah Mayerhoff, New York, N.Y., assignors to Diagnosto Associates, Ltd., New York, N.Y., a corporation of New York
Filed Apr. 30, 1963, Ser. No. 276,966
8 Claims. (Cl. 128—2)



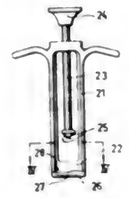
1. A diagnostic device for the detection and location of the sites of internal anatomical abnormalities, comprising a tube proportioned to enable it to be swallowed for positioning within the gastrointestinal tract, said tube being of flexible non-toxic radio-transparent material, a filament disposed within said tube, a plurality of position-indicators of radiopaque material carried by said filament and spaced apart predetermined distances, and a sheath of absorbent material removably positioned over said tube and enveloping a selected portion thereof.

3,155,092
HYDROTHERAPY APPARATUS
Samuel L. McNair, Las Vegas, Nev., assignor, by mesne assignments, to The Songrond Corp., Kansas City, Mo., a corporation of Missouri
Filed June 29, 1962, Ser. No. 206,318
3 Claims. (Cl. 128—66)



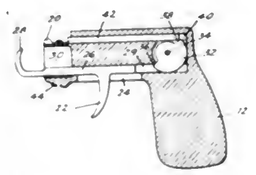
1. A hydrotherapy apparatus, comprising:
(*a*) a rectangular supporting frame having upturned gripping members at its sides and ends;
(*b*) a rectangular water-receiving vessel having yieldable side walls forced between said gripping members, whereby said vessel is removably secured to said supporting frame;
(*c*) bracket means extending from said frame disposed at one side of said vessel;
(*d*) and a vibrating unit disposed in said bracket means for transmitting vibrations to the adjacent wall of said vessel thereby to vibrate said vessel and its contents.

3,155,093
HYPODERMIC SYRINGE
Hans Gösta Enström, Ostertalje, Hans-Wolfgang Barnieske, Sodertalje, and Rolf Karl Erik Barkman, Stockholm, Sweden, assignors to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden
Filed Mar. 5, 1962, Ser. No. 177,362
Claims priority, application Sweden Mar. 9, 1961
2 Claims. (Cl. 128—218)



1. In a hypodermic syringe the combination comprising a syringe body having an open front end capable of receiving therethrough and holding an ampoule-needle unit; an undetachable stem arranged movably in the rear end of the syringe body and protruding therefrom to engage with an ampoule body to press out the injection liquid from the ampoule body; and an ampoule-needle unit cooperating with the syringe body comprising an ampoule body, a needle-holder operably associated with the ampoule body to form a unitary device and an injection needle secured in said needle-holder and protruding from the syringe body; a piston closing the rear end of the ampoule body, said stem having its front end provided with means to grip said piston for movement in forward and rearward direction, said injection needle having its rear end arranged to pierce the front wall of the ampoule body; means for detachably securing said ampoule body in the open front end of said syringe body; and means for engaging loosely said needle-holder with said secured ampoule body whereby the needle-holder is movable relatively to the ampoule body from a first, inoperative position to a second, operative position in which said rear end of the needle has pierced the front wall of the ampoule body.

3,155,094
HEMOSTATIC INSTRUMENT
Louis F. Hamilton, 210 S. Roselawn, Artesia, N. Mex.
Filed Nov. 27, 1961, Ser. No. 155,132
5 Claims. (Cl. 128—326)



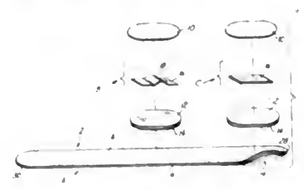
1. A hemostatic instrument comprising a housing having a tapered end, gripping means mounted on the other end of said housing, an elastic band, means for holding said elastic band upon said tapered end, a hook slidably located within said housing and normally positioned outside said tapered end of said housing, a push rod slideably mounted in said housing, and means for simultaneously drawing said hook into said housing and moving said push rod out of said housing to push said elastic band from said tapered end.

3,155,095
ANASTOMOSIS METHOD AND MEANS
Adolph M. Brown, 9735 Wilshire Blvd., Beverly Hills, Calif.
Filed Feb. 7, 1961, Ser. No. 87,636
11 Claims. (Cl. 128—334)



1. An absorbable joinder assembly for the anastomosis of vascular vessels consisting essentially of a hollow cylinder and having an outer surface free of obstructions for insertion into the ends of the vascular vessels in a fitting relation therein to bring the ends in abutting relation and an external cylindrical sleeve dimensioned to have an internal diameter adapted for a clamping fit over the abutting end portions of the vascular vessels and contained cylinder, said cylinder and said sleeve being formed of an absorbable material.

3,155,096
MALE INCONTINENCE CLAMP
Edson S. Outwin, 39 Hillcrest Ave., Summit, N.J.
Filed Aug. 8, 1963, Ser. No. 300,824
9 Claims. (Cl. 128—346)

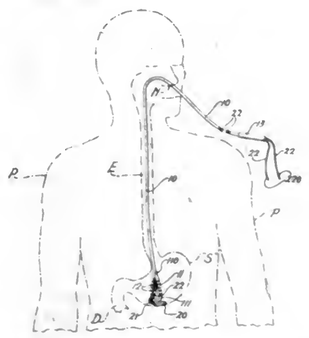


1. A male incontinence clamp comprising a strip of flexible material having an outer surface and an inner surface, said inner surface having, at least over substantial areas thereof, a pressure-sensitive adherence characteristic, first and second pads each having an inner surface, a substantially rigid reinforcement, and an outer surface adherently cooperable with said areas of said inner strip surface, said pads being removably adhered to said inner strip surface at positions such that they oppose one another when said strip is wound about a penis, and cooperating adherence means on the outer surface of said strip and the inner surface of the free end of said strip for securing said strip in wound-about relation to said penis, said reinforcement of said second pad comprising a raised intermediate portion, the inner surface of said second pad conforming thereto in shape, said raised portion being adapted to register with the urethra and press it closed when said clamp is in position on a penis.

3,155,097
FEEDING AND SUCTION TUBES
James Barron, 2535 Amberly, Birmingham, Mich.
Filed July 17, 1962, Ser. No. 210,339
2 Claims. (Cl. 128—350)

1. A feeding tube for formula feeding of a patient directly to the stomach after intubation through the patient's nostril comprising
a small diameter flexible plastic tube having a plurality of apertures through the walls thereof adjacent its lower end,
a sealed pliable gravity balloon partially filled with a heavy fluid including an eye at the upper end thereof,
a suture threaded singly through said eye suspending

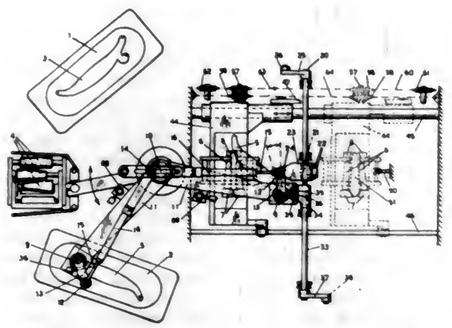
said balloon in depending relationship subjacent the said lower end of said plastic tube, said suture extending double through a selected aperture in the wall of said tube and through said flexible plastic tube with



the ends of said suture extending out of the upper end of said tube,

the said balloon being releasable from said tube after intubation responsive to pulling said suture by one of its ends from said plastic tube.

3,155,098
APPARATUS FOR APPLYING A WRAPPER LEAF ON A CIGAR BUNCH
Henricus J. Maas, Eindhoven, and Marten G. Aalpoel, Nuenen, Netherlands, assignors to Koninklijke Vereenigde Tabaksindustrieen Mignot & De Block N.V., Eindhoven, Netherlands, a company of the Netherlands
Filed Feb. 25, 1963, Ser. No. 260,549
Claims priority, application Netherlands, Mar. 1, 1962, 275,404
7 Claims. (Cl. 131—33)



1. Apparatus for applying a wrapper leaf on a cigar bunch, comprising

rolling means for rolling a leaf on a bunch, said rolling means including a plurality of rotatably mounted rollers arranged to define a generally-cylindrical horizontal rolling space;

means for reciprocating said rolling means in a horizontal direction normal to the axis of said rolling space;

means for opening said rolling means to admit a bunch into and to permit removal of a cigar from said rolling space;

die means for cutting wrapper leaves of a desired configuration, said die means being spaced from the path of reciprocation of said rolling means;

a movable leaf holder;

conveyor means for moving said leaf holder between said die means and a wrapper leaf feeding position above the reciprocatory path of said rolling means, said conveyor means including a movable conveyor element, said leaf holder being pivotally connected with said conveyor element for swinging movement about a vertical axis;

means for locking the conveyor element against movement when said leaf holder is in said leaf feeding position;

and means controlling the swinging movement of the leaf holder relative to the conveyor element, said controlling means being operable to pivot said leaf holder through a small angle when said conveyor element is locked by said locking means, whereby said wrapper leaf is fed to said rolling space to effect wrapping of the bunch in a predetermined manner.

3,155,099
CIGARETTE HOLDERS
Archibald F. Minchin, 210 Older St. W., Box 876, Dunnville, Ontario, Canada
Filed June 20, 1963, Ser. No. 289,185
3 Claims. (Cl. 131—175)



1. A cigarette holder for smoking a cigarette in an enclosed condition comprising a mouth-piece having a smoke-passage extending therethrough, said mouth-piece including an elongated counterbore opening into one end thereof; a telescoping assembly comprising a plurality of tubular elements terminally secured at one end in the innermost portion of said counterbore; said tubular elements normally being circumposed about each other and received in said counterbore when a cigarette is smoked, the outermost element of said telescoped member including means thereon for extending said elements longitudinally away from said mouth-piece when a cigarette is inserted in said holder; and an open cage of a length greater than the cigarette to be smoked and anchored at one end and extending longitudinally from said mouth-piece, said means on said outermost element being reciprocably connected to said open cage, said cage comprising a plurality of mutually parallel wire elements embedded at one end in said mouth-piece, an annular collar connected to the other ends of said wire elements and retaining said wire elements in fixed relation, said means comprising an apertured flange integral with said outermost tubular element and having means for receiving certain of said wire elements therethrough.

3,155,100
SMOKING PIPE CLEANSING DEVICE
Fredric Marland, 8 Riverside Ave., Norwalk, Conn.
Filed Mar. 26, 1962, Ser. No. 182,536
3 Claims. (Cl. 131—244)

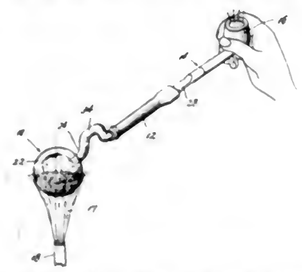
1. A smoking-pipe cleansing device comprising, in combination:

(*a*) a heat-resistant glass vessel of a size commensurate with that of a pipe bowl and adapted to hold water and to constitute a boiler, said vessel being arranged for disposition over a source of heat to effect boiling of water, said vessel having

(*b*) a heat-resistant glass stem integral with the boiler and constituting an inlet and an outlet for the same, said boiler being entirely closed except for the glass stem and the latter being adapted to serve as a support to hold the boiler over the heat source,

(*c*) a flexible coupling tube connected to the glass stem and adapted at one end to be slipped over the bit of a smoking pipe stem to connect the said stems together in communication with each other, and

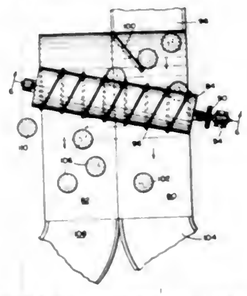
(*d*) a rigid steam-water discriminator and water-retention means comprising an integral portion of the glass stem having a fixed configuration, said means being disposed closely adjacent and above the level of the center of the boiler to be heated simulta-



neously therewith by the said source of heat and by conduction from the boiler, said means effecting a return of condensate to the boiler while at the same time passing steam to the flexible coupling tube during heating of the boiler, and temporarily halting entrance of air into the boiler after heat has been removed therefrom, the ensuing build-up of vacuum in the boiler suddenly sucking water and air from said means into the boiler with a rush,

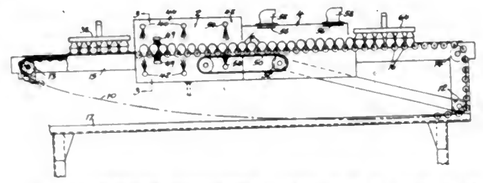
(*e*) said discriminator and retention means comprising an upwardly offset substantially U-shaped portion of the glass stem.

3,155,101
COIN SEPARATOR
Richard E. Perkins, Holliston, Mass., assignor to Electronic Coin Processing Corporation, New York, N.Y., a corporation of New York
Filed Apr. 10, 1961, Ser. No. 101,988
8 Claims. (Cl. 133—3)



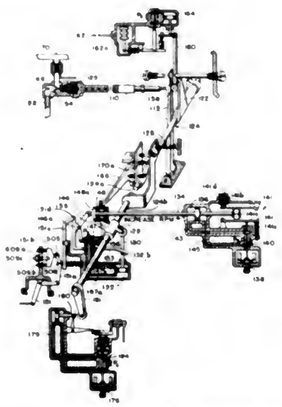
1. A coin separator comprising a cylindrical drum disposed with its axis inclined, an inclined plane disposed beneath the lower end of the drum and spaced from the drum surface a distance less than the thickness of an unmutilated coin of the denomination to be handled, a second inclined plane disposed beneath the drum adjacent the first surface and on the side of the higher end of the drum, said second plane being spaced from the drum periphery a distance just in excess of the thickness of coins of the denomination to be handled, means for depositing coins to be separated on the first inclined plane above the drum, and means causing coins which fail to pass beneath the drum on the first plane to move to the second plane above the drum.

3,155,102
EGG CLEANING EQUIPMENT
Otto C. Niederer, Jr., Bear Tavern Road, and Herbert O. Niederer, Church Road, both of Titusville, N.J.
Filed Mar. 12, 1962, Ser. No. 179,050
13 Claims. (Cl. 134—72)



1. Egg washing equipment comprising an egg washing chamber, a conveyor movable in a predetermined direction through said chamber and having yieldable means thereon defining egg receiving cavities, said yieldable means being movable on the conveyor transversely to the direction of movement of the conveyor to alter the shape of said cavities so as to support eggs in either of two alternative positions; namely, a position in which the eggs have their long axes extending substantially vertically, and a position in which the eggs have their long axes extending substantially horizontally, and means for moving said yieldable means transversely of the conveyor to alter the position of eggs carried by the conveyor during its passage through said egg washing chamber.

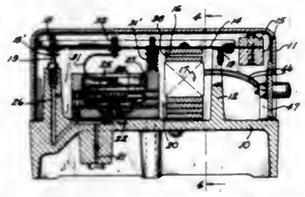
3,155,103
FUEL CONTROL GAS PRODUCER GOVERNOR AND SPEED SELECTOR LINKAGE
Heinz F. Moellmann, Stratford, Conn., assignor to Avco Corporation, Lycoming Division, Stratford, Conn., a corporation of Delaware
Filed May 20, 1959, Ser. No. 814,531
2 Claims. (Cl. 137—18)



1. In a fuel control for a gas turbine engine having a fuel metering valve, a movable member longitudinally responsive in proportion to gas producer rotative speed, a manually operable power lever, a pivot connection movable as a function of said power lever, a feedback lever having one end thereof pivotally connected to said pivot connection, an actuating pivot carried by said feedback lever and positioned a distance from said pivot connec-

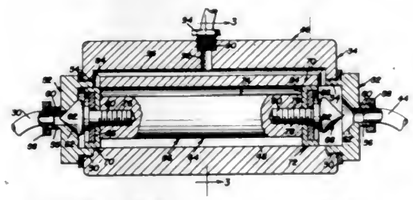
tion, means operable to close said metering valve, a hydraulic valve actuated member for actuating said means, a lever centrally pivoted on said actuating pivot and having one end thereof actuated by said movable member and the opposite end thereof contacting said hydraulic valve actuated member.

3,155,104
ELECTRIC-PRESSURE TRANSDUCERS
Adolph J. Hilgert, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 23, 1962, Ser. No. 182,064
6 Claims. (Cl. 137—85)



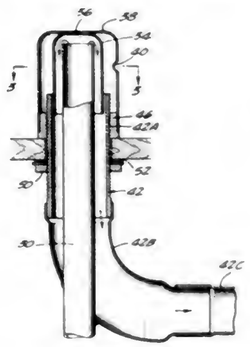
5. In an electric-pressure transducer having a transfer lever, having pneumatic means including a leakport responsive to movement of said transfer lever for regulating the output pressure, having electromagnetic means for moving said transfer lever in a gap-closing direction with respect to the leakport, and having pneumatic feedback means responsive to said output pressure for moving said transfer lever reversely to its first direction of movement, the improvement comprising: providing an electromagnetic means which includes a fixed core and a fixed coil and a movable armature with the latter spaced by a small, variable, air gap from the end of the core, a feedback spring included in said feedback means and positioned to urge said transfer lever in said reverse direction, and a stabilizing spring acting independently of said feedback spring, the sum of the rates of said feedback spring and stabilizing spring being greater than the rate of increase of the magnetic pull on the movable armature resulting from the change in the length of the air gap between the armature and the core, which magnetic pull moves the transfer lever in a gap-closing direction with respect to the leakport, whereby maximum sensitivity with stability results.

3,155,105
AUTOMATIC TRANSFER CONTROL VALVE
Andrew F. Yanna, 4389 Jean Road, Bay City, Mich., assignor of one-third to Martin B. Legatz and one-third to Gerald P. Laracey
Filed Dec. 19, 1961, Ser. No. 160,615
1 Claim. (Cl. 137—112)



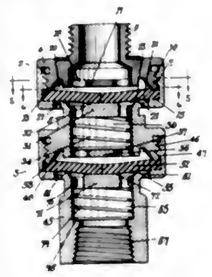
For use with a fluid service line and first and second fluid pumps each provided with an outlet having one end of a fluid passage line connected thereto, an automatic transfer control valve adapted to alternately communicate the other ends of said fluid passage lines with said service line in response to inverse fluid pressure differential changes in said outlets, said control valve including an elongated cylindrical body having a longitudinal bore formed therethrough, end walls removably secured to opposite ends of said body each having an inlet passage formed therethrough aligned with the longitudinal axis of said bore, the inner ends of said passages each defining a conical seat, a piston freely reciprocable in said bore and including diametrically enlarged opposite end oppositely facing sealing cups disposed in sliding sealing engagement with the surfaces of said bore, elongated passage means in said body opening at opposite ends into the opposite ends of said bore adjacent said end walls, an outlet port formed in said body and communicated at one end with said passage means and opening outwardly of said body at the other end and adapted to be communicated with said fluid service line, the outer ends of said inlet passages each being adapted for communication with one of said fluid passage lines, said piston including opposite end conical head portions aligned with the longitudinal axis of said bore and projecting outwardly beyond the corresponding cup, said conical head portions being alternately seatingly engageable in said seats upon reciprocation of said piston, the distance between said seats, heads and cups being such that when one of said heads is seated in the corresponding seat an effective sealing portion of the adjacent cup is registered with the corresponding end of said passage means closing the latter and the other head is disposed inwardly of said body from the corresponding seat and the effective sealing portion of the cup adjacent thereto is displaced inwardly of the adjacent end of said body from the corresponding end of said passage means, said sealing cups each being generally cylindrical and provided with one centrally apertured end wall, a centrally apertured retaining washer snugly disposed in each cup and against the end wall thereof, the opposite ends of said piston including threaded and blind axial bores, said head portions each including a threaded shank portion passed through the corresponding one of said end walls and washers and threadedly secured in the corresponding blind bore.

3,155,106
DISHWASHER DRAIN AIRGAP
Alfred M. Baron, Los Angeles, Calif., assignor to United States Brass Corporation, a corporation of Minnesota
Filed Aug. 13, 1962, Ser. No. 216,545
2 Claims. (Cl. 137—216)



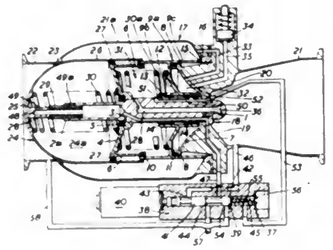
1. Apparatus for providing a drain gap comprising an outer cap having a cylindrical cavity which is open at one end, an inner cap smaller than said outer cap, means supporting said inner cap within the cavity of said outer cap, said inner cap having a cylindrical cavity therein which is open at one end, the openings of the cavities of both of said caps facing in the same direction, an outflow pipe having one end extending into the outer cap cylindrical cavity and coupled to the walls thereof, an inflow pipe having a diameter which is less than that of said inner cap, means supporting said inflow pipe coaxially within said outflow pipe and with one end extending within the cavity of said inner cap adjacent to the closed end of said inner cap cavity, and an opening in the walls of said outer cap for admitting atmospheric pressure into the space between said inner cap and said outflow pipe, said outflow pipe having threads formed in its outer surface, means mounted on the walls of the cavity of said outer cap for threadably engaging said outer cap with the threads on said outflow pipe's outer surface, and a nut threaded on said outflow pipe's outer walls for enabling said apparatus to be clamped to a supporting surface between said nut and the end of said outer cap.

3,155,107
VACUUM BREAKER
Joseph C. Woodford, 203 N. Buchanan St., Spring Lake, Mich.
Filed Feb. 3, 1960, Ser. No. 6,472
10 Claims. (Cl. 137—218)



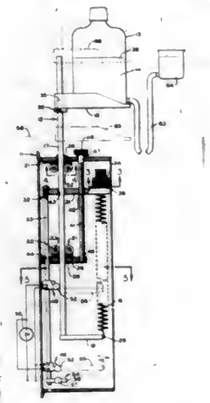
1. A vacuum breaker and back flow prevention means comprising an inlet body member; a hollow chamber formed in said body member; a transverse substantially plane web-like partition formed in said hollow chamber, said web-like partition having a valve surface at its underside, and having a flow port therethrough; an outlet body member provided with an outlet opening; a hollow chamber formed in said outlet member; an annular seating edge formed at the top portion of said hollow chamber of said outlet member, said annular seating edge projecting toward the valve surface of said transverse web-like partition of said inlet body member; a multiplicity of vent ports surrounding said annular seating edge, said vent ports affording communication between said hollow chamber of said outlet member and atmosphere; a flexible resilient substantially plane diaphragm member clamped at its periphery between said inlet body member and said outlet body member, the central portion of said diaphragm member having limited freedom of motion between the valve surface of said transverse web-like partition of said inlet body member and the annular seating edge of said outlet body member; port means through said diaphragm member at its central portion to permit liquid to flow through said diaphragm member under inlet pressure; an axially movable spring pressed combination diaphragm port closing and diaphragm support member positioned in said hollow chamber formed in said outlet member; an automatic pressure-relief and drain valve means connected to said outlet opening of said outlet body member, said pressure-relief and drain valve means comprising a transverse substantially plane web-like partition formed at the bottom of said outlet opening of said outlet body member, said web-like partition having a flow port therethrough and a valve surface at its underside; a body member; a flexible resilient substantially plane pressure-relief and drain valve diaphragm member clamped at its outer periphery between the lower end of said outlet body member and a seat formed in the upper part of said body member of said pressure-relief and drain valve means; an annular seating edge formed at the top portion of said body member of said pressure-relief and drain valve means, said annular seating edge projecting toward said valve surface of said web-like partition formed at the bottom of said outlet opening of said outlet body member; a multiplicity of vent ports surrounding said last mentioned annular seating edge, said last mentioned vent ports affording communication between atmosphere and a hollow outlet chamber formed in the lower part of said body member of said pressure-relief and drain valve means; self closing port means through said diaphragm of said pressure-relief and drain valve means, said self closing ports being adapted to open under inlet liquid pressure to permit liquid to flow through said last mentioned diaphragm, the central portion of which having limited freedom of motion between its annular seating surface and its valve surface at the underside of said web-like partition formed at the bottom of said outlet opening of said outlet body member.

3,155,108
FLUID FLOW CONTROL VALVES
Peter Bruno Kahn, Loughton, and Norman Frederick North, North Romford, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed Jan. 8, 1962, Ser. No. 165,287
Claims priority, application Great Britain, Jan. 10, 1961, 1,067/61
15 Claims. (Cl. 137—220)



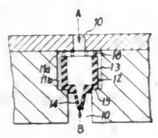
1. A fluid flow control valve including a conduit, an inlet valve in the conduit, resilient means urging the valve to a normally closed position, a second vlave in the conduit resiliently loaded to a normally closed position, the second valve being positioned downstream of the inlet valve, an auxiliary chamber for pressure fluid, a movable member in said chamber dividing the chamber into first and second sub-chambers, the movable member being operatively connected with the second valve so that pressure fluid in the first sub-chamber tends to close the valve while pressure in the second sub-chamber tends to open the valve, a first duct connecting the first sub-chamber to said conduit at a point downstream of the outlet valve, a second duct connecting the second sub-chamber to said conduit at a point between the inlet and second valve, means maintaining a reference pressure in the first sub-chamber, and a control valve responsive to the pressure downstream of the second valve for equalising fluid pressure upstream and downstream of the inlet valve, said control valve being actuated to equalise said pressures when the fluid pressure downstream of the second valve attains a predetermined value.

3,155,109
LIQUID SUPPLY APPARATUS
Erik W. Anthon, Kensington, Calif., assignor to Research Specialties Co., Richmond, Calif., a corporation of California
Filed Aug. 29, 1961, Ser. No. 134,755
7 Claims. (Cl. 137—408)



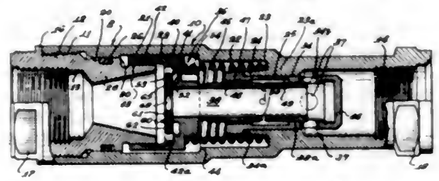
1. Apparatus for maintaining the level of liquid in a container in a fixed plane during changes in the amount of liquid present in the container, comprising a housing, support means held vertically movable within said housing for supporting the container and liquid contents, spring means providing the sole vertical support for said support means, and means for adjusting the spring constant of said spring means to provide a force per unit of change in length of the spring means equal to the force of gravity of the liquid per unit of depth of the liquid.

3,155,110
RUBBER CHECK AND RELIEF VALVE
Allan C. Hoffman, Riverside, Calif., assignor to Vernay Laboratories, Inc., Yellow Springs, Ohio, a corporation of Ohio
Filed Dec. 3, 1962, Ser. No. 241,944
6 Claims. (Cl. 137—493.1)



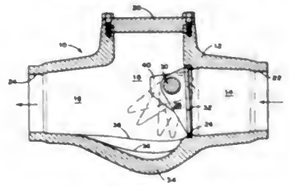
1. In combination with a fluid passage through which fluid must flow without check in one direction, and in which fluid flow in the opposite direction must be checked up to a certain pressure, but must be permitted above said certain pressure, a chamber in said passage and a resilient valve element disposed in said chamber, said valve element comprising a hollow cylindrical wall portion in said chamber, and having a shoulder, and a duck bill portion extending from said shoulder over said cylindrical wall portion into said passage in said one direction, the other end of said cylindrical wall portion being provided with a plurality of spaced lugs, said shoulder and lugs respectively bearing normally against the ends of said chamber, said lugs being adapted to yield above said certain pressure to permit axial movement of said valve element to unseat said shoulder from the end of said chamber to permit flow around the outside of said valve element and between said lugs in said opposite direction.

3,155,111
TEMPERATURE COMPENSATED FLOW CONTROL VALVE
Frank G. Presnell, 2818 Laurel Canyon Place, Los Angeles 46, Calif.
Filed Aug. 29, 1963, Ser. No. 305,317
3 Claims. (Cl. 137—504)



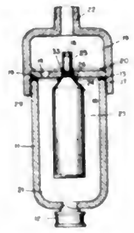
3. In a temperature compensated flow control valve, the combination of: means forming a main flow passage having an inlet and an outlet, means forming a metering orifice in said passage, a movable throttling means movable across and controlling said main flow passage, a spring acting on said throttling means to move it in a direction to open said passage, a movable pressure differential response means operatively connected to said throttling means and including first and second opposed surfaces adapted for exposure to fluids under pressure, said surfaces being so arranged that pressure fluid acting on said first surface tends to move said pressure differential response means and throttling means to close said main flow passage, and pressure fluid acting on said second surface tends to move said response means and throttling means to open said main flow passage, means forming first and second fluid chambers in communication with said opposed first and second surfaces, respectively, means intercommunicating said first fluid chamber with said main flow passage at a point upstream of said metering orifice, means forming a fluid passageway intercommunicating said first and second fluid chambers, there being a dynamic fluid flow orifice in said passageway, means forming a fluid passageway intercommunicating said second fluid chamber with said main flow passage at a point which is on the same side of said throttling means as said metering orifice and which is downstream of said metering orifice.

3,155,112
CHECK VALVE STRUCTURE FOR THE MINIMIZATION OF WATER HAMMER
Ralph M. Rosser, Lynchburg, Va., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 23, 1961, Ser. No. 84,332
2 Claims. (Cl. 137—527.8)



1. A check valve, for use in a flow system subject to water hammer, comprising a body having an inlet and an outlet at opposite ends thereof, a valve seat arranged in said body transversely to the longitudinal centerline of said inlet, a disc-shaped closure member pivotally mounted in said body at the downstream side of said seat to sealingly mate therewith, said body having a dished-out portion with an arcuate bottom forming a continuous curve commencing at the downstream side of said seat, said dished-out portion being offset with respect to the line of travel of the peripheral edge of said closure member during valve closing movement and proportioned to provide a flow area between the peripheral edge of said closure member and said body substantially equal to the flow area between said closure member and said valve seat throughout the major portion of the range of travel of said closure member.

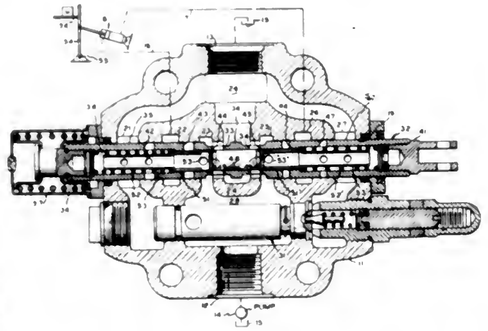
3,155,113
AUTOMATIC MIXING DEVICE
Kenneth J. Germeshausen, Weston, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Feb. 5, 1962, Ser. No. 174,342
1 Claim. (Cl. 137—564.5)



An automatic mixing device for mixing a first liquid under pressure with a second liquid to substantially constant predetermined proportions notwithstanding variations in the pressure of the first liquid, comprising: a hollow casing having an input and an output connection; a divisional member transversely disposed within said casing dividing the casing into an input section having the input connection, and a mixing section having the output connection; a first orifice disposed in the divisional member for passing the first liquid from the input section to the mixing section; a pressure-sensitive container attached to said divisional member by a projection forming an integral part of said container for holding the second liquid within the input section without there intermixing the two liquids, and deforming when subjected to a difference in the pressures of the two liquids until the two liquids are at substantially equal pressures; and a second orifice disposed in said projection for passing the second liquid under pressure from said container through said divisional member to the mixing section where it intermixes with the first liquid before the mixed liquids pass under pressure through the outlet connection, said first and second orifices having preset cross-sectional areas and coefficients of discharge.

3,155,114
DIRECTIONAL CONTROL VALVE WITH FLOW CONTROL AND CHECK VALVE UNIT
Charles A. L. Ruhl, Wheaton, Ill., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed May 17, 1963, Ser. No. 281,237
4 Claims. (Cl. 137—596.2)

1. In a directional control valve of the sliding plunger type including a housing containing a valve bore having a central exhaust chamber, a pair of end exhaust chambers, a motor chamber located between each end exhaust chamber and the central exhaust chamber, and a supply chamber located between each motor chamber and the central exhaust chamber, and a valve plunger slidable in the valve bore and containing an axial bore intersected by four longitudinally spaced lateral ports extending through the valve plunger, the plunger having a first position in which the first and second lateral ports register with one supply and one motor chamber, respectively, and the third and fourth lateral ports register with the other motor chamber and one end exhause chamber, respectively, a second position in which the first and second lateral ports register with said one motor chamber and the other end exhaust chamber, respectively, and the third and fourth lateral ports register with the other supply chamber and the other motor chamber, respectively, and a mid position in which the four lateral ports are isolated from the chambers, a reciprocable piston actuator in said axial bore, first and second flow control-check valve units mounted in said axial bore in abutment with opposite ends of the piston actuator, the first unit controlling communication between the first and second lateral ports and the second unit controlling communication between the third and fourth lateral ports, and springs biasing the valve units toward the piston actuator, the improvement which comprises



(*a*) a fifth lateral through port formed in the valve plunger and opening into the axial bore in the region of the abutting ends of the piston actuator and the first valve unit; and

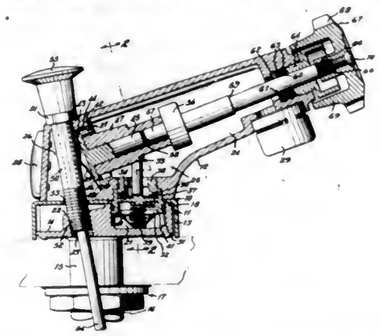
(*b*) a sixth lateral through port formed in the valve plunger and opening into the axial bore in the region of the abutting ends of the piston actuator and the second valve unit,

(*c*) the fifth and sixth lateral ports being so positioned that in the first position of the valve plunger the sixth port registers with the said other supply chamber, and in the second position the fifth lateral port registers with the said one supply chamber.

3,155,115
CAM OPERATED TILTING VALVES
John M. Zeigler, Fairfield, Ohio, assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,181
10 Claims. (Cl. 137—636.4)

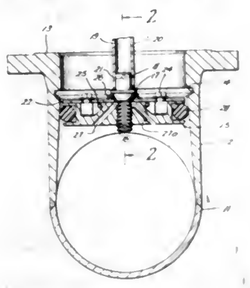
1. A mixing faucet comprising a base member adapted to seat upon the rear deck of a lavatory bowl, inlets for hot and cold water supply lines entering said base member, there being water passageways through said base member in communication with said inlets, an integral faucet body having a hollow interior providing a combined mixing chamber and faucet spout, means to secure said hollow faucet body upon said base member with said spout projecting upwardly and outwardly therefrom and adapted to overhang said bowl, two tippable valves seated in the respective water passageways and having stems projecting into said mixing chamber in equally spaced relation at the sides of the longitudinal axis of said faucet body, an elongated push-pull actuator rod extending longitudinally of the axis of said faucet body and extending from said mixing chamber through said spout and through the end thereof adapted to overhang said bowl, an actu-

ator cam secured to the inner end of said actuator rod and disposed between the stems of said tippable valves, there being an opening at the rear of said faucet body to permit the initial insertion of said actuator rod and said actuator cam into the hollow interior of said faucet body, means to close and seal said opening, the last named means including means to slidably and rotatably support



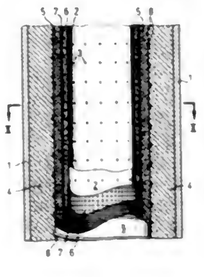
said actuator cam and said actuator rod at the inner end thereof, compressible sealing means at the forward end of said faucet providing a slidable and rotational support for the outer end of said actuator rod, a discharge opening at the underside of said faucet body adjacent to the forward end thereof, and a knob secured to the forward end of said actuator rod for manipulation thereof.

3,155,116
APPARATUS FOR CLOSING SIDE OPENINGS INTO PIPELINES
Burton Ver Nooy, Tulsa, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed June 4, 1962, Ser. No. 202,640
5 Claims. (Cl. 138—89)



1. Apparatus for closing a side opening into a pipeline comprising in combination a nipple attached to the exterior of the pipeline around an opening into the side of the pipe, said nipple having a groove around its interior substantially normal to a flowway through the nipple; a plug, fitting into the flowway, having a central threaded opening therethrough, an annular fluid energized seal of the O-ring type carried by and around the plug in position to seal between the sides of the plug and the interior of the nipple as the plug is moved through the flowway in the nipple as well as when the plug is in its final plugging position in the flowway; said plug also having a flow passageway therethrough spaced from the threaded opening and inwardly from the periphery of the plug for bypassing fluid across the plug so as to equalize pressures thereacross; a control screw engaging the threaded opening through the plug; and valve and cam means operable, responsive to longitudinal travel of the control screw in one direction, to move said retaining members outwardly into said groove and to close said passageway through the plug, and also operable, responsive to longitudinal travel of the control screw in the opposite direction, to open said passageway to equalize pressure across said plug and to permit said retaining members to be retracted from said groove so the plug can be moved out of said nipple.

3,155,117
DOUBLE-WALLED HOLLOW BODY FOR THE RECEPTION OF A HOT GASEOUS MEDIUM UNDER PRESSURE
Werner Spillmann, Kilchberg, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Nov. 21, 1960, Ser. No. 70,775
Claims priority, application Switzerland, Nov. 27, 1959, 81,178
1 Claim. (Cl. 138—149)



A double-walled conduit for use in conveying a high temperature, high pressure working medium from a nuclear reactor heat source to the inlet of a turbine comprising

(*a*) an inner conduit for the reception of the working medium, said inner conduit designed to withstand high temperatures;

(*b*) an outer conduit spaced from the inner conduit and defining therewith an intervening space, said outer conduit being designed to withstand high pressure;

(*c*) said inner conduit containing a plurality of perforations formed therein for connecting said intervening space with the interior of the inner conduit, said perforations providing the sole means of ingress and egress for said intervening space;

(*d*) a layer of gas permeable heat insulating material disposed in the intervening space adjacent the outer conduit;

(*e*) a filtering layer consisting of woven long-fibered mineral material disposed between the insulating material and the inner conduit;

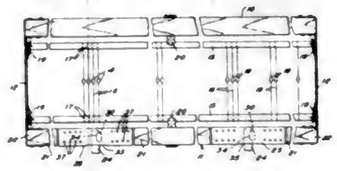
(*f*) a first metallic wire meshwork disposed in the intervening space between the filtering layer and the inner conduit, said meshwork being coextensive with and adjacent to the inner conduit and having relatively large mesh width with regard to the perforations in the inner conduit;

(*g*) a second metallic wire meshwork disposed between said first meshwork and the filtering layer; the mesh width of said second meshwork being smaller than the mesh width of the first meshwork;

(*h*) the first meshwork permitting a circulation of the medium in the longitudinal direction of the conduit and thereby serving to distribute evenly the flow passing from the inner conduit through the perforations and therefore avoiding localized areas of high velocity flow; and

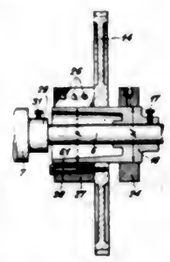
(*i*) said metallic meshworks producing a temperature gradient between the inner conduit and the filtering layer.

3,155,118
LOOM HARNESS
Frank H. Kaufmann, Huntingdon Valley, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1963, Ser. No. 271,670
5 Claims. (Cl. 139—91)



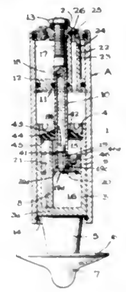
1. In a heddle frame having a top and a bottom rail with front and rear faces of the rails in common spaced planes and end struts connecting said rails, said bottom rail comprising a plurality of aligned wooden sections with contiguous ends at locations intermediate the ends of said bottom rail separated to provide a space and connectors at said spaces between adjoining pairs of ends of said wooden sections, said connectors and said wooden sections being in overlapped relation, members for retaining said connectors and said wooden sections in secured relation, said connectors between said wooden section ends having an access opening along one margin thereof, and an actuator member in said space and secured to said connector to transmit motion to said frame.

3,155,119
BEARING ARRANGEMENT FOR A WARP BEAM OF A WEAVING MACHINE
Erich Wall, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland
Filed Dec. 14, 1961, Ser. No. 159,218
Claims priority, application Switzerland Dec. 21, 1960
4 Claims. (Cl. 139—97)



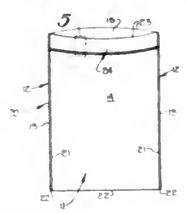
1. A warp beam and bearing assembly for a weaving machine, comprising a warp beam tube, a shaft placed inside and coaxial of said tube and connected thereto, said shaft having an end portion projecting from said tube, a flange mounted on said end portion and having a cylindrical surface coaxial of said tube and having a diameter equal to the diameter of said tube, and a bearing having a bearing surface fitting around said cylindrical surface and rotatably supporting said flange and said tube depending on the relative axial position of said bearing and of said tube.

3,155,120
HYDRAULIC CHECKING DEVICE FOR LOOMS
Nevin S. Focht, 179 Washington Ave., Garden City, Long Island, N.Y.; Georgeana L. Focht, executrix of said Nevin S. Focht, deceased
Filed Feb. 27, 1962, Ser. No. 175,962
6 Claims. (Cl. 139—161)



1. A hydraulic checking apparatus comprising a cylindrical casing, a cylinder slidably disposed within said casing and having a contact bumper extending from one end of said casing, a hollow rod mounted within said casing at the end opposite said bumper and extending into said cylinder, a piston mounted on said rod within said cylinder and dividing said cylinder into a pair of separate chambers, a check valve disposed at the base of said hollow rod, said valve including means for preventing the upward flow of fluid from said chamber immediately below said piston, a fluid containing reservoir within said casing connected to said hollow rod and communicating therethrough with said chambers, a tapered groove metering pin mounted within said cylinder and a bore in said piston, said pin aligned within said bore, whereby when said cylinder moves in said casing said pin slides through said piston.

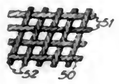
3,155,121
SEAMLESS PILLOWCASE AND FABRIC
Norman L. Seltzer, Princeton, N.J., and Charles R. Higgins, Charlotte, N.C., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Oct. 3, 1961, Ser. No. 142,666
11 Claims. (Cl. 139—389)



1. A textile fabric of interwoven warp and filling yarns comprising a plurality of juxtapositioned interconnected elongate rectangular panels, said panels each comprising a pair of opposing independent fabric layers, the layers of said panels being woven together and to each other along the adjacent longitudinal edges of the panels to connect the panels to each other and to form the panels into tubular form, the layers of alternate panels being interwoven at one end to close that end of the tubular panel with the other end remaining open, the layers of intervening panels being interwoven at both ends to close both ends of these panels and to reinforce the corners of alternate

panels, said intervening panels being adapted to be longitudinally severed in a medial portion thereof to separate the alternate panels into blanks which, when everted, define a seamless pillowcase ready for use.

3,155,122
COATED GLASS FIBER COMBINATIONS
John A. Grant, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Application Mar. 26, 1959, Ser. No. 802,232, now Patent No. 3,079,664, dated Mar. 5, 1963, which is a division of application Ser. No. 391,054, Nov. 9, 1953, now Patent No. 2,915,806, dated Dec. 4, 1959. Divided and this application Dec. 13, 1962, Ser. No. 258,938
3 Claims. (Cl. 139—425)



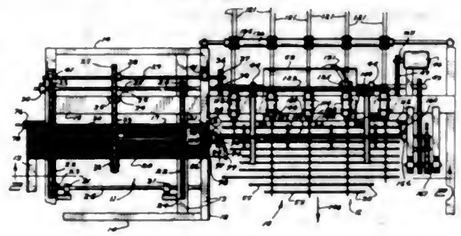
1. A fabric made of yarns of coated glass fibers, the yarns running in one direction comprising fibers coated with one material, while the yarns running crosswise to said first mentioned yarns comprise fibers coated with another material complementary to said one material for improved wearability.

3,155,123
REINFORCED RAMIE SHROUD
Beverly E. Williams, La Grange Park, Ill., assignor, by mesne assignments, to Hodges Research and Development Company, New York, N.Y., a corporation of California
Filed Feb. 23, 1962, Ser. No. 174,968
11 Claims. (Cl. 139—426)



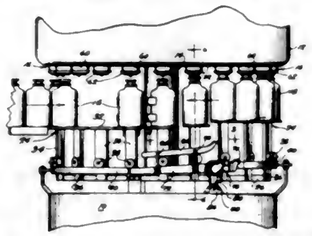
1. As an article of manufacture, a meat clothing shroud for clothing meat carcasses, in which the body portion, exclusive of selvage, has an open weave in which there are between about 20 and about 30 yarns in the warp and between about 20 and about 30 yarns in the fill, per inch, consisting of a major proportion, from about 70% to about 95%, of first-yarns selected from the group consisting of cotton and linen, and a minor proportion, from about 5% to about 30%, of second-yarns consisting of a yarn different from said first-yarns and having a substantially higher wet strength than said first-yarns, said second-yarns occurring in the warp at the rate of from 2 to 10 per inch and in the fill at the rate of from 1 to 2 per inch, said first-yarns and said second-yarns having a size ranging between about 3000 and about 4000 yards per pound.

3,155,124
APPARATUS FOR MAKING POULTRY FLOORS
Raymond L. Cole and Clair O. Cole, both of 7 River Road, Grand Rapids, Minn.
Filed Aug. 22, 1962, Ser. No. 218,715
10 Claims. (Cl. 140—25)



1. A machine for making a support structure from a plurality of slats joined together by wires wherein the slats used have a pair of relatively narrow substantially parallel edge surfaces and a pair of substantially parallel wider side surfaces joining said edge surfaces, said machine including a main frame, guide means on said frame, at least one pair of spaced apart aligned wires mounted for longitudinal movement with respect to said guide means, means for positioning one of said slats at a time on edge transverse to and between said aligned wires, means for twisting said wires together to form a loop around said slat, and power means for moving said slat and said wires in the longitudinal direction of said wires and simultaneously holding said slat on edge including a pair of shafts rotatably mounted with respect to said main frame on opposite sides of the plane of said support structure, a plurality of sprocket wheels drivably mounted on each of said shafts and being arranged in aligned pairs, said sprocket wheels having cogs around the periphery thereof defining receptacles, the receptacles of said sprockets of each of said aligned pairs cooperating to hold opposite edge portions of the same slat simultaneously and of subsequent slats in sequence, power drive means connected to said shafts to rotate said shafts and sprockets in opposite rotational direction, and support means slidably supporting said slats for movement between said wire twisting means and said sprockets.

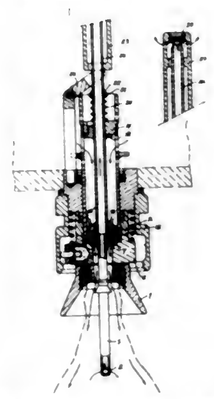
3,155,125
FILLING APPARATUS
George W. Mojonnier, 550 N. Grace St., Lombard, Ill., and Raymond J. Hansel, 112 N. Elmhurst Ave., Mount Prospect, Ill.
Filed Dec. 23, 1960, Ser. No. 77,993
1 Claim. (Cl. 141—150)



Filling apparatus comprising a rotatable vessel having a plurality of liquid dispensing spouts disposed circumferentially about its lower portion in communication with the interior of said vessel, each of said dispensing spouts including an axially flexible valve member and a relatively rigid annular flange means secured to and projecting downwardly from said valve member in position to center

a container with respect to the spout and responsive to upward pressure by a container on said relatively rigid portion to compress said valve member axially and thereby open the spout for dispensing liquid from the vessel, siphon means associated with each of said dispensing spouts and including a conduit extending therethrough in position to siphon excess liquid from the container as the seal is broken between the container and said lower portion of the dispensing spout, a receptacle conveyor rotatable through a path underlying said circumferentially arranged dispensing spouts, said conveyor including a plurality of spaced-apart receptacle-supporting platforms mounted for vertical movement, each of said platforms being disposed in underlying relation to one of said dispensing spouts, means for effecting said vertical movement of each platform in a controlled manner, whereby a receptacle on the platform is brought into engagement with one of said dispensing spouts to compress said valve and open the spout and, after the receptacle is filled to a predetermined level, the receptacle is released from said engagement to close the spout, said platform control means comprising a cam track disposed along the path of said conveyor and a roller on each of said receptacle supporting platforms engaging said cam track, said cam track including a terminal portion which is pivotally mounted for vertical movement relative to the main portion of the track, means on said terminal track portion for guiding said rollers and limiting upward movement thereof, and means for vertically adjusting said terminal track portion including a member rotatably engaging said track portion and disposed in laterally projecting relation thereto, a circular internal cam fixed to said member in eccentric relation thereto with said internal cam disposed within a supporting housing adjacent said track, and means for selectively positioning and securing said cam in position about its axis of rotation to thereby determine the vertical position of said member, whereby the rate of downward movement of said platforms may be selectively determined so as to effect the rate of closing of the associated dispensing spout as the supported receptacle withdraws from the spout.

3,155,126
AUTOMATIC COCKS FOR TAKING SATURATED OR UNSATURATED LIQUIDS
Louis Emile Hi, Paris, Seine, France, assignor to Societe Anonyme de Construction de Materiel d'Alimentation, Paris, France, a corporation of France
Filed Feb. 6, 1961, Ser. No. 87,453
Claims priority, application France, Feb. 8, 1960, 817,870, Patent 1,256,564
10 Claims. (Cl. 141—50)



1. Bottle filling device for the automatic bottling of liquids under gaseous pressure from a tank supplied simultaneously with liquid at a level maintained between certain limits and with gas under pressure, the device comprising the tank, a cylindrical body fixed vertically under the tank, a first movable tubular element sliding in a sealed manner in an axial bore of the cylindrical body relatively to which it is moved downwards by elastic means, the upper part of which communicates with the liquid in the tank and an annular base at the lower part, a second movable tubular element guided coaxially in the first and relatively to which it is moved upwards by elastic means, the upper end of which is situated in the gaseous atmosphere of the tank and the lower end of which passes underneath the base of the first movable element and is provided with lateral apertures, a main liquid valve controlling the flow of liquid between the two movable tubular elements, the valve having its seat oriented upwards and formed by a recess in the internal wall of the annular base of the first movable element and its closure integrally connected with the second movable element, an auxiliary liquid valve co-operating with the main valve and situated above it, having for its downwardly directed seat an annular perforated member fixed around the second movable element and sliding in the first, and having a ring as a closure, said ring being of light material and being movable upwardly by a weak restoring force, a first gas valve controlling the passage of gas from the tank through the second movable tubular element, the seat of said first gas valve being formed by the upper aperture of the second element and a fitting carrying the closure of the valve and capable of being lifted by the upward movement of the first element, a second gas valve placed radially in the base of the first element, a push rod, a cam integrally connected to the cylindrical body and operating the cam to connect the internal space of the base with the atmosphere, an annular vertically movable socket passing through the lower part of the second movable element having an upper end and a lower end, an annular elastic joint near the upper end and fitted into the socket and pushed under the base of the first movable element during refilling of a bottle, a rubber snout near the lower end against which the edge of the bottle fits, this single fitting having the effect of releasing combined vertical displacements of the movable tubular elements, suitable stops limiting these movements and producing successively the opening of the first gas valve and the opening of the liquid valve, the removal of the bottle having the effect of successively closing these valves and decompressing the gaseous atmosphere of the bottle by the second gas valve.

3,155,127
ADJUSTABLE FILLER VALVE
Frederick N. Hubbard, Stockton, and Clair A. Weast, Manteca, Calif., assignors to Tillie Lewis Foods, Inc., Stockton, Calif., a corporation of California
Filed July 25, 1962, Ser. No. 212,431
10 Claims. (Cl. 141—286)

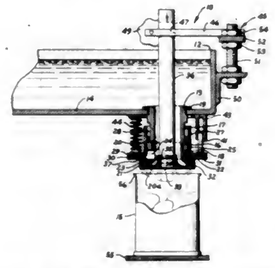
2. A valve structure for filling cans to a predetermined level from a supply tank comprising in combination:

a tubular valve body forming a filler pipe and fixed to the bottom of the supply tank;

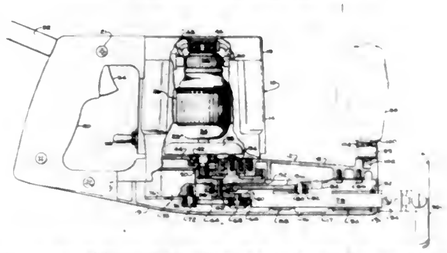
an annular valve seat member including an elastomeric ring located around and movably axially relative to said tubular valve body;

a displacement member of elastomeric material attached to the lower end of said tubular valve body and having an annular upper sealing rim portion and a flexible base portion with a central air exit port, said member having a diameter substantially less than the cans being filled, and somewhat greater than the inside diameter of said annular valve seat, said tubular valve body having radial fluid passages

therein above said displacement member;
means for flexing said displacement member to a desired shape to control its displacement volume;
spring means for constantly urging said annular valve seat into sealing engagement with said upper sealing portion of said displacement member;
whereby said displacement member extends into the can when the can is elevated to engage and move said annular valve seat upward to release liquid from said supply tank through said fluid passages in the filler pipe.

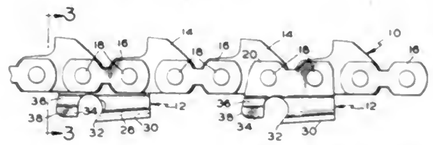


3,155,128
PORTABLE RECIPROCATING SAW
James H. Godfrey, Berlin, and Kestutis Damijonaitis, Newington, Conn., assignors to The Stanley Works, New Britain, Conn., a corportion of Connecticut
Filed Sept. 29, 1961, Ser. No. 141,836
3 Claims. (Cl. 143—68)



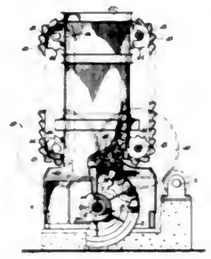
1. A portable reciprocating saw adapted for multipurpose use comprising a housing having a substantially flat bottom portion, a drive motor mounted within the housing, a forwardly extending plunger mounted for reciprocable movement within the housing adjacent the bottom thereof, means providing a driving connection between the motor and plunger, means for securing a saw blade to the plunger for extension forwardly of the housing along the axis of movement of the plunger in a plane extending substantially perpendicular to the flat bottom of the housing and with a cutting edge of the blade extending substantially in the plane of the flat bottom of the housing, a generally upstanding saw blade shoe mounted forwardly on the housing, said shoe being provided with an upwardly extending slot from the lower edge thereof for receiving in a first position thereof the saw blade with the lower edge of the shoe substantially in the plane of the cutting edge of the blade, said shoe being further slotted for receiving in a second position thereof the saw blade with the lower edge of the shoe substantially below the cutting edge of the blade, means providing adjustment of the saw blade shoe substantially perpendicular to the plane of the flat bottom of the housing for adjusting the shoe between said first and second positions to provide for flush cutting with the lower edge of the shoe substantially in the plane of the cutting edge of the blade and plunger cutting with the lower edge of the shoe substantially below the cutting edge of the blade to provide a fulcrum for the saw, a forward handle mounted on the housing, and an upright spade handle connected to the housing rearwardly thereof and extending substantially in the plane of the saw blade whereby the forward handle and upright spade handle provide firm support for controlling the movement of the saw blade in its cutting plane and in a plane extending laterally thereof.

3,155,129
CHAIN SAW TOOTH
Tillson H. Edmunson, 1151 Concord, El Cajon, Calif.
Filed May 21, 1962, Ser. No. 196,219
2 Claims. (Cl. 143—135)



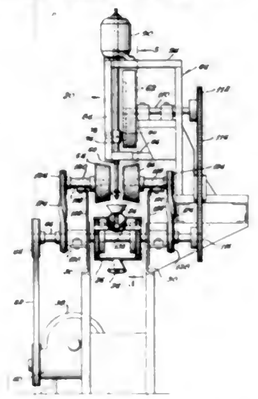
1. In a chain saw having a plurality of links interconnected to form a flexible endless chain, cutting links comprising
(*a*) a flat plate-like body portion,
(*b*) a cutter extending from said body portion,
(*c*) said cutter being curved outwardly and back transverse of the plane of the body portion to form a toe portion,
(*d*) said cutter having its forward edge formed into a cutting edge,
(*e*) said cutter further comprising a groove cutter extending from the end of said toe portion in a plane parallel to the general plane of the body portion,
(*f*) and a depth gauge extending from the body portion in the same general plane as that of the groove cutter,
(*g*) the depth gauge being located in a position on said body portion and extending therefrom a distance sufficient for it to ride in the groove formed by the groove cutter of the previous cutting link.

3,155,130
METHOD FOR PRODUCING WOOD CHIPS
Kenneth C. Logan and Ola Sepall, Quebec City, Quebec, Canada, assignors to Anglo Paper Products, Limited, Quebec City, Quebec, Canada
Filed Feb. 15, 1963, Ser. No. 258,695
5 Claims. (Cl. 144—326)



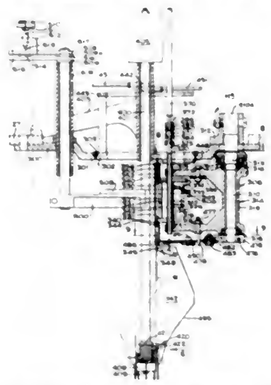
1. A method of producing wood chips for pulping which comprises cutting the surface area of a log in a direction deviating less than 20° from a direction perpendicular to the grain of the wood of said log and along a line of coincidental log engagement having a major portion extending generally parallel to said wood grain and simultaneously cutting a minor portion extending angularly to said wood grain.

3,155,131
DECORING MACHINE
Joseph F. Steber, Green Bay, Wis., assignor to Green Bay Foundry and Machine Works, Green Bay, Wis.
Filed Dec. 8, 1961, Ser. No. 157,892
12 Claims. (Cl. 146—52)



1. Decoring apparatus comprising in combination a continuously operated conveyor means including an endless belt which is flexible for vertical movement, and a decoring mechanism, said conveyor means being adapted to move decorable food items to the decoring mechanism in sequential order, said decoring mechanism having a reciprocable rotary coring knife assemblage, and a pair of positioning rollers straddling said knife assemblage adapted to engage a decorable item as it moves beneath the knife assemblage to flex the belt vertically as required to maintain the upper surface of each food item in the same horizontal plane.

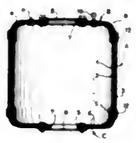
3,155,132
METHOD OF AND APPARATUS FOR SECTIONIZING CITRUS FRUIT
Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 188,998
16 Claims. (Cl. 146—236)



1. In a sectionizing machine, means for supporting a fruit in fixed position, a generally vertically disposed probe positioned above said fruit support means, a sectionizing blade disposed parallel to and alongside said probe, means for moving said probe downwardly independently of said blade to position said probe a predetermined distance in the fruit, means for moving said blade laterally to engage the probe and move it laterally in the fruit to contact a membrane of the fruit and position said blade adjacent the membrane, and means for moving said blade downwardly through the fruit independently of said probe to separate a meat segment of the fruit from the membrane.

15. A method of separating meat segments from membranes of citrus fruit which comprises the steps of holding a fruit in fixed position with its stem-blossom axis having a predetermined orientation, positioning a sectionizing blade and an elongate probe in side by side parallel relation with the end of the probe disposed in spaced relation to the end of said blade, moving said blade and said probe as a unit toward the fruit to move the end of the probe into the fruit while the end of the blade is still spaced from the fruit, maintaining said blade spaced above the fruit while moving said blade and said probe laterally causing said probe to move laterally in said fruit to engage a membrane, and finally sliding said blade relative to the probe to penetrate into the fruit adjacent the probe and separate the membrane from the adjacent meat segment.

3,155,133
FLEXIBLE CONTAINERS AND PROCESS FOR THEIR MANUFACTURE
Yves Timothée Villemonte de la Clergerie, Chalette-sur-Loing, France, assignor to Etablissements Hutchinson (Compagnie Nationale du Caoutchouc), Paris, France, a French body corporate
Filed Nov. 20, 1959, Ser. No. 854,347
Claims priority, application France, Nov. 20, 1958, 779,689, Patent 1,215,872
17 Claims. (Cl. 150—.5)



1. A flexible container having an axis and comprising two coaxial wholly rigid end members, each end member having an outer face including a cylindrical portion, a flexible tubular fabric body coaxial with the end members and having an inner face including annular end portions which encompass said cylindrical portions of the end members, and a continuous integral layer of rubber coextensive with and adhered to the inner face of the body and coextensive with and adhered to at least a part of the outer faces of the end members, whereby the rubber layer forms between the end members and body a perfectly sealed joint which is highly resistant to pressure inside the container.

3,155,134
BAG AND METHOD OF MAKING THE SAME
Frank S. Buono, Garfield, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Dec. 22, 1961, Ser. No. 161,724
3 Claims. (Cl. 150—7)

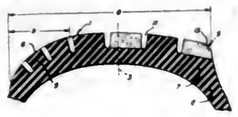
1. An irrigation bag comprising: front and back panels of flexible liquid impervious material connected together along their bottom edges and the major portion of the side edges and free from connection at their upper edges and the upper portion of the side edges providing a liquid tight envelope with an opening at the top; and a protec-

tive and supporting closure for said envelope including a first flap having its upper edge connected to the upper edge of one of said panels and its side edges secured to the upper portion of the side edges of said panel with the flap extending downwardly between the panels when in



closed position, and a second flap having its upper edge connected to the upper edge of the other panel and its side edges secured to the upper portion of the side edges of the other panel with the second flap extending over the upper edge and embracing the upper portion of the outer surface of the opposite panel when in closed position.

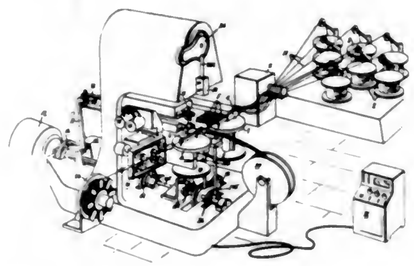
3,155,135
TREAD STRUCTURE FOR PNEUMATIC VEHICLE TIRES
Hans Klenk, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Jan. 10, 1963, Ser. No. 250,537
Claims priority, application Germany, Jan. 13, 1962, C 25,992; Apr. 13, 1962, C 26,742
4 Claims. (Cl. 152—353)



1. A tread structure having a profiled tread surface and having its shoulders so designed that at one shoulder the tread surface gradually merges with the adjacent side wall of the tire along a curve, whereas at the other shoulder the tread surface relatively sharply merges with the adjacent side wall of the tire, said tread surface comprising circumferentially extending tread ribs adjacent said one shoulder, and also comprising block-shaped tread sections arranged in a plurality of circumferential rows having their longitudinal extension in a direction transverse to the direction of rotation of said tire, the block-shaped tread sections of one row being offset in circumferential direction of said row with regard to the adjacent row of block-shaped tread sections.

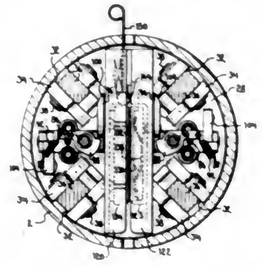
3,155,136
APPARATUS FOR FABRICATING WIRE-CONNECTOR ASSEMBLIES
Edward Laskowski, Amsterdam, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1960, Ser. No. 79,449
5 Claims. (Cl. 153—1)

1. In an apparatus for forming wire-connector assemblies, the combination of a plurality of supply sources for supplying a length of insulated wire, selective means towards which the wire is fed from one of the supply sources, control means operably connected to said selective means for controlling said selection, wire cutters located between said selective means and said supply source for severing the wire subsequent to the selection operation, as said wire is being held by said selective means and said supply source, whereby the severed ends are adjacent one another and in substantial alignment, insulation strippers coacting with said supply source and selective means whereby relative movement between either of the latter two and the insulation strippers re-



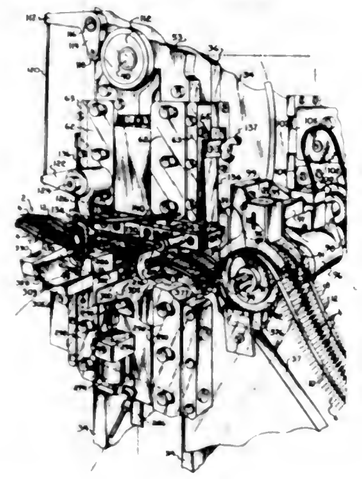
moves the insulation from adjacent ends of said severed wires, means for supplying a connector having a pair of terminals aligned with and adjacent to the severed ends of adjacent wires, a crimping die and an anvil located between said selective means and said supply source for applying said connector to the ends of said severed wires.

3,155,137
CRIMPING TOOL
Herbert C. Stoltz, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 29, 1961, Ser. No. 134,716
5 Claims. (Cl. 153—1)



1. A device for crimping electrical connectors by indentation, said connectors being secured together on a belt in spaced apart side-by-side relationship, said device comprising, a pair of clamping blocks adapted to receive said connectors therebetween, resilient means normally maintaining said blocks in abutting relationship with each other, recesses in the abutting faces of said blocks to define an opening to hold the leading connector of said belt, a plurality of indentors movable radially through said blocks and into said opening, a reciprocable shuttle disposed adjacent to said clamping blocks having means thereon for engagement with said belt to advance said belt, an oscillable shaft extending transversely of the path of reciprocation of said shuttle, said shaft having camming means thereon for camming said blocks apart during movement of said shuttle in its feeding direction, said camming means being in engagement with said shuttle to reciprocate said shuttle.

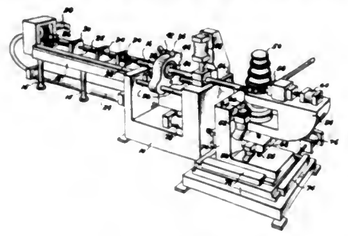
3,155,138
ASSEMBLING AND CRIMPING APPARATUS
Frederick W. Kulicke, Jr., Philadelphia, and Glendon H. Schwalm and Robert Ullman, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 708,602, Jan. 13, 1958. This application July 20, 1962, Ser. No. 215,232
6 Claims. (Cl. 153—1)



1. Apparatus for crimping terminals in end-to-end strip form onto wires extending from electrical devices such as resistors, said devices being secured together in spaced apart side-by-side relationship, said apparatus being adapted to crimp a terminal onto each of said wires between said device and the end of said wire, said device comprising, a pair of crimping dies movable relatively towards and away from each other, a platform disposed adjacent to said dies and having means for feeding a strip of said terminals towards said dies to position the leading terminal of said strip between said dies, means for moving said dies relatively towards each other, means for moving said platform from said dies along a path extending parallel to the direction of movement of said dies during movement of said dies toward each other thereby to provide clearance for said wire during crimping, a shear plate disposed between said platform and said dies, an opening in said shear plate to permit feeding of said said terminal strip from said platform to a position between said dies, and means for moving said shear plate along a path extending parallel to the direction of movement of said platform thereby to sever said leading terminal from said strip as said platform and said strip move away from said dies.

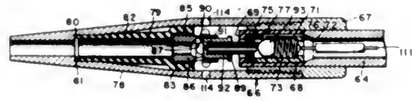
3,155,139
MANDREL APPARATUS FOR TUBE BENDING
Charles F. Hautau, Oxford, Ohio, assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 25, 1961, Ser. No. 140,445
7 Claims. (Cl. 153—19)

1. In a machine for bending tubing having means for maintaining a portion of said tubing in a stationary position during bending, the improvement for feeding a mandrel into the interior of said tubing to support the interior walls of said tubing at the point of bending, comprising: a flexible elongated member disposed and movable along the axis of said portion of said tubing, said member having an outer diameter smaller than the inside diameter of said tubing; a mandrel fixed at one end of said member; power means for retracting said member to a position exterior of said tubing, and for extending said



member to a point along the interior of said tubing where bending is to begin; and means receiving the other end of said member for storing said member alongside of the axis of said portion of said tubing.

3,155,140
ELECTRICALLY IGNITED GAS TORCH
Edward D. Wilson, Rte. 5, Box 350A, Salem, Oreg.
Filed Jan. 24, 1961, Ser. No. 84,690
7 Claims. (Cl. 158—27.4)



1. In an electrically ignited gas torch the combination of: a body having means for connection to a source of inflammable gas under pressure, a flame tip removably connected to said body, said body having passageways for conducting the gas from said means for connection to said flame tip, a valve associated with one of said passageways for controlling the flow of gas to said flame tip, electrical means positioned in said body for generating an electrical potential relative to said body, a trigger having means for actuating said valve and said electrical means to open said valve upon generation of the electrical potential, said flame tip having an electrically conductive housing removably connected to said body and an annular electrically conductive means positioned in and insulated from said housing, said annular electrically conductive means having one portion closely spaced from said housing forming a spark gap, means for conducting the generated electrical potential to said annular conductive means, and means for directing the gas through the inside of said annular conductive means whereby the electrical potential is discharged across the spark gap as spark to ignite the gas.

3,155,141
APPARATUS FOR ATOMIZING AND BURNING A LIQUID FUEL
Arnold W. Doyle, Watertown, Robert R. Perron, Beverly, and John R. Swanton, Jr., Newton, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 18, 1962, Ser. No. 203,044
2 Claims. (Cl. 158—28)

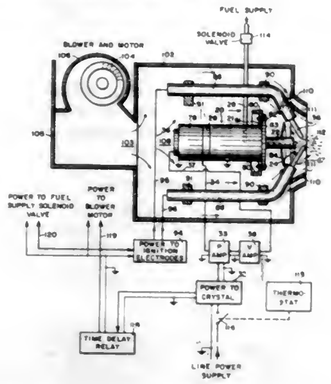
1. Fuel oil burner, comprising in combination
(*a*) a fuel atomizer comprising
(1) a transducer including an atomizing surface capable of oscillating at a supersonic rate;
(2) fuel oil delivery means including electrically operable valve means, said fuel delivery means being adapted to deliver fuel oil to said atomizing surface;

(3) voltage feedback means associated with said transducer and including voltage and power amplifying means exhibiting a phase relationship such that said amplifying means is caused to oscillate at a frequency determined by the acoustical resonance of said transducer;

(4) pickup means mechanically coupled to said transducer and electrically connected to said voltage feedback means;

(*b*) ignition electrodes operable adjacent said atomizing surface;

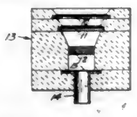
(*c*) motor-operated blower means;



(*d*) housing means surrounding that portion of said atomizer comprising said transducer, said fuel oil delivery means and said pickup means, said ignition electrodes and said blower and adapted to cause incoming air for combustion to sweep around said atomizer thereby to maintain said portion of said atomizer below a predetermined temperature;

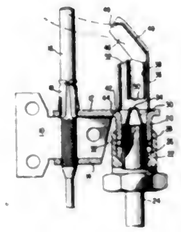
(*e*) thermostat control means adapted to control electrical power to said valve means, to said transducer, to said voltage feedback means, to said ignition electrodes and to said motor whereby they are actuated to function and to supply hot combustion gases when the need is indicated by said thermostat control means.

3,155,142
RADIANT GAS BURNER
Thomas N. Stack, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 13, 1961, Ser. No. 88,845
6 Claims. (Cl. 158—99)



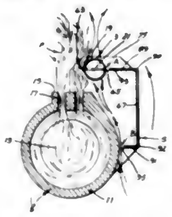
1. A gas burner assembly operable under a variety of inlet gas velocities and pressures, comprising a multiport refractory ceramic radiation plate which promotes flashback of flame therebeneath, a separate multiport feed plate which arrests flashback of flame therethrough, and a multiport refractory ceramic combustion plate which promotes surface combustion of reactant gases within the ports thereof as said gases pass therethrough, said combustion plate being between approximately ⅛ inch and 2 inches thick, having a superficial surface value between about 5 and 75, and being spaced between said radiation plate and feed plate within a confined combustion zone, the arrangement of said plates within said gas burner assembly being such that substantially all gaseous material flowing through the gas burner assembly must flow through each of said plates.

3,155,143
TARGET-TYPE PILOT BURNER
Wilbur F. Jackson, Rolling Hills Estates, and Edward B. Scharer, Lynwood, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 28, 1961, Ser. No. 141,332
2 Claims. (Cl. 158—113)



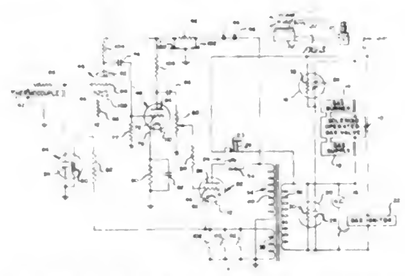
1. In combination with a source of combustion gas under pressure, orifice means connected to said source for discharging an upwardly directed jet of combustion gas from said source, and a vertically extending thermocouple assembly projecting upwardly at the front side of said orifice means in spaced relationship therewith; the improvement comprising a combination incinerator-target type pilot burner hood assembly comprising a first vertically disposed open ended tubular member, means on the lower end of said first tubular member for mounting said first tubular member upon said orifice means at a location such that a jet of combustion gas discharged upwardly from said orifice means passes upwardly and centrally through said first tubular member, a target mounted at the upper end of said first member and inclined upwardly and forwardly from the rearward side of said first tubular member to overlie the opening at the upper end of said first tubular member and to define a relatively open region above said first tubular member for the injection of secondary air to mix with combustion gas above said first tubular member, a second vertically disposed open ended tubular member mounted within said first tubular member to define an annular passage between the inner wall of said first tubular member and the outer wall of said second tubular member, the upper end of said second tubular member being located at substantially the same level as the upper end of said first tubular member and the lower end of said second tubular member being spaced upwardly from the lower end of said first tubular member, said second tubular member being related to said mounting means in a fashion such that a gas jet discharged from said orifice means passes upwardly through said second tubular member to thereby inspirate a flow of air downwardly through the annular passage between said tubular members for mixture with the jet of gas at the lower end of said second tubular member, said second tubular member being offset rearwardly within said first tubular member whereby the radial width of said annular passage is greatest adjacent the forward side of said assembly, and said target being positioned to deflect a pilot flame at the upper end of said second tubular member laterally across the forward portion of the upper end of said annular passage into operative relationships with said thermocouple assembly and to at least partially restrict the flow of air inspirated through said passage while at the same time defining the upper boundary of said region for the injection of secondary air into the primary air-combustion gas mixture discharged from the upper end of said second tubular member.

3,155,144
GAS CONTROL UNIT
Stanley J. Budlane, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed July 20, 1961, Ser. No. 125,458
5 Claims. (Cl. 158—123)



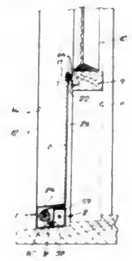
1. In combination with a horizontal type burner having a plurality of ports for directing jets of flame upwardly therefrom, a control device comprising a flame detector mounted above said ports and in the path of said flame, said detector adapted to operate a switch in response to the impingement of flame directed to one side of said detector, and a baffle means disposed adjacent to both said burner and said flame detector for controlling the impingement of said flame on said one side of said detector and the flow of cooling air around the other side of the flame detector, said baffle means having a first section extending into proximity to said other side of said flame detector and defining a restricted opening therewith for the passage of said cooling air, and a second section extending into proximity to said burner and defining a restricted passage therewith, said second section being positioned below the ports of said burner and controlling the flow of secondary air to said flame and the flow of said cooling air to said restricted opening and the other side of said detector, said detector being disposed in a predetermined position above said burner whereby the secondary air flowing to said flame from said restricted passage causes said flame to be restricted to said one side of said detector while the other side of said detector is cooled by said air.

3,155,145
CONTROL CIRCUIT FOR GAS BURNER
Joseph Leo La Pointe, Detroit, and John J. Fannon, Jr., Grosse Pointe, Mich., assignors, by direct and mesne assignments, to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Oct. 5, 1959, Ser. No.. 844,387
10 Claims. (Cl. 158—125)



1. A control circuit for a gas burner comprising means responsive to gas burner operation for generating a signal; amplifier means for said signal; relay means actuable by said amplified signal, said amplifier including an alternating current powered and conducting thyraton; solenoid-operated valve means actuable by said relay means to control the flow of gas to said burner; and igniter means to ignite gas flowing from said burner; said relay means being actuated by said signal to de-activate the igniter subsequent to ignition of the gas.

3,155,146
EXTENSION ROLLER SCREEN
Jean K. Malouf, 6307 25th Ave., Montreal, Quebec, Canada, and Rosaire Parent, Montreal, Quebec, Canada; said Parent assignor to said Malouf
Filed July 11, 1962, Ser. No. 209,191
Claims priority, application Canada Dec. 8, 1961
1 Claim. (Cl. 160—27)



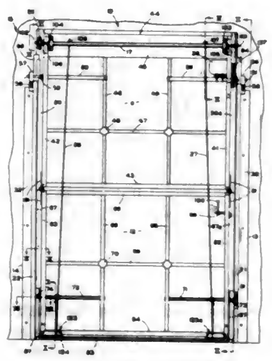
In an extension roller screen for sash type windows comprising a pair of upper frame members arranged in telescopic engagement for sliding endwise adjustment to each other, bracket means for securing said upper frame members to the lower member of a window sash in outwardly spaced relationship therewith such that the outer ends of said upper frame members overlap and slidably contact the outer lateral faces of the sash guiding rails associated with said window sash on the outside of the latter, sealing strips secured to said upper frame members and contacting said lower sash member, a pair of screen housing members arranged in side to side relation and united along their adjacent side edges for sliding endwise adjustment relative to each other in cooperation with the corresponding upper frame members, a screening strip secured at one end to one of said upper frame members and at its other end to the corresponding housing member, and a second screening strip normally disposed in overlapping relation with said first strip and secured at one end to the remaining upper frame member and at its other end to the remaining corresponding housing member, roller means mounted in said housings for separately reeling and unreeling said screening strips to facilitate adjustment as to the height of said screening strips, the outer end of each housing member adapted to fit within the guiding channel for a window sash disposed outwardly of and adjacent the window sash provided with said bracket means and said roller means adapted to overlap the outer lateral faces of said rails so that the marginal outer portions of said screening strips will also overlap said outer lateral faces and said housings having guiding means for guiding said screening strips with their marginal portions in sliding contact with said lateral faces, wherein each said upper frame member has a channel shaped cross-section with inward lips, said bracket means for securing said upper frame members to the lower member of a window sash comprising L-shaped brackets each consisting of a horizontal leg and a vertical leg, said horizontal leg having an enlarged outer end slidably fitted within the associ-

ated channel shaped upper frame member, said vertical leg having a curved portion at its lower end, upright retainer members secured to said lower sash member at their lower end and providing a curved upper portion spaced from said sash member for the lateral passage of the vertical leg of said bracket members with the curved portion of said vertical leg fitting the curved portion of the retainer member between the latter and the lower sash member.

3,155,147
BI-FOLD DOOR WITH SELF-CONTAINED MOTOR

Wesley A. Smith, St. Clair Shores, Mich., assignor to Tilt-A-Door Corporation, Detroit, Mich., a corporation of Michigan

Filed May 8, 1961, Ser. No. 108,528
11 Claims. (Cl. 160—189)



1. A canopy-type closure structure for an opening in an upright wall, comprising:

an upper panel and pivot means supporting said upper panel at points spaced from the upper and lower edges thereof for pivotal movement about a pivot axis substantially parallel with said edges;

a lower panel and means hingedly connecting the upper edge thereof to the lower edge of said upper panel;

a pair of substantially parallel and upright guide members mounted on the wall adjacent respective sides of said opening, said guide members having upper and lower portions disposed at slight angles to each other, and said guide members extending from near the lower end of said opening to points adjacent said pivot axis;

guide means mounted on said lower panel between the upper and lower edges thereof and engaged with said guide members for guiding said lower panel as it is moved vertically along the said guide members;

a shaft rotatably mounted on said upper panel near the upper edge thereof and above said pivot axis;

an elongated flexible element extending and connected between said shaft and the lower portion of said lower panel;

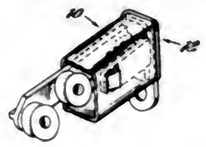
an electric motor mounted on said upper panel above said pivot axis; means drivingly connecting said motor to said shaft, so that operation of said motor effects a rotation of said shaft and a winding or unwinding of said element with respect to said shaft, whereby a raising or lowering of said panels is effected; and

the location of said shaft and motor being such that their weight tends, when said upper panel is moved around said pivot axis, to counterbalance the weight of the lower panel as it is moved vertically.

3,155,148
PULLEY CASE AND CURTAIN ROD COMBINATION

Philip L. Kenney, Cranston, R.I., assignor to Kenney Manufacturing Company, Cranston, R.I., a corporation of Rhode Island

Filed Apr. 5, 1960, Ser. No. 20,116
3 Claims. (Cl. 160—344)

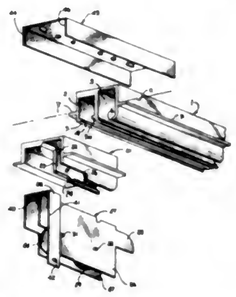


1. An integral molded plastic curtain drawcord pulley support assembly, two pulleys each having a raised hub, and a hollow curtain rod combination comprising: bottom, top, and side walls in an end of said rod defining an opening therein extending longitudinally into said rod; drawcord support assembly mounted in said opening comprising a base, a single pulley support arm mounted on said base and extending longitudinally along one side wall of said rod, an upper cord cantilever pintle mounted on said arm with a pulley being rotatably mounted on said upper cord pintle with said raised hub bearing against said support arm, a lower cord cantilever pintle mounted on said arm with a pulley being rotatably mounted on said lower cord pintle with said raised hub bearing against said support arm, said pintles being longitudinally spaced on said support arm and extending across said opening to a point adjacent the opposite side wall and with rounded heads projecting beyond said pulleys for bearing against said opposite side wall whenever there is misalignment in said opening to correct said misalignment and to hold the pulleys clear of the opposite side wall for free rotation; and means for anchoring said base in a fixed position in said opening.

3,155,149
STRUCTURAL DEVICE

James A. Ford, Lafayette, Calif., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan

Filed Jan. 30, 1962, Ser. No. 169,891
8 Claims. (Cl. 160—346)



1. In a dual-channel, ceiling-supportable track for a traverse rod structure, said track having lateral flanges extending toward each other and defining the edges of a slot communicating with one of said channels, a pulley unit for mounting at the end thereof comprising in combination:

an end unit separate from said track and having a cross-sectional configuration substantially identical with the cross-sectional configuration of the traverse track with said flanges of said end unit being cut away;

a covering member aligning said end unit with a traverse track and with the channels of each thereof in alignment with each other;

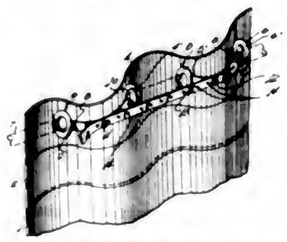
a pulley frame including a pair of parallel side members spaced apart a distance such that they can snugly engage the legs of said one channel, means supporting said side members rigidly with respect to each other and at least one pulley rotatably supported between said side members, said pulley frame being received into said channel of said end unit corresponding to said one channel of said track where said flanges are cut away;

means fixing said pulley frame rigidly with respect to both said end unit and said track.

3,155,150
FLEXIBLE HANGING CURTAINS

Sabino Silvestre, Palos 806, Buenos Aires, Argentina

Filed Apr. 30, 1963, Ser. No. 276,963
2 Claims. (Cl. 160—348)

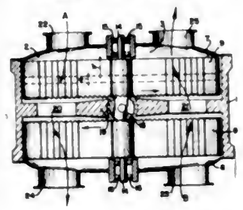


1. A device for hanging and gathering slidable flexible curtains comprising a curtain having an upper band of flexible material having a row of aligned spaced eyelets engageable by a supporting bar, a plurality of flexible tongues each for connecting together an adjacent pair of said eyelets in said row, said flexible tongues each having one end fixed to one eyelet of said pair and having the opposite end thereof provided with at least one fastening means, cooperating fastening means provided on the other eyelet in said pair, capable of engaging said first fastening means for connection therewith; at least one further fastening means on the face of each flexible tongue opposite to that facing said band; and a strip member having a plurality of fastening means engaging said further flexible tongue fastening means and connecting said flexible tongues together and holding said pairs of eyelets in face-to-face relation.

3,155,151
HEAT EXCHANGERS

Robert Poulit, 3 Rue Auguste Mayet, Asnieres, France

Filed Apr. 26, 1961, Ser. No. 105,771
Claims priority, application France, Nov. 22, 1960, 844,659
11 Claims. (Cl. 165—6)

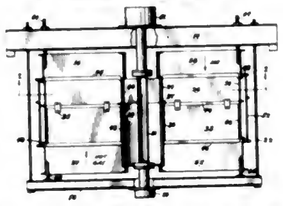


1. In a heat exchanger, a casing having a pair of chambers for passing different pressure fluids, heat transfer means comprising a plurality of heat conveying endless flexible strips movable in closed circuits between said chambers, said strips being of progressively decreasing length and arranged in edgewise and nested position within each other, friction roller means resiliently compressing the nests of the strips in the region between said chambers, at least one of the edges of said strips being formed with continuous teeth, to provide a pair of racks defined by the aligned teeth of the compressed strips within said region and at least one rotatable pinion engaging one of said racks, to coordinate the movements of said strips and to maintain the same in substantially uniformly relative spaced position from each other within said chambers.

3,155,152
ROTOR STRUCTURE FOR ROTARY REGENERATIVE HEAT EXCHANGER

James Condé, Wellsville, N.Y., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Filed May 28, 1962, Ser. No. 198,161
9 Claims. (Cl. 165—7)

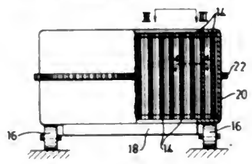


8. Rotary regenerative heat exchange apparatus having a rotor including a cylindrical rotor shell, a central rotor shaft, a shaft shell extending concentrically between the rotor shell and rotor shaft a distance substantially less than the length of said rotor shell, a plurality of support ribs extending tangentially from the rotor shaft to the post shell, a cylindrical jacket in axial alignment with the post shell and supported thereby, a series of partitions extending radially between the shaft shell and the rotor shell to provide a series of sectorial compartments therebetween, said partitions being axially divided to provide a support partition and a dependent partition subjacent thereto, said support partition being fixedly secured at radially opposite ends to the shaft shell and the rotor shell while the dependent partition is pivotally carried by the support partition and is adapted to slidably abut the rotor shell and the cylindrical jacket at its radial ends to permit relative movement therebetween.

3,155,153
ROTATABLE BODY FOR TRANSFER OF MOISTURE OR/AND HEAT

Axel Birger Axelsson, Gavle, Sweden, assignor to Lizenzia A.G., Zug, Switzerland, a corporation of Switzerland

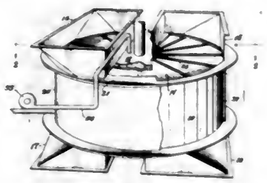
Filed June 21, 1960, Ser. No. 37,618
Claims priority, application Sweden July 10, 1959
1 Claim. (Cl. 165—8)



A wheel-like transferrer of a thermodynamic characteristic of air comprising a plurality of pairs of thin sheets of fibrous material, at least one of the sheets of each said pairs being corrugated and engaging the other sheet at spaced intervals to mutually support each other and form

a mass of adjacent peripherally enclosed tubular parallel cells open at both ends to allow moisture and gas to flow through said cells, the end portions of said cells forming flat faces at each end of said transferrer, said end portions being impregnated with a stiffening material to form said flat faces into relatively hard coherent fluted discs and which material in addition thereto bonds said sheets together along their points of engagement whereby to prevent deformation of said faces while maintaining the inner core of said transferrer relatively soft.

3,155,154
AIR SEAL FOR ROTARY HEAT EXCHANGER
Edward T. Wilson, Andover, N.Y., assignor, by mesne assignments, to Combustion Engineering, Inc., a stock corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,511
3 Claims. (Cl. 165—9)



1. Rotary regenerative heat exchange apparatus having a rotor including a cylindrical shell joined to a rotor post by radial partitions to form a series of sectorial compartments therebetween; a mass of heat absorbent material carried in each compartment of the rotor; a housing surrounding the rotor provided at opposite ends thereof with end plates axially spaced from the edge of the radial partitions and formed with circumferentially spaced apertures between imperforate portions to permit the flow of heating gas and air to and through the rotor; a plurality of ports through the imperforate portion of each end plate; a source of gas under pressure; duct means connecting the source of gas to said ports in the end plate; a valve seat in each end plate port adjacent the rotor; a check valve; means resiliently holding said valve on said seat; axially movable sealing means carried on the end edge of each radial partition; means biasing said sealing means toward the confronting surface of said end plate whereby rotation of the rotor moves the end edges of said sealing means into contacting relation with the valve means to move said valve from its seat and permit gas under pressure to flow into the space between the sealing means and end plate.

3,155,155
THERMAL JACKET ON ROCKING AUTOCLAVE
Eskel Wallstrom, Greenwich, and Richard Lapham Gilbert, Jr., Old Greenwich, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
Filed Feb. 20, 1962, Ser. No. 174,491
1 Claim. (Cl. 165—12)

A temperature controlled autoclave for high-pressure reactions having

(*a*) a cylindrical autoclave body capable of withstanding high pressures,

(*b*) a pressure tight closure therefor,

(*c*) a temperature sensing means to sense temperature within the autoclave, and in combination with the autoclave body and readily separable therefrom,

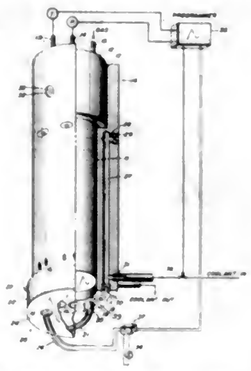
(*d*) a cylindrical thermal jacket of material having a high thermal conductivity, having a smooth unbroken inner cylindrical face which fits closely in concentric heat exchanging relationship with the entire cylindrical outer surface of the autoclave body, said jacket having therein, and parallel to the longitudinal axis thereof,

(*e*) a plurality of heating chambers for electrical heating elements,

(*f*) electrical heating elements in said chambers, and totally enclosed by said chambers except for electrical leads, said jacket also having therein, and spaced between such chambers,

(*g*) a plurality of U-shaped cooling passages formed by parallel cylindrical bores, parallel to the longitudinal axis of the jacket, including means at one end of each of the bores for interconnecting adjacent bores serially,

(*h*) means at the opposed ends of the interconnected bores to supply coolant to and receive coolant from



said bores, and said cooling passages and heating chambers symmetrically and completely surrounding the autoclave body,

(*i*) a source of electricity,

(*j*) means to control the electric current from said source to said heating element,

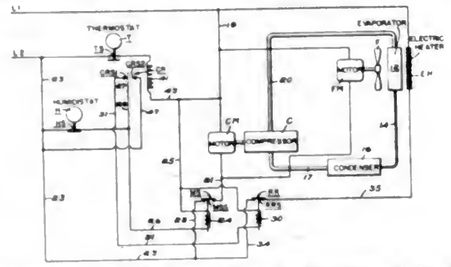
(*k*) a coolant supply source,

(*l*) means to control the coolant flow from said source to and through said cooling passages, and

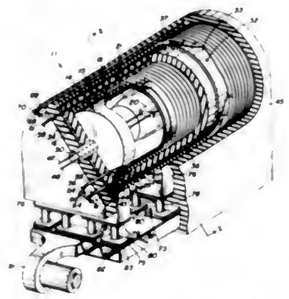
(*m*) a programmer, connected to the temperature sensing means, having therein means to selectively control the electric current control means and the coolant flow control means to maintain a desired time and temperature program for the contents of the autoclave, independent of heat generated by reactants within the autoclave.

3,155,156
CONTROLS FOR AIR COOLERS AND DEHUMIDIFIERS
William K. Kyle, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1962, Ser. No. 182,538
3 Claims. (Cl. 165—21)

1. In an air conditioning system having a refrigerant compressor connected to an air chilling evaporator, having an electric motor for driving said compressor, having an electric heater for heating the air chilled by said evaporator, and having electric supply connections, the combination of a control relay, a thermostat having a switch which closes when the temperature of the air rises to a predetermined value, means including said switch for connecting said relay to said connections, said relay having a first switch which is opened and having a second switch which closes when said relay is energized by the closing of said switch of said thermostat, means including said first switch for connecting said heater to said connections, means including said second switch for connecting said motor to said connections, and a humidistat having a switch which closes when the humidity of the air rises to a predetermined value, connected across said second switch.



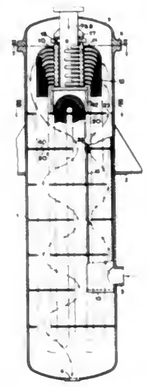
3,155,157
TEMPERATURE STABILIZED CHAMBER UTILIZING THERMOELECTRIC COOLING
Albert E. Anderson, Cedar Rapids, and William R. Stubstad, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 9, 1962, Ser. No. 215,935
2 Claims. (Cl. 165—30)



1. A compact multichamber device having an automatic temperature control, said device comprising: first wall means defining a first enclosed chamber; means including a sensing and heating coil contiguous to said first wall means to sense temperature deviations from a preselected temperature value within said first chamber and responsive thereto heating said first chamber; second wall means surrounding said first chamber and defining a second enclosed chamber; and means including a thermoelectric cooling device contiguous to said second wall means for cooling said second chamber to a temperature at least as low as, said preselected temperature whereby the temperature within said first enclosed chamber is maintained constant even though environmental temperatures outside said second enclosed chamber are higher than said preselected temperature value.

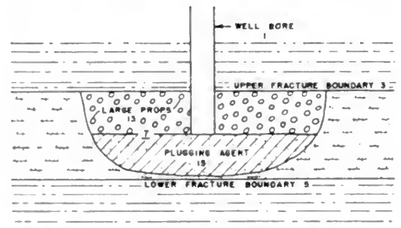
3,155,158
HEADER TYPE TUBULAR HEAT EXCHANGER
Walter Ernest Peters and Leonard Mills, Rugby, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Feb. 27, 1961, Ser. No. 91,918
Claims priority, application Great Britain Mar. 25, 1960
1 Claim. (Cl. 165—161)

A header-type tubular heat-exchanger comprising a vessel containing a first fluid, an inlet duct and an outlet duct for a second fluid, said ducts passing through the wall of said vessel, a plurality of groups of heat-exchange tubes within said vessel, each of said tubes having an inlet and an outlet end, a plurality of separate parallel inlet headers and a plurality of separate outlet headers parallel to the inlet headers within said vessel, each said group of tubes having one said inlet header attached to the inlet end of the tubes in the group and one said outlet header attached to the outlet end thereof, each group of tubes being disposed parallel to the other groups with corresponding portions of each group of tubes being parallel to corresponding portions of the other groups, a plurality of inlet tubes connected between said inlet duct and said inlet headers, a



plurality of outlet tubes connected between said outlet headers and said outlet duct, and a plurality of baffles for said first fluid within said vessel, each baffle comprising a number of contiguous perforated strips parallel to said headers, and each said strip having only one of said group of heat-exchanger tubes passing through the perforations therein, so that when said groups of tubes are removed from said vessel, each said group of tubes together with the associated inlet and outlet headers and the associated baffle strips may, on disconnection of the associated inlet and outlet tubes, be removed laterally as an individual group.

3,155,159
INCREASING PERMEABILITY OF SUBSURFACE FORMATIONS
William J. McGuire, Jr., Dallas, Loyd R. Kern, Irving, and William F. Kieschnick, Jr., Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1960, Ser. No. 51,149
12 Claims. (Cl. 166—29)



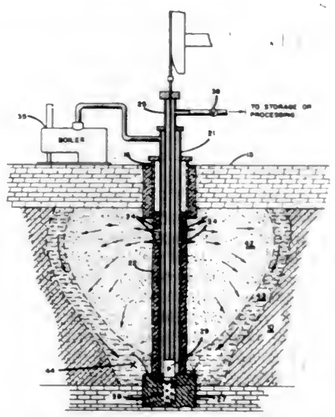
1. In a method for increasing the permeability to fluids of a subsurface earth formation having at least one fracture extending from the wall of a well bore radially into said formation, the improvement comprising: forming a first suspension of a solid, particle-form material and a carrier fluid, wherein said solid particles will settle through said carrier fluid at a rate greater than 0.1 foot per min-

ute; injecting said first suspension under pressure into said fracture, whereby said solid particles settle to form a solid, multilayer pack in the bottom of said fracture; forming a second suspension of a solid, particle-form material and a carrier fluid, wherein said solid particles settle through said carrier fluid at a rate less than 0.1 foot per minute; injecting said second suspension under pressure into said fracture, whereby said solid particles are maintained in suspension in said carrier fluid until said fracture is permitted to close against said solid particles; and releasing the pressure on said second suspension to permit said fracture to close.

3,155,160
RECOVERY OF HEAVY OILS BY STEAM EXTRACTION

Forrest F. Craig, Jr., and Karol L. Hujsak, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Nov. 27, 1959, Ser. No. 855,510
8 Claims. (Cl. 166—40)

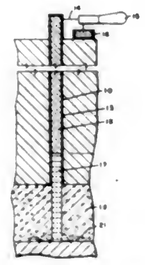


4. In a method of recovering, from an underground stratum in which it occurs, heavy oil which is substantially nonflowable by the application of driving-fluid pressure thereto and which retains substantial viscosity at elevated temperatures, said stratum being substantially completely penetrated by a well extending from the ground surface, which method comprises the steps of injecting substantially only steam at an elevated temperature and pressure into said well and thence into said stratum to heat by condensation substantially the entire stratum face exposed in said well and reduce the viscosity of the oil at said face, whereby heated oil and steam condensate flow downwardly by gravity drainage toward the bottom of said well and continuously expose unheated oil and formation behind said face, and withdrawing said heated oil and condensate from near the bottom of said well at substantially the rate they collect there while holding sufficient back pressure on said well to maintain said pressure and temperature at their elevated values within the heated volume of said stratum, whereby a zone of melting oil and gravity drainage of heated oil and steam condensate propagates radially outwardly from said well through at least the upper part of said stratum, the improvement which comprises the steps of discontinuing said steam-injecting, withdrawing and back-pressure-holding steps at a time when there is an accumulation of heated heavy oil and steam condensate of substantial size within said stratum, and rapidly withdrawing fluids from near the bottom of said well to reduce the pressure at said well bore to a low value and thereby establish throughout said heated volume a substantial pressure gradient to aid the force of gravity drainage in moving said accumulation toward said well bore.

3,155,161
METHOD OF FRACTURING A FORMATION TRAVERSED BY A WELL

Harco J. Tadema, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 1, 1960, Ser. No. 66,488
Claims priority, application Netherlands, Nov. 13, 1959, 245,336
1 Claim. (Cl. 166—42)



A method of fracturing a formation traversed by a well by means of a fracturing fluid under pressure comprising:

partially filling the well with a column of fracturing fluid, the bottom of said column adjoining the area at which the bottom of the fracture is desired and the top of said column of fracturing fluid being non-constrained, the specific gravity of said fracturing fluid being adjusted until the pressure gradient of the column of fracturing fluid exceeds the pressure gradient of the formation to be fractured;

filling the remainder of the well with a driving fluid, the specific gravity of said driving fluid being adjusted until the pressure gradient of the column of driving fluid is less than the pressure gradient of all formations traversed by the well;

increasing the pressure on the driving fluid at the surface until the pressure of the fracturing fluid exceeds the breakdown pressure of the formation to be fractured.

3,155,162
PROPPING FRACTURES WITH GLASS BALLS

Don H. Flickinger and George C. Howard, Tulsa, and Frederick H. Rixe, near Catoosa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

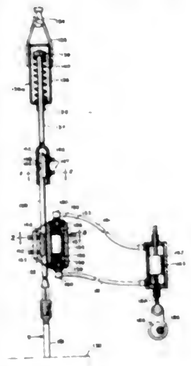
No Drawing. Filed Nov. 20, 1961, Ser. No. 153,692
3 Claims. (Cl. 166—42)

1. A composition for forming and propping a fracture in an earth formation comprising a carrying liquid and solid balls made from glass having an analysis consisting essentially of about 62 percent calcium oxide, about 6 percent boron oxide, about 3 percent sodium oxide, and about 29 percent silica, said balls being within the size range passing a number 12 U.S. Standard sieve and being retained on a number 16 U.S. Standard sieve, said balls having an average crushing strength of at least about 200 pounds, and most of said balls having a minimum diameter which is at least about 80 percent of the maximum diameter.

3,155,163
METHOD AND APPARATUS FOR SONIC JARRING WITH RECIPROCATING MASS OSCILLATOR

Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)

Original application Feb. 20, 1956, Ser. No. 566,628, now Patent No. 2,972,380, dated Feb. 21, 1961. Divided and this application Dec. 22, 1960, Ser. No. 77,669
5 Claims. (Cl. 166—46)

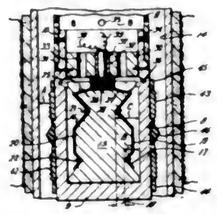


1. In apparatus for loosening a fish stuck at a point below its upper end in a bore hole, the combination of: a grappling tool adapted to rigidly engage the upper end of the fish, a drill collar having a vertical longitudinal axis, said collar being rigidly coupled at its lower end to said grappling tool an acoustic vibration generator located adjacent the upper end of said drill collar comprising a mass element rotatable on and linearly reciprocable along said vertical longitudinal axis, a non-rotatable member adapted for corresponding reciprocation along said axis, cam means between said mass element and said non-rotatable member for converting rotation of said mass element into axial vibration of said mass element and of said non-rotatable members, said non-rotatable reciprocable member being coupled to said drill collar for transmission of reciprocating force to the upper end thereof to set up in said collar and fish an acoustic standing wave, an inertia collar adapted to be lowered into the bore hole on a rotatable drill pipe string, suspended from a rotary table at the ground surface, and a torque transmitting spring connecting said inertia collar and said rotatable mass element of said wave generator, said spring being yieldable in a vertical direction to isolate said inertia collar from vibration transmitted upwards from said generator.

3,155,164
MEANS FOR SETTING TUBULAR BODIES

Russell W. Keener, Houston, Tex., assignor to Jet Set Corporation, Houston, Tex., a corporation of Texas

Filed Jan. 10, 1961, Ser. No. 81,902
14 Claims. (Cl. 166—63)

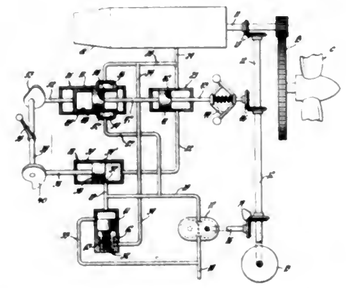


1. In combination, a tubular body for setting in a well wall, a mandrel positioned within said body, a detonate-type explosive applied to the surface of said mandrel, means for charging the interior of said body between the body wall and said explosive with shock wave dampening substance, means to position said body within a well bore, means to detonate said explosive, the type, quantity, positioning, and standoff distance of said explosive being adjusted relative to the facing body wall so that the explosive generated shock wave traveling through said substance in said body will expand said body wall without puncturing, and means for releasing from said body substantially all pressured gases generated by the explosive before they can substantially affect the body wall.

3,155,165
TURBOPROP ENGINE CONTROL WITH UNDERSPEED GOVERNOR

Floyd J. Boyer and Robert J. Wente, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Continuation of application Ser. No. 280,466, Apr. 4, 1952. This application June 11, 1957, Ser. No. 665,627
15 Claims. (Cl. 170—135.74)

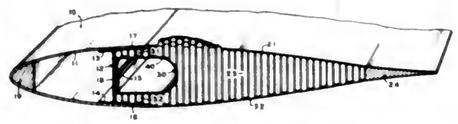


11. A control for a turbo-prop power plant, means for delivering fuel to said power plant including flow regulating means, means for controlling said flow regulating means including a speed governor, in combination with a propeller driven by the power plant and having variable pitch blades, a low pitch stop for said blades, and a second speed governor operatively connected to said propeller for controlling the pitch of said blades, said second governor being effective to move said blades against said stop upon a predetermined speed being reached, said first mentioned governor having a lower setting than said second speed governor whereby said first mentioned governor controls the speed of the power plant and the propeller by varying fuel flow in a speed range below said predetermined speed while said blades are against said stop and ineffective to vary speed.

3,155,166
ROTOR BLADE INCLUDING IMPROVED ATTACHMENT OF FILLED AFT STRUCTURE

Frank L. Stulen and James A. Hinds, Traverse City, Mich., assignors to Parsons Corporation, Detroit, Mich., a corporation of Michigan

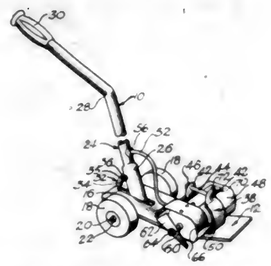
Filed Sept. 17, 1962, Ser. No. 223,992
4 Claims. (Cl. 170—159)



3. Rotor blade construction comprising forward blade structure including a spar having a web including an aft face and

having spar margins extending along the airfoil mold line aft of the web aft face, together with
aft structure including
upper and lower structural skins
having flanges extending inward along and adhered to the aft face of the spar web, and
filler material between said structural skins,
a throat in the filler material adjacnt to the aft face of the spar web,
the throat having a structural skin liner
including flanges extending inward along the aft sides of the said flanges of the skins.

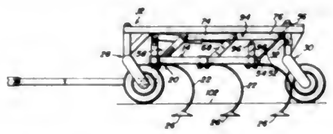
3,155,167
LAWN EDGERS
Henry S. Pendley, 1401 Carroll Drive NW., Atlanta, Ga.
Filed Dec. 21, 1961, Ser. No. 162,312
3 Claims. (Cl. 172—15)



1. In a lawn edger, an elongated base plate of substantially flat construction having a bent forward end thereon tilting slightly upwardly from the rest of said plate, there being an elongated slot in the rearward end of said plate, a transverse axle member mounted on said plate adjacent said slot, a pair of opposed wheel members mounted on opposite sides of said plate in substantial alignment and opposition thereon and adapted to support said plate on the ground, an elongated handle member having the lower end thereof extending through said slotted portion of said plate and being attached pivotally to said axle member, an upstanding arcuate adjustment plate mounted adjacent said slot, an arcuate slot in said plate, an adjustment screw fastening said handle to said adjustment plate in said adjustment slot whereby said handle may be selectively moved and titled into adjusted position thereon and held in place by said adjustment member, a motor retainer supported at least partly on the forward, upwardly tilted end of said plate, a high speed electric motor mounted in said retainer, insulation means insulating said motor from said retainer and from said base plate, a high speed blade mounted on one end of said motor and projecting from said base plate and extending therefrom, and an electrical cable internally connected with said motor and extending for connection to a source of electrical power.

3,155,168
CHISEL AND SWEEP PLOW
Richard C. Telecky, Sprague, Wash.
(Box 82, Ritzville, Wash.)
Filed Dec. 20, 1962, Ser. No. 246,057
7 Claims. (Cl. 172—484)

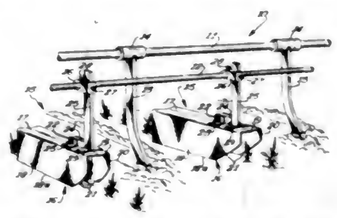
1. A sweep plow comprising a main support frame including front and rear supporting wheels at the front and rear ends of said support frame respectively, a generally horizontally disposed lift frame, parallelogram linkage means mounting said lift frame on said main frame for guided vertical adjustment relative to said main frame while maintaining the generally horizontal attitude of said lift frame, a plurality of depending earth working members supported from said lift frame for vertical adjustment relative to said main support frame simultaneously with said lift frame, and an elongated tow hitch secured at its rear end to the front end of said lift frame for movement about a horizontal transverse axis disposed below the



medial plane of said lift frame and above the lower ends of said earth working members and adapted to have its front end removably secured to a draft vehicle, motor means interconnected between said lift frame and said linkage means for vertically adjusting said lift frame relative to said main frame.

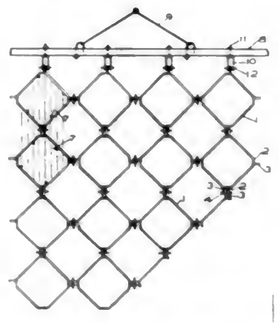
3,155,169
CULTIVATOR SHIELD DEVICE
Elvin Mattson and Allen D. Mattson, Grafton, N. Dak.
Filed Feb. 4, 1964, Ser. No. 342,513
3 Claims. (Cl. 172—512)

1. A cultivator shield device for use with crop cultiva-



tor apparatus of the type having cultivator tools, such as shovels, which tend to throw dirt towards the crop being cultivated, said cultivator shield device comprising
an elongate generally inverted channel-shaped cultivator shield member adapted to be moved longitudinally along a row of plants being cultivated and in straddling relation therewith, said shield member having a substantially flat horizontal top, and substantially flat vertical sides integrally formed with and diverging slightly from opposite edges of said top, said sides having substantially straight longitudinally disposed lower edges adapted to engage the surface of the ground during movement of the cultivator shield member and having leading edges which extend arcuately upwardly from said lower edges,
an elongate vertically extending standard detachably mounted adjacent its upper end in fixed relation to a tool bar of a cultivator apparatus, said standard having a rearwardly projecting elongate horizontally disposed extension affixed to the lower end thereof,
means pivotally connecting the rear end of said horizontal extension of said standard with the top of the shield member adjacent the leading edge thereof, said horizontal extension engaging the upper surface of the shield member to prevent upward tilting movement of the forward portion of the shield member but to permitting downward tilting of the forward portion of said shield member about a substantially transversely extending horizontal axis, the vertical distance between a line extending from the axis of pivot of the shield member to the surface of the ground and substantially normal thereto being greater than the horizontal distance between said axis of pivot and the leading edge of said cultivator shield member whereby the leading edge of the cultivator shield member will be spaced above the surface of the ground when the rear end portion of said shield member is raised.

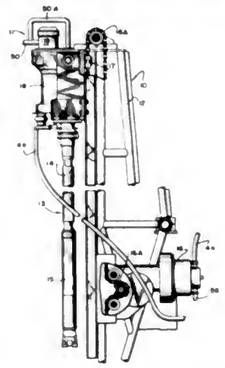
3,155,170
FLEXIBLE LINK HARROW
Walter David Hofer, Brocket, Alberta, Canada, assignor of one-fourth to Lawrence Benjamin Levine and three-fourths to Garth Alphonse Turcott, both of Pincher Creek, Alberta, Canada
Substituted for abandoned application Ser. No. 48,316, Aug. 8, 1960. This application July 31, 1963, Ser. No. 303,705
1 Claim. (Cl. 172—623)



A harrow assembly for attachment in following relation to a draw bar, said assembly comprising a series of square unit frames each having its corners truncated and a lug fixed to each truncated corner off center by which lugs of the corners of adjoining frames may overlap, said lugs having pin receiving openings, pins engageable in said openings for connection of unit frames together and to the drawbar, said draw bar having clevises to which lugs of the frames are attachable, and teeth fixed to the sides of the unit frames arranged in a pattern common to all units with one tooth to each side of a frame with the teeth of each frame so spaced differently from the frame corners (disregarding said truncation) the frames may be connected for a set of teeth in any one frame to travel in the intervals between the the soil cultivated by teeth of frames aligned in advance or to the rear thereof.

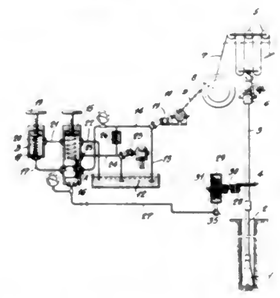
3,155,171
FEED CONTROL MEANS FOR DOWN-THE-HOLE ROCK DRILL RIGS
Ewald H. Kurt, Samuel P. Lewis, and Loree A. D. Paulson, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 15, 1963, Ser. No. 294,962
8 Claims. (Cl. 173—4)

1. A feed control apparatus in combination with a down-the-hole rock drill comprising
(*a*) a drill rig,
(*b*) a drill,
(*c*) a rotary head having
(1) a rotating mechanism movable longitudinally on said rig to support said drill for longitudinal movement,
(2) a spindle driver carried by said rotary head and rotated by said mechanism,
(3) a longitudinally movable drill rotating spindle slidably supported in said spindle driver for relative longitudinal movement with respect to the latter and connected to rotate therewith,
(4) said spindle and spindle driver defining a pressurized fluid inlet chamber communicating with a source of pressurized fluid to receive pressurized fluid therefrom,
(*d*) pressurized fluid operated motor means for moving said rotary head longitudinally on said rig,
(*e*) said spindle driver having passage means communicating with said inlet chamber and said motor



means to convey pressurized fluid from the inlet chamber to said motor means and effect operation of the latter to move said rotary head, and
(*f*) means carried by said spindle for controlling communication of said passage means with said inlet chamber so that flow of pressurized fluid to said motor means is controlled in response to a predetermined relative longitudinal movement between the spindle and spindle driver.

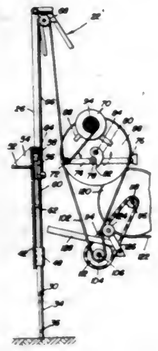
3,155,172
DEVICE FOR AUTOMATIC FEED OF CUTTING BIT IN WELL DRILLING
Vadim Sergueievich Kazmin, Krasnaia Presnia 9, Apt. 105; Vladimir Nickolaievich Komarov, Kalyaievskaya 35, Apt. 3; Ivan Nickolaievich Kudryashov, Bolshaia Polianka 42/2, Apt. 21; and Boris Semionovich Antonov, Varshavskoie Chausse 35b, Korpus 4, Apt. 4, all of Moscow, U.S.S.R.
Filed Apr. 13, 1961, Ser. No. 134,484
7 Claims. (Cl. 173—6)



2. In a well drilling apparatus including a drill bit carried by a drill string, a rotary table for driving the drill string and means including a hoisting drum for raising and lowering the drill string, an apparatus for controlling the feed of the drill string in accordance with the force of gravity and the torque applied to the drill string through the rotary table, said control apparatus comprising a combination motor-pump drivingly connected to said drum and having an intake and discharge, a liquid tank con-

nected to said intake, a pressure responsive valve connected to said discharge, a return pipe from said valve to said tank and a planetary reduction gear for driving said rotary table, said reduction gear having a housing mounted for pivotal movement in proportion to the torque applied to the drill through said rotary table, whereby said motor-pump controlled by said pressure responsive valve operates as a brake to maintain the downward force exerted by gravity on the drill string substantially constant, said control apparatus further including control means connected to said motor-pump for controlling the operation thereof, and means disposed in the path of movement of said housing to actuate said control means for controlling the operation of said motor-pump and the feed of said drill string in accordance with the torque applied to the drill string.

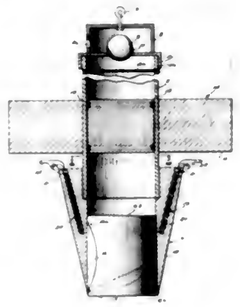
3,155,173
MACHINE FOR DRIVING POSTS
Eugene J. Frandson, Ross, N. Dak.
Filed Aug. 12, 1960, Ser. No. 49,229
5 Claims. (Cl. 173—37)



1. In a post driver, the combination of a vehicle mounted frame, a pair of transversely spaced vertical tubular guides supported by said frame, a set of sleeves slidable on said guides, a slide carried by said sleeves, a power driven shaft journalled in said frame, first and second drive pulleys secured to said power driven shaft, first and second driven shafts journalled in said frame in spaced relation from the power driven shaft, first and second driven pulleys secured to the respective first and second driven shafts, a winch carried by said frame and operatively connected to the first driven shaft, said winch including a cable having an outer end connected to said slide, brake means for said winch, cam actuated means connected to the second driven shaft and operatively engaging an intermediate portion of said cable for alternately raising and lowering said slide, first and second belts passing around the respective first and second drive pulleys and the respective first and second driven pulleys, and independently operable first and second means for selectively tensioning and slackening the respective first and second belts.

3,155,174
FUEL POWERED SEDIMENT CORER
Shale J. Niskin, Miami, Fla., assignor to Stevenson P. Clark, Coconut Grove, Fla.
Filed Apr. 12, 1961, Ser. No. 102,485
6 Claims. (Cl. 175—4)

2. A coring device for obtaining samples of oceanic deposits comprising an elongated core sample barrel having an upper portion formed of material having a specific gravity less than sea water, and having a head at the lower portion of the barrel having a specific gravity greater than sea water, said barrel having an overall specific gravity greater than sea water so that it will sink in sea water, means for attaching a line at



the top of the tube, means defining a propellant chamber at the lower end of the barrel exposed upwardly to the ambient sea water for ejecting an explosive propellant and drawing the barrel head downwardly into the ocean bottom, and means to fire the propellant.

3,155,175
WELLHEAD CEMENTING ASSEMBLY WITH BY-PASS
Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 7, 1962, Ser. No. 200,717
12 Claims. (Cl. 175—7)



1. Apparatus for drilling and cementing an underwater well from an operational base positioned above the surface of a body of water, said apparatus comprising

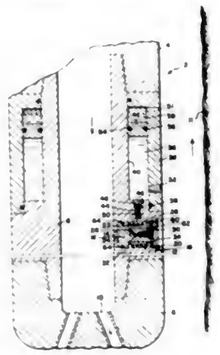
(*a*) a wellhead assembly fixedly positioned below the surface of a body of water,

(*b*) said wellhead assembly including a casinghead having landing surface means for suspending therefrom a pair of concentric pipe strings with the upper ends in axial spaced relationship,

(*c*) a drilling assembly having a vertical bore therethrough in communication between said operational base and the interior of said wellhead assembly with the lower end of said drilling assembly being fixedly secured to the upper end of said wellhead assembly in a fluidtight manner, and

(*d*) fluid bypass conduit means outside and connected between said drilling assembly and said wellhead assembly and in communication through the walls thereof with the vertical bore of said drilling assembly and the interior of said casinghead at a point intermediate the landing surface means in said casinghead for said pair of pipe strings.

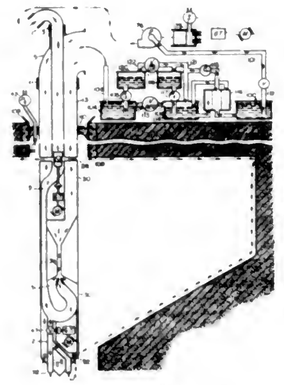
3,155,176
BORE HOLE APPARATUS FOR MARKING DRILLING MUD
John D. Bennett, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Dec. 19, 1960, Ser. No. 76,616
13 Claims. (Cl. 175—42)



10. Bore hole drilling apparatus comprising a hollow drill stem having a longitudinal internal bore, means defining a chamber in said drill stem, a supply of fluid dye contained within said chamber in said drill stem, piston means movably mounted in said chamber, said piston means having opposed responsive sides, means for applying pressure in said internal bore of said drill stem to one of said sides to urge the piston means in one direction, means for applying pressure at the exterior of the drill stem to the other of said sides to urge the piston means in the opposite direction, passageway means providing communication between said chamber and the bore hole, said piston means being movable into said chamber to force the dye therefrom into the bore hole through said passageway means in response to the occurrence of a pressure in said internal bore greater than the pressure at the exterior of said drill stem.

3,155,177
HYDRAULIC JET WELL UNDER-REAMING PROCESS
Anderson Billy Fly, Amarillo, Tex., assignor to Hydro-Jet Services, Inc., Amarillo, Tex., a corporation of Texas
Filed Dec. 23, 1959, Ser. No. 861,557
8 Claims. (Cl. 175—67)

1. A process for under-reaming a well comprising the steps of cutting material from and in the general vicinity of said well and below the ground surface thereof by a plurality of concurrently operating unconfined jets of fluid of equal and opposing reaction while admixing said fluid and said resultant cuttings, thus forming a first admixture, passing said first admixture to a second zone lower than that at which said cutting occurs, feeding said first admixture from said second zone to an upwardly directed jet thereby forming a second admixture, increasing and decreasing the energy of said jet responsive to the increase and decrease, respectively, of the specific gravity of the second admixture thereabove, by shifting of high pressure fluid thereto from and therefrom to said opposing jets and

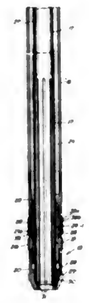


discharging the resultant second admixture from said well at a solid-liquid weight ratio within a predetermined range.

3,155,178
AQUEOUS FOAMS AND FOAMING AGENTS
Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale and Richard E. Berkley, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware
No Drawing. Filed Dec. 5, 1960, Ser. No. 73,546
8 Claims. (Cl. 175—69)

1. A process for raising water from a subterranean zone to the surface which comprises mixing with said water a foam producing quantity of a polyoxyethylated monohydric, aliphatic alcohol having 12–24 carbons and an average of more than 20 oxyethylene groups per mol, and flowing a gas through said subterranean zone and then to the surface to cause said water to form an aqueous foam and raise said foam to the surface with said gas.

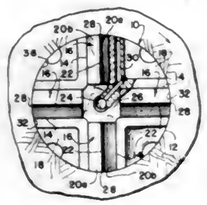
3,155,179
DUAL-TUBE DRILL STRING FOR SAMPLE DRILLING
Lawrence G. Hunt, Tucson, Ariz., and Howard A. Wilmeth, Silver City, N. Mex., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Aug. 4, 1961, Ser. No. 129,458
9 Claims. (Cl. 175—215)



1. In a rotary drilling rig provided with a dual tube drill string adapted to bring core samples to the surface as drilling progresses and including a core bit, concen-

tric outer and inner strings of tubing defining an annular passage leading from the surface to said bit, means for introducing a pressure fluid into said passage near the upper end thereof, and core recovery means at the upper end of the inner string of tubing, the improvement comprising a packer seal ring concentrically swiveled on and outwardly of the outer drive string of tubing above but near the bit, for sealing off the upper portion of the earth bore passage from the lowermost portion thereof during drilling, said outer string having passages therethrough, below but adjacent said packer seal ring and establishing communication between said annular passage and the bore hole, and said bit having passages therethrough also establishing communication between said annular passage and the bore hole, the said passages in both instances being so inclined as to establish localized circulation of said pressure fluid through said lowermost portion of the earth bore passage.

3,155,180
DRILL BIT WITH FLUID PASSAGES
George A. MacSween, Roxboro, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company, Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 27, 1962, Ser. No. 190,619
8 Claims. (Cl. 175—418)



1. In a rotatable and reciprocable drill bit (**10**) for drilling a side wall (**35**) of a hole (**36**) containing muck (**38**), said drill bit (**10**) having a body provided with a periphery and a cutter groove (**14**) in said periphery, a cutter (**16**) disposed in said cutter groove, said cutter (**16**) having a back and a cutter periphery (**32**) and provided with cutting faces (**20***a*, **20***b*) and a cutting edge (**22**), said cutting edge having an exposed peripheral corner (**28**), the improvement comprising:

(*a*) said body (**12**) being provided with a substantially central cleansing fluid passage (**24**) extending through said body (**12**) to a point behind said cutting edge (**22**) for directing high pressure cleansing fluid against the back of said cutter (**16**) and across said cutting edge (**22**) and said cutting faces (**20***a*, **20***b*),

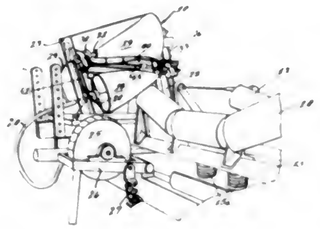
(*b*) said body being provided with rearwardly extending low pressure muck grooves (**18**) on opposite sides of said cutter groove (**14**) and cutter (**16**), said muck grooves defining on said periphery a cutter land,

(*c*) said land (**12**) being provided with a fluid cleansing passage (**30**) communicating with said internal cleansing fluid passage (**24**) and extending through said body (**12**) to said cutter land to a point adjacent said cutter periphery (**32**) and for directing high pressure cleansing fluid against said peripheral corner (**28**) and across said cutting edge (**22**) and said cutting faces (**20***a*, **20***b*) from said cutter periphery (**32**),

(*d*) the flow of high pressure cleansing fluid from said fluid cleansing passage (**30**) impacting against the flow of high pressure cleansing fluid from said internal cleansing fluid passage (**24**) to create a vortex of high pressure cleansing fluid which scours said cutting edge (**22**) and said cutting faces (**20***a*, **20***b*) to remove said muck (**38**) therefrom and to flow said muck (**38**) rearwardly into said low pressure muck grooves (**18**),

(*e*) and said body (**12**) being provided with a peripheral flow groove (**40**) for conducting said flow of high pressure cleansing fluid from said fluid cleansing passage (**30**) to said peripheral corner **28**.

3,155,181
CONVEYOR SCALE AND RECORDER
Robert B. Chambers, Lander, Wyo., assignor to Belt-Scales Corporation, Salt Lake City, Utah, a corporation of Nevada
Filed Mar. 26, 1962, Ser. No. 182,320
9 Claims. (Cl. 177—16)



1. A mechanism for use in indicating weight on a conveyor belt or the like comprising:

a pair of cones,

means mounting the cones for rotation about substantially parallel axes,

means for rotating one of the cones as a direct function of the rate of movement of a conveyor belt,

means for transmitting rotation from said one cone to the other cone,

hydraulic pressure means responsive to the weight on the conveyor belt,

a weight bar,

means for utilizing the rotation of the other cone as a weight indicator for weight on the conveyor belt,

means for changing the position of the weight bar in accordance with pressure changes in the hydraulic pressure means,

actuating means connected to the means for transmitting rotation including a ratchet wheel,

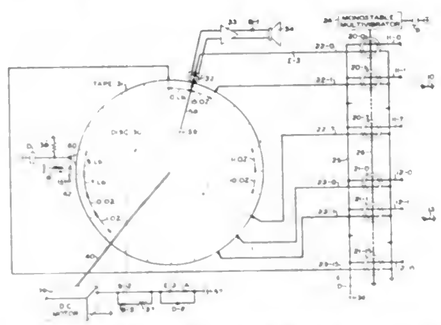
a ratchet engaging the ratchet wheel in response to a changed position of the weight bar,

means actuating the ratchet and means operated by the ratchet wheel and controlling the position of the means for transmitting the rotation from the one cone to the other cone.

3,155,182
SCALE ANNUNCIATOR
Michael I. Rackman, 549 Ocean Parkway, Brooklyn, N.Y.
Filed Dec. 28, 1962, Ser. No. 248,030
13 Claims. (Cl. 177—45)

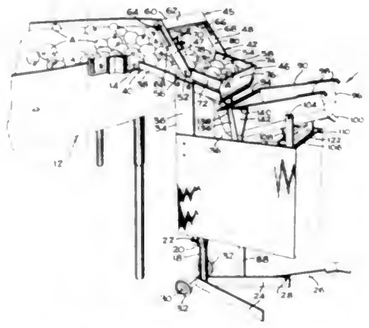
1. An announcement machine for a weighing mechanism comprising a recording containing thereon a sequence of pound announcements followed by a sequence of ounce announcements, first and second means for registering respectively the number of pounds and the number of ounces of an object being weighed, read-out means for successively reading out said announcements at a first rate, speaker means connected to said read-out means, means for controlling the slowing down of the read-out of said announcements to a second rate when the announcements being read out from the recording

are those which correspond to values registered in said first and second registering means, and means for enabling said speaker means only when the announcements being



read out from the recording are those which correspond to values registered in said first and second registering means.

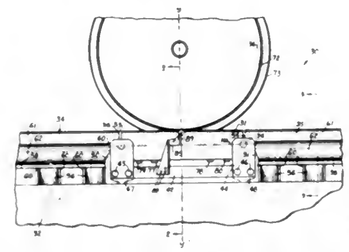
3,155,183
BAGGING MACHINE
John A. Bradford, Yakima, Wash., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 6, 1962, Ser. No. 185,697
5 Claims. (Cl. 177—162)



1. In a fruit bagging machine the combination comprising an inclined fruit collection chute having open upper and lower ends, a pivotable gate assembly mounted over said chute and provided with an upper gate and a lower gate adapted to close the open upper and lower ends of said chute in alternate sequence upon pivotal movement of said gate assembly, adjustment means mounting one of said gates for movement toward or away from the opposite gate, and a lever mechanism connected to said gate assembly for pivoting said gate assembly.

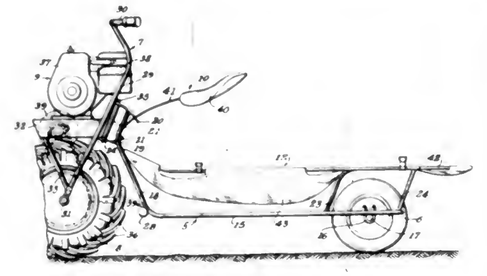
3,155,184
WEIGHING APPARATUS
Seymour H. Raskin, Dallas, Tex., assignor to Sands Measurement Corporation, Dallas, Tex., a corporation of Texas
Filed Sept. 27, 1962, Ser. No. 226,514
13 Claims. (Cl. 177—163)

1. A weighing apparatus for weighing a moving load including: a beam; means supporting said beam at longitudinally spaced locations whereby said beam is free to deflect downwardly as a load moves longitudinally over said beam; means for sensing the deflection of said beam at points spaced longitudinally equidistantly from and on opposite sides of the midpoint of the span of said beam between said spaced locations; and means operatively associated with said sensing means and re-



sponsive to the load when it is at the midpoint of the span for weighing the moving load when it is at the midpoint of the span.

3,155,185
TWO-WHEELED UTILITY VEHICLE HAVING A DRIVEN STEERING WHEEL
Joseph M. Allen, P.O. Box 116, Caliente, Calif., and Earl L. Miner, 1311 17th St., Oceano, Calif.
Filed Sept. 19, 1962, Ser. No. 224,786
3 Claims. (Cl. 180—31)



1. A utility vehicle comprising:

(*a*) a chassis having a support wheel at its rear end and provided with a platform having a rear portion elevated above said wheel and a lower portion forward of the wheel at the approximate level of the axle of said wheel, an upwardly directed extension being provided on the chassis forward of the low level portion of the platform,

(*b*) a steerable power-driven unit for propelling the vehicle and hingedly connected to and forward of the upwardly directed extension of the chassis,

(*c*) a stretcher supported, in part, by the mentioned elevated rear portion of the chassis, said stretcher including a frame that is wider than the chassis with a portion extending rearwardly beyond the rear end of the chassis,

(*d*) means separably connecting said elevated rear portion of the chassis and the rearward end of the stretcher frame,

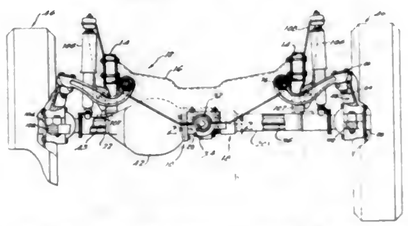
(*e*) a separable connection between the forward end of the stretcher frame and the chassis adjacent to the hinge connection of the latter with the steerable unit, and

(*f*) the portion of the stretcher between the elevated rear portion of the chassis platform and the last-mentioned separable connection being spaced above the lower forward portion of the chassis and platform.

3,155,186
DRIVEN SWINGING AXLE ASSEMBLIES WITH STEERABLE WHEELS

Lamont A. Cadmus, Toledo, Ohio, and Achilles C. Sampietro, Birmingham, Mich., assignors to Willys Motors, Inc., Toledo, Ohio, a corporation of Pennsylvania

Filed July 21, 1961, Ser. No. 125,800
3 Claims. (Cl. 180—43)



1. An independent suspension system having wheels for driving and steering a vehicle comprising an axle assembly including a first and a second transversely extending axle housing member, one of said first and second axle housing members having a yoke portion defining a pair of in-line bores disposed coaxially relative to a longitudinally extending axis located substantially centrally of said axle assembly, the other of said first and second axle housing members having a pair of ears rotatably disposed within said in-line bores, bracket means connecting said yoke portion and said ears to the vehicle for pivotal movement about said axis, a differential assembly disposed in said first axle housing member, a first axle shaft rotatably disposed in said first axle housing member and connected to one side of said differential assembly and extending centrally toward said axis, a second axle shaft rotatably disposed in said second axle housing member and rotatably and pivotably secured to said first axle shaft at a point substantially on said axis and another axle shaft rotatably disposed in said first axle housing and connected to the other side of said differential assembly and extending away from said axis; a pair of steering knuckle assemblies each pivotably secured to an end portion of said first and second axle housing member; a pair of upper control arms each having one end pivotably secured to the vehicle and the other end pivotably secured to one of said pair of said steering knuckle assemblies; a pair of wheel assemblies rotatably secured to said pair of steering knuckle assemblies; means including said axle assembly for transmitting power to said wheel assemblies and steering means including said steering knuckle assemblies for steering said assemblies.

3,155,187
POWER SHAFT

John Z. De Lorean, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 19, 1960, Ser. No. 57,065
18 Claims. (Cl. 180—70)

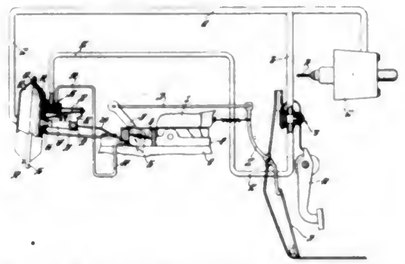


18. In a motor vehicle, a support structure, a vehicle power plant attached to said support structure in the front of said vehicle and having an output shaft extending rearwardly therefrom, a combined transmission and differential axle attached to said support structure at the rear of said vehicle and having an input shaft extending forwardly therefrom, said input and output shafts each inclined downwardly at a fixed predetermined angle with respect to said vehicle, a single one piece solid shaft having one end axially aligned with and connected to said output shaft and its other end axially aligned with and connected to said input shaft, and means for applying a predetermined bending moment to said solid shaft to hold the same in a predetermined non-linear shape during transmission of drive from said power plant to said axle assembly by said solid shaft, said bending moment applying a bending stress on said shaft less than the elastic limit of the same.

3,155,188
FRICTION FEED-BACK SPEED CONTROL

Donald D. Stoltman, Henrietta, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,842
5 Claims. (Cl. 180—82.1)

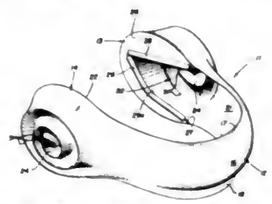


1. In a road speed control system for a vehicle having an engine controlled by a throttle operable by a fluid servo, a negative feed-back arrangement comprising, a valve body having first and second control orifices in series flow relation and a third orifice in parallel flow relation to said second orifice, said orifices being in fluid control connection with the throttle servo, valve means in said valve body for opening and closing said third orifice to shift control of the throttle servo between said first and second orifices, and means responsive to the opening and closing throttle movement of the system and connected to control said valve means in accordance with the thottle movement.

3,155,189
VOICE REFLECTOR

Carolyn H. MacFarlane, 2926 Avalon Ave., Berkeley, Calif.

Filed Feb. 28, 1962, Ser. No. 176,263
5 Claims. (Cl. 181—20)

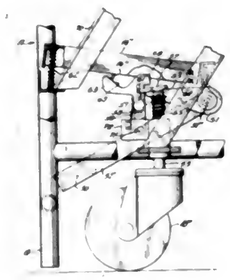


1. In a voice reflector adapted to be worn upon and supported solely by the head of the wearer, a substantially U-shaped member having a substantial width, the member having a frontal portion forming an open frontal cavity, a portion of said member being adapted to have one portion rest upon the person of the wearer to support the frontal portion solely by the person of the wearer in a position so that frontal concavity is disposed in front of the mouth of the wearer, the member also having a pair of substantially open side portions of substantial width joined to the frontal portion and forming ear receiving concavities facing the ears of the wearer and means secured to the side portions and adapted to rest upon the head of the wearer for supporting the side portions solely by the head of the wearer and so that the ear receiving concavities are positioned over the ears of the wearer whereby the voice of the wearer is reflected by the frontal concavity rearwardly into the ear receiving concavities to the ears of the wearer, said means secured to the side portions for supporting the side portions consisting of substantially planar portions mounted on the side portions and overlying the ear receiving concavities, the planar portions being provided with substantially V-shaped cutouts, the substantially V-shaped cutouts being adapted to receive the ears of the wearer, the V-shaped cutouts being formed so that a plane bisecting the angles formed by the cutouts also bisects the frontal and side portions.

3,155,190
WHEEL MOUNTED LADDER

Arthur Carl Borgman, Franklin Square, N.Y., assignor to The Patent Scaffolding Co., Inc., Long Island City, N.Y.

Continuation of application Ser. No. 144,183, Oct. 10, 1961. This application May 28, 1963, Ser. No. 287,459
4 Claims. (Cl. 182—15)

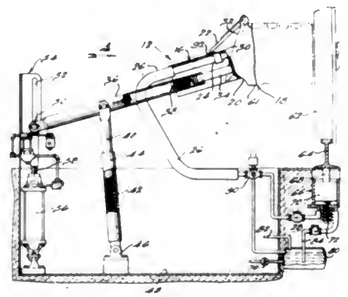


1. A mobile ladder assembly wherein a ladder having a pivotally mounted bottom step with a portion spring biased toward up position is carried on a frame of which one end is supported on wheels and the other end is supported in position for use on spaced legs of the frame, or, for transport on caster means mounted on said frame and including a spring biased stem movable downwardly against said spring bias to frame supporting position, said assembly comprising a spring pressed latch pivoted on the frame and having a cam arm positioned to be actuated by movement of the spring biased portion of said bottom step, said latch being rocked against resistance of said latch spring when said portion of the bottom step is depressed, a bell crank pivoted to rock on said frame and having a long lever arm arranged with its free end extending under said bottom step and a short lever arm arranged with its free end bearing against the top end of said stem, and means arranged and adapted to releasably retain said short lever arm in stem depressing condition and thereby retain said stem and its caster in down position and said legs in up position when the free end of the long lever of the bell crank is rocked downwardly, and to release said stem and caster from down position and said legs from up position when said portion of the bottom step is depressed against said cam arm of the latch to rock said latch against resistance of said latch spring.

3,155,191
AUTOMATIC JOURNAL BOX OILING APPARATUS

Glenn W. Nelson, Farmington, Mich., assignor to The New York Central Railroad Company, a corporation of Delaware

Filed Jan. 12, 1959, Ser. No. 786,339
34 Claims. (Cl. 184—2)

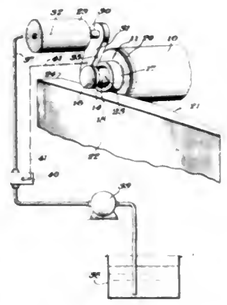


30. In apparatus for oiling railway car journal boxes as the car moves along a track, said journal boxes being normally closed by lids hinged to the upper portions thereof on horizontal axes generally parallel to said track for outward and upward swinging movements, said lids each having a depending lower edge portion the inner surface of which is engageable to exert opening pressure on the lid, said oiling apparatus comprising, means mounted adjacent the track for automatically opening the journal box lid of each successive journal box as the car moves therepast, said means comprising a lid opening element disposed and arranged to progressively engage said inner surface and open said lid, and means for injecting oil into each journal box when each said lid is open, said last mentioned means including a control element disposed in the general path of travel of the journal box lid in its open position to be actuated thereby.

3,155,192
BEARING LUBRICATING DEVICES

Alec P. James, 8 Edwards Road, Birmingham, England

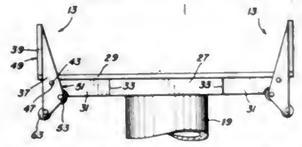
Filed July 30, 1962, Ser. No. 213,216
Claims priority, application Great Britain, Aug. 1, 1961, 27,821/61
8 Claims. (Cl. 184—15)



1. For pumping lubricant to a moving part of a machine, a unit comprising a rod attached at one end to said part so that the rod extends transversely of the direction of movement of said part, a piston/cylinder assembly including a piston and an open-ended cylinder mounted on the rod for relative axial movement so that the piston is withdrawable from the open end of the cylinder to provide a space between the piston and the cylinder, an

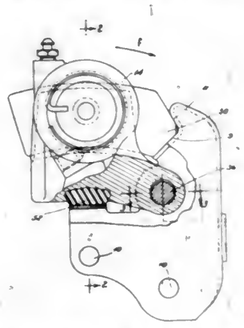
axial hole in the rod to communicate with a lubricant-conveying passage in the moving part, a radial port leading into the axial hole from the cylinder when the piston is within the cylinder and spring means urging the piston into the cylinder.

3,155,193
FLIP-UP JACK FOR A VEHICLE LIFT
Kermit L. Racely, Memphis, Tenn., assignor to Dover Corporation, Washington, D.C.
Filed Sept. 10, 1962, Ser. No. 222,334
7 Claims. (Cl. 187—8.74)



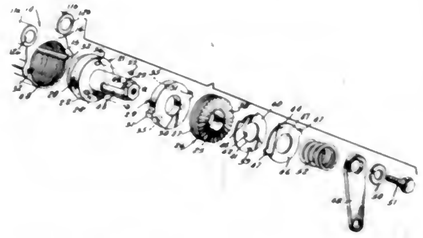
1. In a vehicle lift having a superstructure movable from a lowered position adjacent the ground to raised positions, a flip-up jack comprising pivot means pivotally mounting said jack on said superstructure for pivot of said jack between a downward position and an upright position, a pair of roller means rotatably mounted on said jack for successively engaging the ground during both raising and lowering of said superstructure, said pair of roller means being responsive to movement of said superstructure relative to the ground to cause said jack to pivot between said downward and upright positions.

3,155,194
DISC BRAKES
Pierre Gancel, Paris, France, assignor to Société Anonyme D.B.A., Paris, France, a company of France
Filed Dec. 27, 1961, Ser. No. 162,377
Claims priority, application France Jan. 2, 1961
10 Claims. (Cl. 188—73)



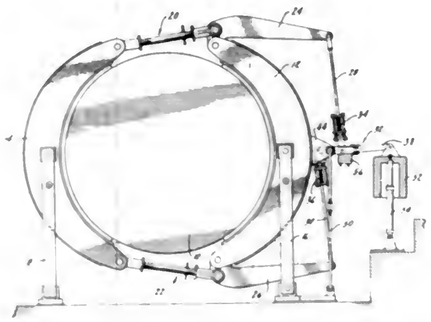
1. A disk brake comprising: a rotor having opposed friction surfaces thereon, a fixed support member comprising a base portion and an arm extending outwardly therefrom straddling said rotor, a housing member straddling said rotor, means operatively connecting said housing to said support member for slidable movement in a direction transverse to the plane of said friction surfaces and for rocking movement in a plane generally parallel to said friction surfaces, first and second friction members each having laterally spaced ends, said first friction member being slidable with respect to said support member and having one end engaging said arm, said second friction member being carried by said housing and having one end engaging said arm, said friction members being located opposite a respective one of said friction surfaces, actuating means carried by said housing to engage said first friction member with its respective surface and through reaction move said housing and thereby said second friction member into engagement with its respective surface, coacting anchoring surfaces located on said housing and said support member situated at a location which is in a lateral direction away from said one end of said friction members and towards the other end of said friction members and remote from said one end of said friction members and said arm, said connecting means being located relative to said anchoring surfaces, said one end of said friction members, and said arm that upon braking during rotation of said rotor in one direction, said anchoring surface located on said housing will be moved in a direction away from the anchoring surface on said support member and said one end of said friction members will be moved into anchoring engagement with said arm and upon braking during rotation of said rotor in the opposite direction, said anchoring surface on said housing will be moved into anchoring engagement with said anchoring surface on said support member and said one end of said friction members will be moved in a direction away from said arm, whereby the force exerted on said friction members by said rotor during rotation in said one direction will be transmitted directly by said friction members to said arm and the force exerted on said friction members by said rotor during rotation in said other direction will be transmitted through said housing to said support member.

3,155,195
BRAKING MECHANISM
Marvin Brawerman, Pacoima, Calif., assignor to Airheart Products, Inc., Van Nuys, Calif., a corporation of California
Filed Feb. 11, 1963, Ser. No. 257,404
6 Claims. (Cl. 188—73)



1. Brake actuating mechanism for actuating cooperable braking elements mounted for relative movement into and out of engagement, said mechanism comprising:
(*a*) a housing having a cylindrical bore;
(*b*) an annular bushing axially adjustable as to position in said bore;
(*c*) an actuator having a shaft portion with a head at one end cooperable with one of said braking elements, said shaft portion being rotatably mounted in said bushing;
(*d*) means between said bushing and head, including camming elements operative in response to rotational movement of said shaft in one direction for moving said head in a brake actuating direction;
(*e*) spring means axially urging said head in a non-braking direction;
(*f*) means for rotating said shaft; and
(*g*) ratchet means operable to adjustably axially position said bushing in said bore so as to compensate for brake element wear, said ratchet means being operable in response to rotational movement of said shaft.

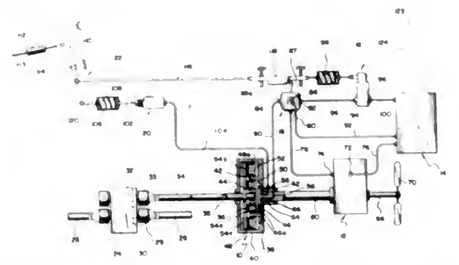
3,155,196
ADJUSTABLE SLACK-FREE BRAKE SYSTEM AND METHOD OF OPERATION THEREOF
John F. Foxx, Wauwatosa, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 6, 1961, Ser. No. 115,201
4 Claims. (Cl. 188—75)



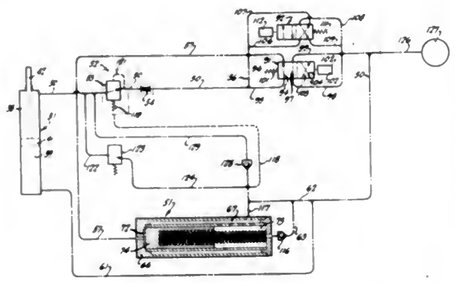
1. A brake system for mine hoists and the like, a brake drum, brake shoes mounted to engage the drum, a linkage constructed to operate the brake shoes, including a brake lever mechanism movable between a brake-off position, a brake-prime position, and a brake-set position,
said brake lever mechanism including a slack take up lever and a brake weight lever having a common pivot, the linkage being connected to the slake take-up lever, the slack take-up weight being mounted on the slack take-up lever and the brake weight on the brake weight lever, and a lost motion connection between the two levers,
a brake weight connected to the brake lever mechanism to apply a predetermined braking force to the drum, a slack take-up weight connected to the brake lever mechanism having a weight such that when it acts alone at least all looseness and backlash will be removed from the linkage without an appreciable braking force, power means for operating the brake lever mechanism, and a connection between the brake weight and the brake lever mechanism such that when the brake lever mechanism is in the brake-off position, neither the slack take-up weight nor the brake weight will be effective on the linkage, when in the brake-prime position the brake weight will not be effective but the slack take-up weight will, and when in the brake-set position, both the brake weight and slack take-up weight will be effective.

3,155,197
MULTIPLE VEHICLE BRAKING APPARATUS
Arthur L. Lee and Arthur B. Coval, Columbus, Ohio, assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1962, Ser. No. 233,206
16 Claims. (Cl. 188—86)

1. Auxiliary braking apparatus for a driver controlled vehicle having a plurality of wheels and a conventional braking system for the wheels including, first control means to actuate said auxiliary braking apparatus and second control means to actuate said conventional braking system, said auxiliary braking apparatus comprising a normally unactuated kinetic absorption means comprising a continuous fluid circuit, a pump in said circuit arranged to circulate fluid around said circuit, said pump having a drive shaft, connecting means between said pump drive shaft and said rotating shaft, fluid operated disengaging means to render said pump inoperative to circulate fluid through said circuit while said shaft is rotating, resistance means in said circuit to increase the resistance to rotation of said pump drive shaft and thereby exert a retarding force on said rotating shaft, said first control means operable to engage said fluid operated disengaging means so that said pump circulates fluid through said circuit and operable to actuate said resistance means to thereby exert a retarding force on said rotating shaft, and a manually controlled actuator connected to both said first control means and said second control means, said manually controlled actuator operable in a first position to actuate only said auxiliary braking apparatus and in a second position to actuate both said auxiliary braking apparatus and said conventional braking system.



3,155,198
HYDRAULIC LOAD COMPENSATING SNUBBER
Howard C. Zintz, Walnut Creek, and Willard D. Childs, Concord, Calif., assignors to The Rucker Company
Filed Jan. 31, 1963, Ser. No. 255,405
11 Claims. (Cl. 188—97)

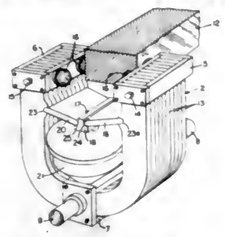


1. A hydraulic load compensating snubber comprising a hydraulic variable enclosure including a first cylinder closed at both ends and having a first piston therein dividing said first cylinder into a first chamber and a second chamber and having a piston rod on said piston extending through one of said ends, a control unit including a second cylinder closed at both ends and having a second piston therein dividing said second cylinder into a third chamber and a fourth chamber, a first conduit extending between said first chamber and said third chamber, a second conduit extending between said second chamber and said fourth chamber, a hydraulic connector between said first conduit and said second conduit, a control means movable between one position permitting flow through said connector and another position blocking flow through said connector, and a flow control valve in said first conduit responsive to the difference in pressure between said third chamber and said fourth chamber.

3,155,199
SPRING APPLIED BRAKE

Carl E. Bricker, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 11, 1963, Ser. No. 315,534
8 Claims. (Cl. 188—170)



8. In a brake the combination of

a frame,

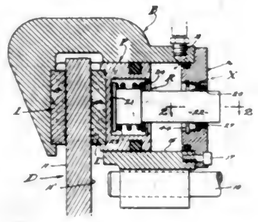
a plurality of U-shaped spring means pivotally mounted together as one unit in substantially centered relation to the frame, said spring means adapted to pivot transversely in relation to the frame but restricted in longitudinal movement by the frame, said spring means adapted to receive a movable member to be braked between the opened U-shaped ends thereof, and

means operatively mounted within the spring means to hold the ends thereof in substantially wider than normal relation during energized movement of the movable member to allow free movement thereof, said means adapted to be released during non-energized movement of said movable member allowing the spring means to operatively engage the movable member in opposed relation to effect the braking action thereon.

3,155,200
SELF BIASED COLLET AND SEAL RETAINER FOR DISC BRAKES

Henry T. Halibrand, 1510 W. 228th St., Los Angeles, Calif.

Filed Feb. 4, 1963, Ser. No. 255,948
5 Claims. (Cl. 188—196)



1. In combination with a disc brake comprising, a brake housing with a cylinder bore therein, a head closing one end of the bore and having a reduced bore therein, a piston slidably carried in the cylinder bore to project from the other end of the bore and having lining carried on said projecting piston to engage a brake disc, and a release unit for retracting the piston into the cylinder bore and comprising a head recessed in the piston and an indicator stem projecting therefrom and into the said reduced bore, there being a retracting spring urging the piston into engagement with the release unit head, and means retaining the release unit head within the said recess with limited movement, a self biased collet including:

(*a*) a ring carried with clearance in said reduced bore and surrounding the indicator stem,

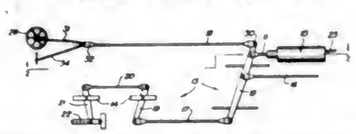
(*b*) spring fingers extending longitudinally from the ring and with pads at the terminal ends thereof pressed onto the said indicator stem to frictionally engage the same,

(*c*) and an annular groove turned in the outer diameter of the ring at and measurably weakening the fingers for control of said frictional engagement with the indicator stem.

3,155,201
BRAKING SYSTEM FOR RAILROAD CARS

Leonard R. Anderson, Midvale, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Sept. 10, 1962, Ser. No. 222,474
1 Claim. (Cl. 188—265)

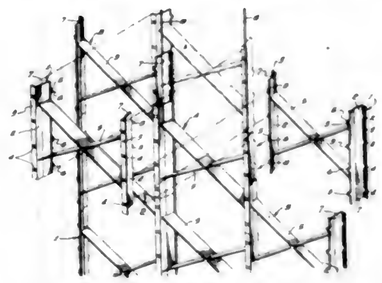


A brake-operating system for railway cars equipped with air brakes, comprising a push rod; an air cylinder for extending and retracting said push rod; brake rigging connected to and operable by said push rod for applying and releasing said brakes; said rigging including a cylinder lever to which the push rod is pivotally connected, and a brake rod pivotally connected to the cylinder lever; a chain having one end connected to the brake rod and extending freely therefrom as a component of a brake lock; a latch plate, having a keyhole-configurated aperture through which the chain is passed and which is adapted to freely pass the links of said chain in one position thereof and to catch the links in another position thereof, as another component of said brake lock; a retaining handle member fixed to the free end of the chain, said member being too large to pass through said aperture; a hand brake comprising a rotatable brake staff and handwheel; and a second chain, having one end fixed to said brake rod and the other end fixed to said brake staff so that the chain will be wound thereon when the staff is rotated.

3,155,202
ARCHITECTURAL SCREEN AND BUILDING UNIT THEREFOR

Kenneth A. Milette, La Puente, Calif., assignor to Mission-West Manufacturing Company, Los Angeles, Calif., a corporation of Delaware

Filed Feb. 29, 1960, Ser. No. 11,859
12 Claims. (Cl. 189—34)

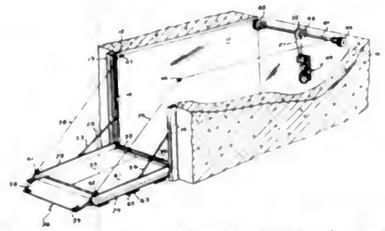


3. An architectural screen building unit comprising: a pair of identical longitudinally extended side walls extending in parallel relation to one another and having complemental interlocking means co-engageable with a similar unit when disposed in opposed face-to-face relation thereto; web means bridging said side walls; said interlocking means including locking lugs disposed in space relation along the corresponding edges of each of said side walls; and recesses disposed along the opposite corresponding edges of said side walls from said lugs for the reception of said lugs when a pair of said units are co-engaged in opposed face-to-face relation; there being an equal number of lugs and recesses on said side walls correspondingly spaced at opposite sides of a transverse median line extending across said side walls whereby said units are engageable with one another in longitudinally staggered relation one-half the length of said units.

3,155,203
MULTIPLE PURPOSE DOOR

John W. Kappen, 243 Kenwood Ave., Dayton, Ohio; Frieda E. Kappen, administratrix of the estate of said John W. Kappen, also known as Jno. W. Kappen, deceased

Filed Nov. 28, 1961, Ser. No. 155,400
5 Claims. (Cl. 189—46)



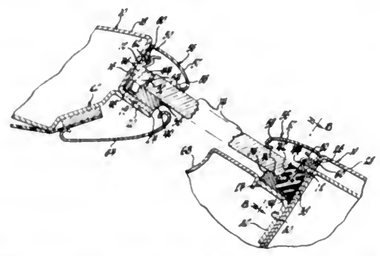
1. A door assembly including a frame having margins in the form of laterally spaced apart side portions and interconnecting top and bottom portions, hinges on opposite portions of said frame, said frame being open between said margins, a pair of doors received in said frame, each connected along one side edge to the hinges on one of said respectively opposite portions of said frame, said doors being swingable on said hinges to open and closed positions relative to said frame, said doors when closed occupying a common plane located substantially within said frame with their other side edges in adjacent relation to one another intermediate said opposite portions of said frame, means for selectively locking said doors to said frame when closed, and means supporting said frame for bodily swinging motion about one of its marginal portions to provide that said frame be movable from a normal upright position to a generally horizontal position for service as a platform wherein said doors define the floor of said platform.

3,155,204
WINDSHIELD MOUNTING

David D. Campbell, James D. Leslie, and James H. Wernig, all of Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 5, 1962, Ser. No. 170,963
6 Claims. (Cl. 189—77)

5. In combination with a vehicle body having a closure opening therein defined by a generally continuous first wall extending laterally to the plane of said opening and a second wall extending laterally to said first wall, a plurality of panel support means located on said first wall adjacent said second wall along the lower edge portion of said opening, said panel support means having an upper surface located below the upper edge portion of said second wall, a panel of a size to close said opening, said panel having the lower edge portion thereof engaging and being supported by said panel support means and being adapted to be directly secured to said second wall around the entire edge portion of said opening, molding support members mounted on said body and including molding support portions extending outwardly of the edge portion of said panel from between

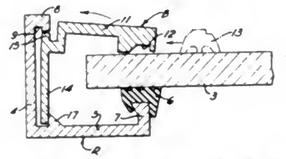


the edge portion of said panel and said first wall, and a continuous bead of cured adhesive material securing said panel support means to said first and second walls and directly securing said panel to said second wall.

3,155,205
METAL WINDOW SASH

Mark I. Place, Pittsburgh, Pa., assignor to E. K. Geyser Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 9, 1962, Ser. No. 186,234
2 Claims. (Cl. 189—78)



1. A window sash for holding sealing gasket strips against the opposite sides of a pane of glass projecting into the glazing chase with which the sash is provided, the sash comprising a metal rail having a body substantially L-shape in cross section with a face and an inner side meeting at substantially a right angle, a gasket strip mounted on the free edge of the face for engaging only one side of the glass pane, a rigid one-piece metal glazing bead having a flange opposed to and substantially parallel to said face and extending from said inner side of the rail to a point where it has a free edge, the rail being provided with a longitudinal groove, the bead having an integral hook-like portion removably disposed in said groove for hooking the bead onto the rail, said groove and hook-like portion being positioned to hold the bead against straight line movement away from the rail, and the rail also being provided with a portion normally engaged by the glazing bead to prevent swinging of said flange away from said face of the rail as long as the bead extends into said groove, and a second gasket strip compressible between said free edge of the bead and the glass pane and normally holding the bead in engagement with said rail portion, the second gasket being removable laterally from the bead, and said bead flange being movable toward said face of the rail and out of said groove in the absence of said second gasket strip.

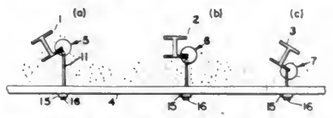
3,155,206
FASTENING MEANS FOR FLANGES

Weldon S. Booth, 117 Villard Ave., Hastings on Hudson, N.Y.

Filed Nov. 18, 1959, Ser. No. 853,884
9 Claims. (Cl. 189—88)

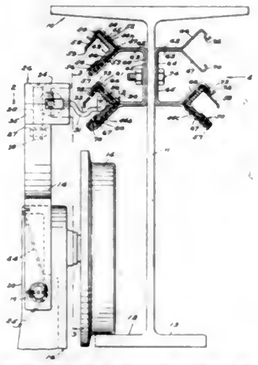
4. Clip means fastening sheeting to a support having a flange, one end of said flange being inclined away from

said sheeting, comprising a rounded plate member, a slot in said member along a radius thereof, said slot being fitted on said end of said flange and a mounting hole



substantially in the center of a quadrant of said plate member adjacent said slot being adapted to receive a J-bolt mounted substantially perpendicular to the plane of said sheeting.

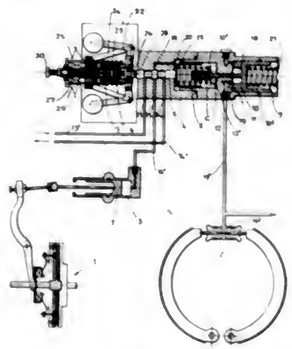
3,155,207
ELECTRIFIED RAIL CONSTRUCTION FOR CRANES, MONORAILS, AND THE LIKE
Marvin S. Blemly, Birmingham, Mich., and Leo Mayer, Cleveland Heights, Ohio, assignors to Jervis B. Webb Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 10, 1961, Ser. No. 144,130
7 Claims. (Cl. 191—23)



1. An electrified rail construction for use in conjunction with a track along which a wheeled vehicle is adapted to travel, characterized by the combination of a collector shoe mounted on the vehicle, a rail member formed of angle section stock having a pair of converging rail surfaces, an insulating jacket encasing the rail member except for exposed adjacent portions of the converging rail surfaces thereof, the insulating jacket including a guard portion extending generally perpendicularly from one of the rail surfaces and generally parallel to the other of the rail surfaces to partially enclosed the exposed rail surfaces leaving a continuous slotted opening sufficient to permit the placing of the collector shoe in such partial enclosure, and means mounting the rail member with the exposed rail surface thereof disposed vertically above and below the path of travel of the collector shoe, said guard portion of the insulating jacket being inclined downwardly from the rail surface which is disposed above the path of travel.

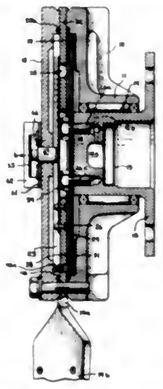
3,155,208
FLUID-ACTUATED CLUTCH AND BRAKE
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed July 6, 1961, Ser. No. 122,335
Claims priority, application France, Aug. 3, 1960, 834,913, Patent 1,271,662
2 Claims. (Cl. 192—13)

1. In a motor vehicle having a source of fluid under pressure, a clutch and a braking system, means responsive to the pressure of fluid for actuating the clutch and braking systems, distributor means connected to the source of fluid under pressure, a return line, a line leading to the clutch actuating means, the improvement comprising: a centrifugal regulator controlling the distributor means to regulate the pressure fluid distributed to said clutch actuating means via said line leading thereto, at least one spring opposing the action of the regulator on the distributor means, and means responsive to the pressure in the brake system and acting upon said spring to decrease the force exerted thereby as a function of the braking pressure to consequently increase the pressure at the clutch



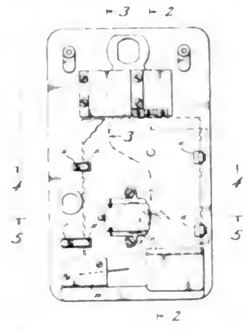
actuating means, said distributor means including a slide-valve, a second spring acting on said slide-valve and controlled by the centrifugal regulator, an auxiliary spring also acting on said slide-valve and a member coupled to the auxiliary spring for manually controlling the force thereof, said one spring also acting on said slide-valve and in opposition to the other springs, a chamber, in the distributor means in which is supported said one spring, said slide-valve extending into the chamber and a connecting circuit establishing communication between the clutch actuating means and the chamber.

3,155,209
FLUID COUPLING DEVICE
Thomas J. Weir, Indianapolis, Ind., assignor to Schwitzer Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 19, 1962, Ser. No. 188,743
1 Claim. (Cl. 192—58)



A fan drive coupling device comprising a drive shaft, an outer casing rotatably mounted on said shaft, a fan spider element having a flat central portion spanning the interior of said casing and having integral fan blade supporting arms disposed exteriorly of said casing, said central portion of said element separating the space within said casing into a fluid reservoir and a drive chamber, a drive disc mounted on said shaft within said drive chamber, said drive disc having surfaces disposed in close face-to-face and spaced relation with surfaces of said element central portion and said outer casing, fluid within said reservoir, means for controlling the flow of fluid from said reservoir to said drive chamber upon rotation of said drive shaft to thereby provide a fluid drive coupling of said casing and said disc with the degree of coupling being dependent on the volume of fluid in said drive chamber, the heat generated within said fluid upon operation of said coupling device being transferred to the exterior of said casing through said spider element and dissipated from said blade supporting arms.

3,155,210
COIN-OPERATED TIMER ASSEMBLY
Russel W. New, Dallas, Tex., assignor to Meter-All Mfg. Co., Inc., Dallas, Tex., a corporation of Texas
Filed July 11, 1961, Ser. No. 123,167
9 Claims. (Cl. 194—1)



1. A coin operated timer assembly for laundry equipment and the like comprising a front panel having a coin receiving slot therethrough, a plurality of posts extending from the back of the panel, a coin acceptor-rejector mechanism abutting said posts so as to be spaced from but parallel to said panel and being positioned to receive coins from said slot, a coin return chute on said panel to receive coins rejected by said mechanism, a timer device mounted on the back of said panel independently of said mechanism and spaced from said panel, said mechanism being disposed between said timer device and said panel and said posts providing an opening at one lateral side of the assembly through which said mechanism can be moved sidewise and into and out of the assembly, and means holding said mechanism on said posts and releasable to permit the mechanism to be moved sidewise out of the assembly without first removing said timer device.

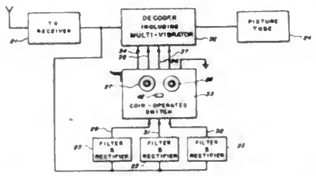
3,155,211
COMMUNICATION RECEIVER
George V. Morris, Norridge, and Penttl V. Sarlund, Chicago, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 27, 1962, Ser. No. 177,144
25 Claims. (Cl. 194—1)

8. A communication receiver for utilizing a received intelligence signal comprising:

means including an adjustable code-determining apparatus, which must be adjusted in accordance with a given adjustment before said intelligence signal may be intelligibly reproduced, for developing a control signal having a waveform dependent upon the instantaneous adjustment of said code-determining apparatus;

means for utilizing said control signal to effect intelligible reproduction of said intelligence signal;

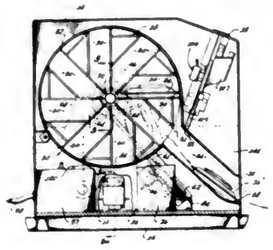
means operable subsequent to the adjustment of said



code-determining apparatus for registering a particular charge in an amount determined by the instantaneous adjustment of said code-determining apparatus;

and means operable subsequent to the adjustment of said code-determining apparatus for releasably locking said code-determining apparatus against further adjustment.

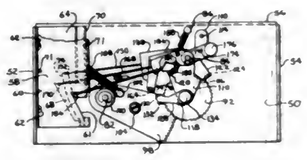
3,155,212
COIN-ACTUATED DISPENSING AND CONTROLLING MACHINE
Thomas F. Hines, Arcadia, Calif., assignor to Brucof Company, Arcadia, Calif., a co-partnership
Filed Nov. 15, 1961, Ser. No. 152,685
10 Claims. (Cl. 194—10)



7. In a coin-actuated dispensing and controlling machine, apparatus for dispensing stored packages, said apparatus comprising: a case having a coin-receiving slot and a discharge opening; a shaft rotatably mounted in said case; a cylindrical magazine secured to said shaft in coaxial relationship and having a plurality of angularly spaced receptacles for storing the packages, said magazine being advanced, upon shaft rotation in one direction and in angular increments equal to the spacing between corresponding receptacles, to bring successive ones of said receptacles into dispensing position; a ratchet wheel secured to said shaft and having a plurality of angularly spaced ratchet teeth, the number and the angular spacing of said teeth corresponding to the number and angular spacing of said receptacles; an indexing arm movably mounted in said case in operative association with said ratchet wheel, said arm being movable betwen first and second positions to engage successive teeth of said ratchet wheel and rotate said shaft; a solenoid for moving said arm from its first to its second position; spring means urging said arm from its second toward its first position; means responsive to the reception of a coin of given denomination deposited through said coin-receiving slot for energizing said solenoid; means responsive to movement of said indexing arm to its second position to de-energize said solenoid; means mounted in said case for preventing rotation of said shaft

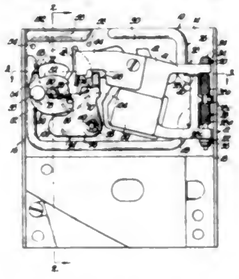
in the opposite direction; and releasable means mounted in said case for preventing rotation of said shaft in said one direction when said magazine is positioned with any one of said receptacles in dispensing position, said last mentioned means being released by virtue of movement of said indexing arm to free said shaft for rotation in said one direction and of one angular increment.

3,155,213
MONEY-HANDLING DEVICES
Gustav F. Erickson, Kirkwood, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 26, 1961, Ser. No. 147,871
30 Claims. (Cl. 194—19)



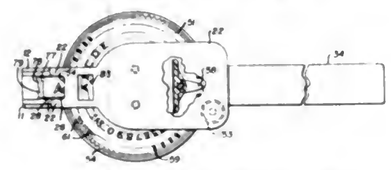
1. A coin-handling device that can respond to the insertion of coins to establish credits and that comprises:
(*a*) a pivot,
(*b*) a ratchet wheel rotatably mounted on said pivot,
(*c*) a spring biasing said ratchet wheel for rotation in one direction,
(*d*) a pawl that normally engages said ratchet wheel to prevent rotation of said ratchet wheel in said direction,
(*e*) a second pivot,
(*f*) a lever that has an actuator thereon with a coin-receiving portion which is adapted to receive coins of a predetermined denomination,
(*g*) a second lever that has an actuator thereon with a coin-receiving portion that is adapted to receive coins of a second denomination,
(*h*) said levers being rotatably mounted on said second pivot and being rotatable relative to the first said pivot and to said ratchet wheel,
(*i*) a transfer plate that is rotatably mounted on said second pivot and that is selectively engageable by each of said levers,
(*j*) said transfer plate normally permitting said pawl to remain in position to hold said ratchet wheel against rotation in said direction but being movable by each of said levers to move said pawl to a position where it frees said ratchet wheel,
(*k*) said transfer plate being in part coextensive with said ratchet wheel,
(*l*) a third pivot that is carried by said transfer plate and that is adjacent the first said pivot,
(*m*) a second pawl that is rotatably secured to said transfer plate by said third pivot and that is movable with said transfer plate,
(*n*) said second pawl normally being spaced from said ratchet wheel to permit rotation of said ratchet wheel relative to said second pawl but responding to movement of said transfer plate to move into engagement with said ratchet wheel,
(*o*) said second pawl being in part coextensive with said ratchet wheel and having the center of rotation thereof adjacent the first said pivot whereby said second pawl can rotate with said ratchet wheel,
(*p*) a stop that is adjacent said ratchet wheel and that is adapted to normally hold said second pawl in a predetermined position adjacent said ratchet wheel,
(*q*) a second stop that is adjacent said ratchet wheel and that is spaced from the first said stop and that is adapted to intercept said second pawl when said second pawl rotates with said ratchet wheel and to thereby halt rotation of said ratchet wheel,
(*r*) a third stop that is spaced from the first said stop a distance different than the spacing between the first said stop and said second stop,
(*s*) said third stop being adapted to intercept said second pawl when said second pawl rotates with said ratchet wheel and to thereby halt rotation of said ratchet wheel,
(*t*) a mechanism that can selectively restore said ratchet wheel to its normal position,
(*u*) and a price-setting member that is movable with said ratchet wheel to permit initiation of a cycle of operation of a controlled device with which said coin-handling device is used,
(*v*) the first said stop being adjustable to provide a number of initial positions in which said second pawl can be held and can thereby provide a number of individually different advancements for said second pawl,
(*w*) said price-setting member being a plate that can be set in different positions relative to said ratchet wheel and can thereby vary the number of advancements of said ratchet wheel required to permit initiation of said cycle of operation of said controlled device,
(*x*) said second stop being on said second lever and normally being spaced out of the path of movement of said second pawl but moving into said path of movement of said second pawl when a coin engages and moves said coin-receiving portion of said actuator of said second lever,
(*y*) said third stop being on said transfer plate,
(*z*) said price-setting member and the first said stop providing a multiplicity of possible price-advancement combinations for said coin-handling device,
(*aa*) said pawls being disposed at opposite sides of said ratchet wheel.

3,155,214
COIN SELECTING APPARATUS
Merral P. Haverstick, St. Louis, Mo., assignor of one-half to The Vendo Company, Kansas City, Mo., and one-half to Coin Acceptors, Inc., St. Louis, Mo., both corporations of Missouri
Filed Feb. 6, 1961, Ser. No. 87,308
6 Claims. (Cl. 194—102)



2. In coin selecting apparatus provided with structure defining an upright coin receiving pathway and a coin testing pathway extending laterally therefrom, the combination of:
(*a*) a coint test component adapted to be pivotally disposed substantially at the zone of juncture of said pathways for receiving and supporting a coin thereon of a selected denomination, said component being rotatable under the weight of a coin on said component, through an arc sufficient to effect diversion of the coin or disc is of less than acceptable diameter, ponent being constructed to pass therethrough coins of other denominations having substantially smaller diameters than coins of said selected denomination; and
(*b*) undersize coin check means engageable with said component after the latter has swung a limited distance under the weight of a coin or disc thereon for preventing further rotation of the cradle through an arc to permit diversion of the coin or disc supported by the component, into the coin testing pathway if the coin or disc is of less than acceptable diameter, said check means being provided with coin or disc operated structure thereon for shifting the check means to a position clearing the component for rotation substantially through said arc, said structure being positioned to be engaged by a coin or disc on the component to effect movement of the latter to said position thereof only by a coin or disc supported by the component of a diameter at least as great as the diameter of a coin of said selected denomination.

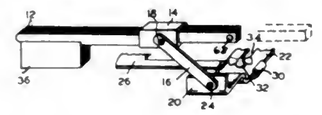
3,155,215
EMBOSSING TOOL WITH RADIAL TAPE FEED PATH
Ray S. Avery, Bradbury, Calif., assignor to Avery Products Corporation, a corporation of California
Filed Jan. 30, 1963, Ser. No. 255,033
8 Claims. (Cl. 197—6.7)



6. In a manual tool for embossing a continuous strip of material, body structure defining a clear path for the strip, two apposed rotatable die discs with axially facing die elements thereon rotatively tied together for selection of any one of a set of pairs of corresponding dies carried on the discs and for positioning the selected pair of dies on opposite sides of the strip of material at a strip forming station, means for guiding said strip of material for outfeeding from said forming station in a radial outfeed direction such that the edges of the outfeeding strip are parallel to and on opposite sides of an imaginary plane containing the axes of the die discs, intermittent drive means for advancing said strip of material, actuator means for actuating the pair of dies which are positioned at the strip forming station, said actuator means including means for actuating the intermittent drive means between embossing operations to advance said strip a sufficient distance radially outwardly of said forming station so that the just-formed portion of said strip becomes visible beyond the periphery of said die discs.

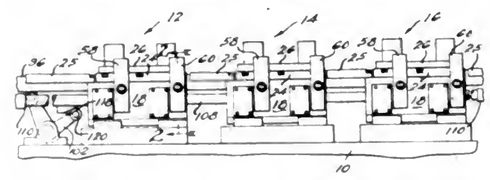
3,155,216
TYPE-EFFACING DEVICE
Calvin C. Talmage, R.F.D. Box 565, Neptune, N.J.
Filed Mar. 26, 1962, Ser. No. 182,321
1 Claim. (Cl. 197—181)

A type effacing device for attachment to a typewriter or the like comprising
a plurality of substantially rigid strip holders provided each with a strip of thin flexible material secured to one end thereof and dependent therefrom,
each of the flexible strips provided with a type effacing coating upon one of its surfaces,
a clamp adapted to receive the free ends of the holders,
a spring-actuated pressure plate disposed within the clamp to secure the holders in fixed parallel relationship to each other with the coated surfaces of the flexible strips disposed parallel to each other and facing in the same direction,



a stabilizer plate secured to one side of the typewriter,
a guide plate slidably mounted in the stabilizer plate, and
a bar arm pivotally connecting the clamp with the guide plate,
whereby the type effacing strips are shiftable as a unit into and out of the line of type impact against the platen and laterally with respect to the platen.

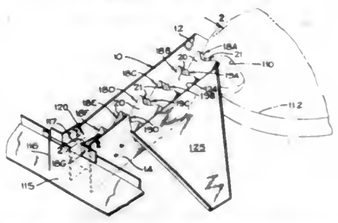
3,155,217
TRANSFER MACHINE
Ralph E. Cross, Grosse Pointe Shores, Mich., assignor to The Cross Company, Fraser, Mich., a corporation of Michigan
Filed Dec. 21, 1961, Ser. No. 161,200
17 Claims. (Cl. 198—19)



1. A machine tool having spaced in-line stations and ways extending through said stations, locators in each station engageable with a work carrying pallet in said station to position the same accurately therein, pivoted clamps in said stations engageable with said pallets to hold the same securely in the located position, clamp operating devices beside said clamps including spring actuated cam slides, and plungers actuated by said slides and bearing on said clamps to engage the same with said pallets, a transfer device including a vertically and horizontally movable transfer bar extending through said stations engageable with said pallets and operable to move the same from station to station on said ways, spaced bell cranks each arranged with one arm supporting said transfer bar and having cam followers on the other of said arms, a cross shaft journaled for rotation in each station, rack and pinion means connecting the cross shaft in each station with the locators in said station, means including eccentric pins in the ends of each cross shaft extending into elongate recesses in said cam slides and operative by rotation of said cross shaft to actuate said cam slides, said recesses being substantially wider than said pins to provide lost motion connections between said pins and said cam slides and being angularly disposed to actuate said cam slides in predetermined sequential relation with respect to said locators, and a reciprocable actuator rod extending through said stations having rotary driving connections with the cross shafts in said stations and cams engageable with the cam followers of said bell cranks to actuate the same to raise or lower said transfer bar, the arrangement being such that actuation of the rod in one direction sequentially engages said locators and releases said cam slides to engage said clamps with said pallets and also lowers said transfer bar to release said pallets and whereby actuation of said rod in the opposite

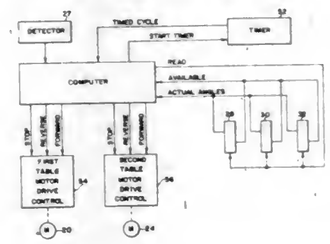
direction sequentially disengages said locators and moves said cam slides to disengage the same from said plungers whereby to release said clamps from said pallets and also operable to raise said transfer device to engage said pallets.

3,155,218
ARTICLE FEEDING MECHANISM
Sherman H. Creed, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,012
8 Claims. (Cl. 198—30)



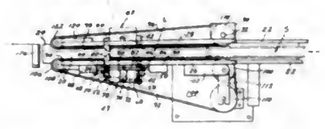
1. In an article feed mechanism of the shuffle feed type comprising a plurality of spaced pusher members mounted between a pair of side walls of a chute for reciprocating movement relative to a plurality of stationary article-storing flights to advance articles step-by-step in a single file from one article-storing flight to the next, an opening in one of said side walls adjacent the path of movement of at least one of said reciprocating pusher members, and means on said one pusher member for urging articles adjacent such file laterally as they are advanced longitudinally of said chute.

3,155,219
POSITION CONTROL APPARATUS
John D. Sterrett, Jr., Penn Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 19, 1963, Ser. No. 259,590
6 Claims. (Cl. 198—33)



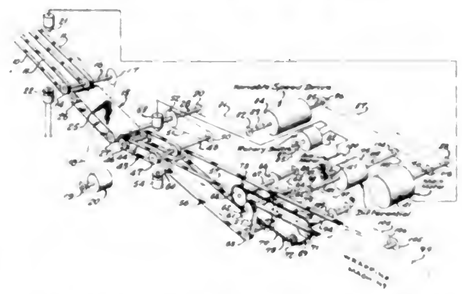
1. Position control apparatus for a moving workpiece having first and second portions and including first position sensing means operative with the workpiece to provide a plurality of first control signals in accordance with the movement positions of the first portion of the workpiece, second position sensing means operative with the workpiece to provide a plurality of second control signals in accordance with the movement positions of the second portion of the workpiece, signal comparison means sequentially responsive to the first control signals and the second control signals for sensing the turn movement of the workpiece relative to a predetermined position, and workpiece movement control means operative with the signal comparison means for controlling the movement of the workpiece into said predetermined position.

3,155,220
INTERMITTENT BOOK FEED MECHANISM
James H. Thorp, Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Sept. 23, 1960, Ser. No. 58,029
8 Claims. (Cl. 198—34)



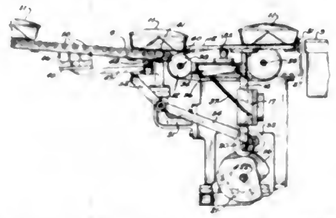
1. In a device adapted to receive books in succession from a continuous feed conveyor and to discharge the books one at a time and at regular intervals; the combination of means defining an elongated channel having a discharge end and an inlet end for successively receiving books in longitudinal alignment from a continuous feed conveyor, stop means movable into said channel to engage a lead book therein and hold the same in a feed position against the urging of the books therebehind, an endless conveyor belt having one pass disposed longitudinally in said channel adjacent said feed position but out of feeding engagement with a book thereat, a drive pulley operatively engaged with said conveyor belt adjacent said inlet end of said channel and providing for movement of said one pass thereof toward the discharge end of said channel, a support pulley operatively engaged with said conveyor belt adjacent the discharge end of said channel and movable transversely to swing said one pass angularly into feeding engagement with a lead book at said feed position and to transport the book toward the discharge end of the channel, and operating means for moving said stop means and said belt support pulley alternately whereby to first hold and then discharge successive lead books from the channel.

3,155,221
METERING APPARATUS
Arthur J. Griner, Westfield, N.J., assignor to National Biscuit Company, a corporation of New Jersey
Filed Nov. 6, 1961, Ser. No. 150,225
11 Claims. (Cl. 198—34)



1. An apparatus for receiving closely spaced articles from an infeed conveyer belt, said apparatus comprising in combination at least one spacing belt operating at a slightly greater linear speed than said infeed conveyer belt for receiving and expanding the spacing between said closely spaced articles, an electric eye station associated therewith to detect the spacing between articles on said spacing belt, a flight conveyer having article engaging flights mounted at equidistantly spaced points thereon to sequentially receive said articles, a connecting conveyer positioned between said spacing belt and said flight conveyer for conveying said articles therebetween, a common drive for said connecting conveyer and said flight conveyer, and said electric eye being operatively connected to said flight conveyer for increasing or decreasing the linear speed of said flight conveyer, whereby the flights thereon will be synchronized with the spacing of articles on said connecting conveyer.

3,155,222
PACKAGE CONVEYORS WITH PACKAGE TIMER ESCAPEMENT MECHANISM
William F. Stremke, Jr., 3329 S. Springfield Ave., Milwaukee, Wis.
Filed Apr. 27, 1962, Ser. No. 190,606
4 Claims. (Cl. 198—34)



1. Package conveying apparatus comprising an input conveyor on which packages arrive in random order and an output conveyor by which packages are discharged at spaced intervals, characterized by package transfer escapement means intermediate said input and output conveyors for transferring packages from the input to the output conveyor in timed relation to the output conveyor, said escapement means comprising:

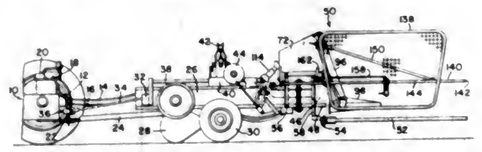
(*a*) a continuously running transfer conveyor intermediate said input and output conveyors,

(*b*) a package elevator for lifting packages off said transfer conveyor,

(*c*) said elevator having a stop proximate said input conveyor providing an abutment against which oncoming packages are held against movement onto said transfer conveyor while said elevator is elevated and which releases said packages when the elevator is retracted, and

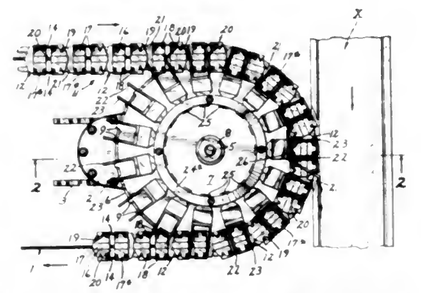
(*d*) a fixed stop proximate said output conveyor to which the transfer conveyor advances packages for abutment thereagainst and above which the elevator lifts said packages when it is fully elevated.

3,155,223
BALE THROWER
Harold E. de Buhr, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,901
7 Claims. (Cl. 198—128)



1. For a baler having a fore-and-aft bale case terminating at a rear outlet including a floor over which bales are successively discharged rearwardly: bale-handling mechanism, comprising: a support disposed above the bale case and having a rear portion above and adjacent to the bale case outlet; pivot means connecting the support to the bale case on a fore-and-aft axis above the bale case for rocking of said support from side to side, said rear portion including an upper pivot on a transverse axis at a level above the bale case outlet; bale-throwing means carried by and depending from said upper pivot for swinging rearwardly and upwardly away from the outlet for throwing a discharged bale rearwardly remote from the baler and returnable downwardly and forwardly back to said outlet to receive another bale and including a receiver element generally at the level of the bale case floor and normally alined fore and aft with the bale case outlet to receive a bale therefrom, said element being swingable laterally from side to side as the support rocks about said axis and said element having a width in excess of the bale case outlet so as to retain register with said outlet despite said lateral swinging; operating means connected between the support and the baler for selectively holding and rocking said frame; and guard means including a pair of laterally spaced members secured respectively to opposite sides of the support and extending rearwardly therefrom alongside the bale-throwing means in protective relation thereto during swinging thereof about said upper pivot.

3,155,224
TRAY MEANS FOR EGG CONVEYORS
Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota
Filed Sept. 17, 1963, Ser. No. 309,428
4 Claims. (Cl. 198—131)



1. Egg collection trays for use on a conveyor belt and adapted to be secured thereto in end-to-end relationship, each of said trays comprising:

(*a*) a base having means associated therewith for securing same to a conveyor belt,

(*b*) and a cradle above the level of and carried by said base,

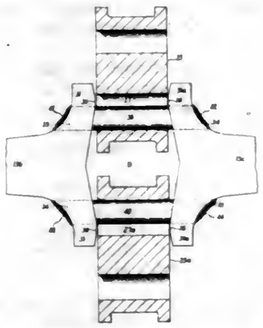
(*c*) said cradle comprising a floor and laterally spaced longitudinally extended barrier means,

(*d*) said cradle being formed to define a notch which opens upwardly through said floor and upwardly and outwardly through one of said barrier means, whereby to permit insertion of a lifting finger laterally through said one of said barrier means and upwardly through said floor and said one of said barrier means.

3,155,225
LATERAL PLATE PUSHER-TYPE CONVEYOR
Claude B. Krekeler, Cincinnati, Ohio, assignor to The Cincinnati Mine Machinery Co., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 19, 1962, Ser. No. 238,402
11 Claims. (Cl. 198—171)

1. A conveying chain for mining machines or like uses and of a type having laterally extending flights at intervals for pushing a material to be conveyed along a platform, said chain comprising successive sections made up of blocks, and plates lapping end portions of said blocks, said end portions of said blocks having transverse per-

forations, pintles passing through said perforations in said blocks and attached to said plates, each of said sections having at each end a terminal block, end portions of said terminal blocks having transverse perforations, and flight elements each having an elongated body extending laterally of the chain and a plate element formed on the end of each such body, the plate elements of opposite flights being held together by pintles passing through one of said perforations in the terminal blocks of successive sections, the last mentioned ones of said

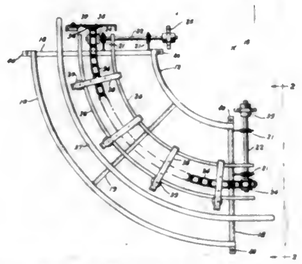


perforations being elongated in the direction of the chain axis, whereby the last mentioned pintles are capable of tilting within the last mentioned ones of said perforations, the plate elements of the said flights being located sufficiently close together to minimize lateral lost motion between the said plate elements and the said terminal blocks, the said plate elements of the said flights having a relief with planar surfaces extending at least to the outer portions of the pintles by which the said flight elements are held together to permit a tilting of the said terminal blocks with respect thereto.

3,155,226
BALE CONVEYOR

Aaron P. Beiler, Gap, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Oct. 31, 1962, Ser. No. 234,431
2 Claims. (Cl. 198—182)

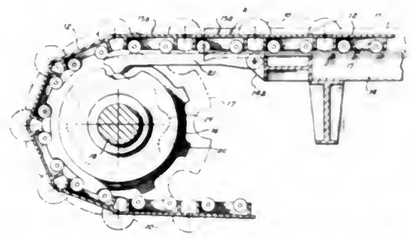


1. In combination with a mow conveyor for bales of hay or the like having sides and means to feed bales in a predetermined direction between said sides, a device for feeding bales of hay or the like onto said mow conveyor from a direction substantially perpendicular to the direction of feed of said mow conveyor, said device comprising a frame having elongated parallel side rails spaced apart the width of said mow conveyor and interconnected at the respective ends thereof by end members, said side rails being curved in a ninety degree arc between said end members, a pair of arcuate guide rails disposed between said side rails and having their respective ends mounted on said end frame members, said guide rails being parallel with said side rails and spaced from the side rails and from each other, a first shaft having a sprocket mounted thereon, a second shaft having a sprocket mounted thereon, means mounting said first shaft on one of said end members for rotation about its own axis and with its sprocket disposed substantially midway between said guide rails, means mounting said second shaft on the other of said end members for rotation about its own axis and with its sprocket disposed substantially midway between said guide rails, an endless detachable link chain entrained around said sprockets and extending therebetween in an upper feed run and a lower return run, a plurality of bale supporting bars carried by said chain and spaced along the length thereof, said bars extending generally perpendicular to said chain and said guide rails and being greater in length than the shortest distance between said guide rails, means at each end of each of said bale supporting bars engageable with the respective guide rails to guide said chain in a ninety degree arcuate path parallel to and disposed between said guide rails as said chain moves said bars along said feed run in travelling from one of said sprockets to the other, means on said frame for selectively attaching the frame to said mow conveyor with either end portion of said frame side rails overlying the sides of the mow conveyor and extending parallel thereto and the other end portion of said frame side rails extending perpendicularly to one or the other sides of the mow conveyor, and means connecting the shaft at the end of said frame overlying said mow conveyor to the mow conveyor feed means to be driven thereby, whereby said frame may be selectively mounted on said mow conveyor to receive bales delivered perpendicular to the mow conveyor from either side thereof and turn and deliver said bales onto said mow conveyor in the direction of feed of the mow conveyor.

3,155,227
STABILIZING MEANS FOR ENDLESS CONVEYORS

Joseph P. Wesson, Bury St. Edmund's, England, assignor to Dominion Malting (Ontario) Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Oct. 18, 1961, Ser. No. 145,813
Claims priority, application Great Britain, Oct. 19, 1960, 35,849/60
2 Claims. (Cl. 198—195)



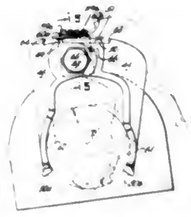
1. An endless conveyor comprising: a load carrying base having substantially contiguous horizontally arranged and interlinked plates, a sprocket for driving said base, stablizing means including supporting means intermediate the ends of the conveyor plates for supporting the load carrying base substantially throughout the length of the conveyor as to maintain said plates in horizontal planar arrangement, and operative means extending between a terminal end of said supporting means and the driving sprocket of the conveyor for maintaining substantially horizontal planar and contiguous relationship of the plates up to the point of travel where each plate is displaced from normal horizontal load supporting position caused

by its travel around the sprocket, said operative means comprising an arm, pivotally mounted at one end adjacent to said terminal end of said conveyor supporting means and extending toward said sprocket, a cam carried on the sprocket drive shaft engageable by the opposite and free end of said arm, said arm having said opposite free end located to engage said cam and being movable thereby to support said plates.

3,155,228
ADJUSTABLE BOTTLE GRIPPERS

James C. Norwood, Stewart Manor, N.Y., assignor to Volckening, Inc., Brooklyn, N.Y., a corporation of New York

Filed Sept. 13, 1963, Ser. No. 308,844
10 Claims. (Cl. 198—210)



1. A container holder for a filling machine having a turntable, comprising a post secured to said turntable and extending upwardly perpendicularly from said turntable and having a vertical axis, a pair of arms, each of said arms having an aperture therein, means being received in said arm apertures for rotatably mounting said arms to said post with respective ends of said arms overlapped and overlying said post so as to be turnable about said axes, said arms extending longitudinally and then laterally from said post over said turntable to form a pocket for receiving a container therebetween, said arms having respective cam portions projecting rearwardly of said post outwardly from said axes, a flexible and resilient blade extending vertically and located behind said post, means connecting said blade to said post below the level of said arms, said arms having a normal spacing in which said cam portions bear against said blade, said cam portions positioned and adapted, upon the turning of said arms to increase the spacing therebetween beyond normal spacing and resulting rearward movement of said cam portions, to flex said blade rearwardly, said blade thereby serving as a spring to resist such turning of said arms.

3,155,229
DRAWING MANDREL

Rudolf Bruno Josef Lackinger, Avesta, Sweden, assignor to Avesta Jernverks Aktiebolag, Avesta, Sweden

Filed June 4, 1962, Ser. No. 199,714
Claims priority, application Sweden, June 30, 1961, 6,838/61
4 Claims. (Cl. 205—7)

1. An apparatus for the cold reduction of the diameter of metal tube in a drawing bench which comprises in combination:

(*a*) a reducing die through which the tubing is adapted to be drawn,

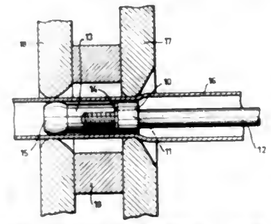
(*b*) a pull rod,

(*c*) a mandrel of hard metal secured near the end of said pull rod, said hard metal having high abrasion resistance and relatively low resistance to impact stresses,

(*d*) said mandrel of hard metal being positioned within the region of said reducing die,

(*e*) a trailing guide extension on said hard metal mandrel that is further out with respect to the end of said pull rod,

(*f*) said trailing guide extension being made of a steel



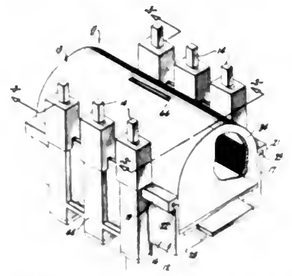
which is less resistant to abrasive forces but more resistant to impact stresses than the hard metal of said mandrel, and

(*g*) an external guide for the tube positioned in the region around said guide extension.

3,155,230
CONTAINER WITH PUSH BUTTON COMBINATION LOCKING MECHANISM

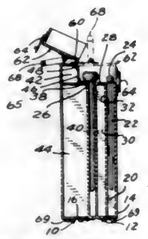
Philip Nemsky, San Francisco, Calif. (211 S. Iron St., Deming, N. Mex.)

Filed May 20, 1963, Ser. No. 281,435
6 Claims. (Cl. 206—1.5)



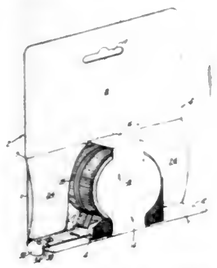
1. A merchandising container comprising a substantially rectangular base housing having an open top and an open end, a display compartment disposed within the open top of said housing and longitudinally slideable relative thereto, said compartment having notched lateral projections along its opposite side walls slideably received in longitudinally extending grooves in the side walls of said housing, and a plurality of plungers reciprocably mounted within said housing adjacent the opposite sides thereof and respectively extending through the notches in said lateral projections of said compartment, said plungers being depressible from extended positions wherein the upper ends thereof are extended from said housing and define push buttons to retracted positions wherein the push buttons are substantially retracted within said housing, a first plurality of said plungers having grooves registrable with said grooves in the side walls of said housing when said plungers are in their retracted positions, the remaining plurality of said plungers having grooves registrable with said grooves in the side walls of said housing when said plungers are in their extended positions, whereby upon depression of said first plurality of plungers to their retracted positions while the remaining plurality of plungers are in their extended positions, the grooves of all plungers are in registry with the grooves in the side walls of said housing and longitudinal sliding of said compartment from said housing is unobstructed.

3,155,231
MALLET CASE AND RACK
Robert Vinas, 2020 Arthur Ave., New York, N.Y.
Filed Apr. 10, 1963, Ser. No. 271,932
5 Claims. (Cl. 206—13)



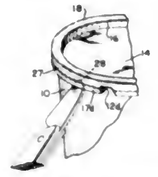
1. A combination carrying case and rack for mallets and other percussion instruments, comprising a pair of generally hollow casing sections pivotally connected to one another, said pair of sections each supporting a plurality of mallets by means of openings which receive mallet handles while the mallet heads extend without said sections, a third casing section pivotally supported to one of said pair of sections, a cover section movably mounted on said third casing section, said pair of hollow casing sections and said third casing section being pivotal to a closed position wherein they are arranged adjacent to one another, said cover section having a closed position such that it extends over the said pair of casing sections to house and conceal the mallet heads extending without said pair of casing sections and an open position which exposes said mallet heads so that they may be selectively withdrawn thereby serving as a carrying case when said cover section is in said closed position and as a dispensing rack when said cover section is in said open position.

3,155,232
DISPLAY PACKAGE AND BLANK FOR MAKING SAME
Salvatore J. Leone, Wallingford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 27, 1962, Ser. No. 219,520
4 Claims. (Cl. 206—45.14)



1. A display package for coilable rules and like articles comprising a front wall and a back wall of sheet material secured together at two longitudinally spaced positions, the front wall having two transversely spaced portions which are severed longitudinally to provide a central connecting web and side webs on opposite sides of the central web, said back wall and side webs being provided with a fold line spaced from one end and being foldable to provide a shelf to space the central web from the back wall of the package to form an open-ended enclosure for receiving an article to be displayed, said side webs being free from said back wall and being so constructed and arranged to be bowed outwardly from the back wall to form abutments for retaining the article received in said enclosure against lateral movement when folded to provide the shelf.

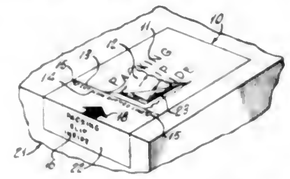
3,155,233
DISCARDABLE OR REUSABLE PLASTIC PACKAGE
Earl S. Tupper, Esmond, R.I., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Original applications Nov. 10, 1954, Ser. No. 467,992, now Patent No. 2,901,098, dated Aug. 25, 1959, and June 23, 1959, Ser. No. 822,325, now Patent No. 3,044,610, dated July 17, 1962. Divided and this application Mar. 16, 1962, Ser. No. 186,573
3 Claims. (Cl. 206—46)



1. In a self retaining and pressure-sensive, hermetically sealed and deformable container with contents sealed therein and adapted for selective discarding or reusability as a frictionally sealable container and cover after severance for removal of enclosed contents, the combination comprising a container and cover both being of thin gauge, pressure-sensitive and deformable material, the container having a bottom and side wall terminating in a rigidifying outwardly disposed peripheral rim flange having horizontal portions and depending skirt portions, a cover having a central wall, an upwardly extending side wall and a rigidifying outwardly disposed peripheral side wall rim flange having horizontal portions and depending skirt portions, the side wall portion of the container adjacent the flange thereof being operative for frictional telescopic and hermetical engagement with the cover side wall, the cover flange and the container flange being in abutting engagement with the abutting faces of the skirt portions providing a slot between the free edges thereof, fusion means between the abutting faces of said flange skirt portions and spaced from said free edges, said flange skirt portions of the cover and container flanges being severable by cutting means placed between said free edges of the skirt portions to sever said fusion means whereby the package may also serve selectively as a container and separate frictionally engageable cover therefor for reuse or as a separated package to be discarded.

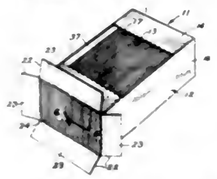
3,155,234
SHIPPING DOCUMENT JACKET WITH PROTECTIVE IDENTIFICATION COVER
David Knoll, 220—09 75th Ave., Bayside 64, N.Y., and Hyman Rosenzweig, 2350 Valentine Ave., Bronx, N.Y.
Filed June 7, 1962, Ser. No. 200,761
1 Claim. (Cl. 206—47)

The combination with a shipping container having merchandise packed therein of a shipping document carrying means secured to the outer surface thereof, said carrying means comprising an envelope enclosing said shipping document, including an opening, a protective sheet secured to the back side of said enevolpe by an adhesive carried on one surface of said protective sheet, said adhesive coated protective sheet being substantially larger than said envelope and extending beyond the periphery thereof and said extending portions being secured to a surface of said container, and the other surface of said protective sheet carrying prominent identifying indicia, including a mark extending transversely of the sheet and defining the preferred position for cutting said sheet to gain access to said envelope and a second mark



in spaced relationship to the first said mark and defining an end portion of said protective sheet, the last said mark being preferably disposed at one edge of said container with said end portion secured to a second surface of said container adjoining the first said surface.

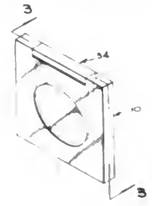
3,155,235
DISPENSERS
John Maich, 125 42nd Ave., San Mateo, Calif.
Filed May 17, 1962, Ser. No. 195,509
11 Claims. (Cl. 206—57)



5. A dispenser for holding a stack of sheets in a fixed position in the dispenser and permitting any selected number of sheets to be removed from the stack while the remainder of the sheets in the stack are retained in said fixed position and comprising, a carton for containing the stack of sheets and having top, bottom, side and end panels, means forming an opening in one of the top, bottom and end panels for removing sheets from the carton, and a stack of sheets disposed within the carton, each sheet having side edges attached to the inside surfaces of the end panels for holding the sheet in fixed position in the carton and having a series of perforations closely adjacent to and substantially uniformly spaced from each edge attached to an end panel for permitting ready detachment of the sheet from the carton, said sheets being interfolded in the stack and attached at a trailing edge to a leading edge of the next adjacent sheet to provide sequential feeding of each sheet from the stack in response to movement of the immediately preceding sheet away from the stack, and each tissue having a leading tab formed with side edges which are offset from the side edges attached to the carton end panels so as to be free of attachment to the carton and movable through the opening on removal of the preceding sheet to a position in which the edges of said opening engage the tab to retain the tab outside of the carton after the preceding sheet has been detached.

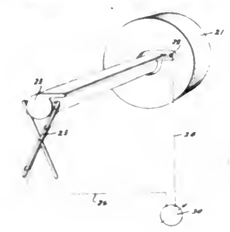
3,155,236
COMBINED COIN HOLDER AND EXHIBITOR
Billy A. Reno, 1631 Hulzenga St., Muskegon, Mich.
Filed Feb. 15, 1963, Ser. No. 258,714
2 Claims. (Cl. 206—.82)

1. A coin holder comprising a body formed in one edge thereof with an inwardly-extending coin-receiving slot, said slot being spaced from opposed sides of the body, said slot having a concave arcuate inner end, and a coin-retaining slide frictionally engaged in said slot, said slide having a concave arcuate inner end for engaging and retaining a coin in the slot against the arcuate inner end of the slot, said one edge of the body being formed with a longitudinal notch, said notch being longer than the width of the slot, said slide comprising a tongue of the cross section of the slot, a bar on the outer end of the tongue



seated in the notch, said bar being of substantially the length of the notch, wider than the tongue and of less height than the depth of the slot, said bar having an outer surface adapted to be flush with the surface of said one side of the block while retaining an uncirculated coin in the coin slot and adapted to be depressed below said surface for retaining a circulated coin in the slot.

3,155,237
ARRANGEMENT FOR MEASURING THE TEMPERATURE OF AN EXTRUSION DURING THE MANUFACTURE THEREOF
Gerhard Mai, Meinerzhagen, Westphalia, Germany, assignor to Otto Fuchs Kommandit-Gesellschaft, Meinerzhagen, Westphalia, Germany
Continuation of application Ser. No. 862,217, Dec. 28, 1959. This application Nov. 12, 1963, Ser. No. 325,200
Claims priority, application Germany, Dec. 27, 1958, F 27,377; Nov. 23, 1959, F 29,903
8 Claims. (Cl. 207—16)



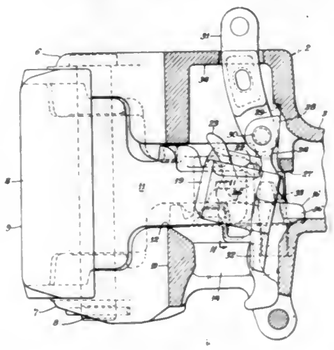
1. An arrangement for determining the temperature of an extrusion during the manufacturer thereof, comprising, in combination, extrusion means for extruding a given electrically conductive extrusion material, said extrusion means including an extrusion die having an outlet end from which the extruded material issues; a first thermocouple element, having thermoelectric properties different from that of the extrusion material, supported by said extrusion means closely adjacent to the extrusion material adjacent said outlet end of said die at a predetermined region of the latter and said first thermocouple element extending away from said extrusion means; an electrical conductor engaging and having substantially the same thermoelectric propertics as the extrusion material; and means connected electrically with said conductor and said first thermocouple element for indicating the temperature of a point on the extrusion material at the region where said first thermocouple element terminates adjacent to said extrusion material, whereby the extrusion material itself forms the second thermocouple element.

3,155,238
WATER SKI RACK DEVICE
Wallace R. Bennett, P.O. Box 664, Steilacoom, Wash.
Filed Sept. 21, 1962, Ser. No. 225,178
5 Claims. (Cl. 211—60)



1. A ski-carrying support comprising a single piece of rod-like relatively rigid material formed to define a series of evenly spaced rigid generally U-shaped coplanar loops connected by integral arcuate joining rod portions with the sides of the loops spaced from the sides of adjacent loops, said pieces of material having substantially parallel ends coplanar with the loops, and respective suction cups axially secured to said ends and adapted to engage a supporting surface for detachably securing the support to the supporting surface in upstanding relation thereto.

3,155,239
TOP OPERATED RAILWAY COUPLER
Norman H. Sudeck, Alliance, Ohio, assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Aug. 30, 1962, Ser. No. 220,482
6 Claims. (Cl. 213—145)



6. In a top operated railway coupler, a head having a top opening; a knuckle pivotally mounted on said head, said knuckle having a tail, a knuckle thrower pivotally mounted in a horizontal plane in said head and having a leg engageable with the tail on said knuckle to move the knuckle to open position, a lock lifter fulcrum member having a hook shaped lock supporting arm, means to move said member upwardly through said opening, abutment means on said head engageable by said arm during upward movement of said member to cause the lower end of said member to move rearwardly to engage and pivot said knuckle thrower in a direction to move said knuckle to open position, a lock pivotally connected to said arm and pivoted rearwardly by gravity when said member is moved upwardly, a top lifter pivotally connected to the upper end of said member, a lockset ledge on said head, a lock leg on said lock to engage said ledge when the lock is raised to its lockset position, and means on said knuckle to move said lock leg out of engagement with said ledge responsive to movement of the knuckle to its closed position.

3,155,240
REMOTE MANIPULATION APPARATUS
Jean-Claude Eude, Argenteuil, Claude Piron, Nantes, Jean Savouyaud, Orsay, and Jean Vertut, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Feb. 6, 1961, Ser. No. 87,269
Claims priority, application France, Feb. 16, 1960, 818,564; May 16, 1960, 827,297; Aug. 19, 1960, 836,225
1 Claim. (Cl. 214—1)

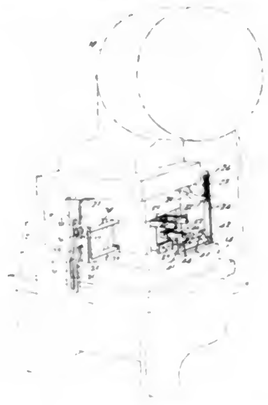


Remote manipulation apparatus having a manipulation head, the head comprising an arm, a forearm and a pincer, and constructed and arranged for unlimited rotation of the arm, for elbow movement of the forearm with respect to the arm, for unlimited movement of the pincer and for closure of the pincer, kinematic linkages transmitting these movements to the head, the linkages comprising gearing and flexible driving shafts, four external motor members driving said linkages, one motor for each movement and the motors being mounted upon the head at maximum distance from the pincer, the improvement comprising speed reducers in each of the linkages adjacent the output end of the linkage reducing motor speed to the controlled speed of the movement.

3,155,241
WORK TRANSFER MECHANISM FOR PUNCH PRESSES
Hugh M. Suofy, 1100 Brooklawn, Birmingham, Mich.
Filed July 18, 1962, Ser. No. 210,734
5 Claims. (Cl. 214—1)

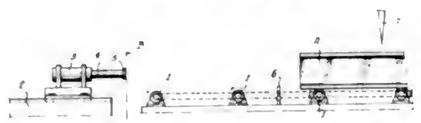
1. A work transfer mechanism for use with a press having a movable part, said work transfer mechanism comprising, a reciprocably mounted carrier, workpiece supporting means mounted on said carrier for vertical movement thereon to raise and lower the workpieces, a link having a slot engaged by a pin on the movable part of the press, said pin being adapted to actuate said link upon engagement with each end of said slot, a first rock shaft, crank arms on said first rock shaft pivotally connected to said link and to said carrier to reciprocate the carrier upon movement of said first rock shaft, a member having a cam slot therein connected to the movable part of the press for movement therewith, a second rock shaft, a crank arm on said second rock shaft having a cam follower engaging said cam slot to rotate said rock shaft, a second crank arm on said second rock shaft operatively

engaging said workpiece supporting means to raise and lower the same, said cam slot having dwell portions engageable by the cam follower at each end of its move-



ment, whereby the raising and lowering of the workpiece supporting means occurs in timed relation to the reciprocation of the carrier.

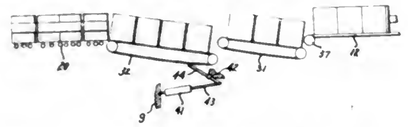
3,155,242
DEVICE FOR THE STOPPING AND ACCURATE POSITIONING OF A MOVING BODY
René Magloire, Paris, France, assignor to Etablissements Ehl-Latic, Chemin des Pompes, Douai (Nord), France, a French society
Filed Apr. 11, 1962, Ser. No. 187,460
Claims priority, application France Apr. 12, 1961
7 Claims. (Cl. 214—1.4)



3. Apparatus for stopping a moving body and then moving the body to a precise location, said apparatus comprising means for driving the moving body in a first direction of movement under the action of a determinable force past the precise location to which it is desired that the body ultimately come to rest, means for contacting the moving body and exerting a force thereon opposing movement of the body to cause the latter to come to a position of rest, the latter means being effective to continue exerting a force on said body to drive the body in a reverse direction against the action of the first said means and the force developed thereby until said body is aligned in said precise location, whereat said body is held in position by said latter means while the first said means continues to apply force to the body.

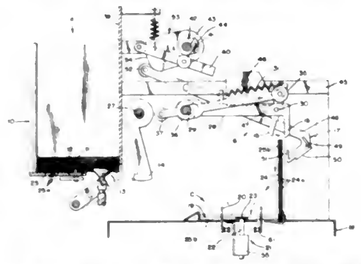
3,155,243
CONCRETE BLOCK CUBING APPARATUS
Michael D. Maramonte, Oak Creek, Wis. (10460 S. 13th St., South Milwaukee, Wis.)
Filed Mar. 19, 1959, Ser. No. 800,535
15 Claims. (Cl. 214—6)

1. A concrete block handling apparatus comprising a series of at least three block transfer means, a first of said means including means for moving blocks as formed in the block molding operation with core holes vertical and a transfer shelf off which the blocks are moved one at a time, the second of said block transfer means being disposed adjacent and below said shelf to receive blocks moved thereoff after they have been turned one quarter turn causing the block core hole to be disposed horizontal, and the third of said block transfer means having a block receiving end thereof disposed adjacent said second transfer means and including means to selectively move



said end either into alignment and substantial level receiving position with the adjacent second transfer means to receive blocks while they are maintained in the same relative position as when on said second transfer means or into a position adjacent and below said second transfer surface a distance effective to result in turning the blocks a second one quarter turn in moving from said second to said third transfer means.

3,155,244
SHEET FEEDING AND MANIPULATING DEVICE AND MISFEED DETECTOR MEANS THEREFOR
Raymond W. Rogers, Brunswick, and Charles P. Spence, Lakewood, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 19, 1962, Ser. No. 224,745
7 Claims. (Cl. 214—8.5)



2. In a device for processing packages of sheets wherein a package is defined as two or more superposed sheets of material, one of which sheets has at least one major dimension, which is greater than the corresponding major dimension of the other sheet or sheets in the package; this dimensional differential being hereinafter referred to as the Δ dimension:

(*a*) a surface having an upstream end and a downstream end adapted to receive said package at a predetermined site at its upstream end,

(*b*) means for transporting said package along said surface from its upstream end toward its downstream end,

(*c*) means for depositing said package at the predetermined site at the upstream end of said surface, oriented with the Δ dimension facing downstream, and

(*d*) detector means at least a portion of which projects upwardly from said surface at a point in said predetermined upstream site which receives the Δ dimension.

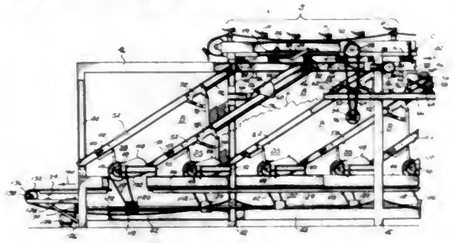
3,155,245
LUMBER ACCUMULATORS
Theodore A. Brandon, 1926 SE. Ash, Portland, Oreg.
Filed Nov. 29, 1960, Ser. No. 72,485
15 Claims. (Cl. 214—16)

1. In a lumber unit accumulator having an expansible storage area for accumulated units; the improvement per-

mitting expansion of said storage area as said storage area fills, said improvement comprising:

(*a*) trolley means reciprocably movable along one side of said storage area;

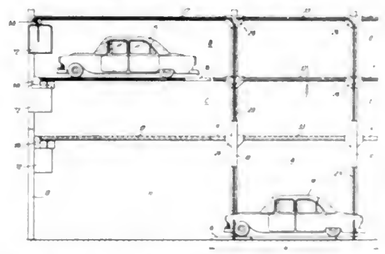
(*b*) gate means pivotally mounted on and carried by said trolley means;



(*c*) lockable latch means constituting part of said gate means and maintaining said gate means in storage area spanning position when locked; and

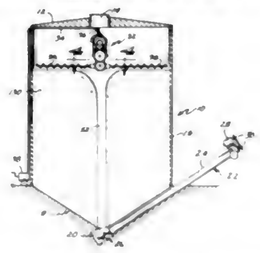
(*d*) gate unlatching means encountered by said latch means at about the lowermost extent of travel thereof.

3,155,246
PARKING EQUIPMENT
Frank J. Baume, P.O. Box 1656, San Francisco, Calif.
Filed July 27, 1962, Ser. No. 212,851
3 Claims. (Cl. 214—16.4)



1. In apparatus of the character described, a structure forming a vertical elevator hatch and at least one stall extending laterally from one side of the hatch at an upper elevation, a platform structure adapted to receive and support a load for storage and movable vertically within the hatch and laterally within the stall, horizontal track means carried along the sides of the stall and forming two pairs of parallel side by side trackways, two pairs of rollers means secured to the sides of the platform structure near the forward and rear ends thereof for engaging said trackways, two pairs of vertical tracks disposed along the sides of the shaft that correspond to said sides of the stall, said roller means being adapted to register with and engage said vertical tracks when the platform structure is shifted from a position within the stall to a position substantially in alignment with the hatch, horizontal track means within the hatch and extending between the vertical tracks at the level of the first named tracks and forming trackways for the forward pair of roller means, motive means for moving the platform structure vertically within the hatch and laterally within the stall, additional roller means carried by the platform structure near the forward end and disposed inwardly of said first named trackways, and adidtional tracking means carried along the sides of the stall and serving to underlie and support said last-named means and said platform structure when said forward roller means passes over the region of the two vertical tracks nearest to said one hatch, said last named tracking means extending parallel to said first-named trackways and adjacent the inner sides of the same.

3,155,247
SELF-CENTERING AUGER APPARATUS
William C. Patterson, Omaha, Nebr., assignor to Nebraska Engineering Company, Omaha, Nebr., a corporation of Nebraska
Filed Aug. 13, 1962, Ser. No. 216,510
5 Claims. (Cl. 214—17)



1. Self-centering auger apparatus for silos comprising:

(*a*) a flexible cable;

(*b*) means suspending said cable within a silo;

(*c*) a U-shaped support member attached to the lower end of said cable;

(*d*) a drive shaft extending between the sides of said support member;

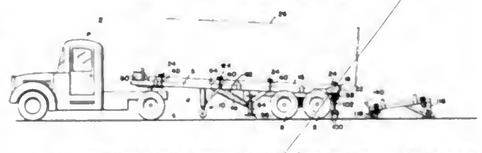
(*e*) a pair of additional U-shaped members pivotally mounted at one end on said shaft to thereby journal said shaft in the sides thereof and projecting in generally opposite directions;

(*f*) a pair of oppositely directed screw members journaled at one end in the ends of said additional U-shaped members;

(*g*) a bevel gear on the adjacent end of each screw member; and

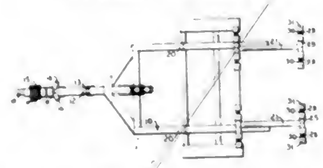
(*h*) a bevel gear on said drive shaft in mesh with said first-mentioned bevel gears for rotating said shafts in the same rotative directions when viewed outwardly from a central point to auger feed radially inwardly or outwardly in accordance with the direction in which said drive shaft is rotated.

3,155,248
VEHICLE-CONTAINER
Harlan T. Haller, Wyckoff, N.J., assignor to Seatrain Lines, Inc., Edgewater, N.J., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,787
10 Claims. (Cl. 214—38)



1. In combination a vehicle having a frame, a pivotal frame adapted to overlie the first-mentioned frame, means pivotally connecting the rear of the pivotal frame to the rear of the first-mentioned frame, a container adapted to overlie the pivotal frame for travelling on the vehicle, a forwardly extending projection member secured to the pivotal frame, means attached to the container having an opening for the reception of said projection member, means to pivot the pivotal frame to upend the container with its lower end clear of the rear of the vehicle and means to elevate and lower the pivotal connecting means whereby the pivotal connecting means is elevated by the fourth mentioned means and the pivotal frame is pivoted by the third mentioned means to position the lower end of the container over a support and the pivotal connecting means is then lowered to first rest the lower end of the container on the support and then lower the projection member clear of the opening of the container, the container having a discharge opening adjacent the thus supported end.

3,155,249
BOAT SUPPORT FOR TRAILERS
Lawrence N. Johnson, % Modern Frame & Rebuild, N. 637 Hamilton, Spokane, Wash.
Filed Nov. 9, 1961, Ser. No. 151,248
2 Claims. (Cl. 214—84)



1. In a boat trailer:

a rigid wheeled supporting frame for connection to a towing vehicle comprising a pair of identical rearwardly protruding longitudinal frame members, the rear portions of said frame members being open and unconnected;

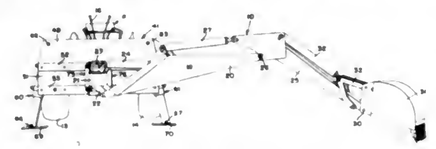
a pair of identical longitudinal members respectively supported on said frame members for independent pivotal rotation about a common transverse axis located adjacent the rear ends of said frame members, said longitudinal members each being pivotally mounted intermediate its ends in identical fashion and each being extended rearwardly of said frame members an identical distance;

a pair of diverging arms mounted respectively at each end of each of said longitudinal members, each pair of said arms being independently rotatable about an axis extending parallel to the longitudinal member on which it is mounted, the outer ends of each pair of said arms terminating in two spaced parallel sections; and

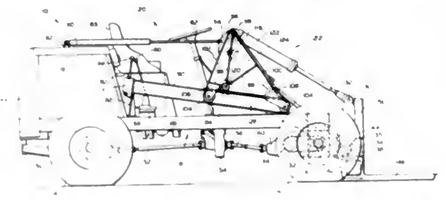
a roller mounted respectively on each side of said parallel sections, each of said rollers being rotatably journalled in spaced pairs on an individual cross-shaft journalled at its midpoint on the parallel section on which it is mounted, said rollers being adapted to contact the hull of the boat being drawn in a forward direction relative to said frame, there being no additional boat contacting elements mounted on said frame intermediate said longitudinal members other said rollers.

3,155,250
EARTH WORKING IMPLEMENT
John L. French, Moline, and Albert J. Van Auwelaer, East Moline, Ill., and Douglas C. Ager, Muscatine, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 10, 1958, Ser. No. 760,266
23 Claims. (Cl. 214—138)

7. In a combination of implement and vertically disposed supporting stand adaptable for connection to a vehicle in which the implement includes a boom swingable angularly about one end and has earth working equipment at the opposite end, the improvement residing in: transverse structure on the stand facing the implement; structure mounted on and adjacent said one end of the boom, said latter structure being engageable with the transverse structure on the stand so as to permit positioning of the boom in any of a plurality of transverse positions on the transverse structure; a supporting structure mounted on the vehicle and including therein elements engageable with the stand; means mounting the stand on the elements, said means being adapted to permit transverse movement of the stand relative to the vehicle.



3,155,251
LIFT TRUCK
William A. Williamson, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 2, 1962, Ser. No. 184,364
15 Claims. (Cl. 214—140)

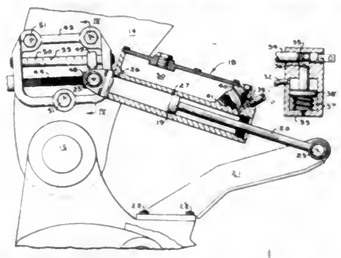


1. An industrial truck having a pair of laterally spaced, longitudinally extending frame members and an operator's station located transversely outwardly of one of said frame members, comprising a longitudinally extending loader mechanism supported from and intermediate said frame members, including upright structure mounted intermediate the ends of the truck, load engaging means supported forwardly of said upright structure and longitudinally extending lift and tilt motor means connecting said load engaging means to said upright structure, said tilt motor means including parallelogram connecting means extending between said load engaging means and said upright structure, and a drive axle connected to drive wheels which are located at the forward ends of said frame members, said drive axle being offset rearwardly of said drive wheels and said frame members having a rearwardly extending opening therebetween at the front end of the truck, whereby actuation of the lift motor means to lower said load engaging means actuates a portion of the loader mechanism downwardly through said rearwardly extending opening and over said drive axle.

3,155,252
ADJUSTABLE VALVE CONTROL MECHANISM FOR TRACTOR MOUNTED LOADERS
Donald R. Muellner, Naperville, and John R. Muntjanoff, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 7, 1963, Ser. No. 286,320
4 Claims. (Cl. 214—140)

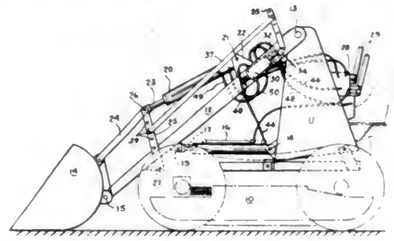
1. In a tractor mounted loader having a bucket supported on lift arms pivoted to the tractor and adapted to be raised by fluid motor means, a control valve for directing fluid to said motor means upon adjustment away from a normal neutral position, means to hold the valve in said position of adjustment and means to release the valve when the bucket attains a predetermined height, said last named means comprising, a master cylinder and piston pivoted between a fixed point on the tractor and a point

on a lift arm whereby movement of the lift arm creates pressure in the master cylinder, a slave cylinder having a



piston operable under pressure to release the control valve, and means for communicating pressure from the master cylinder to the slave cylinder.

3,155,253
CONTROL SYSTEM FOR TRACTOR MOUNTED APPARATUS
John S. Pilch, P.O. Box 140, Ware, Mass.
Continuation of application Ser. No. 30,402, May 16, 1960, which is a continuation of application Ser. No. 570,605, Mar. 9, 1956. This application June 21, 1963, Ser. No. 289,678
6 Claims. (Cl. 214—140)



1. In a device of the character described, a pair of arms adapted to be pivotally connected adjacent one end to a vehicle, a bucket pivotally connected to said arms adjacent the free ends thereof, hydraulic means for raising and lowering said arms and bucket relative to said vehicle, bucket pivoting means including hydraulic means operatively connected to the bucket for pivoting said bucket relative to said arms, means for controlling both of said hydraulic means, a valve member adapted to be automatically actuated whereby said bucket will be automatically pivoted to position its cutting edge in loading position during lowering of said arms at substantially any loading position between dumping position and ground, said valve member being operatively connected to said bucket pivoting means and means operatively connected to said bucket for actuating said valve member such as to cause said bucket to be automatically positioned in proper loading position during the lowering of said arms.

3,155,254
MATERIAL HANDLING LOADER WITH RETAINING ROTOR
Juel R. Reinhart and Gerald L. Reinhart, both of Rte. 2, Crookston, Minn.
Filed Aug. 28, 1963, Ser. No. 305,039
6 Claims. (Cl. 214—144)

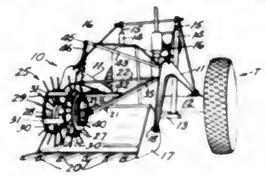
1. A loader for use with a tractor in hauling material from a pile,

comprising a pair of rigid and interconnected booms having rear ends adapted for attachment to the tractor and having front ends,

a loader bucket mounted on the front ends of said booms and having an open front side,

means on said booms and attachable to the tractor for lifting the front ends of the booms,

a loader-engaging the retaining rotor disposed forwardly of said bucket and having a horizontal rotation axis extending transversely of the booms, said rotor having rigid tines projecting transversely outwardly of the rotation axis and having outer ends with open and unobstructed spaces therebetween to

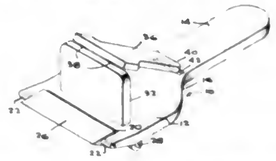


permit said tines to project into the material carried by the bucket.

upwardly movable means on said booms and mounting said rotor for movement upwardly and downwardly with respect to the bucket whereby to permit said rotor to engage the pile and to roll upwardly therealong as the bucket is forced into the pile,

and means connected with said wheel and permitting rotation thereof only in one direction wherein the tines revolve inwardly toward the bucket in their underpassing arc of rotation.

3,155,255
LIFT DOLLY
William C. Daniel, 3338 Paris Drive, Dayton, Ohio
Filed June 29, 1962, Ser. No. 206,293
8 Claims. (Cl. 214—370)



4. A lift and transport dolly, comprising an elongate platform with a wedge-form leading edge, rollers on its underside adjacent said leading edge, a first plate mounted for swinging movement on top of said platform adjacent the position of said rollers, on an axis parallel to said leading edge, and a second plate mounted at the outer edge of said first plate for swinging movement on an axis parallel to said leading edge, said platform having a groove in its upper surface adapted to receive a corner edge of said second plate when said first plate is in a position substantially perpendicular to said platform.

3,155,256
HAND TRUCK
Burton E. Cook, 2106 W. Texas St., Carlsbad, N. Mex.
Filed Mar. 8, 1963, Ser. No. 263,998
3 Claims. (Cl. 214—371)

1. A hand truck adapted for the handling of bulky items and for movement thereof in a manner to prevent sidewise tilting, the truck comprising:

(*a*) an open, elongated frame including a pair of vertically disposed, tubular side members each having an upper end and a lower end and at least one cross member;

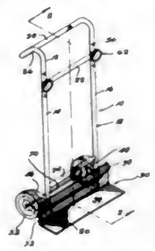
(*b*) a curvilinear extension secured to the upper end of each side member and extending rearwardly of the frame;

(*c*) a handle member located a selected distance rearwardly of the frame and connecting the extensions to one another;

(*d*) load handling means secured to the side members and extending forwardly of the frame and including a back plate having a forward surface and a base plate extending below the frame;

(*e*) a resilient pad on the forward surface of the back member;

(*f*) wheel mount braces extending rearwardly from the frame and secured to the side members adjacent their lower ends;



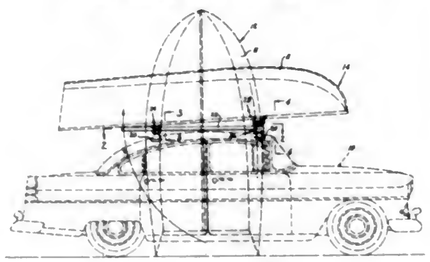
(*g*) ground wheels mounted in the wheel mount braces, the wheels extending rearwardly of the frame the selected distance of the handle and extending below the frame in the plane of the base plate;

(*h*) the frame side members and cross member having apertures formed therein opening toward the forward side of the frame;

(*i*) inserts fixed in the apertures and having threaded bores therein; and

(*j*) a plurality of vacuum cups, included threaded connection screw means, selectively located in the inserts, and operated in response to pressure.

3,155,257
BOAT LOADING DEVICE
Donald H. Showler, 5408 Ben Court, Sacramento 21, Calif.
Filed Apr. 8, 1963, Ser. No. 271,325
10 Claims. (Cl. 214—450)



1. Auxiliary structure adapting a load carrier secured to the top of an automobile, so as to be particularly suitable for loading and carrying a gunwalded boat thereon,

said carrier including a single front and a single rear parallel transverse member, each with horizontally outstanding cantilevered ends,

said auxiliary structure comprising a substantially straight longitudinal bar oriented substantially perpendicular to each of said transverse members and having front and rear portions,

front securing means for detachably securing said front portion of said longitudinal bar to the cantilevered end of said front transverse member,

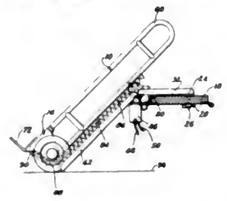
rear securing means for detachably securing said rear portion of said longitudinal bar to a cantilevered end of said rear transverse member,

and an open top vertical axis swivelling guide and support fulcrum means fixedly mounted from above on and through one of said securing means, and of a horizontal dimension only slightly longer than the width of one gunwale,

whereby said fulcrum means can slidably receive one boat gunwale when the latter is in a first position at right angles to the axis of said longitudinal bar, and guide and support the one gunwale when the latter is swivelled about the fulcrum means to a second position parallel to the axis of said longitudinal bar,

and whereby the longitudinal bar can simultaneously support the other gunwale from a similar first position towards a similar second position, thus protecting the automobile top from damage during the positioning of the boat.

3,155,258
MATERIAL HANDLING APPARATUS
Lee L. Fincannon, 1116 South 77th East Ave., Tulsa, Okla., assignor of one-sixth to William L. Riggs and of one-sixth to Charles Christ, both of Tulsa, Okla.
Filed Oct. 5, 1961, Ser. No. 143,186
9 Claims. (Cl. 214—515)

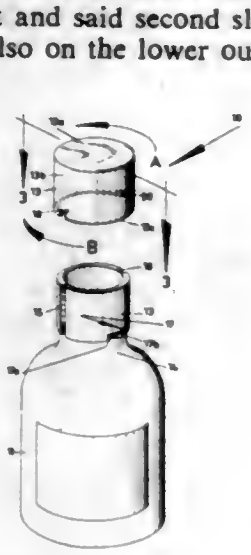


1. A material handling apparatus for loading and unloading material onto a vehicle, and comprising a drive mechanism adapted to be secured to the vehicle, ramp means carried by the drive mechanism and extending from the ground level to the vehicle, cart means independent from the drive mechanism for carrying the material and adapted to travel reciprocally along the ramp means, means provided on the cart means for cooperating with the drive mechanism to provide the reciprocal movement for the cart means and including means cooperating with the drive mechanism for positioning the cart means on the vehicle in an upright position and pushing the cart means onto the vehicle, and means precluding accidental disengagement of the cart means from the drive mechanism.

3,155,259
SAFETY MEDICINE BOTTLE AND CAP
Abbie Scheurman, 38 Heath St. E., Toronto, Ontario, Canada
Filed Dec. 26, 1963, Ser. No. 333,536
4 Claims. (Cl. 215—9)

1. In a safety medicine bottle, a neck portion, said neck portion being joined to the body of said bottle by a reduced section; a first slot formed vertically within the outer peripheral face of said neck portion; a second slot formed vertically within the outer peripheral face of said neck portion, said first and said second slots being located substantially in diametrical opposition to each other; said first slot having a different cross section from said second slot; a sealing cap, said sealing cap being slidably locatable upon said neck portion; said cap having a first inwardly disposed tab formed on its lower edge and a second inwardly disposed tab formed on its lower edge, said first and said second tabs having cross-sections to fit said first and second slots and being located substantially in diametrical opposition to each other; said sealing cap being

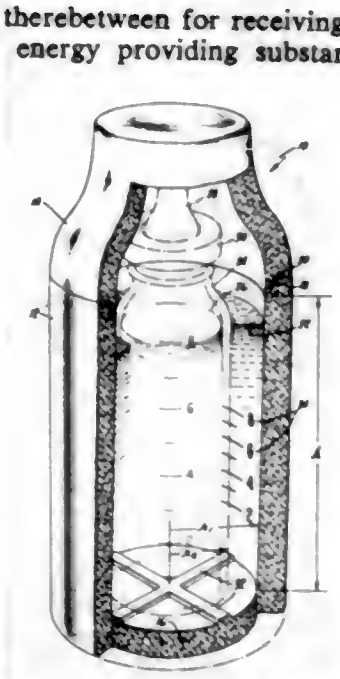
slightly deeper than said neck portion of said bottle; resilient means located within said sealing cap, said resilient means biasing said cap away from said neck portion upon said cap being pushed down about said neck portion; said first and said second tabs being slidably operable within said first and said second slots repectively; said first and said second tabs being disposed adjacent said reduced section upon said cap being depressed to its full extent upon said neck portion; and locking means for the securing of said cap about said neck portion of said safety medicine, said locking means including a first recess and a second recess, said first recess being formed on the lower outer edge of said



neck portion and substantially diametrically opposite said first recess; said first recess comprising a notch adapted to accommodate said first tab and having a perpendicularly disposed short channel formed therewith, said channel running parallel to said lower edge of said neck portion and being capable of receiving therein said first tab; said second recess comprising a notch adapted to accommodate said second tab and having a perpendicularly disposed short channel formed therewith, said channel running parallel to said lower edge of said neck portion and being capable of receiving therein said second tab; and said sealing cap being secured about said neck of said bottle by a first, downward movement, a second, anti-clockwise movement, a third upward movement and a fourth, anti-clockwise movement.

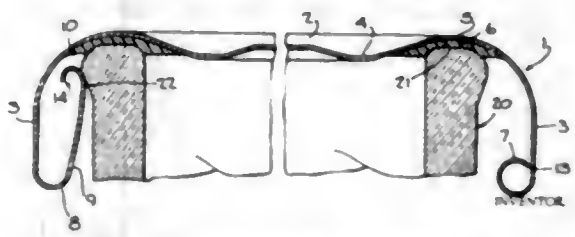
3,155,260
HEAT CONTROL DEVICE
Maurice W. Widener, 6509 Devonshire Drive, San Jose, Calif.
Filed Dec. 20, 1960, Ser. No. 77,196
7 Claims. (Cl. 215—13)

1. A highly thermally insulating enclosure for quickly heating a bottle containing a relatively cold liquid to a desired temperature, and for maintaining the liquid at such temperature for an extensive period, comprising in combination with a bottle: a cylindrical container member of a size to receive said bottle, said container membe having an open end and an end closed by a base, and having an annular stepped portion at its open end, and a raised ribbed portion on the interior of the base at its closed end for supporting said bottle in spaced relationship from said closed end; a cap member having a peripheral stepped portion for seating on the stepped portion of said container member so that when seated thereon a substantially airtight enclosure is formed, said container and cap members each being fabricated from a material having a very low coefficient of thermal conductivity and a low specific heat, the walls of said enclosure generally conforming to the shape of said bottle to be heated and being spaced from the bottle to provide a volume therebetween for receiving a known quantity of a heat energy providing substance sufficient to



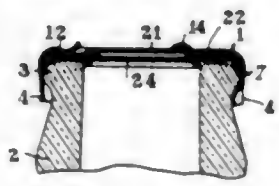
raise the temperature of a liquid contained within said bottle to a desired preselected temperature.

3,155,261
CLOSURE CAP AND METHOD OF MAKING SAME
Daniel D. Acton and Alexander W. Hart, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,805
7 Claims. (Cl. 215—38)



1. A closure cap comprising a cover portion and a skirt portion, the edge of the skirt portion being rolled inwardly to form a bead, elongated lugs extending inwardly from said skirt portion and integral with said bead, the lower edge of the bead and of said lugs being on substantially the same plane, the flattened-out length of each lug being greater than the flattened-out length of said skirt portion.

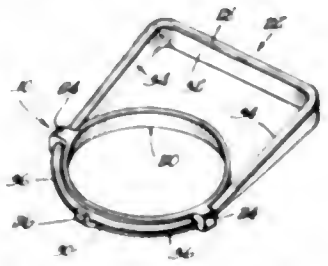
3,155,262
METALLIC CAPSULE, NOTABLY FOR BOTTLES
Modesto Cros, Cusset, France, assignor to Le Bouchon Rapid, Cusset, Allier, France, a société anonyme
Filed Aug. 7, 1963, Ser. No. 300,591
Claims priority, application France, Dec. 22, 1962, 919,589, Patent 1,283,190; Feb. 13, 1963, 924,631, Patent 1,356,388
1 Claim. (Cl. 215—46)



A bottle stopper for a bottle having a neck and a bead thereabout, comprising a cap having a flat top surface and an annular crimped depending skirt adapted to be constricted about the bead of the bottle neck, a plurality of concentric radially extending tongues defined by incised radial lines extending from points adjacent the bottom of the skirt to intermediate points on the top

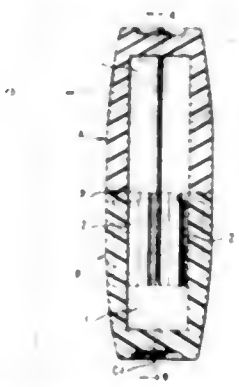
surface and connected by substantially straight incised lines at their inner ends, means defining at least one inwardly concaved annular groove in said top surface intersecting the radial lines outwardly of the straight incised lines, said groove being of a circumference slightly less than the inner diameter of the bottle neck, and being convexed to form an annular rib on the under side of the cap, whereby compression of the crimped skirt about the bead on the bottle will exert pressure on the convexed rib formed by said groove to raise the portion of the tongues interiorly of the groove to a position above the level of said top surface to permit grasping and tearing out of said tongues from the inner ends thereof to remove said cap from the bottle neck, and an internal sealing gasket of resilient material including a flange overlying the top of the bottle neck and a depending portion extending into the neck of the bottle, secured to the under side of said flat top surface.

3,155,263
PLASTIC SUPPORT FOR BOTTLES
Walter E. Hidding, 505 Banbury Road, Arlington Heights, Ill.
Filed Sept. 27, 1963, Ser. No. 312,227
7 Claims. (Cl. 215—100)



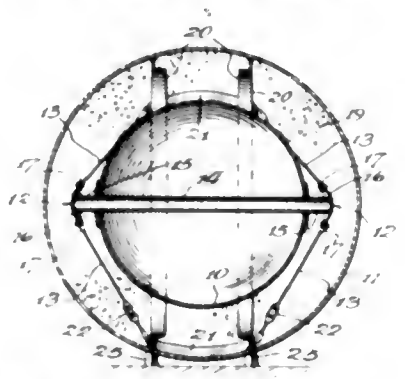
1. A support for bottles and the like comprising: a band adapted to be fitted to a container; a plurality of fulcrum means disposed at spaced positions on said band; endless bail means including a handle portion engaging said fulcrum means to swing thereabout in one direction, said bail means further including a base portion; and stop means on said band arcuately intermediate said fulcrum means for abuttingly contacting said base portion to resist motion thereof in the opposite direction.

3,155,264
CASES FOR PHOTOGRAPHIC FILM
Alvin Lee Shook, 617 W. Bullock St., Denison, Tex.
Filed Feb. 15, 1962, Ser. No. 173,439
1 Claim. (Cl. 220—4)



In a case for carrying photographic films, the combination of a pair of identical hollow members having abutting outer edges, respectively; a strip of flexible, plastic adhered to said edges to form a hinge connecting said members; and an elastic cord having one end anchored in one of said members, passed through both of said members, and its other end anchored in said member, adapted when tensioned to hold the members in closed position.

3,155,265
THERMAL STRESS EQUALIZING SUPPORT SYSTEM
Richard Reese, Park Forest, Ill., assignor to Chicago Bridge & Iron Company, Chicago, Ill.
Filed Jan. 5, 1961, Ser. No. 80,788
6 Claims. (Cl. 220—15)



1. A facility for storing a cryogenic liquid at low temperature, said facility comprising:
an outer vapor barrier shell;
an inner storage vessel spaced and thermally insulated from said shell, said vessel being subject to thermally induced dimension changes;
attaching means joined to said inner vessel for attaching said inner vessel to a support system;
a support system for supporting said vessel in spaced relation from said outer shell, said support system comprising:
a plurality of pivotal mounting means connecting said inner vessel and shell for supporting said inner vessel within said shell without imparting any substantial thermal stress to said system notwithstanding said thermally induced dimension changes by said vessel, said mounting means comprising:
a plurality of support members;
first means for pivotally mounting one end of said members to said shell; and,
second means for pivotally mounting the remaining ends of said members to said attaching means on said vessel, said members being angularly disposed between said vessel and shell to compensate for the thermally induced dimension changes between said shell and said vessel, the length of said support members and the angle of attachment thereof to said inner vessel being such that said support members are substantially free from thermal stresses during service use of said tank, said angle of attachment θ, when said vessel is in a non-storage condition, being defined by

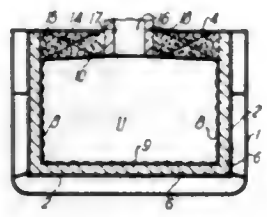
$$\cos\theta = \frac{\text{change in length of the support member due to a temperature differential } \Delta T}{\text{change in length of the attaching means due to a temperature differential } \Delta T}$$

where ΔT is equal to the change in temperature between a storage and a non-storage condition for said vessel.

3,155,266
CONTAINER WITH A FLEXIBLE INNER TANK
Katsuro Yamamoto, Nakanoku, Tokyo, Japan, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
Filed May 15, 1961, Ser. No. 110,085
Claims priority, application Japan May 21, 1960
15 Claims. (Cl. 220—15)

1. A container for storing a liquefied gas at low temperature and at about atmospheric pressure comprising a rigid outer shell internally lined with a heat insulating material and an inner tank in the space enclosed by said

heat insulated shell, said inner tank consisting of a rigid top wall and flexible side and bottom walls secured to said rigid top wall, the rigid top wall being supported by an element fixed to the rigid outer shell in a manner



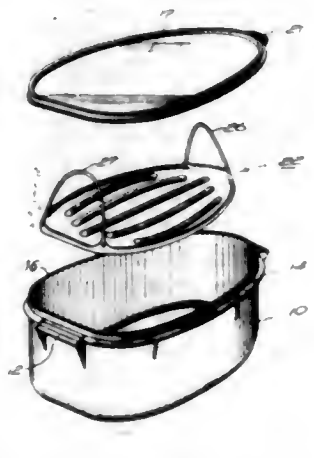
to permit lateral contraction and expansion of said top wall relative to the outer shell, and the flexible side and bottom walls being supported by the inner surface of the heat insulating material lining the rigid outer shell internally.

3,155,267

MEAT KEEPER AND TRAY

James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 172,007
2 Claims. (Cl. 220—17)



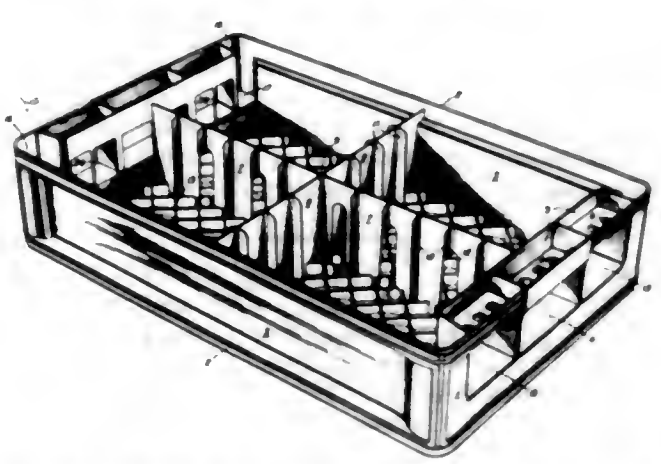
1. An oval container and tray therefor, said tray fabricated from plastic and used for storing perishables in a cool atmosphere; comprising a hollow container having side and bottom walls with an open top, the upper edge of the walls being outwardly disposed between about 7°–13° from the vertical; a seal enclosing the open top of the container, said seal including a central substantially flat wall and a peripheral U-shaped sealing rim, the rim being positionable over the upper edge of the side wall of the container with the open side of the U downward to tightly and resiliently engage the side wall thereby sealing the open top of the container; the legs of the U-shaped rim being disposed at an angle substantially conforming to the angle of disposition of the upper edge of the container; a rigid plastic tray positionable in the container, said tray having supporting legs in engagement with the bottom wall of the container so as to space said tray from the bottom of said container; said tray including a substantially flat tray base having an upstanding rim extending around the periphery of said base and an integral upstanding non-pivoted handle at each end of the tray, said handles extending upwardly from said upstanding peripheral rim at each end of said tray to be easily grasped by the user in removing the tray from the container, each handle further being formed of an elongated flexible member, the ends of said elongated member being spaced apart so as to permit outward flexure of said handles.

3,155,268

BOTTLE CASE

James P. Fogerty, Verona, Albert Spaak, Little Falls, and Frank W. Stevens, Rutherford, N.J., and Ira H. Miller, Lambertville, Mich.; said Fogerty, said Spaak, and said Stevens assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut; said Miller assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Feb. 9, 1962, Ser. No. 172,169
2 Claims. (Cl. 220—21)



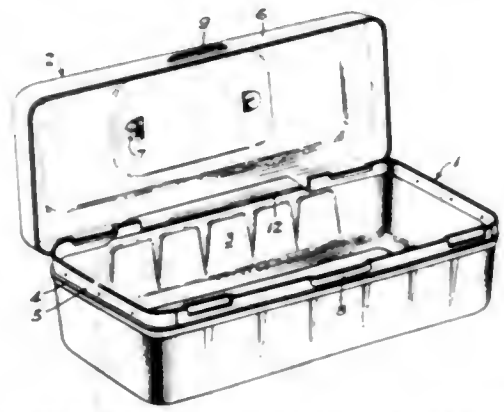
1. A substantially rigid, unitary, plastic beverage case having an open top and integral dividers, side, end and bottom walls, said end walls being provided with openings comprising handle elements, said side walls having a substantially rectangular recessed portion therein, the interior of the case being divided into only four compartments by said dividers which run from the center of each side and intersect at the central portion of the case, the said dividers containing a plurality of integral spacers which extend substantially perpendicular from the dividers, the said bottom being an open grillwork and comprising a plurality of intersecting narrowly-spaced flat ribs which are located edgewise to the bottom of the case, the bottom of the said ribs containing twenty-four downwardly-open flared indentations which terminate flush with the bottom of the case and tend to make the case self-centering in stacking, each group of six of said indentations being arranged in two rows of three each which are symmetrically spaced below the effective area of each of the four compartments formed by the dividers in the interior of the case.

3,155,269

HINGED CLOSURE FOR PLASTIC CONTAINERS

Peter T. Schurman, Snyder, and Raymond C. Confer, Gasport, N.Y., assignors to Airmold Plastics, Inc., Tonawanda, N.Y.

Filed Feb. 13, 1963, Ser. No. 258,203
5 Claims. (Cl. 220—31)



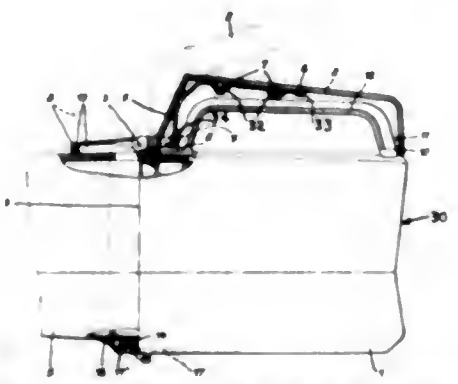
1. A hinged closure for containers comprising, a container part, a closure part, at least one of said parts being made of thermoplastic material, a side wall of said one part being severed at spaced points from one end

toward the opposite end thereof to provide a hinge leaf, said hinge leaf being joined to said one part by a grooved portion of reduced wall thickness to provide a hinge axis, the other of said parts being secured to said hinge leaf for movement about said axis relative to said one part.

3,155,270
HANDLE LATCHING DEVICE

Wilhelm Taft, Stuttgart-Feuerbach, Germany, assignor to Firma Electrostar G.m.b.H., Reichenbach an der Fils, Germany

Filed Sept. 5, 1962, Ser. No. 221,536
Claims priority, application Germany, Sept. 5, 1961, E 21,622
3 Claims. (Cl. 220—55.7)

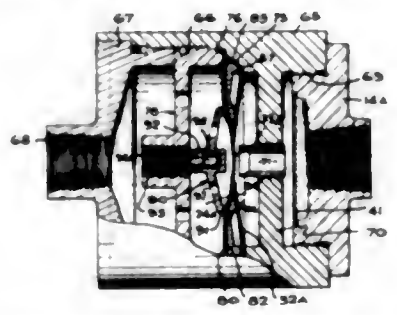


1. A household appliance such as a vacuum cleaner and the like, comprising first and second interengageable housing parts, said first and second housing parts having first walls which align and include a projection on one fitting into a recess on the other, and said first and second housing parts having first walls which align and include a projection on one fitting into a recess on the other, and said first and second housing parts also having second walls which align and include a latching portion formed on said first housing part, and a handle latching portion formed on the other of said housing parts, said handle latching portion including a substantially U-shaped handle lever member for carrying said appliance, said lever member having first and second leg portions, said first leg portion being pivotally mounted on said second housing at a location adjacent said first housing, a spring held to the underside of said handle lever, and including a bearing portion extending alongside said first leg portion adjacent the pivotal connection thereof to said second housing, a latching element pivotably carried by said spring baring portion engageable with said latching portion formed on said second housing and to hold said first and second housings together.

3,155,271
RUPTURE DISC MOUNTING

Stanley E. Summers and Rudolf Visket, Los Angeles County, Calif., assignors to Calmec Manufacturing Corp., Los Angeles, Calif., a corporation of California

Filed July 5, 1963, Ser. No. 292,955
8 Claims. (Cl. 220—89)

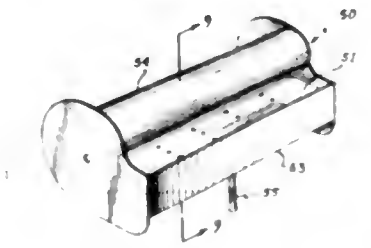


6. In a rupture disc device, a tubular housing having an inlet and an outlet, an annular support mounted at its periphery in said housing between said inlet and said outlet and defining an orifice, said support being stiffly resiliently deflectable, a rupture disc mounted in said housing immediately upstream of said support and secured at its peripheral margin, said disc extending across said orifice to close the same, a frusto-conical spring washer supported at its periphery in said housing immediately downstream of said support, said washer having an opening of less diameter than the opening through said support, and means mounted in said housing upstream of said disc and adjustable axially of the housing for deflecting said support downstream thereby to deflect and preload said washer toward snap-over position.

3,155,272
METHOD AND APPARATUS FOR LOADING A RECEIVER WITH A PLURALITY OF BEADS

Dale T. Kelley, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Original application Apr. 24, 1958, Ser. No. 730,642. Divided and this application Nov. 24, 1961, Ser. No. 154,511
9 Claims. (Cl. 221—1)



1. Apparatus for accurately positioning minute beads in predetermined positions for loading into a jig for alloying said beads to semiconductor disc, said apparatus including in combination, a flat positioning surface having a plurality of openings smaller than said beads formed therein in predetermined, spaced relation, said positioning surface forming one wall of an enclosed chamber, the pressure within which can be varied when the openings are blocked by beads aligned therewith, a curved cradle member having an edge portion coextensive with an edge of said positioning surface along the long dimension of said surface, means for turning said apparatus about an axis from a first position in which said positioning surface is horizontal and above said chamber to a second position in which said positioning surface is vertical and to a third position in which said positioning surface is horizontal and below said chamber, and means for varying the pressure within said chamber when the openings in said positioning surface are blocked by beads aligned therewith so that beads in such alignment are held there by reduction or pressure within said chamber when the apparatus is turned to said second position and beads spread over said positioning surface and not aligned with an opening therein fall into said cradle and the aligned beads may be dislodged from the corresponding openings by increasing the pressure in said chamber when the apparatus is turned to said third position for dropping the aligned beads into a jig.

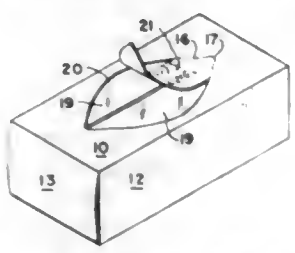
3,155,273
CARTON FOR TISSUES

Raymond A. Cote, Metuchen, N.J., assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada

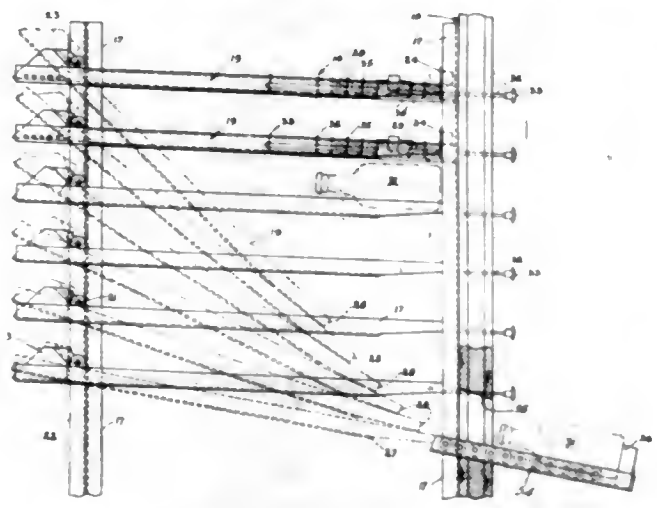
Filed May 31, 1963, Ser. No. 284,700
6 Claims. (Cl. 221—63)

1. In a carton for facial tissues having top, bottom, side, and end walls, a longitudinal tear strip disposed in the top wall and defined at either end by a line of perforations and at either side by a window cut out of

the top wall, transparent covering means disposed under the tear strip and the windows, and a tissue withdrawal slot disposed under the tear strip and in the transparent covering means.



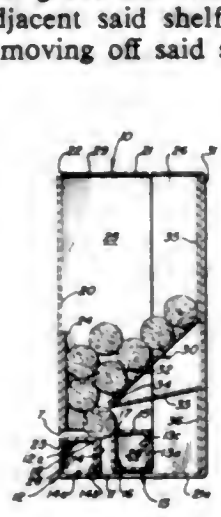
3,155,274
CONTAINER DISPENSING MACHINE
Clyde D. Williams and Oscar F. Forsburg, both of P.O. Box 446, Philipsburg, Pa.
Filed Jan. 17, 1963, Ser. No. 252,108
8 Claims. (Cl. 221—130)



1. A container dispensing machine comprising stacked racks for holding containers in side-by-side relation on each rack with the bottom of a container lower than its top, pivotal arms horizontally disposed and vertically arranged with one arm adjacent each rack for receiving a container thereon from a rack, means for releasing one container at a time from each rack onto an arm, the arms being pivotal about a fulcrum intermediate its ends such that the weight of a container disposed on the arms tilts the arm to lower the container, each arm having a plurality of spaced rollers for gravity discharge of a container from its one end onto a next lower arm when tilted into abutment therewith, a stationary track for receiving a container from the lowest arm of the vertically spaced arms, the container being fed in a path defined by the lowering of one arm into abutting relation with the next lower arm and the transfer of the container from one arm to the next lower arm and finally to the stationary track whereby the contents of the bottle are undisturbed by the gentle lowering action effected.

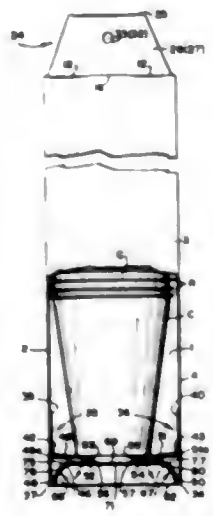
3,155,275
DISPENSER PACKAGE FOR CYLINDRICAL OBJECTS
Vernon E. Slattery, 3291 Dresden St., Columbus, Ohio, and James W. Hall, 4932 Sharon Hill Drive, Worthington, Ohio
Filed Sept. 30, 1963, Ser. No. 312,537
4 Claims. (Cl. 221—289)

4. A dispensing container for dispensing elongated substantially cylindrical objects comprising a hollow body having upright walls which are normally in spaced relationship; said walls being relatively movable toward each other, one of said walls carrying a feeder guide which inclines downwardly toward the other wall, said guide having a free end which is normally spaced from the other wall to provide an article discharge throat, a shelf below said throat for engaging the lowermost article which will roll down said feeder guide into said throat, a stop normally positioned adjacent said shelf to prevent the engaged article from moving off said shelf, said shelf and



said stop each being connected to one of said relatively movable walls so that relative movement thereof moves said shelf and said stop relatively apart to permit the lowermost article to move off said shelf, relative movement of said walls also moving the inclined feeder guide toward the other wall to narrow the space therebetween to prevent further feed of articles to said throat.

3,155,276
DISPENSING CARTON
Marshall I. Williamson, New York, N.Y., and John F. Lee, Paterson, N.J., assignors to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed Jan. 23, 1962, Ser. No. 168,092
8 Claims. (Cl. 221—302)



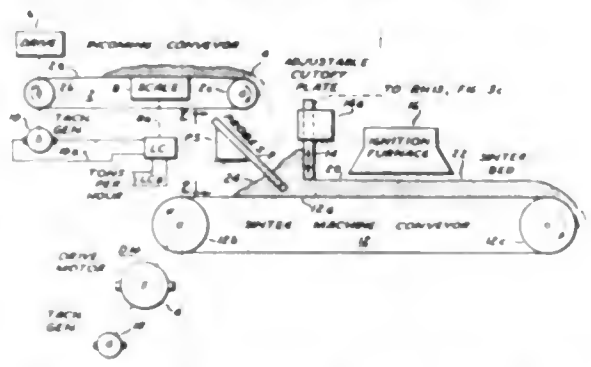
1. A carton for containing and dispensing cups of the type which have top rims and can be nested together in stacks which comprises a structure formed within its side walls for receiving a stack of cups, at least two of the opposite side walls having panels folded to form stiff but yieldable cup supporting members extending from opposite side walls into the carton, said members each being formed of a plurality of panels and a glue flap, one of the panels being foldable along a score line between the panel and the side panel and with the glue flap glued to the inside of the side panel in such a position that the remaining panels are angularly bent along score lines so as to form cup supporting projections which can be pulled downwardly to form projecting ribs which bear against the top sides of the cups and engage and hold the entire stack by the rim of the lowermost cup.

3,155,277

MATERIAL HANDLING CONTROL SYSTEM

Douglas W. Fath, Brookfield, Frank J. Kleewein and Theodore Kraschinsky, Milwaukee, Gene C. Lutsch, Hales Corners, and Carl J. Weiss, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Sept. 13, 1961, Ser. No. 138,239
21 Claims. (Cl. 222—55)



16. In a motor control system having an electrical power supply source and means for adjusting the power supplied from the source to the motor to control the speed thereof:

a first control signal source comprising means providing a first electrical control signal which varies in proportion to a first variable external condition having a first varying characteristic;

a second control signal source comprising means providing a second electrical control signal which varies in proportion to a second variable external condition having a different varying characteristic;

control means responsive to said first and second control signals for controlling said power adjusting means to adjust the speed of the motor;

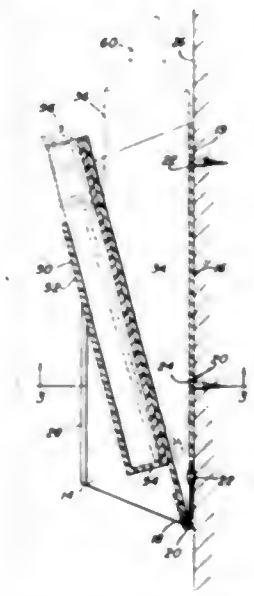
and unitary selecting means operable to select a desired ratio of said first and second control signals for application to said control means and being effective when operated to increase one of said control signals and simultaneously and proportionately to decrease the other of said control signals.

3,155,278

TOOTHPASTE DISPENSER AND BRUSH HOLDER

Charles E. Le Baron, 2726 Sacramento Ave., Pittsburgh, Pa., assignor of one-half to Albert D. Zimmer, Pittsburgh, Pa.

Filed Oct. 8, 1962, Ser. No. 229,013
2 Claims. (Cl. 222—93)



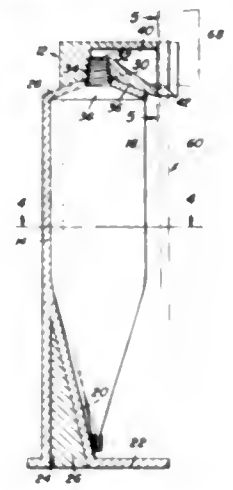
1. A toothpaste dispenser and brush holder comprising a generally U-shaped housing including a pair of generally parallel upstanding legs interconnected at one pair of adjacent sides by means of an upright bight portion, said holder including means adapted to support said housing from an upright supporting surface with said bight portion disposed in surface-to-surface contacting relation with said surface and the free ends of said legs projecting away from said surface, an upwardly opening U-shaped spring clip secured to the lower portion of said bight portion, an upright panel member disposed between said legs and having its lower edge removably retained in said clip with the latter pivotally securing the lower end of said panel member to said housing for rotation about an axis extending between the lower ends of said legs and generally paralleling the lower edge of said panel member with the free upper end of said panel member swingable toward and away from the upper end of said bight portion, an upwardly opening toothbrush receiving member carried by the side of said panel member remote from said bight portion and spaced inwardly from the upstanding side edge portions of said panel member, the free upstanding edges of said legs, remote from said panel member terminating in inturned flanges between which said toothbrush receiving member is receivable, said flanges defining abutments engageable by the opposite upstanding marginal edge portions of said panel member projecting outwardly beyond said toothbrush receiving member for limiting swinging movement of the upper end of said panel member away from said bight portion to a position defining an upwardly opening wedge shaped recess for the reception of an upright collapsible tube of toothpaste whereby the panel member may have its upper end pushed toward said bight portion in order to squeeze said collapsible tube and force toothpaste therefrom.

3,155,279

TOOTH PASTE DISPENSER WITH TUBE AND BRUSH SUPPORT

Jacob C. Ferguson, Jr., 961 Castro Drive, Sacramento 25, Calif.

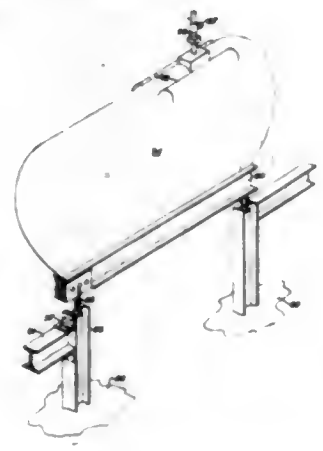
Filed Apr. 4, 1963, Ser. No. 270,670
4 Claims. (Cl. 222—93)



1. In combination, a tooth paste dispenser comprising a stand embodying a base, an upright mounted on and rising from said base, a conical hood formed integrally with the top portion of said upright, said hood having an aperture, a tube of tooth paste having the usual threaded neck, said neck being received within and projecting beyond said aperture and the top of said hood, a neck-closing cap having a conical base and a threaded aperture threadedly engaging said neck and clamping the tooth paste tube upon the hood, said cap having a lateral passage which is communicable with the discharge neck of said paste tube and means on said cap for accommodatingly supporting an attachable and detachable conven-

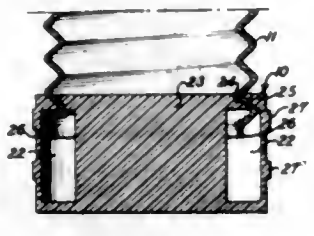
tional-type tooth brush, a lateral passage in said cap terminating in a pair of spaced arms extending laterally beyond a peripheral portion of the cap and an abutment shoulder on each of said arms extending toward the space therebetween, the lateral passage in said cap terminating in the space between said arms whereby upon manually positioning the bristles of the tooth brush in said space and squeezing the tube, tooth paste will be dispensed through said passage to the head of said brush.

3,155,280
BUOYANT FLEXIBLE CONTAINER AND UNDERWATER ANCHORAGE THEREFOR
Harold G. Quase, 9620 Hillridge Drive, Rock Creek Hills, Kensington, Md.
Filed Sept. 29, 1961, Ser. No. 143,016
13 Claims. (Cl. 222—105)



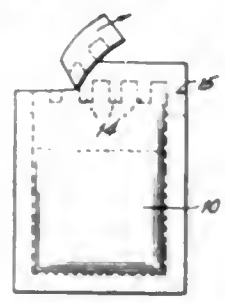
4. A container for underwater storage comprising a flexible bag elongated in a horizontal direction and faired at each end and having an expanded and rounded upper portion the combined upper and lower bag contours tapering at its sides to a narrow neck at the lower portion approximating a pear-shape in cross section, the edges of only the lower portion being sealed together in a bracketing beam at the bottom.

3,155,281
CONTAINER
John Stracey, Ellenville, N.Y., assignor, by mesne assignments, to Questron America, Inc., Ellenville, N.Y., a corporation of New York
Filed Apr. 9, 1962, Ser. No. 186,015
14 Claims. (Cl. 222—107)



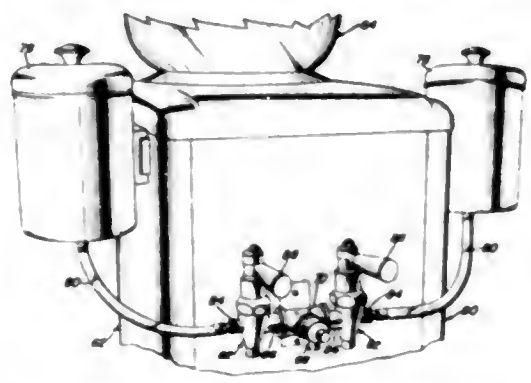
11. A novel container for powders, pastes, sticks and liquids, comprising a main chamber having a substantially flexible resilient wall member in the form of a continuous helical bellows biased to an expanded position by the inherent resiliency of said wall member, said main chamber having a closed bottom and being open at the top, said helical bellows being adapted to be screwed into and collapsed within a hollow base having a bottom and a threaded hole at the top thereof.

3,155,282
SPRINKLER TYPE PACKAGE
Raymond R. Leblanc, West Springfield, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed May 9, 1963, Ser. No. 279,227
4 Claims. (Cl. 222—107)



4. A dispensing package for granular material comprising fabric sides sealed to enclose the material, means near and extending along one end of the package providing shallow pockets between said sides, and a tear line located within the confines of said means, whereby the shallow pockets become discharge channels when said end of said package is torn off along said tear line.

3,155,283
MIXING DISPENSER FOR WATER SUPPLY
Hans A. Schaefer, P.O. Box 747, White Plains, N.Y.
Filed Oct. 26, 1961, Ser. No. 147,833
2 Claims. (Cl. 222—129.1)

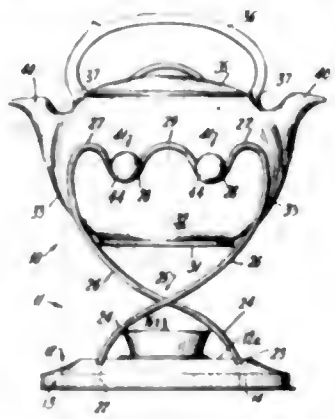


1. In combination with a water cooler of the type including a housing and a water outlet line terminating at its discharge end at a control valve including a first inlet therefor and a pair of secondary inlets disposed below the upper end of said housing, said housing including a water reservoir elevated above said control valve with which the inlet end of said water outlet line is communicated, the discharge end of said water outlet line being communicated with said first inlet, a pair of liquid reservoirs supported from said housing and elevated above said inlets, said liquid reservoirs each including outlet line means operatively connected thereto, said outlet line means each having a control valve disposed therein, the outlet ends of said outlet line means being communicated with said secondary inlets.

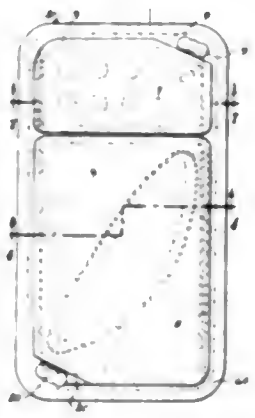
3,155,284
DUAL SWINGABLY MOUNTED POT
Sol Forman and Walter S. Motyka, Brooklyn, and Seymour Sloyer, Lawrence, N.Y., assignors to Forman Family, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 30, 1962, Ser. No. 169,874
13 Claims. (Cl. 222—144)

1. In combination, a stand, a pot comprising a body provided with oppositely extending spouts, said stand having a pair of spaced upwardly fully opening half bearings, and means on the pot to support said pot concurrently and solely on both said half bearings of

said stand in a position of rest, and for pivotal movement of said pot, selectively, on each of said pair of spaced upwardly fully opening half bearings, said half bearings having horizontal axes transverse to the pot, so that said pot is pivotally movable in one direction on one of said pair of bearings from a rest position to one pouring position and in an opposite direction on the other of said pair of bearings from a rest position to another and opposite pouring position, said pot being unattached to the stand and liftable straight upwardly off the stand from said position of rest on both said half bearings, and from pivoted position on either of said half bearings for removal from said stand.

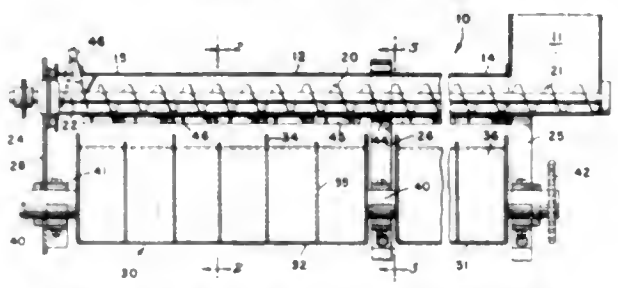


3,155,285
CLOSURE CONSTRUCTION
Paul S. Van Baarn, Monte Carlo, Monaco, assignor to Etudes, Recherches Developpements, E.R.D., S.A., Geneva, Switzerland, a Swiss corporation
Filed Dec. 31, 1962, Ser. No. 248,454
12 Claims. (Cl. 222—153)



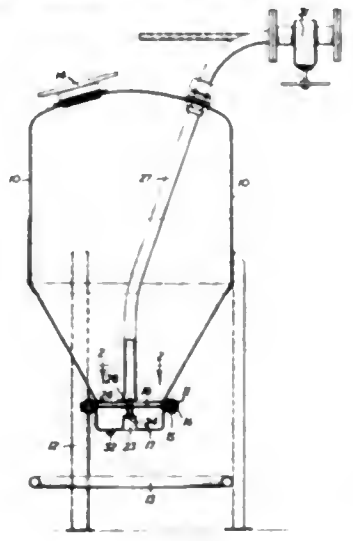
11. A closure construction for a container having a top wall with an opening and a rim defined around the opening, comprising a skirt portion having an encircling wall extending substantially axially and adapted to be engaged around the container rim, and first and second closure lid members extending at substantially right angles to said encircling wall and defined in at least a portion of the area encompassed by said wall, said first closure lid member being hinged to said skirt portion adjacent one side thereof, said second closure wall being hinged to said skirt portion on an opposite side of said skirt portion from said first closure lid, said first and second closure lids being disposed in side by side relationship when closed but being separated from said skirt portion along the adjacent abutting edges of said first and second closure lids, a first tear strip extending around a portion of the periphery of said first closure lid and connecting said first closure lid to said skirt portion except in the area of said hinge and along the side of said first closure lid which is adjacent said second closure lid, and a second tear strip disposed around a portion of the periphery of said second closure lid and connecting said second closure lid to said skirt portion except in the area of the hinge and along the side of said second closure lid adjacent said first closure lid.

3,155,286
FEEDER
Marvin D. Van Peursem, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed July 26, 1963, Ser. No. 297,846
4 Claims. (Cl. 222—166)



1. A feeder for stock animals comprising, in combination, a support frame, an elongated rectilinear container mounted on said frame, said container extending in a horizontal direction and having a longitudinal discharge slot along a major portion of the length of a bottom section of the container, an elongated receptacle mounted beneath said container in register with said slot to receive feed therefrom, a plurality of compartments in said receptacle and located one after another in the direction of the container extension, means in said container for conveying feed longitudinally from one end and toward the other end of the container, said feed discharging first through the end of said slot at said container one end and filling a first receptacle compartment beneath it, the feed building up in the first compartment to close off the portion of the slot above it and then being moved along by said conveying means to fill the next compartment, a plurality of valves movably mounted relative to said container, each valve being shiftable to open and close a given portion of said slot whereby selected compartments may be closed off and prevented from receiving feed, and means for discharging feed from said receptacle.

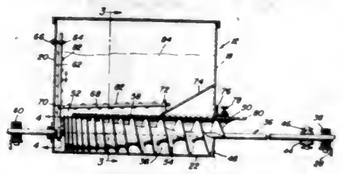
3,155,287
MEANS FOR HANDLING FINELY DIVIDED MATERIAL
John Frederick Gist, Barnt Green, England, assignor to G. & A. Firkins Limited, a British company
Filed Sept. 19, 1962, Ser. No. 224,793
8 Claims. (Cl. 222—189)



1. Means for handling finely divided material comprising: a closed container, having an opening in its upper part; a removable closure for said opening for the intro-

duction of material; means defining an opening in the lower end of said container; a fine mesh screen extending over said opening; an air chamber separated from said container by said screen and adapted to be connected to a source of air under pressure; a discharge pipe leading out of said container from a point adjacent to the upper surface of said screen; and a control valve in said discharge pipe outside said container.

3,155,288
FERTILIZER DISTRIBUTOR
David C. Landgraf, Rte. 1, Box 81, Madill, Okla.
Filed June 28, 1962, Ser. No. 205,963
2 Claims. (Cl. 222—227)



1. A distributor comprising a hopper including upstanding side walls interconnected by an upwardly opening partial cylindrical bottom wall, a constant diameter screw-type conveyor shaft disposed over and closely embraced by said bottom wall and journaled for rotation about its longitudinal axis, at least one of said side walls having outlet opening means formed therein with which one end portion of said screw-type conveyor shaft is registered, drive means drivingly connected to said conveyor shaft, and downwardly opening partial cylindrical baffle means disposed over and closely embracing the upper portion of said conveyor shaft and mounted for movement in said hopper axially of said shaft, said bottom wall and baffle means substantially enclosing the portion of said shaft disposed in a generally cylindrical delivery chamber defined between said bottom wall and said baffle means and coacting with a portion of at least two of said hopper side walls to form a discharge opening adjacent said other end portion of said shaft between said chamber and the portion of said hopper disposed above said baffle means, which opening may be varied in size in response to shifting of said baffle means axially of said shaft, said screw shaft including helical screw threads defining a helical discharge path therebetween that progressively decrease in cross-sectional area from said one end of said shaft toward the other end thereof, said shaft including an eccentrically disposed crank pin, an upright agitator shaft having its lower end journalled on said crank pin and projecting upwardly through said discharge opening and into the upper portion of said hopper disposed above said baffle means, and means in the upper portion of said hopper slidably guiding an upper end portion of said agitator shaft.

3,155,289
APPARATUS FOR ACCURATELY MEASURED DISPENSATION OF MATERIAL
James M. Kauss, Dallas, Tex., assignor to F & M Scientific Corporation, a corporation of Delaware
Filed Feb. 5, 1963, Ser. No. 256,337
6 Claims. (Cl. 222—253)

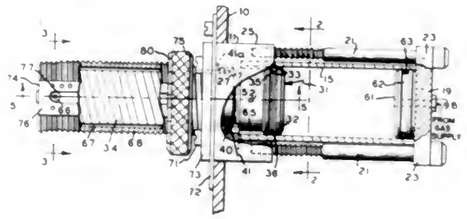
4. Apparatus for accurately determining, controlling, and dispensing samples of fluid material into the moving phase of a chromatographic preparatory separator or the like, comprising, in combination:

an integral pair of axially aligned cylinders, one of said cylinders being a sample dispensing cylinder equipped with inlet means and outlet means, the other of said cylinders being a pneumatic cylinder,

a piston element having a face in each of said cylinders, said elements being rigidly joined together to form a dispensing piston,

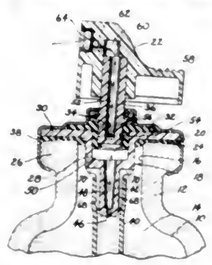
means for supplying said material at a predetermined pressure to said inlet means,

adjustable means for limiting the travel of the dispensing piston thereby to vary the volume of the dispensed sample,



means for supplying a fluid at a pressure less than or equal to said predetermined pressure to said pneumatic cylinders, the surface area of the piston face in the pneumatic cylinder exceeding that of the piston face in the dispensing cylinder, thereby to dispense said material from said outlet means at a pressure greater than said predetermined pressure.

3,155,290
AEROSOL VALVE
Frank Venus, Jr., Oxford, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Sept. 7, 1961, Ser. No. 136,542
3 Claims. (Cl. 222—394)



1. A valve for a pressurized package containing a product to be dispensed under the pressure of a gaseous propellant normally occupying the head space of the package, said valve comprising a valve body defining an interior chamber, said valve body having a cylindrical portion adapted to receive a hollow dip tube, an inlet orifice on said cylindrical portion communicating the interior chamber with the dip tube, a continuously open longitudinal passageway formed in the outer periphery of the cylinderical portion of the valve body communicating the head space of the package with the interior of said dip tube upstream of said inlet orifice, and valve means for controlling the discharge of the product from said interior chamber.

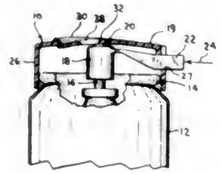
3,155,291
CLOSURE FOR PRESSURIZED PACKAGE
Alfred Wakeman, Durham, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Nov. 15, 1962, Ser. No. 237,808
4 Claims. (Cl. 222—394)

1. In a pressurized package wherein a product is confined within a container under the superatmospheric

pressure of a gaseous propellant and discharge of the product from the container is controlled by a valve mounted thereon, the discharge of the product issuing from a discharge orifice in an actuator for the valve, the combination of

(*a*) a cap portion affixed to the container for the package extending from opposite sides laterally across the actuator for the valve,

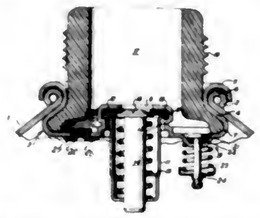
(*b*) said cap portion having a wall thereof in overlying engagement with the valve actuator to seal off from the atmosphere the discharge orifice located in the actuator when the latter is disposed in its normal position,



(*c*) said cap portion having an opening therethrough positioned to one side of the discharge orifice in the valve actuator when the latter is disposed in its normal position, and

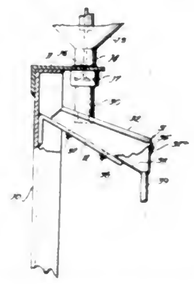
(*d*) an extension on the valve actuator projecting outwardly of the cap portion to be accessible for the application of a force to move the value actuator to effect register of the discharge orifice therein with said opening in said cap portion concomitantly with the opening of the valve for dispensing the product from the package.

3,155,292
SAFETY VALVE ARRANGEMENT FOR PRESSURIZED CONTAINERS
Milo E. Webster, Rochester, N.Y., assignor to Bernz O Matic Corporation, a corporation of New York
Filed Apr. 13, 1962, Ser. No. 187,407
2 Claims. (Cl. 222—397)



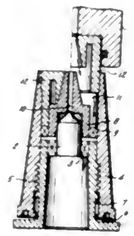
1. In an aluminum cylinder of the portable throw-away type for fuel gas having a closure cap with a centrally positioned dispensing valve, the improvement which comprises the closure cap additionally containing a spring-loaded excess pressure relief valve, extending through the bottom of said closure cap, alongside the dispensing valve, and an excess pressure blow-out closure, said spring-loaded excess pressure relief valve being set to bleed at a pressure of 300–350 pounds per square inch gauge, and said blow-out closure being set to blow at a pressure of about 400–450 pounds per square inch gauge, with said spring-loaded excess pressure relief valve being dimensioned so as to have a slow rate of gas discharge, whereby when said cylinder is subjected to excessive heat in the absence of fire conditions, the spring-loaded excess pressure relief valve can operate to lower the internal pressure of the container to the extent required to prevent the bursting of said container and also limit the quantity of gas released under such conditions to that which is required to prevent bursting of the container, said excess pressure blow-out closure being in free flow communication with the ambient atmosphere and dimensioned to empty the cylinder upon blowing within 5–10 seconds, whereby when said cylinder is subjected to excessive heat in the presence of fire conditions, the blow-out closure can operate to empty the container sufficiently rapidly to prevent explosion.

3,155,293
SPREADER APPARATUS
Howard Ernest Cotter, Flanagan, Ill.
Filed Aug. 3, 1962, Ser. No. 214,597
6 Claims. (Cl. 222—478)



3. In a spreader apparatus including a hopper providing an outlet opening in the bottom thereof and a tubular member extending downwardly from said hopper opening, a gravity flow distributor mounted below said hopper, said gravity flow distributor comprising a box having a cover and a downwardly and rearwardly inclined bottom wall, said tubular member extending through the cover of said box at a position above an upper portion of said bottom wall in open communication with the interior of said box, said box adjacent the lower end of said bottom wall having a plurality of outlet openings extending thereacross, and distributor tubes connected to said box and extending downwardly from the said outlet openings in open communication therewith.

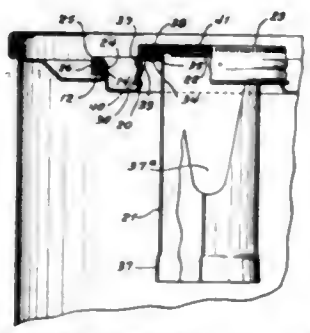
3,155,294
CONTAINER WITH CLOSURE CAP
Wilhelm Waldherr, Kafertlerstrasse 162, Mannheim, Germany
Filed June 26, 1961, Ser. No. 119,408
Claims priority, application Germany, June 27, 1960, W 28,081; July 1, 1960, W 24,398; July 23, 1960, W 28,227
18 Claims. (Cl. 222—521)



1. In combination, a closure cap member, a container member and stopper means, said stopper means having an opening and being operatively associated with said members to provide access to the container member through said stopper means with the stopper means in a first filling position, said stopper means being displace-

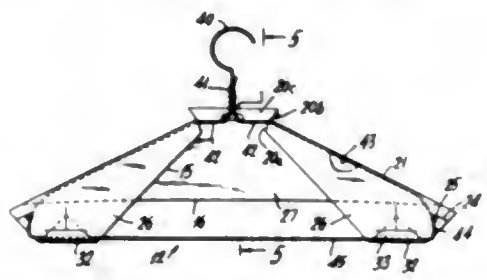
ably supported in one of the members for being urged to a second position in which said access is blocked and the container member is sealed, said cap member being movably supported on the container member and being tightly secured thereto with the stopper means in the second position, said cap member being movable with respect to said container member to provide a dispensing position for said container member in which the container member is externally accessible through the opening in the stopper means.

3,155,295
CONTAINER WALL CLOSURE COMBINATION AND ASSEMBLIES
Clarence W. Dearing, Short Hills, N.J., assignor to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 702,698, Dec. 13, 1957. This application Oct. 8, 1962, Ser. No. 230,786
2 Claims. (Cl. 222—525)



1. A container wall closure assembly combination which comprises a container wall formed with a large standard opening therein and a closure assembly secured thereto, said standard opening having a bordering formation in the form of a neck formed integrally from the stock of said container wall surrounding said opening, said opening neck including a first portion of a single thickness of container wall stock extending upwardly from said container wall and a second portion formed as an extension of said first portion and having a double thickness of said container wall material, said second portion having an upwardly extending first part, a rounded upper end and an inwardly extending second part extending downwardly and inwardly from said rounded end and being seated throughout its extent tightly against the inner surface of said first part, said first portion of said opening neck being curved outwardly and said second portion extending outwardly from said curved portion in frusto conical form at an angle of substantial extent with respect to the axis of said opening, said closure assembly having a securing formation secured to said opening neck and having the remainder of said closure assembly positioned radially inwardly of said opening neck, said assembly being capable of providing various sized pouring openings and closures therefor within the confines of said standard opening and said assembly being formed for application to said opening neck from the outside of a completed container after the same is filled, said assembly including a nozzle and a screw closure member secured thereto, said nozzle being formed as an annular member and said securing formation forming the peripheral portion of said nozzle, said securing formation having an upwardly extending inner portion overlying the inner surface of said opening neck, gasket material between part of said inner portion and inner surface, and said inner portion tightly engaging said gasket material and the exposed part of said inner surface, said securing formation also having an upper portion overlying the rounded upper end of said opening neck and having an outer portion extending downwardly in tight engagement with the outer portion of said opening neck to form a tight joint between said neck and said securing formation on the outer side of the wall of said container, an annular web extending integrally radially inwardly from said securing formation, a screw threaded neck formed with a dispensing opening therethrough, extending laterally away from the radially inner most portion of said web and in spaced relation with respect to said securing formation and a gasketing portion at one end of said screw threaded neck for the leakproof engagement of said screw closure member therewith, said screw closure member including means for engaging said gasketing portion for effecting a leakproof joint and said screw closure member being formed with a side wall threadedly engaged with the threads of said screw threaded neck, the radial extent of said annular web determining the size of said dispensing opening through said screw threaded neck whereby containers equipped with standard openings will have the full areas of said standard openings available for fast filling of the containers and after filling will have the desired size and type of assembly applied to close said opening and provide the desired size of dispensing opening within the confines of said larger standard opening.

3,155,296
GARMENT HANGERS AND COVERS THEREFOR
Caesar A. Calder, 19 Grove St., Caldwell, N.J.
Filed Sept. 27, 1961, Ser. No. 141,145
9 Claims. (Cl. 223—98)



1. In combination, a garment hanger comprising a hook portion, outwardly and downwardly inclined garment shoulder engaging portions, connected at their inner ends to said hook portion, end portions at the outer ends of said inclined portions, and a transverse portion interconnecting said end portions, a cover for said hanger made of sheet material and comprising a back portion having means engaging said hook portion and located at the back of said inclined portions of said hanger, and said cover being formed with downwardly and outwardly inclined folds, and with a pair of front portions connected to said back portion at said folds, and extending down at the front of said inclined portions of said hanger, said cover having cuts extending inwardly from the ends thereof and through which the outer end portions of the hanger pass, said transverse portion of said hanger being located below said cuts, with said end portions of said hanger engaging the inner ends of said cuts, said folds defining an included angle, when the cover is flat, larger than the included angle between said shoulder engaging portions of said hanger, and the distance between the inner ends of said cuts being greater than the distance between said end portions, whereby said end portions of said garment hanger press said back portion of the cover into flexed outwardly and transversely curved condition.

3,155,297
GUN CARRIER
Burton H. Stumpf, 408 Morrison, Waterloo, Ill.
Filed Apr. 12, 1962, Ser. No. 187,011
16 Claims. (Cl. 224—1)

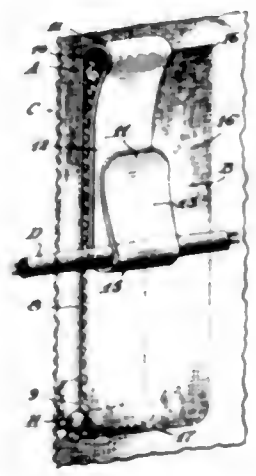
1. A gun carrier adapted to be attached to one side of a person, comprising a frame, a member extending outwardly from one side of said frame for supporting a gun placed on said member, means on said frame adapted

to prevent unlimited pivotal movement of a gun placed on said member, a first rigid arm connected to said frame and adapted



to extend across in front of the person, means for adjusting the vertical distance between the rigid arms, and strap means adapted to extend between the front of the gun carrier over one of the shoulders of said person to said first rigid arm.

3,155,298
CABLE SUPPORTING CLIP
Frank F. Brown, 6311 Florence Place, Bell Gardens, Calif.
Filed Feb. 12, 1962, Ser. No. 172,593
3 Claims. (Cl. 224—5)



1. A pocket engaging clip for supporting the electrical cable leading from a hair clipper, comprising

(*a*) an elongate shank having opposed ends,

(*b*) a return bend on one of said ends adapted to overlie the rim of a pocket,

(*c*) a shoe on the other of said ends adapted to seat on the bottom of a pocket to support said shank with said return bend spaced from the rim of a pocket overlain by said bend, and

(*d*) a U-shaped cable receiving and supporting hanger connected to said return bend overlying said shank.

3,155,299
RACKS FOR FISHING RODS
Ronald Horne, 3365 N. Federal Highway, and Joseph T. Reese, 1918 S. Andrews Ave., both of Fort Lauderdale, Fla.
Filed June 15, 1961, Ser. No. 117,411
1 Claim. (Cl. 224—42.1)

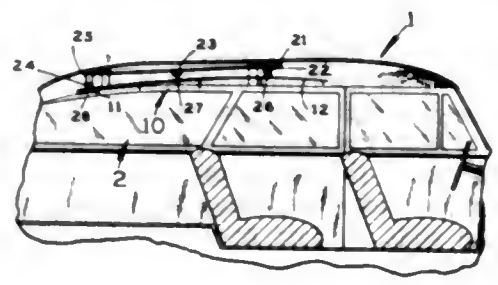
In a fishing rod rack for use in automotive vehicles, having relatively flat tops, as station wagons, the combination of

three spaced rod supports, attached to the underside of the top of said vehicle, including

a forward abutment support, having an appreciable vertical dimension below the top of said vehicle, and being faced on the lower extremity with a resilient material,

an intermediary support, having a vertical dimension less than the vertical dimension of said forward support, and

provided with a series of spaced hook means for en-



gagement with mid portions of fishing rod shafts, and

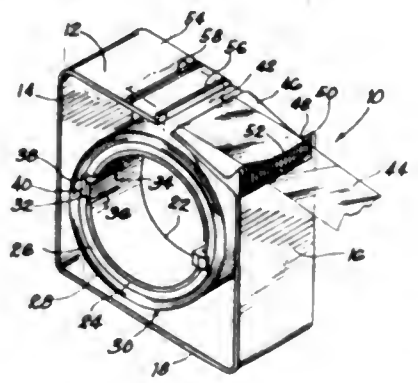
a rearward abutment support, having a vertical dimension greater than said intermediary support, and

provided with a series of flexible means, laterally indexed in relation to said engagement hook means on said intermediary support, to engage and retain fishing rod handles against said rearward support.

3,155,300
METHOD FOR PARTING-OFF A LENGTH FROM METAL BAR STOCK
Ernest George Bayliss, Witton, Birmingham, England, assignor to Forgings and Presswork Limited, Birmingham, England
No Drawing. Filed July 9, 1962, Ser. No. 208,562
Claims priority, application Great Britain, July 13, 1961, 25,359/61; June 23, 1962, 24,249/62
3 Claims. (Cl. 225—2)

1. The method of parting-off a length from a mild steel bar of 0.682 in. diameter which includes providing the bar in the position in which it is to be parted with a circumferential V-notch 0.043 in. deep, depressing the temperature of the bar in the region of the notch to minus 60° C., applying a steady tensile pre-stress of 3.4 tons per square inch, and applying an alternating stress of 13 tons per square inch at a frequency of 40 cycles per second.

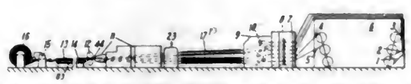
3,155,301
TAPE DISPENSER
Edwin F. Kusek, Chicago, Ill., assignor, by mesne assignments, to Mystik Tape, Inc., a corporation of Illinois
Filed Aug. 30, 1961, Ser. No. 134,873
1 Claim. (Cl. 225—66)



A holder and dispenser for pressure-sensitive adhesive tape wound in roll form about a cylindrical core comprising an enclosure formed of interconnected side, bottom and top walls having a width at least as great as

the width of the roll and in which the opposite walls are spaced one from another by an amount at least as great as the diameter of the roll, a cylindrical section sized within the enclosure in spaced parallel relation with the walls to define a space therebetween dimensioned to be at least as great as the thickness of the roll, a width no greater than the width of the walls and having an outer wall-to-wall dimension corresponding to about the internal diameter of the core to receive the core concentrically about the cylindrical section in position of use, means forming a part of the cylindrical section for blocking the core against axial movement from off of the cylindrical section when in position of use, one of said side, top and bottom walls being formed with a narrow slot extending crosswise thereof intermediate the ends, a pair of ribs projecting outwardly from the face of the wall to one side of the opening and extending crosswise thereof in spaced parallel relation with one of the ribs adjacent the opening, and an upstanding rib having a serrated cutting edge projecting outwardly from the wall to the other side of the opening and extending in parallel relation therewith, and in which the distance between the cutting edge and the slot is greater than the distance between the outermost rib of the pair of ribs and the slot so that the end portion of the tape beyond the enclosure will be dimensioned to extend beyond the pair of ribs for engagement of the adhesive side thereon.

3,155,302
METHODS OF AND APPARATUS FOR GUIDING FABRICS
Alfred Charles Hicks, Manchester, and Norman Hambley, Middleton, Manchester, England, assignors to Turner Brothers Asbestos Company Limited, Manchester, England, a British company
Filed Sept. 14, 1962, Ser. No. 223,782
10 Claims. (Cl. 226—3)



1. A method of constraining each of at least two layers of moving fabric to follow a predetermined path comprising the following steps:—

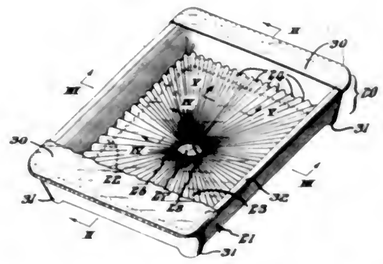
(*a*) causing electric currents to flow in cyclic order in conductors, each of which is carried by one layer of fabric and which extend parallel to the centre lines thereof;

(*b*) influencing by electromagnetic induction a sensing device responsive to the transverse position of that conductor which is for the time being carrying current; and

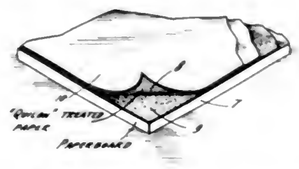
(*c*) applying, through a signal given by the sensing device, a corrective force to that layer of fabric which carries that conductor upon any deviation of that conductor from the predetermined path.

3,155,303
MEAT PACKAGING TRAY
Stanley O. Fenkel, 4721 Walnut St., Philadelphia, Pa., assignor of one-half to Fred Minikes, New Rochelle, N.Y.
Filed Jan. 31, 1962, Ser. No. 172,047
2 Claims. (Cl. 229—2.5)

1. A disposable packaging tray for meats, poultry, and the like, at least the floor of said tray being formed out of thin transparent plastic material, said floor being provided with two wells, one disposed along each of two opposite ends of said tray, said floor being arched between the wells and inclined downwardly from the arch toward each well, said floor having troughs therein running across the arch toward and terminating at each end in said wells, said wells receiving a pad of liquid-absorbing material, the well walls being provided with projections for retaining the absorbent pad placed therein.



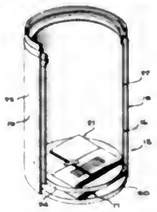
3,155,304
BAKING PAN WITH REPLACEABLE LINER
Ray F. Beerend, Vermilion, Ohio, assignor, by mesne assignments, to Basic Food Materials, Inc., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,164
3 Claims. (Cl. 229—3.1)



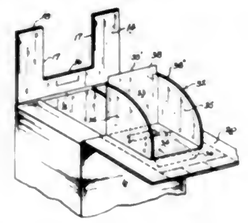
1. A seamless, disposable paper container for cooking and merchandising food, said container being adapted to be mounted in and freely removable from a supporting tray, said container being adapted for handling independently of said tray and comprising a paperboard base having integral bottom and side wall portions and means for providing seamless continuity of surface between the side wall portions and including folded corner portions between and having folded integral connection with adjacent side wall portions, each of said corner portions being folded against one of said side wall portions, the inner surface of the container having a seamless coat of stearato-chromic-chloride sizing extending continuously over all of said portions and having release characteristics and resistance to water and grease penetration into the paperboard base.

3,155,305
FOLDED PLASTIC BAG IN FIBER DRUM
Harold A. Bergstrom, Van Wert, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 27, 1961, Ser. No. 91,868
10 Claims. (Cl. 229—14)

1. The combination of a drum-like container and a tubular liner, said container having a bottom wall and a side wall rising peripherally therefrom, said tubular liner having a bottom wall, said liner bottom wall being seated solely upon the container bottom and secured only thereto thereby anchoring said liner to said container bottom wall, said liner being folded for opening to a position coextensive with the bottom and peripheral side walls of the container.



3,155,306
PREMEASURING DISPENSER SECURED TO LEAKPROOF CONTAINER CLOSURE ASSEMBLY
George Arlington Moore, New York, N.Y. (910 Lake Shore Drive, Chicago, Ill.)
Filed Nov. 1, 1961, Ser. No. 149,254
2 Claims. (Cl. 229—17)



1. In a carton for flowable material, a wall comprising:

first folded and second folded overlapping panels,

said first panel provided with a U-shaped open cut section defined by a base edge, parallel side edges, and end edges,

said base edge being spaced from and parallel to the folded edge of said first panel,

said parallel side edges being joined at one end at right angles with said base edge,

said end edges being joined at right angles with the other ends of said parallel side edges,

said first panel provided with a tab locking slit defined between and parallel to said folded edge and said base edge,

said second panel comprising a frangible section and two end sections which are joined to said frangible section by perforated cut lines,

said cut lines extending from and in a direction normal to the folded edge of said second panel to the extreme edge of said second panel,

said cut lines being separated by a distance larger than the distance between said parallel side edges of said first panel,

said frangible section extending from said folded edge of said second panel to an end edge,

said frangible section provided with a score line extending transversely between said cut lines and spaced from said end edge defining between said score line and said end edge a marginal flange,

said marginal flange provided with a tab means,

said tab means, in the overlapping position of said first and second panels, being in register with said tab locking slit,

said frangible section provided with a premeasuring dispenser unit secured to said section and extending into said open cut section of said first panel in the overlapping position of said panels,

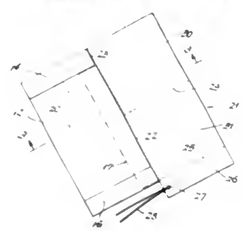
said dispenser unit including a pair of opposed side and end walls to contain a predetermined volume,

said side walls being sector shaped with the curved outer edges thereof engaging said base edge and with the outermost side edges thereof engaging said parallel side edges throughout the pivotal movement of said dispenser unit,

said first and second panels being bonded together in overlapping relationship by an adhesive in the area under said end sections of said second panel and by cohesion in the remaining area of said first panel,

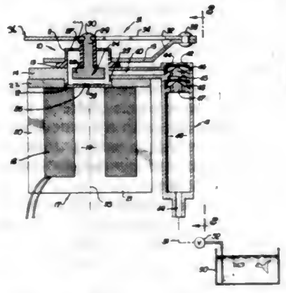
whereby said wall is hermetically sealed until said frangible section is initially pulled away from said first panel, separating from said end sections along said cut lines, rotating said dispenser unit through said open cut section to dispense a predetermined volume of said flowable material and said wall is resealed in a leakproof condition upon said frangible section being rotated toward said first panel and said tab being inserted into said tab locking slit.

3,155,307
COMBINATION ENVELOPE AND TICKET AND BLANK FOR MAKING THE SAME
David Pinkas, 51 Wall St., Norwalk, Conn.
Filed Jan. 7, 1963, Ser. No. 249,711
9 Claims. (Cl. 229—70)



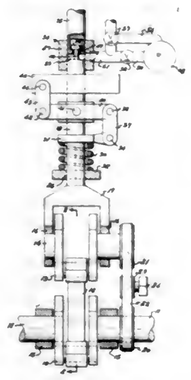
1. An envelope having detachable tags adapted to be formed from a substantially rectangular sheet comprising a main panel, a top panel of the same width as the main panel secured to one side of the main panel and terminating inwardly of the ends of the main panel a distance to provide top and bottom end flaps on said main panel, the bottom end flap being formed by a fold line forming a continuation of the bottom of the top panel, a side flange of a length equal to the top panel and connected to the other edge thereof by a fold line, said side flange being folded to overlie the top panel and to be disposed between the top and main panels when said top and main panels are in superposed relation, means securing the side flange to the main panel, an extension extending from the other side of the main panel and being separated therefrom by slits at each end equal to the lengths of the top and bottom flaps and having a tear line extending between the ends of the slits whereby the extension can be removed from the envelope, said bottom flap being folded about the fold line to overlie said top panel when in superposed relation to close the bottom of the envelope, and means securing the bottom flap in closed position.

3,155,308
FLUID PUMP
Chester E. Tussey, 495 Grandview Ave., San Francisco, Calif.
Filed Sept. 14, 1962, Ser. No. 223,754
12 Claims. (Cl. 230—55)



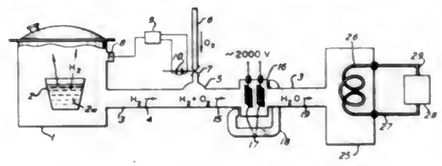
1. In a pumping device, means for creating fluid pressure pulsations including a pump chamber in which said pulsations are created, a power unit for creating a magnetic field moving in the chamber, and an armature movable in said chamber in response to field movement therein for effecting said pulsation creation, the armature being carried to move away from the power unit as fluid enters the pump chamber, the pump chamber having a wall member characterized as flexible in reciprocation in response to said armature movement during which the armature at all times remains essentially rigid in said chamber.

3,155,309
DEVICE FOR PRODUCING A PERIODIC LINEAR DISPLACEMENT OVER A SMALL PORTION OF ITS CYCLE
Berry W. Foster, 1147 10th St., Santa Monica, Calif.
Filed Mar. 13, 1961, Ser. No. 95,212
14 Claims. (Cl. 230—56)



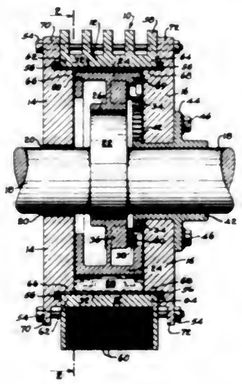
1. A device for producing a periodic linear displacement over a small portion of its cycle comprising:
a first crankshaft having fixed main bearings, first crank and mounted on said fixed main bearings;
a power shaft for driving and timing said first crankshaft;
a second crankshaft having a second crank,
a common connecting rod connecting said first and second cranks and driving said second crank,
second main bearings, said second crankshaft being mounted on said second main bearings;
a reciprocating rod on which said second main bearings are mounted; and
means for constraining said reciprocating rod to move only in a linear direction approximately parallel to the line between the centers of the two said crankshafts.

3,155,310
METHOD OF PRODUCING A VACUUM
Albert Lorenz, Hanau (Main), Germany, assignor to W. C. Heraeus, G.m.b.H., Hanau (Main), Germany, a corporation of Germany
Filed Mar. 7, 1961, Ser. No. 108,969
Claims priority, application Germany Mar. 12, 1960
13 Claims. (Cl. 230—69)



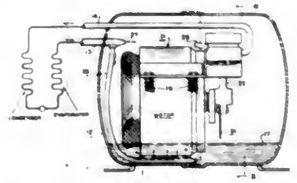
1. A method of producing a vacuum in a container comprising the steps of conducting the gases and vapors to be evacuated from said container including a gas which is difficult to condense, to a cryo pump so as to condense said gases and vapors by freezing, of adding an auxiliary gas capable of reacting with said difficultly condensable gas so as to form a product which is easily condensable by freezing in said cryo pump, and of igniting the mixture of said auxiliary gas and said difficultly condensable gas for causing a reaction therebetween.

3,155,311
HOUSING CONSTRUCTION FOR ROTARY MECHANISMS
Charles Jones, Paramus, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 24, 1962, Ser. No. 211,997
4 Claims. (Cl. 230—145)



1. In a rotary combustion engine having an outer body composed of a pair of end walls and a peripheral wall connected together to form a cavity therebetween, the inner surface of said peripheral wall having a plurality of lobes therein giving said cavity a multi-lobed configuration, a rotor rotatably mounted within said cavity, said rotor having sealing cooperation with said end walls and having a plurality of circumferentially spaced apex portions for sealing engagement with the inner surface of said peripheral wall forming working chambers therebetween which upon relative rotation of said rotor and said outer body vary in volume, an intake means for admitting air to said chambers for combustion therein, and an exhaust means for expelling the burnt gases from said chambers, said peripheral wall having a width substantially greater than that of said rotor so that said peripheral wall projects beyond the rotor and said outer body end walls each having a central portion projecting inwardly to a position adjacent said rotor and extending within the adjacent portion of said peripheral wall projecting beyond said rotor with each said end wall central portion having a flat end face and the peripheral surface of each said end wall central portion having a multi-lobed configuration substantially identical with that of the inner surface of the peripheral wall and being dimensioned so that each central portion of said outer body end walls is in tight fitting engagement with the entire inner surface of the adjacent projecting portion of said peripheral wall.

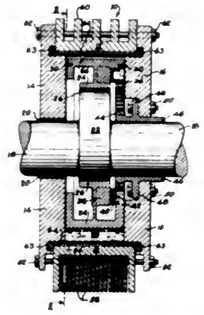
3,155,312
REFRIGERATION APPARATUS
Richard T. Douglas, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 739,316, June 2, 1958. This application Dec. 27, 1961, Ser. No. 163,384
5 Claims. (Cl. 230—232)



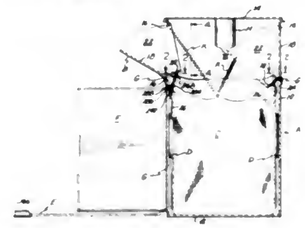
1. Refrigeration apparatus comprising
a motor-compressor unit,
a sealed shell housing said unit,
a body of liquid lubricant in said shell,
means resiliently mounting said unit in said shell in spaced relation to the latter with a portion of the unit submerged in said body of lubricant, and
means for aerating said body of lubricant to reduce the ability of the latter to transmit noise from the unit to the shell.

3,155,313
ROTOR HOUSING CONSTRUCTION OF ROTATING COMBUSTION ENGINE
Max Bentele, Ridgewood, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,507
8 Claims. (Cl. 230—238)

1. In a rotary mechanism having an outer body comprising a peripheral wall interconnected with a pair of end walls forming a cavity and the inner surface of said peripheral wall having a multi-lobe profile, a rotor rotatably mounted within said cavity, a plurality of circumferentially-spaced radially movable seal strips carried by said rotor for sealing engagement with the inner surface of said peripheral wall thereby forming a plurality of working chambers which upon relative rotation of said outer body and said rotor vary in volume, intake means and exhaust means provided in said mechanism; said peripheral wall being formed of a light alloy material selected from the group consisting of aluminum, magnesium, aluminum alloy and magnesium alloy and having a multi-layer liner on the inner surface thereof, said multi-layer liner comprising an intermediate layer securely bonded to the entire inner surface of said peripheral wall and having a relative hardness greater than that of said peripheral wall and a thin inner layer of high wear resistant material deposited on said intermediate layer and said multi-layer liner substantially identically conforming to the inner contour of said peripheral wall.



3,155,314
TRASH DISPOSAL APPARATUS
Peter A. Kreider, 1307 Denise Court, Brea, Calif.
Filed May 8, 1963, Ser. No. 278,918
8 Claims. (Cl. 232—43.2)



1. In an automotive service station trash disposal apparatus of the type which includes a trash-receiving container having an opening formed therein that is closed by a pivotally supported guide in the form a chute when said guide is in a first position, the combination of an air-operated actuator, which when energized, pivots said guide to a second position in which trash may be deposited in said guide, and after a predetermined length of time pivots said guide to said first position to discharge trash therefrom into said container and close said opening, which actuator comprises:
(*a*) a cylinder having first and second open ends supported in said container;
(*b*) a piston slidably movable in said cylinder;
(*c*) a rod pivotally connected to said piston and guide that extends through said first open end;
(*d*) first means that tend at all times to pivot said guide from said second to said first position;
(*e*) a first hollow housing that closes said second end of said cylinder, which first housing has a first passage formed therein through which compressed air is admitted into a first confined space therein, a second passage through which compressed air discharges from said first confined space into said cylinder to move said piston and rod in a direction to pivot said guide into said second position, and a third passage that is in communication with the interior of said cylinder and the ambient atmosphere, said third passage being of substantially smaller cross section than said second passage, and

the rate at which air flows from said cylinder through said third passage to the ambient atmosphere determining the rate at which said piston and rod are moved in said cylinder by said first means towards said first housing, which rate in turn determines the time that it takes for said guide to pivot from said second to said first position;

(*f*) second means for obstructing the flow of compressed air into said first confined space upon the pressure of air therein reaching a predetermined magnitude, said predetermined magnitude being such as to be able to move said piston and rod in said cylinder in a direction away from said first housing to overcome a force exerted by said first means and pivot said guide from said first to said second position;

(*g*) third means for generating a pulse of fluid at increased pressure when said third means is run over by an automotive vehicle or stepped on by a person;

(*h*) fourth means for obstructing the flow of said compressed air at said predetermined magnitude from said first confined space through said second passage to said cylinder when said fourth means is in a first position, but said fourth means permitting flow of said compressed air from said first confined space through said second passage when said fourth means is in a second position; and

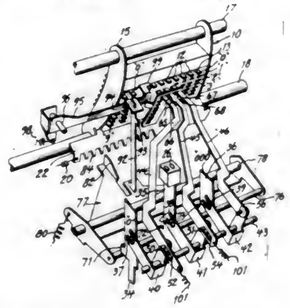
(*i*) fifth means responsive to said pulse of fluid from said third means for moving said fourth means from said first to said second position for a sufficient length of time for said compressed air at said predetermined magnitude in said first confined space to flow through said second passage to said cylinder to move said piston and rod therein to a position where said guide is in said second position.

3,155,315

MECHANISM TO SELECTIVELY INSERT SINGLE DIGITS OR A PLURALITY OF THE SAME DIGITS INTO A CALCULATOR REGISTER

Giam Piero Barozzi and Gian Carlo Horeschi, Cremona, Italy, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 13, 1963, Ser. No. 287,654
4 Claims. (Cl. 235—60)



1. Mechanism for selectively entering digits singly or in groups into a business machine comprising, a pin box having a plurality of stop pins arranged in predetermined rows and being individually settable to register corresponding digits, at least two pin plungers arranged in a common plane and adapted for setting of the said pins brought into alignment with said plungers in said plane, key means, one for each of said plungers for actuating its associated plunger, pin box escapement means for indexing said pin box to bring successive rows of said pins into alignment with said plungers, said escapement means including a bail responsive to actuation of any of said plungers for permitting indexing of said pin box the number of rows corresponding to the number of said pins set, and plunger coupling means for coupling said pin plungers, said coupling means permitting independent actuation of a first one of said plungers by its associated key means and causing coupled actuation of both said plungers under conditions where the other of said plungers is actuated by its associated key means.

ERRATUM

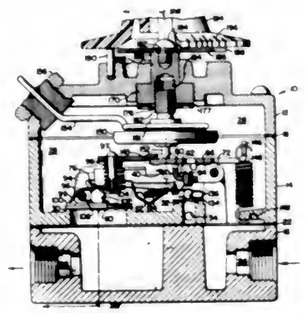
For Class 235—201 see:
Patent No. 3,155,825

3,155,316

THERMOSTATIC CONTROL DEVICE

Charles D. Branson and Clarence Wantz, Greensburg, Pa., assignors to Robertshaw Controls Company, a corporation of Delaware

Filed Feb. 23, 1961, Ser. No. 91,105
8 Claims. (Cl. 236—48)



1. In a thermostatic control device, the combination comprising a casing having an inlet and an outlet, a valve chamber in said casing communicating with said inlet, main valve means in said casing controlling a main fluid flow from said chamber to said outlet, bypass valve means in said casing controlling a bypass fluid flow from said chamber to said outlet, means pivotally mounted in said casing including a lever element for actuating said main valve means and a snap acting mechanism for actuating said bypass valve means with a snap action, thermally responsive means having a movable member operatively associated with said lever means for moving the same whereby said main valve means and said bypass means are subject to thermostatic cycling, and overshoot means operatively disposed between said movable member and said pivotally mounted means, said overshoot means being normaly biased into engagement with said movable member and being pivoted relative to said pivotally mounted means in the opposite direction of said biasing movement of said overshoot means in response to abnormal movement of said movable member in a valve means closing direction.

3,155,317

COMBINATION TEMPERATURE AND PRESSURE REGULATOR

Louis M. Puster and Jesse P. Morgan, Knoxville, Tenn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Mar. 26, 1962, Ser. No. 182,422
8 Claims. (Cl. 236—80)

1. A regulator comprising,

a body having an inlet chamber and an outlet chamber,

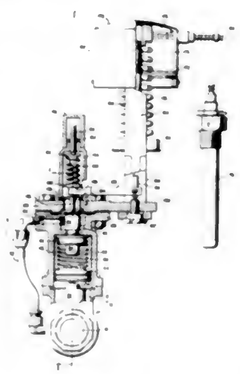
a guide member mounted in said body,

an open ended cavity in the guide member,

a restricted passage connecting the cavity with the outlet chamber,

a main valve slidable on the guide member for controlling flow from the inlet to the outlet chamber, and having an end wall overlying the open end of the cavity,

a port in said end wall providing communication between the inlet chamber and the cavity,



a piston movable in response to pressure variations in the outlet chamber,

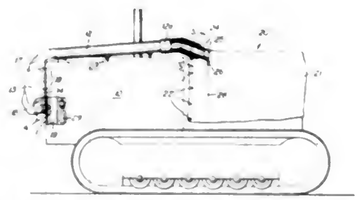
and an anticipating valve carried by the piston movable in one direction to close the port and actuate the main valve in a direction to decrease the flow from the inlet chamber to the outlet chamber, and movable in the opposite direction to open the port and actuate the valve in a direction to increase the flow from the inlet to the outlet chamber.

3,155,318

ACCESSORY HEATING SYSTEM FOR TRACTORS AND SIMILAR EQUIPMENT

Arthur J. Kirkham, 24 W. 5th South, Salt Lake City, Utah

Filed Jan. 11, 1963, Ser. No. 250,877
7 Claims. (Cl. 237—12.3)



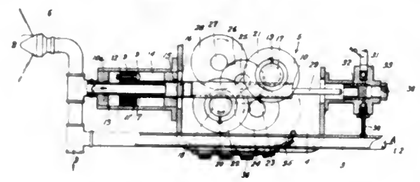
1. A temporary, accessory, heat-conducting device adapted to transfer heat from a radiator of a tractor or similar equipment, which has a fan arranged to propel air forwardly through and out the front of the radiator to an operator's compartment, and for retaining transferred heat in the compartment, said device comprising: a radiator-engagement cap, said cap being formed of flexible and of resilient material and having an intake opening surrounded by a rim capable of resiliently expanding to cover a selected area of desired configuration; fasteners spaced around said rim in order to hold it tightly against a surface area; and a flexible duct extending from said flexible cap to a point of heat utilization.

3,155,319

LARGE SIZE PIPE CLEANING, SEWER SYSTEM CLEANING AND FIRE FIGHTING VEHICLE

Paul Hammelmann, Oelde, Westphalia, Germany

Filed June 15, 1962, Ser. No. 202,820
Claims priority, application Germany, June, 16, 1961, H 42,879
6 Claims (Cl. 239—191)



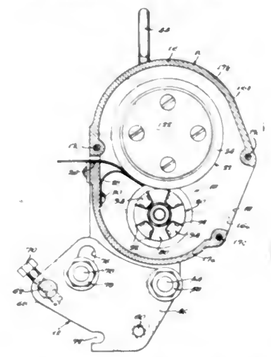
1. A vehicle for frontally dispensing a water jet, comprising a main water supply conduit including a supply hose delivering water under pressure, coupling means attaching the supply hose to the vehicle, nozzle means mounted at the front of the vehicle and connected to the main water supply conduit for receiving and dispensing the water under pressure, drive wheel means for driving the vehicle, a drive shaft carrying the drive wheel means, a hydraulic motor for rotating the drive shaft, a branch line leading from the main water supply conduit to the hydraulic motor and delivering water under pressure thereto for operation of the hydraulic motor, and clutch means arranged between the drive shaft and the drive wheel means for operatively connecting and disconnecting the drive shaft and wheel means, the clutch means being connected to the main water supply conduit and being operated in response to the water pressure in said conduit to connect the drive shaft and wheel means, the clutch means operatively disconnecting the drive shaft and wheel means in the absence of pressure in the conduit.

3,155,320

ROTOR AND ROVING CUTTER MOUNTING MEANS FOR A SPRAY GUN

Walter M. Jones, Evanston, Ill., assignor to Binks Manufacturing Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 27, 1963, Ser. No. 261,365
6 Claims. (Cl. 239—289)



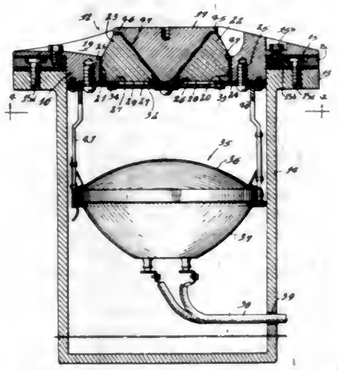
1. A rotor for a roving cutter comprising a body, a plurality of circumferentially spaced longitudinally extending slots in the periphery of said body, a pair of pins projecting from each side wall of each slot, a blade in at least one of said slots engaging a side wall thereof, said blade having an edge extending beyond the periphery of said body and a pair of openings in register with and receiving the respective pair of said pins, a plug mounted

in each of said slots, each of said plugs having a cross-section substantially conforming to the cross-section of said slots, having at each side thereof a longitudinally extending recess in register with and receiving the adjacent pair of pins and having a bore therethrough for reception of fastener means for securing said plug to said body.

3,155,321
AIRPORT RUNWAY LIGHT

Clement J. McDonald, River Forest, Ill., assignor to Multi Electric Mfg., Inc., a corporation of Illinois

Filed Sept. 30, 1960, Ser. No. 61,049
3 Claims. (Cl. 240—1.2)



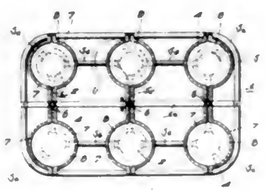
3. In a lighting source, light providing means comprising a light source such as a locomotive headlight lamp having a parabolic reflector and an elongate filament extending transversely to the axis of the reflector for delivering light substantially parallel to said axis in a non-uniform distribution across said reflector wherein a pair of localized areas of high intensity elongated substantially parallel to the direction of elongation of the filament are spaced on either side of said axis, an elongate prism having a light-receiving face spaced from said axis confronting and generally peripherally congruent with one of said localized areas to receive substantially only high intensity light, said prism having additional faces for redirecting the high intensity light to emerge from the prism in a thin beam substantially transversely to said axis; and enclosure means housing the light source and prism and provided with an outlet opening for passing said beam from the prism laterally from the housing, said housing being adapted for implantation with the outlet opening exposed.

3,155,322
BANK LIGHT ASSEMBLY

Tadayoshi Akita, 436 Seijo-cho, Setagaya-ku, Tokyo, Japan; Tatushi Ohta, House No. 440 of Nogeyama Jutaku, No. 29, Nishi-ku, Yokohama, Japan; and Yasuo Ito, 1453 Kita-Tsunashima, Minato-ku, Yokohama, Japan

Filed Jan. 2, 1962, Ser. No. 163,423
2 Claims. (Cl. 240—3)

1. A bank light structure of the type including a plurality of light sources and heat absorbing filters one for each of said sources, said structure comprising a plurality of sockets adapted to receive electric light bulbs and arranged relatively close to each other and in longitudinal and transverse rows, to provide a large-surface composite light source, a plurality of first connecting elements joining the adjacent sockets of both said rows, to provide a first integral lattice frame by said sockets and elements, a supporting member for said structure connected to said frame, a second frame and a plurality of filter mounts supported thereby, and a plurality of further connecting elements joining said first and second frames in spaced

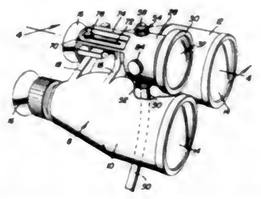


parallel relation to one another and with each of said filter mounts being in alignment with a coordinated light bulb mounted in said sockets.

3,155,323
ILLUMINATION ATTACHMENT FOR BINOCULARS OR THE LIKE

Milton G. Deppe, 105 N. 5th St., Bellevue, Iowa

Filed July 12, 1962, Ser. No. 209,412
3 Claims. (Cl. 240—6.4)



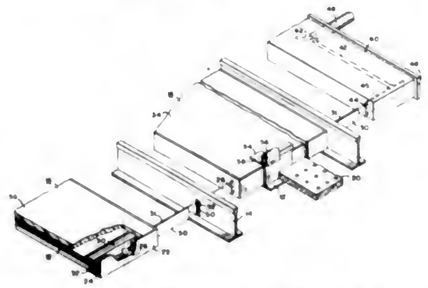
1. In combination, binoculars embodying a pair of duplicate sighting and viewing barrels having distal ends provided with lenses and inner proximal ends embodying eyepieces, frame means interconnecting said proximal ends, said frame means including paired lateral arms fixed to the respective proximal end portions of said barrels, said arms having cooperating ends joined together by a connecting hinge pin normally occupying a plane above the plane of said barrels, a bracket having forward and rearward ends, the rearward end of said bracket residing flatwise atop said hinge pin and being separably connected to said hinge pin by a clamping plate which is separably connected to the rearward end of said bracket, said bracket further having a straight elongated rib having a longitudinal top surface, said rib and surface providing a finger orienting guide, a light source designed and adapted to beam a light forwardly in a plane above top portions of the aforementioned barrels, said light source embodying a cylinder having a rearward end eccentrically connected to the cooperating forward end of said bracket, said cylinder having lamp means enclosed therein and cooperating lens means at its forward end, said cylinder being poised and assuming an operating position above the customary existing space between the respective barrels, said cylinder being centrally provided on the top of said rearward end with switch means including an available finger-operated spring-loaded pushbutton, normally open contact means housed in said cylinder, said pushbutton having cooperating and operating connection with said contact means, said pushbutton being in alignment with but in a plane above the finger guide surface of said rib, and rheostat means operatively embodied in said cylinder and electrically cooperable with said contact means, said rheostat means including a finger-controlled operating knob, said knob being mounted for operation on an exterior of one side of the rearward end of said cylinder, being in a plane below said rib and in close

proximity to said pushbutton whereby with the aid of the rib, pushbutton and close-at-hand operating knob, the beam of light from said light source is operable at will.

3,155,324
CEILING LIGHTING FIXTURES

Kao Chen, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 23, 1961, Ser. No. 133,347
8 Claims. (Cl. 240—9)



8. In a row of lighting fixtures, a pair of adjacent fixtures at one end of said row, an inverted T-shaped supporting member located between said fixtures, each of said fixtures including a frame and having bus bars located in opposing positions along the length of said fixture, said fixtures frames supported on the bottom flanges of said supporting member, said bus bars located adjacent to but spaced from inner sides of said frame, said frame including slots communicating with the spaces between said bus bars and said frame and with the outside of said fixture, openings in said supporting member in registration with said slots, insulating sleeves located in said openings, extensions of the bus bars from one of said adjacent fixtures being passed through said sleeves and the slots of the other of said adjacent fixture and being located in the spaces between the latter fixtures bus bars and frame, means electrically engaging said extensions with said latter fixtures bus bars, and means for electrically connecting said latter fixtures bus bars with a source of electric potential.

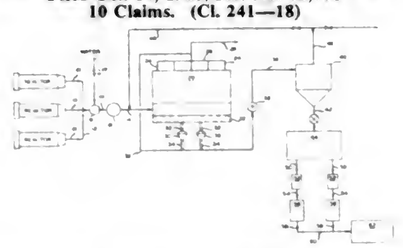
ERRATUM

For Class 240—145 see:
Patent No. 3,155,349

3,155,325
PROCESS AND APPARATUS FOR TREATING CARBON BLACK EFFLUENT

Oliver K. Austin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 14, 1960, Ser. No. 62,708
10 Claims. (Cl. 241—18)

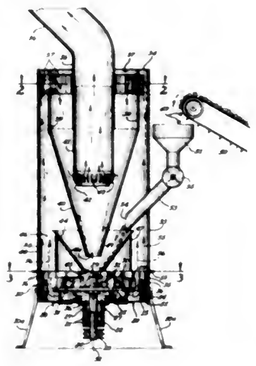


1. A process for recovering carbon black from a stream of smoke containing same which comprises passing said stream into a lower compartment of a bag filter and upwardly thru filter bags into an upper separate compartment of said filter so as to filter black from said stream, drop the black to the bottom of said lower compartment, and pass relatively clean gas from said upper compartment; gravitating separated black from the bottom of said lower compartment into a micropulverizer while pulling smoke therewith from said lower compartment; comminuting coarse black particles and forming a suspension of black in said smoke in said micropulverizer; passing said suspension into a pneumatic conveyor line carrying a conveyor gas; and conveying said black suspension thru said conveyor line to a gas-black separation zone to recover black from said gas.

3,155,326
ORE PULVERIZER AND SIZING DEVICE

Richard E. Rhodes, 4814 E. Virginia, Phoenix 8, Ariz.

Filed Apr. 16, 1962, Ser. No. 187,857
2 Claims. (Cl. 241—53)



1. An ore pulverizer and sizing device including in combination:

(*a*) a circular base,

(*b*) a series of circumferentially spaced inwardly facing stator plates fixed about the periphery of said circular base,

(*c*) a rotary activating disc journaled on said base for rotation about a vertical axis within said stator plates,

(*d*) radial baffles on the lower face of said rotor disc to cause air circulation outwardly of said rotor disc and upwardly over said stator plates,

(*e*) material throwing members fixed to the upper face of said rotor disc for radially outwardly discharging material against said stator plates in the presence of said upward air flow,

(*f*) an air circulating casing mounted on top of said base above said rotor disc and stator plates adapted to receive said upward air flow to separate and classify the treated ore carried in said upward air flow,

(*g*) a top cover fixed on said air circulating casing,

(*h*) a pulverized and sized ore discharge pipe extending downwardly through said top cover,

(*i*) a cylindrical return air sleeve fixed to and extending downwardly from the under surface of said top cover located concentrically between said air circulating casing and said pulverized and sized ore discharge pipe,

(*j*) a long tapered conical member having its large end fixed to the lower edge of said return air sleeve terminating at its lower end in a reduced discharge

opening adapted to discharge in the center of said rotor disc,

(*k*) an output control sleeve carried in an axially vertically adjustable relative to said ore discharge pipe having,

(*l*) a series of discharge louvers circumferentially spaced about the lower end of said output control sleeve through which sized ore is delivered into said output control sleeve from said conical sleeve member,

(*m*) a receiving cone fixed on said base surrounding the lower end of said long tapered conical member having an opening discharging on the center of said rotor disc below said reduced discharge opening of said long tapered conical member and forming an annular air passageway above said stator plates between said air circulating casing and the outside of said receiving cone,

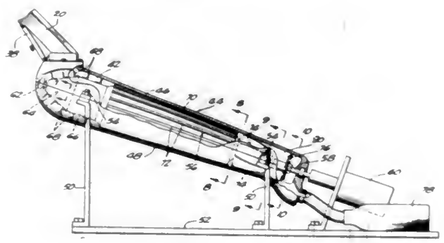
(*n*) means for supplying ore to be treated through said air circulation casing into said receiving cone,

(*o*) and receiving louvers formed in the upper end of said return air sleeve providing for the flow of air and pulverized material from the top of said air circulating casing into the top of said return air sleeve.

3,155,327
COMMINUTING ASHTRAY

John B. Litel, Box 168, Woodland Hills, Calif.

Filed Sept. 10, 1962, Ser. No. 222,532
12 Claims. (Cl. 241—56)



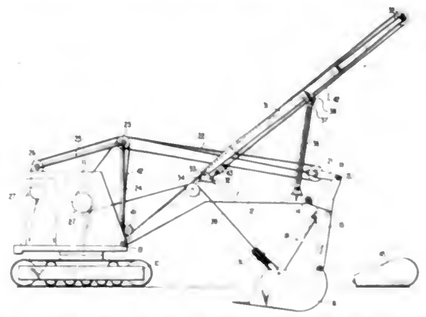
1. A comminuting ashtray comprising: a housing, a rotor within said housing, said rotor carrying a plurality of comminuting blades at the forward extremity, said rotor carrying a plurality of snuffing blades extending longitudinally of said rotor and immediately to the rear of said comminuting blades and means associated with said housing to the rear of said comminuting blade for drawing air and articles through both sets of blades.

3,155,328
COMBINED TRENCH HOE AND CRUSHER BALL MACHINE

Lester A. Longley, Las Vegas, Nev., assignor to Longley Construction Co., Inc., Las Vegas, Nev., a corporation of Nevada

Filed July 12, 1963, Ser. No. 294,595
13 Claims. (Cl. 241—101)

1. An excavating machine, comprising a mobile support; power-operated trench hoe mechanism mounted upon said support and operable to excavate a trench; crusher ball hoist means carried by said support and operable selectively and independently of the trench hoe mechanism for elevating and dropping a crusher ball to crush hard material in advance of the trench hoe mechanism so that the latter is capable of excavating said trench, said trench hoe mechanism including a boom and bucket mechanism pivotally carried by the boom and adapted to rest on the ground as a supporting strut therefor, and means on the boom supporting the crusher ball

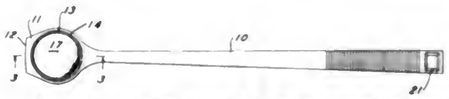


hoist means, said hoist means extending beyond said bucket mechanism in the supporting strut position thereof.

3,155,329
VIBRATORY STRIKING TOOL

Thomas B. Aldrich, West Nyack, N.Y., assignor to Frank W. Earnest, Jr., Wilkes-Barre, Pa.

Filed June 21, 1962, Ser. No. 204,224
3 Claims. (Cl. 241—168)



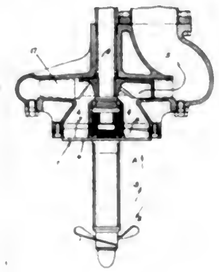
1. A vibratory striking tool for disintegrating ice cubes by a succession of closely spaced blows, comprising in combination, an elongated resilient member having a handle at one end for grasping the tool and a working head at the opposite end, said elongated member convergingly tapering from said handle end to a relatively thin cross-section proximate to said head end to provide an oscillatory whipping motion of said head end when an appropriate force is applied to said handle end, said working head including a substantially planar base so coupled to said resilient member that the plane thereof is disposed perpendicularly to the path of motion traversed by the head when said head is oscillated, and a pair of rigid dome shaped impact members rigidly secured respectively to opposite faces of said planar base with the convex dome surfaces of said impact members facing in opposite directions outward away from said planar base.

3,155,330
CUTTING DEVICE FOR MANURE PUMPS

Otto Hölz, Peter-Dörler-Strasse 26; Franz Hölz, Pfanderweg 12; Hans Zoller, Silcherweg 6; and Max Streicher, Oderstrasse 28, all of Wangen, Allgau, Germany

Filed Feb. 11, 1963, Ser. No. 257,587
2 Claims. (Cl. 241—258)

1. In combination, a manure pump having a casing and a rotary drive shaft extending therethrough, said casing having a suction opening positioned concentrically about said shaft adjacent the inlet side of the pump, a cutter blade mounted on said shaft at the inlet to the pump and rotatable by the shaft with said cutter blade having shearing edges in the direction of rotation of the blade, ribs rigidly mounted with respect to said casing adjacent to the cutter blade and extending across said opening in a plane at right angles to said shaft, said ribs defining elongated triangular openings arranged about said shaft in the direction of rotation thereof, the rib forming the short side of each of said elongated triangular openings facing the shearing edge of said rotatable blade and having a shearing edge cooperating with the shearing edge of the blade, and one of said shearing edges having alternately arranged projections and recesses

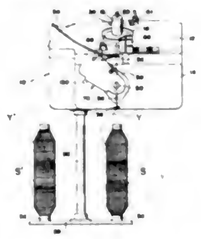


throughout the extent of the edge and substantially in the plane thereof to effect cutting of the material passing to the pump along the entire cooperating shearing edges of the blade and rib and thereby eliminating a build-up of pressure toward the outer periphery of the suction opening.

3,155,331
YARN WINDING MACHINE WITH YARN SEVERING AND TENSION SENSING MEANS

Thomas E. Pitts, Cranston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Dec. 11, 1962, Ser. No. 243,854
7 Claims. (Cl. 242—19)

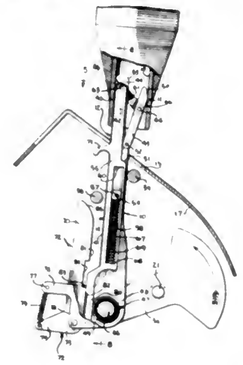


1. In a winding machine adapted to advance a strand of yarn from a supply source to a take-up unit, said machine including sensing means for detecting an interruption in said advancing strand of yarn, and actuating means operable cooperatively with said sensing means to present a fresh strand of yarn for winding upon interruption of said advancing strand, the improvement therein comprising, a clamping member arranged to grip said strand between said supply source and said take-up unit, severing means movable from a first position spaced from said yarn strand to a second position interposed in the path of the strand between said supply source and said clamping member, means connnected with and operable by said actuating means for moving said severing means from said first position to said second position, a guard member normally enclosing said severing means and movable cooperatively therewith, said guard member being arranged to contact said strand of yarn, and resilient means yieldably connecting said severing means and said guard member, said resilient means being yieldable to permit separation of said severing means from said guard member when the tension in said strand exceeds a predetermined value whereby said severing element is presented to cut said strand.

3,155,332
BOBBIN SKEWER

Franklin L. Townsend, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed Apr. 9, 1962, Ser. No. 186,247
16 Claims. (Cl. 242—35.5)



1. In a spooler, the combination of, an elongated arm adapted to telescope at its free end into the bore of an active bobbin and support the latter in an unwinding position, means supporting a reserve bobbin and angularly spacing the latter away from the active bobbin, an expandable tip including a finger mounted on said free end for movement laterally of the arm into and out of engagement with the wall of said bore, mechanism operable to shift said arm endwise along a predetermined path to withdraw said tip from the active bobbin, swing the arm into axial alinement with the reserve bobbin, move the arm endwise along a second path to insert the tip in the reserve bobbin, and swing the latter back to said unwinding position, a slide guided along said arm for back and forth movement longitudinally of the arm and connected to said finger to collapse and expand said tip upon such movement, a spring acting between said arm and said slide to bias the latter in a direction to expand said tip, means operating as an incident to withdrawal of said arm from the active bobbin to shift said slide in one direction to collapse said tip, a latch movably mounted on said arm and engageable with said slide upon the full collapse of said tip thereby to hold the latter collapsed as said arm is projected into the bore of the reserve bobbin, and means operating as an incident to full entry of said tip into the reserve bobbin to trip said latch and release said slide to the action of said spring and thereby cause the instantaneous expansion of said tip until said finger engages and becomes pressed against said bore wall.

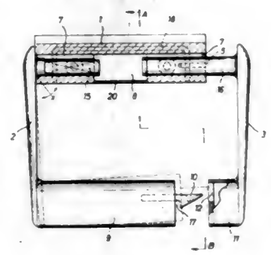
3,155,333
TAMPER-PROOF HOLDER FOR PAPER ROLLS

Paul Jend, Steinhauser Strasse 64, Wuppertal-Beyenburg, Germany

Filed Nov. 19, 1962, Ser. No. 238,676
Claims priority, application Germany, Nov. 20, 1961, J 20,859
2 Claims. (Cl. 242—55.2)

1. A safety holder for a roll of paper comprising an elongated mounting member having a flat planar surface on one side thereof, and a bore extending longitudinally therethrough, a supporting bracket and a securing member carried by said mounting member and extending therefrom at right angles thereto, means at one end of said supporting bracket mounting said supporting bracket in one end of said bore for pivotal movement in a plane at right angles to said bore, means at one end of said securing member mounting said securing member in the other

end of said bore for pivotal movement in a plane at right angles to said bore, and for sliding movement axially of said bore in a direction away from said supporting bracket, an integral roll supporting member extending at the other end of said supporting bracket, toward said securing member and terminating in an integral latch member, an integral roll supporting member extending from the other end of the securing member toward said

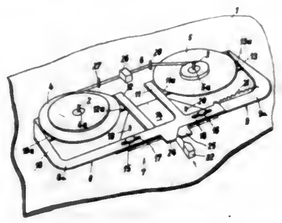


supporting bracket and terminating in a latch receiving means, which receives said latch member and secures said roll supporting members together, said first named means also mounting said supporting bracket for pivotal movement toward said securing member sufficiently to unlatch said latch means only when said supporting bracket is extending in a plane substantially parallel to said flat planar surface.

3,155,334
MAGNETIC SOUND RECORDING AND REPRODUCING APPARATUS

Siegmund Loewe, 68 Ridge Road, Yonkers 5, N.Y.; Bernard Lowe, executor of said Siegmund Loewe, deceased

Filed Jan. 22, 1962, Ser. No. 167,556
Claims priority, application Germany July 9, 1954
7 Claims. (Cl. 242—55.12)

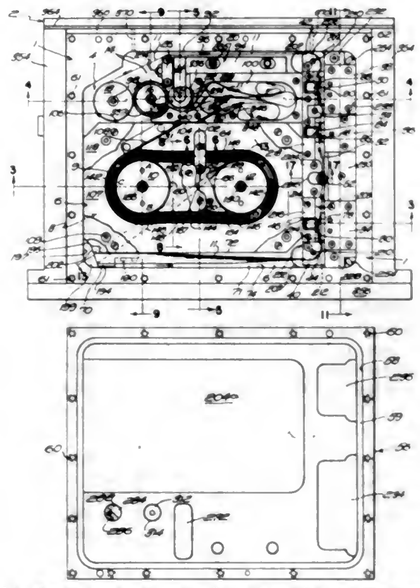


7. In a tape recorder, in combination, a tape deck; a pair of spaced reel supporting shafts extending above said deck; a tape reel removably mounted on each shaft; a carrier for non-rotatably supporting said reels in a common plane at least when said reels are removed from the respective shafts, said carrier comprising a unitary first and a unitary second component each including a supporting portion and a pair of spaced reel-engaging elements which latter are carried by the respective supporting portion and one of which engages one of said reels and the other of which engages the other reel, said components being connected with each other and said elements engaging diametrically opposed portions of the respective reels; and means for moving said elements away from the respective reels.

3,155,335
TAPE STORAGE MAGAZINE

Paul F. Maeder, Rumford, R.I., assignor, by mesne assignments, to Speidel Industrial Division, Inc., Warwick, R.I., a corporation of Delaware

Filed Feb. 17, 1960, Ser. No. 9,264
14 Claims. (Cl. 242—55.19)



14. A tape storage magazine adapted to be removably placed in a tape recorder and having a cavity in a face thereof, spaced reels located in said cavity, a closed loop of tape, said tape being stored in said cavity in the form of a bundle of layers wound around said reels, guide means for guiding an inner tape layer of said bundle away from the inside of said bundle and back to the outside of said bundle, whereby the tape in said bundle moves from the outside of the bundle to the inside of the bundle, means located adjacent the outer contour of at least one of the portions of the tape bundle between the reels to force said portion inwardly into a reverse bend sufficient to avoid any sustained substantial opening of said bundle during movement of said tape from the outside of said bundle to the inside of said bundle, whereby speed difference between the tape layers is compensated for in the area of said reverse bend.

3,155,336
FILM SPOOL

Philip E. Uterhart, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 5, 1962, Ser. No. 164,576
5 Claims. (Cl. 242—71.8)

1. A molded one-piece camera spool for holding motion picture film comprising spaced end flange members each having an axial mounting aperture adapted to receive a coacting member and a hollow cylindrical hub extending therebetween and integrally connected therewith, said hub having two essentially parallel, substantially opposed slots extending longitudinally the length of the hub and terminating at said flange members and being provided with at least one tooth extending into a slot for engaging a perforation of a motion picture film, said hub having a pair of peripheral portions interconnecting said slots, said peripheral portions being characterized in that any

interior portion thereof is accessible through an adjacent slot along a line parallel to a diameter of said hub and each peripheral portion has a pair of edges, each forming a surface of a slot wherein one edge of each said peripheral portion is parallel and diametrically opposite the

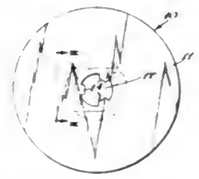


other edge of the other peripheral portion and a part of the interior of each peripheral portion adjacent the remaining edges is a planar surface parallel to the said first edges, thereby permitting said spool to be molded in one piece by co-acting mold sections movable radially to the hub of said spool.

3,155,337
CAMERA FILM SPOOL

Philip E. Uterhart, Park Ridge, Ill., assignor to Bell and Howell Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 25, 1963, Ser. No. 267,690
5 Claims. (Cl. 242—74)

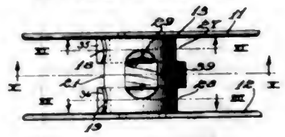


1. An integral spool for motion picture film comprising a hollow hub having flanges centrally mounted at opposed ends thereof, said hub having at least one hub wall portion extending between said flanges and a plurality of circumferentially extending bands forming extensions of said at least one hub wall portion, wherein slots complementary to said bands are formed within said hub at points diametrically opposed to each of said bands, a non-radial slot formed along an edge of said hub wall portion intermediate said hub wall portion and an adjacent free end of at least one of said bands, and film gripping tooth means formed on said hub wall portion for retaining a strip of film within said slot.

3,155,338
CAMERA SPOOL

Philip E. Uterhart, Park Ridge, Ill., assignor to Bell and Howell Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 25, 1963, Ser. No. 267,691
11 Claims. (Cl. 242—74)



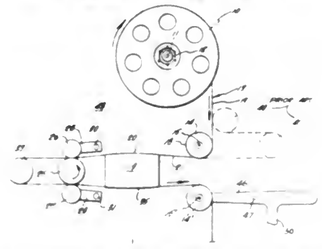
4. A spool construction for motion picture films comprising a pair of flanges, and a hollow hub disposed between said flanges, said hub having a non-radial slot there-

in including curved portions adjacent each of said flanges, and a straight slot portion extending between said curved portions, and said hub also having a peripheral slot therein merging into said straight slot portion.

3,155,339
TAPE TENSION SENSING APPARATUS

Johannes Barend Groenewegen, San Dimas, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

Filed Oct. 23, 1961, Ser. No. 146,941
3 Claims. (Cl. 242—75.51)

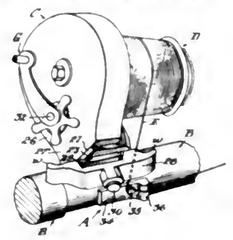


1. A tape transport comprising a reel for storing tape wound on the reel, means for applying a controllable torque to the reel in either direction, means engaging the tape for driving the tape at a predetermined speed, a guide member engaging the tape adjacent the reel, the tape passing around a portion of the guide member so as to change direction as the tape passes between the reel and the tape driving means, the tape path varying over an angle between the reel and the guide member as the amount of tape on the reel changes between full and empty, means movably supporting the guide member, said supporting means constraining the movement of the guide member along a path lying substantially parallel to a line bisecting said angle, means associated with the supporting means for urging the guide means along said path in a direction away from the reel, said last-named means changing the urging force on the guide member with changes in position of the guide member in opposition to the force produced on the guide member by the tape, whereby the position of the guide member is controlled by the tension in the tape, means for sensing the position of the guide member, and means responsive to the sensing means for controlling the torque applying means to adjust the tape tension.

3,155,340
FISHING REEL MOUNT WITH LINE ANCHORING MEANS

William S. King, 6532 Day St., Tujunga, Calif.

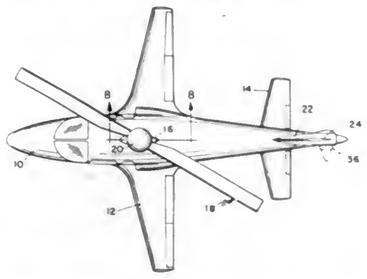
Filed June 15, 1962, Ser. No. 202,748
7 Claims. (Cl. 242—84.2)



1. In a fishing reel mount,
(*a*) a clamp adapted to be applied to a fishing rod in gripping engagement therewith,

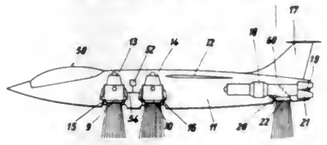
(*b*) a base plate attached to said clamp, and
(*c*) a line engaging stud immovably fixed on said base plate adapted to temporarily anchor a line passed therearound,
(*d*) said stud projecting from said plate a distance approximating the thickness of the line engaged thereby with its outer end adapted to be abutted by the thumb of an operator,
and means for automatically elevating the line free of said stud on a pull being imparted to the line.

3,155,341
CONVERTIPLANE
Peter F. Girard, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Apr. 5, 1963, Ser. No. 271,013
7 Claims. (Cl. 244—7)



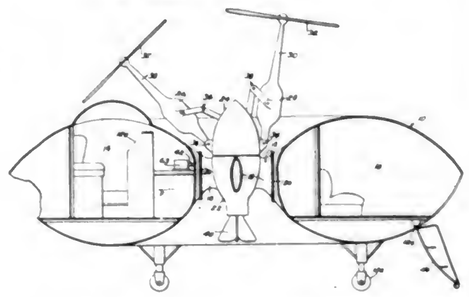
1. In a convertiplane:
an airframe having fixed wing structure;
a lifting rotor rotatably mounted on top of said airframe;
forward thrust producing means operably mounted on said airframe;
a motor;
drive means connected between said motor and said rotor to drive said rotor at one speed to provide a substantial portion of the total lift of the convertiplane;
and speed changing means in said drive means operable to drive said rotor at another, reduced speed, just fast enough to minimize drag, during forward flight of the convertiplane when said forward thrust producing means is operated.

3,155,342
VTOL AIRCRAFT CONSTRUCTION
Ludwig Bölkow, Grunwald, near Munich, and Erich Haberkorn, Riemerling, near Munich, Germany, assignors to Bölkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany
Filed May 22, 1962, Ser. No. 196,661
Claims priority, application Germany May 25, 1961
11 Claims. (Cl. 244—12)



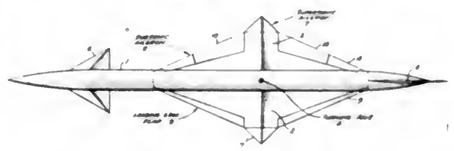
1. An aircraft comprising a fuselage, at least one first thrust engine means arranged forward of the center of gravity of said aircraft in a fixed position for directing thrust gases downwardly for lifting the aircraft vertically. means for deflecting thrust gases directed downwardly by said first thrust engine both in forward and rear directions and laterally and at least one second thrust engine means aft of the center of gravity having means for selectively directing thrust gases downwardly and rearwardly for vertical and forward flight, respectively.

3,155,343
CONVERTIBLE AIRCRAFT STRUCTURE
John Oliver Black, 18094 Parkside, Detroit, Mich.
Filed Jan. 18, 1962, Ser. No. 167,052
4 Claims. (Cl. 244—17.21)



4. An aircraft comprising a circular fuselage having a central opening therethrough, a central rotatable nose portion supported within the central opening of said fuselage and having its outer periphery spaced from the inner periphery of the central opening in said fuselage, and power means supported by said nose portion and having its axis movable relative to the axis of said nose portion for producing an air current through the space between said nose portion and said fuselage.

3,155,344
TWO POSITION VARIABLE SHAPED WING
Richard Vogt, Santa Barbara, Calif., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 271,966
9 Claims. (Cl. 244—46)

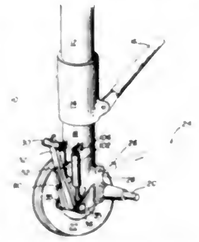


1. In an aircraft having a fuseage, wing means mounted with respect to said fuselage and having a portion designed for subsonic lift and a portion designed for supersonic lift, said supersonic lift portion constituting the center chord of said subsonic lift portion, means for rotating said wing means from subsonic to supersonic flight position, and means for actuating control surfaces of said wing means.

3,155,345
AIRCRAFT NOSE GEAR TOW MEANS FOR CATAPULT LAUNCHING
James Z. Paysen and George T. Trifonoff, Wichita, Kans., assignors to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed Sept. 26, 1962, Ser. No. 226,263
9 Claims. (Cl. 244—63)

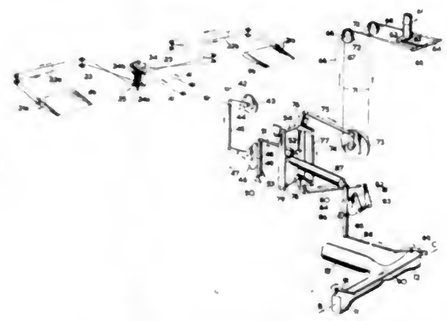
5. The improvement in tow means attached to an aircraft gear strut including a tow bar having an end engageable by a catapult shuttle, the strut having hold-back means attached thereto adapted to release the strut when

catapult force applied through the tow bar exceeds a selected level, comprising:
means pivotally mounting said tow bar on said strut to pivot between a lower tow position and an upper retracted position alongside said strut;
retraction means pivotally supported on said strut having automatic latch means operable to latch said retraction means to said tow bar and a spring acting on said retraction means normally pivoting the same in a direction which would bias said tow bar toward



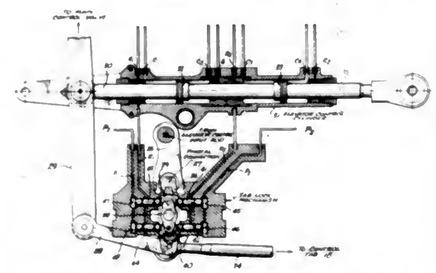
the retracted position when latched to said retraction means; and
cocking means operable to pivot said retraction means in an opposite direction to said first-mentioned direction under force applied by the catapult shuttle to said tow bar against the restraint of said hold-back means and into position to become latched to said tow bar in its tow position, whereby upon release of said tow bar by said shuttle said retraction means will retract said tow bar.

3,155,346
FLYING CONTROL SYSTEM FOR AIRCRAFT
George Hubert Charlton, Luton, Eric Ebdon, Caddington, near Luton, and Kenneth David Harris, Flitwick, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company
Filed Oct. 5, 1962, Ser. No. 228,709
Claims priority, application Great Britain Oct. 13, 1961
3 Claims. (Cl. 244—75)



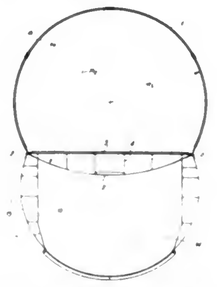
1. In an aircraft comprising opposite wings, an aileron on each wing, a control nozzle, means to supply fluid to the nozzle, the nozzle being arranged to discharge a stream of said fluid in such a direction as to apply a yawing moment to the aircraft, and means for varying the fluid discharge from the nozzle; a flying control system comprising a first control operatively connected to the ailerons to move them differentially, a second control operatively connected to the ailerons to move them together in the same sense, and an interconnection between the ailerons and said nozzle discharge varying means, said interconnection including means responsive only to differential movements of the ailerons to vary the nozzle discharge so as to produce a yawing moment tending to turn the aircraft in the same sense as the movement of the ailerons.

3,155,347
TAB CONTROL MECHANISM INCLUDING AUTOMATIC MEANS FOR REVERSION TO MANUAL CONTROL
Robert R. Richolt, Issaquah, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 326,087
13 Claims. (Cl. 244—83)



1. In an aircraft having a control surface and a control tab associated with said control surface, a control surface mechanism comprising: power means for normally moving said control surface, means for moving said control tab, said control tab moving means being normally locked out of action by said power means, said control tab moving means including means for manually moving said control tab upon failure of said power means, whereby movement of said control tab aerodynamically assists in manual movement of said control surface.

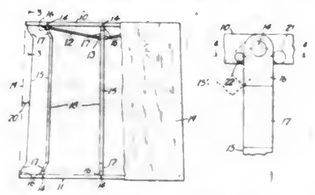
3,155,348
AIRCRAFT FUSELAGE
Armand G. Ricard, Viroflay, France, assignor to Societe Anonyme des Ateliers d'Aviation Louis Breguet, Paris, France, a company of France
Filed May 7, 1963, Ser. No. 278,588
Claims priority, application France, June 14, 1962, 900,749
6 Claims. (Cl. 244—119)



1. An aircraft fuselage capable of being pressurized comprising in combination: an upper wall portion of substantially circular cross-section extending over an angle greater than 180°, a floor portion extending from one edge of the upper wall portion to the other, a lower wall portion having a radius of curvature at least equal to that of the upper wall portion, and longitudinal members con-

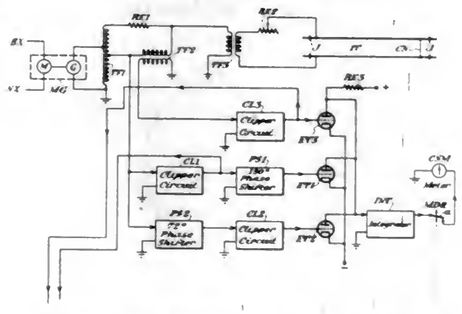
necting the adjacent edges of the said three portions to one another, said members each comprising a web to which is fixed the said floor portion and thin flexible flanges extending from said web in substantially tangential relationship with said wall portions to which they are respectively fixed.

3,155,349
COLLAPSIBLE LAMP SHADE
Sam Derman, 20 Norwood Road, and Harry Grand, 6 Eton Place, both of Springfield, N.J.
Filed Feb. 8, 1963, Ser. No. 257,174
4 Claims. (Cl. 240—145)



1. A lamp shade frame comprising top and bottom rings, radial means for bracing the top ring, said rings being joined by circumferentially spaced flat spring members, said members having ends pivoted directly to both of said rings, the pivot ends of said members being vertically alined when the frame is in extended position, said pivot ends being widely circumferentially spaced one with respect to the other when the frame is in collapsed position, each ring including means engaging one side of the pivot ends of said spring members in checking movement of the frame into open position, and each ring including other means engaging an opposed side of the pivot ends of the spring members in retaining the frame against accidental collapsing when said frame is in open position.

3,155,350
TRACK FULLNESS SYSTEM
Richard D. Campbell, Harmarville, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,207
12 Claims. (Cl. 246—122)

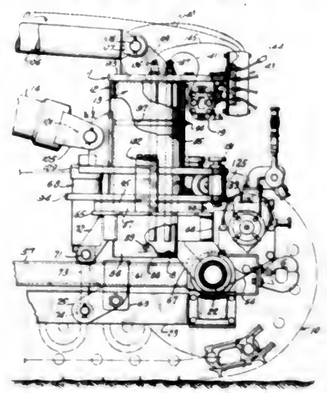


1. Apparatus for deriving a track fullness signal distinctly representing the distance from a first point in a railway track section to a shunt across the rails of the track section, said apparatus comprising, in combination,

(*a*) an alternating current signal supplied to the rails of said track section at said first point so that the phase angle of such signal shifts in accordance with the impedance of the track section between such point and said shunt,

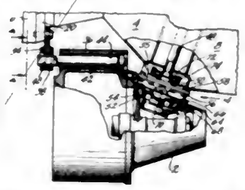
(*b*) and means responsive to the shift of the phase angle of said alternating current signal for producing said track fullness signal.

3,155,351
ROCK DRILL MOUNT
Earl B. Lear, Utica, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 30, 1960, Ser. No. 72,620
10 Claims. (Cl. 248—2)



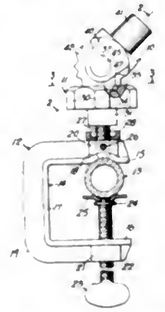
1. A rock drill mount having a deck, a vehicle supporting the deck, a vertically extending cylindrical turret post fixed upon the deck having a hollow interior closed at its bottom and open at its top defining a sump for a hydraulic oil supply, a turret cylinder sleeving over the post having rotative movement about the latter and adapted to pivotally carry a hydraulically powered drill boom, the turret cylinder having a cap closing over its top end, the interior upper end of the turret cylinder being clear of the corresponding end of the turret post, a radial terminal flange defining the base end of the turret cylinder, a bearing washer interposed between the said radial flange and the deck, means for supplying lubricant to opposite faces of the washer, means for supplying lubricant between the peripheral surface of the turret post and the interior diameter wall of the turret cylinder, and the sump having inlet and outlet conduits adapted for connection of the sump with hydraulic means powering the boom, the inlet and outlet conduits being mounted in the cap of the turret cylinder and rotatable as a unit with the turret cylinder relative to and free of the post.

3,155,352
MOUNTING SYSTEM FOR ACCESSORY CASE
Richard W. Batt, Wethersfield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 31, 1961, Ser. No. 99,738
3 Claims. (Cl. 248—17)



1. The combination of a housing, an accessory case and a mounting for supporting the accessory case from the housing, the latter having a flange, said casing and housing having generally-parallel, spaced, longitudinal axes defining a plane, said mounting including a hinge connection between housing and case at a point axially spaced from the flange on the housing, the hinge having its axis substantially normal to said plane for pivotal movement of the case, and a plurality of transversely spaced connections between the flange and the case and axially spaced from the hinge, one of said connections including a first pair of interengaging elements having relative sliding movement both in an axial direction and in a transverse direction at right angles to the axes, the others of the transversely spaced connections each including a second pair of interconnected elements having relative movement both in an axial direction and in a direction at right angles to said plane such that the transverse movement of the first pair is at right angles to the movement of each of the second pairs, these relative movements permitting relative thermal expansion between the housing and case in all directions while maintaining the spaced longitudinal axes parallel.

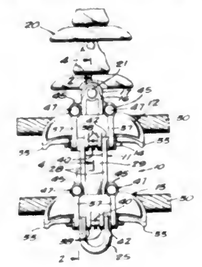
3,155,353
ADJUSTABLE SUPPORT FOR UMBRELLAS
Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, Flushing, N.Y.
Filed Sept. 28, 1962, Ser. No. 226,995
6 Claims. (Cl. 248—40)



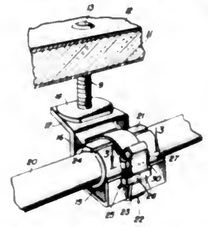
1. In devices of the character defined, a shaft, a pin rotatably mounted on one end of the shaft, a member swingably mounted on said pin, the other end portion of said shaft being threaded, a lock element in threaded engagement with said shaft for movement longitudinally thereof toward and from said member, and said member and element having on adjacent surfaces thereof interengaging means for retaining said member in different circumferential and angular positions with respect to said shaft.

3,155,354
POWER CABLE SUSPENSION ASSEMBLY
L E Lindsey, 2262 E. Mountain, Pasadena, Calif.
Filed Feb. 27, 1962, Ser. No. 176,007
15 Claims. (Cl. 248—63)

1. A suspension clamp assembly for use in releasably supporting heavy-duty power cables from a supporting structure, said clamp having a main body member provided with means at the upper end thereof for pivotally connecting the same to a suspending insulator, said main body including as an integrally cast portion thereof means formed with a horizontally elongated semicylindrical cavity shaped to seat snugly against one vertically disposed lateral side of a power cable, an elongated one-piece keeper jaw member having an elongated semicylindrical cavity facing said first mentioned cavity and contoured oppositely thereto and adapted to seat against the other vertically disposed lateral side of a power cable, means pivotally connecting said keeperjaw to said main body on a horizontal axis beneath and parallel to the axis of a power cable clamped in said elongated cavities, stop means between said main body and keeper jaw members limiting the opening movement of said jaw away from said main body to an arc such that when open said jaw is effective to receive and support the cable in a captive position therein temporarily and whereby the upward pivotal movement of said jaw toward said main body is effective to elevate and transfer the cable partially into the first mentioned elongated cavity, threaded fastener means together with means for holding the same captively assembled to one of suspension clamp members while said jaw is released for pivoting, said fastener means being threadedly engageable with the other of said suspension clamp members to force said jaw member to pivot toward said main body member to grip a power cable between the opposite vertical sides thereof, and said main body including as an integral part thereof eyelet means underlying said cable seating and clamping cavities and adapted to seat anti-sway and swing-stabilizing means therein.



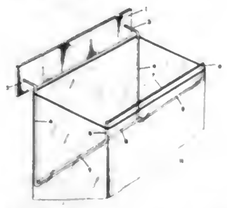
3,155,355
PIPE HANGER
Pasquale P. Cappola, 21 Emerald St., Quincy, Mass.
Filed Feb. 16, 1962, Ser. No. 173,731
5 Claims. (Cl. 248—74)



1. A pipe hanger assembly including a bracket member adapted to be secured to a supporting surface and including a portion adapted to support a pipe section, a strap retaining member encircling said portion and adapted to encircle said pipe section, one end portion of said strap including an inturned reversely bent terminal end portion underlying the adjacent portion of said one end portion and the other end portion of said strap being end lapped over said adjacent portion, a connector comprising a flat elongated plate having a generally rectangular transverse loop formed on one end with said plate defining one long side of said loop, a pair of outwardly projecting bendable ears carried by the other end of said plate and projecting outwardly from the longitudinal sides thereof, said strap being passed through said loop with said plate sandwiched between said terminal and adjacent portions of said strap and said other end of said plate seated in the bent portion of said strap con-

necting said terminal and adjacent portions of said one end portion of said strap, said other end portion of said strap being passed through said loop and terminating in an outturned reversely bent terminal end portion passing over said loop and between said ears, said ears having their free end portions bent toward each other and over the last mentioned terminal end portion in end to end opposing relation and claimping the last mentioned terminal portion between said ears and said adjacent portion.

3,155,356
RECEPTACLE SUPPORT
John W. Montgomery, 2117 E St. NW., Washington 7, D.C.
Filed Sept. 23, 1963, Ser. No. 310,782
10 Claims. (Cl. 248—99)



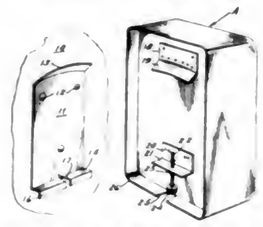
1. A releasable friction-type bag supporting device comprising: first and second downwardly extending members in substantially parallel relationship; at least a third member spaced outwardly from said first and second members; means for resiliently urging said third member against relative movement toward said first and second members and for tending to move said third member relatively away from said first and second members when a downward force is applied to said third member relative to said first and second members; means for imparting a relatively high frictional resistance to at least portions of said first, second and third members; and means for supporting the entire assembly; whereby a bag-like receptacle placed upwardly around said three members when said third member is forced toward said first and second members will be frictionally supported by said members when said third member moves outwardly under said resilient force.

3,155,357
LEVELING DEVICE
Michael Kramcsak, Jr., Bridgeport, and Robert E. Sheahan, Woodbridge, Conn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Continuation of application Ser. No. 110,707, May 17, 1961. This application Mar. 27, 1963, Ser. No. 268,435
7 Claims. (Cl. 248—188.3)



1. A leveling device for supporting a load comprising: an actuator assembly, a cup-like casing defining a chamber, a cover disposed across said cup-like casing, said cover including a central bore for receiving said actuator assembly and allowing reciprocation therein, a disc-like member secured to and forming a part of said actuator assembly within said chamber, said disc-like member spaced slightly from the inner surface of said casing, a conical coil spring positioned coaxial of said assembly outside of said cover, with one end of said spring constrained against said actuator assembly and the other end of said conical coil spring in contact with the outer surface of said cover, said spring having a maximum spring force at least equal to the load thereon, and a viscous damping medium within said cup-like casing whereby movement of said assembly towards said cup-like casing is resisted by said spring and said viscous medium and movement away from said cup-like casing is resisted by said viscous medium only.

3,155,358
ADJUSTABLE BRACKET SUPPORT
Arthur F. Carlson, South Gate, Calif., assignor to Shore-Calnevar, Inc., Paramount, Calif., a corporation of California
Filed Oct. 30, 1961, Ser. No. 148,666
2 Claims. (Cl. 248—226)



1. An adjustable bracket for orienting and releasably supporting a cabinet or similar device on a wall surface, comprising: an elongate plate member adapted to be fixedly secured in an upright position to the wall surface, an arcuate integral curved flange at the upper end of said plate member extending symmetrically on opposite sides of the plate central axis, a right angled integral flange at the lower end of said plate having an edge opening slot substantially on the plate axis, an upper bracket secured to a back wall surface of said device having a flange extending symmetrically on opposite sides of the center of the back wall and adapted to overlie and mate with said curved flange so as to hangingly support the device thereon, a lower bracket on said back surface centrally positioned below said upper bracket flange, a headed screw member having threaded engagement with said lower bracket and adapted to be positioned in said slot with its head portion below said lower end flange when said flanges are associated, whereby tightening of the screw engages the head portion with the lower end flange and acts to apply tension forces clamping said curved flange and upper bracket flange in associated mating engagement to retain the device in oriented mounted position on the wall surface.

3,155,359
MOUNTING BRACKET FOR MAGNETIC HEADS
John W. Hogan and Frank Zeman, Minneapolis, Minn., assignors to The Nortronics Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 13, 1964, Ser. No. 337,449
8 Claims. (Cl. 248—288)

1. A bracket for mounting an electromagnetic transducer head on a tape handling machine relative to a path of tape travel, said bracket comprising:

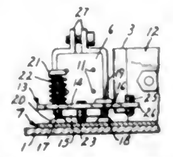
(*a*) a plate member adapted to be secured to said machine on one side of said tape path,

(*b*) a base member adapted to carry said transducer head and having a rear portion and a front portion,

(*c*) adjustment means securing the rear portion of said base member to said plate member in a general position with the front thereof extending generally toward said tape path, said adjustment means providing an adjustment for the position of said transducer head by adjusting the position of the base member relative to the plate member, said means comprising:

(1) a pair of retention elements slidably extending through spaced apertures in said base member and secured to said plate member, one of said retention elements restricting movement of said base member in a direction away from said plate member, and the other of said retention elements including yielding means biasing said base member in a direction toward said plate member,

(2) a pair of spaced adjustment screws threaded into spaced apertures in said base member and



disposed on a line which is generally perpendicular to a line extending through said retention elements, said adjustment screws engaging said plate member and being rotatable in the base member for adjusting the position of the base member relative to the plate member and also relative to the fulcrum defined by said retention elements,

(3) said retention elements being adjustable relative to the plate member for changing the position of the base member relative to the plate member and also relative to a fulcrum defined by said adjustment screws, and

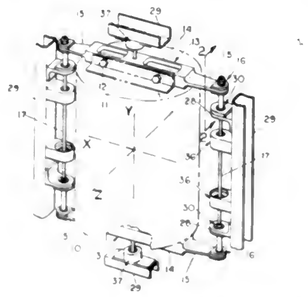
(*d*) a lock element for holding the position of said base member relative to the plate member.

3,155,360
CONTAINER SUPPORT CLIP
Melvin K. Cassells, 67 Vine Hill Road, West Hartford, Conn.
Filed Feb. 14, 1962, Ser. No. 173,244
11 Claims. (Cl. 248—313)



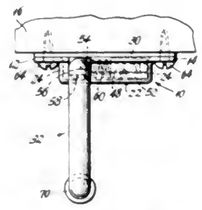
1. A container support clip comprising a backplate section adapted to be detachably mounted in a vertical attitude on a wall or the like, a first container supporting section integral with a lower end portion of said backplate section and extending forwardly and thence upwardly with respect to said portion, a second container supporting section integral with and extending generally forwardly from an upper end portion of said first supporting section, and a third container supporting section integral with and extending generally downwardly from a front end portion of said second supporting section, said first supporting section having a generally semicylindrical concave clamping surface over a portion of its front surface for receiving an enlargement at an upper portion of a container entered upwardly between said first and third supporting sections, and said third supporting section being resiliently deflectable forwardly so as to accommodate entry of said container portion and to thereafter frictionally hold the same in engagement with said clamping surface.

3,155,361
VIBRATION ISOLATION MOUNT
Samuel Balan, Brooklyn, N.Y., assignor to Grumman Aircraft Engineering Corporation, Bethpage, N.Y., a corporation of New York
Filed June 8, 1961, Ser. No. 115,819
10 Claims. (Cl. 248—358)



9. A vibration isolation mounting comprising at least one resilient rod, a pair of universal connection mounting means spaced from each other longitudinally along said rod intermediate its end portions, a pair of beams, at least the end portions of which are resilient, universal coupling means connecting the end portions of said beams with the ends of said rod, and mounting means provided in the central portion of said beams.

3,155,362
FOLDABLE LEG CONSTRUCTION
Clarence I. McCall, Waterbury, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut
Filed July 5, 1963, Ser. No. 293,020
8 Claims. (Cl. 248—359)



1. A folding leg construction for intrument casings and the like comprising, in combination:

(*a*) a housing having coplanar peripheral mounting portions adapted to be secured to the underside of a casing,

(*b*) said housing having a downwardly offset bearing portion located inward of the coplanar mounting portions,

(*c*) said offset portion including a flat bottom wall and downwardly extending side walls at the periphery of the bottom wall,

(*d*) a combined bearing and base plate disposed broadside to the housing and engaged with the mounting portions thereof, said plate forming with said offset portion an enclosure, said plate closing off end portions of the bearing slots,

(*e*) opposite portions of the side walls and adjoining mounting portions of the housing having a pair of open-ended bearing slots,

(*f*) a swingable support member having a pair of legs and a yoke joining the same and having cylindrical bearing surfaces, said yoke being disposed in both the enclosure and the open-end slots of the housing side walls, the bearing surface of the yoke being engaged with the housing whereby the support may be swung between a retracted position folded against the casing underside and an extended position extending downward from the underside,

(*g*) shoe means on the free ends of the legs of the support, for engagement with a table surface,

(*h*) a flat on the said yoke,

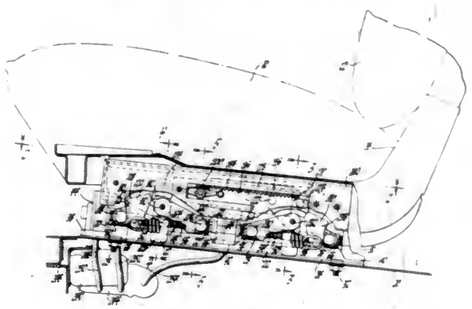
(*i*) a reciprocable detent plunger in the housing, engaged with said flat,

(*j*) a bored block in the housing, slidably carrying the detent plunger,

(*k*) a spring on said plunger, said spring being engaged with the bearing block and plunger to yieldably hold the latter engaged with the flat of the yoke,

(*l*) said flat enabling the plunger to yieldably hold the support in the said extended position.

3,155,363
SEAT ADJUSTER
Thomas E. Lohr, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,411
3 Claims. (Cl. 248—419)



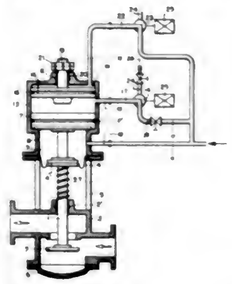
1. In combination with seat adjuster apparatus in the form of spaced adjuster units adapted to support a vehicle seat for horizontal adjustment relative to a vehicle floor and comprising: support bracket means fixed relative to the vehicle floor, a seat frame for said vehicle seat, a downwardly extending vertical flange depending from said seat frame and extending fore and aft of said seat, an outwardly extending horizontal flange provided adjacent the upper end of said vertically extending flange, a horizontally extending outer channel member having reversely bent side portions interconnected by a web portion, the outer surface of said web portion being abuttingly secured to and supported against said downwardly extending flange of said seat frame, one of said reversely bent side portions being abuttingly secured to and supported against said outwardly extending flange, horizontally extending rack means associated with said web portion, horizontally extending slot means formed in said web portion and said downwardly extending flange and extending parallel to said rack means, a horizontally extending inner channel member slidably supported within said outer channel member, said inner channel member being connected and supported by said support bracket means, a drive housing fixed to said inner channel member, pinion means rotatably supported in said housing, a port extending through said housing and said inner channel, said pinion means extending through said port and said slot means and being drivingly engaged with said rack means whereby rotation of said pinion means causes sliding movement of said outer channel and said seat fore and aft relative to said inner channel and said vehicle floor.

3,155,364
MUSICIAN'S FOOT REST
Willie Berg, 9223 Clyde Ave., Chicago 17, Ill.
Filed Jan. 26, 1962, Ser. No. 168,991
2 Claims. (Cl. 248—439)



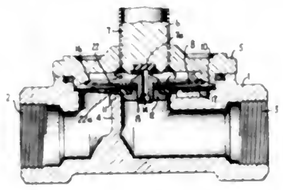
1. A foot rest for musicians comprising, a plate on which a foot is rested, a pair of leg members at opposite ends of the plate and pivoted to the under side of the plate, at least one of the leg members having two feet connected at the top by a web, said web having a depressed central portion between the feet, said depressed portion being defined by converging sides, a stop on the under side of the plate, said stop being substantially wedge-shaped to thereby provide it with opposite inclined surfaces, said leg member when in the plate supporting position having its depressed central portion on its cross bar brought into wedging engagement with the inclined surfaces on the stop to thereby maintain the leg member in extended plate-supporting position.

3,155,365
PRESSURE MEDIUM CONTROLLED LIQUID VALVE FOR AUTOMATIC FLOW LIMITATION DEVICES
Walter Hartung, Haus auf der Buchhalde, Donaueschingen, Germany, and Willi Daume, Hannover, Germany; said Daume assignor to said Hartung
Filed Oct. 28, 1960, Ser. No. 65,721
8 Claims. (Cl. 251—25)



1. In a pressure-medium operated liquid valve comprising a valve housing having inlet and outlet ports and a valve seat therebetween, a valve member comprised of a valve stem and valve head mounted therein and arranged to engage said valve seat, a spring loading said valve member to the closed position, the improvement which comprises valve control means comprising a control housing affixed to said valve housing, said control housing defining a bore circular in cross section, valve actuating means including first piston means positioned in and sealingly engaging the wall of said bore and dividing said chamber into a control chamber and diaphragm chamber, diaphragm means closing the end of said diaphragm chamber, the diameter of said diaphragm means being smaller than the diameter of said piston means, said piston means and the center of said diaphragm means being connected in spaced-apart relationship and being connected to the valve member, auxiliary valve actuating means including an auxiliary piston means positioned in the control chamber and sealingly engaging the wall of said bore and forming a proximal chamber with said first piston means and a distal chamber with the end of said bore, limiting means connected to said auxiliary valve actuating means for limiting inward axial movement thereof to a position wherein said valve member is restrained in an intermediate position, first fluid transfer means having fluid supply and fluid discharge means connected to said proximal chamber for opening said valve member, second fluid transfer means having fluid supply and fluid discharge means connected to said distal chamber for moving said auxiliary valve actuating means to its inward axial limiting position, third fluid transfer means connected to said diaphragm chamber for providing a differential force augmenting the force of said valve spring, and control means connected to said first and said second fluid transfer means for optionally connecting each transfer means to said fluid supply or to said fluid discharge means.

3,155,366
DIAPHRAGM VALVE
Knud Alfred Rasmussen, Sonderborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Mar. 15, 1962, Ser. No. 179,944
Claims priority, application Germany, Mar. 16, 1961
D 35,669
7 Claims. (Cl. 251—45)



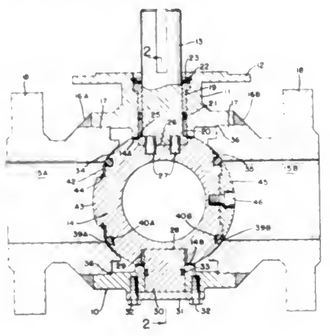
1. An electromagnetic diaphragm valve comprising a hollow valve body having a valve outlet, a central valve seat leading to said valve outlet, a vale inlet and a chamber surrounding and communicating with said seat and with said valve inlet and formed with a circular peripheral groove surrounding said valve seat and having an inclined shoulder, a diaphragm assembly disposed in said chamber for movement toward and away from said seat to control communication between the inlet and outlet, a bleed passage for admitting control pressure to said chamber to bias the diaphragm to the valve seat, said diaphragm assembly comprising a flexible diaphragm member, a resilient element disposed in overlying relationship with respect to said diaphragm member, and a central pilot-port-forming unit interconnecting said flexible diaphragm member and said resilient element and providing an axial passage through said diaphragm member and said resilient element, and valve operating means including a valve member to control the flow through said pilot-port-forming unit, said diaphragm member having a peripheral portion extending into said groove in free-floating relationship, said resilient element having peripheral portions received in said groove in spaced relationship, whereby said resilient element does not bias said diaphragm member when it is sealed on said valve seat, said peripheral portions of said resilient element being engageable with said inclined shoulder upon predetermined movement of said diaphragm member from said valve seat to relieve the diaphragm to a progressively increasing amount as said diaphragm member moves away from said valve seat, said resilient element supporting substantially the entire diaphragm member when said diaphragm member is in fully deflected position while retaining the peripheral portion of said diaphragm member in said groove.

3,155,367
VALVE PLUNGER
Robert T. Gifford, Yellow Springs, Ohio, assignor to Vernay Laboratories, Inc., Yellow Springs, Ohio, a corporation of Ohio
Filed Jan. 11, 1962, Ser. No. 165,498
8 Claims. (Cl. 251—86)



1. A valve plunger comprised of a relatively rigid body, a separate, relatively resilient tip, means for maintaining said tip in snap-on engagement with said body, and means by which said tip is movable on said body after being engaged thereto, said last mentioned means providing for axial movement of said tip with respect to said body.

3,155,368
BALL VALVE SEAT CONSTRUCTION
Homer J. Shafer, Brookwood Way, Mansfield, Ohio
Filed June 28, 1961, Ser. No. 120,371
9 Claims. (Cl. 251—175)



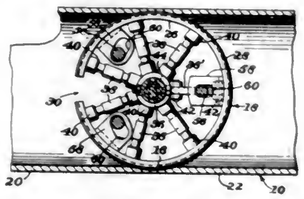
1. A ball valve having a body, aligned inlet and outlet tubes welded to said body and having seating surfaces at their inner ends, a rotatable ball shut-off having a flow passage therethrough and a transversely extending stem journaled in said body, annular grooves in said ball surrounding the inner ends of said inlet and outlet tubes in the fully closed position of the ball with the groove openings at least partly within the seating surfaces on said tubes, resilient ring seals insertable through said tubes into said grooves and having exposed portions to make seals

against said seating surfaces, and retaining means insertable through the tubes for holding said ring seals in said grooves.

3,155,369
PIPE LINE STOPPER

Paul C. Wright, Box 3123, Station A, El Paso, Tex., and Orval V. Chambers, E. 304 Rockwell Ave., Spokane, Wash.

Original application Oct. 9, 1958, Ser. No. 766,335, now Patent No. 3,049,333, dated Aug. 14, 1962. Divided and this application Feb. 9, 1962, Ser. No. 172,157
2 Claims. (Cl. 251—187)

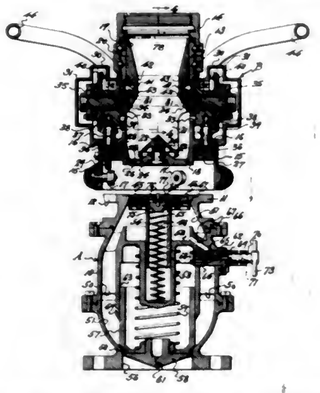


1. A cylindrical pipe stopper adapted to be inserted into, and having a minimum outer diameter less than, a transverse circular opening through a pipe line and to be expanded into flow-stopping sealing engagement with the edges of the opening comprising: a longitudinally-split expansion cylindrical sleeve; a member mounted for movement coaxially of said sleve; a jack screw threadedly engaged with said member for effecting movement thereof; a set of substantially uniformly angularly spaced toggle arms pivotally connected to said member and to said sleeve, whereby movement of said member in one direction expands said sleeve and movement of said member in the opposite direction positively contracts said sleeve; and ball and socket joints connecting all of said arms, save one, with said member and said sleeve, said one arm being connected for only substantially pivotal movement in a single plane in order to restrain coaxial relative rotation between said sleeve and said member.

3,155,370
COUPLING MEMBERS FOR DISCONNECTIBLY JOINING CONDUITS

Joseph T. Drumm, Short Hills, and William Meyer, East Orange, N.J., assignors to Wheaton Brass Works, Union, N.J., a corporation of New Jersey

Filed Oct. 20, 1961, Ser. No. 146,655
5 Claims. (Cl. 251—248)



1. In a conduit coupling of the type comprising a stationary coupling member and a rotatable coupling member adapted to be opposed end to end, the opposed ends of said coupling members having mutually engageable means to interlock the same together in coupled relation when the rotatable member is rotated relative to the stationary member, the rotatable member having a valve plunger axially slidable therein and normally disposed to close the same against fluid flow therethrough, said stationary member also having axially movable spring biased valve means to normally close the same against fluid flow therethrough; the coupling so characterized, having

(1) a ring gear mounted in the end of the rotatable member which opposes the stationary member, means to interlock said ring gear to the stationary member when the coupling members are coupled together, whereby to hold said ring gear stationary relative to rotative movement of the rotatable member,

(2) planetary gear transmission means mounted in connection with the rotatable member exteriorly of its valve plunger and adapted to be actuated by said ring gear when the rotatable member is rotated, means actuated by said planetary gear transmission means to cause axial opening movement of the valve plunger of the rotatable member, whereby to exert axial thrust against the valve means of the adjoined stationary member to open the latter, and thereby permit fluid flow through the joined coupling members.

3,155,371
ANCHOR PLATE PULLER

Allen E. Lorch, 5120 Lincoln Ave., Los Angeles 42, Calif., and Roy A. Rawson, 6239 Allston St., Los Angeles 22, Calif.

Filed Aug. 17, 1962, Ser. No. 217,754
3 Claims. (Cl. 254—24)

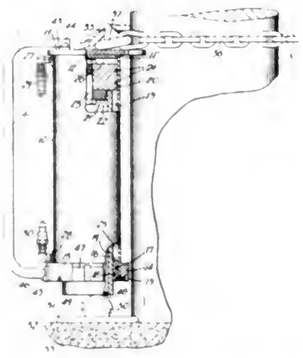


1. A tool of the kind described comprising an elongated member of an inverted T-shape, a jaw swingably carried by each arm of the T and swingable in the same plane as the stem of the T, said jaws having gripping end portions positioned to engage in axial alignment with said stem and slightly spaced away from the jaw carrying end thereof, a carriage slidably mounted on said member between portions of said jaws, two rollers carried by said carriage, each of said jaws having a cam surface engaged by one or the other of said rollers to swing the gripping end portions of said jaws toward each other, and lever operated means carried by the bar and operatively related to said carriage to retract it and thereby cause said rollers to force said jaws toward gripping position, said rollers at all times occupying a protected position between said jaws.

3,155,372
HYDRAULICALLY ACTUATED POLE PULLER

Howard D. Brown, Atlantic, Iowa, assignor to General Machine Products Company, Inc., Trevose, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1963, Ser. No. 257,173
5 Claims. (Cl. 254—30)



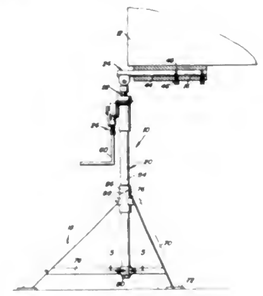
1. A puller device of the charatcer defined comprising a fixed unit in the form of a single piston structure, a lift unit in the form of a single cylinder structure movable longitudinally of the fixed unit, the lift unit comprising a cylinder, a plate fixed to the upper end of the cylinder and having means for coupling a chain or the like therewith, said fixed unit comprising an elongated tubular rod slightly less in diameter than the bore of the cylinder, a piston head coupled with the upper end of said tubular rod and operating in the bore of the cylinder, the tubular rod being smaller in diameter than said head to form an annular hydraulic chamber between the tubular rod and cylinder, means coupled with the cylinder for admitting and discharging a hydraulic medium into opposed end portions of the cylinder to communicate with said chamber and the end of the cylinder beyond said piston head, a seal ring mounted in the lower end of the bore of the cylinder and fitting snugly on said tubular rod, a collar on the periphery of said lower end of the cylinder, means fixed to the lower end of said tubular rod for support of the fixed unit on a ground surface, said plate having an extension at one side thereof which extends laterally beyond the said collar toward an object encircled by the said chain and has a substantially V-shaped object engaging recess in the outer edge thereof, and said chain coupling means being secured to the upper surface of the said plate and extending upwardly therefrom inwardly of the said V-shaped recess so that portions of the said chain when coupled thereto will be supported on the said plate and associated extension.

3,155,373
TRUCK CAMPER BODY JACK

Orville S. Rae, 2601 10th St., Greeley, Colo.

Filed Apr. 5, 1962, Ser. No. 185,445
14 Claims. (Cl. 254—45)

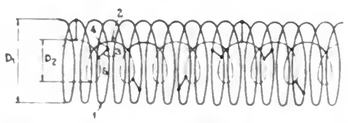
1. In combination with a loaded device having an unknown load distribution above a tiltable supporting plane defined by intersecting supporting axes, pivotal supporting means connected to said loaded device through which said supporting axes extend, displaceable means, pivotal connecting means pivotally connected to said displaceable means about folding axes in spaced perpendicular relation to said supporting axes for pivotal connection thereof under load to the pivotal supporting means about said supporting axes, housing means guidingly supporting said displaceable means for movement along displacement axes intersecting said folding axes, base means including means for mounting said housing means in predetermined angular positions about said displacement axes for support of the loaded device above the ground with the supporting plane in a stabilized position and actuating means operatively positionable on the housing means in driving relation to said displaceable means for sequential displacement of the loaded device at each of the supporting axes to tiltable positions of said supporting plane with respect to the base means.



3,155,374
PLAIN OR BARBED WIRE DEFENSE COIL

Georges Sieffert, Impasse du Moulin, Bar-le-Duc, Meuse, France

Filed June 16, 1961, Ser. No. 117,642
Claims priority, application France, June 17, 1960, 830,477, Patent 1,267,988
8 Claims. (Cl. 256—2)



1. A wire defense coil, comprising an outer relatively small diameter wire wound in a coil of relatively large diameter and with relatively widely spaced convolutions, an inner wire of relatively small diameter wound in a coil of less diameter than the coil of said outer wire, said inner and outer wire convolutions being such that there is a free space of substantial dimension within said inner wire and between said inner wire and said outer wire, and means securing said inner wire to said outer wire at a plurality of locations spaced along the length of said wires.

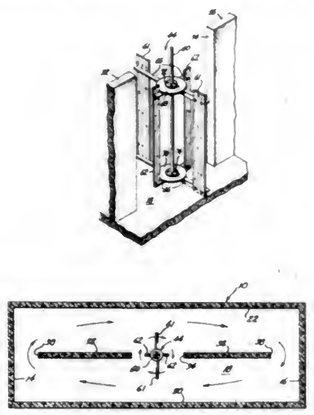
3,155,375
FARM MANURE COLLECTION AND STORAGE APPARATUS

James E. Vaughan, Elma, Wash., assignor to Vaughan Co., Inc., Elma, Wash.

Filed Apr. 23, 1962, Ser. No. 189,619
8 Claims. (Cl. 259—23)

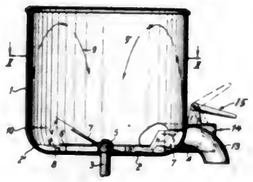
8. A mixing and storage device for liquid manure containing solid wastes which would obtain a generally homogeneous mixture without substantial churning, comprising a horizontally elongated tank, a plurality of divider walls extending generally in a line lengthwise of said tank in a nonoverlapping generally end-to-end relationship, forming passages at opposite sides thereof, two of said divider walls being adjacent to each other and having adjacent ends spaced apart to form a gap therebetween, an impeller rotor mounted in such gap for rotation about an upright axis, and said rotor having elongated upright blades, said blades, in rotating about such axis,

moving through such gap and then into such side passages and moving the liquid therein along one such side passage in the direction opposite the movement of such liquid along the other side passage, to produce currents of liquid moving along such side passages, a series of



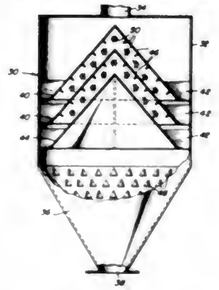
manure collecting troughs externally of said mixing and storage tank, and a connecting trough connecting said manure collecting troughs to said mixing and storage tank for sluicing of manure from said manure collecting troughs into said mixing and storage tank.

3,155,376
MIXING AND AGGLOMERATING DEVICE FOR THERMOPLASTIC MATERIAL
Wolfgang Möllenbruck, Hemmingen, Kreis Leonberg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a German company
Filed Oct. 4, 1960, Ser. No. 60,397
Claims priority, application Germany, Oct. 17, 1959, W 26,566
3 Claims. (Cl. 259—43)



1. A device for mixing and agglomerating pulverized thermoplastic material and liquid, said device comprising a cylindrical mixing vessel having a bottom faired into the cylindrical wall of the vessel by a rounded wall portion, a rotary agitator, and a drive shaft for said agitator disposed parallel with the axis of the vessel and supporting the agitator closely adjacent to the bottom of the vessel parallel thereto, said agitator including a hub receiving said shaft, a plurality of long blades supported on said hub in circumferentially spaced arrangement and extending from the hub close to said rounded wall portion, a ring secured to said long blades intermediate the radial length thereof and disposed coaxially and substantially co-planar with said hub, a plurality of short blades secured to said ring alternating with said long blades and extending radially outward, each of said long blades having radially outward of said ring a blade angle of about 80° to 90° and a pitch angle within the range of 1° to 90° and a height approximately equal to that of said rounded wall portion, the portion of the long blades radially inward of said ring having a reduced height and extending substantially parallel to the bottom of the vessel, each of the short blades having a height less than the radially outward height of the long blades, a discharge duct communicating with said vessel near the bottom thereof and radially outward of said ring, and closure means in said duct for selectively opening and closing the same.

3,155,377
DESTRATIFYING UNIFORM BLENDER
Warren L. Godman, 6646 Loch Hill Road, Baltimore 12, Md.
Filed Feb. 25, 1963, Ser. No. 260,546
18 Claims. (Cl. 259—180)

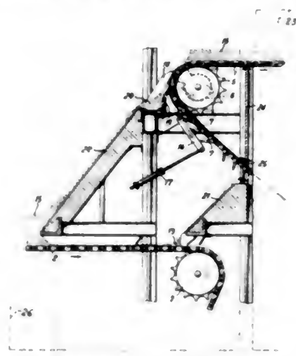


1. Apparatus for blending, comprising a housing, first conical means positioned within said housing to receive a stream of materials fed into said housing, and a second conical means positioned within said housing below said first conical means and arranged to be separated therefrom in nested relationship and to have a discharge substantially in register therewith, said first conical means having a large number of apertures therein in spaced staggered relationship so that a large number of random portions of said stream of material passes through to said second conical means, whereby upon discharge of said stream of material from said first conical means, said random portions thereof collected by said second conical means are recombined therewith to effect gravity mixing.

3,155,378
APPARATUS FOR CONDUCTING SINTERED MATERIAL FROM A SINTERING GRATE TO A COOLING GRATE
Leo Berg, Hurth-Altstatten, Josef Nachreiner, Gleuel, near Cologne, and Alfred Schöll, Cologne-Sulz, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Dec. 1, 1961, Ser. No. 156,262
Claims priority, application Germany Dec. 1, 1960
5 Claims. (Cl. 263—8)

1. An apparatus for conveying sintered material from a driven endless chain type sintering grate having a return deck and a discharge end to a driven endless chain type cooling grate having a receiving end and an upper and a lower deck, comprising pivotally mounted grate plates supported on said chains of the sintering grate, a suction chamber positioned below said sintering grate, the return deck of the sintering grate traveling through said suction chamber, a pressure chamber positioned below said cooling grate, the receiving end of the cooling grate being supported approximately vertically below the discharge end of the sintering grate, guide ribs supported by an angle plate having a substantially horizontal leg and a substantially vertical leg arranged adjacent to the discharge end of the sintering grate to prevent said grate plates from

pivoting until they pass said guide ribs, a first inclined plane leading off from the edge of the horizontal leg of the angle plate and extending from slightly above said edge downwardly to the cooling grate and serving as a slide for the sintered material thrown off from sintering grate, a slide bar positioned adjacent and below the returning deck of the sintering grate at a point below the discharge



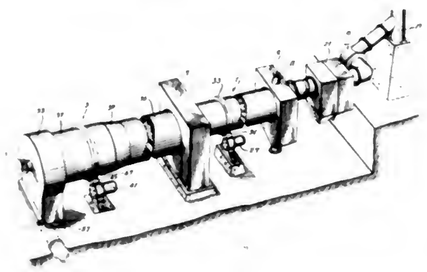
end of the sintering grate and serving to guide the grate plates, and a second inclined plane which is arranged outside the suction chamber below the sintering grate and below the grate plates after leaving the slide bar the lower portion of said second incline plane being positioned above the cooling grate whereby the residual portion of the sintered material falls from the freely hanging grate plates and slide therefrom onto the cooling grate.

3,155,379
PRE-EXPANDER FOR PELLETS OF PLASTIC MATERIAL
Paul E. Fischer, Cedar Grove, William A. Heatley, Jr., North Haledon, and Frank H. Lambert, Pompton Lakes, N.J., assignors to Champlain-Zapata Plastics Machinery, Inc., Caldwell, N.J., a corporation of Delaware
Filed Jan. 29, 1962, Ser. No. 169,411
17 Claims. (Cl. 263—21)



1. A pre-expander for pellets of plastic material, said pre-expander comprising a cylinder which is open at one end, a closure for that end, a piston slidable in said cylinder and acting as a movable bottom, a rod connecting said piston and closure for movement in unison, means operatively associated with said cylinder for heating the interior thereof to expand the pellets of plastic material, and an actuator having a rod connected to said piston and closure assembly to move the same between an intermediate open position for receiving a charge of unexpanded pellets, a closed position in which the pellets are treated to expand the same, and a protruded position in which the piston is moved to the open end of the cylinder to discharge the expanded pellets from the cylinder.

3,155,380
MULTI-UNIT KILN FOR THE PRODUCTION OF LIGHTWEIGHT AGGREGATE
Gerard Arthur Armand Lessard, 218 Bedford Ave., St. Lambert, Quebec, Canada
Filed June 25, 1962, Ser. No. 205,016
4 Claims. (Cl. 263—32)



1. A rotary kiln for the processing of materials amenable to bloating in the manufacture of lightweight aggregates, cement or the like, comprising:

(*a*) a cylindrical horizontally inclined preheating section having a material feed end and an outlet end at a lower level than said feed end;

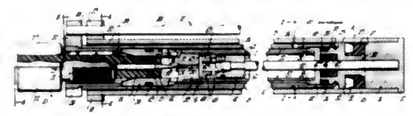
(*b*) variable speed drive means to rotate said preheating section to thus control the retention time of the material in said section;

(*c*) a horizontally inclined firing section connected in alignment with said preheating section and having an inlet end next to the outlet end of said preheating section and a discharge end; said firing section being formed of cylindrical end means at the inlet and at the discharge ends thereof joined by a tapered junction means; the cylindrical end means at the inlet end being smaller in diameter than the cylindrical end means at the discharge end, whereby to allow for the increase in volume of material resulting from bloating thereof as said material moves from the inlet end to the discharge end of the firing section;

(*d*) variable speed drive means to rotate said firing section to thus control the retention time of the material in said section, and

(*e*) firing means firing into the larger diameter end of said firing section.

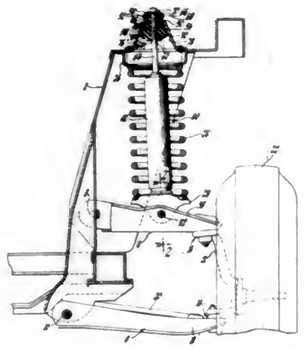
3,155,381
READING PACER
Arthur Jodean Sparling, 638 14th St., Manhattan Beach, Calif.
Filed July 30, 1962, Ser. No. 213,410
12 Claims. (Cl. 267—1)



1. A timer comprising, in combination: an outer head pneumatically closing one end thereof; a middle cylinder having a head which substantially abuts said outer head in the closed relation of said cylinders and which is

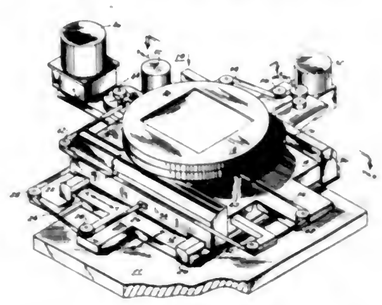
separated therefrom in the extended relation of said cylinders, to define a vacuum chamber between said heads within said outer cylinder; means on said middle cylinder head pneumatically sealing the same to the inner wall of said outer cylinder to maintain a vacuum in said chamber; an inner cylinder mounted in a fixed position within said middle cylinder; means defining a transfer passage extending longitudinally between said inner and middle cylinders; a piston disposed within said inner cylinder, said piston having a stem extending through and sealed in said middle cylinder head and secured to said outer head and thus in a fixed position relative to the outer cylinder, storage and dashpot chambers being defined within said inner cylinder at respective ends of said piston; a body of hydraulic fluid disposed in said storage and dashpot chambers; means, including a restricted bleed orifice and said transfer passage, providing a path for delayed discharge of hydraulic fluid from said dashpot chamber upon relative closing movements of said cylinders in response to atmospheric pressure against the outer ends of said cylinders; means providing relatively free bypass flow of hydraulic fluid from said storage chamber into said dashpot chamber in response to relative extension of said outer and middle cylinders; manually adjustable means for varying the effective area of said restricted bleed orifice so as to regulate the rate of timing movement of said middle cylinder into said outer cylinder; and a valve ring encircling said piston, axially slidable thereon, and in sliding engagement with the inner wall of said inner cylinder, said piston having bypass passage means for bypass flow of hydraulic fluid from said storage chamber past said piston within said inner cylinder to said dashpot chamber, said bypass passage means being closed by said valve ring during timing movement of said inner cylinder, whereby to block bypass flow and to force the hydraulic fluid to escape through said restricted bleed orifice at a relatively slow, timed rate.

3,155,382
INDEPENDENT FRONT WHEEL SUSPENSION ASSEMBLY
Horacio Shakespear, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,443
4 Claims. (Cl. 267—8)



1. A vehicle suspension spring assembly comprising, load supporting elastic means disposed between the sprung and unsprung mass of the vehicle, a hydraulic shock absorber arranged concentrically within said load supporting elastic means, said shock absorber including a piston rod flexibly connected to the sprung mass and a cylinder articulatably connected to the unsprung mass, means forming an apertured wall in said sprung mass through which said rod extends, a pair of annular elastomeric bodies surrounding said rod at opposite sides of said apertured wall, one of said bodies including a lower portion engageable by said cylinder upon predetermined compression deflection of said load supporting elastic means, and means including shoulder means on said rod for compressively loading the upper portion of said one body and all of the other body to elastically secure said rod to said sprung mass, the lower surface of said one body extending substantially below said shoulder means on said rod.

3,155,383
PRECISION POSITIONING APPARATUS
John H. Whitmore, Binghamton, N.Y., assignor to Link Division of General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,962
12 Claims. (Cl. 269—58)

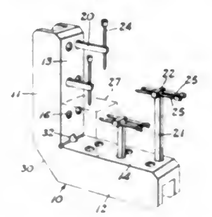


1. A precision positioning apparatus comprising,
(*a*) first and second tables and a support member;
(*b*) means positioning said first table on said support member and said second table on said first table;
(*c*) first and second drive means, said first drive means effective to translate said first table transversely with respect to said support member and said second drive means effective to translate said second table longitudinally with respect to said support member; and
(*d*) means decreasing frictional forces when said first and second tables are driven by said first and second drive means;
(*e*) said last named means including a plurality of fluid bearings on the lower surface of each of said first and second tables, a supply of pressurized fluid, and rigid supply means coupling said fluid to all of said plurality of bearings, whereby said first table tends to separate from said support member and said second table tends to separate from said first table.

3,155,384
WORK HOLDER
Francis Raymond Schwenzer, Buffalo, N.Y., assignor to Schwenzer Tool and Die Co., Inc., Buffalo, N.Y.
Filed July 2, 1963, Ser. No. 292,256
1 Claim. (Cl. 269—101)

In a work holding fixture, a body member comprising a pair of leg members having adjacent surfaces lying in planes disposed at right angles to each other, a plurality of openings extending perpendicularly through said leg members from each of said surfaces, and a plurality of clamp members having shank portions slidably interchangeably engageable in said openings, each of said clamp members having a clamp screw threaded therethrough at an end thereof and directed perpendicularly toward the other of said adjacent surfaces, said body

member having an obliquely disposed flat support surface at the apex of the external angle formed by said leg mem-



bers and a screw hole extending through said body member perpendicular to said oblique support surface.

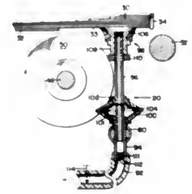
3,155,385
END CLAMP
James H. Lee, Lawndale, Calif., assignor to Wedgelock Corporation of California, North Hollywood, Calif., a corporation of California
Filed June 30, 1961, Ser. No. 121,143
1 Claim. (Cl. 269—236)



An end clamp for clamping a pair of cellular components together and in end-to-end relationship, comprising a U-shaped body of resilient material having legs extending in spaced parallel relation, gripping portions at the free ends of said legs, a first one of said legs having an offset portion to place the gripping portion of said leg close to the gripping portion of the other leg and in normally spaced parallel relationship for insertion into adjacent openings in each of said cellular components juxtaposed in end-to-end relationship; said other leg having an offset portion, bracket means secured to the offset portion of said other leg, said bracket means straddling said first leg and having an end normally extending outwardly of said first leg; manually operable cam means rotatably mounted on said outer end of said bracket means for normally holding said legs to position said gripping portions in normal spaced parallel relationship and for selectively moving said first leg towards said other leg to clamp adjacent walls of said adjacent openings together between said gripping portions, and said cam means having a cam surface for moving said first leg by an amount greater than required to move the gripping portions together so that said gripping portions are flexed into parallel relationship when clamping said adjacent walls.

3,155,386
SHEET-FEEDING DEVICE
Joseph H. Burleigh, Williamson, N.Y., assignor to Cutler Mail Chute Company, Rochester, N.Y., a corporation of New York
Filed July 10, 1962, Ser. No. 208,749
4 Claims. (Cl. 271—26)

1. In a sheet-feeding device for removing sheets successively from a stack of sheets in a repetitive cycle of operations, a system comprising:
a flexible fluid conduit;
control means for connecting said conduit alternately to an evacuation means and to the atmosphere during a cycle of operation of the device;
a first tubular member communicating with said conduit and extending therefrom;
a second tubular member communicating with said first tubular member and that is mounted for sliding, telescoping movement relative thereto, with one of said members sliding within the other;
a resilient hollow body that is collapsible upon evacuation thereof but that is normally extended and resiliently self-sustaining in its extended state, and that is formed with two opposed openings, one of which is sealed about an end portion of one of said members and the other of which is sealed about a portion intermediate the ends of the other of said members, said body being disposed to hold said members in a predetermined, partly telescoped position in its normal condition; a gripping head having at least one suction mouth, and that is disposed at the free end of said second tubular member, with its suction mouth in communication with the bore of said second tubular member, for gripping the surface of a sheet on which it is engaged, upon evacuation of said second tubular member;

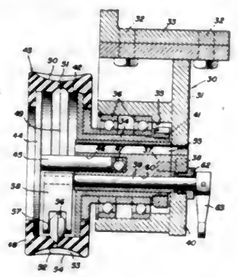


one of said members being formed in its wall with at least one opening that is disposed to provide communication between the bore thereof and the interior of said body;
the evacuable relationship between the suction mouth of said gripping head and said opening being such that the body is not evacuated until the mouth is sealed by the surface of a sheet that is gripped by said gripping head, and such that the body is evacuated and collapsed before the gripping head can grip more than one sheet;
said opening being disposed to maintain communication between the bore of the member in which it is formed and the interior of said body in all of the positions of said members during said cycle, and
means coupled to one of said members for moving said members as a unit from a first, sheet gripping position to a second, sheet release position and back again, during each cycle of operation, while maintaining said first member in communication with said conduit.

3,155,387
SHEET HANDLING APPARATUS
Velio S. Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Oct. 9, 1962, Ser. No. 229,341
18 Claims. (Cl. 271—74)

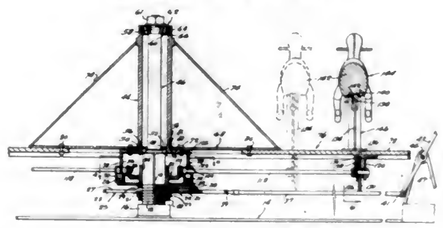
16. A vacuum roller assembly for an article handling conveyor apparatus comprising a rotatably mounted hollow roller having a relatively small axial dimension and a tire-like casing of rubber-like material forming a peripheral wall of the hollow roller, said casing having outwardly opening concave peripheral surface portions, a peripherally extending slit in said casing which is nor-

mally closed and means to open said slit at a predetermined point and provide a passageway at said point be-



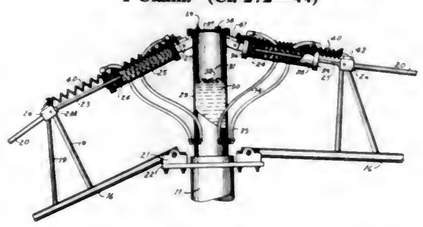
tween the concave surface portions and the interior of the roller.

3,155,388
MERRY-GO-ROUND
Orville E. Walden, Box 46, Nilwood, Ill.
Filed Nov. 16, 1962, Ser. No. 238,173
20 Claims. (Cl. 272—33)



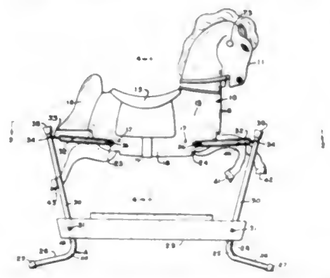
1. A merry-go-round comprising a base, an upstanding pedestal on the base, a crown gear surrounding and splined to the pedestal, a horizontal wheel surrounding and journaled upon the pedestal, a housing beneath the wheel enclosing the crown gear, radial circumferentially spaced horizontal drive shafts beneath the wheel and having pinions on their inner ends supported on the housing and in mesh with the crown gear, pendant brackets on the wheel adjacent to its outer edge carrying the outer ends of the drive shafts, vertically compressible spring mountings fixed upon and upstanding from the wheel in the regions of the outer ends of the drive shafts, horses mounted upon the spring mountings, and ratchet mechanisms operatively connected between the horses and the outer ends of the drive shafts.

3,155,389
ROUNDABOUT AMUSEMENT RIDE
Lavoy Winton, 241 S. Clayton St., Mount Dora, Fla.
Filed Aug. 29, 1960, Ser. No. 52,399
1 Claim. (Cl. 272—44)



A roundabout of the character set forth including, a central vertical rotary beam, arms pivotally mounted on said beam for rotation therewith, seats on said arms, an ascending curved ramp in the path of travel of said seats up which said seats are caused to travel as the beam and arms are rotated and whereby said arms are pivoted upwardly, an abrupt termination of said ramp providing an unsupported flight of said seats in free space whereby they tend to drop by gravity pivotally lowering the arms therewith, and double acting hydraulic means restraining the pivotal movement of said arms, said means including a chamber in said beam, hydraulic fluid in said chamber and a confined compressible fluid in said chamber, each of said hydraulic means being connected with said chamber whereby fluid expelled from the hydraulic means of each arm will pass into said chamber to be circulated and cooled therein.

3,155,390
HOBBY HORSE
Clement R. Moore, St. Louis Park, and Cyrus W. Huff, Mound, Minn., assignors to Moulded Products, Inc., Maple Plain, Minn., a corporation of Minnesota
Filed Nov. 6, 1961, Ser. No. 150,566
3 Claims. (Cl. 272—53.2)

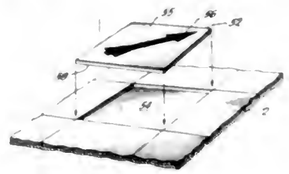


1. A hobby horse comprising a hollow body constructed with an anterior, posterior cavity therein and forming spaced sides, a frame within said body comprising two side frame members extending along the sides of said body and secured thereto, rods extending through and attached to said side frame members and projecting outwardly beyond the sides of the body, a base having uprights, springs between said rods at their outer ends and said uprights, pairs of rear and front legs pivoted on said rods and normally disposed in extended positions, lever arms extending upwardly from said legs and disposed within the cavity in said body, connecting means connecting the arms of said rear legs together, connecting means connecting the arms of said front legs together and a link connected to both said connecting means and having relative pivotal movement with respect to said lever arms, actuating means on said front legs and serving upon downward movement to cause downward movement of the front legs and upward movement of said rear legs and resilient means acting between a part fixed relative to said body and one of said connecting means to return said legs to normal position.

3,155,391
BOARD GAME APPARATUS
Abram B. Chittenden, 507 N. Lincoln St., Clearwater, Fla.
Filed July 12, 1962, Ser. No. 209,438
8 Claims. (Cl. 273—131)

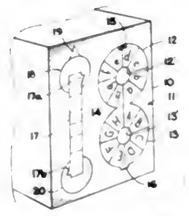
1. A game comprising in combination: a game board having a plurality of squares thereon; four sets of playing pieces movable on said board, each of said sets having a first, second, third and fourth distinctive marking respectively; a first portion of said squares having a fifth distinctive marking to indicate the positions of invulnerability for all playing pieces located thereon; a second

portion of said squares having a sixth distinctive marking thereon to indicate invulnerability for playing pieces located thereon according to the directional character of the movement of the respective pieces; a series of goal squares disposed along each side of said board, each of said series having one of said first, second, third and fourth distinctive markings respectively, said goal squares serving as goals for said playing pieces identifiable with said markings respectively, the series of goal squares



opposite any of said goal squares for particular playing pieces serving as starting squares for said pieces; a portion of said first portion squares being changeable to assume the character of said second portion squares to provide different levels of difficulty of said game; a portion of said second portion squares having a seventh, eighth, ninth and tenth distinctive marking divided in equal portions thereamong, each of said markings being identifiable with a set of said playing pieces.

3,155,392
SPINNING GAME DEVICE FORMED FROM FLAT SHEET MATERIAL
Max J. Ruderian, 613 Wilshire Blvd., Santa Monica, Calif.
Filed Jan. 4, 1963, Ser. No. 249,450
8 Claims. (Cl. 273—142)

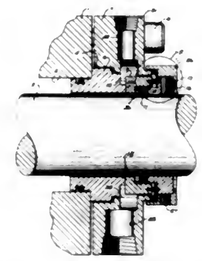


1. In a spinning game device in which a member having a central opening is adapted to be rotated, a bearing frame means for said member comprising: an elongated strip terminating in first and second given shaped ends, said first given shaped end including a pointer portion, the central portion of said strip being bent out of the plane of said strip to define a folded portion receivable in said central opening with said given shaped ends positioned at least in partial overlapping relationship on one side of said member so that said second given shaped end exerts a pressure on said first given shaped end to bias said pointer portion against the face of said member when said folded portion is received in said central opening of said member.

3,155,393
SEALED QUENCH COLLAR
Herbert B. Hummer, Pavilion, Mich., assignor to Dura-metallic Corporation, Kalamazoo, Mich., a corporation of Michigan
Filed Dec. 19, 1962, Ser. No. 245,863
6 Claims. (Cl. 277—74)

1. In mechanical seal construction for use between a wall and a shaft extending therethrough and rotatable relative thereto, wherein said mechanical seal has a pair of sealing members having mutually contacting sealing faces, one sealing member being fixed with respect to said wall and the other sealing member being capable of rotation in response to rotation of said shaft, the improvement comprising:

enclosure means defining a chamber surrounding said seal, a first portion of said enclosure means being rotatable with said other sealing member and a second portion of said enclosure means being fixed with respect to said wall, said first and second portions of said enclosure means including wall means defining

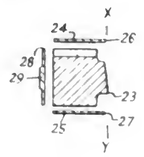


an annular passageway extending away from said chamber;

a ring of external diameter substantially equal to the external diameter of said annular passageway and located within said chamber adjacent said passageway, said ring being of greater radial width than said passageway; and

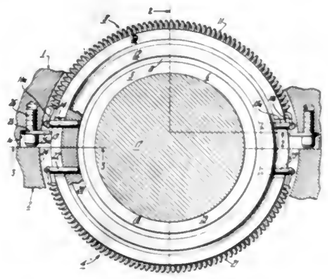
means for introducing a fluid pressure into said chamber of said enclosure means, whereby said pressure will urge said ring against the walls defining said passageway and seal said fluid pressure against escape from within said chamber.

3,155,394
SCRAPER SEGMENTS
Fermo Barbero, 25 Rue d'Italie, Marseille, France
Filed Apr. 19, 1961, Ser. No. 104,139
Claims priority, application France Apr. 21, 1960
2 Claims. (Cl. 277—141)



1. A composite cylinder and piston ring assembly comprising a cylinder wall, a first central ring provided with circumerential staggered upper and lower set back shoulders for the collection of oil and a vertically oblique face terminating in a scraper edge, a resilient member urging said central ring scraper edge outward against said cylinder wall, and second and third elastic scraper members disposed respectively above and below said shoulders in scraping engagement with said cylinder wall, whereby three mutually independent scraper elements in vertical array successively engage the cylinder wall and are separated from each other by two oil grooves formed as shoulder recesses set back from the oblique face of said central ring.

3,155,395
SHAFT PACKING ASSEMBLY
Herbert N. Hoffman, Lunenburg, Mass., assignor to General Electric Company, a corporation of New York
Filed Sept. 12, 1963, Ser. No. 308,497
5 Claims. (Cl. 277—163)



4. A shaft packing assembly including at least two subassemblies, each comprising:

an arcuate support member,

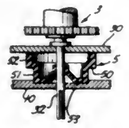
a plurality of packing segment members carried on the arcuate support member,

each packing segment having an inner peripheral portion adapted to define a fluid sealing relation with the outer periphery of a shaft disposed through the packing assembly, each packing segment having also a radially outwardly projecting portion with an axially extending portion disposed over an outwardly facing peripheral surface of the arcuate support member,

a longitudinally extensible resilient member disposed around the outer periphery of the packing segments and biasing them radially inwardly against the arcuate support member, and

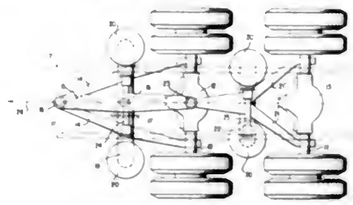
means securing the ends of the resilient member to the respective end portions of the arcuate support member.

3,155,396
SHAFT PASSAGE SEALING COLLAR
Grover H. Smith, 4609 6th Ave. S., Seattle, Wash.
Original application Mar. 17, 1958, Ser. No. 721,936, now Patent No. 3,067,612, dated Dec. 11, 1962. Divided and this application Oct. 21, 1960, Ser. No. 64,039
6 Claims. (Cl. 277—212)



1. A shaft passage sealing collar comprising a resiliently deformable integral cup having a stepped wall including a first wall portion, a second wall portion of smaller diameter and of different extent axially of said cup than said first wall portion and disposed concentrically thereof but axially displaced relative thereto and a shoulder joining the adjacent edges of said first and second wall portions, the edge remote from said shoulder of the wall portion of lesser axial extent forming the lip of the cup, and a bottom having its periphery joined remote from said shoulder to the wall portion of greater axial extent and having a shaft-receiving aperture therein located axially of said cup between said lip and the bottom's periphery, the wall portion of lesser axial extent and said shoulder being yieldable by pressure against the lip and the bottom's periphery to telescope said wall portions relatively for reducing the combined axial extent of said wall portions sufficiently to locate said lip and a portion of said shoulder in coplanar relationship.

3,155,397
DOUBLE AXLE SUSPENSION AND STEERING ARRANGEMENT
Eugen Stump, Stuttgart-Unterturkheim, and Paul E. Strifler, Kornwestheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart - Unterturkheim, Germany
Filed Feb. 12, 1962, Ser. No. 172,447
23 Claims. (Cl. 280—81.5)



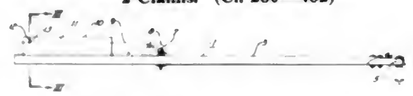
1. A curve-following double axle, especially double rear axle for motor vehicles provided with a vehicle superstructure comprising first axle means, second axle means, and guide means for guiding said first and second axle means in opposite directions with respect to each other, said guide means including a pair of guide members attached to each axle means and having a free end, said guide members being mutually inclined with respect to each other, an essentially horizontally arranged double-armed lever means extending essentially longitudinally of the vehicle, said pairs of guide members extending forwardly of the respective axle means guided thereby, means operatively connecting a respective end of said double-armed lever means to said free end of a respective pair of said guide members and therethrough to the corresponding axle means guided thereby, and means rotatably supporting said double-armed lever means approximately in the center thereof at the vehicle superstructure.

3,155,398
RETAINING DEVICE FOR TENSIONING CABLE OF SKI BINDING
Hannes Marker, Alpspitzstrasse 37, Garmisch-Partenkirchen, Germany
Filed June 29, 1962, Ser. No. 206,454
Claims priority, application Germany, July 15, 1961, M 49,687
5 Claims. (Cl. 280—11.35)



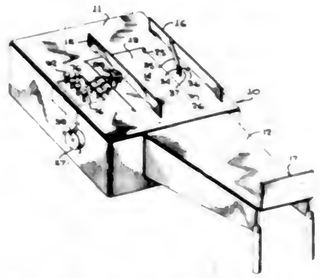
5. A retaining device for the tensioning cable of ski bindings comprising a vertical base portion with a turned down cable holding hook portion on its upper end for mounting on the side surface of skis to engage the upper portion of a ski cable, with the outer edge of said hook portion extending downwardly to approximately the horizontal plane of the axis of a tensioned cable disposed thereunder, and a resilient support member secured to said base portion in vertical alignment below said hook portion, and of approximately the same width as said hook portion, said support member extending outwardly beyond the diameter of a cable adapted to be disposed under said hook portion, with the surface of said resilient member disposed below said outer edge of said hook portion being spaced therefrom a distance which is less than the diameter of a cable adapted to be disposed below said hook portion to provide a horizontally extending slot therebetween so said cable can be released therefrom by a lateral force on said cable and retained therein at all other times.

3,155,399
TRAILER TONGUE EXTENSION
Andrew Fetzko, 607 Ann St., Homestead, Pa.
Filed Apr. 6, 1962, Ser. No. 185,587
2 Claims. (Cl. 280—482)



1. A trailer tongue extender comprising a tongue member having hitch socket means disposed at one end thereof, a hitch ball element disposed near the other end thereof for cooperative engagement with the hitch socket means of a trailer tongue, trailer tongue receiving means disposed on said tongue member between said hitch ball element and said other end, said receiving means being U-shaped to snugly receive said trailer tongue therein and having lockable closure means across the U opening thereof whereby said trailer tongue is substantially immovably retained therein when the hitch socket means of said trailer tongue is cooperatively engaged with said hitch ball element.

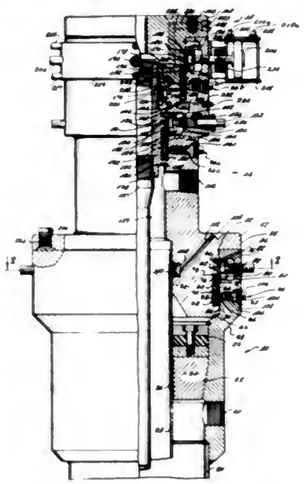
3,155,400
AUTOGRAPH MACHINE
John Leskovec, Jr., 79 Morningside Drive, Elmira, N.Y.
Continuation of abandoned application Ser. No. 126,448, June 23, 1961. This application Feb. 12, 1963, Ser. No. 259,774
32 Claims. (Cl. 281—6)



1. An autographic machine having a surface on which writing paper is supported, comprising guide means projecting upwardly from and adjacent to opposite sides of said surface for limiting lateral movement of the arm of a person writing thereon, and means operatively connected to said guide means to present a clean section of paper in progressive sequence to said surface at predetermined intervals.

3,155,401
WELL HEAD ASSEMBLY
Herbert G. Musolf, 10512 Rose Ave., Stanton, Calif.
Filed Feb. 6, 1961, Ser. No. 87,129
5 Claims. (Cl. 285—18)

1. Well head assembly apparatus comprising: a first housing having a longitudinal bore portion and formed with an upwardly-facing shoulder; a second housing having an annular portion in longitudinally slidably coupled position within said bore portion, said second housing being formed with a downwardly-facing shoulder that rests upon said upwardly-facing shoulder; at least one recess formed around the inside surface of said bore portion; upper and lower outwardly-facing annular grooves formed around the outer surface of said annular portion, said upper groove and said recess being in opposite, concentric juxtaposition when said annular portion is in coupled position within said bore portion as aforesaid, and the lower surface of said upper groove sloping radially outwardly and downwardly; an annular packing ring and an annular packing retainer ring positioned in said lower groove, said packing ring and said retainer ring being in coaxial end-to-end abutment therein, said retainer ring being above said packing ring and, the upper surface of said retainer ring sloping radially outwardly and downwardly; at least one elongated arcuate shoe member carried in said recess and slidable radially thereof between a retracted position and an extended position

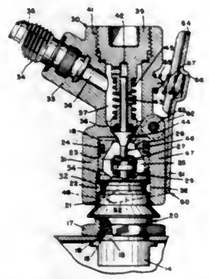


relative to said annular recess, the inner surface of said shoe member being formed with at least two concentrically arcuate, longitudinally spaced apart, inwardly projecting lands, the lower surface of each of said lands sloping radially outwardly and downwardly, the upper one of said lands being engageable with the upper groove of said second housing when said shoe member is in said extended position, and the lower one of said lands being engageable with the upper surface of said retainer ring when said shoe member is in such extended position thereby moving said retainer ring axially in said lower groove against said packing ring and at the same time forcing said shoulders into mutual contact locking said second housing against upward motion relative to said first housing, the lands of said shoe member being free of engagement with said grooves and said retainer ring when said shoe member is in such retracted position; and force-transfer means to slide said shoe member between said retracted and extended positions.

3,155,402
MANUAL DISCONNECT COUPLING WITH PIVOTED LEVER HAVING DETENT ENGAGING FACING CAMS
Richard T. Cornelius, 3537 Zenith Ave. S., Minneapolis, Minn.
Filed Apr. 11, 1960, Ser. No. 21,522
5 Claims. (Cl. 285—88)

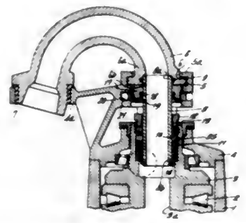
1. In combination with a fitting having a projecting portion with an annular groove therein, a coupling com-

prising a body having a cavity therein receiving said projecting portion with the groove disposed within the confines of said cavity, oppositely disposed coaxial radial guides in said body, plungers slidable in said guides and having inner ends movable into said groove to lock the coupling to the fitting, a lever extending along said body, means for pivoting said lever to said body for swinging



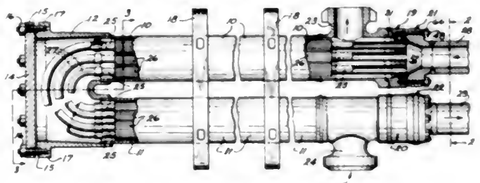
movement about an axis parallel to the plane of the groove and to the axis of said guides, arms on said lever extending outwardly thereof and embracing said body and facing cams on said arms engaging the outer ends of said plungers and simultaneously moving both of said plungers inwardly to urge the inner ends of said plungers into said grooves to hold the coupling locked to said fitting.

3,155,403
SCAVENGING HEAD ASSEMBLY FOR ROTARY DRILLING APPARATUS
Albrecht Schlieckmann, Dusseldorf, Germany, assignor to Gutehoffnungshutte Sterkrade Aktiengesellschaft, Oberhausen, Rhineland, Germany
Filed June 7, 1960, Ser. No. 34,431
Claims priority, application Germany June 10, 1959
4 Claims. (Cl. 285—111)



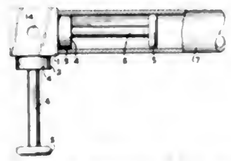
1. A rotary drilling apparatus comprising a hollow elbow member having an internal bore for supplying fluid and having an end with projections extending outwardly in opposite directions, a cleaning head housing having an upper portion with a lock opened at one end to receive said elbow projections, said lock having an internal groove defined therein in which said projections are engageable for joining said elbow to said head, a hollow sword pipe having a bore adapted to align with the internal bore of said elbow, said elbow having a widened diameter portion cut thereinto from the end adjacent said sword pipe to receive said sword pipe, a resilient ring member disposed in said widened diameter portion and frictionally engageable with said sword pipe when it is inserted therein, a rotary drill rod assembly carried by said housing and surrounding the lower end of said sword pipe including a member having an internal bore of greater diameter than the exterior of said sword pipe and permitting telescoping of said sword pipe downwardly therein to permit the upper end to clear said elbow, a groove defined around the lower end of said sword pipe, a spring member disposed in said groove, packing disposed around said sword pipe and supported on said ring member, and a clamping nut engageable with said drill rod assembly and movable to compress said packing against said sword pipe and the interior of said drill rod assembly member, means defining a groove around said sword pipe in said housing opened at one end, a drive nut of lesser dimension than said groove supported thereon, said drive nut extending around said sword pipe, a sleeve affixed to said sword pipe and frictionally coupled with said drive nut, said drive nut being rotatable to displace said sword pipe axially, said elbow being movable to move said projections out of said lock and to permit upward movement of said sword pipe with said packing out of said housing upon upward rotation of said drive nut to free said sleeve.

3,155,404
UNION FOR CONNECTING CONDUITS
John W. Brown, Jr., Lakewood, and John W. Nevins, Elyria, Ohio, assignors to Brown Fintube Company, Elyria, Ohio, a corporation of Ohio
Filed Dec. 17, 1963, Ser. No. 331,267
7 Claims. (Cl. 285—137)



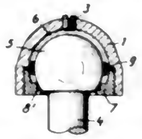
1. A union for connecting at least three conduits providing a fluid flow relation between at least two of said conduits, the first of said conduits communicating with at least one second conduit and defining a first passage through which a first fluid is adapted to flow, and the third of said conduits surrounding said second conduit in spaced relation thereto and defining between the exterior periphery of said second conduit and the interior periphery of said third conduit a second passage adapted to contain a second fluid to be kept separate from said first fluid, said union comprising a terminal member fixed in fluid-tight relation to the end portion of said third conduit and having an outer face and an inner periphery, a fitting member fixed in fluid-tight relation to the end portion of said second conduit and having an outer face and an outer periphery and disposed within said terminal member, means disposed between the inner periphery of said terminal member and the outer periphery of said fitting member to limit relative inward axial movement of said fitting member in said terminal member, a securing member fixed in fluid-tight relation to the end portion of said first conduit and having an outer face confronting the outer faces of said fitting and terminal members, means acting between said securing member and said terminal member to exert an axial force thereon to draw said terminal member and said securing member toward each other and to force said fitting member to the inward limit of its axial travel, a first sealing surface on the outer periphery of said fitting member adjacent its outer face, a second sealing surface on the inner periphery of said terminal member adjacent its outer face, a third sealing surface on said confronting outer face of said securing member in opposition to said first and second sealing surfaces, and sealing means disposed in contact with all of said sealing surfaces to thereby prevent fluid in said first passage from escaping between said fitting member and said securing member and fluid in said second passage from escaping between said fitting member and said terminal member when said force-exerting means is activated.

3,155,405
ASSEMBLING JOINT FOR ASSEMBLING FRAMEWORK COMPRISING TUBULAR RODS, AND FRAMEWORK WITH SUCH ASSEMBLING JOINTS
Poul Cadovius, Ildervej, Skaade Bakker, pr. Hojbjerg, Denmark
Filed Feb. 14, 1961, Ser. No. 89,186
6 Claims. (Cl. 287—54)



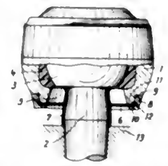
1. A joint element for assembling rod elements having unobstructed tubular ends, which joint element comprises a carrying element and a plurality of outwardly projecting pin members fixedly joined together, each of said pin members having two fitting portions spaced apart in the axial direction of the pin member and having an elongated intermediate portion of substantially reduced cross-section, said fitting portions corresponding substantially to the internal cross-sectional configuration and dimensions of said tubular ends to effect sliding engagement therewith, the one of said fitting portions remote from said carrying element being formed with a generally arcuate peripheral surface and in conjunction with said intermediate portion to permit partial intercoupling of said joint element and rod element at an angle to the axis of said pin member so that said joint element and a rod element may be assembled by initial askew intercoupling of the tubular end at the remote fitting portion of said pin member and by final aligned intercoupling of said tubular end at both fitting portions of said pin member.

3,155,406
BALL AND SOCKET JOINTS
Rudolf Gottschald, Osterrath, Germany, assignor to Viktor Langen, Dusseldorf, Germany
Filed Oct. 3, 1960, Ser. No. 59,968
Claims priority, application Germany, Oct. 3, 1959, E 18,326
7 Claims. (Cl. 287—87)



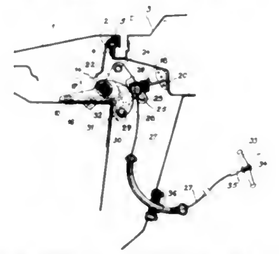
1. A ball and socket joint comprising
a pin member having a ball head at one end,
a housing disposed about said ball head and defining a space therebetween,
said housing having an opening at the lower end for receiving said ball head,
ball retaining means secured to said housing at said opening and having a bore for said pin member,
said ball retaining means having an inner bearing surface engaged by said ball adjacent said bore,
fluid means in said space between said housing and said ball head and supporting the upper half of said ball head away from said housing,
sealing means in said inner bearing surface and engaging said ball head for retaining said fluid means in said housing,
and flexible bearing means fixed to said housing above said sealing means and engaging said ball member about the periphery substantially at its center line.

3,155,407
BALL AND SOCKET JOINTS
Rudolf Gottschald, Osterath, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany, a German company
Filed May 17, 1962, Ser. No. 195,511
Claims priority, application Germany May 26, 1961
2 Claims. (Cl. 287—87)



1. A ball and socket joint comprising
a socket having wall means defining an opening,
a stud having a ball head at one end received in said socket and a shank portion extending through said opening, said opening providing a clearance space relative to said shank portion to allow limited angular movement of said stud in said socket,
a sealing member having a central sleeve portion engaging around said shank portion in said opening and a flexible plane disc portion connected to said sleeve portion intermediate its ends and extending radially from said sleeve portion into contact with the end of said socket at said opening,
said sleeve portion extending upwardly from said radial disc portion into engagement with said ball head,
and means for fixing a peripheral portion of said radial disc portion to said socket at said opening.

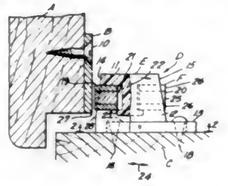
3,155,408
BONNET LID FASTENING DEVICE
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Nov. 16, 1962, Ser. No. 238,159
Claims priority, application France, Nov. 21, 1961, 879,628, Patent 1,313,913
1 Claim. (Cl. 292—216)



Device for fastening the bonnet lid of a vehicle, characterized in that a cross member of the vehicle body supports control and lock members as well as a locking device proper comprising a movable keeper engaging a bonnet-carried bolt, said control and lock members and said keeper being separated and operatively interconnected by a pin, whereby a single actuation of the control member is sufficient for firstly releasing the lock members and subsequently the keeper from the bolt, and wherein two brackets carried by said cross member of the vehicle body are provided with bearings for receiving the connecting pin rigid on the one hand with the movable keeper and on the other hand with the lock member proper urged by a spring and provided with two notches, one for locking the bonnet lid in the closed position and another for keeping the bonnet lid in a

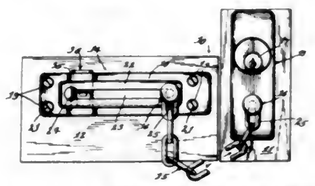
half-closed position, said lock member co-acting with a tooth formed on a lock arm pivoted on a fixed pin and urged by a spring, said lock arm carrying another pin slidably engaging an elongated aperture formed in a link pivoted on said lock member and so connected to a traction control cable that when said cable is pulled the pin of said lock arm moves to one end of said elongated aperture and carries along the lock member while releasing the tooth of said lock arm and rotating said keeper, whereby said keeper lifts the bolt and the bonnet lid.

3,155,409
MAGNETIC DOOR CATCH
Fred Schlissel, Elmont, N.Y., assignor to Penn-Akron Corporation, Woodside, N.Y., a corporation of Delaware
Filed Sept. 23, 1960, Ser. No. 58,105
10 Claims. (Cl. 292—251.5)



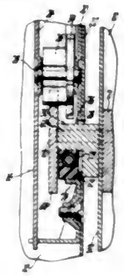
1. A magnetic door latch construction for a door including a swinging door element and a fixed jamb element, one of said elements having a contact armature plate and the other element having a catch comprising a plastic box-like enclosure having closed top and side walls and open end and bottom walls, said side walls having edges adjacent the plate, and attachment feet mounted on the lower side edges of said side walls and extending outwardly trannversely and a magnetic wafer mounted movably between said walls and projecting beyond the edges of said side walls so as to contact said plate before the plate contacts the edges of the side walls, and means formed in said enclosure to retain the wafer in position, the side edges of said side walls adjacent to and contacting the plate extending obliquely downwardly from the top wall toward the attachment feet so that the edges thereof adjacent the attachment feet will contact the plate after a slight movement of the magnetic wafer, said oblique direction being toward the plate away from the top wall and said magnetic wafer including a central magnetic element and upper and lower pole pieces and having a central opening extending therethrough.

3,155,410
LOCKING MEANS FOR CHAIN DOOR GUARDS
Edwin W. North and Carroll V. Spon, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Sept. 1, 1961, Ser. No. 135,663
11 Claims. (Cl. 292—264)



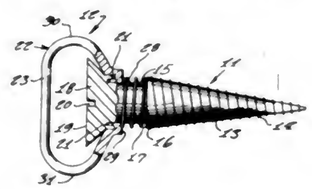
1. In combination with a chain door guard having a slide bracket to be affixed to a door and a slide member affixed to one end of a chain with the other end of the chain anchored to the door frame, said slide bracket having a longitudinal slot with an enlarged opening at one end adapted to receive the slide member which is slidably retained in the slot, the rear of said slide bracket provided with a channel extending across and at the rear of said slot forwardly of said opening, and a locking member slidably mounted in said channel and having a projection movable into and out of the path of said slide member and when in the path of said slide member preventing the latter from being withdrawn from said slot through the opening.

3,155,411
DOOR LATCH SAFETY INTERLOCK
Bela Sandor, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 11, 1963, Ser. No. 294,380
4 Claims. (Cl. 292—280)



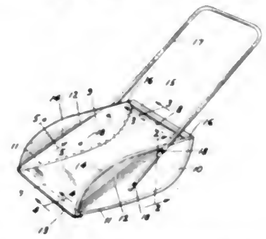
2. In a vehicle body door latch for latching a door member to a body member, the combination comprising, a latch frame mounted on one of said members and including a wall provided with an opening for receiving a striker therein, a latch bolt movably mounted in said frame and including a flange located adjacent said wall, a striker mounted on the other of said members and including an interlock flange, said striker being received within said frame through said opening to engage said bolt, said striker flange being received within said frame on the other side of said bolt flange from said wall to overlie said bolt flange and said frame wall to provide a safety interlock.

3,155,412
PUSH LOCK TURN SCREW
Violet J. Edgar, 6180 E. 47th St. S., Wichita, Kans.
Filed Aug. 29, 1963, Ser. No. 305,419
4 Claims. (Cl. 292—341.17)



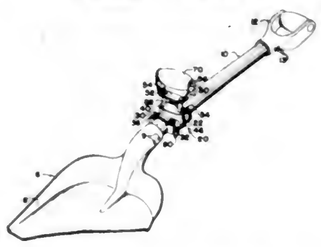
1. In a screw lock, the combination of a screw element and an eye ring, said eye ring being secured rotatably free upon said screw element and means for arresting the rotative movement of said eye ring upon said screw element, said screw element comprising a longitudinal shank of conical configuration, said shank being screw threaded, one end of said shank forming a point of said screw element, and the other end of said shank having a cylindrical portion adjacent thereto, said cylindrical portion being of a diameter which is less than the adjacent conical portion of said shank, thereby forming a shoulder between said cylindrical portion and said conical shank, a screw head at the opposite end of said cylindrical portion, said head being of generally conical configuration having a flat end wall and said means for arresting said rotational movement of said eye ring upon said screw element being located at the junction of said head and said cylindrical portion of said screw element.

3,155,413
SNOW SCOOP
Mack S. Holombo, Bruce Crossing, Mich.
Filed Aug. 22, 1962, Ser. No. 218,606
2 Claims. (Cl. 294—54)



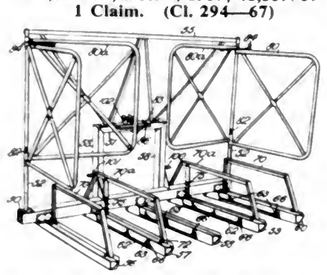
1. A scoop comprising a body member and an inverted U-shaped handle, the said body member having a bottom portion consisting of a length of metal having a longitudinal curve, beginning at a point near the median line and gradually extending upwardly to form a rear wall, there being side walls for said body consisting of a pair of panels, each secured along a longitudinal edge to an edge of said length of metal by a double hem, the leading and trailing edges of said length of metal and the free edges of said panels also being provided with double hems.

3,155,414
HANDLE
Royal A. Bales, Kensington, Kans.
Filed Sept. 24, 1962, Ser. No. 225,623
3 Claims. (Cl. 294—58)



1. An adjustable auxiliary handle for a shovel, scoop or the like comprising, in combination, an elongated body having a substantially semi-cylindrical recess therein in one surface thereof extending longitudinally of the body and adapted to receive a portion of the shank portion of a handle of a shovel, scoop or the like, two U-shaped clamp members each having threaded end portions projecting through said body at opposite end portions of said body with the intermediate portions of said clamps engageable with the shank portion of a handle or a shovel, scoop or the like when positioned in said recess in said body to removably attach said body to said shovel, scoop or the like, a plurality of nuts removably mounted on said end portions of said clamps to connect same to said body, said body having two spaced and substantially parallel holes therethrough in the longitudinally center portion thereof positioned on opposite sides of said recess in said body and at an angle less than a right angle to the axis of said recess, two set screws adjustably mounted in said body with the shank portions thereof positionable in said holes, a substantially U-shaped handle frame having a flat center portion and projecting end portions, two elongated rods each fixedly mounted in one end portion on said center portion of said handle frame and projecting therefrom in substantially parallel relation in a direction opposite from said end portions of said frame, each of said rods having a plurality of aligned openings therein in spaced relation, said rods being positioned apart a distance equal to the spacing of said holes in said body and being adjustably positioned in said holes with said set screws positionable in said openings in said rods to removably mount said rods in said body, and a resilient generally cylindrical hand hold member rotatably mounted between said end portions of said handle frame, said auxiliary handle being constructed and adapted to be removably mounted on the shank portion of the handle of a shovel, scoop or the like with said auxiliary handle being adjustable longitudinally and radially from said shank portion of said handle of a shovel, scoop or the like with said hand hold member being engageable by one hand of the user during use.

3,155,415
TRACTOR ATTACHMENTS
William James Gale, Reeves Farm, Bratton, Westbury, Wiltshire, England, assignor of one-half to Trojan Limited, Croydon, England, a British company
Filed Oct. 11, 1960, Ser. No. 92,429
Claims priority, application Great Britain, Oct. 12, 1959, 34,506/59; Dec. 4, 1959, 41,359/59
1 Claim. (Cl. 294—67)

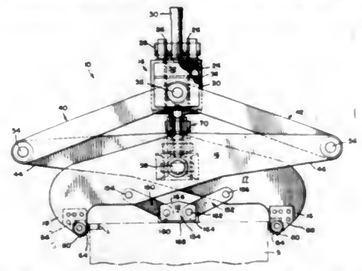


A device for use in lifting a row of bales of hay, straw or the like lying on the ground in parallel but spaced apart relation which device comprises a row of parallel tines spaced to enter between the bales and outside the end of the row, means interconnecting the tines at the rear ends thereof whereby they may be lifted as a unit, rods running one along each side of the intermediate tines of the row and along the inner sides of the tines at the ends of the row, means on the tines supporting the rods for rotation about their axes, a plurality of prongs extending radially from each rod into the spaces between the tines, spring means urging the prongs to slope upwardly from the rods and means responsive to the weight of the bales on lifting movement of the tines for effecting rotation of the rods in the direction to move the prongs downwardly and outwardly into penetrating and holding engagement with bales between the tines.

3,155,416
AUTOMATIC LEVELING DEVICE FOR TONGS
George Buchik, Elmhurst, and Chen-Nuo Yu, Chicago, Ill., assignors to Cullen-Friestedt Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 7, 1962, Ser. No. 215,432
2 Claims. (Cl. 294—81)

1. In a load-lifting tongs, in combination, an elongated head beam, a lift pin positioned on and disposed

medially of the ends of said head beam whereby the same may be suspended from an overhead hoist, substantially identical link and lever assemblies carried at the opposite ends of said head beam, each link and lever assembly comprising a pair of laterally and outwardly extending links pivotally connected at their upper ends to said head beam, a pair of laterally and inwardly extending levers pivotally connected at their upper ends to the lower ends of said links, said levers crossing each other and being pivoted together for scissors-like swinging movements medially of their ends, opposed load-engaging jaws carried at the lower ends of said levers and movable toward and away from each other during swinging movements of the levers in opposite directions, a cross frame extending between and connected to said levers at their region of pivotal connection to each other and underlying said head beam, a suspension pin carried by said cross frame medially of its ends and directly underlying said lift pin, a hook plate pivoted to said head medially of its ends and underlying the lift pin,



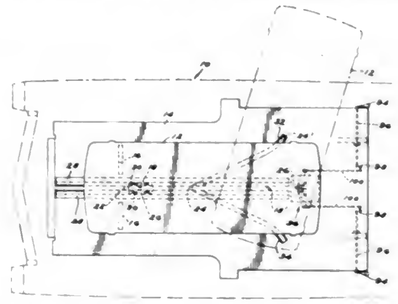
said hook plate being provided with a hook portion adapted to engage said suspension pin to retain the levers of both link and lever assemblies in elevated positions and being operable upon release of the suspension pin to allow the levers to move downwardly under the influence of gravitational force, a latch pin on said hook plate, a latch member effectively pivoted to said head and having a latch seat for receiving the latch pin therein, cooperating cam means on said suspension pin and latch member for guiding the latch pin into register with the latch seat when said levers move vertically upwardly relatively to the head, each link and lever assembly further including a pair of thrust links pivoted at their upper ends to the levers at points substantially midway between the jaws thereof and the point of pivotal connection between the levers, and a load-engaging seating foot pivotally connected at spaced points thereon to the lower ends of the thrust links and engageable with the load when the tongs are lowered in centered relationship upon the load.

3,155,417
LOCKING MECHANISM FOR CASKET TABLE

Cloyd L. Hanselman, Piqua, Ohio, assignor to Divco-Wayne Corporation, New York, N.Y., a corporation of Michigan

Filed Feb. 5, 1962, Ser. No. 171,209
8 Claims. (Cl. 296—16)

1. In a hearse of the side delivery type having a casket table movable relative to a support, guide means cooperable with the table to guide it from a neutral position disposed generally longitudinally within the hearse to either of two transverse extended positions, said guide means including diverging tracks, said table having a follower positioned to move along and be guided by one or the other of said tracks to control the movement of said table toward either extended position; a locking device including arms on a common pivot respectively associated with said tracks which arms normally assume closed positions engaging said follower to hold the table in neutral position, said arms being individually swingable to an open position opening the associated track to release said follower for movement along the open track permitting movement of the table to one of its extended positions, levers operatively connected to said arms and movable to swing said arms, and safety means responsive to initial movement of the table from neutral position to

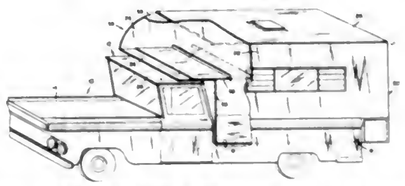


lock the opened arm in open position and responsive to final movement of the table toward neutral position to release the opened arm, said safety means comprising a detent engageable with a lever that has been moved to open the arm to which it is operatively connected, and means on said table rendering said detent inoperative in the neutral position of said table.

3,155,418
MOBILE COACH-TYPE LIVING QUARTERS FOR LAND VEHICLES

Charles Q. Miner, Rte. 4, Box 233, Boise, Idaho

Filed July 5, 1961, Ser. No. 122,016
3 Claims. (Cl. 296—23)

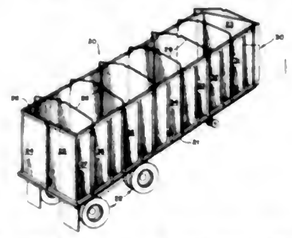


1. In combination with a pick-up type truck having an open rear loading frame and a cab provided with a forwardly facing windshield and located adjacent to and forwardly of said loading frame, an enclosed house-type coach comprising a body mounted on said loading frame and providing a living compartment vertically over said loading frame and a nose extension projecting forwardly over the top of said cab and terminating approximately midway between the front and back of said cab with the space in said nose extension vertically above said cab being sufficient to provide sleeping space only for one person lying transversely of said cab, said nose extension extending substantially over the entire width of said cab and having a convex top wall portion facing upwardly and forwardly with said windshield being operable during forward movement of said truck to divert air flow upwardly and along an inclined path such that the main body of air flow is partially diverted to an elevated position above the top of said cab when it reaches the vicinity of said nose extension, a bunk of single bed width mounted in said nose extension vertically above said cab, and an extensible bunk section arranged with said bunk to be displaced rearwardly with respect to said nose extension and into said compartment and vertically above said loading frame in juxtaposed relationship with said bunk to form a double bed therewith.

3,155,419
CONVERTIBLE TRAILER

Stanley A. Garson, 623 Bush Hill Road, Irwin, Pa., and Carlowen Smith, Uniontown, Pa.; said Smith assignor to said Garson

Filed Jan. 3, 1961, Ser. No. 80,329
16 Claims. (Cl. 296—28)

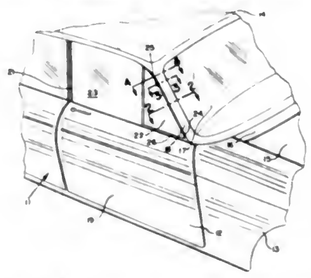


1. In a vehicle body construction, generally horizontal base means, sides on said base means, at least four aligned and contiguous door panels constituting at least part of the linear extent of one of said sides and substantially the full height thereof, means for separably hingedly connecting the two intermediate door panels adjacent the lower part of their mutually adjacent edges to each other and to said base means, means for separably hingedly connecting the two intermediate door panels adjacent the upper part of their mutually adjacent edges, the two end door panels having separable upper and lower hinge means at the edges thereof remote from said intermediate door panels for effecting swinging movement thereof, releasable means for structurally interconnecting all of said upper hinge means, releasable means at the free edges of said door panels engageable with said last mentioned means, said base means and said door panels for securing said door panels to said last mentioned means and said base means, and means for releasably securing each said door panel to said base means at an intermediate point of each said panel.

3,155,420
VEHICLE BODY CORNER PILLAR CONSTRUCTION

Charles Belsky, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 21, 1962, Ser. No. 196,101
3 Claims. (Cl. 296—44)

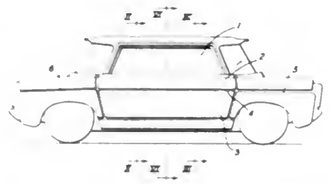


1. In a vehicle body structure, a roof supporting windshield pillar having a first rearwardly facing surface and an inwardly facing surface, said first rearwardly facing surface having a stepped portion, said stepped portion being defined by a second rearwardly facing surface beginning at the outer edge of said pillar and an outwardly facing surface intermediate the outer edge and the inwardly facing surface of said pillar, a vent window supporting frame member having an inwardly facing surface, said frame member being mounted on said body for swingable movement into and out of contiguous relationship to said windshield pillar, said supporting frame member in said contiguous relationship being spaced rearwardly of said rearwardly facing surface of said stepped portion and spaced laterally outwardly of said outwardly facing surface of said stepped portion, a vent window pivotally mounted on said supporting frame member and longitudinally spaced rearwardly from said pillar and laterally inwardly from said supporting frame member, and at least one weather strip extending in a vertical direction and affixed to the inwardly facing surface of said supporting frame member, said weather strip having at least two lips with one lip being disposed between and in sealing contact with said pillar and said supporting frame member, the other lip being disposed between and in sealing contact with said vent window and said supporting frame member when said vent window and said frame member are in said contiguous relationship.

3,155,421
MOTOR VEHICLE DOOR CONSTRUCTION

Béla Barényl, Stuttgart-Valhingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Oct. 6, 1959, Ser. No. 845,058
Claims priority, application Germany Oct. 8, 1958
6 Claims. (Cl. 296—47)



1. A motor vehicle door especially for passenger motor vehicles provided with a door frame, comprising inner door wall means, and outer body covering means for the door subdivided into two separate essentially horizontally extending sections disposed one above the other, said two separate sections each being provided at the mutually facing edges thereof with an angularly bent flange portion forming the leg portion for a channel extending over essentially the entire width of the door and between the upper and lower edges thereof, first securing means for effectively securing the lower one of said two sections to said inner door wall means, and second securing means for effectively securing the upper one of said two sections to said inner door in an easily removable manner independently of said first securing means, at least one of said first and second securing means including means securing a respective leg portion to said inner wall means, said respective leg portion extending into said channel to such an extent that said securing means arranged thereat for securing the same to said inner door wall means are essentially invisible from the outside of the vehicle.

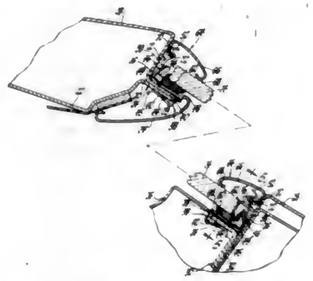
3,155,422
WINDSHIELD MOUNTING

David D. Campbell, James D. Leslie, and James H. Wernig, all of Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 6, 1961, Ser. No. 150,299
5 Claims. (Cl. 296—93)

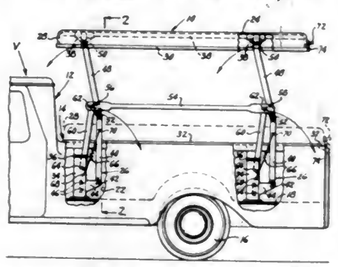
1. A method of installing a transparent panel within a vehicle body opening defined by a generally continuous wall extending laterally to the plane of said opening and merging inwardly of said opening into a flange extending laterally to said first wall and generally parallel

to the plane of said opening comprising, adhesively securing a plurality of spacer means to said wall adjacent said flange, applying a continuous bead of adhesive material to the inner surface of said panel adjacent the edge thereof, locating said panel generally angularly outwardly of the plane of said opening with the lower edge portion thereof resting on said spacer means, rotating said panel about the lower edge portion thereof into



the plane of said opening and within said wall to bring said bead of adhesive material into contact with said flange, and locating the inner surface of said panel a predetermined distance from said flange while deforming said bead of adhesive material to provide a layer of said adhesive material between the inner surface of said panel and said flange.

3,155,423
LIFTABLE VEHICLE TOP
Earnest C. Cripe, Goshen, Ind., assignor to Independent Products Company, Division of the Independent Protection Company, Incorporated, Elkhart, Ind.
Filed Oct. 30, 1962, Ser. No. 234,149
5 Claims. (Cl. 296—100)



1. In a vehicle body having a cab portion and a rear open-topped portion with a floor,

an upstanding peripheral wall around said floor defining a storage compartment,

a liftable top over said open-topped portion comprising a roof element having a downwardly extending flange portion substantially corresponding in plan to the shape of said peripheral wall,

spaced apart upstanding lower mounting plates, each mounted upon the floor and also upon the inner face of each longitudinal side wall, a first and second of said plates being longitudinally aligned at one side of the vehicle body, and a third and fourth of said plates being longitudinally aligned at the other side of the vehicle body, said first and third and second and fourth plates being transversely aligned,

longitudinally adjustable upper mounting plates each adjustably fixed to the bottom of said roof element and positioned substantially vertically above a part of each of the said lower mounting plates,

two similar extensible and retractable roof supporting means at the longitudinal sides of the storage compartment, each latter means pivotally connected to said lower mounting plates and said upper mounting plates at a respective side,

said supporting means at each side including a front pair and a rear pair of pivotally connected and vertically collapsible support arms which, in substantially fully extensible position, includes a vertical lower support arm and an upwardly and slightly forwardly inclined upper support arm, thus presenting two arm-axes which form trailing vertex angles with respect to upwardly and forwardly oriented lines passing through the pivot connections of the bottom of the lower support arms and the lower mounting plates and the pivot connection of the top of the upper support arm and the upper mounting plates,

said supporting means at each side including parallel front and rear lifting bars each pivotally connected to a lower mounting plate at a point forward of and above the pivot connection of the bottom of the adjacent lower support arm, the lifting bars in substantially fully extensible position sloping upwardly and slightly rearwardly and terminating at their tops a short distance higher than and in front of the pivot connections between the lower and upper support arms,

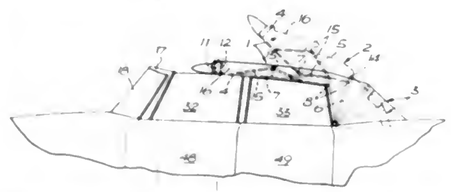
said supporting means at each side also including a horizontal tie rod pivotally connected adjacent its ends to the tops of each lifting bar and also pivotally connected to the lower half portions intermediate the ends of each upper support arm at points which are at the intersection of the center lines of the upper support arms and upwardly and backwardly inclined lines passing through the pivots at the tops of the lifting bars,

whereby when the roof supporting means are moved from a fully extensible position to a retractable position corresponding to elevated and lowered roof positions, the tie rods will always remain horizontal due to the said pivot connections with the parallel lifting bars, the tops of the lower support arms will swing arcuately towards the rear of the vehicle body due to the lower arm connections with the lower mounting plate, and the tops of the upper support arms and all points on the roof element will move both downwardly due to the instantaneous height of the tie rods and progressively forwardly of the instantaneous position of the intermediate portion pivot of the upper support arm and tie rod, thus keeping the roof horizontal in all positions of closure, and moving all points on the roof substantially straight downwardly but slightly rearwardly.

3,155,424
CONVERTIBLE TOP FOR CABRIOLET
Theodor Frodewin Bauer, Leinfelden, near Stuttgart, Germany, assignor to Stuttgarter Karosseriewerk Reutter & Co. G.m.b.H., Stuttgart, Germany, a limited-liability company
Filed Oct. 3, 1961, Ser. No. 142,565
Claims priority, application Germany, Oct. 8, 1960, St 16,992
12 Claims. (Cl. 296—107)

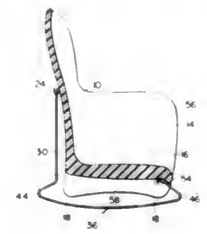
1. In a convertible top for a cabriolet having a plurality of sections with a covering material thereon flexibly connected to each other and each having lateral frame members, transverse struts connecting the opposite frame members to each other for tightening said covering material, means for removably securing the first of said struts to the windshield frame of said cabriolet, the first of said frame members connecting the first and second struts and each comprising a set of telescopically extendible and contractible members for sliding said first strut in

the longitudinal direction of said first frame members toward the second strut when said securing means are disengaged, each set of said telescopic members comprising a rear member of sheet metal having a substantially U-shaped cross section open in the upward direction and a front member partly surrounded by and adapted to be telescoped into said rear member, said front member comprising two sheet-metal parts forming outer and inner



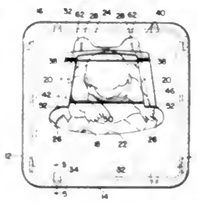
parts, means for pivotably connecting said two parts at their front ends, sealing means mounted on said outer part adapted to engage with the uper edge of a closed door window of said cabriolet, said inner part forming a load-bearing part of said frame members and guided within said rear member, and guiding means on said rear member for pressing the rear end of said outer front part inwardly when said front and rear members are pushed together.

3,155,425
CONVERTIBLE CHAIR FOR DOLLS AND INFANTS
Louis R. Chreist, Jr., South Bend, Ind., assignor to South Bend Toy Manufacturing Company, Inc., South Bend, Ind., a corporation of Indiana
Filed June 12, 1963, Ser. No. 287,313
12 Claims. (Cl. 297—131)



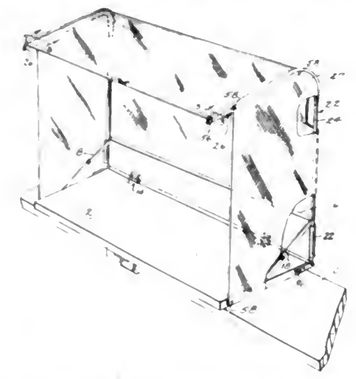
9. A convertible chair comprising backrest means having a seat thereon, said seat having spaced apart front and rear portions, a rocker element for supporting said backrest means and seat on a supporting surface, said rocker element being curved upwardly when disposed beneath said seat in supporting relation thereto, means pivotally mounting said rocker element on said backrest means for swinging movement about a horizontal axis between first and second positions when said backrest means is in upright position, said first position disposing said rocker element beneath said seat, said rocker element having front and rear end portions when disposed in said first position, said rocker elements in said first position having its rear portion adjacent to and beneath the rear portion of said seat and its front portion adjacent to and beneath the front portion of said seat, means for supporting the front portion of said seat on the front portion of said rocker element, said second position disposing said rocker element to extend to the rear of said backrest means with the curvature thereof being downward whereby said rocker element serves as a hanger for a car seat.

3,155,426
TABLE-CHAIR COMBINATION
Jarvis W. Rockwell, Chicago, Ill., assignor to South Bend Toy Manufacturing Company, Inc., South Bend, Ind., a corporation of Indiana
Filed June 19, 1963, Ser. No. 289,099
11 Claims. (Cl. 297—136)



8. A chair-table combination comprising a flat table top having an opening therein, said opening having opposite lateral edges and front and rear edges, said lateral edges angling toward each other, a chair removably inserted into said opening and being supported by said table top, said chair having opposite lateral sides provided with arm rests thereon, respectively, said sides having portions engageable with said lateral edges as an abutment, means including said arm rests for suspending said chair from said table top, and said sides being upright and having a spacing therebetween which is no wider than said opening whereby said chair may be lifted free of said table top.

3,155,427
STADIUM SEAT
Joseph P. Necessary, 1410 Spring, Huntington, W. Va.
Filed Mar. 22, 1963, Ser. No. 267,126
3 Claims. (Cl. 297—184)



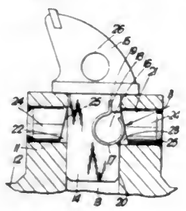
1. A stadium seat comprising a seat member, a back member, hinge means engaging said seat member to said back member to allow the latter to fold flush with the former when the stadium seat is not in use, a pair of L-shaped canopy support members, means for fixing one of said canopy support members to each end of said back member in a position wherein a first leg of each canopy support member extends vertically, and a second leg thereof extends horizontally over the seat member, a cloth canopy member, a canopy storage roller mounted along the rear edge of the seat member, said cloth canopy member having end portions affixed to said roller, means on said canopy support members for receiving and retaining transverse edges of the cloth canopy member, whereby the cloth canopy member can be drawn from the canopy storage roller to a position

wherein it extends behind and over a person occupying the stadium seat, and is secured in that position by its engagement with the canopy support members, said cloth canopy member further including, as integral parts thereof, side panel portions which extend from the said second legs of the canopy support member to the seat on each side of the stadium seat, and means to detachably secure the side panels in that position.

3,155,428
CUTTER TOOL RETAINED BY SPRING DETENT

Sidney Ernest Proctor, High Wycombe, England, assignor to Austin Hoy and Company Limited, High Wycombe, England, a British company

Filed Apr. 12, 1962, Ser. No. 186,987
Claims priority, application Great Britain, Apr. 13, 1961, 13,386/61; May 11, 1961, 17,286/61
3 Claims. (Cl. 299—92)



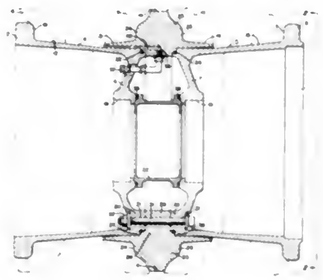
1. A cutter tool and tool box assembly comprising: a cutter tool having a shank, an elongated tool box having an elongated socket open at its upper end to receive said shank, said shank being disposed in said socket and formed with a recess opening outwardly through a side surface of the shank transversely to the length thereof, a detent member supported within said recess and having a resiliently flexible free ended portion arcuately curved in a plane parallel to the length of said shank and projecting from said recess beyond said side surface of the shank, a retaining cam in said socket having a cam surface which is inclined with respect of the longitudinal axis of the socket and which, when the shank is home in the socket, overhangs said detent member and is engaged thereby, the free end of said portion being directed toward said open end of the socket and spaced from the upper edge of said recess to permit comparatively easy upward and inward yielding of said portion into the recess, said detent member normally contacting the lower edge of said recess to offer comparatively greater resistance to flexing of said portion into the recess by the exertion of downwardly and inwardly directed forces thereon.

3,155,429
DUAL WHEEL

Donald H. Metzler, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 16, 1961, Ser. No. 145,397
2 Claims. (Cl. 301—36)

2. A non-frangible dual wheel on which tires are mounted for use on the landing gear of high-speed aircraft susceptible to extensive damage in the event of tire failure producing wheel disintegration, comprising a pair of aluminum allochiral rim bases, each base having mounting means integrally formed thereon adjacent one edge and a tire bead seat and retaining flange along the opposite edge thereof, a unitary circular flange member of high-strength, light-weight, non-frangible forged, abrasion-resistant metallic material positioned between said rim bases having a tire bead seat and retaining flange along each of the opposite edges thereof overlying a portion of the rim base, and an emergency tread surface lying adjacent to and in contact with the lower sidewall portion of the mounted tires and projecting outwardly beyond the retaining flanges on the opposite edges of said rim bases a distance sufficient to maintain the retaining flange of said rim bases out of contact with the ground providing an emergency rolling support for the aircraft in the event of tire failure, and fastening means to hold said rim bases

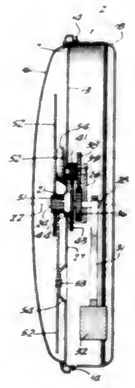


and flange member in the assembled position to form an integral structure wherein the flange member is positioned between the tires mounted thereon and is normally inoperative but becoming operative in the event of tire failure with the emergency tread providing support for the aircraft so that the pilot can retain control thereof.

3,155,430
CHROMATIC WHEEL COVER

John C. Schindler, Sacramento, Calif.
(701 W. St. Joseph St., Perryville, Mo.)

Filed Dec. 6, 1962, Ser. No. 242,697
1 Claim. (Cl. 301—37)



A color changing attachment to a motor vehicle wheel comprising:

(*a*) a circular mounting disk including means for mounting said disk in a vertical attitude on the outside of a motor vehicle wheel for rotational movement therewith;

(*b*) an imperforate transparent cap mounted on the outside of said disk;

(*c*) a plurality of colored disks rotatably mounted on the outer surface of said mounting disk and being revolved thereby as said disk rotates with the wheel;

(*d*) a horizontal shaft rotatably mounted on the axis of rotation of said mounting disk, said shaft and said mounting disk being relatively angularly movable with respect to each other;

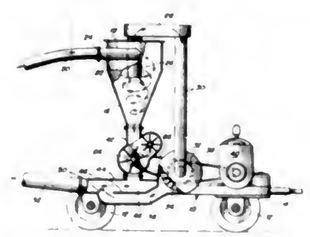
(*e*) an arm having its proximal end mounted on the inner end of said horizontal shaft, said arm depending in a vertical direction and including at its lower end a weight adapted gravitationally to hold said arm in a substantially vertical attitude and thereby to restrain said horizontal shaft against rotational movement relative to said disk and said wheel; and,

(*f*) means connecting said horizontal shaft, said mounting disk and said colored disks for rotating said colored disks at an angular velocity dependent upon the relative angular movement between said disk and said wheel on the one hand and said horizontal relatively fixed shaft on the other hand.

3,155,431
PORTABLE PNEUMATIC CONVEYOR

Charles A. Baldwin, 204 E. Kent St., Streator, Ill.

Filed Apr. 9, 1962, Ser. No. 185,945
6 Claims. (Cl. 302—23)

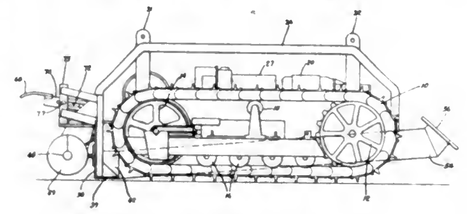


1. A portable pneumatic conveyor for fluent material comprising a movable frame, a hopper closed at the top and mounted on the frame and having a material inlet adjacent the upper end thereof, a blower having a conduit connecting its inlet with the top of the hopper, power means mounted on the frame for driving the blower to provide a partial vacuum within the hopper whereby fluent material is drawn through the material inlet into the top of the tower and drops therein by gravity, material receiving means disposed below the hopper and communicating therewith, whereby material will flow by gravity from said hopper to said material receiving means, an outlet at the bottom of said material receiving means, the material receiving means having circular portions therein, a wheel centrally mounted in the said circular portions having vanes extending from the wheel to make a substantially air-tight connection with the said circular portions, a driving connection for the said wheel from the said power means, a vaned pocket feeder in a substantially air closed side extension of the said circular portions having vanes with tips to engage with the vane tips of the said wheel and rotated thereby to admit a larger piece of foreign material between them to pass the ends of the wheel vane and to be wiped therefrom to avoid clogging of the vanes of the wheel, a material discharge duct at the bottom of the material receiving means to receive fluent material passed through said means by the rotation of said wheel, another duct adjacent the first mentioned duct and connected to the outlet of the blower for causing a partial vacuum in the first duct, and having an opening at a point beyond the inlet opening of the first duct with the said means, a discharge conduit forming a connection with both of said ducts whereby the air flow from the blower will cause a partial vacuum to draw material from said means through the wheel into the first duct and both ducts will combine to propel material through the said discharge conduit.

3,155,432
DIGGING MACHINE

Robert F. Hubbard, Hillsborough, Calif., assignor to Cargill, Incorporated, Minneapolis, Minn., a corporation of Delaware

Filed July 3, 1961, Ser. No. 121,584
8 Claims. (Cl. 302—56)

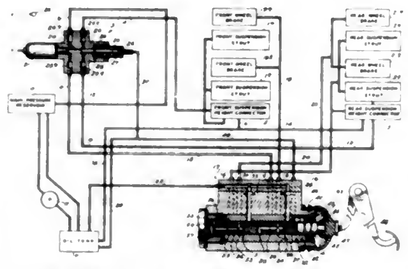


1. An agricultural material digging and feeding machine comprising: a frame, combination supporting and moving means secured to said frame, a back-up blade secured to one end of said frame, an opening in the center of said back-up blade, conduits connecting the opening in said back-up blade to the other end of said machine, an auger shaft rotatably supported by bearings secured to said back-up blade and said shaft inside of the outboard ends thereof, flighting on each end of said shaft and between the bearings supporting it which flighting is constructed and arranged to convey materails from the outboard ends thereof toward its center with a predetermined direction of rotation of said shaft, and a motor on said frame and connected to said shaft for rotating it in said predetermined direction, in which raking means secured to said frame and comprising a single rake bar, tines secured to said rake bar, and means secured to said rake bar moving it as to cause said tines to move forward and up, then rearward and down in an elliptical path to rake materials above and in front of said auger flighting down and into its path.

3,155,433
HYDRAULIC BRAKE SYSTEM INCLUDING A FLUID SUSPENSION BRAKE PRESSURE SUPPLY FOR VEHICLES

Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a company of France

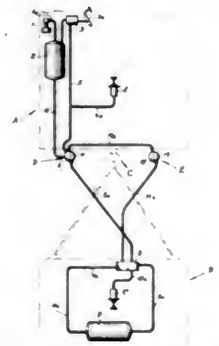
Filed Mar. 7, 1962, Ser. No. 178,172
Claims priority, application France, Mar. 11, 1961, 855,337
5 Claims. (Cl. 303—2)



1. A hydraulic brake system for a vehicle having a suspension system incorporating hydraulic suspension struts acting as suspension springs, comprising two different sets of brakes, a brake pedal, control means operable by said brake pedal and connected to said sets of brakes, a source of hydraulic fluid under pressure, means connecting said control means to said pressure source and

at least one of said suspension struts, said control means being operative to connect one of said sets of brakes to said pressure source and the other set of brakes to said at least one suspension strut, and means connecting said suspension struts to said pressure source and having a safety valve interposed therein which is sensitive to the pressure in said means connecting said control means to said pressure source for isolating said suspension struts from each other and from said pressure source whenever the sensed pressure is less than a predetermined value.

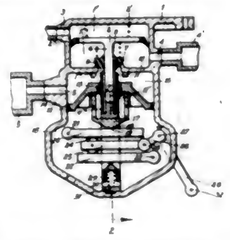
3,155,434
AIR-ACTUATED BRAKING SYSTEM FOR TOWING VEHICLES
Oskar Vielmo, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed July 12, 1962, Ser. No. 209,404
Claims priority, application Germany, July 14, 1961, B 63,273
20 Claims. (Cl. 303—7)



1. A detachable coupling, particularly for connecting two sections of a service line and two sections of a supply line in air-actuated braking systems of towing vehicles and their trailers, said coupling comprising a first hollow coupling member having a first and a second inlet port and a first and a second outlet port; a normally closed first valve assembly mounted in said coupling member between said first inlet port and said first outlet port; a normally closed second valve assembly mounted in said coupling member between said second inlet port and said second outlet port; means operatively connecting said assemblies so that said second valve assembly opens automatically in response to opening of said first valve assembly; a second hollow coupling member detachably connected with said first coupling member; and actuating means provided in said second coupling member for automatically opening said first valve assembly when said coupling members are connected to each other.

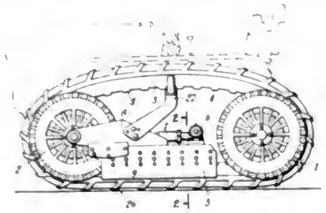
3,155,435
BRAKE PRESSURE GOVERNOR FOR PNEUMATIC BRAKES
Heinz Nicolay, Heidelberg, and Hans Gruener, Heidelberg-Wieblingen, Germany, assignors to Graubremse G.m.b.H., Heidelberg, Germany, a corporation of Germany
Filed July 30, 1962, Ser. No. 213,334
3 Claims. (Cl. 303—40)

1. In a fluid pressure brake apparatus for use with a vehicle,
a housing,
a dividing wall extending across said housing and having a center opening formed as a valve seat,
said dividing wall separating said housing into a control chamber and a brake chamber,
a spring biased control piston reciprocating in said control chamber and having a piston rod extending through said valve seat,
a brake piston reciprocating in said brake chamber,
lever means operable in response to the load of the vehicle disposed in said housing and engaging said brake piston and said piston rod of said control piston, respectively,
said lever means constituting a connection between said control piston and said brake piston,
a control conduit for feeding pressurized fluid into said control chamber to said control piston,



said brake chamber having an opening adapted to communicate with brake cylinders of said vehicle,
a sealing cone mounted on said piston rod and engaging said valve seat in one of the operating positions of said control piston,
resilient means for engagement of said lever means on said piston rod,
the free end of said piston rod of said control piston being forked,
said lever means extending through said forked end, and
said resilient means comprising a plug and a spring within said forked end urging said plug toward said lever means.

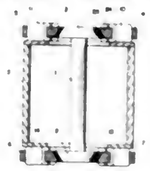
3,155,436
PNEUMATIC TUBULAR TRACK, DRIVING AND CARRYING DEVICE
Giovanni Bonmartini, 2 Via San Teodoro, Rome, Italy
Filed Mar. 11, 1963, Ser. No. 264,339
Claims priority, application Italy, Mar. 17, 1962, 69/90; Oct. 25, 1962, 77/408; Feb. 9, 1963, 82/16
10 Claims. (Cl. 305—13)



1. In a track-laying vehicle having a frame, the combination of two spaced rotating drums located in the same plane, means for driving at least one of said drums, each of said drums comprising axially spaced flanges and means connecting said flanges at circumferentially spaced intervals while leaving open spaces between said intervals, an endless pneumatic track of tubular cross-section running on said drums and having side portions engaging said spaced flanges to support said track on said drums while leaving a central inner portion of said tubular track free of said drums and unconfined to avoid entrapping foreign material between said track and drums, spaced projections on said track, means on said driving drum engaging said projections to provide a positive driving connection between said driving drum and track and

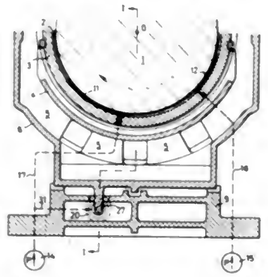
at least one pair of rollers mounted on said vehicle between said drums, the rollers of a pair being rotatable about axes disposed at an angle to one another and positioned to engage side portions of said tubular track to resist twisting and bending deflection of said track between said drums.

3,155,437
ELECTROMAGNETIC BEARING
Eugene E. Kinsey, Bellflower, Raymond E. Brandes, Norwalk, Walter R. Evans, Whittier, and Bruce A. Sawyer, Los Angeles, Calif., assignors to North American Aviation, Inc.
Filed May 21, 1953, Ser. No. 356,538
18 Claims. (Cl. 308—10)



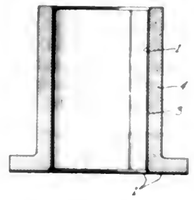
1. A plurality of electromagnets, a relatively movable member suspended by the magnetic field of said electromagnets and in proximity thereto, the magnetic field of all of said electromagnets exerting a direct, suspending force on said member, and electrical means connected in circuit with said electromagnet, said electrical means responsive to variation in impedance of said electromagnets for varying the relative strength of said electromagnets inversely in response to the variation in proximity of said relatively movable member with respect to said electromagnets.

3,155,438
HYDROSTATIC SHAFT MOUNTING
Rudolf Ruegg, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Feb. 21, 1963, Ser. No. 260,180
Claims priority, application Switzerland, Mar. 9, 1962, 2,858/62
10 Claims. (Cl. 308—72)



10. In combination a fixed bearing member; a pivotable bearing member having a bearing surface; a journal mounted for rotation about its axis in said pivotable bearing member; said pivotable bearing member being mounted in said fixed bearing member so as to allow angular displacement; said bearing surface of the pivotable bearing member being provided with at least two pressure fluid containing pockets opening toward said journal and disposed offset relative to each other in the axial direction of the journal; and individual pressure lubricant supply means for each of said pockets; said pivotable bearing being formed with a chamber for collecting the lubricant escaping from the bearing, and the pressure lubricant supply means comprising motor driven pumps fixed to the pivotable bearing member so as to communicate with said collecting chamber and to deliver the collected lubricant to said pockets.

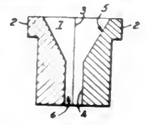
3,155,439
ANTI-FRICTION BEARINGS AND METHOD OF CONSTRUCTING SAME
Edmund A. Guzewicz, Wallingford, Conn., assignor to Chandler Evans Corporation, West Hartford, Conn., a corporation of Delaware
Filed June 14, 1962, Ser. No. 202,590
11 Claims. (Cl. 308—241)



1. A method of forming a self-lubricating rotor bearing comprising the following sequential steps: plasma-coating the working surface of a rigid metal sleeve with a fused, particulate mixture of a soft, solid, dry lubricant, and a metal of high thermal conductivity and low hardness, so that said mixture forms a bearing surface consisting of particles of free lubricant embedded in a matrix of said particulate metal; and machine finishing said coating to selected dimensions, such that said coating forms a relatively thin film, in which both said lubricant and said matrix metal contacts the surface of said rotor during its rotation in said bearing.

7. A self-lubricating bearing comprising, a rigid sleeve, a coating having a working surface formed by a particulate mixture of dry lubricant and high thermal conductivity metal said coating plasma fused to said rigid sleeve so that the interface region of said rigid sleeve and said coating has substantially the same heat transfer coefficient as the fused metals.

3,155,440
SPLIT BUSHING
Robert L. Bleicher, Dayton, Ohio, assignor to Dayton Perforators, Inc., Dayton, Ohio, a corporation of Ohio
Filed Dec. 21, 1961, Ser. No. 161,191
5 Claims. (Cl. 308—237)

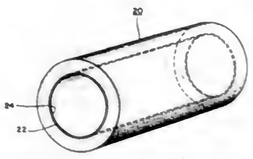


2. A guide bushing including means defining a shell having a passage therethrough, surface portions of said shell providing the entrance to said passage having a generally parabolic contour.

3,155,441
METHOD OF MAKING A TEFLON BEARING
Richard W. Bemmann, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 15, 1961, Ser. No. 152,554
6 Claims. (Cl. 308—241)

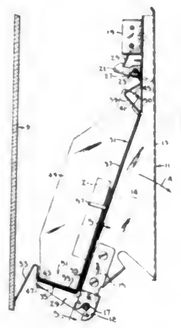
1. The process for making a bearing having a Teflon bearing surface and a porous metal backing, the steps com-

prising; forming a porous metal bearing member, treating the surface thereof with a Teflon enamel, heating the bearing with the Teflon enamel thereon to a temperature in the order of 750° F. for hardening the Teflon, treating



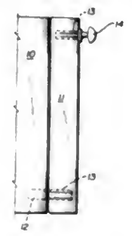
the bearing with an organic solvent for improving the wear and tear resistance thereof and finally sizing the bearing while holding the inner diameter substantially constant for closing the surface pores at the bearing surface and further entrapping the Teflon therein.

3,155,442
DISPLAY ARRANGEMENT FOR VENDING MACHINES
James T. Schuller, St. Ann's, Mo., assignor, by mesne assignments, to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,222
5 Claims. (Cl. 312—138)



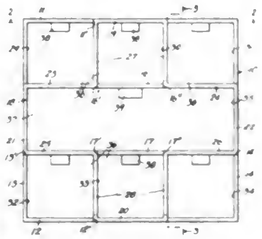
3. A display assembly for candy items or the like in a vending machine of the type having a door movable from a closed to an open position, the door having a display window, said assembly comprising a back panel pivotally connected at its lower end to the door on the inside of the door and adapted for pivotal movement from a closed position to an open position, means releasably latching the panel in a closed position, a support connected to said panel, said support having a lip adapted to engage the display window, a seat extending rearwardly from said lip, a back extending upwardly from said seat, and a ridge at the upper edge of said back, said ridge and seat having a plurality of slots therein, a plurality of partitions extending between said slots in said ridge and said slots in said seat to form item-receiving compartments visible through the display window, and item holders in each compartment, each item holder having a seat resting on the seat of said support and a back extending upwardly along the back of said support to prevent pivotal movement of the respective holder relative to said support, the forward edge of the seat of each holder being adjacent said lip, each of said holders being adapted to have an elastic band placed around its back and an item placed adjacent its back for holding the item in a display position.

3,155,443
REVERSIBLE DOOR CABINET
Raymond Meilinger, Denver, Colo., assignor to Meilinger Fixtures Company, Inc., Denver, Colo., a corporation of Colorado
Filed July 18, 1960, Ser. No. 43,634
4 Claims. (Cl. 312—329)



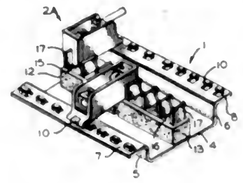
1. In a reversible door cabinet including a cabinet portion and a door portion adapted for reversible placement over the open side of the cabinet portion, the improvement comprising a first latching means recessed in said cabinet portion, a pair of identical insert portions each recessed in opposite sides of said door adapted to receive and releasably engage a door pull when on the outside face of the door and provide second latching means complementary to said first latching means when on the inside face of the door, each insert arranged for registering relation with said first latching means recessed in the cabinet portion when the respective sides of the door face the cabinet.

3,155,444
FIRST AID CABINET WITH DRAWER OPENING REINFORCING FRAME
Louis P. Mancini, 129 Braidburn Road, Florham Park, N.J.
Filed Oct. 27, 1961, Ser. No. 148,153
3 Claims. (Cl. 312—330)



1. A cabinet comprising a casing defined solely by integral top, bottom, back and side walls and by a pair of horizontal partition walls extending between the side walls and spaced from the top and bottom walls, the horizontal partition walls dividing the cabinet into top, middle and bottom drawer sections, the front of the casing being open, parts of the forward edge portions of the top, bottom, side and partition walls being recessed, a reinforcing frame comprising integrally joined horizontal and vertical rails, portions of said vertical rails being mounted and secured in the recesses of said side walls, all of the horizontal rails being mounted and secured in the recessed portions of all of the horizontal walls, and other portions of the vertical rails of said frame dividing the open front of the top and bottom sections of the casing into a plurality of drawer receiving compartments.

3,155,445
PLUG-IN CABLE CONNECTOR
Joseph F. Johnson, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 23, 1962, Ser. No. 181,935
2 Claims. (Cl. 339—149)



1. A plug-in type electric cable connector assembly comprising:

(*a*) an insulating body having a bottom wall, opposed side walls, and a closed end wall defining a three-sided enclosure having an open top wall and an open end wall,

(*b*) a screw-type electrical connector supported in said enclosure adjacent said open end wall,

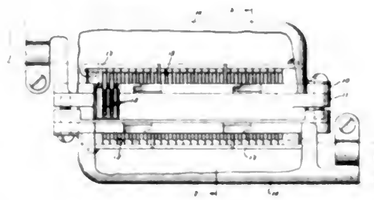
(*c*) a plug-in type electrical socket supported in said enclosure adjacent said closed end wall,

(*d*) an electrical conductor in said enclosure interconnecting said screw-type connector and said plug-in type socket,

(*e*) a portion of said enclosure being cut-away adjacent said plug-in type connector and affording access to said plug-in type connector from the back of said enclosure,

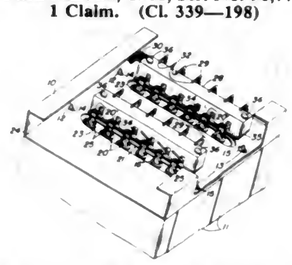
(*f*) a retaining ledge carried by said insulating body at the end thereof adjacent said screw-type connector, whereby said assembly may be engaged under a retaining hook and rotated thereabout into plug-in engagement of said electrical socket with a stationary contact member.

3,155,446
MULTIPLE CONDUCTOR CONNECTOR
Clarence Kowaleski, Rahway, and William Pferd, Watchung, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 9, 1962, Ser. No. 193,514
7 Claims. (Cl. 339—176)



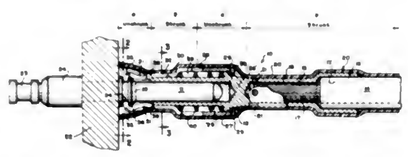
1. A multiple wire connector comprising a mating pair of insulating blocks including a multiplicity of removable electrical terminals in each of said blocks, and a retaining bar associated with at least one of said blocks, said terminals contained in one block being in electrical contact with the terminals in the other, said terminals having spring contact surfaces and being generally U-shaped in cross section throughout the entire length of said terminals, the latter having cantilever springs originating at a point intermediate the ends of said terminals on the bottom of the U-shaped section and bent at an angle to project outside of the U-shaped section thereby forming the spring contact surface, the free end of said cantilever spring bent back towards and into the U-shaped section to protect the cantilever springs, both sides of the U-shaped cross section indented towards the center of the section in a portion under the projected spring, said indentations closing the cross section to a degree narrower than the cantilever spring thereby preventing the spring from being forced down in between the sides of said section, said terminals having restraining means on one end and fixing means on the other, said latter means clamped to said blocks by said bars preventing extraction of said terminals from said blocks.

3,155,447
SAFETY CLASP ELECTRICAL CONNECTOR
Lester W. Haerther and Roger J. Pierce, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 20, 1961, Ser. No. 96,777
1 Claim. (Cl. 339—198)



A connector for establishing a circuit connection between two wires comprising, a substantially fixed-position terminal connected to one of the wires, said terminal formed with a clasp having a bottom seat, an element connected to the other wire, said element having an arm, and means resiliently biasing said arm substantially along the longitudinal axis of said terminal and toward the clasp bottom seat when the arm is in the clasp and maintaining resiliently biased seating of said arm in said clasp, means resiliently biasing the arm away from said terminal when the arm is not in said clasp; wherein said terminal has a sleeve portion extended from a terminal and to the clasp formed in the terminal, and wherein said sleeve portion is adapted for the feeding of molten solder from the terminal end to said clasp.

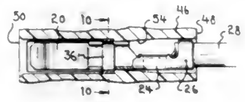
3,155,448
ELECTRICAL CONNECTOR
Theodore Y. Korsgren, Jr., Woodbury, Conn., assignor to Haydon Switch & Instrument, Inc., a corporation of Connecticut
Filed Sept. 19, 1960, Ser. No. 57,035
4 Claims. (Cl. 339—201)



4. A safety locking electrical connector adapted to be detachably coupled with a pin-like element having an annular groove spaced rearwardly from the free end thereof, an inner female socket member adapted to contact electrically said pin-like element when moved in a predetermined direction theretowards, an outer tubular member in telescopic association with said inner socket member and serving as a locking means, said outer member having a plurality of slits therein defining a plurality of locking claws adapted to be engaged with the annular groove in

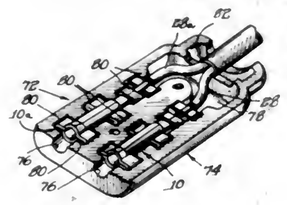
the pin-like element, and spring means acting between said inner and outer members to urge said members apart when said locking claws are in a predetermined locking position, said spring means upon compression accommodating relative movement of said inner and outer members to enable said inner member to cam said locking claws into a predetermined unlocking position in which said claws are free of said annular groove, said locking means being adapted to be unlocked by a displacement of said socket in said predetermined direction towards said pin-like element.

3,155,449
ELECTRICAL CONTACT
Homer E. Henschen, Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 6, 1962, Ser. No. 185,717
5 Claims. (Cl. 339—217)



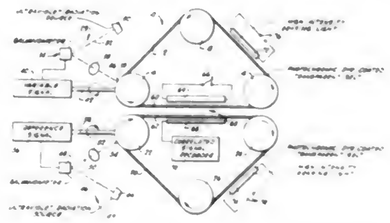
2. A stamped and formed sheet metal contact terminal, said terminal having a generally channel-shaped ferrule-forming portion at one end thereof, a pair of coextensive arms extending from said ferrule-forming portion on opposite sides of the axis of said terminal, said arms being deflectable towards and away from said axis on a moment arm extending the full length of each arm, and a polymeric retainer contained between said arms intermedial the ends thereof, said retainer normally projecting radially beyond said arms and being engageable with a first shoulder in a cavity to retain said contact in said cavity.

3,155,450
ELECTRICAL CONTACT RECEPTACLE
John R. Filson, Medford, N.J., assignor to Positive Connector Co., Medford, N.J., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,421
2 Claims. (Cl. 339—258)



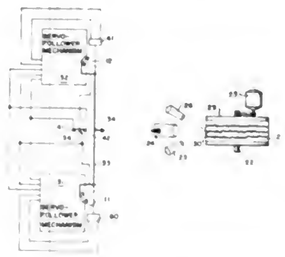
1. A terminal clip comprising a stem portion having means for attaching an electrical conductor thereto, and an elongate receptacle portion joined to said stem portion and adapted to receive a conductive pin; said receptacle portion including an elongate bottom channel portion and an elongate inverted top channel portion confronting the bottom channel portion to form a tubular passageway for receiving the conductive pin, a pair of laterally extending and substantially diametrically opposed ears adjacent the entering end of the receptacle portion and a pair of laterally extending and substantially diametrically opposed ears at the remote end of said receptacle portion adjacent said stem portion, each of said ears being bent upon itself to close proximity with the upper and lower inner ends thereof connected, respectively, to the top and bottom channel portions and with the joined outer ends thereof providing laterally outwardly disposed longitudinal hinge axes permitting resilient separation of the inner ends of the ears and the connected channel portions, the longitudinal length of said ears being relatively short as compared to the length of the receptacle portion with the intermediate substantial length of the receptacle portion between the pairs of ears being provided with substantially diametrically opposed longitudinal slots traversing the distance between the pairs of ears and one of said channel portions being longitudinally traversed by a discontinuity between said pairs of ears to relieve the receptacle portion for free spring action of the ears and channel portions about said hinge axes while retaining longitudinally continuous surface portions of the channel portions for substantially uniform resilient contact with an inserted conductive pin.

3,155,451
OPTICAL CORRELATING METHOD AND APPARATUS USING TEMPORARY RECORDING TECHNIQUES
Donald E. Dunster, Jimmy Ray Cole, and Bobby J. Thomas, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 15, 1962, Ser. No. 237,838
10 Claims. (Cl. 346—1)



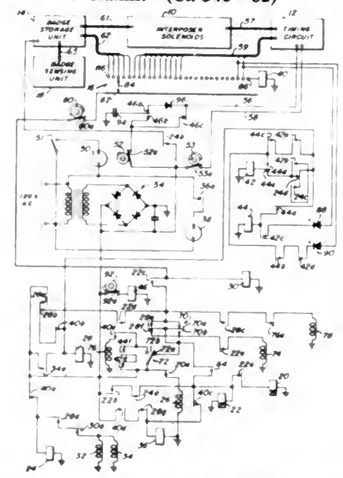
1. A method for determining the degree of coincidence between first and second signals comprising the steps of:
recording the first signal on a bistable recording medium by a beam of one type of radiation as an elongated first trace having a longitudinal time scale, the unit degree of opaqueness of the first trace being representative of the amplitude of the first signal;
recording the second signal on a second recording medium, the second signal being recorded as a second elongated trace having a longitudinal time scale, the unit degree of opaqueness of the second trace being representative of the amplitude of the second signal;
superimposing said recording media with the time scales of the traces in coincidence;
exposing the recording media to a constant intensity source of radiation, the intensity of the source being such as not to appreciably change the state of the bistable recording medium;
moving at least one of the recording media in a direction to provide relative longitudinal movement between the traces;
determining the amount of light passing through the superimposed recording media as a function of the time-phase relation between the traces; and,
exposing the bistable recording medium to high intensity radiation of another type to erase the traces thereon and prepare the medium for recordation of another trace.

3,155,452
TRACE REPRODUCING SYSTEM
Frederik Hendrik Plankeel, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,677
3 Claims. (Cl. 346—31)



1. An apparatus for following a recorded trace and producing a new record related thereto, said apparatus comprising: mounting means for supporting the record containing said trace and moving said record in a direction corresponding substantially to the direction in which said trace was recorded; an illumination means disposed to illuminate the portion of the record supported on said mounting means containing said trace; two light sensitive means disposed adjacent said mounting means; focusing means disposed between the illuminated portion of the record and said light sensitive means; said focusing means being adjusted to focus the light from the illuminated portion of the record on said light sensitive means; each of said light sensitive means being adjusted to respond to a predetermined light intensity generated by a portion of said trace and the adjacent background of said record along the opposite edges of said trace; servo-mechanisms for positioning said light sensitive means laterally with respect to the movement of said record; limit means coupled to said servo-mechanisms to control the maximum and minimum displacement between said light sensitive means; and a recording means coupled to said servo-mechanisms to record the movement thereof.

3,155,453
TIME RECORDING APPARATUS
John T. Parsons, Traverse City, Mich., and Floyd E. Harwood, Fort Wayne, Ind., assignors to Parsons Corporation, Traverse City, Mich., a corporation of Michigan
Original application Jan. 6, 1958, Ser. No. 707,254, now Patent No. 3,020,115, dated Feb. 6, 1962. Divided and this application Aug. 4, 1961, Ser. No. 129,346
5 Claims. (Cl. 346—82)



1. In a time recorder, recording means, a timing circuit continuously adjustable to settings representing time data under the control of applied signals, signaling means for periodically applying operating signals to said timing circuit, means for rendering said timing circuit effective to control said recording means so that said recording means records said time data, means operative during the operation of said recording means for preventing the application of signals to said timing circuit from said signaling circuit and for storing said signals, and means operative following the recording of said time data by said recording means for applying the stored signals to said timing circuit.

CHEMICAL

3,155,454
RECOVERY OF TRACE ELEMENT CATIONS
Murrell L. Salutsky, Silver Spring, Md., and Maria G. Dunseth, Arlington, Va., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Nov. 21, 1962, Ser. No. 239,346
6 Claims. (Cl. 23—1)

1. A method for the removal of trace element cations from water containing the same, said cations being selected from the group consisting of aluminum, barium, calcium, cadmium, cerium, cobalt, copper, iron, lead, manganese, nickel, silver, tin, uranium, and zinc comprising percolating said water through a bed of magnesium ammonium phosphate and recovering the effluent.

3,155,455
REMOVAL OF VANADIUM FROM AQUEOUS SOLUTIONS
James L. Hart, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 12, 1960, Ser. No. 75,111
8 Claims. (Cl. 23—14.5)

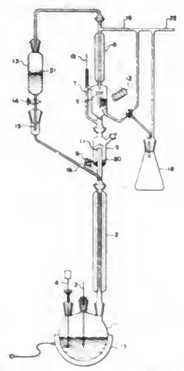
6. A method of removing soluble vanadium values from the pregnant uranium-containing liquor of the carbonate leaching process, which comprises passing said liquor through a liquid permeable bed of particulate highly cross-linked polymer having deposited therein lead sulfate, said polymer providing an inert substrate for said lead sulfate and comprising a polymer of a vinyl-substituted heterocyclic nitrogen base selected from the group consisting of those of the pyridine series, the quinoline series, and the isoquinoline series, whereby said lead sulfate is converted to lead vanadate, and eluting the vanadium values from the resulting lead vanadate-loaded substrate by passing dilute sulfuric acid through said loaded substrate.

3,155,456
PROCESS OF PREPARING HYDRAZINIUM AZIDE
Ulysses V. Henderson, Jr., and Welby G. Courtney, Richmond, Va., assignors to Texaco Experiment Incorporated, Richmond, Va., a corporation of Virginia
No Drawing. Filed June 23, 1961, Ser. No. 119,039
7 Claims. (Cl. 23—101)

1. A process of preparing hydrazinium azide comprising reacting at a temperature from about 100° C. to 135° C. a metal azide selected from the group consisting of alkali metal and alkaline earth metal azides and a hydrazine salt selected from the group consisting of hydrazine sulfate and hydrazine hydrochloride in an oxy-

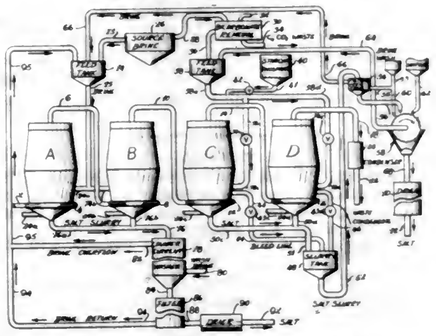
genated hydrocarbon solvent selected from the group consisting of C_2 to C_8 aliphatic alcohols, C_3 to C_8 aliphatic ether-alcohols and mixtures thereof and recovering said hydrazinium azide from said reaction mixture.

3,155,457
PURIFICATION OF THIONYL CHLORIDE
Karl E. Kunkel, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Nov. 16, 1961, Ser. No. 152,885
6 Claims. (Cl. 23—203)



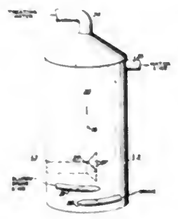
1. A process for the removal from thionyl chloride of sulfur monochloride and sulfur dichloride contaminants therein which comprises fractionally distilling off thionyl chloride from sulfur monochloride contaminant at a temperature lower than the boiling point of sulfur monochloride, forming a solution of sulfur in liquid thionyl chloride and passing said solution of sulfur through gaseous thionyl chloride being distilled, to convert to liquid sulfur monochloride any sulfur dichloride from the thionyl chloride contaminants and formed during the distillation of the thionyl chloride, conducting the sulfur monochloride so formed to the liquid thionyl chloride being distilled and taking off purified distilled thionyl chloride, substantially free of sulfur dichloride.

3,155,458
PROCESS FOR PRODUCING SALT
Howard W. Fiedelman and Richard L. Lintvedt, Woodstock, Ill., assignors to Morton Salt Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 8, 1962, Ser. No. 215,733
14 Claims. (Cl. 23—300)



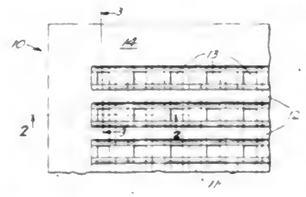
1. A process of inhibiting the crystallization of calcium sulfate during the crystallization of salt from an essentially bicarbonate-free sodium chloride brine having calcium sulfate dissolved therein which comprises crystallizing salt from a body of said brine by evaporation and concentration thereof in the presence of starch phosphate.

3,155,459
SEPARATING BRINE FROM ICE CRYSTALS
David Brown, Millbrook, Conn., John White Colton, Pelham Manor, N.Y., and Sherwood N. Fox, Stamford, Conn., assignors to Halcon International, Inc., a corporation of Delaware
Filed Feb. 9, 1961, Ser. No. 88,050
2 Claims. (Cl. 23—310)



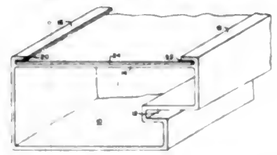
1. A process for the production of a fresh water product from a slurry of ice crystals having an average particle diameter of greater than 0.3 mm. and brine which comprises: introducing said slurry tangentially into a separating zone; separating a substantial portion of said brine; upwardly flowing the remaining ice crystals and residual brine into the lower portion of a washing zone; downwardly flowing wash water into the upper portion of said zone; countercurrently contacting said ice crystals with said wash water; maintaining less than 30% by weight of said ice crystals in said washing zone and a net downflow of wash water of from 3 to 6% based on weight of product; and withdrawing from said upper part of said zone a fresh water product of ice crystals and water having a salinity of less than 500 p.p.m.

3,155,460
FINE MESH SCREENS
Norman B. Mears, Dakota County, Minn. (1170 Dodd Road, St. Paul, Minn.)
Filed May 20, 1960, Ser. No. 30,644)
11 Claims. (Cl. 29—183.5)



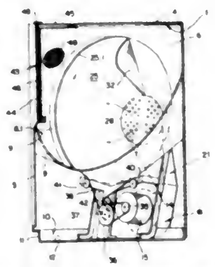
1. A fine mesh precision article comprising, a metal sheet of thickness within the range .02 inch to .0001 inch having a multiplicity of spaced elongated symmetrical ridges separated one from another by continuous elongated grooves of the character produced by etching and extending over a substantial area of both sides of said sheet, the ridges on one side crossing a multiplicity of those on the other side, the depths of the several grooves between crossing points being less than the thickness of the sheet, and said grooves at the crossing points defining minute openings.

3,155,461
FRAME MEMBERS
Joseph M. Hunt, Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed June 19, 1961, Ser. No. 117,887
2 Claims. (Cl. 29—191)



2. A composite frame member of aluminum and stainless steel for doors, windows, architectural members, and building components comprising, in combination, a longitudinally extending extrusion of aluminum having a predetermined cross section configuration with flat face means thereon of predetermined width and having opposed longitudinally extending, inwardly turned flange members disposed adjacent the outer longitudinally extending edges of and substantially parallel to said face means to form opposed grooves thereon, a longitudinally extending flat strip of stainless steel having a predetermined thickness and being of a width substantially equal to the width of said face means, said flat strip being disposed in seated relation in said opposed grooves, said flange members being initially disposed substantially parallel to said flat face means but spaced therefrom to provide said grooves with a width greater than 10% in excess of said predetermined thickness of said flat strip to provide clearance to receive said strip in said seated relation therewith, said flange members being deformed when said flat strip is seated in said opposed grooves to seat the outer edges of said flange members into frictional engagement with said flat strip to maintain said flat strip seated in said grooves against said face means to thereby provide a flat facing of stainless steel over said face means of the aluminum extrusion, said deformed outer edges of said flange members being in substantially straight lines.

3,155,462
CLOTHES DRYING CABINET WITH A BIASED ROTARY DRUM
Clifford E. Erickson, Chicago, and George M. Stone, Naperville, Ill., assignors to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 148,943
6 Claims. (Cl. 34—82)



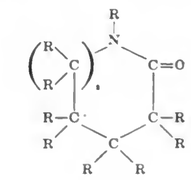
1. A laundry drier comprising, in combination, a cabinet, stationary wall means in said cabinet to provide front, side and top walls and a portion of the rear wall of a chamber within which laundry articles are received to be dried, a loading door in said cabinet affording access to said chamber, a concave rotatable wall structure within said cabinet in interfitting engagement with said stationary rear wall to complete said article-receiving chamber, the concavity of said wall structure facing said loading door, shaft means for said rotatable wall, said shaft means being oblique to all walls of said cabinet, and means on said concave wall structure to effect a tumbling of said articles within said chamber during rotation of said wall structure, means for passing heated air through said chamber, and means for discharging said heated air from said chamber.

3,155,463
STABILIZED JET COMBUSTION FUELS
Harry J. Andress, Jr., Pitman, and Paul Y. C. Gee, Woodbury, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Mar. 8, 1962, Ser. No. 178,251
16 Claims. (Cl. 44—62)

1. An additive composition, adapted for stabilizing petroleum hydrocarbon distillate jet combustion fuels against thermal degradation, consisting essentially of (1) an alkylated catechol containing at least one alkyl group of from about four to about sixteen carbon atoms in an amount of from about 75 to about 95% by weight of said composition and (2) from about 25 to about 5% by weight of said composition of a mixture of (*a*) a disalicylaldimine of a diamine from the group consisting of ethylene diamine and propylene diamine and (*b*) a reaction product obtained by esterifying a 1:1 molar copolymer of a 1-olefinic hydrocarbon, having between about 2 carbon atoms and about 20 carbon atoms per molecule, and maleic acid anhydride with between about 1.5 moles and about 1.75 moles, per mole of said copolymer, of an alcohol from the group consisting of primary and secondary aliphatic hydrocarbon monoalcohols containing between about 4 carbon atoms and about 20 carbon atoms per molecule to produce a mixed mono- and di-ester product; and reacting said ester product with between about 0.25 mole and about 0.50 mole of a polyamine of the formula $H_2N(—R—NH)_n—H$, wherein R is selected from the group consisting of ethylene and propylene and *n* varies between 1 and 2 and between about 0.25 mole and about 0.50 mole salicylaldehyde, per mole of said ester product, said additive composition being further characterized in that it contains said disalicylaldimine (*a*) and said reaction product (*b*) in a ratio by weight of from about 25 to about 75 parts of said disalicylaldimine to from about 75 to about 25 parts of said reaction product.

3,155,464
FUEL COMPOSITION
Richard L. Woodruff, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 29, 1961, Ser. No. 113,087
10 Claims. (Cl. 44—63)

1. An improved fuel composition for use in internal combustion engines consisting essentially of a stable gasoline boiling between about 30° F. and about 425° F. containing an octane-number-improving amount of an organometallic antiknock agent, a minor amount of an ignition control deposit modifying compound selected from the group consisting of compounds of phosphorus, boron and mixtures thereof, and an octane requirement reducing amount of a gasoline soluble heterocyclic compound containing from 5 to 14 carbon atoms and having the structural formula:



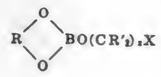
wherein R is selected from the group consisting of a hydrogen atom, a low molecular weight alkyl radical containing from 1 to 4 carbon atoms, x is an integer from 1 to 2 with the proviso that when x equals 2 one R is an alkyl group.

3,155,465
BORON COMPOUNDS AND COMPOSITIONS CONTAINING THE SAME

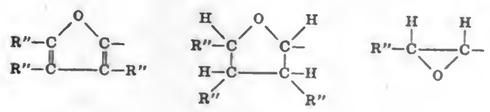
Richard J. De Gray, Shaker Heights, and William O. Fitzgibbons, Warrensville Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

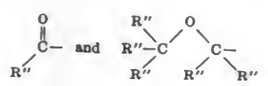
No Drawing. Filed Mar. 27, 1962, Ser. No. 182,958
11 Claims. (Cl. 44—63)

6. A petroleum hydrocarbon stock containing a compound having the formula



where R is selected from the group consisting of beta alkylene of 3 to 8 carbon atoms; x is an integer from 1 to 2; R′ is selected from the group consisting of hydrogen and alkyls of 1 to 2 carbon atoms; and Z is an oxygenated group containing not more than 10 carbon atoms, selected from the group consisting of





where R″ is selected from the group consisting of hydrogen and alkyls of 1–4 carbon atoms, said compound being present in an amount to provide from .0004 to .01 wt. percent elemental boron based on the weight of hydrocarbon.

3,155,466
BLASTING AGENT AND PROCESS FOR THE PRODUCTION THEREOF

Kurt Grütter, Choindez, and Heinrich Stampfli, Courrendlin, Switzerland, assignors to Gesellschaft der Ludw. von Roll'schen Eisenwerke Aktiengesellschaft, Gerlafingen, Switzerland, a Swiss company

No Drawing. Filed Sept. 9, 1959, Ser. No. 838,851
Claims priority, application Switzerland, Sept. 11, 1958, 63,828
3 Claims. (Cl. 51—307)

1. A method of preparing a blasting agent from slag granules having surface fissures, which comprises reheating solidified fissured slag granules to a temperature and for a period of time sufficient to cause sintering of a relatively thin surface layer of the slag granules thereby to fuse and close said fissures but insufficient to cause sintering of the interior of the slag granules and substantial agglomeration of adjacent granules and thereafter slowly cooling said granules to avoid internal stress.

2. A blasting agent comprising discrete surface-sintered slag particles.

3,155,467
PALLADIUM ALLOY PERMEABLE WALL FOR THE SEPARATION AND PURIFICATION OF HYDROGEN

Yuzo Yamamoto, Musashino-shi, Tokyo, and Ryosuke Goto, Setagaya-ku, Tokyo, Japan, assignors, by mesne assignments, to Nippon Junsuiso Kabushiki Kaisha, a corporation of Japan

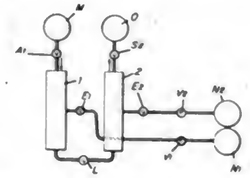
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,237
10 Claims. (Cl. 55—16)

1. In a hydrogen purification process, the step of passing hydrogen through a wall of a palladium alloy of 2 to 40 percent of at least one metal of Group I*b* of the Periodic Table, of 0.1 to 20 percent of at least one metal of Group VIII of the Periodic Table other than palladium, the remainder of said alloy substantially consisting of palladium.

3,155,468
PROCESS FOR SEPARATING A BINARY GASEOUS MIXTURE BY ADSORPTION

Pierre Guérin de Montgareuil, Paris, and Daniel Dominé, Meudon, France, assignors to L'Air Liquide Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France

Filed Nov. 10, 1958, Ser. No. 772,961
Claims priority, application France, Nov. 21, 1957, 752,290, Patent 1,223,261
7 Claims. (Cl. 55—25)



1. A cyclic process for separating a binary gas mixture by means of an adsorbent capable of adsorbing at a given temperature different quantities of two component gases at a fairly high speed with respect to the speed of extragranular diffusion of the mixture into a bed of the adsorbent and capable of having the gases removed therefrom at said given temperature, comprising the steps of:

admitting under pressure a given quantity of said gas mixture at a given temperature into a first zone of a first closed chamber which contains a quantity of said adsorbent free from said gas mixture, then discontinuing the admission of said gas mixture into said first chamber;

shortly thereafter, before the composition of the unadsorbed gas mixture can have equalized by extragranular diffusion, withdrawing part of said gas mixture from said first chamber at a second zone spaced from said first zone and introducing said part into a first zone of a second closed chamber which contains a quantity of said adsorbent until the pressures in said chambers are balanced;

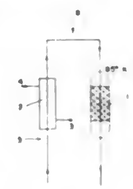
shortly thereafter, before the composition of the unadsorbed gas mixture can have equalized by extragranular diffusion, withdrawing a first gas fraction, without the admission of another given quantity of said gas mixture into said first chamber, from said chambers through a second zone of said second chamber spaced from said first zone of said second chamber, thus lowering the pressures of said chambers, then discontinuing the withdrawal of said first gas fraction from said chambers; and

extracting the residual gas fraction of at least said first chamber under the sole action of vacuum at a lower pressure and at a temperature substantially the same as said given temperature.

3,155,469
PROCESS FOR REMOVING TRACE ADMIXTURES FROM REACTOR COOLANT GAS

Wilhelm Lehmer and Wolfgang Baldus, Munich, Germany, assignors to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Munich, Germany, a company of Germany

Filed Jan. 5, 1962, Ser. No. 164,571
10 Claims. (Cl. 55—66)



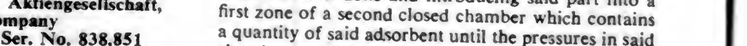
1. Process for the removal of trace impurities from a carrying gas by adsorption, in which the trace impurity, related to equal conditions of pressure and temperature, is much more readily adsorbable than the carrying gas and in which the concentration of impurity is so slight that the loading capacity of the adsorbent decreases faster with decreasing concentration of impurity than would correspond to proportionality, the process consisting essentially in adding an amount of gas to the carrying gas containing the trace impurity, the adsorbability of said additional amount of gas, related to equal conditions of pressure and temperature, being between the adsorbabilities of the trace impurity and of the carrying gas, thereby raising the loading capacity of the adsorbent for the impurity into that range in which loading capacity and total concentration of impurity and additional gas are proportional, and thereafter subjecting the resulting gas mixture to sorbtive treatment.

3,155,470
PROCESS FOR THE SEPARATION OF SUSPENDED PARTICLES FROM GASES

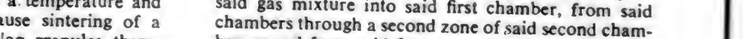
Ernst Götte, Dusseldorf-Oberkassel, and Alfred Kirstahler, Dusseldorf, Germany, assignors to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Oct. 13, 1960, Ser. No. 62,340
Claims priority, application Germany Oct. 31, 1959
4 Claims. (Cl. 55—97)

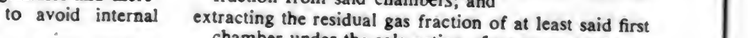
1. Process for the dry separation of suspended liquid and solid particles from gases comprising contacting gases containing liquid and solid particles suspended therein with a dry type mechanical gas filter having deposited thereon as a sole filtering medium a water-soluble liquid alkylene oxide condensation product having low foaming properties and having the formula



wherein R is selected from the group consisting of alkylphenyl and alkylnaphthyl, wherein the alkyl groups contain 4 to 10 carbon atoms, and an aliphatic hydrocarbon radical having 8 to 18 carbon atoms, X is selected from the group consisting of



—O—, —S—, —N= and —SO_2NH—, y is 1 with the proviso that when X is selected from the group consisting of

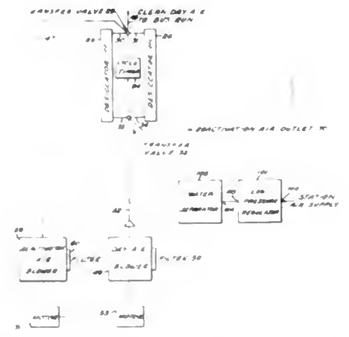


and —N=, y is 2, n is an integer from 3 to 15 and m is an integer from 1 to 17 whereby the said suspended particles are bound with the said alkylene oxide condensation product and removing the gas free of suspended particles from the dry filter.

3,155,471
DRY AIR SYSTEM FOR ISOLATED PHASE BUS

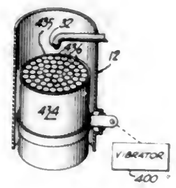
Walter H. Schymik, Oreland, and Joseph V. McNulty, Morristown, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 1, 1959, Ser. No. 810,482
1 Claim. (Cl. 55—162)



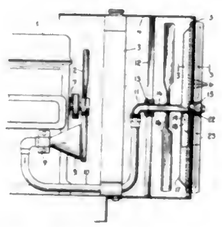
An isolated phase bus and means for preventing condensation within said bus; said bus comprising an elongated conductor and a housing surrounding said conductor and spaced therefrom; said means comprising a first gas pressure generating source, conduit means forming a path which guides gas from said source through an opening in said housing, and desiccator means operatively positioned whereby gas of said source is acted upon by said desiccator means prior to the entry of said gas into said housing; said housing having leakage openings; said leakage openings and said gas pressure generating source being proportioned whereby pressure is maintained within said housing sufficient to prevent air from entering said housing through said leakage openings; said desiccator means comprising a first and a second desiccator unit; valve means connected to said conduit means for alternatively directing said gas through one of said units while by-passing the other of said units; each of said units including reactivating means; means for alternately actuating the reactivating means of each of said units for at least a portion of the time said gas is directed through the other of said units; said reactivating means comprising heating means individual to each of said units and a second gas pressure generating source operatively connected to said valve means whereby gas from the last recited of said sources is directed to the one of said units which is by-passed by the gas from the first recited of said sources; and a cycle timer operatively connected to said valve means for automatic control thereof; said cycle timer also automatically controlling operation of said reactivating means; said first gas pressure source comprising a compressed air supply and an adjustable pressure regulator operatively positioned and connected between said compressed air supply and said valve means; a water separator, operatively positioned between said adjustable pressure regulator and said valve means; said valve means being adapted to direct gas from said second source downward through the one of said units which is bypassed by said first gas pressure source and being further adapted to direct gas from said first gas pressure source upward through the other one of said units.

3,155,472
GAS SCRUBBER SYSTEM
Glen P. Huppke, Beaver Falls, N.Y., assignor to Herbert Simpson Corporation, Chicago, Ill., a corporation of Illinois
Filed July 27, 1959, Ser. No. 829,628
1 Claim. (Cl. 55—178)



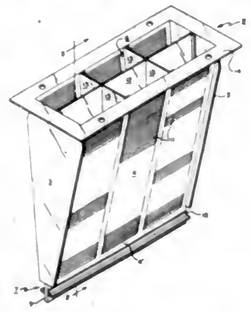
Apparatus for removing solid contaminants from a contaminated fluid medium, said apparatus comprising elongated casing means, means for admitting said medium into said casing means, means for admitting an unfoamed foamable material into said casing means, a fluid pervious means occupying substantially the entire cross-sectional area of said casing means for collecting said material and consisting of a plurality of elongated tubes held together in side-by-side relation arranged longitudinally of said casing means, means for vibrating said tubes, said fluid passing through said tubes and coacting with said unfoamed material to effect the foaming of the material in order to produce a body of foam, and means for unfoaming the foamable material by collapsing the bubbles thereof.

3,155,473
CLEANER FOR AIR SCREEN
Donald Hector McNeil, Brantford, Ontario, Canada, assignor to Cockshutt Farm Equipment of Canada Limited, a corporation of Canada
Filed Sept. 15, 1961, Ser. No. 138,505
7 Claims. (Cl. 55—294)



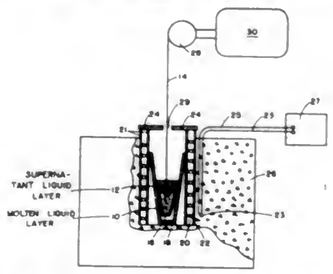
1. In a travelling agricultural machine having a unit that draws in a stream of primary air, an air intake housing for the unit, the housing having an air screen for filtering the primary air drawn through the screen and into the housing by the unit, a rotatable shaft extending through the screen, a propeller fixed to the shaft within the housing for rotation by the primary air stream, an elongated conduit fixed to the shaft within the housing and having along its length outlet openings facing and close to the screen, an air scoop located in the primary air stream and downstream of the screen, an air passage extending from the air scoop through the shaft to the elongated conduit to supply part of the primary air to the conduit and thence through the openings and the screen to dislodge solid matter screened from the primary air, and a sweeper fixed to the shaft outside the housing and extending from the shaft close to the screen and conduit to clear away the dislodged matter.

3,155,474
DUST SEPARATOR
Robert W. Sexton, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 16, 1959, Ser. No. 853,147
3 Claims. (Cl. 55—418)



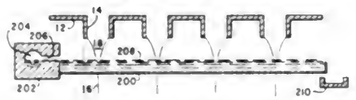
1. Apparatus for separating dust particles from a gaseous stream comprising a casing having a dirty gas inlet and a dust particle outlet opposite said gas inlet, said casing including oppositely disposed side walls bounding the gas flow path from said dirty gas inlet, said side walls converging toward each other in the direction of said dust particle outlet to form a diminishing flow area of the gases and solids passing therethrough, a plurality of louvers in said oppositely disposed side walls, said louvers being disposed so that gas flowing from said gas flow path is abruptly changed in its direction of flow as it passes through said louvers, and a flat, gas impervious partition plate extending solely intermediate substantially the entire louvered portion of said oppositely disposed side walls parallel to and along the initial direction of said gas flow path toward said dust particle outlet to prevent dust particles arrested from the gas by the louvers in one side wall from being deflected through the louvers in the side wall opposite thereto and to serve as a means for channeling the dust particles to said dust particle outlet.

3,155,475
PROCESS FOR DRAWING FIBER THROUGH A SUPERNATANT LIQUID
Leland E. Ashman, Belmont, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 1, 1960, Ser. No. 46,456
12 Claims. (Cl. 65—2)



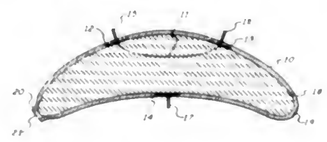
1. Process for continuously drawing thin fibers from a molten pool of a fiber-forming material, characterized by the steps of providing said molten pool with a supernatant liquid essentially immiscible and non-reactive with said fiber-forming material under the conditions of drawing, and drawing fibers from said pool through said supernatant liquid.

3,155,476
APPARATUS FOR PRODUCING GLASS FIBERS
Warren W. Drummond, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1962, Ser. No. 166,834
4 Claims. (Cl. 65—12)



1. In apparatus for producing glass fibers from a body of molten glass which includes a heated bushing having orifices therein through which glass passes and forms cones of glass and means for drawing fibers from the glass passing through the orifices, said orifices being arranged in orderly rows from side-to-side of the bushing, the improvement which comprises supply means for a liquid, and means for guiding and supporting said liquid with a surface of the liquid exposed to the cones of glass and from side-to-side with respect to and spaced from the bushing, said guiding and supporting means being positioned and extending between rows of orifices of the bushing.

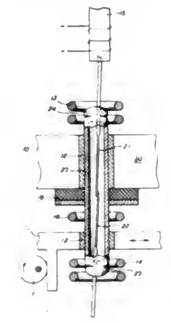
3,155,477
METHOD OF FABRICATING INTRICATE INTERNAL SHAPES
Richard E. Swarts, Northport, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,961
4 Claims. (Cl. 65—23)



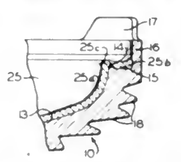
1. A method of fabricating intricately shaped structures including the steps of forming a porous mandrel of a material which is permeable with respect to gases and which may be washed out from the interior of the finished structure into the shape of the desired structure, forming the desired structure into a shape to permit insertion of the mandrel, inserting the mandrel within said structure, heating the structure around the mandrel to softness, said mandrel material maintaining a solid configuration during said heating, drawing a vacuum on the interior of the structure through the porous mandrel thereby causing the interior of the structure to conform to the shape of the mandrel, and washing out the removable mandrel from within the interior of the finished structure.

3,155,478
ADJUSTMENT OF SEALED REED CONTACTS
William D. O'Brien, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 15, 1963, Ser. No. 258,853
9 Claims. (Cl. 65—42)

1. The method of making a switch having reed contacts sealed in a glass tube, said tube having a long axis, comprising the steps of sealing a plurality of reed contacts in the ends of a glass tube in overlapping relation to one another in the plane of said long axis, clamping each end of the sealed tube in a suitable clamping member, heating a portion of the tube intermediate its ends until said portion becomes softened, and deforming said tube while said portion is soft by moving one clamping member with respect to the other a spaced distance in a direction perpendicular to the long axis of said tube whereby the orientation of overlapping reed contacts is adjusted.



3,155,479
CENTRIFUGAL MOLDS AND METHOD OF FORMING HOLLOW ARTICLES
George Zimmerman, Muncie, Ind., assignor, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 25, 1960, Ser. No. 31,718
8 Claims. (Cl. 65—70)



1. A hollow mold for centrifugal casting of a hollow glass article, said mold being open at its upper end and having upwardly-flared inner wall surfaces providing a hollow generally funnel-shaped mold cavity, a depending circumferential ledge extending horizontally outwardly from the upper edge of said wall surfaces, a convergent exteriorly-projecting continuous annular rib disposed at the intersection of said ledge and the upper edge of said wall surfaces, said rib having a knife-like edge adapted to forming a complemental annular groove along a desired line of separation adjacent a region of substantially maximum cross-sectional dimensions of said hollow article contiguous with its formation by centrifugal casting.

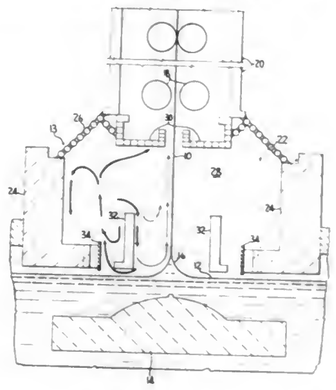
6. The method of forming a hollow glass article having upwardly flared sidewalls, which method comprises the steps of entering a charge of molten glass into an open-ended mold having upwardly flaring sidewalls extending toward the open end of the mold, said mold having an outwardly and upwardly projecting rectangularly-shaped annular ledge and flange portion extending around its open end, rapidly rotating the mold about its vertical axis and thereby spreading the glass and causing it to travel up the sidewalls of the mold thus forming a generally frusto-pyramidal shaped open-ended hollow molded article flowing at least a minor portion of the glass horizontally and radially over a sharply-pointed upper edge of the mold into the outwardly-projecting annular ledge during such rotation to form an upper rim of said article simultaneously forming an annular groove having a sharply defined re-entrant angle in the molded underside surface of the upper rim portion, decelerating and stopping the rotation of the mold, and cooling the molded

glass article at such a rate so as to establish thermally induced stresses in the glass above the annular groove of such magnitude that severance of the article occurs along such groove upon solidification of the glass.

3,155,480
APPARATUS FOR DRAWING GLASS

Cecil R. Ward, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 13, 1960, Ser. No. 75,507
4 Claims. (Cl. 65—85)



1. An apparatus for drawing sheet glass from a molten bath of glass comprising

a drawing chamber positioned above a molten bath of glass,

said drawing chamber being at least partially defined by a pair of refractory members on each side of the plane of the draw of the glass through said chamber,

a cooling member within the drawing chamber on each side of the plane of the draw for withdrawing heat from said chamber, and

a member positioned in said drawing chamber immediately above the surface of said molten bath of glass on each side of and coextensive with the plane of the draw and between a cooler and the adjacent wall of the drawing chamber for collecting radiant heat from said molten bath of glass, and retaining said heat in said drawing chamber,

said member being composed of a material of high thermal capacity and being of a size sufficient for said member to become heated to a temperature above the ambient temperature in said chamber,

said member being spaced a substantial distance from both the adjacent wall of the drawing chamber and the adjacent cooler.

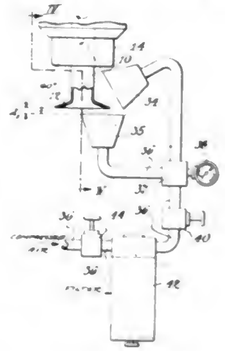
3,155,481
METHOD AND APPARATUS FOR FORMING AND TEMPERING TUBULAR GLASS FLARES

Walter A. Boyce, West Orange, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 477,687, Dec. 27, 1954. This application July 3, 1958, Ser. No. 746,557
7 Claims. (Cl. 65—104)

1. In the manufacture of a glass flare, the process of forming a flange on the end of a glass tube and tempering said flange during the normal sequence of operations required to manufacture the flare which process comprises, increasing the heat input to the part of said glass tube to be flanged by an amount sufficient to increase the temperature thereof to a temperature above the softening point but below the working point of the glass and above the temperature required to render it sufficiently plastic for the flange-forming operation, forming the heated part of said tube into a flange while maintaining the glass at a predetermined temperature above its annealing point, and immediately thereafter abruptly cooling said flange below the strain point of the glass to permanently impart to the surface layers thereof a predetermined compressive stress.

5. In combination with an automatic flare-making machine wherein a length of glass tubing is rotated about its longitudinal axis and indexed through a series of work stations including a preheating station and a flange-forming station; apparatus for rapidly and uniformly cooling the flanged portion of said tubing immediately after the preheating and flange-forming operations have been completed thereon and thus providing means for tempering said portion during the normal sequence of operations required to manufacture said flare comprising;



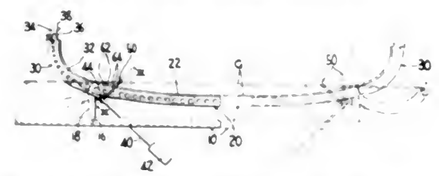
means for holding said tubing; means for rotating said holding means; dispensing means secured to a stationary part of the machine at a tempering station immediately following the flange-forming station for applying a cooling medium to the surfaces of the hot flanged portion of said tubing; conduit means for connecting said dispensing means with a pressurized supply of said cooling medium; and means in said conduit means for controlling the rate of flow of said cooling medium; said dispensing means comprising a pair of nozzles disposed in a common plane and contoured to eject said cooling medium along said plane; said nozzles being so oriented relative to one another and to said holding means that said cooling medium is dispensed by said nozzles in a substantially uniplanar stream which impinges upon both sides of the flanged portion of said glass tubing when said tubing and holding means are located at said tempering station.

3,155,482
METHOD OF BENDING GLASS SHEETS

William F. Grafton, Ford City, Pa., assignor to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania

Filed Aug. 25, 1958, Ser. No. 756,766
1 Claim. (Cl. 65—107)

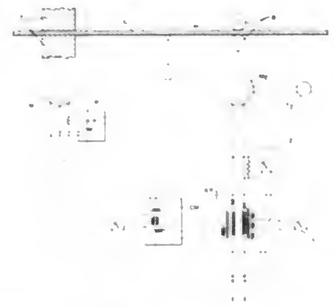
In a method of bending a glass sheet by heat-sagging said sheet onto a shaping surface of desired configuration, comprising contacting one side edge only of said sheet at a pair of spaced points defining a position of proper lateral alignment of the glass sheet side edge with respect to said shaping surface, the improvement comprising moving each point of contact longitudinally along said side edge while maintaining contact with said side edge until the glass sheet sags into contact with said shaping surface upon exposure to elevated temperatures to minimize the duration of contact at elevated temperature for each point contacted along said side edge, whereby the glass sheet is maintained in proper lateral alignment with said shaping surface and a smaller stress gradient is imposed in the contacted portions of the side edge than when the points of the side edge contacted for alignment purposes remain in continuous contact throughout the heat-sagging operation.



3,155,483
APPARATUS FOR POLISHING GLASS

Ivo Rismondo, La-Varenne-Saint-Hilaire, France, assignor to Compagnie de Saint-Gobain, Paris, France

Filed Oct. 5, 1959, Ser. No. 844,368
Claims priority, application France Oct. 7, 1958
19 Claims. (Cl. 65—163)



1. In apparatus for continuously manufacturing polished flat glass which comprises a plurality of driving means engaging the glass which tend to impart constant motion thereto, opposed surface working tools, engaging opposite faces of the glass between the said driving means, acting to retard the motion of the glass and to impair the uniformity of motion imparted by the driving means, power means to drive the driving means, and power control means connected to the power means and activated by variations in the braking effect of the working tools to vary the driving effort and compensate for the braking effect of the said tools on the glass.

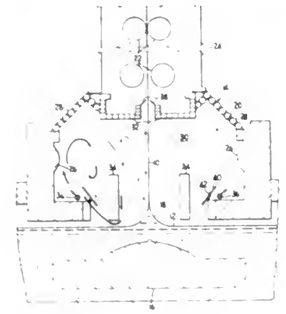
11. Apparatus for making polished glass including sheet forming means, sheet cooling means, surface working means which imparts transparency and luster to the sheet and applies braking effect thereto, and sheet advancing means applied to the glass after the surface working means including means to apply added force to the driving means as the braking effect of the surface working means increases.

3,155,484
APPARATUS FOR DRAWING SHEET GLASS

Cecil R. Ward, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, a corporation of Pennsylvania

Filed Nov. 2, 1959, Ser. No. 850,315
5 Claims. (Cl. 65—203)

1. In apparatus for drawing improved appearance sheet glass from a bath of molten glass which includes a drawing chamber including side and end walls with coolers spaced above the bath and on opposite sides of the path traversed by the sheet and means for controlling the air currents within the chamber which affect the appearance of the sheet including burners within the drawing chamber spaced above the bath and from the path traversed by the sheet on opposite sides thereof, forming a stream of hot gas on each side of the sheet in a lower region of said chamber at a location above the molten bath and spaced from each side surface of said sheet, said burners having openings providing flames which project generally in the direction of the draw, the improvement which comprises, an elongated plate-like member directing said streams

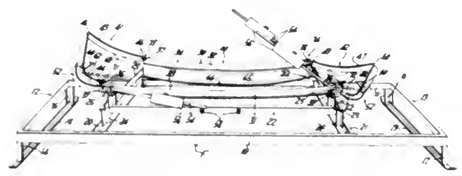


upwardly in a direction which is offset horizontally away from said sheet, said elongated member extending lengthwise of said burner and opposite the openings therein and having a lower terminal edge positioned above the surface of said bath and below the level of the openings in a burner adjacent thereto and an upper terminal edge positioned just above the level of said burner openings, said elongated member having a plate-like side face extending between said terminal edges and being adjacent to and spaced from said burner adjacent thereto and extending in the same general direction as the flames from said burner openings.

3,155,485
BENDING MOLD SHAPING RAIL WITH NON-MARRING INSERTS

Gerald L. Ritenour, Natrona Heights, and Robert E. Kubichan, Creighton, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of abandoned application Ser. No. 106,927, May 1, 1961. This application Jan. 9, 1962, Ser. No. 165,191
6 Claims. (Cl. 65—291)



1. In a sectionalized, skeletonized mold for bending glass sheets having an outline shaping surface of concave elevation including a main molding member, a pair of laterally spaced stainless steel shaping rails having upper shaping surfaces of concave elevation extending along the central portion of the laterally opposite, longitudinally extending side edges of said outline shaping surface and further including stainless steel wing members having upper shaping surfaces of concave elevation and having inner and outer longitudinal extremities, and means pivotally connecting said wing members to said main

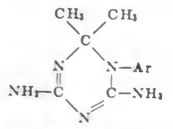
molding member for movement between a spread mold position and a closed mold position, the improvement comprising a flat glass support member of a material that does not mar heat-softened glass attached to each extremity portion of one of said stainless steel shaping rails, each said flat glass support member having an upper surface located in alignment with the upper shaping surface of said shaping rail and extending longitudinally outwardly of said upper shaping surface of said shaping rail, whereby the upper surface of said flat glass support member serves as a continuation of the upper shaping surface of said shaping rail.

3,155,486
METHOD OF CONTROLLING GRAMINACEOUS WEEDS

Herbert Aubrey Stevenson and Edward Levi Leafe, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed July 13, 1961, Ser. No. 123,670
Claims priority, application Great Britain July 25, 1960
12 Claims. (Cl. 71—2.5)

1. A method of selectively controlling graminaceous weeds in a crop which comprises applying to the weeds an agent selected from the group consisting of compounds of the formula:



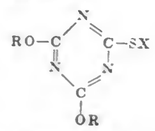
and acid addition salts thereof, wherein Ar represents a radical selected from the group consisting of 3,4-dichlorophenyl, 3,4-dibromophenyl, 3-chlorophenyl, 4-chlorophenyl, 3-bromo-4-chlorophenyl, 4-bromo-3-chlorophenyl, 4-chloro-3-methylphenyl and 3-bromophenyl, said agent being employed at a dosage exerting a phytotoxic action against the weeds but substantially non-phytotoxic to the crop.

3,155,487
METHOD OF KILLING WEEDS

Llewellyn W. Fancher, Lafayette, and Arthur M. Imel, El Sobrante, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Nov. 24, 1959, Ser. No. 855,018. Divided and this application Jan. 16, 1962, Ser. No. 166,680
3 Claims. (Cl. 71—2.5)

1. The method of killing weeds comprising applying to soil the phytotoxic amount of



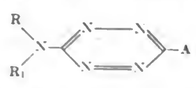
wherein R is lower alkyl and X is selected from the group consisting of naphthyl, phenyl and tolyl.

3,155,488
CONTROLLING UNDESIRABLE PLANT GROWTH

Albert W. Lutz, Princeton, N.J., Ralph G. Child, Pearl River, N.Y., and Bryant L. Walworth, Pennington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,503
4 Claims. (Cl. 71—2.5)

1. A method for the control of undesirable plant growth which comprises: applying to an area to be protected from such growth an s-tetrazine of the formula:



wherein R and R_1 are radicals selected from the group consisting of hydrogen, lower alkyl and lower alkenyl, A represents a substituent selected from the group consisting of $—SR_2$ and



wherein R_2 is a radical selected from the group consisting of lower alkyl and lower alkenyl and R_3 is a substituent selected from the group consisting of hydrogen, lower alkyl and lower alkenyl, in an amount sufficient to effect herbicidal action.

3,155,489
PROCESS FOR PRODUCING A FERTILIZER SUSPENSION PRODUCT HAVING NITROGEN FERTILIZER VALUES

Herbert L. Thompson, 329 Brown-Marx Bldg., Birmingham 3, Ala., and James C. Lacey, Jr., % Southern Research Institute, 2000 9th Ave. S., Birmingham, Ala.

Filed July 27, 1960, Ser. No. 45,727
8 Claims. (Cl. 71—37)



1. The process of producing a usable fertilizer suspension product of solid particles in liquid media which comprises the steps of:

(*a*) vaporizing anhydrous ammonia in a heat exchanger,

(*b*) passing an aqueous slurry of a pulverized calcium compound selected from the group consisting of phosphate rock, limestone, dolomite and mixtures thereof through said heat exchanger whereby the latent heat of vaporization of said anhydrous ammonia cools said aqueous slurry,

(*c*) the ratio of water to the calcium compound in said aqueous slurry ranging from 0.5:1 to 3:1,

(*d*) preheating the vaporized ammonia in the presence of oxygen,

(*e*) reacting said preheated ammonia and oxygen to produce oxides of nitrogen selected from the group consisting of NO and NO_2,

(*f*) reacting said oxides of nitrogen within a reaction zone with the cooled aqueous slurry to form a usable fertilizer suspension product having nitrogen fertilizer values, and

(*g*) removing said fertilizer suspension product from the reaction zone.

3,155,490
PREPARATION OF AMMONIUM PHOSPHATE FERTILIZER

Darwin Fiske De Lapp, New Canaan, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 2, 1962, Ser. No. 207,087
3 Claims. (Cl. 71—42)

1. In a process for the manufacture of a non-gelatinous monoammonium phosphate directly from wet-process phosphoric acid, the improvement which comprises: adding sufficient ammonium hydroxide to wet process phosphoric acid having from about 32% to about 54% P_2O_5 and containing small amounts of aluminum and iron until the pH of the latter acid is increased to from 4.0 to 4.5 to obtain monoammonium phosphate; heating said monoammonium phosphate at a temperature between about 150° C. and 190° C.; cooling the resultant heat-treated product to about room temperature; neutralizing the latter cooled product to a pH between 7 and 9 by adding thereto sufficient aqueous ammonium hydroxide; and thereafter recovering a liquid, non-gelatinous monoammonium phosphate.

3,155,491
BRAZING ALLOY

George Sidney Hoppin III, Huntington Woods, Mich., and William R. Young, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,193
5 Claims. (Cl. 75—.5)

1. An improved brazing alloy mixture consisting of a mixture of:

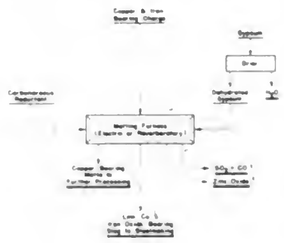
10–40 weight percent of a powdered alloy consisting, by weight, essentially of 1.5–2.4% Si, 0.5–1.8% B with the balance nickel; and

60–90 weight percent of a powdered alloy consisting, by weight, essentially of 18–20% Cr, 9.5–10.5% Si with the balance nickel.

3,155,492
METALLURGICAL PROCESS

Murray C. Udy, Niagara Falls, N.Y., assignor, by mesne assignments, to Independence Foundation, Philadelphia, Pa., a corporation of Delaware, and Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 18, 1963, Ser. No. 271,544
5 Claims. (Cl. 75—24)

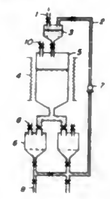


2. Process for the beneficiation of relatively low-grade iron ores containing copper that comprises, smelting said ore in the presence of gypsum sufficient to provide a base-to-acid ratio of approximately 1:1 and a carbonaceous reductant to effect production of a copper-containing matte and a substantially copper-free iron oxide-bearing slag.

3,155,493
METHOD FOR MANUFACTURING HIGH PURITY ALUMINUM

Ryoma Tanaka, Juntaro Yurimoto, and Hirosuke Ryu, Niihama-shi, and Yuji Shioji, Hirakata-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

Filed Aug. 7, 1961, Ser. No. 129,625
Claims priority, application Japan, Aug. 12, 1960, 35/34,840
8 Claims. (Cl. 75—68)



1. A method for manufacturing high purity aluminum, which comprises decomposing an alkylaluminum compound having the general formula of

$$(RR'CH—CH_2)_2AlX$$

wherein R and R′ are respectively selected from alkyl radicals, and X is selected from the group consisting of hydrogen and $RR'CH—CH_2—$ wherein R and R′ each represent alkyl, by heating said compound, up to a temperature ranging from 200° C. to 300° C. and at which said compound is decomposed, in an inert hydrocarbon medium which is liquid at said temperature and has a boiling point higher than said temperature, thereby to decompose said alkylaluminum compound into metallic aluminum, hydrogen and olefin represented by the formula $RR'C=CH_2$ wherein R and R′ have the same meaning as in the formula of said alkylaluminum compound, and separating the resulting aluminum from the hydrocarbon medium.

3,155,494
PROCESS FOR RECOVERY OF FINE ALUMINUM FROM ALUMINUM DROSS

Sidney M. Heins, Chicago, Ill., assignor to Chemical Products Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 8, 1962, Ser. No. 193,294
9 Claims. (Cl. 75—68)

1. The method of recovering metallic aluminum from aluminum dross which consists in preparing a mixture of four parts by weight of crushed aluminum dross and about one part by weight of an alkali nitrate selected from the group consisting of sodium nitrate and potassium nitrate, heating the mixture until the nitrate becomes fused, adding crushed charcoal to the heated mixture at a rate to produce heat by the exothermic reaction of the charcoal and the fused nitrate sufficient to melt the aluminum, and then coalescing the melted aluminum by agitation.

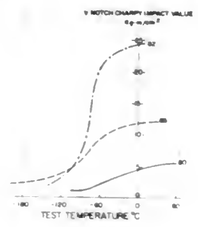
3,155,495
NITRIDE CONTAINING DUCTILE STEEL

Hajime Nakamura, Tokyo-to, Japan, assignor to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

Filed Jan. 4, 1962, Ser. No. 164,291
Claims priority, application Japan, Mar. 11, 1961, 36/8,484
2 Claims. (Cl. 75—124)

2. In a ductile steel composition consisting essentially of 0.04–0.25% carbon, 0.01–0.5% silicon, up to 1.0% manganese, less than 0.035% phosphorus, less than 0.035% sulphur, 0.03–0.12% precipitated aluminum nitride, and at least one of the elements nickel, chromium, molybdenum, vanadium and copper from traces up to

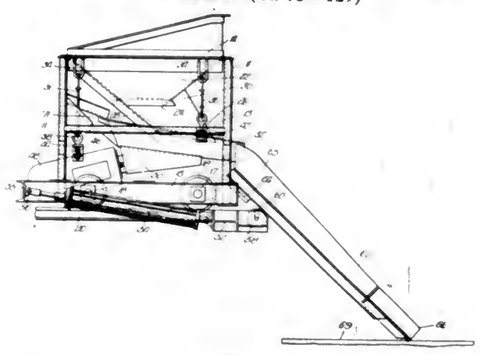
1.0% and boron up to 0.1%, in addition to the iron content, the improvement which consists of metallic aluminum being present in a concentration of 0.003–0.15%, the steel having a 2 mm. V-notch Charpy impact value higher than 10 kg.-m./cm.² at 0° C.



3,155,496
MANGANESE-MOLYBDENUM DUCTILE STEEL
Hajime Nakamura, Tokyo-to, Japan, assignor to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed Apr. 20, 1962, Ser. No. 189,210
Claims priority, application Japan, May 16, 1961, 36/17,370
2 Claims. (Cl. 75—124)

1. A manganese-moylbdenum low-alloy steel consisting essentially of, by weight, 1.00% to 2.00% manganese, 0.30% to 1.00% molybdenum, less than 0.25% carbon, less than 0.60% silicon, less than 0.030% phosphorus, less than 0.040% sulphur, 0.006% to 0.10% precipitated aluminum nitride, less than 0.15% metallic aluminum dissolved in solid solution, the balance iron and incidental impurities, said steel having a fine ferrite granular structure that is finer than number 9 in terms of the ASTM ferrite grain size numbering system.

3,155,497
METHOD OF ADDING SOLID MATERIAL TO MOLTEN METAL
Rudolph Tietig, Jr., Flossmoor, and Daniel J. Pollingue, Jr., Princeton, Ill., assignors to A. J. Boynton & Co., Chicago, Ill., a corporation of Illinois
Original application Feb. 25, 1957, Ser. No. 642,291, now Patent No. 2,872,180, dated Feb. 3, 1959. Divided and this application July 24, 1958, Ser. No. 750,603
2 Claims. (Cl. 75—129)



1. The method of adding solid alloying material in discrete form to molten steel for alloying purposes, the steps which include tapping a steel furnace into a ladle, supporting the alloying material above the ladle by means of a vibratory pan, discharging the alloying material from said pan into the ladle during the tapping operation by vibrating said pan, and regulating the discharging rate for said alloying material by varying the vibratory motion of the pan so as to proportion the discharge of the alloying material to the rate of flow of molten steel into the ladle.

3,155,498
DUCTILE IRON AND METHOD OF MAKING SAME
Henry L. Jandras, Bethlehem, Pa., assignor to Bethlehem Steel Company, a corporation of Pennsylvania
No Drawing. Filed Dec. 27, 1961, Ser. No. 162,558
13 Claims. (Cl. 75—130)

1. A method of manufacturing a workable ductile iron alloy having a total carbon content of from about 1.20% up to about 3.60%, a silicon content of from about 1.00% up to about 2.00%, a sulfur content of 0.035% max. and a content of from about 0.005% up to about 2.00% of a nodularizing agent., said method comprising:

(*a*) tapping from a furnace into a ladle a molten iron alloy containing carbon, silicon and sulfur,

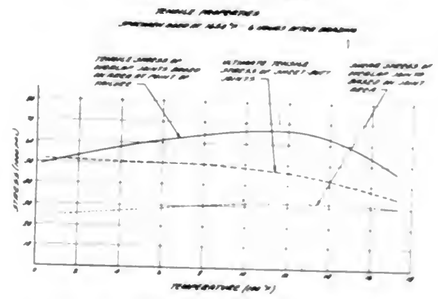
(*b*) treating the molten iron alloy in the ladle by oxygen injection for a period of time to effect substantially complete removal of all the silicon,

(*c*) adding a deoxidizing agent comprising silicon to the molten iron alloy in the ladle to produce a silicon content of about 0.20% up to about 0.50%,

(*d*) adding silicon and a nodularizing agent to the molten iron alloy in the ladle, said nodularizing agent consisting of at least one of the elements of the group magnesium, tellurium, cerium, calcium, lithium, sodium, potassium, thereby imparting to the said molten iron alloy a final silicon content of from about 1.00% up to about 2.00% and 0.005% up to about 2.00% of said nodularizing agent,

(*e*) teeming the molten iron alloy into a chill mold and allowing the said molten iron alloy to solidify.

3,155,499
BRAZING ALLOY
Paul R. Mobley, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 2, 1962, Ser. No. 184,443
2 Claims. (Cl. 75—134)

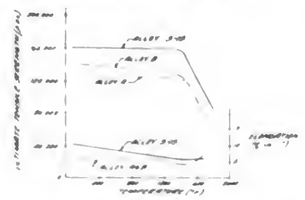


1. An improved high temperature brazing alloy having precipitation strengthening characteristics and consisting essentially of, by weight, 30–35% Cr; 16–19% Pd; 4–6% Si; 1.1–3% Ti; 1–2.5% Al with the balance nickel and impurities.

3,155,500
ALLOY STEELS
Harry L. Anthony III and Gopal K. Bhat, Pittsburgh, Pa., assignors, by mesne assignments, to Wilson Brothers, New York, N.Y., a corporation of Illinois
No Drawing. Original application May 29, 1959, Ser. No. 817,447. Divided and this application July 18, 1962, Ser. No. 210,824
3 Claims. (Cl. 75—126)

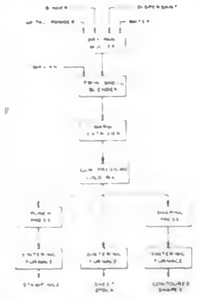
2. A high strength missile motor case made from a rolled alloy steel comprising carbon about 0.35% to about 0.43%, manganese about 0.60% to about 1.10%, phosphorus about 0.025% maximum, sulfur about 0.025% maximum, silicon about 0.60% to about 1.09%, chromium about 0.80% to about 1.36%, molybdenum about 0.15% to about 0.27%, vanadium about 0.15% to about 0.25%, and the balance iron with usual impurities in ordinary amounts, said missile motor case being characterized by a 0.2% offset yield strength in excess of about 213,000 p.s.i. and an ultimate tensile strength about 40,000 p.s.i. greater than the yield strength.

3,155,501
NICKEL BASE ALLOY
Murray Kaufman, West Peabody, and Robert Francis Wilde, Lynnfield Centre, Mass., assignors to General Electric Company, a corporation of New York
Filed June 30, 1961, Ser. No. 121,144
3 Claims. (Cl. 75—171)



1. An improved nickel base alloy which inhibits the formation of embrittling precipitate phases through a balance of carbon, the carbide formers, the solution strengtheners and chromium, consisting essentially of, by weight, 4–7% Al; 1.5–4% Ti; 7–16% Co; 8–16% Cr; 5.5–8% Mo; 0.03–0.1% C; 0.3–1.2% Cb; 0.003–0.4% B; 1–3% W up to 0.2% Zr with the balance nickel and impurities, to form preferentially the M_6C type carbide rather than the $M_{23}C_6$ type carbide, the minimum weight percentage of nickel when the Al/Ti ratio is greater than 2 being calculated from the formula 4+6 (percent Al+percent Ti) and when the Al/Ti ratio is less than 2 being calculated from the formula 4+5 (percent Al+percent Ti).

3,155,502
POWDER METALLURGY
Harry J. Brown, North Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 12, 1960, Ser. No. 49,255
6 Claims. (Cl. 75—214)



1. A method of making dense, crack-free and distortion-free articles of sinterable normally brittle and hard-to-work refractory materials comprising preparing a blended damp, powdery mixture of nearly free-flowing consistency consisting essentially of from about 83 percent by weight to about 95.6 percent by weight of the powdered sinterable refractory material having a particle size of from 1.5 to 10 microns, from about 2 percent to about 8 percent by weight of a water-soluble, polymerized, synthetic gum, from about 2.5 percent to about 7 percent by weight water, and from about .1 percent to about 2 percent by weight of a water-insoluble stearate, compacting said powdery mixture under pressure to produce a compact thereof having a green density of from 30 percent to 65 percent of the theoretical density and a green strength of from 5 p.s.i. to 500 p.s.i., cold-rolling said compact at ambient temperatures and low pressures to reduce the thickness thereof at least 80 percent, thereby producing a thin sheet from said compact, and sintering said sheet in an inert atmosphere.

3,155,503
ELECTROPHOTOGRAPHIC MATERIAL
Paul Maria Cassiers, Mortsel-Antwerp, and René Maurice Hart, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Feb. 26, 1960, Ser. No. 11,129
Claims priority, application Great Britain Feb. 26, 1959
1 Claim. (Cl. 96—1)

An electrophotographic copying process which comprises exposing an electrostatically charged photoconductive insulating layer comprising a copolymer of 59% by weight N-vinyl carbazole and 41% by weight vinyl butyral to a light image whereby the light struck area is discharged and developing said image of electrostatic charges with an electroscopic material.

3,155,504
ELECTROPHOTOGRAPHIC MATERIALS
Klaus Damm, Cologne-Flittard, Wolf Gesierich, Leverkusen, Gerhard Heyl, Cologne-Stammheim, Franz Nissl, Munich, and Karl Schnurrbusch, Cologne-Flittard, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed July 25, 1962, Ser. No. 212,309
Claims priority, application Germany Aug. 17, 1961
22 Claims. (Cl. 96—1)

8. In a process for the production of electrophotographic reproductions by electrostatically charging an electrophotographic layer being of zinc oxide in an electrically insulating film-forming binding agent, exposing the charged layer to an optical image to electrically discharge the layer in accordance with its exposure to light, and then developing the resulting electrostatic image, the improvement according to which the electrophotographic layer is made with zinc oxide which has been treated with an organosilicon compound selected from those having the following formulae:

$$[R_nSiO_{(4-n)/2}]_p$$

$$R'_mSi(OR'')_{4-m}$$

wherein n is an integer from 1 to 3, p an integer from 2 to 6 and m an integer from 0 to 3, R represents a member selected from the class consisting of hydrogen, alkyl having up to 5 carbon atoms, olefinically unsaturated alkyl and aryl, R′ stands for a radical selected from the group consisting of hydrogen, alkyl having up to 5 carbon atoms, olefinically unsaturated alkyl, aryl and cycloalkyl and R″ represents a lower alkyl radical having up to 5 carbon atoms.

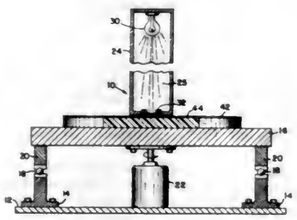
3,155,505
PHOTO-LIGHT PAINTING METHOD
Joseph A. Shannon, Akron, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,469
4 Claims. (Cl. 96—27)

1. That method of photo-light painting a continuous commutator slip-ring pattern on an acid resist light sensi-

tive film positioned on an electroconductive material clad member comprising

projecting from a close spaced adjacent relationship which remains constant a plurality of narrow beams of light simultaneously on the light sensitive film,

effecting relative, uniform, and continuous movement in an elongated endless path between the light-sensitive film and the beams of light to expose parallel portions of the film, while simultaneously



effecting relative nutating movement between the light sensitive film and the beams of light at an angle to the direction of the relative movement and in the plane thereof,

developing the light sensitive film to form a film having a plurality of images of the continuous commutator slip ring pattern, and

etching the electroconductive material in the pattern formed by the film to provide said member with electroconductive slip rings.

3,155,506
PHOTOGRAPHIC PROCESSES
Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 18, 1964, Ser. No. 345,589
13 Claims. (Cl. 96—50)

1. A process which comprises the sequential steps, in the following order, of

(*a*) exposing to actinic radiation, by means of a light pattern, a light-sensitive silver halide emulsion layer having a predetermined pH and comprising silver halide crystals having associated therewith in substantially greater than fog-inhibiting amounts an organic nitrogen-containing, silver-salt-forming compound having in one of its tautomeric forms a



group attached to an —NH— group and to at least one atom selected from the group consisting of sulfur, oxygen and nitrogen atoms; and

(*b*) treating the entire surface of the exposed layer with a liquid solution of a silver halide solvent to remove soluble silver halide in the unexposed areas leaving a silver salt image in the exposed areas;

the concentration of the specific nitrogen-containing compound and the predetermined pH being such that when said emulsion layer is exposed to actinic radiation, the solubility of the associated silver halide crystals is affected to such an extent that at least 20% of the less soluble, exposed, crystals remain after 90% of the more soluble, unexposed, crystals dissolve when the layer is treated with 10% by weight aqueous sodium thiosulfate.

3,155,507
PHOTOGRAPHIC PROCESSES
Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 8, 1962, Ser. No. 236,420
21 Claims. (Cl. 96—64)

1. A process which comprises, in the order stated, the sequential steps of:

(*a*) exposing, imagewise, to actinic radiation, a photographic element containing silver halide crystals made relatively less soluble in a silver halide solvent by treatment with an organic compound capable of forming a silver salt and whose silver salt is of lower solubility in water than silver chloride, and

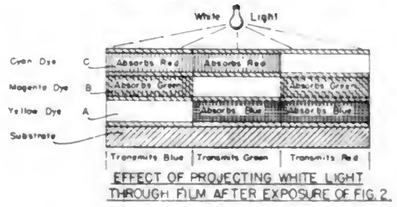
(*b*) prior to any reducing step treating said element with an aqueous solution of a silver halide solvent, thereby effecting solubilization of the silver halide in the more exposed areas at a rate substantially greater than in the less exposed areas until a positive image comprised of silver halide is produced;

said organic compound being present in such an amount, in terms of the ratio of its weight to the surface area of the silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide dispersion, 70/30 mole percent, gelatin emulsion containing 0.29 mg. of Ag in one-half ml., and said silver chlorobromide dispersion is treated with 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag and 100 mg. of sodium thiosulfate, at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5% by weight aqueous sodium hypochlorite and 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate, after vigorous agitation of both dispersions for 30 seconds at 25° C.

3,155,508
PHOTOGRAPHIC DEVELOPERS
William Walker, 21 Bentinck St., Calcutta, India
No Drawing. Filed Nov. 8, 1960, Ser. No. 67,927
4 Claims. (Cl. 96—66)

1. The method of preparing a photographic developer comprising boiling an admixture of from (*a*) 140–160 parts sodium sulfite, (*b*) 2.5–20 parts methyl-para-aminophenol-sulfate, and (*c*) sufficient water to bring the admixture to 1000 parts.

3,155,509
PHOTOGRAPHIC PROCESS
Morris C. Roscow, Cleveland, Ohio, assignor to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey
Filed Sept. 5, 1961, Ser. No. 136,107
6 Claims. (Cl. 96—73)



EFFECT OF PROJECTING WHITE LIGHT THROUGH FILM AFTER EXPOSURE OF FIG. 2.

1. A photosensitive element consisting of a solid support member; a clear, colorless barrier layer deposited on

said support from a solution; a cyan layer coated on said clear, colorless layer, said cyan layer having been deposited as a thin layer from a solution comprising a solvent in which there are dissolved a binder, a bleachable cyan dye and an organic halogen-containing compound selected from the group consisting of alkyl and aralkyl compounds in which at least three halogen atoms are attached to a single carbon atom and in which the halogen atoms are selected from the group consisting of Cl, Br and I, from which coating the solvent has been eliminated; a first photoinsensitive layer of clear, colorless polyvinyl resin on said cyan layer; a layer of nitrocellulose lacquer on said layer of polyvinyl resin; a magenta layer coated on said nitrocellulose lacquer layer, said magenta layer having been deposited as a thin layer from a solution comprising a solvent in which there are dissolved a binder, a bleachable magenta dye and an organic halogen-containing compound selected from the group consisting of alkyl and aralkyl compounds in which at least three halogen atoms are attached to a single carbon atom and in which the halogen atoms are selected from the group consisting of Cl, Br and I from which layer the solvent has been eliminated; a second photoinsensitive layer of clear, colorless polyvinyl resin deposited on said magenta layer; a yellow dye layer coated on said second clear polyvinyl resin layer, said yellow dye layer having been deposited as a thin layer from a solution comprising a solvent in which there are dissolved a binder, a bleachable yellow dye, and an organic halogen compound selected from the group consisting of alkyl and aralkyl compounds in which at least three halogen atoms are attached to a single carbon atom and in which the halogen atoms are selected from the group consisting of Cl, Br and I and superimposed on said yellow dye layer, a layer of clear, colorless polyvinyl resin, there being between about 1 and 10,000 parts by weight of organic halogen containing compound in each of said dye layers for each part of dye therein, by weight, each of said dye layers being deposited as a wet film having a wet thickness of between about 0.0015 and 0.006 inch and each of said non-dye layers being of such thickness as to prevent diffusion of the constituents from the dye layer on one side of said non-dye layer to the dye layer on the opposite side of said non-dye layer.

3,155,510
DIFFUSION-RESISTANT ORGANIC RESIN-COUPLER REACTION PRODUCTS FOR PHOTOGRAPHIC GELATIN LAYERS
Josef Nogradi and Hans Ulrich, Cologne-Stammheim, Willibald Pelz, Opladen, Walter Püschel, Cologne-Stammheim, and Hans Schellenberger, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 19, 1961, Ser. No. 125,079
Claims priority, application Germany July 26, 1960
6 Claims. (Cl. 96—74)

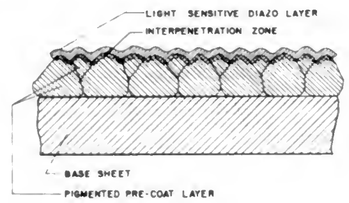
4. A photographic material comprising a support coated with a plurality of emulsion layers, at least one of which is a photosensitive silver halide emulsion layer and at least one of which contains the reaction product of

(i) a color coupler containing a radical of the group consisting of hydroxy and amino radicals which is capable of forming a dye upon development with a primary amine developer, and

(ii) a diffusion-resistant copolymer of N-vinylpyrrolidone and maleic anhydride,

in which reaction product the color coupler and the diffusion-resistant copolymer are linked through a bivalent radical of the group consisting of —CO—O— and —CO—NH— radicals.

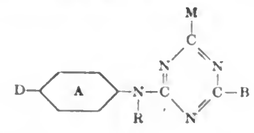
3,155,511
PRECOATED DIAZO REPRODUCTION PAPER
Edward Jahoda, Manhasset, and Peter Muller, Port Washington, N.Y., assignors to Andrews Paper & Chemical Co., Inc., Great Neck, N.Y., a corporation of New York
Filed Aug. 26, 1960, Ser. No. 52,083
2 Claims. (Cl. 96—75)



1. An improved reproduction sheet comprising a non-metallic base sheet, a precoat layer applied thereto and including a mixture of silica particles, particles of barium sulfate and particles of uncooked starch and a light-sensitive diazo layer applied to said precoat layer, said precoat layer being formed of discontinuous particles substantially uniformly mixed and distributed over said base sheet and with said two layers being in at least partially interpenetrating relationship with respect to each other, with the proportions of the materials being approximately one part by weight of silica and between 1 and 20 parts by weight of barium sulfate and uncooked starch.

3,155,512
LIGHT-SENSITIVE DIAZOTYPE COMPOSITIONS
Henri Gerard Jean De Boer, Delft, Netherlands, assignor to N.V. Lichtdrukpapierfabriek de Atlas, Delft, Netherlands, a corporation of the Netherlands
No Drawing. Filed June 26, 1961, Ser. No. 119,284
Claims priority, application Great Britain, June 27, 1960, 22,445/60
10 Claims. (Cl. 96—91)

2. A diazo component for the preparation of diazotype prints and having the formula



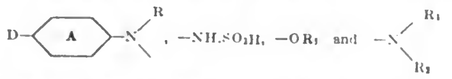
wherein

A represents a member selected from the group consisting of phenylene, lower alkylphenylene, lower alkoxyphenylene and halogenphenylene, and

D represents a diazosulfonate group,

R is a member selected from the group consisting of hydrogen, lower alkyl, aryl and aralkyl,

B is a substituent selected from the group consisting of halogen, the radical M, the group



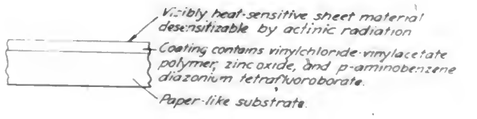
in which R_1 and R_2 each represent a member of the group consisting of hydrogen, alkyl, sulpho-alkyl, aryl, sulpho-aryl, aralkyl and sulpho-aralkyl, and

M is the radical derived from a member selected from the group consisting of cellulose, regenerated cellulose, casein, polyvinyl alcohol and polyamide.

3,155,513
HEAT SENSITIVE SHEET MATERIAL AND METHOD OF MAKING

David P. Sorensen, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,755
8 Claims. (Cl. 96—91)



6. The method of making a photodesensitizable visibly heat-sensitive sheet material having a visibly heat-sensitive layer of components including a halogen-containing vinylogous polymer capable of being readily dehydrohalogenated with formation of at least five conjugate double bonds on heating in the presence of catalytic amounts of a Friedel-Crafts type metal chloride catalyst, and zinc oxide, said method comprising incorporating with said layer a significant small amount of at least about one percent by weight on the weight of said polymer of a photo-sensitive stabilizer material selected from the class consisting of aromatic diazonium fluorophosphates, aromatic diazonium fluoroborates, N-nitroso aromatic amines, dimethyldihydroresorcinol, and mixtures thereof.

3,155,514
PHOTOGRAPHIC COMPOSITIONS AND ELEMENTS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,412
6 Claims. (Cl. 96—107)

1. A photographic silver halide emulsion layer comprising, before exposure to actinic light, silver halide crystals and associated therewith in substantially greater than fog-inhibiting amounts a silver mercaptide of a substituted thiourea compound containing at least one —SH group, the silver mercaptide being of lower solubility in water than silver chloride, the silver halide crystals so associated with the silver mercaptide being less soluble in 10% aqueous sodium thiosulfate than untreated silver halide crystals at a predetermined pH and the substituted thiourea compound being present in such an amount, in terms of the ratio of its weight to the surface area of said silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide (70/30 mole percent) gelatin emulsion containing 57 g. of gelatin per mole Ag and .57 mg. of Ag per ml., and said silver chlorobromide dispersion is treated with 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver and 100 mg. of sodium thiosulfate), at least three times the amount of silver chlorobromide remains undissolved as compared with similar dispersion successively treated with a 5%, by weight, aqueous sodium hypochlorite and 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate), after vigorous agitation of the dispersions for 30 seconds at 25° C.

3,155,515
PHOTOGRAPHIC PRODUCTS

Jack Richard Celeste, Westfield, and Abraham Bernard Cohen, Springfield, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,417
11 Claims. (Cl. 96—107)

1. A photographic silver halide emulsion before exposure to actinic radiation comprising silver halide crystals having associated therewith in substantially greater than fog-inhibiting amount a 4-N-acylaminothiophenol, the silver salt of said thiophenol being of lower solubility in water than silver chloride and less soluble in 10% aqueous sodium thiosulfate than untreated silver halide crystals at a predetermined pH, said 4-N-acylaminothiophenol being present in such an amount, in terms of the ratio of its weight to the surface area of the silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide dispersion, 70/30 mole percent, gelatin dispersion containing 0.29 mg. of Ag in ½ ml., and said silver chlorobromide dispersion is treated with 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag and 100 mg. of sodium thiosulfate, at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5% by weight aqueous sodium hypochlorite and 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate, after vigorous agitation of both dispersions for 30 seconds at 25° C.

3,155,516
PHOTOGRAPHIC PRODUCTS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,418
9 Claims. (Cl. 96—107)

1. A photographic silver halide composition before exposure to actinic radiation containing in greater than fog-inhibiting amounts an organic mercaptan containing 1–2 mercapto groups, having a molecular weight greater than 75 and being taken from the group consisting of alkyl mercaptans and organic mercaptans containing two mercaptan groups linked to carbon, the silver mercaptide of said organic mercaptane being of lower solubility in water than silver chloride; said organic mercaptan being present in such an amount, in terms of the ratio of its weight to the surface area of the silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide dispersion, 70/30 mole percent, gelatin dispersion containing 0.29 mg. of Ag in ½ ml., and said silver chlorobromide dispersion is treated with 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag and 100 mg. of sodium thiosulfate, at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5% by weight aqueous sodium hypochlorite and 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate, after vigorous agitation of both dispersions for 30 seconds at 25° C.; said composition being free from a silver halide developing agent.

2. A photographic element bearing a layer before exposure to actinic radiation comprising silver halide containing in greater than fog-inhibiting amounts an organic mercaptan containing 1–2 mercapto groups, having a molecular weight greater than 75 and being taken from the group consisting of alkyl mercaptans and organic mercaptans containing two mercaptan groups linked to carbon, the silver salt of said organic mercaptan being of lower solubility in water than silver chloride; said organic mercaptan being present in such an amount, in terms of the ratio of its weight to the surface area of the silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide dispersion, 70/30 mole percent, gelatin dispersion containing 0.29 mg. of Ag in ½ ml., and said silver chlorobromide dispersion is treated with 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag and 100 mg. of sodium thiosulfate, at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5% by weight aqueous sodium hypochlorite and 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate, after vigorous agitation of both dispersions for 30 seconds at 25° C.; said composition being free from a silver halide developing agent.

3,155,517
PHOTOGRAPHIC COMPOSITIONS AND ELEMENTS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,419
11 Claims. (Cl. 96—107)

1. A photographic silver halide composition having a pH between 8 and 13 and before exposure to actinic radiation comprising silver halide crystals having associated therewith in substantially greater than fog-inhibiting amounts a hererocyclic nitrogen compound having in the state of its free base at least one intracyclic radical represented by the formula

at least one of the bonds being attached to intracyclic carbon, any divalent atom of the compound that is attached to more than one atom being in the heterocyclic ring and whose silver salt is less soluble in water than untreated silver chloride; said heterocyclic nitrogen compound being present in such an amount, in terms of the ratio of its weight to the surface area of the silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide dispersion, 70/30 mole percent, gelatin dispersion containing 0.29 mg. of Ag in ½ ml., and said silver chlorobromide dispersion is treated with 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag and 100 mg. of sodium thiosulfate, at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5% by weight aqueous sodium hypochlorite and 10% by weight aqueous sodium thiosulfate, so that the resulting mixture contains 0.29 mg. of Ag, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate, after vigorous agitation of both dispersions for 30 seconds at 25° C.

3,155,518
SILVER HALIDE COMPOSITIONS, LAYERS AND ELEMENTS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,817
6 Claims. (Cl. 96—107)

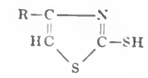
1. A photographic silver halide emulsion layer wherein any heavy metal salt present is a silver halid comprising, before exposure to actinic radiation, light-sensitive silver halide crystals having associated therewith in substantially greater than fog-inhibiting amounts, a silver mercaptide of an aromatic mercaptan having a single mercapto group attached to an aromatic hydrocarbon radical of 6–10 carbon atoms, said silver mercaptide being of lower solubility in water than silver chloride, the silver halide crystals so associated with the silver mercaptide dissolving more slowly in 10% aqueous sodium thiosulfate than untreated silver halide crystals at a predetermined pH, said mercaptan being present in such an amount, in terms of the ratio of its weight to the surface area of said silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide (70/30 mole percent) gelatin dispersion containing 57 g. of gelatin per mole of Ag and .57 mg. of Ag per ml., and said silver chlorobromide dispersion is treated with 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver and 100 mg. of sodium thiosulfate), at least three times the amount of silver chlorobromide remains undissolved as compared with a similar dispersion successively treated with 5%, by weight, aqueous sodium hypochlorite and 10%, by weight, aqueous sodium thiosulfate, (so that the resulting mixture contains 0.29 mg. of silver, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate), after vigorous agitation of the dispersions for 30 seconds at 25° C.

3,155,519
PHOTOGRAPHIC COMPOSITIONS, LAYERS AND ELEMENTS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,824
12 Claims. (Cl. 96—107)

1. A photographic silver halide emulsion layer wherein any heavy metal salt present is a silver halide comprising, before exposure to actinic radiation, light-sensitive silver halide crystals having associated therewith in substantially greater than fog-inhibiting amounts a silver mercaptide of a mercapto compound of the formula:



where R is a hydrocarbon nucleus of 4–12 carbon atoms, said silver mercaptide being of lower solubility in water than silver chloride and the silver halide crystals so associated with the silver mercaptide dissolving more slowly in 10% aqueous sodium thiosulfate than untreated silver halide crystals at a predetermined pH, the mercapto compound forming the mercaptide being present in such an amount, in terms of the ratio of its weight to the surface area of said silver halide crystals, that when admixed in such ratio with an aqueous silver chlorobromide (70/30 mole percent) gelatin dispersion containing 57 g. of gelatin per mole Ag and .57 mg. of Ag per ml., and said silver chlorobromide dispersion is treated with 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver and 100 mg. of sodium thiosulfate), at least three times the amount of silver chlorobromide remains undissolved as in a similar dispersion successively treated with 5%, by weight, aqueous sodium hypochlorite and 10%, by weight, aqueous sodium thiosulfate (so that the resulting mixture contains 0.29 mg. of silver, 25 mg. of sodium hypochlorite and 100 mg. of sodium thiosulfate), after vigorous agitation of the dispersions for 30 seconds at 25° C.

3,155,520
ANIMAL HUSBANDRY METHOD AND FEEDSTUFF

Jack Ziffer, Milwaukee, Wis., assignor to Pabst Brewing Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 29, 1960, Ser. No. 11,479
15 Claims. (Cl. 99—2)

6. An animal feedstuff comprising a nutritional animal feed material admixed with a member selected from the group consisting of polyamidohygrostreptin and polyaminohygrostreptin.

3,155,521
FEED GRAIN ADDITIVE AND METHOD OF PREPARING SAME

George E. Ward and Steven N. Dereniuk, Newaygo, Mich., assignors to Dawe's Laboratories, Inc., Chicago, Ill., a corporation of Illinois

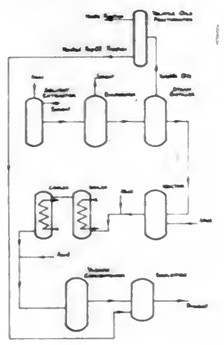
No Drawing. Filed Dec. 9, 1960, Ser. No. 74,775
14 Claims. (Cl. 99—2)

1. A feed grain additive consisting essentially by weight of from 10–70% of 6-ethoxy-1,2-dihydro-2,2,4-trimethylquinoline, 1–88% absorptive vegetable matter characterized by a fiber content of at least 19%, and 2–30% absorptive mineral powder.

3,155,522
PROCESS FOR THE PRODUCTION OF A HOP CONCENTRATE

Robert Peter Hildebrand, Mount Waverley, Victoria, Frank Vincent Harold, South Caulfield, Victoria, Brian James Clarke, St. Kilda, Victoria, and Peter John Andrew Murray, East Malvern, Victoria, Australia, assignors to Carlton and United Breweries Limited, Carlton, Victoria, Australia, a corporation of Victoria

Filed June 28, 1962, Ser. No. 206,000
Claims priority, application Australia July 4, 1961
10 Claims. (Cl. 99—50.5)



1. A process for the production of a hop concentrate for use in the manufacture of a hopped beverage, which includes the steps:

(*a*) extracting hops by refluxing with an organic solvent selected from the group consisting of petroleum fractions of boiling range between 40° C. and 60° C. and trichloroethylene, to form a crude hop-extract,

(*b*) evaporating off all the solvent under vacuum to obtain a crude hop concentrate,

(*c*) separating the total volatile oil content of the hops from the non-volatile resin by steam distilling the crude hop concentrate with live steam to remove said oils from said resins and retaining said oils and said resin residue,

(*d*) subjecting the total hop-oils obtained from step (*c*) to vacuum fractional distillation to remove therefrom low boiling esters and carbonyl compounds and hydrocarbons which give rise to an undesirable taste and flavor in beer and collecting the remaining fractions of the hop oil consisting of terpene and sesquiterpene type materials which possess a taste characteristic suitable for flavouring and for bittering of beer,

(*e*) isomerizing the humulones of hop-resins,

(*f*) concentrating the isomerized resin phase by vacuum distillation to produce an isomerized hop-resin concentrate,

(*g*) blending the selected hop-oil fractions collected from the fractional distillation of the total hop oils with the isomerized hop resin concentrate to produce a blended hop concentrate final product, such product being specifically designed for addition subsequent to wort boiling either prior to fermentation or to the fermented and matured beer prior to final filtration.

3,155,523
EXTRACTION OF COFFEE AROMA AND FLAVOR

Ismar M. Reich, Stamford, Conn., assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 15, 1958, Ser. No. 755,133
15 Claims. (Cl. 99—71)

1. A process of preparing a coffee extract which comprises extracting roasted coffee with a fluorinated compound having a boiling point at atmospheric pressure below 39° F. selected from the group consisting of



and $R_1F_2C—CF_2R_2$ wherein R_1 and R_2 are selected from the group consisting of hydrogen, chlorine and bromine, under temperature and pressure conditions such that the fluorinated compound is in a liquid state, separating liquid from the coffee and evaporating solvent from said liquid.

3,155,524
PROCESS FOR INCREASING WATER ABSORPTION OF SOYBEAN MATERIAL

Frank A. Norris, La Grange Highlands, and David C. Johnson, Naperville, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,634
9 Claims. (Cl. 99—98)

1. A process for the production of soybean material having increased moisture absorption comprising: treating extracted soybean material having a pH of below 7.0 with an aqueous basic material selected from the group consisting of alkali metal hydroxides, alkali metal carbonates, tri-sodium phosphate, ammonium hydroxide and lime, thereby raising the pH of said soybean material to above 7.0 and increasing the moisture content of said material; and heating said treated material from about 5 to about 30 minutes.

3,155,525
METHOD FOR STORAGE OF FOODS BY PACKING WITH ACTIVE NITROGEN

Hideo Sakai, 46 2-chome, Kotake-cho, Nerima-ku, Tokyo, Japan

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,153
3 Claims. (Cl. 99—221)

1. A method for preserving foods comprising the steps of placing the food in a gas impervious container, evacuating air from said container to remove all but a minor percentage of residual oxygen in the food and the container,

ionizing nitrogen gas by passing nitrogen gas through an electric arc discharge, introducing the ionized nitrogen gas into the substantially evacuated container, and sealing the container with the ionized nitrogen gas therein to react with residual oxygen to form nitrogen peroxide within the container to combine with hemoglobin in the food and to oxidize any hydrogen sulfide present.

3,155,526
CALCIUM ALUMINOSULFATE AND EXPANSIVE CEMENTS CONTAINING SAME

Alexander Klein, Danville, Calif., assignor, by direct and mesne assignments, to Chemically Prestressed Concrete Corp., Van Nuys, Calif., a corporation of California

No Drawing. Filed Oct. 18, 1961, Ser. No. 145,964
9 Claims. (Cl. 106—89)

1. A calcium aluminosulfate of the formula $C_aA_bS_c+d$ (free CaO) wherein *a*, *b*, *c* and *d* are molecular coefficients having values of about 1 to 4, 1 to 3, 1 and 1 to 2, respectively; C, A and $\bar{S}$ are bound CaO, bound Al_2O_3 and bound SO_3, respectively; the free CaO is extractable by the method of ASTM C114–58; the product is formed by heating a mixture of a source of CaO, a source of Al_2O_3 and a source of SO_3 to a temperature not exceeding the temperature of fusion but sufficient to form a clinker; said product having an index of refraction of about 1.56 to 1.59; having free $CaSO_4$ by the method of Forsen not greater than 5%; having a combined $CaO+SO_3$ content exceeding about 37%; having a weight ratio of free $CaO+SO_3$ to total $CaO+Al_2O_3+SO_3$ exceeding about 0.38; and having a total $CaO+Al_2O_3+SO_3$ content exceeding about 75%.

2. A cement composition consisting essentially of a major proportion of Portland cement and a minor proportion, sufficient at least to compensate for shrinkage of the Portland cement, of an expansive component, said expansive component being derived by burning, at a temperature not above about 2900° F., a mixture of a source of CaO, of X and of SO_3, wherein X is a sesquioxide selected from the group consisting of Al_2O_3, Fe_2O_3, Cr_2O_3, Mn_2O_3 and V_2O_3, said expansive component consisting essentially of (1) a stable compound in the form of a calcium alumino sulphate type of compound (2) associated CaO extractable by the method of ASTM C114–58 and (3) associated anhydrous $CaSO_4$ extractable by the method of Forsen, said calcium alumino sulphate type of compound accounting for the major portion by weight of said expansive component, said associated CaO being present in amount sufficient to impart substantial expansive properties to the expansive component when it is hydrated, said associated anhydrous $CaSO_4$ being present not in excess of about 5% of the expansive component, said composition being substantially free of added terminator.

3,155,527
ADHESIVE AND METHOD OF PREPARATION

Merle J. Mentzer, Mokena, Ill., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1962, Ser. No. 204,667
5 Claims. (Cl. 106—210)

1. An adhesive composition capable of imparting water resistance to adhesive bonds in paper products comprising about 1 part of gelatinized starch as carrier, between about 3 and 6 parts of ungelatinized starch, between about 0.5 and about 2.0 parts of urea, between about 0.25 and about 1.0 part of a compound selected from the group consisting of formaldehyde and paraformaldehyde, water in an amount between about 15 and about 25 parts, said composition having a pH between about 10 and about 12.5 and being capable of setting upon heating.

3,155,528
EMULSION COATING COMPOSITION

Richard H. Cubberley, Morristown, and John P. Orsulak, Short Hills, N.J., assignors, by mesne assignments, to The Flintkote Company, a corporation of Massachusetts

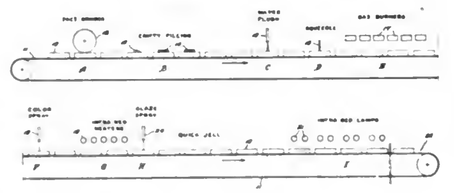
No Drawing. Filed June 13, 1961, Ser. No. 116,700
4 Claims. (Cl. 106—278)

4. An improved dispersion of a coating composition capable of being subjected to temperatures substantially below freezing without breaking and forming a functional protective coating after a short drying time comprising a dispersion of a binder in water and containing from about 5 parts to about 20 parts by weight based on 100 parts by weight of total dispersion of a mixture of at least one alcohol selected from the group consisting of methyl alcohol, ethyl alcohol, and isopropanol and at least one ether selected from the group consisting of ethylene glycol monoethyl ether, ethylene glycol monoethyl ether and propylene glycol monomethyl ether wherein the total ethers comprise at least 3 parts by weight based on 100 parts by weight of the total dispersion.

3,155,529
METHOD OF PRODUCING DECORATIVE MASONRY BLOCKS

Salvatore Paturzo, Towson, Md., assignor to V. Paturzo Bro. & Sons, Inc., Baltimore, Md., a corporation of Maryland

Filed Feb. 8, 1960, Ser. No. 7,345
7 Claims. (Cl. 117—8)



1. The method of treating molded and cured blocks composed of a cementitious binder component and discrete aggregates whereby to produce decorative masonry elements, said method comprising: uninterruptedly advancing such a block along a predetermined path and, concomitantly therewith, sequentially dressing a face of the block to produce thereon a smoothed but porous and pitted surface which displays the contrasting colorations of the respective block constituents; applying a plastic, settable composition to said face and working it into the depressions and openings therein to fill the same; removing excess filling composition from the block face, to preserve the color contrasts of the block constituents appearing therein; heating the block to a temperature sufficient to produce a rapid jelling of a liquid resinous material applied thereto; coating the dressed face of the so-heated block with a film of a transparent thermosetting polyester resin; further heating the block after attainment by such resin coating of the initial jell induced therein by said block temperature, to complete the settling theerof; and cooling the block.

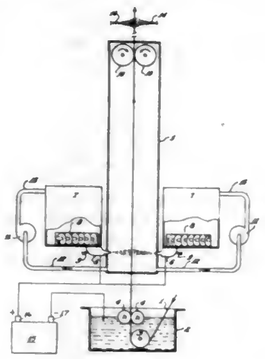
3,155,530
PROCESS FOR PRODUCING PROTECTED METAL SURFACES

Paul E. Schnedler, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed May 25, 1959, Ser. No. 815,636
8 Claims. (Cl. 117—17)

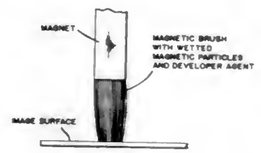
4. A method of providing a protected metal article comprising a continuous strip of ferrous metal having a

non-ferrous metallic coating thereon, which comprises advancing said ferrous strip in a path of travel and, while the metallic coating thereon is in a heated and substantially fluid condition, propelling particles of fibrous mate-



rial against the surface of the metallic coating with such force that the surface of the coating is penetrated, whereby to cause the fibrous material to be entrapped by the metallic coating metal as it subsequently solidifies.

3,155,531
MAGNETIC LIQUID DEVELOPER AND METHOD FOR ELECTROSTATIC IMAGES
Donald L. Fauser, Lakewood, and Edwin R. Kolb, Grafton, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 23, 1958, Ser. No. 762,699
19 Claims. (Cl. 117—37)

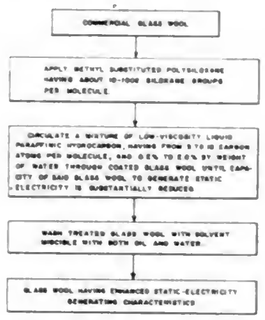


4. In an electrophotographic process of the character described in which an electrostatic charge image is produced on an electrophotographic surface, the developing steps which comprise immersing said charge image on said surface in a non-conductive liquid vehicle having dispersed therein a finely divided magnetic developer agent which is insoluble in said vehicle and capable of electrostatic attraction to said surface, depositing and developing agent on said surface in accordance with said charge image thereon, and maintaining in said liquid vehicle adjacent said surface a magnetic field of a gradient magnetically attracting said developer agent away from said surface and oppositely to said electrostatic attraction of said charge image, the strength of said magnetic attraction for said developer agent away from said surface being less than the strength of said electrostatic attraction of said developer agent toward said charge image on said surface for minimizing deposition of said developer agent on areas of said surface other than areas of said charge image to which said agent is electrically attracted.

3,155,532
METAL PLATING PROCESS
John M. Basile, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 10, 1960, Ser. No. 68,366
9 Claims. (Cl. 117—47)

1. A process for coating a substrate with a metal selected from the group consisting of chromium, molybdenum, tungsten and vanadium comprising heating said substrate to a temperature of between about 450° C. and 1400° C.; immersing said substrate in a solution of carbonyl of said selected metal maintained under a hydrogen atmosphere, whereby said carbonyl is caused to decompose to deposit a coating of said selected metal on said substrate; and cooling the coated substrate in a non-reactive atmosphere to a temperature below about 200° C. when said selected metal is in the group consisting of chromium, tungsten, and vanadium, and to a temperature below about 150° C. when said selected metal is molybdenum.

3,155,533
METHOD OF TREATING GLASS WOOL WITH POLYSILOXANES
Edward Schaschl and George G. Bernard, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed Sept. 10, 1959, Ser. No. 839,257
9 Claims. (Cl. 117—54)

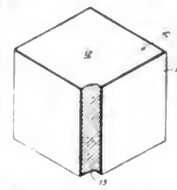


1. A process for preparing a treated glass wool of enhanced static-electricity-generating characteristics comprising applying a coating of methyl substituted polysiloxanes having about 10–1002 siloxane groups/molecule on said glass wool to render it oil-wettable, circulating through said glass wool a fluid comprising low-viscosity liquid paraffinic hydrocarbon having from five to ten carbon atoms per molecule and 0.5% to 2.0% by weight of water, until the capacity of said glass wool to generate static electricity is substantially reduced, and thereafter washing said glass wool with a solvent miscible with both oil and water.

3,155,534
METHOD OF MAKING MAGNESIA-ALUMINA SPINEL BODIES
Charles A. Bruch, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 24, 1961, Ser. No. 112,180
4 Claims. (Cl. 117—5.5)

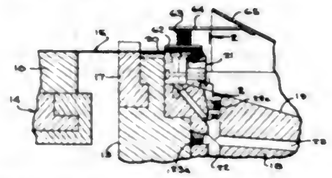
3. The method of forming a body consisting of magnesia-alumina spinel from a polycrystalline alumina body, said method comprising masking all surfaces of the alumina body from the surrounding environment except one, contacting the remaining unmasked surface with magnesia at a temperature of from about 1500 to 1900°

C., and continuing the contact for a time sufficient to transform all of the alumina into the magnesia-alumina



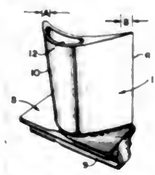
spinel $MgAl_2O_4$ by growth of the spinel into the alumina body from the unmasked surface.

3,155,535
APPARATUS AND METHOD FOR APPLYING SIDE SEAM SEALING COMPOUND TO CAN BODY BLANKS
George W. Thompson, Orland Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 17, 1961, Ser. No. 145,559
18 Claims. (Cl. 117—102)



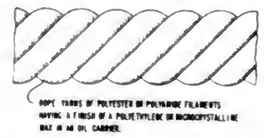
12. A method of applying side seam sealing compound to can body blanks of the type having a hook flange joined by a bight to a contiguous portion of the blank comprising the steps of longitudinally moving the blanks along a predetermined path with the hook flanges disposed longitudinally of the path and downwardly directed, injecting an overabundance of sealing compound in the zone defined by the hook flange, bight and contiguous portion of each blank, plowing out surplus sealing compound from said zone, collecting the surplus sealing compound, and applying at least a portion of the surplus sealing compound to the outer surface of the hook flanges.

3,155,536
ALUMINUM OXIDATION RESISTANT COATING FOR NICKEL AND COBALT BASE ALLOY PARTS
William R. Freeman, Jr., Easton, and Joseph G. Lucas, Trumbull, Conn., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,533
12 Claims. (Cl. 117—102)



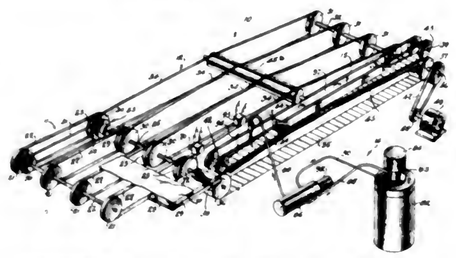
1. In a process for coating an alloy base material selected from the group consisting of nickel and cobalt base alloys with a layer of oxidation resistant aluminum, the method comprising dipping said material in a molten aluminum bath whereby said layer is alloyed to said material and an excess of aluminum is deposited over said layer, reacting nickel chloride with said excess to replace said excess with nickel metal, and then reacting said nickel metal with nitric acid, whereby said nickel metal is removed.

3,155,537
ROPE FINISH
Hugh T. Patterson, Greenville, N.C., and Alfred J. Strohmaier, Seaford, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 24, 1959, Ser. No. 794,824
4 Claims. (Cl. 117—138.8)



1. In rope and cordage manufacture wherein the rope yarns are composed of synthetic linear condensation polymer filaments selected from the class consisting of polyesters and polyamides, the improvement for imparting high dry and wet strength, and high durability, which comprises a rope yarn of said filaments in combination with a finish of wax and an oil carrier therefor having a viscosity in the range from that of kerosene to that of heavy motor oil, in which the amount of wax is between 0.01 and 10 percent by weight of the yarn and between 0.1 and 25 percent by weight of the finish, and the wax is selected from the group consisting of (1) polyethylenes having a melting point between 80° and 200° C., a penetration between 1 and 10, an acid number between 9 and 50, and a saponification number between 9 and 100, and (2) microcrystalline waxes having a melting point between 80° and 150° C., a penetration between 1 and 10, an acid number between 10 and 50, and a saponification number between 30 and 100.

3,155,538
STRIPE COATING APPARATUS
Fred Schneider, Forest Hills, N.Y., and Fred Travis Miller, North Augusta, S.C., assignors to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,663
3 Claims. (Cl. 118—2)



1. Apparatus for applying a band of stiffening material to a flexible panel along an upper marginal edge portion thereof, comprising in combination,

(*a*) conveyor means for supporting and moving the portion of the panel contiguous to said upper marginal edge portion thereof through a substantially horizontal path,

(*b*) an endless movable support positioned adjacent said conveyor means for supporting the said upper marginal edge portion of said panel during movement thereof through said horizontal path,

(*c*) a pair of spaced endless bands cooperating with

said endless movable support for clamping each panel between said pair of spaced bands and said support along its upper edge and also adjacent the said marginal portion during movement of said panel,

(*d*) spray nozzle means disposed above said path and positioned to spray stiffening material onto said panel portion located between said pair of spaced endless bands,

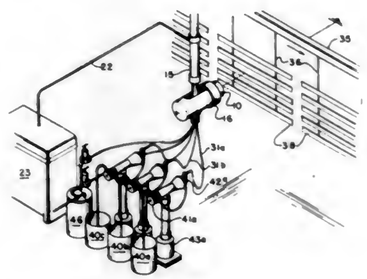
(*e*) means for driving the said conveyor means, said endless movable support and the pair of spaced endless bands at substantially the same linear speed, and

(*f*) heating means in said path following the spray nozzle means to dry the band of stiffening material after application and while the panel is still clamped between said endless movable support and said pair of spaced endless bands.

3,155,539
ELECTROSTATIC SPRAY COATING METHODS AND APPARATUS

James W. Juvinall, 630 W. New York St., Indianapolis, Ind.

Filed Nov. 20, 1958, Ser. No. 775,315
7 Claims. (Cl. 118—11)



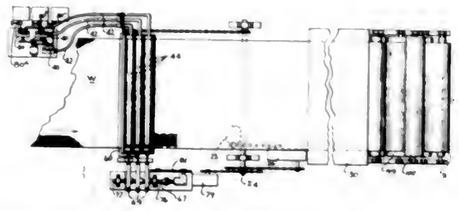
1. In combination with spraying means for forming a spray of liquid coating material particles, a plurality of sources of liquid coating material, means associated with each of said sources for controlling delivery of coating material therefrom to said spraying means, a source of solvent, means for controlling the delivery of solvent therefrom to the spraying means, a common operator for the several delivery-controlling means, said operator being selectively operable to cause delivery to the spraying means from any selected one of said sources while preventing delivery from the other sources to the spraying means, and power-actuated means energizable during the delivery of coating material from the selected coating-material source to operate said operator through a predetermined cycle automatically to effect successive termination of delivery of coating material to the spraying means from such selected coating-material source, delivery of solvent for a predetermined time from the solvent source to the spraying means, and de-energization of said power-actuated means.

3,155,540
APPARATUS FOR THE EXTRUSION COATING OF FABRIC OR LIKE MATERIALS

Lawrence A. Loeffler and Frank E. Lyon, Toledo, Ohio, assignors to The Landers Corporation, Toledo, Ohio, a corporation of Ohio

Filed June 15, 1959, Ser. No. 820,157
2 Claims. (Cl. 118—60)

1. Apparatus for coating a fabric or the like which comprises a hollow body having a plurality of openings therein, manifold means attached to said body and forming a chamber therewith in communication with said openings, said manifold means having a plurality of orifices therein communicating with said chamber, means for supplying a viscous liquid coating material under a substantial positive pressure to said hollow body, whereby said material passes through said openings into said chamber under an equal positive pressure and exudes through said orifices in a plurality of discrete, solid, continuous streams spaced from one another, means for passing a web of fabric or the like under said discrete streams to receive the same thereon, means to move said manifold means and orifices laterally of the path of travel of said web in a predetermined, repetitive path,

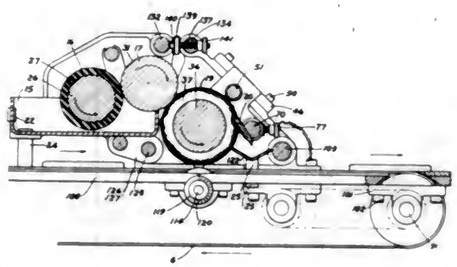


means to cure said coating material in place on said web, a heated cylinder beyond said curing means around which said web and coating material are passed for heating the coating material to a deformable state, and a pair of squeeze rollers beyond said heated cylinder between which rollers said web is passed to deform the surfaces of the coating material with the separate identity of the streams of the material being retained, and with uncoated portions of the web therebetween for the passage of air therethrough.

3,155,541
COATING MACHINE FOR APPLYING A FLUID COMPOSITION TO A WORKPIECE

John K. Jackson, 671 Carleton Road, Westfield, N.J.

Filed May 29, 1961, Ser. No. 113,434
4 Claims. (Cl. 118—203)

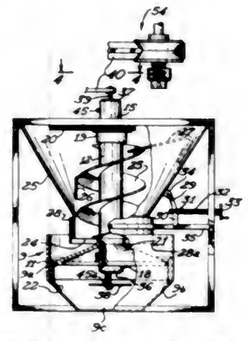


1. A coating machine for applying a fluid composition to a work piece comprising a metering roll having cavities on its surface of a predetermined size to receive the fluid composition, a coating roll, means to rotate the metering and coating rolls, and a doctor blade in pressure contact with the coating roll to control the amount of unused coating composition carried thereby and to condition the coating roll for a supply of coating from the metering roll, the coating roll having an interconnecting absorbent cellular structure in rotatable pressure contact with the metering roll to receive a predetermined amount of fluid composition therefrom mainly by suction action, the coating roll adapted to dispense a metered quantity of the fluid composition to the surface of a workpiece upon pressure contact therewith.

3,155,542
COTTONSEED-TREATING MACHINE

Ray R. Cordell and Wayne F. Gustafson, Minneapolis, Minn., assignors to Ben Gustafson & Son Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 22, 1960, Ser. No. 57,810
6 Claims. (Cl. 118—303)

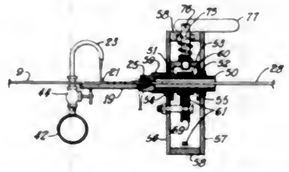


1. A cottonseed-treating machine comprising a housing, an upright shaft mounted for rotation about its longitudinal axis within said housing, means for rotating said shaft, a rotatable seed distributing member mounted upon said shaft within said housing for rotation therewith about an upright axis, a positive action type feeder movably mounted within said housing and moving seeds to said seed distributing member, a seed hopper surrounding said feeder and having a discharge at its lower end through which said feeder moves seeds, a seed flow controlling collar surrounding said hopper discharge and said feeder and controlling the flow of seeds across said seed distributing member, a disc mounted for rotation in a horizontal plane a short distance beneath said cone, means for rapidly rotating said disc, means for applying a seed treating liquid onto the upper surface of said disc as it rotates whereby the liquid will be broken into a radially outwardly moving mist, a plurality of outwardly extending wipers carried by said seed distributing member and moving therewith and bearing against said housing to free the inner surface thereof adjacent said disc of seeds, and a plurality of agitators mounted on said feeder and moving therewith within said hopper to break up masses of seeds which form as a result of being incompletely delinted.

3,155,543
APPARATUS FOR APPLYING LIQUID COATING MATERIAL TO A CONTINUOUS STRAND

Alfred Marzocchi and Albert E. Jannarelli, Cumberland, and William H. Miller, Chepachet, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Mar. 15, 1960, Ser. No. 15,191
7 Claims. (Cl. 118—405)

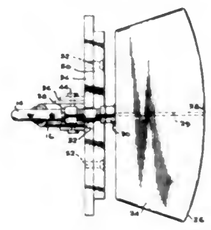


1. Apparatus for applying a resinous liquid coating material to a continuous strand including means for directing a strand along a linear path, a die with an unobstructed, comparatively large entering mouth and a horizontal passage of substantial capacity tapered in section from the mouth to an outlet of restricted size, said die being positioned in the path of the strand whereby the strand travels axially through the horizontal passage and the outlet of said die, means continuously delivering liquid resinous coating material through the mouth of the die to the horizontal passage, said delivery of coating material being at a rate to maintain a constant volume of the coating material within the horizontal passage, and means rotating the die, the speed of rotation of the die and the speed of linear movement of the strand in combination with the capacity and shape of the die passage being such to cause the coating material collected within the passage to whirl as a symmetrical body around the strand passing therethrough.

3,155,544
TABBING MACHINE

Willie McConnell, Ventura, Calif., and George Head, Los Angeles, Calif. (11556 Newcastle Ave., Granada Hills, Calif.); said McConnell assignor to said Head

Filed Dec. 18, 1961, Ser. No. 159,860
4 Claims. (Cl. 118—410)



1. In an apparatus for applying cementitious material under the tabs of shingles comprising a handle, a source of said cementitious material under pressure, and a conduit it fluid-tight communication with said source,

An applicator attached to said handle comprising a laterally elongated relatively thin shoe-type nozzle having

flat upper and lower surfaces,

a relatively wide central portion, said central portion being widest at the center of said nozzle,

a forward edge curved rearwardly laterally from its forwardmost point, said point being located at the center of said nozzle,

a bore passing through said central portion entirely within said nozzle, said bore

terminating at one of its ends in a discharge port at said forwardmost point in said forward edge, and

communicating at its other end in fluid-tight relationship with said conduit.

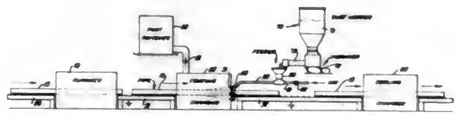
3,155,545
APPARATUS FOR EXTERNAL COATING OF OBJECTS

Ewalt H. Rocks and Marvin L. Busby, Fullerton, Calif., assignors to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed Feb. 27, 1961, Ser. No. 91,839
2 Claims. (Cl. 118—621)

1. An apparatus for externally coating objects, which comprises: a furnace for preheating an electrically conductive workpiece; means for conveying said preheated workpiece from said furnace and electrically grounding said preheated workpiece; a chamber separate from said furnace, adapted to receive said preheated, grounded

workpiece in axially aligned, suspended position in said chamber; an electric grid for producing an electrostatic charge, said grid being mounted in said chamber so as to substantially surround said preheated, grounded workpiece in spaced relationship to said workpiece; a plurality of powder spray nozzles mounted in said chamber and disposed so as to introduce atomized powder between said grid and said workpiece and subject the particles

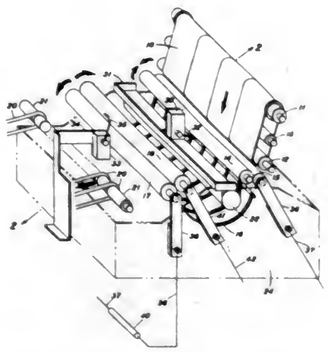


of said powder to electrostatic charge from said grid prior to deposit of said electrostatically charged particles externally on said workpiece, said nozzles being positioned so as to direct said powder in one direction only; hoods on said nozzles disposed so as to direct said powder toward the exterior of said workpiece; and an air supply line connected to said nozzles and disposed so as to introduce air under pressure into said nozzles and blow said powder in said chamber and toward said workpiece.

3,155,546
APPARATUS FOR THE LIQUID TONING OF LATENT ELECTROSTATIC IMAGES

Johan F. Dirks, Holyoke, Mass., assignor to The Plastic Coating Corporation

Filed Sept. 24, 1962, Ser. No. 225,476
12 Claims. (Cl. 118—637)



1. Apparatus for the development of an electrostatic image on a photoelectrostatic sheet, which comprises:

a pair of rolls, both of which are electrically conductive, one of which has a smooth, non-yielding surface and the other of which has a resilient, electrically-conductive surface;

a means for wetting the image-bearing surface of a photoelectrostatic sheet with a toning liquid;

a means for guiding an edge of the photoelectrostatic sheet, after its image-bearing surface has been wet with toning liquid, into the nip between the said rolls with the image-bearing face of the sheet facing the said roll having the smooth, non-yielding surface;

a source of D.C. voltage;

an electrical line connecting one of the poles of the said source of D.C. voltage and the said roll which has the smooth, non-yielding surface;

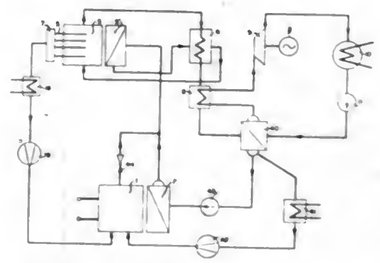
an electrical line connecting the other pole of the source of D.C. voltage and the said roll which has a resilient, electrically-conductive surface;

and, a resistor in at least one of the lines connecting the said source of D.C. voltage with the said rolls.

3,155,547
METHOD FOR PRODUCING ELECTRIC ENERGY FROM NUCLEAR REACTIONS

Manfred Siebker, Gummersbach, Rhineland, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Rhineland, Germany

Filed Apr. 20, 1959, Ser. No. 807,361
8 Claims. (Cl. 136—86)



1. A method of producing electric energy from heat derived from atomic nuclear reactions, which includes the steps of: circulating steam through a nuclear reactor, dissociating said steam in said reactor by the heat freed at high temperature in said reactor, separating the dissociated components of said steam, cooling the thus separated components, converting the potential electrochemical energy of said dissociated components directly into electric energy by means of an electrochemical fuel cell, and following the passage of the said components through said electrochemical fuel cell, affecting a recuperative working by the heat freed during the cooling off of the separated components.

3,155,548
PENETRATION HARDENING TREATMENT FOR IRON AND STEELS

Katsuyo Ashikari, 74 1-chome, Higashita-Machi, Suginami-ku, and Kishichi Tanabe, 2557 2-chome, Koiwa-Machi, Edogawa-ku, both of Tokyo-to, Japan

Filed Oct. 30, 1961, Ser. No. 148,503
Claims priority, application Japan, Oct. 11, 1961, 36,247/61
2 Claims. (Cl. 148—13.1)

1. A process of hardening steel articles by a penetration treatment, which comprises heating said steel articles at a temperature of from 850° C. to 1100° C. in contact with a penetrating and diffusing agent in powder form consisting essentially of a carbide selected from the group consisting of tungsten carbide, titanium carbide, molybdenum carbide, boron carbide, zirconium carbide, tantalum carbide and mixtures thereof, a metal in powder form selected from the group consisting of molybdenum, titanium, cobalt, nickel, copper, zirconium, niobium, and mixtures thereof, and an ammonium salt selected from the group consisting of ammonium tungstate, ammonium molybdate, para ammonium tungstate, and mixtures thereof, thereby causing the metallic components of said agent to penetrate and diffuse into the surface and subsurface regions of said steel articles.

3,155,549
STEEL FOR HIGH TEMPERATURE CEMENTATION

Hajime Nakamura, Tokyo-to, Japan, assignor to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

Filed Jan. 4, 1962, Ser. No. 164,290
Claims priority, application Japan, Mar. 11, 1961, 36/8,485
4 Claims. (Cl. 148—39)

1. A case carburized steel having the approximate composition:

0.05%–0.25% carbon
0.15%–0.40% silicon
less than 1% manganese

said steel having been carburized at a temperature of above about 925° C. and containing in the carburized state between about 0.04% and about 0.10% precipitated aluminum nitride and from about 0.001% to 0.05% of dissolved metallic aluminum.

3,155,550
HEAT TREATMENT OF CHROMIUM-FREE STEEL BEARINGS

Joseph R. Mitchell, Chicago, Mary E. Potter, Thornton Township, Cook County, and Edmond J. Whittenberger, Homewood, Ill., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Sept. 15, 1961, Ser. No. 138,277
2 Claims. (Cl. 148—134)

1. The method of producing steel suitable for bearings characterized by good wear resistance and stress resistance at temperatures above 300° F., comprising making chromium-free steel containing

.80 to 1.20% carbon
.95 to 1.50 manganese
.20 to .90 silicon
.10 to .35 molybdenum
.05 maximum aluminum

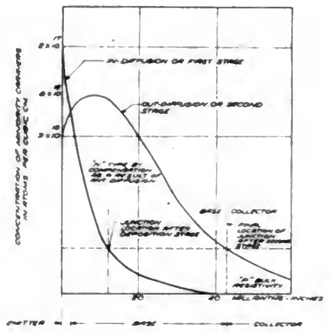
with the balance iron and residual impurities, spheroidizing said steel by heating it to between 1225 and 1275° F. and holding for 2 to 4 hours, raising the temperature thereof to 1375 to 1425° F. and holding for 1 to 3 hours, reducing the temperature to between 1225 and 1275° F. and holding for 1 to 3 hours and cooling therefrom at a rate of 5 to 15° F. per hour to below 1200° F. and then transforming the steel to a microstructure composed essentially of martensite by heating it to between 1475 and 1575° F. and quenching.

3,155,551
DIFFUSION OF SEMICONDUCTOR BODIES

Wesley F. Bennett, Reading, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 28, 1959, Ser. No. 849,413
5 Claims. (Cl. 148—191)

1. The process of making a junction semiconductor body which comprises the steps of placing a semiconductor wafer of a first conductivity type in a first chamber, heating the wafer to a temperature below its melting point in a first stream exclusively of flowing non-oxidizing gas, introducing doping vapor of a significant impurity of the opposite conductivity into the gas at an upstream position relative to the wafer, exposing a face of the wafer to the doped stream for a given time to diffuse the doping vapor to form a junction therein, ceasing to introduce the doping vapor into the non-oxidizing gas stream, cooling the wafer, transferring the wafer to a second chamber substantially free of traces of said significant impurity, heating and wafer for a prescribed time and temperature in a second stream of non-oxidizing gas to produce outdiffusion of said significant impurity from the wafer into the gas stream and a substantial reduction of the significant impurity concentration in the vicinity of said wafer face, and cooling the wafer.



3,155,552
CASTABLE EXPLOSIVE COMPOSITION

Calvin W. Vriesen, Brookside, Newark, Del., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

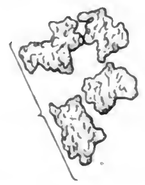
No Drawing. Filed Mar. 8, 1961, Ser. No. 94,395
7 Claims. (Cl. 149—19)

1. An explosive composition essentially composed of 50% to 80% by weight of hydrazine nitrate and 13% to 40% by weight of a cured carboxyl-terminated linear polyester binder cured through the carboxyl terminals thereof, said linear polyester, prior to curing, having a molecular weight of 500 to 5,000 and being the condensation product of a polycarboxylic acid and a polyhydric alcohol, said acid containing at least 24% by weight oxygen and said alcohol containing at least 15% by weight oxygen.

3,155,553
ELECTRICAL DETONATOR

Daniel D. Taylor, Altadena, and Carle C. Brawner, Monrovia, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Oct. 24, 1961, Ser. No. 147,354
5 Claims. (Cl. 149—21)



1. In a conductive mixture for use in an electrical detonator, said mixture containing finely divided detonating material and particles of an electrically conductive material, the improvement wherein the particles of electrically conductive material comprise gold powder with at least 90% of the particles of the gold powder having a maximum dimension of not greater than 15 microns, said gold powder comprising 1% to 25% of said mixture by weight.

3,155,554
LIQUID BLANKETED CHLORATE BLASTING AGENT

Melvin A. Cook, Thomas K. Collins, Wallace D. Pack, and Noel L. Cook, Salt Lake City, Utah, assignors to Intermountain Research and Engineering Company, Inc., Salt Lake City, Utah, a corporation of Utah

No Drawing. Filed May 10, 1961, Ser. No. 109,481
7 Claims. (Cl. 149—77)

1. A blasting agent comprising a uniform mixture of sodium chlorate particles and a liquid fuel, said mixture having substantially zero oxygen balance and all available free space between the sodium chlorate particles filled with the liquid fuel.

3,155,555
FAST BURNING FUELS CONTAINING MERCAPTAN-PEROXIDE REACTION PRODUCTS

John E. Mahan and Cleveland R. Scott, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 11, 1952, Ser. No. 303,814
22 Claims. (Cl. 149—46)

1. A propellant comprising from 20 to 90 percent by weight of an oxidant and from 80 to 10 percent by weight of a fuel component consisting essentially of the reaction product of a mercaptan and a first peroxide; said oxidant being selected from the group consisting of persulfuric acid, peracetic acid, fuming nitric acid, an inorganic strong oxidizing salt, barium peroxide, calcium peroxide and hydrogen peroxide; said reaction product having been obtained by reacting said first peroxide and said mercaptan in a mol ratio of at least 1:1; said mercaptan having a structural formula of R'SH wherein R' is selected from the group consisting of an acyclic carbon to carbon unsaturated hydrocarbon radical having from 3 to 10 carbon atoms, said hydrocarbon radical substituted with a nitro group, and said hydrocarbon radical substituted with a hydroxy group; said first peroxide being selected from the group consisting of M_2O_2, $M'O_3$, and R_2O_2, wherein M is an alkali metal, wherein M' is an alkaline earth metal, wherein each R is selected from the group consisting of: a hydrogen atom; an alkyl, aryl, alkaryl, aralkyl, alkenyl, cycloalkyl, and cycloalkenyl radical; a nitro-substituted alkyl, aryl, alkaryl, aralkyl, alkenyl, cycloalkyl, and cycloalkenyl radical; a hydroxy-substituted alkyl, aryl, alkaryl, aralkyl, alkenyl, cycloalkyl, and cycloalkenyl radical; and a halogen substituted alkyl, aryl, alkaryl, aralkyl, alkenyl, cycloalkyl, and cycloalkenyl radical, said radicals containing from 4 to 24 carbon atoms per molecule.

3,155,556
METHOD FOR GLOSSING ARTICLES MADE OF ALUMINUM AND PARTICULARLY PURE ALUMINUM AND ITS ALLOYS

Heinrich Neunzig, Gindorf, near Grevenbroich, Germany, assignor to Vereinigte Aluminium-Werke A.G., Bonn, Germany

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,180
Claims priority, application Germany, Jan. 13, 1960, V 17,876
10 Claims. (Cl. 156—21)

1. A treating solution to form a glossy surface on a body of a substance belonging to the group consisting of aluminum having a purity of up to 99.95% and of alloys of said aluminum adapted to be lustered followed by electrolytic oxidation, said treating solution consisting of an aqueous solution containing the equivalent of between 100 and 160 cc. 54% nitric acid; the equivalent of between 25 and 40 cc. 70% hydrofluoric acid; and water to form one liter of an aqueous solution of nitric acid and hydrofluoric acid wherein there is added to the thus formed solution between 40 and 70 grams lead-free ammonium fluoride; an amount of lead equivalent to between 0.2 and 0.6 gram lead nitrate and being present in the form of a water soluble lead salt; and between 5 and 100 grams gum arabic.

4. In a method of forming a glossy surface on a body of a substance belonging to the group consisting of aluminum having a purity of up to 99.95% and of alloys of said aluminum adapted to be lustered followed by electrolytic oxidation, the step of treating said surface at a temperature of between about 65 and 85° C. for between about 40 and 60 seconds with an aqueous solution containing the equivalent of between 100 and 160 cc. 54% nitric acid; the equivalent of between 25 and 40 cc. 70% hydrofluoric acid; and water to form one liter of an aqueous solution of nitric acid and hydrofluoric acid wherein there is added to the thus formed solution between 40 and 70 grams lead-free ammonium fluoride; an amount of lead equivalent to between 0.2 and 0.6 gram lead nitrate and being present in the form of a water soluble lead salt; and between 5 and 100 grams gum arabic.

3,155,557
METHOD OF MANUFACTURING IMITATION FUR FROM CHENILLE YARNS

Piotr Filippovich Sapilevsky, Moscow, U.S.S.R., assignor to Moscovsky Experimentalny Zavod iskoostvennoi Kozhi e mekha, Moscow, U.S.S.R.

Filed Apr. 4, 1960, Ser. No. 23,873
1 Claim. (Cl. 156—72)

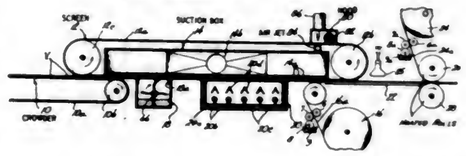


A method of producing imitation fur from chenille yarns having twisted thread cores, said method comprising the steps of untwisting the cores of the chenille yarns to facilitate subsequent removal thereof, adhesively securing the chenille yarns with the untwisted cores to a fabric backing, cutting the threads of said cores into lengths of 10 to 30 millimeters, and removing the cut core threads and any loose components of the chenille yarns not attached to the backing by a combing operation to eliminate any stiffness imparted to the imitation fur due to the presence of such core threads.

3,155,558
METHOD AND MEANS FOR PATCHING VENEER AND MANUFACTURING PAPER - OVERLAID VENEER

Charles C. Clapp, Tacoma, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Apr. 6, 1959, Ser. No. 804,492
10 Claims. (Cl. 156—94)



1. A continuous method of patching veneer to plug a hole therein comprising the steps of

applying a perforate external backing surface to the upper face of said veneer,

applying a suction to said veneer through said external backing surface to maintain said veneer in contact with said backing surface,

propelling particulate thermoactive material upwardly from beneath said veneer to fill said hole in said veneer with enough of said material to completely fill said hole when said material has been activated,

heating said material on the lower face of the veneer during the application of said suction to effect at least partial solidification thereof at said lower face and to a limited depth terminating short of said upper face in contact with said surface,

removing said heat from said lower face,

continuing said suction during formation of a retentive crust on said material, continuing said suction until said veneer is deposited onto a lower support,

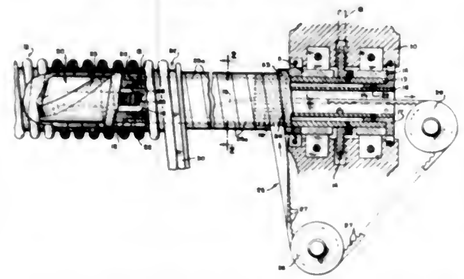
removing said suction and said perforate backing surface from said veneer, and

further heating said material to activate said material in said hole, whereby a substantially solid plug is formed in such hole.

3,155,559
METHOD AND APPARATUS FOR FORMING AND CONTINUOUSLY ADVANCING A HELICALLY WOUND MANDREL SURFACE

Marcus A. Hall, Branford, Conn., assignor to Flexible Tubing Corporation, Guilford, Conn., a corporation of Connecticut

Filed May 17, 1962, Ser. No. 195,517
14 Claims. (Cl. 156—195)



12. A continuous method of making indefinite length articles from at least one extended fabricating element which comprises:

(*a*) forming an elongated circumferentially complete mandrel surface by arranging a flexible belt helically with its successive convolutions adjoining one another.

(*b*) continuously translating all of said complete mandrel surface in a longitudinal direction,

(*c*) continuously collapsing all of said complete mandrel surface at that end thereof which is forward in relation to said direction of translation,

(*d*) continuously replacing said complete mandrel surface at that end thereof which is rearward in relation to said direction of translation, and

(*e*) continuously applying said extended fabricating element to said mandrel surface adjacent said rearward end so that it advances continuously from said forward end in the form of said article.

3,155,560
METHOD OF MAKING A FILTER

Ragnar E. Onstad, Milton J. Shoemaker, Stanley H. Frohmader, and Carl B. Rowe, all of Madison, Wis., assignors to Research Products Corporation, Madison, Wis., a corporation of Wisconsin

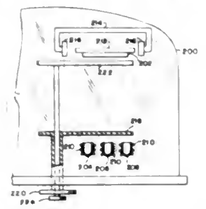
Filed Nov. 3, 1958, Ser. No. 771,330
7 Claims. (Cl. 156—222)

1. A method for making a rigid filter comprising the steps of stacking a plurality of layers of expanded malleable metal foil, applying a settable liquid bonding composition to the stack and distributing the composition throughout the thickness thereof, applying a moderate pressure to said stack to increase the number of points of engagement of adjacent layers, and causing said composition to set while said stack is so pressed together to bond engaging elements of said expanded metal foil layers together.

3,155,561
METHODS FOR MAKING LAMINATED STRUCTURES

Sidney M. Rubens, St. Paul, Minn., Arthur V. Pohm, Ames, Iowa, and Charles D. Olson, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1960, Ser. No. 13,361
7 Claims. (Cl. 156—278)

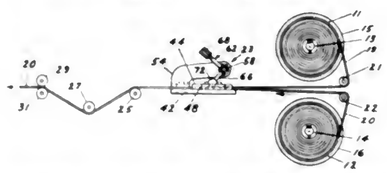


1. A method for making a magnetic device comprising forming at least one discrete area of magnetic material on a substrate, evaporatively forming in a vacuum a printed circuit winding adjacent the magnetic area and substrate combination, evaporatively forming in a vacuum a layer of electrical insulation adjacent said winding, evaporatively forming in a vacuum a second printed circuit winding on said insulation layer, evaporatively forming in a vacuum a second insulation layer on said second winding, and evaporatively forming in a vacuum a third printed circuit winding on said second layer of insulation to form a laminated magnetic structure.

3,155,562
SPLICING DEVICE

James K. Pope, Mount Clemens, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,172
4 Claims. (Cl. 156—504)



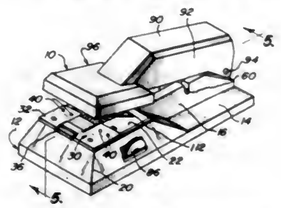
1. Apparatus for splicing web material comprising web supply means for holding segments of web material, withdrawal means for withdrawing web material from said supply means, guide means positioned between said withdrawal means and said supply means defining a path for the passage of web material between said supply means and said withdrawal means, platen means on one side of said path, movable pressure means on the opposite side of said path constructed and arranged to rest upon said platen means, to exert a constant predetermined pressure in the direction of said platen means, and to be moved out of contact with said platen means for a distance sufficient to admit interposition of two superimposed web segments between said pressure means and said platen means, said supply means including a first reel means and a second reel means each adapted for releasably holding a web segment having a lead end for threading between said

platen means and said pressure means and a rear end secured to and trailing a pressure-sensitive element for splicing said rear end to the lead end of another web segment, said pressure means including pressure adjustment means adapted to permit adjustment of the pressure exerted in the direction of said platen means by said pressure means to a pressure sufficient to hold in place a first web segment in contact with said pressure means while a second web segment positioned between said first web segment and said platen means is drawn from said supply means by said withdrawal means, and to effect splicing of said first web segment with said second web segment upon withdrawal of said second web segment from contact with said first web segment by forcing said first web segment against said pressure-sensitive element with a force sufficient to effect said splicing.

3,155,563
MOTION PICTURE FILM SPLICING DEVICE

Leif G. Jorgensen, 517 W. St. Charles Road, Lombard, Ill.

Filed Feb. 21, 1963, Ser. No. 260,277
17 Claims. (Cl. 156—505)



17. A device for splicing adjacent ends of a pair of motion picture film strips by wrapping them with a band of adhesive, transparent tape from roll stock, comprising:

(*a*) a base member including a deck with an opening extending therethrough;

(*b*) a film retaining and transporting carriage movably mounted on said deck for reciprocal movement between first and second positions located on opposite sides of said opening;

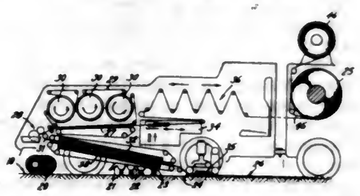
(*c*) means for feeding a free end of said tape through said opening and across said film strip ends when said carriage is at said first position, so that when said carriage is moved across said opening from said first position to said second position the tape will be wrapped around said film ends; and

(*d*) cutting means for severing said tape at the side edges of said film strip ends.

3,155,564
ROAD MARKING DEVICES

Gino Luigi Eigenmann, 11 Via Spinola, Milan, Italy

Filed Sept. 11, 1961, Ser. No. 137,458
Claims priority, application Switzerland, Sept. 10, 1960, 10,272/60 and 10,273/60
2 Claims. (Cl. 156—575)



1. In a road marking apparatus for adhesively applying strip sections of strip material in longitudinally spaced relationship from a vehicle travelling at a given speed along a road surface onto said road surface, in combination,

supply means for supplying said material;

feeding means for feeding said material from said supply means to a position of application of said material to said road surface;

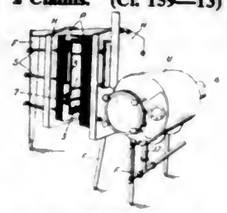
adhesive means for applying a high viscosity adhesive to said road surface, said adhesive means comprising a supply roller, a source of high viscosity adhesive opening onto the surface of said supply roller and rotary brush means in operative contact with the surface of said supply roller and with said road surface ahead of said position of application for brushing the high viscosity adhesive applied to said supply roller on said road surface to evenly distribute said adhesive material on said road surface; and

pressing means for yieldably pressing said material on said road surface at said position of application for a time sufficient to enable substantial setting of said high viscosity adhesive.

3,155,565
FLAT FILM EVAPORATION LIQUID CONCENTRATION METHOD

Hugh Frederick Goodman, London, England, assignor to A.P.V. Company Limited, Crawley, England

Filed Sept. 16, 1960, Ser. No. 56,450
Claims priority, application Great Britain, Mar. 21, 1956, 8,842/56
2 Claims. (Cl. 159—13)



1. In a method of concentrating liquid products by film evaporation, flowing a liquid product to be concentrated in confined, determinate substantially flat thin film form over a plurality of spaced substantially flat parallel heating surfaces; flowing a heating medium between adjacent heating surfaces isolated from the flow of said product over said surfaces for heating said product through said surfaces and evaporating a fraction of said liquid product while flowing in said confined, determinate substantially flat thin film form; and exhausing concentrated liquid and liberated vapour in a long narrow confined determinate band directly from the path of thin film flow thereof over said heating surfaces into and out through an outlet passage large in relation to the cross section of the thin film flow.

3,155,566
LOW FRICTION MATERIAL AND DEVICE

Edward W. Fisher, Palmyra, N.Y., assignor to Garlock Inc., Palmyra, N.Y., a corporation of New York

Filed June 13, 1960, Ser. No. 35,644
12 Claims. (Cl. 161—95)



1. A low friction device having a bearing surface comprising an elastomeric core material and outer low friction fabric material consisting of a polymeric fluorocarbon, said low friction fabric material in a woven configuration, and said elastomeric material dispersed throughout the interstices of said fabric material, such that the bearing surface formed by said fabric material has the ability to retain its shape and properties under varying working temperature and pressure conditions.

3,155,567
SILICEOUS FIBER MATS AND METHOD OF MAKING SAME

Claude F. Harr, Toledo, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 9, 1962, Ser. No. 236,703
8 Claims. (Cl. 161—170)

8. A glass fiber mat, characterized by good water repellent and insulating properties, having a density up to about 3 lbs./cu. ft. comprised of a mass of individual discontinuous fibers bonded together at their intersections with between 15 and 25% by weight of said mat of a cured thermosetting resin modified by a silicone resin in an amount between 0.1 and 2.5% by weight of said thermosetting resin, said mat having aerosol particles uniformly dispersed throughout of a silicone polymer catalyzed by a compound selected from the group consisting of amino silanes and metallic octoates, and further characterized by the silicone polymer and catalyst each being present in the amount between about 0.1 and 5.0% by weight of said mat, said aerosol particles having an average size between about ½ and 10 microns.

3,155,568
STABILIZED INSECTICIDE FORMULATIONS

John M. Surgant, Richmond Heights, and Robert A. Conkin, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 23, 1960, Ser. No. 10,076
7 Claims. (Cl. 167—22)

1. A heat stabilized insecticidal composition comprising 55 to 97% by weight of inert pulverulent solid particles, from 2 to 40% by weight of a phosphorothioate of the group consisting of O,O-dimethyl O-p-nitrophenyl phosphorothioate, O,O-diethyl O-p-nitrophenyl phosphorothioate and S-[1,2-bis(ethoxycarbonylethyl)]-O,O-dimethyl-phosphorodithioate, from 0.05 to 10% by weight of an alcohol selected from the group consisting of alkyl alcohol having from 4 to 18 carbon atoms, cyclopentanol and cyclohexanol; and from 0.05 to 10% by weight of dialkyl sulfate, wherein the alkyl radical has up to 18 carbon atoms.

3,155,569
DICHLOROTOLUENE NEMATOCIDE

Adolph J. Deinet, Woodcliff Lake, N.J., assignor, by mesne assignments, to Heyden Newport Chemical Corporation, a corporation of Delaware

No Drawing. Filed July 10, 1961, Ser. No. 122,637
2 Claims. (Cl. 167—30)

2. The method of combating nematodes which comprises contacting the nematodes with a toxic amount of dichlorotoluene having the two chlorine atoms on the benzene ring.

3,155,570
SYNERGISTIC MIXTURE OF PARATHION AND ITS ORTHO-ISOMER

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 19, 1962, Ser. No. 203,467
Claims priority, application Germany July 7, 1961
2 Claims. (Cl. 167—30)

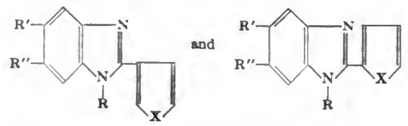
1. A pest control composition containing an effective amount of a mixture of (A) a component selected from the group consisting of (1) O,O-diethyl-O-p-nitrophenyi thionophosphate and (2) O,O-dimethyl-O-p-nitrophenyl thionophosphate and (B) A component selected from the group consisting of (1) O,O-diethyl-o-nitrophenyl thionophosphate and (2) O,O-dimethyl-o-nitrophenyl thionophosphate wherein the ratio of A to B is about 1:1 parts by weight.

3,155,571
ANTHELMINTIC COMPOSITIONS AND METHODS OF USING SAME

Lewis H. Sarett, Princeton, and Horace D. Brown, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 4, 1960, Ser. No. 26,700
8 Claims. (Cl. 167—53)

1. A supplement composition for incorporation in animal feeds which comprises a grain carrier having dispersed therein from about 5% to about 50% by weight of a compound selected from the class consisting of compounds having the formula



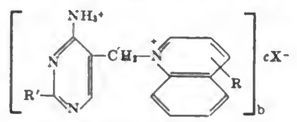
wherein R is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl, R' and R'' are selected from the group consisting of hydrogen, lower alkyl and lower alkoxy and X is selected from the group consisting of O, S, and NH, and the non-toxic acid addition salts thereof.

3,155,572
COMPOSITIONS AND METHODS FOR TREATING COCCIDIOSIS

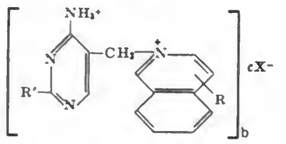
Edward F. Rogers, Middletown, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 13, 1959, Ser. No. 805,738
9 Claims. (Cl. 167—53.1)

1. A composition useful against coccidiosis that comprises a solid nutritive poultry feed additive having intimately dispersed therein a quaternary salt selected from the class consisting of a compound having the formula—



and compounds having the formula—



wherein R and R' are lower alkyl groups, X is a non-toxic anion, and *b* and *c* are positive numbers of such value that *b* moles of cation are neutralized by *c* moles of anion X.

3,155,573
INHALANT COMPOSITION AND METHOD OF MAKING SAME

Frank Fowler, Wilmslow, England, assignor to Benger Laboratories Limited, Holmes Chapel, England

Filed Feb. 26, 1959, Ser. No. 795,855
Claims priority, application Great Britain May 6, 1958
3 Claims. (Cl. 167—54)

1. A medicament comprising therapeutically active mutually non-adherent solid particles embodying a solid

lower molecular weight dextran base carrying a therapeutically active agent selected from the group consisting of isoprenaline and chymotrypsin, the medicament having at least about 80% by weight of the particles with diameters from about 2 to about 6 microns and with less than 10% by weight of the particles having diameters below about 1 micron.

3,155,574
AEROSOL COMPOSITION
John E. Silson, Pleasantville, and John Frangos, Brooklyn, N.Y., assignors to Revlon, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 24, 1962, Ser. No. 197,284
11 Claims. (Cl. 167—54)

1. An aerosol composition comprising a liquefied propellant, nitroglycerin and a non-volatile liquid desensitizing agent therefor, and an agent solubilizing said nitroglycerin in said propellant.

3,155,575
COMPOSITION FOR INHIBITING PEPSIN ACTIVITY AND METHOD OF PREPARING SAME
John Doczi, Morristown, Fred C. Ninger, Livingston, and Harold I. Silverman, West Orange, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Dec. 16, 1960, Ser. No. 76,143
4 Claims. (Cl. 167—55)

1. A method of preparing a composition capable of inhibiting pepsin activity which comprises treating an aqueous solution of an acid salt of chitosan at a pH range of from about 2.5 to about 3 with sufficient sodium aluminate to bring the pH range of about 6.5 to 12 and recovering the precipitate which forms.

4. A composition prepared by the process of claim 1.

3,155,576
ULCER THERAPY COMPOSITION AND METHOD OF USING SAME
Paul M. Lish, Hugh D. Bryan, and Neil H. Mercer, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
No Drawing. Filed May 8, 1962, Ser. No. 193,301
3 Claims. (Cl. 167—55)

1. The process which comprises orally administering to a host suffering from ulcers a therapeutically effective amount of an antacid and a dose of from 1 to 400 mg. per kilogram of body weight of said host of an aluminum hydroxide-dioctyl sulfosuccinate complex containing from about 1 to about 3 molecular proportions of aluminum hydroxide per molecular proportion of dioctyl sulfosuccinate and on a weight basis from 4.5 to 13.7 percent aluminum, from 4.0 to 7.3 percent sulfur, and up to about 20 percent water, such that the periods of pharmacological effectiveness of said antacid and said aluminum hydroxide dioctyl sulfosuccinate complex overlap.

3,155,577
TASTELESS DIOCTYLSULFOSUCCINATE COMPOSITION AND METHOD OF MAKING SAME
Neil H. Mercer and Hugh D. Bryan, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
No Drawing. Filed May 8, 1962, Ser. No. 193,300
16 Claims. (Cl. 167—56)

1. An odorless, relatively tasteless, homogeneous, essentially water insoluble, white friable solid aluminum hydroxide dioctyl sulfosuccinate complex containing from about 1 to about 3 molecular proportions of aluminum hydroxide per molecular proportion of dioctyl sulfosuccinate and on a weight basis from 4.5 to 13.7% aluminum, 4.0 to 7.3% sulfur, and up to 20% water.

3,155,578
ANTIBIOTIC A22765 AND PROCESS OF PRODUCTION
Ernst Gaeumann, Zurich, Ernst Vischer, Basel, and Hans Bickel, Binningen, Switzerland, assignors to Ciba Corporation, a corporation of Delaware
Filed Mar. 15, 1961, Ser. No. 95,882
Claims priority, application Switzerland, Mar. 17, 1960, 3,040/60
23 Claims. (Cl. 167—65)

1. Process for the manufacture of an antibiotic, which comprises cultivating a member selected from the group consisting of *Streptomyces aureofaciens* NRRL 2858, A22083, A22141, A22652, A22931, A23269, A23344, A23978, A24034, A24066, A24292, A25536, A25699, A26043, A26393, A25467 and A26581 in an aqueous medium under aerobic submerged conditions, in a nutrient solution containing an assimilable carbon source, nitrogenous compounds and inorganic salts until the culture displays a substantial antibiotic action and the antibiotic A22765 is then isolated from the nutrient solution.

20. The antibiotic A22765 prepared by the process of claim 1, having the R*f* values 0.25, 0.35, 0.50, 0.65, 0.69, 0.70, 0.72, 0.75 and 0.85 in the solvent systems (1) 4 n-butanol:1 glacial acetic acid:5 water, (2) 4 n-butanol:1 glacial acetic acid:2 water, (3) 60 n-propanol:4 pyridine:40 water, (4) 10 n-propanol:1 glacial acetic acid:25 water, (6) 25 n-butanol:25 ethanol:3 glacial acetic acid:47 water, (7) 60 acetone:3 glacial acetic acid:37 water, (8) 3 methanol:0.1 N-HCl in water and (9) 1 n-butanol:1 glacial acetic acid:2 water, respectively and its pharmaceutically useful acid-addition salts.

3,155,579
THERAPEUTIC COMPOSITION FOR THE TREATMENT OF DISTURBANCES OF THE WATER METABOLISM CHARACTERIZED BY AN INSUFFICIENT ELIMINATION OF WATER
Marcel Perrault, Paris, France, assignor to Laboratoires Laroche Navarron, Levallois, Seine, France, a French body corporate
Filed June 22, 1961, Ser. No. 118,843
5 Claims. (Cl. 167—65)

1. Orally administrable therapeutic composition for the treatment of disturbances of the water metabolism, characterized by insufficient elimination of water in unit dosage form, comprising the compound tectochrysin in an amount suitable for the daily oral administration of from about 1 gram to about 10 grams of said compound, and an orally administrable inert vehicle.

3,155,580
ANTIBIOTIC COMPOSITION
Malcolm E. Bergy and Ross R. Herr, Kalamazoo, and Donald Joseph Mason, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 30, 1961, Ser. No. 134,843
6 Claims. (Cl. 167—65)

3. The process for treating a bacterial disease in humans and animals which comprises the administering to the bacterial host a therapeutic amount of a member selected from the group consisting of lincolnensin and its pharmacologically acceptable acid addition salts in combination with a pharmaceutical carrier.

3,155,581
ANTIBIOTIC AND PRODUCTION THEREOF
Sylvie Pinnert, Léon Ninet, and Jean Preud'homme, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
Filed Feb. 16, 1962, Ser. No. 173,770
Claims priority, application France Feb. 24, 1961
6 Claims. (Cl. 167—65)

1. An antibiotic, herein designated 9671 RP, which is a yellow substance, crystallising as fine needles, melting

point 310–320° C. with decomposition on a Maquenne block, and having an optical rotation $[\alpha]_D^{20}=+38°$ (c=1, pyridine), analysing with the elementary composition C, 49.6%; H, 4.0%; O, 16.7%; N, 14.4%; S, 15.75–15.80%, having an ultra-violet spectrum in solution in water containing dimethylformamide exhibiting two absorption maxima at

242 mμ ($E_{1cm}^{1\%}=525$) and 322 mμ ($E_{1cm}^{1\%}=229$)

exhibiting the following principal infra-red absorption bands 3350 strong, 3125 shoulder, 2930 shoulder, 1745 medium, 1655 very strong, 1532 very strong, 1484 strong, 1425 medium, 1385 weak, 1342 medium, 1308 medium, 1235 medium, 1210 medium, 1168 medium, 1150 medium, 1112 shoulder, 1101 medium, 1061 medium, 1017 medium, 990 weak, 940 weak, 918 medium, 890 shoulder, 843 medium, 822 weak, 790 medium and 752 strong, the said antibiotic being soluble in chloroform, dioxane, pyridine, dimethylformamide and dimethylsulphoxide, slightly soluble in methanol, ethanol, ethyl acetate and benzene and insoluble in water and petroleum ether.

3,155,582
ANTIBIOTIC M-319
Thomas Josephus Oliver, Zion, and Arthur Charles Sinclair, Lake Bluff, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1962, Ser. No. 177,289
6 Claims. (Cl. 167—65)

5. An antibiotic substance designated as M-319 hydrochloride having the following properties: Insoluble in water; an empirical formula of $C_{23}H_{21}NO_7.HCl$; an elemental analysis of 59.73% carbon, 4.97% hydrogen, 3.16% nitrogen, 24.02% oxygen and 8.16% chlorine; an equivalent weight of 460; decomposes at 220°–230° C.; an optical rotation α_D^{22} of +570° in methanol; pKa values of 3.4, 7.6 and 9.25 when titrated in a 75% methanol-water mixture; an ultraviolet absorption spectrum in 0.01 N methanolic HCl exhibiting maxima of

$E_{1cm}^{1\%}=760$

at 224 millimicrons, 1150 at 275 millimicrons and 190 at 435 millimicrons with minima of 330 at 240 millimicrons and 13 at 345 millimicrons; has X-ray diffraction lines of d=10.8, 8.5, 7.5, 6.5, 5.1, 4.0, 3.65, 3.50 and 3.30 and an infrared absorption spectrum when suspended in hydrocarbon oil in solid form as shown in the drawing.

3,155,583
ANTIBIOTIC NARANGOMYCIN AND METHOD OF PRODUCTION
Koppaka V. Rao, Pinebrook, and William S. Marsh, Wanaque, N.J., and Samuel C. Brooks, Jr., Grosse Pointe, Mich., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed May 18, 1962, Ser. No. 198,402
12 Claims. (Cl. 167—65)

1. A process for the production of narangomycin which comprises cultivating the microorganism *Streptomyces lavenduligriseus* (ATCC No. 13306) in an aqueous nutrient medium containing a carbohydrate and a source of organic nitrogen and inorganic salts under submerged aerobic conditions until substantial antimicrobial activity is imparted to said medium.

4. An antibiotic substance selected from the group consisting of narangomycin, an acidic phenolic compound, the crystalline form of which melts at about 201° to 203° C., is slightly soluble in water, more soluble in buffers having pH values greater than 7, and moderately soluble in lower alcohols, acetone, ethyl acetate, chloroform and benzene and which produces bright yellow solutions in aqueous alkali and a dark greenish-brown color with alcoholic ferric chloride, and capable of forming salts with bases; having absorption maxima in the ultraviolet region of the spectrum at 232, 275 and 263 mu with

$E_{1cm}^{1\%}=308$, 336 and 168, respectively

and when dissolved in chloroform exhibits characteristic adsorption in the infrared region at the following frequencies expressed in reciprocal centimeters: 3436, 2924, 2865, 1709, 1667, 1656, 1629, 1610, 1585, 1502, 1471, 1451, 1387, 1309, 1261, 1171, 1088, 1064, 988, 902, 855, 840, 820; whose dried crystalline form contains the elements carbon, hydrogen and oxygen and methoxyl and C-methyl groups in the following proportions by weight:

Carbon	59.73
Hydrogen	6.15
Oxygen (by difference)	34.12
Methoxyl	7.01
C-methyl	6.18

and the metal salts of said substance.

3,155,584
COMPOSITIONS AND METHOD OF INHIBITING MONOAMINE OXIDASE AND TREATING HYPERTENSION
William B. Martin, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,485
8 Claims. (Cl. 167—65)

1. The method of inhibiting the action of monoamine oxidase in a warm blooded animal which comprises administering to said animal a non-toxic amount of a compound selected from the group consisting of N-methyl-N-propargylbenzylamine and its non-toxic, acid-addition salts sufficient to inhibit the action of monoamine oxidase.

3,155,585
ANTIBIOTIC PRODUCED BY *PSEUDOMONAS SYRINGAE*
James E. De Vay, 1302 B St., Davis, Calif.
No Drawing. Filed Jan. 11, 1963, Ser. No. 250,762
10 Claims. (Cl. 167—65)

6. A process which comprises cultivating *Pseudomonas syringae* in a suitable aqueous nutrient medium, separating and freeze-drying the aqueous phase, extracting the the resulting extract with aqueous ethanol, and subjecting the resulting extract to a chromatographic separation treatment to recover therefrom the antibiotic substance produced in said medium by the *Pseudomonas syringae*.

3,155,586
STABLE LIQUID PREPARATIONS OF 6-DEMETHYLTETRACYCLINES
Charles C. Reed, Trenton, Robert B. Fortenbaugh, Gladstone, and Lewis J. Leeson, Park Ridge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Jan. 23, 1963, Ser. No. 253,284
13 Claims. (Cl. 167—65)

1. A stable liquid antibiotic composition adapted for pharmaceutical use comprising, as vehicle, a physiologically acceptable polyhydric alcohol and dissolved in said vehicle from 10 to 125 mg./ml. of a substance selected from the group consisting of 6-demethyltetracycline, 7-chloro-6-demethyltetracycline. and the non-toxic acid-addition salts thereof, from one to six molar equivalents of a water soluble, physiologically acceptable salt of magnesium per mole of antibiotic, and having an apparent pH of 1.5 to 5.0.

3,155,587
STABLE LIQUID PREPARATIONS OF 7-CHLOROTETRACYCLINE

Charles C. Reed, Trenton, and Robert B. Fortenbaugh, Gladstone, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,285
6 Claims. (Cl. 167—65)

1. A stable liquid antibiotic composition adapted for pharmaceutical use comprising, as a vehicle, from 90% to 95% by weight of a physiologically acceptable polyhydric alcohol and dissolved in said vehicle from 10 to 50 mg./ml. of a substance selected from the group consisting of 7-chlorotetracycline and an acid addition salt thereof, from 1 to 3 molar equivalents of a water-soluble, physiologically acceptable calcium salt per mole of 7-chlorotetracycline having an apparent pH of 7.5 to 10.0.

3,155,588
AVIAN PNEUMOENCEPHALITIS VIRUS VACCINE AND METHOD OF MAKING

Raymond A. Bankowski, Davis, Calif., assignor to The Regents of the University of California, Berkeley, Calif.

No Drawing. Filed Sept. 3, 1957, Ser. No. 681,445
4 Claims. (Cl. 167—78)

1. The method of producing a live virus vaccine for Newcastle disease comprising: propagating and attenuating avian pneumoencephalitis virus by serially passing said virus through a Simms-Sanders solution maintained within in a pH range of 6.8 to 8.0 and containing living chicken tissue until said virus has become attenuated and then propagating the virus so attenuated in an artificial medium containing live bovine kidney tissue, but free of avian tissue.

3,155,589
PARENTERAL EXTRAVASCULAR INJECTABLE VACCINES FOR SIMULTANEOUS IMMUNIZATION OF CANIDAE AGAINST RABIES, CANINE DISTEMPER, AND INFECTIOUS CANINE HEPATITIS

Eben A. Slater, St. Joseph, Mo., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Apr. 14, 1958, Ser. No. 728,045
11 Claims. (Cl. 167—78)

1. Vaccine composition comprising at least two live, attenuated, and immunogenic viruses selected from the group consisting of canine distemper virus propagated in avian embryonic tissues, rabies virus propagated in avian embryonic tissues, and infectious canine hepatitis virus propagated in vitro tissue culture selected from the group consisting of dog kidney epithelial, dog uterine, dog testicular, dog spleen, and pig kidney epithelial cell cultures, said infectious canine hepatitis virus having a titer of at least 10^{-6} $TCID_{50}$ and being substantially avirulent to dogs, which viruses are mutually stable in the presence of each other and components of the tissues in which the viruses are propagated, and capable of instigating the production of specific antibodies in animals of the Canidae family when administered by parenteral extravascular injection.

3,155,590
ENCAPSULATION PROCESS AND ITS PRODUCT

Robert Erwin Miller and Jerrold L. Anderson, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Aug. 2, 1962, Ser. No. 214,183
25 Claims. (Cl. 167—83)

1. A system provided for the en masse encapsulation of minute particles by use of agitation and heat followed by cooling with continued agitation, consisting of

(*a*) a major part by volume of a low-viscosity liquid vehicle consisting in part of a solvent for polymeric film-forming wall material, the other part of the vehicle being a non-wall-forming polymeric material

(*b*) polymeric film-forming wall material of rigid solid characteristics, said polymeric material being soluble in the polymer solvent part of (*a*) when the system is warm to form a separate phase, said film-forming polymeric material being used to the extent that the warm solution of it has a viscosity of 4,000 to 10,000 centipoises and may be broken up as tiny liquid entities in the vehicle by agitation, and

(*c*) particulate core material immiscible with (*a*) or (*b*) but wettable by the warm solution of (*b*), (*b*) plus (*c*) forming less than 30% of the system, so that the particles and the liquid entities may be freely interspersed in the warm vehicle during capsule formation.

3,155,591
HAIR RINSE COMPOSITIONS OF POLYOXYPROPYLENE QUATERNARY AMMONIUM COMPOUNDS

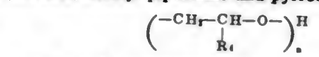
Harry Hilfer, Port Washington, N.Y., assignor to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,581
14 Claims. (Cl. 167—87)

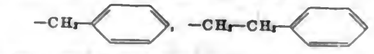
1. A method of treating hair on the human head after shampooing the same to improve its combing properties, which comprises rinsing the shampooed hair with a dilute aqueous solution containing a chemical compound corresponding to the formula



wherein R is alkyl containing from 1 to 2 carbon atoms, R_1 is alkyl containing from 1 to 3 carbon atoms, and compounds wherein R and R_1 are joined together to form with the N atom a member of the group consisting of piperidine, methyl piperidine and pyrrolidine; R_2 is



where R_4 is alkyl containing from 1 to 4 carbon atoms, *n* is a number up to and including 60, the total number of carbon atoms in R_2 being at least 18; R_3 is a member selected from the group consisting of (1) alkyl and alkenyl containing not more than 4 carbon atoms, and (2) benzene; methyl benzenes; ethyl benzenes;



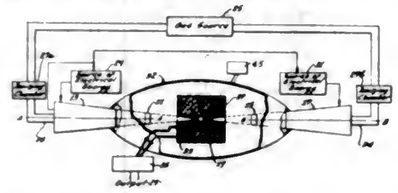
and their methyl and ethyl nuclearly substituted derivatives; and the mono-halo and mono-nitro nuclearly substituted derivatives of the foregoing; and A is an innocuous anion.

3,155,592
FUSION REACTOR

Siegfried Hansen and Glusto Fonda Bonardi, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.

Filed Aug. 19, 1960, Ser. No. 50,610
10 Claims. (Cl. 176—1)

1. In a nuclear fusion reactor for generating energy from a nuclear fusion process resulting from the collision of first and second plasma masses, the combination comprising: a first plasma accelerator including apparatus for positioning the first plasma mass therein and operable for accelerating the first plasma mass along a first accelerating axis, said accelerator discharging the plasma mass having a toroidal shape with its plane substantially normal to said first accelerating axis; and a second plasma accelerator including apparatus for positioning the second plasma mass therein and operable for accelerating the second plasma mass along a second accelerating axis, said accelerator discharging the second plasma mass having a toroidal shape with its plane substantially normal to said second accelerating axis, said second accelerator being

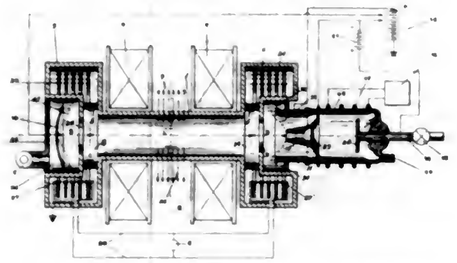


positioned relative to said first accelerator for orienting said second accelerating axis contiguous with said first accelerating axis at a preselected point whereby the first and second plasma masses contact one another at and around the preselected point.

3,155,593
APPARATUS FOR PRODUCING NEUTRONS BY COLLISIONS BETWEEN IONS

Robert R. Warnecke and Hubert Leboutet, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Jan. 19, 1960, Ser. No. 3,361
Claims priority, application France Feb. 2, 1959
19 Claims. (Cl. 176—5)



1. A particle producing apparatus for producing neutrons by the impact of ions within an evacuated enclosure, comprising means for effectively producing a continuous to and fro movement of ion beams within said enclosure including means for bunching and effectively reflecting said ion beams in such a manner that periodic encounters between bunches moving in opposite directions are established within at least one predetermined zone, and means for enabling the escape of neutrons produced by impacts between ions of respective bunches moving in opposite directions.

3,155,594
APPARATUS FOR CONFINING AND HEATING A PLASMA

Bo Peter Lehnert, Sommarvagen 1, Stocksund, Sweden, and Björn Karl Johan Bonnevier, Kopmantorget 12, Stockholm, Sweden

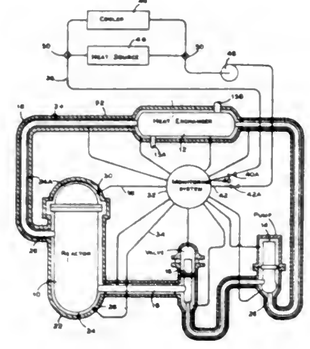
Filed June 10, 1960, Ser. No. 35,207
Claims priority, application Sweden, June 12, 1959, 5,588/59; Dec. 10, 1959, 11,633/59
2 Claims. (Cl. 176—8)

1. A plasma-confining and -heating device, comprising: an annular conductor for generating a magnetic field adapted to confine plasma within a reaction volume defined by two substantially toroidal confining members each coinciding with a field line generated in said magnetic field; means extending inward from said annular conductor for supporting it and for passing therethrough the electric current necessary for the creation of said magnetic field; means for generating an electric field perpendicular to the magnetic field, said last-mentioned means including inner and outer electrodes, each located in one of said toroidal members, and the maximum outer electrode diameter being considerably greater than the minimum diameter thereof.

3,155,595
PREHEATING AND COOLING A NUCLEAR REACTOR SYSTEM

Donald C. Schluderberg, Lynchburg, Va., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 4, 1959, Ser. No. 857,312
1 Claim. (Cl. 176—20)

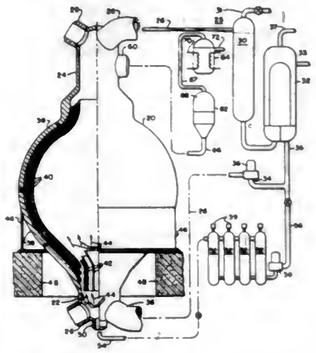


In a nuclear reactor primary coolant system having a closed circuit for the continuous circulation of a primary coolant fluid, said reactor primary coolant system comprising separate components including a reactor and a heat exchanger joined by connecting piping for the flow of primary coolant therethrough, a closely fitting fluid-tight shell enclosing both said components and connecting piping and having a configuration generally conforming to the shape of the contained components and piping and forming therebetween a narrow flow space, the invention comprising an apparatus for selectively preheating and cooling the individual components of said primary coolant system at start-up and shutdown respectively comprising a conduit system having its inlet and outlet connected to said shell and forming a closed circuit with said narrow flow space for circulating a heat transfer fluid therethrough, a heating source disposed in said conduit system, a cooler disposed in said conduit system in parallel with said heating source, and flow control means disposed in said conduit system for selectively directing the flow of said fluid through said heating source and cooler.

3,155,596
METHOD OF OPERATING A NUCLEAR REACTOR

William A. Frederick, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 20, 1957, Ser. No. 704,098
8 Claims. (Cl. 176—21)



1. In a method for starting up a nuclear reactor system employing fissile material at least a portion of which can be circulated through said system to vary the fuel concentration thereof, the steps comprising increasing the concentration of said fissile material from a relatively lower concentration to a low critical concentration at which said fissile material is capable of sustaining a chain reaction, operating said reactor at said low critical concentration until a predetermined quantity of fissional products of said chain reaction are formed, terminating said operation for a period of two to ten hours to permit formation of a reactor poison from said fissional products, and increasing the concentration of said fissile material in said reactor to a high critical concentration at which said fissile material is again capable of sustaining a chain reaction.

3,155,597
EXTRACTIVE SEPARATION PROCESS

David Cornell, Stillwater, Okla., and Gail H. Birum, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 23, 1961, Ser. No. 119,048
19 Claims. (Cl. 202—39.5)

1. The method of separating classes of hydrocarbons from a mixture comprising hydrocarbons of the classes consisting of paraffins, monoolefins, diolefins, naphthenes and aromatic hydrocarbons which comprises contacting the said mixture with an α-oxophosphonate having the following structural formula:

$$(RO)_2-\overset{O}{\overset{\|}{P}}-\overset{O}{\overset{\|}{C}}-R'$$

wherein R represents an alkyl radical and R' is selected from the group consisting of hydrocarbon, alkoxy radicals, aryloxy and alkyl-substituted aryloxy radicals wherein the aryl moiety contains from 6 to 10 carbon atoms and the alkyl substituent contains up to 3 carbon atoms in an extractive distillation separation, withdrawing a vapor fraction containing the more volatile of the said classes, and also withdrawing a liquid fraction containing the less volatile classes dissolved in the said α-oxophosphonate and thereafter separating the individual hydrocarbon classes from each of said fractions by conventional means and stripping the said α-oxophosphonate from the hydrocarbons dissolved therein.

3,155,598
EXTRACTIVE SEPARATION PROCESS

David Cornell, Stillwater, Okla., and Gail H. Birum, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 23, 1961, Ser. No. 119,049
13 Claims. (Cl. 202—39.5)

1. The method of separating classes of hydrocarbons from a mixture comprising hydrocarbons of the classes consisting of paraffins, monoolefins, diolefins, naphthenes and aromatic hydrocarbons which comprises contacting the said mixture with a phosphinylhydrocarbyloxy-silicon compound selected from the class consisting of compounds having the following structural formula:

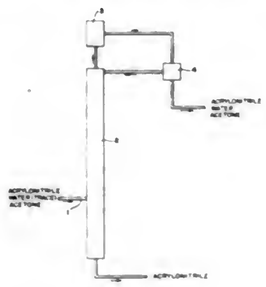
$$R_nSi\left[OCHP(OR)_2\right]_m$$

wherein m is an integer from 1 to 3 inclusive and n equals $4-m$, and R represents an alkyl radical, in an extractive distillation separation, withdrawing a vapor fraction containing the more volatile of the said classes, and also withdrawing a liquid fraction containing the less volatile classes dissolved in the said phosphorus-silicon compound and thereafter separating the individual hydrocarbons from each of said fractions by conventional means and stripping the said phosphorus-silicon compound from the hydrocarbons dissolved therein.

3,155,599
REMOVAL OF SATURATED CARBONYL COMPOUNDS FROM UNSATURATED NITRILES

Gordon G. Cross, Chagrin Falls, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 22, 1962, Ser. No. 218,513
4 Claims. (Cl. 202—42)

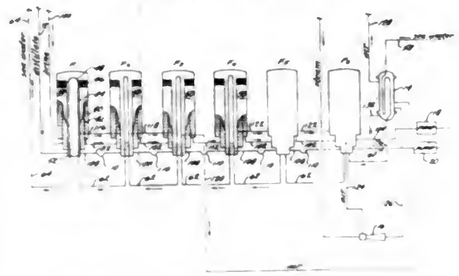


1. The process for purification of a mixture of an olefinically unsaturated nitrile selected from the group consisting of acrylonitrile and methacrylonitrile containing water and small amounts of a saturated carbonyl compound comprising removing water from the mixture of nitrile, water and saturated carbonyl compound at least to the extent that the resultant mixture contains fewer parts by weight of water than of saturaed carbonyl compound and then fractionally distilling the resultant mixture in a distillation zone to recover as overhead substantially the remainder of the water and saturated carbonyl compound and recovering the substantially pure olefinically unsaturated nitrile as bottoms.

3,155,600
MULTI-STAGE PROCESS AND APPARATUS FOR DISTILLING SEA WATER

William R. Williamson, Wethersfield, Conn., assignor to American Machine & Foundry Company, Inc., New York, N.Y., a corporation of New Jersey

Filed May 16, 1960, Ser. No. 29,276
3 Claims. (Cl. 202—53)



1. The method for distilling impure water comprising flowing a continuous stream of impure water through a series of flash evaporators having progressively lower pressures and which pressures are sufficiently low to cause a substantial portion of the impure water passing through each evaporator to be vaporized, said evaporators being divided into first and second groups with the evaporators comprising said second group all being located downstream relative to the flow of impure water from the evaporators comprising said first group, condensing the vapors produced in each evaporator and withdrawing the condensate therefrom, regulating the rate of flow of said impure stream so that by the time a particular quantity of impure water passes through the said first group of evaporators a major portion of the noncondensable vapors entrained therein will be released therefrom into said first group, collecting in each evaporator the noncondensable vapors released from the impure water flowing therethrough, flowing the noncondensable vapors collected in the first evaporator of said first group through the other evaporators of said first group and adding to such flow the noncondensable vapors collected in said other evaporators of said first group, restricting said latter flow as it passes between adjacent evaporators so as to maintain the pressure differential existing between said adjacent evaporators, withdrawing said latter flow from the last of said first group of evaporators at a pressure substantially equal to the pressure of said latter evaporator, flowing the noncondensable vapors collected in the first evaporator of said second group of evaporators through the other evaporators of said second group and adding to such flow the noncondensable vapors collected in said other evaporators of said second group, restricting said latter flow as it passes between adjacent evaporators so as to maintain the pressure differential existing between said adjacent evaporators, and withdrawing said latter flow from the last evaporator of said second group at a pressure substantially equal to the pressure of said latter evaporator.

3,155,601
STABILIZING OF CYANHYDRINS IN ACRYLONITRILE SOLUTIONS

James D. Idol, Jr., Shaker Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,091
2 Claims. (Cl. 202—57)

1. A method of purifying an unsaturated nitrile selected from the group consisting of acrylonitrile and methacrylonitrile containing chemically bound hydrogen cyanide combined with a carbonyl compound in the form of a cyanhydrin said cyanhydrin having the —OH and —CN groups attached to the same carbon atom which normally tends to decompose during the distillation of the unsaturated nitrile and contaminate the distilled product with hydrogen cyanide, which method comprises adding to said unsaturated nitrile 0.001 to 0.1 pound of oxalic acid per 100 pounds of unsaturated nitrile, and distilling the nitrile in the presence of the oxalic acid and recovering said unsaturated nitrile as the overhead.

3,155,602
PREPARATION OF ORGANIC LEAD COMPOUNDS

Jack Linsk, Highland, Ind., and Evan A. Mayerle, Lansing, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

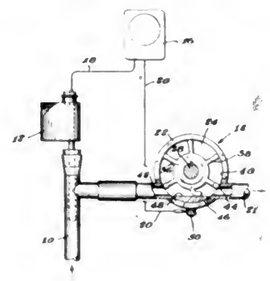
No Drawing. Filed June 13, 1960, Ser. No. 35,441
6 Claims. (Cl. 204—59)

1. In a process for preparing a tetra-alkyl lead compound by electrolyzing an electrolyte comprising an alkyl Grignard reagent, excess alkyl halide, and an ether, with a lead anode, the improvement characterized by superior electrolyte conductivity which comprises effecting said electrolysis in the presence of an ether mixture comprising, in conjoint presence, from about 98 to about 40% by weight of a dialkyl ether of an ethylene glycol having at least two carbon atoms in each alkyl group and not more than two ethylene groups in the glycol portion, and from about 2 to about 60% by weight of tetrahydrofuran.

3,155,603
ANTIMONY ELECTRODE ASSEMBLY

Porter Hart, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 12, 1962, Ser. No. 223,096
9 Claims. (Cl. 204—195)



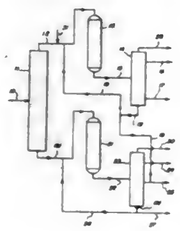
1. An antimony electrode assembly adapted to be used in conjunction with a reference electrode to measure an electrolytic function of a stream which contacts both electrodes, comprising a housing having a hollow inner chamber which has cylindrical side walls and flat end walls, said walls being composed of electrically nonconductive material, a drive shaft being coaxially disposed in said housing with respect to said side walls, an impeller made of electrically nonconductive material and having a hub and an array of flexible vanes, said hub being coupled to said shaft within said chamber, said vanes extending outwardly from said hub to said side walls between said end walls, said vanes extending towards and being close spaced with respect to said end walls, an inlet means and an outlet means, said inlet means and outlet means communicating with said chamber at spaced apart locations, and an antimony electrode,

said antimony electrode being disposed along and secured to said side wall between said inlet means and outlet means, said antimony electrode presenting a smooth continuous surface towards said shaft, a terminal member, said terminal member being disposed externally of said chamber, means coupled to said antimony electrode and extending through said side wall for making electrical contact with said terminal, and means to rotate said shaft.

3,155,604
HYDROCRACKING WITH REDUCED CATALYST AGING

Harry L. Coonradt, Woodbury, and Joseph N. Miale, Runnemede, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Feb. 23, 1960, Ser. No. 10,165
6 Claims. (Cl. 208—78)



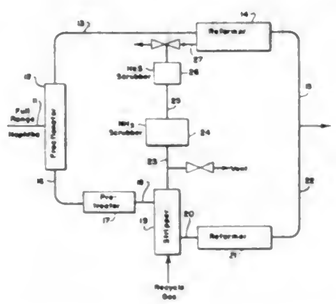
1. A process for hydrocracking a hydrocarbon charge containing at least 1 weight percent pyrenes to lower boiling products, which comprises: dividing said hydrocarbon fraction into a first fraction containing less than 1 weight percent pyrenes and a second fraction containing more than 1 weight percent pyrenes; hydrocracking said first fraction by contacting said first fraction under hydrocracking reaction conditions which include a hydrogen pressure below about 1500 p.s.i.g. with a dual function hydrocracking catalyst which employs at least one noble metal of the platinum and palladium series as a hydrogenation component; hydrocracking said second fraction by contacting said second fraction under hydrocracking reaction conditions with a dual function catalyst which employs a hydrogenation component other than a noble metal of the platinum and palladium series to produce lower boiling products, whereby said charge is converted to high yields of desirable products while the aging of said catalyst is minimized.

3,155,605
REFORMING WITH A STEAMED PLATINUM-ALUMINA CATALYST IN THE PRESENCE OF SULFUR

William H. Lang, Wenonah, and Donald M. Nace, West Deptford Township, Gloucester County, N.J., and Paul B. Weisz, Media, Pa., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Aug. 24, 1961, Ser. No. 133,625
5 Claims. (Cl. 208—79)

2. A process for reforming a desulphurized naphtha hydrocarbon which comprises fractionating said naphtha hydrocarbon to obtain a low boiling naphtha fraction boiling in the range of from about 140° F. to about 300° F. and containing substantially all alkyl cyclopentanes concentrated therein from a higher boiling naphtha portion boiling up to about 400° F. reforming the higher boiling fraction in the absence of sulphur with a platinum reforming catalyst under reforming conditions, reforming the low boiling naphtha fraction in the presence of a severely steamed platinum alumina catalyst under reforming conditions in the presence of added sulphur in amounts ranging from about .001 to about 0.7 weight percent



based on the naphtha charge, and combining the reformed fractions of each step to obtain an improved high octane gasoline.

3,155,606
PROCESS FOR SWEETENING SOUR HYDROCARBONS AND REGENERATING USED CATALYST

Richard H. Coe, Long Beach, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,817
7 Claims. (Cl. 208—203)

1. In a process for the sweetening of mercaptan-containing gasoline having from about 2 to about 20 p.p.m. alkyl phenols which comprises
passing the gasoline
in the presence of an oxygen-containing gas
through a bed of activated carbon, which has been presoaked with an aqueous caustic solution comprising from about 10% to about 20% by weight sodium hydroxide,
until the bed becomes deactivated,
the improvement which comprises thereafter regenerating the bed
at elevated temperatures
by passing water through the bed.

3,155,607
PROCESS FOR THE PRODUCTION OF HEAVY HEATING OILS HAVING LOW SULFUR CONTENTS

Herbert Friess, Gladbeck-Brauck, Germany, assignor to Gelsenberg Benzin Aktiengesellschaft, Gelsenkirchen-Horst, Germany, a German corporation

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,153
Claims priority, application Germany, Mar. 25, 1961, G 31,903
15 Claims. (Cl. 208—212)

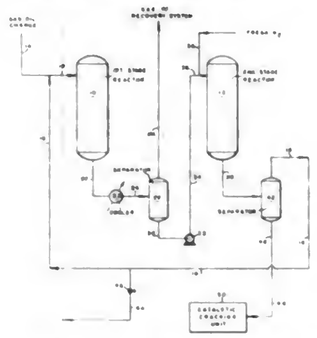
1. A process for preparing heavy heating oils having low sulfur contents comprising the steps of
(1) subjecting an oil residue derived from a member selected from the group consisting of petroleum, oil shale, coal tar, brown coal tar, generator tar, and mixtures thereof (A) to a separation treatment in which said residue (A) is separated into an asphalt and ash rich phase (C) and an asphalt and ash poor heavy oil phase (B);
(2) subjecting the asphalt and ash poor heavy oil phase (B) to a desulfurization treatment to obtain a desulfurized heavy oil phase (E); and

(3) thereafter admixing the asphalt and ash rich phase (C) with the desulfurized heavy oil phase (E) in such quantity relative to said desulfurized heavy oil phase (E) that a heavy heating oil having a low sulfur content not exceeding about 2% is formed.

3,155,608
PROCESS FOR REDUCING METALS CONTENT OF CATALYTIC CRACKING FEEDSTOCK

Jack R. Hopper, Baytown, George P. Reynolds, Jr., Houston, and William B. Franklin, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 1, 1960, Ser. No. 72,998
1 Claim. (Cl. 208—251)

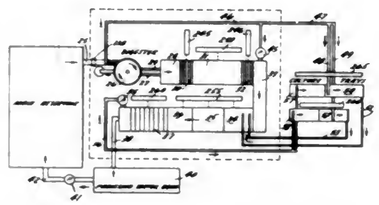


In the process of catalytically cracking, at a temperature of 900° F. to 1000° F. and in contact with a cracking catalyst which is sensitive to nickel, vanadium, and iron, a hydrocarbon stream boiling within the range of 400° F. to 1300° F., having a gravity of 9° API to 30° API and containing about 0.65 p.p.m. nickel, and vanadium and iron contaminants,
the improvement of treating said hydrocarbon stream to remove at least a portion of said contaminants
by hydrotreating the admixture in a first-stage reactor in the presence of a cobalt molybdate catalyst at a temperature within the range from about 730° F. to about 800° F., and a pressure within the range from about 650 p.s.i.g. to about 3000 p.s.i.g.,
a hydrogen charge rate of 350 to 1500 s.c.f./bbl. of hydrocarbon stream,
and a space velocity of 1.0 to 4.5 volumes of hydrocarbon per hour per volume of catalyst,
separating the liquid product of the first-stage reactor from the gaseous effluent thereof,
hydrotreating said liquid product in a second-stage reactor in the presence of a cobalt molybdate catalyst at conditions corresponding to a temperature which is from 50° F. to 150° F. lower than the temperature utilized in the first-stage reactor, and at a pressure which is from 70 p.s.i. to 125 p.s.i. higher than that utilized in the first-stage reactor,
at a hydrogen charge rate of 400 to 1500 s.c.f./bbl. of hydrocarbon feed into the second-stage reactor,
and at a space velocity of from 1.0 to 4.5 volumes of hydrocarbon per hour per volume of catalyst,
separating the effluent of the second-stage reactor into a gaseous portion and a liquid portion,
introducing the gaseous portion into admixture with the hydrocarbon charge stream as said hydrogen-rich gaseous stream,
whereby a charge stock for catalytic cracking is obtained which has a substantially reduced metals content.

3,155,609
STABILIZATION OF A CLOSED OR OPEN WATER SYSTEM THROUGH THE SELECTIVE UTILIZATION OF LIGHT

Leonard Fredrick Pampel, Hales Corners, Wis. (8982 S. 77th St., Franklin, Wis.)

Filed May 9, 1960, Ser. No. 27,620
17 Claims. (Cl. 210—3)

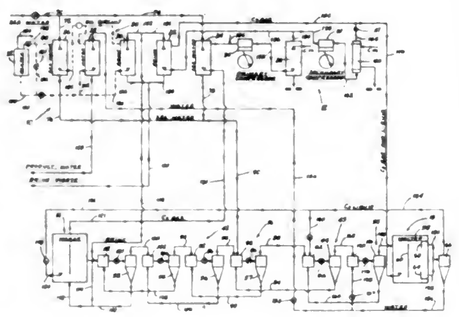


1. A water system having a reservoir connected in a closed main stream circuit having in the following order, a digester, an oxidation turbulence reactor, a photosynthetic process tank, a calcium treatment tank, said system further having a plurality of riffles each provided with a superposed light source; one of said riffles having a superposed light source providing ultra-violet light wave length range below 300 angstroms and another of said riffles having a continuous source of natural light, and means for directing said main stream in said circuit.

3,155,610
HYDRATE FORMING SALINE WATER CONVERSION PROCESS

Virgil C. Williams, St. Louis, Mo., assignor, by mesne assignments, to Sweet Water Development Company, Dallas, Tex., a corporation of Texas

Filed Feb. 8, 1962, Ser. No. 172,030
18 Claims. (Cl. 210—60)

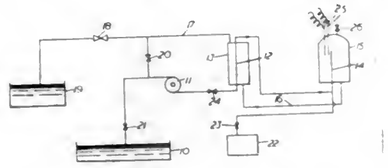


1. A process for reducing the salt content of saline feed water which comprises adding to saline water having a saline concentration greater than that of said saline feed water a gas to form a solid hydrate of said gas with some of the water of said saline water whereby there results a more concentrated saline water, separating the solid hydrate from a major portion of said resulting more concentrated saline water and contacting the solid hydrate with saline water of a concentration at least equal to that of said saline feed water but less than that of said resulting more concentrated saline water to wash occluded saline water therefrom.

3,155,611
APPARATUS FOR TREATMENT OF SEWAGE AND LIKE SLUDGES

Ian King Porteous, Mappleborough Green, Studley, England, assignor to Norstel and Templewood Hawksley Limited, Slough, England

Filed June 22, 1961, Ser. No. 118,810
2 Claims. (Cl. 210—86)



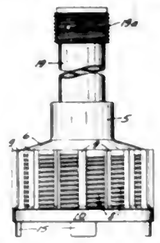
1. Apparatus for the treatment of raw organic sludge, such as raw sewage sludge, comprising the combination of a sludge supply vessel, a heat exchanger, a reaction vessel, first pipe means communicating between said sludge supply vessel and said reaction vessel and passing substantially vertically through said heat exchanger intermediate said vessels, a variable-speed feed pump interposed in said first pipe means between said sludge supply vessel and said heat exchanger, a non-return valve in said first pipe means between said feed pump and said reaction vessel to positively prevent reverse flow of sludge in said first pipe means, a steam boiler, second pipe means communicating between said boiler and said first pipe means adjacent said reaction vessel, means for directing the mixture of preheated sludge and steam through said reaction vessel in a substantially vertical direction, means for regulating the rate of passage of said mixture through said reaction vessel in order at least partly to condition the heated sludge and to maintain in said reaction vessel a substantially constant level which leaves space for gas given off during conditioning of said sludge, means for venting said gas from said reaction vessel, a settlement tank, third pipe means communicating between said reaction vessel and said settlement tank, means for continuously discharging the heated sludge from said reaction vessel through said third pipe means, said third pipe means passing through said heat exchanger in order that heated sludge leaving said reaction vessel is adapted to give up heat to sludge passing through said heat exchanger in said first pipe means, a branch pipe communicating between said first pipe means at the inlet side of said pump and said third pipe means, a first valve in said third pipe means on the settlement tank side of said branch pipe, a second valve in said branch pipe, and a third valve in said first pipe means on the supply vessel side of said branch pipe, said first, second and third valves being adapted when closed to shut off flow through the respective pipes whereby, on starting up the apparatus sludge can be recirculated until it is fully conditioned by closing said first and third valves and opening said second valve.

3,155,612
FLUID DISTRIBUTOR FOR TANKS

Arnold J. Weber, White Bear Lake, Minn., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed May 2, 1962, Ser. No. 191,766
6 Claims. (Cl. 210—291)

5. In a water treatment tank having a closed bottom, a bed of particulate water treatment material in said tank, water conduit means in said tank extending through said bed, and an improved bottom distributor coupled to said conduit means beneath said bed adjacent said bottom comprising, a unitary body member of molded synthetic plastic material having a tubular hub portion, an annular flange projecting substantially radially outwardly from said hub portion, a generally tubular wall depending from the outer periphery of said flange having a multiplicity of attenuated slots, an annular imperforate skirt portion around the lower margin of said tubular wall, an end wall secured to the inner periphery of said skirt portion in downwardly spaced relation to said flange, said end wall being formed with a multiplicity of arcuate concentric attenuated slots for the

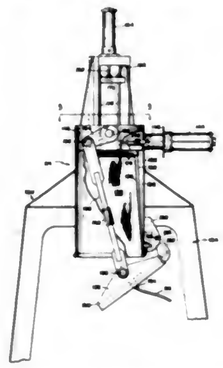


passage of water to and from the interior of said distributor, said arcuate slots in said end wall being interrupted by a plurality of radially extending ribs, a plurality of brace rods projecting upwardly from said radially extending ribs into contact with said annular flange in radially inwardly spaced relation to said tubular wall, and a plurality of circumferentially spaced feet projecting downwardly from said end wall for spacing said distributor upwardly a predetermined distance from said bottom.

3,155,613
FILTERING APPARATUS

Samuel P. Felix, Palo Alto, and John R. Schneider, Belvedere, Calif., assignors, by mesne assignments, to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware

Filed June 29, 1960, Ser. No. 39,622
3 Claims. (Cl. 210—232)

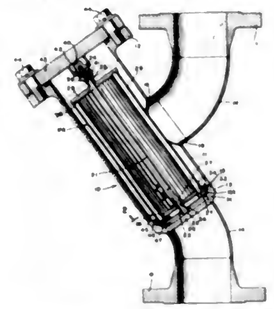


1. A sludge filter comprising a vertically extending tank defining a filter chamber therein and having an open bottom end, a door at the bottom of the tank, means pivotally mounting said door for movement between open and closed positions to open and close said tank bottom end, power actuated means connected to said door for actuating the same between said positions thereof, a bag filter mounted within said filtering chamber in an inverted position, said bag filter being closed at its upper end and open at its bottom end, the open bottom end of said bag filter being wrapped around the open end of said filter tank, resilient means on the exterior of said tank adjacent the open end thereof and secured to said wrapped around portion of said bag filter for retaining the bottom end of the bag filter on the exterior of said tank, a portion of said door being movable into and out of sealing contact with the wrapped around portion of said bag filter as said door opens and closes the tank bottom, movable means for supporting the closed upper end of said bag filter, power actuated means for actuating said movable means to shake said bag filter for loosening sludge adhering thereto, said bag filter dividing the filtering chamber into an inlet chamber internally of the bag filter and an outlet chamber externally of the bag filter, an inlet connection mounted in said door for delivering a liquid to be filtered into said inlet chamber within the bag filter whereby filtered solids adhere to the interior side of the bag filter, and means for discharging filtered liquid from said outlet chamber.

3,155,614
SELF DRAINING FILTER ASSEMBLY

Rudolf Wendlenner, Sun Valley, Calif., assignor to Westward Engineering & Fabricating Co., Paramount, Calif., a corporation of California

Filed Jan. 23, 1961, Ser. No. 83,991
5 Claims. (Cl. 210—452)



1. In a filter assembly of the class described, the combination of: an inclined housing having a first opening on one end and a second opening on a side intermediate the ends, said first and second openings having means for connecting conduits, a hollow filter element extending the length of said housing having an exterior surface communicating with said second opening and an interior surface communicating with said first opening, said filter element having longitudinally corrugated filter media means forming a substantial radial thickness of the filter element with externally and internally facing spaces between corrugations, said housing having a radially extending annular surface near said first opening of a radial width substantially equal to said filter element radial thickiness for engaging and supporting an end of the filter element, a scavenging port extending downwardly from said annular surface toward and communicating with said first opening for draining fluid, and said filter element oriented and aligned with said scavenging port for communicating said scavenging port with substantially the lowest point in the lowermost one of said internally facing spaces between corrugations.

3,155,615
SOLS OF METAL DIALKYL DITHIOPHOSPHATES

Elmer B. Cyphers, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 1, 1961, Ser. No. 128,368
10 Claims. (Cl. 252—32.7)

1. An oil composition comprising a major amount of lubricating oil, about 0.1 to 20.0 wt. percent of a mineral lubricating oil detergent additive, and about 0.01 to 5.0 wt. percent of a metal dialkyl dithiophosphate, wherein each alkyl group has 1 to 3 carbon atoms and wherein said metal dialkyl dithiophosphate is water insoluble and is formed in the presence of said detergent additive.

3,155,616
CALCIUM CARBONATE DISPERSIONS

Vanderveer Voorhees, Los Altos, Calif., assignor to Bray Oil Company, Los Angeles, Calif., a limited partnership of California

No Drawing. Filed Oct. 19, 1961, Ser. No. 146,324
7 Claims. (Cl. 252—33)

1. The process of making a transparent, colloidal dispersion of calcium carbonate in oil which comprises mixing anhydrous methanol and finely divided calcium oxide derived from burning calcium carbonate in the ratio of about 10 to 30 parts of oxide to 100 parts of methanol by weight, introducing carbon dioxide in an amount of 5 to 50% of that amount stoichometrically required to convert the oxide to carbonate, thereby activating the suspended oxide without forming a gelatinous solid complex, mixing the fluid activated oxide suspension with an oil and an oil soluble dispersant selected from the class consisting of the sulfonic and carboxylic acids having upwards of 12 carbon atoms and their salts, continuing the treatment with carbon dioxide gas until no further gas is absorbed, removing the methanol by distillation, thereafter treating with water to disintegrate gel, then dehydrating the oil containing colloidally dispersed calcium carbonate.

3,155,617
DISPERSING CALCIUM CARBONATE

Vanderveer Voorhees, Los Altos, Calif., assignor to Bray Oil Company, Los Angeles, Calif., a limited partnership of California

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,147
11 Claims. (Cl. 252—33.2)

1. The process of making a colloidal dispersion of calcium carbonate in oil which comprises dispersing in anhydrous methanol, calcium oxide of commerce derived from roasting calcium carbonate ores at high temperature, activating said oxide by contacting with a small amount, in the range of .001 to .038 equivalent per equivalent of calcium oxide, of an acid capable of forming a water soluble salt with calcium, mixing with the activated oxide and methanol, an oil and an oil soluble dispersant comprising a salt of an organic acid having upwards of 20 carbon atoms, introducing carbon dioxide into the mixture until substantially all said oxide is converted to calcium carbonate in colloidal form having particles of submicroscopic dimensions, removing anhydrous methanol from the reaction product and recovering the oil-sulfonate as a clear, filterable, free flowing liquid containing dispersed calcium carbonate.

3,155,618
LUBRICANT

David B. Cox, Lynbrook, N.Y., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Apr. 5, 1960, Ser. No. 20,033
17 Claims. (Cl. 252—39)

2. A grease resistant to atomic and high energy radiation, comprising: a major proportion of an aromatic fluid of lubricating viscosity selected from the group consisting of aromatic hydrocarbons and aromatic ethers and from about 5 to about 30 percent by weight of complex alkaline earth metal salt-alkaline earth metal soap gelling agent free of aromatic substituents.

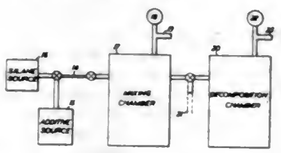
3,155,619
COMPLEX LUBRICANT
Martin M. McCormick, Chicago, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 12, 1962, Ser. No. 172,783
8 Claims. (Cl. 252—39)

1. A process for the preparation of a lubricating grease consisting essentially of an oil of lubricating viscosity and a grease thickening amount of a mixed salt-soap thickener consisting essentially of an alkaline earth metal salt of acetic acid and an alkaline earth metal soap of a higher molecular weight carboxylic acid of about 7 to 30 carbon atoms, wherein said salt of acetic acid and said soap of said higher molecular weight carboxylic acid are in a molar ratio of about 3:1 to 20:1, the improvement which consists essentially of shearing said grease at a rate in the range of about 5,000 to 500,000 reciprocal seconds sufficient to obtain a dispersion of the thickener, followed by shearing said grease at a rate in the range of about 1 to 500 reciprocal seconds to obtain a final grease composition.

3,155,620
FUEL COMPOSITIONS
Rex D. Closson, Royal Oak, Thomas H. Coffield, Farmington, and Oskar E. H. Klopfer, Bloomfield Hills, Mich., and Hymin Shapiro, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 8, 1962, Ser. No. 229,162
3 Claims. (Cl. 252—49.7)

1. A composition consisting essentially of a liquid hydrocarbon selected from the class consisting of hydrocarbon fuels and hydrocarbon lubricants containing from about 0.015 to 10 grams of a Group VIB transition metal per gallon as a compound having the formula $AM(CO)_3$ wherein M is an atom of a Group VIB metal and A is a cycloheptatriene molecule coordinated to said metal atom.

3,155,621
PRODUCTION OF SILICON WITH A PREDETERMINED IMPURITY CONTENT
Frederick C. Cowlard, Towcester, and Leighton G. Penhale, Northampton, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed July 13, 1962, Ser. No. 210,310
2 Claims. (Cl. 252—62.3)



1. A method of preparing hyper-pure silicon semiconductor material containing a predetermined quantity of an additive material, comprising the steps of forming in a mixing chamber a gaseous mixture consisting solely of silane and a gaseous compound of the additive material, the latter being selected from the group consisting of boron and phosphorous, controlling the partial pressures of the gaseous materials fed to the mixing chamber so as to obtain a mixture ratio which corresponds to said predetermined quantity of additive material, feeding the gaseous mixture into a decomposition chamber by means of a pressure difference between the two chambers, heating the decomposition chamber and controlling the temperature and pressure within the decomposition chamber so that the gaseous compounds are thermally decomposed to provide a common deposit of silicon and additive material.

3,155,622
RADIOACTIVE MAGNETIC FLAW DETECTION COMPOSITION AND PROCESS FOR MAKING SAME
Zenon Kazenas, East Cleveland, and Richard A. Ward, Cleveland Heights, Ohio, assignors, by mesne assignments, to John D. Steele, Cleveland, Ohio
No Drawing. Filed Aug. 3, 1959, Ser. No. 831,031
27 Claims. (Cl. 252—62.5)

1. A paramagnetic radioactive powder embodying particles comprised of the combination of a paramagnetic element, a radioactive carrier component, a resin adhering said paramagnetic element and carrier component together, said carrier component having a surface exposed on the surface of the particle, and a radioactive material bonded to the carrier through its exposed surface.

3,155,623
METHOD FOR MAKING BARIUM FERRITE MAGNETS
Robert H. Erickson, St. Clair Shores, Mich., and Sol Boyk, Toledo, Ohio, assignors to General Magnetic Corporation, Detroit, Mich., a corporation of Illinois
Filed Aug. 22, 1962, Ser. No. 218,577
6 Claims. (Cl. 252—62.5)

1. A method of preparing barium ferrite comprising precipitating barium carbonate from an aqueous solution of barium hydroxide on to ferric oxide particles substantially in the molecular ratio of at least one molecular weight of barium carbonate for every six molecular weights of ferric oxide, and calcining the resulting product to produce $BaO \cdot 6Fe_2O_3$.

3,155,624
SOAP-MAKING PROCESS AND PRODUCT
William A. Kelly, Teaneck, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Jan. 26, 1960, Ser. No. 4,626
6 Claims. (Cl. 252—122)

1. A process for making a superfatted transparent soap having a Translucency Voltage of no greater than about 35, said process comprising working below about 110° F., a toilet soap mass containing from about 1.0% to about 5.0% free soap-forming fatty acid and a polyhydric alcohol which overcomes the adverse softening effect of the fatty acid but does not deleteriously affect the transparency and processing characteristics of the bar in an amount up to about 10.0%, the quantity of said free fatty acid being at most 1% greater than the polyhydric alcohol content based on the final bar composition, wherein the mechanical energy is converted into heat energy by working to an extent great enough to cause the mixture to rise in temperature to within a range of from about 100° F. to about 110° F., the moisture and water-soluble soap-compatible, alkali metal neutral salt content having been adjusted prior to the end of the working step to lie within the range from about 17.0% to about 22.5% moisture and an amount of said salt from about 0.2% to about 1%, and plodding the soap mass into bar form.

3,155,625
COLOR STABILIZATION OF MIXTURES OF TRICHLOROFLUOROMETHANE AND N,N,N',N' - TETRAKIS(HYDROXYALKYL)ALKYLENEDIAMINES
Laurence John Long, Palo Alto, Calif., and Samuel R. Williams, Greensboro, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 22, 1960, Ser. No. 77,490
2 Claims. (Cl. 252—182)

1. A composition consisting essentially of a mixture of about 50% to 90% by weight of N,N,N',N'-tetrakis-(hydroxyalkyl)alkylenediamine and about 50% to 10% by weight of trichlorofluoromethane and containing 0.25% to 0.5% by weight of 4,4'thiobis(3-methyl-6-tert.-butylphenol) as a color stabilizer, said N,N,N',N'-tetrakis-(hydroxyalkyl)alkylenediamine having the formula $(HOR')_2N—R—N(R'OH)_2$ wherein R and R' are alkylene groups of two to six carbon atoms with the nitrogen atoms and hydroxyl groups being attached to separate carbon atoms of the R' groups and the two nitrogen atoms being attached to separate carbon atoms of the R group.

3,155,626
POLYMERIZATION CATALYST
John Boor, Jr., Richmond, Calif., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Filed Aug. 17, 1959, Ser. No. 833,949
5 Claims. (Cl. 252—429)

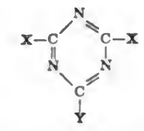
1. An improved Ziegler-type olefin polymerization catalyst composition comprising titanium trichloride, a zinc dihydrocarbyl having from 1 to 10 carbon atoms in each hydrocarbyl group, and from 0.001 mole to 2 mole, per mole of zinc dihydrocarbyl, of a heterocyclic nitrogen compound having 5 to 6 membered rings and having an alkyl radical substituent of up to 6 carbon atoms on at least one carbon atom alpha to a nitrogen atom in the ring.

3,155,627
SUPPORTED CATALYSTS
Edward L. Cole, Glenham, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 29, 1960, Ser. No. 79,112
10 Claims. (Cl. 252—477)

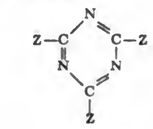
1. A catalytic structure consisting essentially of a support and a metal catalyst material deposited on said support by immersing said support in a solution containing a soluble compound of said catalyst material, pressuring said solution with hydrogen and maintaining said solution at an effective reduction temperature thereby depositing a substantially uniform film of said catalyst material on said support.

3,155,628
PRODUCTION OF POLYMERS CONTAINING s-TRIAZINE NUCLEI LINKED TOGETHER BY A NITROGEN ATOM COMPRISING REACTING s-TRIAZINES WITH NITROGEN COMPOUNDS
Peter Richard Bloomfield, London, England, assignor to Artrite Resins Limited, London, England, a British company
No Drawing. Filed Mar. 20, 1961, Ser. No. 96,709
Claims priority, application Great Britain Mar. 22, 1960
18 Claims. (Cl. 260—2)

1. A method of preparing polycondensates containing s-triazine nuclei linked together substantially exclusively by single nitrogen atoms which method comprises mixing (*a*) a dihalo-s-triazine having the formula:



where X is selected from the group consisting of chlorine and bromine and Y is selected from the group consisting of R and NR_2 where R is an aryl radical with (*b*) a nitrogen-containing compound selected from the group consisting of from 0.5 to 1.5 moles, per mole of dihalo-s-triazine, of ammonia, from 0.5 to 1.5 moles, per mole of dihalo-s-triazine, of a primary mono-amine having the formula RNH_2, R being defined above, and from 0.5 to 2.0 moles, per mole of diahalo-s-triazine, of an amino-s-triazine having the formula:



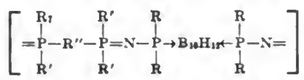
where Z is selected from the group consisting of R, NHR, and NH_2 groups, R being in each instance as defined above, the amino-s-triazine containing at least two replaceable hydrogen atoms forming part of at least one amino group directly attached to the s-triazine ring, heating the reaction mixture to obtain a polymeric product wherein the moiety of reactants (*a*) and (*b*) are coupled through —C—N—C— linkages.

3,155,629
SYNTHESIS OF POLYMERS FROM LIQUID NITRILES BY ELECTRICAL DISCHARGE
Marvin C. Tobin, Westport, Conn., and William G. Delchert, Flushing, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed May 19, 1961, Ser. No. 111,167
6 Claims. (Cl. 260—2)

1. A solid, linear homopolymer of a liquid, polymerizable nitrile monomer selected from the group consisting of a lower alkyl nitrile, benzonitrile, tolunitrile, ethyl cyanoacetate and chloroacetonitrile, said homopolymer being prepared by subjecting said polymerizable nitrile monomer to a field induced by an electrical discharge created by providing a voltage across said field of between about 1000 volts and about 40,000 volts at 60 cycles, and thereafter recovering said solidified nitrile homopolymer.

3,155,630
NOVEL POLYMERS FROM THE CONDENSATION OF BIS(AZIDODIARYLPHOSPHINE) DECABORANE AND DIPHOSPHINE
Hansjuergen A. Schroeder, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed July 23, 1962, Ser. No. 211,869
17 Claims. (Cl. 260—2)

1. A novel linear polymeric composition consisting essentially of recurring structural units of the formula:



wherein R and R' are each selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, and biphenylyl, and R'' is selected from the group consisting of alkylene having from 1 to 8 carbon atoms, arylene having not more than 8 carbon atoms and biphenylene.

3,155,631
SEMI-CONDUCTOR, CONTAINING ETHYLENE/ETHYL ACRYLATE COPOLYMER, PETROLEUM WAX AND CARBON BLACK
George M. Zapp, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,244
6 Claims. (Cl. 260—28.5)

1. A semi-conductive composition comprising, on a weight basis, 25 to 60 parts of an ethylene/ethyl acrylate copolymer containing 15 to 35% of copolymerized ethyl acrylate, 75 to 40 parts of a petroleum wax, and 4 to 30 parts per hundred parts of combined ethylene/ethyl acry-

late copolymer and petroleum wax, of dispersed conductive carbon black.

3,155,632
PROCESS OF PRODUCING IMPROVED POLYVINYL ALCOHOL FIBERS

Kanji Matsubayashi and Osamu Fukushima, Kurashiki, Japan, assignors of three-fourths to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan, and one-fourth to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed July 15, 1960, Ser. No. 42,999
Claims priority, application Japan, July 16, 1959, 34/22,795
5 Claims. (Cl. 260—29.6)

1. In the manufacture of polyvinyl alcohol fibers, the steps which comprise preparing an aqueous spinning fluid comprising a mixture of a solution of polyvinyl alcohol and a polymer which is insoluble in said spinning fluid and is present in said fluid in finely-divided form, said polymer containing 0.2 to 5% of basic nitrogen and said polymer being formed from a polymer of an ethylenically-unsaturated monomer containing a group selected from the class consisting of a halogen, a carbonyl group and an acid amide group, said last-named polymer being in finely-divided form in an aqueous medium and containing a group selected from the class consisting of a halogen, a carbonyl group and an acid amide group and said basic nitrogen being introduced by converting said group to basic nitrogen while said last-named polymer is in said finely-divided form, and spinning said fluid to form fibers therefrom.

3,155,633
SILICONE ADHESIVE COMPOSITION CAPABLE OF BONDING SILICONE RUBBER TO METAL WITHOUT THE USE OF A PRIMER

Keith E. Polmanteer, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 8, 1958, Ser. No. 759,392
1 Claim. (Cl. 260—37)

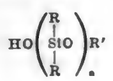
A method for bonding together two surfaces which consists of applying to at least one surface a composition composed of (1) an essentially diorganopolysiloxane having a degree of polymerization of from 250 to 2100 and having per molecule an average of at least two silicon-bonded vinyl radicals, (2) from 10 to 200 parts per 100 parts of (1) of a reinforcing silica filler the surface of which is coated with organosilyl groups of the formula R''_nSi, which groups are bonded to the silica by SiOSi linkages and in which groups each R'' is selected from the group consisting of monovalent hydrocarbon radicals of less than 7 carbon atoms and halogenated monovalent hydrocarbon radicals of less than 7 carbon atoms and n has an average value of from 2 to 3 inclusive, and (3) from 0.1 to 10 parts per 100 parts of (1) of an organic peroxide curing catalyst, thereafter applying the other surface to the adhesive layer and curing the adhesive by heating.

3,155,634
FLUORO-ORGANIC ACID CATALYZED CONDENSATION OF SILOXANOLS

Ronald M. Pike, Chelmsford, Mass., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 8, 1959, Ser. No. 858,031
6 Claims. (Cl. 260—46.5)

1. A process for condensing organosilicon compounds represented by the formula:



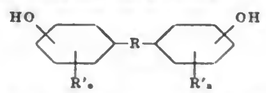
wherein R is a member selected from the group consisting of the unsubstituted monovalent hydrocarbon groups and the substituted monovalent hydrocarbon groups wherein each substituent is a member selected from the group of the halogen atom, and the hydroxyl, cyano, alkoxy and aryloxy groups, R′ is a hydrogen atom and n has a value of at least one, which process comprises condensing an organosilicon compound represented by said formula in the presence of a catalytic amount of a fluorine-substituted aliphatic acid.

3,155,635
PROCESSES FOR MOLECULAR WEIGHT CONTROL OF POLYCARBONATES

Rudolph D. Deanin, West Hartford Township, Hartford County, Conn., and Ann V. Pinter, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 15, 1961, Ser. No. 89,364
5 Claims. (Cl. 260—47)

1. In a process for the production of a polycarbonate of a bisphenol which is a member of the group consisting of bisphenols having the structure



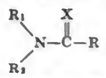
in which R is a divalent radical from the group consisting of the alkane, saturated alicyclic and aryl radicals and the aralkyl radicals containing only aromatic unsaturation, R′ is a monovalent alkane radical and n is an integer from 0 to 4, and halogen derivatives of those bisphenols in which the halogen is attached to carbon in an aromatic ring, in which process phosgene and said bisphenol are reacted in the presence of an acid acceptor and organic solvent for the phosgene in which the polycarbonate is soluble, that improvement which comprises carrying out the phosgenation reaction in the presence of a saturated aliphatic, monohydric alcohol in small amount by weight of said bisphenol which is effective to control the growth in molecular weight of the polycarbonate and to produce a polycarbonate having a different molecular weight from that produced by the same process in the absence of the alcohol.

3,155,636
POLYMERIZATION OF FORMALDEHYDE

Helmuth Kritzler, Cologne-Flittard, and Kuno Wagner, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 16, 1960, Ser. No. 8,939
Claims priority, application Germany Feb. 28, 1959
5 Claims. (Cl. 260—67)

1. A process for the production of high molecular weight polyoxymethylenes, which comprises polymerizing substantially anhydrous monomeric formaldehyde in an inert organic solvent in the presence of catalytic amounts of an organic compound of the formula:



in which X represents an atom selected from the group consisting of oxygen and sulfur atoms, and wherein R_1 and R_2 represent substituents selected from the group consisting of:

(1) each R_1 and R_2 being a hydrogen atom, a monovalent alkyl radical of up to 6 carbon atoms, aralkyl radical, a lower alkyl moncarboxylic acid, a cyclohexyl radical, and an aromatic radical selected from the group consisting of phenyl and benzyl;

(2) R_2 being a substituent of the formula Ar.NH—, wherein Ar stands for an aromatic hydrocarbon radical and R_1 being a substituent as indicated under (1); and

(3) R_1 and R_2 together being members necessary to complete an organic ring system;

and R stands for a radical selected from the group consisting of:

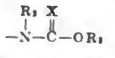
(a) —X—R_5

wherein R_5 is a member of the group consisting of an alkyl, a cyclohexyl, and aralkyl, and an aromatic radical as in substituent R_1 above and X has the same meaning as above;

(b) —R_5

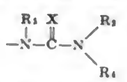
wherein R_5 has the same meaning as above;

(c)



wherein the radicals R_5 are as defined above;

(d)

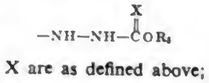


wherein R_5 and X are as defined above, and R_3 and R_4 have the same meaning as R_1 and R_2;

(e) —NH—NH—R_5

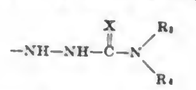
wherein R_5 is as defined above;

(f)



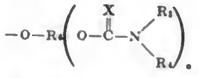
wherein R_5 and X are as defined above;

(g)



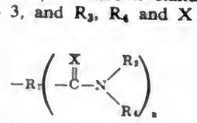
wherein R^3, R_4 and X are as defined above;

(h)



wherein R_6 stands for an aliphatic hydrocarbon radical having the valence $n+1$ where n stands for a whole integer from 1 to 3, and R_3, R_4 and X are as defined above; and

(i)



wherein R_7 stands for an organic hydrocarbon radical having the valence $n+1$ where n stands for a whole integer from 1 to 3, and R_3, R_4 and X are as defined above.

3,155,637
PROCESS FOR THE PRODUCTION OF ETREMELY HIGH MOLECULAR WEIGHT POLYAMIDES

Ernst Reichold, Krefeld, Günter Jacobs, Krefeld-Bockum, and Walter Böckmann, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 2, 1960, Ser. No. 33,367
Claims priority, application Germany June 16, 1959
7 Claims. (Cl. 260—78)

1. A process for the production of extremely high molecular weight polyamides of epsilon-aminocaproic acid having a relative viscosity based upon the viscosity of a 1 percent solution thereof in cresol at a temperature of 20° C. of at least about 4.5 and containing at most about 0.7 percent by weight of low molecular constituents that are extractable by organic solvents which comprises heating an unstabilized polyamide of epsilon-aminocaproic acid having a relative viscosity based upon the viscosity of a 1 percent solution thereof in cresol at a temperature of 20° C. of less than about 3.0 and containing at least about 1 percent by weight of low molecular weight constituents that are extractable by organic solvents to a temperature above about 150° C. but below the softening point of the polyamide in a stream of a gas of the group consisting of superheated steam and mixtures of inert gases and superheated steam.

3,155,638
PROCESS FOR EPOXIDATION OF ETHYLENICALLY UNSATURATED COMPOUNDS

Max B. Mueller, Upper Providence, John G. Iacoviello, Broomall, and Rudolph Rosenthal, Havertown, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 22, 1960, Ser. No. 37,852
12 Claims. (Cl. 260—78.4)

1. The process for producing compounds containing the oxirane group which comprises adding to an ethylenically unsaturated compound containing at least one double bond of the non-conjugated ethylenic group in proportions at least about the stoichiometric equivalent of the double bonds to be epoxidized, a concentrated solution of hydrogen peroxide and a cyclic anhydride of an acid selected from the group consisting of aromatic and saturated aliphatic dicarboxylic acids wherein the oxygen-containing anhydride ring is a five membered ring containing four carbon atoms and one oxygen atom, at temperatures between about 20° C. and about 100° C. and maintaining said temperatures until approximately the theoretical amount of hydrogen peroxide has reacted.

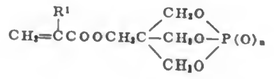
9. An epoxidized beta polymer of diallyl phthalate containing between about 0.6% and about 3.6% oxirane and having an iodine number between about 10 and about 65.

3,155,639
POLYMERS OF ACRYLATES AND METHACRYLATES OF BICYCLIC PHOSPHITES AND BICYCLIC PHOSPHATES

William D. Emmons, Huntingdon Valley, and William S. Wadsworth, Jr., Willow Grove, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Original application Jan. 19, 1961, Ser. No. 83,613. Divided and this application Mar. 14, 1962, Ser. No. 179,801
7 Claims. (Cl. 260—80.5)

1. A copolymer of a compound of the Formula I:



wherein

R^1 is selected from the group consisting of a methyl group and a hydrogen atom, and

n is an integer from 0 to 1,

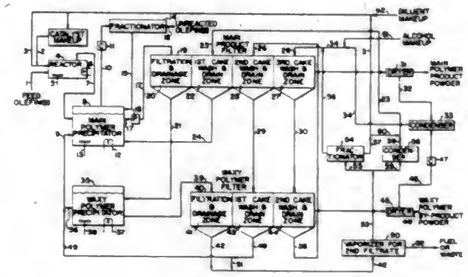
with at least one other copolymerizable monoethylenically unsaturated compound said compound of Formula I being 5 to 95% of the weight of the copolymer, and said copolymer ranging from a viscous liquid to a solid.

7. A polymer of a compound of claim 1 with methyl methacrylate and methacrylic acid.

3,155,640
LOW PRESSURE POLYMERIZATION PRODUCT RECOVERY PROCESS

Lewis D. Etherington, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 26, 1959, Ser. No. 848,823
17 Claims. (Cl. 260—93.7)



1. In the process for polymerizing α-olefins to form normally solid olefin polymers by contacting the olefins under polymerization conditions in the presence of a low boiling hydrocarbon diluent with a polymerization catalyst containing at least a partially reduced compound of a heavy metal of groups IV, V, VI and VIII of the Periodic System to form a polymer product slurry, the improvement comprising controlling the amount of low molecular weight waxy polymer in the final product by the steps of (1) adding to the product slurry 10 to 30 vol. percent (based on the volume of slurry) of an alcohol-diluent mixture containing 60–90 vol. percent of a C_1–C_8 aliphatic alcohol, to precipitate a controlled quantity of waxy polymer out of solution with the main polymer product, (2) filtering the resulting slurry at a temperature in the range of 100–180° F. with the relative precipitation and filtration pressures controlled such that the equilibrium vapor pressure of the filter feed slurry is no higher than the gas pressure on the suction side of the filter screen, (3) first washing the resulting precipitate as polymer cake on the filter with a wash solution having substantially the same polymer solvency as is present in the first filter feed slurry, (4) subsequently washing the polymer cake at least one time with a more alcohol-rich solution of lower ash content than the diluent-alcohol fraction in the filter feed, and (5) drying the polymer cake.

3,155,641
POLYMERIZATION OF ARYLLITHIUM-TITANIUM TRIHALIDE CATALYSTS

Irving Kuntz, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 28, 1961, Ser. No. 155,449
14 Claims. (Cl. 260—93.7)

1. In a process for polymerizing propylene in the presence of a catalyst formed by admixing a titanium trihalide with an organometallic compound, the improvement which comprises utilizing as the organometallic compound an aryllithium having the formula

$$(ArLi)_n(LiX)$$

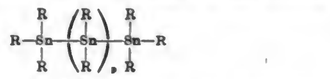
where Ar is an aryl radical, n is an integer of from 2 to 20, and X is a halogen radical.

3,155,642
CATALYST COMPOSITIONS

Edward W. Duck and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,847
Claims priority, application Netherlands, Apr. 29, 1960, 251,099
11 Claims. (Cl. 260—94.3)

1. The reaction product of an aluminum halide selected from the group consisting of aluminum chloride and aluminum bromide, a hydrocarbyl stannane of the formula



wherein at least one R is selected from the group consisting of alkyl, cycloalkyl and aryl and the other R's are selected from the group consisting of alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, halogen, hydrogen, and alkali metal, and p is selected from 0, 1, 2 and 3 and a compound of a third metal selected from the group consisting of cobalt and nickel, said third metal compound being salts and complexes of the group consisting of halides, carboxylates, halide-amine complexes, halide-alcohol complexes, halide-ketone complexes, halide-aluminum chloride complexes and halide-aluminum alkyl complexes, the atomic ratio of the sum of aluminum and tin to said third metal being between about 10 and 100,000 and the atomic ratio of aluminum to tin being about 0.01 and 100.

11. In the process for the polymerization of a conjugated diene of the group consisting of butadiene and isoprene at temperatures in the range from about —20° C. to 150° C., the invention comprising carrying out the polymerization in the presence of a polymerization catalyst according to claim 1.

3,155,643
POLYMERIZATION PROCESS

Cecil Edwin Henry Bawn, Prenton, Birkenhead, England, and Michael Raymond Clarke, Kew, Melbourne, Victoria, Australia, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,504
Claims priority, application Great Britain, Aug. 7, 1958, 25,316/58
10 Claims. (Cl. 260—94.9)

1. In a process for polymerizing a monomer of the group consisting of ethylene, propylene, butadiene, styrene, and mixtures thereof at 15–100° C. under a pressure of 1–300 atmospheres, the improvement which comprises polymerizing said monomer to produce a solid polymer by conducting the polymerization in an inert liquid medium in contact with a catalyst consisting of (*a*) an aluminum halide component of the group consisting of aluminum chloride, aluminum bromide, and mixtures thereof and (*b*) 0.5–20 mols, per mol of the aluminum halide component, of a mercuric component of the group consisting of mercuric chloride, mercuric bromide, mercuric cyanide, mercuric nitrate, mercuric oxide, and mixtures thereof.

3,155,644
PRODUCTION OF HIGHLY OXIDIZED POLYOLEFINS

Clifton Leroy Kehr, Ednor, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 26, 1961, Ser. No. 147,750
6 Claims. (Cl. 260—94.9)

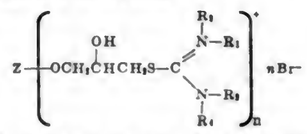
1. A process for producing highly oxidized polyethylene having improved adhesive properties which comprises treating polyethylene having a melt index in the range of about 0.0 to 25 with a free oxygen-containing vapor at a temperature in the range of 100 to 200° C. until the polyethylene is oxidatively degraded to a product having a higher melt index in the range of about 5 to 1000, quenching the oxidation process and treating the resulting product with 0.5 to 60 weight percent of a metallic base selected from the group consisting of magnesium oxide, aluminum butoxide, sodium methylate and calcium hydroxide at a temperature in the range of about 100 to 180° C. until the polyethylene is converted to a polymeric metallo-carboxylate with a melt index in the range 0.1 to 50 by salt formation between the metallic cation of said metal base and the carboxyl groups of the oxidized polyethylene.

3,155,645
ISOTHIURONIUM SALTS OF BROMOHYDRIN ETHER DYESTUFFS

David Taber, Pittsburgh, and Edgar E. Renfrew and Henry W. Pons, Monroeville, Pa., assignors to American Aniline Products, Inc., a corporation of Maryland

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,310
5 Claims. (Cl. 260—151)

1. A dyestuff of the formula:



wherein Z is a water-insoluble dyestuff moiety selected from the group consisting of azo, anthraquinone, phthalocyanine and nitro; R_1 and R_2, as individual substituents, are members selected from the group consisting of hydrogen and lower alkyl and, taken collectively, represent an alkylene bridge having from 2 to 3 carbon atoms, said bridge connecting the N atoms to which R_1 and R_2 are attached; R_3 and R_4 are members selected from the group consisting of hydrogen and lower alkyl; and n is an integer having a value of from 1 to 4.

3,155,646
1 - ARABINOFURANOSYL - 5 - HALOURACIL AND PROCESS FOR THE PREPARATION THEREOF

James H. Hunter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 23, 1960, Ser. No. 51,301
9 Claims. (Cl. 260—211.5)

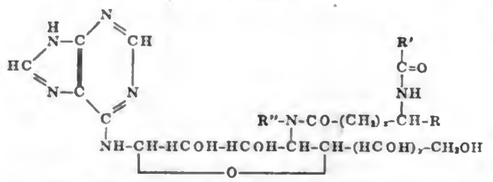
1. Compound selected from the group consisting of 1-arabinofuranosyl-5-halouracil and pharmacologically acceptable salts thereof.

3,155,647
SEPTACIDIN AND DERIVATIVES THEREOF

James D. Dutcher, New Brunswick, Felix E. Pansy, Jamesburg, and Malcolm H. von Saltza, Millstone, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed July 24, 1963, Ser. No. 297,446
7 Claims. (Cl. 260—211.5)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl, hydroxy lower alkyl, lower alkyl-cycloalkyl, lower alkyl-phenyl, lower alkyl-hydroxyphenyl and lower alkyl dihydroxyphenyl; R'' is selected from the group consisting of hydrogen and lower alkyl; R' is selected from the group consisting of alkyl, alkenyl, and alkadienyl of from 3 to 20 carbon atoms, x is selected from the group consisting of 0 and 1; and y is selected from the group consisting of 0, 1 and 2.

3,155,648
PROCESS FOR PRODUCING DE-WAXED CITRUS OILS

Horton E. Swisher, Upland, Calif., assignor to Sunkist Growers, Inc., Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,016
14 Claims. (Cl. 260—236.6)

1. A process for removing coumarone-indene resin from citrus oil comprising the steps of subjecting a citrus oil which contains coumarone-indene resin to the action of a sufficient volume of a citrus oil-soluble fluorochlorohydrocarbon is selected from the group consisting of trichloromonofluoromethane, dichlorodifluoromethane, dichloromonofluoromethane, monochlorodifluoromethane, trichlorotrifluoroethane, dichlorotetrafluoroethane, and mixtures thereof to precipitate the resin, separating the precipitated resin from the liquid phase and separating the fluorochlorohydrocarbon from the citrus oil.

3,155,649
BENZOTHIAZOCINONES, RELATED COMPOUNDS AND THEIR PREPARATION

John Krapcho, Somerset, and Chester F. Turk, Elizabeth, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 11, 1962, Ser. No. 209,235
6 Claims. (Cl. 260—239.3)

4. 8-(2-dimethylaminoethyl) - 2 - (p-methoxyphenyl)-2,3,4,5-tetrahydro-2H-1,8-benzothiazecin-7(8H)-one.

3,155,650
2-SUBSTITUTED-4-SULFANILAMIDOQUINAZOLINES AND PROCESS

Frederick A. Grunwald, Evansville, Ind., assignor to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Mar. 3, 1961, Ser. No. 93,035
3 Claims. (Cl. 260—239.65)

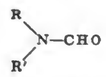
2. Sodium 2-methoxy-4-sulfanilamidoquinazoline.

3,155,651
PROCESS FOR THE PRODUCTION OF N,N'-TETRASUBSTITUTED 3-AMINO-2-AZAPROP - 2 - EN - 1-YLIDENE AMMONIUM HALIDES

Heinrich Gold, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 6, 1960, Ser. No. 73,963
Claims priority, application Germany Dec. 19, 1959
12 Claims. (Cl. 260—240)

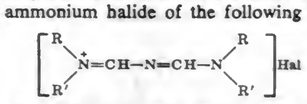
1. A process for the preparation of N,N'-tetrasubstituted 3-amino-2-azaprop-2-en-1 - ylidine ammonium halides which comprises the steps of (1) reacting not less than 6 mols of a secondary N-formylamine having the formula



wherein R and R' each individually is selected from the group consisting of alkyl having 1–6 carbon atoms, cycloalkyl having 5–6 carbon atoms, benzyl and phenyl and when taken together constitute a member selected from the group consisting of 5 and 6 membered alkylene, oxyalkylene and thioalkylene bridges with 1 mol of a

cyanuric halide selected from the group consisting of cyanuric chloride and cyranuric bromide at a temperature of from 0 to 180° C., and (2) recovering the N,N'-tetrasubstituted 3 - amino - 2-azaprop-2-en-1-ylidine ammonium halide thereby produced.

8. An N,N'-tetrasubstituted 3-amino-2-azaprop-2-en-1-ylidene ammonium halide of the following formula



wherein R and R' each individually is selected from the group consisting of alkyl having 1–6 carbon atoms, cycloalkyl having 5–6 carbon atoms, benzyl and phenyl and when taken together constitute a member selected from the group consisting of 5 and 6 membered alkylene, oxyalkylene and thioalkylene bridges and Hal is a member selected from the group consisting of chlorine and bromine.

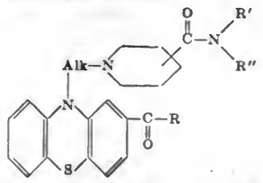
11. 3-tetramethylene - amino-2-azaprop-2-en-1-ylidene-tetramethylene ammonium chloride.

3,155,652
2-ACYL-10-CARBAMOYLPIPERIDINOALKYL-PHENOTHIAZINES AND PROCESS

John W. Cusic, Skokie, and Henry William Sause, Deerfield, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 4, 1958, Ser. No. 758,929
11 Claims. (Cl. 260—243)

1. A compound of the formula



wherein R is lower alkyl; Alk is lower alkylene containing more than 1 carbon atom and separating the nitrogen atoms attached thereto by at least 2 carbon atoms; and R' and R'' are selected from the group consisting of hydrogen, lower alkyl, and hydroxy(lower alkyl).

3,155,653
DERIVATIVES OF PYRIDO[2.3-e,6.5-e]BIS[1,2,4]-THIADIAZINE-1,1,9,9-TETRAOXIDE

Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 22, 1960, Ser. No. 57,640
7 Claims. (Cl. 260—243)

2. 3,7-di - lower - alkylpyrido[2.3-e,6.5-e]bis[1,2,4]thiadiazine-1,1,9,9-tetraoxide.

3. 3,4,6,7 - tetrahydropyrido[2.3-e,6.5 - e]bis[1,2,4]thiadiazine-1,1,9,9-tetraoxide.

3,155,654
SUBSTITUTED 3,4-DIHYDRO-1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDES

Margaret H. Sherlock, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,283
8 Claims. (Cl. 260—243)

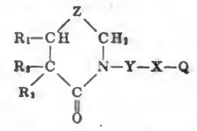
1. 3 - (5 - nitro - 2 - furyl) - 3,4 - dihydro - 1,2,4-benzothiadiazine-1,1-dioxides having hydrogen at the 2-position, having at the 4-position a member selected from the group consisting of H, lower alkyl, and lower alkanoyl, and having at most two substituents present on the benzenoid portion of the molecule said substituents selected from the group consisting of hydrogen, lower alkyl, halogen, trifluoromethyl, amino, nitro, lower alkoxy, carboxy and lower alkanoylamino.

3,155,655
3-SUBSTITUTED-4-METATHIAZANONES AND OXIDE DERIVATIVES

Alexander R. Surrey, Albany, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,010
13 Claims. (Cl. 260—243)

1. A compound of the formula



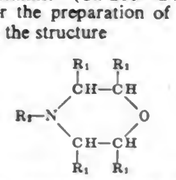
where Z is a member selected from the group consisting of S, SO and SO_2; Y is a member selected from the group consisting of alkylene having from two to six carbon atoms and having its two connecting linkages on different carbon atoms, and, methylene only when X is a direct linkage; X is a member selected from the group consisting of a direct linkage and O; Q is a member selected from the group consisting of hydrogen, lower-alkyl and phenyl; and, R_1, R_2 and R_3 each is a member selected from the group consisting of hydrogen and lower-alkyl.

3,155,656
NOVEL PROCESS FOR N-ALKYLMORPHOLINES

Roland H. Goshorn, Fort Washington, and Richard Ferren, Ambler, Pa., and Herbert Q. Smith, Trenton, N.J., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 14, 1960, Ser. No. 22,109
7 Claims. (Cl. 260—247)

1. A process for the preparation of an N-lower alkyl morpholine having the structure



where R_1 is a member selected from the group of hydrogen and methyl and R_2 is lower alkyl which comprises adding at least three moles of a lower alkyl primary amine to one mole of a bis(2-chloroalkyl) ether containing from four to eight carbon atoms and reacting said amine with said ether at a temperature between about 75° and about 200° C., holding the product reaction mass at a temperature between about 83° C. and 223° C. to liquefy the alkylamine hydrochloride formed until separation of the products into two liquid layers occurs, and physically separating the N-lower alkylmorpholine.

3,155,657
PROCESS FOR THE PRODUCTION OF POLY-GLYCOLAMINE AND MORPHOLINE

William C. Bedoit, Jr., Houston, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

Filed July 20, 1961, Ser. No. 125,468
2 Claims. (Cl. 260—247)

1. A method which comprises the steps of contacting a ruthenium on alumina catalyst containing from about 0.2 to about 5 wt. percent of metallic ruthenium with diethylene glycol containing up to 50 vol. percent of water, hydrogen and from about 1.5 to 3 mols of ammonia per mol of diethylene glycol under reaction conditions including a temperature within the range of about 180° to 300° C., a pressure within the range of about 100 to 300 atmospheres including a hydrogen partial pressure of about 50 to about 200 atmospheres and a reaction time within the range of about 0.2 to 2 hours sufficient to effect conversion of from about 40% to about 80% of the said diethylene glycol to thereby provide a reaction mixture comprising 2-(2-hydroxyethoxy) ethyl amine and morpholine and recovering said 2-(2-hydroxyethoxy) ethyl amine and morpholine from said reaction mixture.

3,155,658
AMINOHYDROXY FATTY AMIDES

Edgar R. Rogier, Hopkins, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,296
14 Claims. (Cl. 260—247.2)

3. 9-morpholino-10-hydroxy-N,N-dimethylstearamide.

3,155,659
PHOSPHONIC DIAMIDES AND METHODS OF MAKING SAME

Edward N. Walsh, Chicago Heights, Ill., assignor to Stauffer Chemical Company, a corporation of Delaware

No Drawing. Filed Feb. 16, 1959, Ser. No. 793,247
13 Claims. (Cl. 260—247.5)

1. A product having the formula



wherein Y_1 and Y_2 are secondary amino groups from the class consisting of alkyl secondary amino wherein each alkyl substituent has up to 8 carbon atoms in the chain, piperidino, morpholino, and pyrrolidino.

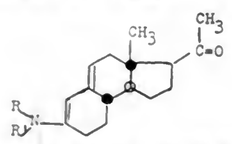
8. Phosphonic dimorpholide.

3,155,660
PROCESS FOR THE PREPARATION OF 19-NOR-$\Delta^{4,9}$-PREGNADIEN-3,20 - DIONE AND INTERMEDIATES

Gerard Nomine, Noisy-le-Sec, Robert Bucourt, Clichy-sous-Bois, and Jean Tessier, Paris, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,265
Claims priority, application France May 8, 1961
18 Claims. (Cl. 260—247.7)

18. An enamine of the formula:



wherein R and R' are selected from the group consisting of alkyl having from 1 to 8 carbon atoms and taken together with the nitrogen atom form a member selected from the group consisting of pyrrolidyl, piperidyl and morpholinyl.

3,155,661
PROCESS FOR PRODUCING SUBSTITUTED GUANAMINES

Robert W. Foreman, Chagrin Falls, and Franklin Veatch, Lyndhurst, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,964
11 Claims. (Cl. 260—249.9)

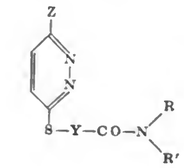
1. A process for the preparation of substituted guanamines which comprises reacting cyanamide with an organic nitrile having from two to about thirty carbon atoms in the liquid phase and in the presence of sufficient ammonia in an amount in the range from about 0.5 to about 10 moles per mole of cyanamide to direct the reaction towards guanamine formation at a reaction temperature within the range from about 90° up to about 250° C. at which the reaction proceeds.

3,155,662
3 HALOGENO PYRIDAZINE-6-MERCAPTO-ALKANOIC ACID AMIDES

Heimo Stormann-Menninger, Linz, Rupert Schönbeck, Leonding, near Linz, and Engelbert Kloimstein, Eferding, Austria, assignors to Österreichische Steckstoffwerke Aktiengesellschaft, Linz, Austria

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,883
Claims priority, application Austria Nov. 16, 1961
9 Claims. (Cl. 260—250)

1. A 3,6-disubstituted pyridazine derivative having the formula:



(I)

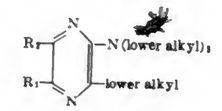
in which Z is a halogen atom selected from the group consisting of chlorine and bromine, Y is a divalent radical selected from the group consisting of methylene, ethylene and methylene substituted by a methyl group, and R and R' are each selected from the group consisting of hydrogen, lower alkyl containing from 1 to 4 carbon atoms inclusive and allyl.

3,155,663
AMINOPYRAZINES

Wilson B. Lutz, Florham Park, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Nov. 15, 1962, Ser. No. 238,050
6 Claims. (Cl. 260—250)

1. A compound selected from the group consisting of those having the formula



wherein R_1 is a member selected from the group consisting of dilower alkyl-amino, hydroxy, bromine chlorine methoxy and ethoxy and R_2 is a member selected from the group consisting of hydrogen and lower alkyl and the pharmaceutically acceptable nontoxic acid addition salts thereof.

3,155,664
DERIVATIVES OF THEOPHYLLINE

Albert Schlesinger, Jackson Heights, Harold Blumberg, Flushing, and Nathan Weiner, Rego Park, N.Y., assignors to Endo Laboratories Inc., Richmond Hill, N.Y., a corporation of New York

No Drawing. Filed Nov. 13, 1959, Ser. No. 852,622
2 Claims. (Cl. 260—256)

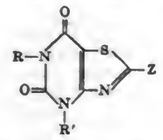
1. N - (theophylline - 7 - ethyl)-N'-(1'-benzyl-ethyl)-hydrazine.

3,155,665
4,6-DIALKYL-5,7-DIKETOTHIAZOLO[4,5-d]PYRIMIDINE-2-CARBOXYLIC ACID AND DERIVATIVES THEREOF

Elmer F. Schroeder, Chicago, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,541
13 Claims. (Cl. 260—256.5)

1. A compound of the formula



wherein R and R′ are lower alkyl and Z is a



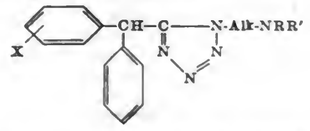
group, X representing a radical selected from the group consisting of hydroxy, lower alkoxy, amino, (lower alkyl)-amino, di-lower alkyl)amino, and hydroxy(lower alkylene)amino.

3,155,666
1-DIALKYLAMINOALKYL - 5-DIPHENYLMETHYL-1H-TETRAZOLES AND RELATED COMPOUNDS

John W. Cusic, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 18, 1963, Ser. No. 296,089
5 Claims. (Cl. 260—268)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and halogen; Alk is lower alkylene separating the nitrogens attached thereto by at least two carbon atoms; and —NRR′ is selected from the group consisting of —N(lower alkyl)$_2$, 1-pyrrolidinyl, piperidino, and 4-methyl-1-piperazinyl.

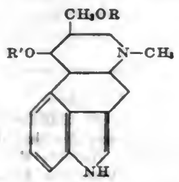
3,155,667
PROCESS FOR THE PREPARATION OF 9-HYDROXYERGOLINES AND PRODUCTS OBTAINED

Bruno Camerino, Luciano Caglioti, and Gianfranco Cainelli, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed July 23, 1962, Ser. No. 211,832
Claims priority, application Italy July 27, 1961
6 Claims. (Cl. 260—285.5)

1. 9-hydroxy-dihydro-lysergol.

6. A process of preparing a compound of the formula:



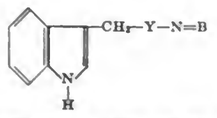
wherein
R is Ac;
R′ is selected from the group consisting of hydrogen and Ac;
Ac is an acyl radical of a member selected from the group consisting of an aliphatic and aromatic carboxylic acid having from 1 to 9 carbon atoms;
which consists essentially of the steps of:
(*a*) reacting a compound selected from the group consisting of lysergic acid and a lower alkyl ester of lysergic acid, dissolved in a solvent selected from the group consisting of tetrahydrofuran, ethyl ether and diethylene-glycol dimethyl ether, with diborane under substantially anhydrous and oxygen-free conditions,
(*b*) reacting the product of the first step with hydrogen peroxide in an alkaline medium and
(*c*) reacting the resulting 9-hydroxy-dihydro-lysergol with an acylating agent selected from the group consisting of the anhydride and chloride of a carboxylic acid selected from the group consisting of aliphatic and aromatic acids having from 1 to 9 carbon atoms.

3,155,668
1-[(3-, 2-, AND 1-INDOLYL)-LOWER-ALKYL]-TERTIARY AMINES AND INTERMEDIATES THEREFOR

Noel F. Albertson, Castleton-on-Hudson, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 11, 1960, Ser. No. 21,106
23 Claims. (Cl. 260—293)

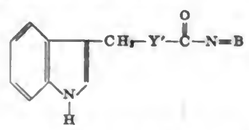
1. A member of the group consisting of (A) a compound of the formula



where Y represents lower alkylene of two to seven carbon atoms and interposing from two to five carbon atoms between the indolylmethyl group and the nitrogen atom of the group N=B, and N=B represents a member of the group consisting of 1-(azacycloalkanyl) of seven to nine ring atoms, 1 - (4-phenylazacycloheptanyl), 3 - (3-azabicyclo[3.2.0]heptanyl) and 3-(1,8,8-trimethyl-3-azabicyclo[3.2.1]octanyl); and (B) an acid-addition salt thereof.

13. An acid-addition salt of 3 - [3(1-indolyl)propyl]-1,8,8-trimethyl-3-azabicyclo[3.2.1]octane.

14. A compound of the formula



where Y′ represents lower-alkylene of two to six carbon atoms and interposing from one to four carbon atoms between the indolylmethyl group and the amide carbonyl carbon atom, and N=B represents a member of the group consisting of 1-(azacycloalkanyl) of seven to nine ring atoms, 1 - (4-phenylazacycloheptanyl), 3 - (3-azabicyclo-[3.2.0]heptanyl) and 3 - (1,8,8 - trimethyl - 3-azabicyclo-[3.2.1]octanyl).

3,155,669
2,4,8-TRIAZA-SPIRO(4,5)DEC-2-ENES

Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen N.V., a corporation of Belgium

No Drawing. Filed June 22, 1962, Ser. No. 204,628
8 Claims. (Cl. 260—294)

1. The compound 1 - oxo-3-R_1-4-R_2-8-R_3-2,4,8-triaza-spiro(4,5)dec-2-ene where R_1 is a member of the group consisting of hydrogen and lower alkyl, R_2 is a member of the group consisting of phenyl, lower alkyl, cyclopentyl and cyclohexyl, and R_3 is a member of the group consisting of hydrogen and benzyl.

3,155,670
1-OXO-2,4,8,TRIAZA-SPIRO(4,5)DECANES

Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen N.V., a corporation of Belgium

No Drawing. Filed June 22, 1962, Ser. No. 204,636
10 Claims. (Cl. 260—294)

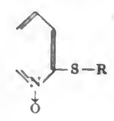
1. A member of the group consisting of 1-oxo-2-R_1-3-R_2-4-R_3-2,4,8-triaza-spiro(4,5)decane and the therapeutically useful acid addition salts thereof where R_1 and R_2 stand for a member of the group consisting of hydrogen and lower alkyl, and R_3 stands for a member of the group consisting of phenyl, lower alkyl, lower alkylphenyl, lower alkoxyphenyl and cyclohexyl.

3,155,671
BENZYL THIOPYRIDINE OXIDES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,853
4 Claims. (Cl. 260—294.8)

1. A compound of the formula



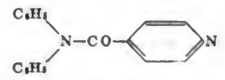
where R is selected from the group consisting of 2,6-dichlorobenzyl and 2,3,6-trichlorobenzyl.

3,155,672
N,N-DIPHENYLISONICOTINAMIDE

Claudio Pasini, Monza, Milan, and Paolo Mantegazzini, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed May 2, 1961, Ser. No. 107,055
Claims priority, application Italy May 5, 1960
1 Claim. (Cl. 260—295)

N,N-diphenylisonicotinamide having the following formula:



3,155,673
PROCESS FOR PREPARING VITAMIN B_6 AND RELATED COMPOUNDS

Eizo Matsumura, 355 Kyokoji, Yao, Osaka Prefecture, Japan

No Drawing. Filed Dec. 27, 1961, Ser. No. 162,588
Claims priority, application Japan, Jan. 12, 1961, 36/851, 36/852, 36/853, 36/854
10 Claims. (Cl. 260—295.5)

1. A process of producing 5-hydroxy-6-methylpyridine-3,4-dicarboxylic acid, which comprises hydrolyzing one member selected from the group consisting of the lower alkyl and aryl esters of 3-cyano-6-methyl-2-pyridone-4-carboxylic acid to 6-methyl-2-pyridone-3,4-dicarboxylic acid, subjecting the resulting 6-methyl-2-pyridine-3,4-dicarboxylic acid to Elbs persulfate oxidation using, at least one member selected from the group consisting of potassium persulfate, sodium persulfate and ammonium persulfate in an aqueous alkaline medium, chlorinating the resulting 5-hydroxy - 6 - methylpyridone-3-4,dicarboxylic acid with an anionic chlorine-liberating agent selected from the group consisting of phosphorus oxychloride, phosphorus pentachloride and the mixture of both, and then reducing the resulting 2-chloro-5-hydroxy-6-methyl-pyridine-3,4-dicarboxylic acid with hydrogen in the presence of a hydrogenation catalyst.

10. 5-hydroxy-6-methyl-2-pyridone - 3,4 - dicarboxylic acid.

3,155,674
2 - (HYDROXYIMINOMETHYL) 1 QUATERNARY PYRIDINIUM SALTS AND PROCESSES FOR THEIR PREPARATION

Wilbur Benedict McDowell, East Brunswick, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,765
9 Claims. (Cl. 260—296)

1. 2 - (hydroxyiminomethyl) - 1 - methyl pyridinium lower alkoxide.

3,155,675
PROCESS FOR THE MANUFACTURE OF 2-β-METHOXYETHYLPYRIDINE

Robert S. Holden, Four Ashes, near Wolverhampton, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 23, 1961, Ser. No. 147,044
Claims priority, application Great Britain, Nov. 3, 1960, 37,833/60
2 Claims. (Cl. 260—297)

1. A process for the manufacture of 2-β-methoxyethylpyridine which comprises contacting 2-β-hydroxyethylpyridine with diazomethane at ambient temperature in the presence of a catalyst selected from the group consisting of boron trifluoride etherate, zinc chloride, aluminum methoxide and methyl borate.

3,155,676
PROCESS OF PREPARING PYRIDYL ALKYL KETONES

Ralph H. Feldhake, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,236
10 Claims. (Cl. 260—297)

1. The process of preparing pyridyl alkyl ketones which comprises a vapor-phase interaction of cyanopyridine, alkane nitrile the alkane group having not more than 18 carbon atoms, and water in the presence of a catalyst support and a catalyst selected from the group consisting of a compound of an element of Groups II and III of the periodic table having an atomic number between 12 and 58 inclusive, a compound of a metallic element of Group IV, a compound of an element of series 4 of the periodic table having an atomic number between 23 and 28 inclusive, and mixtures thereof, maintained at a temperature between about 250° C. and 650° C.

3,155,677
SYNTHESIS OF PYRIDYL ALKYL KETONES

Ralph H. Feldhake, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

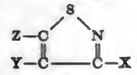
No Drawing. Filed Dec. 10, 1962, Ser. No. 243,660
16 Claims. (Cl. 260—297)

1. The process of preparing pyridyl alkyl ketones which comprises an interaction of cyanopyridine with alkyl carboxylic acid in the presence of a catalyst comprising a compound selected from the group consisting of a compound of an element of Groups II and III of the periodic table having an atomic number between 12 and 58 inclusive, a compound of a metallic element of Group IV, a compound of an element of Series 4 of the periodic table having an atomic number between 23

and 28 inclusive, and mixtures thereof maintained at a temperature between about 250° C. and 650° C.

3,155,678
CERTAIN ISOTHIAZOLE COMPOUNDS AND THEIR PRODUCTION
William R. Hatchard, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 14, 1961, Ser. No. 152,174
8 Claims. (Cl. 260—302)

1. A compound of the formula

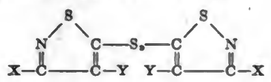


where X is selected from the class consisting of chlorine and bromine; Y is selected from the class consisting of cyano, carboxyl, halocarbonyl, carbamoyl, —CONHR[1], and —COOR[2], where R[1] is selected from the group consisting of hydrocarbon of 1–12 carbon atoms, aminophenyl, and o-(2-benzotriazolyl)phenyl, and R[2] is hydrocarbon of 1–12 carbon atoms; and Z is selected from the class consisting of X, OR, SR, NH_2 NHR, NR_2, $NHNH_2$ and NHNHR, where R is selected from the class consisting of hydrocarbon of 1–12 carbon atoms and halohydrocarbon of 1–12 carbon atoms.

7. The process of preparing isothiazoles which comprises contacting a halogenating agent selected from the class consisting of chlorine, bromine, thionyl chloride, thionyl bromide, sulfuryl chloride, sulfuryl bromide, phosphorus pentachloride, and phosphorus tribromide with an alkali metal salt of 2,2-dicyano-1,1-dimercaptoethylene in a molar ratio of at least 3:1.

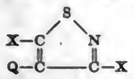
3,155,679
5,5-THIOBIS(ISOTHIAZOLE) COMPOUNDS AND THEIR PRODUCTION
William R. Hatchard, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 27, 1962, Ser. No. 213,010
9 Claims. (Cl. 260—302)

1. A compound of the formula



wherein *n* is 1–2, X is a halogen of atom number 17–35, and Y is of the group consisting of —CN, —$CONH_2$ and —COOH.

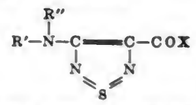
6. A process of preparing a member of the group consisting of a 5,5'-thiobis(3-X-4-isothiazolecarbonitrile) and a 5,5'-thiobis(3-X-4-isothiazolecarboxamide) which comprises reacting a compound of the formula



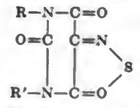
where X is a halogen of atomic number 17–35, and Q is of the group consisting of —CN and —$CONH_2$, with an alkali metal thiocyanate of the formula MSCN, where M is an alkali metal of atomic number 11–19, at a temperature of about 0° C.–150° C. in an inert organic medium which is at least a partial solvent for said compound and thiocyanate, thereby preparing a 5,5'-thiobis(3-X-4-isothiazolecarbonitrile) when Q is —CN and a 5,5'-thiobis(3-X-4-isothiazolecarboxamide) when Q is —$CONH_2$.

3,155,680
PROCESS FOR THE PREPARATION OF 3-AMINO-1,2,5-THIADIAZOL-4-CARBOXYLIC ACID, AND OF NEW DERIVATIVES THEREOF
Kurt Menzl, Linz, Austria, assignor to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria
No Drawing. Filed Jan. 29, 1963, Ser. No. 254,578
Claims priority, application Austria Feb. 9, 1962
6 Claims. (Cl. 260—306.8)

1. In a process of producting derivatives of 3-amino-1,2,5-thiadiazole of the formula



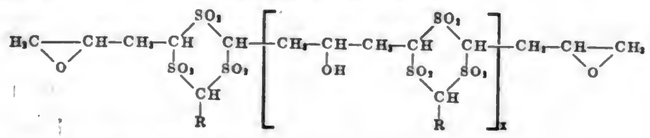
wherein R' is selected from the group consisting of hydrogen and lower alkyl, X is selected from the group consisting of the hydroxy group, the hydrazino group and the group —NHR, where R is selected from the group consisting of hydrogen and lower alkyl and R'' is selected from the group consisting of hydrogen and in the case where X is the group —NHR, the carboxy group, the step of heating a 2,6-diketo-8-thiapurine of the formula



wherein R' is selected from the group consisting of hydrogen and lower alkyl and R is selected from the group consisting of hydrogen and, in the case where R' is a lower alkyl group, lower alkyl with an aqueous alkaline agent selected from the group consisting of aqueous sodium hydroxide, aqueous potassium hydroxide and hydrazine hydrate, the quantity of said aqueous alkaline agent being more than 1 mol per mol of said 2,6-diketo-8-thiapurine, to a temperature sufficient to effect cleavage of the pyrimidine ring of said 2,6-diketo-8-thiapurine.

3,155,681
DIEPOXY-1,3,5-TRIMETHYLENE TRISULFONES AND THEIR PREPARATION
Horst Kramer and Franz Sturzenhofecker, Marl, Kreis Recklinghausen, Germany, assignors to Chemische Werke Huls, Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany
No Drawing. Filed Oct. 2, 1962, Ser. No. 228,220
Claims priority, application Germany Nov. 4, 1961
6 Claims. (Cl. 260—327)

1. A compound of the formula:

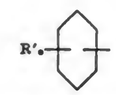


wherein:

R is a member of the group consisting of:

(*a*) hydrogen;
(*b*) alkyl having 1–18 carbon atoms;
(*c*) an unsubstituted unsaturated aliphatic hydrocarbon group having 2–18 carbon atoms and containing 1–3 double bonds;
(*d*) an unsubstituted cycloaliphatic hydrocarbon group having 5–12 carbon atoms, and containing 0–3 double bonds;
(*e*) an unsubstituted aromatic hydrocarbon group having 6–10 carbon atoms;

(*f*) an unsubstituted aromatic hydrocarbon group of the formula



wherein *n* represents a numerical value between 1 and 4 and R' is selected from the group consisting of the preceding groups (*b*)–(*d*);

(*g*) an unsubstituted aralkyl hydrocarbon group having 7–17 carbon atoms;

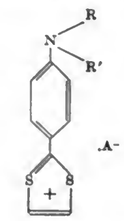
(*h*) an unsubstituted ether group, R''—O—, wherein R'' is selected from the group consisting of the preceding groups (*b*)–(*g*); and

(*i*) an acyl group, R''—CO—, wherein R'' is selected from the group consisting of the preceding groups (*b*)–(*g*);

and wherein *x* represents a numerical value between 0 and 20.

3,155,682
PROCESS FOR 1,3-DITHIOLIUM DYESTUFFS AND INTERMEDIATES THEREFOR
Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 5, 1963, Ser. No. 262,844
10 Claims. (Cl. 260—327)

1. A process of preparing a compound of the formula:



wherein R and R' are lower alkyl and A^- is an anion of a strong acid having a pKa below 4 and selected from the group consisting of perchloric, fluoboric, hydriodic, hydrobromic, p-toluene-sulfonic, picric and nitrobenzoic acids; by:

(*a*) treating 1,3-dithiole-2-thione with a member selected from the group consisting of hydrogen peroxide and a peracid to obtain the 1,3-dithiolium hydrogen sulfate salt;

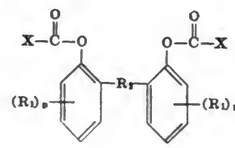
(*b*) treating the dithiolium salt from (*a*) with a strong acid having a pKa below 4 and selected from the group consisting of perchloric, fluoboric, hydriodic, hydrobromic, p-toluene sulfonic, picric, and nitrobenzoic acids; and

(*c*) condensing the compound obtained in (*b*) with a lower N,N-dialkylaniline; and recovering the condensation product.

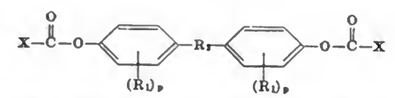
8. 1,3-dithiolium hydrogen sulfate.

3,155,683
PREPARATION OF AROMATIC CYCLIC CARBONATES
Leroy S. Moody, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed June 3, 1963, Ser. No. 284,809
8 Claims. (Cl. 260—340.2)

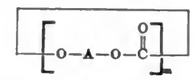
1. A process for preparing a cyclic aromatic carbonate which comprises reacting together in an inert organic solvent containing an acid acceptor, and as the sole reactive ingredients, water and a bishaloformate selected from the class consisting of



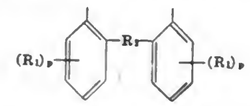
and



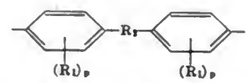
to provide a reaction mixture containing a cyclic carbonate of the formula



where *m* is a whole number from 1 to 3; —A— is



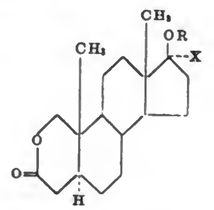
when *m* is from 1 to 2 and —A— is



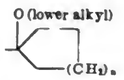
when *m* is 3, X is halogen; R_1 is selected from the class consisting of halogen and alkyl; R_2 is an alkylidene group; and *p* is a whole number from 0 to 2, and separating the cyclic carbonate from the reaction mixture.

3,155,684
OPTIONALLY 17α-ALKYLATED 17β-(SUBSTITUTED-OXY)-2-OXA-5α-ANDROSTAN-3-ONES
Raphael Pappo, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 29, 1962, Ser. No. 233,919
12 Claims. (Cl. 260—343.2)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and lower alkyl, and R is selected from the group consisting of tetrahydropyran-2-yl, lower cycloalkyl, lower cycloalk-1-enyl, and a radical of the formula



wherein *n* is a positive integer less than 3.

3,155,685
PREPARATION OF ESTER LACTONES

Erhard J. Prill and James C. Wygant, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1960, Ser. No. 34
7 Claims. (Cl. 260—343.5)

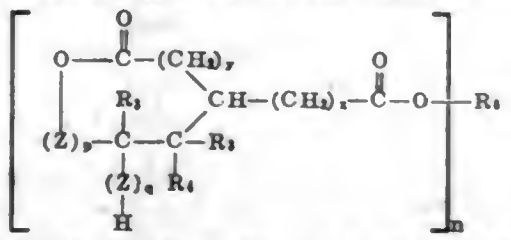
1. The method for producing an ester lactone, wherein the lactone has from 3 to 4 carbon atoms in the lactone ring in addition to the group —CO—O—; comprising the reaction of about 1 mole of a 2-alkenylsuccinic anhydride, free from non-benzenoid unsaturation apart from the 2-alkenyl group, with about 1 mole of a monohydric alcohol containing less than 18 carbon atoms, said alcohol consisting solely of carbon, hydrogen and oxygen atoms, to effect the esterification of one carboxyl group of the anhydride, then effecting the formation of an intramolecular ester by the reaction of the second carboxyl group with the unsaturated 2-alkenyl group in the presence of from about 0.1 to about 5 weight percent, based on the anhydride reactant, of an acid catalyst at a temperature from about room temperature to about 150° C. to form the ester lactone product.

3,155,686
POLY(ESTER LACTONES) AND METHOD FOR PREPARING THE SAME

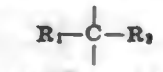
Erhard J. Prill and James C. Wygant, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1960, Ser. No. 23
15 Claims. (Cl. 260—343.6)

1. A poly(ester lactone) including only gamma- and delta-lactones having the structural formula



wherein n is an integer from 2 to 6, p, q, x and y each are integers from 0 to 1, the sum of x and y is 1, the sum of p and q is 1, Z represents the divalent radical



each of R_1, R_2, R_3, R_4 and R_5 are free from non-benzenoid unsaturation and are selected from the group consisting of hydrogen, and unsubstituted alkyl, aryl, alkaryl and aralkyl radicals of 1 to 31 carbon atoms, and R_6 is the non-hydroxy moiety of a polyhydric alcohol originally having up to 6 hydroxyl groups, which non-hydroxy moiety is selected from the group consisting of unsubstituted polyvalent alkane, cycloalkane, alkoxyalkane, phenylenedialkane, alkene, and alkyne radicals having from 2 to 18 carbon atoms and n free-valent bonds.

2. The poly(ester lactone) of claim 1, wherein n is 2; x and q are 1; R_2, R_3, R_4, and R_5 are H; R_1 is $—C_9H_{19}$; and R_6 is $—(CH_2)_2—$.

3,155,687
PREPARATION OF TRIMELLITIC INTERMOLECULAR DOUBLE ANHYDRIDE

Delbert H. Meyer, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,863
2 Claims. (Cl. 260—346.3)

1. The process of making trimellitic intermolecular double anhydride which consists essentially of distilling in the essential absence of any chemical dehydrating reagents a compound selected from the class consisting of trimellitic acid, trimellitic intra-molecular anhydride and mixtures thereof at a pot temperature in the range of about 250° C. to about 350° C., at a total partial pressure of water, trimellitic acid, trimellitic intra-molecular anhydride and trimellitic intermolecular double anhydride in the range of between about 0.001 and 0.01 atmospheres absolute, removing water from the distillation zone, continuing the distillation under conditions within the foregoing ranges, and recovering as a distillate product trimellitic intermolecular double anhydride.

3,155,688
PURIFICATION OF PHTHALIC ANHYDRIDE

Richard William Tomlinson, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 17, 1961, Ser. No. 96,361
Claims priority, application Great Britain, May 30, 1960, 19,004/60
5 Claims. (Cl. 260—346.7)

1. In a process for purifying crude phthalic anhydride obtained by oxidation of naphthalene with oxygen-containing gas wherein said anhydride is treated with a condensing agent at elevated temperatures and thereafter distilled, the improvement which comprises heating the crude phthalic anhydride for from 4 to 8 hours in the presence of a phthalate of potassium at a temperature at least 220° C. and below 250° C.

3,155,689
FORMATION OF (CIS) HEPTACHLOR EPOXIDE

William B. Burton, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 7, 1960, Ser. No. 67,501
6 Claims. (Cl. 260—348.5)

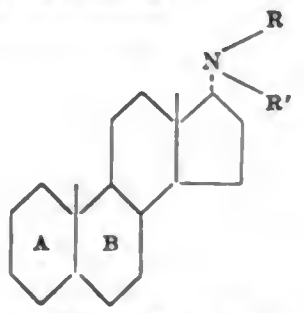
1. The liquid phase process for preparing the metabolite isomer 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene by subjecting 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene to the oxidizing action of chromic acid at a temperature of from about 10° C. to about 100° C.

3,155,690
N-SUBSTITUTED 17α-AMINOSTEROIDS

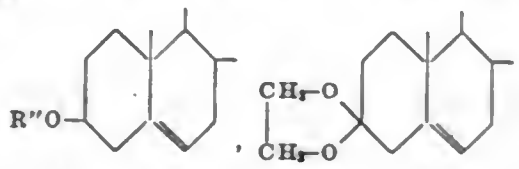
John Wayne Cole, Deerfield, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,537
7 Claims. (Cl. 260—397.3)

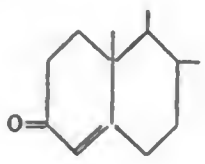
1. A steroid of the formula



wherein R is selected from the group consisting of hydrogen and loweralkyl, and wherein R′ is selected from the group consisting of hydrogen and the group XCO wherein X is selected from the group consisting of loweralkyl and chloroloweralkyl, and wherein the A and B rings have a partial structure selected from the group consisting of



and



wherein R'' is selected from the group consisting of hydrogen and the group XCO wherein X is selected from the group consisting of loweralkyl and chloroloweralkyl.

3,155,691
PRODUCTION OF 17BETA-ALKYL ETHERS OF 16-KETO-17BETA-HYDROXY STEROIDS

Max N. Huffman, Colorado Springs, Colo., assignor to Lasdon Foundation, Inc., Yonkers, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 243,183
8 Claims. (Cl. 260—397.4)

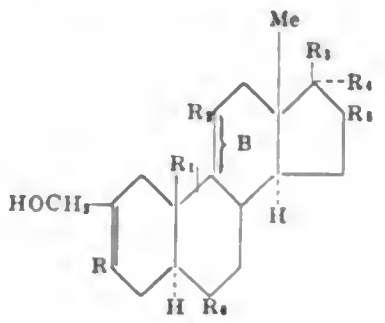
5. 3β,17β-diloweralkoxy-5-androsten-16-one.

3,155,692
3-ENOL ETHERS OF 2-HYDROXYMETHYL-3-OXO-5α-STEROIDS AND PROCESS FOR PREPARING SAME

Bernard Ellis, Derek Burn, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Jan. 24, 1963, Ser. No. 253,751
Claims priority, application Great Britain, Jan. 26, 1962, 3,001/62
11 Claims. (Cl. 260—397.4)

5. A 3-enol ether of the formula:



wherein

R is O-lower alkyl;

R_1 is selected from the group consisting of hydrogen and methyl

R_2 is selected from the group consisting of hydrogen. oxo and hydroxy;

R_3 is selected from the group consisting of hydroxy. $-COCH_3$, $-COCH_2F$, $-COCH_2OH$ and

$-COCH_2O$(acetyl);

R_4 is selected from the group consisting of hydrogen. lower alkyl, and lower alkynyl when R_3 is hydroxy and is selected from the group consisting of hydrogen, hydroxy and acetoxy when R_3 is selected from the group consisting of $-COCH_3$, $-COCH_2F$. $-COCH_2OH$ and $-COCH_2O$(acetyl);

R_3 and R_4 when taken together are selected from the group consisting of oxo and

$-O.CO.CH_2.CH_2-$ — — —;

R_5 is selected from the group consisting of hydrogen, methyl, methylene and hydroxyl;

R_6 is selected from the group consisting of hydrogen and methyl, and

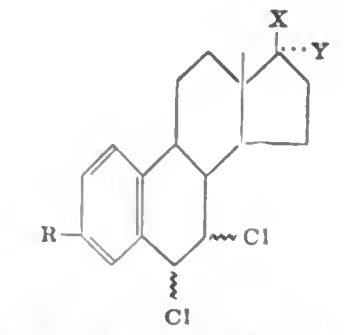
B is a single bond when R_2 is oxo and hydroxy and is selected from the group consisting of single and double bonds when R_2 is hydrogen.

3,155,693
6,7-DICHLOROESTRATRIENES

Fred A. Kincl, Atherton, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,713
Claims priority, application Mexico July 31, 1963
17 Claims. (Cl. 260—397.4)

1. A compound represented by the general formula:



wherein R is a member selected from the group consisting of a hydroxyl group, an acyloxy group containing less than 12 carbon atoms and an ether group containing less than 8 carbon atoms, X is a member selected from the group consisting of a hydroxyl group and an acyloxy group containing less than 12 carbon atoms; Y is a member selected from the group consisting of hydrogen, a lower alkyl group, a lower alkenyl group and a lower alkinyl group, and X and Y taken together represent a keto group.

3,155,694
PROCESS FOR THE REDUCTION OF A PHENOLIC ETHER TO ITS DIHYDRO DERIVATIVE

Alfred L. Wilds, Madison, Wis., and Norman A. Nelson, Kalamazoo, Mich., assignors to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

No Drawing. Continuation of application Ser. No. 392,734, Nov. 17, 1953. This application Oct. 2, 1961, Ser. No. 141,986
6 Claims. (Cl. 260—397.5)

1. The improved process of reducing a R-aryl ether, where R is selected from the group consisting of lower alkyl and hydroxy lower alkyl groups, to the corresponding dihydro enol ether compound which comprises reacting the aryl ether with lithium in a mixture consisting of liquid ammonia and an inert organic solvent by stirring the mixture for a short time, slowing adding a lower alkanol dropwise to the resulting blue reaction mixture and then recovering the dihydro product from the reaction mixture.

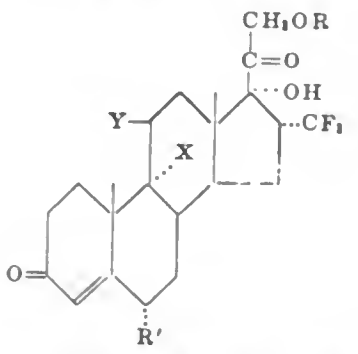
6. Tthe process of preparing 1,4-dihydro-3,17β-estradiol 3-methyl ether which comprises reacting 3,17β-estradiol 3-methyl ether with lithium in a mixture consisting of liquid ammonia and an inert organic solvent by stirring the mixture for about ten minutes and then adding a lower alkanol dropwise over a ten to twenty minute period to the resulting reaction mixture.

3,155,695
16-DIFLUOROMETHYL ADRENOCORTICOIDS

Albert Bowers and John Edwards, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Oct. 18, 1960, Ser. No. 63,267
Claims priority, application Mexico July 2, 1960
15 Claims. (Cl. 260—397.45)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than

12 carbon atoms; R′ is selected from the group consisting of hydrogen, methyl, chlorine and fluorine; Y is selected from the group consisting of hydroxy and keto and X is selected from the group consisting of hydrogen, chlorine and fluorine.

3,155,696

POLYESTERS FROM EPOXY-CONTAINING OLEAGINOUS MATERIALS

Thomas W. Findley, La Grange, Ill., John L. Ohlson, Bedford, Mass., and Frank E. Kuester, La Grange Park, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Original application Apr. 10, 1957, Ser. No. 651,821, now Patent No. 3,006,936, dated Oct. 31, 1961. Divided and this application Jan 30, 1961, Ser. No. 85,484

5 Claims. (Cl. 260—404.8)

1. A method of polymerizing an epoxidized fatty material to form a linear polymer comprising: admixing an epoxidized fatty material containing an average of not more than one epoxy group per molecule with a dicarboxylic acid anhydride, said fatty material being selected from the group consisting of epoxidized fatty glycerides, epoxidized fatty acids and methyl epoxystearate, and being substantially free of terminal epoxy groups, heating the mixture to a temperature sufficient to initiate an exothermic reaction and to cause scission of said epoxy groups; and cooling the reaction product to obtain a fusible polyester polymer, which polymer is soluble in organic solvents.

3,155,697

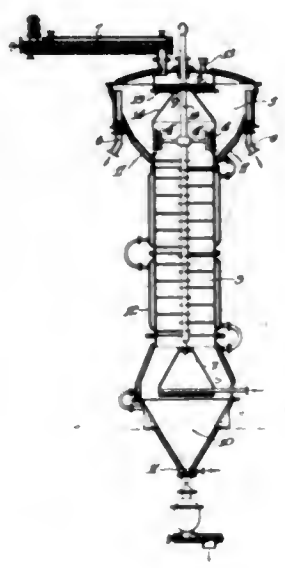
CONTINUOUS COUNTERCURRENT PROCESS FOR THE TRANSITION OF SUBSTANCES BETWEEN A LIQUID AND A SOLID PHASE

Ludwig Jurgen-Lohmann, Augsburg, and Josef Kaupp, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Brüning, Frankfurt am Main, Germany, a corporation of Germany

Original application June 24, 1957, Ser. No. 667,623. Divided and this application Sept. 20, 1960, Ser. No. 59,139

Claims priority, application Germany, June 23, 1956, F 20,606

3 Claims. (Cl. 260—412.8)



1. A continuous process for effecting a material exchange between a comminuted solid phase containing dust particles and a liquid phase comprising (A) equally distributing the liquid phase over the entire cross-section of an elongated vertical contact zone, the horizontal cross-section of said elongated vertical contact zone being constant over the entire length, (B) contacting the phases in counter-current flow in said contact zone, (C) conducting the liquid phase ascendingly and longitudinally through the contact zone at a velocity which is constant throughout any plane transverse to the direction of movement within the contact zone, said velocity being small enough to allow the dust particles of the solid phase to move by the action of gravity exclusively in opposite direction to the liquid current, (D) maintaining within the contact zone within any given plane transverse to the direction of movement within the contact zone a uniform distribution of liquid and solid phase throughout said given plane, (E) maintaining in the contact zone an increasing concentration of the solid particles in the direction of their movement by withholding the removal of the solid phase from the contact zone at the beginning of the process and, (F) removing each phase from the contact zone.

3,155,698

METHOD OF PREPARING ALKYL SILANES

Siegfried Nitzsche and Paul Buchheit, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany

No Drawing. Filed May 24, 1962, Ser. No. 197,239

Claims priority, application Germany June 22, 1961

5 Claims. (Cl. 260—448.2)

1. In the method for preparing alkylchlorosilanes by reacting an alkyl chloride with finely divided silicon at a temperature in the range of 200° to 500° C. the improvement consisting essentially of admixing 0.1 to 3 percent by weight calculated on the weight of the silicon present of a chloride of zirconium with the finely divided silicon prior to the reaction whereby the yield of alkylhydrogenchlorosilanes is increased.

3,155,699

PURIFICATION OF ISOCYANATES BY REDUCTION OF THE HYDROLYZABLE CHLORINE AND ACID CONTENT

Eugene L. Powers, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 30, 1960, Ser. No. 18,484

7 Claims. (Cl. 260—453)

1. A method of reducing the hydrolyzable chlorine and acidic constituents of an organic isocyanate substantially free of chemically bonded chlorine and containing hydrolyzable chlorine and acidic constituents as an impurity therewith, which comprises treating said organic isocyanate mixtures with from 0.01 to 2 mol percent, based on said isocyanate, of a metallic compound selected from the group consisting of ferric chloride, ferrous chloride, stannic chloride, bismuth trichloride, zinc chloride, cadmium chloride, aluminum chloride, and ferric benzoate, and recovering the purified isocyanate from the resulting mixture.

3,155,700

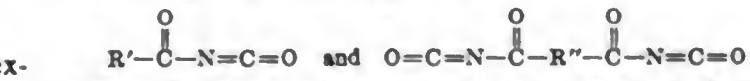
PREPARATION OF ACYL ISOCYANATES

Paul R. Steyermark, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,758

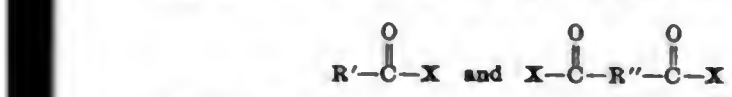
4 Claims. (Cl. 260—453)

1. A method for preparing acyl isocyanate selected from the group consisting of



wherein R′ is selected from the group consisting of alkyl, alkenyl phenyl, halophenyl, lower alkyl phenyl, lower alkoxy phenyl, nitrophenyl and naphthyl and R″ is selected from the group consisting of alkylene, phenylene,

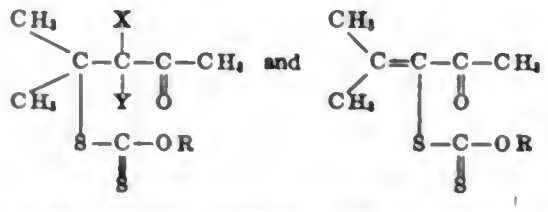
and cycloalkylene which comprises reacting an acyl halide selected from the group consisting of



wherein R′ and R″ have the meanings given previously, and X is selected from the group consisting of chlorine and bromine, with isocyanic acid in the presence of a tertiary amine having a pK_b constant of from about 3 to 10.

3,155,701
XANTHATE ESTERS
Martin Hauser, Stamford, Conn., and Norbert M. Bikales, Livingston, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,275
7 Claims. (Cl. 260—455)

1. Compounds of the formulae:



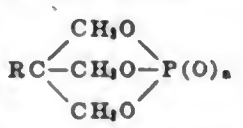
wherein R is a member selected from the group consisting of alkyl of one to twelve carbons, and aralkyl, in which the aryl group has not more than two aromatic rings, and the alkyl group has from one to twelve carbons; and X and Y are individually selected from the group consisting of hydrogen and halogen.

3,155,702
STEREOISOMERS AND THE RACEMATE OF BUTANE - 1,2,3,4 - TETROL-1,4-DI - (METHANESULFONATE)
Peter Werner Feit, Kongens Lyngby, Copenhagen, Denmark, assignor to Løvens Kemiske Fabrik Ved A. Kongsted, Ballerup, Denmark, a firm
No Drawing. Filed Feb. 21, 1961, Ser. No. 90,657
Claims priority, application Great Britain Feb. 22, 1960
1 Claim. (Cl. 260—456)

L-threitol-1,4-di-(methanesulfonate).

3,155,703
BICYCLIC PHOSPHITES AND PHOSPHATES
William D. Emmons, Huntingdon Valley, and William S. Wadsworth, Jr., Elkins Park, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Feb. 10, 1959, Ser. No. 792,262
2 Claims. (Cl. 260—461)

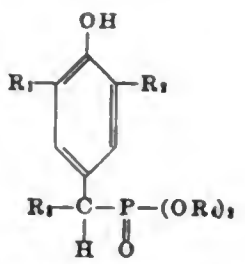
1. A compound of the formula



wherein R is an alkoxymethyl group of two to five carbon atoms, and *n* is zero to one, inclusive.

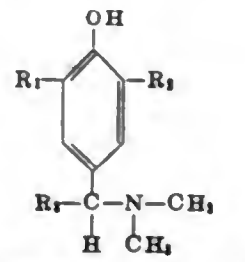
3,155,704
O,O-DIALKYL 3,5-DIALKYL 4-HYDROXYPHENYLALKYL PHOSPHONATES AND PROCESS FOR PREPARING SAME
Gordon G. Knapp, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 1, 1960, Ser. No. 53,354
18 Claims. (Cl. (Cl. 260—461)

1. A compound having the formula:



wherein R_1 is alkyl having from 1–12 carbon atoms, R_2 is alkyl having from 3–12 carbon atoms, R_3 is selected from the group consisting of hydrogen, alkyl having from 1–12 carbon atoms and mononuclear aryl having from 6–12 carbon atoms, and R_4 is alkyl having from 1–12 carbon atoms.

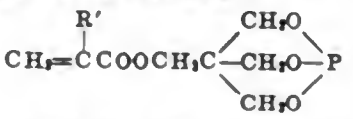
10. The process for preparing the compounds of claim 1 which comprises reacting a compound having the formula:



wherein R_1 is alkyl having from 1–12 carbon atoms, R_2 is alkyl having from 3–12 carbon atoms and R_3 is selected from the group consisting of hydrogen, alkyl having from 1–12 carbon atoms and mononuclear aryl having from 6–12 carbon atoms, with methyl iodide and reacting the resultant methiodide with a trialkyl phosphite wherein the alkyl contain from 1–12 carbon atoms.

3,155,705
ACRYLATES AND METHACRYLATES OF BICYCLIC PHOSPHITES AND BICYCLIC PHOSPHATES
William D. Emmons, Huntingdon Valley, and William S. Wadsworth, Jr., Elkins Park, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Jan. 19, 1961, Ser. No. 83,613
3 Claims. (Cl. 260—461)

1. A compound of the formula



wherein R′ is selected from the class consisting of a methyl group and a hydrogen atom.

3,155,706
PRODUCTION OF DIARYL PHOSPHATES
Vasco G. Camacho and Wendell M. Byrd, Jr., Richmond, Va., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed July 26, 1961, Ser. No. 126,868
13 Claims. (Cl. 260—461)

1. A process for forming diaryl phosphorohalidates, in the absence of a catalyst, comprising simultaneously adding to one molecular proportion of a compound having the formula ROH wherein R is a member of the group consisting of phenyl, lower alkoxy-substituted phenyl, alkyl-substituted phenyl wherein the alkyl has from 1 to 9 carbon atoms, halo-substituted phenyl and nitro-substituted phenyl, one molecular proportion of a phosphorus oxyhalide and a mixture in aqueous solution of one molecular proportion each of an alkali metal hydroxide and an alkali metal phenoxide of the formula ROM wherein R has the same definition as above and M is an alkali metal, maintaining the temperature of the reaction mixture during the addition within the range of

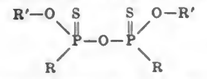
from about −10° C. to 20° C. while maintaining the pH of the reaction mixture from about 4.0 to 6.9 to form a major proportion of said diaryl phosphorohalidate.

3,155,707
SYMMETRICAL DIARYL DIAMIDODITHIOPYROPHOSPHATES

Kenneth C. Kauer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 2, 1961, Ser. No. 128,690
7 Claims. (Cl. 260—461)

1. A compound corresponding to the formula



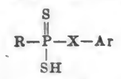
wherein R represents a member of the group consisting of mono-lower alkyl amino and di-lower alkyl amino and R′ represents a member of the group consisting of lower alkyl-phenyl, lower alkoxy-phenyl, lower alkylthio-phenyl, lower alkyl-halophenyl, lower alkoxy-halophenyl, lower akylthio-halophenyl and halophenyl.

3,155,708
PROCESS FOR MAKING HYDROCARBYLPHOSPHONOTHIONIC ACID MONOARYL ESTERS

John P. Chupp, Kirkwood, and Peter E. Newallis, Crestwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 26, 1962, Ser. No. 169,130
10 Claims. (Cl. 260—461)

1. The method of making hydrocarbylphosphonothionic acid monoaryl esters of the formula



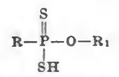
wherein R is hydrocarbyl free of aliphatic unsaturation and having up to 18 carbon atoms and selected from the group consisting of alkyl, C_{5-7} cycloalkyl, methylcyclohexyl, cyclohexylmethyl, bicyclohexyl, pheny, alkylphenyl, cyclohexylphenyl, phenylalkyl, bibenzylyl, benzylphenyl, biphenylyl, naphthyl, tetrahydronaphthyl, anthracyl, phenanthryl, indanyl, indenyl and fluorenyl, wherein X is chalkogen of atomic weight less than 40, and wherein Ar is selected from the group consisting of phenyl and said phenyl having substituents selected from the group consisting of lower alkyl, lower alkoxy, trifluoromethyl, lower alkylthio, bromo, chloro, nitro, which comprises reacting at least one phenolic compound of the formula HX—Ar wherein X and Ar have the aforedescribed significance with at least one hydrocarbylthionophosphine sulfide having a ratio of substituents of phosphorus to sulfur to hydrocarbyl R of approximately 1:2:1, the said hydrocarbyl R having the aforedescribed significance.

3,155,709
METHOD OF MAKING HYDROCARBYLPHOSPHONODITHIOIC ACIDS

Peter E. Newallis, Crestwood, and John P. Chupp, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 27, 1962, Ser. No. 176,137
12 Claims. (Cl. 260—461)

1. The method of making a phosphonothioic acid of the formula



wherein R is hydrocarbyl free of aliphatic unsaturation and having up to 18 carbon atoms and selected from the group consisting of alkyl, C_{5-7} cycloalkyl, methylcyclohexyl, cyclohexylmethyl, bicyclohexyl, phenyl, alkylphenyl, cyclohexylphenyl, phenylalkyl, bibenzylyl, benzylphenyl, biphenylyl, naphthyl, tetrahydronaphthyl, anthracyl, phenanthryl, indanyl, indenyl and fluorenyl, wherein R_1 is selected from the group consisting of

(*a*) aliphatic hydrocarbyl selected from the group consisting of alkyl and mono-unsaturated aliphatic hydrocarbyl selected from the group consisting of alkenyl and alkynyi, and

(*b*) said aliphatic hydrocarbyl (*a*) having at least one substitutent selected from the group consisting of

(1) halogen of atomic number in the range of 18 to 80, and

(2) aromatic hydrocarbyl having 6 to 12 carbon atoms selected from the group consisting of phenyl and alkyl substituted phenyl, and

(3) said aromatic hydrocarbyl (2) having at least one halogen of atomic number in the range of 18 to 80 which substituent is on the aromatic nucleus thereof, and

(4) the substituent AX— wherein X is chalkogen of atomic weight less than 40 and wherein A has from 1 to 12 carbon atoms and is selected from the group consisting of

(4*a*) hydrocarbyl selected from the group consisting of alkyl, alkenyl, alkynyl, cyclohexyl, phenyl, naphthyl, biphenylyl, alkylphenyl, phenylalkyl, phenylalkenyl, and alkylphenylalkyl, and

(4*b*) said hydrocarbyl (4*a*) having at least one halogen substituent of atomic number in the range of 18 to 80,

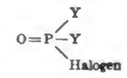
the total carbon atom content of said R_1 being in the range of 1 to 18, which comprises reacting a monohydric alcohol of the formula HO—R_1 wherein R_1 has the aforedescribed significance with a hydrocarbylthionophosphine sulfide having a ratio of substituents of phosphorus to sulfur to hydrocarbyl R of approximately 1:2:1, the said hydrocarbyl R having the aforedescribed significance.

3,155,710
PROCESS FOR PREPARING PHOSPHATE ESTERS WITH A VANADIUM CATALYST

Carroll A. Hochwalt, Clayton, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 7, 1962, Ser. No. 236,126
19 Claims. (Cl. 260—461)

1. In a process for preparing a triorgano-phosphate which comprises reacting a monohydric compound selected from the group consisting of monohydric aliphatic saturated primary alcohols having 5 to 18 carbon atoms; phenol and substituted phenols having 1 to 3 alkyl substituents, said alkyl substituents containing 1 to 18 carbon atoms and said substituted phenols having at least one unsubstituted ortho position; with a phosphorus compound of the general formula



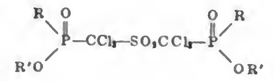
wherein each Y is selected from the group consisting of halogen, alkoxy, haloalkoxy, aryloxy, haloaryloxy, alkoxyalkoxy and aryloxyalkoxy, the improvement which comprises carrying out the reaction in the presence of a compound selected from the class consisting of vanadium halides, vanadium oxides, vanadyl halides, and vanadates, said vanadates being selected from the group consisting of alkali metal vanadates, alkaline earth metal vanadates, ammonium metavanadate, copper metavanadate and silver metavanadate.

3,155,711
BIS(ALKOXY ALKYL PHOSPHINYL-DICHLOROMETHYL) AND BIS(ALKOXY PHENYLPHOSPHINYL-DICHLOROMETHYL) SULFONES

Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,400
4 Claims. (Cl. 260—461)

1. An organophosphorus compound of the following formula:



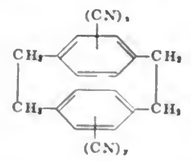
wherein R′ represents lower alkyl and R is selected from the class consisting of lower alkyl and phenyl.

3,155,712
CYANATED DI-p-XYLYLENES

Ying L. Yeh, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,803
2 Claims. (Cl. 260—465)

1. A composition of matter having the structure:



wherein x has a value of from 1 to 3, inclusive, and y is a number from 1 to 3, inclusive.

2. Dicyano-di-p-xylylene.

3,155,713
PROCESS OF PRODUCING 4-HYDROXY-2-BUTYNYL N-(3-HALOPHENYL)CARBAMATES

Thomas R. Hopkins, Johnson County, and Paul D. Strickler, Fairway, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 5, 1961, Ser. No. 135,763
6 Claims. (Cl. 260—471)

1. The process of producing a 4-hydroxy-2-butynyl N-(3-halophenyl) carbamate which comprises reacting a 3-halophenyl isocyanate with an excess of 2-butyne-1,4-diol, and selectively extracting the reaction mixture with a solvent selected from the group consisting of diisopropyl ether, ethylene dichloride and chloroform to isolate said carbamate.

3,155,714
DI(ALKYLGLYCOLYL) PHTHALATES

Robert H. Mills, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 4, 1959, Ser. No. 810,546
9 Claims. (Cl. 260—475)

1. In a method of making di(alkylglycolyl) phthalates, the step comprising reacting (*a*) a phthalic acid, (*b*) a saturated tertiary aliphatic amine having a total of 3 to 24 carbon atoms, and (*c*) an alkyl haloacetate having from 1 to about 18 carbon atoms in the alkyl group, the mol ratio of (*a*):(*b*):(*c*) being about 1:2:2.

3,155,715
PREPARATION OF DIALKYL ESTERS OF TEREPHTHALIC ACID

Alan E. Ardis, Hamden, and Alexander A. Vaitekunas, New Haven, Conn., assignors, by mesne assignments, to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Sept. 30, 1959, Ser. No. 843,347
3 Claims. (Cl. 260—475)

1. In the preparation of dialkyl terephthalate, the process comprising reacting terephthalic acid with five to about fifty times its weight of an alkanol containing 1 to 4 carbon atoms at a temperature of 60° C. to 110° C. for one-half to two hours in the presence of about 0.6 parts of sulfuric acid per part by weight of terephthalic acid and in the presence of 0.2 to 2 mole of isophthalic derivative per mole of terephthalic acid, said isophthalic derivative being chosen from the group consisting of isophthalic acid and a 1 to 4 carbon alkyl ester thereof.

3,155,716
PREPARATION OF PURE ALPHA-NAPHTHALENE SULFONIC ACID AND ALPHA-NAPHTHOL

Albert P. Paul, New Brunswick, and Richard F. Beidler, Middlesex, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,601
4 Claims. (Cl. 260—505)

1. A process for the preparation of 1-naphthalene sulfonic acid containing less than three percent by weight of the 2-isomer which comprises reacting substantially equimolar amounts of chlorosulfonic acid and naphthalene at a temperature of 5° to 40° C., in a slurry of a nitrohydrocarbon selected from the group consisting of nitrobenzene and lower alkyl derivatives thereof, the weight ratio of nitrohydrocarbon to naphthalene being between 1.8:1 and 10:1, separating the precipitated 1-isomer from the reaction mixture and thereby recovering it substantially pure and free of the 2-isomer.

3,155,717
PROCESS FOR THE PREPARATION OF TRIMESIC ACID

David Brown, New York, and Alfred Saffer, Bayshore, N.Y., assignors, by mesne assignments, to Mid-Century Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 27, 1956, Ser. No. 594,095
4 Claims. (Cl. 260—524)

1. A process for the preparation of trimesic acid which comprises reacting 1,3,5-triisopropylbenzene with molecular oxygen in the presence of a manganese carboxylate as catalyst and a monocarboxylic acid of 1 to 8 carbon atoms in the molecule at a temperature in the range of 150 to 275° C. and at a pressure such that a liquid phase of said lower acid is maintained.

3,155,718
PROCESS FOR THE OXIDATION OF ORGANIC COMPOUNDS

Albyn William Norman Brown, Colin Bertie Cotterill, Fred Dean, and Gordon Howard Whitfield, all of Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 28, 1957, Ser. No. 692,534
Claims priority, application Great Britain Nov. 21, 1956
4 Claims. (Cl. 260—524)

1. In processes for the production of benzene carboxylic acids by oxidation in the liquid phase at elevated

temperatures with gaseous oxygen of the alkyl side-chains of alkyl-substituted benzene hydrocarbons in the presence of a catalyst selected from the group consisting of cobalt bromide and manganese bromide and wherein there is present above said liquid phase a vapor phase containing hydrocarbon and oxygen, the improvement which consists essentially of the combination of steps of:

(1) incorporating a hydrocarbon solvent in said liquid phase, relatively more volatile than any of the other components of said phase; and,

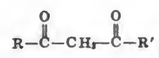
(2) maintaining a boil-up rate such that the vapor of said solvent maintains the hydrocarbon composition of the vapor phase over said liquid phase above the upper explosive limit thereof.

3,155,719
OXIDATION OF ALDEHYDES TO CARBOXYLIC ACIDS USING A CATALYST COMPRISING COBALT NAPHTHENATE AND A COBALT CHELATE

Adolph C. Shotts, Maplewood, La., and Jesse R. Motes, Lubbock, Tex., assignors to Cities Service Research & Development Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1960, Ser. No. 75,691
6 Claims. (Cl. 260—530)

1. In a process of oxidizing an aldehyde in an organic solvent to its corresponding carboxylic acid by intimately contacting said aldehyde with oxygen gas, the improvement of the steps of commingling said aldehyde and at least about 0.005%, based on the weight of said aldehyde, of the catalyst having as components thereof (1) a cobalt salt of naphthenic acid and (2) a cobalt chelate of a β-diketone having up to about 23 carbon atoms and having the formula:



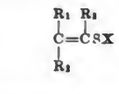
wherein R and R′ are hydrocarbon radicals, the ratio of (1) to (2) being between about 100 to 1 and 1 to 100, and recovering the products of reaction.

3,155,720
DICHLOROVINYL SULFENYL CHLORIDE

Paul C. Aichenegg, Prairie Village, Kans., and Carl D. Emerson, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 28, 1961, Ser. No. 143,009
4 Claims. (Cl. 260—543)

1. Compounds of the formula



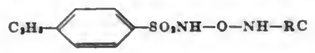
wherein two of R_1, R_2 and R_3 are selected from the group consisting of chlorine and bromine and the remaining member of R_1, R_2 and R_3 is hydrogen, and X is chlorine.

3,155,721
NOVEL SULFONYLUREAS

Jack Mills and Frederick J. Marshall, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 30, 1961, Ser. No. 156,159
2 Claims. (Cl. 260—553)

1. A compound selected from the group consisting of compounds of the formula



wherein R is 2-bicyclo[2.2.1]heptyl, and the salts thereof with nontoxic cations.

3,155,722
RECOVERY OF RESIDUAL AMMONIA AND CARBON DIOXIDE IN THE SYNTHESIS OF UREA

Ivo Mavrovic, New York, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 29, 1960, Ser. No. 5,379
4 Claims. (Cl. 260—555)

3. In a process for urea synthesis which comprises reacting ammonia, carbon dioxide and recycle aqueous ammonium carbamate solution in an overall ammonia-carbon dioxide molar ratio between 2 to 1 and 5 to 1 and at urea synthesis pressure between 2000 p.s.i.g. to 6000 p.s.i.g. and temperature between 320° F. to 430° F., reducing the pressure of the resulting urea-containing process stream to the range of 200 p.s.i.g. to 400 p.s.i.g., heating the process stream at a temperature between 240° F. to 300° F. whereby a major portion of the contained ammonium carbamate is decomposed, separating a first off-gas comprising ammonia, carbon dioxide and water vapor, further reducing the pressure of the residual urea-containing process stream to the range of 5 p.s.i.g. to 50 p.s.i.g., further heating the residual process stream at a temperature between 150° F. to 230° F. to decompose the balance of contained ammonium carbamate, separating a second off-gas comprising ammonia, carbon dioxide and water vapor from the final residual process stream, said final residual process stream comprising product aqueous urea solution, the improvement which comprises scrubbing said second off-gas with cold aqueous ammonia-ammonium carbamate solution whereby said second off-gas is cooled to a temperature between 125° F. to 140° F. and a portion thereof is condensed and absorbed into said solution, said solution being heated from an initial temperature between 110° F. to 140° F. to a final temperature between 115° F. to 145° F. by said scrubbing step, further cooling and refluxing the residual gas portion of said second off-gas to a final temperature below 100° F. whereby substantially all carbon dioxide is removed from said second off-gas, recycling the final residual second off-gas comprising ammonia at 5 p.s.i.g. to 50 p.s.i.g. and free of carbon dioxide to urea synthesis, cooling and recycling a portion of said aqueous ammonia-ammonium carbamate solution to said scrubbing of second off-gas, compressing the balance of said solution to said intermediate pressure of first carbamate decomposition in the range of 200 p.s.i.g. to 400 p.s.i.g., combining said compressed solution with said first off-gas, scrubbing the resulting hot mixed gas-liquid stream with warm aqueous ammonia-ammonium carbamate solution whereby the residual gas phase of said mixed stream is cooled to a temperature between 150° F. to 220° F. and a portion of said mixed stream is condensed and absorbed into said solution and said solution is heated, further cooling and refluxing the residual gas phase to a final temperature between 110° F. to 120° F. whereby substantially all carbon dioxide is removed from said gas phase, recycling the final residual gas phase comprising ammonia at 200 p.s.i.g. to 400 p.s.i.g. and free of carbon dioxide to urea synthesis, cooling and recycling a portion of said warm aqueous ammonia-ammonium carbamate solution to said scrubbing of hot mixed gas-liquid stream, and compressing and recycling the balance of said solution to urea synthesis as said recycle aqueous ammonium carbamate solution.

3,155,723
SYNTHESIS OF UREA AND RECOVERY OF RESIDUAL REACTANTS

Stanley S. Kurpit, Brooklyn, and Ivo Mavrovic and Stanley J. Saffian, New York, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 4, 1960, Ser. No. 6,644
6 Claims. (Cl. 260—555)

1. In a process for urea synthesis which comprises reacting ammonia, carbon dioxide and recycle aqueous ammonium carbamate solution at highly elevated pressure, reducing the pressure of the resulting urea-containing process stream to an intermediate level, heating the process stream to decompose a portion of the contained ammonium carbamate, separating a first off-gas comprising ammonia, carbon dioxide and water vapor, further reducing the pressure of the residual urea-containing process stream to a lower level, further heating the residual process stream to decompose the balance of contained ammonium carbamate, separating a second off-gas comprising ammonia, carbon dioxide and water vapor from the final residual process stream, said final residual process stream comprising product aqueous urea solution, the improved process of recycling said first and second off-gas streams to urea synthesis which comprises reacting said first off-gas at said intermediate pressure level with pressurized aqueous ammonia-ammonium carbamate solution, whereby said first off-gas is partially absorbed into said solution and said solution is concentrated by absorption of ammonia and carbon dioxide from said first off-gas, recycling said concentrated solution to urea synthesis as said recycle aqueous ammonium carbamate solution, combining residual unabsorbed first off-gas with said second off-gas at said lower pressure level, scrubbing the resulting mixed off-gas with cold aqueous ammonia-ammonium carbamate solution whereby said mixed off-gas is cooled and a portion thereof is condensed and absorbed into said solution and said solution is heated, further cooling and refluxing the resdiual gas portion of said mixed off-gas whereby substantially all carbon dioxide is removed from said residual gas, compressing said residual gas comprising ammonia free of carbon dioxide and recycling said ammonia to urea synthesis, cooling and recycling a portion of said aqueous ammonia-ammonium carbamate solution to said scrubbing of mixed off-gas, pressurizing the balance of said solution to said intermediate pressure level, and reacting said solution with said first off-gas as said pressurized aqueous ammonia-ammonium carbamate solution.

3,155,724
PROCESS FOR BRINGING STEREOISOMERIC MIXTURE OF BIS-(4-AMINOCYCLOHEXANE)METHANE CLOSE TO THE EQUILIBRIUM CONCENTRATION

Wilfred J. Arthur, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,080
2 Claims. (Cl. 260—563)

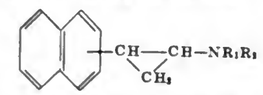
1. The process for taking a mixture of stereoisomers of bis(4-aminocyclohexyl)methane, said mixture being not at the equilibrium concentration of stereoisomeric bis(4-amino-cyclohexyl)methane, and bringing said mixture closer to the equilibrium concentration, said process comprising subjecting said mixture to gaseous hydrogen at a partial hydrogen pressure above about 500 pounds per square inch and a temperature from about 180° C. to 250° C. in the presence of a ruthenium catalyst and from 0.01 to 200 parts by weight of ammonia based on the weight of said mixture.

3,155,725
NAPHTHYLCYCLOPROPYLAMINES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 14, 1960, Ser. No. 35,911
9 Claims. (Cl. 260—570.5)

1. A chemical compound of the class consisting of a free base and its salts of pharmaceutically acceptable acids, said free base having the formula:



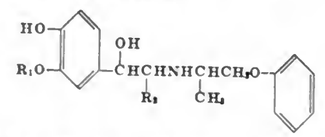
in which R_1 and R_2 are members selected from the group consisting of hydrogen, benzyl and lower alkyl having from 1 to 6 carbon atoms.

3,155,726
OXY-PHENYL-2-(1-METHYL-2-PHENOXY-ETHYLAMINO)-ALKANOLS

William A. Gould and John A. La Budde, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,619
4 Claims. (Cl. 260—570.6)

1. A composition selected from the group consisting of a compound of the formula



wherein R_1 is lower alkyl containing up to 5 carbon atoms and R_2 is selected from the group consisting of hydrogen and methyl; and the nontoxic, pharmaceutically acceptable acid addition salts thereof.

3,155,727
REACTION OF AROMATIC AMINES WITH PARA HALO NITROBENZENES USING COPPER CYANIDE CONDENSATION CATALYST

Farris H. Wilson, Jr., Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed July 25, 1960, Ser. No. 44,888
9 Claims. (Cl. 260—571)

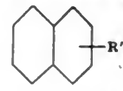
1. A process for condensing a primary aromatic amine conforming to the following general formula

$$R—NH_2$$

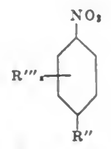
wherein R is selected from (1) phenyl radicals conforming to the following general formula



wherein R′ is selected from the group consisting of hydrogen, alkyl radicals containing from 1 to 9 carbon atoms, alkoxy radicals containing from 1 to 9 carbon atoms, cycloalkyl radicals in which the cycloalkyl ring contains from 5 to 6 carbon atoms and halogen radicals and wherein x is an integer ranging from 1 to 3; (2) naphthyl radicals conforming to the following structure



wherein R′ is selected from the group consisting of hydrogen, alkyl radicals containing from 1 to 9 carbon atoms, alkoxy radicals containing from 1 to 9 carbon atoms, cycloalkyl radicals in which the cycloalkyl ring contains from 5 to 6 carbon atoms and halogen radicals and wherein y is an integer ranging from 1 to 5 with a para halo nitrobenzene which conforms to the following structural formula



wherein R″ is a halogen selected from the group consisting of chlorine and bromine and R‴ is selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 9 carbon atoms and z is an integer ranging from 1 to 2 which comprises reacting the primary aromatic amine with the para halo nitrobenzene in the ratio of from 1 to 6 moles of the primary aromatic amine to 3 to 1 moles of the para halo nitrobenzene in the presence of a basic material selected from the group consisting of oxides, hydroxides and carbonates of the alkali metals which neutralizes the hydrogen halide formed and in the presence of a catalytic amount of cuprous cyanide at a temperature of from 125° C. to 260° C. and removing water from the reaction mixture.

3,155,728
METHOD FOR THE PREPARATION OF POLYGLYCOL PRIMARY AMINE

Sherman D. Lesesne, Georgetown, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

Filed Oct. 11, 1960, Ser. No. 61,982
4 Claims. (Cl. 260—584)

1. A method of preparing a polyglycol primary amine which comprises the steps of:

(1) reacting an aliphatic carbonyl compound containing from 3 to 8 carbon atoms with about an equimolar amount of a primary alkanolamine containing from 2 to 4 carbon atoms in the absence of a solvent at a temperature within the range of about 70° to about 175° C. for a period of time within the range of about 10 to about 80 hours to provide a Schiff base;

(2) reacting said Schiff base with from about 1 to about 100 mols per mol of Schiff base of an alkylene oxide containing 2 to 4 carbon atoms in the presence of an oxyalkylation catalyst at a temperature within the range of about 40° to about 200° C. and a pressure within the range of about 0 to 1000 p.s.i.g. for a period of time within the range of about 1 to 6 hours to form an alkylene oxide adduct of said Schiff base;

(3) subjecting said alkylene oxide adduct to vacuum stripping at a pressure from 1 to 20 mm. of mercury to substantially completely remove unreacted alkylene oxide;

(4) contacting said stripped adduct with an amount of acid sufficient to neutralize said adduct;

(5) hydrolyzing said neutralized adduct with water at about the boiling point of water to form said polyglycol primary amine; and

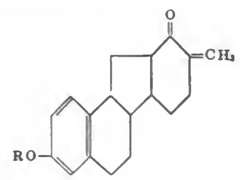
(6) recovering said polyglycol primary amine from the products of said hydrolysis reaction.

3,155,729
DEHYDRO DERIVATIVES OF D-HOMO-C-NOR-ESTRANES AND INTERMEDIATES THERETO

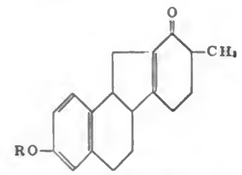
William F. Johns, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 13, 1961, Ser. No. 88,651
6 Claims. (Cl. 260—590)

1. A member selected from the group consisting of compounds represented by the structural formulas



and



wherein R is a lower alkyl radical.

3,155,730
PROCESS FOR PREPARING KETONES

Jackson Eng, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,772
9 Claims. (Cl. 260—593)

1. In a process for condensing lower molecular weight oxygenated hydrocarbons selected from the group consisting of ketones and alcohols to produce higher molecular weight ketones wherein said lower molecular weight oxygenated hydrocarbon is contacted in the vapor phase with a catalyst, the improvement which comprises employing as said catalyst a mixture comprising calcium carbonate and from 10–200 weight percent magnesium oxide based on said calcium carbonate.

3,155,731
ALKENYL PENTABORANE(9) AND METHOD FOR ITS PREPARATION

John E. Paustian, Whippany, N.J., and David M. Gardner, Abington, Pa., assignors to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed July 29, 1958, Ser. No. 751,803
8 Claims. (Cl. 260—606.5)

8. Alkenyl pentaborane(9) wherein the alkenyl radical contains from 2 to 4 carbon atoms selected from the class consisting of monomeric and polymeric alkenyl pentaborane(9).

3,155,732
PROCESS FOR THE PRODUCTION OF TETRAALKYL DIBORANES

Konrad Lang and Friedrich Schubert, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 22, 1959, Ser. No. 828,706
Claims priority, application Germany July 24, 1958
5 Claims. (Cl. 260—606.5)

1. Process for the production of tetraalkyl diborane which comprises reacting:

(*a*) a boron trialkyl,

(*b*) an alkali metal borohydride, and

(*c*) a member selected from the group consisting of boron trifluoride, addition products of boron trifluoride with alkyl ethers, addition products of boron trifluoride with tetrahydrofuran, and mixtures thereof

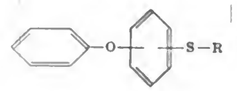
in an inert solvent selected from the group consisting of tetrahydrofuran and diethylene glycol dimethyl ether at about normal pressure and a temperature between about 30–60° C.

3,155,733
ARYLOXYARYLTHIOALKENYL ETHERS

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,522
3 Claims. (Cl. 260—609)

1. A compound corresponding to the formula



wherein R represents an alkenyl group being of from 2 to 12, inclusive, carbon atoms.

3,155,734
PROCESS FOR SEPARATION OF PHENOLS FROM AQUEOUS MIXTURES CONTAINING THEM

Heinrich Merkel, Essen, Germany, assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 8, 1961, Ser. No. 115,614
1 Claim. (Cl. 260—621)

A process for the separation of simple phenols from an aqueous mixture containing simple phenols comprising extracting said phenols from said aqueous mixture with acetophenone.

3,155,735
CHLORINE AND BROMINE SUBSTITUTED FLUOROBUTANES AND FLUOROBUTENES

John T. Barr, Needham, Mass., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania

No Drawing. Original application Nov. 17, 1955, Ser. No. 547,538, now Patent No. 3,020,267, dated Feb. 6, 1962. Divided and this application Dec. 5, 1961, Ser. No. 181,831
5 Claims. (Cl. 260—653)

1. A compound having the formula

$$CF_2BrCFClCHClCH_2Cl$$

4. A compound having the formula

$$CF_2BrCFClCCl{=}CH_2$$

3,155,736
METHOD OF MAKING ORGANOLITHIUM COMPOUNDS

Oscar Francis Beumel, Jr., West Chester, Pa., assignor to Foote Mineral Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 9, 1962, Ser. No. 208,628
8 Claims. (Cl. 260—665)

1. The method of preparing alkyllithium compounds comprising contacting lithium chloride sludge with a mixture of sodium metal and an alkyl halide having the structural formula: RX, wherein R is an alkyl radical having from 3 to 22 carbon atoms and X is a halide radical, to form a corresponding alkyllithium compound and a sodium halide.

3,155,737
PROCESS FOR THE PRODUCTION OF SUBSTITUTED AZULENES

Klaus Hafner, Munich, and Reinhold Müller, Emmershausen, Kreis Usingen, Germany, assignors to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Filed May 11, 1962, Ser. No. 194,150
Claims priority, application Germany, May 25, 1961, St 17,868
3 Claims. (Cl. 260—666)

3. In a process of producing substituted azulenes, the step of reacting an azulene which is substituted in the 4- and 8-position and unsubstituted in the 6-position with a metal compound selected from the group consisting of alkyl, aryl and aralkyl compounds of the alkali metals, thereby forming an addition product; treating said addition product with a compound containing an acid hydrogen atom, thereby forming a dihydroazulene; and subjecting said dihydroazulene to a dehydrogenation treatment so as to form the corresponding substituted azulene.

3,155,738
SEPARATION OF DIMETHYLNAPHTHALENES

George Suld, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,112
10 Claims. (Cl. 260—674)

1. Method comprising the steps of contacting a mixture of dimethylnaphthalene isomers, said mixture being dissolved in an inert solvent and two of said isomers being the 2,6-isomer and the 2,7-isomer, with HF and BF_3, said contacting being at a temperature in the range of −10° C. to 50° C., the molar ratio of HF to total dimethylnaphthalenes in said mixture being higher than 1:1, and the molar ratio of BF_3 to total dimethylnaphthalenes in said mixture being less than 1:1; and separating an acid phase from a hydrocarbon phase, whereby a concentrate of 2,6-dimethylnaphthalene is obtained.

3,155,739
SELECTIVE HYDROGENATION OF ACETYLENE

Harold W. Fleming, Louisville, Ky., assignor to Catalysts and Chemicals Inc., Louisville, Ky., a corporation of Delaware

No Drawing. Filed July 17, 1959, Ser. No. 827,690
1 Claim. (Cl. 260—677)

The process of selectively hydrogenating an acetylene in a gas stream containing ethylene as a major constituent and as a minor impurity sulfur in the range of from about 1 to about 20 p.p.m. which consists of the steps of passing said gas stream with hydrogen over a catalyst containing from about 1 to about 10% by weight of cobalt sulfide as the effective selective hydrogenating catalyst on an inert support at a temperature in the range of from about 250° F. to about 600° F. and a pressure in the range of about 30 to about 60 atmospheres, said hydrogenation being carried out with an excess of hydrogen which is about 5 times that required to hydrogenate acetylene in said stream.

3,155,740
HYDROGENATION OF OLEFINIC POLYMERS

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 28, 1962, Ser. No. 197,874
10 Claims. (Cl. 260—683.9)

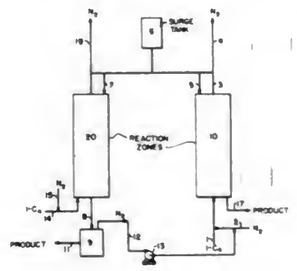
1. Method of hydrogenating branched chain polymers of aliphatic monoolefins which polymers have substantial solubility in aliphatic hydrocarbons which comprises contacting an admixture of such polymers and a saturate hydrocarbon stock containing at least one alkylcyclopentane of the C_6–C_{13} range containing at least one

tertiary carbon atom in the cyclopentyl ring at a temperature in the range of −30 to +50° C. with sulfuric acid having strength of 88–100%, separating the mixture into an acid phase and a hydrocarbon phase, and recovering from the hydrocarbon phase hydrogenated product having the same number of carbon atoms as the original unsaturated polymers.

3,155,741
CHEMICAL REACTIONS IN A HEATLESS FRACTIONATION APPARATUS

Charles W. Skarstrom, Montvale, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 17, 1960, Ser. No. 36,849
8 Claims. (Cl. 260—683.15)



1. A process for reacting in vapor phase at least one component of a gaseous mixture stream comprising the steps of:

(*a*) Flowing a gaseous mixture comprising said component through a first bed of catalyst at a preselected, initial, relatively high pressure and in a positive flow direction, wherein desorbable reaction product is formed in said first bed, said catalyst being capable of causing said component to undergo a chemical reaction under the conditions of the process to result in a desorbable reaction product;

(*b*) Discharging primary effluent comprising nonreacting and nonsorbable components of said gaseous mixture stream from said first bed;

(*c*) Segregating at least a portion of said primary effluent and passing the same in reverse flow through a second bed of catalyst at a relatively low pressure, which second bed of catalyst initially contains relatively more reaction product of said component as compared with said first bed at the start of the cycle, whereby as said cycle continues, the amount of product in said first bed increases and whereby the amount of product in said second bed decreases;

(*d*) Continuing said initial cycle for a time period sufficient to cause formation of a desorbable amount of said reaction product;

(*e*) Thereafter introducing another portion of said gaseous mixture into said second bed in a positive flow direction at an initial relatively high pressure;

(*f*) Discharging a primary effluent comprising nonreacting and nonsorbable components of said gaseous mixture stream from said second bed;

(*g*) Segregating at least a portion of said second bed primary effluent and passing the same at a relatively low pressure in reverse flow through said first bed of catalyst;

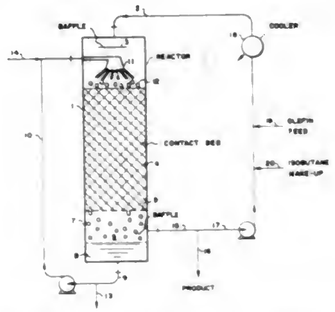
(*h*) Recovering both the primary effluent portions passed in reverse flow through the respective beds and component reaction product which is desorbed because of the lower pressure and the purge action of said primary effluent, and

(*i*) Thereafter cyclically continuing the operation.

3,155,742
ALKYLATION PROCESS

George Holzman and Richard P. Trainer, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,334
9 Claims. (Cl. 260—683.48)



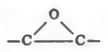
1. A process for producing alkylate which comprises passing in separate, substantially continuous phases hydrocarbon comprising an isoparaffin and an olefin in downward and concurrent flow with a concentrated mineral acid alkylation catalyst at a temperature from about 0° C. to 65° C. over a hydrophilic surface of a contact bed of solid inert material, the ratio by volume of acid to hydrocarbon in the contact zone being from about 0.05:1 to about 0.4:1, and recovering alkylate from the contact zone effluent.

3,155,743
COMPOSITIONS OF MATTER CONTAINING POLYEPOXIDES AND POLYAMINODIPHENYLSULFONES

Herbert A. Newey, Lafayette, Calif., assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Dec. 31, 1956, Ser. No. 631,519
14 Claims. (Cl. 260—836)

8. An adhesive composition comprising a polyepoxide having a



epoxy value of at least 0.45 eq./100 g., an inert filler, a polyvinyl acetal, and at least 0.25 equivalent of a diaminodiphenylsulfone wherein the two phenyl rings remain entirely aromatic and wherein the two amino groups are the only reactive substituents attached to the phenyl rings, an equivalent amount of the sulfone being that sufficient to furnish one amino hydrogen per epoxy group.

3,155,744
ADHESIONABLE VINYL-MODIFIED POLYOLEFINS AND METHODS FOR PRODUCING SAME

Lloyd J. Forrestal, Rowayton, and Armand F. Lewis, Norwalk, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,803
1 Claim. (Cl. 260—878)

An adhesionable, moldable, extrudable vinyl-modified polypropylene, said vinyl group being bis-(2-chloroethyl) vinyl phosphonate grafted thereon and wherein the vinyl-modified polypropylene being increased in weight of from about one percent to about twenty percent.

3,155,745
THERMOPLASTIC WELDING COMPOSITION

George J. Kliner and James F. Attridge, Avon Lake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

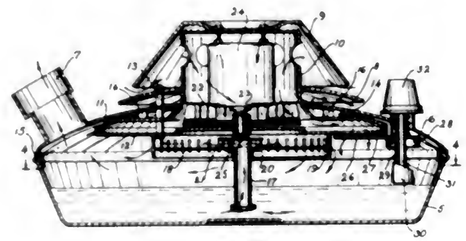
No Drawing. Filed Dec. 18, 1961, Ser. No. 160,261
8 Claims. (Cl. 260—899)

1. The composition comprising 100 parts by weight of a chlorinated vinyl chloride resin selected from the group consisting of chlorinated vinyl chloride homopolymers and chlorinated vinyl chloride copolymers containing at least about 95% by weight of polymerized vinyl chloride units and up to about 5% by weight of polymerized units of a 1-monoolefinically unsaturated monomer copolymerizable with vinyl chloride, and from about 5 to about 25 parts of a polymer of 3,3-bis(chloromethyl) oxetane.

3,155,746
HUMIDIFIER

Raymond Banks, West Paterson, N.J., assignor to Walton Laboratories Inc., Irvington, N.J., a corporation of New Jersey

Filed July 27, 1962, Ser. No. 212,955
5 Claims. (Cl. 261—29)

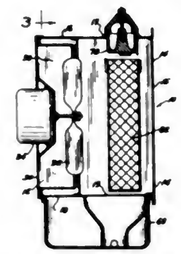


1. A humidifier including in combination a pan providing a reservoir, a cover supported upon the rim of said pan, a central opening in said cover, an air intake casing, a cylindrical portion of said air intake casing projecting upwardly through said central opening and spaced from said cover, an annular opening provided by the spacing between said cylindrical portion and said cover, a flanged portion of said air intake casing beneath said cover, air intake apertures formed in said cylindrical portion, a deflector ring peripherally projecting from said cylindrical portion and overlying said annular opening, a conical member spaced from and overlying said air intake apertures and said deflector ring, a motor supported within said cylindrical portion and spaced therefrom, a motor shaft projecting downwardly toward said pan, fan blades mounted on said motor shaft within said air intake casing, a plate portion of said air intake casing beneath said flanged portion, a water elevating and distributing means separately secured to said motor shaft outside of said air intake casing and beneath said plate portion, a cover outlet formed in said cover, a flange aperture formed in said flange portion, a discharge opening formed in said plate portion, adjustable valve means for controlling flow through said discharge opening, a first air flow path provided by said air intake apertures, said flange aperture and said annular opening, a second air flow path past said water elevating and distributing means, provided by said discharge opening and said cover outlet whereby upon rotation of said motor shaft the quantity of air flowing in said second air flow path may be regulated by adjustment of said valve means.

3,155,747
POWER HUMIDIFIERS

Joseph Perlman, Detroit, Mich., assignor to Auto-Flo Corporation, Detroit, Mich.

Filed Sept. 10, 1962, Ser. No. 222,276
1 Claim. (Cl. 261—29)



In a power humidifier, a sheet metal box having a front, back, top and bottom, with openings formed in each, and sides, all connected together into a box-shape; a front cover plate movably mounted on the box front and closing the opening therein and carrying a fan and a motor; a water pan formed as a separate and independent pan completely outside of the box and removably mounted under and against and secured to the bottom of the box and closing the opening therein; an open top water distributor formed as a separate and independent trough and inserted as a unit into the box top opening to occupy and fill said top opening and having a marginal flange resting upon the box top at such top opening to support said trough on the top of the box; a cover over said trough and secured to and carried by it separately and independently of the box; an evaporator pad mounting means removably mounting an evaporator pad in the box under the distributor and said pad being of an area only slightly less than that of the front opening of the box and thus being insertable into the box through said front opening for mounting therein when the front cover plate is moved to expose the box front opening; and circulating means for carrying water from said water pan to said distributor, said humidifier also including an air trap means in said pan comprising a funnel under the bottom opening of the box and underlying the lower edge of said evaporator pad with its large end opening upwardly to the interior of the box and its small end opening downwardly into the water pan, with its lower edge engaging said pan, and having lateral openings at its small end.

3,155,748
METHOD OF MAKING OPTICAL COMPONENTS

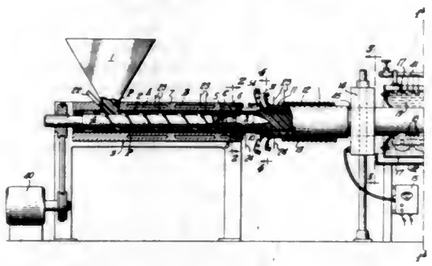
Richard A. Couri, South Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Aug. 3, 1960, Ser. No. 47,172
1 Claim. (Cl. 264—1)

The method of making an infra-red transmitting refracting lens component formed of arsenic trisulphide glass and having an accurately formed aspherically curved finished lens surface thereon, said method comprising forming in a piece of relatively high silica borosilicate glass a mold cavity of a predetermined size and shape and having a high optical finish thereon, said cavity shape including a cylindrically curved upper portion and an aspherically curved lower portion arranged in concentric smoothly merging relation to each other, the aspherical curvature of the lower cavity portion being of a shape similar to the aspheric curvature desired in a finished lens surface of said lens component except larger by an amount sufficient to substantially fully compensate for the contraction which will be experienced by the arsenic trisulphide glass as it cools and pulls away from adjacent sur-

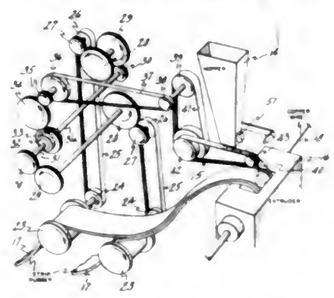
face portions of said cavity after heating and sagging steps have been performed thereon, forming by grinding and polishing a piece of arsenic trisulphide glass into a preform having a cylindrically curved upper part and a spherically curved lower part in concentric relation therewith, said cylindrical part being generally similar to but slightly smaller in diameter than the diameter of the cylindrically curved upper portion of said mold cavity, and said spherically curved lower part of said preform being of such a size as to closely approximate the aspheric curvature of said mold cavity, and having a high optical polish thereon, positioning said preform in said mold cavity with only its spherically curved lower surface resting upon a centrally located point on said aspherically curved cavity surface, heating said mold and preform to a temperature and for a period of time just sufficient to cause said preform to soften and sag into intimate contacting relation with adjacent wall portions of said cavity in such a manner as to replace all air from the space between said preform and said cavity, cooling said mold and sagged preform rapidly to a temperature near the upper part of the normal annealing range of arsenic trisulphide glass, maintaining said mold and sagged preform within said annealing range for a period of time ranging between two and twenty-four hours, and thereafter slowly reducing the temperature of said mold and sagged preform to room temperature, whereby contraction of said sagged preform will free same from wall portions of said cavity and provide an arsenic trisulphide lens component having an accurately formed aspherically curved refracting lens surface thereon.

3,155,749
EXTRUSION PROCESS FOR MAKING PROPELLANT GRAINS
Joel N. Rossen and Keith E. Rumbel, Falls Church, Va., assignors to Atlantic Research Corporation, a corporation of Virginia
Filed May 3, 1960, Ser. No. 26,649
25 Claims. (Cl. 264—3)



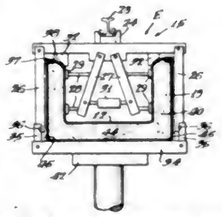
1. A process for making propellent grains which comprises introducing a fluid plastisol consising essentially of small, spherical, substantially non-porous, solid particles of an organic polymer and a finely-divided, solid, inorganic oxidizer dispersed in a high-boiling, liquid, organic plasticizer, which dissolves said polymer readily only at elevated temperatures and in which said oxidizer is insoluble, said oxidizer being present in amount sufficient to maintain active combustion of said polymer, into an elongated cylindrical barrel, heating the plastisol to the temperature at which the polymer dissolves rapidly in the plasticizer to form a plasticized polymer matrix in which said oxidizer is uniformly dispersed, by frictionally heating said plastisol by producing shearing stresses throughout its mass while advancing it in a helical path through said barrel, and by simultaneously heating the walls of said barrel, passing the hot, gelled propellent composition in a longitudinal path through a shaping passage while keeping said composition in a soft, thermoplastic state, and then cooling said shaped composition to form a rigid gel.

3,155,750
APPARATUS AND METHOD FOR INTRODUCING ADDITIVES TO AN EXTRUDER
Raymond C. Dahn, Jr., Trumbull, Martin J. Langan, Bridgeport, and Vincent E. Meyer, Fairfield, Conn., assignors to General Electric Company, a corporation of New York
Filed Apr. 19, 1961, Ser. No. 104,167
8 Claims. (Cl. 264—40)



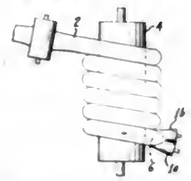
8. The method for proportionate introduction of particulate material into a receiving composition which comprises forming the composition into strips, introducing at least two of such strips to an intake station by drawing each strip over a roll rotated by passage of said strip, feeding the particulate material to said station by an endless belt, moving said belt at a speed directly proportional to the mean rate of rotation of said rolls, and passing said particulate material from said endless belt to said intake station along with said strips of material.

3,155,751
METHOD OF MAKING AN INSULATED STRUCTURE
Carl R. Morris, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 7, 1960, Ser. No. 67,793
3 Claims. (Cl. 264—45)



1. The method of making an insulated cabinet, comprising the steps of: supporting a first enclosure having an open portion with the open portion uppermost; depositing in the lower portion of the enclosure a quantity of foamable material which expands and sets to form an insulative body; disposing a second, smaller enclosure within the first enclosure with the walls of the enclosures in preselected spaced relationship to provide an insulating space; closing the space between the enclosures at said open portion with a yieldable closure member; retaining the enclosures in such relationship for a period of time permitting the material to foam, expand into said space and become set against said closure member, said closure member being anti-adherent to said foam material; and removing said closure member after expansion of said material thereagainst.

3,155,752
METHOD AND APPARATUS FOR SHAPING SAUSAGE CASINGS
Ernst Riegler, Niederwalluf, Rheingau, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Oct. 3, 1962, Ser. No. 228,178
Claims priority, application Germany Oct. 5, 1961
5 Claims. (Cl. 264—95)



5. A method for continuously shaping tubes adapted for use as sausage casings which comprises winding a gas-filled tube onto the surface of a rotating cylindrical holder, imparting a permanent set to the tube, and removing the tube from the holder through a nip zone having a nip line disposed at the same angle to the axis of rotation of the holder as the pitch angle of the tube.

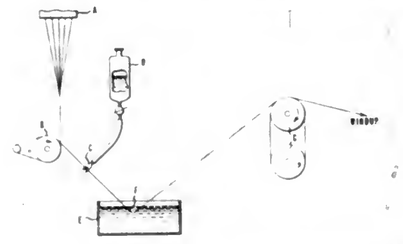
3,155,753
PROCESS OF FILLING A RIGID HOLLOW STRUCTURE WITH FOAMED-IN-PLACE PLASTIC FOAM
Stanley N. Weissman, Cedar Grove, and George L. Matthias, Belleville, N.J., assignors to W. R. Grace & Co., a corporation of Connecticut
Filed Feb. 4, 1963, Ser. No. 255,923
3 Claims. (Cl. 264—45)



1. In the process of filling a rigid hollow plastic shaped structure with a foamed-in-place plastic foam, the improvement which comprises melting the interior surface of said rigid hollow plastic shaped structure and then foaming a molten plastic within the hollow structure while the interior surface is in a softened condition.

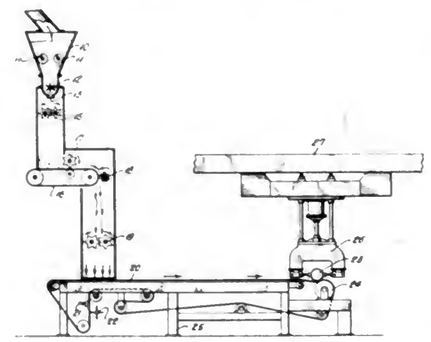
3,155,754
PROCESS FOR PRODUCING ORIENTED SYNTHETIC LINEAR POLYESTER FIBERS AND FILMS HAVING A SHEATH-CORE STRUCTURE
Dustin S. Adams, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 11, 1962, Ser. No. 187,160
7 Claims. (Cl. 264—78)

1. In the production of oriented synthetic linear terephthalate polyester fiber structures by extruding a solvent-free melt of the polyester to form fibers and solidifying the fibers to an unoriented structure, and drawing the solid fibers to orient the structure, the improvement for modifying the surface to provide a distinct sheath-core structure which comprises contacting the dry unoriented fibers with a liquid semisolvent for the polyester for a period of 0.2 second to about 3.0 seconds with immediate



removal of the liquid semisolvent, and then orienting the structure by drawing in a water bath at a temperature of about 80° to 100° C., said liquid semisolvent being effective to provide a pronounced reduction in drawing tension when tested by contacting the fibers with the semisolvent for one minute, rinsing with water and then immediately drawing to orient the structure.

3,155,755
APPARATUS AND PROCESS FOR MANUFACTURING CEMENT ARTICLES
Joseph F. Schulz, Allendale, Howell S. Jobbins, Livingston, and Rafael A. D'Amato, East Rutherford, N.J., assignors to The Flintkote Company, a corporation of Massachusetts
Filed June 22, 1959, Ser. No. 821,936
2 Claims. (Cl. 264—109)



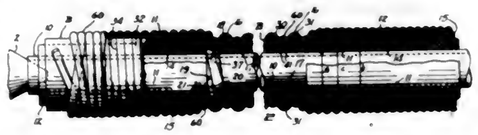
1. A process for producing cement products on a rotatable cylindrical mandrel comprising the steps of applying a layer of dry cement to a moving wet felt in a random uniformly distributed pattern, bringing the cement bearing surface of said felt into engagement with at least a portion of the peripheral surface of said mandrel, applying pressure to said felt engaging said mandrel to squeeze water from said felt into said layer of dry cement, and transferring a plurality of layers of moistened cement from said felt to said mandrel utilizing only the water in the wet felt, the quantity of water squeezed into said dry cement being sufficient to set the cement and less than that required to produce a slushy mass.

3,155,756
MOLDING OF STRESS-FREE POLYCARBONATE ARTICLES
Wilhelm Hechelhammer, Krefeld-Bockum, and Hugo Streib, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 6, 1961, Ser. No. 93,306
Claims priority, application Germany Mar. 8, 1960
10 Claims. (Cl. 264—178)

1. A method for making a substantially stress-free shaped article comprising a thermoplastic polycarbonate which comprises both shaping the polycarbonate and immediately post treating it while subjected to a temperature of from about 70° C. to about 120° C. until the polycarbonate is completely solidified.

3,155,757
METHOD OF AND APPARATUS FOR MAKING AND JOINING SPIRALLY CORRUGATED RUBBER TUBING
Vance M. Kramer, 402 E. Boundary St., Perrysburg, Ohio, and Lawrence W. Carlton, P. O. Box 146, North Baltimore, Ohio
Original application June 9, 1955, Ser. No. 514,312, now Patent No. 2,909,198, dated Oct. 20, 1959. Divided and this application Oct. 16, 1959, Ser. No. 847,021
11 Claims. (Cl. 264—286)

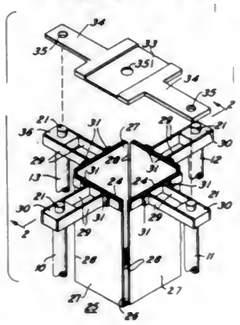
1. In the process of making corrugated tubing on an elongated internal form having spirally corrugated and smoooth surfaced portions the combination of steps which comprises telescoping a tube blank onto the form to support one portion of the blank by and on the corrugated portion of the form and to support another portion of the blank by and on the smooth portion of the form, wrapping a flexible element spirally about the one portion of the telescoped blank under tension with successive



turns of the element in spaced generally parallel relation and in the corrugations of the corrugated portion to draw said one portion of the blank into the corrugations of the form, embracing and confining the other portion of the blank substantially throughout its axial extent to hold it against the smooth portion of the form, and heat treating the blank while said one portion thereof is wrapped and while said other portion thereof is embraced and confined.

ELECTRICAL

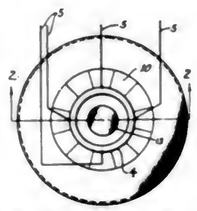
3,155,758
HEATING ELEMENTS FOR VACUUM FURNACES
Charles A. S. Hill, Southampton, Pa. (% Abar Corporation, 2424 Wyandotte Road, Willow Grove, Pa.)
Filed June 14, 1962, Ser. No. 202,616
9 Claims. (Cl. 13—25)



1. A resistance heating element for furnaces composed of a high temperature refractory metal and having a plurality of sections with horizontal bottom wall portions and opposite flat vertical side wall portions free from expansive restraint, and electrically conducting supporting members at the top of each of the side wall portions and extending horizontally outwardly therefrom and supporting said side wall portions free from vertical and horizontal restraint.

3,155,759
HIGH TEMPERATURE FURNACE
Leslie H. Marshall, R.D. 4, Delaware, Ohio
Filed July 3, 1962, Ser. No. 207,347
15 Claims. (Cl. 13—25)

1. An electric heating unit comprising an elongated zirconia tube of which the inner and outer peripheral walls are coaxial and circular at each cross section, said tube having end portions and a heating portion of reduced cross sectional area intermediate the end portions, each end portion having an outer end wall of which the outer face is substantially planar and symmetrical with respect to the tube axis, thin sheets of platinum-rhodium alloy intimately bonded, by current conducting cementitious material, in face-to-face juxtaposition to the outer faces of each end portions, respectively, contact areas of

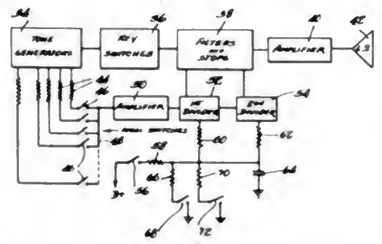


each sheet and the outer face of its associated end wall being symmetrically arranged with respect to said axis, refractory heat conducting crucibles coaxial with the tube and bonded to the outer other faces of the sheets, respectively, sets of platinum-rhodium alloy lead-in wires connected to the sheets, respectively, and each set comprising a plurality of wires connected to the associated sheet at locations symmetrically arranged with respect to said axis.

3,155,760
ELECTRONIC MUSICAL INSTRUMENT SWITCH MEANS
Howard M. Thomas and Harald E. W. Bode, North Tonawanda, N.Y., and John R. Brand, Pacoima, Calif., assignors to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed June 26, 1962, Ser. No. 205,377
12 Claims. (Cl. 84—1.01)

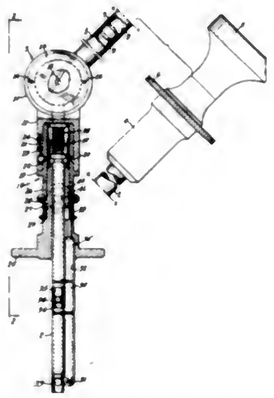
5. An electronic musical instrument comprising means for generating electric oscillations corresponding to a plurality of different tones, amplifier means for amplifying said oscillations, and electro-acoustic transducing means

connected to said amplifier means for converting the amplified oscillations into audible musical tones, electronic divider means for providing electric oscillations of a lower frequency and connected to said amplifier means, a plurality of pedals operable by the feet of a musician, and a plurality of switches respectively operable by said pedals and respectively interconnecting said oscillation generators to said amplifier means for rendering said tones respectively audible at lower frequencies, each of said switches comprising at least two contacts and mechanical means for bringing said two contacts into electrical en-



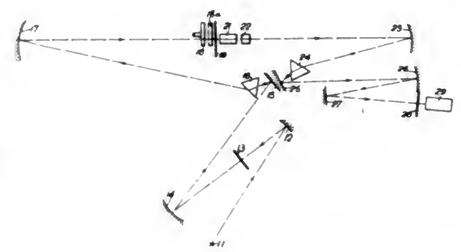
gagement, said mechanical means remaining in contact engaging position indefinitely, common means operable by any of a plurality of pedals, and operative upon any of said mechanical means in contact engaging position to move said two contacts out of electrical engagement upon operation of said pedals by the feet of said musician, said divider means normally being inoperative, a source of potential for rendering said divider means operative, and a common switch operated by said common means to connect said potential to said divider means to render the latter operative.

3,155,761
BORESCOPE
Harry S. Rubens, Massapequa, and Eugene J. Kelly, Queens Village, N.Y., assignors to Engelhard Hanovia, Inc., a corporation of New Jersey
Filed Jan. 12, 1960, Ser. No. 2,002
2 Claims. (Cl. 88—14)



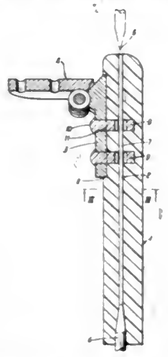
1. A borescope comprising a first tube member, ocular means mounted on one end of the first tube member, a second tube member, light transmissive objective means mounted in one end of the second tube member, a housing member, a tubular extension extending outwardly of the housing member and communicating therewith, a tubular head assembly the other end of the first tube connected to and communicating with the housing, the other end of the second tube mounted in the tubular head assembly, the tubular head assembly being rotatably mounted in the tubular extension, means for detachably mounting the head assembly in the tubular extension, said detachable mounting means comprising a ball detent means coupled to said extension the tubes being positioned angularly of each other and their axes intersecting in the housing, a third tube mounted in said head assembly adjacent to and parallel with the second tube, electric lamp means mounted in an end of said third tube near the objective means of the second tube, a pair of axially-spaced contact rings on said head assembly and mounted externally thereof, electrical circuit means electrically connecting the rings with the lamp, a reflecting means mounted in the housing and positioned to reflect an image from the objective means to the ocular means, and adjustment means on said tubular head assembly for simultaneously rotating the second and third tubes relative to the said tubular extension.

3,155,762
SPECTROPOLARIMETERS
Eric John Gillham and Raymond John King, Teddington, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Jan. 30, 1961, Ser. No. 85,676
Claims priority, application Great Britain Feb. 3, 1960
15 Claims. (Cl. 88—14)



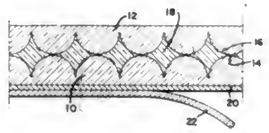
1. A spectropolarimeter including means for producing a beam of light, a first prism of birefringent material located in the optical path of the beam for dispersing the light and directing along a predetermined ray path one of the rays, ordinary and extraordinary, of a selected wave length, a second prism of birefringent material located following said first prism on said ray path and set in an attitude to present to light arriving along said ray path a path for transmission through it for the other of the rays, ordinary and extraordinary, of the selected wave length, means for confining the passage of light from said first to said second prisms to said ray path whereby only light of the selected wave length can reach said second prism, means for confining the passage of light leaving said second prism to light of the other of the rays ordinary and extraordinary of the selected wave length, whereby said first and second prisms act in conjunction as a double monochromator and at the same time respectively as polariser and analyser, means for holding a specimen to be examined in the spectropolarimeter in said ray between said prisms, and means for evaluating the rotation of the plane of polarisation produced by the specimen by reference to light of the selected wave length emerging from said second prism.

3,155,763
SPECTACLE FRAME SIDE PIECES
Herbert L. Thorn and Walter Conway, Guildford, England, assignors to Optoplast Manufacturing Company Limited and The Trident Optical Company Limited
Filed May 8, 1961, Ser. No. 108,591
Claims priority, application Great Britain May 16, 1960
1 Claim. (Cl. 88—53)



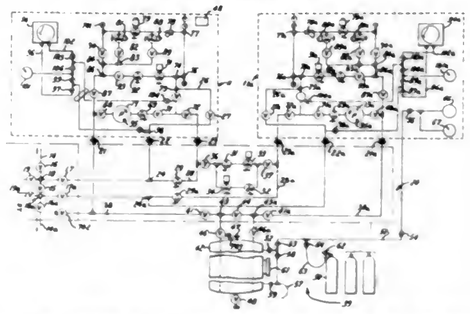
In combination, a spectacle-frame side piece made of a plastic, a hinge member including a first plate bearing on the side piece, two further plates parallel to one another, both perpendicular to said first plate, both fixed to said first plate, both apertured and both extending transversely into said side piece, and a longitudinal wire embedded in the side piece and passing through the apertures in said further plates to hold the hinge member in position on the side piece.

3,155,764
FLEXIBLE WEATHERPROOF REFLEX LIGHT REFLECTOR SHEET AND SIGN MADE THEREOF
Edwin R. Gill, Jr., Millerton, N.Y., assignor to Karl W. Flocks, Washington, D.C.
Filed Mar. 24, 1960, Ser. No. 17,342
9 Claims. (Cl. 88—82)



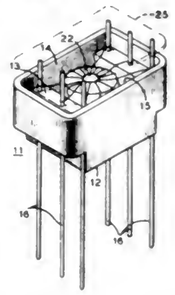
1. A flexible weatherproof reflex light reflector sheet adapted to be supplied in roll form for use in making signs and indicia for outdoor use, comprising a flexible water resistant light transmitting outer lamina, a flexible water resistant light transmitting lower lamina, a light transmitting adhesive cementing the two laminae together and completely filling the space between the laminae, said outer and lower laminae having an index of refraction substantially higher than the index of refraction of said adhesive material, the adjacent surfaces of said laminae having a plurality of outwardly projecting rounded projections projecting therefrom, said projections being arranged in an all-over pattern covering the laminae with the adjacent projections on the two laminae being in alignment, the faces of said adjacent aligned projections in the two laminae being separated not more than 0.4 times the radius of the rounded projections, whereby the lower surface of said lower lamina may be brought into contact with a reflecting base surface to produce reflexive reflection of incident light.

3,155,765
OIL PRESSURE CONTROLLER FOR PIPE-TYPE ELECTRIC CABLE
John L. Lansch, Nyack, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed July 25, 1960, Ser. No. 45,115
8 Claims. (Cl. 174—11)



1. Apparatus for controlling oil pressure in an electric cable comprising an oil reservoir, piping connecting said reservoir with said cable, a pump delivering oil from said reservoir into said cable, a plurality of sets of pressure sensing devices, responsive to the pressure of the oil in said cable, a first of said sets of pressure sensing devices responsive to a first selected range of pressures, a second of said sets of pressure sensing devices responsive to a second selected range of pressures lower than said first range of pressures, a first automatic means for starting and stopping said pump and thus maintaining said cable within said first range of pressures in response to the first of said sets of pressure sensing devices, a second means for starting and stopping said pump and thus maintaining said cable within said second range of pressures in response to the second of said sets of pressure sensing devices, manual means for transferring the operation of said pump from said first means for starting and stopping said pump to said second means for starting and stopping said pump, said manual means comprising a plurality of manually operated units operative in only one of a plurality of possible manual sequences.

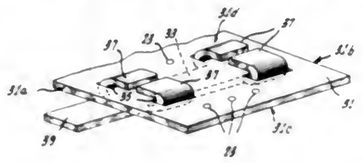
3,155,766
ELECTRICAL COMPONENT ASSEMBLAGE AND CASING THEREFOR
Edwin S. Eichert, Bryn Mawr, Robert F. Procter, Bristol, and Julius Polsky, Philadelphia, Pa., assignors to Technitrol, Inc., a corporation of Pennsylvania
Filed Feb. 14, 1961, Ser. No. 89,156
14 Claims. (Cl. 174—52)



1. A casing for fully enclosing an electrical component having leads comprising a component receptacle composed

of an insulating material and constructed as a unitary molded structure having a plurality of members that are integral with one another, said members including a base member and a superposed member atop said base member having an aperture located above said base member which, with said base member, forms a socket adapted to receive and support the component, said superposed member having a part extending laterally outwardly of an outer edge of said base member, said casing further comprising a plurality of flexible electrical leads that are fixedly embedded in said unitary molded structure and are spaced from one another and pass through said outwardly extending part generally in the vertical direction in inwardly spaced relation to an outer edge of said superposed member and outwardly spaced relation to an outer edge of said base member, each lead of said plurality of flexible electrical leads having its intermediate portion fixedly embedded in said outwardly extending part with the top end portion extending upwardly of the upper surface of said outwardly extending part and the bottom end portion extending downwardly of the lower surface of said outwardly extending part, said plurality of flexible electrical leads being adapted to connect to the leads of an electrical component supported within said socket.

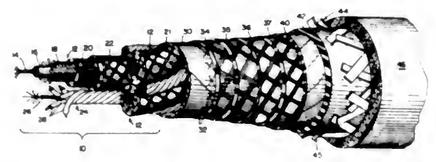
3,155,767
CONNECTING ARRANGEMENT IN ELECTRONIC MODULAR STRUCTURES
Harry F. Schellack, Belleville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 30, 1962, Ser. No. 169,720
8 Claims. (Cl. 174—68.5)



1. In an electronic modular structure, a supporting board of insulating material, and a pair of conductive bus members mounted on said board along one surface thereof between opposed edges thereof, said bus members being secured to said board at least at points in proximity to said edges and extending beyond one of said edges to provide protruding terminal elements, said board having a pair of openings therethrough spaced laterally from but in proximity to said bus members and extending from said one surface to the opposite surface thereof in predetermined relation to said bus members, said board being adapted to receive on its said opposite surface an electronic component having a pair of leads capable of extending through said openings for electrical connection, respectively, to said bus members, and said protruding terminal elements being adapted for connection to external circuit means.

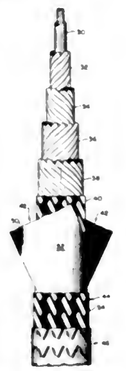
3,155,768
BUOYANT CABLE
Alfred Garshick, Raynham, Mass., assignor to Boston Insulated Wire & Cable Co., Dorchester, Mass., a corporation of Massachusetts
Filed Aug. 14, 1961, Ser. No. 131,361
9 Claims. (Cl. 174—101.5)

1. In a buoyant cable including a plurality of electrical conductors, a plurality of superposed braided sleeve-like flotation members positioned surrounding said conductors, each said flotation member being braided from filamentary material, and a waterproof sheath surrounding said flotation members, each of said flotation members being provided with a substantial spacing between filamentary ma-



terial laid in the same direction thereby to provide a multiplicity of void spaces within said sheath.

3,155,769
ELEVATOR CABLE
Joseph C. Burley, Milton, Mass., assignor to Boston Insulated Wire & Cable Co., Dorchester, Mass., a corporation of Massachusetts
Filed Sept. 29, 1960, Ser. No. 59,267
6 Claims. (Cl. 174—121)



1. In an elevator electrical power control cable, a live center portion including a plurality of cabled insulated electrical conductors, means separate from said center portion to provide the cable with a predetermined bending stiffness greater than the bending stiffness of said center portion alone and comprising an outer cable sheath, said sheath including a plurality of flexible non-metallic members braided about the conductors at a predetermined lay angle greater than 45 degrees, said sheath being impregnated with yieldable resilient material tending to prevent relative movement between said members during bending of the cable.

3,155,770
ENTRANCE SEAL FOR ELECTRICAL CONDUCTORS EXTENDING THROUGH THE WALL OF A PRESSURE VESSEL
William J. Hollenden, Bellmawr, N.J., and Charles E. Welsh, Landsdowne, Pa., assignors to General Electric Company, a corporation of New York
Filed Apr. 24, 1963, Ser. No. 275,314
5 Claims. (Cl. 174—153)

1. An entrance seal for elongated electrical conductors extending between a high pressure region and a low pressure region, comprising:

(*a*) a metal plate having one side in said high pressure region and the other side in said low pressure region and having spaced-apart openings extending therethrough,

(*b*) said conductors being laterally spaced apart and respectively extending through said openings,

(c) a tube of resilient plastic insulating material surrounding each of said conductors and located within the opening through which the conductor extends, each said tube being bonded in gas-tight relationship along its inner periphery to said conductor and along its outer periphery to the inner periphery of said opening,

(d) a first sheet of resilient plastic insulating material contiguous with the high pressure side of said plate and integral with said tubes, said first sheet being bonded to said high pressure side of the plate along substantially all contiguous surfaces of said plate and said first sheet,

(e) a second sheet of resilient plastic insulating material contiguous with the low pressure side of said

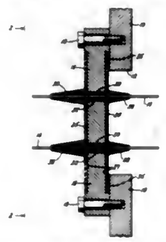
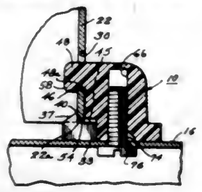


plate and integral with said tubes, said second sheet being bonded to said low pressure side of the plate along substantially all contiguous surfaces of said plate and said second sheet,

(f) each of said tubes of insulating material comprising a pair of integrally-formed tubular extensions surrounding its associated conductor and projecting along the length of said conductor from the sheets at opposite sides of said plate through distances that are large compared to the thickness of said sheets,

(g) the tubular extension located on the high pressure side of said plate having a cross sectional area measured in the plane where the extension intersects the outer surface of said first sheet that is substantially larger than the cross sectional area of said opening at the high pressure side of said plate.

3,155,771
ELECTRONIC CHASSIS MOUNTING BRACKET
Joseph F. Steger, River Grove, and Mario J. Manetti, Oak Park, Ill., assignors to American Plasticraft Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 31, 1962, Ser. No. 234,427
2 Claims. (Cl. 174—158)



1. A mounting bracket suitable for mutually insulating a pair of electrical chassis from one another and for securing the two chassis together, comprising

a unitary molded member formed of an electric insulating material and having

a C-shaped bottom mounting surface formed by a pair of forwardly extending arms and a laterally extending rear portion,

a body connected to said rear portion,

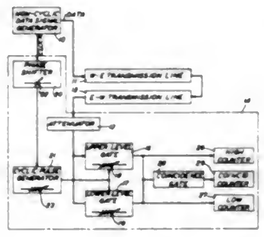
said body having therein a downwardly opening hole for receiving a fastening device, said hole being disposed forwardly of the points of attachment of said arms to said rear portion,

said arms being spaced from said body at all points forward of said hole,

each said arm having a lip disposed at the forward end portion thereof, each said lip providing a rearwardly facing shoulder, and

a forwardly extending protrusion on said body disposed above said arms for reception in an aperture in one of said chassis.

3,155,772
METHOD FOR MEASURING DATA SIGNAL IMPAIRMENT
Richard A. Gibby and Henry Kahl, Summit, and John J. Mahoney, Jr., Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application June 3, 1959, Ser. No. 817,792, now Patent No. 3,057,957, dated Oct. 9, 1962. Divided and this application Feb. 7, 1962, Ser. No. 171,613
8 Claims. (Cl. 178—69)

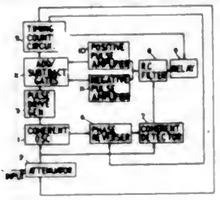


1. In a system for transmitting positive-going and negative-going voltage pulses of predetermined reference configurations, the method for determining transmission impairment of said pulses in terms of the probability of predetermined voltage excursions from said reference configurations, comprising the steps of transmitting said pulses over a system to be measured, receiving said pulses with their characteristic system transmission impairments, sampling a predetermined voltage range of each pulse at a predetermined time interval thereof, and measuring the probability of data wave excursion with respect to said range during said time interval.

3,155,773
SYSTEM FOR SYNCHRONOUSLY DETECTING SIGNALS IN THE PRESENCE OF NOISE
Harold Kilner Robin, Tunbridge Wells, and Thomas Lloyd Murray, Crowborough, England, assignors to National Research Development Corporation, London, England
Filed Mar. 2, 1961, Ser. No. 92,811
Claims priority, application Great Britain Mar. 9, 1960
10 Claims. (Cl. 178—69.5)

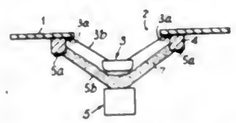
1. A receiver synchronising system for a receiver arranged to receive a signal train having a predetermined whole number of cycles of a synchronising tone inserted at regular intervals corresponding to an even whole number $(2n)$ of cycles of the synchronising tone and including

a coherent oscillator connected to receive the signal train and tuned for synchronisation with the said synchronising tone, phase reverser means for reversing the phase of signals derived from the coherent oscillator once every n cycles of oscillation of the coherent oscillator, a coherent



detector, connected to the output of the phase reverser means and connected to receive the said synchronising tone, for detecting the relative phases of the output of the phase reverser means and the received synchronising tone, receiver timing circuits and means connected to the output of the coherent detector for controlling the said receiver timing circuits.

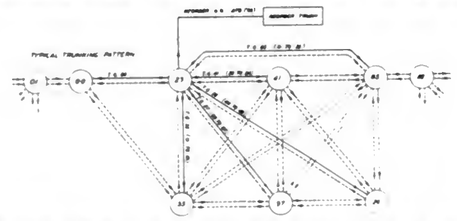
3,155,774
LOUDSPEAKER ARRANGEMENT
Derek Howell, Cambridge, England, assignor to Pye Limited, Cambridge, England, a British company
Filed Aug. 3, 1961, Ser. No. 129,175
Claims priority, application Great Britain, Aug. 19, 1960, 28,817/60
1 Claim. (Cl. 179—1)



A loudspeaker arrangement comprising a first loudspeaker having a speech coil and a cone arranged to operate over the full range of audio signals to be reproduced, a second loudspeaker of larger size than the first loudspeaker, a speech coil and a cone included in said second loudspeaker, a choke connected in series with the speech coil of the second loudspeaker, means connecting the series combination of said speech coil and said choke in parallel with the speech coil of said first loudspeaker, so that the higher audio frequencies are filtered out by said choke and said second loudspeaker only reproduces the lower audio frequencies, means for supporting said first and second loudspeakers with their cones facing in the same direction and with the second loudspeaker behind the first loudspeaker, and means for enclosing the space between the rear of the cone of the first loudspeaker and the front of the cone of the second loudspeaker to trap the volume of air between the cones of the loudspeakers to provide air coupling between the loudspeakers.

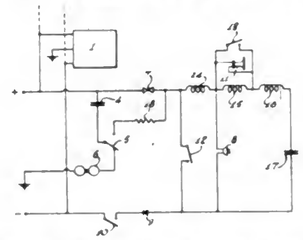
3,155,775
ALTERNATE ROUTE TRUNK SELECTION
Alfred Zarouni, Brooklyn, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 28, 1961, Ser. No. 98,980
22 Claims. (Cl. 179—18)

1. In a switching system wherein trunks are designated for service under the control of route codes; means operable to register a route code; a plurality of groups of trunks whereof certain groups represent alternate routes for certain registered codes; means individual to and controlled by each trunk group to indicate whether or not at least one of the trunks in said group is idle; a route advance test circuit selectively operable under the control of said operated registering means to test the said indicating means in a prescribed order of trunk groups



among those groups representing alternate routes for said registered code; and a trunk hunting circuit selectively operable under the control of said operated test circuit to hunt for an idle trunk in that group whose indicating means is first in said prescribed order to indicate that there is at least one idle trunk in that group.

3,155,776
PARTY LINE SUB-STATION
Yokichi Kano, Yuji Takemi, and Shoichi Kasahara, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 19, 1960, Ser. No. 23,254
2 Claims. (Cl. 179—32)

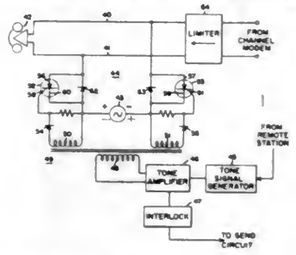


1. A party line telephone system comprising a plurality of sub-stations connected in parallel, a common supply of voltage of predetermined magnitude for applying ringing and talking currents to said plurality of sub-stations; each of said sub-stations including a transmitter and a receiver and an impedance device in series with said transmitter and receiver, said impedance device being characterized by a normally high level of impedance which immediately drops to a low impedance level with a corresponding decrease in voltage across said device substantially below said predetermined magnitude when said device is subjected to said voltage of predetermined magnitude, a sub-station hand-set hook switch in series with each of said impedance devices, whereby when one of said hook switches is closed said voltage of predetermined magnitude is applied to the associated impedance device from said common voltage supply, thereby causing the impedance of said associated impedance device to drop to said low level with a corresponding decrease in voltage thereacross, the impedance devices in the other sub-stations of said party line remaining in the normal high level condition of impedance.

3,155,777
BALANCED STATIC SWITCHING CIRCUITS
Jack D. Owen, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed June 29, 1961, Ser. No. 120,592
6 Claims. (Cl. 179—84)

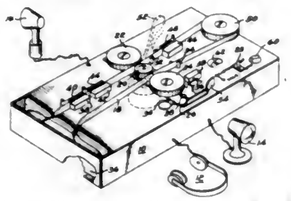
4. In a balanced static switching arrangement for selectively applying an alternating signal to a utilization de-

vice, the combination comprising a pair of input terminals adapted to receive an alternating signal, a pair of output terminals for connection to a utilization device, a first switching means connected between one of said input terminals and one of said output terminals, a second switching means connected between the other of said input and output terminals, said first and second switching means each including a unidirectional conducting device and a controlled semiconductor switching device, a



source of gating signals for said controlled switching device, means for applying said gating signals alternately to said controlled devices whereby during alternations of one polarity a conducting path is established through the controlled device of one of said switching means and the unidirectional device of the other of said switching means and through the controlled device of said other switching means and the unidirectional conducting device of said one switching means during alternation of the opposite polarity.

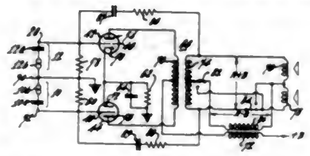
3,155,778
TEACHING APPARATUS USING SOUND RECORDING
Edward M. Meyer, Silver Spring, Md. (5708 Tanglewood Drive, Bethesda, Md.)
Filed Mar. 3, 1961, Ser. No. 93,186
5 Claims. (Cl. 179—100.2)



1. Immediate playback sound recording and reproducing apparatus comprising spaced-apart recording and reproducing heads, a lengthy flexible recording medium extending past both said heads, a single drive capstan, means engageable with said medium at a first point between said heads for urging said medium against said capstan and thereby feeding the medium past said recording head and into a free loop between said heads, and means engageable with said medium at a point following said reproducing head for urging said medium against said capstan and thereby feeding said medium past said reproducing head.

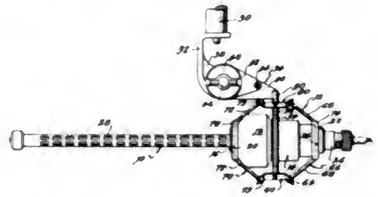
3,155,779
STEREOPHONIC PHONOGRAPH SYSTEM
John A. Tourtellot, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 31, 1958, Ser. No. 724,957
11 Claims. (Cl. 179—100.4)

1. In a stereophonic phonograph system for use with records of the type having a pair of stereophonically related recordings cut in the same record groove comprising, a pair of amplifying channels each having an output terminal, a first and a second output transformer each having a primary and a secondary winding, means connecting the primary winding of said first transformer between said output terminals, means connecting the primary winding of said second output transformer to a tap on



the primary winding of said first output transformer, a pair of load impedance elements connected in series across the secondary winding of said first output transformer, and means connecting the secondary winding of said second output transformer between the junction of said load impedance elements and a tap on the secondary winding of said first output transformer.

3,155,780
MICROPHONE AND MOUNTING MEANS ASSEMBLY
Louis R. Burroughs, Buchanan, Mich., assignor to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Indiana
Filed Jan. 5, 1961, Ser. No. 80,916
11 Claims. (Cl. 179—146)

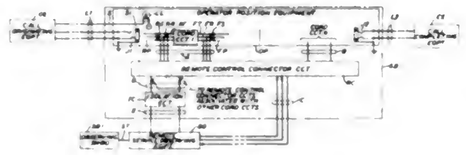


1. An assembly comprising a microphone having a first portion and a second portion spaced from the first portion and support means for the microphone wherein the support means comprises a rigid frame disposed adjacent to the microphone, at least three members mounted at intervals on portions of the frame between the first and second portions of the microphone and secured to the first portion of the microphone at their ends opposite the frame, at least three compliant elements mounted at intervals on portions of the frame between the first and second portions of the microphone and secured to the second portion of the microphone at their ends opposite the frame, the members and elements being under tension and the compliance of the members and elements and the mass of the microphone producing a mechanical resonance at a frequency below the electrical frequency response range of the microphone.

3,155,781
SERVICE OBSERVING EQUIPMENT
Robert W. Ulmer, Pearl River, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 24, 1961, Ser. No. 147,282
16 Claims. (Cl. 179—175.2)

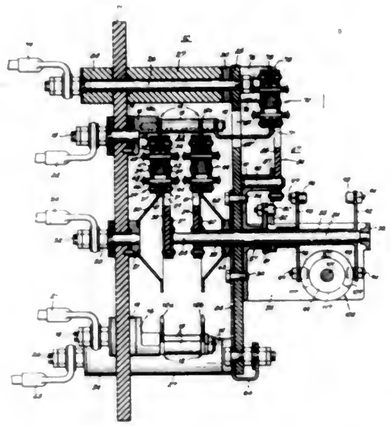
3. In a communication system, a plurality of communication lines, an operator position having conductors for interconnecting said lines, service observing equipment remote from said position and comprising means for detecting the connection of said conductors to one of said lines, an isolation circuit, means at said position

activated by said detecting means for connecting said conductors to said circuit, service observing conductors



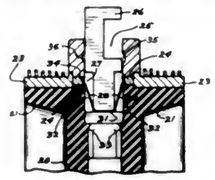
extending between said equipment and said circuit, and means in said circuit for establishing an electrical circuit path between said position and observing conductors.

3,155,782
SWITCH ACTUATING MECHANISM FOR CONTROLLED SPEED TAP CHANGER
Gordon A. Wilson, Jr., Washington, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 1, 1959, Ser. No. 810,489
21 Claims. (Cl. 200—11)



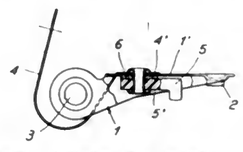
1. An electrical tap changing under load mechanism comprising, in combination, a plurality of arcuately arranged stationary contacts, a movable contact for sequentially engaging said stationary contacts, and intermittent motion transmitting means including a pair of relatively movable members the first of which is positively and nonresiliently connected to said movable contact and the second of which drives said first member for indexing said movable contact with accelerated motion from one stationary contact to a succeeding stationary contact, said movable contact interrupting current under load when it is disengaged from said one stationary contact and competing an electrical circuit under load when it engages said succeeding stationary contact, one of said members having a single means in continuous positive engagement with the other of said members both during actuation of said movable contact and while said movable contact is at rest and said second member positively driving and directly controlling the speed of sid movable contact at all times while it is being indexed between said stationary contacts, whereby contact bounce is avoided.

3,155,783
SWITCH AND COMMUTATOR TYPE PROGRAMMING DEVICE
Wendell E. Wilson, Minneapolis, Minn., George H. Doberstein, 9906 Chicago Ave., Minneapolis 20, Minn., Edmund B. O'Neill, Hopkins, Minn., and Chris A. Healey, Minneapolis, Minn., assignors, by mesne assignments, to George H. Doberstein, Minneapolis, Minn.
Filed Aug. 9, 1962, Ser. No. 215,850
5 Claims. (Cl. 200—26)



1. A programming device including:
a base,
a drum assembly rotatably mounted on said base,
means for rotating said drum assembly at a predetermined rate,
a plurality of commutator bars fixedly attached to said drum, said commutator bars being arranged to form two separate peripheral rows and a plurality of pairs of commutator bars, said bars each having a brush contacting surface and the surfaces of the bars of each row lying on a continuous peripheral surface around said drum, each of said commutator bars being insulated from the other bars,
a pair of brushes, each of said brushes fixedly mounted with respect to said base in position to be in sliding contact with the brush contacting surfaces of the bars of one said rows of commutator bars as said drum rotates, said brushes being positioned to simultaneously contact one commutator bar of each pair as said drum rotates, and,
a separate switch positioned between each pair of commutator bars and movable from an "on" position wherein its corresponding commutator bars are electrically connected to an "off" position wherein its corresponding commutator bars are insulated from each other.

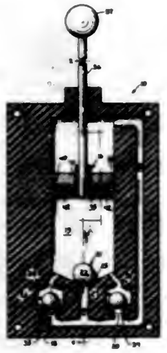
3,155,784
CONTACT BREAKER FOR IGNITION DISTRIBUTORS
Alberto Barozzi, Sesto San Giovanni, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed July 21, 1960, Ser. No. 44,352
Claims priority, application Italy, Aug. 3, 1959, 13,031/59
4 Claims. (Cl. 200—30)



1. In a contact breaker for ignition distributors for internal combustion engines, a distributor rotor arm, a bearing at one end of said arm adapted to be received on the bearing pin of said distributor, a contact on the free end of said arm adapted to engage a contact on said distributor, an L-shaped collector shoe formed of flexible insulating material having a short leg section and a long leg section with the long leg section attached to said arm intermediate its length and between said

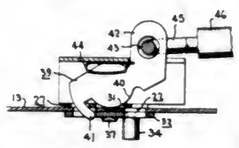
bearing and contact, and washer plate means interposed between the rotor arm and collector shoe permitting yielding movement of said shoe with respect to said arm in a cantilever fashion.

3,155,785
TIMER SWITCH HAVING MOVABLE PISTON AND MERCURY CONTACTS
Harold E. Frey, 3 Tilden Road, Brownsburg, Ind.
Filed Dec. 7, 1960, Ser. No. 74,340
6 Claims. (Cl. 200—33)



2. A timer switch comprising means defining a chamber, a piston arrangement movable in said chamber and guided by the sides of said chamber, said piston arrangement being electrically conductive, electrical contacts monuted in the sides of said chamber for electrical connection by said electrically conductive piston arrangement as said piston arrangement moves by and engages said contacts, and a non-conductive liquid received in said chamber and resisting movement of said piston arrangement through said chamber, said electrical contacts extending different distances in the direction of movement of said piston arrangement and being at different overlapping locations along the path of said piston arrangement whereby said contacts are electrically connected at predetermined times in predetermined sequence.

3,155,786
ENCLOSURE WITH LOCKABLE HANDLE
Louis T. Stegmaier, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,699
1 Claim. (Cl. 200—42)



An enclosure for an electric switching device comprising:

(*a*) a cover having a generally circular opening therein having a radially extending notch portion,

(*b*) a generally circular spacer member supported in said opening for limited rotational movement,

(*c*) upper and lower retainer members disposed on opposite sides of said spacer member respectively,

(*d*) said spacer member and both of said retainer members having at least one pair of aligned apertures therein,

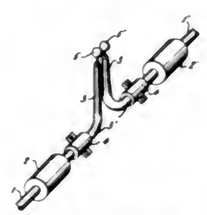
(*e*) a generally inverted U-shaped handle member having an integral bight portion and a pair of opposed side portions, said side portions having a pair of locking lugs passing through said aligned apertures of said spacer and retainer members and bent over at the underside of said assembly,

(*f*) an elongated slot in said upper retainer member between said pair of apertures,

(*g*) a locking member of flat sheet metallic material supported within said handle member in edgewise relation to said bight portion of said handle member, said locking member including a generally circular central portion having a portion thereof slidably received in said elongated slot in said upper retaining plate,

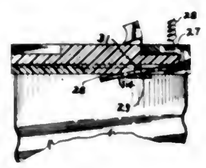
(*h*) said locking member having a locking projection adjacent one end thereof and a locking aperture adjacent the other end thereof, said locking member being rotatable between a first position in which said locking projection is out of said notch of said circular opening and said aperture in said locking member is inaccessibly received within said handle member, and a second position in which said locking projection extends into said notch portion of said circular opening and said aperture is accessible above the top surface of said handle to receive the hasp of a lock member to retain said locking member in said second position.

3,155,787
HIGH VOLTAGE SWITCH ARRANGEMENT FOR INSULATED CONDUCTORS
Alfred Imhof, Zurich, Switzerland, assignor to Moser-Glaser Transformatoren AG, Muttenz, near Basel, Switzerland
Filed May 25, 1962, Ser. No. 197,737
Claims priority, application Switzerland, May 30, 1961, 6280/61
20 Claims. (Cl. 200—48)



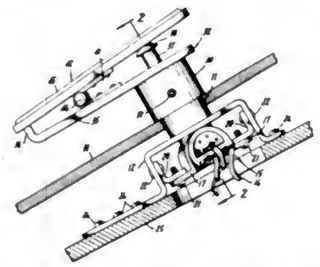
1. A connecting and disconnecting arrangement for insulated high voltage lines, comprising, in combination, at least one insulated conductor means having an insulated main portion having an axis and an insulated angular end portion having a first insulated portion and a second insulated portion extending transversely of each other, said second insulated portion having an end portion including a contact face projecting therefrom, said first insulated portion having a common axis with said main portion of said conductor means and being conductively connected therewith by an uninsulated intermediate portion permitting said angular end portion to be turned relative to said main portion about said common axis between at least two angularly spaced positions in at least one of which said contact face is adapted to engage another conductor; actuating means for turning said angular end portion between said angularly spaced positions; and coupling means surrounding said intermediate portion and the adjoining parts of said main and end portions of said conductor means and permitting said angular end portion to be turned relative to said main portion.

3,155,788
ELECTRICAL SOCKET HAVING CONDUCTIVE ARM PIVOTALLY MOUNTED AT BOTTOM OF SOCKET
Louis Drago, Miami, Fla.
(9021 70th Drive, Forest Hills, N.Y.)
Filed Sept. 4, 1962, Ser. No. 221,023
3 Claims. (Cl. 200—51.09)



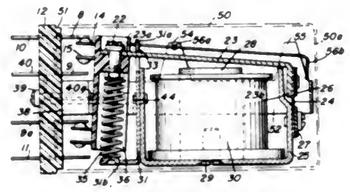
1. A light bulb or fuse socket comprising, in combination, a conductive female receptacle having an open end and a bottom; an electrically conductive arm pivotally mounted at the bottom of said receptacle, said arm having a first end extending toward and terminating substantially at the center of the bottom of said receptacle, said arm having a second end, and said arm being pivotally mounted between said ends; means forming a main current path in said socket with said means extending adjacent to the second end of said arm; leads connected to said receptacle and said means forming a main current path in said socket; and spring means pivotally urging the first end of said arm into said receptacle and the second end of said arm away from said means forming a main current path in said socket, the insertion of a light bulb or fuse in said receptacle forcing the first end of said arm inward pivoting said arm against said spring means and moving the second end of said arm into contact with said means forming a main current path in said socket.

3,155,789
FOOT PEDAL FOR DIMMER SWITCHES
Howard L. Hull, 245 W. 38th St., Apt. 307, Indianapolis, Ind.
Filed Aug. 17, 1961, Ser. No. 132,221
5 Claims. (Cl. 200—86.5)



1. A dimmer switch arrangement for an automobile comprising a dimmer switch including a depressable push-button, resilient means yieldably holding said push-button in projected position, said switch being mounted at the floorboard of the automobile, an elongated foot pedal, a support attached to said floorboard and including a portion spaced upwardly of said floorboard, means swingably connecting said pedal to said upwardly spaced portion of said support, said means being connected to said pedal centrally of the length thereof, said upwardly spaced portion of said support including an abutment at one end thereof, said pedal having one longitudinal end portion engaging said abutment and an opposite longitudinal end portion overlying and engaging said push-button.

3,155,790
REVERSING RELAYS HAVING INCREASED CUT-OFF POWER
Pierre L. A. Lemonnier, Paris, France, assignor to M.T.L Le Materiel Technique Industriel, Paris, France, a company of France
Filed Sept. 11, 1961, Ser. No. 137,106
Claims priority, application France, Sept. 9, 1960, 838,256; Jan. 2, 1961, 848,595
8 Claims. (Cl. 200—87)

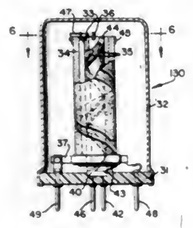


1. A reversing electromagnetic relay comprising a magnet core; a yoke upon which said core and winding are fixedly mounted; a winding for energizing said core; an armature pivotally connected to said yoke and magnetically associated with said core for magnetically induced pivotal movement in one direction relatively to said core when the latter is energized; means for pivotally moving the armature in an opposite direction relatively to the core when the latter is not energized, a first insulating support member secured to a portion of said armature remote from its pivotal connection to said yoke, said support member having a recess opening in a direction facing away from said connection; a pair of opposed, spaced, T-shaped, substantially flat, conducting contact bridges, each end of opposite faces of the cross-bars of the two bridges carrying a substantially rounded contact and the leg of each bridge extending into said recess and being pivotally connected therein for pivotal movement of said bridges about the ends of the legs thereof, the plane of each bridge being substantially parallel to the axis of said pivotal connection; insulated spring means yieldably holding said bridges apart; a second insulating support member which is stationary and spaced from said first support member; a first pair of interconnected, fixed, strip contacts insulatedly secured to said second support member for alternate engagement with the two rounded contacts at corresponding ends of the two bridges and a second pair of fixed, strip contacts insulated, one from the other, and secured to said second support member for alternate engagement with the other two rounded contacts of said bridges.

3,155,791
TWIST RESPONSIVE SWITCH ASSEMBLY
Joseph W. Crownover, 6651 Avenida Mirola, La Jolla, Calif., assignor of twenty-five percent to William W. Haefliger, San Marino, Calif.
Original application Dec. 27, 1957, Ser. No. 705,687, now Patent No. 3,035,126, dated May 15, 1962. Divided and this application Dec. 20, 1961, Ser. No. 160,787
5 Claims. (Cl. 200—87)

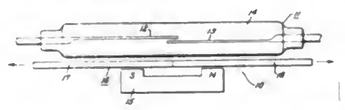
1. An improved switch assembly, comprising a substantially cylindrical body of electrostrictive ceramic material, a pair of spaced electrodes extending longitudinally on the body and winding about the axis thereof, said electrodes being in the same curved plane defined by a surface

of said body, and an electrical switch contact carried for displacement by the body upon twisting thereof about



the body axis in response to application of voltage across said electrodes.

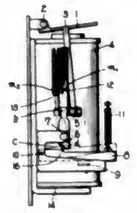
3,155,792
MAGNETIC REED SWITCH DEVICE
Everett W. Werts, Normal, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 7, 1962, Ser. No. 215,324
6 Claims. (Cl. 200—87)



1. In a switch device, a pair of magnetic switches each having a pair of generally parallel extending and overlapping magnetic contacts, at least one contact of each switch being movable for establishing with the other contact respectively contact closed and contact open conditions, magnetic flux-producing means spaced from the switches for producing magnetic flux for controlling movement of said one contact of each switch, said flux-producing means comprising a pair of bar permanent magnets longitudinally extending in parallel relation and spaced in a transverse direction from each other, a magnetic shutter positioned between the switches and the magnets for controlling the path of magnetic flux from the magnets, said shutter comprising a first fixed magnetic member and a second magnetic member mounted for movement relative to the first member, and means for effecting movement of the second member relative to the first member between a first position wherein the second member engages the first member to shunt magnetic flux from the magnets away from the contacts of each switch and a second position wherein the second member is spaced from the first member to establish an air gap permitting magnetic flux from the magnets to traverse the contacts of each switch, said last-named means comprising an actuating rod extending through the space between said bar magnets and connected to said second member, and resilient means biasing said rod so that the second member normally engages said first member.

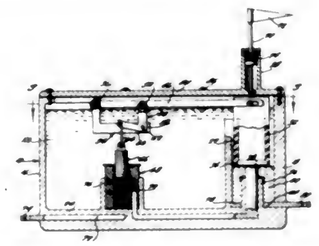
3,155,793
ELECTROMAGNETIC RELAY FOR TELEPHONE PAY STATION
Chūta Aikawa, Suginami-ku, Tokyo, and Hiroshi Watanabe, Meguro-ku, Tokyo, Japan, assignors to Kabushiki Kaisha Tamura Denki Seisakusho, Tokyo, Japan, a company of Japan
Filed Aug. 31, 1959, Ser. No. 837,081
Claims priority, application Japan, Sept. 3, 1958, 33/25,047, 33/25,048; Sept. 4, 1958, 33/25,108
4 Claims. (Cl. 200—104)

1. A multiple contact relay comprising an electromagnet, an armature movable toward said electromagnet when said electromagnet is energized, at least a first spring contact switch and a second spring contact switch, said first spring contact switch being engaged by said armature for being closed when said armature is moved toward said electromagnet and which opens and urges said armature away from said electromagnet when said electromagnet is deenergized, an actuataing member engaged



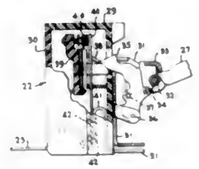
between said first and second switches for closing said second switch when said first switch is closed, and locking means engageable with said actuating member and holding said actuating member in engagement with said second switch to hold said second switch closed when said armature closes said first switch.

3,155,794
HIGH CAPACITY LIQUID CONTACT ELECTRICAL SWITCH
Don T. Eu Daly, Harlingen, Tex.
Filed Aug. 2, 1962, Ser. No. 214,295
5 Claims. (Cl. 200—112)



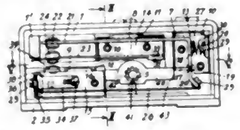
1. An electrical switch comprising an upright casing including a bottom, opposed side walls rising from said bottom, an end wall connecting each of the adjacent ends of said side walls together and a top extending over the upper ends of said side walls and end walls, a well in said casing, said well having the open upper end thereof spaced below said casing top, a contact element in said well and having a portion spaced above the bottom of said well, an inverted cup mounted within said casing for upward and downward movement between a position in which the rim thereof is above and spaced from said contact element portion and a position in which said cup encompasses said element with the rim below and spaced from said element portion, a charge of electrically conductive liquid in said well and contacting said element when said cup is in the above position, said cup when in the down position being operable to force said liquid out of contact with said element, electrical connection means extending through said casing into contact with said liquid and into connection with said element, and releasable latch means operatively connected to said cup for holding said cup in the above position.

3,155,795
CIRCUIT BREAKER TRIP DEVICE WITH AMBIENT COMPENSATION AND ADJUSTING MEANS THEREFOR
Charles L. Jencks, Avon, and Frank H. Murphy, West Hartford, Conn., assignors to General Electric Company, a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,237
3 Claims. (Cl. 200—116)



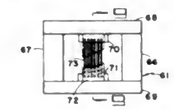
1. An electric circuit breaker comprising:
(*a*) an insulating casing,
(*b*) at least two relatively movable contacts mounted within said casing,
(*c*) operating mechanism for operating said relatively movable contacts including a manually operable handle member and a releasable member releasable to cause automatic opening of said contacts,
(*d*) a latch member mounted in said casing and movable to cause release of said releasable member,
(*e*) a current responsive bimetallic strip mounted in said casing,
(*f*) means in said casing for heating said current responsive bimetallic strip in response to current passing through said separable contacts,
(*g*) an ambient temperature compensating bimetallic strip mounted on said latch member and including a portion engaged by said current responsive bimetallic member upon deflection thereof due to heating,
(*h*) a stop member carried by said latch member, said stop member having a pair of spaced stop portions, one of said stop portions being engaged by and limiting deflection of said ambient compensating bimetallic strip in an increasing temperature direction and the other of said stop portions being engaged by and limiting deflection of said ambient compensating bimetallic strip in a decreasing temperature direction, and
(*i*) said stop member being adjustable to change the position of said stop portions relative to said latch member, whereby to vary the maximum and minimum temperature limits beyond which said ambient compensating bimetallic strip is ineffective.

3,155,796
HOT WIRE STARTING SWITCH FOR SINGLE-PHASE INDUCTION MOTORS
Jakob Ellenberger, Ziegelweg 632, Altdorf, near Nurnberg, Germany
Filed Apr. 21, 1961, Ser. No. 104,655
Claims priority, application Germany, Apr. 23, 1960, E 19,249; Apr. 15, 1961, E 20,933
3 Claims. (Cl. 200—122)



1. A starting switch for a single-phase inducation motor having a main winding and a starting winding comprising, connect and disconnect means for connecting said starting winding in circuit with a source of power for energizing the starting winding to start the motor and for taking said starting winding out of circuit with said power source when said motor is operating substantially at rated speed corresponding to a given load current in said main winding, said connect and disconnect means comprising a pivotally mounted lever having a long lever arm and a short lever arm, a wire conductor connected in operation in series with said main winding and expandable longitudinally by current energizing said main winding, means connecting one end of said wire conductor to said short lever arm physically adjacent to a free end of said short lever arm for actuating said lever between two operating positions for respectively connecting and disconnecting said starting winding, said long and short lever arms and said wire conductor being disposed defining three sides of a rectangular configuration, said long lever arm and said wire conductor being disposed substantially parallel, means comprising resilient means constantly applying a biasing force on said lever for biasing said lever toward one of said two operating positions, adjust means disposed within said rectangular configuration for variably adjusting tension on said wire conductor in opposition to said biasing force to variably adjust said biasing force thereby to vary the value of the biasing force necessary for said resilient means to apply to said lever to actuate said lever to said one operating position as said wire conductor expands and contracts in dependence upon the value of load current in said main winding and passing through said wire conductor, said adjust means comprising a displaceable, adjust lever disposed interiorly of said rectangular configuration and connected to an end of said wire conductor opposite to an end connected to said short lever arm, means comprising a set screw interiorly of said rectangular configuration for adjustably displacing said adjust lever to variably adjust said tension applied to said wire conductor to variably set said biasing force on said resilient means, means interiorly of said rectangular configuration displaceably mounting said adjust lever, a plurality of contacts disposed interiorly of said rectangular configuration effectively actuated to a closed condition and an open condition by said lever arm when actuated to said two operating positions respectively for connecting and disconnecting said starting winding, one of said contacts being disposed adjacent a free end of said long lever arm facing interiorly of said rectangular configuration, connections interiorly of said rectangular configuration and extending outwardly therefrom for connecting said contacts to said main and starting windings of said motor and including connections for connecting said wire conductor in series with said main winding, whereby said rectangular configuration substantially defines the dimensions of said switch and the values of said rated speed are accurately adjustable.

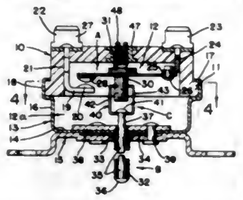
3,155,797
DESTRUCTIBLE FUSE ELEMENTS
George Sargent Janes, South Lincoln, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Original application Oct. 10, 1958, Ser. No. 766,552, now Patent No. 3,035,206, dated May 15, 1962. Divided and this application Nov. 28, 1960, Ser. No. 72,029
3 Claims. (Cl. 200—135)



1. In an electrical circuit having capacitance and inductance providing different total energies wherein the total energy is proportional to the square of the voltage of said circuit, a fuse link interconnecting a pair of conductors and having a predetermined failure time of

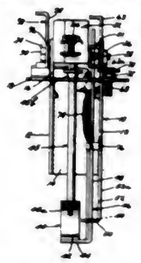
the order or less than the square root of the product of the said capacitance and inductance comprising a piece of electrically nonconductive pressure-sensitive tape, and a plurality of fine wires having a high conductivity and fusing point of the order of that of copper, said wires being stuck to the surface of said tape and said tape being attached to said conductors and maintaining said wires in electrical contact therewith, the net resistance through said wires initially being a first predetermined value offering negligible impedance to current flow, and the total mass of said wires being such that the ratio of the total energy initially stored in the circuit to the total mass of said wires is a second predetermined value to provide said predetermined failure time.

3,155,798
TEMPERATURE SENSING ASSEMBLY FOR A THERMO-SWITCH
Edward G. Them, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio
Original application Feb. 17, 1961, Ser. No. 90,021, now Patent No. 3,134,003, dated May 19, 1964. Divided and this application Feb. 27, 1962, Ser. No. 176,016
3 Claims. (Cl. 200—137)



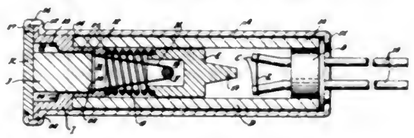
1. In a thermo-switch for controlling a flame, a housing defining a switch chamber, a pair of electrical terminals mounted on said housing, switch elements mounted in said chamber including a stationary contact connected to one terminal, and a mobile contact connected to the other terminal, a cantilever arm of electrically conductive material supporting said mobile contact for conducting an electric current between said terminal, said cantilever arm comprising spring means biasing said mobile contact in one direction to open the switch, means for limiting the movement of said arm in said one direction and for adjusting the maximum spacing of said contacts, a flame sensing probe extending outwardly from said housing in the opposite direction, said probe comprising an elongated tube mounted on said housing and extending away from said switch chamber and a metal rod mounted in said tube and connected to the outer end of said tube, said rod being formed of a metal having a coefficient of expansion lower than that of said tube and having a length greater than that of said tube, the free end portion of said rod projecting into said switch chamber, and means for connecting said rod to said cantilever arm to close said switch in response to heating of said probe comprising a pin of ceramic insulating material and a U-shaped spring member having side walls that are biased toward each other, said pin being connected to said arm and extending toward said rod between said side walls, said U-shaped spring member being connected to the free end portion of said rod between said side walls and having inturned jaws providing means for gripping the opposite sides of said pin to effect closing of said switch in response to axial movement of said rod and for sliding axially on said pin when the pin is positioned in either extremity of its path of movement, whereby said flame sensing probe remains sensitive to small decreases in temperature, said spring means opening said contacts upon separation of said rod and said tube to indicate deterioration of said probe.

3,155,799
THERMALLY RESPONSIVE SWITCHING DEVICE
Stanley R. Mitick, Jr., Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1963, Ser. No. 248,995
7 Claims. (Cl. 200—138)



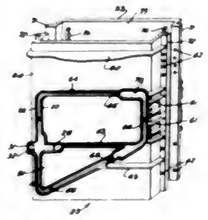
1. A temperature responsive device for use in a heating system, said device comprising a support, a switch positioned on said support, an elongated carriage member arranged for sliding movement relative to said support, a bimetal having one end fixed to said carriage member, means operatively connecting the other end of said bimetal with said switch, a first adjustable means for selectively connecting and disconnecting said last mentioned means from said switch, and a second adjustable means supported on said carriage member for manually adjusting the longitudinal position of said carriage member relative to said support, thereby to adjust the position of said bimetal and the temperature level at which said switch is activated by said bimetal.

3,155,800
SINGLE ACTION TEMPERATURE SENSITIVE ELECTRICAL SWITCH INCLUDING CAMMING MEANS FOR A PLUNGER RETAINING MEMBER
Robert F. Denton, West Los Angeles, Calif., assignor, by mesne assignments, to Genisco Technology Corporation, a corporation of California
Continuation of application Ser. No. 35,557, June 13, 1960. This application Jan. 2, 1963, Ser. No. 250,978
8 Claims. (Cl. 200—142)



1. A single-action temperature-sensitive electrical switch comprising:
an elongated housing having a transversely spaced pair of electrical terminals in the interior of one end thereof; a plunger in the mid-portion of said housing adapted to slide toward said terminals for producing an electrical switching action; means within the other end of said housing providing a pellet chamber having an opening facing toward said plunger, and having an interior shoulder facing away from said opening; a spring biasing said plunger for movement toward said terminals; a resilient spring retaining member having one end fastened to said plunger, its other end extending through said opening into said pellet chamber and having an offset portion which hooks over said shoulder; a temperature-sensitive pellet occupying said pellet chamber and compressively engaged by said spring retaining member for maintaining the engagement of said offset portion of said member with said shoulder; and means for applying heat to said pellet from the exterior of said housing to melt said pellet, said offset portion of said member and said shoulder together then providing a cam action for forcing said other end of said member radially inwardly of said chamber as said plunger moves toward said terminals.

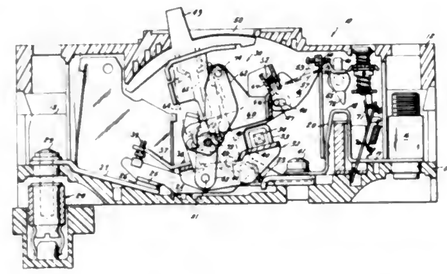
3,155,801
ARC CHUTE SIDE WITH ENCAPSULATED FACE WOUND BLOWOUT COIL
Frank J. Pokorny, Hatboro, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1960, Ser. No. 77,432
4 Claims. (Cl. 200—147)



1. An arc chute for interrupting an electric arc comprised of a pair of shells; each of said shells being made of a material having high dielectric strength and having a plurality of apertures spaced along its perimeter; fastening means inserted through said apertures for securing said shells to one another to thereby form a partially enclosed substantially rectangular housing; each of said shells having an inner and outer face; said outer faces of each of said shells having first and second extending portions projecting outward from said outer face of said shells; said first and second extending portions forming an annular shaped trough therebetween; blowout means for urging an electric arc into said housing; said blowout means including first and second coils each having at least one turn; said first coil being positioned in said trough of one of said shells and said second coil being positioned in said trough of the other of said shells; each of said coils formed to generate magnetic flux in both the region of cooperating contacts and substantially the entire region of said arc chute; said inner face of each of said shells having a pair of spaced parallel ribs vertically aligned in said shell; a plurality of spaced parallel arc plates; said arc plates being positioned between said ribs and within the housing formed by said pair of shells; filler material contained in each of said troughs to rigidly secure said coils to their associated said shells.

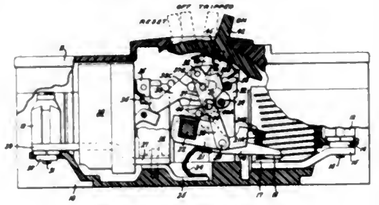
3,155,802
U-SHAPED CRADLE FOR CIRCUIT BREAKER
Ernest R. Wortmann, Drexel Hill, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 9, 1961, Ser. No. 108,812
11 Claims. (Cl. 200—153)

1. In a circuit breaker, a pair of cooperating contacts and a mechanism for operating said contacts into and out of engagement; said mechanism comprising a latchable cradle, a movable contact arm carrying one of said cooperating contacts, first means connecting said cradle and said contact arm in a manner such that said contacts cannot be operated into engagement unless said cradle is in a latched position, an operating spring means urging said cradle to a tripped position; said cradle comprising a U-shaped member; a pivotal mounting for said cradle, said mounting comprising individual pin means for each arm of the cradle, said pin means being axially aligned and spaced from each other, each of said pin means extending outboard of its respective arm; said contact arm



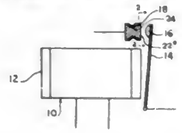
movable in the region intermediate said arms and through the axis of said pin means when operating into and out of engagement.

3,155,803
ELECTRIC CIRCUIT BREAKER WITH TOGGLE POSITIONING MEANS
Keith W. Klein, Simsbury, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York
Filed July 25, 1962, Ser. No. 212,432
4 Claims. (Cl. 200—153)



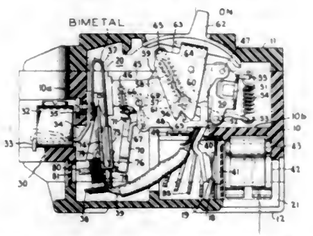
1. An electric circuit breaker comprising:
(*a*) an insulating casing,
(*b*) at least one stationary contact mounted in said insulating casing,
(*c*) an elongated movable contact arm pivotally supported in said insulating casing and carrying a movable contact member movable by said contact arm into and out of engagement with said stationary contact,
(*d*) operating means in said casing for operating said contact arm between open and closed circuit positions comprising a mechanism frame fixedly mounted in said casing and a releasable cradle member pivotally mounted on said frame,
(*e*) a pair of toggle links interconnecting said cradle member and said movable contact arm, said toggle links comprising a pair of upper toggle links and a pair of lower toggle links interconnected by a knee pin,
(*f*) a manually operable handle member supported in said casing,
(*g*) a tension spring interconnecting said handle member and said knee pin of said toggle linkage,
(*h*) reciprocal movement of said handle member causing collapsing and straightening movement of said toggle linkage,
(*i*) said upper toggle links having a portion engaging said frame and restraining said toggle links in a partially collapsed condition following release of said releasable cradle member.

3,155,804
MERCURY AMALGAM ELECTRICAL CONTACTS
Stanley Gewirtz, New York, N.Y., assignor to Solid State Systems, Inc., New York, N.Y.
Filed Mar. 26, 1962, Ser. No. 182,512
3 Claims. (Cl. 200—166)



1. An electrical contact made of a 60/40 mercury/silver amalgam.

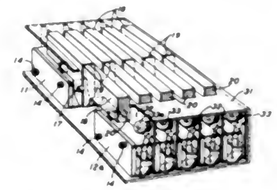
3,155,805
MULTIPOLE CIRCUIT BREAKER WITH NOVEL CONTACT ARM CONSTRUCTION
George W. Kiesel, Unionville, and Emery M. Wegh, Terryville, Conn., assignors to General Electric Company, a corporation of New York
Original application Apr. 15, 1960, Ser. No. 22,483. Divided and this application Dec. 20, 1962, Ser. No. 246,035
4 Claims. (Cl. 200—166)



1. An electric circuit breaker comprising:
(*a*) a pivotally supported contact operator having two opposed side portions and an intermediate bight portion,
(*b*) means supporting said contact operator for pivotal movement about a pivotal axis through said side portions,
(*c*) a relatively movable contact arm pivotally supported on a pivot pin extending through said side portions,
(*d*) said contact arm having a first portion extending from said pivot pin and carrying a movable contact thereon and a second portion extending from said pivot pin at an angle to said first portion, and
(*e*) a tension spring between said second portion of said contact arm and said bight portion of said contact operator biasing said switch arm for rotation about its pivotal support and into engagement with said bight portion of said contact operation as a stop.

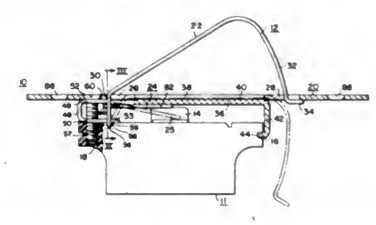
3,155,806
ROCKER SWITCH ASSEMBLY
Alfred S. Klingenberg, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 26, 1961, Ser. No. 147,989
1 Claim. (Cl. 200—167)

A switch assembly comprising a casing of insulation material, a plurality of electrical switches within said casing juxtaposed in two rows with each switch having its match in the opposite row so as to constitute a plurality of opposed switch pairs, each of said electrical switches including a plunger and means for resiliently urging said plunger to an outwardly extending position, said resilient means including over-center spring means which adds to the outward urging force exerted on said plunger when the same is in its extended position and subtracts from said force when the plunger is depressed whereby the said force exerted on said plunger in its extended position exceeds that exerted in its depressed condition, sheets of opaque material disposed between said switch pairs so as to optically isolate each of said switch pairs from adjacent switch pairs, bolts extending through the juxtaposed switches for the purpose of fixing the position of said switches and said sheets of opaque material within said casing, a plurality of rocker arms equal in number to said switch pairs, each of said rocker arms comprising ends of transparent material integrally joined to an intermediate section of opaque material, a single rod passing through said rocker arms at a point equidistant



between the plungers of said switch pairs, the plungers of said switch pairs being urged into resilient contact engagement with respective ends of said rocker arms irrespective of the positions assumed by the same, said casing having apertures therein which permit each of said rocker arms to protrude from said casing thereby allowing each of said rocker arms to be manually rotated in either direction about said rod in order to depress either of said plungers in any one of said switch pairs, a depressed plunger being retained in this condition by the resilient force exerted against the opposite end of the rotated rocker arm by the other plunger of the switch pair, a light mounted adjacent each end of each rocker arm, and electrical circuit means for energizing a light when the plunger of the electrical switch adjacent the same end as said light is depressed.

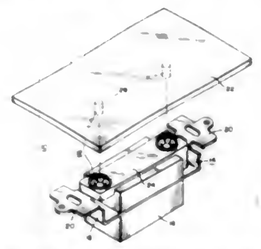
3,155,807
AUXILIARY ACTUATING MEANS FOR ACTUATING A CIRCUIT CONTROLLING WIRING DEVICE
Roy O. Wiley, Newtown, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 19, 1960, Ser. No. 3,401
10 Claims. (Cl. 200—172)



1. The combination comprising an elongated wiring device having actuating means on a front side thereof for making and breaking an electrical circuit, means including an elongated lever pivotally positioned relative

to said wiring device front side for operating said actuating means, an elongated generally planar mounting plate having a transverse portion at one end thereof engaging an adjacent end of said wiring device to secure said mounting plate against separation from said wiring device along a direction substantially normal to the plane of said mounting plate and to space said one end of said mounting plate outwardly of said wiring device front side, a bracket for spacing the other end of said mounting plate outwardly from the other end of said wiring device, said lever generally extending along and projecting outwardly through an opening in said mounting plate, said bracket having a portion thereof engaging one end portion of said lever to support the latter in its pivotal position for movement to and outwardly of the front plane of said mounting plate, and means for securing together said other ends of said mounting plate and said wiring device with said bracket positioned therebetween.

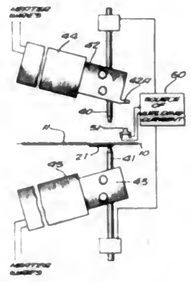
3,155,808
NONLATCHING RESILIENT FASTENING ARRANGEMENT
Roy O. Wiley, Trumbull, Conn., assignor, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 18, 1961, Ser. No. 103,850
9 Claims. (Cl. 200—172)



1. An arrangement for engaging separate objects in fastened yet separable relation, said arrangement comprising a projection extending outwardly from one of said objects, a resilient generally planar metallic clip secured adjacent an opening in another of said objects, said clip having a plurality of deflectable tabs disposed peripherally about and extending toward an opening opening through said clip, each of said tabs having an elongated end portion extending outwardly of the plane of said clip and inwardly of said other object opening, said one object projection having a generally smooth outer surface extending inwardly from an outer end of the projection along its projecting length so as to be frictionally insertable into said clip opening, and each of said clip tab end portions deflecting to be frictionally engaged laterally thereof with said one object projection when it is inserted as described so that the total frictional intersurface engagement about the periphery of said one object projection provides for substantial nonlatching fastening of said objects.

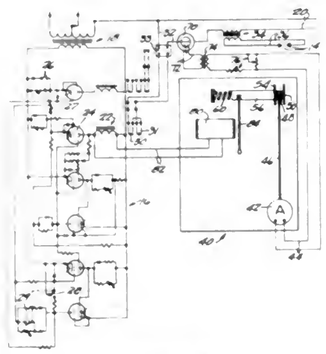
3,155,809
MEANS AND TECHNIQUES FOR MAKING ELECTRICAL CONNECTIONS
Lee M. Griswold, Pasadena, Calif., assignor to Digital Sensors Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 21, 1964, Ser. No. 361,490
9 Claims. (Cl. 219—86)

1. Apparatus for making electrical connections to flexible ribbon-tape cables wherein conductors in the form of ribbons are embedded in a plastic material, a pair of pointed electrodes capable of applying pressure in a limited area to opposite sides of said tape cable, heating means mounted on each of said electrodes for softening



the insulation of said tape cable when and as pressure is being applied to and between said electrodes.

3,155,810
WELD CURRENT INDICATOR
Alton B. Parrott, 1200 Milton St., Benton Harbor, Mich.
Filed July 17, 1962, Ser. No. 210,415
8 Claims. (Cl. 219—109)

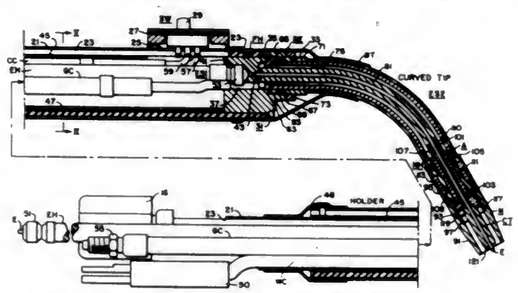


1. An electric welder comprising
welding electrodes,
electric current supply means,
a weld timer controlling the duration of supply of electric current from said supply means to said electrodes,
an ammeter having a shiftable pointer and responsive to current flow in said supply means,
means normally mechanically clamping said pointer against movement, and
clamp release means controlled by said weld timer and operated simultaneously with energization of said welding electrodes.

3,155,811
ARC WELDING TORCH
Floyd E. Adamson, Kenmore, and Edward C. Denneny, Tonawanda, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1961, Ser. No. 139,659
13 Claims. (Cl. 219—130)

1. An arc welding torch for welding with a consumable electrode, comprising a nozzle, a main gas channel in communication with said nozzle for transmitting a shielding gas through said nozzle, and electrode guide means for transmitting said electrode and having electrode entrance means and electrode exit means, said exit means being in electrical contact with said electrode and termi-

nating adjacent said nozzle, said guide means also having interposed between said entrance and said exit means, a sub-channel in communication with said main channel

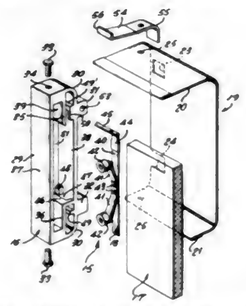


through which the main stream of said shielding gas is transmitted in contact with said electrode to purge said electrode.

3,155,812
ELECTRIC HEATER CONSTRUCTION

Albert Greenhaus, Fresh Meadows, N.Y., assignor to Berko Electric Manufacturing Corporation, Jamaica, N.Y., a corporation of New York

Filed Nov. 9, 1961, Ser. No. 151,599
8 Claims. (Cl. 219—345)



1. In an electric heater, a subassembly comprising a reflector, an electric heater panel having terminal means for the application of energy thereto, and channels of insulating material having openings therein for receiving opposing ends of said heater panel, said terminal means comprising electric contact strips on said opposing ends of said panel, spring loaded electric contact means in each of said channels, said contact means engaging said contact strips and means on said channels for securing said panel to said reflector and retain the channels in engagement with the heater panel, each of said end channels comprising an elongated hollow structure having end walls, top and bottom walls and one side wall, at least one partition between the top and bottom walls to form an elongated panel receiving channel, and means on said bottom wall receiving and retaining said electrical contact means.

3,155,813
MIRROR ASSEMBLY FOR AN ARC IMAGING FURNACE

Harold L. Morlan, Jr., Arlington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 23, 1962, Ser. No. 175,072
2 Claims. (Cl. 219—383)

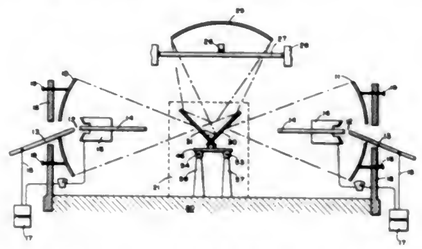
1. An arc imaging furnace, comprising

(*a*) duplicate first and second ellipsoidal projection mirrors;

(*b*) duplicate first and second radiant energy sources positioned with respect to said projection mirrors to direct radiant energy onto said first and second ellipsoidal projection mirrors, respectively;

(*c*) a reimaging ellipsoidal mirror adapted to concentrate radiant energy upon a work area, said reimaging mirror being located above the plane of said projection mirrors and centrally positioned between them;

(*d*) duplicate first and second reflecting mirrors positioned between said first and second projection mirrors and aligned therewith, said first and second reflecting mirrors being adjacent to each other and being adapted to alternate in directing said radiant energy first from said first ellipsoidal projection mirror and then from said second ellipsoidal mirror onto said reimaging ellipsoidal mirror;



(*e*) mirror support means adapted to hold said first and second reflecting mirrors in fixed angular relationship to each other, in radiant energy receiving relationship alternately with said first and second ellipsoidal projection mirrors, respectively, and alternately in radiant energy directing relationship with said reimaging mirror;

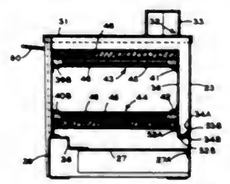
(*f*) horizontal rails adapted to support and furnish direction of movement to said mirror support means; and

(*g*) means for moving said mirror support means back and forth along said rails whereby said first and second reflecting mirrors are movable with respect to said ellipsoidal projection mirrors and said reimaging mirror and are capable in their alternating movement of supplying said radiant energy constantly and continuously to said work area.

3,155,814
INFRARED RADIANT HEATING OVEN

Leon Appleman, Bergenfield, and Richard H. Eck, Wayne, N.J., assignors to Radiant Electronic Products Corp., New York, N.Y., a corporation of Delaware

Filed July 31, 1961, Ser. No. 128,229
8 Claims. (Cl. 219—407)

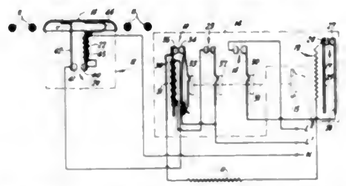


1. A cooking apparatus adapted for reconstituting frozen foods in substantially two to seven minutes comprising a cabinet having rear and connected side panels, a front panel connected to and extending between the bottom front edge portion of said side panels, a top panel having a vent opening supported by said rear and connected side panels, an oven, means supporting said oven in spaced relationship with respect to said cabinet top, rear and side panels to define therebetween an air space, a fused silica plate forming the top walls of said oven and a second fuse silica plate forming the bottom wall of said oven, said silica plates defining respectively the entire extent of the top and bottom walls of said oven, an electric heating coil disposed adjacent each of said plates for imparting heat thereto, and an oven door for opening and closing the front end of said oven.

3,155,815
APPARATUS FOR CONTROL OF COOKING TEMPERATURES

Daniel E. Clapp, Churchville, Pa., assignor to The Proctor-Silex Corporation, Philadelphia, Pa., a corporation of Connecticut

Filed Oct. 26, 1960, Ser. No. 65,088
6 Claims. (Cl. 219—508)

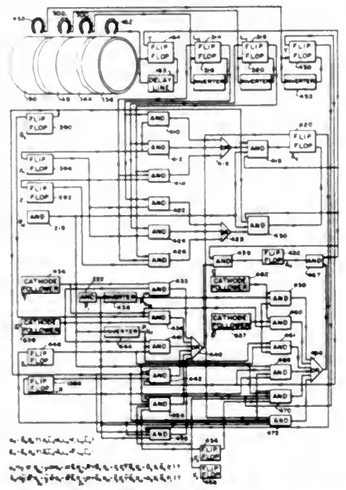


5. In an apparatus for controlling an electric cooking unit, a first switch connected in series circuit with said cooking unit, current-operable thermally responsive means arranged to open and close said switch recurrently, a second thermally operable switch in series circuit with said cooking unit adapted to be initially in closed contact position, means for sensing temperature changes resulting from the operation of the cooking unit, and means responsive to the rate of temperature rise for varying the temperature at which said second switch first opens in such manner that said switch opens at a lower temperature when controlling a cooking load of low thermal capacity than when controlling a cooking load of higher thermal capacity.

3,155,816
DIGITAL COMPUTER

Robert E. Bible, Burbank, Edward L. Braun, Los Angeles, James L. Cass, Burbank, Robert L. McIntyre, La Crescenta, and Robert R. Williamson, Sunland, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed Nov. 8, 1957, Ser. No. 697,299
23 Claims. (Cl. 235—151)



22. In a digital differential analyzer defined by a plurality of integrator storage sections and defined by a plurality of digital positions in each integrator storage section in the plurality and having an interrelationship between the integrator storage sections in the plurality in accordance with a problem to be solved,

means for sequentially presenting the integrator storage sections in the plurality and the successive digital positions in the integrator storage sections for computation on a cyclic basis,

means for providing a plurality of channels for the storage of signal indications for the different integrator storage sections in the plurality,

means for providing in a first channel in the plurality signal indications digitally representing a dependent quantity for a particular integrator storage section in the plurality upon the presentation of the particular integrator storage section for computation,

means for introducing to the particular integrator storage section from a source external to the particular integrator storage section signal indications digitally representing an external quantity for comparison with the dependent quantity for the particular integrator storage section,

means responsive to the signal indications representing the dependent quantity for the particular integrator storage section and the signal indications representing the external quantity for the particular integrator storage section for comparing the signal indications to produce signal indications representing any differences between the dependent quantity and the external quantity for the particular integrator storage section,

means responsive to the signal indications representing the difference increments produced for the particular integrator storage section in each cycle of computation for storing in a second channel in the plurality the signal indications representing the difference increments produced for the particular integrator storage section and having a polarity opposite to such difference increment,

means responsive to the signal indications representing the lack of occurrence of any difference increment in each cycle of computation for storing in the second channel in the plurality signal indications representing a value having a polarity dependent upon the polarity of the difference increment for the previous cycle of computation,

means responsive to the signal indications in the second channel for the particular integrator storage section and the signal indications in the first channel for the particular integrator storage section in each cycle of computation for combining such signal indications to obtain for the particular integrator storage section signal indications representing a new value of the dependent quantity for the integrator storage section,

means for providing signal indications representing digital increments in an independent quantity for the particular integrator storage section upon the presentation of the particular integrator storage section for computation and in accordance with the interrelationship between the particular integrator storage section and other integrator storage sections in the plurality,

means for providing in a third channel in the plurality signal indications representing an output quantity for the particular integrator storage section upon

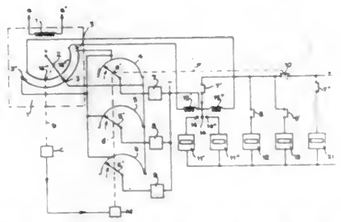
the presentation of the particular integrator storage section for computation,

and means responsive to the signal indications representing the dependent quantity and the output quantity for the particular integrator storage section for combining such signal indications upon the presentation of the particular integrator storage section for computation and in accordance with the signal indications representing the digital increments in the independent quantity for the particular integrator storage section to obtain signal indications representing a new value of the output quantity for the particular integrator storage section.

3,155,817
ELECTRIC SUPPLY SUPERVISION

Pierre Paul Daniel Gaussens, 4 bis Blvd. des Granges, Sceaux, France, and Paul Cazalet, 85 Rue Pixercourt, Paris, France

Filed Nov. 16, 1959, Ser. No. 853,305
Claims priority, application France, Nov. 18, 1958, 779,391
6 Claims. (Cl. 235—151)



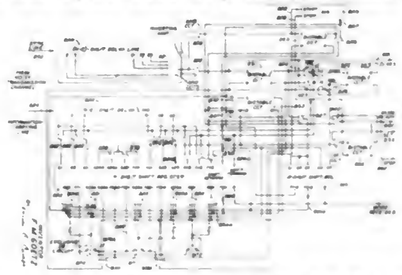
1. In an apparatus for deriving from the measured voltage of an electric supply system, numbers for easily computing therewith the mean and mean square values of the percentage of deviation of said measured voltage from a nominal voltage, the combination of a voltmeter connected to measure the deviation of the voltage of the system from said nominal voltage, a row of contact plates associated with said voltmeter, a source of current, and means operating at regular spaced times to connect said source of current to a selected one of said contact plates the selection being dependent on the instantaneous voltage applied to the voltmeter, with a rotary selector switch having banks of contacts connected with said contact plates and rotary wipers adapted to sweep synchronously the whole banks during each of the spaced times at which said source of current is connected to one of said contact plates, a pulse generator adapted to supply a pulse of current at each step of the switch wipers, at least one counter for each bank of the switch, a relay associated with each wiper, said relay being excited upon the wiper sweeping a contact rendered live through its connection to the contact plate to which the source of current is connected and operating to connect the pulse generator with the corresponding counter during the remainder of the full sweep of the wipers, and a counter for counting how many times the source of current is connected with one of the contact plates.

3,155,818
ERROR-CORRECTING SYSTEMS

Frank M. Goetz, Franklin Square, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 15, 1961, Ser. No. 110,142
17 Claims. (Cl. 235—153)

1. In combination in a self-correcting binary information system which includes a transmission channel subject to error bursts, an encoder comprising means for supplying information digits, means for timing said supplying means and for providing synchronization digits, first shift register means responsive to the output of said supplying means for serially applying said information digits to said channel, means for generating check digits and for serially applying said check digits to said first shift register means for application to said channel, said generating means including second shift register means for providing a binary sequence which includes at least one "0" and one "1," said generating means also including modulo 2 adding means successively responsive to the output of said second shift register means and the information digit appearing in at least one stage of said first shift register means for generating said check digits

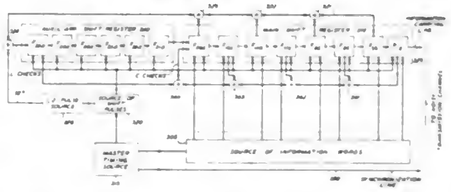


and for serially applying them to said first shift register means, and means for coupling said synchronization digits to said channel; and a decoder comprising delay line means connected to said transmission channel for receiving therefrom said information and check digits and said synchronization digits, third shift register means connected to said delay line means for receiving therefrom said information and check digits, means for shifting said information and check digits through said third shift register means, and parity reconstruction circuit means connected to said third shift register means for regenerating erroneously-received information digits which are within the error-correcting capabilities of said system as said information and check digits are shifted through said third shift register means.

3,155,819
ERROR CORRECTING SYSTEM

Frank M. Goetz, Franklin Square, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 15, 1961, Ser. No. 110,143
15 Claims. (Cl. 235—153)

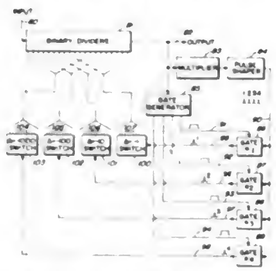


1. In combination in a self-correcting digital information system which includes a transmission channel subject to end-connected or interior error bursts, an encoder comprising means for supplying information digits, timing means for coupling synchronization digits to said channel, shift register means responsive to the output of said supplying means for serially applying said information digits to said channel via the output stage of said shift register means, means for generating check digits and for serially applying said check digits to the input stage of said shift register means, said generating and applying means including means responsive to information digits appearing in spaced ones of the stages of said shift register for providing two sets of check digits to be suffixed to each information word, said providing means including means for deriving the check digits of one set so as to establish only even parity relationships between said information digits and the check digits of both sets and for deriving the check digits of the other set so as to establish both even parity relationships and an even number of odd parity relationships between said information digits and the check digits of both sets; and a decoder coupled to said channel for receiving therefrom said information and synchronization digits, said decoder including means for determining whether a received sequence of digits is characterized by an end-connected or an interior error burst, means responsive to the detection of an end-connected error burst for locating the position in the received sequence of a reference information digit and for then reconstructing erroneously-received information digits, which are within the error-correcting capabilities of said system and parity circuit means responsive to the detection of an interior error burst for reconstructing erroneously-received information digits which are within the error-correcting capabilities of said system.

3,155,820
BINARY DIVIDER WITH RADIX CONVERSION FEEDBACK SWITCHING

Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Jan. 10, 1963, Ser. No. 250,547
9 Claims. (Cl. 235—165)

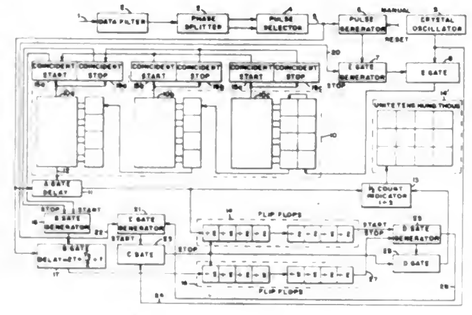


4. Means for adapting a cascaded plurality of n trigger circuits receiving a train of input pulses and having an inherent countdown ratio of 2^n to provide a plurality of countdown ratios each less than 2^n and each being selectible by the positioning of a plurality m of decade switching means, whereby 10^m countdown ratios may be effected by discrete positions of each of said m decade switching means; the inputs to each of said binary dividers being weighted consecutively from 2^0 through 2^{n-1}, pulse generating means connected to the output of the nth and last binary divider to provide a plurality of m like-polarity pulses in response to each output pulse, means delaying said pulses to prevent coincidence thereof with said input pulses, pulse separating means receiving the output from said pulse generating means and producing therefrom a time-space separated feedback pulse corresponding to each of the outputs of said generating means, with each of said train of pulses being transferred to a corresponding and separate trigger line, each of which trigger lines connected individually to one of said m decade switching means, each of said switching means being adapted in selected positions thereof to effect predetermined feedback connections of said trigger pulses to the inputs of selected ones of said plurality of trigger circuits, one of said switching means consecutively effecting a countdown ratio reduction in integral steps of 10^{m-1} and the others of said decade switching means effecting countdown ratio reductions in consecutive lesser steps of 10^{m-2}, 10^{m-3} . . . 10^0, respectively, whereby the plurality of m decade switching means in being positioned to 10^m switching combinations effects 10^m integral output countdown ratios between the input to and output from said plurality of trigger circuits.

3,155,821
COMPUTER METHOD AND APPARATUS

Edwin Shain, De Witt, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 2, 1959, Ser. No. 784,815
4 Claims. (Cl. 235—168)



4. In combination, a source of first pulses of variable recurrence rate, a source of second counting pulses of fixed recurrence rate, a first pulse counter responsive to said second pulses for producing a first output pulse after a predetermined number of said second pulses have been counted and a second output pulse which is time delayed with respect to said first output pulse, means responsive to a first one of said first pulses for applying said second pulses to said first pulse counter as input pulses, means responsive to said first output pulse from said first pulse counter to generate an A gate pulse of predetermined duration occuring at a predetermined time after the occurrence of said first one of said first pulses, second and third pulse counters, means responsive to the duration of said A gate pulse for applying said first pulses to said second pulse counter to store a count equal to $2V_1 - n_1(2)^8$ where V_1 is the average recurrence rate of said first pulses for said A gate duration and n_1 is the integer portion of the quotient

$$\frac{2V_1}{(2)^8}$$

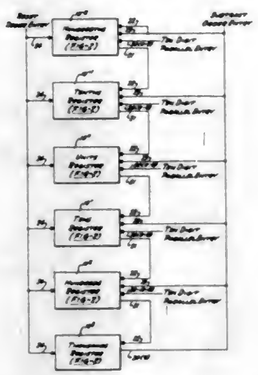
means responsive to said second output pulse for generating a B gate pulse of predetermined duration, means responsive to the duration of said B gate pulse for applying said first pulses to said second pulse counter to store a count equal to $2V_2 - n_2(2)^8$ where V_2 equals the average recurrence rate of said first pulses for said A gate duration and n_2 is the integer portion of the quotient

$$\frac{2V_2}{(2)^8}$$

means responsive at the termination of the B gate pulse for simultaneously applying said second pulses to said second and third pulse counters, a count indicator, means responsive to an output pulse from said second pulse counter for applying second pulses to said count indicator,

and means responsive to an output pulse from said third pulse counter to halt the application of said second pulses to said count indicator.

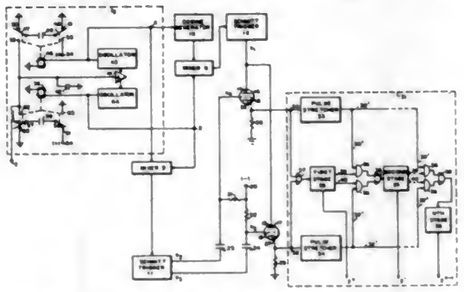
3,155,822
RECIRCULATING ADDER
Franklin C. Chiang, Palo Alto, Calif., assignor to International Control Machines of Santa Clara County, Mountain View, Calif., a corporation of California
Filed Oct. 2, 1961, Ser. No. 142,398
10 Claims. (Cl. 235—173)



1. An arithmetic circuit comprising first memory means for storing a number, second memory means for storing another number, means for entering a plurality of such numbers successively into storage within said memory means, means for producing an electric pulse, means for producing a train of electric pulses, first coincidence means, means connected and arranged to compare the result of an arithmetic operation involving the two stored numbers in said first and second memory means with one of said train of pulses to produce an output pulse having a time position with respect to the first pulse of said train of pulses related to said result, second coincidence means connected and arranged to compare the time position of said output pulse relative to the first pulse of said train of pulses for determining the numerical value of the result, means interconnecting said second coincidence means and said first memory means for automatically changing the number stored within the first memory means to the so-determined value, and means interconnecting said second coincidence means and said second memory means for automatically removing the then-stored number from storage within the second memory means upon the completion of such determination.

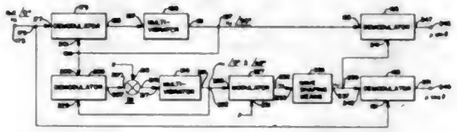
3,155,823
INTEGRATOR
John W. Gray and Henry L. Hunter III, Pleasantville, N.Y., assignors to General Precision Inc., a corporation of Delaware
Filed Apr. 16, 1959, Ser. No. 806,907
10 Claims.. (Cl. 235—183)

6. In an electric signal integrator, a circuit for providing the input to a counter means comprising, means for receiving an electric signal to be integrated and for providing two alternating voltages, the instantaneous frequencies of which differ from each other by an amount corresponding to the instantaneous value of the electric signal to be integrated; and means connected to receive said alternating voltages for providing output voltages the magnitude, frequency, and phase of which correspond



to the instantaneous value of the said frequency difference.

3,155,824
CONTROL APPARATUS
Donald J. Rotier, Crystal, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 22, 1961, Ser. No. 97,488
12 Claims. (Cl. 235—189)

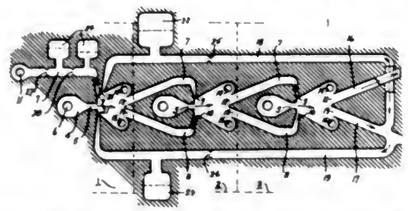


1. In a computing system: first demodulator means including input, reference, and output terminal means; summing, frequency variable multivibrator means including input and output terminal means; means connecting said first demodulator to said multivibrator, said multivibrator providing, in this connection configuration, an output signal which varies in phase from a reference signal in accordance with a multiplicand signal being applied to one of said summing input terminal means on said multivibrator; modulator means including input, output, and reference terminal means, said modulator being adapted to provide an amplitude modulation, of a phase modulated reference signal, by a multiplier signal applied to said input terminal means; means connecting said output terminal means of said multivibrator to said input terminal means of said modulator; second demodulator means including input, reference, and output terminal means, said second demodulator being adapted to provide a D.C. output signal indicative of the amplitude of an input signal and also of the phase of said input signal with respect to a reference signal applied to said reference terminals, said reference signal being the same reference signal as applied to said first demodulator; means connecting said output terminal means of said modulator to said second demodulator; and means connecting a means for supplying first and second reference signals to said reference terminal means on said first and said second demodulators.

3,155,825
PURE FLUID LOGIC CIRCUITRY FOR INTEGRATORS AND DIFFERENTIATORS
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 21, 1963, Ser. No. 260,211
15 Claims. (Cl. 235—201)

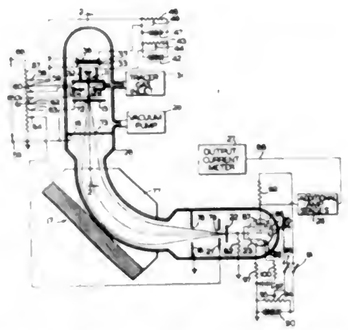
1. An analog fluid amplifier circuit for obtaining calculus mathematical functions comprising

first means for generating a main fluid jet to be controlled,
fluid receiver means downstream from said first means for receiving the main jet,
second means for establishing a control fluid flow and generating a control fluid jet to controllably deflect said main jet, said second means including a first plurality of circuit components,
third means in communication with said receiver means for establishing a feed-back flow and generating a feedback fluid jet to further controllably deflect said main jet, said third means including a second plu-



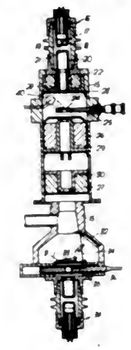
rality of circuit components establishing fluid flow characteristics essential to the generation of said calculus mathematical functions,
said first and said second pluralities of circuit components including resistive and reactive elements defining in each of said first and second means transfer impedance functions containing equivalent time constant factors, and
means combining said control and feedback fluid flows for effecting cancellation of said equivalent time constant factors for rendering said analog fluid amplifier circuit operable to produce pure calculus mathematical functions.

3,155,826
MASS SPECTROMETER LEAK DETECTOR INCLUDING A NOVEL REPELLER-HEATER ASSEMBLY
John L. Peters, 114 Dikeman St., Hempstead, N.Y.
Filed Dec. 29, 1961, Ser. No. 163,111
14 Claims. (Cl. 250—41.9)



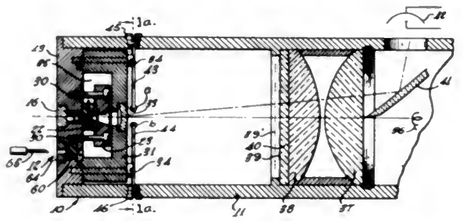
9. A mass spectrometer leak detector having a single analzing stage for detecting ions of a predetermined gas comprising a source of ions, said source having a heater and a repeller that has an ion repelling face which remains fixed during operation of said heater; a support for holding said ion repelling face rigidly in a single plane only on one side of said support, means for positioning said heater on the other side of said support for indirectly heating said repeller and said source of ions, an ion beam producing, analyzing and focusing arrangement for bringing ions of said predetermined gas to a focus, said arrangement including an accelerating electrode for producing an ion accelerating field and further including a magnet for producing an ion analyzing and focusing field; an ion collector at said focus, and a substantially drift-free electrometer amplifier connected to said collector.

3,155,827
ELECTRON MICROSCOPE WITH A SECONDARY ELECTRON SOURCE UTILIZED FOR ELECTRON PROBE ANALYSIS
William Charles Nixon, Cambridge, England, assignor to Hilger & Watts Limited
Filed Mar. 24, 1961, Ser. No. 112,139
Claims priority, application Great Britain Apr. 7, 1960
11 Claims. (Cl. 250—49.5)



1. An electron microscope comprising means to form a stream of electrons traveling away from a specimen to be examined, magnetic focussing means adapted to act upon said electrons so as to form a magnified image of a predetermined area of said specimen capable of being viewed on a fluorescent screen, means to project a further stream of electrons to traverse said magnetic focussing means in the opposite direction to the first named stream of electrons, said focussing means acting upon said further stream to produce a point-focussed beam of electrons on a selected portion of the said predetermined area of said specimen for local area analysis thereof and means responsive to the action of said further electron stream focussed on said selected portion of said specimen for technical examination and analysis of said selected area.

3,155,828
ALIGNING MEANS AND OPTICAL SYSTEM FOR RADIATION DETECTORS
Marcel J. E. Golay, 116 Ridge Road, Rumson, N.J.
Filed Mar. 29, 1960, Ser. No. 18,289
14 Claims. (Cl. 250—83.3)



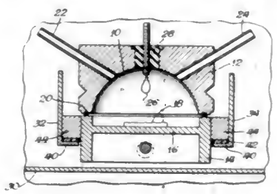
1. In a pneumatic radiation detector having a flexible mirror movable in response to changes in radiation comprising a source of light, at least one condensing lens between the source and mirror, a meniscus lens between the condensing lens and mirror, the light from said source

being directed through said lenses onto said mirror and reflected by said mirror back through said lenses, a light detector, means for directing at least part of said reflected light onto said light detector and light control pattern in said light path forming an integral part of said condensing lens and effectively imaged substantially upon itself by said mirror whereby the quantity of light reaching said light detector will be modified by movement of said mirror.

3,155,829
AUTOMATIC GAS PURGE SYSTEM FOR IONIZATION CHAMBER USED IN RADIOACTIVE SAMPLE ANALYSIS

Donald H. Frank, Chicago, Ill., assignor to Nuclear-Chicago Corporation, a corporation of Delaware

Filed May 17, 1962, Ser. No. 195,533
7 Claims. (Cl. 250—83.6)

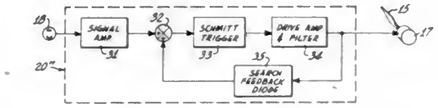


1. A device for detecting and measuring nuclear radiations and feeding the data thus gathered into analysis circuits comprising in combination an ionization gas chamber having an electrode, mechanical means for sealing and locking a radioactive sample within the chamber, a counting gas source connected through means to the chamber, a first electrical switch actuated by the locking means, a time delay relay switch connected in series with the first switch, an electrical solenoid switching means in series with the time delay switch which activates the flow of counting gas at purge rate through the chamber upon closing the first switch, the electrical solenoid switching means mounted to stop the purge rate flow of counting gas through the chamber upon activation of the time delay switch, and a second electrical switch mechanically connected with the first switch which closes when the first switch opens, the said second electrical switch being connected between the electrode and the analysis circuits, whereby a uniform gaseous atmosphere is maintained in the chamber during detection and measurement of radioactive samples positioned therein, and spurious data is not passed from the ionization chamber electrode to the analysis circuits.

3,155,830
SELF-SEARCHING, SELF-DITHERING SERVO SYSTEM

Sheldon A. Knight, Mountain View, Calif., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed June 27, 1961, Ser. No. 120,043
7 Claims. (Cl. 250—201)

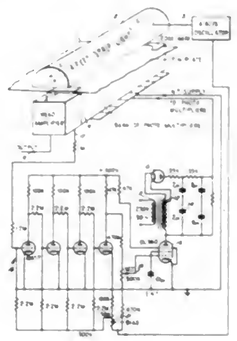


1. In a self-dithering, self-searching servo system, including transducing means for converting variations of radiant energy into variations of electrical voltages, an oscillatable optical scanning means for directing variations of radiant energy to said transducing means, and actuator means for oscillating said optical scanning means in response to electrical voltages applied to said actuator means, the improvement comprising: a signal-amplifier means having its input connected to the output of said transducing means; a bistable trigger circuit having its input connected to the output of said signal amplifier means; and a drive-amplifier means having its input connected to the output of said trigger circuit and its output connected to the input of said actuator means; and in which the open-loop phase shift produced by said drive-amplifier means, actuator means, transducing means and signal-amplifier means is exactly zero at the dithering frequency W_d, and is other than zero degrees at frequencies below and above the dithering frequency.

3,155,831
PROTECTIVE SYSTEM FOR PHOTO-RESPONSIVE UNITS

David Goodwin, Edinburgh, and Robert Lightbody Dobbie, Shotts, Scotland, assignors to Bruce Peebles & Co., Limited, Edinburgh, Scotland, a company of Great Britain

Filed Feb. 16, 1961, Ser. No. 89,790
Claims priority, application Great Britain, Feb. 23, 1960, 6,372/60
16 Claims. (Cl. 250—207)



1. A protective system for a photo-responsive unit including a source of potential for the unit, capacitance in the potential source, an electrically-controlled switch connected between the potential source, including the capacitance, and the photo-responsive unit to remove the potential from the unit, and a circuit connected to the switch for controlling the switch, said circuit comprising resistance and only stray capacitance whereby a very small time constant is maintained which is due substantially to resistance.

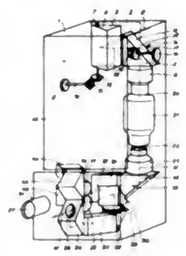
3,155,832
PANORAMIC INFRARED TELESCOPE

Albert Bouwers, The Hague, Netherlands, assignor to N.V. Optische Industrie de Oude Delft, Delft, Netherlands

Filed Mar. 27, 1961, Ser. No. 98,432
Claims priority, application Netherlands, Apr. 2, 1960, 250,105
6 Claims. (Cl. 250—213)

1. In a panoramic infrared periscope the combination of an infrared image converter tube of the image-inverting type having its axis vertical, a first objective lens disposed over said image converter tube and projecting an image of a scene to be observed onto the photo-

cathode thereof, first and second plane reflecting surfaces arranged in optical alignment with said first objective lens in the object space thereof so as to successively reflect light rays from the scene before entering said first objective lens, the first reflecting surface being disposed vertically and rotatable about a vertical axis so as to permit scanning of the object space in horizontal direction, said second reflecting surface being disposed over said first objective lens under an angle of about 45° to the optical axis thereof, a second objective lens disposed under said image converter tube for forming a real optical image of the fluorescent screen of said tube, an eye piece of positive optical power to view said real image formed by said second objective lens, said eye

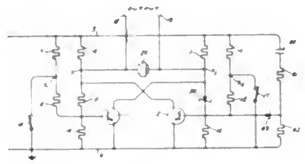


piece having its axis horizontal, and a system of plane reflecting surfaces fixedly disposed in optical alignment in the path of light rays travelling from the fluorescent screen of said image converter tube to said eye piece so as to form, together with said first and second reflecting surfaces in the object space of said first objective lens, an image inverting system whereby an erect image of the scene to be observed is seen in the eye piece.

3,155,833
BISTABLE TRANSISTOR CIRCUIT WITH FERROELECTRIC MEMORY ELEMENT

Paul J. de Fries, Huntsville, Ala., assignor to General Electric Company, a corporation of New York

Filed Dec. 21, 1959, Ser. No. 861,037
8 Claims. (Cl. 307—88)

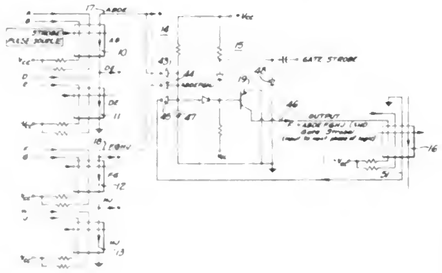


1. An electrical circuit comprising: a pair of transistors each having an emitter, a collector, and a base; a pair of bias circuits each connected to a separate one of said transistor bases, the collector of each transistor being connected to the bias circuit of the other transistor to define a bistable circuit such that either of said transistors may be in a high conduction state but not both simultaneously; a ferroelectric capacitor connected across the collectors of said transistors and connected to said bias circuits to acquire a charge the polarity of which depends on the relative conductances of said transistors and to retain a remanent charge in the event of interruption of power to said circuit, whereby a shift in the high conduction state from one transistor to the other occasions a flow of capacitive current in said ferroelectric capacitor; and impedance means connected to said bias circuits responsive to said capacitive current upon restoration of power to the circuit to inhibit conduction of the transistor not highly conducting before interruption of power.

3,155,834
MULTIPLE LEVEL LOGIC SYSTEM

Robert M. MacIntyre, Newport Beach, Calif., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Michigan

Filed Jan. 30, 1961, Ser. No. 85,753
15 Claims. (Cl. 307—88)



14. In a multiple level logic system, the combination of:

a plurality of magnetic gate elements, each of said gate elements comprising a block of magnetic material having two stable states of magnetic remanence and first and second nonparallel openings therethrough such that a current through an opening produces a flux about such openings and substantially zero net flux about the other opening;

a strobe conductor passing through the first opening of each of said elements respectively;

means for generating a current pulse on the strobe conductor of each of said elements simultaneously, with said pulse of a magnitude to set the flux about the first opening to one state;

a plurality of input current pulse conductors, with at least one input conductor passing through the second opening of each element;

means for generating input current pulses on predetermined input conductors, with the input pulses preceding the strobe pulses providing a first level *and* operation for the input conductors at each element;

a first output conductor passing through the second opening of each of a group of said elements providing a second level *and* operation for the outputs of said group of elements;

a second output conductor passing through the second opening of each of another group of said elements providing a second level *and* operation for the outputs of said other group of elements;

a first *and* gate having a plurality of inputs and an output;

a second *and* gate having a plurality of inputs and an output;

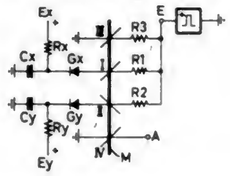
means for connecting said first output conductor to one of said first *and* gate inputs;

means for connecting said second output conductor to another of said first *and* gate inputs providing a third level *and* operation at said first gate;

means for connecting the output of said first gate to one of said second *and* gate inputs;

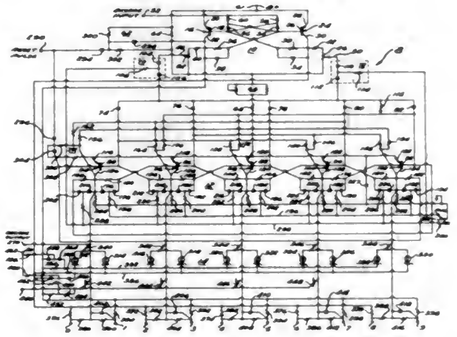
and means for connecting another circuit output to another input of said second *and* gate providing a fourth level *and* operation at said second gate.

3,155,835
LINKING CIRCUITS WITH AMPLIFYING PROPERTIES FOR USE IN COMMUNICATION SYSTEMS
Edmund Ptacnik, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a German corporation
Filed Jan. 15, 1962, Ser. No. 166,125
Claims priority, application Germany Jan. 26, 1961
13 Claims. (Cl. 307—88)



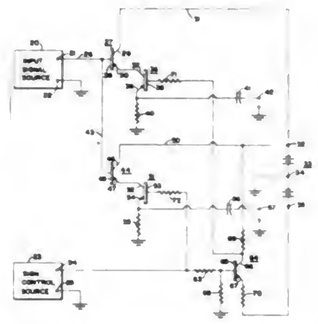
1. A linking circuit with amplifying property, for carrying out linking functions between two or more binary signals to effect delivery of a binary resultant signal, including a repeater having a core and a plurality of windings cooperatively disposed with respect thereto, said repeater requiring, for carrying out a linking function, triggering merely within the linear part of the magnetizing curve of the core material thereof, comprising means for conducting to the linking circuit a readout impulse which supplies the power for the resultant signal signifying the linking result, said resultant signal being represented respectively by the appearance or by the absence of an output pulse, means for distributing said readout impulse over a plurality of input windings of the repeater, the sense of direction of winding and the number of turns of the respective input windings being selected in accordance with the desired linking function, means for respectively blocking or enabling passage of current over predetermined input windings in accordance with the binary value of the signals which are to be linked, so as to produce in a given case, depending upon the binary value of the signals conducted to the linking circuit, in at least one output winding an output pulse forming the resultant signal.

3,155,836
ELECTRONIC COUNTER CIRCUIT SELECTIVELY RESPONSIVE TO INPUT PULSES FOR FORWARD OR REVERSE
Roy A. Hempel, Phoenix, Ariz., assignor, by mesne assignments, to Textron Electronics, Inc., Providence, R.I., a corporation of Delaware
Filed July 27, 1959, Ser. No. 829,870
2 Claims. (Cl. 307—88.5)



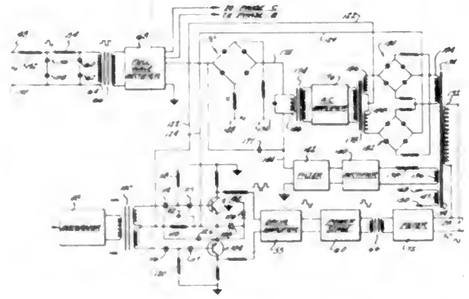
1. An electronic counter circuit comprising a pair of active circuit elements each having a control electrode and an output electrode being intercoupled to form a bi-stable circuit section having two states of stable equilibrium in each of which a different one of said active circuit elements is conducting and the other is substantially cut off, said bi-stable circuit section producing a pulse at said output electrode in response to a change in the state of equilibrium thereof, input circuit means coupled to the control electrodes of said elements for applying input pulses thereto, five further active circuit elements each having a control electrode and an output electrode, the control electrodes and output electrodes of said further active circuit elements being intercoupled to form a multi-stable circuit section having five states of stable equilibrium in each of which a different active circuit element is substantially cut off and the others are conducting, means interconnecting the output electrode of each active circuit element of said multi-stable circuit section to the control electrode of each other active circuit element of said multi-stable circuit section, means including a pair of diodes connecting the output electrode of each active circuit element in said multi-stable circuit section to the control electrode of two other active circuit elements in said multi-stable circuit section, biasing means for selectively applying a biasing potential to one of the diodes of said pair of diodes, means including a second pair of diodes each connecting the output electrode of one of the active circuit elements of said bi-stable circuit section to the control electrodes of all of the active circuit elements in said multi-stable circuit section, and biasing means for selectively biasing one of said second pair of diodes to prevent conduction therethrough.

3,155,837
CONTROL APPARATUS
Barrett Doyle, New Brighton, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 25, 1960, Ser. No. 24,539
10 Claims. (Cl. 307—88.5)



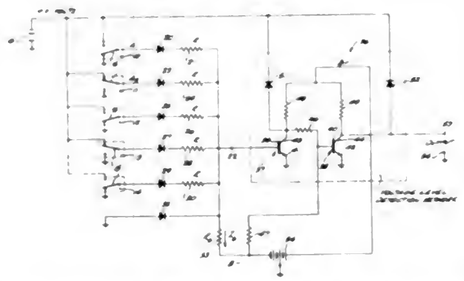
2. Control apparatus of the class described comprising: first and second current control means each having input, output, and control electrodes; a source of input signals; circuit means connecting said signal source to the input terminals of said first and second current control means; gating means having input and output terminals; means connecting the output terminals of said gate means to the control terminals of said first and second current control means; a source of first polarity, second polarity and zero gate signals; and means connecting said source of gating signals to the input of said gate means, so that said gate means controls the conduction of said first and second current control means and thereby produces an output signal at the output of said first current control means when said gating signal is of said first polarity, said second current control means when said gating signal is of said second polarity, and no output when said gating signal is zero.

3,155,838
PULSE-WIDTH MODULATOR
Charles B. Brahm, Ellington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 20, 1960, Ser. No. 30,545
8 Claims. (Cl. 307—88.5)



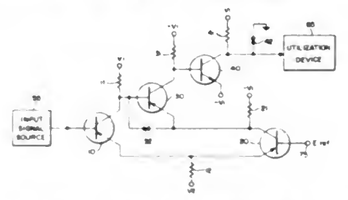
1. A power regulating system for a static inverter comprising an alternating input signal of constant frequency, means for converting said input signal into a constant frequency triangular wave, amplifier circuit, means for supplying said triangular wave to said amplifier circuit to produce a series of pulsed signals having a width proportional to the voltage level of said triangular wave, means for converting said series of pulsed signals into a substantially sinusoidal output voltage, means for producing a constant amplitude reference voltage from said sinusoidal output voltage, means for comparing said output voltage with said reference voltage to produce an error signal, and means for applying said error signal as a bias to said triangular wave to vary the voltage level of said triangular wave and thereby regulate said output voltage.

3,155,839
MAJORITY LOGIC CIRCUIT USING A CONSTANT CURRENT BIAS
Victor J. Modiano, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 25, 1960, Ser. No. 31,779
3 Claims. (Cl. 307—88.5)



1. A combination gating apparatus for "anding" a constant number no less than two of a greater number of bi-level input signals which have zero and information potential levels, said gating apparatus comprising a by-pass uni-directionally conducting device connected from a first terminal maintained at a substantially fixed reference potential to a second terminal, said by-pass uni-directionally conducting device being poled to allow current to flow in a predetermined direction with respect to said second terminal; means connected to said second terminal for generating a constant flow of current in a direction with respect to said second terminal that is opposite said predetermined direction; a plurality of input terminals responsive to each respective bi-level input signal; a corresponding plurality of resistors and additional uni-directionally conducting devices interconnected in series between each respective input terminal and said second terminal, each additional uni-directionally conducting device being poled in the same direction with respect to said second terminal as said bypass uni-directionally conducting device, the resistance of each of said resistors being the same, and the resistance in parallel of a number equal to one less than said constant number of said resistors being substantially equal to the voltage difference between said zero and information potential levels of said bi-level input signals divided by the amperes constituting said constant flow of current, whereby a constant number of said bi-level input signals at information level increases the voltage level at said second terminal from said substantially fixed reference potential level to a second potential level; and means connected to said second terminal for producing a zero level output signal in response to said reference potential level and for producing an information level output signal in response to said second potential level.

3,155,840
SIGNAL COMPARISON DEVICE UTILIZING TRANSISTORS
David F. Hoeschele, Jr., Willow Grove, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 23, 1960, Ser. No. 58,132
11 Claims. (Cl. 307—88.5)



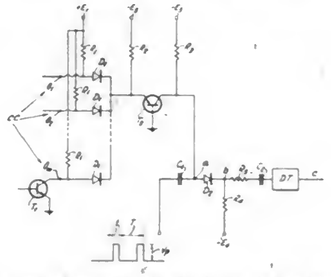
1. A differential detector comprising in combination first, second and third current amplifying devices, each of said devices comprising an input, an output and a common electrode means for connecting the input electrode of said first amplifying device to a source of input signals, means for connecting the input electrode of said second amplifying device to a reference potential, individual impedance means for connecting the output electrode of each of said first and second amplifying devices to a source of bias potential, circuit means operatively connecting the common electrodes of said first and second amplifying devices to each other in a manner whereby a change in the degree of conduction of said first amplifying device results in an inverse change in the degree of conduction of said second amplifying device, the respective degrees of conduction of said first and second amplifying devices being a function of the relative amplitudes of said input signal and said reference potential, the input electrode and the common electrode of said third amplifying device being operatively connected respectively to the output e'ectrodes of said first and second amplifying devices, said third amplifying device being responsive to the respective degrees of conduction and corresponding output voltages appearing on the output electrodes and being developed across said individual impedance means of said first and second amplifying devices and being biased by the combination of said output voltages to either a conducting or a non-conducting state, said third amplifying device being driven

from one of said states of conduction to the other state in response to the occurrence of a predetermined amplitude relationship of said input signal to said reference potential, the voltage change appearing on the output electrode of said third amplifying device when said last device is driven from one of said states of conduction to the other state being indicative of the occurrence of said predetermined amplitude relationship.

3,155,841
LOGICAL N OUT OF M CODE CHECK CIRCUIT

Jiro Okuda, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 26, 1960, Ser. No. 65,226
Claims priority, application Japan Oct. 28, 1959
4 Claims. (Cl. 307—88.5)



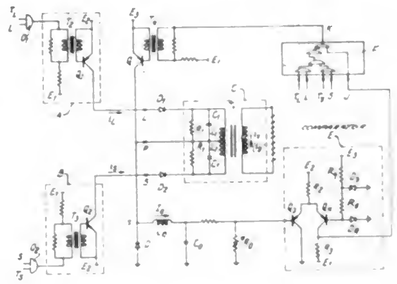
1. An *n* out of *m* code check circuit for *m* binary state inputs comprising: a transistor having base emitter and collector electrodes; means connected between said inputs and the said emitter for converting the binary state inputs to an emitter applied analogue voltage representative of the number of inputs in one binary state; means connected to the said base and collector electrodes for biasing said transistor conductive for an analogue voltage representing *n* inputs in said one state and saturated for voltages above that value; a two terminal diode gate coupled at one terminal thereof to the collector of said transistor; and means connected across both terminals of said diode gate for the biasing thereof at cutoff only when said transistor is non-conductive; whereby when said diode gate is pulsed at the collector connected end thereof said pulse will pass through said diode gate only upon said transistor being conductive, and then only when the transistor is not saturated and the collector-base portion thereof acts as a pulse shunt.

3,155,842
CURRENT REGULATING ARRANGEMENT FOR COINCIDENCE MEMORIES

Bengt Gunnar Magnusson, Enskede, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed May 15, 1961, Ser. No. 110,156
Claims priority, application Sweden, May 24, 1960
1 Claim. (Cl. 307—88.5)

A current-regulating circuit system for electronic data-processing apparatus, said circuit system comprising an inductance means, a comparison circuit having an input and an output, a connecting network, a first switch means having a control terminal, and a second switch means, one terminal of said inductance means being connected to said switch means and the other terminal to the input of said comparison circuit, the output side of the comparison circuit being connected to the input of the connecting network, said first switch means being connected to a first potential, and the control terminal of said first switch means being connected to the output side of said connecting network, the second switch means being connected to a second potential lower than said first potential, said inductance means and said switch means having a common circuit point, and a source of current connected to said common point for supplying write-in and read-out current thereto at spaced intervals of time, said comparison circuit being controlled by the flow of current through said inductance means and in response to a flow of current below a predetermined level through said

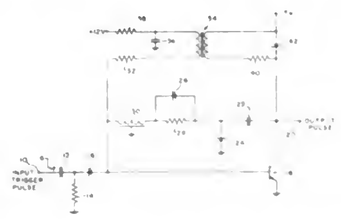


inductance means during periods of time of no-current supply from said source of current controlling said first switch means to connect said first potential to said common point, thereby to raise the potential through the inductance means during said periods of time, and controlling said second switch means in periods of current flow from the source of current to connect said second potential to said common point.

3,155,843
BLOCKING OSCILLATOR

Donald B. Levinson, Beverly Hills, Calif., assignor to General Precision, Inc., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,597
4 Claims. (Cl. 307—88.5)



1. A blocking oscillator including: a transistor having an emitter electrode, a collector electrode and a base electrode, said base electrode being connected to a point of reference potential; a transformer having a primary winding and a secondary winding; first circuit means including said primary winding for connecting said collector electrode to a first unidirectional potential source of a first polarity with respect to said point of reference potential; second circuit means including said secondary winding and further including voltage-divider resistance means connected across a second unidirectional potential source of a second polarity with respect to said point of reference potential and further connected to said base electrode to render said transistor normally non-conductive and to provide regenerative feedback action in said oscillator so as to cause said transistor to be driven to a fully conductive saturated condition upon its being triggered to its conductive condition; third circuit means

including a delay line coupled between said collector electrode and said base electrode and responsive to an output signal from said transistor upon said transistor being driven to its fully conductive saturated condition to introduce a signal to said base electrode after a predetermined time delay established by said delay line so as to return the transistor to its non-conductive condition; said third circuit means further including resistance means in series with said collector and said delay line having a selected resistance value for terminating the input of said delay line in the characteristic impedance thereof so as to attenuate signals reflected therein, a first diode connected across said series resistance means for providing a low impedance path to said delay line for said output signal from said transistor, and a second diode connected from the junction of said collector and said series resistance means to said point of reference potential for providing a low impedance path to said point of reference potential for signals of opposite polarity to said output signal.

3,155,844
MAGNETIC INTEGRATOR INCLUDING HALL EFFECT DEVICE AND UNIJUNCTION TRANSISTOR SWITCHES FOR PROVIDING STEP-LIKE FLUX DENSITY

Samuel H. Auld, Jr., Woodland Hills, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Filed June 2, 1961, Ser. No. 114,523
7 Claims. (Cl. 307—88.5)

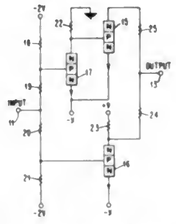


1. In combination:
an alternating current input signal means,
a demodulating means having an input electrically connected to receive said input signal, and having first and second output channels,
first and second resistor-capacitor networks, connected to said first and second output channels respectively,
first and second unijunction transistors having base 1, base 2 and emitter electrodes, and having the said emitter electrode of each of said transistors connected to said first and second resistor-capacitor networks, respectively,
said base 1 electrodes of said transistors being connected to signal power input means,
a core of a magnetic material having a gap therein,
a Hall effect member in said gap,
a magnetizing coil wound about said core and having one of its ends connected to the base 2 electrode of said first transistor and the other of its ends connected to the base 2 electrode of said second transistor, said coil having an intermediate tap to ground,
whereby intermittent pulses from said first transistor pass from one end of said coil to said tap to ground, causing the flow of magnetic flux to build up in one direction in said core, and whereby intermittent pulses from said second transistor pass from said other end of said coil to said tap to ground, causing the flow of magnetic flux to build up in a direction opposite to said one direction, whereby the resultant magnetix flux in magnitude and direction is determined by the difference between the lines of force built up in opposing directions.

3,155,845
THREE LEVEL CONVERTER

Algirdas J. Gruodis, Hyde Park, and Lawrence K. Lange and William H. McAnney, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,323
8 Claims. (Cl. 307—88.5)



7. A ternary switching circuit for cycling an input signal capable of existing at a first, an intermediate, or a second signal level comprising:
a first and a second potential source, said first source corresponding to said first level and said second source corresponding to said second level;
an output circuit;
two switching means, one of said switching means being connected between said first source and said output circuit and the other of said switching means being connected between said first source and a point common to both said second source and said output circuit;
said output circuit including means connected to said switching means for providing an output signal corresponding to said first, intermediate, and second levels in response to selective coupling of said potential sources to said output circuit;
a control circuit connected to said switching means, said control circuit being controlled by said intermediate level signal applied thereto for providing a first one of said control signals to said switching means thereby establishing a coupling connection between said second source and said output circuit, said control circuit being further controlled by said second level signal applied thereto for providing a second one of said control signals to said switching means thereby establishing a coupling connection between said first source and said output circuit, said control circuit being additionally controlled by said first level signal applied thereto for providing a third one of said control signals to said switching means thereby selectively establishing a coupling connection between said sources and said output circuit for providing an output signal corresponding to said intermediate level.

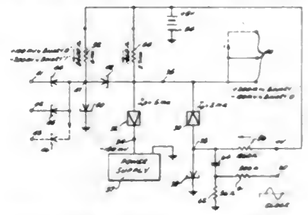
3,155,846
DIGITAL COMPUTER GATING DEVICE

O D Parham, Downey, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 19, 1962, Ser. No. 188,688
7 Claims. (Cl. 307—88.5)

1. A digital computer device comprising:
(*a*) first and second tunnel diodes having first and second peak currents, respectively, serially connected in the order named from a first junction to an output junction and from said output junction to a second junction, said second peak current being greater than said first peak current and said first and second tunnel diodes being poled to allow normal current flow therethrough in a common direction from said first to said second junction;

(*b*) means connected to said second junction for maintaining said second junction at a first substantially fixed potential relative to a reference potential;
(*c*) means connected to said first junction for maintaining the potential difference between said first and second junctions at values less than the least sum of the valley voltage of one of said tunnel diodes and the peak voltage of the other tunnel diode;
(*d*) means connected to said output junction for maintaining a predetermined current flow through said second tunnel diode;
(*e*) means coupled to said first junction for periodically decreasing and increasing the current flow through said first and second tunnel diodes whereby both of

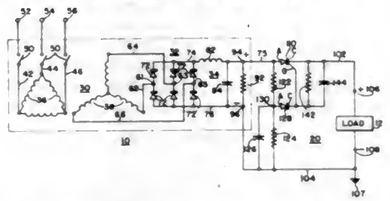


said tunnel diodes periodically revert to the unswitched mode of current conduction in response to said periodic decreases in current flow thereby to produce a substantially constant first potential level at said output junction; and
(*f*) means responsive to no less than one bi-level input signal for changing the current flow through at least one of said tunnel diodes thereby to selectively switch one or the other of said first and second tunnel diodes during each periodic increase in current flow therethrough as determined by a preselected combination of potential levels of said no less than one input signal whereby the switching of said second tunnel diode generates a second potential level at said output junction.

3,155,847
CIRCUIT FOR PROTECTING A LOAD CIRCUIT FROM INITIAL POWER SUPPLY VOLTAGE TRANSIENTS

Thomas M. Kirchmier, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 19, 1963, Ser. No. 259,618
4 Claims. (Cl. 307—93)

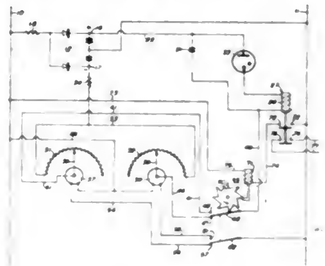


2. In an electric circuit having positive and negative input terminals connected to a unidirectional voltage source and positive and negative output terminals connected to a load circuit, the combination comprising a controlled rectifier having an anode electrode, cathode electrode, and a control electrode, said anode and cathode electrodes connected between said negative input and output terminals with said cathode electrode being connected to the said negative input terminal and said anode electrode being connected to said negative output terminal, said positive input and output terminals being connected to a common point, first and second resistors connected serially between said positive and negative input terminals, said first resistor being connected to said negative input terminal and said second resistor being connected to said positive input terminal, the control electrode of said controlled rectifier being connected to the junction between said first and second resistors, and a capacitor connected in a parallel circuit relationship with said first resistor, the values of resistance and capacitance of said first and second resistors and capacitor being selected so that a signal of sufficient magnitude to cause said controlled rectifier to switch from its blocking state to a conducting state is applied to the control electrode of said controlled rectifier a predetermined time after said unidirectional voltage source is applied to said positive and negative input terminals.

3,155,848
RANDOM TIME INTERVAL GENERATOR

Charles L. Burford, 233 S. Duncan, Stillwater, Okla.

Filed May 16, 1962, Ser. No. 195,262
5 Claims. (Cl. 307—106)



4. A system for producing electrical pulses at random intervals comprising, a source of unidirectional current, a condenser connected to one side of said source, a first voltage varying means, a second voltage varying means, means for connecting the other side of said source through the first voltage varying means to the other side of said condenser to provide a charging cycle, means operable during said charging cycle for actuating the second voltage varying means, a relay coil and a circuit and a tube therein operable to discharge said condenser through said relay coil, means responsive to said discharge through the and interrupting actuation of the second voltage varying means, means operably responsive to said discharge through the relay coil for connecting said condenser through the second voltage varying means to the other side of said source to initiate another charging cycle, and means operable upon energization of said relay coil activating a utilization circuit.

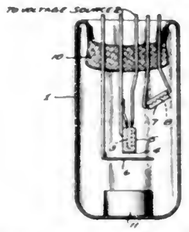
3,155,849
THERMIONIC CONVERTER

Lewis Lawrence Haring, Long Island City, and Michael Silverberg, Little Neck, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware

Filed Mar. 20, 1962, Ser. No. 182,998
5 Claims. (Cl. 310—4)

1. A thermionic converter having a pair of electrodes, one of said electrodes being a high electron emission density cathode, means for heating said cathode, the composition of said cathode being such that the work function thereof is substantially the same over its entire surface area, the other electrode of said pair in said converter being formed of a material having a lower work function than the material of said cathode, a positively ionizable gas in the interelectrode space serving during operation to

neutralize space charge effect, said gas becoming ionized when the electrons emitted by the cathode collide with

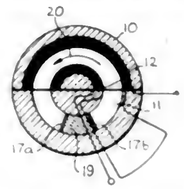


the electrically neutral particles of said gas whereby the energy of ionization is obtained principally from the electron stream.

3,155,850
MAGNETOHYDRODYNAMIC VOLTAGE GENERATOR

Rudolf X. Meyer, Pacific Palisades, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Feb. 26, 1960, Ser. No. 11,195
10 Claims. (Cl. 310—11)

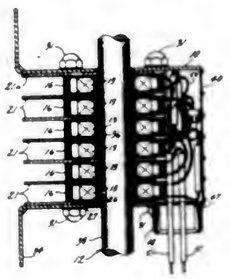


1. A voltage generator comprising: apparatus having a passageway therethrough, said apparatus including means for generating a magnetic field in said passageway; at least one pair of electrodes mounted in and disposed substantially perpendicular to walls defining the longitudinal direction of said passageway; and means for thrusting an ionized gas through said passageway at high speeds, the interception of said field by said ionized gas particles causing an electrical current to flow between said electrodes.

3,155,851
LINEAR INDUCTION MOTOR CONSTRUCTION

Gerald A. Francis, West Hartford, Conn., assignor to Skinner Precision Industries, Inc., New Britain, Conn., a corporation of Connecticut

Filed May 22, 1961, Ser. No. 111,662
10 Claims. (Cl. 310—13)

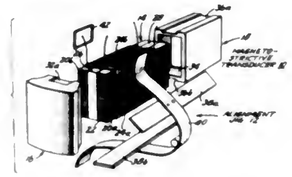


1. A linear induction motor comprising a stator having a plurality of substantially identical stator modules arranged in side-by-side relationship, each said stator module comprising a coil winding, a magnetic stator plate adjacent said winding and having an aperture therein and a magnetic coil housing disposed about said winding, means securing said stator modules together with the aperture in each stator plate coaxial and their inside walls describing a passageway extending throughout the stator, with the windings arranged about the passageway, and with each coil housing in low reluctance contact with adjacent stator plates, a magnetic rod movably positioned within the passageway in said stator, a conductor disposed about said rod and attached thereto, and means for connecting each said coil to a source of electrical energy to produce a magnetic field that travels along the passageway.

3,155,852
TRANSDUCER CONSTRUCTION

Wilbur T. Harris, Woodbury, Conn., assignor to The Harris Transducer Corporation, Woodbury, Conn., a corporation of Connecticut

Original application June 9, 1958, Ser. No. 740,931, now Patent No. 2,964,837, dated Dec. 20, 1960. Divided and this application Dec. 5, 1960, Ser. No. 73,821
10 Claims. (Cl. 310—26)

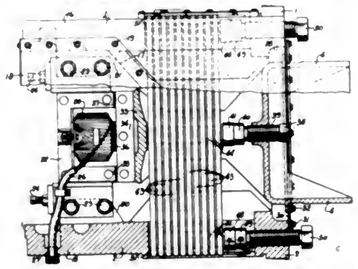


1. A transducer comprising a magnetostrictive member, an electric winding operatively associated therewith, a pair of opposite non-magnetic terminal members, each terminal member having a socket, means bonding the opposite ends of said magnetostrictive member on the sockets of said terminal members respectively, aligned grooves in said opposite terminal members, and a bar mounted in said grooves.

3,155,853
ALUMINUM LEAF SPRING SPACER

William V. Spurlin and Byron E. West, Indiana, Pa., assignors, by mesne assignments, to Link-Belt Company, Chicago, Ill., a corporation of Illinois

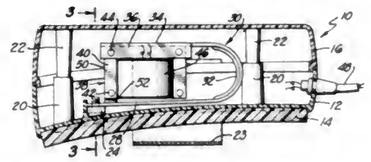
Filed Dec. 30, 1960, Ser. No. 79,720
10 Claims. (Cl. 310—29)



1. A vibratory motor comprising a base having spaced seats, leaf springs having their ends seated on said seats, a plate spaced of low modulus hard and solid material mounted between the leaf springs and said seats and between adjacent leaf springs, clamp means to secure said plate spacers and leaf springs on said seats in said base, an armature frame having a seat to receive the center of said leaf springs, a plate spacer of low modulus material

on said armature frame seat and between adjacent leaf springs, second clamp means to secure said leaf springs and said plate spacers to said armature frame, an armature carried by said armature frame, an electromagnetic field mounted on said base in operative position relative to said armature to reciprocate the same for transmitting vibrations to a member to be vibrated, hard aluminum spacers separating said springs to form a spring clamping assembly at said spring clamping seat, said spacers being at least one-fourth the thickness of said springs.

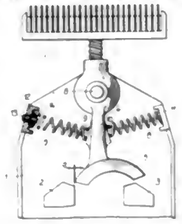
3,155,854
ELECTROMAGNETIC VIBRATOR MOTOR
Martin J. Stam, Westminster, Calif., assignor, by mesne assignments, to The Songrand Corp., Kansas City, Mo., a corporation of Missouri
Filed Apr. 29, 1963, Ser. No. 276,258
4 Claims. (Cl. 310—29)



1. In a vibrator device, the combination of:
a housing member to be vibrated, and
a vibrator motor connected with said housing member, said vibrator motor including
(*a*) a substantially U-shaped spring member having a first leg and a second leg joined by an intermediate bend,
(*b*) said first leg secured at its outer end portion to said housing member and extending in cantilever fashion with respect to said member with the extending portion of the first leg spaced from and normally free from contact with the housing member wall so that said spring member is capable of vibration independently of said housing member,
(*c*) said second leg extending in cantilever fashion from said bend and spaced in overlying relationship with said first leg, and
(*d*) an electromagnet secured to the inside of said second leg and in cooperating relationship with said first leg to cause simultaneous vibration of said electromagnet and second leg relative to said first leg and said electromagnet and spring member relative to said housing member.

3,155,855
TUNED ARMATURE ELECTROMAGNETIC MOTOR
Bodo Fütterer, Langen, near Frankfurt am Main, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation
Filed Feb. 27, 1961, Ser. No. 92,070
4 Claims. (Cl. 310—38)

1. An oscillating armature drive for a dry shaving apparatus comprising, in combination, support means; an elongated oscillating lever mounted intermediate the ends thereof on said support means tiltable about an axis extending transverse to the elongation of said lever; and armature fixed to one end of said lever; electromangetic means mounted on said support means and cooperating with said armature for oscillating said lever between a rest position in which said armature is laterally displaced with respect to said electromagnetic means and an attracted position in which said armature is attracted by said electromagnetic means; a pair of coil springs operatively connected at opposite ends thereof to said lever and to said support means and respectively extending to opposite sides of said lever obliquely inclined thereto so as to provide on said lever a force component directed toward said armature, each of said coil springs having a substantially full number of turns and the free ends of said turns are substantially arranged along a line substantially parallel to the spring axis so that by turning said springs



about their axes lateral bending thereof during compression may be changed; and means cooperating with one end of one of said springs for changing the spring pressure of said one spring and thereby the lateral displacement of said armature from said electromagnetic means in said rest position of said lever.

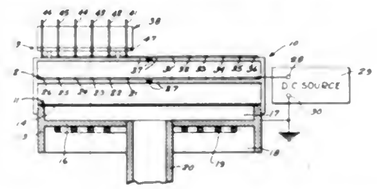
3,155,856
DYNAMOELECTRIC MACHINERY
Edward A. Macha, Monroeville, Pa., and Oliver P. Steele III, Canoga Park, Calif., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1960, Ser. No. 69,078
12 Claims. (Cl. 310—57)

1. In a dynamoelectric machine, a stator structure of annular configuration, a plurality of windings coupled to said stator structure forming a pair of groups of axially extending end turns, means for removing heat developed in said end turns including a pair of heat conducting members of generally annular configuration radially overlying the extremities of said end turn groups and disposed closely adjacent but axially spaced from said end turn groups, respectively, said heat conducting members having a plurality of radially extending slots formed therein to permit independent flexure of segments of said members and heat exchange means coupled to said heat conducting members.

3,155,857
ION BEAM GENERATING SYSTEM
Park French, Aurora, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 1, 1960, Ser. No. 33,332
16 Claims. (Cl. 313—63)

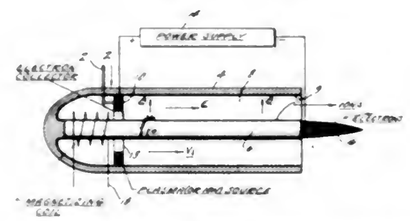
1. In an ion beam system, means for emitting an ion beam having a principal axis, electron-emitting means

disposed in said beam for emitting electrons at points spaced from said axis to travel in generally spiral paths about said axis, said electron-emitting means having a



radial potential behavior closely matching that of said beam.

3,155,858
ION ACCELERATION DEVICE
Edmund C. Lary, Vernon, Russell G. Meyerand, Jr., Glastonbury, and Frank Salz, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 28, 1962, Ser. No. 197,961
12 Claims. (Cl. 313—63)



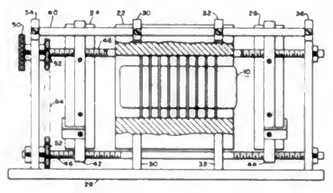
1. An ion acceleration device including a casing having an open end, a centerbody mounted within said casing and extending toward said open end, said centerbody and said casing forming a chamber therebetween, means for establishing a magnetic field across said chamber between said centerbody and said casing, a source of ions within said chamber, a source of electrons adjacent the open end of said chamber, and means for generating an electric field from within said chamber toward the open end of said casing perpendicular to said magnetic field.

3,155,859
TARGET ELECTRODE ASSEMBLY
Alvah C. Koert, Alplaus, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 9, 1961, Ser. No. 88,076
3 Claims. (Cl. 313—68)



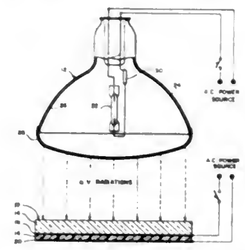
1. A target electrode assembly for a picture signal generating tube or the like comprising an electric charge storage membrane of substantially contiguous crystals of semi-conductive metal oxide, an annular support ring secured to and forming the exclusive support for said membrane, said support ring being composed throughout of a homogeneous intermetallic compound of metals from the group consisting of iron, nickel and cobalt and having a thermal expansion coefficient averaging between 5.71 x 10^{-6} and 6.21 x 10^{-6} inches per inch per degree centigrade from 30° C. to 500° C.

3,155,860
CONTINUOUSLY VARIABLE PERMANENT MAGNET FOR IMAGING PURPOSES
Gerhard W. Goetze, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1960, Ser. No. 61,289
6 Claims. (Cl. 313—84)



1. An electron tube comprising a collector electrode and means for projecting an electron beam along a path toward said collector, an elongated cylindrical permanent magnet disposed coaxially with respect to the path of said electron beam and extending for substantially the length of the path of said electron beam, said cylindrical member being magnetized in a direction parallel to said electron beam path, a first ring member disposed coaxially with respect to said electron path at one end of said cylindrical member, said first ring member being magnetized in a direction parallel to said electron beam but in an opposite direction with respect to the magnetization of said cylindrical member and a second ring member disposed coaxially with respect to said electron path and positioned at the opposite end of said cylindircal member with respect to said first ring member, said second ring member magnetized in a direction parallel to said electron beam path and oppositely magnetized with respect to the cylindrical member.

3,155,861
METHOD FOR OPERATING ELECTRO-LUMINESCENT DEVICE
William A. Thornton, Jr., Cranford, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1961, Ser. No. 87,816
6 Claims. (Cl. 313—108)



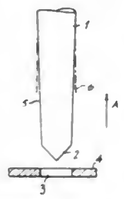
1. The method of storing luminous energy in ultraviolet-responsive and electroluminescent phosphor for later release, which method comprises, first simultaneously exciting said phosphor with ultraviolet radiations of predetermined intensity and an alternating electric field of predetermined intensity, removing said exciting ultraviolet radiations and said alternating electric field with removal of said ultraviolet radiations occurring not later than removal of said alternating electric field, and after a predetermined period exciting said phosphor with ultraviolet radiations of predetermined intensity.

3,155,862
INDEX INDICATOR FOR PLUG-IN UNITS
Frederick Charles Cary, Toronto, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a company of Canada
Filed May 31, 1960, Ser. No. 32,724
2 Claims. (Cl. 313—109.5)



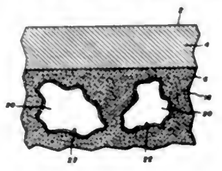
1. A plug-in device having an envelope comprising upper and lower end wall portions and a side wall portion, a plurality of lead-in conductors extending through said lower end wall portion of said envelope, the portions of said lead-in conductors external to said plug-in device being adapted to be located in a socket, all but two adjacent lead-in conductors being substantially regularly spaced with respect to each adjacent lead-in conductor, and index indicating means positioned on said upper end wall portion of said envelope to visibly indicate the approximate location of said two adjacent lead-in conductors to an observer.

3,155,863
ELECTRODE SUPPORT ROD AND SUPPORT PLATE THEREFOR
Frederic William Rodbard Farrow, Enfield, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 17, 1961, Ser. No. 153,096
Claims priority, application Great Britain Dec. 7, 1960
8 Claims. (Cl. 313—260)



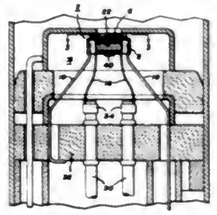
4. A thermionic valve including:
an envelope;
an internal electrode;
a solid support rod on which the internal electrode is mounted and consisting of a part connected to the electrode, a sharply tapering lead-in part adapted to facilitate entry of the support rod end into a mica support disc, and a part adjacent the lead-in part of a circular cross section and formed with two diametrically opposite flattened faces which converge towards the lead-in part at an angle to the rod axis of about one degree; and
a mica support disc or plate provided with a hole comprising two diametrically opposite arcs of a common circle and two straight parallel sides, of such a size that, upon insertion of the support rod, free initial entry of the support rod is permitted but continued insertion of the support rod deforms the straight sides of the hole so that they fit tightly about the cylindrical part of the support rod which is a close clearance fit between the circular arcs.

3,155,864
DISPENSER CATHODE
Patrick P. Coppola, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 21, 1960, Ser. No. 16,593
5 Claims. (Cl. 313—346)



1. A thermionic electron emitter having an emission substrate layer comprising a continuous porous mass of a metal from the class consisting of the metals tungsten, molybdenum, rhenium, platinum, palladium, rhodium, iridium, ruthenium, osmium, and alloys and intermetallic compounds thereof, and a reservoir contiguous to the emission substrate layer comprising a matrix constituent and an emission material constituent, said matrix constituent comprising particles of a metal, and said emission material constituent comprising in the inactive state particles of a material of the class consisting of compounds of alkali metals, alkaline earth metals, and rare earth metals, and a heat destructible coating of a barrier material on the particles of one of said constituents for temporarily preventing chemical reaction of the molecules of said one of said constituents with the molecules of the other of said constituents during heat treatment.

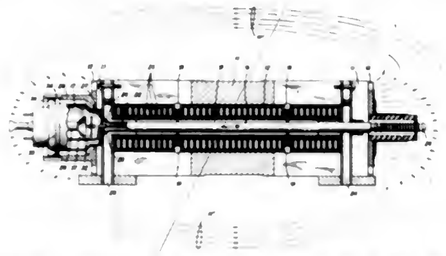
3,155,865
LOW POWER HEATER
Robert J. Ney, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 15, 1961, Ser. No. 159,718
9 Claims. (Cl. 313—346)



4. A heater-cathode assembly for an electron gun or the like comprising an inverted cup-shaped cathode having a side wall, a transverse top wall surmounting said side wall for supporting thermionic electron emissive material, an electrically insulative support carried by said cathode and extending transversely therewithin, and a continuous elongate electrically conductive heating element coiled around said support with the axis of said coil extending generally transversely.

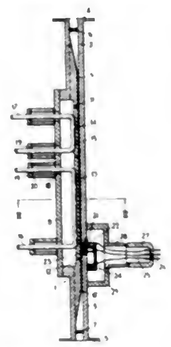
3,155,866
MAGNETIC FOCUSING STRUCTURE FOR TRAVELING WAVE TUBES
Kenneth M. Poole, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 14, 1961, Ser. No. 95,724
3 Claims. (Cl. 315—3.5)

1. In combination a traveling wave tube and a focusing structure therefor, said traveling wave tube having a cathode having an electron emissive surface and an envelope comprising an elongated portion and a bulb portion of magnetic material surrounding the cathode, said focusing structure comprising magnet means and pole-pieces for producing a magnetic focusing field axially of said elongated portion of said envelope and a magnetic shield



member extending from one of said pole-pieces and surrounding said bulb portion over at least a portion of its length, and means for establishing a low reluctance flux path between said bulb and said shield comprising a flange on said bulb remote from the emissive surface of said cathode, said flange being in contact with said shield.

3,155,867
ELECTRON TUBE OF TRANSMISSION LINE TYPE
James Gillies, Stevenage, and Alan Reddish, Pinner, England, assignors to The M-O Valve Company Limited, London, England, a British company
Filed June 18, 1962, Ser. No. 203,317
Claims priority, application Great Britain, June 20, 1961, 22,347/61
11 Claims. (Cl. 315—3.5)

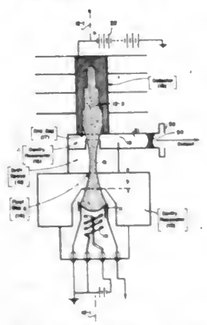


1. An electron tube comprising:
an evacuated envelope;
a transmission line effectively in the form of a spaced apart pair of elongated conductors whose lengths are generally parallel to each other, a portion of the space between the conductors constituting an elongated interaction space whose length is generally parallel to the lengths of the conductors, the interaction space being situated within the envelope and having first and second lateral boundaries respectively defined by portions of the two conductors, whereby an electromagnetic wave may be propagated along the transmission line in a mode such that in the interaction space the electric field of the wave has an appreciable component in the direction of the spacing between said lateral boundaries;
an anode electrode and a sole electrode respectively constituted by parts of the two conductors such that the anode electrode and the sole electrode have surfaces which respectively coincide with said first and second lateral boundaries, the relevant surface of the sole electrode having a first edge which corresponds to a first end of the interaction space;
means whereby the anode electrode may be maintained at a positive potential with respect to the sole electrode so as to establish within the interaction space an electrostatic field in the direction of the spacing between said lateral boundaries;
an electron gun disposed adjacent said first end of the interaction space so as to lie to that side of the interaction space corresponding to said second lateral boundary, the electron gun including a cathode having an electron emissive surface and a plate electrode having a surface which faces the electron emissive surface so that there is formed between these two surfaces a gun space which is situated within the envelope, said two surfaces extending transversely to the direction of the length of the interaction space at said first end of the interaction space and being disposed so that motion in that direction towards the emissive surface from the facing surface of the plate electrode corresponds to motion along the interaction space from said first end to the other end, and said two surfaces each having an edge disposed adjacent said first edge so that the gun space is effectively contiguous with the interaction space in the vicinity of said first edge;
means whereby the cathode may be maintained at least approximately at the same potential as the sole electrode;
and means whereby the plate electrode may be maintained at a positive potential with respect to the cathode so as to establish within the gun space an electrostatic field extending between the emissive surface of the cathode and the facing surface of the plate electrode;
the tube being adapted to operate with a magnetic field established in the interaction and gun spaces in a direction perpendicular to the length of the interaction space and to the direction of the spacing between said lateral boundaries and with a sense such that, under the influence of the magnetic field and said electrostatic fields, electrons emitted from the cathode are caused to travel through the gun space towards the interaction space and, upon being injected from the gun space into the interaction space in the vicinity of said first edge, are caused to travel generally along the length of the interaction space from said first end to the other end.

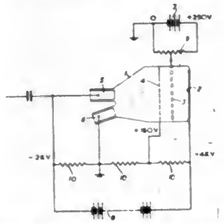
3,155,868
PLURAL RESONATOR CAVITIES TUNED TO INTEGRALLY RELATED FREQUENCIES
Tadakuni Fujii, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan
Filed Sept. 30, 1960, Ser. No. 59,606
Claims priority, application Japan, Oct. 14, 1959, 34/32,529
7 Claims. (Cl. 315—5.43)

1. A velocity-modulated millimeter-wave tube incorporating first and second cavity resonators with a drift space region therebetween, each resonator having a velocity modulation gap means for passing an electron beam through said resonators and across a respective velocity modulation gap means of each resonator, the electron transit angle of the first resonator gap means being proportioned to correspond substantially to an integral multiple of 2π of the electrons passing therethrough, and the second resonator gap means having a smaller electron transit angle of no greater than $\pi/2$ for tight coupling of said electron beam and said second resonator; said

second cavity resonator being tuned to extract energy from said velocity modulated electron beam at a frequency which is a harmonic of the modulation frequency of said first cavity resonator.



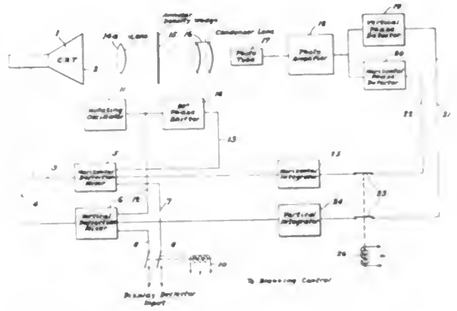
3,155,869
STORAGE TUBE WITH COLLECTOR-BACKPLATE UNITARY TARGET
Jervois Campbell Firmin, Little Baddow, England, assignor to English Electric Valve Company, London, England, a British company
Filed Feb. 7, 1961, Ser. No. 87,625
Claims priority, application Great Britain, Feb. 15, 1960, 5,294/60
6 Claims. (Cl. 315—12)



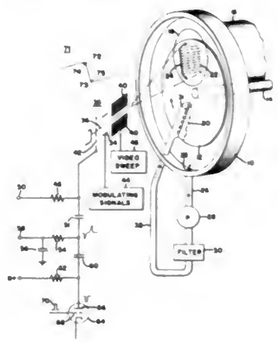
1. A bistable signal storage arrangement comprising an electron discharge tube having a fluorescent screen, a storage electrode arranged parallel to and spaced from said screen, said storage electrode comprising a metallic grid having a layer of insulating material deposited thereon on the side remote from said screen, a writing electron gun and a flood electron gun, means for operating said flood gun to provide a continuous flooding electron beam, a reference point having the potential of the flood gun cathode, a source of potential having a value with respect to the flood gun cathode potential between the first and second secondary emission cross-overs of said layer, means for connecting said grid during signal storage to said source, means for applying potentials to the cathode of said writing gun and said screen which are negative and positive respectively in relation to the flood gun cathode potential and means for switching on said writing gun in correspondence with signals to be stored.

3,155,870
AUTOMATIC RADAR DISPLAY CENTERING SYSTEM
Robert M. Byrne, Hartsdale, N.Y., assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Aug. 19, 1955, Ser. No. 529,392
7 Claims. (Cl. 315—18)

1. A centering system for the display produced on a cathode ray tube by the output of horizontal and vertical deflection mixers supplied by an intermittent blanked deflection input signal and the output of a single nutation oscillator applied to the mixers in quadrature phases, said system comprising an annular density wedge of radially varying density, means for focusing a spot display of said cathode ray tube on said density wedge during a blanking of the deflection input signal, photoelectric means for receiving light of said spot transmitted through said wedge to produce an electric signal, means for separating and integrating vertical and horizontal phase components of said signal as centering error correction voltages, and means for applying said corrective voltages to said cathode ray tube to correct centering of said display.

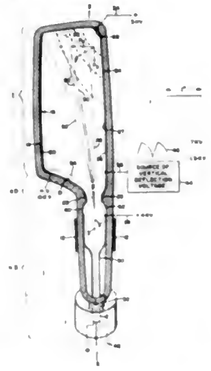


3,155,871
SMOOTHING THE LIQUID IN A LIGHT VALVE PROJECTOR BY MEANS OF ELECTRON BEAM
William E. Good, Liverpool, and Thomas T. True, Camillus, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 10, 1961, Ser. No. 94,860
12 Claims. (Cl. 315—22)



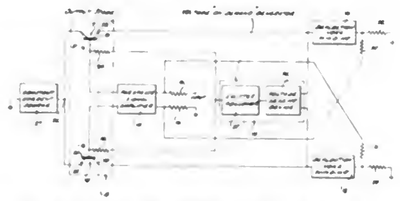
3. In a projection system, means for producing an electron beam, a light modulating liquid having a surface disposed in the path of said beam, means for deflecting said electron beam over an area of said surface periodically in lines similarly directed with successive lines displaced from one another along and orthogonal thereto to form a raster on said area, mechanical means for transporting said liquid through said area in the direction of deflection of said electron beam, and means associated with said electron beam for increasing the density of charge on said liquid at the periphery of said area facing the direction of transport of said liquid.

3,155,872
FLAT DISPLAY TUBE UTILIZING VOLTAGE GRADIENT DEFLECTION LAYER
Svend E. Havn, Syracuse, N.Y., and Harry T. Freestone, Paoli, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,862
16 Claims. (Cl. 315—23)



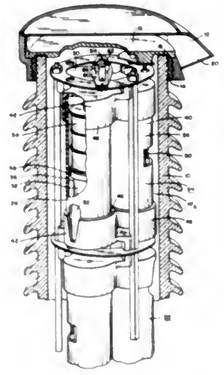
1. In an image display device, a target capable of producing an image when scanned by a beam of electrons, means for supporting a voltage gradient, at least in a given direction, on a surface that is generally parallel to and spaced opposite said target, means for applying a potential to said target, means for applying a lower potential to one extremity of said voltage gradient supporting means, means for applying a cyclically recurring deflection voltage waveform to another extremity of said voltage gradient support means, one cycle having a period T and said waveform having an amplitude which varies continuously throughout the period T, and means for projecting a beam of electrons into the space between said target and said voltage gradient supporting means.

3,155,873
TRANSISTORIZED DEFLECTION CIRCUIT WITH SELECTIVE FEEDBACK
Edwin A. Paschal, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 18, 1961, Ser. No. 103,822
5 Claims. (Cl. 315—27)



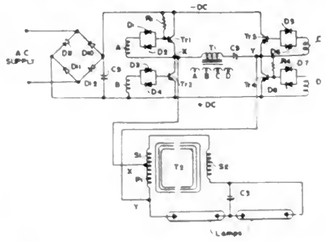
1. An apparatus for magnetically deflecting the electron beam of a cathode-ray type tube, said apparatus comprising first and second deflection yoke windings each having first and second terminals, said second terminals thereof being returned to a common junction maintained at ground potential; first and second transistors of like conductivity types responsive to push-pull deflection signals and coupled to said first terminals of said first and second deflection yoke windings, respectively, for providing current flow therethrough; means connected to said first and second deflection yoke windings for generating a tracking voltage which follows the more negative voltage appearing on either of said windings by a predetermined amount and for applying said tracking voltage to said first and second transistors; and means connected to said first and second transistors for supplying a constant current thereto thereby to minimize energy dissipation therein.

3,155,874
LIGHTNING ARRESTER
Billy B. Sorrow, Ned T. Kunkle, and Robert T. Innis, Ellettsville, Ind., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1961, Ser. No. 128,773
8 Claims. (Cl. 315—36)



1. A lightning arrester including an outer housing, said housing being closed at its ends and sealed, a plurality of columns of lightning arrester elements including elements in each column which evolve gas when subjected to fault current, each of said columns of elements being enclosed in an insulating tube to form an arrester assembly, said tubes having closure means at the ends, said arrester assemblies being disposed side by side within said outer housing and each of said tubes having an opening in its side wall.

3,155,875
HIGH FREQUENCY BALLAST FOR FLUORESCENT LAMPS
Carl M. Wenrich, Temple, and Arthur H. Phillips, Reading, Pa., assignors to Gilbert Associates, Inc., Reading, Pa.
Filed Oct. 5, 1961, Ser. No. 143,131
1 Claim. (Cl. 315—189)



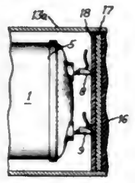
A high frequency ballast circuit for fluorescent lamps comprising an inverter having positive and negative terminals energized by a source of direct current, a pair of transistors connected in series across said terminals, each having a serially connected rectifier to allow current to flow from the emitter to the collector of the transistor, a pair of transformers having interconnected primary

windings, the first of said transformers having a saturable core and a pair of out of phase secondary windings, each of which is connected to a resistor-capacitor network so as to inductively couple the controlling element of one of said transistors to the primary winding of said first transformer, a pair of rectifiers, each connected between each one of said terminals, respectively, and the primary windings of said first transformer to permit current flow only in the direction from the positive to the negative terminal, a condenser in series with said primary winding of said first transformer forming a shunt circuit bridging each of said last mentioned pair of rectifiers and a pair of fluorescent lamps connected across the secondary of the second transformer, whereby said transistors will be alternately conducting to effect starting of said lamps.

3,155,876
ELECTRICAL CAPACITOR PROTECTIVE ARRANGEMENT

Carl E. Paul, Glens Falls, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 29, 1961, Ser. No. 113,463
5 Claims. (Cl. 317—12)

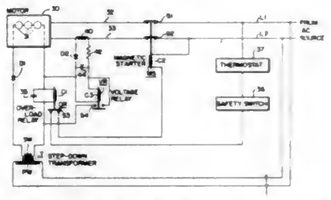


2. Protective apparatus for electrical capacitors comprising, in combination, an electrical capacitor comprising a sealed casing containing a capacitor section and dielectric liquid in which said section is immersed and having external terminals mounted on said casing, said capacitor during operation being subject to failure conditions causing a dimensional change of said casing resulting in movement of said external terminals a predetermined distance prior to rupture of said sealed casing, and electrically conducting means arranged in the path of movement of said terminals and spaced therefrom not more than said predetermined distance for causing a short circuit between said terminals upon contact therewith, whereby the operation of said capacitor is automatically discontinued prior to rupture of said casing due to said failure conditions.

3,155,877
SAFETY CIRCUITS FOR ELECTRIC MOTORS

Erik H. Jensen, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 1, 1960, Ser. No. 66,537
5 Claims. (Cl. 317—13)



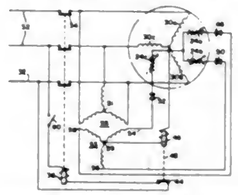
3. A protective circuit for an electric motor having stator windings, comprising a thermistor embedded in said windings, said thermistor having at its ends short-circuited loops in which current flowing through said windings induces currents which heat said loops and through said loops heat said thermistor, an overload relay having an energizing winding and a normally closed switch, an energizing circuit for said motor including said switch, means including said thermistor for flowing current in one direction through said relay winding, and means responsive to current drawn by said motor for flowing current in the opposite direction through said winding.

3,155,878
PROTECTOR FOR DYNAMOELECTRIC MACHINES

Gordon P. Gibson, Orchard Park, and Joseph G. Schwarckopf, Eggertsville, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Jan. 20, 1958, Ser. No. 710,111. Divided and this application May 1, 1961, Ser. No. 106,841

11 Claims. (Cl. 317—13)



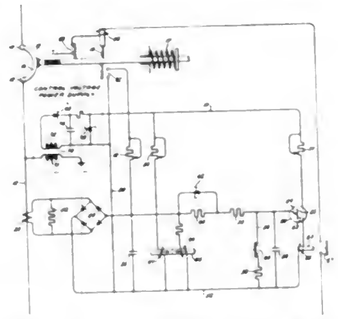
1. An alternating-current electrical apparatus including a frame structure, a winding thereon, a main switching device for connecting said winding to an alternating-current line and causing alternating current to flow in the winding, insulation for said winding susceptible to overheating under abnormal conditions and having a predetermined temperature above which it is desired that it should not be heated, one or more temperature sensitive resistances mounted in the apparatus and subjected to the heating of said winding and insulation, a single direct-current operated control device directly controlling the operation of said main switching device, a control circuit for said control device, means for energizing said control circuit from the alternating-current line through said main switching device, said one or more temperature sensitive resistances being connected in said control circuit and determining the magnitude of the current flow therein solely in response to temperature, said control circuit and one or more temperature sensitive resistances being energized only when the main switching device has been operated to cause alternating current to flow to said winding, and one or more rectifiers in said control circuit and supplying both said one or more temperature sensitive resistances and said control device with direct current which varies with the temperature of said winding and insulation to cause operation of said control device and said main switching device to deenergize the winding when said predetermined temperature is approached.

3,155,879
TRIPPING ARRANGEMENT FOR AN ELECTRIC CIRCUIT BREAKER

Edward J. Casey, Media, and Joseph C. Sofianek, Broomall, Pa., assignors to General Electric Company, a corporation of New York

Filed Dec. 7, 1960, Ser. No. 74,325
6 Claims. (Cl. 317—32)

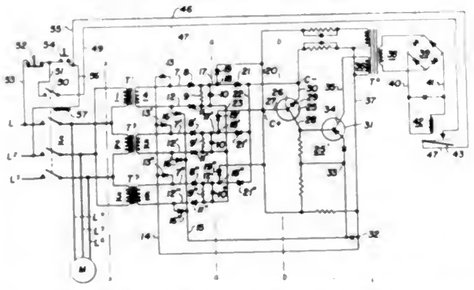
1. An electric circuit breaker for controlling a power line comprising current-sensing means for deriving from said power line a unidirectional signal voltage having a magnitude varying as a direct function of the magnitude of current in said power line, a normally-inactive timing circuit including capacitive means for developing an output voltage that builds up at a rate dependent upon the magnitude of the input voltage applied to the timing circuit once said timing circuit is rendered active, means for applying said signal voltage to said timing circuit as an input voltage, means normally providing a low impedance discharge circuit around said capacitive means when said circuit breaker is closed to render said timing circuit inactive, a gating relay having a controlling part arranged to be energized by said signal voltage and a set of normally-closed contacts connected in said discharge circuit, said gating relay being operable in response to an increase in said signal voltage to a predetermined value to open said contacts to interrupt said discharge circuit and render said timing circuit active, a level detector that fires in response to an increase in said output voltage to a predetermined level, and means for tripping said circuit breaker to open in response to firing of said level detector, said gating relay being responsive to a drop in said signal voltage below said predetermined value to reclose said contacts and reestablish said discharge circuit, said gating relay operating to open said contacts at a higher level of voltage than the predetermined voltage required for firing said level detector, the voltage required for firing said level detector being higher than the value of output voltage resulting from application to said timing circuit when active of the signal voltage that results from the flow of current through said power line equal to the normal continuous current rating of said circuit breaker.



3,155,880
PHASE FAILURE PROTECTION FOR POLYPHASE MOTORS

Louis E. Salina, 522 Summit St., Carnegie, Pa.

Filed Jan. 27, 1960, Ser. No. 4,991
9 Claims. (Cl. 317—46)

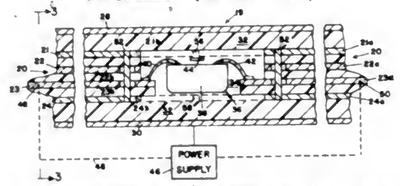


2. Apparatus for protecting a polyphase motor against phase voltage imbalance comprising three voltage transformers adapted to have their primary windings connected in delta across three power supply lines of a polyphase current supply source, each transformer having a secondary winding, a separate rectifier circuit connected across each secondary, each rectifier circuit having a sensing circuit output connection of like polarity, a sensing circuit having two branches, each branch being connected to each said output connection through a separate diode, the diodes connecting one branch to the several output connections being reversed to those connecting the other branch to the several output connections to thereby block current flow from one branch to the other through the diodes, said branches constituting the only common circuit between the output connections of the several rectifier circuits whereby said branches will be at equal potential when all phases are in balance and will be at different potentials when one phase is unbalanced, an oscillating circuit to which the branches are connected at points to suppress oscillation when the two branches are at different potentials, a transformer having its primary energized by the oscillating circuit, said transformer having a secondary winding in which a current flow is induced when the oscillating circuit is oscillating, a relay energized by the said secondary winding, and a motor control switch means responsive to the deenergizing of the relay to open current supply lines to which the polyphase motor to be protected is connected when the relay is deenergized.

3,155,881
HIGH FREQUENCY TRANSMISSION LINE

Lloyd E. St. Jean, Merrick, N.Y., assignor to Sanders Associates Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 28, 1961, Ser. No. 92,260
11 Claims. (Cl. 317—101)

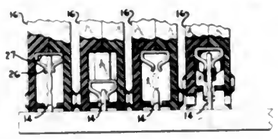


1. A high frequency strip transmission line comprising, in combination, a pair of parallel planar outer conductors extending along a longitudinal axis, at least three superimposed inner conductor strips disposed between said outer conductors and extending substantially parallel to said longitudinal axis, insulating means spacing said strips closely apart, whereby said strips are isolated from each other at low frequencies and closely coupled together at the operating frequency of said line.

3,155,882
CIRCUIT BREAKER PANELBOARD

Robert T. Casey, Southington, Conn., assignor to General Electric Company, a corporation of New York

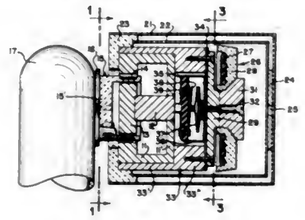
Filed Mar. 29, 1956, Ser. No. 574,850
7 Claims. (Cl. 317—119)



1. An electric circuit breaker panelboard comprising at least one circuit breaker mounting location, circuit breaker connecting means at said location adapted to make electrical connection with a first circuit breaker mounted at said location, said circuit breaker connecting means including a first frangible portion removable to alter the dimensions of said connecting means, the remaining portion of said connecting means being un-

usable to make electrical connection with said first circuit breaker although not interfering with the utility of said remaining portion of said connecting means to make connection with a second circuit breaker.

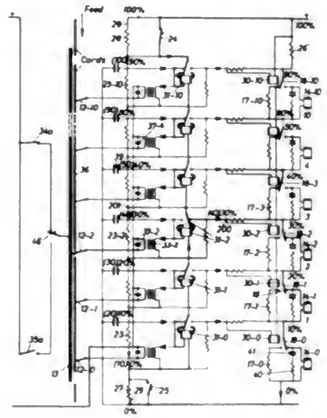
3,155,883
TEMPERATURE-REGULATED TRANSDUCER
Wilfred Roth, 58 Brainard Road, West Hartford, Conn., and Edward W. Beal, Wethersfield, Conn.; said Beal assignor to said Roth
Filed Feb. 20, 1961, Ser. No. 90,272
7 Claims. (Cl. 317—132)



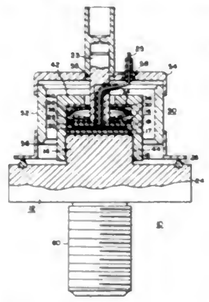
4. A temperature-regulated electro-mechanical transducer which comprises a tubular thermal shield housing having the rear end thereof substantially closed, a magnet structure including an annular outer section and a central pole section with an annular gap around the pole section at the front end thereof, said magnet structure being mounted in said housing toward the front end thereof, a coil movable in said annular gap, an electric heater mounted in said housing toward the rear thereof, a thin diaphragm of heat-conducting material mounted in said housing between said heater and magnet structure, said diaphragm extending transversely of the housing and being spaced from the magnet structure, a tubular heat-conducting member extending between the peripheral region of said diaphragm and said magnet structure and encircling the outer section of the magnet structure in contact therewith, the wall thickness of said tubular member being substantially greater in the portion therof between said diaphragm and magnet structure than in the portion thereof encircling the magnet structure, and a thermostat mounted inside said tubular member for controlling said heater, said thermostat being mounted in contact with said diaphragm on the side thereof toward the magnet structure and adapted to sense the temperature of the diaphragm.

3,155,884
DISTRIBUTION NETWORK WHICH EFFECTS A SUBSTANTIALLY CONSTANT LOAD
Otto Modersohn, Volkmarode uber Braunschweig, and Hubertus Bettin, Braunschweig, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Mar. 8, 1961, Ser. No. 94,180
Claims priority, application Germany, Mar. 8, 1960, O 7,276
14 Claims. (Cl. 317—137)

1. A distribution network, comprising, in combination, a source of electric energy; a series of energizable electromagnet means, each having a predetermined impedance; a series of load resistance means respectively associated with said energizable electromagnet means to form a series of resistance-electromagnet combinations, the impedance of each of said load resistance means being substantially equal to the impedance of the respectively associated energizable electromagnet means; circuit means including a plurality of change-over switch means respectively associated with said resistance-electromagnet combinations and each being movable between a normal first position and a second position, said plurality of change-over switch means being arranged between said resistance-electromagnet combinations, respectively, for connecting, when in said first position, all of said load resistance means with each other as a series-chain between the terminals of said source of electric energy, a movement of any one of said change-over switch means to its second position resulting in connecting immediately the respectively adjacent electromagnet means as an element of said chain in replacement of the respectively associated load resistance means thereby causing immediately energization of the particular electromagnet means; a plurality of actuating means respectively associated with said change-over switch means for actuating the latter; and a plurality of energizing means respectively associated with said actuating means for selectively energizing the respectively associated one of said actuating means so as to actuate the corresponding one of said change-over switch means, whereby the load on said source of electric energy remains substantially constant irrespective of the number of energizable electromagnet means that are energized simultaneously.



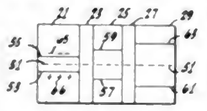
3,155,885
HERMETICALLY SEALED SEMICONDUCTOR DEVICES
Joseph Marino and Thomas P. Nowalk, Irwin, and William R. Schaefer, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1962, Ser. No. 225,351
4 Claims. (Cl. 317—234)



1. A sealed electrical device comprising a good thermally conductive support having a peripheral flange having an upper surface and an upwardly extending,

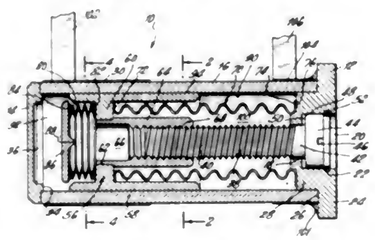
threaded base mounting portion having an upper surface; a semiconductor element disposed on the upper surface of the base mounting portion; at least one electrical conductor disposed to the semiconductor element; at least one spring member disposed on the element; a cylindrical metal member having an integrally connected apertured cap at the upper end thereof and a threaded segment on the inner periphery of the lower end disposed on the base mounting portion and enclosing the element, the threaded segment cooperating with the threads on the base mounting portion to provide a constant pressure on the spring member thereby exerting pressure on the semiconductor element to provide good electrical contact between the electrical lead and the element and between the element and the upper surface of the base mounting portion, and a header member containing an insulating segment with the electrical conductor passing therethrough joined to the outer periphery of the upper surface of the flange of the support to provide a hermetic enclosure for the semiconductor element.

3,155,886
SOLID STATE SUPERCONDUCTOR TRIODE
Jacques I. Pankove, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,892
13 Claims. (Cl. 317—235)



1. An electronic device comprising a first region of a material selected from the group consisting of normal metals and superconductors, a second region of a superconductor spaced from said first region by a first thin electrically-insulating layer, and a third region of a superconductor spaced from said second region by a second thin electrically-insulating layer; said third region having a larger energy bandgap for normal charge carriers than said second region and said first region having a smaller energy bandgap for normal charge carriers than said second region, said first and second electrically-insulating layers each being between 6 and 100 A.U. thick.

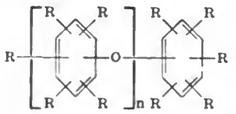
3,155,887
GAS FILLED TRIMMER CAPACITOR
Llewellyn T. Barnes, 155 Atlantic Ave., Freeport, N.Y., assignor of one-third to Charles T. Barnes, Freeport, N.Y., and of one-third to John F. Woog, Garden City, N.Y.
Filed May 10, 1962, Ser. No. 193,692
8 Claims. (Cl. 317—245)



1. A capacitor comprising a hollow cylinder provided with end walls, an adjusting member journalled in one of said end walls, said adjusting member having an externally-threaded portion extending longitudinally into said cylinder, a cylindrical piston electrode slidable in said cylinder and having an internally threaded bore receiving said threaded portion, a first bellows secured to said one of said end walls and to said piston electrode and surrounding the threaded portion of said adjusting member, a bellows plate, a second bellows secured to said bellows plate and at the other end to a face of said piston electrode opposite said one end wall and communicating with the threaded bore of said piston electrode, so that when said adjusting member is rotated and said piston electrode is moved to compress said first bellows, the threaded portion of said adjusting member will extend through said threaded bore and through the interior of said second bellows to engage said bellows plate to expand said second bellows.

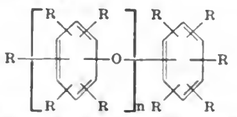
3,155,888
CAPACITOR AND METHOD OF MAKING SAME
Edward S. Blake and William C. Hammann, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 29, 1959, Ser. No. 843,057
13 Claims. (Cl. 317—258)

1. An apparatus comprising electrical conducting elements situated in spaced relationship with respect to each other and being adapted to provide an electrical potential therebetween and a dielectric material interposed between said elements consisting essentially of a linear poly(oxyphenylene)benzene containing at least two oxyphenylene groups together with the terminal phenyl radical having the structural formula



wherein *n* is an integer from 2 to 9, inclusive, and each R group is selected from the group consisting of hydrogen, halogen, nitrile, phenyl, and alkyl.

9. A method of preventing power leakage between electrical conducting elements of a capacitor consisting of impregnating porous dielectric sheets with a linear poly(oxyphenylene)benzene dielectric material having the structural formula

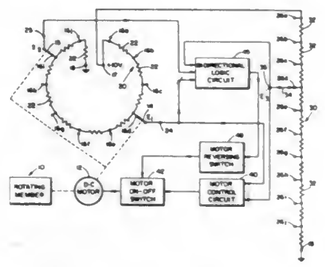


wherein *n* is an integer from 2 to 9, inclusive, and each R group is selected from the group consisting of hydrogen, halogen, nitrile, phenyl, and alkyl, interleaving the impregnated sheets with a plurality of sheets of metal foil electrical conducting elements, rolling the interleaved insulated spaced electrical conducting element assembly, placing said assembly in a container, connecting electrical wire to the metal foil elements, and sealing the assembly in the container.

3,155,889
MINOR ARC SELECTING POSITIONAL SERVO SYSTEM
Melvin S. Stiles, Rochester, and Jorgen L. Nielsen, Penfield, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Mar. 30, 1961, Ser. No. 99,394
11 Claims. (Cl. 318—28)

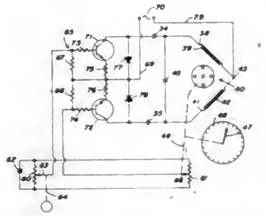
1. A position selection system for a rotatable member driven by a motor comprising means for deriving a reference voltage capable of being varied in discrete steps in accordance with a desired position of said rotatable member, means coupled to said rotatable member for selecting first and second control voltages the magnitudes

of which are dependent upon the position occupied by said rotatable member, and direction control means for said motor responsive to each of said reference voltages and



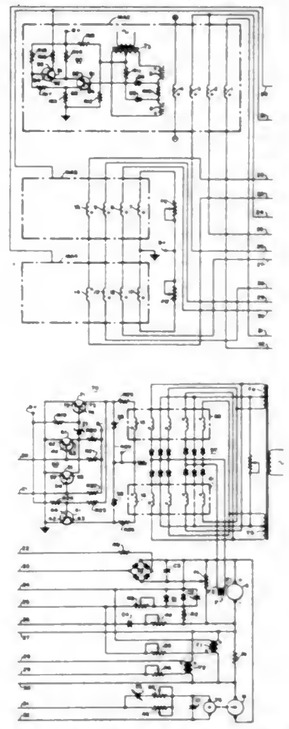
said first and second voltages for rotating said member to said desired position through the lesser of two possible angular displacements.

3,155,890
TRANSISTOR SERVOMOTOR DRIVE CIRCUIT
Benjamin B. Biderman and Charles O. Feigleson, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 10, 1961, Ser. No. 123,002
8 Claims. (Cl. 318—29)



1. A drive control system for a motor having two stator windings joined at a common terminal and having two outer end terminals, comprising; a first capacitor connected to one of said outer end terminals, a second capacitor connected to the other of said outer end terminals, and a third capacitor connected directly between a terminal of said first capacitor and a terminal of said second capacitor; a first transistor and a second transistor each having an emitter, a base and a collector and with the collectors thereof connected to the said first and second capacitors, respectively; an A.C. voltage source having a first lead connected to the common terminal of said motor windings and having a second lead connected to the emitters of said first and second transistors; a first diode and a second diode connected between said second A.C. voltage lead and said first and second capacitors, respectively; said first and second diodes being arranged for passing current when forwardly biased in one direction relative to said second A.C. voltage lead; said first and second transistors being arranged for passing current in the opposite direction from the current passing direction of said first and second diodes when the respective transistor is biased to conduction; an element movably mounted for movement to multiple positions; and means responsive to movement of said element for selectively biasing one of said transistors to conduction for directional drive control of said motor.

3,155,891
REGULATOR FOR ELECTRODYNAMIC POWER SYSTEM WITH CURRENT LIMITATION
John Rosa, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 20, 1961, Ser. No. 125,507
8 Claims. (Cl. 318—143)

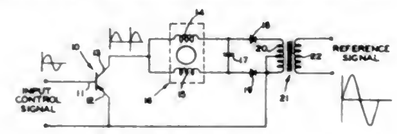


1. A regulator for controlling the speed of a motor connected in series circuit relation with a generator by controlling the field of said generator and comprising a static bistable power supply means adapted to reversibly supply a fixed amount of voltage to the said generator field in response to the respective stable states of the bistable means, speed sensing means adapted to supply an output signal proportional to the speed of the motor, signal comparison means including a reference signal proportional to a desired speed and operable to control said static bistable supply means to reversibly supply said fixed amount of voltage in accordance with the sign of the difference between said reference signal and the output signal of said speed sensing means, static current limiting means adapted to override said signal comparison means when the current supplied by said generator exceeds preset values of current, and voltage compensating means responsive to the voltage supplied by said generator to said motor for reducing said preset value as said voltage increases and for increasing said preset value as said voltage decreases.

3,155,892
MOTOR CONTROL SYSTEM
John C. Karlson, Miller Place, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 22, 1959, Ser. No. 815,033
8 Claims. (Cl. 318—207)

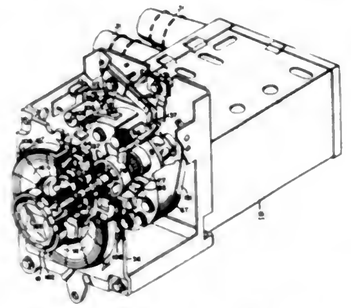
1. A motor control system comprising a two-phase motor having a first winding and second winding re

actively coupled together, a circuit comprising a transformer having a primary winding adapted to be connected to a reference signal source and a center-tapped output winding having a first portion connected in series with a first unilateral current-carrying member and said first



winding and a second portion connected in series with a second unilateral current-carrying member and said second winding, switching means responsive to a control signal and connected to said motor windings, and to the center tap of the output winding for selectively controlling the flow of current in said first and second windings.

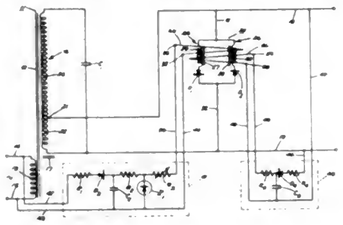
3,155,893
TUNER ACTUATOR MECHANISM
Julius Kemeny, Liverpool, John M. Parsons, Baldwinsville, and Charles E. Cady and Mertis E. Jones, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 2, 1960, Ser. No. 25,990
12 Claims. (Cl. 318—467)



1. An actuator mechanism for a tuner having a rotatable channel selection shaft and a fine tuning means, comprising a plurality of fine tuning adjustment means respectively associated with each channel and arranged to automatically set said fine tuning means to an individual preset condition for each channel position of said channel selection shaft, a rotatable axially adjustable control shaft, means coupling said control shaft to said channel selection shaft when said control shaft is in a first axial position, and means enabling said control shaft when in a second axial position to adjust the fine tuning adjustment means associated with whichever channel is selected by said channel selection shaft.

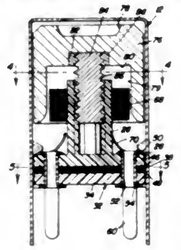
3,155,894
VOLTAGE STABILIZING SYSTEMS
Gordon M. Bell, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Mar. 2, 1961, Ser. No. 92,820
17 Claims. (Cl. 323—66)

1. A voltage stabilizing system for maintaining a voltage at a predetermined stabilized level comprising a high reactance transformer including a magnetic core with a primary winding and a secondary winding thereon; a pair of input terminal leads for connection to a source of alternating current voltage; said primary winding being connected across said alternating current input leads; an output circuit including a pair of output leads connected across at least a portion of said secondary winding; a capacitor connected across said secondary winding; a self-saturating saturable reactor connected across at least a portion of said secondary winding and having a reference control winding and a feedback control winding inductively coupled on said self-saturating saturable reactor; a first reference circuit means providing a substantially constant current to said reference control winding; and a feedback circuit means connected in circuit with said output terminals and providing a current to said feed-



back control winding substantially proportional to the voltage at said output leads; said reference control winding and said feedback control winding providing a net magnetomotive force for resetting said core and for varying the volt-second capacity of said self-saturating saturable reactor in response to deviations in the output voltage from said predetermined stabilized voltage level so as to maintain the output voltage across the output terminals substantially constant at said predetermined level.

3,155,895
COIL ASSEMBLY WITH THREADED STEM CORE
Stanley A. Adams, South Haven, and Donald Hubert, Kalamazoo, Mich., assignors to Adams Electronics Inc., Bangor, Mich.
Filed Apr. 20, 1960, Ser. No. 23,545
7 Claims. (Cl. 323—76)

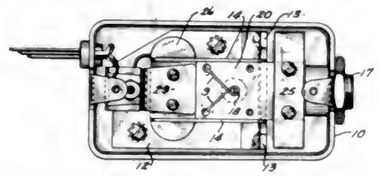


2. In a coil assembly, a coil form for a winding including a base plate, a tubular coil form rigid with the base plate, a plurality of radially and inwardly extending ribs disposed inwardly of the tubular coil form, a cup-shaped core enclosing the upper end of the coil form, a winding on the coil form disposed inwardly of the cup-shaped core, and a stem disposed concentrically in the core and having external threads thereon in threaded engagement with the ribs on the coil form for varying the position of the core in relation to the winding on the coil form.

3,155,896
PRESSURE-ELECTRIC TRANSDUCERS
Adolph J. Hilgert, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 24, 1962, Ser. No. 168,386
6 Claims. (Cl. 323—95)

1. A system for producing an output voltage which is substantially independent of supply voltage and load

variations comprising a pressure-electric transducer having a frame, an electrical suply circuit, a transfer lever pivoted to said frame, pressure-responsive means for pivotally moving said transfer lever in a first direction, electric contact means in said electrical supply circuit connected with said transfer lever and having pressure variable conducting means therebetween responsive to movement of said transfer lever for controlling the flow



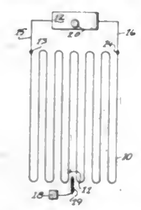
of electricity in said supply circuit in accordance with lever movement, magnetic feedback means in said supply circuit for moving said transfer lever reversely from said first direction of movement, said magnetic feedback means including a coil in the supply circuit, and electrical output conductors leading from opposite sides of said coil whereby the electrical output is proportional to pressure change in said pressure-responsive means and substantially independent of supply voltage and load variations.

3,155,897

FAULT DETECTION SYSTEM HAVING A PORTABLE RADIO SIGNAL GENERATOR AND STATIONARY RADIO RECEIVER FOR DETECTING OPEN CIRCUITS IN AN ELECTRICAL CONDUCTOR

Robert B. Rice, Chattanooga, Tenn., assignor to The Wheland Company, Chattanooga, Tenn., a corporation of Tennessee

Filed Oct. 17, 1960, Ser. No. 63,182
9 Claims. (Cl. 324—52)



1. An apparatus for detecting and locating an open circuit in an electrical conductor having a first end and a second end, comprising:

(*a*) a portable generator, physically detached from said conductor, for inducing a radio signal in said conductor when said generator is in the vicinity of said conductor,

(*b*) a first radio receiver connected to said first end for receiving said radio signal when induced in said conductor between said first end and said open circuit,

(*c*) a second radio receiver connected to said second end for receiving said radio signal when induced in said conductor between said second end and said open circuit,

(*d*) first means for modulating the radio signal received by said first receiver with a first audio signal of predetermined frequency.

(*e*) first means for detecting the first modulated signal to produce a first audio output signal,

(*f*) second means for modulating the radio signal received by said second receiver with a second audio signal having a different frequency from said first audio signal,

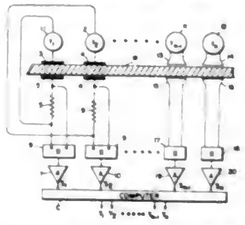
(*g*) second means for detecting the second modulated signal to produce a second audio output signal of different frequency from said first audio output signal.

3,155,898

METHOD AND APPARATUS FOR MEASURING MULTIPLE PROPERTIES OF MATERIAL BY APPLYING ELECTRIC FIELDS AT MULTIPLE FREQUENCIES AND COMBINING DETECTION SIGNALS

Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed July 11, 1960, Ser. No. 41,971
11 Claims. (Cl. 324—58.5)



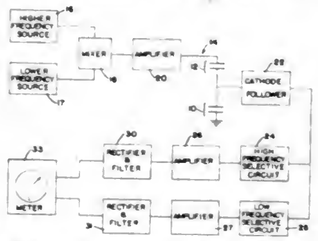
1. The method of measuring multiple properties of a product transported in a continuous industrial process comprising the steps of subjecting said product simultaneously to a plurality of alternating electromagnetic fields of different frequencies not higher than the microwave region, detecting simultaneously a signal at each of said frequencies which has a characteristic influenced by said properties, and electrically combining said signals to obtain a quantitative measure of each of said properties.

3,155,899

METHOD AND APPARATUS FOR DETERMINING MOISTURE CONTENT AND OTHER VARIABLES UTILIZING A CAPACITOR TEST CELL AT TWO DIFFERENT FREQUENCIES

Allen R. Davidson, Erie, Pa., assignor, by mesne assignments, to Industrial Nucleonics Corporation, Columbus, Ohio, a corporation of Ohio

Filed Feb. 26, 1957, Ser. No. 642,525
13 Claims. (Cl. 324—61)



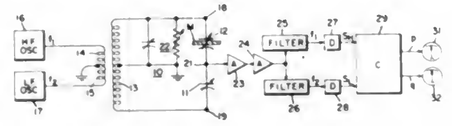
1. Apparatus for determining the amount of moisture or a similar variable constituent in a dielectric material while said material is in a confined stream of constant volume between the plates of a capacitor test cell, comprising, a voltage divider circuit having said test cell and a known value capacitor connected in series, sources supplying separate voltages of different frequencies, means for superimposing said separate voltages and applying said superimposed voltages across said divider circuit, and means for comparing said superimposed voltages after passage through said divider circuit and producing an output voltage proportional to the difference in the amplitude of said voltages which is analogous to the amount of moisture present in said dielectric material.

3,155,900

MEASURING SYSTEM FOR DETERMINING THE MASS OF A DIELECTRIC MATERIAL UTILIZING A CAPACITIVE PROBE AT TWO FREQUENCIES

Albert F. G. Hanken, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed July 11, 1960, Ser. No. 41,975
18 Claims. (Cl. 324—61)



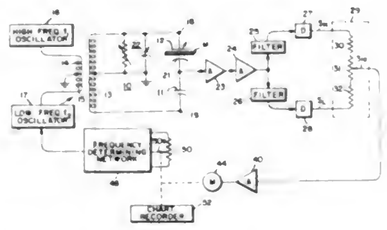
1. A system for measuring the weight and moisture content of a material comprising a measurement head having two spaced electrodes of a measurement capacitor adapted to have said material pass adjacent said two spaced electrodes to form a portion of the dielectric of said measurement capacitor, means for simultaneously applying two separate frequencies to said capacitor, means for detecting the signal across said capacitor at each of said frequencies, and measuring means for combining the detected signals to obtain a measurement proportional to the weight of said material and a measurement proportional to the relative moisture content of said material.

3,155,901

SYSTEM FOR QUANTITATIVELY MEASURING ONE PROPERTY OF DIELECTRIC MATERIAL BY APPLYING INPUT SIGNALS AT TWO DIFFERENT FREQUENCIES TO A CAPACITANCE PROBE AND VARYING ONE INPUT SIGNAL TO MAINTAIN A CONSTANT RATIO OF OUTPUT SIGNALS FOR THE TWO FREQUENCIES

Albert F. G. Hanken, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed May 4, 1961, Ser. No. 107,794
6 Claims. (Cl. 324—61)



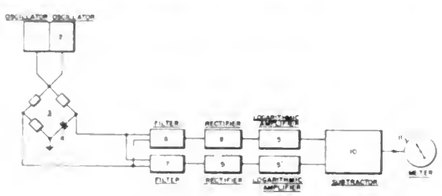
1. Apparatus for quantitative determination of at least one property of a dielectric material, said apparatus comprising a plurality of sources of electrical signals at different respective frequencies, detecting means, capacitive probe means coupled to said sources having spaced electrodes for applying electrical signals from said sources to at least a portion of said material and electrically coupling said detecting means to said portion, said detecting means including means for deriving separate signals each resulting from the signals applied to said portion from a respective source as these applied signals are influenced by the mass of said material and the dielectric properties of said material at the frequency of that source, means for combining said separate signals to produce a continuous resultant signal that is a function of the ratio of the magnitudes of said separate signals, and means responsive to said resultant signal for varying the output of one of said sources of electrical signals.

3,155,902

METHOD AND APPARATUS FOR DETERMINING MOISTURE CONTENT OF DIELECTRIC MATERIALS BY MEASURING THE RATIO OF VOLTAGE CHANGES AT TWO FREQUENCIES

Gordon William Walls, Geelong, Victoria, Australia, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Continuation of application Ser. No. 608,095, Sept. 5, 1956. This application Nov. 16, 1962, Ser. No. 238,838
11 Claims. (Cl. 324—61)



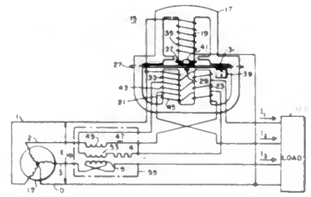
9. A method for the quantitative determination of at least one property of a dielectric material, said method comprising applying electrical signals at a plurality of different frequencies to at least a portion of the material, deriving separate signals each resulting from the signals applied at a respective frequency as these applied signals are influenced by the mass of said material and the dielectric properties of said material at that frequency, and combining said separate signals to produce a continuous resultant signal that is a function of the ratio of said separate signals and quantitatively indicative of said property.

3,155,903

POLYPHASE MEASURING DEVICE USING A SINGLE EDDY CURRENT TYPE MEASURING UNIT AND A THREE-WINDING MUTUAL REACTOR

Ambrose J. Petzinger, Glen Rock, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 17, 1960, Ser. No. 63,108
17 Claims. (Cl. 324—107)



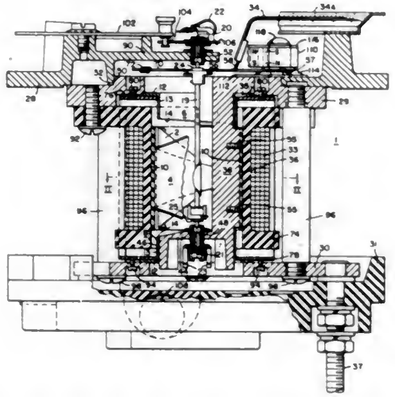
1. In a measuring device for measuring a function of the product of voltage and current in a three-phase alternating current system carrying phase currents I_1, I_2 and I_3 which in a vector system are represented by vectors rotating counterclockwise and for a balanced load are angularly spaced 120° from each other, a measuring unit having a voltage winding and first, second and third current windings, and translating means responsive to alternating energizations of the voltage winding and any of the current windings in accordance with a function of the product of such energizations, means connecting the first, second and third current windings for energization respectively to operate the translating means in accordance with I_1, $I_2\angle 120°$ and $I_3\angle -120°$ in proportions such that for balanced load on the system I_1, $I_2\angle 120°$ and $I_3\angle -120°$ are coincident in phase and magnitude,

the currents being referred to a vector system such that an angle appended to a vector having a first position operates to rotate the vector counterclockwise for a positive angle and clockwise for a negative angle from such first position for an angular distance represented by said angle.

3,155,904
REPULSION IRON VANE ASSEMBLY

Veron S. Thomander, Maplewood, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 16, 1961, Ser. No. 82,828
9 Claims. (Cl. 324—147)

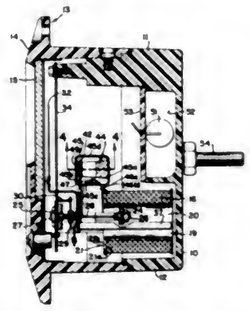


1. In an electrical instrument, a first frame member having an aperture extending completely therethrough, said member having a first circular shoulder surrounding said aperture, a second frame member having first and second surfaces, said first surface being provided with a second circular shoulder of substantially the same diameter as said first shoulder, said second frame member having a post portion extending outwardly from said second surface, said post having a circularly cylindrical portion spaced from said second surface, said cylindrical portion having an aperture coaxial with the center of curvature thereof, said post portion being located entirely to one side of a first axis extending through the center of curvatures of said second circular shoulder and of said cylindrical portion, said post further being provided with a surface portion which forms a segment of a circular cylinder having its axis of curvature lying along said first axis, said frame members being positioned with said circular shoulders seated together, said first frame member having a portion overlying its said aperature, said overlying portion having an aperture coaxial with said axis, a hollow circular tubular member surrounding a part of said post portion and having an inner surface, the radius of said inner surface of said tubular member being equal to the radius of said post surface portion, means securing said tubular member to said post surface portion, a repulsion vane secured to and extending peripherally of said inner surface, a shaft having its longitudinal axis extending along said first axis, means supporting said shaft for rotation and carried in said aperture in said overlying portion and in said aperture in said post cylindrical portion, and a movable vane carried by said shaft and having a portion extending outwardly therefrom, said extending portion of said movable vane having an end portion spaced from said repulsion vane and cooperable therewith to cause movement of said shaft.

3,155,905
IRON VANE TYPE ELECTRICAL INDICATING INSTRUMENT WITH MAGNETIC DAMPING MEANS AND INCLUDING FIXED VANE AND COIL ADJUSTMENT MEANS

Royden F. Estoppey, Berkeley Heights, and John Guglielotta, Clark, N.J., assignors to Weston Instruments, Inc., a corporation of Texas

Filed Apr. 24, 1961, Ser. No. 104,971
1 Claim. (Cl. 324—147)



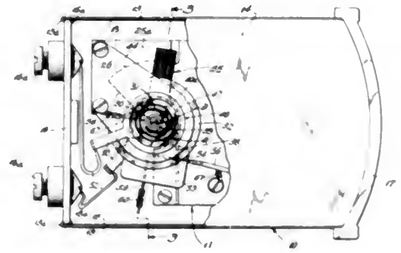
An electrical indicating instrument of the iron vane type comprising a pair of input terminals, a mechanism connected to said input terminals and having a fixed system including a field coil assembly and a movable system cooperating with said fixed system for producing rotation of said movable system when electrical energy is applied to said terminals, a scale, said movable system including a first vane and a pointer for cooperating with said scale to provide a measure of the electrical input to said terminals, magnetic damping means, said damping means including a shield of magnetic material and a generally bar shaped magnet having a plurality of extending pole pieces, said shield having top, bottom, front and rear sides substantially enclosing said magnet and including indentations formed in a portion of said shield adjacent said pole pieces to thereby form a magnetic gap between said pole pieces and said indentations, said bottom shield side having a narrow slot extending lengthwise of said shield and said damping means further including an electrically conductive non-magnetic plate adapted for rotation through said slot into said magnetic gap when said movable system is rotated, said field coil assembly including a coil wound upon a bobbin, said bobbin having a mounting flange with a plurality of slots adapted to allow movement of said coil with respect to said movable system in a direction transverse to the longitudinal axis of said coil to thereby provide means for aligning said pointer with the intermediate divisions of said scale upon application of said electrical input to said terminals, and means for aligning said pointer with divisions on the upper end of said scale, said means including a second vane in the fixed system substantially disposed within said coil and extending generally in the direction of the longitudinal axis of said coil, said second vane being adjustable in a direction transverse to said longitudinal axis with respect to both said coil and said movable system.

3,155,906
ELECTRICAL METER HAVING ITS SPIRAL SPRINGS PROTECTIVELY SURROUNDED BY ZERO SETTING CAGE STRUCTURE

Charles G. Roper, Fairfield, Conn., assignor, by mesne assignments, to C. Garland Roper, Fairfield, Conn.

Filed Aug. 7, 1962, Ser. No. 215,355
9 Claims. (Cl. 324—154)

1. In a meter having a magnetic means provided with a pair of spaced pole pieces having a single air gap therebetween, an armature having a coil, and means mounting the armature for movement about an axis to move the coil in said air gap; the improvement wherein the armature has a pair of oppositely spiraled torsion springs disposed in planes at each end of the armature perpendicular to said axis and having their inner ends connected to the armature; a pair of fixed plates disposed above and below

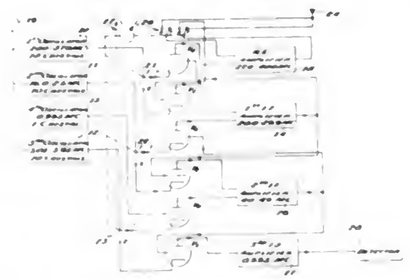


said armature, each plate being coplanar with the spring and provided with a central aperture to surround the torsion spring; and a ring-like cage for each spring having tongues passing through the central aperture to interlock therewith to rotatably mount the cage thereon, said cages protecting the springs and being connected to the other ends of said torsion springs whereby rotation of the cage adjusts the meter for zero reading.

3,155,907
FREQUENCY SYNTHESIS SYSTEM FOR MULTI-FREQUENCY TRANSMITTER-RECEIVER

Arthur H. Wulfsberg and Paul G. Wulfsberg, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Jan. 21, 1952, Ser. No. 267,484
4 Claims. (Cl. 325—18)

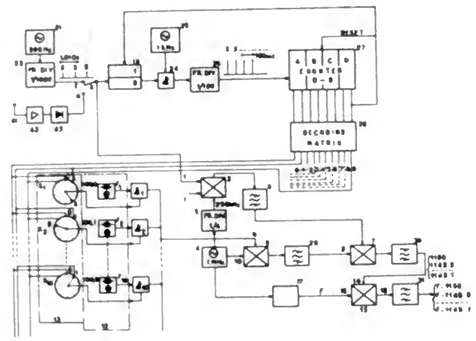


3. In a multiple conversion transmitter-receiver having at least one unidirectional intermediate-frequency amplifier comprising first and second oscillator means, a first pair of frequency mixers, each having one input alternately connectable to said first oscillator means, and a second pair of frequency mixers, each having one input alternately connectable to said second oscillator means, the first mixer of each pair heterodyning the receiver signal, the other mixer in each pair heterodyning the transmitter frequency, the output of said intermediate-frequency amplifier being connected in common to the other input of the transmitter mixer in said first pair and to the other input of said receiver mixer in said second pair, and the input of said intermediate-frequency amplifier being connected in common to the output of said receiver mixer in said first pair and the output of said transmitter mixer in said second pair, whereby said intermediate-frequency amplifier is common to said transmit and receive functions.

3,155,908
ELECTRONIC CODING DEVICE FOR RADIO-ELECTRIC OR TELEPHONE LINKS

Léon Berman, Asnieres, France, assignor to Compagnie Industrielle des Téléphones, Paris, France

Filed June 16, 1961, Ser. No. 117,732
Claims priority, application France Oct. 28, 1960
10 Claims. (Cl. 325—35)



1. In a coding system for radio or telephone links operable with single side-band and with suppressed carrier, and employing a substantially synchronous cyclic switching of the carrier frequency at the transmitting and receiving stations, a coding device comprising:

means for determining the period of coding cycle including bistable multi-vibrator means provided with an input and an output and having a normal inoperative condition and an operating condition, pulse producing means for producing in the output thereof relatively short starting pulses with a period of recurrence τ, first connecting means operatively connecting the output of said pulse producing means to the input of said multi-vibrator means to apply thereto said starting pulses and to change said multi-vibrator means from the said normal condition to the said operative condition by a respective starting pulse, control means operatively connected to said multi-vibrator means for setting said multi-vibrator means to the said normal condition thereof a relatively short time prior to each starting pulse, main gate means having two inputs and an output, the output of said multi-vibrator means being operatively connected with one input of said main gate means so that the opening thereof is determined by the respective starting pulse, oscillator means operable to produce oscillations of a frequency of N' kc./s. and operatively connected to the other input of said main gate means, and frequency divider means operable to produce a ratio k' and provided with an input connected to the output of said main gate means and with an output so as to produce in the output thereof relatively short pulses following each other at the recurrence period

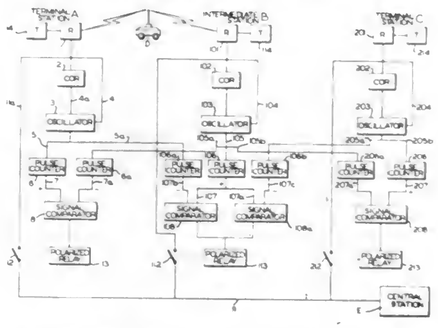
$$\tau' = \frac{k'}{N'} \text{ milliseconds}$$

from the opening of said main gate means;

a pulse counter having input means operatively connected to the output of said main gate means and including S binary multi-vibrator means, and means in said pulse counter for restoring said pulse counter to zero by the pulse of the order 2^S and further means for simultaneously determining by said last-mentioned pulse the return to zero of said frequency divider means and the return of said bistable multi-

vibrator means to the normal condition thereof at a time later by 2^{S-7} than that of the preceding starting pulse.

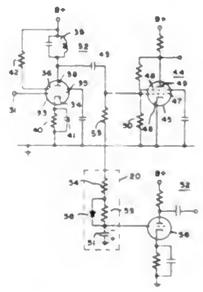
3,155,909
MOBILE COMMUNICATION SYSTEM IN WHICH THE BASE STATION RECEIVER, WHICH RECEIVES THE STRONGEST SIGNAL, IS AUTOMATICALLY SELECTED
Neal H. Shepherd, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 148,979
14 Claims. (Cl. 325—51)



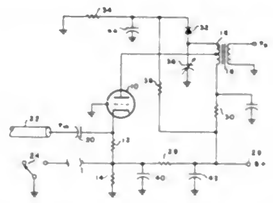
1. A system for selectively connecting a mobile transmitter unit to a central station through one of at least two base stations comprising, a first base station including a first station receiver to receive a signal from the mobile transmitter, a second base station including a second station receiver to receive a signal from the mobile transmitter, first means at said first station responsive to the received signal level of said first station receiver to produce a first comparison signal of one polarity having an amplitude proportional to the received signal level of said first station receiver, second means at said first station responsive to the signal level at said second station receiver to produce a second comparison signal of opposite polarity to said first comparison signal and having an amplitude proportional to the signal level at said second station receiver, comparator means at said first station connected to compare said first and second comparison signals, transmission means to connect the signal received at one of said base stations to a central station, and control means responsive to the output of said first station signal comparator at a predetermined amplitude and polarity to selectively connect said first station to said transmission means.

3,155,910
I.F.-CONTROLLED SQUELCH CIRCUIT FOR NARROW BANDWIDTH RECEIVERS
Friedrich Harald Mann and Archie V. Miller, Lynchburg, Va., assignors to General Electric Company, a corporation of New York
Filed May 3, 1962, Ser. No. 192,176
3 Claims. (Cl. 325—478)

1. A narrow band radio receiver for receiving a modulated carrier wave including means for translating the carrier wave to a lower frequency, said receiver being of the type wherein the bandwidth of the translated carrier wave is entirely occupied by the modulating intelligence, means for detecting the modulating intelligence and means for reproducing the modulating intelligence, carrier operated squelch circuitry for said reproducing means to control said reproducing means solely in response to the carrier wave to prevent reproduction of noise including means for producing a unidirectional control voltage in response to said carrier wave to disable said squelch circuit and enable said reproducing means, said last named means including a capacitor means and means constituting a first charge path for charging said capacitor to the level of said control voltage, said squelch circuit being susceptible to improper actuation by short duration noise impulses in the absence of a carrier or by noise impulses which have a large amplitude compared to the carrier, and means constituting an alternate discharge path for rapidly discharging said capacitor whenever a noise impulse of short duration and high amplitude charges said capacitor including a unidirectional conducting device which is so poled as to be nonconducting for the leading edge of any short duration impulses to permit charging of said capacitor through said first path and is in a conducting state during the trailing edges of said impulses to permit rapid discharge of said capacitor whereby the squelch circuitry is made insensitive to high amplitude short duration noise impulses.

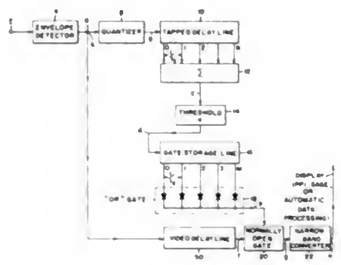


3,155,911
GATED AMPLIFIER
James O. Moritz, Sunnyvale, Calif., assignor to Sylvania Electric Products, Inc., a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,921
4 Claims. (Cl. 328—102)



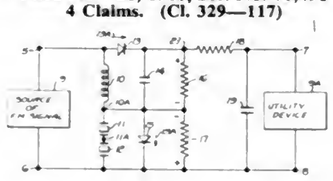
1. A gated amplifier circuit comprising, an electron tube having a cathode, a grounded control grid and an anode, means coupling said cathode to a source of signals and through a first resistor to a first source of positive potential, an output transformer having primary and secondary windings, means connecting said anode through at least a portion of said primary winding in series with a second resistor to a second source of positive potential, a diode connected in parallel with said primary winding with the anode thereof connected to one terminal of said primary winding, means connecting the cathode of said diode to a third source of positive potential, and means including a switch for changing said first source of potential from a first value at which said tube is conducting and said diode is reverse-biased to a second value at which said tube is cut off and said diode is forward-biased into conduction.

3,155,912
AUTOMATIC GATING CIRCUIT
Sidney Applebaum, Liverpool, Paul W. Howells, Morrisville, and Zenn Zenon, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 1, 1961, Ser. No. 106,972
9 Claims. (Cl. 328—108)



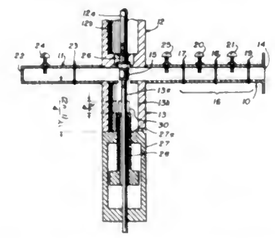
1. An electronic gate circuit for separating a short train of periodic pulses from a long train of periodic pulses intermingled therewith comprising, means for receiving said trains of intermingled pulses, means for processing all the pulses of each periodic train to provide control pulses, normally open gating means responsive to the control pulses to close and block the transmission of selected pulses, and means for supplying said intermingled short train of periodic pulses and long train of periodic pulses to said gating means for selection of the desired train of periodic pulses.

3,155,913
CRYSTAL DISCRIMINATOR
Wolfgang G. Prenosil and Robert G. Kinsman, Torrance, Calif., assignors, by mesne assignments, to Pacific Industries, Inc., a corporation of California
Filed Nov. 21, 1960, Ser. No. 70,491
4 Claims. (Cl. 329—117)



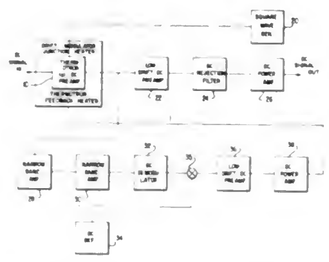
1. A discriminator network for detecting a frequency modulated signal comprising:
- a pair of input terminals adapted to have said signal applied thereto;
- a voltage divider connected across said terminals and including a reactive element and piezoelectric structure connected in series with said reactive element, said structure comprising a pair piezoelectric crystals, one of said crystals having a resonant frequency and an antiresonant frequency higher than the resonant and antiresonant frequencies respectively of the other crystal, and means interconnecting the crystals to provide said structure with an impedance which varies between a relatively high value and a relatively low value over a frequency range determined by the joint action of the crystals; and
- means coupled with said divider for providing a direct output voltage representative of the difference in magnitude between the voltage developed by said signal across said reactive element and the voltage developed by said signal across said piezoelectric structure.

3,155,914
COAXIAL REACTIVE TUNING STUB FOR TUNING A LOWER FREQUENCY SIGNAL WITHOUT AFFECTING A HIGHER FREQUENCY SIGNAL
David George Vice, John E. Mowle, and David G. Jardine, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Apr. 29, 1963, Ser. No. 276,650
5 Claims. (Cl. 330—4.9)



1. A coaxial reactive tuning stub adapted to have a first and a second radio frequency signal connected thereto, the first signal having a lower frequency than the second signal; said stub having an electrical length equal to a whole number of quarter wavelengths at the second signal frequency, an electrical length differing from a whole number of quarter wavelengths at the first signal frequency, and comprising means for varying the characteristic impedance of the stub whereby the reactance of the stub at the first signal frequency is varied and the reactance of the stub at the second signal frequency remains virtually open or short circuited.

3,155,915
THERMAL MODULATION FOR TRANSISTOR DRIFT CORRECTION
John W. Higginbotham, Bel Air, Md., assignor to Martin-Marietta Corporation
Filed June 28, 1962, Ser. No. 206,098
3 Claims. (Cl. 330—10)

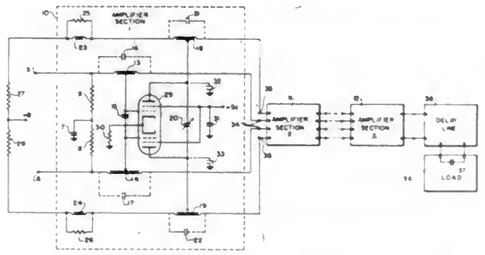


1. Apparatus to modulate a temperature sensitive amplifying device including a semiconductor member having an input and an output circuit, at least one cooperative electrode attached to said semiconductor member, thermal modulating means associated with said electrode to vary the current flow therethrough so as to provide an A.C. signal component at said output circuit differencing means included in said output circuit of said semiconductor member to separate a signal appearing at said output circuit into its D.C. and A.C. components, means to rectify the A.C. component, said rectified A.C. component being a function of the thermal characteristic of said semiconductor member and means to degeneratively feed back said rectified A.C. component to the input of said semiconductor member.

3,155,916
BROAD-BAND DISTRIBUTED AMPLIFIER

Raymond Gerr, New York, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware

Filed July 27, 1961, Ser. No. 127,375
3 Claims. (Cl. 330—54)

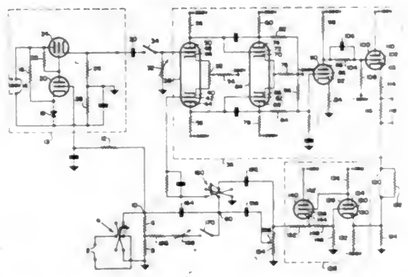


1. A broad-band distributed amplifier comprising: an n-section first broad-band filter, where n is any desired integer, each section including a shunt impedance arm; an n-section second broad-band filter, each section including a shunt impedance arm; at least n signal repeaters, each having input electrodes included in the shunt impedance arm of a section of said first filter and output electrodes included in the shunt impedance arm of a corresponding section of said second filter; a terminating impedance connected to one end of said second filter and having a value Z_0 approximately equal to the characteristic impedance of the adjacent section thereof; and a termination coupled to the other end of said second filter having an impedance of a value less than Z_0, said sections of said second filter having parameters so proportioned that the coefficients of reflection at the successive junctions between adjacent sections thereof, including the termination junctions, are proportional to the coefficients of a binomial expansion of the order n.

3,155,917
ELECTRONIC APPARATUS

Abraham J. Gelles, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed May 7, 1959, Ser. No. 811,585
3 Claims. (Cl. 330—85)

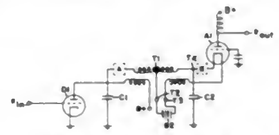


1. An electronic controller comprising, in combination, a signal input circuit, a plural-stage amplifier circuit at least the first stage of which constitutes a differential amplifier stage having a first and a second input and the output stage of which comprises a cathode follower, a negative feedback circuit connected to said output stage, a feedback amplifier included in said feedback circuit, a slidewire resistor connected to the output of said feedback amplifier and having an adjustable slider thereon, a summing junction, a first capacitor connected between said summing junction and said slider, a second capacitor connected between said input circuit and said summing junction, means providing a variable high resistance path to ground from said summing junction, means connecting said summing junction to said first input of said first mentioned amplifier, and means for connecting a reference potential to said second input of said first mentioned amplifier.

3,155,918
COUPLING GRID MEANS FOR GROUNDED GRID AMPLIFIER

Charles Richard Ellis and Robert C. McClure, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 8, 1960, Ser. No. 74,607
4 Claims. (Cl. 330—159)



1. A grounded grid amplifier circuit for isolating RF signals from plate supply voltages and from filament voltages comprising:

(a) a driver stage including an electron tube having a plate coupled through a first transformer winding to a source of plate supply voltage,

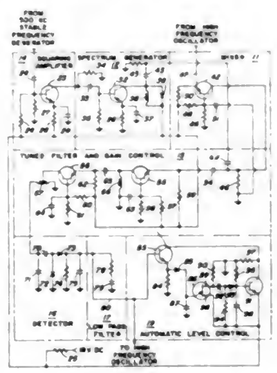
(b) an amplifier stage including an electron tube having a grounded grid and having a first terminal of its filament coupled through a second transformer winding to receive RF signals from said first transformer winding, and

(c) a source of filament supply voltage having a first terminal coupled through a third transformer winding to a second terminal of said filament and having a second terminal coupled to an intermediate terminal in said second transformer winding.

3,155,919
A.F.C. SPECTRUM LOCK-IN CIRCUIT

Clyde W. Baxter, Orlando, Fla., and David W. Weber, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Jan. 3, 1961, Ser. No. 80,317
3 Claims. (Cl. 331—19)

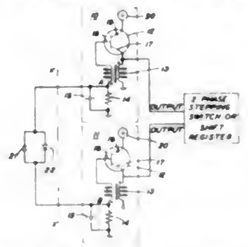


1. An automatic frequency control device for stabilizing a high frequency oscillator, comprising: a stable frequency source; means for receiving the output from said source of stable frequency and generating a stable spectrum of referencing frequencies each of which is separated from adjacent frequencies by a frequency f_1; a high frequency oscillator having an adjustable voltage sensitive frequency determining network and providing an output frequency f_2; mixing means for receiving said referencing frequencies and the output frequency from said oscillator; filter means tuned to pass nf_1 products wherein n is an integer greater than 1, said filter means having a relatively narrow pass band and providing an amplitude modulated signal at its output equal to $nf_1 \pm f_3$ wherein f_3 corresponds within the limitations of said pass band to the frequency error of the output frequency of said oscillator; detector means connected with said tuned means for receiving the output from said mixing means and providing an output signal the fluctuations of which are determined by f_3; means for coupling said output signal from said detector means to said frequency determining network for controlling the frequency of said oscillator; and an automatic level control connected to said last named means for receiving the output of said detector means and in response thereto monitoring the same and reducing said signal to a predetermined minimum value whenever a predetermined maximum value is reached whereby a range of frequencies is repeatedly swept until said frequency error f_3 is eleminated.

3,155,920
TWO INTERCONNECTED BLOCKING OSCILLATORS

George W. Wells, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 27, 1961, Ser. No. 127,350
6 Claims. (Cl. 331—56)



1. An astable pulse generator comprising two blocking oscillators each having a timing circuit comprising a capacitor which is charged during periods of conduction of the blocking oscillator and discharged during periods of non-conduction of the blocking oscillator, and voltage dropping means connected between said capacitors to divert charging current from the capacitor of each blocking oscillator during a portion of its respective charging period and to supply the diverted current to the capacitor of the other blocking oscillator, prolonging the respective discharge periods, whereby the blocking oscillators are locked to generate pulses of like polarity in alternate portions of the oscillating cycle.

3,155,921
SQUARE WAVE PULSE GENERATOR HAVING GOOD FREQUENCY STABILITY

Martin Fischman, Wantagh, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Nov. 21, 1961, Ser. No. 153,947
4 Claims. (Cl. 331—117)

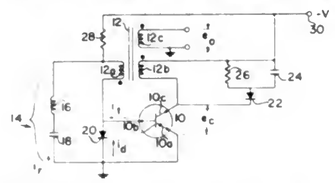
4. A pulse oscillator comprising

(a) a transistor having emitter, base, and collector electrodes,

(b) a series resonant circuit having one end coupled to the emitter of said transistor,

(c) a transformer having first, second and third windings, the first winding being coupled between the base of said transistor and the other end of said series resonant circuit, the second winding having one end connected to the collector of said transistor and the other end adapted for connection to a voltage source, and the third winding being adapted for connection to an external load,

(d) a diode coupled between the emitter and base of said transistor, the direction of current flow through said diode being opposite to the direction of current flow between emitter and base in said transistor,

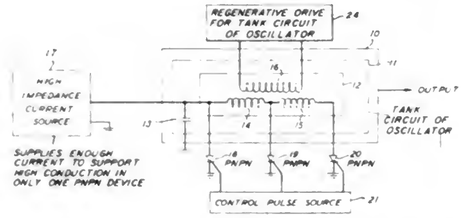


(e) switching means coupled across the second winding of said transformer, said switching means comprising a resistor and a capacitor connected in parallel and a second diode connected in series with said resistor and capacitor, said second diode being poled to conduct during substantially the same interval as said first diode, an output signal appearing across the third winding of said transformer having a frequency determined by the resonant frequency of said series resonant circuit.

3,155,922
OSCILLATOR FREQUENCY CONTROL WITH SWITCHING

John A. Hackett, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 21, 1961, Ser. No. 153,813
3 Claims. (Cl. 331—179)



1. Apparatus for tuning an oscillator comprising a resonant circuit characterized by a resonant frequency and including a plurality of tuning elements, a plurality of electronic devices having first and second stable states of operation characterized by different ranges of current and voltage parameters, means for interconnecting said devices with said resonant circuit effectively to remove a portion of said tuning elements from said resonant circuit when one of said devices is operating in said first stable state to affect said resonant frequency, a source of electrical energy with means for limiting one of said parameters to a value in said range characteristic to said first stable state, said energy source being interconnected with said devices, said devices comprising a circuit arranged in a manner which characteristically permits division of said one parameter, a source of information signals, and means to impress said signals upon said one device for inducing said first stable state in said one device with a value of said one parameter approaching said limited value so that only said second stable state can be maintained in said devices other than said one device.

3,155,923
WAVEGUIDE CHOKE COUPLING HAVING FACE OF JOINT INTERRUPTED BY ORTHOGONALLY INTERSECTING CHOKE GROOVES TO REDUCE UNWANTED MODE RESONANCE

David Robert Persson, London, England, assignor to Decca Limited, London, England

Filed Aug. 18, 1960, Ser. No. 50,402
Claims priority, application Great Britain, Aug. 19, 1959, 28,399
15 Claims. (Cl. 333—7)



1. A coupling between two waveguide sections wherein said sections have surfaces extending outwardly from the waveguide apertures, the two surfaces being adjacent to one another, said surfaces having at least one choking groove in at least one surface, said choking grooving extending parallel to the adjacent edge of the waveguide aperture to block leakage of radio frequency signals propagated through said narrow gap, and wherein further grooves are provided in at least one of said surfaces extending from points adjacent the waveguide aperture to intersect said choking groove at right angles dividing the annular region around the waveguide apertures into a plurality of separate leakage transmission paths of which said further grooves form side boundaries.

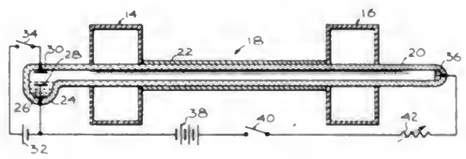
14. A waveguide switch comprising a hollow stator having an inner cylindrical surface with a number of rectangular ports in said inner cylindrical surface leading to separate rectangular waveguides and a cylindrical rotor rotatably mounted for rotational movement in said stator, the rotor containing at least one waveguide section extending between rectangular ports in the cylindrical surface of the rotor and arranged so that said waveguide section in the rotor can be positioned to connect selected pairs of ports in the stator, one of said cylindrical surfaces being formed with choking grooves parallel to and spaced a quarter wavelength at the operational frequency from the longer edges of the rectangular ports and having further grooves extending from said choking grooves at right angles thereto to points near the corner of said rectangular ports, and wherein said ports are arranged with their longer sides parallel to the axis of the rotor with said further grooves formed as two circumferential grooves extending around said one cylindrical surface closely adjacent to the narrower sides of the ports to form side boundaries for the leakage transmission paths from all the ports and wherein said choking grooves extend in the axial direction of the rotor intersecting the two circumferential grooves.

3,155,924
PLASMA GUIDE MICROWAVE SELECTIVE COUPLER

Irving Kaufman, Woodland Hills, Calif., and William H. Steier, Urbana, Ill., assignors to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Apr. 20, 1961, Ser. No. 115,061
3 Claims. (Cl. 333—7)

1. In combination with first and second spaced waveguides, means for selectively coupling said first and second waveguides to one another for controlling energy transfer therebetween comprising a closed dielectric tube penetrating through said first and second waveguides, a third waveguide supported around said tube between said first and second waveguides, said tube enclosing a plasma therein, and means for selectively varying the electron density of said plasma between a low density at which energy is coupled through said third waveguide, an intermediate density at which no energy is coupled, a high

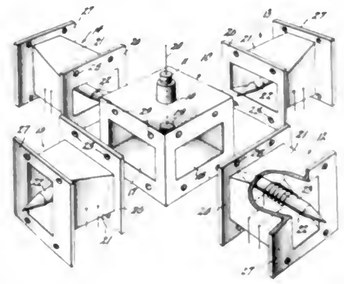


density at which energy is coupled through said plasma, and a still higher density at which no energy is coupled.

3,155,925
AXIAL FED N-SIDED CAVITY WITH TRIGGERING CONTROL FOR SELECTIVELY ENERGIZING INDIVIDUAL FARADAY ROTATOR SWITCHES FOR MULTI-CHANNEL COMMUNICATION

Ernest Wantuch, Livingston, N.J., assignor to Airtron, Inc., Morris Plains, N.J.

Filed Dec. 18, 1961, Ser. No. 159,866
4 Claims. (Cl. 333—7)

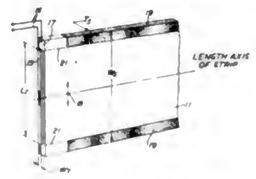


1. A microwave commutator for selectively interconnecting a microwave from a single inlet to any one of a plurality of outlets comprising: a turnstile junction having four outlet ports, and an inlet port, a coaxial transmission line and coupler means interconnected with said inlet port for introducing and coupling a microwave signal to said turnstile to equally excite all of said outlet ports within the junction, the central axis of each of said outlet ports lying in a common geometric plane and intersecting at a central junction point within the junction, and the central axis of the inlet port being perpendicular to said geometric plane and intersecting the said geometric plane at said common junction point within the junction, a plurality of microwave switch arms, each communicating with a different outlet port of said junction, said switches each comprising a waveguide section having a uniform cross-section along its length but having its alternate sides oppositely and equally varying in dimension along its length until at the outlet thereof each side has the same dimensions as the adjacent side at the inlet thereof, an energizable Faraday rotator member within each switch, an electromagnet for each Faraday rotator member energizable to produce a strong magnetic field within said rotator member, and a triggering means for selectively energizing different ones of said electromagnets responsively to an input impulse to vary the plane of polarization of a microwave signal introduced into the energized switch arm by 90 electrical degrees.

3,155,926
ULTRASONIC STRIP DELAY LINES

Allen H. Meitzler, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 22, 1962, Ser. No. 182,713
4 Claims. (Cl. 333—30)

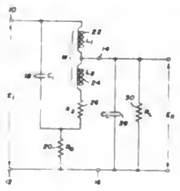


1. A delay line comprising an elongated thin strip of ultrasonic transmission material, said strip having a rectangular cross-section with a width dimension many times that of the thickness dimension, ultrasonic transducer means mounted at one end of said strip of transmission material for generating in said strip an elastic wave motion, ultrasonic transducer means mounted at the other end of said strip for generating electrical signals in response to the wave motion in the strip, and means for minimizing the effect of spurious signals and multiple reflections along said line comprising a tape of acoustical absorbing material having a length extending along a major portion of the length of said strip between said transducers and having a width wrapped around at least one minor surface of said strip and covering a minor fractional portion of the major surface of said strip adjacent to said minor surface, the remaining portions of said strip being free from said absorbing material whereby a substantial portion of wave motion generated by said transducer at said one end travels to said other end without excessive interaction with said absorbing material and said minor surfaces.

3,155,927
BRIDGED-T TERMINATION NETWORK

Thomas T. True, Camillus, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 12, 1960, Ser. No. 55,495
4 Claims. (Cl. 333—32)

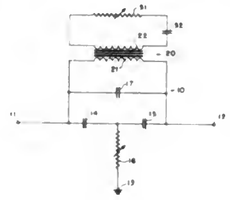


1. A termination circuit to terminate a transmission line in its characteristic impedance when feeding a capacitive load comprising: a first and second input terminal; a first and second output terminal; a capacitor and a first resistor serially coupled between said first and second input terminal; said first resistor haying a resistance equal to the characteristic impedance of the transmission line; a first inductor; a second inductor; and a second resistor serially coupled across said capacitor; said first and second inductors having a mutual inductance coupling therebetween; said first output terminal being coupled to a junction between said first and second inductors; said second output terminal being coupled to a junction between said first resistor and said input terminal.

3,155,928
BRIDGED-T FREQUENCY REJECTION FILTER

Albert C. Reid, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed June 13, 1961, Ser. No. 116,770
1 Claim. (Cl. 333—75)

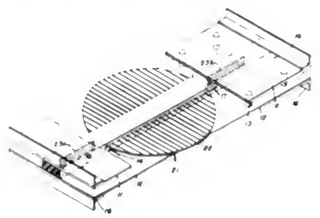


In a bridged-T frequency rejection filter including a T-network having capacitive elements in each arm thereof and a resistive element in the leg thereof and including an inductive element bridging said capacitive elements, the improvement which includes a circuit closed upon itself having an inductive element, a resistive element and a capacitive element connected in series, said inductive element in said circuit being closely coupled inductively to said inductive element in said network, said circuit being non-resonant in the frequency band of interest, and said resistive elements in said network and circuit both being variable resistors whereby the effective inductance of said inductive element in said network is a function of the resistive value of said resistor in said closed circuit and whereby the rejection frequency of said filter can be varied through a limited range by adjustment of the resistive values of said resistors in said network and in said circuit.

3,155,929
H-GUIDE ATTENUATOR

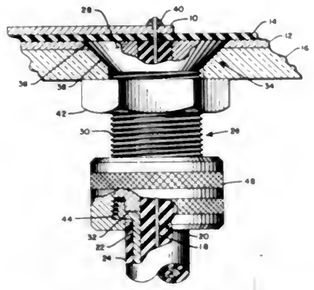
Leo Birenbaum, New York, N.Y., assignor to Polytechnic Institute of Brooklyn, Brooklyn, N.Y., a corporation of New York

Filed Dec. 6, 1962, Ser. No. 242,763
10 Claims. (Cl. 333—81)



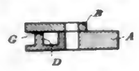
1. A microwave attenuator for an H-guide comprising a pair of longitudinally extending conductive plates arranged in parallel relation and spaced apart by a distance smaller than the width of said plates, a dielectric strip positioned between said plates and extending longitudinally along the center lines of said plates, said dielectric strip constituting the wave-guiding element of said H-guide, and a vane having microwave resistance properties, said vane passing transversely through said dielectric strip and lying in a plane parallel with said plates, said H-guide serving to propagate microwave energy in a mode that has its principal electric vector parallel with said plates and transversely of the axis of said dielectric strip.

3,155,930
FLANGED CONDUCTIVE SLEEVE FOR CONNECTING STRIP LINE WITH COAXIAL LINE
Harry E. Lovejoy, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,811
3 Claims. (Cl. 333—97)



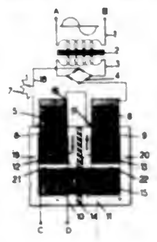
2. In combination: A strip transmission line comprising a pair of substantially flat, parallel conductors with a dielectric therebetween; a substantially flat, non-conducting, rigid support member for said transmission line; a coaxial cable having at least an inner signal conductor and a shielding conductor with a dielectric therebetween, a length of said cable extending from one end oriented substantially perpendicular to said transmission line with the signal conductor passing insulatively through one of the transmission line conductors into electrical contact with the other transmission line conductor; an electrically conductive sleeve member having a cylindrical portion and a flanged portion; said cylindrical portion securely enclosing said length of cable and in electrical contact with the shielding conductor; the flanged portion abutting the support member in supported relationship therewith and in electrical contact relationship with said one transmission line conductor; and means for securing the flanged portion in said relationships.

3,155,931
WIDE RANGE VARIABLE MAGNETIC INDUCTOR
Hisao Maeda, Nikkatsu Apartment, No. 13, Shiba-Koen, Minato-ku, Tokyo-to, Japan
Filed Jan. 13, 1960, Ser. No. 2,199
3 Claims. (Cl. 336—134)



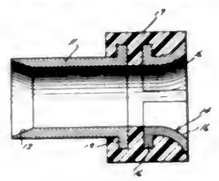
1. A variable ferromagnetic inductor comprising, in combination, a circular stationary plate made of a high-frequency ferromagnetic material; a rotating plate made of a high-frequency ferromagnetic material and affixed rotatably and parallel to said stationary plate, said rotating plate having a portion with an inclined surface of varying thickness thus providing for varying spacing and contact surface areas relative to said stationary plate; a protruding part formed on either of said plates, perpendicular to the plane of rotation thereof; and a coil wound around said protruding part; the dimensions and configurations of said plates and said protruding part being devised so that the inductance of said coil is made to vary as a function of the effective permeability of the magnetic path of said coil, said effective permeability being made to vary by the rotation of the rotating plate relative to said stationary plate, in the contact surface areas and spacing between the opposing surfaces, which form the coil's magnetic path through the rotating plate and the stationary plate.

3,155,932
SATURABLE REACTOR HAVING HIGHLY VARIABLE IMPEDANCE
Edouard Oberli, 59 Blvd. Pasteur, La Courneuve, France
Filed Oct. 30, 1959, Ser. No. 849,939
Claims priority, application France, Nov. 5, 1958, 778,416, Patent 1,217,699
4 Claims. (Cl. 336—155)



1. A saturable reactor comprising two separate cores of magnetically permeable material defining a pair of closed magnetic circuits, one portion of each core running parallel to a corresponding adjacent portion of the other core and being separated therefrom by a thin layer of insulating material, said parallel adjacent core portions forming with said insulating material a composite leg having a circumference less than the sum of the individual circumferences of said parallel core portions, an alternating current coil connected in an alternating current circuit and wound about said composite leg so that its resistance per ampere turn is less than that which would prevail in two separate alternating current coils, if each were wound about only one of said parallel adjacent core portions, two separate direct current saturating coils, one wound about a portion of each of said cores other than said parallel adjacent portions, said saturating coils being connected in series and so wound on said cores as to induce oppositely directed magnetic flux in said parallel adjacent portions, and means supplying direct current to said direct current coils.

3,155,933
PROBE FOR INSERTION IN CONDENSER TUBES OR THE LIKE
Gilson H. Rohrback, Whittier, and Willard R. Scott, Jr., Fullerton, Calif., assignors to Magna Corporation, a corporation of California
Filed June 26, 1961, Ser. No. 119,736
5 Claims. (Cl. 338—13)



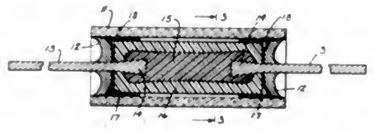
1. A corrosion indicating probe for insertion into a metallic tube comprising a hollow corrodible element permitting flow of the corrosive fluid therethrough, electrical leads extending from said element, and an electrically insulating collar mounted on said corrodible element for holding said element in axial alignment within said tube.

3,155,934
HERMETICALLY SEALED PROBE FOR MEASURING CORROSION
William E. Messick, Tustin, Edgar J. Goff, Fullerton, and Ted H. Cramer, Garden Grove, Calif., assignors to Magna Corporation, Santa Fe Springs, Calif., a corporation of California
Filed Mar. 8, 1962, Ser. No. 178,339
2 Claims. (Cl. 338—13)



1. A corrosion measuring probe comprising a hollow casing, an end cap detachably secured to one end of said casing, said end cap and said casing being fitted together to provide a flush joint at the union thereof, electrical connector means at the other end of said casing, a corrodible metal probe element carried by said end cap in exposed relation beyond said casing, seal means between said metal probe element and said end cap rigidly sealing the connection therebetween, a reference element constituting an extension of said probe and located within the confines of said casing, and electrical conductors connecting said probe and said reference element to said electrical connector means, said conductors being of sufficient length within said casing to permit detachment of said end cap and said probe element from said casing without disturbing the electrical connections at said electrical connector means.

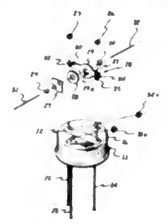
3,155,935
SEALED RESISTOR
Anthony C. Pfister, Whitefish Bay, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Original application Jan. 30, 1957, Ser. No. 637,222, now Patent No. 3,037,266, dated June 5, 1962. Divided and this application Oct. 9, 1961, Ser. No. 143,915
5 Claims. (Cl. 338—237)



4. A molded composition electrical resistor having improved stability of resistance value comprising; a dried, resin bonded resistance body of dispersed carbon particles, said resistance body exhibiting a substantial ability to acquire moisture from ambient humidity; a pair of electrodes in electrical contact with said body and projecting therefrom; a substantially moisture impervious sleeve disposed about said resistance body in encapsulating relationship thereto, said sleeve having openings through which the electrodes project; a metallic surface in intimate wetted engagement with said sleeve and adjacent the openings therein; and metallic seals disposed between said metallic surfaces and the projecting electrodes to hermetically seal the openings in said sleeve.

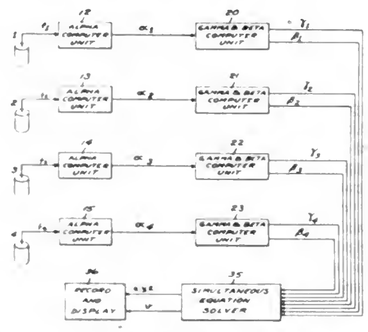
3,155,936
TRANSISTOR DEVICE WITH SELF-JIGGING CONSTRUCTION
Dale T. Kelley, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Original application Apr. 24, 1958, Ser. No. 730,642. Divided and this application Nov. 21, 1961, Ser. No. 153,906
6 Claims. (Cl. 338—329)

5. A semiconductor device including in combination, a mounting header comprising a body portion and first and second pairs of upstanding metallic posts held in and extending above the upper surface of said body portion, said second pair of posts having turned-over end portions, and a preassembled self-jigging subassembly soldered to said posts, said subassembly comprising a connector strip having a pair of arms, apertured holding portions at the



ends of each of said arms engaging one of said first pair of posts, a semiconductor body carried on said connector strip, and lead wires extending from opposite sides of said body and resting on said turned-over end portions of said second pair of posts with an edge portion of said connector strip resting on the upper surface of the body portion of said mounting header.

3,155,937
SYSTEM FOR DETERMINING VEHICLE PARAMETERS
George W. Grimm, New York, and Patrick J. McKeown, Syosset, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Wilmington, Del., a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,827
5 Claims. (Cl. 340—6)



1. A navigational system employing a plurality of devices adapted to receive and pass transmitted energy having a frequency modified by Doppler frequency shift, said devices being positioned in a known location, an alpha computer connected to each of said devices, a gamma and beta computer connected to each alpha computer and a simultaneous equation solver receiving the output of the gamma and beta computers and yielding vehicle position and velocity information, each alpha computer having means for deriving the quantity alpha in terms of the known value of the velocity of the transmitted energy, the known value of the frequency of the transmitted energy and the frequency of the transmitted energy modified by Doppler frequency shift, said gamma and beta computer having means for squaring the alpha output of the alpha computers, means for differentiating with respect to time the output of the alpha computers and means connected to said squaring and differentiating means for deriving beta and gamma quantities as a function of alpha, the derivative of alpha with respect to time and the

velocity of the transmitted energy and said simultaneous equation solver having means for computing the said vehicle position and velocity information in terms of the velocity of the source of said transmitted energy, the computed gamma and beta quantities and the known position coordinates of each of the said devices, the quantities alpha, beta and gamma being defined as follows:

$$\text{alpha } (\alpha) = V_0\left(\frac{f_1}{f_0}-1\right)$$

$$\text{beta } (\beta) = \left(1+\frac{\alpha}{V_0}\right)\left(\frac{\alpha}{\frac{d\alpha}{dt}}\right)$$

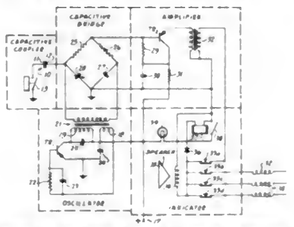
$$\text{gamma } (\gamma) = \left(1+\frac{\alpha}{V_0}\right)\left(\frac{1}{\frac{d\alpha}{dt}}\right)$$

wherein f_0 is sound frequency in water V_0 is sound velocity in water and f_1 is a Doppler shifted frequency.

3,155,938
TIRE DEFLATION DEVICE AND SYSTEM

Joseph Meyers, 23 Alter St., Cloverdale, Calif., assignor of twenty-five percent to McCulloch Investments, a copartnership, twenty-five percent to Chesley L. Wolfe and Luree C. Wolfe, ten percent to Richard L. Cooper, and forty percent to said Joseph Meyers, all of Cloverdale, Calif.

Filed Dec. 7, 1959, Ser. No. 857,839
9 Claims. (Cl. 340—58)



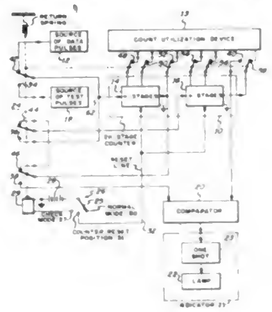
5. Apparatus for detecting a low pressure condition in one of the pneumatic tires on a vehicle, comprising a capacitor having first and second plates, said first plate being mounted upon a rotatable wheel of said vehicle and said second plate being mounted to a relatively fixed part of said vehicle, said plates being supported at substantially fixed distances apart; whereby said first plate is movable relative to the second plate by movement of said rotatable wheel without producing a substantial change in the capacitance of said capacitor; a tire pressure sensitive switch connected to the tire of said wheel and responsive to the pressure condition of said tire for grounding said first plate; and means responsive to grounding of said first plate for producing a signal, said means comprising a transistor oscillator, a bridge circuit energized by said oscillator and including said second plate, and a transistor amplifier connected to the output of said bridge circuit, said means being packaged as a compact unit and mounted in close proximity to said first plate.

3,155,939
COUNTER CHECKING CIRCUIT

Joseph R. Vadus, Carle Place, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Oct. 31, 1960, Ser. No. 66,358
11 Claims. (Cl. 340—146.1)

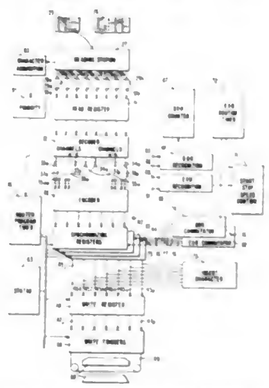
4. In a system wherein counts of data pulses are employed in a utilization circuit and which includes a $2n$-stage counter with first and second n-stage sections connected in series and a source of data pulses normally connected to supply data pulses to the input of the first counter section, a comparator for comparing signals supplied to two inputs thereof and for providing different outputs when the signals to its two inputs are respectively alike and unlike, means for connecting the nth-stage outputs of said counter sections to said respective inputs of the comparator, switch means which in one mode connects the two counter sections in series for normal operation in the system and in a second mode opens the series connection and couples the inputs of said counter sections together, and means jointly operative with said switch means for discontinuing the supply of data pulses to the input of the first counter when the switch means is in second mode and for supplying test pulses to the commonly connected inputs of the counters when the switch means is in the second mode.



3,155,940
CODED PAPER TAPE TO MAGNETIC TAPE TRANSLATOR

Richard L. Taylor, Salt Point, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 9, 1960, Ser. No. 13,879
7 Claims. (Cl. 340—172.5)



3. In a coded paper tape to magnetic tape converter system including a magnetic tape recorder and a paper tape reader, for recording on magnetic tape in continuous mode a series of coded characters from a paper tape, the paper tape reader being arranged for reading at one time the code designations making up a character into an included read register, and generally providing timing signals derived from the character on paper tape for controlling the character rate of the magnetic tape recorder, which magnetic tape recorder includes a write register, the combination comprising:

(a) a master program timer responsive to the timing signals derived by the paper tape reader from the characters;

(b) a quantity n of parallel data paths intermediate the read and write registers, each data path including a synchronizing register; and

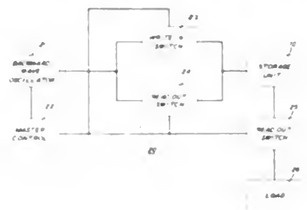
(c) means responsive to said master program timer for directing successive characters from the read register to the write register via selected ones of said data paths in turn in a repetitive sequence,

whereby in the sequence of characters 1, 2, 3 . . . n, $n+1$, $n+2$, in a character cycle for character $n+2$, a master program timer sequence is generated as character $n+2$ is read from paper tape to said read register, character 1 is written on magnetic tape, character 2 enters said write register as it is discharged from a selected synchronizing register, characters 3 to $n+1$ remain stored in the $n-1$ respective other synchronizing registers, and character $n+2$ enters the selected synchronizing register from which character 2 was discharged as character $n+2$ traverses said read register.

3,155,941
SPIN RESONANCE STORAGE SYSTEM

William B. Mims, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 22, 1959, Ser. No. 848,017
7 Claims. (Cl. 340—173)



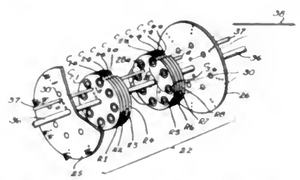
1. A data storage system comprising a storage medium having a plurality of paramagnetic ions characterized by at least two discrete electron energy levels, means for supplying to said storage medium, under the control of information to be stored, read-in energy of frequencies corresponding to the separations between a pair of said energy levels, said read-in energy being effective to transfer a substantial proportion of the electron population in the lower of said pair levels to the upper level of said pair, means for supplying to said storage medium, under the control of read-out intelligence, read-out energy of frequencies corresponding to the separations between said pair of energy levels, and means for simultaneously detecting absorption of said read-out energy.

3,155,942
METHOD AND APPARATUS FOR THREADING CORE MEMORY ARRAYS

Martin L. Hoover, Downey, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed June 18, 1956, Ser. No. 592,087
6 Claims. (Cl. 340—174)

1. Apparatus for use in the fabrication of a magnetic core array comprising: a stack of axially aligned nonmagnetic discs, each disc provided with equally spaced openings on the surface thereof located at the same distance from the axis of the stack; a core positioned in each of the openings of said discs, said discs capable of being individually rotated about the axis of the stack such that the cores thereon are aligned to form columns; and means including positioning holes having a different arrangement in each said disc for aiding in rotatably positioning each disc about the axis of said stack so as to form columns

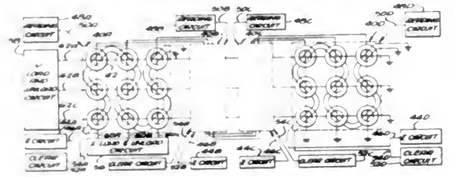


comprised of different combinations of cores through which the wires of the array can be threaded.

3,155,943
MAGNETIC-CORE MEMORY DRIVING SYSTEM

Seymour Markowitz, Los Angeles, Calif., assignor, by mesne assignments, to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 9, 1959, Ser. No. 798,166
4 Claims. (Cl. 340—174)

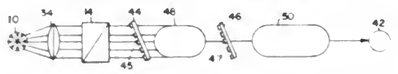


1. The method of operating a magnetic-core memory of the type comprising a plurality of digit planes each of which includes a plurality of magnetic cores arranged in columns and rows and having substantially rectangular hysteresis characteristics with two states of magnetic remanence, each core being capable of being driven from magnetic remanence at one state to magnetic remanence at the opposite state, said method comprising driving all the magnetic cores in all of the digit planes to remanence at said one state prior to storing data therein, applying a drive to remanence at said opposite state to desired similarly positioned cores in all said digit planes while applying a drive to selected ones of said similarly positioned cores to maintain them at said one state of remanence to thereby store desired data, and applying a drive to saturation at said opposite state of remanence to all said similarly positioned cores in all said digit planes for reading out the data stored in said cores.

3,155,944
PHOTO-MAGNETIC MEMORY DEVICES

Paul E. Oberg, Bloomington, and Robert W. Olmen, White Bear Lake, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 20, 1959, Ser. No. 835,066
15 Claims. (Cl. 340—174)



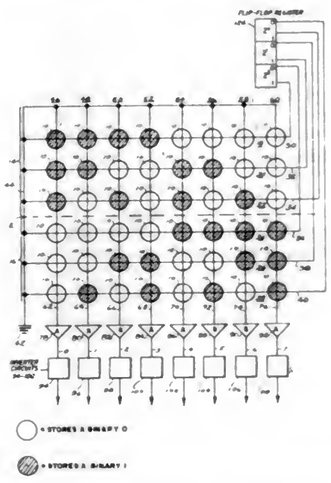
1. Apparatus for sensing the remanent magnetic state of a predetermined magnetic element selected from a first plurality of magnetic elements, each element having at least two stable states of magnetization along a certain axis of magnetization and existing in one or the other of said stable states comprising a source of light waves having vibrations confined substantially to one plane, means for dividing said light waves into parallel light beams, one for each magnetic element in said first plural-

ity of magnetic elements, a second plurality of magnetic elements positioned in optical alignment with said first plurality of magnetic elements, each magnetic element having at least two stable states of magnetization, and all but one magnetic element existing in the same stable state, said one magnetic element being in optical alignment with said predetermined magnetic element, and existing in a different magnetic state from the other magnetic elements in said first plurality, said second plurality being positioned to receive said parallel beams of light waves at an angle other than normal thereto and at an angle other than 90° with said axis of magnetization, the light beams incident to the magnetic elements existing in the same magnetic state undergoing rotation to the extent of a predetermined angular distance in a first predetermined direction due to said same magnetic state, the light beam incident to said one magnetic element undergoing rotation to the extent of a predetermined angular distance in a second predetermined direction due to said different state of magnetization, a first analyzing means for transmitting the light beam which has been rotated in said second predetermined direction and for blocking the light beams which have been rotated in said first direction, said transmitted light beam being incident on said predetermined magnetic element at an angle other than normal thereto and at an angle other than 90° with said axis of magnetization, said light beam further undergoing rotation by the existing state of magnetization of said predetermined magnetic element, and a second analyzing means for receiving said further rotated light waves for determining the extent of rotation thereof and thereby indicating the remanent state of said predetermined magnetic element.

3,155,945
PARALLEL INTERROGATION OF COMPUTER MEMORIES

David E. Keefer, Houston, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 4, 1960, Ser. No. 19,833
18 Claims. (Cl. 340—174)

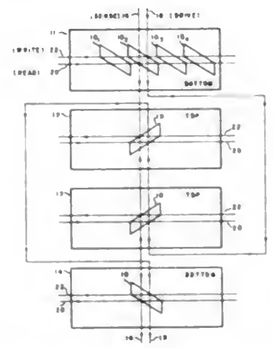


1. A circuit for comparing binary information to stored binary information comprising: a plurality of ferromagnetic anisotropic thin film elements exhibiting the capability of being nondestructively interrogated, said elements arranged in a plurality of columns and rows, each column having a different element in common with each row, said elements arranged for storing binary coded information manifestations in one-half of the elements in each column and for storing the binary complement of said information manifestations in the other half of the elements in each column, and means for determining if preselected binary coded information manifestations are stored in at least one of said columns, said means providing an indication of the column or columns in which said pre-selected coded information is stored, said determining means comprising a plurality of interrogate lines, at least one for each row of magnetic elements, a plurality of output lines, at least one magnetically coupled to all elements in each column of said elements, means for applying a plurality of signals representing preselected binary coded information manifestations of a single predetermined polarity to simultaneously activate ones of said interrogate lines according to the known digit order, the binary code of the pre-selected binary coded information and the predetermined polarity of plurality of signals, thereby inducing an output signal in each output line associated with a column of elements that does not contain the pre-selected information.

3,155,946
NOISE CANCELLATION IN LINEAR SELECTION MEMORIES

Michael M. Stern, Brookline, and Herbert A. Ullman, Burlington, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 7, 1960, Ser. No. 67,544
4 Claims. (Cl. 340—174)



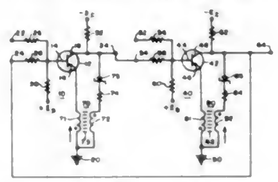
1. A magnetic core memory system comprising: a plurality of memory planes, each plane including a plurality of magnetic cores having substantially rectangular hysterisis loop characteristics; a plurality of sense windings; a plurality of digit drive windings; said windings being arranged in paired combinations of one sense winding and one drive winding, with the component windings of each pair linking a common group of cores and lying in inductive coupling relationship with one another; and, means for connecting the sense and drive windings between planes, said means including a twisted pair of conductors, one end of said pair having its first conductor connected to the sense winding of one plane and its second conductor connected to the drive winding of the other plane, and the other end of said pair having said first conductor connected to the sense winding of said other plane and said second conductor connected to the drive winding of said one plane, wherein said twisted pair is arranged in a looped configuration.

3,155,947
FLIP-FLOP CIRCUIT

Taro Yoshida, Nagoya, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a company of Japan

Filed Nov. 29, 1960, Ser. No. 72,340
Claims priority, application Japan Dec. 7, 1959
6 Claims. (Cl. 340—174)

4. An electrical circuit comprising a pair of static switching devices cross-coupled with each other to define a flip-flop, each device having first and second electrodes and an internal power current path extending from one to the other of said electrodes, each device being operable to first and second conduction states, the flip-flop having one stable state when one device is in its first conduction state and the other device is in its second conduction state, and a second stable state when the conduction states of the devices are reversed, first and second saturable reactors, each having a saturable core and respective primary and secondary windings on the core, bias means, first and second sets of circuits connected across said bias means, each set including first and second parallel circuit branches, each first branch of a set including in series the internal power current path of a different one of said devices and the primary winding of a different one of said reactors, each second branch of a set including in series a voltage reference and the secondary winding of the reactor whose

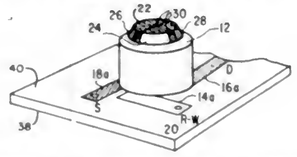


primary winding is in the first branch of the same set, the voltage across each second branch being in excess of a predetermined value set by said voltage reference in response to the associated switching device being in its first state of conduction, the primary winding of each reactor being poled to drive its associated core toward a saturation flux density of a predetermined sense in response to its associated switching device being in its second conduction state, whereby upon removal of said bias means the core retains a flux density of said predetermined sense, the secondary winding of each reactor being poled to drive its associated core to a saturation flux density of opposite sense in response to the voltage across its associated second branch exceeding said predetermined value, whereby in response to the removal of said bias means the core retains a flux density of said opposite sense.

3,155,948
MAGNETIC CORE ASSEMBLIES

Michael M. Stern, Brookline, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 5, 1961, Ser. No. 157,622
5 Claims. (Cl. 340—174)

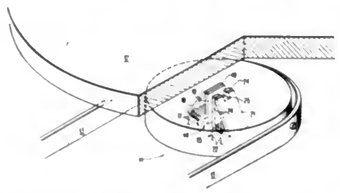


3. A magnetic core memory device comprising: first and second printed circuit boards disposed parallel to each other; a substantially cylindrical pin affixed at one end to said first circuit board with its axis perpendicular to the plane of the board, said pin having a bevelled edge at the other end and being comprised of axially disposed conductive segments, coextensive with the pin, and non-conductive segments; said second board having a bevelled hole therein receiving the bevelled end of said pin; a magnetic memory core encircling said pin and supporting said boards in spaced relation to each other; and printed circuit windings on said first and second boards selectively, electrically connected to the conductive segment of said pins.

3,155,949
TUNNEL ERASE MAGNETIC TRANSDUCER

Wilbur E. Tibbetts, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 24, 1961, Ser. No. 154,794
5 Claims. (Cl. 340—174.1)

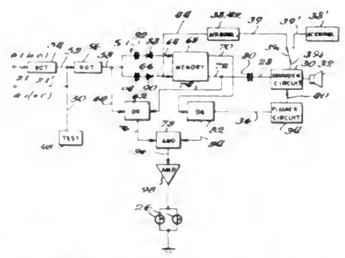


2. A magnetic transducer assembly for cooperating with a track on a moving magnetic record medium, comprising: a read/write element having a relatively wide gap; and an erase element having a gap of approximately equal overall width to that of the read/write gap, the erase gap being interrupted by a centrally disposed tunnel, the erase element being disposed immediately downstream of and fixed in alignment with the read/write element.

3,155,950
MULTIPLE SIGNALLING ANNUNCIATOR

George E. Foster, 7917 S. Yale, Chicago, Ill.

Filed Feb. 19, 1960, Ser. No. 9,925
4 Claims. (Cl. 340—213.2)



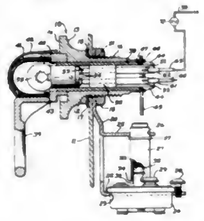
1. An annunciator which comprises, input means for connecting the annunciator to an alarm circuit which has normal and abnormal conditions, a memory element having a pair of output channels producing a signal on alternate channels only for each change of state of the memory element and the memory element adapted to change from one state to another upon being pulsed by a signal of predetermined polarity, but changing back to the first state only if pulsed by a signal of opposite polarity, means between the input means and the memory element for converting any change of condition of the alarm circuit into a pulse of one polarity only, first and second OR elements each having two inputs and one output, and AND element having both of the OR element outputs connected to its input and having an optical indicator in its output adapted to give an optical signal when energized, one of the two output channels which

has a signal thereon for normal condition being connected to an input of said first OR element, the input means having a connection with the other input of said first OR element and adapted to apply a signal continuously thereto only when the alarm circuit is abnormal, the other of said output channels which has no signal thereon for normal condition being connected to one of the inputs of said second OR element, a continuous source of intermittent signal connected to the other of said inputs of said second OR element, and an independent acknowledge pulse means connected to the input of said memory element for applying a pulse of opposite polarity thereto to change said state when desired, the occurrence of abnormal condition in said alarm circuit causing a change in state of the memory element and providing an intermittent optical indication irrespective of whether the abnormal condition is momentary or continuous, and said optical signal being changed to continuous when said memory element is thereafter pulsed by said acknowledgment pulse means if the abnormal condition remains, or to become extinguished in the event the abnormal condition was momentary.

3,155,951
TESTING APPARATUS FOR TEMPERATURE WARNING DEVICE

Clarence G. Duenke, St. Louis, Mo., assignor to The Clarken Company, St. Louis, Mo., a corporation of Missouri

Filed Jan. 16, 1961, Ser. No. 83,043
5 Claims. (Cl. 340—214)



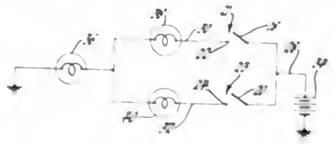
1. A temperature warning device comprising an indicator, temperature responsive thermostat, and a source of electrical energy, all wired in series, the circuit being normally held open by the thermostat and the thermostat having temperature sensitive switch elements for closing the circuit upon sensing a temperature above a predetermined maximum, a short circuit across the thermostat, normally open switch means in the short circuit, the switch means including means for releasing the thermostat from circuit closing condition when the switch means is closed, and a movable actuating member for opening and closing the switch means, the switch means comprising a contact arm connected to the actuating member for a movement therewith, and the releasing means comprising a movable plunger adapted to be depressed by the contact arm, the short circuit being closed when the contact arm contacts the plunger.

3,155,952
CONDITION INDICATING SYSTEM

Benjamin F. Boehm, Oak Park, and Charles D. Simmons, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 10, 1962, Ser. No. 165,364
4 Claims. (Cl. 340—244)

1. A condition indicating system comprising a voltage source, a first circuit including a first electrical indicating device and a first switching means, a second circuit including a second electrical indicating device and a second switching means, and a third circuit including a third electrical indicating device, the first and second circuits connected together in parallel and in series with the third circuit across the voltage source, each of the first and second circuits having an impedance greater than that of the third circuit and the third circuit having an impedance greater than the parallel impedance of the first and second circuits whereby upon closure of either the first or second

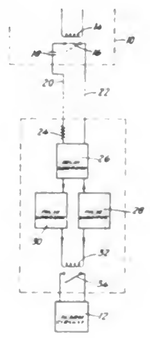


switching means the first or second indicating device, respectively, will be active and the third indicating device will be inactive, and upon closure of both the first and second switching devices the third indicating device will be active and the first and second indicating devices will be inactive.

3,155,953
PROTECTED REMOTE ALARM SYSTEM

John G. W. Lee, Welwyn, and Lionel R. F. Thompson, Hatfield, England, assignors, by mesne assignments, to The De Havilland Aircraft Company Limited, Hatfield, England, a company of Great Britain

Filed Sept. 27, 1960, Ser. No. 58,836
Claims priority, application Great Britain, Oct. 15, 1959, 34,922/59
6 Claims. (Cl. 340—253)

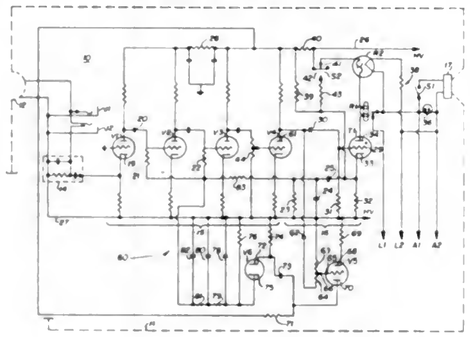


1. A remote alarm system comprising a monitored electric circuit, an electric switch disposed in proximity to said monitored circuit and responsive to current flow in said monitored circuit to assume a normally conducting condition, first and second electric pulse generators disposed at a location remote from said monitored circuit, delay means including a resistor and a capacitor electrically connecting through said switch the pulse output of said first generator to said second generator to control the pulse output of said second generator at a predetermined phase displacement relative to the pulse output of said first generator, at least one of said resistor and said capacitor being located in the vicinity of said monitored circuit and alarm initiating means electrically connected to the outputs of said first and second generators and responsive both to said switch assuming the non-conducting condition and to change in said predetermined phase displacement to produce an alarm initiating signal.

3,155,954
AUTOMATIC SENSITIVITY CONTROL FOR SOUND ACTUATED DETECTION AND ALARM SYSTEMS

Howard M. Larrick, 3105 Howard Ave. NW., Canton, Ohio, and Walter R. Brosch, 2032 Gregg Road, Akron 19, Ohio

Filed June 15, 1962, Ser. No. 202,763
1 Claim. (Cl. 340—261)



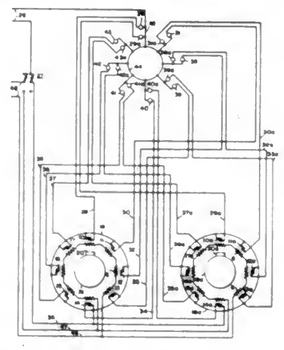
In a sound actuated detection and alarm device having sound pickup means, first amplifier means having the input thereof connected to said sound pickup means, at least one signaling device and an energizing circuit actuated by said first amplifier means for triggering said signaling device, said energizing circuit having thermal delay deactuating means and amplification control time delay feedback means, the improvement comprising; second amplifier means having the grid control input thereof connected to the output of said first amplifier means through a potentiometer having a resistance of on the order of 500,000 ohms to prevent excessive draining of the signal from said first amplifier means, rectifier means connected to the output of said second amplifier means, a time-delay network connecting said rectifier means to said first amplifier means ahead of the output thereof to impress a negative blocking bias thereto delayed by a few milliseconds to prevent said first amplifier means from triggering said energizing circuit in response to environmental sounds, and a high impedance blocking means connected between said time-delay network and said amplification control time-delay feedback means to prevent impressing signals from said time-delay network on said energizing circuit.

3,155,955
SHAFT POSITION INDICATOR

John D. Davidson, North Huntingdon Township, Westmoreland County, and Franklin J. Murphy, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 15, 1961, Ser. No. 110,092
4 Claims. (Cl. 340—268)

4. Means for indicating the relative rotational position of two rotating shafts comprising a first set of magnetically actuated switch devices disposed in a circular array, magnet means rotatable with one of the shafts in position to effect successive actuation of said switch devices, a second set of magnetically actuated switch devices disposed in a circular array, magnet means rotatable with the other of the shafts in position to effect successive actuation of the switch devices of the second set, a first set of indicating means individually connected to the switch devices of the first set of switch devices to be successively energized by actuation of the switch devices, a second set of indicating means individually connected to the switch devices of the second set of switch devices to be successively energized by actuation of the switch devices, the indicating means of the first set being arranged in a circle in positions corresponding to those of the switch devices to which they are connected, the indicating means of the second set being arranged in a circle concentric with the first-mentioned circle in positions corresponding to those of the switch devices to which

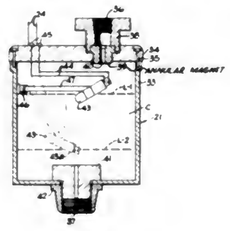


they are connected, whereby successive energization of the indicating means of the two sets indicates the relative rotational positions of the two shafts, each of the switch devices having a coil thereon, and means for energizing all of said coils to prevent operation of the switch devices by said magnet means.

3,155,956
BEARING FAILURE PREDICTING DEVICE

Lloyd Hornbostel, Jr., and Lawrence B. Ward, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Feb. 15, 1963, Ser. No. 258,829
8 Claims. (Cl. 340—269)



1. A device for detecting failure of a bearing in a bearing assembly having a substantially uniform flow of lubricant comprising,

means defining a chamber with an outlet opening and an inlet opening for receiving a flow of lubricant from said bearing,

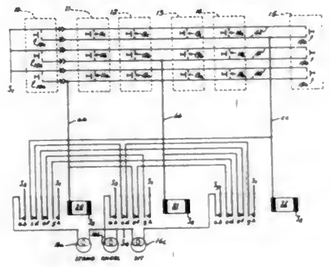
said openings being relatively sized for maintaining a substantially constant level of lubricant in the chamber under normal operating conditions,

an orifice in one of said openings restrictable by tramp metal released by the bearing prior to failure and changing flow through said one opening,

magnetic means operatively associated with said orifice for collecting tramp metal in the orifice released by the bearing prior to failure and reducing the orifice size thereby reducing flow through said orifice,

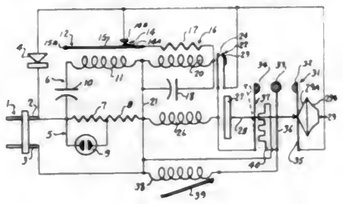
and means detecting change in lubricant level in said chamber for indicating approaching bearing failure.

3,155,957
SIGNALING SYSTEM
Anthony J. Parissi, Cohoes, and Francis O. Perreault, Waterford, N.Y., assignors to Marion Products, Inc.
Filed Dec. 5, 1960, Ser. No. 73,731
10 Claims. (Cl. 340—286)



1. A system for selectively signaling audiences and the like from different locations comprising a plurality of station means, indicating means having a plurality of indicators representing respective commands, momentary switching means at each station means having a plurality of contacts associated respectively with each of said indicators, a network, the contacts associated with a particular indicator at one station means being connected by said network to like contacts at said other station means, multi-contact relay means associated with each of said indicators, a source of current, energizing circuit means interconnecting each of said relay means with the associated network and said source of current, indicator contacts on each of said relay means interconnecting, when energized, the respective indicator and said source for energizing the respective indicator, holding contacts on each of said relay means, transfer contacts on each of said relay means, transfer-hold circuit means allocated to each of said relay means comprising the holding contacts on said relay means and transfer contacts on said other relay means connected to said holding contacts, said transfer-hold circuit means interconnecting the selected relay means and said source of current for holding said relay means energized when said relay means is momentarily energized from the respective network by operation of the respective switch contacts at the operated station means, said hold-transfer circuit means of said other relay means being conjointly deenergized by energization of said transfer contacts on said selected relay means.

3,155,958
NEAR RECEIVER HAVING REED DETECTOR AND HAVING FLUID DIAPHRAGM TIME DELAY CONTROL OF ALARM
Robert H. Voigt, Milford, Mich., assignor to Aseco, Incorporated, Milford, Mich., a corporation of Michigan
Filed Jan. 29, 1962, Ser. No. 169,463
9 Claims. (Cl. 340—310)



1. In an alarm circuit having a source of electrical power and means selectively imposing a predetermined actuation signal thereon, a delayed actuation device comprising

(*a*) an alarm circuit including a switch and means producing an audible alarm upon actuation of said switch,

(*b*) means actuating said switch and including an energizing circuit and a time delay means,

(*c*) said energizing circuit being operable to actuate said time delay means upon receipt of said predetermined actuation signal,

(*d*) said time delay means being operable to actuate said switch upon the lapse of a predetermined time interval after the actuation by said energizing circuit,

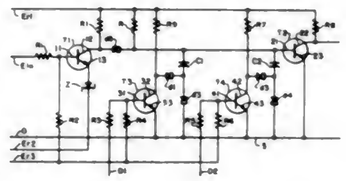
(*e*) said time delay means comprising a fluid cell diaphragm being operable to urge said switch toward its actuated position as said diaphragm expands, means normally holding said diaphragm in a collapsed condition, and said holding means being actuated by said energizing circuit to release said diaphragm to expand whereby said switch is slowly urged toward a closed condition,

(*f*) a second time delay means operable to retain said holding means in a released postion for a predetermined time interval after cessation of said predetermined actuation signal, and

(*g*) said switch comprising a pair of closely adjacent contact members, and

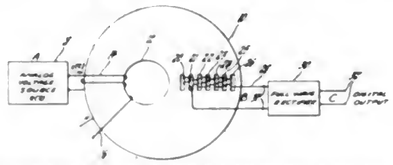
(*h*) said second delay means comprising heating means provided on one of said contact members, means energizing said heating means upon said diaphragm being expanded a predetermined degree, and said other contact member having heat responsive means operable to separate said contacts upon being heated a predetermined amount by said heating means whereby said switch is opened after a predetermined time interval.

3,155,959
TIMED OUTPUT PULSE PROVIDING DEVICE RESPONSIVE TO DIGITAL INPUT SIGNALS
James Dobbie and Emil T. Schonholzer, Williamsville, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1960, Ser. No. 67,222
5 Claims. (Cl. 340—347)



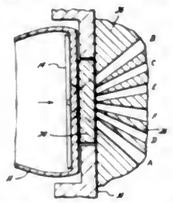
5. In an electrical signal translating device for converting a pulsed input signal having a plurality of digits into a timed output signal, the combination of a plurality of capacitors with a different one of said capacitors being provided for each digit of said input signal, first circuit means for supplying a first voltage of a first polarity to place a charge on each of said capacitors, second circuit means for supplying a second voltage of a second and opposite polarity to discharge said charge on each of said capacitors, switching means operative with each of said capacitors for controlling respectively the discharge of each of said capacitors in response to the respective digits of said input signal, and output signal providing means operative with each of said capacitors for sensing the charge on said capacitors and for providing an output signal having a time duration in accordance with the net discharge of said capacitors.

3,155,960
ELECTROMAGNETIC QUANTIZER
Robert R. Bockemuehl, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 27, 1962, Ser. No. 176,017
6 Claims. (Cl. 340—347)



3. Apparatus for converting a voltage into a sequence of pulses wherein the number of pulses is related to the amplitude of the voltage, the apparatus comprising, a closed magnetic core having first and second remanent flux states, a plurality of substantially parallel flux paths of progressively greater lengths defined by a plurality of apertures in the core, an input winding linking the core, a voltage source connected across the input winding and adapted to produce a current pulse therein which increases as a function of time and is sufficient to switch at least a portion of the flux paths from the first remanent state to the second, a plurality of output coils individually linking respective flux paths, each output coil linking the respective flux path in a sense opposite to the sense of the coil linking the path of immediately greater length, whereby a change in the magnetic state of the core from the first remanent state to the second induces respective voltage pulses in the output coils, the output coils linking the flux paths being connected in series thereby to provide a common output winding wherein the voltage pulses induced in the output coils appear in alternately opposite polarities, full wave rectifying means having input and output terminals, the input terminals being connected to the common output winding to receive the pulses of alternately opposite polarity, the rectifying means being adapted to produce a sequence of output pulses of a single polarity corresponding in number to the number of pulses induced in the parallel flux paths.

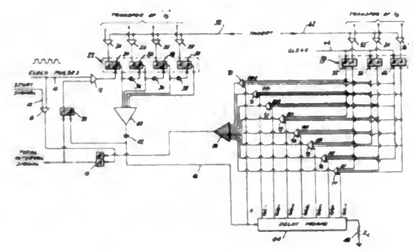
3,155,961
ANALOG-TO-DIGITAL CONVERTERS
Carl K. Shumway, Jr., Sarasota, Fla., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Aug. 28, 1962, Ser. No. 219,971
1 Claim. (Cl. 340—347)



A system for converting analog-to-digital signals comprising in combination:

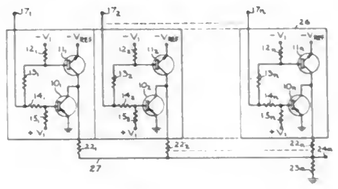
a cathode-ray-tube having an end face defining a light emitting surface, means for generating an electron beam, means for displacing said electron beam over said light emitting surface, the displacement being a function of the amplitude of said analog signals; a thin coded mask disposed adjacent and opposite to said light emitting surface and in the path of light emitted by said surface, said mask being formed of a plurality of areas, said areas having distinct transparent states and being arranged in groups to form the columns of a digital pattern, each group being representative of a discrete position of said beam; a plurality of photoelectric transducers, at least one transducer for each column; a housing having a light absorbing floor, a light absorbing ceiling, and a plurality of wedges between said floor and said ceiling, one wedge for each column, each wedge defining a sharp edge which is pressed against the digital mask along a line dividing two consecutive digital columns for projecting the light transmitted by each group of areas onto selected ones of said transducers thereby providing groups of corresponding electric signals, each group of electric signals being representative of a discrete amplitude of said analog signals.

3,155,962
SYSTEM FOR REPRESENTING A TIME INTERVAL BY A CODED SIGNAL
Ralph H. Beter, Philadelphia, and Morris Rubinoff, Sharon Hill, Pa., assignors, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Original application May 23, 1955, Ser. No. 510,172, now Patent No. 2,888,647, dated May 26, 1959. Divided and this application Mar. 12, 1959, Ser. No. 799,026
7 Claims. (Cl. 340—353)



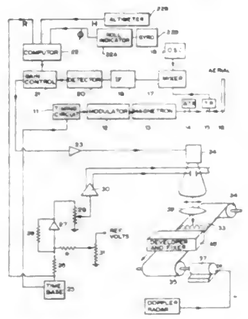
4. A circuit for generating a signal having a time duration equal to that represented by a two part digital code, a first part of said code representing the number of integral reference intervals and a second part of the code representing the number of fractional reference intervals to be included in said generated signal, said circuit comprising first register means which may be preset to indicate said first part of said code, means for presetting said first register means to indicate said first part of said code, second register means which may be preset to register said second part of said code, means for presetting said second register means to indicate said second part of said code, a signal generating circuit, means for supplying a single clocking pulse signal to said signal generating circuit to initiate the operation thereof, means for supplying clocking pulse signals to said first register means during the interval that said signal generating circuit is operative, said first register means being arranged to provide an output signal upon the application of a number of clocking signals determined by the condition to which said first register means is preset, a tapped delay means having a plurality of output taps, the delay between adjacent output taps being a preselected fraction of a period of said clocking signal, means coupling the output of said first register means to the input of said tapped delay means, means controlled by said second register means for connecting a selected one of said output taps to said signal generating circuit, the selection of said tap being determined by the condition to which said second register means is preset, said signal generating circuit being so constructed and arranged that the operation thereof is terminated by a signal from said tapped delay means.

3,155,963
TRANSISTORIZED SWITCHING CIRCUIT
Donald W. Boensel, La Crescenta, Calif., assignor, by mesne assignments, to Space-General Corporation, Glendale, Calif., a corporation of California
Filed May 31, 1960, Ser. No. 32,729
14 Claims. (Cl. 340—347)



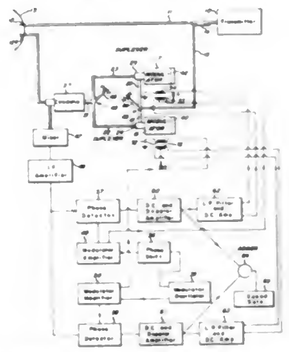
6. A digital-to-analog converter connected between first and second voltage sources for producing an analog voltage equivalent of pulses applied thereto, said converter comprising: a load resistor across which the analog voltage is produced; a plurality of weighting resistors connected at one of their ends directly to said load resistor; and a corresponding plurality of switching circuits respectively connected directly to the other ends of said weighting resistors, each of said switching circuit normally producing a first voltage level corresponding to the first voltage source across its associated weighting resistor and operable in response to a pulse applied thereto to produce a second voltage level thereacross corresponding to the second voltage source, each switching circuit including first and second transistors respectively connected directly between the first and second voltage sources and the associated weighting resistor, and variable biasing means connected directly to said first and second transistors, said means normally biasing said first and second transistors to be conducting and non-conducting, respectively; and operable in response to a pulse applied thereto to bias said first and second transistors to be non-conducting and conducting, respectively.

3,155,964
RADAR MAPPING SYSTEMS
Roger Voles, London, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain
Filed Aug. 25, 1958, Ser. No. 757,155
Claims priority, application Great Britain, Aug. 28, 1957, 27,041/57
5 Claims. (Cl. 343—5)



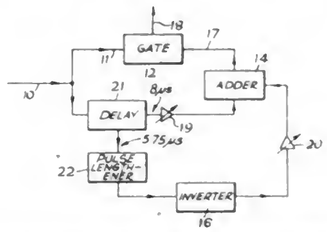
1. Radar apparatus comprising an aerial capable of receiving signals transmitted or reflected from a distant object, a receiver operative to detect signals received by said aerial and means responsive to variations of attitude of said aerial in relation to a given attitude to control the gain of said receiver, whereby errors in the power of received signals due to said variations are substantially reduced.

3,155,965
FEED-THROUGH NULLING SYSTEM
John D. Harmer, Arlington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 28, 1961, Ser. No. 106,391
8 Claims. (Cl. 343—5)



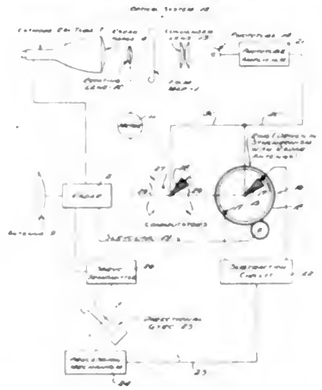
1. In combination, a transmitter for producing an output signal cooperating with a receiver, means for receiving a signal derived from said output signal which contains a feed-through signal from said transmitter, means for sampling a portion of said output signal and producing a first signal in phase relationship with said output signal and a second signal in phase quadrature with said first signal, means for feeding said first signal through a first modulator and said second signal through a second modulator, said latter means including means for reflecting said first and second signals back through said first and second modulators to provide a nulling signal from the outputs of said first and second re-entrant modulators, which nulling signal is substantially equal in magnitude and opposite in phase to said feed-through signal, and means for combining said nulling signal with said feed-through signal in order to cancel said feed-through signal fed to said receiver.

3,155,966
SECONDARY RADAR SYSTEMS
Alaric Allen, Ashford, England, assignor to A. C. Cossor Limited, London, England, a British company
Filed July 23, 1959, Ser. No. 829,074
Claims priority, application Great Britain July 10, 1959
6 Claims. (Cl. 343—6.8)



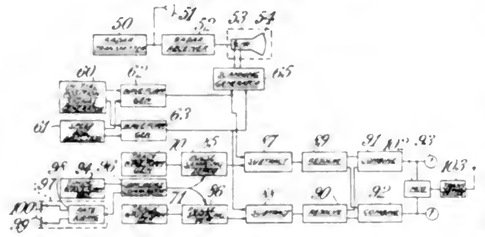
1. A transponder for a secondary radar system comprising a coincidence circuit having two input terminals and an output terminal and responsive only to pulses in predetermined amplitude relation applied simultaneously to said two input terminals to generate a signal at said output terminal, means applying received pulses to one of said input terminals, delay means having at least one input and two outputs providing two different time delays, means applying received pulses to said input of said delay means, means coupling one of said outputs of said delay means to the other of said input terminals, sense-inverting means, and means coupling the other said output of said delay means through said sense-inverting means to said other input terminal.

3,155,967
AUTOMATIC AZIMUTH MATCHING APPARATUS
Richard L. Burtner, Canton, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Oct. 17, 1955, Ser. No. 540,765
4 Claims. (Cl. 343—7)



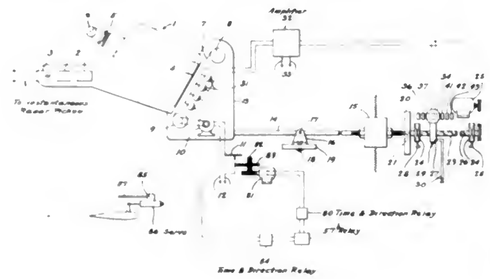
4. In a guidance system for aircraft and the like, a radar, for producing an image of the terrain over which the aircraft is passing, a rotary antenna for the radar, means for stabilizing the antenna, a previously prepared map of the terrain over which the aircraft should be passing, the map and image having the same scale and orientation, means for comparing the map and image and for producing an error voltage when the map and image get out of orientation in azimuth, and means operated by the error voltage for re-stabilizing the antenna.

3,155,968
RADAR-CONTROLLED GUIDANCE SYSTEM
Robert Matthews and Ronald Thomas Albert Howell, London, England, assignors to Decca Limited, London, England
Filed Apr. 7, 1958, Ser. No. 726,820
23 Claims. (Cl. 343—7)



1. Apparatus for controlling the navigation of a vehicle along a required track comprising two electrical waveform generators arranged to generate repetitive synchronised waveforms representative of the co-ordinates in plan position of the required ground track for the vehicle, a voltage source, a sine-cosine potentiometer connected to said source, manually operable voltage controlling means for controlling the voltage applied from said source to said sine-cosine potentiometer, and two comparator means for determining the differences between the output signals from the sine-cosine potentiometer and the corresponding co-ordinate instantaneous output signals of said waveform generators at simultaneously occurring instants in the waveform cycles and for providing from said determined differences an output representative of the distance of the vehicle from said track.

3,155,969
METHODS AND APPARATUS FOR AUTOMATICALLY GUIDING AN AIRPLANE OR THE LIKE
James Byron Jones, Stamford, Conn., assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Dec. 6, 1947, Ser. No. 790,151
12 Claims. (Cl. 343—7)



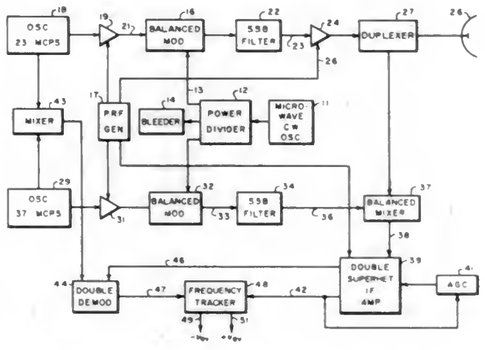
3. In combination, a strip film bearing a radar map of a stretch of terrain over which a body is to move, motor means for advancing the film, means for continuously presenting an instantaneous radar image of the terrain over which the body is moving, said radar image being of substantially the same scale and orientation as the map image and being superimposed upon the map image, means for effecting periodically repeated scanning movement between the superimposed images, means for indicating a match between the images, means for controlling a direction of movement of the body in response to the position of match of the images.

7. That method of guiding an airplane or other body over a course which includes the steps of comparing a substantially instantaneous picture of the course with a previously prepared picture of the course, effecting scanning movement of the pictures to effect substantially a match thereof, moving the prepared picture, and coordinating the speed of movement of the prepared picture to the speed of movement of the body.

3,155,970
MICROWAVE RECEIVER-TRANSMITTER
Leonard O. Vladimir, Chappaqua, N.Y., assignor to General Precision Inc., a corporation of Delaware
Filed Nov. 15, 1957, Ser. No. 696,872
8 Claims. (Cl. 343—8)

1. A microwave receiver-transmitter comprising, a first continuous wave oscillator, a second continuous wave oscillator, a first modulator having the output of said first and second oscillators impressed thereon and producing a first modulated signal therefrom, a single sideband filter having said first modulated signal impressed thereon and transmitting only the lower sideband signal thereof, gating means connected to the output of said single sideband filter for converting the output thereof into a succession of pulse signals, radiating means transmitting said pulse signals and receiving the reflected echo signals thereof, a

third continuous wave oscillator, a second modulator having the outputs of said first and third oscillators impressed thereon and producing a second modulation signal therefrom, a single side band filter having said second modulated signal impresed thereon and transmitting only the

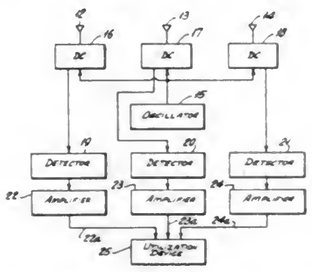


upper sideband signal thereof, a mixer having the reflected echo signals and the upper sideband of said second modulated signal impressed thereon producing an intermediate frequency signal therefrom, and means for deriving Doppler information from said intermediate frequency signal.

3,155,971
MISSILE SCORING SYSTEM

Paul G. Hansel, Greenville, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York

Filed Oct. 6, 1960, Ser. No. 60,924
5 Claims. (Cl. 343—12)

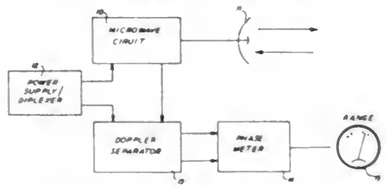


1. A system for scoring near misses of a projectile with respect to a target, comprising at least three antennas positioned at spaced locations on said target, a source of signals of predetermined frequency coupled to each of said antennas for radiation thereof, separate signal receiving means coupled to each of said antennas for receiving reflected signals from the projectile, the reflected signals received at each antenna being frequency shifted from the frequency of the radiated signal by an amount dependent on the instantaneous closing speed of the projectile with respect to that antenna, means coupled to each of said receiving means for comparing the frequencies of said reflected signals and said radiated signal to produce a difference frequency signal, and scoring means responsive to the difference frequency signal at each antenna for indicating a near miss based on predetermined distance criteria.

3,155,972
CONTINUOUS WAVE RADAR

Wesley D. Boyer, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,181
6 Claims. (Cl. 343—12)

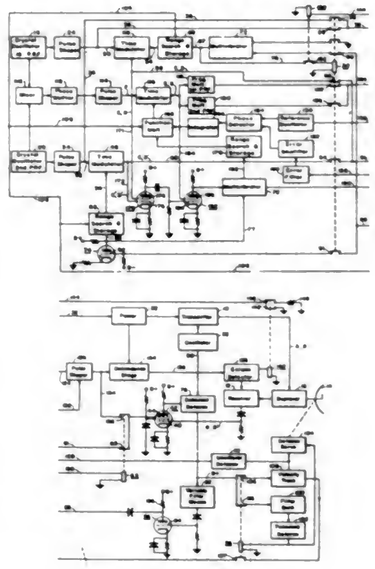


1. A continuous wave radar system for measuring range to an object that has a relative velocity with respect to the system comprising, a microwave generator, means coupled to said microwave generator for causing said microwave generator to alternately and periodically generate microwave energy having two different frequencies, means for transmitting said microwave energy to the object, and for receiving the microwave energy reflected from the object, means coupled to said last mentioned means for obtaining a Doppler signal that results from each of said two different frequencies of microwave energy, and means for comparing the phase of said Doppler signals to provide an indication of the range to the target.

3,155,973
MULTIPLE PULSE REPETITION FREQUENCY AUTOMATIC RANGE TRACKING PULSE DOPPLER RADAR

Harry B. Smith, Catonsville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 13, 1956, Ser. No. 592,233
2 Claims. (Cl. 343—17.1)



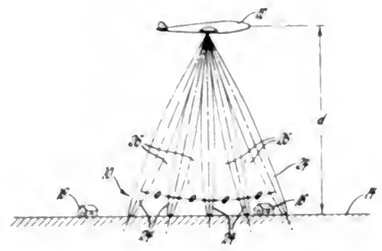
1. In a radar system, a source of energy pulses having a first repetition frequency, a source of energy pulses having a second repetition frequency, means for transmitting energy pulses of said first repetition frequency,

means for receiving transmitted energy pulses reflected from a distant object, means for producing a train of voltage pulses having a repetition frequency equal to the difference between said first and second repetition frequencies, means for changing the repetition frequency of said train of pulses to said first pulse repetition frequency, means for positioning the train of pulses at said first repetition frequency to correspond in phase with received energy pulses at said first repetition frequency reflected from a distant object, means for detecting phase coincidence of pulses in said train of pulses with energy pulses transmitted at the first repetition frequency, and means responsive to the output of said detecting means for causing said transmitting means to transmit energy pulses of said second repetition frequency and for changing the repetition frequency of said train of pulses to said second repetition frequency.

3,155,974
SPEED MEASURING SYSTEM

Theodore V. Seling, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 2, 1958, Ser. No. 765,711
2 Claims. (Cl. 343—100)



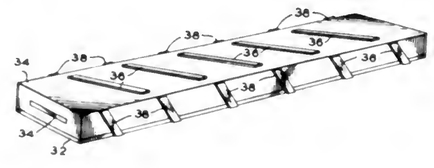
1. A system for measuring the relative velocity between a body and a target comprising a multi-lobe antenna system mounted on the body for receiving electromagnetic radiations from a target area, the antenna system having an axis in a predetermined alignment with said body and producing an interferometer pattern comprising zones disposed along said axis of maximum sensitivity separated by zones of minimum sensitivity, said zones having a predetermined angular spacing, receiver means coupled to said antenna system for developing a signal voltage corresponding to the received electromagnetic radiations, a detector coupled to the receiver means for developing a signal voltage corresponding to the cyclic variations of the received radiations, and frequency responsive means connected with the detector for measuring the frequency of the cyclic variations as an indication of the component of relative velocity between the body and the target along the axis of said antenna system.

3,155,975
CIRCULAR POLARIZATION ANTENNA COMPOSED OF AN ELONGATED MICROSTRIP WITH A PLURALITY OF SPACE STAGGERED RADIATING ELEMENTS

Maurice G. Chatelain, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.

Filed May 7, 1962, Ser. No. 192,846
5 Claims. (Cl. 343—785)

1. An antenna, comprising:
an elongated, conductive microstrip;
an elongated, conductive ground plane spaced from and parallel to one face of said microstrip;

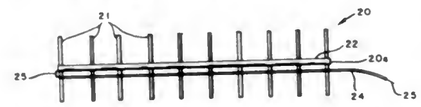


and a plurality of radiating elements spaced from and longitudinally spaced along the other face and both sides of said microstrip in staggered relation.

3,155,976
BROADBAND STRAIGHT LADDER ANTENNA WITH TWIN WIRE BALANCED FEED SUPPLIED VIA INTEGRAL UNBALANCED LINE

Arthur F. Wickersham, Jr., and Eric N. Harlow, Santa Clara, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 31, 1959, Ser. No. 837,005
5 Claims. (Cl. 343—814)

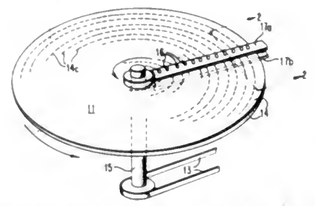


1. A high frequency end-fire antenna having an axis and comprising a plurality of conducting elements arranged in a common plane and extending parallel to each other, said elements being axially spaced from each other, and means for feeding electromagnetic wave energy to said conducting elements comprising a coaxial cable and a conducting member, both extending axially and being electromagnetically coupled to said elements for the full length of the antenna, said cable having an outer conductor and an inner conductor, said inner conductor being directly electrically connected to said conducting member at one end of the antenna, and energy input means coupled to said coaxial line at the opposite end of the antenna for transmitting energy to said elements.

3,155,977
RESILIENT RECORDING DISK

Ralph E. Marrs, Campbell, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 31, 1959, Ser. No. 837,104
9 Claims. (Cl. 346—74)



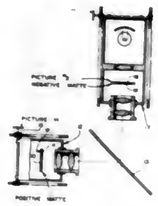
1. Recording apparatus comprising a compliable rotating disk having a recording medium on at least one surface thereof,
a rigid guide disk member disposed closely adjacent said compliable disk to limit the transverse movement of said compliable disk,
said guide disk member having an opening therein,
a pair of loading members extending into said opening and disposed adjacent opposite surfaces of said rotating disk for producing a wedge of air between said

disk surfaces and each of said loading members to control the position of said disk relative to said loading members,

the spacing between said loading members and said rotating disk decreasing in the direction of rotation of said rotating disk, and

transducer means in at least one of said loading members for cooperating with said rotating disk.

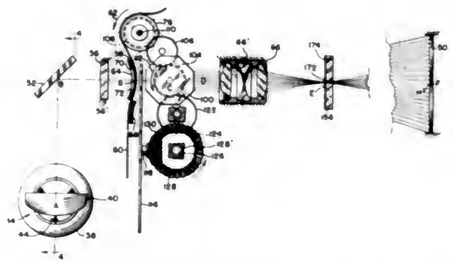
3,155,978
METHOD OF MAKING MOTION PICTURES
John F. Seitz, 367 Dal Keith Ave., Los Angeles, Calif.
Filed Aug. 8, 1960, Ser. No. 48,196
1 Claim. (Cl. 352—47)





The method of making motion pictures which includes the step of consecutively projecting the frames of a motion picture film strip and the frames of a matte strip onto one side of a light-transmitting reflector, simultaneously and in synchronism therewith projecting consecutively the frames of another motion picture film strip and the frames of a matte strip which matte strip is the reciprocal of the first-mentioned matte strip onto the other side of the reflector with the images of the frames of all strips in registration with each other, and photographically recording on the consecutive frames of a film strip the composite image resulting from having simultaneously projected consecutively the successive frames of both film strips and of the two matte strips one of which is the reciprocal of the other.

3,155,979
ROTATING PRISM OPTICAL SYSTEM
Gifford M. Mast and Wright K. Gannett, Davenport, Iowa, assignors to Mast Development Co., Davenport, Iowa, a corporation of Iowa
Filed Mar. 25, 1963, Ser. No. 267,582
9 Claims. (Cl. 352—119)



1. In motion-picture apparatus of the type in which film travels continuously and at a uniform rate through a film plane and past a film aperture centered on an optical axis and disposed between a light source and a regular prism rotating continuously at a rate of one prism facet per frame of film, the improvement residing in mechanism for regulating light intensity at the aperture as consecutive frames enter, are exposed at and depart from the aperture comprising: first light-diffusing means movable in progressively increasing covering relation to that portion of the aperture between its frame-entry edge and substanially its center and said means being movable thence clear of the aperture, second light-diffusing means movable in progressively decreasing covering relation to that portion of the aperture between substantially its center and its frame-departure edge and movable thence clear of the aperture, and means carrying said first and second means for sequential movement and in synchronism with film travel to follow respectively entering and departing frames, said first and second means being so spatially related that both are clear of the aperture and thus uncover the aperture for the transmission of light at higher intensity than the diffused light under conditions where a frame is centered in the aperture and where any two consecutive frames are half-centered in the aperture respectively at opposite sides of the optical axis.

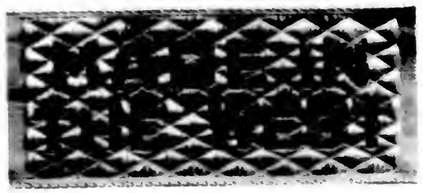
DESIGNS

NOVEMBER 3, 1964

199,483
CARBONATED BEVERAGE CONTAINER
John J. Heydon, 611 W. Hill St., Fullerton, Calif., and Dean W. Myers, 2815 Lafayette Ave., Newport Beach, Calif.
Filed Sept. 30, 1963, Ser. No. 76,789
Term of patent 14 years
(Cl. D2—3)



199,484
TEXTURED FABRIC CLOTHES LABEL
Milton A. Engle, 4907 Alcove Ave., North Hollywood, Calif.
Filed Nov. 8, 1960, Ser. No. 62,781
Term of patent 14 years
(Cl. D3—9)



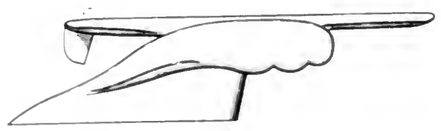
199,485
CASE FOR EMERGENCY EXIT LOCKS
Joseph M. Parriott, Westport, Conn., assignor to Emhart Corporation
Filed July 5, 1962, Ser. No. 70,798
Term of patent 14 years
(Cl. D10—8)



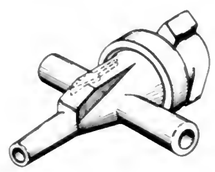
199,486
BUILDING
William L. De Witt, Box 518, Roscommon, Mich.
Filed Feb. 12, 1964, Ser. No. 78,605
Term of patent 14 years
(Cl. D13—1)



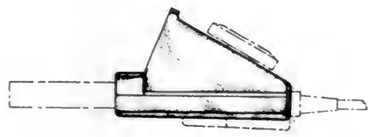
199,487
AUTOMOBILE HOOD ORNAMENT
Stephen C. Lentini, 1935 Pomona St., Costa Mesa, Calif., and James D. Knox, 2218 Halifax St., Huntington Beach, Calif.
Filed Jan. 21, 1964, Ser. No. 78,296
Term of patent 14 years
(Cl. D14—18)



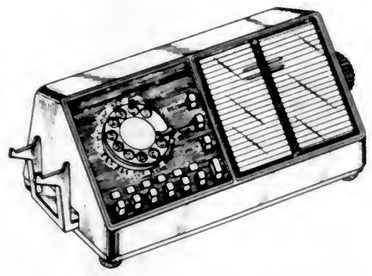
199,488
VALVE FOR MEDICAL APPARATUS AND THE LIKE
Glenn L. Beall, Wildwood, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Dec. 24, 1962, Ser. No. 72,939
Term of patent 14 years
(Cl. D16—2)



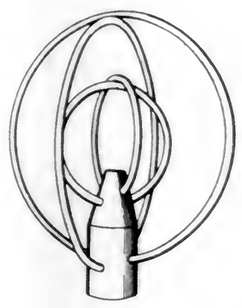
199,489
PROBE-TYPE CONTROL
Frederick W. Becker, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Jan. 21, 1963, Ser. No. 73,241
Term of patent 14 years
(Cl. D26—13)



199,490
REPERTORY DIALER TELEPHONE HOUSING
James N. Burlin, New York, N.Y., and Stanley E. Seretny, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 77,297
Term of patent 14 years
(Cl. D26—14)



199,491
FM RADIO AND TELEVISION ANTENNA
George V. Korkala, 1 Mercer Hill Road, Ambler, Pa.
Filed Nov. 6, 1963, Ser. No. 77,307
Term of patent 14 years
(Cl. D26—14)



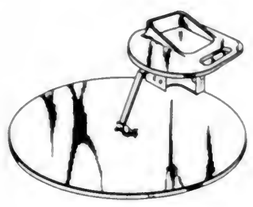
199,492
COMBINED BIRTH RECORD AND PICTURE FRAME
Victor M. Kindlund and Cleatus S. Kindlund, both of 296 Oaklawn Ave., Cranston, R.I.
Filed Nov. 26, 1963, Ser. No. 77,568
Term of patent 14 years
(Cl. D29—20)



199,493
CABINET
Bobby Lee Inman, Pittsylvania County, Va. (R.F.D. 2, Axton, Va.)
Filed May 7, 1962, Ser. No. 70,007
Term of patent 14 years
(Cl. D33—19)



199,494
ROCKING AND SWIVEL TOY
Carl L. Doerr, Long Beach, Calif., assignor to Doerr Enterprises, Inc., Long Beach, Calif.
Filed Apr. 17, 1962, Ser. No. 69,742
Term of patent 14 years
(Cl. D34—5)



199,495
VELOCIPEDE
John A. Conti, Dothan, Ala., assignor to Hedstrom Union Company, Fitchburg, Mass.
Filed Apr. 8, 1963, Ser. No. 74,341
Term of patent 7 years
(Cl. D34—15)



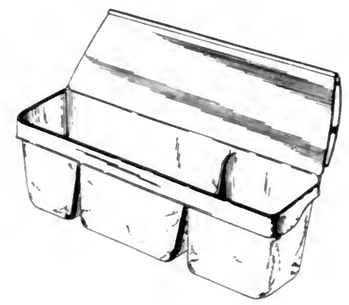
199,496
TRICYCLE
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., a corporation of California
Filed Apr. 8, 1964, Ser. No. 79,415
Term of patent 14 years
(Cl. D34—15)



199,497
PLANTER
David Marcan, Burrough's Grove, Pump Lane, Little Marlow, England
Filed Oct. 23, 1963, Ser. No. 77,110
Claims priority, application Great Britain Sept. 30, 1963
Term of patent 14 years
(Cl. D35—3)



199,498
FOOD AND DRINK SERVICE RECEPTACLE FOR AUTOMOBILES
Kenneth H. MacKay, P.O. Box 1149, Ocala, Fla.; George L. MacKay, Kenneth H. MacKay, Jr., and Julia F. MacKay, coexecutors for Kenneth H. MacKay, deceased
Filed Feb. 4, 1963, Ser. No. 73,414
Term of patent 14 years
(Cl. D44—29)



199,499
FINGER RING
John L. Hazelquist, Garden City, Mich., assignor to Traub Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 29, 1964, Ser. No. 78,408
Term of patent 14 years
(Cl. D45—10)



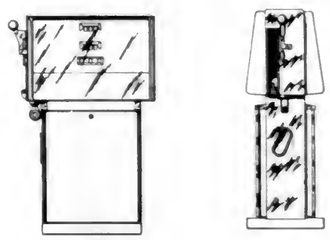
199,500
FINGER RING
John L. Hazelquist, Garden City, Mich., assignor to Traub Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 30, 1964, Ser. No. 78,435
Term of patent 14 years
(Cl. D45—10)



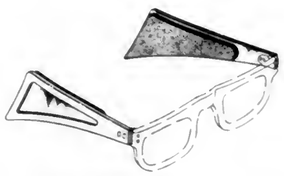
199,501
JEWELRY CHARM OR SIMILAR ARTICLE
Frank Kominik, 80—09 35th Ave., Jackson Heights, Long Island, N.Y.
Filed Feb. 23, 1962, Ser. No. 68,950
Term of patent 14 years
(Cl. D45—17)



199,502
GASOLINE DISPENSING PUMP
Irving C. Jacobs, James Alan MacDonnell, and Lawrence Marchese, Longmeadow, Mass., and John Cuccio, Westport, and Laird F. Covey, West Redding, Conn., assignors to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts
Filed Jan. 3, 1963, Ser. No. 73,044
Term of patent 14 years
(Cl. D52—2)



199,503
PAIR OF EYEGLASSES
Jeannette Davis, 1211 Selby Ave., Los Angeles, Calif.
Filed Sept. 18, 1963, Ser. No. 76,631
Term of patent 14 years
(Cl. D57—1)



199,504
MICROSCOPE SLIDE HOLDER
Elmo Maiolatesi, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 21, 1963, Ser. No. 77,082
Term of patent 14 years
(Cl. D57—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



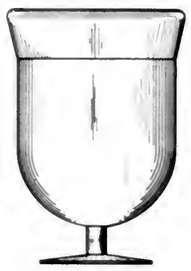
199,505
STORAGE CONTAINER FOR LIQUIDS
James B. Swett, 8 Devonshire Drive, Barrington, R.I., and Henry J. Marien, 46 N. Country Club Drive, Warwick, R.I.
Filed Apr. 25, 1963, Ser. No. 74,615
Term of patent 14 years
(Cl. D58—17)



199,506
COLLAPSIBLE TUBE
Claude Livingston Alexander, New Hope, Pa., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 13, 1964, Ser. No. 79,960
Term of patent 14 years
(Cl. D58—17)



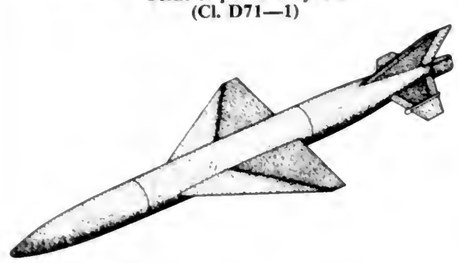
199,507
DUAL COMPARTMENT CONTAINER FOR HAIR CURLERS AND CLIPS OR THE LIKE
John S. Linko, 407 Chestnut St., Edgeworth, Pa.
Filed Nov. 12, 1963, Ser. No. 77,350
Term of patent 14 years
(Cl. D58—25)



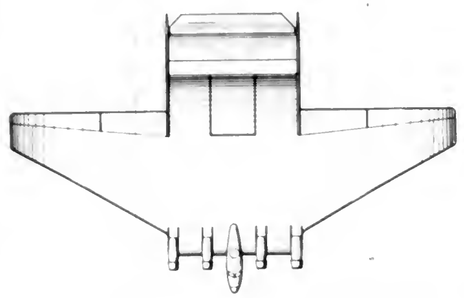
199,508
MOTION PICTURE CAMERA
Norman R. Kubnick, Wheeling, Allen R. Obergfell, Niles, and Grant D. Ross, Jr., Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 21, 1964, Ser. No. 80,099
Term of patent 14 years
(Cl. D61—1)



199,509
DRONE AIRCRAFT
Wayne R. Wadington, Woodland Hills, and John R. Clark, Rolling Hills, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Dec. 3, 1962, Ser. No. 72,693
Term of patent 14 years
(Cl. D71—1)



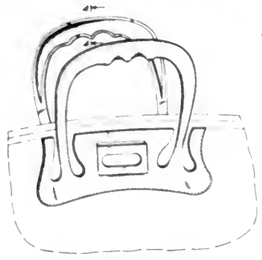
199,510
HEAVY FREIGHT PLANE
Vincent J. Burnelli, 9250 Piney Branch Road, Silver Spring, Md.
Filed Dec. 16, 1963, Ser. No. 77,820
Term of patent 14 years
(Cl. D71—1)



199,511
UNIT FOR DISPENSING LIQUID THERMOPLASTIC MATERIAL AND FOR CHILLING MOLDS CONTAINING SAME
James B. McCormick, 521 S. Madison, La Grange, Ill.
Filed July 2, 1963, Ser. No. 75,620
Term of patent 14 years
(Cl. D83—12)



199,512
LUGGAGE HANDLE OR THE LIKE
Simon Javkin, Brooklyn, N.Y., assignor to The Rotuba Extruders, Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 2, 1964, Ser. No. 79,306
Term of patent 14 years
(Cl. D87—2)



199,513
SINGLE STATION SHOWER
Harper Landell, Whitemarsh, and Charles F. Molzen, Philadelphia, Pa., assignors to Speakman Company, Wilmington, Del.
Continuation of design application Ser. No. 70,782, July 3, 1962. This application July 26, 1963, Ser. No. 76,216
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

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PATENTS WERE ISSUED ON THE 3RD DAY OF NOVEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bourns, Inc.: *See*—
Hardison, Wilbur T., Mathison, Caddock, and Bourns. Re. 25,674.

Bourns, Marlan E.: *See*—
Hardison, Wilbur T., Mathison, Caddock, and Bourns. Re. 25,674.

Burt, Robert V., to The Procter & Gamble Co. Container sorting apparatus. Re. 25,673, 11–3–64, Cl. 198—38.

Caddock, Richard E.: *See*—
Hardison, Wilbur T., Mathison, Caddock, and Bourns. Re. 25,674.

Du Bonnet, Renee (previously known as R. B. Neal). Lint removing device. Re. 25,675, 11–3–64, Cl. 15—104.

Hardison, Wilbur T., V. G. Mathison, R. E. Caddock, and M. E. Bourns, to Bourns, Inc. Variable resistor device. Re. 25,674, 11–3–64, Cl. 338—143.

Mathison, Victor G.: *See*—
Hardison, Wilbur T., Mathison, Caddock, and Bourns. Re. 25,674.

Neal, Renee B.: *See*—
Du Bonnet, Renee. Re. 25,675.

Procter & Gamble Co., The: *See*—
Burt, Robert V. Re. 25,673.

LIST OF DESIGN PATENTEES

Abbott Laboratories: *See*—
Beall, Glenn L. 199,488.

Alexander, Claude L., to American Can Co. Collapsible tube. 199,506, 11–3–64, Cl. D58—17.

American Can Co.: *See*—
Alexander, Claude L. 199,506.

Beall, Glenn L., to Abbott Laboratories. Valve for medical apparatus and the like. 199,488, 11–3–64, Cl. D16—2.

Becker, Frederick W., to Westinghouse Electric Corp. Probe-type control. 199,489, 11–3–64, Cl. D26—13.

Bell & Howell Co.: *See*—
Kubnick, Norman R., Obergfell, and Ross. 199,508.

Bell Telephone Laboratories, Inc.: *See*—
Burlin, James N., and Seretny. 199,490.

Burlin, James N., and S. E. Seretny, to Bell Telephone Laboratories, Inc. Repertory dialer telephone housing. 199,490, 11–3–64, Cl. D26—14.

Burnelli, Vincent J. Heavy freight plane. 199,510, 11–3–64, Cl. D71—1.

Clark, John R.: *See*—
Wadington, Wayne R., and Clark. 199,509.

Conti, John A., to Hedstrom Union Co. Velocipede. 199,495, 11–3–64, Cl. D34—15.

Covey, Laird F.: *See*—
Jacobs, Irving C., MacDonell, Marchese, Cuccio, and Covey. 199,502.

Cuccio, John: *See*—
Jacobs, Irving C., MacDonell, Marchese, Cuccio, and Covey. 199,502.

Davis, Jeannette. Pair of eyeglasses. 199,503, 11–3–64, Cl. D57—1.

De Witt, William L. Building. 199,486, 11–3–64, Cl. D13—1.

Doerr, Carl L., to Doerr Enterprises, Inc. Rocking and swivel toy. 199,494, 11–3–64, Cl. D34—5.

Doerr Enterprises, Inc.: *See*—
Doerr, Carl L. 199,494.

Embart Corp.: *See*—
Parriott, Joseph M. 199,485.

Engle, Milton A. Textured fabric clothes label. 199,484, 11–3–64, Cl. D3—9.

Gilbert & Barker Mfg. Co.: *See*—
Jacobs, Irving C., MacDonell, Marchese, Cuccio, and Covey. 199,502.

Hazelquist, John L., to Traub Mfg. Co. Finger ring. 199,499, 11–3–64, Cl. D45—10.

Hazelquist, John L., to Traub Mfg. Co. Finger ring. 199,500, 11–3–64, Cl. D45—10.

Hedstrom Union Co.: *See*—
Conti, John A. 199,495.

Heydon, John J., and D. W. Myers. Carbonated beverage container. 199,483, 11–3–64, Cl. D2—3.

Inman, Bobby L. Cabinet. 199,493, 11–3–64, Cl. D33—19.

Jacobs, Irving C., J. A. MacDonell, L. Marchese, J. Cuccio, and L. F. Covey, to Gilbert & Barker Mfg. Co. Gasoline dispensing pump. 199,502, 11–3–64, Cl. D52—2.

Javkin, Simon, to The Rotuba Extruders, Inc. Luggage handle or the like. 199,512, 11–3–64, Cl. D87—2.

Kindlund, Victor M. and C. S. Combined birth record and picture frame. 199,492, 11–3–64, Cl. D29—20.

Kindlund Cleatus S.: *See*—
Kindlund, Victor M. and C. S. 199,492.

Knox, James D.: *See*—
Lentini, Stephen C., and Knox. 199,487.

Kominik, Frank. Jewelry charm or similar article. 199,501, 11–3–64, Cl. D45—17.

Korkala, George V. FM radio and television antenna. 199,491, 11–3–64, Cl. D26—14.

Kubnick, Norman R., A. R. Obergfell, and G. D. Ross, Jr., to Bell & Howell Co. Motion picture camera. 199,508, 11–3–64, Cl. D61—1.

Landell, Harper, and C. F. Molzen, to Speakman Co. Single station shower. 199,513, 11–3–64, Cl. D91—3.

Lentini, Stephen C., and J. D. Knox. Automobile hood ornament. 199,487, 11–3–64, Cl. D14—18.

Linko, John S. Dual compartment container for hair curlers and clips or the like. 199,507, 11–3–64, Cl. D58—25.

MacDonell, James A.: *See*—
Jacobs, Irving C., MacDonell, Marchese, Cuccio, and Covey. 199,502.

MacKay, George L.: *See*—
MacKay, Kenneth H. 199,498.

MacKay, Julia: *See*—
MacKay, Kenneth H. 199,498.

MacKay, Kenneth H., deceased (by G. L. MacKay, K. H. MacKay, Jr., and J. MacKay, coexecutors). Food and drink service receptacle for automobiles. 199,498, 11–3–64, Cl. D44—29.

MacKay, Kenneth H., Jr.: *See*—
MacKay, Kenneth H. 199,498.

Maiolatesi, Elmo, to United States of America, Army. Microscope slide holder. 199,504, 11–3–64, Cl. D57—1.

Marcan, David. Planter. 199,497, 11–3–64, Cl. D35—3.

Marchese, Lawrence: *See*—
Jacobs, Irving C., MacDonell, Marchese, Cuccio, and Covey. 199,502.

Marlen, Henry J.: *See*—
Swett, James B., and Marlen. 199,505.

Mattel, Inc.: *See*—
Ryan, John W. 199,496.

McCormick, James B. Unit for dispensing liquid thermoplastic material and for chilling molds containing same. 199,511, 11–3–64, Cl. D83—12.

Molzen, Charles F.: *See*—
Landell, Harper, and Molzen. 199,513.

Myers, Dean W.: *See*—
Heydon, John J., and Myers. 199,483.

Northrop Corp.: *See*—
Wadington, Wayne R., and Clark. 199,509.

Obergfell, Allen R.: *See*—
Kubnick, Norman R., Obergfell, and Ross. 199,508.

Parriott, Joseph M., to Embart Corp. Case for emergency exit locks. 199,485, 11–3–64, Cl. D10—8.

Ross, Grant D., Jr.: *See*—
Kubnick, Norman R., Obergfell, and Ross. 199,508.

Rotuba Extruders, Inc., The: *See*—
Javkin, Simon. 199,512.

Ryan, John W., to Mattel, Inc. Tricycle. 199,496, 11–3–64, Cl. D34—15.

Seretny, Stanley E.: *See*—
Burlin, James N., and Seretny. 199,490.

Speakman Co.: *See*—
Landell, Harper, and Molzen. 199,513.

Swett, James B., and H. J. Marlen. Storage container for liquids. 199,505, 11–3–64, Cl. D58—17.

Traub Mfg. Co.: *See*—
Hazelquist, John L. 199,499.
Hazelquist, John L. 199,500.

United States of America, Army: *See*—
Maiolatesi, Elmo. 199,504.

Wadington, Wayne R., and J. R. Clark, to Northrop Corp. Drone aircraft. 199,509, 11–3–64, Cl. D71—1.

Westinghouse Electric Corp.: *See*—
Becker, Frederick W. 199,489.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF NOVEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Carney, John L., Jr. 3,155,052.
AMP Inc.: *See*—
Broske, William F. 3,155,039.
Henschen, Homer E. 3,155,449.
Kulicke, Frederick W., Jr., Schwalm, and Ullman. 3,155,138.
Stoltz, Herbert C. 3,155,137.
A.P.V. Co. Ltd.: *See*—
Goodman, Hugh F. 3,155,565.
Aalpoel, Marten G.: *See*—
Maas, Henricus J., and Aalpoel. 3,155,098.
Abbott, James H., Jr.: *See*—
Palma, Oscar J., and Abbott. 3,154,835.
Abbott Laboratories: *See*—
Cole, John W. 3,155,690.
Martin, William B. 3,155,584.
Oliver, Thomas J., and Sinclair. 3,155,582.
Accurate Wire Forming Inc.: *See*—
Bonde, James R. 3,154,828.
Acton, Daniel D., and A. W. Hart, to Anchor Hocking Glass Corp. Closure cap and method of making same. 3,155,-261, 11–3–64, Cl. 215—38.
Adams, Dustin S., to E. I. du Pont de Nemours and Co. Process for producing oriented synthetic linear polyester fibers and films having a sheath-core structure. 3,155,754, 11–3–64, Cl. 264—78.
Adams Electronics Inc.: *See*—
Adams, Stanley A., and Hubert. 3,155,895.
Adams, Rudolph E.: *See*—
Pahel, William M., and Adams. 3,154,829.
Adams, Stanley A., and D. Hubert, to Adams Electronics Inc. Coil assembly with threaded stem core. 3,155,895, 11–3–64, Cl. 323—76.
Adamson, Floyd E., and E. C. Denneny, to Westinghouse Electric Corp. Arc welding torch. 3,155,811, 11–3–64, Cl. 219—130.
Ager, Douglas C.: *See*—
French, John L., Van Auwelaer, and Ager. 3,155,250.
Agfa Aktiengesellschaft: *See*—
Damm, Klaus, Gesierich, and Heyl. 3,155,504.
Maas, Dieter, and Engelsmann. 3,155,023.
Nogradi, Josef, Ulrich, Pelz, Puschel, and Schellenberger. 3,155,510.
Ahlefeld, Edwin H., Jr., A. J. Baldwin, P. Hold, W. A. Rapetski, and H. R. Scharer, to Farrel Corp. Continuous internal stiff-gel mixer. 3,154,808, 11–3–64, Cl. 18—2.
Aichenegg, Paul C., and C. D. Emerson, to Chemagro Corp. Dichlorovinyl sulfenyl chloride. 3,155,720, 11–3–64, Cl. 260—543.
Aikawa, Chûta, and H. Watanabe, to Kabushiki Kaisha Tamura Denki Seisakusho. Electromagnetic relay for telephone pay station. 3,155,793, 11–3–64, Cl. 200—104.
Airheart Products, Inc.: *See*—
Brawerman, Marvin. 3,155,195.
Airmold Plastics, Inc.: *See*—
Schurman, Peter T., and Confer. 3,155,269.
Air Reduction Co., Inc.: *See*—
Matsubayashi, Kanji, and Fukushima. 3,155,632.
Airtron, Inc.: *See*—
Wantuch, Ernest. 3,155,925.
Akita, Tadayoshi, T. Ohta, and Y. Ito. Bank light assembly. 3,155,322, 11–3–64. Cl. 240—3.
Albertson, Noel F., to Sterling Drug Inc. 1-[(3-, 2-, and 1-indolyl)-lower-alkyl]-tertiary amines and intermediates therefor. 3,155,668, 11–3–64, Cl. 260—293.
Aldrich, Thomas B., to F. W. Earnest, Jr. Vibratory striking tool. 3,155,329, 11–3–64, Cl. 241—168.
Alexander, Robert W., to Simplex Wire and Cable Co. Method of forming a composite conductor. 3,154,846, 11–3–64, Cl. 29—470.3.
Allen, Alaric, to A. C. Cossor Ltd. Secondary radar systems. 3,155,966, 11–3–64, Cl. 343—6.8.
Allen, Joseph M., and E. L. Miner. Two-wheeled utility vehicle having a driven steering wheel. 3,155,185, 11–3–64, Cl. 180—31.
Allen-Bradley Co.: *See*—
Pfister, Anthony C. 3,155,935.
Allied Chemical Corp.: *See*—
Deanin, Rudolph D., and Pinter. 3,155,635.
Mueller, Max B., Iacoviello, and Rosenthal. 3,155,638.
American Air Filter Co., Inc.: *See*—
Sexton, Robert W. 3,155,474.
American Aniline Products, Inc.: *See*—
Taber, David, Renfrew, and Pons. 3,155,645.
American Chain & Cable Co., Inc.: *See*—
Bratz, Otto J. 3,154,966.
American Cyanamid Co.: *See*—
De Lapp, Darwin F. 3,155,490.
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Hauser, Martin, and Bikales. 3,155,701.
Klingsberg, Erwin. 3,155,682.
Lutz, Albert W., Child, and Walworth. 3,155,488.
Paul, Albert P., and Beidler. 3,155,716.
Reed, Charles C., and Fortenbaugh. 3,155,587.
Reed, Charles C., Fortenbaugh, and Leeson. 3,155,586.
Tobin, Marvin C., and Delchert. 3,155,629.
Wallstrom, Eskel, and Gilbert. 3,155,155.

American Flange & Mfg. Co., Inc.: *See*—
Dearing, Clarence W. 3,155,295.
American Machine & Foundry Co.: *See*—
Clauson, Sigurd. 3,154,987.
Smith, Richard N., and Zang. 3,155,056.
Williamson, William R 3,155,600.
American Optical Co.: *See*—
Courl, Richard A. 3,155,748.
American Plasticraft Co.: *See*—
Steger, Joseph F., and Manetti. 3,155,771.
American Radiator & Standard Sanitary Corp.: *See*—
Knight, Sheldon A. 3,155,830.
Zeigler, John M. 3,155,115.
Ametek, Inc.: *See*—
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Markowitz, Seymour. 3,155,943.
Amsted Industries Inc.: *See*—
Sudeck, Norman H. 3,155,239.
Anaconda Wire and Cable Co.: *See*—
Lansch, John L. 3,155,765.
Anchor Hocking Glass Corp.: *See*—
Acton, Daniel D., and Hart. 3,155,261.
Andersen, Clifford, to The Wurlitzer Co. Bridle wire. 3,154,-993, 11–3–64, Cl. 84—240.
Anderson, Albert E., and W. B. Stubstad, to Collins Radio Co. Temperature stabilized chamber utilizing thermoelectric cooling. 3,155,157, 11–3–64, Cl. 165—30.
Anderson, Carl A. Life saving wadders. 3,154,800, 11–3–64, Cl. 9—343.
Anderson Electric Corp.: *See*—
McDurmont, Walter R. 3,154,981.
Anderson, Jerrold L.: *See*—
Miller, Robert E., and Anderson. 3,155,590.
Anderson, Leonard R., to Kennecott Copper Corp. Braking system for railroad cars. 3,155,201, 11–3–64, Cl. 188—265.
Andersson, Sven E. Formwork lock having two parallel locking slots. 3,154,998, 11–3–64, Cl. 85—36.
Andresen, John H., Jr., to Astek Instrument Corp. Altimeter. 3,154,948, 11–3–64, Cl. 73—386.
Andress, Harry J., Jr., and P. Y. C. Gee, to Socony Mobil Oil Co., Inc. Stabilized jet combustion fuels. 3,155,463, 11–3–64, Cl. 44—62.
Andrews Paper & Chemical Co., Inc.: *See*—
Jahoda, Edward, and Muller. 3,155,511.
Anglo Paper Products, Ltd.: *See*—
Logan, Kenneth C., and Sepall. 3,155,130.
Anthon, Erik W., to Research Specialties Co. Liquid supply apparatus. 3,155,109, 11–3–64, Cl. 137—408.
Antonov, Boris S.: *See*—
Kazmin, Vadim S., Komarov, Kudryashov, and Antonov. 3,155,172.
Anthony, Harry L., and G. K. Bhat, to Wilson Bros. Alloy steels. 3,155,500, 11–3–64, Cl. 75—126.
Antonucci, Carmine J., to Potter Instrument Co., Inc. Paper gap control in high speed bed and platen presses. 3,155,-032, 11–3–64, Cl. 101—45.
Antunez, Armand E., Jr. Flush valve. 3,154,794, 11–3–64, Cl. 4—57.
Applebaum, Sidney, P. W. Howells, and Z. Zenon, to General Electric Co. Automatic gating circuit. 3,155,912, 11–3–64, Cl. 328—108.
Appleman, Leon, and R. H. Eck, to Radiant Electronics Products Corp. Infrared radiant heating oven. 3,155,814, 11–3–64, Cl. 219—407.
Arbee Corp., The: *See*—
Creswell, Clifford A. 3,154,960.
Creswell, Clifford A. 3,154,961.
Ardis, Alan E., and A. A. Valtekunas, to Socony Mobil Oil Co., Inc. Preparation of dialkyl esters of terephthalic acid. 3,155,715, 11–3–64, Cl. 260—475.
Armco Steel Corp.: *See*—
Schnedler, Paul E. 3,155,530.
Aronson, David, to Worthington Corp. Refrigeration apparatus. 3,154,930, 11–3–64, Cl. 62—148.
Artrite Resins Ltd.: *See*—
Bloomfield, Peter R. 3,155,628.
Arthur, Wilfred J., to E. I. du Pont de Nemours and Co. Process for bringing stereoisomeric mixture of bis-(4-aminocyclohexane)methane close to the equilibrium concentration. 3,155,724, 11–3–64, Cl. 260—563.
Aseco, Inc.: *See*—
Volgt, Robert H. 3,155,958.
Ashikari, Katsuyo, and K. Tanabe. Penetration hardening treatment for iron and steels. 3,155,548, 11–3–64, Cl. 148—13.1.
Ashman, Leland E., to Arthur D. Little, Inc. Process for drawing fiber through a supernatant liquid. 3,155,475, 11–3–64, Cl. 65—2.
Associated Electrical Industries Ltd.: *See*—
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Enström, Hans G., Barnieske, and Barkman. 3,155,093.

Ateliers d'Aviation Louis Brequet, Societe Anonyme des: *See*—
Ricard, Armand G. 3,155,348.
Atlantic Refining Co., The: *See*—
McGuire, William J. Jr., Kern, and Kieschnich. 3,155,-159.
Atlantic Research Corp.: *See*—
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Attridge, James F.: *See*—
Kliner, George J., and Attridge. 3,155,745.
Auld, Samuel H., Jr., to Lear Siegler, Inc. Magnetic integrator including hall effect device and unijunction transistor switches for providing step-like flux density. 3,155,-844, 11–3–64, Cl. 307—88.5.
Austin, Oliver K., to Phillips Petroleum Co. Process and apparatus for treating carbon black effluent. 3,155,325, 11–3–64, Cl. 241—18.
Auto-Flo Corp.: *See*—
Perlman, Joseph. 3,155,747.
Avco Corp.: *See*—
Freeman, William R., Jr., and Lucas. 3,155,536.
Janes, George S. 3,155,797.
Moellmann, Heinz F. 3,155,103.
Avery Products Corp.: *See*—
Avery, Ray S. 3,155,215.
Avery, Ray S., to Avery Products Corp. Embossing tool with radial tape feed path. 3,155,215, 11–3–64, Cl. 197—6.7.
Avesta Jernverks Aktiebolag: *See*—
Lackinger, Rudolf B. J. 3,155,229.
Axelsson, Axel B., to Lizenzia A.G. Rotatable body for transfer of moisture or/and heat. 3,155,153, 11–3–64, Cl. 165—8.
Ayers, David T., Jr., to Kelsey-Hayes Co. Fluid pressure motor mechanism. 3,155,012, 11–3–64, Cl. 91—391.
Ayres, John E. Disposable gas operated cigarette lighter. 3,154,935, 11–3–64, Cl. 67—7.1.
Ayres, Richard D., to Raymar Construction Co., Inc. Secondary escape hatch attachment for underground fallout or blast shelters. 3,155,057, 11–3–64, Cl. 109—1.
B. P. Tanker Co., Ltd.: *See*—
Ross, John W., and Hopkins. 3,155,069.
Babco Products, Inc.: *See*—
Ingves, Wallace W., and Manuel. 3,155,031.
Babcock & Wilcox Co., The: *See*—
Rossser, Ralph M. 3,155,112.
Babcock & Wilcox Co., The: *See*—
Schluderberg, Donald C. 3,155,595.
Backus, Harold A., and F. A. Ruhmann, to Burroughs Corp. Photographic apparatus. 3,155,026, 11–3–64, Cl. 95—73.
Baker, Ellery L., to United Wire & Supply Corp. Tube pointer. 3,154,978, 11–3–64, Cl. 78—15.
Balan, Samuel, to Grumman Aircraft Engineering Corp. Vibration isolation mount. 3,155,361, 11–3–64, Cl. 248—358.
Baldwin, Arnold J.: *See*—
Ahlefeld, Edwin H., Jr., Baldwin, Hold, Rapetski, and Scharer. 3,154,808.
Baldwin, Charles A. Portable pneumatic conveyor. 3,155,-431, 11–3–64, Cl. 302—23.
Baldwin-Lima-Hamilton Corp.: *See*—
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Bales, Royal A. Handle. 3,155,414, 11–3–64, Cl. 294—58.
Bankowski, Raymond A., to The Regents of the University of California. Avian pneumoencephalitis virus vaccine and method of making. 3,155,588, 11–3–64, Cl. 167—78.
Banks, Raymond, to Walton Laboratories Inc. Humidifier. 3,155,746, 11–3–64, Cl. 261—29.
Barber, Roy H., to Hardwick Stove Co. Removable oven door and hinge assembly. 3,155,088, 11–3–64, Cl. 126—191.
Barber-Colman Co.: *See*—
Townsend, Franklin L. 3,155,332.
Barber-Greene Co.: *See*—
Sauer, James F., Gebhardt, and Martenson. 3,155,021.
Barbero, Fermo. Scraper segments. 3,155,394, 11–3–64, Cl. 277—141.
Barényi, Béla, to Daimler-Benz Aktiengesellschaft. Motor vehicle door construction. 3,155,421, 11–3–64, Cl. 296—47.
Barkman, Rolf K. E.: *See*—
Enstrom, Hans G., Barnieske, and Barkman. 3,155,093.
Barnes, Charles: *See*—
Barnes, Llewellyn T. 3,155,887.
Barnes Drill Co.: *See*—
Greenberg, Donald K., and Casson. 3,154,893.
Barnes, Llewellyn T., ⅛ to C Barnes, and ¼ to J. F. Woog. Gas filled trimmer capacitor. 3,155,887, 11–3–64, Cl. 317—245.
Barnieske, Hans-Wolfgang: *See*—
Enström, Hans G., Barnieske, and Barkman. 3,155,093.
Baron, Alfred M., to Texas Research and Electronics Corp. Dishwasher drain airgap. 3,155,106, 11–3–64, Cl. 137—216.
Barozzi, Alberto, to Fabbrica Italiana Magneti Marelli S.p.A. Contact breaker for ignition distributors. 3,155,784, 11–3–64, Cl. 200—30.
Barozzi, Glam P., and G. C. Horeschi, to Sperry Rand Corp. Mechanism to selectively insert single digits or a plurality of the same digits into a calculator register. 3,155,315, 11–3–64, Cl. 235—60.
Barr, John T., to Pennsalt Chemicals Corp. Chlorine and bromine substituted fluorobutanes and fluorobutenes. 3,155,735, 11–3–64, Cl. 260—653.
Barron, James. Feeding and suction tubes. 3,155,097, 11–3–64, Cl. 128—350.
Basic Food Materials, Inc.: *See*—
Beerend, Ray F. 3,155,304.
Basile, John M., to Union Carbide Corp. Metal plating process. 3,155,532, 11–3–64, Cl. 117—47.
Batt, Richard W., to United Aircraft Corp. Mounting system for accessory case. 3,155,352, 11–3–64, Cl. 248—17.
Battelle Memorial Institute: *See*—
Simon, Ralph. 3,154,927
Bauer, Theodor F., to Stuttgarter Karosseriewerk Reutter & Co. G.m.b.H. Convertible top for cabriolet. 3,155,424, 11–3–64, Cl. 296—107.
Baume, Frank J. Parking equipment. 3,155,246, 11–3–64, Cl. 214—16.4.
Bawn, Cecil E. H., and M. R. Clarke, to Monsanto Chemicals Ltd. Polymerization process. 3,155,643, 11–3–64, Cl. 260—94.9.
Baxter, Clyde W., and D. W. Weber, to Collins Radio Co. A.F.C. spectrum lock-in circuit. 3,155,919, 11–3–64, Cl. 331—19.
Bayliss, Ernest G., to Forgings and Presswork Ltd. Method for parting-off a length from metal bar stock. 3,155,300, 11–3–64, Cl. 225—2.
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Beard, Ray D.: *See*—
Roorda, Harry W., Gresch, and Beard. 3,155,082.
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Taylor, Daniel D., and Brawner. 3,155,553.
Becton, Dickinson and Co.: *See*—
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Bedolt, William C., Jr., to Jefferson Chemical Co., Inc. Process for the production of polyglycolamine and morpholine. 3,155,657, 11–3–64, Cl. 260—247.
Beerend, Ray F., to Basic Food Materials, Inc. Baking pan with replaceable liner. 3,155,304, 11–3–64, Cl. 229—3.1.
Beidler, Richard F.: *See*—
Paul, Albert P., and Beidler. 3,155,716.
Beller, Aaron P., to Sperry Rand Corp. Bale conveyor. 3,155,226, 11–3–64, Cl. 198—182.
Belk, Wilber C., to FMC Corp. Method of and apparatus for sectionizing citrus fruit. 3,155,132, 11–3–64, Cl. 146—236.
Bell, Gordon M., to General Electric Co. Voltage stabilizing system. 3 155 894, 11–3–64, Cl. 323—66.
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Uterhart, Philip E. 3,155,336.
Uterhart, Philip E. 3,155,337.
Uterhart, Philip E. 3,155,338.
Bell Telephone Laboratories, Inc.: *See*—
Gibby, Richard A., Kahl, and Mahoney. 3,155,772.
Goetz, Frank M. 3,155,818.
Goetz, Frank M. 3,155,819.
Hackett, John A. 3,155,922.
Klingenberg, Alfred S. 3,155,806.
Kowaleski, Clarence, and Pferd. 3,155,446.
Meitzler, Allen H. 3,155,926.
Mims, William B. 3,155,941.
O'Brien, William D. 3,155,478.
Poole, Kenneth M. 3,155,866.
Ulmer, Robert W. 3,155,781.
Wells, George W. 3,155,920.
Zarount, Alfred. 3,155,775.
Beloit Corp.: *See*—
Hornbostel, Lloyd, Jr., and Ward. 3,155,956.
Beloit Iron Works: *See*—
Westbrook, Carl M. 3,154,941.
Belsky, Charles, to Ford Motor Co. Vehicle body corner pillar construction. 3,155,420, 11–3–64, Cl. 296—44.
Belt-Scales Corp.: *See*—
Chambers, Robert B. 3,155,181.
Bemmann, Richard W., to General Motors Corp. Method of making a Teflon bearing. 3,155,441, 11–3–64, Cl. 308—241.
Bendix Corp., The: *See*—
Johanson, Carl E. 3,154,944.
Karlson, John C. 3,155,892.
Benger Laboratories Ltd.: *See*—
Fowler, Frank. 3,155,573.
Bennett, John D., to Sun Oil Co. Bore hole apparatus for marking drilling mud. 3,155,176, 11–3–64, Cl. 175—42.
Bennett, Wallace R. Water ski rack device. 3,155,238, 11–3–64, Cl. 211—60.
Bennett, Wesley F., to Western Electric Co., Inc. Diffusion of semiconductor bodies. 3,155,551, 11–3–64, Cl. 148—191.
Bentele, Max., to Curtiss-Wright Corp. Rotor housing construction of rotating combustion engine. 3,155,313, 11–3–64, Cl. 230—238.
Benton, Robert C., and R. R. Whitehouse, to Centre Circuits, Inc. Difference gage. 3,154,858, 11–3–64, Cl. 33—125.
Berg, Leo, J. Nachreiner, and A. Schöll, to Knapsack-Griesheim Aktiengesellschaft. Apparatus for conducting sintered material from a sintering grate to a cooling grate. 3,155,378, 11–3–64, Cl. 263—8.
Berg, Willie. Musician's foot rest. 3,155,364, 11–3–64, Cl. 248—439.
Bergstrom, Harold A., to Continental Can Co., Inc. Folded plastic bag in fiber drum. 3,155,305, 11–3–64, Cl. 229—14.
Bergy, Malcolm E., R. R. Herr, and D. J. Mason, to The Upjohn Co. Antibiotic composition. 3,155,580, 11–3–64, Cl. 167—65.
Berkley, Richard E.: *See*—
Kirkpatrick, Willard H., Seale, and Berkley. 3,155,178.
Berko Electric Mfg. Corp.: *See*—
Greenhaus, Albert. 3,155,812.
Berman, Leon, to Compagnie Industrielle des Telephones. Electronic coding device for radioelectric or telephone links. 3,155,908, 11–3–64, Cl. 325—35.
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Schaschl, Edward, and Bernard. 3,155,533.
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Beter, Ralph H., and M. Rubinoff, to Philco Corp. System for representing a time interval by a coded signal. 3,155,-962, 11–3–64, Cl. 340—353.

Bethlehem Steel Co.: *See*—
Jandras, Henry L. 3,155,498.
Steffensen, Percy L. 3,154,806.

Bettin, Hubertus: *See*—
Modersohn, Otto, and Bettin. 3,155,884.

Beumel, Oscar F., Jr., to Foote Mineral Co. Method of making organolithium compounds. 3,155,736, 11–3–64, Cl. 260—665.

Bhat, Gopal K.: *See*—
Anthony, Harry L., III, and Bhat. 3,155,500.

Bible, Robert E., E. L. Braun, J. L. Cass, R. L. McIntyre, and R. R. Williamson, to General Precision, Inc. Digital computer. 3,155,816, 11–3–64, Cl. 235—151.

Bickel, Hans: *See*—
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Biddison, Albert M. Combined rod holder and hook setting device. 3,154,875, 11–3–64, Cl. 43—15.

Biderman, Benjamin B., and C. O. Feigleson, to Collins Radio Co. Transistor servomotor drive circuit. 3,155,890, 11–3–64, Cl. 318—29.

Bierl, Hans, to E. A. Olsson. Apparatus for accomplishing mold movement in continuous casting machines. 3,154,815, 11–3–64, Cl. 18—26.

Bikales, Norbert M.: *See*—
Hauser, Martin, and Bikales. 3,155,701.

Binks Mfg. Co.: *See*—
Jones, Walter M. 3,155,320.

Birenbaum, Leo, to Polytechnic Institute of Brooklyn. H-guide attenuator. 3,155,929, 11–3–64, Cl. 333—81.

Birum, Gail H.: *See*—
Cornell, David, and Birum. 3,155,597.
Cornell, David, and Birum. 3,155,598.

Black, John O. Convertible aircraft structure. 3,155,343, 11–3–64, Cl. 244—17.21.

Blackstein, Anne: *See*—
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Blake, Edward S., and W. C. Hammann, to Monsanto Co. Capacitor and method of making same. 3,155,888, 11–3–64, Cl. 317—258.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic processes. 3,155,506, 11–3–64, Cl. 96—50.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic processes. 3,155,507, 11–3–64, Cl. 96—64.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic compositions and elements. 3,155,514, 11–3–64, Cl. 96—107.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic products. 3,155,516, 11–3–64, Cl. 96—107.

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Blake, Ralph K., to E. I. du Pont de Nemours and Co. Silver halide compositions, layers and elements. 3,155,518, 11–3–64, Cl. 96—107.

Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic compositions, layers and elements. 3,155,519, 11–3–64, Cl. 96—107.

Bleicher, Robert L., to Dayton Perforators, Inc. Split bushing. 3,155,440, 11–3–64, Cl. 308—237.

Blemly, Marvin S., and L. Mayer, to Jervis B. Webb Co. Electrified rail construction for cranes, monorails, and the like. 3,155,207, 11–3–64, Cl. 191—23.

Blohm, Richard, to Kästler & Co. Chord forming device for string instruments. 3,154,994, 11–3–64, Cl. 84—317.

Bloomfield, Peter R., to Artrite Resins Ltd. Production of polymers containing s-triazine nuclei linked together by a nitrogen atom comprising reacting s-triazines with nitrogen compounds. 3,155,628, 11–3–64, Cl. 260—2.

Blumberg, Harold: *See*—
Schlesinger, Albert, Blumberg, and Weiner. 3,155,664.

Bockemuehl, Robert R., to General Motors Corp. Electromagnetic quantizer. 3,155,960, 11–3–64, Cl. 340—347.

Bockmann, Walter: *See*—
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Bode, Harald E. W., to The Wurlitzer Co. Reed with curved taper. 3,154,997, 11–3–64, Cl. 84—408.

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Bodine, Albert G., Jr. Method and apparatus for sonic jarring with reciprocating mass oscillator. 3,155,163, 11–3–64, Cl. 166—46.

Bodner, Charles H. Micrometer calipers. 3,154,860, 11–3–64, Cl. 33—148.

Boehm, Benjamin F., and C. D. Simmons, to General Motors Corp. Condition indicating system. 3,155,952, 11–3–64, Cl. 340—244.

Boeing Co., The: *See*—
Paysen, James Z., and Trifonoff. 3,155,345.
Richolt, Robert R. 3,155,347.
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Boensel, Donald W., to Space-General Corp. Transistorized switching circuit. 3,155,963, 11–3–64, Cl. 340—347.

Bohme Fettchemie G.m.b.H.: *See*—
Gotte, Ernst, and Kirstahler. 3,155,470.

Bölkow, Ludwig, and E. Haberkorn, to Bölkow-Entwicklungen Kommanditgesellschaft. VTOL aircraft construction. 3,155,342, 11–3–64, Cl. 244—12.

Bölkow-Entwicklungen Kommanditgesellschaft: *See*—
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Stockel, Karl. 3,154,914.

Bonde, James R., to Accurate Wire Forming Inc. Crate fastener. 3,154,828, 11–3–64, Cl. 24—261.

Bonmartini, Giovanni. Pneumatic tubular track, driving and carrying device. 3,155,436, 11–3–64, Cl. 805—13.

Bonnevier, Bjorn K. J.: *See*—
Lehnert, Bo P., and Bonnevier. 3,155,594.

Boor, John, Jr., to Shell Oil Co. Polymerization catalyst. 3,155,626, 11–3–64, Cl. 252—429.

Booth, Weldon S. Fastening means for flanges. 3,155,206, 11–3–64, Cl. 189—88.

Boothe, Willis A., to General Electric Co. Pure fluid logic circuitry for integrators and differentiators. 3,155,825, 11–3–64, Cl. 235—201.

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Stevenson, Herbert A., and Leafe. 3,155,486.

Borgman, Arthur C., to The Patent Scaffolding Co., Inc. Wheel mounted ladder. 3,155,190, 11–3–64, Cl. 182—15.

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Vielmo, Oskar. 3,155,434.

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Burley, Joseph C. 3,155,769.
Garshick, Alfred. 3,155,768.

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Cros, Modesto. 3,155,262.

Bouwers, Albert, to Optische Industrie de Oude Delft, N.V. Panoramic infrared telescope. 3,155,832, 11–3–64, Cl. 250—213.

Bowers, Albert, and J. Edwards, to Syntex Corp. 16-difluoromethyl adrenocorticoids. 3,155,695, 11–3–64, Cl. 260—397.45.

Bowmar Instrument Corp.: *See*—
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Boyce, Walter A., to Westinghouse Electric Corp. Apparatus and method for forming glass tube flares and tempering thereof. 3,155,481, 11–3–64, Cl. 65—104.

Boyer, Floyd J., and R. J. Wente, to General Motors Corp. Turboprop engine control with underspeed governor. 3,155,165, 11–3–64, Cl. 170—135.74.

Boyer, Wesley D., to Ford Motor Co. Continuous wave radar. 3,155,972. 11–3–64, Cl. 343—12.

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Erickson, Robert H., and Boyk. 3,155,623.

Boynton, A. J., & Co.: *See*—
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Brahm, Charles B., to United Aircraft Corp. Pulse-width modulator 3,155,838, 11–3–64, Cl. 307—88.5.

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Brandon, Theodore A. Lumber accumulators. 3,155,245, 11–3–64, Cl. 214—16.

Branson, Charles D., and C. Wantz, to Robertshaw Controls Co. Thermostatic control device. 3,155,316, 11–3–64, Cl. 236—48.

Bratz, Otto J., to American Chain & Cable Co., Inc. Ball bearing push-pull cable. 3,154,966, 11–3–64, Cl. 74—501.

Braun Aktiengesellschaft: *See*—
Futterer, Bodo. 3,155,855.

Braun, Edward L.: *See*—
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Braun, Ottwin L., to Reliance Steel Products Co. Forced circulation water-cooled door. 3,155,080, 11–3–64, Cl. 122—498.

Brawerman, Marvin, to Airheart Products, Inc. Braking mechanism. 3,155,195, 11–3–64, Cl. 188—73.

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Taylor, Daniel D., and Brawner. 3,155,553.

Bray Oil Co.: *See*—
Voorhees, Vanderveer. 3,155,616.
Voorhees, Vanderveer. 3,155,617.

Brenner, Abe. Straight seam guide attachment. 3,155,060, 11–3–64, Cl. 112—153.

Bricker, Carl E., to The Goodyear Tire & Rubber Co. Spring applied brake. 3,155,199, 11–3–64, Cl. 188—170.

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Broadhead, Samuel L., Jr., to Collins Radio Co. Binary divider with radix conversion feedback switch. 3,155,820, 11–3–64, Cl. 235—165.

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Rao, Koppaka V., Marsh, and Brooks. 3,155,583.

Brosch, Walter R.: *See*—
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Broske, William F., to AMP Inc. Safety plug for explosive cartridge. 3,155,039, 11–3–64, Cl. 102—38.

Brown, Adolph M. Anastomosis method and means. 3,155,095, 11–3–64, Cl. 128—334.

Brown, Albyn W. N., C. B. Cotterill, F. Dean, and G. H. Whitfield, to Imperial Chemical Industries Ltd. Process for the oxidation of organic compounds. 3,155,718, 11–3–64, Cl. 260—524.

Brown, David, J. W. Colton, and S. N. Fox, to Halcon International, Inc. Separating brine from ice crystals. 3,155,459, 11–3–64, Cl. 23—310.

Brown, David, and A. Saffer, to Mid-Century Corp. Process for the preparation of trimesic acid. 3,155,717, 11–3–64, Cl. 260—524.

Brown, Delmont D.: *See*—
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Brown Fintube Co.: *See*—
Brown, John W., Jr., and Nevins. 3,155,404.

Brown, Frank F. Cable supporting clip. 3,155,298, 11–3–64, Cl. 224—5.

Brown, Harry J., to Union Carbide Corp. Powder metallurgy. 3,155,502, 11–3–64, Cl. 75—214.

Brown, Horace D.: *See*—
Sarett, Lewis H., and Brown. 3,155,571.

Brown, Howard D., to General Machine Products Co., Inc. Hydraulically actuated pole puller. 3,155,372, 11–3–64, Cl. 254—30.

Brown, John W., Jr., and J. W. Nevins, to Brown Fintube Co. Union for connecting conduits. 3,155,404, 11–3–64, Cl. 285—137.

Bruce, Ewen A. Water closets. 3,154,796, 11–3–64, Cl. 4—90.

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Mercer, Neil H. and Bryan. 3,155,577.
Lish, Paul M., Bryan, and Mercer. 3,155,576.

Bryant, Clifford A., to Cabin Crafts, Inc. Machine for producing cut and uncut pile. 3,155,059, 11–3–64, Cl. 112—79.

Buccicone, Vello S., to Buccicone Engineering Co., Inc. Sheet handling apparatus. 3,155,387, 11–3–64, Cl. 271—74.

Buccicone Engineering Co., Inc.: *See*—
Buccicone, Vello S. 3,155,387.

Buchheit, Paul: *See*—
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Buchik, George, and C. Yu, to Cullen-Friestedt Co. Automatic level device for tongs. 3,155,416, 11–3–64, Cl. 294—81.

Buchli, Arnold. Scraper with parallelogram linkage connecting bucket to frame. 3,154,868, 11–3–64, Cl. 37—129.

Bucourt, Robert: *See*—
Nomine, Gerard, Bucourt, and Tessier. 3,155,660.

Budlane, Stanley J., to General Electric Co. Gas control unit. 3,155,144, 11–3–64, Cl. 158—123.

Bullough, Ronald R. C. Newman, J. Wakefield, R. L. Rouse, and J. B. Willis, to Associated Electrical Industries Ltd. Production of P-N junctions in semi-conductor material. 3,154,838, 11–3–64, Cl. 29—25.3.

Buono, Frank S., to Becton, Dickinson and Co. Bag and method of making the same. 3,155,134, 11–3–64, Cl. 150—7.

Burford Charles L. Random time interval generator. 3,155,848, 11–3–64, Cl. 307—106.

Burleigh, Joseph H., to Cutter Mail Chute Co. Sheet-feeding device. 3,155,386, 11–3–64, Cl. 271—26.

Burley, Joseph C., to Boston Insulated Wire & Cable Co. Elevator cable. 3,155,769, 11–3–64, Cl. 174—121.

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Burn, Philip H. Marine toilet. 3,154,795, 11–3–64 Cl. 4—77.

Burns, Thagrus A. Packaging device. 3,154,899, 11–3–64, Cl. 53—190.

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Burroughs, Louis R., to Electro-Voice, Inc. Microphone and mounting means assembly. 3,155,780, 11–3–64, Cl. 179—146.

Burtner, Richard L., to Goodyear Aerospace Corp. Automatic azimuth matching apparatus. 3,155,967, 11–3–64, Cl. 343—7.

Burton William B., to Shell Oil Co. Formation of (Cis) heptachlor epoxide. 3,155,689, 11–3–64, Cl. 260—348.5.

Busby, Marvin L.: *See*—
Rocks, Ewart H., and Busby. 3,155 545.

Busillo, Eugene P., to Fischer & Porter Co. Flowmeter. 3,154,945 11–3–64, Cl. 73—209.

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Conner, John W. 3,154,865.

Buttner, Horace J., to Textron Inc. Marine propulsion system. 3,155,071, 11–3–64, Cl. 115—16.

Byam, Erwin B. to Textron Inc. Transfer mechanism with means to operate fingers independently of movement of transfer head. 3,154,801, 11–3–64, Cl. 10—12.

Byrd, Wendell M., Jr.: *See*—
Camacho, Vasco G., and Byrd. 3,155,706.

Byrne Robert M., to Goodyear Aerospace Corp. Automatic radar display centering system. 3,155,870, 11–3–64, Cl. 315—18.

Cabin Crafts, Inc.: *See*—
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Cadmus, Lamont A., and A. C. Sampietro, to Willys Motors, Inc. Driven swinging axle assemblies with steerable wheels. 3 155,186, 11–3–64, Cl. 180—43.

Cadovius Poul: Assembling joint for assembling framework comprising tubular rods, and framework with such assembling joints. 3,155,405, 11–3–64, Cl. 287—54.

Cadwell, Wilfred C., R. A. Oberlander, and D. J. Wright, to Caterpillar Tractor Co. Track roller with a replaceable rim. 3,154,958, 11–3–64, Cl. 74—230.3.

Cady Charles E.: *See*—
Kemeny, Julius, Parsons, Cady, and Jones. 3,155,893.

Caglioti, Luciano: *See*—
Camerino, Bruno, Caglioti, and Cainelli. 3,155,667.

Cainelli, Gianfranco: *See*—
Camerino, Bruno, Caglioti, and Cainelli. 3,155,667.

Calder, Caesar A. Garment hangers and covers therefor. 3,155,266, 11–3–64, Cl. 223—98.

Caley, William S., and J. D. Harshman, to Bowmar Instrument Corp. Miniature gear mechanism. 3,154,963, 11–3–64, Cl. 74—421.

Calmec Mfg. Corp.: *See*—
Summers, Stanley E., and Visket. 3,155,271.

Camacho, Vasco G., and W. M. Byrd, Jr., to Socony Mobil Oil Co., Inc. Production of diaryl phosphates. 3,155,706, 11–3–64, Cl. 260—461.

Camerino, Bruno, L. Caglioti, and G. Cainelli, to Societa Farmaceutici Italia. Process for the preparation of 9-hydroxyergolines and products obtained. 3,155,667, 11–3–64, Cl. 260—285.5.

Campbell, David D., J. D. Leslie, and J. H. Wernig, to General Motors Corp. Windshield mounting. 3,155,204, 11–3–64, Cl. 189—77.

Campbell, David D., J. D. Leslie, and J. H. Wernig, to General Motors Corp. Windshield mounting. 3,155,422, 11–3–64, Cl. 296—93.

Campbell, Floyd R., 45% to E. L. Cunningham. Container. 3,154,880, 11–3–64, Cl. 43—57.5.

Campbell, Richard D., to Westinghouse Air Brake Co. Track fullness system. 3,155,350, 11–3–64, Cl. 246—122.

Campbell Soup Co.: *See*—
Egee, Walter W., and Thomas. 3,154,805.

Canadian General Electric Co., Ltd.: *See*—
Cary, Frederick C. 3,155,862.

Canadian Ingersoll-Rand Co., Ltd.: *See*—
MacSween, George A. 3 155,180.

Canadian International Paper Co.: *See*—
Cote, Raymond A. 3,155,273.

Cappola, Pasquale P. Pipe hanger. 3,155,355, 11–3–64, Cl. 248—74.

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Carlson, Arthur F., to Shore-Calnevar, Inc. Adjustable bracket support. 3,155,358, 11–3–64, Cl. 248—226.

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Hildebrand, Robert P., Harold, Clarke, and Murray. 3,155,522.

Carney, John L., Jr., to ACF Industries, Inc. Hatch cover for railway cars. 3,155,052, 11–3–64, Cl. 105—377.

Cary, Frederick C., to Canadian General Electric Co., Ltd. Index indicator for plug-in units. 3,155,862, 11–3–64, Cl. 313—109.5.

Casey, Edward J., and J. C. Sofianek, to General Electric Co. Tripping arrangement for an electric circuit breaker. 3,155,879, 11–3–64, Cl. 317—32.

Casey, Robert T., to General Electric Co. Circuit breaker panelboard. 3,155,882, 11–3–64, Cl. 317—119.

Cass, James L.: *See*—
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Cassells, Melvin K. Container support clip. 3,155,360, 11–3–64, Cl. 248—313.

Cassiers, Paul M., and R. M. Hart, to Gevaert Photo-Producten N.V. Electrophotographic material. 3,155,503, 11–3–64, Cl. 96—1.

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Greenberg, Donald K., and Casson. 3,154,893.

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Catamaran Corp.: *See*—
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Caterpillar Tractor C.: *See*—
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Junck, John A., and Scheidt. 3,154,921.
Muellner, Donald R., and Muntjanoff. 3,155,252.

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Wright, Paul C., and Chambers. 3,155,369.

Chambers, Robert B., to Belt-Scales Corp. Conveyor scale and recorder. 3,155,181, 11–3–64, Cl. 177—16.

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Charlton, George H., E. Ebdon, and K. D. Harris, to Power Jets (Research and Development) Ltd. Flying control system for aircraft. 3,155,346, 11–3–64, Cl. 244—75.

Chase, John A., to Radio Corp. of America. Wire shaping apparatus. 3,154,976, 11–3–64, Cl. 78—13.

Chase, John A., to Radio Corp. of America. Apparatus for pointing and severing wires or pins. 3,154,975, 11–3–64, Cl. 78—1.

Chatelain, Maurice G., to The Ryan Aeronautical Co. Circular polarization antenna composed of an elongated microstrip with a plurality of space staggered radiating elements. 3,155,975, 11–3–64, Cl. 343—795.

Chemagro Corp.: *See*—
Aichenegg, Paul C., and Emerson. 3,155,720.

Chemical Products Corp.: *See*—
Heins, Sidney M. 3,155,494.

Chemical Construction Corp.: *See*—
Kurpit, Stanley S., Mavrovic, and Saffian. 3,155,723.
Mavrovic, Ivo. 3,155,722.

Chemically Prestressed Concrete Corp.: *See*—
Klein, Alexander. 3,155,526.

Chemische Werke Huls, Aktiengesellschaft: *See*—
Kramer, Horst, and Sturzenhofecker. 3,155,681.

Chen, Kao, to Westinghouse Electric Corp. Ceiling lighting fixtures. 3,155,324, 11–3–64, Cl. 240—9.

Chesebrough-Pond's Inc.: *See*—
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Lear, Earl B. 3,155,351.

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Lutz, Albert W., Child, and Walworth. 3,155,488.
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Zintz, Howard C., and Childs. 3,155,198.
Chittenden, Abram B. Board game apparatus. 3,155,391, 11–3–64, Cl. 273—131.
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Chope, Henry R., to Industrial Nucleonics Corp. Method and apparatus for measuring multiple properties of material by applying electric fields at multiple frequencies and combining detection signals. 3,155,898, 11–3–64, Cl. 324—58.5.
Chreist, Louis R., Jr., to South Bend Toy Mfg. Co., Inc. Convertible chair for dolls and infants. 3,155,425, 11–3–64, Cl. 297—131.
Chupp, John P.: *See*—
Newallis, Peter E., and Chupp. 3,155,709.
Chupp, John P., and P. E. Newallis, to Monsanto Co. Process for making hydrocarbyl-phosphonothionic acid-monoaryl esters. 3,155,708, 11–3–64, Cl. 260—461.
Ciba Corp.: *See*—
Gaeumann, Ernst, Vischer, and Bickel. 3,155,578.
Cicin, Paul. Infinitely variable mechanical torque converter. 3,154,971, 11–3–64, Cl. 74—751.
Cilker, William H., and W. A. Shrode, to FMC Corp. Apparatus for treating glass roving. 3,154,908, 11–3–64, Cl. 57—35.
Cincinnati Milling Machine Co., The: *See*—
Dever, Lewis A., and Herfurth. 3,155,007.
Schroeder, Walter. 3,155,006.
Weisberger, Robert H. 3,154,891.
Cincinnati Mine Machinery Co., The: *See*—
Krekeler, Claude B. 3,155,225.
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Shotts, Adolph C., and Motes. 3,155,719.
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Brueder, Antoine. 3,155,433.
Henry-Biabaud, Edmond. 3,155,208.
Clapp, Charles C., to Weyerhaeuser Co. Method and means for patching veneer and manufacturing paper-overlaid veneer. 3,155,558, 11–3–64, Cl. 156—94.
Clapp, Daniel E., to The Proctor-Silex Corp. Apparatus for control of cooking temperatures. 3,155,815, 11–3–64, Cl. 219—508.
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Clark, Stevenson P.: *See*—
Niskin, Shale J. 3,155,174.
Clarke, Brian J.: *See*—
Hildebrand, Robert P., Harold, Clarke, and Murray. 3,155,522.
Clarke, Michael R.: *See*—
Bawn, Cecil E. H., and Clarke. 3,155,643.
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Duenke, Clarence G. 3,155,951.
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Clayton, William H., to Combustion Engineering, Inc. Vapor generator. 3,155,074, 11–3–64, Cl. 122—479.
Clayton, William H., and W. W. Schroedter, to Combustion Engineering, Inc. Power plant installation. 3,155,076, 11–3–64, Cl. 122—479.
Clayton, William H., Jr., to Combustion Engineering, Inc. Double reheat power plant arrangement. 3,155,078, 11–3–64, Cl. 122—479.
Clayton, William H., Jr., to Combustion Engineering, Inc. Supercritical vapor generator power plant system. 3,155,079, 11–3–64, Cl. 122—479.
Clayton, William H., Jr., and R. B. Knust, to Combustion Engineering, Inc. Power plant organization and method of operation. 3,155,077, 11–3–64, Cl. 122—479.
Cleveland Crane & Engineering Co., The: *See*—
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Closson, Rex D., T. H. Coffield, O. E. H. Klopfer, and H. Shapiro, to Ethyl Corp. Fuel compositions. 3,155,620, 11–3–64, Cl. 252—49.7.
Cockshutt Farm Equipment of Canada Ltd.: *See*—
McNeil, Donald H. 3,155,473.
Coe, Richard H., to Shell Oil Co. Process for sweetening sour hydrocarbons and regenerating used catalyst. 3,155,606, 11–3–64, Cl. 208—203.
Coffield, Thomas H.: *See*—
Closson, Rex D., Coffield, Klopfer, and Shapiro. 3,155,620.
Cohen, Abraham B.: *See*—
Celeste, Jack R., and Cohen. 3,155,515.
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Small, Samuel N. 3,155,353.
Cohen, Louis H., to Phelps Time Recording Lock Corp. Lock for a sequential locking system. 3,154,938, 11–3–64, Cl. 70—134.
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Cole, John W., to Abbott Laboratories. N-substituted 17α-aminosteroids. 3,155,690, 11–3–64, Cl. 260—397.3.
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Anderson, Albert E., and Stubstad. 3,155,157.
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Bideman, Benjamin B., and Feigleson. 3,155,890.
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Haerther, Lester W., and Pierce. 3,155,447.
Wulfsberg, Arthur H. and P. G. 3,155,907.
Collins, Thomas K.: *See*—
Cook, Melvin A., Collins, Pack, and Cook. 3,155,554.
Colton, John W.: *See*—
Brown, David, Colton, and Fox. 3,155,459.
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Clayton, William H., Jr. 3,155,078.
Clayton, William H., Jr. 3,155,079.
Clayton, William H., Jr., and Knust. 3,155,077.
Clayton, William H., and Schroedter. 3,155,076.
Condé, James. 3,155,152.
Powell, Elno M., and Schroedter. 3,155,075.
Wilson, Edward T. 3,155,154.
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Eude, Jean-Claude, Piron, Savouyaud, and Vertut. 3,155,240.
Compagnie Generale de Telegraphie Sans Fil: *See*—
Warnecke, Robert R., and Leboutet. 3,155,593.
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Berman, Leon. 3,155,908.
Conch International Methane Ltd.: *See*—
Harmens, Alexander. 3,154,928.
Yamamoto, Katsuro. 3,155,266.
Condé, James, to Combustion Engineering, Inc. Rotor structure for rotary regenerative heat exchanger. 3,155,152, 11–3–64, Cl. 165—7.
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Schurman, Peter T., and Confer. 3,155,269.
Congdon, Milton H. Automatic toilet unit. 3,154,793, 11–3–64, Cl. 4—7.
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Conner, John W., 1/50 to J. W. Vincent, 1/50 to W. G. Reed, and 1/50 to R. J. Butze. Automatic work table. 3,154,865, 11–3–64, Cl. 35—13.
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Cook, Melvin A., T. K. Collins, W. D. Pack, and N. L. Cook, to Intermountain Research and Engineering Co., Inc. Liquid blanketed chlorate blasting agent. 3,155,554, 11–4–64, Cl. 149—77.
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Mentzer, Merle J. 3,155,527.
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Cornell, David, and G. H. Birum, to Monsanto Co. Extractive separation process. 3,155,598, 11–3–64, Cl. 202—39.5.
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Cossor, A. C., Ltd.: *See*—
Allen, Alaric. 3,155,966.
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Cox, David B., to Socony Mobil Oil Co., Inc. Lubricant. 3,155,618, 11–3–64, Cl. 252—39.
Cragoe, Edward J., Jr., to Merck & Co., Inc. Derivatives of pyrido[2,3-e,6,5-e] - bis[1,2,4]thiadiazine - 1,1,9,9 - tetraoxide. 3,155,653, 11–3–64, Cl. 260—243.
Craig, Forrest F., Jr., and K. L. Hujsak, to Pan American Petroleum Corp. Recovery of heavy oils by steam extraction. 3,155,160, 11–3–64, Cl. 166—40.
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Creswell, Clifford A., to The Arbee Corp. Drive belts. 3,154,960, 11–3–64, Cl. 74—233.
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Crooke, Donald W. Instant spinout hook remover. 3,154,879, 11–3–64, Cl. 43—53.5.
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Cross, Ralph E., to The Cross Co. Transfer machine. 3,155,217, 11–3–64, Cl. 198—19.
Crownover, Joseph W., 25% to W. W. Haefliger. Twist responsive switch assembly. 3,155,791, 11–3–64, Cl. 200—87.
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Jones, Charles. 3,155,311.
Jones, Charles, and Mount. 3,155,085.
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Cutter Mail Chute Co.: *See*—
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Dabanian, Karnig H., and W. H. Kirk. Adjustable air gauging mandrel. 3,154,939, 11–3–64, Cl. 73—37.9.
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Barényi, Béla. 3,155,421.
Stump, Eugen, and Strifler. 3,155,397.
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Davidson, Allen R., to Industrial Nucleonics Corp. Method and apparatus for determining moisture content and other variables utilizing a capacitor test cell at two different frequencies. 3,155,899, 11–3–64, Cl. 324—61.
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Dayus, Lloyd G. Adjustable air diffuser. 3,155,027, 11–3–64, Cl. 98—40.
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Dearing, Clarence W., to American Flange & Mfg. Co., Inc. Container wall closure combination and assemblies. 3,155,295, 11–3–64, Cl. 222—525.
De Boer, Henri G. J., to N.V. Lichtdrukpapierfabriek De Atlas. Light-sensitive diazotype compositions. 3,155,512, 11–3–64, Cl. 96—91.
De Buhr, Harold E., to Deere & Co. Bale thrower. 3,155,223, 11–3–64, Cl. 198—128.
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Persson, David R. 3,155,923.
Deere & Co.: *See*—
De Buhr, Harold E. 3,155,223.
French, John L., Van Auwelaer, and Ager. 3,155,250.
De Fries, Paul J., to General Electric Co. Bistable transistor circuit with ferroelectric memory element. 3,155,833, 11–3–64, Cl. 307—88.
De Gray, Richard J., and W. O. Fitzgibbons, to The Standard Oil Co. Boron compounds and compositions containing the same. 3,155,465, 11–3–64, Cl. 44—63.
De Havilland Aircraft Co. Ltd., The: *See*—
Lee, John G. W., and Thompson. 3,155,953.
Deichert, William G.: *See*—
Tobin, Marvin C., and Deichert. 3,155,629.
Deinet, Adolph J., to Heyden Newport Chemical Corp. Dichlorotoluene nematocide. 3,155,369, 11–3–64, Cl. 167—30.
Dejewski, Edwin N.: *See*—
Pellicone, Joseph S., Dejewski, and Lo Piccolo. 3,155,016.
De Lapp, Darwin F., to American Cyanamid Co. Preparation of ammonium phosphate fertilizer. 3,155,490, 11–3–64, Cl. 71—42.
De Laval Turbine Inc.: *See*—
Felix, Samuel P., and Schneider. 3,155,613.
De Lorean, John Z., to General Motors Corp. Power shaft. 3,155,187, 11–3–64, Cl. 180—70.
De Mestral, George, to International Velcro Co., Estab. Method for the manufacture of pile fabrics. 3,154,837, 11–3–64, Cl. 28—72.
Denneny, Edward C.: *See*—
Adamson, Floyd E., and Denneny. 3,155,811.
Denton, Robert F., to Genisco Technology Corp. Single action temperature sensitive electrical switch including camming means for a plunger retaining member. 3,155,800, 11–3–64, Cl. 200—142.
Deppe, Milton G. Illumination attachment for binoculars or the like. 3,155,323, 11–3–64, Cl. 240—6.4.
Derenink, Steven N.: *See*—
Ward, George E., and Dereniuk. 3,155,521.
Derman, Sam, and H. Grand. Collapsible lamp shade. 3,155,349, 11–3–64, Cl. 240—145.
De Vay, James E. Antibiotic produced by pseudomonas syringae. 3,155,585, 11–3–64, Cl. 167—65.
Dever, Lewis A., and C. Herfurth, to The Cincinnati Milling Machine Co. Automatic machine tool control mechanism. 3,155,007, 11–3–64, Cl. 90—21.
De Vita, Raymond A., to United Shoe Machinery Corp. Power plants. 3,154,925, 11–3–64, Cl. 60—97.
De Vito, Louis A. and P. M. Device for dispensing semi-solid substances. 3,155,053, 11–3–64, Cl. 107—8.
De Vito, Pasquale M.: *See*—
De Vito, Louis A. and P. M. 3,155,053.
Devon Instruments Ltd.: *See*—
Shortt, William H. 3,154,913.
Diagnostic Associates, Ltd.: *See*—
Nissenbaum, Gerald, and Mayerhoff. 3,155,091.
Diagrit Electrometallics Ltd.: *See*—
Dawkins, John C. F. 3,154,894.
Di Angelus, Anthony: *See*—
Costantini, Anthony R., and Di Angelus. 3,154,931.
Dietert, Harry W., to Harry W. Dietert Co. Moldability controller. 3,154,824, 11–3–64, Cl. 22—89.
Dietert, Harry W., Co.: *See*—
Dietert, Harry W. 3,154,824.
Dietz, Alfred. Stranded spiral rope. 3,154,910, 11–3–64, Cl. 57—149.
Digital Sensors Inc.: *See*—
Griswold, Lee M. 3,155,809.
Dirks, Johan F., to The Plastic Coating Corp. Apparatus for the liquid toning of latent electrostatic images. 3,155,546, 11–3–64, Cl. 118—637.
Divco-Wayne Corp.: *See*—
Hanselman, Cloyd L. 3,155,417.
Dobbie, James, and E. T. Schonholzer, to Westinghouse Electric Corp. Timed output pulse providing device responsive to digital input signals. 3,155,959, 11–3–64, Cl. 340—347.
Dobbie, Robert L.: *See*—
Goodwin, David, and Dobbie. 3,155,831.
Doberstein, George H.: *See*—
Wilson, Wendell E., Doberstein, O'Neill, and Healey. 3,155,783.

Doczi, John, F. C. Ninger, and H. I. Silverman, to Warner-Lambert Pharmaceutical Co. Composition for inhibiting pepsin activity and method of preparing same. 3,155,575, 11–3–64, Cl. 167—55.

Dolch, George D., Jr., to Thompson Ramo Wooldridge Inc. Metal forging process. 3,154,849, 11–3–64, Cl. 29—528.

Domine, Daniel: *See*—
Guerin de Montgareuil, Pierre, and Domine. 3,155,468.

Dominion Engineering Works Ltd.: *See*—
Thomas, Rex. 3,155,029.

Dominion Malting (Ontario) Ltd.: *See*—
Wesson, Joseph P. 3,155,227.

Dorsett, Wendell E.: *See*—
Middlesworth, Tommy A., and Dorsett. 3,155,083.

Douglas Aircraft Co., Inc.: *See*—
Crispin, Thayer S. 3,154,979.

Douglas, Richard T., to Westinghouse Electric Corp. Refrigeration apparatus. 3,155,312, 11–3–64, Cl. 230—232.

Dover Corp.: *See*—
Racely, Kermit L. 3,155,193.

Dow Chemical Co., The: *See*—
Engles, Earl F., Jr. 3,154,898.
Hart, Porter. 3,155,603.
Kauer, Kenneth C. 3,155,707.
Reifschneider, Walter. 3,155,733.

Dow Corning Corp., The: *See*—
Polmanteer, Keith E. 3,155,633.

Doyle, Arnold W., R. R. Perron, and J. R. Swanton, Jr., to Arthur D. Little, Inc. Apparatus for atomizing and burning a liquid fuel. 3,155,141, 11–3–64, Cl. 158—28.

Doyle, Barrett, to Honeywell Inc. Control apparatus. 3,155,837, 11–3–64, Cl. 307—88.5.

Dozier, James R.: *See*—
Shatto, Howard L., Jr., Dozier, and Goepfert. 3,154,854.

Drago, Louis. Electrical socket having conductive arm pivotally mounted at bottom of socket. 3,155,788, 11–3–64, Cl. 200—51.09.

Dravo Corp.: *See*—
Weidner, Everett L. 3,154,832.

Dreyfus, Bertrand A., to Societe d'Electronique et d'Automatisme. Machine for sawing samples of brittle materials. 3,155,087, 11–3–64, Cl. 125—21.

Drumm, Joseph T., and W. Meyer, to Wheaton Brass Works. Coupling members for disconnectibly joining conduits. 31,155,370, 11–3–64, Cl. 251—248.

Drummond, Warren W., to Pittsburgh Plate Glass Co. Apparatus for producing glass fibers. 3,155,476, 11–3–64, Cl. 65—12.

Dubbeld, Willem. Cheese mold. 3,154,853, 11–3–64, Cl. 31—44.

Duck, Edward W., and J. A. Waterman, to Shell Oil Co. Catalyst compositions. 3,155,642, 11–3–64, Cl. 260—94.3.

Duenke, Clarence G., to The Clarken Co. Testing apparatus for temperature warning device. 3,155,951, 11–3–64, Cl. 340—214.

Dunseth, Maria G.: *See*—
Salutsky, Murrell L., and Dunseth. 3,155,454.

Dunster, Donald E., J. R. Cole, and B. J. Thomas, to Continental Oil Co. Optical correlating method and apparatus using temporary recording techniques. 3,155,451, 11–3–64, Cl. 346—1.

Du Pont de Nemours, E. I., and Co.: *See*—
Adams, Dustin S. 3,155,754.
Arthur, Wilfred J. 3,155,724.
Blake, Ralph K. 3,155,506.
Blake, Ralph K. 3,155,507.
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Blake, Ralph K. 3,155,516.
Blake, Ralph K. 3,155,517.
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Blake, Ralph K. 3,155,519.
Celeste, Jack R., and Cohen. 3,155,515.
Hatchard, William R. 3,155,678.
Hatchard, William R. 3,155,679.
Long, Laurence J., and Williams. 3,155,625.
Patterson, Hugh T., and Strohmaier. 3,155,537.
Sahlin, Edward T. 3,154,992.
Zapp, George M., Jr. 3,155,631.

Durametallic Corp.: *See*—
Hummer, Herbert B. 3,155,393.

Durtschi, William J. Disc trimming machines. 3,154,991, 11–3–64, Cl. 83—451.

Dutcher, James D., F. E. Pansy, and M. H. von Saltza, to Olin Mathieson Chemical Corp. Septacidin and derivatives thereof. 3,155,647, 11–3–64, Cl. 260—211.5.

Earnest, Frank W., Jr.: *See*—
Aldrich, Thomas B. 3,155,329.

Eash, George H., to Catamaran Corp. Double cam device. 3,154,956, 11–3–64, Cl. 74—107.

Eastwood Acceptance Corp.: *See*—
Powell, Vernon R. 3,154,848.

Ebdon Eric: *See*—
Charlton, George H., Ebdon, and Harris. 3,155,346.

Eck, Richard H.: *See*—
Appleman, Leon, and Eck. 3,155,814.

Edelberg, Alan K., J. S. Kamborian, and J. S. Kamborian, Jr., said Edelberg assor, to said J. S. Kamborian. Fastener with sharp base. 3,154 825, 11–3–64, Cl. 24—73.

Edgar, Violet J. Push lock turn screw. 3,155,412, 11–3–64, Cl. 292—341.17.

Edgerton, Germeshausen Grier, Inc.: *See*—
Germeshausen, Kenneth J. 3,155,113.

Edmunson, Tillson H. Chain saw tooth. 3,155,129, 11–3–64, Cl. 143—135.

Ed-U-Cards Mfg. Corp.: *See*—
La Prelle, Frank B. 3,154,863.

Edwards, John: *See*—
Bowers, Albert, and Edwards. 3,155,695.

Egee, Walter W., and E. R. Thomas, to Campbell Soup Co. Apparatus for deboning cooked poultry. 3,154,805, 11–3–64, Cl. 17—1.

Ehl-Latic, Chemin des Pompes, Etablissements: *See*—
Magloire, René. 3,155,242.

Ehrenfreich, A., & Cie: *See*—
Gottschald, Rudolf. 3,155,407.

Eichert, Edwin S., R. F. Procter, and J. Polsky, to Technitrol, Inc. Electrical component assemblage and casing therefor. 3,155,766, 11–3–64, Cl. 174—52.

Eichholtz, Konrad, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Turbine jet engine. 3,154,915, 11–3–64, Cl. 60—35.6.

Eichholtz, Konrad, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Propulsive and lifting convertible jet engine unit. 3,154,916, 11–3–64, Cl. 60—35.54.

Eigenmann, Gino L. Road marking devices. 3,155,564, 11–3–64, Cl. 156—575.

Ekstrand, Jerome D. Deep water fishing bobber. 3,154,878, 11–3–64, Cl. 43—44.88.

Electra Motors, Inc.: *See*—
Palm, Bernhard N. 3,154,959.

Electric & Musical Industries Ltd.: *See*—
Voles, Roger. 3,155,964.

Electric Storage Battery Co., The: *See*—
Simpson, Jack N. 3,154,788.

Electro-Mechanical Research, Inc.: *See*—
Shumway, Carl K., Jr. 3,155,961.

Electronic Coin Processing Corp.: *See*—
Perkins, Richard E. 3,155,101.

Electrostar G.m.b.H., Firma: *See*—
Hanschitz, Rudolf, and Taft. 3,154,802.
Taft, Wilhelm. 3,155,270.

Electro-Voice, Inc.: *See*—
Burroughs, Louis R. 3,155,780.

Elektro-Thermit G.m.b.H.: *See*—
Kruger, Ernst. 3,154,892.

Ellenberger, Jakob. Hot wire starting switch for single-phase induction motors. 3,155,796, 11–3–64, Cl. 200—122.

Ellis, Bernard, D. Burn, and V. Petrow, to The British Drug Houses Ltd. 3-enol ethers of 2-hydroxymethyl-3-oxo-5a-steroids and process for preparing same. 3,155,692, 11–3–64, Cl. 260—297.4.

Ellis, Charles R., and R. C. McClure, to General Electric Co. Coupling grid means for grounded grid amplifier. 3,155,918, 11–3–64, Cl. 330—159.

Elwell, Charles A., to Product Design & Development Corp. Animated doll. 3,154,881, 11–3–64, Cl. 46—9.

Emerson, Carl D.: *See*—
Aichenegg, Paul C., and Emerson. 3,155,720.

Emmons, William D., and W. S. Wadsworth, Jr., to Rohm & Haas Co. Polymers of acrylates and methacrylates of bicyclic phosphites and bicyclic phosphates. 3,155,639, 11–3–64, Cl. 260—80.5.

Emmons, William D., and W. S. Wadsworth, Jr., to Rohm & Haas Co. Bicyclic phosphites and phosphates. 3,155,703, 11–3–64, Cl. 260—461.

Emmons, William D., and W. S. Wadsworth, Jr., to Rohm & Haas Co. Acrylates and methacrylates of bicyclic phosphites and bicyclic phosphates. 3,155,705, 11–3–64, Cl. 260—461.

Endo Laboratories Inc.: *See*—
Schlesinger, Albert, Blumberg, and Weiner. 3,155,664.

Eng, Jackson, to Esso Research and Engineering Co. Process for preparing ketones. 3,155,730, 11–3–64, Cl. 260—593.

Engelhard Hanovia, Inc.: *See*—
Rubens, Harry S., and Kelly. 3,155,761.

Engelsmann, Dieter: *See*—
Maas, Dieter, and Engelsmann. 3,155,023.

Engles, Earl F., Jr., to The Dow Chemical Co. Skin packaging. 3,154,898, 11–3–64, Cl. 53—30.

English Electric Co. Ltd., The: *See*—
Peters, Walter E., and Mills. 3,155,158.

English Electric Valve Co.: *See*—
Firmin, Jervois C. 3,155,869.

Ensign-Bickford Co., The: *See*—
Smith, John M. 3,155,038.

Enström, Hans G., H. Barnieske, and R. K. E. Barkman, to Astra, Apotekarnes Kemiska Fabriker, Aktiebolaget. Hypodermic syringe. 3,155,093, 11–3–64, Cl. 128—218.

Equitable Capital Corp.: *See*—
Nagle, Edward M. 3,154,818.

Erickson, Carl E. Electric shaver. 3,154,851, 11–3–64, Cl. 30—41.5.

Erickson, Clifford E., and G. M. Stone, to General Electric Co. Clothes drying cabinet with a biased rotary drum. 3,155,462, 11–3–64, Cl. 34—82.

Erickson, Gustav F., to National Rejectors, Inc. Money-handling devices. 3,155,213, 11–3–64, Cl. 194—19.

Erickson, Robert H., and S. Boyk, to General Magnetic Corp. Method for making barium ferrite magnets. 3,155,623, 11–3–64, Cl. 252—62.5.

Erikalsputki Oy: *See*—
Malkki, Eino K., and Silde. 3,155,063.

Escher Wyss Aktiengesellschaft: *See*—
Ruegg Rudolf. 3,155,438.
Spillmann, Werner. 3,155,117.

Esso Research and Engineering Co.: *See*—
Cyphers, Elmer B. 3,155,615.
Eng, Jackson. 3,155,730.
Etherington, Lewis D. 3 155,640.
Hopper, Jack R., Reynolds, and Franklin. 3,155,608.
Kuntz, Irving. 3,155,641.
Skarstrom, Charles W. 3,155,741.

Estoppey, Royden F., and J. Gugliotta, to Weston Instruments, Inc. Iron vane type electrical indicating instrument with magnetic damping means and including fixed vane and coil adjustment means. 3,155,905, 11–3–64, Cl. 324—147.

Etablissements Hutchinen (Compagnie Nationale du Caoutchous): *See*—
Villemonte de la Clergerie, Yves T. 3,155,133.

Etherington, Lewis D., to Esso Research and Engineering Co. Low pressure polymerization product recovery process. 3,155,640, 11–3–64, Cl. 260—93.7.

Ethyl Corp.: *See*—
Closson, Rex D., Comfeld, Klopfer, and Shapiro. 3,155,620.
Knapp, Gordon G. 3,155,704.

Etudes, Recherches Developpements, E.R.D., S.A.: *See*—
Van Baarn, Paul S. 3,155,285.

Eu Daly, Don T. High capacity liquid contact electrical switch. 3,155,794, 11–3–64, Cl. 200—112.

Eude, Jean-Claude, C. Piron, J. Savouyaud, and J. Vertut, to Commissariat à l'Energie Atomique. Remote manipulation apparatus. 3,155,240, 11–3–64, Cl. 214—1.

Evans, Walter R.: *See*—
Kinsey, Eugene E., Brandes, Evans, and Whitfield. 3,155,437.

Ewing, Lynn H.: *See*—
Nelson, Permil N. 3,154,857.

F & M Scientific Corp.: *See*—
Kauss, James M. 3,155,289.

FMC Corp.: *See*—
Belk, Wilber C. 3,155,132.
Bradford, John A. 3,155,183.
Cilker, William H., and Shrode. 3,154,908.
Creed, Sherman H. 3,155,218.

Fabbrica Italiana Magneti Marelli S.p.A.: *See*—
Barozzi, Alberto. 3,155,784.

Fagan, Denis C., and C. H. James, to United Shoe Machinery Corp. Machine for molding soles onto shoe bottoms. 3,154,813, 11–3–64, Cl. 18—17.

Fairchild Camera and Instrument Corp.: *See*—
Gerr, Raymond. 3,155,916.

Falcon Alarm Co., Inc.: *See*—
Reeves, Charles E. 3,154,937.

Fancher, Llewellyn W., and A. M. Imel, to Stauffer Chemical Co. Method of killing weeds. 3,155,487, 11–3–64, Cl. 71—2.5.

Fannon, John J., Jr.: *See*—
La Pointe, Joseph L., and Fannon. 3,155,145.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Gold, Heinrich. 3,155,651.
Hechelhammer, Wilhelm, and Strelb. 3,155,756.
Kritzler, Helmuth, and Wagner. 3,155,636.
Lang, Konrad, and Schubert. 3,155,732.
Reichold, Ernst, Jacobs, and Bockmann. 3,155,687.
Schrader, Gerhard. 3,155,570.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning: *See*—
Jurgen-Lohmann, Ludwig, and Kaupp. 3,155,697.

Farrel Corp.: *See*—
Ahlefeld, Edwin H., Jr., Baldwin, Hold, Rapetski, and Scharer. 3,154,808.

Farrow, Frederic W. R., to Associated Electrical Industries Ltd. Electrode support rod and support plate therefor. 3,155,863, 11–3–64, Cl. 313—260.

Fath, Douglas W., F. J. Kleewein, T. Kraschinsky, G. C. Lutsch, and C. J. Weiss, to Cutler-Hammer, Inc. Material handling control system. 3,155,277, 11–3–64, Cl. 222—55.

Fauser, Donald L., and E. R. Kolb, to Harris-Intertype Corp. Magnetic liquid developer and method for electrostatic images. 3,155,531, 11–3–64, Cl. 117—37.

Fazioli, William A.: *See*—
Olton, Dirck J., and Fazioli. 3,154,896.

Federal-Mogul-Bower Bearings, Inc.: *See*—
Sayre, Charles H., Lewis, and O'Brien. 3,154,844.

Federal Paper Board Co., Inc.: *See*—
Williamson, Marshall L., and Lee. 3,155,276.

Feigleson, Charles O.: *See*—
Biderman, Benjamin B., and Feigleson. 3,155,890.

Felt, Peter W., to Løvens Kemiske Fabrik Ved A. Kongsted. Stereoisomers and the racemate of butane-1, 2,3,4-tetrol-1, 4-di-(methanesulfonate). 3,155,702, 11–3–64, Cl. 260—456.

Feldhake, Ralph H., to Reilly Tar & Chemical Corp. Process of preparing pyridyl alkyl ketones. 3,155,676, 11–3–64, Cl. 260—297.

Feldhake, Ralph H., to Reilly Tar & Chemical Corp. Synthesis of pyridyl alkyl ketones. 3,155,677, 11–3–64, Cl. 260—297.

Felix, Samuel P., and J. R. Schneider, to De Laval Turbine Inc. Filtering apparatus. 3,155,613, 11–3–64, Cl. 210—232.

Fenkel, Stanley O., ½ to F. Minikes. Meat packaging tray. 3,155,303, 11–3–64, Cl. 229—2.5.

Fennessy, John J. Drive mechanism for microfilm reader-printer. 3,154,965, 11–3–64, Cl. 74—472.

Ferguson, Jacob C., Jr. Tooth paste dispenser with tube and brush support. 3,155,279, 11–3–64, Cl. 222—93.

Ferren, Richard: *See*—
Goshorn, Roland H., Ferren, and Smith. 3,155,656.

Fetzko, Andrew. Trailer tongue extension. 3,155,399, 11–3–64, Cl. 280—482.

Fichtel & Sachs A.G.: *See*—
Gebhardt, Willi, and Zerbst. 3,154,970.

Fiedelman, Howard W., and R. L. Lintvedt, to Morton Salt Co. Process for producing salt. 3,155,458, 11–3–64, Cl. 23—300.

Field, Sheldon B., to John J. McMullen Associates, Inc. Ship stabilizer. 3,155,066, 11–3–64, Cl. 114—125.

Fike, Louis T., to Super Mold Corp. Tire curing apparatus. 3,154,814, 11–3–64, Cl. 18—18.

Filson, John R., to Positive Connector Co. Electrical contact receptacle. 3,155,450, 11–3–64, Cl. 339—258.

Fincannon, Lee L., ¼ to W. L. Riggs, and ¼ to C. Christ. Material handling apparatus. 3,155,258, 11–3–64, Cl. 214—515.

Findley, Thomas W., J. L. Ohlson, and F. E. Kuester, to Swift & Co. Polyesters from epoxy-containing oleaginous materials. 3,155,696, 11–3–64, Cl. 260—404.8.

Firkins, G. & A., Ltd.: *See*—
Gist, John F. 3,155,287.

Firmin, Jervois C., to English Electric Valve Co. Storage tube with collector-backplate unitary target. 3,155,869, 11–3–64, Cl. 315—12.

Firth, Donald, and R. H. Y. Hancock, to Council for Scientific and Industrial Research. Machine tool drives. 3,155,983, 11–3–64, Cl. 82—28.

Fischer, Paul E., W. A. Heatley, Jr., and F. A. Lambert, to Champlain-Zapata Plastics Machinery, Inc. Pre-expander for pellets of plastic material. 3,155,379, 11–3–64, Cl. 263—21.

Fischer & Porter Co.: *See*—
Busillo, Eugene P. 3,154,945.

Fischer, Stefan. Apparatus for the manufacture of shaped bodies out of thermoplastic material. 3,154,809, 11–3–64, Cl. 18—5.

Fischman, Martin, to General Telephone and Electronics Laboratories, Inc. Square wave pulse generator having good frequency stability. 3,155,921, 11–3–64, Cl. 331—117.

Fisher, Don E., to Monsanto Co. Yarn collecting device. 3,154,907, 11–3–64, Cl. 57—34.

Fisher, Edward W., to Garlock Inc. Low friction material and device. 3,155,566, 11–3–64, Cl. 161—95.

Fitzgibbons, William O.: *See*—
De Gray, Richard J., and Fitzgibbons. 3,155,465.

Fleming, Harold W., to Catalysts and Chemicals Inc. Selective hydrogenation of acetylene. 3,155,739, 11–3–64, Cl. 260—677.

Flexible Tubing Corp.: *See*—
Hall, Marcus A. 3,155,559.

Flickinger, Don H., G. C. Howard, and F. H. Rixe, to Pan American Petroleum Corp. Propping fractures with glass balls. 3,155,162, 11–3–64, Cl. 166—42.

Flintkote Co., The: *See*—
Cubberley, Richard H., and Orsulak. 3,155,528.
Schulz, Joseph F., Jobbins, and D'Amato. 3,155,755.

Flocks, Karl W.: *See*—
Gill, Edwin R., Jr. 3,155,764.

Flora, Laurence H., to Tinnerman Products, Inc. Fastening device. 3,154,826, 11–3–64, Cl. 24—73.

Fly, Anderson B., to Hydro-Jet Services, Inc. Hydraulic jet well under-reaming process. 3,155,177, 11–3–64, Cl. 175—67.

Focht, Georgeana L.: *See*—
Focht, Nevin S. 3,155,120.

Focht, Nevin S., deceased; G. L. Focht, executrix. Hydraulic checking device for looms. 3,155,120, 11–3–64, Cl. 139—161.

Fogerty, James P., A. Spaak, F. W. Stevens, and I. H. Miller, said Fogerty, Spaak and Stevens assors. to W. R. Grace & Co., and said Miller assor to Owens-Illinois Glass Co. Bottle case. 3,155,268, 11–3–64, Cl. 220—21.

Fonda Bonardi, Giusto: *See*—
Hansen, Siegfried, and Fonda Bonardi. 3,155,592.

Foote Mineral Co.: *See*—
Beumel, Oscar F., Jr. 3,155,736.

Ford, James A., to Kirsch Co. Structural device. 3,155,149, 11–3–64, Cl. 160—346.

Ford Motor Co.: *See*—
Belsky, Charles. 3 155,420.
Boyer, Wesley D. 3,155,972.
MacIntyre, Robert M. 3,155,834.
Pope, James K. 3,155,562.

Foreman, Robert W., and F. Veatch, to The Standard Oil Co. Process for producing substituted guanamines. 3,155,661, 11–3–64, Cl. 260—249.9.

Forgings and Presswork Ltd.: *See*—
Bayliss, Ernest G. 3,155,300.

Forman Family, Inc.: *See*—
Forman, Sol, Motyka, and Sloyer. 3,155,284.

Forman, Louis: *See*—
Hargens, Charles W., III, and Smith. 3,154,950.

Forman, Sol, W. S. Motyka, and S. Sloyer, to Forman Family, Inc. Dual swingably mounted pot. 3,155,284, 11–3–64, Cl. 222—144.

Forrestal, Lloyd J., and A. F. Lewis, to American Cyanamid Co. Adhesionable vinyl-modified polyolefins and methods for producing same. 3,155,744, 11–3–64, Cl. 260—878.

Forsburg Oscar F.: *See*—
Williams, Clyde D., and Forsburg. 3,155,274.

Fortenbaugh, Robert B.: *See*—
Reed, Charles C., and Fortenbaugh. 3,155,587.
Reed, Charles C., Fortenbaugh, and Leeson. 3,155,586.

Foster, Berry W. Device for producing a periodic linear displacement over a small portion of its cycle. 3,155,309, 11–3–64, Cl. 230—56.

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Harmens, Alexander, to Conch International Methane Ltd. Gasification of a liquid gas with simultaneous production of mechanical energy. 3,154,928 11–3–64, Cl. 62—53.

Harmer, John D., to Raytheon Co. Feed-through nulling system. 3,155,965, 11–3–64, Cl. 343—5.

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Harris, Irving F., and E. Wachter, to Simon Mattress Mfg. Co. Means to facilitate germicidal treatment of mattresses. 3,154,798. 11–3–64, Cl. 5—347.

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Harrison, George C., and C. F. Gaetke, to Minnesota Mining and Mfg. Co. Closed molds for casting gaskets on pipe ends. 3,154,816, 11–3–64, Cl. 18—30.

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Hartung, Walter, and W. Daume, said Daume assor. to said Hartung. Pressure medium controlled liquid valve for automatic flow limitation devices. 3,155,365, 11–3–64, Cl. 251—25.

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Haskin, Lawrence H., Jr., to The Inta-Roto Machine Co., Inc. Apparatus for applying fluid to a web such as intaglio printing machines. 3,155,037, 11–3–64, Cl. 101—364.

Haslacher, Alfred B., deceased; (by R. L. Haslacher, administrator), to M. L. Haslacher. Apparatus for sealing ends in impervious bags. 3,155,017, 11–3–64, Cl. 93—27.

Haslacher, Mabel L.: *See*—
Haslacher, Alfred B. 3,155,017.

Haslacher, Robert L.: *See*—
Haslacher, Alfred B. 3,155,017.

Hatchard, William R., to E. I. du Pont de Nemours and Co. Certain isothiazole compounds and their production. 3,155,678, 11–3–64, Cl. 260—302.

Hatchard, William R., to E. I. du Pont de Nemours and Co. 5,5-thiobis(isothiazole) compounds and their production. 3,155,679, 11–3–64, Cl. 260—302.

Hauser, Martin, and N. M. Bikales, to American Cyanamid Co. Xanthate esters. 3,155,701, 11–3–64, Cl. 260—455.

Hautau, Charles F., to Baldwin-Lima-Hamilton Corp. Mandrel apparatus for tube bending. 3,155,139, 11–3–64, Cl. 153—19.

Haverstick, Merral P., ½ to The Vendo Co., and ½ to Coin Acceptors, Inc. Coin selecting apparatus. 3,155,214, 11–3–64, Cl. 194—102.

Havn, Svend E., and H. T. Freestone, to General Electric Co. Flat display tube utilizing voltage gradient deflection layer. 3,155,872, 11–3–64, Cl. 315—23.

Hayden, Robert L., E. G. Langlois, and D. C. Starkweather, to Western Electric Co., Inc. Wire stripping apparatus. 3,154,980, 11–3–64, Cl. 81—9.51.

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Wilson, Wendell E., Doberstein, O'Neill, and Healey. 3,155,783.

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Hechelhammer, Wilhelm, and H. Streib, to Farbenfabriken Bayer Aktiengesellschaft. Molding of stress-free polycarbonate articles. 3,155,756, 11–3–64, Cl. 264—178.

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Stiglic, Paul M., Shramo, and Hehmeyer. 3,155,019.

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Henderson, Ulysses V., Jr., and W. G. Courtney, to Texaco Experiment Inc. Process of preparing hydrazinium azide. 3,155,456, 11–3–64, Cl. 23—101.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Fluid-actuated clutch and brake. 3,155,208, 11–3–64, Cl. 192—13.

Henschen, Homer E., to AMP Inc. Electrical contact. 3,155,449, 11–3–64, Cl. 339—217.

Hensgen, Bernard T., and D. K. Jewell, to Swift & Co. Apparatus for removing meat from bones. 3,154,804, 11–3–64, Cl. 17—1.

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Hi, Louis E., to Societe Anonyme de Construction de Materiel d'Alimentation. Automatic cocks for taking saturated or unsaturated liquids. 3,155,126, 11–3–64, Cl. 141—50.

Hicks, Alfred C., and N. Hambley, to Turner Bros. Asbestos Co. Ltd. Methods of and apparatus for guiding fabrics. 3,155,302, 11–3–64, Cl. 226—3.

Hidding, Walter E. Plastic support for bottles. 3,155,263, 11–3–64, Cl. 215—100.

Higginbotham, John W., to Martin-Marietta Corp. Thermal modulation for transistor drift correction. 3,155,915, 11–3–64, Cl. 330—10.

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Hilgert, Adolph J., to Johnson Service Co. Pressure-electric transducers. 3,155,896, 11–3–64, Cl. 323—95.

Hill, Charles A. S. Heating elements for vacuum furnaces. 3,155,758, 11–3–64, Cl. 13—25.

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Hofer, Walter D., ¼ to L. B. Levine, and ¾ to G. A. Turcott. Flexible link harrow. 3,155,170, 11–3–64, Cl. 172—623.

Hoffman, Allan C., to Vernay Laboratories, Inc. Rubber check and relief valve. 3,155,110, 11–3–64, Cl. 137—493.1.

Hoffman, Herbert N., to General Electric Co. Shaft packing assembly. 3,155,395, 11–3–64, Cl. 277—163.

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Hollenden, William J., and C. E. Welsh, to General Electric Co. Entrance seal for electrical conductors extending through the wall of a pressure vessel. 3,155,770, 11–3–64, Cl. 174—153.

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Holter, John W., to The Holter Co. Hypodermic syringe operating means. 3,155,090, 11–3–64, Cl. 128—2.

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Holz, Otto and F., H. Zoller, and M. Streicher. Cutting device for manure pumps. 3,155,330, 11–3–64, Cl. 241—258.

Holzman, George, and R. P. Trainer, to Shell Oil Co. Alkylation process. 3,155,742, 11–3–64, Cl. 260—683.48.

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Hopp, Philip, G. H. Woods, and A. G. Jackson, to The Hopp Press, Inc. Sign assembly. 3,154,870, 11–3–64, Cl. 40—128.

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Hoppin, George S., III, and W. R. Young, to General Electric Co. Brazing alloy. 3,155,491, 11–3–64, Cl. 75—.5.

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Horne, Ronald, to Monsanto Co. Denier monitoring and control system. 3,154,810, 11–3–64, Cl. 18—8.

Horne, Ronald, and J. T. Reese. Racks for fishing rods. 3,155,299. 11–3–64, Cl. 224—42.1

Horton, Robert C., to The Schlegel Mfg. Co. Channel construction. 3,154,823. 11–3–64, Cl. 20—69.

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La Pointe, Joseph L., and Fannon. 3,155,145.

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Hanken, Albert F. G. 3,155,901.
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Jalowiecki, Jerzy G. Retractible running gear for boat trailers. 3,154,799, 11–3–64, Cl. 9—1.

James, Alec P. Bearing lubricating devices. 3,155,192, 11–3–64, Cl. 184—15.

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Jend, Paul. Tamper-proof holder for paper rolls. 3,155,333, 11–3–64, Cl. 242—55.2.

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Jones, Charles, and R. E. Mount, to Curtiss-Wright Corp. Internal combustion engine with spark plug subject to high temperature operating conditions. 3,155,085, 11–3–64, Cl. 123—169.

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Juvinall, James W. Electrostatic spray coating methods and apparatus. 3,155,539, 11–3–64, Cl. 118—11.

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Kaiser, Carl, and C. L. Zirkle, to Smith Kline & French Laboratories. Naphthylcyclopropylamines. 3,155,725, 11–3–64, Cl. 260—570.5.

Kalle Aktiengesellschaft: *See*—
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Kallenberg, Karl J., to Pako Corp. Auxiliary contact printer unit for photographic printing machine. 3,155,025, 11–3–64, Cl. 95—77.5.

Kamborian, Jacob S., Jr.: *See*—
Edelberg, Alan K., J. S. Kamborian, and J. S. Kamborian, Jr. 3,154,825.

Kamborian, Jacob S.: *See*—
Edelberg, Alan K., J. S. Kamborian, and J. S. Kamborian, Jr. 3,154,825.

Kanegafuchi Boseki Kabushiki Kaisha: *See*—
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Kanegafuchi Kikai Kogyo Kabushiki Kaisha: *See*—
Urano, Yukio, Hamahata, Yosano, and Fujihara. 3,154,909.

Kano, Yokichi, Y. Takemi, and S. Kasahara, to Nippon Electric Co. Ltd. Party line sub-station. 3,155,776, 11–3–64, Cl. 179—32.

Kappen, Frieda E.: *See*—
Kappen, John W. 3,155,203.

Kappen, Jno W.: *See*—
Kappen, John W. 3,155,203.

Kappen, John W., a.k.a. Jno W. Kappen; F. E. Kappen, administratrix. Multiple purpose door. 3,155,203, 11–3–64, Cl. 189—46.

Karlson, John C., to The Bendix Corp. Motor control system. 3,155,892, 11–3–64, Cl. 318—207.

Kasahara, Shoichi: *See*—
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Kashihara, Manabu. Infinitely variable speed change gear utilizing a ball. 3,154,957, 11–3–64, Cl. 74—198.

Kauer, Kenneth C., to The Dow Chemical Co. Symmetrical diaryl diamidodithiopyrophosphates. 3,155,707, 11–3–64, Cl. 260—461.

Kaufman, Irving, and W. H. Steier, to Thompson Ramo Wooldridge, Inc. Plasma guide microwave selective coupler. 3,155,924, 11–3–64, Cl. 333—7.

Kaufman, Murray, and R. F. Wilde, to General Electric Co. Nickel base alloy. 3,155,501, 11–3–64, Cl. 75—171.

Kaufmann, Frank H., to Steel Heddle Mfg. Co. Loom harness. 3,155,118, 11–3–64, Cl. 139—91.

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Jurgen-Lohmann, Ludwig, and Kaupp. 3,155,697.

Kauss, James M., to F & M Scientific Corp. Apparatus for accurately measured dispensation of material. 3,155,289, 11–3–64, Cl. 222—253.

Kazenas, Zenon, and R. A. Ward, to J. D. Steele. Radioactive magnetic flaw detection composition and process for making same. 3,155,622, 11–3–64, Cl. 252—62.5.

Kazmin, Vadim S., V. N. Komarov, I. N. Kudryashov, and B. S. Antonov. Device for automatic feed of cutting bit in well drilling. 3,155,172, 11–3–64, Cl. 173—6.

Keefer, David E., to Sperry Rand Corp. Parallel interrogation of computer memories. 3,155,945, 11–3–64, Cl. 340—174.

Keel, Adolf. Power transmission. 3,155,047, 11–3–64, Cl. 103—161.

Keen, John M. S., J. R. Simpson, and G. A. K. Pope, to Rolls-Royce Ltd. Oil discharge pump for a gas turbine engine. 3,154,919, 11–3–64, Cl. 60—39.08.

Keener, Russell W., to Jet Set Corp. Means for setting tubular bodies. 3,155,164, 11–3–64, Cl. 166—63.

Kehr, Clifton L., to W. R. Grace & Co. Production of highly oxidized polyolefins. 3,155,644, 11–3–64, Cl. 260—94.9.

Kelley, Dale T., to Motorola, Inc. Method and apparatus for loading a receiver with a plurality of beads. 3,155,272, 11–3–64, Cl. 221—1.

Kelley, Dale T., to Motorola, Inc. Transistor device with self-jigging construction. 3,155,936, 11–3–64, Cl. 338—329.

Kelly, Eugene J.: *See*—
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Kemeny, Julius, J. M. Parsons, C. E. Cady, and M. E. Jones, to General Electric Co. Tuner actuator mechanism. 3,155,893, 11–3–64, Cl. 318—467.

Kendall Co., The: *See*—
Seltzer, Norman L., and Higgins. 3,155,121.

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Hunt, Lawrence G., and Wilmeth. 3,155,179.

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Kuhn, James O. 3,154,995.

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Kenney, Philip L. 3,155,148.

Kenney, Philip L., to Kenney Mfg. Co. Pulley case and curtain rod combination. 3,155,148, 11–3–64, Cl. 160—344.

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McGuire, William J., Jr., Kern, and Kleschnich. 3,155,159.

Kliesel, George W., and E. M. Wegh, to General Electric Co. Multipole circuit breaker with novel contact arm construction. 3,155,805, 11–3–64, Cl. 200—166.

Kimball, Stanley M. Concrete wall form. 3,154,833, 11–3–64, Cl. 25—131.

Kinel, Fred A., to Syntex Corp. 6,7-dichloroestratrienes. 3,155,693. 11–3–64, Cl. 260—397.4.

King, Noble T., to Monsanto Co. Yarn holding device. 3,154,932, 11–3–64, Cl. 66—145.

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Kinsman, Robert G.: *See*—
Prenosil, Wolfgang G., and Kinsman. 3,155,913.

Kirchmier, Thomas M., to Westinghouse Electric Corp. Circuit for protecting a load circuit from initial power supply voltage transients. 3,155,847, 11–3–64, Cl. 307—93.

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Dabanian, Karnig H., and Kirk. 3,154,939.

Kirkham, Arthur J. Accessory heating system for tractors and similar equipment. 3,155,318, 11–3–64, Cl. 237—12.3.

Kirkpatrick, Willard H., V. L. Seale, and R. E. Berkley, to Naleo Chemical Co. Aqueous foams and foaming agents. 3,155,178, 11–3–64, Cl. 175—69.

Kirsch Co.: *See*—
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Kirsten, Rolf, and H. Wurst, to Hofliger & Karg. Former for the production of tubing. 3,155,018, 11–3–64, Cl. 93—82.

Klaus, Franz. Centrifugal pumps. 3,155,043, 11–3–64, Cl. 103—87.

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Klein, Alexander, to Chemically Prestressed Concrete Corp. Calcium aluminosulfate and expansive cements containing same. 3,155,526, 11–3–64, Cl. 106—89.

Klein, Keith W., and D. B. Powell, to General Electric Co. Electric circuit breaker with toggle positioning means. 3,155,803, 11–3–64, Cl. 200—153.

Klenk, Hans, to Continental Gummi-Werke Aktiengesellschaft. Tread structure for pneumatic vehicle tires. 3,155,135, 11–3–64 Cl. 152—353.

Kliner, George J., and J. F. Attridge, to The B. F. Goodrich Co. Thermoplastic welding composition. 3,155,745, 11–3–64, Cl. 260—899.

Klingenberg, Alfred S., to Bell Telephone Laboratories, Inc. Rocker switch assembly. 3,155,806, 11–3–64, Cl. 200—167.

Klingsberg, Erwin, to American Cyanamid Co. Process for 1,3-dithiolium dyestuffs and intermediates therefor. 3,155,682, 11–3–64. Cl. 260—327.

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Knight, Sheldon A., to American Radiator & Standard Sanitary Corp. Self-searching, self-dithering servo system. 3,155 830, 11–3–64, Cl. 250—201.

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Cole, Edward L., and Knowles. 3,155,627.

Knust, Ronald B.: *See*—
Clayton, William H., Jr., and Knust. 3,155,077.

Koert, Alvah C., to General Electric Co. Target electrode assembly. 3,155,859, 11–3–64, Cl. 313—68.

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Fauser, Donald L., and Kolb. 3,155,531.

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Koppers Co., Inc.: *See*—
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Köstler & Co.: *See*—
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Kowaleski, Clarence, and W. Pferd, to Bell Telephone Laboratories, Inc. Multiple conductor connector. 3,155,446, 11–3–64. Cl. 339—176.

Kramcsak, Michael, Jr., and R. E. Sheahan, to Stewart-Warner Corp. Leveling device. 3,155,357, 11–3–64, Cl. 248—188.3.

Kramer, Horst, and F. Sturzenhofecker, to Chemische Werke Huls, Aktiengesellschaft. Diepoxy-1,3 5-trimethylene trisulfones and their preparation. 3,155,681, 11–3–64, Cl. 260—327.

Kramer, Vance M., and L. W. Carlton. Method of and apparatus for making and joining spirally corrugated rubber tubing. 3 155 757, 11–3–64, Cl. 264—286.

Krapcho, John, and C. F. Turk, to Olin Mathieson Chemical Corp. Benzothiazocinones, related compounds and their preparation. 3,155,649. 11–3–64, Cl. 260—239.3.

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Kreider, Peter A. Trash disposal apparatus. 3,155,314, 11–3–64 Cl. 232—43.2.

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Krikorian George, to Coro Inc. of Rhode Island. Method of manufacture of article of jewelry. 3,154,841, 11–3–64, Cl. 29—160.6.

Krilanovich, Joseph J. Musical instrument. 3,154,996, 11–3–64. Cl. 84—401.

Kritzler, Helmuth, and K. Wagner, to Farbenfabriken Bayer Aktiengesellschaft. Polymerisation of formaldehyde. 3,155,636, 11–3–64, Cl. 260—67.

Kronogård, Sven-Olof, to Volvo, Ab. Gas turbine plant. 3,154,918, 11–3–64, Cl. 60—39.16.

Kronogård, Sven-Olof, to Volvo, Ab. Hydrodynamic torque converter. 3,154,924, 11–3–64, Cl. 60—54.

Kruger, Ernst, to Elektro-Thermit G.m.b.H. Apparatus for grinding rails. 3,154,892, 11–3–64, Cl. 51—178.

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Kulicke, Frederick W., Jr., G. H. Schwalm, and R. Ulman, to AMP Inc. Assembling and crimping apparatus. 3,155,138, 11–3–64, Cl. 153—1.

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Kurt, Ewald H., S. P. Lewis, and L. A. D. Paulson, to Ingersoll-Rand Co. Feed control means for down-the-hole rock drill rigs. 3 155,171, 11–3–64, Cl. 173—4.

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l'Air Liquide Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude: *See*—
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Lang, Konrad, and F. Schubert, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of tetraalkyl diboranes. 3 155,732, 11–3–64, Cl. 260—606.5.

Lang, William H., D. M. Nace, and P. B. Weisz, to Socony Mobil Oil Co., Inc. Reforming with a steamed platinum-alumina catalyst in the presence of sulfur. 3,155,605, 11–3–64, Cl. 208—79.

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Larrick, Howard M., and W. R. Brosch. Automatic sensitivity control for sound actuated detection and alarm systems. 3,155 954, 11–3–64, Cl. 340—261.

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Laufbahn, Jennie: 25% each to A. Blackstein and C. Gass, and 25% to L. Reiter. Shoe construction with detachable components. 3,154,866, 11–3–64, Cl. 36—2.5.

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Yanna, Andrew F. 3,155,105.
Lehmer, Wilhelm, and W. Baldus, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Process for removing trace admixtures from reactor coolant gas. 3,155,469, 11–3–64, Cl. 55—66.
Lehnert, Bo P. and B. K. J. Bonnevier. Apparatus for confining and heating a plasma. 3,155,594, 11–3–64, Cl. 176—8.
Lemelson, Jerome H. Ultrasonic tool. 3,154,890, 11–3–64, Cl. 51—59.
Lemonnier, Pierre L. A., to M.T.I. Le Materiel Technique Industrial. Reverning relays having increased cut-off power. 3,155,790, 11–3–64, Cl. 200—87.
Leone, Salvatore J., to The Stanley Works. Display package and blank for making same. 3,155,232, 11–3–64, Cl. 206—45.14.
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Campbell, David D., Leslie, and Wernig. 3,155,422.
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Lewis, Douglas R. Torque converter. 3,154,964, 11–3–64, Cl. 74—472.
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Örnehage, Curt I. 3,155,086.
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Littel, John B. Comminuting ashtray. 3,155,327, 11–3–64, Cl. 241—56.
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Loeffler, Lawrence A., and F. E. Lyon, to The Landers Corp. Apparatus for the extrusion coating of fabric or like materials. 3,155,540, 11–3–64, Cl. 118—60.
Loewe, Siegmund, deceased; B. Lowe, executor. Magnetic sound recording and reproducing apparatus. 3,155,334, 11–3–64, Cl. 242—55.12.
Logan, Kenneth C., and O. Sepall, to Anglo Paper Products, Ltd. Method for producing wood chips. 3,155,130, 11–3–64, Cl. 144—326.
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Long, Laurence J., and S. R. Williams, to E. I. du Pont de Nemours and Co. Color stabilization of mixtures of trichlorofluoromethane and N,N,N′,N′-tetrakis(hydroxyalkyl) alkylene-diamines. 3,155,625, 11–3–64, Cl. 252—182.
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Longley, Lester A., to Longley Construction Co., Inc. Combined trench hoe and crusher ball machine. 3,155,328, 11–3–64, Cl. 241—101.
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Lovejoy, Harry E., to Sperry Rand Corp. Flanged conductive sleeve for connecting strip line with coaxial line. 3,155,930, 11–3–64, Cl. 333—97.
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Lown, George: *See*—
Lown, Walter H., and Brown. 3,155,045.
Lown, Walter H., deceased; (G. Lown, executor), and D. D. Brown. Wear resistant pumps. 3,155,045, 11–3–64, Cl. 103—103.
Lucas, Joseph G.: *See*—
Freeman, William R., Jr., and Lucas. 3,155,536.
Lutsch, Gene C.: *See*—
Fath, Douglas W., Kleewein, Kraschinsky, Lutsch, and Weiss. 3,155,277.
Lutz, Albert W., R. G. Child, and B. L. Walworth, to American Cyanamid Co. Controlling undesirable plant growth. 3,155,488, 11–3–64, Cl. 71—2.5.
Lutz, Wilson B., and R. I. Meltzer, to Warner-Lambert Pharmaceutical Co. Aminopyrasines. 3,155,663, 11–3–64, Cl. 260—250.
Lyon, Frank E.: *See*—
Loeffler, Lawrence A., and Lyon. 3,155,540.
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Gillies, James, and Reddish. 3,155,867.
M.T.I. Le Materiel Technique Industrial: *See*—
Lemonnier, Pierre L. A. 3,155,790.
Maas, Dieter, and D. Engelsmann, to Agfa Aktiengesellschaft. Automatic cameras. 3,155,023, 11–3–64, Cl. 95—10.
Maas, Henricus J., and M. G. Aalpoel, to Koninklijke Vereenigde Tabaksindustrieen Mignot & de Block N.V. Apparatus for applying a wrapper leaf on a cigar bunch. 3,155,098, 11–3–64, Cl. 131—33.
MacFarlane, Carolyn H. Voice reflector. 3,155,189, 11–3–64, Cl. 181—20.
Macha, Edward A., and O. P. Steele, III, to Westinghouse Electric Corp. Dynamoelectric machinery. 3,155,856, 11–3–64, Cl. 310—57.
MacIntyre, Robert M., to Ford Motor Co. Multiple level logic system. 3,155,834, 11–3–64, Cl. 307—88.
MacSween, George A., to Canadian Ingersoll-Rand Co., Ltd. Drill bit with fluid passages. 3,155,180, 11–3–64, Cl. 175—418.
Maeda, Hisao. Wide range variable magnetic inductor. 3,155,931, 11–3–64, Cl. 336—134.
Maeder, Paul F., to Speidel Industrial Division, Inc. Tape storage magazine. 3,155,335, 11–3–64, Cl. 242—55.19.
Magloire, René, to Ebl-Latic, Chemin des Pompes, Etablissements. Device for the stopping and accurate positioning of a moving body. 3,155,242, 11–3–64, Cl. 214—1.4.
Magna Corp.: *See*—
Messick, William E., Goff, and Cramer. 3,155,934.
Magna Products Inc.: *See*—
Rohrback, Gilson H., and Scott. 3,155,933.
Magnusson, Bengt G., to Telefonaktiebolaget L M Ericsson. Current regulating arrangement for coincidence memories. 3,155,842, 11–3–64, Cl. 307—88.5.
Mahan, John E., and C. R. Scott, to Phillips Petroleum Co. Fast burning fuels containing mercaptan-peroxide reaction products. 3,155,555, 11–3–64, Cl. 149—46.
Mahoney, John J., Jr.: *See*—
Gibby, Richard A., Kahl, and Mahoney. 3,155,772.
Mai, Gerhard, to Otto Fuchs, Kommandit-Gesellschaft. Arrangement for measuring the temperature of an extrusion during the manufacture thereof. 3,155,237, 11–3–64, Cl. 207—16.
Maich, John. Dispensers. 3,155,235, 11–3–64, Cl. 206—57.
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Kleber, Edward J., Jr., and Majka. 3,154,839.
Malavasi, Leonida. Machine for kneading raised dough. 3,155,054, 11–3–64, Cl. 107—12.
Malkki, Eino K. and V. Silde, to Erikaisputki Oy. Machine for making spiral pipe. 3,155,063, 11–3–64, Cl. 113—35.

Mallory, P. R., & Co., Inc.: *See*—
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Malouf, Jean K., and R. Parent, said Parent assor to said Malouf. Extension roller screen. 3,155,146, 11–3–64, Cl. 160—27.
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Mandelbaum, Robert, and F. G. Weis, to Union Tank Car Co. Simplex liquid handling apparatus having improved electrode type control system. 3,155,048, 11–3–64, Cl. 103—241.
Mandelbaum, Robert, and F. G. Weis, to Union Tank Car Co. Duplex liquid handling apparatus having improved electrode-type control system. 3,155,049, 11–3–64, Cl. 103—241.
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Steger, Joseph F., and Manetti. 3,155,771.
Mann, Friedrich H., and A. V. Miller, to General Electric Co. I.F.-controlled squelch circuit for narrow bandwidth receivers. 3,155,910, 11–3–64, Cl. 325—478.
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Ingves, Wallace W., and Manuel. 3,155,031.
Maramonte, Michael D. Concrete block cubing apparatus. 3,155,243, 11–3–64, Cl. 214—6.
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Marino, Joseph, T. P. Nowalk, and W. R. Schaefer, to Westinghouse Electric Corp. Hermetically sealed semiconductor devices. 3,155,885, 11–3–64, Cl. 317—234.
Marker, Hannes. Retaining device for tensioning cable of akt binding. 3,155,398, 11–3–64, Cl. 280—11.35.
Markowitz, Seymour, to Ampex Corp. Magnetic-core memory driving system. 3,155,943, 11–3–64, Cl. 340—174.
Marland, Fredric. Smoking pipe cleansing device. 3,155,100, 11–3–64, Cl. 131—244.
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Parisi, Anthony J., and Perreault. 3,155,957.
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Martin, William B., to Abbott Laboratories. Compositions and method of inhibiting monoamine oxidase and treating hypertenson. 3,155,584, 11–3–64, Cl. 167—65.
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Higginbotham, John W. 3,155,915.
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Berry, Malcolm E., Herr, and Mason. 3,155,580.
Mast Development Co.: *See*—
Mast, Gifford M., and Gannett. 3,155,979.
Mast, Gifford M., and W. K. Gannett, to Mast Development Co. Rotating prism optical system. 3,155,979, 11–3–64, Cl. 352—119.
Matsubayashi, Kanji, and O. Fukushima, ¾ to Kurashiki Rayon Co., Ltd., and ¼ to Air Reduction Co., Inc. Process of producing improved polyvinyl alcohol fibers. 3,155,632, 11–3–64, Cl. 260—29.6.
Matsumura, Eiso. Process for preparing vitamin B_6 and related compounds. 3,155,673, 11–3–64, Cl. 260—295.5.
Matthews, Robert, and R. T. A. Howell, to Decca Ltd. Radar-controlled guidance system. 3,155, 968, 11–3–64, Cl. 343—7.
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Weisman, Stanley N., and Matthias. 3,155,753.
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Mattson, Elvin and A. D. 3,155,169.
Mattson, Elvin and A. D. Cultivator shield device. 3,155,169, 11–3–64, Cl. 172—512.
Mavrovic, Ivo, to Chemical Construction Corp. Recovery of residual ammonia and carbon dioxide in the synthesis of urea. 3,155,722, 11–3–64, Cl. 260—555.
Mavrovic, Ivo: *See*—
Kurpit, Stanley S., Mavrovic, and Saffian. 3,155,723.
Mayer, Leo: *See*—
Blemly, Marvin S., and Mayer. 3,155,207.
Mayerhoff, Jonah: *See*—
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Mayerle, Evan A: *See*—
Linsk, Jack, and Mayerle. 3,155,602.
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McConnell, Willie, and G. Head, said McConnell assor. to G. Head. Tabbing machine. 3,155,544, 11–3–64, Cl. 118—410.
McCormick, Martin M., to Sinclair Research, Inc. Complex lubricant. 3,155,619, 11–3–64, Cl. 252—39.
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McDonald, Clement J., to Multi Electric Mfg., Inc. Airport runway light. 3,155,321, 11–3–64, Cl. 240—1.2.
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McDowell, Wilbur B., to Olin Mathieson Chemical Corp. 2-(hydroxyiminomethyl) 1 quaternary pyridinium salts and processes for their preparation. 3,155,674, 11–3–64, Cl. 260—296.
McDurmont, Walter R., to Anderson Electric Corp. Compression tool. 3,154,981, 11–3–64, Cl. 81—15.
McGraw-Edison Co.: *See*—
Wilson, Gordon A., Jr. 3,155,782.
McGuire, William J., Jr., L. R. Kern, and W. F. Kieschnich, Jr., to The Atlantic Refining Co. Increasing permeability of subsurface formations. 3,155,159, 11–3–64, Cl. 166—29.
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Grimm, George W., and McKeown. 3,155,937.
McMullen, John J., Associates, Inc.: *See*—
Field, Sheldon B. 3,155,066.
McNair, Samuel L., to The Songrand Corp. Hydrotherapy apparatus. 3,155,092, 11–3–64, Cl. 128—66.
McNeil, Donald H., to Cockshutt Farm Equipment of Canada Ltd. Cleaner for air screen. 3,155,473, 11–3–64, Cl. 55—294.
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McQueary, Milton F. Arrow straightener. 3,154,982, 11–3–64, Cl. 81—15.
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Mead Johnson & Co.: *See*—
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Lish, Paul M., Bryan, and Mercer. 3,155,576.
Mercer, Neil H., and Bryan. 3,155,577.
Mears, Norman B. Fine mesh screens. 3,155,460, 11–3–64, Cl. 29—183.5.
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Meilinger Fixtures Co., Inc.: *See*—
Meilinger, Raymond. 3,155,443.
Meilinger, Raymond. to Meilinger Fixtures Co., Inc. Reversible door cabinet. 3,155,443, 11–3–64, Cl. 312—329.
Meitzler, Allen H., to Bell Telephone Laboratories, Inc. Ultrasonic strip delay lines. 3,155,926, 11–3–64, Cl. 333—30.
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Menzl, Kurt, to Osterreichische Stickstoffwerke Aktiengesellschaft. Process for the preparation of 3-amino-1,2,5-thiadiazol-4-carboxylic acid, and of new derivatives thereof. 3,155,680, 11–3–64, Cl. 260—306.8.
Mercer, Neil H.: *See*—
Lish, Paul M., Bryan, and Mercer. 3,155,576.
Mercer, Neil H., and H. D. Bryan, to Mead Johnson & Co. Tasteless dioctylsulfosuccinate composition and method of making same. 3,155,577, 11–3–64, Cl. 167—56.
Merck & Co., Inc.: *See*—
Cragoe, Edward J., Jr. 3,155,653.
Rogers, Edward F., and Sarett. 3,155,572.
Sarett, Lewis H., and Brown. 3,155,571.
Merkel, Heinrich, to Koppers Co., Inc. Process for separation of phenols from aqueous mixtures containing them. 3,155,734, 11–3–64, Cl. 260—621.
Messick, William E., E. J. Goff, and T. H. Cramer, to Magna Corp. Hermetically sealed probe for measuring corrosion. 3,155,934, 11–3–64, Cl. 338—13.
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New, Russel W. 3,155,210.
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Meyer, Delbert H., to Standard Oil Co. Preparation of trimellitic intermolecular double anhydride. 3,155,687, 11–3–64, Cl. 260—346.3.
Meyer, Edward M. Teaching apparatus using sound recording. 3,155,778, 11–3–64, Cl. 179—100.2.
Meyer, Rudolf X., to Thompson Ramo Wooldridge Inc. Magnetohydrodynamic voltage generator. 3,155,850, 11–3–64, Cl. 310—11.
Meyer, Vincent E.: *See*—
Dahn, Raymond C., Jr., Langan, and Meyer. 3,155,750.
Meyer, William: *See*—
Drumm, Joseph T., and Meyer. 3,155,370.
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Meyers, Joseph, 25% to McCulloch Investments. 25% to C. L. and L. C. Wolfe, 10% to R. L. Cooper, and 40% to J. Meyers. Tire deflation device and system. 3,155,938, 11–3–64, Cl. 340—58.
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Coonradt, Harry L., and Miale. 3,155,604.
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Brown, David, and Saffer. 3,155,717.
Middlesworth, Tommy A., and W. E. Dorsett, to International Harvester Co. Low silhouette engine. 3,155,083, 11–3–64, Cl. 123—41.49.
Miehle-Goss-Dexter, Inc.: *See*—
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Miller, Archie V.: *See*—
Mann, Friedrich H., and Miller. 3,159,910.
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Fogerty, James P., Spaak, Stevens, and Miller. 3,155,268.
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Miller, Robert E., and J. L. Anderson, to The National Cash Register Co. Encapsulation process and its product. 3,155,590, 11–3–64, Cl. 167—83.

Mills, Jack, and F. J. Marshall, to Eli Lilly and Co. Novel sulfonylureas. 3,155,721, 11–3–64, Cl. 260—553.

Mills, Leonard: *See*—
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Mills, Robert H., to Monsanto Co. Di(alkylglycolyl)phthalates. 3,155,714, 11–3–64, Cl. 260—475.

Mims, William B., to Bell Telephone Laboratories, Inc. Spin resonance storage system. 3,155,941, 11–3–64, Cl. 340—173.

Minchin, Archibald F. Cigarette holders. 3,155,099, 11–3–64, Cl. 131—175.

Miner, Charles Q. Mobile coach-type living quarters for land vehicles. 3,155,418, 11–3–64, Cl. 296—23.

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Minnesota Mining and Mfg. Co.: *See*—
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Stack, Thomas N. 3,155,142.

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Mitchell, Joseph R., M. E. Potter, and E. J. Whittenberger, to United States Steel Corp. Heat treatment of chromium-free steel bearings. 3,155,550, 11–3–64, Cl. 148—134.

Mitick, Stanley R., Jr., to General Electric Co. Thermally responsive switching device. 3,155,799, 11–3–64, Cl. 200—138.

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Mobay Chemical Co.: *See*—
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Mobley, Paul R., to General Electric Co. Brazing alloy. 3,155,499, 11–3–64, Cl. 75—134.

Modersohn, Otto, and H. Bettin, to Olympia Werke A.G. Distribution network which effects a substantially constant load. 3,155,884, 11–3–64, Cl. 317—137.

Modiano, Victor J., to Hughes Aircraft Co. Majority logic circuit using a constant current bias. 3,155,839, 11–3–64, Cl. 307—88.5.

Moellmann, Heinz F., to Avco Corp. Fuel control gas producer governor and speed selector linkage. 3,155,103, 11–3–64, Cl. 137—18.

Mojonnier, George W., and R. J. Hansel. Filling apparatus. 3,155,125, 11–3–64, Cl. 141—150.

Möllenbruck, Wolfgang, to Werner & Pfleiderer. Mixing and agglomerating device for thermoplastic material. 3,155,376, 11–3–64, Cl. 259—43.

Monitor Tool & Finding Co.: *See*—
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Monroe, Paul S., to Halcon International, Inc. Spacer clip for holding insulation about a vessel. 3,154,889, 11–3–64, Cl. 50—160.

Monsanto Chemicals Ltd.: *See*—
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Cornell, David, and Birum. 3,155,598.
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Prill, Erhard J., and Wygant. 3,155,686.
Surgant, John M., and Conkin. 3,155,568.

Montgomery, John W. Receptacle support. 3,155,356, 11–3–64 .Cl. 248—99.

Moody, Leroy S., to General Electric Co. Preparation of aromatic cyclic carbonates. 3,155,683, 11–3–64, Cl. 260—340.2.

Moore, Clement R., and C. W. Huff, to Moulded Products, Inc. Hobby horse. 3,155,390, 11–3–64, Cl. 272—53.2.

Moore, George A. Premeasuring dispenser secured to leak-proof container closure assembly. 3,155,306, 11–3–64, Cl. 229—17.

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Morgenson, Donald J., to Shatter King Mfg Co., Inc. Trash crusher. 3,155,028, 11–3–64, Cl. 100—96.

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Morris, Carl R., to Whirlpool Corp. Method of making an insulated structure. 3,155,751, 11–3–64 Cl. 264—45.

Morris, George V., and P. V. Sarlund, to Zenith Radio Corp. Communication receiver. 3,155,211, 11–3–64, Cl. 194—1.

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Mueller, Max B., J. G. Iacoviello, and R. Rosenthal, to Allied Chemical Corp. Process for epoxidation of ethylenically unsaturated compounds. 3,155,638, 11–3–64, Cl. 260—78.4.

Muellner, Donald R., and J. R. Muntjanoff, to Caterpillar Tractor Co. Adjustable valve control mechanism for tractor mounted loaders. 3,155,252, 11–3–64, Cl. 214—140.

Muenz, Maximilian. Cover for textile machine. 3,154,817, 11–3–64, Cl. 19—98.

Mukherjee, Ram K. Automatic gear mechanisms. 3,154,962, 11–3–64, Cl. 74—337.

Muller, Kurt, and M. A. Tissi, to Inventa A.G. fur Forschung und Patentverwertung. Apparatus and process for stretching textile threads of synthetic linear polyamides. 3,154,807, 11–3–64, Cl. 18—1.

Muller, Peter: *See*—
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Davidson, John D., and Murphy. 3,155,955.

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Murray, Thomas L.: *See*—
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Musolf, Herbert G. Well head assembly. 3,155,401, 11–3–64, Cl. 285—18.

Mutti, Daniel S. Fishing lure. 3,154,877, 11–3–64, Cl. 43—42.51.

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Nace, Donald M.: *See*—
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Nagle, Edward M., to Equitable Capital Corp. Swab manufacturing apparatus. 3,154,818, 11–3–64, Cl. 19—145.3.

Nakamura, Hajime, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Nitride containing ductile steel. 3,155,495, 11–3–64, Cl. 75—124.

Nakamura, Hajime, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Manganese-molybdenum ductile steel. 3,155,496, 11–3–64, Cl. 75—124.

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Nalco Chemical Co.: *See*—
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Nash, Dudley O., and J. P. Selmeier, to General Electric Co. Catalytic igniter. 3,154,920, 11–3–64, Cl. 60—39.82.

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National Cash Register Co., The: *See*—
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Miller, Robert E., and Anderson. 3,155,590.

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Necessary, Joseph P. Stadium seat. 3,155,427, 11–3–64, Cl. 297—184.

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Nelson, Permit N., to L. H. Ewing. Adjustable carpenter's square. 3,154,857, 11–3–64, Cl. 33—93.

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Neumeier, Albert, R. B. Johnson, and R. J. Krause, to Omark Industries, Inc. Method and apparatus for forming a chisel type cutter link. 3,154,972, 11–3–64, Cl. 76—112.

Neunzig, Heinrich, to Vereinigte Aluminium-Werke A.G. Method for glossing articles made of aluminum and particularly pure aluminum and its alloys. 3,155,556, 11–3–64, Cl. 156—21.

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Newallis, Peter E., and J. P. Chupp, to Monsanto Co. Method of making hydrocarbylphosphonodithioic acids. 3,155,709, 11–3–64, Cl. 260—461.

Newey, Herbert A., to Shell Oil Co. Compositions of matter containing polyepoxides and polyaminodiphenylsulfones. 3,155,743, 11–3–64, Cl. 260—836.

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Niederer, Otto C. Jr. and H. O. Egg cleaning equipment. 3,155,102, 11–3–64, Cl. 134—72.

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Nishkian, Arcinae. Patti shell forming device. 3,155,055, 11–3–64, Cl. 107—15.

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Nissenbaum, Gerald, and J. Mayerhoff, to Diagnostic Associates, Ltd. Diagnostic device for the detection and location of the sites of internal anatomical abnormalities. 3,155,091, 11–3–64, Cl. 128—2.

Nitzsche, Siegfried, and P. Buchheit, to Wacker Chemie G.m.b.H. Method of preparing alkyl silanes. 3,155,698, 11–3–64, Cl. 260—448.2.

Nixon, William C., to Hilger & Watts Ltd. Electron microscope with a secondary electron source utilized for electron probe analysis. 3,155,827, 11–3–64, Cl. 250—49.5.

Nogradi, Josef, H. Ulrich, W. Pelz, W. Puschel, and H. Schellenberger to Agfa Aktiengesellschaft. Diffusion-resistant organic resin-coupler reacting products for photographic gelatin layers. 3,155,510, 11–3–64, Cl. 96—74.

Nomine, Gerard, R. Bucourt, and J. Tessier, to Roussel-UCLAF, S.A. Process for the preparation of 19-nor-$\Delta^{4,9}$-pregnadien-3,20-dione and intermediates. 3,155,660, 11–3–64, Cl. 260—247.7.

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Okuda, Jiro, to Nippon Electric Co. Ltd. Logical N out of M code check circuit. 3,155,841, 11–3–64, Cl. 307—88.5.

Okuno, Tsutomu. Nail clipper with receiver for clippings. 3,154,850, 11–3–64, Cl. 30—28.

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Ordorica, Vincent, F. Moritz, and L. Leavitt, to Sperry Rand Corp., Ford Instrument Co. Division. Digital remote position indicator. 3,154,946, 11–3–64, Cl. 73—313.

Ormsby, Ralph D., to Honeywell Inc. Gyroscopic control apparatus. 3,154,953, 11–3–64, Cl. 74—5.6.

Örnehage, Curt I., to Lidkopings Mekaniska Verkstads Aktiebolag. Truing and feeding method and apparatus for grinding machines. 3,155,086, 11–3–64, Cl. 125—11.

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Outwin, Edson S. Male incontinence clamp. 3,155,096, 11–3–64, Cl. 128—346.

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Palm, Bernhard N., to Electra Motors, Inc. Variable speed drive. 3,154,959. 11–3–64. Cl. 74—230.17.

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Parrott, Alton B. Weld current indicator. 3,155,810, 11–3–64, Cl. 219—109.

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Parsons, John T., and F. E. Harwood, to Parsons Corp. Time recording apparatus. 3,155,453, 11–3–64, Cl. 346—82.

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Pasini, Claudio, and P. Mantegazzini, to Società Farmaceutici Italia. N,N-diphenylisonicotinamide. 3,155,672, 11–3–64, Cl. 260—295.

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Patterson, William C., to Nebraska Engineering Co. Self-centering auger apparatus. 3,155,247, 11–3–64, Cl. 214—17.

Paturzo, Salvatore, to V. Paturzo, Bro. & Son, Inc. Method of producing decorative masonry blocks. 3,155,529, 11–3–64, Cl. 117—8.

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Paul, Carl E., to General Electric Co. Electrical capacitor protective arrangement. 3,155,876, 11–3–64, Cl. 317—12.

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Pehoski, Walter L., to Perl-Tile Co. Tile and pan handling apparatus. 3,154,831, 11–3–64, Cl. 25—2.

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Peters, John L. Mass spectrometer leak detector including a novel repeller-heater assembly. 3,155,826, 11–3–64, Cl. 250—41.9.

Peters, Walter E., and L. Mills, to The English Electric Co. Ltd. Header type tubular heat exchanger. 3,155,158, 11–3–64, Cl. 165—161.

Peterson, Seymour, to Storm Industries, Inc. Tray means for egg conveyors. 3,155,224, 11–3–64, Cl. 198—131.

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Pilch, John S. Control system for tractor mounted apparatus. 3,155,253, 11–3–64, Cl. 214—140.

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Pinkas, David. Means for mounting and regulating the outer end of a spiral spring. 3,154,912, 11–3–64, Cl. 58—113.

Pinkas, David. Combination envelope and ticket and blank for making the same. 3,155,307, 11–3–64, Cl. 229—70.

Pinnert, Sylvie, L. Ninet, and J. Preud'Homme, to Rhone-Poulenc S.A. Antibiotic and production thereof. 3,155,581, 11–3–64, Cl. 167—65.

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Deanin, Rudolph D., and Pinter. 3,155,635.

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Grafton, William F. 3,155,482.
Ritenour, Gerald L., and Kubichan. 3,155,485.
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Ward, Cecil R. 3,155,484.

Place, Mark I., to E. K. Geyser Co. Metal window sash. 3,155,205, 11–3–64, Cl. 189—78.

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Pollingue, Daniel J., Jr. : *See*—
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Polmanteer, Keith E., to The Dow Corning Corp. Silicone adhesive composition capable of bonding silicone rubber to metal without the use of a primer. 3,155,633, 11–3–64, Cl. 260—37.

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Poole, Kenneth M., to Bell Telephone Laboratories, Inc. Magnetic focusing structure for traveling wave tubes. 3,155,866, 11–3–64, Cl. 315—3.5.

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Keen, John M., Storer, Simpson, and Pope. 3,154,919.

Pope, James K., to Ford Motor Co. Splicing device. 3,155,562, 11–3–64, Cl. 156—504.

Porteous, Ian K., to Norstel and Templewood Hawksley Ltd. Aparatus for treatment of sewage and like sludges. 3,155,611, 11–3–64, Cl. 210—86.

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Potter, Mary E. : *See*—
Mitchell, Joseph R., Potter, and Whittenberger. 3,155,550.

Poulit, Robert. Heat exchangers. 3,155,151, 11–3–64, Cl. 165—6.

Powell, David B. : *See*—
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Powell, Elno M., and W. W. Schroedter, to Combustion Engineering, Inc. Vapor generator. 3,155,075, 11–3–64, Cl. 122—479.

Powell, Vernon R., to Eastwood Acceptance Corp. Apparatus and method for forming close tolerance tubing. 3,154,848, 11–3–64, Cl. 29—516.

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Powers, Eugene L., to Mobay Chemical Co. Purification of isocyanates by reduction of the hydrolyzable chlorine and acid content. 3,155,699, 11–3–64, Cl. 260—453.

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Presnell, Frank G. Temperature compensated flow control valve. 3,155,111, 11–3–64, Cl. 137—504.

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Prill, Erhard J., and J. C. Wygant, to Monsanto Co. Poly-(ester lactones) and method for preparing the same. 3,155,686, 11–3–64, Cl. 260—343.6.

Primich, Frank, and R. J. Neidigh, to Products Research and Development Corp. Lighter for bottled-gas torches. 3,154,936, 11–3–64, Cl. 67—20.1.

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Proctor, Sidney E., to Austin Hoy and Co. Ltd. Cutter tool retained by spring detent. 3,155,428, 11–3–64, Cl. 299—92.

Proctor-Silex Corp., The : *See*—
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Shakespear, Horacio, to General Motors Corp. Independent front wheel suspension assembly. 3,155,382, 11–3–64, Cl. 267—8.

Shannon, Joseph A., to Goodyear Aerospace Corp. Photolight painting method. 3,155,505, 11–3–64, Cl. 96—27.

Shapiro, Hymin: *See*—
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Shatter King Mfg. Co., Inc.: *See*—
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Shatto, Howard L., Jr., J. R. Dozier, and B. L. Goepfert, to Shell Oil Co. Ship control apparatus. 3,154,854, 11–3–64, Cl. 33—1.

Shea, Warren, to Radiant Pen Corp. Tubular article with pocket. 3,154,873, 11–3–64, Cl. 40—334.

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Burton, William B. 3,155,689.
Coe, Richard H. 3,155,606.
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Holzman, George, and Trainer. 3,155,742.
Johnson, Glenn D. 3,155,175.
Newey, Herbert A. 3,155,743.
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Tadema, Harco J. 3,155,161.
Woodruff, Richard L. 3,155,464.

Shepherd, Neal H., to General Electric Co. Mobile communication system in which the base station receiver, which receives the strongest signal, is automatically selected. 3,155,909, 11–3–64, Cl. 325—51.

Sherburne, Philip C., to Grinnell Corp. Trolley hanger. 3,155,051, 11–3–64, Cl. 105—155.

Sherlock, Margaret H., to Schering Corp. Substituted 3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxides. 3,155,654, 11–3–64, Cl. 260—243.

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Shortt, William H., to Devon Instruments Ltd. Means for maintaining the motion of a train of wheelwork. 3,154,913, 11–3–64, Cl. 60—7.

Shotts, Adolph C., and J. R. Motes, to Cities Service Research & Development Co. Oxidation of aldehydes to carboxylic acids using a catalyst comprising cobalt naphthenate and a cobalt chelate. 3,155,719, 11–3–64, Cl. 260—530.

Showler, Donald H. Boat loading device. 3,155,257, 11–3–64, Cl. 214—450.

Shramo, Daniel J.: *See*—
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Shrode, William A.: *See*—
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Shumway, Carl K., Jr., to Electro-Mechanical Research, Inc. Analog-to-digital converters. 3,155,961, 11–3–64, Cl. 340—347.

Shurts, Wilbur F., and J. B. Snoy, to Twin Disc Clutch Co. Booster pressure control for liquid systems. 3,155,040, 11–3–64, Cl. 103—35.

Siebker, Manfred, to L. & C. Steinmuller G.m.b.H. Method for producing electric energy from nuclear reactions. 3,155,547, 11–3–64, Cl. 136—86.

Sieffert, Georges. Plain or barbed wire defense coil. 3,155,374, 11–3–64, Cl. 256—2.

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Silson, John E., and J. Frangos, to Revlon, Inc. Aerosol composition. 3,155,574, 11–3–64, Cl. 167—54.

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Simpson, Herbert, Corp.: *See*—
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Sinclair Research, Inc.: *See*—
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Reid, Albert C. 3,155,928.

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Ryberg, Arling W. 3,154,955.

Sites, Benjamin L., to Miehle-Goss-Dexter, Inc. Apparatus for making corrected color separations. 3,155,001, 11–3–64, Cl. 88—24.

Skarstrom, Charles W., to Esso Research and Engineering Co. Chemical reactions in a heatless fractionation apparatus. 3,155,741, 11–3–64, Cl. 260—683.15.

Skinner Precision Industries, Inc.: *See*—
Francis, Gerald A. 3,155,851.

Slater, Eben A., to The Upjohn Co. Parenteral extravascular injectable vaccines for simultaneous immunization of canidae against rabies, canine distemper, and infectious canine hepatitis. 3,155,589, 11–3–64, Cl. 167—78.

Slattery, Vernon E., and J. W. Hall. Dispenser package for cylindrical objects. 3,155,275, 11–3–64, Cl. 221—289.

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Smith, George A.: *See*—
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Smith, Grover H. Shaft passage sealing collar. 3,155,396, 11–3–64, Cl. 277—212.
Smith, Harry B., to Westinghouse Electric Corp. Multiple pulse repetition frequency automatic range tracking pulse doppler radar. 3,155,973, 11–3–64, Cl. 343—17.1.
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Smith, John M., to The Ensign-Bickford Co. Detonating fuse. 3,155,038, 11–3–64, Cl. 102—27.
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Smith, Lawrence E., and P. E. Rowland, to The Bristol Co. Temperature compensator and measuring instrument incorporating the same. 3,154,949, 11–3–64, Cl. 73—393.
Smith, Richard N., and J. A. Zang, to American Machine & Foundry Co. Plastic or dough mixing apparatus. 3,155,056, 11–3–64, Cl. 107—36.
Smith, Wesley A., to Tilt-A-Door Corp. Bi-fold door with self-contained motor. 3,155,147, 11–3–64, Cl. 160—189.
Smith, William R., to McDonough Power Equipment, Inc. Cutter unit suspension arrangement for power mowers. 3,154,903, 11–3–64, Cl. 56—25.4.
Smyth Mfg. Co., The: *See*—
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Snoy, Joseph B.: *See*—
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Pasini, Claudio, and Mantegazzini. 3,155,672.
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Societe Industrielle de Sonceboz: *See*—
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Socony Mobil Oil Co., Inc.: *See*—
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Ardis, Alan E., and Valtekunas. 3,155,715.
Camacho, Vasco G., and Byrd. 3,155,706.
Coonradt, Harry L., and Miale. 3,155,604.
Cox, David B. 3,155,618.
Lang, William H., Nace, and Weisz. 3,155,605.
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Sorensen, David P., to Minnesota Mining and Mfg. Co. Heat-sensitive sheet material and method of making. 3,155,513, 11–3–64, Cl. 96—91.
Sorrentino, Angelo M. Movable projector and screen combination. 3,155,002, 11–3–64, Cl. 88—28.
Sorrow, Billy B., N. T. Kinkle, and R. T. Innis, to Westinghouse Electric Corp. Lightning arrester. 3,155,874, 11–3–64, Cl. 315—36.
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Rockwell, Jarvis W. 3,155,426.
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Sparling, Arthur J. Reading pacer. 3,155,381, 11–3–64, Cl. 267—1.
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Barozzi, Giam P., and Horeschi. 3,155,315.
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Lovejoy, Harry E. 3,155,930.
Oberg, Paul E., and Olmen. 3,155,944.
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Ordorica, Vincent, Moritz, and Leavitt. 3,154,946.
Vadus, Joseph R. 3,155,939.
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Spillmann, Werner, to Escher Wyss Aktiengesellschaft. Double-walled hollow body for the reception of a hot gaseous medium under pressure. 3,155,117, 11–3–64, Cl. 138—149.
Spon, Carroll V.: *See*—
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Spurlin, William V., and B. E. West, to Link-Belt Co. Aluminum leaf spring spacer. 3,155,853, 11–3–64, Cl. 310—29.
Stack, Thomas N., to Minnesota Mining and Mfg. Co. Radiant gas burner. 3,155,142, 11–3–64, Cl. 158—99.
Stam, Martin J., to The Songrand Corp. Electromagnetic vibrator motor. 3,155,854, 11–3–64, Cl. 310—29.
Steber, Joseph F., to Green Bay Foundry and Machine Works. Decoring machine. 3,155,131, 11–3–64, Cl. 146—52.
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De Gray Richard J., and Fitzgibbons. 3,155,465.
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Steger, Joseph F., and M. J. Manetti, to American Plasticraft Co. Electronic chassis mounting bracket. 3,155,771, 11–3–64, Cl. 174—158.
Stegmaier, Louis T., to General Electric Co. Enclosure with lockable handle. 3,155,786, 11–3–64, Cl. 200—42.
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Stern Michael M., to Sylvania Electric Products Inc. Magnetic core assemblies. 3,155,948, 11–3–64, Cl. 340—174.
Stern, Michael M., and H. A. Ullman, to Sylvania Electric Products, Inc. Noise cancellation in linear selection memories. 3,155,946, 11–3–64, Cl. 340—174.
Sterrett, John D., Jr., to Westinghouse Electric Corp. Position control apparatus. 3,155,219, 11–3–64, Cl. 198—33.
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Stewart, Albert R. Gun lock. 3,154,874, 11–3–64, Cl. 42—1.
Stewart William H. Self setting flexible head staple. 3,154,999, 11–3–64, Cl. 85—49.
Stewart-Warner Corp.: *See*—
Kramesak, Michael, Jr., and Sheahan. 3,155,357.
Stegermark, Paul R., to W. R. Grace & Co. Preparation of acyl isocyanates. 3,155,700, 11–3–64, Cl. 260—453.
Stiglic, Paul M., D. J. Shramo, and C. R. Hehmeyer, to Thompson Ramo Wooldridge Inc. Hot gas servo system having rotary actuator. 3,155,019, 11–3–64 Cl. 92—39.
Stiles, Melvin S., and J. L. Nielsen, to General Dynamics Corp. Minor arc selecting positional servo system. 3,155,889, 11–3–64, Cl. 318—28.
Stockel, Karl, to Bolkow-Entwicklungen Kommanditgesellschaft. Rocket engine construction. 3,154,914, 11–3–64, Cl. 60—35.6.
Stoltman, Donald D., to General Motors Corp. Friction feedback speed control. 3,155,188, 11–3–64, Cl. 180—82.1.
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Stremke, William F., Jr. Package conveyors with package timer escapement mechanism. 3,155,222, 11–3–64, Cl. 198—34.
Stremke, William F., W. F. Stremke, Jr., and R. R. Pazderski. Infeed conveyor for the prewrap table of wrapping machine. 3,154,900 11–3–64, Cl. 53—206.
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Strope, Thom C., to The Goodyear Tire & Rubber Co. Shoe heel containing grooves around insert. 3,154,867, 11–3–64, Cl. 36—35.
Strumskis, Louis. Ship stabilizer. 3,155,065, 11–3–64, Cl. 114—122.
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Stump, Eugen, and P. E. Striffler, to Daimler-Benz Aktiengesellschaft. Double axle suspension and steering arrangement. 3,155,397, 11–3–64, Cl. 280—81.5.
Stumpf, Burton H. Gun carrier. 3,155,297, 11–3–64, Cl. 224—1.
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Swisher, Horton E. 3,155,648.
Suofy, Hugh M. Work tranafer mechanism for punch presses 3,155,241, 11–3–64, Cl. 214—1.
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Surgant, John M., and R. A. Conkin, to Monsanto Co. Stabilized insecticide formulations. 3,155,568, 11–3–64, Cl. 167—22.
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Swett, James B., to Rexall Drug and Chemical Co. Meat keeper and tray. 3,155,267, 11–3–64, Cl. 220—17.
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Szabo, Karoly, to Stauffer Chemical Co. Bis (alkoxy alkyl phosphinyl-dichloromethyl) and bis (alkoxy phenylphosphinyl-dichloromethyl) sulfones. 3,155,711, 11–3–64, Cl. 260—461.
Taber, David, E. E. Renfrew, and H. W. Pons, to American Aniline Products, Inc. Isothiuronium salts of bromohydrin ether dyestuffs. 3,155,645, 11–3–64, Cl. 260—151.
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Taylor Daniel D., and C. C. Brawner, to Beckman Instruments, Inc. Electrical detonator. 3,155,553, 11–3–64, Cl. 149—21.
Taylor, Richard L., to International Business Machines Corp. Coded paper tape to magnetic tape translator. 3,155,940, 11–3–64, Cl. 340—172.5.
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Texas Research and Electronics Corp.: *See*—
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Textron Electronics, Inc.: *See*—
Hempel, Roy A. 3,155,836.
Textron Inc.: *See*—
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Byam, Erwin B. 3,154,801.
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Therm-O-Disc, Inc.: *See*—
Them, Edward G. 3,155,798.
Thiokol Chemical Corp.: *See*—
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Thomander, Vernon S., to Westinghouse Electric Corp. Repulsion iron vane assembly. 3,155,904, 11–3–64, Cl. 324—147.
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Thomas, Edward R.: *See*—
Egee, Walter W., and Thomas. 3,154,805.
Thomas, Howard M., H. E. W. Bode, and J. R. Brand, to The Wurlitzer Co. Electronic musical instrument switch means. 3,155,760, 11–3–64, Cl. 84—1.01.
Thomas, Rex, to Dominion Engineering Works Ltd. Calenders. 3,155,029, 11–3–64, Cl. 100—170.
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ISSUED NOVEMBER 3, 1964

NOTE.—First number=class, second number=subclass, third number=patent number

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 3, 1964 Volume 808 Number 1

TRADEMARKS

NOTICES

Handling of Mail Orders for Printed Copies of Patents and Trademark Registrations

In the OFFICIAL GAZETTE of December 27, 1960, the Patent Office gave notice of a new service for handling mail orders for patent copies which read, in part, as follows:

Effective immediately, all regular and special service copy orders containing Patent Office coupons *only* may be addressed to:

Box 9
U.S. Patent Office
Washington, D.C. 20231

Orders received in this way will be processed through the Mail Room the same day as they are received and thus will be assured of priority handling. This service applies to coupon orders only and does not include orders charged to Deposit Accounts, nor to letters containing lists of numbers or orders for other services of the Office; they must of necessity be handled in the regular manner.

Mail other than that which was intended by the Patent Office to be received at Box 9, under the provisions of the foregoing notice is being addressed and delivered to Box 9. This has adversely affected the service planned for handling patent and trademark copy orders without benefiting addressees in the speedier handling of other matter sent to Box 9.

Effective October 27, 1964, all mail received at Box 9, the content of which is not limited exclusively to patent and trademark coupons, will be returned to the sender.

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Riedel-de Haen, Inc., assignee, by mesne assignments, of William A. Schlesinger, New York, N.Y., Reg. No. 220,366, Canc. No. 8286.

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15,640
Date of oldest new application	Mar. 2, 1964
Date of oldest amended application	Feb. 21, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-2-64	3-2-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-2-64	2-21-64
Renewals (All Classes)	9-8-64	9-29-64
Sec. 12 (c) Publications (All Classes)	9-14-64	--

Applications filed during the month of September 1964—2175

Registrations Issued—428 No. 779,248 to No. 779,675
Renewals Issued—50

For the quarter—July 1, 1964 through September 30, 1964

Applications filed	6457
Registrations issued	5446
Renewals issued	730
Cancellations under Sec. 8	1182

The TRADEMARK SECTION of the OFFICIAL GAZETTE issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Magnaflow Corporation, Inc., assignee, by mesne assignments, of Magnaflow Pump Corp., Houston, Tex., Reg. No. 576,461, Canc. No. 8319.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 161,439 (THE RAIN KING), Chicago Flexible Shaft Company, Lawn sprinklers; **Reg. No. 401,051** (RAIN KING), same, Lawn sprinklers, hose nozzles, hose couplings, and quick coupling valves; **Reg. No. 602,276**, same, Sunbeam Corporation, Hose couplings, **filed** Apr. 27, 1964, D.C., S.D.N.Y., Doc. 64/1289, *Sunbeam Corporation* v. *First Manufacturing Corp.*

Reg. No. 401,051. (See Reg. No. 161,439.)

Reg. No. 435,900 (JUJYFRUITS), Henry Heide, Incorporated, Candy; **Reg. No. 635,667** (JUJUBES), same, Gum candies, **filed** June 6, 1957, D.C., E.D. Wis. (Milwaukee), Doc. 57–C–130, *Henry Heide, Inc.* v. *George Ziegler Company.* Reg. No. 435,900 held valid and infringed; Reg. No. 635,667 should be cancelled and held not infringed; May 4, 1964. Final Judgment; defendant enjoined Sept. 15, 1964.

Reg. No. 602,276. (See Reg. No. 161,439.)

Reg. No. 635,667. (See Reg. No. 435,900.)

Reg. No. 647,689 ("POP") George Tucker Eyelet Company, Limited, Rivets, **filed** May 22, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 35829, *Humble Oil & Refining Company* v. *Ashworth Fuel Co., Inc. et al.* Action dismissed with prejudice Sept. 3, 1964.

Reg. No. 701,895 (MAGIC LADY), Exquisite Form Brassiere, Inc., Underwear panty, **filed** May 12, 1964, D.C., S.D.N.Y., Doc. 64/1466, *Exquisite Form Industries, Inc.* v. *Kiki Undies Corp.*

Reg. No. 705,917 (WINSTON), E & L Manufacturing Company, Baseball gloves, bats and balls, and boxing gloves, badminton sets, tennis rackets, etc., **filed** Apr. 29, 1963, D.C., S.D.N.Y., Doc. 63/1223, *Larry Ellenberg* v. *Winston Sporting Goods Corp. et al.* Stipulation and order of discontinuance May 11, 1964.

Reg. No. 715,907 (BUDGET RENT A CAR), Rent-A-Car Services Corporation, Rental and leasing of motor vehicles, **filed** May 11, 1964, D.C., W.D. Tex. (San Antonio), Doc. 3419, *Budget Rent-A-Car Corporation of America* v. *Airport Rent-A-Car et al.*

Reg. No. 731,789 (CIVIL WAR), The Avalon Hill Company, Equipment sold as a unit for playing a board game, **filed** Nov. 23, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2138, *The Avalon Hill Company* v. *Milton Bradley Company.* Stipulation dismissing complaint and counterclaims with prejudice May 21, 1964.

Reg. No. 734,332 (ALITALIA), Alitalia-Linee Aeree Italiane-Societa per Azioni (Italian corporation), Transportation by air of persons, property, and mail, **filed** May 20, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–523, *Alitalia Linee-Aeree Italiane S.p.A.* v. *Alitalia Restaurant & Pizzeria.* Consent judgment for injunction June 10, 1964.

Reg. No. 739,592 (SUNNY DAY), Samson Cordage Works, Clothes line, **filed** Jan. 9, 1964, D.C. Mass. (Boston), Doc. 64–23–F, *Samson Cordage Works* v. *Puritan Cordage Mills.* Consent decree; trademark held valid and infringed; defendant enjoined Feb. 25, 1964.

Reg. No. 750,443 (AKG), Electronic Applications, Inc., Electro-acoustic equipment and systems—namely, microphones, headphones, loudspeakers, etc.; **Reg. No. 750,444** (AKG AND DESIGN), same, **filed** May 21, 1964, D.C. Conn. (New Haven), Doc. 10476, *Akustische u. Kino-Gerate Gesellshaft mbH* v. *Gertrude M. Cwikla et al.*

Reg. No. 750,444. (See Reg. No. 750,443.)

Reg. No. 756,083 (ROBERT'S FRESH-N-UP), Nail Tone, Inc., Paper facial blotters, **filed** May 5, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–469, *Forward Industries, Inc., formerly known as Nail Tone, Inc.* v. *Andrea Products Co.* Action remanded to Supreme Court, New York, N.Y., June 11, 1964.

Reg. No. 760,658 (MICRO-PAK), Photo Industrial Corp., Unexposed film and developed film, **filed** Apr. 27, 1964, D.C.N.J. (Newark), Doc. 393–64, *Robert R. Skutch, Jr. et al.* v. *Costa Ice Cream Co.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 129,722. Samuel Bernstein Hair Company, Boston, Mass. Filed Oct. 12, 1961.

JAMIE

Class 39—Clothing

For Hairnets.

Class 40—Fancy Goods, Furnishings, and Notions

For Coldwave End Papers.

Class 51—Cosmetics and Toilet Preparations

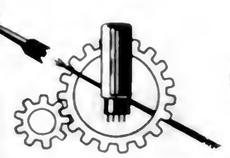
For Hair Bleach, Hair Rinse, and Hair Spray.

Class 52—Detergents and Soaps

For Cosmetics and Toilette Preparations for the Hair—Namely, Lanolin Shampoo Preparations.

First use August 1960.

SN 179,902. International Electronic Research Corporation, Burbank, Calif. Filed Oct. 28, 1963.



Class 21—Electrical Apparatus, Machines, and Supplies

For Heat Dissipating and Vibration Resistant Liners and Containers Therefor for Electronic Components—Namely, Electronic Tube Shields, Electronic Tube Shield Bases, Electronic Tube Shield Liners, Transistor Heat Dissipating and Vibration Resistant Retainers, Electronic Amplifiers, Electronic Power Sources, Electronic Power Supplies, Miniaturized Welded Circuitry and Circuit Modules.

Class 26—Measuring and Scientific Appliances

For Electronic Oscillators, Electronic Measuring Equipment and Telemetering Instrumentation—Namely, A.C. Voltage Calibrators, A.C. Voltage Standards, Phase Generators, Digital Voltmeters, Digital Frequency Meters, Analog to Digital Converters, Signal Generators, Gyro Wheels and Micro-Syn Supplies, High and Low Level Voltage Oscillators for Telemetry, Telemetry Transmitters, Mixer Amplifiers for Telemetry, Narrow Band and Wide Band RF Amplifiers, RM and PCM Airborne and Ground Telemetry Systems, Commutators, Simulators, Decommutators, Receivers for Telemetry, Command Destruct Receivers, Command Control Receivers, and Recorders.

First use in the early part of 1953.

SN 185,006. American Cyanamid Company, Wayne, N.J. Filed Jan. 21, 1964.

WASCOFLEX

Owner of Reg. Nos. 335,851, 640,563, and others.

Class 5—Adhesives

For Contact Bonding Adhesive for Bonding Roof Flashing to Itself or Other Materials.

Class 12—Construction Materials

For Roof Flashing and Roof Expansion Joint.

First use Aug. 23, 1963.

SN 187,469. Horace B. Brose, d.b.a. Heide Babe Products, Tampa, Fla. Filed Feb. 26, 1964.



Class 5—Adhesives

For Vulcanizing Cement for Vehicle Tire Repairs.

First use July 15, 1963.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Vehicle Tire Repairs—viz, Vulcanizable Inserts and Patches.

First use Oct. 10, 1963.

SN 193,931. Buxton, Incorporated, Agawam, Mass. Filed May 21, 1964.

BUXTON

Owner of Reg. Nos. 417,984, 508,732, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Men's and Ladies' Personal Accessories—Namely, Key Cases, Purses, Billfolds, Pocket Cases, Pocketbooks, Eyeglass Cases, Pass, Card and Picture Cases, Money Holders, Jewelry Cases, and Document Cases.

First use July 27, 1919.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Cases.

First use June 1955.

SN 195,445. Roussel-UCLAF, Paris, France. Filed Mar. 25, 1964.



The mark consists of three parallelograms in triangular relationship. Priority claimed under Sec. 44(d) on French Reg. No. 516,054, dated Sept. 26, 1963 (Seine); Natl. Inst. No. 212,118.

Class 6—Chemicals and Chemical Compositions

For Chemical Products for Industry, Science, Photography, Agriculture, Horticulture, Sylviculture; Fire Extinguishing Compositions; Pickles and Chemical Preparations for Welding; Tanning Materials; Dyestuffs; Mordants; Bleaching Preparations; Essential Oils; Compositions To Lay Dust; and Preparations for Destroying Weeds and Noxious Animals.

Class 18—Medicines and Pharmaceutical Preparations

For Veterinary and Hygienic Pharmaceutical Products; and Personal Disinfectants.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 146,825. Johnson & Johnson, New Brunswick, N.J. Filed June 13, 1962.

RAPID-PAK

Owner of Reg. No. 695,322, and others.
For Slivers of Cotton or Synthetic Fiber for Packaging Use.
First use May 29, 1962.

SN 174,411. McCormick Distilling Co., Weston, Mo. Filed Aug. 5, 1963.

WHISKEY

Owner of Reg. No. 768,059.
For Wood Chips for Use in Cooking.
First use May 27, 1963.

SN 174,751. Cornell Seed Company, St. Louis, Mo. Filed Aug. 9, 1963.

CORNELI

Owner of Reg. Nos. 391,378 and 724,042.
For Vegetable, Garden, Flower, Farm, and Field Seeds.
First use July 1926.

SN 181,877. Fleming-Joffe Limited, New York, N.Y. Filed Nov. 26, 1963.

FLEMING-JOFFE

"TENDERLOIN"

For Leather.
First use Nov. 4, 1963.

SN 183,824. Associated Minerals Consolidated Limited, Southport, Queensland, Australia. Filed Dec. 27, 1963.



The mark comprises the letters "AMA." Owner of Australian Reg. No. 112,635, dated Jan. 12, 1953.
For Rutile, Rutile Sand, Zircon, Zircon Sand, Zircon Flour, Ilmenite, Monazite, Cassiterite and Garnet.
First use 1947; in commerce 1947.

SN 189,698. Jewell Bridges Haga, d.b.a. Delta Turtle Farm, Belzoni, Miss. Filed Mar. 26, 1964.

SUPREME DIXIE

For Live Baby Turtles.
First use Jan. 7, 1964.

Class 2—Receptades

SN 196,056. National Can Corporation, Chicago, Ill. Filed June 19, 1964.

ALUMI-LINED

For Cans.
First use on or about Apr. 14, 1964.

SN 197,872. Bopp-Decker Incorporated, Birmingham, Mich. Filed July 15, 1964.

CASUALTONE

For Plastic Tableware.
First use June 10, 1964.

SN 198,352. Hamilton-Skotch Corporation, Hamilton, Ohio. Filed July 22, 1964.

PACER

For Insulated Containers in the Form of Jugs.
First use May 16, 1962.

SN 198,355. Hoerner Boxes, Inc., Keokuk, Iowa. Filed July 22, 1964.



For Reinforced Cartons Having Wood Cross Members and Rolled Up Corrugated End Supports.
First use May 11, 1964.

SN 198,483. Joe Lowe Corporation, Englewood, N.J. Filed July 24, 1964.

SPACE-SHOTS

For Empty Cartons and Empty Bags.
First use May 1, 1964.

Class 4—Abrasives and Polishing Materials

SN 166,973. Cardinal Engineering Corporation, Philadelphia, Pa. Filed Apr. 18, 1963.

Square Saucer

S/S

For the purpose of this application only and without waiver of common-law rights, applicant makes no claim to the words "Square Saucer" used apart from the mark as shown.
For Rotary Abrasive or Grinding Discs.
First use Oct. 16, 1962.

SN 184,045. Electro Refractories & Abrasives Corporation, Buffalo, N.Y. Filed Jan. 6, 1964.

CUTRITE

For Grinding Wheels, Particularly Cut Off Wheels.
First use Apr. 17, 1953.

SN 188,569. Oso Brite Mfg. Co., Inc., Smith Center, Kans. Filed Mar. 12, 1964.

OSO-BRITE

For All-Purpose Polish—Namely, for Appliances, Windows, Mirrors, Brass, Copper, Porcelain, Plastic, Chrome, Steel, Formica Tile, Furniture and Similar Surfaces; and an Automobile Polish—Namely, for Automobiles, Trailers, and Boats.
First use September 1961.

SN 189,360. Pines International Chemical Company, Chicago, Ill. Filed Mar. 23, 1964.

DURA FINISH

The word "Finish" is disclaimed apart from the entire mark, as shown.
For Floor Wax.
First use Feb. 6, 1964.

SN 189,361. Pines International Chemical Company, Chicago, Ill. Filed Mar. 23, 1964.

DURA SHEEN

The word "Sheen" is disclaimed apart from the entire mark as shown.
For Cleaning and Polishing Solution for Wood, Tile, Concrete and Resilient Type Floors.
First use Feb. 6, 1964.

Class 5—Adhesives

SN 171,475. National Starch and Chemical Corporation, New York, N.Y. Filed June 20, 1963.



For Flour for Making a Paste.
First use Apr. 1, 1922.

Class 6—Chemicals and Chemical Compositions

SN 164,913. Stauffer Chemical Company, New York, N.Y. Filed Mar. 18, 1963.

TRIFUME B

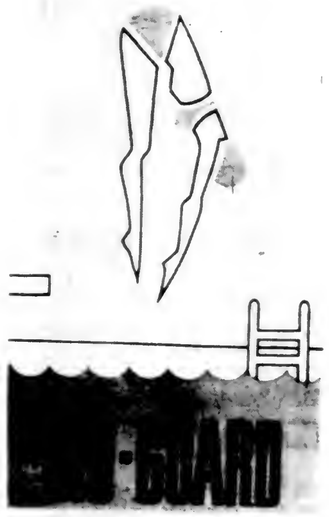
For Machinery Fumigant.
First use Nov. 13, 1961.

SN 165,920. Guardian Chemical Corporation, Long Island City, N.Y. Filed Apr. 2, 1963.

IODOSENE

For Germicide for Manufacturing Use.
First use Mar. 26, 1963.

SN 167,115. Bio-Lab, Inc., Decatur, Ga. Filed Apr. 19, 1963.



Owner of Reg. No. 688,467.
For Swimming Pool Algicide.
First use Apr. 9, 1963.

SN 177,220. Animal Repellents, Inc., Griffin, Ga. Filed Sept. 18, 1963.

REBUFF

For Non-Toxic Repellent Composition Sprayed Into the Face of an Attacking Human or Other Animal for Personal Protection From Attack.
First use July 25, 1963.

SN 177,435. National Rosin Oil Products, Inc., Savannah, Ga. Filed Sept. 20, 1963.

TERPLEX

For Polymerized Turpentine.
First use Aug. 29, 1963.

SN 177,927. Topco Associates, Inc., Skokie, Ill. Filed Sept. 27, 1963.

TOPCO

For Air Freshener, Ammonia, Insecticide, Fabric Softener, and Antifreeze.
First use Jan. 6, 1961, on ammonia.

SN 177,974. Dexter Chemical Corporation, New York, N.Y. Filed Sept. 30, 1963.

DEKOPAN

For Defoaming Agents Used in the Manufacture of Pulp and Paper and Also in the Coating of Paper.
First use July 1, 1955.

SN 181,089. Wood Chemical Co., Inc., Lubbock, Tex. Filed Nov. 13, 1963.

WOODKILL

For Insecticides, Herbicides, and Fungicides.
First use Jan. 1, 1951.

SN 182,499. Philadelphia Quartz Company, Philadelphia, Pa. Filed Dec. 6, 1963.

SCORE

For Powdered or Granular Soluble Alkaline Silicates and Combinations of Soluble Alkaline Silicates With Minor Amounts of Other Materials That Do Not Change the Basic Chemical Properties of the Soluble Alkaline Silicates.
First use Oct. 25, 1963.

SN 184,069. Illinois Instrument Group Incorporated, Des Plaines, Ill. Filed Jan. 6, 1964.

IIG ANASORB

For Calcined Diatomaceous Silica for Use as a Solid Support in Gase Chromatography.
First use Dec. 30, 1963.

SN 186,074. W. R. Grace & Co., New York, N.Y. Filed Feb. 5, 1964.

AM-FOL

For Defoliant-Desiccant for Experimental Use on Cotton.
First use July 17, 1963.

SN 189,765. California Chemical Company, San Francisco, Calif. Filed Mar. 27, 1964.

CALCHEM

For Chemical Compositions for Use in Industry and Agriculture—Namely, Insecticides and Ethyl Mercaptan for Use as a Gas Odorant.
First use Jan. 27, 1964.

SN 190,600. Warren L. Crawford, Urbana, Ill. Filed Apr. 8, 1964.

BUCKET OF STEAM

For Demineralized Water.
First use Feb. 13, 1964.

SN 191,688. Gross-Padow Corp., Brooklyn, N.Y. Filed Apr. 21, 1964.

cleer-o'-disc

For Household Deodorant in Tablet Form.
First use at least as early as 1957.

SN 191,711. Philadelphia Quartz Company, Philadelphia, Pa. Filed Apr. 21, 1964.

CIRCLE

For Laundry Sour.
First use Mar. 2, 1964.

SN 191,813. Universal Oil Products Company, Des Plaines, Ill. Filed Apr. 22, 1964.



Owner of Reg. Nos. 543,284, 671,663, and others.
For Inhibitor To Retard Deterioration of Organic Substrates.
First use about June 10, 1958.

SN 191,876. Parke-Hill Chemical Corporation, Mount Vernon, N.Y. Filed Apr. 23, 1964.

INSURED *life*

For Chemicals for the Treatment of Boiler Water and Tank Fuel Oil To Inhibit Rust Formation and Scale and Sludge Accumulation.
First use on or about Apr. 10, 1964.

SN 191,893. Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan. Filed Apr. 23, 1964.

SUMITHION

スミチオン

Owner of Japanese Reg. No. 564,562, dated Jan. 18, 1961.
For Insecticides and Disinfectants.

SN 192,104. Union Bag-Camp Paper Corporation, New York, N.Y. Filed Apr. 27, 1964.

UNIPALM

For Palmitic Acid Derived From Tall Oil.
First use July 11, 1963.

SN 192,457. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

TRAFFIC

For Household Deodorant.
First use Apr. 15, 1958.

SN 192,497. Monsanto Company, St. Louis, Mo. Filed May 1, 1964.

CWS

For Edible Organic Acids.
First use Feb. 10, 1964.

SN 192,534. Union Carbide Corporation, New York, N.Y. Filed May 1, 1964.



For Refrigerants.
First use on or about Sept. 16, 1963.

SN 192,547. The Atlantic Refining Company, Philadelphia Pa. Filed May 4, 1964.

ULTRAFENE

For Linear Alpha Olefins.
First use Aug. 13, 1963.

SN 198,796. Hartfield Stores, Incorporated, Los Angeles, Calif. Filed July 27, 1964.

ZODYS

For Liquid Bleach for Household Use.
First use Mar. 1, 1961.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 192,605. P. Lorillard Company, New York, N.Y. Filed May 4, 1964.

MELLO ROOT

For Smoking Pipes.
First use Jan. 23, 1963.

SN 194,068. Peterson's Ltd., New York, N.Y. Filed May 22, 1964.

BEWLAY

For Pipes.
First use May 19, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 182,717. Federal Cartridge Corporation, Minneapolis, Minn. Filed Dec. 10, 1963.

AMERICAN EAGLE



Owner of Reg. Nos. 267,303 and 577,427.
For .22 Caliber Ammunition.
First use Jan. 1, 1936.

Class 10 — Fertilizers

SN 198,841. Hartfield Stores, Incorporated, Los Angeles, Calif. Filed July 30, 1964.

ZODYS

For Fertilizer.
First use May 8, 1964.

Class 11 — Inks and Inking Materials

SN 176,882. The Buckeye Ribbon & Carbon Co., Cleveland, Ohio. Filed Sept. 13, 1963.

ASTRALON

For Inked Ribbons, Especially Ribbons Having a Cloth Base Woven of Synthetic Fiber.
First use Oct. 1, 1962.

SN 182,253. N.V. Drukinktfabriek Farbianca, Amsterdam, Netherlands. Filed Dec. 3, 1963.

FARBIANCA

Owner of Dutch Reg. No. 97,799, dated Mar. 7, 1949.
For Printing Inks.
First use 1940; in commerce September 1957.

SN 192,531. Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. Filed May 1, 1964.

TRIANGLE
"It MUST Be Right!"

Owner of Reg. Nos. 363,592, 719,524, and others.
For Marking Inks.
First use as early as March 1949.

Class 12 — Construction Materials

SN 166,320. Thermalon Insulation, Inc., Staten Island, N.Y. Filed Apr. 8, 1963.

INFRATHERMALFOAM

For Plastic Foam Insulation Material for Floors, Walls, and Roofs of Buildings, Applied in Liquid Form.
First use Mar. 19, 1963.

SN 177,744. Afco Corporation, Alexandria, La. Filed Sept. 26, 1963.

AFCO

For Hardboard Prefinished Wall Panels, Thresholds, Metal and Hardboard Moldings, and Metal Trim.
First use in or about August 1949.

SN 178,346. Gero Metallurgical Corporation, Boston, Mass. Filed Oct. 4, 1963.

G.I.M. PROCESS

Applicant disclaims the term "Process" apart from its use in connection with the letters "G.I.M."
For Sealing Compound for Use in Vacuum Casting Equipment.
First use May 15, 1963.

SN 183,414. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Dec. 23, 1963.

NILES

For Firebrick.
First use at least as early as January 1904.

SN 187,280. Gustin-Bacon Manufacturing Company, Kansas City, Mo. Filed Feb. 24, 1964.

ULTRA*LINER

The word "Liner" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 687,056, 734,375, and others.
For Fiber Glass Insulation for Lining Metallic Ducts.
First use Feb. 5, 1964.

SN 190,915. General Dynamics Corporation, Chicago, Ill. Filed Apr. 13, 1964.

REGAL

For Glazed Bricks.
First use Feb. 20, 1964.

SN 190,982. J. R. Simplot Company, Boise, Idaho. Filed Apr. 13, 1964.

CAL-IDA

For Lumber.
First use at least as early as June 1955.

SN 190,983. Simpson Timber Company, Seattle, Wash. Filed Apr. 13, 1964.

SILVERADO

For Paneling and Siding, Both Interior and Exterior.
First use Feb. 13, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 176,720. Duchin Gifts, Inc., New York, N.Y. Filed Sept. 11, 1963.

Jeweler's Brass

The term "Brass" is disclaimed apart from the mark as shown.
For Brass Holloware Gift Items, Specifically, Condiment Shakers, Candlesticks, Candelabra, Vases, Sconces, Cake Plates, Candy Dishes, and Hurricane Lamps.
First use July 31, 1963.

SN 182,339. Maes Incorporated, Holland, Mich., by change of name from Maes Milkers, Inc., Holland, Mich. Filed Dec. 4, 1963.

ULTRA-SAN

For Plastic Tubing for Use in Dairy and Food Processing Industries.
First use Jan. 2, 1963.

SN 187,170. The B. F. Goodrich Company, Akron, Ohio. Filed Feb. 21, 1964.

WEDJNUT

For Blind Fasteners and Rivets.
First use Feb. 7, 1964.

SN 190,180. International Protected Metals, Inc., South Plainfield, N.J. Filed Apr. 2, 1964.

CON-DUCT

For Plastic Coated Metal Pipe.
First use Mar. 20, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 185,698. Metal Spinners, Inc., Milwaukee, Wis. Filed Jan. 30, 1964.

MS
METAL SPINNERS

No claim is made to the words "Metal Spinners" apart from the other features of the mark.
For Metal Parts and Component Parts for Motor Housings and Vents, Cylindrical or Cone Metal Shapes Made From Sheet Metal, Ferrous and Non-Ferrous, Including Steel, Aluminum, Copper, and Brass.
First use Nov. 23, 1962.

SN 188,749. Grede Foundries, Inc., Milwaukee, Wis. Filed Mar. 16, 1964.

MAX HARD

The mark "Max Hard" is not the name of a living individual.
For Abrasion Resistant Metals.
First use Nov. 7, 1963.

SN 192,532. Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. Filed May 1, 1964.

TRIANGLE
"It MUST Be Right!"

Owner of Reg. Nos. 363,592, 719,524, and others.
For Rod Mill Products, Including Rods of Metal Alloys From Which Wire Is Drawn and Alloy Wire.
First use as early as March 1949.

Class 15 — Oils and Greases

SN 193,561. Marathon Oil Company, Findlay, Ohio. Filed May 15, 1964.

MARAFLUID "45"

Owner of Reg. No. 730,668.
For Oil and Grease Lubricants.
First use Apr. 2, 1964; July 10, 1961, as to "Marafluid."

SN 193,562. Marathon Oil Company, Findlay, Ohio. Filed May 15, 1964.

MARAFLUID "55"

Owner of Reg. No. 730,668.
For Oil and Grease Lubricants.
First use Apr. 2, 1964; July 10, 1961, as to "Marafluid."

SN 194,235. Power Petroleum Products, Dallas, Tex. Filed May 25, 1964.

Super Chek

For Automatic Transmission Fluid.
First use August 1963.

SN 195,327. Quaker Chemical Corporation, Conshohocken, Pa. Filed June 10, 1964.

QUASTRALIA

For Metal Working, Cleaning, and Protective Lubricants.
First use May 26, 1964.

SN 196,600. The Barcolene Company, Boston, Mass. Filed June 29, 1964.

FREE UP

Owner of Reg. Nos. 619,752, 735,524, and others.
For Penetrating Oil.
First use June 16, 1964.

Class 16—Protective and Decorative Coatings

SN 168,542. Southern Coatings & Chemical Company, Sumter, S.C. Filed May 9, 1963.

Southern Coatings

The drawing is lined for red, but no claim to color is made.
For Paint, Varnish, and Lacquer.
First use Oct. 7, 1955; Dec. 15, 1953, as to the letters "SC" in the form shown.

SN 169,026. The W. H. Fales Company, Brooklyn, N.Y. Filed May 16, 1963.

NO-FO

For Liquid Defoamer for Use in Emulsion Paints.
First use during 1958.

SN 177,431. Mauts Paint & Varnish Company, Madison, Wis. Filed Sept. 20, 1963.

PERT

For Paints.
First use Sept. 5, 1963.
Subj. to Intf. with SN 181,442 and SN 183,584.

SN 181,442. The Glidden Company, Cleveland, Ohio. Filed Nov. 18, 1963.

Xpert

For Exterior and Interior Clear Finishes for Application to Floors, Wood, Metal, and Brick.
First use Oct. 23, 1961.
Subj. to Intf. with SN 177,431 and SN 183,584.

SN 182,000. Southwest Grease & Oil Co., Inc., Wichita, Kans. Filed Nov. 27, 1963.

DURA-KOTE

For Spray Rust Preventive for Automobile.
First use Sept. 21, 1963.

SN 182,861. Carolina Coatings, Inc., Charlotte, N.C. Filed Dec. 12, 1963.

NULEX

For Interior Latex Base Flat Wall Paints.
First use Nov. 1, 1963.

SN 183,584. Hanline Bros., Inc., Baltimore, Md. Filed Dec. 26, 1963.

HANLINE X-PERT

For Paints.
First use Jan. 20, 1963.
Subj. to Intf. with SN 177,431 and SN 181,442.

SN 189,244. Douglas R. Allen Corporation, d.b.a. Douglas R. Allen Corp., Lynwood, Calif. Filed Mar. 23, 1964.

Doray

For Silicone Spray for the Protection of Fabric Upholstered Furniture and Upholstery Fabrics.
First use August 1962.

Class 17—Tobacco Products

SN 189,093. Philip Morris Incorporated, New York, N.Y. Filed Mar. 19, 1964.

PURITAN

Owner of Reg. No. 554,797.
For Smoking Tobacco, Cigars, and Cigarettes.
First use Jan. 28, 1916.

SN 190,714. General Cigar Co., Inc., New York, N.Y. Filed Apr. 9, 1964.

ULTRA

For Tobacco Product—Namely, Manufactured Tobacco Sheet for Use as a Cigar Wrapper.
First use at least as early as March 1961.

SN 191,651. The American Tobacco Company, New York, N.Y. Filed Apr. 21, 1964.

A CARGO OF CONTENTMENT IN A FILTER CIGARETTE

Applicant makes no claim of exclusive right to use the words "Filter Cigarette" apart from the mark shown in the drawing. Owner of Reg. No. 734,806.
For Cigarettes.
First use Apr. 17, 1964.

SN 193,620. The Bloch Brothers Tobacco Co., Wheeling, W. Va. Filed May 18, 1964.

THE HAGUE

For Smoking Tobacco.
First use Apr. 24, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 142,805. First Texas Pharmaceuticals, Inc., Dallas, Tex. Filed Apr. 23, 1962.

INTESTOL

For Antidiarrheal Preparation.
First use Dec. 31, 1915.

SN 148,277. EBB, Inc., Louisville, Ky. Filed July 2, 1962.

EBB

For Liquid Medicated Scalp and Hair Preparations—Namely, Antiseptic and Preparations for the Treatment of Seborrheic Dermatitis of the Scalp and Common Dandruff.
First use June 4, 1962.

SN 157,264. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed July 2, 1963.

RUMINON
ルミノン

The Japanese characters on the drawing are the equivalent to the word "ruminon." Owner of Japanese Reg. No. 494,243, dated Jan. 11, 1956.
For Prophylactic and Therapeutic Agent for Flatulence in the Ruminant.

SN 169,231. E. C. De Witt & Co. Inc., Chicago, Ill. Filed May 20, 1963.

PENGUIN FEET-TREET CREAM

No claim is made to the right to the exclusive use of the words "Feet," "Treet," and "Cream" apart from the mark as shown.
For Antiseptic Preparation for Soothing and Cooling Feet and Ankles.
First use May 1, 1963.

SN 172,946. Scott-Lee Laboratories, Inc., New Orleans, La. Filed July 12, 1963.

HISTALET

For Antihistamine, Vasoconstrictor and Decongestant Preparation.
First use Nov. 29, 1960.

SN 172,951. Scott-Lee Laboratories, Inc., New Orleans, La. Filed July 12, 1963.

SCOVITE

For Vitamin Preparation.
First use Apr. 5, 1960.

SN 178,252. J. P. Brown, Jr., d.b.a. Dixi Chem Company, Chattanooga, Tenn. Filed Oct. 3, 1963.

The All-American



The picture of the man contained in the design is a product of the artist's imagination and has no reference to any person, living or dead.
For Liquid Medicine (or Spray) for the Treatment of Cuts, Burns, and Scratches.
First use Feb. 1, 1963.

SN 179,598. Boehringer Ingelheim, G.m.b.H., Ingelheim (Rhine), Germany, assignee of C. H. Boehringer Sohn, Ingelheim (Rhine), Germany. Filed Oct. 23, 1963.

TRIMIZOLIN

Owner of German Reg. No. 758,228, dated Feb. 18, 1962.
For Sympathomimetic.

SN 181,154. Laboratoires Chibret, Societe Anonyme, Clermont-Ferrand, Puy-de-Dome, France. Filed Nov. 14, 1963.

VISCOCORT

Owner of French Reg. No. 483,259, dated Oct. 15, 1959 (Seine); Natl. Inst. No. 132,720.
For Pharmaceutical Preparation for the Treatment of Boils and Eczema.

SN 185,109. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 22, 1964.

BIO-BASE

For Topical Skin Medication for Pimples, Blackheads, and Oily Skin.
First use Dec. 3, 1963.

SN 191,210. The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 15, 1964.

ENTEROLAX

For Preparation for the Relief of Constipation.
First use Apr. 7, 1964.

SN 192,252. American Home Products Corporation, New York, N.Y. Filed Apr. 29, 1964.

AURALYSIN

Owner of Reg. No. 378,396.
For Otic Preparation.
First use Apr. 8, 1964.

SN 193,390. Merck & Co., Inc., Rahway, N.J. Filed May 13, 1964.

FRESHELLE

For Vaginal Douche Preparations.
First use Apr. 22, 1964.

SN 193,578. The Reducine Company Limited, Dublin, Ireland. Filed May 15, 1964.

T. D. Lambert

The name "T. D. Lambert" identifies the founder of applicant's business who is now deceased.
For Veterinary Preparations—Namely, Liniments and Salves for External Use on Dogs, Horses, and Cattle.
First use 1906; in commerce 1906.

SN 193,685. Mead Johnson & Company, Evansville, Ind. Filed May 18, 1964.

ORACON

For Medicinal Preparation for Ovulation Control and Other Gynecological Conditions.
First use on or prior to May 7, 1964.

SN 193,786. Herald Pharmacal, Inc., Bedford, Va. Filed May 19, 1964.

ZnLin

For Emollient Lotion for Treatment of Poison Ivy, Poison Oak, Sunburn, and Skin Allergies.
First use May 4, 1964.

SN 194,324. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed May 26, 1964.

SPIRAVET

Priority claimed under Sec. 44(d) on French Reg. No. 521,293, dated Apr. 16, 1964 (Paris); Natl. Inst. No. 223,936. Owner of U.S. Reg. No. 750,408.
For Veterinary Preparations in the Form of Liquids, Tablets, and Ointments, Used in Treatment, Prevention and Control of Animal and Poultry Diseases.

SN 195,143. Pharmaceutical Specialties, Inc., d.b.a. Dermatological Prescription Laboratories, Monterey, Calif. Filed June 8, 1964.

RUSCAPS

For Tablets for the Specific Purpose of Preventive Therapy Against Poison Ivy and Poison Oak Dermatitis.
First use Feb. 8, 1964.

SN 197,539. Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany. Filed July 10, 1964.

VITAGERAL

For Pharmaceutical Preparation for the Treatment of Disorders of Old Age.
First use Apr. 17, 1964; in commerce Apr. 17, 1964.

Class 19—Vehicles

SN 169,373. Henschel-Werke Aktiengesellschaft, Kassel, Germany. Filed May 21, 1963.

HENSCHEL

Owner of German Reg. No. 687,109, dated Feb. 1, 1956.
For Land Vehicles—Namely, Commercial Trucks, Truck-Tractors, Trailers, Platform Trucks, Van-Type Trucks, Dump Trucks, Buses, Trolley Buses; and Special Purpose Truck Chassis Suitable for Truck Mixers, Fire Engines, Tank Vehicles, Silo-Vehicles, Dust Carts, Long Shaped Load Carriers, Street Sweepers, Crane Vehicles, Wrecking Trucks, and Mobile Workshops.
First use prior to 1954; in commerce 1954.

SN 180,125. Rockwell-Standard Corporation, Coraopolis, Pa. Filed Oct. 30, 1963.

INSTANTOR

For Automotive Vehicle Brakes and Component Parts Thereof.
First use on or about Sept. 16, 1963.

SN 186,462. Lord Manufacturing Company, Erie, Pa. Filed Feb. 11, 1964.

TYLASTIC

For Elastic Tiedowns and Components Thereof Used To Anchor Ladings to the Beds of Railway Flatcars or Other Vehicles.
First use Apr. 9, 1962.

SN 192,851. Skyline Homes, Inc., Elkhart, Ind. Filed May 6, 1964.

HILLCREST

For Mobile Homes.
First use on or before June 26, 1961.

SN 192,853. Skyline Homes, Inc., Elkhart, Ind. Filed May 6, 1964.

CRESTWOOD

For Mobile Homes.
First use Oct. 24, 1960.

SN 193,378. Institutional Industries, Inc., Cincinnati, Ohio. Filed May 13, 1964.

A-LINE

For Carts for Use in Hospitals and Other Institutions.
First use on or before Jan. 13, 1964.

SN 193,379. Institutional Industries, Inc., Cincinnati, Ohio. Filed May 13, 1964.

SPRITE

For Lightweight Wheel Chairs.
First use on or before Feb. 19, 1964.

SN 193,506. Oliver H. Thompson, Big Rapids, Mich. Filed May 14, 1964.



For Wheeled Carts.
First use on or about Dec. 1, 1963.

SN 193,661. Goerlich's, Inc., Toledo, Ohio. Filed May 18, 1964.

KEY

For Shock Absorbers.
First use June 21, 1963.

SN 193,662. Goerlich's, Inc., Toledo, Ohio. Filed May 18, 1964.

CREST

For Shock Absorbers.
First use Oct. 10, 1963.

SN 193,663. Goerlich's, Inc., Toledo, Ohio. Filed May 18, 1964.

KAR-GARD

For Shock Absorbers.
First use May 14, 1962.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 151,031. Essex Wire Corporation, Fort Wayne, Ind. Filed Aug. 13, 1962.

REED-PAK

Owner of Reg. Nos. 628,592, 749,036, and others.
For Encased Reed-Switch Relays.
First use July 13, 1962.

SN 156,899. Benard Burson, Jr., Austin, Tex., assignee, by mesne assignment, of Nucleonics Research & Development Corporation, Austin, Tex. Filed Nov. 8, 1962.

BLINK-OFF

For Canceller for Automotive Turn Indicators.
First use July 6, 1962.

SN 163,587. Signetics Corporation, Sunnyvale, Calif. Filed Feb. 27, 1963.

VARI-FEB

For Integrated Circuit Dice With Unconnected Components.
First use Nov. 26, 1962.

SN 176,627. Channel Master Corporation, Ellenville, N.Y. Filed Sept. 10, 1963.

BLUESTAR

For Television Amplifiers.
First use Aug. 21, 1963.

SN 176,748. Radiation Dynamics, Inc., Westbury, N.Y. Filed Sept. 11, 1963.

DYNA-MAG

For Ion Sources for Linear Accelerators.
First use Sept. 14, 1961.

SN 176,902. W. L. Gore & Associates, Inc., Newark, Del. Filed Sept. 13, 1963.

MIL-ENE

For Insulation—Namely, for Insulating Coverings for Electrical Conductors—Namely, Wire.
First use June 6, 1963.

SN 178,141. Square D Company, Park Ridge, Ill. Filed Oct. 1, 1963.



Owner of Reg. Nos. 103,050, 708,033, and others.
For Electrical Distribution Equipment, That Is, Electrical Equipment Ordinarily Used Within a Building To Distribute, and To Control the Distribution of, the Electric Power Utilized Therein; Electrical Control Equipment, That Is, Electrical Equipment for Controlling Electric Motors Arranged To Drive Machinery and for Controlling Other Industrial Electric Power Utilization Equipment; Adjustable Speed Drives Comprising a Motor and Speed Control Equipment Therefor; and Electromagnets Used for Lifting, Separation, and Road-Sweeping.
First use about 1934; 1914 as to the mark in another form.

SN 178,476. Pearsall Company, Denver, Colo. Filed Oct. 7, 1963.

STATITROL

For Static Neutralizers—Namely, Ion Generators Which Produce Either Positive or Negative Charges or Both for the Neutralization of Static as an Accumulation of Positive and Negative Charges.
First use July 9, 1963.

SN 179,988. American Motors Corporation, Detroit, Mich. Filed Oct. 29, 1963.

KELVINATOR

Owner of Reg. No. 142,652.
For Garbage Disposers, Electrical in Nature.
First use in or before 1954.

SN 181,810. Tiger Plastics Corp., Brooklyn, N.Y. Filed Nov. 22, 1963.

EXACTALENS

For Lenses for Electric Light Fixtures.
First use Oct. 3, 1963.

SN 182,610. Foster Electric Co., Ltd., Mitaka-shi, Tokyo, Japan. Filed Dec. 9, 1963.



For Electric Acoustic Devices, To Wit, Speakers, Microphones, Pick-Ups, Wireless Microphones, Amplifiers, Headphones and Earphones.
First use Mar. 14, 1959; in commerce May 1, 1959.

SN 183,435. Microwave Electronics Corporation, Palo Alto, Calif. Filed Dec. 23, 1963.

HIPOLON

For Electron Discharge Device—Namely, Traveling Wave Tubes.
First use Oct. 30, 1963.

SN 184,945. Microwave Electronics Corporation, Palo Alto, Calif. Filed Jan. 20, 1964.

MITEK

For Passive Microwave Devices—Namely, Cavity Resonators.
First use Apr. 17, 1963.

SN 184,960. Raylite Electric Corp., New York, N.Y. Filed Jan. 20, 1964.

STAYZ-LIT

Owner of Reg. No. 670,780.
For Decorative Lighting Outfits for Christmas Trees and Electric Lamps for Such Outfits.
First use April 1957.

SN 189,982. California Magnetic Control Corporation, North Hollywood, Calif. Filed Mar. 31, 1964.

POWERVOLT

For Ignition Systems and Components Thereof for Internal Combustion Engines.
First use Jan. 23, 1964.

SN 189,983. California Magnetic Control Corporation, North Hollywood, Calif. Filed Mar. 31, 1964.



Owner of Reg. No. 759,137.
For Components of Electrical and Electronic Systems—Namely, Transformers, Reactors, Magnetic Amplifiers, Power Supplies, Discriminators, Filters, and Products for Internal Combustion Engines, i.e., Voltage Regulators, Ignition Systems, Alternators, and Generators.
First use Oct. 16, 1952.

SN 194,343. Automatic Devices Company, Allentown, Pa. Filed May 27, 1964.

VALLEN

For Electrically Operated Curtain Track Equipment and Controls.
First use Mar. 22, 1939.

SN 194,403. Metex Electronics Corporation, Clark, N.J. Filed May 27, 1964.

POLAFRAME

For Radio Frequency Shielding, Especially in Gasket Form.
First use January 1964.

SN 194,404. Metex Electronics Corporation, Clark, N.J. Filed May 27, 1964.

POLASHEET

For Radio Frequency Shielding, Especially in Gasket Form.
First use January 1964.

SN 194,405. Metex Electronics Corporation, Clark, N.J. Filed May 27, 1964.

POLARING

For Radio Frequency Shielding, Especially in Gasket Form.
First use 1962.

SN 194,945. Baker Fidelity Corporation, d.b.a. Baker Audio Associates, Atlanta, Ga. Filed June 5, 1964.

SEFAC

For Electronic Apparatus Sold as a Unit and in Separate Parts and Comprising Keyboard, Generator, Electronic Memory Tanks, Electronic "Writer" and Display Board Similar to a Television Screen and Designed for Any and All Uses and Applications Requiring Electronic Data Display at Adjacent or Remote Locations Which Applications Require or Are Facilitated by Electronic Memory Information Retrieval and Display, or Alpha-Numeric Generation and Display Such as Flight Announcement Control, Inventory Control and Like Applications.
First use May 1, 1964.

SN 195,040. Charles Adler, Jr., Baltimore, Md. Filed June 8, 1964.

BEACONBULB

For High Intensity Daylight Running Light for Automobiles.
First use May 27, 1964.

SN 196,836. Atlas Supply Company, Springfield, N.J. Filed July 1, 1964.

MILE PĀK

Owner of Reg. Nos. 366,714, 752,532, and others.
For Storage Batteries.
First use May 25, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 126,416. Allis-Chalmers Sports Products, Inc., Frankfort, Mich, by change of name from Chamberlin Metal Products Co., Frankfort, Mich. Filed Aug. 21, 1961.



Applicant disclaims the representation of a golf cart separate and apart from the mark as shown.
For Golf Carts.
First use June 21, 1961.

SN 146,840. Lou Vargo Enterprises, Inc., Baton Rouge, La. Filed June 6, 1962.

ISO-BAR

The drawing is lined with vertical lining, but such lining is not an indication of color and no claim to any particular color is made.
For Exercising Apparatus Adapted for Isometric Contraction.
First use Apr. 6, 1962.

SN 164,985. Mattel, Inc., Hawthorne, Calif. Filed Mar. 19, 1963.

TINY BROTHER

For Dolls.
First use Feb. 12, 1963.

SN 166,415. Kenneth A. Sells, d.b.a. Sells Aerial Tennis Company, Shawnee Mission, Kans. Filed Apr. 9, 1963.



The word "Tennis" is disclaimed apart from the mark as shown.
For Equipment Comprising a Net, Paddles, and Feathered Birds for Playing a Badminton-Type Game.
First use June 14, 1954.

SN 167,304. PEG Industries, Inc., Denver, Colo. Filed Apr. 22, 1963.

SCHUSS

"Schuss" is an international skiing term of Austrian or German origin meaning "down the hill fast."
For Ski Wax.
First use Jan. 20, 1963.

SN 176,440. Guild Musical Instrument Corporation, Hoboken, N.J. Filed Sept. 6, 1963.

PIANETTA

For Children's Toy in the Form of a Blow Accordion.
First use Apr. 1, 1963.

SN 176,578. Sifo Company, St. Paul, Minn. Filed Sept. 9, 1963.

Young Life

For Jigsaw-Type Puzzle.
First use Aug. 1, 1963.

SN 176,819. Mattel, Inc., Hawthorne, Calif. Filed Sept. 12, 1963.

SEW-FREE

For Doll Clothes.
First use Aug. 13, 1963.

SN 177,539. Czela North, d.b.a. Czela, Costa Mesa, Calif. Filed Sept. 23, 1963.

PINK FINK

For Gift Novelty—Namely, a Toy Animal.
First use May 20, 1963.

SN 177,931. Wilson Sporting Goods Co., River Grove, Ill. Filed Sept. 27, 1963.

CRAFT BUILT

Owner of Reg. No. 536,989.
For Baseball Gloves and Mitts, and Inflated Goods—Namely, Footballs, Basketballs, Volleyballs, Soccer Balls, and Striking Bags.
First use 1945.

SN 179,269. Sylvia Nelson Schlesinger, Albany, N.Y. Filed Oct. 17, 1963.

EGG COLORING UNLIMITED

The words "Egg Coloring" are disclaimed.
For Water Colors, Brush, Nesting Egg, and Color Felt, Sold as a Toy Kit.
First use June 1, 1963.

SN 180,406. Items Incorporated, St. Louis, Mo. Filed Nov. 4, 1963.

ROCKY MOUSE

No claim of exclusive right is made to "Mouse" for the goods recited.
For Animal Toy, Particularly a Toy Containing the Configuration of a Mouse.
First use Aug. 28, 1963.

SN 182,140. Chance Manufacturing Company, Inc., Wichita, Kans. Filed Nov. 20, 1963.

TRABANT

For Carnival-Type Amusement Ride.
First use Apr. 4, 1963.

SN 186,076. Guild Toys, Inc., Patterson, N.J. Filed Feb. 5, 1964.

BOOBY-TRAP

For Equipment Sold as a Unit for Playing a Board or Parlor Game.
First use May 11, 1962.

SN 186,481. Star Manufacturing Company, Leominster, Mass. Filed Feb. 11, 1964.

Star

Owner of Reg. No. 682,823.
For Baby Toys.
First use Nov. 5, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 156,295. Harris-Intertype Corporation, Cleveland, Ohio. Filed Oct. 31, 1962.

HARRIS KEY REGISTER

No claim is made to the exclusive right to use the term "Key Register" apart from the mark as shown. Owner of Reg. No. 528,029.
For Tools for Placing Indexing Marks To Control the Placement of Printing Plates and Color Separations.
First use October 1958.

SN 172,149. Blu Strike Blade Co. Inc., New York, N.Y. Filed July 1, 1963.

PERMA-SHARP

Owner of Reg. No. 426,013.
For Razor Blades.
First use Mar. 14, 1963.

SN 173,112. Kammco, Greenbrook Township, N.J. Filed July 16, 1963.

Fresh Up

For Automatic Car and Truck Wash Equipment.
First use Apr. 1, 1963.

SN 178,895. E. L. Caldwell & Sons, Inc., Corpus Christi, Tex. Filed July 29, 1963.

CUTS · SHREDS
CUT and TILL
CHOPS · TILLS

For Machines for Shredding and Cutting Above-Ground Growth and for Chopping Roots and Tilling Soil.
First use July 17, 1963.

SN 176,987. Adjustable Bushing Corp., North Hollywood, Calif. Filed Sept. 16, 1963.

EXPANDO-GRIP

For Adjustable Wall Thickness Bushings and Associated Adjustable Diameter Products Including Bearings, Blind Bolts, Bolts, Mold Clamp Pins, Panel Fasteners, Quick-Acting Pins, and Kindred Tooling.
First use May 1, 1962.

SN 178,300. Retor Developments Limited, Galt, Ontario, Canada. Filed Oct. 3, 1963.

DYNATRACE

For Hydraulic Power-Pack for a Modulated Feed Control System.
First use 1961; in commerce Apr. 23, 1963.

SN 179,352. Pavan, Galliera Veneta, Padova, Italy. Filed Oct. 18, 1963.

PAVAN

For Macaroni Processing Equipment—Namely, Machines for Storage and Pneumatic Conveyance of Flour, Screw Presses for Mixing and Making Macaroni Products, Dryers for Dehydrating Macaroni Products, Machines for Cutting and Packaging Macaroni, Machines for Washing and Cleaning Parts of Processing Equipment, Nest Making Machines, Coiling Machines, Bow Tie Making Machines, Noodle Cutters, and Dies.
First use January 1954; in commerce January 1954.

SN 182,981. Toolmatic Corp., New York, N.Y. Filed Dec. 13, 1963.

TOOLMATIC

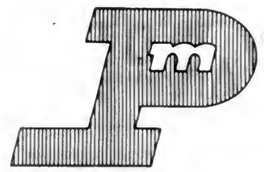
For Machine Tools and Machines Provided With Electronic Controls Therefor.
First use Nov. 1, 1963.

SN 187,502. Masonry Equipment Inc., Waterloo, Iowa. Filed Feb. 26, 1964.

CUTMASTER

For Sawing Equipment—Namely, Power Saws and Saw Blades for Working Concrete Blocks, Cinder Blocks, Shale Blocks, Masonry Lintels, Masonry Slabs, Ceramic Items, and Other Masonry Materials.
First use at least as early as Apr. 6, 1959.

SN 187,795. The Portage Machine Company, Akron, Ohio. Filed Mar. 2, 1964.



The drawing is lined for the color red.
For Horizontal Boring Mills, Layout Machine, and Rotary Surface Tables.
First use Oct. 1, 1957.

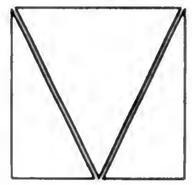
SN 188,743. Garfield Williamson, Inc., Jersey City, N.J. Filed Mar. 16, 1964.

WONDERLAWNER

Owner of Reg. Nos. 554,773 and 642,779
For Lawn and Garden Spreader.
First use January 1964.

SN 188,899. Multi-Attachments, Inc., New York, N.Y. Filed Mar. 17, 1964.

Multimatic



For Control Equipment for Printing Presses—Namely, Apparatus Preventing the Printing of a Multiple Image.
First use May 1963.

SN 190,214. The W. S. Tyler Company, Cleveland, Ohio. Filed Apr. 2, 1964.

TY-LEVEL

Owner of Reg. No. 760,310.
For Vibrating Apparatus—Namely, Screening Apparatus.
First use Jan. 21, 1964.

SN 190,235. Beaver Precision Products, Inc., Clawson, Mich. Filed Apr. 3, 1964.



For Screw and Nut Assemblies of the Ball Recirculating Type, Ball Way Bearings, Roller Way Bearings, and Machine Tool Components.
First use 1952.

SN 191,199. Modern Equipment Company, Port Washington, Wis. Filed Apr. 15, 1964.

MODERN

Owner of Reg. No. 763,127.
For Metal Pouring Ladles, Ladle Handlers, and Overhead Cranes.
First use on or about Oct. 2, 1963.

SN 191,344. Fraser's, Inc., New York, N.Y. Filed Apr. 15, 1964.

MURRAY HILL

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, Serving Forks, and Serving Spoons.
First use Apr. 1, 1964.

SN 191,372. Eisenberg-Lozano, Incorporated, New York, N.Y. Filed Apr. 17, 1964.

CHEESEMASTER

For Implements for Cutting or Slicing and Serving Cheese, Comprising Cheese Knives, Cheese Planes, and Wire Cheese Cutters of Stainless Steel.
First use on or about Apr. 2, 1964.

SN 191,862. Laray Cosmetics, Inc., Elizabeth, N.J. Filed Apr. 23, 1964.

MARTELL

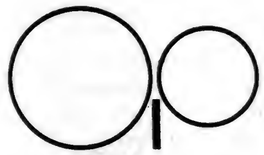
For Razors, Safety Razor Blades, Safety Razors, and Scissors.
First use Oct. 13, 1942.

SN 192,742. Pan-O-Matic Corporation, Portland, Oreg. Filed May 5, 1964.

PAN-O-MATIC

For Machines for Separating and Recovering Precious Metals and Minerals From Sand and Gravel.
First use 1958.

SN 192,808. Duncan Products, Inc., Los Angeles, Calif. Filed May 6, 1964.



For Precision Drill Jig Bushings and Related Tooling Accessories.
First use June 16, 1963.

SN 192,865. Wylie Manufacturing Company, Oklahoma City, Okla. Filed May 6, 1964.

ROL-MOR

For Road Rolling Machinery Used for Compacting Aggregate and Asphalt, etc., in Road Construction and Repair.
First use Jan. 25, 1964.

SN 192,888. Beloit Corporation, Beloit, Wis. Filed May 7, 1964.

VentaNip

For Paper Making Machinery—Namely, Peripherally Grooved Rolls Such as Used in Press Sections, and Other Similar Applications.
First use Apr. 16, 1964.

SN 192,896. Control Print Machinery Manufacturers Corporation, North Arlington, N.J. Filed May 7, 1964.



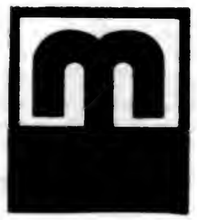
For Printing Apparatus, Including Coding and Marking Machines, and Parts and Supplies Therefor.
First use on or about Oct. 29, 1962.

SN 192,915. Karl Schmidt GmbH, Neckarsulm, Germany. Filed May 7, 1964.

KOLBENSCHMIDT

Owner of German Reg. No. 779,167, dated Oct. 29, 1963.
For Pistons, Casting Blanks, Raw and Partly Wrought Common Metals and Metal Alloys, Shaped Metal Pieces Produced by Casting, Pugging and/or Turning, Casting Tools, Machine Tools, and Parts Thereof.

SN 192,923. Melnor Industries, Inc., Moonachie, N.J. Filed May 7, 1964.



For Shears.
First use Nov. 1, 1963.

SN 193,079. Tiffin Scenic Studios, Inc., Tiffin, Ohio. Filed Apr. 21, 1964.

Stagemaster

For Stage Rigging.
First use Feb. 15, 1950.

SN 193,586. Smith-Berger Manufacturing Corporation, Seattle, Wash. Filed May 15, 1964.

BERGER

For Logging and Loading Machines and Equipment—Namely, Log Yarding Machines, Mobile Metal Towers, Fairleaders, Air and Hydraulic Log Loading Tongs, Bridge Cranes, Loading Booms, and Slack Pullers.
First use 1933.

SN 193,769. Electroweld Manufacturing Corporation, Erie, Pa. Filed May 19, 1964.

ajusta-buckets

For Power Driven Earth Working and Excavating Equipment.
First use Nov. 8, 1963.

SN 194,413. Nordberg Manufacturing Company, Milwaukee, Wis. Filed May 27, 1964.

NORDBERG

Owner of Reg. Nos. 525,591 and 537,263.
For Internal Combustion Engines, Including Diesel Engines for Stationary and Marine Purposes, Gas Engines, Dual Fuel Engines—Namely, Internal Combustion Engines for Both Gaseous and Liquid Fuels; In-Line V-Type and Radial Engines; Engine-Compressor Units; Engine-Pumping Units; Controls for Internal Combustion Engines; Gears, Including Speed Changing Gears; Power-Driven Hoists, Friction Type Mine Hoists; Rock, Ore and Gravel Crushers, Including Cone and Jaw Crushers, Gyratory Crushers, Impact Crushers, and Gyratory Fine Grinders; Vibrating Screens for Screening Rocks and Ores; Ball Mills and Grinders; Plastic Backing for Mill and Crusher Wearing Parts; Rotary Kilns; Autogenous Mills, Tube Mills, Rod Mills and Pebble Mills; Vertically Axised Screens, Rod Decks and Rod Grizzlies, Bar Grizzlies; Conveyor Drive Pulleys and Brakes; Lubricating Systems and Parts; Track Working Equipment, Including Cribbing and Ballasting Machines, Adzing Machines, Track Jacks, Track Grinders, Rail Grinders; Tampers, Spike Drivers, Spike Pullers, Rail Drills, Track-Supported Screening Assemblies for Screening Ballast Before It Is Returned to Place; Nut and Bolt Screwing and Unscrewing Devices—Namely, Power Socket Wrenches for Nuts and Bolts of Track Rails; Ballast Routers; Yard Cleaners; Track Gaging Machines; Tie Pullers and Inserters; Line Indicators; Rail Lifters; Scarifier-Inserters; Screens and Screen Assemblies for Railroad Use; Spike Hammers; Spike Pullers—Hydraulic and Mechanical; Tamping Power Jacks; Tie-Axes; Tie Drills; Trackliners; Trackshifters; Track Surfacers; Switchliners; Metalworking and Metal Forming Hydraulic Presses; Compression and Transfer Molding Presses for Plastics; Reinforced Plastics Molding Presses; Laminating Presses; Multiple Opening Heated Platen Presses; Air Power Presses; Hydrostatic Presses; Scrap Shears; Straightening, Forcing and Bending Presses; Hobbing Presses; Special Presses; Accumulator Systems; High Pressure Hydraulic Valves; Hydraulic Shock Alleviators; High Pressure Pumps; Abrasive Wheel Presses; Abrasive Belt Sealing Presses; Powdered Metal Presses; Extrusion Presses; and Briquetting Presses.
First use Feb. 18, 1964.

SN 195,100. Heatron, Incorporated, York, Pa. Filed June 8, 1964.

HEATRON

Owner of Reg. No. 663,723.
For Hermetic Refrigerant Liquid Pumps.
First use Sept. 22, 1953.

SN 196,322. Waukesha Motor Company, Waukesha, Wis. Filed June 23, 1964.

CLIMAX

For Oil Field Drilling Units and Pumping Units.
First use June 1925 on drilling units.

SN 196,331. Yaun Manufacturing Company, Inc., Baton Rouge, La. Filed June 23, 1964.

YAUN

For Earth Moving Equipment and Heavy Construction Equipment—Namely, Clamshell Buckets, Concrete Buckets, Dragline Buckets, Rock Buckets, Grapples, and Spreader Boxes; and Parts Thereof.
First use at least as early as 1940.

SN 196,415. American Brake Shoe Company, New York, N.Y. Filed June 25, 1964.

Hydroil ic

Owner of Reg. No. 396,777.
For Hydraulic Presses, Attachments for Use Therewith and Therein, and Parts Thereof.
First use Aug. 1, 1941.

SN 196,416. American Brake Shoe Company, New York, N.Y. Filed June 25, 1964.

Hydroilics

Owner of Reg. No. 396,777.
For Attachments for Use in and With Hydraulic Presses, Constant Displacement Pumps, Hydraulic Motors, Hydraulic Transmissions, Custom Built Hydraulic Machinery for Specialized Industrial Purposes, and Parts Therefor.
First use Aug. 1, 1941.

SN 196,417. American Brake Shoe Company, New York, N.Y. Filed June 25, 1964.

MULTIPRESS
MIDGET

Owner of Reg. Nos. 559,156 and 575,539.
For Hydraulic Presses and Parts Therefor.
First use June 11, 1947.

SN 196,462. Mojonnier Bros. Co., Chicago, Ill. Filed June 25, 1964.

VAC-U-LIFT

For Milk Handling and Transfer System Whereby a Continuous Flow of Milk Is Transferred From the Cow to the Vacuum Storage Tank Simultaneously Removing the Air in the System Incorporated During the Milking Process.
First use July 9, 1963.

SN 196,518. Futurmill, Inc., Southfield, Mich. Filed June 26, 1964.

LITTLE CHIPPER

For Milling Cutters.
First use May 20, 1964.

SN 196,539. McDonough Co. d.b.a. O. Ames Co., Parkersburg, W. Va. Filed June 26, 1964.

TIGER

For Shovels, Spades, and Scoops.
First use on or about Jan. 17, 1964.

SN 196,609. Brisco Mountain Woodcrafters, Inc., Dingmans Ferry, Pa. Filed June 29, 1964.

PEPSAL

For Combination Pepper Grinder and Salt Cellar.
First use at least as early as June 10, 1964.

SN 196,761. G. S. Blakeslee & Co., Chicago, Ill. Filed June 30, 1964.

BLAKESLEE

Owner of Reg. No. 510,545.
For Electrically Powered Glass and Dish Washing Machines; Electrically Powered Food Mixing Machines; Electrically Powered Potato and Vegetable Peelers of the Abrasive Disc Type; Can and Bottle Crushers; and Food Waste Disposers.
First use at least as early as 1922 on glass and dish washing machines.

Class 25 — Locks and Safes

SN 193,710. Sentinel Frechek Locks, Incorporated, Wheeling, Ill. Filed May 18, 1964.

FRECHEK

For Locks, Including Coin and Check Operated Locks and Key Operated Locks and Combined Key and Coin or Check Operated Locks, Parts Thereof and Keys for Locks.
First use on or about Jan. 15, 1964.

SN 194,010. Yale & Towne, Inc., New York, N.Y. Filed May 21, 1964.

LOCKTRONIC

For Locks for Doors.
First use November 1961.

Class 26 — Measuring and Scientific Appliances

SN 181,057. Nuclear Diodes, Inc., Highland Park, Ill. Filed Nov. 13, 1963.

nuclear
nd diodes

Applicant disclaims any rights in the word "Diodes" apart from the mark as shown.
For Solid State Radiation Detectors.
First use Dec. 6, 1961.

SN 189,159. Fire-Lite Alarms, Inc., New Haven, Conn. Filed Mar. 20, 1964.

FIRE-LITE

For Fire Alarm Systems and Equipment Such as Fire Detecting Devices, Visual and Audio Components Including Bells, Gongs and Annunciator Panels, Automatic and Manual Fire Alarm Controls, Control Panels, Battery Chargers, Booster Panels and the Like.
First use on or about May 22, 1951, on fire detecting devices.

SN 191,443. Sandoz, Inc., Hanover, N.J. Filed Apr. 17, 1964.

MELLAMETER

For Dispensing Pump Which Dispenses 25 Milligrams of Liquid on Each Actuation After Priming.
First use Mar. 23, 1964.

Class 27 — Horological Instruments

SN 160,254. Advertime, Inc., Evansville, Ind. Filed Jan. 7, 1963.

ADVERTIME

For Clocks of Such a Nature That Advertising Copy Can Be Affixed Thereto.
First use Sept. 20, 1962.

Class 28 — Jewelry and Precious-Metal Ware

SN 175,392. Concord Craftsman, Inc., Brighton, Mass. Filed Aug. 20, 1963.

CONCRA

For Jewelry Used for Personal Adornment.
First use May 31, 1963.

SN 184,120. The World Charm Corporation, New York, N.Y. Filed Jan. 6, 1964.

cWc

For Jewelry for Personal Wear—Namely, Charms, Bracelets, and Key Chains.
First use Nov. 14, 1963.

SN 192,242. Samuel Alabaster, d.b.a. The Empire Company, Memphis, Tenn. Filed Apr. 29, 1964.

Alabaster originals

Applicant disclaims the word "Originals" apart from the mark as shown.
For Costume Jewelry.
First use Dec. 1, 1953.

SN 196,878. Marvella, Inc., New York, N.Y. Filed July 1, 1964.

MARVELLORA

Owner of Reg. Nos. 641,378, 677,684, and others.
For Pearls and Costume Jewelry.
First use on or about June 1, 1964.

SN 197,200. Textron Inc., Providence, R.I. Filed July 6, 1964.

COLOSSUS

For Expansion Bracelets Including Watch Bracelets.
First use June 18, 1964.

SN 197,204. Textron Inc., Providence, R.I. Filed July 6, 1964.

SPARTACUS

For Expansion Bracelets Including Watch Bracelets.
First use June 18, 1964.

SN 198,041. B. B. Greenberg Co., Cranston, R.I. Filed July 17, 1964.

CHARMANTE

For Women's Jewelry for Personal Wear and Adornment.
First use May 6, 1964.

SN 198,279. Kordes & Lichtenfels, Pforzheim, Germany. Filed July 21, 1964.

Korli

Owner of German Reg. No. 497,294, dated Nov. 5, 1937.
For Genuine and Costume Jewelry.

SN 199,496. Merle Reed, Moose Pass, Alaska. Filed Aug. 7, 1964.

MR

For Jewelry Made of Precious Metal, Including Men's and Women's Jewelry, Pins, Earrings, Charms, Bracelets, Cuff Links, Tie Slides, Rings, etc.
First use January 1960.

Class 29 — Brooms, Brushes, and Dusters

SN 177,858. California Industries for the Blind, Sacramento, Calif. Filed Aug. 27, 1963.

another product of
fore-sight by the blind

Applicant hereby waives and disclaims the words "Another Product of" apart from the mark as shown.
For Mops, Brushes, and Brooms.
First use on or about May 1, 1963.

SN 192,001. Bissell Inc., Grand Rapids, Mich. Filed Apr. 27, 1964.

Floor Tender

For Devices for Waxing, Wet Mopping and Drying of Hard Floors.
First use Apr. 6, 1964.

SN 196,281. Edgar Joseph, d.b.a. Jaytan Leather Company, San Antonio, Tex. Filed June 23, 1964.

JAYTAN

Owner of Reg. No. 700,725.
For Nylon Mesh Cleaning Pads, Cleaning and Polishing Mitts.
First use June 26, 1962.

Class 31 — Filters and Refrigerators

SN 157,595. Martin J. Berardi, Miami, Fla. Filed Nov. 20, 1962.

SILVER MAGIC

For Filters for Purifying Fluids.
First use May 7, 1962.

SN 166,898. Henry Valve Company, Melrose Park, Ill. Filed Apr. 17, 1963.

FIL-COR

For Cartridge-Type Filter Element for Industrial Use.
First use Mar. 21, 1963.

SN 172,571. Dole Refrigerating Company, Chicago, Ill. Filed July 8, 1963.

POWER-CEL

Owner of Reg. Nos. 594,861, 741,287, and others.
For Refrigerating Units.
First use June 28, 1963.

SN 193,103. C. Richard Boyd, d.b.a. Dick Boyd, Miami, Fla. Filed May 11, 1964.

CHEMI-PURE

For Granular Filtering Material for the Use of Purifying Aquarium Water, Consisting of Activated Carbons and Ion Exchange Resins, Used in a Precise Mixture.
First use May 1, 1959.

SN 193,778. Fogel Refrigerator Company, Philadelphia, Pa. Filed May 19, 1964.

* * FOGEL

For Commercial Refrigerators and Freezers.
First use Apr. 15, 1964; at least as early as 1910 as to the mark "Fogel" in varying forms.

Class 32 — Furniture and Upholstery

SN 175,519. Stabilus Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany. Filed Aug. 21, 1963.

LIFT-O-MAT

Owner of German Reg. No. 771,786, dated Mar. 25, 1963.
For Furniture, Particularly Height Adjustable Tables and Chairs.

SN 185,748. Acme Iron Works, Inc., Washington, D.C. Filed Jan. 31, 1964.

RAC ME

Without relinquishing any common law rights, applicant disclaims the exclusive right to use the outline design of a golf club apart from the mark as shown.
For Storage Shelf Assemblies for Golf Clubs and the Like.
First use Nov. 21, 1963.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 173,863. Precision Multiple Controls, Inc., Ridgewood, N.J. Filed July 26, 1963.

TENASTIC

For Non Electric Light Globes.
First use July 17, 1963.

SN 174,975. Metals Engineering & Manufacturing Co., Inc., Detroit, Mich. Filed Aug. 13, 1963.

sun flo

For Gas-Fired Packaged Air Units Used To Replace the Tempered Air Being Exhausted From Various Types of Processes and To Provide Ventilation for Industrial Plants.
First use June 1959.

SN 178,193. Hardwick Stove Company, Cleveland, Tenn. Filed Oct. 2, 1963.

DEBUTANTE

For Gas and Electric Ranges.
First use Sept. 16, 1963.

SN 183,454. Portland Firescreens Co., Portland, Oreg. Filed Dec. 23, 1963.

PORTLAND FIRESCREENS CO

Applicant disclaims the words "Portland Firescreens Co." apart from the mark as used.
For Fireplace Screens, Andirons, and Fire Sets Consisting of Poker, Tongs, Shovel, Brush and Stand, and Fenders, Bellows, Fire Lighters, and Fireplace Grates.
First use Apr. 8, 1963.

SN 184,430. Bickley Furnaces Incorporated, Bensalem Township, Bucks County, Pa. Filed Jan. 13, 1964.

CARBELL

For Kilns or Heat Treating Furnaces for Firing Ceramic Products or the Like.
First use Nov. 25, 1963.

SN 192,109. The Vulcan Radiator Company, Hartford, Conn Filed Apr. 27, 1964.

SILL TRIM

For Heating Radiators Including Finned-Tube Radiator Elements and Enclosures and Accessories Therefor.
First use November 1955.

SN 194,796. The Frymaster Corporation, Shreveport, La. Filed June 3, 1964.

JET SERVER

Owner of Reg. No. 763,951.
For Steam Operated Food Warmers.
First use May 18, 1964.

SN 195,015. Ronson Corporation, Woodbridge, N.J. Filed June 4, 1964.

RONSON

For Gas Candles.
First use August 1962.

SN 195,344. Vapor-Vane, Inc., Peekskill, N.Y. Filed June 10, 1964.

VAPOR-VANE

For Oil Burner Attachments To Increase Air Turbulence.
First use Apr. 15, 1964.

SN 195,708. Piggy Que Inc., Vinton, Iowa. Filed June 15, 1964.

PIGGY QUE

For Cooking Grills, Generally for Outdoor Use.
First use Apr. 4, 1964.

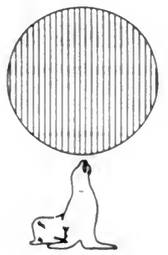
Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 166,707. Gross Manufacturing Company, Inc., Monrovia, Calif. Filed Apr. 15, 1963.

GROSS

For Pneumatic Tire and Tube Repair Patches.
First use during June 1956.

SN 189,694. Federal-Mogul-Bower Bearings, Inc., Detroit, Mich. Filed Mar. 26, 1964.



The drawing is lined to indicate the color red. Owner of Reg. Nos. 322,517; 322,520, and 667,747.
For Shaft Seals.
First use Feb. 14, 1964.

SN 192,054. Market Tire Company of Maryland, Inc., Rockville, Md. Filed Apr. 27, 1964.



For Tires.
First use Mar. 6, 1964.

SN 193,068. Universal Fluid Dynamics Co., Alpena, Mich. Filed May 8, 1964.

K-G

For Seals for Piston and Cylinder Assemblies.
First use Apr. 1, 1964.

Class 36 — Musical Instruments and Supplies

SN 187,530. The Solocast Company, Stamford, Conn. Filed Feb. 26, 1964.

SOLOCASTER

For Phonographic Playback Device Which Is Carried by Tourists Passing Through Museums and Scenic Places in Which the Information Recorded on the Record Provides in Effect a Guided Tour of Such Places.
First use July 26, 1961.

Class 37 — Paper and Stationery

SN 164,665. The Sorg Paper Company, Middletown, Ohio. Filed Mar. 14, 1963.

INVITATION TEXT

The word "Text" is disclaimed apart from the mark as a whole.
For Paper for Printing Announcements, Brochures, Menus, and the Like.
First use Sept. 27, 1961.

SN 175,647. Eberhard Faber, Inc., Wilkes-Barre, Pa. Filed Aug. 23, 1963.

YOUNG SET

For Coloring Kit (Containing Pencil-Crayons for Coloring Paper Sheet Areas).
First use Aug. 15, 1963.

SN 176,713. Continental Bank-Supply Company, Mexico, Mo. Filed Sept. 11, 1963.

GRIP-TITE

For Checkbook Covers.
First use Aug. 6, 1963.

SN 179,412. Georgia-Pacific Corporation, Portland, Oreg. Filed Oct. 21, 1963.

MD

Owner of Reg. Nos. 291,323, 361,632, and 631,801.
For Toilet and Facial Tissue and Paper Napkins.
First use July 1961.

SN 181,064. Nathan Polsky, Rockville Centre, N.Y. Filed Nov. 13, 1963.

SCRATCH-ART

For Group of Individual Sheets of Multi-Layer Paper With an Opaque Top Layer for Drawing With a Pointed Non-Writing Instrument.
First use Oct. 21, 1963.

SN 187,352. J. S. Staedtler, Nuernberg, Germany. Filed Feb. 24, 1964.

MARS-DURAGRAPH

Owner of U.S. Reg. No. 621,326.
For Pencils and Pencil Leads.
First use November 1961; in commerce November 1961.

Class 38 — Prints and Publications

SN 154,680. Augsburg Publishing House, Minneapolis, Minn. Filed Oct. 8, 1962.

Sacred Expression

For Greeting Cards.
First use June 1, 1962.

SN 156,023. Outdoor American Corporation, Spokane, Wash. Filed Oct. 26, 1962.

NUDE WORLD

For Magazine Devoted to Nudism.
First use Feb. 1, 1962.

SN 160,365. Conover-Mast Publications, Inc., New York, N.Y. Filed Jan. 8, 1963.

CIM

For Trade Magazine.
First use on or about July 13, 1960.

SN 167,910. Frank C. Hutchison, Greenfield, N.H. Filed May 1, 1963.

"Investor's Year Book"

For Booklet Containing Information and Forms Relating to Investments.
First use Mar. 21, 1963.

SN 172,634. James L. Breese, d.b.a. Breese Publishing Company, San Francisco, Calif. Filed July 9, 1963.

bpc tech reports

Applicant disclaims "Tech Reports" apart from the mark.
For Trade Bulletins Printed Monthly and From Time to Time.
First use Dec. 1, 1962.

SN 172,933. Norcross, Inc., New York, N.Y. Filed July 12, 1963.

DOUBLE WISH

For Greeting Cards.
First use Dec. 12, 1941.

SN 174,222. Norcross, Inc., New York, N.Y. Filed Aug. 1, 1963.

BLARNEY THE LEPRECHAUN

For Greeting Cards.
First use June 1962.

SN 180,822. Augsburg Publishing House, Independent Subsidiary of The American Lutheran Church, Minneapolis, Minn. Filed Nov. 12, 1963.

OMNIA VINCIT VERITAS
AUGSBURG·PUBLISHING·HOUSE
THY WORD IS TRUTH

The translation of the phrase "Omnia Vincit Veritas" is "truth conquers all."
For Prints and Publications—Namely, Books, Pamphlets, Periodicals, and Catalogs.
First use Jan. 2, 1961.

SN 181,194. United Missionary Church, Inc., d.b.a. Bethel Publishing Company, Elkhart, Ind. Filed Nov. 14, 1963.

PAGING

For Books.
First use Sept. 28, 1963.

SN 182,255. Economics Laboratory, Inc., St. Paul, Minn. Filed Dec. 3, 1963.

EL TODAY

For Magazine.
First use August 1963.

SN 185,272. The College Placement Council, Inc., Bethlehem, Pa. Filed Jan. 24, 1964.

CPC

For Publications Concerning College Placement.
First use Oct. 28, 1957.

SN 186,905. Tek Rep, Inc., Rockville, Md. Filed Feb. 17, 1964.

TEK TOPICS

For Advertising and Marketing Newsletter Which Is Distributed to Companies in the Electronics Industry.
First use Nov. 21, 1963.

SN 191,715. Miguel Angel Quevedo, Caracas, Venezuela. Filed Apr. 21, 1964.

CARTELES

For Illustrated Weekly Periodical.
First use Apr. 10, 1964; in commerce Apr. 10, 1964.
Subj. to Intf. with SN 195,367.

SN 193,314. The Afro-American Company of Baltimore City, Baltimore, Md. Filed May 13, 1964.

Washington Afro-American
AND WASHINGTON TRIBUNE

For Newspapers.
First use May 12, 1964.

SN 193,315. The Afro-American Company of Baltimore City, Baltimore, Md. Filed May 13, 1964.

Richmond Afro-American
AND THE RICHMOND PLANET

For Newspapers.
First use May 13, 1939.

SN 195,367. Carteles de America Ltd., New York, N.Y. Filed June 11, 1964.

CARTELES

For Bi-Weekly Illustrated Magazine.
First use Apr. 1, 1964.
Subj. to Intf. with SN 191,715.

Class 39 — Clothing

SN 134,347. Regal Uniform Company, Los Angeles, Calif. Filed Dec. 19, 1961.

Lady Diane
OF CALIFORNIA

No claim is made to the wording "of California" apart from the mark. Owner of Reg. No. 417,048.
For Ladies' Apparel—Namely, Uniforms, Blouses and Skirts.
First use on or about July 29, 1959.

SN 135,015. Walter Lantz Productions, Inc., Hollywood, Calif. Filed Jan. 2, 1962.

WOODY WOODPECKER

Owner of Reg. No. 558,834.
For Clothing—Namely, Costumes, Shirts, Socks, Baby Bibs, and Hats.
First use November 1948.

SN 136,616. Youthcraft Creations, Inc., New York, N.Y. Filed Jan. 25, 1962.

SAN' SEAM

For Girdles.
First use Nov. 13, 1961.

SN 160,304. Johnson, Stephens and Shinkle Shoe Company, St. Louis, Mo. Filed Jan. 7, 1963.

DE MILANO

For Women's and Girls' Shoes Made of Leather, Fabric, and Combinations of Leather and Fabric.
First use May 15, 1956.

SN 160,346. Toddle Tyke Company, Atlanta, Ga. Filed Jan. 7, 1963.

TODDLE TYKE

For Infant's Outerwear and Infant's Playwear Consisting of, Diaper Sets, Diaper Covers, Overalls, Overall Jacket/Cap Sets, Shirts, Blouses, Sunsuits, Sunsuit-Jacket-Sets, Stretch Knit Slacks, Stretch-Knit/Topper Sets.
First use May 12, 1950.

SN 165,531. Puritan Fashions Corporation, New York, N.Y. Filed Mar. 27, 1963.

Ruth Walter

The name "Ruth Walter" is that of a living designer whose consent is of record. Owner of Reg. No. 754,689.
For Women's and Misses' and Children's Wearing Apparel—Namely, Dresses, Blouses, Skirts, Jackets, Coats, Slacks, Slack Suits, Shorts, Robes, Pajamas, and Bathing Suits.
First use Mar. 10, 1958.

SN 166,922. The Oak Rubber Company, Ravenna, Ohio. Filed Apr. 17, 1963.

HAPPY HANDS

For Disposable Plastic Gloves.
First use Apr. 8, 1963.

SN 172,046. Centreville Mills, Inc., New York, N.Y. Filed June 28, 1963.



Centex
BRAND
CHILDRENS
STRETCH
TIGHTS

Applicant disclaims the use of the word "Brand" and the expression "Children's Stretch Tights." Applicant also disclaims the representation of underwear shown on the figure of the child.
For Children's Stretch Tights.
First use Aug. 5, 1961.

SN 174,907. Phillips-Van Heusen Corporation, New York, N.Y. Filed Aug. 12, 1963.

THE '360'

For Men's Knit Shirts.
First use Jan. 11, 1963.

SN 175,248. Cisco, Inc., New York, N.Y. Filed Aug. 19, 1963.

TEAK

For Men's Sport Shirts.
First use July 24, 1963.

SN 175,445. Anthony Squires Pty. Limited, St. Mary's, New South Wales, Australia. Filed Aug. 20, 1963.

ANTHONY SQUIRES

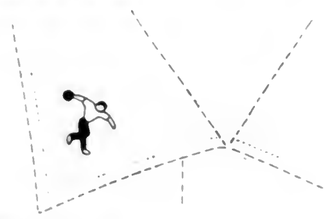
"Anthony Squires" is a fanciful and fictitious name. Owner of Australian Reg. No. 134,620, dated Nov. 25, 1957.
For Articles of Clothing—Namely, Men's Suits and Trousers.
First use 1948; in commerce 1960.

SN 175,446. Anthony Squires Pty. Limited, St. Mary's, New South Wales, Australia. Filed Aug. 20, 1963.

ANTHONY SQUIRES INTERNATIONAL

"Anthony Squires" is a fanciful and fictitious name. Owner of Australian Reg. No. 166,655, dated May 8, 1961.
For Articles of Clothing—Namely, Men's Suits and Trousers.
First use 1960; in commerce 1960.

SN 177,528. King Louie International, Inc., Kansas City, Mo. Filed Sept. 23, 1963.



For Shirts.
First use Apr. 14, 1955.

SN 178,026. Martin Orlovitz, d.b.a. Eastern Trouser Company, d.b.a. Eastern Trouser Co., Philadelphia, Pa. Filed Sept. 30, 1963.

Strongwear



Owner of Reg. No. 407,139.
For Men's and Boys' Trousers.
First use during 1933.

SN 178,690. Endicott Johnson Corporation, New York, N.Y. Filed Oct. 10, 1963.

LOCKRIM

Owner of Reg. No. 403,560.
For Box Toe Portion of Safety Shoes.
First use July 1, 1942.

SN 179,272. Serbin, Inc., Miami, Fla. Filed Oct. 17, 1963.



For Misses and Junior Size Dresses, Blouses, Skirts, Shorts, Pants, and Pedal Pushers.
First use Aug. 31, 1963.

SN 181,306. Best Products, Inc., Charlotte, N.C. Filed Nov. 18, 1963.



The word "Wear" is disclaimed apart from the mark as shown.
For Children's Shirts.
First use Nov. 12, 1963.

SN 182,795. House of Gold, Dallas, Tex. Filed Dec. 11, 1963.



For Apparel for Women—Namely, Suits, Coats, Dresses, Blouses, Sweaters, Skirts, Hostess Gowns, Dinner Pajamas, Tailored Wool Knits in Three Piece Suits, Tailored Suede Dresses, Three Piece Suede Suits, and Town Coats in Suede With and Without Mink Collars.
First use Aug. 12, 1963.

SN 183,760. Industrial Products Company, Philadelphia, Pa. Filed Dec. 30, 1963.

TRI-CUSHION SUSPENSION

For Pants.
First use Jan. 18, 1963.

SN 184,287. Freeman Shoe Corporation, d.b.a. Freeman Shoe Corp., Beloit, Wis. Filed Jan. 9, 1964.

Bootmaker Guild

Owner of Reg. Nos. 405,239 and 549,140.
For Men's Shoes Constructed of Leather, Rubber, Fabric or Combinations Thereof.
First use on or about Sept. 16, 1940.

SN 185,176. The Williamson-Dickie Manufacturing Company, Fort Worth, Tex. Filed Jan. 22, 1964.

RED HAWK

Owner of Reg. No. 506,247.
For Hosiery.
First use Sept. 27, 1963.

SN 185,191. Bond Stores, Inc., New York, N.Y. Filed Jan. 23, 1964.

DIRECTOR GROUP

For Men's Suits, Coats and Slacks, Topcoats and Overcoats.
First use Jan. 6, 1964.

SN 187,318. Oriental Trading Inc., Hialeah, Fla. Filed Feb. 24, 1964.



Applicant disclaims the Italian words "Creazioni Di."
For Shoes.
First use November 1960.

SN 187,358. Suzy Brooks, Inc., New York, N.Y. Filed Feb. 24, 1964.

POUPETTE

For Children's Dresses, Shorts, Bermuda Pants, Capri Pants, Calf Length Pants, Slacks, Blouses, Separate Jackets, Rompers, Skirts, Jumpsuits, and Tennis Outfits.
First use Feb. 4, 1964.

SN 187,386. Joseph Bancroft & Sons Co., Wilmington, Del. Filed Feb. 25, 1964.

BANCORA

Owner of Reg. No. 760,067.
For Knitted Wool Garments—Namely, Sweaters, Skirts, and Stockings.
First use on or about Nov. 23, 1963.

SN 187,461. Robert E. Allen, Des Moines, Iowa. Filed Feb. 26, 1964.



For Shooting Jackets.
First use Dec. 5, 1963.

SN 187,472. Caressa, Inc., Miami, Fla. Filed Feb. 26, 1964.

PHILIPPE BOTTIER

The mark "Philippe Bottier" is a fictitious name.
For Women's and Girls' Shoes.
First use November 1963.

SN 187,898. Russel Taylor, Inc., New York, N.Y. Filed Mar. 3, 1964.

DYMOCURL

For Women's Coats.
First use Aug. 20, 1963.

SN 188,170. Zerlina Imports, Inc., New York, N.Y. Filed Mar. 6, 1964.

ZERLINA

For Women's Knitwear—Namely, Dresses, Suits, Coats, Blouses, Skirts, and Men's and Children's Knitted Shirts and Sweaters.
First use January 1962.

SN 188,228. H. S. Gale Incorporated of St. Louis, St. Louis, Mo. Filed Mar. 9, 1964.

ST. LÔ

For Ladies' and Misses' Sportswear—Namely, Skirts, Blouses, Shorts, Pedal Pushers, Dresses, Jumpers, Jackets, Toreador Pants, and Suits.
First use June 18, 1963.

SN 188,629. Gilison Knitwear Co., Inc., Hicksville, N.Y. Filed Mar. 13, 1964.

TOURING PRO

For Sweaters and Sportshirts.
First use Sept. 15, 1960.

SN 188,670. Siceloff Manufacturing Company, Inc., Lexington, N.C. Filed Mar. 13, 1964.

Honor Grads
by SICELOFF

For Men's and Boys' Slacks and Shorts.
First use Mar. 4, 1964; year 1909 as to the name "Siceloff."

SN 189,116. Standard Garments, Inc., Baltimore, Md. Filed Mar. 19, 1964.

PATRA PANTS

Applicant makes no claim to the exclusive right to use the word "Pants" apart from the mark as shown, common law rights, however, being reserved.
For Ladies' Capri Pants, Pedal Pushers, and Shorts.
First use Jan. 30, 1964.

SN 189,707. Kiki Undies Corporation, New York, N.Y. Filed Mar. 26, 1964.

GIKKI

For Ladies' Panties.
First use Mar. 9, 1964.

SN 189,708. Kiki Undies Corporation, New York, N.Y. Filed Mar. 26, 1964.

JIKKI

For Ladies' Panties.
First use Mar. 9, 1964.

SN 190,325. Belk Stores Services, Inc., Charlotte, N.C. Filed Apr. 6, 1964.

Country Nook

For Ladies' Blouses and Dresses.
First use Sept. 12, 1963.

SN 190,349. The Irving Drew Corporation, Lancaster, Ohio. Filed Apr. 6, 1964.

Drew
ARCH REST
Sculptured to the foot

Owner of Reg. Nos. 186,677, 190,674, and 343,087.
For Women's and Misses' Shoes.
First use in or about June 1963; on or about Aug. 16, 1916, as to the mark "Arch Rest"; 1916 as to the mark "Drew"; July 7, 1934, as to the mark "Sculptured to the Foot."

SN 190,569. Boyd-Richardson Company, St. Louis, Mo. Filed Apr. 6, 1964.

ALUMNI

Owner of Reg. Nos. 327,546 and 612,625.
For Men's Clothing—Namely, Hats, Suits, Trousers, and Sport Coats.
First use June 1950 on suits, trousers, and sport coats.

SN 190,845. The Williams Manufacturing Company, Portsmouth, Ohio. Filed Apr. 10, 1964.

PALLADIO

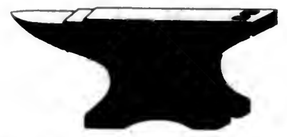
For Shoes.
First use Mar. 25, 1964.

SN 190,854. Anvil Brand, Incorporated, High Point, N.C. Filed Apr. 13, 1964.

ANVIL

Owner of Reg. Nos. 80,055 and 281,610.
For Men's and Boys' Shirts, Shorts, Pants, Coats, Jackets, Overalls, and Dungarees.
First use May 29, 1910, on overalls.

SN 190,855. Anvil Brand, Incorporated, High Point, N.C. Filed Apr. 13, 1964.



Owner of Reg. Nos. 80,055, and 281,610.
For Men's and Boys' Shirts, Shorts, Pants, Coats, Jackets, Overalls, and Dungarees.
First use 1935 on overalls; May 29, 1910, on overalls in a different form.

SN 190,972. Reliance Manufacturing Company, New York, N.Y. Filed Apr. 13, 1964.

CHIP-SHOT

For Men's and Boys' Dress, Work, and Sports Clothing—Namely, Shirts, Pants, Underwear, Pajamas, Overalls, Walk Shorts, Deck Pants, Dungarees, Jackets, Slacks and Slack Suits.
First use Mar. 23, 1964.

SN 191,184. Lancedale Knitting Company, Inc., New York, N.Y. Filed Apr. 15, 1964.

STRETCHISSIMO

For Ladies' and Children's Panties, Bloomers, Tights, Slacks, Sweater Shirts, and Swimwear.
First use Mar. 31, 1964.

SN 191,419. The Lovable Company, Atlanta, Ga. Filed Apr. 17, 1964.

ANCHORS-A-WAIST

For Women's Foundation Garments.
First use Feb. 13, 1964.

Class 40—Fancy Goods, Furnishings, and Notions

SN 196,340. Avanti Ltd., Baltimore, Md. Filed June 24, 1964.

AVANTI

The English translation of the word "Avanti" is "go ahead; forward."
For Hair Rollers.
First use on or about June 9, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 158,766. Angelica Uniform Company, St. Louis, Mo. Filed Dec. 10, 1962.

ARMOR

For Cotton Fabrics.
First use November 1952.

SN 172,530. J. C. Penney Co. Inc., New York, N.Y., assignee of Thomson Company, Thomson, Ga. Filed July 5, 1963.

PENN OLEEN

For Textile Fabrics as Used in Men's and Boys' Slacks.
First use June 24, 1963.

SN 173,787. Societe a Responsabilite Limitee Dite: Textile du Vermandois, Laval (Mayenne), France. Filed July 25, 1963.

FLOQUETTE

Owner of French Reg. No. 495, dated Dec. 16, 1961 (Laval); Ntl. Inst. No. 176,315.
For Carpets and Rugs.

SN 173,877. Stëvcoknit Textile Co., New York, N.Y. Filed July 26, 1963.

COLORWAYS

For Knitted Fabrics in the Piece.
First use June 25, 1963.

SN 184,100. Neisner Brothers, Inc., Rochester, N.Y. Filed Jan. 6, 1964.

ANITA LEWIS QUALITY

The name "Anita Lewis" is a fictitious name and does not refer to any particular individual either living or dead. Applicant disclaims the word "Quality" as the same appears on the drawing and specimens. Owner of Reg. Nos. 714,244, 714,161, and 708,115.
For Towels and Table Coverings, and Bedding Supplies—Namely, Blankets, Sheets, Bedspreads, Mattress Covers, and Pillow Cases.
First use June 1, 1960.

SN 186,405. A. Steinam Company, Inc., New York, N.Y. Filed Feb. 10, 1964.

BOOMERANG

For Textile Fabrics in the Piece, Comprised of Wool, Cotton, Rayon, Nylon, and Combinations Thereof.
First use Nov. 15, 1963.

SN 186,406. A. Steinam Company, Inc., New York, N.Y. Filed Feb. 10, 1964.

WHIPLASH

For Textile Fabrics in the Piece, Comprised of Wool, Cotton, Rayon, Nylon, and Combinations Thereof.
First use Nov. 15, 1963.

SN 186,407. A. Steinam Company, Inc., New York, N.Y. Filed Feb. 10, 1964.

BACKLASH

For Textile Fabrics in the Piece, Comprised of Wool, Cotton, Rayon, Nylon, and Combinations Thereof.
First use Nov. 15, 1963.

SN 186,812. Burlington Industries, Inc., New York, N.Y. Filed Feb. 17, 1964.

CORE - SPAN

For Textile Fabrics in the Piece Suitable for Use in the Manufacture of Men's and Boys' Suits, Jackets, and Slacks.
First use Dec. 11, 1963.

SN 191,079. Bruno Romanin, Milan, Italy. Filed Apr. 14, 1964.



Owner of Italian Reg. No. 155,652, dated July 12, 1961.
For Plastic Sheeting Reinforced by Means of Textile Materials, of Natural or Synthetic Fibers, for Use as Piece Goods, Upholstery, Tarpaulins, Sacs, Tents, and for Other Industrial Uses.

SN 191,259. Davoe Corporation, New York, N.Y. Filed Apr. 16, 1964.

DABRETTA

For Coated Flannel Fabric for Use in Making Outer Wear Garments.
First use on or about Apr. 1, 1964.

SN 191,328. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 16, 1964.

WONDER BOND

Owner of Reg. Nos. 628,771, 763,601, and others.
For Woolen Piece Goods.
First use Apr. 11, 1963.

SN 191,624. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 20, 1964.

SUPER-CREASE

Owner of Reg. Nos. 225,842, 727,544, and others.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers, or of Blends of the Foregoing.
First use Apr. 14, 1964.

SN 191,626. Tanbro Fabrics Corporation, New York, N.Y. Filed Apr. 20, 1964.

SALEMENCA

For Cotton Fabric.
First use Mar. 3, 1950.

SN 191,822. Fieldcrest Mills, Inc., Spray, N.C. Filed Apr. 3, 1964.

Fashion Weavers

Owner of Reg. No. 721,079.
For Towels, Sheets, Bath Rugs and Shower Curtains.
First use Mar. 24, 1964.

SN 191,928. Gutman-Lann Glove Company, Inc., New York, N.Y. Filed Apr. 24, 1964.

TLC

For Fabrics in the Piece Made of Natural and/or Synthetic Fibers, for Making Gloves.
First use Apr. 1, 1964.

SN 192,057. Deering Milliken, Inc., New York, N.Y. Filed Apr. 27, 1964.

MILLICOR

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Apr. 10, 1964.

SN 192,058. Deering Milliken, Inc., New York, N.Y. Filed Apr. 27, 1964.

MILLIPREME

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Apr. 7, 1964.

SN 192,059. Deering Milliken, Inc., New York, N.Y. Filed Apr. 27, 1964.

DELICIA

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Apr. 9, 1964.

SN 192,060. Deering Milliken, Inc., New York, N.Y. Filed Apr. 27, 1964.

FLANBOYANT

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof.
First use on or about Dec. 12, 1963.

SN 192,226. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 28, 1964.

JERSEYLEEN

Owner of Reg. No. 231,734.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or Blends of the Foregoing.
First use Apr. 20, 1964.

Class 43 — Thread and Yarn

SN 182,858. Emile Bernat & Sons Co., Uxbridge, Mass. Filed Dec. 12, 1963.

MOHAIR PLUS

The word "Mohair" is disclaimed apart from the mark as shown.
For Hand Knitting Yarn.
First use Nov. 19, 1963.

SN 191,740. The Aldon Spinning Mills Corporation, Talcottville, Conn. Filed Apr. 22, 1964.

ALDON

For Yarn.
First use Feb. 3, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 186,856. Kerr Manufacturing Company (Delaware corporation), Detroit, Mich., by assignment and change of name from Kerr Manufacturing Company (Michigan corporation), Detroit, Mich. Filed Feb. 17, 1964.

LUSTER CAST

Applicant disclaims the word "Cast" apart from the mark as shown.
For Investment Compound for Dental Use.
First use Jan. 6, 1964.

SN 187,147. Procon Pump & Engineering Company, Oak Park, Mich. Filed Feb. 20, 1964.

FLEX-O-BLADE

For Tongue Depressor and Mouth Bite Instrument for Control of the Tongue and/or Maintaining an Airway in a Patient Under Anesthesia, Pre-Eclampsia or in Convulsions.
First use on or about Dec. 12, 1963.

SN 190,978. Salpac Company, Collingswood, N.J. Filed Apr. 13, 1964.

SANIVAC

For Vacuum Units and Kits of Components Therefor for Concurrently Removing Hair and Massaging the Scalp.
First use Mar. 23, 1964.

SN 192,086. J. Sklar Manufacturing Co., Long Island City, N.Y. Filed Apr. 27, 1964.



For Surgical Instruments—Namely, Retractors, Hammers, Scissors, Forceps, and Speculums.
First use Sept. 30, 1918.

SN 193,916. American Seating Company, Grand Rapids, Mich. Filed May 21, 1964.

LECTRA-CARE

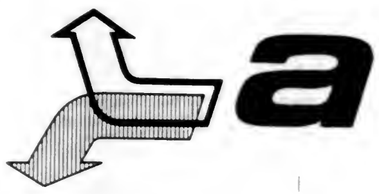
For Electrically-Operated Hospital Beds.
First use in or before August 1963.

SN 193,990. Scott Aviation Corporation, Lancaster, N.Y. Filed May 21, 1964.

WELDORAMIC

For Filter Lens Adaptors for Breathing Masks.
First use on or about Oct. 21, 1963.

SN 198,104. Utah-American Corporation, Huntington, Ind. Filed July 17, 1964.



The drawing is lined for the color red.
For Electric Hand Dryers.
First use May 29, 1964.

Class 46 — Foods and Ingredients of Foods

SN 120,686. The Borden Company, New York, N.Y., assignee of Aunt Jane's Foods, Incorporated, Dearborn, Mich. Filed May 24, 1961.



Applicant makes no claim in or to the word "Pickle" which is the name of the goods. Owner of Reg. No. 588,866.
For Pickles.
First use January 1949.

SN 125,110. Takara Shoyu Kabushiki Kaisha, Chuo-ku, Tokyo-to, Japan. Filed July 31, 1961.

SUKINOMOTO

Priority claimed under Sec. 44(d) on Japanese applications, filed Mar. 30, 1961; Reg. Nos. 630,395, date Nov. 28, 1963, 631,971, dated Nov. 12, 1963, and 632,832, dated Dec. 19, 1963.
For Soy Sauces; Condimental Liquid Sauces Used Mainly for Sukiyaki; Bean Pastes (Miso); Vinegars; Salt; Worcester Sauce; Ketchup; Mayonnaise and Curry Powder; Pepper Powder; Mustard Powder; Horseradish Powder; Canned Meat and Poultry; Canned Fish and Shell Fish.

SN 147,683. Astor Products, Inc., Jacksonville, Fla. Filed June 26, 1962.

FISCHER'S

Owner of Reg. No. 264,053.
For Black Pepper.
First use Jan. 15, 1924.

SN 159,683. Best Feeds & Farm Supplies, Inc., Oakdale, Pa. Filed Dec. 26, 1962.

JOY

Owner of Reg. No. 615,414.
For Suet Cake for Use as Bird Food.
First use Nov. 7, 1962.

SN 164,634. Komberec and Fiedler Enterprises, Inc., Spokane, Wash. Filed Mar. 14, 1963.



For Frozen Confection Consisting of a Frosen Iced Cylinder Coated With Chocolate.
First use Mar. 31, 1959.

SN 168,957. Raeford Turkey Farms, Inc., Raeford, N.C. Filed May 15, 1963.



Applicant disclaims the representation of the goods.
For Fresh Frozen Poultry.
First use Nov. 1, 1962.

SN 176,131. Watson Seafood and Poultry Co., Inc., Raleigh, N.C. Filed Aug. 30, 1963.



Applicant disclaims the descriptive words "Chicken" and "A Tasty Treat" and the representation of the chicken.
For Fresh Dressed and Frozen Poultry and Parts Thereof
First use Aug. 1, 1956.

SN 177,378. S. R. Smith, Inc., Nashville, Tenn. Filed Sept. 19, 1963.

BIG SQUEAL

For Sausage.
First use Nov. 10, 1953.

SN 178,549. Hot Shoppes, Inc., Washington, D.C. Filed Oct. 8, 1963.



For Prepared Ready To Eat Chicken.
First use Aug. 30, 1963.

SN 180,699. American Packing Company, Booneville, Miss. Filed Nov. 8, 1963.



For Fresh and Smoked Meats.
First use Nov. 2, 1963.

SN 183,060. Peggy Gray Holliday, d.b.a. Peggy Gray Candies, North Springfield, Pa. Filed Dec. 16, 1963.

PEGGY GRAY

Owner of Reg. No. 305,283.
For Candies.
First use July 1, 1923.

SN 183,574. Foremost Dairies, Inc., San Francisco, Calif. Filed Dec. 26, 1963.

COFFEE GOLD

For Non-Dairy Product, Containing Vegetable Fat, for Whitening Coffee.
First use Dec. 13, 1963.

SN 183,839. L. S. Heath & Sons, Inc., Robinson, Ill. Filed Dec. 31, 1963.



No claim of exclusive right is made to the wording "English Toffee" as the name of the goods herein. The words "From the Makers of" is disclaimed apart from the mark as shown in the drawing as is the representation of the package of applicant's candy. Owner of Reg. Nos. 389,755, 598,577, and others.
For Candy.
First use Nov. 22, 1963.

SN 190,032. The Sugardale Provision Company, Canton, Ohio. Filed Mar. 31, 1964.

TRIM-TEND

For Fresh Dressed Beef Sides, Quarters and Cuts.
First use on or about Mar. 9, 1964.

SN 190,034. The Sugardale Provision Company, Canton, Ohio. Filed Mar. 31, 1964.

MOR-TEND

Owner of Reg. No. 768,909.
For Fresh Dressed Beef Sides, Quarters, and Cuts.
First use on or about Mar. 9, 1964.

SN 190,744. Orchard Hill Farms, Inc., Red Hook, N.Y. Filed Apr. 9, 1964.

AUNT EM'S

For Frozen Dinners—Namely, Frozen Turkey Dinners, Including Roast Turkey With Gravy, Dressing, and Vegetable.
First use Mar. 3, 1964.

SN 191,267. Ever-Tempting Products Corporation, Carteret, N.J. Filed Apr. 16, 1964.

GOLDEN INCA CORN

No claim of exclusive right is made to the word "Corn" as the name of the goods herein.
For Toasted Corn Kernels.
First use Mar. 26, 1964.

SN 192,192. Michigan Frosted Foods Co., d.b.a. Beutel Canning Co., Bay City, Mich. Filed Apr. 28, 1964.

MICHIGAN BRAND

The word "Brand" is disclaimed.
For Frozen Vegetables and Tomato Catsup.
First use 1944.

SN 195,760. Adam Bozzuto, d.b.a. P.G.A. Food Stores, Waterbury, Conn. Filed June 16, 1964.

PGA

For Canned Vegetables and Canned Fruits.
First use 1947.

SN 195,801. Old Virginia Packing Company, Inc., Front Royal, Va. Filed June 16, 1964.

OLD VIRGINIA

Owner of Reg. Nos. 520,568, 618,354, and others.
For Grape Juice, Jams, Jellies, Fruit Preserves, Apple Butter, Mince Meat, Marmalade, Tomato Juice, Apple Juice, Apple Sauce, Vinegar, Ketchup, Prune Juice, Apricot Nectar, Tomato Aspic, Peanut Butter, Honey, and Sliced Apples.
First use July 1906.

SN 195,803. Pet Milk Company, St. Louis, Mo. Filed June 16, 1964.

GOLDEN FANCY

For Candy.
First use Nov. 27, 1963.

SN 195,877. McKee Baking Company, Collegedale, Tenn. Filed June 17, 1964.



The portrait appearing on the drawing identifies the minor daughter of Ellsworth McKee, and his consent is of record.
For Oatmeal Cream Pie, Cup Cakes, Raisin Cream Cakes, Fruit Squares, Fig Bars, Fruit-Filled Cookies, Chocolate Rolls, Banana Filled Cakes, Sugar Wafers.
First use Aug. 23, 1960.

Class 47 — Wines

SN 176,067. Vincent Buonocore & Sons, Inc., New Haven, Conn. Filed Aug. 30, 1963.

BON-CORE

Owner of Reg. No. 412,526.
For Wines and Cooking Wines.
First use as early as 1910.

SN 190,147. Bisceglia Brothers Wine Co., d.b.a. Winedale Vineyards Co., Fresno, Calif. Filed Apr. 2, 1964.

WINEDALE

For Wines.
First use Dec. 13, 1939.

Class 49 — Distilled Alcoholic Liquors

SN 182,340. Maison E. Remy Martin & Co., Cognac, France. Filed Dec. 4, 1963.



For Cognac.
First use Apr. 15, 1963; in commerce Apr. 15, 1963.

SN 185,036. The Alfred Hart Company, Los Angeles, Calif. Filed Jan. 21, 1964.

LARCHMONT

For Distilled Alcoholic Liquor—Namely, Gin.
First use Apr. 11, 1939.

SN 187,166. Whyte & Mackay Limited, Glasgow, Scotland. Filed Feb. 20, 1964.

WHYTE & MACKAYS

Owner of U.S. Reg. Nos. 307,378 and 369,177.
For Blended Scotch Whiskey.
First use January 1909; in commerce January 1909.

Class 50 — Merchandise Not Otherwise Classified

SN 128,244. Baron Displays, Inc., Miami, Fla. Filed Sept. 20, 1961.

DISPLAY-O-RAMA

For Advertising Display Forms.
First use July 25, 1961.

SN 154,870. Fiesta-Car Company, Roselle, Ill. Filed Oct. 9, 1962.

FIESTA'S

The drawing is lined for the color red, but no claim is made to color.
For Decorative Display Kits Consisting of Signs, Streamers, Cans, Bells and Similar Items for Wedding and Bridal Party Cars, and for Party Decorations.
First use Feb. 5, 1962.

SN 159,510. Paul H. McMurray, d.b.a. McMurray Mfg. Co., Delphi, Ind. Filed Dec. 20, 1962.

ROYAL PORK HOUSE

Applicant disclaims the word "House" apart from the mark.
For Livestock Buildings—Namely, Pens and Enclosures for Livestock, Water Feeders, Feed Bins, Manure Disposal Mechanism and Parts Therefor, Sometimes Sold as a Unit.
First use on or about June 27, 1962.

SN 186,971. Renwal Products, Inc., New York, N.Y. Filed Feb. 18, 1964.

SCULPT-A-FORM

For Hobby Kits for Assembling a Figure From Component Anatomical Parts.
First use Feb. 3, 1964.

SN 193,638. Dettra Flag Company, Inc., Oaks, Pa. Filed May 18, 1964.

BULLDOG

Owner of Reg. No. 647,167.
For Flags and Decorations—Namely, Flats, Fans, Pull-downs, Drapery, Panel Drapes, and Fan Drapes Made of Cloth.
First use on or about Jan. 1, 1912.

SN 198,232. Stabil Manufacturing Co., Minneapolis, Minn. Filed July 20, 1964.

Ad-o-Matic

For Pen Set Comprising a Base and a Removable Pen, Said Base Having a Plate Member Recessed Therein Bearing Indicia, Said Plate Member Being Arranged To Pop Up Upon Withdrawal of the Pen From the Base.
First use May 20, 1964.

SN 199,141. Union Steel Products Company, Albion, Mich. Filed Aug. 3, 1964.

PALLETAINER JUNIOR

The lining of the drawing represents a part of the mark, and is not lined for color. Owner of Reg. No. 541,806.
For Material Handling Pallets Formed of Metal.
First use Apr. 18, 1958.

Class 51 — Cosmetics and Toilet Preparations

SN 148,880. Electric Razors, Incorporated, Huntington Station, N.Y. Filed July 12, 1962.

Royal-aid

For Cosmetic Products and Toilet Preparations—Namely, After Shave Lotion.
First use May 1, 1962.

SN 152,580. Hartford Cosmetics Company, Inc., Newington, Conn. Filed Sept. 6, 1962.

JUSDIP

For Finger Nail Polish Remover.
First use June 12, 1962.

SN 184,097. Neisner Brothers, Inc., Rochester, N.Y. Filed Jan. 6, 1964.

ANDREW LEWIS QUALITY

The name "Andrew Lewis" is a fictitious name and does not refer to any particular individual either living or dead. Applicant disclaims the word "Quality" as the same appears on the drawing and specimens. Owner of Reg. Nos. 708,114 and 714,993.
For Hair Grooming Preparations, Shaving Preparations and After-Shave Preparations.
First use June 1, 1960.

SN 185,414. House of Lacan N.V., Willemstad, Curacao, Netherlands Antilles. Filed Jan. 27, 1964.

LACAN'S

Owner of U.S. Reg. No. 760,437.
For Personal Deodorants, Body and Hand Lotions, Colognes, and After Shaving Lotions.
First use November 1956 on personal deodoranta; in commerce November 1956.

SN 186,488. Weatherly-Wingfield Co., Incorporated, Appomattox, Va. Filed Feb. 11, 1964.

BLUE SPICE

Applicant disclaims the word "Spice" apart from the mark as shown.
For After Shave Lotion.
First use Jan. 14, 1964.

SN 188,175. John H. Breck, Inc., Springfield, Mass., assignee of American Cyanamid Company, Wayne, N.J. Filed Mar. 9, 1964.

COME TRUE

For Hair Coloring Preparation.
First use Feb. 26, 1964.

SN 188,314. The Wella Corporation, Englewood, N.J. Filed Mar. 9, 1964.

Color Care

No claim is made to the word "Color" apart from the mark shown in the drawing.
For Hair Coloring Dye, Tint, and Rinse.
First use Feb. 25, 1964.

SN 188,315. The Wella Corporation, Englewood, N.J. Filed Mar. 9, 1964.

WELLA *Colormatic*

Owner of Reg. Nos. 409,337, 575,177, and 575,178.
For Hair Coloring Dye, Tint, and Rinse.
First use Feb. 25, 1964.

SN 190,089. Johnson & Johnson, New Brunswick, N.J. Filed Apr. 1, 1964.

SOFF

For Medicated Skin Lotions.
First use Mar. 11, 1964.

SN 191,034. Calgon Corporation, Pittsburgh, Pa. Filed Apr. 14, 1964.

CALGON

Owner of Reg. Nos. 306,582, 699,145, and others.
For Bubble Bath and Bath Oil Beads.
First use Sept. 7, 1961.

SN 193,037. Owen Laboratories, Inc., Dallas, Tex. Filed May 8, 1964.

PABAFILM

For Preparation for Protecting the Skin Against Sun Rays.
First use Apr. 24, 1964.

Class 52 — Detergents and Soaps

SN 153,822. Sā Prise Chemicals, Inc., Greer, S.C. Filed Sept. 24, 1962.

Sā Prise

For All Purpose Cleaner, Dishwash, and Fine Fabrics Wash.
First use Sept. 5, 1962.

SN 176,115. Lester H. Roth, Pittsburgh, Pa. Filed Aug 30, 1963.

SYNCAL

For Synthetic Calcium Compound Used as a Professional Dental Cleaning Agent.
First use July 19, 1963.

SN 177,088. Purex Corporation, Ltd., d.b.a. Turco Products, Inc., Wilmington, Calif. Filed Sept. 16, 1963.

TURCODINE

For Cleaner Sanitizer.
First use Oct. 4, 1961.

SN 185,883. Clarence A. Flarsheim, Kansas City, Mo. Filed Feb. 3, 1964.

MOBIL-MATIC

Owner of Reg. No. 761,903.
For Chemical Compositions for Cleaning and Coating Air Filters.
First use Jan. 16, 1964.

SN 188,107. R. O. Hull & Company, Inc., Cleveland, Ohio. Filed Mar. 6, 1964.

ROPREPP

For Preparations Used To Remove Rust, Scale or Other Deposits From Metallic Surfaces.
First use Sept. 6, 1963.

SN 188,108. R. O. Hull & Company, Inc., Cleveland, Ohio. Filed Mar. 6, 1964.

ROSTRIP

For Paint Strippers, Metal Strippers or Similar Preparations Used To Remove Organic or Metallic Coatings From Wood, Metal or Other Substrates.
First use Mar. 12, 1963.

SN 189,783. Leo R. Ladouceur, d.b.a. L. & G. Chemical Company, Anoka, Minn. Filed Mar. 27, 1964.

DISHQUICK

For Liquid Detergents.
First use on or about Oct. 15, 1963.

SN 189,892. General Parts & Supply Company, Inc., St. Paul, Minn. Filed Mar. 30, 1964.

CHAR-MAID

For Liquid Preparation for Removing Carbonaceous Build-Up or Crust From Frying Pans, Skillets, Waffle Irons, Range Ovens, Burner Plates, Pots and Pans, and Similar Articles.
First use Mar. 9, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 156,185. The Big A System, Inc., St. Louis, Mo., assignee of Samuel J. Temperato, d.b.a. The Big A System, St. Louis, Mo. Filed Oct. 29, 1962.



The term "Burger" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 738,763 and 738,764.
For Drive In Restaurant Services.
First use July 14, 1962.

SN 166,264. The Thomas A. Dooley Foundation, San Francisco, Calif. Filed Apr. 8, 1963.



The drawing is lined for blue.
For Eleemosynary Institution Services—Namely, Medical Services, Supplies, and Information.
First use Oct. 1, 1962.

SN 168,004. Institutional Book Service, d.b.a. Childrens Press, Inc., Chicago, Ill. Filed May 2, 1963.



"Better Books Make Better Schools" is disclaimed, apart from the mark as shown.
For Supplying Book Lists of Book Publishers to Schools, Libraries and the Like Educational Institutions Located in Various Cities in Different States, and Arranging for Displays of Said Books.
First use on or about Apr. 5, 1963.

SN 178,543. Glamorene, Incorporated, Clifton, N.J. Filed Oct. 8, 1963.

RENT-O-MAT

Owner of Reg. No. 676,629.
For Rental of Apparatus and Equipment for Cleaning Rugs and for Cleaning, Waxing, and Polishing Floors and Other Surfaces of Wood, Linoleum, Asphalt Tile, Vinyl, Terrazzo, and Tile.
First use June 1, 1963.

SN 184,966. Rock Island Corporation, d.b.a. Rock Island Lumber Company, St. Paul, Minn. Filed Jan. 20, 1964.

Gold Shield

Owner of Reg. No. 760,167.
For Advice and Consultation in the Planning of Houses and Buildings.
First use Apr. 16, 1961.

SN 186,040. Chicago Motor Club, Chicago, Ill. Filed Jan. 31, 1964.



The wording "Motor Club" is disclaimed apart from the mark as shown.
For Services to Motorist Members, Including Assistance in Planning Auto Trips, Emergency Road Services, Bail Bond Service, Advice and Assistance in Obtaining Motor Vehicle Insurance and Financing and Domestic and Foreign Travel Accommodations.
First use Jan. 13, 1914.
Subj. to Intf. with SN 180,943.

SN 186,041. Chicago Motor Club, Chicago, Ill. Filed Feb. 4, 1964.



The wording "Motor Club" is disclaimed apart from the mark as shown.
For Services to Motorist Members, Including Assistance in Planning Auto Trips, Emergency Road Services, Bail Bond Service, Advice and Assistance in Obtaining Motor Vehicle

Insurance and Financing and Domestic and Foreign Travel Accommodations.
First use Jan. 13, 1914.
Subj. to Intf. with SN 180,943.

Class 101 — Advertising and Business

SN 158,255. Marshall S. Lachner Associates, Inc., New York, N.Y. Filed Nov. 30, 1962.

BMOC

For Merchandising Service Consisting of Recruiting College Students or Faculty Members To Act as Campus Sales Representatives of Business Concerns and Supervising Their Sales Activities.
First use May 1, 1962.

Class 102 — Insurance and Financial

SN 185,704. National Aviation Underwriters, Inc., d.b.a. National Insurance Underwriters, Clayton, Mo. Filed Jan. 30, 1964.



For Underwriting of Insurance for Rural Letter Carriers.
First use September 1959.

SN 186,522. Indiana Lumbermens Mutual Insurance Company, Indianapolis, Ind. Filed Feb. 10, 1964.

Crestliner

For Property and Casualty Insurance.
First use January 1960.

Class 106 — Material Treatment

SN 164,590. Associated Spring Corporation, Bristol, Conn. Filed Mar. 14, 1963.

Westmetal PRODUCTS CO.

The words "Products Co." are disclaimed apart from the mark as shown.
For Fabrication of Metal Articles to Plans and Specifications of Others.
First use April 1946.

SN 175,779. Monolith Inc., Mountain View, Calif. Filed Aug. 26, 1963.

MONOLITH

For Metalizing the Surfaces of Ceramics of Others and for Making Ceramic-To-Metal Seals Between Parts of Others.
First use Jan. 26, 1962.

Class 107 — Education and Entertainment

SN 153,192. Wrather Corporation, Beverly Hills, Calif., assignee of Muzak Corporation, New York, N.Y. Filed Sept. 14, 1962.

O-VATION MUSIC

Applicant hereby disclaims the word "Music" except as used in the aforesaid mark.
For Service of Leasing and Circulating Musical Tapes and Taped Musical Programs to Radio and Television Stations.
First use Oct. 25, 1960.

SN 153,194. Wrather Corporation, Beverly Hills, Calif., assignee of Muzak Corporation, New York, N.Y. Filed Sept. 14, 1962.

O-VATION music

Applicant disclaims the word "Music" except as used in the aforesaid mark.
For Service of Leasing and Circulating Musical Tapes and Taped Musical Programs to Radio and Television Stations.
First use Oct. 25, 1960.

SN 153,809. The Potomac Hunt, Travilah, Md. Filed Sept. 24, 1962.

THE POTOMAC HUNT

For Providing Facilities for Fox Hunting and Hunter Trials and Related Equestrian and Foxhound Sporting Events and Purposes.
First use 1938.

SN 165,508. Famous Artists Schools, Inc., New York, N.Y. Filed Mar. 27, 1963.

FAMOUS PHOTOGRAPHERS COURSE

Owner of Reg. Nos. 581,397, 748,914, and others.
For Correspondence Courses in All Phases of Photography.
First use Feb. 20, 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 163,698. American Right of Way Association, Los Angeles, Calif. Filed Mar. 1, 1963.

AMERICAN RW ASSOCIATION

The drawing is lined for the colors blue and gold.
For Indicating Membership in the Applicant.
First use during 1937.

SN 177,185. Permanent Peace Association, Inc., New York, N.Y. Filed Sept. 17, 1963.

PPA

For Identification of Members in an Association.
First use Aug. 27, 1963.

SN 186,427. International Association of Fire Chiefs, New York, N.Y. Filed Jan. 20, 1964.

The drawing is lined for red and gold. The mark consists of flame symbols in the form of leaves with accompanying sparks.
For Indicating Members of Applicant Who Are Senior Fire Chiefs.
First use Mar. 22, 1961.

CERTIFICATION MARKS

Class A — Goods

SN 84,086. John Ott, Winnetka, Ill. Filed Oct. 27, 1959.

The mark certifies that the goods bearing the mark meet standards determined by applicant as to the degree of transmission of the sunlight spectrum.
For Eye Glasses.
First use July 23, 1959.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

779,248. PROPALOID-T. American Tansul Company, assignee of The Inerto Company. SN 166,282. Pub. 8–18–64. Filed 4–8–63.

779,249. SILAGE-BOOSTER. Calcium Carbonate Company. SN 171,752. Pub. 8–18–64. Filed 6–25–63.

779,250. HC PELLBIND. H. C. Spinks Clay Co., Inc. SN 174,541. Pub. 8–18–64. Filed 8–6–63.

779,251. BLU-CHILLA AND DESIGN. Blu-Chilla, Incorporated. SN 177,957. Pub. 8–18–64. Filed 9–30–63.

779,252. TWD. Tine W. Davis. SN 181,862. Pub. 8–18–64. Filed 11–26–63.

Class 2 — Receptacles

779,253. AIR-FLO. Sweetheart Plastics, Inc. SN 167,844. Pub. 5–19–64. Filed 4–30–63.

779,254. THREE RHOMBI (DESIGN). Mitsubishi Shoji Kaisha, Ltd. SN 174,892. Pub. 8–18–64. Filed 8–12–63.

Class 4 — Abrasives and Polishing Materials

779,255. HOOVER. The Hoover Company. MULTIPLE CLASS (Classes 4 and 21). SN 156,976. Pub. 8–18–64. Filed 11–9–62.

779,256. HOOVER AND DESIGN. The Hoover Company. MULTIPLE CLASS (Classes 4 and 21). SN 156,978. Pub. 8–18–64. Filed 11–9–62.

779,257. PENNY PAK. Penny-Pak, Inc. SN 168,346. Pub. 8–18–64. Filed 5–7–63.

779,258. SHOO. Jeffrey L. Fried, d.b.a. Walton-March. SN 171,442. Pub. 8–18–64. Filed 6–20–63.

779,259. UNI-OXIDEC. Universal Shellac & Supply Co. SN 177,320. Pub. 8–18–64. Filed 9–18–63.

779,260. T TEXACO AND DESIGN. Texaco Inc. MULTIPLE CLASS (Classes 4 and 52). SN 182,680. Pub. 8–18–64. Filed 12–9–63.

Class 5 — Adhesives

779,261. VELVERAY. Velveray Corporation. SN 165,390. Pub. 8–18–64. Filed 3–25–63.

779,262. CLEAR-TITE. R-H Products Co., Inc. SN 184,509. Pub. 8–18–64. Filed 1–13–64.

779,263. GTI AND DESIGN. General Tape & Supply, Inc. SN 185,127. Pub. 8–18–64. Filed 1–22–64.

Class 6 — Chemicals and Chemical Compositions

779,264. NILOX. Southern Instruments Limited. SN 149,968. Pub. 8–18–64. Filed 7–27–62.

779,265. FAMA. Fama & Famin Gesellschaft mit beschrankter Haftung. MULTIPLE CLASS (Classes 6 and 12). SN 156,808. Pub. 8–18–64. Filed 11–7–62.

779,266. OLIFFAC. International Flavors & Fragrances Inc. SN 157,805. Pub. 8–18–64. Filed 11–23–62.

779,267. OTT AND DESIGN. The Ott Chemical Company. SN 160,551. Pub. 8–18–64. Filed 1–11–63.

779,268. DANTOIN. Glyco Chemicals, Inc. SN 162,438. Pub. 8–18–64. Filed 2–11–63.

779,269. CUPREX. Foseco International Limited. SN 162,721. Pub. 8–18–64. Filed 2–14–63.

779,270. FERRUX. Foseco International Limited. SN 162,722. Pub. 8–18–64. Filed 2–14–63.

779,271. INOCULIN. Foseco International Limited. SN 162,723. Pub. 8–18–64. Filed 2–14–63.

779,272. FLOWCO. Mallinckrodt Chemical Works. SN 162,760. Pub. 8–18–64. Filed 2–14–63.

779,273. FEEDOL. Foseco International Limited. SN 162,834. Pub. 8–18–64. Filed 2–15–63.

779,274. ESTAB. Velsicol Chemical Corporation. SN 163,435. Pub. 8–18–64. Filed 2–25–63.

779,275. RONGAL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 163,447. Pub. 8–18–64. Filed 2–25–63.

779,276. LANIGAN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 163,540. Pub 8–18–64. Filed 2–27–63.

779,277. NEOSYN. Colloids, Inc. SN 170,032. Pub 8–18–64. Filed 5–31–63.

779,278. RE-GEN-ALL. Howard H. Herzberger, d.b.a Herzberger's. SN 171,661. Pub. 8–18–64. Filed 6–24–63.

779,279. GOLDEN REY. S. E. Rykoff & Co. SN 172,243 Pub. 8–18–64. Filed 7–1–63.

779,280. SHAMROCK AND DESIGN. Shamrock Pool Equipment Co., Inc. MULTIPLE CLASS (Classes 6, 13, 21, 23, and 31). SN 172,249. Pub. 8–18–64. Filed 7–1–63.

779,281. UDS. Prairie States Corporation SN 172,774. Pub. 8–18–64. Filed 7–10–63.

779,282. LUMINSOL. Lumin Chemical Company. SN 173,115. Pub. 8–18–64. Filed 7–16–63.

779,283. FLUOROPHENE. Stecker Chemicals, Inc. SN 174,804. Pub. 8–18–64. Filed 8–9–63.

779,284. CUFLEX. The Dayton Bright Copper Company. SN 178,892. Pub. 8–18–64. Filed 10–14–63.

779,285. FLEXITE. Martens Chemical Corp. SN 182,096. Pub. 8–18–64. Filed 11–29–63.

779,286. OCTAMINE. United States Rubber Company. SN 182,380. Pub. 8–18–64. Filed 12–4–63.

779,287. TUEX. United States Rubber Company. SN 182,382. Pub. 8–18–64. Filed 12–4–63.

779,288. AMINOX. United States Rubber Company. SN 182,386. Pub. 8–18–64. Filed 12–4–63.

779,289. IDAMINT. A. M. Todd Company. SN 183,475. Pub. 8–18–64. Filed 12–23–63.

779,290. VAN-GLO. Wyandotte Chemicals Corporation SN 184,558. Pub. 8–18–64. Filed 1–13–64.

779,291. ELECTROMIX. Savin Business Machines Corporation. SN 184,655. Pub. 8–18–64. Filed 1–15–64.

779,292. LANAMOL. Allied Chemical Corporation. SN 184,869. Pub. 8–18–64. Filed 1–20–64.

779,293. TAKATEX. Miles Laboratories, Inc. SN 184,946. Pub. 8–18–64. Filed 1–20–64.

779,294. CIOVAP. Shell Oil Company. SN 184,976. Pub. 8–18–64. Filed 1–20–64.

779,295. SNO-BAN. Todd Chemical Company, Inc. SN 185,167. Pub. 8–18–64. Filed 1–22–64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

779,296. INJECTO-REFUEL. S. M. Frank & Co., Inc. SN 166,703. Pub. 8–18–64. Filed 4–15–63.

779,297. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,685. Pub. 8–18–64. Filed 8–8–63.

779,298. THREE RHOMBI (DESIGN). Mitsubishi Shoji Kaisha, Ltd. SN 174,894. Pub. 8–18–64. Filed 8–12–63.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

779,299. RAZORBACK AND DESIGN. Garmon Specialty Company. SN 183,754. Pub. 8–18–64. Filed 12–30–63.

Class 10 — Fertilizers

779,300. SOLU-PELL. J. & L. Adikes, Inc. SN 190,010. Pub. 8–18–64. Filed 3–31–64.

779,301. LOAMITE. Pope & Talbot, Inc. SN 191,074 Pub. 8–18–64. Filed 4–14–64.

779,302. TRI-UNA-SOL. Monsanto Company. SN 192,501. Pub. 8–18–64. Filed 5–1–64.

Class 11 — Inks and Inking Materials

779,303. VELVERAY. Velveray Corporation. SN 165,391. Pub. 8–18–64. Filed 3–25–63.

779,304. MULTRA-TRAP. Wikoff Color Corporation. SN 188,493. Pub. 8–18–64. Filed 3–11–64.

779,305. VERSATYL. The Sherwin-Williams Company. SN 188,587. Pub. 8–18–64. Filed 3–12–64.

779,306. EVR-FLAT. Manifold Supplies Company. SN 189,715. Pub. 8–18–64. Filed 3–26–64.

779,307. NERCO. Nerco, Inc. of Deerfield Beach. SN 190,105. Pub. 8–18–64. Filed 4–1–64.

Class 12 — Construction Materials

779,265. (See Class 6 for this trademark.)

779,308. RONDETTE. Keelcraft Corporation. SN 156,620. Pub. 8–18–64. Filed 11–5–62.

779,309. BALCOR. Balsa Products Inc. SN 182,458. Pub. 8–18–64. Filed 12–6–63.

779,310. GLOBE. The Globe Brick Company. SN 183,053. Pub. 8–18–64. Filed 12–16–63.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

779,280. (See Class 6 for this trademark.)

779,311. TI-IT. McCullough & Fisher. SN 165,345. Pub. 8–18–64. Filed 3–25–63.

779,312. SURGE MASTER AND DESIGN. Flexicraft Industries, Inc. SN 166,544. Pub. 8–18–64. Filed 4–11–63.

779,313. LEAD GASKET. W. H. Maze Company. SN 174,972. Pub. 8–18–64. Filed 8–13–63.

779,314. DESIGN CONSISTING OF AN ELLIPTICAL SHAPE. Anchor Post Products, Inc. SN 175,092. Pub. 8–18–64. Filed 8–15–63.

779,315. YELLO-JACKET. Ritchie Manufacturing Company. SN 175,878. Pub. 8–18–64. Filed 8–27–63.

779,316. FIBRA-BASE. Cleveland Wash Tray Mfg. Co., Inc. SN 179,120. Pub. 8–18–64. Filed 10–16–63.

779,317. Z. Ted Lederer. SN 183,078. Pub. 8–18–64. Filed 12–16–63.

779,318. MIRACLE. Pacer Plumbing Products Company, Incorporated. SN 185,927. Pub. 8–18–64. Filed 2–3–64.

779,319. EASTON. Allied Chemical Corporation. SN 187,711. Pub. 8–18–64. Filed 3–2–64.

779,320. PHARMA-SAVER. Swinyar Enterprises, Incorporated. SN 188,155. Pub. 8–18–64. Filed 3–6–64.

Class 14 — Metals and Metal Castings and Forgings

779,321. PH 15–7 MO. Armco Steel Corporation. SN 117,159. Pub. 8–18–64. Filed 4–5–61.

779,322. INTERMOLD. Gries Reproducer Corporation. SN 178,696. Pub. 8–18–64. Filed 10–10–63.

Class 15 — Oils and Greases

779,323. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,687. Pub. 8–18–64. Filed 8–8–63.

779,324. THREE RHOMBI (DESIGN). Mitsubishi Shoji Kaisha, Ltd. SN 174,896. Pub. 8–18–64. Filed 8–12–63.

779,325. NUT KRAKER AND DESIGN. Eugene D. Day, d.b.a. National Chemical Company. SN 186,335. Pub. 8–18–64. Filed 2–10–64.

779,326. SEA CHIEF. Texaco Inc. SN 189,742. Pub. 8–18–64. Filed 3–26–64.

779,327. ATR. Applied Chemicals Corp. SN 190,143. Pub. 8–18–64. Filed 4–2–64.

779,328. DPI. Eastman Kodak Company. SN 190,165. Pub. 8–18–64. Filed 4–2–64.

Class 16 — Protective and Decorative Coatings

779,329. POLYCHEM. U.S. Polychemical Corporation. SN 139,162. Pub. 3–26–63. Filed 3–5–62.

779,330. GHP. Pittsburgh Plate Glass Company. SN 174,230. Pub. 8–18–64. Filed 8–1–63.

779,331. C–200. Pittsburgh Chemical Company. SN 176,019. Pub. 8–18–64. Filed 8–29–63.

779,332. AMERITONE. Vi-Cly Industries, Inc. SN 181,434. Pub. 8–18–64. Filed 11–18–63.

779,333. PUFCOTROL. Alfred J. Russack, d.b.a. Madison Chemical Company. SN 184,179. Pub. 8–18–64. Filed 1–7–64.

779,334. SMOOTH-X. Dutch Masters Paint & Varnish Company, Inc. SN 185,027. Pub. 8–18–64. Filed 1–21–64.

Class 17 — Tobacco Products

779,335. BURGUNDY. P. Lorillard Company. SN 181,904. Pub. 8–18–64. Filed 11–26–63.

Class 18 — Medicines and Pharmaceutical Preparations

779,336. GOLDEN COUGH TABS. Golden Cough Tablets, Inc., assignee, by mesne assignments, of Irving Ehrlich, d.b.a. Golden Cough Tabs Products. SN 152,685. Pub. 8–18–64. Filed 9–7–62.

779,337. OTODEX. Strenol Products Limited. SN 161,581. Pub. 8–18–64. Filed 1–24–63.

779,338. NEPHURIN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, assignee of Lloyd Brothers Incorporated. SN 167,736. Pub. 6–16–64. Filed 4–29–63.

779,339. MEDI-SOOTHE. Revlon, Inc. SN 169,065. Pub. 8–18–64. Filed 5–16–63.

779,340. TUSSICALM T. Roussel Corporation. SN 170,767. Pub. 8–18–64. Filed 6–11–63.

779,341. LENSAL. Joseph William Brink, d.b.a. Buzze's Pharmaceutical Company. SN 171,750. Pub. 8–18–64. Filed 6–25–63.

779,342. GARRETT AND DESIGN. Garrett Laboratories, Inc. SN 172,384. Pub. 8–18–64. Filed 7–3–63.

779,343. TELODRON. Norden Laboratories, Inc. SN 175,313. Pub. 8–18–64. Filed 8–19–63.

779,344. AEROFILM. The Norwich Pharmacal Company. SN 176,743. Pub. 8–18–64. Filed 9–11–63.

779,345. D & G AND DESIGN. American Cyanamid Company. SN 177,599. Pub. 8–18–64. Filed 9–24–63.

779,346. KING AND DESIGN. Tonnema N.V. MULTIPLE CLASS (Classes 18 and 46). SN 179,169. Pub. 8–11–64. Filed 10–16–63.

779,347. HAYSMA. Margaret Krop. SN 180,585. Pub. 8–18–64. Filed 11–6–63.

779,348. DIRAHIST. American Cyanamid Company. SN 180,819. Pub. 8–18–64. Filed 11–12–63.

779,349. QUIEBAR. J. R. Nevin Co., Inc. SN 181,260. Pub. 8–18–64. Filed 11–15–63.

779,350. MEGACLOR. ICAR, Industria di Ricerca e Produzione del Farmaco, S.p.A. SN 181,818. Pub. 8–18–64. Filed 11–22–63.

779,351. AQUADERM. Menley & James Laboratories, Ltd. SN 183,084. Pub. 8–18–64. Filed 12–16–63.

779,352. DIPIPERON. N.V. Laboratoria Pharmaceutica Dr. C. Janssen. SN 183,092. Pub. 8–18–64. Filed 12–16–63.

779,353. TRIPERIDOL. N.V. Laboratoria Pharmaceutica Dr. C. Janssen. SN 183,094. Pub. 8–18–64. Filed 12–16–63.

779,354. ACME IDEAL AND DESIGN. Acme Markets, Inc. SN 183,352. Pub. 8–18–64. Filed 12–23–63.

779,355. MEPHSTRAM. Western Research Laboratories. SN 184,543. Pub. 8–18–64. Filed 1–13–64.

779,356. LEBONATE. Western Research Laboratories. SN 184,544. Pub. 8–18–64. Filed 1–13–64.

779,357. A–4. Western Research Laboratories. SN 184,550. Pub. 8–18–64. Filed 1–13–64.

779,358. A–3. Western Research Laboratories. SN 184,551. Pub. 8–18–64. Filed 1–13–64.

779,359. A–2. Western Research Laboratories. SN 184,552. Pub. 8–18–64. Filed 1–13–64.

779,360. TRISTACOL. International Latex Corporation. SN 184,929. Pub. 8–18–64. Filed 1–20–64.

779,361. RUMESTROL. Merck & Co., Inc. SN 184,944. Pub. 8–18–64. Filed 1–20–64.

779,362. DECADERM-N. Merck & Co., Inc. SN 185,307. Pub. 8–18–64. Filed 1–24–64.

779,363. DECADERM. Merck & Co., Inc. SN 185,308. Pub. 8–18–64. Filed 1–24–64.

779,364. LISALBA. American Home Products Corporation. SN 185,479. Pub. 8–18–64. Filed 1–28–64.

779,365. SEREPAX. American Home Products Corporation. SN 185,480. Pub. 8–18–64. Filed 1–28–64.

779,366. CORTROSYN. Organon Inc. SN 186,267. Pub. 8–18–64. Filed 2–7–64.

779,367. BRILOX. Bristol-Myers Company. SN 186,511. Pub. 8–18–64. Filed 2–12–64.

779,368. THIZODRIN. Eli Lilly and Company. SN 186,827. Pub. 8–18–64. Filed 2–17–64.

779,369. VITAMEXOL. Wallace & Tiernan Inc. SN 187,056. Pub. 8–18–64. Filed 2–19–64.

779,370. TREMIN. Schering Corporation. SN 187,439. Pub. 8–18–64. Filed 2–25–64.

779,371. THONZEL. Warner-Lambert Pharmaceutical Company. SN 187,449. Pub. 8–18–64. Filed 2–25–64.

779,372. ELVAC-ND. Eli Lilly and Company. SN 188,523. Pub. 8–18–64. Filed 3–12–64.

779,373. EL-ADE. Eli Lilly and Company. SN 189,184. Pub. 8–18–64. Filed 3–20–64.

779,374. ELBOLUS-C.D. Eli Lilly and Company. SN 189,185. Pub. 8–18–64. Filed 3–20–64.

779,375. REDUCINE ETC. AND DESIGN. The Reducine Company Limited. SN 190,117. Pub. 8–18–64. Filed 4–1–64.

779,376. MONOVET. Affiliated Laboratories Corporation SN 191,237. Pub. 8–18–64. Filed 4–16–64.

779,377. FINGERS OF FIRE. The Chattanooga Medicine Company, d.b.a. Chattem Laboratories. SN 191,361. Pub. 8–18–64. Filed 4–17–64.

779,378. MAG-2. The Chattanooga Medicine Company, d.b.a. Chattem Laboratories. SN 191,362. Pub. 8–18–64. Filed 4–17–64.

779,379. DOLONIL. Warner-Lambert Pharmaceutical Company. SN 191,728. Pub. 8–18–64. Filed 4–21–64.

Class 19 — Vehicles

779,380. JET WIND. Bridgestone Tire Company Limited. SN 128,323. Pub. 8–18–64. Filed 9–20–61.

779,381. SUPER "C." Atlas International Company. SN 174,323. Pub. 8–18–64. Filed 8–5–63.

779,382. AMERON. The Kelly-Springfield Tire Company. SN 175,041. Pub. 8–18–64. Filed 8–14–63.

779,383. GITANE. Manufacture Industrielle de Cycles & Motocycles (MICMO). SN 175,950. Pub. 8–18–64. Filed 8–28–63.

779,384. SERVITA. Pemco Wheel Company. SN 182,822. Pub. 8–18–64. Filed 12–11–63.

779,385. RIVER QUEEN AND DESIGN. River Queen Boat Works, Inc. SN 184,257. Pub. 8–18–64. Filed 1–8–64.

779,386. THREE TRANSVERSE RED BANDS ON BICYCLE BRAKE HUB (DESIGN). The Bendix Corporation. SN 184,346. Pub. 8–18–64. Filed 1–10–64.

779,387. "SS." The Firestone Tire & Rubber Company. SN 187,187. Pub. 8–18–64. Filed 2–21–64.

779,388. HOSTELLER. Wheel Goods Corporation. SN 187,637. Pub. 8–18–64. Filed 2–27–64.

779,389. MARVELLE. Marlette Coach Company. SN 187,769. Pub. 8–18–64. Filed 3–2–64.

779,390. XL. Symington Wayne Corporation. SN 187,812. Pub. 8–18–64. Filed 3–2–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

779,255. (See Class 4 for this trademark.)

779,256. (See Class 4 for this trademark.)

779,280. (See Class 6 for this trademark.)

779,391. SLIM-CAPS. Mucon Corporation. SN 174,417. Pub. 8–18–64. Filed 8–5–63.

779,392. WG. World Generator Co. MULTIPLE CLASS (Classes 21 and 23). SN 189,521. Pub. 8–18–64. Filed 3–23–64.

779,393. MIDWEC. Midwec Corporation. SN 190,099. Pub. 8–18–64. Filed 4–1–64.

Class 22 — Games, Toys, and Sporting Goods

779,394. SAFARI. Abercrombie & Fitch Company. SN 152,870. Pub. 8–18–64. Filed 9–11–62.

779,395. GIFT CARD (DESIGN). Fisher-Price Toys, Inc. SN 169,361. Pub. 8–18–64. Filed 5–21–63.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

779,280. (See Class 6 for this trademark.)

779,392. (See Class 21 for this trademark.)

779,396. SPE-D-CUT. United-Greenfield Corporation, by change of name and assignment from Wendt-Sonis Company. SN 79,540. Pub. 12–11–62. Filed 8–13–59.

779,397. AMWAY. Amway Corporation, assignee of Amway Sales Corporation. SN 154,191. Pub. 8–18–64. Filed 10–1–62.

779,398. HYDROSTOP. Harold W. Scholin and Carl W. Scholin (joint owners), d.b.a. Scholin Industries. SN 157,566. Pub. 8–18–64. Filed 11–19–62.

779,399. GUN-NAILER. Signode Corporation, by change of name from Signode Steel Strapping Company. SN 164,779. Pub. 8–18–64. Filed 3–15–63.

779,400. LOAD LIMITER. Columbus McKinnon Corporation. SN 165,803. Pub. 8–18–64. Filed 4–1–63.

779,401. SPRING LEAF. Oneida Ltd. SN 170,943. Pub. 8–18–64. Filed 6–13–63.

779,402. CHRIS-CRAFT. Chris-Craft Corporation. SN 177,967. Pub. 8–18–64. Filed 9–30–63.

779,403. SOUTHWEST. Southwest Welding & Manufacturing Co. SN 182,001. Pub. 8–18–64. Filed 11–27–63.

779,404. TUTHILL. Tuthill Pump Company. SN 182,447. Pub. 8–18–64. Filed S.R. 12–5–63; Am. P.R. 6–16–64.

779,405. HI-LO. Hi-Lo Powered Stirrups, Inc. SN 183,408. Pub. 8–18–64. Filed 12–23–63.

779,406. DURALON. Imperial International Corp. SN 184,070. Pub. 8–18–64. Filed 1–6–64.

779,407. TRAV-L-AIRE. Otis Elevator Company. SN 185,926. Pub. 8–18–64. Filed 2–3–64.

779,408. WEBMATIC. Royal Zenith Corporation. SN 185,941. Pub. 8–18–64. Filed 2–3–64.

779,409. SKID-ROL. Paul J. Kordes Co., Inc. SN 186,255. Pub. 8–18–64. Filed 2–7–64.

779,410. OSBORN AND DESIGN. The Osborn Manufacturing Company. SN 186,559. Pub. 8–18–64. Filed 2–12–64.

779,411. KNIFE-O-MATIC. Rival Manufacturing Company. SN 187,337. Pub. 8–18–64. Filed 2–24–64.

779,412. BID-WELL. Bid-Well Corporation. SN 187,389. Pub. 8–18–64. Filed 2–25–64.

779,413. GUARDIAN. The Tait Manufacturing Company. SN 187,444. Pub. 8–18–64. Filed 2–25–64.

779,414. K & D. Kendrick & Davis Co. SN 187,672. Pub. 8–18–64. Filed 2–28–64.

779,415. MMS IN CROWN DESIGN. The Monarch Marking System Company. SN 187,681. Pub. 8–18–64. Filed 2–28–64.

779,416. TERMI-FOIL. AMP Incorporated. SN 188,605. Pub. 8–18–64. Filed 3–13–64.

779,417. SERVASODA. Specialty Engineering Corporation. SN 188,923. Pub. 8–18–64. Filed 3–17–64.

779,418. C CROWELL PUMPS AND DESIGN. Crowell Manufacturing Corporation. SN 188,967. Pub. 8–18–64. Filed 3–18–64.

779,419. AUTO SEAM. L & L Manufacturing, Inc. SN 189,325. Pub. 8–18–64. Filed 3–23–64.

779,420. LANGSTON. Samuel M. Langston Company. SN 189,328. Pub. 8–18–64. Filed 3–23–64.

779,421. ME-CO-MAT. Fr. Mettler's Sons Ltd. Engineering Works, Arth. SN 189,845. Pub. 8–18–64. Filed 3–30–64.

779,422. PUSH-PULLER. Owatonna Tool Company. SN 189,932. Pub. 8–18–64. Filed 3–30–64.

779,423. SLIM-TWINS. Owatonna Tool Company. SN 189,934. Pub. 8–18–64. Filed 3–30–64.

Class 25 — Locks and Safes

779,424. SEGALOCK AND DESIGN. Marshall Tool Co. SN 174,037. Pub. 8–18–64. Filed 7–30–63.

779,425. FORE LINE. Sargent & Company. SN 183,287. Pub. 8–18–64. Filed 12–19–63.

Class 26 — Measuring and Scientific Appliances

779,426. ASE AND DESIGN WITHIN A CIRCLE. August Sauter K.G. SN 116,104. Pub. 4–23–63. Filed 5–24–62.

779,427. BRYANT IN OVAL DESIGN. Ex-Cello-O Corporation. SN 128,541. Pub. 12–10–63. Filed 9–25–61.

779,428. BRYANT. Ex-Cell-O Corporation. SN 128,542. Pub. 12–10–63. Filed 9–25–61.

779,429. NILOX. Southern Instruments Limited. SN 149,969. Pub. 8–18–64. Filed 7–27–62.

779,430. MONO-CENTRIC SEG. Textron Inc. SN 158,111. Pub. 8–18–64. Filed 11–28–62.

779,431. RAPISTAN. The Rapids-Standard Company, Inc. SN 168,223. Pub. 8–18–64. Filed 5–6–63.

779,432. AVITRONICS. Dalto Electronics Corp. SN 169,524. Pub. 8–18–64. Filed 5–23–63.

779,433. DANTON ETC. AND DESIGN. Duro Instrument Corporation. SN 174,176. Pub. 8–18–64. Filed 8–1–63.

779,434. ADS. Pronto File Corporation, assignee of Advance Data Systems Corporation. SN 175,005. Pub. 8–18–64. Filed 8–14–63.

779,435. PHOTOMAN. Visual Graphics Corporation. SN 175,530. Pub. 8–18–64. Filed 8–21–63.

779,436. CUSHION-REST. J. I. Morris Company. SN 179,551. Pub. 8–18–64. Filed 10–22–63.

779,437. SPORTSARAMA. The Electric Storage Battery Company. SN 179,880. Pub. 8–18–64. Filed 10–28–63.

779,438. DIAZO/MATIC. The Frederick Post Co. SN 182,612. Pub. 8–18–64. Filed 12–9–63.

779,439. MICRO PERFECT. Richmond Photomechanical Company. SN 184,752. Pub. 8–18–64. Filed 1–16–64.

779,440. ENDEVCO. Endevco Corporation. SN 184,799. Pub. 8–18–64. Filed 1–17–64.

779,441. INFOGRAPH. Atmoore and Company. SN 185,187. Pub. 8–18–64. Filed 1–23–64.

779,442. HYPO-REPO AND DESIGN. Planetary Sciences Incorporated. SN 185,529. Pub. 8–18–64. Filed 1–28–64.

779,443. THOMAS MICRO-CATALOGS. Thomas Publishing Company. SN 185,826. Pub. 8–18–64. Filed 1–31–64.

779,444. MAGNIRAY. Verebes & Co., Ltd. SN 185,962. Pub. 8–18–64. Filed 2–3–64.

779,445. DENSIMATIC. National Instrument Laboratories, Inc. SN 186,110. Pub. 8–18–64. Filed 2–5–64.

779,446. DELPHIC-I. Kollsman Instrument Corporation. SN 186,176. Pub. 8–18–64. Filed 2–6–64.

779,447. TRIPLE CHECK AND DESIGN. G. C. Murphy Company. SN 186,632. Pub. 8–18–64. Filed 2–13–64.

779,448. TRIMODE. Electronic Processes Corporation of California. SN 187,095. Pub. 8–18–64. Filed 2–20–64.

779,449. DETECTIRSCOPE. Varo, Inc. SN 187,365. Pub. 8–18–64. Filed 2–24–64.

779,450. DEBONAIR. Imperial Camera Corporation. SN 193,251. Pub. 8–18–64. Filed 5–15–64.

Class 29 — Brooms, Brushes, and Dusters

779,451. SPONGE-IT. Ox Fibre Brush Company, Inc. SN 176,943. Pub. 8–18–64. Filed 9–13–63.

779,452. LINT MITT. E. Wright Co. SN 183,823. Pub. 8–18–64. Filed 12–30–63.

Class 31 — Filters and Refrigerators

779,280. (See Class 6 for this trademark.)

779,453. PORTABAR. True Manufacturing Company, Inc. SN 124,696. Pub. 8–18–64. Filed 7–17–61.

779,454. CP. Maremont Corporation, assignee of Winslow Engineering and Manufacturing Company. SN 184,320. Pub. 6–23–64. Filed 1–9–64.

Class 32 — Furniture and Upholstery

779,455. VISUALTAINER. E. G. Artz, Inc. SN 172,795. Pub. 8–18–64. Filed 7–11–63.

779,456. LANE STOWAWAY. The Lane Company, Inc. SN 174,390. Pub. 8–18–64. Filed 8–5–63.

779,457. LADY JOAN. J. B. Liebman & Co., Inc. SN 187,499. Pub. 8–18–64. Filed 2–26–64.

779,458. FIBERMOLD. Borg-Warner Corporation. SN 187,648. Pub. 8–18–64. Filed 2–28–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

779,459. VENTROL. Acme Manufacturing Company. SN 158,760. Pub. 6–30–64. Filed 12–10–62.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

779,460. WIRE TRACTION. The Goodyear Tire & Rubber Company. SN 188,101. Pub. 8–18–64. Filed 3–6–64.

Class 36 — Musical Instruments and Supplies

779,461. YAMAHA ELECTONE. Nippon Gakki Seizo Kabushiki Kaisha. SN 169,297. Pub. 8–18–64. Filed 5–20–63.

779,462. TRACER BEAM. Grado Laboratories, Inc. SN 175,993. Pub. 8–18–64. Filed 8–29–63.

779,463. VISTA. M. Hohner, Inc. SN 180,883. Pub. 8–18–64. Filed 11–12–63.

779,464. STRATFORD. Kohler & Campbell, Inc. SN 185,788. Pub. 8–18–64. Filed 1–31–64.

779,465. LE SABRE. Gosho Trading Company, Inc. SN 185,889. Pub. 8–18–64. Filed 2–3–64.

779,466. WYNCOTE. Cameo-Parkway Records, Inc. SN 186,149. Pub. 8–18–64. Filed 2–6–64.

779,467. COBELT. Genisco, Incorporated. SN 186,167. Pub. 8–18–64. Filed 2–6–64.

779,468. TAURUS. Taurus Records, Inc. SN 186,203. Pub. 8–18–64. Filed 2–6–64.

779,469. ASTRA-SONIC. Pentron Electronics Corporation. SN 186,756. Pub. 8–18–64. Filed 2–14–64.

779,470. TURRET. Minaret Records, Inc. SN 187,032. Pub. 8–18–64. Filed 2–19–64.

Class 37 — Paper and Stationery

779,471. FLAIR. Hudson Pulp & Paper Corp. SN 164,976. Pub. 10–29–63. Filed 3–19–63.

779,472. GOLDEN REY. S. E. Rykoff & Co. SN 172,244. Pub. 8–18–64. Filed 7–1–63.

779,473. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,689. Pub. 8–18–64. Filed 8–8–63.

779,474. THREE DIAMONDS. Mitsubishi Shoji Kaisha, Ltd. SN 174,780. Pub. 8–18–64. Filed 8–9–63.

779,475. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,898. Pub. 8–18–64. Filed 8–12–63.

779,476. STATES-WIDE ECONOMY SYSTEMS. Abernathy G. Bull, d.b.a. States-Wide Economy Systems. SN 182,462. Pub. 8–18–64. Filed 12–6–63.

779,477. POLYHIDE. Weyerhaeuser Company, assignee of Crocker Hamilton Papers, Inc. SN 185,200. Pub. 8–18–64. Filed 1–23–64.

779,478. POLYCLOSURE. Weyerhaeuser Company, assignee of Crocker Hamilton Papers, Inc. SN 185,201. Pub. 8–18–64. Filed 1–23–64.

779,479. SANIDRAPE. Pacific Paper Products, Inc. SN 192,070. Pub. 8–18–64. Filed 4–27–64.

Class 38 — Prints and Publications

779,480. THE LINDSAY SPARKLE AND DESIGN. Union Tank Car Company. SN 148,272. Pub. 8–18–64. Filed 7–2–62.

779,481. ARCANUM. Americo L. Giannicchi. SN 169,726. Pub. 8–18–64. Filed 5–27–63.

779,482. "CAR MED-I-DENT." Benjamin Saben, d.b.a. Saben Safety Enterprises. SN 170,227. Pub. 8–18–64. Filed 6–3–63.

779,483. THE TA. Robert C. Thompson, d.b.a. The Trend Analyst. SN 171,723. Pub. 8–18–64. Filed 6–24–63.

779,484. THE CARNATION. The Delta Sigma Phi Fraternity. SN 178,420. Pub. 8–18–64. Filed 10–7–63.

779,485. FLEET INTERNATIONAL. McGraw-Hill, Inc., by change of name from McGraw-Hill Publishing Company, Inc. SN 180,107. Pub. 8–18–64. Filed 10–30–63.

Class 39 — Clothing

779,486. HEBREW LETTERS AND DESIGN. M. Wolozin Inc. SN 130,601. Pub. 8–18–64. Filed 10–24–61.

779,487. GALBLINE AND SHIELD DESIGN. S.A. Galbline. MULTIPLE CLASS (Classes 39 and 40). SN 141,988. Pub. 8–18–64. Filed 4–10–62.

779,488. EUROPE CRAFT AND DESIGN. Europe Craft Imports Inc. SN 144,825. Pub. 8–18–64. Filed 5–17–62.

779,489. MISS COUTURE. Miss Couture, Inc. SN 153,795. Pub. 8–18–64. Filed 9–24–62.

779,490. ENSENADA. Reliance Manufacturing Company. SN 163,175. Pub. 8–18–64. Filed 2–20–63.

779,491. ROYAL DAN. Dan River Mills, Incorporated. SN 168,592. Pub. 8–18–64. Filed 5–10–63.

779,492. PEDS AND DESIGN. Richard Paul, Inc. SN 171,699. Pub. 8–18–64. Filed 6–24–63.

779,493. LASCARA. Schappe A.G (Schappe S.A.) (Schappe Ltd). SN 172,138. Pub. 8–18–64. Filed 6–25–63.

779,494. DEB TEEN. Hudson Hosiery Company. SN 172,492. Pub. 8–18–64. Filed 7–5–63.

779,495. CORLA D'ITALIA. Plymouth Wholesale Corporation. SN 179,732. Pub. 8–18–64. Filed 10–24–63.

779,496. JILL COLBY. Jane Colby Inc. SN 181,327. Pub. 8–18–64. Filed 11–18–63.

779,497. ROSE QUEEN. Sprouse-Reitz Co., Inc. SN 181,576. Pub. 8–18–64. Filed 11–20–63.

779,498. WEATHER JAMMERS. The Westminster Mfg. Co., Inc. SN 182,018. Pub. 8–18–64. Filed 11–27–63.

779,499. CALIFORNIA STORIES. Simon Cohen, d.b.a. Whistle Stop Footwear. SN 182,038. Pub. 8–18–64. Filed 11–29–63.

779,500. ROBERT LEWIS. United Sheeplined Clothing Company, Inc. SN 182,517. Pub. 8–18–64. Filed 12–6–63.

779,501. GARI AND DESIGN. Murray Graham, Inc. SN 182,530. Pub. 8–18–64. Filed 12–5–63.

779,502. BALSINI. J. D. Carrier Shoe Co. Limited. SN 183,030. Pub. 8–18–64. Filed 12–16–63.

779,503. FIRECRACKER AND DESIGN. Embassy Enterprises, Inc. SN 183,164. Pub. 8–18–64. Filed 12–17–63.

779,504. IACO AND DESIGN. I. Amsterdam Co., Inc. SN 183,241. Pub. 8–18–64. Filed 12–19–63.

779,505. K AND DESIGN. H. R. Kaminsky & Sons, Inc. SN 183,415. Pub. 8–18–64. Filed 12–23–63.

779,506. SACONY SACONCETTE. S. Augstein & Co., Inc. SN 184,683. Pub. 8–18–64. Filed 1–16–64.

779,507. SKIMOR AND DESIGN. Frederic J. Dormer. SN 185,283. Pub. 8–18–64. Filed 1–24–64.

779,508. RAG-TAG. Parade Dress Co., Inc. SN 185,439. Pub. 8–18–64. Filed 1–27–64.

779,509. MR. WONDERFUL. The B.V.D. Company, Inc. SN 185,482. Pub. 8–18–64. Filed 1–28–64.

779,510. VAL-U-WISE. Rudin & Roth, Inc. SN 186,122. Pub. 8–18–64. Filed 2–5–64.

Class 40 — Fancy Goods, Furnishings, and Notions

779,487. (See Class 39 for this trademark.)

779,511. U-REE-KA. Quaker Hair Goods Company. SN 148,419. Pub. 8–18–64. Filed 7–5–62.

779,512. BUTOFIX. William Arnold Edwin Fulco Bommel, d.b.a. Bovi Industrie-en Handelsonderneming. SN 187,391. Pub. 8–18–64. Filed 2–25–64.

779,513. TORTOISELLA. Revlon, Inc. SN 193,984. Pub. 8–18–64. Filed 5–21–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

779,514. THREE DIAMONDS. Mitsubishi Shoji Kaisha, Ltd. SN 174,782. Pub. 8–18–64. Filed 8–9–63.

779,515. MAILLISETTE. Societe Rhovyl. SN 179,954. Pub. 8–18–64. Filed 10–28–63.

779,516. RHODIANYL. Societe Rhodiaceta. SN 180,781. Pub. 8–18–64. Filed 11–8–63.

779,517. TANISHEEN. Tanbro Fabrics Corporation. SN 182,373. Pub. 8–18–64. Filed 12–4–63.

779,518. SHARKSPUR. Deering Milliken, Inc. SN 185,276. Pub. 8–18–64. Filed 1–24–64.

779,519. CIRRUS. Deering Milliken, Inc. SN 185,279. Pub. 8–18–64. Filed 1–24–64.

779,520. DOE-IKEN. Deering Milliken, Inc. SN 185,280. Pub. 8–18–64. Filed 1–24–64.

779,521. MILLITRIM. Deering Milliken, Inc. SN 185,282. Pub. 8–18–64. Filed 1–24–64.

779,522. CATAPULT. Klopman Mills, Inc. SN 185,422. Pub. 8–18–64. Filed 1–27–64.

779,523. HIDDEN POWER. Klopman Mills, Inc. SN 185,423. Pub. 8–18–64. Filed 1–27–64.

Class 43 — Thread and Yarn

779,524. MAILLISETTE. Societe Rhovyl. SN 179,955. Pub. 8–18–64. Filed 10–28–63.

779,525. RHODIANYL. Societe Rhodiaceta. SN 180,783. Pub. 8–18–64. Filed 11–8–63.

779,526. FABOUCLE. Madison Throwing Company, Inc. SN 182,338. Pub. 8–18–64. Filed 12–4–63.

Class 44 — Dental, Medical, and Surgical Appliances

779,527. ANALETTE. American Home Products Corporation. SN 179,385. Pub. 8–18–64. Filed 10–21–63.

779,528. BB BINGLE BOND AND DESIGN. Pro-Tex Inc. SN 182,896. Pub. 8–18–64. Filed 12–12–63.

779,529. PERICANNULA. Matthews Research, Inc. SN 182,956. Pub. 8–18–64. Filed 12–13–63.

779,530. DURODENT. One Wilkinson Avenue, Inc. SN 185,808. Pub. 8–18–64. Filed 1–31–64.

779,531. RM. Rocky Mountain Dental Products Co. SN 186,765. Pub. 8–18–64. Filed 2–14–64.

779,532. "VAGINOSTIC." Julius Schmid, Inc. SN 188,276. Pub. 8–18–64. Filed 3–9–64.

779,533. R AND D. R and D Corporation. SN 188,797. Pub. 8–18–64. Filed 3–16–64.

Class 45 — Soft Drinks and Carbonated Waters

779,534. TAHITI JOE. Tahitian Products Co. Inc., assignee of James Robertson Company, d.b.a. Tahitian Products Co. SN 173,506. Pub. 8–18–64. Filed 7–22–63.

Class 46 — Foods and Ingredients of Foods

779,346. (See Class 18 for this trademark.)

779,535. POWER HOUSE. Eversweet Foods, Inc., by change of name from Eversweet Corporation. SN 100,240. Pub. 11–29–60. Filed 7–5–60.

779,536. JAHN'S SINCE 1897. Jahn's Since 1897, Inc. SN 116,234. Pub. 8–18–64. Filed 3–22–61.

779,537. GOLD COIN. The Cudahy Packing Company. SN 138,778. Pub. 8–18–64. Filed 2–28–62.

779,538. CHEERS. Blumenthal Bros. Chocolate Co. SN 143,715. Pub. 9–24–63. Filed 5–3–62.

779,539. MARVEL. Pay Way Feed Mills, Inc. SN 147,616. Pub. 8–18–64. Filed 6–25–62.

779,540. BEST MAID. Dalton's Best Maid Products, Inc., d.b.a. Mrs. Dalton's Best Maid Products, Inc., and Mrs. Dalton's Mayonnaise Co. SN 156,221. Pub. 8–18–64. Filed 10–30–62.

779,541. SCHWARTZ AND DESIGN. W. H. Schwartz & Sons, Limited. SN 157,152. Pub. 8–18–64. Filed 3–7–63.

779,542. FUDGEES. Continental Baking Company. SN 157,683. Pub. 8-18-64. Filed 11-21-62.

779,543. PLAZA DE TOROS. Growers Exchange, Inc. SN 159,725. Pub. 8-18-64. Filed 12-26-62.

779,544. DCC AND DESIGN. Drew Chemical Corporation. SN 162,086. Pub. 8-18-64. Filed 2-5-63.

779,545. MARS ASTROJET AND DESIGN. Mars, Incorporated, by merger and change of name from Mars Incorporated. SN 162,572. Pub. 8-18-64. Filed 2-12-63.

779,546. A AND DESIGN. Alemagna Panettoni di Gioachino Alemagna & C. SN 164,089. Pub. 8-18-64. Filed 3-6-63.

779,547. YEGGS. Herald House, Inc. SN 165,776. Pub. 8-18-64. Filed 4-1-63.

779,548. YEGGS HARDBOILED FOR IMMEDIATE USE AND DESIGN. Herald House, Inc. SN 165,777. Pub. 8-18-64. Filed 4-1-63.

779,549. MISS MINNEAPOLIS. Archer-Daniels-Midland Company. SN 167,098. Pub. 8-18-64. Filed 4-19-63.

779,550. SUPREME. Armour and Company. SN 167,602. Pub. 8-18-64. Filed 4-26-63.

779,551. BEE CEE AND DESIGN. Hodgson Bee Supplies, Ltd. SN 170,474. Pub. 8-18-64. Filed 6-6-63.

779,552. JO-BI FARMS. Jo-Bi Farms, Inc. SN 173,172. Pub. 8-18-64. Filed 7-17-63.

779,553. TOP KOTE. Illinois Baking Corporation. SN 175,921. Pub. 8-18-64. Filed 8-28-63.

779,554. MEYER'S PRIDE. Leo and Robert Meyer, d.b.a. Meyer Tomatoes. SN 176,455. Pub. 8-18-64. Filed 9-6-63.

779,555. ST BRICET. Societe "Astra-Calve." SN 178,830. Pub. 8-18-64. Filed 10-11-63.

779,556. SOUTHERN SELECT. General Foods Corporation. SN 179,531. Pub. 8-18-64. Filed 10-22-63.

779,557. CALVE. Societe "Astra-Calve." SN 179,565. Pub. 8-18-64. Filed 10-22-63.

779,558. DESIGN OF BOY'S FACE WITH BOW-TIE. Court-Leigh Corp. SN 179,775. Pub. 8-18-64. Filed 10-25-63.

779,559. DRUMETTES. J. D. Jewell, Inc. SN 180,409. Pub. 8-18-64. Filed 11-4-63.

779,560. GRAND PRIZE. Valley Fruit & Vegetable Company, Inc., d.b.a. Valley Fruit & Vegetable Co. SN 180,796. Pub. 8-18-64. Filed 11-8-63.

779,561. DIAMOND AND MOON DESIGN. Fabrica de Dulces Colombina Limitada. SN 180,862. Pub. 8-18-64. Filed 11-12-63.

779,562. WAYNE. Wayne Candles, Inc. SN 181,196. Pub. 8-18-64. Filed 11-14-63.

779,563. LADY WAYNE. Wayne Candles, Inc. SN 181,197. Pub. 8-18-64. Filed 11-14-63.

779,564. FROSTY AND DESIGN. Frosty Pet Food Co. SN 182,718. Pub. 8-18-64. Filed 12-10-63.

779,565. IDAMINT. A. M. Todd Company. SN 183,476. Pub. 8-18-64. Filed 12-23-63.

779,566. CHOC-O-NUTS! BY OH HENRY! Williamson Candy Company, d.b.a. Williamson Candy Co. SN 183,718. Pub. 8-18-64. Filed 12-27-63.

779,567. FARGO. Dairy Technics, Inc. SN 183,887. Pub. 8-18-64. Filed 1-2-64.

779,568. FROG MEX AND DESIGN. M. S. Cowen Company, d.b.a. M. S. Cowen Co. SN 184,441 Pub. 8-18-64. Filed 1-13-64.

779,569. CAL-GROVE. Sunkist Growers, Inc. SN 185,453. Pub. 8-18-64. Filed 1-27-64.

779,570. CLABBER GIRL. Hulman & Company. SN 187,868. Pub. 8-18-64. Filed 3-3-64.

779,571. LIQUASMOKE. Meat Industry Suppliers, Inc. SN 188,025. Pub. 8-18-64. Filed 3-5-64.

779,572. BNS. Buffalo Nut Shops, Inc. SN 188,192. Pub. 8-18-64. Filed 3-9-64.

779,573. VITEXTURE. Nopco Chemical Company, d.b.a. Vitex Laboratories. SN 188,566. Pub. 8-18-64. Filed 3-12-64.

779,574. TK AND DESIGN. Tandy Snacks, Inc. SN 189,219. Pub. 8-18-64. Filed 3-20-64.

779,575. DIET GUARD AND DESIGN. Wagner Industries, Inc. SN 189,229. Pub. 8-18-64. Filed 3-20-64.

779,576. BLUE GOOSE AND DESIGN. Blue Goose, Inc. SN 189,267. Pub. 8-18-64. Filed 3-23-64.

779,577. PARDNER. Aronimink Products, Inc. SN 189,762. Pub. 8-18-64. Filed 3-27-64.

779,578. LITTLE STARS. Central Nebraska Packing Co., d.b.a. Crown Prince Pet Food Co. SN 189,767. Pub. 8-18-64. Filed 3-27-64.

Class 47 — Wines

779,579. CATHERINA DA BRAGANZA. Distillers Corporation (S.A.) Limited. MULTIPLE CLASS (Classes 47 and 49). SN 174,087. Pub. 8-18-64. Filed 7-31-63.

779,580. THREE SISTERS. Schenley Industries, Inc. SN 185,160. Pub. 8-18-64. Filed 1-22-64.

Class 48 — Malt Beverages and Liquors

779,581. GOLDEN LEPRACHAUN AND DESIGN. Reiter's Beer Distributors. SN 183,629. Pub. 8-18-64. Filed 12-26-63.

Class 49 — Distilled Alcoholic Liquors

779,579. (See Class 47 for this trademark.)

779,582. BELL'S 6. Arthur Bell & Sons Ltd. SN 157,964. Pub. 8-18-64. Filed 11-27-62.

779,583. KERRIGAN'S. Joseph E. Seagram & Sons, Inc. SN 168,538. Pub. 8-18-64. Filed 5-9-63.

779,584. QUALITE DU CENTAURE. Maison E. Remy Martin & Co. SN 181,785. Pub. 8-18-64. Filed 11-22-63.

779,585. OLD BRONZE. The Alfred Hart Company, d.b.a. Distillery Distributors. SN 185,035. Pub. 8-18-64. Filed 1-21-64.

Class 50 — Merchandise Not Otherwise Classified

779,586. TRIP-L-LOK. R. D. Werner Co., Inc. SN 173,400. Pub. 8-18-64. Filed 7-19-63.

779,587. THE RITCHIE LINE AND DESIGN. Ritchie Manufacturing Company. SN 175,876. Pub. 8-18-64. Filed 8-27-63.

779,588. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 177,615. Pub. 8-18-64. Filed 9-24-63.

779,589. MONOGRAM. Monogram Models, Inc. SN 184,490. Pub. 8-18-64. Filed 1-13-64.

779,590. ULTRASIGN. Prismo Safety Corporation. SN 190,542. Pub. 8-18-64. Filed 4-7-64.

Class 51 — Cosmetics and Toilet Preparations

779,591. CAROLINA AND DESIGN. Carolina Company, Inc., d.b.a. The Carolina Soap and Candle Makers. MULTIPLE CLASS (Classes 51 and 52). SN 148,954. Pub. 8-18-64. Filed 7-13-62.

779,592. OLIFFAC. International Flavors & Fragrances Inc. SN 157,806. Pub. 8-18-64. Filed 11-23-62.

779,593. DENCLEN. Krauth Chemicals Limited. SN 163,561. Pub. 8-18-64. Filed 2-27-63.

779,594. PENNY PAK. Penny-Pak, Inc. SN 168,349. Pub. 8-18-64. Filed 5-7-63.

779,595. BONAT SUPER CREME RINSE. Samuel Bonat & Bro., Inc. SN 170,160. Pub. 8-18-64. Filed 6-3-63.

779,596. RELAX-A-BATH. Mary Sherman, Inc. SN 172,422. Pub. 8-18-64. Filed 7-3-63.

779,597. GANDHOUR. Camille Clément René Pacaud. SN 174,044. Pub. 8-18-64. Filed 7-30-63.

779,598. REPRESENTATION OF A CARTOON FIGURE HOLDING A BRUSH. Alberto-Culver Company. SN 180,162. Pub. 8-18-64. Filed 10-31-63.

779,599. EVANGELINE. Sidney Klein, d.b.a. Leon Hirsh and Son. SN 181,152. Pub. 8-18-64. Filed 11-14-63.

779,600. GOOD MORNING! Mark Allen Co. SN 181,944. Pub. 8-18-64. Filed 11-27-63.

779,601. TRUEHOLD. Michel Kazan. SN 183,271. Pub. 8-18-64. Filed 12-19-63.

779,602. FASHION TIPS. Viviane Woodard Corporation. SN 184,557. Pub. 8-18-64. Filed 1-13-64.

779,603. SUN-BRERO. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics. SN 184,634. Pub. 8-18-64. Filed 1-15-64.

779,604. KORO. Holland-Rantos Company, Inc. SN 184,723. Pub. 8-18-64. Filed 1-16-64.

779,605. ARCTIC LOTION. Wolff Freres, Inc. SN 184,772. Pub. 8-18-64. Filed 1-16-64.

779,606. MADAME DE. Germaine Monteil Cosmetiques Corp. SN 184,912. Pub. 8-18-64. Filed 1-20-64.

779,607. SHINING ARMOR. Maradel Products, Inc. SN 185,057. Pub. 8-18-64. Filed 1-21-64.

779,608. LE BAISE-MAIN DE PARIS. Mrs. Rica Juliette Sebbah Baudecroux, for herself and as legal guardian of her minor children, Jean-Paul Baudecroux and Michelline-Rosemonde Baudecroux (co-owners). SN 185,105. Pub. 8-18-64. Filed 1-22-64.

779,609. GLAMOUR EYES. Viviane Woodard Corporation. SN 185,179. Pub. 8-18-64. Filed 1-22-64.

779,610. STIMU-CLEAN. Avon Products, Inc. SN 185,189. Pub. 8-18-64. Filed 1-23-64.

779,611. EXPRESSO EYES. Cosmetically Yours, Inc. SN 185,199. Pub. 8-18-64. Filed 1-23-64.

779,612. ALLEVIA. Alexandra de Markoff Sales Corporation. SN 185,343. Pub. 8-18-64. Filed 1-27-64.

779,613. VERVE. The Gillette Company, d.b.a. The Toni Company. SN 185,404. Pub. 8-18-64. Filed 1-27-64.

779,614. UNLOCKS. The Gillette Company, d.b.a. The Toni Company. SN 185,405. Pub. 8-18-64. Filed 1-27-64.

Class 52 — Detergents and Soaps

779,260. (See Class 4 for this trademark.)

779,591. (See Class 51 for this trademark.)

779,615. CLEER SHEEN. Richard Hudnut. SN 148,893. Pub. 8-18-64. Filed 7-12-62.

779,616. MELOS AND DESIGN. Feinseifenwerk Walter Rau & Company. SN 168,128. Pub. 8-11-64. Filed 3-26-63.

779,617. SEP-KO. Sep-Ko Chemicals, Inc., assignee of Monarch Chemicals, Inc. SN 171,687. Pub. 8-18-64. Filed 6-24-63.

779,618. TOWEL-EZE AND DESIGN. Abco Dealers, Inc. SN 180,813. Pub. 8-18-64. Filed 11-12-63.

779,619. PROVIODINE. Rougier Incorporated. SN 181,804. Pub. 8-18-64. Filed 11-22-63.

779,620. DRAW ALL AND DESIGN. William R. Robertshaw, d.b.a. Robertshaw & Company. SN 182,213. Pub. 8-18-64. Filed 12-2-63.

779,621. BLENSOL. Paula Payne Products Company. SN 182,821. Pub. 8-18-64. Filed 12-11-63.

779,622. ENDEN. Helene Curtis Industries, Inc. SN 184,284. Pub. 7-28-64. Filed 1-9-64.

779,623. ARAMIS. Estee Lauder, Inc. SN 184,710. Pub. 8-18-64. Filed 1-16-64.

Service Marks

Class 100 — Miscellaneous

779,624. SLURRY SEAL AND DESIGN. Slurry Seal, Inc. SN 122,478. Pub. 8-18-64. Filed 6-20-61.

779,625. CIRCLE K. Kiwanis International. SN 155,723. Pub. 8-18-64. Filed 10-23-62.

779,626. PLAZA 66. Phillips Petroleum Company. SN 180,233. Pub. 8-18-64. Filed 10-31-63.

779,627. SCHRAFFT'S. Frank G. Shattuck Company. SN 180,812. Pub. 8-18-64. Filed 11-15-63.

Class 101 — Advertising and Business

779,628. COAST-TO-COAST AND DESIGN. Coast-To-Coast Stores (Central Organization), Incorporated (Delaware corporation, assignee of Coast-To-Coast Stores (Central Organization), Incorporated (Minnesota corporation). SN 146,020. Pub. 8-18-64. Filed 6-4-62.

779,629. SQUARE, CIRCLE, AND TRIANGLE (DESIGN). K. Alfred Pfetsch, d.b.a. K. Alfred Pfetsch Company. SN 150,451. Pub. 8-18-64. Filed 8-3-62.

779,630. FASHION CARE. The Manitowoc Company, Inc. SN 152,075. Pub. 8-18-64. Filed 8-28-62.

779,631. "THE GIRL IN THE WHITE GLOVES." Manpower Inc. SN 157,714. Pub. 8-18-64. Filed 11-21-62.

779,632. RALPHABET. Ralphabet Enterprises. SN 164,887. Pub. 8-18-64. Filed 3-18-63.

779,633. ADS. Pronto File Corporation, assignee of Advance Data Systems Corporation. SN 175,006. Pub. 8-18-64. Filed 8-14-63.

779,634. BI-LO. The Kroger Co., d.b.a. Bi-Lo. SN 179,719. Pub. 8-18-64. Filed 10-24-63.

779,635 CHICKEN DELIGHT. Chicken Delight, Inc. SN 180,291. Pub. 8-18-64. Filed 11-1-63.

779,936. WESTERN GIRL AND DESIGN. Western Girl Inc. SN 182,390. Pub. 8-18-64. Filed 12-4-63.

Class 102 — Insurance and Financial

779,637. INA CRUISER. Insurance Company of North America. SN 143,964. Pub. 8-18-64. Filed 5-7-62.

779,638. NACOLAH. The North American Company for Life, Accident and Health Insurance. SN 177,278. Pub. 8-18-64. Filed 9-18-63.

779,639. INFINITE SERVICE AND DESIGN. Bank of the Southwest National Association, Houston. SN 181,451. Pub. 8-18-64. Filed 11-19-63.

779,640. PENINSULAR. Peninsular Life Insurance Company. SN 182,207. Pub. 8-18-64. Filed 12-2-63.

779,641. IC AND SHIELD DESIGN. Imperial Casualty and Indemnity Company. SN 182,267. Pub. 8-18-64. Filed 12-3-63.

779,642. IC AND SHIELD DESIGN. Imperial Casualty and Indemnity Company. SN 182,269. Pub. 8-18-64. Filed 12-3-63.

779,643. IMPERIAL. Imperial Casualty and Indemnity Company. SN 182,270. Pub. 8-18-64. Filed 12-3-63.

779,644. TERMPLAN AND DESIGN. Industrial Finance & Thrift Corporation. SN 184,160. Pub. 8–18–64. Filed 1–7–64.

Class 103 — Construction and Repair

779,645. GETS 'EM. Getz Exterminators, Inc. SN 135,502. Pub. 8–18–64. Filed 1–10–62.

Class 106 — Material Treatment

779,646. ETAMCO AND DESIGN. Eastern Tool and Manufacturing Co. SN 181,023. Pub. 8–18–64. Filed 11–13–63.

Class 107 — Education and Entertainment

779,647. THE ZING TEAM OF PRO FOOTBALL—THE DALLAS TEXANS! Dallas Texans Football Club, Inc. SN 142,931. Pub. 8–18–64. Filed 4–24–62.

779,648. GOLDIE AND THE GINGERBREADS ETC. AND DESIGN. Goldie Zelkowitz. SN 172,701. Pub. 8–18–64. Filed 7–9–63.

779,649. THE FESTIVAL ORCHESTRA. Festival Associates, Inc. SN 176,898. Pub. 8–18–64. Filed 9–13–63.

Collective Membership Marks

Class 200

779,650. NATIONAL LITTLE BRITCHES ETC. AND DESIGN. National Little Britches Rodeo Association, Inc., assignee of The Arapahoe County Fair Association, Inc. SN 115,705. Pub. 8–18–64. Filed 3–15–61.

779,651. MIRTH IS KING AND DESIGN. National Court of the Royal Order of Jesters. SN 141,466. Pub. 8–18–64. Filed 4–3–62.

779,652. GREEK LETTERS (DESIGN). Gamma Phi Delta Sorority, Incorporated. SN 160,537. Pub. 8–18–64. Filed 1–11–63.

779,653. SKATE-SAILING ASSOCIATION OF AMERICA. Skate-Sailing Association of America. SN 166,662. Pub. 8–18–64. Filed 4–12–63.

779,654. ALPHA KAPPA LAMBDA. Alpha Kappa Lambda Fraternity. SN 168,660. Pub. 8–18–64. Filed 5–13–63.

779,655. COAT-OF-ARMS (DESIGN). Alpha Kappa Lambda Fraternity. SN 168,661. Pub. 8–18–64. Filed 5–13–63.

779,656. AMERICAN ACADEMY OF MATRIMONIAL LAWYERS. American Academy of Matrimonial Lawyers. SN 171,071. Pub. 8–18–64. Filed 6–17–63.

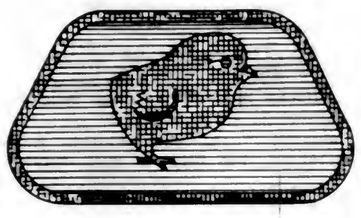
779,657. LIBERTY DISTRIBUTORS ETC. AND DESIGN. Liberty Distributors. SN 173,659. Pub. 8–18–64. Filed 7–24–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

779,658. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. SN 178,031. Filed P.R. 9–30–63; Am. S.R. 9–14–64.



The drawing is lined for yellow and blue.
For Live Poultry Chicks and Poultry Hatching Eggs.
First use on about Sept. 6, 1963.

Class 18 — Medicines and Pharmaceutical Preparations

779,659. Key Pharmaceuticals, Inc., Miami, Fla. SN 156,621. Filed P.R. 11–5–62; Am. S.R. 3–4–64.

THE HOUSE OF SUSTAINED ACTION MEDICATION

For Pharmaceutical Preparations for Oral Ingestion in Tablet, Pellet, Pill, and Capsule Form.
First use April 1962.

Class 22 — Games, Toys, and Sporting Goods

779,660. Colorforms, Norwood, N.J. SN 176,076. Filed P.R. 8–30–63; Am. S.R. 8–31–64.

STICK-ONS

For Educational Toys, Game Equipment or Elements and Kits Which Comprise and/or Utilize Interchangeable Design Stickers.
First use Mar. 14, 1963.

Class 38 — Prints and Publications

779,661. The Webb Publishing Company, St. Paul, Minn. SN 163,980. Filed P.R. 3–5–63; Am. S.R. 9–14–64.

BEEF

For Monthly Newspaper.
First use Feb. 1, 1963.

Class 40 — Fancy Goods, Furnishings, and Notions

779,662. The Lashette Co., Inc., Natick, Mass. SN 177,643. Filed P.R. 9–24–63; Am. S.R. 8–11–64.

NU-BROWS

For Artificial Eyebrows.
First use July 30, 1963.

Class 46 — Foods and Ingredients of Foods

779,663. Gaetano's Inc., Kansas City, Mo. SN 156,782. Filed P.R. 9–6–62; Am. S.R. 6–2–64.

GAETANO'S

For Italian Style Food Products—Namely, Italian Sauce, Salad Dressing, and Pizza Sauce.
First use February 1960.

779,664. The James G. Gill Company, Inc., Norfolk, Va. SN 176,900. Filed P.R. 9–13–63; Am. S.R. 9–10–64.



The drawing is lined for red, blue, and green.
For Coffee.
First use Sept. 6, 1963.

779,665. Pangburn Company, Inc., Fort Worth, Tex. SN 176,945. Filed P.R. 9–13–63; Am. S.R. 6–1–64.

COFFEE-N-CREME

For Candy.
First use Apr. 5, 1963.

779,666. The Chocolate House, Inc., Milwaukee, Wis. SN 188,078. Filed 3–6–64.

SOMETHING SPECIAL FROM THE WONDERFUL WORLD OF CHOCOLATE

For Candy.
First use Sept. 24, 1962.

Class 49 — Distilled Alcoholic Liquors

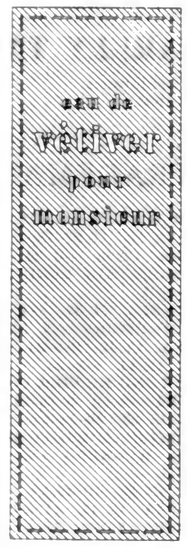
779,667. L. J. McGuinness and Co. Limited, Mimic, Ontario, Canada. SN 138,727. Filed P.R. 2–27–62; Am. S.R. 9–10–64

McGUINNESS

Owner of Canadian Reg. No. 19,358, dated Apr. 15, 1944; and U.S. Reg. No. 621,897.
For Whisky, Vodka, Gin, Rum, Brandy, and Liqueurs.

Class 51 — Cosmetics and Toilet Preparations

779,668. J. Warren Kane, Inc., New York, N.Y., assignee of Societe S.C.A.R.P., Paris, France. SN 115,190 Filed 4–5–64.



The French words "Eau de Vetiver pour Monsieur" mean "vetiver water for the gentleman." The drawing is lined for green.
For Toilet Water.
First use January 1957.

779,669. Avon Products, Inc., New York, N.Y. SN 146,348. Filed P.R. 6–7–62; Am. S.R. 9–14–64.

TAFFY BLONDE

For Brush On Hair Color Product.
First use May 24, 1962.

779,670. Revlon, Inc., New York, N.Y. SN 169,975. Filed P.R. 5–29–63; Am. S.R. 6–16–64.

BARELY IVORY

For Nail Enamel.
First use May 13, 1963.

779,671. Revlon, Inc., New York, N.Y. SN 169,976. Filed P.R. 5–29–63; Am. S.R. 6–16–64.

BARELY MAUVE

For Nail Enamel.
First use May 13, 1963.

779,672. Revlon, Inc., New York, N.Y. SN 169,977. Filed P.R. 5–29–63; Am. S.R. 6–16–64.

BARELY PEACH

For Lipstick and Nail Enamel.
First use May 13, 1963.

779,673. Revlon, Inc., New York, N.Y. SN 169,979. Filed P.R. 5–29–63; Am. S.R. 6–16–64.

BARELY TAN

For Nail Enamel and Lipstick.
First use May 13, 1963.

779,674. Revlon, Inc., New York, N.Y. SN 175,212. Filed P.R. 8–16–63; Am. S.R. 9–16–64.

'TRES PETITE'

The French phrase is translated as "tiny"
For Filled Compacts of Powder for the Skin.
First use Aug. 1, 1963.

779,675. Samuel Bonat & Bro., Inc., West Paterson, N.J. SN 178,096. Filed P.R. 10–1–63; Am. S.R. 9–14–64.

BODY BUILDER

For Hair Conditioner.
First use Apr. 17, 1962.

TRADEMARK REGISTRATIONS RENEWED

25,554. REPRESENTATION OF HAND AND TOOL DEVICE. Cl. 39. 11–27–1894.
181,915. PARADISE. Cl. 46. 4–1–24.
183,767. STONE MOUNTAIN BOND AND DESIGN. Cl. 37. 5–6–24.
185,101. LATH O WELL. Cl. 52. 6–10–24.
188,445. HESS AND DESIGN. Cl. 51. 8–26–24.
189,122. NARCISSA. Cl. 42. 9–9–24.
189,126. CORINA. Cl. 42. 9–9–24.
189,368. THE MIDLAND RUBBER CO. Cl. 39. 9–16–24.
189,463. STAY SLIM. Cl. 39. 9–16–24.
190,589. VIKING. Cl. 23. 10–14–24.
190,689. INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS AND DESIGN. Cl. 38. 10–21–24.
190,963. TRITON. Cl. 16. 10–28–24.
191,136. BRADFASTA. Cl. 42. 11–4–24.
191,728. BRADCREPA. Cl. 42. 11–18–24.
191,783. BRADONA. Cl. 42. 11–18–24.
192,353. DERAYCO. Cl. 16. 12–2–24.
192,435. 33. Cl. 26. 12–2–24.
192,746. CHEX. Cl. 52. 12–9–24.
193,973 SEPARENE. Cl. 44. 1–13–25.
193,974. SILVERLOY AND DESIGN. Cl. 44. 1–13–25.
194,004. FRUIT OF THE LOOM AND DESIGN. Cl. 38. 1–13–25.
194,481. GRAPHOL AND DESIGN. Cl. 15. 1–27–25.
195,219. (THE CORPORATION JOURNAL). Cl. 38. 2–17–25.
408,277. FASTASY. Cl. 29. 8–1–44.
408,613. W.S. Cl. 6. 8–22–44.
408,713. ACTION INCHES. Cl. 39. 8–29–44.
408,902. MOTOAIR. Cl. 21. 9–5–44.
409,020. BUSTER BROWN. Cl. 39. 9–12–44.
409,026. SLEEPMASTER. Cl. 32. 9–12–44.
409,030. 5 P.M. Cl. 42. 9–12–44.
409,065. AMERIDINE. Cl. 42. 9–12–44.
409,172. ECUSTA AND DESIGN. Cl. 8. 9–19–44.
409,382. PLYOPHEN. Cl. 5. 10–3–44.
409,581. TOTRUST. Cl. 16. 10–10–44.
409,629. EMERSON AND DESIGN. Cl. 21. 10–10–44.
409,675. SELECTROL. Cl. 26. 10–17–44.
409,680. EATUM. Cl. 46. 10–17–44.
409,714. CURITY. Cl. 44. 10–17–44.
409,721. TOTALUME. Cl. 16. 10–17–44.
409,899. W.S. Cl. 4. 10–31–44.
409,924. G.I. AND DESIGN. Cl. 21. 10–31–44.
410,094. NEMCO. Cl. 39. 11–7–44.
410,524. FARBERITE. Cl. 1. 11–28–44.
410,887. FAIRBANKS-MORSE. Cl. 21. 12–26–44.
411,282. PARALATE. Cl. 52. 1–9–45.
411,327. ALOX. Cl. 1. 1–16–45.
412,027. PLANTAROME. Cl. 46. 2–13–45.
412,086. DENTYTE. Cl. 44. 2–20–45.
412,308. AH. Cl. 21. 2–27–45.
412,319. TORRID ZONE. Cl. 46. 2–27–45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

439,551. CB LACET-A-LA CROIX. Cl. 42. 7–6–48.
442,180. CARTIER-BRESSON ETC. AND DESIGN. Cl. 43. 3–8–49.
518,885. CARTIER-BRESSON ETC. AND DESIGN. Cl. 43. 12–20–49.
749,571. SHEAFFER. Cl. 27. 5–14–63.
770,163. DICAMBA. Cl. 6. 5–26–64.
770,164. TRICAMBA. Cl. 6. 5–26–64.

Section 8

617,880. AM I MY BROTHERS KEEPER? Cl. 38. 12–20–55.

The following registrations issued Sept. 16, 1958

666,991. VEALE-WAY. Cl. 1.
666,992. SEALOMATIC. Cl. 2.
666,994. BAGSCO AND DESIGN. Cl. 3.
666,996. CHARM-MATE. Cl. 3.
666,998. LAVACORD. Cl. 3.
667,000. MON-KEY. Cl. 3.
667,005. PURPLE DEATH. Cl. 6.
667,018. RIVESTIMENTO DALMINE. Cl. 12.
667,020. FORM-A-LITE. Cl. 12.
667,025. "402." Cl. 14.
667,026. COMMONWEALTH. Cl. 14.
667,027. QUEMET HUNTSMAN. Cl. 14.
667,031. SEWLUBE. Cl. 15.
667,037. PUCK. Cl. 17.
667,039. ORINE. Cl. 18.
667,044. NATURESSENCE AND DESIGN. Cl. 18.
667,045. SI-LAK FOR SILOS AND DESIGN. Cl. 18.
667,047. FLINT. Cl. 18.
667,048. SALIVA-PAROTIN AND JAPANESE CHARACTERS. Cl. 18.
667,049. STUART PROLAR. Cl. 18.
667,050. STUART PROLAR-B. Cl. 18.
667,056. PARAACUDA AND DESIGN. Cl. 19.
667,058. MAGIC TILT. Cl. 19.
667,059. FLORIDA. Cl. 19.
667,060. NORTH AND DESIGN. Cl. 21.
667,064. HELIARC. Cl. 21.
667,065. MOTOROID. Cl. 21.
667,066. TRIM-SPORT. Cl. 22.
667,067. ROD BARKLEY. Cl. 22.
667,071. APRIL SHOWERS AND DESIGN. Cl. 22.
667,073. GYRO-JOE. Cl. 22.
667,079. BENTLEY-KOMET. Cl. 23.
667,080. PRIME. Cl. 23.
667,082. JUBILEE. Cl. 23.
667,083. BELOND "500." Cl. 23.
667,095. BADENIA. Cl. 27.
667,100. MELEE GLARE TOP. Cl. 28.

667,102. SWEDEN SHAKE MAKER. Cl. 31.
667,106. BANKERS BOX PRODUCTS BB AND DESIGN. Cl. 32.
667,109. FAVORIT. Cl. 37.
667,111. SUE-PAM AND DESIGN. Cl. 37.
667,119. JUDD SAXON. Cl. 38.
667,122. YOUR LEISURE TIME. Cl. 38.
667,123. BRIGHT ACRES. Cl. 38.
667,124. PLAYGIRL. Cl. 38.
667,130. FAERIE HI MOMMY. Cl. 39.
667,131. ANNIVERSAIRE. Cl. 39.
667,132. A-JUSTA-BOOT. Cl. 39.
667,133. LADY WINGS AND DESIGN. Cl. 39.
667,141. BIARRITZ. Cl. 39.
667,147. MISTER CY. Cl. 39.
667,154. IMPERIAL WINDSOR. Cl. 42.
667,161. PACA-BOUCLE. Cl. 42.
667,162. COMPULSION. Cl. 42.
667,163. DRAGER. Cl. 44.
667,169. FAUNS. Cl. 44.
667,172. KOOL DROPS. Cl. 45.
667,173. PENGUINS. Cl. 45.
667,180. NOBILITY. Cl. 46.
667,183. BRONCO. Cl. 46.
667,189. SUN AND DESIGN. Cl. 50.
667,191. AQUA-SEAL AND DESIGN. Cl. 50.
667,197. GOLD SATIN. Cl. 51.
667,201. LUCKY-LADY. Cl. 52.
667,203. HUDSON PREP AND DESIGN. Cl. 52.
667,206. KORROSOLV. Cl. 52.
667,207. GREASUP. Cl. 52.
667,210. SPEED-D-BURR. Cl. 52.
667,211. M AND DESIGN. Cl. 102.
667,218. YOUR "A" MOTOR COURT. Cl. B.
667,219. TREEWOOD. Cl. 12.
667,220. READI-PATCH. Cl. 12.
667,226. ARMSTRONG. Cl. 19.
667,227. ARMSTRONG AND DESIGN. Cl. 19.
667,228. THOMSON FEED SHEETER AND DESIGN. Cl. 23.
667,231. FISK. Cl. 31.
667,232. BEAUTIFUL SIGHT IN A 20/20. Cl. 39.
667,233. PEEBLES' POULTRY PREMIX. Cl. 46.
667,234. D'LISH. Cl. 46.
667,235. SNACK-PAK. Cl. 46.
667,237. IT PAYS TO DO BUSINESS WITH CHASE MANHATTAN. Cl. 102.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

370,260. ECONO-WAY. Cl. 46. 8–22–39. The Borden Company, New York, N.Y. Amended to appear:

ECONO-WAY

408,233. CAMEO CORPORATION CLEANER. Cl. 52. 8–1–44. Cameo Corporation. B. T. Babbitt, Inc., New York, N.Y. Amended: In the statement, column 1, line 17 and column 2, line 6, "Cleanser" is deleted and *Cleaner* is inserted, and the drawing is amended to appear:

CAMEO
CORPORATION
CLEANER

411,394. FLOTOFOAM. Cl. 1. 1–16–45. United States Rubber Company, New York, N.Y. In the statement, column 1, lines 9 through 12, the description of goods is deleted and *Foamed elastomeric material in semi-finished form for further use in manufacturing* is inserted.

422,732. BRISTOLITE. Cl. 39. 8–13–46. Bristol Manufacturing Corporation, Bristol, R.I. Amended to appear:

BRISTOLITE

665,630. CILCO. Cl. 16. 8–12–58. Commercial Ink & Lacquer Co. Inc. The Borden Company, New York, N.Y. Amended to appear:

cilco

677,586. WATTS AND DESIGN. Cl. 13. 4–28–59. Watts Regulator Company, Lawrence, Mass. Corrected: In the statement, column 1, line 6, before "siphon" *anti-* should be inserted and in column 2, lines 3 and 4, "gas-line" should be deleted and *air-line* should be inserted.

677,656. SPEEDBELT. Cl. 23. 4–28–59. Timesavers Sanders, Inc., Minneapolis, Minn. Corrected: In the statement, column 1, line 1, after "Sanders" , *Inc.* should be inserted.

680,880. CAROLINA MAID. Cl. 46. 6–23–59. Gladiola Biscuit Co. Fant Milling Company, Sherman, Tex. Corrected: In the statement, column 2, line 1, "eat" should be deleted and *bake* should be inserted.

682,763. TEM-PRA-TONE. Cl. 16. 8–4–59. Binney & Smith Inc., New York, N.Y. Corrected: In the statement, column 2, line 1, "colors" should be deleted and *base paint* should be inserted.

750,718. GULF AND DESIGN. Cl. 1. 6–11–63. Gulf Oil Corporation, Pittsburgh, Pa. Amended: In the statement, column 2, line 4, "Nos. 621,880, 724,399, and others" is deleted and *No. 621,650* is inserted, and the drawing is amended to appear:

Gulf

775,928. 6 DOORNKAATCHEN ETC. AND DESIGN. Cl. 49. 8–25–64. Doornkaat Aktiengesellschaft, Norden/Ostfriesland, Germany. In the statement, column 2, line 3, after "The" *German term "Aus Kornsaat,"* should be inserted.

766,091. INTERNATIONAL TOASTMISTRESS AND DESIGN. Cl. 107. 3–3–64. International Toastmistress Clubs, Inc., Huntington Park, Calif. Amended to appear:

INTERNATIONAL TOASTMISTRESS

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

361,469. HOUSE & HOME. Cl. 38. Eugene Nelson Beard, 10–18–38. New Cert. Sec. 7(c) to McGraw-Hill, Inc., New York, N.Y.

653,791. BON APPETIT. Cl. 38. American Colortype Company. 10–29–57. New Cert. Sec. 7(c) to Beverage News, Inc., Wichita, Kans.

664,721. IHE AND DESIGN. Cl. 34. Industrial Heat Engineering Company. 7–22–58. New Cert. Sec. 7(c) to Industrial Heat Engineering Company, Greenville, S.C.

671,590. SNUGGY CUFFS. Cl. 39. Geo L. Chapman, d.b.a. George Chapman Co. 12–23–58. New Cert. Sec. 7(c) to Warren H. Kinne, Mountain Lakes, N.J.

691,535. FLO-BALL AND DESIGN. Cl. 13. Hydromatics, Inc. 1–19–60. New Cert. Sec. 7(c) to Crane Co., New York, N.Y.

694,432. FLO-BALL. Cl. 13. Hydromatics, Inc. 3–15–60. New Cert. Sec. 7(c) to Crane Co., New York, N.Y.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 4 — Abrasives and Polishing Materials

408,628. Aug. 22, 1944. K. J. Quinn & Co. Inc., Malden, Mass. Pub. by registrant.

CUSTOMIZE

For Preparation in Paste or Semi-Paste Form To Be Applied to Leather as a Dressing, Polish and Finish Therefor.

410,883. Dec. 26, 1944. The Diversey Corporation, Chicago, Ill. Pub. by registrant.

PERFON

For Alkaline Cleansing Compound in Powdered Form.

Class 12 — Construction Materials

408,365. Aug. 8, 1944. The Sullivan Company, Memphis, Tenn. Pub. by registrant.

GARDEX

For Specially Prepared Bituminous Compound for Use as a Waterproof Preservative, Rust Proofing, Oil and Acid Resisting Coating for Concrete and Steel.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

130,561. Apr. 27, 1920. Reed & Prince Mfg. Company, Worcester, Mass. Pub. by registrant.

For Screws, Bolts, Nuts, Rivets, and Burrs.

375,052. Feb. 6, 1940. Reed & Prince Mfg. Company, Worcester, Mass. Pub. by registrant.



For Screws, Bolts, Nuts, Rivets, Burrs, and Headed and Threaded Rods.

Class 18 — Medicines and Pharmaceutical Preparations

434,873. Dec. 9, 1947. Whitmoyer Laboratories, Inc., Myerstown, Pa. Pub. by registrant.

Tra-Min

For Trace Mineral Compound, a Supplement for Use in Livestock and Poultry Feeds.

443,616. Dec. 13, 1949. Whitmoyer Laboratories, Inc., Myerstown, Pa. Pub. by registrant.

Flav-A-Dee

For Dried Liver Meal With Added Nutrients and Vitamin Concentrates for Use as an Ingredient in Livestock and Poultry Feeds.

Class 28 — Jewelry and Precious-Metal Ware

226,262. Apr. 5, 1927. Gladwin Limited, London, England. Pub. by registrant.

Embassy

For Table and Other Household Knives, Forks, Spoons, Scoops, Servers, Tongs, and Nutcrackers, All of Which Are Silver Plated.

Class 37 — Paper and Stationery

183,124. Apr. 22, 1924. Fort Howard Paper Company, Green Bay, Wis. Pub. by registrant.

NUN-X-L

For Toilet Paper.

Class 38 — Prints and Publications

193,679. Jan. 6, 1925. The Post Publishing Company, Bridgeport, Conn. Pub. by registrant.

THE BRIDGEPORT TELEGRAM

For Newspapers.

193,680. Jan. 6, 1925. The Post Publishing Company, Bridgeport, Conn. Pub. by registrant.

BRIDGEPORT SUNDAY POST

For Newspapers.

193,681. Jan. 6, 1925. The Post Publishing Company, Bridgeport, Conn. Pub. by registrant.

THE BRIDGEPORT POST

For Newspapers.

410,829. Dec. 19, 1944. Otto Muller, d.b.a. Triological Institute, Ridgebury, N.Y. Pub. by registrant.

Triology

For Weekly Publication Containing Metaphysicoreligious Subject Matter.

Class 39 — Clothing

373,041. Nov. 21, 1939. Lewel Manufacturing Co., Inc., Newark, N.J. Pub. by registrant.

Lewella

For Girdles, Brassieres, Corsets, and Foundation Garments.

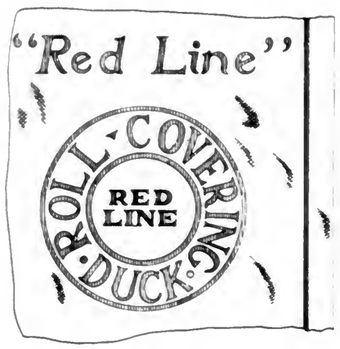
411,015. Jan. 2, 1945. Superba Cravats, Rochester, N.Y. Pub. by Superba Cravats, Inc., Rochester, N.Y.

SUGAR and SPICE

Owner of Reg. No. 362,590.
For Neckties and Mufflers.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

189,919. Sept. 30, 1924. Pittsburgh Waterproof Company, Pittsburgh, Pa. Pub. by Mamaux Supply Company, Pittsburgh, Pa.



For Cotton Duck Used for Aprons for Laundry Machines or for Covering Pressing Surfaces of Laundry Presses, etc.

Class 45 — Soft Drinks and Carbonated Waters

189,039. Sept. 9, 1924. Orange Crush Company, Chicago, Ill. Pub. by Crush International Inc., Evanston, Ill.

HANDI-PACK

For Nonalcoholic, Maltless Beverages Sold as Soft Drinks.

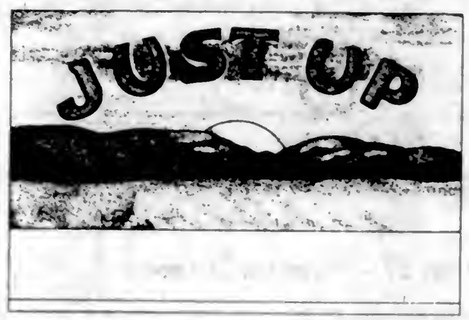
199,387. June 9, 1925. Anders Lindahl, Stockholm, Sweden. Pub. by Aktiebolaget Fructus Fabriker, Stockholm, Sweden.

POMMAC

For Lemonade, Non-Alcoholic, Maltless Soft Drinks, and Essences and Extracts for Preparing Such Drinks.

Class 46 — Foods and Ingredients of Foods

408,271. Aug. 1, 1944. Jim Watkins & Sons, Aptos, Calif. Pub. by Jim Watkins Co., Inc., Watsonville, Calif.



For Fresh Vegetables—Namely, Cauliflower, Peas, Beans, and Tomatoes.

Class 51 — Cosmetics and Toilet Preparations

188,428. Aug. 26, 1924. Alfred Wright Perfumer, Inc., New York, N.Y. Pub. by Yardley & Company Limited, London, England.

REVERIE

For Liquid Perfume and Sachet Powders.

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AMP Inc., Harrisburg, Pa. 779,416, pub. 8–18–64. Cl. 23.
Abercrombie & Fitch Co., New York, N.Y. 779,394, pub. 8–18–64. Cl. 22.
Acme Mfg. Co., Philadelphia, Pa. 779,459, pub. 6–30–64. Cl. 34.
Acme Markets, Inc., Philadelphia, Pa. 779,354, pub. 8–18–64. Cl. 18.
Adikes, J. & L., Inc., Jamaica, N.Y. 779,300, pub. 8–18–64. Cl. 10.
Advance Data Systems Corp.: *See*—
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Aldon Rug Mills, Inc., Lenni Mills, Pa. 667,154, canc. Cl. 42.
Alemagna Panettoni di Gioachino Alemagna & C., Milan, Italy. 779,546, pub. 8–18–64. Cl. 46.
Allen, Mark, Co., Detroit, Mich. 779,600, pub. 8–18–64. Cl. 51.
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Alpha Kappa Lambda Fraternity, Emporia, Kans. 779,654–5, pub. 8–18–64. Cl. 200.
American Academy of Matrimonial Lawyers, Chicago, Ill. 779,656, pub. 8–18–64. Cl. 200.
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American Home Products Corp., New York, N.Y. 779,527, pub. 8–18–64. Cl. 44.
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Archer-Daniels-Midland Co., Minneapolis, Minn. 779,549, pub. 8–18–64. Cl. 46.
Armco Steel Corp., Middletown, Ohio. 779,321, pub. 8–18–64. Cl. 14.
Armour and Co., Chicago, Ill. 779,550, pub. 8–18–64. Cl. 46.
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Aronimink Products, Inc., Philadelphia, Pa. 779,577, pub. 8–18–64. Cl. 46.
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Arrow-Hart & Hegeman Electric Co., The, Hartford, Conn. 412,308, ren. 11–3–64. Cl. 21.
Arts, E. G., Inc., Milwaukee, Wis. 779,455, pub. 8–18–64. Cl. 32.
"Astra-Calve," Societe, Paris, France. 779,555, pub. 8–18–64. Cl. 46.
"Astra-Calve," Societe, Paris, France. 779,557, pub. 8–18–64. Cl. 46.
Atlas International Co., Chicago, Ill. 779,381, pub. 8–18–64. Cl. 19.
Atmoore and Co., Evanston, Ill. 779,441, pub. 8–18–64. Cl. 26.
Augstein, S., & Co., Inc., College Point, N.Y. 779,506, pub. 8–18–64. Cl. 39.
Avon Products, Inc., New York, N.Y. 779,610, pub. 8–18–64. Cl. 51.
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Badische Anilin- & Soda-Fabrik, Ludwigshafen (Rhine), Germany. 779,275, pub. 8–18–64. Cl. 6.
Balsa Products Inc., Miami, Fla. 779,309, pub. 8–18–64. Cl. 12.
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Bauernfreund, Max, d.b.a. French Powder Puff Co., Long Island City, N.Y. 408,277, ren. 11–3–64. Cl. 29.
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Bell, Arthur, & Sons, Ltd., Perth, Scotland. 779,582, pub. 8–18–64. Cl. 49.
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Bentley Engineering Co. Ltd., The, Leicester, England. 667,079, canc. Cl. 23.
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Binney & Smith Inc., New York, N.Y. 682,763, cor. Cl. 16.
Blu-Chilla, Inc., Nampa, Idaho. 779,251, pub. 8–18–64. Cl. 1.
Blue Goose, Inc., Fullerton, Calif. 779,576, pub. 8–18–64. Cl. 46.
Blumenthal Bros. Chocolate Co., Philadelphia, Pa. 779,538, pub. 9–24–63. Cl. 46.
Bommel, William A. E. F., d.b.a. Bovi Industrie-en Handelsonderneming, Diemen, Netherlands. 779,512, pub. 8–18–64. Cl. 40.
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Bridgestone Tire Co. Ltd., Chuo-ku, Tokyo, Japan. 779,380, pub. 8–18–64. Cl. 19.
Briggs Bituminous Composition Co.: *See*—
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Bristol Mfg. Corp., Bristol, R.I. 422,732. Am. 7(d). Cl. 39.
Bristol-Myers Co., New York, N.Y. 779,367, pub. 8–18–64. Cl. 18.
Brown Oil Tools, Inc., Houston, Tex. 667,080, canc. Cl. 23.
Buffalo Nut Shops, Inc., Buffalo, N.Y. 779,572, pub. 8–18–64. Cl. 46.
Bull, Abernathy G., d.b.a. States Wide Economy Systems, Sterling, Ill. 779,476, pub. 8–18–64. Cl. 37.
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Calcium Carbonate Co., Quincy, Ill. 779,249, pub. 8–18–64. Cl. 1.
Cameo Corp. B. T. Babbitt, Inc., New York, N.Y. 408,233. Am. 7(d). Cl. 52.
Cameo-Parkway Records, Inc., Philadelphia, Pa. 779,466, pub. 8–18–64. Cl. 36.
Pacaud, Camille C. R., Paris, France. 779,597, pub. 8–18–64. Cl. 51.
Carolina Co., Inc., d.b.a. The Carolina Soap and Candle Makers, Southern Pines, N.C. 779,591, pub. 8–18–64. Multiple Class (Classes 51 and 52).
Carolina Soap and Candle Makers, The: *See*— Carolina Co., Inc.
Carrier, J. D., Shoe Co. Ltd., Toronto, Ontario, Canada. 779,502, pub. 8–18–64. Cl. 39.
Central Nebraska Packing Co., d.b.a. Crown Prince Pet Food Co., North Platte, Nebr. 779,578, pub. 8–18–64. Cl. 46.
Chapman, Geo. L., d.b.a. George Chapman Co., to W. H. Kinne, Mountain Lakes, N.J. 671,590, new cert. Cl. 59.
Chapman, George, Co.: *See*— Chapman, Geo. L.
Chase Manhattan Bank, The, New York, N.Y. 667,237, canc. Cl. 102.
Chattanooga Medicine Co., The, d.b.a. Chattem Laboratories, Chattanooga, Tenn. 779,377–8, pub. 8–18–64. Cl. 18.
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Chicken Delight, Inc., Rock Island, Ill. 779,635, pub. 8–18–64. Cl. 101.
Chocolate House, Inc., The, Milwaukee, Wis. 779,666. Cl. 46.
Chris-Craft Corp., Pompano Beach, Fla. 779,402, pub. 8–18–64. Cl. 23.
Clark, C & J., Ltd., Somerset, England. 666,992, canc. Cl. 2.
Cleveland Wash Tray Mfg. Co., Inc., Cleveland, Ohio. 779,316, pub. 8–18–64. Cl. 13.
Coast-To-Coast Stores (Central Organization), Inc., Inc., from Coast-To-Coast Stores (Central Organization), Inc., Minneapolis, Minn. 779,628, pub. 8–18–64. Cl. 101.
Cohen, Simon, d.b.a. Whistle Stop Footwear, Pomona, Calif. 779,499, pub. 8–18–64. Cl. 39.
Cohn-Hall-Mark Co., to United Merchants and Manufacturers, Inc., New York, N.Y. 409,030, ren. 11–3–64. Cl. 42.
Cohn-Hall-Marx Co., to United Merchants and Manufacturers, Inc., New York, N.Y. 409,065, ren. 11–3–64. Cl. 42.
Colby, Jane, Inc., New York, N.Y. 779,496, pub. 8–18–64. Cl. 39.
Colloids, Inc., Newark, N.J. 779,277, pub. 8–18–64. Cl. 6.
Colorforms, Norwood, N.J. 779,660. Cl. 22.
Columbus McKinnon Corp., Tonawanda, N.Y. 779,400, pub. 8–18–64. Cl. 23.
Commercial Ink & Lacquer Co. Inc., The Borden Co., New York, N.Y. 665,630. Am. 7(d). Cl. 16.
Consolidated Sewing Machine Corp., New York, N.Y. 667,031, canc. Cl. 15.
Continental Baking Co., Rye, N.Y. 779,542, pub. 8–18–64. Cl. 46.
Corporation Trust Co., The, New York, N.Y. 195,219, ren. 11–3–64. Cl. 38.
Cosmetically Yours, Inc., Yonkers, N.Y. 779,611, pub. 8–18–64. Cl. 51.
Court-Leigh Corp., Brooklyn, N.Y. 779,558, pub. 8–18–64. Cl. 46.
Cowen, M. S., Co., d.b.a. M. S. Cowen Co., San Francisco, Calif. 779,568, pub. 8–18–64. Cl. 46.
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Creco Co., Inc.: *See*— United Sanitary Products Co. Inc.
Crowell Mfg. Corp., Brooklyn, N.Y. 779,418, pub. 8–18–64. Cl. 23.
Crown Prince Pet Food Co.: *See*— Central Nebraska Packing Co.
Crush International Inc.: *See*— Orange Crush Co.
Cuban Tobacco Co. Inc., New York, N.Y. 667,037, canc. Cl. 17.
Cudahy Packing Co., The, Omaha, Nebr. 779,537, pub. 8–18–64. Cl. 46.
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Dairy Technics, Inc., Kalamazoo, Mich. 779,567, pub. 8–18–64. Cl. 46.
Dallas Texans Football Club, Inc., Dallas, Tex. 779,647, pub. 8–18–64. Cl. 107.
Dalmine S.p.A., Milan, Italy. 667,018, canc. Cl. 12.
Dalto Electronics Corp., Norwood, N.J. 779,432, pub. 8–18–64. Cl. 26.
Dalton's Best Maid Products, Inc., d.b.a. Mrs. Dalton's Best Maid Products, Inc., and Mrs. Dalton's Mayonnaise Co., Fort Worth, Tex. 779,540, pub. 8–18–64. Cl. 46.
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Dalton's Mayonnaise Co., Mrs.: *See*— Dalton's Best Maid Products, Inc.
Dan River Mills, Inc., Danville, Va. 779,491, pub. 8–18–64. Cl. 39.
Davis, Tine W., Montgomery, Ala. 779,252, pub. 8–18–64. Cl. 1.
Day, Eugene D., d.b.a. National Chemical Co., Lubbock, Tex. 779,325, pub. 8–18–64. Cl. 15.
Dayton Bright Copper Co., The, Dayton, Ohio. 779,284, pub. 8–18–64. Cl. 6.
Deering Milliken, Inc., New York, N.Y. 779,518–21, pub. 8–18–64. Cl. 42.
Delta Sigma Phi Fraternity, The, Denver, Colo. 779,484, pub. 8–18–64. Cl. 38.
Delaney, Edward J., Joliet, Ill. 667,111, canc. Cl. 37.
De Markoff, Alexandra, Sales Corp., New York, N.Y. 779,612, pub. 8–18–64. Cl. 51.
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Devoe & Raynolds Co., Inc., New York, N.Y. 190,963, ren. 11–3–64. Cl. 16.
Devoe & Raynolds Co., Inc., New York, N.Y. 192,353, ren. 11–3–64. Cl. 16.
Diamond Alkali Co., Pittsburgh, Pa. 411,282, ren. 11–3–64. Cl. 52.
Distillers Corp., (S.A.) Ltd., Republic of South Africa. 779,579, pub. 8–18–64. Multiple Class (Classes 47 and 49).
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Fama & Famin Gesellschaft mit beschrankter Haftung, Hannover-Hainholz, Germany. 779,265, pub. 8–18–64. Multiple Class (Classes 6 and 12).
Fant Milling Co.: *See*— Gladiola Biscuit Co.
Farber, John D., d.b.a. Briggs Bituminous Composition Co., Philadelphia, Pa. 410,524, ren. 11–3–64. Cl. 1.
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Finley-Smith Sales Co., Aurora, Ill. 667,056, canc. Cl. 19.
Firestone Tire & Rubber Co., The, Akron, Ohio. 779,387, pub. 8–18–64. Cl. 19.
Fisher-Price Toys, Inc., East Aurora, N.Y. 779,395, pub. 8–18–64. Cl. 22.
Fisk, Ellsworth J., Jacksonville, Fla. 667,231, canc. Cl. 31.
Flexicraft Industries, Inc., Chicago, Ill. 779,312, pub. 8–18–64. Cl. 13.
Flint, Eaton & Co., Decatur, Ill. 667,047, canc. Cl. 18.
Florasynth Laboratories, Inc., New York, N.Y. 412,027, ren. 11–3–64. Cl. 46.
Foremost Dairies Inc., San Francisco, Calif., from Western Condensing Co., Appleton, Wis. 667,233, canc. Cl. 46.
Form-A-Lite, Inc., Northbridge, Mass. 667,020, canc. Cl. 12.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 189,122, ren. 11–3–64. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 189,126, ren. 11–3–64. Cl. 42.

Fort Howard Paper Co., Green Bay, Wis. 183,124, 12(c) pub. 11–3–64. Cl. 37.
Foseco International Ltd., Birmingham, England. 779,269–71, pub. 8–18–64. Cl. 6.
Foseco International Ltd., Birmingham, England. 779,273, pub. 8–18–64. Cl. 6.
Fownes Bros. & Co., London, England, to Fownes Bros. & Co., Inc., New York, N.Y. 25,554, ren. 11–3–64. Cl. 39.
Fownes Bros. & Co., Inc.: *See*— Fownes Bros. & Co.
Frank, S. M., Co., Inc., New York, N.Y. 779,296, pub. 8–18–64. Cl. 8.
Frederick Post Co., The, Chicago, Ill. 779,438, pub. 8–18–64. Cl. 26.
French Powder Puff Co.: *See*— Bauernfreund, Max.
French, Shriner & Urner Mfg. Co., Boston, Mass. 667,141, canc. Cl. 39.
Freres, Wolff, Inc., New Preston, Conn. 779,605, pub. 8–18–64. Cl. 51.
Fried, Jeffrey L., d.b.a. Walton-March, Highland Park, Ill. 779,258, pub. 8–18–64. Cl. 4.
Frosty Pet Food Co., Santa Ana, Calif. 779,564, pub. 8–18–64. Cl. 46.
Fruit of the Loom, Inc.: *See* — Knight, B. B. & R., Inc.
Gabline, S.A., Luxembourg, Luxembourg. 779,487, pub. 8–18–64. Multiple Class (Classes 39 and 40).
Gaetano's Inc., Kansas City, Mo. 779,663. Cl. 46.
Gamma Phi Delta Sorority, Inc., Indianapolis, Ind. 779,652, pub. 8–18–64. Cl. 200.
Garmon Specialty Co., North Little Rock, Ark. 779,299, pub. 8–18–64. Cl. 9.
Garrett Laboratories, Inc., Baltimore, Md. 779,342, pub. 8–18–64. Cl. 18.
Gatewood, Boyce A., Cleburne, Tex. 666,994, canc. Cl. 3.
General Foods Corp., White Plains, N.Y. 667,172–3, canc. Cl. 45.
General Foods Corp., White Plains, N.Y. 779,556, pub. 8–18–64. Cl. 46.
General Industries Co., The, Elyria, Ohio. 409,924, ren. 11–3–64. Cl. 21.
General Tape & Supply, Inc., Detroit, Mich. 779,263, pub. 8–18–64. Cl. 5.
Graphol Products Co., Inc., Brooklyn, N.Y., to Graphol Products Co., Hawthorne, N.J. 194,481, ren. 11–3–64. Cl. 15.
Genisco, Inc., Compton, Calif. 779,407, pub. 8–18–64. Cl. 36.
Germaine Monteil Cosmetiques Corp., New York, N.Y. 779,606, pub. 8–18–64. Cl. 51.
Getz Exterminators, Inc., St. Louis, Mo. 779,645, pub. 8–18–64. Cl. 103.
Giannicchi, Americo L., New York, N.Y. 779,481, pub. 8–18–64. Cl. 38.
Gill, James G., Co., Inc., The, Norfolk, Va. 779,664. Cl. 46.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 779,613–14, pub. 8–18–64. Cl. 51.
Gladiola Biscuit Co. Fant Milling Co., Sherman, Tex. 680,880 cor. Cl. 46.
Gladwin Ltd., London, England. 226,262, 12(c) pub. 11–3–64. Cl. 28.
Globe Brick Co., The, Newell, W. Va. 779,310, pub. 8–18–64. Cl. 12.
Glyco Chemicals, Inc., New York, N.Y. 779,268, pub. 8–18–64. Cl. 6.
Gold Seal Importers, Inc., New York, N.Y. 666,998, canc. Cl. 3.
Golden Cough Tablets, Inc., from Irving Ehrlich, d.b.a. Golden Cough Tabs Products, Brooklyn, N.Y. 779,336, pub. 8–18–64. Cl. 18.
Golden Cough Tabs Products: *See*— Golden Cough Tablets, Inc.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 779,460, pub. 8–18–64. Cl. 35.
Gordon's Asphalt Paving Products, Inc., Centerline, Mich. 667,220, canc. Cl. 12.
Gosbo Trading Co., Inc., New York, N.Y. 779,465, pub. 8–18–64. Cl. 36.
Grado Laboratories, Inc., Brooklyn, N.Y. 779,462, pub. 8–18–64. Cl. 36.
Graham, Murray, Inc., New York, N.Y. 779,501, pub. 8–18–64. Cl. 39.
Graphol Products Co.: *See*— Graphol Products Co., Inc.
Gries Reproducer Corp., New Rochelle, N.Y. 779,322, pub. 8–18–64. Cl. 14.
Growers Exchange, Inc., Salinas, Calif. 779,543, pub. 8–18–64. Cl. 46.
Gulf Oil Corp., Pittsburgh, Pa. 750,718. Am. 7(d). Cl. 1.
Hamilton, Crocker, Papers, Inc.: *See*— Weyerhaeuser Co.
Hart, Alfred, Co., The, d.b.a. Distillery Distributors, Los Angeles, Calif. 779,585, pub. 8–18–64. Cl. 49.
Hazleton Macaroni Co.: *See*— Amerise, William.
Hazleton Macaroni Mfg. Co.: *See*— Amerise, William.
Hearst Corp., The, New York, N.Y. 667,119, canc. Cl. 38.
Herald House, Inc., Oakland, Calif. 779,547–8, pub. 8–18–64. Cl. 46.
Herzberger, Howard H., d.b.a. Herzberger's, Bay City, Mich. 779,278, pub. 8–18–64. Cl. 6.
Herzberger's: *See*— Herzberger, Howard H.
Hess, Frank, d.b.a. Hess Hair Milk Laboratories, to Hess Hair Milk Laboratories, Inc., St. Paul, Minn. 188,445, ren. 11–3–64. Cl. 51.
Hess Hair Milk Laboratories: *See*— Hess, Frank.
Hess Hair Milk Laboratories, Inc.: *See*— Hess, Frank.
Hewitt Soap Co., Inc., The: *See*— Pioneer Products Co., The.
Hi-Lo Powered Stirrups, Inc., Cincinnati, Ohio. 779,405, pub. 8–18–64. Cl. 23.
Hirsh, Leon, and Son: *See*— Klein, Sidney.
Hodgson Bee Supplies, Ltd., New Westminster, British Columbia, Canada. 779,551, pub. 8–18–64. Cl. 46.
Hohner, M., Inc., Hicksville, N.Y. 779,463, pub. 8–18–64. Cl. 36.
Holland-Rantos Co., Inc., New York, N.Y. 779,604, pub. 8–18–64. Cl. 51.
Hoover Co., The, North Canton, Ohio. 669,255–6, pub. 8–18–64. Multiple Class (Classes 4 and 21).
Hoover, Joseph, & Sons Co., Philadelphia, Pa. 667,124, canc. Cl. 38.
House of Seagram, Inc., The, New York, N.Y. 667,122, canc. Cl. 38.
Howard Supply Co., Vernon, Calif. 667,026, canc. Cl. 14.
Hudnut, Richard, Morris Plains, N.J. 779,615, pub. 8–18–64. Cl. 52.
Hudson Fur Cleaning Co., Providence, R.I. 667,203, canc. Cl. 52.
Hudson Hosiery Co., Charlotte, N.C. 779,494, pub. 8–18–64. Cl. 39.
Hudson Pulp & Paper Corp., New York, N.Y. 779,471, pub. 10–29–63. Cl. 37.
Hulman & Co., Terre Haute, Ind. 779,570, pub. 8–18–64. Cl. 46.
Humble Oil & Refining Co.: *See*— Standard Oil Co. of New Jersey.
Hydromatics, Inc., to Crane Co., New York, N.Y. 691,535, new cert. Cl. 13.
Hydromatics, Inc., to Crane Co., New York, N.Y. 694,432, new cert. Cl. 13.
Icar, Industria di Ricerca e Produzione del Farmaco, S.p.A., Rome, Italy. 779,350, pub. 8–18–64. Cl. 18.
Illinois Baking Corp., Chicago, Ill. 779,553, pub. 8–18–64. Cl. 46.
Imperial Camera Corp., Chicago, Ill. 779,450, pub. 8–18–64. Cl. 26.
Imperial Casualty and Indemnity Co., Omaha, Nebr. 779,641–3, pub. 8–18–64. Cl. 102.
Imperial International Corp., New York, N.Y. 779,406, pub. 8–18–64. Cl. 23.
Industrial Finance & Thrift Corp., New Orleans, La. 779,644, pub. 8–18–64. Cl. 102.
Industrial Heat Engineering Co., to Industrial Heat Engineering Co., Greenville, S.C. 664,721, new cert. Cl. 34.
Inerto Co., The: *See*— American Tansul Co.
Insurance Co. of North America, Philadelphia, Pa. 779,637, pub. 8–18–64. Cl. 102.
International Brotherhood of Electrical Workers, Washington, D.C. 190,689, ren. 11–3–64. Cl. 38.
International Flavors & Fragrances Inc., New York, N.Y. 779,266, pub. 8–18–64. Cl. 6.
International Flavors & Fragrances, Inc., New York, N.Y. 779,592, pub. 8–18–64. Cl. 51.
International Latex Corp., Dover, Del. 779,360, pub. 8–18–64. Cl. 18.
International Nickel Co., Inc., The, New York, N.Y. 667,025, canc. Cl. 14.
International Toastmistress Clubs, Inc., Huntington Park, Calif. 766,091. Am. 7(d). Cl. 107.
Jann's Since 1897, Inc., Brooklyn, N.Y. 779,536, pub. 8–18–64. Cl. 46.
Jewell, J. D., Inc., Gainesville, Ga. 779,559, pub. 8–18–64. Cl. 46.
Joa Co., Lake Wales, Fla. 667,169, canc. Cl. 44.
Jo-Bi Farms, Inc., Council Bluffs, Iowa. 779,552, pub. 8–18–64. Cl. 46.
Kaminsky, H. R., & Sons, Inc., Fitzgerald, Ga. 779,505, pub. 8–18–64. Cl. 39.
Kane J. Warren, Inc., New York, N.Y., from Societe S.C.A.R.P., Paris, France. 779,668. Cl. 51.
Kantro, Jerome, d.b.a. Jerome Kantro Co., Salinas, Calif. 667,180, canc. Cl. 46.
Kantro, Jerome, Co.: *See*— Kantro, Jerome.
Kaxan, Michel, New York, N.Y. 779,601, pub. 8–18–64. Cl. 51.
Keelcraft Corp., Palisades Park, N.J. 779,308, pub. 8–18–64. Cl. 12.
Kellogg Co., Battle Creek, Mich. 667,235, canc. Cl. 46.
Kelly-Springfield Tire Co., The, Cumberland, Md. 779,382, pub. 8–18–64. Cl. 19.
Kendall Co., The, Boston, Mass. 409,714, ren. 11–3–64. Cl. 44.
Kendrick & Davis Co., Lebanon, N.H. 779,414, pub. 8–18–64. Cl. 23.
Key Pharmaceuticals, Inc., Miami, Fla. 779,659, canc. Cl. 18.
Kilsman Instrument Corp., Elmhurst, N.Y. 779,446, pub. 8–18–64. Cl. 26.
Kinne, Warren H.: *See*— Chapman, Geo. L.
Kiwanis International, Chicago, Ill. 779,625, pub. 8–18–64. Cl. 100.
Klein, Sidney, d.b.a. Leon Hirsh and Son, New York, N.Y. 779,599, pub. 8–18–64. Cl. 51.
Klopman Mills, Inc., New York, N.Y. 779,522–3, pub. 8–18–64. Cl. 42.
Knight, B. B. & R., Inc., Providence, R.I., and New York, N.Y., to Fruit of the Loom, Inc., Providence, R.I. 194,004, ren. 11–3–64. Cl. 38.
Kohler & Campbell, Inc., Granite Falls, N.C. 779,464, pub. 8–18–64. Cl. 36.
Kordes, Paul J., Co., Inc., Butler, Wis. 779,409, pub. 8–18–64. Cl. 23.
Krauth Chemicals Ltd., Chertsey, Surrey, England. 779,593, pub. 8–18–64. Cl. 51.

Kroger Co., The, d.b.a. Bi-Lo, Cincinnati, Ohio. 779,634, pub. 8–18–64. Cl. 101.
Krop, Margaret, Chicago, Ill. 779,347, pub. 8–18–64. Cl. 18.
L & L Mfg., Inc., North Wilkesboro, N.C. 779,419, pub. 8–18–64. Cl. 23.
Lane Co., Inc., The, Altavista, Va. 779,456, pub. 8–18–64. Cl. 32.
Langston, Samuel M., Co., Camden, N.J. 779,420, pub. 8–18–64. Cl. 23.
La Resista Corset Co., The, to La Resista, Inc., Bridgeport, Conn. 408,713, ren. 11–3–64. Cl. 39.
La Resista, Inc.: *See*—
La Resista Corset Co., The.
Lashette Co., Inc., The, Natick, Mass. 779,662. Cl. 40.
Lauder, Estee, Inc., New York, N.Y. 779,623, pub. 8–18–64. Cl. 52.
Lederer, Ted, Santa Monica, Calif. 779,317, pub. 8–18–64. Cl. 13.
Leetronics, Inc., Brooklyn, N.Y. 667,065, canc. Cl. 21.
Lehn & Fink Products Corp., d.b.a. Tussy Cosmetics, Bloomfield, N.J. 779,603, pub. 8–18–64. Cl. 51.
Lewel Mfg. Co., Inc., New York, N.Y., to Lewell Mfg. Co., Inc., Newark, N.J. 373,041, 12(c) pub. 11–3–64. Cl. 39.
Liberty Distributors, Philadelphia, Pa. 779,657, pub. 8–18–64. Cl. 200.
Liebman, J. B., & Co., Inc., Philadelphia, Pa. 779,457, pub. 8–18–64. Cl. 32.
Lifetime Living, Inc.: *See*—
Pharmaceuticals, Inc.
Lilly, Eli, and Co., Indianapolis, Ind. 779,368, pub. 8–18–64. Cl. 18.
Lilly, Eli, and Co., Indianapolis, Ind. 779,372–4, pub. 8–18–64. Cl. 18.
Lindahl, Anders, by Aktiebolaget Fructus Fabriker, Stockholm, Sweden. 199,387, new cert. Cl. 45.
Linck, O. E., Co., Inc., Clifton, N.J. 667,005, canc. Cl. 6.
Lloyd Bros. Inc.: *See*—
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning.
Lorillard, P., Co., New York, N.Y. 779,335, pub. 8–18–64. Cl. 17.
Lumin Chemical Co., Wilson, N.C. 779,282, pub. 8–18–64. Cl. 6.
Lunatime, Inc., New York, N.Y. 749,571, canc. Cl. 27.
Madison Chemical Co.: *See*—
Russack, Alfred J.
Madison Throwing Co., Inc., Madison, N.Y. 779,526, pub. 8–18–64. Cl. 43.
Martin, Maison E. Remy, & Co., Cognac, France. 779,584, pub. 8–18–64. Cl. 49.
Mallinckrodt Chemical Works, St. Louis, Mo. 779,272, pub. 8–18–64. Cl. 6.
Mamaux Supply Co.: *See*—
Pittsburgh Waterproof Co.
Manifold Supplies Co., Brooklyn, N.Y. 779,306, pub. 8–18–64. Cl. 11.
Manitowoc Co., Inc., The, Manitowoc, Wis. 779,630, pub. 8–18–64. Cl. 101.
Manpower Inc., Milwaukee, Wis. 779,631, pub. 8–18–64. Cl. 101.
Manufacture Industrielle de Cycles & Motocycles (MICmo), Machecoul, Loire-Atlantique, France. 779,383, pub. 8–16–64. Cl. 19.
Maradel Products, Inc., New York, N.Y. 779,607, pub. 8–18–64. Cl. 51.
Maremont Corp., Chicago, Ill., from Winslow Engineering and Mfg. Co., Redwood City, Calif. 779,454, pub. 6–23–64. Cl. 31.
Mariette Coach Co., Mariette, Mich. 779,389, pub. 8–18–64. Cl. 19.
Mars, Inc., Chicago, Ill., to Mars, Inc., Wilmington, Del. 412,319, ren. 11–3–64. Cl. 46.
Mars, Inc., from Mars Inc., Chicago, Ill. 779,545, pub. 8–18–64. Cl. 46.
Marshall Tool Co., Norwalk, Coun. 779,424, pub. 8–18–64. Cl. 25.
Martens Chemical Corp., College Point, N.Y. 779,285, pub. 8–18–64. Cl. 6.
Matthews Research, Inc., Alexandria, Va. 779,529, pub. 8–18–64. Cl. 44.
Mettler's, Fr., Sons Ltd. Engineering Works, Arth, Switzerland. 779,421, pub. 8–18–64. Cl. 23.
May, Felix R., d.b.a. Physical Culture Products Co., Branford, Conn. 667,044, canc. Cl. 18.
Maze, W. H., Co., Peru, Ill. 779,313, pub. 8–18–64. Cl. 13.
McCullough & Fisher, Las Vegas, Nev. 779,311, pub. 8–18–64. Cl. 13.
McGraw-Hill, Inc.: *See*—
Beard, Eugene N.
McGraw-Hill, Inc., from McGraw-Hill Publishing Co., Inc., New York, N.Y. 779,485, pub. 8–18–64. Cl. 38.
McGraw-Hill Publishing Co., Inc.: *See*—
McGraw-Hill, Inc.
McGuinness, L. J., and Co. Ltd., Mimic, Ontario, Canada. 779,667. Cl. 49.
Meat Industry Suppliers, Inc., Northfield, Ill. 779,571, pub. 8–18–64. Cl. 46.
Menley & James Laboratories Ltd., Philadelphia, Pa. 779,351, pub. 8–18–64. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 779,361–3, pub. 8–18–64. Cl. 18.
Meyer, Leo and Robert, d.b.a. Meyer Tomatoes, King City, Calif. 779,554, pub. 8–18–64. Cl. 46.
Meyer Tomatoes: *See*—
Meyer, Leo and Robert.
Mid-Union Indemnity Co., Elgin, Ill. 667,211, canc. Cl. 102.
Midwec Corp., Oshkosh, Nebr. 779,393, pub. 8–18–64. Cl. 21.
Minaret Records, Inc., Val Paraiso, Fla. 779,470, pub. 8–18–64. Cl. 36.
Mishawaka Rubber Co., Inc.: *See*—
Mishawaka Woolen Mfg. Co.
Mishawaka Rubber and Woolen Mfg. Co., The: *See*—
Mishawaka Woolen Mfg. Co.
Mishawaka Woolen Mfg. Co., from The Mishawaka Rubber and Woolen Mfg. Co., to Mishawaka Rubber Co., Inc., Mishawaka, Ind. 189,368, ren. 11–3–64. Cl. 39.
Miss Couture, Inc., Kansas City, Mo. 779,489, pub. 8–18–64. Cl. 39.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 779,323–4, pub. 8–18–64. Cl. 15.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 779,473–5, pub. 8–18–64. Cl. 37.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 779,514, pub. 8–18–64. Cl. 42.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 779,254, pub. 8–18–64. Cl. 2.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 779,297–8, pub. 8–18–64. Cl. 8.
Miles Laboratories, Inc., Elkhart, Ind. 779,293, pub. 8–18–64. Cl. 6.
Modern Carpet Sweeper Co., Inc., Great Neck, N.Y. 667,082, canc. Cl. 23.
Monarch Chemicals, Inc.: *See*—
Sep-Ko Chemicals, Inc.
Monarch Marking System Co., The, Dayton, Ohio. 779,415, pub. 8–18–64. Cl. 23.
Monogram Models, Inc., Morton Grove, Ill. 779,589, pub. 8–18–64. Cl. 50.
Monsanto Co., St. Louis, Mo. 779,302, pub. 8–18–64. Cl. 10.
Morris, J. I., Co., Southbridge, Mass. 779,436, pub. 8–18–64. Cl. 26.
Mucon Corp., Newark, N.J. 779,391, pub. 8–18–64. Cl. 21.
Muller, Otto, d.b.a. Triological Institute, Ridgebury, N.Y. 410,829, 12(c) pub. 11–3–64. Cl. 38.
Murphy, G. C., Co., McKeesport, Pa. 779,447, pub. 8–18–64. Cl. 26.
N.V. Laboratoria Pharmaceutica Dr. C. Janssen, Turnbout, Belgium. 779,352–3, pub. 8–18–64. Cl. 18.
National Chemical Co.: *See*—
Day, Eugene D.
National Court of the Royal Order of Jesters, Pittsburg, Kans. 779,651, pub. 8–18–64. Cl. 200.
National Industrial Products Co.: *See*—
Exact Weight Scale Co., The.
National Instrument Laboratories, Inc., Rockville, Md. 779,445, pub. 8–18–64. Cl. 26.
National Little Britches Rodeo Association, Inc., from The Arapahoe County Fair Association, Inc., Littleton, Colo. 779,650, pub. 8–18–64. Cl. 200.
National Tart Co., Inc., Dallas, Tex. 667,234, canc. Cl. 46.
Nerco, Inc., Deerfield Beach, Fla. 779,307, pub. 8–18–64. Cl. 11.
Nevin, J. R., Co., Inc., Buffalo, N.Y. 779,349, pub. 8–18–64. Cl. 18.
New England Mackintosh Co., Inc., Brockton, Mass. 410,094, ren. 11–3–64. Cl. 39.
New Era Hats Inc., New York, N.Y. 667,131, canc. Cl. 39.
New Jersey Machine Corp., Hoboken, N.J. 408,902, ren. 11–3–64. Cl. 21.
Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu, Japan. 779,461, pub. 8–18–64. Cl. 36.
Nopco Chemical Co., d.b.a. Vitex Laboratories, Newark, N.J. 779,573, pub. 8–18–64. Cl. 46.
Norden Laboratories, Inc., Lincoln, Nebr. 779,343, pub. 8–18–64. Cl. 18.
North American Co. for Life, Accident and Health Insurance, The, Chicago, Ill. 779,638, pub. 8–18–64. Cl. 102.
North Electric Co., Galion, Ohio. 667,060, canc. Cl. 21.
Norwich Pharmacal Co., The, Norwich, N.Y. 779,344, pub. 8–18–64. Cl. 18.
Oelerich & Berry Co., Chicago, Ill. 667,183, canc. Cl. 46.
Olin Mathieson Chemical Corp.: *See*—
Ecusta Paper Corp.
Oneida Ltd., Oneida, N.Y. 779,401, pub. 8–18–64. Cl. 23.
One Wilkinson Avenue, Inc., Jersey City, N.J. 779,530, pub. 8–18–64. Cl. 44.
Orange Crush Co., Chicago, by Crush International Inc., Evanston, Ill. 189,039, 12(c) pub. 11–3–64. Cl. 45.
Organon Inc., West Orange, N.J. 779,366, pub. 8–18–64. Cl. 18.
Osborn Mfg. Co., The, Cleveland, Ohio. 779,410, pub. 8–18–64. Cl. 23.
Otis Elevator Co., New York, N.Y. 779,407, pub. 8–18–64. Cl. 23.
Ott Chemical Co., The, Muskegon, Mich. 779,267, pub. 8–18–64. Cl. 6.
Owatonna Tool Co., Owatonna, Minn. 779,422–3, pub. 8–18–64. Cl. 23.
Ox Fibre Brush Co., Inc., Frederick, Md. 779,451, pub. 8–18–64. Cl. 29.
P. & P. Products, Detroit, Mich. 667,201, canc. Cl. 52.
P.R. Features, Inc., New York, N.Y. 617,880, canc. Cl. 38.
Pacer Plumbing Products Co., Inc., Moberly, Mo. 779,318, pub. 8–18–64. Cl. 13.
Pacific Paper Products, Inc., Tacoma, Wash. 779,479, pub. 8–18–64. Cl. 37.
Palmer & Parker Co., Boston, Mass. 667,219, canc. Cl. 12.
Pangburn Co., Inc., Fort Worth, Tex. 779,665. Cl. 46.
Parade Dress Co., Inc., New York, N.Y. 779,508, pub. 8–18–64. Cl. 39.
Paul, Richard, Inc., Wilmington, Del. 779,492, pub. 8–18–64. Cl. 39.
Payne, Paula, Products Co., Charlotte, N.C. 779,621, pub. 8–18–64. Cl. 52.
Pay Way Feed Mills, Inc., Kansas City, Mo. 779,539, pub. 8–18–64. Cl. 46.
Pemco Wheel Co., Kalamazoo, Mich. 779,384, pub. 8–8–64. Cl. 19.

Peninsular Life Insurance Co., Jacksonville, Fla. 779,640, pub. 8–18–64. Cl. 102.
Penny-Pak, Inc., Danville, Ill. 779,594, pub. 8–18–64. Cl. 51.
Penny-Pak, Inc., Danville, Ill. 779,257, pub. 8–18–64. Cl. 4.
Pentron Electronics Corp., Chicago, Ill. 779,469, pub. 8–18–64. Cl. 36.
Pere, J. Thiriez J., & Fils & Cartier-Bresson, Societe a responsabilite Limitee, Lille, France. 442,180, canc. Cl. 43.
Pere, J. Thiriez J., & Fils & Cartier-Bresson, Societe a responsabilite Limitee, Lille, France 439,551, canc. Cl. 42.
Pere, J. Thiriez J., & Fils & Cartier-Bresson, Societe a responsabilite Limitee, Lille (Nord), France. 518,885, canc. Cl. 43.
Pfetsch, K. Alfred, d.b.a. K. Alfred Pfetsch Co., New York, N.Y. 779,629, pub. 8–18–64. Cl. 101.
Pfetsch, K. Alfred, Co.: *See*—
Pfetsch, K. Alfred.
Pharmaceuticals, Inc., from Lifetime Living, Inc., New York, N.Y. 667,039, canc. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 779,626, pub. 8–18–64. Cl. 100.
Physical Culture Products Co.: *See*—
May, Felix R.
Piedmont Shirt Co., Greenville, S.C. 667,133, canc. Cl. 39.
Pioneer Hi-Bred Corn Co., Des Moines, Iowa. 779,658. Cl. 1.
Pioneer Products Co., The, to The Hewitt Soap Co., Inc., Dayton, Ohio. 192,746, ren. 11–3–64. Cl. 52.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 779,330–1, pub. 8–18–64. Cl. 16.
Pittsburgh Waterproof Co., to Mamaux Supply Co., Pittsburgh, Pa. 189,919, 12(c) pub. 11–3–64. Cl. 42.
Planetary Sciences Inc., Santa Clara, Calif. 779,442, pub. 8–18–64. Cl. 26.
Plastoform Corp., Brooklyn, N.Y. 667,073, canc. Cl. 22.
Pliantform Foundations, Inc., The, New York, N.Y. 667,232, canc. Cl. 39.
Plymouth Wholesale Corp., New York, N.Y. 779,495, pub. 8–18–64. Cl. 39.
Pope & Talbot, Inc., San Francisco, Calif. 779,301, pub. 8–18–64. Cl. 10.
Post Publishing Co., The, Bridgeport, Conn. 193,679–81, 12(c) pub. 11–3–64. Cl. 38.
Prairie States Corp., Danville, Ill. 779,281, pub. 8–18–64. Cl. 6.
Prismo Safety Corp., Huntingdon, Pa. 779,590, pub. 8–18–64. Cl. 50.
Pronto File Corp., New York, N.Y., from Advance Data Systems Corp., Los Angeles, Calif. 779,434, pub. 8–18–64. Cl. 26.
Pronto File Corp., New York, N.Y., from Advance Data Systems Corp., Los Angeles, Calif. 779,633, pub. 8–18–64. Cl. 101.
Pro-Tex Inc., Houston, Tex. 779,528, pub. 8–18–64. Cl. 44.
Pyramid Leather Goods Co., Inc., New York, N.Y. 666,996, canc. Cl. 3.
Quaker Hair Goods Co., Philadelphia, Pa. 779,511, pub. 8–18–64. Cl. 40.
Quebec Metallurgical Industries Ltd., Ottawa, Ontario, Canada. 667,027, canc. Cl. 14.
Quinn, K. J., & Co, Inc., Malden, Mass. 408,628, 12(c) pub. 11–3–64. Cl. 4.
R and D Corp., Chicago, Ill. 779,533, pub. 8–18–64. Cl. 44.
Ralphabet Enterprises, Fresno, Calif. 779,632, pub. 8–18–64. Cl. 101.
Rapids-Standard Co., Inc., The, Grand Rapids, Mich. 779,431, pub. 8–18–64. Cl. 26.
Rau, Feinseifenwerk Walter, & Co., Stuttgart-Mohringen, Germany. 779,616, pub. 8–18–64. Cl. 52.
Reducine Co., Ltd., The, Dublin, Ireland. 779,375, pub. 8–18–64. Cl. 18.
Reed & Prince Mfg. Co., by Reed & Prince Mfg. Co., Worcester, Mass. 130,561, 12(c) pub. 11–3–64. Cl. 13.
Reed & Prince Mfg. Co., by Reed & Prince Mfg. Co., Worcester, Mass. 375,052, 12(c) pub. 11–3–64. Cl. 13.
Regie Nationale des Usines Renault, Billancourt, Seine, France. 667,059, canc. Cl. 19.
Reichhold Chemicals, Inc., White Plains, N.Y. 409,382, ren. 11–3–64. Cl. 5.
Reiter's Beer Distributors, Brooklyn, N.Y. 779,581, pub. 8–18–64. Cl. 48.
Reliance Mfg. Co., New York, N.Y. 779,490, pub. 8–18–64. Cl. 39.
Revlon, Inc., New York, N.Y. 779,339, pub. 8–18–64. Cl. 18.
Revlon, Inc., New York, N.Y. 779,513, pub. 8–18–64. Cl. 40.
Revlon, Inc., New York, N.Y. 779,670–4. Cl. 51.
Rhodiaceta, Societe, Paris, France. 779,516, pub. 8–18–64. Cl. 42.
Rhodiaceta, Societe, Paris, France. 779,525, pub. 8–18–64. Cl. 43.
Rhovyl, Societe, Paris, France. 779,524, pub. 8–18–64. Cl. 43.
Rhovyl, Societe, Paris, France. 779,515, pub. 8–18–64. Cl. 42.
R-H Products Co., Inc., South Acton, Mass. 779,262, pub. 8–18–64. Cl. 5.
Richmond Photomechanical Co., East Greenwich, R.I. 779,439, pub. 8–18–64. Cl. 26.
Ritchie Mfg. Co., Conrad, Iowa. 779,315, pub. 8–18–64. Cl. 13.
Ritchie Mfg. Co., Conrad, Iowa. 779,587, pub. 8–18–64. Cl. 50.
Rival Mfg. Co., Kansas City, Mo. 779,411, pub. 8–18–64. Cl. 23.
River Queen Boat Works, Inc., Gary, Ind. 779,385, pub. 8–18–64. Cl. 19.
Robertshaw & Co.: *See*—
Robertshaw, William R.
Robertshaw, William R., d.b.a. Robertshaw & Co., Phoenix, Ariz. 779,620, pub. 8–18–64. Cl. 52.
Robertson, James, Co.: *See*—
Tahitian Products Co. Inc.
Rocky Mountain Dental Products Co., Denver, Colo. 779,531, pub. 8–18–64. Cl. 44.
Roskin, I., Co., Inc., New York, N.Y. 667,100, canc. Cl. 28.
Rougier Inc., Montreal, Quebec, Canada. 779,619, 8–18–64. Cl. 52.
Roussel Corp., New York, N.Y. 779,340, pub. 8–18–64. Cl. 18.
Royal Zenith Corp., New York, N.Y. 779,408, pub. 8–18–64. Cl. 23.
Rudin & Roth, Inc., New York, N.Y. 779,510, pub. 8–18–64. Cl. 39.
Russack, Alfred J., d.b.a. Madison Chemical Co., White Plains, N.Y. 779,333, pub. 8–18–64. Cl. 16.
Rybert Printing Co.: *See*—
Rybert, Thomas F., & Co.
Rybert, Thomas F., & Co., to Thomas F. Rybert, d.b.a. Rybert Printing Co., Atlanta, Ga. 183,767, ren. 11–3–64. Cl. 37.
Rybert, Thomas F.: *See*—
Rybert, Thomas F., & Co.
Rykoff, S. E., & Co., Los Angeles, Calif. 779,279, pub. 8–18–64. Cl. 6.
Rykoff, S. E., & Co., Los Angeles, Calif. 779,472, pub. 8–18–64. Cl. 37.
S.C.A.R.P., Societe: *See*—
Kane, J. Warren, Inc.
Saben, Benjamin, d.b.a. Saben Safety Enterprises, Los Angeles, Calif. 779,482, pub. 8–18–64. Cl. 38.
Saben Safety Enterprises: *See*—
Saben, Benjamin.
Sargent & Co., New Haven, Conn. 779,425, pub. 8–18–64. Cl. 25.
Sauter, August, K.G., Ebingen Wurttemberg, Germany. 779,426, pub. 4–23–63. Cl. 26.
Savin Business Machines Corp., New York, N.Y. 779,291, pub. 8–18–64. Cl. 6.
Schappe A.G. (Schappe S.A.) (Schappe Ltd.), Geneva, Switzerland. 779,493, pub. 8–18–64. Cl. 39.
Schenley Industries, Inc., New York, N.Y. 779,580, pub. 8–18–64. Cl. 47.
Schering Corp., Bloomfield, N.J. 779,370, pub. 8–18–64. Cl. 18.
Schmid, Julius, Inc., New York, N.Y. 779,532, pub. 8–18–64. Cl. 44.
Scholin, Carl W.: *See*—
Scholin, Harold W., and Carl W. Scholin.
Scholin, Harold W., and Carl W. Scholin, d.b.a. Scholin Industries, Chicago, Ill. 779,398, pub. 8–18–64. Cl. 23.
Scholin Industries: *See*—
Scholin, Harold W., and Carl W. Scholin.
Schueler & Co., New York, N.Y. 667,163, canc. Cl. 44.
Schwartz, W. H., & Sons, Ltd., Halifax, Nova Scotia, Canada. 779,541, pub. 8–18–64. Cl. 46.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 779,583, pub. 8–18–64. Cl. 49.
Sep-Ko Chemicals, Inc., from Monarch Chemicals, Inc., Minneapolis, Minn. 779,617, pub. 8–18–64. Cl. 52.
Stecker Chemicals, Inc., Ho-Ho-Kus, N.J. 779,283, pub. 8–18–64. Cl. 6.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.
Shamrock Pool Equipment Co., Inc., El Monte Calif. 779,280, pub. 8–18–64. Multiple Class (Classes 6, 13, 21, 23, and 31).
Shattuck, Frank G., Co., New York, N.Y. 779,627, pub. 8–18–64. Cl. 100.
Shell Oil Co., New York, N.Y. 779,294, pub. 8–18–64. Cl. 6.
Sherman, Mary, Inc., St. Louis, Mo. 668,596, pub. 8–18–64. Cl. 51.
Sherwin-Williams Co., The, Cleveland, Ohio. 779,305, pub. 8–18–64. Cl. 11.
Shirley Fabrics Corp., New York, N.Y. 667,162, canc. Cl. 42.
Signode Corp., from Signode Steel Strapping Co., Chicago, Ill. 779,399, pub. 8–18–64. Cl. 23.
Signode Steel Strapping Co.: *See*—
Signode Corp.
Si-Lak Co., The, Hospers, Iowa. 667,045, canc. Cl. 18.
Simonite Co., Inc., The, Edinburg, Ind. 666,991, canc. Cl. 1.
Siris, A. J., Products, New York, N.Y. 667,000, canc. Cl. 3.
Skate-Sailing Association of America, Verona, N.J. 779,653, pub. 8–18–64. Cl. 200.
Sleepmaster Products Co., Inc., Newark, N.J. 409,026, ren. 11–3–64. Cl. 32.
Slurry Seal, Inc., Waco, Tex. 779,624, pub. 8–18–64. Cl. 100.
Southern California Muffler Corp., Culver City, Calif. 667,083, canc. Cl. 23.
Southern Instruments Ltd., Camberley, Surrey, England. 779,429, pub. 8–18–64. Cl. 26.
Southern Instruments Ltd., Camberley, Surrey, England. 779,264, pub. 8–18–64. Cl. 6.
Southwest Welding & Mfg. Co., Alhambra, Calif. 779,403, pub. 8–18–64. Cl. 23.
Specialty Engineering Corp., Dallas, Tex. 779,417, pub. 8–18–64. Cl. 23.
Speed-D-Burr Corp., Glendale, Calif. 667,210, canc. Cl. 52.
Spinks, H. C., Clay Co., Inc., Paris, Tenn. 779,250, pub. 8–18–64. Cl. 1.
Sprouse-Reitz Co., Inc., Portland, Oreg. 779,497, pub. 8–18–64. Cl. 39.
Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 408,613, ren. 11–3–64. Cl. 6.
Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 409,899, ren. 11–3–64. Cl. 4.

Stanley Works, The: *See*—
Wilbur & Williams Co., The.
States-Wide Economy Systems: *See*—
Bull, Abernathy G.
Strenol Products Ltd., London, England. 779,337, pub. 8–18–64. Cl. 18.
Strouse, Adler Co., The: *See*—
Strouse, Adler & Co.
Strouse, Adler & Co., to The Strouse, Adler Co., New Haven, Conn. 189,463, ren. 11–3–64. Cl. 39.
Stuart Co., The, Pasadena, Calif. 667,049–50, canc. Cl. 18.
Sullivan Co., The, Memphis, Tenn. 408,365, 12(c) pub. 11–3–64. Cl. 12.
Sunkist Growers, Inc., Los Angeles, Calif. 779,569, pub. 8–18–64. Cl. 46.
Sun Rubber Co., The, Barberton, Ohio. 667,189, canc. Cl. 50.
Superba Cravats, by Superba Cravats, Inc., Rochester, N.Y. 411,015, 12(c) pub. 11–3–64. Cl. 39.
Superba Cravats, Inc.: *See*—
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Sweden Freezer Mfg. Co., Seattle, Wash. 667,102, canc. Cl. 31.
Sweetheart Plastics, Inc., Wilmington, Mass. 779,253, pub. 5–19–64. Cl. 2.
Swinyar Enterprises, Inc., Collegedale, Tenn. 779,320, pub. 8–18–64. Cl. 13.
Tahitian Products Co., Inc., from James Robertson Co., El Segundo, Calif. 779,534, pub. 8–18–64. Cl. 45.
Tait Mfg. Co., The, Dayton, Ohio. 779,413, pub. 8–18–64. Cl. 23.
Tanbro Fabrics Corp., New York, N.Y. 779,517, pub. 8–18–64. Cl. 42.
Tandy Snacks, Inc., Orlando, Fla. 779,574, pub. 8–18–64. Cl. 46.
Taurus Records, Inc., Brooklyn, N.Y. 779,468, pub. 8–18–64. Cl. 36.
Teikoku Hormone Mfg. Co. Ltd., Minato-ku, Tokyo, Japan. 667,048, canc. Cl. 18.
Texaco Inc., New York, N.Y. 779,260, pub. 8–18–64. Multiple Class (Classes 4 and 52).
Texaco Inc., New York, N.Y. 779,326, pub. 8–18–64. Cl. 15.
Textron Inc., Rochester, N.Y. 779,430, pub. 8–18–64. Cl. 26.
Thomas Publishing Co., New York, N.Y. 779,443, pub. 8–18–64. Cl. 26.
Thompson, Robert C., d.b.a. The Trend Analyst, Glendale, Calif. 779,483, pub. 8–18–64. Cl. 38.
Timesavers Sanders, Inc., Minneapolis, Minn. 677,656, cor. Cl. 23.
Todd, A. M., Co., Kalamazoo, Mich. 779,289, pub. 8–18–64. Cl. 6.
Todd, A. M., Co., Kalamazoo, Mich. 779,565, pub. 8–18–64. Cl. 46.
Todd Chemical Co., Inc., Great Neck, N.Y. 779,295, pub. 8–18–64. Cl. 6.
Toni Co., The: *See*—
Gillette Co., The.
Tonnema N.V., Sneek, Netherlands. 779,346, pub. 8–11–64. Multiple Class (Classes 18 and 46).
Trend Analyst, The: *See*—
Thompson, Robert C.
Trimline Tackle Co. Inc., Bronx, N.Y. 667,066, canc. Cl. 22.
Triological Institute: *See*—
Muller, Otto.
True Mfg. Co., Inc., St. Louis, Mo. 779,453, pub. 8–18–64. Cl. 31.
Tussy Cosmetics: *See*—
Lehn & Fink Products Corp.
Tuthill Pump Co., Chicago, Ill. 779,404, pub. 8–18–64. Cl. 23.
U.S. Polychemical Corp., Spring Valley, N.Y. 779,329, pub. 3–26–63. Cl. 16.
Uhrenfabrik "Timex" Jaissle & Co., Pforzheim, Germany. 667,095, canc. Cl. 27.
Union Carbide Corp., New York, N.Y. 667,064, canc. Cl. 21.
Union Tank Car Co., Chicago, Ill. 779,480, pub. 8–18–64. Cl. 28.
United-Greenfield Corp., Chicago, Ill., from Wendt-Sonis Co., Hannibal, Mo. 779,396, pub. 12–11–62. Cl. 23.
United Hosiery Mills Corp., Chattanooga, Tenn., to Buster Brown Textiles, Inc., Wilmington, Del. 409,020, ren. 11–3–64. Cl. 39.
United Merchants and Manufacturers, Inc.: *See*—
Cohn-Hall-Marx Co.
United Sanitary Products Co. Inc., New York, to Creco Co., Inc., Long Island City, N.Y. 185,101, ren. 11–3–64. Cl. 52.
United Sheeplined Clothing Co., Inc., New York, N.Y. 779,500, pub. 8–18–64. Cl. 39.
United States Rubber Co., New York, N.Y. 779,286–8, pub. 8–18–64. Cl. 6.
United States Rubber Co., New York, N.Y. 411,394. Am. 7(d). Cl. 1.
Universal Shellac & Supply Co., Brooklyn, N.Y. 779,259, pub. 8–18–4. Cl. 4.
Univest, Inc., Temple City, Calif. 667,191, canc. Cl. 50.
Vaillancourt, E.: *See*—
Vaillancourt, Elzear J.
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Valley Fruit & Vegetable Co.: *See*—
Valley Fruit & Vegetable Co., Inc.
Valley Fruit & Vegetable Co., Inc., d.b.a. Valley Fruit & Vegetable Co., Pharr, Tex. 779,560, pub. 8–18–64. Cl. 46.
Varo, Inc., Garland, Tex. 779,449, pub. 8–18–64. Cl. 26.
Velsicol Chemical Corp., Chicago, Ill. 770,163–4, canc. Cl. 6.
Velsicol Chemical Corp., Chicago, Ill. 779,274, pub. 8–18–64. Cl. 6.
Velveray Corp., Passaic, N.J. 779,261, pub. 8–18–64. Cl. 5.
Velveray Corp., Passaic, N.J. 779,303, pub. 8–18–64. Cl. 11.
Verebes & Co., Ltd., London, England. 779,444, pub. 8–18–64. Cl. 26.
Vereinigte Papierwerke Schickedanz & Co., Nurnberg, Germany. 667,109, canc. Cl. 37.
Vi-Cly Industries, Inc., Compton, Calif. 779,332, pub. 8–18–64. Cl. 16.
Viking Corp., The, Hastings, Mich. 190,589, ren. 11–3–64. Cl. 23.
Visual Graphics Corp., New York, N.Y. 779,435, pub. 8–18–64. Cl. 26.
Vitex Laboratories: *See*—
Nepco Chemical Co.
Woodard, Viviane, Corp., Panorama City, Calif. 779,602, pub. 8–18–64. Cl. 51.
Woodard, Viviane, Corp., Panorama City, Calif. 779,609, pub. 8–18–64. Cl. 51.
Wagner Industries, Inc., Cicero, Ill. 779,575, pub. 8–18–64. Cl. 46.
Wallace & Tiernan Inc., Belleville, N.J. 779,369, pub. 8–18–64. Cl. 18.
Walton-March: *See*—
Fried, Jeffrey L.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 779,371, pub. 8–18–64. Cl. 18.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 779,379, pub. 8–18–64. Cl. 18.
Watkins, Jim, & Sons, Aptos, Calif., by Jim Watkins Co., Inc., Watsonville, Calif. 408,271, 12(c) pub. 11–3–64. Cl. 46.
Watkins, Jim, Co., Inc.: *See*—
Watkins, Jim, & Sons.
Watson, Russ and Helen, Denison, Iowa. 667,123, canc. Cl. 38.
Watts Regulator Co., Lawrence, Mass. 677,586, cor. Cl. 13.
Wayne, Symington, Corp., Salisbury, Md. 779,390, pub. 8–18–64. Cl. 39.
Wayne Candles, Inc., Fort Wayne, Ind. 779,562–3, pub. 8–18–64. Cl. 46.
Webb Publishing Co., The, St. Paul, Minn. 779,661. Cl. 38.
Wendt-Sonis Co.: *See*—
United-Greenfield Corp.
Werner, R. D., Co., Inc., Greenville, Pa. 779,586, pub. 8–18–64. Cl. 50.
Western Condensing Co.: *See*—
Foremost Dairies Inc.
Western Girl Inc., San Francisco, Calif. 779,636, pub. 8–18–64. Cl. 101.
Western Research Laboratories, Denver, Colo. 779,355–9, pub. 8–18–64. Cl. 18.
West Milford Sportswear, Inc., Pompton Lakes, N.J. 667,147, canc. Cl. 39.
Westminster Mfg. Co., Inc., The, New York, N.Y. 779,498, pub. 8–18–64. Cl. 39.
Weyerhaeuser Co., Tacoma, Wash., from Crocker Hamilton Papers, Inc., New York, N.Y. 779,477–8, pub. 8–18–64. Cl. 37.
Wheel Goods Corp., Minneapolis, Minn. 779,388, pub. 8–18–64. Cl. 19.
Whistle Stop Footwear: *See*—
Cohen, Simon.
Whitmoyer Laboratories, Inc., by Whitmoyer Laboratories, Inc., Myerstown, Pa. 434,873, 12(c) pub. 11–3–64. Cl. 18.
Whitmoyer Laboratories, Inc., by Whitmoyer Laboratories, Inc., Myerstown, Pa. 443,616, 12(c) pub. 11–3–64. Cl. 18.
Wikoff Color Corp., Charlotte, N.C. 779,304, pub. 8–18–64. Cl. 11.
Wilbur & Williams Co., The, Boston, Mass., to The Stanley Works, New Britain, Conn. 409,721, ren. 10–27–64. Cl. 16.
Wilbur & Williams Co., The, Boston, Mass., to The Stanley Works, New Britain, Conn. 409,581, ren. 11–3–64. Cl. 16.
Williamson Candy Co., d.b.a. Williamson Candy Co., Chicago, Ill. 779,566, pub. 8–18–64. Cl. 46.
Winslow Engineering and Mfg. Co.: *See*—
Maremont Corp.
Wolozin, M., Inc., New York, N.Y. 779,486, pub. 8–18–64. Cl. 39.
World Generator Co., South Holland, Ill. 779,392, pub. 8–18–64. Multiple Class (Classes 21 and 23).
Wright, Alfred, Perfumer, Inc., New York, N.Y., by Yardley & Co. Ltd., London, England. 188,428, 12(c) pub. 11–3–64. Cl. 51.
Wright, E., Co., Decatur, Ill. 779,452, pub. 8–18–64. Cl. 29.
Wyandotte Chemicals Corp., Wyandotte, Mich. 779,290, pub. 8–18–64. Cl. 6.
Yardley & Co. Ltd.: *See*—
Wright, Alfred, Perfumer, Inc.
Zelkowitz, Goldie, Brooklyn, N.Y. 779,648, pub. 8–18–64. Cl. 107.

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PATENTS

NOTICES

Public Law 88-619

[88th Congress, H.R. 945]
October 3, 1964

AN ACT

78 Stat. 995.

To improve judicial procedures for serving documents, obtaining evidence, and proving documents in litigation with international aspects.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 1621 of title 18, United States Code, is amended to read:

Courts. Judicial procedure, improvement. 62 Stat. 773. Penalty.

"§ 1621. *Perjury generally*

"Whoever, having taken an oath before a competent tribunal, officer, or person, in any case in which a law of the United States authorizes an oath to be administered, that he will testify, declare, depose, or certify truly, or that any written testimony, declaration, deposition, or certificate by him subscribed, is true, willfully and contrary to such oath states or subscribes any material matter which he does not believe to be true, is guilty of perjury, and shall, except as otherwise expressly provided by law, be fined not more than $2,000 or imprisoned not more than five years, or both. This section is applicable whether the statement or subscription is made within or without the United States."

Applicability.

SEC. 2. Section 3491 of title 18, United States Code, is amended to read:

"§ 3491. *Foreign documents*

"Any book, paper, statement, record, account, writing, or other document, or any portion thereof, of whatever character and in whatever form, as well as any copy thereof equally with the original, which is not in the United States shall, when duly certified as provided in section 3494 of this title, be admissible in evidence in any criminal action or proceeding in any court of the United States if the court shall find, from all the testimony taken with respect to such foreign document pursuant to a commission executed under section 3492 of this title, that such document (or the original thereof in case such document is a copy) satisfies the requirements of section 1732 of title 28, unless in the event that the genuineness of such document is denied, any party to such criminal action or proceeding making such denial shall establish to the satisfaction of the court that such document is not genuine. Nothing contained herein shall be deemed to require authentication under the provisions of section 3494 of this title of any such foreign documents which may otherwise be properly authenticated by law."

62 Stat. 945; 75 Stat. 413.

SEC. 3. The Act of July 3, 1930, 46 Stat. 1005, as amended by the Act of June 7, 1933 (48 Stat. 117; 22 U.S.C., secs. 270 through 270g), is repealed.

Repeal.

SEC. 4. (a) Chapter 113 of title 28, United States Code, is amended by inserting therein, after section 1695:

28 USC 1691-1695.

New Applications Received During September 1964		Issue—November 10, 1964			
Patents	7,119	Patents	940	No. 3,155,980 to No.	3,156,919, incl.
Designs	424	Designs	43	No. 199,514 to No.	199,556, incl.
Plant Patents	4	Plant Patents	1	No. 2,451	
Reissues	20	Reissues	9	No. 25,676 to No.	25,684, incl.
Total	7,567	Total	993		

"§ 1696. *Service in foreign and international litigation*

"(a) The district court of the district in which a person resides or is found may order service upon him of any document issued in connection with a proceeding in a foreign or international tribunal. The order may be made pursuant to a letter rogatory issued, or request made, by a foreign or international tribunal or upon application of any interested person and shall direct the manner of service. Service pursuant to this subsection does not, of itself, require the recognition or enforcement in the United States of a judgment, decree, or order rendered by a foreign or international tribunal.

"(b) This section does not preclude service of such a document without an order of court."

78 Stat. 996.

(b) The analysis of chapter 113 of title 28, United States Code, is amended by inserting:

"1696. Service in foreign and international litigation."

after:

"1695. Stockholder's derivative action."

62 Stat. 948. SEC. 5. (a) Section 1741 of title 28, United States Code, is amended to read:

"§ 1741. *Foreign official documents*

"An official record or document of a foreign country may be evidenced by a copy, summary, or excerpt authenticated as provided in the Federal Rules of Civil Procedure."

28 USC app. 28 USC 1731–1745. (b) The analysis of chapter 115 of title 28, United States Code, is amended by striking:

"1741. Foreign documents generally; copies."

and inserting in place thereof:

"1741. Foreign official documents."

Repeal. SEC. 6. (a) Section 1742 of title 28, United States Code, is repealed.

(b) The analysis of chapter 115 of title 28, United States Code, is amended by inserting after:

"1742. Land titles; foreign records."

the following:

"[Repealed]."

63 Stat. 103. SEC. 7. (a) Section 1745 of title 28, United States Code, is amended to read:

"§ 1745. *Copies of foreign patent documents*

"Copies of the specifications and drawings of foreign letters patent, or applications for foreign letters patent, and copies of excerpts of the official journals and other official publications of foreign patent offices belonging to the United States Patent Office, certified in the manner provided by section 1744 of this title are prima facie evidence of their contents and of the dates indicated on their face."

(b) The analysis of chapter 115 of title 28, United States Code, is amended by striking:

"1745. Copies of foreign patent specifications and drawings."

and inserting in place thereof:

"1745. Copies of foreign patent documents."

62 Stat. 949. SEC. 8 (a) Section 1781 of title 28, United States Code, is amended to read:

"§ 1781. *Transmittal of letter rogatory or request*

"(a) The Department of State has power, directly, or through suitable channels—

"(1) to receive a letter rogatory issued, or request made, by a foreign or international tribunal, to transmit it to the tribunal, officer, or agency in the United States to whom it is addressed, and to receive and return it after execution; and

"(2) to receive a letter rogatory issued, or request made, by a tribunal in the United States, to transmit it to the foreign or international tribunal, officer, or agency to whom it is addressed, and to receive and return it after execution.

"(b) This section does not preclude—

"(1) the transmittal of a letter rogatory or request directly from a foreign or international tribunal to the tribunal, officer, or agency in the United States to whom it

78 Stat. 997.

is addressed and its return in the same manner; or

"(2) the transmittal of a letter rogatory or request directly from a tribunal in the United States to the foreign or international tribunal, officer, or agency to whom it is addressed and its return in the same manner."

28 USC 1781–1785. (b) The analysis of chapter 117 of title 28, United States Code, is amended by striking:

"1781. Foreign witnesses."

and inserting in place thereof:

"1781. Transmittal of letter rogatory or request."

62 Stat. 949. SEC. 9. (a) Section 1782 of title 28, United States Code, is amended to read:

"§ 1782. *Assistance to foreign and international tribunals and to litigants before such tribunals*

"(a) The district court of the district in which a person resides or is found may order him to give his testimony or statement or to produce a document or other thing for use

in a proceeding in a foreign or international tribunal. The order may be made pursuant to a letter rogatory issued, or request made, by a foreign or international tribunal or upon the application of any interested person and may direct that the testimony or statement be given, or the document or other thing be produced, before a person appointed by the court. By virtue of his appointment, the person appointed has power to administer any necessary oath and take the testimony or statement. The order may prescribe the practice and procedure, which may be in whole or part the practice and procedure of the foreign country or the international tribunal, for taking the testimony or statement or producing the document or other thing. To the extent that the order does not prescribe otherwise, the testimony or statement shall be taken, and the document or other thing produced, in accordance with the Federal Rules of Civil Procedure. 28 USC app.

"A person may not be compelled to give his testimony or statement or to produce a document or other thing in violation of any legally applicable privilege.

"(b) This chapter does not preclude a person within the United States from voluntarily giving his testimony or statement, or producing a document or other thing, for use in a proceeding in a foreign or international tribunal before any person and in any manner acceptable to him."

(b) The analysis of chapter 117 of title 28, United States Code, is amended by striking:

"1782. Testimony for use in foreign countries."

and inserting in place thereof:

"1782. Assistance to foreign and international tribunals and to litigants before such tribunals."

SEC. 10 (a) Section 1783 of title 28, United States Code, is amended to read:

"§ 1783. *Subpoena of person in foreign country*

"(a) A court of the United States may order the issuance of a subpoena requiring the appearance as a witness before it, or before a person or body designated by it, of a national or resident of the United States who is in a foreign country, or requiring the production of a specified document or other thing by him, if the court finds that particular testimony or the production of the document or other thing by him is necessary in the

78 Stat. 998.

interest of justice, and, in other than a criminal action or proceeding, if the court finds, in addition, that it is not possible to obtain his testimony in admissible form without his personal appearance or to obtain the production of the document or other thing in any other manner.

"(b) The subpoena shall designate the time and place for the appearance or for the production of the document or other thing. Service of the subpoena and any order to show cause, rule, judgment, or decree authorized by this section or by section 1784 of this title shall be effected in accordance with the provisions of the Federal Rules of Civil Procedure relating to service of process on a person in a foreign country. The person serving the subpoena shall tender to the person to whom the subpoena is addressed his estimated necessary travel and attendance expenses, the amount of which shall be determined by the court and stated in the order directing the issuance of the subpoena." 62 Stat. 949. 28 USC app.

(b) The analysis of chapter 117 of title 28, United States Code, is amended by striking:

"1783. Subpoena of witness in foreign country."

and inserting in place thereof:

"1783. Subpoena of person in foreign country."

SEC. 11. Section 1784 of title 28, United States Code, is amended to read:

"§ 1784. *Contempt*

"(a) The court of the United States which has issued a subpoena served in a foreign country may order the person who has failed to appear or who has failed to produce a document or other thing as directed therein to show cause before it at a designated time why he should not be punished for contempt.

"(b) The court, in the order to show cause, may direct that any of the person's property within the United States be levied upon or seized, in the manner provided by law or court rules governing levy or seizure under execution, and held to satisfy any judgment that may be rendered against him pursuant to subsection (d) of this section if adequate security, in such amount as the court may direct in the order, be given for any damage that he might suffer should he not be found in contempt. Security under this subsection may not be required of the United States.

"(c) A copy of the order to show cause shall be served on the person in accordance with section 1783(b) of this title. Penalty.

"(d) On the return day of the order to show cause or any later day to which the hearing may be continued, proof shall be taken. If the person is found in contempt, the court, notwithstanding any limitation upon its power generally to punish for contempt, may fine him not more than $100,000 and direct that the fine and costs of the proceedings be satisfied

by a sale of the property levied upon or seized, conducted upon the notice required and in the manner provided for sales upon execution."

Repeal. SEC. 12. (a) Section 1785 of title 28, United States Code, is repealed.

(b) The analysis of chapter 117 of title 28, United States Code, is amended by striking: "1785. Privilege against incrimination."

Approved October 3, 1964.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 1052 (Comm. on the Judiciary).
SENATE REPORT No. 1580 (Comm. on the Judiciary).
CONGRESSIONAL RECORD, Vol. 110 (1964):
Jan. 20: Considered and passed House.
Sept. 24: Considered and passed Senate.

Board of Appeals Decisions Rendered in the Month of September 1964

Examiner affirmed	239
Examiner affirmed in part	31
Examiner reversed	91
Total	361

Citation of References

[807 O.G. 782]

To simplify listing of references on PO–98, changes are to be made, effective immediately, in the arrangement and content of the citation of references by the Examiner. The resulting uniformity will also benefit a new system to be implemented in November whereby a copy of each reference cited by the Examiner will be placed in the application file.

The data required by Rule 107 will be given in this sequence:

U.S. Patent No.[1]	Month and Year	Last Name of Patentee	Class and Subclass
Re. 20,707	10/57	Uebelhoide	266—46
3,112,123	2/63	Hoy	9—1

Foreign Ref. No.[2]	Month and Year of Reference	Country[3]	Class and Subclass
1,079,430	11/57	France	13—51
368,387	12/41	Great Britain	66—43

Other References: Listed as in the past but arranged alphabetically by author or, if no author is given, by title.

RICHARD A. WAHL,
Oct. 14, 1964. *Acting Superintendent of the Examining Corps.*

[1] U.S. Patents.—In strict numerical order regardless of whether Reissue, Design, etc., preceded by the customary abreviations such as "Re.," "D.," etc.
[2] Foreign References.—In strict numerical order under each country.
[3] Country.—List alphabetically.

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Examination of Applications

The following amended rule is adopted to take effect on publication. The text of this rule was published in the Federal Register for June 2, 1964 (29 F.R. 7150), and all persons who desired to were invited to submit written data, views arguments or suggestions in connection with the proposed rule. The rule is being adopted as proposed after full and careful consideration of all the material submitted.

Section 1.101 of Title 37 CFR (Patent Rule 101) is amended by deleting paragraph (b) thereof and replacing it with new paragraph (b) reading as follows:

§ 1.101 *Order of examination.*

* * * * *

(b) Applications which have been acted upon by the Examiner, and which have been placed by the applicant in condition for further action by the Examiner (amended applications) shall be taken up for action in such order as shall be determined by the Commissioner.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: September 21, 1964.
J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 64–9887; Filed, Sept. 29, 1964, 8:46 a.m.]

Published 29 F.R. 13470, September 30, 1964

Publication of Portions of Applications

1. The Notice of July 28, 1964, 804 O.G. 813, announced that portions of the disclosures of applications will be published in the OFFICIAL GAZETTE under certain conditions. The following constitutes instructions to Examiners and other employees of the Office in carrying out this practice.

2. a. A request for publication must be received while the application is pending and not under final rejection. It must state that the application is to be available to the public when published and must be accompanied by a formal abandonment of the application, which may be qualified to take effect on publication. A specific portion of the disclosure, and, in cases having drawings, a figure of the drawing must be designated.

b. A representative claim, if sufficiently detailed, should be used as the portion of the disclosure to be published. Otherwise, a specific portion of the specification, consonant with the selected figure should be designated in the request. Such specific portion, when necessary, may be taken from the brief summary of the invention, omitting unessential details and theoretical matters.

3. In no event will a request for publication avoid abandonment of an application for failure to respond to an outstanding Office action awaiting response by the applicant, but such abandonment will not prevent publication.

4. The papers are initially referred to the Examiner for consideration of (a) the formalities of the request, (b) whether or not there should be a publication, and (c) the nature of the material to be published as explained in paragraphs 5, 6 and 7 below. The Examiner will prepare a letter to be signed by a Primary Examiner to be sent to the applicant through the attorney or agent. In those cases ready for publication, the letters will be mailed to the applicants and the files, including the drawing, forwarded to the Issue and Gazette Branch. The papers will be entered in the file in the Examining Group. In those cases where it has been determined not to publish, the letters will be mailed but the correspondence, including the original request, will not become part of the record in the application file. These papers will be kept on file in the Office of the Group Supervisor.

5. If the Examiner finds that the request for publication does not comply with the requirements (see paragraph 2), the letter will advise applicant of the defects.

6. If the disclosure sought to be published appears to the Examiner to be purely fanciful, or inoperative or incomplete, publication should be denied by the Examiner; likewise, if the publication of *such disclosure* is deemed to be of no value or if it is fully met by readily available prior art. However, questions of patentability over the prior art should not be considered. If the Examiner recommends that there be no publication for any reason, the letter to the applicant mentioned in paragraph 4 will simply state that it has been determined not to publish any portion of the disclosure, without giving any reasons. The reasons, however, should be stated in a separate memorandum which together with the paper requesting publication will be filed as set forth in the last sentence of paragraph 4.

7. If the request for publication is not defective and the Examiner has not determined to recommend adversely, the material to be published must be considered as explained in paragraph 2. The letter prepared by the Examiner and sent to the applicant will state that the request for publication has been approved and an abbreviature will be published in the OFFICIAL GAZETTE. The letter will also indicate the classification of the abbreviature based on the material to be published.

8. The Issue and Gazette Branch will arrange for publication in the OFFICIAL GAZETTE of the selected material. This will appear in a separate section with a suitable heading stating that the portions of the applications are published and the complete files are available to the public upon written request. The selected material will be headed with the name of the applicant, and assignee if any, the title and classification of the invention, serial number and filing date of the application, the number of sheets of drawing and the number of pages of the original specification, and the date of publication.

9. After publication of the selected material, the files are returned to the Examining Group. Mounted copies of the publications will be prepared by the Service Branch of the Office of Patent Classification for use in the Examining Group and the in Public Search Room or Scientific Library.

10. In an application awaiting action by the Office in which a request for publication is filed, further action on the application by the Examiner will be suspended pending processing of the request. In the event that publication is not approved, suspension of action will be automatically lifted.

11. Care must be taken by the Examiner not to refer to these publications as patents or as applications. They may be designated and cited as follows:

Brown, abbreviature of application Serial No. ———— Published ————, ——— O.G. ——— (List classification as usual)

These abbreviatures will be used as printed publications effective only from the date of publication in the OFFICIAL GAZETTE.

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

Concur: Oct. 13, 1964.
C. A. KALK,
Director of Administration.

Foreign Patents Received in the Scientific Library as of September 30, 1964

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Sept. 23, 1964	45,036
(*Patents*)	Sept. 11, 1964	249,652
Austria	Sept. 25, 1964	235,474
Belgium	Oct. 16, 1962	573,100
Canada	Sept. 25, 1964	694,950
Czechoslovakia	Sept. 24, 1964	111,250
Denmark	Sept. 10, 1964	98,550
East Germany	Sept. 17, 1964	31,455
Egypt	Jan. 30, 1964	4,326
Finland	June 18, 1964	33,502
France:		
(*Patents*)	Sept. 23, 1964	1,361,600
(*Additions*)	Sept. 9, 1964	82,950
(*Medicaments*)	Aug. 14, 1964	1,950 M
(*Additions*)	May 4, 1964	28 CAM
Germany:		
(*Auslegeschriften*)	Sept. 1, 1964	1,173,400
(*Patents*)	Sept. 1, 1964	1,161,104
Great Britain	Sept. 24, 1964	969,620
India	July 1, 1964	85,192
Ireland	Mar. 5, 1964	23,892
Italy	Apr. 25, 1963	616,900
Japan	Sept. 21, 1964	16,800/64
Netherlands	Sept. 8, 1964	109,154
Norway	Sept. 9, 1964	104,282
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Aug. 17, 1964	48,367
Rumania	July 14, 1964	42,503
Sweden	Aug. 27, 1964	190,167
Switzerland	Sept. 25, 1964	380,055
U.S.S.R.	Sept. 8, 1964	163,463

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: Missing 1–10,000
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Patents Available for Licensing or Sale

2,551,149. Reel. Mrs. Clarence McCampbell, 19301 Parkmont Ave., Cleveland, Ohio, 44135.

3,036,504. Screw Conveyor Variable Limit Apparatus. M. D. Sayre, Atlantic, Iowa. Correspondence to: H. Robert Henderson, 1213 Savings & Loan Bldg., Des Moines, Iowa.

3,142,114. Method of Filling Fused or Burnt Portions and Cracks in Molds, Especially Ingot Molds, Consisting of Cast Iron or Hematite Iron. Gabelin & Co., Dusseldorf, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,150,836. Apparatus for Mixing and Milling Viscous Materials. Donald C. Krahe, 3614 Hillcrest Drive, Belmont, Calif., 94002.

3,150,883. Safety Trailer Hitch. Aurelio Sancioni, Rte. 1, Box 277, Corning, Calif.

General Electric Company is prepared to grant non-exclusive licenses under the following 7 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,144,628. Transformer With Winding Sections Connected in Series or Parallel.

3,148,372. Surge Voltage Recorder.

Applications for license under the following 2 patents may be addressed to: General Electric Company, Patent Counsel, Chemical and Metallurgical Division, 1 River Road, Schenectady, N.Y., 12305.

3,098,830. Polymeric Silazanes.

3,098,833. Organopolysiloxane Emulsion Containing a Curing Catalyst Comprising Zinc Stearate, a Metal Salt and an Alkanolamine-Fatty Acid Condensate.

Applications for license under the following 3 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Att: Patent Counsel.

2,830,262. Magnetic Core Test Apparatus.

3,051,535. Dry Lubricant Ball-Type Bearing With Non-Rotating Balls.

3,138,774. Electrical Induction Apparatus With Resiliently Supported Magnetic Core.

Disclaimers

Reissue No. 25,337.—*Willard Turner* and *Kenneth N. Wright*, Decatur, Ill. DRY FEED PRODUCT AND METHOD OF MAKING SAME. Patent dated Feb. 26, 1963. Disclaimer filed Aug. 7, 1964, by the assignee, *A. E. Staley Manufacturing Company*.

Hereby enters this disclaimer to claims 7, 19 and 20 of said patent.

3,134,718.—*Arthur Nobile*, Roseland, N.J. PREGNA-1,4-DIENES AND COMPOSITIONS CONTAINING SAME. Patent dated May 26, 1964. Disclaimer filed Aug. 17, 1964, by the assignee, *Schering Corporation*.

Hereby enters this disclaimer to claims 12, 16 and 19 of said patent.

3,136,910.—*Sam H. Kaplan*, Chicago, Ill. COLOR TELEVISION TUBE WITH A MAGNETIC FOCUS-MASK. Patent dated June 9, 1964. Disclaimer filed Aug. 14, 1964, by the assignee, *Zenith Radio Corporation*.

Hereby enters this disclaimer to claims 1, 3, 4 and 5 of said patent.

Oldest Date Cases in Groups

The OFFICIAL GAZETTE report of oldest cases in each Group has been found somewhat misleading.

The oldest *effective* filing dates recently reported reflect the status of only a few isolated cases, dates far behind the dates of the main body of work awaiting action in the Group. Further, due to lag in publication, examination of such cases under current practice usually has been completed before the report is published.

Accordingly, to better serve those for whose guidance the report is published, beginning with the issue of November 3, 1964, the dates reported are the *actual* filing dates of (1) the oldest case in the Group awaiting first action, and (2) the oldest case in the Group awaiting second or later action.

October 12, 1964.

RICHARD A. WAHL,
Acting Superintendent,
Patent Examining Corps.

PROPOSED NEW INTERFERENCE PRACTICE

It is proposed, by appropriate amendment to the Rules of Practice of the Patent Office, to institute interference practice substantially as set forth below. It is desired, prior to formulating specific rule changes, to obtain the opinions of all interested persons as to the desirability of taking such a step, together with any pertinent comments or suggestions. A public hearing will be held for this purpose on January 12, 1965, in Room 3886 of the Department of Commerce Building at 10:00 A.M. Statements relative to the proposed practice should be filed prior to the said date and will receive careful consideration.

Interferences will be under the sole jurisdiction of the Board of Patent Interferences and no motion or other proceeding in an interference will be handled directly by a Primary Examiner although the Board will consult such examiners in an advisory capacity when appropriate. The procedure employed in an interference between a pending application and a patent will differ to some extent from that employed in an interference between pending applications.

Interference between pending applications will be declared only when the parties are clearly claiming the same patentable invention. In such a case the Board of Patent Interferences, after consultation with the appropriate Primary Examiner, will declare the interference on the basis of all such counts as are necessary to cover the conflicting subject matter. No motion period will be set and motions to dissolve, amend or shift the burden of proof will not be entertained. The patentability of the counts will be carefully determined in advance and will not be subject to contest. If it becomes apparent that any count is unquestionably unpatentable, the Board of Patent Interferences may recommend to the Commissioner that the interference be dissolved as to such count. The right of a party to make the counts is ancillary to priority and will be reviewable at final hearing. When an interference is declared, care will be taken to see that counts adequately covering all common patentable subject matter to which the claims of the parties are directed are included, and accordingly, as above indicated, motions to amend will not be entertained.

Within a specified time after the declaration of the interference, each party will be required to submit his proofs of invention in affidavit form, including corroborating affidavits and all exhibits relied on. Preliminary statements as such will not be required but each party will be required to allege categorically as a part of his affidavit showing the earliest dates of the acts essential to establishing priority which he believes to be established by his proofs; and he will not be entitled to any date earlier than those alleged. Each party will be required to file his original affidavit showing, including documentary exhibits and any prior applications relied on for the record, and a copy for each opposing party. Physical exhibits will be deposited in the Patent Office and will be open to inspection of the parties.

The Board of Patent Interferences would be authorized to direct that the evidence be presented by testimony rather than in affidavit form if special circumstances justified such procedure, as for example if the issue was one of originality involving a clear conflict of evidence. In the event that an essential witness is hostile and refuses to make an affidavit, his testimony may be obtained by the procedure provided in Title 35, Section 24 of the United States Code.

After each party has filed his proofs, or the time set for filing them has expired, the copies last referred to will be mailed to the parties and the applications of opposing parties will be made accessible to them, as well as all exhibits filed as part of the proofs. A time will then be set for the filing of briefs by the parties, accompanied by copies for opposing parties and, when these have been received or the time for filing them has expired, the copies will be mailed and a time will be set for the filing of reply briefs, which will be handled in the same manner. An oral hearing will be set before the Board of Patent Interferences if either party so requests, and an award of priority will be made by that tribunal.

In the case of an interference between a patentee and a junior applicant, the preliminary procedure set forth in proposed amended Rules 204, 226 and 228, as published in 805 O.G. 5, will be followed. If the affidavit showing made by the applicant under that procedure is found sufficient prima facie, to overcome the effective filing date of the patentee, or if the applicant is the senior party, the interference will proceed substantially as explained above.

The issue of such an interference will ordinarily correspond exactly to one or more claims of the patent and in such a case, there will be no motion period. Any question of right to make a count will be decided after final hearing as a basis for an award of priority. If the applicant cannot make the patent claims verbatim but can make a corresponding slightly broader claim omitting one or more clearly immaterial limitations of the patent claims or if, even though he can make the patent claim verbatim, he establishes prior to the declaration of the interference that it is necessary in order for him to present his best proofs that the issue should comprise one or more broader claims differing from a corresponding patent claim only in immaterial respects, the interference will be declared on the basis of such modified claim or claims. In such a case, a motion period will be set solely for the purpose of enabling the patentee to be heard as to whether the modified claim or claims form a proper issue and if not what claims, if any, should be substituted for them. This motion period will be set immediately after it has been determined that the applicant's affidavit showing is sufficient to justify continuance of the interference, and the patentee will at that time be given access to the opposing application.

Upon expiration of the motion period and/or the final determination of any motions and any reformation of the issue which may be necessary or; if no motion period is to be set, upon approval of the preliminary statements, times will be set for the filing by both parties of their proofs in affidavit form and for the filing of briefs and reply briefs as above set forth in connection with interferences between applications. An affidavit showing previously filed by a junior applicant will be considered in this connection but since that showing was required only to antedate the patentee's filing date, the applicant will be allowed to present further affidavit proofs if he so desired.

In all interferences involving patents, preliminary statements will be required immediately upon declaration of the interference.

EDWARD J. BRENNER,
Commissioner of Patents.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 1, 1964

The List Below Reflects the Oldest Actual Filing Dates for Cases Awaiting Action; In Column 1 (New) and Column 2 (Amended)

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	1-31-63	6-28-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	7-13-64	9-28-53
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5- 8-63	8-12-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	3-31-58	1-27-54
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	8-30-62
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	4-29-63	8-22-62
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers, Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	8-26-64	9- 7-56
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	11-30-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	11- 4-58
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	2- 6-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	1-10-63	12-11-53
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	4-16-57	2-10-53
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	6-10-54
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	4-22-64	8-21-61

Total number of pending applications (excluding Designs)	212,033
Total number of Design applications pending	5,795
Total number of applications awaiting action (excluding Designs)	135,475
Total number of Design applications awaiting action	2,483
Date of oldest new application awaiting action	April 16, 1957
Date of oldest amended application awaiting action	Feb. 10, 1953

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,429,972 to 2,431,669, inclusive
Plant Patents ..... Numbers 766 to 767, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner... Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 6-63	11-28-62
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner..... Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	7- 3-62	3- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner..... Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	1-18-63	5-11-59
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	3- 3-58
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner..... Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	8- 9-64	8-17-61
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner..... Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	2-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner..... Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	6-10-64	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner..... Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	6- 5-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGO, Supervisory Examiner..... Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	6-16-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner..... Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	7-30-59
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-19-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner..... Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-19-63	1-13-58
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner..... Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10-16-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner..... Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-22-64	6-11-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner..... Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner..... Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	4- 1-63	9- 5-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner..... Industrial Arts; Household, Personal and Fine Arts.	12- 5-60	2- 5-64

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HEINRICH SCHOLLER

No. 7166. Decided June 11, 1964

[51 CCPA —; 332 F.2d 837; 141 USPQ 825]

1. PATENTABILITY—PROCESS—OBVIOUSNESS—COMMON KNOWLEDGE THAT INCREASED TEMPERATURE SPEEDS UP CHEMICAL REACTIONS.

In response to appellant's contention that the combination of Richter and Spencer would teach only the use of elevated temperature and pressure in the first stage of Richter's process, corresponding to the first stage of appellant's process, and that it would not be obvious to conduct the second stage of Richter's process, corresponding to the second stage of appellant's claimed process, under pressure at elevated temperature, *Held* that "It is apparent from a study of Richter that he recognizes that complete digestion of the cellulose in his second stage is dependent upon treating time, strength of treating liquid and reaction temperature," and that "In view of Spencer's disclosure of obtaining complete digestion of cellulose in a single stage by the use of elevated temperature and pressure, and in view of the common knowledge that increased temperature speeds up chemical reactions, it appears to us that it would be obvious to those skilled in the art to employ elevated temperatures in the second stage of Richter's process to insure completion of the digestion of cellulose by the cooking liquor."

2. SAME—PARTICULAR SUBJECT MATTER—PROCESS OF PRODUCING CELLULOSE FROM CELLULOSE-CONTAINING PLANT MATERIAL.

The decision of the Board of Appeals, refusing certain claims to a process of producing cellulose from cellulose-containing plant material, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 468,123.

AFFIRMED.

Michael S. Striker for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Scholler appeals from the Board's affirmance of the rejection of claims 35, 39, and 40 to 43 of his patent application.[1]

The invention relates to a process of producing cellulose from cellulose-containing plant material, such as wood, straw, etc., by digesting said material under pressure at elevated temperatures in two stages. In the first stage the raw material is treated with a cooking liquor of progressively increasing concentration of active ingredients under pressure at a raised temperature, until the raw material is partially digested to a predetermined extent. In the second stage digestion of the thus partially digested raw material is completed under pressure and at elevated temperature in counter current to a washing liquid. Fresh washing liquid contacts the substantially completely digested material and passes in counter current towards the material which has only been digested to the predetermined extent. During this passage the washing liquid is converted into a cooking liquor, the concentration of which progressively increases in the direction towards raw material in the predetermined partially digested state:

[1] Serial No. 468,123, filed November 10, 1954.

Claim 39 reads:

39. A process of producing cellulose from a raw material consisting essentially of cellulose-containing plant portions, comprising the steps of digesting said raw material under pressure at elevated temperature in counter-current flow with a cooking liquor, the concentration of active ingredients in said cooking liquor being progressively increased as the digestion progresses until said raw material is partially digested to a predetermined extent, said cooking liquor being utilized in a ration of at least 12 cubic meters of cooking liquor for each 1000 kg. of raw material calculated as dry weight; withdrawing a portion of at least partially spent cooking liquor from said partially digested raw material; introducing a portion of cooking liquor to said partially digested raw material; and passing said partially digested cellulose-containing material having cooking liquor adhering thereto in a second stage under pressure and at a temperature of between about 125° C. and 165° C. in counter-current to a washing liquid so that said partially digested cellulose-containing material is further digested with progressively decreasing concentrations of cooking liquor active ingredients until said cellulose-containing material is completely digested, thereby obtaining cellulose of uniform properties.

The references are:

Richter, 1,632,802, June 21, 1927.
Spencer, 1,690,954, November 6, 1928.

Richter discloses a two stage digestion of cellulose from cellulose-containing material by a continuous, counter current process with a flow arrangement of raw material and treating liquid similar to that being claimed.

Spencer discloses an essentially one stage process for digesting cellulose-containing material to extract cellulose. The process is conducted at elevated temperature and pressure in continuous counter current flow of raw material to a cooking liquor which contacts the most completely digested material at full strength, which strength is progressively reduced as it flows in counter current to successive portions of the raw material towards the point of entry of fresh, undigested raw material. Thus Spencer's process corresponds to the first stage of the claimed process except that Spencer completely digests the cellulose whereas Scholler partially digests it and completes the digestion in a second stage:

The Board stated:

The only feature of the appealed claims which is lacking in the Richter patent is that of carrying out the second stage digestion and washing at a temperature of 125° C. to 165° C. However, the Spencer patent adequately suggests that a digestion process be carried out under pressure at elevated temperatures, and appellant admits on page 14 of his brief, lines 4 and 5, that pressure digestion is old, such admission being consistent with the statement in the second paragraph of appellant's specification. In our opinion, it would be quite obvious to a person of ordinary skill in this art to utilize the well-known expedient of high pressure and temperature digestion in conjunction with the digestion process of Richter, including both stages of Richter's process, inasmuch as digestion takes place at both stages. • • •

[1] Scholler contends that at most the combination of Richter and Spencer would teach only the use of elevated temperature and pressure in the first stage of Richter's process, corresponding to the first stage of Scholler's process. In no event, Scholler maintains, would it be obvious to conduct the second stage of Richter's process under pressure at elevated temperature. Scholler argues that in the absence of elevated temperature during the second stage of Richter's process which corresponds to the second stage of the claimed process, digestion of cellulose from the already partially digested pulp will take place only to an extremely limited extent.

Richter states, however,

When a concentrated solution of caustic soda is employed in treating the fiber, only a relatively short treating period, say, five to ten minutes, at about room temperature, is necessary to produce an alpha fiber having characteristics rendering it especially applicable for viscose preparation.

When a relatively dilute solution of caustic soda is employed in treating the fiber, a longer treating period and an elevated temperature are necessary to produce fiber of the desired alpha cellulose content. • • •

Furthermore, as Scholler states in his brief, "It is well known that, broadly, the speed of chemical reactions doubles when the temperature is increased by about 10° C."

It is apparent from a study of Richter that he recognizes that complete digestion of the cellulose in his second stage is dependent upon treating time, strength of treating liquid and reaction temperature. In view of Spencer's disclosure of obtaining complete digestion of cellulose in a single stage by the use of elevated temperature and pressure, and in view of the common knowledge that increased temperature speeds up chemical reactions, it appears to us that it would be obvious to those skilled in the art to employ elevated temperatures in the second stage of Richter's process to insure completion of the digestion of cellulose by the cooking liquor.

[2] We appreciate appellant's arguments but are not satisfied that the Board erred in rejecting his application.

The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT MARSHALL STEWART AND EMORY P. BOYNTON

No. 7199. Decided June 25, 1964

[51 CCPA —; 333 F.2d 253; 142 USPQ 92]

1. CLAIM—UNDUE BREADTH—35 U.S.C. 112.

"Our review of appellants' specification makes it clear that the gist of the invention is finding a way to adapt *continuous* diffusion extraction to removing sugar from sugar *cane*. Appellants admit that *batch* diffusion of cane is old, as is *continuous* diffusion of sugar *beets*. While we agree with appellants that 'the disclosure is not limited to specified sizes of sugar cane pieces or specified densities of the diffusion liquid,' it cannot be gainsaid that the disclosed process deals *only* with sugar *cane* and more specifically a particular way to prepare cane for adaptation to *continuous* diffusion. Claims 11 and 16 define processes not even limited to sugar *cane*. We do not see how such claims point out *the invention* within the meaning of 35 U.S.C. 112."

2. SAME—SAME—SAME—OMISSION OF CRITICAL DIMENSIONS IN CLAIM.

"As to claim 18, which defines the material to be treated as 'divided sugar cane solids,' we are not convinced such claim particularly points out the invention as required by the statute since appellants' specification unequivocally says, 'The important factor is not so much the shape or configuration of the pieces of sugar cane, but the range of *dimensions substantially parallel to the stalk axis is critical*.' • • • Claim 18 fails to make any mention of this critical aspect of the disclosed invention."

APPEAL from the Patent Office. Serial No. 834,472.

AFFIRMED.

Mason, Kolehmainen, Rathburn & Wyss, Boris Haskell, Alfred B. Levine, Warren D. McPhee (*Nicholas M. Esser* of counsel) for appellants.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 11, 16 and 18 of application Serial No. 834,472, filed August 18, 1959, for "Continuous Diffusion Process."

The invention relates to a process for extracting sugar from sugar cane by continuous diffusion wherein slices of cane are contacted with hot water in a countercurrent liquid-solid extraction (leaching) process. The sole issue is whether appellants' claims define the invention in compliance with 35 U.S.C. 112, second paragraph.[1]

By way of background, the instant application is a continuation of an application filed in 1958 which in turn is a continuation-in-part of an application filed in 1955. After the Examiner had allowed ten claims in the 1958 application, a patent to Bruniche-Olsen issued, No. 2,885,311 of May 5, 1959. Desiring to provoke an interference therewith, appellants copied one claim therefrom (patent claim 3) as claim 11 in the instant application. Claims 16 and 18, though not copied from the Bruniche-Olsen patent, are similar to claim 11 which reads:

> 11. A continuous diffusion process, comprising a single treatment stage inclined to the horizontal and subject to continuous feed of liquid at one end, continuous feed of *divided solids* at its opposite end, and continuous discharge of spent pulp and enriched liquid at the respective ends of said stage opposite the points of their introduction, moving the solids upwardly along the inclination in a linear movement at a substantially uniform rate throughout the depth of the liquid body in a movement initiated by a succession of mechanical movements separately applied against any given portion of the solids with only a limited interval between such applications during which the movement of said solids continues from displacement of following solids responding to such mechanical movement, moving the liquid downwardly along the inclination in a gravity flow countercurrent to the solids movement, imparting a rotational component of movement to said solids in said linear movement, and interrupting the rotation of said solids at intervals along the course of solids movement so as to distribute the solids uniformly throughout the liquid. [Emphasis ours.]

Claims 16 and 18 differ from claim 11 in several respects, the most relevant to this appeal being that claim 16 recites "sucrose-containing solids" rather than "solids" broadly, while claim 18 recites "sugar cane solids."

Since the issue is whether the above claims comply with 35 U.S.C. 112, second paragraph, i.e., whether they "particularly point out and distinctly claim" the invention, we shall first consider appellants' disclosure to determine what it is appellants have invented.

Appellants' specification says previously known methods of extracting sugar from cane in which the cane is crushed and pressed are unsatisfactory since by crushing and pressing "substantial amounts of undesirable materials are expressed from the cane, along with the juice, and these remain in the juice as undesirable impurities." Further, it is pointed out that in extraction of sugar by diffusion rather than crushing and pressing, the cell walls of the cane are left intact, acting as semi-permeable membranes through which sugar may pass and "undesirable materials commonly found in raw cane juice are left in the cells to a considerable degree * * *."

Diffusion extraction of sugar from cane is not new. The specification cites a 1951 journal article which describes *batch* methods of diffusion extraction but says no *continuous* method is feasible. The specification notes also that sugar *beets* are susceptible to continuous

[1] The claims are also rejected on art, which rejection, for reasons hereinafter apparent, we find unnecessary to discuss.

diffusion extraction since they form a "slippery, self-lubricating mass when admixed with water" which is easily moved through a countercurrent flow system whereas cane, due to its physical shape and properties, is not so susceptible.

The essence of appellants' invention as described is finding a way to prepare cane stalks so that upon contact with water in countercurrent flow, high diffusion of sugar results while cane pulp is easily moved through the system. The specification says (emphasis ours):

> * * * sugar cane as it comes from the field is supplied to a cane slicing means * * * which cuts or chops the stalks of cane *transversely into uniform slices.* * * *
>
> * * * * * * *
>
> For optimum operation of the process, it is desirable that the sugar cane * * * disks or slices * * * [have] a diameter essentially equal to that of the diameter of the sugar cane stalk. For practical purposes thicknesses of less than about ½ inch (13 millimeters) are required. Preferably sugar cane disks ⅛ inch (3 millimeters) to ⅜ inch (9 millimeters) in thickness are used. The slices into which the cane is cut or divided are essentially disk-shaped because the cutting is done substantially transversely to the axis of the stalk. * * * *The important factor is not so much the shape or configuration of the pieces of sugar cane, but the range of dimensions substantially parallel to the stalk axis is critical.* It is necessary that the slices be not too thick, otherwise they resist both diffusion and transfer in suspension in water or sugar juice, and not too finely divided, otherwise the purity of the resulting diffusion juice is adversely affected and the material may pack into an immovable mass.

The specification further says continuous diffusion may be effected in "any apparatus capable of continuously transporting a suspension of cane slices countercurrent to a diffusion medium," one suggested apparatus being that described in Patent 2,950,998 of Stewart and Boynton, the instant appellants.

The Examiner allowed ten claims, all directed to the method of extracting sugar cane juice from sugar cane, in which claims at least cane slice dimensions and sugar juice concentrations are specifically defined. In some claims, temperatures and liquid-solid contact times are also recited.

The Examiner rejected claims 11, 16 and 18 as "failing to properly define the invention." The Board construed the rejection as "based on the ground that the appealed claims are broader than the disclosure." We take this rejection to be grounded on failure to comply with 35 U.S.C. 112, second paragraph.

The Board said (emphasis ours):

> The stated position of the Examiner is that appellants have made the size of the cane slices and the density of the sugar juice critical and essential features of their process. The Examiner considers claims which do not recite these critical limitations to be directed to a broader invention which does not have proper basis in appellants' disclosure. * * *
>
> * * * * * * *
>
> The description of the invention in the specification, including the conditions disclosed as being critical, may properly be assumed to set forth the best mode contemplated by the inventors of carrying out their invention. No basis is seen for now ignoring conditions previously stated to be critical.
>
> *The disclosure shows no conception by appellants of treating any material other than sugar cane, and in the treatment of cane the disclosure states that certain dimensions of the cane slices are critical.* The record * * * further indicate[s] that the density (Brix) of the juice is also a critical factor. Claims 11 and 16 are not even limited to treating sugar cane. All of the appealed claims omit the said critical factors of solids dimensions and Brix of the liquid. We agree with the Examiner that these claims are broader than the disclosure * * *.

The Board further said:

> Claim 11 stands rejected as lacking proper antecedent basis for the terminology "inclined to the horizontal." Appellants do not point out wherein there is antecedent basis in the instant specification for this language. * * * We are unable to adopt appellants' view that any apparatus, including a vertical one, which is not actually horizontal may properly be described as "inclined to the horizontal." * * *
>
> Claim 18 stands rejected as too broad in the expression "disposed at such an angle to the horizontal that the continuous feed of solids is against gravity." We will sustain this rejection. The quoted language would cover the use of a diffusion apparatus having its axis positioned at considerably less than 90° to the horizontal. As pointed out in the preceding paragraph, we are of the opinion that appellants do not have basis for such an arrangement.

Appellants argue that by this appeal they "assert their right to claim the subject matter comprehended by claim 3 [claim 11 herein] of the Bruniche-Olsen et al. * * * [patent]"; that "for highly technical reasons the Patent Office has stubbornly resisted any effort of appellants to claim the common subject matter"; that the "procedure disclosed by appellants would infringe claim 3 of Bruniche-Olsen et al. [which] * * * is an important factor in considering whether or not the invention of claim 11 * * * is disclosed in appellants' application"; that the Patent Office position that "because appellants have given detailed description of the preferred apparatus, materials preparation and operational steps to carry out the diffusion process, they are not entitled to generic patent claims on this process" is in error: and that their disclosure "is certainly as good as that of Bruniche-Olsen et al. and clearly is adequate to support the claim copied from Bruniche-Olsen et al."

We first point out that this is not an interference, we are not determining priority or right to make counts, and accordingly we are in no way concerned with the *disclosure* of the Bruniche-Olsen patent. Nor is it material that claim 3 of Bruniche-Olsen (claim 11 herein) may dominate appellants' invention. We are here concerned only with whether claims 11, 16 and 18 "particularly point out and distinctly claim" the invention which is disclosed in appellants' specification.

Notwithstanding appellants' arguments, we find no reversible error in the Board's decision. [1] Our review of appellants' specification makes it clear that the gist of the invention is finding a way to adapt *continuous* diffusion extraction to removing sugar from sugar *cane*. Appellants admit that *batch* diffusion of cane is old, as is *continuous* diffusion of sugar *beets*. While we agree with appellants that "the disclosure is not limited to specified sizes of sugar cane pieces or specified densities of the diffusion liquid," it cannot be gainsaid that the disclosed process deals *only* with sugar *cane* and more specifically a particular way to prepare cane for adaptation to *continuous* diffusion. Claims 11 and 16 define processes not even limited to sugar *cane*. We do not see how such claims point out *the invention* within the meaning of 35 U.S.C. 112.

[2] As to claim 18, which defines the material to be treated as "divided sugar cane solids," we are not convinced such claim particularly points out the invention as required by the statute since appellants' specification unequivocally says, "The important factor is not so much the shape or configuration of the pieces of sugar cane, but the range of *dimensions substantially parallel to the stalk axis is critical*." [Emphasis ours.] Claim 18 fails to make any mention of this critical aspect of the disclosed invention.

Finding the above ground of rejection to be well taken, we find it unnecessary to consider the other reasons for rejecting the claims relied on by the Patent Office.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE I. WILLIAM MCLEAN, JR. AND FREDERICK W. TRADER, JR.

No. 7101. Decided June 11, 1964

[51 CCPA —; 332 F.2d 580; 141 USPQ 799]

1. PATENTABILITY—AFFIDAVIT—AFFIDAVIT UNDER RULE 131.

In connection with the principal reference, Haas, and with respect to an affidavit of appellants under Rule 131, *Held* that "Appellants having shown by affidavit that 'they did everything done by [Haas] *prior* to the latter's publication date, they have overcome [Haas] as a valid ground of rejection,'" citing *In re Wilkinson*, 50 CCPA 701, 304 F.2d 673, 134 USPQ 171.

APPEAL from the Patent Office. Serial No. 505,548.

REVERSED.

Watson, Leavenworth, Kelton & Taggart, John T. Kelton (*George M. Richards, William H. Vogt III*, of counsel) for appellants.

Clarence W. Moore (*Joseph Schimmel* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

McLean and Trader appeal from the Board's affirmance of the rejection of all the claims of their patent application.[1]

The invention relates to poliomyelitis vaccine products and to a method for their preparation whereby the antigen from an original killed polio vaccine is adsorbed onto aluminum phosphate which is then separated from the mother liquor and resuspended in an aqueous medium. The liquid phase of the suspension constituting the final products is described as being substantially free of non-viral protein. The products are said to be more potent and more stable than the original vaccines from which the antigen was adsorbed.

Claims 10 and 16 read:

> 10. Process for producing a poliomyelitis vaccine product which comprises adsorbing the poliomyelitis virus antigen from a killed aqueous poliomyelitis vaccine containing at least one strain of human poliomyelitis antigen onto aluminum phosphate, separating the aluminum phosphate with the adsorbed poliomyelitis antigen from the liquid and resuspending the aluminum phosphate-antigen precipitate in an aqueous medium.
>
> 16. A poliomyelitis vaccine product comprising an aqueous suspension of at least one type of killed but antigenic poliomyelitis virus adsorbed on aluminum phosphate, the aqueous phase of said suspension being substantially free from non-viral proteins.

The references are:

Haas-Deutsche Med. Wochenschr, vol. 80, pp. 273–280, February 1955.
Ericsson Nature, Sept. 7, 1946, vol. 158, pp. 350–351.
Modern Drug Encyclopedia, 1952, 5th ed., p. 1140.
Li et al., Proc. Soc. Exptl. Biol. & Med., October 1954, pp. 148–157.
Modern Drugs, p. 745, January 1954.
Freund Annual Review of Microbiology, 1947, p. 295.

[1] Serial No. 505,548, filed May 2, 1955.

Haas discloses the use of aluminum hydroxide as an adjuvant [2] and states that its addition to a vaccine "is able to intensify many antigens in their immunization effect . . ." Haas also notes that with respect to polio vaccine the increased immunizing effect is not linearly proportional to the concentration of aluminum hydroxide.

Ericsson and Freund disclose that aluminum phosphate is an adjuvant for toxoids for the purpose of increasing immunologic responses.

Li et al. and the Modern Drug Encyclopedia references disclose the addition of a mixed vaccine of diphtheria, pertussis and tetanus antigens adsorbed on aluminum hydroxide to a live polio vaccine. The Modern Drugs reference discloses the adsorption of a mixed vaccine of diphtheria, pertussis and tetanus antigens on aluminum phosphate.

The Board held that in view of the secondary references showing the use of aluminum phosphate as an adjuvant to increase immunologic response, it would be obvious to substitute aluminum phosphate for the aluminum hydroxide adjuvant of Haas.

Appellants contend that Haas is not properly considered as a reference because of their affidavit under Rule 131, and that their invention is not obvious from the cited prior art.

The first issue in this case is the sufficiency of the affidavit and the Solicitor agrees that if the affidavit overcomes the Haas reference, the basis for the rejection is removed.

The affidavit of McLean and Trader discloses testing of their polio vaccine, prior to the date of the Haas reference, to the extent necessary to comply with the minimum requirements of the National Institutes of Health, Department of Health, Education and Welfare. The tests were conducted on the Rhesus monkey.

Although Haas discloses inoculation of human beings with "the poliomyelitis vaccine of the Behring Works" there is no indication that said vaccine contained aluminum hydroxide. A close analysis of Haas indicates that the Behring Works vaccine cannot be said to have necessarily contained any adjuvant. Thus in discussing "whether one can obtain adequate virus concentrations on the tissue cultures" Haas states

> • • • The following Table 2 gives an outline of the virus concentrations, determined on trypsinized Rhesus monkey kidney tissue, of the last 20 mixtures of poliomyelitis viruses from the *poliomyelitis-vaccine production of the Behring Works*. • • •

Subsequently, in discussing the Behring Works vaccine, the use of aluminum hydroxide as an adjuvant is disclosed and results of a series of tests on Rhesus monkeys inoculated with the Behring Works vaccine is given. The presence of the adjuvant in the Behring Works vaccine in those tests is clearly set forth.

[1] In the absence of a clear disclosure of the inoculation of human beings with the polio vaccine containing an adjuvant, we find our decision in *In re Wilkinson*, 50 CCPA 701, 304 F.2d 673, 134 USPQ 171, dispositive here. Appellants having shown by affidavit that "they did everything done by [Haas] *prior* to the latter's publication date, they have overcome [Haas] as a valid ground of rejection." *In re Wilkinson*.

Since Haas is not properly a reference the issue of obviousness becomes moot.

The rejection of all claims is reversed.

REVERSED.

[2] Adjuvant: one that helps or facilitates: as a: an ingredient (as in a prescription or solution) that facilitates or modifies the action of the principal ingredient • • •. Webster's Third New International Dictionary unabridged 1961.

U.S. Court of Customs and Patent Appeals

CHARLES B. SWAIN AND ALBERT G. SCHUESSLER *v.* BOB C. CRITTENDON

No. 7131. Decided June 11, 1964

[51 CCPA —; 332 F.2d 820; 141 USPQ 811]

1. INTERFERENCE—CONSTRUCTIVE REDUCTION TO PRACTICE—RIGHT TO MAKE.
   The Crittendon parent application in disclosing "sulfonated sperm oil" *Held* to support an award of priority of a count which calls for "sulfated sperm oil."
2. SAME—SAME—35 U.S.C. 120.
   Held that where an applicant alleges that he is entitled to rely upon a previously filed application under 35 U.S.C. 120, the parent application must comply with the first paragraph of 35 U.S.C. 112; and hence *Held* that "the crucial question is whether one skilled in the art would, with the disclosure of the Crittendon parent application at hand, be able to practice the invention defined by the counts."
3. SAME—SAME—SAME.
   "We are not here concerned with whether the Crittendon parent application contained a disclosure sufficient to support the grant of a patent thereon. E.g., *Loukomsky* v. *Gerlich*, 46 CCPA 805, 264 F.2d 907, 121 USPQ 213. Its legal significance here is whether it discloses the subject matter of the *present* counts. We think that it does."
4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—INTERFERENCE—MATTER BEFORE COURT.
   "• • • appellants have the later record date as to constructive reduction to practice of the subject matter defined by the counts; appellee has shown that, on the basis of the full supporting disclosures in his parent application, he was the prior inventor. It is possible, of course, that the Patent Office at some future time may decide, in an ex parte proceeding, that appellee is not entitled to these counts as claims in a patent. Such a question however, is not presently before us. We here decide only that *appellants* may *not* have such claims."

APPEAL from the Patent Office. Interference No. 90,431.

AFFIRMED.

Roy G. Story, *Edward T. McCabe* for appellants.

Ellsworth H. Mosher (*Sidney A. Johnson* of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

This appeal by Swain et al. from an award of priority to Crittendon raises the single issue of whether Crittendon is entitled under 35 U.S.C. 120 to rely upon the filing date of a parent application as establishing priority of invention. Resolution of this issue requires (1) a determination of whether the parent application contains in fact a disclosure of the subject matter of the counts, and (2) if so, a further determination of whether such disclosure is legally sufficient to support an award of priority.

Some historical background is required in order to understand the issue and how it arises here. Appellants' patent,[1] from which the present counts were copied, matured from an application [2] filed in the Patent Office on October 18, 1954. Appellee's application,[3] which is presently involved in this interference, was filed on September 8, 1958 as a continuation-in-part of an earlier filed application, the Crittendon parent,[4] filed April 8, 1954.

[1] No. 2,793,188, issued May 21, 1957, entitled "External Oil Phase Drilling Fluid Emulsions."
[2] Serial No. 463,036.
[3] Serial No. 759 433, for "Emulsion Drilling Fluid."
[4] Serial No. 421,953, for "Emulsion Drilling Fluid."

Upon declaration of the interference, appellants were made senior party on the basis of their October 1954 filing date. Appellee moved to shift the burden of proof on the ground that he was entitled to the April 1954 filing date of the Crittendon parent application under section 120. The Examiner denied appellee's motion to shift, holding that the counts were not properly supported by the disclosure of the Crittendon parent application.

On appeal, the Board of Patent Interferences overruled the Examiner on the question of whether there was proper support in the Crittendon parent application, and held that the motion to shift the burden of proof should have been granted. Since appellants took no testimony, but elected to rely on their October 1954 filing date, the Board awarded priority to appellee. On reconsideration, the Board adhered to its decision without change.

The invention defined by the counts relates to water-in-oil emulsions having application in well drilling, and to methods of drilling oil bearing formations using said emulsions as the drilling fluid. The drilling fluid contains solid particles dispersed or suspended therein and polyvalent metal salts of sulfated sperm oil as the emulsifying agent. The counts relate to a well drilling and completion fluid (counts 1 and 2) and to a method of drilling wells using such fluid (counts 3–6). The broadest counts of the two groups are counts 1 and 3, which read as follows:

1. A fluid having application as a well drilling and completion fluid comprising a water-in-petroleum oil emulsion, solid particles dispersed in said fluid, and an emulsifying agent comprising *a polyvalent metal salt of sulfated sperm oil.* [Emphasis added.]

3. A method of drilling oil-producing formations with a rotary bit comprising circulation of a drilling fluid to said bit and then to the well surface, said drilling fluid comprising a water-in-oil emulsion with finely divided solids suspended therein and an emulsifier comprising a *sulfated sperm oil salt of a bivalent metal.* [Emphasis added.]

The controversy here has its origin in the language we have emphasized in the above counts.

The disclosure in the Crittendon parent application, insofar as the emulsifier utilized in the drilling fluid is concerned, is broad and comprehensive. However, the four examples of the parent application each specify the use of a "sodium salt of *sulfonated* sperm oil." [Emphasis added.] As pointed out by the Board:

• • • The point of controversy has arisen because "sulfonated" rather than "sulfated" sperm oil is described in the parent case. The difference resides in the fact that in a sulfonate (in strict chemical parlance) the sulfur atom of the sulfonic acid group (SO_3H) is bonded directly to a carbon atom whereas in the case of the sulfated oils the sulfur atom is linked to carbon through an oxygen atom. The compounds are different, the former being a sulfonic acid (or salt) and the sulfate being an ester, either whole or half, or a salt thereof.

[1] Thus it is appellants' position, rejected by the Board, that the Crittendon parent application in disclosing "sulfonated sperm oil" will not support an award of priority of a count which calls for "sulfated sperm oil." We do not agree.

The emulsifier is described generically in the parent application as "a sulfuric acid derivative of an aliphatic ester." The parent specification further states that "By sulfuric acid derivative is meant the product obtained by reaction between any aliphatic ester and a sulfonating or sulfating agent."

The Examiner and the Board seemed to agree that the sulfuric acid derivative resulting from reacting sulfuric acid with sperm oil is a sulfate addition product and would be so regarded by persons skilled in this art. As the Examiner commented:

• • • it is well known in the art that the products formed by the "sulfonation" reaction of sulfuric acid and unsaturated vegetable oils (i.e. sperm oil) are not true *sulfonates* but rather sulfate addition products even though such products are variously termed "sulfonated" oil.

And, in referring to the above statement of the Examiner, the Board said:

The term "sulfonated" is often loosely used to refer to a sulfated oil. See, for example, paper No. 10 in the parent case, which includes a reproduction of a brochure by Swift and Co. (the senior party's assignee), wherein the term "sulfonated" is applied to sulfated sperm oil. See also Organic Chemistry (Fieser and Fieser, 3rd ed., p. 412) where at the middle of the page it is stated:

> The first synthetic compounds to compete with soap • • • *are sulfonated (actually sulfated)* oils made by treating unsaturated oils • • • with concentrated sulfuric acid. [Our emphasis.]

As appears in this standard work (also at the middle of the same page) "sulfonated castor oil," otherwise known as Turkey-red oil, is actually sulfated and not sulfonated. The Condensed Chemical Dictionary (5th ed., published by Reinhold Pub. Corp.) under "sulfonated oils" at page 1047 states with reference to animal or vegetable oils which have been treated with sulfuric acid:

> Chemically this trade term, sulfonated, is incorrect since the oils are sulfated (contain the $—OSO_2OH$ group and not the $—SO_2OH$ group).

We think, therefore, that the Board of Patent Interferences was correct in stating:

Accordingly, we are satisfied without doubt that sulfated sperm oil is supported in the parent disclosure. Swain et al. have presented nothing convincing to the contrary to overcome the prima facie effect of the Primary Examiner's ruling reproduced above. See *Henning* v. *Hunt*, 1955 C.D. 376 (390), 42 CCPA 1064, 106 USPQ 307. • • •

The further question remains as to whether such disclosure is legally sufficient to support an award of priority.

It is appellants' position that the Crittendon parent application fails to support the counts in that it disclosed and claimed not only a salt of a sulfonated (sulfated) sperm oil, but also a salt of a sulfonated aromatic hydrocarbon in admixture therewith. While this is true, the six counts involved herein are broad counts which do not exclude the presence of other ingredients in the composition. The broad "comprising" and "containing" terminology of the counts originated with appellants who, for purposes of the present interference, would now have the counts construed narrowly as though they had used the conventional narrow "consisting of" terminology.

Claims in the Crittendon parent application were rejected and the application was abandoned by a letter of abandonment dated January 23, 1963 without, however, abandoning the invention, which was transferred to the then copending continuation-in-part application here in issue. This abandonment occurred after declaration and during the pendency of the present interference. Appellants urge this abandonment apparently to establish that the parent application did not meet the requirements of 35 U.S.C. 112. In appellants' brief the position is thus stated:

The question as to whether the invention is adequately disclosed in the Crittendon parent application, as has been noted previously, was first raised while this application was before the Board of Appeals. All of the claims in the application had been finally rejected by the Primary Examiner as based upon an insufficient disclosure. In additon, there was a rejection based upon new matter and still another rejection based upon undue breadth in the appealed claims.

On April 30, 1957, the Board of Appeals notified Crittendon that the hearing on appeal would be held on September 25, 1958. On April 9, 1958, Crittendon

requested remand of the application from the Board of Appeals and also submitted an amendment under Rule 204 copying claims 1, 6, 9, 11, 12 and 13 of the Swain et al. Patent 2,793,188 into the Crittendon application. The Primary Examiner refused entry of the amendment on the ground that there is no basis in the disclosure of the parent Crittendon application for the claims copied from the patent. The Examiner held that the broadest recitation of the invention included an admixture of a salt of sulfonated aromatic hydrocarbon and an emulsifying agent (which may be a salt of sulfonated sperm oil). This refusal to enter the amendment and declare the interference was not appealed to the Board of Appeals but rather Crittendon elected to file a new application, designated a continuation-in-part application, on September 8, 1958. This application contained claims 29–34 corresponding to claims 1, 6, 9, 11, 12 and 13 of the Swain et al. patent. The Examiner held (Rp 37) that the interference could not be declared inasmuch as Crittendon could not rely upon the parent case since the disclosure therein was insufficient to support the claims and an affidavit under Rule 204 was required. When this affidavit was filed, the interference was declared.

* * * * * * *

It is appellants' contention that the Primary Examiner was correct and the Board of Patent Interferences was incorrect in their holdings with respect to the question whether the counts are supported in the parent Crittendon application. * * *

[2] First, we point out that, where an application alleges that he is entitled to rely upon a previously filed application under section 120, the parent application must comply with the first paragraph of 35 U.S.C. 112, which provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Hence, we think the crucial question is whether one skilled in the art would, with the disclosure of the Crittendon parent application at hand, be able to practice the invention defined by the counts.

[3] We are not here concerned with whether the Crittendon parent application contained a disclosure sufficient to support the grant of a patent thereon. E.g., *Loukomsky* v. *Gerlich*, 46 CCPA 805, 264 F.2d 907, 121 USPQ 213. Its legal significance here is whether it discloses the subject matter of the *present* counts. We think that it does.

In *Den Beste* v. *Martin*, 45 CCPA 798, 252 F.2d 302, 116 USPQ 584, we pointed out, with citation of authorities, that the disclosure in an application of a single species or example falling within the terms of an interference count is sufficient to constitute a constructive reduction to practice of the count.

In reversing the Board in *Loukomsky* v. *Gerlich*, supra, this court stated:

* * * The error of the Board resides in its having predicated its decision on the *priority* issue on whether Loukomsky was entitled to *claim* the process of the count. That question may very well have to be decided after the interference is over, but at this juncture the sole issue is whether Loukomsky is entitled to an award of priority which would deny the count to Gerlich. There is no dispute that Loukomsky has established the earlier date. Since we hold he is entitled to make the count for the purposes of this contest, he is entitled to the award of priority, which is to say, of course, that Gerlich is not entitled to a claim which reads on the prior disclosure of Loukomsky, whether or not Loukomsky is entitled to the same claim in a patent.

The Examiner attempted to distinguish the *Loukomsky* case, we think incorrectly, stating:

* * * the omitted component in each instance performed a function which was entirely distinct and independent from that of the component (or components) which was common to both parties and constituted the count of the interference. This is not the same situation as the present case wherein the essence of the invention in the 421,953 application is in the use of a mixture of emulsifiers and some sort of synergistic effect is apparently obtained as a result of this combination of emulsifiers.

We agree instead with the reasoning of the Board:

We believe that distinctness of function is not the proper test for determining whether the parent case discloses the invention of the counts and we find nothing in the cited cases which indicates that any such test was considered. It appears here that the Examiner's decision was predicated on what Crittendon is entitled to claim in the parent case, that is to say, on patentability. However, as clearly appears in the *Loukomsky* case, so far as the priority issue is concerned, this is a reversible error since priority must be determined on support in the parent case and is independent of patentability. It may well be that the counts would not be patentable in the parent case but this is not a proper question for decision by us and we express no opinion on the merits of the question.

[4] Thus, appellants have the later record date as to constructive reduction to practice of the subject matter defined by the counts; appellee has shown that, on the basis of the fully supporting disclosures in his parent application, he was the prior inventor. It is possible, of course, that the Patent Office at some future time may decide, in an ex parte proceeding, that appellee is not entitled to these counts as claims in a patent. Such a question however, is not presently before us. We here decide only that *appellants* may *not* have such claims.

For the foregoing reasons, the decision of the Board of Patent Interferences is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,381,678, F. R. Maxwell, AIRPLANE WING; **Re. 24,009**, R. W. Sitler, LOCKING KEY FOR ADJOINING CABINET UNITS, **filed** May 1, 1964, Ct. Cls., Doc. 122-64, *Frank R. Maxwell* v. *The United States*.

2,445,322(a), M. C. Fridolph, BODY GARMENT, **filed** Mar. 19, 1963, D.C., S.D.N.Y., Doc. 63/776, *Sarong, Inc.* v. *Willoform Mfg. Co., Inc.* Consent judgment; defendants enjoined May 19, 1964.

2,445,322(b); **2,707,280**, E. G. Mayer, GIRDLES, **filed** Jan. 15, 1963, D.C., S.D.N.Y., Doc. 63/159, *Sarong, Inc.* v. *Milady Brassiere & Corset Co., Inc.* Consent judgment; defendants enjoined June 4, 1964. **Same, filed** Nov. 16, 1962, D.C., S.D.N.Y., Doc. 62/3797, *Sarong, Inc.* v. *Lido Foundations, Inc.* Order of dismissal June 8, 1964.

2,491,646, H. M. Coleman et al., PROCESS FOR TREATING ANIMAL MATERIALS, **filed** July 11, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–833, *B. Heller & Co.* v. *First Spice Mfg. Corp.*

2,508,890, G. E. Rowe, APPARATUS FOR FORMING GLASSWARE; **2,508,891**, same, **filed** May 19, 1964, D.C., S.D.N.Y., Doc. 64/1544, *Emhart Manufacturing Company* v. *Contiental Can Company, Inc.*

2,508,891. (See 2,508,890.)

2,546,038, B. D. McIntyre, SHOCK ABSORBER CONSTRUCTION; **Re. 23,421**, R. H. Whisler, Jr., SHOCK ABSORBER; **Reg. No. 526,842** (MONROE), Monroe Auto Equipment Company, Shock absorbers for the following articles—namely, automobiles, trucks, busses, railway cars, and truck seats, **filed** Mar. 12, 1962, D.C. Kans. (Wichita), Doc. W–2600, *Monroe Equipment Company* v. *Precision Rebuilders, Inc.* Patents infringed; defendant enjoined; counterclaim dismissed Apr. 27, 1964.

2,554,844, L. M. Swift, CASING COLLAR LOCATOR; **2,967,994**, G. Peterson, CASING JOINT LOCATOR, **filed** Sept. 21, 1964, D.C., N.D. Tex. (Wichita Falls), Doc. CA–7–95, *Dresser Industries, Inc.* v. *Texas Perforating Company.*

2,566,409, L. M. Greene, VIBRATORY AIRCRAFT ALARMS OF THE ROTARY ECCENTRIC WEIGHT TYPE; **2,964,744**, same, WARNING SIGNAL FOR AIRCRAFT, **filed** Apr. 18, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–459–CC, *Safe Flight Instrument Corp.* v. *Lockheed Aircraft Corp. et al.* Stipulation and order of dismissal with prejudice May 22, 1964.

2,623,443, E. B. Robinson, MANUFACTURE OF HELICALLY WOUND TUBES; **2,712,778**, same, IMPROVEMENTS IN AND RELATING TO THE PRODUCTION OF HELICALLY WOUND CONTAINERS; **2,737,091**, same, METHOD OF MAKING HELICALLY WOUND CONTAINERS; **Re. 23,899**, same, METHOD OF PRODUCING HELICALLY WOUND CONTAINERS, **filed** May 25, 1964, D.C. Md. (Baltimore), Doc. 15596, *Robinson & Sons Limited et al.* v. *National Can Corporation.*

2,626,065, L. K. Sanders et al., AUTOMOBILE PARKING ELEVATOR, **filed** May 26, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–250, *Pigeon Hole Parking, Inc.* v. *Southwest Realty & Development Co., Inc., successor in interest to Pigeon Hole Parking of Texas, Inc.*

2,651,304(a), W. J. Browner, THERAPEUTIC ELECTRODE; **2,842,135(a)**, same, ELECTRICAL BODY TREATING DEVICE, **filed** May 19, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C198(3), *Relaxacizor, Inc.* v. *Bioelectronics Figurecare System.*

2,651,304(b); **2,842,135(b)**; **3,108,597**, Moss and Browner, GENERATOR FOR ELECTRONIC MUSCLE STIMULATOR, **filed** May 28, 1964, D.C., E.D. La. (New Orleans), Doc. 14583,

Relaxacizor, Inc. v. *Bio-Electronics of Louisiana.* **Same, filed** June 18, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1073, *Relaxacizor, Inc.* v. *Hale and Hearty, Inc. et al.*

2,673,374, A. Strahm, METHOD OF FABRICATING ARTICLES OF PLASTIC MATERIAL IN AT LEAST TWO MOLDING OPERATIONS, **filed** Mar. 19, 1963, D.C., S.D.N.Y., Doc. 63/771, *American Can Company* v. *Thatcher Glass Mfg. Co., Inc.* Stipulation and order of dismissal with prejudice May 14, 1964. **Same, filed** Mar. 19, 1963, D.C.N.J. (Newark), Doc. 232–63, *American Can Company* v. *Peerless Tube Co., Inc.* Order of dismissal May 28, 1964.

2,676,415, J. Love, WHEEL TESTING INSTRUMENT; **Reg. No. 575,119,** (ALIGN-A-MATIC), J. Love, Portable vehicle wheel toe-in and toe-out and camber indicator of the drive-over class, **filed** June 6, 1963, D.C.N.J. (Newark), Doc. 481–63, *Meyer Iglewitz et al.* v. *Paul Jacobson et al.* Order of dismissal May 28, 1964.

2,679,759, R. Gilmont, ABSOLUTE AND DIFFERENTIAL MANOMETER, **filed** Aug. 8, 1961, D.C., S.D.N.Y., Doc. 61/2799, *Manostat Corporation* v. *Roger Gilmont Instruments, Inc. et al.* Stipulation and order of discontinuance May 8, 1964.

2,680,513, Murphy and Schnall, CONTAINER TRAY FOR FRUIT UNITS; **2,706,038,** same, FRUIT CONTAINER; **2,708,027,** same, CONTAINER TRAYS FOR FRUIT UNITS; **2,708,028,** same, FRUIT CONTAINER; **2,712,383,** same, CONTAINER TRAYS FOR FRUIT UNITS, **filed** May 26, 1964, D.C.N.J. (Newark), Doc. 502–64, *Plast-O-Pak Corporation* v. *Gilbert Plastics, Inc.*

2,685,536, Starkey and Ransburg, METHOD FOR ELECTROSTATICALLY COATING ARTICLES; **2,794,417,** same, APPARATUS FOR ELECTROSTATICALLY COATING ARTICLES; **2,893,893,** W. W. Crouse, METHOD AND APPARATUS FOR ELECTROSTATIC COATING; **2,893,894,** E. M. Ransburg, same, **filed** Jan. 7, 1963, D.C. Oreg. (Portland), Doc. 63–9, *Ransburg Electro-Coating Corp.* v. *Nesag Neue Entluftungs & Spritztechnik A.C.* Judgment and decree as to defendants Harry T. Shuler, doing business as Harwell Co., Wm. McMickle and Modern Firescreens Co., enjoining them from making or using Nesag Spraytron, etc., and enjoining them from infringing Patent Nos. 2,685,536; 2,794,417; 2,893,893; and 2,893,894. **Same,** Re. 24,602, C. C. Simmons, ELECTROSTATIC METHOD AND APPARATUS FOR SPRAY COATING OF ARTICLES, **filed** June 1, 1964, D.C., N.D. Ind. (Hammond), Doc. 3909, *Ransburg Electro-Coating Corp.* v. *Sunbeam Lighting Co., Inc.-Eastern.*

2,706,038. (See 2,680,513.)

2,706,697, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS; **Re. 24,165**(*a*), same, **filed** Dec. 7, 1962, D.C.N.J. (Newark), Doc. 1015–62, *Technograph Printed Circuits, Ltd. et al.* v. *Electronic Associates, Incorporated.* Order of dismissal Sept. 22, 1964.

2,707,280. (See 2,445,322(*b*).)

2,708,027. (See 2,680,513.)

2,708,028. (See 2,680,513.)

2,712,383. (See 2,680,513.)

2,712,778. (See 2,623,443.)

2,734,479, E. O. Norris, CENTRIFUGAL SPRAYING COATING APPARATUS; **2,848,353,** same, METHOD AND APPARATUS FOR SPRAYING ARTICLES INCLUDING SEPARATION AND RECIRCULATION OF COATING MATERIAL, **filed** May 26, 1964, D.C. Del. (Wilmington), Doc. 2852, *The Gyromat Corporation* v. *Ekco Products Company, Inc.*

2,737,091. (See 2,623,443.)

2,759,010, Lorenz and Schrader, ALKYLMERCAPTOALKYL-O,O-DIALKYLDITHIOPHOSPHATE, **filed** Apr. 30, 1964, D.C., E.D. Tex. (Tyler), Doc. 391, *Chemagro Corporation* v. *Universal Chemical Company et al.*

2,777,926, M. E. Bourns, VARIABLE RESISTOR; **2,882,375,** M. E. Bourns, et al., VARIABLE RESISTOR CONSTRUCTIONS; **2,935,716,** M. E. Bourns, VARIABLE RESISTOR CONSTRUCTION, **filed** May 8, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–624–HW, *Bourns, Inc. et al.* v. *Atohm Electronics.*

2,794,417. (See 2,685,536.)

2,807,309, Saint and Thomas, MOTOR OPERATED SWING, **filed** Aug. 14, 1962, D.C., E.D. Pa. (Philadelphia), Doc. 31884, *Graco Metal Products, Inc.* v. *Swyngtyme Products, Inc.* Stipulation of dismissal without prejudice May 6, 1964.

2,828,194, Hopkins and Easley, ETCHING, **filed** Apr. 18, 1963, D.C.N.J. (Newark), Doc. 298–63, *The Dow Chemical Company* v. *Bell Photo Engraving Company.* Final consent judgment for injunction May 13, 1964.

2,838,592, F. Feketics, SHIELDING ENCLOSURES, **filed** June 26, 1962, D.C.N.J. (Camden), Doc. 536–62, *Shieldtron, Inc.* v. *Temperature Engineering Corp. et al.* Consent decree for injunctive relief in favor of plaintiff and against defendants May 22, 1964.

2,842,135. (See 2,651,304.)

2,848,353. (See 2,734,479.)

2,856,635, Gerson and Bruins, METHOD OF MANUFACTURING PLASTIC SHEET MATERIAL WITH PEARL ESSENCE INCORPORATED THEREIN, **filed** Jan. 12, 1962, D.C., S.D.N.Y., Doc. 62/207, *Patrician Plastic Corp.* v. *Emsig Manufacturing Co. et al.* Order of discontinuance May 20, 1964.

2,876,424, T. Stiler, TRANSFORMER, **filed** May 22, 1962, D.C., S.D.N.Y., Doc. 62/1835, *Ted Stiler* v. *Sinclair Refining Company.* Stipulation and order of dismissal without prejudice May 21, 1964.

2,882,375. (See 2,777,926.)

2,893,893. (See 2,685,536.)

2,893,894. (See 2,685,536.)

2,905,945, L. Winter, COLLAR CONSTRUCTION FOR SHIRTS, **filed** Jan. 26, 1962, D.C., S.D.N.Y., Doc. 62/445, *Snap-Tab Corporation* v. *Ide Manufacturing Co., Ltd.* Action dismissed May 21, 1964. **Same, filed** Aug. 26, 1964, D.C., S.D.N.Y., Doc. 64/2641, *Piedmont Shirt Co.* v. *Snap Tab Corp.* **Same, filed** Oct. 29, 1962, D.C., S.D.N.Y., Doc. 62/3578, *Mabs, Inc. et ano.* v. *Rob Roy Co.* Cause dismissed Sept. 24, 1964. **Same, filed** Nov. 21, 1962, D.C., S.D.N.Y., Doc. 62/3845, *Mabs, Inc. et ano.* v. *Charles Greenberg & Sons, Inc.* Cause dismissed Sept. 24, 1964. **Same,** Doc. 62/3846, *Mabs, Inc. et ano.* v. *Eagle-Friedman-Roedelheim Co.* Cause dismissed Sept. 24, 1964.

2,931,216, A. W. Rauth, SYSTEM OF TESTING GAS METERS, **filed** Dec. 4, 1963, D.C., E.D. Mich. (Detroit), Doc. 24684, *Adolph W. Rauth* v. *Michigan Consolidated Gas Company.* Stipulation and order of dismissal without prejudice May 26, 1964.

2,935,716. (See 2,777,926.)

2,964,744. (See 2,566,409.)

2,967,994. (See 2,554,844.)

2,977,902(*a*), E. H. L. Johannes, APPARATUS FOR TRIMMING AND CUTTING PREDETERMINED LENGTHS OF SPAGHETTI; **3,061,440,** same, PROCESS FOR MAKING SPAGHETTI, **filed** Nov. 14, 1962, D.C.N.J. (Camden), Doc. 950–62, *DeFrancisci Machine Corp. et al.* v. *Campbell Soup Company.* Consent judgment declaring defendant to have good title of patents in suit; said patents held valid and infringed May 15, 1964.

2,977,902(*b*), E. H. L. Johannes, APPARATUS FOR TRIMMING AND CUTTING PREDETERMINED LENGTHS OF SPAGHETTI, **filed** Nov. 27, 1961, D.C.N.J. (Camden), Doc. 1005–61, *DeFrancisci Machine Corporation et al.* v. *Campbell Soup Company.* Consent judgment declaring defendent to have good title to patents in suit; said patents held valid and infringed May 15, 1964.

2,987,636, I. Jepson, ELECTRIC MIXER; **3,077,340,** Jepson and Chambers, ELECTRIC MIXER, **filed** May 26, 1964, D.C. Conn. (New Haven), Doc. 10483, *Sunbeam Corporation* v. *The Iona Mfg. Co., Inc.*

3,036,390, J. H. Grossman, LIGHT-WEIGHT SHOE CONSTRUCTION, **filed** Feb. 18, 1964, D.C., S.D.N.Y., Doc. 64/530, *Penobscot Shoe Company* v. *Larutan, Inc.* Stipulation and order of dismissal May 21, 1964.

3,040,231, P. P. Biringer, SELF-BALANCING POWER SUPPLY SYSTEM HAVING A SINGLE PHASE OUTPUT ENERGIZED BY A MULTIPHASE SOURCE, **filed** Oct. 1, 1963, D.C., W.D.N.C. (Charlotte), Doc. 1821, *Ajax Magnethermic Corp.* v. *Allvac Metals Company*; consent decree; patent held valid and infringed June 1, 1964.

3,054,594, V. Hecht, CARBURETOR VALVE ASSEMBLY, **filed** June 29, 1964, D.C. Kans. (Wichita), Doc. W–3222, *ACF Industries, Incorporated* v. *Victor Hecht et al.*

3,061,440. (See 2,977,902(*a*).)

3,077,340. (See 2,987,636.)

3,083,517, R. W. Wilson, TOBACCO HARVESTER; **3,105,713,** F. J. Hassler, APPARATUS FOR BULK CURING TOBACCO; **3,110,326,** same, METHOD FOR BULK CURING TOBACCO, **filed** May 15, 1964, D.C., E.D.N.C. (Raleigh), Doc. 876, *Powell Manufacturing Company, Inc. et al.* v. *Long Manufacturing Company.*

3,105,713. (See 3,083,517.)

3,108,397. (See 2,651,304(*b*).)

3,110,326. (See 3,083,517.)

Re. 23,421. (See 2,546,038.)

Re. 23,899. (See 2,623,443.)

Re. 24,009. (See 2,381,678.)

Re. 24,165(*a*). (See 2,706,697.)

Re. 24,165(*b*), P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS, **filed** Dec. 20, 1961, D.C.N.J. (Newark), Doc. 1071–61, *Technograph Printed Circuits, Ltd. et al.* v. *Emerson Radio & Phonograph Corp.* Consent order of dismissal of complaint Sept. 21, 1964.

Re. 24,602. (See 2,685,536.)

Des. 189,004, F. Abel, COMBINED CAN OPENER AND SPOUT, **filed** Oct. 28, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–1315 WB, *The Huffman Manufacturing Company* v. *Hollywood Accessories, Inc.* Consent decree: defendant enjoined May 19, 1964.

Des. 195,401, J. Johnson, ARMCHAIR, **filed** July 16, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–837–CC, *Charlton Co. of Calif.* v. *Frank & Son, Inc.* Stipulation and order of dismissal with prejudice May 22, 1964.

REISSUES

NOVEMBER 10, 1964

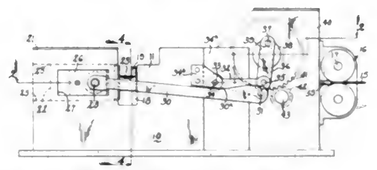
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,676
COLD HEADER DRIVES

Raymond H. Carlson, Rockford, Ill., assignor to Textron Industries, Inc., Rockford, Ill., a corporation of Delaware

Original No. 3,107,557, dated Oct. 22, 1963, Ser. No. 22,963, Apr. 18, 1960. Application for reissue May 4, 1964, Ser. No. 375,686

1 Claim. (Cl. 78—17)



A cold heading machine comprising:

a horizontally extending relatively light weight frame,

a die block fixedly positioned intermediate the opposite ends of said frame and having a substantially vertically extending face,

a horizontally extending working die mounted in the face of said die block and extending longitudinally of said frame,

a cutoff die mounted in said die block adjacent said working die,

a feed means mounted adjacent a first end of said frame on the opposite side of said die block with respect to the face thereof for feeding a length of stock in the horizontal direction through said cutoff die,

a gate mounted for reciprocal sliding movement in the horizontal direction in the second end of said frame opposite said first end and carrying a working tool thereon aligned with and for cooperation with said working die,

drive means for reciprocating said gate mounted on said first end of said frame, said drive means comprising a shaft rotatably journaled in said frame and extending transversely thereof and having a crank at each end thereof on opposite sides of said frame,

a pair of rocker levers journaled at one end each on said frame on the side of said die block opposite the face thereof and havng their free ends extending away from said die block toward said first end of said frame, the free ends of said levers being operatively connected through intermediate linkage to corresponding ones of said cranks for actuation thereby between a first position extending in a direction generally longitudinally of said frame to a second position extending at a substantial angle with respect to said longitudinal direction,

a pair of pitmans disposed exteriorly of the frame, one at each side thereof, each of said pitmans being connected at one end to opposite sides of said gate, the other *ends* of said pitmans being connected to the free ends of said levers whereby upon actuation of said levers to said first position said gate is pulled by said pitmans into a working position immediately adjacent said die block and as said levers are moved to said second position said gate is actuated to an inoperative position away from said die block,

a knockout pin extending horizontally of said die block and longitudinally of said frame and having a portion thereof extending into said working die,

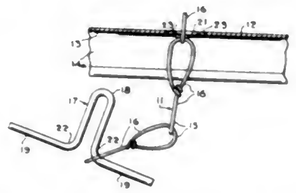
and actuating means for said knockout pin mounted intermediate said frame and means operatively connected to said drive means for operating said actuating means.

25,677
PLAY SWING

Daniel P. Grudoski, Hartstown, Pa., assignor to Blazon, Inc., Cuyahoga Falls, Ohio, a corporation of Ohio

Original No. 3,088,734, dated May 7, 1963, Ser. No. 130,135, Aug. 8, 1961. Application for reissue Aug. 6, 1963, Ser. No. 300,400

2 Claims. (Cl. 272—85)



5. A play swing for suspension from an overhead support, comprising: a seat having laterally spaced apertures through laterally opposite marginal portions thereof; a pair of elongated suspension elements adapted to be swingably suspended in laterally spaced relation from the overhead support, and including connected chain links at lower ends thereof, each said seat aperture being of size and shape adapted to limit the connected chain links of the respective suspension element to be freely slidable lengthwise therethrough in either direction; and a pair of hangers; each said hanger being a single length of rigid wire material of uniform cross-section, formed to provide a central loop defined by spaced side portions inturned from a connecting outer end of the loop, and further providing oppositely out-turned terminal end portions, there being a space between said side portions opening outwardly at junctures thereof with said terminal end portions, but the width of the loop otherwise permitting free endwise projection thereof upwardly through a said seat aperture until said terminal end portions supportingly engage the underside of the corresponding said marginal portion of the seat and a substantial extent of the loop is freely presented above the seat; the uniform cross-section of said hanger permitting free passage of an end portion endwise through a selected chain link of the respective suspension element and the spacing between its side portions permitting reception of a lower portion of the selected link to provide supporting engagement of the selected link with said outer end of the loop whereby the connected chain links of the suspension elements are separately freely slidable through their respective seat apertures toward supporting engagement of the hangers within selected links of their respective suspension elements, and supporting engagement of the seat on the terminal end portions of the hangers; said marginal portions of the seat having downturned extensions adjacent the respective said apertures to be engageable by said terminal end portions of the corresponding said hangers in seat-supporting positions thereof, and thereby adapted to limit turning movement of the hangers in said apertures in either direction with respect to the seat.

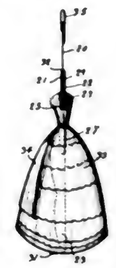
25,678
TAKE-APART DOLL WITH DETACHABLE GARMENTS

Robert Risler, Paris, France, assignor to Cragstan Corporation, New York, N.Y., a corporation of New York

Original No. 2,964,873, dated Dec. 20, 1960, Ser. No. 776,050, Nov. 24, 1958. Application for reissue Dec. 17, 1962, Ser. No. 245,642

Claims priority, application France, Dec. 26, 1957, 754,630

3 Claims. (Cl. 46—22)



2. A doll comprising a first part having a portion shaped to represent a trunk in three dimensions, said first part having a transverse slot extending across the upper portion thereof, a second part of flat material having a front portion shaped to represent arms, a centrally disposed folded back portion and a slot between said folded back portion and said front portion, a third part of flat material shaped to represent a head and having a depending end-piece, an apertured garment part to cover at least partially said second part, said end-piece extending through said garment part and said slot in said second part and between the front and rear portions thereof, said second and third parts together with said garment part being received in said transverse slot in the upper portion of said first part.

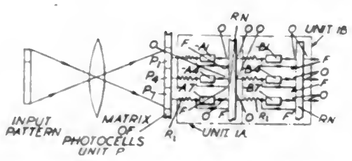
25,679
SYSTEM FOR ANALYSING THE SPATIAL DISTRIBUTION OF A FUNCTION

Wilfred Kenelm Taylor, Richmond, Surrey, England, assignor, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original No. 3,016,518, dated Jan. 9, 1962, Ser. No. 565,272, Feb. 13, 1956. Application for reissue Mar. 22, 1962, Ser. No. 183,989

Claims priority, application Great Britain, Feb. 14, 1955, 4,385

21 Claims. (Cl. 340—146.3)



18. An apparatus for recognizing patterns comprising, in combination:

a plurality of input terminals;

a plurality of connection points;

a plurality of output terminals;

means for applying pattern-dependent signals to the input terminals;

a first impedance matrix means for coupling each input terminal with at least two connection points and for coupling each connection point with at least two input terminals;

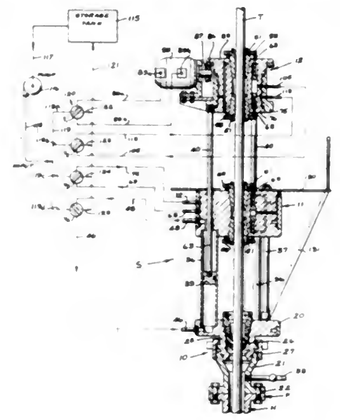
and a second impedance matrix means for coupling each connection point with at least two output terminals and for coupling each output terminal with at least two connection points.

25,680
HYDRAULIC PIPE SNUBBER FOR OIL WELLS

Cicero C. Brown, Houston, Tex., assignor to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas

Original No. 3,096,075, dated July 2, 1963, Ser. No. 74,977, Dec. 9, 1960. Application for reissue Aug. 2, 1963, Ser. No. 300,143

9 Claims. (Cl. 254—29)



9. In a pipe snubber, including a stationary lower snubbing member, a movable upper snubbing member vertically reciprocable relative to the lower snubbing member, and fluid pressure means for reciprocating said upper snubbing member, each of said snubbing members comprising, a body having a through bore to receive a pipe, separate sets of radially gripping pipe-gripping wedges mounted in the opposite end portions of each of said bores for reciprocative longitudinal and radial movement therein into and out of pipe-gripping positions, and means including fluid pressure-actuated means in each of said snubbing members operatively connected to the sets of pipe-gripping wedges in each snubbing member for moving both sets of wedges therein simultaneously into and out of radial pipe-gripping position.

25,681
MARKING DEVICE FOR DIFFERENTIALLY COATED TIN PLATE

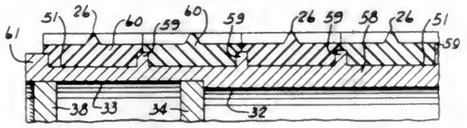
Ralph A. Pannier, McCandless Township, Allegheny County, Pa., assignor to The Pannier Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,119,329, dated Jan. 28, 1964, Ser. No. 91,185, Feb. 23, 1961. Application for reissue June 17, 1964, Ser. No. 388,027

3 Claims. (Cl. 101—375)

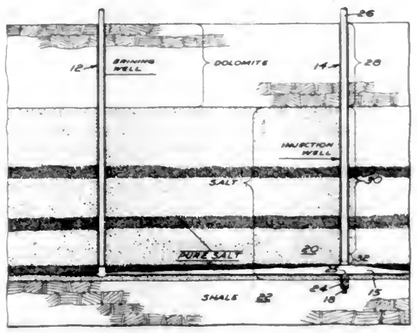
2. A device for continuously marking the surface of continuously moving strip material which consists of a drum to be mounted for rotation adjacent the continu-

ously moving strip material and having annular seating surface means transversely across said drum, a transverse slot means in said seating surface means, a plurality of flexible and expansible continuously annular independent elastomer printing bands each of uniform width materially narrower than the transverse extent of said seating surface means, each independent elastomer printing band having an internal diameter smaller than the diameter of said seating surface means and expansible to be stretched and placed thereon to grip said seating surface means, each independent elastomer printing band having a body section with an outwardly extending section terminating in a printing surface that cooperates with the printing surfaces of adjacent independent elastomer printing bands, an inwardly projecting transverse locking lug



means on the inner surface of each independent elastomer printing band to intermesh in said transverse slot means to lock said independent elastomer printing bands and laterally align their printing surfaces in cooperative relation, said annular independent elastomer printing bands covering said annular seating surface means, the adjacent cooperative printing surfaces of adjacent independent elastomer printing bands forming a printing design laterally and annularly to print longitudinal and lateral printing design on the continuously moving strip.

25,682
METHOD OF WELL COMPLETION
Charles H. Jacoby, Dearborn, Mich., assignor to The International Salt Company, Inc., Scranton, Pa.
Original No. 3,064,957, dated Nov. 20, 1962, Ser. No. 807,449, Apr. 20, 1959. Application for reissue Jan. 22, 1964, Ser. No. 350,929
7 Claims. (Cl. 299—4)



5. The method of mining a subterranean soluble [salt] *mineral* deposit, which method includes

(a) driving a well through said soluble [salt] *mineral* deposit and into the strata therebelow,

(b) sealing the bottom of the well by plugging back the well to a level within the region of the soluble [salt] *mineral* deposit,

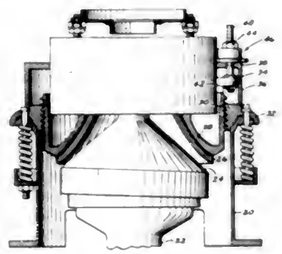
(c) inserting a casing into said well which is of smaller diameter than the well and to a point just above the plug in the well bottom,

(d) sealing between the casing and well by forcibly introducing cement through said casing to seal between the casing and well upwardly from said plug,

(e) cutting away the cement to expose a small vertical portion of said soluble [salt] *mineral* deposit in an area thereof between said plug and the bottom of the casing after the plug and at least a lowermost portion of the cement around the casing has hardened and without disturbing the stated seals at areas either above or below the exposed portion,

(f) then applying a splitting and uplifting pressure to said [salt] *soluble mineral* deposit at said exposed portion thereof so that such force is confined solely at the exposed region, preparatory to introduction of a [salt] *soluble mineral* solvent fluid into the split area.

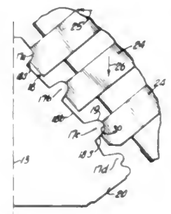
25,683
CRUSHER BOWL LOCKING MEANS
Mercer M. Dorsey, Ajo, Ariz., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Original No. 2,972,448, dated Feb. 21, 1961, Ser. No. 751,784, July 29, 1958. Application for reissue Jan. 25, 1963, Ser. No. 254,034
3 Claims. (Cl. 241—286)



3. In a gyratory crusher, a circumferential main frame, a supporting ring releasably mounted on the main frame, a concave supporting element screw-threaded into the supporting ring and adapted to be rotated therein, a cone mounted in the frame for gyratory movement defining a crushing cavity with the concave supporting element, rotation of the concave supporting element being effective to vary the size of the crushing cavity, an annular top enclosure connected to the concave supporting element to rotate therewith and supported on the supporting ring, the enclosure having a generally horizontal upper shelf spaced above the supporting ring, a plurality of fluid operated pressure applying piston and cylinder assemblies spaced about the crusher and mounted on the top enclosure to rotate therewith above the concave supporting element and supporting ring, the cylinders of the assemblies being mounted on and extending above the shelf, means extending through the shelf and operatively connected to the concave supporting element and the pistons so that the assemblies are effective to apply a generally vertical thrust, as a group, upward on the concave supporting element and downward on the supporting ring through the top enclosure to remove thread clearance between the concave supporting element and supporting ring, and conduit means connecting said pressure applying assemblies to a common pressure fluid source.

25,684
METHOD OF MAKING ROCK BIT CUTTER
John B. Coulter, Jr., Fort Worth, Tex., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Original No. 3,003,370, dated Oct. 10, 1961, Ser. No. 3,314, Jan. 19, 1960, which is a division of Ser. No. 595,982, July 5, 1956, now Patent No. 2,927,778, dated Mar. 8, 1960. Application for reissue Sept. 11, 1963, Ser. No. 308,295
7 Claims. (Cl. 76—108)

5. The method of making a roller cone for an earth boring drill which comprises: turning a steel cone blank about its axis while feeding a plurality of forming tools with straight cutting edges toward the blank to cut circumferential grooves therein separated by ridges, each ridge in longitudinal section having outwardly tapering straight sides and having a sharp corner at the outer edge of each side; supporting cutting tool means for straight line movement inwardly and outwardly relative to the axis of the cone blank, the cutting tool means having curved cutting edge means to engage said sharp corners upon such inward movement; and effecting relative rotation between the cone blank and the cutting tool



means while forcing the latter inwardly against each ridge to mill the sharp corner of each ridge and change it to a rounded shape conforming in section with the curvature of the cutting tools means.

PLANT PATENTS

GRANTED NOVEMBER 10, 1964

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,451
PEONY PLANT
Carl G. Klehm, 6 E. Algonquin Road, Arlington Heights, Ill.
Filed July 1, 1963, Ser. No. 292,171
1 Claim. (Cl. Plt.—68)

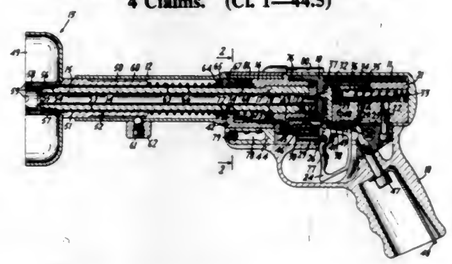
A new and distinct variety of peony plant characterized by its extremely large size of bloom, its distinct color, and the robust heartiness of the plant as shown and described herein.

PATENTS

GRANTED NOVEMBER 10, 1964

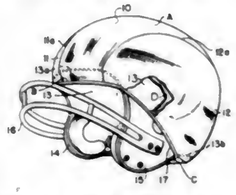
GENERAL AND MECHANICAL

3,155,980
POWDER ACTUATED TOOL
Lester F. Mulno and Richard H. Maynard, Newburgh, and William A. Eager, Cornwall on the Hudson, N.Y., assignors to Star Expansion Industries Corporation, Mountainville, N.Y., a corporation of Delaware
Filed Jan. 19, 1962, Ser. No. 167,402
4 Claims. (Cl. 1—44.5)



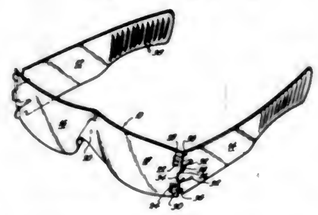
4. A powder actuated tool for driving a fastener into a workpiece comprising a barrel housing, a breech block housing, a barrel rigidly supported in the barrel housing having a breech end receivable within the breech block housing adapted to receive a powder charge, a breech block rigidly mounted within the breech block housing and engageable with the breech end of the barrel means by relative axial and rotational motion therebetween, firing pin means supported for motion within the breech housing between a cocked position and a firing pin position, means for urging the firing pin means toward the firing position adjacent to the breech end of the barrel, firing pin cocking means engageable with the workpiece and movable axially with respect to the housings to move the firing pin means to the cocked position against the force of the urging means, sear means interposed between the firing pin means and the cocking means and movable to release the firing pin means from the cocking means, trigger means pivotally supported with respect to the breech block housing having a projection normally interposed between the firing pin means and the breech end of the barrel to prevent the firing pin means from contacting the powder charge but movable out of the interposed position upon actuation of the trigger means, means urging the trigger means projection into interposing relation with the firing pin means, a sear release element on the trigger means engageable with the sear means upon actuation of the trigger when the firing pin means is in the cocked position, means on the cocking means preventing actuation of the trigger means when the cocking means is away from the firing pin cocking position, a sleeve member rotatably mounted on one of the housings supporting the other housing for relative rotary motion with respect thereto, pin and slot means connecting said other housing to the sleeve member permitting limited relative axial motion of the housings and preventing relative pivotal motion therebetween except at one extreme of relative axial motion, second slot means formed in one of the housings having a shape corresponding to the relative rotary motion of the housings and axial motion of the cocking means and including detent recess means at each end of the portion corresponding to relative rotary motion of the housings, follower means associated with the cocking means and movable within the second slot means, and spring means urging the follower means into the detent recess means thereby releasably retaining the housings in their corresponding relative angular positions.

3,155,981
FOOTBALL HELMET COVER
John McKissick, 201 Country Club Blvd., and Olin J. McCurry, 616 Laurel St., both of Summerville, S.C.
Filed Feb. 5, 1963, Ser. No. 256,313
2 Claims. (Cl. 2—3)



1. In combination with a football helmet comprising, a substantially dome shaped portion adapted to cover the head of the wearer, ear guards carried by the sides thereof extending below the dome shaped portion, a removable cover comprising, an element stretched to conform contiguously to the dome shaped portion of the football helmet covering the dome shaped portion when placed thereover, said element being constructed of two-way stretch textile material, said element being colored with the color characteristic of a given football team, and elastic edge portions carried by said element extending over and inwardly of the front and rear edges of the dome shaped portion between the ear guard portions, said elastic edge portions extending across the ear guards, whereby the cover may be easily slipped over the football helmet and confined thereon during play, and whereby a given football helmet may be thus easily modified to readily identify a given football team.

3,155,982
EYESHIELD
Charles A. Baratelli, Reading, Pa., assignor to Pennsylvania Optical Company, Reading, Pa., a corporation of Pennsylvania
Filed May 7, 1962, Ser. No. 192,652
7 Claims. (Cl. 2—12)



1. An eyeshield comprising a one-piece eyeshield member with viewing portions and an interposed nose engaging portion, said eyeshield member having side marginal edges spaced upper and lower hinge openings

inwardly of each of the side marginal edges thereof and a central edge slot at each of said marginal edges, a pair of temples each having spaced upper and lower hinge tongues at their forward ends extending through said openings, said hinge tongues having respectively upwardly and downwardly turned extremities for engaging adjacent front face portions of said eyeshield member, and a resilient tongue having a free end extremity generally in the plane of the tongue carried by each of said temples between said hinge tongues for engaging each of said central edge slots, the said resilient tongues, when the temples are in open operative position, being bent outwardly of the planes of the temples and placed under tension whereby to urge the temples toward closed position and, when the temples are in closed storage position, lying substantially in the planes of the temples.

3,155,983
WEARING APPAREL WITH ADJUSTABLE BELT
Lois F. Myers, 320 W. Oak St., Vassar, Mich.
Filed Feb. 4, 1963, Ser. No. 255,795
2 Claims. (Cl. 2—76)



1. An article of wearing apparel comprising a bodice portion having a lower edge; a skirt portion having an upper edge adjacent the lower edge of said bodice portion, the adjacent edges of said portions being turned outwardly of the article along the majority of their length and lying in back to back engagement, the remaining length of said edges being turned inwardly of the article and lying in face to face engagement; a belt formed of two layers of material receiving therebetween the outwardly turned edges of said portions; stitch means joining said belt along said one side only to the outwardly turned edges of said portion, thereby enabling said belt to be turned upwardly to overlie said bodice portion or turned downwardly to overlie said skirt portion, said stitch means also joining said outwardly turned edges to each other; and other stitch means joining the inwardly turned edges of said portions to one another.

3,155,984
FASTENERLESS EXAMINATION GOWN
Donna L. Derrick, P.O. Box 131, Mukilteo, Wash.
Filed Dec. 16, 1963, Ser. No. 330,779
6 Claims. (Cl. 2—114)

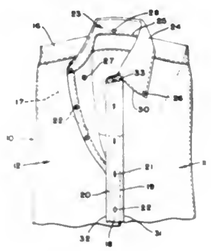


1. A substantially fasternerless wrap-around X-ray examination gown comprising a generally rectangular sheet of a width vertically to serve as a gown and of a transverse length exceeding the girth of the wearer's torso, said sheet having upper corner portions formed as the shoulder portions of a jacket, each such shoulder portion comprising a reentrant shoulder-receiving pocket provided with an armhole, and said sheet having a third armhole formed therein approximately midway between the corner armholes.

ERRATUM

For Class 2—114 see:
Patent No. 3,155,984

3,155,985
REVERSIBLE SHIRT DICKEY
Helen S. Gallagher, 21999 Parnell Road, Shaker Heights, Ohio
Filed June 19, 1962, Ser. No. 203,545
2 Claims. (Cl. 2—115)



1. A reversible shirt dickey comprising a back panel, two rectangularly elongated front panels which are adapted to substantially cover the chest of the wearer, a facing adjacent one edge of one of the front panels, said facing being formed of two strips of material fastened to said one edge of each side of said one panel, a plurality of buttonholes extending through said facing thereby to present a uniform appearance on opposite sides of said one panel, the other of said front panels having a plurality of buttons on opposite sides thereof complementary to said buttonholes, yoke means joining said back and front panels and forming a generally circular opening to receive the neck of the wearer, reversible collar means around said opening, said reversible collar means including a double thickness of fabric rolled under and stitched to said generally circular opening, and said yoke being of heavy bodied material and attached to each of said front and back panels along a seam extending from said opening to the outer edge of each of said panels.

3,155,986
WAIST BAND CONSTRUCTION
Samuel E. Miller, Wilmette, Ill., assignor to Quick Service Textiles, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 30, 1962, Ser. No. 241,218
6 Claims. (Cl. 2—236)

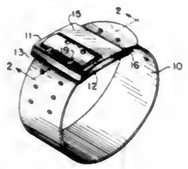
1. In combination, a garment having an inwardly folded edge portion, a first strip of textile material attached thereto and providing a portion of a waistband for the garment, at least a portion of the width of said strip being disposed within said folded edge portion and secured thereto, a second strip of resilient, but generally shape-retaining material having a permanently set, inwardly concave transverse configuration secured along both edges to said first strip and having at least a por-

tion thereof disposed within said folded edge portion, whereby, when the garment is worn, the resiliency of



said second strip biases said folded edge portion toward the wearer's body to preclude roll-over thereof.

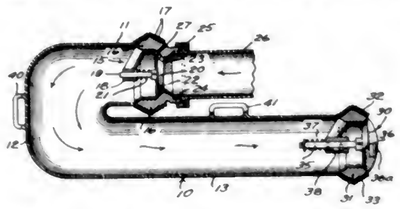
3,155,987
BUCKLE AND STRAP
Landon Graham McGill, St. Pauls, N.C., assignor to St. Pauls Manufacturing Co., Inc., St. Pauls, N.C.
Filed Nov. 3, 1961, Ser. No. 149,980
5 Claims. (Cl. 2—322)



1. A buckle for use with a strap having a series of longitudinally spaced prong receiving openings in one end and an enlargement on the opposite end, said buckle comprising a pair of generally parallel side members, said side members being connected by integral end members and an integral cross member intermediate the ends thereof, said cross member having a generally vertically disposed slot extending therethrough in which the strap is adapted to be disposed, an elongated retaining bar located generally parallel to said cross member, a flexible web of reduced thickness integrally connecting said cross member and said retaining bar, at least one prong mounted on said retaining bar for disposition in at least one of the openings in the strap and located in a manner to engage one of said end members so that the strap is fastened at both ends to said buckle.

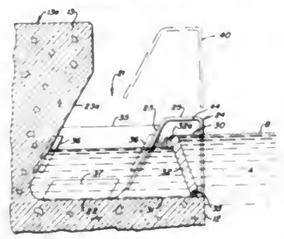
3,155,988
REFUSE CONTAINER FOR USE WITH PRESSURE TOILETS
Richard T. Cella, Clarksville Road, R.R. 1, Trenton, N.J.
Filed Jan. 23, 1964, Ser. No. 339,741
6 Claims. (Cl. 4—8)

1. A waste container for use with pressure toilets or the like comprising an elongated member having peripheral walls composed at least in part of a heat-settable resin in the rigid and set state, and inlet and discharge valves secured in opposite ends of said member, said valves having annular rims formed with a convex outer surface and of a diameter greater than that of the adjacent portion of said members, said peripheral walls being disposed over said convex surfaces and set in rigid state in close contact therewith for securing said valves in place against displacement in either direction, said inlet valve being of the poppet type having a head biased to open inwardly in response to external pressure and having coupling means for coupling the same to a fixed housing,



said outlet valve being of similar structure and biased to open outwardly.

3,155,989
SWIMMING POOL SURFACE WATER REMOVAL SYSTEM
Miller A. Anderson, Columbus, Ohio, assignor to Miller Anderson Pool Company, Columbus, Ohio, a corporation of Ohio
Filed Jan. 17, 1963, Ser. No. 252,100
5 Claims. (Cl. 4—172)



1. In combination with a swimming pool having a main body portion adapted to contain a body of water; an open top, channel-form gutter extending completely around the periphery of the main body portion of said pool and including an upstanding gutter lip terminating in an upper edge portion disposed slightly above the level of water normally contained in said pool and which may be overflowed when the water in said pool is relatively turbulent, said gutter lip substantially separating said gutter from the body of water and being formed at longitudinally spaced intervals with a plurality of notches having a portion disposed above and the remaining portion extending downwardly a distance below the level of water normally contained in said pool; a movable, buoyant gate member occupying each of said notches, each of said gate members having an upper edge normally disposed substantially below the upper edge portion of said gutter lip and slightly below the level of water normally contained in said pool and operable to provide a substantially constant, but restricted, outflow of surface water from the main body portion of said pool into said gutter by way of said notches when the body of water is substantially quiescent.

3,155,990
DISPOSABLE CUSPIDOR EVACUATED BY SUCTION
James O. Templeton, Franklin County, Tenn. (215 S. Jefferson St., Winchester, Tenn.)
Filed Feb. 18, 1963, Ser. No. 259,003
1 Claim. (Cl. 4—258)

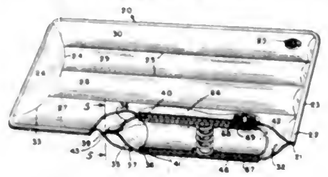
A cuspidor comprising
a rigid frusto-conical funnel having a nipple at its lower end,
a flexible hose for connecting the nipple of the funnel to a source of suction and

a disposable receptacle,
the receptacle being frusto-conical and fitting snugly within the funnel,
having an opening at its lower end in registry with the nipple of the funnel,
extending substantially above the upper end of the funnel,



having a rolled upper edge so contoured as to fit the face of a person and
having adjacent its upper edge and above the funnel at least one vent opening,
whereby waste matter expectorated by a person is evacuated by suction through the receptacle, funnel and hose.

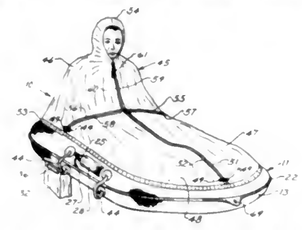
3,155,991
MATTRESS WITH PUMP AND METHOD FOR FORMING SAME
Philip N. Dunham, Nashua, N.H., assignor to Hampshire Manufacturing Corporation, Nashua, N.H., a corporation of New Hampshire
Filed July 18, 1961, Ser. No. 124,936
12 Claims. (Cl. 5—348)



1. In an air tight, inflatable mattress having a plurality of pneumatically connected air cells including at least one cell closed at one end, and having a cell wall, the combination of a fish tail valve of flexible sheet material extending across, and having one end peripherally affixed to the wall of, said one cell and defining a pump chamber between said valve and said closed end, said fish tail valve having a one way air outlet port for delivering air from said chamber to the remainder of said cells; a one way air inlet valve in the wall of said one cell for supplying air to said chamber; cell distending means within said chamber comprising an elongated, open ended tube of soft, deformable, self supporting plastic substantially co-extensive in length with said chamber and normally of hollow cylindrical cross section and metal spring tube distending means extending transversely across the interior of said tube for rapidly restoring said tube to normal cross section after flattening.

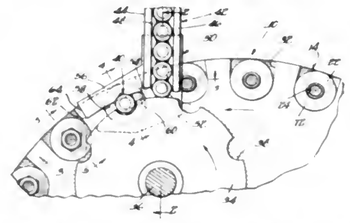
3,155,992
LIFE RAFT
Glenn A. Shewmake and Matthew I. Radnofsky, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 5, 1962, Ser. No. 221,634
8 Claims. (Cl. 9—11)
(Granted under Title 35, U.S. Code (1952), sec. 266)

7. In combination with a life raft comprising an inflatable flotation tube which when inflated is in the form of a tubular gunwale enclosing an occupant-receiving space; a retractable covering for said raft of foldable, highly radar-reflective material, said covering being secured along its periphery in sealing engagement with



the surface of said inflatable flotation tube and adaptable to being drawn up about a person in the raft to envelop said person and thereby shield said person from sun and spray and to serve as a radar reflector for said raft.

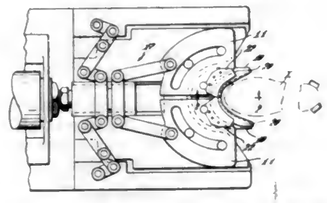
3,155,993
MECHANISM FOR ASSEMBLING NUT MEMBERS AND WASHERS
William Stern, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,638
3 Claims. (Cl. 10—155)



1. A mechanism for assembling workpieces such as nut members having a body and a neck portion depending from a clamping surface thereof and apertured washers, comprising a first rotary turret mounted for rotation about a predetermined axis for feeding a plurality of washers successively along a predetermined arcuate path of travel, a second rotatable turret disposed closely above said first turret and mounted for rotation about an axis substantially parallel to said first mentioned axis for feeding successive nut members above said path of travel and into axial alignment with successive washers, said axis of said second turret being located radially inwardly of said arcuate path of travel, said second turret having a diameter substantially less than the diameter of said first turret, said second turret having circumferentially disposed nut member receiving and retaining means movable along a path of travel from a nut member receiving position located radially inwardly of said first mentioned path of travel, to a second position substantially in alignment with said first mentioned path of travel and then radially inwardly of said first mentioned path of travel, means for supplying nut members to said second mentioned turret at said first position, means extending between said first and second mentioned turrets at said first position for supporting nut members above said first mentioned path of travel at said first position and for lowering the nut members into partially assembled relationship with the washers during movement of the nut members from said first position toward said second position, and means substantially concentric with said first turret and extending along said path of travel from adjacent said second position for engaging neck portions of successive

nut members for guiding the nut members along said first mentioned path of travel and disengaging the nut members from said second mentioned turret.

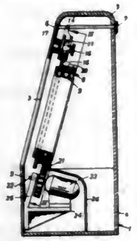
3,155,994
WIPERS
Harry L. Dent, Winchester, and David M. Thompson, Nashville, Tenn., assignors to Jacob S. Kamborian, West Newton, Mass.
Filed Dec. 8, 1959, Ser. No. 858,196
12 Claims. (Cl. 12—145)



1. In a machine for lasting the ends of shoes, wipers and a shoe support for supporting a last upon which an insole and upper may be assembled, means supporting the wipers comprising cam plates and means fastening the wipers to the underside of the cam plates, Teflon caps disposed on the upper sides of the wipers with portions engaged with the edges of the cam plates and other portions extending downwardly over the leading edges of the wipers and conformed thereto, and clamp plates bolted to the cam plates with portions clampingly engaging the caps adjacent the cam plates, and teeth projecting downwardly from said clamp plates into engagement with the caps.

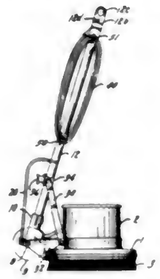
11. The method of lasting comprising supporting a last with an insole and upper assembled thereon with the margins of the upper projecting away from the shoulder of the last, and wiping the margins over the shoulder of the last against the insole with an implement made of relatively rigid material and having at least a portion of its margin engaging surface covered with a material having a substantially lower coefficient of friction with respect to the margins than the first mentioned material.

3,155,995
MACHINE FOR CLEANING SHOES
Fritz Herrmann, Hubertusstrasse, Neuenhain, Taunus, Germany
Filed Aug. 26, 1963, Ser. No. 304,327
Claims priority, application Switzerland, Sept. 5, 1962, 10,533/62
9 Claims. (Cl. 15—36)



1. A shoe cleaning machine comprising a housing having an opening therein, a ring rotatably mounted in said opening, internal cleaning elements arranged in a crown and mounted on the internal periphery of said ring, a motor for rotating said ring, means for guiding said ring externally and consisting of at least three peripherally distributed guide rollers and means for moving at least one of said rollers from its guiding position whereby said ring can be disengaged from said guide rollers.

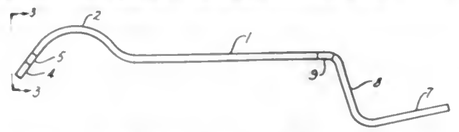
3,155,996
HANDLE AND SKID MEANS FOR A FLOOR MACHINE
Arthur P. Berthelot, Park Ridge, William J. Clements, Downers Grove, and John P. Jason, Chicago, Ill., assignors to Clements Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 17, 1962, Ser. No. 245,062
2 Claims. (Cl. 15—49)



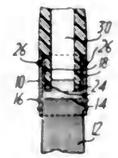
1. A floor polishing machine comprising a circular base, a housing upstanding from a central portion of said base, a motor in said housing, a rotatable circular brush member depending from said base, an outrigger portion on and extending laterally from said base above the plane of said brush member, an axle extending laterally through said outrigger portion, a fitting pivoted on said axle intermediate its ends, said fitting having a hollow slotted upper portion, a handle shaft having one of its ends seated within and secured to said fitting upper portion, a hollow extension intermediate the ends of said fitting and extending toward said housing, the open area within said extension communicating with the area within said fitting, a cross bore in the lower portion of said fitting, said cross bore being formed and adapted to receive said axle, a rearward extension on said fitting adjacent said cross bore, oppositely disposed leg portions on said rearward extension, apertures through said leg portions, said apertures lying in a plane diverging from the plane of said handle shaft, a skid member having a pair of parallel leg portions, said leg portions having their free ends secured in said apertures, the opposite ends of said leg portions being curved at parallel planes toward said handle shaft, said skid member including a cross portion joining the opposite ends of said leg elements and lying in a curved path, the radius of said path being such as just to receive the circumference of said handle shaft at a point intermediate the ends of said handle shaft, wheel elements rotatably mounted on the opposite ends of said axle outwardly of said outrigger portion and having their periphery in alignment with the lower surface of said base, said hollow fitting extension being formed and adapted to abut said outrigger portion and to serve as a stop for movement of said handle shaft toward said base whereby, when said hollow extension is in engagement with said base, the upper portion of said handle shaft is positioned above the gravitational center of said base.

3,155,997
JOINTER AND RAKING TOOL
Thomas H. Gallagher, 31 Willina Drive, Carnegie, Pa.
Filed July 24, 1959, Ser. No. 829,389
1 Claim. (Cl. 15—105.5)

In a tool for raking out and smoothing mortar joints of masonry walls, a straight handle portion of flat relatively wide strap metal of rectangular cross section having one end of gooseneck shape terminating in a relatively narrow rake-out tongue with flared shoulders formed at an angle of about 45°, the other end of the tool having a shank of the width of the rake-out tongue bent at substantially right angles to the handle portion in the same direction as the gooseneck end of the tool is bent and a trowel portion of approximately the width of the mortar joint integral with said shank extending from said shank at right angles substantially parallel to and spaced from the handle portion of the tool to dispose the handle at an angle to avoid contact of the hand with the wall.

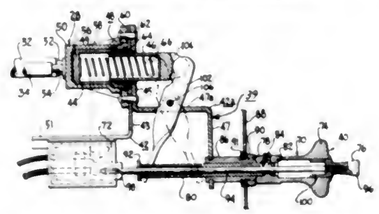


3,155,998
BRUSH STRUCTURE
Kenneth V. Hardman, Upper Montclair, and Arthur J. Lang, Cedar Grove, N.J., assignors to H. V. Hardman Company, Inc., a corporation of New Jersey
Filed Feb. 2, 1960, Ser. No. 6,244
8 Claims. (Cl. 15—192)



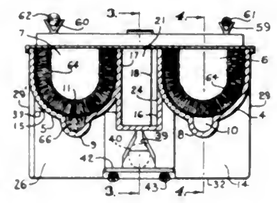
1. A paint brush comprising a ferrule, a plurality of bristles positioned in one end portion of said ferrule, a plastic handle having an open ended skirt portion which extends down into the ferrule, said skirt being dimensioned to provide a capillary space between the interior wall of the ferrule and the exterior of at least two opposite portions of the side wall of the skirt, a hardened block of self curing resinous cement which is positioned in the ferrule on top of the said plurality of bristles and which has upright portions that extend into the capillary space throughout a substantial portion of the area of such space to seal off the interior of the hollow skirt and provide additional adhesive bonding between the skirt of the handle to assist in anchoring the plastic handle in the ferrule, the rim at the bottom of said open ended skirt being positioned in the hardened block of cement.

3,155,999
WINDSHIELD CLEANER
John R. Oishei, 14 Queen Ann's Gate, Buffalo, N.Y., and Martin Bitzer, 150 Highland Parkway, Kenmore 23, N.Y.
Filed Apr. 1, 1963, Ser. No. 269,654
16 Claims. (Cl. 15—250.02)



1. In a windshield cleaning system including a wiping element and a connected motor and including washer apparatus having a delivery nozzle; a servo-system comprising a low displacement pump constituting a servo-mechanism for delivering fluid through said nozzle and a unitized control combined therewith, said unitized control including a servo-actuator and a motor actuator, means for manually actuating said servo-actuator and said motor actuator conjointly with a single mode of movement to eject a single measured increment of fluid through said nozzle at operator controlled pressure and to energize said motor, dual function means for automatically resetting said servo-actuator and recharging said pump and means for manually actuating said motor actuator independently of said servo-actuator to energize or deenergize said motor.

3,156,000
BALL CLEANER ATTACHMENT FOR GOLF CART
Earl C. Westhoff, 532 N. Scott Ave., Box 365, Belton, Mo.
Filed Oct. 29, 1962, Ser. No. 233,673
4 Claims. (Cl. 15—513)



1. A golf ball cleaning device for attaching to a golf cart handle comprising:

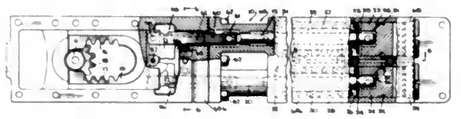
(*a*) a body having an elongated rigid wall substantially semi-cylindrical in shape, the ends of which are closed to form a chamber,

(*b*) a clamping member with a golf cart handle receiving portion therein, said clamping member being fixed with respect to said body and having means associated therewith for clamping said body on the golf cart handle, means forming a reservoir opening into said chamber, and

(*c*) an interior lining of capillary deep pile liquid cleaner-retentive material on said wall in said chamber and dividing said chamber from said reservoir, said pile presenting an interior surface with a diametrical dimension smaller than the outside diameter of a golf ball,

(*d*) whereby a liquid cleaner may be introduced into said reservoir and wicked up in said absorbent material and a golf ball may be rotated and reciprocated longitudinally within said chamber for cleaning same.

3,156,001
CLOSER WITH HOLD-OPEN PIVOT ARM
Raymond W. Schmid, Havertown, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed July 2, 1962, Ser. No. 206,619
11 Claims. (Cl. 16—64)



1. A hold open mechanism for a door closer of the type having a body portion, a closer spring, and a pair of parts

movable relatively to the body portion through which the closer spring is energized as the door is opened and through which the energized closer spring acts to close the door when the door is released, comprising,

a lost motion connection between said pair of movable parts for allowing relative movement between said parts,

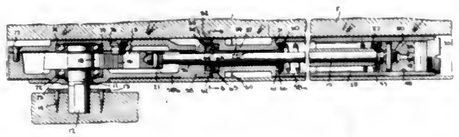
a dog member operatively connected to said pair of movable parts and movable by relative movement between said parts,

a limiting surface on said body portion engageable by said dog member during a major portion of the movement of said pair of movable parts in the door opening direction to prevent movement of said dog member and relative movement between said parts,

a relieved portion in said body portion adjacent said limiting surface for releasing said dog member when said pair of movable parts has moved to a position corresponding to the open position of the door to allow relative movement between said pair of movable parts and resulting movement of said dog member to a door holding position, and

limit means on said body portion engaged by said dog member when said dog member is moved to said door holding position whereby to prevent movement of said pair of movable parts in a door closing direction by said closer spring, said dog member being movable to the door releasing position through relative movement between said parts affected by the application of force to the door.

3,156,002
HOLD-OPEN MECHANISM FOR DOOR CLOSER
Raymond W. Schmid, Havertown, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed May 28, 1962, Ser. No. 198,358
8 Claims. (Cl. 16—79)



1. A hold open mechanism for a door closer of the type having a body part, a spring, and a part movable relatively to the body part through which the spring is energized as the door is opened and through which the energized spring acts to close the door when the door is released, comprising,

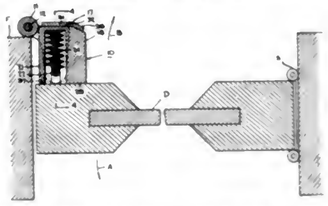
a detent surface on one of said parts,

a detent mounted on the other part for movement into locking engagement with said detent surface on said one part when said detent and surface are aligned through relative movement between said parts,

cooperating cam surfaces on said detent and one of said parts for camming said detent out of locking engagement with said detent surface through relative movement of said parts, and

means cooperating with said detent when said detent is in locking engagement with said detent surface to lock said spring to said movable part and render said spring ineffective to exert force between said body part and said movable part and therefore ineffective to cause relative movement between said parts to cam and said detent out of engagement with said detent surface, said detent being releasable by relative movement between said parts through application of an external force to the door.

3,156,003
PANIC RELEASE DOOR STOP
Raymond W. Schmid, Havertown, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Apr. 27, 1962, Ser. No. 196,671
6 Claims. (Cl. 16—85)



1. A panic release door stop comprising,

a roller,

a channel shaped roller supporting member slidably received on said mounting member with the legs of said roller supporting member extending along opposite sides of said mounting member,

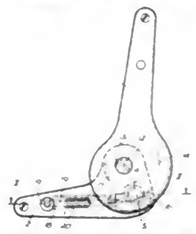
means rotatably mounting said roller between the legs of said roller supporting member,

an elongated slot extending through said mounting member between said opposite sides of said mounting member,

a pivot pin secured between the free ends of said legs of said roller supporting member and extending through said slot whereby said roller mounting member may move between a position in which said roller is in a door stopping position along the front of said mounting member and a position in which said roller clears said front of the mounting member to allow said roller to pivot away from said door stopping position to a door releasing position, and

spring means within said mounting member extending between a portion of said mounting member and said pivot pin and yieldingly holding said roller supporting member in the position in which said roller is in said door stopping position, but yielding under substantial force applied to said roller to allow sufficient movement of said roller to clear said front of said mounting member and pivot to said door releasing position.

3,156,004
HINGE FITTINGS FOR SEATS WITH ADJUSTABLE BACK RESTS
Werner Strien, Stuttgart-Weilimdorf, and Jörg Resag, Stuttgart-Vaihingen, Germany, assignors to Recaro A.G., Glarus, Switzerland, a corporation of Switzerland
Filed Dec. 4, 1962, Ser. No. 242,263
Claims priority, application Germany, Dec. 7, 1961, St 18,654
5 Claims. (Cl. 16—146)



1. A hinge fitting for a seat with an adjustable back rest, especially for motor vehicles, comprising a first hinge member adapted to be secured to one side of the back rest, a second hinge member adapted to be secured to the same side of the seat and including a pair of members

adapted to be connected to each other to form a casing, said first and second hinge members being pivotably connected to each other, a first conical locking member nonrotatably mounted in said second hinge member and having a first set of teeth on the conical part thereof, a shaft rotatably mounted in said first locking member and having on its periphery a second set of teeth, a tubular second locking member mounted on said shaft so as to be movable in the axial direction thereof and having on the wall of its bore a third set of teeth engaging with said second set of teeth on said shaft so that said second locking member is nonrotatably mounted on said shaft, said second locking member having an inner conical surface provided with a fourth set of teeth adapted when said second locking member is shifted in the axial direction to engage with or disengage from said first set of teeth on said first locking member, said first set of teeth on said first locking member and said fourth set of teeth on said second locking member having such a shape that the plane of each of their tooth flanks is inclined relative to the axis of said shaft at a maximum angle of

$$\delta = \text{arc tg}\,\frac{\mu_1+\frac{R_1}{R_2}\mu_2-\text{tg}\,\epsilon\left(\frac{R_1}{R_2}-\mu\mu_2\right)}{1-\frac{R_1}{R_2}\cdot\mu_1\mu_2+\text{tg}\,\epsilon\left(\mu_2+\mu_1\frac{R_1}{R_2}\right)}$$

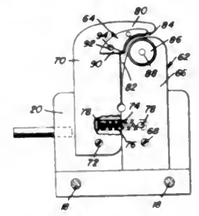
said second set of teeth on said shaft and said third set of teeth on said second locking member having such a shape that the plane of each of their flanks is inclined relative to the axis of said shaft at an angle of less than

$$\epsilon = \text{arc tg}\,\frac{\mu_1+\frac{R_1}{R_2}\cdot\mu_2}{\frac{R_1}{R_2}-\mu_1\cdot\mu_2}$$

wherein μ_1 represents the coefficient of friction of the tooth flanks of the interengaging first and fourth sets of teeth on said first and second locking member, respectively, μ_2 represents the coefficient of friction of the interengaging second and third sets of teeth on said second locking member and said shaft, respectively, R_1 represents the radius of the pitch circle extending centrally between the ends of the tooth flanks of the interengaging first and fourth sets of teeth on said first and second locking member, respectively, and R_2 represents the radius of the pitch circle extending centrally between the ends of the tooth flanks of the interengaging second and third sets of teeth on said first locking member and said shaft, respectively, the angle of taper β of said first and fourth sets of teeth being greater than the angle of taper α of said second and third sets of teeth; further comprising means for connecting said shaft to said first hinge member, means for securing said shaft against movement in its axial direction, means for shifting said second locking member in the axial direction to a fixed position in which the teeth on said first locking member are in engagement with the teeth on said second locking member and thereby prevent a pivoting movement of said hinge members relative to each other, and to a second position, in which these teeth are disengaged from each other and thus no longer produce any locking effect.

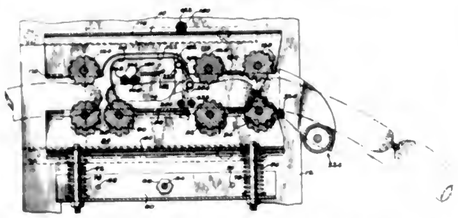
3,156,005
WEASAND MEAT SPLITTER AND PULLER
Rogild H. Thompson, R.R. 2, Glenville, Minn.
Filed June 6, 1962, Ser. No. 200,506
7 Claims. (Cl. 17—1)

6. A weasand meat remover comprising a supporting frame, a weasand meat splitter carried by said frame, carriage means movably mounted on the frame, knife means on the carriage for forming a cut through the weasand means without cutting the weasand inner sinew or gristle, means on the carriage for slidably receiving the inner sinew and gristle and abutting the weasand meat in said cut with such means forming an abutment for the weasand meat for stripping the split weasand meat from the sinew or gristle when the latter is pulled through said meat, said means slidably receiving the inner sinew or gristle in-



cluding a space having tapering edges, said knife means including a pair of opposed knifes at the entrance to the space for cutting the weasand meat as the weasand meat with the inner sinew therein is forced between the opposed knives.

3,156,006
LINK CUTTING MACHINE
Alfred J. Gouba, 339 Atlantic St., Sloan 12, N.Y.
Filed July 2, 1962, Ser. No. 206,926
11 Claims. (Cl. 17—1)



5. A machine for severing linked articles from each other, comprising,

a conveyor mechanism for advancing a chain of linked articles,

carriage mechanism mounted for cyclic movement back and forth along the path of advancement of the linked articles,

knife means carried by said carriage mechanism for severing the region of joining being adjacent linked articles during each cyclic movement of the carriage mechanism, and

means responsive to the position of articles along the path of advancement for initiating said cyclic movement of the carriage mechanism,

said conveyor mechanism comprising upper and lower sections, each including a plurality of spaced rollers with the rollers of the two sections defining an article-gripping throat therebetween, and means for driving said rollers with those at one end of each section rotating more rapidly than those at the opposite end of each section.

3,156,007
POULTRY SHACKLE
Donald P. Smith, 4530 Woodfin, Dallas 20, Tex.
Filed Dec. 21, 1961, Ser. No. 161,103
4 Claims. (Cl. 17—44.1)

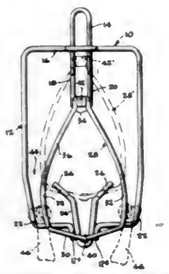
1. An improved automatic release shackle for fowl adapted to be pendulously suspended on a traveling conveyor and effective to release the fowl from the shackle at a predetermined point of conveyor travel comprising:

a substantially quadrilateral frame member having sides and having conformations adapted to be received on the conveyor to suspend the shackle pendu-

lously therefrom an oppositely disposed fowl head receiving means, said fowl head receiving means being in the form of a substantially V-shaped portion adapted to retain the head of the fowl therein;

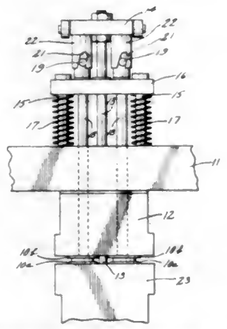
a pair of spaced guide bars depending from the top portion of the frame member;

a movable member supported by said frame member for vertical movement therealong from a first position wherein the movable member and frame member cooperatively define fowl holding nips between the sides of the frame and the movable member serving to retain the fowl within the shackle to a second position effective to define fowl-passing spaces to release the fowl from the shackle, said member including a pair of spaced bars integrally interconnected at their respective top and bottom portions thereof to form a unitary movable member, said spaced bars being disposed on either side of the frame member, the top portion of said movable member being guidingly received within the spaced guide bars, the bottom portion of said movable member being guidingly received along the adjacent surfaces of the fowl head receiving means, said movable member having a central guide member extending between the spaced bars and guidingly received within the head receiving means of the frame; and



a lift member rigidly attached to said movable member and adapted to vertically urge said movable member to said second position upon application of an external force thereto.

3,156,008
RELEASE MECHANISM FOR AUTOMATIC MOLDING MACHINE
Cecil Martin, Cranston, R.I., assignor to General Electric Company, a corporation of New York
Filed Jan. 13, 1964, Ser. No. 337,990
1 Claim. (Cl. 18—2)



1. In an automatic compression molding machine, a mold having an upper cavitated part and a lower closure part defining a shaped cavity, means for engaging and disengaging the lower mold with respect to the upper mold,

a threaded core piece having reciprocal movement in said upper mold and defining therewith an annular portion of said cavity,

an ejector rod on which said core piece is mounted,

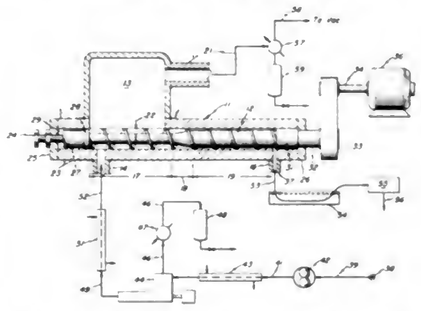
an embossment mounted on said ejector rod at a point removed from said core piece,

and means for imparting reciprocal and slight rotational movement to said ejector rod,

said means including a reciprocally moving sleeve with a spiral channel in which said embossment is positioned,

said spiral channel being of a length and pitch to impart first a rotative force to said core piece to break loose the threads of said core piece from a workpiece positioned in the mold cavity and then an ejector force to break the workpiece free from other surfaces of said upper mold.

3,156,009
DEVOLATILIZING EXTRUDER
Clarence M. Alsys, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 30, 1960, Ser. No. 79,742
2 Claims. (Cl. 18—12)

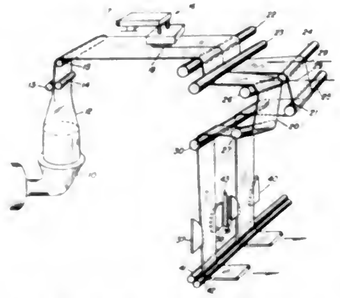


1. Apparatus for removing solvent from normally solid polymer at temperatures above the melting point but below the decomposition temperature of the polymer, which apparatus comprises: a screw extruder having a barrel with an inlet for solvent-containing polymer and a polymer outlet, means for introducing solvent-containing polymer into said inlet, a threaded extruding screw rotatable in said barrel, the flight depth of said screw being greater at the inlet than at the polymer outlet, a solvent vapor outlet positioned near said polymer inlet and adapted for the passage therethrough of solvent vapors from said barrel, means for maintaining a vacuum on said solvent vapor outlet, means for heating the introduced polymer and solvent to permit vaporization of the solvent, and drive means coupled to said extruder screw at the polymer outlet end of said barrel and whereby extruding under pressure provides a vacuum seal for said extruder screw at the polymer outlet.

3,156,010
SLIT SEAL AND MULTIPLE TUBE GUSSETER
Paul Victor Osborn, Jr., Rochester, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed May 10, 1963, Ser. No. 279,364
3 Claims. (Cl. 18—14)

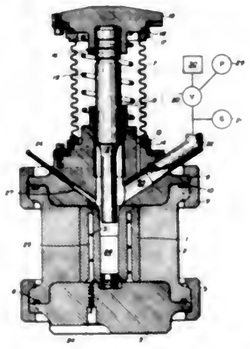
1. A slit seal gusseter comprising, in combination; means for extruding a tubular web of thermoplastic material, nip roll means for flattening said tube, slitting and sealing means for slitting central portions of said web and sealing the ends of each slit half together to form two parallel tubular webs; adjustable roller means

for causing said two tubular webs to diverge from one another; said adjustable roller means including a first and second roller; at least one of said first and second rollers being angularly rotatable between a first and second adjustment position; said first and second rollers being coaxial with one another and having their ends in substantially abutting relation when said at least one of said rollers is in its said first adjustment position; the



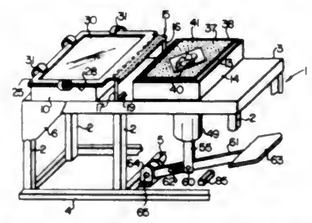
axes of said first and second rollers being at an angle to one another when said at least one of said rollers is in its said second adjustment position to cause said two tubular webs to diverge from one another; and gusseting means for gusseting the sides of each of said two tubular webs; said slitting and sealing means being movable between an operable and non-operable position with respect to said tubular web.

3,156,011
SELF-CONTAINED VARIABLE-ENVIRONMENT PRESSING DIE
Donald M. Olson, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 10, 1962, Ser. No. 165,464
2 Claims. (Cl. 18—16)



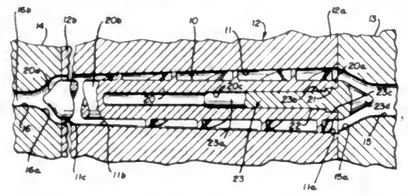
1. A self-contained variable-environment pressing die comprising a cylindrical die having a die cavity and a hollow portion annular to said die cavity within the wall, a cylindrical die container surrounding said die, a compression block sealed to and enclosing the bottom of said die container, a backup punch sealed in the bottom of said die cavity and positioned against said compression block, a guide block sealed to and enclosing the top of said die container and provided with a cylindrical guide aperture in alignment with said die cavity, a punch slidably positioned within said cylindrical aperture, a punch holder connected to said punch at its end most remote from said die cavity, a metal bellows sealed between said guide block and said holder, a spring positioned within said bellows and extending between said guide block and said holder whereby the punch is held in its upward preactuation position, resistance heating means positioned within the hollow portion of the wall of said die, electrical connection means connected to said heating means and extending through said compression block for connecting said heating means to an external voltage source, a conduit in communication with the die cavity extending externally of said assembly, a valve connected to said conduit, a pressurized gas container connected to said valve, and means for controlling the gaseous environment during pressing operations such that a selected gas is present in the die cavity during the pressing operation at any selected pressure between subatmospheric and superatmospheric.

3,156,012
VACUUM MOLDING MACHINE
Michael Hritz, 6329 Ridge Road, Parma 29, Ohio
Filed Feb. 27, 1962, Ser. No. 175,929
7 Claims. (Cl. 18—19)



1. A vacuum molding machine comprising a vacuum box, a perforated pattern in such vacuum box, a heating means horizontally spaced from such vacuum box, frame clamping means for clamping a sheet of thermoplastic material, said frame clamping means being mounted on a pivot bracket between said heating means and said vacuum box for swinging said frame clamping means and thus said sheet of thermoplastic material about a horizontal axis from a position adjacent said heating means to a position adjacent said vacuum box and in peripheral sealing engagement therewith, a closed variable volume vacuum chamber in fluid communication with said perforated pattern, means to enlarge the volume of said vacuum chamber to create a less than atmospheric pressure between said sheet and pattern to cause such sheet to conform to such pattern, and means to reduce said vacuum chamber to less than its original size to create a greater than atmospheric pressure to expel said sheet from said pattern.

3,156,013
SEPARATOR UNIT FOR INJECTION CYLINDER
Leon E. Elphee, Lakewood, Ohio, assignor to Portage Machine Company, Akron, Ohio
Filed June 26, 1961, Ser. No. 119,501
1 Claim. (Cl. 18—30)



A separator unit for use in the heated flow passage of an injection unit of the character described, comprising:

(A) an elongate cylinder having

(1) a nose end including a projecting nose element that directs the material flowing through said passage onto the exterior of said cylinder,
(2) and a rearwardly disposed end,
(3) and further having a substantially constant diameter throughout its longitudinal extent between said longitudinal ends;

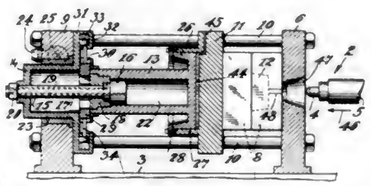
(B) at least one rib member
(1) projecting radially from the exterior in continuous helical form so as to define a screw thread
(*a*) having a pitch of at least one,
(*b*) and having a major diameter that decreases from a maximum dimension adjacent said nose end to a minimum dimension adjacent said rearwardly disposed end;

(C) said flow passage having an internal diameter that varies complementally with the major diameter of said screw thread formed by said rib
(1) whereby said separator unit may be nonrotatably and removably positioned in said flow passage;

(D) said rib, said cylinder and said flow passage defining a continuous uninterrupted helical guide channel that progressively decreases in volume throughout its longitudinal extent and through which material may be advanced;

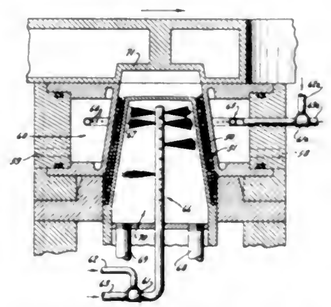
(E) said nose element being
(1) detachably secured to said cylinder and
(2) having a portion thereof projecting beyond the point of juncture of said rib with said cylinder
(3) said projecting portion being constructed of material of greater heat conducting properties than said cylinder.

3,156,014
INJECTION MOLDING MACHINE
Karl Wenger, Munich-Untermenzing, Germany, assignor to Krauss-Maffei Aktiengesellschaft, Munich-Allach, Germany
Filed Mar. 21, 1963, Ser. No. 271,833
Claims priority, application Germany, June 6, 1959, K 37,921
6 Claims. (Cl. 18—30)



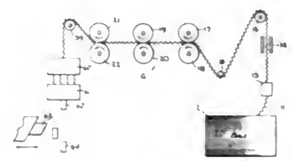
1. In a machine of the character described, in combination, a first stationary support and a second stationary support, said supports being spaced from each other; elongated guiding members extending between and having ends secured to said supports; a first pressure member supported by said first support and directed toward said second support; a second pressure member mounted on said guiding members and movable between an inoperative position in which it is spaced from said first pressure member and an operative position in which it is located adjacent said first pressure member; a piston mounted on said second support and directed toward said first support; a cylinder slidably mounted on said second support, said cylinder enclosing said piston and cooperating therewith so that upon admission of pressure fluid into said cylinder the cylinder is moved in a direction toward said first support; a piston element and a cylinder element, said cylinder element enclosing said piston element, one of said elements being firmly secured to said cylinder and the other of said elements being firmly secured to said second pressure member; locking means mounted on said second support and adapted to prevent return movement of said cylinder when the cylinder has moved in a direction toward said first support; and fluid admitting means for admitting pressure fluid into said cylinder element so as to move said other element and said second pressure member into said operative position thereof.

3,156,015
APPARATUS FOR MOLDING A PLASTIC ARTICLE
James M. Harrison, Fort Worth, Tex., assignor to Crown Machine & Tool Company, Fort Worth, Tex., a corporation of Texas
Filed Oct. 20, 1961, Ser. No. 146,504
4 Claims. (Cl. 18—38)



1. In a plastic molding machine having a cavity mold and an adjoining chamber surrounding said cavity mold, the combination which includes a source of cooling liquid, means to convey said cooling liquid into the chamber, a compressed air source, means to communicate the interior of the chamber with said high pressure source simultaneously with the cooling liquid, and an outlet in said chamber whereby the cooling liquid is expelled from said chamber by the pressure gradients created therein.

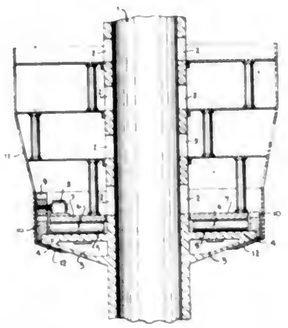
3,156,016
TOW OPENING
Donald T. Dunlap and Richard E. St. Pierre, both of Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,900
17 Claims. (Cl. 19—66)



10. The process of treating a crimped multifilament tow comprising the steps of spreading said tow into the form of a flat band, longitudinally advancing the band-shaped tow between and in contact with a first pair of idly rotatable opposed cylindrical surfaces both of which are smooth and are rotated in response to movement of said tow therebetween so as to exert a drag on said tow, further advancing said tow between and in contact with each of a tandem series of additional pairs of opposed cylindrical surfaces wherein one surface of each of said additional pairs is circumferentially ridged and the other surface of each additional pair is smooth, positively rotating at least one surface of each pair of said additional pairs of surfaces at respective progressively higher surface speeds so as to differentially grip said tow as it moves from said first pair of surfaces to the last of said additional pairs of surfaces, whereby the filaments of said tow are separated longitudinally and the crimps in adjacent filaments are deregistered so as to result in an open tow.

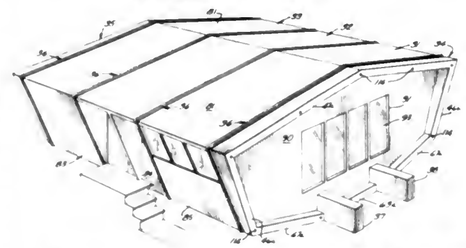
15. Apparatus for treating a crimped multifilament tow, comprising banding jet means for shaping said tow into a flat band, at least one pair of opposed differential gripping rolls between and in contact with which said tow is adapted to pass, in each pair one of said differential gripping rolls being provided with a profiled surface and the other being smooth-surfaced, drive means operatively connected to at least one roll of each pair so as to rotate the same positively at a predetermined surface speed, the rolls of each pair being biased toward one another and being rotatable together, whereby said tow upon moving through said differential gripping rolls while the latter are being rotated by said drive means is differentially gripped to effect a longitudinal separation of the filaments of said tow and deregistration of the crimps of adjacent filaments so as to result in a completely opened tow.

3,156,017
BUILDING WITH ROTATABLE OBSERVATION STRUCTURE
Leopold Faerber, Tewaagstrasse 11, Dortmund, Germany
Filed Jan. 16, 1959, Ser. No. 787,178
7 Claims. (Cl. 20—1)



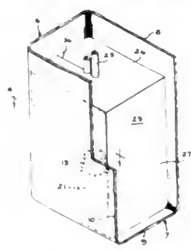
1. In a high tower building having a vertical hollow shaft supported on the ground, the combination of at least one console spaced at considerable height above the ground and mounted on and surrounding said shaft annularly, said shaft engaging the inner portion of said console and said engagement forming the sole support for said console,, whereby the major portion of the cantilevered console is free from any support vertically below it, a structure supported on said major portion of said console and surrounding said shaft and rotatable about the axis of said shaft, said console forming the sole support for said structure, driving means between said console and said structure operable for rotating said structure, said shaft defining an opening for intercommunication between the shaft and structure interiors, anti-friction bearing means between said console and said structure, and an enclosure wall surrounding said structure and extending to a point below the topmost portion of said console and having windows.

3,156,018
PLANT-MANUFACTURED BUILDING STRUCTURE
John H. Slayter, P.O. Box 431, Newark, Ohio
Filed Dec. 21, 1961, Ser. No. 160,984
23 Claims. (Cl. 20—2)



1. A composite transverse truss unit for a building structure comprising a pair of side-supporting columns, a cantilever arm supported by each of said columns and extending inwardly therefrom, a floor joist including a continuous member connected to the lower ends of said side columns, said floor joist having downwardly opening yokes spaced on opposite sides of the midpoint thereof and inwardly of the respective ends thereof for receiving supporting beams extending at an angle to said continuous member, each yoke having an inner arm defined by a central brace structure depending from said continuous member, said brace structure including a continuous chord member having its outer ends connected to the lower ends of the inner yoke arms, and each yoke having an outer arm defined by a brace structure at each end of said continuous member, said last-named brace structure including a continuous angularly disposed chord member having its outer end connected to said continuous member and its inner end connected to the lower end of the cooperating outer yoke arm.

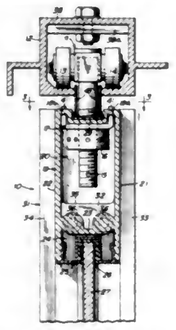
3,156,019
FOAM INSULATED DOOR STRUCTURE INCLUDING ELECTRICAL HINGE
Daniel B. Dawley, Anchorage, Ky., assignor to General Electric Company, a corporation of New York
Filed Apr. 9, 1963, Ser. No. 271,722
1 Claim. (Cl. 20—16)



A door structure comprising spaced inner and outer panels, one of said panels including a face portion and channel sections on the side thereof facing the other of said panels and extending along at least two adjacent vertical and horizontal edges of said face portion and intersecting at a corner of said door, each of said channel sections including a wall spaced from said face portion and a base portion connecting said wall and said face portion, a hollow hinge pintle projecting into said door through one of said base portions adjacent said corner, an electric lead adapted to be connected to means mounted on said door, said lead extending from the interior portion of said door through said pintle, an L-shaped

member composed of resilient foam material having the respective ends thereof wedged in said respective channel sections at said corner in spaced relation with said pintle and overlying and sealing the area of said corner around said pintle, said member having a slit in one leg thereof, said lead passing through said slit, and a mass of resin foam insulation formed in situ within the space between said inner and outer panels, said member preventing said foam insulation from contacting and embedding the length of said lead within the corner, area sealed by said member whereby said length is free to absorb the twisting action thereof resulting from opening and closing movement of said door on said hinge pintle.

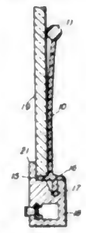
3,156,020
SLIDING DOOR
William J. Horgan, Jr., Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1962, Ser. No. 239,109
7 Claims. (Cl. 20—19)



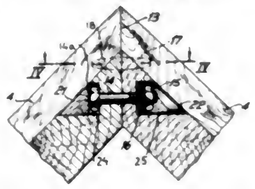
1. A sliding door assembly comprising
a door supported from an overhead track for horizontal sliding movement therealong and having at an upper corner
a tubular top rail with a hollow portion extending inwardly from an opening in the adjacent vertical end of said door,
an upper web on said rail overlaying said hollow portion,
and a slot in said upper web extending inwardly from said opening,
a carriage slidably mounted on said track,
a rod depending from said carriage and extending through said slot into said hollow portion,
and a support member supporting said upper web and mounted on said rod,
said support member being U-shaped in transverse cross-section, having longitudinally extending upper edge portions at the ends of the U, and being horizontally disposed longitudinally in said tubular top rail with said upper edge portions supporting said upper web, and said support member being slidable with said rod out of said hollow portion through said opening when said support member is lowered relative to said upper web and spaced therebelow.

3,156,021
STORM SASH HANDLE
Edwin R. Thompson, Canfield, Ohio, assignor to Western Reserve Plastic, Inc., Canfield, Ohio
Filed June 25, 1962, Ser. No. 204,847
1 Claim. (Cl. 20—52)

A window sash frame including a panel liner and a handle to assist in raising and lowering said window sash comprising a bottom frame member of the window sash having a front vertical rib and a rear vertical rib, said ribs being coextensive with said bottom frame member and forming a substantially triangular recess therebetween, upper surfaces of said ribs providing spaced shoulders in the same plane, and a panel retaining flange integral with said bottom frame member and extending vertically upward beyond the surface of said rear rib and flush with an inner surface of said rib, the handle being of resilient material having a thickened portion along the length of its uppermost edge so as to be grasped with the human hand, and an inner and outer flange disposed at right angles to said handle in opposite directions in the same plane along the lowermost edge of said handle and coextensive therewith, a lower face of said outer flange engaging the shoulder of said front vertical rib and substantially the width thereof and flush with an outer facing of said front vertical rib, a lower face of said inner flange engaging the shoulder of said rear vertical rib and an end of said inner flange engaging the lower inner portion of said panel retaining flange, a top face of said inner flange engaging a bottom portion of said panel member enclosed in said sash and being substantially the width of said panel, a depending flange extending along the lower edge of the handle and coextensive therewith, said depending flange engaging an inner face of said outer vertical rib coextensive therewith and with its end edge portion engaged in the bottom of the recess.

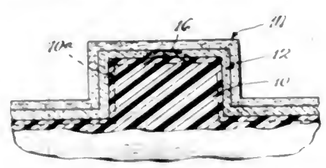


3,156,022
CORNER JOINT FOR WOODEN FRAME
Werner Schlegel, Kastanienallee 3, Essen, Germany
Filed Mar. 14, 1961, Ser. No. 95,568
Claims priority, application Germany, Mar. 18, 1960, Sch 27,612
1 Claim. (Cl. 20—92)



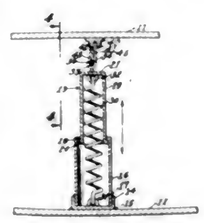
A frame structure comprising a pair of orthogonally adjoining wooden frame members provided with beveled end faces forming a miter joint, said members being formed at said end faces with respective recesses which are matchingly aligned with each other at said joint and progressively decrease in width in a direction generally perpendicular to said end faces, fastening means including a screw extending transversely to said end faces across said joint at a location beyond said recesses for holding said members together, said screw being provided with opposite terminations respectively bearing upon said members, a shear-resisting element with outwardly tapering halves resiliently expandable against the walls of said recesses in a direction parallel to said end faces, said element being seated with close fit in said recesses and bridging said members, and at least one spring washer interposed between one of said terminations and the respective member for continuously urging said members toward each other, thereby wedging said element into said recesses.

3,156,023
METHOD OF INVESTMENT CASTING
John Hockin, 4305 S. Maple Ave., Brookfield, Ill.
Filed May 16, 1961, Ser. No. 110,417
4 Claims. (Cl. 22—196)



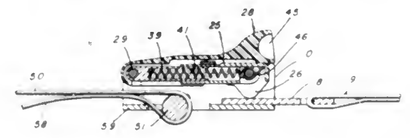
3. In a method of investment casting the steps of forming a wax pattern, immersing said pattern in a solution consisting substantially of five percent kerosene, eighty five percent alcohol and ten percent acetone, removing said pattern from said solution, drying said solution on said pattern to form a uniform thickness of soft thin insoluble film over the entire surface of the pattern, depositing a first dip coat comprised of refractory and a binder over the entire surface of said film covering said pattern, and depositing a second dip coat comprised of refractory and a binder over the entire outer surface of said first dip coat, said film serving to minimize adhesion between the first dip coat and the pattern.

3,156,024
CUFF LINK CONSTRUCTION
David W. Green, Box 3066, Grand Central Station, Glendale, Calif.
Filed July 15, 1963, Ser. No. 294,917
2 Claims. (Cl. 24—41)



1. In cuff link construction, a pair of heads, there being a shank between the heads, said shank comprising a shallow cuplike member secured to one head, a tubular member received in the cuplike member and secured thereto, said tubular member provided with an internal flange, a second tubular member telescoped within the first tubular member and provided with an external flange for cooperation with the flange of the first tubular member to limit outward movement of the inner tubular member relative to the outer tubular member, a coil spring within the inner tubular member and having one end secured to the shallow cuplike member, the opposite end of the spring being secured to the inner tubular member to maintain the two tubular members normally telescoped, the second head provided with a stud and a spring hook depending from the stud, and the inner tubular member provided with an eye member for connection with said hook.

3,156,025
SEPARABLE FASTENER
Andrew G. Carter, Grand Rapids, Mich., and Herman G. Alofs, 1512 Yorkshire SE., Grand Rapids, Mich.; said Carter assignor to Andrew G. Carter and Harriet T. Carter, a partnership doing business as Carter Engineering Company, Grand Rapids, Mich.
Filed Apr. 2, 1962, Ser. No. 184,197
6 Claims. (Cl. 24—230)

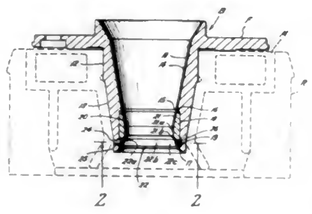


1. A buckle mechanism, comprising:
a frame and an engaging plate having interengageable apertures and abutments, respectively, for transmission of belt tension forces,
said frame having opposite sidewalls interconnected by a base, said sidewalls each having a guideway parallel to said base;
a shaft having the ends thereof slidably received in said guideways;
a cam member mounted on said shaft for sliding movement with respect to said frame, said cam member having portions disposed to bear on said engaging plate to maintain the engagement of said apertures and abutments, said cam member being slidable to a position providing freedom of said engaging plate to move to disengage said abutments and apertures, said cam member also having an extension substantially perpendicular to said shaft;
a handle shaft having the ends thereof received in said sidewalls;
a handle slidably and pivotally mounted with respect to said frame on said handle shaft, said handle having opposite guideways;
a link member having spaced side portions provided with lugs at one end engaging said handle guideways for pivotal and sliding movement therein, and the opposite end engaging said slidable shaft for rotation with respect to said cam member,
said spaced side portions being disposed on opposite sides of said cam member extension;
spring means biasing said cam member laterally to locking position,
said spring means including a member connected to said handle shaft and having telescoping relationship to said cam member extension, and also including a compression spring received within at least one of said telescoping members;
and rotary biasing means including a torsion spring surrounding said slidable shaft urging said handle and link member to an angular relationship corresponding to the locking position of said cam member, said torsion spring having the ends thereof engaging said cam member and said link member.

3,156,026
SLIP BOWL
Benjamin F. Kelley, Tulsa, Okla., assignor to Ben F. Kelley Co., Inc., a corporation of Oklahoma
Filed Dec. 4, 1961, Ser. No. 156,605
6 Claims. (Cl. 24—263)

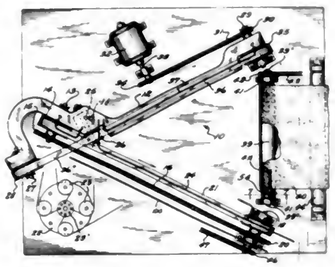
1. A slip bowl, comprising, a generally tubular metal body having a generally conical bore tapering downwardly and inwardly from its upper end, an annular guide bushing rotatably seated wholly within the wall of said bore above its lower end to define the throat portion of

said bore, said bushing being constructed of metal harder than said body, and a split retainer ring seated in the bore



wall of said body beneath the lower end of said bushing to secure the latter in place in said bore wall.

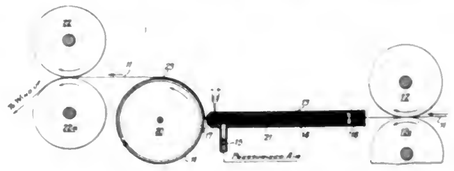
3,156,027
APPARATUS FOR FABRICATING FILAMENT WEBS
Lester R. Wellman, 110 Lakewood Place, Highland Park, Ill.
Filed Dec. 22, 1960, Ser. No. 77,723
6 Claims. (Cl. 28—1)



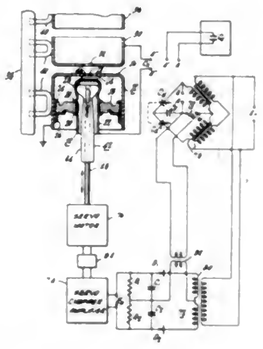
1. Apparatus for extending a plurality of threads from a creel, comprising a bi-layered traveling, endless, primary pressure belt having inner and outer extremities and between whose layers portions of the threads are transversely laced in spaced-apart relation with dangling outer end portions, a bi-layered, traveling, endless traverse pressure belt having inner and outer extremities and having its inner extremity crossing the inner extremity of the primary pressure belt and forming an outwardly diverging angle relative thereto, and means during the cycle of travel of the primary belt for engaging the dangling ends of the threads with the traveling traverse belt at the point of junction of the belts to further extend the threads by pulling portions of the same through the layers of the primary belt during outward diverging travel of the traverse belt.

3,156,028
PROCESS FOR CRIMPING TEXTILE YARN
Ernst Weiss and Rudolf A. Prokesch, Wattwil, Switzerland, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 2, 1959, Ser. No. 817,569
Claims priority, application Austria June 3, 1958
18 Claims. (Cl. 28—72)

18. A process for crimping a thermoplastic textile yarn, which comprises inducing a yarn to travel axially by means of a fluid stream, heating the yarn to plastify the same, impinging the fluid stream and the plastified yarn against a hard irregular surface while moving the irregular surface at the point of yarn impingement thereagainst in a direction transverse of the axis of the traveling yarn, retaining the yarn temporarily on said irregular surface, diverting the flowing fluid therefrom, setting the yarn by cooling before any substantial tension is applied to the crimped yarn, and winding up the yarn under tension.



3,156,029
ELECTRON GUN AND FABRICATION THEREOF
James O. Simon, Gas City, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,867
3 Claims. (Cl. 29—25.13)

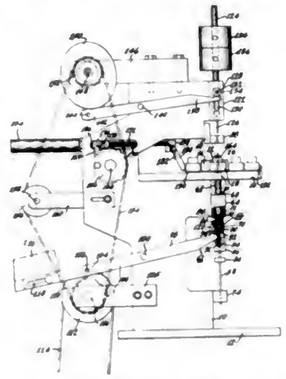


1. In the method of assembling an apertured control electrode and an elongated tubular cathode having a coated electron emissive end wall closely spaced from said control electrode, the steps of: fixing said coated end wall in such close proximity to said control electrode that it can no longer be suitably contacted and pushed away from said control electrode, and then setting the spacing between said coated end wall and said control electrode by outwardly bulging the tubular sidewall of said cathode to thereby shorten the initial length of said cathode and thereby increase the distance between said coated end wall and said control grid to a desired amount.

3,156,030
CATHODE INSERTION APPARATUS
Herbert E. Natalis, Rahway, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,837
15 Claims. (Cl. 29—25.19)

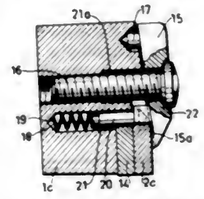
1. Apparatus for inserting a first electrode into a mount assembly comprising a second electrode and a support sleeve for said first mentioned electrode previously fixed in said assembly, said apparatus comprising means for engaging said second electrode, said means also comprising means to guide said first electrode, means for moving said mount in such a manner that said second electrode

is engaged in said second electrode engaging means, and means for moving said first electrode in said guiding means



and onto said electrode support sleeve while said second electrode is engaged by said engaging means.

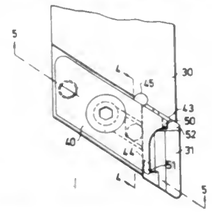
3,156,031
TOOL HOLDER
Evert Gustav Lundgren, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Sept. 7, 1961, Ser. No. 136,523
Claims priority, application Sweden, Sept. 10, 1960, 8681/60
2 Claims. (Cl. 29—96)



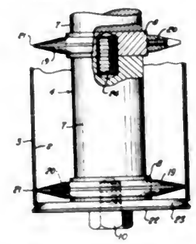
1. A tool holder comprising a holder shank, a cutting insert and a clamping jaw for clamping said insert against a bottom support surface in an insert site in said shank, an abutment surface positioned on said shank adjacent said insert site substantially perpendicular to said bottom surface, a pivot bearing between said holder shank and said clamping jaw remote from said insert site, a pin slidably mounted in a bore in the holder shank, a spring positioned to press said pin upwardly towards said clamping jaw, said pin having an inclined surface and an inclined surface on said clamping jaw positioned to be engaged by said inclined surface on said pin whereby to move said clamping jaw to engage said abutment surface.

3,156,032
CUTTING INSERT AND TOOL HOLDER THEREFOR
Evert Gustav Lundgren, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Mar. 21, 1963, Ser. No. 266,994
Claims priority, application Sweden, Mar. 23, 1962, 3261/62
11 Claims. (Cl. 29—96)

11. A tool holder and cutting insert combination comprising an insert having a substantially plane bottom surface, substantially plane side surfaces and a top surface, a cutting edge at the intersection of one of said side surfaces and said top surface, said top surface comprising a clamp contact surface adjacent to one end of said cutting edge and extending downwardly toward both said bottom surface and said one side surface and a second clamp contact surface spaced from said one clamp contact surface, said holder comprising a shaft having an insert site, said insert site having a bottom surface and side surfaces engaging the bottom surface and two adjacent side surfaces of said insert, a clamping plate, a screw holding said clamping plate against said insert and means other than said screw holding said clamping plate against lateral movement with respect to said insert site, said clamping plate having two spaced apart clamping areas engaging said clamp contact surfaces on said insert, said clamp contact surfaces being positioned adjacent the free ends of said side surfaces in said insert site.



3,156,033
METHOD AND APPARATUS FOR FORMING A GLASS COATED TUBULAR ROLLER ELEMENT
Carl S. Brown, Cleveland, Ohio, assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,641
6 Claims. (Cl. 29—148.4)

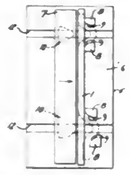


1. A method of forming a glass-coated roller, comprising,
(*a*) fusing a glass coating to the exterior surface of the thin-wall non-self-supporting tubular shell,
(*b*) subsequently forcing a central self-supporting core having an outer continuous diameter substantially corresponding to the internal diameter of the shell into the thin-wall shell to substantially remove any distortion from the shell and form a self-supporting laminated roller.

3,156,034
METHOD OF FORMING CURVED AND FLANGED METAL MEMBERS
Frederick A. Gruetjen, Santa Barbara, Calif., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Aug. 19, 1963, Ser. No. 303,044
6 Claims. (Cl. 29—155)

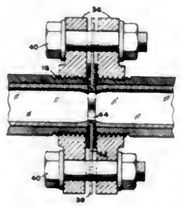
1. In the method of forming a flanged, curved metal member from a metal blank by initially offsetting the blank in the direction of its width to stress one side of the blank in tension and the other in compression in the center

of the area being offset and subsequently flanging the blank longitudinally along each side, the step consisting of controllably pressing the side of the blank under compression during offsetting progressively upwardly from the plane of the blank along the edge thereof simultaneously during the offsetting of the blank whereby the fibers



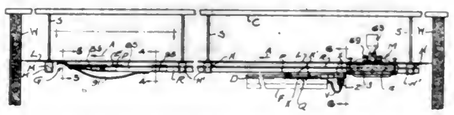
under compression are permitted to yield upwardly to a predetermined extent with the offsetting of the blank to thereby reduce the total upset in said fibers while at the same time shifting the neutral fiber axis of the blank relatively toward the tension edge of the blank to thereby reduce the stretching of the fibers under tension during the offsetting operation.

3,156,035
METHOD OF MAKING A GLASS LINED PIPE JOINT
Donald E. Diehl, Rochester, and Herbert F. Young, West Webster, N.Y., assignors to Pfaudler Permutit, Inc., Rochester, N.Y., a corporation of New York
Filed July 20, 1959, Ser. No. 828,344
4 Claims. (Cl. 29—157)



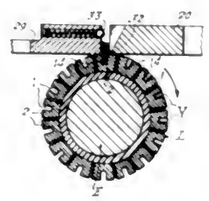
1. The method of cutting and fitting glass-lined pipe, comprising the method steps of cutting said pipe, supporting said pipe in substantially vertical orientation with the cut end lowermost, heating the end of said pipe while in vertical orientation to the softening temperature of the glass lining, maintaining said pipe at said elevated temperature until the glass lining softens and sags out of the end of the pipe to form an enlarged, annular projection extending therebelow, cooling said pipe, and grinding said projection to form a flat gasket seating surface.

3,156,036
INSTALLATION EQUIPMENT FOR SUCCESSIVE ELONGATED UNITS
Charles Williams, 7058 Bancroft, St. Louis 9, Mo.
Original application Dec. 18, 1958, Ser. No. 781,226, now Patent No. 3,090,110, dated May 21, 1963. Divided and this application Apr. 18, 1963, Ser. No. 273,938
5 Claims. (Cl. 29—203)



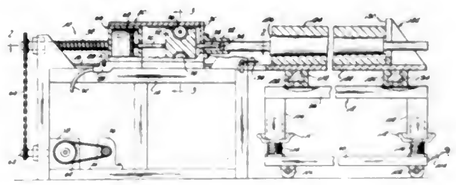
1. In a device for feeding electrical conduit-supporting rail to a series of aligned hangers spaced apart and suspended from overhead supports and connected by a stationary guy line, an elongated guide comprising a body rear part provided with attaching elements at one end for connection to one end of a rail, an elongated body forward part hinged at one end to said body rear part and having a guy line engageable tip at its other end, with an upper face concaved in cross section, and spring means yieldingly thrusting said tip end upwardly in advance of said body part.

3,156,037
ARMATURE WIRE STAKING AND CUTTING MACHINE
Samuel Warner, Hillside, N.J., assignor to Samuel Warner, Harold Jacobs and Kurt Uglig, as trustees
Filed Apr. 19, 1961, Ser. No. 104,022
4 Claims. (Cl. 29—205)



1. A machine for connecting the wires of an armature to corresponding commutator bars having elongated slots with spaced side walls opening through the periphery of the commutator to receive the wires, said machine including a frame, means on the frame for mounting the armature and commutator for rotation about a common axis, means for securing an armature wire in each commutator slot with the end portions of the wires extending from the slots, and cutter means including a cutter edge mounted on said frame fixed in cooperative relation with the edge of a commutator slot to shear said end portions of the wires between said edge of said commutator slot and said cutter edge upon rotation of the commutator.

3,156,038
AIR HAMMER MANDREL PRESS
Angelo J. Donofrio, Hasbrouck Heights, N.J., assignor to Toscony, Inc., Passaic, N.J., a corporation of New York
Filed June 22, 1962, Ser. No. 204,358
3 Claims. (Cl. 29—234)

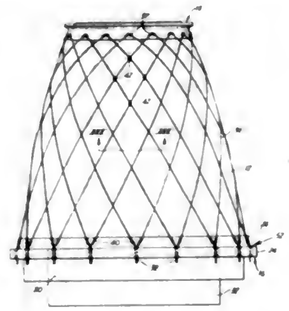


3. In combination,
a frame,
a hammer assembly mounted on the frame for movement in an elongated path,
means for moving the hammer assembly in the elongated path,
a portable truck for supporting a mandrel and a hollow cylinder including
lock means to releasably secure the truck to the frame to prevent any relative movement therebetween and so that the axis of the mandrel lies in the elongated path, and
a support to hold the cylinder in a fixed position in the elongated path, and
means slidably coupling the hammer assembly with one end of the mandrel whereby the movement of the hammer assembly forces the mandrel into the cylinder.

3,156,039
HIGH ENERGY FORMING PROCESS
Charles H. Martens, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Sept. 24, 1963, Ser. No. 311,259
4 Claims. (Cl. 29—421)
(Granted under Title 35, U.S. Code (1952), sec. 266)

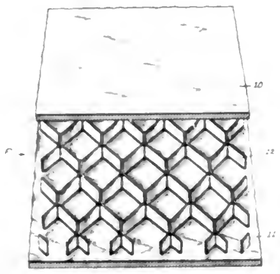
1. In the high energy forming of austenitic stainless steels whereby high pressures are instantaneously created in a fluid and thereby transmitted to the surface of a work piece forcing it to conform to the configuration of a die, said work piece and said die being immersed in said fluid; the improvement which comprises substituting for said fluid a liquid having a temperature of −100° F. or less and allowing the temperature of said work piece to come to equilibrium with the temperature of said liquid before forming said work piece.

3,156,040
METAL FABRICATION
Martin G. Drexhage, Buffalo, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Nov. 8, 1960, Ser. No. 68,018
2 Claims. (Cl. 29—452)



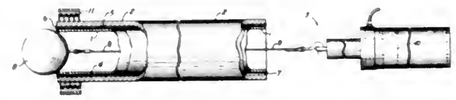
1. The method of fabricating metal articles particularly from metals of low ductility, which comprises placing a pair of rings on opposite end portions of a mandrel having an intermediate portion of compound curvature dimensioned to pass neither of said rings, and with said rings spaced apart by said intermediate portion of the mandrel, attaching the ends of a series of high tensile strength wires to one of said rings at circumferentially spaced points, therearound and passing such wires therefrom over said intermediate portion of the mandrel to lie as a geodesic network thereon between the rings, prestressing said wires and attaching them, while prestressed, to the other of said rings, spraying a metal skin over said intermediate portion of said mandrel and said rings to form a shell having said wires embedded therein, cutting away the inside of one of said rings at its abutment surface with the mandrel to permit such ring to pass over said intermediate portion of the mandrel, thereby releasing the prestressing force upon the wires and effecting compression of said skin, and then removing the article from the mandrel.

3,156,041
METHOD OF SOLDERING AND BRAZING STRUCTURAL ELEMENTS
Frank M. Gault, 124 Twin Falls Road, Berkeley Heights, N.J.
Filed Apr. 18, 1960, Ser. No. 22,903
1 Claim. (Cl. 29—471.1)



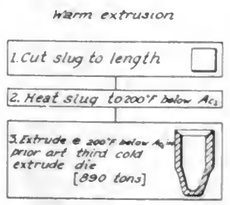
A method of making hollow structural members, comprising cleaning the surfaces of ferrous metal sheets having a thickness not substantially exceeding .025 inch, assembling with and between said sheets a honeycomb reinforcement of ferrous metal strips having a thickness of up to about .025 inch, said strips forming open-ended compartments therebetween of substantially uniform shape, applying to said sheets and reinforcement a brazing metal and a brazing flux consisting essentially of 10 to 60 parts of a fluoride, 40 to 90 parts of a borate, at least 5% of a phosphate and the remainder water, all parts being by weight, heating the assembled sheets and reinforcement to flux their internal surfaces and react said flux with said sheets to provide the internal surfaces of said member with a corrosion-resisting phosphate coating and melt said brazing metal to braze said sheets to said reinforcement, and cooling said assembly to solidify said brazing metal and unite said sheets and reinforcement and form a structural member containing a plurality of mutually reinforcing hollow sealed compartments.

3,156,042
METHOD OF MAKING DUPLEX WALL TUBING
Daniel J. Reed, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Apr. 10, 1962, Ser. No. 186,459
1 Claim. (Cl. 29—471.5)



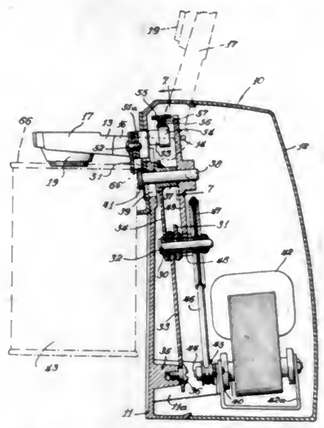
The process of making a duplex wall tubing, which comprises assembling a pair of individual metal tubes with a clearance therebetween and being capable of being expanded without cracking, said tubes carrying a brazing agent in said clearance, hermetically closing the clearance at the ends of the tubes, progressively induction heating the tubes from one end to other and raising the temperature to a brazing temperature, and progressively expanding the inner tube into engagement with the outer tube immediately rearwardly of the heated area to bond the inner tube to the outer tube, said expansion of the inner tube also expanding the outer tube to establish a permanent stretch of the outer tube.

3,156,043
PROCESS FOR WARM EXTRUSION OF METAL
Charles G. Grazioso, 2116 Hartel Ave., Philadelphia 15, Pa., and Gerard W. Mulder, R.R. 2, Delavan, Wis.
Filed Mar. 9, 1956, Ser. No. 570,645
1 Claim. (Cl. 29—552.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



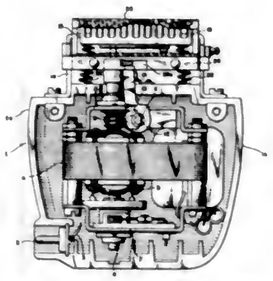
A process of forming high or low carbon steel or its alloys consisting of heating in a controlled atmosphere a 3 inch diameter billet of W.D. 1018 steel of a weight approximately the weight of a finished product to 1250° F., placing said billet in a fully cupped die, and fully cupping said billet in a single extrusion.

3,156,044
ELECTRIC CAN OPENER
George L. Congdon, Fort Atkinson, and John A. Benkovich, Beloit, Wis., assignors to Burgess Vibrocrafters, Inc., Grayslake, Ill., a corporation of Illinois
Filed Oct. 25, 1962, Ser. No. 232,966
13 Claims. (Cl. 30—4)



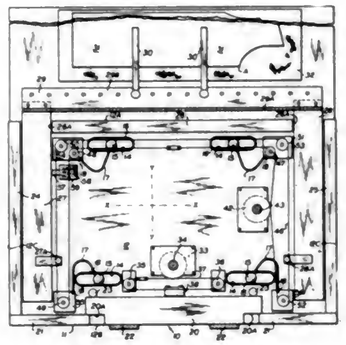
1. A can opener comprising: a housing including a front panel having an elongated vertical slot therein; a cutter blade mounted on the outside of said panel above said slot; a shaft extending through and guided by said slot and guided by the housing for vertical movement in the slot; a can turning wheel secured to the outer end of said shaft, said can turning wheel being located behind and below said cutter blade; an operating handle pivotally supported on said panel on the upper portion thereof; a toggle joint assembly in said housing and including two end connections, one of which receives said shaft and the other of which is supported by the housing against substantial vertical movement, said handle being operatively connected to said assembly between said two ends to move the can turning wheel vertically in said slot in response to movement of the handle; and power means in said housing and connected to said shaft to impart a rotary movement to the can turning wheel.

3,156,045
DRY SHAVER WITH RECIPROCATING INNER CUTTER AND COMPOUND OSCILLATING OUTER SHEAR PLATE
Johan Godefroy, Mauricialaan 40, Overveen, Netherlands
Filed Oct. 9, 1961, Ser. No. 150,610
3 Claims. (Cl. 30—43.3)



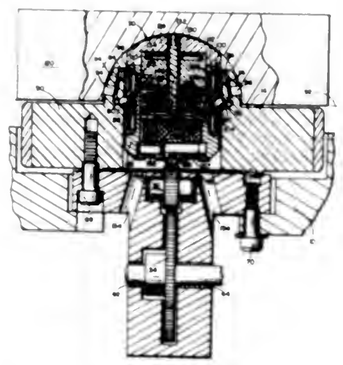
1. In an electric shaver, a shaverhead assembly including:
(A) a plurality of knives;
(B) means for causing said knives to reciprocate along a first longitudinal axis;
(C) a cutting plate with means for mounting said plate above said knives;
(D) means for oscillating said cutting plate about a second longitudinal axis that is off-set from said first longitudinal axis; and
(E) means for causing said cutting plate to oscillate and said knives to reciprocate at different frequencies.

3,156,046
PATTERN GRADING DEVICE
Joel Sanford Potter, Timbertop Farm, West Nyack, N.Y.
Filed Mar. 7, 1962, Ser. No. 178,131
5 Claims. (Cl. 33—12)



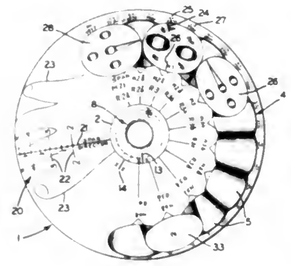
1. A pattern grading device comprising a rectangular base plate defined by upper and lower horizontal edge portions and opposed vertical edge portions, a horizontal stop bar carried on said plate adjacent the lower horizontal edge portion of said base, said stop bar being mounted on said base plate to permit relative horizontal movement therebetween, brackets connected to said stop bar adaptable for fixedly securing said stop bar to a supporting surface, opposed slide guides connected adjacent each vertical edge portion of said base plate, a slide bar slidably mounted relative to said base plate disposed in each of said slide guides, a tie means interconnecting the opposed slide bars to provide for concomitant movement of said slide bars relative said base plate, means for holding a master pattern to said tie means, means connected to said base plate for movably supporting said base plate over a supporting surface whereby grading of the master pattern is attained by proportionate movement of the pattern in a horizontal and vertical direction effected by horizontal movement of the base relative to stop bar and vertical movement of the slide base relative said base plate relative to a fixed sheet of material, and means for determining the proportionate vertical and horizontal movement of said master pattern for the grading of a given size, said latter means including a first indicator for indicating the proportional horizontal movement of said pattern, and a second indicator for indicating the predetermined proportional vertical movement of said master pattern grading, each of said indicators being calibrated to read in sizes.

3,156,047
CAVITY GAUGE AND METHOD FOR MEASURING A CAVITY
Shirley Frederick Eyestone and Stanley W. Cogan, Whittier, and Joseph A. Mehm, Huntington Park, Calif., assignors to North American Aviation, Inc.
Filed Feb. 9, 1961, Ser. No. 88,199
10 Claims. (Cl. 33—174)



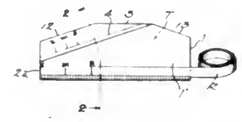
1. In combination: supporting means; positioning means for positioning a device to be inspected upon said supporting means; housing means; first and second diaphragm means each having a substantially rigid rim and hub and a flexible web; first and second conical bearing journals having, respectively, first and second apex angles and positioned, respectively, upon said hubs; means for attaching said first and second diaphragm means at their rims to opposite sides of said housing means with the cones of said journals diverging outward from said housing means and with the axes of said cones aligned; third and fourth conical bearing journals having, respectively, third and fourth apex angles and positioned upon said supporting means with their axes aligned and their diverging directions toward each other; said supporting means forming a space, between said third and fourth conical journals, for positioning said housing means to allow rotation in said space; a first spherical ball positioned between said first and third conical journals to support said housing means for rotation relative to said support means and to align the axes of said first and third conical bearings; a second spherical ball positioned between said second and fourth conical journals to support said housing means for rotation relative to said support means and to align the axes of said second and fourth conical bearings to cause the axes of said bearings to be aligned along the axis of rotation of said housing means; said first and second diaphragm means biasing said balls into engagement with and spring-loading said bearings; feeler gauge means mounted upon said housing means and adapted to be extensible from said axis of rotation in a radial direction; and means for measuring the extension of said feeler gauge means.

3,156,048
BOWLING BALL GRIP FITTING DEVICE
Marvin M. Cohan, deceased, late of Canton, Ohio, by Hilda Cohan, executrix, 205 22nd St. NW., Canton, Ohio
Filed June 27, 1961, Ser. No. 120,093
9 Claims. (Cl. 33—174)



1. A bowler's grip measuring device comprising a ball having a thumb hole therein and a progressively increasing spiral groove therein surrounding and eccentric to the thumb hole, each edge of said groove comprising a series of arcuate portions, opposed pairs of arcuate portions in the two edges of the groove being concentric, and a plurality of removable cylindrical finger hole inserts each having two spaced finger holes of different diameter therein, each of said finger hole inserts being selectively longitudinally slidably and rotatably mounted between any desired opposed concentric pairs of arcuate portions in said groove, said arcuate portions of the edges of the groove being of considerably less length than the diameter of each finger hole insert.

3,156,049
MATRIX BAND FORMING TEMPLATE
Frank J. Zolnowski, 3456 E. Plankinton Ave., Cudahy, Wis.
Filed Mar. 21, 1962, Ser. No. 181,286
7 Claims. (Cl. 33—174)



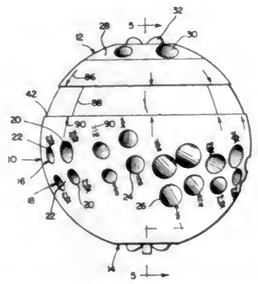
1. A matrix band forming template for guiding a band which is being folded over itself into a generally curved and flat band, said template being a generally flat and unitary member and having one side defining a folding edge over which said band is foldable, a guide edge formed on the template and arranged at substantially less than a forty-five degree angle with said folding edge and for guiding and positioning said band at the proper angle relative to said folding edge, and type of tooth indicia along said guide edge and spaced a predetermined distance from the intersection of said folding edge and

said guide edge for determining the proper axial position of said band relative to said folding edge to thereby substantially center the finished fold on said band.

3,156,050
DEVICE FOR DETERMINING FINGER-HOLE POSITIONS IN BOWLING BALLS

John G. Hendricks, Weston, Mass., assignor to Stowe-Woodward, Inc., Newton Upper Falls, Mass., a corporation of Massachusetts

Filed Mar. 23, 1962, Ser. No. 182,061
1 Claim. (Cl. 33—174)

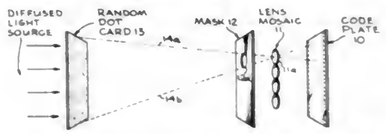


A device for fitting a bowling ball to a hand of a bowler, said device comprising a generally ball shaped body presenting a medial zone and a pair of opposed zones on opposite sides thereof, said body having an axis, said medial zone presenting two rows of finger hole pairs, each of said two rows of finger hole pairs being disposed about said axis in said medial portion in a spiral, the holes of one of the spirals being deeper than the holes of the other of said spirals, one of said opposed zones being provided with generally conical cavity having an axis coinciding with said axis of said body, the other of said opposed zones being provided with a generally cylindrical cavity having an axis coinciding with said axis of said body, an anchor disposed in said ball between said generally conical cavity and said generally cylindrical cavity, a pivotal shaft universally pivotally journaled in said anchor and extending into said generally conical cavity, a fixed shaft fixed to said anchor and extending into said generally cylindrical cavity, a solid conical sector having a sequence of thumb holes therein and a central bore therethrough, said thumb holes of said sequence being of successively differing diameters, said pivotal shaft extending through said central bore of said solid conical sector, a flange about said solid conical sector, said flange bearing against the periphery of said generally conical cavity, said solid conical sector having a cavity therein, said pivotal shaft having an externally threaded outer extremity, said fixed shaft having an externally threaded outer extremity, a first manually engageable nut having an internally threaded bore turned onto the externally threaded outer extremity of said pivotal shaft, a second manually engageable nut having an internally threaded bore turned onto the externally threaded outer extremity of said fixed shaft, said first nut clamping said flange against said periphery and projecting outwardly beyond the general outer profile of said solid sector when into innermost position, a plurality of selectable heavy metal weights having openings receiving said fixed shaft and being seated in said cylindrical cavity, said second nut clamping said heavy metal weights into said cylindrical cavity and projecting outwardly beyond the general outer profile of the zone of said body having said cylindrical cavity, said cylindrical cavity being open except for said second nut.

3,156,051
CRYPTOGRAPHIC TECHNIQUE AND APPARATUS

William R. Hughes, Northridge, and Robert M. Stewart, Encino, Calif., assignors to Space-General Corporation, Glendale, Calif., a corporation

Filed June 6, 1961, Ser. No. 115,153
9 Claims. (Cl. 35—2)

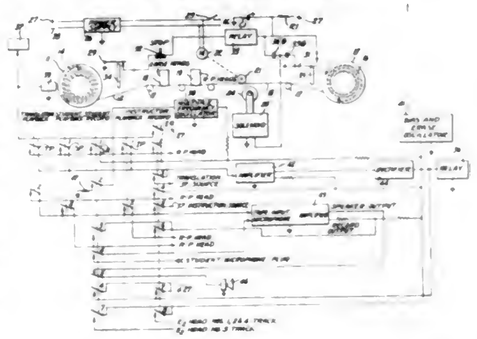


1. Coding apparatus comprising: a photographic plate for recording images projected thereon; a lens mosaic having N lenses, N being an integer greater than 1, said mosaic being positioned in front of said plate whereat said N lenses will respectively project upon N different areas thereof; means for projecting N different patterns of randomly arranged images of dots on each of the N areas of said plate, the projection by said means being such that the arrangements of dot images in said N areas are different from each other, and means for recording on a medium in superimposed relationship in a single area a data pattern as modified in each discrete N area by the respective arrangement of dots in said N areas.

3,156,052
AUDIO INSTRUCTION REPEATER

Carlos A. Irazoqui, New York, N.Y., assignor to Electro-Mechanical Consultants, Inc., New York, N.Y., a corporation of New York

Filed Apr. 23, 1962, Ser. No. 189,419
5 Claims. (Cl. 35—35)

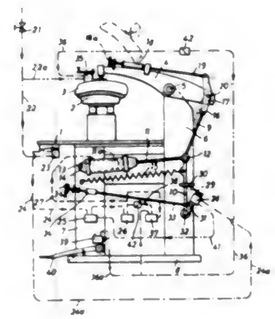


1. In an audio instructor repeater including a multiple track tape recorder for simultaneously recording variable length instructions and translations thereof and for separately recording a student's version of said instructions on a multiple track control tape, and for selectively repeating said recordings on said control tape in response to a timing signal recorded on said control tape, a control system comprising: spring tensioned control tape, supply and take-up spools for said control tape attached to and extending therebetween, said spring tensioned supply spool overpowering said take-up spool whereby said control tape is normally on said supply spool; a driven capstan positioned adjacent said control tape; and pressure means responsive to said timing signal for holding said control tape in engagement with said capstan whereby said capstan draws said control tape from said supply spool and said take-up spool takes up said control tape drawing said control tape through said multiple track tape recorder to record information or repeat information recorded on said control tape, and for disengaging said control tape from said capstan in the absence of said timing signal whereby said supply spool withdraws said control tape from said supply spool and said take-up spool takes up said control tape drawing said control tape through said multiple track tape recorder to record information or repeat information recorded on said control tape, and for disengaging said control tape from said capstan in the absence of said timing signal whereby said supply spool withdraws said control tape from said take-up spool.

3,156,053
GARMENT FINISHING MACHINE

Paul Mullejans, Cologne-Merheim, and Manfred Albiez, Cologne-Braunsfeld, Germany, assignors to Hoffman Maschinen G.m.b.H., Cologne-Mulheim, Germany

Filed May 15, 1963, Ser. No. 280,547
Claims priority, application Germany, May 15, 1962, H 45,787
6 Claims. (Cl. 38—40)



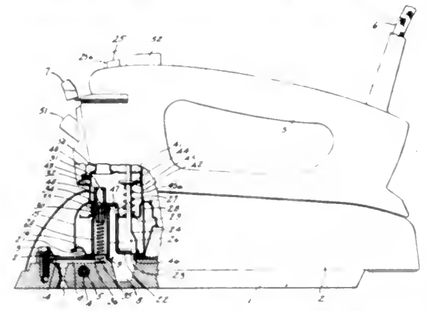
1. In a machine for pressing textile materials of the type having upper and lower plates movable relative to each other by a toggle linkage and a single fluid motor connected to the latter for pressing textile material between the plates, the combination with said elements of the machine of a mechanism for moving the plates relative to each other comprising a source of fluid under pressure, a conduit for supplying fluid from said source to the fluid motor, valve means for controlling flow of fluid through said conduit to said motor including a limit valve for stopping said motor when actuated, a cam on the toggle linkage movable in a path intersecting said limit valve to engage and operate the latter, a member mounting said limit valve for movement toward and away from said cam, and manually operable means for adjusting the member and position of the limit switch relative to the cam on the toggle linkage.

3,156,054
FLOODED BOILER STEAM OR SPRAY IRON

William E. Davidson, Ontario, Calif., assignor to General Electric Company, a corporation of New York

Filed Oct. 9, 1962, Ser. No. 229,374
6 Claims. (Cl. 38—77)

1. In a flatiron having a soleplate, a liquid boiler for generating steam, means for heating said soleplate and boiler, and a water reservoir overlying said boiler, a liquid passage from said reservoir to said boiler maintaining the boiler in a flooded condition, a steam conduit of insulating material extending upwardly from said boiler into said water reservoir for permitting the steam formed in said boiler to separate from the water in the boiler and pass upwardly into the water reservoir and thus equalize pressure between the boiler and the reservoir, baffle means surrounding said conduit for limiting the circulation of

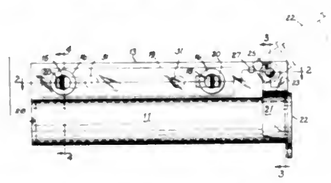


steam within said reservoir, and means for conducting the separated steam to the fabric being ironed.

3,156,055
RAILWAY CAR CARD HOLDER

James J. Hennessy, Jr., % Hennessy Lubricator Co., Inc., 605 Guilford Ave., Chambersburg, Pa.

Filed June 17, 1963, Ser. No. 288,415
4 Claims. (Cl. 40—19)

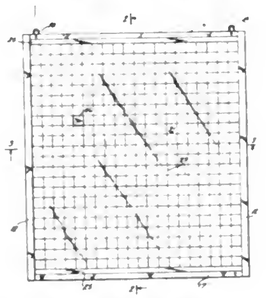


1. A holder for a railway defect card or the like, comprising an elongated tubular body having a flat flange projecting tangentially from one side thereof, said body and flange being of plastic material, an aperture in said flange, an annular metal grommet inserted through said aperture and headed over on opposite sides of said flange, and a metal mounting strip for application to a car wall, said strip lying against said flange and including a projecting ear received in said grommet and bent over the latter to hold the tube and strip assembled.

3,156,056
VISUAL CONTROL BOARD

Victor Pribil, 120 Iris Ave., Floral Park, N.Y.

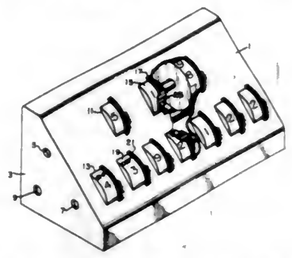
Filed Jan. 11, 1962, Ser. No. 165,526
2 Claims. (Cl. 40—63)



1. A visual control board arranged to removably receive and support magnetic indicators on predetermined

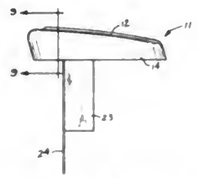
areas on the face thereof, said board comprising a substantially rectangular rigid, flat support constituted of a magnetic material, a transparent plastic sheet on said support, the face of the plastic sheet in contact with said support having thereon permanent markings which divide the face into said predetermined areas for receiving the magnetic indicators and said plastic sheet having a thickness such that said permanent markings are visible through the sheet, and relatively long, narrow, magnetized strips secured to at least two opposite edges of said plastic sheet extending the entire length of said edges, said strips being magnetically attracted to said support at all four corners and thereby removably mounting the transparent sheet on the support in flat wrinkle-free superposed relation therewith.

3,156,057
TELEPHONE NUMBERS REGISTER
Duane E. Cooper, 21 Forest Road, Delmar, N.Y.
Filed Mar. 12, 1962, Ser. No. 178,854
1 Claim. (Cl. 40—68)



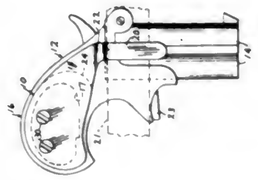
A telephone numbers register comprising a housing, three rods, ten rollers with indicia thereon, and a spring; said housing having end walls and window openings formed therein, said three rods being mounted in said end walls and being in longitudinal alignment as arranged and disposed therein, each one of said rollers having integral therewith a knurled disc and an indent wheel, each of said knurled discs being of a diameter greater than its associated roller to permit manipulation thereof, three of said rollers being freely mounted on one of said rods mounted in the upper portion of said end walls, the remaining seven of said rollers being freely mounted on one of said rods mounted in the forward lower portion of said end walls, each of said window openings formed in said housing corresponding to and associated with each of said rollers and their integral knurled discs as arranged and disposed on said rods, each of said window openings being formed slightly larger than the segmental area generated by the housing plane cutting each of said rollers and their integral discs to thereby permit free rotation of each of said rollers and their integral discs and to prevent endwise movement of said rollers relative to their respective longitudinal axes of said rods upon which said rollers and their integral discs are freely mounted, said three rollers mounted in the upper portion of said end walls having indicia thereon corresponding to the NPA Code for the direct dialing of station to station calls, said remaining seven rollers mounted in the forward lower portion of said end walls having indicia thereon corresponding to the telephone numbers of the parties to be called, the third one of said rods being mounted in said end walls and arranged and disposed between the other two of said mounted rods, said spring being mounted on said third rod, said spring comprising a body portion and spring fingers, said body portion being cross-sectionally incomplete in the generation of a circle but in excess of a semi-circle, said spring fingers being integral with said body portion and extending from terminal portions of the incomplete circular generation of said body portion, said body portion receiving said third rod therein and being retained on said third rod received therein, each one of said spring fingers having a depending detent, each one of said indent wheels having indents formed therein corresponding to the indicia on each of said rollers, each one of said depending detents being engaged with one of said indents of each of said indent wheels.

3,156,058
CAP
Henry Ruskin, Bayside, and Ernest S. Viola, Westbury, N.Y., assignors to Swingline Inc., Long Island City, N.Y., a corporation of New York
Filed Mar. 1, 1961, Ser. No. 92,616
5 Claims. (Cl. 40—331)



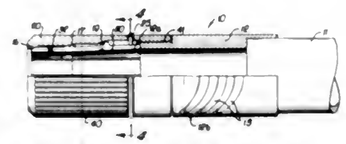
1. A cap comprising a body member of resinous material having a recess therewithin, a substantially transparent top member of resinous material overlying said body member and adhesively secured thereto, said top member having an upper face, a lower face, indicia cut out of said lower face but beneath said upper face, a dissolvable paint layer beneath said indicia; and a non-dissolvable intermediate member impregnated with a paint dissolving solvent intervening said top member and said body member.

3,156,059
GRIP HOLDER FOR PISTOLS
Robert E. Crain, 1524 NW. 29, Oklahoma City, Okla.
Filed Nov. 26, 1962, Ser. No. 240,047
2 Claims. (Cl. 42—71)



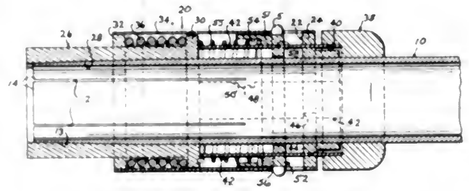
1. In combination with a fire arm, such as a pistol having a barrel, said pistol having a hand grip portion extending downwardly and rearwardly of a gun barrel and having a transverse irregular shaped opening and having detachable handle plates on opposite sides of the grip portion, a support including: a first body comprising a sheet metal plate positioned on one side of the grip portion of said pistol and having marginal edges formed substantially coextensive with the grip portion to define the configuration of a conventional pistol hand grip portion; an arm integrally connected with the edge of said first body adjacent said gun barrel and turned arcuately outward from the plane of said first body and extending, throughout its length, in parallel spaced relation with respect to the barrel toward the forward end of the latter; a second body comprising a sheet metal plate having marginal edges formed substantially coextensive with the grip portion to define the configuration of a conventional pistol grip portion positioned on the other side of said pistol grip portion; and means interconnecting said first and second bodies through the opening in the grip portion of said pistol for positioning said support.

3,156,060
SHOTGUN CHOKE
Frank A. Pachmayr, Los Angeles, Calif., assignor to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 26, 1962, Ser. No. 247,080
5 Claims. (Cl. 42—79)



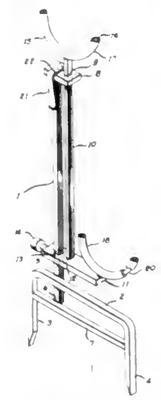
1. A shotgun choke comprising a tubular body applicable at its rear to a gun barrel and split from its front end rearwardly and at circular intervals to form a radially expansible and contractable shot pattern control section, said section having within its split length a bore having an axially inner extent the wall of which in the expanded condition of the section being in substantially straight parallelism with the body axis, and a forward wall extent which progressively enlarges to the discharge end of the section, said bore wall extents being angularly related so that in the radially contracted condition of the body said inner extent of the bore wall progressively tapers toward said forward extent the wall of which then is in substantially straight parallelism with the body axis, a sleeve rotatable about said split section of the body, and interengaging wedge means on said section and sleeve operable by rotation of the sleeve to radially deflect the section between said expanded and contracted conditions.

3,156,061
INERTIA OPERATED AUTOMATIC SHOTGUN CHOKE
Walton B. Evans, Newalla, Okla.
(420 S. Highland Ave., Midwest City, Okla.)
Filed Mar. 11, 1963, Ser. No. 264,353
4 Claims. (Cl. 42—79)



1. An automatic choke in combination with a shotgun having a barrel and having circumferentially spaced slots extending longitudinally rearward from the forward end of said barrel forming a resilient contractile section, comprising:
- a tubular housing secured to said barrel rearwardly of the contractile section, said housing having an annular flange perpendicular to the axis of said barrel, said flange having a plurality of circumferentially spaced slots therethrough;
- a cylindrical first inertia body slidably surrounding said barrel forwardly of said housing and operable by movement rearwardly of the forward end of the barrel to constrict the contractile section of the latter and vary the pattern of shot fired therethrough;
- a ring slidably surrounding said first inertia body intermediate its ends;
- a sleeve extending between and connected at its respective ends to the periphery of said housing flange and said ring;
- a resilient member around said first inertia body within said sleeve normally urging said first inertia body rearwardly of the forward end of said barrel;
- a handle surrounding said barrel rearwardly of said housing;
- a plurality of circumferentially spaced tangs interconnecting said first inertia body and said handle, said tangs slidably projecting longitudinally through the slots in said housing flange, each of said tangs having a first recess in one edge thereof engaging said housing flange; and
- means interposed between said housing flange and said first inertia body and actuated by the recoil of said shot gun for rotating said tangs around a portion of the barrel.

3,156,062
GUN REST
Ralph Maxwell Stevenson, 2010 Union Bank Bldg., Pittsburgh, Pa., and Emil W. Knight, Slippery Rock, Pa.
Filed Nov. 20, 1963, Ser. No. 325,040
4 Claims. (Cl. 42—94)

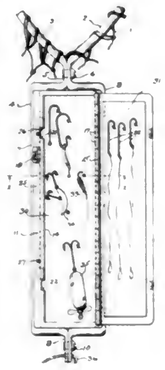


1. A gun rest comprising a standard in the shape of a rectangular bar mounted to extend vertically on a ground bracket having a pair of spikes for inserting into the ground, said standard having a cross plate at the top thereof, an adjustable arm having a plate at the bottom thereof with an opening complementary to the shape of the vertical standard for sliding movement thereon, said top plate having a recess for receiving the adjustable arm, a cradle for resting a gun barrel at the top of said adjustable arm and a similar cradle on the bottom plate of said adjustable arm and a set screw for securing the bottom plate of the adjustable arm to any position along the axis of the vertical arm of said standard.

3,156,063
COMBINED FISH NET AND TACKLE BOX
Nute Mace, 87 Allen St., Sylva, N.C.
Filed Nov. 13, 1963, Ser. No. 323,480
8 Claims. (Cl. 43—11)

1. A fish net comprising:
(*a*) a supporting frame having a net-supporting loop portion and an integral handle portion formed of the extended ends of said loop portion, said ends being extended outwardly away from each other, then parallel to each other, and then towards each other again at the extreme ends to form two spaced parallel hand-grip members providing a handle;
(*b*) a fish net secured to said loop portion;

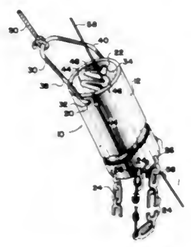
(*c*) means for rigidly securing the ends of said loop portion in close proximity between said loop portion and said handle portion;



(*d*) means for rigidly securing said extreme ends in close proximity; and

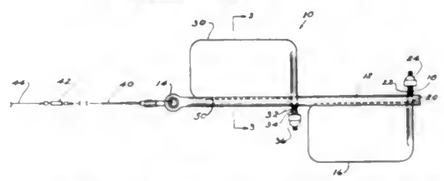
(*e*) a tackle box secured between said hand-grip members and having a shape and size to complement the handle formed by said hand-grip members.

3,156,064
MEANS TO RECOVER A LURE OR THE LIKE
Herbert J. Czirr, Grand Hotel, Medicine Lodge, Kans.
Filed Aug. 21, 1963, Ser. No. 303,624
5 Claims. (Cl. 43—17.2)



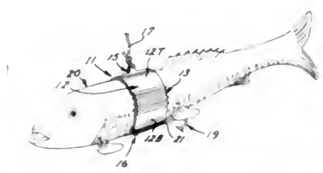
5. Means for recovering a snagged object having a line attached thereto comprising, in combination, a hollow body member having an opening in the side thereof adapted to receive the line or the like attached to the snagged object to be recovered, bail means having portions pivotally mounted on said body member in spaced relation and having a handle portion shaped and adapted to receive a cord or the like, said bail means having a portion positioned in the hollow of said body member adjacent and spaced from said opening thereof shaped to have a line receiving recess with an adjacent portion of said bail means being positioned relative to said opening of said body member to open and close said opening of said body member when said bail means is pivotally moved relative to said body member, said means for recovering a snagged object being constructed and adapted so that the line attached to the object can be passed through said opening of said body member and received in said recess in said bail means so that said body member can be moved along the line into engagement with the snagged object or the like.

3,156,065
FISHING LINE UNWINDER
Alfred W. Klammer, 1521 73rd Ave. N., Minneapolis, Minn.
Filed Feb. 20, 1963, Ser. No. 259,804
3 Claims. (Cl. 43—43.13)



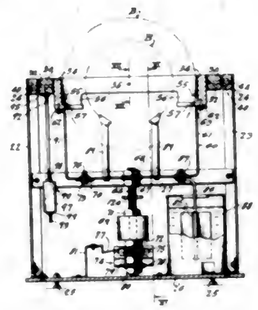
1. A fishing line unwinding device comprising an elongated member, a first adjustable wing pivotally mounted on one side of the member adjacent to one end of the member, a second adjustable wing pivotally mounted on the opposite side of the member to the rear of the first wing, each of said wings having an edge adapted to abut said member, each of the wings being provided with a rod on the edge abutting the member extending slidably through an aperture in the member to the opposite side, each of the rods being screw threaded on its outer end, a nut mounted on the screw threaded end of each of the rods, a spring carried on each rod between the nut and the member for holding the wings in their adjusted positions, said wings being shiftable to either side of the longitudinal axis of said member and frictionally held in adjusted angular relationship with respect to said member for optional reverse rotation of the device.

3,156,066
LIVE BAIT HOLDER
George E. Munyer, Inglewood, Calif. (4093 Rosecrans Ave., Hawthorne, Calif.)
Filed Mar. 4, 1963, Ser. No. 262,491
6 Claims. (Cl. 43—44.4)



1. A bait holder comprising: a resilient holding loop means defining a substantially elliptical oval interior aperture means extending longitudinally therethrough and adapted to resiliently engage area coextensive side portions of the middle part of a bait in the form of a longitudinal fish body when inserted longitudinally thereinto with a head portion thereof positioned forwardly of said longitudinal interior aperture means and with a tail portion thereof positioned rearwardly of said longitudinal interior aperture means, said resilient holding loop means having side parts thereof provided with controllably forcibly manually extendable resilient effective spring means in the form of integral corrugation means formed therein whereby to provide for controllable manual extension thereof and the consequent effective enlargement of said longitudinal interior aperture means to facilitate initial insertion of said fish body therethrough, said resilient effective spring means normally forcibly drawing opposed portions of said resilient holding loop means toward each other whereby to correspondingly effectively reduce the interior size of said longitudinal interior aperture means and to produce forcible engagement of the inner surfaces of said opposed portions with corresponding exterior surface portions of the middle part of said fish body adapted to be positioned therein; said inner surfaces of said opposed portions of said resilient loop means being provided with frictional engagement means cooperable for friction engagement with said corresponding exterior surface portions of said middle part of said fish body, said resilient loop means being provided with fish hook means, said resilient holding loop means being integrally provided at the top thereof at a substantially central symmetrical location with respect thereto with connection means adapted for connection with respect to the end of a fishing line.

3,156,067
BALL BALANCE TESTING DEVICE
Nicholas A. Malko, 1723 Potomac Drive, Toledo 7, Ohio
Filed Oct. 25, 1961, Ser. No. 147,523
20 Claims. (Cl. 73—483)



1. A device for testing the balance of bowling balls comprising:

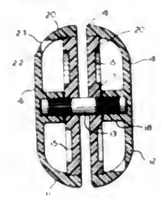
(*a*) means for universally tiltingly supporting a bowling ball so that its geometrical center is at the axes of tilt of said supporting means,

(*b*) means to oppose and vary displacement of said supporting means comprising a bracket fixed to said supporting means and an adjustable pendular weight depending from said bracket,

(*c*) means fixed to said bracket to dampen the oscillations thereof, and

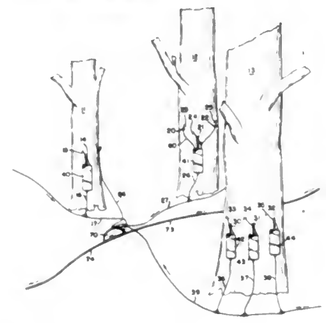
(*d*) means fixed to said bracket and cooperating with a stationary object of said supporting means, said indicating means including a chart having distance-weight graduations.

3,156,068
RETURN TOP HAVING CONICAL APERTURES FOR PRODUCING SOUND
James H. Nelligan, Luck, Wis., assignor to Donald F. Duncan, Inc.
Filed Sept. 8, 1961, Ser. No. 137,946
2 Claims. (Cl. 46—61)



1. A whistling return top including a pair of substantially identical half sections, each half section being defined by a wall having an outer convex surface and an inner plate-like portion joined to the periphery of said wall, each half section including a chamber extending around the axis of each half section and between the plate-like portion and said wall, at least one half section including at least two apertures directed through the outer surface, each aperture being directed along an axis in intersecting relation to the axis of each section while being inclined thereto, each of said apertures having a generally right conical form with the conical axis thereof generally coincident with its axis of direction, the smaller diameter of the aperture being at the outer surface of said wall to thereby provide a relatively sharp edge around each aperture at the outer surface, said apertures being spaced from each other and located near the peripheral rim of said half section, whereby upon spinning of the two half sections, air may pass into and out of said chamber through said apertures for a noise-producing effect.

3,156,069
MAPLE SAP COLLECTING SYSTEM
Robert M. Lamb, Onondaga County, N.Y. (915 Oswego St., Liverpool, N.Y.)
Filed Nov. 13, 1962, Ser. No. 236,988
8 Claims. (Cl. 47—51)

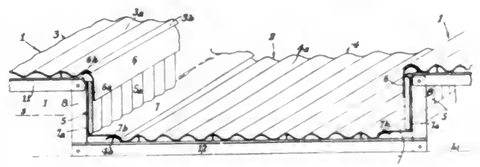


1. A maple sap collecting system comprising a spile vented at the upper end, fluid tight sap-conducting means connected with said spile for withdrawal of sap therefrom by gravity flow, a sap container connected with said sap-conducting means to receive the sap from said spile, means for supporting said container at a location below and adjacent the spile, a downwardly extending, flexible tube connected fluid tight with said container for withdrawal of sap by gravity flow, a vented sap-receiving junction connected fluid tight with said downwardly extending, flexible tube to receive the sap from said container, and a flexible tube connected fluid tight with said junction for withdrawal of the sap therefrom by gravity flow.

3,156,070
SELF-SUPPORTING ROOF OR WALL STRUCTURE
Jacques Mesnager, 182 Rue de Rivoli, Paris, France
Filed July 18, 1960, Ser. No. 43,613
Claims priority, application France, Feb. 21, 1956, Patent 1,143,163
9 Claims. (Cl. 50—12)

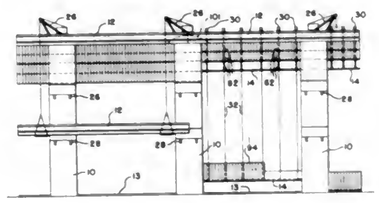
1. A self-supporting roof structure adapted to bear on two parallel bearing lines comprising, in combination, a first plurality of corrugated sheet members having substantially parallel grooves and ridges and longitudinal edge portions substantially parallel to said grooves and ridges and substantially normal to said bearing lines, said first plurality of corrugated sheet members being arranged substantially parallel to each other and in two groups respectively located spaced from and on opposite sides of a medium surface of said structure, with the members in each group spaced in direction transverse to said longi-

tudinal portions thereof and with the members of one group located between adjacent members of the other group; and a second plurality of corrugated sheet members having each substantially parallel grooves and ridges and longitudinal edge portions extending substantially normal to said grooves and ridges of said second plurality



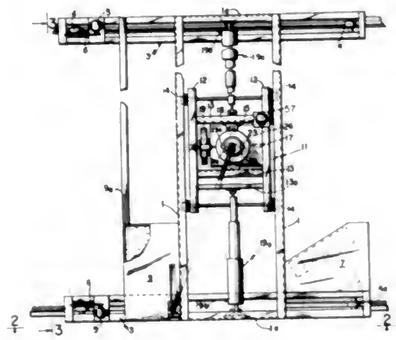
of sheet members, said second plurality of sheet members extending respectively between adjacent longitudinal edge portions of said two groups of first corrugated sheet members and fastened along said longitudinal edge portions thereof to the respective longitudinal edge portions of said first plurality of corrugated sheet members.

3,156,071
BUILDING STRUCTURE
Rudi Van Bijlevelt, 4450 Montalvo, San Diego 7, Calif.
Filed June 22, 1959, Ser. No. 821,989
1 Claim. (Cl. 50—534)



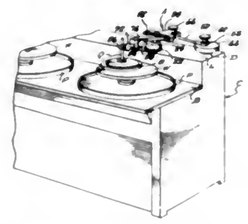
A method of constructing a building comprising the steps of erecting at least one self-supporting, vertically disposed pillar; connecting beam means to said pillar so that said beam means extends from said pillar; mounting a plurality of hoist means to said beam means; connecting lifting members between said hoist means and a first floor slab; operating said hoist means to raise said floor slab; connecting a first plurality of tension members between said first floor slab and said beam means to suspend said floor slab beneath said beam means; disconnecting said lifting members from said first floor slab; connecting the lifting member to a second floor slab; operating said hoist means to raise said second floor slab; connecting a second plurality of tension members between said second floor slab and said beam means to suspend said second floor slab beneath said first floor slab; disconnecting the lifting member from the second slab; connecting said lifting members to a third floor slab and so on and repeating the operation until the desired number of floor slabs are suspended; inserting jacks between the various floor slabs; forming columns between the floor slabs and around the pluralities of tension members for the reception of solidifiable material; and operating the jacks to produce tension loads in said pluralities of tension members, filling said columns with solidifiable material to maintain said tension loads, and removing said jacks in an order suitable to produce the desired post-tensioning of said pluralities of said tension members.

3,156,072
GRINDING APPARATUS
Herman F. Boehme, Upper Providence, Pa., assignor to Loewy Machinery Supplies Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 9, 1962, Ser. No. 236,611
6 Claims. (Cl. 51—32)



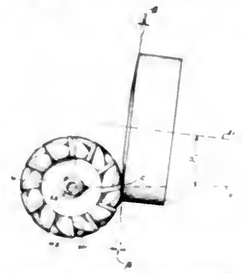
1. A grinding apparatus comprising a longitudinally movable bridge, fluid power means on said bridge to move said bridge longitudinally in either direction, a trolley mounted on said bridge and movable transversely, fluid power means to move said trolley transversely in either direction relative to said bridge, a vertically movable cylindrical carrier mounted on said trolley with its axis substantially perpendicular to the horizontal plane of said trolley, fluid power means to move said carrier in a vertical direction along its cylindrical axis, a variable speed grinding wheel mounted on said carrier powered by a variable displacement fluid motor, and means to oscillate said grinding wheel about an axis parallel to the horizontal diameter of said grinding wheel.

3,156,073
IRREGULAR, NON-REPETITIVE, CLOSED-LOOP SURFACING MECHANISM
Ray H. Strasbaugh, Downey, Calif.
(10990 S. Santa Fe Ave., Lynwood, Calif.)
Filed Jan. 15, 1963, Ser. No. 251,534
10 Claims. (Cl. 51—57)



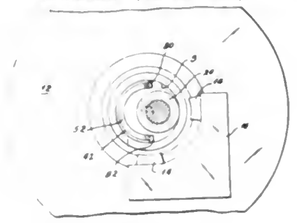
1. In combination with a laterally oscillating lever arm carrying a generally transverse stylus disposed by terminal engagement therewith to slide a polishing or coursing element over a workpiece, which workpiece is disposed spacedly underlying and generally parallel to the length of said laterally oscillating arm, the improvement comprising: continuous drive means connected to said arm at two points remote from said stylus and spaced longitudinally therealong, each connection adapted to laterally oscillate said arm at a different speed whereby the phase relation between the two oscillations is continually changing, and such composite pattern of oscillations, amplified by the effective length of the lever arm, directs said stylus in describing a pattern of successive, irregular, non-repetitive, nearly closed loops.

3,156,074
PROCESS AND APPARATUS FOR GRINDING A SHELL MILLING CUTTER
George M. Baltz, P.O. Box 1142, Yakima, Wash.
Filed Aug. 7, 1961, Ser. No. 129,765
16 Claims. (Cl. 51—122)



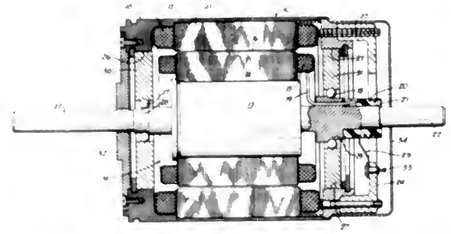
1. In combination, a grinder wheel having a grinding annulus on one end face thereof, which annulus is disposed at a shallow conical angle to the rotational axis of the wheel, the grinder wheel being mounted so that its rotational axis is inclined to a horizontal plane through the annulus, and apparatus for mounting a cutter wheel adjacent the annulus for purposes of sharpening the cutting teeth thereon, which mounting apparatus enables the cutter wheel to be positioned so that its rotational axis lies in the horizontal plane and transverse to the rotational axis of the grinder wheel with the cutting edge of one of its side face cutting teeth in contact with the annulus over a line coincident with a vertical line through the grinder wheel axis, at least one of the grinder wheel and the mounting apparatus being movable in a direction lying in said plane and in a plane at right angles to the grinder wheel axis so as to effect relative traversal of the two wheels.

3,156,075
GAGING DEVICE FOR WORK GRINDERS
Franklin L. Slayman, Canton, Ohio, assignor to The Timken Roller Bearing Company, Canton, Ohio, a corporation of Ohio
Filed Jan. 2, 1962, Ser. No. 163,798
8 Claims. (Cl. 51—165)



1. Means for measuring the size of cylindrical bore surfaces during grinding enlargement thereof comprising a gaging head which is adapted to be moved into a bore during bore enlargement, said head having a fixed length shoe thereon that slidably engages the surface of the bore during measurement thereof, said shoe engaging the bore at the diametrical bottom thereof and remaining in slidable engagement therewith as the grinding proceeds to enlarge the bore diameter, a radially outwardly facing orifice located in said head substantially diametrically opposite from said shoe in the bore, means establishing pressure at the orifice, and bore enlargement indicating means sensitive to changes in the orifice pressure caused by changes in the spacing between the orifice and the adjacent surface of the bore during enlargement of the bore, said indicating means being connected into said pressure establishing means.

3,156,076
MANUFACTURE OF HIGH ACCURACY THROUGH BORE SYNCHRO
Silvie Michael Origoni, River Vale, and Charles W. Lang, Pompton Plains, N.J., assignors to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Apr. 26, 1960, Ser. No. 24,793
5 Claims. (Cl. 51—281)



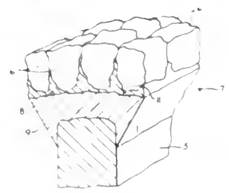
1. A method of fabricating a high-precision dynamoelectric device in which a cylindrical rotor member having a coaxial shaft extension at each end is mounted for coaxial rotation in a hollow cylindrical housing and stator assembly by means of respective ball bearing sets journaling the shaft extensions in the housing, said method comprising:

precision grinding the stator assembly to produce a cylindrical inner surface thereon while simultaneously grinding journals in the housing for the outer races of the ball bearing sets, said journals consisting of respective cylindrical surfaces coaxially disposed adjacent each end of the housing and stator assembly;

precision grinding the rotor member to produce, in a single setting and operation, a cylindrical outer surface thereon complementary to said stator assembly cylindrical inner surface and, on each of the shaft extensions, respective ground and polished, coaxial, inner ball-races for the ball bearing sets, located complementary to the outer race journals ground on the housing and stator assembly; and

line lap fitting a ball bearing outer race member into each of said outer race journals.

3,156,077
DIAMOND EDGE SAW BLADE
Eugene N. Connoy and Robert J. Wilkie, Minneapolis, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Feb. 6, 1963, Ser. No. 256,715
3 Claims. (Cl. 51—395)



1. An abrasive edged saw blade comprising:

(A) a thin flat spring steel strip having substantially uniform thickness and at least one straight edge;

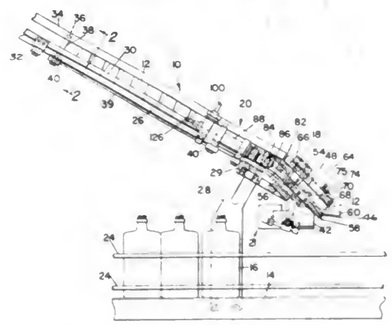
(B) a bead of electrodeposited metal on said edge of the strip, said bead having

(1) an inner cushioning portion which embraces the marginal portion of the strip at said edge thereof and has a top boundary that is wider than the thickness of the spring steel strip and is spaced from said edge of the strip; and

(2) an outer portion which covers said boundary of the inner cushioning portion and extends across the full width thereof but does not cover the sides of the cushioning portion; and

(C) abrasive grits embedded in said outer portion of the bead and confined to said outer portion so that no abrasive grits overlie the side faces of the spring steel strip.

3,156,078
CLOSURE FEEDING DEVICE
Walter S. Sterling, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed June 13, 1961, Ser. No. 116,772
12 Claims. (Cl. 53—68)



1. In a closure feeding device, in combination, a feed chute for supporting a line of closures, means for retaining a single closure at the delivery end of the chute in a position to be engaged and withdrawn by and loosely applied to the neck of a container being moved therepast, a conveyer for advancing a line of containers beneath the chute into engagement with successive closures supported at said delivery end of the chute, and means spaced from said delivery end of the chute for holding back the line of closures in the chute and for releasing successive closures singly into said delivery end for withdrawal by and application to successive containers, said retaining means having a relatively low resistance to withdrawal of a closure by a container whereby to prevent displacement of the container during said withdrawal, said low resistance retaining means including resilient means having a resistance such as to support a single closure only.

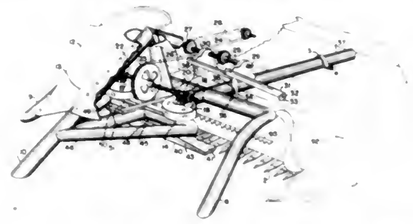
3,156,079
CORN HEADER ATTACHMENT
Joseph K. Park and Byron K. Webb, Clemson, S.C., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Apr. 3, 1963, Ser. No. 270,481
3 Claims. (Cl. 56—2)

1. A corn header attachment for a grain combine having a cutterbar and a feed drum, said attachment comprising:

(*a*) an elongated central rigid support member;

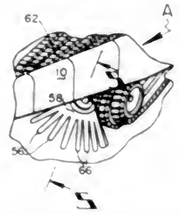
(*b*) rotary feed means on said central support member for forcing standing corn stalks over the cutterbar of said combine; and

(*c*) guide means on said central support member for guiding standing corn stalks into contact with said rotary feed means and for guiding cut stalks into contact with the feed drum of the combine, said guide means comprising first and second rigid side support members secured to the elongated rigid central support member and extending outwardly and downwardly on both sides thereof, a front support member secured to the elongated central support member, a first contoured plate secured to the front



support member, and second and third contoured plates secured to the side support members and to the elongated central support member, said second and third contoured plates together with said first contoured plate defining a pair of similar continuous passageways for guiding cut corn stalks into contact with the rotary feed means and the feed drum of the combine such that each passageway comprises a horn-shaped opening of rearwardly decreasing width followed by a downwardly extending, outwardly flared, enlarged opening extending to the cutterbar.

3,156,080
COTTON HARVESTER
Merlin L. Huff, P.O. Box 836, Buckeye, Ariz.
Filed Jan. 28, 1963, Ser. No. 254,053
9 Claims. (Cl. 56—28)



1. In a cotton harvester the combination of: a vehicle disposed to traverse longitudinally of rows of cotton plants; a cotton engaging rotor having an annular row of resilient downwardly diverging plant stalk engaging fingers; first means rotatably mounting and supporting said rotor on said vehicle in position to cause engagement of said fingers with stalks of a cotton plant row in close proximity to the ground and resilient means coupled to said first means and urging said rotor downwardly; said resilient means disposed to permit upward movement of said rotor when it contacts an elevated obstruction.

3,156,081
COTTON PICKER SPINDLE SLAT POSITIONER HINGE MEANS
Marion R. Farmer, Pine Bluff, Ark., assignor to Ben Pearson, Incorporated, Pine Bluff, Ark., a corporation of Arkansas
Filed Sept. 12, 1962, Ser. No. 223,224
9 Claims. (Cl. 56—42)

1. In a cotton picking machine which comprises a plurality of slats supporting rotatable cotton picking spindles,

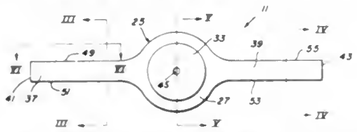
drive means for rotating said spindles, stripper means for stripping picked cotton from said spindles, upper and lower endless chains supporting and moving said spindle supporting slats into and away from spindle driving contact with said drive means along the picking side of the machine and through said stripper means on the stripping side of the machine, slat positioning hinge means connected to the upper and lower ends of said slats and interconnecting said slats to said chains, substantially circular means at the front and rear ends of said machine, said substantially circular means including sprocket means at one end of said machine and idler means at the other end of said machine, said chains being trained about and engaging said substantially circular means, said positioning hinge means having hinge arms spaced from the adjacent slat ends and offset from the longitudinal axis of the slat, each said hinge arm including a hub extending from the leading edge of the hinge arm in the direction of movement of the chains, said hubs being hingedly connected with said chains, the leading part of said hubs being substantially semi-circular and centered on the respective connections with said chains, a notch formed in the leading edges of said hinge arms adjacent and outward of



said hubs, a relatively elongated recess in the trailing edge of said hinge arms, said recess including arcuate inward and outward surfaces formed on radii substantially equal to the radius of said hub, for snugly alternately engaging with said hub of an adjacent following hinge arm, a nose on said trailing edge adjacent said outward surface positioned for separately fitting into the notch of the adjacent following hinge arm, passage of said slats about the rear substantially circular means separating said slats and said positioning hinge means preceding entry into the stripping side of said machine, said hubs engaging the outward surface of the recess of the next preceding hinge arm and said noses engaging the notches of the next following hinge arms of the slats when along the stripping side of said machine holding the slats in position with the spindles projecting therefrom trailingly diagonal relative to said chains, passage of said slats about the forward substantially circular means relieving the holding of said slats in such diagonal spindle positioning and shifting said hubs into engagement with the inward recess surfaces holding the slats in position with said spindles projecting substantially perpendicularly relative to said chains during slat movement along the picking side of the machine.

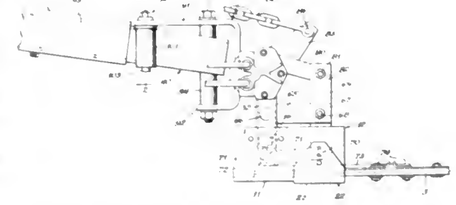
3,156,082
MOWER BLADE CONSTRUCTION
Guy E. Joyner, 216 Alexander, Memphis, Tenn.
Filed July 26, 1962, Ser. No. 212,615
2 Claims. (Cl. 56—295)

1. In a rotary mower of the type having a depending vertically rotating power shaft, a blade comprising a hub including a substantially circular horizontally extending mid-portion and upper and lower disc-like portions respectively integrally attached to said mid-portion adjacent the upper and lower surfaces thereof, said disc-like portions being smaller in diameter than said mid-portion and being concentric with one another and with said mid-portion, a pair of horizontally extending blade arms integrally attached to said mid-portion on opposite sides thereof and extending outwardly in opposite directions from said mid-portion and terminating in distal ends, said hub being provided with a central bore extending therethrough, said blade being mounted directly on said power shaft with said power shaft extending through said bore and below said hub, means mounted on said shaft below said hub for securing said blade on said shaft for rotation therewith, each of said arms having leading and trailing edges and having upper and lower sur-



faces, each of said arms having a pair of longitudinally disposed grooves substantially semi-circular in cross-section and respectively in the leading and trailing edges thereof to provide upper and lower sharpened edges on said leading edge and said trailing edge respectively adjacent said upper and lower surfaces, said upper and lower sharpened edges being unobstructed whereby said upper and lower sharpened edges are effective as cutting edges, said blade being composed entirely of polyethylene and maintaining substantially the same shape when in operation as when standing still.

3,156,083
MOWER WITH COUNTER-RECIPROCATING ELEMENTS
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 16, 1960, Ser. No. 56,406
10 Claims. (Cl. 56—296)

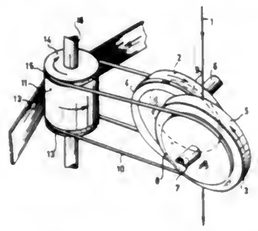


10. In a drive for a mower having a cutter bar member and a sickle member, means pivotally suspending the cutter bar member for limited lengthwise free swinging movement, means for counter-reciprocating said members including means drivingly connected to said one of said members and reactively connected to the other member through said means pivotally suspending the cutter bar member.

3,156,084
FALSE TWIST DEVICE
Pieter van Dijk, deceased, late of Velp, Netherlands, by Henriette Jacoba van Dijk-Groeneveld, heir, Velp, Netherlands, and Jan van Silfhout, Arnhem, Netherlands, assignors to N.V. Research, Arnhem, Netherlands, a corporation of the Netherlands
Filed Apr. 28, 1961, Ser. No. 107,007
Claims priority, application Netherlands May 2, 1960
13 Claims. (Cl. 57—77.4)

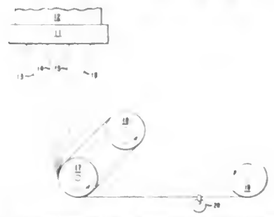
1. A false twist device comprising a pair of rotatable discs disposed at a small angle with respect to each other to define a nip therebetween at the apex of said angle, adjacent portions of said discs defining a yarn path passing through said nip, said discs being displaced from each

other along an axis normal to said yarn path, a fixed arm on which one of said discs is rotatably mounted, a movable arm on which the other of said discs is rotatably mounted, means mounting said movable arm for pivotal movement laterally with respect to said fixed arm, and means for constantly rotating said discs including a belt



for driving said disc on said movable arm, said mounting means having a pivot axis intersecting said belt when said discs are in engagement to form a nip, whereby torsional forces from said belt tending to pivot the movable arm about said pivot axis are eliminated.

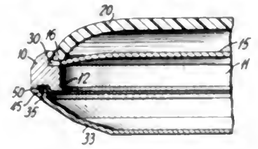
3,156,085
CONTINUOUS COMPOSITE POLYESTER FILAMENT YARN
William H. Jamieson, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 24, 1959, Ser. No. 841,988
6 Claims. (Cl. 57—140)



1. Linear polyester yarn having a uniform appearance in the form of dyed fabrics comprising a plurality of continuous filamentary structures having a uniform cross section along their length, said yarn consisting of at least two species of filamentary structures having different cross-sectional shapes, the cross section of one of said species having a shape factor of at least about 18, not more than about 75% of any one of said species being present in said yarn, with the proviso that when the cross sections of said species have essentially the same number of sides the shape factor of one of said species be at least 1.4 times greater than that of the other species.

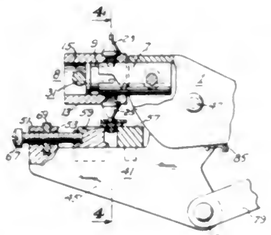
3,156,086
EPOXY JOINED WATCH CASE
Josef Egger, Pforzheim, Germany, assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 15, 1961, Ser. No. 138,445
Claims priority, application Germany Sept. 22, 1960
2 Claims. (Cl. 58—88)

1. A watch sub-assembly comprising as an integral one-piece member a bezel having a groove, a watch back having a flange portion, and a hardened epoxy material, wherein the flange has notched portions thereon, the notched portions of the flange are adhered to the epoxy material, the notched portions of the flange and the epoxy material are in the groove, the epoxy material is adhered to the walls of the groove and substantially fills the groove, and the side walls of the groove are substantially



parallel and slant inwardly to the center of the watch toward the open end of the groove.

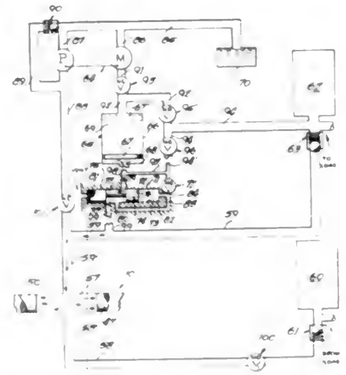
3,156,087
COMBINED RIVET PUNCH AND SPINNER
Elof Granberg, Richmond, Calif., assignor, by mesne assignments, to Firmont Inc., Richmond, Calif., a corporation of California
Filed July 11, 1960, Ser. No. 42,038
5 Claims. (Cl. 59—7)



5. A chain saw service tool comprising a punch head assembly including a punch, and a rivet spinner in spaced relationship to said punch; an anvil asesmbly for supporting a saw chain to be serviced, said anvil assembly including an anvil support, a pair of anvil components on said support adapted to cooperate in supporting a chain in line with said punch, for punching of a rivet from such chain; means for adjusting at least one of said anvil components with respect to the other component from said cooperating position to a position in line with said rivet spinner for the spinning of a rivet in such chain; and means for bringing said punch head assembly and said anvil assembly together.

3,156,088
FREE PISTON ENGINE HYDRAULIC PUMP STARTING SYSTEM
Edwin A. Kariba, Chicago, and C Paul Kolthoff, Jr., Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Original application Aug. 17, 1961, Ser. No. 132,089. Divided and this application June 4, 1962, Ser. No. 212,753
3 Claims. (Cl. 60—14)

3. A starting system for a free piston engine hydraulic fluid pump of the kind described having a pair of opposed pump pistons and at least one pump chamber comprising a chargeable fluid metering unit communicatively connectable to a source of hydraulic fluid at high pressure, said metering unit having a fluid volume capacity substantially equal to the maximum displacement of said pump pistons, an auxiliary hydraulic pump driven by an hydraulic motor energizable from said high pressure source, the inlet side of said auxiliary pump communicatively connectable to said pump chamber for fluid evacuation of said chamber to move said pump pistons inboardly by atmospheric pressure to initial compression stroke position, and a start valve positioned for rapidly discharging hydraulic fluid from said metering unit at high pressure to said pump chamber for moving said pump pistons outboardly whereby at least one of said pump pistons

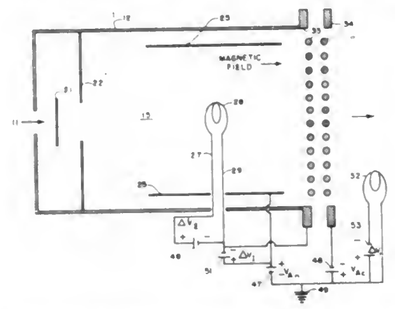


drives said power piston on its initial fuel-air compression stroke until compression-ignition occurs thereby starting said engine.

3,156,089
HYDROGEN PEROXIDE DECOMPOSITION
Herman J. Baumgartner, Danville, and Richard M. Roberts, Berkeley, Calif., assignors to Shell Oil Company, a corporation of Delaware
No Drawing. Filed Sept. 24, 1959, Ser. No. 843,035
9 Claims. (Cl. 60—35.4)

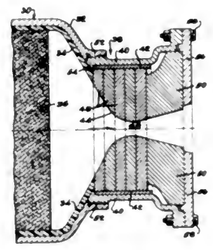
1. A method for decomposing hydrogen peroxide of about 30 to 100% wt. concentration which comprises contacting the hydrogen peroxide with a solid silver-containing decomposition catalyst in the presence of between about 50 and about 10,000 milligrams per liter of organic peroxide-containing residue from hydrogen peroxide production by oxidizing a compound selected from the group consisting of alkyl anthraquinones, alcohols, hydrocarbons and hydrazobenzenes.

3,156,090
ION ROCKET
Harold R. Kaufman, Berea, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 18, 1961, Ser. No. 139,007
10 Claims. (Cl. 60—35.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



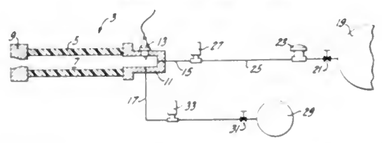
8. An electrostatic ion rocket engine comprising
a casing defining an engine chamber,
an annular anode within said chamber,
means for feeding a propellant into said chamber toward said anode,
a heated filament within said anode for bombarding said propellant with high-velocity electrons in the range of energies from about 20 to about 100 electron volts to form ions,
means for forming a magnetic field about said casing to prevent said high-velocity electrons from reaching the walls thereof without first colliding with propellant particles in said chamber, and
means for accelerating said ions away from said casing.

3,156,091
MULTI-LAYER ANISOTROPIC HEAT SHIELD CONSTRUCTION
George Kraus, Jackson Heights, N.Y., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 19, 1961, Ser. No. 125,253
17 Claims. (Cl. 60—35.6)



1. An exhaust gas nozzle construction for jet engines having an exhaust gas discharge nozzle the inner surface of which includes a throat portion and defines a flow passage for discharge of exhaust gases through said nozzle to provide thrust for said jet engine, said exhaust gas nozzle construction comprising an annular load carrying member; an annular first layer forming a lining over at least a portion of the inner surface of said load carrying member, said first layer being of a material for insulating said load carrying member against outward flow internal heat from within the nozzle; and an annular second layer disposed over at least a portion of the inner surface of said first layer, said second layer being of a material which is anisotropic in that it has relatively good heat conduction property in one direction and has relatively good heat insulation property in a direction substantially at right angles thereto, the anisotropic material of the second layer being oriented so that, at least at its inner surface, said second layer has relatively good heat conduction in a direction from its inner surface toward its outer surface and has relatively good heat insulation in a direction at right angles to its said good heat conduction direction.

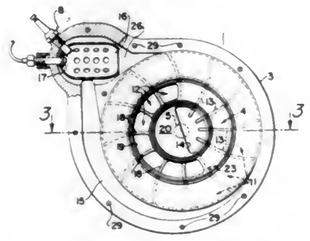
3,156,092
HYBRID DEMONSTRATOR
Allen L. Holzman, Palo Alto, Calif., assignor to United Aircraft Corporation, a corporation of Delaware
Filed Aug. 9, 1962, Ser. No. 215,840
1 Claim. (Cl. 60—35.6)



A caseless hybrid rocket motor comprising a centrally-perforated, elongated propellant-grain of transparent, oxidizable plastic, said grain having sufficient web thick-

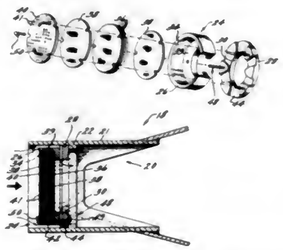
ness to cause combustion to occur without rupture for a predetermined time, said grain having a forward end and an aft end, a nozzle connected to the aft end of said grain, means for storing fluid oxidizer, and means connected to the forward end of said grain for injecting said fluid oxidizer onto the surface of the grain perforation, said transparent grain serving to allow visual observation of the combustion phenomenon.

3,156,093
THERMODYNAMIC ENGINE
James E. Chapman, Palos Verdes Estates, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 8, 1961, Ser. No. 94,363
9 Claims. (Cl. 60—39.43)



1. An internal combustion engine comprising: a rotary member; compressor sections within said rotary member; means for effecting resonant pulsations of air flowing into said rotary member so as to deliver supercharged air to said compressor sections; a combustion chamber; means for transferring air at high pressure from said compressor sections to said combustion chamber; means in operational relationship with said combustion chamber for developing energy to act upon said rotary member; means for transferring energy from said combustion chamber to activate said rotary member; and means for converting energy acting upon said rotary member into useful power output.

3,156,094
CATALYTIC IGNITION MEANS FOR A JET ENGINE THRUST AUGMENTATION SYSTEM
Dudley O. Nash and John P. Plungis, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,233
4 Claims. (Cl. 60—39.82)



1. An improved catalytic ignition device for use in a high velocity, continuous flow combustible gas stream, said ignition device comprising:

a generally cylindrical hollow body member having an imperforate wall and including a shoulder located internally and intermediate the open ends thereof;

a support member positioned within said body member and including a central opening therethrough, said support member forming an annular passage with the interior surface of said imperforate wall;

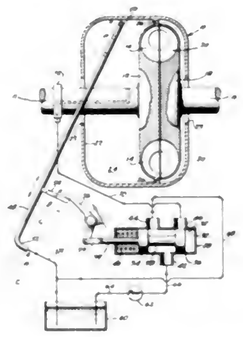
a plurality of diverging passages in flow communication with said annular passage and said central opening;

a flow permeable element of catalytic material positioned in said support member in the path of the combustible gas stream;

a free-floating perforated metering disk overlying the catalytic element and presenting a surface normal to the gas stream, said metering disk being dynamically loaded against the catalytic element by the force of said gas stream flowing axially through said open-ended hollow body member;

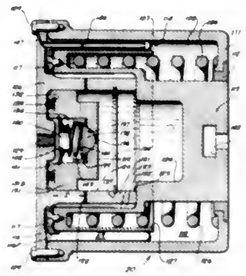
and removable means retaining said disk in a loosely assembled relationship with said support member to permit immediate replacement of a damaged or worn out catalytic element.

3,156,095
HYDRAULIC TRANSMISSIONS
Peter O. Tauson, Bradfordwoods, Pa., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 9, 1961, Ser. No. 108,782
3 Claims. (Cl. 60—54)



1. In a hydraulic coupling system having a fluid reservoir in which the level of fluid is proportional to the power being transmitted by the coupling, the combination of a sump, a scoop tube operatively disposed for scooping fluid within the reservoir and delivering such fluid to said sump, said scoop tube being movable from a first position to empty said coupling and to a second position in which said coupling is filled, via a plurality of intermediate positions in which said coupling is partially filled, a pump for delivering fluid from the sump to said coupling a valve connected between said pump and said coupling, said valve having a bypass outlet operably connected for delivering fluid from said pump to said sump to bypass said coupling and another outlet operably connected for delivering fluid from said pump to said coupling, said scoop tube being operably connected for actuating said valve to substantially open said bypass outlet and close said other outlet when said scoop tube is in said first position and to substantially close said bypass outlet and open said other outlet when said scoop tube is in said second position, and to partially open and partially close each of said outlets when said scoop tube is in any of said various intermediate positions, whereby said scoop tube and valve are effective to control the level of fluid in said coupling.

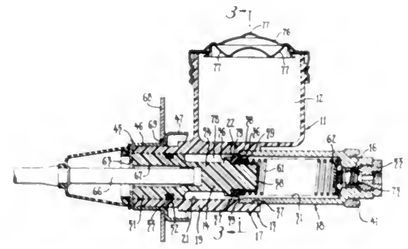
3,156,096
BRAKE SLACK ADJUSTER MECHANISM
Howard B. Huntress and Thomas S. Taylor, Suffern, N.Y., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Original application Nov. 3, 1959, Ser. No. 850,697, now Patent No. 3,053,349. Divided and this application Jan. 23, 1962, Ser. No. 168,132
4 Claims. (Cl. 60—54.5)



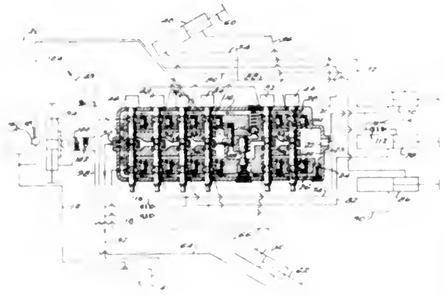
1. Hydraulic slack adjuster mechanism comprising, an outer cylinder including an outer housing having an axially extending inner bore and a base member extending across one end of the housing, a first piston reciprocal within the bore, a sleeve member projecting from an inner face of the base member and spaced radially inwardly from the outer cylinder and having an aperture extending radially therethrough, a second piston reciprocal within the sleeve member, said first and second pistons defining a first expansible chamber therebetween, said second piston defining a second expansible chamber within the sleeve member, said second piston being slidable between a first position wherein the second piston blocks fluid flow between the first and second chambers through the aperture to trap fluid within the first expansible chamber and a second position wherein the piston permits communication between the first chamber and the second chamber through said aperture to adjust the first piston, biasing means including a return spring acting for biasing the first piston inwardly of the bore and exerting a force through hydraulic fluid in the first chamber to move the second piston from the second to the first position, and a static seal effective between the second chamber and the second piston in its first position to prevent leakage of trapped fluid from the second chamber in the adjusted position of the second piston whereby a force applied to the second piston by pressurized fluid supplied to the second expansible chamber is transmitted to the first piston through the trapped fluid in the first expansible chamber and is effective to move the second piston a predetermined distance between said first and second positions prior to any fluid being supplied to the first expansible chamber through said aperture.

3,156,097
HYDRAULIC MASTER CYLINDER
Curtis L. Brown, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 29, 1963, Ser. No. 268,876
4 Claims. (Cl. 60—54.6)

1. A master cylinder structure for use in hydraulic brake systems comprising a reservoir of hydraulic fluid in constant communication with the atmosphere, a cylinder body formed integrally with said reservoir and having a first cylinder bore therein, a port between said reservoir and first cylinder bore maintaining constant communication therebetween, a piston member including a piston head disposed in said cylinder bore, a tube member connected to said cylinder body and having a second cylinder bore in axial alignment with said first cylinder bore, said piston head being engageable with said second cylinder bore and being smaller than said first cylinder bore, said piston head having an initial position in said first cylinder bore between said port and one end of said first cylinder bore to provide an annular passage surrounding said piston head, said annular passage placing said first and second bores in communication with each other, said piston member being movable between said initial position and an applied position in which said piston head engages said second bore to close said annular passage and isolate said bores.

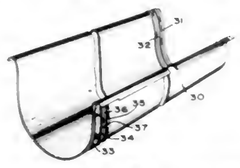


3,156,098
HYDRAULIC POWER SYSTEM
Albert M. La Rou, Huntington Woods, Mich., assignor, by mesne assignments, to Ford Motor Company, a corporation of Delaware
Filed Nov. 20, 1959, Ser. No. 854,479
3 Claims. (Cl. 60—97)



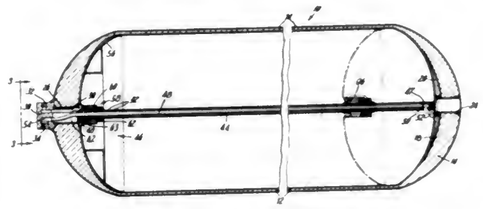
1. In a hydraulic power transmission having a pair of driven pumps for actuating a plurality of hydraulic cylinders, a selector valve comprising a housing and a plurality of valve spools in said housing selectively operable to direct fluid flow to said cylinders, ports operatively associated with said spools and passages connected with said ports forming an open center pressure distribution system, means connecting one of said pumps to one end of said open center system, means connecting the other pump to said system between certain of said spools, an unloading valve disposed in said housing between certain of the valve spools and operable to vent a portion of the system at pre-selected pressure, and a check valve disposed between the unloading valve and the remainder of the system and operable to close to prevent venting of said remainder of the system by operation of the unloading valve.

3,156,099
FLUID DISTRIBUTION ELEMENTS
John J. Dailey, 1209 Woodcrest Lane, Arlington, Tex.
Filed Mar. 10, 1961, Ser. No. 94,819
3 Claims. (Cl. 61—14)



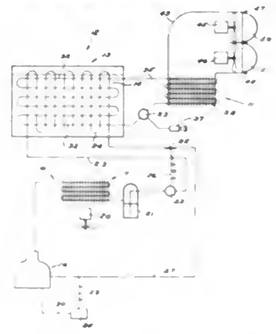
1. An interchangeable flume element comprising a length of plastic material formed with a trough-like cross-section, one end of said element having a first interlocking formation on its upper surface, the other end of said element having a second interlocking formation on its lower surface complementary to said first interlocking formation, whereby a plurality of flume elements may be interchangeably joined together with their contiguous plastic surfaces in water-tight relationship; one of said interlocking formations comprising a plurality of transverse ribs and a stud; the other of said interlocking formations comprising a plurality of transverse grooves and an aperture of complementary form to receive the ribs and stud respectively, of the complementary interlocking formation of another of said flume elements; each of said ribs and stud being substantially bulbous in cross-section and each of said grooves being provided with an overhanging lip portion whereby a snap interlocking action is obtained when two of said flume elements are joined together by their complementary interlocking formations.

3,156,100
APPARATUS FOR SUPPLYING LIQUEFIED GAS
George C. Haettinger, Indianapolis, Ind., and Stuart P. Ramsey, Brighton, Mass., assignors to Union Carbide Corporation, a corporation of New York
Filed May 19, 1961, Ser. No. 111,238
8 Claims. (Cl. 62—51)



1. Apparatus which comprises: a double-walled vacuum-insulated container having a storage space therein with liquid portion and gaseous portion ends, a piston positioned transversely within the container defining separable liquid and gaseous portions in the container storage space, means for engaging said piston with the inner surface of said container storage space to provide a fluid tight seal therewith a conduit assembly fixedly positioned in substantial co-axial relationship with the container longitudinal axis and adapted to longitudinally guide said piston and maintain a fluid-tight seal therebetween, said conduit assembly comprising an inner duct and a conduit surrounding such duct and outwardly spaced therefrom to define an annular passage therebetween, said duct communicating with the liquid portion end of said container storage space for introducing liquid in and discharging liquid from such portion, and said conduit having perforations therein for communication between said annular passage and the container storage space liquid portion when the slidable piston is disposed adjacent the gaseous end portion of said container storage space for venting such liquid portion during the filling of such liquid portion.

3,156,101
TRUCK REFRIGERATION SYSTEM
James W. McGuffey, Lansing, Mich., assignor to Tranter Manufacturing, Inc., Lansing, Mich., a corporation of Michigan
Filed Mar. 4, 1963, Ser. No. 262,440
4 Claims. (Cl. 62—223)



1. The combination in a temperature conditioning or refrigerating system of means providing a first refrigerating circuit, a vessel adapted to contain a quantity of a low melting point medium, and means providing a second refrigerating circuit, said first circuit including a refrigerant circulating evaporator coil disposed in said vessel to be immersed in said medium to refrigerate the latter by absorbing heat therefrom, said second circuit including a refrigerant circulating condenser coil similarly disposed in said vessel to be refrigerated by said medium upon absorption into the latter of heat from the condenser coil, a refrigerant circulating evaporator coil of said second circuit disposed externally of said vessel, means placing said condenser and evaporator coils of said second circuit in communication with one another, the flow of refrigerant in said coils of said second circuit, other than as affected by temperature change, being under thermal draft at a predetermined, substantially constant pressure, and means to circulate air to be refrigerated past the evaporator coil of said second circuit, said air circulating means comprising a pair of fans having adjacent separate discharges and driven respectively by separate sources, each of said fans having check valve means at the discharge thereof to prevent circulation by either one thereof through the other and not past the evaporator coil of said second circuit.

3,156,102
REFRIGERATOR CONSTRUCTION
Anthony R. Costantini, Philadelphia, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Company, doing business as Victory Metal Manufacturing Corporation, Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed May 7, 1963, Ser. No. 278,579
9 Claims. (Cl. 62—237)

3. A refrigerator apparatus comprising in combination, a refrigerating unit, and a physically independent thermally insulated mobile refrigerated cabinet unit, said cabinet being provided with

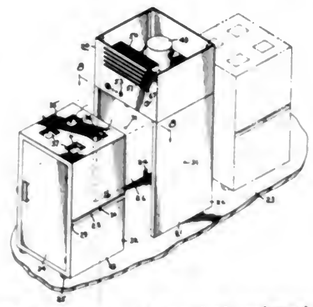
(*a*) an access door for loading and unloading the insulated cabinet interior,

(*b*) inlet and outlet air ports located in the top wall of the cabinet for respectively permitting the injection of cold air into and withdrawal of air out of the cabinet interior, and

(*c*) means for opening and closing said cabinet inlet and outlet ports,

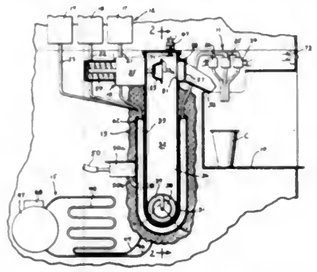
said refrigerating unit including

(*a*) means for cooling and circulating air including a cooled air outlet vent and a return air inlet vent respectively so located that said cabinet inlet and outlet ports can be respectively disposed immediately therebeneath in vertical registration therewith, and



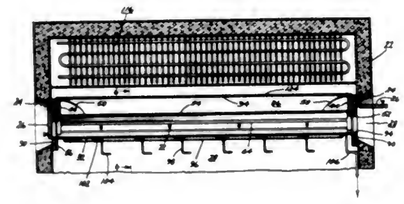
(*b*) selectively actuatable shiftable means for directly sealingly coupling the said refrigerating unit cooled air outlet and return inlet respectively to the said cabinet inlet and outlet ports when the cabinet is positioned as aforesaid so that the several vents and ports are vertically registered.

3,156,103
ICED DRINK DISPENSING MACHINE
Anthony J. Ross, 116 Myrtle Ave., Elmhurst, Ill.
Filed Apr. 3, 1961, Ser. No. 100,241
10 Claims. (Cl. 62—331)



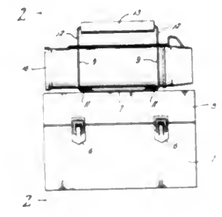
10. In an iced drink dispensing device, the combination of an ice making apparatus including a vessel for receiving an ice producing liquid and a vessel for storing ice, the liquid receiving vessel having a freezing wall, refrigerating means for cooling said wall to freeze a layer of liquid thereon, means for removing frozen liquid from the wall and for feeding the same to the ice storage vessel, said ice storage vessel having an ice outlet opening for discharging ice in the storage vessel, a plurality of beverage dispensing devices for dispensing a plurality of different beverage producing liquids, a plurality of separate liquid storage and supply means for supplying different beverage producing liquids to a respective one of said liquid dispensing means, said liquid storage and supply means including a plurality of generally crescent shaped liquid receptacles engaging the outer wall of said liquid receiving vessel for receiving a plurality of different beverage producing liquids, said receptacle being disposed in heat exchange relation with said liquid receiving vessel to be cooled by the frozen liquid in said liquid receiving vessel whereby the ice which melts in cooling the beverage liquids remains in the liquid receiving vessel to be refrozen on the freezing wall.

3,156,104
QUICK FOOD FREEZING APPARATUS WITH VACUUM MEANS
Robert C. Norr, Grabill, and Merrill D. Swaidner, Roanoke, Ind., assignors to Town & Country Food Co., Inc., a corporation of Indiana
Filed May 18, 1962, Ser. No. 195,813
8 Claims. (Cl. 62—341)



1. Apparatus for freezing food products comprising: at least one freezing cell, said cell having a flat, rigid bottom wall formed of relatively thin heat-conductive metal, a top wall formed of relatively thin sheet of rubber-like material, said top wall being secured around a part of its perimeter to said bottom wall and normally forming a cavity therewith for receiving the products to be frozen, means joining another part of the perimeter of said top wall and said bottom wall and forming an opening communicating with said cavity, and means for sealingly closing said opening; means for evacuating said cavity whereby said top wall intimately engages the products in said cavity and forces said products into intimate engagement with said bottom wall; and refrigeration means for freezing the products in said cavity and including a freezing element in direct contact with the outer surface of said bottom wall, and means for circulating refrigerated air over the outer surface of said top wall.

3,156,105
REFRIGERATED LUNCH BOX
Wilburn E. Bahner, 1121 W. Drew, Houston, Tex.
Filed Aug. 9, 1963, Ser. No. 301,162
3 Claims. (Cl. 62—371)

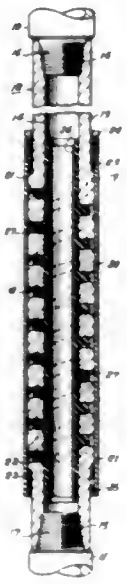


1. In a refrigerator lunch box, a container, a hinged lid on said container, an insulation lining on the inner walls of the container, a cover over said insulation, ribs on the side walls and bottom of the inside of said container and a unit holder pivotally mounted in said lid, a refrigerating unit maintained in position in said lid by said holder and a spring latch releasably maintaining said holder in latched position.

3,156,106
DRILL STRING SHOCK ABSORBERS

Jack P. Crane, Odessa, Tex., assignor to Gist Manufacturing Company, Odessa, Tex., a corporation of Texas

Filed Aug. 17, 1962, Ser. No. 217,745
8 Claims. (Cl. 64—27)

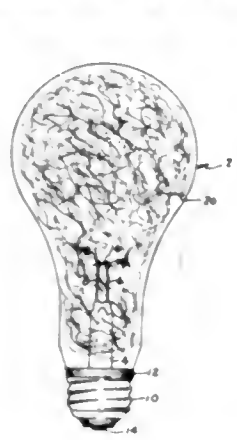


1. A shock absorber for a drill string having a drill bit at its lower end including a cylindrical body adapted to be mounted in the drill string adjacent the drill bit, the body having a bore extending therethrough for conducting drilling fluid to the bit, said body having at least one helical slot to provide at least one helical shock absorbing portion, a sleeve of elastic material complementary to and secured within the bore of said body for sealing the slot thereof, at least one helical rib on the exterior of the elastic sleeve and substantially complementary to said slot for engaging therein to cushion the contraction of the helical shock absorbing portion of said body, and a sleeve slidably confined on said body in overlying relation to its helical shock absorbing portion to shield said portion and the slot thereof.

3,156,107
PHOTOFLASH LAMP AND PROTECTIVE COATING THEREFOR

John W. Shaffer, Williamsport, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 21, 1961, Ser. No. 153,875
3 Claims. (Cl. 67—31)

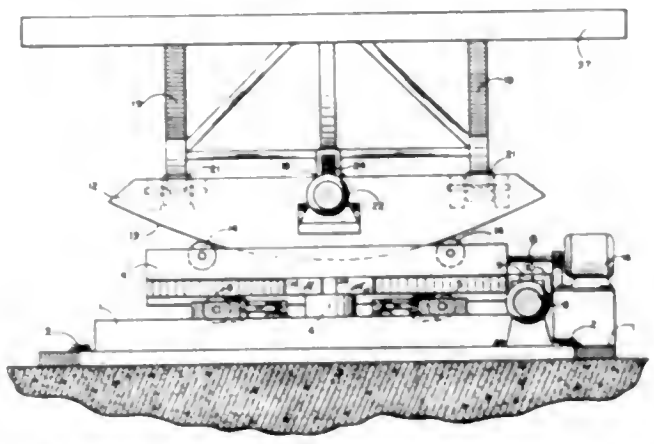


1. A photoflash lamp comprising: a sealed, light-transmitting envelope; a combustion-supporting gas filling in said envelope; a quantity of a filamentary combustible disposed in said envelope; ignition means disposed in said envelope in operative relationship with respect to said combustible; and a polyarylcarbonate coating on the exterior wall of said envelope.

3,156,108
MISSILE ATTITUDE POSITIONER

Truman Rudderow, Downey, Calif., assignor to North American Aviation, Inc.

Filed Oct. 13, 1959, Ser. No. 846,156
12 Claims. (Cl. 73—1)

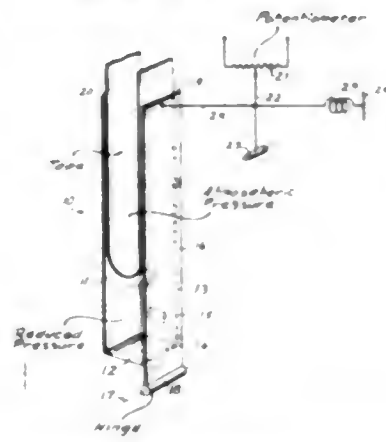


1. A missile testing and attitude positioner comprising: a base means lying in a horizontal position and rotatably mounted on swivel means adapted to rotate said base means; first drive means operatively connected to said swivel means and adapted to be actuated to selectively rotate said base means; pitch base means vertically and tiltably mounted on said base means; second drive means operatively connected to said pitch base means for selectively tilting said pitch base means in a first direction; roll base means vertically and tiltably mounted on said pitch base means and substantially constructed and arranged prependicularly thereto, said roll base means adapted to hold and tilt a missile; third drive means operatively connected to said roll base means for selectively tilting said roll base means in a second direction which is substantially perpendicular to said first direction wherein the axes of rotation of said base means, said pitch base means and said roll base means all pass through the center of gravity of a missile supported on said positioner.

3,156,109
TAPE LOOP GAGE

Ivan O. Fieldgate, Halesite, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Sept. 7, 1962, Ser. No. 222,072
2 Claims. (Cl. 73—37)



1. In an information processing apparatus having a vacuum chamber with an opening for receiving a tape loop, said vacuum chamber comprising,

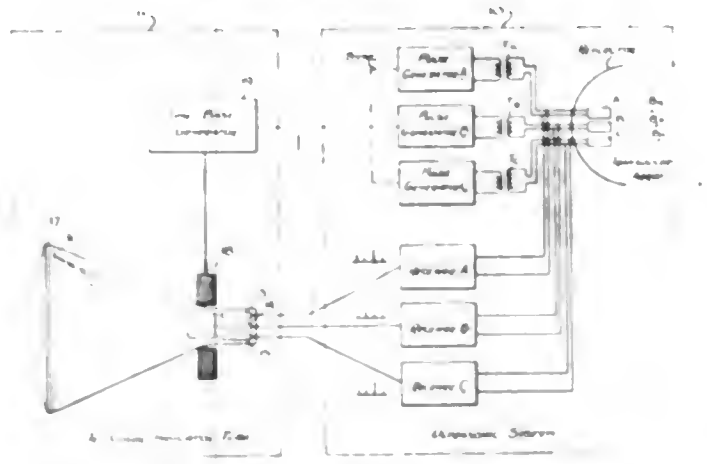
means to define an enclosure having at least three sides and a bottom and a tape loop-receiving opening,

a fourth side of said enclosure parallel to a flat side of the tape and including hinge means permitting the fourth side to pivot in an arcuate manner and in close-fitting relationship with two of the sides,

said enclosure including means to connect a vacuum source to the enclosure for developing a tape loop, and

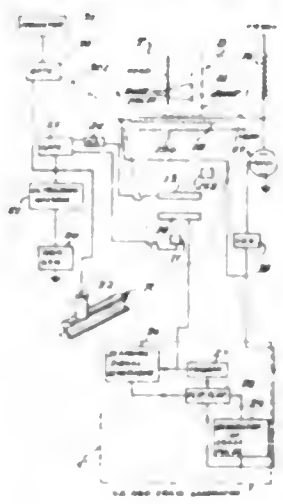
means on said pivotable fourth side for attaching a mechanical linkage at a predetermined distance from the hinge means to develop a physical movement in a mechanically actuatable device.

3,156,110
ULTRASONIC DETECTION AND VISUALIZATION OF INTERNAL STRUCTURE
Manfred E. Clynes, Orangeburg, N.Y.
(Sneeden's Landing, Palisades, N.Y.)
Filed July 23, 1962, Ser. No. 211,730
10 Claims. (Cl. 73—67.8)



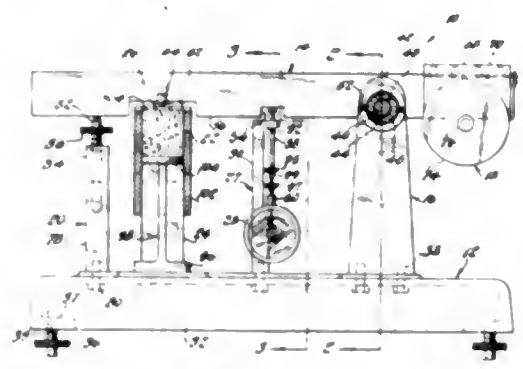
1. The method of examining the internal structure of a body, comprising the steps of irradiating the body with three beams of ultrasonic energy projected in the same direction but having different frequencies, separately detecting said beams after they are intercepted by structural components of said body to produce signals whose respective amplitudes are indicative of the characteristics of said structural components of said body with respect to the beam frequencies, generating in response to each signal a primary color pattern whose intensity depends on the amplitude of said signal, and additively coordinating said primary color patterns to produce a color pattern representative of the characteristics of said structural components.

3,156,111
METHOD AND APPARATUS FOR USE IN ULTRASONIC RAIL TESTING
Ivan L. Joy, Topeka, Kans., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 19, 1959, Ser. No. 787,618
14 Claims. (Cl. 73—67.9)



1. Apparatus for providing a progressive pictorial representation of the internal structural characteristics of lengthwise successive portions of a track rail and comprising ultrasonic equipment including means for emitting successive ultrasonic test signal pulses at a predetermined repetition rate and for receiving echoes of said pulses, means for progressing the ultrasonic equipment along the rail to successively establish such equipment in elastic wave transmitting and receiving relation with lengthwise successive portions of the rail to enable such ultrasonic equipment to produce a set of echo signals corresponding to each said test signal pulse and constituting an A-scan pulse echo signal pattern representative of lengthwise successive sections of the rail, a memory type cathode ray tube having a fluorescent screen, means for projecting a beam of cathode rays on to said screen and means for deflecting said beam in two coordinate directions, two coordinate scanning means for said tube and including first means operable at said repetition rate and at a certain scan speed for repeatedly deflecting said beam along one coordinate direction for a certain scan time, second means operable at a repetition rate and scan speed many times lower than the first named repetition rate and scan speed for repeatedly deflecting said beam along another coordinate direction for a scan time many times greater than the first named scan time, means for varying the intensity of the beam in accordance with the intensity of the said sets of echo signals received by said receiving means, and means operable by said second means for applying an erase signal to said tube in synchronized relation with said second means to erase stored trace intelligence from said screen prior to application of new trace intelligence.

3,156,112
APPARATUS FOR MEASURING MOLD WALL MOVEMENT OR CREEP
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed May 18, 1961, Ser. No. 111,039
6 Claims. (Cl. 73—83)



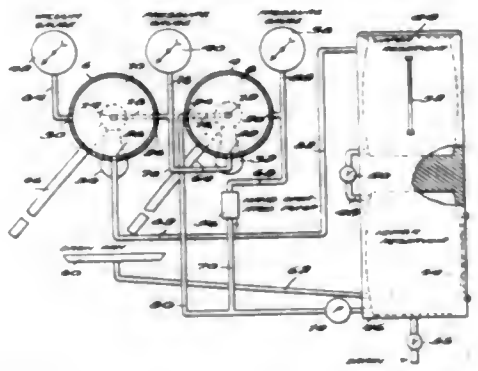
1. Apparatus for measuring creep of granular material comprising a base, a pair of brackets secured to the base adjacent one end thereof, a lever, means pivotally mounting the lever between the brackets with the lever extending between the ends of and generally parallel to the base with the apparatus in operation, support means positioned on said base adjacent the other end thereof for confining a specimen of granular material, a confined specimen of granular material supported by the support means and having an exposed unconfined surface, a contact plate positioned on the unconfined surface of the specimen having an area small relative to the area of the unconfined surface of the specimen, said lever being engageable with the contact plate on pivotal movement of said lever in one direction, a weight assembly operably associated with and variably positionable on the lever to bias the lever in said one direction, means supported on said base and engageable with said lever for controlling the loading of the contact plate by said lever and means secured to the base and operable between the base and lever for indicating relative movement between said unconfined surface of the specimen of granular material and lever after engagement of the lever with the contact plate.

3,156,113

DEVICE FOR TESTING ENGINE FUEL SYSTEMS

Robert T. Dollar, Gainesville, Ga., assignor to Dollar Auto Electric Service, Gainesville, Ga.

Filed Oct. 30, 1961, Ser. No. 148,375
5 Claims. (Cl. 73—116)



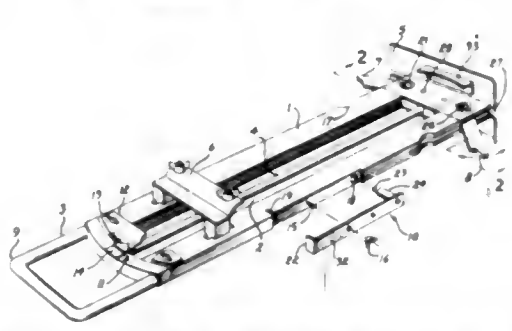
1. A device for testing engines comprising means forming a pair of reservoirs one above the other, a valved connection between said reservoirs, a first valve means including a first main opening and at least two first auxiliary openings and means for selectively connecting said first main opening to either of said first auxiliary openings, a second valve means comprising a second main opening and at least two second auxiliary openings and means for selectively connecting said second main opening to either of said second auxiliary openings, means connected to said first main opening adapted for connection to the fuel inlet of a carburetor, and means connected to said second main opening adapted for connection to a fuel pump outlet, a hand operated pump having its intake connected to the lower reservoir to withdraw fuel therefrom, means connecting the outlet of the pump to a first of said first auxiliary opennigs, means connecting a second of said first auxiliary openings to a first of said second auxiliary openings, a pressure gauge connected to said last connecting means, and means connecting the second of said second auxiliary openings to the upper of said reservoirs.

3,156,114

COMBINATION SKI BOOT HOLDER AND TORQUE INDICATORS

Peter Isaac, 9 Crown Hill Place, Apt. 410, Toronto 18, Ontario, Canada

Filed Dec. 20, 1962, Ser. No. 246,133
4 Claims. (Cl. 73—133)



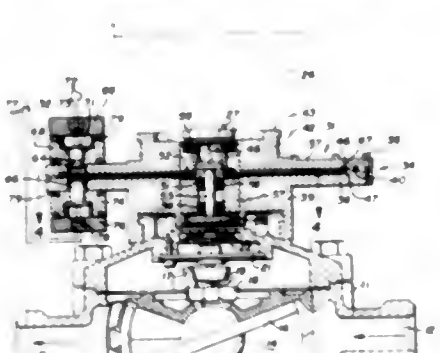
3. A device comprising the combination with a holder for at least one ski boot of means for indicating the torque between a boot and ski harnessed thereto at least including a substantially flat supporting structure against which at least one ski boot may be secured with retaining clamps, load moving means applicable between the heel of a boot and a ski when harnessed thereto, said load moving means projecting from one corner of one end of said supporting structure, boot toe moving means rotatably connected to each corner of the same end of said supporting structure having said load moving means, device setting means comprising a detachable stirrup which may be selectively placed in journals located in the same corners in which said boot toe moving means are connected, effort applying means for exerting torque with either said load moving means or said toe moving means, said effort applying means consisting of a resilient rod and handle assembly which is connected to the end of said supporting structure having said boot toe moving means and which projects from the opposite end of said supporting structure, and indicating means comprising a scale and pointer one of which is secured to said supporting structure and the other to said resilient rod and handle assembly, said indicating means indicating the clockwise direction of said torque about the heel of said boot when said stirrup is placed in one said journal and said effort applying means are actuated, and the counterclockwise direction of said torque about the heel of said boot when said stirrup is placed in the other said journal and said effort applying means are actuated, and said torque about the toe of said boot when said load moving means are applied and said effort applying means are actuated.

3,156,115

RATE OF FLOW INDICATING DEVICE

Charles B. Adelmann, 9 Ocho Rios Place, Danville, Calif.

Filed May 10, 1961, Ser. No. 109,129
7 Claims. (Cl. 73—198)



1. In a rate of flow indicating apparatus of the type adapted for use with a meter for measuring fluid flow of the type having a positive displacement drive mounted in a housing and a detachably mounted register secured to the housing and driven by the displacement drive, the apparatus comprising a separate detachable casing, the casing being adapted to be mounted on the housing and wherein the register is adapted to be mounted on the casing, a member rotatably mounted in said casing and adapted to be driven by the positive displacement drive in the housing, sensing means mounted on said casing for sensing the rate of rotation of the member, a control device, means for supplying a signal from said sensing means to the control device, and means driven by said member and adapted to drive said register.

3,156,116

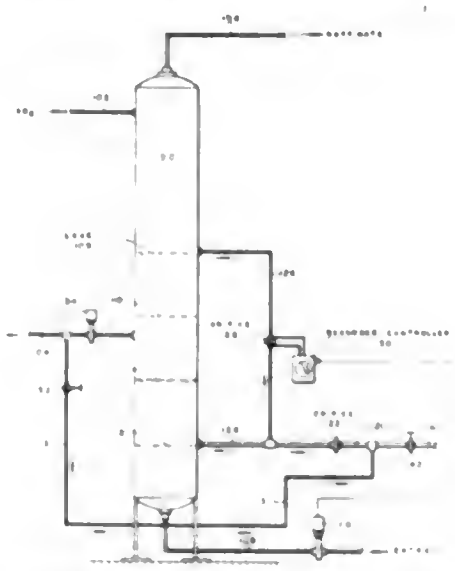
MEASUREMENT OF LIQUID LEVEL

Paul B. Land, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Oct. 1, 1962, Ser. No. 227,260
4 Claims. (Cl. 73—302)

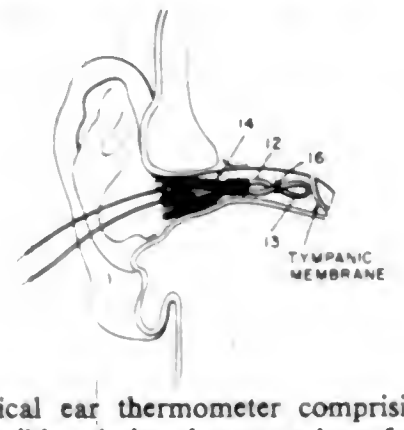
2. Apparatus comprising a vessel having at least one fluid inlet means and one fluid outlet means, first unrestricted purge line means opening into and communicating with said vessel at a lower point thereof, restricted purge line means connecting said unrestricted purge line means with a higher point in said vessel, means for restricting the flow of purge fluid through said restricted purge line means, means for determining the rate of flow in said restricted purge line means, conduit means connecting said fluid inlet means with said purge line means whereby a

portion of the liquid feed to said vessel is directed through said purge line means, and choke orifice means in said



purge line means intermediate said conduit means and said restricted purge line means.

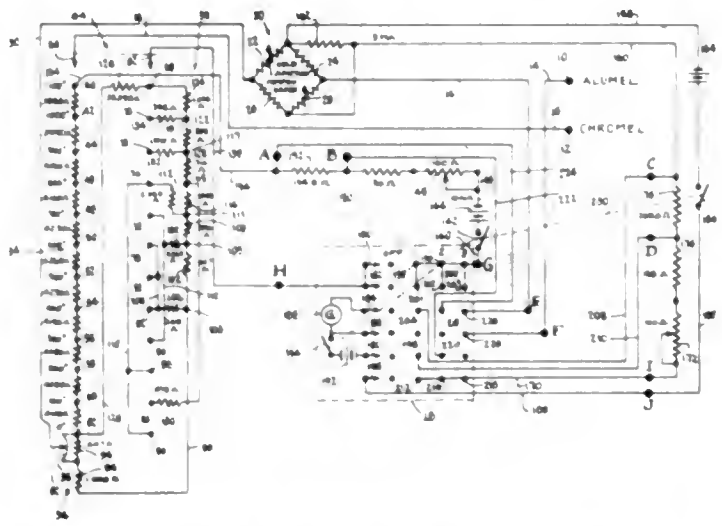
3,156,117
CLINICAL EAR THERMOMETER
Theodor H. Benzinger, Holly Oaks, Tilden Lane, Rockville, Md.
Filed Sept. 21, 1961, Ser. No. 139,812
17 Claims. (Cl. 73—359)
(Granted under Title 35, U.S. Code (1952), sec. 266)



16. A clinical ear thermometer comprising, in combination, a flexible tubular element, a loop formed in said tubular element, a temperature-sensitive element positioned at the bend of said loop and forming with said tubular element a thermal-sensitive probe, the stiffness of said tubular element being such that when said probe is inserted into the auditory canal of an individual whose temperature is to be measured and the bend of said loop brought in contact with the tympanic membrane of said individual, any excessive force applied to said probe to place said bend in the above position causes a buckling of said tubular element whereby damage to said tympanic membrane is prevented and means secured to said tubular element and adapted to cooperate with the inner wall surface of said auditory canal for releasably retaining the bend of said loop in contact with said tympanic membrane.

3,156,118
THERMOCOUPLE PYROMETER AND ASSOCIATED POTENTIOMETER CIRCUIT
Knud J. Knudsen, Middlebury, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut
Filed Mar. 17, 1961, Ser. No. 96,596
7 Claims. (Cl. 73—360)

1. In a potentiometer-type pyrometer for connection to a thermocouple, a potentiometer circuit including a fixed series drop resistor permanently connected therein; a thermocouple circuit connected with the potentiometer circuit; a cold junction compensating circuit in series with said thermocouple circuit, said compensating circuit including a fixed series drop resistor permanently connected therein, and said compensating and potentiometer circuits having separate energizing means to effect a continuous flow of current therethrough and through the series drop resistors; and a combined current-check and indicator means for checking the current flowing through the potentiometer and compensating circuits and for providing current indications from the thermocouple circuit, said means including solely one deflecting instrument movement, including a standard battery potential source and connector means for joining the latter in series with said movement, and including manually operable switch devices having a common operator and including controlled circuits, effecting plural connections of not only the instrument movement but also of the potential source to either of said drop resistors to establish such movement and

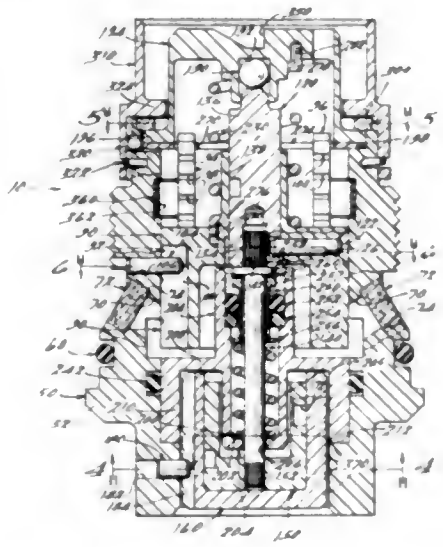


potential source as a series-joined unit at different times either across the drop resistor of the potentiometer circuit or across the drop resistor of the compensating circuit, or else effecting connections of the instrument movement alone in series in the thermocouple circuit, thereby to enable the series-joined unit respectively to check the potentiometer circuit current or the compensating circuit current, or else enable the instrument movement alone to provide readings from the thermocouple circuit, said switch devices and controlled circuits shunting one or the other of the said fixed, series drop resistors across the said series-joined unit to effect the said current checks; and battery protective means comprising a multiple switch organization having a common manual control and having circuitry connected with the said energizing means and with standard potential source, for connecting said means and source simultaneously in, and for disconnecting them simultaneously from, their respective circuits, thereby to prevent the potential source from having excessive loading such as would result if the source were connected with an unenergized drop resistor.

3,156,119
DIFFERENTIAL PRESSURE INDICATOR
Rex C. Darnell, Dexter, Mich., assignor, by mesne assignments, to Michigan-Dynamics, Inc., Detroit, Mich., a corporation of Michigan
Filed Feb. 13, 1962, Ser. No. 172,977
3 Claims. (Cl. 73—407)

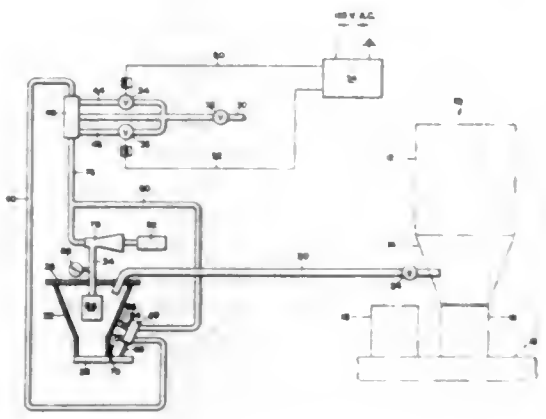
2. A differential pressure indicator comprising a housing having an aperture therein for communication with a high fluid pressure and an aperture for communication with a relatively lower fluid pressure, a piston disposed between the apertures in said housing and movable in longitudinal translation in response to a pressure differen-

tial between the apertures in said housing, a shaft threadably coupled to said piston for converting movement thereof into rotation and having a radial flange thereon, a nut threadably coupled to said shaft for converting rotation thereof into translation, said nut giving visual indication of the differential pressure existing between the



apertures of said housing, and means for sealing the high pressure side of said piston from the low pressure side thereof comprising a sleeve rotatably disposed about said shaft having a radial flange thereon, and a flat radially extending seal disposed about said shaft and between the flanges on said shaft and sleeve, respectively.

3,156,120
AUTOMATIC SAMPLING SYSTEM
Mitchell J. Kowynia, 104 Manchonis Road, North Wilbraham, Mass.
Filed May 16, 1962, Ser. No. 195,202
2 Claims. (Cl. 73—421)

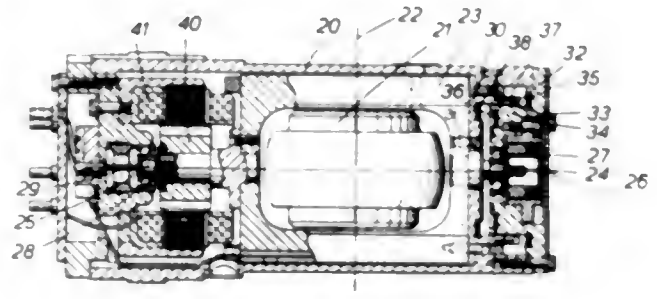


1. A sampling mechanism for use with a bag filling machine having a material supply hopper comprising: a sampler bin having a discharge opening, a sampler spout extending between said sampler bin and the material supply hopper, a flapper valve for normally closing the discharge opening of said sampler bin, servo means for moving said flapper valve into and out of closing position relative to the discharge opening of said sampler bin, means for creating a vacuum within said sampler bin whereby material is drawn from the supply hopper through said sampler spout and into said sampler bin, a supply of pressurized air, an air supply conduit, a pair of feeder air control lines leading from said air supply conduit, a distribution valve connected to said air control lines, a solenoid operated valve in each said air control line, a control timer connected to each said solenoid operated valve, said control timer effectuating the alternate opening or closing of first one and then the other of said solenoid valves, air conduits leading from said distribution valve to said servo means and to said means for creating a vacuum within said sampler bin, whereby when one of said solenoid valves is opened pressurized air is delivered to said vacuum means to create a vacuum in said sampler bin and to one side of said servo means to close said flapper valve, and whereby when the other of said solenoid valves is opened pressurized air is delivered only to the other side of said servo means to open said flapper valve.

ERRATUM

For Class 73—483 see:
Patent No. 3,156,067

3,156,121
DAMPING DEVICES
William Richard Simons, Cheltenham, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed Aug. 21, 1961, Ser. No. 132,662
Claims priority, application Great Britain July 3, 1961
16 Claims. (Cl. 74—5.5)

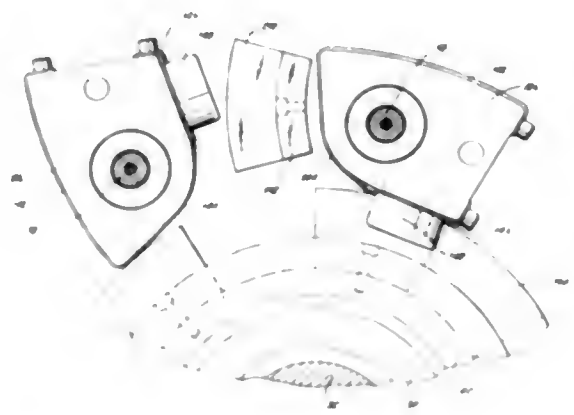


1. A device for damping the motion of a rotary shaft comprising first and second members having first and second cylindrical surfaces respectively which surfaces are both coaxial with the shaft, one of said surfaces at least partially surrounding the other but being spaced from it by a small amount, the first member being mounted for rotation with the shaft and the second member being fixed relative to the shaft, a body of liquid occupying at least a part of the space between the cylindrical surfaces, said body of liquid being provided to damp the motion of the shaft by reason of the viscous forces arising on rotation of the shaft, and means for confining said body of liquid to said part of said space, said means comprising bodies of a material having the property that its surface is not readily wetted by the liquid concerned, at least two such bodies being provided in association with each member and between them bounding the whole of the cylindrical surface on the member concerned so as to prevent the escape of liquid from the required space without there being any physical contact between relatively movable parts, and the first and second members being constructed of materials having different temperature co-efficients of expansion, that of the member having the said one surface being smaller than that of the other member, the difference in said co-efficients being related to the change of viscosity of the liquid with temperature, at least partially to compensate for any change in the characteristics of the device arising from the said viscosity variation at least within a predetermined range of temperatures.

3,156,122
SPINDLE CONTROL FOR THREADING MACHINES

Guy O. Conner, Cleveland, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Application Mar. 25, 1958, Ser. No. 723,865, now Patent No. 3,036,319, dated May 29, 1962, which is a division of application Ser. No. 215,131, Mar. 12, 1951, now Patent No. 2,828,492, dated Apr. 1, 1958. Divided and this application May 31, 1961, Ser. No. 113,872
4 Claims. (Cl. 74—22)



1. Mechanism for controlling the longitudinal position of a rotatable and longitudinally movable tool driving spindle in a metal working machine comprising: a drum cam mounted in said machine having a cam ridge thereon, a tiltable block rotatably journalled but longitudinally fixed on said spindle, said spindle extending through said block eccentrically thereof, rollers mounted on said block on axes perpendicular to and displaced from the axis of said spindle, said rollers being positioned to fit snugly, one on each side of said ridge said block being formed with an arcuate surface opposite said rollers, and a removable annular surface in said machine adapted for sliding engagement by the arcuate surface of said block to prevent rotation of said block with said spindle and to permit said block to rotate away from said cam ridge when said annular surface is removed.

3,156,123
SEQUENCE CONTROLLER MECHANISM

Dann W. Denny, Morrison, Ill., assignor to General Electric Company, a corporation of New York

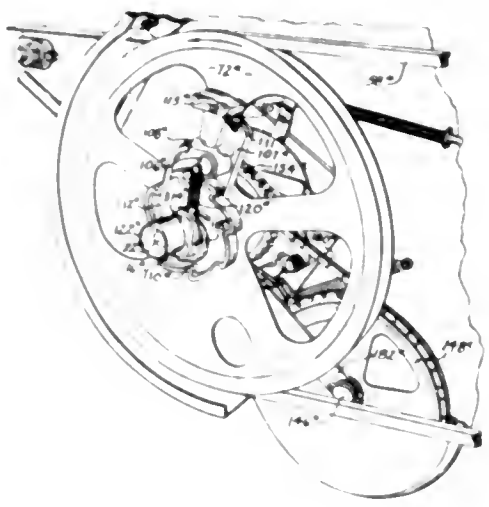
Filed Jan. 18, 1961, Ser. No. 83,462
14 Claims. (Cl. 74—54)

6. Control mechanism for operating a plurality of control devices, comprising a main rotatable operating unit, a plurality of followers distributed about the axis of said unit and operated thereby to actuate said devices in sequence and complete a cycle of operation, gear means acting upon said operating unit for impelling said unit, indexing driven means connected to said gear means for intermittently rotating said unit rapidly in successive steps, motor driven timing means connected to said gear means intermittently rotating said operating unit in successive steps, said timing means including a timing output gear and an intermediate gear located between said timing output gear and said gear means, said intermediate gear being continuously driven by said output gear means and arranged to act upon said gear means thereby to rotate said unit, said intermediate gear being rotatably journalled in an elongated supporting slot, the positioning of said slot and said intermediate gear being such that the intermediate gear is driven toward one end of the slot by the output gear means when said indexing driven means is de-energized thereby to rotate said unit, said intermediate gear being movable toward the other end of said slot when said indexing driven means is energized, thereby to disengage said intermediate gear from driving relationship with said gear means and said operating unit and allow said unit to be driven by the indexing driven means, an auxiliary gear in alternative driven engagement with said indexing driven means and said motor driven timing means, at least one auxiliary operating unit including a cam stacked coaxially upon said auxiliary gear, and complementary interdigitating means for securing said cam to said auxiliary gear, said auxiliary cam being engageable with an associated one of said followers thereby to provide a controlling means for at least one of said devices.

3,156,124
AGRICULTURAL IMPLEMENT

Charles D. Miller, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

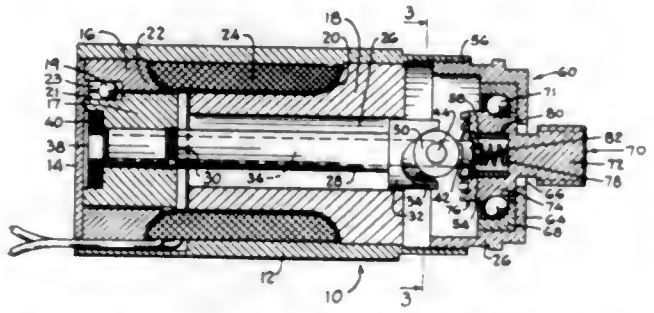
Original application July 15, 1959, Ser. No. 827,247, now Patent No. 3,036,837, dated May 29, 1962. Divided and this application Apr. 23, 1962, Ser. No. 189,373
10 Claims. (Cl. 74—125.5)



1. In a power control for a spreader, a rotatable shaft, a ratchet wheel fixed on said shaft, a pawl support element journaled on said shaft, means for rotating said pawl support element, a pawl movably carried by said pawl support element in juxtaposition with said ratchet wheel for driving engagement therewith, and means carried at least in part by said element and at least in part by said shaft for selectively urging said pawl into engagement with said ratchet wheel for effecting rotation of said shaft from said element or for removing said pawl from engagement with said ratchet wheel to thereby per-

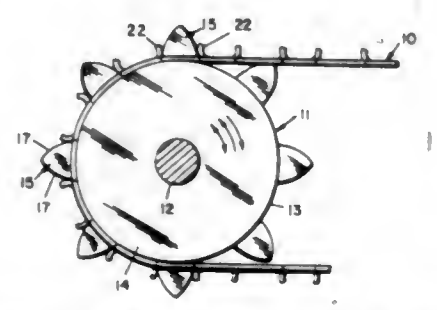
mit said shaft to remain stationary while said element rotates.

3,156,125
DETENT POSITIONING ROTARY SOLENOID
Joseph E. Straub, El Segundo, Calif., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 15, 1962, Ser. No. 237,956
10 Claims. (Cl. 74—126)



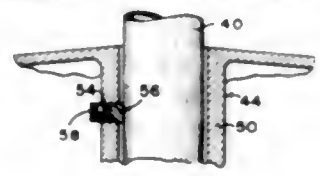
1. A torque solenoid of the character described comprising a coil adapted to be energized by an electric current, a core fixedly mounted within said coil, an armature normally axially spaced from said core and aligned therewith and nonrotatably linearly moveable to said core upon energization of said coil, magnetic circuit means completing a magnetic circuit from said core, around said coil to said armature, a shaft extending through said core rotatably about its axis and operable for limited simultaneous rotational and axial movement, roller means on said shaft, cam means connecting said armature to said rollers means on said shaft, said cam means comprising a crown cam acting to convert linear movement of said armature to a helical motion that is applied to said shaft, and output means converting said helical motion to rotary motion.

3,156,126
POSITIVE BELT DRIVES
Horace W. Olsen, 2038 North Blvd., Houston 6, Tex., assignor of one-third each to Sol A. Levy, Jr., and Jack W. Gregory, Jr., both of Houston, Tex.
Filed June 1, 1962, Ser. No. 199,535
5 Claims. (Cl. 74—229)



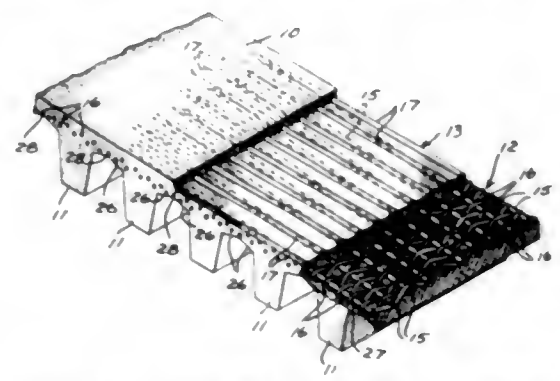
2. In a positive belt drive the combination of a sprocket having a peripheral edge provided with a set of circumferentially spaced teeth, each of said teeth having a pair of driving edges, a band engaging said sprocket, said band being formed with longitudinally spaced openings receiving the teeth of said sprocket therein, and pairs of resilient fingers provided on said band at opposite ends of said openings, the fingers in each pair having free ends and being spaced apart by a distance smaller than the circumferential dimension of a tooth of said sprocket received in the associated band opening whereby both of said driving edges of the tooth may simultaneously be in frictional engagement with the respective of the pair of fingers.

3,156,127
VIBRATION REDUCING DEVICE AND METHOD
David D. Pettigrew, Pittsburgh, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1962, Ser. No. 214,226
8 Claims. (Cl. 74—230.17)



1. In a variable speed V-belt transmission: a first rotary member; a second rotary member rotatable with and freely slidable on said first member; and means for eliminating chatter between said members without impeding sliding of the second member on the first comprising a solid vibration absorbing insert of material having a low coefficient of friction carried by one of said members and stop means carried by said one member biasing said insert into engagement with the other of said members.

3,156,128
GEAR BELT
Robert B. Williams, Wethersfield, Conn., assignor to The Russell Manufacturing Company, Middletown, Conn., a corporation of Connecticut
Filed Dec. 26, 1962, Ser. No. 246,928
2 Claims. (Cl. 74—232)

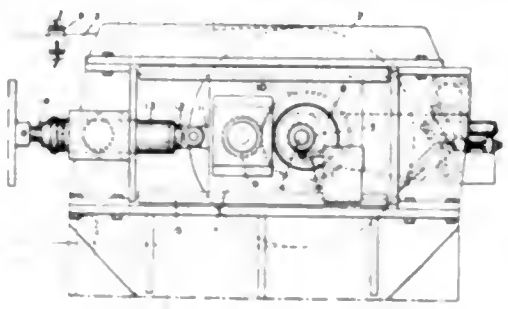


2. A gear belt composed of a molded plastic material comprising a backing portion with gear teeth integrally molded on one surface thereof, said backing portion having inner and outer layers of tension members embedded therein, one of said layers comprising a woven fabric sleeve having filler yarns and warp yarns, said filler yarns being substantially straight and extending helically around said belt to constitute a tension member, and said warp yarns extending transversely of the belt in crimped form to bind the filler yarns in place, the other of said layers of tension members comprising a yarn extending lengthwise of said belt in the form of a helical winding, the helical filler yarns of said first layer having a pitch direction opposite to that of said second layer.

3,156,129
BELT ALIGNING DEVICE
William A. Greiner, Jr., Lancaster Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,284
3 Claims. (Cl. 74—241)

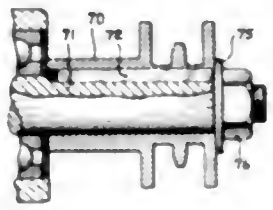
1. An aligning device for controlling the path of travel of an inelastic belt, comprising a guiding member over which the belt travels, a supporting frame in which said guiding member is supported, a pair of slidable chocks in which said guiding member is journaled for movement in said support, a pair of eccentric mountings mounted in said chocks for the ends of the shaft passing through the

center of said guiding member, a scanning device to determine the alignment of the belt with respect to the guiding member, means for rotating said eccentrics in accord-



ance with a signal from said scanning device, and a hydraulic cushion in direct alignment with the movement of the chock to cushion said movement.

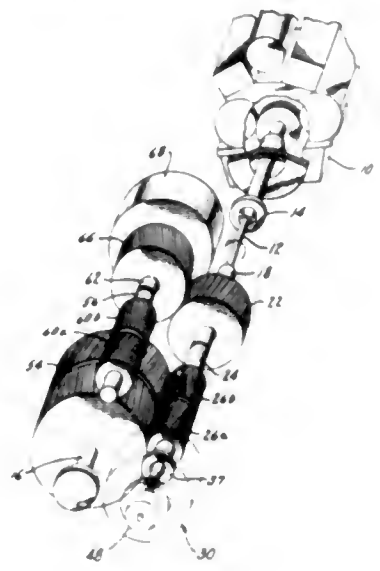
3,156,130
SPROCKET ARRANGEMENT
Mary E. Gant, 8204 Westfield Blvd., Indianapolis, Ind.
Filed July 3, 1961, Ser. No. 121,462
2 Claims. (Cl. 74—243)



1. An integral sprocket arrangement comprising a hub, a sprocket extending radially of said hub and including a plurality of radially extending teeth, a pair of annular flanges extending radially of said hub a greater distance than said teeth, a sprocket spacing collar extending axially a substantial distance from one side of said hub, and a chain received on said sprocket, said flanges each having a flat inner surface perpendicular to the axis of a supporting shaft and extending radially outwardly to the outer periphery of the respective flange, said flange surfaces being spaced from said chain a distance less than the width of said chain taken axially of said hub, said spacing collar being of a predetermined length to automatically space said sprocket on said shaft when secured thereon, said integral hub, sprocket, flanges, and spacing collar also providing a balanced rotative unit.

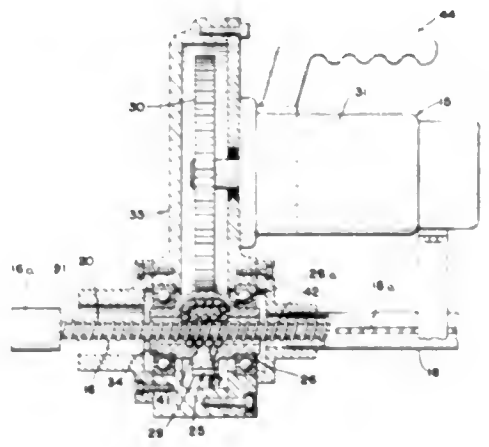
3,156,131
REVERSING TRANSMISSION WITH A THRUST BEARING ON THE INPUT SHAFT
Jack A. Hart, Hales Corners, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 12, 1962, Ser. No. 201,836
7 Claims. (Cl. 74—361)

1. In an engine drive arrangement, a drive shaft rotatable in one direction, a driven shaft, a gear assembly connecting said drive shaft and said driven shaft for driving said driven shaft in either direction including a clutch mounted at one end of said drive shaft for drivingly connecting a portion of said gear assembly to said drive shaft, said clutch including a first clutch member attached to said drive shaft and a second clutch member attached to said portion of said gear assembly, clutch operating means for drivingly connecting said first and second clutch members and including an axially movable connection with said first clutch member, and a thrust bearing mounted at said one end of the drive shaft to prevent any axial load from the axially movable connec-



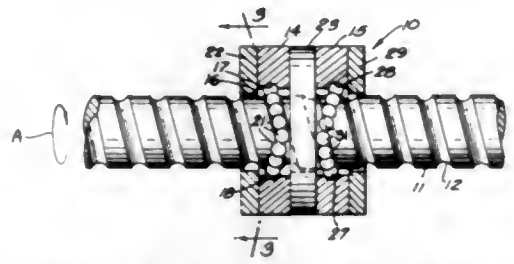
tion with the first clutch member from being transmitted axially by the drive shaft toward an engine.

3,156,132
REMOTE CONTROL MECHANICAL ACTUATOR
Henry Peter Borie, Jr., 2093 Harwitch Road, Columbus, Ohio
Filed May 24, 1961, Ser. No. 112,336
4 Claims. (Cl. 74—424.8)



1. A power transmission device comprising:
a stationary support;
an elongated flexible cable movably mounted on said support;
said cable comprising a flexible core having a wire wound therearound with said wire being wrapped in the form of a helix on said core with the turns of the helix being spaced apart one from the other longitudinally of said core;
a nut received over said cable;
means rotatably mounting said nut on said support;
a plurality of balls carried by said nut with said balls being operatively received in the spaces between the windings of said wire on said flexible core;
recirculating means formed in said nut and operatively receiving said balls whereby movement of one of said cable and nut causes continuous circulation of said balls through said nut into the spaces between said windings on said cable and thereby movement of the other of said cable and nut.

3,156,133
BALL BEARING LEAD SCREW FOLLOWER
Myron L. Anthony, 6040 Brainard, La Grange, Ill.
Filed June 21, 1962, Ser. No. 204,207
6 Claims. (Cl. 74—459)



1. A follower for a ball-type lead screw of predetermined diameter having a helical ball-receiving recess of given path and direction, comprising:

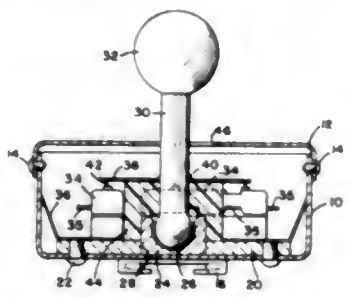
a one-piece cylindrical ball race member having an axial aperture of greater diameter than the diameter of said lead screw, disposed in encompassing relation to said lead screw,

said ball race member having a first internal helical ball-receiving channel of given depth extending parallel to the helical recess in said lead screw, and a second internal helical channel of greater depth but oppositely directed, relative to said first channel, each of said channels extending for the full axial length of said ball race member, said channels intersecting at their ends to afford a complete one-turn ball path, around said lead screw, comprising an advance portion defined by said first channel and a return portion defined by said second channel;

a plurality of load-bearing ball members disposed in said channels and substantially completely filling said ball path;

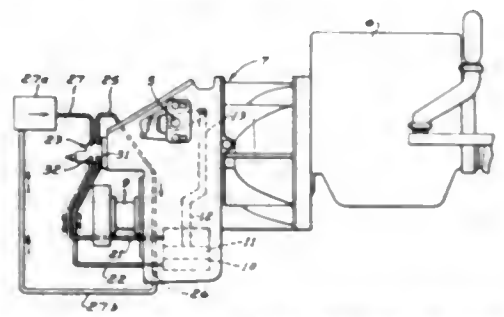
and a pair of deflectors, mounted on said ball race member at the opposite ends thereof at the outer side of the respective intersections of said channels and extending substantially radially of the axis of said lead screw, for deflecting said balls from one channel to the other, said deflectors each affording a substantially uninterrupted transition surface consisting a continuation of both channels at their intersection.

3,156,134
CONTROL APPARATUS FOR DENTAL CHAIR
Tom Forrester, Jr., Hilton, N.Y., assignor to Ritter Company, Inc., Rochester, N.Y., a corporation of Delaware
Filed July 25, 1961, Ser. No. 126,649
6 Claims. (Cl. 74—471)



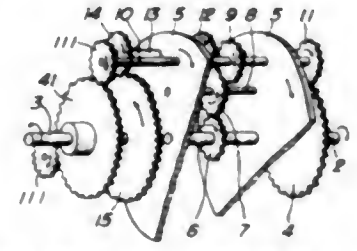
1. Control apparatus comprising, in combination, a removably mountable control box, a plurality of control means mounted within and on the bottom of said box and spaced from each other, a shaft having a neutral position and being mounted for substantially universal movement about a pivot point on an axis centrally located with respect to said plurality of control means, said axis being substantially equally radially spaced from each of said control means, a contact disc mounted on said shaft, and resilient means between said contact disc and box normally maintaining said shaft in said neutral position and permitting said disc to actuate at least one of said control means only when a selected force is applied to said shaft.

3,156,135
CONTROL SERVOMECHANISM
Roy M. Gedeon, Cleveland, Ohio, assignor to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 14, 1962, Ser. No. 237,544
15 Claims. (Cl. 74—732)



1. In a drive assembly for a vehicle having a source of motive power and power transfer means including transmission means having fluid controlled coupling means actuatable to connect said transmission means in power transfer relation between said source and the drive wheels of said vehicle: control means comprising a hydraulic fluid system connected to said coupling means, means for directing an actuating quantity of fluid to said coupling means being effective to energize the latter and connect said transmission means in said power transfer relation so as to propel said vehicle selectively in forward and reverse directions at a speed responsive to the speed of said source, sensor means in said system operable to relieve said coupling means of a portion of said actuating fluid effective to cause a reduction in the power transfer between said motive source and transmission means, means operatively connecting said transmission means to said sensor means whereby said sensor means is thereafter responsive to said transmission means adjusting to said reduction in power transfer for continuously relieving said coupling means of a predetermined portion of said fluid so as to effect a constant reduction in said power transfer and a consequent driving of said vehicle at a reduced creeping speed.

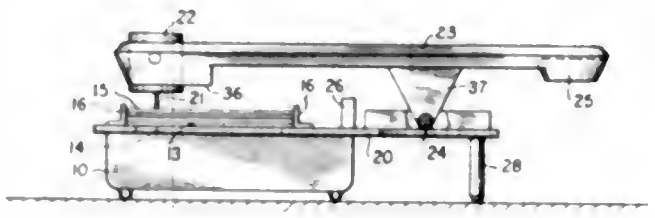
3,156,136
REDUCTION GEAR BOX
Akimoto Sogabe, 2163 Kawashima-cho, Hodogaya, Yokohama, Japan
Filed Mar. 28, 1962, Ser. No. 183,237
3 Claims. (Cl. 74—802)



1. A reduction gear box comprising a casing **1** having spaced end walls, a driving and a driven shaft **2** and **3** mounted in axial alignment in said end walls for free rotation therein, a pair of stationary spur gears **4** and **41** mounted in said casing adjacent to said end walls concentrically with said aligned shafts, a pair of axially spaced carrier discs **5**, **5** freely revolubly mounted on said driving shaft **2**, a driving spur gear **6** fixedly mounted on said driving shaft between said pair of carrier discs, a plurality of first spur gears **9** disposed around said driving gear **6** to be driven thereby, said first spur gears **9** being mounted individually on first shafts **10**

freely revolubly carried by said carrier discs, a pair of second spur gears 11 and 111 of equal diameters fixedly mounted on each of said first shafts 10 at opposite ends thereof and continuously meshing with said stationary gears 4 and 41, respectively, a plurality of third spur gears 12 disposed around said driving gear 6 to be driven thereby and having respective second shafts 13 rotatively carried by said carrier discs, a fourth spur gear 14 fixedly mounted on each of said second shafts 13 at the side where said driven shaft 3 extends, and a driven spur gear 15 fixedly mounted on said driven shaft and meshing with all of said fourth spur gears 14, said driven gear 15 having a pitch circle diameter slightly larger than the pitch circle diameter of said stationary gears, said stationary spur gears, said second spur gears and driven spur gear having the same tooth pitch.

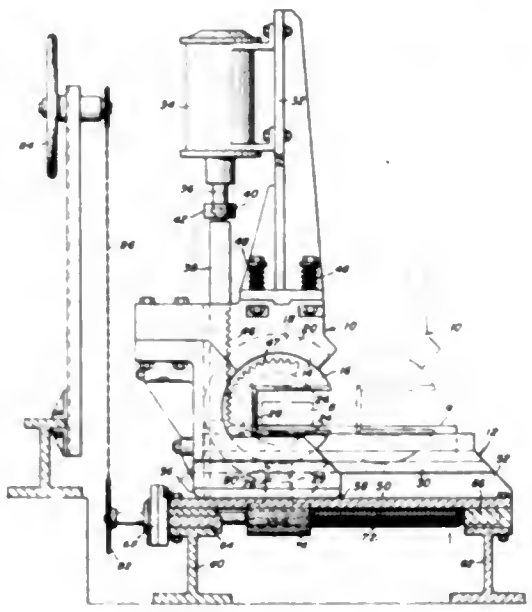
3,156,137
SUPERIMPOSABLE CARD SYSTEM WITH TEMPLATE AND GUIDED DRILL
Frederick Jonker, Washington, D.C., and William P. Gingras, Rockville, Md., assignors to Jonker Business Machines, Inc., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,441
4 Claims. Cl. (77—27)



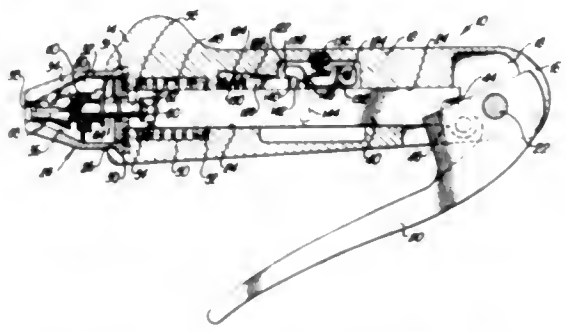
1. Apparatus for selectively drilling code perforations in data record cards of the coordinate-index type, comprising a housing having a flat upper support plate, data-card locating formations on said plate to receive and maintain at least one data card in fixed position above said plate, said support plate including a lateral substantially coplanar extension defining a trackway in substantial alignment with a card received by said formations, a tiltable elongate arm arranged over said support plate and supported by a depending formation riding in said trackway to permit motion of said arm both in the fore-and-aft direction of said trackway and for at least a limited swinging motion of said arm in a plane substantially parallel to and above said support plate, and a card-drilling device secured to one end of said arm so as to overlie the area of such card; said depending formation in engagement with said trackway being constructed to maintain said arm against rotation about its own lengthwise axis, whereby the axis of said card-drilling device is maintained substantially perpendicular to the plane of said support plate and the card thereon, regardless of the horizontal positioning of said card-drilling device.

3,156,138
BAR TURNER
Arthur W. Johnson, 3851 W. 61st St. Chicago 20, Ill.
Filed Aug. 21, 1962, Ser. No. 218,275
4 Claims. (Cl. 80—53)

1. A billet turning device adapted to turn a supported billet about a longitudinal axis, said device comprising, a base member, a housing member supported on said base member, a rotary member carried by said housing member, said rotary member having means to engage and rotate a billet about its longitudinal axis, drive means adapted to selectably rotate said rotary member, and means providing for tilting movement of said housing member on said base member about an axis laterally spaced from said longitudinal axis during rotation of said rotary member, whereby the tilting movement prevents jamming of the supported billet during turning.



3,156,139
CRIMPING TOOL
Grant N. Willis, Bristol, Conn., assignor to Cannon Electric Company, Los Angeles, Calif., a corporation of California
Original application Oct. 3, 1960, Ser. No. 60,070, now Patent No. 3,126,750, dated Mar. 31, 1964. Divided and this application Feb. 1, 1962, Ser. No. 172,048
3 Claims. (Cl. 81—15)

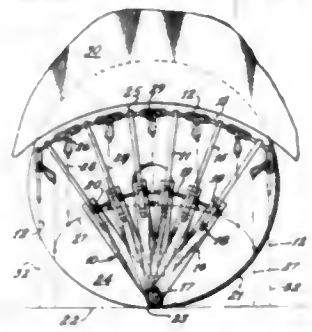


1. A crimping tool which comprises: an elongated housing having a tubular forward portion open at its forward end, the forward portion of the housing having an annular inside surface which inclines forwardly and radially inwardly; a plurality of jaws in the forward portion of the housing and engageable against said annular inside surface; elongated actuator means longitudinally slidable in the housing and engageable against the jaws, said actuator means including a forward portion axially disposed in the forward portion of the housing between the jaws, said forward portion of the actuator means having a forwardly opening bore therein to receive a member to be crimped and having radial openings therein through which portions of the jaws are movable to engage the member to be crimped, forward movement of the actuator means in the housing camming the jaws radially inwardly against said annular inside surface of the housing; a clearance between said jaws and said forward portion of said actuator means, and a resilient elastomer collet member circumferentially disposed within said clearance and carried by said forward portion of the actuator means rearwardly of said radial openings therein and engaged against the jaws so as to primarily radially shiftably bias the jaws outwardly.

3,156,140
APPARATUS FOR APPLYING TIRE CHAINS

William R. Epes, 127 Lefferts Road, Yonkers, N.Y.

Filed May 23, 1961, Ser. No. 112,074
4 Claims. (Cl. 81—15.8)

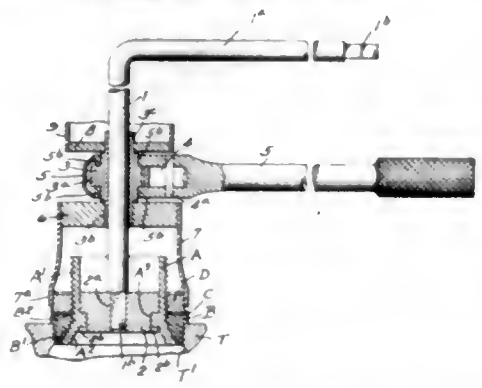


1. A tool, for draping a tire chain having inside and outside ring chains and cross chains over a tire comprising spring fingers pivoted at one end on a pivot, said fingers being adapted to be pivoted into a folded position one above the other and adapted to be pivoted into a radiating position about said pivot, means for spacing said fingers at a definite angle in respect to each other, a support on the end of each finger opposite to said pivot for supporting the intermediate portion of said inside ring chain when said fingers are in said radiating position, said fingers being adapted to carry said intermediate portion of said inside ring chain over the top of said tire and to be bent downwardly to release said ring chain from said supports and thereby drape said tire chain over the tire.

3,156,141
COMBINATION INSIDE-OUTSIDE SPUD WRENCH

Vance R. Pluntz, 4315 Knoll Top Drive,
Indianapolis, Ind.

Filed Aug. 21, 1962, Ser. No. 218,272
2 Claims. (Cl. 81—53)

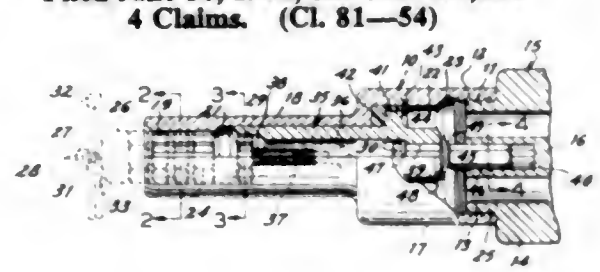


1. A spud wrench for assembling and disassembling spud assemblies in water inlets of commodes or the like in which the spud assembly includes an externally threaded nipple to receive a locking nut, and has a flange at its end engaging the walls of the commode inlet, and said nipple having a series of inwardly extending spaced lugs in its bore, comprising a lever having a non-circular end portion; a head adapted to be removably inserted in the nipple and having a series of recesses in its outer periphery adapted to receive and engage the lugs of said nipple, and having a non-circular central hole receiving the correspondingly shaped end of the lever; a ratchet head rotatably and slidably mounted on said lever above the first head and having ratchet teeth therearound; a ratchet lever rotatably mounted on said ratchet head; a pawl carried by said ratchet lever for engaging the ratchet teeth in one direction of swing of the ratchet lever to rotate the ratchet head with the ratchet lever; a socket sleeve fixedly mounted on the ratchet head, said sleeve being adapted to engage the locking nut to rotate the latter as the ratchet head is being rotated while the nipple is held from rotation by the first lever; said sleeve having a circular inner end, a disc fixedly mounted on the ratchet head, said disc being fixedly mounted within the circular inner end of the socket sleeve; and the outer end of said socket sleeve having a non-circular shape to suit that of the locking nut and radially spaced from and concentrically surrounding the first named head.

3,156,142
NUT RUNNER ATTACHMENT

Lewis C. Finkle, Temple City, Calif., assignor to Wedgelock Corporation of California, North Hollywood, Calif., a corporation of California

Filed June 30, 1961, Ser. No. 121,086
4 Claims. (Cl. 81—54)

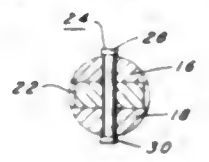


1. An attachment comprising: An elongate tubular member having an enlarged end and opposite reduced end adapted to grip a fastener housing, a sleeve rotatably mounted in said tubular member, means for preventing relative longitudinal movement of said tubular member and said sleeve, said means comprising bearing means and ring means mounted interiorly in the enlarged end of said tubular member in spaced relation and an annular flange on said sleeve extending between said bearing means and said ring means and in contact therewith, said sleeve having one end thereof counterbored to receive and to grip a nut, said sleeve end being spaced axially inwardly of the reduced end of said tubular means, connector means non-rotatably fixed to an opposite end of said sleeve, said connector means comprising a non-circular shaft having on end thereof inserted into said sleeve and secured thereto by fasteners, the other end of said shaft extending outwardly of said tubular member for connection with motor means for rotating said sleeve relative to said tubular member.

3,156,143
ADJUSTABLE LEVERAGE TOOL

Robert S. Wolf, Philadelphia, Pa., assignor to Holiday Frosted Food Co., Philadelphia, Pa., a corporation of Pennsylvania

Filed July 16, 1962, Ser. No. 209,984
3 Claims. (Cl. 81—177)

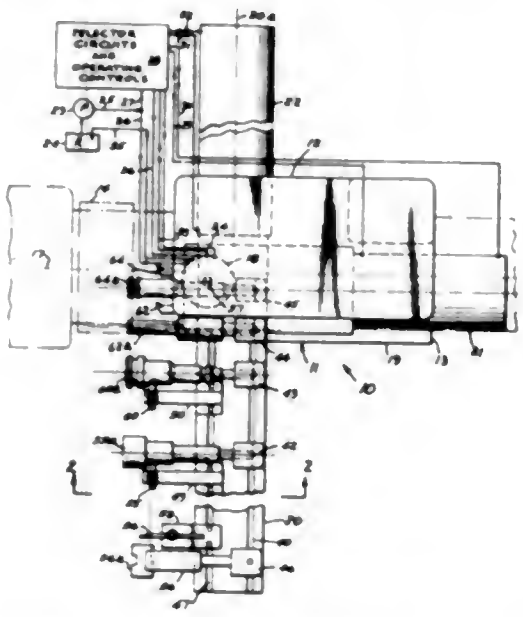


1. An adjustable leverage tool comprising a main L-shaped tool, said tool including an elongated handle, a head depending from one end of said handle in perpendicular relationship to said handle, an extension handle, means for pivotably securing said extension handle to said elongated tool handle adjacent said head, said extension handle having a slot therein for nesting said tool handle within said extension handle when said handles are on the same side of said tool head, said extension handle being pivotable from said nested position to a position displaced 180 degrees therefrom, said extension handle projecting beyond said tool head when it is displaced 180 degrees from said nested position, and stop means on said tool head for limiting the displacement of said extension handle to 180 degrees from said nested position.

3,156,144
MULTIPLE TEMPLATE, MULTIPLE CUTTING TOOL, CONTOUR COPYING MACHINE

Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut

Filed Aug. 1, 1961, Ser. No. 128,440
8 Claims. (Cl. 82—14)

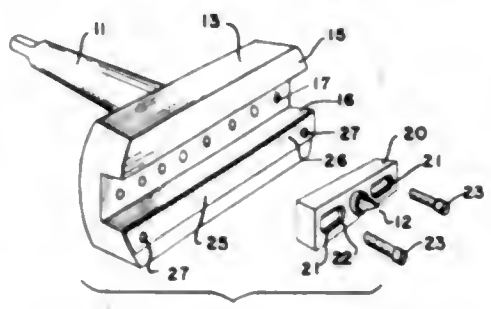


1. In a pattern-controlled machine tool of the class having a pair of non-parallel slides, one atop the other, a tracer valve, at least one of which slides is controllable by the tracer valve, the improvement comprising a plurality of template holders on the uppermost slide, each adapted to hold a respective template whose contour is to be duplicated in a workpiece, and a plurality of tool holders on said uppermost slide, one for each of said template holders, each adapted to hold tools to machine a workpiece, the templates and tools thereby being provided in sets, the members of each set being rigidly interconnected relative to each other through the uppermost slide, means for moving the templates into individual adjacency with the tracer valve and thereby to move its respective tool into adjacency with the workpiece, whereupon relative movement between the tracer valve and template is duplicated between the workpiece and tool and whereby successive sets of respective templates and tools may be moved into adjacency for successive machining operations without removal of the workpiece from the machine tool.

3,156,145
TAILSTOCK CENTER

Richard G. Schultz, 29618 Ann Arbor Trail, Garden City, Mich.

Filed Apr. 30, 1963, Ser. No. 276,786
3 Claims. (Cl. 82—15)

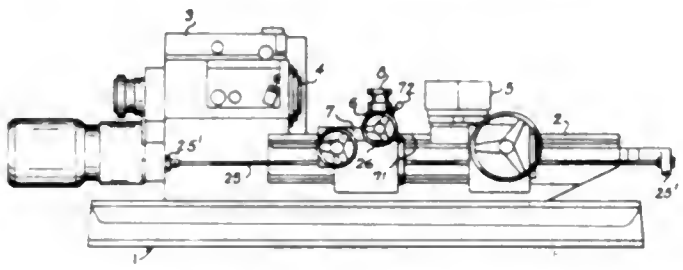


1. A tailstock dead-center comprising an elongated, tapered shank for fitting into a tailstock, an elongated flat plate having a rear face and a forward face, the plate being centrally secured at its rear face to the enlarged end of the shank and being arranged in a plane perpendicular to the axis of the shank, and a uniform cross-section, open groove formed in said forward face, said groove extending the full length of the plate and opening forwardly; a slider block snugly, but slidably, fitted in said groove for sliding endwise along the length of the groove, with one face of the block being exposed at the opening of said groove, a workpiece supporting point secured to the center of said one face of said slider block; openings formed in said slider block on the opposite sides of said point, the openings each being elongated in a direction parallel to the groove, and a number of threaded openings formed in the base of said groove, and a screw fitted through each of said slider block openings for engagement with the slider block and for threaded engagement with one of the threaded openings for adjustably fixing the position of the slider in said groove and thus to offset the point a predetermined amount relative to the axis of the shank.

3,156,146
MACHINE TOOL DRIVES

Nicholas P. Darash, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 12, 1959, Ser. No. 845,688
2 Claims. (Cl. 82—24)

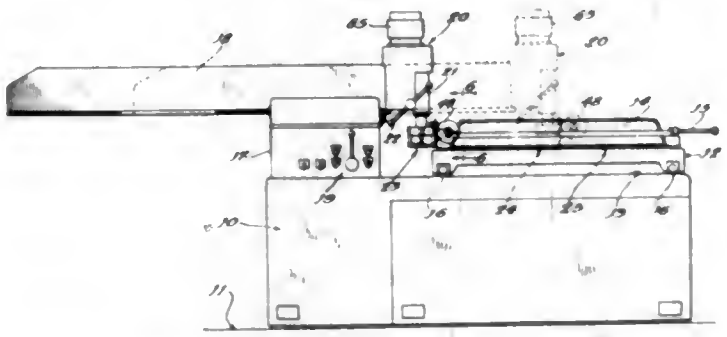


1. In a machine tool, slide means, carriage means supporting the slide means for reciprocating movement relative thereto, cooperating screw and nut elements, one of said elements being rotatably carried by one of said means, the other of said elements being fixed against rotation to the other of said means, a hydraulic motor supported by said one of said means and having a member rotatable through complete revolutions in a fluid chamber in response to the flow of fluid therethrough, said fluid chamber having fluid ports communicating therewith for directing fluid into and from the fluid chamber, said member being operatively and fixedly connected to said one element for rotation at all times therewith and to effect rotation thereof upon rotation of said member in response to fluid flow through said chamber to thereby effect movement of said slide means relative to said carriage means at a rapid traverse speed, power actuated additional drive means for rotating said one element and said member to effect movement of said slide means at a feed speed, a handwheel operatively connected to said one element for rotating said one element and said member to effect movement of said slide means, and control means controlling the flow of fluid through said fluid chamber including a valve member having a neutral position wherein said valve member connects said fluid ports and provides a closed path for fluid in said fluid chamber so that the fluid in said chamber flows through said path when said valve member is in said neutral position and said power actuated drive means is operated or said handwheel is turned and having an actuated position connecting said fluid ports to a source of fluid pressure and to exhaust to provide fluid flow through said fluid chamber to effect rotation of said member in said chamber.

3,156,147
BELT SHAVING MACHINE

James A. Linn, Evanston, and Raymond E. Smith, Lake Forest, Ill., assignors to Burrell Belting Company, a corporation of Illinois

Filed May 2, 1962, Ser. No. 191,979
12 Claims. (Cl. 83—5)

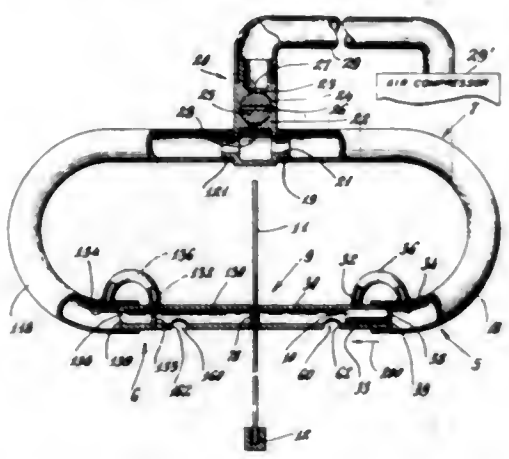


1. A machine for shaving ends of a woven belt for splicing purposes, comprising: a base including a bed having means for clamping a woven multi-ply belt thereon with an end portion of the belt exposed; a head mounted on said base, said head being reciprocally movable across the bed and across said exposed end portion of the belt; an upright cutter wheel mounted on the head position to cut into the belt on the bed in the direction of the thickness thereof; a slicing wheel on the head in position to cut into the belt on the bed between plies thereof, said slicing wheel being in tandem and following said upright cutter wheel, and means for accurately positioning said cutting and slicing wheels relative to said bed during movement of the head thereover whereby said wheels may sever a single ply from a multi-ply woven belt on said bed.

3,156,148
DATA PROCESSING CARD PUNCHING

Curtis E. Carr, Gardner, Mass., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed May 18, 1961, Ser. No. 110,925
12 Claims. (Cl. 83—34)

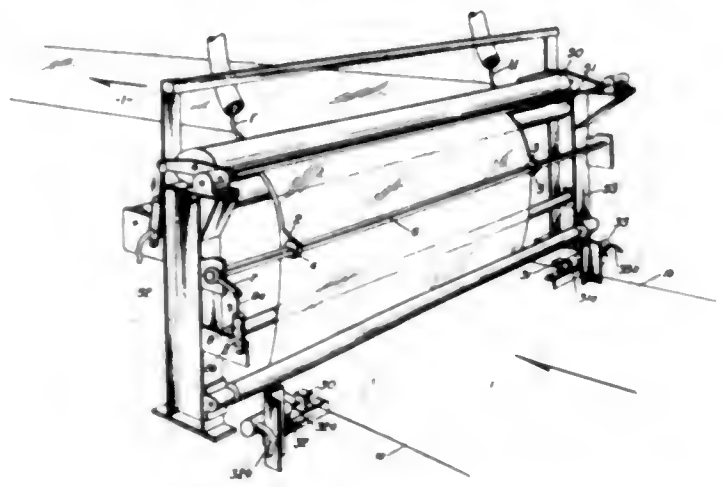


11. Apparatus for punching holes in data processing cards comprising: a data card supporting station; at least a first tube assembly positioned with one end adjacent said card station; at least a second tube assembly longitudinally aligned with said first tube assembly and with one end thereof spaced from but proximate to said one end of said first tube assembly so that said card station is between said one ends of said tube assemblies; a propulsion mechanism; said propulsion mechanism comprising pneumatic-pressure means and means operatively connected to said propulsion mechanism and the distal other ends of both said tube assemblies for conveying said pressure produced by said pneumatic means into said other ends of said tubes; a punching projectile having at least one cutting portion in one of said tube assemblies adjacent said distal other end thereof; means for actuating said pneumatic means so that a gaseous pressure is produced in each of said other ends of said tube assemblies of sufficient magnitude to propel said punching projectile situated in said other end of either of said tube assemblies along the length of said tube, so as to pass from said one end of one of said tube assemblies, through a card which may be positioned at said card supporting station and into said one end of the other of said tube assemblies; a pneumatic escape means positioned between said other end and one end of each of said tube assemblies, so as to allow the escape of said gaseous pressure in the absence of said projectile between said escape means and said other end of either of said tube assemblies; said pneumatic escape means being formed directly in said tube assemblies by a discontinuity of the walls thereof; said walls forming said escape means being sufficiently spaced apart to allow a card disc formed by the punching operation to pass therethrough so as to escape from the interior of said tube assemblies; and additional means for assisting in dislodging punched card discs which may adhere to said cutting portion of said punching projectile, at least part of said additional means being positioned adjacent said escape means and operating at times upon a card disc which may be carried by said punching projectile.

3,156,149
APPARATUS FOR TRIMMING AND WINDING SHEETED MATERIALS

William G. Frizelle III, Palmyra, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Sept. 26, 1962, Ser. No. 226,382
3 Claims. (Cl. 83—176)

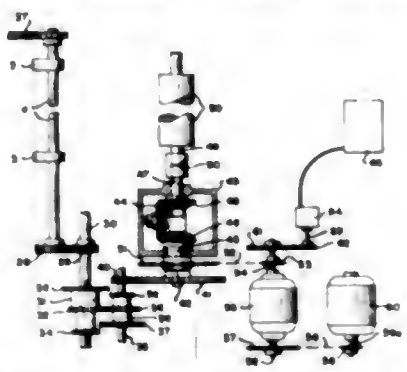


1. In an apparatus for slitting a transported web of a sheeted material, including nip rolls for transporting the web, and means for detecting a break in said web ahead of said nip rolls, a means for avoiding separation of said web between the point of detection and said nip rolls, which comprises in sequence a pair of web diverters elements aligned laterally of said web; means for extending said diverter elements inwardly toward the web center; slitter knives normaly disposed in intercepting relation to said web travel path intermediate said diverter elements and said nip rolls; and means energized by an electrical signal from said break detector to actuate said diverter element extension means, and means to withdraw and restore said knives from and to said intercepting relation to said web in a timed sequence.

3,156,150
APPARATUS FOR ACTING ON CONTINUOUSLY ADVANCING ELONGATED MATERIAL

Albert J. Sarka, Maple Heights, Ohio, assignor, by mesne assignments, to The Wean Engineering Company, Inc.

Filed Sept. 19, 1960, Ser. No. 56,971
13 Claims. (Cl. 83—298)

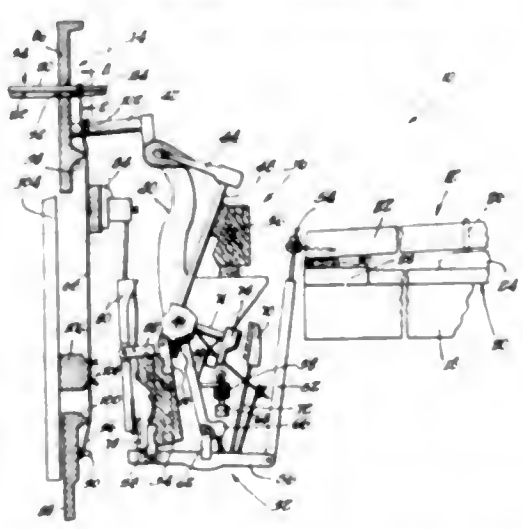


1. Apparatus for acting on continuously advancing elongated material comprising feed means for continuously advancing the material, tool means having opposed elements for acting on the material as the material advances, means imparting continuous cyclic movement to the tool means whereby the tool means advance and retract generally along the path of the advancing material and the opposed elements thereof move rectilinearly relatively toward each other and act on the advancing material during such advance of the tool means and the tool means then return in the opposite direction to complete the cyclic movement thereof, driving mechanism driving the feed means to advance the material substantially at the speed of advance of the tool means while the tool means act on the material and at a speed independent of the speed of the tool means while the tool means are not acting on the material and control means for controlling the driving mechanism to predeterminedly drive the feed means while the tool means are not acting on the material whereby to determine the spacing along the material between the places on the material at which the tool means act on the material.

3,156,151
RESILIENT TUNING PIN

Clifford W. Andersen, De Kalb, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed June 19, 1963, Ser. No. 289,089
6 Claims. (Cl. 84—201)

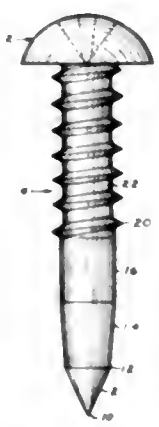


1. A tuning pin for insertion in a bore fashioned in a piano frame to form a mounting situs for one end of a piano string, said tuning pin comprising: a tubular body fabricated of resilient material which is shaped to dispose confronting edges in spaced relationship for establishing a laterally opening, longitudinally extending slot, said material forming a continuous connection between said edges away from said slot for establishing an elongated hinge axis extending longitudinally of said tubular body, whereby the wall of said body reacts resiliently to radial compression for wedged engagement of said body in a said bore; and a tool-engageable formation on one end of said body.

3,156,152
SELF-TAPPING DRIVING SCREW FASTENER

Edgar Reed, Worcester, Mass., assignor to Reed & Prince Manufacturing Company, Worcester, Mass., a corporation of Massachusetts

Filed Sept. 8, 1961, Ser. No. 136,885
1 Claim. (Cl. 85—41)

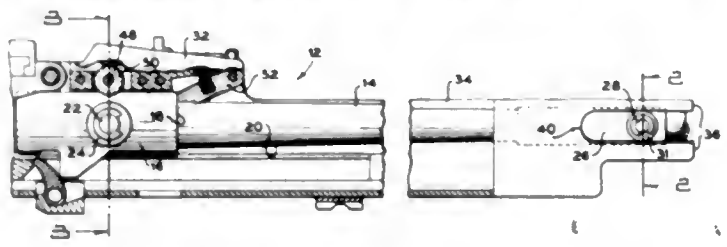


A self-tapping screw fastener comprising a shank and a head, the shank comprising a portion having a smooth exterior surface extending from the entering end of the screw toward the head for approximately one half the length of the shank and comprising a conical part the point of which forms the entering end of the screw, a flared part having an outer surface extending from the base of the conical part and diverging toward the head at an angle of approximately 6° to the axis of the shank, and a third part having a cylindrical outer surface extending from the flared part to the end of said smooth exterior surface portion of the shank, said conical part having an outer surface diverging toward the head at an angle greater than 6° with respect to the axis of the shank, said flared part and said cylindrical part being approximately equal in length and greater in length than said conical part, and a thread extending from the end of the smooth exterior surface portion of the shank to the head, the root diameter of the thread being less than the diameter of said cylindrical part and the pitch diameter of the thread being greater than the diameter of said cylindrical part, said pitch diameter being constant throughout its length.

3,156,153
ROLLER BEARING MOUNTED BARREL FOR A MACHINE GUN

John L. Lochhead, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

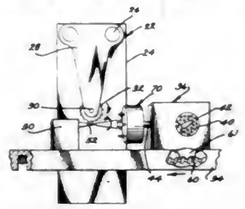
Filed Oct. 16, 1963, Ser. No. 316,780
1 Claim. (Cl. 89—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)



In a machine gun having a receiver, a barrel support of U-shaped configuration in cross-section extending for-

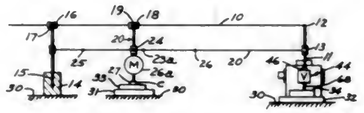
wardly from the receiver, a reciprocal barrel, a pair of axles extending diametrically from said barrel adjacent the rear end thereof, a pair of rollers respectively mounted on said axles, rails formed in the receiver for supporting contact by said rollers, a pair of shafts extending diametrically from said barrel forwardly of said axles and parallel therewith, an inner and an outer roller bearing mounted on each of said shafts, a pair of arms extending respectively forward from the sides of said barrel support, a flange formed along the inside of each of said arms, a recess extending longitudinally into each of said arms from the front end thereof, an upper raceway formed along the upper side of each of said recesses for the related one of said outer roller bearings, and a lower raceway formed along the top side of each of said flanges for the related ones of said inner roller bearings.

3,156,154
APPARATUS FOR FORMING HELICAL FLUTES
Kenneth P. Stanaback, 3640 Breton Road SE., Grand Rapids, Mich.
Original application Mar. 16, 1961, Ser. No. 96,276, now Patent No. 3,125,931, dated Mar. 24, 1964. Divided and this application Nov. 13, 1961, Ser. No. 151,722
7 Claims. (Cl. 90—11.62)



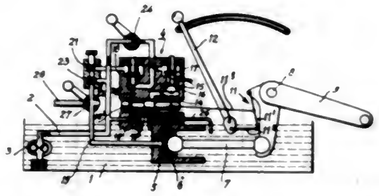
1. A milling apparatus comprising: a work table; a rotatable milling cutter mounting means and a cutter mounted on said mounting means above said work table and adapted to be power operated; said mounting means and work table being linearly movable with respect to each other; rotational work piece supporting means on said table capable of supporting a frusto-conical workpiece blank adjacent said cutter; rotational driving means adjacent said supporting means; drive connecting means between said driving means and said work piece supporting means, including clutching means positively and rotationally driving said work piece supporting means when said cutter starts milling a work piece; and said connecting means being disengageable after initial rotation of said work piece supporting means allowing the work piece to rotate independently of said driving means after said milling has substantially started.

3,156,155
PANTOGRAPH MACHINE TOOLS
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed May 25, 1962, Ser. No. 197,695
8 Claims. (Cl. 90—13.1)



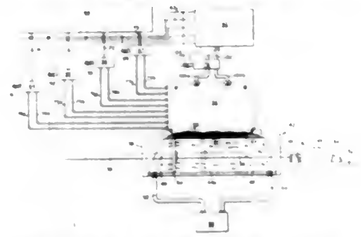
1. In combination with a pantograph type machine tool of the class which includes a cutting member, a follower shaft member, a pantograph linkage interconnecting said members, a work support and a pattern support, the cutting member being adapted to cut a contour in a workpiece held by the work support, and the follower shaft member being adapted to respond to the contour of a pattern which is held by the pattern support, the improvement comprising: a tracer valve element of the type which includes a deflectable stylus adapted to trace over the contour of the pattern and fluid control means controlled by the stylus adapted to control the flow of fluid in a fluid circuit as a function of stylus position; a ways which is movable relative to the pattern support; a slide element mounted to said ways; a motive means for moving the slide element, said motive means being regulated and powered by fluid passed through said fluid circuit; the tracer valve being mounted to the slide element; and a joint interconnecting the follower shaft member to one of said elements for concurrent movement therewith.

3,156,156
HYDRAULIC LIFTING DEVICES OF TRACTORS
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Aug. 10, 1959, Ser. No. 832,814
Claims priority, application France, Sept. 8, 1958, 774,018, Patent 1,222,459
5 Claims. (Cl. 91—31)



1. In a tractor having a hitch for connecting an implement thereto and a hydraulic control system having a manual control lever for controlling said system for raising and lowering the hitch, said system including a fluid ram connected to the hitch, a fluid circuit comprising a pump, a reservoir, and a distributor comprising a pilot valve having a neutral position and operable from said neutral position in opposite directions to extreme operative positions for controlling the action of said fluid on said fluid ram, means defining two parallel flow paths in said fluid circuit connecting said pump with said fluid ram, one of said flow paths being connected between said pump and fluid ram and including a first non-return valve, a second flow-path of said two flow-paths connected to said one flow path upstream of said first non-return valve and downstream thereof comprising a throttle valve and a second non-return valve biased to a closed position and serially connected with said throttle valve, a by-pass valve biased to a closed position and in communication with said second flow path upstream of said second non-return valve to bypass the fluid to said reservoir, follow-up linkage connecting said pilot valve to the hitch and activated by said ram for positioning said pilot valve in said neutral position and connected to said manual control lever for positioning said pilot valve in said extreme positions, said bypass valve being controlled by said pilot valve and being open at the positioning of said pilot valve in said neutral position, said control lever being operable to two operative positions for controlling the movement of said pilot valve, in one direction to an extreme position for controlling the closing of said by-pass valve thereby to supply fluid under pressure to the fluid ram and in another direction to another extreme position for opening said second non-return valve and said by-pass valve to allow discharge of said fluid from said ram, and said throttle valve having means operable selectively to restrict the flow through said second flow path for increasing the pressure upstream of said by-pass valve to apply to the fluid ram an increased pressure tending to elevate said hitch to effect a transfer of a fraction of the load on the implement to said hitch.

3,156,157
POSITIONING CONTROL SYSTEM AND APPARATUS
John G. Smith, Philadelphia, and Erik R. Solyst, Havertown, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 11, 1961, Ser. No. 102,224
11 Claims. (Cl. 91—48)



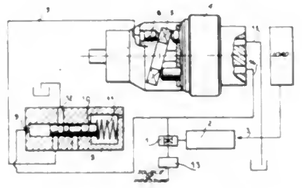
1. A control system for effecting movement of associated apparatus to selected positions comprising, means forming a chamber and including a plurality of ports disposed along its length, movable means within and dividing said chamber into separate compartments, means operatively interconnecting said movable means with the apparatus to be moved, means for effecting equal fluid pressures of a medium across said movable means whereby it is held immobile, means to effect a pressure differential across said movable means whereby greater pressure on one side will cause the movable means to move in the direction of least pressure, said pressure differential means defining first passageways arranged in groups for conveying the medium from the chamber through selected ones of said first passageways, a plurality of second passageways, each associated with a group of said first passageways, diaphragm means interposed between said first and second passageways and actuatable to block the flow of the medium through said first passageways, and means for selectively varying the pressure in ones of said second pasasgeways to thereby actuate said diaphragm means to block the flow of the medium in ones of said first passageways to thereby enable said medium to flow through others of said first passageways.

3,156,158
ROTARY FLUID DISPLACEMENT APPARATUS
James B. Pamplin, 11612 Morgan Lane, Garden Grove, Calif.
Filed Aug. 20, 1959, Ser. No. 835,117
6 Claims. (Cl. 91—96)



1. Rotary fluid displacement apparatus comprising: a housing; a rotor journaled in said housing that is formed with a pair of confronting complementary impeller cam faces around a shaft of said rotor each of said cam faces having a plurality of lobes; an abutment-mounting member around said rotor shaft between said cam faces to define a work chamber between each of said cam faces and each of the axially opposite ends of said mounting member, said lobes of said cam faces being adapted to radially divide one of said chambers into at least two compartments; an abutment slidably supported by said mounting member and having an engagement with said cam faces adapted to translate rotation of said rotor into reciprocation of said abutment axially of said rotor, said abutment being adapted to radially divide each of said compartments as said compartments pass said abutment, a pair of ports in said housing immediately adjacent to and on opposite sides of said abutment, each of said ports having communication with both of said work chambers at the levels of both of the axially opposite ends of said mounting member whereby both of said ports are continuously open during rotation of said rotor, the lobes of each of said cam faces being spaced apart sufficiently such that when one of said lobes passes said blade, another of said lobes prevents direct passage of a motive fluid between said open ports and means in said housing engagable with said mounting member to prevent displacement of said mounting member to maintain said abutment in place between said ports.

3,156,159
METHOD OF AND DEVICE FOR THE REGULATION OF HYDRAULIC MOTORS
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed July 5, 1961, Ser. No. 121,915
Claims priority, application France, July 6, 1960, 832,245, Patent 1,269,749
6 Claims. (Cl. 91—175)

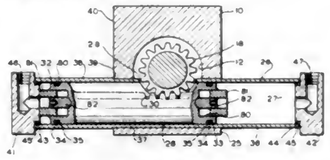


1. A regulating device for a hydraulic motor of the swash plate type having pistons, a swash plate with a variable inclination, admission and exhaust circuits and a load driven by said hydraulic motor, said regulating device comprising a first stage means disposed on one of said admission and exhaust circuits, means controlled by said load controlling said first stage means for changing the pressure in said admission or exhaust circuit, a second stage means comprising a regulator piston controlling the inclination of said plate and a slide valve distributor controlling said regulator piston responsive to a change of pressure created by said first stage means, whereby said first stage means is restored to its initial position as soon as said swash plate has taken up the inclination which corresponds to the desired output of the motor.

3,156,160
ACTUATOR
Kenneth H. Meyer, Akron, and Paul Carr, Uniontown, Ohio, assignors to Flo-Tork, Inc.
Filed Feb. 15, 1963, Ser. No. 258,824
14 Claims. (Cl. 92—13)

1. A fluid actuator comprising,
(*a*) a body member having a gear chamber,
(*b*) an output shaft journaled in the body,

(*c*) said shaft including a pinion gear disposed in the gear chamber,



(*d*) said body having a piston bore extending laterally therethrough and communicating with the gear chamber bore,

(*e*) a tubular member in the piston bore and projecting from the body,

(*f*) said tubular member having internal walls defining a cylindrical piston chamber and an opening in said walls connecting the gear and the piston chambers,

(*g*) piston means disposed in the piston chamber and including a rack engaged with the pinion,

(*h*) closure means closing the ends of said tubes and providing fluid inlets to the piston chamber for the selective introduction of fluid under pressure to the opposite ends of the tube,

(*i*) said tube including a pilot portion projecting from one side of the body and of a diameter smaller than the piston bore, a central portion tightly disposed in the piston bore, and an enlarged portion projecting from the side of the body opposite the pilot portion; and

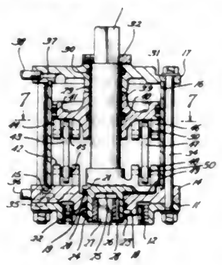
(*j*) said tubular member including a shoulder extending between the adjacent ends of the enlarged and central portions, the shoulder being abuttable against the body.

3,156,161

PRESSURE FLUID ACTUATED FRACTIONAL ROTATION OPERATOR FOR VALVES AND THE LIKE

Earl R. Forsman and Branch M. McNeely, Houston, Tex., assignors to Keystone Valve Corp., Houston, Tex., a corporation of Texas

Filed Apr. 10, 1963, Ser. No. 271,920
7 Claims. (Cl. 92—33)



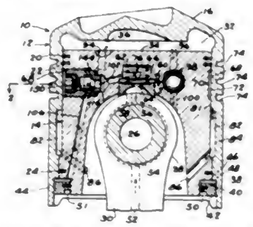
1. A pressure fluid actuated fractional rotation operator comprising, a cylinder, cylinder head means closing at least one end of said cylinder, said cylinder and head combination having port means for conducting power fluid under pressure to the interior of the cylinder adjacent the head means, a driven shaft having a lateral arm thereon, bearing means fixed coaxially relative to said cylinder rotatably carrying said shaft and restraining it from longitudinal movement, a piston mounted in said cylinder in slidable and rotating engagement therewith, and a pair of rigid links both universally pivoted to said piston and each extending therefrom in a direction with a circumferential component, one pivoted at its opposite end to said cylinder head means and the other at its opposite end to said arm, all of said pivots being eccentric to said cylinder, whereby said piston will be caused to rotate relative to said head means and said arm will be caused to rotate relative to said piston when said piston moves longitudinally in said cylinder.

3,156,162

VARIABLE COMPRESSION RATIO PISTON

William A. Wallace, Grosse Pointe Woods, and Robert F. Pecha, Warren, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed June 26, 1963, Ser. No. 290,706
8 Claims. (Cl. 92—82)



1. In a variable compression ratio piston for an internal combustion engine comprising first and second parts movable relative to one another in response to reciprocation of the piston, said parts defining first and second fluid chambers within said piston which vary in internal volume oppositely to one another in response to said relative movement and to variations in the quantity of fluid therein, a supply passage adapted to receive an incompressible fluid under pressure from a source external to the piston, first and second inlet passages communicating between said supply passage and said first and second chambers respectively, non-return valve means permitting one-way flow of fluid through said first and second passages towards said first and second chambers respectively, a first discharge passage leading from said first chamber to the exterior of said piston, a pressure regulating discharge valve controlling flow of fluid from said first chamber through said first discharge passage and means for regulating discharge of fluid at a restricted rate from said second chamber including a third chamber in said piston normally flooded with said pressure fluid from said supply passage and a flow connection adapted for draining fluid from said third chamber to the exterior of the piston.

3,156,163

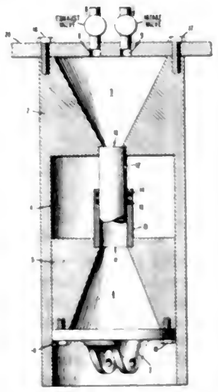
TWIN CHAMBER MOTOR ASSEMBLY

Lionel H. Rosenhaft, New York, N.Y.
(1053 E. 55th St, Brooklyn 34, N.Y.)

Filed Mar. 18, 1963, Ser. No. 265,933
2 Claims. (Cl. 92—113)

1. In a piston type hydraulic motor, in combination, a cylinder having a built-in compression chamber in the upper section, a piston area in the lower section, said cylinder compression chamber having ports on the top for the intake and exhaust of fluid pressures, a port at the bottom of said cylinder compression chamber, having a tube extending downward therefrom into the piston area, said tube for the interchange of fluid pressures between the above said cylinder compression chamber and the piston, said piston having a built-in compression chamber, with a port on top, a tube extending therefrom upwardly, said tube nesting with the tube from the cylinder compression chamber, both said tubes having in common suitable seals against leakage of fuel pressure, said tubes

telescope and are movable, said piston with compression chamber having on the underside a means for attaching



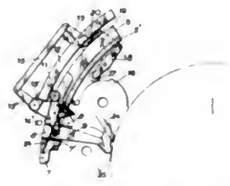
a piston rod, said cylinder compression chamber, piston with a compression chamber and the tubes are interconnected and all housed within the cylinder.

3,156,164

MACHINE FOR FORMING A FLUID-TIGHT BAG OF THERMO-WELDABLE MATERIAL

Georges Gassner, Schiltigheim, France, assignor to Les Ateliers de Constructions Mecaniques C. & A. Holweg, S.A.R.L., Strasbourg, France, a corporation of France

Filed Oct. 4, 1960, Ser. No. 60,462
Claims priority, application France Dec. 21, 1959
1 Claim. (Cl. 93—22)



In a machine for forming from a flat blank a fluid-tight bag of thermo-weldable material having a substantially square bottom including flaps and a sealed edge over said flaps,

a rotary drum adapted to be engaged by a flat tubular bank,

a stationary arcuate guiding member disposed concentrically and spaced apart from the periphery of said drum,

a carriage reciprocating along said arcuate guiding member about said drum,

a finger supported by and moveable through said carriage along said arcuate guiding member and reciprocating in said carriage radially relative to said carriage and said rotary drum,

cam operated means for reciprocating said finger during the reciprocating movement of said carriage and coordinated to the rotation of said rotary drum,

stationary guiding members disposed adjacent the periphery of said rotary drum for raising the bottom edge of said flat blank,

stationary presser rollers following said stationary guiding members and engaging the periphery of said rotary drum to flatten said bottom edge of said flat blank,

said finger being adapted to engage the inner surface of said bottom edge of said flat blank during its movement toward said rotary drum, and

means for sealing said bottom edge over the bottom portion of said flat blank in order to form a fluid-tight bag.

3,156,165

APPARATUS FOR AND METHOD OF CLOSING BAG BOTTOMS

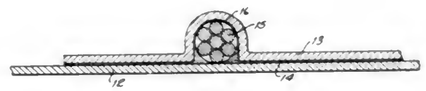
Rudolf R. Weis, Antioch, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Jan. 29, 1962, Ser. No. 169,301
8 Claims. (Cl. 93—27)



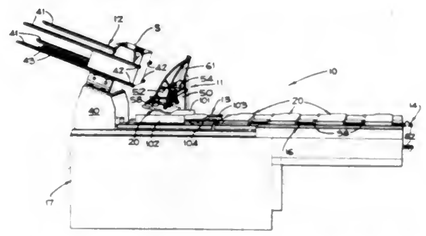
1. In bag-bottoming apparatus, a generally cylindrical bag-bottoming drum adapted to be continuously driven for consecutively advancing through adhesive-applying and flap-folding stations a succession of bags each of which has an outer leading flap and an outer trailing flap to be folded from open to closed position, and structure for folding each such trailing flap comprising a flap folder rotatably mounted for movement about a generally circular path describing a plane having at least a portion thereof overlapping the cylindrical surface of said rotatable drum at such folding station and being sufficiently close to such surface that the trailing flap of a bag at such folding station is engaged by said flap folder and folded thereby from open to closed position, such described plane being oriented in substantially tangential relation with respect to the cylindrical surface of said drum and the direction of rotation of said flap folder during engagement thereof with such trailing flap at such folding station being generally along the direction of rotation of said drum, and drive mechanism connected with said flap folder for continuously rotating the same with a varying velocity pattern of angular acceleration immediately prior to and during a substantial portion of its engagement with such trailing flap and of angular deceleration subsequent thereto, the axis of rotation of said flap folder being spacially fixed and said flap folder having a narrow inner end portion and a wide outer end portion relative thereto and progressively increasing in width from said narrow to said wide end portion so as to approximate a condition of general similitude as to the width-linear velocity relationship of all successive segments along the length of said flap folder so that all such segments tend to remain in engagement with such trailing flap for approximately equal periods of time irrespective of the distances of the successive segments from said axis of rotation.

3,156,166
SHOPPING BAG
John S. Davis, Irvington, N.Y., assignor to Equitable Paper Bag Co., Inc., Long Island City, N.Y., a corporation of New York
Continuation of application Ser. No. 718,621, Mar. 3, 1958. This application June 29, 1962, Ser. No. 206,505
3 Claims. (Cl. 93—35)



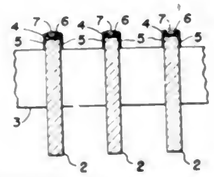
1. The method of attaching cord handles to surfaces that form opposite side walls of a shopping bag, which method comprises applying adhesive in a soft condition directly to limited areas of said walls of the bag at opposite sides of a mouth of the bag, applying end portions of cord handles to the adhesive-coated areas of the side walls and with loop ends of the cords extending beyond the mouth of the bag, applying a patch web over the end portions of each handle and over the adhesive-coated area on each wall of the bag, and while the adhesive remains soft, shaping each patch web to the cord by pressing the patch web inward around both sides of each end portion of the cord handle and downward into contact with the side wall of the bag adjacent to the cord to shape the patch web to the cord and to draw side portions of the patch web in closer to the cord while the adhesive is soft and the patch web and the cord are free to move on the adhesive coated surface the wall of the bag.

3,156,167
CARTON HANDLING APPARATUS
Robert K. Galloway, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,833
6 Claims. (Cl. 93—53)



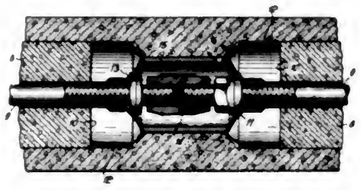
1. A carton feeding mechanism comprising a bracket, a suction cup mounted on said bracket and having a mouth for gripping a collapsed tubular carton blank, a shaft for mounting the bracket, means for oscillating the bracket about said shaft between a carton blank engaging position and a carton blank releasing position, folding means pivotally mounted on said bracket adjacent one end thereof and adapted to be substantially aligned with the plane of the mouth of said suction cup in said engaging position, and a rgid member pivotally connected to said shaft and to said folding means for pivoting the folding means as said bracket is oscillated about the shaft so as to reduce the angle between the folding means and said plane to erect said carton blank by pivoting one section thereof away from the suction cup and with respect to a second section engaged by said suction cup, said sections being at an approximate right angle to each other at said releasing position.

3,156,168
GRATING
Harry S. Nagin, Merion, and Harold Nagin, Pittsburgh, Pa., assignors to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1960, Ser. No. 23,687
4 Claims. (Cl. 94—5)



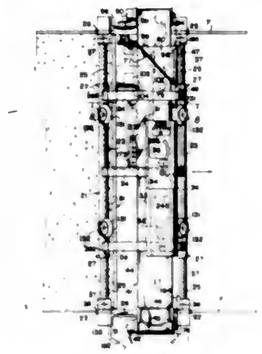
1. A grating having two sets of spaced parallel bars, the bars of one set extending crosswise of the other with the bars of one set extending through the bars of the other, and strip-like clips set astraddle the bars of one set only and extending above the top surface of the grating, said strip-like clips having a longitudinal channel in the top thereof and depending sides below the channel, and a filling of abrasive grains and resin in the channels of said strips with the resin bonding the grains to each other and to the interior of the channels and forming a tread surface on the grating and means securing the depending sides of the strips to the bars on which they are set.

3,156,169
CONCRETE ROADWAY
Ulrich Finsterwalder, Munich-Obermenzing, Germany, assignor to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany
Filed Mar. 15, 1960, Ser. No. 15,240
Claims priority, application Germany, Mar. 16, 1959, D 30,220
1 Claim. (Cl. 94—8)



A jointless roadway surface of concrete comprising reinforced concrete bodies extending longitudinally of the roadway disposed over a bed alongside one another in spaced apart relationship and concrete filling the spaces between and above said bodies and presenting an exposed face of overfill and forming the roadway surface, the cross section of said bodies being smaller than the thickness of said roadway surface, each of said bodies including at least one highly prestressed steel reinforcing element and the elements of sequential said bodies being connected at their adjacent ends to form a prestressed continuous chain of reinforcing bodies, said elements being steel rods or the like having threaded ends projecting beyond the concrete of the bodies and a threaded sleeve being mounted on said threaded ends to connect adjacent said bodies, a bell shaped anchoring member being mounted proximate the ends of each said steel rod and a hollow cylindrical supporting body of steel or the like being received over said threaded sleeve intermediate proximate said bell shaped members and being supported against said bell shaped members to transmit the forces from the concrete of one body to the concrete of the other.

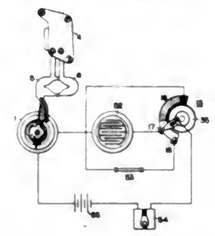
3,156,170
PLACING PLASTIC PAVING MATERIAL
William H. Behrens, Racine, Michael I. Hudis, Brookfield, and Hilton L. Neal, Anton E. Arnosti, and Robert A. Fricke, Milwaukee, Wis., assignors to Chain Belt Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 11, 1960, Ser. No. 28,395
17 Claims. (Cl. 94—46)



1. In a concrete spreader for placing concrete in laying a slab of pavement or the like, a spreader frame arranged to travel along the site of a pavement slab being laid, a conveyer supporting gantry structure positioned transversely of the slab being laid and movably mounted on said spreader frame for endwise adjustment relative thereto, said gantry being longer than the width of the pavement slab being laid and adapted to project over either or both edges of the slab site to receive plastic concrete, power operated means to move said gantry endwise on said frame to position its projecting ends selectively relative to the slab being laid for receiving concrete delivered at the side of the slab site, belt pulleys rotatably mounted at each end of said conveyer gantry respectively, a conveyer belt trained to run over said pulleys to convey plastic concrete transversely of the slab being laid, power operated means mounted on said movable gantry and connected to drive one of said belt pulleys in either direction selectively and thereby drive said conveyer belt regardless of the position of said gantry relative to said frame, a plow movably mounted on said gantry in position to plow plastic concrete from the upper run of said conveyerbelt to deposit it on the site of the pavement slab being laid, power operated means mounted on said movable gantry and connected to move said plow along said belt in either direction selectively, and control apparatus operatively connected to said plow moving power means and arranged to control movement of said plow in a manner to place the plastic concrete plowed from said belt on the site in a strip extending transversely of the pavement slab being laid.

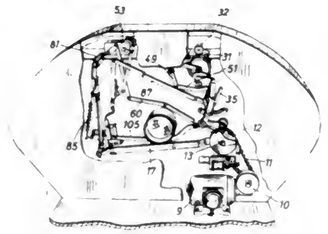
3,156,171
AUTOMATIC DIAPHRAGM CONTROL DEVICE FOR PHOTOGRAPHIC CAMERA
Yoshinobu Sakaki, 5 Kikusaka-cho 1-chome, Chigusa-ku, Nagoya, Japan
Filed Nov. 14, 1962, Ser. No. 237,605
Claims priority, application Japan, Nov. 19, 1961, 41,916/61
2 Claims. (Cl. 95—64)

1. In an automatic diaphragm control device for a photographic camera comprising diaphragm means, a source of electric current, and a galvanometer coupled to said diaphragm and to said source of current and driven by said source of electric current to control the diaphragm means, the combination of a photoconductive means for controlling a flow of current through the galvanometer in accordance with an amount of light falling upon the same, a variable resistance, and a fixed resistance and a common switching means connected in a circuit with said galvanometer and said source of electric current, said common switching means selectively connecting said variable resistance, said photoconductive means and said fixed resistance to said galvanometer, resilient means, and manual holding means coupled to said



common switching means and to which said resilient means is connected for manually holding said fixed resistance in connection with said galvanometer against the action of said resilient means, releasing of said manual holding means effecting automatically both disconnection of said fixed resistance from said galvanometer and connection of said photoconductive means to the same, said variable resistance controlling manual operation of said diaphragm means.

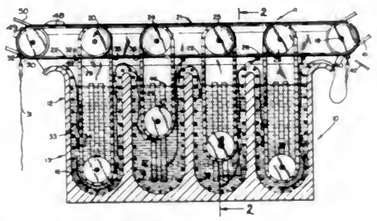
3,156,172
PHOTOGRAPHIC PRINTING APPARATUS
Wilhelm Baasner, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Mar. 22, 1960, Ser. No. 16,753
Claims priority, application Germany, Mar. 26, 1959, A 31,686
17 Claims. (Cl. 95—75)



1. In a photographic printer, in combination, feeder means for feeding a strip of light-sensitive paper in stepwise fashion to an exposure position where the paper is exposed so as to have a photographic print produced thereon, so that at each step of said feeder means another print can be reproduced on the paper; manually operable means cooperating with said feeder means for adjusting the stroke of the latter so as to regulate the extent to which the paper is advanced at each step of the feeder means; cutting means for cutting the strip of light-sensitive paper after prints have been reproduced thereon, said cutting means being supported for movement with respect to the exposure position of said paper; and adjusting means cooperating with said cutting means for regulating the position thereof with respect to said exposure position, said adjusting means being operatively connected with said manually operable means to be actuated when said manually operable means is actuated for regulating the stroke of said feeder means, and the position to which said cutting means is moved by said ad-

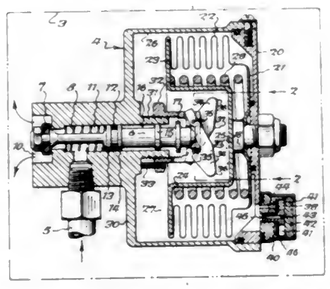
justing means coinciding with the interruption between a pair of successive prints on said paper according to the stroke to which said feeder means is adjusted by said manually operable means.

3,156,173
MAGNETIC CONVEYANCE AND TRANSFER SYSTEM FOR PHOTOGRAPHIC PROCESSING
James R. Meyer, 315 Chestnut St., South St. Paul, Minn.
Filed Oct. 16, 1961, Ser. No. 145,406
3 Claims. (Cl. 95—94)



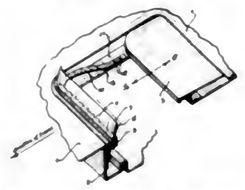
1. In a system adapted for use in development of photographic film having a plurality of fluid baths positioned adjacent each other, comprising, a pair of drums associated with each fluid bath, one of said drums being a drive drum and located exteriorly of said fluid bath and the other being an idler drum located within said fluid bath, both said drive drum and said idler drum having parallel axes of rotation, an endless dipping belt positioned about each said pair of drums, an endless transfer belt positioned about said drive drums, a magnetically attractive carrier bar adapted to have a strip of film attached thereto, one of said belts having first magnetic plates to form a continuous surface, the other of said belts having second magnetic plates intermittently spaced along its length whereby to form free spaces between adjacent second magnetic plates, said second magnetic plates having a predominating magnetically attracting characteristic over that of said first magnetic plates, said first and second magnetic plates being adapted to temporarily attract and retain said carrier bar thereto, and drive means connected to one of said drive drums for powered rotation thereof.

3,156,174
PRESSURE REDUCING REGULATOR
Edward H. Replogle, Buffalo, N.Y., assignor to Scott Aviation Corporation, Lancaster, N.Y.
Filed July 25, 1960, Ser. No. 45,019
5 Claims. (Cl. 98—1.5)



1. A pressure regulator for controlling the fluid pressure within an enclosure comprising, in combination with an enclosure, a regulator having a casing, means placing an interior part of said casing in communication with said enclosure, a wall movable in said casing part in response to variations in pressure in said enclosure, a high pressure fluid inlet to said casing, a regulated pressure fluid outlet from said casing communicating with said enclosure, a regulating valve controlling the flow of pressure fluid from said inlet through said outlet, means resiliently urging said valve into a closed position, a thrust rod connected to said valve, and a balanced pair of variable-leverage levers movably connected to said casing for engagement with said thrust rod, said levers being arranged for actuation by said wall to move said rod and thereby open said valve upon a decrease in pressure within said enclosure.

3,156,175
AIR DEFLECTOR FOR MOTOR VEHICLES
Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany
Filed July 13, 1961, Ser. No. 123,834
Claims priority, application Germany July 14, 1960
5 Claims. (Cl. 98—2)

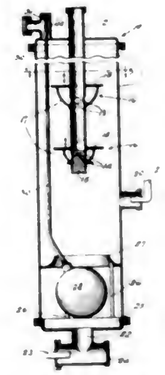


1. In a motor vehicle having a curved roof, and an opening in said roof defining lateral longitudinally extending edges and front and rear transverse edges, the vehicle further having a slidable roof portion movable between retracted and extended positions for respectively opening and closing said opening: an air deflector for diverting the air stream from said opening with the roof portion retracted, said air deflector comprising: a thin strip of elastic material supported adjacent the front edge of the roof opening and extending substantially over the entire width of the opening, said strip having upper and lower ends, a rigid bar supporting the strip only at the lower end thereof while leaving the remainder of the strip free for deflection, said bar having opposite ends and a longitudinal curvature corresponding to the transverse curvature of the vehicle roof, rearwardly extending resilient arms connected to the ends of the rigid bar to support the same and means mounting said arms on the vehicle laterally of the roof opening at a location in the path of the slidable roof portion, said arms being mounted on the vehicle remote from the bar such that the resilient arms cause the bar and the strip therewith to be urged upwardly to a position whereat the strip projects above the opening in the roof with the slidable roof portion in the retracted position thereof, said resilient arms being mounted by the last said means with at least a portion of the arms in the path of movement of the movable roof portion for being contacted and resiliently deformed by the slidable roof portion as the latter is moved to the extended position thereof to displace the bar and the strip to a withdrawn position beneath the roof opening.

3,156,176
HEATING APPARATUS
Alden H. Wakeman, Lake Mills, and Dan C. Roahen, Fort Atkinson, Wis., assignors, by mesne assignments, to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed July 8, 1959, Ser. No. 825,787
5 Claims. (Cl. 99—251)

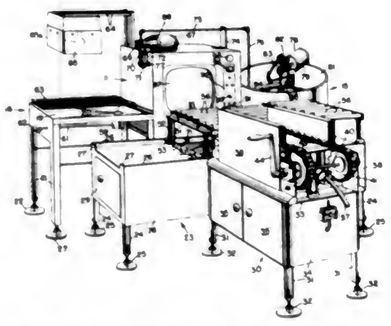
1. An apparatus for heat treating a flowing liquid, comprising an elongated upright chamber, a first inlet

for such liquid disposed adjacent to the upper end of said chamber, means operatively connected to said first inlet to effect spray-like diffusion of the entering liquid toward the interior surface of said chamber whereby a substantial curtain of liquid descends within said chamber, a second inlet for steam mounted on said chamber beneath said liquid diffusing means for introducing steam into said chamber in a direction substantially normal to said chamber longitudinal axis whereby all the steam introduced into said chamber penetrates the liquid curtain and intimately mixes and is in heat exchange with the descending liquid so that all of the steam condenses,



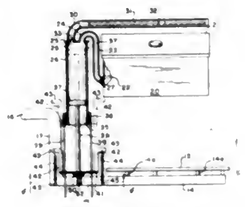
an outlet for the admixture disposed adjacent to the chamber bottom, a third inlet for pressurized non-condensable gas communicating with the interior of said chamber, adjustable pressure maintenance means operatively connected to the interior of said chamber for maintaining the interior pressure of said chamber through said third inlet, and restricting means mounted within said outlet for controlling the flow of admixture through said outlet and effect an accumulation of admixture within said chamber whereby said outlet is submerged therein and the pressure within the said chamber remains above the boiling point of the entering liquid.

3,156,177
FOOD PREHEATING, COOKING AND WARMING DEVICE
Harland Sanders, Shelbyville, Ky., assignor, by mesne assignments, to Kentucky Fried Chicken Corporation, Shelbyville, Ky., a corporation of Kentucky
Filed July 16, 1962, Ser. No. 209,935
9 Claims. (Cl. 99—339)



1. An apparatus of the character set forth comprising an oven having a door in the front wall thereof, a cooking fluid filter positioned at one side of said oven, a warming table positioned at the other side of said oven, an elongated transfer table having one of its sides contiguous to the front of said oven, filter and warming table, a preheating table positioned opposite to the front of said oven and contiguous to the other side of said transfer table having means for heating pans on the preheating table, means for movably supporting pans from one position to another on said transfer table, and means for supporting and moving pans from said preheating table to the supporting and transfer means on said transfer table, means for conveying cooking fluid from pans positioned on said warming table to said filter, and means for conveying cooking fluid from said filter to pans positioned on said transfer table.

3,156,178
POP-UP TOASTER HAVING MEANS FOR BUTTERING TOAST DURING THE EJECTION THEREOF
Albert A. Kormos, 689 East 400 South, Provo, Utah
Filed May 14, 1963, Ser. No. 280,322
4 Claims. (Cl. 99—355)

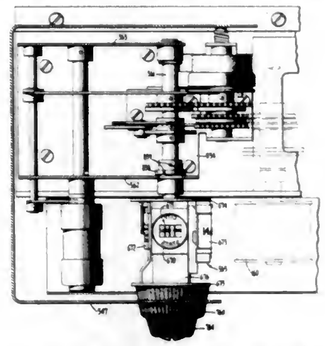


1. In combination with a toaster of the pop-up type including a body having a slot therein for the reception of a piece of bread to be toasted, heating elements for toasting the bread adjacent said slot, a support for the bread, and a handle member depressible to lower said support and automatically movable to raise the support when the toasting is completed; a buttering device for the toasted bread comprising a receptacle for butter, a cylinder, a tube extending between said receptacle and the top of said cylinder, a reservoir extending parallel to said slot adjacent the top of said body and having an elongated opening therein on the side adjacent a tube connecting the top of said cylinder to said reservoir, a piston in said cylinder, and a piston rod extending between said piston and said support actuable upon raising of the support to eject fluid butter heated by said heating elements through said opening onto the adjacent side of the toasted bread.

3,156,179
PRINT SELECTION MEANS FOR POSTAGE METERING MACHINE
Ingemar H. Lundquist, Oakland, Calif., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Original application Mar. 24, 1959, Ser. No. 801,594, now Patent No. 3,107,854, dated Oct. 22, 1963. Divided and this application Jan. 2, 1962, Ser. No. 163,677
7 Claims. (Cl. 101—91)

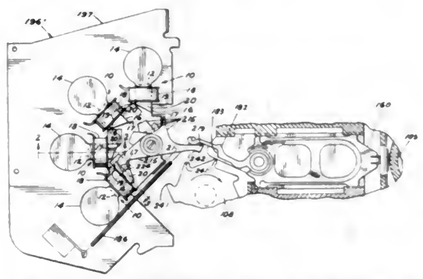
1. In a postage metering device, a frame, a printing drum mounted for actuation within said frame, a town printing die member secured on said printing drum and movable to printing position upon actuation of said printing drum, a plurality of angularly settable dater type die wheels coaxially mounted side-by-side within said town printing die, means mounted on said frame selectively settable to represent a date, means normally operable to prevent setting of said settable means, means normally disengaged from said dater type wheels rockable to operatively engage said dater type die wheels with said settable

means for control thereby, and means manually operable to disable said preventing means and to rock said rock-



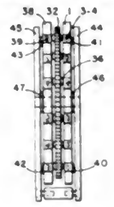
able means to the engaged position thereby enabling operation of said settable means to angularly adjust said dater type wheels.

3,156,180
PERMANENT MAGNET HAMMER MODULE IN HIGH SPEED PRINTERS
Hugh R. Barnes, St. Clair Shores, Mich., assignor, by mesne assignments, to Holley Computer Products Company, Warren, Mich., a corporation of Michigan
Filed Sept. 18, 1961, Ser. No. 138,991
3 Claims. (Cl. 101—93)



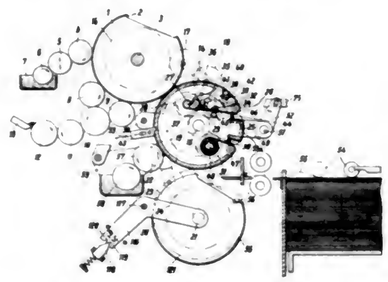
1. In an electromechanical printer having a print drum, a movable print hammer having one end confronting said drum, a first lever having an impact surface and pivoted to the opposite end of said hammer, means to mount and to constrain the movement of said hammer in excursions toward and away from said drum, a mounting plate, a second lever having an impact surface and pivoted to said plate for movement in a plane coplanar with the plane of said first lever, said second lever having a first arm operatively associated with said first lever to form a cooperating lever system, resilient means operatively connected with a lever of said system in a manner such that said levers are normally biased to a print position, a cam adapted to strike the impact surface of one of said levers and thereby drive said hammer toward said drum when said levers are in said print position, said cam also adapted to strike the impact surface of the other of said levers to position said levers in a non-print position after said hammer is driven toward said drum, said second lever having a second arm, a stationary permanent magnet structure adjacent to said second arm, an armature attached to said second arm, said armature holding said lever system in said non-print position against the force of said resilient means when said armature is in engagement with said permanent magnet structure, a bucking coil associated with said permanent magnet structure, and said coil when energized adapted to reduce the armature-holding force of the magnet structure an amount sufficient to release the armature under the influence of said resilient means thereby enabling said resilient means to pivot the levers of said lever system to said print position at which said cam sequentially engages said levers.

3,156,181
TYPE WHEEL PRINTER
Sol Dubin, Massapequa, N.Y., assignor to Telechrome Manufacturing Corp., Amityville, N.Y., a corporation of New York.
Filed Aug. 3, 1961, Ser. No. 129,132
1 Claim. (Cl. 101—110)



In a type wheel device for a type wheel printer, the combination of, a print wheel assembly including a pair of end supports in predetermined spaced relationship, two type wheels carried between said supports, a disc-like gear containing a plurality of spherical balls mounted under pressure between said wheels to thereby transmit driving torque to the type wheels on each side of said disc-like gear when said gear is engaged with a rotating mating gear and turning said wheels by contact substantially solely through the medium of said balls.

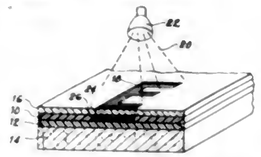
3,156,182
ROTARY OFFSET PRINTING MACHINES WITH SHIFTABLE BLANKETS
Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Nov. 23, 1962, Ser. No. 239,702
Claims priority, application Germany, Nov. 23, 1961, R 31,528, R 31,529
34 Claims. (Cl. 101—142)



1. In an offset printing machine, in combination, first roller means having peripheral surface means, and first and second holder means for holding a printing form, and a copy sheet, respectively, on separate portions of said surface means; second roller means including an offset roller, blanket means having a peripheral portion located on the peripheral surface of said offset roller, and transporting means for transporting said blanket means so that said peripheral portion is shifted; supporting means supporting said second roller means for translatory move-

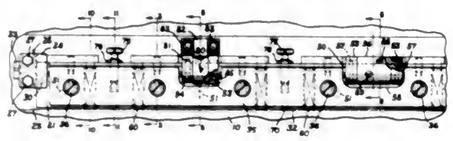
ment between a transfer position in which said first and second roller means cooperate for transferring a copy of said printing form to said peripheral portion of said blanket means, a printing position in which said first and second roller means cooperate for printing by said peripheral portion of said blanket means at least a part of said transferred copy on a copy sheet held by said second holding means, and a neutral position in which said first and second roller means are spaced from each other; operating means for moving said second roller means between said positions; and control means for operating said transporting means after each revolution of said offset roller so that said blanket means is shifted and different parts of said transferred copy are printed on successive copy sheets.

3,156,183
THERMOGRAPHIC OFFSET MASTER AND METHOD OF USE
Frederick O. Bach, Elmhurst, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Apr. 24, 1961, Ser. No. 105,188
6 Claims. (Cl. 101—149.2)



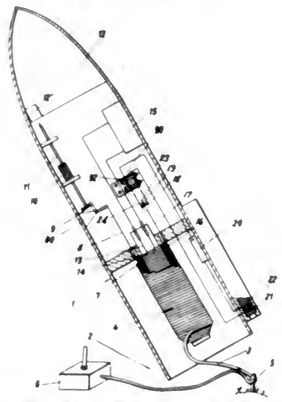
1. The method of imaging a lithographic plate directly from an original in which the image contains a radiation absorbing-heat generating material comprising the steps of positioning the original in surface contact with the coated side of a lithographic plate in which the coating on the lithographic surface of the plate is formed of an ink receptive, water repellent imaging material which is reducible to a molten state at a temperature capable of being developed in the imaged areas of the original upon irradiation and which is dispersed in an aqueous separable binder, directing radiations onto the original whereby the radiations are absorbed in the imaged areas of the original in sufficient quantity for generation of a heat pattern which transfers to the adjacent coating to reduce the corresponding areas of the ink receptive, water repellent imaging material to a fused state, and then treating the coating with an aqueous medium to remove the coating from the lithographic surface and leave fused imaging material on the underlying lithographic surface.

3,156,184
PLATE CLAMP
Darl T. Shank, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 20, 1962, Ser. No. 174,490
7 Claims. (Cl. 101—415.1)



1. A plate clamp for releasably securing and tensioning a flexible member on a mounting surface, comprising an elongated support plate mounted for limited movement with respect to said surface, clamping means mounted on said plate and movable to a first position for cooperation with said plate in clamping one end of the member to said plate and also movable to a second position releasing the one end of the member, first spring means urging said clamping means forward to said second position, a first cam means operable on said clamping means and movable between an active position holding said clamping means in said first position and an inactive position wherein said first spring means moves said clamping means to its said second position, second spring means urging said plate toward a tensioning position for applying tension to the member, second cam means operable on said plate and movable to one position to move said plate against said second spring means for relieving tension in the member, said second cam means also being movable to an opposite position causing said second spring means to tension the member, and singular cam actuator means operable to move said first cam means to its said active position and then to move said second cam means to its said opposite position.

3,156,185
TRIGGERING DEVICE FOR A MOVABLE BODY
Joachim Hermann, Erminoldstrasse 83, Munich 8, Germany, and Horst Senger, Forststrasse 4, Ottobrunn, near Munich, Germany
Filed Dec. 12, 1961, Ser. No. 158,658
15 Claims. (Cl. 102—1)

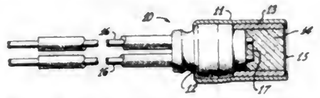


1. A device for triggering activities of a flying body having propulsion means, such as a rocket, remotely guided by a control cable, comprising a rocket housing, means for coiling said control cable in said housing, a control cable stored on said coiling means and adapted to have one end secured at a launching station and to be pulled out from the rocket housing during movement thereof, said control cable being an electrical transmission cable, at least one control member stored on the rocket housing and connected to a coiled portion of said control cable intermediate the length thereof and movable with said control cable only when the particular coiled portion of the control cable at the location of the connection in said rocket housing is pulled out from the rocket housing, and means on said rocket housing connected to said control member and actuated by movement thereof.

3,156,186
AMMONIUM NITRATE-ALUMINUM EXPLOSIVE
Michael A. Picciano, Menlo Park, and Bertil V. Carlson, Saratoga, Calif., assignors to General Precision, Inc., a corporation of Delaware
Filed Mar. 17, 1961, Ser. No. 96,482
6 Claims. (Cl. 102—28)

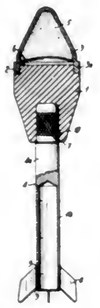
1. An explosive mixture of ammonium nitrate and aluminum, the aluminum consisting substantially entirely

of finely divided flake aluminum, said mixture being dry, the proportions of ammonium nitrate and aluminum being such that the said mixture is initiated and is completely consumed by an exploding bridgewire device when



the bridge wire of such device is brought into contact with said mixture and said wire is caused to explode by the passage of current therethrough in a short time interval and at a high current density.

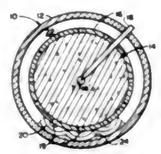
3,156,187
RIFLE-GRENADES
Boris Batou, Geneva, Switzerland, assignor to Anstalt fur die Entwicklung von Erfindungen und gewerblichen Anwendungen Energa, Vaduz, Liechtenstein
Filed Apr. 8, 1963, Ser. No. 271,149
Claims priority, application Switzerland, Apr. 16, 1962, 4,667/62
2 Claims. (Cl. 102—41)



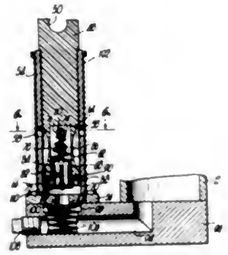
1. A rifle grenade for training purposes, said grenade comprising in combination a substantially solid body having forward and rearward end portions formed of resilient material such as rubber and the like, said body defining a bore at the rearward end portion, a tail assembly received within said bore, a hollow generally cup-shaped frangible cap having an end thereof connected to the forward end portion of said body, a pulverulent inert marking charge inside said cap, a closure member in said cap adjacent to the end thereof which is connected to said body, said closure member retaining said charge inside of said cap, said solid body having a continuous surface adjacent said closure member, said frangible cap being adapted to break upon impact with an object such that said cap and said pulverulent inert marking charge constitute a shock-absorbing cushion for reducing the kinetic energy of said grenade.

3,156,188
FRAGMENTATION WEAPON
Louis Zernow, Glendora, and Kenneth N. Kreyenhagen, West Covina, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Mar. 1, 1962, Ser. No. 177,699
10 Claims. (Cl. 102—67)

1. An apparatus of the class described comprising an outer unitary casing of integral non-scored construction, explosive material in the casing, a barrier provided with openings disposed about said explosive material and completely encasing said explosive material, said barrier being disposed in inwardly spaced relation to said casing to define a substantially continuous unobstructed space therebetween, means for detonating said explosive material, and the resulting detonation wave coacting with said barrier so that when the detonation wave reaches said barrier, parts of the detonation wave pass through the openings and form a network of detonation wave interactions beyond the barrier in the space between the barrier and the casing which produce preferential fractures in the casing along the planes of the detonation wave interactions.

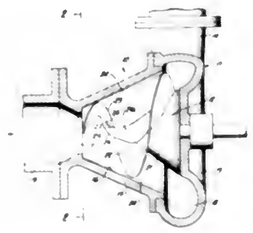


3,156,189
PUMP
Paul S. Giovagnoli, 4200 Birmingham Road, Kansas City 17, Mo.
Filed July 23, 1962, Ser. No. 211,544
1 Claim. (Cl. 103—57)



Pumping apparatus for pressurizing liquid comprising:
a cylinder provided with a liquid inlet and a liquid outlet, said inlet comprising a series of openings communicating with the interior of the cylinder and spaced circumferentially therearound;
piston means reciprocable in the cylinder for forcing liquid from the cylinder through the outlet, said piston means including an elongated body of synthetic resin materal having a plurality of circumferentially spaced, longitudinally arcuate grooves adjacent the openings of said cylinder, there being a groove for each opening respectively, there being a longitudinally extending bore in the body communicating with one end of the latter, said body having an aperture for each groove communicating the respective grooves with said bore, and a valve carried by the body permitting flow of liquid in the bore only in the direction of said outlet;
a massive block of rigid material secured to said cylinder adjacent the end of the latter proximal said outlet there being a chamber in said block communicating with the outlet;
a pressure tank in communication with the chamber for receiving liquid therefrom;
a check valve in the chamber for permitting flow of fluid therethrough only in the direction from the outlet to the tank;
an eccentric operably coupled with said body for reciprocating the latter, said eccentric having a driving element and a driven element, the latter being rotatable on an axis relatively closely spaced to the axis of rotation of the driving element for imparting short strokes to said body; and
prime mover means operably coupled with the eccentric for operating the latter to drive the piston.

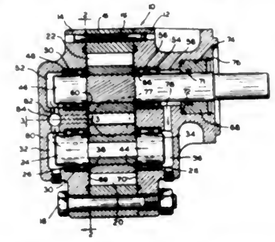
3,156,190
PUMP IMPELLER
Martin Stähle, % Hidrostal, Jiron Huaraz, 951 Brena, Lima, Peru
Filed Mar. 14, 1963, Ser. No. 265,131
2 Claims. (Cl. 103—88)



1. In a pump, the combination of a casing having a volute outlet chamber and a flaring inlet bore defined by a surface of revolution, the large end of said flaring inlet bore opening into said volute outlet chamber, an impeller mounted to rotate within said flaring inlet bore, said impeller having a first flaring hub portion concentrically mounted in said flaring inlet bore and flaring in the same axial direction but having a substantial lesser diameter and extending into said volute outlet chamber, a second offset hub portion merging with the first hub portion and extending upstream and converging from the first hub portion and having an axis angularly offset with respect to the axis of the first hub portion, and merging therewith so as to provide a smooth continuous surface with said first flaring hub portion, a single continuous spiral screw blade of substantially constant thickness encircling said first and second hub portions and extending axially upstream from said second offset hub portion, said screw blade having a leading end inclined to said axis of said first hub portion and said screw blade having an outer edge that on the rotation thereof said edge defines a surface of revolution concentric with said flaring inlet bore and closely adjacent thereto, and said screw blade having a root portion engaging and merging into a smooth surface with said offset axially extending second hub portion so that no abrupt shoulder is formed between said root portion of the screw blade and the surface of said offset second portion of the hub.

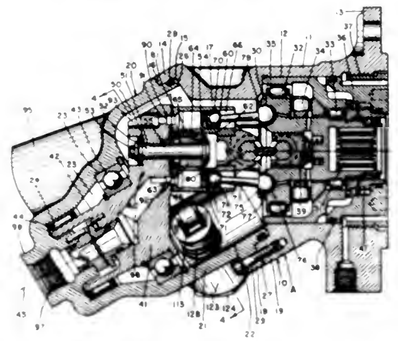
3,156,191
SEALING MEANS FOR PUMPS AND MOTORS
John A. Lauck, Benton Harbor, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 23, 1960, Ser. No. 77,975
24 Claims. (Cl. 103—126)

1. In a fluid device having a shaft, bearing means for the shaft and rotatable pressure fluid transfer means mounted on the shaft, non-resilient sealing means mounted on the shaft in spaced relation from the fluid transfer means and movable axially of the shaft, said sealing means defining with the shaft a leakage fluid metering clearance, means conducting pressure fluid from the fluid transfer means to one side of said sealing means and a sealing surface on the bearing means adjacent the other side of said sealing means, said sealing means being actuatable along the shaft into sealing relation with said



sealing surface for controlling leakage of pressure fluid along the shaft.

3,156,192
PUMP
Forrest L. Austin, Hopkins, and Carl Potter, Minneapolis, Minn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Sept. 22, 1961, Ser. No. 139,993
11 Claims. (Cl. 103—162)



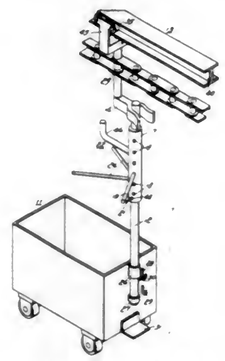
1. In combination, a variable capacity hydraulic pump or motor unit, comprising a casing, first and second members supported by the casing to rotate, respectively, about first and second rotational axes fixed relative to one another and to the casing and intersecting at a given acute angle less than 45°, reaction areas on the first and second members spaced apart and generally facing each other, the first of the reaction areas on the first member being offset from and inclined relative to the rotational axis of said first member at an angle the complement of the above-mentioned given angle, the second of the reaction areas on the second member being fixed relative to the rotational axis of the second member and extended normal thereto and symmetrically thereof, said first reaction area being movable upon rotation of the first member transversely of the rotational of axis of the second member and being in only one rotatable position of the first member normal to and generally symmetrical of said second rotational axis, and expansible fluid chamber means confined between the reaction areas, said fluid chamber means including a cylinder block having a valve surface mating flush on one of the reaction areas and having a plurality of spaced through-cylinder bores each open at one end to the valve surface to be closed by the one reaction area, means to support the cylinder block to rotate about a rotational axis fixed normal to symmetrically of the one reaction area, a piston in each of the cylinder bores defining therein with the one reaction area a fluid chamber, connecting rods fixed between the pistons and the other

of the reaction areas at spaced locations thereon symmetrically of its transverse symmetrical axis, and inlet and outlet port means in the one reaction area for porting fluid for the chambers, whereby rotation of the first member about the first rotational axis moves the first reaction area thereon transversely of the second rotational axis of the second member to adjust the operating stroke of the hydraulic unit effected upon rotation of the second member and the cylinder block about their respective rotational axes.

3,156,193
CONVEYOR SYSTEM

Marvin H. Anderson, Jr., Hastings, Mich., and Robert Mittermann, Andover, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,191
5 Claims. (Cl. 104—88)



1. A conveyor system having a main overhead dragline conveyor, masted trucks transported by the main conveyor, successive transfer stations associated with the main conveyor and spur conveyors at each of the transfer stations comprising:

means associated with said spur conveyors, for automatically delivering preselected trucks, and selecting means including

a rotatable mast cylinder,

a plurality of pin positions and a spur mast located on the cylinder,

a selector pin located in a predetermined pin position on the cylinder,

a selector bar positioned on the overhead conveyor system to engage the selector pin and rotate the cylinder so that the spur mast becomes situated in the path of the spur conveyor,

an escape lever located in a predetermined pin position on the cylinder, and

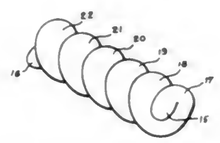
an escape bar positioned on the overhead conveyor system after the selector bar to contact the escape lever repositioning the mast cylinder so that the spur mast misses the spur conveyor where delivery is not desired.

3,156,194
METHOD OF MAKING A COILED BREAD LOAF

Gerald L. Scott, Kansas City, Mo., assignor to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware

Filed July 5, 1960, Ser. No. 40,798
1 Claim. (Cl. 107—54)

In the method of molding a bread loaf, coiling a dough sheet crosswise of the direction in which it was sheeted into a scroll, compacting said scroll, axially extending said compacted scroll by axially stretching said scroll to form an elongated rod-like strand of approximately circular cross section throughout its length and several times the length of the compacted scroll, coiling said strand progressively from one end thereof to the other

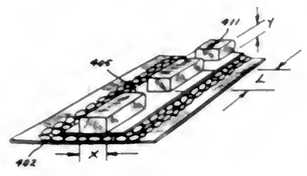


end thereof into a helicoid having axially abutting turns, all said turns being of approximately the same external diameter and of approximately zero internal diameter, and holding said coiled strand from uncoiling during transfer to a pan.

3,156,195
METHOD FOR FORMING A CONFECTIONERY PRODUCT

Clifford E. Evanson, Highland Park, Ill., Donald E. Jorgensen, Minneapolis, and Arthur W. Albrecht, West St. Paul, Minn., and Clarence F. Block, Barrington, and Elner W. Larsen, Palatine, Ill., assignors to Pearson Candy Company, St. Paul, Minn., a corporation of Minnesota

Filed Sept. 22, 1961, Ser. No. 140,028
6 Claims. (Cl. 107—54)



1. A method of making a confectionery product comprising the depositing of nuts in a continuously moving granular first layer, covering said moving layer of nuts with an extruded viscous sticky second layer of confectionery material, extruding confectionery center pieces in succession in spaced relation on the second layer, rolling the aforementioned layers to encase the center pieces and cutting the rolled material intermediate the center pieces.

3,156,196
TRIPODS FOR INSTRUMENTS HAVING OFF CENTER AXES OF MOVEMENT

Robert L. Hood, Byram, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed June 26, 1963, Ser. No. 290,689
4 Claims. (Cl. 108—4)

1. A tripod for instruments aimable about axes which do not coincide with the tripod head comprising

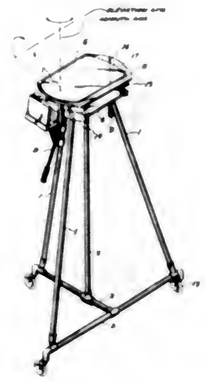
(*a*) a tripod framework and mounting head, said mounting head being provided with curved tracks, the center of curvature of the tracks being above the tripod head,

(*b*) a platform and means to tilt it on the tracks,

(*c*) a pivot on said platform offset from the center

of the tripod head, said pivot forming an axis at right angles to the platform,

(*d*) a platform pivoting about said pivot and means for mounting an instrument on said last platform

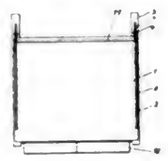


positioned so that the elevation axis of said instrument constitutes the axis of curvature of the tracks on the tripod head and the pivot forms a part of the azimuth axis of the instrument.

3,156,197
IMPLEMENT FOR BABY CARE

Alfons Walz, Biberacher Strasse 89, Bad Waldsee, Wurttemberg, Germany

Filed Jan. 7, 1963, Ser. No. 249,945
Claims priority, application Germany, Jan. 9, 1962, W 27,491
9 Claims. (Cl. 108—27)



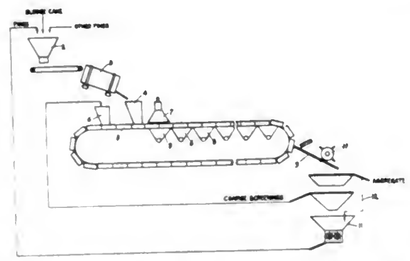
1. An implement for baby care comprising a substantially rectangular plate, a pair of legs adapted to be secured to said plate on each lateral side thereof, a narrow board for supporting each pair of said legs, a pair of holding members adjustable to different distances from each other on the lower side of each of said boards, and means for removably securing the individual parts of said implement to each other.

3,156,198
METHOD OF PROCESSING SEWAGE SLUDGE

Walter Koch, Offenbach (Main), Germany, assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 26, 1961, Ser. No. 85,086
7 Claims. (Cl. 110—7)

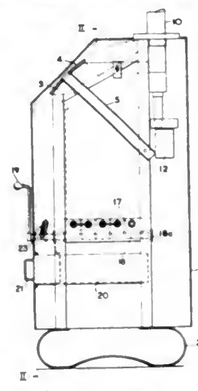
1. The method of converting dewatered sewage sludge to light-weight aggregate which comprises mixing dry finely-divided previously processed sludge with sludge to be processed to produce a friable mix, forming the mix into individual small bodies, forming a layer of these small bodies, igniting the layer and forcing oxidizing gas therethrough to burn out combustible matter and fuse unburned residue into a sinter.



3,156,199
INCINERATORS

Ernest Percy Buckle, % Pemberton & Sturgess (Gt. Britain) Ltd., Granville Works, Coronation Road, Park Royal, London NW. 10, England

Filed May 1, 1962, Ser. No. 191,589
9 Claims. (Cl. 110—8)



1. An incinerator for burning dry or moisture-laden material, comprising a combustion chamber mounted in spaced relation to an outer casing, means for cooling the outer casing by circulation of air and for withdrawing the gases of combustion by an induced draught, a plurality of electrical heating elements connected to a source of electrical supply, said heating elements positioned near the base of said combustion chamber, ceramic shroud means protecting each of said heating elements from the material being burned, said shroud means mounted in close spaced relationship to said heating elements and extending through the walls of said combustion chamber, whereby said heating elements may be replaced externally of said incinerator without contacting said combustion chamber.

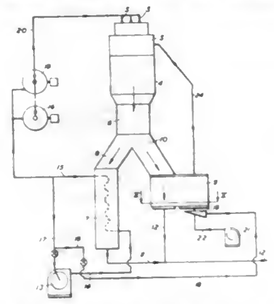
3,156,200
FURNACE COMPRISING REGENERATIVE HEAT EXCHANGERS

Leonard Herbert Leeson, Normanton, Derby, England, assignor to International Combustion (Holdings) Limited, London, England, a British company

Filed Nov. 28, 1961, Ser. No. 155,406
Claims priority, application Great Britain, Dec. 1, 1960, 41,417/60
1 Claim. (Cl. 110—56)

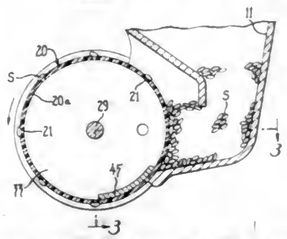
A pulverized fuel fired furnace comprising, in combination: a combustion chamber; pulverized fuel burners fir-

ing into said combustion chamber; a combustion products outlet duct connected to receive combustion products from said combustion chamber and having a first branch for receiving a portion of the combustion products and a second branch for receiving the remainder of the combustion products; a secondary air supply system for said combustion chamber including a source of cool secondary air, a regenerative air heater located in said first branch and having an air inlet duct and an air outlet duct, and duct connecting means interconnecting said source with said regenerative air heater air inlet duct and said regenerative air heater air outlet duct with said combustion chamber; and a primary air supply system for said burners including a primary air blower having an air inlet duct separate from the source of secondary air, and



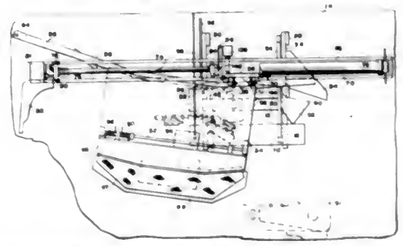
an air outlet duct, a recuperative air heater located in said second branch and having an air inlet duct and an air outlet duct, a fuel pulverizing unit having an air inlet duct and an air-fuel mixture outlet duct connected to said burners, and further duct connecting means interconnecting said primary air blower air outlet duct with said recuperative air heater air inlet duct, said recuperative air heater air outlet duct with said fuel pulverizing air inlet duct, said recuperative air heater air outlet duct with said recuperative air heater air inlet duct to permit recirculation of heated air through said recuperative air heater, and said recuperative air heater air outlet duct with said regenerative air heater air inlet duct to permit recirculation of part of the hot air output of said recuperative air heater to said regenerative air heater.

3,156,201
VACUUM-TYPE SEED PLANTER
Ralph L. Tweedale, Southfield, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Nov. 7, 1962, Ser. No. 236,077
1 Claim. (Cl. 111—77)



A vacuum-type seed planter having a seed carrying hopper disposed over a furrow opening drill and a suction drum with peripheral apertures rotatably mounted so that seeds are carried over said apertures from the hopper to the drill, characterized by said drum having a flexible surfaced cylindrical wall in which said apertures are formed so that seeds seat firmly and sealingly over said apertures as they are carried from the hopper to said drill, said drum wall being formed of a laminated construction having an internal ply sufficiently rigid to maintain a substantial cylindrical shape, a soft center core portion of substantial thickness, and an outer ply of resilient material yieldable in conformity to the shape of a seed drawn against said drum.

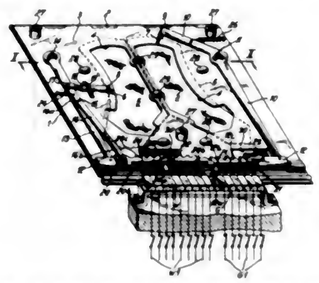
3,156,202
APPARATUS FOR PADDING UNDERCOLLARS
Philip C. Feffer, Sparks, Albert J. Hasselbach, Baltimore, and Louis Natale, Baltimore County, Md., assignors to L. Greif & Bro., Nashville, Tenn., a corporation of Tennessee
Filed Feb. 16, 1961, Ser. No. 89,760
5 Claims. (Cl. 112—2)



5. An apparatus for padding undercollars by means of a plurality of laterally spaced independent lines of stitches having a predetermined form including a sewing machine adapted to impart feeding movement to the work during application of a line of stitches thereto, a base adjacent said sewing machine, a support mounted on said base, a work supporting carriage on said support and movable with respect thereto, a work holding means carried by said carriage adapted to hold said work during application of the line of stitches thereto, means moving said support and said carriage adjacent said sewing machine to a position placing the work in operational engagement with said sewing machine, said carriage being movable with respect to said sewing machine during a plurality of sewing operations in a path corresponding to the predetermined form of the line of stitches being applied, said support being movable toward and away from said sewing machine in a direction transverse to the direction of feeding movement imparted by said sewing machine, a cam follower secured to said carriage, a reciprocable cam cooperating with said cam follower positively returning said work supporting carriage to a starting position after each of said sewing operations, means operatively responsive to the position of said carriage upon the completion of a line of stitches to effect actuation of said support and said carriage moving means so that said work is positioned in operational engagement with said sewing machine for the application of a succeeding line of stitches laterally spaced from the preceding line of stitches and means ejecting the work when said sewing operations have been completed.

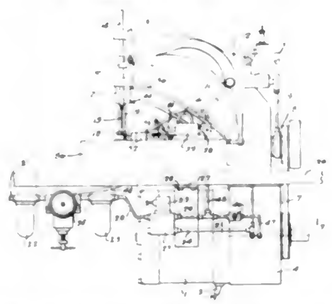
3,156,203
WORK BLANK SUPPORT, PARTICULARLY SEWING MATERIAL SUPPORT FOR AUTOMATIC DEVICE
Hans Adam, Kaiserslautern, Hans Orth, Alsenborn, and Emil Clauss, Kaiserslautern, Germany, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany
Filed May 2, 1962, Ser. No. 191,948
Claims priority, application Germany, May 6, 1961, P 27,114
11 Claims. (Cl. 112—2)

1. Work blank support for securing blanks of material which may vary as to size, width and other physical characteristics that determine the working operations to be performed on the blanks, said support being adapted for use with automatic machines equipped with work performing devices and having operating switches adapted to actuate said work performing devices, said support comprising means for mounting said blanks with said means being mounted to cooperate with said operating switches wherein said support and said operating switches are adapted to be in operating relationship to said work



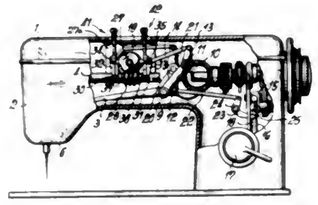
performing devices, said support having switching members mounted thereon operative to actuate different said operating switches, means for adjusting said switching members to correspond to different said physical characteristics of said blanks and operative to actuate different said operating switches corresponding to said different said physical characteristics thereby adapting corresponding work performing devices to effect operations on said blanks.

3,156,204
SYSTEM FOR CONTROLLING MACHINERY AND ASSOCIATED ELEMENTS
Martin J. Harnish, Carlisle, and Roy E. Miller, Mechanicsburg, Pa., assignors to General Automated Machinery Corporation, Carlisle, Pa.
Filed Aug. 31, 1962, Ser. No. 220,660
17 Claims. (Cl. 112—2)



1. A work controlled system for operating machinery comprising a driving motor, an air pressure operated clutch connected to said motor and the machinery and capable of connecting said motor to the machinery to be operated, a housing connected to a source of air under pressure and having an exhaust opening for said air, means controlled by the work for at times closing said exhaust opening when engaged by the work, an electrically operated valve interconnected between said clutch and a source of air under pressure for operating said clutch, an electrical circuit connected to said electrically operated valve, a switch interconnected in said electrical circuit and means carried by said housing operable by the air in said housing when said exhaust opening is closed and capable of closing said switch.

3,156,205
SEWING MACHINE MECHANISM FOR DECORATIVE STITCHING
Rudolf Reeber, Reinhold Dobner, and Rudolf Schäfer, Kaiserslautern, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany
Filed Apr. 23, 1963, Ser. No. 275,018
Claims priority, application Germany, Apr. 26, 1962, P 29,253
3 Claims. (Cl. 112—158)

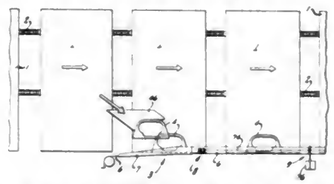


1. Mechanism for sewing decorative stitching on a sewing machine having a machine housing and a drive shaft, said mechanism comprising a support arranged in said housing in fixed position proximate said drive shaft, a cam shaft journalled on said support in driving engagement with said drive shaft, a plurality of pattern cam disks mounted on said cam shaft, a spring loaded rocker disposed proximate and extending parallel to said cam shaft, said rocker including an abutment member, a plurality of followers corresponding in number to the number of said disks and mounted in alignment on said rocker, a switch member for each said follower mounted on said support in said housing for movement into engagement with its respective said follower and operative selectively to move a follower to establish connection between the rocker and one said pattern cam disk, each said follower having a leaf spring secured at one end to said rocker and presenting a scanning end proximate one said disk and each said follower yielding resiliently in a direction generally parallel to said shaft and being movable angularly and axially in response to movement of its associated switch member.

3,156,206
METHOD OF APPLYING HANDLES TO A SERIES OF BAGS
William O. Hall, 120 William Way, Pittsburg, Calif., and Wallace G. Phillips, 509 W. 10th St., Antioch, Calif.
Filed July 25, 1961, Ser. No. 126,595
4 Claims. (Cl. 112—262)

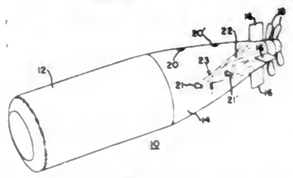
1. A method of closing an open end of each successive bag of a series of bags while simultaneously securing a carrying handle over an outer surface of each such bag, comprising continuously moving a series of discrete preformed bags in succession in one general direction and in spaced relationship to a first station, each of said preformed bags of said series having a plurality of walls arranged in substantially flat relationship and an open end to be closed simultaneously with the securing of a handle over an outer surface of an outer of such walls; adjacent said first station providing an upright stack of preformed handles; slidably feeding lowermost individual handles from said stack in the direction of but oblique to said one general direction while maintaining the lower surface of such handle substantially in engagement with the outer surface of such bag wall, said feeding being in timed relationship to movement of successive bags relative to said first station; while said bag walls are arranged in said substantially flat relationship positioning a handle over an outer surface of each successive bag of said series adjacent an end of such bag at said first station; moving the successive bags of said series with handles positioned

thereon to a second station; and at said second station applying a line of stitching through the handle and the



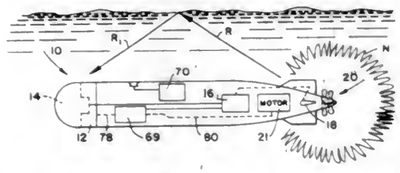
end of each bag of said series so that each bag end is closed as a handle is simultaneously secured over an outer surface thereof.

3,156,207
CONTROL DEVICE FOR BOUNDARY LAYER CONTROL VEHICLE
Walter B. Giles, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 9, 1961, Ser. No. 81,378
4 Claims. (Cl. 114—23)



1. In an underwater vehicle having a hull with a porous suction surface providing laminar boundary layer flow the improvement comprising control means normally flush with said hull, means for extending said control means into said laminar boundary layer to trip said flow creating turbulence over a section of said hull downstream from said control means.

3,156,208
METHOD AND APPARATUS FOR SELF NOISE TESTS FOR SUBMERGED VEHICLES
Stephen Kowalyshyn, Ellicott City, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1961, Ser. No. 151,404
4 Claims. (Cl. 114—25)

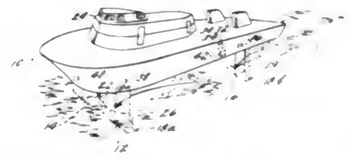


1. Test apparatus for use with an acoustic torpedo during a self-noise test run, said torpedo being of the type having a directional transducer and a steering control change-over switch responsive to amplitude of signal level at the electrical output side of the transducer, during a normal operational run of said torpedo said change-over switch being operative to couple a transducer responsive homing signal to a means for steering the torpedo when said amplitude is above a predetermined switch actuation threshold and operative to decouple the homing signal and the means for steering when said amplitude is below the predetermined threshold level, said homing steering signal including a depth homing signal, said means for steering including a depth steering signal input and during an operational run there being provided a means for coupling the depth homing signal to said depth steering signal input, said self noise test run being along a path through a body of water substantially free of sources of target signals and being for the purpose of determining the maximum self noise interference depth, when the torpedo runs through the water above said depth the change-over switch being susceptible to undesired actuation to its homing signal coupling condition in response to self noise generated by the torpedo, said test apparatus, in combination, comprising;

(*a*) means responsive to said change-over switch for generating a self noise dependent steering signal to steer the torpedo downward when the change-over switch is in its homing signal coupling condition and to steer the torpedo upward when the change-over switch is in its homing signal de-coupling condition, said means for generating a self noise dependent signal being operatively connected to the depth steering signal input of the means for steering the torpedo in lieu of said means for coupling and when the homing signal is decoupled from the means for steering, to thereby steer the torpedo along a path oscillating about the average maximum depth at which self noise causes said undesired actuation of the change-over switch, and

(*b*) means for recording a plot of instantaneous depth of the torpedo during said self noise test run, whereby said average maximum depth may be determined by inspection of the plot.

3,156,209
AUTOPILOT FOR HYDROFOIL CRAFT
Henry R. Ask, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 6, 1962, Ser. No. 207,881
17 Claims. (Cl. 114—66.5)



1. In an automatic control system for a hydrofoil craft, means for sensing and controlling the heave of said craft in varying sea conditions comprising control surfaces on said craft, means for producing a signal proportional to the vertical accelerations of said craft, means for operating upon said signal to eliminate low frequency accelerations, additional means operating upon said signal for rectifying said signal and retaining the downward acceleration peaks, and means for averaging said downward peaks to produce a control signal for actuating said control surface.

3,156,210
PLANKING CONSTRUCTION FOR BOATS AND THE LIKE
Lyman R. Lyon, 1731 Bassett Road, Royal Oak, Mich.
Filed Dec. 18, 1961, Ser. No. 159,967
8 Claims. (Cl. 114—84)

1. A planking construction for a boat hull comprising a plurality of elongated aluminum planks, one of said planks having a longitudinally extending edge portion with a generally circular channel therein, another of said planks having a longitudinally extending edge portion of circular cross section complementary to the channel in said one plank so as to be rotatably acceptable therein in directly engaged universal lateral stress transmitting relationship, said planks being rotatable relative to one another and said stress-transmitting relationship being maintained upon such rotation, the periphery of the circular edge portion on said another being relieved to facilitate assembly of said planks and whereby the juncture of the



edge portions of said planks defines a closed longitudinally extending recess between and communicating with the edge portions of each said planks, and means in said channel communicating with the edge portions of said planks for effecting a seal therebetween.

3,156,211
INDICATING DEVICE
Paul H. Mallory, Jr., 8215 Leader, Houston, Tex.
Filed Feb. 20, 1963, Ser. No. 259,996
3 Claims. (Cl. 116—114)



1. An indicating device for indicating a golfer's swinging form, comprising:

(*a*) a hollow transparent tube having open ends;

(*b*) attaching means provided on said tube for securing said tube on headgear of the golfer for obtaining a self-indication of his swing form;

(*c*) end closure means including first and second magnets positioned in said open ends;

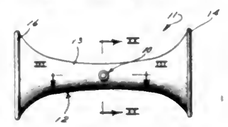
(*d*) a third intermediate magnet mounted in the wall of said tube between said closure means;

(*e*) a ball disposed within said tube and releasably engaged with said intermediate magnet in the starting position thereof; and

(*f*) said ball being releasable from said intermediate magnet solely by non-magnetic forces for movement to a stop position in engagement with one of said first or second magnets.

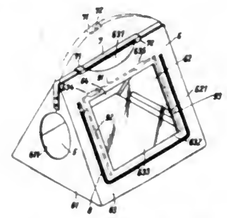
3,156,212
FLUID OPERATED SONIC TRANSDUCER
Roy D. Buell, Jr., Hinsdale, Ill., assignor to Buell Manufacturing Company, Lyons, Ill., a corporation of Illinois
Filed Apr. 20, 1962, Ser. No. 189,121
2 Claims. (Cl. 116—137)

1. An ultrasonic transducer comprising:
an amplifying and directing housing,
a transducer affixed within said amplifying housing,
said transducer having
a transducer housing defining a converging diverging passageway,
an ultrasonic resonator passing through said transducer housing and affixed to said amplifying housing,
a resonator cavity to generate ultrasonic waves defined by said resonator,
said resonator cavity having a mouth with a sharp cavity outer rim edge and being within said converging-diverging passageway,



a nozzle having an outlet for directing fluid towards said resonator cavity,
said nozzle outlet being spaced from said resonator so as to direct fluid before the cavity edge and across the entire mouth of the cavity,
said nozzle and said resonator being spaced so that the longitudinal center line of said resonator mouth intersects the longitudinal center line of said nozzle outlet at an angle in the order of 120°, and
means to supply pressurized air to said nozzle whereby ultrasonic waves are generated by impinging fluid onto the resonator.

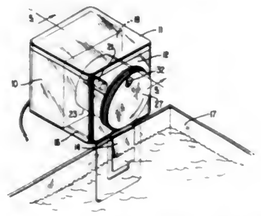
3,156,213
MOBILE CONTAINER FOR CARRYING AND ACCOMMODATING DOMESTIC ANIMALS
Julius Patten, Vogelsanger Weg 35, Cologne-Junkersdorf, Germany
Filed July 5, 1962, Ser. No. 207,492
Claims priority, application Germany July 7, 1961
11 Claims. (Cl. 119—19)



1. A container for carrying and accommodating domestic animals comprising, in combination, a foldable prismatic carrying frame formed by a plurality of rigid frame members hinged along at least one edge of said prismatic frame to each other so as to be foldable between a spread position for use and a collapsed position in which said frame members are abutting against each other in substantially parallel relationship, each of said frame members having an elongated portion extending longitudinally of said carrying frame and said elongated portions of said frame members extending parallel to each other; a rigid bottom plate having longitudinal edges extending parallel to said elongated portions of said frame members; hinge means for hingedly connecting said bottom plate along one of the longitudinal edges thereof to the elongated portion of one of said frame members; releasable fastening means for releasably connecting said bottom plate along the other longitudinal edge thereof

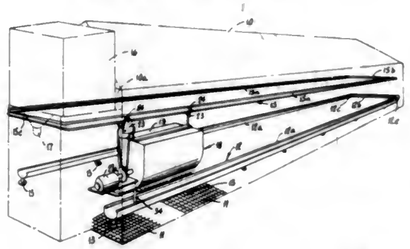
to the longitudinal portion of another of said frame members to releasably maintain thereby said carrying frame in said spread position; and a covering of flexible material enclosing said carrying frame in said spread position for use.

3,156,214
AUTOMATIC FISH FEEDER
Albert B. Denney, P.O. Box 3006, Colonial Station, Waco, Tex., and Harrell E. Gordon, P.O. Box 3011, Colonial Station, Waco, Tex.
Filed Aug. 8, 1963, Ser. No. 300,723
1 Claim. (Cl. 119—51)



An automatic fish feeder comprising a main housing attachable to a wall of an aquarium tank and having a side wall opening, an electric motor mounted within the main housing near one side wall thereof and spaced from the side wall opening, there being a relatively large interior chamber within the main housing between said motor and said side wall opening, said chamber adapted to be heated by the heat generated by said motor, said motor having a shaft projecting into said chamber substantially coaxially with the side wall, a feed cylinder journaled for rotation within said side wall opening and having its major portion disposed within the confines of said interior chamber in spaced relation to the side walls thereof, whereby heat in said chamber substantially surrounds said cylinder, said cylinder detachably secured to said motor shaft to turn slowly therewith, said cylinder projecting somewhat forwardly of said side wall opening and main housing in overhanging relation to the aquarium tank, and adjustable feed regulator and discharge means on the forward overhanging portion of said cylinder to supply feed intermittently from the cylinder to the aquarium tank during slow rotation of the cylinder with the motor shaft.

3,156,215
MOBILE HOPPER POULTRY FEEDER
Bernard Barker, Blackheath, near Birmingham, England, assignor to Fisher & Ludlow Limited, Stafford County, England, a British company
Filed July 15, 1963, Ser. No. 294,836
Claims priority, application Great Britain, July 19, 1962, 27,383/62
4 Claims. (Cl. 119—52)



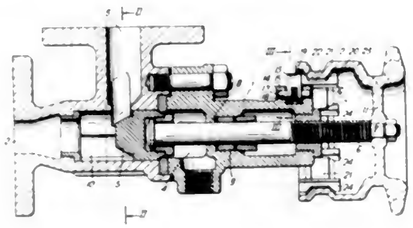
1. Apparatus for dispensing animal food stuffs into a feeding trough, comprising in combination, a rail, a container for the food stuff to be dispensed supported on said rail for movement along the length thereof, a driving member in engagement with said rail for advancing said container along the length of said rail, said container having a base portion provided with a discharge outlet at one end thereof for delivering food stuff to said trough, a shaft extending between opposite ends of said container and supported therefrom for rotation, a metering element adjacent said discharge outlet mounted at one end of said shaft for rotation therewith, agitator and conveyor means mounted on said shaft for rotation therewith for conveying said food stuff toward said metering element, power means connected to said container, and drive transmitting means operably connecting said power means to said driving member and said shaft and adapted to simultaneously drive said driving member to advance said container along the length of said rail and to rotate said shaft to effect metered discharge of said food stuff from said container at a rate proportional to the rate of advancement of said container along said rail.

3,156,216
LIVESTOCK OILER
Jesse L. Poage, Perry, Mo.
Filed Apr. 3, 1963, Ser. No. 270,417
6 Claims. (Cl. 119—157)



3. A livestock oiler comprising a reservoir adapted to contain oil, a post on which said reservoir is supported, an applicator element movably supported on the post below the reservoir and adapted to be moved relative to the post by an animal brushing against said applicator element, a pump adapted to dispense the oil from the reservoir including a reciprocating pump rod, means engaging the pump rod and actuated by the applicator element for operating the pump in response to movement of the applicator element, means adapted to convey oil from the pump to said applicator element, a pipe having a portion extending through and sealed to a bottom part of the reservoir and including an upper end disposed in the upper part of said reservoir, said post being tubular and having an upper part telescopically interfitting with and secured to said pipe, said pump rod being reciprocably disposed in said post and pipe and having a lower end protruding outwardly from a part of the post and engaging said means actuated by the applicator element, said pump including a piston, and said pump rod having an upper end connected to said piston above the upper end of said pipe.

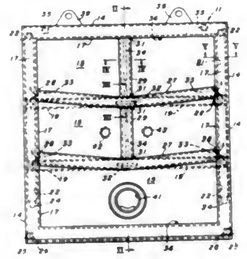
3,156,217
SEQUENCING BOILER BLOW-DOWN MEANS
Arthur Richard James Harding, Slough, England, assignor to Ronald Trist & Co., Limited, Slough, England, a British company
Filed Nov. 21, 1962, Ser. No. 239,243
Claims priority, application Great Britain, Nov. 27, 1961, 42,338/61
3 Claims. (Cl. 122—382)



1. In a plant including a vessel adapted to contain liquid and vapour under pressure, an auxiliary chamber, a vapour leg connecting the auxiliary chamber to the vapour space of the vessel, a blow down pipe, a liquid leg connected to the liquid space of the vessel and a valve and casing therefor, said valve having three successive positions comprising, a first position in which it connects the chamber to the liquid leg, a second position in which it connects the liquid leg to blow-down, and a third position in which it connects the chamber to blow-down, said valve comprising a reciprocating slide valve having a stem extending through one end of the casing, said casing being formed with a port at the end opposite to that through which the valve stem passes connected to the liquid leg, with a lateral port connected to the auxiliary chamber, with a second end port connected to the blow-down pipe, and with grooves opposite the lateral port communicating with both end ports, the valve being operative to close one end port in one extreme position, thus connecting the chamber to the liquid leg, to close the other end port in the other extreme position thus connecting the chamber to blow-down and in an intermediate position between the two extreme positions to close the lateral port while the end ports communicate with each other through the grooves, thus connecting the liquid leg to blow down.

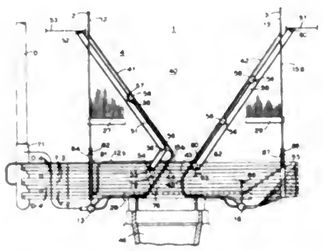
3,156,218
FORCED CIRCULATION WATER-COOLED FURNACE DOOR
Ottwin L. Braun, Pittsburgh, Pa., assignor to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1961, Ser. No. 142,371
2 Claims. (Cl. 122—498)

1. A furnace door comprising an inner plate, an outer plate in spaced parallel relation with the inner plate, marginal flanges extending from the plates and rearwardly turned with the inner plate flange extending for a first portion inwardly and then for a second portion outwardly to join the outer plate flange sealingly, a water jacket defined by the spaced plates and flanges, the inner plate and its flange first portion defining a central recess, hollow keys of trapezoidal cross-section spaced within the recess and sealed to the inner plate and to the inner plate first flange portion, the keys opening at their ends into the jacket between the marginal flanges of the plates, structural channels fixed sealingly to the inner plate and positioned within the jacket, the channels being in communication with the keys via apertures through the inner plate, the keys within the recess being located to anchor a refractory capable of being applied in the recess to cover the inner plate and the keys, a water inlet flow connected to the channels and in communication with the jacket,



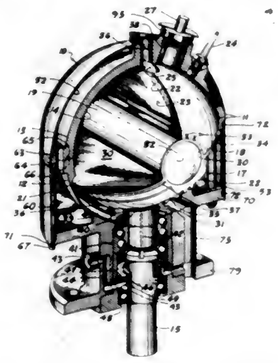
and a water outlet connected to the outer plate and in communication with the jacket whereby water forced through the inlet flows through the channels and to the jacket simultaneously, from the channels to the keys, and from the keys to the outlet in the sequence named.

3,156,219
TUBULOUS VAPOUR GENERATORS
Ronald E. Zoller, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company
Filed May 2, 1961, Ser. No. 107,165
Claims priority, application Great Britain May 2, 1960
6 Claims. (Cl. 122—510)



1. In combination with a vapor generator, walls including vapor generating tubes forming an upright furnace confining high temperature gases and a hopper opening to the lower end of the furnace, said walls including a pair of opposed walls diverging in an upward direction to form a part of the hopper and then extending upwardly to form a part of the furnace; means supplying fluid to the vapor generating tubes of said opposed walls including a drum containing a water space, a series of downcomer tubes connected to said drum at spaced positions along the length thereof, and means connecting said downcomer tubes to the vapor generating tubes of said opposed walls and including tubular means extending through said hopper and the opposed walls thereof; and means for supporting said hopper including means transmitting the weight of said hopper to vapor generating tubes of said opposed walls of the furnace, said last named means including means for transmitting the weight of said hopper to and carrying said hopper from said tubular means, and means for top-supporting said tubular means from some of the vapor generating tubes of said opposed walls of the furnace.

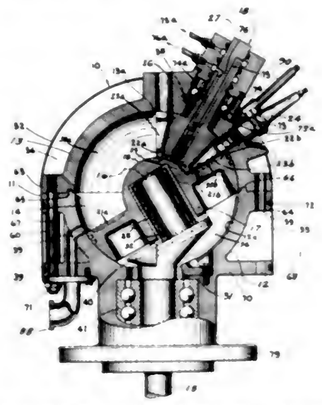
3,156,220
ROTARY INTERNAL COMBUSTION ENGINE
Lloyd E. Miller, Jr., Sunrise Cedars, Md.
(7811 Erwin Road, Coral Gables, Fla.)
Filed Aug. 22, 1960, Ser. No. 51,098
16 Claims. (Cl. 123—8)



1. A rotary displacement device of the class described comprising a housing, an interconnected rotor and nutator rotatively disposed in said housing and having working surfaces thereon, said working surfaces defining with an inner portion of said housing a chamber, said nutator undergoing nutative motion in said housing during rotation, thereby to bring about substantial volume changes in said chamber, means for providing fluid access to said chamber during a portion of the nutator movement, the fluid admitted being compressed by subsequent movement of the working surface of said nutator toward the working surface of said rotor, a center bar forming the interconnection between said members and being integral with one of said members, sealing means disposed on the other of said members and biased into close contact with the said center bar to prevent the leakage of high pressure fluid between said members, an end cap disposed at each end of said center bar to further prevent leakage, spring means for biasing said end caps radially outwardly, and centrifugal compensating means associated with each end cap to cancel the effect of centrifugal force upon said end caps, thereby to allow said spring means to determine the pressure with which said end caps contact the inner portion of said housing, and sealing means on said nutator disposed about a portion of the nutator contacting an inner portion of the housing, said sealing means extending substantially circumferentially from end cap to end cap and biased into contact with said inner portion of said housing by spring means.

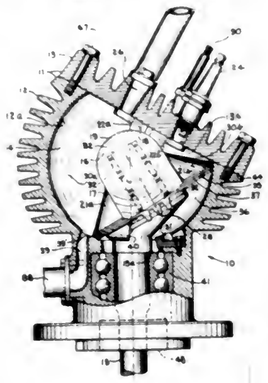
3,156,221
TWIN COMBUSTION CHAMBER SPHERICAL ENGINE
Lloyd E. Miller, Jr., Sunrise Cedars, Md.
(7811 Erwin Road, Coral Gables, Fla.)
Filed Mar. 30, 1961, Ser. No. 99,546
24 Claims. (Cl. 123—8)

1. In combination, a generally spherical housing, an interconnected rotor and nutator rotatively disposed in said housing and each having thereon a pair of working surfaces, opposed working surfaces on said rotor and nutator defining with an internal spherical portion of said housing a pair of chambers whose volumes change substantially and in opposite phase during rotation of rotor and nutator with respect to said housing, said nutator undergoing nutative motion during its rotation, with its working surfaces alternately moving toward and away from the respective working surfaces of the rotor, thereby to bring about said volume changes, said nutator being provided with a load-bearing surface disposed about its periphery, a first substantially circular track disposed about a portion of the interior of said housing, with which said load-bearing surface is in continuous contact during rotation of said nutator, an upstanding member substantially centrally disposed with respect to said first track, a second track disposed about the upper surface of said upstanding member, a track-contacting member



disposed on a side of said nutator remote from the working surface of said nutator, latter said member being in contact with said second track during rotation of said nutator, said tracks together providing proper nutational motion at all rotative positions of said nutator, and restraining means for preventing, during a phase of rotation of said interconnected rotor and nutator when such members are in alignment, the unrestrained rotation of latter members without volumetric change in said chambers.

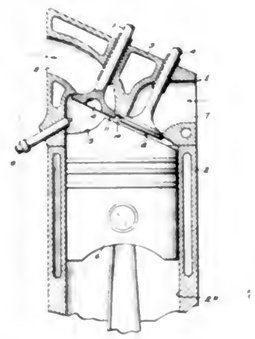
3,156,222
FLATHEAD SPHERICAL ENGINE
Lloyd E. Miller, Jr., Baltimore, Md.
(7811 Erwin Road, Coral Gables, Fla.)
Filed Jan. 9, 1963, Ser. No. 250,272
33 Claims. (Cl. 123—8)



1. A rotary displacement device comprising a housing whose inner walls are configured to form a generally spherical cavity, said cavity being less than fully spherical by virtue of a portion of the cavity wall defining a substantially flat chordal plane, a crankshaft rotatably mount-

ed in said housing and having a crankpin axis thereon disposed at an angle to the axis of rotation of said crankshaft, said crankpin axis being caused to nutate within said cavity during crankshaft rotation, said crankshaft and crankpin axes, if extended, intersecting at the geometric spherical center of said cavity, said crankpin axis being perpendicular to said chordal plane at a certain rotative position of said crankshaft, a nutator in said cavity rotatably disposed about said crankpin axis, said nutator disposed slidably in sealing contact with said cavity wall so as to define therewith at least one expansive chamber, said nutator being rotatable at a mean angular velocity of one-half crankshaft angular velocity and undertaking a combined rotative-nutative movement within said cavity in concert with crankshaft rotation to cause said expansive chamber to change volume continuously during such movement.

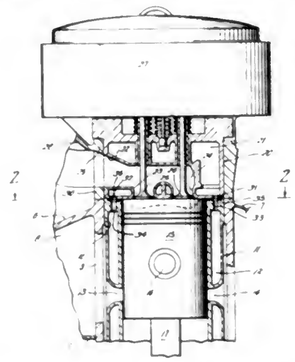
3,156,223
WEDGE TYPE OPEN COMBUSTION CHAMBER FOR IMPROVED COMBUSTION IN DIESEL ENGINES
Orlo J. Blomquist, 1713 Riverside, St. Charles, Ill.
Filed Apr. 2, 1963, Ser. No. 270,122
2 Claims. (Cl. 123—32)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An open combustion chamber for a diesel engine comprising a block having at least one bore therein; a piston slidably mounted in said bore; a head on said block; an inlet and an exhaust valve slidable in said head and a fuel injector mounted in said block; there being a small concave pocket in the head of said exhaust valve, said fuel injector being mounted at an angle in said block and substantially in alignment with said small concave pocket whereby a fuel stream injected from said injector will be directed into said pocket.

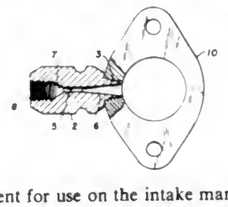
3,156,224
HEAD GASKET FOR DIESEL ENGINE
Vladimir A. Winkler, 4010 Calendar St., Houston 9, Tex.
Filed July 8, 1963, Ser. No. 293,477
5 Claims. (Cl. 123—41.83)

1. The combination with an internal combustion engine having cylinder liner and head members with opposed surfaces bolted together, a water passage extending transversely through said surfaces, and an exhaust passage adjacent and in communication with said surfaces, of a gasket ring between said surfaces and closely surrounding said passage for sealing said passage against water loss and a second gasket between said surfaces and having first and second parts, respectively, entirely surrounding the interior of said liner between said interior and said passage and said first gasket for protecting



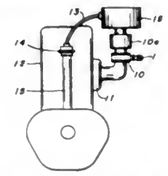
said first gasket against combustion gases from said liner interior and said exhaust passage.

3,156,225
INTERNAL COMBUSTION ENGINE AND AUXILIARY MANIFOLD AIR INTAKE THEREFOR
William J. Linn, 1373 N. Sheridan Ave., Pittsburgh, Pa.
Filed Sept. 5, 1962, Ser. No. 221,631
5 Claims. (Cl. 123—119)



1. A fitment for use on the intake manifold of an internal combustion engine having a carburetor through which air and fuel are mixed for passage through the manifold comprising a body having a threaded nipple at one end adapted to be screwed into the manifold, the body having an axial passageway through it, the passageway having an entering end portion for air at the end remote from the nipple, the passage being completely closed between its ends whereby only ambient air from about the outer end of the fitment may pass therethrough the passageway forming a venturi extending between said entering end portion and the end of the discharge nipple.

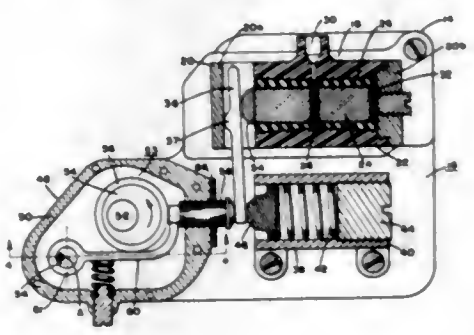
3,156,226
AIR INTAKE FITTING FOR INTERNAL COMBUSTION ENGINE
William J. Linn, 1373 N. Sheridan Ave., Pittsburgh, Pa.
Filed May 23, 1963, Ser. No. 282,717
2 Claims. (Cl. 123—119)



1. A fitment for use on an internal combustion engine intake manifold wherein the engine is of the type having a carburetor with a throttle for controlling the flow of

air therethrough in which air and fuel are mixed for passage through the manifold of the engine, said fitment comprising an elongated body having an axially-extending passage therethrough, said body having an outlet end for attaching it to an opening in the intake manifold and an entering end through which air is admitted to the passage, the passage defining a venturi with the passage in the outer end being of larger diameter and reduced between the ends to a smaller cylindrical bore and then enlarged toward the outlet end on a gradual taper, the body having a conical head over the entering end of the passage and spaced from the end of the passage, the head having a sleeve portion of smaller diameter at its rear that connects the head to the body, the sleeve portion having a plurality of peripherally-elongated slot-like openings extending through it for the flow of air from behind the conical head radially through the sleeve portion into the entering end of the passage, the conical head pointing away from the elongated body.

3,156,227
PIEZOELECTRIC VOLTAGE GENERATOR
George H. Hufferd, Lyndhurst, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Oct. 22, 1962, Ser. No. 231,891
15 Claims. (Cl. 123—148)



1. A piezoelectric voltage generator comprising, in combination:

housing means having an abutment rigid against displacement;

piezoelectric element means within said housing means and piezoelectrically responsive in compression, one end of said element means being disposed in fixed relation to said abutment;

force applying means operably arranged in bearing relation with said element means and effective to apply force to the other end of said element means in response to actuation thereof;

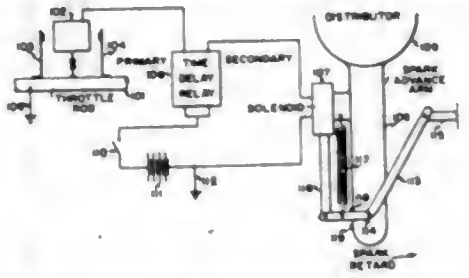
actuating means bearing against said force applying means and adapted to store potential energy and for releasing the potential energy to apply a sudden force at zero velocity upon said force applying means for transfer of said force to said element means to generate an electric potential.

3,156,228
METHOD AND APPARATUS FOR RETARDING SPARK
Albert J. Blackwood, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,399
6 Claims. (Cl. 123—146.5)

1. A method for reducing detonation in an internal combustion engine having an ignition system including a distributor and a fuel system including a throttle which comprises:

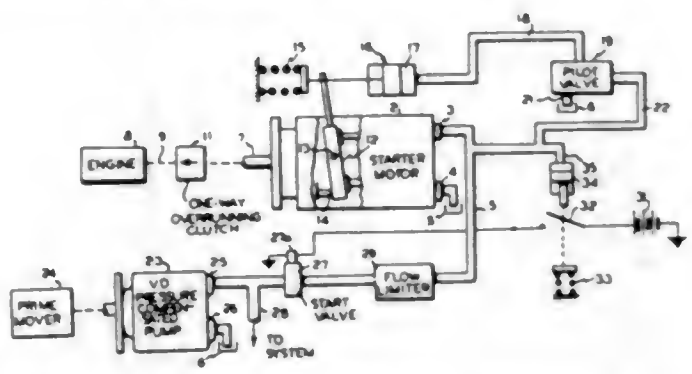
(*a*) sensing changes in the position of said throttle, and

(*b*) temporarily retarding for a short predetermined period of time the spark within said distributor in



excess of the normal spark setting, said temporary spark retardation taking place in response to the sensed change in throttle position.

3,156,229
HYDRAULIC SYSTEM AND METHOD
Edward V. Manning, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Aug. 28, 1962, Ser. No. 219,915
8 Claims. (Cl. 123—179)



1. In combination, an engine and a hydraulic starting system for accelerating the engine to starter cut-out speed, the system comprising

(*a*) a variable displacement hydraulic motor including a displacement control element movable between minimum and maximum displacement positions;

(*b*) stop means defining a minimum displacement position for the displacement control element in which the displacement of the motor is greater than zero;

(*c*) drive means connecting the motor and the engine and arranged to transmit torque from the motor to the engine;

(*d*) means associated with the drive means for preventing the transmission of torque from the engine to the motor;

(*e*) a source of hydraulic fluid capable of delivering fluid at a substantially constant pressure and at a rate which varies between a minimum value and a maximum value equal to the demand of the motor when the displacement control element is in maximum displacement position and the motor is operating at a speed less than starter cut-out speed;

(*f*) conduit means connected with the motor and the source for leading fluid from the source to and through the motor;

(*g*) motor control means responsive to the flow demand of the motor for maintaining the displacement control element in the maximum displacement position when the motor is running and the demand is below said maximum delivery rate and for moving the displacement control element toward the minimum displacement position when the demand tends to exceed said maximum delivery rate to thereby maintain the flow demand constant at that rate; and

(*h*) means responsive to the operating pressure of the

motor for terminating the supply of fluid from the source to the motor when the operating pressure decreases below a predetermined value.

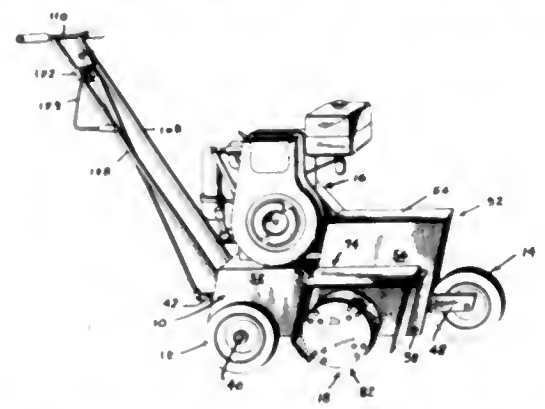
3,156,230
TAKEDOWN BOWS
Harold W. Groves, 1821 Somervell St. NE., Albuquerque, N. Mex.
Filed Oct. 19, 1960, Ser. No. 63,551
2 Claims. (Cl. 124—23)



1. A takedown bow having two limbs joined in a riser section, a grip fitting handle portion in the middle of the riser section, said grip fitting handle portion being configured to the natural grip of the human hand, a scarf joint in said riser portion commencing proximate the handle portion lower end at the bellyface and extending through the riser section on a descending plane to the back face, said scarf joint being provided by a sawing operation of the unitary bow blank, a composition plate having a thickness equal to half the saw kerf affixed to the joint surface of each limb, at least one of said plates being gradually diminished in thickness from the fore and aft end portions to the middle thereof, a clamp bolt seat in the bottom limb aligned with the perpendicular to the joint and being located in the middle of the joint substantially, a clamp bolt threaded socket affixed in the upper limb and aligned with the bolt seat when the limbs are in assembled alignment, a pair of guide pin sockets transfixing said joint and located in the opposing surfaces of the limbs in spaced relation fore and aft the middle of the joint, a pair of guide pins adapted to seat in said guide pin sockets to align the limbs when assembled, and a bolt adapted to engage said bolt seat and bolt socket to compressedly join said limbs and said plates with consequent compression of the fore and aft outer portions of the limbs.

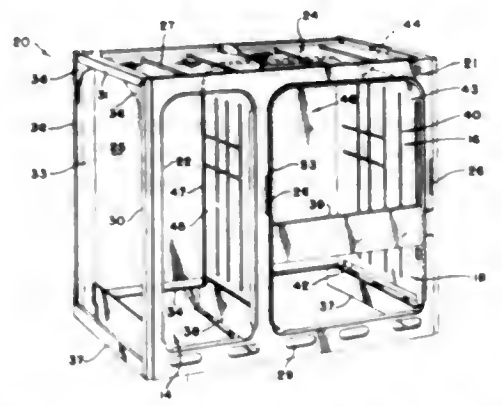
3,156,231
CONCRETE PLANE
Edward M. Harding, Jr., Rockville, Md., assignor to Equipment Development Co., Inc., Silver Spring, Md., a corporation of Maryland
Filed Feb. 6, 1962, Ser. No. 171,435
8 Claims. (Cl. 125—5)

1. In combination with a horizontal shaft rotatably supported in a mobile unit and having operable connection with power means on said unit, a cutter assembly comprising, plates fixed axially on said shaft in longitudinally spaced relationship therealong, wedge sockets on the opposed faces of said plates arranged in spaced relationship about the peripheries thereof, said sockets being formed by brackets having frictionally obstructed channels therein opening generally radially inward of their supporting plates, bar means each having its remote ends frictionally coupled in opposed wedge sockets on said spaced plates, and a plurality of cutter wheels arranged in packed side by side relationship longitu-



dinally of each bar means with the peripheral cutting edges of said wheels projecting radially from said shaft beyond the outermost circumferential edges of said plates.

3,156,232
RANGE CHASSIS
Earl S. Pollock and Dalton L. Divelbiss, Lexington, Ohio, assignors to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Sept. 19, 1961, Ser. No. 139,204
1 Claim. (Cl. 126—39)

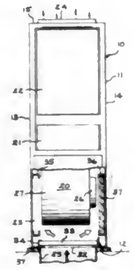


A range chassis comprising a front wall having an opening for an oven therein, a substantially imperforate top integrally formed with said front wall, the main area of said top being depressed relative to the sides of the top, a substantially imperforate back wall integrally formed with said top, rigidifying means extending between and secured to said front and back walls adjacent the bottom portions thereof to rigidify said chassis, and oven liner means disposed within said opening in said front wall of said chassis, said oven liner means comprising a one-piece unit forming the side and top walls thereof and a back wall secured thereto, said oven liner means also spanning a substantial portion of the height of said front and back walls of said chassis, with the side walls of said oven liner means being rigidly mounted adjacent the bottom of said chassis to said rigidifying means extending between and secured to said front and back walls of said chassis, the thus mounted liner means forming a rigid unitary assembly with said chassis.

3,156,233
SEALING AND SOUND ABSORBING MEANS FOR AIR HANDLING APPARATUS
Alva D. O'Connell, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,219
6 Claims. (Cl. 126—110)

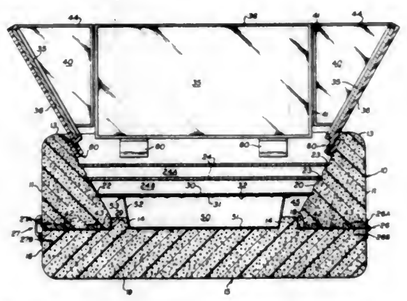
5. A convertible air handling apparatus having a metal housing enclosing a plenum chamber that includes a motor-blower unit, the housing having an open bottom

wall that forms a bottom air inlet opening, an opening in the top wall of the housing forming an air outlet opening, a filter medium adapted to be positioned within the bottom opening when the apparatus is provided with a bottom inlet, at least one sheet of fiberboard positioned along a side wall of the plenum chamber to attentuate



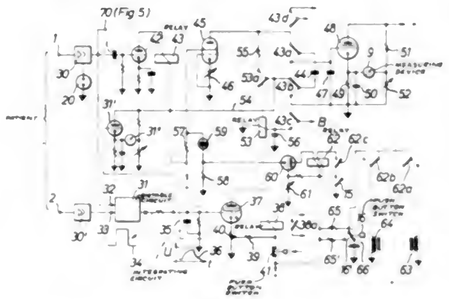
the noises therein, means for forming an air inlet opening in one of the side walls of the housing, the said filter medium being adapted to be transposed to fit within the side inlet opening, while the said sheet of fiberboard is adapted to be located in the bottom opening to seal the bottom opening of the housing and continue to attenuate the noise level.

3,156,234
SOLAR OVEN WITH PLASTIC CASING AND HINGES
Hyman A. Steinberg, 7—25 166th St., Whitestone, N.Y.
Filed Jan. 10, 1962, Ser. No. 165,351
10 Claims. (Cl. 126—270)



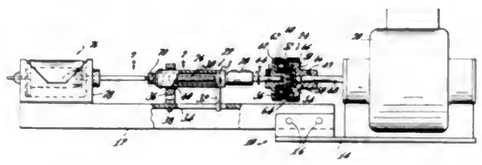
1. A solar oven comprising, in combination, a generally polygonal casing of rigid foamed plastic heat insulating material having an opening therethrough extending between and through a pair of substantially parallel outer end surfaces and bounded by side walls having inner surfaces; a flat, black and opaque metal collector plate extending between said inner surfaces intermediate said end surfaces and substantially parallel to the latter; said collector plate dividing said casing opening into a cavity, opening through one end surface, and receiving radiation entering through the opening in such one end surface, and a space having an access opening through the other end surface and in heat transfer relation with said collector plate; means, including said collector plate, defining a food receiving chamber within said space, said chamber being in contiguous relation with less than the entire area of said collector plate between said inner surfaces, to amplify the relative transfer of heat from said collector plate to said food receiving chamber; and a heat insulating door substantially coextensive with said other end surface of said casing and hinged to said casing and effective to close the access opening to said food receiving chamber; the inner surface of said collector plate, facing said space and said food receiving chamber, being coated with a plastic composition material effective to prevent food from sticking to the inner surface of said collector plate.

3,156,235
HEART MONITORING DEVICE
Erich Jaeger, Rontgenring 5, Wurzburg (Main), Germany
Filed Oct. 3, 1960, Ser. No. 59,957
Claims priority, application Germany Oct. 3, 1959
7 Claims. (Cl. 128—2.05)



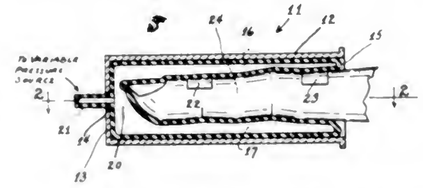
1. A device for monitoring the function of the heart of a patient, comprising, in combination: a pulse beat detecting means for contacting a patient's body at a location where pulse beats may be sensed; circuit means connected to said detecting means for actuating an alarm when the pulse beat frequency deviates from a predetermined and adjustable range, said circuit means including a clock mechanism arranged to start operation during the time that no beat is detected by said detecting means and thus when the heart is stopped; a pacemaker and an adjustable delay circuit connected to said circuit means and said pacemaker and arranged for automatically starting said pacemaker when the limits of a predetermined adjustable range of the pulse beat frequency are exceeded.

3,156,236
MEDICAL INJECTOR
Donald E. Williamson, Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed Dec. 7, 1961, Ser. No. 157,792
9 Claims. (Cl. 128—2.05)



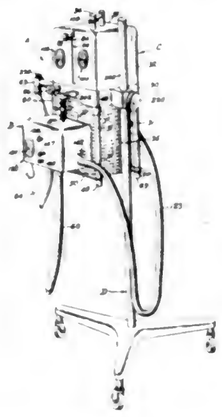
1. An injection device for providing constant hydraulic pressure suitable for angiography injections comprising: a constant torque electric motor; means for efficiently converting the constant torque available from said motor to constant thrust; and a hydraulic piston and cylinder, the piston of which is driven by said means whereby energization of said motor to produce constant torque will provide constant pressure in a hydraulic medium contained in said cylinder.

3,156,237
APPARATUS FOR MEASURING BLOOD PRESSURE AND HEARTBEAT PULSES
Karl W. Edmark, Jr., Seattle, Wash., assignor to Physio-Control Company, Inc., Seattle, Wash., a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,932
15 Claims. (Cl. 128—2.05)



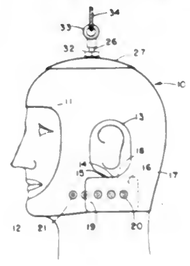
1. In a blood pressure and heartbeat pulse measuring apparatus, an extremity-receiving pneumatic compressor provided on its interior surface with spaced electrodes located to make electrical contact with two spaced points on an extremity received within the compressor, means to supply fluid under pressure to said compressor, pressure-indicating means connected to said compressor, impedance-responsive means electrically connected to said electrodes so that the impedance defined by the portion of the extremity between said two spaced points will be electrically connected to said impedance-responsive means, said impedance varying with the flow of blood through said portion, and means varying the fluid pressure in said compressor in accordance with the response of said impedance-responsive means.

3,156,238
DEVICE FOR AIDING IN THE ADMINISTRATION OF GASEOUS ANESTHETIC AGENTS
Forrest M. Bird, Airport Box 970, Palm Springs, Calif., and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, Calif.
Filed Feb. 18, 1960, Ser. No. 9,628
16 Claims. (Cl. 128—29)



1. A device for use with a respirator for administering anesthetic gas, including in combination: a body member having an upper side and a lower side and defining a hollow chamber having an inlet for anesthetic gas, an outlet for said gas, and a bellows outlet opening through said lower side; a bellows having a centrally open upper fixed end closed against said lower side of said body and a reinforced lower movable end, the interior of said bellows and said lower side defining a variable capacity chamber connected to said hollow chamber by said bellows outlet opening; a bellows housing enclosing said bellows and sealed against its upper end and sealing it to said lower side to define a bellows-enclosing chamber, the pressure in said bellows-enclosing chamber having an actuating effect on said bellows, said bellows housing having an inlet opening adapted to be connected to a respirator for varying the pressure in said bellows-enclosing chamber; an exhaust tube slidably mounted in said body and extending through said body and into said bellows and normally urged downwardly by gravity with its lower end in contact with said reinforced lower end of said bellows and moved up thereby when said bellows is collapsed by the pressure in said bellows-enclosing chamber being greater than that in said bellows interior, said tube having opening means adjacent its lower end and an open upper end; a gas leak valve normally closing the upper end of said tube but mounted for vertical sliding action away therefrom, said valve having an upwardly extending stem; a pair of vertical rods extending up from said body on opposite sides of said tube; a crosshead slidably mounted on said rods and normally bearing on said gas leak valve stem to hold said exhaust valve closed; and movable upward and lower stop means for said crosshead, movably supported by said body.

3,156,239
TRACTION HELMET
Antonio Uribe M., 1131 E. Merced Ave., West Covina, Calif.
Filed May 1, 1961, Ser. No. 114,586
5 Claims. (Cl. 128—75)



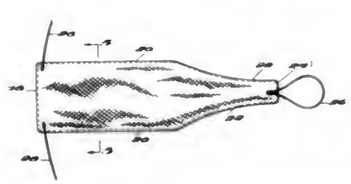
1. A cervical traction apparatus comprising: a helmet of flexible material adapted to generally conform to the contour of a human head and having an opening at the lower portion thereof adapted to permit passage of the upper portion of the neck, said helmet having a lower rearward portion adapted to fit the occipital portion of the skull, and a lower forward portion adapted to fit the mandibular portion of the skull; an opening at the face of the helmet adapted to leave the eyes, nose and mouth unobstructed; a pair of symmetrically positioned openings, one on each side of the helmet adapted to permit passage of the ears, said openings being discontinuous at the bottom thereof; cooperating means associated with the ends of the mandibular portion of the helmet and associated with the end portions of the occipital portion of the helmet adapted to selectively engage each other to fix the gap between the respective ends of the occipital portion of the helmet and the ends of the mandibular portion of the helmet; an opening at the dome of said helmet; and adjustable means associated with said opening adapted to selectively clamp the helmet at predetermined positions and thereby vary the angle of the axis of pull transmitted to said helmet.

3,156,240
SUPPOSITORY APPLICATOR
Thomas S. Harrison, New Canaan, Conn., and Bruce J. Cokeley, Huntington Station, N.Y., assignors to Lehn & Fink Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 8, 1961, Ser. No. 136,873
3 Claims. (Cl. 128—271)



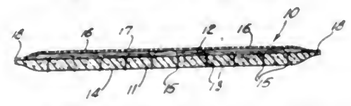
3. A combined suppository and applicator, said suppository comprising an elongated suppository capable of melting at body temperature and a tapered hollow applicator member having open smaller and larger opposite ends, said smaller end being embedded in said suppository and having an opening thereon receiving a portion of said suppository for securing said suppository to said applicator member, and said larger end being open to receive a finger.

3,156,241
DISPOSABLE CATAMENIAL DEVICE
Nancy L. Hyde, 17219 Lassen St., Northridge, Calif., and Bette R. Howard, 7415 Northaven Road, Dallas, Tex.
Filed Feb. 24, 1961, Ser. No. 91,355
4 Claims. (Cl. 128—289)



1. For use on a female wearer, a disposable combination catamenial pad and belt, comprising a pad for disposition in the crotch area of a wearer, said pad being of absorbent material having a forward end including two corners and a rearward end, the forward end of said pad being straight, the rearward portion of said pad being curved inwardly on each side edge to conform to the inner thigh portions of the legs of a wearer and narrowing to define a blunt rearward end, an open mesh fabric encasing the absorbent material, a belt structure for holding the pad against the body of a wearer, said belt structure including a small loop connected to the rearward end of said pad, straps connected to the forward end of the pad on the corners thereof, and hooks connected to the free ends of said straps for engagement with said loop and said pad being of sufficiently short length to fit entirely within the crotch area of a wearer and said loop being sufficiently short that it engages said straps in the lower inter-buttock area of a wearer to eliminate bulges, said loop and straps being constructed of a fine, strong, elastic material, and a thin plastic waterproof layer on one side of said pad.

3,156,242
FLEXIBLE ABSORBENT SHEET
George A. Crowe, Jr., Plainfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Mar. 29, 1962, Ser. No. 183,484
1 Claim. (Cl. 128—296)



A dressing comprising
a facing formed of a flexible sheet of cellular hydrophobic heat softenable sponge material,
a backing formed of a flexible opaque air-pervious sheet of heat softenable material, and
a web of absorbent fibers disposed between said sponge facing and said backing, said backing being secured to said sponge facing around the edges thereof through fusion and fibers from said absorbent web extending through said sponge sheet facing to the opposite side thereof, whereby when the portion of said fibers extending through said sponge sheet are wetted said fibers act to draw fluid along their length up through said sponge sheet and into and through said absorbent fiber web, said opaque backing acting to hide said absorbed fluids from view.

3,156,243
TOURNIQUET
Raymond E. Sculley, 2218 Elliott SE., Grand Rapids, Mich.
Continuation of application Ser. No. 716,928, Feb. 24, 1958. This application June 15, 1961, Ser. No. 117,340
5 Claims. (Cl. 128—327)



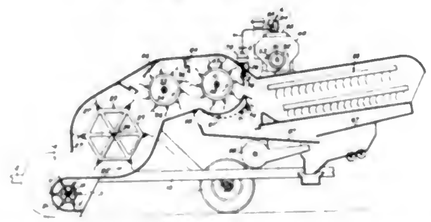
1. A tourniquet, comprising: a piece of flexible tubing of convenient length to extend around a member of a body; a resilient loop joined to an end of said piece and elongated along the axis thereof, the opposite sides of said loop converging at an acute angle at the end of said loop remote from said piece, said sides each being provided with a stiffening member extending substantially from the apex of said acute angle to an intermediate point on said loop whereby the application of tension to said piece transferred through said sides will tend to urge said loop sides into parallelism, the opposite end of said piece from said loop being insertable in said loop to various positions to generate tension in said piece, and clamped by said loop in such positions, said loop also having a release tab secured thereto adjacent the apex of said acute angle, and a portion of reduced thickness provided with a reinforcement member at the end of said piece opposite from said loop.

3,156,244
BINDER AND METAL USED IN SAME
Robert F. Lindgren, Aurora, and Frank J. Malcik, Chicago, Ill., assignors to Wilson Jones Company, Chicago, Ill., a corporation of Massachusetts
Filed Feb. 15, 1962, Ser. No. 173,421
4 Claims. (Cl. 129—12)



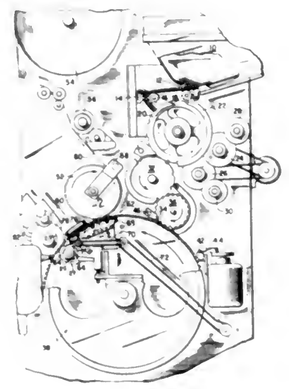
1. A post binder construction comprising an upper and a lower casing, each of said casings being formed of high impact synthetic organic plastic material, said lower casing having a pair of spaced posts extending upwardly therefrom, said upper casing being provided with a pair of spaced holes each aligned with the corresponding post of said lower casing, a longitudinally disposed corrugated metallic support member within said upper casing, a longitudinally disposed U-shaped metallic member surrounding said corrugated support member, a cover member pivotally secured to each of said casings, and a plurality of sheets within said covers each provided with a pair of spaced holes, each of the holes within each of said sheets being aligned with the corresponding post.

3,156,245
PEANUT PICKING MACHINE
Oliver K. Hobbs, Suffolk, Va., assignor to Benthall Machine Company, Inc., Suffolk, Va., a corporation of Virginia
Filed Sept. 25, 1961, Ser. No. 140,402
3 Claims. (Cl. 130—27)



1. In apparatus for detaching peanuts from their vines the combination of, a threshing mechanism including a group of horizontally disposed cylinders arranged in side by side relationship, a housing encasing said cylinders receiving vines with peanuts thereon as the apparatus is moved forwardly, an internal combustion engine supported on said housing, means transmitting power from said engine to said threshing mechanism rotating all of said cylinders to move the vines rearwardly through the threshing mechanism, a concave positioned under the rearwardly located cylinder of said group, pivot means at a forward portion of said concave supporting it for swinging movements whereby portions of the concave rearwardly of said pivot means may be raised and lowered with respect to the path of movement of the periphery of said rearwardly located cylinder, an intake manifold on said engine having a low pressure therein with a rise in said pressure as the load on the engine increases as a consequence of the cylinders engaging said vines, means including a linkage connected to a rear portion of said concave responsive to atmospheric pressure and said low pressure condition within said manifold to move portions of said concave rearwardly of said pivot means upwardly towards the path of movement of the periphery of said cylinder, and means operably responsive to said higher pressure within said manifold shifting portions of the concave rearwardly of said pivot means downwardly and away from the path of movement of the periphery of said cylinder.

3,156,246
CIGARETTE MACHINE FOR MAKING MOUTHPIECE CIGARETTES
John Burkhard, Rego Park, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 29, 1961, Ser. No. 141,764
3 Claims. (Cl. 131—94)

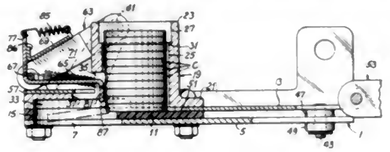


1. In a mouthpiece attaching machine, a conveyor drum for carrying composite assemblies to be united by a uniting band being applied thereabout, said conveyor drum having transverse flutes on its surface moving therewith for carrying said assemblies, means defining cutout portions at spaced intervals along the length of and in the bottom of said flutes to provide intervening flute portions for supporting said assemblies, a uniting band conveyor drum positioned adjacent said fluted drum for applying uniting bands about said assemblies as they are conveyed by said conveyor drum, and traveling surfaces extending upwardly through the cutout portions in the bottom of said flutes for first pressing the assembly against one side of said flute and then against said uniting band applying drum to facilitate applying a uniting band about the assembly.

3,156,247
COIN APPARATUS
James T. Schuller, St. Ann, Mo., assignor, by mesne assignments, to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 179,134
4 Claims. (Cl. 133—5)

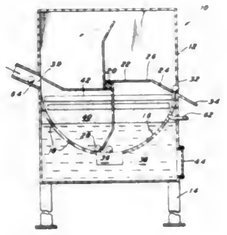
1. A change maker comprising a magazine for holding a stack of coins to be issued in change, said magazine having a lateral outlet, means for ejecting coins from the magazine by pushing them forward through the outlet, a blocking member normally occupying a retracted position at the outlet defining a normal height for the outlet, said blocking member when in retracted position being engageable by an object in the magazine of greater height than

said normal outlet height, means mounting said blocking member to move forward and upward away from its retracted position upon engagement of said blocking member by such an object being pushed forward by said ejecting means and biasing said blocking member to return to retracted position, said blocking member on such forward and upward movement being adapted to clear the object and then return to retracted position under its return bias, said mounting means also mounting said blocking member to yield upward in the event of engagement of said blocking member with said object on return of the block-



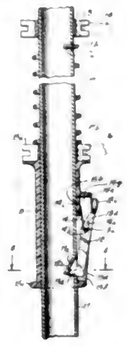
ing member to retracted position, said mounting means comprising a carrier and a connection between said blocking member and carrier, the carrier being movable to move said connection forward and upward away from a retracted position to carry the blocking member forward and upward and away from retracted position, said connection permitting said blocking member to yield upward relative to said carrier, and spring means biasing said blocking member to move downward relative to said carrier.

3,156,248
CLEANING APPARATUS
Burton Rand, Bala-Cynwyd, Pa., assignor, by mesne assignments, to The Dow Chemical Company, a corporation of Delaware
Filed Mar. 20, 1962, Ser. No. 181,061
11 Claims. (Cl. 134—60)



1. A machine for washing bearings and the like comprising a tub member of a semi-cylindrical shape adapted to have a cleaning liquid placed therein, a housing enclosing said tub member, said housing having feeding and discharging means, said tub member having at least one perforation therein, said housing being constructed and arranged to receive liquids discharged thereinto from said perforation, means to continuously maintain a body of liquid in the tub, a plurality of angularly disposed rotatably mounted paddles above said tub member, each paddle having a tip disposed at an angle with respect to the remainder of each paddle and a radius of the tub member, said remainder of each paddle being generally perpendicular to the axis of rotation of said paddle, means maintaining the angular relationship of the paddles and their tips constant, and means for rotating said paddles to facilitate movement of the elements to be cleaned from the feeding to the discharging means, said means rotating said paddles in a direction such that each tip is angled away from the direction of rotation of said paddle.

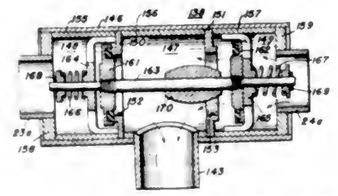
3,156,249
WINDPROOF UMBRELLA WITH CATCH
Nat Biderman, New York, N.Y., assignor to Liberty Umbrella Co., Inc., New York, N.Y., a corporation of New York
Filed June 27, 1963, Ser. No. 291,010
2 Claims. (Cl. 135—20)



1. A windproof umbrella having a rod and a rib structure adapted to spring inside out from a normal open downwardly bowed position to an upwardly bowed position, a runner slidably mounted on said rod for operating and controlling said rib structure, releasable positioning means coacting between said runner and rod, said means including an upper and lower opening formed in the rod and a catch carried by said runner and spring biased to selectively engage said upper and lower openings, finger pressure means carried by said catch for disengaging the latter from said upper and lower openings, said upper opening and rib structure being constructed and arranged for automatic disengagement of the catch to permit the runner to slide upwardly along said rod for springing the rib structure from said normal open downwardly bowed position to an inside out upwardly bowed position upon exertion of wind pressure on the underside of the open umbrella, said finger pressure means being accessible for finger manipulation to release the runner by one of the fingers of one hand while the latter is simultaneously gripping the runner and exerting a sliding force to move the runner downwardly beyond said upper opening to spring the ribs from said inside out position to a normal configuration, said upper opening being elongated along the length of said rod and having an inclined bottom wall extending from a relatively deep lower end to an upper end at the surface of said rod, said inclined bottom wall serving as a guide for effecting said automatic disengagement of the catch.

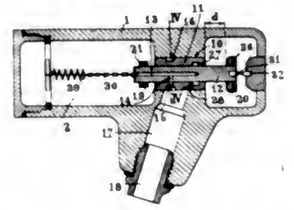
3,156,250
CONTROL VALVE FOR REVERSIBLE REFRIGERATING SYSTEMS
Walter O. Lum, 7 Crescent Road, Livingston, N.J.
Original application Nov. 29, 1955, Ser. No. 549,705. Divided and this application Nov. 7, 1960, Ser. No. 67,790
4 Claims. (Cl. 137—113)

1. A two-way check, three-way valve for fluid control systems comprising a hollow cylindrical valve body having a pair of spaced partition elements having ports therein and dividing the interior of said body into three zones, three external fluid connections for said body one communication with the central one of said zones between said elements and the others with the respective zones on the outer sides of said elements, a double headed valve member, guide means mounting said member for reciprocating movement with respect to said ports, said heads being spaced on said member to engage their respective ports alternatively, said guide means including a pair of positioning slides mounted on said valve member for relative movement axially with respect to said heads and springs for biasing said slides to positions at a predetermined fixed spacing, stop means in said body for



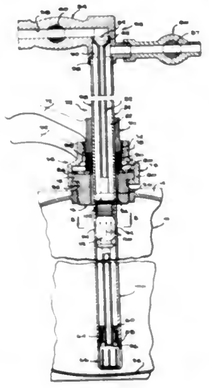
engaging the respective one of said slides when the adjacent head approaches its respective valve port whereby upon closing of the port the respective spring is stressed to bias the valve head away from its port and damping means engaging said valve member for minimizing vibration thereof during movement of said valve member.

3,156,251
FUEL OUTPUT ADJUSTMENT APPARATUS
Edmond Henry-Biabaud, 16 Rue du Ranelagh, Paris, France
Filed May 12, 1960, Ser. No. 40,489
Claims priority, application France, June 23, 1959, 798,255, Patent 1,237,826
4 Claims. (Cl. 137—117)



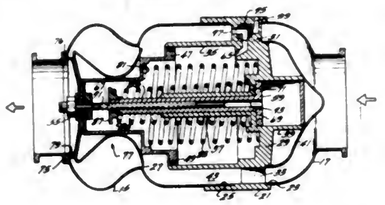
1. An apparatus for adjusting the output of a liquid fuel delivered under pressure, which comprises a fixed outer member formed with a cylindrical bore and with at least one radial port through which the liquid under pressure may escape, an inner cylindrical member slidably mounted in said bore and in sealing engagement therewith, said inner cylindrical member being formed with at least one radial port through which the fuel under pressure is delivered, a chamber fed with the fuel under pressure, said inner cylindrical member having an end emerging into said chamber and another end protruding outside said chamber, a duct formed in said inner member connecting said chamber with said port of said inner member, another duct for discharging from the apparatus the fuel circulated through said ports, a stop limiting the sliding movement of said inner member under the influence of the fluid pressure prevailing in said chamber when the apparatus is fed with fuel under pressure, in a position wherein said ports lie in a common radial plane, a spring resiliently urging said inner member for sliding in a direction opposite to that resulting from the action of said fuel pressure when the delivery of fuel under pressure to the apparatus has ceased, the traction exerted by said spring being inferior to the force exerted by said fuel pressure, another stop limiting the sliding movement of said inner member under the influence of said spring, and means for causing said inner member to revolve in said outer member and therefore cause said ports to register more or less with each other for increasing or reducing the fuel output through said ports.

3,156,252
BEER SIPHON ASSEMBLY
Mack S. Johnston, P.O. Box 41, Kalispell, Mont.
Continuation of application Ser. No. 25,592, Apr. 29, 1960. This application Dec. 8, 1961, Ser. No. 159,818
12 Claims. (Cl. 137—212)



12. A pressure siphon assembly comprising: a siphon tube having an outlet at one end thereof and an inlet at the other end thereof; a tubular member disposed about said siphon tube and spaced therefrom to define a passage therebetween; fluid pressure inlet means communicating with the inside of said outer tubular member; generally cylindrical valve means surrounding said siphon tube having upper and intermediate portions spaced from the outer surface of said siphon tube to provide a fluid passage, with the upper portion of said valve means in sealed relation with said outer tubular member, and said valve means having a lower portion in sealing relation with the outer surface of said siphon tube, the intermediate portion of said valve means being formed of a relatively thin flexible material and having at least one valve slit formed therein, whereby sufficient pressure within said inlet means and the inside of said valve means in excess of the pressure surrounding said slit valve means exterior will effect opening of said valve slit and cause a flow of fluid out through said slit.

3,156,253
PRESSURE REGULATING VALVE AND COMBINATION ON-OFF VALVE
Howard P. Marderness, West Chester, Ohio, assignor to General Electric Company, a corporation of New York
Filed Nov. 24, 1961, Ser. No. 154,548
4 Claims. (Cl. 137—220)



1. A fluid pressure regulating valve comprising:
a valve housing adapted to be connected in a fluid flow line and including wall means defining a valve cylinder member, a surrounding annular passage, and an inward convolution in said passage downstream of the cylinder member;
a valve piston member including a skirt element slidable

in said cylinder member and a head element disposed downstream of said inward convolution in said housing wall means to define therewith a flow constriction the open area of which is reduced by upstream movement of the valve piston member;

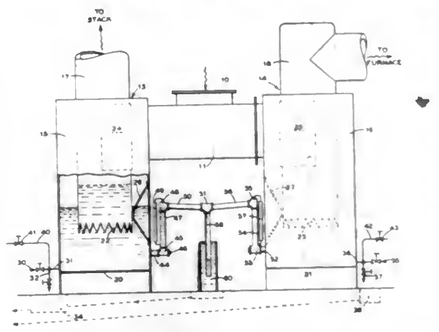
force loading means for said valve piston member including passage means connecting said cylinder member to a first reference pressure source at pressure level related to the level of pressure to be held by the regulating valve by the same proportionality as between the effective areas of said valve piston skirt and head elements on which these pressures respectively act;

on-off valve means including relatively movable valve and valve seat elements, one carried by said housing wall means and one by said valve piston member, said on-off valve elements being of effective area smaller than said valve piston skirt and arranged to block fluid flow through said housing upon travel of said valve piston member to its downstream extreme of movement;

a second reference pressure source at pressure level substantially higher than said first source; and

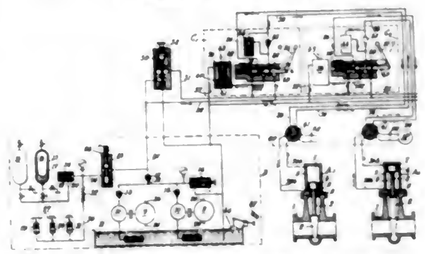
valve means operable in a first position to maintain said passage means connected to said first reference pressure source so that said valve piston member will move to control the open area of said flow constriction in response to the regulated pressure acting on said valve piston head element and to said first reference pressure acting on said valve piston skirt element, and operable in a second position to transfer said connection to said second reference pressure source to cause said valve piston member to move to close said on-off valve means.

3,156,254
LIQUID SEAL GAS CUT-OFF VALVES
Hubert G. Stallkamp, Akron, and Edwin Durham, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 10, 1961, Ser. No. 109,073
3 Claims. (Cl. 137—253)



1. Water sealing valve apparatus for the selective flow of hot gases from a common source to points of use comprising walls forming a pair of spaced upwardly elongated tanks each having a gas discharge duct with a lower open end spaced above the bottom of the tank, a gas inlet opening into the upper portion of each tank, means for directing flow of gases to both of said inlet openings from a common duct, means including valved pipes for separately charging water directly to each of said tanks to submerge the lower open end of each of the respective gas discharge ducts and to thereby stop flow of gases therethrough, means for discharging water from each of said tanks for flow of gas therethrough, and means for maintaining a continuous flow of water through one of said valved pipes for overflow of water from said tank only when water is in said tank for gas flow sealing purposes.

3,156,255
REMOTE CONTROL INSTALLATIONS FOR A PLURALITY OF GATE-VALVES WITH COMMON SOURCE OF OPERATING FLUID
René Gasquet, Neuilly-sur-Seine, and Gabriel Trichot, Saint-Leu-la-Foret, France, assignors to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A., Paris, France, a French body corporate
Filed Nov. 2, 1961, Ser. No. 149,718
Claims priority, application France, Nov. 7, 1960, 843,234
3 Claims. (Cl. 137—344)



1. A remote control installation for at least two gate-valves which comprises, in combination, a common source of liquid under pressure, a double-acting jack located in the vicinity of every gate-valve and operatively connected therewith to actuate it, respectively, each of said jacks comprising two chambers, the filling of each of said chambers with liquid under pressure operating said jack in one direction, a distributor associated with each of said jacks respectively for operating it, said distributors being grouped together, each of said distributors comprising a first inlet and a first outlet adapted to be placed in communication with each other for one position of said distributor, said first outlet being in communication with one of the chambers of the corresponding jack and a second inlet and a second outlet, to be placed in communication with each other for another position of said distributor, said second outlet being in communication with the other of the chambers of said last mentioned jack, introduction of fluid into said other of the said chambers producing closing of the valve, pipe means arranged to connect said common source of liquid under pressure with the first mentioned inlet of each of said distributors, a pressure reducing device having an inlet and an outlet, pipe means for placing said last mentioned inlet in communication with said source of liquid under pressure, and pipe means for placing said last mentioned outlet in communication with the second mentioned inlet of such of said distributors.

3,156,256
VALVE LOCKING MEANS
Donald F. Weaver, Rte. 1, West Fork, Ark.
Filed July 16, 1962, Ser. No. 210,047
2 Claims. (Cl. 137—385)

1. In a valve locking means, comprising, in combination,

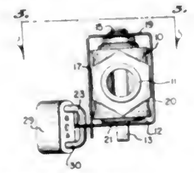
a valve having a housing and a rotatable valve stem with a portion extending beyond the valve housing elongated and rectangular in cross section,

a jacket detachably wrapped around said valve housing, said jacket having two elongated rectangular slot openings each capable of selectively embracing that portion of the valve stem that is elongated and rectangular in cross section; said slot openings extending transversely to each other,

a tab on one end of said jacket,

a slit in the other end area of said jacket for receiving said tab,

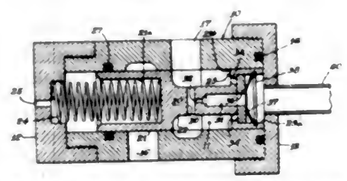
said tab having a hole;



and a fastening means detachably extending through the hole in said tab;

said jacket being in rectangular form around said valve housing with said two rectangular slot openings being in opposite sides of said jacket, respectively.

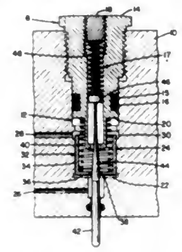
3,156,257
FLOW CONTROL VALVE
Don S. Strader, Mount Prospect, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Nov. 20, 1961, Ser. No. 153,383
8 Claims. (Cl. 137—494)



8. A fluid flow control device comprising, a valve body having a valve bore formed therein, a pilot conduit connected into one end of said valve bore, a valve spool slidably carried in said valve bore and having one end biased against said one end of said valve bore, a pressure port and a drain port connected into said valve bore, said valve spool having an annular groove and an annular land position so said annular groove is in free fluid communication with said pressure port in all operated positions of said valve spool and so that said land blocks said drain port when said valve spool engages said one end of said valve bore and said drain port and said pressure port are interconnected by said annular groove when said valve spool is moved away from said one end of said valve bore, a passageway in said valve spool extending between said annular groove and said one end of said valve bore, an orifice formed in said passageway intermediate the ends thereof, and check valve means carried in said one end of said valve spool and operable responsive to hydraulic fluid pressure in said annular groove to permit substantial fluid flow from said annular groove to said pilot conduit.

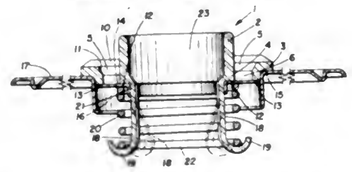
3,156,258
FLUID FLOW LIMITING DEVICE
Dale R. Moody, Englewood, Colo., assignor to Martin Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Apr. 19, 1962, Ser. No. 188,684
7 Claims. (Cl. 137—504)

1. A fluid flow regulator comprising in combination: a housing; a valve chamber in said housing having an inlet and outlet and a port communicating with the outlet; a reciprocable piston-type valve member in said valve chamber exposed to fluid pressure and operative to throttle fluid flow through said port, said valve member having a metering orifice through which fluid passes from said inlet to said port; resilient means associated with said chamber biasing said valve member in the open position and against movement toward the closing position; an



adjustable pin having a varying cross section extending through said orifice into said valve chamber; and resilient means for biasing said pin in a direction away from said port toward said inlet.

3,156,259
RELIEF VALVE
Otakar R. Havelka and Joseph Kampf, Preston, Ontario, Canada, assignors to Kralinator Filters Limited, Preston, Ontario, Canada
Filed Mar. 19, 1962, Ser. No. 180,721
3 Claims. (Cl. 137—516.23)

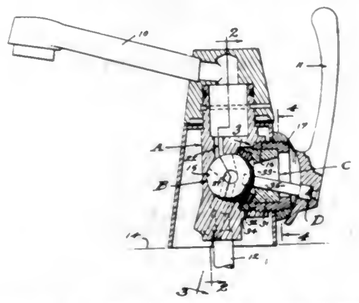


1. A relief valve comprising a plastic valve body having a plurality of ports, a valve plate, said valve body having a valve seat against which said plate is adapted to close and having said ports opening through said seat and means for urging said valve plate to close said ports comprising a pair of resilient arms integral with said valve body said arms having hooked ends and a coil compression spring bearing against said valve plate and supported by said hooked ends.

3,156,260
BALL TYPE MIXING AND VOLUME CONTROL VALVE
Homer M. Harvey, Los Angeles, and Dale H. Hart, Long Beach, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed July 19, 1961, Ser. No. 128,327
2 Claims. (Cl. 137—625.41)

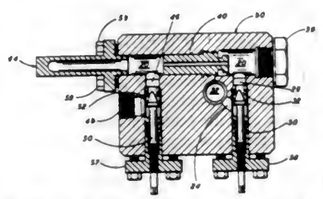
1. A valve adapted to selectively mix flow from a pair of fluid supply lines comprising a valve body having a horizontally faced, semi-spherical seat and having a pair of inlet passages and an outlet passage therein, one end of each of said passages opening into the seat to form spaced inlet and outlet ports therein; a complementary ball element having one side engaged by said seat and formed with a generally Y-shaped internal passage which terminates in three space ports on the periphery of said ball element, each of said ports in the periphery of said ball element being disposed for fluid communicating registration with a respective one of said inlet and outlet ports in said seat whereby when said ball element is rotated about a first axis the two inlet ports therein can selectively be brought into fluid communicating registration with their respective inlet ports in said seat so as to control the ratio of the two inlet fluids appearing in

the outlet port and when said ball element is rotated about a second axis perpendicular to said first axis said two inlet ports therein are brought into or out of fluid communicating registration with their respective inlet ports in said seat so as to control the total quantity of fluid delivered from said inlet passages in said seat to said outlet passage in said seat; said ball element and said seat being arranged so that the passages and the ports in said seat and the passage and ports in said ball element all lie on one side of a vertical plane through the center of said ball element; a removable retainer secured to said body on the other side of said vertical plane and having a vertically extending narrow guide slot therein,



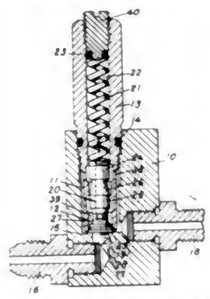
said retainer including resilient seal means engaging said ball element and said body and further including means threadedly received in said body and urging said seal means into sealing engagement with both said body and said ball element; a stem extending generally horizontally with its axis coinciding with said first axis, said stem being of substantially the same width as said narrow guide slot and secured to said other side of said ball element passing through said guide slot whereby movement of said stem along said slot causes the ball element to rotate about said second axis and whereby revolving said stem in said guide slot causes rotation of said ball element about said first axis and means for limiting the rotation of said ball element.

3,156,261
FLOW TARGET FOR WELL CONTROL APPARATUS
Garland Cason, Barataria, La., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,556
6 Claims. (Cl. 137—800)



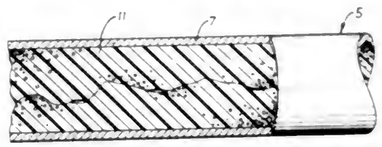
2. For use in a wellhead that includes a fluid production choke to limit the flow rate through said wellhead, a flow target comprising a flange for mounting said target in the outlet path of fluid flowing through said choke, and means forming a blind borehole alignable with the axis of said choke, said borehole having a depth at least three times its diameter whereby a fluid cushion is formed by fluid in said blind borehole to absorb the energy of fluid passing through said choke.

3,156,262
FLOW CONTROL VALVES
Kurt Anders Gustav Attebo, Nykoping, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Feb. 5, 1963, Ser. No. 256,290
12 Claims. (Cl. 138—43)



1. A flow control valve comprising a housing having an elongated fluid passage therein, an inlet opening and an outlet opening in said passage, a valve body axially movably arranged in said passage, cylindrical throat means displaced from said outlet opening in said passage, said valve body having a circumferential clearance in said passage to allow fluid flow between said openings along the exterior of said valve body, circumferential land means on said valve body displaceable into said throat means, said land means having a tight enough fit in said throat means to cause resistance to fluid flow along the exterior of said land means in dependance on the depth of penetration of said land means into said throat means, resilient means in said housing bearing against said valve body to resist penetration of said land means into said throat means, and means on said valve body for producing under admittance of fluid flow from said inlet opening to said outlet opening a pressure drop effective against said valve body and tending to displace said land means into said throat means against the resistance of said resilient means.

3,156,263
METHOD FOR PIPE CLOSURE
Barnet R. Adelman, Atherton, Calif., assignor to United Aircraft Corporation, a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,267
4 Claims. (Cl. 138—89)

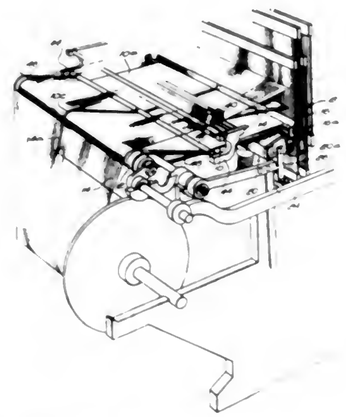


4. A self closing pipe comprising a pipe having an internal coating therein, said coating comprising an irreversibly heat foamable material which will swell upon the application of heat to close the pipe.

3,156,264
APPARATUS AND METHODS FOR CLEANING TEXTILE MACHINES
Philip F. Maguire, Jr., Providence, and Arthur Magson, Cumberland, R.I., assignors to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed May 22, 1961, Ser. No. 111,519
10 Claims. (Cl. 139—1)

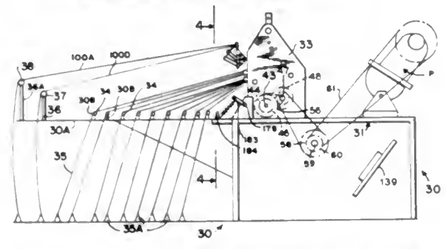
1. In combination with a textile machine having:
(I) a base adapted to rest on a floor,

(II) first components:
(A) which define one end of an upper region of said machine,
(B) on which textile strands are temporarily stored,
(C) from which strands extend:
(1) through said upper region,
(2) parallel to each other,
(III) second components:
(A) which define the opposite end of said upper region,
(B) which receive said extending strands,
(C) which operate upon and said strands and produce lint therefrom,
(IV) third components:
(A) which define the sides of said upper region,
(B) which are spaced apart,
(C) which connect said first and second components,
(V) fourth components:
(A) which are located in a lower region between said base and said upper region,
(B) which produce during machine operation air currents moving upwardly toward said upper region,



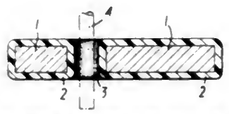
(VI) a sheet which:
(A) separates said upper and lower regions,
(B) has an upwardly presented surface as large as the major portion of the area of said upper region,
(C) is substantially impervious to said moving air currents,
whereby said upwardly moving air currents are prevented by said sheet from passing into said upper region and carrying said lint upwardly therein, and whereby said lint which falls downwardly through said upper region is arrested by said sheet surface,
(VII) means:
(A) which:
(1) are associated with said sheet,
(2) are independent of air movement,
(B) for moving to a predetermined location the portion of said lint which:
(1) has been shielded by said sheet from said air currents in said lower regions,
(2) has fallen down through said upper region to rest on said sheet surface,
(VIII) means at said predetermined location for gathering up lint from said sheet surface.

3,156,265
NOVELTY FABRIC LOOM
Cesar Bustamante, 150 W. 21st St., New York, N.Y.
Filed May 23, 1961, Ser. No. 111,948
9 Claims. (Cl. 139—11)



1. A machine for automatically interweaving ornamental links into a fabric comprising a frame having a weaving station in which warp and weft threads are woven into fabric, a stamping station for blanking said links positioned adjacent said weaving stations, means for moving said links from said stamping station to said weaving station, and means for interweaving said links into said fabric as the fabric is being woven.

3,156,266
GUIDE MEANS FOR READING NEEDLES IN DOBBIES
Rudolf Schwarz, Horgen, Switzerland, assignor to Gebr. Stäubli & Co., Zurich, Switzerland, a Swiss firm
Filed Dec. 31, 1962, Ser. No. 248,786
Claims priority, application Switzerland, Dec. 29, 1961, 1/62
1 Claim. (Cl. 139—68)

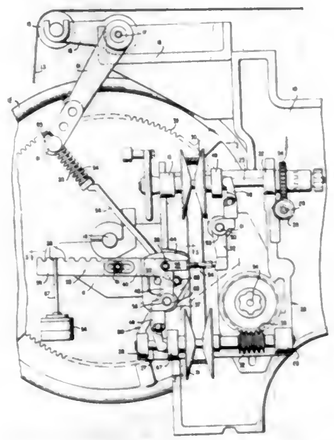


For use in a shed-forming machine having a perforated pattern reading mechanism comprising reciprocably operated reading needles for reading perforations, an improved guide rail comprising, a metal core having a plurality of spaced apertures to receive the reading needles for reciprocable travel therein, a low-friction cover of synthetic material on said core extending along the length thereof including covering the inner surfaces of said apertures to provide low-friction cover comprising a material having a coefficient of friction sufficiently low to preclude the necessity of lubricating said needles, said core comprising a ferrous metal and having opposite ends extending outwardly of said cover material, and said cover material comprising a plastic.

3,156,267
LET-OFFS FOR LOOMS AND THE LIKE
Felix Ernest Hooper, Greenville, S.C., assignor, by mesne assignments, to Let-Offs, Inc., Greenville, S.C., a corporation of South Carolina
Filed Mar. 6, 1963, Ser. No. 263,199
7 Claims. (Cl. 139—110)

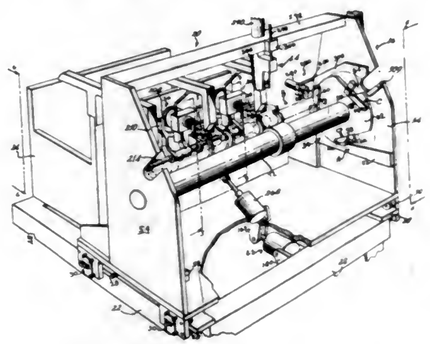
3. In a loom let-off, a mounting plate attachable to a loom side, a pivot pin secured to the mounting plate near one edge thereof and extending substantially at right angles to the plane of the mounting plate and having projecting parts on opposite sides of the mounting plate, a generally L-shaped weight lever unit including a bifurcated end portion which straddles said one edge of the mounting plate, the lower ends of said bifurcated portion having openings receiving said projecting parts of the

pivot pin, the said weight lever having an elongated generally level weight holding arm which is substantially centered between said projecting parts and spaced above said pivot pin at the top of said bifurcated portion, variable speed transmission means on the mounting plate



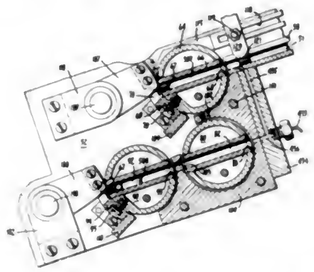
driven by the loom and connected with and driving the loom beam, control linkage means for said transmission means connected with one side of said bifurcated portion, and means operated by the whip roll of the loom and connected with the other side of said bifurcated portion eccentrically of the pivot pin.

3,156,268
COIL WINDING MACHINE
Harry W. Moore, 5051 Kittridge Road, Dayton 24, Ohio
Filed Aug. 8, 1960, Ser. No. 48,081
26 Claims. (Cl. 140—71)



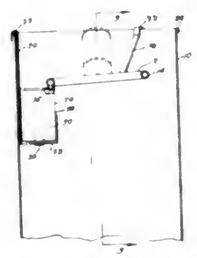
1. In a mechanism for depositing coils on a dummy field member having a plurality of pairs of coil-receiving slots, the combination comprising: a winding form; means for winding coils upon said form; means supporting the dummy member adjacent the form with one pair of slots being in position to receive a coil wound on said form; means for transferring the coil wound upon said form to said one pair of coil-receiving slots; and means for indexing said dummy member to present a different pair of coil-receiving slots in position to receive coils from said form.

3,156,269
AUTOMATIC SPRING-LOOPING MACHINE
Edwin W. Lehtonen, Castro Valley, Calif., assignor to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Apr. 11, 1960, Ser. No. 21,159
14 Claims. (Cl. 140—103)



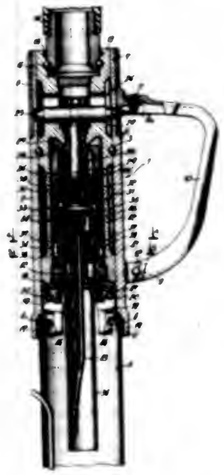
1. A spring-looping machine comprising a conduit for feeding axially aligned coil springs, means for delivering unlooped coil springs into an inlet end of said conduit, an air jet discharging tangentially into said conduit in one direction for rotating said springs while passing through said conduit, means at the other end of said conduit for holding a spring rotating in said conduit in the contrary direction in a particular angular position and against rotation and simultaneously allow a predetermined number of turns of said spring to extend beyond said conduit, a loop-forming tool operative transversely of the axis of said spring to form a loop therein, and means for operating said loop-forming tool.

3,156,270
SALVAGE DEVICE FOR CANNED FLUID RESIDUES
Arthur C. Erickson, 120 W. Almeria Road, Phoenix, Ariz.
Filed May 24, 1963, Ser. No. 283,063
3 Claims. (Cl. 141—106)



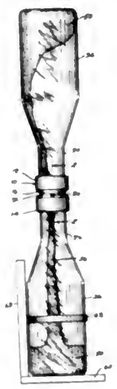
1. A salvage device comprising an open top container having a bottom adapted to rest upon a ground surface, a gang holder embodying an endless tube conformably shaped to fit within and extend about the interior of said container, said tube being insertable through the open top of said container and disposed within said container so that it is below and spaced from the open top of said container and extends in an upwardly-sloping direction, hanger means operatively connected to said tube at a plurality of spaced points thereabout and dependingly supported from the open top of said container for supporting said tube in the aforesaid position within said container, there being a plurality of drainage openings in said tube and opening to the upper side of said tube, a spout opening to the lower side of said tube, and a drainage receptacle disposed within said container and supported in said container in fluid-receiving relation with respect to said spout, said tube being operable to support an incompletely drained can in a position in which the dispensing opening of said can overlies and is in communication with a drainage opening of said tube and the bottom of the can leans against the container inwardly of and adjacent the open top of the container.

3,156,271
FUELING DEVICE
Rudolf Schnurmann, Rheydt, Rhineland, Germany, assignor to Scheidt & Bachmann A.G., Rheydt, Rhineland, Germany, a corporation of Germany
Filed Nov. 2, 1961, Ser. No. 149,657
Claims priority, application Germany, May 27, 1961, Sch 29,770
6 Claims. (Cl. 141—210)



1. A fueling device for liquid fuels comprising a filling hose, a housing disposed at and secured to the free end of said filling hose, valve- and control-means disposed in said housing, a bushing surrounding said housing and adapted to be coupled fluid-tight with the filling pipe of a vehicle tank, arresting pegs disposed at the free end face of said housing and adapted to cooperate with abutment members of a bayonet closing member provided on the free end of said filling pipe, in order to secure thereto said housing, said valve- and control-means comprising an auxiliary valve and a main valve disposed in said housing in series in the direction of the flow of said fuel, said housing defining a chamber receiving said main valve, said auxiliary valve having a valve rod extending axially in said housing in a direction opposite to that of the flow of said fuel, said bushing having on its inner face diametrically oppositely disposed, inclined guide grooves, a cross-bolt secured to the free end of said valve rod, the ends of said cross-bolt extending into said inclined guide grooves of said bushing, so that upon relative rotation between said housing and said bushing said cross-bolt is lifted axially in said housing and said auxiliary valve is opened, and means, responsive to the fluid pressure in said chamber for opening said main valve, in order to start the flow of said fuel from said filling hose into said filling pipe.

3,156,272
BOTTLE COUPLING DEVICE
William G. Indrunas, New York, N.Y.
(68—19A Cloverdale Blvd., Bayside, Long Island, N.Y.)
Filed Jan. 22, 1962, Ser. No. 167,563
1 Claim. (Cl. 141—286)

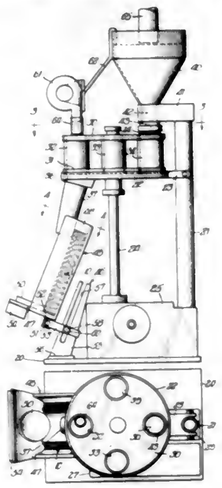


A bottle coupling device for draining ketchup bottles and the like from one bottle into another, comprising: a first annular coupling element having threaded means for engaging the neck of one of said bottles, a first converging stop element at an inner end of said first coupling element to limit the ingress of said neck of said bottle relative to said first coupling element, said stop element including a first upwardly flaring inner wall; a second coupling element similarly detachably engageable with the neck of the other of said bottles; a second converging stop element at an inner end of said second coupling element, said second stop element including a downwardly flaring inner wall, said last-mentioned wall having a perforation extending through the plane thereof forming air venting means; said upwardly and downwardly flaring walls meeting and forming a juncture which is inwardly spaced from the inner end of said perforation, whereby fluid material is prevented from falling into said perforation as said material flows from an uppermost bottle to a lowermost bottle.

3,156,273
APPARATUS FOR AND METHOD OF OPENING AND FILLING BAGS
Thomas E. Piazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 3, 1959, Ser. No. 857,186
8 Claims. (Cl. 141—317)

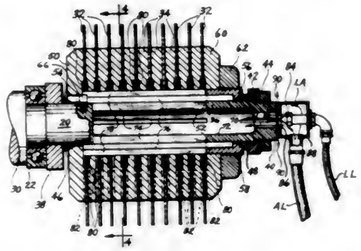
3. In an apparatus for opening and filling bags which are formed of relatively thin film material so that they are difficult to open and support in open position for filling, which apparatus comprises a product measuring device having a discharge opening and a filling spout depending from said discharge opening, a bag magazine for supporting in upright position a stack of bags and having a generally upright portion against which the back end of the stack rests, said upright magazine portion extending above the lowermost edge of said filling spout, said magazine having a bottom on which the bottom end of the stack of bags rests with the upper end portions of the bags disposed between the filling spout and said upright magazine portion, a bracket member, a pivotal connection between said bracket member and said bag magazine which is lo-

cated so that said magazine will pivot by gravity to hold the top edge of the back wall of the endmost bag in the front of the stack against the filling spout and enable the



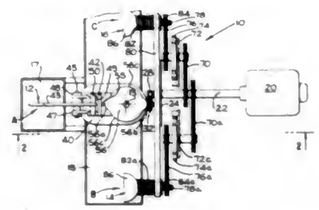
front wall of the bag to be pulled across the mouth of the filling spout thereby to open the bag for receiving a product.

3,156,274
MIST LUBRICATED RIPSAWING METHOD AND MECHANISMS
Alexander J. Gollick, 7518 23rd W., Seattle, Wash.
Filed July 27, 1961, Ser. No. 127,220
19 Claims. (Cl. 144—312)



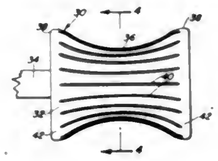
1. The method of gang ripsawing wood by simultaneously kerfing same in thin, smooth kerfs at high speed, comprising: power feeding the wood past a gang of thin saw blades mounted on a hollow, rotary mandrel and rotating at high speed, while cooling said blades by atomizing a liquid lubricant in said hollow mandrel, at super-atmospheric pressure, and in a locale in direct heat conductive relation to the rotating saw blade so that the cooling effect incident to the lubricant atomization absorbs thermal energy from the saw blade by conduction, and lubricating, cooling and cleaning the kerf-forming surfaces of said blades by substantially uniformly directing the atomized lubricant thereon, said method further comprising delivering the lubricant to the hollow mandrel through stationary conduit means and a nonrotating-to-rotating joint between said stationary conduit means and said hollow mandrel, and maintaining the pressurization within the nonrotating-to-rotating joint sufficient to prevent aspiration of ambient air in through the joint.

3,156,275
DRUPE PITTING MACHINE
James M. Halt, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 13, 1961, Ser. No. 159,089
7 Claims. (Cl. 146—28)



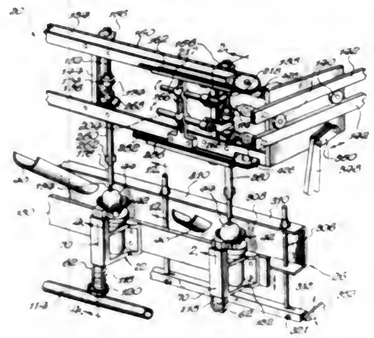
1. A fruit pitting machine comprising opposed blades for bisecting the fruit flesh and gripping its pit, a pair of twisting heads rotatable about axes lying in a common plane normal to the plane of fruit bisection, means mounting said blades for oscillation about an axis normal to said common plane and equidistant from the axes of said twisting heads, for alternately moving the fruit toward and into engagement with each head, means for holding each head in a predetermined position and preventing rectilinear translation of the head at all times prior to movement of the fruit by said blades into engagement with each head, and means for rotating said twisting heads.

3,156,276
PARING TOOL FOR FLESHY VEGETABLES
Sebastiano J. Petrella, 11–A Golden Ave., and Salvatore J. Petrella, 18 Wright Ave., both of Medford, Mass.
Filed Feb. 21, 1962, Ser. No. 174,824
3 Claims. (Cl. 146—43)



3. A self-cleaning vegetable peeling tool comprising an elongated concave body circular in transverse section from end to end, a shaft integral with and projecting axially from at least one end of said body, said body having smooth flat, planar end surfaces each lying in a plane normal to said axis of rotation, the circumferential surface of said body having longitudinally extending channels therein of uniform width from end to end, said channels having planar side walls and an intervening bottom wall, the circumferential edges of said side walls comprising peeling edges, the diameter of the body and the depth and width of said channels and the inclination of said side walls being such that for a given speed of rotation centrifugal force will clean vegetable peelings from said channels, said channels being divergent from their intermediate portions to their ends for varying the peeling effects of the different longitudinal points, said channels terminating within said circumferential surface inwardly of said end surfaces whereby to provide an uninterruptedly smooth unbroken surface at each end portion of said circumferential surface.

3,156,277
FRUIT PREPARATION MACHINE
Thomas B. Keesling, Los Gatos, Calif., assignor, by mesne assignments, to FMC Corporation, a corporation of Delaware
Original application May 13, 1957, Ser. No. 658,846, now Patent No. 3,016,076, dated Jan. 9, 1962. Divided and this application Oct. 10, 1961, Ser. No. 148,788
14 Claims. (Cl. 146—52)

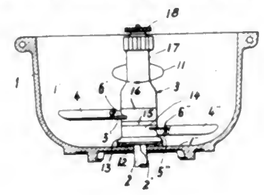


5. Apparatus for coring fruit comprising means for holding the fruit against rotation, a coring member mounted for rotation about the core axis of the fruit, an impaling fin mounted adjacent said coring member for rotation relatively thereto about the axis of rotation of said coring member, means for separately rotating said coring member and said impaling fin at different times, and means for effecting relative movement between said coring member and said impaling fin as a unit and said fruit holding means along the core axis of the fruit to advance said coring member and said impaling fin into the fruit during rotation of said coring member.

7. An apple coring apparatus comprising an apple holder, a carriage mounted for movement to a first position adjacent said holder and to a second position removed from said holder, a first corer mounted upon said carriage for movement therewith, means to move said apple holder upwardly to force said first corer a limited distance into an apple in said apple holder to partially core the apple and impale the apple on said first corer, a second corer mounted for upward movement and positioned beneath the apple when impaled on said first corer and located at said second position by said carriage, means to move said carriage to said second position, and means to move said second corer a limited distance upwardly into the apple on said first corer and into adjacent confronting relationship therewith to complete the coring of the apple.

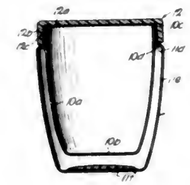
3,156,278
BLENDER
Fritz Otto, Hameln (Weser), Germany, assignor, by mesne assignments, to Belder Trust, Vaduz, Liechtenstein
Filed Dec. 27, 1962, Ser. No. 247,596
Claims priority, application Germany, Dec. 28, 1961, St 18,714
13 Claims. (Cl. 146—67)

1. A blender comprising a receptacle with side and bottom walls, a rotatable shaft in said receptacle, hub means on said shaft above the bottom wall of said receptacle, pivot means on said hub means offset from the axis of said shaft, and blade means freely fulcrumed on said pivot means for rotary entrainment by said shaft in an orbit of sweep approaching at least one of said walls in a fully extended position of said blade means in which said blade means extend in substantially radial direction away from the shaft axis, the latter being swingable about said pivot means in a sense opposite the shaft



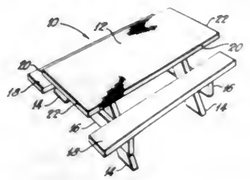
rotation for sweeping an orbit of lesser radius in response to resistance from a mass of material to be processed in said receptacle.

3,156,279
DOUBLE-WALL JAR
Michael J. Grebowiec, Kansas City, Kans., and Paul A. Marchant, Kansas City, Mo., assignors, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 29, 1960, Ser. No. 52,716
1 Claim. (Cl. 150—.5)



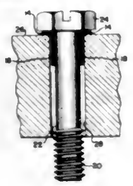
A double wall plastic jar assembly having nested outer and inner plastic shells, said outer shell being blow molded and said inner shell being injection molded; said outer shell having bottom and side walls with a top edge forming an open top, the upper end of said outer shell being necked inwardly to provide a vertical surface having a thread finish, an intermediate portion of said outer shell having a greater diameter than said necked in upper end, a substantially horizontal flange forming part of the side wall of the outer shell, said flange joining said upper end and said intermediate portion to form a continuous side wall with an internal shoulder stepped outwardly immediately below said upper end; said inner shell having side and bottom walls and an open top, the inner shell being removably inserted into the open top of the outer shell to a nesting position within the outer shell, the external surface of the side and bottom walls of the inner shell being completely enclosed by the wall of the outer shell when the shells are in nested position and said upper end of the outer shell engaging the outer surface of the inner shell side wall with a press fit; an outwardly extending continuous rim integral with the periphery of said open top of the inner shell, said rim extending outward to completely overlie said top edge of the outer shell when the shells are in nested position; lug means integral with and extending outwardly from the outside surface of the side wall of said inner shell, said lug means being located a distance below said rim substantially equal to the distance from said top edge of the outer shell to the bottom of said outer shell flange; said lug means being engaged beneath said flange when the shells are in nested position to maintain the inner shell within the outer shell; and a closure comprising a cover portion overlying the open top and rim of the inner shell, with a depending integral peripheral flange with an internal thread finish engaged with the thread finish on the upper end of the outer shell.

3,156,280
TABLE COVER
Robert A. Affholter, 2838 Palomas Drive NE., Albuquerque, N. Mex.
Filed Sept. 17, 1962, Ser. No. 223,912
5 Claims. (Cl. 150—52)



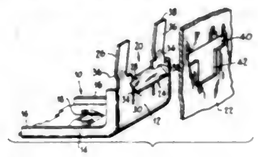
1. In a pattern for a form-fitting table cover,
a rectangular body of sheet material of a size to generally overlie a table top to be covered,
said body having relatively longer sides and relatively shorter, lateral ends, said sides and ends being adjoined by rectangular pieces of sheet material of a size to generally overlie the edges and ends of the table top,
said end rectangles being adjoined by trapezoidal underlays for the lateral ends of the table top,
said side rectangles being adjoined by trapezoidal underlays for the longitudinal edges of the table, with adjacent rectangular extensions,
and said side trapezoids and rectangles in combination being of a width in the range from about 3.5 to about 5 times the width of said end trapezoids.

3,156,281
FASTENER ASSEMBLY WITH RESILIENT LOCKING RETAINER
Roy C. Deml, Greensburg, Pa., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Nov. 4, 1960, Ser. No. 67,209
1 Claim. (Cl. 151—36)



The combination of a member having a flange with a mounting hole therein, a bolt and washer assembly adapted to be mounted in said hole, said bolt having a head portion with a clamping surface thereon and a shank portion having a threaded portion and an unthreaded portion, said threaded portion being spaced from said head portion and being of larger diameter than said unthreaded portion, said washer being of resilient material and having a split cylindrical portion slidably mounted on said unthreaded portion, said washer having a washer member integrally interconnected to said cylindrical portion, said washer having an inner diameter less than the diameter of said threaded portion when said washer is not stressed, said washer being disposed on said shank of said bolt before said threaded portion thereof is formed, and a plurality of tab members projecting outwardly from said cylindrical portion and adapted for engaging the wall of said hole, said tab members being integrally connected to the cylindrical portion intermediate its ends with the free ends of the tab members projecting outwardly and angularly therefrom toward said washer member of said washer, said cylindrical portion being radially compressible for clearance of said wall by said tab members during assembly whereby subsequent engagement of said tab members with the wall of said hole retains said assembly in said hole, said washer member of said washer having a plurality of radially projecting teeth disposed between said bolt head and the flange of said member whereby when said bolt is tightened against said flange, said teeth prevent reverse rotation of said bolt head, said teeth being at one end of said washer and being twisted whereby they have one corner lying above and one corner lying below a plane passed through said end perpendicular to the axis of the washer.

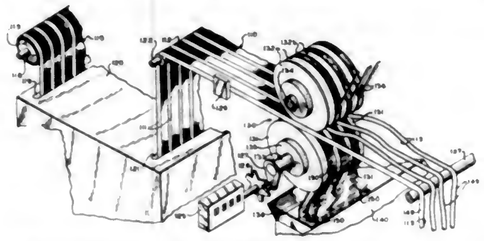
3,156,282
SHEET METAL FASTENER WITH T-SHAPED KEY
William A. Bedford, Jr., Littleton, Colo., assignor, by mesne assignments, to Thompson Bremer & Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 8, 1962, Ser. No. 171,861
6 Claims. (Cl. 151—41.75)



1. A bracket for joining a pair of plates or the like in angularly disposed relationship, comprising a generally rigid angle member having an upright land and a base land extending in angularly intersecting planes from a junction thereof toward free ends of the lands and adapted to be respectively secured to correspondingly disposed panels at a junction thereof, the upright land having a T-shaped key member struck therefrom for anchoring in a mating T-shaped slot in an upright panel of any of a range of thicknesses, said key member including a leg projecting generally upwardly from an integral connection with the upright land adjacent said junction and a transversely disposed head on a free end of the leg, said leg being bent first slightly inwardly from the plane of said upright land and then sharply outwardly and downwardly through an angle substantially more than 90° to dispose the head outwardly beyond said upright land with a transverse edge of the head directed inwardly toward the upright land for engaging the outer side of said upright panel when it is clamped between the head and the upright land, the first inward bend of said leg providing a yieldable lead for inwardly biasing said edge of the head into tight, incision engagement with said upright panel, said upright land also having integrally formed portions projecting upwardly on opposite sides of and beyond said key member for engaging the inner side of said upright panel in opposition to inward biasing forces imposed on the head of said key member.

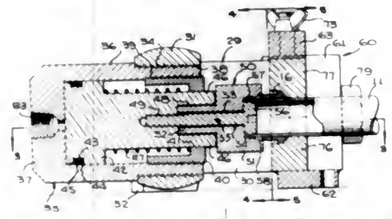
3,156,283
OPERATING UPON SHEETS OF FOIL
Henry F. Ruschmann, Mine Brook Road, Bernardsville, N.J.
Filed Feb. 14, 1961, Ser. No. 100,775
14 Claims. (Cl. 153—2)

3. A method of making narrow slivers of foil, comprising the steps of (1) advancing a sheet of the foil longitudinally while repetitively performing the operation of shearing the sheet across at least one longitudinal path bounded on the sheet by path margins spaced apart to provide for the length of the slivers, in each operation to complete a narrow inter-margin strip by formation of the second edge thereof, the first edge thereof having been formed by the preceding shear, and thereafter (2) cutting the



sheet longitudinally at two transversely separated positions within the path to form discrete slivers from said strips.

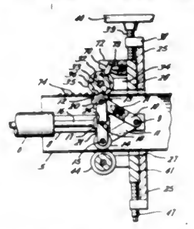
3,156,284
HYDRAULIC FERRULE PRESETTING TOOL
John H. Stanley, Euclid, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 29, 1962, Ser. No. 206,502
7 Claims. (Cl. 153—1)



1. A ferrule securing tool for securing ferrules on tubes, said tool comprising a housing, a die-block carried by said housing for holding a tube, said die-block having a ferrule positioning seat, said housing including a cylinder having an axis disposed coextensive with the tube axis of said die-block, a piston mounted within said cylinder for movement towards and away from said die-block, a die member carried by said piston for movement therewith, said die member having an end facing said die-block with said end having a recess therein for receiving an end portion of a tube, said recess having an outer wall portion defining a camming surface for engaging and inwardly indenting an end of a ferrule remote from said die-block to force the ferrule end into the surface of an associated tube to form an interlock therewith, and a hydraulic pump connected to said cylinder for driving said die member towards said die block.

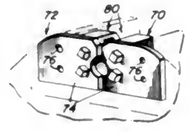
3,156,285
APPARATUS FOR PROVIDING OPENINGS IN A TUBULAR WORK PIECE
Leslie A. Layne, Houston, Tex., assignor, by mesne assignments, to Layne & Bowler Inc., Memphis, Tenn., a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 18,993
13 Claims. (Cl. 153—2)

1. In an apparatus for providing a tubular work piece with an axially extending series of lateral openings, the combination of means for supporting a tubular work piece for axial movement and for restraining the same against movement transverse to its axis, a toothed punch roller of such size as to enter the work piece without engaging the inside walls; means for supporting said punch roller out of engagement with the inside walls within the work piece for rotation about an axis transverse to the axis of the work piece and for bodily movement in a direction to bring the teeth of said roller into engagement with the wall of the work piece, first actuating means connected to said roller for effecting such bodily movement to cause at least one tooth of said



roller to penetrate the wall of the work piece, and second actuating means for moving the work piece axially while said roller is restrained by said first actuating means against further bodily movement.

3,156,286
PARAFFIN SCRAPER AND TOOL FOR APPLYING
Carl H. Besse, P.O. Box 1583, Hobbs, N. Mex.
Filed Dec. 13, 1961, Ser. No. 159,032
4 Claims. (Cl. 153—32)

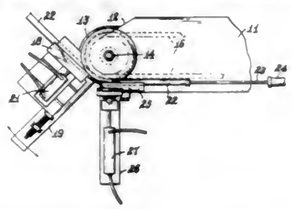


1. A pair of vise jaw member adapters for clamping a strap like tab about a rod with the tab radially compressing the rod and the opposite ends thereof disposed in end abutting relation and exposed for welding together, said vise jaw adapters each comprising a mounting plate adapted to be secured to one side face of a vise jaw member, an upright abutment block mounted on each of said mounting plates and projecting laterally to one side of the corresponding plate and including an upstanding generally planar face adapted to be disposed in surface to surface abutting relation with the working face of the jaw member to which it is secured, the upstanding side of one of said abutment blocks remote from its planar face including an outwardly opening recess and the corresponding side of the other abutment member including an elongated outwardly projecting member slidably receivable in said recess, each of said sides remote from the corresponding planar face also including a semi-cylindrical recess adapted to clampingly engage one-half of said tab about a corresponding portion of said rod.

3,156,287
CONTROL MEANS FOR METAL FORMING APPARATUS
Harrison Munro, Aurora, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois
Filed Dec. 12, 1961, Ser. No. 158,909
12 Claims. (Cl. 153—40)

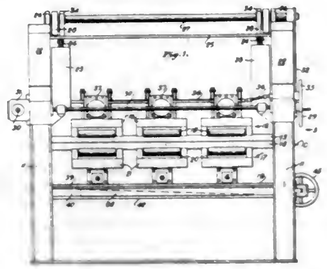
1. Control means for a tube bending machine of a type including a bending die and a clamp die rotatable with said bending die and means to rotate said dies and controlled by said control means, said control means comprising an electric circuit, a first variable resistor in said circuit, a plurality of second variable resistors arranged to be connected in a network with said first resistor, a relay in said circuit actuable to connect a selected second resistor in said circuit, a third and fourth variable resistor effective to vary the resistance of the selected second re-

sistor, said resistors functioning when the electrical position of the first variable resistor matches the resistance of



the selected second resistor, and means to actuate said relay for connecting a different second variable resistor in said circuit.

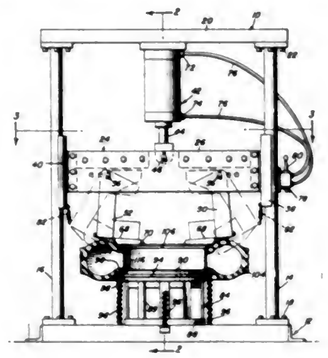
3,156,288
ROLLER LEVELLER STRAIGHTENING MACHINES FOR METAL PLATES, SHEET OR STRIP
Kenneth Thomas Lawson, Marton, Middlesbrough, England, assignor to Head Wrightson & Company Limited, Durham, England, a company of Great Britain
Filed Oct. 16, 1961, Ser. No. 145,135
Claims priority, application Great Britain, Oct. 18, 1960, 35,747/60
6 Claims. (Cl. 153—107)



1. In a roller leveller straightening machine, means for adjusting the distance between the two sets of work rolls, means for adjusting the longitudinal position of said work rolls, means for adjusting the lateral position of said work rolls, and means for flexing said work rolls, at least one of said means for effecting work roll position adjustment comprising two plate members in face contact one with the other and means for effecting relative angular movement between said plate members, the interface of said plate members being at an angle to the planes containing the other and outer faces of said plate members, said outer faces in one position being parallel to one another, whereby in use relative angular movement between said plate members will cause a change in the angle between said outer faces.

3,156,289
TIRE CHANGING MACHINE
Leland L. Dragoo, 1013 N. 9th, Beatrice, Nebr., and Paul W. Goebel, R.F.D., Fairbury, Nebr.
Filed May 11, 1962, Ser. No. 193,930
5 Claims. (Cl. 157—1.2)

1. A tire changing machine adapted to assist in the removal of a tire casing from and its mounting on a wheel rim of the type including a split lock ring, said machine comprising a base defining an upstanding center axis and including support means adapted to support a wheel rim in an elevated horizontally disposed position, pressure head means, means mounting said pressure head means from said base above said support means for guided movement toward and away from said support means, motor means operatively connected between said base and said pressure head means for lowering said head means toward said base, depending pressure leg members carried by said pressure head means and including foot portions adapted to engage the upper side wall of a tire casing disposed on a wheel rim supported from said support means at points disposed circumferentially about said side wall for urging the latter downwardly upon the lowering of said pressure head means relative to said support means, said support means comprising an upright standard including means supported by the upper end portion

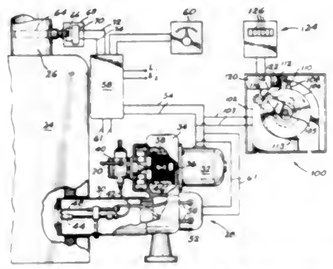


thereof defining a rest on which a wheel rim may be supported in a horizontal position without said rest projecting outwardly beyond said rim, a horizontally disposed support ring, means mounting said ring from said base in concentric relation with said center axis and for movement between an upper position adjacent said rest and a lower position spaced below said rest, and means normally yieldably urging said ring toward said upper position, said ring being adapted to engage and support the lower side wall portion of a tire casing being forced downwardly by said pressure leg members from engagement with a wheel rim disposed on said rest.

3,156,290
FLUID-HANDLING SYSTEM FOR OIL BURNERS
Kenneth C. Goodall, Jr., 1440 SW. Hood View Lane, Lake Oswego, Oreg., and Kenneth C. Bradford, 5723 NE. Simpson, Portland 18, Oreg.
Filed Aug. 16, 1962, Ser. No. 217,383
2 Claims. (Cl. 158—36.3)

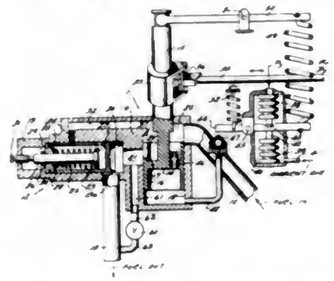
1. An oil burner system comprising an oil reservoir, an oil burner unit including an intermittently operated motor-driven pump for pumping oil and a nozzle restricting the flow of oil pumped by said pump, said pump in said unit producing a substantially constant rate of flow of oil through said nozzle, a supply conduit connecting said oil burner unit and said reservoir, a timing device, said timing device including a constant speed timer motor driving the device and pulse generating means driven by said timer motor producing pulses at a regular frequency, said pulse generating means being adjustable to change the frequency at which pulses are produced, means interconnecting the timer motor of said device and the motor of the motor-driven pump whereby one operates only when the other operates, and counter means for counting and recording pulses operatively

connected to the pulse generating device and receiving the pulses therefrom, adjustment of said pulse generating means enabling a change to be made in the count re-



corded by said counter means over a given time period whereby the counter means may be set to record pulses exactly corresponding in number to volume units of oil pumped.

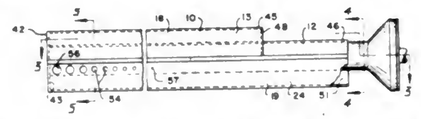
3,156,291
ENGINE FUEL CONTROL
Richard H. Cornell, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,330
6 Claims. (Cl. 158—36.4)



6. A gas turbine engine fuel control system comprising:
(*a*) a fuel pump,
(*b*) a metering valve connected to control the flow rate of fuel from said fuel pump to a combustion system,
(*c*) variable flow area pressure regulating means connected in series flow relation with said metering valve for maintaining the pressure drop across said metering valve substantially constant, and
(*d*) means for saturating the pressure regulating characteristic of said pressure regulating means at a preselected minimum fuel flow rate corresponding to a variable preselected minimum flow area of said metering valve,
(*e*) the flow area of said pressure regulating means in its saturated condition being less than said preselected minimum metering valve flow area.

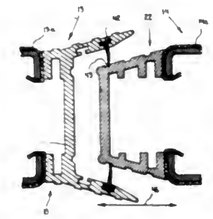
3,156,292
GAS BURNER WITH SECONDARY AIR SUPPLY
Richard W. Ross, 4528 Parker St., North Burnaby, British Columbia, Canada
Filed Apr. 24, 1961, Ser. No. 104,910
6 Claims. (Cl. 158—114)

1. A gas burner comprising a horizontal pipe having outer and inner ends and restricted gas outlet means extending longitudinally of the top thereof, an elongated closed casing formed over the pipe and having outer and inner ends near the pipe outer and inner ends respectively, said casing having a top spaced from the pipe top and with burner outlet means therein, said casing forming a distribution chamber, an entrance at the outer end of the pipe through which air is admitted into the pipe, and means for directing a combustion gas into the air at the pipe entrance, said pipe being adapted to direct an air-gas mixture through the gas outlet means to the chamber throughout a substantial portion of the length thereof,



whereby said chamber provides an even distribution of air-gas mixture through said burner outlet means for burning along the casing top, and an air duct formed over the bottom of the pipe with an inlet and an outlet respectively near the outer and inner ends of the pipe, said duct being adapted to supply air to the burner outlet means outside the casing and near the inner end thereof.

3,156,293
FOLDING DOOR SEALING ARRANGEMENT
Ralph W. Reynolds, Indianapolis, Ind., assignor to Holcomb & Hoke Mfg. Co., Inc., Indianapolis, Ind., a corporation of Indiana
Filed July 8, 1963, Ser. No. 293,373
1 Claim. (Cl. 160—40)



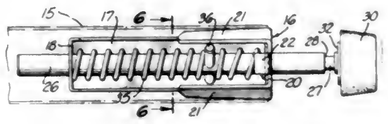
A folding partition seal arrangement comprising: a first vertically extending post member having a vertically extending rigid base portion with a pair of vertically extending side flanges having inner surfaces lying in planes convergent to an intersection in a vertical line, each of said side flanges being joined along one marginal edge thereof to one marginal edge of said base portion, and each of said side flanges having a second marginal edge parallel to said one marginal edge thereof, with a vertically extending slot provided on the inner surface of each of said side flanges and horizontally spaced from said marginal edges thereof, said slots having a T-shaped cross section; a second vertically extending post member including a vertically extending central portion with a pair of vertically extending side portions lying in plane convergent to an intersection in a vertical line, each of said side portions having a vertical marginal edge joining a lateral marginal edge of said central portion, and each of said side portions having a pair of horizontally spaced vertically extending grooves therein, said grooves being horizontally spaced from the marginal edge of the said side portion in which the grooves are provided, folding partition structure attached to each of said post members, said post members being relatively movable horizontally to and away from a closed condition where said flange inner surfaces are in horizontally spaced facing relation to said side portions; and first and second vertically extending seals of homogeneous material, each having a generally T-shaped cross section with the head portion of the T disposed in one of said T-shaped slots, with each of said seals having its shank normally project-

ing perpendicular to the inner surface of the flange and terminating at a free marginal edge, when said members are away from said closed condition, the shanks of said seals being flexed horizontally during relative movement of said post members to said closed condition whereupon the free marginal edges slide along said side portions during closure, and said free edges enter into said grooves in said side portions of said second post member and make sealing contact therewith throughout the vertical extent of said seals to thereby provide isolation between a space on one side of said partition structure and a space on the other side of said partition structure when said members are in closed condition.

3,156,294
SPRING-LOADED HOLD-DOWN DEVICE

Leon C. Miller, Bridgeport, and James A. Englund, Fairfield, Conn., and Francis Vecchiarelli, River Edge, N.J., assignors to National Distillers and Chemical Corporation, a corporation of Virginia

Filed Oct. 2, 1961, Ser. No. 142,384
2 Claims. (Cl. 160—173)

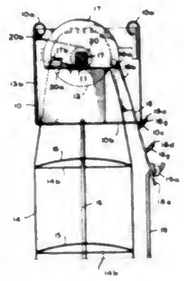


1. A hold-down device for holding down the bottom rail of an inside mount Venetian blind with respect to the jambs of the associated window, said bottom rail being in the form of an elongated hollow box beam, said device comprising an H-shaped frame adapted to be inserted into the interior of said bottom rail at one end thereof, said frame including a pair of spaced apart legs and an end plate attached to one of them, said legs and said end plate having aligned apertures provided therein, a plunger rod passing through said apertures and both slidable and rotatable therein, said plunger rod being slidable between an extended position and a retracted position, a compression coil spring encircling said plunger rod and bearing at opposite ends against said spaced apart legs, a pin extending transversely through said plunger rod and passing between two adjacent coils of said spring, said pin being longer than the minimum inside transverse dimension of said bottom rail, whereby said pin is prevented by said bottom rail from turning in either direction beyond a limited angular distance, said plunger rod being freely rotatable when said bracket is withdrawn from said bottom rail, thereby causing said pin to follow said spring coils so as to adjust the longitudinal position of said plunger rod with respect to said frame, said pin being operable to compress those coils of said spring between it and one of said spaced apart legs when said plunger rod is depressed, said plunger rod having a circumferential groove formed therein adjacent its outer end, one side of said groove defining an annular shoulder which is engageable with said frame at the margin of one of said apertures when said plunger is retracted so as to hold the plunger at said retracted position, said plunger rod being released from said retracted position by applying side pressure on the outer end of said plunger rod in the direction to unseat said annular shoulder from said frame and position said annular shoulder to the exterior of said bottom rail, and resilient bumper means rotatably mounted on the outer end of said plunger rod and bearing against said window jamb when the plunger rod is extended, the angular relationship of said bottom rail being freely adjustable when said bumper means is in holding engagement with said window jamb.

3,156,295
TILTING MECHANISM FOR VENETIAN BLINDS, OR THE LIKE

Francis Vecchiarelli, River Edge, N.J., and James A. Englund, Fairfield, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Jan. 30, 1963, Ser. No. 254,956
6 Claims. (Cl. 160—175)

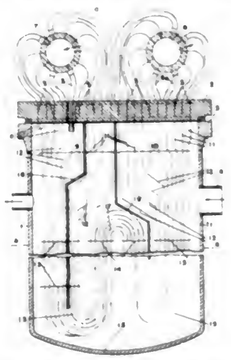


1. In a Venetian blind including a head bar having a tilt rod mounted longitudinally thereof for rotative movement, tape rolls mounted upon said tilt rod, ladder tapes depending from said tape rolls, and angularly adjustable slats supported by said ladder tapes, tilting mechanism for normally retaining said slats in closed position and operable for selectively adjusting the angular relationship of said slats to one of a plurality of predetermined positions, said tilting mechanism including a tilt disk secured to said tilt rod, resilient means for urging said tilt disk and tilt rod to a normal position where said slats are closed, a pull tab pivotally attached to said tilt disk for partially rotating said tilt disk and tilt rod to a position where said slats are opened, and stop means for selectively locking said tilt disk when the angular adjustment of said slats will have reached one of said predetermined positions.

3,156,296
HIGH PRESSURE PRE-HEATER FOR FEED WATER

Fritz K. Kelp, Nurnberg, Germany, assignor, by mesne assignments, to C. Aug. Schmidt Söhne G.m.b.H. Maschinenfabrik und Apparatebau, Hamburg, Germany

Filed Aug. 3, 1961, Ser. No. 150,607
Claims priority, application Germany Dec. 5, 1960
9 Claims. (Cl. 165—74)



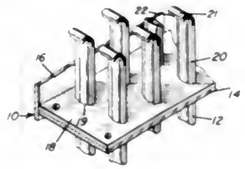
1. In a high pressure pre-heater for feed water: a housing having an opening and also having a steam inlet and a drain outlet, a cover plate closing said opening and provided with a first group and a second group of passages

therethrough and distributed in uniformly spaced relation thereover, first collector means arranged outside said housing and communicating with said first group of passages for conveying said water thereto, second collector means arranged outside said housing and communicating with said second group of passages for receiving heated feed water therefrom, and a plurality of tubes inside said housing having their ends connected to said first and second group of passages respectively and having their intermediate portions between said ends extending nearly through the entire length of said housing, said tubes extending from said first group of passages and also from said second group of passages first through at least the major longitudinal extension of said housing in a direction away from said cover plate and then extending substantially along straight lines at least once in the opposite direction through a portion of said housing up to a certain plane, the tubes in the portions leading away from said plate being offset angularly toward each other in the region of said certain plane so as to leave space in the center of the housing for portions of the tubes extending in the opposite direction, the spacing of said tubes from each other below said certain plane being a fraction of the spacing of said passages from each other in said cover plate.

3,156,297
AUTOMOBILE RADIATOR PROTECTIVE DEVICE

James L. Lane, Blythe, Calif., assignor, by mesne assignments, to Walking Stick Radiators, Inc., Blythe, Calif., a corporation of California

Filed Sept. 15, 1960, Ser. No. 56,296
6 Claims. (Cl. 165—119)



6. The combination in an automobile radiator of a plate formed with elliptical openings, tube elements having their lower ends communicating with the openings of said plate, the upper ends of said tubes having a baffled top portion comprising two spaced apart curved members having a narrow orifice between them directing water toward the plate, the spacing apart of said curved members being less than the minor diameter of the elliptical tube members and continued on both sides of the curved portion, whereby to restrict passage through the orifice of foreign material in the water.

3,156,298
HEAT SHIELDING FOR DUCTS

Terence Edward Gouvenôt Gardiner and Robert Garbutt, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England

Filed Aug. 18, 1960, Ser. No. 50,357
Claims priority, application Great Britain Aug. 18, 1959
1 Claim. (Cl. 165—134)

A duct for hot flowing gases comprising a main wall, an assembly of sheet elements, means for supporting each sheet element separately on said wall of the duct in inwardly spaced relation thereto and for isolating the wall from any significant stresses due to differential thermal expansion between the elements and the wall, each sheet element having a pair of opposite first edges parallel to, and a pair of opposite second edges at right angles to, the direction of flow of gas through the duct, the adjacent first edges of adjacent elements having marginal zones overlapping one another in surface-to-surface slidable contacts, the adjacent second edges of adjacent elements having marginal zones overlapping one another in spaced relation to form narrow slits directed downstream at each overlap, the marginal zone of the second edges nearer the wall of the duct being joggled towards the wall, so that

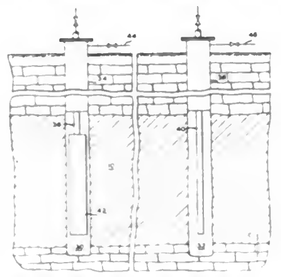


on the side presented towards the hot gas the surface of the assembly is substantially smooth, and the elements and the wall defining between them at least one passage through which fluid coolant may flow to and through the narrow slits, the fluid coolant flowing parallel to and in the same direction as the hot gases.

3,156,299
SUBTERRANEAN CHEMICAL PROCESS

Joseph C. Trantham, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,686
18 Claims. (Cl. 166—11)



1. A process for producing halogenated hydrocarbons in situ in a subterranean stratum containing hydrocarbons and recovering the halogenated hydrocarbons which comprises injecting at least one reactive halogen selected from the group consisting of Cl, Br, and F and interhalogen compounds thereof into a section of said stratum thru a well therein and contacting said hydrocarbons with said halogen in gaseous form under halogenating conditions so as to halogenate hydrocarbons as the principal reaction therein; continuing the injection of said halogen so as to drive resulting halogenated hydrocarbons into a well in said stratum; and producing an effluent from last said well containing said halogenated hydrocarbons.

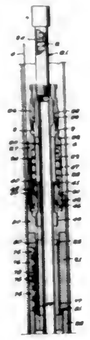
3,156,300
METHOD AND APPARATUS FOR PROTECTING WELLS

John S. Page and John S. Page, Jr., both of 1450 El Mirador Ave., Long Beach, Calif.

Filed Aug. 14, 1963, Ser. No. 302,073
29 Claims. (Cl. 166—66.5)

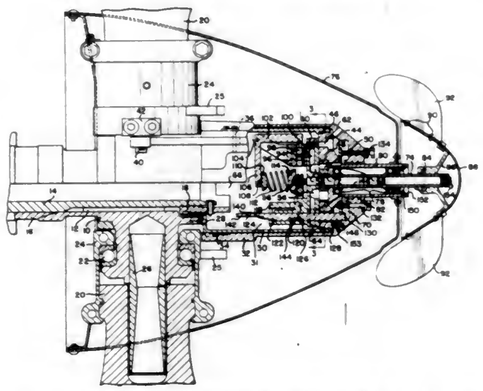
1. Apparatus for protecting a flowing well against the loss of fluid products of the well from a conduit at the

top of the well, including: means at the top of the well adapted to be moved by forces which if sustained by the conduit at the top of the well would cause such loss; valve means located in the well below said flow structure, said valve means including a body open to well fluids therebelow and having a passage leading to the well above the valve means from said body; a valve element in said body shiftable to a position closing said passage to close the valve means and to a position spaced from said passage



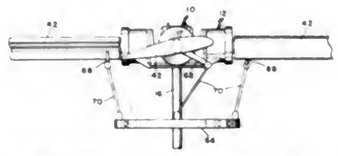
to open the valve means; said element having a first fluid pressure responsive surface for hydraulically holding said valve means open and a second fluid pressure responsive surface for hydraulically closing said valve means; and means including a conduit connected with said first named means, said flow conduit and said valve means for conducting fluid under pressure from said flow conduit to said first fluid pressure responsive surface to permit flow of the well.

3,156,301
VARIABLE PITCH PROPELLER
David Biermann, Piqua, Ohio, assignor to Hartzell Propeller, Inc., Piqua, Ohio, a corporation of Ohio
Filed Dec. 7, 1962, Ser. No. 243,057
20 Claims. (Cl. 170—160.14)



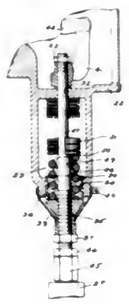
6. A variable pitch propeller comprising; a hub, blade means supported on and extending radially from the hub and being rotatable on the hub for changing the blade pitch, means operable during rotation of the propeller for urging the blade means toward reduced pitch position, fluid motor means carried by the hub operable in response to a supply of pressure fluid thereto for urging the blade means toward increased pitch position, and means carried in its entirety by the propeller hub for effecting a controlled supply of pressure fluid to said fluid motor means, said last mentioned means including a fluid reservoir, a pump having its inlet connected to said reservoir and having an outlet, a first circuit connecting said outlet with said motor means, a second circuit connecting said outlet with said reservoir including therein a propeller speed responsive governor means to control the fluid flow in said second circuit, and means operatively connected with the said pump and arranged at the nose end of said propeller operative for effecting actuation of said propeller in response to rotation of said propeller, said governor means comprising a control spring, a cam associated with said spring movable for adjusting the bias of the spring thereby to adjust the control speed of the propeller, and means sensitive to the speed of the propeller through the air for adjusting said cam.

3,156,302
ROTOR HUB FOR HELICOPTER
Laland T. Jordan, 5181 Arlene St., San Diego, Calif.
Filed Jan. 27, 1964, Ser. No. 340,231
3 Claims. (Cl. 170—160.27)



1. A helicopter rotor hub, comprising:
a pair of similar hub elements each having coaxial bearing portions at opposite ends thereof to receive and retain rotor blades;
the central portion of each hub element having a pair of spaced trunnions on an axis perpendicular to and coplanar with the axis of said bearing portions;
a rotor supporting shaft having a spider fixed thereon;
said spider having two pairs of stub shafts disposed on orthogonal axes in a common plane;
said hub elements being interfitted and mounted on said spider with said stub shafts journalled in said trunnions.

3,156,303
TRACTOR DRAFT CONTROL SPRING
Peter F. Hilder, Birmingham, and William S. Morrison, Royal Oak, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,603
1 Claim. (Cl. 172—7)



In a tractor having a power liftable implement hitch and power means for lifting the hitch; a housing, a draft sensing plunger mounted for movement in a wall of the housing for controlling operation of the power means, means for impressing a force on the plunger generally proportional to draft of an implement connected to the hitch and tending to displace the plunger, and a compound spring formed of a low rate spring and a high rate spring coaxial with the plunger, the springs being arranged in end to end abutting relation and extending between the plunger and housing with the high rate spring extending between the low rate spring and the housing, the high rate spring being formed of a series of Belleville washers closely fitting about the plunger, and a radial step formed on the plunger of larger diameter than the portion fitting within the high rate spring and engaged with the end of the high rate spring upon movement of the plunger beyond its initial range of movement.

3,156,304
LAWN EDGER
Frank E. Lawrence, 232 Seminary Road, Milan, Ohio
Filed Aug. 14, 1963, Ser. No. 302,179
4 Claims. (Cl. 172—18)



1. A lawn edging device comprising:
(*a*) a flat foot plate having a locating edge and a base surface substantially perpendicular to the edge,
(*b*) a spaced pair of guide means extending from a top surface of said plate and disposed perpendicularly to said foot plate and said base surface,
(*c*) a blade having a cutting edge,
(*d*) means connecting said blade to said guide means for vertical reciprocal movement in a plane including said locating edge, said blade being movable between a first position in which said cutting edge is above said foot plate and a second position in which said cutting edge is below said foot plate,
(*e*) springs associated with said guide means for urging said blade to said first position,
(*f*) a stop carried by said guide means, said stop being engageable with said connecting means to locate said blade in said first position,
(*g*) a vertically positionable handle member attached to said blade,
(*h*) a transverse arm extending from the upper end of said handle member; and,
(*i*) all of said device being above the base surface when the blade is in the first position whereby to facilitate positioning of the edging device by sliding said device over the lawn to be edged with said base surface in abutment with the lawn.

3,156,305
CONTOUR HOE
Elvin Nash, Nodaway, Iowa
Filed Oct. 21, 1960, Ser. No. 64,103
1 Claim. (Cl. 172—381)

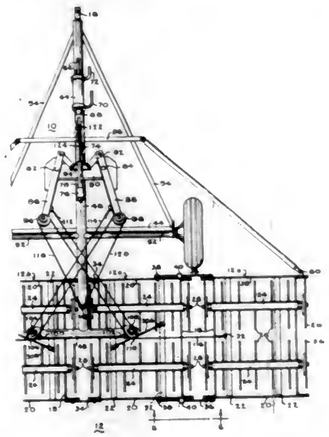


A hoe having an elongated handle and having a blade having an earth engaging surface disposed transversely to the handle and generally facing the opposite end of said handle from said blade, said hoe blade being elongated in a direction transverse to said hoe handle as seen from above when said handle is held in a horizontal position with blade depending, said blade having side portions on either side of said handle, each side portion being curved all along its length with its outer ends progressively farther from that end of the handle which is opposite from said blade whereby said blade presents a convex surface to the earth as the hoe is pulled through the ground, said hoe blade having an under edge which is gradually convexly curved with side portions extending upwardly from its center portion and the entirety of said under edge being of substantially the same curvature whereby the blade does not tend to furrow the ground as sharply as if it were pointed, the under edge of said blade having a length which is more than four times its depth when its depth is measured from its uppermost end portions to its lower most center portion to permit the hoe to be drawn into the ground more gradually than if the under edge were more sharply curved and as makes ground entry easier than if the under edge were flat, the gradual curvature of the convex undersurface serving to permit the hoe to be drawn into the surface of the ground to a limited extent as is desirable for cultivation, the undersurface of said blade having a depth from its uppermost end portions to its lowermost center portion which is over twice the length of the said undersurface.

3,156,306
CARRIER FOR MULTISECTION FARM IMPLEMENTS
John S. Dunker, Hull, Ill.
Filed Sept. 4, 1962, Ser. No. 221,197
2 Claims. (Cl. 172—456)

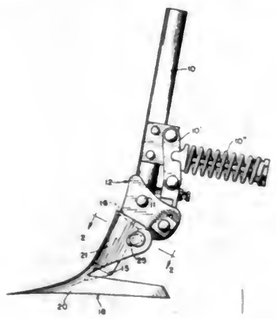
2. A carrier for multisection implements comprising:
a wheel-supported frame having a longitudinally extending center member;
said center member being inclined upwardly with respect to the surface of the ground;
ground-engaging implement means connected to said frame and disposed generally below the upper inclined end of said center member;
said implement means comprising at least one inboard section and plural outboard sections;
hinge means foldably connecting said outboard sections to said inboard section in side by side relation;
plural elongated lifting means mounted upon said center member each of which is swingable to one side of said center member;
plunger means operatively linked to said lifting means to effect swinging of the latter;
flexible elements connecting said lifting means and said sections in lift force transmitting relation; and

said flexible elements being connected to transmit lifting force to elevate said sections above the surface



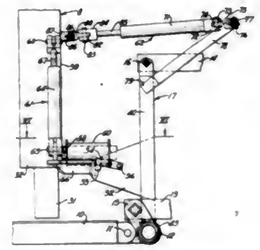
of the ground and simultaneously to fold said outboard sections upwardly about said hinge means in response to actuation of said plunger means.

3,156,307
QUICK DISCONNECT SWEEP
Martin L. Bledsoe, Rte. 2, St. Pauls, N.C.
Filed Dec. 15, 1961, Ser. No. 159,607
2 Claims. (Cl. 172—744)



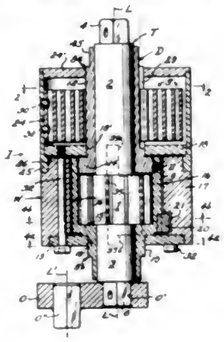
1. A quick disconnect plow sweep for mounting on a downwardly extending plow standard, said sweep comprising a generally horizontally disposed blade portion and a shank portion extending upwardly and rearwardly therefrom, said shank portion having a fore part and a pair of rearwardly extending generally parallel side members, each of said side members having a slot disposed on an angle relative to said fore part, adjustable fastening means extending through both of said slots, said slots being inclined from an upper rear position to a lower front position whereby when said fastening means is loosened it will gravitate toward the fore part of the shank.

3,156,308
ADJUSTABLE TRACTOR HITCH SUPPORT FOR FENCE POST DRIVER
Sherwood S. De Forest, Coraopolis, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Feb. 1, 1961, Ser. No. 86,422
5 Claims. (Cl. 173—43)



1. A tractor support for a fence post driver comprising the combination with a fence post driver having a fence post driving element and a guide housing in which it has guided movement along a rectilinear path, a pair of laterally spaced tractor hitch links, and a draft bar supported by said links, of a supporting frame mounted in a vertical position on said draft bar, a pair of laterally spaced brackets on said frame in positions above and extending outwardly from said said draft bar, a supporting plate having trunnions at opposite ends thereof pivotally supported on said brackets, a bearing on said plate arranged with its axis extending transversely of the axis of said plate trunnions, means mounting said housing on said plate including a shaft journaled in said bearing and supporting said housing for pivotal movement about said bearing axis, and separate means for adjusting the pivotal positions respectively of said housing on said plate and of said plate on said frame brackets to arrange said housing in a position in which the said path of movement of said driving element extends vertically.

3,156,309
ROTARY IMPACT TOOLS
Oscar J. Swenson, Sunset Hill Drive, Branford, Conn.
Filed Dec. 12, 1960, Ser. No. 75,385
13 Claims. (Cl. 173—93)



1. A rotary impact tool comprising an input member, an output member, and an inertia member, all approximately symmetrical about a common axis and journalled upon each other at mating mutually telescoping circular surfaces thereof for independent angular movement about said axis, a circular series of teeth on the output member about said axis, a circular shell coaxial with the output, input and inertia members and affixed to one of the last two mentioned members, spring means housed by the shell and yieldably interconnecting the inertia member and input member so as increasingly to resist angular relative movement thereof in one direction from an initial relative position, a pawl carried by the inertia member for angular movement therewith and spring-biased for engagement with said teeth and capable of movement to disengage the teeth, and a cam on the input member operative on the pawl as a function of said relative movement of the input member and inertia member in said direction to force the pawl out of engagement with one tooth of the series, whereby to enable the inertia member to produce a forcible impact through engagememnt of the pawl with another tooth of the series.

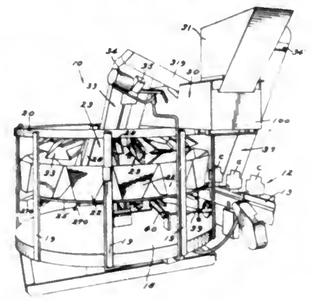
3,156,310
STABILIZED KNUCKLE JOINT
Thomas M. Frisby, Denver, Colo., assignor to Eastman Oil Well Survey Company, Denver, Colo., a corporation of Delaware
Filed Dec. 7, 1959, Ser. No. 857,763
13 Claims. (Cl. 175—76)



1. In directional drilling apparatus including a knuckle joint between upper and lower pipe sections of a pipe string, the improvement which comprises stabilizer means including upper and lower sets of circumferentially spaced stabilizer elements on said lower pipe section of fixed lateral extent from said lower pipe section, the upper set comprising elements spaced entirely around the circumference of said pipe, the stabilizer elements of said lower set located immediately beneath elements of said upper set being of different lateral extent than said corresponding stabilizer elements of the upper set, whereby when said pipe section is in a bore hole said lower pipe section will be aligned at an angle by means of said joint and the cooperation of said stabilizing elements with the surface of said bore hole.

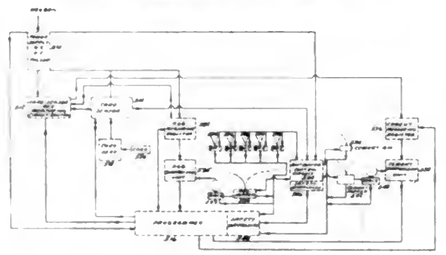
3,156,311
WEIGHING MACHINE
Gustav A. Olofsson, Lansing, and Donald W. Garnett, Grand Ledge, Mich., assignors to The Olofsson Corporation, Lansing, Mich., a corporation of Michigan
Filed Oct. 17, 1962, Ser. No. 231,262
42 Claims. (Cl. 177—55)

1. In a weighing machine having a traveling material receiving and discharging receptacle subject to increase in weight by substance adhering thereto after discharge of its normal content, counterpoise means to weigh the receptacle and content in travel, means to effect a discharge of said content from the receptacle in a desired ultimate weight determined by said counterpoise means, and means automatically acting on said counterpoise means after said discharge of said content from said



receptacle under control of said discharge means to adjust said counterpoise means to compensate for the increased receptacle weight due to adhered substance.

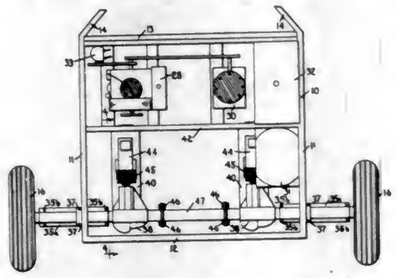
3,156,312
APPARATUS FOR AUTOMATICALLY DISCHARGING AND WEIGHING PRE-SELECTED PLURAL MATERIALS
Robert E. Heltzel, Arnold Sherman, Alex Sherman, Richard K. Brugler, and John C. Bennett, all of Warren, Ohio, assignors to The Heltzel Steel Form and Iron Co., Warren, Ohio, a corporation of Ohio
Filed Feb. 8, 1957, Ser. No. 638,946
5 Claims. (Cl. 177—70)



1. A cumulative material weighting apparatus comprising means for detecting data on an information media which data indicates types and quantities of material to be successively accumulated, a common material collection and weight indicating means, plural means for delivery of selected ones of said materials to said collection and weight indicating means, an electrical transducer operable by said collection and indicating means including a transformer having a primary winding and a center-tapped secondary winding means supplying power to said primary winding, said transformer also having a movable core piece physically connected to said collection and indicating means, an electrical register which includes two variable electrical resistances, means for varying said resistances differentially in response to said means for detecting data, means connecting one end of a first of said resistances to a first end of said secondary winding, means connecting one end of a second of said resistances to a second end of said secondary winding, means connecting to a common point the remaining ends of said resistances, and means connected between said common point and said center-tap for signaling said plural means for delivery to change the type of material being delivered when said collection and indicating means equals the amount set in said register.

3,156,313
VEHICLE HAVING LATERALLY ADJUSTABLE DRIVING UNITS

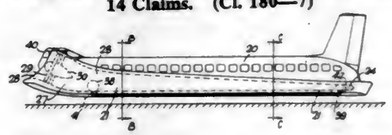
Floyd J. Peterson, Box 76, Manson, Wash.
Filed June 11, 1962, Ser. No. 201,368
6 Claims. (Cl. 180—6.48)



1. A wheeled drive apparatus for an orchard platform comprising:
a rigid vehicular frame;
wheel means mounted on said frame, including two outside wheels located respectively at opposite sides of the frame in coaxial positions, said wheels being fixed to axles supported by casings slidably mounted on the frame for motion parallel to the axis of the axles;
means mounted on the frame operatively engaged with the axle casings adapted to selectively fix the positions of said casings relative to the frame;
individual motor means operatively connected to said axles at their respective inner ends, said motor means being fixed to the respective axle casings and being slidably mounted on said frame for motion in a direction parallel to the axis of said axles.

3,156,314
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER

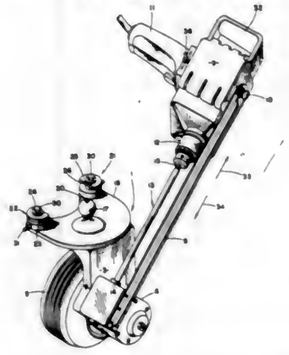
Lavis Albert Henry Riddle, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed July 18, 1960, Ser. No. 43,479
Claims priority, application Great Britain July 21, 1959
14 Claims. (Cl. 180—7)



1. A vehicle for travelling over a surface of the type which is at least partly supported above that surface by a cushion of pressurised gas comprising a body having at least one supply port formed in the bottom thereof and extending near the periphery thereof, means for supplying fluid to said supply port and causing said fluid to issue from said port and form a curtain of moving fluid travelling across the gap existing between said body and said surface, said curtain cooperating with said body and said surface in enclosing a gas-containing space between the bottom of said vehicle and said surface wherein said cushion of pressurised gas is formed and maintained, said fluid supplying means including a tubular supply duct having its longitudinal axis substantially parallel to the periphery of the bottom of said body, and means for drawing at least part of the curtain-forming fluid back into, and then causing the same to reissue from, said body including at least one recovery port formed in the bottom of said body paralliel to and inboard of said supply port, at least one transfer supply port formed in the bottom of said body parallel to said supply port and situated on the side thereof remote from said recovery port, and a transfer duct connecting said recovery and transfer supply ports, said transfer duct being part annular in vertical cross-section and partially surrounding said supply duct.

3,156,315
DOLLIES FOR MANEUVERING TRAILERS

Harold C. Hawgood, 5737 Craner Ave., North Hollywood, Calif.
Filed June 5, 1962, Ser. No. 200,248
9 Claims. (Cl. 180—13)

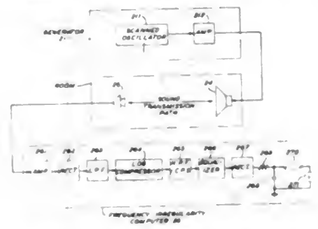


1. A dolly for maneuvering trailers and the like, said dolly comprising: a bracket having a horizontal branch and a vertical branch depending from said horizontal branch; means carried by the horizontal branch for so removably attaching the bracket to the hitch of a trailer that the bracket may rotate on a vertical axis; a first shaft extending through said vertical branch and journaled therein for rotation on a horizontal axis; a supporting wheel rigidly mounted on said first shaft and so positioned thereon that said vertical axis will pass between the wheel's opposite sides; a worm gear rigidly mounted on said first shaft and so positioned thereon that said vertical branch is interposed between said wheel and said gear; a bar for steering the dolly, said bar rigidly mounted with respect to said vertical branch and extending perpendicularly of said first shaft; a second shaft disposed parallel to said bar and having one end disposed in the vicinity of said worm gear; a worm meshing with said worm gear and mounted for rotation with said second shaft; and means for mounting a chuck-carrying power drill adjacent the free end of said bar with its chuck in position to receive the otherwise free end of said second shaft.

3,156,316
METHOD OF AND APPARATUS FOR AUTOMATICALLY MEASURING SOUND TRANSMISSION CHARACTERISTICS OF A ROOM

Harold L. Barney, Madison, and Mark B. Gardner, Chatham Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 1, 1960, Ser. No. 66,597
11 Claims. (Cl. 181—.5)

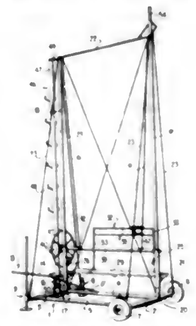
1. Apparatus for computing automatically the frequency irregularity between two arbitrarily selected points in a room which comprises a source of a sound wave located at one of said points, means for selectively varying the frequency of said sound wave during a predetermined time interval, means responsive to said sound wave for deriving an electrical wave representative of the logarithm of sound pressure fluctuations at the second of said points due to said sound wave, means supplied with said electrical wave for deriving from successive maximum and minimum amplitudes of said electrical wave a succession of



proportional electrical charges representative of the differences in magnitude between said successive maximum and minimum amplitudes, and means coacting with said charge deriving means for accumulating upon a storage device said succession of proportional electrical charges during said predetermined time interval.

3,156,317
SCAFFOLD

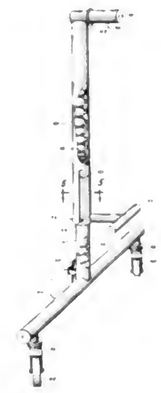
Warner S. Lundeen, 423 East Ave., Holdrege, Nebr.
Filed Aug. 26, 1963, Ser. No. 304,386
3 Claims. (Cl. 182—16)



1. A transportable scaffold of the character described comprising a substantially rectangular base, a pair of wheels rotatively mounted on one end of said base at the corners thereof, adjustable legs mounted upon the corners of said base, a platform support unit secured to said base and extending vertically therefrom, said platform support unit including a first elongated tubular support member having one end secured to said base at a point centrally of said wheels, a second elongated tubular support member mounted substantially parallel to said first support member at the opposite end of said base, and a transverse support bar secured to said first and second support members and extending horizontally therebetween, a platform assembly including support sleeve units slidably mounted upon said first and second support members, said support sleeve units including means to engage said support members to lock said support sleeve units thereto, a platform secured to each of said support sleeve units and extending substantially between said first and second support members, means operably connected to and movable with said platform for raising and lowering said platform relative to said first and second support members, said raising and lowering means including a rotatable shaft spaced above said platform and journaled at each end to said support sleeves, cable means having one end attached to the upper portion of said platform support unit above said platform and an opposite end secured to said shaft, a wheel secured to one end of said shaft to facilitate the manual rotation thereof, detent means mounted upon one of said support sleeves adjacent said wheel, said detent means adapted to engage the wheel to lock said wheel at a desired position, and a trailer hitch secured to the upper end of said first support member.

3,156,318
ROLLER STAND FOR TRAMPOLINES

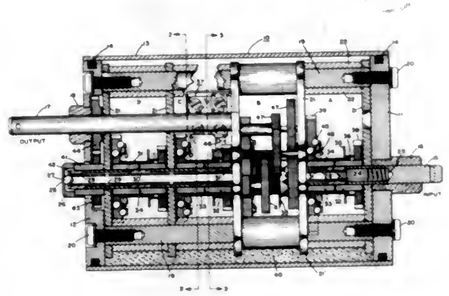
Bill W. Sorenson and Carl Denhardt, Jefferson, Iowa, assignors to American Trampoline Company, Jefferson, Iowa, a corporation of Iowa
Filed Feb. 15, 1962, Ser. No. 173,480
3 Claims. (Cl. 182—139)



1. In a trampoline, comprising,
a trampoline frame being substantially rectangular in size,
support means at each end of said frame for supporting said frame when said trampoline is in an extended horizontal position,
a roller stand on each side of said frame intermediate the ends thereof, said roller stand having a pair of telescoping members, a spring means interconnecting said members to normally extend them relative to each other, one of said members having means for pivotally engaging the frame of said trampoline, the other of said members having a cross bar on its lower end, and roller means on said cross bar at each end thereof for engagement with a supporting surface,
means for limiting relative extension and rotation between said telescoping members,
the combined strength of said spring means in each roller stand being sufficient to extend each pair of telescoping members to a length sufficient to support said trampoline above the supporting surface when each of said roller stands is in a vertical position extending between the trampoline frame and the supporting surface, and
said roller stand adapted to pivot on said trampoline frame to a position extending at an acute angle to said trampoline frame with said spring means extending said pair of telescoping members to give said roller stand a length greater than the vertical distance between the trampoline frame when in its extended horizontal position and the supporting surface, said roller stand when in said last mentioned position having only one of said roller means on said cross bar in engagement with said supporting surface,

said spring means being compressed to reduce the overall length of said roller stand as said roller stand is pivoted to a vertical position to return said roller means on the other end of said cross bar into engagement with said supporting surface.

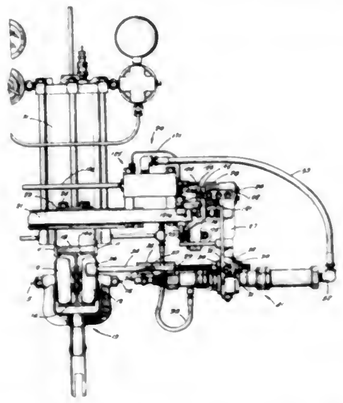
3,156,319
TRANSMISSION
Earl O. Schweitzer, Wickliffe, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Nov. 17, 1961, Ser. No. 153,177
1 Claim. (Cl. 184—6)



Lubricating means for a transmission having gears and clutches within a closed housing comprising, hollow oil shaft means extending through said housing and having an opening external of said housing for periodic replenishment of the oil supply and having a plurality of openings located within said housing through which oil escapes, hollow drive shaft means extending through said housing and coaxially around and spaced from said oil shaft into which said oil escapes, said drive shaft means comprising a plurality of coaxially aligned relatively rotatable sections forming joints between each two sections thereof and on which said gears and clutches are mounted, a plurality of oil permeable sleeve bushing means mounted around said oil shaft means and within said hollow drive shaft means for mounting said drive shaft means in spaced relation around said oil shaft means, one of said sleeve bushing means being located at each of said joints in the drive shaft means to control the rate at which oil escapes from said hollow drive shaft means through said joints to the sad gears and clutches which are mounted on said drive shaft means.

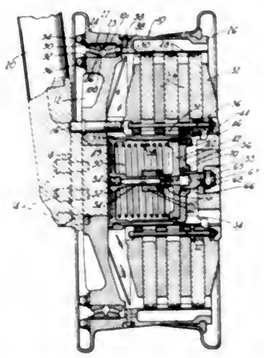
3,156,320
LUBRICATING DEVICE
Joseph C. Bystricky, Crystal Lake, Frederick G. Schweisthal, Skokie, and Ernest G. Stock, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Original application Apr. 7, 1959, Ser. No. 804,845. Divided and this application June 1, 1961, Ser. No. 114,053
11 Claims. (Cl. 184—29)

1. In a lubricating device, a cylinder having a supply port at one end thereof, a piston slidable in the cylinder and having a head and a guide portion, a spring of a predetermined strength urging the piston toward said one end of the cylinder, a tubular member carried by the guide portion of the piston and slidable relative to the guide portion of the piston, a second spring of substantially greater strength than said predetermined strength and urging the tubular member away from the head of the piston, a plunger member fixed rigidly to the piston and slidable in the tubular member to force a lubricant therethrough, the tubular member having a lubricant supply opening



therein, and nozzle means mounted on the end of the tubular member in alignment therewith.

3,156,321
HYDRAULIC ACTUATOR AND WHEEL MOUNTING FOR DISC TYPE BRAKE
Gerard P. Deyerling and Mack O. Lindley, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Continuation of application Ser. No. 640,941, Feb. 18, 1957. This application Jan. 18, 1963, Ser. No. 252,483
10 Claims. (Cl. 188—18)



1. A wheel and brake comprising a nonrotatable wheel supportive member extending radially into supportive engagement with the rim of the wheel, a nonrotatable cylindrical member located at the axis of rotation of the wheel within the confines of the wheel sides, a plurality of interleaved rotors and stators located within the confines of the wheel sides and keyed for axial movement to the rotatable wheel and cylindrical member respectively, a piston slidably received in a cylinder bore formed in said cylinder member, a pull rod operatively secured to said piston and displaceable therewith, a transverse pressure plate operatively secured to the pull rod and movable thereby to clamp the rotors and stators together in forcible engagement, and resilient means for urging the pressure plate in a retractile direction, and automatically adjusting means which positions the pressure plate responsively to

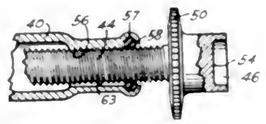
wear of the rotors and stators to maintain approximately the initial clearance established between said rotors and stators.

3,156,322
TWO SHOE SERVO BRAKE
Daniel C. Johnson, Leeds, England, assignor to National Research Development Corporation, a corporation of Great Britain
Filed Mar. 23, 1961, Ser. No. 97,845
Claims priority, application Great Britain Mar. 25, 1960
8 Claims. (Cl. 188—78)



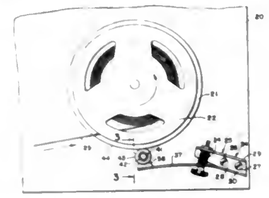
1. A self-servo two-shoe brake comprising a brake drum having an internal braking surface, a primary shoe displaceable circumferentially in the direction of rotation of the drum by frictional drag under the influence of a force applied to the primary shoe to cause it to engage the braking surface, a secondary shoe displaceable in the direction of movement of the braking surface, a mechanism operable by displacement of the primary shoe and acting on the secondary shoe to force said secondary shoe into engagement with the braking surface, and means operable by displacement of the secondary shoe for applying a negative feed-back in opposition to the operating force on the primary shoe, the said means operable by displacement of the secondary shoe including a double-armed lever member having a short arm with which the secondary shoe coacts, and a longer arm which extends substantially to a mid point of the primary shoe, the force exerted on the primary shoe being applied in a radial direction through said longer arm of the double-armed lever member and the pressure exerted by the secondary shoe on the shorter arm thereof exerting a negative feed-back acting through the longer arm in opposition to the operating force on the primary shoe.

3,156,323
BRAKE ADJUSTING MECHANISM
Raymond Boyer, Sr., South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,523
7 Claims. (Cl. 188—79.5)



1. In a brake, a pair of brake shoes arranged in end to end relationship, an adjustable strut interposed between a pair of adjacent ends of said brake shoes, said strut comprising: an adjusting screw member having a threaded portion, an internally threaded hollow adjusting screw nut member receiving said threaded portion of said adjusting screw member, means for non-rotatably connecting one of said members to one of said brake shoe ends and means for rotatably connecting the other of said members to the other of said brake shoe ends whereby said members are rotatable relative to each other, a deformable member disposed within said adjusting screw nut and located between the threaded portion of said adjusting screw and the inner surface of said adjusting screw nut, said deformable member being arranged within said adjusting screw nut that the threaded portion of said adjusting screw engages said deformable member to compress the same against the inner surface of said adjusting screw nut.

3,156,324
SPEED REGULATING ATTACHMENT FOR TAPE RECORDERS
Earl F. Colbert, 21 Curtis St., Worcester, Mass.
Filed Dec. 27, 1962, Ser. No. 247,680
1 Claim. (Cl. 188—80)

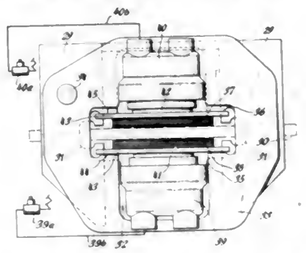


In combination with a tape recorder including a deck, a tape reel rotatably mounted in a horizontal plane on said deck and means for rotating said reel, a speed control device for said reel comprising a substantially U-shaped bracket including a short vertical side flange, an elongated resilient vertical side flange, and a base, screw means securing said base to said deck, said elongated flange including a resilient extension arm which projects beyond said base to a point adjacent said reel, said resilient arm being cut away from said base adjacent said extension arm, a horizontal base portion on the free end of said extension arm, a vertical pin carried by said base portion, a roller rotatably mounted on said pin, a resilient O-ring on said roller engaging said tape reel, said elongated flange having an opening therein adjacent the cut away portion, and said short vertical side flange having an opening therein aligned with the opening in said elongated flange, a bolt extending through said aligned openings, a knurled head on said bolt on the outer side of said elongated flange, a nut rotatable on the other end of said bolt on the outer side of said short flange, and a compression spring surrounding said bolt between said flanges, whereby rotation of said knurled head varies the compression of said spring to vary the pressure exerted by said O-ring on said tape reel.

3,156,325
SPOT-TYPE DISC BRAKES
Walter Robert Taylor, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Dec. 18, 1962, Ser. No. 245,465
Claims priority, application Great Britain, Dec. 22, 1961, 46,013/61
11 Claims. (Cl. 188—73)

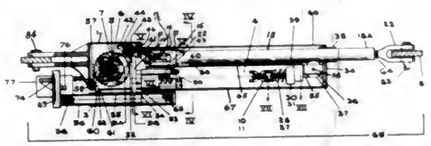
1. A disc brake comprising a fixed support with a horizontal portion, movable members mounted on said horizontal portion of said fixed support, means pivotally connecting said movable members to said fixed support for swinging movement in a substantially horizontal plane about said fixed support, corresponding opening means in

said movable members for receiving a disc brake therein, a pad member on each movable member disposed in said opening means, and a motor means mounted on each



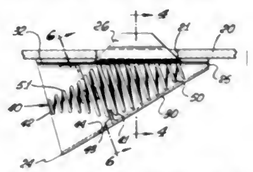
movable member for moving its respective pad member into contact with the disc brake received in the opening means.

3,156,326
DOUBLE ACTING BRAKE ADJUSTER
Lewis M. Showers, Jr., 104 E. Essex Ave., Lansdowne, Pa., and Charles T. Biscardi, 19 E. Mill Road, Maple Shade, N.J.
Filed July 2, 1963, Ser. No. 294,790
3 Claims. (Cl. 188—196)



1. A double acting brake adjuster for a brake linkage to resist tension loads, in combination, a ratchet chain-sprocket housing having a brake lever jaw at one end and a command trigger spring housing guide on the bottom, a brake adjusting rod guide and housing demountably attached to the other end of said ratchet chain-sprocket housing, a brake adjusting rod slidably mounted and extending a suitable distance beyond the end of said brake adjusting rod guide and housing for connection to the brake linkage, said brake adjusting rod having an adjustable brake lever jaw on the extended end and an integral equalizer lever jaw on the other end, a pair of equalizer levers pivotally attached at their centers to said integral equalizer lever jaw, a pair of parallel brake adjusting chains having the end links of the load portions pivotally attached to opposite ends of said equalizer levers to insure equal distribution of load on said parallel brake adjusting chains, upper and lower guide plates to guide the slidable motion of said integral jaw, a rotatively mounted ratchet chain sprocket in said ratchet chain-sprocket housing, said ratchet chain sprocket having two integral chain engaging sprockets disposed on opposite sides of a toothed ratchet wheel portion, said chain engaging sprockets matching said parallel brake adjusting chains, load portions of said parallel brake adjusting chains being disposed tangent to said chain sprockets, a load transferring portion of said parallel brake adjusting chains engaging arcuate portions of said chain sprockets, take-up portions of said parallel brake adjusting chains extending in a return direction parallel to said load portions, a pair of pre-compressed helical take-up springs surrounding said take-up portions, end links of said take-up portions secured to a take-up spring follower, said pre-compressed helical take-up springs being confined between said take-up chain followers and a fixed seat integral with said demountable brake adjusting rod guide to produce the take-up adjustment of brake linkage, an anti-creep cable sheave rotatively mounted on said demountable brake adjusting rod guide, an anti-creep cable looped around said anti-creep sheave with one end suitably attached to said take-up spring follower and the other end suitably attached to said brake adjusting rod near said integral equalizer lever jaw to insure the relative movement of said parallel brake adjusting chains, said chain sprocket and said brake adjusting rod, a pair of ratchet dogs including an anti-lengthening dog and an anti-shortening dog pivotally mounted in said ratchet chain sprocket housing and alternately engageable with said ratchet chain sprocket, a ratchet dog lift and tripper slidably mounted in a supporting guide for remote control of the anti-lengthening dog, a command trigger return spring housing slidably mounted in a command trigger guide, a slot in said command trigger return spring housing for alternately engaging and disengaging said ratchet dogs, ratchet dog springs for urging the ratchet dogs into engagement with ratchet teeth of ratchet chain sprocket, a command trigger secured to said command trigger spring housing, a command lever secured to the brake linkage and engageable with said command trigger for actuation of the said command trigger return spring housing during normal and over-travel brake application.

3,156,327
VEHICLE BRAKE AIR COOLING DEVICE
Edmond W. Roll, 320 E. Walnut, Kokomo, Ind.
Filed Dec. 10, 1963, Ser. No. 329,548
12 Claims. (Cl. 188—264)

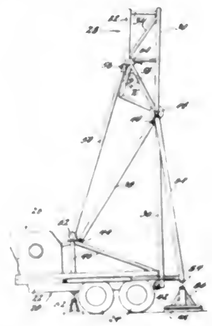


1. In a vehicle brake cooling apparatus: a brake mechanism including a non-rotatable backing plate; an air scoop having a body secured to said backing plate at one side thereof and an opening in its side wall, said body having an open forward end for the entry of air into the scoop which discharges through said opening into the brake mechanism on the other side of said backing plate; and a helical spring in said body forwardly of its opening for baffling passage of foreign substances to said opening, the turns of said spring being spaced apart substantially to permit air to flow between said turns and through said body to said opening.

3,156,328
COMBINATION OUTRIGGER AND FRONT LEG EXTENSION
Emil A. Bender, P.O. Box 52, Bakersfield, Calif.
Filed Feb. 25, 1960, Ser. No. 11,027
13 Claims. (Cl. 189—11)

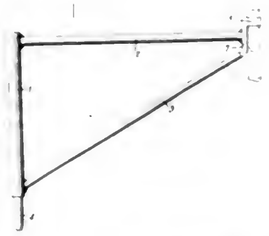
1. In a portable, vehicle-mounted derrick structure wherein the derrick mast is hinged to a mast support adjacent an end of said vehicle for swinging movement between a generally horizontal, transport position extending over the vehicle and an operative position wherein the mast extends beyond the vertical with the peak of the mast located vertically above the free space outwardly of the vehicle beyond the hinge mounting of the mast, an outrigger brace for transferring support of the mast from the vehicle, downwardly through the hinge joint, including a ground support member located away from the vehicle in the direction of mast overhang, a compression member pivotally connected to the mast support structure adjacent and below the hinge joint at one end and connected at its opposite end with said ground support member and a

tension member connected to the ground support member at one end and, at its opposite end, pivotally connected with another portion of the mast support structure at a point below said hinge joint and below that at which said



compression member is connected, said compression and tension members being connected at the ends thereof, remote from their points of connection with said mast support structure.

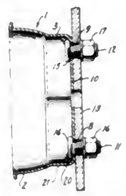
3,156,329
DISMOUNTABLE CONSTRUCTION
Jacques Alberti, 14 Chemin de Lucinge, Lausanne, Switzerland
Filed June 1, 1962, Ser. No. 199,286
Claims priority, application Switzerland June 3, 1961
5 Claims. (Cl. 189—15.5)



1. A dismountable assembly constituted of elements nested one into the other, all the elements being identical and each constituted of a triangle of rigid shape, each element including at least two apexes of the triangle female nesting means, and further including male nesting means for cooperating with the female nesting means of two adjacent elements to connect the elements together.

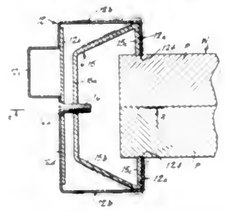
3,156,330
CYLINDER ATTACHING STRUCTURE
Arthur A. Berg, Lincolnwood, Ill., assignor to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 18, 1961, Ser. No. 83,477
2 Claims. (Cl. 189—36)

1. A thin-walled structure having an end wall and a wall perpendicular thereto, an aperture in said end wall and spaced from said perpendicular wall, a fastener extending through said aperture and having an enlarged element in contact with the inner surface of said end wall and out of contact with the inner surface of said



perpendicular wall, a weldment secured to said element and to said perpendicular wall adjacent said end wall.

3,156,331
KNOCK-DOWN DOOR BUCK CONSTRUCTION WITH ADJUSTABLE WALL CLAMPING MEANS
Samuel Sklar, 63—153 Alderton St., Rego Park, N.Y.
Filed Oct. 15, 1962, Ser. No. 230,577
4 Claims. (Cl. 189—46)

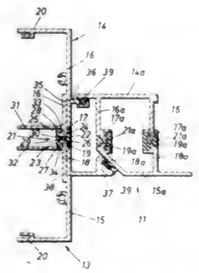


1. In a three-piece metal preformed door buck construction for installing in a doorway cut in a wall, a pair of channel-shaped jambs each integrally formed with opposite side walls for extending over vertical edges of a wall bordering said doorway, flanges inwardly bent toward each other extending from said opposite side walls for clampingly contacting opposite sides of said wall, adjustable means coacting with said side walls to flex the latter and bring said flanges toward each other to effect said clamping contact, each jamb having a jamb portion from which said opposite side walls integrally extend, said adjustable means including a plurality of straps spaced from each other along each of said jamb portions, each strap having an intermediate section and a pair of opposite arm sections, each intermediate section being spaced from and substantially parallel to the jamb portion and having opposite ends thereof formed in bends divergently disposing said arm sections with respect to each other, each of said arm sections having an end opposite said bend attached to one of the opposite side walls, means adjustably interconnecting each intermediate section with the jamb portion to vary the distance therebetween, said strap being otherwise free from contact and engagement with said jamb portion and opposite side walls, said bends being constructed and arranged to flex and decrease the divergence of said arm sections upon bringing the intermediate portion towards the jamb portion by said interconnecting means to effect said side wall flexing and wall clamping by said flanges.

3,156,332
INSULATED METAL STRUCTURE
Donald J. Cameron, Thornhill, Ontario, Canada, assignor to Cameron Windows (Aluminum) Limited, Brampton, Ontario, Canada
Filed Mar. 25, 1963, Ser. No. 267,432
6 Claims. (Cl. 189—75)

1. An insulated metal structure especially suited for use as a window frame, door frame, window sash and door sash, said insulated metal structure comprising a

first metal section and a second metal section, said first metal section including a first wall having an inwardly turned first flange, said second metal section including a second wall having an inwardly turned second flange, said first and second sections being positioned side-by-side with said flanges adjacent to and spaced apart from each other; a member of rigid thermal insulating material positioned between said sections and locking said sections together, said insulating member being adapted to be readily slidable between said sections for slidable insertion between said sections and for slidable removal from between said sections, said insulating member being of T-shape configuration and comprising a first portion having first, second, third and fourth arms, said first and second arms extending away from said first portion on one side thereof and being spaced apart from each other, said third and fourth arms extending away from said first portion on another side thereof opposite said one side and being spaced apart from each other, said first and third arms each having inwardly turned arms positioned remote from said first portion and extending towards said second and fourth arms respectively, said first and second arms and one of said inwardly turned arms defining a



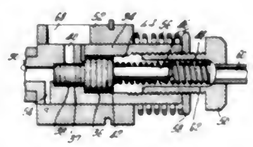
first channel, said third and fourth arms and the other of said inwardly turned arms defining a second channel, said first portion being slidably positioned between said flanges with said first flange being positioned in said first channel and said second flange being positioned in said second channel, said second and fourth arms being positioned in recesses in said first and second walls respectively, the outer surfaces of said second and fourth arms being substantially flush with the outer surfaces of said first and second walls; a third flange extending inwardly from said first wall and spaced from said first flange, said first and third flanges defining a third channel therebetween; and a fourth flange extending inwardly from said second wall and spaced from said second flange, said second and fourth flanges defining a fourth channel therebetween, said one inwardly turned arm completely occupying said third channel and abutting said first and third flanges, said other inwardly turned arm completely occupying said fourth channel and abutting said second and fourth flanges, whereby said first and third flanges and said second and fourth flanges are adapted to guide said insulating member during insertion thereof between said sections.

3,156,333
IDLING FUEL-SUPPLY CONTROL MECHANISM FOR INDUCTION CARBURETORS OF VEHICLES

Llewellyn T. Barnes, 155 Atlantic Ave., Freeport, N.Y., assignor of thirty-three and one-third percent to Charles T. Barnes, Freeport, N.Y.

Filed Nov. 23, 1960, Ser. No. 71,265
1 Claim. (Cl. 192—3)

In a carburetor system for an internal combustion engine mounted in a vehicle including a hand brake, and induction type carburetor having a throttle valve, and a manifold communicating with said carburetor, an auxiliary air supply system for supplying an increased amount of air to said carburetor during idling conditions of said engine, said auxiliary air supply system comprising a housing mounted exteriorly of said carburetor, a bore within said housing, a conduit connecting said housing bore with the interior of said carburetor downstream of said throttle valve, a piston slidably mounted within said housing bore, means coupling said housing bore to an air supply source rearwardly of the leading end of said piston, means urging said piston to a normal position in which it at least partially interrupts communication between said conduit and said air supply source, conduit means coupling said bore rearwardly of said piston with

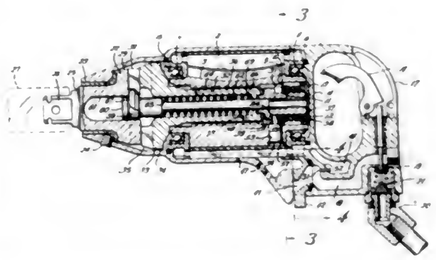


the interior of said engine manifold for movement of said piston to a position opening said conduit to said air supply source under the influence of high induction forces existing in said engine manifold when said engine is overrunning, and secondary means for placing said conduit into increased communication with said air supply source during the condition of stationary idling of said engine, said secondary means being independent of the induction forces in said manifold and comprising an alternate aperture establishing communication between said conduit and said air supply source, a sleeve, means biasing said sleeve to overlie said alternate aperture, and coupling means connecting said sleeve to said vehicle hand brake for operation of said sleeve to uncover said alternate aperture upon manual actuation of said hand brake.

3,156,334
IMPACT TOOL WITH HAMMER ROTATABLE AND AXIALLY MOVABLE WITHIN THE MOTOR

Martin D. Hoza, Houston, Tex., assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas

Filed May 16, 1961, Ser. No. 110,384
9 Claims. (Cl. 192—30.5)

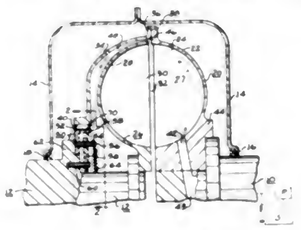


8. An impact tool comprising a motor, a hammer and an anvil, the said hammer being rotatably carried by and slidable within said motor, means to cause said motor to rotate said hammer and to permit at least a portion of said hammer to reciprocate axially, and means to cause said hammer to strike said anvil and impart the energy of the rotating motor and hammer to the anvil.

3,156,335
TORQUE LIMITING FLUID DRIVE

Richard Marine Nelden, Birmingham, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1958, Ser. No. 774,485
7 Claims. (Cl. 192—3.2)

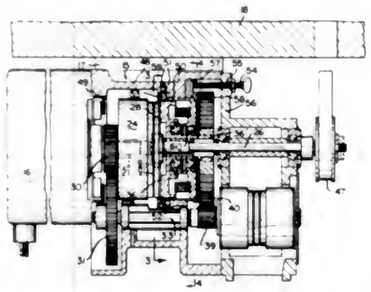


1. In an overload protected fluid coupling, vaned impeller and runner shells mounted in opposed rotatable relation, said impeller and runner shells being respectively mounted on aligned input and output shafts and being axially spaced to define a radially extending first space therebetween for exhausting fluid from said coupling, means for supplying hydraulic fluid to said coupling, a casing connected to said impeller shell and extending in surrounding relation to said runner shell to define an annular space around said output shaft in fluid flow communication with said first space for exhausting fluid from said coupling and a valve on said fluid coupling and positioned in said annular space to control fluid flow therethrough, said valve including means operatively connected to one of the runner shell and output shaft actuating the valve toward a closed position upon an increase in output speed and actuating the valve toward an open position upon a decrease in output speed.

3,156,336
TRANSMITTER CLUTCH DISC ALIGNMENT ADJUSTING MECHANISMS

Herman C. Frentzel, Milwaukee, Wis., assignor to Hansen Glove Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 2, 1963, Ser. No. 249,047
2 Claims. (Cl. 192—110)

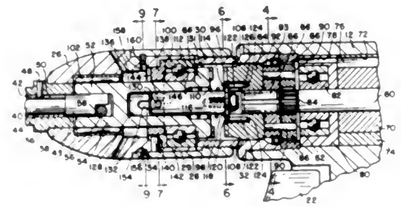


1. In a transmitter, a housing, a pair of clutch discs co-axially mounted therewithin and having adjacent face portions spaced from one another, one of the clutch discs being axially shiftable relative to the other clutch disc to regulate the spacing between the adjacent face portions of said discs, an adjusting member co-axially mounted relative to said discs and axially adjustably carried within the housing and engaging the perimeter of said adjacent face portion of the axially shiftable clutch disc to adjustably space said disc from the adjacent face portion of the other clutch disc and to resist axial movement of the shiftable clutch disc toward the other clutch disc, and set screw means adjustably carried by the housing and exerting forces against peripherally spaced outer end portions of the shiftable clutch disc in opposition to the direction of force imposed by the first-mentioned adjusting member to releasably lock the discs in spaced relation.

3,156,337
COUPLING DEVICE FOR TOOL SPINDLE

William L. Olds and William J. Baker, Spring Lake, Mich., assignors to Gardner-Denver Company, a corporation of Delaware

Filed Feb. 15, 1961, Ser. No. 89,531
6 Claims. (Cl. 192—148)

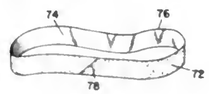


1. Spindle housing means;
spindle means rotatable with respect to said housing means;
spindle driving means;
first and second coupling means between said spindle means and said driving means;
said first coupling means including releasable means;
said second coupling means connecting said driving means and said spindle means when said first coupling means is released;
stop means cooperative with said second coupling means to arrest rotation of said spindle means; and
means holding said stop means stationarily with respect to said housing means.

3,156,338
ENDLESS LAMINATED PRINTING TAPES

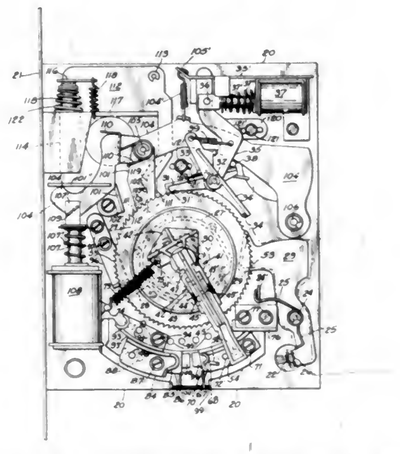
Walter Ploeger, Jr., North Bellmore, N.Y., assignor, by mesne assignments, to Filmon Process Corp., New York, N.Y., a corporation of New York

Original application Mar. 24, 1960, Ser. No. 17,391, now Patent No. 3,086,901, dated Apr. 23, 1963. Divided and this application July 23, 1962, Ser. No. 214,179
5 Claims. (Cl. 197—172)



1. A tape comprising a laminated endless ribbon, one layer of said ribbon being an ink carrying nylon ribbon of uniform width, a second layer of said laminated endless ribbon being a thin ribbon of ink-impervious thermoplastic material having the same width as said nylon ribbon and joined to said nylon ribbon along its edges only, and a thermo-fused butt joint across the width and through the thickness of said laminated ribbon, the thickness of said joint being substantially equal to the thickness of said laminated ribbon.

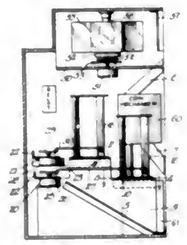
3,156,339
CREDIT MECHANISM
Jacob C. Kiefer and Herman G. Jensen, both of Chicago, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 134,007
11 Claims. (Cl. 194—1)



1. A credit mechanism for use in coin-controlled, electrically-operated machines, comprising: a control switch biased toward its closed position; an add-subtract ratchet wheel having means thereon for causing the opening of said switch at the start position of the wheel, said wheel being biased to rotate in a direction away from said switch-opening position to establish and add credit upon such rotation; a holding pawl for engaging said wheel to normally prevent its rotation in said direction; a detent device normally disconnected from said ratchet wheel and having a movable element engageable with the teeth of said wheel to cause said detent device to rotate with the wheel when said element is so engaged as hereinafter specified; coin-controlled means for disengaging said holding pawl and for causing said detent device to engage said ratchet wheel; a plurality of credit-limit stops mounted in different positions circumferentially of the ratchet wheel and so disposed as to be in the path of movement of said detent device when the latter is engaged with the ratchet wheel but out of such path when such device is disengaged, at least one of said stops being retractably mounted; coin-controlled means for moving said retractable stop out of the path of said detent device when a coin of a value calling for a plurality of credits is inserted in the machine; subtract means for returning said ratchet wheel to its switch-opening position with a step movement for each operation of the machine corresponding to a unit of credit; and means for disengaging said detent device from said ratchet wheel and for returning it to its initial position, out of the plane of said stops, prior to such return movement of the ratchet wheel.

3,156,340
COIN OPERATED VENDING MACHINE
Jack H. Arkes, 608 S. Dearborn St., Chicago 5, Ill.
Filed May 3, 1961, Ser. No. 107,387
2 Claims. (Cl. 194—10)

1. An article vending machine comprising:
(1) a plurality of cages each rotatable around its own axis;
(2) a plurality of square articles to be dispensed in each cage disposed therein, with each article turned 45° with respect to the articles adjacent to it;
(3) base plate means upon which said cages are mounted, said means containing an opening beneath each cage, which openings are shaped to conform to the shape and size of the articles;
(4) means including a motor individual to each cage for rotating the cage through an arc of 45°;
(5) a manually operable switch for selecting said motors one at a time by preparing a circuit to the selected motor;
(6) a relay common to said motors and operable to

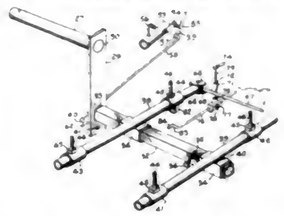


close the motor circuit prepared by said selector switch;
(7) a coin chute mechanism common to said motors;
(8) and a circuit for said relay closed by the passage of a coin through said coin mechanism to operate the relay and thereby close the prepared circuit to the selected motor over which circuit that motor operates to rotate the cage and thereby register the bottom article with the opening in the base plate means thereby to dispense that article.

ERRATUM

For Class 197—172 see:
Patent No. 3,156,338

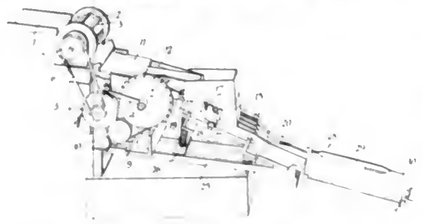
3,156,341
MOTOR MOUNT FOR CONVEYORS
Leon C. Wilcoxen, Dodge City, Kans., assignor to Mayrath Machinery Company, Inc., a corporation of Kansas
Filed July 10, 1961, Ser. No. 122,938
3 Claims. (Cl. 198—233)



1. A motor mount comprising a depending arm, a horizontal rockable member fixed at one end to the upper end of said arm and projecting laterally therefrom, means supporting said member for rocking movement on its own axis, a supporting bar member fixed at one end to said arm adjacent its lower end and projecting therefrom laterally in the direction opposite said rockable member, said supporting bar member being of polygonal cross section, a pair of spaced parallel elongated motor mounts arranged over and supported intermediate their lengths by said supporting bar member, at least one of said motor mounts having a sleeve to which it is fixed and which sleeve corresponds in cross sectional shape to said supporting bar member and surrounds the same to slide thereon toward and away from the other motor mount, means for fixing said sleeve in

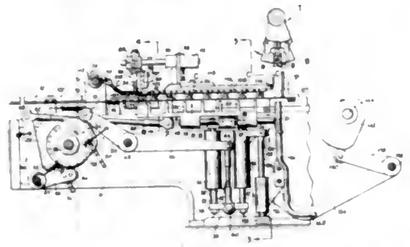
adjusted position along said supporting bar member, a pair of longitudinally slidable sleeves surrounding each motor mount and having means for connecting them to a motor, and means connected between the lower end of said arm and a stationary point for fixing said arm against swinging movement to maintain said motor mount horizontal.

3,156,342
RIVET FEED MACHINES
Clifford Edmund Brewer, 19 Upton Road, Poole, Dorset, England
Filed Feb. 27, 1963, Ser. No. 261,279
Claims priority, application Great Britain Mar. 2, 1962
15 Claims. (Cl. 198—33)



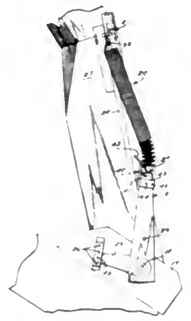
1. A rivet feeding machine, for rivets having a rivet portion comprising a shank and a head and a mandrel portion extending from said head, the machine comprising; a rivet aligning member portions of which define a slot extending through said rivet aligning member, said slot having a width the dimension of which lies between the diameter of said mandrel portion and the diameter of said head and having enlargements at intervals the smallest width of which enlargements is greater than the diameter of said head; means for supplying rivets to the upper surface of said rivet aligning member; means for reciprocating said rivet aligning member; and a rivet guiding member a portion of which is disposed below said rivet aligning member and portions of which define a slot having a width the dimension of which lies between the diameter of the said mandrel portion and the diameter of said head, said slot in said rivet guiding member being disposed in alignment with, and a portion of said slot in the rivet guiding member underlying, said slot in said rivet aligning member.

3,156,343
CIGAR FEEDING DEVICE
Neal R. Parlatore, Laurelton, Queens, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 19, 1962, Ser. No. 180,792
5 Claims. (Cl. 198—34)



1. Apparatus for sequentially feeding cigars to the intake station of a continuously operable wrapping machine of the type described comprising, a supporting structure, means for receiving and continuously conveying a plurality of cigars along said supporting structure, means for providing an abutment to obstruct the continuous movement of said cigars and to cause said cigars to accumulate in a row at a forward position along said supporting structure, a first member perpendicular to said supporting structure moveable from beneath to engage the underside of the leading cigar, a second member perpendicular to said supporting structure movable from above to engage the upper side of the leading cigar, means for cooperatively moving said members in a path to engage the leading cigar and to carry the same to a position on said supporting structure over and forward of said abutment, said moving means being sequentially operable to cause said member to serially remove the leading cigar from engagement with said abutment and to place the same forward thereof.

3,156,344
BALANCING MEANS FOR ELEVATOR RECEIVING CONVEYOR
Elmo L. Batterton and William C. Roecker, Morton, and Merle Franklin Dodson, East Peoria, Ill., assignors, by mesne assignments, to Meyer Mfg. Co., a corporation of Illinois
Filed Apr. 5, 1962, Ser. No. 185,330
15 Claims. (Cl. 198—91)

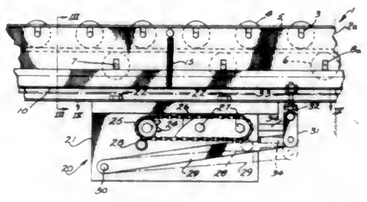


1. An elevator comprising:
an inclined elevating section having a hopper pivotally mounted on the lower end thereof,
spring means interconnecting said elevating section with said hopper to urge said hopper to collapse upon said elevating section,
and means for varying the point of spring connection on said hopper as a function of the pivoted position of said hopper with respect to said elevating section.

3,156,345
MOTOR POWERED ACCUMULATING CONVEYOR
Maynard J. De Good, Grand Rapids, Mich., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed June 23, 1961, Ser. No. 119,109
13 Claims. (Cl. 198—127)

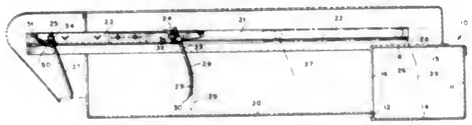
1. In a conveyor for articles having a plurality of driven rollers forming an article transporting surface, a power driven propelling member beneath said rollers and a plurality of pressure rollers beneath said propelling member; said conveyor being characterized by a first zone and a second zone; said first zone being at the discharge end of said conveyor and of a length to accommodate at least a portion of one article; said second zone being adjacent thereto and adapted to discharge articles into said first zone; said pressure rollers in said first zone being fixedly supported to hold said propelling member in driving engagement with said driven rollers; means supporting said

pressure rollers in said second zone for vertical movement, said pressure rollers in one position holding said member in driving engagement with said driven rollers and in another position disengaged from said driven rollers; a sensing element adjacent the discharge end of said first zone, said sensing element being positioned to be actuated by articles moving over said driven rollers;



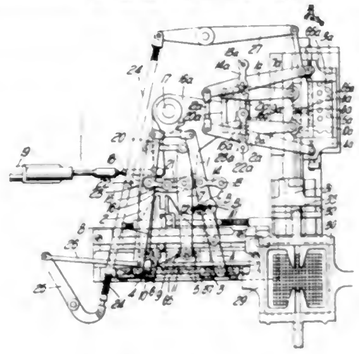
an actuator operatively connected to said means for moving said means and pressure rollers to shift said propelling member out of engagement with said driven rollers when said sensing element is actuated; a time delay element interconnected with said sensing element and said actuator whereby said actuator will become operative only after the lapse of a predetermined time interval after said sensing element has been actuated.

3,156,346
HAY BALER
James W. McDuffie, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Jan. 15, 1963, Ser. No. 251,637
5 Claims. (Cl. 198—223)



1. In a hay baler, a bale case having a pair of upstanding side walls, a top wall and a bottom wall, one of said side walls having a feed opening and said top wall having a slot communicating with said opening, a hay receiving platform extending laterally from said side wall adjacent a lower portion of said opening, a track mounted above said platform and said bale case and extending transverse to the bale case, a carriage mounted on said track for movement toward and away from said bale case, said carriage having a forward end toward said bale case and a rear end remote therefrom, a finger depending from said carriage adjacent said forward end and engageable with hay on said platform, means supporting said finger on said carriage for pivotal movement about a horizontal axis transverse to said track, a pair of angularly spaced stops on said supporting means, one of said stops being engageable with said carriage and limiting pivotal movement of said finger in one direction and the finger being held thereby in a normal pivotal position on a working stroke of said carriage, the other of said stops being engageable with said carriage and limiting pivotal movement of said finger in an opposite direction, spring means biasing said finger to pivot in said one direction, said finger having a straight upper section inclined downwardly and toward said bale case and a curved lower section extending generally vertically when the finger is in said normal position and said lower section being spaced from said platform, a clamp on said supporting means through which said finger upper section extends, means for releasing said clamp whereby said finger may be adjusted relative to said carriage in the direction of the longitudinal axis of the finger upper section to vary the space between the finger lower section and said platform, said finger upper section projecting downwardly through said top wall slot when said carriage is at the end of a working stroke and urging material toward the upper corner of the bale case remote from said one side wall and said finger lower section urging material toward the bale case side wall opposite said one side wall.

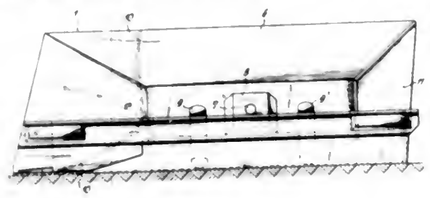
3,156,347
SINGLE-TYPE CASTING MACHINES AND COMPOSING MACHINES
Peter Wills, Three Bridges, Sussex, England, assignor to The Monotype Corporation Limited, London, England, a British company
Filed Apr. 24, 1962, Ser. No. 189,910
Claims priority, application Great Britain Apr. 25, 1961
9 Claims. (Cl. 199—76)



1. In a composing machine, the combination comprising a carrier for carrying matrices arrayed in a plurality of rows in the carrier, the carrier being movable in a direction transversely of the rows to bring a selected one of the rows to a predetermined row position to allow composition of a character from one of the matrices in that row; row positioning means including a plurality of selecting pins and row selecting means, the selecting pins and the row selecting means being operable to co-operate to select one of the said rows to be brought to the said row position; width setting means, associated with each of said pins, for setting the width of a character to be composed, said width setting means providing a predetermined width which has a unique value for each pin, whereby when a pin is selected the said width is consequently determined; the said row selecting means comprising means for selecting a row by co-operation with a first pin thereby setting one width for a character to be composed from a matrix in the said row, and means for alternatively selecting the said row by co-operation with a second pin thereby setting another width for a character to be composed from a matrix in the said row.

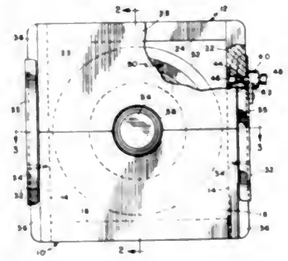
3,156,348
TRANSVERSE CLEARING MACHINE, ESPECIALLY FOR USE IN CONNECTION WITH MINING MACHINES FOR UNDERGROUND MINING
Otto Adolf Wilhelm Renzing, Paul H. A. Kaisler, and Willy K. Lanfermann, all of Bochum, Germany, assignors to Gebr. Eickhoff, Maschinenfabrik u. Eisengiesserei m.b.H., Bochum, Germany
Filed Apr. 9, 1962, Ser. No. 186,095
Claims priority, application Germany, Apr. 14, 1961, E 20,926
3 Claims. (Cl. 198—226)

1. In combination with conveyor means, a transverse clearing machine, especially for use in connection with underground mining, for transferring mined material received from mining tool means to said conveyor means, which includes: base plate means extending at right angles to the direction of movement of said conveyor means and ascending toward said conveyor means to approximately the level thereof, fluid operable piston means reciprocable over said plate means toward and away from said conveyor means for receiving mined ma-



terial and transferring same to said conveyor means, and clearing plate means hinged to the side of said base plate means which trails during mining and at one side of the path of movement of said fluid operable piston means, said clearing plate means being foldable downwardly for movement over the floor during the clearing or reverse movement of said clearing machine to pick up material from the floor.

3,156,349
GUARD FOR HONEYCOMB CUTTERS
Richard R. Brown, 1633 Lily Ave., El Cajon, Calif.
Filed Nov. 20, 1962, Ser. No. 239,021
2 Claims. (Cl. 206—46)



2. The combination of a honeycomb cutter having a disc-like blade with an annular sharp cutting edge and an axial hub extending from one side thereof;

a substantially flat, hollow guard composed of a pair of separable complementary shell portions;

opposed guide channels fixed to opposite edges of one of said shell portions and having extended portions to engage therebetween the other said shell portion;

locking means on one of said extended portions releasibly engageable with said other shell portions;

said guard having an opening in one side thereof at the junction of said shell portions to fit closely around and hold said hub of the cutter with the hub protruding through said opening;

said shell portions being substantially larger than the cutter and having internal annular clearance from the the cutting edge;

spacing means inside the other side of said guard to space all portions of the cutting edge of the cutter therefrom;

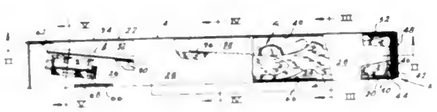
said spacing means and the said other side each having an opening, said openings being coaxial with said first mentioned opening to permit access and to facilitate mounting the cutter on the spindle of cutting machine while the guard is still in place on the cutter.

3,156,350
PLASTIC CAPSULE
Harry A. Lockwood, Westport, Conn. (% DriAire Inc., 26 Fitch St., East Norwalk, Conn.)
Filed June 20, 1963, Ser. No. 289,317
1 Claim. (Cl. 206—46)



A wholly one-piece and wholly rigid permanently sealed capsule comprising a tubular plastic body having integral, closed, rigid and self-supporting fused ends, the wall thickness of the ends being in general appreciably greater than the wall thickness of the sides of the body to provide added strength and rigidity at the ends for minimizing failure and breakage of the same, said ends being so formed by the fusing as to comprise inner and outer twisted configurations respectively at their inside and outside surfaces, said inner and outer configurations at each individual end having generally matching shapes whereby the ends are constituted as undulating walls which have a non-uniform, irregular thickness, said end walls being of generally rounded and blunt contour devoid of sharp or thin protuberances, thereby to effect an increased strength due to shape.

3,156,351
CARTON CONSTRUCTION FOR RIFLES AND THE LIKE
Donald I. Small, West Springfield, Mass., assignor to Longview Fibre Company, a corporation of Delaware
Filed Dec. 14, 1962, Ser. No. 244,675
19 Claims. (Cl. 206—46)

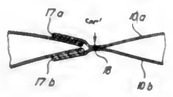


1. In a carton construction in combination with a rifle comprising a stock attached to a barrel, said carton comprising a rectangular bottom wall, end walls and opposed front and rear walls, said rifle lying on its side on the bottom wall with the upper portion of the stock contiguous with one of said opposed walls and the barrel biased relative to said opposed walls, a first top panel folded inwardly from the upper end of the front wall and a vertical panel folded downwardly from said first top panel, said vertical panel being biased relative to said front wall and in contiguous relation with the upper surface of the rifle barrel adjacent the outer end thereof, a second top panel folded inwardly from the top of said front wall, said second top panel having a vertical panel folded downwardly therefrom in contiguous relation with the lower surface of the rifle at a point lengthwise of the rifle intermediate the points where the first vertical panel is contiguous with the upper surface of the barrel and the upper surface of the stock is contiguous with said one opposed wall.

3,156,352
MULTI-COMPARTMENT PACKAGE
Lewis J. Hayhurst, San Carlos, Calif., assignor to Foremost Dairies, Inc., San Francisco, Calif., a corporation of New York
Filed Aug. 6, 1962, Ser. No. 214,900
4 Claims. (Cl. 206—47)

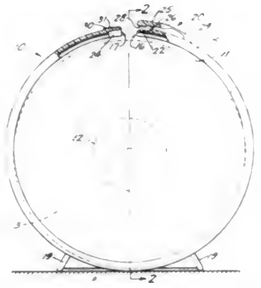
1. A multi-compartment package comprising: opposed flexible sheet material side walls sealed together along their end and longitudinal edges; a transverse breakaway

seal between said end edges and extending from one longitudinal edge to the other to divide said package into at least two compartments; each of said side walls being folded upon itself to form a generally U-shaped pull



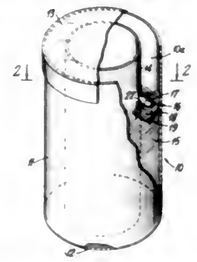
tab extending outwardly therefrom and transversely thereacross adjacent said breakaway seal; said pull tabs being opposite each other and on the same side of said breakaway seal.

3,156,353
CLOSURE
Wayne O. Harnish, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,651
11 Claims. (Cl. 206—52)



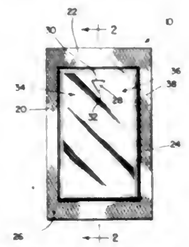
10. A dust resistant reel-closure combination including a reel having a hub with a continuous rim and two spaced parallel circular solid side flanges, and a reel closure member comprising a flexible band wrapped coaxially around the reel bridging the space between the flange edges and having circumferential grooves on its radially inner surface adapted to receive the flange edges, the wrapped band having two adjoining ends, one end reduced in size to form a circumferentially extending tongue bridging the space between the flange edges and telescoped in a corresponding recess in the other band end, the radially inner surface of the tongue being grooved to receive the flange edges, and latching means adapted to be molded integrally with the flexible band including a lever and fulcrum on one of said band ends, the lever overlapping the second of said band ends, cooperating detent means on the radially inner surface of the overlapping portion of said lever and on the radially outer surface of said second band end, the detent means on said radially outer surface comprising a series of circumferentially spaced ratchet teeth to permit adjustment of the circumference of the wrapped band, means for retaining said cooperating detent means in engagement, and means for pivoting the lever about the fulcrum to disengage the detent means and permit removal of the band from the reel, the ratchet teeth being oriented to permit shortening the reel circumference by sliding the lever over the teeth, but to prevent lengthening the reel circumference without dis-engagement of the detent means.

3,156,354
DEVICE FOR BLOCKING WIRE LAY
William M. Laymon, Fort Wayne, Ind., assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,389
10 Claims. (Cl. 206—53)



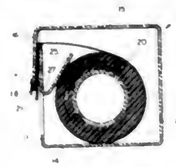
1. The combination of a wire container having a bottom, a generally cylindrical outer side wall and a generally cylindrical core disposed substantially coaxially of said outer wall and surrounded thereby in spaced relation thereto, said core forming the inner wall of an annular vertical space defined by said outer wall and the core, a lay of wire coiled in said space around the core and surrounded by said outer wall, a cushion in said space mounted on top of the wire lay, and a clip in said space overlying the cushion in position to hold the cushion compressed against the wire lay and thereby press the wire lay against the container bottom, said clip having releasable prong means embedded in one of said walls to hold the clip against upward displacement by the cushion.

3,156,355
CONDIMENT PACKET
Robert T. Rodgers, Medfield, Mass., assignor to Jack A. Wood and Isabel D. Wood, Canton, Mass., doing business as Ivy Packet Co.
Filed Feb. 2, 1962, Ser. No. 170,704
1 Claim. (Cl. 206—56)



A substantially flat packet having a plurality of edge sections, said edge sections having a rectangular outer profile and a rectangular inner profile, said packet comprising a pair of superposed panels, said panel each including an outer paper backing and an inner thermoplastic coating, the inner thermoplastic coatings being joined throughout said edge sections around the periphery of said packet to provide a hermetic enclosure for a condiment, said inner thermoplastic coatings being joined additionally at a single control section, the bulk of the area of said control section being spaced from one section of said periphery of said packet in order to define at least a mouth between said one section and an adjacent section of said periphery, and an indicia on at least one of the paper backings at said mouth, said indicia visibly extending across a corner of said external rectangular profile, said paper backing ranging in thickness from 0.0005 to 0.005 inch, said thermoplastic coating ranging in thickness from 0.0005 to 0.005 inch, said thermoplastic coating being composed of a water impermeable synthetic polymer, each of said edge sections ranging in width from ⅛ to ¼ inch, whereby when a corner of said packet is ripped from the remainder thereof along said indicia, said mouth is open, said control section being a substantially triangular island separated from said one section, the base of said island being adjacent to said one section and the apex of said island being remote from said one section, the base of said island ranging in width from ¼ to ½ inch and the distance from the base to the apex of said island ranging from ⅛ to ⅜ inch.

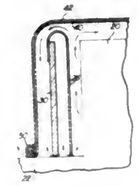
3,156,356
DISPENSING PACKAGE FOR ROLLED PLASTIC WRAP
Albert L. McConnell, Sproul Estates, Chester, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 8, 1962, Ser. No. 229,004
3 Claims. (Cl. 206—58)



1. A carton for containing and dispensing a roll of plastic film material, said carton comprising a receptacle of generally rectangular configuration, having a cover with a dependent front panel extending over the front wall of the receptacle to form a passage through which the plastic film material travels in dispensing, and an integrated tab element in the front wall of said receptacle and releasable therefrom, said releasable tab element forming a part of said front wall and being partially separable from said front wall without substantially diminishing the structural rigidity of said front wall, said element being movable into the interior of the carton and reflexly turned to rest upon the periphery of said plastic roll, said tab element acting in resilient opposition to said roll, with the edge of said tab element originally disposed toward the bottom of said carton, being related to said roll in the direction counter to which said film is removed from said roll and being situated between said roll and the unwound film.

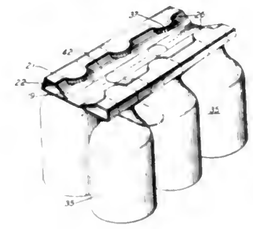
3,156,357
METAL FOIL PACKAGE FOR ANNEALING
William John Neuhauser and Roland Valentine Villiers, Louisville, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original application Nov. 19, 1959, Ser. No. 854,061, now Patent No. 3,067,073, dated Dec. 4, 1962. Divided and this application Feb. 20, 1962, Ser. No. 182,701
5 Claims. (Cl. 206—59)

5. A package suited for annealing comprising, a cylindrical roll of aluminum foil wound upon a core, the ends of said core projecting from opposite ends of said roll; a separate end sheet of aluminum foil adjacent each end of said roll, said end sheet extending over substantially the entire area of the roll end; an asbestos disc adjacent each said end sheet on the side of said end sheet remote from said roll, said core ends extending through registering apertures in said asbestos discs and said end sheets; the edges of said end sheets being folded over the edges of respective adjacent asbestos discs and extending along the outer surfaces of said discs; and, a wrapper of aluminum foil surrounding the roll and extending inwardly at the ends of the roll and packed around the circumference of said core ends to encase said end sheets and said asbestos discs; the asbestos discs and end sheets having



together such insulating and heat deflecting properties as to substantially equalize the flow of annealing heat to all parts of said wound foil, which flow would be unequal in their absence.

3,156,358
CARRIER AND MULTI-CONTAINER PACKAGE
Benjamin F. Randrup, Pleasant Hill, Calif., assignor to John Burton Machine Corporation, Concord, Calif.
Filed Feb. 2, 1962, Ser. No. 170,757
12 Claims. (Cl. 206—65)

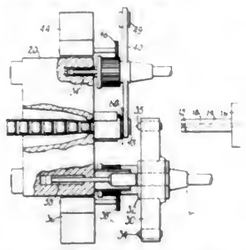


1. A package comprising:
(*a*) a pair of upright containers in side by side relation each having a restricted diameter neck at its upper end and a cap secured over said upper end having an axially downwardly facing surface around said neck;
(*b*) a carrier for said containers comprising;
(*c*) a sheet of bendable, resilient material formed with a pair of neck receiving openings through which said necks extend,
(*d*) the marginal portions around the edges of said neck openings being in yieldable engagement with said necks and extending upwardly out of the plane of said sheet into engagement with said axially facing surfaces of said caps to hold said containers and caps against withdrawal from said openings,
(*e*) said sheet having relatively wide marginal exensions projecting oppositely outwardly of said pair of neck receiving openings in the vertical plane in which said containers are positioned and upwardly across the oppositely outwardly facing outer lateral sides of said caps and then toward each other and over said caps and terminating in free edges spaced between the caps on said containers,
(*f*) a pair of cap receiving openings formed in said extensions through which the inner sides of said caps that are opposite to said outer sides project, and
(*g*) the edge of each of said cap receiving openings at said inner sides of said caps being in engagement with the said axially downwardly facing surface of said caps.

3,156,359
METAL EXTRUSION PRESS WITH ROTARY CONTAINER

Ronald John Elger, Poole, Dorset, England, and Peter Billen, Leverkusen, Walter Vom Dorp, Rheydt, and Gustav Buse, Hilden, Rhineland, Germany, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain, and Mannesmann - Meer A.G., Monchen-Gladbach, Germany, a corporation of Germany

Filed July 5, 1962, Ser. No. 207,717
Claims priority, application Great Britain, July 11, 1961, 25,109/61
8 Claims. (Cl. 207—1)



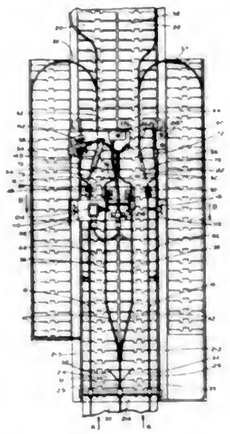
1. A metal extrusion press having a main axis, a die arranged in said axis, a billet-container adapted to be positioned into the main axis of the press so as to enable the major portion of a billet in that container to be extruded through said die while the remainder of the billet stays in the container, a carrier for said container, said carrier being rotatable about an axis parallel to the main axis of the press, a discard-severing punch mounted on said carrier, both said container and said punch being mounted on said carrier with their centers equidistant from the axis of rotation of said carrier, this distance being equal to the distance of the two axes from each other, means for rotating said carrier, means for moving said carrier parallel to the main axis of the press and relative to said die so as to strip the unextruded portion of a billet from the container, and means for moving said discard-severing punch when in the main axis of the press towards said die so as to sever the unextruded portion of a billet from the extruded article.

3,156,360
BEVERAGE BOTTLE SORTERS

Ward J. La Count, 120 Roxann Ave., North Syracuse, N.Y., and George Schwab, Bella Vista Drive, R.D. 1, La Fayette, N.Y.

Filed June 9, 1960, Ser. No. 35,052
2 Claims. (Cl. 209—74)

1. A bottle sorting apparatus comprising a conveyor for moving circular bottles in upright position, a pair of guide rails disposed immediately above said conveyor extending in a direction of movement of said conveyor, said guide rails forming a guide way for single file movement of bottles therebetween, and terminating immediately beyond a bottle diameter sensing region, movable cam means disposed above said conveyor at guide rail height on one side of said sensing region, and being moved by the passage of the body portion of bottles exceeding a predetermined diameter at the height of said cam means, a center guide rail disposed above said conveyor beyond said sensing region, having the end nearest said sensing region disposed substantially on a center line between said pair of guide rails; a gate of a radial length substantially greater than the circular bottles to be sorted pivoted at the said end of said center guide rail and extending toward the ends of said pair of guide rails, and having its free end swing through an arc between the ends of said pair of rails, means for biasing said gate to a position with its free end adjacent the end of one of said pair of rails, means for swinging the free end of said gate to a position adjacent the end of the other of said pair of rails in response to movement of said cam means, and guide rails disposed on either side of said center rail in spaced relation to provide two paths for bottles to move on opposite sides of said center rail, said last named guide rails having curved pocket forming portions on opposite sides of the free end of said gate, the pockets

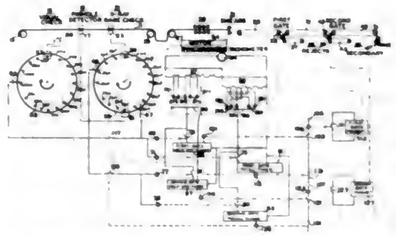


formed by the pocket forming portions of said last named guide rails being of a sufficient width immediately adjacent the end of said guide way means and in advance of said gate hinge to accommodate a bottle when the gate is swung to its end limit position adjacent the pocket, whereby the gate may move a bottle into the pocket for delivery to one pathway in order to receive an immediately succeeding bottle for delivery into the other pathway said curved portions terminating adjacent the respective ends of said pair of rails.

3,156,361
SHEET CLASSIFYING SYSTEM

Jim N. Moreland, Roanoke, and Paul Nybo, Salem, Va., assignors to General Electric Company, a corporation of New York

Filed Oct. 31, 1961, Ser. No. 148,865
1 Claim. (Cl. 209—74)

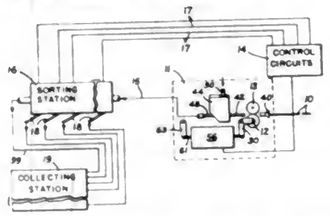


In a sheet classifying system for classifying sheets including magnetic gating means for diverting sheets having faults therein from the classifying system, a pin wheel timer, means for displacing a pin in said pin wheel timer to select a sheet to be diverted by said magnetic gating means, means for moving said pin in said pin wheel timer in synchronism with the movement of the selected sheet in said classifying system, select means for producing a select signal when said pin has been moved to a position indicating that the corresponding selected sheet has moved to a predetermined distance from said magnetic gating means, hold-off timing means responsive to said select signal to magnetize said magnetic gating means after a first predetermined period of time as the head of the sheet with the fault therein approaches said magnetic gating means, total timing means responsive to said select signal to demagnetize said magnetic gating means after a second predetermined period of time as the tail of the sheet with the fault therein clears said magnetic gating means, means for producing length signals indicating the length of sheets being classified, means for producing speed signals indicating the speed of the classifying system and means responsive to said length and speed signals for varying said first and second predetermined periods of time to insure that all sheets with faults therein are diverted from the classifying system.

3,156,362
LIMIT CONTROL APPARATUS

Orvill H. Valentine, Jr., Oconomowoc, Wis., William F. Lodding, Bourbonnais, Ill., and Robert M. Kinkead and Milton M. Moorhead, Jr., Dayton, Ohio, assignors to Ethicon, Inc., a corporation of New Jersey

Original application Dec. 24, 1957, Ser. No. 705,008, now Patent No. 3,023,899, dated Mar. 6, 1962. Divided and this application Feb. 16, 1962, Ser. No. 173,756
4 Claims. (Cl. 209—90)



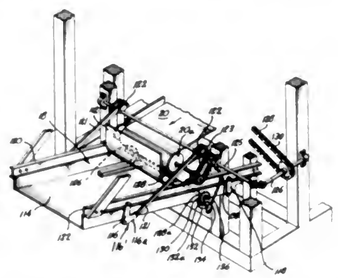
1. In apparatus for classifying a plurality of successive sutures according to the minimum cross sectional dimension thereof including means for conveying successive sutures along a predetermined path past sensing means responsive to the diameter of said sutures providing signals representing such diameters to a controllable sorting station at the end of such path, the improvement comprising a plurality of holding circuits connected to receive signals representing thickness from said sensing means and each operable to go into a state of conduction according to predetermined finite minimum thicknesses of a suture being gauged temporarily storing said thickness information, a separate D.C. operated transfer relay associated with each said circuit, means applying operating power to each of said transfer relays for operation through each said associated circuit in the conductive state thereof subsequent to the passage of said suture past said sensing means, and means on said sorting station connected for operation by said relays for directing each such suture according to the minimum dimension thereof as represented by a relay operated through said circuits.

3,156,363
VINER AND SEPARATOR MACHINES

George Butler, P.O. Box 326, Monroe, Wash.

Filed Feb. 3, 1961, Ser. No. 86,963
3 Claims. (Cl. 209—112)

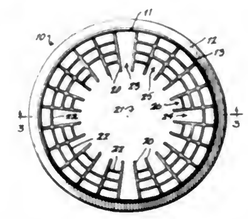
1. Recleaning apparatus to separate fruit from chaff comprising inclined support means onto which mixed fruit and chaff are deposited, drive means for said support means, operable to move said support means reciprocatively on a forward stroke to an elevated, advanced position and on a return stroke, effected at least substantially as abruptly as said forward stroke, to a depressed, return position, along a path of reciprocation which is inclined in the same sense but to a greater degree than the incline of said support means, said drive means being operable to drive the support means on its return stroke with an abruptness which leaves the chaff suspended in mid-air as the support means starts its return stroke and which effects completion of at least a major portion of the return stroke by the time the suspended chaff settles by gravity back down upon the support means whereby the chaff recontacts the support means at a location nearer the latter's upper edge than initially, such that a succession of such reciprocations causes progressive incremental migration of the chaff up the support means while the relatively dense fruit tumbles down the incline of the support means, wherein the support means comprises an inclined reciprocated plate, said apparatus further comprising an elongated scraper blade, means supporting the blade in contact with the plate's upper surface with the length of the blade extending substantially along the incline of the plate, said means supporting the blade being operable to guide such blade for reciprocation back and forth across the plate, and drive means operable to effect such reciprocation of the blade back and forth across the plate accompanying reciprocation of the plate.



3,156,364
PAINT BRUSH HOLDER

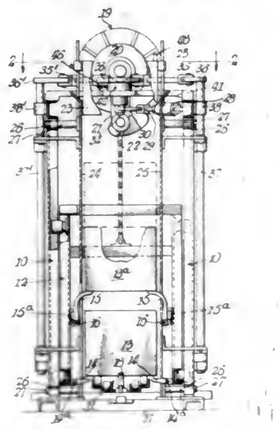
William G. Wolcott, 25 Bramble Lane, Riverside, Conn.

Filed June 10, 1963, Ser. No. 286,825
6 Claims. (Cl. 211—65)



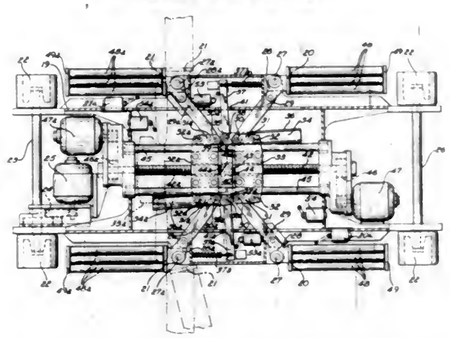
1. A paint brush holder for disposition between a solvent container and a cover and comprising a peripheral wall, and a grid structure integral with said peripheral wall including a plurality of walls extending inwardly from said peripheral wall and terminating in spaced relation to the center point of said holder to provide a free space centrally of said holder, and a plurality of strut walls each extending between certain pairs of said first-mentioned plurality of walls, certain of said strut walls being at varying distances from said peripheral wall and defining a plurality of brush handle receiving recesses of varying depths opening to said central free space.

3,156,365
CASE STACKING APPARATUS
Warren Du Broff, 350 Carol Court, Highland Park, Ill.
Filed Aug. 28, 1961, Ser. No. 134,489
8 Claims. (Cl. 214—6)



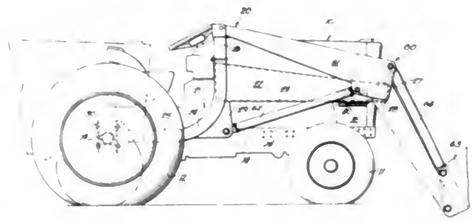
1. In the combination of a case upstacker having a frame carrying a vertically reciprocable carriage and holding dogs selectively positionable under a case being elevated on said carriage to support that case, the improved vertical alignment apparatus comprising a pair of sheets mounted on said frame for coactive movement to define a vertical channel for the receipt of superposed cases, means for bringing said sheets toward each other from a first spacing and thereafter to partially retract said sheets away from said cases whereby said sheets have a spacing less than said first spacing, said means being responsive to the vertical movement of a stack of cases for fully retracting said sheets to said first spacing.

3,156,366
PARKING AND HANDLING DEVICES
Milo Shutt, Alliance, Ohio, assignor to The Alliance Machine Company, Alliance, Ohio
Filed Sept. 10, 1962, Ser. No. 222,459
5 Claims. (Cl. 214—16.1)



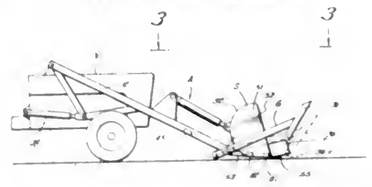
1. In a parking apparatus having generally side-by-side storage stalls, an elevator means traversable transversely of the ends of the stalls, cooperating ways on the elevator and in each stall, the improvement comprising a dolly having a pair of separately and independently moving carriages, said carriages being connected together by stop means limiting their independent movement, each of said carriages having driven wheels independently movable on the cooperating ways, drive means on each carriage independently driving the driven wheels on said carriage to move said carriage, first and second wheel engaging means on each said carriage each movable from a rest position parallel to the side of the carriage and the plane of the wheels of the vehicle to an actuating position greater than 90° from the rest position and to an operative position transversely to the side of the carriage and to the plane of the vehicle wheels, said first and second horizontal movable wheel engaging means on each carriage being so spaced as to engage opposite sides of a pair of vehicle wheels to force the wheels to run onto the movable wheel engaging means to lift the wheels of the vehicle from the surface on which they rest, a second drive means on each carriage moving the first wheel engaging means from their rest position to their actuating position and return, a third drive means on each carriage moving each of the second wheel engaging means from their rest position to engage the opposite side of the wheel when the first wheel engaging means are moved from their actuating position to their operating position by contact with the wheel to be lifted and control means selectively actuating one carriage drive means and one of said second and third drive means on said one carriage selectively to run the carriage beneath the vehicle and engage one of said first and second wheel engaging means on the vehicle tire to move it from its actuating position to its operative position and energizing means actuated by the movement of the wheel engaging means from the actuating to operative position to energize the other of said first and second wheel engaging means on said one carriage and to energize the drive in the other carriage to cause it to move toward the other pair of vehicle wheels and to open one of the first and second wheel engaging means thereon to its actuating position whereby the said other carriage goes through the same cycle to lift said other pair of wheels.

3,156,367
TRACTOR MOUNTED LOADER
Clifford J. Griffith, Westmont, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 16, 1963, Ser. No. 251,828
6 Claims. (Cl. 214—140)



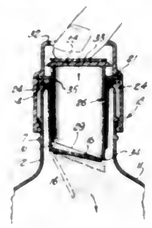
1. The combination with a tractor having a frame including mounting means located along each side of the tractor, a rear axle structure, and mounting brackets secured to said mounting means on each side of the tractor; a loader attachment including a pair of longitudinal side members extending along each side of the tractor from said mounting brackets to said rear axle, the portion of said side members adjacent said mounting brackets having horizontal plate portions; said mounting brackets including horizontal support surfaces adapted to underlie said horizontal plate portions and thereby prevent downward movement of said side members, and restricting means elevated from said horizontal support surfaces adapted to engage the upper surfaces of said horizontal plate portions to prevent upward movement of said side members; and rear mounting means for securing said side members to said rear axle structure.

3,156,368
PICK-UP APPARATUS
Myles G. Schutte, 4655 Telephone Road, Houston, Tex.
Filed July 19, 1961, Ser. No. 125,177
5 Claims. (Cl. 214—147)



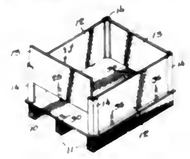
1. A pick-up apparatus, comprising a scoop having a portion thereof engageable with the ground in use, a gripping arm, pivot means attaching said gripping arm to said scoop for pivotal movement relative thereto, said gripping arm having a gripping element thereon spaced forwardly of said scoop when picking up an object and being adapted to pivot about said pivot means for receiving and confining an object between said scoop and said gripping element, and said gripping element having means disposed forwardly of said scoop when picking up an object for engaging the object to cause the gripping element to ride upwardly and pass over the object to the forward portion of the object while said portion of said scoop is in engagement with the ground for thereby automatically confining the forward and rear surfaces of the object between the gripping element and the scoop.

3,156,369
BICAMERAL CONTAINER
Donald R. Bowes, Fanwood, and Paul E. Regan, Jr., Somerville, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Sept. 19, 1962, Ser. No. 224,629
3 Claims. (Cl. 215—6)



1. A bicameral package comprising mixing container having a pouring neck presenting a mouth portion, a cup fitting in said neck and adapted to be slidably removed therefrom, said cup having an outwardly extending peripheral flange fitting over said mouth portion, said peripheral flange having a greater diameter than said mouth portion and overlapping the peripheral edge of said mouth portion, a removable and replaceable cap adapted to fit over and mechanically engage said neck removably and replaceably, said cap having a shoulder contacting the flange on said cup and pressing it downwardly toward said mouth portion to form a seal when the cap is fully engaged with said neck, said cap having an inwardly extending ridge portion spaced below said shoulder and forming therewith a retaining recess for receiving the overlapping portion of the peripheral flange of said cup and retaining the cup in the cap when the cap is removed from the neck, and a plunger fitting in said cup and being displaceable toward the bottom of the cup to remove a portion of the cup, said cap having a relatively rigid frangible top section above said plunger and said frangible section being adapted to be broken to permit access to the plunger for displacing the plunger toward the bottom of the cup to remove a portion of the cup and allow the contents of the cup to be mixed with the other contents of the container while the cap is in position on the neck of the container, said frangible section comprising a removable portion having a transverse dimension less than the transverse dimension of the top of the plunger so that the plunger cannot be displaced from the cup through the opening left in the top of the cap by displacement of the removable portion, the top of the plunger having a transverse dimension greater than the inside diameter of the cup for preventing the plunger from being removed from the cup through the bottom of the cup, whereby the cap containing the cup and the plunger may be removed easily from the pouring neck by unscrewing the cap from the neck to allow some of the mixture to be poured from the mixing container and the mixing container may be reclosed by screwing the cap back on the pouring neck and the cup and the plunger retained therein to complete the closure.

3,156,370
KNOCKDOWN BULK CONTAINER
Earl Grant Monfort, Ellensburg, Wash., assignor to Winthrop Enterprises, a limited partnership
Filed Jan. 22, 1962, Ser. No. 168,320
8 Claims. (Cl. 217—15)



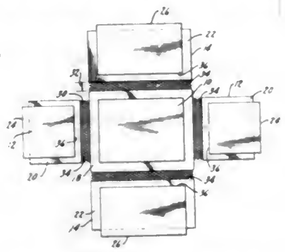
1. In a container having a rectangular floor panel and for each of its four side walls employing a respective wood panel resting upon the floor panel along a related margin of the floor panel, structure for joining adjacent ends of the meeting side panels one to another comprising, for each of the four corners of the container: an extruded metal corner post formed to present two outwardly opening vertical channels disposed at substantial right angles to one another and with each channel having a width corresponding to the thickness of the related side panel so as to receive the end edge of the latter as a tongue therein, each said channel along at least one of its side walls having a protruding vertical key made integral with the wall and arranged to register with a mating key-way cut in the panel, the transverse vertical plane in which said key lies being spaced inwardly both from the free end of the channel wall to which it is attached and the channel wall which lies opposite thereto.

3,156,371
CONTAINER
James M. Harrison, Fort Worth, Tex., assignor to Crown Machine & Tool Company, Fort Worth, Tex., a corporation of Texas
Filed Feb. 26, 1962, Ser. No. 175,601
11 Claims. (Cl. 220—6)

1. A blank for forming a rigid container including a plurality of separate foamed plastic sections, lying generally in the same plane, for forming the walls and bottom of the container,

each of said walls being positioned opposite and generally aligned with an edge of said bottom,

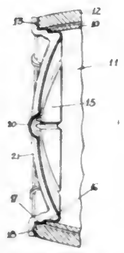
a thin paper-like flexible hinge embedded into and connecting each of said walls with an edge of said bottom and spacing said walls from the bottom such that



when the walls are folded up to a generally upright position relative to the bottom, each hinge will be in tension and each wall will be firmly in contact with the bottom,

and a top for said container.

3,156,372
CLOSURE FOR THE EXHAUST OPENING OF A JET ENGINE
George K. Parker, Woodside, Calif. (1649 Old County Road, San Carlos, Calif.)
Filed Dec. 19, 1961, Ser. No. 160,563
5 Claims. (Cl. 220—24)



1. In combination, a jet engine having an annular jet engine outlet end and a surrounding annular cowling projecting beyond said outlet end, said outlet end being defined by an annular wall the inside surface of which tapers to and terminates at the mouth of the engine outlet, a closure comprising a circular plastic radially deformable closure having an inner annular wall insertable within said outlet end and tapered in the same direction as said surface to resiliently bear against the surface, and an outer annular wall extension adapted to form a closure between the engine outlet and cowling and to resiliently engage against the inside of the cowling.

3,156,373
PLUG DEVICES
Leonard F. Willis, Birmingham, Mich., assignor to Han Le Ray Corporation, Madison Heights, Mich., a corporation of Michigan
Filed May 28, 1962, Ser. No. 200,018
5 Claims. (Cl. 220—24.5)

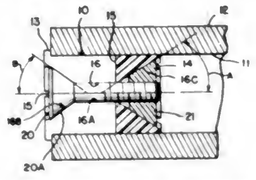
1. A device for plugging the open end of a tubular passage and the like comprising

(*a*) an elongated plug adapted for insertion in said tubular passage,

(*b*) said plug being provided with radial slots extending longitudinally inwardly from both ends to provide an inner arcuate end segment and an outer arcuate end segment,

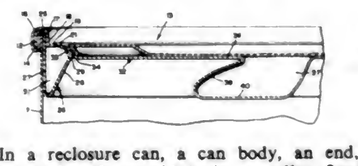
(*c*) a screw carried in said plug,

(*d*) means carried by said plug and operable to radially displace said arcuate end segments radially outwardly into binding engagement with the inner surface defining said tubular passage upon rotation of said screw;



(*e*) said means being further operable to urge said inner end segment into binding engagement with said surface before urging said outer end segment into binding engagement with said surface upon rotation of said screw.

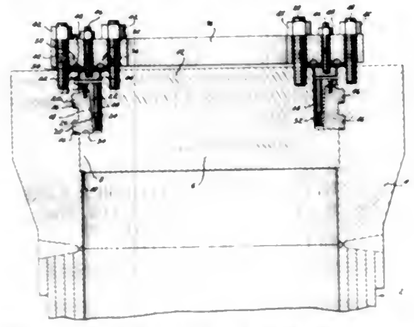
3,156,374
CAN MACHINE AND METHOD
Arthur P. Scholtz, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill.
Filed May 8, 1961, Ser. No. 123,331
12 Claims. (Cl. 220—29)



1. In a reclosure can, a can body, an end, means securing said end to said body, a collar fixed inside said body between said body and said end, said collar being resilient, a cap for said collar, and cooperating means on said cap and collar detachably to hold said cap on said collar in underlying relation to said end, said collar when said end is in place being bent downwardly within elastic limits by said end and the cap is shifted therewith so that when said end is cut off, the pressure of the collar on said end will raise the cut portion of the end and at the same time lift said cap.

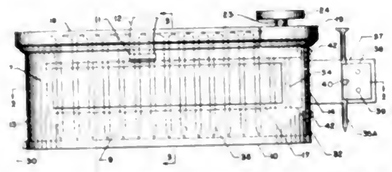
3,156,375
EXTERNAL PRESSURE SEAL FOR PRESSURE VESSELS
Charles A. Long, 205 W. Elm St., Titusville, Pa.
Filed Aug. 29, 1963, Ser. No. 305,263
6 Claims. (Cl. 220—46)

1. In a pressure vessel: a generally cylindrical shell portion having an open end; a closure in said open end and having an inner flange portion substantially closing said open end and an outer portion of less diameter than said open end of said shell and defining an outwardly open channel therebetween; a locking ring in said channel interlockingly engaged with said shell and held thereby against axial movement; said inner flange portion of said closure having an outer surface bearing directly on said locking ring to lock said closure in said open end; an annular pressure ring in the outer end of said channel; an annular bridge ring radially spanning the open end of said channel and being fixed to said vessel; concentric sealing means, each bearing against said bridge ring, one of said sealing means sealingly engaging adjacent portions of said closure and said pressure ring and the other sealingly engaging adjacent portions of said shell and said pressure ring; and selectively operable pressing means for moving



said pressure ring outwardly toward said bridge ring to apply initial sealing pressure to both said sealing means.

3,156,376
SEMI-AUTOMATIC FASTENING DEVICE DISPENSER
Walter Lasting, 111—33 116th St., Richmond Hill 20, N.Y.
Filed Feb. 8, 1963, Ser. No. 257,128
4 Claims. (Cl. 221—79)



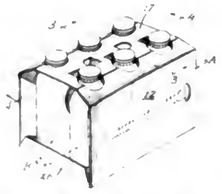
1. In a nail dispenser, the combination with a housing comprising sidewalls one of which has a forward extension, end walls, a bottom and a cover, the said cover including a short fixed portion and a relatively long removable portion and the forward one of said end walls ending in spaced relation to the sidewall, of which said extension is a part, to provide a slot opening for individual edgewise passage of nails therethrough; of an endless belt, spools engaged by said belt and rotatably mounted in said housing adjacent said end walls, nails to be dispensed being carried by and transversly of said belt in spaced parallel relation, manually operable for rotating one of said spools to intermittently feed the belt mounted nails successively to said discharge opening, stripping means for disengaging the nails from said belt as they reach said opening and a stop block removably attached to the inner face of said wall extension in advance of said opening, said block comprising a permanent magnet functioning to successively draw nails as they are released from said belt through the discharge opening, across the face of said wall extension to and support them against the stop block in position for nailing.

3,156,377
BOTTLE CARRIERS
Lawrence S. Wysocki, Chicago, Ill., assignor, by mesne assignments, to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed July 30, 1962, Ser. No. 213,438
4 Claims. (Cl. 220—114)

1. A bottle carrier of the wrap around type adapted to wrap around two side by side rows of bottles in opposed relation, the carrier including an elongated strip of foldable sheet material creased to provide, a first side wall, a bottom panel, a second side wall, a top panel structure and a locking flap secured in series,

said top panel structure including a center top panel and a pair of side top portions connected to opposite sides of said center top panel and to said second side wall and said locking flap respectively,

said top panel structure including a series of opposed pairs of apertures at the juncture between said center top panel and said side top portions and spaced apart a distance substantially equal to the diameter of the bottles to be contained and equal in number to the bottles to be contained,



said apertures being of a size to accommodate the necks of the bottles to be contained,

one aperture of each pair being at least partially formed by cut lines defining a tab,

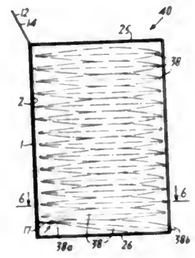
a strap connected to each tab and defined by cut lines terminating in spaced relation substantially at the center of said center top panel between said rows of apertures,

said tab and strap being adapted to fold into substantially parallel relation to said side walls and between the bottles of each pair when said carrier is folded about said rows of bottles.

ERRATUM

For Class 221—79 see:
Patent No. 3,156,376

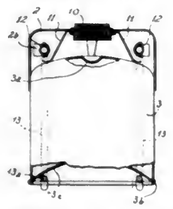
3,156,378
ARTICLE DISPENSER HAVING A REMOVABLE SUPPLY CARTRIDGE
William J. Bua, 42 Rutledge Road, Scarsdale, N.Y.
Filed Aug. 20, 1962, Ser. No. 217,989
5 Claims. (Cl. 221—197)



1. A dispenser comprising two component parts comprising a tubular casing and having open ends and a magazine in operation axially into said casing having a space for stacking substantially alike articles therein substantially conforming to a cross section of said magazine, said magazine having a partial closure at the lower end thereof for holding said articles therein and having an opening through which said articles are loaded into said magazine in stacked relationship and having another opening from which a lowermost of said articles may be withdrawn from said stack, said casing having an opening

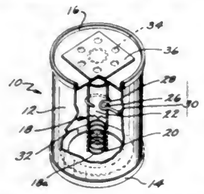
registering with a part of said another opening of said magazine when said magazine is inserted in said casing axially to permit withdrawal of the lowermost articles, a deflectable, ejector tab on one of said parts disposed extending inwardly into said casing and said magazine in position for engaging the lowermost of the stacked articles successively to partially eject them through said registering openings of the magazine and casing for easy withdrawal of the lowermost of said articles from said dispenser.

3,156,379
STOVES AND LIKE APPARATUS OPERATING WITH LIQUEFIED GAS
Gabriel Félicien Corlet, Pierre-Benite, Rhone, France, assignor to A.D.G. Société d'Application des Gaz, Produits Routiers et Matériaux, Paris, Seine, France, a French joint-stock company
Filed Mar. 16, 1962, Ser. No. 180,266
Claims priority, application France, Apr. 28, 1961, 41,520
6 Claims. (Cl. 222—5)



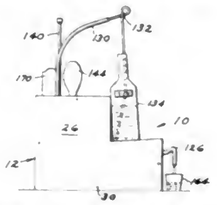
6. A portable apparatus of the kind using a liquefied combustible gas comprising a substantially cylindrical gas cartridge having a first end and a second end, with said second end of recessed shape defining an inner space; a support in the form of an inverted cup to receive the first end of said cartridge; stirrups hinged to said support, each comprising two substantially parallel spaced branches and a transverse branch cooperating with the second end of said cartridge to retain the first end thereof engaged in said support, said transverse branch having an inwardly projecting portion which extends into the inner space defined by said recessed second end of said cartridge; and means on said support to act on the upper end of said cartridge to positively apply the lower end thereof against the transverse branch of each of said stirrups to latch the inwardly projecting portion of said transverse branch in the inner space defined by the recessed second end of said cartridge and to thereby prevent said stirrups from being swung outwardly to liberate said cartridge.

3,156,380
COUPON EJECTOR
Alfred J. Kuechenmeister, 6010 Lake Shore Road, Manistee, Mich.
Filed July 27, 1962, Ser. No. 212,966
6 Claims. (Cl. 222—41)



1. A coupon-ejecting and granular material dispensing package, comprising: a container having an aperture at one end through which the material is discharged when the container is inverted; a cartridge within said container; biasing means for biasing said cartridge outwardly of said container; releasable lock means for preventing outward movement of said cartridge; weight means resting on the material contained in said container when said container is in a position to discharge said material therefrom; and means associated with said lock means for engaging said weight means and releasing said lock means when said weight means reaches a predetermined position in said container.

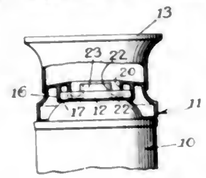
3,156,381
AUTOMATIC LIQUOR DISPENSER FOR BARS
Peter Plentis, 13775 Sherwood St., Detroit, Mich.
Filed Apr. 16, 1962, Ser. No. 187,670
16 Claims. (Cl. 222—60)



1. An automatic dispenser for a liquid comprising a pump including a pumping chamber and a movable pumping element in said chamber; a primary liquid reservoir; a secondary liquid reservoir; conduit means connecting said reservoirs; passage means connecting said pumping chamber to said secondary liquid reservoir; an electrical motor including a rotatable shaft; and pump actuating means operatively connecting said motor to said pump comprising an actuating arm connected to said pumping element, a slot in said arm through which said shaft extends with clearance between said shaft and the end walls of said slot, a pair of spaced abutments on one side of said arm opposite the ends of said slot, and a cam fixed to said shaft between said abutments and rotatable with said shaft upon energization of said motor; said cam being engageable with one of said abutments during a portion of the first cycle of rotation of said cam to move said pumping element and said actuating arm with respect to said shaft in one direction to discharge the liquid in said pumping chamber and engageable with the other of said abutments during a later portion of the first cycle of rotation of said cam to move said pumping element and said actuating arm with respect to said shaft in the opposite direction to replenish the chamber with liquid from said secondary liquid reservoir.

3,156,382
AEROSOL CONTAINER ADAPTER COLLAR
Jerome N. Michell, Highland Park, Ill., assignor to W. R. Frank Packaging Engineers, Inc., a corporation of Illinois
Filed Aug. 17, 1962, Ser. No. 217,616
4 Claims. (Cl. 222—182)

1. An adapter collar for an aerosol container having a container top outer rim, a mounting cup rim and an aerosol valve positioned above said rim which comprises: an annular ring having inner and outer diameters and a downwardly extending flange, said flange being adapted to secure the ring to one of the outer rim of the container top and the mounting cup rim, the inner diameter of the annular ring being larger than the diameter of the aerosol valve button positioned above the rim, said annular ring having a plurality of steps on its upper surface portion, each step having a part which is disposed in a vertical direction, the vertical parts of said steps being located at different distances from the center of the adapter collar, and each of said vertical parts being adapted to receive and coact with



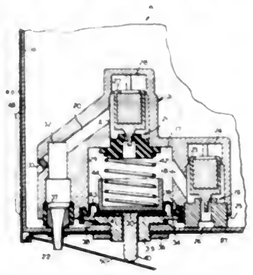
a container cap to hold the same, so that the adapter collar may be used with various sizes of container caps.

3,156,383
EXPANSIBLE SINGLE USE DISPENSING CONTAINER
Gino Melli, Sant'Ilario d'Enza, Italy, assignor to Maison Industrie Tecnico Chimiche Nelsen
Filed Aug. 6, 1962, Ser. No. 215,195
Claims priority, application Italy, Apr. 5, 1962, 6,609/62
6 Claims. (Cl. 222—83)



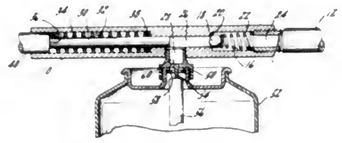
1. A hermetically sealed container having self-supporting walls, said container comprising a body, a neck projecting away from said body and terminating in a filling mouth having opposed lips which are compressed together and hermetically sealed to each other, a threaded dispensing spout closed by a rupturable diaphragm integral with the spout, a cap for said spout, and means carried by said cap for rupturing said diaphragm.

3,156,384
DISPENSERS FOR LIQUIDS, WITH MEASURED DISCHARGE
Jacob M. Katz, 357 E. 57th St., New York, N.Y.
Filed Sept. 27, 1962, Ser. No. 226,656
3 Claims. (Cl. 222—207)



1. In a dispenser for liquids, a supply tank, a body member positioned within said tank near the bottom thereof; said body member having first, second and third sockets extending upwardly in said body from the bottom surface thereof, a resilient diaphragm closing the mouth of the first socket, a first tubular member fitted in the first socket intermediate its ends, dividing said first socket into an upper region and a lower region, a first valve member positioned in the upper region of the first socket and freely slidable up and down therein; said first tubular member serving as a seat for said first valve member and normally closed thereby due to the action of gravity on said first valve member, a second tubular member fitted in the mouth end of the second socket, a second valve member positioned above said second tubular member and within the second socket and freely slidable up and down in said second socket, said second tubular member serving as a seat for said second valve member and normally closed thereby due to the action of gravity on the second valve member; said second tubular member being communicative with the supply tank, a discharge nozzle fitted in and communicatively with the third socket and extending downwardly therefrom in water-tight engagement with the bottom wall of the main tank, through said tank wall and outwardly of said supply tank, spring means within the lower part of the first socket, biasing the diaphragm downwardly, an element positioned below the diaphragm, a shank extending downwardly from said element which is below the diaphragm, through the bottom wall of the supply tank and outwardly of said supply tank, adapted to be pushed manually upwardly whereupon said element associated therewith will shift the diaphragm upwardly into the first socket, means securing said body member to the bottom wall of the supply tank and means preventing leakage from the supply tank around said shank; said body member having a bore communicatively connecting the third socket with the upper part of the first socket when the first valve member is raised off its seat to open the first tubular member; said body member also having a bore communicatively connecting the upper portion of the lower part of the first socket with the second socket above the second tubular member whereby when the second valve member is raised off its seat to open the the second tubular member, the lower portion of the first socket is made communicative with the supply tank.

3,156,385
METHOD AND APPARATUS FOR DISPENSING VISCOUS SUBSTANCES
Dean B. Yetter, Hebron, Ill., assignor to Crown Industrial Products Company, Woodstock, Ill., a corporation of Delaware
Filed Dec. 20, 1962, Ser. No. 246,213
5 Claims. (Cl. 222—262)



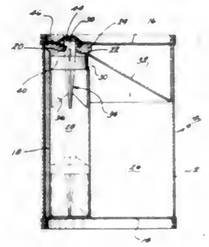
1. A self-contained portable gun for dispensing a viscous substance such as grease or the like, including a barrel having an outlet and a filling opening, a check valve in the barrel between said outlet and filling opening, a reciprocal plunger in the barrel and means for operating it, said filling opening being in communication with the barrel when the plunger is in an inoperative position, said plunger closing said filling opening as it is reciprocated to drive the substance from the barrel,

an adapter connected to said barrel at the filling opening, a release member on said adapter extending away from said filling opening, said adapter having at least one passage therein in communication with the filling opening

a can fixed to said adapter with said release member extending into said can, a normally closed valve in

said can, said release member opening said valve to place the interior of said can in communcation with said barrel through said filling opening and passage, said can containing a supply of a viscous substance to be dispensed and a completely contained source of pressure positioned beneath said viscous substance, and a diaphragm circumferentially attached to said can and flexible throughout its area, said diaphragm being positioned between said viscous substance and said source of pressure.

3,156,386
GRAVITY EJECTOR FOR INVERTIBLE CONTAINER
Alfred J. Kuechenmeister, 6010 Lakeshore Road, Manistee, Mich.
Filed July 27, 1962, Ser. No. 212,959
3 Claims. (Cl. 222—372)



1. A dispenser comprising: a container having an elongated piston chamber and a spout communicating with one end thereof; said spout constituting a proportioning chamber; said container having a material-storage chamber communicating with said piston chamber adjacent said spout; a gravity operated piston means in said piston chamber slidably movable lengthwise thereof and normally clear of said spout when said container is upright; said proportioning chamber being of substantial length and uniform cross section; said piston means having an element thereon longer than said proportioning chamber and arranged to enter said spout and pass entirely through said proportioning chamber to the exterior of said container when said container is inverted, thereby ejecting a measured charge from said container; said piston, upon entering said proportioning chamber, sealing the same against entry of additional material from both said piston and storage chambers.

3,156,387
COMBINED PACKAGE AND DISPENSING UNIT FOR PASTY MATERIALS
Julian L. Harwood, 2007 Brummel, Evanston, Ill.
Filed Apr. 4, 1961, Ser. No. 100,553
1 Claim. (Cl. 222—390)

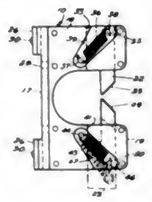
A self-contained package and dispensing unit for dispensing relatively thick, flowable materials comprising: a rigid container body having at least one fully open end and a supply space therein substantially filled with said material, said container body having an end wall closing off the other end thereof, said end wall including a spout for dispensing said material, a dispensing unit anchored in and closing off said fully open end of the container body for dispensing said material in controlled amounts through said spout, said dispensing unit comprising a rotatable screw means having a threaded portion extending longitudinally within said container body for substantially most of the length thereof, a plunger member fixed against rotation and slidably mounted for longitudinal movement within said container body and threaded over said threaded portion of said screw means so as to be moved toward the dispensing end of said container body upon rotation of said screw means, a synthetic plastic coupling member extending from the end of said screw means adjacent said fully opened end of said container body, said coupling member having an axially extending body portion spaced substantially inwardly from the walls of the container body and a flange extending transversely from the inner end of said body portion at a point within and spaced from the open end of said container body, a separate thin-walled cup-shaped thrust bearing member mounted within said open end of said container body and adapted to be filled with sealing compound, said thrust bearing member having a transversely extending central wall at the inner end thereof which is positioned on the outer side of said flange of said coupling member whereby said flange transfers the thrust on said screw means to said central wall, said transversely extending central wall having a central opening through which said body portion of



said coupling member outwardly extends, said thrust bearing member having an outwardly extending peripheral wall engaging the inner surface of said container body and anchored directly to said body to prevent movement thereof in any direction, and a separate rotatable knob member having a transverse outer wall overlying the open end of said container body and solely engaging and non-rotatably connected to the outer end of the body portion of said coupling member, said outer wall being spaced from said central wall of said thrust bearing member to leave an appreciable space which can be filled with sealing compound and which space is covered by said transverse outer wall, said rotatable knob member being attached to the coupling member subsequent to the connection of said thrust bearing member to the container body where there is full access to the inside of the cup-shaped thrust bearing member prior to connection of the rotatable knob member to the coupling member.

3,156,388
TOOL HOLDER
Charles S. Simmons, 600 15th St., Sparks, Nev.
Filed Nov. 29, 1963, Ser. No. 326,846
4 Claims. (Cl. 224—5)

1. In a tool holder for a tool having a handle, the combination of a body, spaced ears projecting outwardly from said body to define an opening to receive the tool handle, each of said ears having a slot in communication with said opening, a plunger in each of said slots, each plunger being movable between two positions, in one position said plungers being in end to end closely spaced relation and in said other positions said plungers being in end to end spaced apart relation to permit removal and acceptance of a tool handle, a spring means acting between each plunger and said body urging said plunger to said closely spaced end to end relation at



least one of said plungers having a surface whereby a pressure against said surface causes said plunger to move to its other position.

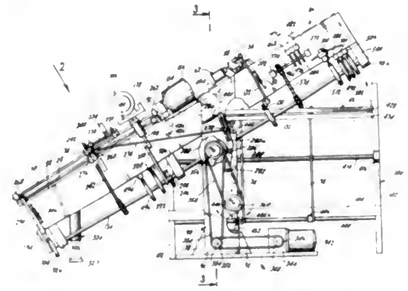
3,156,389
SNAP-IN EASEL BINDER
Elbert L. Walker, Jr., 4456 Clarissa Ave., Los Angeles 27, Calif.
Filed July 26, 1963, Ser. No. 297,917
7 Claims. (Cl. 224—46)



1. A snap-in easel binder comprising:
(*a*) a loose-leaf binder having stiff covers connected by a back and provided with a set of loose-leaf rings to hold a sheaf of sheets, and
(*b*) a combined carrier and easel attachment provided with panels disposed between the covers and having separable connection with said rings, with separably connected panel extensions disposed on the outsides of said binder cover, and with loops connecting the panels on the same side of the binder and slidingly engaged with the covers of the binder.

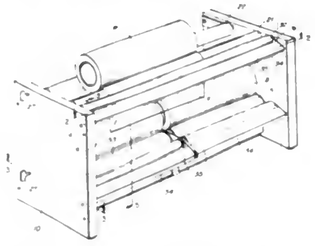
3,156,390
GLASS CUTTING MACHINE
Finley B. Hess, Brockway, and George B. Erskine, Emporium, Pa., assignors to Brockway Glass Company, Brockway, Pa.
Filed Nov. 4, 1960, Ser. No. 67,278
9 Claims. (Cl. 225—2)

1. A machine for severing lengths of thermoplastic tubing into a plurality of longitudinal sections comprising supply means to deliver one of said lengths at a time to a transfer location, guide means defining a feed path in communication with said transfer location, advancement means to periodically advance said length of tubing along said feed path a predetermined distance beyond a severing line, adjustable stop means defining a positioning location along said feed path at a distance beyond said severing line equal to the length of said longitudinal sections and adapted to stop said advancement at said positioning location, rotating means adapted to rotate said length of tubing in said feed path after said advancement is stopped, heating means at said severing line to heat said length of tubing, severing means adapted to sever a section from said length of tubing at said severing line, receiving means



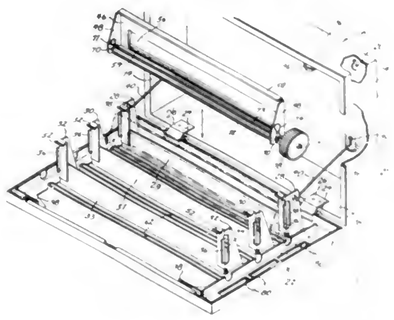
to receive said length of tubing after it has been severed, and control means to activate said aforementioned means in timed sequence.

3,156,391
FILM DISPENSER GUARD AND POSITIONING DEVICE
Guy J. Wicksall, Canandaigua, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Aug. 30, 1962, Ser. No. 220,459
4 Claims. (Cl. 225—34)



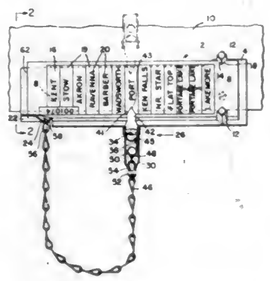
1. A dispenser for thermoplastic film, comprising a frame having side members, a pair of parallel substantially horizontal rollers on shafts journalled rotatably mounted at the same level between said side members, a rod extending between the side members and substantially on a level with and at one side of said rollers, a film locator member rotatably mounted on said rod and depending downwardly, a high resistance wire extending between said side members at approximately the level of said rollers and on the other side of said locator member, a guard mounted above said wire, said guard having a bracket portion and a shielding portion, said shielding portion substantially encompassing said wire when the guard is in the lower position, the extremity of said bracket portion remote from said shielding portion engaging the shaft of the adjacent horizontal roller and said guard in said lower position out of contact with said wire, said guard being biased into said lowermost position and being shiftable into said upper position with said wire exposed, whereby a roll of film supported on said rollers and having its free end hanging downwardly between a roller and said locator member may be readily grasped, a desired length pulled from said roll and the film raised, thereby causing the film locator and the guard to lift, whereby the film engages the hot wire and is thereby severed.

3,156,392
SHEET MATERIAL DISPENSER
Henry R. Johannes, Macungie, Pa.
(% Caloric Corp., Topton, Pa.)
Filed Dec. 27, 1962, Ser. No. 247,758
4 Claims. (Cl. 225—38)



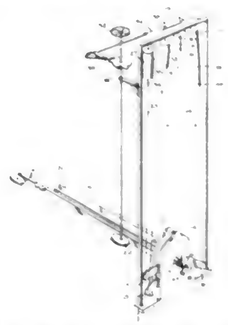
1. A sheet material dispenser comprising:
a box-like receptacle,
a cover having a slot therein and hinged to a side of said receptacle,
a shelf carried by said cover,
a separate tray,
means for releasably clamping said tray to said shelf,
means yieldably and detachably clamping a sheet material supply roll on said tray,
nip rolls carried by said tray and adapted to receive the lead end of the sheet material there-between and disposed in registration with said slot, and
actuating means operable from without said receptacle for unidirectional turning, said rolls to propel the sheet material through said slot.

3,156,393
CHECK HOLDING AND NOTCHING DEVICE
Clinton E. Hicks, Cherry Hill, N.J., and John W. Zundt, Ardmore, Pa., assignors to Globe Ticket Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 1, 1963, Ser. No. 292,011
1 Claim. (Cl. 225—89)



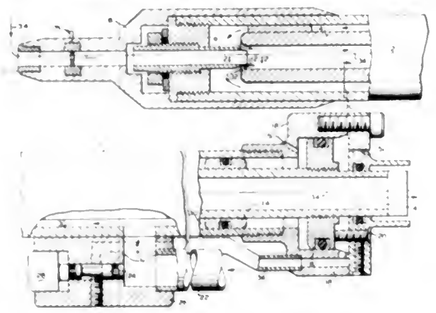
In combination, a plurality of substantially rectangular stacked stubless checks each having a pair of opposed openings respectively in the opposite long sides thereof adjacent one end, said checks having printed indicators thereon and a check holding and notching device comprising a substantially rectangular member having a rear face and a front face supporting said checks, a pair of retaining members secured to said support member and respectively passing through the openings in said checks to releasably retain the checks on the support member, a clamp having a pair of opposed jaws and adapted to engage along a long side thereof the rear face of the check support member and the checks respectively, a spring urging the jaws towards each other, the jaw engaging the checks having a reduced end and sharp edges, hand hold means for moving the jaws apart to disengage the clamp from the checks and the rear face of the check support member, and a check stop member adjacent one end of the side of the support member engaged by the clamp and remote from the retaining members.

3,156,394
APPARATUS FOR CUTTING A CASING OF MALLEABLE MATERIAL CONTAINING A SOLID MATERIAL
Maurice Alles, Bagnols, Pierre Camatte, Orange, Denis Martin, Villeneuve, and Achille Pellerin, Bagnols, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Apr. 28, 1960, Ser. No. 25,389
Claims priority, application France, May 4, 1959, 793,814
1 Claim. (Cl. 225—94)



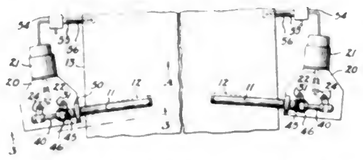
Apparatus for serving a casing containing solid materials at right angles to the longitudinal axis of the casing, the casing having longitudinally extending spaced ribs, comprising a plurality of clamping jaws disposed in a plane at right angles to and about the long axis of the casing, a plurality of shearing jaws disposed in a second plane at right angles to and about the long axis of the casing and adjacent said first plane, said clamping jaws and said shearing jaws fitting between and engaging said ribs when engaging the casing, means for moving said clamping jaws and said shearing jaws into engagement with the casing, a trough supporting said casing, means for moving said casing stepwise in said trough in pre-determined amounts to bring said casing into position for engagement by said clamping jaws and said shearing jaws, said means for moving said clamping jaws into clamping engagement including a first circular cam disposed about said casing, a first central axial opening in said cam receiving said casing, said means for moving said shearing jaws into engagement with said casing including a second circular cam, a second central axial opening in said second cam receiving said casing, channels in said cams receiving said jaws and ramp and pin means for each of said jaws for moving said jaws into engagement with said casing when said cams are rotated, after engagement of the casing by said shearing jaws, rotation of said cam for said shearing jaws moving said shearing jaws with respect to said clamping jaws first shearing said ribs and then shearing said casing in a plane between the plane of said shearing jaws and the plane of said clamping jaws.

3,156,395
FLUID PRESSURE METHOD FOR TRANSFERRING YARN
William Cropper Ashby, Chattanooga, Tenn., William Wallar Bunting, Jr., Wilmington, Del., Robert Meagher, Wallingford, Pa., and Thomas Larson Nelson, Newark, and Kenneth Gilbert Swayne, Hockessin, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Nov. 25, 1960, Ser. No. 71,662, now Patent No. 3,094,262, dated June 18, 1963. Divided and this application Nov. 15, 1962, Ser. No. 237,990
3 Claims. (Cl. 226—7).



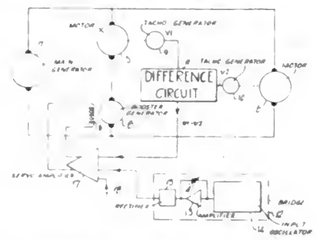
1. An improved method of applying tension to a yarn line and having special utility in handling wet multifilament yarn lines, said method comprising the steps of applying to a yarn line an annular jet of high velocity air at an elevated pressure and directed substantially along the desired line of movement of said yarn line, increasing the velocity of the air stream by varying the transverse cross section of said jet to supersonic flow conditions at a given point along the yarn line, and maintaining said supersonic flow conditions by controlling the transverse cross section of said jet along a significant and extended portion of said yarn line travel sufficient to achieve a desired tension level in said yarn line.

3,156,396
WEB GUIDING MEANS
Harvey Snyder and Alexander V. Alexeff, Cleveland, and Howard R. Richards, Lakewood, Ohio, assignors to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 8, 1962, Ser. No. 228,943
4 Claims. (Cl. 226—17)



2. Web guiding apparatus comprising first and second rotatable rolls each extending from its own fixed end to its own free end transversely of the length of the guided web, said first roll extending over the web and said second roll extending under the web, means for oscillatably moving said rolls as a set back and forth, around an imaginary axis extending from the region of said fixed roll ends to the region of said free roll ends, (1) angularly away from a first condition of over-and-under relationship between the rolls and toward a second condition of side-by-side relationship between the rolls and (2) angularly away from said second condition and toward said first condition, the rolls being mounted so that said fixed ends angularly lead said free ends in moving away from said first condition and toward said second condition and said free ends angularly lead said fixed ends in moving away from said second condition and toward said first condition, means for shifting said rolls back and forth together transverse to the direction of web travel incident to said progressive back and forth movement between said first and second conditions.

3,156,397
CONTROL OF STRIP DRIVING MEANS
Richard Edward Davies, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Apr. 27, 1962, Ser. No. 190,678
Claims priority, application Great Britain May 2, 1961
3 Claims. (Cl. 226—42)



1. An arrangement for controlling the sag of a catenary length of a travelling conducting material, comprising two electric motors coupled in driving relationship to the two ends of said length, both motors having their armatures supplied from a common direct current source, a direct current booster generator having an armature connected in series with the armature of one of said two motors, a field winding of said booster generator being supplied from a rectifier which is fed from an oscillator through an amplifier, said amplifier having a feedback circuit and a capacitor having an electrode formed by the said length of material being included in said feedback circuit.

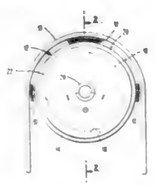
3,156,398
TAPE HANDLING APPARATUS
Carl Lauxen, Haddonfield, and John B. Long, Jr., Westmont, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 30, 1961, Ser. No. 121,154
7 Claims. Cl. 226—97)



2. A tape guide for guiding a tape along a path comprising a member having a surface disposed along said path, means for supplying a pressurized fluid above atmospheric pressure between said surface and said tape,

and means included in said last named means for supplying said fluid at relatively higher pressures above atmospheric pressure in the end regions of said surface and relatively lower pressures above atmospheric pressure in the central region of said surface.

3,156,399
FLUID BEARING
Walter G. Wadey, Wynnewood, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,992
2 Claims. (Cl. 226—97)



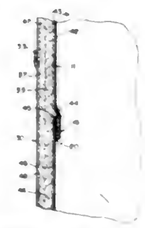
1. A fluid guide bearing adapted to support a web over a certain angle of contact, said bearing comprising a closed cylindrical body including a first surface portion of porous material, a second surface portion impermeable to bearing fluid and third surface portions having varying degrees of permeability to said bearing fluid, and said first and third surface portions extending over an angle substantially equal to said angle of contact.

3,156,400
FILM STRIP FEEDING MECHANISM
John Joseph Rigby, "Kelston," London Road, Camberley, Surrey, England
Filed Apr. 30, 1962, Ser. No. 191,370
Claims priority, application Great Britain May 3, 1961
7 Claims. (Cl. 226—157)



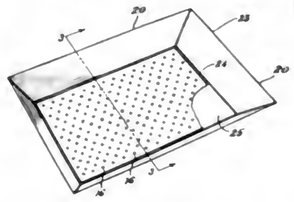
1. In a strip feeding mechanism, a base; a drive spindle rotatably supported on said base; a sprocket drum fixed to said drive spindle for moving said strip; and solenoid actuated drive means for imparting a step-by-step rotational movement to said spindle and said sprocket drum to move said strip step-by-step, said drive means comprising a drive member mounted on said drive spindle, a series of circumferentially spaced drive pins carried by said drive member, a connecting rod formed with a ratchet element and being movable to an operative position for causing engagement of said ratchet element with said drive pins individually, a solenoid the plunger of which is hingedly connected to the other end of said connecting rod, whereby said connecting rod may swing to enable said ratchet element to move relatively away from said drive member when said connecting rod is moved from its operative position to an inoperative position, spring means for biasing said ratchet element into its inoperative position, and switch means for energising said solenoid to move said connecting rod to its operative position thereby to move said drive member through a predetermined angle of rotation.

3,156,401
CONTAINER
James N. Krause, Jefferson County, Ky., assignor to The Anaconda Aluminum Company, a corporation of Montana
Filed Oct. 17, 1960, Ser. No. 62,911
7 Claims. (Cl. 229—4.5)



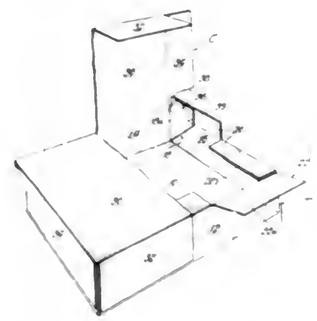
1. A tubular container comprising a substantially rigid body, end closure caps secured to each end of said body, said body having at least one ply of body stock helically wound into tubular form and having secured thereto at least one surface ply formed of a laminate of co-extensive layers of aluminum foil and paper so arranged that the paper layer adjoins the body stock and the aluminum layer faces away from the body stock, the surface ply being helically wound with one marginal portion thereof overlapping the adjacent marginal portion of an adjoining convolution thereof, the one of said marginal portions of the surface ply which is outermost with respect to the body stock being reversely folded in the direction of the body stock, the paper layer of the folded marginal portion of the surface ply facing the paper layer of the adjacent portion of said ply adjacent the fold and having its aluminum foil layer on the outside of the fold, the aluminum foil layer of the folded back marginal portion of the surface ply being one of the marginal portions thereof which is lapped over and adhesively sealed to the aluminum foil layer of the adjacent marginal portion of an adjoining convolution of said ply so that the lapped portions are in foil-to-foil relation with one another, the resulting helical seam between adjacent convolutions of the surface ply thus enclosing both side edges of the paper layer thereof between the aluminum foil layer of the surface ply and the body stock of the container.

3,156,402
LIQUID ABSORBING AND CONCEALING DEVICE
Clyde F. Dupuis, Downers Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 31, 1961, Ser. No. 128,176
1 Claim. (Cl. 229—30)



A liquid absorbing and concealing tray structure for containing juice exuding product such as meat or poultry, comprising: a tray formed from substantially moisture resistant and opaque material and having a flat bottom surface; a flat sheet of thin substantially moisture resistant and opaque material placed in the tray to rest on the flat bottom surface thereof with a liquid absorbing capillary gap existing between said sheet and said flat bottom surface; said sheet having a plurality of small juice absorbing openings therethrough spaced substantially over the entire area thereof.

3,156,403
WEB-CORNER CARTON WITH INTEGRAL COVER
Mark Goldstein, Philadelphia, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Jan. 11, 1963, Ser. No. 250,862
1 Claim. (Cl. 229—31)



A web-corner, liquid-tight, tray-type carton, with an integral cover, formed from a unitary blank of foldable paperboard, comprising:

(*a*) a tray having a bottom wall, with opposed pairs of upstanding front and rear side walls and end walls hinged to the side and end edges, respectively, of said bottom wall and connected to each other;

(*b*) a cover having a top wall hinged at its rear edge to the upper edge of the tray rear side wall and having depending front and end closure flaps hinged to its forward and end edges and disposed to overlie the front side wall and end walls, respectively, of the tray;

(*c*) said front side wall and end walls having normally inwardly extending closure flaps hinged to their upper edges;

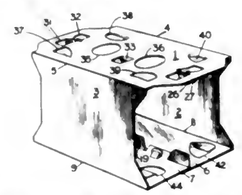
(*d*) said end walls being connected to said side walls at the corners of the tray by web members each of which includes a pair of triangular web sections hinged to end edges of related end and side walls and to each other;

(*e*) the web sections attached to the rear side wall having inwardly extending tabs of a length substantially equal to the width of the related cover end flaps and being cut therefrom;

(*f*) the web sections attached to the front side wall having inwardly extending tabs of a width substantially equal to the width of the tray front side wall flap and being cut therefrom;

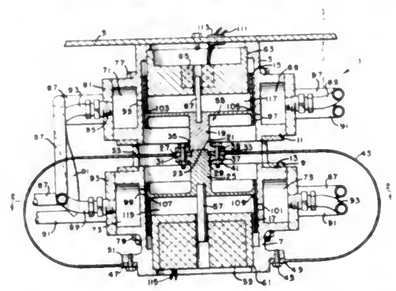
(*g*) the web sections of each web member being folded to overlie each other and an end portion of a related end wall, with the web section tabs overlying and being adhesively secured to the related end wall flaps.

3,156,404
CAN WRAPPER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Aug. 9, 1963, Ser. No. 301,155
8 Claims. (Cl. 229—40)



1. A wrapper for packaging a plurality of articles having recessed ends and whose axes are disposed in substantially parallel relation and whose ends are arranged in common planes, said wrapper comprising generally parallel top and bottom walls interconnected by spaced side walls to form an open-ended tubular structure, said top and bottom walls being arranged for disposition in contacting generally parallel relation to the ends of the packaged articles, and a plurality of tabs struck out of said top and bottom walls and folded inwardly approximately 180 degrees along individual hinge lines and engageable respectively with the ends of the articles disposed at the ends of the wrapper, the hinge lines being bifurcated at one end thereof to define webs which are generally normal to the associated tab for engaging the inner edges of the recessed ends of adjacent articles and for causing the associated tab to curve inwardly toward the adjacent article end thereby to prevent dislodgement thereof through the end of the wrapper.

3,156,405
RESONANT PISTON COMPRESSOR
Peter W. Curwen, Burnt Hills, N.Y., assignor to Mechanical Technology Incorporated, Latham, N.Y., a corporation of New York
Filed Oct. 25, 1962, Ser. No. 232,997
18 Claims. (Cl. 230—55)



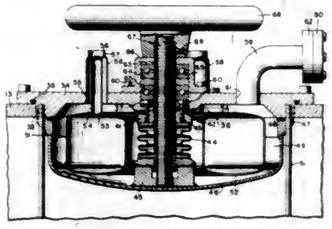
1. A resonant piston compressor for compressing gas and supplying same to a gas system, comprising a piston assembly, an electronic drive circuit including electromechanical force and motion transducers, and upper and lower cylinders; said piston assembly being coupled to said electronic drive circuit through said electromechanical force and motion transducers to always drive said piston assembly at resonance, said piston assembly comprising upper and lower pistons received within and reciprocable within said cylinders with a spring connected to said piston assembly and to one of said cylinders, said upper and lower cylinders having intake and discharge chambers communicating internally of said cylinders and pistons, said electromechanical force and motion trans-

ducers including a feedback motion transducer, a drive transducer operatively connected to one of said pistons to drive said piston assembly and with the motion of said driven piston assembly detected by said feedback motion transducer operatively connected to the other one of said pistons to thereby drive said piston assembly at its resonant frequency.

3,156,406
HIGH VACUUM PUMPING METHOD AND APPARATUS

William A. Lloyd, Mountain View, and Renn Zaphiropoulos, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 26, 1962, Ser. No. 182,528
8 Claims. (Cl. 230—69)

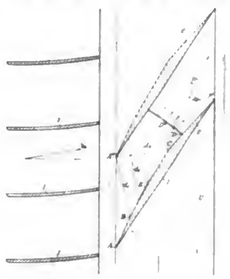


1. A high vacuum system apparatus comprising a main vacuum chamber, a cryogenic vacuum pump positioned within said main vacuum chamber, and movable means positioned within said main vacuum chamber for isolating said cryogenic vacuum pump within said main vacuum chamber.

3,156,407
SUPERSONIC COMPRESSORS

Fernand Bourquard, Courbevoie, France, assignor to Commissariat à l'Energie Atomique, Paris, France, a French organization

Filed July 6, 1959, Ser. No. 825,166
Claims priority, application France July 7, 1958
4 Claims. (Cl. 230—120)

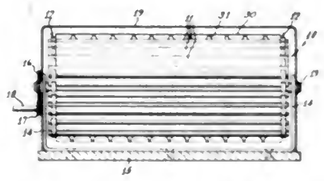


1. A supersonic axial flow compressor for a gaseous fluid which comprises, in combination, a casing, two coaxial annular members mounted in said casing adjacent to each other in the axial direction and defining an annular flow duct for said gaseous fluid through said two members successively in said axial direction, the downstream member being a rotor, blades carried by said rotor and extending across said flow duct to form between them a plurality of passages for said gaseous fluid, and guide blades carried by the upstream member and arranged to guide said fluid, fed thereto at a predetermined velocity to give it as it leaves said guide blades a velocity represented by a given vector, each of said rotor blades comprising on the suction face thereof a substantially flat area extending from its leading edge and parallel to the vector which is the resultant of the above mentioned vector and of a vector representing the relative velocity of said rotor blade leading edge at working speed with respect to said upstream member, the velocities represented by the two last mentioned vectors being such that the resultant velocity is supersonic, the fore portion of each of said passages being convergent and the rear portion divergent in the direction of the gaseous fluid flow, with a throat region between said portions, so as to produce a normal shock wave rearwardly of said convergent portion, downstream of which shock wave the fluid flow is subsonic, said suction face of each of said rotor blades comprising, after said flat area, a slightly convex area extending from said flat area to said throat portion, said flat and convex areas being arranged to produce, in said convergent portion of said passage, a succession of expansion waves creating an acceleration of the gaseous fluid flowing past them to reach said throat region, said convex area beginning at the points from which an expansion wave starting from said suction face reaches the leading edge of the next blade facing said suction face.

3,156,408
ROTOR ELEMENT FOR LINE FLOW FAN

Taylor D. Whitenack, Jr., Fort Wayne, Ind., assignor to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey

Filed June 18, 1963, Ser. No. 288,640
2 Claims. (Cl. 230—134)



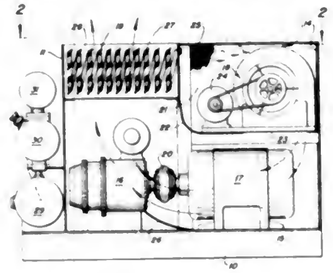
1. A rotor element for a line flow fan comprising a pair of disks spaced apart and mounted on an axle, a plurality of blades supported on said disks longitudinally parallel to said axle, said disks each having a rim portion of flexible and resilient material, slots in said rim portion, said blades being arcuate in cross section and supported in said slots in said rim portions, said slots extending generally radially of the disks and each having a closed end and an opposite end opening through an edge of said rim portion, and a stop portion at the open end of each slot extending into the slot as means to hold the blades in the slots, the length of each slot between its closed end and the stop portion therein being no greater than the width of one of said blades and the space between the walls of each slot being no greater than the thickness of one of said blades measured between the base and apex of the arcuate cross section of the blade.

3,156,409
ENCLOSED ROTARY INDUSTRIAL AIR COMPRESSOR

Fred Paugh, Maywood, Calif., assignor to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio

Filed Aug. 7, 1962, Ser. No. 215,390
6 Claims. (Cl. 230—211)

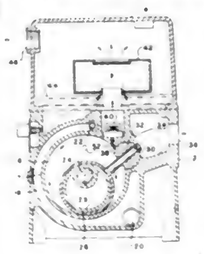
1. A compressor unit comprising an enclosure, a compressor within the enclosure, a driving motor for the compressor, adjacent to it within the enclosure and coupled to it, said compressor having an inlet for drawing air to be compressed from within the enclosure, an independently driven blower disposed to force cooling air over the motor and the compressor, said enclosure having an inlet area through which the blower draws the cooling air, and an oil cooler in cooperation with the compressor, said enclosure having an air outlet area adjacent the oil cooler so that the cooling air will pass into association with said cooler and out of said enclosure through said outlet.



3,156,410
PUMP

Rene P. Le Riche, Haddonfield, N.J., assignor, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 3, 1961, Ser. No. 149,936
10 Claims. (Cl. 230—232)



1. A pump comprising a housing having an inlet port and an outlet port in communication with a pumping chamber, a pressure responsive valve controlling flow from said chamber through said outlet port, a movable pumping element in said chamber, means for selectively moving said element to produce a suction side in said chamber adjacent the point where said inlet port is in communication with said chamber and a compression side in said chamber adjacent the point where said outlet port communicates with said chamber, and means including a conduit in communication with the compression side of said chamber for introducing a controlled amount of gas into said chamber equivalent to less than .1% and more than .001% of the volumetric capacity of said chamber.

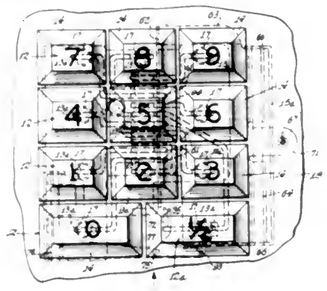
3,156,411
VALUE ENTERING DEVICE USEFUL FOR MIXED NUMBERS

Joseph E. McEvoy, Stamford, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed Jan. 9, 1964, Ser. No. 336,841
24 Claims. (Cl. 235—60)

1. A value indicating mechanism for indicating values involving a whole number disposed in each one of a plurality of successive denominational orders and at least one additional number which is less than the difference between two successive whole numbers in the lowest one of said denominational orders; said mechanism comprising:

control means including a plurality of control units;
an indicator member constantly associated with each of said control units;
indexing means for indexing said control means a successive step from a returned position each time the indexing means is tripped, thereby to index one of said control units to a first location for said additional number, to index any one of said control units at said first location to a location for said lowest denominational order, and to index any one of said control units at a location for one of said denominational orders to a location for the next higher denominational order;
said control means, when in said returned position, being disposed with one of said control units at said first location;



a first value setting means operatively arranged, when actuated, for setting the control unit then at said first location, thereby to control setting of the indicator member associated therewith to a set position for one of said whole numbers and for tripping said indexing means;
a second value setting means operatively arranged, when actuated, for setting the control unit then at said first location, thereby to control setting of the indicator member associated therewith to a set position for said additional member, and for by-passing said indexing means;
and means cooperable with the indicator members and located to designate the whole number set in any of said denominational orders and to designate said additional number when set.

3,156,412
REMOTE CONTROL SYSTEM FOR COMBINED ADDING MACHINE, TAX COMPUTER, AND COIN DISPENSER

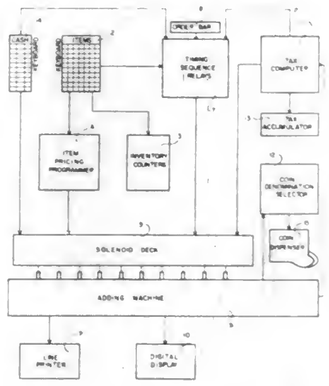
Richard F. Julius, Silver Spring, Md., and Raymond K. Carnahan, Alexandria, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Aug. 11, 1961, Ser. No. 130,898
10 Claims. (Cl. 235—146)

1. A register system comprising
(*a*) an adding machine having keys for entering, subtotalling, totalling and subtracting dollars, dimes and cents, and having mechanically positioned means for each decimal order and each positioned means defining ten positions for instantaneously representing the digital content of the adding machine;
(*b*) key actuator means superposed above the adding machine for selectively operating its keys when the actuator means is energized;
(*c*) keyboard means connected to selectively energize the actuator means, and the keyboard means including means for operating the sub-totalling key;
(*d*) first and second banks of decade switches corre-

sponding with each decimal order, and both banks in each order being coupled to one of said positioned means to follow the digital content of the adding machine;

(*e*) first circuit means for determining a tax amount according to a predetermined tax rate and comprising multiple paths wired through some of the switches in each first bank and connected to energize said actuator means selectively according to the positions of the switches when the adding machine is registering a subtotal as a consequence of operating said subtotalling key, and said first circuit means energizing said actuator means to operate the totalling key to add the tax and the subtotal to form a total;



(*f*) means coupled to said actuator means for energizing the keys of the machine to enter an amount of cash tendered, and including means for operating said subtracting key to obtain on the adding machine a difference representing change due;

(*g*) change dispenser means having individual denomination deliverying means; and

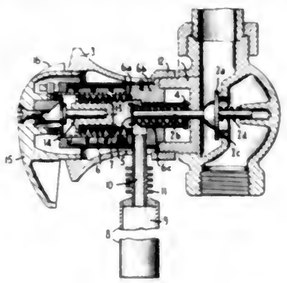
(*h*) second circuit means for determining change denominations and comprising multiple paths wired through others of the switches in each second bank and connected to energize said denomination delivering means selectively according to the positions of the switches when the adding machine is registering said difference as a consequence of operating said subtracting key.

3,156,413
THERMOSTATICALLY-CONTROLLED RADIATOR VALVE

Kjeld Porland, Nordborg, Als, Denmark, assignor to Danfoss ved ingenior Mads Clausen, Nordborg, Als, Denmark, a Danish firm

Filed May 15, 1962, Ser. No. 194,930
Claims priority, application Denmark, Dec. 16, 1953, 4,125/53
1 Claim. (Cl. 236—42)

In a thermostatically-controlled radiator valve for variably controlling in operation flow of a fluid heating medium through a radiator comprising a valve body having a valve seat and a valve member actuatable into a seated position on said seat closing said valve and an unseated position opening the valve to allow said heating medium to flow therethrough, a valve stem on said valve member extending outwardly through an aperture in said valve body, valve-actuating means mountable on said valve body for automatically closing said valve and opening it in response to ambient temperature variations in the vicinity of said valve and for opening said valve proportionately to temperature differences between said ambient temperature and a selected temperature, said valve-actuating means comprising a bonnet, an actuating first bellows in said bonnet having a closed free end releasably engageable with said valve stem for actuation of said valve stem axially in two opposite directions in direct proportion to the expansion and contraction of said first bellows, a regulating second bellows having a free end which is closed disposed distal to said first bellows closed end spaced axially therefrom, means in said bonnet comprising said first and second bellows jointly defining intermediate said opposed closed ends of said bellows a control space the volume of which is varied as said first and second bellows expand and contract, an elongated bulb disposed externally of said housing depending therefrom and having a longitudinal axis disposed in operation in a vertical position, a rigid tube coaxial with said longitudinal axis and having a substantially uniform internal bore with a uniform diameter providing communication between said bulb and said space and rigidly mounting said bulb in close proximity to said valve housing, said internal diameter being substantially smaller than the internal diameter of said bulb, said tube being made of a material having a relatively low coeffi-

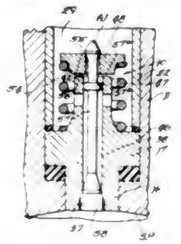


cient of heat transfer, a liquid filling said bulb, tube, and space, said liquid having the characteristic of varying in volume in response to temperature variations sensed by said bulb, resilient means in said valve body biasing said valve member to an unseated position for working in opposition to contraction of said working first bellows caused by pressure exerted by said liquid in said space and tending to seat said valve member when said valve-actuating means is mounted on said valve body, a bushing internally of said regulating second bellows for variably adjusting the axial position of the closed end of said second bellows relative to said closed end of said first bellows, means comprising a threaded regulating spindle extending into said regulating bellows and outwardly of said bonnet for varying the axial position of said bushing thereby to vary the axial position of the closed end of said regulating second bellows and to adjustably and variably define the volume of said space and set said volume at different selected given volumes, said first and second bellows being disposed coaxially in a plane normal to said longitudinal axis of said bulb, a union nut for removably mounting said bonnet on said valve body, whereby said valve body with said seat, said valve member and stem is installable separately on said radiator and said valve-actuating means comprising the bonnet and first and second bellows and associated bulb are selectively installable subsequently for automatic control by said liquid.

3,156,414
FUEL INJECTION NOZZLE

Thomas M. Dressler, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Nov. 30, 1962, Ser. No. 241,382
1 Claim. (Cl. 239—453)



A fuel injection valve for an internal combustion engine provided with a combustion chamber, said valve comprising:

a valve seat member having a fuel passage for communication with said chamber;

a pintle valve reciprocable within the passage between closed and open positions of the valve from and toward said chamber, and being biased in an axial direction toward the closed position;

said passage comprising an anterior inner cylindrical bore surface, an outer cylindrical bore surface, and an outwardly tapered seat between the inner and outer bore surfaces and joined to the inner surface;

said pintle valve having an anterior stem end, and a posterior head, said pintle valve further having an enlarged collar between the stem and head, said collar presenting a cylindrical surface which extends toward the stem in an axial direction so that at least a portion of the collar is at all times in an anterior position relative to the junction between the outwardly tapered seat and the inner cylindrical bore surface of said fuel passage, the cylindrical surface of said collar being of a larger outside diameter than the valve stem and being closely spaced apart with respect to the passage to prevent the formation and collapse of gas bubbles in the fuel at the surface of the seat; and

stop means presented by the valve seat member at the end thereof corresponding to the anterior stem end of said pintle valve, and engaged by means carried by the stem end for limiting the axial excursion of the valve to insure the described anterior relation of the collar;

said collar having portions thereof extending both above and below the junction of the tapered seat and the inner bore surface in the open position of the valve, said pintle valve having a valve portion between the collar and the head establishing sealing engagement with said tapered seat in the closed position of the valve.

3,156,415
SKYLIGHT

Frank S. Walker, 57 Salem End Lane, Framingham, Mass.

Filed Mar. 9, 1962, Ser. No. 178,642
3 Claims. (Cl. 240—7.35)

1. A skylight for the roof of a vehicle body comprising a circular translucent plastic light admitting member, an annular resilient rim member having a grooved portion in its inner periphery for receiving the outer edge of said light admitting member, and having a grooved portion in its outer periphery fitted over the edges of an opening in the vehicle roof, said plastic member admitting light for lighting the interior of the vehicle in the daytime, and artificial lighting means including means formed integrally with said plastic member and disposed immediately below



and adjacent the marginal portion of said plastic member for supporting artificial lighting elements for use in lighting the interior of the vehicle in the night time.

3,156,416
LAMP HOUSING

Vernon F. Griffin, Hales Corners, Wis., assignor to J. W. Speaker Corporation, Milwaukee, Wis., a corporation of Illinois

Filed Mar. 12, 1962, Ser. No. 178,953
5 Claims. (Cl. 240—8.3)



4. A fixture for an electric lamp bulb comprising:

(A) a substantially cup-shaped housing of resilient insulating material having

(1) a rear wall, and

(2) a circumferential side wall integral with the rear wall and extending forwardly therefrom;

(B) a pair of spaced apart bosses integral with the rear wall and extending forwardly therefrom at locations spaced inwardly of the side wall;

(C) a pair of metal socket defining members, each having

(1) a medial U-shaped portion and

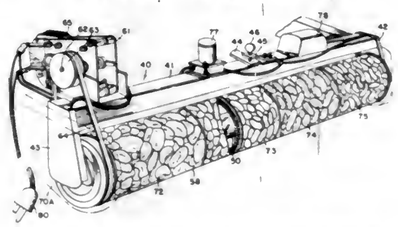
(2) coplanar mounting lugs extending laterally outwardly from the ends of the U;

(D) means mounting said socket defining members on the bosses with the lugs of the two socket defining members flatwise overlying one another and the front ends of the bosses, and with the U-shaped portions of the socket members opposing and opening toward one another so as to cooperate in defining a tubular lamp base receptacle that has its axis substantially parallel to the rear wall;

(E) a contact carrier projecting forwardly from the rear wall and extending across one end of the receptacle, said contact carrier being resiliently flexible toward and from the receptacle; and

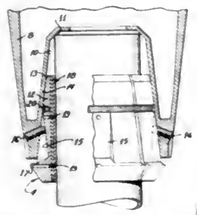
(F) an elongated metal contactor received in a hole in said contact carrier and extending substantially parallel to the receptacle axis, said contactor being connectable with an electrical conductor and having an enlarged head which overlies the side of the contact carrier that faces the receptacle to preclude motion of the contactor relative to the contact carrier in a direction away from the receptacle so that the contactor can engage a terminal on the end of the base of a light bulb received in the receptacle under a biasing force produced by flexing of the contact carrier away from the receptacle.

3,156,417
SHOW CASES
Edward F. Kemp, Carlisle, and Ellsworth G. Nichols, Winchester, Mass. (both of 100 Walnut St., Somerville 43, Mass.)
Application Sept. 5, 1956, Ser. No. 608,089 which is a division of application Ser. No. 369,446, July 21, 1953, now Patent No. 2,776,179, dated Jan. 1, 1957. Divided and this application Oct. 19, 1961, Ser. No. 146,375
2 Claims. (Cl. 240—10.1)



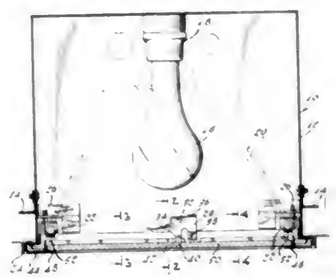
1. An electrical display device comprising a longitudinal beam, arms carried by the beam, a hollow transparent cylinder between the arms, a light tube within the cylinder, said tube having electrical terminal prongs extending outwardly at the end thereof, a hub at either end of the tube, electrical sockets carried by the hub for receiving said prongs, corresponding prongs connected to and extending from said sockets, means carried by said arms for receiving and supporting said corresponding prongs and for connecting them to a source of electric current, means for rotatably supporting said cylinder on said hub, an electric motor carried by the beam, a pulley connected to and driven by the motor, and a belt engaging said pulley and the periphery of the cylinder.

3,156,418
POLE TOP MOUNTED LUMINAIRE
Edward R. Jablonski and Harold A. Van Dusen, Jr., South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,932
12 Claims. (Cl. 240—84)



3. In a luminaire assembly, a vertical luminaire supporting tapered pole with the large end secured to an outdoor ground area to be illuminated, a luminaire having a lower base housing with an inwardly contracting conical opening terminating in a radial supporting flange resting on the upper end of the pole, a plurality of identical arcuate collet segments having an inner radius substantially corresponding to the top radius of the pole and slidably disposed within the conical opening, the outer surface of each collet being tapered to wedge between the pole and the base housing and having the uppermost taper increased to facilitate assembly into the conical opening and having a reverse slope section centrally of the lower portion of each segment, the frictional engagement of the collet segments with the pole and the base housing establishing a distributed bearing load, and locking means releasably secured to the base housing in alignment with the reverse slope section and bearing on the reverse slope section to rigidly lock the luminaire to the pole against severe vibration loads.

3,156,419
LUMINAIRE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 51,309, Aug. 23, 1960. This application May 22, 1963, Ser. No. 284,284
7 Claims. (Cl. 240—147)

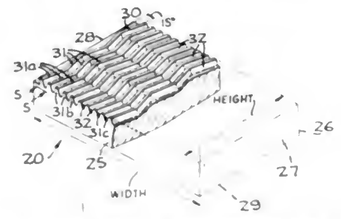


5. A luminaire comprising, a housing adapted to be mounted to a ceiling, a downwardly facing opening formed in said housing, a downwardly facing substantially F-shaped channel connected to said housing about said opening, a frame, said frame including an outer peripheral lip portion projecting upwardly into said downwardly facing channel, an inwardly extending flange defining an opening in said frame, a light transmitting member of larger area than said opening defined by said inwardly extending flange of said frame and supported upon said flange, stop means spaced above said light transmitting member and flange, said light transmitting member being vertically movable between said flange and said stop means, hinge means along an edge portion of said frame pivotally mounting said frame on said housing within said housing opening, a latch pivotally mounted upon said housing, an ear extending from said latch means and projecting over an edge portion of said light transmitting member for engaging the same, said ear being moved upwardly by said transmitter when the transmitter is moved upwardly, said latch being rotated by the upward movement of said ear, a frame catch downwardly depending from said latch, spring bias means intermediate said latch and said housing holding said catch in engagement with said frame, said catch holding said frame in closed relation to said housing, said catch releasing said frame when said latch is rotated by said light transmitting member being raised above said flange and moving said ear upwardly.

3,156,420
METHOD FOR MAKING MOLYBDENUM DISULFIDE
James S. Crowl, Port Huron, Mich., assignor to Acheson Industries, Inc., Port Huron, Mich., a corporation of Michigan
No Drawing. Original application Aug. 17, 1959, Ser. No. 833,926, now Patent No. 3,062,741, dated Nov. 6, 1962. Divided and this application Jan. 26, 1962, Ser. No. 169,103
7 Claims. (Cl. 241—16)

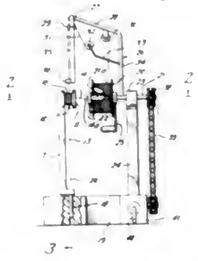
1. A method for making finely divided molybdenum disulfide which comprises the steps of grinding molybdenum disulfide in the presence of a compatible grinding aid selected from the group consisting of salicylic acid and phthalic anhydride.

3,156,421
ROCK CRUSHER JAW
Kenneth V. Lutz, 10081 Carmen Road, Cupertino, Calif.
Filed Dec. 9, 1963, Ser. No. 329,097
6 Claims. (Cl. 241—217)



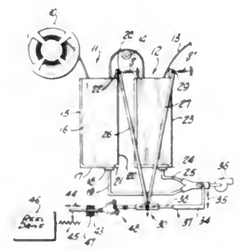
1. A hard rock crusher jaw comprising a first jaw crusher plate having a rock-engaging surface, and a second jaw crusher plate having a rock-engaging surface confronting the rock-engaging surface of said first jaw crusher plate, said rock-engaging surface of said first jaw crusher plate being formed with a plurality of spaced zig-zag ridges having trapezoidal cross-sectional areas defining zig-zag channels therebetween for contacting rock disposed between said first and second jaw crusher plates, said zig-zag ridges being formed of a series of angular turns extending in the height direction of said first jaw crusher plate, said zig-zag channels being formed with a depth greater than the width of the respective rock-engaging surfaces of the ridges having the trapezoidal cross-sectional areas.

3,156,422
HALF SHELL COIL WINDING MACHINE
Lawrence D. Zepernick, Houston, Tex., assignor to Vector Cable Company, Houston, Tex., a corporation of Texas
Filed Dec. 3, 1962, Ser. No. 241,660
5 Claims. (Cl. 242—9)



1. An apparatus for winding wire on a coil core having an axis of curvature comprising a support,
a spindle carried for rotation about a first axis by said support,
a wire supply reel rotatably mounted on said spindle,
means for resisting rotation of said reel relative to said support,
wire guide means projecting radially from said spindle and rotatably therewith about said reel,
means in line with said spindle for rotatably supporting a coil core about a second axis normal to and intersecting said first axis so that the axis of curvature for the coil core is aligned with said second axis,
means for rotating said spindle and said wire guide means to unwind wire threaded through said guide means from said reel and to wind said wire upon a core on said supporting means, and
slack control means on said wire guide means for maintaining said wire taut between said core and said reel, said slack control means being spring biased and operable independently of centrifugal forces developed by the movement of said wire guide means about said wire supply reel.

3,156,423
TAPE LOOP CONTROL
John T. Potter, Locust Valley, and Andrew Gabor, Port Washington, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed May 18, 1962, Ser. No. 195,709
12 Claims. (Cl. 242—55.12)

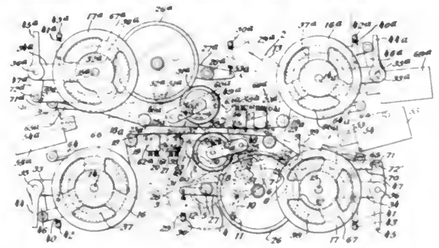


1. In tape handler apparatus, means to control tension in a tape, comprising:
first tape storage means adapted to provide a supply of tape for processing information in accordance with a predetermined schedule,
at least one temporary tape storage means including means to provide sufficient tension on a tape to absorb slack and including a movable portion adapted to be continuously urged to be moved by said tension means throughout a range of positions in response to and proportional to the position of the tape in the temporary tape storage means,
first means connected at a first point to the movable portion,
second means connected at a second different point, and
third means interconnecting said first and second means whereby movement of the movable portion produces a movement of the third means in a manner different in magnitude but proportional to the movement of the movable portion to control tension in the tape.

3,156,424
MAGNETIC TAPE DECKS
Laszlo Namenyi-Katz, Roehampton, London, England, assignor to Vectron Electro-Physics Limited, Bedfont, England
Filed Aug. 23, 1962, Ser. No. 219,058
Claims priority, application Great Britain Aug. 25, 1961
20 Claims. (Cl. 242—55.12)

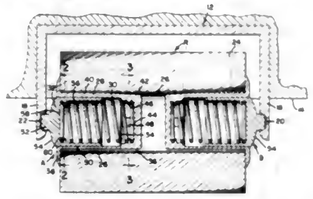
1. A tape deck for a magnetic tape recorder, comprising means defining one path including a take-up reel for a magnetic tape, electromagnetic transducer means associated with said tape path means, means defining a second path for a second magnetic tape and including a second take-up reel, electromagnetic transducer means associated with said second tape path means, a capstan common to both said tape paths for driving a magnetic tape in either path at constant speed past the respective one of said electromagnetic transducer means, a pinch roller associated with an idler wheel for each tape path and operable for bringing the respective tape into drive engagement with

said capstan while establishing a drive train through its associated idler to the take-up reel in its respective path,



and means for operating each of said pinch rollers and associated idler wheels.

3,156,425
ROLL SUPPORTING ARBOR
George C. Mynchenberg, 502 Forest Ave., Apt. D, Pacific Grove, Calif.
Filed Nov. 14, 1962, Ser. No. 237,560
6 Claims. (Cl. 242—55.53)



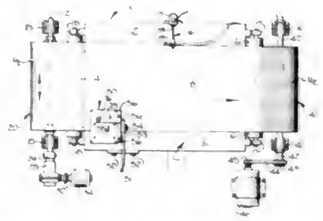
1. In a dispenser for rolled strip material that is coiled upon a hollow cylindric spool and wherein said dispenser is formed with a pair of spaced apart opposed sockets for receiving said cylindric spool therebetween, a pair of substantially identical arbor forming members receivable in opposite ends of said spool for mounting said spool for rotative movement between said sockets, each said arbor forming member comprising: a housing having one end formed with a cylindric exterior surface for receipt in one end of said hollow spool and an internal bore communicating with the opposite end of said housing, said housing having an annular flange adjacent last said end for limiting axial movement of said housing relative said spool, said housing being sized to enter said spool by an amount at most equal to half the length of said spool, a plurality of protrusions on said cylindric exterior surface for frictionally engaging said hollow cylindric spool interior thereof, a plunger telescopically disposed in said bore, said plunger being formed on the outer end thereof with a cylindric boss adapted to be received in said dispenser socket, and a compression spring in said bore for biasing said boss into said socket.

3,156,426
APPARATUS FOR CONTROLLING TRAVELING WEBS
John D. Brock, Rte. 1, Dalton, Ga., assignor of fifty percent to Richard A. Burnette, Dalton, Ga.
Filed Aug. 21, 1962, Ser. No. 218,337
14 Claims. (Cl. 242—56.2)

1. Apparatus for controlling traveling webs to guide one edge thereof along a substantially constant, horizontal line, said apparatus comprising

(*a*) first and second laterally spaced, vertically movable sensing means disposed on opposite sides of said constant line, said first sensing means being normally in engagement with the web closely adjacent to said one edge thereof and said second sensing means normally being out of engagement with the web when said one edge thereof is traveling along said constant line, said first sensing means moving downwardly out of engagement with the web when said one edge thereof deviates from said constant line in a direction laterally away from said second sensing means and said second sensing means being adapted to move upwardly into engagement with the web when said one edge thereof deviates from said constant line in the opposite direction,

(*b*) first switch means operatively associated with said first sensing means and being actuated upon movement of said first sensing means out of engagement with the web,

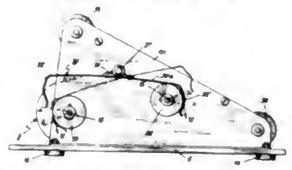


(*c*) second switch means operatively associated with said second sensing means and being actuated upon movement of said second sensing means into engagement with the web,

(*d*) guide means responsive to actuation of either of said first and second switch means for correctively guiding said one edge of the web back to the constant line, and

(*e*) third sensing means for sensing variations in thickness of the web and being operatively connected to said first and second switch means for compensatingly varying the position of said first and second switch means relative to said first and second sensing means to thereby maintain said first and second switch means responsive to all deviations of the web and only such deviations.

3,156,427
APPARATUS FOR EXAMINING MATERIAL CONTAINING INFORMATION
Luis Congost Horta, Iradier 6 bis, and Miguel Asensio Maicas, San Andres 101, both of Barcelona, Spain
Filed Mar. 20, 1962, Ser. No. 181,112
Claims priority, application Spain, Mar. 30, 1961, 266,500
1 Claim. (Cl. 242—67.4)



An apparatus for examining material containing information, the apparatus comprising in combination;

(*a*) two winding rollers for the material to be examined which are placed disjunctively in the winding and unwinding state,

(*b*) a driving shaft rotatable at will in one direction or the other,

(*c*) transmission means for transmitting the rotation of the driving shaft to one or the other of the winding rollers corresponding to the direction of rotation of the driving shaft,

(*d*) a bearing mounted on the rotatable driving shaft,

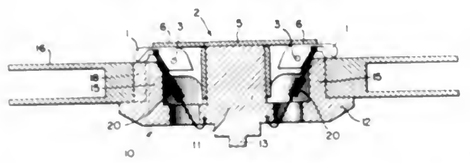
(*e*) friction means including a spring mechanically associated with the rotatable driving shaft and the bearing so that the shaft transmits a torque to the bearing,

(*f*) two parts of circular shape solidly connected to the two winding rollers respectively,

(*g*) a substantially straight arm connected to the bearing and comprising two arm portions respectively associated with the two parts of circular shape,

(*h*) a resilient clamp carried by each arm portion and positioned on its respective arm portion to approach the corresponding part of circular shape upon movement of the arm in a direction tangential to the corresponding part of circular shape, wherein when one of said resilient clamps is in frictional contact with its associated circular part, the other resilient clamp is entirely disengaged from its associated circular part and the resilient clamps being shaped such that interference with the part of circular shape occurs in a defined angular sector where the peripheral velocity has a direction substantially coinciding with the direction of approach of the resilient clamp.

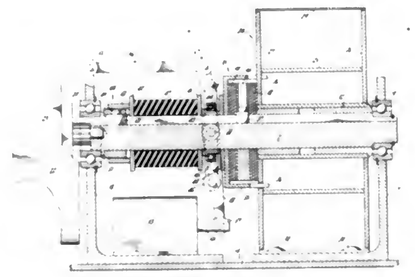
3,156,428
REEL SUPPORT
Ralph H. Dale, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed July 31, 1962, Ser. No. 213,723
5 Claims. (Cl. 242—68.3)



1. A reel support comprising a base plate having a reel flange receiving surface, an outwardly extending post mounted on said reel receiving surface of said plate, a support member slidably mounted on said post, an outwardly extending ring mounted on said reel-receiving surface of said base plate to encircle said post and having an outside diameter approximately equal to the diameter of a hub-receiving aperture in a reel and an inside diameter arranged to allow the sliding movement of said support member, an arm mounted on said support member and extending radially outward with respect to said post, a locking tab end-pivoted on said arm and having a length sufficient to extend a free end of said tab past said ring in one position of said support member and a spring connected between said tab and said base plate to bias said tab towards said base plate whereby to clamp a reel on said receiving surface in said one position.

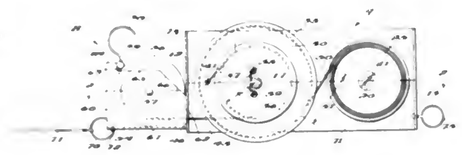
3,156,429
WATER SKI TOW ROPE RETRIEVER
Harry W. Jones, Jr., Enterprise, Kans., assignor to The J. B. Ehrsam & Sons Manufacturing Company, Enterprise, Kans., a corporation of Kansas
Filed Dec. 14, 1962, Ser. No. 244,828
3 Claims. (Cl. 242—86.5)

1. A water ski tow rope retriever, comprising bearing means adapted to be mounted on a boat, a shaft journalled in said bearing means, a winding drum mounted on said shaft for rotation relative thereto, a disc-type clutch mounted on said shaft and including an element rotationally fixed relative to said shaft, an element rotationally fixed relative to said drum and friction means movable axially of said shaft between an engaged position establishing a driving connection between said shaft and said drum and a released position in which said drum and said shaft are independently rotatable, a first thrust plate, a second thrust plate and a third thrust plate arranged in axially-spaced relation on said shaft, said first thrust plate having an operative connection with said axially-movable friction means, a shifter yoke operatively engaged between said first and second thrust plates, axially-resilient



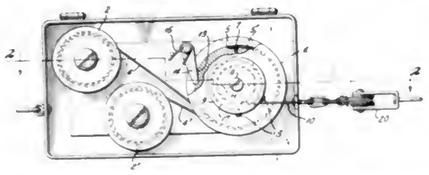
means engaged between said second and third thrust plates, axially-adjustable abutment means engaging said third thrust plate to limit movement thereof away from said second thrust plate, a rotary electric motor connected to drive said shaft, electrically energizable power means connected to said shifter yoke and effective, when energized, to move said second thrust plate toward said third thrust plate, thereby releasing said clutch, switch means dominating said motor, and switch means dominating said power means.

3,156,430
ADJUSTABLE TENSION FORCE UNIT
Edwin L. Zivi, Severna Park, Md., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,271
8 Claims. (Cl. 242—107)



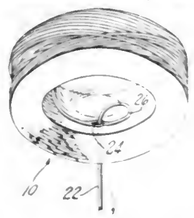
1. A cable tensioning device for providing a tensile stress of a substantially constant but adjustable output value in a cable, comprising a base portion, a power output drum means mounted for rotation about a shaft mounted on said base portion, motor means to exert a substantially constant torque to rotate said power output drum means, a cable drum mounted for rotation on said shaft with said power output drum means, a cable, said cable being wrapped around said cable drum in a direction to be subjected to tension by the torque in said power output drum means, said cable having one end secured to said power output drum means, whereby when said cable is unreeled from said cable drum said cable drum is disengaged from said cable and may be removed from said shaft and another cable drum of any diameter placed on said shaft to vary the effective output of said device, the cable being reeled back onto said cable drum by the torque of said power output drum means.

3,156,431
CABLE TENSIONING UNIT
Edwin L. Zivl, Severna Park, Md., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,374
7 Claims. (Cl. 242—107)



1. A cable tensioning unit comprising a base member, spring means precoiled to a predetermined diameter, a take-up drum means on which said spring means normally assumes the precoiled position, said take-up drum means mounted for rotation with respect to said base member, an output drum means to which the outer end of said spring means is secured, a cable drum means removably secured to and mounted to turn concentrically with said output drum means, said output drum means being mounted on a shaft secured to said base member and having the axis thereof parallel with the axis of said take-up drum means, latch means to stop rotation of said output drum means at a predetermined point of rewind, said latch means being moved into an inoperative position upon reverse direction of rotation by said output drum means being moved by said cable drum means.

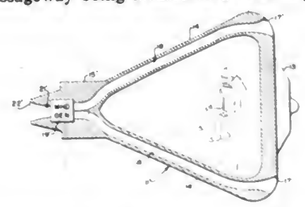
3,156,432
THREAD PACKAGE
Robert W. Bradley, Marblehead, and George F. C. Burke, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Feb. 28, 1963, Ser. No. 262,302
3 Claims. (Cl. 242—163)



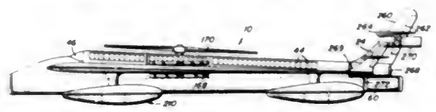
1. A self-supporting annular thread package wound in a plurality of layers of adjacent convolutions from a single length of thread having leading and trailing ends in which the leading end extends generally radially from the inside to the outside of the thread package through a passage defined in part at least by holes through individual convolutions.

3,156,433
MAGNETOHYDRODYNAMIC GENERATOR
Edward A. White, Jr., Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 10, 1962, Ser. No. 165,461
7 Claims. (Cl. 244—1)

1. The combination comprising; a space vehicle having a passageway therethrough extending from an inlet port to an outlet port, a load device in said vehicle to be actuated by electrical energy, and an MHD generator positioned within said vehicle, operatively associated with said passageway and connected to said load device whereby the passage of said vehicle through space causes ionized fluid to pass through said generator thereby generating electrical energy for actuating said load device, said inlet port of said passageway being located in a high pressure surface of said vehicle and said outlet port of said passageway being located in a relatively lower pressure surface of said vehicle, whereby the passage of said vehicle through space produces a ram-jet flow of said ionized fluid from said inlet port to said outlet port through said generator, said vehicle being subjected to a high velocity spin about a central axis, and said outlet port being located radially outward of said inlet port, whereby said ionized fluid is further accelerated through said generator by centrifugal pumping action.



3,156,434
VTOL AIRCRAFT
Houston H. Harrington, 1728 W. Monroe St., Chicago 12, Ill.
Filed Mar. 28, 1962, Ser. No. 183,075
7 Claims. (Cl. 244—7)



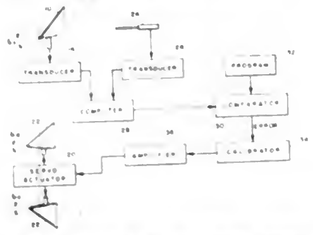
7. In an aircraft having a fuselage adapted to be aerodynamically supported by fixed wings during forward flight and by rotating wings spaced thereabove during vertical movement, power means for producing an exhaust flow of fluid therefrom, flow passage means operatively connected to the power means for controllably directing said flow of fluid to selectively produce thrust in directions inducing said forward flight and vertical movement, selectively powered turbine means for imparting rotation to said rotating wings only in response to the flow of fluid inducing said vertical movement, continuously powered turbine means mounted in said flow passage means and operative in response to the flow of gas inducing either said vertical movement or forward flight, and auxiliary propeller means operatively connected to said continuously powered turbine means for producing a substantially vertical flow of air to either assist said vertical movement or positionably control the fuselage during said forward flight.

3,156,435
COMMAND SYSTEM OF MISSILE GUIDANCE
Edward L. Norton, Summit, and Jacob W. Schaefer, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 12, 1954, Ser. No. 449,396
12 Claims. (Cl. 244—14)

1. In an antiaircraft system a missile, means in said missile for establishing a reference axis of fixed orientation with respect to the earth, means for steering said missile about a pair of orthogonal axes fixed with respect to the missile, means for stabilizing said missile to maintain one of said steering axes normal at all times to the plane defined by said reference axis and the longitudinal axis of the missile, tracking means for continuously establishing the position of a target aircraft in space, other tracking means for similarly establishing the position of said missile, means for computing from the target and missile positions a predicted path for said target and a predicted missile path intercepting the target at a future time and means for transmitting control signals based on said predicted paths to the missile steering means to insure interception of the target by the missile at said time.

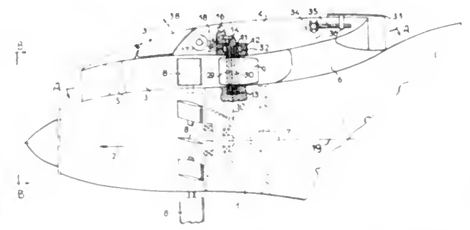


3,156,436
HELIX ANGLE SENSOR AND ROLL CONTROL MEANS
Richard P. White, San Diego, Calif., assignor to Ryan Aeronautical Co., San Diego, Calif.
Filed June 20, 1960, Ser. No. 37,339
3 Claims. (Cl. 244—14)



1. A helix angle sensor and roll control means for use in an aerodynamic body, comprising: a freely floating, weathercocking vane mounted on the body to pivot on an axis substantially radial to the longitudinal axis of the body to sense substantially helical airflow due to rotation and forward motion of the body; pick-off means connected to said vane and providing a signal proportional to the angular deflection of the vane relative to the longitudinal axis of the body; velocity sensing means mounted on the body and providing a signal proportional to the longitudinal velocity of the body; computer means combining said signals and providing an output signal proportional to the roll rate of said body; a program unit adapted to provide a signal proportional to the required roll rate of said body, corresponding to velocity, according to a predetermined program; a comparator connected to said computer and to said program unit to compare the signals therefrom and provide an error signal proportional to the difference between the signals; actuating means connected to receive and be operated by the error signal from said comparator; and roll control means operatively coupled to said actuating means, whereby said roll control means is moved in accordance with the error signal to nullify deviation of said vane from that determined by said program unit.

3,156,437
FLUID FLOW STRAIGHTENING DEVICE IN A PROPELLED BODY
Pierre Mercier, Piscop, Seine-et-Oise, France, assignor to S.F.E.R.M.A., Société Francaise d'Entretien et de Réparation de Materiel Aeronautique, Seine, France, a company of France
Filed Aug. 21, 1961, Ser. No. 132,800
Claims priority, application France Sept. 2, 1960
1 Claim. (Cl. 244—73)

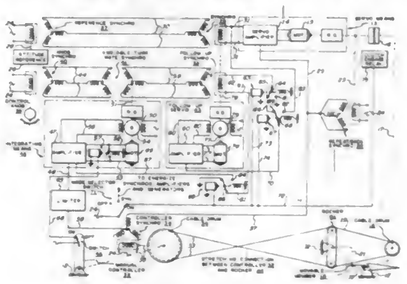


In a body to be propelled in a fluid and having a length portion surrounded by a tubular element supported in coaxial and radially spaced relation therewith to define with said portion an annular fluid passage, an alternator in said body, a turbine having a row of radial blades extending in said passage for driving said alternator by the flow of fluid through said passage, the incoming fluid being deflected by said blades in a direction which forms an angle with the incoming fluid and said angle having a mean value determined in function of a given speed of said incoming fluid, at least one structural element in said passage aft of said blades, said element having a radial leading edge, a radial trailing edge parallel to said leading edge and two opposite side walls extending longitudinally between said radial edges, a plurality of circumferentially spaced straightening guide vanes in said passage between said turbine blades and said structural element, each vane mounted for pivotal movement about a radial axis, a mechanism for pivoting said vanes in parallel relationship from a predetermined mean position in either one of two opposite directions, said mean position corresponding to the mean value of said angle of deflection, motor means for operating said mechanism, and fluid pressure sensitive means connected to said opposite side walls of the structural element for controlling said motor means in response to fluid pressure differentials occurring at said opposite side walls upon variations of said angle of deflection from said mean value thereof to thereby adjust the straightening position of said vanes from said mean position thereof in either one of said opposite directions in accordance with said variations of the angle of deflection.

3,156,438
MANUALLY CONTROLLED SERVO SYSTEM
Gerald J. Diller, Phoenix, and Donald H. Nelson and Everett R. Tribken, Scottsdale, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230.209
12 Claims. (Cl. 244—83)

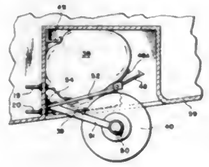
1. A manually controlled servo system for a navigable craft having a movable member for turning it about an axis including means for providing an output depending

on the angular displacement of the craft from reference attitude in relation to the axis, a synchro with a part fixed to the craft and a movable part operatively connected to the member providing a repeatback output depending on the angular displacement of the member from a null condition with respect to the craft, a manually operable controller, a mechanical connection between the controller and member with a stretching part providing the system with the feel characteristics of a centering spring, a synchro with a part fixed to the aircraft and a movable



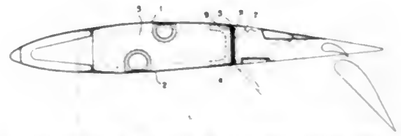
part operatively connected to the controller, means connecting the controller synchro and repeatback synchro providing an output depending on the force exerted on the controller to stretch the stretching part of the mechanical connection and relatively angularly displace the controller and member connected synchro parts, and servo means connected to the member responsive to the combined outputs of the attitude output means, the force output means and the repeatback output means operable to turn the craft about the axis at a rate depending on the force exerted on the controller.

3,156,439
MANUALLY OPERATED LANDING GEAR FOR LIGHT AMPHIBIOUS AIRPLANES
Alexander C. Fleury, 8200 Wallingford Ave., Seattle 3, Wash.
Filed Aug. 27, 1962, Ser. No. 219,665
13 Claims. (Cl. 244—102)



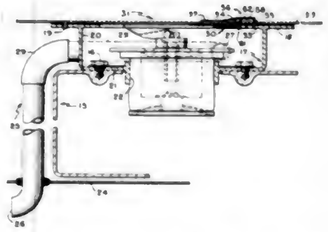
1. A retractable landing gear for an amphibious airplane, comprising: (*a*) a landing gear well in the under portion of the hull of said airplane, (*b*) a carrier means pivotally secured in said well, said carrier means being provided with a landing wheel axle and a landing wheel on said axle, (*c*) a pressure plate means secured to said carrier means near said pivotal connection and extending substantially across and confined generally within its respective well, (*d*) an inflatable and deflatable extending bladder means located in said well on the inner side of said pressure plate means and an inflatable and deflatable retracting bladder means located in said well on the outer side of said pressure plate means, and (*e*) means for supplying and controlling fluid to one of said bladder means and exhausting fluid from the other of said bladder means for raising and lowering the landing gear in said well.

3,156,440
AIRCRAFT WING
Akira Ikeda, Chikusa-ku, Nagoya, Japan, assignor to Shin-Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed May 22, 1963, Ser. No. 282,352
Claims priority, application Japan, May 26, 1962, 37/21,798
6 Claims. (Cl. 244—123)



1. In an aircraft wing structure adapted to accommodate a fuel tank: spaced rear beam members, skin elements connected to said beam members and providing, at least in part, the airfoil configuration of the wing structure, an expansible fuel tank adapted for being positioned between said skin elements, means extending between said beam members at a trailing portion of the wing and means detachably receiving the latter means to said beam members for releasably retaining said tank in said wing structure.

3,156,441
FUEL TANK VENTING SYSTEM FOR AIRCRAFT
Thurston O. Thorn, Nashville, Tenn., assignor to Avco Corporation, Nashville, Tenn., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,876
5 Claims. (Cl. 244—135)



1. In a vented fuel storage system for installation in an airfoil having a filler compartment adjacent its upper surface and further having a fuel tank disposed below the filler compartment and having an upwardly extending mouth adapted to be capped,
and a filler compartment door mounted on the top of the airfoil for closing said compartment,
and primary compartment-venting means establishing an air passage from the atmosphere to said compartment,
the improvement which comprises:
first, secondary compartment-venting means for establishing an air passage from the atmosphere to said compartment and including a vacuum-responsive air inlet valve having a rearwardly extending intake secured to said door; and
second, a cap for said fuel tank having provision for assuring a continuous vent passage from the interior of said tank toward said compartment, comprising:
a well-shaped body member,
upper and lower plates for compressing the body member together,
an adjustable screw-threaded clamp for securing the body member and plates in compressive assembly, said clamp comprising a vertically extending screw projecting upwardly through the lower plate and an interiorly threaded sleeve projecting downwardly through the upper plate and formed with an integral cap portion,
said provision comprising a first vent channel formed between the interior of the tank and said well and a second vent channel formed with a vertical portion extending through said screw and a portion extending transverse to said sleeve and below said cap portion,
the central portion of the upper one of said plates being formed with a convex surface, whereby water is diverted away from said well, said second vent channel and valve providing continuity of communication between said interior and the atmosphere in the event of blocking of said primary compartment-venting means and said first vent channel.

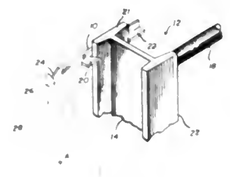
3,156,442
SHOCK-ABSORBING DEVICE FOR LANDINGS
Alfred Pourchet, 24 Parc de la Berangere, Saint-Cloud, France
Filed May 14, 1962, Ser. No. 194,617
3 Claims. (Cl. 244—138)



1. A shock absorbing device for smoothly landing a load when falling in free fall, comprising:
(*a*) a load-carrying member;
(*b*) a stabilizing parachute connected to the load carrying member to decelerate the latter during the fall;
(*c*) a container of fluid under pressure in said member;
(*d*) a plurality of subsonic type nozzles connected to said member and arranged to face downwardly when said parachute is open during falling of the member and load;
(*e*) controllable connections between the container and the nozzles;
(*f*) probe means adapted to hang from the load-carrying member and cooperating with said controllable connections as said probe means touches the ground to release fluid from said container through said nozzles to form a cushion of fluid of limited time duration between said member and the ground;
(*g*) means, at the outlet of said nozzles, to prevent unduly rapid dispersion of the fluid cushion formed, beneath said load-carrying member.

3,156,443
LADDER-ATTACHING SUPPORTS FOR BUCKETS
Nicholas Lupinacci, 207 Stillwater Ave., Stamford, Conn.
Filed Dec. 12, 1961, Ser. No. 158,729
3 Claims. (Cl. 248—211)

1. A ladder-attaching holder of the class described comprising a one piece, relatively flat holder provided at one end portion thereof with spaced struck-out portions having gripping surfaces being at an acute angle with the edge of the vertical sidepieces of the ladder, and each of said gripping surfaces engaging a respective sidepiece only at the junction of said edge and the adjacent face of said sidepiece, the holder extending laterally from the



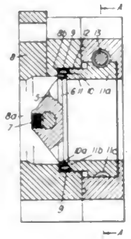
ladder but co-planar therewith, and an indentation on the opposite end of said holder for suspending a weighted object therefrom.

3,156,444
PIPE SQUEEZING APPARATUS FOR CONTROLLING FLOW THROUGH PLASTIC PIPE
Douglas E. Black, 2044 W. Palo Verde Drive, Phoenix, Ariz.
Filed Dec. 11, 1961, Ser. No. 158,498
7 Claims. (Cl. 251—7)



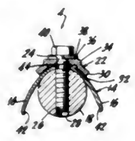
1. A pipe squeezer for shutting off flow in plastic pipes comprising, an elongated body assembly which has a handle at one end thereof, a pair of spaced coplanar oppositely disposed relatively movable V-shaped pipe engaging members of greater length than the diameter of the pipe to be squeezed and having facing parallel apexes adapted to engage the plastic pipe when it is disposed transversely therebetween, each pipe engaging member connected at one end to the elongated body assembly adjacent its other end of said body assembly, the pipe engaging members at their ends opposite from those attached to the elongated body being free so that the movable members may be spaced from each other and slipped around the pipe section to be squeezed, said movable pipe engaging members each having flat external faces which meet at a pointed apex which is slightly rounded, the width of each of said faces being of substantial length with respect to the radius of the pipe so that the faces support the deflected pipe wall during squeezing, the faces of each pipe engaging member enclosing an angle of approximately 90°, and means associated with the pipe engaging members and the body assembly to move the members apart to permit the pipe to be received therebetween and to move the members together to engage and squeeze the pipe in substantial line contact.

3,156,445
BUTTERFLY VALVES
Frank Edward Swain, 9 Kirkstone Close, Glenfield Frith Drive, Leicester, England
Filed Sept. 29, 1960, Ser. No. 59,406
3 Claims. (Cl. 251—171)



1. In a butterfly valve assembly, a valve body having a flow passage therethrough and an annular recess about said flow passage, a closure member pivotally mounted within said valve body on an axis of rotation extending across the longitudinal axis of said valve body, said closure member having a continuous peripheral surface radially inwardly of said recess when in valve closed position, means for selectively rotating said closure member between valve opened and closed positions to respectively permit and block flow of fluid through said body, an axially compressible radially ring disposed for radial movement in said recess with its outer periphery spaced from the surrounding bottom of said recess and its inner periphery providing a continuous resilient mouth engaged by said closure member in valve closed position, said ring being of such structure that axial compression of said ring causes a related change in the diameter of said mouth, axially adjustable means comprising a side wall of said recess axially engaging said ring for varying the axial compression of said ring to effect an infinite step adjustment of the diameter of said mouth between an interference fit with said closure member and a looser fit wherein rubbing loads applied by said ring to said closure member are reduced, and manually manipulatable means accessible externally of and extending through said valve body for axially displacing said wall to enable continuous adjustment of said diameter concomitantly with the rotataion of said closure member between opened and closed positions.

3,156,446
DAMPER SECURING MEANS
Andrew Chaloka, Rahway, N.J., assignor to L. J. Wing Mfg. Co., Division of Aero-Flow Dynamics, Inc., Linden, N.J., a corporation of New York
Filed Feb. 27, 1963, Ser. No. 261,402
10 Claims. (Cl. 251—298)



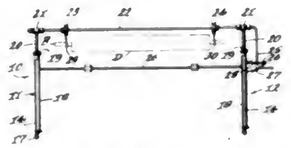
1. Apparatus for controlling the direction of flow of a gas, comprising a damper V shaped cross-section and having a pair of diverging arms interconnected by an apex portion, a pivot pin mounted for movement to position said damper in a plurality of positions, said pin longitudinally contacting the inner surface of the apex portion of said damper, and means for securing said damper to said pin, said securing means comprising an apertured member having a pair of diverging inclined wings overlying said apex portion of said damper and in surface-to-surface contact with said apex portion in gripping relation therewith, and a fastener extending through the aperture in said apertured member and through an opening formed therein said damper and secured to said pin for holding said member against said damper and the latter against said pin.

3,156,447
INITIAL STAGES FOR A STEAM TURBINE
Yasuo Takeda, Higashinadaku, Kobe, Japan, assignor to Kawasaki Jukogyo Kabushiki Kaisha (Kawasaki Dockyard Co., Ltd.)
Continuation of application Ser. No. 546,759, Nov. 14, 1955. This application Dec. 22, 1960, Ser. No. 77,771
1 Claim. (Cl. 253—69)



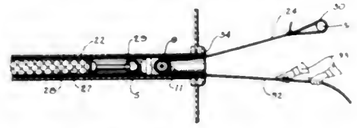
In a rotary steam turbine having a casing and a rotor rotatably arranged in said casing, said rotor having a shaft and having more than two turbine wheels secured thereto, said turbine wheels having blades thereon; the first two stages in said turbine comprising a first impulse stage and a second impulse stage, each of said impulse stages having a row of fixed steam nozzles of the partial admission type, said row of steam nozzles of said first impulse stage being arranged on the inner wall of said casing for cooperation with said blades of a first turbine wheel, a diaphragm arranged between said first turbine wheel and a second turbine wheel of said plurality of turbine wheels, a labyrinth seal formed between said diaphragm and said rotor of said turbine for preventing the flow of steam through the existing interstice between said diaphragm and said rotor, said row of steam nozzles of said second impulse stage being arranged in said diaphragm for cooperation with said blades of said first turbine wheel and with said blades of said second turbine wheel, the steam flow emerging from said first impulse stage deviating from the center line of said rotor shaft under design conditions, and said steam nozzles of said second impulse stage having inlet edges arranged corresponding to said deviated steam flow, said first two stages being constructed in such a manner that when steam is flowing in said turbine and said turbine is operating under design conditions said first impulse stage has a heat drop of substantially 1.5 to 3 times the heat drop in said second impulse stage and the steam velocity in the outlet of said nozzles of said first impulse stage does not exceed the velocity of sound.

3,156,448
COTTON MILL HOIST
Notley P. Reavis, 812 E. Reeves St., Salisbury, N.C.
Filed Dec. 31, 1962, Ser. No. 248,659
2 Claims. (Cl. 254—7)



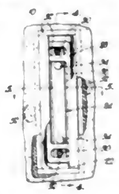
1. A lifting crane of the class described comprising in combination a pair of parallel, tubular side frames mounted on wheels, each of said side frames having a triangular configuration comprised of a horizontal base portion and a pair of upwardly converging side portions, an elongated cross bar extending transversely between a corresponding one of said side portions on each of said side frames to secure said frames to each other, a vertical column in each frame, a thread formed at the uppermost section of each column, a threaded stud fitted in each of said threaded sections, the uppermost section of each said threaded stud having a bearing, an operating shaft mounted in said bearings, said shaft extending the entire length between said side frames, grooved pulleys on said shaft, chains over said pulleys and a handle bar for manual rotation of said shaft.

3,156,449
METHOD OF THREADING CABLE THROUGH CONDUIT
Glover C. Ensley, 525 N. Woodland Drive, North Kansas City, Mo.
Filed Dec. 31, 1962, Ser. No. 248,800
2 Claims. (Cl. 254—134.3)



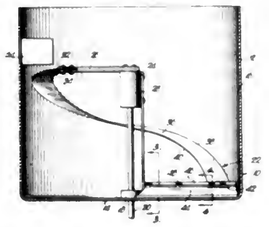
1. A method of pulling electrical cable through a conduit which includes the steps of:
(*a*) doubling a pull rope and threading same through the conduit,
(*b*) engaging said rope in a pulley sheave,
(*c*) securing said sheave to said cable,
(*d*) anchoring one end of said rope, and exerting a pull on a free end of said rope for drawing said sheave through said conduit with an increased mechanical advantage.

3,156,450
ADJUSTABLE ANCHOR FOR RAILING SUPPORTS
Wenzel W. Thom, 1503 Northeast Parkway, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.
Filed Feb. 12, 1962, Ser. No. 172,421
3 Claims. (Cl. 256—65)



1. Apparatus for anchoring an elongated member having a pair of spaced, externally threaded fastening devices thereon to a support comprising:
an elongated, hollow body having a pair of spaced sides and a flange for each side respectively, said flanges extending inwardly toward each other from corresponding longitudinal edges of said sides and being spaced apart to form a slot therebetween, said sides defining a channel therebetween communicating with said slot, said body adapted to be secured to said support;
an elongated, rigid anchor element having a length and width less than the length and width of said channel, said anchor element being disposed within the channel with the length of the anchor element extending along the length of the channel to permit limited longitudinal and transverse movement of the anchor element relative to said body, said anchor element having a pair of internally threaded openings therein spaced apart a distance equal to the distance between said fastening devices of said member, said openings being adapted to threadably receive said fastening devices to couple the member to said anchor element when the latter is in any one of a number of positions within said channel;
a rigid retainer plate having a length less than the length of the channel and a width greater than the width of said slot, said retainer plate being disposed within the channel, between said anchor element and the flanges and across said slot for maintaining the element in the channel, said retainer plate being provided with apertures larger than and in alignment with the openings in said anchor element to permit said fastening devices to be received within said openings when said anchor element is angularly disposed in said channel; and
means coupling the anchor element to said retainer plate to permit said anchor element to move longitudinally of the channel with said retainer plate and to move transversely of said channel relative to said retainer plate whereby the openings of said anchor element may be aligned with said fastening devices when said member is not completely aligned with said support.

3,156,451
ROTATABLE AGITATOR
Samuel M. Waas, Kansas City, Mo., assignor to Manley, Inc., Kansas City, Mo., a corporation of Missouri
Filed Feb. 16, 1961, Ser. No. 89,810
4 Claims. (Cl. 259—107)

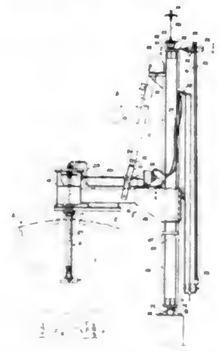


1. In combination with a container having a bottom, a vertical, rotatable, drive shaft in the container, and a side wall extending upwardly from said bottom, a rotor provided with:
hub structure secured to and extending along said shaft for rotation therewith;
a helical, transversely flat vane having a pair of spaced ends;
means securing the ends of said vane to said hub structure adjacent the upper and lower extremities of the latter respectively to dispose said ends in vertically spaced relationship and to position said vane at least partially about said shaft in laterally spaced relationship to said hub structure to thereby present a vertically disposed material passage extending through the space between said hub structure and said vane;
material pickup means mounted on the securing means adjacent the lower end of said vane, substantially spanning the horizontal distance between said hub structure and said lower end of the vane and disposed in wiping relationship to said bottom for wiping the latter and directing material toward said lower end of the vane as said shaft is rotated, said vane being disposed to receive material at said lower end thereof from said pickup means and to elevate the material within the container for gravitational return flow through said passage from the uppermost end of the vane and from the vane throughout its length along both longitudinal edges of the vane

during continuous rotation thereof, whereby to circulate, tumble and agitate the material; and

deflector means carried by said container in overlying relationship to the generally cylindrical path of travel of said vane and positioned to engage and dislodge material from the upper surface of the vane at the upper end thereof as said upper end moves by said deflector means during rotation of the shaft, whereby the free gravitation of the material to the bottom for further mixing is enhanced.

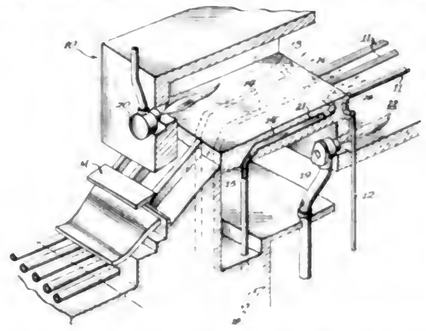
3,156,452
MIXING APPARATUS
Robert E. Touzalin, Aurora, and Rudolph R. Patrick, Warrensville Heights, Ohio, assignors to Interlake Iron Corporation, Cleveland, Ohio, a corporation of New York
Filed Oct. 10, 1961, Ser. No. 144,124
17 Claims. (Cl. 259—135)



1. An apparatus for mixing large masses of liquid-like material comprising, an upstanding column mounted for rotation about a generally vertical axis, power means for rotating the column about said vertical axis, a transversely extending support member operably connected to said column for vertical movement on said column and for rotational movement as a unit with said column upon actuation of said power means, a generally vertically extending mixing means disposed adjacent one end of said support member, motor means mounted on said support member and operably connected to said mixing means for rotating the latter about a generally vertical axis, and cooling means disposed interiorly within said mixing means for applying a coolant to said mixing means from a source of supply.

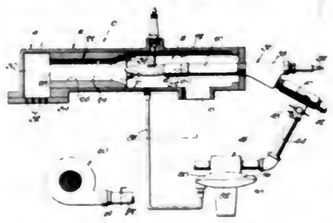
3,156,453
HEATING FURNACE
Robert A. Hogue, Gary, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 96,785
3 Claims. (Cl. 263—6)

1. In a billet heating furnace the combination comprising a plurality of skids located in the heating section of the furnace for supporting the billets as they travel through the furnace, means for cooling each skid independently of each other, a substantially planar soaking hearth member positioned in a soaking section of the furnace adjacent to the skids along which billets are adapted to be moved while supported thereby in the furnace, a plurality of enclosed heating passages extending below the planar surface of said hearth with each said passage disposed vertically below the hearth surface and in alignment with the axis of one of the said skids, an individual heating means for producing combustion within the con-



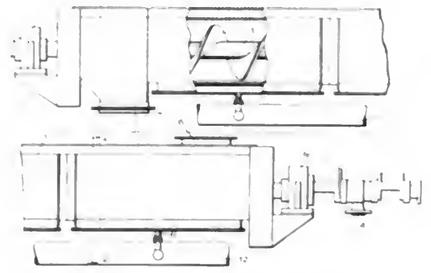
fines of each heating passage beneath the hearth, and means to direct exhaust gases from said heating passages into the furnace in the region of the skids.

3,156,454
INSTANTANEOUS HIGH-CAPACITY HEATER FOR A GASEOUS MEDIUM
John H. Flynn, 234 Elk Ave., New Rochelle, N.Y.
Filed Jan. 16, 1963, Ser. No. 252,276
3 Claims. (Cl. 263—19)



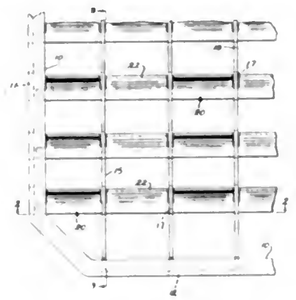
1. An air heater, comprising a casing providing a substantially cylindrical chamber and means providing opposite closed and open chamber ends and a lateral air inlet to said chamber between said ends; a burner tube extending through said closed chamber end into said chamber axially thereof and having a burner end with a flame opening of a given mean cross-sectional dimension *d* from which to project an axial flame toward said open chamber end; means for forcing air through said inlet into the confronting part of said chamber transversely thereof; and a tubular ceramic liner in said chamber between said open end thereof and said burner end and providing a through-passage substantially coaxial with said chamber, said chamber being of a cross-sectional dimension several times larger than said dimension *d* and being between said closed chamber end and liner of a length several times larger than said cross-sectional chamber dimension, said burner end being located between said air inlet and liner and axially spaced from said liner a distance several times larger than said dimension *d*, and said air inlet being of a mean cross-sectional dimension several times larger than said dimension *d* to compel the forced air to set up air turbulence in said confronting chamber part cross-sectionally throughout, with said air inlet being so spaced from said closed chamber end that the end part of said chamber therebetween is only several times shorter than the length of said chamber between said closed end thereof and said liner, whereby said chamber end part will serve as an air dome in largely suppressing air turbulence in said chamber and compelling substantially uniform and non-turbulent air flow past a flame from said burner end and into said liner passage.

3,156,455
METHODS OF EFFECTING HEAT EXCHANGE AND HEAT TRANSFER DEVICES THEREFOR
Charles Boulet, Versailles, France, assignor to Holo-Flite International Incorporated, San Francisco, Calif.
Filed Jan. 15, 1962, Ser. No. 166,218
Claims priority, application France, Dec. 7, 1961, 881,216
6 Claims. (Cl. 263—21)



2. A method of treating a material, comprising conveying the material along a chamber by a hollow heat exchange screw device, circulating heat exchange medium through said screw device, subjecting the material to a fluidizing action by injecting a fluid directly into it, whereby the particles are simultaneously subjected in the chamber between the helices of said screw device along the chamber to heat exchange contact with the heat exchange surfaces of the screw device, agitated by said device and conveyed by said device along the treatment chamber.

3,156,456
HEAT TREATING TRAY
Paul S. Menough, Rocky River, Ohio, assignor to Dale A. Vonderau, Cleveland, Ohio
Filed May 10, 1955, Ser. No. 507,270
1 Claim. (Cl. 263—47)



A warp and rack-proof grid adapted to carry loads of articles to be heated through the high temperature in a heat treating furnace comprising an assemblage of a plurality of parallel load bars and a plurality of tie bars, the load bars having vertically disposed side surfaces and elongated openings extending lengthwise thereof approximately on their medial lines, the vertical width of the load bars being several times the vertical width of said openings, the tie bars extending through said openings of a plurality of load bars and having limited movement therein relative to said load bars and having horizontally disposed side surfaces, and means for locking the load bars and tie bars together in loose engagement to prevent the creation of thermally induced stresses and to permit relative expansion and contraction of the bars when the grid is heated and cooled, said means including a plurality of notches in one edge of each of the tie bars into which the load bars extend, each pair of notches forming tongues therebetween which are slightly less in length measured longitudinally of the tie bars than the distances to be established and maintained between the load bars in said notches.

3,156,457
SINUOUS WIRE SEAT SPRING
John C. Hampson, Holland, Mich., assignor to Rockwell-Standard Corporation, Coraopolis, Pa., a corporation of Pennsylvania
Original application June 12, 1956, Ser. No. 590,926, now Patent No. 3,057,380, dated Oct. 9, 1962. Divided and this application Apr. 30, 1962, Ser. No. 191,170
1 Claim. (Cl. 267—1)

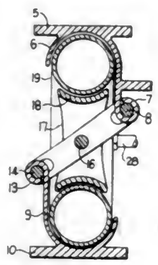


A sinuous strip wire seat spring formed from a single length of spring wire of original predetermined uniform diameter and consisting of a series of loops with alternate loops open laterally oppositely in the seat spring, said loops each consisting of parallel side bars serving as torsion bars in the seat spring and extending at right angles to the longitudinal axis of said seat spring with the closed ends of said loops being straight spacer bars, the wire of said formed seat spring being substantially unstretched axially and of the same uniform diameter as originally in the unformed length of wire, and the formed sinuous strip being bent about the axes of selected torsion bars to provide at opposite ends oppositely outwardly open V-structures, the V-structure at one end having a full length torsion bar at its apex and each side of said one said V-structure comprising two spacer and torsion bar sections with the spacer bars in the terminal side of said one V-structure being shorter than the spacer bars in the other side thereof, and there being an intermediate arched portion of said formed sinuous strip extending between said V-structures, the end section of said arched portion that is connected to said one V-structure comprising a torsion bar connected at opposite ends to shorter torsion bars by spacer bars that are similarly inclined to the longitudinal axis of the spring.

3,156,458
PNEUMATIC SUSPENSION SYSTEM FOR AUTOMOTIVE VEHICLES
Robert S. Leonard, 601 Belden Ave., Chicago, Ill.
Substituted for abandoned application Ser. No. 251,221, Jan. 14, 1963. This application May 22, 1964, Ser. No. 371,871
4 Claims. (Cl. 267—65)

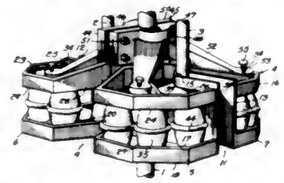
2. An invention of the character described, comprising a fluid filled elastic member in shape of a torus resting upon a saddle, having a flat plate secured to an axle on an automotive vehicle and a second saddle diametrically opposite the first mentioned saddle, the second saddle, having a flat plate secured to the underside of the frame of the said

automotive vehicle and structure connecting the two saddles, by means of a shackle bar, to a hub having a side configuration of an annular body, the said hub being



located within the confines of the said elastic member, thereby providing a pneumatic suspension system for automotive vehicles.

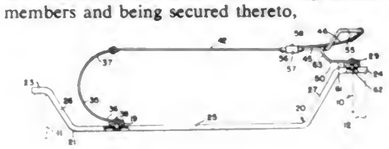
3,156,459
SHOCK ABSORBER FOR PUMPING EQUIPMENT
Richard C. Mason, 1124 S. Guthrie St., Tulsa, Okla.
Filed Nov. 13, 1962, Ser. No. 236,974
4 Claims. (Cl. 267—70)



1. A shock absorber for connecting a variable load with a reciprocating means, said shock absorber including
a plate member to be connected with the reciprocating means and having vertical guides,
a plate member to be connected with the variable load and having portions in sliding engagement with the guides,
said plate members having registering sockets in facing sides thereof and apertures registering with said sockets,
cushioning members between the plate members and having hollow bodies with cylindrical ends closely fitting within said sockets to expand and compress under relative movement of the plate members for absorbing shocks,
said cylindrical ends of the cushioning members having apertures registering with the apertures in the plate members for flow of air into and out of the cushioning members for cooling said cushioning members, and
said cushioning members having circumferential ribs with the ribs of one member contacting with the ribs of adjacent members under said variable load for strengthening support of the cushioning members under increased resiliency afforded by flow of air therefrom.

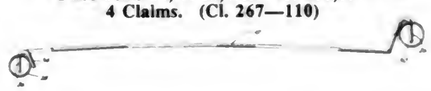
3,156,460
SEAT SPRING STRUCTURE
Samuel L. Santillo, Dubuque, Iowa, assignor to Flexsteel Industries Incorporated, Dubuque, Iowa, a corporation of Minnesota
Filed July 25, 1962, Ser. No. 212,227
5 Claims. (Cl. 267—102)

1. In a seat spring structure comprising a supporting frame having spaced longitudinal frame members each formed with a body portion and front and rear frame offsets disposed above said body portion and front and rear transverse frame members secured thereto, transversely spaced spring units carried by said frame and including upright C-shaped leaf springs secured at their lower ends to said rear transverse frame member and substantially horizontal longitudinal leaf springs secured to the upper ends of said C-shaped leaf springs and extending forwardly thereof, the combination of:
(*a*) said forward transverse frame member resting on the forward frame offsets of said longitudinal frame members and being secured thereto,



(*b*) spring offsets formed on the forward portions of said longitudinal leaf springs and disposed below the same and extending in a forward direction, said offsets resting on and being secured to said forward frame member,
(*c*) spring connecting portions connecting said spring offsets to said springs at the forward portions thereof,
(*d*) supplemental leaf springs attached to said longitudinal leaf springs rearwardly of the offsets therein and extending forwardly thereof, and
(*e*) an edging member secured to the forward ends of said supplemental leaf springs.

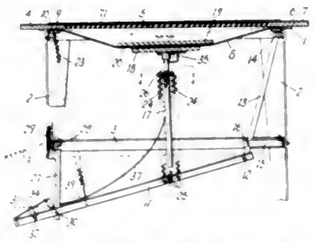
3,156,461
TERMINAL CONNECTIONS FOR LINEAR SPRING ELEMENTS
John M. Caughey, Adrian, Mich., assignor to Stubnitz Greene Corporation, a corporation of Michigan
Filed June 14, 1963, Ser. No. 288,037
4 Claims. (Cl. 267—110)



1. A cushion spring structure having in combination, a pair of spaced opposed frame members of which at least one has an elongated slot, a linear spring wire element supported in bridging relation from said frame members, at least one end of said element having a U-looped terminal portion disposed in said slot, the parallel legs of said U-looped terminal portion having an overall unstressed dimension slightly in excess of the length of said slot whereby said leg portions have a frictional, snap-in association with said slot, said slot opening outwardly substantially normal to a plane through said members, said U-looped terminal portion being disposed substantially normal to said plane whereby the connection between said slot and said U-looped terminal portion may be established solely by bodily movement of said element toward said plane.

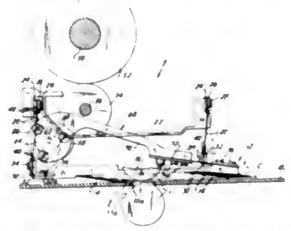
3,156,462
VACUUM TABLE TOP
Elmer C. Weaver, 2007 Lakeview Drive, Kalamazoo, Mich.
Filed Nov. 7, 1962, Ser. No. 236,068
13 Claims. (Cl. 269—21)

13. A structure of the class described comprising a supporting frame, a bed member mounted on said frame and having a foraminate portion adapted to supportedly receive material in closure relation to the foraminate portion thereof, a diaphragm disposed on the underside of and adjustable to and from said bed member and having portions thereof sealingly engaged with said bed member in surrounding relation to said foraminate portion thereof, a manually operable actuating member mounted on said frame, a thrust member mounted on said diaphragm in



coacting relation to said actuating member to be actuated thereby when said actuating member is retracted, and means including a springably extensible element for connecting said manually operable and actuating member to said diaphragm.

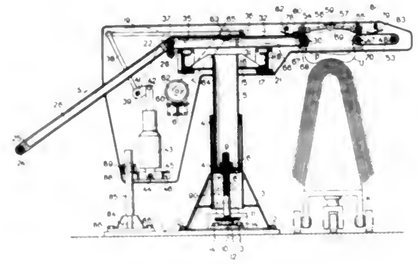
3,156,463
CARD-ADVANCING MECHANISM
Earl E. Masterson, Weston, and Anthony B. Ragozzino, Ridgefield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1962, Ser. No. 189,806
18 Claims. (Cl. 271—54)



1. A repetitive material-advancing mechanism comprising:
(*a*) a support;
(*b*) at least one flexible mounting member secured to the support and projecting in a selected direction therefrom;
(*c*) and a material-advancing device including a plurality of material-engaging means arranged to operatively engage the material in succession for repetitive advancing thereof when the material-advancing device is reciprocated in a direction transverse to the selected direction;
(*d*) the material-advancing device being mounted on the projecting part of the mounting member;
(*e*) the mounting member being sufficiently bendable to permit the material-advancing device to be so reciprocated relative to the support.

3,156,464
DEVICE FOR PILING SHEET MATERIAL
Jaromír Piškytl, Otrokovice, and Rudolf Forst, Napajedla, Czechoslovakia, assignors to Strojosvit Krnov, národní podnik, Krnov, Czechoslovakia
Filed Mar. 5, 1963, Ser. No. 263,032
Claims priority, application Czechoslovakia, Mar. 7, 1962, 1,431/62
3 Claims. (Cl. 271—68)

1. A device for piling hides and pieces of other flexible sheet material, comprising, in combination,
(*a*) a frame,
(*b*) a supply conveyor,
(*c*) a take-off conveyor,
(*d*) said supply and take-off conveyor being arranged on said frame in series, with a gap between their adjacent extremities,
(*e*) supporting means for the material to be piled below said gap,
(*f*) a shifting device capable to alternately bridge and open said gap,



(*g*) said shifting device operating at a level coincident with that of said conveyors,
(*h*) means for transmitting to the take-off conveyor alternately a movement in the direction of the movement of the supply conveyor and in the opposite direction, and
(*i*) control means controlling the movement of said shifting device and of said take-off conveyor in dependence upon the position of the flat, flexible material to be piled.

3,156,465
EXERCISING APPARATUS
Frederick P. Jacobi, 514 E. 29th Place, Davenport, Iowa
Filed Dec. 5, 1961, Ser. No. 157,134
7 Claims. (Cl. 272—57)

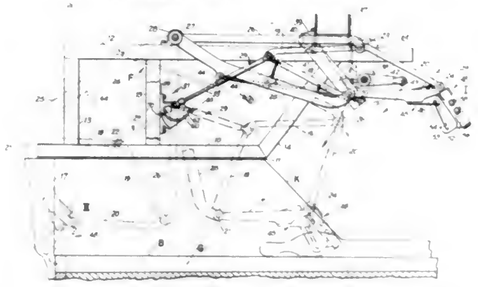


1. An exercising device comprising a pair of substantially parallel rail members joined together throughout their length, a slideboard disposed between said rail members, a handgrip member slidably mounted on each of said rail members, and means carried by said handgrip members whereby said handgrip members may be grasped in either hand to enable a person desiring exercise to climb up said rails when they are disposed in a vertically inclined position by alternately shifting his weight from one hand to another while the handgrip members are advanced along said rails.

3,156,466
BOWLING PINSPOTTING MACHINE SWEEP MECHANISM WITH DRIVE MEANS COMPRISING DISTORTABLE PARALLELOGRAMS

George Fried, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed May 18, 1962, Ser. No. 195,925
6 Claims. (Cl. 273—54)



1. In a bowling alley sweep mechanism, the combination of

two straight-line mechanisms each disposed at a different side of the alley bed and each comprising

four links pivoted end-to-end to define a parallelogram, said links all having the same effective length, the pivot points between adjacent ones of said links defining the respective ends of the two diagonals of said parallelogram,

a pair of supporting links each having one end pivotally connected to a pivot defining a different end of one of said diagonals,

support means disposed above the alley bed, the other ends of said supporting links being pivotally connected to said support means in such fashion that the combination of said supporting links and said four links is suspended for pivotal movement lengthwise of the alley bed,

the parallelogram defined by said four links being disposed in a substantially upright plane so that the other diagonal thereof has one end nearer said support means than is the other end, and control means operatively connected at the pivot point defining said one end of said other diagonal;

a sweep having its end portions each connected to a different one of said straight-line mechanisms at said other end of said other diagonal; and

power means operatively connected to drive both of said straight-line mechanisms in synchronism through a cycle in which said supporting links first swing downwardly, from a forwardly raised position, toward the alley bed to bring said sweep to an initial operative position at the alley bed, then rearwardly through a predetermined angle to bring said sweep to a rearward position, and the forwardly in return to said forwardly raised position,

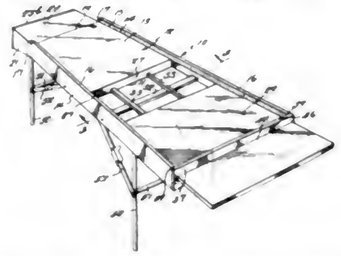
said control means of each of said straight-line mechanisms being operative in compression, during swinging of the supporting links through said predetermined angle, to restrict the path of travel of the pivot point defining said one end of said other diagonal to a predetermined arc such that the parallelograms defined by said four links of each straight-line mechanism are progressively distorted to maintain said sweep in substantially straight-line horizontal movement as said sweep travels between said initial operative position and said rearward position,

the length of said other diagonal of the parallelogram defined by said four links of each of said straight-line mechanisms being smaller as said supporting links of said straight-line mechanisms swing through the central portion of said predetermined angle than when said sweep is at said initial operative position and said rearward position, whereby the vertical space required for the sweep mechanism is minimized.

3,156,467
CHANGEABLE TARGET DISK GAME

Leonard S. Rucker, Swansea, S.C.
(P.O. Box 385, North, S.C.)

Filed Aug. 17, 1962, Ser. No. 217,576
6 Claims. (Cl. 273—126)

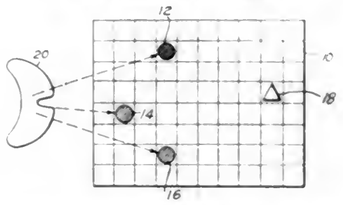


1. A game table comprising an elongated substantially rectangular base including side walls and one end wall having a transverse slot extending substantially the full width thereof, legs supporting said base, a fixed horizontal panel mounted on said base and having a flat top surface and terminating at an intermediate point of said side walls spaced from said end wall, said flat top surface being below the top of said walls, the upper portions of said side walls being cut away adjacent the end of said fixed panel remote from said end wall to leave a flat unwalled end portion of a substantial extent to provide straight and angular access for a cue to propel a playing piece in either a longitudinal or angular direction relative to the longitudinal extent of the panel, said side walls having horizontal grooves therein aligned with said fixed panel, and supporting members horizontally aligned with the bottom of said fixed panel extending across the space between said fixed panel and said end wall, and a removable reversible panel having one set of indicia on one side and a second set of indicia on the other side insertible through said slot into said grooves to rest on said supporting members, said removable panel having a flat top surface co-planar and flush with the flat top surface of said fixed panel.

3,156,468
GAME WITH COLOR SELECTIVE PARTS

Alexander W. Hughes, Jr., Chicago, Ill.
(4323 Northfield Road, Cleveland 28, Ohio)

Filed July 24, 1962, Ser. No. 213,084
3 Claims. (Cl. 273—134)

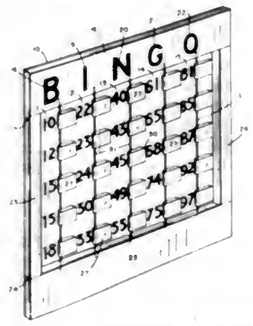


1. A game comprising a game board having a plurality of playing positions indicated thereon, two groups of opposing pieces, the pieces of one group being of identical shape but of at least two colors, and optical means to make all of the pieces of said one group appear to be of the same color, said optical means being adapted for being used by one player at a time.

3,156,469
BINGO GAME BOARDS

Raymond J. Mokler, St. James, Manitoba, Canada
(9 Nelson Road, Melrose, Mass.)

Filed June 8, 1962, Ser. No. 201,009
2 Claims. (Cl. 273—135)

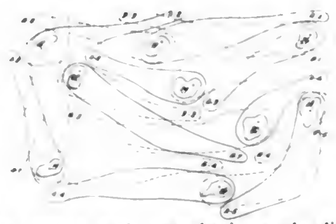


1. A game board, comprising: a rectangular-shaped backing plate having spaced columns of numbers thereon thereacross; a rectangular frame having a central open space secured to said backing plate, to enclose said columns of numbers in the central open space therewithin; a series of spaced wires crossing said central space, the ends of said wires supported by opposing sides of said frame; each of said wires positioned parallel with and passing over one side of one of said columns of numbers on said backing plate; a plurality of doors swingably mounted in spaced relation on each of said wires, one door over each number therebelow; means carried by said wires for retaining said doors in said spaced relationship thereon; and each of said doors mounted so as to be individually swingable on its respective wire from a backing plate contacting position on one side of said wire to a backing plate contacting position on the other side of said wire.

3,156,470
MULTIPLE GOLF COURSE

Edgar H. Newkirk, 1817½ Malcolm, Los Angeles, Calif.

Filed July 2, 1959, Ser. No. 824,586
2 Claims. (Cl. 273—176)

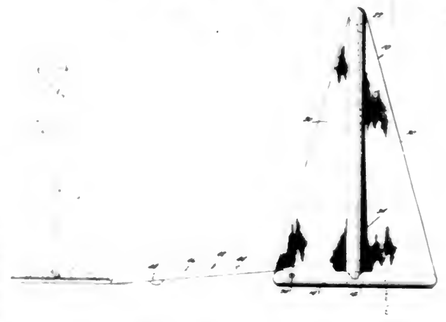


1. An outdoor golf course having a plurality of separate golfing circuits with full-size fairways and greens, said golf course including: a first circuit comprising a plurality of first circuit fairways each having a front and a rear end, a first circuit tee operatively disposed at the front end of each of said first circuit fairways, and a separate green operatively connected with the rear end of each of said first circuit fairways; and a second circuit comprising a plurality of second circuit fairways each having a front and a rear end, a second circuit tee operatively disposed at the front end of each of said second circuit fairways, and operative connections between the rear ends of said second circuit fairways and the respective said greens, each of said second circuit fairways approaching its respective green from a different direction than the respective said first circuit fairway approaches that same green, whereby a single set of greens is alternatively usable in two separate golfing circuits on said golf course.

3,156,471
GOLF TARGET WITH INFLATABLE SUPPORT MEANS

Emile L. Bibeau, Box 321, Methuen, Mass.

Filed Feb. 6, 1962, Ser. No. 171,373
8 Claims. (Cl. 273—176)



3. A golf practice apparatus having an impact-absorbing unit comprising a framework of flexible, pneumatic tubing including a pair of horizontally disposed, spaced parallel, ground-engaging feet having means to anchor said feet to a horizontal surface, and a vertically disposed rectangle carried by said feet, medially of their length, said tubing having pneumatic intercommunication throughout, and including an air valve, four triangular panels of screen webbing in the corners between the rectangle and the feet, a panel of sheet material carried by said rectangle, within the opening thereof, said panel having a series of vertically spaced openings for passing golf balls, a vertical sleeve carried by said panel and enveloping said openings, for arresting balls and guiding them vertically downward to the lowermost of said openings, said panel also having a plurality of perforations substantially smaller than said openings, a ramp of screen material attached to said feet and the lower side of said rectangle and having vertical side rails, and a laterally disposed, depressed portion near its outer end, and a rectangular pad of sponge material arranged transversely to said ramp, adjacent its outer end and extending on both sides thereof.

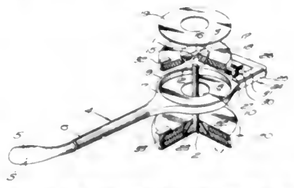
3,156,472
MAGNETIC TONE ARM SUSPENSION

Joe F. Brock, Rome, N.Y.
(6016 Fernview Ave., Cincinnati, Ohio)

Filed Feb. 27, 1963, Ser. No. 261,329
10 Claims. (Cl. 274—23)

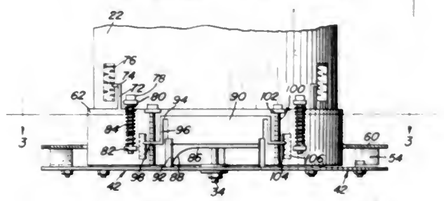
2. In a record-player having a turntable: an upstanding post fixed adjacent the turntable; an elongated tone arm extending laterally from the post, bearing means mounted at the end of said tone arm and having a vertical passage therethrough for removably receiving said post whereby said tone arm is adapted to slide vertically and to swing laterally with respect to the axis of the post; first magnet means mounted on and for movement with said tone arm;

second magnet means mounted below said tone arm, said first and second magnet means having opposing magnetic fields, the repelling force of said opposing magnetic fields being such as to produce an upward force equal to the down force caused by the weight of the tone arm, and the bottom of the tone arm being thereby floated at an elevation appreciably above the top of the lower magnet means; first magnetic field modifying means mounted



on said first magnet means for producing at an angular location thereon a region of increased flux density; and second magnetic field modifying means mounted on said second magnet means at an angular location thereon for producing a region of increased flux density whereby a magnetic torque is imposed on said tone arm urging it to swing laterally about said axis when said first and second field modifying means are approximately vertically aligned.

3,156,473
MATERIAL SPREADING SPINNER
Charles P. de Biasi, 74 Braman Road, Waterford, Conn.
Filed Jan. 25, 1961, Ser. No. 84,862
14 Claims. (Cl. 275—15)



3. A material spreader comprising
an open ended housing,
an open ended casing disposed adjacent an open end of the housing,
spinner structure rotatably mounted adjacent an open end of the casing in spaced relationship relative thereto and defining therewith a space therebetween through which material may be spread in a generally lateral direction relative thereto,
yieldable means mounting said casing to the housing to enable the size of the space between the casing and the spinner structure to be varied,
adjustable means for said yieldable means,
said casing having an aperture disposed adjacent the open end thereof, and
control means for varying the size of the aperture.

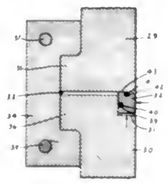
3,156,474
SELF-CONTAINED OIL SEAL ASSEMBLY
Robert S. Nelson, Pontiac, Mich., assignor to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed June 19, 1961, Ser. No. 118,063
2 Claims. (Cl. 277—39)

1. An oil seal assembly for mounting between a pair of relatively movable parts, said assembly including a casing having an axial wall portion for mounting in fixed sealed relation on one of said parts, said casing having spaced radial wall portions formed integral with said axial wall portion extending toward the other of said parts, a sealing member of generally C-shape in cross section in said casing and being formed with axially extending radially spaced parallel and oppositely acting flexible sealing lips joined by a normally flexible radially extending intermediate portion having inner and outer radial faces, and spring means carried by each of said lips to urge one of said lips into running sealing engagement with said axial wall portion and hold the other of said lips radially outwardly of said casing for fixed sealing engagement with the other of said parts, the intermediate portion of said sealing member extending along one of said radial wall portions in paralleling spaced relation thereto and having circumferentially spaced rib-like projections formed on the



outer radial face thereof and in engagement with said one radial wall portion to maintain axial spacing of said sealing member in said casing during installation and subsequent operational use of said assembly for lubrication of said one sealing lip, said intermediate portion further being provided with a flat washer-like rigidifying means mounted along the inner radial face thereof opposite to said rib like projections with the opposite edges of said rigidifying means being in engagement with the inner surface edge portions of said sealing lips in the areas of flexible connection of said sealing lips with said intermediate portion, the sealing surface of the other of said sealing lips being generally axially flat with the leading edge portion thereof being radially inclined for ready mounting thereof on the other of said parts.

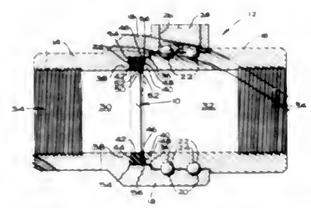
3,156,475
FLUID SEALING APPARATUS OPERABLE BY AXIALLY AND RADIALLY UNBALANCED PRESSURE LOAD
George Gerard, Yonkers, and Jacob Brayman, Staten Island, N.Y., assignors to Barogenics, Inc., a corporation of New York
Filed July 28, 1961, Ser. No. 127,738
5 Claims. (Cl. 277—58)



1. Apparatus comprising, first and second hollow means axially disposed on opposite sides of a joint for containing a fluid under pressure, said two means having mating end surfaces at said joint and said first means

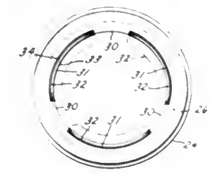
having formed an annular recess in its mating surface and at its inner periphery, annular member means seated in said recess and having a greater radial expansion than said first means under pressure exerted by said fluid radially outwards on both such means, first sealing ring means carried by said member means at the outer diameter thereof to contact an annular surface portion of said recess, and second sealing ring means carried by said member means to contact the mating surface of said second hollow means, said first ring means being axially spaced from the second in the direction away from said second hollow means and said second ring means being radially spaced inwards of the first so as to produce on said member means both a radial and an axial unbalance in the fluid pressure forces acting thereon, said radial unbalance being effective to radially expand said member means more than the pressure of said fluid expands said first means, and said axial unbalance being effective to urge said member means towards said second means, and said two unbalances being accordingly effective to squeeze said two ring means against the two surfaces respectively contacted thereby to provide a pressure-tight seal at said joint.

3,156,476
PACKING FOR SWIVEL JOINTS
Henry W. Roessler, Jr., Pomona, Calif., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 18, 1960, Ser. No. 29,840
3 Claims. (Cl. 277—95)



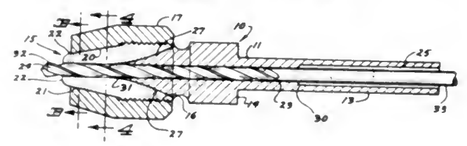
1. A swivel pipe joint and seal construction comprising a female swivel coupling member provided with a bore and a counterbore defined by a circumferential wall and an annular shoulder, a male swivel coupling member rotatably mounted in said female coupling member and having an inner end surface confronting said annular shoulder of said counterbore, a compound packing disposed within said female coupling member for sealing between said relatively rotatable male and female coupling members, said packing comprising a first sealing annulus having an end surface engaged with said annular shoulder of the counterbore in the female coupling member, a second sealing annulus disposed adjacent said first sealing annulus and having an end surface engaged with said end surface of the male coupling member, the circumferential surfaces of both of said annuli being engaged with said circumferential wall of the counterbore in the female swivel coupling member, the circumferential areas of the two annuli being unequal, and an anti-friction ring interposed between said annuli which has a lesser coefficient of friction in respect to either of said sealing annuli than the coefficient of friction of either of said annuli with respect to its associated coupling member, whereby relative rotation between said male and female coupling members cause relative rotation between at least one of said sealing annuli and said anti-friction ring.

3,156,477
SPARK PLUG GASKET AND TOOL THEREFOR
Harold P. Hopp, 374 Lantana Ave., Englewood, N.J.
Filed Aug. 19, 1963, Ser. No. 302,918
1 Claim. (Cl. 277—236)



In a compressible annular gasket having a principal axis of compression, a sealing element including at least one sealing member forming a generally annularly-shaped sealing area, a bend portion disposed centrally of said sealing area, and a locking flange connected to said bend portion, there being a plurality of slots extending through said bend portion to facilitate the inward flexing of said locking flange.

3,156,478
DRILL BIT SUPPORT
Frank R. Lamusga, 3407 Polk St. NE., Minneapolis 18, Minn.
Filed May 11, 1961, Ser. No. 109,435
2 Claims. (Cl. 279—42)

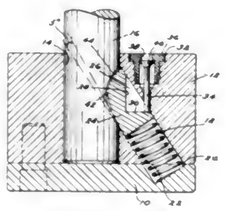


1. A support for a drill bit having a cylindrical shank and a pair of outer helical cutting edges, said cutting edges lying on an imaginary cylindrical surface concentric with said cylindrical shank, said support including a chucking member adapted to be driven by a rotating machine tool, said chucking member having a longitudinal hole therethrough concentric with the axis of rotation of said machine tool, said hole being of configuration to tightly fit said cylindrical shank and said cutting edges, a first end of said chucking member having a plurality of transverse slots defining an even number of chucking jaws, said slots further defining tapered ramp-like surfaces between said jaws extending from intersections of said slots with said longitudinal hole of said chucking member to an outer surface of said chucking member, said jaws having a conically tapered outer surface, and a collar threadably mounted with respect to said chucking member and having a conically tapered inner surface adapted to collide with said conically tapered outer surface of said jaws to move said jaws inwardly when said collar is threadably moved toward a second end of said chucking member, said ramp-like surfaces being of size so that each of said chucking jaws contracts said drill bit with substantially uniform pressure along the length of said chucking jaws.

3,156,479
LOCKING DEVICE
John Drazick, 8565 Steel Ave., Detroit 28, Mich.
Filed Apr. 5, 1963, Ser. No. 270,936
3 Claims. (Cl. 279—76)

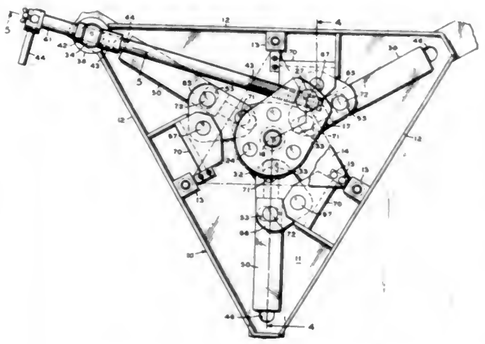
1. A releasable holding device for retaining recessed elements in a retaining recess in which a releasable resiliently biased plunger engages a recess in the element

to be retained and in which the plunger is inserted into an angled bore intersecting the retaining recess, that improvement which comprises a basically cylindrical plunger movable axially in a cylindrical bore, having one wall adapted to match complementally the cylindrical wall of the bore and having an opposite wall formed as a cylinder on an axis angled to the axis of said plunger and said bore, said angle increasing away from the bore and a



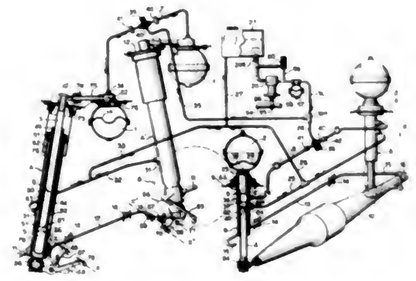
complemental cylindrical angled wall in the recess of the element to be retained also disposed at an angle to the plunger angle similar to that of the opposite wall of said plunger wherein the two angled walls will wedge together as the plunger moves into the recess in the retained element providing a relatively large area of contact circumferentially and axially for transmitting dislodging forces through said plunger to the opposite wall of said bore.

3,156,480
SELF-CENTERING CHUCK MECHANISM
Paul P. Wuesthoff, St. Louis, Mo., assignor to The Pandjiris Weldment Company, St. Louis, Mo., a corporation of Missouri
Filed Nov. 19, 1962, Ser. No. 238,399
7 Claims. (Cl. 279—119)



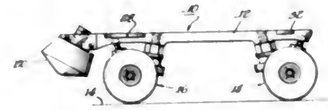
1. In a chuck mechanism:
(*a*) a jaw reciprocatively mounted for movement toward or away from an axis,
(*b*) a wheel rotatively mounted on said axis,
(*c*) a fulcrum member attached to and rotatable with said wheel,
(*d*) a nut rotatively mounted on said fulcrum member,
(*e*) a shaft threadedly connected to said nut, the nut traveling longitudinally along said shaft upon shaft rotation so as to turn said fulcrum member and said wheel, and
(*f*) means operatively interconnecting said wheel with said jaw for adjusting the position of said jaw in response to turning of said wheel.

3,156,481
BALANCED PNEUMATIC SUSPENSIONS INCLUDING AN AUTOMATIC LEVEL CONTROL
Marcel Dangauthier, Paris, France, assignor to Societe d'Etudes et d'Applications Industrielles Commerciales et Immobilieres "Inter-Technique," Paris, France, a French body corporate
Filed Mar. 26, 1962, Ser. No. 182,443
Claims priority, application France, Apr. 4, 1961, 857,675, Patent 1,293,578
5 Claims. (Cl. 280—6)



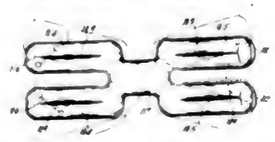
1. A vehicle pneumatic suspension of the type in which the opposite pneumatic supporting elements of piston and cylinder type which connect the opposite wheels of a transverse set of wheels to the sprung mass of the vehicle have their cylinders communicating with each other through balancing conduit means, said opposite wheels are interconnected by a mechanical anti-roll device and each cylinder has an escape orifice adapted to be masked by the corresponding piston in an inner position of the latter and unmasked in an outer position of the piston, said suspension comprising a low-pressure liquid reservoir and low-pressure conduit means putting the cylinders in communication with the reservoir by way of said escape orifices, a volumetric liquid pump having an outlet, high-pressure conduit means connected to said outlet and to each supporting element in such manner as to put the cylinder thereof in permanent communication with the liquid pump, and a restricted passageway in each high-pressure conduit means between said outlet and each cylinder, said restricted passageway comprising a thin wall extending across said high-pressure conduit means and having a calibrated orifice formed therethrough, the high-pressure conduit means of said opposite supporting elements constituting said balancing conduit means, whereby the liquid pumped by said pump flows through each high-pressure conduit means and the restricted passageway therein to the cylinders and ordinarily maintains the pistons in a position of equilibrium relative to their cylinders whereas if the piston of one of said opposite supporting elements masks the corresponding escape orifice there occurs an increase in the static pressure in said one of the opposite supporting elements owing to the pressure drop in the passage of the whole of the liquid delivered to the pump through the restricted passageway in the high-pressure conduit means of the opposite supporting element, thereby creating an anti-tilt effect which is supplementary to the anti-roll effect of said anti-roll device and controls the level of the vehicle.

3,156,482
DETACHABLE TOE STOP FOR ROLLER SKATE CONSTRUCTION
Gordon K. Ware, Chicago, Ill., assignor to The Chicago Roller Skate Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 13, 1962, Ser. No. 187,404
4 Claims. (Cl. 280—11.2)



1. A roller skate structure comprising: a sole plate adapted to be secured to a skater's shoe; a plurality of rollers carried by said sole plate; a brake member arranged forwardly of said sole plate and including an elastomeric ground engaging body portion and an elongated, threaded attachment element extending outwardly therefrom; means on said sole plate to support said brake member for selective adjustment with respect to said sole plate, said means defining an internally threaded bore adapted to receive threadedly said attachment element therein; said means including a releasable clamping portion carrying a radial segment of the axial extent of the threaded sidewall of said bore; and means straddling said bore for advancing said releasable clamping portion into engagement with said attachment element to grippingly resist dismounting of said brake member.

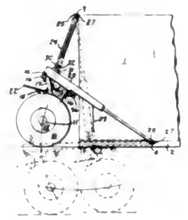
3,156,483
GLIDING APPLIANCE FOR WINTER AND NAUTICAL SPORTS
Jacques Léon Alexandre See, 54 Rue la Bruyere, Paris 9, France
Filed Apr. 11, 1963, Ser. No. 272,423
Claims priority, application France, Apr. 14, 1962, 894,513, Patent 1,327,948; July 25, 1962, 905,099, Patent 1,336,828
10 Claims. (Cl. 280—12)



1. Gliding appliance for winter and nautical sports comprising a member having a central section and a pair of end sections, each end section being formed of a pair of parallel struts extending longitudinally and connected to said central section by means which permits each of said struts to pivot at least partially with respect to said central section.

3,156,484
ELEVATING AND TRANSPORTING DEVICE
Elmer Hughes Talbert, P.O. Box 482, Georgetown, Del.
Filed Jan. 12, 1962, Ser. No. 165,750
2 Claims. (Cl. 280—35)

1. A transporter system for elevating, supporting and transporting a body unit over a supporting surface, comprising a front transporter unit and a rear transporter unit for respective attachment to the front and rear of the body unit, each of said units comprising a frame assembly provided with a supporting wheel assembly, a pair of elevating jacks having their lower ends detachably connected with said frame assembly, means for detachably connecting the upper ends of said jacks to the upper portion of said body unit, a pair of positioning jacks having respective ends thereof detachably connected with the frame assembly and having the opposite ends thereof detachably connected with the body unit at the bottom of the latter and between the front and rear thereof, means for extending said elevating jacks to raise the body unit to a position where the bottom thereof is at substantially the same elevation as said



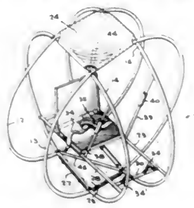
frame assembly, means for collapsing said positioning jacks to bring said frame assembly into supporting position beneath the bottom of said body unit, and means for attaching the frame assembly to the bottom of said body unit, whereby the latter may be readily transported over the supporting surface.

3,156,485
TRAILER LOAD-EQUALIZING MECHANISM
Manford S. De Lay, St. Louis County, Mo. (2117 Gravois Ave., St. Louis, Mo.), assignor of twenty-one and fifty-five one-hundredths percent to Robert B. Melhaus, Warrenton, Mo., and of twenty-one and fifty-five one-hundredths percent to Glennon T. Moran, St. Louis, Mo.
Filed Dec. 21, 1961, Ser. No. 161,036
7 Claims. (Cl. 280—81)



1. A load-equalizing device for adjustably connecting truck-bodies to running gear, said load-equalizing device comprising a base-frame extending in a lengthwise direction with respect to the truck-body, a plurality of slide-channels mounted on the base-frame adjacent to the outer longitudinal side margins of the truck-body and extending in said lengthwise direction, a plurality of longitudinally extending slide-rails adapted to be mounted on the underside of the truck-body adjacent the outer longitudinal margins thereof in vertical alignment with the slide-channels, said slide rails being provided with a longitudinally extending series of apertures, each of said slide-rails being provided with a pair of longitudinally extending laterally projecting horizontal flanges, means operatively mounted on the base-frame for engaging a selected aperture in each of the slide-rails above one of said horizontal flanges to prevent longitudinal shifting movement between the slide-channels and the slide-rails, manually operable means for disengaging said last-named means, means operatively mounted on the base-frame for slidably engaging the other flange of said pair of horizontal flanges of said slide-rails to prevent substantial vertical relative movement between the slide-rails and slide-channels, and separate manually operable means for disengaging the last-named means.

3,156,486
OCCUPANT-PROPELLED ROLLING DEVICE FOR AMUSEMENT AND EXERCISE
Harry L. W. Fenwick, 9661 Shannon Ave., Garden Grove, Calif.
Filed Feb. 5, 1963, Ser. No. 256,353
1 Claim. (Cl. 280—206)



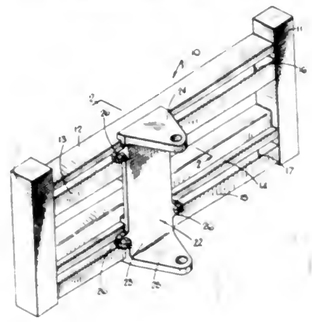
An amusement and exercise device comprising respective pairs of parallel spaced continuous substantially circular hoops crossing each other substantially at right angles and connected together at their right-angled intersections to define a substantially spherical framework, a pair of parallel bars chordally secured in the hoops of said pairs, a seat transversely secured on said parallel bars, a foot bar transversely secured to said parallel bars forwardly of said seat, respective inclined hand bars secured between said chordally secured bars and the associated hoops forwardly of and extending upwardly from said seat, and respective spherically contoured rigid plates secured to the transversely superimposed portions of the hoops above and below said seat and being substantially coextensive in area with the area defined within said transversely superimposed hoop portions.

3,156,487
STEERING DEVICE FOR CONNECTED TRACTOR AND DOLLY VEHICLES
Henry W. Bigge, 50 Marsh Place, Oakland, Calif.
Filed Sept. 25, 1961, Ser. No. 140,487
12 Claims. (Cl. 280—426)



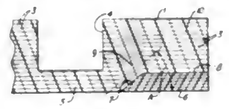
1. In combination with a tractor vehicle having a frame and a trailer vehicle having a frame and fixed axles attached thereto, an automatic steering device for causing said trailer to turn an amount proportional to an amount of turning of said tractor vehicle in order for said trailer to track directly behind said tractor during turns, said steering device comprising: a first steering bar rigidly fixed to said tractor frame; a second steering bar rigidly fixed to said trailer frame; a first load bed rotatably mounted on said first steering bar; a second load bed rotatably mounted on said second steering bar; an extendable reach comprising inner and outer slidable reach sections, said reach sections being rigidly connected to said first and second load beds respectively; locking means for connecting said reach sections together at the retracted position, crossed cable means attached at predetermined spaced apart locations on said first and second steering bars, each said cable means being attached at one end to said steering bar on one side of said tractor and to said trailer steering bar on the opposite side; and means for moving and maintaining said reach sections at a fixed extended position relative to each other in order to obtain adequate cable tension between said tractor and said trailer vehicles and for releasing said locking means for movement into the position for full automatic release when said reaches are to be retracted, said latter means comprising a bar slidably attached to one said reach section, movable to a fixed position relative thereto and adapted to bear at one end against said reach locking means when said reach sections are partially extended, and means for moving said bar to force said reach sections apart to the fully extended position against the tension in said cables.

3,156,488
EXCAVATORS
Alec J. Kelly, Uttoxeter, England, assignor to J. C. Bamford (Excavators) Limited, Uttoxeter, England, a British company
Filed May 23, 1962, Ser. No. 197,821
3 Claims. (Cl. 280—456)



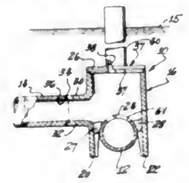
1. A slewing frame for an excavator of the type specified comprising, a pair of spaced apart upright side members, a plurality of horizontally arranged elongated guide members extending between said upright side members, said guide members comprising, two upper guide members which are spaced apart vertically to provide an upper guide channel therebetween and two lower guide members which are spaced apart vertically to provide a lower guide channel therebetween, a bracket member for carrying the king post of the excavator slidably mounted upon said guide members, and releasable clamping means disposed near the top and near the bottom of said bracket member, said clamping means being engaged with said upper and lower guide channels for fixedly clamping the bracket member in any desired position along the length of the guide members.

3,156,489
REINFORCEMENT FOR END OF A TUBULAR MEMBER
Wayne A. Deringer, Shorewood, Wis., assignor to Dowsmith Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 12, 1963, Ser. No. 264,558
1 Claim. (Cl. 285—114)



A reinforcement for the end portion of a tubular member circumscribed by a clamp-receiving groove and with said end portion disposed between said groove and the adjacent end of the member, which comprises an annular recess in the internal surface of the member at said end portion and said tubular member being formed of a series of superimposed laminated layers, and an insert ring located in the recess and bonded to said tubular member with the outer end of said insert ring facing said end of the tubular member and the inner end of said insert ring being inclined, the laminated layers of said tubular member located radially outward of said inner inclined end being disposed generally parallel to said inclined end to provide radial reinforcement to said end portion to resist shear stresses, the forward wall forming said groove being closely adjacent said inclined laminations.

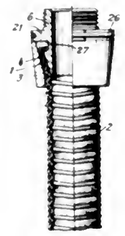
3,156,490
PIPE CONNECTOR CONSTRUCTION
Clifton O. Myll, Indio, Calif.
(P.O. Box 116, Coachella, Calif.)
Filed June 6, 1960, Ser. No. 34,143
4 Claims. (Cl. 285—121)



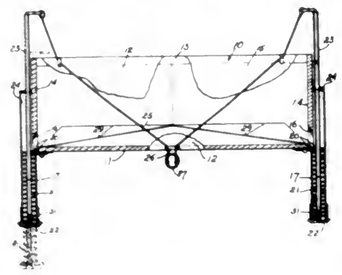
1. A sub-surface drain pipe system comprising in combination a section of base line non-metallic hollow pipe extending generally horizontally; a lateral line of non-metallic hollow pipe also extending in a generally horizontal direction at an angle to the base line pipe; and a connector of non-metallic material extending above the base line pipe and connecting the lateral to the base line pipe; said connector comprising a hollow body open at least at the bottom and of larger diameter than the maximum diameter of the base line pipe, said body having downwardly facing surfaces shaped to mate with the exterior surface configuration of the base line pipe and adapted to rest upon the base line pipe; said connector also including leg means extending downwardly substantially in prolongation of the downwardly facing surfaces and of the body walls into engagement with the ground independently of the base line pipe to maintain the connector in an upright position relative to the base line pipe; said leg means being disposed at least at one side of the base line pipe; and said body having at one side means forming a lateral opening in communication with the interior of said connector located generally above the base line pipe and adapted for connection to the end of said lateral pipe line; said base line section having means forming an opening in the upper wall thereof and in communication with the interior of the connector whereby to admit to the base line pipe fluid flowing into the connector from the lateral line pipe.

3,156,491
END FITTINGS FOR FLEXIBLE HOSES, CONDUITS OR THE LIKE
Frank Reed Jackson, Burnham, and John William Wilson, Slough, England, assignors to Superflexit Limited, Slough, England
Filed July 17, 1961, Ser. No. 124,466
Claims priority, application Great Britain, Aug. 17, 1960, 28,541/60
3 Claims. (Cl. 285—243)

1. An end fitting for a flexible conduit having a belled extremity, said fitting comprising a cylindrical body member having an end portion with an externally tapered surface adapted to be positioned in the belled extremity of the conduit, a grommet of resilient compressible material adapted to surround the belled extremity of the conduit and in engagement with the outer surface thereof, an internally tapered compression sleeve encompassing the grommet, said body member having an outwardly directed flange defining an abutment shoulder for the grommet and the conduit, means positively to lock the body member and the compression sleeve in position with the conduit and grommet firmly gripped between the tapering faces of the end portion of the body member and the compression sleeve, said means comprising a circlip engaging registering grooves in said flange and said compression sleeve, said body member having an annular groove therein between the flange thereof and said end portion into which the edge of the grommet and conduit are compressed to provide an efficient seal.

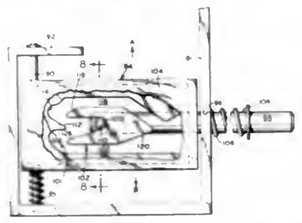


3,156,492
SKID CONTROL AND TRACTION DEVICE FOR VEHICLES
Thomas O. Murray, 1127 N. State St., Chicago 10, Ill.
Filed Dec. 14, 1962, Ser. No. 244,609
2 Claims. (Cl. 291—42)



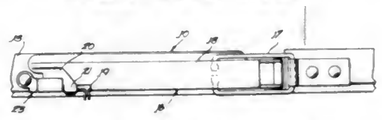
1. A skid control and traction device for a vehicle including a container positioned in the trunk of the vehicle for access and filling and adapted to hold flowable material such as sand, and having an incline leading to a hole in its lower portion, a tube cut at its middle portion to half of its diameter to form an opening with substantially half of its upper portion bent to form a flap bracket attached to said container, said tube positioned with its opening below and communicating with the hole in said container, a hollow coiled spring mounted within the lower portion of said tube, the upper portion of said coiled spring contacting and attached to said bracket, the lower end of said coiled spring having attached thereto a cap larger in diameter than the diameter of said tube for closing the bottom of said tube when the coiled spring is in retracted position, said tube positioned so that its lower end is directly in front of a rear tire of the vehicle, a rod attached to said coiled spring and extending within and above said tube, a wire attached on one end to said rod and extending to a pedal positioned on the floor of the vehicle near the driver's seat, said pedal adapted upon being pressed to move said wire, said rod and said coiled spring so that said cap is moved away from the bottom of the tube to permit sand from said container to flow out by gravity from said tube in front of the rear tire to the pavement to provide traction.

3,156,493
PUSH BUTTON FASTENER
Edward G. Griffiths, Maywood, N.J., assignor to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Filed Oct. 21, 1960, Ser. No. 64,047
5 Claims. (Cl. 292—164)



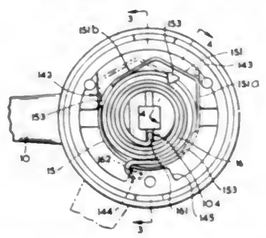
1. An assembly for holding a pair of members in assembled relationship including in combination a pair of elements comprising interengageable means for holding said members in assembled relationship, means mounting said elements respectively on said members for relative rectilinear movement therebetween along an axis and for relative rectilinear movement therebetween in a direction perpendicular to said axis, means responsive to a first rectilinear movement of said elements along said axis in one direction for producing relative movement in a second direction perpendicular to said axis, means responsive to said relative movement in said second direction for engaging said interengageable means to hold said members assembled, means responsive to a second relative rectilinear movement of said elements in said one direction for producing a second relative rectilinear movement of said elements in said second direction perpendicular to said axis and means responsive to said second relative movement in said second direction for releasing said interengageable means to free said members.

3,156,494
POSITIVE LATCHING MEANS FOR CONTAINER CLAMPING RINGS
Charles N. Rockwell, Kankakee, Ill., assignor to Fibre Drum Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 1, 1962, Ser. No. 227,297
3 Claims. (Cl. 292—256.69)



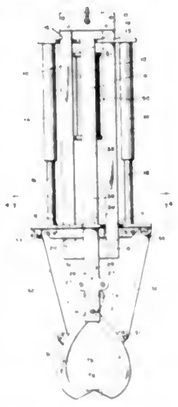
1. In a combination including a split clamping ring providing a generally vertical outer face and an inwardly-extending lower flange, lever means for expanding and contracting said ring including a lever arm pivotally connected at one end to said ring, said lever arm having a body conforming generally in curvature to said ring and providing an inwardly-extending flange on the lower side thereof, said lever arm being swingable to a locking position in close proximity to said ring when it is contracted with said lever arm body opposite said ring outer face and said lever arm flange overlying said ring flange, said lever arm having a free end providing a depressed flattened locking portion with the inside surface thereof bearing against said ring outer face in said locking position, said lever flange terminating short of said locking portion, and a latching arm having a vertical body portion and an inwardly-extending flange on the lower side thereof, one end of said latching arm body being pivotally mounted on said ring adjacent the location of said lever free end in said locking position, said latching arm being swingable from its latching position with its body opposite said ring outer face and its flange overlying said ring flange to an open position with said latching arm extending downwardly from said ring, said latching arm body having an outwardly offset retainer portion arranged to slide over said lever arm locking portion as said latching arm is moved towards its latching position and to hold said locking portion against the ring outer face in said latching position, the improvement comprising a latching tab provided by said locking portion and projecting downwardly from the side of said locking portion adjacent the end of said flange, the tip end of said latching tab having an inwardly offset portion, and said latching arm flange extending beyond said retainer portion and providing an outer edge sliding under said latching tab as said latching arm is moved towards its latching position, the inwardly offset portion of said latching tab snapping over said outer edge as said latching tab reaches its latching position, whereby the secure latching of said clamping ring can be readily ascertained by visual inspection.

3,156,495
DOOR FURNITURE
Ernest John Holden, 23 Welcombe Road, Stratford-upon-Avon, England
Filed Feb. 21, 1962, Ser. No. 174,761
Claims priority, application Great Britain, Apr. 13, 1961, 13,249/61; Dec. 29, 1961, 46,575/61
16 Claims. (Cl. 292—336.3)



1. Door furniture incorporating a mounting means for fixing to a door, an actuating means turnably mounted relatively to said mounting means and having a portion thereof disposed internally of said mounting means, abutments associated with said mounting means, a stop member mounted on but non-rotatable relatively to said portion for determining in conjunction with the abutments aforesaid the degree of movement to be permitted to the actuating means, a spirally wound return spring arranged to encircle the internally disposed portion of the actuating means and to be exposed when viewed from the rear of the mounting means and thereby rendered readily accessible from the rear of the mounting means, a fixed anchorage associated with the mounting means which is exposed when viewed from the rear, said spring having one end thereof anchored detachably to the said actuating means and the other end thereof anchored detachably to a said fixed anchorage and thereby being adapted for effecting the return of the actuating means automatically to the "locking" position after the actuation of said actuating means to perform an "unlocking" operation, the arrangement being such that the said return spring normally is retained in position by its own tension whilst being readily removable if so required by detaching the appropriate end of the spring from one anchorage and then detaching the other end of the return spring from the other anchorage and then withdrawing the spring over the internally disposed portion of the actuating means without involving disturbance of any other component of the assembly.

3,156,496
FLOATING TONG
Lucien V. Davidson, 1254 Columbia St., Port Angeles, Wash.
Filed July 9, 1963, Ser. No. 293,715
5 Claims. (Cl. 294—88)

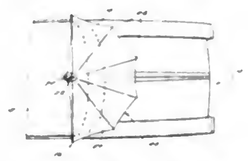


1. A tong mechanism comprising a vertically suspended main frame, a pair of tongs with linkage at their upper ends suspending them from the lower end of said main frame, a floating frame structure mounted by and vertically movable on said main frame; said floating frame structure comprising independently movable upper and lower end plates, tong hanger bars fixed to said upper end plate and extended downwardly therefrom beyond the lower end of said main frame, and pivotally mounting said pair of tongs between them for opening and closing action, a power unit mounted between said upper and lower end plates of said floating frame structure and operable to effect change in the spacing of said end plates, and links joined with said pair of tongs and with said lower end plates of the floating frame to effect the opening and closing action of the tongs in accordance with the change in spacing of said end plates.

ERRATUM

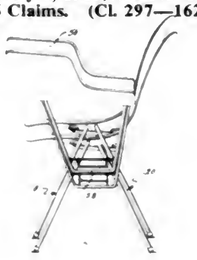
For Class 296—28 see:
Patent No. 3,156,503

3,156,497
AUTOMOBILE WINDSHIELD RAIN VISOR
Alcide Lessard, 545 Scituate Ave., Cranston, R.I.
Filed Sept. 10, 1962, Ser. No. 222,338
8 Claims. (Cl. 296—95)



1. In a rain visor assembly for an automobile windshield, a support plate having a front portion and an elongated rearwardly extending portion joined to said front portion, a first suction cup for engaging the top of said automobile secured to said support plate and including an upper neck section that abuts the underside of said support plate, a second suction cup for engaging the top of said automobile secured to the underside of the outer end of said rearwardly extending portion and spaced from said first suction cup, a plurality of spaced radially extending arms having downwardly turned portions formed on the innermost ends thereof that extend through openings formed in said support plate for pivotally mounting said arms on said support plate so that said arms are movable from a folded to a spread position, at least some of said downwardly turned portions extending through openings formed in the neck section of said first suction cup for preventing pivotal movement of said first suction cup with respect to said support plate, a securing plate overlying said arms and secured to said support plate in spaced relation for engaging said arms in said support plate and locking them in their pivotal position between said support and securing plates, a flexible sheet of waterproof material to which said arms are secured in spaced radial relation and being expandible into taut relation by said arms when said arms are pivoted to the spread position thereof, and means for normally retaining said arms in either a contracted or extended position wherein said flexible sheet is either folded to a position of non-use or fully expanded to provide a protective shield for the automobile windshield when the visor assembly is mounted on the automobile top.

3,156,498
STACKING CHAIRS
Leif Blodee, Holland, Mich., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,497
6 Claims. (Cl. 297—162)

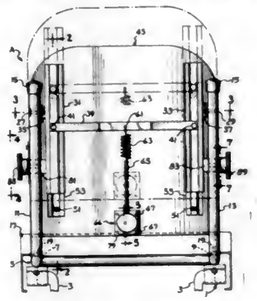


1. A stackable arm tablet chair capable of stacking without removal of the arm tablet, comprising: a base; a seat mounted on said base; arm tablet support bracket means affixed to said base and extending upwardly alongside and above said seat; an arm tablet mounted on said bracket means with a pivotal connection with a front to rear pivotal axis with respect to said seat; said tablet being pivotal about said axis, laterally with respect to said seat, from a horizontal use position to a second, generally vertical stacking position; said tablet having portions cooperatively engaged with said bracket means to maintain its vertical position until purposely shifted to its horizontal position, and said tablet being slightly past the true vertical plane in said second position, to tilt laterally and upwardly diagonally outwardly away from said seat, thereby allowing tablet internesting with stacking of said chair with identical chairs.

3,156,499
VEHICLE SEAT
Paul Freedman, 1825 W. Newport Ave., Chicago, Ill.
Filed May 14, 1962, Ser. No. 194,553
8 Claims. (Cl. 297—307)

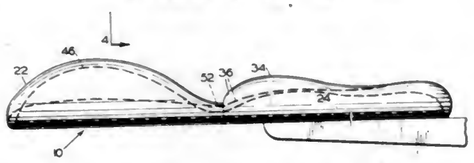
1. A seat comprising a resilient seat rest, a back rest, means for mounting the back rest for shifting movement from a normal position downwardly and upwardly relative to the seat rest, whereby when a person is sitting on the seat rest with his back on the back rest, the back rest

may move upwardly and downwardly with the person as the person moves upwardly and downwardly on the resilient seat rest, means for opposing the downward movement of the back rest, and means including a releasable



catch mechanism movable with the back rest and operable by a person sitting on the seat for adjusting selectively the normal position of the back rest upwardly and downwardly relative to the seat rest to select any one of a plurality of normal positions for the back rest.

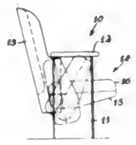
3,156,500
DENTAL CHAIR COMPONENT
Kenneth C. Kerr, 1222 S. Riverside, Medford, Oreg.
Filed Jan. 14, 1963, Ser. No. 251,130
2 Claims. (Cl. 297—391)



1. A dental chair component including in combination a back rest and head rest each having patient engaging front surfaces, said head rest being integrated with said back rest and extending in an immovable, substantially straight line relation from the upper end of the back rest, said back rest being transversely curved and having forward projections in its front surface at its upper end adjacent the sides adapted for engagement by the shoulder blade portions of a patient, said head rest being of lesser lateral dimension than said back rest to form an area of access for a person working on the patient and being of a length sufficient to support the head and neck of the patient, said head rest having a pair of forwardly projecting side wing portions forming a longitudinal central recess for receiving the patient's head and neck.

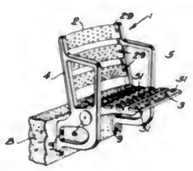
3,156,501
ADJUSTABLE SEAT MOUNTING ARRANGEMENT
Donald S. Harris, New Castle, Ind., assignor to Peabody Seating Company, Inc., North Manchester, Ind., a corporation of Indiana
Filed Aug. 6, 1962, Ser. No. 214,998
4 Claims. (Cl. 297—333)

1. In an auditorium-type seat structure wherein a seat is mounted for pivotal movement from an inclined neutral position to a vertical storage position and a horizontal operative position relative to a back, said seat and back being supported by spaced standards, the provision of a hinge arrangement comprising fixed shaft means extending between said standards, said seat being mounted on said shaft means for pivoting thereabout, spaced first and second floating sleeve-type stop means mounted on said shaft means for limited pivotal movement relative to said shaft means, spaced abutment means carried by said seat in association with each of said stop means to limit pivoting of said seat relative to said stop means, radial pin means carried by said shaft means and positioned for engagement with spaced surfaces of each of said stop means to limit pivoting of said stop means relative to said shaft means in both clockwise and counterclockwise directions, each of said stop means including a spaced resilient bumper and positive stop confined for limited movement between the spaced abutment means carried by said seat



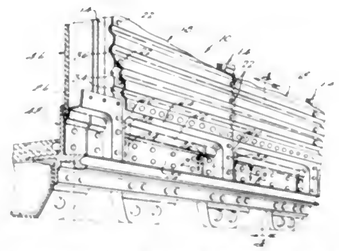
during movement of said seat from a neutral position, said bumpers and positive stops being positioned for engagement with said abutment means to fix said stop means relative to said seat, first spring means interconnecting said first stop means with said seat, and second spring means interconnecting said second stop means with said shaft means, said first spring means being mounted for tensioning when said seat is moved from the neutral position to the horizontal operative position, said second spring means being mounted for tensioning when said seat is moved from the neutral position to the vertical storage position.

3,156,502
SEAT STRUCTURES
William A. Chisholm, Mount Prospect, Ill., assignor to Arlington Seating Co., Arlington Heights, Ill., a corporation of Illinois
Filed Jan. 11, 1963, Ser. No. 250,833
7 Claims. (Cl. 297—452)



1. A chair comprising
(*a*) supporting means,
(*b*) a back panel including a plurality of elongated tubular members disposed in substantially parallel spaced relation to each other and each having a front face and a rear face,
(*c*) said back panel being mounted on said supporting means in upstanding position,
(*d*) and a seat panel including a plurality of elongated tubular members disposed in substantially parallel spaced relation to each other and each having a top face and a bottom face,
(*e*) said seat panel being movably mounted on said supporting means for movement between one position wherein said top and bottom faces extend substantially horizontally and another position wherein said top and bottom faces extend substantially vertically,
(*f*) each of said tubular members having a plurality of openings therethrough substantially equally spaced across the entire surface of each of said faces.

3,156,503
TRAILER BODY SIDE WALL AND RAIL CONSTRUCTION
George Chieger, Birmingham, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 9, 1963, Ser. No. 314,923
2 Claims. (Cl. 296—28)



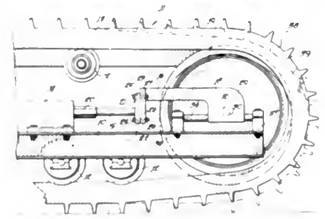
1. An improved construction for joining the side walls of trucks, trailers and the like to the lower side rails thereof comprising
a lower side rail having a vertically extending flange,
a vertical side wall post disposed exteriorly of the flange on said side rail, said post having
a pair of oppositely directed flanges engageable with the outer surface of said side rail flange, the flanges on said post being outwardly upset above a point spaced below the upper edge of said side rail flange,
a side wall inner liner having a lower edge portion secured between the upper edge of said side rail flange and the upset portion of said post,
a side wall outer skin overlying said post on the exterior thereof,
a side wall pan having a center portion disposed in juxtaposed relation to the vertical flange on said side rail, a vertically extending outwardly upset portion overlying said post, and a horizontally extending outwardly upset portion at the upper edge thereof underlying a lower edge portion of said side wall skin, and
means for securing side post, side wall skin and pan to one another to form a structurally integrated assembly.

3,156,504
WHEEL BALANCING MEANS
Roger Antraigue, 202 Quai de Jemmapes, Paris 10, France
Filed Aug. 28, 1962, Ser. No. 219,861
3 Claims. (Cl. 301—5)



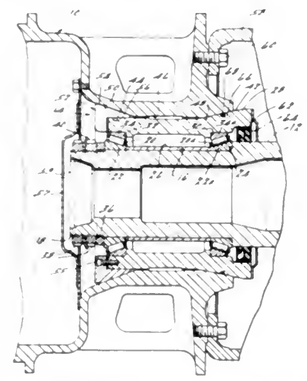
1. In a tire-bearing vehicle wheel having a rim with an annular tire-bead-retaining flange extending radially outwardly with reference to the wheel axis, said flange curving arcuately away from the tire and terminating in a substantially axially extending lip, thereby defining a concave surface curving away from the tire and spanning an arc of approximately 90°, the combination of said rim with balancing means for said wheel comprising a weighted body and a pair of lateral lugs integral with said body, said lugs and said body having a convex side conforming to the curvature of said concave surface and contacting same throughout an area which includes a part of said radially extending bead-retaining flange as well as a substantial portion of said lip, said lugs being fastened to said lip close to the edge thereof by spot welds whose axes extend substantially radially of the wheel axis.

3,156,505
TRACK IDLER ADJUSTER
Clarence A. Hubert, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed May 22, 1962, Ser. No. 196,702
20 Claims. (Cl. 305—30)



1. In an endless track having idler wheels over which the track passes, means supporting the idler wheels including a track frame, idler wheel shafts rotatively supporting the wheels, idler support rods extending transverse to the shafts for carrying the wheels, blocks bored for the reception and support of said rods, said blocks having a fixed connection with the track frame on opposite sides of each of the shafts, the bores in the blocks being displaced vertically from center, and means to enable inverting of said blocks to alter the elevation of the idler wheels.

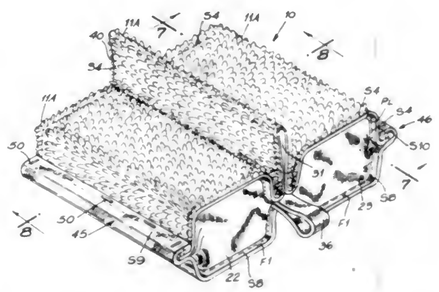
3,156,506
WHEEL AND BEARING ASSEMBLY
Hudson B. Scheifele, Grosse Pointe, and Clarence L. Barker and Elmer Clement Jensen, Birmingham, Mich., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed May 18, 1962, Ser. No. 195,822
7 Claims. (Cl. 308—211)



1. The combination comprising a wheel having a hub with a centrally disposed through bore located a substantial distance radially inwardly from the outer periphery of said hub a spindle having axially inwardly disposed shoulder means for providing an engaging surface, a bearing assembly for rotatably supporting said wheel on said spindle comprising a pair of bearings having inner and outer races and having said inner races disposed upon said spindle, an inner sleeve member of a preselected length disposed about said spindle and lo-

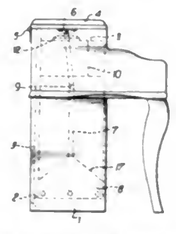
cated intermediate said bearings and in abutting relation with said inner races, an outer sleeve member having a pair of radially internally disposed shoulders axially spaced a preselected distance in accordance with said preselected length of said inner sleeve and having said internally disposed shoulders in abutting relation with said outer races, means disposed on the axially outer end of said spindle for engaging said inner race of the axially outermost one of said pair of bearings and adapted to axially secure said inner races and said inner sleeve against said shoulder means on said spindle, first means located radially a short distance from the internal surface of said outer sleeve member and disposed externally on said outer sleeve member for frictionally engaging a portion of the surface defining a portion of said through bore in said hub for supporting said hub and for limiting relative axial movement between said hub and said sleeve member in one axial direction, a ring member removably secured to the axially outer end of said outer sleeve member, and means disposed externally on said ring member being frictionally engageable with a different portion of the surface defining a different portion of said through bore in said hub for supporting said hub and for limiting relative axial movement between said hub and said ring member in an opposite axial direction, a brake drum, and means securing said brake drum to said hub at its axially inboard side.

3,156,507
JOURNAL LUBRICATORS
Llewellyn E. Hoyer, Wyckoff, and Edward R. Gorcyca, Mahwah, N.J., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed July 30, 1962, Ser. No. 218,799
4 Claims. (Cl. 308—243)



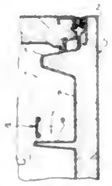
1. A lubricator for the journal of a railroad car comprising a pair of oil wicking woven fabric members respectively affording a lower strip and an upper strip, the upper strip being of a predetermined fabric weight and having chenille threads of oil wicking material woven therein to afford a uniform coverage of oil wicking loops across the exposed upper face of the upper strip, the lower strip being of a fabric weight substantially greater than the upper strip, the upper and lower strips being joined at the longitudinal center area thereof and the ends of the lower strip being folded over the ends of the upper strip to afford a pair of pockets and to afford stiff limit elements, the upper strip being bunched at the longitudinal center area thereof to afford an outwardly extending looped portion extendible well above the upper surface of the portions of the upper strip on either side thereof, oil absorbent material packed in said pockets, and means retaining the oil absorbent material in the pockets.

3,156,508
CABINET FOR RADIO RECEIVING SETS
Lester K. Franklin, 390 S. Hauser Blvd., Los Angeles 36, Calif.
Filed May 11, 1962, Ser. No. 194,040
5 Claims. (Cl. 312—7)



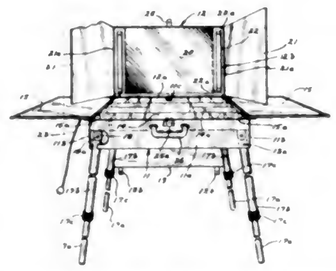
1. In a cabinet structure: a case; a removable slide forming the back of the case; a lid for the case carried by the upper edge of the slide; a platform; and a linkage between the lid and the platform for raising the platform when the lid is raised; said slide carrying a radio receiving set having controls on the top thereof, the set being so mounted on the slide that the controls will be disposed in close proximity to the lid in its closed position to render them readily accesible when the lid is raised.

3,156,509
SHELF GUARD FOR REFRIGERATOR DOOR SHELVES
Cooper J. Padgett, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 4, 1963, Ser. No. 327,982
2 Claims. (Cl. 312—214)



1. In a refrigerator door including an inner liner comprising side walls defining a recess and a shelf within said recess extending between said side walls, a shelf guard adapted to bridge the space between said side walls and comprising a member having symmetrical upper and lower rolled edges joined by a thin intermediate section, a vertical opening in each of said side walls above said shelf for respectively receiving the opposite ends of said guard, each of said openings including a slot portion for receiving said intermediate section of said guard and enlarged end portions at the upper and lower ends of said slot portion for receiving said rolled edges, said end portions and the inner edge of said slot portion defining a resilient tab, a forwardly extending flange on one end of said guard adapted to pass through one of said openings when said guard is positioned at an angle to said inner liner and to engage the rear surface of the side wall adjacent said one opening when said guard is moved to a position adjacent said shelf, the other end of said guard comprising an arcuate dimple lanced from the intermediate section of said guard on the same side thereof as said rolled edges and adapted to snap past said tab portion of the other of said openings and having an edge portion offset from said intermediate section of said guard for engaging the rear surface of said tab.

3,156,510
PORTABLE VANITY
Jesse Hindin and Elga I. Hindin, Minneapolis, Minn., assignors to Portable Make-Up Vanity Corporation, Larkspur, Calif., a corporation of California
Filed Dec. 27, 1962, Ser. No. 247,739
2 Claims. (Cl. 312—223)



1. A portable overnight vanity case with a compartmented storage area comprising, in combination,

(*a*) a case portion having a bottom with upstanding walls forming side and end walls to define said storage area and having a plurality of partitions therein to divide said storage area into a plurality of compartments;

(*b*) a top closure panel for said case portion, said top closure panel having a top with downwardly extending end and side walls, one of the side walls of said top closure being hinged to one of the side walls of said case portion whereby the top panel when in a fully opened position will lie in a plane substantially normal to the storage area;

(*c*) a mirror panel having a width less than the length of said top closure panel, said mirror panel being disposed on the inward side of said top closure to form a hollow compartment with said top closure and open recesses at opposite ends of said mirror panel;

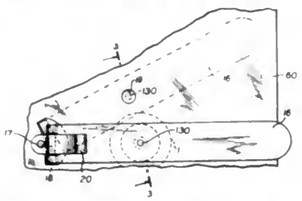
(*d*) illuminating means disposed in each of said open recesses to illuminate said mirror panel;

(*e*) a pair of panels hinged respectively to the upper portion of the said end walls by hinges, the panels being not more than one half the length of the compartmented storage area, the said panels being rotatable from a position on top of said compartmented storage area to an outstanding relation to the compartmented storage area when in the open position; and

(*f*) the said portable vanity also having locking elements on the top closure panel and case portion for securing them when in the closed position.

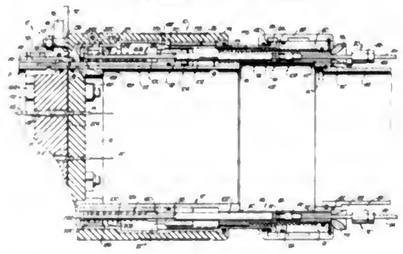
3,156,511
SLIDE PROJECTOR WITH A DEVICE TO FACILITATE REPLACEMENT OF THE CONTACT BASE LAMP
Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Jan. 3, 1962, Ser. No. 164,027
1 Claim. (Cl. 339—45)

In a slide projector of the type having a socket receiving a projector lamp bulb having a contact base formed with a locating pin projecting through a locating opening in the socket and with detent means releasably interengageable with detent means on the socket to releasably latch the lamp bulb in the socket; means for releasing the interengaged detent means, to provide for replacement of the lamp bulb, comprising a lever pivoted to the projector base about an axis extending substantially parallel to the base and spaced substantially from said socket in a lateral direction, said lever having an operating end projecting laterally beyond the projector base for manual swinging of said lever toward said socket; said lever carrying projecting means engageable with the outer end of said locating pin to move the lamp bulb outwardly of the socket, upon such swinging of said lever toward the socket, an amount sufficient to disengage the detent means; the operating end of said lever projecting laterally beyond the projector being formed with a manual grip, said lever being pivoted at its inner end to the projector base and



carrying a lug intermediate its ends constituting said projecting means; further means pivoting the inner end of said lever to said projector base for swinging movements substantially parallel to said projector base; and the projector base having an opening spaced arcuately from said locating pin for receiving said lug when said lever is swung laterally out of operative relation with said locating pin; and spring means biasing said lever toward said projector base to engage said lug in said projector base opening and to retain said lever engaged with the undersurface of said projector base.

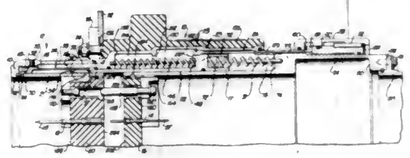
3,156,512
AUXILIARY LOCKING DEVICE FOR QUICK DISCONNECT UMBILICAL CONNECTOR
Robert G. Peterson and George J. Panek, Phoenix, Ariz., and Fredrick E. Schulte, Canoga Park, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 26, 1962, Ser. No. 169,148
17 Claims. (Cl. 339—45)



6. A quick disconnect umbilical electrical connector having an auxiliary locking device, said connector comprising a plug member and a receptacle member; means on said plug and receptacle members engageable to releasably lock them together in mating engagement; a contact element in the plug member mateable with a contact element in the receptacle member to complete an electrical circuit; a primary locking means slideably mounted on one of said members and movable for releasably locking said releasable lock means in mating engagement; and an auxiliary locking device on said one member arranged to coact with said primary locking means for releasably locking the primary locking means to preclude premature release of the releasable lock means, said auxiliary locking device comprising a first member and a second member each being connected to said primary locking means

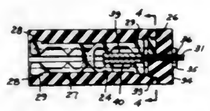
and being slideable within said one member, and each being employed as a guide to guide the sliding movement of said primary locking means with respect to said plug and receptacle members, a first means carried by said one member and releasably engageable with said first member which precludes sliding of said primary locking means and consequent premature release of said releasable lock means; and a second means carried by said one member and movable between a locking position in which it holds said first means in engagement with said first member, and a release position in which it permits release of said first means from said first member; and means connected to said second means for effecting movement thereof.

3,156,513
PERIPHERAL TANG LOCK FOR QUICK DISCONNECT UMBILICAL CONNECTOR
Robert G. Peterson and George J. Panek, Phoenix, Ariz., and Fredrick E. Schulte, Canoga Park, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 26, 1962, Ser. No. 169,711
17 Claims. (Cl. 339—45)



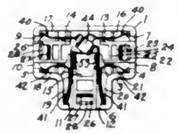
17. An electrical connector which comprises: a pair of interengageable members, each member having a contact unit mounted therein, said contact units being matable to complete an electrical circuit through the connector when the members are interengaged; and releasable locking means for locking the members together in interengaged relationship, said locking means including a catch means on one of said members, a latch means on the other of said members engageable with said catch means, and a third member on said one of said members movable between a retaining position and a release position for alternately retaining said catch means and said latch means in engagement, and releasing said catch means and said latch means for separation, respectively; and a plurality of spaced springs having different resonant frequency rates carried by said one of said members and arranged to exert force in the same direction on said third member for biasing said third member toward said retaining position.

3,156,514
CONNECTOR
George S. Wing, Palos Verdes Estates, William R. Dickie, Manhattan Beach, and Josef U. Berkl, West Los Angeles, Calif., assignors to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed Nov. 21, 1961, Ser. No. 153,967
12 Claims. (Cl. 339—97)



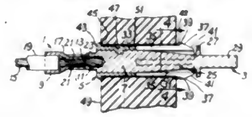
2. Connector means for making conductive engagement with an electrical conductor of the class wherein a conductive flat metallic strip is enclosed by a substantially flat insulating cover, comprising: a pair of conductive connector plates, a first of said plates having a substantially flat surface, and a plurality of protrusions on a face of the other of said plates, the protrusions passing through the cover and being welded to the strip, and the strip being welded to the flat surface of the first plate, both portions of the cover between the weldments of the strip and the last-mentioned plate having been displaced laterally by pressure applied across the sandwich of two plates and the conductor and by heat developed by the passage of current from one plate to the other, thereby structurally welding both plates to the strip and conductively connecting both plates to the strip.

3,156,515
ELECTRICAL OUTLET PLUG
John D. More, 5105 Rindge Road, La Sierra, Calif.
Filed Aug. 13, 1962, Ser. No. 216,385
2 Claims. (Cl. 339—159)



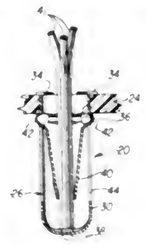
1. An electrical outlet plug which includes a body having two parallel end walls provided with prong receiving slots and an end wall at substantially right angles to the two parallel end walls and provided with prong receiving slots; the improvement which consists in: a pair of identically formed conductor strips, each conductor strip structurally twisted to provide a concave offset portion between first and second contact portions, the faces of said contact portions being in substantially right angular relationship and extending from one of the parallel end walls to the end wall at right angles thereto; the second contact portion being reversibly folded and bent to provide a third contact portion, the face of which is substantially in right angular relationship to the first portion of the second contact portion; said third contact portion being in alignment with a prong receiving slot in the other of said parallel end walls; said offset portions of the pair of conductor strips crossing with the concavities in facing relationship and out of contact.

3,156,516
ELECTRICAL CONNECTOR
Leon C. Minor, Birmingham, Ala., assignor to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed July 23, 1962, Ser. No. 211,498
3 Claims. (Cl. 339—217)



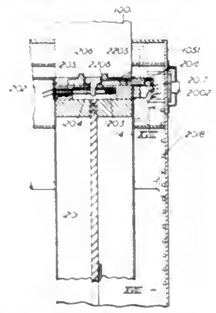
1. An electrical connector adapted to be plugged into and unplugged from a hole in a board, comprising an electrically conductive pin and a sleeve on said pin, said sleeve being formed of resilient material and having a plurality of slits extending inward from one end thereof constituting its forward end and terminating short of its other and rearward end so that said sleeve has a cylindric rearward end portion and a forward end portion wholly constituted by a plurality of individual spring fingers separated by said slits extending forward from said cylindric rearward end portion and integral with the latter, said cylindric rearward end portion of the sleeve being circumferentially continuous so as to be radially inexpansible, said sleeve having an outwardly extending integral annular flange at its rearward end, said flange having a flat forward face for engagement with one face of a board at one end of a hole in the board, each of said spring fingers having an outwardly extending latch projection at its forward end having a flat rearward face for latching engagement with the other face of a board at the other end of the hole, each of said latch projections having a nose formation with a forward end portion tapered inwardly toward the forward end of the nose formation for springing said fingers radially inward upon plugging said connector into the hole, and a portion extending rearwardly from said forward end portion tapered inwardly toward the flat rearward face of the nose portion, said pin having a cylindric sleeve-seating portion intermediate its ends received in said cylindric rearward end portion of said sleeve and said cylindric rearward end portion of said sleeve being securely fastened to said sleeve-seating portion of said pin against axial movement relative to the pin, said pin having an integral portion forward of said sleeve-seating portion of reduced diameter relative to the diameter of said sleeve-seating portion to allow for bending inward of said spring fingers as said connector is inserted in a hole, said pin further having an integral rearward end portion extending rearward from said sleeve-seating portion and having a socket extending from its rearward end for reception of one end of an electric conductor to be secured therein, and said pin further having an integral forward end extension reaching beyond the forward ends of said spring fingers.

3,156,517
SOLDER WELL TERMINAL
Paul A. Maximoff, Barrington, and Billy Erik Olsson, Chicago, Ill., assignors to Malco Manufacturing Company, Chicago, Ill., a partnership
Continuation of application Ser. No. 759,721, Sept. 8, 1958. This application Feb. 12, 1962, Ser. No. 174,653
11 Claims. (Cl. 339—220)



1. A terminal connector for securing one or more electrical leads to a terminal base board through the use of solder, comprising a hollow body secured to said base board and having a side closure wall and an opening for receiving said leads at one end of said body, a plurality of gripping fingers formed out of said wall to extend inwardly of said body in converging cantilever relation away from said opening and terminating in free ends immediately adjacent each other to grip the leads and to permit the free flow of molten solder into said hollow body, respective spring curls integrally and resiliently connecting said gripping fingers with said body and shortening said gripping fingers to prevent interference with said wall whereby leads inserted into the opening in said body are resiliently gripped by said fingers, and a closed end on said body opposite said opening sufficiently closely spaced to the free ends of said fingers to positively position the lead means by limiting the depth of penetration into said connector and to retain solder for forming a permanent solder connection.

3,156,518
TIME RECORDING DEVICES
Martin Bud, 9 Heathgate, London NW. 11, England
Filed Jan. 16, 1961, Ser. No. 82,860
Claims priority, application Great Britain, Feb. 5, 1960, 4,131/60
4 Claims. (Cl. 346—86)



1. In and for a time-recording device the combination comprising a single guide means for positioning a record-receiving means therein, a plurality of blocking means associated with said guide means, means for displacing at least one of said blocking means relative to the other blocking means, said blocking means being arranged for co-operation with complementary means of record receiving means of a first kind, when said blocking means are in a first predetermined relative position and for co-operation with complementary means of record receiving means of a second kind when said blocking means are in a second predetermined relative position, whereby to discriminate between said two kinds of record receiving means, and means for allowing operation of the time recording device only if a record-receiving means of that kind has been positioned in the guide means which corresponds to the relative position into which the blocking means have been displaced.

CHEMICAL

3,156,519
SULFOLANYL ALKYL ETHERS IN DYEING CELLULOSE ACETATE, POLYVINYLIDINE CYANIDE AND GLYCOL-DICARBOXYLIC ACID POLYMER FILAMENTS
Martin Kallman and Victor Salvin, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 5, 1961, Ser. No. 100,798
4 Claims. (Cl. 8—55)

1. The process which comprises immersing a filamentary material selected from the group consisting of vinylidine cyanide polymer, polyester condensation product of a glycol and a dicarboxylic acid, cellulose triacetate and secondary cellulose acetate filamentary materials in an aqueous dispersion of a disperse dye containing about 0.1 to 6% of an alkyl sulfolanyl ether present in an amount ranging from about 2 to 20% of the weight of said filamentary material.

3,156,520
DYESTUFFS AND ALKALI METAL SALTS OF WOOD SUGAR ACIDS AND LIGNIN SULFONATES

Leroy A. Blaisdell, Eatontown, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,754
2 Claims. (Cl. 8—91)

2. A dyestuff paste of improved stability and redispersibility comprising a water-dispersed solid dyestuff and a modifying additive obtained by adding an excess of lime to spent sulfite liquor, filtering to remove solids comprising calcium lignosulfonate, treating the filtrate with carbon dioxide to precipitate free lime as calcium carbonate, adding sufficient alkali metal carbonate to convert the calcium salts of the wood sugar acids and lignosulfonic acids to alkali metal salts, filtering to remove calcium carbonate and concentrating the filtrate to obtain the alkali metal salts of wood sugar acids and lignosulfonic acids substantially free of lime-precipitable lignosulfonates.

3,156,521
PROCESS OF BLEACHING TEXTILES WITH LOWER ALKYL QUATERNARY AMMONIUM PERHALIDES

Jack F. Mills, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 19, 1961, Ser. No. 146,357
4 Claims. (Cl. 8—108)

1. A process for bleaching natural and synthetic fibers which comprises applying to said fibers a water dispersion having dissolved therein an effective amount of a compound having the structure $R_4NBr_nCl_{(3-n)}$ wherein each R is a lower alkyl radical containing about 1–6 carbon atoms and n is an integer from one to three inclusive.

3,156,522
TREATMENT OF WOOL WITH ISOCYANATE-EPICHLOROHYDRIN MIXTURES

Nathan H. Koenig, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,078
8 Claims. (Cl. 8—127.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for chemically modifying wool which comprises reacting wool under anhydrous conditions with a mixture containing 5 to 95% by weight of epichlorohydrin and 95 to 5% by weight of an organic isocyanate selected from the group consisting of aliphatic, aromatic, and aromatic-aliphatic isocyanates.

3,156,523
ELEMENT 95 AND METHOD OF PRODUCING SAID ELEMENT

Glenn T. Seaborg, Chicago, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 23, 1946, Ser. No. 692,730
12 Claims. (Cl. 23—14.5)

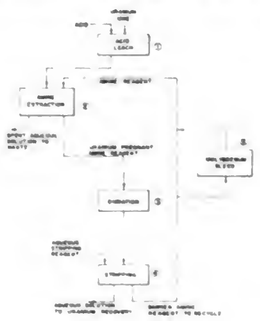
1. Element 95.

3,156,524
PREVENTION OF INSOLUBLE MOLYBDENUM-AMINE COMPLEXES IN THE LIQUID-LIQUID EXTRACTION OF URANIUM USING AMINE EXTRACTANTS

James L. Drobnick, Golden, and Clifford J. Lewis, Lakewood, Colo., assignors to General Mills, Inc., a corporation of Delaware

Filed Sept. 22, 1958, Ser. No. 762,424
7 Claims. (Cl. 23—14.5)

1. Process of extracting uranium from a uranium ore containing molybdenum which comprises leaching the ore with a strong mineral acid to produce an aqueous solution containing uranium and molybdenum values, extracting the acid leach solution with an amine reagent to produce an amine extract containing molybdenum and uranium values, treating said extract with an oxidizing agent prior to stripping uranium from said extract to maintain the molybdenum in the molybdate form and to prevent precipitation of a complex of molybdyl molybdenum with the amine reagent and subsequently stripping uranium from said extract.



3,156,525
PURIFICATION OF SODIUM DIURANATE

Harold L. Ford and James R. Owen, Grants, N. Mex., and Robert A. Koble and Howard W. Goard, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 28, 1960, Ser. No. 72,010
5 Claims. (Cl. 23—14.5)



1. A method for purifying yellow cake, comprising sodium diuranate containing vanadium values as impurity, which method comprises roasting said yellow cake at elevated temperatures in a first heating zone to solubilize said vanadium values, withdrawing the resulting roasted yellow cake from said first heating zone and passing the same to a leaching zone, contacting said roasted yellow cake in said leaching zone with an aqueous leaching solution to dissolve said solubilized vanadium values, withdrawing a slurry of leached yellow cake and leach solution containing soluble vanadium values from said leaching zone and passing said slurry to a thickening zone, thickening said slurry in said thickening zone, withdrawing from said thickening zone an overflow stream comprising leach solution containing a substantial amount of said soluble vanadium values, separating said overflow stream into a yellow cake portion and as a first product of the process a solution containing a substantial amount of said soluble vanadium values, recycling said yellow cake portion to said thickening zone, withdrawing a stream of leach solution from said thickening zone and passing the same to said leaching zone, withdrawing from said thickening zone an underflow stream comprising a slurry of thickened yellow cake, filtering said underflow stream in a first filtration zone to obtain a filtrate comprising leach solution and a yellow cake residue, washing said residue in said first filtration zone with water, recycling said filtrate and the resulting washings to said thickening zone, removing said yellow cake residue from said first filtration zone and repulping the same with water, filtering the resulting repulped yellow cake in a second filtration zone to obtain a filtrate and a yellow cake residue, washing the latter residue in said second filtration zone with water, recycling the latter filtrate and resulting washings to said thickening zone, repulping the latter residue and passing the resulting repulped yellow cake to a second heating zone, drying the latter repulped yellow cake at elevated temperatures in said second heating zone, and withdrawing the resulting dried, purified yellow cake from said second heating zone as a second product of the process.

3,156,526
STAINLESS STEEL DECLADDING

Loranus P. Hatch, Brookhaven, James J. Reilly, Bellport, Charles B. Bartlett, West Islip, and Richard Johnson, Shoreham, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed May 3, 1963, Ser. No. 277,964
7 Claims. (Cl. 23—14.5)

7. A process for recovering uranium from stainless steel clad uranium bearing nuclear fuel element comprising,

(*a*) immersing said element in a fluidized bed,

(*b*) said bed containing about one percent by weight of fine particles of aluminum fluoride based upon the total weight of the bed,

(*c*) the remainder of said bed being composed of fine particles of aluminum oxide

(*d*) said bed particles being intimately contacted with, activated and fluidized by passage of gaseous fluorine through said bed for about ½ hour while maintaining the temperature of said bed at a temperature ranging from between about 400° C. to about 450° C.,

(*e*) fluidizing said activated bed containing said body with an oxygen containing gas, while maintaining the temperature of said bed at a temperature ranging from between about 675° C. and 725° C., until the uranium contained in said element is exposed

(*f*) fluidizing said bed and intimately contacting and reacting said exposed uranium with gaseous fluorine, while maintaining the temperature of said bed at a temperature ranging from between about 400° C. to about 450° C. until the uranium in said bed is reacted with fluorine,

thereafter recovering the uranium from the reaction product of uranium and fluorine gas.

3,156,527
METHOD FOR THE PRODUCTION OF TITANIUM TETRACHLORIDE AND ZIRCONIUM CHLORIDES

Arthur Wallace Evans, Nunthorpe, Middlesbrough, and James Dennis Groves, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, York, England, a corporation of Great Britain

No Drawing. Filed Aug. 7, 1958, Ser. No. 753,616
5 Claims. (Cl. 23—87)

1. A method of producing titanium tetrachloride by exothermic chlorination of titanium-bearing material containing titanium dioxide, which comprises establishng a fluid bed of particles containing titanium dioxide and zircon at 700 to 925° C. in a rising continuous gaseous stream comprising chlorine, which bed contains in excess of 15 percent by weight of titanium dioxide and about 10 to 55 percent by weight of zirconium oxide, based on the mineral content of the bed, providing in the bed sufficient amount of carbonaceous material to ensure formation and vaporization of titanium tetrachloride from the bed and periodically feeding particles containing titanium dioxide and zircon to said bed and continuing said chlorination until the titanium dioxide content reduces toward said 15 percent by weight and in response to said reduction in titanium dioxide content, feeding enough of said titanium dioxide material to the bed to prevent the amount of titanium dioxide in said bed from falling below said 15 percent by weight and continuing chlorination to establish a zirconium oxide concentration of about said 10 to 55 percent by weight.

3,156,528
PROCESS FOR RECOVERING AN ALKALI METAL PEROXIDE OCTAHYDRATE

John R. Moyer, Charles K. Bon, and Dale L. Schechter, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

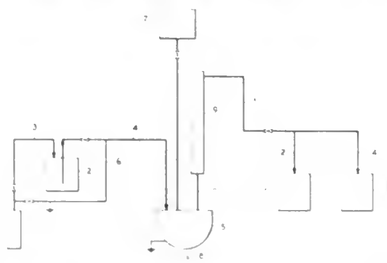
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,643
4 Claims. (Cl. 23—184)

1. A method for recovering an alkali metal peroxide selected from the group consisting of sodium peroxide and lithium peroxide from an aqueous solution of said peroxide which comprises, adding to said aqueous solution an approximately equal volume of about 50 percent by weight solution of the corresponding alkali metal hydroxide, exposing the resulting mixture to a temperature in the range of from about 0° C. to about 20° C., thereby to precipitate correspondingly a solid hydrate selected from the group consisting of sodium peroxide octahydrate and lithium peroxide monohydrate, and separating the hydrate so-precipitated from the solution.

3,156,529
PROCESS FOR THE PURIFICATION OF THIONYL CHLORIDE

David S. Rosenberg, Niagara Falls, and Harry Flaxman, North Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Oct. 17, 1961, Ser. No. 145,618
13 Claims. (Cl. 23—203)



1. A process for the production of thionyl chloride of high purity from a crude thionyl chloride containing a sulfur chloride impurity which comprises contacting the crude thionyl chloride with an alpha olefin, heating the crude thionyl chloride and alpha olefin until a distillate is obtained, substantially free of the sulfur chloride, distilling off thionyl chloride substantially free of sulfur chloride and condensing said distillate to obtain a purified liquid thionyl chloride.

3,156,530
PREPARATION OF DECABORANE

Lawrence J. Edwards, Zelienople, John M. Criscione, Butler, and Richard K. Pearson, Zelienople, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 13, 1958, Ser. No. 721,321
7 Claims. (Cl. 23—204)

1. In a method of producing decaborane by the pyrolysis of diborane, the improvement which comprises carrying out the pyrolysis by simultaneously exposing a flowing stream of diborane to both a hot surface and a cold surface in juxtaposition, said hot surface being at a temperature above about 200° C. and said cold surface being at a temperature below about 40° C.

3,156,531
HYDROGEN PEROXIDE PURIFICATION

Daniel B. Luten, Jr., and Robert E. Meeker, Berkeley, Calif., assignors to Shell Oil Company, a corporation of Delaware

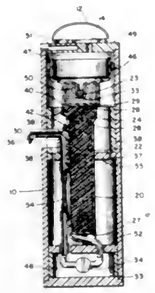
No Drawing. Filed Apr. 15, 1959, Ser. No. 806,455
7 Claims. (Cl. 23—207)

1. A process for removing a monocarboxylic acid (HA) having a single acid dissociation constant K_{HA} between 10^{-4} and 10^{-8} from hydrogen peroxide which comprises contacting the hydrogen peroxide with a salt of a di- to tetra-basic acid H_nB, wherein n is a whole number from 2 to 4, and a strong base selected from the group consisting of a quaternary ammonium base anion exchange resin and a tertiary sulfonium base anion exchange resin, the salt having polyvalent anions of the polybasic acid each linked to from 2 to 4 exchange sites of the resin, the polybasic acid H_nB having a first acid dissociation constant which is greater than the acid dissociation constant K_{HA} of the monocarboxylic acid and having another dissociation constant for the monoprotonated form of the polyvalent anion which is attached to the 2 to 4 sites of the resin which is less than that of the monocarboxylic acid, thereby binding the monocarboxylic acid to the resin salt without releasing free polybasic acid H_nB and separating the hydrogen peroxide from the resulting resin mixed salt of both the acids HA and H_nB, the pH of the hydrogen peroxide being maintained below about 6.5 throughout contact with the resin salt.

3,156,532
YTTRIUM-90 GENERATOR

Robert F. Doering, Smithtown, and Walter D. Tucker, Sayville, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 30, 1961, Ser. No. 121,264
1 Claim. (Cl. 23—252)



Apparatus for separating yttrium-90 from its parent strontium-90 consisting of:

(1) a vertical column;

(2) beta shielding means surrounding the vertical column;

(3) porous partitions separating said column into three vertically spaced zones, said zones consisting of:

(a) an upper zone containing an eluting solution;

(b) a middle zone containing strontium-90 fixed to an ion exchange resin, and

(c) a lower zone containing an ion exchange resin;

(4) a porous bed and a porous support therefor closing the upper zone;

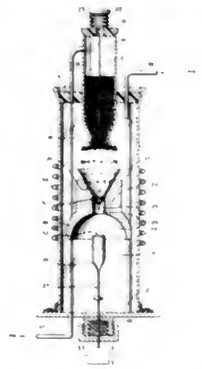
(5) an inlet for introducing eluting material through the porous bed into the upper zone; and

(6) an outlet for removing strontium-90 free yttrium-90 from the lower zone consisting of a delivery tube, a flexible tube secured to the delivery tube, a slide means engaging the delivery tube and flexing the flexible tube whereby the delivery tube is movable between an operative position and a retracted position within the shielding means and a valve intermediate the lower zone and the delivery tube, said outlet being within the shielding means and above the lower end of the column.

3,156,533
CRYSTAL GROWTH APPARATUS

Oscar Imber, 12214 Kendall Court, Silver Spring, Md.

Filed July 26, 1960, Ser. No. 45,508
3 Claims. (Cl. 23—273)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A crystal growth apparatus comprising:

(a) a chamber having a vertical axis,

(b) a conical container having an open upper base, said base being in open communication with said chamber, an inner lateral surface and a suitable opening at the apex thereof,

(c) said opening having a dimension approximately in the range of about 0.5 mm. to about 1.1 mm. to permit gravity flow under a hydrostatic head,

(d) means arranged above said container for periodically discharging powder on said surface,

(e) heating means provided at the periphery of said container, for melting the powder contacting said surface,

(f) a support rod below said opening adapted to support a crystal growth element thereon,

(g) said conical container, said means for discharging powder and said support rod being supported in said chamber and arranged in substantially coaxial relationship to said axis,

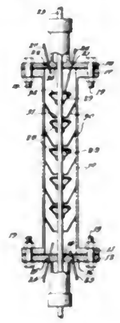
(h) means coupled with said chamber for moving said rod downward away from said opening, and

(i) means connected to said chamber for circulating an inert atmosphere therethrough.

3,156,534
APPARATUS FOR TREATMENT OF MOLTEN MATERIALS

Paul R. Josephson, Rochester, N.Y., and Lawrence E. Burkhart, Ames, Iowa, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 17, 1962, Ser. No. 218,237
4 Claims. (Cl. 23—283)

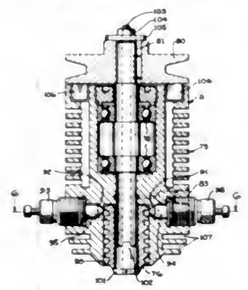


1. An apparatus for reacting two types of molten materials with each other, comprising: a vertical column; an inlet and an outlet in the bottom of said column; an inlet and an outlet in the top of said column; a rotatable shaft axially arranged in said column; a plurality of hollow distributor elements attached to said shaft and spaced from said column, each of said elements having a decreasing diameter towards each end and the greatest diameter between the ends and having a plurality of orifices in the periphery at a location of greater diameter than those of the two ends; and a plurality of nonperforated guide funnels directly attached to the inside of said column wall, one each below each distributor element, each funnel having the bottom opening concentrically arranged around said shaft as the only passage therethrough.

3,156,535
APPARATUS FOR PRODUCTION OF FOAMED PLASTICS

Marion W. Humphreys, Hickory Hill Farm, Chesterland, Ohio

Filed May 15, 1959, Ser. No. 813,482
19 Claims. (Cl. 23—285)

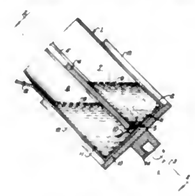


1. Apparatus for production of foamed plastic from a mixture of fluids comprising a mixing device formed with a mixing chamber, with a plurality of inlet ports for conducting the respective fluids into such chamber, and with an outlet for discharge of the mixture from such chamber, and a high speed rotary member in such chamber, such inlet ports extending axially transversely thereof and arranged to deposit thin layers of the respective fluids from such inlet ports successively directly thereon for intimate mixing and to convey such mixture to such outlet, said rotary member having a major diameter affording only a small radial clearance in such chamber.

3,156,536
WASHER MIXER APPARATUS

Bernard Desbois, Saint-Jean-de-Maurienne, France, assignor to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France, a corporation of France

Filed May 23, 1961, Ser. No. 111,969
Claims priority, application France, May 24, 1960, 828,093
4 Claims. (Cl. 23—286)

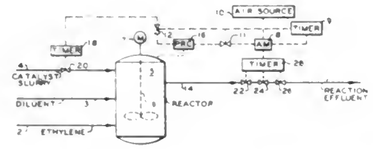


1. Apparatus for mixing liquids with finely divided solid materials comprising, in combination: a container for the products to be mixed; means supporting said container for movement about an axis inclined to the vertical; means for moving said container about said inclined axis; at least one partition member mounted within said container and dividing said container into a plurality of compartments, said partition member contacting the bottom surface of said container; at least one opening extending through said partition along the bottom edge of said partition forming a passageway between said compartments, said opening being so small that the movement imparted to the container about said inclined axis produces differences in liquid level between the compartments, said opening being large enough so that liquid circulates alternately from one compartment to the other during said movement whereby the circulation of said liquid between the compartments causes the liquid to transverse the entire thickness of the finely divided materials to be treated causing a thorough mixing of the liquid and the finely divided materials.

3,156,537
METHOD AND APPARATUS FOR CONTROLLING CATALYST CONCENTRATION IN THE PRODUCTION OF SOLID OLEFIN POLYMERS

Norman F. McLeod, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 25, 1959, Ser. No. 815,689
9 Claims. (Cl. 23—288)



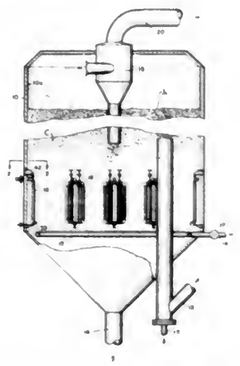
1. Apparatus comprising in combination a polymerization reactor, means for introducing liquid diluent, olefin and catalyst to said reactor, means for withdrawing re-

action effluent from said reactor, a vessel communicating with said means for withdrawing reaction effluent, means for periodically vapor sealing said vessel, means for increasing the volume of the sealed vessel, means for measuring pressure in said vessel and means for varying the quantity of catalyst introduced to the reactor in response to and directly proportional to the pressure in said vessel.

3,156,538
COOLING OF BED REACTORS

Richard A. Schneider, St. Louis, Mo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1960, Ser. No. 65,098
4 Claims. (Cl. 23—288)



1. The combination with a reactor vessel containing a bed of contact material for effecting exothermic chemical reactions, of a cooling device embedded in said material, said device including vertically spaced, horizontally elongated bottom and top headers and a plurality of substantially vertical vaporizing tubes interconnecting said headers for partial vaporization of liquid coolant ascending therethrough, said tubes being connected to said headers at intervals along the lengths of the latter and said tubes and headers being externally in contact with said bed, support means for said upper header fixed to said vessel, said lower header being suspended from said upper header through said vaporizing tubes, a supply pipe for liquid coolant extending from outside said vessel to said lower header, said supply pipe having flexibility to permit vertical motion of said lower header upon thermal expansion and contraction of the cooling device, and a discharge pipe connected to said upper header and extending outside of the vessel.

3,156,539
SUPERCONDUCTIVE MATERIALS

Harry N. Treaftis, Lee, and Charles E. Watts, Jr., Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

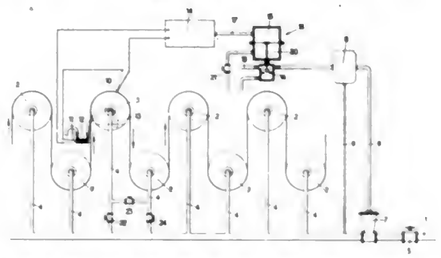
No Drawing. Filed Mar. 27, 1962, Ser. No. 182,927
1 Claim. (Cl. 29—194)

A superconductive circuit comprising superconductive elements joined together with a superconductive material consisting essentially of by weight two parts of mercury and one part by weight of a material consisting essentially of about 65 percent silver, minimum; about 25 percent tin, minimum; 6 percent copper, maximum; and 2 percent zinc, maximum.

3,156,540
MEANS FOR REGULATING THE HEAT SUPPLY DURING THE DRYING OF PAPER

Jean Georges Baert, 48 Rue de Lisbonne, Paris, France

Filed Feb. 15, 1960, Ser. No. 8,780
Claims priority, application France, Feb. 17, 1959, 787,113, Patent 1,229,781; Oct. 28, 1959, 808,702
1 Claim. (Cl. 34—48)

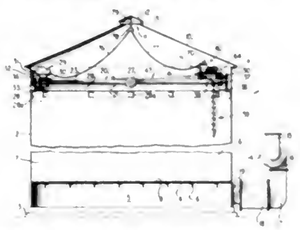


A paper making machine of the Fourdrinier type comprising a plurality of drying cylinders in heat transfer relationship with said paper, a supply pipe with branches individually supplying each cylinder with a heated vapor in proportions maintaining some of said cylinders hotter than others, signal responsive means for regulating the flow of vapor in said supply pipe, means for providing a continuing physical signal which is a function of the quantity of heat actually transferred to said paper by a selected one of said hotter cylinders, means for providing a continuing physical reference signal indicative of a predetermined quantity of heat transferred from said selected cylinder, and means for comparing said physical signals and transmitting a signal indicative of the difference therebetween to said flow regulating means for regulation of the supply of heated fluid to said cylinders, the branch leading to said selected cylinder and the branch leading to an adjacent cylinder being provided with valves and being connected intermediate said valves and cylinders by a connecting pipe also provided with a valve, thus permitting individual regulation of the speed at which said vapor is supplied to said selected cylinder.

3,156,541
APPARATUS FOR STIRRING GRAIN AND SIMILAR PARTICULATE MATERIAL

Henry A. Kalke, R.F.D. 2, Rockford, Iowa

Filed July 24, 1961, Ser. No. 126,190
4 Claims. (Cl. 34—181)



1. Grain storing and drying apparatus comprising a bin having a perforated bottom on which grain may be piled; air drying means; means for forcing dried air through said perforated bottom and through the pile of grain; grain stirring means; means mounting said stirring means for spiralling movement through said grain about a vertical axis within said bin; driving means for revolving said stirring means about said vertical axis in a single direction of revolution; and means operable while said stirring means is revolving about said axis for serially moving said stirring means radially toward and radially away from said axis whereby said stirring means will serially trace a spiral path of ever decreasing radii followed by tracing a spiral path of ever increasing radii, will then repeat tracing a path of ever decreasing radii followed by tracing a path of ever increasing radii, and so on.

3,156,542
MASKING AGENT FOR MIDDLE DISTILLATES

Edwin C. Younghouse, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 16, 1961, Ser. No. 89,645
2 Claims. (Cl. 44—59)

1. Diesel fuel composition of improved exhaust odor qualities which consists essentially of a hydrocarbon distillate boiling in the range from 250° F. to 750° F., from about 0.001 wt. percent to 0.5 wt. percent of musk xylene, from about 0.0002 wt. percent to 0.2 wt. percent of vanillin based upon the weight of the base fuel and about 0.015 wt. percent of oxo bottoms based upon the base fuel.

3,156,543
STABILIZED ORGANIC MATERIAL

Thomas H. Coffield, Farmington, and Allen H. Filbey, Walled Lake, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

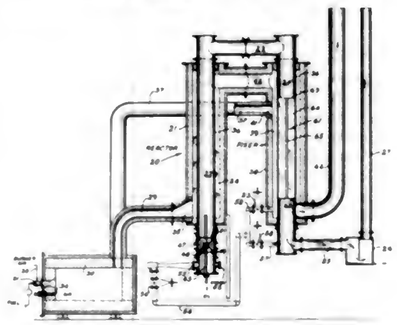
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,452
2 Claims. (Cl. 44—78)

1. As a new composition of matter, a liquid hydrocarbon fuel tending to undergo oxidative deterioration containing 0.001 to about 2 percent of 4,4'-bis(2-isopropyl-6-tert-butylphenol).

3,156,544
APPARATUS FOR MAKING COMBUSTIBLE GAS

John C. Eck, Convent, and Edward M. Gocze, Avenel, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Oct. 1, 1962, Ser. No. 227,348
10 Claims. (Cl. 48—102)



1. Apparatus for making combustible gas, in combination, a reactor having a single inner reactor tube of heat resistant and heat conducting material spaced from the inner walls of said reactor to define an annular heating flue surrounding said tube, the axis of said tube being substantially coincident with that of said reactor, means for continuously supplying hot gases to said annular heating flue and flowing such gases through said flue to heat said tube, means for continuously supplying a gas making medium to said tube, means for continuously supplying a carrier gas to said tube, a fixing chamber having a single inner fixing tube of heat resistant and heat conducting material therein spaced from the inner walls defining an annular heating flue surrounding the inner fixing tube, the axis of said fixing tube being substantially coincident with that of said fixing chamber, the inlet end of said fixing tube communicating with the exit end of said reactor tube, said annular heating flue surrounding said fixing tube communicating with the annular heating flue surrounding the reactor tube for series flow of heating gases through both annular heating flues, a heat transfer member comprising continuous walls of good thermal conductivity material extending throughout substantially the full cross-sectional area of the fixing tube for substantially the full length thereof, and means for withdrawing the fixed gas from the exit end of said fixer tube.

3,156,545
ABRASIVE ARTICLES

Samuel S. Kistler, Salt Lake City, Utah, and Charles V. Rue, Tiffin, Ohio, assignors to Wakefield Corporation, Detroit, Mich., a corporation of Michigan

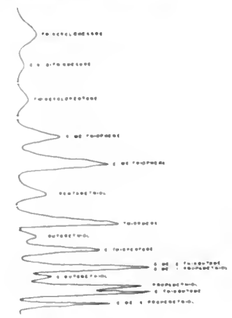
No Drawing. Filed May 14, 1962, Ser. No. 194,700
7 Claims. (Cl. 51—298)

1. A solid abrasive article comprising abrasive grains having a grit size in the range of No. 8 to No. 250 bonded with at least one thermosetting resin, said abrasive grains consisting essentially of about 15% to about 60% by volume of glass, about 7% to about 85% by volume of zirconia particles and about 78% to 0% by volume of alumina particle, said zirconia and alumina particles being embedded in and distributed throughout said glass.

3,156,546
GAS CHROMATOGRAPHIC SEPARATION AT HIGH TEMPERATURE OPERATION

William C. Jones, Jr., Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Nov. 3, 1960, Ser. No. 67,122
2 Claims. (Cl. 55—67)



1. A method of chromatographically separating thiohydrocarbons which comprises passing said thiohydrocarbons in admixture through an elongated chromatographic column having a stationary phase of polyepichlorohydrin having a molecular weight range of 400 to 2000 and an average molecular weight of 1150, at a temperature above 64° C., whereby said admixture is resolved into its components.

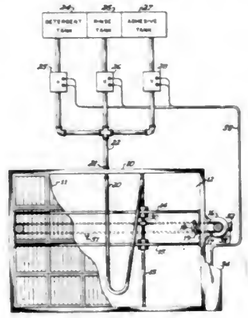
3,156,547
CONTROL APPARATUS FOR GAS CLEANING DEVICES

Howard W. Fleck, Wabash, Ind., assignor to Honeywell Inc., a corporation of Delaware

Filed Nov. 2, 1961, Ser. No. 149,749
4 Claims. (Cl. 55—118)

1. In an air cleaner having a particle collecting area and a treating mechanism for the collecting area including a driving motor, a treating head adapted to be driven thereby to pass back and forth across said collecting area

and to perform treating operations thereupon and a sequencer for controlling the operation of said treating mechanism to provide a treating cycle including portions of the cycle wherein said head is moved across said collecting area and treating operations are performed upon said area and portions of the cycle wherein said head is held stationary for fixed periods of time, said sequencer comprising; a programmer operable through a plurality of positions for controlling the operation of said driving motor during a treating cycle; electrically energizable advance means operably associated with said programmer and responsive to electrical signals to drive said programmer through said plurality of positions; an energization circuit for said driving motor; first switch means in said circuit for controlling energization of said driving motor; first signal means operable in response to movement of said treating head for supplying an electrical signal upon movement of said treating head across said area; circuit means including second switch means for electrically con-



necting said first signal means to said advance means; second signal means adapted to supply electrical signals at a substantially uniform rate; further circuit means including third switch means for electrically connecting said second signal means to said advance means; means including means operable by said programmer for operating said first, second, and third switch means to complete the energization circuit for said driving motor and to electrically connect said advance means only to said first signal means during portions of said cycle wherein said movable head is to be moved across said area, and to open said motor energization circuit and to electrically connect said advance means only to said second signal means during portions of said cycle wherein said movable head is stationary, the sequencer thereby being adaptable to any air cleaner to provide a predetermined number of passes of said treating head back and forth across the collecting area during each of said portions of said cycle wherein said head is moving without regard to the dimensions of the collecting area.

3,156,548
GAS CHROMATOGRAPHY APPARATUS

John A. Perry, Lansing, Ill., assignor to Sinclair Research, Inc., a corporation of Delaware

Filed Mar. 21, 1960, Ser. No. 16,487
9 Claims. (Cl. 55—197)

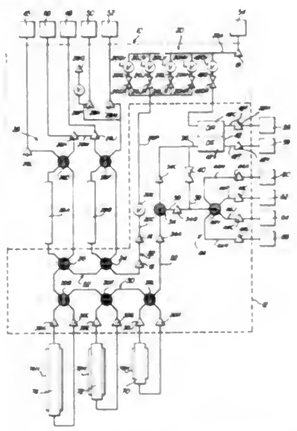
1. An apparatus suitable for use in gas chromatography and which may be provided with a source of carrier gas, a source of fluid sample, partitioning means and effluent collection means which comprises a chassis having a front side and a back side, which chassis supports

(I) Inlets for
  (A) a carrier gas
  (B) a liquid sample and
  (C) a gas sample

(II) A carrier gas flow line having flow control means which connects said carrier gas inlet with said sample inlets,

(III) Connections to
  (A) partitioning means comprising an inlet to said means and an outlet from said means and
  (B) effluent collection means

(IV) A sample passageway leading, by way of flow control means, from said sample inlets to said partitioning means inlet,



(V) An effluent line leading, by way of flow control means, from said partition means outlet to said effluent collection means, and

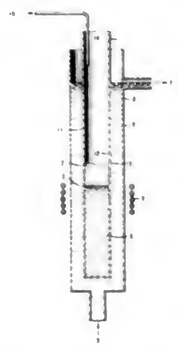
(VI) On its back side an insulating jacket which encloses said carrier gas flow line, said sample passageway and said effluent line,

said inlets (I) and connections (III) being accessible on the front side of the chassis.

3,156,549
METHOD OF MELTING SILICON

Denis G. Kelemen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 4, 1958, Ser. No. 727,023
1 Claim. (Cl. 65—32)



The method of progressively melting and solidifying a mass of silicon which comprises supporting said silicon in a clear fused silica or clear fused quartz vessel in an inert atmosphere, heating a portion of said mass to a temperature above the melting point of silicon by inducing heating currents in said portion from a high frequency or radio frequency induction energy source, moving said silicon relative to said source to permit progressive melting and solidifying of at least a substantial portion of the mass of silicon and simultaneously with said heating step maintaining the container walls at a temperature below the melting temperature of the silicon by causing a liquid, non-conducting coolant to flow in contact with the external surfaces of the walls of said vessel.

3,156,550
SEED STOCK PROTECTING AGENT IN DRILLABLE FORM

Ernst-August Bartels, Wiesbaden, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Sept. 6, 1960, Ser. No. 53,899
Claims priority, application Germany Sept. 3, 1959
6 Claims. (Cl. 71—2.4)

1. A granular drillable seed protecting agent for treating seeds, the particles of which comprise a granular non-germinating drillable carrier, a first layer over said carrier strongly adherent thereto and containing a seed protecting substance, said layer being at least partially decomposable by the moisture in the soil during the germination of the seed to be protected, and a powdery second adherent layer over said first layer the second layer containing a binding agent different from that of the first layer, adhering to the first layer less strongly than said first layer to the carrier, and containing a seed protecting substance which is at least partially transferable to seed mixed with the granular drillable seed protecting agent.

3,156,551
HERBICIDAL COMPOSITION OF REDUCED TENDENCY TO CORRODE IRON AND ZINC

Robert Coles Brian, Bracknell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 29, 1961, Ser. No. 113,076
Claims priority, application Great Britain June 9, 1960
21 Claims. (Cl. 71—2.4)

1. A herbicidal composition having a reduced tendency to corrode iron and zinc, comprising a herbicidally effective amount of a normally corrosive, herbicidally active dipyridylium quaternary salt and a corrosion reducing mixture present in corrosion-inhibiting amount, said mixture consisting essentially of an inorganic phosphate which gives rise to $H_2PO_4^-$ ions when dissolved in water and an inorganic water-soluble molybdate, said phosphate and molybdate being selected from the group consisting of the water-soluble ammonium, alkali metal and alkaline earth metal monohydrogen and dihydrogen phosphates and alkali metal molybdates.

3,156,552
METHOD FOR THE MODIFICATION OF THE GROWTH AND CONTROL OF UNDESIRED VEGETATION

Melvin J. Josephs, Philadelphia, Pa., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 16, 1962, Ser. No. 210,207
7 Claims. (Cl. 71—2.5)

1. A method which comprises exposing plants and plant parts to the action of a growth-altering amount of an active agent selected from the group consisting of tris(1-aziridinyl)phosphine oxide, tris(1-aziridinyl) phosphine sulfide, tris(2-methyl-1-aziridinyl)phosphine oxide, tris(2-methyl-1-aziridinyl)phosphine sulfide and an O-lower alkyl bis(aziridinyl)phosphine oxide.

3,156,553
COMPOSITION AND METHOD FOR THE CONTROL OF WEEDS

Norman E. Searle, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1961, Ser. No. 106,535
2 Claims. (Cl. 71—2.6)

1. A composition comprising a herbicidal amount of a compound selected from the group consisting of 2,5-dichloro-6-methylbenzoyl chloride; 2,3,5-trichloro-6-methylbenzoyl chloride; 2,6-dichloro-5-methylbenzoyl chloride; 2,3,6-trichloro-5-methylbenzoyl chloride; 2-chloro-5,6-dimethylbenzoyl chloride; 2,3-dichloro-5,6-dimethylbenzoyl chloride; and 2,3-dichloro-6-methylbenzoyl chloride and less than 6% by weight of a surface-active agent.

3,156,554
METHOD OF CONTROLLING RELATIVE STEM GROWTH OF PLANTS

Nathan E. Tolbert, Okemos, Mich., assignor to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,175
10 Claims. (Cl. 71—2.7)

1. A method of controlling the relative stem growth of plants consisting of treating plants with a compound of the formula

$$R—N(CH_3)_3.Y$$

wherein R contains not less than two and not more than three carbon atoms and is selected from the group consisting of haloalkyl, alkylene, haloalkylene, cyanoalkyl, mercaptoalkyl, alkoxyalkyl and epithioalkyl, and Y is a nonphytotoxic anion in an amount effective to reduce relative stem growth without causing phytotoxic effects.

3,156,555
METHOD OF CONTROLLING RELATIVE STEM GROWTH

Nathan E. Tolbert, Okemos, Mich., assignor to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,786
4 Claims. (Cl. 71—2.7)

1. The method of controlling the relative stem growth of plants consisting of treating plants with a compound of the formula

$$R—N(CH_3)_3.Y$$

wherein R is selected from the group consisting of isopropyl; n-propyl and 2-methylpropyl and Y is a nonphytotoxic anion in an amount effective to reduce relative stem growth without causing phytotoxic effects.

3,156,556
METHOD OF PRODUCING FINE SPHERICAL METAL POWDERS

Basil Meddings, Fort Saskatchewan, Alberta, and David John Ivor Evans, Edmonton, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada

Filed July 20, 1962, Ser. No. 211,347
7 Claims. (Cl. 75—.5)



1. A method for the production of nickel powder formed of spherical particles by reacting an aqueous

ammoniacal nickel sulphate solution with hydrogen gas at elevated temperature and pressure comprising initiating said reaction in a solution which is adjusted to contain, in solution, 1 mole of sulphate radical per mole of nickel and ammonia in an amount equivalent to about 1.8 to about 2.5 moles of ammonia per mole of dissolved nickel; and in which is provided an addition agent capable of initiating and promoting the reducing reaction in an amount within the range of from about 0.1 to about 1 gram per litre, and a catalyst selected from the group consisting of anthraquinone, substituted anthraquinones, benzoquinone, naphthaquinone, tannic acid and morin in amount of at least about 0.01 gram per litre.

3,156,557
PROCESS OF PRODUCING METALS FROM METAL OXIDES

Erik Dahl and Sigmund Okstad, Vagsbygd, near Kristiansand, and Hans Skretting, Kristiansand, Norway, assignors to Elektrokemisk A/S, Oslo, Norway, a corporation of Norway

No Drawing. Filed Sept. 26, 1961, Ser. No. 140,663
Claims priority, application Norway Oct. 4, 1960
10 Claims. (Cl. 75—4)

1. The process of producing charge pellets characterized by the fact of having a point pressure strength initially of at least 3 kg. and, upon three days' storage, of at least 15 kg., and further characterized by the fact that upon heating of the pellets to 700° C. the point pressure strength thereof increases substantially, which comprises the steps of mixing together finely divided charge material which can be reduced with carbon and which is selected from the group consisting essentially of iron oxide, iron oxide combined with alloying ingredients and calcium compounds, with a finely divided bituminous binding agent having an effective swelling index of at least 4.5 and comprising in major part finely-divided coal, mixing into the mixture so formed from about 3% to about 10% by weight of a water-activatable hydraulic cement and then pelletizing the final mixture with the aid of water.

3,156,558
HIGH-DENSITY, NONMAGNETIC STAINLESS STEEL

Samuel J. Rosenberg and Thomas P. Royston, Jr., Washington, D.C., assignors to the United States of America as represented by the Secretary of Commerce

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,740
4 Claims. (Cl. 75—128)

1. A high density, nonmagnetic steel, of approximately 8.4 grams/cm.^{3} and consisting essentially of:

carbon	0.20% maximum
manganese	2.00% maximum
phosphorous	0.040% maximum
sulfur	0.030% maximum
silicon	1.60% maximum
chromium	15.5 to 17.5%
nickel	31.5 to 33.5%
tungsten	9.0 to 10.0%

and the balance of said steel being essentially iron.

3,156,559
ALUMINUM BRONZE ALLOY CONTAINING IRON AND COBALT AND METHOD OF HEAT TREATING THE SAME

John F. Klement, Milwaukee, Wis., assignor to Ampco Metal, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed July 19, 1961, Ser. No. 125,104
6 Claims. (Cl. 75—162)

1. An aluminum bronze alloy, consisting essentially of 9.0% to 12.0% aluminum, 2.0% to 5.0% iron, 0.01% to 1.9% cobalt and the balance copper, said alloy having a metallographic structure consisting of beta, cobalt-containing intermetallic compounds and acicular alpha and having a tensile strength in the range of 100,000 to 120,000 p.s.i., a yield strength in the range of 45,000 to 70,000 p.s.i., an elongation in two inches of 5% to 30%, and a Brinell hardness in the range of 190 to 240.

3,156,560
DUCTILE NIOBIUM AND TANTALUM ALLOYS

John W. Semmel, Jr., Wyoming, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed June 5, 1959, Ser. No. 818,263
6 Claims. (Cl. 75—174)

1. A body composed of (*a*) at least 90 weight percent of a matrix metal selected from the group consisting of niobium and tantalum, said matrix containing small amounts of oxygen, carbon and nitrogen as nonmetallic impurities and, (*b*) a compound of a metal selected from the group consisting of scandium, yttrium and the rare earth elements of the lanthanide series of the Periodic Table of Elements, and combinations thereof together with said nonmetallic impurities, said selected metal being added in amounts of from about 2 to 10 weight percent of said alloy to combine with said nonmetallic impurities and increase the ductility of said matrix metal.

3,156,561
METHOD OF PRODUCING COLOR PHOTOGRAPHIC PICTURES

Paul Dreyfuss, Basel, Switzerland, assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware

No Drawing. Filed June 1, 1959, Ser. No. 817,068
Claims priority, application Switzerland, June 3, 1958, 60,178; Apr. 16, 1959, 72,135
16 Claims. (Cl. 96—20)

1. In a process for producing colored photographic pictures composed of at least two component color images by the silver-dyestuff bleaching process, wherein (*a*) by exposure and development silver images representing the component color images are produced in a photographic material, each image being in close spatial relationship with an appertaining dyestuff, and wherein (*b*) said dyestuffs are bleached in dependence on the appertaining silver images to produce dyestuff images, the improvement consisting essentially of subjecting the dyestuffs contained in the photographic material, after full formation of the silver images, to bleaching out treatment comprising at least two successive operations in dyestuff bleaching baths, each of which baths exerts a different bleachng action on at least one and the same component image, thereby acceleratedly bleaching out dyestuff of at least one, but less than all, of the component images in at least one of said bleaching operations, and bleaching out dyestuff of from at least the remaining up to all of said component images in at least one other bleaching operation; and so adjusting the accelerated bleaching to the other bleaching as to yield the predetermined balance between the gradations of the different color component images.

3,156,562
REPRODUCTION OF PHOTOGRAPHIC IMAGES ON CERAMIC SURFACES

Murray N. Gladstone, Los Angeles, Calif. (532 E. Michelle St., West Covina, Calif.)

Filed Oct. 14, 1960, Ser. No. 62,672
6 Claims. (Cl. 96—34)

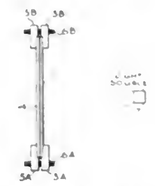
1. A process of producing a grainless photographic image in continuous tone on a ceramic surface from a stripping film having a gelatin silver halide emulsion adhered to a thin cellulose derivative support which is adhered by a warm-water softenable adhesive to a heavier cellulose derivative support, comprising the steps of exposing, through a continuous tone negative, the said

emulsion so that the exposing light goes first through the cellulose derivative supports and then into the emulsion, developing the exposed film in a hardening developer which hardens the emulsion to a depth in direct proportion with the continuous tones of the said continuous tone negative, thus rendering insoluble in warm water all the portions of the emulsion so exposed and developed arresting the developing action in a solution of acetic acid, washing away the unexposed portions of the emulsion with warm water, bleaching the resulting image in solutions of that class of chemicals which form an insoluble silver salt image soluble in thiosulphate solutions, dissolving said silver salt image in a thiosulphate solution, washing away the said thiosulphate solution, stripping under warm water the thin cellulose derivative support from the heavier cellulose derivative support, drying, treating the resulting clear gelatin relief image which is adhered to the thin cellulose derivative support alternately in aqueous solutions of metallic acid salts the metallic components of which are of the class consisting of ceramic colorants, and in aqueous solutions of alkali salts within that class which will form insoluble metallic precipitates with the said metallic acid salts, resulting in the deposition within the gelatin relief image of a uniformly dispersed precipitate of water insoluble metallic salts the metallic components of which are of the class consisting of ceramic colorants and which metallic components will serve as the ceramic colorants herein, continuing the said alternate treatments until the required density of precipitate within the said gelatin relief image is obtained, swabbing the relief image to remove adhering surface precipitate, drying, adhering with an adhesive colloid the face of the precipitate bearing gelatin relief image to the ceramic surface, dissolving away the cellulose derivative support of the gelatin relief image, and firing the combined precipitate bearing gelatin relief image and the ceramic piece to burn away the gelatin and the adhesive colloid and to fuse the image to the ceramic piece.

3,156,563
METHOD OF PRODUCING ACCURATELY ALIGNED PATTERNS ON OPPOSITE SIDES OF A WORK PIECE

Michael E. Harrison, Redondo Beach, and John E. Fitzgerald, Manhattan Beach, Calif., assignors to Thompson Ramo Wooldridge Inc., Los Angeles, Calif., a corporation of Ohio

Filed Apr. 22, 1959, Ser. No. 808,085
4 Claims. (Cl. 96—36)



1. The method of etching aligned patterns on opposite sides of a work piece including in combination the steps of preparing an image carrier bearing a desired pattern, attaching the image carrier to one-half of a two-piece jig, attaching a direct positive photographic plate to the other half of the two-piece jig, joining the halves of the two-piece jig with the image carrier being held in fixed relationship and in contact with the direct positive photographic plate, exposing the direct positive photographic plate through the image carrier, developing the direct positive photographic plate with one-half of the jig affixed thereto, applying a photosensitive, reagent-resistant material to opposite sides of the work piece, joining the two halves of the jig about the work piece with the image carrier and the developed direct positive photographic plate engaging opposite sides of the work piece, exposing both sides of the work piece through the image carrier and the developed direct positive plate, respectively, removing the exposed work piece from the jig, removing the areas on the work piece of the unexposed photosensitive, reagent-resistant material, and etching both sides of the work piece on the areas in which the photosensitive, reagent-resistant material has been removed whereby the etching takes place in aligned patterns on opposite sides of the work piece corresponding to the pattern on the image carrier.

3,156,564
PRODUCTION OF PHOTOGRAPHIC IMAGES MAKING USE OF THE INTENSITY-REVERSAL EFFECT

René von Wartburg, Basel, Switzerland, assignor to John Eggert, Zollikon, Zurich, Switzerland

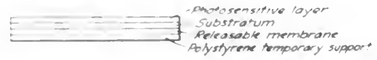
No Drawing. Filed Mar. 4, 1959, Ser. No. 797,056
Claims priority, application Switzerland Mar. 11, 1958
9 Claims. (Cl. 96—45)

1. In the process of producing a direct positive photographic reproduction with a photographic emulsion that is subjected to intensity-reversal by an intense diffuse flash exposure of not more than 0.01 second, the improvement according to which the emulsion used is one which has been subjected to a grain size ripening while containing an anti-fogging agent, and has not been subjected to a chemical ripening.

3,156,565
PHOTOGRAPHIC STRIPPING FILM

James R. Sinclair, Mayfield Heights, Ohio, assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, a corporation of Delaware

Filed Sept. 13, 1962, Ser. No. 223,366
9 Claims. (Cl. 96—83)



1. A stripping film comprising a polystyrene temporary support, a releasable membrane on one side thereof consisting essentially of between about 10 and about 45 weight percent of acrylate ester polymer and between about 55 and about 90 weight percent of a member of the group consisting of a lower alkyl cellulose ether and a cellulose ester of an organic carboxylic acid having from two to four carbon atoms, said membrane being adhered to said polystyrene support and cleanly strippable therefrom by mechanical peeling, and a photosensitive silver halide layer carried by said releasable membrane on the side opposite the polystyrene support.

3,156,566
PROCESSES FOR IMPROVING THE TENDERNESS OF MEAT USING A COLD WATER BUFFERED ENZYME

Beverly E. Williams, La Grange Park, Ill., assignor, by mesne assignments, to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,437
1 Claim. (Cl. 99—107)

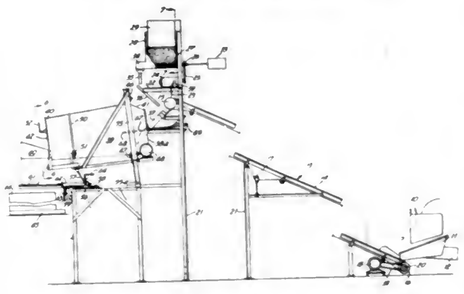
In a process for increasing the tenderness of cooked meat, the steps of adding an aqueous proteolytic enzyme solution by multiple entry injection of approximately 3% solution by weight under pressures of from 35 to 100

pounds per square inch and at a temperature of about 32° F. such that the temperature of the solution in the meat does not exceed approximately 55° F. directly into the meat of freshly slaughtered edible animals before completion of rigor mortis whereby the activity of the proteolytic enzyme on the meat is buffered and minimized during the subsequent chilling process and the greater part of the activity of the proteolytic enzyme occurs during the cooking of the meat with increase in tenderness of the meat, the proteolytic enzyme being selected from the group consisting of papain, bromelin, ficin and combinations thereof having a potency of approximately 40 HU/g. in an amount of approximately 1 gram for each 300 pounds of meat treated.

3,156,567
METHOD OF MANUFACTURING CHEESE CONTINUOUSLY

Burnell E. Budahn, Norwood, Minn.

Filed May 3, 1963, Ser. No. 277,856
10 Claims. (Cl. 99—115)



1. In the making of cheese from slabs of cheese curd in a continuous operation from milling to hooping with a substantial saving in butterfat content of the cheese and a substantial reduction in dusting losses and a substantial reduction in time consumed for the operation, the steps of

(*a*) milling slabs of the curd

(*b*) spreading a predetermined proportionate amount of salt upon the milled curd

(*c*) tumbling the curd immediately as milled and salted for such time and under such conditions as required to coat the salt evenly on the curd and keep potential dusting losses in the so tumbled curd along with the full butterfat content thereof, and

(*d*) then discharging the so tumbled curd and salt into containers for subsequent pressing of the curd into cheese.

3,156,568
PROCESS OF MAKING LOW-FAT RIPENED SKIM MILK CHEESE

Robert E. Hargrove, Fairfax, Va., and Frank E. McDonough, Accokeek, Md., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,906
13 Claims. (Cl. 99—116)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process of manufacturing a low-fat ripened skim milk cheese comprising pasteurizing a cream containing about 20% milk fat at a temperature in the range of about 175–190° F., homogenizing the pasteurized cream, combining about 2% by weight homogenized, pasteurized cream with about 98% by weight skim milk to provide a cheese milk, pasteurizing the cheese milk at a temperature in the range of about from 170–185° F., homogenizing the pasteurized cheese milk at a pressure of not appreciably more than 1,000 p.s.i.g., inoculating the homogenized, pasteurized cheese milk with a starter culture containing *Streptococcus cremoris*, Leuconostoc, and a microorganism selected from the group consisting of *Lactobacillus lactis*, *Bacterium linens* and *Micrococcus caseolyticus*, thereafter admixing rennet with the inoculated cheese milk to coagulate the curd, cutting the curd after about one hour, stirring and cooking the curd, draining the curd, salting the curd, hooping the curd, pressing out the wet curd in substantially the absence of air, and curing the cheese, and, as a step following homogenizing the pasteurized cream and prior to admixing rennet to the cheese milk, adding to the fat a lipase selected from the group consisting of an animal lipase and a microbial lipase to contribute flavor to the cheese.

3,156,569
SEASONING COMPOSITION AND METHOD OF ENHANCING THE FLAVOR OF FOODS CONTAINING A GLUTAMIC ACID SALT

Joan M. Griffin, Forest Hills, and Edward F. Bouchard, Huntington, N.Y., and Kurt S. Konigsbacher, Stamford, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,494
13 Claims. (Cl. 99—140)

1. A seasoning for food which comprises a mixture of a glutamic acid salt and maltol, said mixture containing maltol in an amount of from about 0.5 to about 20 percent by weight of the said glutamic acid salt.

3,156,570
HEAT TREATMENT OF ALBUMEN TO REDUCE THE MICROBIOLOGICAL POPULATION THEREIN

John Holme, Green Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 28, 1961, Ser. No. 141,319
9 Claims. (Cl. 99—161)

1. A process for reducing the microbiological population of albumen, which process comprises adding sufficient soluble alkali-metal soap of at least one fatty acid containing from 12 to 22 carbon atoms in the molecule to produce a soap concentration of from about 0.002 to about 0.010 molar in an aqueous dispersion of albumen containing not more than about six percent albumen solids by weight; subjecting the aqueous mixture of fatty acid soap and albumen to temperatures of at least 212° F. for a period of time sufficient to effect significant reduction of the microbiological population thereof; cooling said mixture; and thereafter removing said soluble soap from solution, whereby the albumen has essentially unimpaired culinary function.

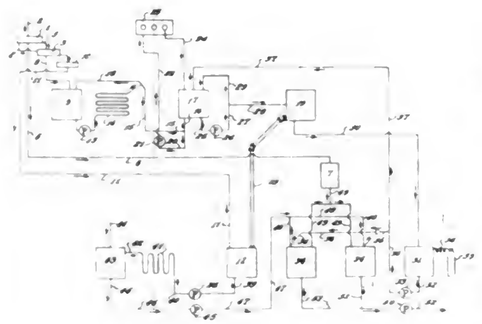
3,156,571
CONTINUOUS PROCESS AND APPARATUS FOR MAKING CONCENTRATED LIQUIDS

Charles S. Walker, Clearwater, Fla., assignor to Institutum Divi Thomae Foundation, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 21, 1955, Ser. No. 489,325
12 Claims. (Cl. 99—205)

1. In a process of making concentrates from aqueous liquid beverage material chosen from a class consisting of fruit and vegetable juices, milk and brewed coffee, the steps of continuously circulating the beverage material between a cooler acting to cool portions of said beverage material to the extent of producing ice crystals therein and a holding tank, in a closed system, whereby the formation of ice crystals in the beverage material takes place while the beverage material is maintained in a flowable condition, continuously introducing fresh beverage material into the circulating stream and continuously withdrawing partially frozen beverage material from the circulating stream, and subjecting the withdrawn material to centrifugal separation whereby to remove from it at least a portion of the ice crystals formed therein.

10. In apparatus for the purpose described, a reservoir for liquid to be concentrated, a holding tank fed by said reservoir, means for gradually cooling said liquid to a temperature at which ice crystals form therein, said holding tank and cooling means having interconnections forming a recirculatory system, means for maintaining said liquid



under conditions of continuous agitation in said recirculatory system during the formation of said crystals, means for varying the length of time of submission of any increment of said liquid to said cooling and agitating in said system, whereby to vary the size and size distribution of the crystals forming in said liquid, means for withdrawing treated liquid from said recirculatory system, and separating means acting to separate from said treated liquid crystals above a certain size therein.

3,156,572
PRINTING INKS

Daniel J. Carlick, Berkeley Heights, and William J. Russell, Dover, N.J., assignors to Interchemical Corporation, New York, N.Y.

No Drawing. Filed Oct. 18, 1961, Ser. No. 145,979
5 Claims. (Cl. 106—27)

1. A thermoplastic printing ink having a solidification point between 104° and 140° F. comprising pigment dispersed in a vehicle consisting essentially of a polyamide produced by the condensation of a polymerized acid selected from the group consisting of dimers and trimers of linoleic acid and linolenic acid and ethylene diamine and at least one solvent selected from the group consisting of dipropylene glycol, hexylene glycol, octylene glycol, neopentyl glycol, tridecyl alcohol, hexadecyl alcohol and lauryl alcohol.

3,156,573
NOVEL FLUOSULFATE GLASSES

Isadore Mockrin, Plymouth Meeting, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 11, 1962, Ser. No. 201,288
12 Claims. (Cl. 106—47)

1. A novel fluosulfate glass composition consisting of fluoride and sulfate anions, and cations consisting essentially of sodium and a trivalent cation selected from the group of aluminum and iron, the sum of the molar ratio of said anions to trivalent cation being between 3.5 and 5.0, the molar ratio of fluoride anions to trivalent cation being between 2.0 and 3.5, and the molar ratio of sulfate anions to trivalent cation being between about 1.0 and 2.0.

12. A process for preparing a fluosulfate glass which comprises heating in a closed container at a temperature of at least about 600° C. and thereafter cooling to a solid a mixture of inorganic salts which produce sulfate and fluoride anions, sodium cations, and a trivalent cation selected from the group consisting of aluminum and iron, the amounts of inorganic salts being taken so that the sum of the molar ratio of total anions to trivalent cation is between about 3.5 and 5.0, the molar ratio of fluoride ion to trivalent cation is between about 2.0 and 3.5, and the molar ratio of sulfate ion to trivalent cation is between about 1.0 to 2.0.

3,156,574
PROCESS OF INCORPORATING AQUEOUS PIGMENT COMPOSITION IN VISCOSE

Albert Stanley Gomm, Leslie Budworth Morgan, and Leonard Wood, all of Blackley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 19, 1960, Ser. No. 50,598
Claims priority, application Great Britain, Sept. 9, 1959, 30,768/59
1 Claim. (Cl. 106—165)

In a process for the manufacture of shaped colored articles of regenerated cellulose comprising forming a viscose solution and converting the viscose to regenerated cellulose; the improvement comprising incorporating in said viscose solution before it is converted to regenerated cellulose an aqueous pigment composition consisting essentially of a pigment, water, a dispersing agent selected from the group consisting of cationic and non-ionic dispersing agents and at least about 58%, based on the weight of dry pigment solids of dextrine.

3,156,575
COPPER PHTHALOCYANINE PIGMENTS OF IMPROVED DISPERSIBILITY AND STRENGTH

Louis J. Gagliano and Calvin C. Wanser, Glens Falls, N.Y., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 5, 1962, Ser. No. 171,288
4 Claims. (Cl. 106—288)

4. A pigment composition having improved dispersibility and strength in plastic and oleoresinous vehicle systems consisting essentially of a copper phthalocyanine pigment which has been treated with from about 1% to about 10% by weight, based on the weight of pigment, of a pyrrolidone compound selected from the group consisting of N-methyl-2-pyrrolidone and N-vinyl-2-pyrrolidone.

3,156,576
ISOCYANATE MODIFIED PIGMENTS

Theodore A. Te Grotenhuis, Olmsted Falls, Ohio (524 Bulkley Bldg., Cleveland, Ohio)

No Drawing. Original applications Oct. 12, 1951, Ser. No. 251,152, now Patent No. 2,780,612, dated Feb. 5, 1957 and Mar. 19, 1952, Ser. No. 277,547, now Patent No. 2,780,611, dated Feb. 5, 1957. Divided and this application July 30, 1956, Ser. No. 600,727
21 Claims. (Cl. 106—308)

2. An inorganic pigment, which has freely mobile particles free of binder suitable for incorporation in rubbery polymers, having over surface portions thereof a residue from the reaction of the surface of said pigment with an amount of an organic polyisocyanate that renders the pigment hydrophobic, said polyisocyanate being free of aliphatic unsaturation and having a plurality of isocyanato groups attached directly to an organic group which is free of functional groups other than isocyanato groups.

3,156,577
ABSORPTIVE GLASSES AND WELDING PLATES MADE THEREFROM

Lee O. Upton, Sturbridge, Mass., and Robert W. Young, Woodstock, Conn., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed May 16, 1962, Ser. No. 195,069
14 Claims. (Cl. 117—33.3)

1. Glass articles of the character described ranging in shades from 3.3 to 5.0 having a thickness of approximately 3 mm. which are particularly durable and stable as to chemical attack and moisture attack at high humidity and high temperature resulting from the combining of:

	Percent by weight
Silica, SiO_2	From 44.8 to 65.4.
Calcium oxide, CaO	From 3.5 to 12.0.
Sodium oxide, Na_2O	From 0 to 16.0.
Potassium oxide, K_2O	From 0 to 16.0.
Lead oxide, PbO	From 0 to 25.8
Bismuth trioxide, Bi_2O_3	From 0 to 20.63.
Titanium dioxide, TiO_2	From 0 to 2.0.
Copper oxide, CuO	From 1.7 to 4.5.
Cobalt oxide, Co_2O_3	From 0.004 to 0.04.

where the sum of Bi_2O^3 and PbO must equal at least 20% of the total batch; and the sum of Na^2O and K^2O must equal at least 8% of the total batch, said glass being adapted for peak transmission of light of wave lengths between 480 and 490 millimicrons and for substantially complete absorption of light of wave lengths shorter than 400 millimicrons and of visible light of wave lengths longer than 600 millimicrons.

8. A welding plate embodying a glass resulting from the range of ingredients set forth in claim 1 having a thin coating of gold on a side surface thereof.

3,156,578
STEEL PICKLING PROCESS FOR APPLICATION OF ONE-COAT ENAMEL

Evan M. Oliver, Louisville, Ky., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 24, 1961, Ser. No. 112,227
2 Claims. (Cl. 117—50)

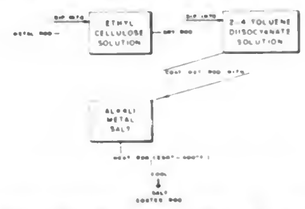
1. The method of treating a steel surface preparatory to the application of a nickel flash coating followed by a single finish coat of enamel which method comprises the steps of cleaning said surface in an aqueous alkali cleaning bath, pickling the cleaned surface in a hot aqueous pickling bath containing, by weight, from 0.5 to 2.0 percent sulfuric acid and from 0.2 to 1.0% nitric acid and having a controlled ferric and ferrous ion concentration equivalent to 0.1 to 0.5 percent by weight ferric iron and 0.2 to 3 percent by weight of ferrous iron to remove from the surface of said article from 1.5 to 3.0 grams of iron per square foot of exposed surface, and thereafter rinsing the pickled surface with an aqueous solution of from 0.5 to 5.0 percent by weight of sulfuric acid, said pickling bath being maintained at a specific gravity of about 1.0 to 1.08 at 165° F. by the replacement of portions of said bath with water and at a pH of from .7 to 1.2 by the addition of sulfuric acid and nitric acid in the proportions of about 2.8 parts by weight of sulfuric acid to 1 part by weight of nitric acid.

3,156,579
PROCESS FOR BONDING SALT TO METAL BALLISTIC ROD

John E. Baldwin, Ridgecrest, and Erwin L. Capener, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 9, 1957, Ser. No. 670,835
4 Claims. (Cl. 117—62.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The process of bonding an alkali metal salt coating to a metal ballistic rod for a rocket, comprising dipping the metal rod into a solution of ethylcellulose dissolved in a mixture of 80% toluene and 20% acetone, the final solution containing approximately 5 to 10% ethylcellulose, drying said rod, dipping the rod into 2,4-toluene diisocyanate and then immediately affixing around said rod a metal salt coating consisting essentially of potassium

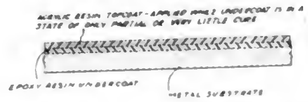


sulfate, ethyl cellulose, butyl methacrylate, dibutyl phthalate, polyglycol dimethacrylate and benzoyl peroxide, heating the rod assembly to a temperature from about 250 to 400 degrees Fahrenheit without warping the salt coating, and then cooling said rod; resulting in a bond between the salt coating and said rod which is greatly impervious to the plasticizer ingredients in a rocket propellant.

3,156,580
METHOD OF SURFACE FINISHING METAL SURFACES WITH EPOXY AND ACRYLIC RESINS

Robert F. Howard, Fort Worth, Tex., assignor, by mesne assignments, to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

Filed Jan. 29, 1960, Ser. No. 5,368
7 Claims. (Cl. 117—75)



1. In the process of coating the surface of an article, the steps of

cleaning the article,

applying a layer of fluid epoxy resin containing a catalyst therefor directly to the surface of the article,

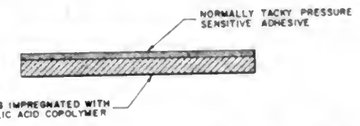
and then applying a layer of fluid acrylic resin containing a catalyst therefor directly to the epoxy resin layer,

in which the acrylic resin layer is applied while the epoxy resin layer is only partially cured.

3,156,581
PRESSURE-SENSITIVE ADHESIVE TAPE AND IMPREGNATED FIBROUS WEB

Larry P. Finnegan and Verle A. Miller, Dover, Del., assignors, by mesne assignments, to Milky Way Products Company, Dover, Del., a corporation of Delaware

Filed Aug. 1, 1958, Ser. No. 752,429
22 Claims. (Cl. 117—76)

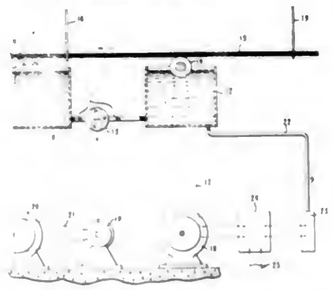


1. A fibrous article comprising a unified mass of nonwoven fibrous material internally bonded with a unifying composition comprising a copolymer of at least one aliphatic conjugated diene and at least one copolymerizable ethylenically unsaturated monomer, said copolymer containing carboxylic acid groups provided by a polycarboxylic acid constituent in turn provided by said unsaturated monomer and said acid constituent being present in minor amount.

3,156,582
APPARATUS AND METHOD FOR TREATING FILAMENTARY MATERIAL

Lewis E. Parker, Charlotte, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 30, 1959, Ser. No. 849,952
6 Claims. (Cl. 117—11)



5. A method of applying to a continuously moving web of material a prescribed amount per unit length of a given substance comprising the steps of moving said web in arcuate contact with part of the surface of a driven roller another part of which dips into a reservoir normally containing a prescribed amount of said substance, feeding said substance in liquid form into said reservoir at a rate proportional to the speed of the web, said rate being constant at a constant speed of the web, sensing any variation in the amount of substance in the reservoir from the prescribed amount, and altering the speed of said driven roller upon sensing any variation in the amount of said substance in the reservoir from the prescribed amount in order to compensate for such variation, said alteration being an increase in the speed of said roller when the amount of substance in the reservoir increases above the prescribed amount and a decrease in the speed of said roller when the amount of substance in the reservoir decreases below the prescribed amount.

3,156,583
APPARATUS FOR RETAINING DRAPES

Wilbert Vandenberg, 8229 Golden Ave., and William M. Wohlwend, 7535 San Miguel, both of Lemon Grove, Calif.

Filed July 20, 1962, Ser. No. 211,346
5 Claims. (Cl. 118—501)

1. An apparatus for retaining drapes, or the like, in pleated position for sizing the same, comprising in combination:

(A) a frame including:

(*a*) two uprights spaced from one another;

(B) a second frame including:

(*b*) two uprights in guided relationship with the two uprights, respectively, of the first mentioned frame;

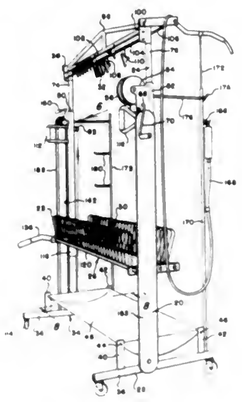
(*c*) said second mentioned frame including a tie member connecting the upper portions of the uprights of the second mentioned frame;

(*d*) means on the tie member for attaching the pleats of the drape thereto;

(C) means on the first mentioned frame and attached to the second mentioned frame for raising and lowering the latter;

(D) a third frame interposed between the uprights of the first mentioned frame;

(*e*) said third frame including a series of pleating tines substantially horizontally spaced from one another;



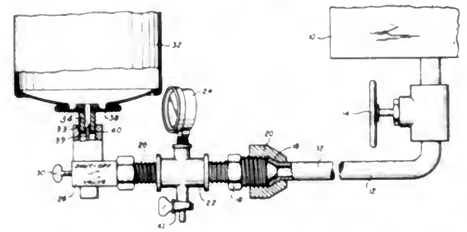
(*f*) means for oscillating the tines toward and away from the drape;

(E) and means on the first mentioned frame for raising and lowering the third mentioned frame.

3,156,584
METHOD AND APPARATUS FOR CLEANING PIPE LINES

Alfred Yurdin, 20 Madison Ave., Maplewood, N.J.

Filed July 9, 1963, Ser. No. 293,734
9 Claims. (Cl. 134—17)

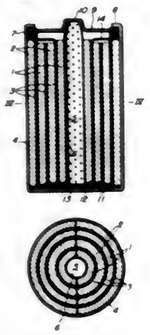


1. A method of cleaning a clogged pipe line by means of a solvent and a carrier for the solvent, which method comprises abruptly releasing from a region of superatmospheric pressure a stream of liquefied gas containing a solvent for softening the material with which the pipe line is clogged, expanding the liquefied gas and the solvent contained therein into the pipe line with the pressure in the pipe line substantially less than the liquefaction pressure of the gas at the existing temperature whereby the gas changes suddenly to the vapor phase with resulting atomizing of the solvent, causing a wave front of the vapor and atomized solvent to flow into the pipe line and up to the region of obstruction, carrying the solvent into contact with the obstruction by means of the wave front and supplying additional vapor and solvent to the pipe line and to the obstruction at progressively higher pressures to exert force against the obstruction, increasing the pressure up to the full pressure of the liquefied gas or such lesser pressure as will break through the obstruction, and continuing the flow of carrier and solvent through the region of the obstruction after break-through of the obstruction to open up the inside cross-section of the pipe line by the combined softening action of the solvent and mechanical erosion by the carrier.

3,156,585
HERMETICALLY SEALED STORAGE BATTERIES

Masaru Yamano and Hironosuke Ikeda, Hirakata-shi, Japan, assignors to Sanyo Electric Co., Ltd., Moriguchi-shi, Japan, a corporation of Japan

Filed Apr. 11, 1962, Ser. No. 187,159
Claims priority, application Japan, July 18, 1961, 36/36,805
7 Claims. (Cl. 136—6)

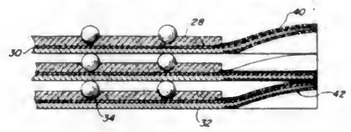


1. A sealed secondary storage cell comprising a hollow casing of electrically conductive material, positive and negative electrodes which are hollow and of the same general shape as the casing disposed concentrically within said casing, each of said electrodes being divided into at least two parts generally along the longitudinal axis of said casing, a first insulating member separating said electrodes, an electrolyte, an outwardly expandable sleeve of electrically conductive material inserted in the central opening defined by the hollow electrode which is innermost of said casing, resilient means for insulating said expandable sleeve and one of said electrodes from said casing, a cover plate for sealing said casing electrically connected to said sleeve, and a member for insulating said cover plate from said casing, said sleeve expanding outwardly to make electrical contact with the parts of the innermost electrode and exerting a force radially thereto which in turn is transmitted to the parts of the outermost electrode thereby urging the parts of the outermost electrode into electrical conducting relationship with said casing.

3,156,586
SEA-WATER BATTERY

Frank Solomon, Lake Success, N.Y., and Renato Di Pasquale, Rutherford, N.J., assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Filed Feb. 8, 1961, Ser. No. 87,943
2 Claims. (Cl. 136—100)



1. A primary electric battery, comprising:
housing means;
a plurality of bipolar electrodes disposed in stacked relationship within said housing means with faces of one polarity confronting faces of opposite polarity of adjacent electrodes and spaced therefrom for enabling the flow of an electrolyte therebetween;
conductor means for drawing electric current from said electrodes, each of said electrodes comprising a plate of one polarity with a layer of a material of opposite polarity disposed thereon, said plates each extending outwardly beyond the confines of the respective layer to form a marginal portion free from said layer, said portion being deformed along the plate edge into a plurality of peripherally spaced undulations which are outwardly flared in funnel-like manner and offset from corresponding undulations of adjacent plates, said undulations being tangent to a plane parallel to said faces;
internal spacer means inwardly of the confines of each of said layers for spacing it from a respective plate of an adjoining electrode to permit the flow of electrolyte between adjacent electrodes, said internal spacer means rising substantially to the level of said undulations; and
an insulating strip overlying said marginal portions and said undulations, said undulations contacting the adjoining face of a respective adjacent electrode through said strip for separating the adjacent electrodes along their marginal portions and for preventing deformation of said marginal portions by a flow of said electrolyte through said housing means between said electrodes.

3,156,587
PRIMARY CELLS

William R. Wolfe, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

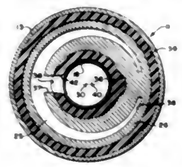
Filed Dec. 10, 1962, Ser. No. 243,495
5 Claims. (Cl. 136—100)

2. A primary voltaic cell whose anode contains as an essential component for supplying electrons to the external circuit an organic ethylenically unsaturated compound containing at least one tertiary amino nitrogen atom directly attached to an ethylenic carbon atom, such organic compound being further characterized by being stable in the presence of aqueous inorganic salt electrolytes, by having a molecular weight below about 650, and by having at least one pair of ethylenic carbon atoms per molecule.

3,156,588
ECCENTRIC SEPARATOR FOR GALVANIC BATTERY

William G. Darland, Jr., Parma, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 27, 1961, Ser. No. 148,297
9 Claims. (Cl. 136—143)

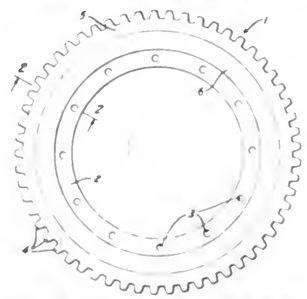


5. In a galvanic battery for use as a power source in a spinning projectile, the battery having a plurality of chemically coated annular plates surrounding a frangible electrolyte containing ampule, the ampule being frictionally supported above a breaker platform, the plates and the ampule incapsulated in a molding compound in a manner to form an ampule cavity and a fill channel, a thin annular separator interposed between each pair of plates to form a plurality of cells, each of the separators comprising an outer annular portion, an inner annular portion, a web connecting said outer annular and inner annular portions over a small area, said inner annular and outer annular portions being radially spaced in a manner to form an eccentric channel therebetween, said inner annular portion having an annular opening therein surrounding said ampule and an entry-port therethrough diametrically opposite said web whereby when the projectile is fired, the ampule is broken against the breaker platform to release the electrolyte and the cells formed by said separators and the plates are filled with electrolyte by the spin of the projectile to activate the battery.

3,156,589
METHOD OF FORMING A COMPOSITE BRONZE GEAR RING

John F. Klement, Milwaukee, Wis., assignor to Ampco Metal, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 27, 1961, Ser. No. 106,030
3 Claims. (Cl. 148—3)

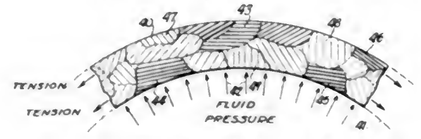


1. A method of forming a composite bronze gear ring, comprising the steps of pouring a molten tin bronze alloy containing from 9% to 14% tin into a rotating mold to centrifugally cast an outer section of the gear ring, cooling the outer section to a temperature in the range of 1800° F. to 1900° F. while rotating the mold, pouring a molten copper base alloy into the mold while rotating the same to centrifugally cast the copper base alloy against the inner surface of the outer section to form an inner section of the gear ring, said copper base alloy having a coefficient of thermal conductivity greater than 22 B.t.u./sq. ft./ft./hr./° F. and being bonded to the first section to provide a composite bronze gear ring, cooling the composite gear ring to a temperature in the range of 700° F. to 1100° F. at a rate faster than 200° F. per minute per inch of section thickness, and cooling the gear ring from said temperature in the range of 700° F. to 1100° F. to room temperature at a rate slower than 500° F. per minute per inch of section thickness to provide a chilled surface for the outer section of the gear ring.

3,156,590
AGE HARDENED TITANIUM BASE ALLOYS AND PRODUCTION THEREOF

Milton B. Vordahl, Beaver, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

Filed Apr. 4, 1960, Ser. No. 19,741
8 Claims. (Cl. 148—12.7)



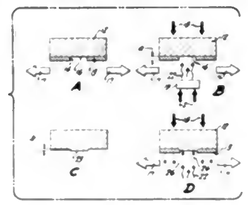
1. A titanium base alloy having an aged alpha-plus-beta microstructure consisting at least in part of alpha nuclei disposed in a beta matrix and forming therewith interfaces which are predominantly oriented substantially parallel to one direction.

8. The method of age hardening an article made of a titanium base alloy having a beta containing microstructure for imparting maximum strength in a given direction thereof, which consists in tensioning said article in substantially only said direction throughout its cross-sectional area with a tension of about 10,000 to 20,000 p.s.i. and aging at elevated temperature while so tensioned, thereby to precipitate alpha nuclei predominantly along preferred interface planes parallel to said direction.

3,156,591
EPITAXIAL GROWTH THROUGH A SILICON DIOXIDE MASK IN A VACUUM VAPOR DEPOSITION PROCESS

Arthur P. Hale, Santa Clara, and Brian D. James, Menlo Park, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed Dec. 11, 1961, Ser. No. 158,298
5 Claims. (Cl. 148—175)

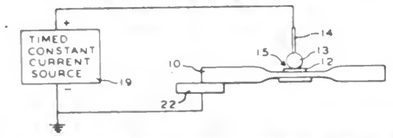


1. An improved process of manufacturing semiconductor devices comprising the steps of forming upon at least one surface of a monocrystalline silicon wafer a sufficient coating of silicon dioxide to leave a coating of silicon dioxide on the surface at the end of the subsequent evaporation step, forming at least one opening in said silicon dioxide to expose a limited area of the surface of said silicon so as to define a mask upon such wafer surface, heating said silicon wafer in a high vacuum to a temperature in the range from about 1050° C. to the melting temperature of silicon, and evaporating silicon adjacent said wafer, whereby epitaxial growth occurs upon said exposed wafer surface in the mask opening and furthermore whereby a portion of said silicon dioxide coating is simultaneously reduced to volatile silicon monoxide, thereby preventing the deposition of a silicon film on the mask while leaving a final thinner coating of silicon dioxide on the surface at the end of the evaporation step.

3,156,592
MICROALLOYING METHOD FOR SEMICONDUCTIVE DEVICE

Rainer Zuleeg, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

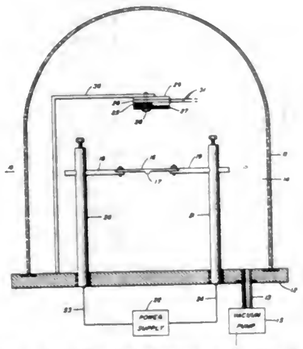
Filed Apr. 20, 1959, Ser. No. 807,481
1 Claim. (Cl. 148—183)



A process for microalloying a material that promotes one conductivity type to a semiconductive material of opposite conductivity type which comprises the steps of plating a first material of one conductivity type on the surface of a relatively thin base region in a semiconductor body of a second material of opposite conductivity type having a thin base region and a relatively thicker base region, contacting to the plated material a plated lead

element having the one conductivity type, passing a positive constant D.C. current in the forward direction of electron flow through the contact under a lead element-to-body voltage proportional to the resistivity of the second material, developing a voltage drop across the resistance of the body, said voltage drop being related to the resistivity of the body, heating the relatively thin base region including Joule heating, establishing said voltage potential between the lead element and the body to determine the heating of the relatively thin base region, confining the heating to the relatively thin base region with said constant current flow, homogeneously distributing the heat in the heat zone around and under the plated material, continuing the current to provide a temperature in the relatively thin base region above the melting point of the plating one conductivity type material to produce a molten alloy phase and distributing the melt evenly at the interface across the area to produce microalloy and solidifying said alloy by cessation of said current.

3,156,593
FABRICATION OF SEMICONDUCTOR DEVICES
Joseph R. Ligenza, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 17, 1961, Ser. No. 153,049
7 Claims. (Cl. 148—187)



1. Method of producing a semiconductor p-n junction device which comprises forming an oxide layer on at least one face of a silicon body, forming a solid alkali hydroxide pattern on selective portions of said oxide layer, said hydroxide being selected from the group consisting of sodium hydroxide, potassium hydroxide, rubidium hydroxide, and cesium hydroxide, heating said hydroxide and said oxide at a temperature below the melting point of said hydroxide to form a water-soluble silicate, washing said face with water to remove said silicate, exposing said face at an elevated temperature to a vapor of a conductivity type determining impuritiy to diffuse said impurity through only those surface portions of said face not covered by the oxide layer, and attaching electrodes to the various formed conductivity-type regions.

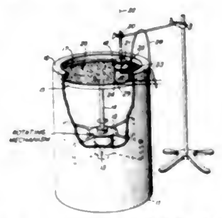
3,156,594
POLYMERIC BASE PROPELLANT COMPOSITIONS CONTAINING LITHIUM FLUORIDE CATALYST
Marvin Duane Horton, Provo, Utah, assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed June 10, 1964, Ser. No. 374,214
4 Claims. (Cl. 149—19)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A propellant composition consisting essentially of the following ingredients:
Ammonium perchlorate
Lithium fluoride
Polybutyl acrylic acid terpolymer
A resin consisting of a condensation product of epichlorohydrin and bisphenol A.

3,156,595
CHEMICAL COMPOSITION FOR PRODUCING HEAT
Albert T. Camp and Gerald L. MacKenzie, Redlands, Calif., assignors, by mesne assignments, to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
No Drawing. Filed Sept. 21, 1961, Ser. No. 139,613
5 Claims. (Cl. 149—87)

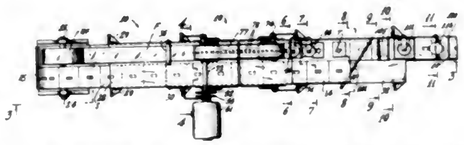
4. A fluid composition for producing heat without gaseous by-products when ignited in a closed system, said composition consisting of an alkali metal selected from the group consisting of lithium, sodium, and potassium; a light metal selected from the group consisting of aluminum, magnesium, and beryllium; and a fluorochlorocarbon oil containing fluorine, chlorine, and carbon atoms in the approximate ratios shown by the formula C_2F_3Cl, said alkali and light metals together constituting about 25% of the total weight.

3,156,596
METHOD FOR POLISHING GALLIUM ARSENIDE
Miles V. Sullivan, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,126
10 Claims. (Cl. 156—17)



1. The method of polishing a crystal of gallium arsenide which comprises the steps of wetting said crystal with a mixture consisting essentially of bromine and methanol, said bromine being present in an amount within the range of 0.001 to 0.05 percent by volume of the total solution and stirring along a plane substantially parallel to and at a distance from the high points of said crystal of the order of the depth of the discontinuities of said crystals.

3,156,597
APPARATUS FOR AND PROCESS OF MAKING TRANSPARENCY SLIDES
Frank Nadaline, Jr., Yonkers, N.Y., assignor to Fotochrome Color Corporation, Bronx, N.Y., a corporation of New York
Filed Jan. 25, 1961, Ser. No. 84,869
23 Claims. (Cl. 156—108)



9. A process for making transparency slides comprising transversely cutting pieces from a strip of film and depositing the cut pieces in spaced relation to each other on equally spaced windows formed on one longitudinal

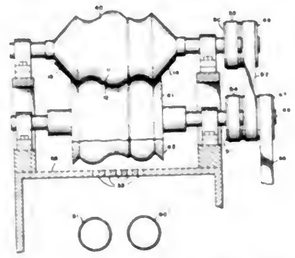
side of a central fold line in a sheet strip by feeding the film strip and sheet strip together longitudinally in the same direction, folding the other side of said sheet strip about said fold line to overlie the first side, and said cut pieces, said other side having windows registering with the first windows upon folding said other side, and transversely cutting said sheet strip between registering windows.

3,156,598
METHOD OF MAKING A FIBER REINFORCED RESIN TUBULAR ARTICLE
Wesley G. Martin, Whitefish Bay, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed June 12, 1961, Ser. No. 120,868
4 Claims. (Cl. 156—161)



1. A method of fabricating a fiber-reinforced resin tubular article, comprising winding long substantially continuous reinforcing fibers on a generally cylindrical mandrel in a generally helical pattern, impregnating the fibers with a liquid unpolymerized thermosetting resin, partially polymerizing the resin to a solid deformable state, prestressing the fibers in tension while said resin is in the solid deformable state, and thereafer substantially completely polymerizing the resin to the infusible state while maintaining the prestressed condition on the fibers to provide an integral article having the compressive stress in the polymerized resin substantially balanced by the tension in the fibers and having a uniform distribution of fibers and resin throughout the thickness of the article.

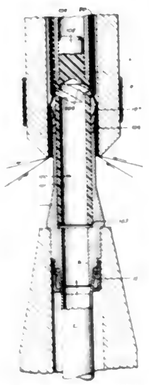
3,156,599
METHOD AND APPARATUS FOR MANUFACTURING CARDBOARD MOLDING
Roland R. Keesee, 275 Plainview Circle, North Little Rock, Ark.
Filed Sept. 7, 1960, Ser. No. 56,089
18 Claims. (Cl. 156—196)



1. The method of forming a molding strip comprising securing a continuous paper flap to each longitudinal edge of a relatively stiff cardboard strip, said flaps being disposed in overlapping relation to the respective margins of the strips and extending outwardly therefrom, aqueously moistening the strip and flaps and heating the strip until it becomes relatively soft, molding the strip while soft to a decorative shape, bending the flaps inwardly, each along a longitudinal line adjacent to its respective longitudinal edge of the strip, reducing water in the strip while the flaps are in the bent position to restore stiffness therein, and pressing the flaps to a smooth surface finish.

5. Apparatus for forming a molding strip comprising means for securing a continuous paper flap to each longitudinal edge of a stiff cardboard strip, means for aqueously moistening the strip and flaps and heating the strip to render it soft, means for molding the soft strip to a desired decorative shape, means for arching the molded strip longitudinally from a normally straight position and simultaneously bending the flaps inwardly on the concave side of the arched strip along longitudinal lines, means for reducing water in the strip to restore its stiffness, and means for pressing the flaps to a smooth surface finish.

3,156,600
APPARATUS FOR CONTINUOUSLY PRODUCING A RUBBER COATING
Jacques Fontaine, Paris, France, assignor to Les Tuyaux Flexibles Rudolph, Paris, France
Filed July 25, 1960, Ser. No. 45,118
Claims priority, application France July 28, 1959
7 Claims. (Cl. 156—393)

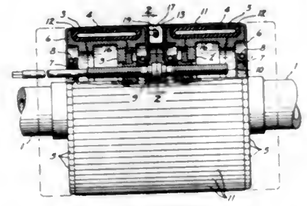


1. In a machine for lining tubular fabrics internally by means of a liquid lining compound, comprising a vertical elongated sleeve having an internal diameter substantially equal to the external diameter of the tubular fabric, and provided with a heating means above a predetermined level, means for continuously pulling said tubular fabric through said sleeve, the provision of a second sleeve within and coaxial relatively to said first elongated sleeve penetrating into the lower part of said first sleeve below said level, and having an external diameter just large enough to permit the fabric to pass between said first sleeve and said second sleeve, said second sleeve being closed at its upper end and provided with passage means near said closed end whereby a liquid lining compound may be laterally discharged, means to introduce a liquid lining compound inside said second sleeve to pass laterally through said passage means, and guide means, having a cylindrical elongated form, internal of and coaxial with respect to said first sleeve, and having an external diameter just large enough to permit the lined fabric to pass between said guide means and said first sleeve, said guide means extending from the closed upper end of said second sleeve up to the upper end of said first sleeve.

3,156,601
TIRE BUILDING DRUM
Virgil E. Henley, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 19, 1961, Ser. No. 160,573
5 Claims. (Cl. 156—415)

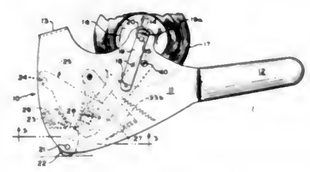
1. In a tire building drum having a supporting shaft and two externally cylindrical expansible and contractible sections connected to turn in unison, means for expanding said sections and means for adjusting said sections axially toward or away from one another, the combination

therewith of an expansible and contractible band bridging the space between said drum sections, telescopically receiving said sections and conforming to the curvature thereof, said band comprising interconnected segments in the form of straight narrow substantially flat spring steel strips disposed edge to edge and slidably engaging the external surfaces of said end sections, a metal positioning block attached to the interior face of each segment substantially midway between its ends, said blocks having inwardly converging circumferentially spaced faces that abut when the drum is contracted to its minimum diameter, said blocks being of the same axial width with the side faces perpendicular to the drum axis and of a



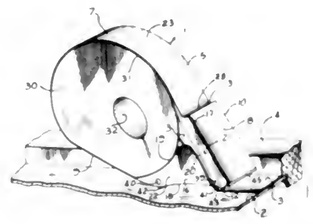
radial length greater than the radial expansion of the drum, means for applying radial pressure to said bridging band consisting of elastic means attached to said blocks for maintaining a radial inward thrust thereon, and spaced annular plates attached to said shaft and having guide faces extending inwardly from their peripheral edges that are perpendicular to the drum axis and that engage the axially spaced faces of said blocks during the entire expanding movement of the drum to hold said segments parallel to the drum axis and against axial movements during expansion and contraction of the drum and that permit free radial movement of the individual blocks into and out of the space between the plates for removal or replacement.

3,156,602
TAPE DISPENSER
George H. Fritzinger, 18 Oakridge Road, West Orange, N.J.
Filed Jan. 15, 1962, Ser. No. 166,293
8 Claims. (Cl. 156—523)



1. A hand applicator for wide heavy rolls of industrial pressure sensitive tape comprising a housing having two laterally spaced side walls merging into an extending handle at one end and joined at the top by a crossbar at the other end with open end space between the walls below said crossbar and with open space at the top between the crossbar and handle, said housing being adapted to be manipulated by gripping the handle with one hand and by placing the palm of the other hand on said crossbar, a core for supply roll of tape journaled between the upper portion of said side walls midway between said handle and crossbar, an applicator roller journaled between said side plates at the bottom of said other end thereof for rolling tape lead from said supply roll on to a surface to be covered with with tape, a mechanism in said housing for cutting the tape leading from said supply roll on a line just back of said applicator roller, and a rocker mechanism pivoted between said side walls and coupled to said cutting mechanism, said rocker being biased into an unoperated position and being adapted to elongate the path of the free tape from the supply roll to said applicator roller and thereupon to operate said cutting mechanism as the rocker is swung upwardly towards said crossbar from its unoperated position, said rocker mechanism including means for releasably gripping the tape at a distance back from where it is cut by said cutting mechanism when said cutting mechanism is operated whereby to present a starting length of tape past said applicator roller when the rocker mechanism is returned to unoperated position, and said rocker mechanism having a trigger in said open end space at a distance below said crossbar enabling the user to actuate the rocker mechanism by lifting motion of the fingers of said other hand as the palm of the hand is resting on said crossbar.

3,156,603
TAPE DISPENSER
Clifford C. Robinson, 5217 Woodland, Kansas City, Mo.
Filed Jan. 2, 1962, Ser. No. 163,928
2 Claims. (Cl. 156—577)



1. A hand held tape dispenser adapted to lay strips of pressure sensitive adhesive tape on a surface selectively in a straight path and a curved path and closely adjacent an abutting surface extending outwardly from said surface comprising:

(*a*) an integral case having a forward portion and first and second spaced parallel thin side walls, said side walls each having an aligned peripheral edge,

(*b*) said integral case including an end wall extending between and connecting said side walls at said peripheral edges,

(*c*) a pair of spaced interrupted portions on said end wall respectively forming a forward opening at said forward portion and a rear opening spaced rearwardly of said forward opening,

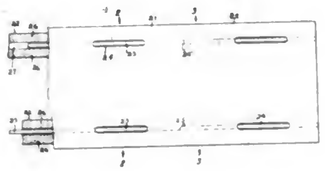
(*d*) means associated with said first side wall for rotatably supporting a supply of pressure sensitive adhesive tape in said case,

(*e*) forward and rear parallel axles fixed at opposite ends thereof to said first and second side walls and extending between said first and second side walls respectively adjacent said forward and rear openings, and

(*f*) a tape laying roller on said forward axle and a guide roller on said rear axle, said rollers respectively having a portion extending through said respective openings and projecting externally of said case,

(*g*) said end wall between said interrupted portions being recessed behind said roller portions allowing simultaneous contact of said roller portions on said surface for guiding said guide roller simultaneously with straight path tape laying by said tape laying roller, said dispenser being selectively tilted upwardly about said tape laying roller for disengaging said guide roller from said surface for curved path tape laying.

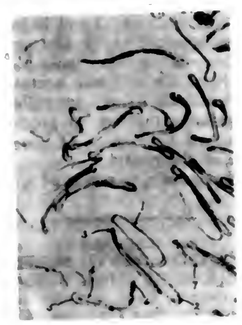
3,156,604
REINFORCED CLOSURE AND RETAINER PANELS
David H. Blatt, Melrose Park, Pa., assignor to Walnut Industries, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1961, Ser. No. 146,886
4 Claims. (Cl. 161—113)



1. Reinforced non-metallic flexible barrier material adapted for use as paneling for constructing bulkheads, partitions and like barrier walls to cover an open space extending between relatively fixed structural elements of a load-confining compartment comprising, in combination, a paper web of predeterminedly fixed uniform width but of an indeterminate length substantially exceeding the expanse of said normally open space, a plurality of relatively narrow flat tapes of non-metallic flexible material of tensile strength greatly exceeding that of the paper web, said tapes extending in transversely spaced parallel relation to each other and the side edges of said paper web continuously along the full length of and in flatwise engagement with one surface of said paper web, and a separate paper backing for the tapes coextensive in length with the paper web and adhesively bonded thereto in overlying relation to said tapes whereby the latter are each sandwiched between bonded-together laminates of web and backing, said tapes being partially adhesively bonded to one of said laminates so as to normally constitute it a part of said one laminate but being individually strippable from the paneling without destroying the integrity of the paneling, at least one of said laminates being provided with recurring means spaced along the length thereof for exposing and rendering accessible longitudinally spaced portions of the tapes for securing the tape-exposed portions of the paneling to the supporting walls therefor and whereby, when the barrier material is transversely severed, the severed end portions of the paper web may be disposed in overlapped relation and the severed end portions of the tapes may be freely lifted out of the plane of the barrier material and overlapped for securement together in overlying relation to the overlapped portions of the paper web.

3,156,605
REGENERATED CELLULOSE FIBER
Joseph H. Anderer, Springfield, Anthony P. Da Vinci, Trainer, and Thomas F. McHugh, Aston Township, Chester, Delaware County, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 25, 1960, Ser. No. 17,712
16 Claims. (Cl. 161—169)

1. As an article of manufacture, a textile fabric comprising thin-walled regenerated cellulose fibers having an average wall thickness not exceeding about three microns and having a water-retention of at least about double that of a solid fiber of like mass and composition, the textile



fabric being further characterized by its resistance to waterspotting.

3,156,606
RUBBER COMPOSITION AND ARTICLE OF MANUFACTURE CONTAINING SAID COMPOSITION
Morris Blumberg, Newark, Del., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Apr. 4, 1960, Ser. No. 19,467
2 Claims. (Cl. 161—176)

2. An article of manufacture comprising a layer of a rubber composition comprising a major portion of a synthetic rubber comprising the polymerization product of styrene and butadiene and a minor portion of N,N'N''-tripropylene phosphoric triamide and a layer of nylon cord impregnated with an adhesive material, said nylon cord layer being bonded by said adhesive material to said rubber layer.

3,156,607
LOBED FILAMENT
Donald R. Strachan, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 31, 1961, Ser. No. 113,830
12 Claims. (Cl. 161—177)



1. A continuous textile filament having a substantially uniform oblong cross section along its length prepared from a synthetic fiber-forming polymer, said cross section having a major to minor axis ratio within the range 1.3 to 1.8, tip radius ratios within the range 0.15 to 0.6, and from six to eight lobes interconnected by smooth continuous lines which define its periphery, said lobes and said interconnecting lines being arranged about the periphery of said cross section to provide symmetry about at least one of said axes.

3,156,608
BONDING OF THERMOPLASTIC MATERIALS
Jack M. Kamins, New York, N.Y., and Seymour R. Russell, Metuchen, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed July 28, 1960, Ser. No. 45,933
3 Claims. (Cl. 161—269)

1. A method of bonding cellulose acetate sheets one to the other, which comprises applying to the surfaces to

be bonded a dispersion of particles of cellulose acetate in between about 7 and 24 parts by weight of a sprayable dispersion medium per part of particles, said particles having a size between about 0.1 and 50 microns, said medium comprising about 2 to 12 parts of a non-volatile plasticizer for cellulose acetate, about 2 to 18 parts of a volatile non-solvent for cellulose acetate, and about 1 to 12 parts of a volatile solvent for cellulos acetate, and pressing said surfaces together to produce a laminated article characterized by absence of distortion along the bonded surface of the sheets.

3. A laminated article as produced by the method of claim 1.

3,156,609
IODOCHLOROETHYL VINYL SULFONE AND ITS USE FOR COMBATTING WHEAT BUNT

Roy B. Flay, Concord, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,851
5 Claims. (Cl. 167—22)

2. A method of treating fungus-infested wheat which comprises contacting said wheat with a fungitoxic amount of iodochloroethyl vinyl sulfone.

3,156,610
METHOD OF CONTROLLING PESTS WITH AMINOALKYL-CARBAMIC ACIDS

John H. Wotiz, Mentor, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,191
4 Claims. (Cl. 167—22)

4. The method of destroying pests which comprises contacting said pests with an active amount of a compound of the structure

$$H_2N(CH_2)_m[(R^3)(CH_2)_2(R^4)(CH_2)_2]_g(CH_2)_mNHCOOH$$

wherein R^3 and R^4 are alkylene, m is an integer from 2 to 22, inclusive, and g is an integer from 1 to 100, inclusive.

3,156,611
NEMATOCIDAL USE OF TETRAHALOETHYLSULFENYL HALIDE

Edward D. Weil, Lewiston, Emil J. Geering, Grand Island, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,870
3 Claims. (Cl. 167—22)

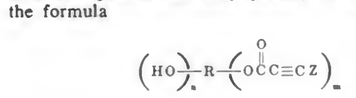
1. A method of destroying nematodes which comprises applying to the locus to be treated a toxic amount of a compound having the formula C_2HX_4SX where X is a halogen selected from the group consisting of chlorine and bromine.

3,156,612
METHOD OF INHIBITING GROWTH OF FUNGI AND BACTERIA WITH ESTER OF ACETYLENIC ACID AND POLYOL

John M. Butler, Dayton, Ohio, and Lee A. Miller, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 22, 1963, Ser. No. 253,062
9 Claims. (Cl. 167—22)

1. The method of inhibiting the growth of fungi and bacteria which comprises exposing said fungi and bacteria to a growth inhibiting quantity of a compound of the formula



wherein R is selected from the class consisting of hydrocarbon radicals having from 2 to 18 carbon atoms and halohydrocarbon radicals of from 2 to 18 carbon atoms and is linked to any hydroxyl and acetylenic carboxyl moieties through different carbon atoms thereof, with no two of any of said hydroxyl and acetylenic carboxyl moieties being bonded to the same carbon atom, n is an integer of from 0 to 3, m is an integer of from 1 to 4 and the sum of n plus m is from 2 to 4, and Z is selected from the class consisting of hydrogen, alkyl radicals of from 1 to 5 carbon atoms, and aryl radicals of from 6 to 10 carbon atoms.

3,156,613
METHOD OF REPELLING BIRDS WITH SUBSTITUTED PYRIMIDINE COMPOUNDS

Lyle D. Goodhue and Kenneth E. Cantrel, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 24, 1959, Ser. No. 835,407
16 Claims. (Cl. 167—46)

1. A method of repelling birds which comprises subjecting the locus from which birds are to be repelled to the action of 2,4-diethyl-5-methyl-6-aminopyrimidine.

2. A method of repelling birds which comprises subjecting the locus from which birds are to be repelled to the action of 2-4-diethyl-5-methyl-6-aminopyrimidine acetate.

3,156,614
MEDICINAL COMPOSITIONS AND METHOD FOR RELIEVING COUGH

Donald R. MacDonnell, Radnor, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,867
9 Claims. (Cl. 167—54)

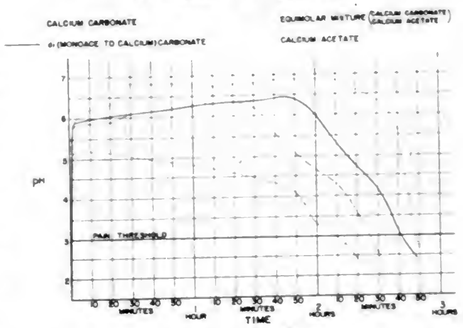
1. The method of relieving cough associated with upper respiratory tract irritation which comprises the nasal administration of a vapor dosage unit of from about 0.25 mg. to about 1.50 mg. of 2-amino-6-methylheptane.

3,156,615
ANTACID COMPOSITION AND METHOD OF USING SAME

Ruth C. Denison, Signal Mountain, Tenn., assignor to Mrs. John W. Bradley, Lookout Mountain, Tenn.

Original application July 14, 1958, Ser. No. 748,481. Divided and this application Jan. 22, 1962, Ser. No. 173,605

4 Claims. (Cl. 167—55)



1. A non-systemic antacid composition in dosage unit form for the relief of gastric hyperacidity which comprises di(monoacetocalcium) carbonate and a pharmaceutical carrier, said di(monoacetocalcium) carbonate having an acid neutralizing capacity such that when 2 grams of the compound are added to 150 ml. of aqueous acid solution at pH 1.6 at body temperature the pH value of the solution rises to at least 4.0 in not more than 5 minutes and remains above 4.0 for at least 1 hour.

3,156,616
COMPOSITION AND METHOD FOR CORRECTING FOODS AND BLOOD CONDITIONS HAVING CLOT PROMOTING CHARACTERISTICS

James Fraser Mustard, Toronto, Ontario, Canada, assignor to Her Majesty in right of Canada

Filed Nov. 14, 1958, Ser. No. 774,004
4 Claims. (Cl. 167—65)

1. A method for reducing the blood clotting rate in humans which results from ingested fatty foods containing blood clotting promoting factors consisting essentially of phosphatidyl ethanolamine, which comprises feeding humans fatty foods containing, as an additive for inhibiting the clotting of blood due to said phosphatidyl ethanolamine, Folch Fraction III, in an amount of from at least five times by weight, based on the weight of the phosphatidyl ethanolamine content of said food, to about 30 grams of said fraction to provide a normal dosage of said fraction with said food of at least 30 to 40 mgm. per kilogram of body weight of the human ingesting said food, whereby the blood clotting rate of said human is not increased by said food and the blood clotting promoting factors therein.

3. An edible composition for ingestion by humans consisting of a fatty food containing blood clotting promoting factors consisting essentially of phosphatidyl ethanolamine which increase the blood clotting rate of humans; and, as an additive for inhibiting the clotting of blood caused by the said phosphatidyl ethanolamine content of said food, Folch Fraction II in an amount of from at least five times by weight, based upon the weight of the phosphatidyl ethanolamine content of said food to about 30 grams of said fraction, to provide a normal dosage of said fraction with said food of at least 30 to 40 mgm. per kilogram of body weight of the human ingesting said composition whereby the blood clotting rate of said human is not increased by said edible composition.

3,156,617
THERAPEUTIC COMPOSITIONS OF KANAMYCIN 2-(PARA-TERTIARY-AMYLPHENOXY)-n-BUTYRATE

Alphonse P. Granatek, Syracuse, and Frank H. Buckwalter, De Witt, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,244
5 Claims. (Cl. 167—65)

3. A composition in oral unit dosage form useful in the treatment of urinary tract infections comprising at least 250 mg. kanamycin base activity as kanamycin 2-(para-tertiary-amylphenoxy)-n-butyrate and at least 50 mg. of a member selected from the group consisting of 2,6-diamino-3-phenylazopyridine and the nontoxic acid addition salts thereof.

3,156,618
SUBSTANCE POSSESSING ANTIMICROBIAL ACTIVITY AND DISEASE CONTROL ACTIVITY ON SOME PLANT DISEASES AND THE METHOD FOR ITS PRODUCTION

Hachiro Oku and Toshiro Nakanishi, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan

Filed Jan. 24, 1963, Ser. No. 253,721
Claims priority, application Japan, Feb. 8, 1962, 37/3,940
2 Claims. (Cl. 167—65)

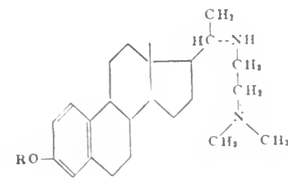
1. Ascochytin, a substance being a slightly acidic, light yellow needle crystal; containing the elements carbon, hydrogen and oxygen; being very soluble in chloroform, moderately soluble in methanol, ethanol, acetone, ethylacetate, ethylether, benzene, ethyleneglycol, sparingly soluble in n-hexane and petroleum ether, and almost insoluble in water; giving a strong greenish fluorescence in solution under ultra-violet ray, giving a red color with ferric chloride reagent in ethanol, decolorizing potassium permanganate, giving negative Fehling's test, being decolorized with magnesium acetate, sodium hydroxide and hydrosulfite; melting at a temperature in the range of 200~201° C. with decomposition; having a degree of optical rotation $[\alpha]_D^{25}$ of −85.99° (1% in chloroform); having analytical data: C, 65.66; H, 5.91; O, 28.43; having visible and ultra-violet absorption spectra in ethanol solution exhibiting two maxima at 415 and 286 mμ; and exhibiting characteristic absorptions in the infrared region on the spectrum in potassium bromide pellet, at the following frequencies expressed in reciprocal centimeters: 3100, 2950, 1640, 1590, 1530, 1460, 1410, 1340, 1250, 1200, 1160, 1120, 1070, 1050, 1005, 960, 935, and 835.

3,156,619
20α(β-[N,N - DIMETHYL - AMINO] - ETHYLAMINO)-19 - NOR - $\Delta^{1,3,5(10)}$ - PREGNATRIENES, PROCESS FOR PREPARATION THEREOF AND METHOD OF TREATMENT

Daniel Bertin, Montrouge, and Lucien Nedélec, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed June 17, 1963, Ser. No. 288,551
Claims priority, application France, June 25, 1962 901,845; Sept. 24, 1962, 910,263; May 6, 1963, 933,795
31 Claims. (Cl. 167—65)

28. A method of treating hyperlipemia and hypercholesterolemia comprising administering daily an effective amount of an amino steroid selected from the group consisting of 20α-(β-[N,N-dimethylamino]-ethylamino)-19-nor-$\Delta^{1,3,5(10)}$-pregnatrienes having the formula:



wherein R is selected from the group consisting of hydrogen, a lower alkyl having 1 to 7 carbon atoms and an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms and their non-toxic, pharmaceutically acceptable acid addition salts.

3,156,620
ATTENUATED LIVE RABIES VACCINE AND METHOD OF PREPARING THE SAME

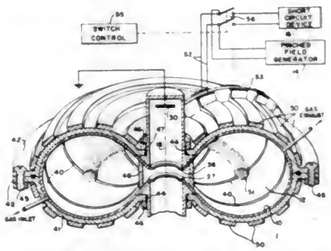
George Roberts Sharpless, Pearl River, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Jan. 10, 1962, Ser. No. 165,298
7 Claims. (Cl. 167—78)

1. A process of preparing rabies virus vaccine which comprises propagating a live rabies virus in a tissue culture medium of avian embryo cells containing at least 0.5% hydrolyzed soluble gelatin.

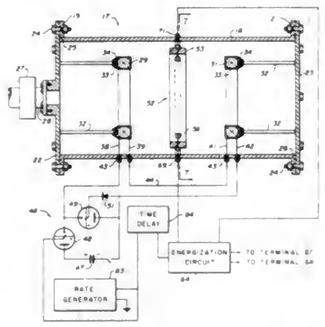
3,156,621
HIGH TEMPERATURE GAS CONFINEMENT ARRANGEMENT
Vernal Josephson, Palos Verdes Estates, Calif., assignor to Space Technology Laboratories, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 14, 1960, Ser. No. 75,759
4 Claims. (Cl. 176—1)

1. Apparatus for providing stable confinement of a gaseous plasma, the particles of which have high kinetic energizes, the apparatus including in combination: a hollow torus within which a gaseous plasma is maintained; a segmented resonant cavity microwave member secured to inner surfaces of said torus; a magnetic drive device including conductors coupled to the outer surface of said torus for establishing a high density current in the gaseous plasma, the current being directed along a selected path and generating an encircling magnetic field; and an



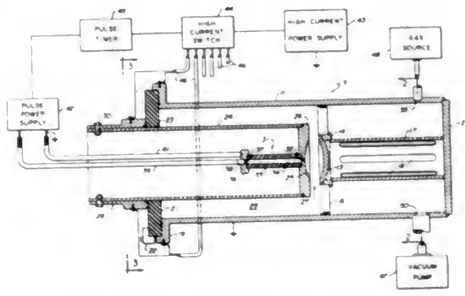
electron discharge device providing a velocity modulated electron stream electromagnetically coupled and interacting with the segmented resonant cavity for providing radio-frequency magnetic fields therein which are crossed with respect to the encircling magnetic field about the current, the radio frequency magnetic fields being substantially greater than the encircling magnetic field.

3,156,622
APPARATUS FOR HEATING IONS IN A PLASMA
Milton M. Hill, Livermore, and Donald F. Martin, Alamo, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 17, 1961, Ser. No. 127,084
26 Claims. (Cl. 176—7)



1. A plasma energization process comprising the steps of establishing in an evacuated space, a radially inhomogeneous axially symmetric magnetic field having spaced regions of increased magnetic field intensity therein defining a containment zone, establishing a ring of plasma coaxially of said field at a transverse median plane between said regions of increased magnetic field intensity, increasing the magnetic field intensity of said field with respect to time to spiral particles from said ring radially inward to the central axial region of said zone whereby the energy of said particles is increased non-adiabatically and energetic particles are accumulated in said zone, providing a radially homogeneous axially symmetric magnetic field having spaced regions of increased magnetic field intensity therein, and increasing the intensity of said last named field with respect to time to further increase the energy of said energetic particles adiabatically.

3,156,623
PLASMA SWITCHING PINCH TUBE
William R. Baker, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 2, 1962, Ser. No. 177,140
8 Claims. (Cl. 176—8)

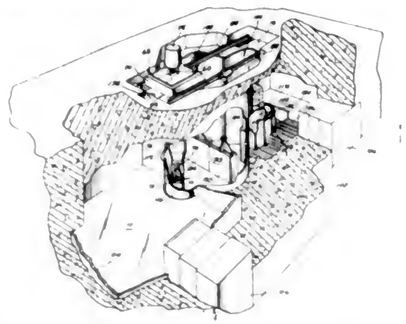


1. In apparatus for generating and heating an ion-electron plasma, the combination comprising:
(*a*) a hermetically sealed housing formed of electrically conductive material,
(*b*) an insulator mounted within said housing,
(*c*) a first electrode disposed within said housing in spaced apart relationship from said insulator and from the wall of said housing,
(*d*) a long conducting shaft disposed in said housing and extending from said insulator to the region of said first electrode, said shaft having an end surface facing said first electrode and spaced apart therefrom to form a second electrode,
(*e*) a plurality of electrical conductors extending from said first electrode to the wall of said housing in a direction substantially perpendicular to that of said shaft, said conductors being spaced apart to provide passageways for plasma therebetween,
(*f*) means for evacuating said housing,
(*g*) means for admitting gas to said housing,
(*h*) an electrical power supply connected between said housing and said shaft at points remote from said first and second electrodes,
(*i*) a discharge initiating means disposed centrally within said housing and adjacent said first and said second electrodes, and
(*j*) means correlating activation of said discharge initiating means with activation of said power supply.

3,156,624
NUCLEAR REACTOR SYSTEM
Charles E. Clifford and Harold Robert Zeitlin, Del Mar, and Knud Antonsen, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1961, Ser. No. 85,685
8 Claims. (Cl. 176—12)

1. A nuclear reactor system comprising a tank having two projections disposed at opposite ends of the tank, a fluid coolant within said tank, a first irradiation facility

disposed adjacent one of said projections, a second irradiation facility disposed adjacent the other of said projections, a reactor core within said tank, a carriage, means for supporting said carriage for movement between said projections, the projections being of such a size as to receive said core, means connecting said core to said carriage so that said carriage supports said core in spaced relationship to the bottom of said tank, means on said carriage for moving said carriage on said supporting means, and a movable gate of radiation shielding material normally disposed between said projections,



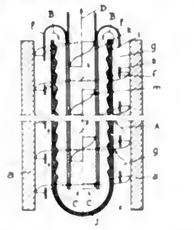
said gate being movable horizontally to a position which permits passage of said core between said positions.

3,156,625
CORE FOR A SUPERCRITICAL PRESSURE POWER REACTOR
Harold Harty and James J. Regimbal, Richland, Kadzuhisa G. Toyoda, Pasco, and Richard D. Widrig, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 22, 1962, Ser. No. 232,315
3 Claims. (Cl. 176—40)



1. A core for a supercritical pressure power reactor comprising a plurality of parallel, elongated fuel elements each containing a plurality of pressure tubes for coolant, and a plurality of control elements comprising one portion containing a material having a high capture cross section for thermal neutrons and a follower portion of a material having a low capture cross section for thermal neutrons, each of said control elements consisting of a grid encompassing and interpenetrating a number of said fuel elements, the number and arrangement of control elements being such that each fuel element in the reactor is surrounded by a control element at all times.

3,156,626
NUCLEAR REACTOR SUPPLYING SUPERHEATED STEAM
André Huet, 48 Ave. du President Wilson, Paris, France
Filed Mar. 12, 1962, Ser. No. 178,965
Claims priority, application France, Mar. 22, 1961, 856,382, Patent 1,292,317
7 Claims. (Cl. 176—54)



1. In a boiling liquid nuclear reactor, a plurality of fuel rods disposed in circumferentially-adjoining relationship to enclosed between them a cylindrical space, said space being adapted to have boiling liquid flow upwardly therethrough, means in said space for separating steam from the boiling liquid inside said cylindrical space, and at least one additional fuel rod disposed inside said cylindrical space to superheat the steam which is released towards the top of said space, said additional fuel rod being hollow, and means for guiding said steam first over the exterior surface and then over the interior surface of said additional fuel rod, whereby said steam can be superheated under controlled conditions which are not influenced by the conditions under which the steam is initially generated by said first-named plurality of fuel rods.

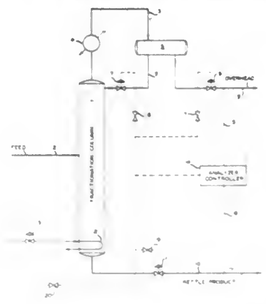
3,156,627
CARAMELIZED GLUCOSE IN GLUTAMIC ACID PRODUCTION
Guido M. Miescher, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,257
8 Claims. (Cl. 195—47)

1. In a process for the production of glutamic acid by cultivating glutamic acid producing strains of the organism *Brevibacterium divaricatum* in an aqueous nutrient medium containing a pure sugar source, a nitrogen source, a mineral source, and a growth promoting material, the improvement which comprises carrying out the fermentation in the presence of caramelized glucose in small amounts sufficient to initiate growth of said *Brevibacterium divaricatum*.

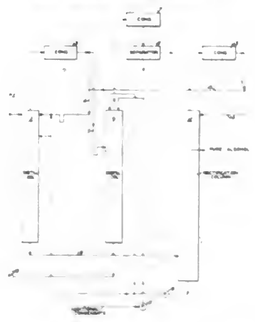
3,156,628
DISTILLATION PROCESS CONTROLLED BY THE CONCENTRATION OF AN IMPURITY IN THE PRODUCT STREAMS
Owen D. Larrison, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,750
14 Claims. (Cl. 202—40)

1. The method of controlling distillation separation of a multi-component heavier fluid from a multi-component lighter fluid comprising passing a mixture of said heavier fluid and said lighter fluid to a fractionation zone, heating said mixture in said zone to cause separation by vaporization of said lighter fluid from said heavier fluid,

withdrawing said lighter fluid as vapor from an upper portion of said zone, cooling the withdrawn lighter fluid to cause condensation thereof, returning a portion of said withdrawn lighter fluid to an upper portion of said zone as reflux, removing another portion of said withdrawn lighter fluid as a product of the separation, withdrawing said heavier fluid from a lower portion of said zone as another product of the separation, determining as impurity the concentration of a heavier component in the withdrawn lighter fluid and producing a first signal proportional thereto, determining as impurity the concentration of a lighter component in the withdrawn heavier fluid and producing a second signal proportional thereto, producing a third signal proportional to the ratio of said first signal to said second signal, and controlling in response to said third signal the rate of said returning said portion of said withdrawn lighter fluid.

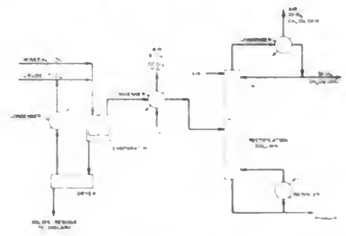


3,156,629
PROCESS FOR THE PRODUCTION OF A HIGHLY PURIFIED ALCOHOL
Wilhelm Ester, Herne, Germany, assignor to Bergwerksgesellschaft Hibernia A.G., Herne, Germany, a German corporation
Filed Oct. 5, 1960, Ser. No. 62,072
Claims priority, application Germany Feb. 17, 1958
6 Claims. (Cl. 202—57)



1. A process for the purification of crude alcohol mixtures present in solution in concentration of about 10–15% and containing impurities prepared by a phosphoric acid catalyzed alcoholation of ethylene by alkali treatment, distillation and rectification thereof comprising introducing the crude alcohol mixture into the uppermost portion of a first distillation zone, introducing an aqueous alkaline solution having a pH within the range of 8 to 12 at a temperature of from about 80 to 100° C. but below the boiling point thereof into said uppermost portion of said first distillation zone at a point below the introduction of the crude alcohol mixture, withdrawing overhead from said first distillation zone a vaporous mixture containing impurities with some entrained alcohol, condensing said vaporous mixture and introducing at least a portion of the condensed vapors into the upper portion of a second distillation zone, introducing an aqueous alkaline solution at a temperature of about 80 to 100° C. but below the boiling point thereof into the upper portion of said second distillation zone at a point somewhat above that of the introduction of the condensed vapors, withdrawing overhead from said second distillation zone a vaporous mixture substantially free of alcohol, withdrawing from the bottom portion of said second distillation zone an aqueous alcohol solution for introducing into said uppermost portion of said first distillation zone with said crude alcohol, withdrawing from the bottom portion of said first distillation zone an aqueous alcohol solution, introducing said aqueous alcohol solution from said first distillation zone into a lower intermediate portion of a rectification zone and withdrawing from the upper portion of said rectification zone a substantially pure alcohol fraction.

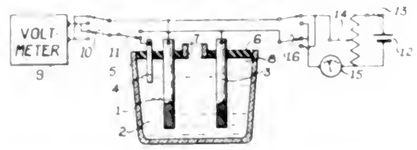
3,156,630
PURIFICATION OF TITANIUM TETRACHLORIDE BY DISTILLATION IN THE PRESENCE OF AN OIL AND THE USE OF AN INERT GAS PURGE
Frederick Fahnoe, Ashtabula, Ohio, and John A. Sturm, Tuscola, Ill., assignors, by mesne assignments, to National Distillers and Chemical Corporation, a corporation of Virginia
Filed Dec. 19, 1960, Ser. No. 76,791
8 Claims. (Cl. 202—57)



1. An improved process for the purification of crude titanium tetrachloride containing about 0.5 to 4.0% by weight of solid material which comprises adding about 0.10 to 0.30% by weight of a carbonizable oil to the crude titanium tetrachloride, evaporating titanium tetrachloride containing chloro-acetyl chlorides from the resulting mixture to separate non-volatile impurities, condensing said titanium tetrachloride in the presence of an inert gas purge to remove a portion of low boiling impurities; distilling said condensed titanium tetrachloride in a distillation zone to remove the remaining low boiling impurities in the presence of an inert gas purge added to the upper portion of said distillation zone, and recovering purified titanium tetrachloride substantially free of chloroacetyl chlorides.

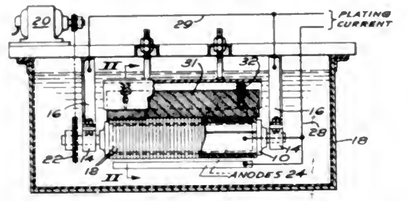
3,156,631
METHOD OF MEASURING CORROSION OF ELECTRONIC CONDUCTORS BY NON-GASEOUS IONIC CONDUCTORS
Robert G. Seyl, 1123 Mulford St., Evanston, Ill.
Filed Sept. 16, 1959, Ser. No. 840,266
8 Claims. (Cl. 204—1)

1. In a method for measuring the corrosion current of the interface of an electronic conductor surface and a non-gaseous ionic conductor, the method of measuring a Transition Point of line slope change occurring in an initial range of current-potential relationship, which method comprises the steps of forming an area of the interface to be measured and an area of separate and opposed interface in a combination of shape and size and opposed position of the two interfaces selected to substantially maintain range of variation in value of polarized electrode potential subsequently produced on the interface to be measured within range of variation occurring to its Free Electrode Potential, establishing a reference electrode within the ionic conductor separated from the interface to be measured by a distance to include total polarization voltage in polarized electrode potential measurement and positioned to substantially exclude voltage produced by ionic conductor resistance to polarizing D.C. current subsequently passed between the two interfaces, selecting a D.C. voltage delivery system from a class producing substantially reproducible manner of approach of the current-potential relationship toward equilibrium values of current and potential, at a selected instant of time during the progress of the corrosion operating the D.C. voltage delivery system to deliver D.C. voltage to the electronic conductors of the opposed interfaces of value to polarize the interface to be measured to an electrode potential which defines one limit to a range of current-potential relationship substantially including the Free Electrode Potential and extending beyond the Transition Point of line slope change occurring at minimum polarization voltage in the linear relationship of voltage and current, measuring the value of the polarizing D.C. current and the value of the resulting polarized electrode potential upon the initial attainment of a rate of change of the current-potential relationship selected to be slightly greater than the rate of change occurring from the combined effects of rate of change of corrosion rate and rate of distortion of interface properties by the polarizing D.C. current, and repeating consecutively and successively and progressively the steps of operating the D.C. voltage delivery system and of measuring value of polarizing D.C. current and value of resulting polarized electrode potential to measure the range of current-potential relationship, with each of said operations of the voltage delivery system being so adjusted as to change the value of the polarized electrode potential to be measured by less than about one-half of the voltage difference between consecutive Transition Points of line slope change, and wherein each measurement of the value of polarizing D.C. current and resulting polarized electrode potential is made upon the initial attainment of the same selected small rate of change of the current-potential relationship, whereby each Transition Point of line slope change occurring in the measured range of current-potential relationship is measured at substantially a single value of current and at a substantially single value of potential regarded to measure the Free Electrode Potential of an Interface Electrode.



3,156,632
METHOD OF APPLYING PARTICLES TO AN ELECTROFOAM DURING ELECTROPLATING
Hyman Chessin, Olean, N.Y., and Jacques J. J. L. Hilhorst, Eldred, Pa., assignors to Van Der Horst Corporation of America, Olean, N.Y.
Filed Feb. 11, 1960, Ser. No. 8,074
7 Claims. (Cl. 204—16)

1. The method of providing a composite material body comprising electroformed material having other discrete material embedded therein, said method comprising subjecting a base member to an electroplating operation while disposing in rubbing contact thereagainst a cohesive mass of particulate material, the pressure bearing relationship therebetween being such as to cause particles of said particulate material to detach from said cohesive mass and to become embedded within the electroform as it progresses.



3,156,633
FILM-FORMING METAL CAPACITORS
Karel H. Olson, Allentown, Pa., and Newton Schwartz, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 21, 1962, Ser. No. 174,868
5 Claims. (Cl. 204—38)

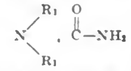
1. The method of fabricating a capacitor which comprises the steps of producing a first electrode by depositing a layer of a film-forming metal on a substrate by condensation, anodizing the said film-forming metal to form a dielectric oxide film thereover, immersing the anodized first electrode in an electrolyte having a pH less than 9, biasing said anodized first electrode cathodically, thereby causing an electric current flow between said electrolyte and said first electrode immersing said anodized first electrode in a nonaqueous solution comprising ions of at least one halogen, biasing said anodized first electrode anodically, thereby causing an electric current flow between said first electrode and said nonaqueous solution, and causing said film-forming metal to go into solution at imperfection sites, reanodizing said first electrode and depositing a second electrode such that said dielectric oxide film is interposed between said first and said second electrodes.

3,156,634
GOLD PLATING
Robert Duva, Paramus, and Donald Gardner Foulke, Watchung, N.J., assignors to Sel-Rex Corporation, Nutley, N.J., a corporation of New Jersey
Filed Dec. 12, 1962, Ser. No. 244,204
9 Claims. (Cl. 204—43)

1. An aqueous acid gold plating bath containing about 10–200 g./l of a salt of a weak, stable organic acid, 4 to 16 g./l. of gold added as an alkali gold cyanide and,
about ½ to about 20 g./l. of a compound having the formula



wherein R is selected from the group consisting of hydrogen, an alkyl group of up to 6 carbon atoms, and an aryl group of up to 6 carbon atoms, and where X is selected from the group consisting of



and OH, where R_1 is selected from the group consisting of hydrogen, an alkyl group of up to 6 carbon atoms and an aryl group of up to 6 carbon atoms, said bath being adjusted to a pH of 2.5 to 7.0.

3,156,635
GOLD PLATING

Donald Gardner Foulke, Watchung, Plainfield, N.J., assignor to Sel-Rex Corporation, Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,301
5 Claims. (Cl. 204—46)

1. The method of electrodepositing gold which comprises electrolyzing an aqueous solution containing an alkali metal gold cyanide in the amount of 4 g./l. to 36 g./l., a nitrogen compound selected from the group consisting of hydrazine, water soluble substituted hydrazine compounds and salts of hydrazine, and a combination of acidic anions selected from the group consisting of phosphoric, phosphorous and polyphosphoric acid anions and sufficient alkali to give a pH of 3.0–6.0.

3,156,636
HALOGENATION OF IRRADIATED POLYMERS

Joseph Silverman, Hicksville, N.Y., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

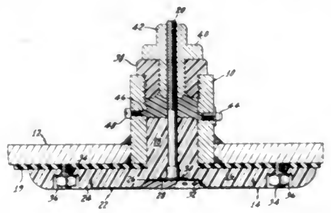
No Drawing. Filed Dec. 2, 1959, Ser. No. 856,661
6 Claims. (Cl. 204—154)

1. A process comprising halogenating an irradiated polymer of an olefin having 2 to 3 carbon atoms, said irradiation having been to an extent of at least 2×10^6 rad with high energy ionizing irradiation, said halogen having an atomic weight up to 80 said halogenation being continued until at least 0.01% of halogen is present in the polymer.

3,156,637
CATHODIC PROTECTION ANODE ASSEMBLY

Edward P. Anderson, 34 W. Lawn Road, Livingston, N.J.

Original application Nov. 14, 1960, Ser. No. 68,906. Divided and this application Jan. 10, 1964, Ser. No. 340,846
1 Claim. (Cl. 204—196)

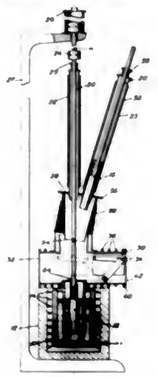


An anode assembly in a cathodic protection system for a ship's hull comprising an open ended tubular gland member fixed through the hull, an anode element having a plate portion fixed to the outside of the hull, said anode element having a stem portion extending into one end of the gland member and a connector pin embedded in said stem portion and extending through said gland member, a plug fixed in and closing the other end of the gland member, said connector pin extending through the plug, said stem portion and the plug being spaced apart to provide a space between them within the gland member, a pair of bores opening through the side of the gland member into said space, a filling plug threaded into one of said bores, and an air vent screw threaded into the other of said bores, said space being filled with a synthetic plastic which has been injected into the space under pressure and cured in situ.

3,156,638
CELL FOR ELECTROLYSIS OF MELTS HAVING A PLURALITY OF MOVABLE CATHODES

Edwin Meier and Erich Schweizer, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

Filed July 7, 1961, Ser. No. 122,524
Claims priority, application Switzerland, July 8, 1960, 7,838/60
3 Claims. (Cl. 204—226)

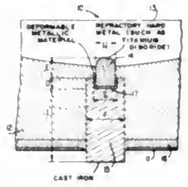


1. Apparatus for producing high melting metals by electrolysis of electrolytic charge comprising a cell for holding said electrolytic charge, a plurality of cathodes movable selectively into and out of said cell, means for moving said cathodes, said means comprising a lifting device for selectively raising and lowering said cathodes, enclosure means surrounding said cathodes and insulating said cathodes from the atmosphere, said enclosure means being mounted on a support plate pivotally attached to said container whereby said cathodes are selectively positionable for insertion into said cell, said support plate being attached to said cell by a corrugated tube, said enclosure means, corrugated tube and container means forming an envelope insulated from the atmosphere, means for stripping said cathodes of high melting metal depositable thereon, receiver means for collecting high melting metal stripped from said cathodes, said receiver means being movable with respect to said cathodes into and out of a position under said cathodes.

3,156,639
ELECTRODE

Robert M. Kibby, Florence, Ala., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Aug. 17, 1961, Ser. No. 132,072
10 Claims. (Cl. 204—243)

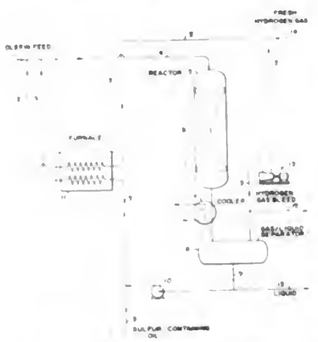


1. In an electrolytic cell for the reduction of dissolved alumina to molten aluminum, having a pot shell and shell lining to contain the bath constituents and the molten aluminum pad, a cathode structure comprising a collector bar having at least three distinct sections arranged substantially in axial alignment, including (*a*) a stem portion which terminates inwardly of the cell within said lining, at a position in the vicinity of said molten aluminum pad where the end of said stem portion is exposed to a temperature approaching the melting point of aluminum, said stem portion having a socket therein at the end adjacent to said molten pad, (*b*) refractory hard metal cap portion supported within said socket in spaced relation to said stem portion and extending out of said lining into contact with said molten pad, and (*c*) an intermediate portion of deformable metallic material at least partially filling the space between said cap portion and said socket to provide a resilient connection therebetween accommodating differences in the thermal expansion characteristics of said cap and stem portions, said metallic material being capable of wetting said cap and stem portions and having a melting point so as to be softer than said cap portion at the operating temperature of said cell.

3,156,640
COMBINED HYDROISOMERIZATION-DESULFURIZATION PROCESS

Marius 't Hart, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 8, 1961, Ser. No. 136,795
Claims priority, application Netherlands, Sept. 9, 1960, 255,780
12 Claims. (Cl. 208—64)



1. A combination process for the simultaneous isomerization to isoparaffins of a normal olefinic material boiling within the gasoline range and desulfurization of an added sulfur-containing hydrocarbon oil fraction which comprises contacting a mixture of said olefinic material and sulfur-containing fraction in the presence of hydrogen at elevated temperature and pressure with a catalyst comprising a solid acidic isomerization catalyst on which is deposited a sulfide of a metal selected from the group consisting of the metals in the left-hand colume of Group VI of the Periodic Table, the iron group metals of Group VIII of the Periodic Table, and mixtures thereof.

3,156,641
HYDROCRACKING OF HYDROCARBONS WITH THE USE OF A CATALYST COMPRISING NICKEL METAL AND A HETEROPOLY ACID ON ALUMINA

Herman S. Seelig, Forest Park, Valparaiso, Harry M. Brennan, Hammond, and Louis Charles Gutberlet, Cedar Lake, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

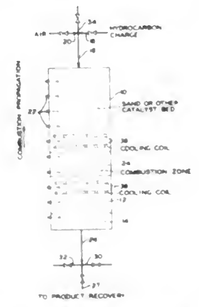
No Drawing. Filed June 15, 1960, Ser. No. 36,177
16 Claims. (Cl. 208—112)

1. A process for hydrocracking substantially sulfur-free hydrocarbons to obtain predominantly gasoline-boiling-range products of high octane number, said process being characterized by the conversion of a polynuclear aromatic compounds to an alkyl-substituted benzene and an isoparaffin, which comprises contacting said hydrocarbons with hydrogen gas under hydrocracking conditions in the presence of a catalyst essentially comprising nickel metal and a heteropoly acid on alumina.

3,156,642
PROCESS FOR CONVERSION OF HYDROCARBONS

Joseph C. Trantham and Charles J. Engle, Bartlesville, Okla., and Arthur R. Schleicher, Champaign, Ill., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 22, 1960, Ser. No. 44,722
17 Claims. (Cl. 208—120)



1. A process for upgrading and converting hydrocarbons to more desirable products which comprises providing a stationary particulate elongated bed of solid refractory material within an elongated reaction chamber occupying substantially the entire reaction zone therein; heating a complete transverse cross section of said bed at one end thereof to combustion-supporting temperature; forming a mixture of said hydrocarbons and air in which the air concentration is substantially less than that required for complete combustion of said hydrocarbons and at a temperature below combustion temperature; thereafter passing said mixture into the hot section of said bed so as to ignite same and establish a combustion zone throughout said cross section, thereby burning a substantial proportion of said hydrocarbons so as to maintain the temperature of said zone in the range of 900° to 1200° F. and convert within said bed a substantial proportion to lighter hydrocarbons and oxygenated products; regulating the flow rate of said mixture and the proportion of air therein so as to move a relatively thin combustion zone through said bed toward the opposite end thereof; and recovering said hydrocarbons and products from one end of said bed.

7. The process of claim 1 wherein said bed comprises a cracking catalyst.

10. The process of claim 7 wherein said catalyst comprises silica-alumina.

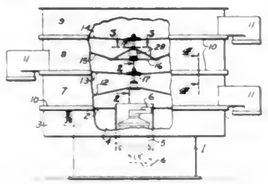
3,156,643
TENSIONING MEANS FOR SEPARATOR SCREENS

Howard W. Wright, Jr., San Gabriel, and Bill A. Racine, Hacienda Heights, Calif., assignors to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California

Filed Jan. 22, 1962, Ser. No. 167,560
6 Claims. (Cl. 209—352)

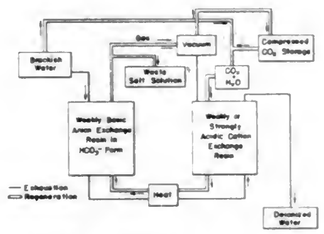
1. The combination with a separator including a pair of circular shells and a normally flat circular screen interposed and clamped therebetween the screen defining a central aperture and said aperture having reinforced margins, of tensioning means for said screen, comprising:

(*a*) a partition disposed under said screen in rigid relation to said shells;
(*b*) a mounting means disposed centrally with respect to said partition and including a perforated mounting plate;
(*c*) a compression spring disposed below said mounting plate;
(*d*) an umbrella disk covering the central portion of said screen and the reinforced margins of said aperture;



(*e*) a tension bolt having a head underlying said spring and a shaft extending upwardly through said spring, mounting plate, screen, and umbrella disk;
(*f*) and screw-threaded means at the upper protruding end of said shaft for drawing upwardly on said bolt and depressing said screen, thereby to place said screen under tension and said spring under compression;
(*g*) said umbrella disk preventing particles passing said screen from falling in the region of said mounting means, spring, and lower portion of the tension bolt.

3,156,644
DEIONIZATION PROCESS
Robert Kunin, Yardley, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
Filed July 25, 1961, Ser. No. 126,551
20 Claims. (Cl. 210—32)

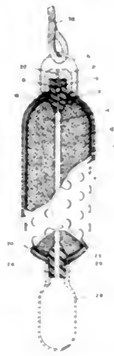


1. A process for the removal of ionizable matter from fluids which comprises passage of the fluids through a bed of a weakly basic anion exchanger, which has been converted to the bicarbonate form by carbonation with CO_2, so as to convert any salt of a highly ionized acid to its corresponding bicarbonate, passing the effluent from said weakly basic anion exchange bed through an acidic cation exchanger in the hydrogen form to remove the cations and to liberate and expel carbon dioxide therefrom, and drawing off the thus degasified effluent as the deionized fluid.

3,156,645
EMERGENCY SEA WATER DEMINERALIZER
Jay W. Chapin, 3149 S. L St., Oxnard, Calif., and John S. Williams, Rte. 1, Box 236, Newbury Park, Calif.
Filed June 26, 1962, Ser. No. 205,471
1 Claim. (Cl. 210—120)
(Granted under Title 35, U.S. Code (1952), sec. 266)

An emergency sea water demineralizer employing reverse osmosis at comparatively great ocean depths comprising, in combination:

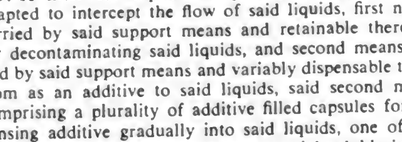
an elongated substantially cylindrical pressure resistant unit consisting of semi-porous material;
a generally narrow tubular axial chamber formed interiorly of said pressure resistant unit, said tubular axial chamber opening out to form short conical cavities in the upper and lower ends of said resistant unit;
a conical plug secured into the upper cone shaped end of said axial chamber, said conical plug having an upwardly extending threaded portion adapted to receive a threaded cap, said plug and said cap being furnished with reduced bores concentric with said axial chamber, said plug having an outer enlarged bore concentric with its reduced bore for the reception of a ball check surmounted by a cylindrical compression spring, the compression of said spring being controlled by the positioning of said cap on the said upwardly extending threaded portion of said plug;
a similarly shaped conical plug secured into the lower cone shaped end of said resistant unit, said conical plug having a downwardly extending threaded portion adapted to receive a threaded substantially massive hollow collecting bottle for collecting the fresh water seeping into said axial chamber, said lower conical plug having an axial aperture concentric with said axial chamber;



a semi-permeable salt excluding membrane structure closely surrounding and supported by said pressure resistant unit;
an outer perforated protective covering closely surrounding and enclosing said semi-permeable membrane, said covering having a light bail secured to its upper end; and
light cable means attached to said bail for lowering said demineralizer into a body of sea water from the horizontal surface thereof to a depth sufficient to effect said reverse osmosis, said parts of said demineralizer being proportioned so as to maintain said axial chamber in a position normal to said horizontal surface with said ball check at the upper end of said axial chamber and said collecting bottle at the lower end of said axial chamber.

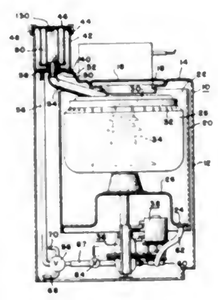
3,156,646
APPARATUS FOR DIGESTION OF WASTE REMOVED FROM SEPTIC TANKS
Byron R. Cameron, 1628 SE. 10th St., Fort Lauderdale, Fla.
Filed July 3, 1962, Ser. No. 207,282
2 Claims. (Cl. 210—195)

1. In an apparatus for the digestion of human waste:
a primary settling chamber for said waste provided with a plurality of barriers reaching only part way to the top of the chamber and dividing the chamber into a plurality of compartments;
a digestion chamber operable to form an upper supernatant liquid layer and a lower sludge layer;
a conduit system interconnecting the lower regions of at least one of said compartments, said liquid layer, said sludge layer, and an outside disposal zone;
a pressure means in said conduit system;
control means in said conduit system permitting said pressure means to force said waste from said settling chamber selectively to said liquid layer and to said disposal zone and also permitting said pressure means to force sludge from said sludge layer selectively to said liquid layer and said disposal zone;



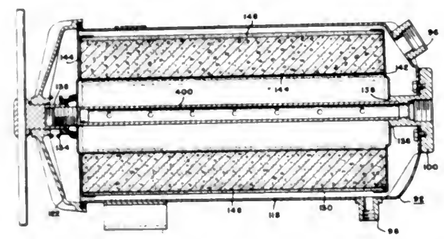
at least one nozzle located in the upper region of said digester;
a second conduit system interconnecting said nozzle, said liquid layer and an outside cleaning area;
a pressure means in said second conduit system;
control means in said second conduit system permitting said pressure means to force liquid from said supernatant liquid layer selectively to said nozzle and said cleaning zone;
a plurality of outlets for withdrawing fluids from selected levels of said digester; and
a skimmer system for skimming and withdrawing materials from the supernatant liquid layer in said digester.

3,156,647
FILTER FOR A DRY CLEANING APPARATUS
Richard E. Gould, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,629
8 Claims. (Cl. 210—209)



5. A filter for liquids comprising a support means adapted to intercept the flow of said liquids, first means carried by said support means and retainable therewith for decontaminating said liquids, and second means carried by said support means and variably dispensable therefrom as an additive to said liquids, said second means comprising a plurality of additive filled capsules for dispensing additive gradually into said liquids, one of said capsules having an encapsulating material soluble in said liquids in a time interval different from that of the encapsulating material of the other of said capsules, thereby to cause the additive in said one of said capsules to be dispensed into said liquids after the additive in the other of said capsules to maintain the concentration level of said additive in said liquids throughout the life of said filter.

3,156,648
FILTER CARTRIDGE FOR A DRY CLEANING SYSTEM
Byron L. Brucken and Victor A. Williamitis, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,078
9 Claims. (Cl. 210—209)



9. A composite casting adapted for use as a disposable filter cartridge in a solvent dry cleaning system and comprising an integral filtering matrix of a settable porous inorganic material for removing particulate matter from said solvent and means for controlling and effecting the porosity of said filtering matrix, said last named means including a solvent conditioning means comprising a frothed mixture of detergent and air frothingly dispersed throughout said matrix for controlling the porosity of said matrix and dispensible from said composite casting into said solvent throughout the life of said filter cartridge.

3,156,649
FUNCTIONAL FLUIDS CONTAINING THIOCARBOXYLATE ESTERS
William A. Hewett, Oakland, and George M. Calhoun, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 25, 1960, Ser. No. 24,206
8 Claims. (Cl. 252—48.6)

1. A mineral oil composition comprising a major amount of mineral oil and from about 0.1% to about 5% of a polythioacetate derivative of a copolymer of a diolefin having from about four through six carbon atoms and an alpha-monoolefin wherein the copolymer has a molecular weight of at least 5,000.

8. A mineral oil composition comprising a major amount of mineral oil and from about 0.1% to 5% of an oil-soluble polythioacetate derivative of a copolymer of butadiene and 1-octadecene wherein the copolymer has a molecular weight of about 400,000.

3,156,650
OXIDE COATED IRON-COBALT ALLOY MAGNETIC MATERIAL
Richard B. Falk, Greenville, Mich., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Nov. 17, 1960, Ser. No. 69,810
5 Claims. (Cl. 252—62.5)

1. Magnetic material comprising fine particles, each of said particles consisting essentially of a core of an alloy of iron and cobalt and a coating surrounding said core of an oxide of iron and cobalt, the iron being present in the approximate range of 45 to 70 percent based on the combined weight of the iron and cobalt, the dimensions of each of said particles being that of a single magnetic domain, said magnetic material having a coercive force in excess of 1800 oersteds at room temperature.

3,156,651
LIGHT TRANSPARENT FERRIMAGNETIC GARNETS

Seymour Geller, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 28, 1962, Ser. No. 183,201
2 Claims. (Cl. 252—62.5)

1. The ferrimagnetic garnet

$$Y_{3-x}Ca_xFe_2Fe_{3-x}Ge_xO_{12}$$

where x has a value between 1.1 and 2.5.

2. The ferrimagnetic garnet

$$Gd_{3-x}Ca_xFe_2Fe_{3-x}Ge_xO_{12}$$

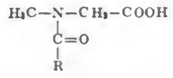
where x has a value between 1.1 and 2.5.

3,156,652
AUTOMATIC TRANSMISSION FLUID

Edward G. Foehr, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,645
5 Claims. (Cl. 252—75)

1. A power transmission fluid having a viscosity of from about 75 to 1000 SSU at 100° F., consisting essentially of a major proportion of a mineral lubricating oil base having a viscosity of from 50 to 400 SSU at 100° F. and from 0.10% to 0.75% by weight of N-acylsarcosine of the general formula:



in which R represents an aliphatic hydrocarbon radical containing from 11 to 23 carbon atoms, wherein said mineral lubricating oil base contains

(*a*) from 1.0 to 15% by weight of a polymeric viscosity index improver selected from the group consisting of
  (1) mixed oil-soluble polymerized alkyl methacrylates having an average of 12 carbon atoms in the alkyl chain and a molecular weight of about 220,000, and
  (2) oil-soluble polyisobutylene having a molecular weight of about 220,000:

(*b*) from 1.0 to 15% by weight of a polymeric detergent selected from the group consisting of
  (1) an oil-soluble reaction product of N-methyl piperazine with a quadripolymer comprised of monomeric constituents of dodecyl methacrylate, octadecyl methacrylate, polyethylene glycol methacrylate and glycidyl methacrylate in a molar ratio of about 33/17/1/1, wherein the polyethylene glycol has a molecular weight of from 500 to 2500 and the molecular weight of the polymer is from 100,000 to 300,000, and
  (2) an oil-soluble copolymer of alkyl methacrylate and vinyl pyrrolidone having a molecular weight of about 220,000 having mixed higher alkyl radicals in the alkyl chain;

(*c*) from 10 to 250 millimoles per kilogram of base oil of calcium petroleum sulfonate having a molecular weight of about 400;

(*d*) from 0.1 to 1.0% by weight of an oxidation inhibitor selected from the group consisting of phenyl-α-napthylamine and di(tertiary butyl)-p-cresol; and

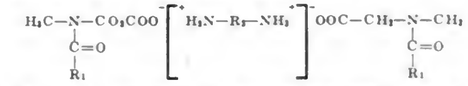
(*e*) from 0.0008 to 0.01% by weight of a dimethyl silicone polymer foam inhibitor.

3,156,653
TRANSMISSION FLUID

Edward G. Foehr, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,606
4 Claims. (Cl. 252—78)

1. A power transmission fluid consisting essentially of a mineral lubricating oil having a viscosity of from about 50 to 400 SSU at 100° F., and from 0.1% to 0.75% by weight of an aromatic primary diamine salt of N-acyl sarcosine of the general formula:



wherein R_1 represents the hydrocarbon group of an aliphatic carboxylic acid of from about 11 to 24 carbon atoms in the acid residue and R_3 represents an aromatic hydrocarbon radical containing from 6 to 8 carbon atoms, said power transmission fluid having a viscosity of from about 75 to 1000 SSU at 100° F.

2. The power transmission fluid of claim 1 which also contains (A) as a viscosity index improver, from 1.0 to 15.0% by weight of base oil of an oil-soluble copolymer of monomeric constituents of alkyl methacrylate and vinyl pyrrolidone having a molecular weight of about 220,000, said copolymer having higher alkyl radicals in the alkyl chain, (B) as a foam inhibitor, from 0.0008 to 0.01% by weight of base oil of dimethyl silicone polymer, and (C) as an oxidation inhibitor, from 0.1 to 1% by weight of base oil of di-tert-butyl p-cresol.

3,156,654
BLEACHING

Jan O. Konecny and Robert E. Meeker, both of Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 19, 1961, Ser. No. 117,791
5 Claims. (Cl. 252—95)

1. A composition adapted for bleaching cellulosic textiles consisting essentially of granules of sodium perborate uniformly admixed with a water soluble inorganic salt of cobalt, each molecule of said cobalt salt being in the form of a chelate compound thereof with pyridine-2-carboxylic acid, there being about 0.2 to about 140 millimoles of perborate to from about 0.001 to about 1 millimole of water-soluble cobalt salt and 0.01 to 20 millimoles of pyridine-2-carboxylic acid providing a molar excess of said acid to water-soluble cobalt salt present so that in aqueous solution the chelate gives up cobalt to cellulosic material but preserves the perborate from decomposition by cobalt not absorbed by the cellulosic material.

3,156,655
HEAVY DUTY LIQUID DETERGENT COMPOSITION

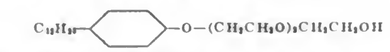
Willard M. Bright, Ridgewood, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 2, 1960, Ser. No. 46,897
8 Claims. (Cl. 252—109)

1. A substantially homogeneous, readily pourable, heavy duty liquid detergent composition consisting essentially of an aqueous emulsion of (1) from about 7% to about 10% by weight of a synthetic organic nonionic non-soap detergent mixture, said mixture being selected from the group consisting of (A) from about 5% to about 9% by weight of an alkyl penol-ethylene oxide condensate having an alkyl group containing from nine to twelve carbon atoms and containing nine to fifteen oxyethylene units plus from about 1% to about 3% by weight of a polyoxyaikylene alkanol having the empirical formula

$$HO—(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_cH$$

where b is an integer from 26 to 30 and a plus c is an integer such that the molecule contains from 0% to 20% of ethylene oxide and (B) from about 5% to about 7.5% by weight of a tridecyloxypolyethoxyethanol having the formula $C_{13}H_{27}O(CH_2CH_2O)_8CH_2CH_2OH$ plus from about 1% to about 3% by weight of a material selected from the group consisting of (*a*) a dodecylphenoxypolyethoxyethanol having the formula



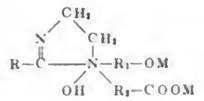
and (*b*) a polyoxyalkylene alkanol having the empirical formula $HO(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_cH$ where b is an integer from 26 to 30 and a plus c is an integer such that the molecule contains from 0% to 20% of ethylene oxide, (2) from about 18% to about 30% by weight of postassium pyrophosphate, (3) from about 1% to about 3% by weight of an alkali metal salt of an interpolymer of vinyl methyl ether and maleic anhydride, (4) from about 1% to about 4% by weight of an alkali metal soap selected from the group consisting of caprate, laurate and oleate, and (5) from about 2% to about 6% by weight of sodium xylene sulfonate; the alkali metal cations of components (3) and (4) being selected from the group consisting of sodium and potassium.

3,156,656
AQUEOUS SHAMPOO COMPOSITION

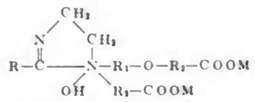
Louis H. Libby, Highland Park, Ill., assignor to The Gillette Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 6, 1958, Ser. No. 707,150
13 Claims. (Cl. 252—152)

1. An aqueous shampoo composition consisting essentially of water in combination with (A) a cationic surface active agent in an amount from 0.4% to 7% by weight, (B) a non-ionic polyoxyalkylene surface active agent containing from 5 to 20 alkylenoxy units, each said unit having from 2 to 3 carbon atoms, said non-ionic agent being present in an amount from 2% to 20% by weight, and (C) an amount, at least equal to the amount of said non-ionic agent and from 8% to 20% by weight, of a member of the class consisting of compounds having the structures



and



in which R is a hydrocarbon group having from 4 to 18 carbon atoms, R_1, R_2 and R_3 are selected from the group consisting of (*a*) aliphatic hydrocarbon groups of 1 to 4 carbon atoms, (*b*) hydroxy-substituted aliphatic hydrocarbon groups of 1 to 4 carbon atoms, (*c*) aliphatic hydrocarbon groups having a single ether linkage and of 2 to 4 carbon atoms, (*d*) hydroxy-substituted aliphatic hydrocarbon groups having a single ether linkage and of 2 to 4 carbon atoms, (*e*) aliphatic keto groups containing only a single keto linkage and otherwise being hydrocarbon of 2 to 4 carbon atoms, (*f*) aliphatic keto groups containing only a single keto linkage and otherwise being hydroxy-substituted hydrocarbon of 2 to 4 carbon atoms, and M is an alkali metal.

3,156,657
PROCESS FOR PREPARING A CATALYST USEFUL FOR REMOVING CARBON MONOXIDE FROM HYDROGEN-CONTAINING GASES

Philip C. Pinder, Sway, Derek G. Turpin, Lymington, and Jan M. Popiel, Hythe, near Southampton, England, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 19, 1959, Ser. No. 794,264
Claims priority, application Great Britain Mar. 6, 1958
2 Claims. (Cl. 252—440)

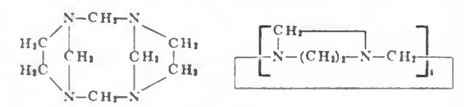
2. A process for preparing a catalyst consisting essentially of between about 5% and 11% of NiO, between about 1 and 3% of MgO, and between about 0.3 and 0.5% of sulfate and the rest alumina which is manufactured from aluminum sulfate and contains residual sulfate which provides all the sulfate defined in said catalyst, which comprises impregnating said alumina with an aqueous solution of selected amounts of nicket nitrate and magnesium nitrate to give the above-mentioned composition upon drying and calcining, drying the resulting mixture and calcining the resulting catalyst to form the oxides of nickel and magnesium at a temperature of about 1000° F. for about 3 hours.

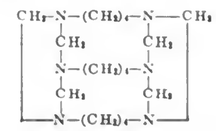
3,156,658
PREPARATION OF URETHANES USING POLYCYCLIC POLYAMINE CATALYSTS

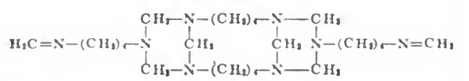
George T. Gmitter, Fairlawn Village, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed July 11, 1962, Ser. No. 209,245
13 Claims. (Cl. 260—2.5)

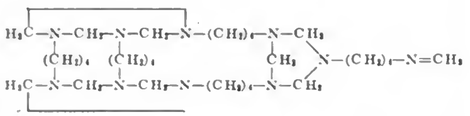
1. In a process of making a urethane comprising reacting an organic hydroxy compound containing at least two hydroxyl groups with an organic polyisocyanate in the presence of a reaction catalyst, the improvement which comprises employing, as a catalyst in such reaction, a polycyclic polyamine having a structural formula selected from the group consisting of







and



3,156,659
POLYURETHANE COMPOSITIONS

Paul Robitschek, Eugene, Oreg., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,225
17 Claims. (Cl. 260—2.5)

2. A fire-resistant cellular reaction product of components comprising:

(A) a hydroxyl-containing composition comprising an alkyd resin comprised of the reaction product of a polycarboxylic compound and a polyhydric alcohol containing at least three hydroxy groups, wherein the polycarboxylic compound consists of an adduct of hexahalocyclopentadiene, wherein the halogen is selected from the group consisting of fluorine, chlorine, bromine, and mixtures thereof, and a polycarboxylic compound containing aliphatic carbon-to-carbon unsaturation and selected from the group consisting of a polycarboxylic acid, a polycarboxylic acid anhydride, a polycarboxylic acid halide, and a polycarboxylic acid ester;

(B) a foaming agent; and

(C) an organic polyisocyanate in an amount to provide from about 30 to 130 percent of isocyanato groups based on the number of hydroxyl and carboxyl groups present in said hydroxyl-containing composition and foaming agent.

3,156,660

EPOXY RESINOUS COMPOSITIONS AND THEIR PREPARATION

James R. Scheibli, Oakland, Calif., assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Oct. 16, 1959, Ser. No. 846,792
14 Claims. (Cl. 260—28)

1. A composition which when heated with an epoxy curing agent is converted to an insoluble infusible product consisting essentially of a mixture of (1) from 10% to 70% by weight of a polyepoxide having more than one vic-epoxy group, (2) from 3% to 85% by weight of an alkyl substituted phenol, and (3) from about 10% to about 65% by weight of a bituminous material.

14. A composition consisting essentially of a mixture of (1) from 10% to 70% by weight of a polyepoxide having more than one vic-epoxy group, (2) from 3% to 85% by weight of a polyalkylated phenol wherein at least one of the alkyl groups contains at least 7 carbon atoms, (3) from about 10% to 65% by weight of a bituminous material of the group consisting of asphalts, high boiling extracts of petroleum distillates, residual fuel oils having a viscosity between 10 cs. at 100° F. and 1500 cs. at 100° F., coal tars, refined coal tars and coal tar pitches, and (4) from about 1% to 45% by weight of the polyepoxide of an epoxy resin curing agent.

3,156,661

INSECTICIDAL WATER-BASED, SELF-POLISHING COATING COMPOSITIONS

Irving Feinberg, Sanford, Fla., assignor to Chemical Corporation of America, Tallahassee, Fla., a corporation of Florida

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,037
10 Claims. (Cl. 260—28.5)

1. In a method of preparing an insecticide containing water-based, self-polishing, coating composition wherein the insecticide contained therein is a member of the group consisting of lindane and dieldrin, the improvement comprising preparing a dispersible melt which includes the insecticidal member of said group and normally solid meltable waxy material, said member being included in said melt in an amount exceeding its dispersed solid phase compatibility with said waxy material, dispersing said melt in hot water to form an aqueous emulsion thereof, thereafter cooling said aqueous emulsion to solidify the dispersed components thereof, and, prior to incipient precipitation of the insecticidal member from said emulsion, mixing an aqueous emulsion polymerization latex product therewith, said latex product comprising dispersed resinous polymeric material composed predominately of monomer units derived from members of the group consisting of styrene, the methacrylic acid esters of the monohydric alcohols having from 1 to 18 carbon atoms, and the acrylic acid esters of said monohydric alcohols.

6. A water-based, self-polishing, coating composition comprising a continuous aqueous phase, particles of normally solid meltable waxy material dispersed in said phase and containing an insecticide selected from members of the group consisting of lindane and dieldrin in solid solution therewith, and discrete particles of synthetic resinous polymeric material dispersed in said phase and having an insecticide selected from members of said group dissolved therein, said resinous material being an aqueous emulsion polymerization product composed predominately of monomer units derived from members of the group consisting of styrene, the methacrylic acid esters of the monohydric alcohols having from 1 to 18 carbon atoms, and the acrylic acid esters of said monohydric alcohols.

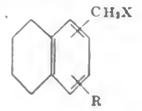
3,156,662

TETRALIN DERIVATIVE PLASTICIZERS FOR VINYL CHLORIDE POLYMERS

Daniel A. Dimmig, Wilkinsburg, Pa., and John J. Jaruzelski, Roselle, N.J., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Mar. 10, 1961, Ser. No. 94,697
4 Claims. (Cl. 260—31.2)

3. A new composition of matter comprising a resin selected from the group consisting of polyvinyl chloride polymers and vinyl chloride-vinylacetate copolymers and from 42 to 85 parts per 100 parts resin of a compound of the formula:



where R is selected from the group consisting of H and CH_3. X is $—OR_1OOCR_2$, where R_1 is selected from the group consisting of $—C_2H_4—$ and

$$—CH_2CH_2OCH_2CH_2—$$

and R_2 is a phenyl radical.

3,156,663

PLASTICIZED ALKOXYLATED POLYVINYL ALCOHOL COMPOSITIONS

Philip L. Gordon, Lexington, Donald E. Dean, Fitchburg, and James L. Diedrich, Leominster, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed May 12, 1961, Ser. No. 118,219
4 Claims. (Cl. 260—31.6)

1. A plastic composition consisting essentially of a water soluble alkoxylated polyvinyl alcohol and a plasticizer compounded therewith, the plasticizer being a water soluble partial ester of a C_{12}–C_{20} aliphatic monocarboxylic acid with a polyhydric alcohol, the said alcohol having 2–6 carbon atoms to the molecule, said ester having therein about 5–30 hydroxyalkyl groups for 1 mole of the ester and being in the proportion of about 1–10 parts by weight of the ester for 100 parts of the alkoxylated polyvinyl alcohol.

3,156,664

SPRAYABLE FILM-FORMING COMPOSITION CONTAINING A PARTIAL AMINE SALT-PARTIAL ESTER

Michael A. Manganelli, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 2, 1959, Ser. No. 850,081
8 Claims. (Cl. 260—33.4)

1. A liquified sprayable film-forming composition comprising about 45–75% by weight of a halogenated C_1–C_3 alkane propellant capable of exerting a total pressure of 25–50 p.s.i. at room temperature, about 25–50% by weight of anhydrous alkanol containing 1–4 carbon atoms, and about 0.5–5% by weight of an alkanol-soluble partial amine salt, partial ester of a C_2–C_4 olefin-maleic anhydride copolymer wherein, of the potentially free carboxyl groups, up to 20% exist as free carboxyl groups, 57–70% exist as esters with an alkanol containing 1–4 carbon atoms, and the remaining 10–50% exist as salts with a tertiary amine selected from the group consisting of trimethylamine, triethylamine, tripropylamine, tributylamine, tripentylamine and N,N-dimethylaniline, said copolymer before esterification and amination having an average molecular weight of 10,000–70,000.

3,156,665

NON-DUSTING PIGMENT WITH N-ALKYL AND CYCLOALKYL TOLUENE SULFONAMIDE-COATED NYLON MOLDING COMPOSITIONS

Philip Dawson Brossman, Parkersburg, W. Va., and Edward Hector Price, Kennett Square, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1961, Ser. No. 93,340
6 Claims. (Cl. 260—37)

1. A nylon molding resin in coarse granular form in which the granules are uniformly coated with from 0.1 to 1.0% by weight of a heat-stable finely-divided pigment bound to the surfaces of the nylon granules by a uniform coating of from 0.05 to 0.5% by weight, based on the nylon, of a liquid binder selected from at least one member of the group consisting of ortho- and para-N-alkyl toluenesulfonamides and ortho- and para-N-cycloalkyl toluenesulfonamides, said N-alkyl radical having from 1 to 10 carbon atoms and said N-cycloalkyl radical being selected from the group consisting of N-cyclopentyl, N-cyclohexyl, and N-methylcyclohexyl, and the aforesaid nylon molding resin comprising a linear superpolycarboxylamide in which the amide linkages form an integral part of the polymer chains.

3,156,666

COMPATIBLE BLENDS OF OLEFINIC HYDROCARBON POLYMERS, SILICA AND POLYMERS REACTABLE WITH SILICA AND PROCESS FOR FORMING STRUCTURES THEREOF

Richard Dale Pruett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 3, 1958, Ser. No. 712,674
7 Claims. (Cl. 260—41)

1. A shaped structure formed from a homogeneous compatible blend of a saturated organic thermoplastic copolymer of ethylene and vinyl acetate, at least one olefinic hydrocarbon polymer selected from the group consisting of polymers of mono-olefins and di-olefins and 5–75%, based on the weight of said polymers of finely divided particles of silica, said particles of silica having their greatest dimension within the range from .001 micron to about .1 micron, having a specific surface area of at least 100 square meters/gram and being characterized by a surface layer of hydroxyl groups.

3,156,667

HEAT STABILIZATION OF POLYVINYL ALCOHOL WITH PHOSPHORIC ACID

Joseph G. Martins, Ludlow, Mass., assignor to Shawinigan Resins Corporation, Springfield, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,199
3 Claims. (Cl. 260—45.7)

1. A process to heat stabilize polyvinyl alcohol resins prepared by hydrolysis of vinyl acetate polymers with an alkaline hydrolysis catalyst,

said polyvinyl alcohol having a molecular weight of 12,000 to 125,000 and 0 to 80% by weight of residual acetate groups calculated as polyvinyl acetate,

said process comprising neutralizing said polyvinyl alcohol by steeping in a solution of phosphoric acid dissolved in an organic liquid selected from the group consisting of methyl acetate, ethyl acetate, methyl alcohol, ethyl alcohol, acetone, and mixtures thereof, removing said acid solution, and washing the polyvinyl alcohol with the organic liquid,

the amount of phosphoric acid used is chemically equivalent to 100–200% of the alkaline catalyst.

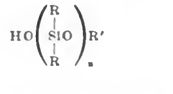
3,156,668

PROCESS FOR THE CONDENSATION OF HYDROXYL-CONTAINING ORGANOSILICON COMPOUNDS USING LITHIUM HYDROXIDE OR LITHIUM DIORGANOSILANOLATE

Ronald M. Pike, Chelmsford, Mass., assignor to Union Carbide Corporation, a corporation of New York

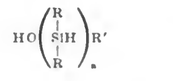
No Drawing. Filed Dec. 8, 1959, Ser. No. 858,029
10 Claims. (Cl. 260—46.5)

1. A process for condensing organosilicon compounds represented by the formula:



wherein R is a member selected from the group consisting of the unsubstituted monovalent hydrocarbon groups and the substituted monovalent hydrocarbon groups wherein each substituent is a member selected from the group of the halogen atom, and the amino, hydroxyl, cyano, carbalkoxy, aminoalkylamino, alkoxy and aryloxy groups, R′ is a member selected from the group consisting of the alkyl groups and the hydrogen atom and n has a value of at least one, which process comprises condensing an organosilicon compound represented by said formula in the presence of a catalytic amount of a compound selected from the group consisting of lithium hydroxide and the lithium diorganosilanolates.

8. A process which comprises cocondensing (1) an organosilicon compound represented by the formula:



wherein R is a member selected from the group consisting of the unsubstituted monovalent hydrocarbon groups and the substituted monovalent hydrocarbon groups wherein each substituent is a member selected from the group consisting of the halogen atoms and the amino, hydroxyl, cyano, carbalkoxy, aminoalkylamino, alkoxy and aryloxy groups, R′ is a member selected from the group consisting of the alkyl groups and the hydrogen atom and n has a value of at least eight and (2) an alkoxysilane represented by the formula:

$$R_rSi(OR')_{4-r}$$

wherein R and R′ have the above defined meanings and r has a value from 1 to 3, said cocondensation being effected in the presence of a catalytic amount of a member selected from the group consisting of lithium hydroxyide and lithium diorganosilanolates.

3,156,669
THERMAL STABILIZATION OF OXYMETHYLENE POLYMERS BY THE USE OF MALEURATE ESTERS

Raymond J. Kray, Berkeley Heights, and Thomas J. Dolce, Summit, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1960, Ser. No. 4,881
19 Claims. (Cl. 260—45.85)

2. A polymer composition comprising a moldable oxymethylene polymer and a stabilizing amount of a maleurate monoester, said oxymethylene polymer containing oxyalkylene groups having more than one carbon atom and containing from 60 to 99.6 mol percent of oxymethylene groups.

3,156,670
HEAT-HARDENABLE PHENOLIC RESINS

Anthony C. Soldatos, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 31, 1960, Ser. No. 53,064
10 Claims. (Cl. 260—58)

1. A heat-hardenable, water-insoluble, liquid phenolic resin, wherein phenolic nuclei are linked one to another by dihydric glycol residues through aliphatic ether linkages, which is the condensation reaction product, at elevated temperatures, of a mixture having a pH of from about 8 to about 12, which consists essentially of a trifunctional phenol, from about 1.5 to about 3 moles of formaldehyde, per mole of said phenol, and from about 0.3 to about 1.5 moles, per mole of said phenol, of a dihydric glycol having the general formula:

$$HO\left(C_nH_{2n}—O\right)_xH$$

wherein n is an integer having a value of 2 to 10 inclusive and x is an integer having a value of 1 to 15 inclusive, said phenolic resin purified so that it contains less than about 2 percent by weight, based on the weight of said resin, of water-soluble, organic resinification by-products.

3,156,671
METHOD FOR PREPARING TRIOXANE-CYCLIC ETHER COPOLYMERS

Hans A. Suter and Francis B. McAndrew, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 28, 1960, Ser. No. 17,759
10 Claims. (Cl. 260—67)

1. A process for obtaining high molecular weight oxymethylene copolymers which comprises copolymerizing trioxane with a cyclic ether having adjacent carbon atoms in a system wherein said trioxane and said cyclic ether are dissolved in an inert non-aqueous solvent, precipitating unreacted trioxane by cooling said system and continuing the copolymerization process while said trioxane is in its precipitated state.

3,156,672
LINEAR POLYUREAS PREPARED FROM HALF-POLYMERS

Gerrit Johann Meine van der Kerk, Utrecht, Netherlands, assignor to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk, Onderzoek ten behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands

No Drawing. Filed May 10, 1960, Ser. No. 28,007
Claims priority, application Netherlands, May 11, 1959, 239,046
4 Claims. (Cl. 260—77.5)

1. A process for the preparation of stabilized linear polyalkylene ureas which comprises heating a half-polymer with a molecular weight between about 1200 and 5000 and having the formula

$$X—NH—\left[R—NH—\overset{O}{\overset{\|}{C}}—NX—\right]_y—R—NH_2$$

wherein R is selected from the group consisting of aliphatic and cyclo aliphatic radicals having 4 to 12 carbon atoms, X is selected from the group consisting of hydrogen and aliphatic radicals having 1 to 4 carbon atoms and y is an integer from 10 to 30 at a temperature from 10 to 20° C. above the melting point of the half-polymer in the presence of 0.3 to 1.7 mols of a urea compound selected from the group consisting of urea, cyanuric acid and an ureide having two free $—NH_2$ groups per mol of half-polymer until a polyalkylene urea of sufficiently high viscosity is obtained.

3,156,673
NEW POLYMERIC MATERIALS OF BORONATE-POLYISOCYANATE REACTION PRODUCTS

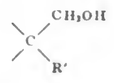
William Randall Bamford, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,292
Claims priority, application Great Britain, Sept. 1, 1960, 30,211/60
10 Claims. (Cl. 260—77.5)

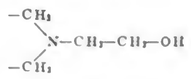
1. A process for the production of polymeric materials which comprises the reaction of an organic di-isocyanate with a diol having the general formula:



where R is selected from the group consisting of a polymethylene group having from 4 to 10 carbon atoms and a p-phenylene group, and Z is a divalent group having a general formula selected from the group consisting of



or



R′ being an alkyl group.

3,156,674
ADDITION POLYMERS OF ALKENYL EPOXY ETHERS, ETHYLENICALLY UNSATURATED ALCOHOLS AND MONOETHYLENICALLY UNSATURATED HYDROCARBONS, AND CURED PRODUCTS PREPARED THEREFROM

Edward C. Shokal, Walnut Creek, and Paul A. Devlin and De Loss E. Winkler, Orinda, Calif., assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Jan. 30, 1959, Ser. No. 790,066
13 Claims. (Cl. 260—80.7)

1. A polyepoxide consisting of the addition polymer of (1) 10% to 99% by weight of an epoxy ether of the group consisting of alkenyl glycidyl ethers and alkenyl vic-epoxy cycloalkyl ethers, (2) 1% to 90% by weight of an ethylenically unsaturated alcohol, and (3) 1% to 60% by weight of a dissimilar monomer of the group consisting of monoethylenically unsaturated monomer containing 2 to 15 carbon atoms, and diethylenically unsaturated aliphatic hydrocarbons containing from 4 to 10 carbon atoms.

3,156,675
PROCESS FOR THE POLYMERIZATION OF COMPOUNDS CONTAINING OLEFINIC BONDS

Werner Ehmann and Karl-Heinz Kahrs, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,959
Claims priority, application Germany, Aug. 20, 1960, F 31,927
6 Claims. (Cl. 260—87.3)

1. In the process for the manufacture of a copolymer of an olefin containing 2 to 4 carbon atoms with another copolymerizable monomer selected from the group consisting of vinyl esters, acrylic and methacrylic esters, vinyl chloride, maleic anhydride, vinyl carbazole, at a pressure of less than 70 atmospheres gage and at temperatures within the range of −80° C. to +60° C., the step which comprises using as a catalyst a mixture consisting essentially of an alumino-organic compound of the general formula



wherein x and y represent members of the group consisting of hydrogen, alkyl radicals of 1 to 8 carbon atoms, aryl radicals and cycloalkyl radicals; and z represents a member of the group consisting of alkyl radicals of 1 to 8 carbon atoms, aryl radicals and cycloalkyl radicals, with an organic peroxide, the proportion by weight of aluminum compound to organic peroxide being from 100:1 to 100:50.

3,156,676
ALLYL NORTRICYCLENE COMPOUNDS AND POLYMERS THEREOF

Henri G. G. Dekking, Montville, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 28, 1959, Ser. No. 842,602
15 Claims. (Cl. 260—88.2)

1. 3-allyl nortricyclene.

3. A homopolymer of 3-allyl nortricyclene.

3,156,677
RESINOUS POLYOLEFIN TREATMENT

William Resnick, Haifa, Israel, assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

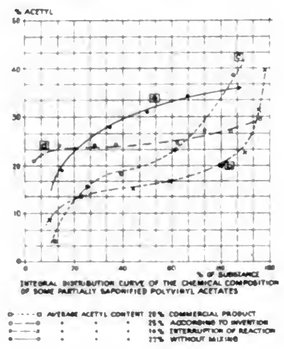
Filed Dec. 21, 1962, Ser. No. 247,794
13 Claims. (Cl. 260—88.2)

1. A process for separating a resinous polymer of a normally gaseous olefin from a solution of said polymer in a normally liquid hydrocarbon solvent, which solution contains up to 20% by weight, based on the weight of dissolved resinous polymer, of grease-to-wax like polymer of said olefin preferentially soluble in said solvent which process comprises the steps of cooling said solution to form a polymer gel containing substantially all of the resinous polymer and grease-to-wax like polymer contained in said solution, subjecting said gel to mechanical compression to express a liquid which is a solution of said grease-to-wax like polymer in said hydrocarbon solvent and recovering a resinous polymer concentrate thus produced containing a substantially lower ratio, on a weight basis, of grease-to-wax like polymer to resinous polymer than initially present in said solution.

3,156,678
PROCESS FOR THE MANUFACTURE OF PARTIALLY SAPONIFIED POLYVINYL ESTERS

Hans Dexheimer, Kelkheim, Taunus, Otto Fuchs, Hofheim, Taunus, Michael Lederer, Frankfurt am Main, and Werner Schmieder, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Aug. 10, 1961, Ser. No. 130,544
Claims priority, application Germany, Aug. 18, 1960, F 31,905
7 Claims. (Cl. 260—89.1)



INTEGRAL DISTRIBUTION CURVE OF THE CHEMICAL COMPOSITION OF SOME PARTIALLY SAPONIFIED POLYVINYL ACETATES

1. A process for the manufacture of a partially saponified polyvinyl ester which comprises stirring with an alkaline catalyst a polyvinyl ester in a solvent mixture consisting essentially of (1) an alcohol and (2) the ester of said alcohol and the acid portion of said polyvinyl ester while maintaining a ratio of component (2) to component (1) of the solvent mixture in the range between 50:1 and 2.5:1.

3,156,679
METHOD OF POLYMERIZING NITRO ALCOHOL ESTERS OF ACRYLIC AND METHACRYLIC ACIDS

Herman T. Roy, Jr., Cleveland Heights, Ohio, assignor to The General Tire and Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 1, 1949, Ser. No. 113,674
4 Claims. (Cl. 260—89.5)

1. A method of polymerizing a liquid comprising an ester of a member of the group consisting of nitro alcohol esters of acrylic acid and nitro alcohol esters of methacrylic acid, which comprises mixing with said ester at least one alkyl percarbonate of the general formula

$$R—O—O—\overset{O}{\overset{\|}{C}}—O—O—R'$$

where R and R′ are alkyl groups which consist of hydrogen and carbon, and thereafter subjecting the mixture to a temperature of at least 25° C. and not substantially in excess of 50° C. until a solid polymer is produced, said alkyl percarbonate being present in an amount of .005% to 2%, based on the weight of the polymerizable monomeric material in said liquid.

3,156,680
PROCESS FOR POLYMERIZING VINYL ETHERS WITH VANADYL OR VANADIC SULFATE CATALYSTS

Michael Dunay, Fanwood, and Herman D. Noether, Short Hills, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 31, 1960, Ser. No. 53,049
10 Claims. (Cl. 260—91.1)

3. A process of polymerizing vinyl ethers having a vinyl group directly bonded to an etheric oxygen atom, wherein the etheric substituents are selected from the group consisting of alkyl, haloalkyl, phenyl alkyl and alkoxy alkyl, having from 1 to 20 carbon atoms comprising contacting said vinyl ether with a catalyst comprising at least one member selected from the group consisting of vanadyl sulfate and vanadic sulfate.

3,156,681
POLYMERIZATION PROCESS

Sheldon Kavesh, Leominster, Mass., and Arnold J. Rosenthal, Whippany, and George Walter Halek, New Providence, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 15, 1960, Ser. No. 49,437
6 Claims. (Cl. 260—93.7)

1. A polymerization catalyst system comprising (1) an anhydrous crystalline titanium composition of aluminum, titanium, and chlorine, said titanium being essentially trivalent, said composition having the following X-ray diffraction pattern:

d	I/I₁	d	I/I₁
5.91	Very strong.	2.72	Weak-medium.
5.32	Medium.	2.52	Strong.
5.10	Do.	2.13	Weak.
4.55	Weak-medium.	1.96	Weak-medium.
3.95	Weak.	1.80	Medium.
3.03	Medium.	1.77	Medium-strong.
2.94	Weak-medium.	1.70	Weak-medium.
2.90	Do.	1.47	Do.

d=interplanar spacings expressed in angstrom units.
I/I_1=relative intensities.

(2) at least one aluminum alkyl, (3) an aliphatic ether free of non-benzenoid unsaturation, and (4) a vinyl alkyl ether; the ratio of gram equivalents of titanium in said composition to mols of said aluminum alkyl being from 60:1 to 1:30; the ratio of gram equivalents of titanium in said composition to mols of aliphatic ether being from 0.1 to 10; and the ratio of millimoles of said vinyl alkyl ether per gram equivalent of titanium in said titanium composition being from 0.0005 to 0.5.

3,156,682
HYDROXYLATED POLYMER PRODUCTS AND PREPARATION THEREOF

Charles C. Kirk, Laurel, and Razmic S. Gregorian, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,431
2 Claims. (Cl. 260—94.9)

1. The process of forming hydroxylated polyethylene which comprises heating in suspension polyethylene containing carbonyl groups in an inert hydrocarbon solvent having a boiling point greater than 50° C. at a temperature below the solution temperature of the polymer in the presence of a Grignard reagent of the general formula RMgX wherein R is an alkyl and X is a halide and thereafter adding water to said suspension.

3,156,683
PURIFICATION OF CAPROLACTAM

Ollie W. Chandler, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Sept. 23, 1959, Ser. No. 841,667
5 Claims. (Cl. 260—239.3)

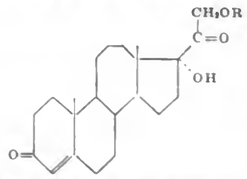
1. In a process for the purification of caprolactam produced by the Beckmann rearrangement of cyclohexanone oxime, the steps which comprise refluxing substantially anhydrous caprolactam at pressures ranging from about 5 to about 50 mm. and at liquid temperatures ranging from about 115 to about 175° C., while continually bubbling through the liquid caprolactam a gas inert to caprolactam selected from the group consisting of nitrogen, neon, argon, xenon, carbon dioxide, methane, and hydrogen, condensing the refluxing caprolactam at temperatures ranging from about 20° C. to about 100° C., said reflux being continued until the caprolactam contains less than 25 p.p.m. of volatile base calculated quantitatively as ammonia and then distilling the caprolactam at temperatures ranging from about 115 to about 175° C. and at pressures ranging from about 5 to about 50 mm.

3,156,684
C-HOMO-Δ^4-PREGNENE-17α,21-DIOL-3,20-DIONE, ITS ESTERS, INTERMEDIATES AND PROCESS

Georges Muller, Nogent-sur-Marne, Seine, and Roland Bardoneschi, Le Vert-Galant, Seine-et-Oise, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed June 7, 1963, Ser. No. 286,186
Claims priority, application France, June 14, 1962, 900,743
32 Claims. (Cl. 260—239.55)

1. A C-homo-steroid of the formula



wherein R is selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from one to eighteen carbon atoms.

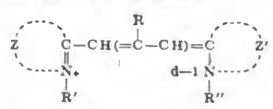
4. 17α - 20,20 - 21 - bis - methylenedioxy - 5β - pregnane-3,11-dione.

3,156,685
IMPROVED POLYMETHINE SENSITIZING DYES

Jean Marie Nys and Henri Depoorter, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed July 3, 1961, Ser. No. 121,372
Claims priority, application Great Britain June 20, 1957
5 Claims. (Cl. 260—240.6)

1. A methine dye of the formula:



wherein:

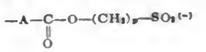
Z constitutes the atoms necessary to complete a heterocyclic system selected from the group consisting of benzothiazole, 6 - methoxybenzothiazole, 6 - methyl benzothiazole, 5-methyl benzothiazole, 5,6-dimethyl benzothiozole, benzoselenazole, benzoxazole, 5-phenyl benzoxazole, 6-methoxybenzoxazole, benzimidazole, 5,6-dichlorobenzimadazole, thiazole and 4-methyl thiazole;

Z′ constitutes the atoms necessary to complete a heterocyclic system selected from the group consisting of benzothiazole, benzoselenazole, benzoxazole, benzimidazole, thiazole, naphthothiazole, selenazoline and thiazoline;

d is a positive integer from 1 to 3;

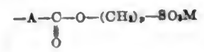
R is a member selected from the group consisting of hydrogen and methyl;

R′ is a radical of the formula



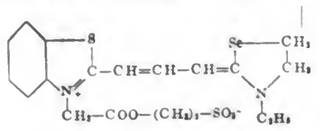
wherein A is lower alkylene, and *p* a positive integer from 1 to 6, and

R″ is a member selected from the group consisting of lower alkyl and



wherein A is lower alkylene, *p* a positive integer from 1 to 6 and M an alkyl metal atom.

2. Methine dye of formula:

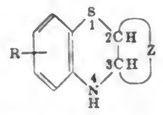


3,156,686
PROCESSES FOR PREPARING CYCLOALKYLIZED 2,3-DIHYDRO-1,4-BENZTHIAZINES

Gerhard Hackmack, Aumuhle, near Hamburg, and Walter Krastinat, Hamburg-Niendorf, Germany, assignors to Chemische Fabrik Promonta G.m.b.H., Hamburg, Germany, a body corporate of Germany

No Drawing. Filed Apr. 27, 1961, Ser. No. 105,872
Claims priority, application Germany, Apr. 28, 1960, C 21,316
3 Claims. (Cl. 260—243)

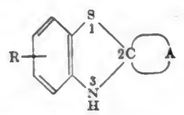
1. A process for the production of compounds corresponding to the formula



in which R is selected from the group consisting of hydrogen and halogens, and Z stands for hydrocarbon chain which connects the carbon atoms in the 2 and 3 position and is selected from the group consisting of

—CH_2—CH_2—CH_2—CH_2—

and —CH_2—CH_2—CH_2—CH_2—CH_2—, comprising heating spiro-compounds corresponding to the formula



in which R has the meaning stated above and A stands for a hydrocarbon chain selected from the group consisting of —CH_2—CH_2—CH_2—CH_2—CH_2— and

—CH_2—CH_2—CH_2—CH_2—CH_2—CH_2—

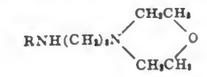
in the range of 240–320° C.

3,156,687
N-(N-HIGHER ALIPHATIC HYDROCARBON AMINO-PROPYL)-MORPHOLINES

Donald L. Andersen, Minneapolis, and Jean B. Thielen, St. Paul, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Nov. 27, 1961, Ser. No. 155,199
9 Claims. (Cl. 260—247.2)

1. A compound selected from the group consisting of



where R is an aliphatic hydrocarbon radical having from 8 to 24 carbon atoms and the acid addition salts thereof.

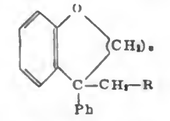
9. The acetate salt of 1-(N-morpholino)-3-tallow amino propane.

3,156,688
N-ALKYL AND N-ARALKYL BENZOXACYCLOALKANEMETHYLAMINES

Harold Elmer Zaugg, Lake Forest, Robert William De Net, Waukegan, and Raymond John Michaels, Jr., Mundelein, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Nov. 5, 1962, Ser. No. 235,510
15 Claims. (Cl. 260—247.7)

1. A member of the group consisting of a compound of the formula



and therapeutically acceptable, acid-addition salts thereof wherein Ph is phenyl, *n* is a number from 1 to 3 inclusive and R is selected from the group consisting of amino, loweralkylamino, diloweralkylamino, cycloalkylamino, containing from 3 to 7 carbon atoms in the ring, morpholino, pyrrolidino, benzylamino and 1-methyl-4-piperazino.

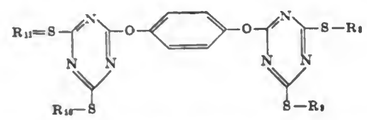
6. 4-phenyl-4-morpholinomethylchroman.

3,156,689
1,4-PHENYLENE-BIS[2-OXY-4,6-BIS(ALKYLTHIO)-5-TRIAZINES]

Martin Dexter, White Plains, Martin Knell, Ossining, and Eric A. Roskin, Bronx, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 21, 1961, Ser. No. 87,520. Divided and this application Apr. 4, 1963, Ser. No. 273,540
2 Claims. (Cl. 260—248)

1. A compound of the formula



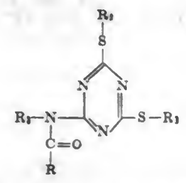
wherein each of R_8,R_9, R_{10} and R_{11} is alkyl of 1 to 18 carbon atoms.

3,156,690
6(N-ACYL-ALKYLHYDROXYANILINO)-2,4-BIS-(ALKYLTHIO)-1,3,5-TRIAZINES

Martin Dexter, White Plains, Martin Knell, Ossining, and Eric A. Roskin, Bronx, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 21, 1961, Ser. No. 87,520. Divided and this application Apr. 4, 1963, Ser. No. 273,541
4 Claims. (Cl. 260—249.5)

1. A compound of the formula



wherein R is alkyl of 1 to 11 carbon atoms, each of R_1 and R_2 is alkyl of 1 to 18 carbon atoms, and R_3 is alkyl hydroxyphenyl.

3,156,691
PRODUCTION OF 2-AMINOPYRIMIDINE

Heinrich Pasedach, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,414
Claims priority, application Germany Jan. 18, 1961
4 Claims. (Cl. 260—256.4)

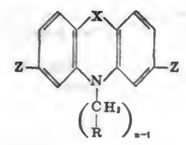
1. A process for the production of 2-aminopyrimidine which comprises reacting propargylaldehyde at temperatures between −10° C. and +100° C. while mixing intensely with an aqueous hydrochloric acid solution containing from 20% by weight of hydrogen chloride to an amount of hydrogen chloride equal to the saturation point of the solution at the reaction temperature, the hydrogen chloride content of which is at least one mole equivalent with reference to the amount of propargylaldehyde and allowing the reaction mixture to react with a compound selected from the group consisting of guanidine and salts of guanidine at temperatures between −10° C. and +100° C.

3,156,692
5-BASICALLY SUBSTITUTED DIBENZAZEPINE COMPOUNDS

Louis Müslin, Basel, Walter Schindler, Riehen, near Basel, and Franz Häfliger, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed June 23, 1959, Ser. No. 822,185
Claims priority, application Switzerland July 23, 1958
9 Claims. (Cl. 260—293)

1. Basically substituted azepine of the formula



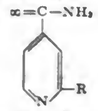
wherein X represents a member selected from the group consisting of the $—CH_2—CH_2—$ and $—CH=CH—$ groups, Z represents the same member selected from the group consisting of hydrogen and the chlorine atom, R is a member selected from the group consisting of N-lower alkyl-pyrrolidyl and N-lower alkyl-piperidyl, and *n* is a whole number from 1 to 3 inclusive.

3,156,693
PROCESS FOR PREPARING S-OXIDES OF 2-LOWER ALKYL ISOTHIONICOTINAMIDES

Paul Gailliot, Paris, Jean Baget, Sceaux, Seine, and Pierre Sarret, Fontenay-sous-Bois, Seine, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Apr. 23, 1962, Ser. No. 189,262
Claims priority, application France June 1, 1961
3 Claims. (Cl. 260—294.8)

1. Process for the preparation of S-oxides of isothionicotinamide compounds which comprises oxidising an isothionicotinamide of the formula:



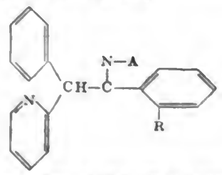
wherein R represent a member of the class consisting of hydrogen and alkyl of up to five carbon atoms with an inorganic per-salt selected from the class consisting of the alkali metal perborates and percarbonates at a temperature between 10° and 40° C. in an inert liquid medium.

3,156,694
TRIFLUOROACETAMIDE AND METHANESULFONAMIDE COMPOUNDS

Horace A. De Wald, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,079
5 Claims. (Cl. 260—294.8)

1. A compound of the formula



where R is a member of the class consisting of lower alkyl and halogen, and A is a member of the class consisting of trifluoroacetyl and methanesulfonyl.

4. N-[α-(o-methylphenyl)-β-(2-pyridyl)phenethylidene]methanesulfonamide.

3,156,695
PROCESS FOR THE PRODUCTION OF AROMATIC DI- AND POLYCARBOXYLIC ACIDS

Werner Stein, Dusseldorf-Holthausen, and Hartwig Schutt, Dusseldorf-Benrath, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Mar. 27, 1958, Ser. No. 724,266
Claims priority, application Germany Apr. 5, 1957
2 Claims. (Cl. 260—295)

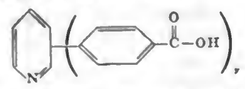
1. The method of producing alkali metal salts of pyridine-2,5-dicarboxylic acid by the thermal conversion of nicotinic acid, which comprises heating an alkali metal salt of nicotinic acid to a temperature above 300° C. and below the temperature at which said salt and the reaction products substantially decompose, in a substantially oxygen free inert atmosphere, in the presence of salts of oxalic acid, said salts being selected from the group consisting of alkali and alkaline earth metal salts, in the presence of a catalyst containing a material from the group consisting of cadmium, zinc, mercury, lead and iron and the oxides and salts of said metals, and under a pressure of less than 400 atmospheres for a time sufficient to effect said conversion, thereby obtaining a molar yield of said pyridine-2,5-dicarboxylic acid which is more than 50% of the nicotinic acid salt undergoing conversion.

3,156,696
CONDENSATION POLYMERS OF PYRIDYL POLYBENZOIC ACIDS WITH GLYCOLS

Ellis K. Fields, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Feb. 28, 1961, Ser. No. 92,129
3 Claims. (Cl. 260—295)

1. A polyester obtained by the reaction of a pyridine polybenzoic acid having the formula



wherein *y* is an integer from 2 to 3, with from 1 to 20 moles of a diol selected from the class consisting of ethylene glycol, propylene glycol, dihydroxy cyclohexane, bismethylol benzene and 1,1-dimethyl-1,1-di(p-hydroxyphenyl) methane.

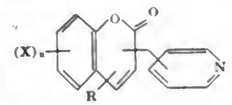
3. A polyester obtained by reacting ethylene glycol with 2,6-di(p-carboxyphenyl) pyridine in the ratio of 5 parts of glycol per part of said dicarboxylic acid by weight in a nitrogen atmosphere at 200° C. until the bis-glycolate is formed, heating the bis-glycolate to a temperature in the range of 250 to 350° C. while removing ethylene glycol by distillation and while reducing the pressure to 5 to 10 mm. Hg until substantially no further glycol remains distilled and recovering the polyester formed.

3,156,697
PYRIDYLCOUMARINS

Robert B. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,040
21 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of (1) free base compounds of the formula



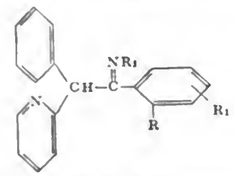
wherein X is selected from the group consisting of halogen and alkoxy of from 1 to 4 carbon atoms, inclusive; *n* is an integer from 0 to 3, inclusive; and R is selected from the group consisting of hydrogen, alkyl of from 1 to 4 carbon atoms, inclusive, and phenyl; (2) acid addition salts thereof; and (3) N-oxides thereof.

3,156,698
2-[α-(ORTHO SUBSTITUTED BENZIMIDOYL) BENZYL] PYRIDINE COMPOUNDS

Horace A. De Wald and Roger D. Westland, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,075
7 Claims. (Cl. 260—296)

1. A compound of the formula



where R is a member of the class consisting of lower alkyl, lower alkoxy, lower alkylthio, phenyl, trifluoromethyl, and halogen; R_1 is a member of the class consisting of hydrogen, lower alkyl, lower alkoxy and halogen; in combination R and R_1 at position 3 are

$—CH=CH—CH=CH—$

and R_2 is a member of the class consisting of hydrogen and methyl.

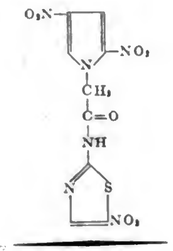
2. 2-[α-(o-lower alkylbenzimidoyl)benzyl]pyridine.

3,156,699
N-(5-NITRO-THIAZOLYL-2)2,4-DINITRO-PYRROLE-1-ACETAMIDE

George Karmas, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Original application Apr. 20, 1960, Ser. No. 23,383. Divided and this application July 18, 1961, Ser. No. 124,767
1 Claim. (Cl. 260—306.8)

A compound having the formula

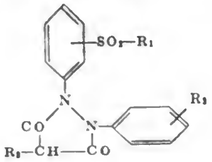


3,156,700
4-SUBSTITUTED 1,2-DIARYL-3,5-DIOXO-PYRAZOLIDINES

Louis Muslin, Rudolf Pfister, and Franz Hafliger, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,975
Claims priority, application Switzerland Feb. 24, 1960
12 Claims. (Cl. 260—310)

1. A compound of the formula



wherein:

R_1 is alkyl having at most 3 carbon atoms,

R_2 is a member selected from the group consisting of hydrogen, alkyl having at most 4 carbon atoms, alkoxy having at most 4 carbon atoms, alkylsulphonyl having at most 3 carbon atoms, halogen and hydroxyl,

and R_3 is a member selected from the group consisting of hydrogen, alkyl having at most 10 carbon atoms, phenyl-loweralkyl, furfuryl, phenylthio-loweralkyl, phenylsulphinyl-loweralkyl, phenylsulphonyl-loweralkyl, chlorobenzyl, dimethoxybenzyl, methylenedioxybenzyl and chlorophenyl.

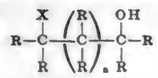
3,156,701
PRODUCTION OF OXACYCLOALKANES FROM ALKYLENE HALOHYDRINS

Albert L. Rocklin, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 194,647
5 Claims. (Cl. 260—333)

1. The process for preparing cyclic ethers which comprises reacting together

an alkali metal hydroxide and
an alkylene halohydrin of the formula



where each R is selected from the group consisting of hydrogen and alkyl of up to 4 carbon atoms and phenyl, *n* is a positive integer such that the halohydrin contains from 3 to 10 carbon atoms and X represents halogen of the group consisting of chlorine and bromine,
in anhydrous liquid phase in tertiary alkanol having 4 to 8 carbon atoms per molecule at the boiling temperature of the reaction mixture.

3. The process for preparing oxetane which comprises reacting together
an alkali metal hydroxide and
trimethylene chlorohydrin
in anhydrous tertiary alkanol having 4 to 8 carbon atoms per molecule at the boiling temperature of the reaction mixture.

3,156,702
METHOD OF PRODUCING VINYLENE CARBONATE
Horst Höfermann and Hermann Springmann, Recklinghausen, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany
No Drawing. Filed Mar. 27, 1962, Ser. No. 182,953
Claims priority, application Germany Mar. 28, 1961
7 Claims. (Cl. 260—340.2)

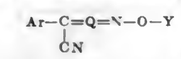
1. A process for the production of vinylene carbonate which process comprises contacting gaseous monochloroethylene carbonate at 270–450° C. with a catalyst consisting essentially of a member of the group consisting of copper, zinc, cadmium, iron, cobalt, nickel and halogenides and oxides thereof.

3,156,703
STABILIZED 3,4-DIHYDRO-1,2-PYRAN-2-CARBOXALDEHYDE COMPOSITIONS
Glen D. Lichtenwalter, La Porte, and Gregor H. Riesser and Robert W. Fourie, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,294
14 Claims. (Cl. 260—345.9)

1. A stabilized composition consisting essentially of acrolein dimer and sufficient nonacidic simple salt of metal of Group II of the Periodic Table of the Elements having an atomic number of 4 to 80 to reduce polymer formation during storage.

3,156,704
ARYLCYANOMETHYLENE QUINONE OXIMES AND THEIR DERIVATIVES
Ralph B. Davis, Notre Dame, Ind., assignor to University of Notre Dame, Notre Dame, Ind.
No Drawing. Filed Apr. 12, 1960, Ser. No. 21,622
3 Claims. (Cl. 260—396)

1. A compound having the formula:



wherein Ar is a group selected from the class consisting of p-chlorophenyl and p-methoxyphenyl groups; Q is a 1,4-quinoid radical selected from the class consisting of the 1,4-benzoquinoid radical, the 1,4-naphthoquinoid radical, and substituted 1,4-benzoquinoid radical containing not more than two substituent groups thereon, said substituent groups on said 1,4-benzoquinoid radical being selected from the class consisting of —Cl, —CH_3 and —OCH_3; and Y is a radical selected from the class consisting of hydrogen, potassium and sodium.

3,156,705
PRODUCTION OF DICARBOXYLIC ACID ANHYDRIDES BY THE CATALYTIC OXIDATION OF OLEFINS
Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Dec. 14, 1960, Ser. No. 75,655
7 Claims. (Cl. 260—346.8)

1. In a process for the vapor phase catalytic oxidation of butene to provide maleic anhydride, the improvement which comprises effecting said catalytic oxidation in the presence of a catalyst complex comprising vanadium, oxygen, phosphorus and a metal selected from the group consisting of the metals of the fourth period of Group VIII*b* and mixtures thereof, said catalyst containing from about 1.1 to about 1.6 atoms of phosphorus per atom of vanadium and containing from about 0.20 to about 2.0 weight percent of the said metals of the fourth period of Group VIII*b* based on the total weight of vanadium, oxygen and phosphorus; the said catalyst having been deposited onto carrier particles while the vanadium has an average valence of no more than plus 4.6.

3,156,706
PRODUCTION OF DICARBOXYLIC ACID ANHYDRIDES BY THE CATALYTIC OXIDATION OF ALIPHATIC HYDROCARBONS
Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Dec. 14, 1960, Ser. No. 75,680
9 Claims. (Cl. 260—346.8)

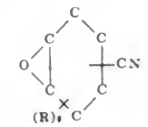
1. In a process for the vapor phase catalytic oxidation of butene to provide maleic anhydride, the improvement which comprises effecting said catalytic oxidation in the presence of a catalyst complex comprising vanadium, oxygen, phosphorous and a phosphorus stabilizer which comprises from 15 to 85 weight percent of (1) a member selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, francium and mixtures thereof with the remainder being (2) a member selected from the group consisting of metals from the Periodic Table Group II*b* and mixtures thereof, said catalyst containing from about 1.1 to about 1.6 atoms of phosphorus per atom of vanadium and containing from about 0.20 to about 2.0 weight percent of the said phosphorus stabilizer based on the total weight of vanadium, oxygen and phosphorus; the said catalyst having been deposited onto carrier particles while the vanadium has an average valence of no more than plus 4.6.

3,156,707
OXIDATION OF ALIPHATIC HYDROCARBONS
Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed May 17, 1962, Ser. No. 195,419
5 Claims. (Cl. 260—346.8)

1. A process for the preparation of maleic anhydride at high yields which comprises contacting a gaseous mixture of butene and oxygen at an elevated temperature with a catalyst obtained by depositing on a carrier a catalyst solution of phosphorus and vanadium atoms, in an atomic ratio of about 1.0 to 2.0 atoms of phosphorus per atom of vanadium, the said vanadium having a valence of no greater than about four at the time of deposition of the solution on the carrier, and thereafter drying the resulting coated carrier to form the catalyst, the said catalyst solution having been prepared by dissolving vanadium pentoxide in an aqueous solution of hydrochloric acid and thereafter adding the phosphorus atoms to the solution.

3,156,708
CUPROUS COMPLEXES
Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 27, 1960, Ser. No. 78,251
4 Claims. (Cl. 260—348)

1. The cuprous complex produced by the reaction of a cuprous salt of an inorganic mineral acid with an epoxycyclohexanecarbonitrile of the formula:



wherein each R, individually, is selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbon atoms, at a temperature of from about 20° C. to about 100° C.

3,156,709
OXIDATION PROCESS
George Graham Allan, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 6, 1962, Ser. No. 177,725
7 Claims. (Cl. 260—348.5)

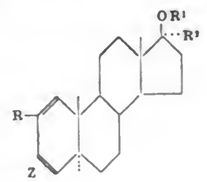
1. In a process for the liquid phase oxidation of a water-soluble ethylenic compound having an electronegatively substituted double bond with hydrogen peroxide in the presence of a metal compound catalyst for the oxidation, the improvement comprising employing as the catalyst an organometallic compound which is insoluble in the reaction mixture and mechanically separating said organometallic compound from said mixture after completion of the oxidation.

3,156,710
5α-HYDROXY-6β-AMINOSTEROIDS OF THE ANDROSTANE SERIES
Kanzo Sasaki, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed July 11, 1963, Ser. No. 294,237
5 Claims. (Cl. 260—349)

1. 3β,5α,17β-trihydroxy-6β-azidoandrostane.

3,156,711
NOVEL Δ^1-3-DESOXYANDROSTENE AND $\Delta^{1,3}$-3-DESOXYANDROSTADIENE DERIVATIVES
Alexander D. Cross and Albert Bowers, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Oct. 19, 1962, Ser. No. 231,836
17 Claims. (Cl. 260—397.5)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and methyl; R^1 is a member of the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than twelve carbon atoms; R^2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, and lower alkinyl; and Z is a member of the group consisting of a double bond and a saturated linkage, each between C–3 and C–4.

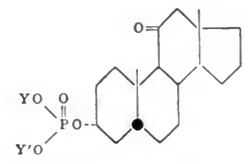
3,156,712
PREPARATION OF 3β-HYDROXY-Δ^4-20-KETOSTEROIDS FROM STEROIDAL Δ^4-3,20-DIKETONES
Peter W. D. Mitchell, Mount Royal, Quebec, and David J. Marshall, Cote St. Luc, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 5, 1961, Ser. No. 135,729
7 Claims. (Cl. 260—397.3)

1. A process for preparing 3β-hydroxy-Δ^4-20-ketosteroids which comprises the steps of: (1) adding pyrrolidine to a solution of a steroidal Δ^4-3,20-diketone in a lower alkanol, and recovering a 3-pyrrolidino-$\Delta^{3,5}$-steroidal 20-ketone; (2) adding semicarbazide to an acidified solution of said 3-pyrrolidino-$\Delta^{3,5}$-steroidal-20-ketone to form an acidic solution of a 3-pyrrolidino-$\Delta^{3,5}$-steroidal-20-semicarbazone, commingling said acidic solution with an excess of dilute aqueous alkali metal hydroxide solution, recovering a 3-keto-Δ^4-steroidal-20-semicarbazone; (3) agitating said semicarbazone in a lower alkanol with sodium borohydride and thereafter recovering a 3β-hydroxy-Δ^4-steroidal-20-semicarbazone; (4) preparing a solution of said 3β-hydroxy-Δ^4-steroidal-20-semicarbazone in a water-miscible non-alcoholic solvent, adding thereto pyruvic acid, and thereafter diluting the reaction mixture with water to cause separation of the 3β-hydroxy-Δ^4-steroidal-20-ketone, and recovering said 3β-hydroxy-Δ^4-steroidal-20-ketone.

6. 6α-methylprogesterone-20-semicarbazone.

3,156,713
PROCESS FOR THE PRODUCTION OF 3α-PHOSPHATO-5β-ANDROSTANE-11-ONE
Julien Warnant, Neuilly-sur-Seine, Robert Joly, Montmorency, and André Allais and Pierre Girault, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed July 11, 1962, Ser. No. 209,257
Claims priority, application France, July 21, 1961, 868,569, Patent 1,173,938; Oct. 20, 1961, 876,603, Patent 1,849 M
4 Claims. (Cl. 260—397.45)

1. The process of producing phosphate esters of the formula



wherein Y and Y′ are selected from the group consisting of hydrogen and alkali metals and together represent divalent alkaline earth metals, which comprises the steps of reacting 5β-androstane-3α-ol-11-one with a dibenzylphosphonate halide, subjecting the 3α-dibenzylphosphato-5β-androstane-11-one to the action of hydrogen in the presence of a hydrogenolysis catalyst in an inert organic solvent and recovering said phosphate esters.

3,156,714
SYNTHESES OF SPIRILLOXANTHIN AND INTERMEDIATES

Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 31, 1962, Ser. No. 198,719
7 Claims. (Cl. 260—410.9)

1. A process for the preparation of spirilloxanthin comprising the steps of

(*a*) reacting 6-methyl-5-hepten-2-one with methyl alcohol under acidic conditions to form 6-methoxy-6-methylheptan-2-one,

(*b*) treating the latter compound with ethyl haloacetate and zinc metal in a Reformatsky reaction to form ethyl 3-hydroxy-3,7-dimethy-7-methoxyoctanoate,

(*c*) dehydrating the latter compound with a dehydrating agent to form ethyl 3,7-dimethyl-7-methoxy-2-octanoate,

(*d*) reacting the latter compound with N-bromosuccinimide to form ethyl 3,7-dimethyl-7-methoxy-octa-2,4-dienoate,

(*e*) reducing the latter compound with a group I-group III mixed metal hydride to form 3,7-dimethyl-7-methoxy-octa-2,4-dien-1-ol,

(*f*) reacting the latter compound with triphenyl phosphorus hydrohalide to form 3,7-dimethyl-7-methoxy-octa-2,4-dien-1-yl triphenyl phosphorus bromide, and

(*g*) reacting the latter compound with crocetin dialdehyde in the presence of an alkali metal alcoholate to give spirilloxanthin.

3,156,715
POLYFLUORINATED ORGANO-MERCURY COMPOUNDS AND THEIR PREPARATION

Robert N. Haszeldine, Windyridge, Lyme Road, Disley, England; Alan R. Parkinson, 25 Highview St., Deane, Bolton, England; and John M. Birchall, 22 Lorna Road, Cheadle Hulme, England

No Drawing. Filed Sept. 18, 1962, Ser. No. 224,515
10 Claims. (Cl. 260—433)

1. Compounds of the general formula R_f—Hg—X where R_f is a carbocyclic aromatic radical containing benzenoid unsaturation, said radical being attached to the mercury atom through an aromatic ring carbon atom and carrying fluorine on at least half of its aromatic ring positions, and where X is selected from the class consisting of an R_f radical, chlorine, bromine, iodine and the acetate radical.

3,156,716
PROCESS FOR PREPARING TETRAVINYL LEAD

Hugh E. Ramsden and Hugh F. Shannon, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 24, 1963, Ser. No. 253,742
7 Claims. (Cl. 260—437)

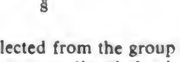
1. An improved process for the preparation of tetravinyl lead comprising (1) slowly adding a vinyl Grignard solution to a slurry of lead chloride each in an organic ethereal solvent at a temperature maintained below about 40° C. during the major part of said addition the amount of said organic ethereal solvent being sufficient to allow efficient mixing of said slurry, (2) refluxing the mixture and (3) distilling under reduced pressure while maintaining the pot temperature below about 75° C. to recover said tetravinyl lead as a distillate fraction.

3,156,717
ORGANIC SULFUR COMPOUNDS HAVING FUNGICIDAL ACTIVITY

Giorgio Rossi, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,245
Claims priority, application Italy Dec. 28, 1960
4 Claims. (Cl. 260—455)

1. A compound having the formula:



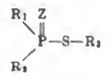
in which R is selected from the group consisting of methoxy, ethoxy, isopropoxy, dimethylamino and diethylamino groups, and R_1 is benzyl (—$CH_2C_6H_5$).

3,156,718
PROCESS FOR PREPARING THIOPHOSPHORIC, THIOPHOSPHONIC, AND THIOPHOSPHINIC ACID ESTERS

Walter Lorenz, Wuppertal-Vohwinkel, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 103,192, Apr. 17, 1961. This application Nov. 21, 1962, Ser. No. 239,361
Claims priority, application Germany Apr. 16, 1960
10 Claims. (Cl. 260—461)

1. A process for the production of a compound of the general formula



in which Z is a chalcogen having an atomic number from 6 to 18, R_1 and R_2 are selected from the group consisting of lower alkyl and lower alkoxy and R_3 is a member of the group consisting of lower alkyl, benzyl, nitrobenzyl, alkylmercaptoalkyl, alkylamidocarbonylalkyl and alkoxycarbonylalkyl, which comprises reacting an alkali salt of a thiono-phosphorus acid of the formula



in which R_1 and R_2 have the same meaning as given above and X is an alkali-forming group selected from the group consisting of sodium, potassium and ammonium with a compound of the formula

$$X—O—SO_2—SR_3$$

in which X and R_3 have the same meaning as stated above.

3,156,719
PROCESS FOR PREPARING DIALKYL 2,5-DIARYLAMINO-3,6-DIHYDROTEREPHTHALATES

Paul H. Griswold, Jr., Wilmington, Del., and William S. Struve, Chatham, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,819
8 Claims. (Cl. 260—471)

We claim as our invention:

1. In a process for preparing a dialkyl 2,5-diarylamino-3,6-dihydroterephthalate by condensing an arylamine with a dialkyl succinylsuccinate in an inert liquid reaction medium, said arylamine being a member of the group consisting of phenyl- and naphthylamines which have a free position ortho to the amino group and which bear in the remaining positions substituents selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy, and said liquid reaction medium being a member selected from the group consisting of

biphenyl-diphenyloxide eutectic melt,
the methyl napthalenes,
biphenyl,
diphenyloxide,
diethylphthalate,
tetramethylene sulfone, and
mineral oils boiling within the range of 225° to 300° C.,

the improvement which comprises effecting said condensation by the aid of a catalytic quantity of a salt, formed in situ, from a portion of said arylamine and a sulfonic acid of the formula R—SO_3H, wherein R is a member of the group consisting of

(*a*) lower alkyl, phenyl and naphthyl, and

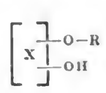
(*b*) phenyl and naphthyl nuclei containing no more than two substituents and wherein said substituents are selected from the group consisting of halogen, lower alkyl and lower alkoxy.

3,156,720
ETHYLENICALLY UNSATURATED DERIVATIVES OF ORTHO-DIHYDRIC PHENOLS

Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig and Martin Skoultchi, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,119
7 Claims. (Cl. 260—486)

1. The ethylenically unsaturated derivatives of orthodihydric phenols which correspond to the formula:



wherein X is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals carrying said hydroxy and alkoxy groups thereon in positions which are ortho with respect to one another, and wherein R is an ethylenically unsaturated radical selected from the class consisting of beta-hydroxypropyl acrylate and beta-hydroxypropyl methacrylate groups.

3,156,721
METHOD FOR SEPARATING RACEMIC SODIUM GLUTAMATE AND SODIUM SULFATE

Hiroo Kageyama, Isogo-ku, Yokohama-shi, Michiya Sato, Tokyo, and Tetuya Inoue, Kawasaki-shi, Kanagawa-ken, Japan, assignors to Ajinomoto Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Apr. 8, 1960, Ser. No. 21,037
Claims priority, application Japan, Apr. 28, 1959, 34/13,287
4 Claims. (Cl. 260—534)

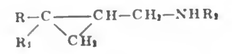
1. A method for recovering substantially pure racemic sodium glutamate from an aqueous solution containing racemic sodium glutamate and sodium sulfate wherein sodium sulfate is contained in an amount of at least about 0.6 times the racemic sodium glutamate by weight and racemic sodium glutamate is contained in an amount of at least 2 grams to 100 grams of water at 10° C., said method comprising saturating said solution with sodium chloride at a temperature between about 50° C. and the boiling point of said solution, removing any solid phase which occurs in said solution, cooling said solution to a temperature of about 10° C., and recovering the crystals of substantially pure racemic sodium glutamate which precipitate.

3,156,722
2,2-DIALKYLCYCLOPROPANEMETHYLAMINES

William J. Considine, Flushing, N.Y., and Jack Bernstein, New Brunswick, and John C. Burke, Milltown, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,870
6 Claims. (Cl. 260—563)

1. A compound selected from the group consisting of those of the formula



wherein R is a member selected from the group consisting of hydrogen and lower alkyl; R_1 is lower alkyl; and R_2 is a member selected from the group consisting of hydrogen and lower alkyl, and non-toxic acid-addition salts thereof.

3,156,723
FORMATION OF OXIMES FROM α-NITROOLEFINS

Wolfgang K. Seifert, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Oct. 26, 1961, Ser. No. 147,738
7 Claims. (Cl. 260—566)

1. Process for the preparation of oximes which comprises reducing at room temperature an unsubstituted α-nitroolefin selected from the group consisting of acyclic and alicyclic monoolefinic hydrocarbons with hydrogen in the presence of from about 1 to 10% by weight based on the weight of said α-nitroolefin of palladium in lower alkanol solvent having from 0.2–2 moles of a mineral acid per mole of α-nitroolefin and thereby producing the oxime.

3,156,724
PREPARATION OF 2,2'-DICHLOROHYDRAZOBENZENE

Raymond E. Werner, Norbert Young, John J. Prichett, and Charles E. Brenner, Cincinnati, Ohio, assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,146
3 Claims. (Cl. 260—569)

1. The process which comprises catalytically hydrogenating ortho-nitrochlorobenzene in an alkaline reaction medium at a temperature in the approximate range 40–100° C. in the presence of a relatively small amount of a naphthalene compound of the group consisting of 2,3-dichloro - 1,4 - naphthoquinone, 1,4-naphthoquinone, and 1,4-naphthalenediol and in the presence of a metal catalyst of the group consisting of palladium and platinum hydrogenation catalysts, whereby 2,2' - dichlorohydrazobenzene is produced as the major reaction product.

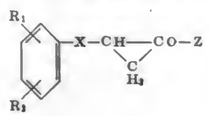
3,156,725
SUBSTITUTED 2-PHENOXY AND PHENYLTHIO-CYCLOPROPYLAMINES

Carl Kaiser, Haddon Heights, N.J., and Richard J. Mohrbacher, Fort Washington, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,557
7 Claims. (Cl. 260—570.5)

1. Chemical compound of the class consisting of a free base and its nontoxic pharameutically acceptable acid

addition salts, said free base having the formula:



in which:

X is a member selected from the group consisting of oxygen and sulfur,

Z is a member selected from the group consisting of amino, monomethylamino and dimethylamino, and;

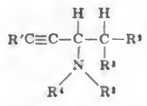
R_1 and R_2 are members selected from the group consisting of hydrogen, lower alkyl, halogen, amino, nitro, lower alkoxy and trifluoromethyl.

3,156,726
ACETYLENIC AMINES

Kent C. Brannock and Robert D. Burpitt, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 19, 1961, Ser. No. 139,050
2 Claims. (Cl. 260—570.8)

1. Compounds of the formula



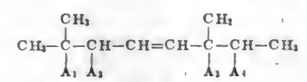
wherein R' is selected from the group consisting of phenyl and lower alkyl-substituted phenyl radicals; R^2 and R^3 are selected from the group consisting of hydrogen, alkyl radicals of one to eight carbon atoms, and alkylene radicals which, with the carbon atom to which they are attached, form a 5- to 6-membered saturated carbocyclic ring; and R^4 and R^5 are selected from the group consisting of alkyl radicals of one to eight carbon atoms and divalent organic radicals which, with the nitrogen atom to which they are attached, form a 5- to 6-membered, saturated heterocyclic ring from the group consisting of morpholino, pyrrolidinyl and piperidino.

3,156,727
DIHYDROXY DIAMINES AND THEIR PRODUCTION

Henri Sidi, Paramus, and William M. Kraft, Verona, N.J., assignors, by mesne assignments, to Heyden Newport Chemical Corporation, a corporation of Delaware

No Drawing. Filed Mar. 29, 1960, Ser. No. 18,262
12 Claims. (Cl. 260—573)

1. A dihydroxy diamine having the formula



wherein two of the substituents A_1, A_2, A_3, and A_4 represent hydroxyl groups and the other two of said substituents represent groups having the formula $—NR_2$, wherein each R represents a member selected from the group consisting of hydrogen, alkyl groups having from 1 to 18 carbon atoms, hydroxyalkyl groups having from 1 to 6 carbon atoms, aminoalkylene groups having from 2 to 8 carbon atoms, phenyl, and benzyl and where the combination of A_1 and A_2 and the combination of A_3 and A_4 each contain one hydroxyl group and one $—NR_2$ group.

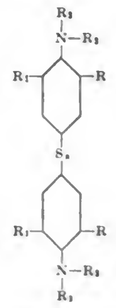
6. 2,3,6,7 - [dihydroxy di(β-hydroxyethylamino)]-2,6-dimethyl-octylene-4.

3,156,728
THIOBIS(2,6-DIALKYLANILINE) COMPOUNDS

Harold D. Orloff, Oak Park, and Calvin J. Worrel, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 28, 1960, Ser. No. 39,235
9 Claims. (Cl. 260—578)

1. A 4,4'-thiobis[2,6-di(lower alkyl)aniline] compound having the formula



wherein R is an alkyl group having from 2 to 4 carbon atoms, R_1 is an alkyl group having from 1 to 4 carbon atoms, R_2 and R_3 are each hydrogen, and x ranges from 1 to 4 inclusive.

3,156,729
SYNTHESIS OF DIAMINES

Irving L. Mador and Louis J. Rekers, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 4, 1958, Ser. No. 758,901
2 Claims. (Cl. 260—583)

1. In a process for preparing a diamino dimer of butadiene by maintaining in liquid phase a reaction mixture comprising butadiene and a lower molecular weight alcohol of the methanol series and, in said mixture maintained at a temperature below about 100° C. and a pressure up to about 5,000 p.s.i., reacting hydroxylamine with titanous chloride whereby the titanous ion is oxidized to titanic ion, the improvement which comprises carrying out said reaction using an amount of butadiene of from about one to about eight equivalents per equivalent of hydroxylamine and an amount of titanous chloride substantially less than equivalent to said hydroxylamine in the presence of hydrogen and a platinum hydrogenation catalyst to reduce simultaneously in situ the titanic ion that forms by reduction of the hydroxylamine with the titanous ion.

3,156,730
REDUCTIVE CONDENSATION PROCESS

Jack Kwiatek and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,123
2 Claims. (Cl. 260—601)

1. A reductive condensation process for the direct production of higher molecular weight saturated aldehydes from lower molecular weight saturated aliphatic aldehydes containing an alpha hydrogen atom and having up to 10 carbon atoms which consists of reacting said lower molecular weight saturated aliphatic aldehyde containing an alpha hydrogen atom at a temperature of about 0° to 180° C. with an aqueous solution having a pH of from about 7 to 13 containing cobalt ions and cyanide anions in the presence of a hydrogen pressure of from about 1 to 1,000 p.s.i., said aqueous solution containing from about 2 to about 10 cyanide anions per cobalt ion and from about 0.001 to about 1 mole of cobalt ion per mole of the saturated aliphatic aldehyde containing an alpha hydrogen atom.

3,156,731
STABILIZATION OF VINYLCYCLOALKANETHIOLS

Vernon R. Ratzlow and Charles A. Ray, Jr., Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,919
17 Claims. (Cl. 260—609)

1. A composition of matter consisting essentially of a vinylcycloalkanethiol and a stabilizing amount of an organic polysulfide represented by the structural formula $R'S_xR''$ wherein R' and R'' are alkyl radicals, each alkyl radical having from 1 to 12 carbon atoms, and x is an integer in the range of 3 to 10.

3,156,732
TELOMERS FROM TETRAFLUOROETHYLENE AND SECONDARY IODIDES

Murray Hauptschein, Glenside, and Milton Braid, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 16, 1961, Ser. No. 82,701
11 Claims. (Cl. 260—653.1)

1. A method for preparing telomers of tetrafluoroethylene which comprises reacting tetrafluoroethylene with a secondary iodide of the formula

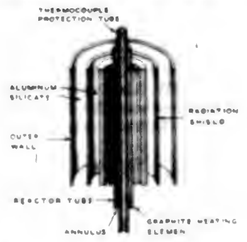


where R^1 and R^2 are selected from the class consisting of perfluoroalkyl and perfluoromonochloroalkyl radicals at a temperature of from 150° C. to 220° C. and under super-atmospheric pressure of at least 100 lbs./in.² gage.

3,156,733
SELECTIVE PYROLYSIS OF METHANE TO ACETYLENE AND HYDROGEN

John Happel, 69 Tompkins Ave., Hastings on Hudson, N.Y., and Leonard Kramer, 236 E. 29th St., New York, N.Y.

Filed Dec. 2, 1960, Ser. No. 73,435
6 Claims. (Cl. 260—679)

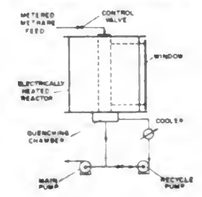


1. A process for the pyrolysis of methane to produce acetylene and hydrogen which comprises heating a methane containing stream, without substantial interruption, within a pyrolytic reaction zone at sub-atmospheric pressure and at a maximum temperature within the range of 1500° C. to 2000° C.; the space velocity of hydrocarbon through said reaction zone being within the range of 20 $sec.^{-1}$ to 0.05 $sec.^{-1}$; the initiation of said reaction zone being characterized by a temperature of about 250° C. below the aforesaid maximum temperature; withdrawing the gaseous product from said reaction zone and quenching said product rapidly to a temperature of at least 600° C.

3,156,734
PYROLYSIS OF METHANE-HYDROGEN MIXTURES

John Happel, 69 Tompkins Ave., Hastings on Hudson, N.Y.

Filed May 22, 1961, Ser. No. 111,646
9 Claims. (Cl. 260—679)



1. A process for the pyrolysis of mixtures of methane and hydrogen to produce essentially only acetylene and hydrogen which comprises heating at a total pressure at least atmospheric, a mixture of substantially pure methane and hydrogen having proportions of hydrogen to methane in the range of 1:1 to 39:1 mole ratios within a substantially isothermal pyrolysis reactor, in which the principal part of the pyrolysis occurs and wherein the maximum temperature of the reaction zone is at least 1450° C. up to 2000° C., the reaction zone being essentially isothermal in that heat is being added to crack the gas in its passage through the reaction zone, the beginning of the pyrolysis reaction zone being that point at which the temperature of the said mixture reaches a level of about 250° C. below the maximum temperature in the pyrolysis reactor, the effective space velocity of said mixture through said reaction zone being within the range of 0.72 to 70.7 $sec.^{-1}$ $atm.^{-1}$.

3,156,735
OXIDATIVE DEHYDROGENATION USING GOLD-PLATINUM GROUP METAL CATALYST

Warren E. Armstrong, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,085
10 Claims. (Cl. 260—680)

1. The process for oxidatively converting olefinically unsaturated hydrocarbons to corresponding more unsaturated hydrocarbons having a higher carbon to hydrogen ratio which consists essentially of contacting said olefinically unsaturated hydrocarbons, in admixture with oxygen, at an elevated temperature, with a catalytically active composition consisting essentially of gold in combination with a noble metal selected from the group consisting of platinum, palladium, rhodium, ruthenium and iridium, and a solid refractory oxide supporting material having a surface area less than 8 $m.^2/g.$, said catalytically active composition containing said gold and said noble metal in a ratio of from about 0.2 to about 25 atoms of gold per atom of said noble metal.

3,156,736
PROCESS FOR PREPARATION OF SYNTHETIC LUBRICANTS

Derek Southern, Heswall Wirral, Charles B. Milne, Little Sutton Wirral, and Gerald Robinson, Chester, England, assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1960, Ser. No. 57
Claims priority, application Great Britain, Jan. 8, 1959, 752/59; Apr. 28, 1959, 14,460/59
1 Claim. (Cl. 260—683.15)

A process for the preparation of a lubricating oil which comprises subjecting a mixture of C_{9-17} cracked wax olefins to extractive crystallization with urea, recovering

urea-reactive straight chain alpha-mono olefins from the molecular complexes so formed, percolating the recovered olefins over particulate silica gel, polymerizing the percolated olefins with a mixture of 0.1–0.5 mole aluminum trialkyl per mole of titanium tetrachloride at a temperature between about 0° C. and 50° C. and at about atmospheric pressure, fractionally distilling the polymerized oily product consisting essentially only of polymerized straight chain alpha-monoolefins so as to recover the fraction containing substantially no components having less than about nineteen carbon atoms per molecule, and hydrogenating the recovered fraction, whereby a lubricating oil is obtained.

3,156,737

HYDROCARBON CONVERSION PROCESS

Louis C. Gutberlet, Cedar Lake, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 15, 1961, Ser. No. 95,827
16 Claims. (Cl. 260—683.65)

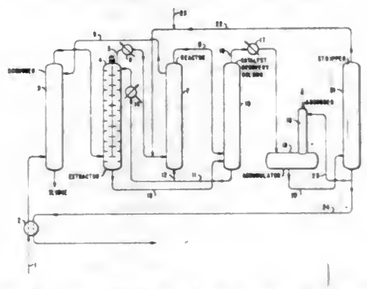
1. A process for the production of branched chain paraffinic hydrocarbons which process comprises contacting an olefinic hydrocarbon with a catalyst in a reaction zone in the presence of a hydrogen-affording gas under elevated pressure and at a temperature in a range of about 400° F. to 750° F., said catalyst comprising a metallic hydrogenation component, a solid acidic component, and an activity control-affording substance comprising a normally solid element of Group VA of the Periodic Table, whereby there is provided a converted paraffinic branched chain product containing more branched chain paraffins than the paraffin isomerization equilibrium amount at the operating temperature.

3,156,738

ISOMERIZATION OF HEXANES WITH FRIEDEL-CRAFTS CATALYST

William S. Reveal, Orinda, and William E. Ross, Danville, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,742
8 Claims. (Cl. 260—683.75)



1. In the isomerization of a saturated isomerizable hydrocarbon containing a minor amount of aromatic hydrocarbon impurity with a molten salt isomerization catalyst comprising aluminum chloride and antimony trichloride in the presence of a hydrogen halide promoter in a reaction zone, the reaction zone effluent passing to a separation zone wherein hydrocarbon isomerization product is separated from a liquid metal halide fraction comprised predominantly of antimony trichloride and a very minor proportion of aluminum chloride, which proportion is substantially less than that comprised in the reaction zone, the improvement which comprises contacting the isomerizable hydrocarbon in an extraction zone with at least a portion of the liquid metal halide fraction withdrawn from said separation zone, recovering a raffinate phase comprising isomerizable hydrocarbon of reduced aromatic content and an extract phase comprising liquid metal halide fraction enriched in aromatics, isomerizing the raffinate phase with said isomerization catalyst and returning the extract phase to the separation zone to recover the aromatics with the isomerization product.

3,156,739

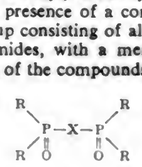
MANUFACTURE OF OLEFINS

Leopold Horner and Hellmut Hoffmann, Mainz (Rhine), and Walter Klink, Worms-Pfiffligheim, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 16, 1961, Ser. No. 110,346
Claims priority, application Germany, July 12, 1960, F 31,635
12 Claims. (Cl. 260—668)

1. A process for the manufacture of olefins which comprises reacting a member selected from the group consisting of cyclohexanone, fluorenone and carbonyl compounds of the formula:

in which R_1 represents a member selected from the group consisting of alkyl, alkenyl, aralkyl, aralkenyl, hydrocarbon aryl, and pyridyl radicals and R_2 represents a member selected from the group consisting of hydrogen, acyl, alkyl, alkenyl, aralkyl, aralkenyl, and hydrocarbon aryl radicals, in the presence of a condensation agent selected from the group consisting of alkali metal alkoxides and alkali metal amides, with a member selected from the group consisting of the compounds of the formula:



wherein each R represents a member selected from the group consisting of alkyl, alkoxy, hydrocarbon aryl and hydrocarbon aryl oxy, and X represents a member selected from the group consisting of alkylene radicals containing 2 to 6 carbon atoms, alkenylene radicals containing 2 to 4 carbon atoms and xylylene radicals.

3,156,740

THERMOSETTING MIXTURE OF A STYRENE-ACRYLIC ACID-EPOXIDE-CONTAINING COMPOUND AND AN AMINE-ALDEHYDE RESIN

George W. Bussell, Dearborn, Mich., assignor to Rinshed-Mason Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 28, 1962, Ser. No. 197,877
7 Claims. (Cl. 260—834)

1. A thermosetting mixture comprising (*a*) an amine-aldehyde resin blended with (*b*) the reaction product of (1) a copolymer of an acid selected from the group consisting of acrylic acid and methacrylic acid, styrene, and another polmerizable monoethylenically unsaturated compound, and (2) an epoxide-containing compound containing the epoxide group



the proportion of epoxide-containing compound to the copolymer being such that from 1 to 2 epoxide groups are present for each free carboxylic acid group of the copolymer; said epoxide-containing compound having only one epoxide group which is readily reactive under acidic conditions.

3,156,741

COPOLYMERS OF STYRENE, DIMETHYL ITACONATE AND ACRYLONITRILE AND A PROCESS FOR THEIR MANUFACTURE

Giuseppe Messina, Limbiate, Nicola de Pisapia, Milan, Levio Spano, Cesano Maderno, and Emanuele Condurelli, Milan, Italy, assignors to L.I.R.C. Laboratori Italiani di Ricerca Chimica, Milan, Italy, a joint-stock company of Italy

Filed Nov. 17, 1959, Ser. No. 853,542
Claims priority, application Italy, Jan. 12, 1959, Patent 601,904; Oct. 21, 1959, 17,451/59; Oct. 23, 1959, 17,661/59
10 Claims. (Cl. 260—881)

1. A process for copolymerizing styrene and dimethyl itaconite comprising mixing styrene in the amount of 30 to 90 parts by weight and dimethyl itaconate in the amount of 70 to 10 parts by weight and acrylonitrile in the amount of 1 to 30% by weight of styrene and dimethyl itaconate and heating the resulting mixture at temperatures in the range of from about 60 to 150° C. for a period of time of at least about 24 hours.

10. A resinous terpolymer of acrylonitrile, styrene and dimethyl itaconate.

3,156,742

STABILIZED ACRYLONITRILE POLYMER COMPOSITIONS

Terry W. Tarkington, Decatur, and Carlton D. Whitt, Athens, Ala., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 17, 1961, Ser. No. 89,926
16 Claims. (Cl. 260—895)

1. A new composition of matter comprising a polymer containing in polymerized form at least 80 percent of acrylonitrile and up to 20 percent of at least one copolymerized mono-olefinic monomer and, as a light stabilizing agent from 0.05 to 5.0 percent, based on the weight of the polymer, of a compound taken from the group consisting of alkyl C-substituted pyridines having 1 to 12 carbon atoms in the substituents and aromatic C substituted pyridines having 6 to 12 carbon atoms in the substituents.

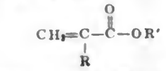
3,156,743

DYEABLE POLYPROPYLENE FIBERS CONTAINING ACRYLATE AND METHACRYLATE UNITS IN POLYMERIC FORM

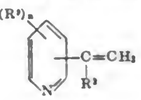
Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 21, 1959, Ser. No. 860,648
19 Claims. (Cl. 260—897)

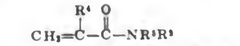
2. Polypropylene fiber exhibiting excellent dye affinity, light and gas fastness, resistance to oxidation and weathering, said fiber containing about 1 to about 25%, by weight, based on polypropylene, of a polymeric modifier selected from the group consisting of homopolymers of (1) a monomer having the formula:



wherein R is a member selected from the group consisting of hydrogen and methyl and R′ is a member selected from the group consisting of alkyl, alkoxyalkyl, cycloalkyl, aralkyl and aryl radicals containing 1–12 carbon atoms, and copolymers of a monomer having said formula with a member selected from the group consisting of (A) different monomers having said formula and (B) vinyl pyridine monomers having the formula:



wherein R^2 is a member selected from the group consisting of hydrogen and methyl and R^3 is a lower alkyl group containing 1–4 carbon atoms, *n* being an integer from 0 to 4, and (C) N-substituted acrylamide monomers having the formula:



wherein R^4 is a member selected from the group consisting of hydrogen and lower alkyl groups containing 1–4 carbon atoms, R^5 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, aralkyl and aryl groups containing 1–18 carbon atoms and R^6 is a member selected from the group consisting of alkyl, cycloalkyl, aralkyl and aryl groups.

5. The fiber of claim 2 in which the polymeric modifier is a copolymer of a monomer (1) with a monomer (A).

6. The fiber of claim 2 in which the polymeric modifier is a copolymer of a monomer (1) with a monomer (B).

7. The fiber of claim 2 in which the polymeric modifier is a copolymer of a monomer (1) with a monomer (C).

12. Polypropylene fiber exhibiting excellent dye affinity, light and gas fastness, resistance to oxidation and weathering, said fiber containing about 1 to about 25% by weight, based on the fiber, of poly(methyl methacrylate).

3,156,744

HIGH IMPACT STRENGTH BLENDS OF VINYL-CHLORIDE RESINS WITH ETHYLENE-CARBON MONOXIDE COPOLYMERS

Dennis H. Mullins, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 9, 1960, Ser. No. 54,860
7 Claims. (Cl. 260—897)

1. A homogeneous rigid, opaque composition comprising a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and interpolymers of vinyl chloride with at least one other ethylenically unsaturated copolymerizable monomer, said interpolymer containing at least about 80 percent by weight of polymerized vinyl chloride, and, blended therewith, from about 1 percent to about 30 percent by weight based upon the total weight of polymer of a solid ethylene-carbon monoxide copolymer containing from about 1 percent to about 15 percent by weight of the carbon monoxide component and having a melt index of from about 0.01 to about 100 at a temperature of 190° C. and under a pressure of 43.1 pounds per square inch.

3,156,745

PROCESS FOR THE MANUFACTURE OF SHAPED STRUCTURES OF POLYOLEFINS HAVING IMPROVED DYEING PROPERTIES

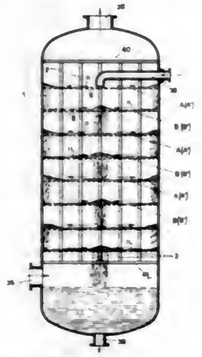
Horst Behrenbruch, Kelkheim, Taunus, Wilhelm Happe, Schwalbach, Taunus, Hans Hoyer, Frankfurt am Main, and Emil Kinzinger, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 6, 1960, Ser. No. 73,966
Claims priority, application Germany, Dec. 10, 1959, F 30,048
6 Claims. (Cl. 260—897)

6. A composition of matter consisting essentially of a linear polyolefin selected from the group consisting of polyethylene and polypropylene having admixed therewith from 0.1 to 30% by weight of an additive consisting essentially of a polyvinyl ester selected from the group consisting of polyvinyl acetate, polyvinyl propionate, polyvinyl butyrate, polyvinyl stearate, and copolymers of vinyl esters selected from the group consisting of vinyl acetate,

vinyl propionate, vinyl butyrate and vinyl stearate with unsaturated carboxylic acids to improve the dyeability of the polyolefin.

3,156,746
CONTACTING APPARATUS FOR RECTIFYING AND CONTACTING COLUMNS
Walter Kittel, Gartengasse 12, Gmunden, Austria
Filed Oct. 11, 1961, Ser. No. 145,536
Claims priority, application Switzerland Mar. 7, 1952
12 Claims. (Cl. 261—114)



8. A rectifying and contacting column comprising means for introducing a liquid into said column and for discharging said liquid therefrom, means for introducing a gas into said column and for discharging said gas therefrom, a plurality of spaced insert trays, support means for said trays, said trays occupying substantially the entire cross-section of said column and being subdivided into a plurality of sectors, downcomer means for feeding liquid from peripheral regions of centrifugal trays, and from central regions of centripetal trays to respectively successive peripheral regions of centripetal trays and central regions of centrifugal trays, each of said sectors being subdivided into a plurality of substantially horizontal individual elements, the corners of which are held by said support means, each of said elements defining in their body a plurality of uniform angular passages enabling uniform angular flow of said gas, said passages having different angular directions in each of said sectors, said directions being angularly displaced with respect to each other in adjacent sectors so that said liquid passes over substantially the entire surface of each of said trays, said directions in elements of successive trays being alternately centrifugal and centripetal, whereby the flow of said liquid is substantially centrifugal in predetermined trays and substantially centripetal in the trays intermediate said predetermined trays.

3,156,747
METHOD OF MAKING FUEL COMPACTS FOR NEUTRONIC SYSTEMS
Joseph E. Burke, Ballston Lake, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 20, 1950, Ser. No. 157,098
3 Claims. (Cl. 264—21)

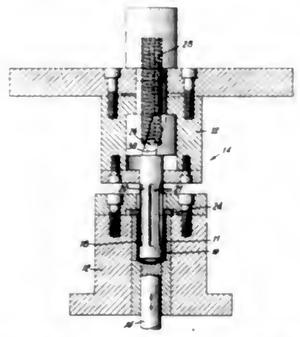
1. The method of producing non-pyrophoric stable compacts from pyrophoric materials which comprises intimately admixing at least one powdered material from the class consisting of uranium, plutonium, and hydrides thereof, with anhydrous benzene solution of a hydrocarbon plastic bonding material from the class consisting of polyethylene, polystyrene, hydrogenated polystyrene and polyisobutylene, the amount of said plastic varying from about 25 to about 95 percent by volume of the solvent-free mixture, drying the resulting mixture in an inert atmosphere, and forming compacts from the dried mixture at a pressure varying from about 2,500 to about 100,000 pounds per square inch.

3,156,748
METHOD FOR PRODUCING MOLDED ARTICLES OF SPONGE POLYURETHANE
Jacques Roth, 27 Rue Erckmann Chatrian, Strasbourg, Bas-Rhin, France
Filed Nov. 7, 1961, Ser. No. 150,629
Claims priority, application France, Nov. 9, 1960, 7,034
4 Claims. (Cl. 264—48)



1. In a method of molding articles of sponge polyurethane by means of polymerization of its components in a heated mold, said method tending to form a skin on the polyurethane article, the steps of
applying to the inner walls of a mold a solution of a material adhering to said skin formed on said article,
removing the solvent of said solution to form a dry base film on the inner walls of said mold,
feeding polyurethane sponge material into said mold to form a molded article and subjecting said sponge material to a temperature of about 100° C. for a time period of about 5 to 7 minutes in order to obtain a preliminary polymerization,
removing said molded article from said mold without said skin formed thereon,
removing said base film jointly with said skin formed on the outside of said molded article and adhering to said base film, and
subjecting said molded article to a second heating for a final polymerization.

3,156,749
IMPACT MOLDING OF GALVANIC CELL CATHODES
Lee C. Hosfield, Sarasota, Fla., assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 16, 1961, Ser. No. 145,325
3 Claims. (Cl. 264—161)

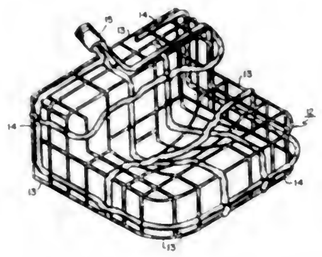


1. A process for impact molding a cylindrical cathode in place in a galvanic cell container which comprises the steps of dispensing an excess of cathodic mix into the bottom of said cell container; driving a cylindrical punch, smaller in diameter than the inside diameter of said cell container and provided with a plurality of flutes for expelling said excess of said cathodic mix from said container, into said cathodic mix, removing said excess of said cathodic mix through said flutes while the remainder of said cathodic mix is molded into a cathode between said punch and the inner walls of said cell container, rotating said punch a slight amount prior to withdrawal from said container whereby said excess of said cathodic mix in said flutes is sheared and severed off from said formed cathode; and then removing said punch from said cell container thus forming a finished cathode-container structure.

3,156,750
PROCESS OF PRODUCING POLYCAPROLACTAM MONOFILAMENTS
John Anthony Cuculo, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application June 18, 1959, Ser. No. 821,108. Divided and this application July 31, 1962, Ser. No. 213,597
2 Claims. (Cl. 264—178)

1. A process for producing a monofilament fish line, 3–30 mils in diameter, of polycaprolactam comprising extruding a dried, flaked, polycaprolactam containing 3–15% by weight of a plasticizer at a temperature of about 250° C.; quenching the extrudate in water at a temperature of about 5°–25° C.; drawing said extrudate at a ratio of 5.2/1.0 at a temperature of 150°–165° C. in an oil which is substantially unreactive towards said polycaprolactam.

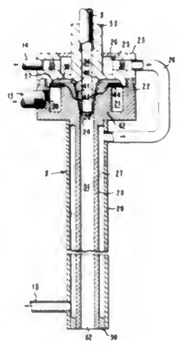
3,156,751
MOLD FOR FORMING A CERAMIC ARTICLE AND METHOD OF MAKING THE MOLD
Thomas H. Valdes, Trenton, and Carlman M. Rinck, Lawrence Township, Mercer County, N.J., assignors to Crane Co., Johnstown, Pa., a corporation of Illinois
Filed Dec. 6, 1961, Ser. No. 157,348
12 Claims. (Cl. 264—219)



1. A method of making a mold part for forming a green clay piece which comprises:
(*a*) forming surfaces corresponding to the surfaces of the green clay piece which are to be formed by said mold part,
(1) said surfaces having interior dimensions slightly less and exterior dimensions slightly greater than the green clay piece,
(*b*) forming a grid over said surfaces,
(*c*) removing the grid from said surfaces,
(*d*) securing a network of porous air conduits to said grid,
(*e*) leading an end of each of at least some of said conduits to a common point spaced from but adjacent said grid,
(*f*) applying to said ends at said common point coupling means whereby compressed air can be supplied to the conduits through said ends,
(*g*) positioning the grid and conduits in a mold case with the network of conduits spaced from the surfaces of the mold case which correspond to the surfaces of the green piece to be formed by the mold part,
(*h*) closing the mold case, and
(*i*) pouring molding material which hardens after pouring and which is water absorbent when hard into the case and around the grid and conduits.

7. A mold part to be joined with other mold parts to form a cavity into which slip is poured to form a green clay piece which comprises:
(*a*) a mold body having surfaces corresponding to a portion of the surfaces of the green clay piece,
(*b*) a grid within said mold,
(1) said grid having cross members arranged to form a network,
(2) said network extending parallel to but spaced within said body from said mold surfaces,
(*c*) a network of porous conduits secured to said grid and positioned within said mold body generally parallel to but away from said mold surfaces,
(1) the ends of some of said conduits extending to a common point positioned away from said mold body, and
(*d*) means for connecting the conduits through said ends positioned at said common point to a source of compressed air.

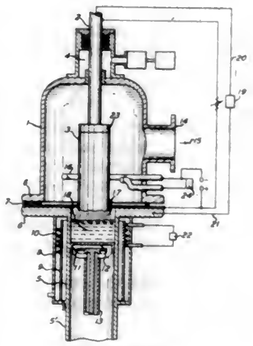
3,156,752
METHOD AND APPARATUS FOR HEAT TREATING FILAMENTS
Andrew Passmore Cope, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,162
10 Claims. (Cl. 264—345)



10. An improved process for heat-treating continuously forwarded fluid-borne plurality of untwisted unentangled continuous filaments comprising contacting the moving filaments with a co-current stream of heated fluid elevated above the sticking temperature of the filaments while maintaining a boundary surrounding the contacting filaments and co-current streams at a temperature below the sticking temperature of the filaments to avoid interference with filament movement by adherence of the filaments to the boundary.

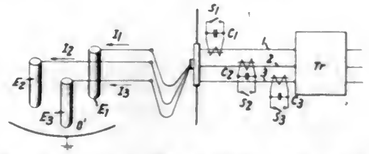
ELECTRICAL

3,156,753
MELTING FURNACE FOR METALS
Helmut Gruber, Hanau, Germany, assignor to W. C. Heraeus G.m.b.H., Hanau (Main), Germany, a corporation of Germany
Filed Sept. 19, 1961, Ser. No. 139,302
1 Claim. (Cl. 13—9)



A method of melting metals within a furnace under a reduced pressure comprising the steps of first melting a consumable electrode connected to a supporting rod within an evacuated furnace chamber into a crucible by means of an electric arc, then lowering the end of said supporting rod from which said consumable electrode has been melted off into the molten metal within said crucible and allowing the metal to solidify so as to be connected to said rod, then elevating said rod with said solidified metal and thereby lifting said metal from said crucible into said furnace chamber, and then again melting said metal within said chamber into said crucible by electron bombardment.

3,156,754
ARRANGEMENT FOR BALANCING THE POWER TRANSMISSION LINE TO A POLYPHASE ARC FURNACE
Werner Düchting, Darmstadt, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Nov. 8, 1961, Ser. No. 151,083
Claims priority, application Germany, Nov. 11, 1960, L 37,494; June 26, 1961, L 39,351; Aug. 26, 1961, 39,873
17 Claims. (Cl. 13—9)



1. An arrangement for balancing the power transmission line of a polyphase arc furnace, and comprising an arc furnace having three electrodes therein, a 3-phase power transmission line having three conductors with said conductors being respectively connected to said furnace electrodes, and additional balancing impedances in said power transmission line which impedances have the following value

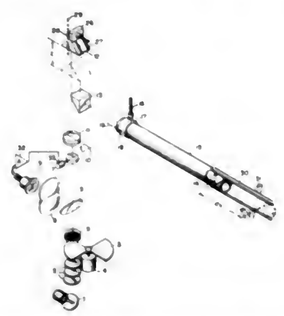
$$Z_j = B(\pm)\frac{\sqrt{3}}{3}(r_i - r_k) + (X_{ij} - X_{ik}) - (X_{ij} - X_{jk})$$

wherein indices *i*, *j*, *k* denote three phases and permutations thereof, with (−) denoting anticyclic permutations and + thereabove cyclic permutations, *r* being the ohmic conductor resistance, X the reactance thereof with similar indices in a pair of indices denoting self-reactance, unequal indices in a pair of indices denoting mutual reactance, and

$$B = \frac{1}{3}\sqrt{\begin{matrix} 3(U_{3\sim}/I)^2 - (r_i+R)^2 - (r_j+R)^2 - (r_k+R)^2 \\ -2(r_i+R)(r_j+R) - 2(r_i+R)(r_k+R) \\ -2(r_j+R)(r_k+R) \end{matrix}}$$

wherein R is the arc resistance.

3,156,755
OPTICAL INSTRUMENT FOR MEASURING ELEMENTAL SURFACE DISPLACEMENTS
Philip Wardham Collyer, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Mar. 29, 1961, Ser. No. 99,189
3 Claims. (Cl. 88—14)



1. An instrument for detecting minute displacements of surface elements in a predetermined direction at right angles to a predetermined optical measuring plane, comprising in combination and in optical alignment a radiation detection system having a stationary sharp line of detection discontinuity,

(*a*) means for imaging said line in successive positions in space, the direction of movement of the successive images defining the predetermined optical measuring plane, a movable retroreflector having a sharp edge between reflecting surfaces,

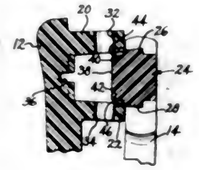
(*b*) means for moving the retroreflector in a direction approximately parallel to the optical measuring plane and along the surface the elemental displacement of which is to be measured, the retroreflector being capable of limited motion at right angles to said plane,

(*c*) a source of illumination, means for producing a beam therefrom and for shaping said beam and means, including the imaging means of section (*a*), for directing said beam approximately parallel to the optical measuring plane and striking the retroreflector,

(*d*) movable reflecting means mechanically connected to the retroreflector and moving therewith, said reflecting means being in the path of the beam to the retroreflector and the beam reflected therefrom, the mechanical connection moving the reflecting means in a direction and at a rate to maintain the optical path constant from said retroreflector to the line of detector system discontinuity, and

(*e*) the beam directing means also imaging the beam shaping means into the line of detector discontinuity.

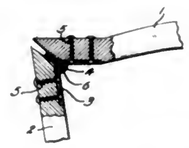
3,156,756
HINGE CONSTRUCTION
Charles W. Seaver, Needham, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed June 7, 1961, Ser. No. 115,488
2 Claims. (Cl. 88—53)



1. A hinge comprising the assembly of a first member having a pair of spaced superimposed coaxially apertured hinge leaves formed of resilient material joined together adjacent one of their ends, a raised abutment integral with said first member and disposed between said hinge leaves, a second member embodying a hinge ear having a pair of opposing outwardly directed substantially coaxial lugs one fitted into each of the apertures of said hinge leaves for rotation therein and a stop portion adapted to engage said abutment to limit the extent of rotation of said hinge ear, said hinge ear further having a thickened area adjacent the portion thereof adapted to fit in between the inner sides of said hinge leaves which area is of a dimension slightly greater than that of the normal spacing between said hinge leaves to provide said hinge ear with a frictional fit between said hinge leaves when said first and second members are assembled, means in the form of guide slots one on each of the inner facing sides of said hinge leaves for facilitating making the assembly of said hinge leaves and hinge ear, said slots having cliff-like side walls and being so dimensioned and arranged as to each receive said lugs of said hinge ear adjacent the outer edges of said hinge leaves and to guide said lugs into said apertures in said hinge leaves when making said assembly by forcing the hinge ear in between said hinge leaves and said abutment between said hinge leaves being bifurcated by a slot to increase the resiliency of said hinge leaves.

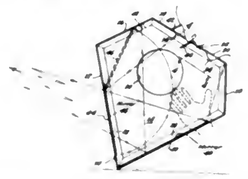
3,156,757
SPECTACLE TEMPLE TENSIONER AND PIVOT PIN GUARD AND METHOD OF TENSIONING TEMPLES
Joseph Spina, 3420 Washington Road, West Palm Beach, Fla.
Filed Oct. 26, 1961, Ser. No. 147,794
2 Claims. (Cl. 88—53)

1. In combination with a spectacle temple and frontal frame pivotally connected with a hinge having a hinge pin,



cylindrical resilient member longitudinally surrounding the hinge pin and having a portion thereof intermediate the adjacent ends of said temple and frontal frame.

3,156,758
OPTICAL AMUSEMENT DEVICE
Nicolas Tregubenko, 1748 W. 1st St., San Pedro, Calif.
Filed Jan. 17, 1962, Ser. No. 166,886
4 Claims. (Cl. 88—75)



1. An amusement device to permit an operator to employ a portion of his face in the region of his lips and chin with added representations on his chin of a pair of eyes and a nose in inverted position to produce a grotesque face image for the amusement of observers, said device comprising:

a lightweight portable structure to be held by the operator in front of his face, said structure having a front window, said structure having a bottom wall that is upwardly and rearwardly inclined and having a rearward wall that is upwardly and forwardly inclined, said rearward wall having an opening therein to encircle said region of the operator's face and further having an aperture above said opening dimensioned to receive the operator's nose and to permit the operator to look through the aperture,

said inclined bottom wall having a mirror surface to reflect an image of the area of said opening to the observers forwardly through said window;

a baffle extending forwardly from said rearward wall below said aperture to mask the operator's nose from reflection by said mirror surface through said window; and

a mirror carried by said structure movable between an idle position and a second position masking said window at an angle to reflect said image from the first mentioned mirror to said aperture for viewing by the operator.

3,156,759
DUAL CANTILEVER MOUNTED SCANNING MECHANISM
Edwin G. Collen, Morris Plains, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Jan. 13, 1961, Ser. No. 82,499
1 Claim. (Cl. 88—97)

A scanner mechanism, comprising in combination:

a scanner to direct light rays along a path;

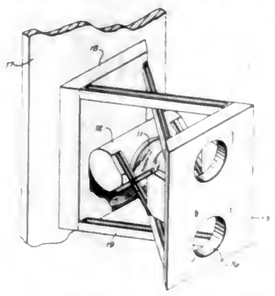
an extended mounting and scanner support member on which said scanner is centrally mounted;

an extended intermediate support member at least partially transparent facing said scanner, permitting the scanner to scan therethrough;

a first two pairs of dual cantilever beams forming crossed spring pivots, including in phase windings around each of said pairs of beams, said beams being affixed to and extending between said scanner support member and said intermediate member, corresponding crossed springs in each of said pairs being in the same plane and affixed to said intermediate member on the one and the other side of said scanner so as to cause said scanner to oscillate to and fro in a first plane at right angles to said light path when actuated by an electric current through said windings;

a flat fixed member in back of said scanner;

a second two pairs of dual cantilever beams forming crossed spring pivots, including in phase windings



around each of said pairs of beams, said beams being affixed to and extending between said fixed and intermediate members, disposed so as to cause said intermediate member to oscillate to and fro in a second plane at right angles to both said first plane and said light path when actuated by an electric current through said windings, said first and second pairs of crossed spring pivots being so constructed as to oscillate at different natural oscillating frequencies; and,

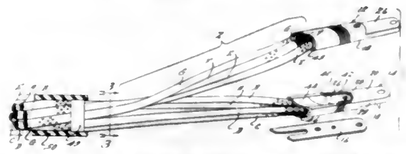
an A.-C. electric power source coupled to said windings to actuate said first and second pairs of beams and cause them to oscillate as A.-C. current passes through said windings.

3,156,760

WELDING CABLE WITH IMPROVED CONDUCTOR ORIENTATION ADJACENT THE TERMINALS

Earl I. Grove, Walled Lake, Mich., assignor to Gar Wood Industries, Inc., Wayne, Mich., a corporation of Michigan

Filed June 11, 1963, Ser. No. 287,064
9 Claims. (Cl. 174—15)



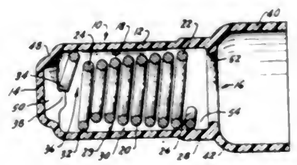
1. A flexible welding cable having a longitudinal axis and for use with a terminal assembly having two sections lying on opposite sides of a plane of separation, said cable comprising: an intermediate portion including a plurality of longitudinally extending layers of conductors having a preselected orientation, said plurality of layers comprising a first layer of conductors, a second layer of conductors disposed on one side of said first layer, and a third layer of conductors disposed on the other side of said first layer; said cable having an end portion wherein all of the conductors of the first layer lie on one side of said plane for connection to one terminal section and all of the conductors of the second and third layers lie on the other side of said plane for connection to the other terminal section, and a resorting zone between said intermediate and end portions, the conductors of said first layer in said resorting zone extending angularly laterally with respect to said axis in a first radial direction out of said preselected orientation for connection to said one terminal section, the conductors of said second layer and said third layer in said resorting zone extending angularly laterally of said axis in a generally radial direction opposite to said first direction out of said preselected orientation for connection to said other terminal section.

3,156,761

CONNECTOR ASSEMBLY

William G. Schinske, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware

Filed Nov. 26, 1962, Ser. No. 240,113
22 Claims. (Cl. 174—87)



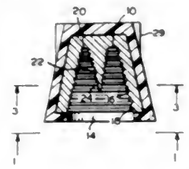
11. In a connector assembly for joining the stripped ends of two or more electric wires or the like, a generally cylindrical cap with a generally central bore open at one end and closed by an end wall at the other end, a wire coil in the bore, an interlock between the cap and coil, including means in the bore engaging the coil for connecting the coil to the cap when the cap and coil are being turned down on the stripped ends of the wires, means for releasing the coil from the cap after the wire ends engage the end wall of the cap and turning of the cap is continued so that the cap may be freely turned in either direction thereafter without unscrewing the coil from the wire ends, and means for normally preventing the coil from coming out of the cap at all times.

3,156,762

CONNECTOR FOR INSULATED WIRES

Irving F. Matthysse, Danbury, Conn., assignor to Burndy Corporation, a corporation of New York

Continuation of application Ser. No. 94,579, Mar. 9, 1961. This application May 31, 1963, Ser. No. 286,102
2 Claims. (Cl. 174—87)



1. A connector engaging and electrically interconnecting a plurality of insulated wire ends, comprising: a rigid conductive connector body member; an outer insulating cover member on said body member; said body member having an open conductor receiving end and an inner conductor receiving recess; said recess having an inner

wall defining a truncated cone-shape, tapering inwardly from a relatively large diameter proximate said conductor receiving end to a lesser diameter remote therefrom; a conductive cone shaped insulation cutting member coaxially supported within said recess, tapering from a given diameter remote from said conductor receiving end to a lesser diameter proximate said conductor receiving end; said cutting member being received in the center of a plurality of said wire ends inserted into said recess in bundle form, said cutting member and said recess inner wall each being provided with helical threads having sharp cutting edges engaging and advancing the wire ends into the said recess as the said body member is rotated relative to the wire axes; the sharp threads of said cutting member extending through the insulation and electrically engaging the conductors in each of said plurality of wires to form a common electrical connection therebetween.

3,156,763

ELECTRICAL CONDUCTOR JOINING PRACTICES

Walter G. Zelley, New Kensington, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 19, 1961, Ser. No. 117,775
2 Claims. (Cl. 174—94)

2. In a mechanical pressure-restrained interfacial electrical joint assembly between coextensive contacting surfaces of two electrically conductive metallic members, at least one member of which is aluminum, said joint assembly exhibiting low initial and extended electrical contact resistance as compared to the same joint assembly incorporating the aluminum member in as-fabricated condition, said aluminum member having its as-fabricated surface before incorporation in coextensive interfacial surface contact with the surface of the other electrically conductive member in the joint assembly conditioned and passivated against substantial natural reoxidation by exposure to an aqueous solution of an alkali metal zincate to deposit a coating of zinc thereon followed by removal of the deposited zinc coating by exposure to an oxy-acid stripping solution, and clamping means securing the pressure-restrained coextensive interfacial surface contacting joint assembly between the members.

3,156,764

COMPRESSIBLE ELECTRICAL CONNECTOR WITH INTERNAL DEFORMABLE RIBS

John A. Toedtman, Warson Woods, Mo., assignor to Jasper Blackburn Corporation, St. Louis, Mo., a corporation of Missouri

Filed Mar. 26, 1962, Ser. No. 182,237
7 Claims. (Cl. 174—94)



1. A compressible electrical connector comprising:

(*a*) a connector body made of malleable metal, said body being provided with a recess,

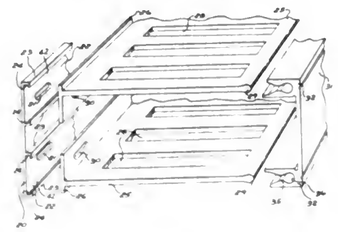
(*b*) the body being provided with a plurality of deformable ribs extending into the interior of said recess, said ribs yielding under pressure of a conductor to accommodate a conductor within a wide range of different sizes in said recess as the body provides an overlapping connection enfolding the conductor upon compression of the connector.

3,156,765

WIREWAY WITH ADJUSTABLE WIDTH SIDEWALLS

Irving F. Weiss, Cleveland, Ohio, assignor to E. C. P. Manufacturing Co., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 12, 1960, Ser. No. 55,342
12 Claims. (Cl. 174—101)



5. A wireway for retaining electrical wires in an orderly and accessible formation comprising, a pair of spaced elongated rail-like side walls, each of said rail-like side walls including a base and an elongated beading, said base being an off-center T in cross section with the one arm of the T longer than the other, the arms of the T comprising a mounting flange adapted to be mounted on a base structure, said pair of spaced elongated rail-like side walls being removably mountable on the same base structure in any one of several different relative positions, said several different relative positions providing a channel-like wireway of different widths, said elongated beading extending along substantially the entire length of its respective rail-like side wall, an elongated cover, said cover having a pair of spaced flange members extending substantially the entire length of said cover, each of said flange members including a pair of distensible side walls, said distensible side walls being adapted to receive and retain the elongated beading of said rail-like wide wall, and said cover being mounted on said pair of spaced rail-like side walls by placing the cover over the channel-like passageway formed by the rail-like side walls and snapping each flange member over the beading of its respective rail-like side wall.

3,156,766

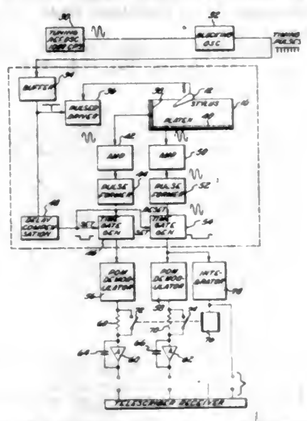
SONAR TELESCRIBER

George M. Stamps, Palos Verdes Estates, Calif., assignor to Telautograph Corporation, Los Angeles, Calif., a corporation of California

Filed June 18, 1962, Ser. No. 203,111
9 Claims. (Cl. 178—18)

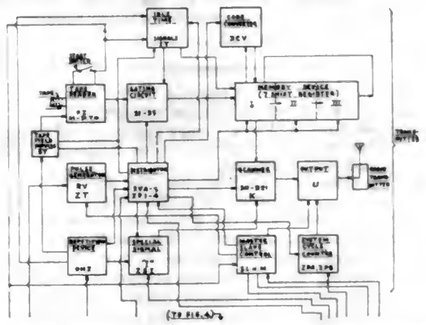
1. A telescriber unit for generating a pair of output signals having a characteristic that varies as a function of the change in two coordinates of position of a stylus over a writing area, said unit comprising a platen of acoustically conductive material, the stylus being movable over the surface of said platen, a first acoustical transducer mounted in the stylus and acoustically coupled to the platen when the stylus is in contact with the platen, second and third acoustical transducers coupled to the platen adjacent the margins of the platen, the transducers being spaced from each other, a periodic reference signal source, means for electrically exciting said first transducer from the reference signal to produce sound waves in the platen, means for sensing the resulting signal generated by the second transducer and comparing the time relation of the reference signal and said resulting signal, means responsive to the sensing and comparing means for generating a first output signal having a characteristic that varies as functions of the time relation between the two signals compared, means for sensing the resulting signal pro-

duced by the third transducer and comparing the time relation between the reference signal and said resulting signal, and means responsive to said last-mentioned sens-



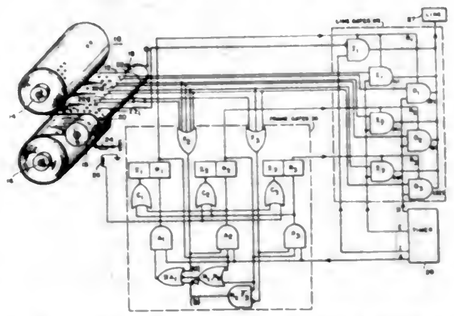
ing and comparing means for generating a second output signal having a characteristic that varies as a function of the time relation between the two signals compared.

3,156,767
SYSTEM FOR ESTABLISHING AND MAINTAINING SYNCHRONISM IN DUPLEX TELEGRAPH SYSTEMS
Hendrik Cornelis Anthony van Duuren, Wassenaar, Christiaan Johannes van Dalen, Leidschendam, and Herman de Silva, Voorburg, Netherlands, assignors to De Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Jan. 8, 1960, Ser. No. 1,313
Claims priority, application Netherlands Jan. 19, 1959
41 Claims. (Cl. 178—58)



1. In an automatic error correcting telecommunication system having at least two stations each station having a transmitter and receiver and each transmitter and receiver having an input circuit, a memory circuit connected to and controlled by its said input circuit, a distributor circuit controlling its said memory circuit, a repetition device connected and controlled by its said distributor circuit to produce a predetermined number of signals in a repetition cycle, and an output circuit, and each said receiver also having an error detector circuit connected between its said memory circuit and its said repetition device, the improvement comprising: means for establishing and maintaining synchronism between the signals of the transmitter at one station with the receiver at another station, said means comprising: means in each transmitter connected to its said distributor circuit for giving an indication to each transmitted one of a given sequence of signals in a system cycle group corresponding to its position in a pattern in said group, the number of signals in said group being proportional to the number of signals in a repetition cycle, means at each receiver connected to its memory circuit for reproducing said indications, and means at each receiver connected to said error detector circuit for stopping and then restarting said reproducing means for insuring that the received signals are established and maintained in the same sequence and in the same order and same system cycle pattern in said group in which they were transmitted regardless of any interruptions or repetitions of said signals.

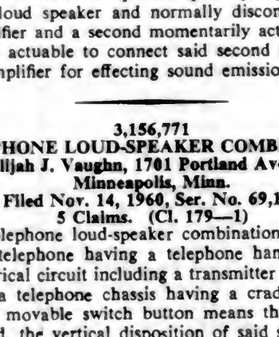
3,156,768
VARIABLE LENGTH CODE METHOD AND SYSTEM
Leo H. Wagner, Holmdel, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 6, 1962, Ser. No. 208,134
8 Claims. (Cl. 178—68)
(Granted under Title 35, U.S. Code (1952), sec. 266)



8. In a pulse code communication system, means for transmitting characters of widely varying occurrence frequency, with increasing communication efficiency, involving a succession of frames each including a fixed number of fixed length code elements of a few discrete states sufficient to identify only the most common characters and progressively increasing pluralities of frames sufficient to identify progressively less common characters, each frame including an indicator element and a few combinational code elements, a first state of the indicator element identifying the start of a new character and completion of an old character, other states of the indicator element normally identifying the continuation of a character started in a prior frame; means for separating the indicator and code elements of successive frames; and means for grouping the frames of successive characters by the absence of said first state in the indicator element of the particular frames.

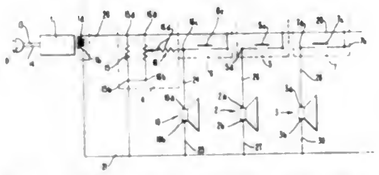
3,156,769
STEREOPHONIC TONAL OUTPUT FROM SINGLE AUDIO INPUT CHANNEL
Jerome Markowitz, 821 N. 30th St., Allentown, Pa.
Filed May 10, 1960, Ser. No. 28,145
2 Claims. (Cl. 179—1)

1. An amplifier loudspeaker unit for an electrical sound producing system comprising a signal source, a connection from said signal source to a first amplifier and loudspeaker, a connection from said signal source to a second amplifier and loudspeaker, a random voltage source, an electronic switch with dual output points in opposite phase triggered from said random voltage source, a lamp connected to each output point of said electronic switch, a photo sensitive resistor in proximity to each lamp and



a connection from each photo sensitive resistor to each amplifier so that the signal from the random voltage source will cause the output of the first amplifier and louderspeaker to vary in opposite phase to that of the second amplifier and loudspeaker.

3,156,770
METHOD AND APPARATUS FOR SELECTIVELY CONTROLLING SOUND EMISSION
Charles C. Trainor, Bronx, N.Y., assignor to Hershman Musical Instrument Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 31, 1960, Ser. No. 66,149
2 Claims. (Cl. 179—1)

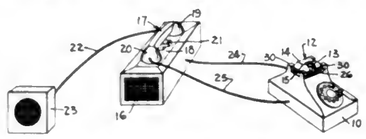


1. In a sound reproducing system, a loud speaker, an amplifier connected to said loud speaker, settable attenuator means associated with said speaker for regulating the volume of sound emitted from said speaker, a momentarily actuable switch selectively actuable to by-pass said attenuator and effect a full volume output from said loud speaker, a second loud speaker spatially separated from said first loud speaker and normally disconnected from said amplifier and a second momentarily actuable switch selectively actuable to connect said second loud speaker to said amplifier for effecting sound emission therefrom.

3,156,771
TELEPHONE LOUD-SPEAKER COMBINATION
Elijah J. Vaughn, 1701 Portland Ave. S., Minneapolis, Minn.
Filed Nov. 14, 1960, Ser. No. 69,197
5 Claims. (Cl. 179—1)

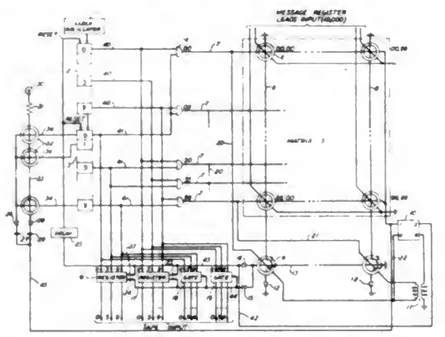
1. A telephone loud-speaker combination comprising:
(*a*) a telephone having a telephone handset with an electrical circuit including a transmitter and receiver, and a telephone chassis having a cradle and vertically movable switch button means therewith associated, the vertical disposition of said switch button means controlling the opening and closing of said electrical circuit,

(*b*) said telephone handset being electrically connected to said telephone chassis,
(*c*) an amplifier box having a seating means for holding said telephone handset,
(*d*) said seating means having openings for communition of sound energy between said transmitter and receiver and the inside of said amplifier box,
(*e*) sound treating means contained within said amplifier box for modifying sounds associated with each of said transmitter and receiver, said sound treating means including means for detecting sound associated with said transmitter and receiver and being of a first energy level, means for converting said detected sound to an electrical signal, and means for converting said amplified electrical signal to sound



energy having an energy level greater than said first energy level and being in the normal audio energy level,
(*f*) means for de-energizing said amplifying means,
(*g*) a speaker positioned remotely with respect to said amplifier box,
(*h*) means for electrically connecting said amplified electrical signals from said amplifier box to said speaker, and
(*i*) a manually operable switch mechanism removably mounted on said telephone chassis cradle and in activating contact with said switch button means,
(*j*) whereby said transmitter and receiver will be de-energized without requiring replacement thereof in said telephone chassis cradle.

3,156,772
TELEPHONE MESSAGE UNIT RECORDING SYSTEM
Lambert Freericks, Hasbrouck Heights, N.J., and Herbert L. Kukasch, New York, and Thomas B. Luzon, Bayside, N.Y., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed May 29, 1961, Ser. No. 125,308
19 Claims. (Cl. 179—7)



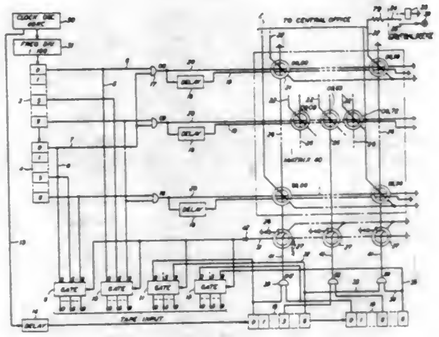
10. In a telephone system, an electronic message register comprising a magnetic memory core matrix array having rows and columns, means including a winding uniquely coupled to each core of said matrix for setting a core on usage of an associated subscriber line, a row of buffer magnetic cores, means for transferring information stored in any core in a column of said matrix to a

unique buffer core, means for scanning successive rows of cores of said matrix to reset any set core and for operating said transferring means, and means for interrupting said matrix row scanning and for scanning said buffer cores individually on resetting of any one of said matrix cores.

3,156,773
TELEPHONE MESSAGE UNIT RECORDING SYSTEM

Lambert Freericks, Hasbrouck Heights, N.J., and Herbert L. Kukasch, New York, and Thomas B. Luzou, Bayside, N.Y., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed June 5, 1961, Ser. No. 114,916
13 Claims. (Cl. 179—7)



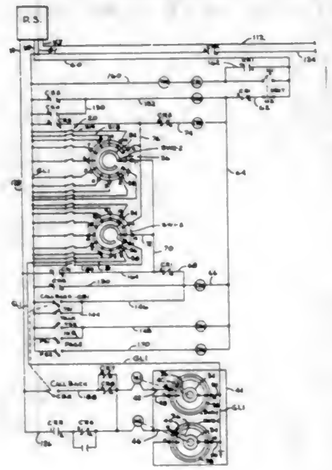
11. A scanning circuit for a matrix array having a plurality of bistable memory devices, comprising means for randomly applying setting pulses to said devices, a plurality of means each coupled to all devices in a respective group of said devices for resetting said devices, buffer storage means, means for transferring the information in any group of said devices to said buffer storage means in response to the resetting of said devices, and a plurality of means each coupled to a respective group of said devices and operative only at a predetermined time after the operation of said resetting means on said respective group for controlling together with said random setting pulse applying means the setting of the devices in said respective group.

3,156,774
COMMUNICATION SYSTEM FOR DRIVE-IN RESTAURANTS AND OTHER APPLICATIONS

Angelo Boudouris, 5856 Highland View Drive, Sylvania, Ohio

Filed Sept. 14, 1959, Ser. No. 839,626
17 Claims. (Cl. 179—16)

1. A scanning system for connecting a central station to at least one of a plurality of remote stations, said system comprising means associated with each of the remote stations for making a circuit connection, switch means, a source of power, a first power path, a second power path, means associated with said switch means to connect one of said power paths simultaneously to all stations except one, means associated with said switch means to connect the other of said power paths to the remaining station, means associated with said switch means for changing the remaining station to which said other path is connected, means effective to operate said changing means when any of the circuit-connecting means except the circuit-connecting means of said remaining station is actuated to establish a circuit connection, and means effective to stop operation of said changing means when said other path of current is connected through the

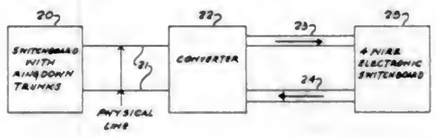


circuit-connecting means of the remaining station to complete a circuit for said other path.

3,156,775
TELEPHONE CONVERTER

Anthony M. Ioakimidis, Chicago, and Donald E. Hutson, La Grange, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Dec. 2, 1959, Ser. No. 856,776
20 Claims. (Cl. 179—16)

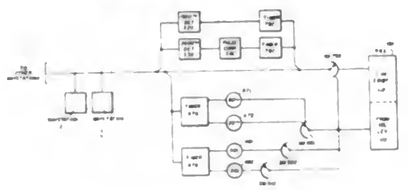


1. In a telephone system, a plurality of exchanges having dissimilar signalling systems, some of said exchanges including conventional common battery or ring-down equipment and other of said exchanges including multifrequency electronic switching equipment, converter means for converting signals emanating from a signalling one of said exchanges to signals which are usable at a signalled one of said exchanges, means comprising a communication channel for interconnecting said conventional and said electronic equipment via said converter means, means for transmitting over said channel at least one of said signals between said conventional equipment and said converting means in the form of bursts of ringing signals of relatively high strength, means for transmitting over said channel at least some of said signals between said electronic equipment and said converting means in the form of tones, means for transmitting relatively low strength voice signals over said channel and means in said converting means for detecting said ringing signals responsive to the strength of signals received over said channel.

3,156,776
WAYSTATION TELEPHONE SYSTEM

Edward L. Roback, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Aug. 15, 1962, Ser. No. 217,072
8 Claims. (Cl. 179—17)



1. In a communication system, a waystation line, a plurality of waystations connected thereto each including a calling device, waystation control means terminating said waystation line, an automatic telephone exchange including a plurality of subscriber lines each including a calling device, and including a plurality of automatic switches controlled by dial impulses to extend a plurality of different connections including a connection to said waystation control means, said waystation control means comprising:

tone signaling means including a plurality of first tone signal sources and a plurality of second tone signal sources; switching means connected to said telephone exchange by said extended connection and connected to said waystation line, operated in response to dial impulses received from said telephone exchange or from one of said waystations to selectively connect one of said first tone signal sources and plurality of said second tone signal sources to said waystation line to transmit a plurality of selected signal tones over said waystation line;

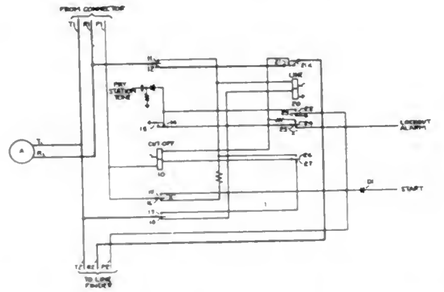
and each of said waystations further including, subscriber signaling means; a first tone responsive circuit connected to said waystation line; and a second tone responsive circuit connected to said subscriber signaling means, said first tone responsive circuit operated in response to the tone signal from the selected one of said first tone signal sources to extend said waystation line to said second tone responsive circuit and condition said second tone responsive circuit, said conditioned second tone responsive circuit operated in response to said plurality of selected second tone signals to operate said subscriber signaling means to signal a subscriber at said waystation.

3,156,777
BALANCED LOCKOUT LINE CIRCUIT

Henry Leopold Horwitz, Nutley, John Edward Cox, Passaic, and Stanley John Westhead, Rutherford, N.J., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed July 13, 1959, Ser. No. 826,571
6 Claims. (Cl. 179—18)

1. In a telephone system outgoing automatic switching means, incoming automatic switching means, a two-wire telephone line and a two relay line circuit connected to said telephone line comprising: means responsive to outgoing calls for transmitting call indications to start said outgoing automatic switching means; means responsive to conditions requiring lockout for connecting battery potential to said line, for marking said line busy, and for transmitting an alarm; means responsive to incoming calls for interconnecting said telephone line and said incoming automatic switching means; and means for maintaining the impedance to ground of each of said two-

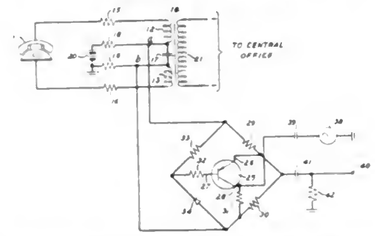


wires substantally equal whereby said telephone line is maintained in electrical balance at all times.

3,156,778
SUPERVISORY CIRCUITS FOR TELEPHONE SUBSCRIBER'S LINE

Frank P. Cirone, Dover, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1959, Ser. No. 861,909
11 Claims. (Cl. 179—18)



1. A supervisory circuit for a telephone system comprising a subset loop having either one of two predetermined currents flowing therein at all times, signal generating means, output means, gating means joining said generating means and said output means, and nonlinear bridge means connected to said loop and said gating means for operating said gating means in response to only a selected one of said two predetermined currents flowing in said loop.

3,156,779
LINE FINDING ARRANGEMENT

Nadios Celestini, Milan, Italy, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Nov. 25, 1960, Ser. No. 71,703
9 Claims. (Cl. 179—18)

1. In a telephone system,

a switchboard,

a group of lines each having a pair of conductors,

a plurality of line circuits in said switchboard each terminating one of said lines,

a line finder including a finder switch having a pair of line wipers and a pair of contact banks, the first line-conductor of each said pair being normally connected to the first contact of the corresponding pair of finder-bank contacts, and the second line-conductor of each said pair being normally connected to a source of potential in said line circuit,

a testing device common to all said lines,

means operated responsive to the closure of the line loop upon the initiation of a call on one of said lines, to start said finder switch, connect said testing device to the second contact of the aforementioned corresponding pair of finder-bank contacts, and cause a bridge path to be closed across said pair of finder wipers,

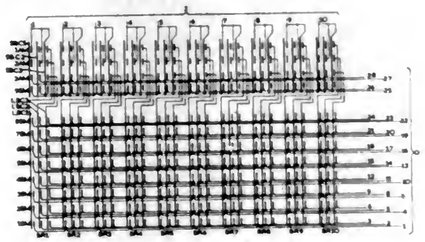
and said testing device being operated, in a circuit extending from said potential over said loop, said first finder-bank contact and wiper, said bridge, and said second finder-wiper and contact, in response to said wipers engaging the line-bank contacts of said calling line, for stopping said finder switch.

3,156,780

CROSSBAR SWITCHES FOR USE IN AUTOMATIC TELEPHONE SYSTEMS

Leslie James Browell, Heswall, and James Frederick Denby, Liverpool, England, assignors to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company

Filed Aug. 27, 1962, Ser. No. 219,546
Claims priority, application Great Britain, Sept. 20, 1961, 33,621/61
4 Claims. (Cl. 179—22)



1. A crossbar switch comprising an even number of select magnets, a plurality of bridge magnets, a plurality of bridges, one for each bridge magnet, a plurality of sets of bridge commons for each bridge, the bridge commons being severed at an effectively corresponding region of each of them into short bridge commons and long bridge commons, said short bridge commons and said long bridge commons having respectively a first and second group of select magnets associated therewith, contact crosspoints each appropriate to a particular select magnet and a particular bridge magnet, movable contacts in each crosspoint for engaging with the appropriate bridge commons on the operation of the particular select magnet and the particular bridge magnet, a plurality of inlets individual to different ones of said bridges, means connecting each inlet to one set of the short bridge commons of the associated bridge, means connecting movable contacts of said one set of short bridge commons and associated with different select magnets of said first group to different sets respectively of the long bridge commons of said bridge and a plurality of outlets individually multipled over movable contact of corresponding sets of long bridge commons in all the bridges.

3,156,781

CALLED-LINE TONE-SIGNALING SYSTEM

Paul W. Hemminger, Palisades, N.Y., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Aug. 5, 1960, Ser. No. 47,700
10 Claims. (Cl. 179—84)

1. A telephone system comprising a plurality of subscriber lines, an automatic switching network including a plurality of connecting means for selectively interconnecting said lines to complete paths between calling and called lines, means for busy marking both said calling and called lines to guard against double seizure, means responsive to a call to a busy line for applying a distinctive call signal to said busy line while precluding the



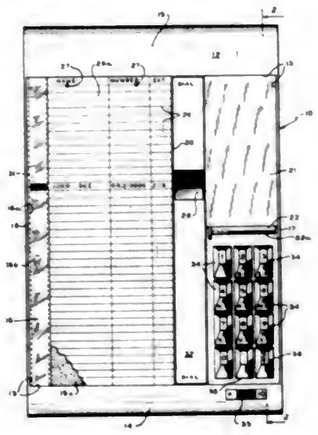
establishment of a voice connection to said busy line, and means for blocking the transmission of said distinctive call signal to any other line which may be connected to said busy line.

3,156,782

AUTOMATIC REPERTORY TELEPHONE DIALING MACHINE

Richard Kobler, West Orange, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Dec. 16, 1960, Ser. No. 76,318
25 Claims. (Cl. 179—90)



1. In an automatic telephone repertory dialing system: the combination of a dial mechanism comprising a group of dial keys selectively depressible according to letters and digits of telephone numbers to be dialed, means responsive to releasing a dial key from a fully depressed position for partially returning the key and latching the same in an intermediate position, a record medium, means for recording signals on said record medium representative of a digit dialed, and means controlled by said dial keys respectively for starting said recording means only upon release of a dial key into a latched intermediate position.

3,156,783

DISTRIBUTION FRAME

Harald Valdemar Alexandersson, Lidingo, Sven Eric Evald Johannesson, Hagersten, and Jorma Petteri Savilharju, Kallhall, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Mar. 28, 1961, Ser. No. 98,869
Claims priority, application Sweden Apr. 11, 1960
5 Claims. (Cl. 179—98)

1. A jack for interconnection wiring frames in telephone exchanges, said jack comprising a channel-shaped metal strip having on two opposite inner walls several lengthwise staggered protrusions constricting the inner

cross-sectional area of the strip at said protrusions, whereby upon insertion of a jumper wire into said strip and



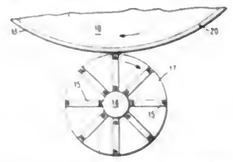
past said protrusions the wire is forced into a generally S-shaped configuration and into pressure contact with said protrusions.

3,156,784

MAGNETIC ERASER

Herbert J. Kump, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 30, 1961, Ser. No. 85,807
6 Claims. (Cl. 179—100.2)



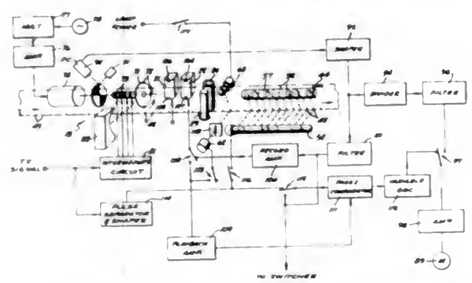
1. A magnetic record eraser comprising in combination, a movable magnetic record of extended surface and means for subjecting said record surface to an alternating magnetic erase field, said means comprising rotor member having a plurality of radially disposed unidirectional flux producing pole elements arranged in uniformly spaced condition in a circumferential manner about the periphery of said rotor member, said rotor member being mounted with its peripheral surface proximate said magnetic record surface, and means for rotating said rotor member in timed relation with the movement of said record surface whereby said pole elements subject successive increments of said magnetic surface while in motion to an alternating damped magnetic field variation.

3,156,785

TAPE EDITING AID

Harold G. Hummel, Santa Clara, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 1, 1961, Ser. No. 92,499
13 Claims. (Cl. 179—100.2)



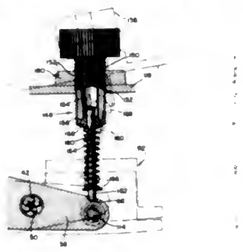
13. In combination with a recording system of the class having a magnetic tape movable past a recording head for recording a primary signal having periodic interruptions, said system including means for receiving a pair of input signals and comparing the phases of said input signals to vary the speed of said tape as a function of the phase difference between said input signals, the combination comprising: a plurality of index marks pre-printed at regular intervals on said tape; a mask having a slit formed therein and mounted alongside said tape with said slit spaced from said recording head for a distance corresponding to a multiple of said intervals; a photoelectric cell mounted to view said index marks in passage before said slit and functioning to produce a first pulse at the instant each index mark passes said slit, said photoelectric cell being connected to said signal comparing means to supply said first pulses thereto as one of said pair of input signals; and pulse forming means connected to receive said primary signal and to produce a second pulse at the instant each of said interruptions is received by said pulse forming means and by said head for recording on said tape, said pulse forming means being connected to said comparing means to supply said second pulses thereto as the other of said pair of input signals; whereby said tape speed is varied in accordance with the phase difference between said first and second pulses so as to bring and to maintain said first and second pulses in synchronous phase relation, thereby insuring that said primary signal interruptions are each recorded precisely at corresponding index marks on said tape.

3,156,786

SUSPENSION SYSTEM FOR ELECTROMAGNETIC TRANSDUCERS

Dusan S. Gelletich, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 22, 1961, Ser. No. 140,080
3 Claims. (Cl. 179—100.2)



3. Electromagnetic transducer mounting apparatus comprising,

(*a*) a supporting frame having a rectangular aperture therein,

(*b*) a loading and retracting member pivotally mounted for movement toward and away from said aperture, said retracting member having a pair of elongated substantially spherical openings therein,

(*c*) an electromagnetic transducer including a plurality of read-record heads thereon and provided with a forwardly projecting air bearing ledge extending the length thereof,

(*d*) a pair of U-shaped lifter members adjustably disposed intermediate the ends of said transducer and including means for frictionally slidably engaging the spherical openings in said loading and retracting member permitting said transducer to be moved conjointly therewith,

(*e*) oppositely disposed rocker arms adjustably, pivotally mounted intermediate their ends adjacent said supporting frame for rocking movement relative to said aperture,

(*f*) bearing means rockably mounting said transducer between one pair of opposite ends of said rocker arms,

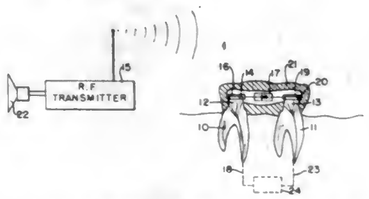
(*g*) a broken link mechanism, said mechanism including a hollow threaded member engaging said loading

and retracting member, and a member telescopically, slidably, receivable within said hollow member,

(*h*) spring means biasing said slidable member away from said hollow member, and

(*i*) bearing means intermediate said spring means and said hollow member permitting said slidable member to move angularly relative to said hollow member causing said spring means to bias said slidable member into operative engagement with said one pair of opposite ends of said rocker arms effective thereby to adjustably position said transducer relative to said mounting means and to a record with which it may be associated thereby to maintain the prescribed adjustment when said transducer is disposed in a retracted position relative to said record member as well as when said transducer is disposed in operative airbearing relation relative to said record member.

3,156,787
SOLID STATE HEARING SYSTEM
Henry K. Puharich, 87 Hawkes Ave., Ossining, N.Y., and Joseph L. Lawrence, 570 Fort Washington Ave., New York, N.Y.
Filed Oct. 23, 1962, Ser. No. 232,390
8 Claims. (Cl. 179—107)



1. In a hearing system of the type including a radio transmitter for converting audible signals into modulated electromagnetic signals and transmitting said electromagnetic signals on a predetermined range of carrier frequencies, and a reception system for receiving the transmitted electromagnetic signals, converting them to electrical signals and imparting the electrical signals to viable nerves of the facial nerve system of a human subject, the improvement characterized by said reception system comprising,

(*a*) a piezoelectric radio frequency resonant crystal element arranged for electrical circuit connection with nerves of a first area of the facial system of the human subject,

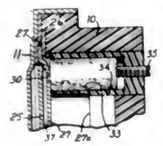
(*b*) said crystal having a predetermined resonant frequency range substantially inclusive of said predetermined range of said carrier frequencies, and

(*c*) a diode having positive and negative terminals and having its negative terminal connected to said radio frequency resonant crystal,

(*d*) said diode having its positive terminal arranged for circuit connection with nerves of a second area of said facial system.

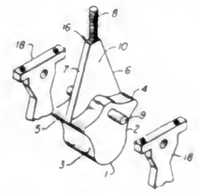
3,156,788
DAMPED MAGNETIC TELEPHONE RECEIVER
William Kuskin, Rahway, N.J., assignor, by mesne assignments, to Theodore H. Egley, Avon, N.J.
Filed Jan. 6, 1961, Ser. No. 81,128
2 Claims. (Cl. 179—115)

1. In a receiver of the character described, a casing comprising a hollow rear section providing a first closed air space, a front cover connected to the rear section, a vibratory disk back of and adjacent to the front cover, a second disk closing the front of the first air space and disposed back of but spaced from the vibratory disk to provide a second closed air space, said second disk separating the mentioned air spaces and having an aperture transversely therethrough and connecting said air spaces, means for vibrating the vibratory disk, and adjustable



means for regulating the air flow from one air space to the other through said aperture, said means comprising a porous compressible element and precision means for varying the pressure on said element.

3,156,789
LEVER KEY SWITCH WITH MOLDED LEVER KEY
Vernon L. Vander Kooy, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 6, 1961, Ser. No. 101,155
2 Claims. (Cl. 200—1)



1. In a lever key switch, an escutcheon plate having a slot therein with vertical ends, a framework secured to and depending from said plate with switching springs secured thereto, a lever key pivotally mounted in said frame with its upper portion extending upward through the slot in said escutcheon plate and having projections on its lower portion for operating the springs when the key is moved about its pivot, said key integrally molded in one piece with one portion comprising a thin flat tapered shank extending upward from its pivot point in the shape of a triangle with a threaded portion extending upward from the upper apex of the triangular shaped portion to which a handle may be attached, the lower portion of the key at the base of the triangular shaped shank formed of greater thickness than said shank portion with a large cam surface on the lower side thereof engaging the springs when the key is operated and with upper cam surfaces, on each side of said shank, formed by said thicker portion and engaging the under side of said plate on either side of said slot to stop the key, and a pivot pin extending through said thickened portion for pivoting the key in the frame, each side of said triangular section lying parallel to the adjacent end of the slot when the key is moved in either direction to operate one of the sets of switch springs.

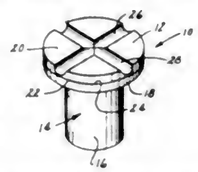
3,156,790
MULTIPOSITION ELECTRIC SWITCH
Woodrow A. De Smidt, Whitefish Bay, and Cedric E. Zarwell, Shorewood, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 8, 1961, Ser. No. 108,546
6 Claims. (Cl. 200—17)

2. In a selector switch, the combination of: an interchangeable insulating base member including stationary contacts, movable contacts engageable with said stationary contacts, and terminal means connected to each of said contacts; a cover member for said switch fastened to said base member; a pair of reciprocably movable insulating contact actuators; a rotatable operator including means for translating alternative linear motion to said contact actuators upon rotation of said operator in opposed rotative direction; a spring biased detent supported and transported by said rotatable operator; a shiftable indexing push plate arranged to be moved from a first to a second indexing position and including spaced sets of indent apertures, engageable with said detent, each set of said apertures being disposed in circumferentially spaced relationship in an arc corresponding to the path of travel of said rotatable operator, the centers of the respective arcs



defined by said indent apertures being longitudinally spaced from one another; whereby movement of said push plate to its first operating position will shift the centers of the sets of indent apertures of said push plate to position a selected set of indent apertures in register with the arcuate path of travel of said detent for releasable locking engagement therewith upon operation of said rotatable operator to selected operating positions, and whereby movement of said push plate to its second operating position will position another set of its indent apertures in register with the arcuate path of travel of said detent for releasable seating engagement with said detents to provide a second selection of operating positions of said rotatable operators.

3,156,791
VENTILATED CONTACT POINTS
Robert Henry Hieger, 14305 Faust, Detroit, Mich.
Filed Feb. 24, 1964, Ser. No. 347,649
6 Claims. (Cl. 200—30)

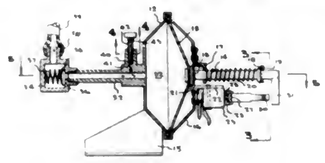


6. A pair of cooperating ignition contacts for an automotive ignition circuit including a mounting bracket having a substantially right angled cantilevered tab extending therefrom and a pivoted breaker arm pivotally secured to said mounting bracket;

one of said pair of ignition contacts being non-rotatably secured to said cantilevered tab, the other secured to said pivotal breaker arm for facewise engagement with the respective circular exposed contact faces, one of which has a pair of intersecting and diametrically extending arcuate cross sectional slots formed therein and lying normal to each other;

said slotted contact being rotationally oriented so that the arcuate cross sectional slots lie diagonally to the mounting bracket, whereby the circulation of air between the contacts and the inherent vibration of said mounting bracket during operation will effect the gravitational removal of the foreign particles from the engaging circular faces of said pair of contacts.

3,156,792
DELAYED ACTION LIGHT SWITCH DEVICE
Wesley L. Long, 22 Sunnyside Drive, Springfield, Ill.
Filed May 26, 1961, Ser. No. 113,004
2 Claims. (Cl. 200—34)



1. In an automatic motor vehicle light control system of the type providing delayed deenergization of the vehicle headlights for a predetermined period of time after the vehicle engine has been shut off, a delay switch system comprising a chamber having a flexible diaphragm mounted therein, means to connect said chamber at times to the intake manifold of the engine while the engine is running, whereby to flex said diaphragm, a normally open switch mounted adjacent said chamber and having an externally projecting operating plunger, a loop-shaped lever having a U-shaped end portion provided with an outer arm, means pivotally supporting said U-shaped end portion on said switch with said outer arm in a position to engage said plunger and close the switch responsive to rotation of the lever, said lever having a free outer portion opposite said U-shaped end portion, a plunger member slidably mounted in a wall of the chamber and connected at its inner end to said diaphragm, a transversely extending arm on the outer end of said last-named plunger member located in a position to engage said free outer portion of the lever and to rotate the lever responsive to flexure of the diaphragm, whereby to close said switch, and restricted vent means connecting the chamber to atmosphere to provide delayed release of the diaphragm when the engine is shut off.

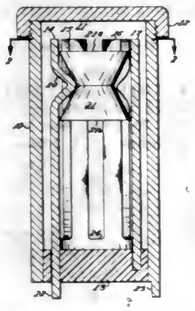
3,156,793
CONTACT ELEMENTS FOR PERFORATED RECORD READING DEVICES
Norman J. Rosen, Altadena, Robert H. Lewis, West Covina, and Howard C. Stanley, Glendora, Calif., assignors to Datex Corporation, Monrovia, Calif., a corporation of California
Filed May 24, 1962, Ser. No. 197,533
10 Claims. (Cl. 200—46)



1. A sensing element for imperforate record members and the like including an elongated, resilient element having a substantially central sensing portion extending out-

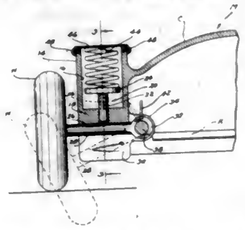
wardly therefrom and a sensing portion at opposite ends thereof and extending outwardly therefrom in the opposite direction from the central sensing portion.

3,156,794
OMNI-DIRECTIONAL IMPACT SWITCH
Ingebret H. Vold, Brooklyn Center, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 26, 1962, Ser. No. 247,123
7 Claims. (Cl. 200—61.45)



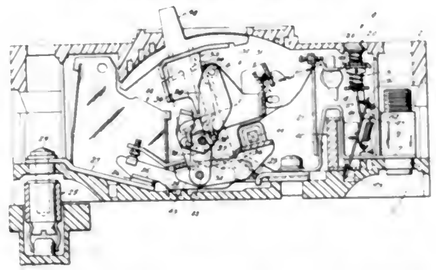
1. An impact switch, comprising: a metallic body having a cylindrical chamber therein, a non-conductive closure member mounted across one end of said chamber, a plurality of flexible switch arms mounted on said closure member at spaced intervals in an annular ring concentric with the periphery of said closure member and extending longitudinally into said chamber, said switch arms being held generally parallel with the wall of said chamber but out of contact therewith, a first group of said switch arms being shaped in the form of flat blades, a second group of said switch arms being shaped in the form of flat blades with a rounded protuberance formed inwardly at an intermediate point thereon, said switch arms of said first and said second group being mounted in alternate positions in said concentric ring; and an inertial mass having the configuration of two frusto-conical sections joined at their small base, said mass thereby having a concave outer surface defined by the sides of said frusto-conical sections, said mass being constrained between said annularly spaced switch arms with said rounded protuberances disposed on said concave surface of said mass, at least one of said switch arms being forced into contact with said metallic body upon sufficient movement of said mass in any direction.

3,156,795
SHORTING MEANS FOR IGNITION SYSTEMS
Anthony Bonfiglio, 1600 W. 6th St., Racine, Wis.
Filed May 28, 1962, Ser. No. 198,294
2 Claims. (Cl. 200—61.52)



1. In a mower comprising a housing supported for transport on a wheel having an axle, and a power means on said housing having an ignition system, in combination a means of interrupting the flow of current through said system comprising a pivot for said axle on said housing, said pivot extending transversely of the axis of said axle and spaced from said wheel, a plunger slidable in said housing and engaging said axle intermediate said wheel and said pivot, resilient means to urge said plunger into engagement with said axle, said plunger having an enlarged portion normal thereto, a shorting abutment adjacent said plunger and integral with said housing, a terminal abutment in said housing electrically insulated therefrom and positioned adjacent said plunger, an electrical conductor connected between said power means and said terminal abutment, said enlarged portion simultaneously contacting said shorting abutment and said terminal abutment upon displacement of said axle about said pivot.

3,156,796
HIGH SENSITIVITY THERMOMAGNETIC CIRCUIT BREAKER
Walter H. Vogelsberg, Narbeth, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 31, 1961, Ser. No. 128,071
6 Claims. (Cl. 200—88)



1. A circuit breaker trip unit including an automatic magnetic tripping means comprising a manget for generating flux in response to current flow through the circuit breaker, and an armature operatively positioned so that said flux passes therethrough; said magnet including a pair of pole faces lying in a plane; said armature being mounted for pivotal movement toward and away from said plane about an axis extending across edge surfaces of said pair of pole faces; bimetallic tripping means for deflection responsive to predetermined current flow in said circuit breaker; first means for mounting said magnetic tripping means, and second means for mounting said bimetallic tripping means; said first and second means being substantially independent, whereby a V-shaped air gap relationship of said armature and pair of pole faces is maintained independent of the deflection of said bimetallic tripping means thereto.

3,156,797
PLUG-IN ELECTROMAGNETIC RELAY
Zeke R. Smith, Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Dec. 7, 1961, Ser. No. 157,628
9 Claims. (Cl. 200—87)

1. In a plug-in type electromagnetic relay, the combination of

a flat base plate having an opening;

a base assembly comprising

a base of insulation material disposed in said opening and rigidly secured to said base plate to support said base plate on said base, said base having an aligning plug, and

a plurality of base pins rigidly secured to said base and arranged in parallel relation at angularly spaced points on a circle concentric to said aligning plug;

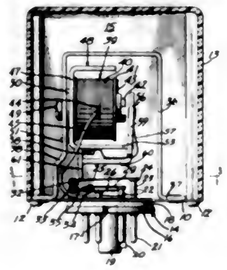
a plurality of posts each connected to one of said base pins and projecting from said base on the side thereof opposite to said base pins;

contact means including

a plurality of contact arms each mounted on one of said post and projecting therefrom generally parallel to said base and transversely of said posts;

a bracket mounted on said base plate and projecting on the same side thereof as said posts and said contact arms, said bracket including

at least one leg portion which extends substantially perpendicular to said base plate;



electromagnetic operating means mounted on said bracket and including

an electromagnet parallel to said base above said contact arms and substantially perpendicular to said leg portion of said bracket,

a field member having one leg parallel to said electromagnet and providing a pivot, and another leg parallel to said leg portion of said bracket,

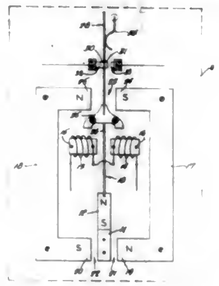
an armature pivotally mounted on said pivot and including a leg portion which is generally parallel to said contact arms and movable generally perpendicular thereto; and

a restoring spring connected to said armature; and

means connecting said armature to actuate said contact means in response to actuation of said electromagnet.

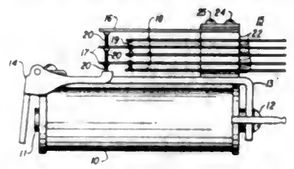
3,156,798
RESONANT FREQUENCY REED RELAY
Herbert T. Rights, Abington, Pa., assignor to James G. Biddle Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1961, Ser. No. 102,995
15 Claims. (Cl. 200—91)

1. A reed relay having no contacts on the vibrating reed, comprising a support structure, a reed consisting of magnetic material at least in part, having a predetermined resonant frequency supported from said support structure and supported at one end on the support structure so that the regions occupied by the reed during vibration are completely free of obstruction, vibration producing means associated with the reed to cause it to vibrate when its resonant frequency is reached, magnetic field producing means located relative to the vibrating reed such that vibration will distort the field, a pair of contacts one of which is fixed relative to the support structure, and movable contact bearing means for the other contact supported on the support structure and movable relative thereto and located in the field distortable by the vibrating reed such that when field distortion occurs the contact bearing means will be deflected to change



the condition of the contacts as the distorted field acts upon the contact bearing means.

3,156,799
TENSION LOADING ARRANGEMENT FOR SPRING PILEUPS
William A. Depner, Naperville, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,627
1 Claim. (Cl. 200—104)

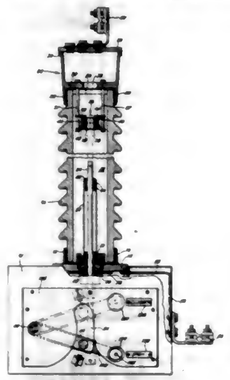


An electromagnetic relay comprising an electromagnet with a heelpiece mounted on one end thereof supporting an armature with a movable actuating arm, a spring pileup mounted on said heelpiece comprising a series of movable springs and a series of stationary springs each having contacts cooperating with each other when the movable springs are moved to engage the stationary springs, all of said springs non-pretensioned and mounted together in parallel relation in said pileup, a buffer at the end of each movable spring, said buffers in alignment with each other and with the actuating arm of said armature, a single tensioned spring mounted on said pileup on the outside thereof with the movable springs lying between the tensioned spring and the actuating arm, said tensioned spring also having a buffer in the movable end thereof in alignment with the buffers in said movable springs, the tension in said tensioned spring acting as the sole force to press all of the movable springs toward the actuating arm to normally hold said arm in its unoperated position and maintain all of said buffers in contact with each other as the arm is moved to operate the springs.

3,156,800
HIGH SPEED GROUNDING SWITCH
Kazuo Henry Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,460
12 Claims. (Cl. 200—106)

1. A high speed grounding switch comprising, fixed and movable contact means, switch closing means urging said movable contact means toward its closed position, latch means for holding said movable contact in open position, electro-responsive latch release means for freeing

said movable contact for movement toward its closed position, resetting means normally operable to move said movable contact out of its closed position and into its latched position, said electro-responsive latch release means also being operable to render said resetting means



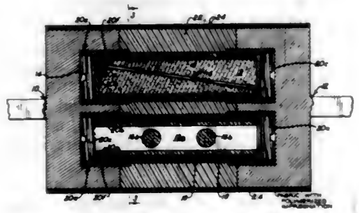
ineffective to move said movable contact so that movement of said movable contact out of its closed position may be prevented and said movable contact may be released for movement into its closed position if a resetting operation has commenced or when said resetting means is held in its open position.

3,156,801

CURRENT LIMITING FUSE UNIT WITH CASING SEALING ITS TERMINALS

Thomas M. Cole, Harrison, N.Y., and Robert B. Goody, Tenafly, N.J., assignors to Federal Pacific Electric Company, a corporation of Delaware

Filed Jan. 7, 1960, Ser. No. 1,020
7 Claims. (Cl. 200—120)



4. A current-limiting fuse unit, including plural tubular cartridge fuses, each having a tubular insulating wall, closed-end metal terminals and a fuse link interconnecting said terminals, a unitary polyester plastic body cast and internally stressed in tension about said cartridge fuses and in intimate engagement therewith everywhere except for only portions of said cartridge fuses projecting from said body, said body forming seals between said terminals and said tubular wall, said body comprising at least an encircling layer of impregnated fabric.

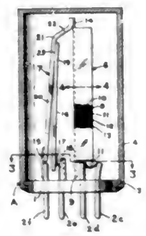
3,156,802

THERMAL TIME DELAY RELAY WITH RELATIVELY FLEXIBLE CONTROL MEMBER

Angelo A. De Falco, Irvington, N.J., assignor to Falcon Electronics Corp., Harrison, N.J., a corporation of New Jersey

Filed Apr. 24, 1957, Ser. No. 654,903
14 Claims. (Cl. 200—122)

1. In a time delay control device to be connected in a current-carrying circuit, a thermally responsive actuating member having one end connected to a point of reference in said control device and communicating with said circuit to allow the free end of said member to expand longitudinally relative to said point of reference in response to thermal changes caused by variations in the current in said circuit, a control member connected between said point of reference a spaced distance from said actuating member and directly to the free end of said actuating member, said control member including an angular bend at a point



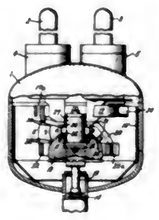
thereon relatively close to the point of connection to said actuating member, said control member having a relatively stiff portion between said bend and the point of connection to the actuating member and a relatively flexible portion on the side of the bend remote from the relatively stiff portion, and means in operable relation with the flexible portion of said control member including a switch to be opened and closed on expansion and contraction of said actuating member.

3,156,803

CIRCUIT INTERRUPTER HAVING UNIFORMLY SPACED SPIRAL ARC RUNNERS IN A CONFINED ATMOSPHERE FOR IMPROVED ARC VOLTAGE CONTROL

Thomas J. Scully, King of Prussia, and Vincent N. Stewart, Springfield, Pa., assignors to General Electric Company, a corporation of New York

Filed May 29, 1962, Ser. No. 198,647
19 Claims. (Cl. 200—144)



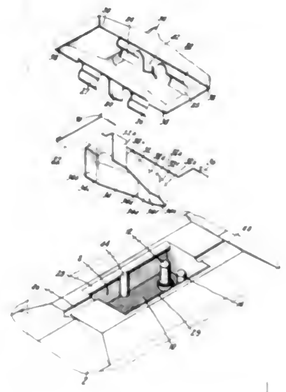
1. A circuit interrupter comprising:
(*a*) a tank;
(*b*) a pair of line terminals extending into said tank;
(*c*) first and second stationary electric contacts disposed within said tank in spaced relation to each other and insulated from the tank;
(*d*) means for electrically connecting said stationary contacts to said line terminals, respectively;
(*e*) a movable bridging contact disposed separably to engage said stationary contacts within said tank;
(*f*) a first arc runner member located adjacent to said stationary contacts and insulated from said tank;
(*g*) a second arc runner member generally surrounding said bridging contact and insulated from said tank;
(*h*) means for electrically connecting said first and second arc runner members to said first and second stationary contacts, respectively; and
(*i*) actuating means for moving said bridging contact to establish an electric arc in the tank;
(*j*) said arc runner members being positioned in opposition to and spaced from each other for receiving said arc and being so arranged that a magnetic field is developed therebetween in response to current flowing therein for continuously moving the arc along said members while the arc is being extinguished within said tank.

3,156,804

SLIDABLE SWITCH MECHANISM FOR AN ELECTRIC TOOTHBRUSH

Hans Springer, Ashland, and Edgar A. Phaneuf, Southborough, Mass., assignors to General Electric Company, a corporation of New York

Filed May 31, 1962, Ser. No. 198,886
7 Claims. (Cl. 200—157)



1. A switch for an electric toothbrush comprising a pair of upwardly extending generally cylindrical fixed spaced terminals, a manual control button slidably mounted on said tooth brush, a pair of flexible contact arms, said arms being formed of sheet metal, each of said arms having a free end, an intermediate portion and an end secured to said control button to provide secured ends and free ends, said secured ends being spaced from each other, said free ends being in contact with each other so that together the arms form a generally V shaped arrangement, the intermediate portions of said arms being bent to be generally parallel to each other to provide generally parallel arms, said contact arms being spaced from said terminals in one position of said control button and in contact with said terminals in another position of said control button so that by sliding the control button in one direction the contact arms are wedged between the generally cylindrical terminals with the generally parallel intermediate portions remaining in contact with the terminals and the free ends being wiped against the terminals to obtain good electrical contact, means provided on said contact arms for holding the contact arms in contact with the terminals in the switch closed position, said flexible contact arms being moved out of engagement with said terminals by manually sliding the button in the opposite direction.

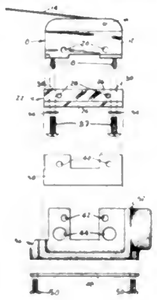
3,156,805

ELECTRIC SWITCH ASSEMBLY INCLUDING INDICATOR AND MOUNTING MEANS

Harold E. Baker, Danvers, Erle H. Dodge, Beverly, and Marcellus N. Gilbert, Jr., Lynnfield, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 22, 1960, Ser. No. 44,591
7 Claims. (Cl. 200—167)

1. An electric switch assembly comprising: a switch body member; a pair of terminal plugs depending from the bottom of said body member; a translucent case disposed in abutting relationship with respect to the bottom of said body member, said case having a pair of holes extending therethrough and in register with said terminal



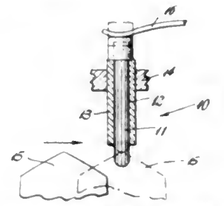
plugs; a pair of hollow terminal screws extending into said holes from the bottom of said case, said plugs extending into and engaging said screws; and a light source disposed in said case and electrically connected across said screws.

3,156,806

PUSH ROD OR SIMILAR DEVICE

George M. Beardow, Redding Ridge, Conn., assignor to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware

Filed Mar. 6, 1963, Ser. No. 263,253
7 Claims. (Cl. 200—172)



1. In the combination of an elongate rod, means for slidably mounting said rod for longitudinal movement and means for reciprocating said rod; the improvement wherein said rod comprises a unitary bamboo body having substantially all of the fibers thereof straight and continuous throughout the length of the body, said fibers being parallel to the longitudinal axis of the body.

3,156,807

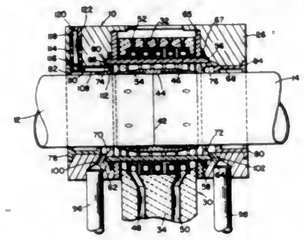
INDUCTION HEATING METHOD AND MEANS

John A. Stein, Torrance, and Therian E. Austin, Long Beach, Calif., assignors to North American Aviation, Inc.

Filed Oct. 27, 1961, Ser. No. 148,171
4 Claims. (Cl. 219—9.5)

1. Induction heating means for causing heat in a localized area of a specimen, said means including housing means for supporting an induction heating element in

stationary operative relationship with said area, said induction heating element comprising a tubular conductor, said housing means including a chamber enclosing said area, conduit means communicating with said chamber



for supplying an inert gas to fill said chamber in conjunction with operation of said induction heating element, said conductor being constructed and arranged for support by said housing means externally of said chamber.

3,156,808
MANUFACTURE OF TURBINE AND COMPRESSOR BLADES

William Thomas Davies, Fernside, Fritchley, near Ambergate, Frank Henry Stark, Chellaston, and Henry Sidney Bateman, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Nov. 19, 1957, Ser. No. 697,456
Claims priority, application Great Britain, Nov. 20, 1956, 35,521/56
5 Claims. (Cl. 219—69)

1. The method of forming a passageway in a metal part by electric arc disintegration comprising the steps of relatively reciprocating said part generally axially and a hollow electrically conducting tube sized and shaped in accordance with the passageway requirements, connecting the tube and the part in a direct current electric circuit, advancing said tube at such a rate as to cause the tube and part to approach without touching sufficiently close to effect arcing only between the tube tip and the bottom of the passageway at each reciprocation as the passageway is formed and flowing a stream of electrolyte through the hollow tube, said electrolyte having low conductivity and being capable of break-down at the voltage of said current at the nearest approach of the tube end and passageway bottom, said tube being helical, and a twisting action being produced between it and the part during the reciprocating and advancing operations.

3,156,809
VAPOR DEFLECTOR

Charles F. Stearns, East Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,109
1 Claim. (Cl. 219—121)

Apparatus for preventing metal vapor from clouding the means through which a welding operation being performed in a chamber is viewed comprising:

a ring shaped inner supporting member,

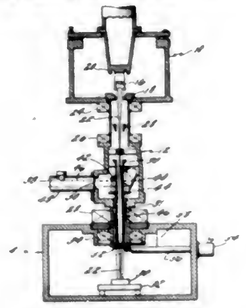
a ring shaped outer supporting member coaxial and coplanar with said inner member,

at least three deflector blades mounted between said inner and outer members,

viewing means providing visual communication between the inside and outside of the chamber,

means rotatably supporting said members and blades inside of the chamber between the articles being welded and said viewing means whereby the welding operation is viewed through the rotating blades,

gear means engaging said outer member for causing rotation of said members and blades about the common axis of said members, and

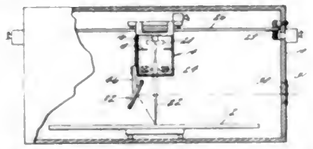


means sealably extending into the chamber for driving said gear means.

3,156,810
PROTECTIVE DEVICE FOR MOVABLE GUN VIEWING SYSTEM

Fred H. Samuelson, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,738
1 Claim. (Cl. 219—121)



Apparatus for working materials by means of a beam of electrons comprising:

an evacuable chamber,

an electron beam generator,

means movably supporting said beam generator within said chamber,

means for supporting an object to be worked in said chamber in a position such that the electron beam generated by said beam generator may impinge thereon,

means for producing relative motion between said object supporting means and the axis of the beam of electrons,

image reflecting means,

means attached to said beam generator for supporting said reflecting means adjacent the axis of the electron beam in a position such that an image of the desired beam impingement point on the object to be worked is angularly reflected by said reflecting means,

means so located in a wall of said chamber as to intercept the image angularly reflected from said reflecting

means for permitting passage out of the chamber of the image without coincident leakage of environmental gas into the chamber whereby viewing of the desired beam impingement point from the exterior of the chamber is enabled,

first means mounted for movement with said beam generator, and means providing for storage of a roll of transparent material adjacent said reflecting means, and

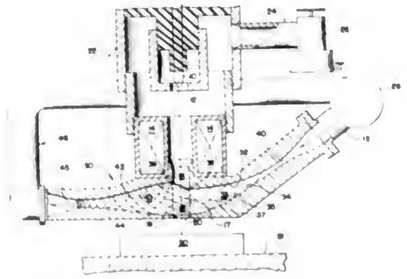
second means mounted for movement with said beam generator, said second means being supported adjacent said reflecting means for advancing a sheet of transparent material from said storage means across

the light path between said reflecting means and the object to be worked whereby the sheet of transparent material intercepts vapors released from the object due to impingement of the beam thereon and thus prevents impairment of the reflecting means.

3,156,811
GASEOUS SEALING MEANS IN AN APPARATUS FOR WORKING MATERIALS BY A BEAM OF CHARGED PARTICLES

Frank W. Barry, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,214
22 Claims. (Cl. 219—121)



1. Apparatus for working materials by means of a beam of charged particles comprising:

means for generating a beam of charged particles;

a vessel containing at least a portion of said beam generating means, said vessel defining an opening for transmission of said beam;

means for creating and maintaining a first relatively low pressure in said vessel;

means for directing the beam out of said vessel through said opening so that the beam will impinge on a material to be worked located outside of said vessel in a region where the environmental gas is at a second pressure greater than the said first pressure;

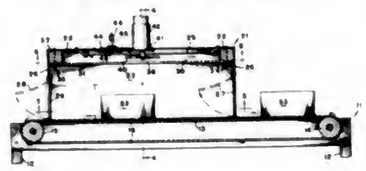
a source of gas under pressure; and

means connected to said pressurized source of gas for generating a supersonic stream of gas and establishing a pressure gradient between said vessel opening and the environmental gas in the region of the material to be worked, said means thereby effecting passage of said beam from said vessel opening without material attenuation thereof.

3,156,812
OVEN FOR SHRINKING WRAPPERS

David Forman and Harold M. Forman, both of Philadelphia, Pa., assignors to Formatron, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1962, Ser. No. 173,209
5 Claims. (Cl. 219—388)

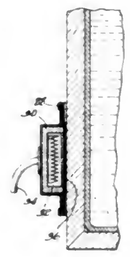


1. An oven for shrinking heat shrinkable envelopes on packages comprising members forming an enclosure having a top panel, side panels, end panels and an open bottom, said end panels having entrance and exit openings, respectively, defining the terminals of the path of travel of the packages through the enclosure, said open bottom being adapted to receive a mechanical conveyor in the space between the openings in said end panels; an air circulation control panel above the path of travel, below and in spaced relation to the top panel; said control panel having side air exhaust openings at a median zone on either side of the path of travel for the movement of air to the oven from the space between the control panel and the said top panel; said control panel having also a central air intake opening in the median zone between said side openings; air circulation means adjacent said air intake opening and electrical heating units in the space between the top panel and the control panel in the path of air travel between the intake opening and the side openings; a fresh air damper between the exterior of the enclosure and the space between said top and control panels; and means responsive to temperature changes within the enclosure for actuating said damper to control the flow of primary air from the exterior of the enclosure to the interior space between said top and control panels.

3,156,813
BATTERY WARMER

Edward Tully Trainor, Chicago, Ill., assignor to Milesmaster Inc. of America, Chicago, Ill., a corporation of Illinois

Filed Oct. 15, 1962, Ser. No. 230,655
4 Claims. (Cl. 219—526)

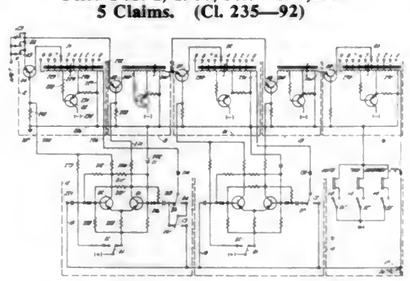


3. A heating device for attachment to a battery installed in a vehicle or the like comprising housing means including a side plate having a central portion and a peripheral portion encircling said central portion, an electrical heating element mounted within said housing means adjacent said central portion and connectable with a source of electrical power, said central portion having an outer surface facing in a first direction, said peripheral portion having a surface facing generally in said first direction, resilient adhesive means secured to said peripheral portion for connecting said device to a battery, said central portion surface being substantially entirely exposed and free of said adhesive means, said adhesive means including a resilient body secured substantially only to said peripheral portion surface around said central portion and having a substantial thickness in said first direction, said resilient body having an outer surface facing generally in said first direction, and a coating of adhesive material on said outer surface of the resilient body, said surface of the resilient body being offset in said first direction from said central portion surface for engagement with the battery to be heated and for spacing the central portion surface from the battery.

3,156,814
ADJUSTABLE HIGH COUNT MAGNETIC COUNTER

Carl Neitzert, Chatham Township, Camden County, N.J., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 1, 1960, Ser. No. 9,155
5 Claims. (Cl. 235—92)



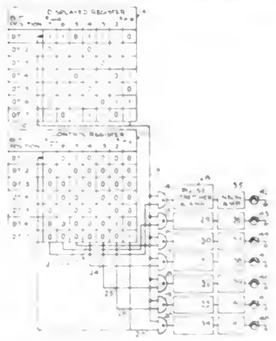
1. In a counter capable of being set to produce an output pulse upon receipt of a predetermined high number of input pulses, the combination comprising a unit adjustable counter, a tens adjustable counter and a hundreds adjustable counter, each of said counters being of the type having a saturable element capable of achieving the condition of saturation upon receipt of a limited but predetermined and adjustable number of input pulses accompanied by production of an output pulse with automatic resetting to the initial state, a units decade counter and a tens decade counter of the type having a saturable element capable of achieving saturation upon receipt of ten input pulses accompanied by production of an output pulse with automatic resetting to the initial state, means including an input terminal for receiving a train of input pulses, an output terminal, means including a first two-condition switch interposed between the units adjustable counter and the units decade counter for connecting such counters alternatively to the input terminal and so that when the number of pulses is received for which the units adjustable counter has been set the units adjustable counter is disabled and the units decade counter is enabled to receive pulses from the input terminal, means including a second two-condition switch interposed between the tens adjustable counter and the tens decade counter so that the tens adjustable counter receives an input signal from the units decade counter until the number of pulses is received for which the tens adjustable counter has been set following which the second two-condition switch disables the tens adjustable counter and enables the tens decade counter to receive pulses from the units decade counter, said hundreds adjustable counter being connected between the tens decade counter and the output terminal so that a signal is produced at the output terminal when the set count is reached therein.

3,156,815
REGISTER MONITOR

Jack C. Smeltzer, Woodland Hills, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware

Filed Jan. 3, 1961, Ser. No. 80,326
2 Claims. (Cl. 235—164)

1. A device for displaying the contents of a register which contents appear sequentially at the output portion thereof, comprising a register capable of parallel output from each bit position, said parallel output register's length being a submultiple in length of the length of the register to be displayed, a strobe bit circulating in said parallel output register, a plurality of three-term gates connected to said parallel output register whereby each of said bit positions of said parallel output register makes up a first term of each of said plurality of three-term gates, the output of said register to be displayed making up a second term of each of said plurality of three-term

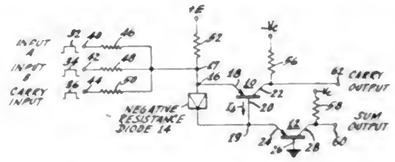


gates, computer timing means making up the third term of each of said plurality of three-term gates, and indicating means connected to the output of each of said gates.

3,156,816
ELECTRICAL CIRCUITS

Walter F. Kosonocky, Iselin, N.J., and Juan J. Amodei, Levittown, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Feb. 15, 1961, Ser. No. 89,537
23 Claims. (Cl. 235—172)



1. The combination comprising: a negative resistance diode having a current peak I_p, where $I<I_p<2I$; a transistor having an emitter-base path connected in parallel with said diode, said transistor also having a collector electrode; means biasing said collector electrode so that said transistor saturates when the collectod current has a value of approximately 2I; an impedance device having one terminal common to said base and to one terminal of said diode; and means for applying input current at the junction of said emitter and the other terminal of said diode.

3,156,817
ELECTRICAL SIGNAL ANALYZING SYSTEM

Vernon R. Briggs, Woodland Hills, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed May 13, 1960, Ser. No. 29,069
4 Claims. (Cl. 235—181)

1. A system for measuring the relative timing displacement of mutually coherent signal components of two electrical series signals which appear in the presence of noise, the system including the combination of:

a rotatable magnetic drum;

first and second input signal terminal means, each of which is responsive to a different one of the electrical signals;

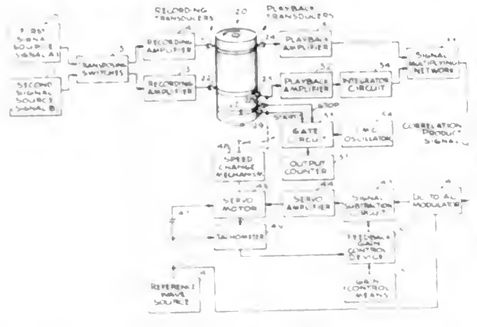
a pair of recording devices each associated with a different recording channel on the magnetic drum;

transposing switch means coupled between the signal input terminals and the recording devices and operating to couple the electrical signals to the recording devices;

a pair of playback devices associated with the different recording channels on the magnetic drum, one of the playback devices being substantially fixed relative to the associated recording channel and the drum and the other being movable along the recording channel to provide a variable timing displacement between the signals reproduced in the channels;

an integrator circuit coupled to the movable reproducing head to provide a substantially 90° phase shift between the signals reproduced from the magnetic drum;

a signal multiplying network coupled to the fixed playback head and to the integrator circuit to provide correlation product signals which represent in instantaneous value a relatively short term average of the product of the instantaneous values of the reproduced signals;



a positioning system including a servo motor for controlling the position of the movable reproducing head;

servo amplifier means coupled to receive correlation product signals from the signal multiplying network and to provide correlation output signals to the servo motor;

a tachometer device coupled to the servo motor and coupled to provide a negative feedback signal to the servo amplifier which opposes the correlation product signal, thus to provide a relatively long term averaging of the product signals from the signal multiplying network; and

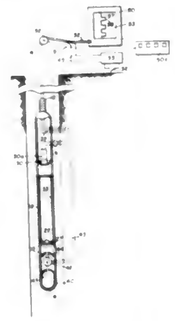
an output indication device coupled to the movable reproducing head and operating to provide a measure of the spacing along the channels between the fixed reproducing lead and the movable reproducing head, whereby there is provided a measure of relative timing displacement between the mutually coherent signal components of the electrical singals.

3,156,818
RADIOACTIVE FLUID FLOW MEASURING APPARATUS WITH MEANS FOR INJECTING A MARKER MATERIAL BETWEEN THE SOURCE AND DETECTOR

Richard L. Caldwell, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed July 25, 1960, Ser. No. 45,199
4 Claims. (Cl. 250—43.5)

1. Apparatus for determining the rate of fluid flow comprising means forming an elongated flow channel adapted to be supported for movement through a fluid-carrying conduit and adapted to direct said fluid through said flow channel, a first element for transmitting radioactive radiation through fluid in said flow channel, a second element spaced apart from said first element along the length of said flow channel and responsive to radioactive radiation transmitted through said fluid for generating an output signal, means for injecting material into said fluid upstream of said second element to produce a

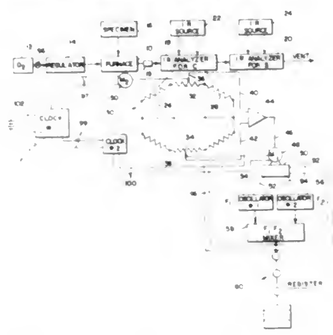


flow-dependent variation in the transmission of radioactive radiation through said fluid between said first and second elements, and means connected to said second element for indicating the variations with time of said output signal as a measure of flow rate of said material through said flow channel.

3,156,819
AUTOMATIC ABSORPTION ANALYZING SYSTEM

Glenn E. Smith, Cambridge, and Paul C. Watson, Arlington, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 29, 1961, Ser. No. 134,691
10 Claims. (Cl. 250—43.5)



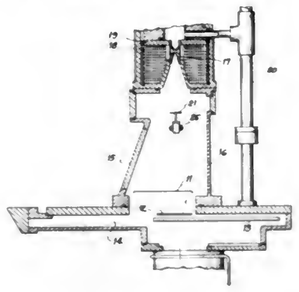
1. Apparatus for quantitatively analyzing a chemical compound, comprising an analyzer adapted to detect the presence of a predetermined substance in said compound and to detect variations in concentration thereof, a bridge circuit, first and second potentiometers forming part of said circuit and each having a slider associated therewith, said analyzer including first and second resistance elements forming part of said circuit, said resistance elements being operatively associated with said analyzer and being variable in response to changes in concentration of said substance, a motor responding to a voltage difference between said sliders to adjust one of said sliders and thereby balance said bridge circuit, a pair of variable oscillators, means connecting said motor to said oscillators for simultaneously increasing the frequency of one oscillator and decreasing the frequency of the other oscillator, means for mixing the frequencies of both oscillators and means for counting the pulses of the difference frequency

output of said mixer, the resulting count corresponding to the total amount of said substance in said compound.

3,156,820
METHOD AND APPARATUS FOR CALIBRATING ELECTRON-MICROSCOPE MAGNIFICATION

Charles B. Reimer, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Mar. 22, 1962, Ser. No. 181,749
6 Claims. (Cl. 250—49.5)



1. In an electron microscope having an electron-optics system from which a focused electron beam is projected, an image-receiving object such as a photographic plate, and a housing defining an electron drift space between said system and said object, the improvement which comprises an electron-opaque circular gauge element mounted in said housing and movable between an operating position in the path of said beam and a retracted position outside said beam, and means for moving said element to place said gauge element in either of said positions, the gauge element in its operative position being effective to cast a shadow on the image-receiving object suitable for use in calibrating the microscope magnification by comparison of the shadow size with the size of a magnified standard image projected on the image-receiving object by the electron beam.

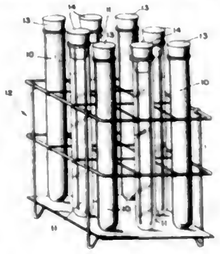
4. The method of calibrating the magnification of an electron microscope which comprises the steps of using as a specimen a diffraction-grating replica providing a plurality of parallel lines of uniform predetermined spacing, projecting a magnified image of such specimen, interposing in the path of such projection a circular gauge member of known dimensions, whereby the shadow of said gauge member is superimposed on the projected image of said specimen, and adjusting the magnification controls of the microscope until the diameter of said gauge-member shadow includes a predetermined integral number of spaces between said parallel lines.

3,156,821
METHOD OF MONITORING LOW LEVEL RADIOACTIVITY BY THE STIMULATED GROWTH OF BACTERIA

Rene L. Engel, 703A Bowen, China Lake, Calif., and Giorgio Soli, 1340 Sierra Alta Way, Los Angeles, Calif.

Filed June 15, 1961, Ser. No. 117,475
8 Claims. (Cl. 250—83)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of monitoring for low-level radioactivity comprising the steps of introducing a suspension of hydrogen-utilizing bacteria into an assembly of test tubes, one-half of which are unshielded glass tubes and the other half glass tubes shielded by lead, all containing a culture medium; filling the tubes of said assembly with hydrogen gas and sealing to a leak-proof condition; placing said assembly in the ocean at a predetermined depth, maintaining said assembly in place for a selected length of time, withdrawing said assembly for examination, and

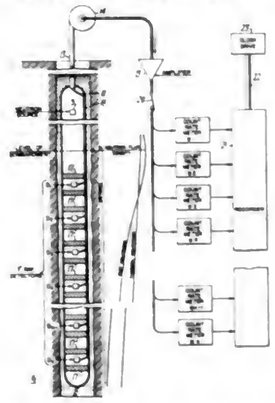


comparing the cultures in the shielded and unshielded tubes to ascertain the amount of growth of the bacteria resulting from stimulation by radiation, for determination of the presence and location of a radioactivity source.

3,156,822
INDUCED GAMMA RAY LOGGING AT A PLURALITY OF LEVELS IN A WELL BORE

Jay Tittman, Danbury, Conn., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Nov. 20, 1959, Ser. No. 854,490
10 Claims. (Cl. 250—83.3)

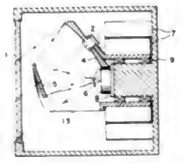


1. A method of logging earth formations traversed by a bore, the formations including at least a first element that is susceptible of induced radioactivity in response to interaction with relatively low energy neutrons to produce radioactive products and a second element that is susceptible of induced radioactivity in response to interaction with relatively high energy neutrons to produce radioactive products, said radioactive products of each of said first and second elements having substantially the same half-lives, said method comprising the steps of bombarding for a predetermined interval the formations adjacent a first level in the bore with neutrons of relatively high energies; during a second predetermined interval subsequent to said interval of bombardment, continuously measuring, simultaneously at a plurality of levels in said bore spaced longitudinally with respect to the axis of said bore from said first level of bombardment, the gamma-ray activity resulting from the decay of the radioactive products of said first and second elements produced as a result of said bombardment; and recording successive indications representative of said gamma-ray activity as a function of time measured at each of said plurality of levels after termination of said bombardment to enable a determination of the relative quantities of said first and second elements in said formations.

3,156,823
HORIZON SENSOR WITH REFLECTIVE OPTICS

Robert W. Astheimer, Westport, and Henry F. Peterssen, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed May 16, 1962, Ser. No. 195,185
7 Claims. (Cl. 250—83.3)



1. In a conical scanning instrument comprising a radiation detector and means for successively imaging targets in a conical scan thereon the improvement which comprises,

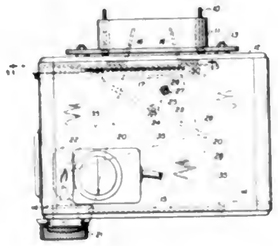
(*a*) a converging mirror and at least one plane mirror mounted in a framework capable of rotation about an axis,

(*b*) a radiation detector mounted on the axis of framework rotation and the mirrors being positioned to image targets from a conical scan onto the detector, the optical axis of the mirrors at the detector corresponding with the axis of rotation, at least one of the mirrors being tilted with respect to the axis of rotation to produce the conical scan the angle of which is determined by the tilt of the mirror.

3,156,824
X-RAY COLLIMATOR HAVING VISIBLE LIGHT CENTERING ARRANGEMENT AND AN ADJUSTABLE FILTER FOR X-RAYS

Leonard F. Peyser, White Plains, N.Y., assignor to Howdon Videx Products Corporation, Califon, N.J., a corporation of New Jersey

Filed Dec. 1, 1960, Ser. No. 73,025
4 Claims. (Cl. 250—105)

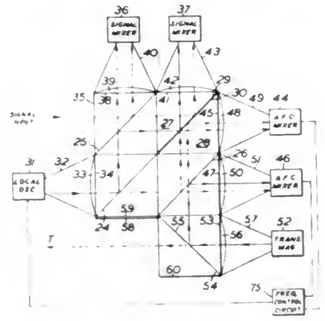


1. In an X-ray collimator having upper and lower sets of collimating plates for adjustably defining the X-ray beam, the upper set comprising two pairs of opposed plates, the plates of each pair being adjustable at right angles to the plates of the other pair and one said pair being positioned above the other said pair, an adjustable filter assembly comprising a filter plate, means pivotally mounting the said filter plate between the two said pairs of upper collimating elements and for swinging movement into and out of the beam path defined by the said elements.

3,156,825
RADIO OPTICAL APPARATUS

Albert Walter Lines, Great Malvern, England, assignor to the Minister of Supply in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

Filed May 4, 1954, Ser. No. 427,440
Claims priority, application Great Britain, May 4, 1953, 12,392/53
4 Claims. (Cl. 250—199)



1. A transmit-receive device for operation at quasi-optical frequencies comprising a local oscillator, a first hybrid unit including a pair of dielectric prisms oriented to provide a pair of adjacent parallel surfaces, each of which would be totally internally reflecting in the absence of the other for radiation incident thereon at an angle greater than the critical angle, said surface being so spaced as to divide incident radiation derived from the local oscillator equally between a straight through transmitted beam and an internally reflected beam, a second hybrid unit of the same construction as said first unit arranged to divide one of said beams into two additional beams each feeding a balanced signal mixer, a third such hybrid unit adapted to divide the second of the aforesaid two equal beams from the local oscillator into two additional beams each being fed into a balanced automatic frequency control mixer, said second hybrid unit being also arranged to accept an incoming received signal and to divide the same into two equal components each feeding one of said balanced signal mixers, said third hybrid unit being positioned to receive a small fraction of the output of a local transmitter as a reference frequency and to divide the same into two equal components fed respectively into the aforesaid two balanced automatic frequency control mixers, and means connecting said frequency control mixers to said local oscillator for controlling the frequency thereof.

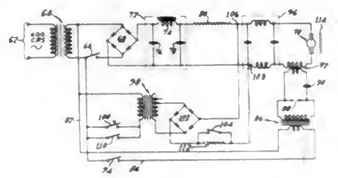
3,156,826
LIGHT COMMUNICATION SYSTEM EMPLOYING SUPERIMPOSED CURRENTS APPLIED TO A HIGH INTENSITY LIGHT SOURCE

Edward C. Mutschler, Maplewood, N.J., assignor to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey

Filed June 14, 1961, Ser. No. 117,181
4 Claims. (Cl. 250—199)

1. A light communication system comprising an arc discharge lamp having a predetermined rated power, a source of alternating current; a first circuit for supplying the lamp with pulsating current at a higher level than the rated power of the lamp, said first circuit including the source of current connected to the lamp through a full wave rectifier; and a second circuit for supplying current to the lamp at a lower level than the rated power of the lamp but sufficient to maintain an arc and including the source of current connected to the lamp through a

full wave rectifier, and having connected in the circuit between the rectifier and the lamp a resistor in series with

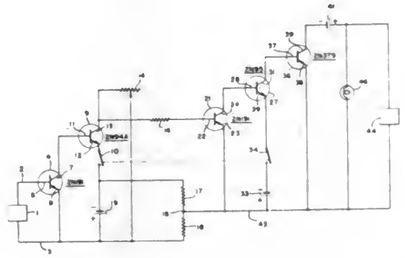


the lamp and filter means to eliminate pulses in the current.

3,156,827
PHOTOSENSITIVE TRANSISTOR CIRCUIT FOR SLAVE FLASH UNIT

Emmett E. Porteous, 2201 K St., and Duane I. Carpenter, 1324 Rushden Drive, both of Sacramento, Calif.

Filed July 6, 1961, Ser. No. 122,240
2 Claims. (Cl. 250—214)



1. A transistor slave flash unit comprising:

(*a*) a transducer adapted to transform energy impinging on said transducer to an electrical current;

(*b*) a first transistor member connected to said transducer, said first transistor member having a predetermined electrical configuration;

(*c*) a second transistor member connected to said first transistor member and being in complementary symmetrical configuration with respect thereto, said second transistor member including an emitter electrode and a collector electrode;

(*d*) a first common bus connected to said transducer;

(*e*) a battery interposed in a conductor leading from said emitter electrode to said first common bus;

(*f*) a pair of series resistances in shunt with said battery and joined at an intermediate junction;

(*g*) a variable resistor interposed in a conductor leading from said collector electrode to said first common bus, said variable resistor being capable of equalizing the voltages existing at said junction and said collector electrode whereby ambient energy conditions impinging on said transducer are nullified;

(*h*) a second common bus connected to said junction;

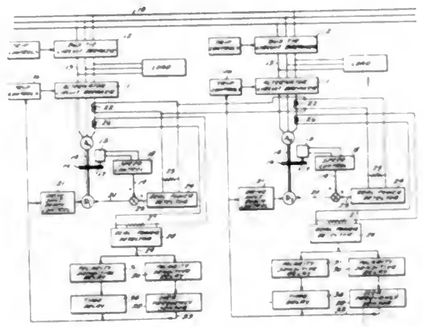
(*i*) a plurality of additional transistor members connected to said second common bus; and,

(*j*) means connected to the last of said additional transistor members and to said second common bus for deriving an electrical analogue of energy impinging on said transducer in excess of ambient energy.

3,156,828
PROTECTIVE CONTROL FOR PARALLELED ALTERNATOR SYSTEMS

William H. Hopper, Jr., Lynn, Lawrence G. Norris, Marblehead, and John W. Harrison, Danvers, Mass., assignors to General Electric Company, a corporation of New York

Filed Mar. 30, 1959, Ser. No. 802,849
6 Claims. (Cl. 307—57)

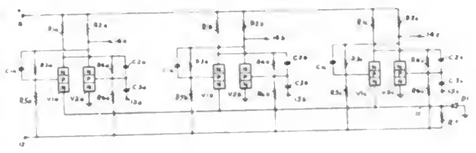


1. In a system of alternators operable in parallel on a common bus and including alternator circuit breaker means for connecting and disconnecting said alternators individually to and from said bus, a protective arrangement for protecting said system against malfunctions in said alternators or their prime movers comprising means for sensing the magnitude and direction of the electric power delivered by or to each of said alternators when operating on said common bus, means for sensing the occurrence of a preselected overspeed condition in excess of the normal operating speed of said alternators, and means for operating the alternator circuit breaker of any alternator only upon the occurrence therein of the transmission of a preselected magnitude of positive power simultaneously with the existence of said preselected overspeed condition.

3,156,829
FLIP-FLOP INTERCONNECTION CIRCUITS

Richard K. Richards, Wappingers Falls, N.Y. (1821 Allen Ave., Ames, Iowa)

Filed Oct. 16, 1958, Ser. No. 767,729
6 Claims. (Cl. 307—88.5)

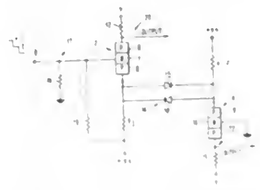


1. A circuit comprised of a plurality of flip-flops with each of said flip-flops comprising two current controlling devices with each of said devices comprising a current emitting electrode, an electrical connection from a first potential source to the current emitting electrode of one of said devices in each of said flip-flops, an electrical junction connected to the current emitting electrode of the other of said devices in each of said flip-flops, a resistor connected between said junction and a second potential source, and potential controlling means interconnecting said first potential source and said junction.

3,156,830
THREE-LEVEL ASYNCHRONOUS SWITCHING CIRCUIT

James L. Walsh, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 22, 1961, Ser. No. 161,643
5 Claims. (Cl. 307—88.5)

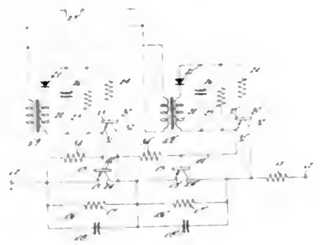


1. A current switching circuit having at least three different stable outputs comprising: a pair of like transistors each having an emitter, a collector and a base; each of said transistors being biased from a constant current source; a pair of unilaterally conducting devices connected in parallel opposed conducting relation and interconnecting the emitter electrodes of the said transistors; said devices being also connected between the said current sources coupled to the said transistors; an input circuit connected to the base of one of the said pair of transistors; the base of the other of said pair of transistors being connected to a source of reference potential; a normal output circuit connected to the collector of one of the said pair of transistors; and a complementary output circuit connected to the collector of the other of the said pair of transistors; whereby positive, ground and negative input signals cause a normal output of two, one and zero, and a complementary output of zero, one and two.

3,156,831
GATE HAVING VOLTAGE DIVIDER SHUNTING SERIES EMITTER-COLLECTOR PATHS AND INDIVIDUAL BASE-BIAS LEVEL SETTING MEANS EQUALIZING TRANSISTOR LEAKAGE CURRENTS

John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Original application Aug. 5, 1958, Ser. No. 753,272, now Patent No. 3,056,043, dated Sept. 25, 1962. Divided and this application Mar. 23, 1962, Ser. No. 181,997
2 Claims. (Cl. 307—88.5)



1. In an electric switch, first and second transistors each having a base, an emitter and a collector, means for connecting said emitter and collector of each of said transistors in series circuit across a source of electrical potential, impedance means connected across each of said transistors from said emitter to said collector for controlling the voltage applied to said transistors, and means connected to said base of each of said transistors for controlling conduction through said emitter collector circuit, said means comprising a third and fourth transistor each having a base, emitter and collector, said emitter of each of said third and fourth transistors being connected to a different base of said first and second transistors, said emitter and base of each of said third and fourth transistors being connected together across a source of electrical potential, said collector of each of said third and fourth transistors being connected to the collector of one of said first and second transistors.

3,156,832
HIGHLY LINEAR RAMP SIGNAL GENERATOR

Thomas Mollinga, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 2, 1962, Ser. No. 184,158
5 Claims. (Cl. 307—88.5)



1. A generator for generating a ramp signal in response to an input initiating signal, comprising:

a first resistor;

a timing capacitor coupled between a source of reference potential and the first resistor;

a normally closed switch coupled between the source of reference potential and a junction of the first resistor and the timing capacitor, the switch being adapted to open in response to an input initiating signal;

a first transistor arranged in an emitter follower configuration and having its base terminal coupled to the junction of the first resistor and the timing capacitor;

means for biasing the first transistor to a normally conductive state;

a second transistor having its base terminal coupled to the emitter of the first transistor and its emitter terminal coupled to an output means;

means for biasing the second transistor to a normally conductive state;

a constant current source;

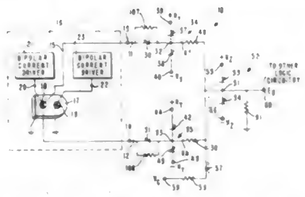
a second resistor coupled between the output means and the constant current source;

a third transistor arranged in an emitter follower configuration having its base terminal coupled to a junction of the second resistor and the constant current source and its emitter terminal coupled to the first resistor;

and means for biasing the third transistor to a normally conductive state, whereby a constant voltage is main-

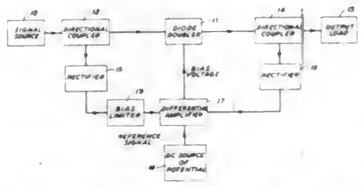
tained across the first resistor to provide a constant charging current to the timing capacitor when the switch is open.

3,156,833
SENSE CIRCUITS EMPLOYING TUNNEL DIODES OR THE LIKE
Harley A. Cloud, Vestal, and Paul B. Flagg and William K. Mead, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 15, 1962, Ser. No. 217,133
18 Claims. (Cl. 307—88.5)



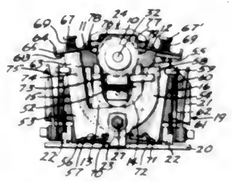
18. A sense circuit for sensing and providing output signals indicating the presence and absence of input signals from an input circuit comprising:
first and second polystable stages;
each of said stages comprising a pair of bistable devices connected in series and having a node therebetween;
means connecting each of the nodes to said input circuit;
output means connected with said nodes;
each of said stages having at least two stable states characterized by inversely related signals at the node thereof;
both of said stages being in the same state in the absence of input signals so that signals of the same polarity are supplied to said output means; and
an input signal having at least a preselected value causing one of said stages to change state to provide signals of opposite polarity to said output means.

3,156,834
AUTOMATIC LEVEL CONTROL
Albert L. Stillwell, Green Brook, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 20, 1962, Ser. No. 225,079
6 Claims. (Cl. 307—88.5)



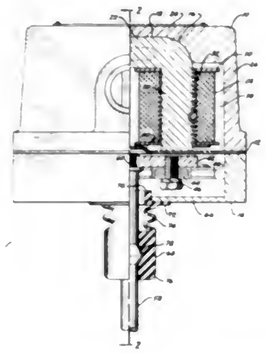
1. An automatic level control circuit for controlling the output signal level from a diode comprising:
an input signal source,
a diode,
and an output circuit,
first control means responsive to the level of the output signal delivered by said diode to said output circuit for varying the bias of said diode,
and second control means responsive to the level of the input signal delivered by said signal source to said diode for limiting the maximum bias applied to said diode.

3,156,835
BIDIRECTIONAL STEPPING MOTOR
Siegfried Godel, Norwalk, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 14, 1961, Ser. No. 89,247
24 Claims. (Cl. 310—22)



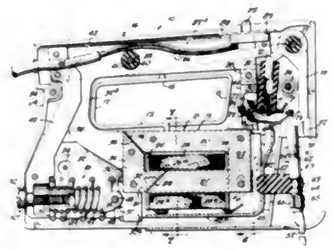
3. A stepping motor comprising an output shaft, a ratchet wheel operably connected for rotating said shaft, a pair of armatures, means including a pair of selectively energizable electromagnets for actuating said armatures, driving means for reversibly rotating said ratchet wheel in a step-by-step manner and including a pair of pivotally mounted driving pawls each operative, upon actuation of a different one of said armatures, to rotate said ratchet wheel in a different direction, a pair of detent pawls normally engaged with said ratchet wheel to prevent rotation thereof, each of said detent pawls being disengaged from said ratchet wheel, upon actuation of a different one of said driving pawls, to allow rotation of said ratchet wheel.

3,156,836
ELECTROMAGNETIC EXPLOSIONPROOF VIBRATORY HEAD
Walter S. Koke, Homewood, Ill., assignor to Novo Industrial Corporation, a corporation of New York
Filed Nov. 25, 1959, Ser. No. 855,449
1 Claim. (Cl. 310—29)



An explosionproof vibrating head including a housing divided into two chambers by a thin and substantially flat intermediate non-magnetic wall, said intermediate wall being of low permeability and completely sealing said two chambers, one from the other, a core positioned in one of said chambers, said core having a portion, remote from said intermediate wall, which is embedded within said housing and secured thereto, said core further having portions which extend toward and bear against said intermediate wall, a coil positioned on said core to form an electromagnet therewith, electrical connections for said coil passing through said housing, an armature, a plurality of leaf spring assemblies suspending the armature in said other chamber of the housing in predetermined spaced relation to said intermediate wall when at rest, said armature having a generally central projection extending toward said intermediate wall, said intermediate wall having a generally central cavity for receiving said projection when said armature is moved toward said intermediate wall.

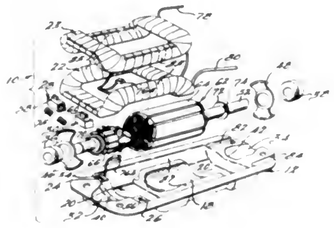
3,156,837
ELECTROMAGNETIC RECIPROCATIVE SAW
Carl E. Weller and Donald R. Fegley, Easton, Pa., and Alden J. Brassaw, Phillipsburg, N.J., assignors to Weller Tool Corporation, Luquillo, Puerto Rico, a corporation of Puerto Rico
Filed Apr. 3, 1963, Ser. No. 270,274
9 Claims. (Cl. 310—29)



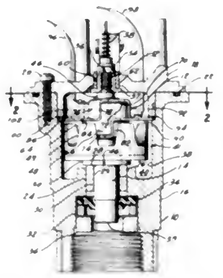
1. A portable electromagnetic power saw of the reciprocative blade type comprising a casing, an alternating current electromagnet in said casing including a core extending along a selected axis having a pair of pole faces adjacent one end of the electromagnet and an electromagnet coil adapted to be energized by alternating current electrical energy, a moveable armature adjacent said one end for movement toward and away from said pole faces upon operation of the electromagnet, a reciprocative rod member for removably holding a saw blade extending generally perpendicularly to said axis and located beyond the opposite end of said electromagnet relative to said armature, lever means pivotally supported at a fixed location in said casing at a point spaced above said core having a first lever arm extending below said point supporting said armature for swinging movement toward and away from said pole faces and a second lever arm extending from said point above said core and terminating in a pivotal connection with said rod member for reciprocating said rod member responsive to variations in the magnetic flux in said core, and spring means for resiliently urging said armature away from said pole faces.

3,156,838
DIRECT CURRENT ELECTRIC MOTOR
Robert O. Winther, Menominee, Mich., assignor to King-Seeley Thermos Co., a corporation of Michigan
Filed Sept. 4, 1959, Ser. No. 838,350
7 Claims. (Cl. 310—42)

1. An electric motor construction comprising a pair of housing portions made of a magnetic material and shaped to define a motor chamber when they are placed together in confronting relationship, means securing said housing portions together in confronting relationship and in register with each other, an armature assembly journaled in said chamber, and a pair of field coils disposed respectively in different ones of said portions and shaped to bear against each other to hold themselves against the walls of said chamber, each one of said housing portions being shaped to define a field pole face having a face spaced close to said armature assembly.



3,156,839
ALTERNATOR
Peter Wargo, Maywood, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 2, 1962, Ser. No. 184,334
14 Claims. (Cl. 310—156)

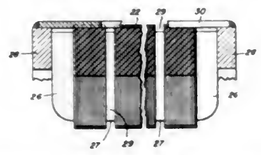


1. An improved dynamo electric machine having a rotor and stator spaced apart along the axis of rotor rotation to provide an axial air gap therebetween, comprising a rotor assembly including a central shaft mounted for rotation about its axis, at least two permanent magnet poles of unlike polarity spaced radially from said central shaft and equally spaced circumferentially about the shaft axis to form a circular cavity therebetween, a stator assembly including a hollow core of magnetic material surrounding said shaft and positioned within said circular cavity, a coil positioned coaxially upon said hollow core within said circular cavity and spaced from said magnetic poles, a pair of field plates of magnetic material coupled to said core at either end thereof, each of said field plates including fingers extending axially along the outer surface of said coil toward the center thereof and terminating in portions extending radially away from said coil, said terminal portions of said fingers being coplanar and alternately coupled to a common field plate whereby rotation of said permanent magnet rotor will cause an alternating current to be generated within said single stator coil.

3,156,840
MAGNETIC CORE FOR DYNAMOELECTRIC MACHINES

Norman G. Clothier, West Albany, Joseph H. McKendree, Schenectady, and Vincent J. Picozzi, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed July 10, 1959, Ser. No. 826,358
5 Claims. (Cl. 310—259)

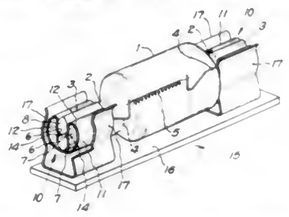


1. A prewound core comprising a plurality of stacked laminations having conductor receiving slots therein, a deflector positioned on opposite ends of said laminations and straps extending axially thereacross and interconnecting said deflectors, said deflectors initially having a configuration such that the faces thereof do not lie in parallel planes so that when subjected to a force exerted axially thereon and against the laminations, the deflectors are caused to deform out of their original plane thus creating a pressure in the lamination stock corresponding with the degree of distortion in said deflection, each of said deflectors comprising a combined flange ring and spring having a resiliency sufficient to impose said pressure in said laminations.

3,156,841
ELECTRIC LAMP BASE END STRUCTURE

Reginald J. Ayres, Shaker Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Dec. 28, 1960, Ser. No. 79,030
3 Claims. (Cl. 313—49)

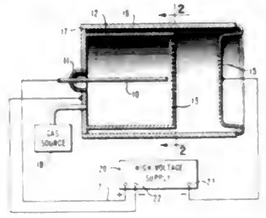


1. An electrical device comprising a sealed glass envelop provided with a protruding flat stem press portion of solid glass having a channelway in at least one of its flat sides extending therealong from its outer end, a lead-in conductor sealed into said stem press portion and protruding endwise therefrom, said conductor being bent around the outer end of said stem press portion and lying flat against one of the said flat sides thereof within the said channelway therein so as to lie below the surface of the said one flat side and form a terminal contact for the device, and a base mounted on said stem press portion and comprising a spring metal band of open ring shape circumposed about said stem press portion and having its ends inturned to extend approximately diametrically of the ring-shaped base and form resilient spring finger portions disposed parallel to one another in opposed spaced relation and between which the said flat stem press portion is received and resiliently clamped tightly in flatwise postion therebetween, one of said finger portions having a protuberance on its contact face snap-locked within the said channelway in said stem press portion to hold the base securely in place thereon against sidewise removal therefrom and firmly engage with the said conductor in said channelway to form a good electrical connection therewith.

3,156,842
GAS IONIZER

Gordon W. McClure, 4627 Trumbull Ave. SE., Albuquerque, N. Mex.

Filed Oct. 8, 1962, Ser. No. 228,999
17 Claims. (Cl. 313—63)



1. Apparatus effective in ionizing a gas without use of a magnetic field comprising

a first metal electrode having a hollow wall portion shaped substantially as a figure of revolution,

a second metal electrode of rod shape positioned substantially along the axis of said wall portion, the cross-sectional size of said second electrode being very much smaller than the cross-sectional area within said wall portion,

means for biasing one of said electrodes negatively with respect to the other to a high voltage,

means for providing an environment of said gas at very low pressure within the space bounded by said first electrode, the pressure of said gas and the dimensions of the wall portion of the first electrode being such that the ionization mean free path of 100 electron volt electrons in said gas is greater than the largest inside diameter of said wall portion,

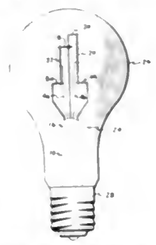
the said voltage being higher than the starting potential of ion discharge in the said apparatus,

and means extending at least part way across the space bounded by said first electrode for urging electrons adjacent the opposite ends of said first electrode inwardly away from such ends.

3,156,843
INCANDESCENT LAMP MOUNT

Samuel E. Swasey, Edgemere, Marblehead, and Kenton R. Bagley, Beverly, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 27, 1960, Ser. No. 65,426
4 Claims. (Cl. 313—271)



1. A lamp comprising: an hermetically sealed envelope having a longitudinal axis; a stem disposed in said envelope at an end thereof, the longitudinal axis of said stem being substantially coincident with the longitudinal axis of said envelope, and said stem having a press formed on the inner end thereof; a pair of short lead-in wires of substantially the same length secured in said stem press and extending generally longitudinally within said envelope and further extending laterally toward one another and substantially normal to the longitudinal axis of said envelope and terminating short of said axis and having hooks formed in the ends thereof; a long lead-in wire secured in said stem press and extending generally longitudinally within said envelope and substantially further than said pair of short lead-in wires, said long lead-in wire further extending laterally and having a hook formed at the end of said laterally extending portion, said hook being substantially in register with one of said hooks formed on the ends of said short lead-in wires; an extra short wire secured adjacent one end thereof to said long lead-in wire at a point below the point at which said long lead-in wire extends laterally, said extra short wire extending laterally and having a hook formed on the other end thereof, said hook being substantially in register with the other of the said hooks formed on the ends of said short lead-in wires; and a filament disposed substantially vertically, extending between and supported by each of said two pairs of registered hooks.

3,156,844
AMPLIFIER TUBE HAVING A THERMIONIC CATHODE WITHOUT HEATER

Werner Veith, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Aug. 31, 1960, Ser. No. 53,135
Claims priority, application Germany Sept. 18, 1959
9 Claims. (Cl. 313—305)



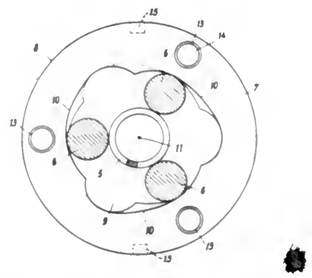
1. A high vacuum amplifier tube having a thermionic cathode, said cathode comprising a conductive cathode carrier, a layer of emission material disposed thereon, and an artifically produced resistance layer disposed between the carrier and the emission layer, said intermediate layer having a resistance which is sufficiently high that the constant emission current, operating as a transverse current through said resistance layer, is operative as the sole heating means for maintaining the cathode at operating temperature, and at least one auxiliary electrode disposed in engagement with said emission layer, said auxiliary electrode being operative, when positively biased, to form an auxiliary current path between it and said carrier for the traversing of an initial current operative to initiate emission.

3,156,845
CONDUCTOR CENTERING ARRANGEMENT FOR TRAVELING FIELD TUBE

Gustav-Adolf Classe, Ulm (Danube), Germany, assignor to Telefunken Gesellschaft mit beschränkter Haftung, Hannover, Germany

Filed Sept. 26, 1960, Ser. No. 58,248
Claims priority, application Germany Sept. 29, 1959
10 Claims. (Cl. 315—3.5)

1. In a traveling field tube, a spiral conductor, a plurality of insulating bars outwardly of said conductor and supporting the same, a pair of rings in face-to-face relationship surrounding said insulating bars, the inner edge of each ring having a plurality of cam surfaces corresponding in number and position to said insulating bars,

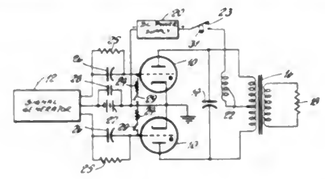


the corresponding cam surfaces of said rings being in reverse relationship so that rotation of said rings in one direction with respect to each other will urge said bars against said conductor.

3,156,846
HIGH POWER THYRATRON INVERTER WITH A LOW VALUE RESISTOR BY-PASS

Hugo J. Wilms, Jr., Waterford, Conn., and John B. Drew, Westerly, R.I., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 30, 1960, Ser. No. 40,115
2 Claims. (Cl. 315—166)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. In an inverter of the type having two gaseous thyratrons for passing current alternately when in operation and in which each has an anode, a gate element, and a cathode and in which the maximum power that the inverter can deliver is substantially less than the apparent maximum power capacity of the inverter elements because the inverter power delivering capability is limited by thyratron misfiring, the improvement which comprises two resistances whose magnitudes are less than twenty ohms connected directly between the gate and cathode elements of the respective thyratrons and in close proximity thereto and operable to attenuate stray signals that may appear between the gate and cathode elements of the thyratrons incident to inverter power output.

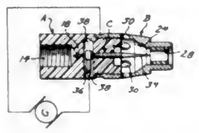
3,156,847
IONIZING AIR GUN

Harold Schweriner, Lansdale, Pa., assignor, by mesne assignments, to The Simco Company, Inc., Lansdale, Pa., a corporation of Pennsylvania

Filed Apr. 21, 1960, Ser. No. 23,675
6 Claims. (Cl. 317—4)

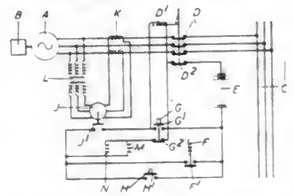
1. An ionizing air nozzle for connection to a source of air under pressure comprising a non-conductive barrel, an orificed conductive tip longitudinally extending from said barrel, a conductive needle supported within said barrel and having a point axially projecting within said tip,

the point of said needle being concentrically spaced within said tip and insulated therefrom, means imposing an ionized air field of conical configuration intermediate said



tip and said point, and means directing a stream of air co-axially with said needle whereby ionized air will be discharged from the nozzle.

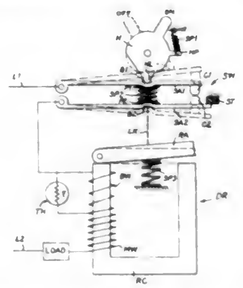
3,156,848
PROTECTIVE ARRANGEMENTS FOR PRIME MOVERS COUPLED TO ELECTRIC GENERATORS
Basil Wood, Esher, England, assignor to Merz & McLellan Services Limited, Newcastle-on-Tyne, England, a British company
Filed Oct. 2, 1959, Ser. No. 844,006
Claims priority, application Great Britain, Oct. 6, 1958, 31,805/58
2 Claims. (Cl. 317—19)



1. A protective arrangement for a prime mover driving an electrical generator for supplying an electrical load through a main circuit-breaker, comprising an electrical circuit controlling the tripping of the main circuit-breaker, tripping control means acting when operated to control such circuit and thereby to effect tripping of the circuit-breaker, and means exercising an over-riding control for preventing the tripping control means from effecting tripping of the circuit-breaker whenever the generator is supplying substantial power through the circuit-breaker to the load, such over-riding control means including a blocking contact in the said electrical circuit normally rendering such circuit inoperative thereby to prevent tripping of the circuit-breaker, and a sensitive wattmetrical relay responsive to the power supply conditions in the electrical connection from the generator to the load and acting, when the power supply from the generator to the load has fallen below a predetermined small value, to release the blocking contact and thereby to permit the tripping control means to effect tripping of the circuit-breaker.

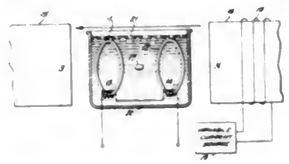
3,156,849
CIRCUIT-BREAKING APPARATUS
Henry David Epstein, Cambridge, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 16, 1959, Ser. No. 799,517
5 Claims. (Cl. 317—27)

1. Circuit-breaking apparatus comprising a relay having a relay armature associated in a magnetic circuit with a first relay coil and a second relay coil, a switch including first and second switch contacts, said contacts and coils being serially connected in an electrical circuit between an electrical load and a source of electrical power, said second coil being adapted to produce magnetic flux in said magnetic circuit opposing magnetic flux produced by said first coil thereby producing a net magnetic flux in said magnetic circuit, said armature adapted to be actuated when said net magnetic flux reaches a predetermined value, trip-free means for closing said switch contacts, means responsive to actuation of said relay armature to open said contacts, and a temperature-sensitive resistor



device adapted to change its resistance in response to predetermined temperature change shunt-connected across said second coil whereby upon the current drawn by said load exceeding a predetermined level the resistor resistance changes, thereby changing said net magnetic flux to said predetermined value, and said electrical circuit for said load is broken.

3,156,850
METHOD OF PROVIDING A REGULATED MAGNETIC FIELD
Geoffrey K. Walters, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 31, 1958, Ser. No. 784,305
3 Claims. (Cl. 317—123)

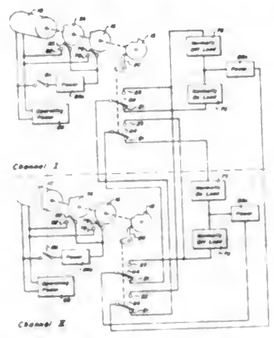


1. An apparatus for producing a magnetic field step function comprising a means for producing a variable magnetic field, a pair of axially aligned rings spaced from one another and positioned so that the field produced by said magnetic field producing means would normally link said rings, said rings comprising a material which is normally superconducting below a transition temperature, means to maintain the temperature of said rings below said transition temperature, an electrical winding on each of said rings and means to apply current to said electrical windings thereby generating a magnetic field sufficient to destroy the superconductivity in at least a part of each of said rings.

3,156,851
TIMING MECHANISM
William C. Monday, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed July 16, 1962, Ser. No. 210,271
8 Claims. (Cl. 317—157)

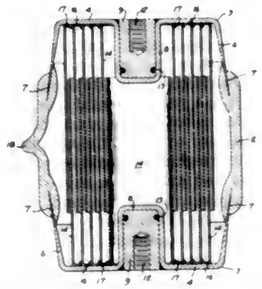
8. A timing apparatus of the character described comprising in combination a housing having a plurality of timing devices disposed therein, each device including a pair of counter-rotating means, one of which rotates at

a speed slower than the other, switch means operatively associated with each pair of counter-rotating means and adapted to be actuated thereby, means common to said devices for initially positioning one of said counter-



rotating means of each device with respect to the other counter-rotating means of the same device, and circuit means interconnecting the switch means of each device, whereby actuation of switch means in one of said devices actuates said circuit means.

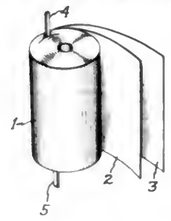
3,156,852
FIXED CAPACITOR
Roderick W. Neibaur, San Jose, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 653,111, Apr. 16, 1957. This application June 17, 1964, Ser. No. 375,851
4 Claims. (Cl. 317—244)



1. A vacuum fixed capacitor comprising an evacuated envelope including aligned metallic end caps spaced apart and hermetically closing opposite ends of a dielectric shell interposed therebetween, each said end cap including a centrally disposed inwardly extending integral boss, and a plurality of mutually reaching integrally united concentric cylindrical condenser plates fixed in each end cap and interleaved with the condenser plates fixed in the opposite end cap.

3,156,853
ELECTRICAL CAPACITOR WITH AN IMPREGNATED OXIDE LAYER
Robert A. West, Hudson Falls, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 13, 1961, Ser. No. 137,905
8 Claims. (Cl. 317—258)

1. An electrical capacitor comprising a pair of electrodes, at least one of said electrodes being composed of aluminum and having a first dense anodic oxide dielectric layer overlying the surface of said one electrode and a second porous anodic dielectric layer overlying



said dense dielectric layer, and a semi-conducting material having a resistivity between about 5×10^5 and about 3×10^7 ohm-cm. impregnating said porous dielectric layer.

3,156,854
WOUND CAPACITOR WITH INTERNAL IMPREGNATING TUBE
Haim Beyer, New Bedford, Mass., assignor to Cornell-Dubilier Corporation, South Plainfield, N.J., a corporation of Delaware
Original application Apr. 2, 1953, Ser. No. 346,412, now Patent No. 2,942,302, dated June 28, 1960. Divided and this application Sept. 25, 1959, Ser. No. 842,532
3 Claims. (Cl. 317—260)

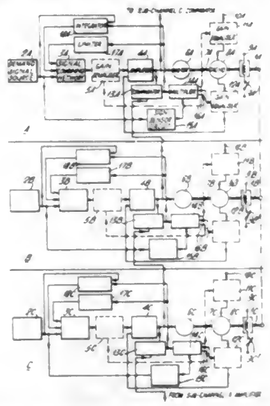


2. A capacitor subassembly, comprising a convolutely wound capacitor unit, the inner surfaces of which define an axial passage therein, a non-yieldable elongated insert removably positioned within said passage and extending beyond the ends of said capacitor unit for defining the line of said passage externally of said unit and at least one metallic conducting tubular element mounted on an extending portion of said insert, said element having one end thereof positioned adjacent the end of said capacitor unit and the other end thereof spaced therefrom at least a distance sufficient to extend through a nonconducting casing moldable about said capacitor unit.

3,156,855
SERVO SYSTEMS HAVING A PLURALITY OF INDEPENDENT SUB-CHANNELS ARRANGED TO ACTUATE A COMMON OUTPUT
David William Righton and Richard Julian Treadwell, Cheltenham, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Dec. 20, 1961, Ser. No. 160,796
Claims priority, application Great Britain, Dec. 21, 1960, 43,844/60
22 Claims. (Cl. 318—19)

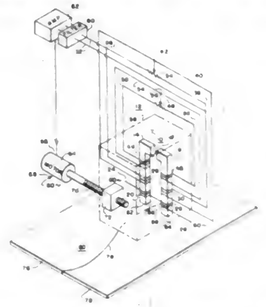
1. A servo system of the kind in which a plurality of independent sub-channels are arranged to actuate a common output in dependence upon a common demand quantity, the system comprising at least three sub-channels each including an amplifier, means for applying a signal representing the common demand quantity to the amplifier, a servo motor energised by the amplifier, at least one feed back signal source driven by the servo motor, a feed back channel for applying the output of the feed back signal source to the amplifier, means coupling the motor to actuate the common output, a source of signals representing the difference between the outputs of the amplifiers of both the sub-channel in which the source is included and the next one in a predetermined cyclic order of all the sub-channels which cyclic order is the same for the different sub-channels, means for varying the transmis-

sion charcteristics of the sub-channel in response to an applied signal, means for applying the output of the difference signal source to said varying means to vary said



characteristics to reduce the discrepancy towards zero and means for preventing a simultaneous drift of the outputs of all the sub-channel amplifiers together in the same manner.

3,156,856
AUTOMATIC SEAM TRACKING SYSTEM
Hershel M. Nance, Rte. 1, Wellington, Ala.
Filed Sept. 5, 1962, Ser. No. 221,944
11 Claims. (Cl. 318—31)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An automatic seam tracking system for following a seam on a planar surface comprising:

(A) a magnetic core assembly having first and second core members positioned on one side of said planar surface and in a contiguous relationship with respect to one another;

(B) first flux inducing means coupled to said first core member for inducing a first flux thru said first core member and second flux inducing means coupled to said second core member for inducing a second flux thru said second core member, said first and second flux being in phase;

(C) a reference source of low frequency electrical current energizing said flux inducing means;

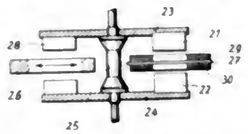
(D) first flux sensing means responsive to flux thru said first core member for producing a first signal voltage and second flux sensing means responsive to flux thru said second core member for producing a second signal voltage;

(E) signal combining means responsive to said first and second signal voltages for providing a combined signal output voltage, said first and second signal voltages being combined in a phase to produce subtraction;

(F) electromechanical means responsive to said combined signal and said reference source of low frequency current for producing motion in a first direction when said combined signal and reference source are in phase, and motion in a second direction when said combined signal and reference source are out of phase; and

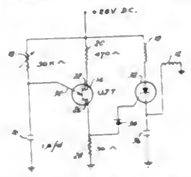
(G) drive means coupled between said electromechanical means and to said magnetic core assembly for positioning said magnetic core assembly so that said combined signal is reduced to a minimum value.

3,156,857
ELECTRODYNAMIC RATE REGULATOR ARRANGEMENT FOR CLOCKS
Fritz Herr, Kolpingstrasse 18, and Günther Glaser, Parzelle Buhle 5, both of Schramberg, Germany
Filed Dec. 17, 1959, Ser. No. 860,247
Claims priority, application Germany Dec. 17, 1958
12 Claims. (Cl. 318—132)



1. Electrodynamic rate regulator for clocks and the like, comprising a rotary oscillator mounted on a spindle, a plurality of permanent magnet parts mounted on said oscillator, said parts cooperating with coreless control coil fixed in the clock and with a coreless driving coil likewise in a fixed position in the clock, an inductive transistor coupling circuit, two discs cooperating with said magnetic parts forming oppositely placed magnet poles, having a flux path closed in the vicinity of the spindle, said magnetic parts being fastened to said discs and being axially magnetized and opposed cylindrical magnets which have an air gap to receive the coreless coils when the oscillator is in stationary position, said discs having high magnetic permeability, further including ferromagnetic embodiments arranged in the vicinity of the rotary oscillator to return the magnetic power flow, as well as counterweights arranged symmetrically to the cylinder magnets and secured to said discs and further comprising decoupling means for both coils, the amplitude of the rotary oscillator being influenced by damping means comprising an electrically controlled member mounted on the rotary oscillator and located opposite the coils.

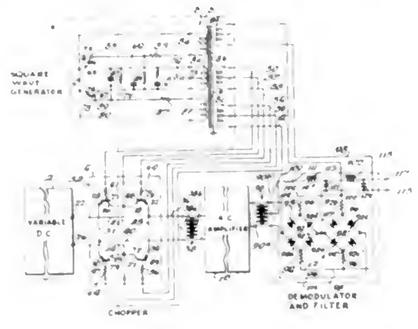
3,156,858
SYNCHRONOUS AND INDUCTION MOTOR OPERATION FROM A D.C. SOURCE BY MEANS OF A SOLID STATE INVERTER INTEGRAL WITH THE MOTOR
Ralph Reitherman, Lake Villa, Ill., assignor to Small Motors Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 11, 1961, Ser. No. 137,385
4 Claims. (Cl. 318—138)



1. In a two-phase motor, a pair of motor coils, means for pulsing first one coil and then the other, to drive the

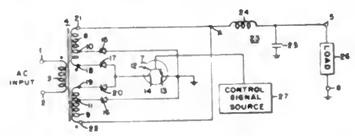
motor, including a source of D.C. connected to one coil, a one-way current conduction device connected to said coils, a capacitor connected to said current conduction device and said voltage source, and means for intermittently causing said one-way current device to conduct to pulse said one coil and to charge said capacitor, said capacitor discharging through the other coil when said current device is not conducting.

3,156,859
SHIELDED DIRECT CURRENT AMPLIFIER
Jay A. Cox, Hawthorne, Calif., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Original application Jan. 3, 1961, Ser. No. 80,467. Divided and this application Sept. 20, 1962, Ser. No. 225,095
1 Claim. (Cl. 321—8)



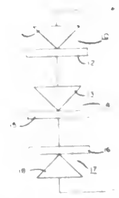
In a direct current amplifier system comprising: a pair of direct current signal input terminals, a chopper circuit for converting the direct current input signals to pulsating current, the chopper circuit comprising a first and a second pair of current conducting devices each having a control terminal for rendering the associated device conductive or non-conductive depending upon the polarity of a control voltage signal fed thereto, and a pair of output terminals to be energized by the direct current input signal, an output transformer having input and output windings, means for connecting one of said pairs of current conducting devices between said signal input terminals and the input winding of said output transformer for providing a low resistance path for current flow through said transformer input winding in one direction when the associated devices are rendered conductive, means for coupling the other pair of current conducting devices between said signal input terminals and said input winding of said output transformer for providing a low resistance path for current flow through said transformer input winding in the other direction when the associated devices are rendered conductive, and a control voltage signal source including a signal output transformer having input winding means and output winding means wound in superimposed relation on a core of magnetic material, a control voltage signal being induced in the latter output winding means from the latter input winding means, and ungrounded means connecting said output winding means to the control terminals of said first and second pair of conductive devices to render the same alternately conductive, the improvement comprising electric field shielding means between said input and output winding means, said shielding means comprising an electrically conductive coating insulated from said winding means and surrounding the inner of said winding means except for an insulating gap extending the length of said coating, which prevents the formation of a short circuit loop around the core, and a strip of conductive material located between and insulated from said windings and positioned to cover said insulating gap electrically to shield the same against passage of any significant electric field therethrough from the inner winding means, said strip of conductive material being electrically connected to said coating but isolated from direct electrical contact with one of the longitudinal marginal portions of said coating bordering said insulating gap to prevent the formation of a short circuit loop around the core.

3,156,860
VOLTAGE CONTROL CIRCUITS
Donald A. Paynter, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 24, 1959, Ser. No. 842,101
19 Claims. (Cl. 321—18)



1. A voltage control circuit for energization by a source of alternating voltage comprising a transformer having an input winding and an output winding, said source of alternating voltage being connected to said input winding, a load, a first rectifying circuit including a first rectifier element connected between a first portion of said output winding and said load, the voltage induced in said first portion being of a first peak amplitude level and of a given polarity, at least a second rectifying circuit including a second rectifier element and a controllable conductive means connected between a second portion of said output winding and said load, the voltage induced in said second portion being of a second peak amplitude level and of said given polarity, so that the maximum inverse voltage applied across said controllable means is no greater than the difference between said peak amplitude levels, and means for controlling the conductivity of said controllable means to vary the magnitude of the rectified voltage connected to said load, thereby varying the output voltage.

3,156,861
VOLTAGE REFERENCE DEVICE AND PROCESS FOR MAKING THE SAME
Donald C. Dickson, Jr., Prospect Heights, Ill., assignor to Hoffman Electronics Corporation, a corporation of California
Filed Oct. 28, 1957, Ser. No. 692,708
5 Claims. (Cl. 323—66)



1. The process for producing a highly stable voltage reference device which includes the steps of establishing a current of predetermined magnitude through a first

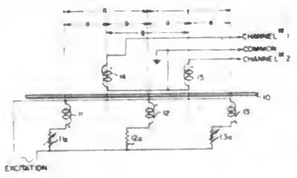
semiconductor device in a current range in which said semiconductor device has a voltage drop versus temperature curve which is of a first slope, measuring the voltage drop across said semiconductor device at approximately the middle and at approximately the cold and hot extremes of a range of temperatures, respectively, to give two voltage drop increment factors ΔV_{A_C} and ΔV_{A_H}, establishing said current of predetermined magnitude through at least one additional semiconductor device, such device having a voltage drop versus temperature curve at said current of predetermined magnitude which is of an opposite slope to that of said first semiconductor device, measuring the voltage drop across each such additional semiconductor device at said approximately middle, cold and hot extremes of said range of temperatures to give voltage drop increment factors ΔV_{B_H} and ΔV_{B_C} for each such additional semiconductor device, selecting at least one such additional semiconductor device to give a total value ΔV_{B_H} of magnitude approximating ΔV_{A_H} but of opposite sign, and a total value of ΔV_{B_C} of magnitude approximating ΔV_{A_C} but of opposite sign, and combining in series electrical relationship said first semiconductor device and said at least one additional semiconductor device.

3,156,862

ELECTRICAL FLAW DETECTOR APPARATUS HAVING NULL PLANE POSITIONED AS WELL AS ELECTRICALLY BALANCED COIL ARRANGEMENTS

Norman A. Herrick, Euclid, Ohio, assignor to Assembly Products, Inc., Chesterland, Ohio, a corporation of Ohio

Filed Dec. 15, 1961, Ser. No. 159,497
2 Claims. (Cl. 324—34)



1. In apparatus for testing an electrically conductive material sheet which is relatively long and wide as compared with its thickness,

(*a*) an alternating current source of excitation power,

(*b*) at least three excitation coils on one side of said sheet in the direction of its thickness dimension, said coils having axes which are mutually parallel and coplanar whereby one of the coils is found between the other two,

(*c*) a pair of sensing coils arranged with mutually parallel axes which are substantially coplanar with those of the excitation coils while sensing coils are on the opposite side of the sheet from the excitation coils,

(*d*) conductor means connected to one of said sensing coils to form a first signal channel,

(*e*) conductor means connected to the other of said sensing coils to form a secod signal channel,

(*f*) difference detection means arranged to compare the signals in the two channels, and

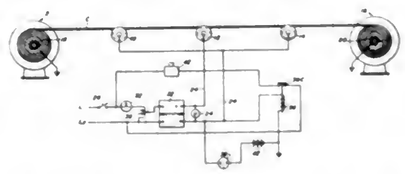
(*g*) conductors connected from said alternating current source to said excitation coils and which conductors establish connections which, with respect to winding direction of each of said coils, establishes null planes between excitation coils, the sensing coils being arranged to have their axes located substantially each in a different null plane.

3,156,863

APPARATUS FOR LOCATING A FAULT IN ELECTRIC CABLES HAVING SEMI-CONDUCTING COVERINGS

Frederick W. Wakefield, Northboro, Mass., assignor to United States Steel Corporation, a corporation of New Jersey

Filed May 16, 1960, Ser. No. 29,282
2 Claims. (Cl. 324—54)



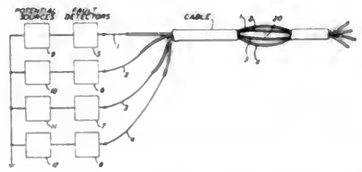
2. Apparatus for locating insulation faults in a moving length of electric cable having a semi-conducting covering surrounding an insulated electric conductor comprising three spaced apart pulleys over which the cable passes in sequence in electrical contact therewith, means providing D.C. power, said means having two terminals, a lead connecting one of said terminals to the center pulley of said spaced apart pulleys, a lead connecting the other terminal to the other pulleys, current responsive means having one side connected to the second named lead, means for grounding the conductor of said cable, means connecting the other side of said current responsive means to ground, a D.C. power source, a neon lamp connected across said current responsive means in series with said D.C. power source, and signal means operative by said current responsive means to provide a signal when current of a predetermined amount flows therethrough, when a fault occurs in the insulation of the cable between the first and second of said pulleys contacted by said cable current flowing to ground through the cable conductor and back to said means providing D.C. power through said current responsive means whereby said signal means is operated.

3,156,864

APPARATUS FOR TESTING THE INSULATION OF A PLURALITY OF MUTUALLY INSULATED CONDUCTORS WITH MEANS FOR APPLYING SEPARATE ALTERNATING POTENTIALS TO EACH OF THE CONDUCTORS

Everett J. Shaw, Pennington, N.J., assignor to Western Electric Company, Incorporated, a corporation of New York

Filed Dec. 20, 1960, Ser. No. 77,214
9 Claims. (Cl. 324—54)



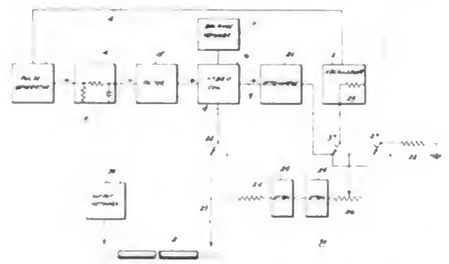
1. Apparatus for testing the insulation of at least three mutually insulated conductors which comprises means for supplying at least three separate alternating potentials of predetermined amplitudes, means for connecting each of the conductors to be tested to a different one of said potentials, said supply means being designed for causing opposed peaking of the potential applied to one conductor relative to each of the respective potentials applied to the other conductors, and means for monitoring the electrical condition of the conductors to detect the presence of a fault in the insulation between any of the conductors.

3,156,865

PULSE ECHO TEST SET CALIBRATION CIRCUIT AND METHOD

John Lamont, North Arlington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 20, 1960, Ser. No. 23,462
9 Claims. (Cl. 324—58)



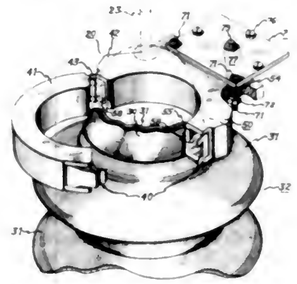
1. In a pulse echo test set including a pulse source, a hybrid coil having first and second output windings, a first attenuator, the first output winding being coupled to the first attenuator, and an oscilloscope for measuring impedance characteristics of transmission lines; a calibrate-measure circuit for establishing the magnitude of echoes relative to an input pulse, said calibrate circuit comprising a switching means and a second attenuator, said switching means being operable to, selectively, either connect the second output winding to a line under test, or, at another position, connect the second output winding to the second attenuator and the second attenuator to the oscilloscope.

3,156,866

METHOD AND MEANS FOR INDICATING THE MODE OF FAILURE OF INSULATORS

John G. Anderson, Dalton, Mass., and Remo U. Giacomoni, Milan, Italy, assignors to General Electric Company, a corporation of New York

Filed Mar. 22, 1961, Ser. No. 97,514
5 Claims. (Cl. 324—72)



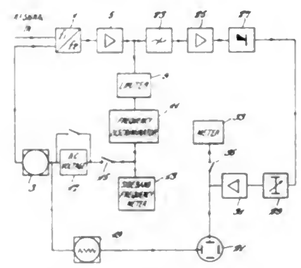
1. In a mode of failure indicator for an elongate transmission line insulator assembly, an impulse current transformer having a magnetic core ring adapted for coaxial mounting upon said insulator assembly and including a secondary winding provided with a pair of output terminals, said transformer providing at said output terminals unidirectional high voltage impulses in response to steep wave front unidirectional current flashovers across said insulator and low voltage impulses in response to flashovers at power frequency, said high voltage impulses having opposite polarities characteristically related to flashovers in opposite directions across said insulator, and indicating means responsive only to said high voltage impulses for indicating the direction of a steep wave front flash-over.

3,156,867

ELECTRIC SIGNAL SPECTRUM ANALYSERS INCLUDING AUTOMATIC FREQUENCY CONTROL

Arthur Leslie Whitwell, Norman Williams, and Alexander Ian McPhedran, Glasgow, Scotland, assignors to James Scott and Company (Electrical Engineers) Limited, Glasgow, Scotland

Filed Sept. 19, 1960, Ser. No. 56,740
9 Claims. (Cl. 324—77)



1. A microwave signal spectrum analyser including a mixer arranged to receive a signal to be analysed, a local oscillator connected to said mixer so as to derive an intermediate frequency when the output of the oscillator is combined with the signal, a broad band intermediate frequency amplifier connected to the output of the mixer and receiving said intermediate frequency, a display and measuring circuit, a narrow band intermediate frequency amplifier, means connecting the output of said broad band intermediate frequency amplifier to the display and measuring circuit through the narrow band intermediate frequency amplifier, an automatic frequency control circuit interconnected between the output of the broad band intermediate frequency amplifier and the input of said local oscillator, said automatic frequency control circuit including a frequency discriminator supplied by said intermediate frequency and furnishing a direct voltage output of an amplitude corresponding to the frequency of the discriminator input signal, and means to apply said direct discriminator output voltage directly to said local oscillator input to vary the local oscillator output frequency so as to maintain the intermediate frequency substantially constant, an independently operative source of direct voltage of sawtooth wave form, and means connecting the output of said sawtooth voltage source directly to said local oscillator input, the sawtooth frequency thus being maintained constant independently of the nature of the analyzed signal, and the actual amplitude of said sawtooth voltage being compensated by the output voltage of said discriminator so that the respective output voltage of said local oscillator complements the respective signal to be analysed in such a manner that the output of said mixer corresponds to said intermediate frequency.

3,156,868

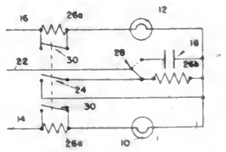
PHASE SEQUENCE INDICATOR INCLUDING DOUBLE THROW SWITCHING MEANS

William C. Murrills, 1207 University, Walla Walla, Wash.

Filed July 15, 1960, Ser. No. 43,204
2 Claims. (Cl. 324—108)

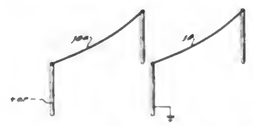
1. An electrical phase sequence indicator, comprising: a pair of electrically sensitive filament lights electri-

cally connected in series with a pair of opposed probes;
a reactor and a resistor, each electrically connected at one end intermediate said filament lights;
a third terminal probe; and



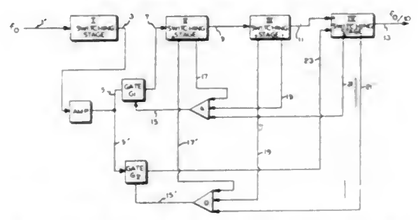
a double throw switch electrically connected to said third terminal probe and connecting said third terminal probe selectively and alternately to the opposed ends of said reactor and said resistors; and
an off-on switch electrically connected parallel with said resistor.

3,156,869
ELECTROMETER HAVING FLEXIBLE ELECTRODES AND FLEXIBLE FIBER
Francis R. Shonka, Riverside, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 19, 1962, Ser. No. 180,910
4 Claims. (Cl. 324—109)



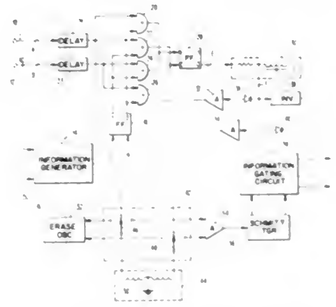
1. In an electrometer having a flexible fiber with a sag therein, the combination of said flexible fiber and a flexible deflecting electrode mounted parallel and adjacent to said flexible fiber and having a sag equal to that of said flexible fiber, whereby the electrical geotropic effects on said flexible fiber are counteracted.

3,156,870
HIGH-FREQUENCY DECADE COUNTING SYSTEM EMPLOYING GATING NETWORK RESPONSIVE TO ALL COUNTING STAGES
David S. Nixon, Jr., Bedford, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed June 25, 1962, Ser. No. 204,943
20 Claims. (Cl. 328—45)



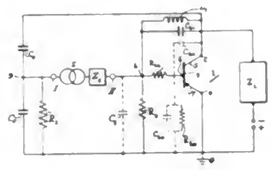
1. A counter having, in combination, three serially connected switching stages, a further switching stage to which signal impulses-to-be-counted may be fed, a gating system connected with the further switching stage to trigger the three serially connected switching stages through the gating system, the gating system being responsive to output signals applied thereto from each of the three serially connected switching stages.

3,156,871
MAGNETIC RECORDING SYSTEM EMPLOYING MEANS FOR GENERATING CORRECTION PULSES ONLY BETWEEN CONSECUTIVE SIMILAR INFORMATION PULSES
James A. Fraunfelder, North Wales, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 11, 1962, Ser. No. 165,490
12 Claims. (Cl. 328—63)



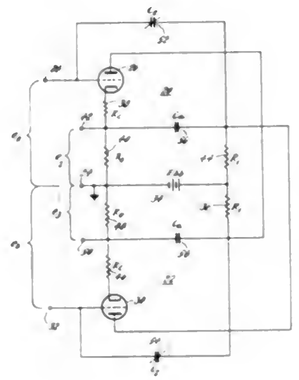
1. A system for generating a series of information signals represented by pulses of either a first or second type comprising means for generating a pulse signal between two consecutive information signals whenever said consecutive signals are of the same type, said pulse signal being of the opposite type to said consecutive pulses, and means for preventing said pulse signal from being generated if said consecutive signals are of different types.

3,156,872
UNILATERALIZED TRANSISTOR RELAY SYSTEM
Ben H. Tongue, West Orange, N.J., assignor to Blonder-Tongue Electronics, Newark, N.J., a corporation of New Jersey
Filed Dec. 19, 1960, Ser. No. 76,786
12 Claims. (Cl. 330—27)



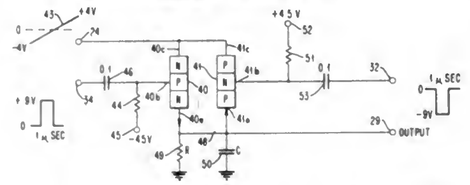
1. A transistor relay system for operation over a band of frequencies having, in combination, a transistor relay provided with a base, an emitter and a collector inherently having an effective internal collector-to-true base capacitance $C_{b'c}$, a spreading resistance R_{bb} between the true and physical base terminals, an emitter-to-true base capacitance $C_{b'e}$, shunt resistance $R_{b'e}$, and an effective socket and header capacitance and the like C_{bc} between the collector electrode and the said physical base terminal; the system including a load connected between the collector and emitter, a pair of series-connected capacitance elements connected between the collector and emitter, a first input terminal connected to the point of series connection of the pair of capacitance elements, a second input terminal connected to the said physical base terminal, and means for neutralizing the capacitance C_{bc} over the said band of frequencies, the ratio of the capacitance elements of the pair of capacitance elements being adjusted to correspond substantially to that of $C_{b'c}/C_{b'e}$ in order to unilateralize the said relay.

3,156,873
DIFFERENTIAL AMPLIFIER
Thomas R. Williams, Princeton, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 12, 1960, Ser. No. 49,399
6 Claims. (Cl. 330—69)



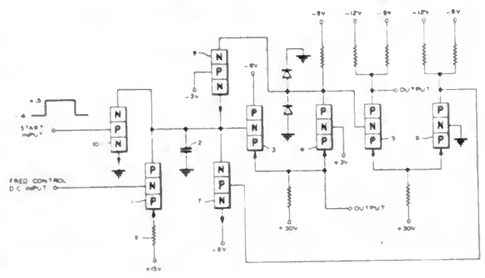
1. A differential amplifier providing a first output signal proportional to the difference between a pair of input signals and a second output signal which is the negative counterpart of the first output signal comprising, in combination: a first amplifier stage having a pair of input terminals, one being connected to ground potential, said first amplifier stage including an electronic amplifier tube having at least a cathode, an anode and a control grid, the other of said input terminals being connected to said control grid, and the amplification factor of said tube being much greater than unity, a pair of terminals for a power supply for said electronic tube, one of said terminals being connected to ground potential, a load resistance connected between said anode and the other of said power supply terminals, a second and a third resistance connected in series between said cathode and said one input terminal, said second resistance being connected to said cathode and having a numerical value which is much greater than the reciprocal of the mutual transconductance of the tube to which it is connected, and an output terminal connected to the junction between said second and third resistances, said grounded input terminal constituting another output terminal; a second amplifier stage comprising a symmetrical duplicate of said first amplifier stage; a first capacitance connected between the anode end of said load resistance of said first stage and the junction between the cathode resistances of said second stage; and a second capacitance connected similarly between the load resistance of the second stage and the junction between the cathode resistances of the first stage, said first and second capacitances being of such value as to constitute a virtual short circuit to A.C. frequencies down to the lowest A.C. frequency which it is desired to include in the frequency range of the differential amplifier.

3,156,874
BIDIRECTIONAL MEMORY AND GATE SYNCHRONIZING CIRCUIT FOR A VARIABLE FREQUENCY OSCILLATOR
Ambrose A. Verdibello, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,171
3 Claims. (Cl. 331—27)



1. A sampler circuit for storing the value at particular intervals of an input signal varying with time and shiftable in opposite senses from a datum potential, comprising an NPN transistor, a PNP transistor, each transistor having collector, base and emitter electrodes, means connecting both collector electrodes together and to an input terminal to receive said signal varying with time, means connecting said emitters to a common junction, a capacitor and a parallel resistor connected in parallel between said common junction and a terminal maintained at said datum potential, means supplying to the base electrodes of the respective transistors biasing potentials tending to hold said transistors in a relatively non-conductive condition, and means effective during said particular intervals to supply to said base electrodes data pulse potentials effective to overcome said biasing potentials, said data pulse potentials varying in opposite senses and being effective to render one or the other of said transistors substantially conductive, depending upon the sense of the departure of said input signal from said datum potential, and thereby to charge said capacitor to a potential serving as a measure of the signal potential during said interval, and an output terminal connected to said common junction.

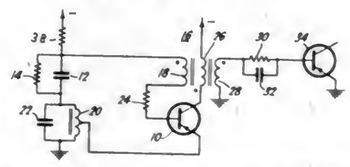
3,156,875
CONSTANT AMPLITUDE, VARIABLE FREQUENCY SAWTOOTH GENERATOR
Benjamin C. Fiorino and Alfred Brunschweiger, both of Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 14, 1961, Ser. No. 117,176
5 Claims. (Cl. 331—111)



1. A sawtooth generator having an output frequency which varies in accordance with an input voltage comprising a capacitor, an input transistor, the collector and emitter of said input transistor being connected to provide a charging path for said capacitor, said input voltage being connected to the base of said input transistor,

said input transistor providing a constant charging current to said capacitor for a given input voltage, means for discharging said capacitor, switching means responsive to the voltage across said capacitor for initiating an operation of said discharging means when the voltage across said capacitor reaches a first predetermined voltage, means for clamping the discharge of said capacitor at a second predetermined voltage, and means producing an output in accordance with the voltage across said capacitor whereby said output is a sawtooth waveform having an amplitude limited by said first and said second predetermined voltages and having a frequency in accordance with the magnitude of said input voltage.

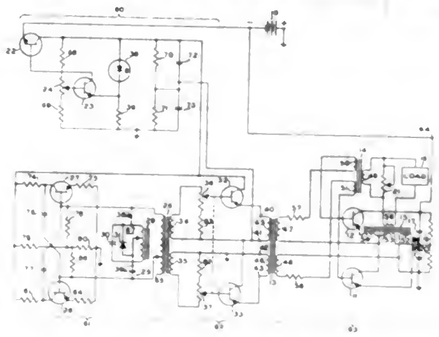
3,156,876
BLOCKING OSCILLATOR WITH ADDITIONAL REGENERATIVE FEEDBACK
Martin Fischman, Wantagh, and William Geller, Plainview, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Dec. 28, 1960, Ser. No. 78,970
3 Claims. (Cl. 331—112)



1. A frequency stable pulse oscillator comprising
(*a*) a transistor having first, second, and third electrodes;
(*b*) a resonant circuit including a tapped inductor and a capacitor, the tap on said inductor being coupled to said first electrode;
(*c*) a feedback transformer having a magnetic core and primary, secondary, and output windings, said primary winding being coupled between said third electrode and one end of said resonant circuit, the voltages produced across said primary and secondary windings being of opposite polarity;
(*d*) means coupling one end of said secondary winding to the second electrode of said transistor;
(*e*) a biasing network including a resistor and a biasing capacitor connected in parallel with said resistor, said capacitor discharging in the interval between pulses;
(*f*) means coupling said biasing network between said secondary winding and the other end of said resonant circuit; and
(*g*) unidirectional current means coupled across said output winding, said unidirectional current means maintaining a low impedance across said transformer windings when said transistor is non-conducting.

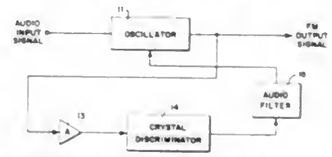
3,156,877
DIRECT CURRENT TO ALTERNATING CURRENT CONVERTER
Stephen L. Merkel, Cleveland, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Original application Apr. 25, 1958, Ser. No. 730,962, now Patent No. 3,065,429, dated Nov. 20, 1962. Divided and this application Aug. 28, 1962, Ser. No. 219,897
4 Claims. (Cl. 331—113)

1. In an oscillating circuit energized from a source of time varying voltage, the combination of linear inductance means and capacitance means for determining the frequency of oscillation of said circuit, with wave distorting means for introducing high order harmonics into said circuit, said wave distorting means comprising a saturable inductance element connected in series with said capacitance means and a half-wave rectifier connected substantially in parallel with said saturable inductance element,



whereby the effect of said saturable inductance element on the frequency of oscillation of said circuit is minimized by said half-wave rectifier.

3,156,878
FREQUENCY MODULATION SYSTEM AND CRYSTAL DISCRIMINATOR THEREFOR
Robert E. Lee and Richard I. Kearley, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 8, 1960, Ser. No. 7,421
12 Claims. (Cl. 332—19)

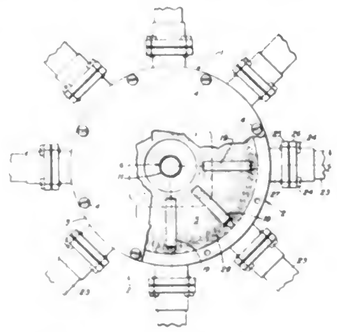


3. A frequency modulator having a stabilized center frequency comprising an oscillator having a first and second input, said oscillator having a means to vary its oscillation frequency in accordance with the signal applied to said first input and a means to increase its oscillation frequency in response to a signal voltage of one polarity applied to said second input and to decrease its oscillation frequency in response to a signal voltage of the opposite polarity applied to said second input; a crystal; discriminator circuit means including said crystal to generate a signal voltage of said one polarity when the oscillation frequency of said oscillator is below the resonant frequency of said crystal, to generate a signal voltage of the opposite polarity when the oscillation frequency of said oscillator is above said resonant frequency, and to generate a zero signal voltage when said oscillation frequency is at said resonant frequency; and a filter means connected to filter a predetermined range of frequencies out of the signal voltage generated by said discriminator circuit means and to apply the resulting filtered signal voltage to said second input.

3,156,879
POWER DIVIDER UTILIZING INDUCTIVE COUPLING IN A CAVITY RESONATOR EXCITED IN THE TM_{010} MODE
Philip N. Hess, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 6, 1960, Ser. No. 41,208
6 Claims. (Cl. 333—6)

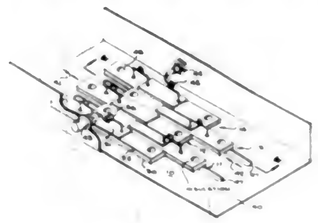
1. Electromagnetic wave coupling apparatus for transferring electromagnetic wave energy in either direction

between a plurality of electromagnetic wave guiding circuits and a single electromagnetic wave guiding circuit comprising a cylindrical resonator adapted to be excited in the TM_{010} mode, an electromagnetic wave guiding circuit capacitively coupled to said resonator essentially on



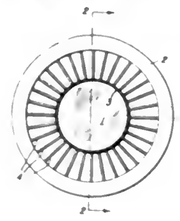
the axis thereof and a plurality of circuits equally inductively coupled to said resonator at circumferentially spaced points on said resonator so that the energy transferred divides evenly between said plurality of inductively coupled circuits when said resonator is energized in the TM_{010} mode.

3,156,880
LUMPED CONSTANT FILTER
Walter Philip Hollinger, Bronxville, N.Y., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 4, 1960, Ser. No. 47,422
2 Claims. (Cl. 333—73)



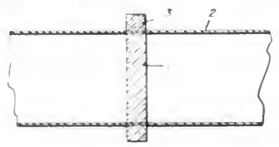
1. A band pass filter, comprising a plurality of elongated strips of dielectric material each having an opening extending from a first face to a second opposite face, first and second metallic coatings on said first and second faces of each of said strips of dielectric material, a metallic ground plane, each of said strips lying adjacent to and parallel with another strip, said first metallic coatings of each of said strips being in flat contact with said metallic ground plane, a coil associated with each of said elongated strips of dielectric material, said coils each having a first lead connected directly to a second metallic coating and a second lead connected via one of said openings to a first metallic coating of an associated one of said elongated strips of dielectric material, said elongated strips of dielectric material being longitudinally movable with respect to one another while maintaining said contacts with said ground plane, said second coatings being mutually insulated, whereby each elongated strip of dielectric material and its associated coatings and coil form a tank circuit, said tank circuits being coupled to one another solely via stray capacities between said second coatings, the coils associated with adjacent ones of said strips being spatially displaced with respect to one another sufficiently to essentially decouple said coils from one another electromagnetically.

3,156,881
VACUUM TIGHT ELECTROMAGNETIC RADIATION PERMEABLE WINDOW SEAL
Ralph J. Bondley, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,777
11 Claims. (Cl. 333—98)



1. A vacuum tight seal transparent to electromagnetic radiation comprising a waveguide enclosed central member of low dielectric loss ceramic material having a low coefficient of expansion, an outer member having an intermediate coefficient of expansion and metal means between said waveguide and said outer member having a thickness greater than said waveguide acting to securely engage said central member and having a higher thermal coefficient of expansion so as to expand inwardly with an increase in temperature.

3,156,882
VACUUM TIGHT ELECTROMAGNETIC RADIATION PERMEABLE WINDOW SEAL
Ralph J. Bondley, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,778
5 Claims. (Cl. 333—98)

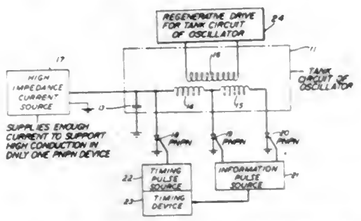


1. A vacuum tight seal transparent to electromagnetic radiation comprising a central member of low dielectric loss ceramic material having a coefficient of expansion substantially less than the coefficients of expansion which characterize metals, a supporting structure comprising a metal frame immediately surrounding said central member, said frame therefore having a large coefficient of expansion as compared with the central member, and a refractory composition restraining member in clamping relation to said metal frame in juxtaposition with said central member, the restraining member having a coefficient of expansion greater than said central member but less than said frame and also less than coefficients of expansion which characterize metals, said coefficient being of a value to cause expansion of said restraining member with volumetric expansion of said frame while causing the inner diameter of said frame to follow the limited expansion of and minimize stress changes with temperature changes of said central member thereby preventing cleavage therefrom, said frame having a thickness which is small in comparison to the thickness of said restraining member.

3,156,883
STEP FREQUENCY OSCILLATOR WITH SEMICONDUCTOR SWITCHING

George W. Wells, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 21, 1961, Ser. No. 153,908
4 Claims. (Cl. 334—56)

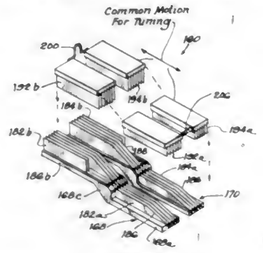


1. A system for converting pulse signals into tone signals, comprising a source of information pulse signals, an oscillator having a tuning capacitance and a tuning inductance and means for varying its output frequency in response to said information pulse signals, means for producing timing signals at predetermined times between said information pulse signals, means for applying said timing signals to short out one of said tuning capacitance and said tuning inductance of said oscillator to terminate oscillations of said oscillator, and a coordinated switching arrangement adapted in response to one of said information pulse signals simultaneously to unshort said one of said capacitance and said inductance and to select said output frequency.

3,156,884
ULTRA HIGH FREQUENCY TUNER HAVING RECTILINEARLY SLIDING PLATES PROVIDING VARIABLE INDUCTANCE AND CAPACITANCE

Harold T. Lyman, Milford, Francis G. Mason, Weston, and Jesse C. Jaqua, New Haven, Conn., assignors to Aladdin Industries, Incorporated, Nashville, Tenn., a corporation of Illinois

Filed Apr. 30, 1962, Ser. No. 190,881
4 Claims. (Cl. 334—68)

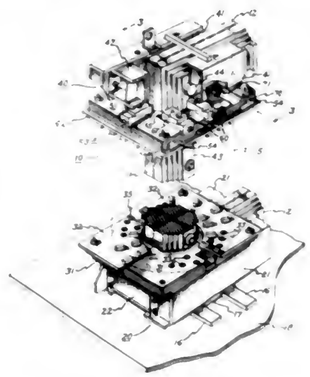


3. In a tuner,
the combination comprising first and second generally parallel line conductors,
each of said conductors having inner and outer end portions,
said outer end portions being offset laterally relative to said inner end portions,
first and second terminals connected to said inner end portions of said line conductors,
first and second inner coupling capacitance members mounted on said inner end portions of said respective first and second conductors,
first and second outer capacitance coupling members mounted on said outer end portions of said first and second conductors,
a tuning member,
first and second inner tuning capacitance members mounted on said tuning member and disposed in variable overlapping relation to said respective first and second inner coupling capacitance members,
first and second outer tuning capacitance members mounted on said tuning member and disposed in variable overlapping relation to said respective first and second outer coupling capacitance members,
conductive means connected between said first and second inner tuning capacitance members,
an inductance element connected between said first and second outer tuning capacitance members,
and means supporting said tuning member and said line conductors for relative movement between said tuning member and said line conductors in a direction generally parallel to said line conductors for thereby moving said inner and outer tuning capacitance members into and out of overlapping relation to said inner and outer coupling capacitance members so as to vary both the effective inductance and the effective capacitance between said terminals.

3,156,885
ELECTRICAL APPARATUS AND METHOD OF MAKING SAME

Stanley H. Koza, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Nov. 18, 1959, Ser. No. 853,853
2 Claims. (Cl. 336—197)

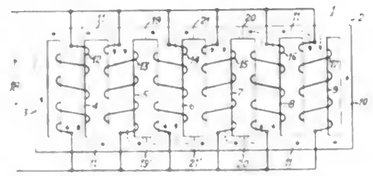


1. A transformer comprising core elements joined by yoke elements extending therebetween, a winding surrounding one of said core elements between said yoke elements, first clamping means engaging a yoke element and said core elements in a first plane adjacent one end of said winding, second clamping means engaging another yoke element and said core elements in a second plane parallel to said first plane and adjacent the other end of said winding, an insulating plate at each end of said winding surrounding said one core element and insulating said winding from said clamping means, the insulating plate adjacent said first clamping means being fixed and the insulating plate adjacent said second clamping means being movable along said one core element away from said second clamping means, and a plurality of expandable spacers formed of electrical insulating material interposed between said second clamping means and the adjacent insulating plate for moving said insulating plate away from said second clamping means and thus exerting clamping pressure on said winding, said spacers each comprising a pair of cooperating wedges having slanting faces, said pairs of wedges being adjustably connected together and oppositely disposed in face-to-face relation with their slanting faces in sliding engagement and their top and bottom surfaces parallel.

3,156,886
MULTIPLE UNIT POWER TRANSFORMER WITH WINDINGS CONNECTED IN PARALLEL

James R. Sutherland, New Lebanon, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 31, 1962, Ser. No. 170,180
1 Claim. (Cl. 336—212)

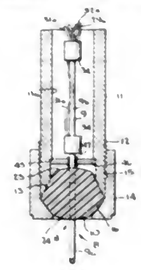


A single-phase core type transformer having a core with n parallel legs whose corresponding ends are joined by separate straight yoke members and n being at least six, the two outer legs and the yoke members having the same width, the remaining legs each having a width which is twice the width of the yokes and outer legs, identical windings on said remaining legs, said windings being so connected in parallel as to produce reverse direction flux in adjacent ones of said remaining legs when said parallel connected windings are connected to a common external circuit whereby the flux density is the same in all parts of said core, the yokes between at least one pair of adjacent legs comprising magnetic core laminations having long and short yoke portions, said long yoke portions abutting each other, said short yoke portions spaced from each other so as to form gaps therebetween, said gaps being bridged with magnetic lamination inserts, whereby said transformer can be shipped in multiple units and assembled by abutting said long yoke portions and bridging said gaps between said short yoke portions by said magnetic lamination inserts.

3,156,887
CORROSION TEST PROBE

Charles Craig Weikal, Corpus Christi, Tex., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

Filed June 14, 1960, Ser. No. 36,002
4 Claims. (Cl. 338—13)

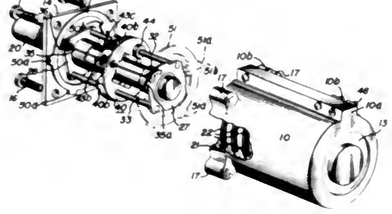


4. A corrosion test probe adapted to be positioned in a corrosive environment, comprising a tubular housing of solid thin gage stock having a longitudinal bore and open at one end thereof, a fluorocarbon polymer sealing plug mounted in said housing at said open end thereof and having its outer peripheral surface mated to the surface of said bore about said open end of said housing, said sealing plug being maintained in compressive stress to provide expansion of said plug transverse to said compressive stress and against the interior walls of said housing whereby to provide a fluid-tight seal peripherally of said plug between said bore and said corrosive environment, and a unitary testing member supported by said sealing plug and extending therethrough in a fluid-tight manner, said testing member having a first section constituting a sensing element located exteriorly of said housing for exposure to said corrosive environment, said first section of said testing member having a pair of legs juxtaposed to one another with one of said legs being completely straight and the other of said legs being straight from the free end thereof to an intermediate point and spiraled about said one leg from said intermediate point to the juncture of said legs, said one leg and the straight part of said other leg extending through said sealing plug to a predetermined distance beyond the inner end surface of the latter within said bore, and a second section constituting a reference element located completely within the confines of said bore and protected from said corrosive environment, said second section of said testing member being an integral extension of said one leg of said first section and being partly straight and partly deformed into a spiral.

3,156,888
ADJUSTABLE POTENTIOMETER

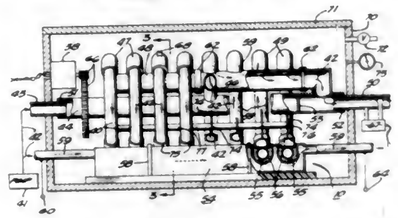
Elias Blanco, Los Angeles, Calif., assignor to Weston Instruments, Inc., a corporation of Texas

Filed Mar. 1, 1963, Ser. No. 262,006
1 Claim. (Cl. 338—149)



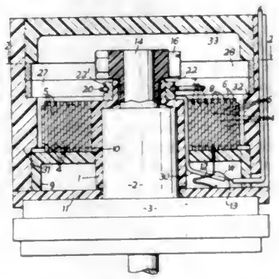
A potentiometer comprising
a housing,
an electrical resistance element supported in said housing,
a shaft journalled for rotation in said housing,
two rods disposed in spaced parallel relation to and on opposite sides of said shaft,
means securing said rods to said shaft for rotation therewith,
first stop means including a sleeve member slidably engaging one of said rods,
an assembly secured to said sleeve member intermediate the ends thereof and slidably engaging the other of said rods, adapted to be rotated with said shaft and rods,
means formed in said housing and on the periphery of said assembly for moving said assembly axially of said housing when said asembly is rotated,
electrical connections for said resistance element including a wiper contact carried by said assembly adapted to slidably engage said resistance element, and
second stop means secured to said housing in cooperative relationship to said first stop means to define predetermined limits of travel of said assembly, stopping forces being transmitted from said shaft through said one rod and said first and second stop means to said housing.

3,156,889
RHEOSTAT
Keith E. Starner, Gardena, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed June 14, 1962, Ser. No. 202,483
5 Claims. (Cl. 338—151)



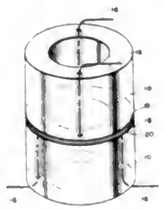
1. An infinitely variable, high current rheostat for regulating hundreds of amperes in an environment sensitive to relatively small current variations, comprising:
- a plurality of parallel hollow annular resistive elements adaptable for conducting large electric currents and substantial coolant fluid;
- a centrally disposed rotatable support pipe coupled to one end of each of said elements by means of an insulated hollow coupling, respectively;
- a bus bar header both electrically and hydraulically coupled to the opposite ends of said elements;
- a contactor defining upwardly opening arcuate wells arranged to encompass an arcuate portion of each of said elements respectively;
- a mercury pool within each of said wells for electrically coupling said contactor to said elements;
- insulating means for dividing said contactor into a plurality of sections so that the only coupling therebetween is through a plurality of said elements;
- means for detecting the current flow through the rheostat; and
- means for rotating uniformly said elements relative to said contactor to vary the impedance between said mercury pools and said header and thereby regulate the voltage between said contactor sections while maintaining a programmed current flow of the order of hundreds of amperes through the rheostat.

3,156,890
VARIABLE ELECTRIC RESISTANCES
Daphne Blake Oram, Wrotham, England, assignor to Reliance Controls Limited, a British company
Filed Apr. 25, 1961, Ser. No. 105,433
Claims priority, application Great Britain May 3, 1960
15 Claims. (Cl. 338—174)



12. A variable electric resistor, comprising an elongated core of electrically-insulating material, a single-layer winding of wire on said core, said core carrying said winding having a spiral form, an elongated strip of electrically-insulating material interleaving the convolutions of said core of spiral form, one edge of said interleaving strip extending beyond the corresponding edge of said core to define a guide channel, a rotatable shaft, an annularly grooved cylindrical slip ring coaxial with said shaft and a wiper having a U-shaped body of resilient metal wire the limbs of which engage the groove in said slip ring and clasp said slip ring, said wiper being coupled to said shaft for rotation therewith and for movement along said channel in a direction approximately perpendicularly to the axis of said shaft and in contact with the edge of said winding in said channel.

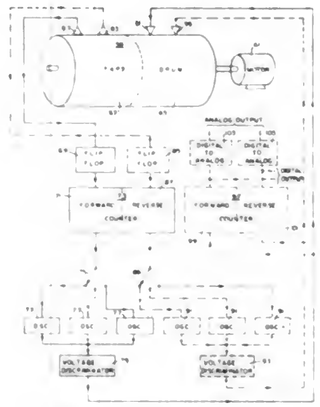
3,156,891
ATTACHING WIRE LEADS TO THIN FILMS PLATED WITH SEMICONDUCTOR COMPOUNDS
Joseph C. Jerome, 3966 Madrona Road, Riverside, Calif.
Filed May 24, 1963, Ser. No. 283,119
7 Claims. (Cl. 338—323)
(Granted under Title 35, U.S. Code (1952), sec. 266)



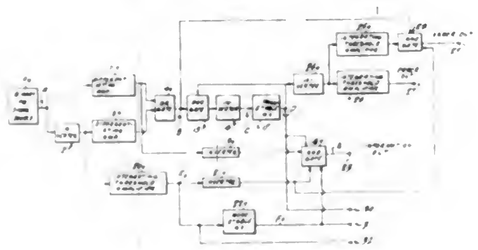
1. A means for attaching wire leads to fragile thin films plated with semiconductor compounds comprising:
- (*a*) a ring shaped mount having one planar circular surface polished smooth,
- (*b*) a plurality of passageways passing through the walls of said mount and exiting through said flat polished surface,
- (*c*) an electrical wire lead in each of said passageways and terminating at the exit thereof,
- (*d*) the tips of said lead wires being daubed with an electrical conducting adhesive,
- (*e*) a thin film substrate having a surface thereof coated with a semiconductor material cemented to the polished surface of said ring mount and the conducting adhesive at the tips of said lead wires making good electrical contact with the semiconductor coating on said film, thereby providing a rigid support for said semiconductor coated film and electrical contacts thereto.

3,156,892
STORING AND REPRODUCING COORDINATE FUNCTIONS ON FERROMAGNETIC MATERIAL FOR USE IN CORRECTING SEISMIC RECORDS
John P. Woods, Edwin B. Neitzel, and Clifford D. Dransfield, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1959, Ser. No. 790,631
26 Claims. (Cl. 340—15.5)

1. A method of storing a coordinate function, comprising dividing said function into a plurality of preselected increments, each of which represents a change in the magnitude of said function as represented along one coordinate of said function, establishing a linear scale of physical distance along a ferromagnetic recording medium proportional to the other coordinate of said function, moving said recording medium relative to at least one magnetic recording element while simultaneously accumulating the distance traveled by said recording element along said linear scale, and placing at least one magnetic spot on said recording medium at each of those cumulative distances along said linear scale of physical distance at which each of said increments occurs.

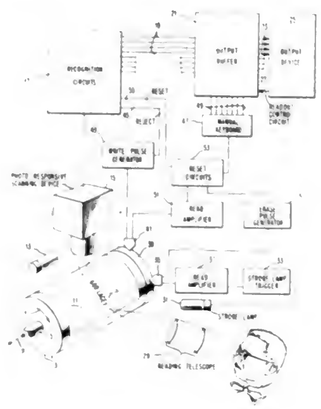


3,156,893
SELF-REFERENCED DIGITAL PM RECEIVING SYSTEM
Abraham Harel, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,702
10 Claims. (Cl. 340—146.1)



10. In combination, a source of a digital phase modulated signal including a serial train of binary signal bits in which each one type of signal bit is in a first state for the first half of its bit interval T and in a second state for the second half of its bit interval T while each zero type of signal bit is in the second state for the first half of its bit interval T and in the first state for the second half of its bit interval T where T is the duration of each bit interval,
- said binary signal bits being arranged in groups with succeeding groups being separated by a separation code interval including a uniquely extending portion equal to 3.00T during which said phase modulated signal remains in one of said states with transitions between said first and second states occurring only at times corresponding to the middle of said binary signal bit intervals,
- means responsive to said phase modulated signal to produce a first pulse train including a pulse for each transition between said first and second states in said phase modulated signal,
- means including a monostable multivibrator having a time constant equal to 0.75T responsive only to the pulses in said first pulse train occurring at the times of the mid-bit transitions in said binary signal bits to produce a reference signal phased according to said mid-bit transitions,
- means including an integrating-threshold amplifier having a time constant equal to 2.50T and responsive only to said extended portion of said separation code interval to produce a control signal,
- means responsive to said reference signal, said control signal, and said digital phase modulated signal to produce an output pulse train in which the reception of each of said one type of signal bits in said groups is indicated by a pulse and the reception of each of said zero type of signal bits is indicated by the absence of a pulse,
- means including a second integrating-threshold amplifier having a time constant equal to 0.50T responsive to said first pulse train, said reference signal, and said control signal to produce an output pulse upon the omission of a transition between said first and second states at the middle of a received binary signal bit in said groups,
- and a third integrating-threshold amplifier having a time constant equal to 3.25T responsive only to said reference signal to produce an output signal upon said phase modulated signal remaining in one of said states for a period longer than 4.00T.

3,156,894
VISUAL CHARACTER INSPECTION SYSTEM
Evon C. Greanias, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1960, Ser. No. 79,388
12 Claims. (Cl. 340—146.3)



1. In a character recognition system including means for selectively recurrently presenting a document to a scanning station, scanning means at the scanning station for scanning characters, recognition circuit means connected to said scanning means for providing outputs indicative of the characters scanned, said recognition circuit means having reject signal means operable to provide a signal upon the scanning of a questionable character, the

combination with the foregoing of visual character inspection means governed by said reject signal means, including a recurrently operated strobe lamp for recurrently illuminating the questionable character to effectively stop the motion of the document for visual inspection.

3,156,895

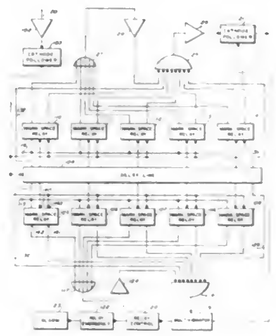
EMERGENCY ALARM SYSTEM FOR IFF SYSTEMS EMPLOYING PULSE-TRAIN DECODER

Paul E. Fiske, 1059 Devonshire Drive, San Diego 7, Calif.; Royal V. Keeran, 1637 N. Laurel, Upland, Calif.; Willis R. Dawirs, 1070 Novara, San Diego, Calif.; Lawrence N. Higgins, 1265 Trieste Drive, San Diego 7, Calif.; Vernon E. Terp, 3637 Warner St., San Diego 6, Calif.; Bernarr H. Humpherys, 719 Golden Rod, Escondido, Calif.; Joseph S. Szewzuk, 6951 51st St., San Diego 20, Calif.; Ernest W. Fischer, Jr., 1431 Cascade Place, El Cajon, Calif.; and John E. Naylor, 3698 Zola St., San Diego 6, Calif.

Filed July 26, 1962, Ser. No. 212,750

3 Claims. (Cl. 340—164)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An emergency alarm system for IFF systems comprising; input means adapted for coupling separated video thereto; delay means having an input and outputs and having said input operatively coupled to the input means for coupling separated video thereto; a multiplicity of mark-space switching means having inputs and outputs therefrom and having an input coupled to the outputs from said delay means; a first set of said mark-space switching means having inputs operatively coupled to the outputs of said delay means for producing output pulses therefrom when the mark-space switching means are set for a particular code configuration corresponding to an emergency alarm; coincidence means having inputs and outputs therefrom, said coincidence means having inputs operatively coupled to one of said outputs from said first set of mark-space switching means and adapted to produce a pulse when inputs are coincident thereto and wherein said output pulse indicates the presence of an emergency code; an OR gate having inputs and an output therefrom, said inputs to said OR gate being operatively coupled to other outputs from first set of mark-space switching means and wherein said output from said OR gate is operatively coupled to an input on said coincidence means so that a pulse from said OR gate means functions as an inhibit pulse for said coincidence means: emergency code indicating means operatively coupled to the output of said coincidence means for indicating the presence of a pulse at the output of said coincidence means corresponding to an emergency alarm.

3,156,896

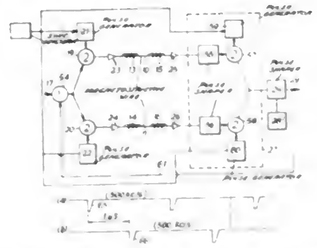
PLURAL PATH MAGNETOSTRICTIVE PULSE DELAY LINE HAVING SEPARATION AND RECOMBINATION OF THE PULSE TRAIN

Alfred D. Martin, Beeston, Nottingham, and Oliver C. Wells, London, England, assignors to Ericsson Telephones Limited, London, England, a British company

Filed Oct. 20, 1958, Ser. No. 768,290

Claims priority, application Great Britain Oct. 21, 1957

16 Claims. (Cl. 340—167)



1. An electro-mechanical delay device comprising a plurality of electro-mechanical delay elements each having an input transducer, an output transducer, and mechanical delay means intercoupling said transducers to propagate mechanical pressure waves therethrough in response to electrical signals at said input transducer and to provide electrical signals at said output transducer in response to the presence of said pressure waves thereat, switch means adapted to connect the input transducers separately in a recurring sequence to a common input circuit, and a combining circuit means connected between the output transducers and a common output circuit, the combining circuit means being adapted to combine selected portions of each of the respective signals appearing in the output transducers.

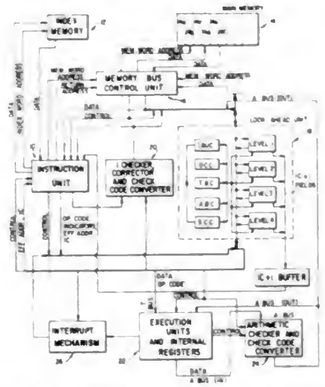
3,156,897

DATA PROCESSING SYSTEM WITH LOOK AHEAD FEATURE

Ralph J. Bahnsen, Cambridge, Mass., and Jules F. Dirac, Sea Isle City, N.J., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 1, 1960, Ser. No. 73,005

14 Claims. (Cl. 340—172.5)



1. A data processing system including memory means having information stored therein at various addresses, said information consisting of data words and instruction words, control means for transferring information to and from said memory means, an instruction unit for selecting information in said memory means, said instruction unit including an instruction counter for specifying the addresses of instruction words stored in said memory means and an instruction register for storing instruction words transferred from said memory means, said instruction words specifying requested data words and operation codes, and an execution unit for performing a processing operation on data words, in combination with a plurality of addressable buffer registers for storing information, a plurality of changable addressing means associated with said buffer registers, each of said addressing means selectively controlling said buffer registers to perform processing operations thereon in accordance with said instruction words, and means interlocking the operation of said plurality of addressing means so that a processing operation is performed on a buffer register by only one of said addressing means at a time.

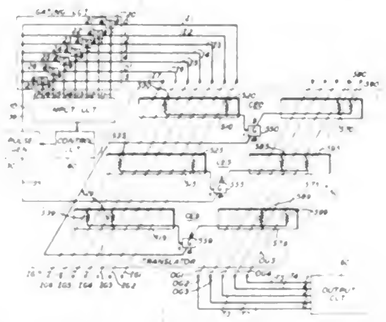
3,156,898

TRANSLATOR

Robert C. Avery, Jackson Heights, N.Y., Robert H. Gumley, Allendale, N.J., and Anthony Majilinger, Long Island City, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 26, 1961, Ser. No. 162,162

29 Claims. (Cl. 340—172.5)



22. A translator comprising a plurality of conductors arranged in a parallel array and a plurality of printed circuit cards positioned perpendicular to said parallel array, each of said cards including conductive terminals positioned adjacent said conductors in accordance with the translation code of the translator and defining air-gaps therewith, and a high resistance in series with each of said terminals and directly adjacent said each terminal for preventing discharge in said air-gaps on breakdown thereof from forming an arc.

3,156,899

SAMPLED DATA SIMULATOR CONTROL SYSTEM

Jerald E. Reich, Lynwood, and James J. Perez, Torrance, Calif., assignors to Space Technology Laboratories, Inc., Redondo Beach, Calif., a corporation of Delaware

Filed May 24, 1962, Ser. No. 197,502

6 Claims. (Cl. 340—172.5)

1. A sampled data simulator comprising:

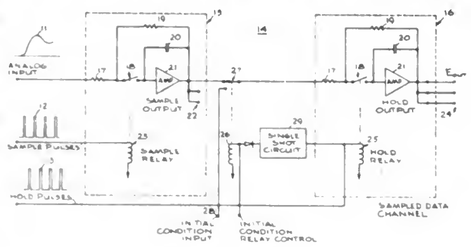
a plurality of sample and hold circuits each adapted to be controlled by a sample pulse and a hold pulse respectively,

timing means for generating a train of clock pulses at a given repetition rate,

means responsive to said clock pulses for generating a train of sample pulses coherent with said clock pulses, said sample pulses having a pulse width sufficient to allow sampling of an input signal by said sampling circuits,

means for controlling said sample circuits with said sample pulses,

means responsive to said clock pulses for generating a train of hold pulses coherent with said clock pulses, said hold pulses being delayed a predetermined time



greater than said pulse width of said sample pulse and less than the period time of sample pulses,

means for controlling said hold circuits with said hold pulses, and

means for synchronizing the starting of an external signal simulating device with said timing means, whereby said sample and hold pulses are coherent with the starting of said simulating device.

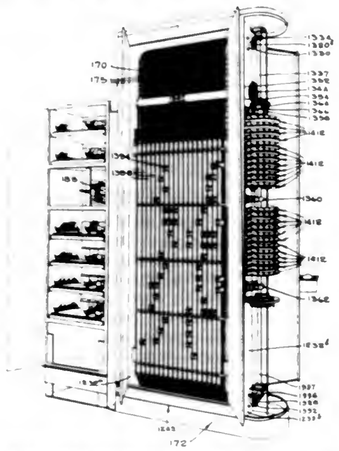
3,156,900

MEMORY DEVICE FOR A MACHINE FOR HANDLING EGGS

Harold J. Mumma, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware

Original application Dec. 28, 1953, Ser. No. 400,466, now Patent No. 2,895,274, dated July 21, 1959. Divided and this application May 15, 1959, Ser. No. 813,547

16 Claims. (Cl. 340—173)



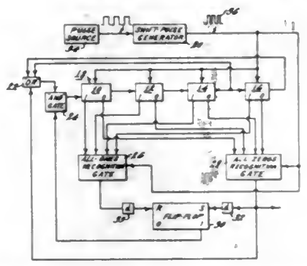
1. A data storage mechanism comprising a first memory device having an endless belt, means operable to drive said belt along a predetermined path, rows of pins extending parallel to a rotary axis of said belt, said pins being pivotally supported from said belt in consecutive sectors of the peripheral surface thereof for individual adjustment from an ineffective position to an effective position and corresponding pins of consecutive rows of pins being aligned in a direction longitudinally of the belt periphery to form longitudinal extending pin files, a first suppporting structure disposed at a predetermined station along said

path and arranged adjacent said belt along and exteriorly of the peripheral surface of said belt, solenoids held by said supporting structure opposite said pin files and operative upon energization to shift selected pins of said pin files from the ineffective to the effective position for storing information, a second supporting structure disposed at a subsequent station along said path and aranged adjacent said belt along and exteriorly of the peripheral surface of said belt, switches held by said second supporting structure opposite said pin files in such a manner that they are actuated by pins in the effective position, a second memory device including a rotor, a circular row of pins pivotally supported from said rotor for individual adjustment from an ineffective to an effective position, a plurality of Geneva gears rotatably mounted in an arc around said rotor in such a manner that the recesses in the peripheries of said Geneva gears are drivingly engaged by the pins of said rotor that are in the effective position, normally open switches associated with each of said Geneva gears, means on said Geneva gears adapted to close said normally open switches, and means responsive to the actuated switches of said second supporting structure and operable to move said pins of said rotor from the ineffective to the effective position for transferring information from said first memory device to said second memory device to store the information in said second memory device.

3,156,901
SHIFT REGISTER SYSTEMS

Arthur J. Kline, Jr., Phoenix, Ariz., assignor to Radio Corporation of America, a corporation of Delaware

Continuation of application Ser. No. 642,888, Feb. 27, 1957. This application Dec. 29, 1960, Ser. No. 79,460
7 Claims. (Cl. 340—173)



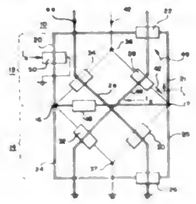
1. A shift register system comprising a shift register having a plurality of stages connected for series operation from a first stage to a last stage, each of said stages including a bistable element for storing binary signals and means for applying simultaneous shift pulses unconditionally to the bistable elements in all of said stages so that each bistable element receives each shift pulse, said elements being responsive to said pulses to shift simultaneously the binary signals stored in said register, and recirculation means connecting the bistable elements in a plurality of said stages to the bistable element in said first stage.

3,156,902
SUPERCONDUCTIVE INFORMATION HANDLING APPARATUS

Horace T. Mann, Palos Verdes, Calif., assignor to Space Technology Laboratories, Inc., Los Angeles, Calif., a corporation of Delaware

Filed July 11, 1960, Ser. No. 41,862
10 Claims. (Cl. 340—173.1)

1. A superconductive information handling arrangement, comprising: two superconductive circuit loops connected in electrical parallel across a pair of junction points; each of said loops including a switch portion, capable of being changed from a superconducting to a resistive state when subjected to a current flow in excess of a critical value, and a superconducting inductance portion; and means connected to induce a persistent circulating current selectively in each of said circuit loops; said means including a superconductive switch element connected in series with each of said inductance portions, a pair of terminals, and a superconductive gate element connected

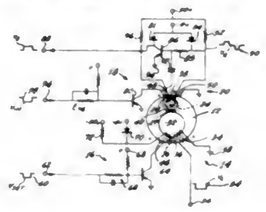


between each of said junction points and each of said terminals; each of said superconductive switch elements being capable of being changed between superconducting and resistive states when subjected to a first external excitation means, each of said gate elements being capable of being changed between superconducting and resistive states when subjected to a second external excitation means.

3,156,903
SIGNAL DELAY CIRCUIT

Richard K. Gerlach, Gardena, and Royal E. Howes, Inglewood, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 22, 1959, Ser. No. 828,910
13 Claims. (Cl. 340—174)

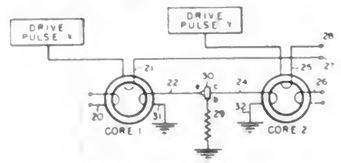


1. In combination, with a core having major concentric flux paths about a major aperture and minor concentric flux paths about a minor aperture wherein the minor flux paths provide for the storage of predetermined different magnitudes of residual magnetic flux, a circuit arrangement for delaying variations in level of pulses to be delayed comprising: means coupled to the core for storing predetermined different magnitudes of residual magnetic flux in the minor flux paths wherein the magnitude of the magnetic flux is a function of the desired delay; and circuit means having an input and output and a pulse delay winding having one end thereof coupled to said input and the other end coupled to said output for serially interconnecting the input to the output, said winding being threaded through said minor aperture for coupling said pulses to be delayed to the core to reverse the direction of the magnetic flux stored in the minor flux paths to reduce the impedance of said winding to place both ends of said winding at substantially the same level after said magnetic flux reversal, said circuit means being operative in response to each of the pulses applied on the input to produce a delayed pulse in the output wherein the time period of delay is substantially equal to the time interval required to reverse the stored magnetic flux in the minor magnetic flux paths.

3,156,904
PASSIVE TRANSISTOR-MAGNETIC CORE SWITCHING SYSTEM

Hugo M. Beck, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 30, 1960, Ser. No. 60,274
2 Claims. (Cl. 340—174)
(Granted under Title 35, U.S. Code (1952), sec. 266)

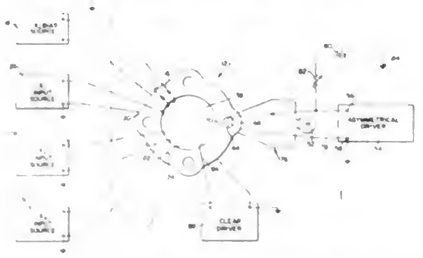


2. A register shift circuit for transferring information with a minimum of energy consumption comprising:
first and second cores, each core having an input winding, an output winding and an advance winding;
drive means to alternately energize the advance windings of said first and second coils in ordered sequence and in predetermined time relationship with the signals received in the input winding of said first core;
a passive transistor having emitter, base and collector leads;
circuit means connecting said transistor base lead to ground, said transistor emitter lead to the output winding of said first core and said transistor collector lead to the input winding of said second core;
whereby said transistor decouples said first and second cores when the advance winding of said second coil is energized by said drive means.

3,156,905
MAGNETIC STORAGE ARRANGEMENT

Oscar B. Stram, Paoli, and Edward V. Trocky, Philadelphia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 30, 1960, Ser. No. 79,762
18 Claims. (Cl. 340—174)

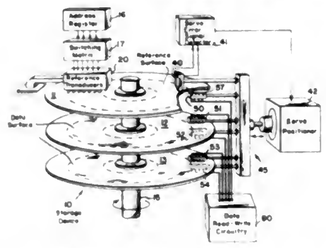


4. A magnetic storage arrangement comprising at least one magnetic element capable of assuming stable states of magnetic remanence and having a large aperture, and at least one small aperture, winding means threaded through said large aperture to receive a logic input signal composite to place said magnetic element in one of said stable states, and to cause the magnetic material on both sides of said small aperture to acquire a common flux direction, circuit means coupled to said magnetic element, and asymmetrical signal source connected to said circuit means having a signal amplitude of magnitudes in the positive and negative directions sufficient to permit reversal of flux direction in the region of said small aperture when said magnetic element is in a predetermined stable state, said circuit means including a winding portion thereof threaded through said small aperture, adapted to detect said flux reversals in the region of said small aperture.

3,156,906
TRANSDUCER POSITIONING MECHANISM IN A RANDOM ACCESS MEMORY SYSTEM

Richard E. Cummins, Saratoga, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 16, 1959, Ser. No. 846,989
5 Claims. (Cl. 340—174.1)

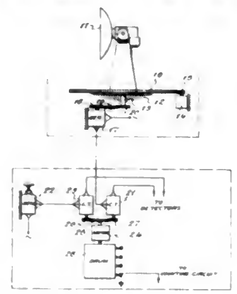


1. A control system for positioning transducers at selected addresses in a recording surface form of memory, said system comprising a plurality of transducers, a plurality of recording surfaces, one recording surface having a reference portion, a reference recorder device disposed across substantially all said reference portion of said one recording surface, an erasable reference track, means coupled to said recorder device for operating the same to provide said erasable reference track; said track being differently positioned for each desired address, and said reference track dividing said reference portion into two oppositely recorded areas, and a servo system including one of said transducers responsive to either of the oppositely recorded areas for moving said one of the transducers in a first or in a second direction toward the reference track to control the positions of the other transducers relative to the remaining part of the available recording surface.

3,156,907
SHAFT POSITION TRANSDUCER

Walter C. Lanning, Plainview, and Robert E. Spero, New Hyde Park, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware

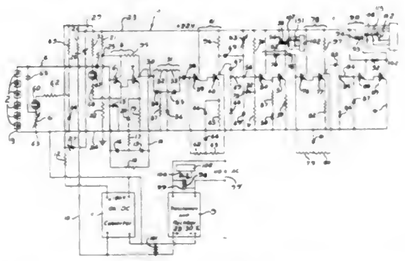
Original application Mar. 6, 1956, Ser. No. 569,917, now Patent No. 3,034,053, dated May 8, 1962. Divided and this application Dec. 14, 1959, Ser. No. 859,279
4 Claims. (Cl. 340—198)



1. In combination, a rotatable shaft, means coupled to said shaft for generating an alternating magnetic field having a direction vector corresponding to the angular position of said rotatable shaft, a winding disposed with-

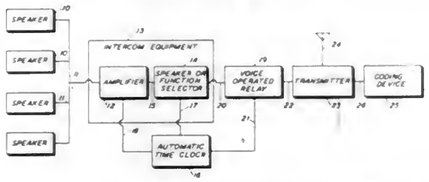
in said field, means for rotating said winding at uniform rotational speed about an axis perpendicular to said vector, whereby there is induced in said winding a voltage amplitude modulated by a signal having a frequency related to the speed of rotation of said winding and a phase determined by the angular position of said rotatable shaft, means coupled to said means for rotating and driven synchronously with said winding for generating a reference voltage of the same frequency as that of said signal, said reference voltage having a phase representing a predetermined position of said shaft, and means coupled to the last-named means and to said winding for measuring the phase difference between said signal and said reference voltage, whereby said phase difference represents the angular displacement of said shaft from said predetermined position.

3,156,908
FLAME RESPONSIVE APPARATUS
Raymond I. Kopan, Prairie Village, Kans., and Donald R. Cleary, Kansas City, Mo., assignors, by mesne assignments, to Viking Corporation, Hastings, Mich., a corporation of Michigan
Filed Dec. 4, 1961, Ser. No. 156,853
12 Claims. (Cl. 340—228)



1. In fire detecting apparatus of the type having photoresistive cells adapted to provide a fluctuating signal in response to low frequency fluctuating infrared radiation impinging thereon, said signal being of a magnitude to induce a fire signal, a circuit monitoring network comprising, an oscillator adapted to continuously impress a low frequency monitor signal onto the cell output of smaller magnitude than said first named magnitude but within the correct frequency range to induce a fire signal, and means adapted to produce a signal in response to the interruption of monitor signal transmission through said apparatus.

3,156,909
BURGLAR ALARM AND MONITORING SYSTEM
Ben C. Werk, Camden, N.J., assignor to McCune Electronics, Inc., Youngstown, Ohio, a corporation of Ohio
Filed July 3, 1962, Ser. No. 207,312
3 Claims. (Cl. 340—261)



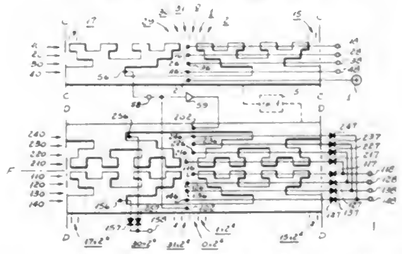
1. In a combination intercommunication, burglar alarm and monitoring system, apparatus comprising means operable to generate and transmit an alarm signal, and remote means operable to receive said alarm signal, said means operable to generate and transmit an alarm signal comprising a plurality of speaker-microphones, an amplifier coupled to said speaker-microphones, a function selector coupled to said amplifier, said function selector acting to receive signals from said speaker-microphones and transmit signals to said speaker-microphones, a voice operated relay coupled to said function selector, and a radio transmitter coupled to said function selector by way of said voice operated relay, said transmitter responsive in operation to said voice operated relay, said remote means operable to receive said alarm signal comprising a radio receiver tuned to the frequency of said transmitter.

3,156,910
TELEMETERING SYSTEM
James S. Tarbutton, Ruston, La.
Filed Aug. 10, 1959, Ser. No. 832,853
8 Claims. (Cl. 340—345)



1. An electronic oscillator circuit comprising an inductance choke coil, a pair of capacitors each having one plate connected to opposite ends of said choke coil, a diode having its electrodes connected to the other plates of said two capacitors, a biasing battery having one pole connected passively to said diode, said diode affording the sole variable current flow path through the inductance.

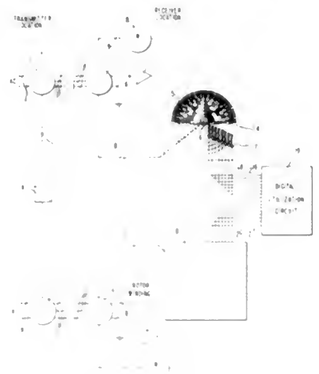
3,156,911
MULTIPLE-DISK REFLECTED BINARY ENCODER
Martin Ziserman, Hartsdale, N.Y., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 27, 1959, Ser. No. 855,740
10 Claims. (Cl. 340—347)



10. A multiple-pattern reflected binary encoder including in combination a first rotatable member, means including means mounted on the first member for providing a reflected binary count containing a plurality of digits and having a most significant digit, means responsive only to said most significant digit for providing a pair of complementary signals, a second rotatable member, reduction gearing means interconnecting the first and second members, the rotational speed of the second member being less than that of the first member by an even whole number factor at least equal to four, a first circle comprising a number of electrically conductive segments mounted on the second member, a second circle comprising an equal number of electrically conductive segments mounted on the second member, the number of segments of each of the first and second circles being equal to half said factor of gear reduction, the first and second circles being similar and electrically isolate, a first electrically conductive circular segment mounted on the second member, a second electrically conductive circular segment mounted on the second member, the first and second circular segments being electrically isolate and each subtending 180°, the first circle and the first circular segment being electrically connected, the second circle and the second circular segment being electrically connected, means coupling one of the complementary signals only to the first circle and the first circular segment, means coupling the other of the complementary signals only to the second circle and the second circular segment, a first signal sensing device disposed in signal-sensing relationship with the first circle, a second signal sensing device disposed in a relatively phase-displaced signal-sensing relationship with the second circle, the first and second devices having a predetermined relative phase-displacement equal to 360° divided by twice said factor of gear reduction, a third and a fourth signal sensing device disposed in phase-displaced signal-sensing relationship with the first circular segment, the third and fourth devices having a phase displacement of 90°, a fifth and a sixth signal sensing device disposed in phase-displaced signal-sensing relationship with the second circular segment, the fifth and sixth devices having a phase displacement of 90°, the third and fifth devices having said predetermined relative phase displacement, the fourth and sixth devices having said predetermined relative phase displacement, for one direction of rotation of the second member the phase of the first device leading that of the second device and the phase of the third device lagging that of the fifth device and the phase of the fourth device lagging that of the sixth device, means responsive to the fourth and sixth devices and including a first pair of unilateral impedances for providing a most significant bit output, means responsive to the third and fifth devices and including a second pair of unilateral impedances for providing a next-to-most significant bit output, and means responsive to the first and second devices and including a third pair of unilateral impedances for providing a least significant bit output having the same significance as said most significant digit.

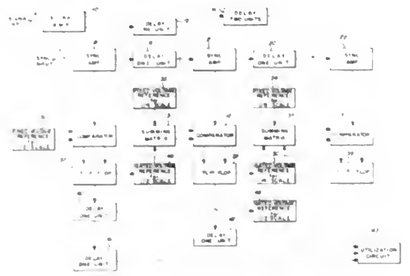
3,156,912
ELECTROMECHANICAL SYSTEM
William R. Maclay, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1960, Ser. No. 78,652
7 Claims. (Cl. 340—347)

7. An analog-to-digital converter comprising: an input shaft having an instantaneous angular position which it is desired to convert to an electrical digital output signal; a first synchro transmitter having a rotor and an electrical output; said rotor of said first synchro transmitter being connected to be positioned in accordance with said input shaft; a gear speed changing means; a second synchro transmitter having a rotor and an electrical output; said rotor of said second synchro transmitter being connected to be positioned in accordance with said input shaft through said gear speed changing means; a first synchro receiver having a rotor and electrical input and electrical output connected to receive an electrical input from said first synchro transmitter; a second synchro receiver having a rotor and an electrical input and output connected to receive an electrical input from said second synchro transmitter; said synchro transmitters and said synchro receivers being physically positioned remotely from one another; a first output shaft associated with said first synchro receiver; the rotor and electrical output of said first synchro receiver being connected with said first output shaft through a position servo follow-up loop; a second output shaft associated with said second synchro receiver; the rotor and electrical output of said second synchro



receiver being connected with said second output shaft through a servo follow-up loop; a first shaft digitizer being connected to said first output shaft; a second shaft digitizer being connected to said second output shaft; said first synchro transmitter, synchro receiver, and shaft digitizer providing a digital output of plural higher orders of binary significance; said second synchro transmitter, synchro receiver, and shaft digitizer providing a digital output of plural lower orders of binary significance.

3,156,913
ANALOG-TO-DIGITAL CONVERTER SYSTEM
Clark F. Crocker, South Sudbury, and Melvin Prager, Ashland, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Jan. 18, 1962, Ser. No. 167,124
13 Claims. (Cl. 340—347)



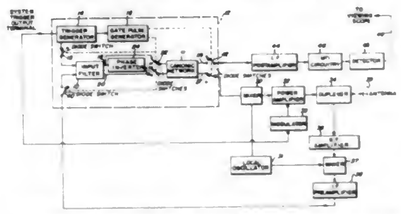
12. An analog-to-digital converter comprising:
a plurality of consecutive comparator circuits operable to either a binary zero or binary "1" condition;
means including delay devices each having an additional unit of delay to progressively apply said input

signal to said comparator circuits in a predetermined time sequence;
means for coupling fixed and progressively lower bias voltages to said comparator circuits;
means for coupling the bias voltage on each comparator circuit at said predetermined rate to each succeeding comparator circuit when each comparator circuit is in one of said binary conditions;
and timing means comprising synchronization pulses progressively applied to said comparator circuits to enable said comparator circuits to operate at the repetition rate of said synchronization pulses.

3,156,914
TRANSMISSION AND RECEPTION OF RADAR SIGNALS

George R. Welti, Newton, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 29, 1960, Ser. No. 25,775
19 Claims. (Cl. 343—17.1)

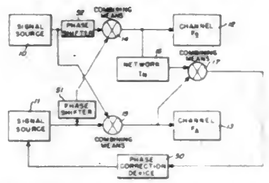


1. A pulse compression system comprising means for generating a plurality of sequences of successive signals of alternately increasing and decreasing frequencies, the autocorrelation of said increasing sequences of said signals being equal to that of said decreasing sequences of said signals, the crosscorrelation of said increasing and decreasing sequences being substantially less than the autocorrelation of either of said sequences, means for transmitting said sequences, means for receiving said sequences, and means for progressively summing said sequences so that the third quarter of said sequences is identical to the first quarter, and the fourth quarter is the negative of the second quarter of said sequences.

3,156,915
MULTI-CHANNEL SYSTEMS

Richard E. Lang, Concord, and Robert L. Wyckoff, Hollis-ton, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Sept. 30, 1959, Ser. No. 843,530
10 Claims. (Cl. 343—117)

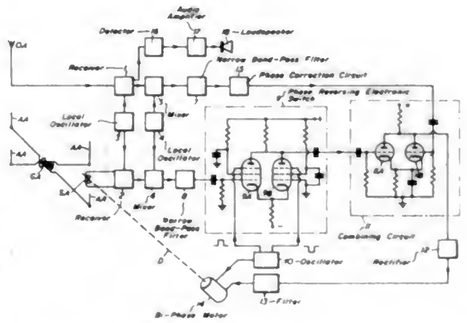


2. A multi-channel system comprising, in combination, a plurality of signal channels each having a particular frequency response characteristic, a plurality of input signal sources connected to said signal channels, a portion of an input signal from at least one of said signal sources being cross coupled from said one signal source to at least one other of said signal sources whereby the performance of said multi-channel system is impaired, network means connected to said one of said signal sources, said network means having an impulse response characteristic substantially equal to the frequency response characteristic of the channel to which said one of said input signal sources is connected, means connected to the output of said network means and to said other of said signal sources for combining the output of said network means with the input signal from said other of said signal sources to provide a correction signal, means responsive to said correction signal for reducing the cross-coupling effect between said one and said other signal channels whereby said system performance is improved.

3,156,916
RADIO DIRECTION FINDERS

Dennis William George Byatt, Great Baddow, England, assignor to The Marconi Company Limited, a British company

Filed Apr. 13, 1961, Ser. No. 102,817
Claims priority, application Great Britain, May 18, 1960, 17,545/60
5 Claims. (Cl. 343—117)



1. An automatic radio direction finder comprising in combination substantially non-directional means for deriving a non-directional signal from an incoming radio wave; directional means of variable directivity for deriving from said incoming radio wave a directional signal dependent on the momentary directivity of said directional means; means for translating the non-directionally and directionally received signals into signals of the same relatively low frequency and lying within a relatively narrow frequency band; means for periodically reversing the phase of one of the resultant relatively low frequency signals thus produced; means for combining the periodically phase reversed relatively low frequency signals with the other low frequency signals in such manner that, when the former is of one phase the two signals combine additively and when it is of the other phase the said two signals combine subtractively; and means responsive to the result of combination for varying the directivity of said directional means of variable directivity.

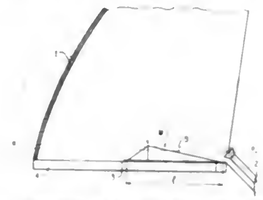
3,156,917
ANTENNA REFLECTOR AND FEED WITH ABSORBERS TO REDUCE BACK RADIATION TO FEED

Gaetano Parmeggiani, Milan, Italy, assignor to Marelli Lenkurt S.p.A., Milan, Italy

Filed Feb. 17, 1961, Ser. No. 89,967
Claims priority, application Italy Feb. 22, 1960
8 Claims. (Cl. 343—782)

1. In an antenna system of the type comprising a reflector formed of a sectional paraboloid having a flat horizontal ground plane and having illuminating means disposed at the focal point, offset from the focal axis

of said reflector, for illuminating said reflector with radiant energy:
microwave absorbing means on said ground plane, interposed in the region between said illuminating means and that part of the reflector which is sub-

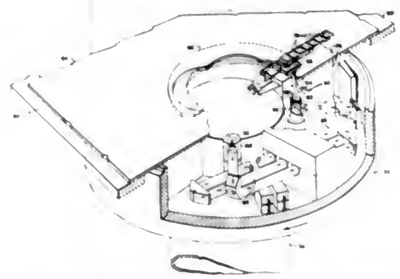


stantially perpendicular to the direction of propagation of the incident rays from the illuminating means, for the absorption of the unwanted radiant energy from said part of the reflector which is reflected back to said illuminating means.

3,156,918
RECORD ECCENTRICITY DETECTOR AND CENTERING ARRANGEMENT FOR RECORDING MACHINES

Donald H. Cronquist, Santa Clara, and Robert C. Treseder, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,736
20 Claims. (Cl. 346—74)

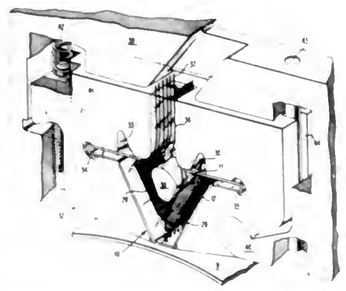


5. In a recording apparatus having a recording head arranged to rotate about a predetermined axis, an arrangement for detecting eccentricities in the position of records placed upon the apparatus with regard to said predetermined axis, comprising in combination in the record plate a non-circular hole having symmetrically shaped opposite sectors and in the recording apparatus a source of light, means for moving a beam from said source of light about said axis of rotation in a circular orbit adjacent the edge of the hole of a record plate placed upon the apparatus, light-sensitive means, means for directing said light beam upon passage through said hole onto said light-sensitive means, and means for comparing the times of illumination of said light-sensitive means by said beam in opposite sectors of the orbit of the beam.

3,156,919
ELECTROMAGNETIC TRANSDUCER HEAD

Donald E. Rutter, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,875
4 Claims. (Cl. 346—74)

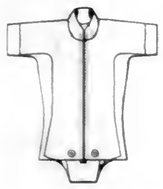


1. A magnetic recording device for use in producing a mosaic of concentric polarity magnetized dots on a magnetizable recording surface comprising a plurality of stylus core members of flux permeable material, said core members having recording and remote ends, said recording end terminating in a recording end surface transverse to the major axis thereof, means for supporting said core members with the axes of said recording ends thereof in linear array and with said recording end surfaces in a common plane, said supporting means including a low reluctance flux path element connected to said recording and remote ends of said core members and forming a return path to said remote ends of said core members for flux emanating from corresponding recording ends thereof, said flux return path element comprising a thin unitary flux permeable plate member, said plate member having a boundary surface positionable proximate the recording surface of said magnetizable material and a linear array of openings therein adapted to receive the record ends of said stylus members, said plate member boundary surface being coplanar with said recording end surfaces of said record ends of said stylus members and said record ends of said core members being positionable in said openings of said plate members in a manner forming a peripheral recording gap between each of said record ends of said core members and said plate member, and multiple turn energizing windings on said core members intermediate said recording and remote ends thereof.

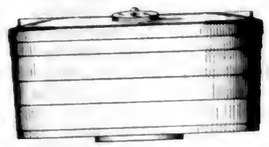
DESIGNS

NOVEMBER 10, 1964

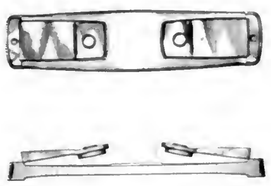
199,514
FOAM RUBBER WET SUIT SHIRT
Jack E. O'Neill, 1071 41st St., Santa Cruz, Calif.
Filed Aug. 13, 1963, Ser. No. 76,195
Term of patent 14 years
(Cl. D3—25)



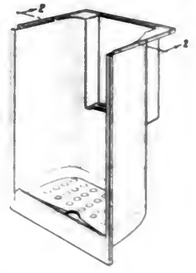
199,515
CONTAINER FOR SOAP DISPENSER
Howard G. Mullett and Robert J. Booker, Milwaukee, Wis., assignors to Bradley Washfountain Co., Milwaukee, Wis., a corporation of Wisconsin
Filed May 10, 1963, Ser. No. 74,840
Term of patent 14 years
(Cl. D4—3)



199,516
PAPER TOWEL HOLDER
William C. Monahan, 190 Seaton Road, Stamford, Conn.
Filed Dec. 11, 1963, Ser. No. 77,756
Term of patent 14 years
(Cl. D4—3)

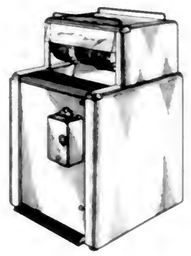


199,517
SHOWER STALL
James F. Fulton, 806 The Crescent, Mamaroneck, N.Y.
Filed June 5, 1963, Ser. No. 75,237
Term of patent 14 years
(Cl. D4—4)

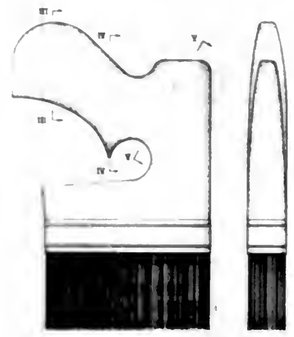


199,518
HOLDER FOR A MOP, BROOM OR THE LIKE
Ralph G. Sanders and Norman B. Watkins, Burbank, Calif., assignors to Technibilt Corporation, Glendale, Calif., a corporation of California
Filed Sept. 28, 1962, Ser. No. 71,915
Term of patent 7 years
(Cl. D9—2)

199,519
GOLF CLUB CLEANING MACHINE
Logan W. Johnson and John J. Schwartz, Minneapolis, Minn., assignors to Kleen-Shot Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed July 8, 1963, Ser. No. 75,709
Term of patent 14 years
(Cl. D9—2)

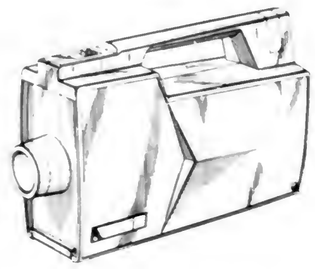


199,520
PAINT BRUSH
Phillip F. Jones, 2050 Niles-Cortland Road, Cortland, Ohio
Filed Feb. 20, 1964, Ser. No. 78,708
Term of patent 14 years
(Cl. D9—2)

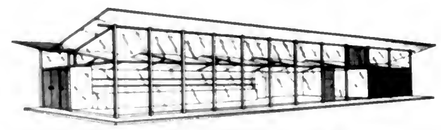


199,521
TOOTHBRUSH POWER HANDLE OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed Apr. 2, 1964, Ser. No. 79,313
Term of patent 14 years
(Cl. D9—2)

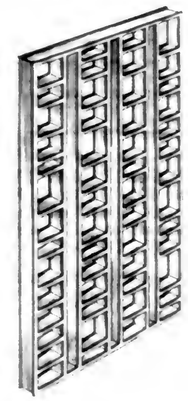
199,522
VACUUM CLEANER OR SIMILAR ARTICLE
Walter C. Anderson, Southport, Conn., assignor to General Electric Company, a corporation of New York
Filed May 27, 1964, Ser. No. 80,186
Term of patent 14 years
(Cl. D9—2)



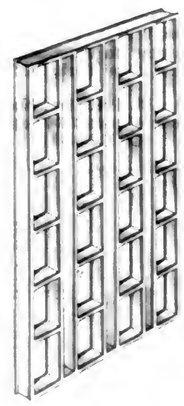
199,523
STORE
Robert J. Harper, Scarsdale, N.Y., assignor to Northwestern Refining Co., St. Paul Park, Minn., a corporation of Minnesota
Filed July 30, 1963, Ser. No. 76,043
Term of patent 14 years
(Cl. D13—1)



199,524
GRID CORE FOR A TRANSLUCENT BUILDING PANEL OR SIMILAR ARTICLE
Robert R. Keller, 41 Union St., Manchester, N.H.
Filed Apr. 8, 1964, Ser. No. 79,408
Term of patent 14 years
(Cl. D13—1)



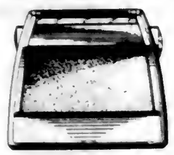
199,525
GRID CORE FOR A TRANSLUCENT BUILDING PANEL OR SIMILAR ARTICLE
Robert R. Keller, 41 Union St., Manchester, N.H.
Filed Apr. 8, 1964, Ser. No. 79,409
Term of patent 14 years
(Cl. D13—1)



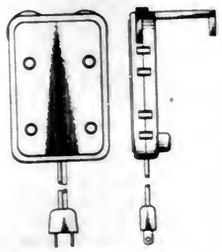
199,526
BUCKLE
Lawrence Del Ponte, Cranston, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island
Filed June 25, 1963, Ser. No. 75,513
Term of patent 14 years
(Cl. D17—1)



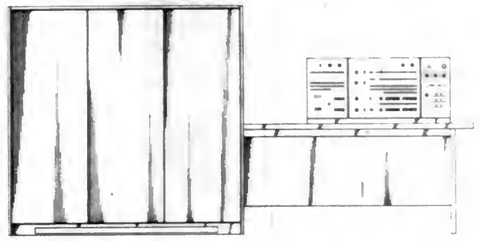
199,527
ELECTRIC SHAVER
Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 77,102
Term of patent 14 years
(Cl. D22—3)



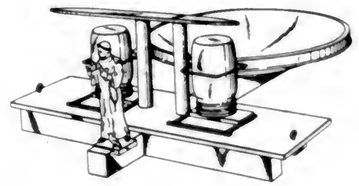
199,528
MULTI-OUTLET ELECTRIC EXTENSION CORD
Eugene G. Danner, 9122 71st Road, Forest Hills, N.Y.
Filed Nov. 14, 1963, Ser. No. 77,421
Term of patent 14 years
(Cl. D26—1)



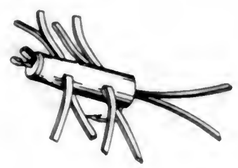
199,529
ELECTRONIC COMPUTER
Walter F. Kraus, Poughkeepsie, James J. La Due, New York, Walter S. McCormick and Joseph F. Talerico, Poughkeepsie, and William F. Dalton, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 77,967
Term of patent 14 years
(Cl. D26—5)



199,530
COMBINATION BIRD BATH AND FEEDER
Frank X. Crulkshank, Rte. 2, Cosbocton, Ohio
Filed Oct. 9, 1963, Ser. No. 76,919
Term of patent 14 years
(Cl. D31—2)



199,531
FISHING LURE
Herbert E. Turner, 1094 Court St., Memphis, Tenn.
Filed Sept. 6, 1963, Ser. No. 76,498
Term of patent 14 years
(Cl. D31—4)



199,532
COMBINED VALET STAND AND SEAT
John Rolando, Point Lookout, and Robert Z. Lerner, Brookville, N.Y., and Alberto Montina, Udina, Italy, assignors to Stuart M. Lerner, Inc., Melville, N.Y., a corporation of New York
Filed July 15, 1963, Ser. No. 75,794
Term of patent 14 years
(Cl. D33—8)



199,533
SEWING MACHINE CABINET OR SIMILAR ARTICLE
Joseph A. Crozier, Trumann, Ark., Walter F. Nessen, Jeffersontown, Ky., and Elbert J. Stanley, Goztepe-Kadikoy, Istanbul, Turkey, assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed May 7, 1964, Ser. No. 79,879
Term of patent 14 years
(Cl. D33—12)



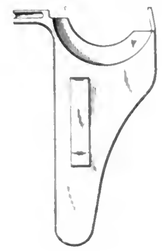
199,534
GOLF PUTTER
Robert J. Mader, 1607 Hickory St., Torrance, Calif.
Filed Apr. 1, 1964, Ser. No. 79,294
Term of patent 14 years
(Cl. D34—5)



199,535
SOCCER BALL
Max Doss, 47—25 45th St., Woodside 7, N.Y.
Filed July 11, 1963, Ser. No. 75,752
Term of patent 14 years
(Cl. D34—15)



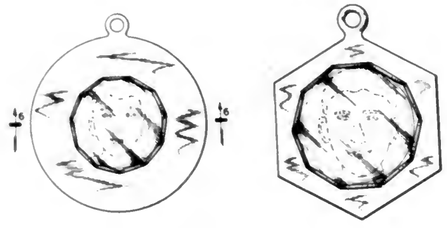
199,536
HOLDER FOR AERIAL TOP
Stephen J. Salayka, 103 Berry St., Brooklyn, N.Y.
Filed Mar. 17, 1964, Ser. No. 79,038
Term of patent 14 years
(Cl. D34—15)



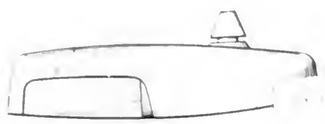
199,537
RING
Lewis D. Sklar, 1421 SE. 4th Ave., Fort Lauderdale, Fla.
Filed Jan. 25, 1963, Ser. No. 73,309
Term of patent 14 years
(Cl. D45—10)



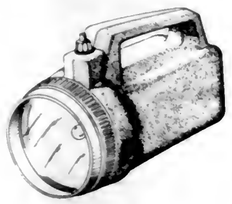
199,538
CHARM
Tom H. Sand, New York, N.Y., assignor to Photogen Co., New York, N.Y.
Filed Nov. 30, 1962, Ser. No. 72,658
Term of patent 14 years
(Cl. D45—17)



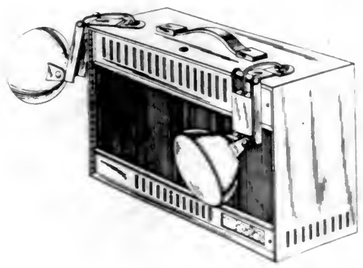
199,539
SEWING MACHINE LIGHT OR SIMILAR ARTICLE
Albert N. Cook, Bernardsville, and William H. Griffith, Somerville, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 3, 1964, Ser. No. 78,059
Term of patent 14 years
(Cl. D48—20)



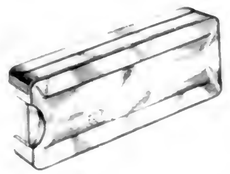
199,540
PORTABLE LANTERN
Nolan K. Rhoades, Beloit, and Ralph T. Jacobsen, Stoughton, Wis., assignors to The Electric Storage Battery Company, Philadelphia, Pa., a corporation of New Jersey
Filed Nov. 18, 1963, Ser. No. 77,464
Term of patent 14 years
(Cl. D48—24)



199,541
EMERGENCY LIGHTING UNIT
Nolan K. Rhoades, Beloit, Wis., and Donald E. Watkins, Parma, Ohio, assignors to The Electric Storage Battery Company, Philadelphia, Pa., a corporation of New Jersey
Filed Jan. 27, 1964, Ser. No. 78,377
Term of patent 14 years
(Cl. D48—24)



199,542
LATCH FOR LUGGAGE AND LIKE CASES
John B. Humphries, Stamford, Conn., assignor to The Excelsior Hardware Company, Stamford, Conn.
Filed Feb. 18, 1963, Ser. No. 73,622
Term of patent 14 years
(Cl. D50—7)



199,543
PAIR OF SPECTACLES
Richard L. Huggins, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 6, 1963, Ser. No. 75,259
Term of patent 14 years
(Cl. D57—1)



199,544
SHOPPING BAG
Goble W. Bryant, Newburgh, N.Y., assignor to Interstate Bag Company, Inc., Walden, N.Y., a corporation of Virginia
Filed Dec. 31, 1963, Ser. No. 77,987
Term of patent 14 years
(Cl. D58—2)



199,545
COMBINED BOTTLE AND DISPENSING CAP
Albert H. Torongo, Washington Crossing, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Jan. 3, 1964, Ser. No. 78,058
Term of patent 14 years
(Cl. D58—6)



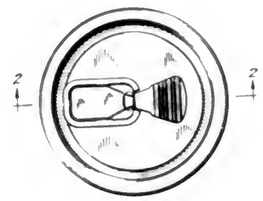
199,546
BOTTLE
James E. Plummer, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 31, 1963, Ser. No. 76,055
Term of patent 14 years
(Cl. D58—9)



199,547
CONTAINER CAP
Albert Jack Russo, Roslyn Heights, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed May 21, 1963, Ser. No. 74,981
Term of patent 14 years
(Cl. D58—26)



199,548
CLOSURE WITH A TEAR STRIP OPENER
Arthur Philip Zundel, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 21, 1964, Ser. No. 79,637
Term of patent 14 years
(Cl. D58—26)



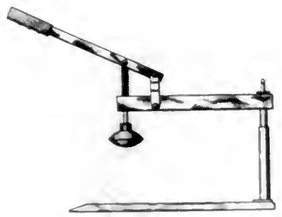
199,549
AIRCRAFT
William Coelho Thomas, 11675 Wyoming, Detroit 4, Mich.
Filed Jan. 23, 1961, Ser. No. 63,639
Term of patent 14 years
(Cl. D71—1)



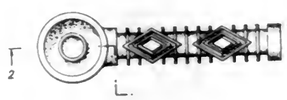
199,550
SAIL BOAT
Arthur C. Rowe, Jr., Waltham, Mass., assignor to Justin L. Wyner, doing business as The Chester Hill Boat Company, Stoughton, Mass.
Filed Mar. 4, 1963, Ser. No. 73,787
Term of patent 14 years
(Cl. D71—1)



199,551
HEART MASSAGING DEVICE
James J. Lally, 800 W. 52nd Terrace, Kansas City, Mo.
Filed Jan. 7, 1964, Ser. No. 78,102
Term of patent 14 years
(Cl. D83—1)



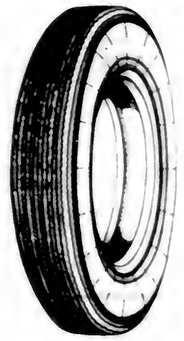
199,552
SMOKER'S PIPE OR SIMILAR ARTICLE
Philip D. Berenson, Elizabeth, N.J. (44 Montgomery St., Jersey City 2, N.J.), assignor of one-half to Weber Briars, Inc., Jersey City, N.J., a corporation of New Jersey
Filed Oct. 23, 1963, Ser. No. 77,106
Term of patent 7 years
(Cl. D85—8)



199,553
HAIR DRYER
Charles Stowe Myers, Evanston, Ill., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed July 11, 1963, Ser. No. 75,747
Term of patent 14 years
(Cl. D86—10)



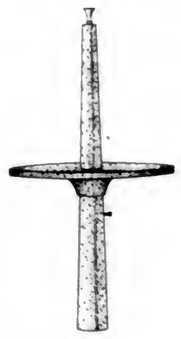
199,554
TIRE
Frank Bernard Jones, Sutton Coldfield, and Paul Eric Manning, Castle Bromwich, England, assignors to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed Feb. 19, 1964, Ser. No. 78,700
Claims priority, application Great Britain Oct. 18, 1963
Term of patent 14 years
(Cl. D90—20)



199,555
HANDLE FOR PLUMBING FIXTURES
Donald Doman, Janesville, Wis., assignor to Kohler Co., Kohler, Wis., a corporation of Wisconsin
Filed Feb. 20, 1964, Ser. No. 78,709
Term of patent 14 years
(Cl. D91—3)



199,556
COMBINED FOUNTAIN AND SEAT FOR SWIMMING POOLS AND THE LIKE
Joseph D. George, 1263 Royal York Road, Islington, Ontario, Canada
Filed July 11, 1963, Ser. No. 75,754
Term of patent 14 years
(Cl. D91—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF NOVEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Blaxon, Inc.: *See*—
Grudoski, Daniel P. Re. 25,677.

Brown, Cicero C., to Brown Oil Tools, Inc. Hydraulic pipe snubber for oil wells. Re. 25,680, 11–10–64, Cl. 254—29.

Brown Oil Tools, Inc.: *See*—
Brown, Cicero C. Re. 25,680.

Carlson, Raymond H., to Textron Industries, Inc. Cold header drives. Re. 25,676, 11–10–64, Cl. 78—17.

Chicago Pneumatic Tool Co.: *See*—
Coulter, John B. Re. 25,684.

Coulter, John B., to Chicago Pneumatic Tool Co. Method of making rock bit cutter Re. 25,684, 11–10–64, Cl. 76—108.

Cragstan Corp.: *See*—
Risler, Robert. Re. 25,678.

Dorsey, Mercer M., to Nordberg Mfg. Co. Crusher bowl locking means. Re. 25,683, 11–10–64, Cl. 241—286.

Grudoski, Daniel P., to Blaxon, Inc. Play swing. Re. 25,677, 11–10–64, Cl. 272—85.

International Business Machines Corp.: *See*—
Taylor, Wilfred K. Re. 25,679.

International Salt Co., Inc., The: *See*—
Jacoby, Charles H. Re. 25,682.

Jacoby, Charles H., to The International Salt Co., Inc. Method of well completion. Re. 25,682, 11–10–64, Cl. 299—4.

Nordberg Mfg. Co.: *See*—
Dorsey, Mercer M. Re. 25,683.

Pannier Corp., The: *See*—
Pannier, Ralph A. Re. 25,681.

Pannier, Ralph A., to The Pannier Corp. Marking device for differentially coated tin plate. Re. 25,681, 11–10–64, Cl. 101—373.

Risler, Robert, to Cragstan Corp. Take-apart doll with detachable garments. Re. 25,678, 11–10–64, Cl. 46—22.

Taylor, Wilfred K., to International Business Machines Corp. System for analysing the spatial distribution of a function. Re. 25,679, 11–10–64, Cl. 340—146.3.

Textron Industries, Inc.: *See*—
Carlson, Raymond H. Re. 25,676.

LIST OF PLANT PATENTEES

Klehm, Carl G. Peony plant. 2,451, 11–10–64, Cl. 68.

LIST OF DESIGN PATENTEES

American Can Co.: *See*—
Zundel, Arthur P. 199,548.

Anderson, Walter C., to General Electric Co. Vacuum cleaner or similar article. 199,522, 11–10–64, Cl. D9—2.

Anson, Inc.: *See*—
Del Ponte, Lawrence. 199,526.

Bausch & Lomb Inc.: *See*—
Huggins, Richard L. 199,543.

Berenson, Phillip D., ½ to Weber Briars, Inc. Smoker's pipe, or similar article. 199,552, 11–10–64, Cl. D85—8.

Boldt, Melvin H., to Schick Electric Inc. Electric shaver. 199,527, 11–10–64, Cl. D22—3.

Booker, Robert J.: *See*—
Mullett, Howard G., and Booker. 199,515.

Bradley Washfountain Co.: *See*—
Mullet, Howard G., and Booker. 199,515.

Briars, Weber, Inc.: *See*—
Berenson, Phillip D. 199,552.

Bryant, Goble W., to Interstate Bag Co., Inc. Shopping bag. 199,544, 11–10–64, Cl. D58—2.

Chester Hill Boat Co., The: *See*—
Rowe, Arthur C., Jr. 199,550.

Colgate-Palmolive Co.: *See*—
Russo, Albert J. 199,547.

Cook, Albert N., and W. H. Griffith, to The Singer Co. Sewing machine light or similar article. 199,539, 11–10–64, Cl. D48—20.

Crozier, Joseph A., W. F. Nessen, and E. J. Stanley, to The Singer Co. Sewing machine cabinet or similar article. 199,533, 11–10–64, Cl. D33—12.

Crulkshank, Frank X. Combination bird bath and feeder 199,530, 11–10–64, Cl. D31—2.

Dalton, William F.: *See*—
Kraus, Walter F., La Due, McCormick, Talerico, and Dalton. 199,529.

Danner, Eugene G. Multi-outlet electric extension cord 199,528, 11–10–64, Cl. D26—1.

Del Ponte, Lawrence, to Anson, Inc. Buckle. 199,526, 11–10–64, D17—1.

Doman, Donald, to Kohler Co. Handle for plumbing fixtures. 199,555, 11–10–64, Cl. D91—3.

Doss, Max. Soccer ball. 199,535, 11–10–64, Cl. D34—15.

Dunlop Tire and Rubber Corp.: *See*—
Jones, Frank B., and Manning. 199,554.

Electric Storage Battery Co., The: *See*—
Rhoades, Nolan K., and Jacobsen. 199,540.
Rhoades, Nolan K., and Watkins. 199,541.

Excelsior Hardware Co., The: *See*—
Humphries, John B. 199,542.

Fulton, James F. Shower stall. 199,517, 11–10–64, Cl. D4—4.

General Electric Co.: *See*—
Anderson, Walter C. 199,522.
Johnson, Carl N., and Judson. 199,521.

George, Joseph D. Combined fountain and seat for swimming pools and the like. 199,556, 11–10–64, Cl. D91—4.

Griffith, William H.: *See*—
Cook, Albert N., and Griffith. 199,539.

Harper, Robert J., to Northwestern Refining Co. Store. 199,523, 11–10–64, Cl. D13—1.

Huggins, Richard L., to Bausch & Lomb Inc. Pair of spectacles. 199,543, 11–10–64, Cl. D57—1.

Humphries, John B., to The Excelsior Hardware Co. Latch for luggage and like cases. 199,542, 11–10–64, Cl. D50—7.

International Business Machines Corp.: *See*—
Kraus, Walter F., La Due, McCormick, Talerico, and Dalton. 199,529.

Interstate Bag Co., Inc.: *See*—
Bryant, Goble W. 199,544.

Jacobsen, Ralph T.: *See*—
Rhoades, Nolan K., and Jacobsen. 199,540.

Johnson, Carl N., and W. V. Judson, to General Electric Co. Toothbrush powder handle or similar article. 199,521, 11–10–64, Cl. D9—2.

Johnson & Johnson: *See*—
Torongo, Albert H. 199,545.

Johnson, Logan W., and J. J. Schwartz, to Kleen-Shot Corp. Golf club cleaning machine. 199,519, 11–10–64, Cl. D9—2.

Jones, Frank B., and P. E. Manning, to Dunlop Tire and Rubber Corp. Tire. 199,554, 11–10–64, Cl. D90—20.

Jones, Phillip F. Paint brush. 199,520, 11–10–64, Cl. D9—2.

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Keller, Robert R. Grid core for a translucent building panel or similar article. 199,524, 11–10–64, Cl. D13—1.

Keller, Robert R. Grid core for a translucent building panel or similar article. 199,525, 11–10–64, Cl. D13—1.

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Kraus, Walter F., J. J. La Due, W. S. McCormick, J. F. Talerico, and W. F. Dalton, to International Business Machines Corp. Electronic computer. 199,529, 11–10–64, Cl. D26—5.

La Due, James J.: *See*—
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Lally, James J. Heart massaging device. 199,551, 11–10–64, Cl. D83—1.

Lerner, Robert Z.: *See*—
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Lerner, Stuart M., Inc.: *See*—
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Mader, Robert J. Golf putter. 199,534, 11–10–64, Cl. D34—5.

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Monahan, William C. Paper towel holder. 199,516, 11–10–64, Cl. D4—3.

Montina, Alberto: *See*—
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Mullett, Howard G., and R. J. Booker, to Bradley Washfountain Co. Container for soap dispenser. 199,515, 11–10–64, Cl. D4—3.

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Crozier, Joseph A., Nessen, and Stanley. 199,533.
Northwestern Refining Co.: *See*—
Harper, Robert J. 199,523.
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Owens-Illinois Glass Co.: *See*—
Plummer, James E. 199,546.
Photogem Co.: *See*—
Sand, Tom H. 199,538.
Plummer, James E., to Owens-Illinois Glass Co. Bottle. 199,546, 11–10–64, Cl. D58—9.
Rhoades, Nolan K., and R. T. Jacobsen, to The Electric Storage Battery Co. Portable lantern. 199,540, 11–10–64, Cl. D48—24.
Rhoades, Nolan K., and D. E. Watkins, to The Electric Storage Battery Co. Emergency lighting unit. 199,541, 11–10–64, Cl. D48—24.
Rolando, John, R. Z. Lerner, and A. Montina, to Stuart M. Lerner, Inc. Combined valet stand and seat. 199,532, 11–10–64, Cl. D33—8.
Rowe, Arthur C., Jr., to Justin L. Wyner, d.b.a. The Chester Hill Boat Co. Sail boat. 199,550, 11–10–64, Cl. D71—1.
Russo, Albert J., to Colgate-Palmolive Co. Container cap. 199,547, 11–10–64, Cl. D58—26.
Salayka, Stephen J. Holder for aerial toy. 199,536, 11–10–64, Cl. D34—15.
Sand, Tom H., to Photogem Co. Charm. 199,538, 11–10–64, D45—17.
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Thomas, William C. Aircraft. 199,549, 11–10–64, Cl. D71—1.
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Turner, Herbert E. Fishing lure. 199,531, 11–10–64, Cl. D31—4.
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TO WHOM

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Abbott Laboratories: *See*—
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Acheson Industries, Inc.: *See*—
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Adam, Hans, H. Orth, and E. Clauss, to G. M. Pfaff AG. Work blank support, particularly sewing material support for automatic device. 3,156,203, 11–10–64, Cl. 112—2.
Adelman, Barnet R., to United Aircraft Corp. Method for pipe closure. 3,156,263, 11–10–64, Cl. 138—89.
Adelmann, Charles B. Rate of flow indicating device. 3,156,115, 11–10–64, Cl. 73—198.
Aerojet-General Corp.: *See*—
Zernow, Louis, and Kreyenhagen. 3,156,188.
Aerospace Corp., The: *See*—
Starner, Keith E. 3,156,889.
Affholter, Robert A. Table cover. 3,156,280, 11–10–64, Cl. 150—52.
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Baasner, Wilhelm. 3,156,172.
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Kageyama, Hiroo, Sato, and Inoue. 3,156,721.
Aladdin Industries, Inc.: *See*—
Lyman, Harold T., Mason, and Jaqua. 3,156,884.
Alberti, Jacques. Dismountable construction. 3,156,329, 11–10–64, Cl. 189—15.5.
Albies, Manfred: *See*—
Mullejans, Paul, and Albies. 3,156,053.
Albrecht, Arthur W.: *See*—
Evanson, Clifford E., Jorgensen, Albrecht, Block, and Larsen. 3,156,195.
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Alexeff, Alexander V.: *See*—
Snyder, Harvey, Alexeff, and Richards. 3,156,396.
Allais, André: *See*—
Warnant, Julien, Jolly, Allais, and Girault. 3,156,713.
Allan, George G., to E. I. du Pont de Nemours and Co. Oxidation process. 3,156,709, 11–10–64, Cl. 260—348.5.
Allen-Bradley Co.: *See*—
De Smidt, Woodrow A., and Zarwell. 3,156,790.
Alles, Maurice, P. Camatte, D. Martin, and A. Pellerin, to Commissariat a l'Energie Atomique. Apparatus for cutting a casing of malleable material containing a solid material. 3,156,394, 11–10–64, Cl. 225—94.
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Eck, John C., and Gocze. 3,156,544.
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Baude, John. 3,156,831.
Alofs, Herman G.: *See*—
Carter, Andrew G., and Alofs. 3,156,025.
Alays, Clarence M., to Standard Oil Co. Devolatilizing extruder. 3,156,009, 11–10–64, Cl. 18—12.
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Zelley, Walter G. 3,156,763.
American Brake Shoe Co.: *See*—
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Huntress, Howard B., and Taylor. 3,156,096.
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American Cyanamid Co.: *See*—
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Mitchell, Peter W. D., and Marshall. 3,156,712.
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Zivi, Edwin L. 3,156,431.
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Anderer, Joseph H., A. P. Da Vinci, and T. F. McHugh, to FMC Corp. Regenerated cellulose fiber. 3,156,605, 11–10–64, Cl. 161—169.
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Andersen, Donald L., and J. B. Thielen, to General Mills, Inc. N-(N-higher aliphatic hydrocarbon amio-propyl)-morpholines. 3,156,687, 11–10–64, Cl. 260—247.2.
Anderson, Edward P. Cathodic protection anode assembly. 3,156,637, 11–10–64, Cl. 204—196.
Anderson Electric Corp.: *See*—
Minor, Leon C. 3,156,516.
Anderson, Joan G., and R. C. Giacomoni, to General Electric Co. Method and means for indicating the mode of failure of insulators. 3,156,866, 11–10–64, Cl. 324—72.
Anderson, Marvin H., Jr., and R. Mittermann, to Western Electric Co., Inc. Conveyor system. 3,156,193, 11–10–64, Cl. 104—88.
Anderson, Miller A., to Miller Anderson Pool Co. Swimming pool surface water removal system. 3,155,989, 11–10–64, Cl. 4—172.
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Clifford, Charles E., Zeltlin, and Antonsen. 3,156,624.
Antraigue, Roger. Wheel balancing means. 3,156,504, 11–10–64, Cl. 301—5.
Arkes, Jack H. Coin operated vending machine. 3,156,340, 11–10–64, Cl. 194—10.
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Armco Steel Corp.: *See*—
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Astheimer, Robert W., and H. F. Peterssen, to Barnes Engineering Co. Horizon sensor with reflective optics. 3,156,823, 11–10–64, Cl. 250—83.3.
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Attebo, Kurt A. G., to Atlas Copco Aktiebolag. Flow control valves. 3,156,262, 11–10–64, Cl. 138—43.
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Ayres, Reginald J., to General Electric Co. Electric lamp base end structure. 3,156,841, 11–10–64, Cl. 313—49.
Baasner, Wilhelm, to Agfa Aktiengesellschaft. Photographic printing apparatus. 3,156,172, 11–10–64, Cl. 95—75.

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Stallkamp, Hubert G., and Durham. 3,156,254.

Babcock & Wilcox Ltd.: *See*—
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Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
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Baert, Jean G. Means for regulating the heat supply during the drying of paper. 3,156,540, 11–10–64, Cl. 34—48.

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Bahner, Wilburn E. Refrigerated lunch box. 3,156,105, 11–10–64, Cl. 62—371.

Bahnsen, Ralph J., and J. F. Dirac, to International Business Machines Corp. Data processing system with look ahead feature. 3,156,897, 11–10–64, Cl. 340—172.5.

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Baldwin, John E., and E. L. Capener, to United States of America, Navy. Process for bonding salt to metal ballistic rod. 3,156,379, 11–10–64, Cl. 117—62.2.

Baltz, George M. Process and apparatus for grinding a shell milling cutter. 3,156,074, 11–10–64, Cl. 51—122.

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Baratelli, Charles A. to Pennsylvania Optical Co. Eyeshield 3,155,982, 11–10–64, Cl. 2—12.

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Barnes, Hugh R., to Holley Computer Products Co. Permanent magnet hammer module in high speed printers. 3,156,180, 11–10–64, Cl. 101—93.

Barnes, Llewellyn T., 33⅓% to C. T. Barnes. Idling fuel-supply control mechanism for induction carburetors of vehicles. 3,156,333, 11–10–64, Cl. 192—3.

Barney, Harold L., and M. B. Gardner, to Bell Telephone Laboratories, Inc. Method of and apparatus for automatically measuring sound transmission characteristics of a room. 3,156,316, 11–10–64, Cl. 181—.5.

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Barry, Frank W., to United Aircraft Corp. Gaseous sealing means in an apparatus for working materials by a beam of charged particles. 3,156,811, 11–10–64. Cl. 219—121.

Bartels, Ernst-August, to Chemische Werke Albert. Seed stock protecting agent in drillable form. 3,156,550, 11–10–64, Cl. 71—2.4.

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Bateman, Henry S.: *See*—
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Batou, Boris, to Anstalt fur die Enlwicklung von Erfindungen und gewerblichen Anwendungen Energa. Rifle-grenades. 3 156,187, 11–10–64, Cl. 102—41.

Batterton, Elmo L., W. C. Roecker, and M. F. Dodson, to Meyer Mfg. Co. Balancing means for elevator receiving conveyor. 3,156,344, 11–10–64, Cl. 198—91.

Baude, John, to Allis-Chalmers Mfg. Co. Gate having voltage divider shunting series emitter-collector paths and individual base-bias level setting means equalising transistor leakage currents. 3,156,831, 11–10–64. Cl. 307—88.5.

Baumgartner, Herman J., and R. M. Roberts, to Shell Oil Co. Hydrogen peroxide decomposition. 3,156,089, 11–10–64. Cl. 60—35.4.

Beardow, George M., to Vitramon, Inc. Push rod or similar device. 3,156,806, 11–10–64, Cl. 200—172.

Beck, Hugo M., to United States of America, Navy. Passive transistor-magnetic core switching system. 3,156,904, 11–10–64, Cl. 340—174.

Bedford, William A., Jr., to Bremer, Thompson & Co. Sheet metal fastener with T-shaped key. 3,156,282, 11–10–64, Cl. 151—41.75.

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Bertin, Daniel, and L. Nedelec, to Roussel-Uclaf, S.A. 20a(β-[N,N-dimethyl-amino] - ethylamino) - 19 - nor - Δ',3,5(10)-pregnatrienes, process for preparation thereof and method of treatment. 3,156,619, 11–10–64, Cl. 167—65.

Besse, Carl H. Paraffin scraper and tool for applying. 3,156,286, 11–10–64, Cl. 153—32.

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Blaisdell, Leroy A., to American Can Co. Dyestuffs and alkali metal salts of wood sugar acids and lignin sulfonates. 3,156,520, 11–10–64, Cl. 8—91.

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Bledsoe, Martin L. Quick disconnect sweep. 3,156,807, 11–10–64, Cl. 172—744.

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Blodee, Leif, to Herman Miller, Inc. Stacking chairs. 3,156,498, 11–10–64, Cl. 297—162.

Blomquist, Orlo J. Wedge type open combustion chamber for improved combustion in diesel engines. 3,156,223, 11–10–64, Cl. 123—32.

Blonder-Tongue Electronics: *See*—
Tongue, Ben H. 3,156,872.

Blumberg, Morris, to Interchemical Corp. Rubber composition and article of manufacture containing said composition. 3,156,606, 11–10–64. Cl. 161—176.

Boehme, Herman F., to Loewy Machinery Supplies Co., Inc. Grinding apparatus. 3,156,072, 11–10–64, Cl. 51—32.

Bon, Charles K.: *See*—
Moyer, John R., Bon, and Schechter. 3,156,528.

Bondley, Ralph J., to General Electric Co. Vacuum tight electromagnetic radiation permeable window seal. 3,156,881, 11–10–64, Cl. 333—98.

Bondley, Ralph J., to General Electric Co. Vacuum tight electromagnetic radiation permeable window seal. 3,156,882, 11–10–64, Cl. 333—98.

Bonfiglio, Anthony. Shorting means for ignition systems. 3,156,795, 11–10–64, Cl. 200—61.52.

Borden Co., The: *See*—
Gordon, Philip L., Dean, and Diedrich. 3,156,663.

Borie, Henry P., Jr. Remote control mechanical actuator. 3,156,132, 11–10–64, Cl. 74—424.8.

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Griffin, Joan M., Bouchard, and Konigsbacher. 3,156,569.

Boudouris, Angelo. Communication system for drive-in restaurants and other applications. 3,156,774, 11–10–64, Cl. 179—16.

Boulet, Charles, to Halo-Flite International Inc. Methods of effecting heat exchange and heat transfer devices therefor. 3,156,455, 11–10–64, Cl. 263—21.

Bourquard, Fernand, to Commissariat a l'Energie Atomique. Supersonic compressors. 3,156,407, 11–10–64, Cl. 230—120.

Bowers, Albert: *See*—
Cross, Alexander D., and Bowers. 3,156,711.

Bowes, Donald R., and P. E. Regan, Jr., to Ethicon, Inc. Bicameral container. 3,156,369, 11–10–64, Cl. 215—6.

Boyer, Raymond, Sr., to The Bendix Corp. Brake adjusting mechanism. 3,156,323, 11–10–64, Cl. 188—79.5.

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Goodall, Kenneth C., Jr., and Bradford. 3,156,290.

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Bradley, Robert W., and G. F. C. Burke, to United Shoe Machinery Corp. Thread package. 3,156,432, 11–10–64, Cl. 242—163.

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Brannock, Kent C., and R. D. Burpitt, to Eastman Kodak Co. Acetylenic amines. 3,156,726, 11–10–64, Cl. 260—570.8.

Brassaw, Alden J.: *See*—
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Braun, Ottwin L., to Reliance Steel Products Co. Forced circulation water-cooled furnace door. 3,156,218, 11–10–64, Cl. 122—498.

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Gerard, George, and Brayman. 3,156,475.

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Brenner, Charles E.: *See*—
Werner, Raymond E., Young, Prichett, and Brenner. 3,156,724.

Brewer, Clifford E. Rivet feed machines. 3,156,342, 11–10–64, Cl. 198—33.

Brian, Robert C., to Imperial Chemical Industries Ltd. Herbicidal composiiton of reduced tendency to corrode iron and zinc. 3,156,551, 11–10–64, Cl. 71—2.4.

Briggs, Vernon R., to Thompson Ramo Wooldridge Inc. Electrical sign alanalyzing system. 3,156,817, 11–10–64, Cl. 235—181.

Bright, Willard M., to Lever Bros. Co. Heavy duty liquid detergent composition. 3,156,655, 11–10–64, Cl. 252—109

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Bristol Siddeley Engines Ltd.: *See*—
Gardiner, Terence E. G., and Garbutt. 3,156,298.

British Titan Products Co. Ltd.: *See*—
Evans, Arthur W., and Groves. 3,156,527.

Brock, Joe F. Magnetic tone arm suspension. 3,156,472, 11–10–64, Cl. 274—23.

Brock, John D., 50% to R. A. Burnette. Apparatus for controlling traveling webs. 3,156,426, 11–10–64, Cl. 242—56.2.

Brockway Glass Co.: *See*—
Hess, Finley B., and Erskine. 3,156,390.

Brossman, Philip D., and E. H. Price, to E. I. du Pont de Nemours and Co. Non-dusting, pigment with N-alkyl and cycloalkyl toluene sulfonamide-coated nylon molding compositions. 3,156,665, 11–10–64, Cl. 260—37.

Browell, Leslie J., and J. F. Denby, to Automatic Telephone & Electric Co. Ltd. Crossbar switches for use in automatic telephone systems. 3,156,780, 11–10–64, Cl. 179—22.

Brown, Carl S., to A. O. Smith Corp. Method and apparatus for forming a glass coated tubular roller element. 3,156,033, 11–10–64, Cl. 29—148.4.

Brown, Curtis L., to Midland-Ross Corp. Hydraulic master cylinder. 3,156,097, 11–10–64, Cl. 60—54.6.

Brown, Richard R. Guard for honeycomb cutters. 3,156,349, 11–10–64, Cl. 206—46.

Brucken, Byron L., and V. A. Williamitis, to General Motors Corp. Filter cartridge for a dry cleaning system. 3,156,648, 11–10–64, Cl. 210—209.

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Fiorino, Benjamin C., and Brunaschweiger. 3,156,875.

Bua, William J. Article dispenser having a removable supply cartridge. 3,156,378, 11–10–64, Cl. 221—197.

Buckle, Ernest P. Incinerators. 3,156,199, 11–10–64, Cl. 110—8.

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Granatek, Alphonse P., and Buckwalter. 3,156,617.

Bud, Martin. Time recording devices. 3,156,518, 11–10–64, Cl. 346—86.

Budahn, Burnell E. Method of manufacturing cheese continuously. 3,156,567, 11–10–64, Cl. 99—115.

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Buell, Roy D., Jr., to Buell Mfg. Co. Fluid operated sonic transducer. 3,156,212, 11–10–64, Cl. 116—137.

Bunker-Ramo Corp., The: *See*—
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Bunting, William W., Jr.: *See*—
Ashby, William C., Bunting, Meagher, Nelson, and Swayne. 3,156,395.

Burgess Vibrocrafters, Inc.: *See*—
Congdon, George L., and Benkovich. 3,156,044.

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Burke, John C.: *See*—
Considine, William J., Bernstein, and Burke. 3,156,722.

Burke, Joseph E., to United States of America, Atomic Energy Commission. Method of making fuel compacts for neutronic systems. 3,156,747, 11–10–64, Cl. 264—21.

Burkhard, John, to American Machine & Foundry Co. Cigarette machine for making mouthpiece cigarettes. 3,156,246, 11–10–64, Cl. 131—94.

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Josephson, Paul R., and Burkhart. 3,156,534.

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Burnette, Richard A.: *See*—
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Burpitt, Robert D.: *See*—
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Mollinga, Thomas. 3,156,832.
Smith, John G., and Solyst. 3,156,157.
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Buse, Gustav.: *See*—
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Bussell, George W., to Rinshed-Mason Co. Thermosetting mixture of a styrene-acrylic acid-epoxide-containing compound and an amine-aldehyde resin 3,156,740, 11–10–64, Cl. 260—45.2.

Bustamante, Cesar. Novelty fabric loom. 3,156,265, 11–10–64, Cl. 139—11.

Butler, George. Viner and separator machines. 3,156,363, 11–10–64, Cl. 209—112.

Butler, John M., and L. A. Miller, to Monsanto Co. Method of inhibiting growth of fungi and bacteria with ester of acetylenic acid and polyol. 3,156,612, 11–10–64, Cl. 167—22.

Byatt, Dennis W. G., to The Marconi Co. Ltd. Radio direction finders. 3,156,916, 11–10–64, Cl. 343—117.

Bystricky, Joseph C., F. G. Schweisthal, and E. G. Stock, to Stewart-Warner Corp. Lubricating device. 3,156,320, 11–10–64, Cl. 184—29.

Cadion, Jean, to Andre Citroen Societe Anonyme. Method of and device for the regulation of hydraulic motors. 3,156,159, 11–10–64, Cl. 91—175.

Caldwell, Richard L., to Socony Mobil Oil Co., Inc. Radioactive fluid flow measuring apparatus with means for injecting a marker material between the source and detector. 3,156,818, 11–10–64, Cl. 250—43.5.

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California Research Corp.: *See*—
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Foehr, Edward G. 3,156,653.
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Callery Chemical Co.: *See*—
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Cameron, Byron R. Apparatus for digestion of waste removed from septic tanks. 3,156 646, 11–10–64, Cl. 210—195.

Cameron, Donald J., to Cameron Windows (Aluminum) Ltd. Insulated metal structure. 3,156,332, 11–10–64, Cl. 189—75.

Cameron Windows (Aluminum) Ltd.: *See*—
Cameron, Donald J. 3,156,332.

Camloc Fastener Corp.: *See*—
Griffiths, Edward G. 3,156,493.

Camp, Albert T., and G. L. MacKenzie, to Lockheed Aircraft Corp. Chemical composition for producing heat. 3,156,595, 11–10–64, Cl. 149—87.

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Cannon Electric Co.: *See*—
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Picciano, Michael A., and Carlson. 3,156,186.

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Carr, Curtis E., to The Perkin-Elmer Corp. Data processing card punching. 3,156,148, 11–10–64, Cl. 83—34.

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Carter, Andrew G., and H. G. Alofs, said Carter assor. to A. G. and H. T. Carter. Separable fastener. 3,156,025, 11-10-64, Cl. 24—230.

Carter, Harriet T.: *See*—
Carter, Andrew G., and Alofs. 3,156,025.

Case, J. I., Co.: *See*—
Miller, Charles D. 3,156,124.

Cason, Garland, to California Research Corp. Flow target for well control apparatus. 3,156,261, 11-10-64, Cl. 137—800.

Caughey, John M., to Stubnitz Greene Corp. Terminal connections for linear spring elements. 3,156,461, 11-10-64, Cl. 267—110.

Celanese Corp. of America: *See*—
Dekking, Henri G. G. 3,156,676.
Dunay, Michael, and Noether. 3,156,680.
Dunlap, Donald T., and St. Pierre. 3,156,016.
Kallman, Martin, and Salvin. 3,156,519.
Kamins, Jack M., and Russell. 3,156,608.
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Weikal, Charles C. 3,156,887.

Celestini, Nadlos, to Automatic Electric Laboratories, Inc. Line finding arrangement. 3,156,779, 11-10-64, Cl. 179—18.

Cella, Richard T. Refuse container for use with pressure toilets. 3,155,988, 11-10-64, Cl. 4—8.

Chain Belt Co.: *See*—
Behrens, William H., Hudis, Neal, Arnosti, and Fricke. 3,156,170.

Chaloka, Andrew, to L. J. Wing Mfg. Co., Division of Aero-Flow Dynamics, Inc. Damper securing means. 3,156,446, 11-10-64, Cl. 251—298.

Chandler, Ollie W., to Commercial Solvents Corp. Purification of caprolactam. 3,156,683, 11-10-64, Cl. 260—239.3.

Chapin, Jay W., and J. S. Williams, Emergency sea water demineralizer. 3,156,645, 11-1064, Cl. 210—120.

Chapman, James E., to The Garrett Corp. Thermodynamic engine. 3,156,093, 11-10-64, Cl. 60—39.43.

Chemetron Corp.: *See*—
Joy, Ivan L. 3,156,111.

Chemical Corp. of America: *See*—
Feinberg, Irving. 3,156,661.

Chemische Fabrik Promonta, G.m.b.H.: *See*—
Hackmack, Gerhard, and Krastinat. 3,156,686.

Chemische Werke Albert: *See*—
Bartels, Ernst-August. 3,156,550.

Chemische Werke Huls Aktiengesellschaft: *See*—
Hofermann, Horst, and Springmann. 3,156,702.

Chessin, Hyman, and J. J. J. L. Hilhorst, to Van Der Horst Corp. of America. Method of applying particles to an electrofoam during electroplating. 3,156,632, 11-10-64, Cl. 204—16.

Chicago Rawhide Mfg. Co.: *See*—
Nelson, Robert S. 3,156,474.

Chicago Roller Skate Co., The: *See*—
Ware, Gordon K. 3,156,482.

Chleger, George, to Fruehauf Corp. Trailer body side wall and rail construction. 3,156,503, 11-10-64 Cl. 296—28.

Chisholm, William A., to Arlington Seating Co. Seat structures. 3,156,502, 11-10-64, Cl. 297—452.

Ciba Corp.: *See*—
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Ciba Ltd: *See*—
Meier, Edwin, and Schweizer. 3 156,638.

Cirone, Frank P., to Bell Telephone Laboratories, Inc. Supervisory circuits for telephone subscriber's line. 3,156,778, 11-10-64, Cl. 179—18.

Citroen, Andre, Societe Anonyme: *See*—
Cadiou, Jean. 3,156,159.

Clark Equipment Co.: *See*—
Lauck, John A. 3,156,191.

Classe, Gustav-Adolf, to Telefunken Gesellshcaft mit beschrantter Haftung. Conductor centering arrangement for traveling field tube. 3,156,845, 11-10-64, Cl. 315—3.5.

Clauss, Emil: *See*—
Adam, Hans, Orth, and Clauss. 3,156,203.

Cleary, Donald R.: *See*—
Kopan, Raymond L., and Cleary. 3,156,908.

Clements Mfg. Co.: *See*—
Berthelot, Arthur P., Clements, and Jason. 3,155,996.

Clements, William J.: *See*—
Berthelot, Arthur P., Clements, and Jason. 3,155,996.

Clevite Corp.: *See*—
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Schweitzer, Earl O. 3,156,319.

Clifford, Charles E., H. R. Zeltlin, and K. Antonsen, to General Dynamics Corp. Nuclear reactor system. 3,156,624, 11-10-64, Cl. 176—12.

Clothier, Norman G., J. H. McKendree, and V. J. Picozzi, to General Electric Co. Magnetic core for dynamoelectric machines. 3,156,840, 11-10-64, Cl. 310—259.

Cloud, Harley A., P. B. Flagg, and W. K. Mead, to International Business Machines Corp. Sense circuits employing tunnel diodes or the like. 3,156,833, 11-10-64, Cl. 307—8.5.

Clynes, Manfred E. Ultrasonic detection and visualization of internal structure. 3,156,110, 11-10-64, Cl. 73—67.8.

Coffield, Thomas H., and A. H. Filbey, to Ethyl Corp. Stabilized organic material. 3,156,543, 11-10-64, Cl. 44—78.

Cogan, Stanley W.: *See*—
Eyestone, Shirley F., Cogan, and Mehm. 3,156 047.

Cohan, Marvin M., deceased, by H. Cohan, executrix. Bowling ball grip fitting device. 3,156,048, 11-10-64, Cl. 33—174.

Cohan, Hilda: *See*—
Cohan, Marvin M. 3,156,048.

Cokeley, Bruce J.: *See*—
Harrison, Thomas, and Cokeley. 3,156,240.

Colbert, Earl F. Speed regulating attachment for tape recorders. 3,156,324, 11-10-64, Cl. 188—80.

Cole, Thomas M., and R. B. Goody, to Federal Pacific Electric Co. Current limiting fuse unit with casing sealing its terminals. 3,156,801, 11-10-64, Cl. 200—120.

Collen, Edwin G., to General Precision Inc. Dual cantilever mounted scanning mechanism. 3,156,759, 11-10-64, Cl. 88—97.

Collyer, Philip W., to Barnes Engineering Co. Optical instrument for measuring elemental surface displacements. 3,156,755, 11-10-64, Cl. 88—14.

Commercial Solvents Corp.: *See*—
Chandler, Ollie W. 3,156,683.
Miescher, Guido M. 3,156,627.

Commissariat a l'Energie Atomique: *See*—
Alles, Maurice, Camatte, Martin, and Pellerin. 3,156,394.
Bourquard, Fernand. 3,156,407.

Condurelli, Emanuele: *See*—
Messina, Giuseppe, De Pisapia, Spano, and Condurelli. 3,156,741.

Congdon, George L., and J. A. Benkovich, to Burgess Vibrocrafters, Inc. Electric can opener. 3,156,044, 11-10-64, Cl. 30—4.

Congost Horta, Luis, and M. Asensio Maicas. Apparatus for examining material containing information. 3,156,427, 11-10-64, Cl. 242—67.4.

Conner, Guy O., to Republic Steel Corp. Spindle control for threading machines. 3,156,122, 11-10-64, Cl. 74—22.

Connoy, Eugene N., and R. J. Wilkie, to Continental Machines Inc. Diamond edge saw blade. 3,156,077, 11-10-64, Cl. 51—395.

Considine, William J., J. Bernstein, and J. C. Burke, to Olin Mathieson Chemical. 2,2-dialkylcyclopropanemethylamines. 3,156,722, 11-10-64, Cl. 260—563.

Container Corp. of America: *See*—
Goldstein, Mark. 3,156,403.

Continental Aviation and Engineering Corp.: *See*—
Wallace, William A., and Pecha. 3,156,162.

Continental Can Co., Inc.: *See*—
Dupuis, Clyde F. 3,156,402.
Plazze, Thomas E. 3,156,273.

Continental Machines, Inc.: *See*—
Connoy, Eugene N., and Wilkie. 3,156,077.

Cooper, Duane E. Telephone numbers register. 3,156,057, 11-10-64, Cl. 40—68.

Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Dyeable polypropylene fibers containing acrylate and methacrylate units in polymeric form. 3,156,743, 11-10-64, Cl. 260—897.

Cope, Andrew P., to E. I. du Pont de Nemours and Co. Method and apparatus for heat treating filaments. 3,156,752, 11-10-64, Cl. 264—345.

Cordis Corp.: *See*—
Williamson, Donald E. 3,156,236.

Coriet, Gabriel F., to A.D.G. Societe d'Application des gaz, Produits Routiers et Materiaux. Stoves and like apparatus operating with liquefied gas. 3,156,379, 11-10-64, Cl. 222—5.

Cornell, Richard H., to General Electric Co. Engine fuel control. 3,156,291, 11-10-64, Cl. 158—36.4.

Cornell-Dubilier Corp.: *See*—
Beyer, Haim. 3,156,854.

Costantini, Anthony R., and A. Di Angelus, to Victory Metal Mfg. Co., d.b.a. Victory Metal Mfg. Corp. Refrigerator construction. 3,156,102, 11-10-64, Cl. 62—237.

Cox, Jay A., to Gulton Industries, Inc. Shielded direct current amplifier. 3,156,859, 11-10-64, Cl. 321—8.

Cox, John E.: *See*—
Horwitz, Henry L., Cox, and Westhead. 3,156,777.

Crain, Robert E. Grip holder for pistols. 3,156,059, 11-10-64, Cl. 42—71.

Crane Co.: *See*—
Valdes, Thomas H., and Rinck. 3,156,751.

Crane, Jack P., to Gist Mfg. Co. Drill string shock absorbers. 3,156,106, 11-10-64, Cl. 64—27.

Criscione, John M.: *See*—
Edwards, Lawrence J., Criscione, and Pearson. 3,156,530.

Crocker, Clark F., and M. Prager, to Raytheon Co. Analog-to-digital converter system. 3,156,913, 11-10-64, Cl. 340—347.

Cronquist, Donald H., and R. C. Treseder, to International Business Machines Corp. Record eccentricity detector and centering arrangement for recording machines. 3,156,918, 11-10-64, Cl. 346—74.

Cross, Alexander D., and A. Bowers, to Syntex Corp. Novel Δ^5-3-desoxyandrostene and $\Delta^{3,5}$-3-desoxyandrostadiene derivatives. 3,156,711, 11-10-64, Cl. 260—397.5.

Crowe, George A., Jr., to Johnson & Johnson. Flexible absorbent sheet. 3,156,242, 11-10-64, Cl. 128—96.

Crowl, James S., to Acheson Industries, Inc. Method for making molybdenum disulfide. 3,156,420, 11-10-64, Cl. 241—16.

Crown Industrial Products Co.: *See*—
Yetter, Dean B. 3,156,385.

Crown Machine & Tool Co.: *See*—
Harrison, James M. 3,156,015.
Harrison, James M. 3,156,371.

Crown Zellerbach Corp.: *See*—
Weis, Rudolf R. 3,156,165.

Crucible Steel Co. of America: *See*—
Vordahl, Milton B. 3,156,590.

Cuculo, John A., to E. I. du Pont de Nemours and Co. Process of producing polycaprolactam monofilaments. 3,156,750, 11-10-64, Cl. 264—178.

Cummins, Richard E., to International Business Machines Corp. Transducer positioning mechanism in a random access memory system. 3,156,906, 11-10-64, Cl. 340—174.1.

Curtiss-Wright Corp.: *See*—
Kraus, George. 3,156,091.

Curwen, Peter W., to Mechanical Technology Inc. Resonant piston compressor. 3,156,405, 11-10-64, Cl. 230—55.

Czirr, Herbert J. Means to recover a lure or the like. 3,156,064, 11-10-64, Cl. 43—17.2.

Dahl, Erik, S. Okstad, and H. Skretting, to Elektrokemisk A/S. Process of producing metals from metal oxides. 3,156,557, 11-10-64, Cl. 75—4.

Dailey, John J. Fluid distribution elements. 3,156,099, 11-10-64, Cl. 61—14.

Dale, Ralph H., to Honeywell Inc. Reel support. 3,156,426, 11-10-64, Cl. 242—68.3.

Danfoss ved Ingenior Mads Clausen: *See*—
Porland, Kjeld. 3,156,413.

Dangauthier, Marcel, to Societe d'Etudes et d'Applications Industrielles Commerciales et Immobilieres "Inter-Technique." Balanced pneumatic suspensions including an automatic level control. 3,156,481, 11-10-64, Cl. 280—6.

Darash, Nicholas P., to The Warner & Swasey Co. Machine tool drives. 3,156,146, 11-10-64, Cl. 82—24.

Darland, William G., Jr., to United States of America, Navy. Eccentric separator for galvanic battery. 3,156,588, 11-10-64, Cl. 136—143.

Darnell, Rex C., to Michigan-Dynamics, Inc. Differential pressure indicator. 3,156,119, 11-10-64, Cl. 73—407.

Date, Kazuo H., to McGraw-Edison Co. High speed grounding switch. 3,156,800, 11-10-64, Cl. 200—106.

Datex Corp.: *See*—
Rosen, Norman J., Lewis, and Stanley. 3,156,793.

Davidson, Lucien V. Floating tong. 3,156,496, 11-10-64, Cl. 294—88.

Davidson, William E., to General Electric Co. Flooded boiler steam or spray iron. 3,156,054, 11-10-64, Cl. 38—77.

Davies, Richard E., to Associated Electrical Industries Ltd. Control of strip driving means. 3,156,397, 11-10-64, Cl. 226—42.

Davies, William T., F. H. Stark, and H. S. Bateman, to Rolls-Royce Ltd. Manufacture of turbine and compressor blades. 3,156,808, 11-10-64, Cl. 219—69.

Da Vinci, Anthony P.: *See*—
Anderer, Joseph H., Da Vinci, and McHugh. 3,156,605.

Davis, John S., to Equitable Paper Bag Co., Inc. Shopping bag. 3,156,166, 11-10-64, Cl. 93—35.

Davis, Ralph B., to University of Notre Dame. Arylcyanomethylene quinone oximes and their derivatives. 3,156,704, 11-10-64, Cl. 260—396.

Dawirs, Willis R.: *See*—
Fiske, Paul E., Keeran, Dawirs, Higgins, Terp, Humpherys, Szewzuk, Fischer, and Naylor. 3,156,895.

Dawley, Daniel B., to General Electric Co. Foam insulated door structure including electrical hinge. 3,156,019, 11-10-64, Cl. 20—16.

Dean, Donald E.: *See*—
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Delay, Manford S., 21.55% to R. B. Melhaus, and 21.55% to G. T. Moran. Trailer load-equalizing mechanism. 3,156,485, 11-10-64, Cl. 280—81.

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De Wald, Horace A., and R. D. Westland, to Parke, Davis & Co. 2-[4-(ortho substituted benzimidoyl)benzyl] pyridine compounds. 3,156,698, 11-10-64, Cl. 260—290.

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Dexter, Martin M. Knell, and E. A. Roskin, to Geigy Chemical Corp. 6(N-acyl-alkylhydroxyanilino)-2,4-bis-(alkylthio)-1,3,5-triazines. 3,156,690, 11-10-64 Cl. 260—249.5.

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Foehr, Edward G., to California Research Corp. Transmission fluid. 3,156,653, 11–10–64, Cl. 252—78.

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Freericks, Lambert, H. L. Kukasch, and T. B. Luzon, to American Telephone and Telegraph Co. Telephone message unit recording system. 3,156,773, 11–10–64, Cl. 179—7.

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Dexter, Martin, Knell, and Roskin. 3,156,690.

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Nelden, Richard M., to American Radiator & Standard Sanitary Corp. Torque limiting fluid drive. 3,156,335, 11–10–64, Cl. 192—3.2.

Nelligan, James H., to Donald F. Duncan, Inc. Return top having conical apertures for producing sound. 3,156,068, 11–10–64, Cl. 46—61.

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Nelson, Robert S., to Chicago Rawhide Mfg. Co. Self-contained oil seal assembly. 3,156,474, 11–10–64, Cl. 277—39.

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Neuhauser, William J., and R. V. Villiers, to Reynolds Metals Co. Metal foil package for annealing. 3,156,357, 11–10–64, Cl. 206—59.

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Nichols, Ellsworth G.: *See*—
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Nixon, David S., Jr., to General Radio Co. High-frequency decade counting system employing gating network responsive to all counting stages. 3,156,870, 11–10–64, Cl. 328—45.

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O'Connell, Alva D., to General Electric Co. Sealing and sound absorbing means for air handling apparatus. 3,156,-233, 11–10–64, Cl. 126—110.

Oishei, John R., and M. Bitzer. Windshield cleaner. 3,155,-999, 11–10–64, Cl. 15—250.2.

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Olson, Karel H., and N. Schwartz, to Bell Telephone Laboratories, Inc. Film-forming metal capacitors. 3,156,633, 11–10–64, Cl. 204—38.

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Orloff, Harold D., and C. J. Worrel, to Ethyl Corp. Thiobis (2,6-dialkylaniline) compounds. 3,156,728, 11–10–64, Cl. 260—578.

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Page, John S., and Page, J. S., Jr. Method and apparatus for protecting wells. 3,156,300, 11–10–64, Cl. 166—66.5.

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Peterson, Robert G., Panek, and Shulte. 3,156,513.

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Peterson, Robert G., G. J. Panek, and F. E. Schulte, to International Telephone and Telegraph Corp. Auxiliary locking device for quick disconnect umbilical connector. 3,156,512, 11–10–64, Cl. 339—45.

Peterson, Robert G., G. J. Panek, and F. E. Schulte, to International Telephone and Telegraph Corp. Peripheral tang lock for quick disconnect umbilical connector. 3,156,513, 11–10–64, Cl. 339—45.

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Kerr, Ralph O. 3,156,707.

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Dexter, Martin, Knell, and Roskin. 3,156,690.
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Smith, Donald P. Poultry shackle. 3,156,007, 11–10–64, Cl. 17—44.1.

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Suter, Hans A., and F. B. McAndrew, to Celanese Corp. of America. Method for preparing trioxane-cyclic ether copolymers. 3,156,671, 11–10–64, Cl. 260—67.

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Takeda, Yasuo, to Kawasaki Jukogyo Kabushiki Kaisha (Kawasaki Dockyard Co., Ltd.). Initial stages for a steam turbine. 3,156,447, 11–10–64, Cl. 253—69.

Talbert, Elmer H. Elevating and transporting device. 3,156,484, 11–10–64, Cl. 280—35.

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Tarkington, Terry W., and C. D. Whitt, to Monsanto Co. Stabilized acrylonitrile polymer compositions. 3,156,742. 11–10–64, Cl. 260—895.

Tauson, Peter O., to Armco Steel Corp. Hydraulic transmissions. 3,156,095, 11–10–64, Cl. 60—54.

Taylor, Thomas S. : *See*—
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Toedtman, John A., to Jasper Blackburn Corp. Compressible electrical connector with internal deformable ribs. 3,156,764, 11–10–64, Cl. 174—94.

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Tolbert, Nathan E., to Research Corp. Method of controlling relative stem growth. 3,156,555, 11–10–64, Cl. 71—2.7.

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Uribe M., Antonio. Traction helmet. 3,156,239, 11–10–64, Cl. 128—75.

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Van Dijk, Pieter, deceased (by H. J. van Dijk-Groeneveld, heir), and J. van Silfhout, to Research, N.V. False twist device. 3,156,084, 11–10–64, Cl. 57—77.4.

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Van Duuren, Hendrik C. A., C. J. van Dalen, and H. de Silva, to De Staat der Nederlanden ten Deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie. System for establishing and maintaining synchronism in duplex telegraph system. 3,156,767, 11–10–64, Cl. 178—58.

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Veith, Werner, to Siemens & Halske Aktiengesellschaft. Amplifier tube having a thermionic cathode without heater. 3,156,844, 11–10–64, Cl. 313—305.

Verdibello, Ambrose A., to International Business Machines Corp. Bidirectional memory and gate synchronizing circuit for a variable frequency oscillator. 3,156,874, 11–10–64 Cl. 331—27

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Von Wartburg, Rene, to J. Eggert. Production of photographic images making use of the intensity-reversal effect. 3,156,564, 11–10–64, Cl. 96—45.

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Warnant, Julien, R. Joly, A. Allais, and P. Girault, to Roussel-UCLAF. Process for the production of 3α-phosphato-5β-androstane-11-one. 3,156,713, 11–10–64, Cl. 260—397.45.

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Weiss, Ernst, and R. A. Prokesch, to E. I. du Pont de Nemours and Co. Process for crimping textile yarn. 3,156,028, 11–10–64, Cl. 28—72.

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Williams, Charles. Installation equipment for successive elongated units. 3,156,036, 11–10–64, Cl. 29—203.

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437: 3,156,716
455: 3,156,717
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573: 3,156,727
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260— 583: 3,156,729
601: 3,156,730
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653.1: 3,156,732
668: 3,156,739
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683.75: 3,156,738
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895: 3,156,742
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48: 3,156,748
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345: 3,156,752
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110: 3,156,461
269— 21: 3,156,462
271— 54: 3,156,463
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272— 57: 3,156,465
85: Re.25,677
273— 54: 3,156,466
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134: 3,156,468
135: 3,156,469
176: 3,156,470
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274— 23: 3,156,472
275— 15: 3,156,473
277— 39: 3,156,474
58: 3,156,475
95: 3,156,476
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279— 42: 3,156,478
76: 3,156,479
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280— 6: 3,156,481
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12: 3,156,483
35: 3,156,484
81: 3,156,485
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285— 114: 3,156,489
285— 121: 3,156,490
243: 3,156,491
291— 42: 3,156,492
292— 164: 3,156,493
256.69: 3,156,494
336.3: 3,156,495
294— 88: 3,156,496
296— 28: 3,156,503
95: 3,156,497
297— 162: 3,156,498
307: 3,156,499
333: 3,156,501
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452: 3,156,502
299— 4: Re.25,682
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305— 30: 3,156,505
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3,156,834
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243: 3,156,507
310— 22: 3,156,835
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42: 3,156,838
156: 3,156,839
259: 3,156,840
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223: 3,156,510
313— 49: 3,156,841
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271: 3,156,843
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317— 4: 3,156,847
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318— 19: 3,156,855
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321— 8: 3,156,859
18: 3,156,860
323— 66: 3,156,861
324— 34: 3,156,862
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174.1: 3,156,906
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345: 3,156,910
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D83— 1: 199,551
D85— 8: 199,552
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P.— 68: 2,451

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 10, 1964 Volume 808 Number 2

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

Service by Publication

A concurrent use proceeding involving the registration identified below having been instituted, and the notice of such proceeding sent by registered mail to the registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that the registrant listed herein, her assigns or legal representative is allowed thirty days from the date of this publication to enter an appearance for the purpose of defending said registration.

Juliet Johanna Jonas, also known as Juliet J. Jonas, New York, N.Y., Reg. No. 220,395, Concurrent Use No. 269.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15,640
Date of oldest new application	Mar. 2, 1964
Date of oldest amended application	Feb. 21, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-2-64	3-2-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-2-64	2-21-64
Renewals (All Classes)	9-8-64	9-29-64
Sec. 12 (c) Publications (All Classes)	9-14-64	--

Applications filed during the month of September 1964—2175

Registrations Issued ..... 412—No. 779,676 to No. 780,087
Renewals Issued 45

The TRADEMARK SECTION of the OFFICIAL GAZETTE issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 40,619 (PEPSI-COLA), Caleb D. Bradham, Flavoring syrup for soda water; **Reg. No. 51,959** (PEP-KOLA), same, Non-alcoholic tonic beverages; **Reg. No. 55,199** (PEPSI-COLA), same, A tonic beverage; **Reg. No. 111,508** (PEPSI), The Pepsi-Cola Co., A flavoring-syrup for soda-water; **Reg. No. 349,886** (PEPSI-COLA), same, Beverages and sirups for the manufacture of such beverages; **Reg. No. 349,985** (PEPSI-COLA AND DESIGN), same; **Reg. No. 350,201** (PEPSI-COLA), same, Bottle closures, particularly crowns; **Reg. No. 356,723,** same, Wooden receptacles and cases and racks for bottles, which cases and racks are sold in trade empty; **Reg. No. 369,426,** same, Beverage coolers sold in trade empty; **Reg. No. 716,288** (PEP), Dr. Pepper Company, Soft drinks, and syrups for making same, **filed** Feb. 26, 1963, D.C., N.D. Tex. (Dallas), Doc. 3-63-56, *Pepsi-Cola Company* v. *Dr. Pepper Company*. Final judgment, Reg. Nos. 40,619; 51,959; 55,199; 111,508; 349,886; 349,985; 350,201; 356,723; and 369,426 held valid and infringed; Reg. No. 716,288 should be cancelled; defendant enjoined Dec. 20, 1963.

Reg. No. 51,959. (See Reg. No. 40,619.)

Reg. No. 55,199. (See Reg. No. 40,619.)

Reg. No. 111,508. (See Reg. No. 40,619.)

Reg. No. 349,886. (See Reg. No. 40,619.)

Reg. No. 349,985. (See Reg. No. 40,619.)

Reg. No. 350,201. (See Reg. No. 40,619.)

Reg. No. 356,723. (See Reg. No. 40,619.)

Reg. No. 369,426. (See Reg. No. 40,619.)

Reg. No. 526,842 (MONROE), Monroe Auto Equipment Company, Shock absorbers for the following articles—Namely, automobiles, trucks, busses, railway cars, and truck seats; **2,546,038,** B. D. McIntyre, SHOCK ABSORBER CONSTRUCTION; **Re. 23,421,** R. H. Whisler, Jr., SHOCK ABSORBER, **filed** Mar. 12, 1962, D.C. Kans. (Wichita), Doc. W-2600, *Monroe Equipment Company* v. *Precision Rebuilders, Inc.* Patents infringed; defendant enjoined; counterclaim dismissed Apr. 27, 1964.

Reg. No. 575,119 (ALIGN-A-MATIC), J. Love, Portable vehicle wheel toe-in and toe-out and camber indicator of the driveover class; **2,676,415,** J. Love, WHEEL TESTING INSTRUMENT, **filed** June 6, 1963, D.C.N.J. (Newark), Doc. 481-63, *Meyer Iglewitz et al.* v. *Paul Jacobson et al.* Order of dismissal May 28, 1964.

Reg. No. 716,288. (See Reg. No. 40,619.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 165,263. Saphier, Lerner, Schindler, Inc., New York, N.Y. Filed Mar. 22, 1963.

ENVIRONETICS

100—Miscellaneous

For Industrial Designing of Products of and for Others in the Area of Electronics, Communications, Home Furnishings, and Acoustics.

103—Construction and Repair

For Custom Designing of Office and Home Interiors.
First use Feb. 1, 1963.

SN 170,128. United States Rubber Company, New York, N.Y. Filed May 31, 1963.

U.S. PERMOBOND

Owner of Reg. Nos. 346,727 and 736,172.

Class 1—Raw or Partly Prepared Materials

For Natural and Synthetic Rubber Linings Useful to Line Tanks, Pipes and Fittings, and the Like.
First use April 1963.

Class 5—Adhesives

For Natural and Synthetic Rubber Cements for Such Linings
First use May 1962.

SN 172,354. Hydro-Meca, Paris, France. Filed June 28, 1963.

TWIN-BOX

Priority claimed under Sec. 44(d) on French Reg. No. 512,978, dated Apr. 25, 1963 (Seine); Natl. Inst. No. 204,226.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic Valves and Check Valves; Pressure Reducing and Relief Valves; and Hydraulic Transmission Valves.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors; Electrically Operated Valves and Hydraulic Pressure Operated Switches.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hydraulic Controls and Power Systems for Use With Road-Making Equipment, Fork Lift Trucks, Tractors; Hydraulic Accumulators; Hydraulic Activators; Hydraulic Motors; Hydraulic Pump-Motor Units; Hydraulic Pumps; Hydraulic Power Steering Units; Hydraulic Reservoirs, Servo and Remote Control Systems; Hydraulic Shock Absorbers; Hydraulic Winches; Hydraulic Machine Tools—Namely, Lathes, Mills, Band Saws, Boring Machines; Hydraulic Gear Pumps and Motors.

Class 7—Cordage

SN 174,583. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Aug. 7, 1963.



For Tying Ribbons, Bows, and Related Binding Materials.
First use at least as early as September 1960.

Class 37—Paper and Stationery

For Stationery—Namely, Writing Paper, Note Paper and Envelopes; Gift Wrapping Materials—Namely, Wrapping Papers and Tissues, Foils, Cellophane, and Kindred Wrapping Materials; Seals, Labels and Tags, With or Without Attached Ornaments; Party Table Supplies—Namely, Paper Table Coverings, Place Mats, Napkins, Cocktail Napkins, Coasters, and Plates; Invitations; Announcements; Place Cards; Bridge Tallies; Enclosure Cards.
First use at least as early as September 1960.

Class 38—Prints and Publications

For Greeting Cards—Namely, Birthday Cards, Christmas Cards, Easter Cards, Valentines; Holiday Cards; Get Well Cards; Sympathy Cards; Special Event Cards; Cut-Out Cards; Children's Activity Cards; Card Making Kits; Calendar Booklets; Booklets of Verses; Decorated Note Paper; Printed Seals, Labels and Tags, With or Without Attached Ornaments.
First use at least as early as September 1960.

Class 50—Merchandise Not Otherwise Classified

For Party Decorations, Favors, and Novelty Party Supplies.
First use at least as early as Jan. 1, 1961.

SN 174,584. Gibson Greetings Cards, Inc., Cincinnati, Ohio. Filed Aug. 7, 1963.



Owner of Reg. No. 503,979.

Class 7—Cordage

For Tying Ribbons, Bows, and Related Binding Materials.
First use at least as early as 1930.

Class 37—Paper and Stationery

For Stationery—Namely, Writing Paper, Note Paper and Envelopes; Gift Wrapping Materials—Namely, Wrapping Papers and Tissues, Foils, Cellophane, and Kindred Wrapping Materials; Seals, Labels and Tags, With or Without Attached Ornaments; Party Table Supplies—Namely, Paper Table Coverings, Place Mats, Napkins, Cocktail Napkins, Coasters, and Plates; Invitations; Announcements; Place Cards; Bridge Tallies; Enclosure Cards.
First use at least as early as 1930.

Class 38—Prints and Publications

For Greeting Cards—Namely, Birthday Cards, Christmas Cards, Easter Cards, Valentines; Holiday Cards; Get Well Cards; Sympathy Cards; Special Event Cards; Cut-Out Cards; Children's Activity Cards; Card Making Kits; Calendar Booklets; Booklets of Verses; Decorated Note Paper; Printed Seals, Labels and Tags, With or Without Attached Ornaments.
First use at least as early as Jan. 1, 1847.

Class 50—Merchandise Not Otherwise Classified

For Party Decorations, Favors, and Novelty Party Supplies.
First use at least as early as Jan. 1, 1961.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 167,364. J. H. Benecke, Kommanditgesellschaft, Hannover-Vinnhorst, Germany. Filed Apr. 23, 1963.

PACELLA

Priority claimed under Sec. 44(d) on German application filed Oct. 23, 1962; Reg. No. 780,305, dated Nov. 25, 1963.
For Synthetic Leather; Synthetic Leather for Boots, Shoes, Overshoes, Other Footwear, Uppers, Soles, Shoe Lining, and Other Shoe Material; Plastic Foils, and Plastic Sheets.

SN 174,810. United Clay Mines Corporation, Trenton, N.J. Filed Aug. 9, 1963.

OWEN CLAY

No exclusive claim is made to the word "Clay" apart from the mark as shown.
For Ingredient—Namely, Clay, for Use in the Manufacture of Floor Tile, Wall Tile, Sanitaryware, Electrical Porcelain, Refractories, and as an Additive for Increasing the Fire Resistance of Fiberglass and Mineral Fiber Board.
First use May 1, 1954.

SN 187,598. National Distillers and Chemical Corporation, New York, N.Y. Filed Feb. 27, 1964.

ULTRATHENE

Owner of Reg. No. 764,486.
For Polyolefin Copolymers in Pelletized Form.
First use Jan. 7, 1964.

SN 189,006. Monsanto Chemical Company, St. Louis, Mo. Filed Mar. 18, 1964.

RJ-100

For Resinous Polyols.
First use Nov. 1, 1963.

SN 189,017. Rohm & Haas Company, Philadelphia, Pa. Filed Mar. 18, 1964.

KYDEX

Owner of Reg. No. 703,068.
For Synthetic Resinous Materials in the Form of Sheets.
First use on or about Feb. 28, 1964.

SN 189,284. General Latex and Chemical Corporation, Cambridge, Mass. Filed Mar. 23, 1964.

VULTACRYL

Owner of Reg. Nos. 240,652, 624,246, and others.
For Polymers Containing Acrylic Monomers in the Polymerized Form.
First use Jan. 23, 1964.

SN 189,285. General Latex and Chemical Corporation, Cambridge, Mass. Filed Mar. 23, 1964.

VULTACET

Owner of Reg. Nos. 240,652, 624,245, and 624,246.
For Polymers Containing Vinylacetate in the Polymerized Form.
First use Feb. 7, 1964.

SN 189,441. Checkmate Chemicals, Inc., Greenville, S.C. Filed Mar. 24, 1964.

ROOKPLAZ

For Thermoplastic Resin for Fabric Binding.
First use Mar. 17, 1964

SN 189,463. Charles Dana Gibson, d.b.a. Deer Run Farms, Hillsdale, N.Y. Filed Mar. 24, 1964.

CDG

For Registered Polled Hereford Cattle.
First use Oct. 15, 1962.

SN 189,551. Chemfax, Incorporated, Gulfport, Miss. Filed Mar. 25, 1964.

STYGENE

For Polynuclear Aromatic Polymers, Dark in Color and Sold in Liquid or Solid Form.
First use May 15, 1961.

SN 189,552. Ciba Corporation, New York, N.Y. Filed Mar. 25, 1964.

CYCLAL

For Synthetic Resins for Plastics.
First use Feb. 28, 1964.

SN 189,562. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Mar. 25, 1964.

CANTRECE

Owner of Reg. Nos. 687,742 and 688,056.
For Man-Made Fibers and Filaments for Generalised Use in the Industrial Arts.
First use Jan. 27, 1964.

SN 189,652. Chemfax, Incorporated, Gulfport, Miss. Filed Mar. 26, 1964.

Chemfax INCORPORATED

The word "Incorporated" is disclaimed apart from the mark as shown. The drawing is lined for the color green.
For Mineral Spirits, Soluble Resins, Petroleum Polymer Resins, Polynuclear Aromatic Polymers, Cyclopentadiene Polymer Resins, Acidolefin Interpolymers, Petroleum Tars and Pitches, All Sold in Liquid or Solid Form.
First use Apr. 1, 1955.

SN 190,145. Bernel Foam Products Company, Inc., Buffalo, N.Y. Filed Apr. 2, 1964.

ISOTHANE

For Flexible and Rigid Synthetic Foamed Plastic Material for General Use.
First use on or about Jan. 23, 1964.

SN 190,691. S. M. Arnold, Inc., St. Louis, Mo. Filed Apr. 9, 1964.

BRUT

For Chamois.
First use on or about Jan. 1, 1939.

SN 190,710. The Franklin Chemical Company, Columbus, Ohio. Filed Apr. 9, 1964.

DURACET

For Polyvinyl Acetate Resin Emulsion.
First use around January 1954.

SN 192,241. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Fibers and Fibrous Materials Used for Thermal and Sonic Insulation, Stuffing and Padding for Mattresses, Bolsters and Pillows, Padded Jackets, Wrappers, Bedjackets, and Articles of Wearing Apparel, and Imitation Leathers.

Class 2—Receptacles

SN 177,130. World Gift Company, Dallas, Tex. Filed Sept. 16, 1963.



For Brass Aftabas, Ceramic Canister Sets, Wooden Plates, Alabaster Trays, Aluminum Trays, Metal Trays, and Brass Trays.
First use Mar. 1, 1953.

SN 199,479. Metcraft Products, Inc., Baltimore, Md. Filed Aug. 7, 1964.

PORT-A-BIN

For Storage and Dispensing Bins for Dry Flowable and Liquid Bulk Products.
First use July 1, 1964.

SN 199,943. American Can Company, New York, N.Y. Filed Aug. 17, 1964.

GALA

For Waxed Paper Bags.
First use Jan. 31, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 197,299. William Elwood Hulan, d.b.a. Hulan Leather Shop, Shelbyville, Tenn. Filed July 7, 1964.

PERFECTION

For Dog Collars, Training Leashes, Whips, Check Cords, and Roading Harnesses.
First use Sept. 8, 1916.

Class 7—Cordage

For Tying Ribbons, Bows, and Related Binding Materials.
First use at least as early as 1930.

Class 37—Paper and Stationery

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First use at least as early as Jan. 1, 1847.

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SECTION 2

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Priority claimed under Sec. 44(d) on German application filed Oct. 23, 1962; Reg. No. 780,305, dated Nov. 25, 1963.
For Synthetic Leather; Synthetic Leather for Boots, Shoes, Overshoes, Other Footwear, Uppers, Soles, Shoe Lining, and Other Shoe Material; Plastic Foils, and Plastic Sheets.

SN 174,810. United Clay Mines Corporation, Trenton, N.J. Filed Aug. 9, 1963.

OWEN CLAY

No exclusive claim is made to the word "Clay" apart from the mark as shown.
For Ingredient—Namely, Clay, for Use in the Manufacture of Floor Tile, Wall Tile, Sanitaryware, Electrical Porcelain, Refractories, and as an Additive for Increasing the Fire Resistance of Fiberglass and Mineral Fiber Board.
First use May 1, 1954.

SN 187,598. National Distillers and Chemical Corporation, New York, N.Y. Filed Feb. 27, 1964.

ULTRATHENE

Owner of Reg. No. 764,486.
For Polyolefin Copolymers in Pelletized Form.
First use Jan. 7, 1964.

SN 189,006. Monsanto Chemical Company, St. Louis, Mo. Filed Mar. 18, 1964.

RJ-100

For Resinous Polyols.
First use Nov. 1, 1963.

SN 189,017. Rohm & Haas Company, Philadelphia, Pa. Filed Mar. 18, 1964.

KYDEX

Owner of Reg. No. 703,068.
For Synthetic Resinous Materials in the Form of Sheets.
First use on or about Feb. 28, 1964.

SN 189,284. General Latex and Chemical Corporation, Cambridge, Mass. Filed Mar. 23, 1964.

VULTACRYL

Owner of Reg. Nos. 240,652, 624,246, and others.
For Polymers Containing Acrylic Monomers in the Polymerized Form.
First use Jan. 23, 1964.

SN 189,285. General Latex and Chemical Corporation, Cambridge, Mass. Filed Mar. 23, 1964.

VULTACET

Owner of Reg. Nos. 240,652, 624,245, and 624,246.
For Polymers Containing Vinylacetate in the Polymerized Form.
First use Feb. 7, 1964.

SN 189,441. Checkmate Chemicals, Inc., Greenville, S.C. Filed Mar. 24, 1964.

ROOKPLAZ

For Thermoplastic Resin for Fabric Binding.
First use Mar. 17, 1964.

SN 189,463. Charles Dana Gibson, d.b.a. Deer Run Farms, Hillsdale, N.Y. Filed Mar. 24, 1964.

CDG

For Registered Polled Hereford Cattle.
First use Oct. 15, 1962.

SN 189,551. Chemfax, Incorporated, Gulfport, Miss. Filed Mar. 25, 1964.

STYGENE

For Polynuclear Aromatic Polymers, Dark in Color and Sold in Liquid or Solid Form.
First use May 15, 1961.

SN 189,552. Ciba Corporation, New York, N.Y. Filed Mar. 25, 1964.

CYCLAL

For Synthetic Resins for Plastics.
First use Feb. 28, 1964.

SN 189,562. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Mar. 25, 1964.

CANTRECE

Owner of Reg. Nos. 687,742 and 688,056.
For Man-Made Fibers and Filaments for Generalized Use in the Industrial Arts.
First use Jan. 27, 1964.

SN 189,652. Chemfax, Incorporated, Gulfport, Miss. Filed Mar. 26, 1964.

Chemfax INCORPORATED

The word "Incorporated" is disclaimed apart from the mark as shown. The drawing is lined for the color green.
For Mineral Spirits, Soluble Resins, Petroleum Polymer Resins, Polynuclear Aromatic Polymers, Cyclopentadiene Polymer Resins, Acidolefin Interpolymers, Petroleum Tars and Pitches, All Sold in Liquid or Solid Form.
First use Apr. 1, 1955.

SN 190,145. Bernel Foam Products Company, Inc., Buffalo, N.Y. Filed Apr. 2, 1964.

ISOTHANE

For Flexible and Rigid Synthetic Foamed Plastic Material for General Use.
First use on or about Jan. 23, 1964.

SN 190,691. S. M. Arnold, Inc., St. Louis, Mo. Filed Apr. 9, 1964.

BRUT

For Chamois.
First use on or about Jan. 1, 1939.

SN 190,710. The Franklin Chemical Company, Columbus, Ohio. Filed Apr. 9, 1964.

DURACET

For Polyvinyl Acetate Resin Emulsion.
First use around January 1954.

SN 192,241. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Fibers and Fibrous Materials Used for Thermal and Sonic Insulation, Stuffing and Padding for Mattresses, Bolsters and Pillows, Padded Jackets, Wrappers, Bedjackets, and Articles of Wearing Apparel, and Imitation Leathers.

Class 2—Receptacles

SN 177,130. World Gift Company, Dallas, Tex. Filed Sept. 16, 1963.



For Brass Aftabas, Ceramic Canister Sets, Wooden Plates, Alabaster Trays, Aluminum Trays, Metal Trays, and Brass Trays.
First use Mar. 1, 1953.

SN 199,479. Metcraft Products, Inc., Baltimore, Md. Filed Aug. 7, 1964.

PORT-A-BIN

For Storage and Dispensing Bins for Dry Flowable and Liquid Bulk Products.
First use July 1, 1964.

SN 199,943. American Can Company, New York, N.Y. Filed Aug. 17, 1964.

GALA

For Waxed Paper Bags.
First use Jan. 31, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 197,299. William Elwood Hulan, d.b.a. Hulan Leather Shop, Shelbyville, Tenn. Filed July 7, 1964.

PERFECTION

For Dog Collars, Training Leashes, Whips, Check Cords, and Roading Harnesses.
First use Sept. 8, 1916.

SN 199,848. Morris White Fashions, Inc., New York, N.Y. Filed Aug. 13, 1964.



For Ladies' and Children's Handbags.
First use July 17, 1939.

Class 4 — Abrasives and Polishing Materials

SN 189,554. Congoleum-Nairn Inc., Kearny, N.J. Filed Mar. 25, 1964.



Applicant disclaims the words "Fine Floors" apart from the mark as shown. The drawing is lined for blue. Owner of Reg. Nos. 78,472, 123,332, and 269,684.
For Floor Waxes.
First use Nov. 18, 1960.

SN 192,627. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

IMPERVIUM

For Heavy Duty Self-Polishing Waterproof Waxes, Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs, and/or Repackaging Under Their Own Brand Names.
First use on or about Mar. 9, 1953.

SN 192,629. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

PLEXIN

For Bacteria-Proof Floor Polishes Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs and/or Repackaging Under Their Own Brand Names.
First use on or about Nov. 10, 1958.

SN 192,681. Chemical Corporation of America, Tallahassee, Fla. Filed May 5, 1964.

GOLD LABEL
freewax

Owner of Reg. Nos. 589,892, 711,680, and 742,824.
For Floor Cleaning and Waxing Material.
First use Apr. 15, 1964.

Class 5 — Adhesives

SN 186,432. Arno Adhesive Tapes, Inc., Michigan City, Ind. Filed Feb. 11, 1964.



Applicant disclaims the representation of the roll of tape apart from the mark as shown. Owner of Reg. No. 758,633.
For Adhesive Coated Tapes Including Paper Masking Tape, Plastic Tape, Strapping Tape, Double-Faced Tape, Sealing Tape, Cloth Tape, Coated Cloth Tape. Pipe-Wrap Tape, and Adhesive Compounds of Elastomer-Based Dry Materials of the Character Commonly Referred to as Caulking Compound.
First use May 1957.

SN 192,918. LePage's, Inc., Pittsburgh, Pa. Filed May 7, 1964.

PASTY PALS

For Adhesives—Namely, White Paste of the Type Used by School Children.
First use Apr. 22, 1964.

Class 6 — Chemicals and Chemical Compositions

SN 133,918. Safe-T-Water Co., Half Moon Bay, Calif. Filed Dec. 11, 1961.

ANTIDISCRASSICUM

For Parasiticidal Preparation for Fish Marine Life.
First use September 1918.

SN 157,195. The British Drug Houses, Limited, London, England. Filed Apr. 2, 1963.

LASTIL

Owner of British Reg. No. 756,984, dated Aug. 27, 1956.
For Chemical Substances Being Fungicides.

SN 158,680. The Best Fertilizers Co. (Delaware corporation), Lathrop, Calif., assignee of The Best Fertilizers Co. (California corporation), Lathrop, Calif. Filed Dec. 7, 1962.

BEST

Owner of Reg. No. 736,988.
For Agricultural Chemicals—Namely, Insecticides, Pesticides, Fungicides, Herbicides, Nematocides and Rodenticides.
First use in or about 1957.

SN 158,681. The Best Fertilizers Co. (Delaware corporation), Lathrop, Calif., assignee of The Best Fertilizers Co. (California corporation), Lathrop, Calif. Filed Dec. 7, 1962.



Owner of Reg. No. 738,099.
For Agricultural Chemicals—Namely, Insecticides, Pesticides, Fungicides, Herbicides, Nematocides and Rodenticides.
First use in or about 1957.

SN 166,715. Hayes-Sammons Chemical Company, Mission, Tex. Filed Apr. 15, 1963.

KILL-TOX

For Agricultural Insecticide.
First use May 26, 1959.

SN 166,716. Hayes-Sammons Chemical Company, Mission, Tex. Filed Apr. 15, 1963.

POWER-TOX

For Agricultural Insecticide.
First use Apr. 28, 1959.

SN 169,656. Puerto Rico Distilling Company, Arecibo, Puerto Rico. Filed May 24, 1963.

AL-KOLITO

For Denatured Alcohol.
First use Apr. 3, 1963.

SN 171,544. The Harshaw Chemical Company, Cleveland, Ohio. Filed June 21, 1963.

NUSAT

For Chemical for Use in the Preparation of Electroplating Solutions—Namely, Nickel Plating Solutions.
First use Mar. 26, 1963.

SN 175,310. NRG Fuels Corporation, St. Louis, Mo. Filed Aug. 19, 1963.



The term "Energy" is disclaimed except from the mark as shown.
For Liquefied Petroleum Gas, Butane Gas, Propane Gas, and Mixtures Thereof.
First use Mar. 25, 1963.

SN 177,212. AGIP Societa per Azioni, Rome, Italy. Filed Sept. 18, 1963.



Owner of Italian Reg. No. 139,987, dated Nov. 29, 1958.
For Industrial Petroleum Products—Namely, Liquid Petroleum Gases.
First use on or about July 8, 1958.

SN 177,377. Sindar Corporation, New York, N.Y. Filed Sept. 19, 1963.

DIOXIN

For Chemical Suitable for Use in Anti-Fungal, Anti-Bacterial, and Anti-Microbial Preparations.
First use Oct. 5, 1962.

SN 178,896. The Dow Chemical Company, Midland, Mich. Filed Oct. 14, 1963.

LITEPOZ

For Chemical Compositions Useful as Cement Extenders.
First use Aug. 23, 1963.

SN 179,293. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 17, 1963.

POLAMINE

For Deodorizing Agent for Water Systems and Dairy Plants.
First use Feb. 7, 1962.

SN 181,086. Wood Chemical Co. Inc., Lubbock, Tex. Filed Nov. 13, 1963.



Applicant disclaims the words "Service Sells" and "Quality Tells."
For Insecticides, Herbicides and Fungicides.
First use Jan. 1, 1951.

SN 187,563. Continental Oil Company, Ponca City, Okla. Filed Feb. 27, 1964.

CATAPAL

For Catalyst Grade Alumina Monohydrate.
First use Feb. 20, 1964.

SN 187,565. Continental Oil Company, Ponca City, Okla. Filed Feb. 27, 1964.

CONOPAL

For High Purity Alumina Monohydrate.
First use Feb. 20, 1964.

SN 188,109. R. O. Hull & Company, Inc., Cleveland, Ohio. Filed Mar. 6, 1964.

ROSHEENE

For Chemical Composition in Powder or Liquid Concentrate Form To Be Mixed With Water To Form a Dipping Solution for Chemical Polishing or Brightening of Metallic Surfaces.
First use June 28, 1963.

SN 188,354. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 10, 1964.

B 1 T

For Chemical Butanetriol.
First use June 26, 1963.

SN 188,455. Morton Salt Company, Chicago, Ill. Filed Mar. 11, 1964.

MORSODREN

For Agricultural Fungicide.
First use on or about Feb. 12, 1964.

SN 189,792. Mead Johnson & Company, Evansville, Ind. Filed Mar. 27, 1964.

N-A-C

For Reagent for Laboratory Use in the Performance of Sputum Tests.
First use on or prior to Feb. 14, 1964.

SN 190,238. Romolo Capolino, d.b.a. Armorize Company, Drexel Hill, Pa. Filed Apr. 3, 1964.

ARMORIZE

For Penetrating Composition for Use in Loosening Metal Parts Held Fast by Rust and as a Hygroscopic Water Repellent for Metals.
First use on or about Mar. 20, 1964.

SN 190,262. Heatbath Corporation, Springfield, Mass. Filed Apr. 3, 1964.

PEN DIP

Applicant disclaims the word "Dip" apart from the mark as shown.
For Water Displacing Solvent Type Rust Preventative Chemicals.
First use about May 27, 1963.

SN 190,263. Heatbath Corporation, Springfield, Mass. Filed Apr. 3, 1964.

PX

For Chemicals for Producing a Black Finish on Stainless Steel and Cast and Malleable Irons.
First use June 3, 1963.

SN 192,392. The Harshaw Chemical Company, Cleveland, Ohio. Filed Apr. 30, 1964.

TEXPAD

For Textile Pigment Padding Preparation.
First use Feb. 18, 1963.

SN 192,937. Richard Fay Neugebauer, d.b.a. California Veterinarian Research Laboratory, Pasadena, Calif. Filed May 7, 1964.

CVRL

For Insect Repellents.
First use Aug. 8, 1959.

SN 192,970. Airkem, Inc., New York, N.Y. Filed May 8, 1964.

Breezy

For Space Deodorant and Air Freshening Compositions.
First use Apr. 10, 1964.

SN 193,281. Royce R. Jones, d.b.a. Weschem Products, Hobbs, N. Mex. Filed May 12, 1964.

Loctra-Stop

For Chemical Spray Compound To Eliminate Static Electricity.
First use May 4, 1964.

SN 193,350. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 13, 1964.

IRGAPADOL

Owner of Reg. Nos. 611,643, 768,075, and others.
For Chemical Agent Used in the Application of Dyestuffs.
First use Nov. 6, 1963.

SN 193,351. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 13, 1964.

TINOLITE

Owner of Reg. No. 655,968.
For Pigment Printing Auxiliaries.
First use August 1957.

SN 193,374. Hy Pac, Inc., Palmetto, Fla. Filed May 13, 1964.

HOUSEBOY

For Household Deodorants.
First use Apr. 1, 1963.

SN 193,588. Standard Oil Company of California, San Francisco, Calif. Filed May 15, 1964.



Owner of Reg. No. 640,883.
For Lighter Fluid.
First use Apr. 8, 1964.

SN 193,982. Larry E. Pilley, d.b.a. Sta-Hi Sales Company, Laramie, Wyo. Filed May 21, 1964.

STA-HI

For Chemical Additive for Automotive Storage Batteries.
First use Mar. 28, 1964.

SN 194,048. The Glidden Company, Cleveland, Ohio. Filed May 22, 1964.

GLIDCO

For Pine Oil, Dipentene, Camphene, and Terpineol.
First use December 1961.

SN 194,049. The Glidden Company, Cleveland, Ohio. Filed May 22, 1964.

MYRCENE-85

Applicant disclaims any exclusive right to the use of the word "Myrcene" apart from the mark.
For Myrcene.
First use October 1954.

SN 197,281. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 7, 1964.

IRGAFOMAL

Owner of Reg. Nos. 594,078, 618,459, 440,392, and others.
For Chemical Agent Used in the Wet Processing of Textiles.
First use Apr. 23, 1964.

Class 7 — Cordage

SN 166,459. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 10, 1963.

VYTACORD

For Synthetic Yarns and Cords Primarily for Use in Making Pneumatic Tires.
First use Mar. 6, 1963.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 195,449. George Risk, Columbus, Nebr. Filed June 11, 1964.

TAR-X

For Cylindrical Portable Device for Circumferentially Perforating Cigarettes.
First use at least as early as June 5, 1964.

SN 197,234. Ronson Corporation, Woodbridge, N.J. Filed July 6, 1964.

COMET

For Cigarette Lighters.
First use May 1, 1964.

SN 198,187. Manor Merchandise Corp., Brooklyn, N.Y. Filed July 20, 1964.

MANOR

For Pyrophoric and Catalytic Cigarette and Cigar Lighters.
First use on or about July 13, 1964.

SN 200,095. Glass Laboratories, Inc., Brooklyn, N.Y. Filed Aug. 18, 1964.

GL

For Ashtray.
First use April 1963.

Class 10 — Fertilizers

SN 162,575. Martinsville Mulch, Inc., Indianapolis, Ind. Filed Feb. 12, 1963.



For Peat.
First use Mar. 7, 1962.

SN 190,552. Socony Mobil Oil Company, Inc., New York, N.Y. Filed Apr. 7, 1964.

VIGILANTE

Owner of Reg. No. 758,661.
For Fertilizers.
First use Mar. 2, 1961.

SN 190,553. Socony Mobil Oil Company, Inc., New York, N.Y. Filed Apr. 7, 1964.

VITANITE

Owner of Reg. No. 758,662.
For Organic Nitrogen Fertilizer.
First use Feb. 12, 1962.

Class 12 — Construction Materials

SN 138,520. Moloney Products, Inc., Albia, Iowa. Filed Feb. 23, 1962.

MOLONEY *all-weather* DOORS

Applicant disclaims the words "All-Weather" and "Doors" apart from the mark as shown.
For Combination Storm and Screen Doors.
First use at least as early as March 1956.

SN 173,802. Williams Form Engineering Corporation, Grand Rapids, Mich. Filed July 25, 1963.

UNIT-FORM

For Components of Forms Used in Conjunction With Pouring Concrete, Including Fastening Devices.
First use June 24, 1963.

SN 191,298. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Apr. 16, 1964.

RAJAH

For Firebrick.
First use in or about October 1952.

SN 191,350. Acme Backing Corporation, New York, N.Y. Filed Apr. 17, 1964.

ACMETITE

For Laminate of Aluminum Foil and Plastic Film for Moisture-Proof Barrier and Thermal Insulation.
First use Apr. 2, 1964.

SN 192,185. Kelley Company, Inc., Milwaukee, Wis. Filed Apr. 28, 1964.

Camatic

For Swinging Doors.
First use Oct. 10, 1963.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 165,443. Maryland Plastics Incorporated, Federalsburg, Md. Filed Mar. 26, 1963.

PRINCESS WARE

No claim is made to the word "Ware" apart from the mark as shown.
For Articles Made of Plastic—Namely, Drain Boards, Sink Strainers, Dish Drainer, Dust Pans, Molds for Frozen Confections, and the Like.
First use on or about Feb. 18, 1963.

SN 177,969. Continental Industries, Inc., Tulsa, Okla. Filed Sept. 30, 1963.

AUTOVALVE

For Valves for Gas Shutoff.
First use Sept. 13, 1963.

SN 178,212. National Fence Manufacturing Co., Inc., Bladensburg, Md. Filed Oct. 2, 1963.

BULLDOG

For Welded Wire Fabric and Chain Link Fence Fittings—Namely, Post Caps, Line Post Caps, Rail Ends, Barb Arms, Hinges, Gate Latches, Pressed Steel Sleeves, Boulevard Clamps, Tension Bands, Brace Bands, Tension Bars, Truss Rods, Gate Locking Devices (Industrial), Gate Holdbacks, Gate Scrolls, Post Hinges, and Loop Caps.
First use Mar. 19, 1963.

SN 184,185. Signode Corporation, Chicago, Ill., by change of name from Signode Steel Strapping Company, Chicago, Ill. Filed Jan. 7, 1964.

GUN-NAILS

For Nails.
First use Aug. 1, 1962.

SN 188,991. Miller Products Co., Des Moines, Iowa. Filed Mar. 18, 1964.

QUIK-PIN

For Lynch Pins or Safety Locking Pins.
First use June 10, 1963.

SN 189,271. Chicago Roll Forming Corporation, Cicero, Ill. Filed Mar. 23, 1964.

RAXXCO

For Storage Racks, Parts, and Accessories Therefor.
First use on or about Feb. 24, 1964.

SN 193,067. Universal Fluid Dynamics Co., Alpena, Mich. Filed May 8, 1964.

FLUSH-LOK

For Valves and Valve Parts for Piston and Cylinder Assemblies.
First use Apr. 1, 1964.

SN 193,163. Hanawai Manufacturing Company, Limited, Honolulu, Hawaii. Filed May 11, 1964.

TARGETMASTER

For Sprinkler Type Irrigation Devices Especially Adapted for Agricultural Uses.
First use on about Apr. 30, 1962.

SN 193,481. Marine Hardware & Supply Co., Boston, Mass. Filed May 14, 1964.

SKIPPER'S CHOICE

For Marine Hardware.
First use Apr. 29, 1964.

SN 194,396. Long-Lok Corporation, Los Angeles, Calif. Filed May 27, 1964.

STRIP-LOK

Owner of Reg. No. 712,010.
For Self-Locking Bolts and Screws.
First use May 15, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 176,564. Mitsubishi Metal Mining Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Sept. 9, 1963.



Owner of Japanese Reg. Nos. 65,709–1 and 65,709–2, dated June 6, 1914.
For Metals and Alloys in Strip, Sheet, Wire, Powder, Leaf, Rod, Cast, Forged or Tube Form.

SN 196,022. Continental Steel Corporation, Kokomo, Ind. Filed June 19, 1964.

ECONO-ROD

Owner of Reg. Nos. 642,794, 721,227, and 753,964.
For Steel Rods.
First use May 18, 1964.

SN 196,023. Continental Steel Corporation, Kokomo, Ind. Filed June 19, 1964.

ECONO-WIRE

Owner of Reg. Nos. 642,794, 721,227, and 753,964.
For Steel Wire.
First use May 6, 1964.

SN 196,251. Chicago Foundry Company, Chicago, Ill. Filed June 23, 1964.



For Grey Iron and Ductile Iron Castings.
First use in or about 1947.

SN 197,051. Allegheny Ludlum Steel Corporation, Pittsburgh, Pa. Filed July 6, 1964.

ALLEGHENY

For Steel in the Form of Ingots, Billets, Bar, Rods, Wire, Plates, Strip and Sheets Made From Steel Alloys.
First use January 1930.

Class 15 — Oils and Greases

SN 175,099. The DoAll Company, Des Plaines, Ill. Filed Aug. 15, 1963.

XerOil

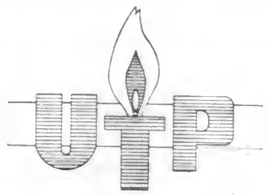
For Powdered and/or Pellet Synthetic Cutting Fluid Concentrate for General Machining Applications.
First use on or before June 10, 1963.

SN 182,762. Gattenfeld Grease & Oil Corporation, Inc., Kansas City, Mo. Filed Dec. 11, 1963.

POLYCOAT

For Olefin Polymer Sold as an Ingredient in Lubricating Greases.
First use on or about Nov. 12, 1963.

SN 190,172. Farley Butane Company, Abilene, Tex. Filed Apr. 2, 1964.



The drawing is lined for the color blue.
For Lubricating Oils.
First use Mar. 24, 1964.

SN 192,144. The Frontier Refining Company, Denver, Colo. Filed Apr. 27, 1964.

ETERNA "6000"

Owner of Reg. No. 741,162.
For Motor Oils.
First use Jan. 27, 1964.

SN 196,457. Massey-Ferguson Limited, Toronto, Ontario, Canada. Filed June 25, 1964.



Owner of Reg. No. 693,470.
For Lubricating Oils.
First use July 24, 1962; in commerce July 24, 1962.

Class 16—Protective and Decorative Coatings

SN 181,422. Strathmore Products, Inc., Syracuse, N.Y. Filed Nov. 18, 1963.

STRATHOLINER

For Corrosion Resistant Base Coat for Industrial Use on Such Applications as Appliances and Electrical Equipment.
First use Feb. 27, 1956.

SN 181,423. Strathmore Products, Inc., Syracuse, N.Y. Filed Nov. 18, 1963.

CONTROLAC

For Lacquer Solvent.
First use Aug. 29, 1956.

SN 181,771. General Kinetics, Inc. of West Palm Beach, West Palm Beach, Fla. Filed Nov. 22, 1963.

Windercote

For Fabric Color Spray.
First use Oct. 4, 1963.

SN 181,793. Poly Resins, Sun Valley, Calif. Filed Nov. 22, 1963.

Urapol

For Two Component Pigmented Liquid Plastic Rubber Coating To Be Sprayed on All Types of Walking Surfaces, Roofs, Bathrooms, Kitchens, Vestibules, etc. in Homes, Industrial and Public Buildings.
First use Nov. 3, 1960.

SN 185,607. S. S. Kresge Company, Detroit, Mich. Filed Jan. 29, 1964.

Kmart

Owner of Reg. No. 743,912.
For Interior and Exterior Paints, Enamels, Varnishes, Roof Coatings, Exterior Primers, and Primer Sealers.
First use Jan. 26, 1962.

Class 17—Tobacco Products

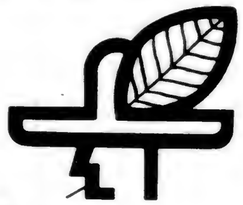
SN 177,272. Philip Morris Incorporated, New York, N.Y. Filed Sept. 18, 1963.

★ ★

MULTIFILTER$_2$

For Filters for Cigarettes.
First use Sept. 11, 1963.

SN 191,650. The American Tobacco Company, New York, N.Y. Filed Apr. 21, 1964.



For Cigarettes.
First use Apr. 17, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 148,988. Metabolic Products Corporation, Cambridge, Mass. Filed July 13, 1962.

MELASOL

For Antiseptic and Fungicide.
First use Sept. 30, 1954.

SN 166,532. Dentinox Gesellschaft fuer Pharmazeutische Praeparate Lenk & Schuppan, Berlin-Steglitz, Germany. Filed Apr. 11, 1963.

DENTINOX

Owner of German Reg. No. 253,999, dated Oct. 15, 1920.
For Agent for the Relief of Symptoms of Inflammation and Excessive Salivation in Early Teething.

SN 168,416. Iromedica A.G., Sankt Gallen, Switzerland. Filed May 8, 1963.

EgmoVit

For Multivitamine Pharmaceutical Preparation.
First use Nov. 1, 1956; in commerce Aug. 14, 1957.

SN 171,496. Stanley Drug Products, Inc., Portland, Oreg. Filed June 20, 1963.

REFRESH'N

For Medicinal Preparation for Use in the Control of Sleepiness.
First use June 3, 1963.

SN 171,838. FMC Corporation, San Jose, Calif., assignee of American Viscose Corporation, Philadelphia, Pa. Filed June 26, 1963.

PHARMACEL

For Analgesic Tablets.
First use June 19, 1963.

SN 175,500. Laboratorio Lemos Soc. Resp. Ltda., Buenos Aires, Argentina. Filed Aug. 21, 1963.

LEMOS

Owner of Argentine Reg. No. 393,782, dated Apr. 16, 1958.
For Vaccines, Serums, and Ferments for the Treatment of Human Maladies.
First use September 1926; in commerce September 1932.

SN 176,673. S & S Pharmaceutical Company, d.b.a. S & S Sales Company, North Miami Beach, Fla. Filed Sept. 10, 1963.

Aktex

For Pharmaceutical Preparation Used in the Treatment of Diseases of the Skin.
First use July 1, 1963.

SN 177,102. Sternco Industries, Inc., Allendale, N.J. Filed Sept. 16, 1963.

VITA TONIC

The word "Tonic" is disclaimed apart from the mark.
For Sulphathiazole Preparation for Aquarium Fish.
First use Aug. 6, 1956.

SN 186,374. Medicinal Research Laboratories, Philadelphia, Pa. Filed Feb. 10, 1964.

BUTANESIN

For Skeletal Muscle Relaxant, Analgesic and Mild Sedative.
First use October 1960.

SN 186,955. Joseph Levine, d.b.a. G.I. Drug Company, Brooklyn, N.Y. Filed Feb. 18, 1964.

ASPAPOPS

For Medicated Lollypops for the Temporary Relief of Minor Throat Irritation, Tickling and Dryness.
First use at least as early as Dec. 20, 1944.

SN 190,096. McNeil Laboratories, Incorporated, Fort Washington, Pa. Filed Apr. 1, 1964.

INAPSINE

Owner of Reg. No. 760,907.
For Tranquilizers.
First use Nov. 7, 1962.

SN 191,116. Biofarma, Societe Anonyme, Neuilly-sur-Seine (Seine), France. Filed Apr. 15, 1964.

VIALIBRAN

Owner of French Reg. No. 502,380, dated Feb. 8, 1962 (Paris); Natl. Inst. No. 178,996.
For Vaso-Dilatators.

SN 191,882. The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 23, 1964.

KAO 22

For Preparation for the Relief of Diarrhea.
First use Apr. 17, 1964.

SN 192,575. Delta Drug Corporation, Jacksonville, Fla. Filed May 4, 1964.

EVENOL

For Pharmaceutical Preparation Used as a Tranquilizer With Muscle Relaxant Action.
First use Mar. 31, 1964.

SN 193,096. Barnes-Hind Barium Products, Sunnyvale, Calif. Filed May 11, 1964.

CINÉTRAST

For Esophageal Paste of Micronized Barium Sulfate Used for X-Ray Examination.
First use Apr. 7, 1964.

SN 193,432. Alberto-Culver Company, Melrose Park, Ill. Filed May 14, 1964.

ACRA/SIL

For Antacid Medicinal Preparation.
First use Apr. 28, 1964.

SN 193,824. Success Chemical Co., Inc., Brooklyn, N.Y. Filed May 19, 1964.

OPTO-MIST

For Eye Drops.
First use Aug. 12, 1957.

SN 193,836. American Home Products Corporation, New York, N.Y. Filed May 20, 1964.

ULTI-LEP

For Veterinary Preparation for Prevention of Leptospirosis.
First use May 7, 1964.

SN 193,886. Mead Johnson & Company, Evansville, Ind. Filed May 20, 1964.

QUESTRAN

For Demulcent Absorbent.
First use on or prior to Apr. 23, 1964.

SN 193,995. Sterling Drug Inc., New York, N.Y. Filed May 21, 1964.

TRANCODYNE

Owner of Reg. Nos. 662,486 and 698,881.
For Preparation With Skeletal Muscle Relaxant, Tranquilizing and Analgesic Properties.
First use May 5, 1964.

SN 194,340. American Home Products Corporation, New York, N.Y. Filed May 27, 1964.

MILKOTE

For Medicinal Antacid Preparation.
First use Apr. 28, 1964.

SN 194,418. The Purdue Frederick Company, Yonkers, N.Y. Filed May 27, 1964.

GRANUVITOL

For Multi-Vitamin Preparation.
First use May 15, 1964.

SN 194,581. Dalin Pharmaceuticals, Inc., Bayside, N.Y. Filed June 1, 1964.

SPASMID-PB

For Antispasmodic and Anticholinergic Sedative.
First use May 25, 1964.

SN 194,590. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed June 1, 1964.

RAMETIN

Priority claimed under Sec. 44(d) on German application filed Dec. 17, 1963; Reg. No. 783,272, dated Feb. 3, 1964.
For Parasiticides for Veterinary Use Only.

SN 194,719. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 2, 1964.

LISCAL

For Analgesic Preparation.
First use May 25, 1964.

SN 194,720. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 2, 1964.

TOFRACHLOR

Owner of Reg. Nos. 672,089 and 728,465.
For Psychotropic Preparation.
First use May 25, 1964.

SN 194,721. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 2, 1964.

GRADEIN

For Sedative.
First use May 25, 1964.

SN 194,722. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 2, 1964.

ANAFRANIL

Owner of Reg. Nos. 672,089 and 728,465.
For Psychotropic Preparation.
First use May 25, 1964.

SN 194,845. F. B. Washburn Candy Corp., d.b.a. F. B. Washburn Corp., Brockton, Mass. Filed June 3, 1964.

GE-SUND-HEIT

For Medicated Cough Drops.
First use May 25, 1964.

SN 194,861. American Home Products Corporation, New York, N.Y. Filed June 4, 1964.

SCRIPSIN

For Analgesic Preparation.
First use May 20, 1964.

SN 194,862. American Home Products Corporation, New York, N.Y. Filed June 4, 1964.

CONQUEST

For Analgesic Preparation.
First use May 20, 1964.

SN 195,473. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed June 11, 1964.

MODATON

Owner of Reg. No. 722,776.
For Preparation for the Relief of Constipation and Regulation of Bowel Action, i.e., a Deconstipant.
First use on or about Aug. 1, 1961.

SN 195,840. Block Drug Company, Inc., Jersey City, N.J. Filed June 17, 1964.

EXEMTIN

For Medical Preparation for the Relief of Eczema and Other Dermatological Disorders.
First use on or about June 10, 1964.

SN 196,040. Hammock Bros., Knoxville, Tenn. Filed June 19, 1964.



The drawing is lined to reproduce the lining shown on the specimens and which does not represent color.
For Liniment.
First use 1940.

SN 197,296. Hudson Vitamin Products, Inc., New York, N.Y. Filed July 7, 1964.

JET-A-SEPTIC

For Medicated Preparation for Infection, Relief of Pain and Itching From Minor Cuts, Scrapes, Burns, Insect Bites, Sunburn, Poison Ivy, and Poison Oak.
First use June 9, 1964.

Class 19—Vehicles

SN 169,371. Henschel-Werke Aktiengesellschaft, Kassel, Germany. Filed May 21, 1963.



Owner of German Reg. No. 747,045, dated Mar. 23, 1961.
For Land Vehicles—Namely, Commercial Trucks, Truck-Tractors, Trailers, Platform Trucks, Van-Type Trucks, Dump Trucks, Buses, Trolley Buses, and Special Purpose Truck Chassis Suitable for Truck Mixers, Fire Engines, Tank Vehicles, Silo-Vehicles, Dust Carts, Long Shaped Load Carriers, Street Sweepers, Crane Vehicles, Wrecking Trucks and Mobile Workshops.
First use prior to 1954; in commerce 1954.

SN 176,707. Barish Associates, Inc., New York, N.Y. Filed Sept. 11, 1963.

SAILWING

For Self-Deploying Fabric Devices for Use as Parachutes, Gliders, and Sails.
First use May 25, 1963.

SN 183,224. Raven Industries, Inc., Sioux Falls, S. Dak. Filed Dec. 18, 1963.

R-PLUS

For Parachutes.
First use Aug. 3, 1963.

SN 187,311. National Carts, Incorporated, Azusa, Calif. Filed Feb. 24, 1964.



The representation of the shopping cart is disclaimed apart from the mark as shown.
For Shopping Carts.
First use Apr. 15, 1962.

SN 194,026. Birmingham Auto Suply Co., Birmingham, Ala. Filed May 22, 1964.

ECON-O-MAT

For Floor Mats for Automobiles.
First use May 15, 1960.

SN 194,082. Union Carbide Corporation, New York, N.Y. Filed May 22, 1964.

ULTREX

For Truck and Trailer Bodies, and Parts Thereof.
First use on or about Jan. 28, 1963.

SN 194,365. Cullip Industries, Inc., Ellaville, Ga. Filed May 27, 1964.

Capella

For Mobile Homes.
First use May 15, 1964.

SN 194,425. Seiberling Rubber Company, Barberton, Ohio. Filed May 27, 1964.

JEWELTONE

For Automobile Floor Mats.
First use Apr. 7, 1964.

Class 20—Linoleum and Oiled Cloth

SN 192,364. Congoleum-Nairn Inc., Kearny, N.J. Filed Apr. 30, 1964.

SPRING

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Counter Tops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 15, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 139,567. Audiotronics Corporation, North Hollywood, Calif. Filed Mar. 12, 1962.



For Sound Systems for Instruction in Schools, Including Transcription Players, P.A. Systems, and Classroom Radios.
First use Jan. 10, 1958, on radios.

SN 151,952. Mangel Stores Corporation, New York, N.Y. Filed Aug. 27, 1962.

SHOPPER'S FAIR

Owner of Reg. No. 687,336.
For Automobile Ignition, Lighting, Listening and Warning Devices Equipment and Accessories; Lamps, Electrical Switches, Sockets and Related Equipment, Flashlights and Holders Therefor, Lanterns, Electrical Cords, Soldering Irons and Kits, Cigarette Lighters, Bottle Warmers, Fuses, Battery Hydrometers, Percolators, and Tea Makers.
First use at least as early as August 1956.

SN 156,519. Georges Quellet, Neuchatel, Switzerland. Filed Nov. 2, 1962.



Owner of Swiss Reg. No. 150,336, dated Feb. 27, 1954.
For Electroacoustical and Electronic Devices—Namely, Tape Recorders and Accessories Therefor.

SN 165,731. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Apr. 1, 1963.

ELECTRI-WARM

For Electric Built-In Wall Heaters; Electric Automatic Heaters; Electric Portable Heaters; Combination Electric Ceiling Heater-Light-Vent Apparatus; Electric Heating Cables; Electric Baseboard Heaters; Electric Furnaces, Electric Unit Space Heaters, Electric Ceiling Heating Panels; Radiant Heaters; Thermal Mats; Snow Melting Cable; and Accessories Relating Thereto.
First use Jan. 12, 1961.

SN 168,788. Yardney Electric Corp., New York, N.Y. Filed May 13, 1963.

PRIMER

For Electrochemical Cells and Batteries.
First use May 6, 1963.

SN 169,764. Resista International, Inc., Los Angeles, Calif. Filed May 27, 1963.

RESISTA PVC-COTE

The notation "PVC-Cote" is disclaimed apart from the mark as shown.
For Electrical Metallic Conduits and Electrical Fittings With Plastic Protective Coatings.
First use May 21, 1963.

SN 177,135. Zenith Radio Corporation, Chicago, Ill. Filed Sept. 16, 1963.

THE ROYALTY OF RADIO TELEVISION AND HIGH FIDELITY

Owner of Reg. Nos. 545,001, 673,434, and 679,517.
For Radios, Television Receivers, and High Fidelity Home Entertainment Instruments, and Combinations of Any of the Foregoing.
First use at least as early as April 1960; at least as early as March 1942 as to "The Royalty Radio" on radios; at least as early as July 1959 as to the mark in a different form.

SN 180,915. Lear Jet Corporation, Wichita, Kans. Filed Nov. 12, 1963.

LEAREPEATER

For Electronic Sound Player Device Capable of Automatically Repeating a Prerecorded Message.
First use on or about Sept. 2, 1963.

SN 183,045. Electro-Craft Corporation, Hopkins, Minn. Filed Dec. 16, 1963.

MOTOMATIC

For Electric Controls for Electric Motors.
First use Dec. 4, 1963.

SN 185,660. Bestran Corporation, Monrovia, Calif. Filed Jan. 30, 1964.

ULR

For Ceramic Disc Capacitors.
First use July 25, 1963.

SN 188,286. Stackpole Carbon Company, St. Marys, Pa. Filed Mar. 9, 1964.

STABILITE

For Variable Resistor of Carbon Composition.
First use Jan. 15, 1963.

SN 188,293. Surface Conduction, Inc., New York, N.Y. Filed Mar. 9, 1964.

G-STRING

Owner of Reg. No. 639,599.
For Microwave Transmission Lines and Parts Thereof, Such as Launchers, Receivers, Baluns, and Wire.
First use May 1, 1952.

SN 188,922. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Mar. 17, 1964.

TELEMICROPHONE

For Microphones.
First use on about Dec. 21, 1963; in commerce on about Dec. 21, 1963.

SN 190,850. Aeronautical Electronics, Inc., Raleigh, N.C. Filed Apr. 13, 1964.



For Two-Way Mobile Radio Equipment and Parts Thereof.
First use Mar. 24, 1964.

SN 190,882. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

KAPPA-82

For Indoor Antennas.
First use Mar. 20, 1964.

SN 190,884. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

LAMBDA-82

For Indoor Antennas.
First use Mar. 20, 1964.

SN 190,886. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

ALPHA-82

For Indoor Antennas.
First use Mar. 20, 1964.

SN 195,093. General Motors Corporation, Detroit, Mich. Filed June 8, 1964.

DEL-CON

For Static Electronic Control Systems for Machines.
First use Jan. 26, 1962.

SN 197,046. Bradford Novelty Co., Inc., Boston, Mass. Filed July 6, 1964.



Owner of Reg. No. 651,289.
For Electrical Ornaments and Decorations for Christmas Tree Tops, Automobiles, Windows, Stands, and Tables.
First use in or about 1950.

SN 200,096. Glass Laboratories, Inc., Brooklyn, N.Y. Filed Aug. 13, 1964.



For Magnets.
First use July 1963.

Class 22 — Games, Toys, and Sporting Goods

SN 163,048. Hedlund Manufacturing Company, Nokomis, Ill. Filed Feb. 19, 1963.



For Sports Equipment—Namely, Hockey Sticks, Toboggans, Sleds, Aqua Planes, Skip Planes, Tow Ropes, Ski Poles, Skis, Together With Accessories Such as Ski Bindings, Harness and Harness Mounts.
First use April 1962.

SN 165,426. Jolly Toys, Inc., New York, N.Y. Filed Mar. 26, 1963.

JUDY

For Dolls.
First use March 1957.

SN 166,531. H. Davis Toy Corporation, Newark, N.J. Filed Apr. 11, 1963.



The word "Original" is disclaimed apart from the mark as shown.
For Hobby Kits for Making Toy and Play Jewelry.
First use Mar. 7, 1963.

SN 168,026. Northwestern Golf Company, Chicago, Ill. Filed May 2, 1963.



For Golf Equipment and Supplies, Specifically, Clubs, Balls, Club Covers, Bags, Carts, and Gloves.
First use January 1961.

SN 172,928. Louis Marx & Co. Inc., New York, N.Y. Filed July 12, 1963.

DOLL DREAM HOUSE

No claim is made to the words "Doll" and "House" apart from the mark as shown.
For Toy Doll Houses, Including Toy Furniture and Toy House Furnishings.
First use May 1960.

SN 174,145. A & W Root Beer Co., Santa Monica, Calif. Filed Aug. 1, 1963.

GLOBAL GOLF

No claim is made to the word "Golf" apart from the mark as shown.
For Prefabricated Miniature Golf Courses and Equipment Customarily Associated Therewith—Namely, Fairways, Greens, and Hazards, Clubhouse, Golf Clubs, Balls, and Score Cards.
First use at least Jan. 26, 1963.

SN 185,317. Reliart Trailer Manufacturing Corp., Stanton, Mich. Filed Jan. 24, 1964.

A-PAC-UP

For Sporting Equipment—Namely, Shelters and Particularly Portable Shelters Used by Sportsmen as Temporary Weather Shields and Manually Movable by One Person.
First use on or about Nov. 20, 1960.

SN 189,023. Victor Comptometer Corporation, Chicago, Ill. Filed Mar. 18, 1964.

SCRAMBLER

For Golf Clubs.
First use October 1963.

SN 189,197. Harry J. Miele, d.b.a. Hari-Kari Sales Company, Williamsport, Pa. Filed Mar. 20, 1964.

HARI-KARI

For Sporting Goods—Namely, Golf Club Carriers.
First use Feb. 7, 1964.

SN 189,999. Gentex Corporation, New York, N.Y. Filed Mar. 31, 1964.

SEA SCAMP

For Buoyant Vests.
First use Mar. 16, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 142,846. Paper, Calmenson & Co., St. Paul, Minn. Filed Apr. 23, 1962.

X-TRA-EDGE

For Grader Blades.
First use Nov. 7, 1957.

SN 143,077. J. Wiss & Sons Co., Newark, N.J. Filed Apr. 25, 1962.

IDEAL

For Shears, Snips, Scissors, Trimmers, and Clippers.
First use in or about 1912.

SN 160,445. Seitz-Werke G.m.b.H., Bad Kreuznach, Germany. Filed Jan. 9, 1963.



The term "Three Chamber System" is disclaimed apart from the remainder of the mark. Priority claimed under Sec. 44(d) on German application filed Oct. 4, 1962; Reg. No. 779,326, dated Oct. 31, 1963. Owner of U.S. Reg. No. 667,676.
For Counter-Pressure Filling Machines for Liquids.

SN 166,045. Simonds Saw and Steel Company, Fitchburg, Mass. Filed Apr. 3, 1963.

COBALT 529

The word "Cobalt" is disclaimed apart from the mark as shown.
For Metal Cutting Circular Saws.
First use Feb. 26, 1963.

SN 169,451. Henschel-Werke Aktiengesellschaft, Kassel, Germany. Filed May 22, 1963.



Owner of German Reg. No. 747,045, dated Mar. 23, 1961.
For Locomotives, Diesel Engines for Land and Water Vehicles and for Power Generators, Road Building and Earth Moving Equipment—Namely, Rollers, Graders, Wheeldozers, Motor Scrapers, Tractors, Fluidizing Mixers and Extruders; Machine Tools—Namely, Milling, Drilling, Boring, Tapping Machinery and Gear Shapers; Cast and Forged Parts Plant and Equipment—Namely, Presses, Rolling Mills, Pickling Plants, Can Making Machines, Castings and Forgings; Axles and Transmissions—Namely, Driven Steering Axles for Road Traction Vehicles, Non-Driven Steering Axles for Road Traction Vehicles, Transfer Cases for Road Traction Vehicles, Reverse Reduction Gears for Rail Traction Vehicles, Shift Transmissions and Final Drives for Construction Equipment.
First use prior to 1954; in commerce 1954.

SN 177,570. The Tait Manufacturing Company, Dayton, Ohio. Filed Sept. 23, 1963.

ATLAS

For Water Pumps—Namely, Shallow Well and Deep Well Pumps for Household, Farm, and Industrial Use.
First use Nov. 29, 1962.

SN 178,334. Consolidated Engineering Company, Houston, Tex. Filed Oct. 4, 1963.

FLUIDFLO

For Pulverant Solids Transfer Equipment.
First use February 1958.

SN 181,351. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 18, 1963.



For Belt Conveyors.
First use Sept. 25, 1963.

SN 182,202. Omark Industries, Inc., Portland, Oreg. Filed Dec. 2, 1963.



Owner of Reg. Nos. 641,710 and 739,299.
For Saw Chains, Saw Chain Depth Gauge Jointers, Saw Chain Files and File Holders, Saw Chain Filing Vises, Saw Chain Breakers, Saw Chain Saw Bars, Saw Bar Groove Grinders, Saw Bar Groove Gauges, Grinding Wheels, Wedges, Saw Chain Sprockets, Wedge Plates, Saw Bar Handles, Saw Bar Tighteners, and Parts Thereof; Powder Actuated Tools, Drive Pins, Drill Anchors, and Tool Kits; Concrete and Masonry Cutting Machines and Diamond and Abrasive Cutting Blades and Diamond Drilling Machines and Diamond Drills and Bits.
First use August 1963.

SN 182,203. Omark Industries, Inc., Portland, Oreg. Filed Dec. 2, 1963.

OMARK

Owner of Reg. Nos. 641,710, 655,025, and 739,299.
For Saw Chains, Saw Chain Depth Gauge Jointers, Saw Chain Filing Vises, Saw Chain Files and File Holders, Saw Chain Breakers, Saw Chain Saw Bars, Saw Bar Groove Grinders, Saw Bar Groove Gauges, Saw Chain Sprockets, Grinding Wheels, Wedges, Wedge Plates, Saw Bar Handles, Saw Bar Tighteners and Parts Thereof; Powder Actuated Tools, Drive Pins, Drill Anchors, and Tool Kits.
First use May 25, 1956.

SN 183,159. Continental Drill Corporation, Inc., Chicago, Ill. Filed Dec. 17, 1963.

BLACK - TRITE

33

For Twist Drills, Masonry Drills, Boring Bits, and Related Drill Products.
First use Jan. 10, 1961.

SN 184,064. Haunt-Werke Körber & Co. K.G., Hamburg-Bergedorf, Germany. Filed Jan. 6, 1964.

CASCADE

Owner of U.S. Reg. No. 770,681.
For Cigarette Making Machines and Filter Assembling Machines.
First use Aug. 31, 1961; in commerce Aug. 31, 1961.

SN 191,751. Drott Manufacturing Corporation, Milwaukee, Wis. Filed Apr. 22, 1964.

TRAVELIFT

For Self-Propelled Straddle-Type Lifting Equipment.
First use at least as early as March 1955.

SN 191,752. Drott Manufacturing Corporation, Milwaukee, Wis. Filed Apr. 22, 1964.

Travelift

For Self-Propelled Straddle-Type Lifting Equipment.
First use at least as early as March 1955.

SN 193,334. Cincinnati Lathe and Tool Co., Cincinnati, Ohio. Filed May 13, 1964.

CINTIMILL

For Milling Machines.
First use Feb. 22, 1963.

SN 193,335. Cincinnati Lathe and Tool Co., Cincinnati, Ohio. Filed May 13, 1964.

CINTIMATIC

For Drilling Machines.
First use July 12, 1963.

SN 193,598. Tavaro S.A., Geneva, Switzerland. Filed May 14, 1964.

PARA-BLOC

Priority claimed under Sec. 44(d) on Swiss Reg. No. 200,994, dated Nov. 25, 1963.
For Sewing Machines and Parts Thereof—Namely, Crochet Attachments and Netting Needles.
First use Nov. 25, 1963; in commerce January 1964.

SN 193,631. Walter T. Cole Tool Corporation, South Beloit, Ill. Filed May 18, 1964.

CARBO-CLAD

For Inserted Carbide Taps.
First use Apr. 1, 1964.

SN 193,692. Oneida Ltd., Oneida, N.Y. Filed May 18, 1964.

FIREBIRD

For Stainless Steel Flat Tableware.
First use Apr. 20, 1964.

SN 193,847. Bonney Vehslage Tool Co., Newark, N.J. Filed May 20, 1964.

B-V.

For Punches—Namely, Conductor and Ticket Punches and All-Purpose Hand Punches.
First use on or before Jan. 1, 1908.

SN 193,957. The Heim Universal Corporation, Fairfield, Conn. Filed May 21, 1964.

UNILINK

For Flexible Couplings, Connectors (Non-Electric), Rod End Couplings and Bearings, Designed for Use With Aircraft, Machine Tools, and the Like.
First use Mar. 25, 1964.

SN 194,275. Buck Bros. Inc., Millbury, Mass. Filed May 26, 1964.

STAG

For Chisels.
First use during August 1949.

SN 194,276. Buck Bros. Inc., Millbury, Mass. Filed May 26, 1964.

BUCK BROS.

Owner of Reg. No. 540,300.
For Chisels, Gouges, Plane Irons, Draw-Knives, Countersinks, Punches, Wood Turners' Cutting, Parting, Paring, and Sizing Tools, Wood Carving Tools, Screw Driver Bits, Awls, Nail Sets, Reamers, and Handles for Wood Cutting and Turning Tools, and Hammers.
First use during May 1875.

SN 194,360. Casco Products Corporation, Bridgeport, Conn. Filed May 27, 1964.

CASCO

For Fire Extinguishers.
First use Aug. 7, 1961.

SN 195,071. Donaldson Company, Inc., Minneapolis, Minn. Filed June 8, 1964.

DONASONIC

For Gas Turbine Intake Silencers.
First use May 1, 1964.

SN 195,899. Studebaker Corporation, South Bend, Ind. Filed June 17, 1964.

WESTCHESTER

For Garden Tractors.
First use Dec. 10, 1963.

SN 196,511. Eastman Machine Company, Buffalo, N.Y. Filed June 26, 1964.

Chickadee

For Cloth Cutting Machines.
First use Mar. 30, 1964.

SN 197,031. Gray Manufacturing Company, Inc., St. Joseph, Mo. Filed July 3, 1964.

PORTA-MATIC

For Pneumatic Automotive Lifts.
First use Jan. 8, 1954.

SN 197,156. Moslo Machinery Company, Cleveland, Ohio. Filed July 6, 1964.

DUPLIMATIC

For Automatic Plastic Injection Molding Machines.
First use on or about July 15, 1949.

SN 197,332. S.p.A. Virginio Rimoldi & C., Milan, Italy. Filed July 7, 1964.

RIM

For Needles for Sewing Machines.
First use June 1, 1962; in commerce Oct. 1, 1962.

SN 197,477. Crescent Niagara Corporation, Buffalo, N.Y. Filed July 9, 1964.

Owner of Reg. Nos. 270,927 and 402,398.
For Tools—Namely, All Kinds and Types of the Following Goods: Wrenches, Pliers, Screw Drivers, Files, and Ignition Sets.
First use May 14, 1964.

Class 24 — Laundry Appliances and Machines

SN 196,893. G. C. Murphy Company, McKeesport, Pa. Filed July 1, 1964.

TRIPLE CHECK

For Ironing Board Covers and Pads.
First use Apr. 1, 1964.

Class 26 — Measuring and Scientific Appliances

SN 154,583. Irving P. Filderman, Memphis, Tenn. Filed Oct. 5, 1962.

"F" PUPILENS

The term "Pupilens" is disclaimed apart from the mark as shown.
For Contact Lenses.
First use Sept. 29, 1962.

SN 171,094. W. M. Cissell Manufacturing Co., d.b.a. W. M. Cissell Manufacturing Co., Inc., Louisville, Ky. Filed S.R. June 17, 1963: Am. P.R. Mar. 9, 1964.

CISSELL

Owner of Reg. No. 529,643.
For Timing Apparatus for Laundry and Dry Cleaning Machines—Namely, Time Switches and Coin-Meter Timers.
First use Dec. 5, 1957.

SN 181,222. Elliott Brothers (London) Limited, London, England. Filed Nov. 15, 1963.

MINILOG

Owner of British Reg. No. B801,316, dated Feb. 5, 1960.
For Panel Units Supporting Elementary Portions of Electric Circuits Which May Be Interconnected To Provide Logical Circuits Which May Be Used for Any Such Purposes as Data Processing, Computing, Sequencing, and Control.

SN 193,147. Flexi-Post, Inc., Fort Lauderdale, Fla. Filed May 11, 1964.

FLEXI-POST

For Parking Meter Stands.
First use Jan. 21, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 197,988. Herman David Schurin, New York, N.Y. Filed July 16, 1964.

DSC

For Pendants, Religious Medallions and Crosses, Necklaces, Bracelets, and Earrings.
First use May 2, 1963.

SN 199,892. Donley Manufacturing Co., Inc., North Attleboro, Mass. Filed Aug. 14, 1964.

LITTLE QUEEN

For Costume Jewelry Not Including Watches.
First use at least as early as January 1956.

Class 29 — Brooms, Brushes, and Dusters

SN 188,812. Stanley Home Products, Inc., Westfield, Mass. Filed Mar. 16, 1964.

CLOVERLEAF

For Dry Mops, Wall Brushes, and Hand Dusters.
First use April 1937.

SN 192,211. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Brushes of All Types, Brooms, Paint and Artist Brushes, Made of Hair and Bristles of Natural and Synthetic Materials.

SN 198,033. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 17, 1964.

DENTA-FLEX

For Toothbrushes.
First use Apr. 24, 1964.

Class 30 — Crockery, Earthenware, and Porcelain

SN 177,132. World Gift Company, Dallas, Tex. Filed Sept. 16, 1963.



For Ceramic Butter Dishes, Ceramic Breakfast Sets, Ceramic Cups and Saucers, Ceramic Demitasse Sets, Ceramic Lavabos, Ceramic Lazy-Susans, Ceramic Plates, Ceramic Salt Boxes, Goblets, Vases, Ceramic Salt and Pepper Sets, and Ceramic Tea Pots.
First use Mar. 1, 1953.

Class 31 — Filters and Refrigerators

SN 182,417. General Dynamics Corporation, New York, N.Y. Filed Dec. 5, 1963.

PORTA-CO_2LD

For Refrigerator Units for Cooling the Interior of Vehicles.
First use Feb. 14, 1963.

Class 32 — Furniture and Upholstery

SN 178,297. Plan Hold Corporation, Torrance, Calif. Filed Oct. 3, 1963.



The mark consists of a square with a stylized letter "P" thereon.
For Filing Equipment and Accessories for Vertical and Roll Filing—Namely, Friction Binders, Hangers, Wall Racks, Swing-Type Racks, Rolling Stands, Carousel Racks, Stack Roll Files, Cabinets, Data Files, Table Clamps, and Bracket Mounts.
First use Dec. 12, 1962.

SN 188,853. Eastern Products Corporation, Baltimore, Md. Filed Mar. 17, 1964.



Owner of Reg. No. 635,929.
For Venetian Blinds.
First use early part of October 1961.

SN 193,186. Lincoln Manufacturing Co., Inc., d.b.a. W. H. Frick Co., Fort Wayne, Ind. Filed May 11, 1964.

LITTLE NELL

For Portable Cafeteria Equipment—Namely, Portable Cabinet for Storing Dishes.
First use Apr. 3, 1964.

SN 193,300. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company, Chicago Heights, Ill. Filed May 12, 1964.

CALCUTTA

For Window Shades.
First use Mar. 31, 1964.

SN 193,415. Sperry Rand Corporation, New York, N.Y. Filed May 13, 1964.

CITADEL

For Filing Cabinets.
First use Aug. 10, 1961.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 160,635. Hanson Manufacturing Company, Inc., Dallas, Tex. Filed Jan. 14, 1963.

KOOLWALL

For Space Heaters.
First use February 1955.

SN 161,571. Weld Mold Company, Dearborn, Mich. Filed Jan. 28, 1963.



The words "Weld Mold Process" are disclaimed apart from the mark as shown.
For Welding Mechanisms Including Welding Devices, and Welding Rods.
First use October 1945.

SN 162,504. Todd Shipyards Corporation, New York, N.Y. Filed Feb. 11, 1963.

DIRECTAIRE

For Industrial and Commercial Oil or Gas Burning Space Heaters.
First use November 1961.

SN 168,164. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed May 6, 1963.

VORTACOOL

Owner of Reg. No. 736,398.
For Vortex Tubes and Vortex Tube Air Conditioning Apparatus for Supplying Temperature Conditioned Air, Such as to Protective Clothing of Industrial Workers.
First use Aug. 22, 1961.

SN 184,024. Basic Products Corporation, Chicago, Ill. Filed Jan. 6, 1964.

CARBOTROL

For Heat Treating Furnaces.
First use March 1954.

SN 184,760. Sunbeam Corporation, Chicago, Ill. Filed Jan. 16, 1964.

SUNBEAM

Owner of Reg. Nos. 390,181, 540,165, and 613,962.
For Humidifiers and Parts Thereof.
First use Oct. 25, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 185,434. National Coupling Company, Inc., Fort Wayne, Ind. Filed Jan. 27, 1964.

VanR

For Vinyl and Rubber Gaskets Used on Concrete and Clay Pipe.
First use Sept. 19, 1959.

Class 36 — Musical Instruments and Supplies

SN 173,935. Living Shakespeare, Inc., New York, N.Y. Filed July 29, 1963.

LIVING SHAKESPEARE

For Phonograph Records.
First use Nov. 6, 1961.

Class 37 — Paper and Stationery

SN 157,906. Indexes Unlimited, Ltd., Oyster Bay, N.Y. Filed Nov. 26, 1962.

VALU-PLUS

For Index Tabs and Index Cards and Sheets.
First use Nov. 16, 1962.

SN 177,652. Oxford Paper Company, New York, N.Y. Filed Sept. 24, 1963.

PERFECTOWEB

For Web Offset Printing Papers.
First use Aug. 23, 1963.

SN 178,019. Mississippi Industrial Land and Timber Corporation, Jackson, Miss. Filed Sept. 30, 1963.

O.K.

For Toilet Tissue, Facial Tissues, Paper Toweling, Wax Paper, and Other Similar Related Paper Products.
First use July 10, 1963.

SN 192,212. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Paper and Articles Made of Paper, Specifically Writing Papers, Die-Cut Flat Cartons, Printing Papers, Paper Mounts for Photographers, Bookcovers, Artists' Paper and Wall Papers.

SN 193,677. David Kahn, Inc., North Bergen, N.J. Filed May 18, 1964.

WEAREVER

Owner of Reg. Nos. 267,704, 762,777, and others.
For Writing Instruments and Parts Therefor and Related Items—Namely, Writing and Marking Pens and Pencils and Parts Therefor Including Fountain Pens, Ink Cartridge Pens, Felt Tip Marking Pens, Ball Point Pens, Desk Pens, Mechanical Pencils, Pen and Pencil Sets, Pen Points, Replacement Cartridges and Refills for Ball Point Pens, Ink Cartridge Pens and Marking Pens, Erasers and Pencil Leads.
First use June 2, 1963, on marking pens; at least as early as 1918 as to the mark, on related goods, in a different form.

SN 199,944. American Can Company, New York, N.Y. Filed Aug. 17, 1964.

GALA

For Paper Products—Namely, Toilet Tissue, Towels, Napkins, Facial Tissue, and Waxed Paper.
First use Jan. 31, 1964.

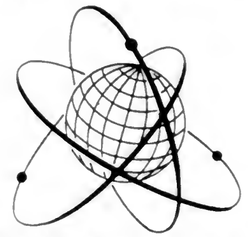
Class 38 — Prints and Publications

SN 162,656. Paul de Haen, New York, N.Y. Filed Feb. 13, 1963.

DRUGS IN PROSPECT

For Pharmaceutical Index Cards Published From Time to Time.
First use Jan. 25, 1963.

SN 166,066. Color Guild Associates, Los Angeles, Calif. Filed Apr. 4, 1963.



For Architects' and Decorators' Books of Different Color Cards, Merchants' Color Card Books, Contractors' Color Card Books, and Color Cards.
First use July 6, 1962.

SN 173,934. Living Shakespeare, Inc., New York, N.Y. Filed July 29, 1963.

LIVING SHAKESPEARE

For Series of Folio Books Containing Plays Written by William Shakespeare.
First use Nov. 6, 1961.

SN 175,324. Robert Sanderson, d.b.a. Concept Textbook Company, Mount Vernon, N.Y. Filed Aug. 19, 1963.

CONCEPTtext
CONCEPTtext

For Textbooks Published From Time to Time.
First use Aug. 12, 1963.

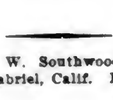
SN 176,954. Retail Clerks International Association, Washington, D.C. Filed Sept. 13, 1963.



Owner of Reg. No. 420,983.
For Monthly Magazine, and Miscellaneous Printed Matter Issued From Time to Time.
First use 1946.

SN 177,355. Alexander Hamilton Institute, Incorporated, New York, N.Y. Filed Sept. 19, 1963.

Modern Business



The person whose portrait is part of the mark is Alexander Hamilton, the great Revolutionary hero, publicist, etc. Owner of Reg. No. 125,948.
For Books.
First use 1917.

SN 177,814. Sydney W. Southwood, d.b.a. The Bleeding Turnip Line, San Gabriel, Calif. Filed Sept. 26, 1963.



For Printed Collection Notices.
First use July 1963.

SN 184,372. Galaxy Publishing Corp., New York, N.Y. Filed Jan. 10, 1964.

MAGABOOK

For Books.
First use Apr. 2, 1963.

SN 186,278. Furman W. Quick, d.b.a. Systematic Digit 7, Baltimore, Md. Filed Feb. 7, 1964.

SYSTEMATIC DIGIT 7

For Periodic Pamphlet Relating to Astrology.
First use Dec. 3, 1963.

SN 187,290. The Iowa Engineering Society, Des Moines, Iowa. Filed Feb. 24, 1964.

THE EXPONENT

For Magazine Publication.
First use May 1940.

SN 187,313. National Periodical Publications, Inc., New York, N.Y. Filed Feb. 24, 1964.

METAL MEN

For Comic Books.
First use Feb. 28, 1963.

SN 187,330. Michael C. Rann, d.b.a. Michael C. Rann Agency, Chicago, Ill. Filed Feb. 24, 1964.

IT'S TIME FOR THE COFFEE BREAK

For Monthly News Sheet Containing Information on Insurance, Taxes, and Items of General Interest.
First use September 1963.

SN 187,713. American Bowling Congress, Milwaukee, Wis. Filed Mar. 2, 1964.

BOWLING

For Printed Magazine Relating to Matters Affecting the Sport of Bowling.
First use Aug. 16, 1940.

SN 187,927. The Jackmeyer Corporation, New York, N.Y. Filed Mar. 4, 1964.

JACKRON

For Printed Labels and Tags.
First use Jan. 10, 1964.

SN 188,251. The Market Place, Inc., Oxon Hill, Md. Filed Mar. 9, 1964.

THE MARKET PRICE

For Monthly Bulletin Directed to the Aviation Industry.
First use September 1963.

SN 189,514. Trailer Dealer Publishing Company, Chicago, Ill. Filed Mar. 24, 1964.

MOBILE HOME/TRAVEL TRAILER DEALER

Owner of Reg. No. 666,714.
For Magazine.
First use Jan. 5, 1964.

SN 189,902. William Joseph Kunkler, d.b.a. Dial-A-Double, Columbus, Ohio. Filed Mar. 30, 1964.

DIAL-A-DOUBLE

For Printed Goods (Paper Dial Used To Compute Daily Double at Race Track).
First use Mar. 11, 1964.

SN 192,586. General Development Corporation, Miami, Fla. Filed May 4, 1964.

NEW VISTAS

For Magazine for Property Owners in Communities Developed by Applicant.
First use Feb. 12, 1964.

Class 39 — Clothing

SN 137,086. Pem Classics, Inc., New York, N.Y. Filed Feb. 1, 1962.

PEM CLASSICS

The word "Classics" is disclaimed apart from the mark as shown.
For Ladies' Blouses, Skirts, Shorts, Jackets, Dresses, and Sets Including Combinations of the Foregoing.
First use Dec. 1, 1961.

SN 138,836. The Atlas Company, d.b.a. The Atlas Co., Ephrata, Pa. Filed Mar. 1, 1962.

Spiffies

For Denims and Dungarees.
First use on or about Jan. 10, 1962.

SN 139,144. Sheffield Hosiery Mills, Inc., Miami, Fla. Filed Mar. 5, 1962.

RUN-KNOT
TOP and TOE

No claim is made to the words "Top and Toe," apart from the mark as shown.
For Hosiery.
First use Feb. 9, 1962.

SN 166,096. Holly Stores, Inc., New York, N.Y. Filed Apr. 4, 1963.

MISS HOLLY OF 5TH AVE.

The words "Of 5th Ave." are disclaimed apart from the mark as shown.
For Lingerie, Dresses, Blouses, Coats, Skirts, and Slacks.
First use Dec. 12, 1962.

SN 171,402. Teenform, Inc., New York, N.Y. Filed June 19, 1963.

HIP MATE

For Girdles and Panty Girdles.
First use June 15, 1961.

SN 176,649. Erlee Manufacturing Corporation, Passaic, N.J. Filed Aug. 23, 1963.



For Infants' Wear—Namely, Baby Pants.
First use July 24, 1963.

SN 175,691. Saks & Company, New York, N.Y. Filed Aug. 23, 1963.

CONVERTIBLE FLYER

Owner of Reg. No. 633,231.
For Men's Shoes.
First use Aug. 13, 1963.

SN 178,397. Alix of Miami, Inc., Miami, Fla. Filed Oct. 7, 1963.

Jodie Rae
PETITES

The name "Jodie Rae Petites" is fanciful. The word "Petites" is disclaimed apart from the mark as shown.
For Women's Outer Camisoles and Bras, Outer Shorts and Shirt Combinations, Swim Suits, Pedal Pushers, Slacks, Jackets, Blouses, Skirts, Beach Coats and Dresses; and Men's Shirts, Shorts, Slacks, Swim Suits, Sport Jackets, and Beach Coats.
First use on or about July 1, 1963.

SN 180,882. Hat Council, Inc., New York, N.Y. Filed Nov. 12, 1963. COLLECTIVE MARK.

SLIPSTREAM

The mark is used to indicate the goods of the members of the applicant.
For Hats and Caps.
First use Oct. 15, 1963.

SN 183,487. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed Dec. 11, 1963.

WEARTEX

Owner of Reg. No. 175,765.
For Men's and Young Men's Suits, Sport Coats, Topcoats, and Overcoats.
First use June 1928; January 1923 on related goods.

SN 184,094. Neisner Brothers, Inc., Rochester, N.Y. Filed Jan. 6, 1964.

ANDY LEWIS QUALITY

Applicant disclaims the descriptive word "Quality" apart from the mark as shown. The name "Andy Lewis" is fictitious. Owner of Reg. Nos. 708,114, 708,115, and 708,116.
For Hosiery and Shoes.
First use June 1, 1960.

SN 184,798. The Eastern Isles, Inc., New York, N.Y. Filed Jan. 17, 1964.

SMART TIME

For Women's and Children's Robes, Dusters, Negligees, and Bathrobes.
First use Apr. 10, 1957.

SN 184,968. Rugby Knitting Mills, Inc., Buffalo, N.Y. Filed Jan. 20, 1964.

Rugby

Owner of Reg. Nos. 162,114, 772,367, and others.
For Sport Jackets, Slacks, and Shirts.
First use December 1950.

SN 185,487. Beverly Vogue Company, Los Angeles, Calif. Filed Jan. 28, 1964.

SAV-A-SKIRT

Owner of Reg. No. 636,861.
For Ladies' Lingerie, Slips, and Half-Slips.
First use Dec. 13, 1963.

SN 185,528. Parkcrest of Dallas, Inc., Dallas, Tex. Filed Jan. 28, 1964.

MR M

For Women's Dresses, Skirts, Jackets, Blouses, and Suits.
First use Nov. 5, 1963.

SN 186,082. F. Jacobson & Sons, Inc., New York, N.Y. Filed Feb. 5, 1964.

TURTLE DOVES

For Men's Pajamas, Sport Shirts, and Knit Shirts.
First use Jan. 23, 1964.

SN 186,972. Firma Rieker & Co., Tuttlingen, Wurttemberg, Germany. Filed Feb. 18, 1964.

Rieker SEALED SOLE

No claim is made to the words "Sealed Sole" apart from the mark as shown. Owner of U.S. Reg. No. 623,529.
For Ski Boots.
First use Oct. 28, 1963; in commerce Oct. 28, 1963.

SN 187,504. Merit Clothing Company, Mayfield, Ky. Filed Feb. 26, 1964.

BERKELEY HALL

For Men's Suits.
First use Aug. 22, 1957.

SN 189,470. The Hercules Trouser Company, Columbus, Ohio. Filed Mar. 24, 1964.

Flex-ton

For Slacks and Trousers.
First use Jan. 24, 1964.

SN 189,519. John Winter & Son, Inc., Short Hills, N.J. Filed Mar. 24, 1964.

EMPIRIC FOOTWEAR

The word "Footwear" is disclaimed apart from the mark as shown.
For Footwear—Namely, Men's Shoes.
First use Mar. 6, 1964.

SN 189,869. Chestnut Hill Industries, Inc., Hollywood, Fla. Filed Mar. 30, 1964.

EASETTA

For Fabrics Made Up Into Women's and Misses' Finished Apparel—Namely, Slacks, Skirts, Blouses, Sweaters, and Shorts.
First use at least as early as Aug. 1, 1963.

SN 190,527. Melville Shoe Corporation, New York, N.Y. Filed Apr. 7, 1964.

SWIMMER

For Men's and Women's Shoes.
First use Mar. 25, 1964.

SN 191,241. The Asher Company, Fitchburg, Mass. Filed Apr. 16, 1964.

FLEX-A-WAIST

For Men's, Boys', and Women's Pants.
First use Mar. 9, 1964.

SN 191,490. Bettee Hosiery Mills, Inc., San Mateo, Calif. Filed Apr. 20, 1964.

KEYER

For Men's Hosiery.
First use on or about Aug. 29, 1963.

SN 191,614. Julius Schmid, Inc., New York, N.Y. Filed Apr. 20, 1964.

IMPERIAL

For Rubber Household Gloves.
First use on or about Apr. 3, 1964.

SN 191,668. Beryl Mills, Inc., New York, N.Y. Filed Apr. 21, 1964.

"FOUR IN ONE"

For Pajamas.
First use Jan. 9, 1964.

SN 191,809. Constance Thackeray, Toledo, Ohio. Filed Apr. 22, 1964.

APRANTS

For Aprons.
First use Sept. 13, 1963.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 171,324. Deering Milliken, Inc., New York, N.Y. Filed June 19, 1963.

BRIGADOON

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use June 5, 1963.

SN 183,393. Fields Plastics & Chemicals, Inc., Lodi, N.J. Filed Dec. 23, 1963.

CAVALIER

For Water Repellent Piece Goods in Sheet Form of Vinyl Plastic With a Cotton Backing Used by the Outerwear Industry for Coats, Jackets, Overcoats, Raincoats, Hats, Shoe Uppers, and Slippers.
First use Nov. 5, 1963.

SN 187,254. Crompton Company, New York, N.Y. Filed Feb. 24, 1964.

STORM CLOUD

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers and Blends Thereof.
First use Jan. 21, 1964.

SN 187,825. Troy Mills Incorporated, Troy, N.H. Filed Mar. 2, 1964.

TROY LEISURE BLANKET

Applicant disclaims the word "Blanket" apart from the mark as shown. Owner of Reg. Nos. 299,668, 534,679, and 593,965.
For Blankets of Either Wool, Cotton and Synthetic Fibers or Mixtures Thereof.
First use Jan. 28, 1963.

SN 187,912. Chatham Manufacturing Company, Elkin, N.C. Filed Mar. 4, 1964.

SPRINGFIELD

Owner of Reg. Nos. 407,285 and 407,286.
For Blankets and Fabrics in the Piece Adapted for Use in Making Suits, Coats, Dresses, Jackets, Raincoats, and the Like.
First use Apr. 30, 1903, on blankets.

SN 191,730. Wellington Sears Company, New York, N.Y. Filed Apr. 21, 1964.

TAMARA

For Piece Goods of Cotton or Synthetics, or Cotton and/or Synthetics.
First use September 1963.

SN 192,374. Deering Milliken, Inc., New York, N.Y. Filed Apr. 30, 1964.

BIG "M"

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use Mar. 6, 1964.

SN 193,104. Canton Cotton Mills, Canton, Ga. Filed May 11, 1964.

CANSPAN

For Piece Goods of Cotton, Wool, Synthetic Fibers, and Combinations Thereof.
First use Feb. 26, 1964.
Subj. to Intf. with SN 189,874.

Class 43 — Thread and Yarn

SN 188,808. Standard Coosa Thatcher Company, Chattanooga, Tenn. Filed May 1, 1964.

SMOOTH SERGE

For Industrial Sewing Thread.
First use Sept. 12, 1959.

SN 192,215. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Threads and Yarns of Synthetic Fibers in the Form of Single and Multiple Strands, Twisted Strands, String, and Cord.

SN 192,467. Brunswick Worsted Mills, Inc., Moosup, Conn. Filed May 1, 1964.

Lanyle

For Knitting Yarn.
First use about Apr. 1, 1959.

SN 192,468. Brunswick Worsted Mills, Inc., Moosup, Conn. Filed May 1, 1964.

POMFRET

For Knitting Yarn.
First use about Apr. 1, 1955.

Class 44 — Dental, Medical, and Surgical Appliances

SN 172,690. Societe de Distribution d'Appareils pour la Coiffure (S.O.D.A.C.), Paris, France. Filed July 9, 1963.

BABYLISS

Owner of French Reg. No. 508,905, dated Nov. 6, 1962 (Seine); Natl. Inst. No. 194,375.
For Electric Hair Curlers.

SN 176,116. Lester H. Roth, Pittsburgh, Pa. Filed Aug. 30, 1963.

CRISCORD

For Cotton Strand and Like Materials Impregnated With Calcium or Calcium Containing Compounds Such as Synthetic Calcium Hydroxyapatite for the Purpose of Hemostasis and Retraction of the Gum.
First use Aug. 1, 1963.

SN 178,224. Jacob A. Saffir, Los Angeles, Calif. Filed Oct. 2, 1963.

BIOSONIC

For Ultrasonic Dental Prophylaxis Instrument.
First use July 10, 1963.

SN 178,465. Mehron, Inc., New York, N.Y. Filed Oct. 7, 1963.

EYE-FASHION

For Artificial Eyelashes.
First use Jan. 2, 1963.

SN 182,368. Silva Inc., La Porte, Ind. Filed Dec. 4, 1963.

SILVA

Owner of Reg. Nos. 378,365, 381,413, and 585,073.
For Electric Heaters for Sauna Baths.
First use February 1963.

SN 184,079. Ketchum & Co. Inc., d.b.a. Ultimate, New York, N.Y. Filed Jan. 6, 1964.

ULTIMATE

For Fountain Syringes, Combination Syringes, Travel Syringes, and Hot Water Bottles.
First use Nov. 14, 1962.

SN 185,807. One Wilkinson Avenue, Inc., Jersey City, N.J. Filed Jan. 31, 1964.

OXSILIT

For Translucent Silicate Oxyphosphate Filling for Teeth.
First use January 1936.

SN 188,058. Snowden-Pencer Corporation, Los Gatos, Calif. Filed Mar. 2, 1964.

DIAMOND JAW

Owner of Reg. No. 573,181.
For Surgical Needle Holders and Precision Fitted Jaw Inserts Therefor.
First use March 1951.

SN 199,093. Nordic American Manufacturing Co., San Francisco, Calif. Filed Aug. 3, 1964.

Scandia Sauna

The word "Sauna" is disclaimed apart from the mark as shown.
For Heaters and Accessories for Sauna Baths.
First use Jan. 3, 1963.

SN 199,749. Meadox Medicals, Incorporated, Haledon, N.J. Filed Aug. 12, 1964.

MICRO-CRIMPED

For Surgical Supplies—Namely, Vascular Prosthetic Devices and Materials.
First use on or about Mar. 14, 1958.

Class 45 — Soft Drinks and Carbonated Waters

SN 162,443. Crush International Inc., Evanston, Ill., assignee of Inter-American Orange-Crush Company, Evanston, Ill. Filed Feb. 11, 1963.

Bidú Cola

The word "Cola" is disclaimed apart from the mark as shown. Owner of Reg. No. 390,000.
For Cola-Type Soft Drinks and Emulsions for Making the Same.
First use on or about Feb. 1, 1957.

Class 46 — Foods and Ingredients of Foods

SN 125,469. Colonial Provision Co., Inc., Boston, Mass. Filed Aug. 7, 1961.

Colonial

For Bacon, Frankfurters, Ham, Sausage, Bologna, and Other Smoked and Prepared Meats.
First use during May 1939.

SN 146,658. Pure Milk Association, Chicago, Ill. Filed June 11, 1962

Dairy Lane

Applicant claims use for the area comprising all the territory in the United States except the area comprising the counties of Macon and Logan in the State of Illinois. Owner of Reg. No. 647,192.
For Milk and Dairy Products—Namely, Evaporated, Condensed, Powdered, Dehydrated, Malted and Whole Milk, Bottled Milk, Cream, Ice Cream, Ice Cream Bars, Butter, Cheese, and Cottage Cheese.
First use Mar 16, 1950.
Subj. to Con. Use Proc. with Kentland Dairy Corp.

SN 156,077. Chock Full O' Nuts Corporation, New York, N.Y. Filed Oct. 29, 1962.

Chock full o' Nuts

Owner of Reg. Nos. 564,547, 580,454, and 632,806.
For Cakes, Pie, and Doughnuts.
First use about 1928.

SN 158,437. Charles Freihofer Baking Company, Inc., Troy, N.Y. Filed Dec. 4, 1962.

GRAND BAKE

For Bakery Products—Namely, Bread.
First use Nov. 1, 1962.

SN 159,052. Empire Pretzel & Potato Chip Corp., Buffalo, N.Y. Filed Dec. 13, 1962.

Mister TEE'S

For Potato Chips and Corn Type Snack Products, Including Corn Chips, Cheese Corn, and Popcorn.
First use in or about October 1962.

SN 162,630. Stanley J. Demos, d.b.a. Stanley Demos, Cincinnati, Ohio. Filed Feb. 13, 1963.

Champagne DRESSING Stanley Demos

The words "Champagne Dressing Made by Stanley Demos" are disclaimed apart from the mark.
For Salad Dressing.
First use Apr. 2, 1958.

SN 165,446. The Miami Margarine Company, d.b.a. Delmar Products Company, Cincinnati, Ohio. Filed Mar. 26, 1963.

royal scot

Lines shown in the design portion of the drawing are a feature of the mark and do not represent particular colors. Owner of Reg. Nos. 670,705 and 680,585.
For Salad Dressing.
First use Jan. 16, 1958.

SN 166,842. Stevens Candy Kitchens, Incorporated, Chicago, Ill. Filed Apr. 16, 1963.

HONEY BONS

Applicant disclaims the word "Honey" apart from the mark as shown.
For Candies.
First use Mar. 15, 1963.

SN 172,768. Pakco Companies, Inc., Hammonton, N.J. Filed July 10, 1963.

PAKCO-PAK

For Fresh Berries.
First use May 21, 1960.

SN 173,090. Armour and Company, Chicago, Ill. Filed July 16, 1963.

BANNER

For Meat Products—Namely, Fresh, Cooked, Dry, and Smoked Sausage, Fresh and Frozen Liver, and Smoked Pork.
First use in or about March 1915.

SN 174,951. Frankford Candy & Chocolate Co., Inc., Philadelphia, Pa. Filed Aug. 13, 1963.

EASTER LANE TREATS

The word "Treats" is disclaimed apart from the mark as shown.
For Chocolate Candy.
First use Aug. 1, 1963.

SN 175,210. Prince Macaroni Manufacturing Company, Lowell, Mass. Filed Aug. 16, 1963.

PRINCE

Owner of Reg. Nos. 137,680, 691,367, and others.
For Alimentary Paste, and Allied Food Products—Namely, Spaghetti, Macaroni, Noodles, Vermicelli, Lasagna, Ravioli, Shells, Bonnets, Bows, Rings, Elbows, etc., Baby Food Pastina, Spaghetti Sauce, Meat Sauce, Mushroom Sauce, Marinara Sauce, Pizza Sauce, Lobster Sauce, Bolognese Sauce, Clam Sauce, Low Calorie Sauce; Romano Cheese, Parmesan Cheese, Shaker Top Cheese; Pizza Pie Mixes; Bread Crumbs; Prepared Spaghetti Dinners in Dry Form Having the Following Components: Spaghetti, Sauce and Cheese; Heat and Serve Prepared Foods Sold in Cans or Jars—Namely, Ravioli in Sauce, Spaghetti in Sauce, Shells in Sauce, Macaroni and Beans, Sausages in Sauce; Italian White Beans; Italian Olive Oil; Imported Olives, Onions, Pickles, Pimientos and Gherkins.
First use Dec. 12, 1912.

SN 175,955. Tomatoes Unlimited, Inc.-Waynesville, Waynesville, N.C. Filed Aug. 28, 1963.

Mountain Pride

The word "Mountain" is disclaimed apart from the mark as shown.
For Fresh Tomatoes.
First use on or about July 30, 1963.

SN 176,545. Liguori Hermanos S.A. Agropecuaria, Comercial, Industrial, e Inmobiliaria, Buenos Aires, Argentina. Filed Sept. 9, 1963.

SALUD

The word "Salud" means "health" in the English language.
For Fresh Fruit.
First use January 1943; in commerce Feb. 10, 1953.

SN 177,200. National Tea Co., Chicago, Ill. Filed Sept. 13, 1963.

TOP TASTE

Owner of Reg. Nos. 444,626, 728,902, and others.
For Dairy Products for Food Purposes Such as Fluid Milk, Evaporated Milk, and Powdered Milk.
First use in or during August 1956.

SN 177,537. National Fruit Product Co., Inc., Winchester, Va. Filed Sept. 23, 1963.

SUNTINT

Owner of Reg. Nos. 201,311 and 396,398.
For Canned Peaches.
First use August 1950.

SN 177,661. Carene B. Hirlinger, d.b.a. Sovex Food Products, Holly, Mich. Filed Sept. 24, 1963.

SOVEX

For Yeast-Vegetable Concentrate, Used for Seasoning, for Making Soup, Drinks, Bouillions, and as a Spread for Bread, Crackers, and Sandwiches.
First use June 1, 1939.

SN 178,422. Derry Products, Inc., Brooklyn, N.Y. Filed Oct. 7, 1963.



The words "Pina Colada" are disclaimed when used apart from the mark as shown. Owner of Reg. No. 620,061.
For Bottled and Canned Non-Carbonated Fruit Drink Containing Fruit Juice.
First use Apr. 4, 1963.

SN 179,314. The Borden Company, New York, N.Y. Filed Oct. 18, 1963.

spf-LAC

For Replacement for Sow's Milk.
First use Nov. 20, 1961.

SN 179,703. Mary Ellen's, Incorporated, Orrville, Ohio. Filed Oct. 24, 1963.

A CUP TO A CUP

Owner of Reg. No. 586,796.
For Jams, Jellies, Marmalade, and Apple Butter.
First use Jan. 27, 1942.

SN 183,088. G. Gould Murdick, Charlevoix, Mich. Filed Dec. 16, 1963.

MURDICK'S FAMOUS

For Fudge and Other Candies.
First use July 1, 1923.

SN 184,027. E. J. Brach & Sons, Chicago, Ill. Filed Jan. 6, 1964.

BURGUNDY

Owner of Reg. No. 555,315.
For Candy.
First use in or about January 1933.

SN 186,072. General Foods Corporation, White Plains, N.Y. Filed Feb. 5, 1964.

POST

Owner of Reg. Nos. 69,283, 655,328, and others.
For Food Product, Dough-Like in Nature, With or Without a Fruit Filling, To Be Prepared in a Pop-Up Toaster.
First use Oct. 15, 1963.

SN 187,473. Carter Products, Inc., New York, N.Y. Filed Feb. 26, 1964.

SLENDER WHIRL

For Salad Dressing.
First use Nov. 13, 1963.

SN 187,737. El-Ge Potato Chip Co., Inc., York, Pa. Filed Mar. 2, 1964.

COLLEGE PARK

For Potato Chips.
First use April 1962.

SN 187,877. National Dairy Products Corporation, New York, N.Y. Filed Mar. 3, 1964.

n·r·g (ENERGY)

For Fortified Fluid Skim Milk.
First use on or about Feb. 1, 1962.

SN 187,882. Star Canning Company, Lindale, Tex. Filed Mar. 3, 1964.

FAMOUS STAR

For Canned Blackberries and Canned Vegetables.
First use December 1920.

SN 188,045. National Biscuit Company, New York, N.Y. Filed Jan. 24, 1964.

FAST BREAK

For Cereal Breakfast Food.
First use Oct. 14, 1963.

SN 190,779. Bentley-Markey, Inc., San Francisco, Calif. Filed Apr. 10, 1964.

Cathay

For Canned Fruit.
First use Oct. 10, 1963.

SN 190,781. Berger & Plate Company of San Francisco, d.b.a. Berger and Plate Company, San Francisco, Calif. Filed Apr. 10, 1964.

ZAMBA

For Dried Vegetables.
First use September 1951.

SN 196,870. Leaf Brands, Inc., Chicago, Ill. Filed July 2, 1964.

LEAF TROLL

Owner of Reg. Nos. 531,421, 737,243, and others.
For Chewing Gum.
First use June 4, 1964.

SN 197,093. Wilbur B. Cox, d.b.a. Kings Foods Products, San Francisco, Calif. Filed July 6, 1964.

GOLDEN ORCHARD

For Canned Fruits.
First use in the year 1916.

SN 197,111. G. & S. Produce Company, d.b.a. G & S Produce Co., Somerton, Ariz. Filed July 6, 1964.

GUNSMOKE

For Fresh Vegetables and Fresh Melons.
First use Dec. 16, 1963.

SN 197,248. The Arkansas Rice Growers Cooperative Association, Stuttgart, Ark. Filed July 7, 1964.

GREEN SHIELD

For Rice.
First use January 1941.

SN 197,249. The Arkansas Rice Growers Cooperative Association, Stuttgart, Ark. Filed July 7, 1964.

LOTUS

For Rice.
First use October 1946.

SN 197,250. The Arkansas Rice Growers Cooperative Association, Stuttgart, Ark. Filed July 7, 1964.

MONOGRAM

For Rice.
First use October 1941.

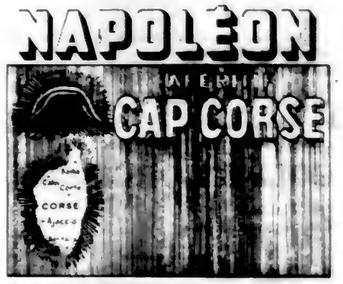
Class 47 — Wines

SN 173,874. Societe N. Napoleon & Cie, Marseilles, Bouches-du-Rhone, France. Filed July 26, 1963.



The drawing is lined for gold and red, but no claim is made to color. Owner of French Reg. No. 44,077, dated Apr. 14, 1959 (Marseilles); Natl. Inst. No. 125,518.
For Wines.

SN 173,875. Societe N. Napoleon & Cie, Marseilles, Bouches-du-Rhone, France. Filed July 26, 1963.



The drawing is lined for red and gold. No claim is made to the words "Aperitif" and "Cap Corse," and to the map of Corsica apart from the mark as shown. Owner of French Reg. No. 42,023, dated Apr. 25, 1955 (Marseilles); Natl. Inst. No. 56,577.
For Wine Aperitif.

SN 187,484. Distillers Corporation (S.A.) Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Feb. 26, 1964.

HERE XVII
SOUVEREIN

The words "Here" and "Souverein" are Afrikaans and mean "gentlemen" and "sovereign," respectively. Owner of South African Reg. No. R61/2025, dated Nov. 27, 1961.
For Sparkling Wines.

Class 49 — Distilled Alcoholic Liquors

SN 142,448. Distillerie König GmbH, Lisihus, Zug, Switzerland, by change of name from Puschkin GmbH, Lisihus, Zug, Switzerland. Filed Apr. 17, 1962.



Reserving all common law rights, the German words "Nach Einem Rezept Alter Schule" (according to a recipe of old school) and the Russian words "Stolovaya Vodka" (table vodka) are disclaimed apart from the mark as shown.
For Vodka.
First use Oct. 21, 1959; in commerce Oct. 14, 1961.

SN 172,657. Goddards Limited, St. Thomas, Virgin Islands. Filed July 9, 1963.

GODDARD'S

For Rum.
First use November 1948; in commerce November 1948.

Class 50 — Merchandise Not Otherwise Classified

SN 147,693. Bourges Color Corporation, New York, N.Y. Filed June 26, 1962.

DULTOP

For Transparent (Dull) Plastic Sheets With Adhesive Backing Used in the Preparation of Art Work.
First use at least as early as Feb. 9, 1962.

SN 147,694. Bourges Color Corporation, New York, N.Y. Filed June 26, 1962.

KLEERTOP

For Transparent (Glossy) Plastic Sheets With Adhesive Backing Used in the Preparation of Art Work.
First use Sept. 8, 1955.

SN 161,434. Anthony Schools, Los Angeles, Calif. Filed Jan. 25, 1963.

ANTHONY

For Teaching Device Comprising a Casing Having Adjustable Sliding Panels and Pamphlets Bearing Questions and Answers Adapted To Be Used With Such Casing.
First use Dec. 21, 1962.

SN 175,714. The Borden Company, New York, N.Y. Filed Aug. 26, 1963.

RE*NU

For Self-Adhesive Plastic Film, With Removable Protective Backing, for Decorative Purposes.
First use Aug. 30, 1962.

SN 177,134. World Gift Company, Dallas, Tex. Filed Sept. 16, 1963.



For Household Decorative Novelties—Namely, Decorative Fruits, Grass Mats, Brass Plaques, Wood Fiber Roses, Grass Rugs, Wrought Iron Shelves, Brass Shoes, Wooden Shoes, Aluminum Statuettes, Brass Statuettes, Wood Statuettes, and Ceramic Statuettes.
First use Mar. 1, 1953.

SN 190,941. Mack-Wayne Plastics Company, Wayne, N.J. Filed Apr. 13, 1964.



For Molded Plastic Closures.
First use Jan. 24, 1964.

SN 191,269. Evers Industries, Inc., Long Island City, N.Y. Filed Apr. 16, 1964.

Vyn-A-Wood

For Artificial Fruit and Fruit Bowls.
First use Feb. 25, 1964.

SN 191,847. T. J. Edwards, Inc., Jamaica Plain, Mass. Filed Apr. 23, 1964.

EDMARK

For Name Plates and Labels of Metal or Other Sheet Material for Machinery and Manufactured Products.
First use Mar. 31, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 145,271. Maradel Products Inc., New York, N.Y. Filed May 23, 1962.

Crême Emolia

The word "Creme" is disclaimed apart from the mark as shown.
For Moisturizing Cream for the Skin.
First use Apr. 13, 1962.

SN 162,104. Robert J. Leigh, d.b.a. Fashion Fair Company, Arcadia, Calif. Filed Feb. 5, 1963.

Fashion Fair

For Hair Setting Lotion for Women.
First use Feb. 1, 1962.

SN 164,281. Tre Beau Cosmetic Company, Baltimore, Md. Filed Mar. 8, 1963.

Tré Beau
COSMETICS



The word "Cosmetics" is disclaimed. The English translation of "Beau" is "handsome."
For Bath Oil, Bath Salts, Dusting Powder, Hair Tonic Shampoo, Lipstick, Makeup Foundations, Rouge, Face Powder, Eyebrow Pencils, Roll On Mascara, Nail Polish, Cleansing Cream, Skin Freshner, Hormone Cream, Beauty Masque, Medicated Creams, Body Lotions, Hand Cream, Hand Lotion, Foot Cream, Suntan Lotion, Deodorants, Cream Sachet, and Cologne.
First use Apr. 2, 1962.

SN 165,207. Carley, Inc., Haddonfield, N.J. Filed Mar. 22, 1963.



For Men's Cologne.
First use Mar. 8, 1963.

SN 165,845. Shulton, Inc., Clifton, N.J. Filed Apr. 1, 1963.



Reserving unto itself all of its common law rights, applicant disclaims sole right to the word "Spice" apart from the mark as shown. Owner of Reg. Nos. 344,285, 374,868, and others.

For Roll-On Deodorant, After Shave Lotion, After Shave Talcum, and Men's Cologne.

First use 1937.

SN 170,027. Caprex, Inc., Detroit, Mich. Filed May 31, 1963.

KAPREX

For Liquid Composition for Grooming and Controlling Human Hair.

First use Mar. 26, 1963.

SN 172,280. Fernando Terrego Martin, Madrid, Spain. Filed June 17, 1963.



"Ana Balena" is the name of the second wife of Henry VIII of England. Owner of Spanish Reg. No. 122,623, dated Feb. 5, 1943.

For Hair-Dressing Preparation, Hair-Coloring Preparation, Toilet Water, Cologne, Finger Nail and Toe Nail Manicuring Preparation, After Shave Lotion, Dentifrices, Cosmetic Skin Cream and Lotions, Hand Lotions and Creams, Face and Body Powders, Lipsticks and Hair Dyes, Personal Deodorant Preparations, Rouge, Eye Shadow, Mascara, Mascara Liquid Eyeliner, Eyebrow Pencil, Bath Oils, Body Lotions, Cold Permanent Waving Preparations, Foundation Creams and Powders, and Perfume.

SN 172,686. Rhodes Pharmacal Co., Inc., Chicago, Ill. Filed July 9, 1963.

HOLDEX

For Resin Ingredient Incorporated in a Hair Holding Spray.

First use July 3, 1962.

SN 176,544. La Maur, Inc., Minneapolis, Minn. Filed Sept. 9, 1963.

STRATONE

For Permanent Type Hair Straightening Kit, Composed of Hair Straightening Preparations, Shampoo, Hair Rinse, Neutralizer, and Hair Conditioner.

First use Sept. 3, 1963.

SN 185,090. Victor F. Trebay, Deer Park, N.Y. Filed Jan. 21, 1964.

HAWAIIAN SURF

For After-Shave Cologne for Men.

First use on or about Jan. 2, 1964.

SN 187,179. Cosway Company, Inc., Beverly Hills, Calif. Filed Feb. 21, 1964.

COSWAY

For Bubble Bath Preparations.

First use January 1962.

SN 187,998. B and L Products, Walsenburg, Colo. Filed Mar. 5, 1964.

SALSODENT

For Dentifrice.

First use on or about Dec. 12, 1963.

SN 188,176. American Dietaids Company, Yonkers, N.Y. Filed Mar. 9, 1964.

NYCE

For Cold Cream.

First use May 30, 1938.

SN 190,865. Benson Enterprises, Inc., Kansas City, Mo. Filed Apr. 13, 1964.



For Cosmetic for Temporarily Smoothing Wrinkles.

First use March 1964; as early as April 1962 in a different form.

Subj. to Intf. with SN 191,950.

SN 191,172. Elizabeth Hartley, Inc., New York, N.Y. Filed Apr. 15, 1964.

MAGIC ROSE

For Perfumes and Colognes.

First use Apr. 3, 1964.

SN 191,173. Elizabeth Hartley, Inc., New York, N.Y. Filed Apr. 15, 1964.

CLANDESTINE

For Perfumes and Colognes.

First use Apr. 3, 1964.

SN 191,174. Elizabeth Hartley, Inc., New York, N.Y. Filed Apr. 15, 1964.

SERENDIPITY

For Perfumes and Colognes.

First use Apr. 3, 1964.

SN 191,175. Elizabeth Hartley, Inc., New York, N.Y. Filed Apr. 15, 1964.

HALLMARK

For Perfumes and Colognes.

First use Apr. 3, 1964.

SN 191,950. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Apr. 24, 1964.

LINE AWAY

For Wrinkle Smoother.

First use Mar. 28, 1964.

Subj. to Intf. with SN 190,865.

Class 52 — Detergents and Soaps

SN 145,176. Emery Industries, Inc., Cincinnati, Ohio. Filed May 22, 1962.

SYNERGIZER

For Absorbefacient and Detergent Used in Dry Cleaning, Hand Spotting, and for General Cleaning Purposes.

First use Apr. 23, 1962.

SN 166,500. Shulton, Inc., Clifton, N.J. Filed Apr. 10, 1963.



Reserving unto itself all of its common law rights, applicant disclaims sole right to the word "Spice" apart from the mark as shown. Owner of Reg. Nos. 344,285, 374,868, and others.

For Shaving Mug Containing Shaving Soap.

First use 1954.

SN 174,435. Peck's Products Company, St. Louis, Mo. Filed Aug. 5, 1963.

SUDS WITH MUSCLES

No claim is made to the word "Suds," apart from the mark as shown.

For Detergent for Cleaning Glass, and Metal Surfaces as Well as Dishes, Silverware, and Kitchenware.

First use 1951.

SN 187,480. Purex Corporation Ltd., Wilmington, Calif. Filed Feb. 25, 1964.

HANSOFT

Owner of Reg. No. 410,290.

For Waterless Hand Soap.

First use on or about Feb. 1, 1938.

SN 187,570. Easy Way Chemicals, Inc., Oklahoma City, Okla. Filed Feb. 27, 1964.

TERRIFIC

For All Purpose Household Cleaner.

First use Jan. 13, 1964.

SN 188,791. Petrol Inc., Cleveland, Ohio. Filed Mar. 16, 1964.

TOP MAN

For Cleaning and Restoring Compound for Convertible Tops of Automobiles and Vinyl and Plastic Surfaces of Automobile Seating, Head Liners, Luggage, and Furniture.

First use Jan. 15, 1964.

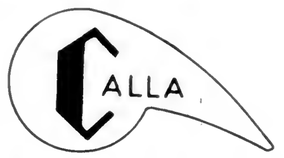
SN 190,597. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 8, 1964.

DANCE

For Toilet Soap and Hair Shampoo.

First use Feb. 11, 1964, on toilet soap.

SN 190,827. Odie T. Pipkin, d.b.a. Calla Chemical Company, Fullerton, Calif. Filed Apr. 10, 1964.



For All Purpose Cleaning and Degreasing Compound.

First use Apr. 1, 1962.

SERVICE MARKS

Class 100 — Miscellaneous

SN 156,384. Bill Curphy, d.b.a. Bill Curphy Enterprises, Dallas, Tex. Filed Nov. 1, 1962.

COASTA-RINK

For Engineering Design Services in the Field of Construction of Buildings Such as Skating Rinks.

First use Oct. 3, 1962.

SN 164,457. Mary Carter Paint Co., Tampa, Fla., assignee of National Biff-Burger System, Inc., Tampa, Fla. Filed Mar. 12, 1963.

BIFF-BURGER

For Drive-In Restaurant Service.

First use Mar. 17, 1959.

Class 101 — Advertising and Business

SN 161,106. Gulf Oil Corporation, Pittsburgh, Pa., assignee of Spencer Chemical Company, Kansas City, Mo. Filed Jan. 21, 1963.

PLASTICULTURE

For Counseling and Technical Assistance in the Selection and Use of Plastic Films, Chemicals, and Machinery in Growing Agricultural Crops.
First use Nov. 30, 1962.

SN 162,764. James J. Mitchell, Chicago, Ill. Filed Feb. 14, 1963.



For Consultation and Advice in Sales Promotion, and Business Brokerage Services.
First use Oct. 1, 1957.

SN 170,994. Dun & Bradstreet, Inc., New York, N.Y. Filed June 14, 1963.

D-U-N-S

Owner of Reg. No. 531,159.
For Assigning and Supplying Identification Numbers for Use by Business Enterprises for the Purpose of Facilitating the Automation of the Payment of Accounts Payable and the Obtaining of Business Statistics and Information.
First use Apr. 23, 1963.

SN 182,749. Stanley-Rose Company, Mobile, Ala. Filed Dec. 10, 1963.

IFIS

For Furnishing Advertising Counseling Services.
First use July 1956.

SN 185,669. Greater Detroit Board of Commerce, Detroit, Mich. Filed Jan. 30, 1964.



Exclusive registration rights in the words "Greater Detroit Board of Commerce" and "Founded 1903" are not claimed apart from the rest of the mark, all common law rights being retained.
For Promoting Regional Business and Commerce by Such Means as Working for Resolving Commercial, Industrial, and Financial Problems, and Civic Development, and Facilitating the Production and Distribution of Goods and Services in Order To Encourage an Atmosphere in Which Private Enterprise May Operate Profitably and Efficiently.
First use Sept. 1, 1963.

Class 102 — Insurance and Financial

SN 172,636. College Assurance Plan, Inc., Milwaukee, Wis., assignee of CAP, Inc., Milwaukee, Wis. Filed July 9, 1963.



Owner of Reg. No. 751,036.
For Insurance Agency Services—Namely, Sales and Service of Life Insurance Policies Specifically Designed for College Students.
First use May 1, 1963; June 1, 1959, as to the mark "CAP."

SN 184,432. Bradshaw Insurance Agency, Delphi, Ind. Filed Jan. 13, 1964.



For Insurance Agency Service.
First use Apr. 15, 1959.

SN 185,775. Hayden, Stone & Co., Incorporated, New York, N.Y. Filed Jan. 31, 1964.



The mark comprises a fanciful display of the letters "H" and "S."
For Investment Banking and Brokerage Services, Including the Underwriting and Distribution of Corporate Stocks and Bonds, and the Brokerage of and Other Dealings in Securities and Commodities.
First use on or about Jan. 6, 1964.

SN 187,879. The North Atlantic Life Insurance Company of America, Mineola, N.Y. Filed Mar. 3, 1964.



For Underwriting Life Insurance.
First use April 1962.

Class 104 — Communication

SN 178,233. Theatre Network Television, Inc., New York, N.Y. Filed Oct. 2, 1963.

T-N-T Color

The word "Color" is disclaimed apart from the mark as shown. Owner of Reg. No. 650,265.
For Televising Communications by Business, Industry, Government, and Educational Institutions Through Closed-Circuit Television.
First use Mar. 20, 1963.

Class 107 — Education and Entertainment

SN 175,398. Harvey Emerson Enterprises, Inc., d.b.a. Modern Upholstery Institute, Fallbrook, Calif. Filed Aug. 20, 1963.



The mark consists of the letters "M" and "U" and design.
For Educational Services—Namely, Instructions in Upholstering Furniture, Making Slip Covers and Drapes, and Methods of Planning and Operating Upholstery Business.
First use July 3, 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 176,953. Retail Clerks International Association, Washington, D.C. Filed Sept. 13, 1963.



The drawing is lined for red and blue, however, no claim is made to color. Owner of Reg. No. 402,815.
For Indicating Membership in the Applicant Association.
First use 1946.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

779,676. USCOTHANE. United States Rubber Company. MULTIPLE CLASS (Classes 1 and 35). SN 135,301. Pub. 8–25–64. Filed 1–5–62.

779,677. BERMUDA ROCK. Bristol Silica Company. SN 149,813. Pub. 8–25–64. Filed 7–26–62.

779,678. UNILON. Universal Brush Mfg. Co. SN 160,677. Pub. 8–25–64. Filed 1–14–63.

779,679. CHROMOPAK. W. H. Curtin & Company. SN 166,514. Pub. 8–25–64. Filed 4–10–63.

779,680. T & R. Union Bag-Camp Paper Corporation, assignee of Nello Chemicals, Inc., d.b.a. Turpentine & Rosin Factors, Inc. SN 173,485. Pub. 8–25–64. Filed 7–22–63.

779,681. ANITROOP. Albert Trostel & Sons Company. SN 173,797. Pub. 8–25–64. Filed 7–25–63.

779,682. VITAFALFA. L. Teweles Seed Co. SN 177,925. Pub. 8–25–64. Filed 9–27–63.

779,683. HADES. Husky Briquetting, Inc. SN 182,181. Pub. 8–25–64. Filed 12–2–63.

Class 4 — Abrasives and Polishing Materials

779,684. SUPO-WAX. Firma Pharmakon L. u. F. Hobiger-Chemische Fabrik. MULTIPLE CLASS (Classes 4 and 52). SN 172,578. Pub. 8–25–64. Filed 7–8–63.

779,685. SUPO. Firma Pharmakon L. u. F. Hobiger-Chemische Fabrik. MULTIPLE CLASS (Classes 4 and 52). SN 172,579. Pub. 8–25–64. Filed 7–8–63.

779,686. TRACTO-GRIT. Metals Development Co., d.b.a. MDC Industries. SN 175,773. Pub. 8–25–64. Filed 8–26–63.

Class 5 — Adhesives

779,687. URAC. American Cyanamid Company. SN 166,355. Pub. 8–25–64. Filed 4–9–63.

Class 6 — Chemicals and Chemical Compositions

779,688. STEEL TREET. Marsh Steel & Aluminum Co. SN 150,576. Pub. 8–25–64. Filed 8–6–62.

779,689. AEPD. Commercial Solvents Corporation. SN 162,417. Pub. 8–25–64. Filed 2–11–63.

779,690. PENN SWIM AND DESIGN. Pennsalt Chemicals Corporation. MULTIPLE CLASS (Classes 6 and 52). SN 163,657. Pub. 8–25–64. Filed 2–28–63.

779,691. MARS. Mars Chemical Corporation. SN 166,644. Pub. 8–25–64. Filed 4–12–63.

779,692. MARS AND DESIGN. Mars Chemical Corporation. SN 166,645. Pub. 8–25–64. Filed 4–12–63.

779,693. CIRCLE AND ARROW (DESIGN). Mars Chemical Corporation. SN 166,646. Pub. 8–25–64. Filed 4–12–63.

779,694. LESCO. International Chemical Corporation. SN 168,326. Pub. 8–25–64. Filed 5–7–63.

779,695. HEPA-TROL. Dade Reagents, Inc. SN 172,978. Pub. 8–25–64. Filed 7–15–63.

779,696. SHAMROCK. Shamrock Pool Equipment Co., Inc. MULTIPLE CLASS (Classes 6, 13, 21, 23, and 31). SN 173,969. Pub. 8–25–64. Filed 7–29–63.

779,697. LEMAROME. Hoffmann-La Roche Inc. SN 175,189. Pub. 8–25–64. Filed 8–16–63.

779,698. BAN-I-RON. Union Tank Car Company. SN 175,224. Pub. 8–25–64. Filed 8–16–63.

779,699. PACIFIC. Dominion Tar & Chemical Company, Limited. SN 177,506. Pub. 8–25–64. Filed 9–23–63.

779,700. TOP CHEK. Chemical Research & Development Company, d.b.a. Androc Chemical Company. SN 177,915. Pub. 8–25–64. Filed 9–27–63.

779,701. NYOLENE. Larousse Inc. SN 178,205. Pub. 8–25–64. Filed 10–2–63.

779,702. NASUNA. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 180,857. Pub. 8–25–64. Filed 11–12–63.

779,703. FOAMASOL. Onyx Chemical Corporation. SN 180,949. Pub. 8–25–64. Filed 11–12–63.

779,704. ATTACK AND DESIGN. Cadco, Inc. SN 181,852. Pub. 8–25–64. Filed 11–26–63.

779,705. UMBRELLA (DESIGN). Chapman Chemical Company. SN 182,314. Pub. 8–25–64. Filed 12–4–63.

779,706. QUIK-CLOR. Pioneer Salt Company. SN 182,650. Pub. 8–25–64. Filed 12–9–63.

779,707. POSITIVE EZE. Aldy Graphic Supply, Inc. SN 184,415. Pub. 8–25–64. Filed 1–13–64.

779,708. PICK AND RETORT (DESIGN). Foote Mineral Co. SN 184,460. Pub. 8–25–64. Filed 1–13–64.

779,709. FICIN-CELL. Spectra Biologicals, Incorporated. SN 184,523. Pub. 8–25–64. Filed 1–13–64.

779,710. DADI. The Upjohn Company. SN 185,464. Pub. 8–25–64. Filed 1–27–64.

Class 7 — Cordage

779,711. HAPPY DAWN. Puritan Cordage Mills. SN 192,633. Pub. 8–25–64. Filed 5–4–64.

Class 8 — Smokers' Artides, Not Including Tobacco Products

779,712. VENTAR II. Achilles Corporation. SN 188,407. Pub. 8–25–64. Filed 3–11–64.

Class 10 — Fertilizers

779,713. IRON KE-MIN. Georgia-Pacific Corporation, assignee of Puget Sound Pulp & Timber Co. SN 138,537. Pub. 8–25–64. Filed 2–23–62.

779,714. BURPEE'S EVERBLOOM. W. Atlee Burpee Company. SN 159,460. Pub. 8–25–64. Filed 12–20–62.

779,715. IMC. International Minerals & Chemical Corporation. SN 193,874. Pub. 8–25–64. Filed 5–20–64.

779,716. JUST ONCE AND DESIGN. Vaughan's Seed Company. SN 194,541. Pub. 8–25–64. Filed 5–28–64.

Class 12 — Construction Materials

779,717. SMALLTEL AND DESIGN. Smalltel Inc. SN 179,276. Pub. 8–25–64. Filed 10–17–63.

779,718. SMALLTEL. Smalltel Inc. SN 179,277. Pub. 8–25–64. Filed 10–17–63.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

779,696. (See Class 6 for this trademark.)

779,719. ZERO LEAKAGE. B & W Fitting Co. SN 162,525. Pub. 8–25–64. Filed 2–12–63.

779,720. MMM AND DESIGN. Manning, Maxwell & Moore, Incorporated. SN 183,688. Pub. 8–25–64. Filed 12–27–63.

779,721. METROL. Metrol Corporation. SN 183,695. Pub. 8–25–64. Filed 12–27–63.

779,722. TRU-CUPL. Bendix-Westinghouse Automotive Air Brake Company. SN 184,877. Pub. 8–25–64. Filed 1–20–64.

779,723. CHESSMAN EMERGING THROUGH AN ELLIPSE (DESIGN). J. B. Knight Company, d.b.a. J. B. Knight Distributing Company. MULTIPLE CLASS (Classes 13 and 23). SN 185,904. Pub. 8–25–64. Filed 2–3–64.

779,724. FAUCETROL. Almo Laboratories Co., Inc. SN 187,993. Pub. 8–25–64. Filed 3–5–64.

779,725. MAGNIF-O-SINK. Borg-Warner Corporation. SN 188,190. Pub. 8–25–64. Filed 3–9–64.

779,726. GLAMORSINK. Borg-Warner Corporation. SN 188,191. Pub. 8–25–64. Filed 3–9–64.

779,727. HAPPY HOME. F. W. Woolworth Co. SN 188,600. Pub. 8–25–64. Filed 3–12–64.

779,728. COUNTRY SQUIRE. Mission-West Manufacturing Company. SN 188,778. Pub. 8–25–64. Filed 3–16–64.

779,729. METLOCK. Paul V. Metcalfe, d.b.a. Metcalfe Industries. SN 188,990. Pub. 8–25–64. Filed 3–18–64.

779,730. HARVARD. The American Granby Company. SN 189,031. Pub. 8–25–64. Filed 3–19–64.

779,731. MOLLY TITE-GRIP. Molly Corporation. SN 189,091. Pub. 8–25–64. Filed 3–19–64.

779,732. MISCELLANEOUS DESIGN. Aerojet-General Corporation. SN 189,241. Pub. 8–25–64. Filed 3–23–64.

Class 14 — Metals and Metal Castings and Forgings

779,733. MISCELLANEOUS DESIGN. Foote Mineral Co. SN 184,461. Pub. 8–25–64. Filed 1–13–64.

779,734. READIBRYL. Max Daggett, Jr. SN 185,581. Pub. 8–25–64. Filed 1–29–64.

779,735. DIALOY. The J. M. Ney Company. SN 188,385. Pub. 8–25–64. Filed 3–10–64.

779,736. VACU-TROL. The Carpenter Steel Company. SN 188,421. Pub. 8–25–64. Filed 3–11–64.

779,737. NUPCO. National Utility Products Company. SN 188,650. Pub. 8–25–64. Filed 3–13–64.

779,738. KALBRITE. Kaiser Aluminum & Chemical Corporation. SN 188,766. Pub. 8–25–64. Filed 3–16–64.

Class 15 — Oils and Greases

779,739. BYCOSIN AND DESIGN. Sven Gustav Byström. SN 171,585. Pub. 8–25–64. Filed 6–21–63.

779,740. BYCOSIN. Sven Gustav Byström. SN 171,586. Pub. 8–25–64. Filed 6–21–63.

779,741. DINO. Sinclair Refining Company. SN 191,322. Pub. 8–25–64. Filed 4–16–64.

Class 16 — Protective and Decorative Coatings

779,742. TESTOR'S T. The Testor Corporation. SN 152,353. Pub. 8–25–64. Filed 8–31–62.

779,743. BEMOCOTE. Thompson and Company. SN 169,991. Pub. 8–25–64. Filed 5–29–63.

779,744. REL-SATIN. Reliance Universal Inc., by change of name from Reliance Varnish Company. SN 171,917. Pub. 8–25–64. Filed 6–26–63.

779,745. SNAP-START. Burmatt Industries. SN 174,077. Pub. 8–25–64. Filed 7–31–63.

779,746. EPIHYDRO. Devoe & Raynolds Company, Inc. SN 177,689. Pub. 8–25–64. Filed 9–25–63.

779,747. SURF-GARD. Body Bros., Inc. SN 181,517. Pub. 8–25–64. Filed 11–20–63.

779,748. UCARSIL. Union Carbide Corporation. SN 187,049. Pub. 8–25–64. Filed 2–19–64.

779,749. AQUAVAR AND DESIGN. Aquavar, Inc. SN 188,178. Pub. 8–25–64. Filed 3–9–64.

Class 17 — Tobacco Products

779,750. HOUSE OF WINDSOR. W. H. Snyder and Sons Incorporated. SN 96,044. Pub. 8–25–64. Filed 4–28–60.

779,751. SPIRAL. P. Lorillard Company. SN 173,850. Pub. 8–25–64. Filed 7–26–63.

779,752. LA BOLSA. N.V. Sigarenfabriek "La Bolsa" v/h C. J. Boele. SN 188,900. Pub. 8–25–64. Filed 3–17–64.

779,753. REPRESENTATION OF A WHITE OWL AND DESIGN. General Cigar Co., Inc. SN 189,577. Pub. 8–25–64. Filed 3–25–64.

779,754. CARDINALS. La Primadora Cigar Corporation. SN 191,404. Pub. 8–25–64. Filed 4–17–64.

Class 18 — Medicines and Pharmaceutical Preparations

779,755. REPHRIN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 168,991. Pub. 8–25–64. Filed 5–13–63.

779,756. INFLUVAC. N.V. Philips-Duphar. SN 173,122. Pub. 6–16–64. Filed 7–16–63.

779,757. ANTI-PICA. N.V. Laboratoria Pharmaceutica Dr. C. Janssen. SN 183,091. Pub. 8–25–64. Filed 12–16–63.

779,758. BARNIPS. R. Barnett and Company Limited. SN 183,953. Pub. 8–25–64. Filed 1–3–64.

779,759. GUARSOL. Western Research Laboratories. SN 184,546. Pub. 8–25–64. Filed 1–13–64.

779,760. GAMIMUNE. Hollister Stier Laboratories, Inc. SN 186,850. Pub. 8–25–64. Filed 2–17–64.

779,761. P PARKELL AND DESIGN. Parkell Products Inc. SN 189,353. Pub. 8–25–64. Filed 3–23–64.

779,762. PARKELL. Parkell Products Inc. SN 189,355. Pub. 8–25–64. Filed 3–23–64.

Class 19 — Vehicles

779,763. PRIME-MOVER. The Prime-Mover Co. MULTIPLE CLASS (Classes 19 and 23). SN 161,904. Pub. 8–25–64. Filed 2–1–63.

779,764. PUMA. Ski-Tow Manufacturing Company. SN 178,230. Pub. 8–25–64. Filed 10–2–63.

779,765. MONZA G.T. The Huffman Manufacturing Company. SN 187,925. Pub. 8–25–64. Filed 3–4–64.

779,766. TAYPA-WATE AND DESIGN. Three G Corporation. SN 187,973. Pub. 8–25–64. Filed 3–4–64.

779,767. MAGNA-WATE AND DESIGN. Three G Corporation. SN 187,974. Pub. 8–25–64. Filed 3–4–64.

779,768. LUCITONE. Harte & Company, Inc. SN 188,010. Pub. 8–25–64. Filed 3–5–64.

779,769. SHORT PUTT AND DESIGN. George B. Ellis. SN 188,089. Pub. 8–25–64. Filed 3–6–64.

779,770. FLO-LITE. General Motors Corporation. SN 188,092. Pub. 8–25–64. Filed 3–6–64.

779,771. SUPERDUTY. General Motors Corporation. SN 188,093. Pub. 8–25–64. Filed 3–6–64.

779,772. SEA-V. Thompson Boat Company of New York, Inc. SN 188,302. Pub. 8–25–64. Filed 3–9–64.

779,773. LO-TRI-PAK. Whitehead & Kales Company. SN 188,316. Pub. 8–25–64. Filed 3–9–64.

779,774. LOADKING. Wesbar Stamping Corporation. SN 188,490. Pub. 8–25–64. Filed 3–11–64.

779,775. TRUNKMASTER. Wesbar Stamping Corporation. SN 188,491. Pub. 8–25–64. Filed 3–11–64.

779,776. TRUNKING. Wesbar Stamping Corporation. SN 188,492. Pub. 8–25–64. Filed 3–11–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

779,696. (See Class 6 for this trademark.)

779,777. MULTITONE. Multitone Electronics Limited. SN 157,533. Pub. 8–25–64. Filed 11–19–62.

779,778. FOSTROL. Fostoria Corporation. SN 162,729. Pub. 8–25–64. Filed 2–14–63.

779,779. UNIMETL. Waters Manufacturing, Inc. SN 172,263. Pub. 8–25–64. Filed 7–1–63.

779,780. VU–82. Channel Master Corporation. SN 176,629. Pub. 8–25–64. Filed 9–10–63.

779,781. HALO-HAT. Seismograph Service Corporation. SN 177,452. Pub. 8–25–64. Filed 9–20–63.

779,782. POWERFLEX. Sigma Instruments, Inc. SN 179,273. Pub. 8–25–64. Filed 10–17–63.

779,783. PE AND DESIGN. Progress Electronics Co., Inc. SN 179,655. Pub. 8–25–64. Filed 10–23–63.

779,784. MMM AND DESIGN. Manning, Maxwell & Moore, Incorporated. SN 183,687. Pub. 8–25–64. Filed 12–27–63.

779,785. BATAC. Rotron Manufacturing Company, Inc. SN 188,469. Pub. 8–25–64. Filed 3–11–64.

779,786. UCC. Union Carbide Corporation. SN 188,487. Pub. 8–25–64. Filed 3–11–64.

779,787. DIVERSITRON. James L. Bennett, d.b.a. Diversitron Electronics. SN 188,713. Pub. 8–25–64. Filed 3–16–64.

779,788. MISCELLANEOUS DESIGN. Electronic Instruments Limited. SN 189,567. Pub. 8–25–64. Filed 3–25–64.

779,789. OUTERCALL. Outercom Electronics Corporation. SN 190,639. Pub. 8–25–64. Filed 4–8–64.

779,790. OUTERKEY. Outercom Electronics Corporation. SN 190,640. Pub. 8–25–64. Filed 4–8–64.

779,791. REACTOSPEED. Automatic Control Company. SN 190,693. Pub. 8–25–64. Filed 4–9–64.

779,792. 'TENNA-BUG. Emerson, Johnson, Mackay, Incorporated. SN 190,906. Pub. 8–25–64. Filed 4–13–64.

779,793. CAMPAIGNER. Sears, Roebuck and Co. SN 191,219. Pub. 8–25–64. Filed 4–15–64.

779,794. WILSHIRE. Wilshire Oil Company of California. SN 191,232. Pub. 8–25–64. Filed 4–15–64.

779,795. MINITAN. Components, Inc. SN 191,258. Pub. 8–25–64. Filed 4–16–64.

779,796. WINGFOOT (DESIGN). The Goodyear Tire & Rubber Company. SN 193,007. Pub. 8–25–64. Filed 5–8–64.

Class 22 — Games, Toys, and Sporting Goods

779,797. GUIDE-WHIP. Mattel, Inc. SN 176,820. Pub. 8–25–64. Filed 9–12–63.

779,798. GOLFISHING CLUBROD. David F. Bascom, d.b.a. Wretched Mess Enterprises. SN 178,863. Pub. 8–25–64. Filed 10–14–63.

779,799. EYE IN THE SKY. Donald F. Duncan, Incorporated. SN 180,864. Pub. 7–7–64. Filed 11–12–63.

779,800. AMERICAN LADY. Wilson Sporting Goods Co. SN 183,717. Pub. 8–25–64. Filed 12–27–63.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

779,696. (See Class 6 for this trademark.)

779,723. (See Class 13 for this trademark.)

779,763. (See Class 19 for this trademark.)

779,801. SEYMOUR. Mogal Cutlery Co., Inc. SN 143,153. Pub. 8–25–64. Filed 4–26–62.

779,802. HYDRO-KINETICS. Hydro-Kinetics, Inc. SN 162,752. Pub. 8–25–64. Filed 2–14–63.

779,803. "SWISH." Norman P. Nilsen, d.b.a. Nilsen's Feed & Supply. MULTIPLE CLASS (Classes 23 and 50). SN 165,363. Pub. 8–25–64. Filed 3–25–63.

779,804. MALIMO. VEB Nahwirkmaschinenbau Malimo Karl-Marx-Stadt, by change of name from VEB Tüllmaschinenbau Karl-Marx-Stadt. SN 166,673. Pub. 4–14–64. Filed 4–12–63.

779,805. MALIPOL. VEB Nahwirkmaschinenbau Malimo Karl-Marx-Stadt, by change of name from VEB Tüllmaschinenbau Karl-Marx-Stadt. SN 166,674. Pub. 4–28–64. Filed 4–12–63.

779,806. CLINCH. Access Equipment Limited. SN 168,654. Pub. 8–25–64. Filed 5–9–63.

779,807. WRAP-KING. Crompton & Knowles Corporation. SN 172,730. Pub. 8–25–64. Filed 7–10–63.

779,808. FEEDETTE. Everpure, Inc. SN 172,887. Pub. 8–25–64. Filed 7–12–63.

779,809. SERVAC. Airoyal Engineering Company. SN 173,084. Pub. 8–25–64. Filed 7–16–63.

779,810. KLENZMATION. Economics Laboratory, Inc. SN 173,157. Pub. 8–25–64. Filed 7–17–63.

779,811. PARA-MOUNT. General Kinematics Corporation. SN 173,349. Pub. 8–25–64. Filed 7–19–63.

779,812. FLAKEMASTER. H. K. Porter Company, Inc. SN 174,606. Pub. 8–25–64. Filed 8–7–63.

779,813. D+B. Dunham-Bush, Inc. SN 175,906. Pub. 8–25–64. Filed 8–28–63.

779,814. B-D AND DESIGN. Barnes Drill Co. SN 175,965. Pub. 8–25–64. Filed 8–29–63.

779,815. CENTRIFEED. Pitney-Bowes, Inc. SN 176,018. Pub. 8–25–64. Filed 8–29–63.

779,816. FLORAL DESIGN. Shiseido Company, Ltd. SN 176,676. Pub. 8–25–64. Filed 9–10–63.

779,817. SHISEIDO. Shiseido Company, Ltd. SN 176,677. Pub. 8–25–64. Filed 9–10–63.

779,818. POINT. Shiseido Company, Ltd. SN 176,678. Pub. 8–25–64. Filed 9–10–63.

779,819. S & G. Schreiber & Goldberg, Inc. SN 177,552. Pub. 8–25–64. Filed 9–23–63.

779,820. SMITH & LOVELESS. Union Tank Car Company. SN 177,666. Pub. 8–25–64. Filed 9–24–63.

779,821. SMITH & LOVELESS. Union Tank Car Company. SN 177,667. Pub. 8–25–64. Filed 9–24–63.

779,822. CIMEX. Cimex Limited. SN 180,292. Pub. 8–25–64. Filed 11–1–63.

779,823. VARIATIONS. Dansk Importing Co., Inc. SN 181,216. Pub. 8–25–64. Filed 11–15–63.

779,824. ADAMS RITE. Adams Rite Manufacturing Company. SN 181,596. Pub. 8–25–64. Filed 11–21–63.

779,825. MMM AND DESIGN. Manning, Maxwell & Moore, Incorporated. SN 183,689. Pub. 8–25–64. Filed 12–27–63.

779,826. METROL. Metrol Corporation. SN 183,696. Pub. 8–25–64. Filed 12–27–63.

779,827. FORT DESIGN IN A CIRCLE. Fort Howard Paper Company. SN 184,051. Pub. 8–25–64. Filed 1–6–64.

779,828. MULTICOLLECT. Mathias Bauerle G.m.b.H. SN 184,941. Pub. 8–25–64. Filed 1–20–64.

779,829. ROYAL ZENITH. Royal Zenith Corporation. SN 185,940. Pub. 8–25–64. Filed 2–3–64.

779,830. DRILL MATE. The Jaeger Machine Company. SN 186,006. Pub. 8–25–64. Filed 2–4–64.

779,831. UARCO. Uarco Incorporated. MULTIPLE CLASS (Classes 23, 26, 32, and 37). SN 186,415. Pub. 8–25–64. Filed 2–10–64.

779,832. SELECTRIC BEAVER AND DESIGN. Milk Equipment, Inc. SN 187,031. Pub. 8–25–64. Filed 2–19–64.

779,833. ROOT-N-ALL. An Jo, Incorporated. SN 188,406. Pub. 8–25–64. Filed 3–11–64.

779,834. PORTABRAKE. Bear Manufacturing Company. SN 188,418. Pub. 8–25–64. Filed 3–11–64.

779,835. SPHERAFORM. Lavalee & Ide, Inc. SN 188,450. Pub. 8–25–64. Filed 3–11–64.

779,836. AUTOMATED DOCKHAND. Mississippi Valley Structural Steel Company. SN 188,453. Pub. 8–25–64. Filed 3–11–64.

779,837. MURRAY WAY AND DESIGN. Murray-Way Corporation. SN 188,457. Pub. 8–25–64. Filed 3–11–64.

779,838. CE AND DESIGN. The Youngstown Sheet and Tube Co. SN 188,494. Pub. 8–25–64. Filed 3–11–64.

779,839. FLOURISH. Charles D. Briddell, Incorporated, d.b.a. Chas. D. Briddell, Inc. SN 188,846. Pub. 8–25–64. Filed 3–17–64.

779,840. FISCHER AND DESIGN. St. Egydyer Eisen- und Stahl-Industrie Gesellschaft. SN 188,919. Pub. 8–25–64. Filed 3–17–64.

779,841. MACARR. J. I. Case Company. SN 189,143. Pub. 8–25–64. Filed 3–20–64.

779,842. GARRETT ALL DRIVE. Garrett Enumclaw Co. SN 189,163. Pub. 8–25–64. Filed 3–20–64.

779,843. CANNON. ITT Cannon Electric Inc. SN 189,175. Pub. 8–25–64. Filed 3–20–64.

779,844. TRI-POSTER. Visirecord, Inc. SN 190,304. Pub. 8–25–64. Filed 4–3–64.

779,845. SPRING-O-MATIC. Perkins Machine and Gear Company. SN 190,538. Pub. 8–25–64. Filed 4–7–64.

779,846. VEND-A-BAKE. Vend-A-Bake, Inc. SN 190,676. Pub. 8–25–64. Filed 4–8–64.

779,847. CRUISER. McDonough Power Equipment, Inc. SN 191,785. Pub. 8–25–64. Filed 4–22–64.

779,848. CUTLASS. McDonough Power Equipment, Inc. SN 191,786. Pub. 8–25–64. Filed 4–22–64.

779,849. COMMODORE. Commodore Business Machines (Canada) Limited. SN 195,488. Pub. 8–25–64. Filed 6–15–64.

Class 24 — Laundry Appliances and Machines

779,850. SUPREX. Ametek, Inc. SN 165,283. Pub. 8–25–64. Filed 3–25–63.

779,851. PERMALON. Textile Mills Company. SN 188,815. Pub. 8–25–64. Filed 3–16–64.

Class 25 — Locks and Safes

779,852. ADAMS RITE. Adams Rite Manufacturing Company. SN 181,597. Pub. 8–25–64. Filed 11–21–63.

779,853. GUILD. Guild Industries, Inc. SN 188,866. Pub. 8–25–64. Filed 3–17–64.

Class 26 — Measuring and Scientific Appliances

779,831. (See Class 23 for this trademark.)

779,854. FLO-TROL. Waterworks Equipment Company. SN 162,799. Pub. 8–25–64. Filed 2–14–63.

779,855. DEMI CANON. Canon Camera Kabushiki Kaisha. SN 176,982. Pub. 8–25–64. Filed 9–6–63.

779,856. PICKER. Picker X-Ray Corporation. CONSOLIDATED CERTIFICATE. SN 178,730, pub. 5–5–64, filed 10–10–63, Cl. 26; SN 178,972, pub. 5–5–64, filed 10–14–63, Cl. 39; SN 178,731, pub. 8–11–64, filed 10–10–63, Cl. 44.

779,857. CERAMOCOUPLE. Thermo Electric Co., Inc. SN 182,905. Pub. 8–25–64. Filed 12–12–63.

779,858. FE AND DESIGN. Farmer Electric Products Co., Inc. SN 185,119. Pub. 8–25–64. Filed 1–22–64.

Class 29 — Brooms, Brushes, and Dusters

779,859. BRONZE KNIGHT. The Glidden Company. SN 171,647. Pub. 8–25–64. Filed 6–24–63.

779,860. DISPOS-A-MOP. Majestic Wax Company. SN 182,490. Pub. 8–25–64. Filed 12–6–63.

779,861. LA BEAUT-ETTE. All American Brush Mfg. Corp. SN 186,314. Pub. 8–25–64. Filed 2–10–64.

Class 31 — Filters and Refrigerators

779,696. (See Class 6 for this trademark.)

779,862. MIRACLE WATER AND DESIGN. Water Refining Company, Inc. SN 183,142. Pub. 8–25–64. Filed 12–16–63.

779,863. ALFCO. Aluminum Filter Company. SN 187,061. Pub. 8–25–64. Filed 2–20–64.

779,864. QUARTER MASTER AND DESIGN. Beverage-Air Company. SN 187,069. Pub. 8–25–64. Filed 2–20–64.

779,865. MICROSOFT. L•A Water Conditioning, Inc. SN 188,115. Pub. 8–25–64. Filed 3–6–64.

779,866. CERVITOR KITCHENS. Cervitor Kitchens Incorporated. SN 188,197. Pub. 8–25–64. Filed 3–9–64.

779,867. COCHRANEX. Crane Co. SN 188,426. Pub. 8–25–64. Filed 3–11–64.

779,868. COPELADRIVE. Copeland Refrigeration Corporation. SN 188,964. Pub. 8–25–64. Filed 3–18–64.

779,869. SPARTAN. Appliance Wholesalers, Inc. SN 189,136. Pub. 8–25–64. Filed 3–20–64.

Class 32 — Furniture and Upholstery

779,831. (See Class 23 for this trademark.)

779,870. FIBRELLA AND DESIGN. Aquaslide Corporation. SN 178,247. Pub. 8–25–64. Filed 10–3–63.

779,871. BAKER. Baker Furniture, Inc. SN 189,763. Pub. 8–25–64. Filed 3–27–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

779,872. BAR-B-LITE. Jack E. Rose. SN 137,801. Pub. 8–25–64. Filed 2–12–62.

779,873. QUICKDRAFT. The Quickdraft Corporation. SN 167,048. Pub. 8–25–64. Filed 4–18–63.

779,874. SIBONITE. The Carbone Corporation. SN 172,638. Pub. 8–25–64. Filed 7–9–63.

779,875. CRESTLINE. Hardwick Stove Company. SN 175,109. Pub. 8–25–64. Filed 8–15–63.

779,876. METROL. Metrol Corporation. SN 183,697. Pub. 8–25–64. Filed 12–27–63.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

779,676. (See Class 1 for this trademark.)

779,877. CARGOMASTER. J. C. Penney Company. SN 172,935. Pub. 12–10–63. Filed 7–12–63.

779,878. POS-A-TRACTION. Inglewood Tire and Auto Service, Inc. SN 184,382. Pub. 8–25–64. Filed 1–10–64.

779,879. COAT-OF-ARMS (DESIGN). Vogue Tyre & Rubber Company, by change of name from Vogue Rubber Company. SN 187,832. Pub. 8–25–64. Filed 3–2–64.

Class 36 — Musical Instruments and Supplies

779,880. DISC DUB AND DESIGN. The Ferrodynamics Corporation. SN 147,910. Pub. 8–25–64. Filed 6–28–62.

779,881. SONO-FLEX. Sonotone Corporation. SN 167,950. Pub. 8–25–64. Filed 5–1–63.

779,882. NAGRA. Stefan Kudelski, d.b.a. Stefan Kudelski, Fabrique d'Enregistreurs "Nagra." SN 170,842. Pub. 8–25–64. Filed 6–12–63.

779,883. GALAXY. Fantasy Records Inc. SN 187,186. Pub. 8–25–64. Filed 2–21–64.

779,884. DYNA-POINTS. Jensen Industries, Inc. SN 187,670. Pub. 8–25–64. Filed 2–28–64.

779,885. MICRO-PLATE. Reeves Industries, Inc. SN 188,579. Pub. 8–25–64. Filed 3–12–64.

779,886. PRESIDENT. Pentron Electronics Corporation. SN 188,659. Pub. 8–25–64. Filed 3–13–64.

779,887. CARRY-CORDER. North American Philips Company, Inc. SN 188,789. Pub. 8–25–64. Filed 3–16–64.

779,888. CIRCLE. Minaret Records, Inc. SN 188,894. Pub. 8–25–64. Filed 3–17–64.

Class 37 — Paper and Stationery

779,831. (See Class 23 for this trademark.)

779,889. COMMODORE. A. W. Faber-Castell Pencil Co., Inc. SN 167,542. Pub. 8–25–64. Filed 4–25–63.

779,890. "COLLECTOR'S PRIDE." Samuel L. Stone, d.b.a. S. L. Stone. SN 173,055. Pub. 8–25–64. Filed 7–15–63.

779,891. DIAZOTEX. Kimberly-Clark Corporation. SN 173,174. Pub. 8–25–64. Filed 7–17–63.

779,892. COOKE & COBB. Wilson Jones Company. SN 174,464. Pub. 8–25–64. Filed 8–5–63.

779,893. CLASS MATE. Westab Inc., by change of name from Western Tablet & Stationery Corporation. SN 174,552. Pub. 8–25–64. Filed 8–6–63.

779,894. "LETTER-ETTES." Gibson Greeting Cards, Inc. SN 174,585. Pub. 8–25–64. Filed 8–7–63.

779,895. DESIGN OF A HERALD ON A SHIELD. F. W. Woolworth Co. SN 176,135. Pub. 8–25–64. Filed 8–30–63.

779,896. SOF-TOUCH. Purity Stores, Inc. SN 176,570. Pub. 7–7–64. Filed 9–9–63.

779,897. PRO B-L AND DESIGN. Pro B/L Corporation. SN 176,832. Pub. 8–25–64. Filed 9–12–63.

779,898. NACO. Narragansett Coated Paper Corporation. SN 179,056. Pub. 8–25–64. Filed 10–15–63.

779,899. SCORE-MINDER. Brock Industries, Inc. SN 179,111. Pub. 8–25–64. Filed 10–16–63.

779,900. GL AND DESIGN. Georg Lauer. SN 180,257. Pub. 8–25–64. Filed 10–28–63.

779,901. VISTA-DOME. Blue Ribbon Pen & Pencil Co., Inc. SN 181,748. Pub. 8–25–64. Filed 11–22–63.

779,902. HEALTH SAV-A-TAX AND DESIGN. Safeguard Corporation. SN 181,805. Pub. 8–25–64. Filed 11–22–63.

770,903. HPS. Phillips Petroleum Company. SN 182,211. Pub. 8–25–64. Filed 12–2–63.

779,904. CARD-LITE. G. J. Aigner Company. SN 182,695. Pub. 8–25–64. Filed 12–10–63.

779,905. ZODYS AND DESIGN. Hartfield Stores, Incorporated. SN 184,290. Pub. 8–25–64. Filed 1–9–64.

779,906. CROWN/LITH. Crown Zellerbach Corporation. SN 187,729. Pub. 8–25–64. Filed 3–2–64.

779,907. CRONICON. F. W. Woolworth Co. SN 188,830. Pub. 8–25–64. Filed 3–16–64.

779,908. 7–11. Dur-O-Lite Pencil Company. SN 188,969. Pub. 8–25–64. Filed 3–18–64.

779,909. VOLTIC. Ludlow Corporation. SN 189,188. Pub. 8–25–64. Filed 3–20–64.

779,910. TRANSLEC. Ludlow Corporation. SN 189,189. Pub. 8–25–64. Filed 3–20–64.

779,911. FABRICOLOR. Speedry Chemical Products, Inc. SN 189,631. Pub. 8–25–64. Filed 3–25–64.

779,912. REMARKABLE. Kalflex Inc. SN 192,183. Pub. 8–25–64. Filed 4–28–64.

Class 38 — Prints and Publications

779,913. ARROW DESIGN. Accelerated Instruction Methods Corporation. SN 155,545. Pub. 8–25–64. Filed 10–22–62.

779,914. A.I.M. Accelerated Instruction Methods Corporation. SN 155,547. Pub. 8–25–64. Filed 10–22–62.

779,915. THE NATURIST. Outdoor American Corporation. SN 156,022. Pub. 8–25–64. Filed 10–26–62.

779,916. FOR WOMEN ONLY. Union Tank Car Company. SN 169,496. Pub. 8–25–64. Filed 5–22–63.

779,917. N SYMBOL OF ELEGANCE. Norcross, Inc. SN 178,560. Pub. 8–25–64. Filed 10–8–63.

779,918. FLOTILLA INTERNACIONAL. McGraw-Hill, Inc., by change of name from McGraw-Hill Publishing Company, Inc. SN 180,106. Pub. 8–25–64. Filed 10–30–63.

779,919. KLENZADE AND DESIGN. Economics Laboratory, Inc. SN 182,945. Pub. 8–25–64. Filed 12–13–63.

779,920. THE SCIENCE TEACHER. National Science Teachers Association, Inc. SN 184,169. Pub. 8–25–64. Filed 1–7–64.

779,921. FSA CENTRIFUGE. National Science Teachers Association, Inc. SN 184,170. Pub. 8–25–64. Filed 1–7–64.

779,922. PLAZA. A. E. Arnett, d.b.a. Plaza Directory. SN 184,198. Pub. 8–25–64. Filed 1–8–64.

779,923. BUSINESS ATOMICS REPORT. Technical Publishing Company. SN 184,525. Pub. 8–25–64. Filed 1–13–64.

779,924. S & P AND DESIGN. Standard & Poor's Corporation. SN 184,847. Pub. 8–25–64. Filed 1–17–64.

779,925. LIBERTY CARDS. Allan Molasky. SN 185,063. Pub. 8–25–64. Filed 1–21–64.

779,926. BUSINESS STIM-U-LIZER. Robinson-Phillips Incorporated. SN 185,078. Pub. 8–25–64. Filed 1–21–64.

779,927. ROSEAL. Rose Patch & Label Company. SN 185,242. Pub. 8–25–64. Filed 1–23–64.

779,928. MODERN AUDELS. Howard W. Sams & Co., Inc. SN 185,321. Pub. 8–25–64. Filed 1–24–64.

779,929. DURAFLEX EDITION AND DESIGN. Houghton Mifflin Company. SN 185,413. Pub. 8–25–64. Filed 1–27–64.

779,930. MANI-YACKS. Kaumagraph Company. SN 185,419. Pub. 8–25–64. Filed 1–27–64.

779,931. SAM. SAM, Incorporated. SN 185,448. Pub. 8–25–64. Filed 1–27–64.

779,932. TM–C. Thomas Publishing Company. SN 185,825. Pub. 8–25–64. Filed 1–31–64.

Class 39 — Clothing

779,856. CONSOLIDATED CERTIFICATE. See Class 26.

779,933. ANDI WARREN. Andi Warren Inc. SN 135,165. Pub. 8–25–64. Filed 1–4–62.

779,934. ABELLA. Vivian Dresses, Inc. SN 152,361. Pub. 8–25–64. Filed 8–31–62.

779,935. NE PLUS ULTRA HER GRACE INC. THE CHAMPAGNE OF ROBES AND DESIGN. Her Grace, Inc. SN 154,247. Pub. 8–25–64. Filed 10–1–62.

779,936. DEBUTANTE. Duracraft Corporation. SN 160,618. Pub. 8–25–64. Filed 1–14–63.

779,937. OCEAN BRIEF. Ocean Pool Supply Company, Inc. SN 162,771. Pub. 8–25–64. Filed 2–14–63.

779,938. HOOD-WINKS. Robert Hosiery Mills, Incorporated. SN 169,868. Pub. 8–25–64. Filed 5–28–63.

779,939. HI-JEANS. Blue Ridge Manufacturers, Incorporated. SN 171,607. Pub. 8–25–64. Filed 6–24–63.

779,940. TAMARACK. The Van Wert Manufacturing Co. SN 173,718. Pub. 7–7–64. Filed 7–24–63.

779,941. KOMFY KATCH-ALL. G. Kingsley Ward. SN 174,139. Pub. 8–25–64. Filed 7–31–63.

779,942. MAGIC DIAMOND. Blair Fashions, Inc. SN 175,464. Pub. 8–25–64. Filed 8–21–63.

779,943. FANCIFUL REPRESENTATION OF A BIRD (DESIGN). Berkshire International Corporation. SN 181,516. Pub. 8–25–64. Filed 11–20–63.

779,944. PHM. Pincus Brothers, Inc. SN 181,997. Pub. 8–25–64. Filed 11–27–63.

779,945. ARNAV. Arnav Shoe Corporation. SN 183,659. Pub. 8–25–64. Filed 12–27–63.

779,946. GOLDEN FALCON. Georgia Shoe Manufacturing Company, Inc. SN 183,910. Pub. 8–25–64. Filed 1–2–64.

779,947. HORATIO ALGER. Horatio Alger Clothes, Inc., assignee of Joseph H. Cohen & Sons, Inc. SN 184,700. Pub. 8–25–64. Filed 1–16–64.

779,948. ACTIVE-DUTY. The Irving Drew Corporation. SN 186,081. Pub. 8–25–64. Filed 2–5–64.

779,949. HOE DOWN. Lucky Stride Shoes, Inc. SN 186,088. Pub. 8–25–64. Filed 2–5–64.

779,950. GREAT NORTHERN. S. Abrahams & Co., Inc. SN 186,217. Pub. 8–25–64. Filed 2–7–64.

779,951. CERRION. Timely Clothes, Inc. SN 186,290. Pub. 8–25–64. Filed 2–7–64.

779,952. COVERKINS. Kayser-Roth Corporation. SN 186,365. Pub. 8–25–64. Filed 2–10–64.

779,953. ENDURALOOM. E. R. Moore Company. SN 186,380. Pub. 8–25–64. Filed 2–10–64.

779,954. SECOND-STRETCH. Flexnit Company, Inc. SN 186,716. Pub. 8–25–64. Filed 2–14–64.

779,955. AROSHEEN. Cluett, Peabody & Co., Inc. SN 186,813. Pub. 8–25–64. Filed 2–17–64.

779,956. DE PAUL. David Crystal, Inc. SN 186,819. Pub. 8–25–64. Filed 2–17–64.

779,957. GEEYESCA. Novelty Veiling Co., Inc. SN 186,965. Pub. 8–25–64. Filed 2–18–64.

779,958. WELLS LAMONT. Wells Lamont Corporation. SN 187,165. Pub. 8–25–64. Filed 2–20–64.

Class 40 — Fancy Goods, Furnishings, and Notions

779,959. GALAKERITE. Societa Italiana Galakerite. SN 164,774. Pub. 8–25–64. Filed 3–14–63.

779,960. SEW MATE. United-Carr Incorporated, by change of name from United-Carr Fastener Corporation. SN 172,117. Pub. 8–25–64. Filed 6–28–63.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

779,961. DAN RIVER PLAID OF THE MONTH. Dan River Mills, Incorporated. SN 120,700. Pub. 8–25–64. Filed 5–24–61.

779,962. CREPE DU JOUR. Deering Milliken, Inc. SN 171,325. Pub. 8–25–64. Filed 6–19–63.

779,963. CALVIN. Henry Calvin Fabrics. SN 172,367. Pub. 8–25–64. Filed 7–3–63.

779,964. ACRILAIRE. Chatham Manufacturing Company. SN 179,696. Pub. 5–19–64. Filed 10–24–63.

779,965. CLARKS COLLAPAD OLD MILL BRAND AND DESIGN. William Clark and Sons Limited. SN 182,584. Pub. 8–25–64. Filed 12–9–63.

779,966. CHARBERT. Charbert, Inc. SN 182,778. Pub. 8–25–64. Filed 12–11–63.

779,967. CANNON MANOR. Cannon Mills Company. SN 183,311. Pub. 8–25–64. Filed 12–20–63.

779,968. ETACOL. Etacol International. SN 185,374. Pub. 8–25–64. Filed 1–27–64.

779,969. GLAMOURFAIR. J. P. Stevens & Co., Inc. SN 185,537. Pub. 8–25–64. Filed 1–28–64.

779,970. DISCIPLINED. Bates Manufacturing Company. SN 185,645. Pub. 8–25–64. Filed 1–30–64.

779,971. SENSATION AND DESIGN. Hartfield Stores, Incorporated. SN 186,000. Pub. 8–25–64. Filed 2–4–64.

779,972. DURAPILE. Alamac Knitting Mills, Inc. SN 186,043. Pub. 8–25–64. Filed 2–5–64.

779,973. GIVE 'N GO. Erwin Mills, Inc. SN 186,182. Pub. 8–25–64. Filed 2–6–64.

779,974. LANCER. The General Tire & Rubber Company. SN 186,352. Pub. 8–25–64. Filed 2–10–64.

Class 43 — Thread and Yarn

779,975. M MONSANTO. Monsanto Company, by change of name from Monsanto Chemical Company. SN 169,745. Pub. 8–25–64. Filed 5–27–63.

779,976. TEXTRETCH. National Spinning Co., Inc. SN 171,907. Pub. 8–25–64. Filed 6–26–63.

779,977. GMR. The Schlichter Jute Cordage Company. SN 182,665. Pub. 8–25–64. Filed 12–9–63.

779,978. NMR. The Schlichter Jute Cordage Company. SN 182,666. Pub. 8–25–64. Filed 12–9–63.

779,979. CHEMLINE. Monsanto Company, by change of name from Monsanto Chemical Company. SN 186,015. Pub. 8–25–64. Filed 2–4–64.

779,980. MONO HAZEL. Sauquoit Fibers Company. SN 186,281. Pub. 8–25–64. Filed 2–7–64.

779,981. BARBARA. Sauquoit Fibers Company. SN 186,282. Pub. 8–25–64. Filed 2–7–64.

779,982. VILLWYTE. Midland-Ross Corporation. SN 186,377. Pub. 8–25–64. Filed 2–10–64.

Class 44 — Dental, Medical, and Surgical Appliances

779,856. CONSOLIDATED CERTIFICATE. See Class 26.

779,983. SURGIQUIP AND DESIGN. Surgiquip Engineering Incorporated. SN 154,384. Pub. 8–25–64. Filed 10–2–62.

779,984. MISCELLANEOUS DESIGN. Baxter Laboratories, Inc. SN 177,850. Pub. 8–25–64. Filed 9–27–63.

779,985. ACHAFOS. Etablissement Vivadent. SN 178,537. Pub. 8–25–64. Filed 10–8–63.

779,986. LECCO FULL VIEW. The Lake Erie Chemical Company. SN 180,213. Pub. 8–25–64. Filed 10–31–63.

779,987. SUPER-SHEER. The Scholl Mfg. Co., Inc. SN 186,197. Pub. 8–25–64. Filed 2–6–64.

779,988. GOLDEN EAR. The Prestige Products Company, Inc. SN 188,141. Pub. 8–25–64. Filed 3–6–64.

779,989. DPC AND DESIGN. Deseret Pharmaceutical Co., Inc. SN 188,204. Pub. 8–25–64. Filed 3–9–64.

779,900. A–M. Walter D. Gilmore, d.b.a. Abbett and Macke. SN 188,230. Pub. 8–25–64. Filed 3–9–64.

779,991. PHARMASEAL. Pharmaseal Laboratories. SN 188,792. Pub. 8–25–64. Filed 3–16–64.

779,992. PANDORA. Sterilon Corporation. SN 189,390. Pub. 8–25–64. Filed 3–23–64.

779,993. CUL-TUBE. C. R. Bard, Inc. SN 189,428. Pub. 8–25–64. Filed 3–24–64.

779,994. WILLIAMS. Williams Gold Refining Company Incorporated. SN 189,645. Pub. 8–25–64. Filed 3–25–64.

Class 45 — Soft Drinks and Carbonated Waters

779,995. PRESTA-CO. Apollinaris Brunnen A.G. SN 134,929. Pub. 8–25–64. Filed 1–2–62.

779,996. MOUNTAIN AIR. The Isaly Dairy Company, d.b.a. Isaly's. SN 184,823. Pub. 8–25–64. Filed 1–17–64.

Class 46 — Foods and Ingredients of Foods

779,997. ELMWOOD FARMS. National Tea Co., d.b.a. National Food Stores. SN 144,084. Pub. 8–25–64. Filed 5–8–62.

779,998. MASON AND DESIGN. Mason, Au & Magenheimer Confy. Mfg. Co., Inc. SN 159,168. Pub. 8–25–64. Filed 12–14–62.

779,999. NUT-BROWN. E. B. Millar & Company. SN 162,053. Pub. 8–25–64. Filed 1–23–63.

780,000. VICTORIA AND DESIGN. N.V. Biscuit & Chocoladefabriek Victoria, d.b.a. N.V. Victoria. SN 165,653. Pub. 8–25–64. Filed 3–28–63.

780,001. PACIFIC MISS. Castroville Marketing Association. SN 170,170. Pub. 8–25–64. Filed 6–3–63.

780,002. SEA 'N SURF. Edward Andelman Associates, Inc., d.b.a. Sea 'N Surf. SN 172,286. Pub. 8–25–64. Filed 7–2–63.

780,003. JOHNNY APPLE SQUEEZE. Milk Proteins Inc. SN 172,324. Pub. 8–25–64. Filed 7–2–63.

780,004. ZWICKY'S. Milwaukee Cheese Co. SN 172,325. Pub. 8–25–64. Filed 7–2–63.

780,005. MARY LEE AND DESIGN. Michigan Shelby Company. SN 173,271. Pub. 8–25–64. Filed 7–17–63.

780,006. PEACOCK'S. Carter Products, Inc. SN 173,894. Pub. 8–25–64. Filed 7–29–63.

780,007. TOP'EMS. Beaver Home Products Company. SN 175,378. Pub. 8–25–64. Filed 8–20–63.

780,008. PICNIC. Mutual Citrus Products Company. SN 176,669. Pub. 8–25–64. Filed 9–10–63.

780,009. HACIENDA BRICK BRAND. Nalley's, Inc. SN 178,714. Pub. 8–25–64. Filed 10–10–63.

780,010. TOP TRAY. Birds Eye Foods Limited. SN 180,826. Pub. 8–25–64. Filed 11–12–63.

780,011. PERRICONE'S. Sam Perricone Citrus Company. SN 180,963. Pub. 8–25–64. Filed 11–12–63.

780,012. STYLIZED LLP. L & L Provision Company. SN 182,274. Pub. 8–25–64. Filed 12–3–63.

780,013. MORTON CHEF LINE AND DESIGN. Continental Baking Company. SN 182,711. Pub. 8–25–64. Filed 12–10–63.

780,014. GOLDEN ROAST. Crown Nut Company, Inc. SN 183,500. Pub. 8–25–64. Filed 12–24–63.

780,015. TENDER TIPS. Orleans Canning Company. SN 185,229. Pub. 8–25–64. Filed 1–23–64.

780,016. R/I AND DESIGN. Roland Industries, Inc. SN 187,156. Pub. 8–25–64. Filed 2–20–64.

780,017 AMBASSADOR. United States Baking Company, Inc., by change of name from Miller-Parrott Baking Company, Inc. SN 187,506. Pub. 8–25–64. Filed 2–26–64.

780,018. CHEF'S BUFFET. Stark, Wetzel & Co., Inc. SN 188,287. Pub. 8–25–64. Filed 3–9–64.

780,019. CONESTOGA. Pepperidge Farm, Incorporated. SN 188,660. Pub. 8–25–64. Filed 3–13–64.

780,020. RESPON-DO. Rust Sales Co. SN 188,801. Pub. 8–25–64. Filed 3–16–64.

780,021. CHIT CHAT. National Biscuit Company. SN 190,197. Pub. 8–25–64. Filed 4–2–64.

780,022. PLAINSMAN. General Foods Corporation. SN 190,256. Pub. 8–25–64. Filed 4–3–64.

780,023. DUET. National Biscuit Company. SN 190,414. Pub. 8–25–64. Filed 4–6–64.

Class 47 — Wines

780,024. KIK AND DESIGN. Montebello Liquors, Incorporated. SN 169,293. Pub. 8–25–64. Filed 5–20–63.

Class 48 — Malt Beverages and Liquors

780,025. CONBREW. The Bennett Brewing Company, Limited. SN 182,921. Pub. 8–25–64. Filed 12–13–63.

780,026. BIG CAT. Pabst Brewing Company. SN 183,275. Pub. 8–25–64. Filed 12–19–63.

780,027. BIG CAT AND DESIGN. Pabst Brewing Company. SN 183,276. Pub. 8–25–64. Filed 12–19–63.

Class 49 — Distilled Alcoholic Liquors

780,028. COPPER KETTLE. A & A Liquors. SN 180,158. Pub. 8–25–64. Filed 10–31–63.

780,029. RON LLAVE ETC. AND DESIGN. Puerto Rico Distillers, Inc., assignee of Licoreria Roses Inc. SN 181,163. Pub. 8–25–64. Filed 11–14–63.

780,030. HIGH JINKS. Schenley Distillers, Inc. SN 184,973. Pub. 8–25–64. Filed 1–20–64.

780,031. RAINDROP. Schenley Distillers, Inc. SN 185,247. Pub. 8–25–64. Filed 1–23–64.

Class 50 — Merchandise Not Otherwise Classified

779,803. (See Class 23 for this trademark.)

780,032. DUBL-LOCK. Approved Safety Inc. SN 162,066. Pub. 8–25–64. Filed 2–5–63.

780,033. SPILL-PROOF. R. D. Werner Co., Inc. SN 174,727. Pub. 8–25–64. Filed 8–8–63.

780,034. RELIART. Reliart Trailer Manufacturing Corp. SN 186,566. Pub. 8–25–64. Filed 2–12–64.

780,035. D-VID-A-WAY. Commercial Shearing & Stamping Company. SN 187,477. Pub. 8–25–64. Filed 2–26–64.

780,036. MATCAPPS. Madeline Capp. SN 193,800. Pub. 8–25–64. Filed 5–19–64.

780,037. NAIR SUPREME. Carter Products, Inc. SN 179,605. Pub. 8–25–64. Filed 10–23–63.

780,038. NAIR SUPREME. Carter Products, Inc. SN 179,606. Pub. 8–25–64. Filed 10–23–63.

780,039. LADY BRILLIANT. John H. Breck, Inc. SN 185,492. Pub. 8–25–64. Filed 1–28–64.

Class 52 — Detergents and Soaps

779,684. (See Class 4 for this trademark.)

779,685. (See Class 4 for this trademark.)

779,690. (See Class 6 for this trademark.)

780,040. CLEANS LIKE A WHITE TORNADO! Colgate-Palmolive Company. SN 158,794. Pub. 8–25–64. Filed 12–10–62.

780,041. TARSPHALT. Chester A. Rhinesmith and Marion F. Rhinesmith (joint owners), d.b.a. Chemical Dispersing Co. SN 176,959. Pub. 8–25–64. Filed 9–13–63.

780,042. ACTENE. Aetna Chemical Corporation. SN 180,481. Pub. 6–16–64. Filed 11–5–63.

780,043. METASTRIP. Metasurf Corporation. SN 185,309. Pub. 8–25–64. Filed 1–24–64.

Service Marks

Class 100 — Miscellaneous

780,044. SNO-CAP DRIVE-IN. Reed & Bell, Inc. SN 146,933. Pub. 8–25–64. Filed 6–14–62.

780,045. AUTOSPEC. Raytheon Company. SN 163,174. Pub. 8–25–64. Filed 2–20–63.

780,046. PUPPY PALACE. Harlee Manufacturing Co. SN 167,628. Pub. 8–25–64. Filed 4–26–63.

780,047. RED COACH. Tally Ho Grill of Boston, Inc. SN 178,989. Pub. 8–25–64. Filed 10–14–63.

Class 101 — Advertising and Business

780,048. SUPER-THRIFT. P. A. & S. Small Company. SN 152,449. Pub. 8–25–64. Filed 9–4–62.

780,049. FREE TIME. Luther Shehan, d.b.a. Dick Shehan Company. SN 166,497. Pub. 8–25–64. Filed 4–10–63.

Class 103 — Construction and Repair

780,050. MASTER POOLS. Master Pools, Inc. SN 163,062. Pub. 8–25–64. Filed 2–19–63.

780,051. RED BALL AND DESIGN. The Atlantic Refining Company. SN 170,596. Pub. 8–25–64. Filed 6–10–63.

780,052. ABALENE. Abalene Pest Control Service, Inc. SN 177,208. Pub. 8–25–64. Filed 9–18–63.

Class 105 — Transportation and Storage

780,053. SKUNK. California Western Railroad. SN 139,822. Pub. 8–25–64. Filed 3–14–62.

780,054. TRANS-AIR. Trans-Air System Inc. SN 167,663. Pub. 8–25–64. Filed 4–26–63.

780,055. "BOLL WEEVIL EXPRESS" AND DESIGN. Jack Cole Company. SN 181,125. Pub. 8–25–64. Filed 11–14–63.

Collective Membership Marks

Class 200

780,056. SIA SKI INDUSTRIES AMERICA AND DESIGN. Ski Industries America. SN 151,532. Pub. 8–25–64. Filed 8–20–62.

780,057. AKA (GREEK SYMBOLS). Alpha Kappa Lambda Fraternity. SN 168,662. Pub. 8–25–64. Filed 5–13–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

780,078. H. B. Hunter Company, Inc., Norfolk, Va. SN 155,804. Filed P.R. 10–24–62; Am. S.R. 9–11–64.



Class 45—Soft Drinks and Carbonated Waters

For Non-Alcoholic Mixes for Making Cocktail Drinks.

Class 46—Foods and Ingredients of Foods

For Lemon Butter Sauce Used as Dessert Topping and Also Used To Flavor Meat, Fish, and Vegetables; Syrups Used as Dessert Topping and Also Used for Other Food Purposes.

First use Oct. 12, 1962.

Class 1 — Raw or Partly Prepared Materials

780,058. Gerald W. Epstein, d.b.a. John M. Shawvan Company, Forest Park, Ill. SN 136,212. Filed P.R. 1-22-62; Am. S.R. 2-25-64.

KENTUCKY GREEN

For Grass Seed Mixture, a Portion of Which Is Kentucky Blue Grass Seed.
First use Jan. 15, 1962.

780,059. Oil-Dri Corporation of America, Chicago, Ill. SN 176,744. Filed P.R. 9-11-63; Am. S.R. 9-4-64.

DRI-NEST

For Absorbent Clay for Use as Poultry Litter.
First use June 19, 1958.

Class 11 — Inks and Inking Materials

780,060. The Carter's Ink Company, Cambridge, Mass. SN 142,611. Filed P.R. 4-10-62; Am. S.R. 3-19-63.

ELECTRIC

For Carbon Paper and Typewriter Ribbon.
First use in November 1956.

Class 12 — Construction Materials

780,061. Penn Crete Products Company, Inc., Philadelphia, Pa. SN 173,676. Filed P.R. 7-24-63; Am. S.R. 9-15-64.

DRI-FIL

For Powdered Masonry Filler.
First use on or about Mar. 30, 1962.

Class 14 — Metals and Metal Castings and Forgings

780,062. Yale Engineering Company, Chicago, Ill. SN 149,508. Filed P.R. 7-20-62; Am. S.R. 8-17-64.

INSTANT STEEL

For Solid Bonding Agent Which Has Powered Iron Base With a Solvent System Sold in Flexible Tubes in the Form of Paste and It Sets Upon Release of the Solvent System To Give the Working Characteristics of Steel Used for Repairing, Caulking, Filling, Sealing, Bonding Metals Together, When Applied to a Clean Solvent Surface Which Is Free From an Anti-Friction Type of Material Such as, for Example, Oil, Wax, Water.
First use June 27, 1962.

780,063. Yale Engineering Company, Chicago, Ill. SN 149,509. Filed P.R. 7-20-62; Am. S.R. 8-17-64.

INSTANT ALUMINUM

For Solid Bonding Agent Which Has Powdered Aluminum Base With Solvent System Sold in a Flexible Tube in the Form of Paste and It Sets Upon Release of the Solvent System To Give the Working Characteristics of Aluminum, Used for Repairing, Caulking, Filling, Sealing, Bonding Metals Together, When Applied to a Clean Solid Surface Which Is Free From an Anti-Friction Type of Material Such as, for Example, Oil, Wax, Water.
First use June 27, 1962.

Class 19 — Vehicles

780,064. Krizman Manufacturing Company, Inc., South Bend, Ind. SN 150,077. Filed P.R. 7-30-62; Am. S.R. 9-4-64.

CAMBER-AID

For Ball Joint for Automobile Front Wheel Suspension.
First use June 1, 1962.

Class 22 — Games, Toys, and Sporting Goods

780,065. Hassenfeld Bros., Inc., Central Falls, R.I. SN 159,061. Filed P.R. 12-13-62; Am. S.R. 9-21-64.

ELECTRO WAND

For Electrostatic Flying Toy.
First use on or about Nov. 8, 1962.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

780,066. Brown & Sharpe Manufacturing Company, Providence, R.I. SN 178,409. Filed P.R. 10-7-63; Am. S.R. 9-15-64.



The drawing is lined for red.
For Machine Tool Work Headstocks and Machine Tool Spindle Units.
First use June 21, 1963.

Class 25 — Locks and Safes

780,067. Sciplone Roger Manzardo, Lusern, Switzerland. SN 186,463. Filed 2-11-64.

COLORCAP

For Key Identifying and Control Media—Namely, Plastic Covers Stretchable Covers for Keys.
First use April 1960; in commerce April 1960.

Class 34 — Heating, Lighting, and Ventilating Apparatus

780,068. Leslie Welding Co., Inc., Franklin Park, Ill. SN 166,109. Filed P.R. 4-4-63; Am. S.R. 3-30-64.

DUALOUVRE

For Ventilators.
First use Nov. 30, 1962.

Class 37 — Paper and Stationery

780,069. Peterson Electronic Die Co., Inc., Mineola, N.Y. SN 178,729. Filed P.R. 10-10-63; Am. S.R. 8-31-64.

A PETERSON CASE

For Casings for Books.
First use Jan. 3, 1961.

780,070. Weyerhauser Company, Tacoma, Wash., assignee of Hamilton Paper Company, Miquon, Pa. SN 182,482. Filed P.R. 12-6-63; Am. S.R. 9-21-64.

STA-WHITE

For Designation for Paper Products—Namely, Direct Process Paper the Principal Use of Which Is to a Paper Base for Sensitized Reproduction Papers, Such as Blueprint and Diazo-Type Papers.
First use Mar. 16, 1962.

Class 38 — Prints and Publications

780,071. Journal of the West, Los Angeles, Calif. SN 169,645. Filed P.R. 5-24-63; Am. S.R. 5-21-64.

JOURNAL *of the* WEST

For Periodical Magazine.
First use Aug. 23, 1962.

780,072. Farm Journal, Inc., Philadelphia, Pa. SN 177,623. Filed P.R. 9-24-63; Am. S.R. 9-17-64.

POWER FARMING NEWS

For Section of a Magazine.
First use Sept. 13, 1963.

Class 39 — Clothing

780,073. I. B. Kleinert Rubber Company, New York, N.Y. SN 140,950. Filed P.R. 3-28-62; Am. S.R. 8-20-64.

GLO CAP

For Bathing Caps.
First use Jan. 24, 1962.

780,074. Barry Walt, Inc., New York, N.Y. SN 163,505. Filed P.R. 2-26-63; Am. S.R. 8-27-64.

KIRKLAND

For Wearing Apparel—Namely, Coats.
First use Feb. 1, 1963.

780,075. World Toy House, Inc., St. Paul, Minn. SN 163,858. Filed P.R. 3-4-63; Am. S.R. 9-21-64.

SAFE-N-SOFT

For Baby Pants.
First use Feb. 8, 1963.

780,076. May Hosiery Mills, Nashville, Tenn. SN 176,667. Filed P.R. 9-10-63; Am. S.R. 9-9-64.

NO SEE'EMS

For Hosiery.
First use Sept. 5, 1963.

Class 44 — Dental, Medical, and Surgical Appliances

780,077. Floxite Company, Inc., Niagara Falls, N.Y. SN 169,542. Filed P.R. 5-23-63; Am. S.R. 9-16-64.

TOOTH TABS

For Serrated Paper Dental Cleaner.
First use Mar. 8, 1963.

Class 46 — Foods and Ingredients of Foods

780,078. See Section 1 (Combined Certificate).

780,079. Rod's Food Products, Inc., Los Angeles, Calif. SN 158,382. Filed P.R. 12-3-62; Am. S.R. 9-21-64.

whip-O

For Vegetable Derived Aerated Topping Used for Decorating or Topping Desserts.
First use Oct. 28, 1962.

780,080. Kotarides Baking Company, Inc., d.b.a. Mary Jane Bakers, Norfolk, Va. SN 161,717. Filed P.R. 1-30-63; Am. S.R. 6-26-64.

C'EST SI BON

The English translation for the French words "C'est Si Bon" is "It's so good."
For Bread.
First use September 1962.

780,081. Ballas Egg Products Company, Inc., Zanesville, Ohio. SN 164,310. Filed P.R. 3–11–63; Am. S.R. 6–26–64.

GOLDEN YOLK

For Frozen Eggs and Egg Solids.
First use April 1961.

780,082. Wm. Wrigley Jr. Company, Chicago, Ill. SN 164,409. Filed P.R. 3–11–63; Am. S.R. 6–22–64.

KLEEN

For Chewing Gum.
First use Feb. 26, 1963.

780,083. Orchard Hill Farms Candy Company, Chicago, Ill., assignee of Chesterton Candy Company, d.b.a. Orchard Hill Farms Candy Company, Chicago, Ill. SN 178,417. Filed P.R. 10–7–63; Am. S.R. 9–15–64.

ZOUR

For Candy.
First use Oct. 1, 1962.

Class 48 — Malt Beverages and Liquors

780,084. G. Heileman Brewing Company, Inc., La Crosse, Wis. SN 167,259. Filed P.R. 4–22–63; Am. S.R. 9–18–64.

SPRING BREWED

For Beer.
First use Oct. 10, 1962.

Class 50 — Merchandise Not Otherwise Classified

780,085. Aluminum Specialty Company, Manitowoc, Wis. SN 143,914. Filed P.R. 5–7–62; Am. S.R. 9–18–64.

EVERGREEN

For Plastic Christmas Decoration.
First use Jan. 22, 1962.

Class 52 — Detergents and Soaps

780,086. Racine Industrial Plant, Inc., Racine, Wis. SN 178,037. Filed P.R. 9–30–63; Am. S.R. 9–10–64.

RACINE

For Commercial Dry Carpet Cleaning Compound for Commercial Use.
First use Aug. 26, 1963.

Service Mark

Class 101 — Advertising and Business

780,087. Certified Test Markets, Inc., New York, N.Y. SN 138,944. Filed P.R. 3–2–62; Am. S.R. 8–6–64.

A CERTIFIED TEST MARKET

For Survey Services Directed To Obtaining Test Markets for Advertising and Sales Purposes.
First use on or about May 1, 1961.

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182,001. TRITWIST. Cl. 42. 4–1–24.
183,553. SPORTEX. Cl. 42. 5–6–24.
189,219. REPRESENTATION OF EAGLE IN A CIRCLE (DESIGN). Cl. 14. 9–16–24.
189,545. WINE DIP. Cl. 45. 9–23–24.
189,745. MOON MULLINS. Cl. 38. 9–23–24.
189,747. SMITTY. Cl. 38. 9–23–24.
190,830. SUPER-TAND. Cl. 1. 10–28–24.
190,977. WESTON DODSON & CO. INC. AND DESIGN. Cl. 1. 10–28–24.
191,830. AMERICAN BEAUTY. Cl. 46. 11–18–24.
192,632. SCRIPTO. Cl. 37. 12–9–24.
192,777. RAMTITE. Cl. 12. 12–9–24.
193,092. PLAYFLEX. Cl. 39. 12–16–24.
194,104. ARCY. Cl. 6. 1–13–25.
194,226. WAYAGAMACK AND DESIGN. Cl. 1. 1–20–25.
194,332. INVERTIT. Cl. 46. 1–20–25.
195,005. ICY-HOT. Cl. 3. 2–17–25.
195,462. ICY-HOT. Cl. 42. 2–24–25.
408,692. DAMASKACEL. Cl. 42. 8–29–44.
409,010. GOLDEN MIST. Cl. 46. 9–12–44.
409,014. I USE M.I.S. PRODUCTS AND DESIGN. Cl. 46. 9–12–44.
409,038. UTILIN. Cl. 18. 9–12–44.
409,059. SHOVELMOBILE. Cl. 23. 9–12–44.
409,151. VU-DEX. Cl. 37. 9–19–44.
409,180. PLASTO PIX. Cl. 44. 9–19–44.
409,238. CELATOW. Cl. 1. 9–26–44.
409,311. SUL-RAY. Cl. 18. 10–3–44.
409,688. MULTIWAX. Cl. 6. 10–17–44.
410,479. QUEEN BEES. Cl. 28. 11–28–44.
410,627. RAMBLING ROSES. Cl. 28. 12–5–44.

410,919. POLLIGENS. Cl. 18. 12–26–44.
411,032. ACCO. Cl. 4. 1–2–45.
411,072. MOUNTAIN PASS. Cl. 46. 1–2–45.
411,546. ESKA. Cl. 27. 1–23–45.
411,559. LIBERTY. Cl. 19. 1–23–45.
411,600. PROPORTIONETTES. Cl. 39. 1–23–45.
411,687. LINCOLNWELD. Cl. 21. 1–30–45.
411,721. CRES-LITE. Cl. 16. 1–30–45.
411,997. CALPADON. Cl. 18. 2–13–45.
412,156. ACORN AND DESIGN. Cl. 14. 2–20–45.
412,242. STERO REALIST AND DESIGN. Cl. 26. 2–27–45.
412,243. DESIGN OF DREDGE IN RIVER. Cl. 46. 2–27–45.
412,305. ACCO. Cl. 52. 2–27–45.
412,381. L'HEURE BLEUE. Cl. 51. 3–6–45.
412,390. MITSOUKO. Cl. 51. 3–6–45.
412,391. RUE DE LA PAIX. Cl. 51. 3–6–45.

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733,091. AIRFLOW CO. AND DESIGN. Cl. 31. 6–19–62.

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641,830. CALLA. Cl. 46. 2–19–57.
649,262. SYMPHONY LOTTO. Cl. 22. 7–30–57.
649,644. SIE AND DESIGN. Cl. 23. 8–6–57.
649,740. CHARMERS BY CW. Cl. 39. 8–6–57.
650,624. DIXIE'S BEST. Cl. 46. 8–20–57.
660,544. JUPITER. Cl. 26. 4–15–58.
660,705. FURAL. Cl. 12. 4–22–58.

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667,246. TOUCHETTE. Cl. 2.
667,247. VALU-BILT. Cl. 2.
667,249. PET CROSS. Cl. 3.
667,250. SAND-O-GRIND. Cl. 4.
667,252. ANCHOR-DOUGH. Cl. 5.
667,253. LIQUASET. Cl. 5.
667,259. WATER BAN. Cl. 6.
667,271. CARDIA SOL. Cl. 6
667,272. GRAPHA SOL. Cl. 6.
667,273. LECTRODE SOL. Cl. 6.
667,276. PERFECT PRINT NO-OFFSET VARNISH. Cl. 11.
667,278. VISTA-LUX. Cl. 12.
667,281. FALAKO. Cl. 12.
667,284. SAV-A-DOR. Cl. 13.
667,286. "DUTY-RITE." Cl. 13.
667,288. K-W AND DESIGN. Cl. 13.
667,305. MIDWEST. Cl. 16.
667,307. PANS. Cl. 18.
667,309. BONADERM. Cl. 18.
667,312. SLIM-WAY. Cl. 18.
667,317. METICILLIN-S. Cl. 18.
667,318. FERROVET. Cl. 18.
667,323. GLARNO. Cl. 19.
667,325. ARKANSAS TRAVELER AT AND DESIGN. Cl. 19.
667,329. FLUIDRIDE. Cl. 19.
667,330. SEA SAUCER. Cl. 19.
667,336. BARFORM. Cl. 19.
667,339. WEDGEFIELD. Cl. 21.
667,340. VARICAP. Cl. 21.
667,341. MOTO MAC ETC. AND DESIGN. Cl. 21.
667,342. DAYNA. Cl. 21.
667,352. STANDARD-ROYAL. Cl. 21.
667,353. A BELLE DOLL. Cl. 22.
667,356. FUEL-MASTER. Cl. 23.
667,358. ROCKET. Cl. 23.
667,372. ROYAL. Cl. 23.
667,375. ALL-CROP. Cl. 23.
667,378. EXEMPLAR. Cl. 23.
667,381. MENZIES. Cl. 23.
667,382. TRU-TRIM. Cl. 23.
667,388. JLITAR. Cl. 26.
667,389. COLOTRONIC. Cl. 26.
667,390. RE-CO- AND DESIGN. Cl. 26.
667,392. PLUG RITE. Cl. 26.
667,393. HALOID XEROX ETC. AND DESIGN. Cl. 26.
667,394. HALOID XEROX. Cl. 26.
667,398. JETSTREAM. Cl. 27.
667,399. WALDORF. Cl. 27.
667,400. SIGNET. Cl. 27.
667,407. CENTRIFIL. Cl. 31.
667,409. LINK AND DESIGN. Cl. 32.
667,410. KROEHLER PERMANIZED ETC. AND DESIGN. Cl. 32.
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667,416. ROTO-FILE. Cl. 32.
667,425. ROOMETTE. Cl. 34.
667,432. ARCTIC BREEZE. Cl. 34.
667,434. WATER-AIRE. Cl. 34.
667,439. KAOKOVER. Cl. 35.
667,441. KAOFORM. Cl. 35.
667,442. HERO. Cl. 36.
667,450. THE GAMBOLS. Cl. 38.
667,455. SPORTABLES BY SPORTCRAFT. Cl. 39.
667,456. VITA SOLE. Cl. 39.
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667,472. FRAGRANCE. Cl. 39.
667,473. FLAMING YOUTH. Cl. 39.
667,474. FAN. Cl. 39.
667,475. WIZ-BAC. Cl. 39.
667,476. FAN-TEX. Cl. 39.
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667,484. PHOENIX HARBURG AND DESIGN. Cl. 42.
667,486. DESIGN OF A CHEST. Cl. 42.
667,488. MINIMETER. Cl. 44.
667,490. PUROCK. Cl. 45.
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431,828. "HIS NIBS." Cl. 6. 8–12–47.
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736,560. ULTRA-O-RAY. Cl. 103. 8–21–62.

Erratum

In the OFFICIAL GAZETTE of May 26, 1964, at page TM 206, under Trademark Registrations Canceled, Section 8, "660,323. NILOS. Cl. 23." should be deleted.

INDEX OF REGISTRANTS

NOVEMBER 10, 1964

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A & A Liquors, Washington, D.C. 780,028, pub. 8–25–64. Cl. 49.
Abalene Pest Control Service, Inc., Burlington, Vt. 780,052, pub. 8–25–64. Cl. 103.
Abbett and Macke : *See*—
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Abrahams, S., & Co., Inc., Philadelphia, Pa. 779,950, pub. 8–25–64. Cl. 39.
Accelerated Instruction Methods Corp., Chicago, Ill. 779,913–4, pub. 8–25–64. Cl. 38.
Access Equipment Ltd., Hemel Hempstead, Hertfordsbire, England. 779,806, pub. 8–25–64. Cl. 23.
Achilles Corp., Atlantic City, N.J. 779,712, pub. 8–25–64. Cl. 8.
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Acme Chemical Co., Milwaukee, Wis. 411,032, ren. 11–10–64. Cl. 4.
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Adams Rite Mfg. Co., Glendale, Calif. 779,824, pub. 8–25–64. Cl. 23.
Adams Rite Mfg. Co., Glendale, Calif. 779,852, pub. 8–25–64. Cl. 25.
Aerojet-General Corp., El Monte, Calif. 779,732, pub. 8–25–64. Cl. 13.
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Alroyal Engineering Co., Livingston, N.J. 779,809, pub. 8–25–64. Cl. 23.
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Aldy Graphic Supply, Inc., Minneapolis, Minn. 779,707, pub. 8–25–64. Cl. 6.
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Aluminum Specialty Co., Manitowoc, Wis. 780,085. Cl. 50.
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American Cyanamid Co., Wayne, N.J. 779,687, pub. 8–25–64. Cl. 5.
American Granby Co., The, Milford, Conn. 779,730, pub. 8–25–64. Cl. 13.
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Aquaslide Corp., South El Monte, Calif. 779,870, pub. 8–25–64. Cl. 32.
Aquavar, Inc., San Carlos, Calif. 779,749, pub. 8–25–64. Cl. 16.
Arnay Shoe Corp., Little Ferry, N.J. 779,945, pub. 8–25–64. Cl. 39.
Arnett, A. E., d.b.a. Plaza Directory, Wichita, Kans. 779,922, pub. 8–25–64. Cl. 38.
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Atlantic Mfg. Co., now by change of name Scripto Mfg. Co., to Scripto, Inc., Atlanta, Ga. 192,632, canc. Cl. 37.
Atlantic Refining Co., The, Philadelphia, Pa. 780,051, pub. 8–25–64. Cl. 103.
Atlantic Stamping Co., Rochester, N.Y. 667,288, canc. Cl. 13.
Automatic Control Co., St. Paul, Minn. 779,791, pub. 8–25–64. Cl. 21.
B & W Fitting Co., Cleveland, Ohio. 779,719, pub. 8–25–64. Cl. 13.
Baker Furniture, Inc., Grand Rapids, Mich. 779,871, pub. 8–25–64. Cl. 32.
Ballas Egg Products Co., Inc., Zanesville, Ohio. 780,081. Cl. 46.
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Barnes Drill Co., Rockford, Ill. 779,814, pub. 8–25–64. Cl. 23.
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Birds Eye Foods Ltd., Walton-On-Thames, Surrey, England. 780,010, pub. 8–25–64. Cl. 46.
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Borg-Warner Corp., Chicago, Ill. 779,725–6, pub. 8–25–64. Cl. 13.
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Cadco, Inc., Des Moines, Iowa. 779,704, pub. 8–25–64. Cl. 6.
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Cannon Mills Co., Kannapolis, N.C. 779,967, pub. 8–25–64. Cl. 42.
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Chatham Mfg. Co., Elkin, N.C. 779,964, pub. 8–19–64. Cl. 42.
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Colgate-Palmolive Co., New York, N.Y. 780,040, pub. 8–25–64. Cl. 52.
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Crest Hosiery Mill, Hickory, N.C. 634,618, canc. Cl. 39.
Crookes Laboratories Ltd., The, London, England. 667,318, canc. Cl. 18.
Crompton & Knowles Corp., Worcester, Mass. 779,807, pub. 8–25–64. Cl. 23.
Crossman, Julius, Inc., New York, N.Y. 667,456, canc. Cl. 39.
Crown Nut Co., Inc., Kingston, Pa. 780,014, pub. 8–25–64. Cl. 46.
Crown Zellerbach Corp., San Francisco, Calif. 779,906, pub. 8–25–64. Cl. 37.
Crystal, David, Inc., New York, N.Y. 779,956, pub. 8–25–64. Cl. 39.
Curtin, W. H., & Co., Houston, Tex. 779,679, pub. 8–25–64. Cl. 1.
Dade Reagents, Inc., Miami, Fla. 779,695, pub. 8–25–64. Cl. 6.
Daggett, Max, Jr., Dallas, Tex. 779,734, pub. 8–25–64. Cl. 14.
Dainippon Pharmaceutical Co., Ltd., Higashi-ku, Osaka, Japan. 667,307, canc. Cl. 18.
Dan River Mills, Inc., Danville, Va. 779,961, pub. 8–25–64. Cl. 42.
Dansk Importing Co., Inc., Great Neck, N.Y. 779,823, pub. 8–25–64. Cl. 23.
Dayna Lighting, Inc., Philadelphia, Pa. 667,342, canc. Cl. 21.
Deering Milliken, Inc., New York, N.Y. 779,962, pub. 8–25–64. Cl. 42.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 779,702, pub. 8–25–64. Cl. 6.
Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 779,989, pub. 8–25–64. Cl. 44.
Devoe & Raynolds Co., Inc., Louisville, Ky. 779,746, pub. 8–25–64. Cl. 16.
Diversitron Electronics: *See*— Bennett, James L.
Dodson, Weston, & Co., Inc., Bethlehem, Pa. 190,977, ren. 11–10–64. Cl. 1.
Dominion Tar & Chemical Co., Ltd., Montreal, Canada. 779,699, pub. 8–25–64. Cl. 6.
Dormeuil Freres, Paris, France, to Dormeuil Freres Societe Anonyme, Paris, France. 182,001, ren. 11–10–64. Cl. 42.
Dormeuil Freres, to Dormeuil Freres Societe Anonyme, Paris, France. 183,553, ren. 11–10–64. Cl. 42.
Dormeuil Freres Societe Anonyme: *See*— Dormeuil Freres.
Drew, Irving, Corp., The, Lancaster, Ohio. 779,948, pub. 8–25–64. Cl. 39.
Duncan, Donald F., Inc., Evanston, Ill. 779,799, pub. 7–7–64. Cl. 22.
Dunham-Bush, Inc., West Hartford, Conn. 779,813, pub. 8–25–64. Cl. 23.
Duracraft Corp., Salt Lake City, Utah. 779,936, pub. 8–25–64. Cl. 39.
Dur-O-Lite Pencil Co., Melrose Park, Ill. 779,908, pub. 8–25–64. Cl. 37.
Eclipse Lawn Mower Co., The: *See*— Buffalo-Eclipse Corp.
Economics Laboratory, Inc., St. Paul, Minn. 779,919, pub. 8–25–64. Cl. 38.
Economics Laboratory, Inc., St. Paul, Minn. 779,810, pub. 8–25–64. Cl. 23.
Economy Auto Stores, Inc., Atlanta, Ga. 667,341, canc. Cl. 21.
Electronic Instruments Ltd., Richmond, England. 779,788, pub. 8–25–64. Cl. 21.
Ellis, George B., Mountain View, Calif. 779,769, pub. 8–25–64. Cl. 19.
Emerson, Johnson, MacKay, Inc., North Hollywood, Calif. 779,792, pub. 8–25–64. Cl. 21.
Epstein, Gerald W., d.b.a. John M. Shawvan Co., Forest Park, Ill. 780,058. Cl. 1.
Era Watch Co. Ltd. C. Ruedi-Flury & Co., Bienne, Switzerland. 667,400, canc. Cl. 27.
Etablissement Vivadent, Schaan, Leichtenstein. 779,985, pub. 8–25–64. Cl. 44.
Etacol International, Zurich, Switzerland. 779,968, pub. 8–25–64. Cl. 42.
Everpure, Inc., Oak Brook, Ill. 779,808, pub. 8–25–64. Cl. 23.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 779,889, pub. 8–25–64. Cl. 37.
Falako Corp., The, Akron, Ohio. 667,281, canc. Cl. 12.
Fantasy Records Inc., San Francisco, Calif. 779,883, pub. 8–25–64. Cl. 36.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. 779,755, pub. 8–25–64. Cl. 18.
Farmer Electric Products Co., Inc., Natick, Mass. 779,858, pub. 8–25–64. Cl. 26.
Farm Journal, Inc., Philadelphia, Pa. 780,072. Cl. 38.
Farnam, F. D., Co., Chicago, Ill. 667,439, canc. Cl. 35.
Farnam, F. D., Co., Chicago, Ill. 667,441, canc. Cl. 35.
Ferrara Candy Co., Not Inc., Chicago, Ill. 667,508, canc. Cl. 46.
Ferrodynamics Corp., The, Lodi, N.J. 779,880, pub. 8–25–64. Cl. 36.
Fiorita, Anthony R., d.b.a. Wine-Dip Co., Moberly, Mo. 189,545, ren. 11–10–64. Cl. 45.
Firma Pharmakon L.U.F. Hobiger-Chemische Fabrik, Vienna, Austria. 779,684–5, pub. 8–25–64. Multiple Class (Classes 4 and 52).
Fitzsimmons Stores, Ltd., d.b.a. Smart & Final Iris Co., Smart & Final Co., Smart & Final Co., Ltd., and Haas Baruch & Co., Los Angeles, Calif. 641,830, canc. Cl. 46.
Flexnit Co., Inc., New York, N.Y. 779,954, pub. 8–25–64. Cl. 39.
Flo-Jet Co., Inc., Niagara Falls, N.Y. 780,077. Cl. 44.
Fluordent, Inc., New Orleans, La. 419,823, canc. Cl. 6.
Foote Mineral Co., Exton, Pa. 779,708, pub. 8–25–64. Cl. 6.
Foote Mineral Co., Exton, Pa. 779,733, pub. 8–25–64. Cl. 14.
Fort Howard Paper Co., Green Bay, Wis. 779,827, pub. 8–25–64. Cl. 23.
Fostoria Corp., Huntingdon Valley, Pa. 779,778, pub. 8–25–64. Cl. 21.
Fromson Orban Co., Inc., New York, N.Y. 660,705, canc. Cl. 12.
Garrett Enumclaw Co., Enumclaw, Wash. 779,842, pub. 8–25–64. Cl. 23.
General Cigar Co., Inc., New York, N.Y. 779,753, pub. 8–25–64. Cl. 17.
General Foods Corp., White Plains, N.Y. 780,022, pub. 8–25–64. Cl. 46.
General Kinematics Corp., Barrington, Ill. 779,811, pub. 8–25–64. Cl. 23.
General Motors Corp., Detroit, Mich. 779,770–1, pub. 8–25–64. Cl. 19.
General Tire & Rubber Co., The, Akron, Ohio. 779,974, pub. 8–25–64. Cl. 42.

Georgia Shoe Mfg. Co., Inc., Flowery Branch, Ga. 779,946, pub. 8–25–64. Cl. 39.
Georgia-Pacific Corp., from Puget Sound Pulp & Timber Co., Bellingham, Wash. 779,713, pub. 8–25–64. Cl. 10.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 779,894, pub. 8–25–64. Cl. 37.
Gilmore, Walter D., d.b.a. Abbett and Macke, Covington, Ky. 779,990, pub. 8–25–64. Cl. 44.
Gimbel, Harold H., d.b.a. The Sea Saucer Co., New Haven, Conn. 667,330, canc. Cl. 19.
Glarno Safety Visor: *See*— Woodall, James.
Glidden Co., The, Cleveland, Ohio. 779,859, pub. 8–25–64. Cl. 29.
Goodyear Aircraft Corp., Akron, Ohio. 667,329, canc. Cl. 19.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 779,796, pub. 8–25–64. Cl. 21.
Gruen Industries, Inc., d.b.a. Gruen Watch Co., Cincinnati, Ohio. 667,398, canc. Cl. 27.
Gruen Watch Co.: *See*— Gruen Industries, Inc.
Guerlain, Inc.: *See*— Guerlain Perfumery Corp., The.
Guerlain Perfumery Corp., The, Wilmington, Del., and New York, N.Y., to Guerlain, Inc., New York, N.Y. 412,381, ren. 11–10–64. Cl. 51.
Guerlain Perfumery Corp., The, Wilmington, Del., and New York, N.Y., to Guerlain, Inc., New York, N.Y. 412,390–1, ren. 11–10–64. Cl. 51.
Guild Industries, Inc., Townsend, Mass. 779,853, pub. 8–25–64. Cl. 25.
Halo'd Co., The: *See*— Haloid Xerox Inc.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 667,394, canc. Cl. 26.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 667,393, canc. Cl. 26.
Hamilton Paper Co.: *See*— Weyerhaeuser Co.
Hamman, Harold E., Riverside, Calif. 667,252, canc. Cl. 5.
Hardwick Stove Co., Cleveland, Tenn. 779,875, pub. 8–25–64. Cl. 34.
Harlee Mfg. Co., Chicago, Ill. 780,046, pub. 8–25–64. Cl. 100.
Harte & Co., Inc., New York, N.Y. 779,768, pub. 8–25–64. Cl. 19.
Hartfield Stores, Inc., Los Angeles, Calif. 779,905, pub. 8–25–64. Cl. 37.
Hartfield Stores, Inc., Los Angeles, Calif. 779,971, pub. 8–25–64. Cl. 42.
Hassenfeld Bros., Inc., Central Falls, R.I. 780,065. Cl. 22.
Heileman, G., Brewing Co., Inc., La Crosse, Wis. 780,084. Cl. 48.
Her Grace, Inc., New York, N.Y. 779,935, pub. 8–25–64. Cl. 39.
Hero Records: *See*— Newton, Frederick G.
Hires, Charles E., Co., The, Philadelphia, Pa. 667,490, canc. Cl. 45.
Hoffman-La Roche Inc., Nutley, N.J. 779,697, pub. 8–25–64. Cl. 6.
Hollister Stier Laboratories, Inc., Spokane, Wash. 779,760, pub. 8–25–64. Cl. 18.
Hope Chest Co., Inc., The, Minneapolis, Minn. 667,486, canc. Cl. 42.
Huffman Mfg. Co., The, Dayton, Ohio. 779,765, pub. 8–25–64. Cl. 19.
Hunter, H. B., Co., Inc., Norfolk, Va. 780,078. Multiple Class (Classes 45 and 46).
Husky Briquetting, Inc., Cody, Wyo. 779,683, pub. 8–25–64. Cl. 1.
Hydro-Kinetics, Inc., Zanesville, Ohio. 779,802, pub. 8–25–64. Cl. 23.
Icy-Hot Bottle Co. of Cincinnati, Ohio (Inc. in 1923), The: *See*— Icy-Hot Bottle Co., The.
Icy-Hot Bottle Co., The, to The Icy-Hot Bottle Co. of Cincinnati, Ohio (Inc. in 1923), Cincinnati, Ohio, to King-Seeley Thermos Co., Ann Arbor, Mich. 195,005, ren. 11–10–64. Cl. 3.
Icy-Hot Bottle Co., The, to The Icy-Hot Bottle Co. of Cincinnati, Ohio, Cincinnati, Ohio, to King-Seeley Thermos Co., Ann Arbor, Mich. 195,462, ren. 11–10–64. Cl. 42.
Iloca Camera: *See*— Witt, Wilhelm.
Industrial Stampings, Inc., Worcester, Mass. 667,286, canc. Cl. 13.
Inglewood Tire and Auto Service, Inc., Inglewood, Calif. 779,878, pub. 8–25–64. Cl. 35.
International Chemical Corp., New York, N.Y. 779,694, pub. 8–25–64. Cl. 6.
International Minerals & Chemical Corp., Skokie, Ill. 779,715, pub. 8–25–64. Cl. 10.
Isaly Dairy Co., The, d.b.a. Isaly's, Youngstown, Ohio. 779,996, pub. 8–25–64. Cl. 45.
Isaly's: *See*— Isaly Dairy Co., The.
Italiana Galakerite, Societa, Milan, Italy. 779,959, pub. 8–25–64. Cl. 40.
Itt Cannon Electric Inc., Los Angeles, Calif. 779,843, pub. 8–25–64. Cl. 23.
Jaeger Machine Co., The, Columbus, Ohio. 779,830, pub. 8–25–64. Cl. 23.
Jensen Industries, Inc., Addison, Ill. 779,884, pub. 8–25–64. Cl. 36.
Jo, An Inc., Charlotte, N.C. 779,833, pub. 8–25–64, Cl. 23.
Jones, Wilson, Co., Chicago, Ill. 779,892, pub. 8–25–64. Cl. 37.
Jordan, Reppard J., d.b.a. Sterling Chemical Co., Jacksonville, Fla. 667,276, canc. Cl. 11.
Journal of the West, Los Angeles, Calif. 780,071. Cl. 38.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 779,738, pub. 8–25–64. Cl. 14.
Kalflex Inc., New York, N.Y. 779,912, pub. 8–25–64. Cl. 37.
Kaumagraph Co., Wilmington, Del. 779,930, pub. 8–25–64. Cl. 38.
Kaylon Inc., New York, N.Y., to Chadbourn Gotham, Inc., Charlotte, N.C. 411,600, ren. 11–10–64. Cl. 39.
Kayser-Roth Corp., New York, N.Y. 779,952, pub. 8–25–64. Cl. 39.
Kimberly-Clark Corp., Neenah, Wis. 779,891, pub. 8–25–64. Cl. 37.
King-Seeley Thermos Co.: *See*— Icy-Hot Bottle Co., The.
Kleinert, I. B., Rubber Co., New York, N.Y. 780,073. Cl. 39.
Knight, J. B., Co., d.b.a. J. B. Knight Distributing Co., Brownfield, Tex. 779,723, pub. 8–25–64. Multiple Class (Classes 13 and 23).
Knight, J. B., Distributing Co.: *See*— Knight, J. B., Co.
Kocher, Sylvan: *See*— Kocher, Walter.
Kocher, Walter, New York, N.Y., to Sylvan Kocher, Grenchen, Switzerland. 411,546, ren. 11–10–64. Cl. 27.
Kotarides Baking Co., Inc., d.b.a. Mary Jane Bakers, Norfolk, Va. 780,080. Cl. 46.
Kreider-Creveling Shoe Co., Boston, Mass. 193,092, ren. 11–10–64. Cl. 39.
Kreage, S. S., Co., Detroit, Mich. 667,339, canc. Cl. 21.
Krizman Mfg. Co., Inc., South Bend, Ind. 780,064. Cl. 19.
Kroehler Mfg. Co. of Kentucky, Louisville, Ky. 667,410, canc. Cl. 32.
Kudelski, Stefan, d.b.a. Stefan Kudelski, Prilly, Vaud, Switzerland. 779,882, pub. 8–25–64. Cl. 36.
L'A Water Conditioning, Inc., City of Industry, Calif. 779,865, pub. 8–25–64. Cl. 31.
L & L Provision Co., Chicago, Ill. 780,012, pub. 8–25–64. Cl. 46.
Lactona Inc., St. Paul, Minn., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 409,180, ren. 11–10–64. Cl. 44.
Lake Erie Chemical Co., The, Wickcliffe, Ohio. 779,986, pub. 8–25–64. Cl. 44.
La Primadora Cigar Corp., New York, N.Y. 779,754, pub. 8–25–64. Cl. 17.
Larousse Inc., New York, N.Y. 779,701, pub. 8–25–64. Cl. 6.
Lauer, Georg, Pforzheim, Germany. 779,900, pub. 8–25–64. Cl. 37.
Lavallee & Ide, Inc., Chicopee, Mass. 779,835, pub. 8–25–64. Cl. 23.
Lebus, Harris, Ltd., London, N., England. 667,409, canc. Cl. 32.
Lederle Laboratories, Inc., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 410,919, ren. 11–10–64. Cl. 18.
Leslie Welding, Co., Inc., Franklin Park, Ill. 780,068. Cl. 34.
Liberty Coach Co., Inc., Syracuse, Ind. 411,559, ren. 11–10–64. Cl. 19.
Licoreria Roses Inc.: *See*— Puerto Rico Distillers, Inc.
Lincoln Electric Co., The, Cleveland, Ohio. 411,687, ren. 11–10–64. Cl. 21.
Long Island Tinsmith Supply Corp., Richmond Hill, N.Y. 667,284, canc. Cl. 13.
Lorillard, P., Co., New York, N.Y. 779,751, pub. 8–25–64. Cl. 17.
Lucky Stride Shoes, Inc., Maysville, Ky. 779,949, pub. 8–25–64. Cl. 39.
Ludlow Corp., Needham Heights, Mass. 779,909–10, pub. 8–25–64. Cl. 37.
Lynndale Co., The, Stratford, Conn. 667,371–3, canc. Cl. 6.
MDC Industries: *See*— Metals Development Co.
Madison Sales Corp., Chicago, Ill. 667,399, canc. Cl. 27.
Majestic Wax Co., Denver, Colo. 779,860, pub. 8–25–64. Cl. 29.
Manning, Maxwell & Moore, Inc., Stratford, Conn. 779,720, pub. 8–25–64. Cl. 13.
Manning, Maxwell & Moore, Inc., Stratford, Conn. 779,784, pub. 8–25–64. Cl. 21.
Manning, Maxwell & Moore, Inc., Stratford, Conn. 779,825, pub. 8–25–64. Cl. 23.
Manzardo, Scipione R., Luzern, Switzerland. 780,067. Cl. 25.
Mars Chemical Corp., Atlanta, Ga. 779,691–3, pub. 8–25–64. Cl. 6.
Marsh Steel & Aluminum Co., North Kansas City, Mo. 779,688, pub. 8–25–64. Cl. 6.
Marshall-Wells Co., Duluth, Minn. 667,247, canc. Cl. 2.
Mary Jane Bakers: *See*— Kotarides Baking Co., Inc.
Maschinenfabrik Augsburg-Nurnberg A.G., Nurnberg, Germany. 667,356, canc. Cl. 23.
Mason, Au & Magenheimer Confy. Mfg. Co., Inc., Mineola, N.Y. 779,998, pub. 8–25–64. Cl. 46.
Master Pools, Inc., City of Industry, Calif. 780,050, pub. 8–25–64. Cl. 103.
Matsumoto, Saburo, d.b.a. Asahi Optical Co., Ltd., Chuo-ku, Tokyo, Japan. 660,544, canc. Cl. 26.
Mattel, Inc., Hawthorne, Calif. 779,797, pub. 8–25–64. Cl. 22.
May Hosiery Mills, Nashville, Tenn. 780,076. Cl. 39.
McDonough Power Equipment, Inc., McDonough, Ga. 779,847–8, pub. 8–25–64. Cl. 23.
McGraw-Hill, Inc., from McGraw-Hill Publishing Co., Inc., New York, N.Y. 779,918, pub. 8–25–64. Cl. 38.
McGraw-Hill Publishing Co., Inc.: *See*— McGraw-Hill, Inc.
McNeely Co., Philadelphia, Pa., to Allied Kid Co., Boston, Mass. 190,830, ren. 11–10–64. Cl. 1.

Mead Johnson & Co., Evansville, Ind. 667,488, canc. Cl. 44.
Meat Industry Suppliers, Inc., Northfield, Ill. 409,014, ren. 11–10–64. Cl. 46.
Mectron Corp., Lawrence, Mass. 425,952, canc. Cl. 21.
Menzies Engineering Co., Pottsville, Pa. 667,381, canc. Cl. 23.
Metals Development Co., d.b.a. MDC Industries, Philadelphia, Pa. 779,686, pub. 8–25–64. Cl. 4.
Metasurf Corp., Detroit, Mich. 780,043, pub. 8–25–64. Cl. 52.
Metcalfe Industries: *See*—
Metcalfe, Paul V.
Metcalfe, Paul V., d.b.a. Metcalfe Industries, Columbus, Ohio. 779,729, pub. 8–25–64. Cl. 13.
Metrol Corp., Houston, Tex. 779,721, pub. 8–25–64. Cl. 13.
Metrol Corp., Houston, Tex. 779,826, pub. 8–25–64. Cl. 23.
Metrol Corp., Houston, Tex. 779,876, pub. 8–25–64. Cl. 34.
Metromatic Oil Burner Co.: *See*—
Metropac Industries, Inc.
Metropac Industries, Inc., d.b.a. Metromatic Oil Burner Co., Everett, Mass. 667,434, canc. Cl. 34.
Michigan Shelby Co., Detroit, Mich. 780,005, pub. 8–25–64. Cl. 46.
Midland-Ross Corp., Cleveland, Ohio. 779,982, pub. 8–25–64. Cl. 43.
Mifflin, Houghton, Co., Boston, Mass. 779,929, pub. 8–25–64. Cl. 38.
Milk Proteins Inc., Detroit, Mich. 780,003, pub. 8–25–64. Cl. 46.
Mill Equipment, Inc., Seattle, Wash. 779,832, pub. 8–25–64. Cl. 23.
Millar, E. B., & Co., Chicago, Ill. 779,999, pub. 8–25–64. Cl. 46.
Miller-Parrott Baking Co., Inc.: *See*—
United States Baking Co., Inc.
Mills, Erwin, Inc., Durham, N.C. 779,973, pub. 8–25–64. Cl. 42.
Milwaukee Cheese Co., Brookfield, Wis. 780,004, pub. 8–25–64. Cl. 46.
Minaret Records, Inc., Valparaiso, Fla. 779,888, pub. 8–25–64. Cl. 36.
Mission-West Mfg. Co., Hawthorne, Calif. 779,728, pub. 8–25–64. Cl. 13.
Mississippi Valley Structural Steel Co., Chicago, Ill. 779,836, pub. 8–25–64. Cl. 23.
Mixermobile Manufacturers, Inc.: *See*—
Mixermobile Manufacturers.
Mixermobile Manufacturers, to Mixermobile Manufacturers, Inc., Portland, Oreg. 409,059, ren. 11–10–64. Cl. 23.
Model Brassiere Corp., Cortland, N.Y. 667,472–7, canc. Cl. 39.
Mogal Cutlery Co., Inc., New York, N.Y. 779,801, pub. 8–25–64. Cl. 23.
Molasky, Allan, Ladue, Mo. 779,925, pub. 8–25–64. Cl. 38.
Molly Corp., Temple, Pa. 779,731, pub. 8–25–64. Cl. 13.
Montebello Liquors, Inc., Baltimore, Md. 780,024, pub. 8–25–64. Cl. 47.
Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 779,975, pub. 8–25–64. Cl. 43.
Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 779,979, pub. 8–25–64. Cl. 43.
Moore, E. R., Co., Chicago, Ill. 779,953, pub. 8–25–64. Cl. 39.
Morgan Cotton Mills, Inc., Laurel Hill, N.C. 667,483, canc. Cl. 42.
Mosler Safe Co., The, Hamilton, Ohio. 667,416, canc. Cl. 32.
Mountain Pass Canning Co., Inc.: *See*—
Mountain Pass Canning Co., Ltd.
Mountain Pass Canning Co., Ltd., Canutillo, Tex., to Mountain Pass Canning Co., Inc., El Paso, Tex. 411,072, ren. 11–10–64. Cl. 46.
Multitone Electronics Ltd., Toronto, Ontario, Canada. 779,777, pub. 8–25–64. Cl. 21.
Murray-Way Corp., Troy, Mich. 779,837, pub. 8–25–64. Cl. 23.
Mutual Citrus Products Co., Anaheim, Calif. 780,008, pub. 8–25–64. Cl. 46.
Mutual Electronics Industries Corp., Providence, R.I., from United Cable Corp., Scarsdale, N.Y. 667,540, canc. Cl. 21.
N.V. Biscuit & Chocoladefabriek Victoria, d.b.a. N.V. Victoria Dordrecht, Netherlands. 780,000, pub. 8–25–64. Cl. 46.
N.V. Laboratoria Pharmaceutica Dr. C. Janssen, Turnhout, Belgium. 779,757, pub. 8–25–64. Cl. 18.
N.V. Philips-Duphar, Amsterdam, Netherlands. 779,756, pub. 6–16–64. Cl. 18.
N.V. Sigarenfabriek "La Bolsa" v/h C. J. Boele, Kampen, Netherlands. 779,752, pub. 8–25–64. Cl. 17.
N.V. Victoria: *See*—
N.V. Biscuit & Chocoladefabriek Victoria.
Nalley's, Inc., Tacoma, Wash. 780,009, pub. 8–25–64. Cl. 46.
Narragansett Coated Paper Corp., Pawtucket, R.I. 779,898, pub. 8–25–64. Cl. 37.
National Biscuit Co., New York, N.Y. 780,021, pub. 8–25–64. Cl. 46.
National Biscuit Co., New York, N.Y. 780,023, pub. 8–25–64. Cl. 46.
National Cleaning Equipment Corp., Harrisburg, Pa. 736,560, canc. Cl. 103.
National Food Stores: *See*—
National Tea Co.
National Lead Co., New York, N.Y. 667,259, canc. Cl. 6.
National Science Teachers Association, Inc., Washington, D.C. 779,920–1, pub. 8–25–64. Cl. 38.
National Spinning Co., Inc., New York, N.Y. 779,976, pub. 8–25–64. Cl. 43.
National Tea Co., d.b.a. National Food Stores, Chicago, Ill. 779,997, pub. 8–25–64. Cl. 46.
National Utility Products Co., Cleveland, Ohio. 779,737, pub. 8–25–64. Cl. 14.
Nello Chemicals Inc.: *See*—
Union Bag-Camp Paper Corp.
Newton, Frederick G., d.b.a. Hero Records, Detroit, Mich. 667,442, canc. Cl. 36.
Ney, J. M., Co., The, Bloomfield, Conn. 779,735, pub. 8–25–64. Cl. 14.
Niamco, Inc.: *See*—
Buckeye Corp., The.
Nilsen's Feed & Supply: *See*—
Nilsen, Norman P.
Nilsen, Norman P., d.b.a. Nilsen's Feed & Supply, Phelan, Calif. 779,803, pub. 8–25–64. Multiple Class (Classes 23 and 50).
Norcross, Inc., New York, N.Y. 779,917, pub. 8–25–64. Cl 38.
North American Philips Co., Inc., New York, N.Y. 779,881 pub. 8–25–64. Cl. 36.
Novelty Veiling Co., Inc., New York, N.Y. 779,957, pub. 8–25–64. Cl. 39.
Obermayer, S., Co., The, Chicago, Ill. 192,777, ren. 11–10–64. Cl. 12.
Ocean Pool Supply Co., Inc., New York, N.Y. 779,937, pub. 8–25–64. Cl. 39.
Oelerich & Berry Co., Chicago, Ill. 667,505, canc. Cl. 46.
Oil-Dri Corp. of America, Chicago, Ill. 780,059. Cl. 1.
Onyx Chemical Corp., Jersey City, N.J. 779,703, pub. 8–25–64. Cl. 6.
Orchard Hill Farms Candy Co., from Chesterton Candy Co., d.b.a. Orchard Hill Farms Candy Co., Chicago, Ill. 780,083. Cl. 46.
Orleans Canning Co., Chicago, Ill. 780,015, pub. 8–25–64. Cl. 46.
Outdoor American Corp., Spokane, Wash. 779,915, pub. 8–25–64. Cl. 38.
Outercom Electronics Corp., Charlotte, N.C. 779,789–90, pub. 8–25–64. Cl. 21.
Pabst Brewing Co., Milwaukee, Wis. 780,026–7, pub. 8–25–64. Cl. 48.
Pacific Semiconductors, Inc., Culver City, Calif. 667,340, canc. Cl. 21.
Parkell Products Inc., Long Island City, N.Y. 779,761–2, pub. 8–25–64. Cl. 18.
Paulucci, Jeno F., d.b.a. The Bop Corp., Duluth, Minn. 667,491, canc. Cl. 45.
Peavey Co.: *See*—
Stanard Tilton Milling Co.
Penn Crete Products Co., Inc., Philadelphia, Pa. 780,061. Cl. 12.
Penney, J. C., Co., New York, N.Y. 779,877, pub. 12–10–64. Cl. 35.
Pennsalt Chemicals Corp., Philadelphia, Pa. 779,690, pub. 8–25–64. Multiple Class (Classes 6 and 52).
Pentron Electronics Corp., Chicago, Ill. 779,886, pub. 8–25–64. Cl. 36.
Pepperidge Farm, Inc., Norwalk, Conn. 780,019, pub. 8–25–64. Cl. 46.
Perkins Machine and Gear Co., West Springfield, Mass. 779,845, pub. 8–25–64. Cl. 23.
Permanent Filter Corp., Los Angeles, Calif. 667,407, canc. Cl. 31.
Perricone, Sam, Citrus Co., Los Angeles, Calif. 780,011, pub. 8–25–64. Cl. 46.
Pet Center Corp., New York, N.Y. 667,249, canc. Cl. 3.
Peterson Electronic Die Co., Inc., Mineola, N.Y. 780,069. Cl. 37.
Pharmaseal Laboratories, Glendale, Calif. 779,991, pub. 8–25–64. Cl. 44.
Phillips Petroleum Co., Bartlesville, Okla. 779,903, pub. 8–25–64. Cl. 37.
Phoenix Gummiwerke Aktiengesellschaft, Hamburg-Harburg, Germany. 667,484, canc. Cl. 42.
Picker X-Ray Corp., White Plains, N.Y. 779,856. Pub. 5–5–64, Cl. 26, Cl. 39; pub. 8–11–64, Cl. 44. (Consolidated certificate, Classes 26, 39, and 44.)
Pincus Bros., Inc., Philadelphia, Pa. 779,944, pub. 8–25–64. Cl. 39.
Pioneer Salt Co., Philadelphia, Pa. 779,706, pub. 8–25–64. Cl. 6.
Pitney-Bowes, Inc., Stamford, Conn. 779,815, pub. 8–25–64. Cl. 23.
Plaza Directory: *See*—
Arnett, A. E.
Plug Rite, Inc., St. Louis, Mo. 667,392, canc. Cl. 26.
Polk Bros. Typewriter Co., Chicago, Ill. 667,378, canc. Cl. 23.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 779,812, pub. 8–25–64. Cl. 23.
Prestige Products Co., Inc., The, Marshfield, Mass. 779,988, pub. 8–25–64. Cl. 44.
Prime-Mover Co., The, Muscatine, Iowa. 779,763, pub. 8–25–64. Multiple Class (Classes 19 and 23).
Pro B/L Corp., Wellesley, Mass. 779,897, pub. 8–25–64. Cl. 37.
Progress Electronics Co., Inc., New York, N.Y. 779,783, pub. 8–25–64. Cl. 21.
Puerto Rico Distillers, Inc., from Licoreria Roses Inc., Arecibo, Puerto Rico. 780,029, pub. 8–25–64. Cl. 49.
Puget Sound Pulp & Timber Co.: *See*—
Georgia-Pacific Corp.
Puritan Cordage Mills, Louisville, Ky. 779,711, pub. 8–25–64. Cl. 7.
Purity Stores, Inc., Burlingame, Calif. 779,896, pub. 7–7–64. Cl. 37.
Quickdraft Corp., The, Canton, Ohio. 779,873, pub. 8–25–64. Cl. 34.
RKO Teleradio Pictures, Inc., Boston, Mass. 667,525, canc. Cl. 104.
Racine Industrial Plant, Inc., Racine, Wis. 780,086. Cl. 52.
Raytheon Co., Lexington, Mass. 780,045, pub. 8–25–64 Cl. 100.
Realist, Inc.: *See*—
White, David, Co., The.

Reed & Bell, Inc., Humboldt, Tenn. 780,044, pub. 8–25–64. Cl. 100.
Reeves Industries, Inc., Danbury, Conn. 779,885, pub. 8–25–64. Cl. 36.
Reliance Universal Inc., from Reliance Varnish Co., Louisville, Ky. 779,744, pub. 8–25–64. Cl. 16.
Reliance Varnish Co.: *See*—
Reliance Universal Inc.
Reliart Trailer Mfg. Corp., Stanton, Mich. 780,034, pub. 8–25–64. Cl. 50.
Reproduction Equipment Co., Dallas, Tex. 667,390, canc. Cl. 26.
Revere Copper and Brass, Inc.: *See*—
Taunton-New Bedford Copper Co.
Rhinesmith, Chester A., and Marion F. Rhinesmith, d.b.a. Chemical Dispersing Co., Troy, N.Y. 780,041, pub. 8–25–64. Cl. 52.
Rhinesmith, Marion F.: *See*—
Rhinesmith, Chester A., and Marion F. Rhinesmith.
Rich, Ivor, New York, N.Y. 415,388, canc. Cl. 4.
Robert Hosiery Mills, Inc., Collegeville, Pa. 779,938, pub. 8–25–64. Cl. 39.
Robinson-Phillips, Inc., New York, N.Y. 779,926, pub. 8–25–64. Cl. 38.
Rod'a Food Products, Inc., Los Angeles, Calif. 780,079. Cl. 46.
Roland Industries, Inc., St. Louis, Mo. 780,016, pub. 8–25–64. Cl. 46.
Rose, Jack E., Elkhart, Ind. 779,872, pub. 8–25–64. Cl. 34.
Rose Patch & Label Co., Grand Rapids, Mich. 779,927, pub. 8–25–64. Cl. 38.
Rotron Mfg. Co., Inc., Woodstock, N.Y. 779,785, pub. 8–25–64. Cl. 21.
Royal Zenity Corp., New York, N.Y. 779,829, pub. 8–25–64. Cl. 23.
Rust Sales Co., Denver, Colo. 780,020, pub. 8–25–64. Cl. 46.
Safeguard Corp., Lansdale, Pa. 779,902, pub. 8–25–64. Cl. 37.
St. Egydyer Eisen- und Stahl-Industrie Gesellschaft, Vienna, Austria. 779,840, pub. 8–25–64. Cl. 23.
SAM, Inc., Chicago, Ill. 779,931, pub. 8–25–64. Cl. 38.
Sams, Howard W., & Co., Inc., Indianapolis, Ind. 779,928, pub. 8–25–64. Cl. 38.
San Juan Fishing & Packing Co.: *See*—
Whis Fish Products Co.
Sante Chemical Co., Inc.: *See*—
Sante Chemical Co.
Sante Chemical Co., to Sante Chemical Co., Inc., to Sulray, Inc., New York, N.Y. 409,311, ren. 11–10–64. Cl. 18.
Sauquoit Fibers Co., Scranton, Pa. 779,980–1, pub. 8–25–64. Cl. 43.
Schenley Distillers, Inc., New York, N.Y. 780,030–1, pub. 8–25–64. Cl. 49.
Schering Corp., Bloomfield, N.J. 667,317, canc. Cl. 18.
Schlichter Jute Cordage Co., The, Philadelphia, Pa. 779,977–8, pub. 8–25–64. Cl. 43.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 779,987, pub. 8–25–64. Cl. 44.
Schreiber & Goldberg, Inc., New York, N.Y. 779,819, pub. 8–25–64. Cl. 23.
Scripto, Inc.: *See*—
Atlantic Mfg. Co.
Sea Saucer Co., The: *See*—
Gimbel, Harold H.
Sea'N Surf: *See*—
Andelman, Edward, Associates, Inc.
Sears, Roebuck and Co., Chicago, Ill. 779,793, pub. 8–25–64. Cl. 21.
Segelman, Alvin B., d.b.a. Cliniderm Laboratories, Boston, Mass. 667,309, canc. Cl. 18.
Seidlitz Paint and Varnish Co., Kansas City, Mo. 667,305, canc. Cl. 16.
Seismograph Service Corp., Tulsa, Okla. 779,781, pub. 8–25–64. Cl. 21.
Shamrock Pool Equipment Co., Inc., El Monte, Calif. 779,696, pub. 8–25–64. Multiple Class (Classes 6, 13, 21, 23, and 31).
Shawvan, John M., Co.: *See*—
Epstein, Gerald W.
Shehan, Dick, Co.: *See*—
Shehan, Luther.
Shehan, Luther, d.b.a. Dick Shehan Co., Spindale, N.C. 780,049, pub. 8–25–64. Cl. 101.
Shiseido Co., Ltd., Chuo-ku, Tokyo, Japan. 779,816–8, pub. 8–25–64. Cl. 23.
Sibner, H. R., Co.: *See*—
Sibner, Harold R.
Sibner, Harold R., d.b.a. H. R. Sibner Co., New York, N.Y. 431,828, canc. Cl. 6.
Sigma Instruments, Inc., South Braintree, Mass. 779,782, pub. 8–25–64. Cl. 21.
Sinclair Refining Co., New York, N.Y. 779,741, pub. 8–25–64. Cl. 15.
Ski Industries America, New York, N.Y. 780,056, pub. 8–25–64. Cl. 200.
Ski-Tow Mfg. Co., Elkhart, Ind. 779,764, pub. 8–25–64. Cl. 19.
Slim-Way Foods Corp., Chicago, Ill. 667,312, canc. Cl. 18.
Small, P. A. & S., Co., York, Pa. 780,048, pub. 8–25–64. Cl. 101.
Smalltel Inc., Chicago, Ill. 779,717–8, pub. 8–25–64. Cl. 12.
Smart & Final Co.: *See*—
Fitzsimmons Stores, Ltd.
Smart & Final Co., Ltd.: *See*—
Fitzsimmons Stores, Ltd.
Smart & Final Iris Co.: *See*—
Fitzsimmons Stores, Ltd.
Snyder, W. H., and Sons Inc., Windsor, Pa. 779,750, pub. 8–25–64. Cl. 17.
Sonotone Corp., Elmsford, N.Y. 779,881, pub. 8–25–64. Cl. 36.
Southwest Mfg. Co. Div.: *See*—
Standard Railway Equipment Mfg. Co.
Southwestern Industrial Electronics Co., Houston, Tex. 649,644, canc. Cl. 23.
Spectra Biologicals, Inc., East Brunswick, N.J. 779,709, pub. 8–25–64. Cl. 6.
Speedry Chemical Products, Inc., Glendale, N.Y. 779,911, pub. 8–25–64. Cl. 37.
Sport Kraft, Inc., Lewes, Del. 667,455, canc. Cl. 39.
Stanard Tilton Milling Co., St. Louis, Mo., to Peavey Co., Minneapolis, Minn. 191,830, ren. 11–10–64. Cl. 46.
Standard Electric Time Co., The, Springfield, Mass. 667,352, canc. Cl. 21.
Standard & Poor's Corp., New York, N.Y. 779,924, pub. 8–25–64. Cl. 38.
Standard Railway Equipment Mfg. Co., d.b.a. Southwest Mfg. Co. Div., Little Rock, Ark. 667,325, canc. Cl. 19.
Stark, Wetsel & Co., Inc., Indianapolis, Ind. 780,018, pub. 8–25–64. Cl. 46.
Sterilon Corp., Buffalo, N.Y. 779,992, pub. 8–25–64. Cl. 44.
Sterling Chemical Co.: *See*—
Jordan, Reppard J.
Stevens, J. P., & Co., Inc., New York, N.Y. 779,969, pub. 8–25–64. Cl. 42.
Stone, S. L.: *See*—
Stone, Samuel L.
Stone, Samuel L., d.b.a. S. L. Stone, Boston, Mass. 779,890, pub. 8–25–64. Cl. 37.
Straus-Frank Co., Dallas, Tex. 667,432, canc. Cl. 34.
Stroock, S., & Co., Inc., New York, N.Y. 667,478, canc. Cl. 42.
Stroock, S., & Co., Inc., New York, N.Y. 667,480, canc. Cl. 42.
Stroock & Co., Inc., New York, N.Y. 667,482, canc. Cl. 42.
Sulray, Inc.: *See*—
Sante Chemical Co.
Surgiquip Engineering Inc., San Francisco, Calif. 779,983, pub. 8–25–64. Cl. 44.
Surpass Leather Co., Philadelphia, Pa. 667,241, canc. Cl. 1.
Tally Ho Grill of Boston, Inc., Wollaston, Mass. 780,047, pub. 8–25–64. Cl. 100.
Taunton-New Bedford Copper Co., Taunton, Mass., to Revere Copper and Brass, Inc., New York, N.Y. 189,219, ren. 11–10–64. Cl. 14.
Technical Publishing Co., Barrington, Ill. 779,923, pub. 8–25–64. Cl. 38.
Testor Corp., The, Rockford, Ill. 779,742, pub. 8–25–64. Cl. 16.
Teweles, L., Seed Co., Milwaukee, Wis. 779,682, pub. 8–25–64. Cl. 1.
Textile Mills Co., Newark, N.J. 779,851, pub. 8–25–64. Cl. 24.
Tex-Trim, Inc., Yonkers, N.Y. 667,382, canc. Cl. 23.
Thermo Electric Co., Inc., Saddle Brook, N.J. 779,857, pub. 8–25–64. Cl. 26.
Thomas Publishing Co., New York, N.Y. 779,932, pub. 8–25–64. Cl. 38.
Thompson Boat Co. of New York, Inc., Cortland, N.Y. 779,772, pub. 8–25–64. Cl. 19.
Thompson and Co., Oakmont, Pa. 779,743, pub. 8–25–64. Cl. 16.
Three G Corp., Akron, Ohio. 779,767, pub. 8–25–64. Cl. 19.
Timely Clothes, Inc., Rochester, N.Y. 779,951, pub. 8–25–64. Cl. 39.
Trans-Air System Inc., Jamaica, N.Y. 780,054, pub. 8–25–64. Cl. 105.
Tribune Co., The, Chicago, Ill. 189,745, ren. 11–10–64. Cl. 38.
Tribune Co., The, Chicago, Ill. 189,747, ren. 11–10–64. Cl. 38.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 779,681, pub. 8–25–64. Cl. 1.
Turner, Sam, Distributor, Atlanta, Ga. 650,624, canc. Cl. 46.
Turpentine & Rosin Factors, Inc.: *See*—
Union Bag-Camp Paper Corp.
Uarco Inc., Barrington, Ill. 779,831, pub. 8–25–64. Multiple Class (Classes 23, 26, 32, and 37).
Unette Corp., Livingston, N.J. 667,246, canc. Cl. 2.
Union Bag-Camp Paper Corp., New York, N.Y., from Nello Chemicals, Inc., d.b.a. Turpentine & Rosin Factors, Inc., Jacksonville, Fla. 779,680, pub. 8–25–64. Cl. 1.
Union Carbide Corp., New York, N.Y. 779,748, pub. 8–25–64. Cl. 16.
Union Carbide Corp., New York, N.Y. 779,786, pub. 8–25–64. Cl. 21.
Union Tank Car Co., Chicago, Ill. 779,698, pub. 8–25–64. Cl. 6.
Union Tank Car Co., Chicago, Ill. 779,820–1, pub. 8–25–64. Cl. 23.
Union Tank Car Co., Chicago, Ill. 779,916, pub. 8–25–64. Cl. 38.
United Cable Corp.: *See*—
Mutual Electronics Industries Corp.
United States Baking Co., Inc., from Miller-Parrott Baking Co., Inc., Terre Haute, Ind. 780,017, pub. 8–25–64. Cl. 46.
U.S. Electrical Motors, Inc., Los Angeles, Calif. 667,541, canc. Cl. 21.
United States Rubber Co., New York, N.Y. 779,676, pub. 8–25–64. Multiple Class (Classes 1 and 35).
United-Carr Fastener Corp.: *See*—
United-Carr Inc.
United-Carr Inc. from United-Carr Fastener Corp., Boston, Mass. 779,960 pub. 8–25–64. Cl. 40.
Unitronics, Inc., Ferguson, Mo. 667,389, canc. Cl. 26.
Universal Brush Mfg. Co., Chicago, Ill. 779,678, pub. 8–25–64. Cl. 1.

Upjohn Co., The, Kalamazoo, Mich. 779,710, pub. 8–25–64. Cl. 6.
Van Wert Mfg. Co., The, Van Wert, Ohio. 779,940, pub. 7–7–64. Cl. 39.
Vaughn's Seed Co., Downers Grove, Ill. 779,716, pub. 8–25–64. Cl. 10.
Veb Nahwirkmaschinenbau Malimo Karl-Marx-Stadt, from Veb Tullmaschinenbau Karl-Marx-Stadt, Karl-Marx-Stadt, Germany. 779,804–5, pub. 4–14–64. Cl. 23.
Veb Tullmaschinenbau Karl-Marx-Stadt: *See*—
Veb Nahwirkmaschinenbau Malimo Karl-Marx-Stadt.
Vend-A-Bake, Inc., Brooklyn, N.Y. 779,846, pub. 8–25–64. Cl. 23.
Visirecord, Inc., Copiague, N.Y. 779,844, pub. 8–25–64. Cl. 23.
Vista-Lux Corp. of America, Beltsville, Md. 667,278, canc. Cl. 12.
Vivian Dresses, Inc., New York, N.Y. 779,934, pub. 8–25–64. Cl. 39.
Vogue Rubber Co.: *See*—
Vogue Tyre & Rubber Co.
Vogue Tyre & Rubber Co., from Vogue Rubber Co., Chicago, Ill. 779,879, pub. 8–25–64. Cl. 35.
Walker, Carrie, Inc., New York, N.Y. 649,740, canc. Cl. 39.
Wallerstein Laboratories: *See*—
American Burtonizing Co.
Walt, Barry, Inc., New York, N.Y. 780,074. Cl. 39.
Ward, G. Kingsley, Toronto, Ontario, Canada. 779,941, pub. 8–25–64. Cl. 39.
Warner, William R., & Co. Inc., Wilmington, Del., and New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 409,038, ren. 11–10–64. Cl. 18.
Warner-Lambert Pharmaceutical Co.: *See*—
Lactona Inc.
Warner, William R., & Co. Inc.
Warren, Andi, Inc., New York, N.Y. 779,933, pub. 8–25–64. Cl. 39.
Water Refining Co., Inc., Middletown, Ohio. 779,862, pub. 8–25–64. Cl. 31.
Waters Mfg., Inc., Wayland, Mass. 779,779, pub. 8–25–64. Cl. 21.
Waterworks Equipment Co., Salt Lake City, Utah. 779,854, pub. 8–25–64. Cl. 26.
Wayagamack Pulp & Paper Co., Ltd., to Consolidated Paper Corp. Ltd., Three Rivers, Quebec, Canada. 194,226, ren. 11–10–64. Cl. 1.
Wells Lamont Corp., Chicago, Ill. 779,958, pub. 8–25–64. Cl. 39.
Werner, R. D., Co., Inc., Greenville, Pa. 780,033, pub. 8–25–64. Cl. 50.
Wesbar Stamping Corp., West Bend, Wis. 779,774–6, pub. 8–25–64. Cl. 19.
Westab Inc., from Western Tablet & Stationery Corp., Dayton, Ohio. 779,893, pub. 8–25–64. Cl. 37.
Western Abrasives, Portland, Oreg. 667,250, canc. Cl. 4.
Western Research Laboratories, Denver, Colo. 779,759, pub. 8–25–64. Cl. 18.
Western Tablet & Stationery Corp.: *See*—
Westab Inc.
Weyerhaeuser Co., Tacoma, Wash., from Hamilton Paper Co., Miquon, Pa. 780,070. Cl. 37.
White, David, Co., The, Milwaukee, to Realist, Inc., Menomonee Falls, Wis. 412,242, ren. 11–10–64. Cl. 26.
Whitehead Bros. Co., New York, N.Y. 667,253, canc. Cl. 5.
Whitehead & Kales Co., Detroit, Mich. 779,773, pub. 8–25–64. Cl. 19.
Whiz Fish Products Co., to San Juan Fishing & Packing Co., Seattle, Wash. 409,010, ren. 11–10–64. Cl. 46.
Williams Gold Refining Co. Inc., Buffalo, N.Y. 779,994, pub. 8–25–64. Cl. 44.
Wilshire Oil Co. of California, Los Angeles, Calif. 779,794, pub. 8–25–64. Cl. 21.
Wilson Sporting Goods Co., River Grove, Ill. 779,800, pub. 8–25–64. Cl. 22.
Wine-Dip Co.: *See*—
Fiorita, Anthony R.
Witco Chemical Co., Inc.: *See*—
American Petroleum Products Co.
Witt, Wilhelm, d.b.a. Iloca Camera, Hamburg, Germany. 667,388, canc. Cl. 26.
Woodall, James, d.b.a. Glarno Safety Visor, Columbus, Ga. 667,323, canc. Cl. 19.
Woolworth, F. W., Co., New York, N.Y. 779,727, pub. 8–25–64. Cl. 18.
Woolworth, F. W., Co., New York, N.Y. 779,895, pub. 8–25–64. Cl. 37.
Woolworth, F. W., Co., New York, N.Y. 779,907, pub. 8–25–64. Cl. 37.
World Toy House, Inc., St. Paul, Minn. 780,075. Cl. 39.
Wretched Mess Enterprises: *See*—
Bascom, David F.
Wrigley, Wm., Jr., Co., Chicago, Ill. 780,082. Cl. 46.
Yale Engineering Co., Chicago, Ill. 780,062–3. Cl. 14.
Youngstown Sheet and Tube Co., The, Boardman, Ohio. 779,838, pub. 8–25–64. Cl. 23.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 17, 1964 Volume 808 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1964

Examiner affirmed	271
Examiner affirmed in part	57
Examiner reversed	105
Total	433

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

Publication of Portions of Applications

1. The Notice of July 28, 1964, 804 O.G. 813, announced that portions of the disclosures of applications will be published in the OFFICIAL GAZETTE under certain conditions. The following constitutes instructions to Examiners and other employees of the Office in carrying out this practice.

2. *a.* A request for publication must be received while the application is pending and not under final rejection. It must state that the application is to be available to the public when published and must be accompanied by a formal abandonment of the application, which may be qualified to take effect on publication. A specific portion of the disclosure, and, in cases having drawings, a figure of the drawing must be designated.

b. A representative claim, if sufficiently detailed, should be used as the portion of the disclosure to be published. Otherwise, a specific portion of the specification, consonant with the selected figure should be designated in the request. Such specific portion, when necessary, may be taken from the brief summary of the invention, omitting unessential details and theoretical matters.

3. In no event will a request for publication avoid abandonment of an application for failure to respond to an outstanding Office action awaiting response by the applicant, but such abandonment will not prevent publication.

4. The papers are initially referred to the Examiner for consideration of (*a*) the formalities of the request, (*b*) whether or not there should be a publication, and (*c*) the nature of the material to be published as explained in paragraphs 5, 6 and 7 below. The Examiner will prepare a letter to be signed by a Primary Examiner to be sent to the applicant through the attorney or agent. In those cases ready for publication, the letters will be mailed to the applicants and the files, including the drawing, forwarded to the Issue and Gazette Branch. The papers will be entered in the file in the Examining Group. In those cases where it has been determined not to publish, the letters will be mailed but the correspondence, including the original request, will not become part of the record in the application file. These papers will be kept on file in the Office of the Group Supervisor.

5. If the Examiner finds that the request for publication does not comply with the requirements (see paragraph 2), the letter will advise applicant of the defects.

6. If the disclosure sought to be published appears to the Examiner to be purely fanciful, or inoperative or incomplete, publication should be denied by the Examiner; likewise, if the publication of *such disclosure* is deemed to be of no value or if it is fully met by readily available prior art. However, questions of patentability over the prior art should not be considered. If the Examiner recommends that there be no publication for any reason, the letter to the applicant mentioned in paragraph 4 will simply state that it has been determined not to publish any portion of the disclosure, without giving any reasons. The reasons, however, should be stated in a separate memorandum which together with the paper requesting publication will be filed as set forth in the last sentence of paragraph 4.

New Applications Received During September 1964

Patents	7,119
Designs	424
Plant Patents	4
Reissues	20
Total	7,567

Issue—November 17, 1964

Patents	964	No. 3,156,920 to No.	3,157,883, incl.
Designs	54	No. 199,557 to No.	199,610, incl.
Plant Patents	2	No. 2,452 to No.	2,453, incl.
Reissues	4	No. 25,685 to No.	25,688, incl.
Total	1024		

7. If the request for publication is not defective and the Examiner has not determined to recommend adversely, the material to be published must be considered as explained in paragraph 2. The letter prepared by the Examiner and sent to the applicant will state that the request for publication has been approved and an abbreviature will be published in the OFFICIAL GAZETTE. The letter will also indicate the classification of the abbreviature based on the material to be published.

8. The Issue and Gazette Branch will arrange for publication in the OFFICIAL GAZETTE of the selected material. This will appear in a separate section with a suitable heading stating that the portions of the applications are published and the complete files are available to the public upon written request. The selected material will be headed with the name of the applicant, and assignee if any, the title and classification of the invention, serial number and filing date of the application, the number of sheets of drawing and the number of pages of the original specification, and the date of publication.

9. After publication of the selected material, the files are returned to the Examining Group. Mounted copies of the publications will be prepared by the Service Branch of the Office of Patent Classification for use in the Examining Group and the in Public Search Room or Scientific Library.

10. In an application awaiting action by the Office in which a request for publication is filed, further action on the application by the Examiner will be suspended pending processing of the request. In the event that publication is not approved, suspension of action will be automatically lifted.

11. Care must be taken by the Examiner not to refer to these publications as patents or as applications. They may be designated and cited as follows:

Brown, abbreviature of application Serial No. ——————. Published ——————, —— O.G. —— (List classification as usual)

These abbreviatures will be used as printed publications effective only from the date of publication in the OFFICIAL GAZETTE.

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

Concur: Oct. 13, 1964.
C. A. KALK,
Director of Administration.

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, February 9, 1965.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities of the country in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be directed to the Commissioner of Patents and filed in the Patent Office not later than January 8, 1965.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Room 3718, Department of Commerce Building, Washington, D.C. 20231.

EDWIN L. REYNOLDS,
Oct. 19, 1964. *Chairman, Committee on Enrollment.*

Disclaimers

2,958,520.—*Karl Fritz*, Hagen, Westphalia, Germany. GALVANIZING FURNACE. Patent dated Nov. 1, 1960. Disclaimer filed Aug. 26, 1964, by the inventor.

Hereby enters this disclaimer to claims 1, 2, 3, 4 and 8 of said patent.

3,111,255.—*George V. Skowronski*, Neenah, Wis. CASTON. Patent dated Nov. 19, 1963. Disclaimer filed Aug. 24, 1964, by the assignee, *American Can Company*.

Hereby enters this disclaimer to claim 6 of said patent.

3,116,090.—*Martin E. Kornbluth*, New York, N.Y. NUMBERED THEATER CHAIR SEATS. Patent dated Dec. 31, 1963. Disclaimer filed Aug. 18, 1964, by the assignee, *American Seating Company*.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

3,117,332.—*Garrett P. Kelley*, Fox Point, and *Henry J. Dallman*, Glendale, Wis. ADJUSTABLE DOCKBOARD. Patent dated Jan. 14, 1964. Disclaimer filed Aug. 28, 1964, by the assignee, *Kelley Company, Inc.*

Hereby enters this disclaimer to claim 6 of said patent.

Failure To Perfect Appeal to CCPA

If appeal is taken to the United States Court of Customs and Patent Appeals following an adverse decision of the Board of Appeals and no claims stand allowed, failure to file the record on time (CCPA Rule 25) results in termination of proceedings as of the expiration date for appeal to the court. Rule 197(c).

This is called to the attention of the Examiners because continuity under 35 U.S.C. 120 between such an application and another may be lost.

RICHARD A. WAHL,
Acting Superintendent
Nov. 4, 1964. *Patent Examining Corps*

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 1, 1964

The List Below Reflects the Oldest Actual Filing Dates for Cases Awaiting Action; In Column 1 (New) and Column 2 (Amended)

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	1-31-63	6-28-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	7-13-64	9-28-53
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5- 8-63	8-12-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	3-31-58	1-27-54
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner Compositions (Part) e.g.. Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	8-30-62
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	4-29-63	8-22-62
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	8-26-64	9- 7-56
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	11-30-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	11- 4-58
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	2- 6-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner Communications; Multiplexing Techniques; Facsimile and Related Art.	1-10-63	12-11-53
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner Data Processing, Computation and Conversion; Storage Devices and Related Art.	4-16-57	2-10-53
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner Optics; Radiant Energy; Measuring.	9-12-62	6-10-54
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner Conductors; Switches; Miscellaneous.	4-22-64	8-21-61

Total number of pending applications (excluding Designs)	212,033
Total number of Design applications pending	5,795
Total number of applications awaiting action (excluding Designs)	135,475
Total number of Design applications awaiting action	2,483
Date of oldest new application awaiting action	April 16, 1957
Date of oldest amended application awaiting action	Feb. 10, 1953

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents	Numbers 2,429,972 to 2,431,669, inclusive
Plant Patents	Numbers 766 to 767, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	9- 6-63	11-28-62
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	7- 3-62	3- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	1-18-63	5-11-59
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	3- 3-58
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	8- 9-64	8-17-61
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	2-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. OAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	6-10-64	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	6- 5-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	6-16-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	7-30-59
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-19-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-19-63	1-13-58
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10-16-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-22-64	6-11-62
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	4- 1-63	9- 5-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	12- 5-60	2- 5-64

DECISIONS IN PATENT AND TRADEMARK CASES

Supreme Court of the United States

WILBUR-ELLIS COMPANY ET AL. *v.* KUTHER

No. 109. Decided June 8, 1964

[— U.S. —; 141 USPQ 703]

1. INFRINGEMENT—"RECONSTRUCTION" OR "REPAIR."

"The question in terms of patent law precedents is whether what was done to these machines, the original manufacture and sale of which had been licensed by the patentee, amounted to 'repair,' in which event there was no infringement, or 'reconstruction,' in which event there was. The idea of 'reconstruction' in this context has the special connotation of those acts which would impinge on the patentee's right 'to exclude others from making' (35 U.S.C. § 154) the article."

2. SAME—REPAIR—ADAPTING OLD PATENTED MACHINE TO RELATED USE.

"These four machines were not spent; they had years of usefulness remaining though they needed cleaning and repair. Had they been renovated and put to use on the '1-pound' cans, there could be no question but that they were 'repaired,' not 'reconstructed,' within the meaning of the cases. When six of the 35 elements of the combination patent were resized or relocated, no invasion of the patent resulted, for * * * the size of cans serviced by the machine was no part of the invention; nor were characteristics of size, location, shape and construction of the six elements in question patented. Petitioners in adapting the old machines to a related use were doing more than repair in the customary sense; but what they did was kin to repair for it bore on the useful capacity of the old combination, on which the royalty had been paid. We could not call it 'reconstruction' without saying that the patentee's right 'to exclude others from making' the patented machine, 35 U.S.C. § 154, had been infringed. Yet adaptation for use of the machine on a '5-ounce' can is within the patent rights purchased, since size was not the invention."

ON WRIT of certiorari to Court of Appeals for the Ninth Circuit.

REVERSED.

Frank A. Neal (*James M. Naylor*, *Karl A. Limbach*, and *Naylor & Neal* of counsel) for petitioners.

Oscar A. Mellin and *Carlisle M. Moore* for respondent.

MR. JUSTICE DOUGLAS delivered the opinion of the Court.

Respondent is the owner of a combination patent covering a fish-canning machine. A number of machines covered by the patent were manufactured and sold under his authorization. Among them were the four machines in suit, petitioner Wilbur-Ellis Company being the second-hand purchaser. Respondent received out of the original purchase price a royalty of $1,500 per machine. As originally constructed each of these machines packed fish into "1-pound" cans: 3 inches in diameter and $4\frac{11}{16}$ inches high. Three of the machines when acquired by Wilbur-Ellis were corroded, rusted, and inoperative; and all required cleaning and sandblasting to make them usable. Wilbur-Ellis retained petitioner Leuschner to put the machines in condition so they would operate and to resize 6 of the 35 elements that made up the patented combination. The resizing was for the purpose of enabling the machines to pack fish into "5-ounce" cans: $2\frac{1}{8}$ inches in diameter and $3\frac{1}{2}$ inches long. One of the six elements was so corroded that it could be rendered operable only by grinding it down to a size suitable for use with the smaller "5-ounce" can.

This suit for infringement followed; and both the District Court, 200 F. Supp. 841, and the Court of Appeals, 314 F.2d 71, held for respondent. The case is here on certiorari. 373 U.S. 921.

We put to one side the case where the discovery or invention resided in or embraced either the size or locational characteristics of the replaced elements of a combination patent or the size of the commodity on which the machine operated. The claims of no patent before us reach that far. We also put to one side the case where replacement was made of a patented component of a combination patent. We deal here with a patent that covered only a combination of unpatented components.

[1] The question in terms of patent law precedents is whether what was done to these machines, the original manufacture and sale of which had been licensed by the patentee, amounted to "repair," in which event there was no infringement, or "reconstruction," in which event there was.[1] The idea of "reconstruction" in this context has the special connotation of those acts which would impinge on the patentee's right "*to exclude others from making*" (35 U.S.C. § 154) the article. As stated in *Wilson* v. *Simpson*, 9 How. 109, 123, ". . . when the material of the combination ceases to exist, in whatever way that may occur, the right to renew it depends upon the right to make the invention. If the right to make does not exist, there is no right to rebuild the combination." On the other hand, "When the wearing or injury is partial, then repair is restoration, and not reconstruction." *Ibid.* Replacing worn-out cutting knives in a planing machine was held to be "repair," not "reconstruction," in *Wilson* v. *Simpson*, *supra*. Our latest case was *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, which a majority of the Court construe as holding that it was not infringement to replace the worn-out fabric of a patented convertible automobile top, whose original manufacture and sale had been licensed by the patentee. See No. 75, *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, decided this day. *Post*, p. 476.

[2] Whatever view may be taken of the holding in the first *Aro* case, the majority believe that it governs the present one. These four machines were not spent; they had years of usefulness remaining though they needed cleaning and repair. Had they been renovated and put to use on the "1-pound" cans, there could be no question but that they were "repaired," not "reconstructed," within the meaning of the cases. When six of the 35 elements of the combination patent were resized or relocated, no invasion of the patent resulted, for as we have said the size of cans serviced by the machine was no part of the invention; nor were characteristics of size, location, shape and construction of the six elements in question patented. Petitioners in adapting the old machines to a related use were doing more than repair in the customary sense; but what they did was kin to repair for it bore on the useful capacity of the old combination, on which the royalty had been paid. We could not call it "reconstruction" without saying that the patentee's right "to exclude others from making" the patented machine, 35 U.S.C. § 154, had been infringed. Yet adaptation for use of the machine on a "5-ounce" can is within the patent rights purchased, since size was not an invention.

The adaptation made in the six nonpatented elements improved

[1] See *Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89 (reconstruction); *Heyer* v. *Duplicator Mfg. Co.*, 263 U.S. 100 (repair).

the usefulness of these machines. That does not, however, make the adaptation "reconstruction" within the meaning of the cases. We are asked in substance to treat the case as if petitioners had a license for use of the machines on "1-pound" cans only. But the sales here were outright, without restriction. *Adams* v. *Burke*, 17 Wall. 453, 456, therefore controls:

". . . when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use."

And see *United States* v. *Univis Lens Co.*, 316 U.S. 241, 250.

REVERSED.

MR. JUSTICE HARLAN would affirm the judgment substantially for the reasons given in the majority opinion in the Court of Appeals, 314 F.2d 71.

Supreme Court of the United States

ARO MANUFACTURING CO., INC., ET AL.
v.
CONVERTIBLE TOP REPLACEMENT CO., INC.

No. 75. Decided June 8, 1964

[— U.S. —; 141 USPQ 681]

1. INFRINGEMENT—CONTRIBUTORY INFRINGEMENT—"RECONSTRUCTION" OR "REPAIR"—UNLICENSED STRUCTURE.

"Like the Court of Appeals, we treated CTR's right to relief as depending wholly upon the question whether replacement of the fabric portions of the convertible tops constituted infringing 'reconstruction' or permissible 'repair' of the patented combination. The lower courts had held it to constitute 'reconstruction,' making the car owner for whom it was performed a direct infringer and Aro, which made and sold the replacement fabric, a contributory infringer; we disagreed and held that it was merely 'repair.' The reconstruction-repair distinction is decisive, however, only when the replacement is made in a structure whose original manufacture and sale have been licensed by the patentee, as was true only of the General Motors cars; when the structure is unlicensed, as was true of the Ford cars, the traditional rule is that even repair constitutes infringement."

2. SAME—35 U.S.C. 271(a)—AUTHORIZED SALE OF PATENTED ARTICLE CARRIES IMPLIED LICENSE TO USE—UNAUTHORIZED USER IS INFRINGER.

"Section 271(a) provides that 'whoever without authority makes, uses or sells any patented invention . . . infringes the patent.' It is not controverted—nor could it be—that Ford infringed by making and selling cars embodying the patented top-structures without any authority from the patentee. If Ford had had such authority, its purchasers would not have infringed by using the automobiles, for it is fundamental that sale of a patented article by the patentee or under his authority carries with it an 'implied license to use.' • • • But with Ford lacking authority to make and sell, it could by its sale of the cars confer on the purchasers no implied license to use, and their use of the patented structures was thus 'without authority' and infringing under § 271(a). Not only does that provision explicitly regard an unauthorized user of a patented invention as an infringer, but it has often and clearly been held that unauthorized use, without more, constitutes infringement."

3. SAME—WHERE USE INFRINGES REPAIR DOES ALSO.

"If the owner's *use* infringed, so also did his *repair* of the top-structure, as by replacing the worn-out fabric component. Where use infringes, repair does also, for it perpetuates the infringing use."

4. SAME—SAME—DIRECT INFRINGEMENT PREREQUISITE TO CONTRIBUTORY INFRINGEMENT.

"• • • replacement of worn-out fabric components with fabrics sold by Aro, held • • • to constitute 'repair' rather than 'reconstruction' and thus to be permissible in the case of licensed General Motors cars, was not per-

missible here in the case of unlicensed Ford cars. Here, * * * the direct infringement by the car owners that is prerequisite to contributory infringement by Aro was unquestionably established."

5. SAME—CONTRIBUTORY INFRINGEMENT—35 U.S.C. 271(c)—KNOWLEDGE OF CONTRIBUTORY INFRINGER.

"* * * the language of § 271(c) presents a question * * * concerning the element of knowledge that must be brought home to Aro before liability can be imposed. It is only sale of a component of a patented combination '*knowing* the same to be especially made or especially adapted for use in an infringement of such patent' that is contributory infringement under the statute. Was Aro 'knowing' within the statutory meaning because—as it admits, and as the lower courts found—it knew that its replacement fabrics were especially designed for use in the 1952–1954 Ford convertible tops and were not suitable for other use? Or does the statute require a further showing that Aro knew that the tops were patented, and knew also that Ford was not licensed under the patent so that any fabric replacement by a Ford car owner constituted infringement?"

6. SAME—SAME—SAME—SAME.

"* * * a majority of the Court is of the view that § 271(c) does require a showing that the alleged contributory infringer knew that the combination for which his component was especially designed was both patented and infringing."

7. SAME—SAME—SAME—*Mercoid* DECISIONS AS OVERRULED BY STATUTE.

"In seeking to avoid such liability [for contributory infringement], Aro relies on the *Mercoid* cases. *Mercoid Corp.* v. *Mid-Continent Investment Co.*, 320 U.S. 661; *Mercoid Corp* v. *Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680. * * * The answer to Aro's argument is that Congress enacted § 271 for the express purpose of reinstating the doctrine of contributory infringement as it had been developed by decisions prior to *Mercoid*, and of overruling any blanket invalidation of the doctrine that could be found in the *Mercoid* opinions. * * * Hence, where Aro's sale of replacement fabrics for unlicensed Ford cars falls squarely within § 271(c), and where Aro has not properly invoked the misuse doctrine as to any other conduct by CTR or AB, *Mercoid* cannot successfully be employed to shield Aro from liability for contributory infringement."

8. SAME—SAME—DEFENSE ON BASIS OF AGREEMENT.

"Turning to the question of replacement fabric sales made *before* July 21, 1955, we agree with the District Court that the agreement between AB and Ford did not negative Aro's liability for these sales. With respect to the post-agreement sales the agreement necessarily absolved Aro of liability, its intention to the contrary notwithstanding, because it had the effect of precluding any direct infringement to which Aro could contribute. With respect to the pre-agreement sales, however, Aro's contributory infringement had already taken place at the time of the agreement. Whatever the agreement's effect on the amount recoverable from Aro * * * it cannot be held, in the teeth of its contrary language and intention, to have erased the extent infringement."

9. SAME—SAME—SAME.

"It is true that a contributory infringer is a species of joint-tortfeasor, who is held liable because he has contributed with another to the causing of a single harm to the plaintiff. See *Wallace* v. *Holmes*, 29 Fed. Cas. 74, 80 (No. 17,100) (C.C.D.Conn. 1871); *Thomson-Houston Elec. Co.* v. *Ohio Brass Co.*, * * * 80 F., at 721; Rich, 21 Geo. Wash. L. Rev. 521, 525 (1953). It is also true that under the old common-law rule, a release given to one joint-tortfeasor necessarily released another, even though it expressly stated that it would have no such effect. See Prosser, Torts (2d ed. 1955), at 243–244. Under this rule Aro's argument on this point would prevail, since the agreement did release Ford's purchasers for their infringing use of the top-structures before the agreement date, and that was the use to which Aro contributed. See *Schiff* v. *Hammond Clock Co.*, 69 F.2d 742, 746 (C.A. 7th Cir. 1934), reversed for dismissal as moot, 293 U.S. 529. But the rule is not applicable. Even in the area of nonpatent torts, it has been repudiated by statute or decision in many if not most States, see Prosser, supra, at 245, and by the overwhelming weight of scholarly authority. E.g., American Law Institute, Restatement of Torts (1939), § 885(1) and Comments *b–d*. And application of the rule to contributory infringement has been rejected by this Court."

10. SAME—SAME—SAME.

"A release given a direct infringer in respect of past infringement, which clearly intends to save the releasor's rights against a past contributory infringer, does not automatically surrender those rights. Thus the District Court was correct in denying that 'defendants are entitled to the fortuitous benefit of the old joint-tortfeasor rule.' The mere fact that the agreement released Ford and Ford's customers for their past infringement does not negate Aro's liability for *its* past infringement."

ON WRIT of certiorari to the United States Court of Appeals for the First Circuit.

MODIFIED and REMANDED.

Charles Hieken and *David Wolf* for petitioner.

Elliott I. Pollock and *Paul V. Power* for respondent.

MR. JUSTICE BRENNAN delivered the opinion of the Court.

Respondent Convertible Top Replacement Co., Inc., (CTR) acquired by assignment from the Automobile Body Research Corporation (AB) all rights for the territory of Massachusetts in United States Patent No. 2,569,724, known as the Mackie-Duluk patent. This is a combination patent covering a top-structure for automobile "convertibles." Structures embodying the patented combination were included as original equipment in 1952–1954 models of convertibles manufactured by the General Motors Corporation and the Ford Motor Company. They were included in the General Motors cars by authority of a license granted to General Motors by AB; Ford, however, had no license during the 1952–1954 period, and no authority whatever under the patent until July 21, 1955, when it entered into an agreement, discussed later, with AB; Ford's manufacture and sale of the automobiles in question therefore infringed the patent. Petitioner Aro Manufacturing Co., Inc. (Aro), which is not licensed under the patent, produces fabric components designed as replacements for worn-out fabric portions of convertible tops; unlike the other elements of the top-structure, which ordinarily are usable for the life of the car, the fabric portion normally wears out and requires replacement after about three years of use. Aro's fabrics are specially tailored for installation in particular models of convertibles, and these have included the 1952–1954 General Motors and Ford models equipped with the Mackie-Duluk top-structures.

CTR brought this action against Aro in 1956 to enjoin the alleged infringement and contributory infringement, and to obtain an accounting, with respect to replacement fabrics made and sold by Aro for use in both the General Motors and the Ford cars embodying the patented structures. The interlocutory judgment entered for CTR by the District Court for the District of Massachusetts, 119 U.S.P.Q. 122, and affirmed by the Court of Appeals for the First Circuit, 270 F.2d 200, was reversed here. *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336 ("*Aro I*"), petition for rehearing or alternative motion for amendment or clarification denied, 365 U.S. 890. Our decision dealt, however, only with the General Motors and not with the Ford cars. [1] Like the Court of Appeals, we treated CTR's right to relief as depending wholly upon the question whether replacement of the fabric portions of the convertible tops constituted infringing "reconstruction" or permissible "repair" of the patented combination. The lower courts had held it to constitute "reconstruc-

tion," making the car owner for whom it was performed a direct infringer and Aro, which made and sold the replacement fabric, a contributory infringer; we disagreed and held that it was merely "repair." The reconstruction-repair distinction is decisive, however, only when the replacement is made in a structure whose original manufacture and sale have been licensed by the patentee, as was true only of the General Motors cars; when the structure is unlicensed, as was true of the Ford cars, the traditional rule is that even repair constitutes infringement. Thus, the District Court had based its ruling for CTR with respect to the Ford cars on the alternative ground that, even if replacement of the fabric portions constituted merely repair, the car owners were still guilty of direct infringement, and Aro of contributory infringement, as to these unlicensed and hence infringing structures. 119 U.S.P.Q. 122, 124. This aspect of the case was not considered or decided by our opinion in *Aro I*.

On remand, however, another judge in the District Court read our opinion as requiring the dismissal of CTR's complaint as to the Ford as well as the General Motors cars, and entered judgment accordingly. CTR appealed the dismissal insofar as it applied to the Ford cars, and the Court of Appeals reinstated the judgment in favor of CTR to that extent. 312 F.2d 52. In our view the Court of Appeals was correct in holding that its "previous decision in this case was not reversed insofar as unlicensed Ford cars are concerned." 312 F.2d., at 57.[1] However, we granted certiorari, 372 U.S. 958, to consider that question, and to consider also the issue that had not been decided in *Aro I*: whether Aro is liable for contributory infringement, under 35 U.S.C. § 271(c), with respect to its manufacture and sale of replacement fabrics for the Ford cars.[2]

I[3]

[1] The repair-versus-reconstruction issue had been the only issue expressly considered or decided by the Court of Appeals on review of the District Court's original interlocutory judgment, see 270 F.2d, at 202, and was thus the focal point of the briefs and arguments here in *Aro I*. See, *e.g.*, Brief for the United States as Amicus Curiae, at 2–3 and n. 1; but see Brief for the Respondent, at 73–76. That the Court considered no other issue, and thus dealt only with the General Motors and not with the Ford cars, is evident from its statement of the "determinative question" as being that of repair versus reconstruction, 365 U.S., at 342; from its failure to consider the body of authority holding that even repair of an infringing article constitutes infringement; and from, among other such statements in its opinion, see *id.*, at 344, 346, its reliance on the proposition that "a license to use a patented combination includes the right" to repair it, *id.*, at 345—a proposition that of course was not applicable to the Ford cars, whose owners had purchased the patented structures from an unlicensed manufacturer and thus had no "license to use" them. The three other opinions in *Aro I* were likewise directed entirely to the issue of repair versus reconstruction, and gave no attention to the different considerations that would come into play in the absence of a license from the patentee to the automobile manufacturer. The concurring opinion of MR. JUSTICE BLACK, for example, relied on the proposition that "One royalty to one patentee for one sale is enough under our patent law as written," 365 U.S., at 360, which would seem inapplicable to the situation presented by the Ford cars, where the patentee had not received any royalty on the sale of the patented structures. See also *id.*, at 354, 356, n. 9; and see the dissenting opinion of MR. JUSTICE HARLAN, 365 U.S., at 369, 373. The concurring opinion of MR. JUSTICE BRENNAN did refer to the presence in the case of the unlicensed Ford cars; it stated, 365 U.S., at 368, that "the judgment of the Court of Appeals must be reversed, except, however, as to the relief granted respondent [CTR] in respect of the replacements made on Ford cars . . . ." That the author of that opinion did not understand the Court as having ruled differently on the Ford car question, or as having ruled on it at all, is shown by the fact that he concurred generally in the result, rather than concurring in part and dissenting in part. The Court said nothing to indicate disagreement with this interpretation of its opinion and decision.

[2] We also granted Aro's motion for leave to use the record that was before us in *Aro I*. 372 U.S. 958.

CTR has made a Motion to Settle the Record, asking us to declare that certain items designated for printing by Aro do not comprise a portion of the record before this Court. We postponed further consideration of the motion until the hearing of the case on the merits. 375 U.S. 804. The items in question, which were not included in the record in *Aro I*, consist of certain requests for admissions and answers thereto, and of materials involved in an accounting proceeding begun after the original affirmance by the Court of Appeals but subsequently stayed and never completed. A motion to strike the same materials from the record was made by CTR in the course of the second appeal to the Court of Appeals, and was denied by that court "without prejudice to renewal in its brief, at the oral argument, or upon taxation of costs." CTR did not renew the motion upon brief or oral argument in the Court of Appeals, but says that it still intends to do so upon taxation of costs if costs should ever be taxed against it by the Court of Appeals. Because of these events in the Court of Appeals, the motion in this Court is also denied, without prejudice to its renewal upon taxation of costs in the Court of Appeals.

[3] This Part of the opinion—with the exception of the point discussed at p. 11 and note 8, *infra*—expresses the views of JUSTICES HARLAN, BRENNAN, STEWART, WHITE, and GOLDBERG.

CTR contends, and the Court of Appeals held, that since Ford infringed the patent by making and selling the top-structures without authority from the patentee,[4] persons who purchased the automobiles from Ford likewise infringed by using and repairing the structures; and hence Aro, by supplying replacement fabrics specially designed to be utilized in such infringing repair, was guilty of contributory infringement under 35 U.S. § 271(c). In *Aro I*, 365 U.S., at 341–342, the Court said:

> "It is admitted that petitioners [Aro] know that the purchasers intend to use the fabric for replacement purposes on automobile convertible tops which are covered by the claims of respondent's combination patent, and such manufacture and sale with that knowledge might well constitute contributory infringement under § 271(c), if, but only if, such a replacement by the purchaser himself would in itself constitute a *direct* infringement under § 271(a), for it is settled that if there is no direct infringement of a patent there can be no *contributory* infringement. . . . It is plain that § 271(c)—a part of the Patent Code enacted in 1952—made no change in the fundamental precept that there can be no contributory infringement in the absence of a direct infringement. That section defines contributory infringement in terms of direct infringement—namely the sale of a component of a patented combination or machine for use 'in an infringement of such patent.' And § 271(a) of the new Patent Code, which defines 'infringement,' left intact the entire body of case law on direct infringement. The determinative question, therefore, comes down to whether the car owner would infringe the combination patent by replacing the worn-out fabric element of the patented convertible top on his car . . . ."

Similarly here, to determine whether Aro committed contributory infringement, we must first determine whether the car owners, by replacing the worn-out fabric element of the patented top-structures, committed direct infringement. We think it clear, under § 271(a) of the Patent Code and the "entire body of case law on direct infringement" which that section "left intact," that they did.

[2] Section 271(a) provides that "whoever without authority makes, uses or sells any patented invention . . . infringes the patent." It is not controverted—nor could it be—that Ford infringed by making and selling cars embodying the patented top-structures without any authority from the patentee. If Ford had had such authority, its purchasers would not have infringed by using the automobiles, for it is fundamental that sale of a patented article by the patentee or under his authority carries with it an "implied license to use." *Adams* v. *Burke*, 17 Wall. 453, 456; *United States* v. *Univis Lens Co.*, 316 U.S. 241, 249, 250–251. But with Ford lacking authority to make and sell, it could by its sale of the cars confer on the purchasers no implied license to use, and their use of the patented structures was thus "without authority" and infringing under § 271(a).[5] Not only does that provision explicitly regard an unauthorized user of a patented invention as an infringer, but it has often and clearly been held that unauthorized use, without more, constitutes infringement. *Birdsell* v. *Shaliol*, 112 U.S. 485; *Union Tool Co.* v. *Wilson*, 259 U.S. 107, 114; see *Sanitary Refrigerator Co.* v. *Winters*, 280 U.S. 30, 32–33; *General Talking Pictures Corp.* v. *Western Electric Co.*, 305 U.S. 124, 127.

[3] If the owner's *use* infringed, so also did his *repair* of the top-

[4] The case will be considered in this Part of the opinion without reference to the agreement made on July 21, 1955, between Ford and AB, and thus on the assumption that Ford never obtained any authority under the patent. The effect of that agreement will be considered in succeeding Parts of the opinion.

[5] We have no need to consider whether the car owners, if sued for infringement by the patentee, would be entitled to indemnity from Ford on a breach of warranty theory. In fact they were not sued, and were released from liability by the agreement between Ford and AB. See *infra*, at 16–18.

structure, as by replacing the worn-out fabric component. Where use infringes, repair does also, for it perpetuates the infringing use.

"No doubt . . . a patented article may be repaired without making the repairer an infringer, but not where it is done for one who is. It is only where the device in patented form has come lawfully into the hands of the person for or by whom it is repaired that this is the case. In other words, if one without right constructs or disposes of an infringing machine, it affords no protection to another to have merely repaired it: the repairer, by supplying an essential part of the patented combination, contributing by so much to the perpetuation of the infringement." *Union Special Mach. Co.* v. *Maimin*, 161 F. 748, 750 (C.C.E.D. Pa. 1908), aff'd. 165 F. 440 (C.A. 3d Cir. 1908).

Accord, *Remington Rand Business Serv., Inc.* v. *Acme Card System Co.*, 71 F.2d 628, 630 (C.A. 4th Cir. 1934), cert. denied, 293 U.S. 622; 2 Walker, Patents (Deller ed. 1937), at 1487. [4] Consequently replacement of worn-out fabric components with fabrics sold by Aro, held in *Aro I* to constitute "repair" rather than "reconstruction" and thus to be permissible in the case of licensed General Motors cars, was not permissible here in the case of unlicensed Ford cars. Here, as was not the case in *Aro I*, the direct infringement by the car owners that is prerequisite to contributory infringement by Aro was unquestionably established.

We turn next to the question whether Aro, as supplier of replacement fabrics for use in the infringing repair by the Ford car owners, was a contributory infringer under § 271(c) of the Patent Code. That section provides:

"Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer."

We think Aro was indeed liable under this provision.

Such a result would plainly have obtained under the contributory-infringement case law that § 271(c) was intended to codify.[6] Indeed, most of the law was established in cases where, as here, suit was brought to hold liable for contributory infringement a supplier of replacement parts specially designed for use in the repair of infringing articles. In *Union Tool Co.* v. *Wilson*, *supra*, 259 U.S., at 113–114, the Court held that where use of the patented machines themselves was not authorized,

"there was, consequently, no implied license to use the spare parts in these machines. As such use, unless licensed, clearly constituted an infringement, the sale of the spare parts to be so used violated the injunction [enjoining infringement]."

As early as 1897, Circuit Judge Taft, as he then was, thought it "well settled" that

[6] The section was designed to "codify in statutory form principles of contributory infringement" which had been "part of our law for about 80 years." H.R. Rep. No. 1923 on H.R. 7794, 82d Cong., 2d Sess., at 9; see also Congressman Rogers' statement, Hearings before Subcommittee No. 3 of House Judiciary Committee on H.R. 3760, 82d Cong., 1st Sess., at 159:

"Then in effect this recodification, particularly as to section 231 [which became § 271 in the Patent Code of 1952], would point out to the court, at least that it was the sense of Congress that we remove this question of confusion as to whether contributory infringement existed at all, and state in positive law that there is such a thing as contributory infringement, or at least that it be the sense of Congress by the enactment of this law that if you have in the Mercoid case [320 U.S. 661, 680] done away with contributory infringement, then we reinstate it as a matter of substantive law of the United States and that you shall hereafter in a proper case recognize or hold liable one who has contributed to the infringement of a patent.

"That is the substantive law that we would write if we adopted this section 231 as it now exists. Is that not about right?"

Mr. Giles S. Rich, now judge of the Court of Customs and Patent Appeals, then spokesman for proponents of § 271(c), answered that the statement of the bill's purpose was "very excellent." *Ibid.* See also 98 Cong. Rec. 9323, 82d Cong., 2d Sess., July 4, 1952 (colloquy of Senators Saltonstall and McCarran).

"where one makes and sells one element of a combination covered by a patent with the intention and for the purpose of bringing about its use in such a combination he is guilty of contributory infringement and is equally liable to the patentee with him who in fact organizes the complete combination."

While conceding that in the case of a machine purchased from the patentee, the defendant "may knowingly assist in assembling, repairing, and renewing a patented combination by furnishing some of the needed parts," Judge Taft added: "but, when he does so, he must ascertain, if he would escape liability for infringement, that the one buying and using them for this purpose has a license, express or implied, to do so." *Thomson-Houston Elec. Co.* v. *Ohio Brass Co.*, 80 F. 712, 721, 723 (C.A. 6th Cir. 1897). See also *National Brake & Elec. Co.* v. *Christensen*, 38 F.2d 721, 723 (C.A. 7th Cir. 1930), cert. denied, 282 U.S. 864; *Reed Roller Bit Co.* v. *Hughes Tool Co.*, 12 F.2d 207, 211 (C.A. 5th Cir. 1926); *Shickle, Harrison & Howard Iron Co.* v. *St. Louis Car-Coupler Co.*, 77 F. 739, 743 (C.A. 8th Cir. 1896), cert. denied, 166 U.S. 720. These cases are all authority for the proposition that "The right of one, other than the patentee, furnishing repair parts of a patented combination, can be no greater than that of the user, and he is bound to see that no other use of such parts is made than that authorized by the user's license." *National Malleable Casting Co.* v. *American Steel Foundries*, 182 F. 626, 641 (C.C.D.N.J. 1910).

In enacting § 271(c), Congress clearly succeeded in its objective of codifying this case law. The language of the section fits perfectly Aro's activity of selling "a component of a patented . . . combination . . . , constituting a material part of the invention, . . . especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use." Indeed, this is the almost unique case in which the component was hardly suitable for *any* noninfringing use.[7] On this basis both the District Court originally, 119 U.S.P.Q., at 124, and the court of Appeals in the instant case, 312 F.2d, at 57, held that Aro was a contributory infringer within the precise letter of § 271(c). See also *Aro I*, 365 U.S., at 341.

[5] However, the language of § 271(c) presents a question, apparently not noticed by the parties or the courts below, concerning the element of knowledge that must be brought home to Aro before liability can be imposed. It is only sale of a component of a patented combination "*knowing* the same to be especially made or especially adapted for use in an infringement of such patent" that is contributory infringement under the statute. Was Aro "knowing" within the statutory meaning because—as it admits, and as the lower courts found—it knew that its replacement fabrics were especially designed for use in the 1952–1954 Ford convertible tops and were not suitable for other use? Or does the statute require a further showing that Aro knew that the tops were patented, and knew also that Ford was not licensed under the patent so that any fabric replacement by a Ford car owner constituted infringement?

[6] On this question a majority of the Court is of the view that § 271(c) does require a showing that the alleged contributory infringer knew that the combination for which his component was

[7] Aro's factory manager admitted that the fabric replacements in question not only were specially designed for the Ford convertibles but would not, to his knowledge, fit the top structures of any other cars.

especially designed was both patented and infringing.[8] With respect to many of the replacement-fabric sales involved in this case, Aro clearly had such knowledge. Ford by letter dated January 2, 1954, AB informed Aro that it held the Mackie-Duluk patent; that it had granted a license under the patent to General Motors but to no one else; and that "It is obvious, from the foregoing and from an inspection of the convertible automobile sold by the Ford Motor Company that anyone selling ready-made replacement fabrics for these automobiles would be guilty of contributory infringement of said patents." Thus the Court's interpretation of the knowledge requirement affords Aro no defense with respect to replacement-fabric sales made after January 2, 1954. It would appear that the overwhelming majority of the sales were in fact made after that date, since the oldest of the cars were 1952 models and since the average life of a fabric top is said to be three years With respect to any sales that were made before that date, however, Aro cannot be held liable in the absence of a showing that at that time it had already acquired the requisite knowledge that the Ford car tops were patented and infringing. When the case is remanded, a finding of fact must be made on this question by the District Court, and unless Aro is found to have had such prior knowledge, the judgment imposing liability must be vacated as to any sales made before January 2, 1954. As to subsequent sales, however, we hold, in agreement with the lower courts, that Aro is liable for contributory infringement within the terms of § 271(c).

[8] This view is held by THE CHIEF JUSTICE and JUSTICES BLACK, DOUGLAS, CLARK and WHITE. See the opinion of MR. JUSTICE BLACK, *post*, pp. 11–14, and of MR. JUSTICE WHITE, *post*, p. 1.

JUSTICES HARLAN, BRENNAN, STEWART and GOLDBERG dissent from this interpretation of the statute. They are of the view that the knowledge Congress meant to require was simply knowledge that the component was especially designed for use in a combination and was not a staple article suitable for substantial other use, and not knowledge that the combination was either patented or infringing. Their reasons may be summarized as follows:

(1) No other result would have been consistent with the congressional intention to codify the case law of contributory infringement as it existed prior to this Court's decision in *Mercoid* v. *Mid-Continent Investment Co.*, 320 U.S. 661—and to do this not only in general, see note 6, *supra*, and p. 15, *infra*, but with specific reference to the knowledge requirement. See Hearings, *supra*, note 6, at 159–160, 163–165. Under that case law, liability was established by a showing that the component was suitable for no substantial use other than in the patented combination, since it was "the duty of the defendant to see to it that such combinations which it is intentionally inducing and promoting shall be confined to those which may be lawfully organized." *Thomson-Houston Elec. Co.* v. *Ohio Brass Co.*, *supra*, 80 F., at 720–723. Accord, *Mercoid Corp.* v. *Mid-Continent Investment Co.*, *supra*, 320 U.S., at 664; 3 Walker, Patents (Deller ed. 1937), at 1764–1765, and cases cited. See *Freedman* v. *Friedman*, 242 F.2d 364 (C.A. 4th Cir. 1957).

(2) The House Committee's change in the language of the bill concerning the knowledge requirement, see the opinion of MR. JUSTICE BLACK, *post*, pp. 11–14, was not intended to limit liability to cases where the alleged contributory infringer had knowledge of the patented or infringing nature of the combination; it was intended merely to assure that the statute would be construed to require knowledge that the article sold was a component of some combination and was especially designed for use therein, rather than simply knowledge that the article was being sold. See, *e.g.*, the statement of Congressman Crumpacker, Hearings, *supra*, at 175, objecting to the original language on the ground that "the way it is phrased the word 'knowingly' refers directly to the word 'sells.'" See also *id.*, at 175–176. While the representatives of a manufacturing concern and of the Justice Department did urge the Committee to adopt the position which the Court now holds it did adopt, none of the Congressmen said anything to indicate agreement with these views or disagreement with the contrary view expressed by the spokesman for the sponsors of the bill. This view, as clearly stated on several occasions at the Hearings, was that

"[Y]ou know that the component is going into that machine. You don't have to know that it is patented. You don't have to know the number of the patent, and you don't have to know that the machine that it is going into consitutes an infringement." *Id.*, at 175; see also *id.*, at 160, 176.

(3) The suggestion that a person cannot be liable even for direct infringement when he has no knowledge of the patent or the infringement is clearly refuted by the words of § 271(a), which provides that "whoever without authority makes, uses or sells any patented invention . . . infringes the patent," with no mention of any knowledge requirement. And the case law codified by § 271 has long recognized the fundamental proposition that "To constitute an infringement of a patent, it is not necessary that the infringer should have known of the existence of the patent at the time he infringed it or, knowing of its existence, it is not necessary that he should have known his doings to constitute an infringement." 3 Walker, Patents (Deller ed. 1937), § 453. See, *e.g.*, *United States* v. *Berdan Fire-Arms Mfg. Co.*, 156 U.S. 552, 566; *Sontag Chain Stores Co.* v. *National Nut Co.*, 310 U.S. 281, 295; *Boyden* v. *Burke*, 14 How. 575, 582.

(4) Section 287 of 35 U.S.C., quoted in the opinion of MR. JUSTICE BLACK, *post*, p. 15, n. 14, does not require a different conclusion. That section prevents a patentee from recovering damages for infringement unless he has marked the patented article with notice of the patent. Since a patentee may hardly be expected to mark the article when it has not been manufactured or sold by him, but rather by an infringer, the section has been held not to apply to such a situation. *Wine Ry. Appliance Co.* v. *Enterprise Ry. Equip. Co.*, 297 U.S. 387. That of course is the situation here with respect to the Ford cars.

[7] In seeking to avoid such liability, Aro relies on the *Mercoid* cases. *Mercoid Corp* v. *Mid-Continent Investment Co.*, 320 U.S. 661; *Mercoid Corp.* v. *Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680. Since those cases involved essentially an application of the doctrine of patent misuse, which is not an issue in this case,[9] they are not squarely applicable to the contributory infringement question here. On the other hand, they are hardly irrelevant. The Court in *Mercoid* said, among other things, that the principle that "he who sells an unpatented part of a combination patent for use in the assembled machine may be guilty of contributory infringement" could no longer prevail "against the defense that a combination patent is being used to protect an unpatented part from competition." 320 U.S., at 668. As the Court recognized, its definition of misuse was such as "to limit substantially the doctrine of contributory infringement" and to raise a question as to "what residuum may be left." 320 U.S., at 669. See Report of the Attorney General's National Committee to Study the Antitrust Laws (1955), at 252. The answer to Aro's argument is that Congress enacted § 271 for the express purpose of reinstating the doctrine of contributory infringement as it had been developed by decisions prior to *Mercoid*, and of overruling any blanket invalidation of the doctrine that could be found in the *Mercoid* opinions. See, *e.g.*, 35 U.S.C. § 271(c), (d); Hearings, *supra*, note 6, at 159, 161–162, quoted, *supra*, note 6; and the *Aro I* opinions of MR. JUSTICE BLACK, 365 U.S., at 348–349 and notes 3–4; MR. JUSTICE HARLAN, *id.*, at 378, n. 6; and MR. JUSTICE BRENNAN, *id.*, at 365–367. Hence, where Aro's sale of replacement fabrics for unlicensed Ford cars falls squarely within § 271(c), and where Aro has not properly invoked the misuse doctrine as to any other conduct by CTR or AB, *Mercoid* cannot successfully be employed to shield Aro from liability for contributory infringement.[10]

Thus we hold that, subject to the reservation expressed at pp. 11–14, *supra*, with respect to sales made before January 2, 1954, and subject to the further reservations set forth in succeeding Parts of this opinion, Aro's sales of replacement fabrics for use in the Ford cars constituted contributory infringement under § 271(c).

II [11]

Although we thus agree with the Court of Appeals that Aro was liable for contributory infringement with respect to the Ford cars, we find merit in a defense asserted by Aro. In our view this defense negatives Aro's liability as to some of the replacement fabrics in question and, as to the others, reduces substantially—quite possibly to a mere nominal sum—the amount of recovery that CTR may be awarded. The defense is based on the agreement of July 21, 1955,

[9] Aro does contend here that recovery by CTR is precluded by misuse of the patent, and also that such misuse entitles Aro to an award of treble damages for violation of the antitrust laws. Although the point was arguably raised by Aro's original answer and counterclaim, and was decided against Aro in the original opinion of the District Court, 119 U.S.P.Q., at 122, n. 1, it was substantially abandoned on the first appeal, and hence was not ruled on in the first opinion of the Court of Appeals. Accordingly, this Court's opinion in *Aro I* stated that patent misuse "is not an issue in this case." 365 U.S., at 344, n. 10; see also the dissenting opinion of MR. JUSTICE HARLAN, 365 U.S., at 376–377 and n. 5. On remand, after the District Court had dismissed without prejudice the counterclaim alleging misuse, the Court of Appeals held that neither the defense based on misuse nor the counterclaim was in the case, the defense having been "clearly abandoned" and the counterclaim never having been adequately pleaded. 312 F.2d, at 58. We do not find error in this ruling, and thus have no occasion to consider Aro's allegations of patent misuse.

[10] We have no doubt that § 271(c) as so construed and applied, within the limitations set forth in the succeeding portions of this opinion, is constitutional.

[11] This Part of the opinion expresses the views of JUSTICES BRENNAN, STEWART, WHITE, and GOLDBERG. MR. JUSTICE HARLAN concurs in the result.

between Ford and AB. See note 4, *supra*. This agreement affected Aro's liability differently, we think, depending upon whether the replacement-fabric sales were made before or after the agreement date. We shall first discuss its effect on liability for the subsequent sales.

Agreement was made at a time when, as CTR states in its brief, "Ford had already completed its manufacture of all the cars here involved." Under it, Ford agreed to pay AB $73,000 for certain rights under the patent, which were defined by paragraph 1 of the agreement as follows:

> "1. AB hereby releases Ford, its associated companies . . . [and] its and their dealers, customers and users of its and their products, of all claims that AB has or may have against it or them for infringement of said patents arising out of the manufacture, use or sale of devices disclosed therein and manufactured before December 31, 1955, other than the 'replacement top fabrics' licensed under paragraph 3."

In paragraph 3, AB licensed Ford to make and sell "replacement top fabrics" for the Mackie-Duluk top-structures, receiving in return a royalty—separate from the $73,000 lump-sum payment—of 5% of the net sales. And in paragraph 5, AB expressly reserved the right

> "to license under . . . said Mackie-Duluk patent . . . the manufacture, use and sale of replacement top fabrics other than those supplied to, made by, or sold by Ford . . . to the extent that AB is entitled to reserve such right under 35 United States Code, § 271 (1952)."

In a pretrial memorandum filed early in the lawsuit, the District Court construed the agreement in the following manner, which we think to be a correct interpretation of the parties' intention:

(1) With respect to all patented top-structures manufactured before July 21, 1955, and all replacement fabrics installed before that date, it was a "release" to the parties named—that is, Ford and its customers—of the claims for infringement by manufacture, sale, or use of the patented combinations;

(2) With respect to any new structures manufactured between July 21 and December 31, 1955 (it appears that there were no such structures), the agreement was a "future license" to Ford and its customers to make, sell, and use the patented combinations, but "excepting replacements" unless these were provided by Ford under the special license granted by paragraph 3;

(3) With respect to the post-July 21 status of structures manufactured before July 21, the agreement was also a "future license" to Ford and its customers of the rights to make, sell, and use, but again, "excepting replacements" not provided by Ford; and

(4) The agreement "demonstrated an intention not to release" or license any persons other than Ford or its customers; in particular, the parties did not intend to release or license contributory infringers like Aro in respect of replacement fabrics sold either before or after July 21.

Considering the legal effect of the agreement as so construed, the District Court went on to rule that if the fabric replacement should be held to constitute repair rather than reconstruction (as this Court did subsequently hold in *Aro I*), then:

(*a*) Aro *would* be liable for contributory infringement as to replacements made before July 21, 1955, since "I do not construe the agreement to release contributory infringers for rights of action already accrued";

(*b*) however, despite the intention of the parties, Aro would *not* be liable as to replacements made after July 21, 1955, since "If replacement is legitimate repair, no average owner can do-it-yourself, and he must be free to go to persons in the position of defendants without apprehension on their part."

The distinction between pre-agreement and post-agreement sales subsequently became irrelevant to the District Court's view of the case, when it held after trial that replacement of the fabrics constituted reconstruction rather than repair; the Court's interlocutory judgment for CTR thus held Aro liable with respect to *all* the Ford cars in question. When this Court in *Aro I* reversed the ruling on the reconstruction-repair issue, the only reference in the opinions to the Ford cars took the view that Aro should be held liable only in respect of replacements made on those cars "before July 21, 1955," 365 U.S., at 368 (concurring opinion), and thus agreed with the distinction originally drawn by the District Court. The present opinion of the Court of Appeals, however, in reinstating the Ford car portion of the interlocutory judgment for CTR without consideration of this distinction, appears to have held Aro liable in respect of replacement fabrics sold for the 1952–1954 Ford cars not only before July 21, 1955, but also after that date and—so long as the cars remain on the road—up to the present and into the future.

CTR's argument in support of this result emphasizes that the agreement in terms ran in favor only of Ford and Ford's customers and not of third parties like Aro, and that it expressly excepted "replacement top fabrics" from the scope of the rights it granted. Reliance is also placed on testimony that the amount to be paid by Ford under the agreement was set as low as $73,000 only because of a clear understanding between the parties that such payment would not affect AB's rights to recover from persons in the position of Aro.[12] CTR thus argues:

> "If the Ford agreement had never been made at all, it is clear that it would have been proper to require that Aro pay royalties, insofar as infringing Ford cars are concerned, even up to the present time. This being the case, it is clear that it was proper for the agreement to expressly recognize and to expressly exclude Aro's liability from its terms. Since Ford refused to purchase any rights for Aro, either before or after July 21, 1955, Aro is liable for its Ford repair activities both before and after that date."

Insofar as replacement fabrics sold "after that date" are concerned, we do not agree. We think the agreement's attempt to reserve rights in connection with future sales of replacement fabrics was invalid. By the agreement AB authorized the Ford car owners, in return for a payment from Ford, to use the patented top-structures from and after July 21, 1955. Since they were authorized to use the structures, they were authorized to repair them so as "to preserve [their] fitness for use . . . ." *Aro I*, 365 U.S., at 345, quoting *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 325, 336. The contrary provisions in the agreement, purporting to restrict the right of use and repair by prohibiting fabric replacement unless done with fabrics purchased from Ford or some other licensee, stand condemned by a long line of this Court's decisions delimiting the scope of the patent grant. When the patentee has sold the patented article or authorized its sale and has thus granted to the purchaser an "implied license

[12] Counsel for AB testified on deposition as follows:
"I . . . definitely told them that there were these other replacement top manufacturers and that if we were left in a position to collect royalty from them, that obviously we could give Ford a lower rate, and that is what Ford said they wanted, that they weren't interested in buying any sort of release or license or anything else that would help out these replacement top people . . . ."

to use," it is clear that he cannot thereafter restrict that use; "so far as the use of it was concerned, the patentee had received his consideration, and was no longer within the monopoly of the patent." *Adams* v. *Burke*, 17 Wall. 453, 456. In particular, he cannot impose conditions concerning the unpatented supplies, ancillary materials, or components with which the use is to be effected. *E.g.*, *Carbice Corp.* v. *American Patents Development Corp.*, 283 U.S. 27; *Mercoid Corp.* v. *Mid-Continent Investment Co.*, 320 U.S. 661; *United States* v. *Loews, Inc.*, 371 U.S. 38, 46. It follows that here, where the patentee has by the Ford agreement *explicitly* authorized the purchasers to use the articles, the patentee cannot thereafter restrict that use by imposing a condition that replacement parts may be purchased only from a licensed supplier.

With the restriction thus eliminated from consideration, it is clear that Aro cannot be liable for contributory infringement in connection with sales of replacement fabrics made after July 21, 1955. After that date the Ford car owners had authority from the patentee—indeed, had a "license" [13]—fully to use and repair the patented structures. Hence they did not commit direct infringement under § 271(a) when they had the fabrics replaced; hence Aro, in selling replacement fabrics for this purpose, did not commit contributory infringement under § 271(c). The case as to the post-agreement sales is thus squarely ruled by *Aro I*. It was held there, despite AB's attempt to reserve the right to license sales of replacement fabrics, that General Motors car owners, who were authorized to use the patented structures by virtue of the license granted General Motors by AB, performed nothing more than "permissible repair" when they replaced the worn-out fabrics, and hence that there was no direct infringement by the owners to which Aro, by selling the replacement fabrics, could contribute. In other words, since fabric replacement was "repair" rather than "reconstruction," it was merely an aspect of the use of the patented article, and was thus beyond the patentee's power to control after the use itself had been authorized. So here, the Ford car owners were authorized to use the patented structures after July 21, 1955, by virtue of the agreement between AB and Ford. Hence they were likewise entitled, despite AB's attempt to reserve this right, to perform the "permissible repair" of replacing the worn-out fabrics; hence, just as in *Aro I*, the car owners by replacing the fabrics committed no direct infringement to which Aro's sales could contribute. "[I]f the purchaser and user could not be amerced as an infringer certainly one who sold to him . . . cannot be amerced for contributing to a non-existent infringement." *Aro I*, 365 U.S., at 341.

CTR would have it that this result is inconsistent with *Birdsell* v. *Shaliol*, 112 U.S. 485, and *Union Tool Co.* v. *Wilson*, 259 U.S. 107. In our view it is not. *Birdsell* allowed the patentee to hold one infringer liable for use of the patented machines after obtaining a judgment against another infringer for the manufacture and sale of the same machines; *Union Tool* held infringement to exist where the defendant, after being held liable for the manufacture and sale of certain infringing machines, sold spare parts for use in the same

[13] The District Court termed the agreement a "future license" in this respect, and AB's counsel on more than one occasion referred to it as a "release or license." It is difficult to see why it should not be considered a license insofar as it related to future activity, see *De Forest Radio Tel. Co.* v. *United States*, 273 U.S. 236, 241, although of course its proper label is less important than its clear effect of authorizing Ford's purchasers to make full use of the patented structures.

machines. Both cases turned upon the fact that the patentee had not collected on the prior judgment and thus had not received any compensation for the infringing use—or, indeed, any compensation at all.[14] Here, in contrast, the amount paid by Ford under the agreement was expressly stated to include compensation for the use of the patented structures by Ford's purchasers; moreover, the agreement covered *future* use and in this respect operated precisely like a license, with the result that after the agreement date there was simply no infringing use for which the patentee was entitled to compensation. See *Birdsell* v. *Shaliol*, *supra*, 112 U.S., at 487. In sum, AB obtained its reward for the use of the patented structures under the terms of the agreement with Ford; CTR cannot obtain from Aro here another reward for the same use.

We therefore hold, in agreement with the District Court's original view, that Aro is not liable for replacement fabric sales [15] made after July 21, 1955. Insofar as the judgment of the Court of Appeals imposes liability for such sales, it is reversed.[16]

III [17]

[8] Turning to the question of replacement fabric sales made *before* July 21, 1955, we agree with the District Court that the agreement between AB and Ford did not negative Aro's liability for these sales. With respect to the post-agreement sales the agreement necessarily absolved Aro of liability, its intention to the contrary notwithstanding, because it had the effect of precluding any direct infringement to which Aro could contribute. With respect to the pre-agreement sales, however, Aro's contributory infringement had already taken place at the time of the agreement. Whatever the agreement's effect on the amount recoverable from Aro—a matter to be discussed in Part IV of this opinion—it cannot be held, in the teeth of its contrary language and intention, to have erased the extant infringement.

[9] It is true that a contributory infringer is a species of joint-tortfeasor, who is held liable because he has contributed with another to the causing of a single harm to the plaintiff. See *Wallace* v. *Holmes*, 29 Fed. Cas. 74, 80 (No. 17,100) (C.C.D. Conn. 1871); *Thomson-Houston Elec. Co.* v. *Ohio Brass Co.*, *supra*, 80 F., at 721; Rich, 21 Geo. Wash. L. Rev. 521, 525 (1953). It is also true that under the old common-law rule, a release given to one joint-tortfeasor necessarily released another, even though it expressly stated that it would have no such effect. See Prosser, Torts (2d ed. 1955), at 243–244. Under this rule Aro's argument on this point would prevail, since the agreement did release Ford's purchasers for their infringing use of the top-structures before the agreement date, and that was the use to which Aro contributed. See *Schiff* v. *Hammond Clock Co.*,

[14] In *Birdsell* the Court relied on the fact that only nominal damages had been awarded in the prior suit. 112 U.S., at 489. In *Union Tool* the Court's statement that the patentee had not "received any compensation whatever for the infringement by use of these machines," 259 U.S., at 113, was apparently based on the fact that the damages and profits awarded by the prior judgment had not yet been calculated or paid. See Brief for Respondent, at 37, and the opinion of the Court of Appeals, 265 F. 669, 673 (C.A. 9th Cir. 1920). Compare *Buerk* v. *Imhoeuser*, 4 Fed. Cas. 597 (No. 2,108) (C.C.S.D.N.Y. 1876), 4 Fed. Cas. 594 (No. 2,107) (C.C.S.D.N.Y. 1876).

[15] The date of the sale by Aro rather than the date of the installation in the car by the purchaser from Aro should control, since it is the act of sale that is made contributory infringement by § 271(c).

[16] Since Aro's infringement thus terminated in 1955, it would seem that the perpetual injunction included in the interlocutory judgment would no longer be a proper element of relief.

[17] This Part of the opinion, like Part I, expresses the views of JUSTICES HARLAN, BRENNAN, STEWART, WHITE and GOLDBERG.

69 F.2d 742, 746 (C.A. 7th Cir. 1934), reversed for dismissal as moot, 293 U.S. 529. But the rule is not applicable. Even in the area of nonpatent torts, it has been repudiated by statute or decision in many if not most States, see Prosser, *supra*, at 245, and by the overwhelming weight of scholarly authority. *E.g.*, American Law Institute, Restatement of Torts (1939), § 885(1) and Comments *b–d*. And application of the rule to contributory infringement has been rejected by this Court. In *Birdsell* v. *Shaliol*, *supra*, 112 U.S., at 489, the Court applied to a patent case the proposition that "By our law, judgment against one joint trespasser, without full satisfaction, is no bar to suit against another for the same trespass." What is true of a judgment is true of a release. See Prosser, *supra*, at 241–244. [10] A release given a direct infringer in respect of past infringement, which clearly intends to save the releasor's rights against a past contributory infringer, does not automatically surrender those rights. Thus the District Court was correct in denying that "defendants are entitled to the fortuitous benefit of the old joint-tortfeasor rule." The mere fact that the agreement released Ford and Ford's customers for their past infringement does not negate Aro's liability for *its* past infringement. Hence the judgment of the Court of Appeals, insofar as it relates to Ford car replacement-fabric sales made by Aro before July 21, 1955—and subject to the reservation set forth at pp. 11–14, *supra*, with respect to sales made before January 2, 1954—is affirmed; accordingly, the case is remanded to the District Court for a determination of damages and for such other proceedings as that court deems appropriate.

IV [18]

The case must now be remanded for a determination of the damages to be recovered from Aro in respect of the infringing pre-agreement sales. It is true that the lower courts have not yet expressly addressed themselves to the damages issue, and that the parties have not argued it here. Nevertheless, it appears that all concerned in this litigation have shared a specific assumption as to the measure of damages that would be available to CTR if it succeeded in establishing infringement. Because we sharply disagree with that assumption, and because expression of our views may obviate the need upon remand for lengthy proceedings before a master in this already overlong litigation, we deem it in the interest of efficient judicial administration to express those views at this time. In brief, it is our opinion that the Ford agreement, while it does not negate Aro's liability for the prior sales as it does for the subsequent ones, does have the effect of limiting the amount that CTR can recover for the pre-agreement infringement, and probably of precluding recovery of anything more than nominal damages.

If the sum paid by Ford for the release of it and its customers constituted full satisfaction to AB for the infringing use of the patented structures, we think it clear that CTR cannot now collect further payment from Aro for contributing to the same infringing use. The rule is that

"Payments made by one tortfeasor on account of a harm for which he and another are each liable, diminish the amount of the claim against the other whether or not it was so agreed at the time of payment and whether the payment was made before or after judgment . . . ." Restatement of Torts, *supra*, § 885(3).

It has been said that "all courts are agreed" upon such a rule. Prosser, *supra*, at 246. And its applicability to contributory-infringement cases has been clearly indicated by this Court. *Birdsell* v. *Shaliol*, *supra*, 112 U.S., at 488–489; see *Hazeltine Corp.* v. *Atwater Kent Mfg. Co.*, *supra*, 34 F.2d 50, 52 (D.C.E.D. Pa. 1929). Indeed, if "actual damages" or "full compensation" paid by a maker-and-seller can have the effect of releasing a user, as was indicated in *Birdsell*, such a result should follow *a fortiori* where, as here, the damages paid were expressly stated to be compensation for use of the device, and the person subsequently sued is a contributory infringer liable merely for contributing to the same infringing use. In such a case full payment by or on behalf of the direct infringer leaves nothing to be collected from the contributory infringer. We therefore find it necessary to consider whether the payment by Ford to AB constituted full payment for the infringing use committed directly by Ford's purchasers and contributorily by Aro.

This depends upon the measure and total amount of recovery to which CTR and AB are entitled. In particular, if they are entitled to recover a royalty from Aro on the infringing sales of replacement fabrics, it is clear that no such recovery was included in the payment from Ford, whose representatives "weren't interested in buying any sort of a release or license or anything else that would help out these replacement top people." See note 12, *supra*. CTR does contend, and all involved in this litigation have apparently assumed that a judgment holding Aro liable for contributory infringement will result in recovery of such a royalty on Aro's sales.[19] This is the assumption with which we disagree. It is our view that despite our affirmance of the judgment against Aro as to sales made before the agreement date, no such royalty will be available to CTR as part of its recovery. We are, indeed, doubtful that CTR can properly be allowed recovery of anything more than nominal damages from Aro.

The measure of recovery for patent infringement is governed by 35 U.S.C. § 284, which provides:

"Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

"When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed."

It is presumably the language "in no event less than a reasonable royalty" that has led to the assumption noted above. But that assumption ignores the fact—clear from the language, the legislative history, and the prior law—that the statute allows the award of a reasonable royalty, or of any other recovery, only if such amount constitutes "damages" for the infringement. It also ignores the important distinction between "damages" and "profits," and the relevance of this distinction to the 1946 amendment of the statute.

"In patent nomenclature what the infringer makes is 'profits'; what

[18] This Part of the opinion expresses the views of JUSTICES BRENNAN, STEWART, WHITE, and GOLDBERG. MR. JUSTICE HARLAN considers that the matters here dealt with are not ripe for decision and should be left for determination in the future course of this litigation.

[19] AB's counsel asserted on deposition: "I believe we would have the right to arrive at royalty and otherwise consider as patented the replacement top . . . ." When asked by the District Court at a hearing concerning a judgment bond how much he expected to recover, CTR's counsel replied: "I suppose a reasonable royalty would be 5 percent." Considerable evidence was introduced before the Master as to Aro's income from infringing sales and as to royalty rates fixed in licenses granted by CTR or AB to other replacement-fabric suppliers. See also the statement of AB's counsel quoted in note 12, *supra*, and the statement in CTR's brief quoted *supra*, at 19.

the owner of the patent loses by such infringement is 'damages.'" *Duplate Corp.* v. *Triplex Safety Glass Co.*, 298 U.S. 448, 451. Profits and damages have traditionally been all-inclusive as the two basic elements of recovery. Prior to 1946, the statutory precursor of the present § 284 allowed recovery of both amounts, reading as follows:

"[U]pon a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby . . . ." R.S. § 4921, as amended, 42 Stat. 392.

By the 1946 amendment, Act of August 1, 1946, c. 726, § 1, 60 Stat. 778, U.S.C. (1946 ed.), §§ 67, 70, the statute was changed to approximately its present form, whereby only "damages" are recoverable.[20] The purpose of the change was precisely to eliminate the recovery of profits as such and allow recovery of damages only.

"The object of the bill is to make the basis of recovery in patent-infringement suits general damages, that is, any damages the complainant can prove, not less than a reasonable royalty, together with interest from the time infringement occurred, rather than profits and damages." H.R. Rep. No. 1587, 79th Cong., 2d Sess. (1946), to accompany H.R. 5311, at 1–2; S. Rep. No. 1503, 79th Cong., 2d Sess. (1946), to accompany H.R. 5311, at 2."[21]

There can be no doubt that the amendment succeeded in effectuating this purpose; it is clear that under the present statute only damages are recoverable. See, *e.g.*, *Ric-Wil Co.* v. *E. B. Kaiser Co.*, 179 F.2d 401, 407 (C.A. 7th Cir. 1950), cert. denied, 339 U.S. 958; *Livesay Window Co.* v. *Livesay Industries, Inc.*, 251 F.2d 469, 471–472 (C.A. 5th Cir. 1958); *Laskowitz* v. *Marie Designer, Inc.*, 119 F. Supp. 541, 554–555 (D.C.S.D. Cal. 1954); Cullen, 28 J. Pat. Off. Soc'y 838 (1946); Wolff, 28 J. Pat. Off. Soc'y 877 (1946).

The 1946 amendment is of crucial significance to the total amount of CTR's recovery against Aro and hence to the amount, if any, that may still be recovered after receipt of the payment from Ford. When recovery of the infringer's profits as such was allowed, the rule was that "complainant's damages are no criterion of defendant's profits": it was "immaterial that the profits made by the defendant would not have been made by the plaintiff." 3 Walker, Patents (Deller ed. 1937), § 845, at 2186. And in cases of joint infringement this Court was said to have declared the doctrine that, whereas "when the total damage sustained has been paid by one tort-feasor, the damages cannot be duplicated through recovery against another," nevertheless, "every infringer of a patent right may be made to give up whatever profits he has derived from the infringement, and . . . one infringer is not relieved by payment by another infringer, but each is accountable for the profits which he has received." *Hazeltine Corp.* v. *Atwater Kent Mfg. Co.*, *supra*, 34 F.2d 50, 52. Under such a rule, CTR might well argue that the payment received from Ford could have no effect in preventing it from recovering the profits made by Aro—which might even exceed the amount of a royalty on Aro's sales.

But the present statutory rule is that only "damages" may be recovered. These have been defined by this Court as "compensation for the pecuniary loss he [the patentee] has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his unlawful acts." *Coupe* v. *Royer*, 155 U.S. 565, 582. They have been said to constitute "the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred." *Yale Lock Mfg. Co.* v. *Sargent*, 117 U.S. 536, 552. The question to be asked in determining damages is "how much had the Patent Holder and Licensee suffered by the infringement. And that question [is] primarily: had the Infringer not infringed, what would Patent Holder-Licensee have made?" *Livesay Window Co.* v. *Livesay Industries, Inc.*, *supra*, 251 F.2d, at 471.

Thus, to determine the damages that may be recovered from Aro here, we must ask how much CTR suffered by Aro's infringement—how much it would have made if Aro had not infringed. Asking that question, we may assume first that the agreement of July 21, 1955, did not exist and that AB had not collected a cent from Ford. Even on that assumption, we would find it difficult to see why CTR's damages should be measured by a royalty on Aro's sales. CTR and AB were not deprived of such a royalty by Aro's infringement, for they could not have licensed Aro's sales in any event; they were denied the right to do so in *Aro I*, and would still be denied it even if they had received no royalties on the patented combinations themselves. For the right could not be granted without allowing the patentee to "derive its profit, not from the invention on which the law gives it a monopoly but from the unpatented supplies with which it is used . . . ." *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502, 517; *Mercoid Corp* v. *Mid-Continent Investment Co.*, *supra*, 320 U.S., at 666–667. It would be absurd to say that what CTR could not recover from Aro in *Aro I* after it had licensed General Motors, it could recover here if it had stood by and let Ford infringe—as it apparently did, see p. 34, *infra*—and had then brought suit against Aro *before* settling with Ford. The rules prohibiting extension of the patent monopoly to unpatented elements are not so readily circumvented. This does not mean, of course, that CTR would have no remedy for Aro's contributory infringement. It could in a proper case obtain an injunction; it could recover such damages as had actually been suffered from the contributory infringement by virtue of the prolongation of the use of the infringing automobiles; it could in a case of willful or bad-faith infringement recover punitive or "increased" damages under the statute's trebling provision; and it could perhaps—we express no view on the question—recover from Aro a royalty on Ford's sales of the patented top-structures, even though such damages were primarily caused not by Aro's infringement but by Ford's, in a case where they could not be recovered from Ford or Ford's customers. It is difficult to conceive of any instance, however, in which actual damages could properly be based on a royalty on sales of an unpatented article used merely to repair the patented structure.

If CTR thus could not collect a royalty on Aro's sales in the absence of any payment from Ford, it surely cannot do so here after AB, in return for $73,000, has released Ford and Ford's customers from liability for the direct infringement to which Aro contributed. Are there indeed any actual damages that CTR can recover from Aro after receiving $73,000 from Ford? The answer depends on whether CTR and AB suffered any loss by Aro's infringement—which depends in turn on how much they would have made if Aro had not infringed. But in view of the merely contributory nature of Aro's

[20] In the 1952 codification, §§ 67 and 70 of the 1946 Code were consolidated in the present § 284. The stated purpose was merely "reorganization in language to clarify the statement of the statutes." H.R. Rep. No. 1923, 82d Cong., 2d Sess., at 10, 29.

[21] See also Hearings before the House Committee on Patents, 79th Cong., 2d Sess., on H.R. 5231 (subsequently amended, reintroduced, and reported as H.R. 5311), Jan. 29, 1946, *e.g.*, pp. 2–3.

infringement, *this* leads in turn to the question how much CTR and AB would have made if *Ford* had not infringed; for in that event—as was held in *Aro I* with respect to the General Motors cars, and as we have held in Part II, *supra*, with respect to the post-agreement Ford car sales—Aro could not have contributorily infringed. If Ford had not infringed, AB would have made a royalty on Ford's sales of the patented top-structures—as it made such a royalty under its license to General Motors in *Aro I*. The amount that would thus have been received must be compared, however, with the amount that AB in fact received from Ford. We shall assume for the present—although CTR will have an opportunity to disprove the assumption upon remand—that the amount received by AB under the agreement was the same amount it would have received had it licensed Ford in the first place to produce the same number of convertible tops.[22] On this assumption, AB is just as well off now as it would have been if Ford had never infringed the patent. And since if Ford had not infringed, Aro could not have contributorily infringed, it follows that what CTR and AB would have made if Aro had not infringed was precisely what they did make by virtue of the Ford agreement. Their pecuniary position was not rendered one cent worse by the total infringement to which Aro contributed, and hence they are not entitled—on the assumption stated above as to the payment by Ford—to anything more than nominal damages from Aro.

To allow recovery of a royalty on Aro's sales after receipt of the equivalent of a royalty on Ford's sales, or to allow any recovery from Aro after receipt of full satisfaction from Ford, would not only disregard the statutory provision for recovery of "damages" only, but would be at war with virtually every policy consideration in this area of the law. It would enable the patentee to derive a profit not merely on unpatented *rather than* patented goods—an achievement proscribed by the *Motion Picture Patents* and *Mercoid* cases, *supra*—but on unpatented *and* patented goods. In thus doubling the number of rewards to which a patentee is entitled "under our patent law as written," see MR. JUSTICE BLACK concurring in *Aro I*, 365 U.S., at 360, it would seriously restrict the purchaser's long-established right to use and repair an article which he has legally purchased and for the use of which the patentee has been compensated. See *Adams* v. *Burke*, 17 Wall. 453. The patentee could achieve this result, moreover, by the simple tactic of not licensing or suing the manufacturer in the first place, but rather standing by while the direct infringement occurs, thus allowing contributory infringements to spring up around him, with the result of bringing within the reach of his monopoly unpatented items that would never be there if the manufacturer had been licensed from the start. And little is sacrificed, for it is almost always possible to sue or settle with the manufacturer at a later date. This in fact seems to have been the strategy that AB employed here. It first sent Ford a notice of infringement—according to the deposition testimony of AB's own counsel—in late 1953, "a day or so after we got the patent." Yet it did nothing to stop Ford's infringement, and did not settle with Ford until 18 months later, by which time all the automobiles in question had been manufactured. In view of

[22] No answer was given by AB's counsel to the question how the $73,000 figure had been arrived at, except to say that it would have been larger if it had been intended to release contributory infringers as well. But the fact that paragraph 3 of the agreement provides for a 5% royalty on replacement tops, as the General Motors license agreement also apparently did, suggests that the effective royalty received from Ford for the right to make and sell the patented top-structures was the same as that received from General Motors.

the apparently deliberate delay and of the unquestionably solvent status of the infringer, it indeed seems unlikely that the amount paid for the release was less than would have been paid under a license. In any event, the notion is intolerable that by such delay CTR and AB could entitle themselves to collect from Aro what they could not have collected had Ford been licensed from the start as General Motors was.

To achieve such a result through use of the contributory infringement doctrine would be especially ironic, in view of the purpose of that doctrine as set forth in case law and commentary and as presented to the Congress in urging passage of § 271(c). That purpose is essentially, as was stated in the earlier versions of the bill that became § 271(c), "to provide for the protection of patent rights where enforcement against direct infringers is impracticable." H.R. 5988, 80th Cong., 2d Sess.; H.R. 3866, 81st Cong., 1st Sess. At the hearings on § 271(c) itself, Mr. Rich, see note 6, *supra*, explained to the subcommittee that "There may be twenty or thirty percent of all patents that are granted that cannot practically be enforced against direct infringers . . . ." Hearings, *supra*, note 6, at 160.[23] Such a purpose might have been applicable here if CTR and AB had been unable to enforce the patent against Ford (a rather unlikely event), since it would indeed have been impractical to sue every one of the car owners. But where the patentee has in fact enforced the patent against so solvent and accessible a direct infringer as Ford, it is difficult to see why it should then be allowed to invoke the contributory infringement doctrine—designed for cases "where enforcement against direct infringers is impracticable"—so as to enforce the patent a second time and obtain a reward that it could not extract from a direct infringer alone. Whatever the result might have been under the old "damages and profits" provision, no such perversion of the congressional purpose is possible within the rule allowing recovery of "damages" only.

Hence we think that after a patentee has collected from or on behalf of a direct infringer damages sufficient to put him in the position he would have occupied had there been no infringement, he cannot thereafter collect actual damages from a person liable only for contributing to the same infringement. This principle is but an application of the rule that full satisfaction received from one tort-feasor prevents further recovery against another. It is consistent with the Court's opinion in *Birdsell* v. *Shaliol*, *supra*, 112 U.S., at 488–489. See also *George Haiss Mfg. Co.* v. *Link-Belt Co.*, 63 F.2d 479, 481 (C.A. 3d Cir. 1932); *Buerk* v. *Imhaeuser*, note 14, *supra*, 4 Fed. Cas. 597. And it is squarely in accord with a recent decision of the Court of Appeals for the Second Circuit. *Farrand Optical Co., Inc.* v. *United States*, 325 F.2d 328, 335 (C.A. 2d Cir. 1963). Nor is there any authority, even in lower courts, directly to the contrary. Of the many cases cited by CTR for the correct proposition that use or repair of an infringing structure constitutes infringement, relatively few deal at all with the question of amount of recovery. Some of these, it is true, do allow recovery on sales of infringing machines and a further recovery on sales of spare parts for those machines. But they are all distinguishable: either the parts themselves were

[23] See also *Thomson-Houston Elec. Co.* v. *Ohio Brass Co.*, *supra*, 80 F. 712, 721; Rep. Gen. Nat'l Comm'n to Study the Antitrust laws, *supra*, at 252; Rich, 21 Geo. Wash. L. Rev. 521, 542 (1952); Eastman, 48 Mich. L. Rev. 183, 187 (1949); Note, 66 Yale L. J. 132, 132 (1956).

patented,[24] or the infringing parts-supplier had sold the machines as well and thus had arguably taken the sales of both machines and parts away from the patentee,[25] or the overlapping recovery allowed from the direct and contributory infringers was one of profits rather than damages.[26]

In the *Farrand* case, *supra*, the payment by the direct infringer was made under judicial decree, and there could thus be no question but that it represented full compensation for the infringing use. Where a private release of past infringement which does not purport to release others is involved, the adequacy of the compensation must always be a question of fact. Hence here, while it seems unlikely that Ford's payment under the agreement was any less than would have been paid under a license—that is, anything less than full satisfaction to AB for the infringing use committed directly by Ford's purchasers and contributorily by Aro—we think the case must nevertheless be remanded for findings on the question. We would also allow the lower courts to consider whether Aro's conduct has been such as to warrant an award of punitive or increased damages, although we think that very unlikely.

V

The result is that the judgment of the Court of Appeals is reversed insofar as it holds Aro liable for contributory infringement with respect to replacement-fabric sales made after July 21, 1955. The judgment is affirmed insofar as it holds Aro liable with respect to sales made before that date, but subject to the reservation based on the knowledge requirement with respect to sales made before January 2, 1954. The case is remanded to the District Court for further proceedings consistent with this opinion.

It is so ordered.

MR. JUSTICE WHITE, concurring.

I agree with my Brother BLACK that the plain language and legislative history of § 271(c) require the alleged contributory infringer to have knowledge of the infringing nature of the combination to which he is contributing a part. Otherwise I share MR. JUSTICE BRENNAN's view of this case.

Section 271(a) imposes no comparable requirement of knowledge in the case of the direct infringer who makes or uses the patented combination and § 287 does not say that one who makes or uses without knowledge is not infringing. It specifies that the "infringer" is not liable for damages until notice of the "infringement." In any event, § 287, as my Brother BRENNAN says, is not applicable here under *Wine Ry. Appliance Co.* v. *Enterprise Ry. Equipment Co.*, 297 U.S. 387, because the patentee has not manufactured the article and has had no opportunity to mark it in accordance with § 287.

Here the patentee gave notice to Aro and I think it is liable on Ford tops sold by it after that date, but not before, unless it had knowledge from other sources. After the notice date, the knowledge requirement of § 271(c) was satisfied and the use of Ford cars by the

[24] *Reed Roller Bit Co.* v. *Hughes Tool Co.*, 12 F.2d 207, 209, 210 (C.A. 5th Cir. 1926).
[25] *National Brake & Elec. Co.* v. *Christensen*, 38 F.2d 721 (C.A. 7th Cir. 1930); *Graham* v. *Mason*, 10 Fed. Cas. 930 (No. 5,672) (C.C.D. Mass. 1872).
[26] *E.g.*, *Conmar Products Corp.* v. *Tibony*, 63 F. Supp. 372, 374 (D.C.E.D.N.Y. 1945).

owners thereof was direct infringement providing the necessary predicate for contributory infringement under § 271(c).

MR. JUSTICE BLACK, with whom THE CHIEF JUSTICE, MR. JUSTICE DOUGLAS and MR. JUSTICE CLARK join, dissenting.

For a number of reasons I would reverse the judgment, and reinstate the order of dismissal of the District Court.

I

With regret I find it necessary to disagree with the inferences the Court draws from the past history of this case. Respondent Convertible held exclusive rights for Massachusetts in a combination patent on a convertible automobile top, the combination consisting of wood or metal supports, a fabric cover, and a mechanism to seal the fabric against the side of the automobile in order to keep out weather. None of the elements of the combination was patented or patentable. During the years in question General Motors Corporation and the Ford Motor Company manufactured automobiles with tops like those described in the patent. General Motors had a license from Convertible authorizing it to do so. Ford did not. Petitioner Aro manufactured and sold fabric replacement covers which were purchased by owners of both General Motors and Ford cars when the covers originally installed on the cars wore out. Convertible settled a claim it made against Ford for direct infringement, and did not sue Ford dealers or Ford car owners. It maintained also that the individual General Motors and Ford car owners who replaced their worn-out covers with Aro replacement covers by doing so directly infringed the combination patent. Convertible did not sue the individual car owners who patched or replaced the worn-out fabric, but it did bring this suit against Aro, charging that Aro by selling the replacement fabric thereby helped the individual car owners infringe and so became liable as a contributory infringer under 35 U.S.C. § 271(c).[1] The District Court held that the patent was valid and that Aro had been guilty of contributory infringement; it enjoined Aro from further alleged infringements and ordered an accounting to determine the damages due Convertible from Aro's sales of replacement fabrics to owners both of General Motors and of Ford cars. 119 U.S.P.Q. 122. The Court of Appeals affirmed the judgment, 270 F.2d 200, and we granted certiorari to review it. We reversed the judgment. *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336. We denied a petition for rehearing or alternative motion for amendment or clarification in which Convertible argued that our reversal applied only to replacements of General Motors, and not Ford, cars. 365 U.S. 890.

When the District Court received the mandate of this Court, it entered judgment dismissing the complaint on the ground that this Court's decision and mandate had reversed the prior judgment in its entirety. But Convertible appealed the dismissal to the Court of Appeals. That court said:

"The puzzling question is whether the Supreme Court in reversing this court

[1] "Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use, shall be liable as a contributory infringer." 66 Stat. 811, 35 U.S.C. § 271(c).

intended to reverse *in toto* or only to reverse insofar as replacement tops for General Motors cars were concerned." 312 F.2d 52, 56 (C.A. 1st Cir.).

Thereupon the Court of Appeals, reversing the District Court's action taken in obedience to this Court's mandate, held that this Court when it said "*Reversed*" at the end of its opinion had meant to reverse, not the entire judgment, but only that part of the judgment enjoining Aro from selling replacement fabrics for General Motors cars, which were made under licenses, and ordering an accounting for such sales in the past; the Court of Appeals said that this Court had in effect affirmed the earlier judgment insofar as that judgment concerned replacements for Ford fabrics. This Court today, in affirming the Court of Appeals' judgment, says:

"Our decision dealt, however, only with the General Motors and not with the Ford cars." *Ante*, p. 2.

The Court's statement of what we did is, I think, completely refuted by the record in this case.

The opinion of the Court was delivered by Mr. Justice Whittaker. That opinion was joined by THE CHIEF JUSTICE, MR. JUSTICE BLACK, MR. JUSTICE DOUGLAS, and MR. JUSTICE CLARK. The grounds for the Court's opinion, as I shall point out, applied alike to the repair of Ford cars which had originally been sold by the manufacturer without a license from Convertible, and to General Motors cars that had been sold with such a license. MR. JUSTICE BRENNAN, however, dissented from the grounds of the Court's opinion although he concurred in the judgment of reversal "except, however, as to the relief granted respondent in respect of the replacements made on Ford cars before July 21, 1955." 365 U.S., at 368. MR. JUSTICE HARLAN, joined by Justices Frankfurter and STEWART, dissented from the Court's opinion and from its judgment in its entirety. 365 U.S., at 369. His grounds for dissenting from the Court's opinion were substantially the same as those of MR. JUSTICE BRENNAN.[2] The difference between MR. JUSTICE HARLAN's dissent and MR. JUSTICE BRENNAN's opinion concurring in the Court's judgment "except . . . as to the relief granted . . . in respect of the replacements made on Ford cars" was a very minor one: both agreed, contrary to what the Court decided, that a person could be held liable for contributory infringement of a combination patent, even though he furnished a replacement for only a part of the combination, if the part replaced was important enough for the substitution to amount to "reconstruction" rather than merely "repair" of the device; MR. JUSTICE BRENNAN, however, believed that the question whether there had been a "reconstruction" was for this Court to decide as a matter of law and that there had not been a "reconstruction" here, while MR. JUSTICE HARLAN said that the trial court's findings that there had been a "reconstruction" were decisive.

The difference in the approach of Justices HARLAN and BRENNAN from that of Mr. Justice Whittaker, writing for the Court, is responsible, as I read the record, for the fact that while the Court reversed the former judgment in its entirety, MR. JUSTICE BRENNAN was willing to reverse it only as to replacement fabrics sold for General Motors cars. MR. JUSTICE BRENNAN believed that since the licensed General Motors cars as built did not directly infringe the patent and Aro contributed to what did not amount to a "reconstruction" of them, Aro as to them was not a contributory infringer; the Ford cars,

[2] MR. JUSTICE BRENNAN's opinion said:
"My Brother HARLAN's dissent cogently states the reasons why I also think that is too narrow a standard of what constitutes impermissible 'reconstruction.'" 365 U.S., at 362.

however, were built by the manufacturer without a license from Convertible, so Ford and the purchasers who used its cars were allegedly direct infringers, and since Aro helped Ford owners continue to use infringing tops it was a contributory infringer even though the replacement covers did not "reconstruct" the tops. The Court, however, in Mr. Justice Whittaker's opinion, rejected completely the notion that there could ever be within the meaning of § 271(c) any contributory infringement—whether based on a finding of "reconstruction" or on some other theory—in a case like this one, where the patent was merely a combination patent and the party which was sued for infringement had sold replacements for only a part of the combination. The Court's opinion relied on the fact that the fabric Aro used was not itself patented, that Convertible had made no claim to invention based on the fabric or its shape, pattern or design, and that a combination patent gave its owner a monopoly on nothing but the combination as a whole, since, Mr. Justice Whittaker said, "if anything is settled in the patent law, it is that the combination patent covers only the totality of the elemnets in the claim and that no element, separately viewed, is within the grant." 365 U.S., at 344. The effect of the Court's holding was that since the top fabric was not itself patented, Convertible could not extend its monopoly privileges regarding the combination as a whole to the unpatented fabric cover part of the top. Obviously, this holding of the Court and the reasons Mr. Justice Whittaker gave for it did not depend on whether the fabric was used on a Ford or on a General Motors car.

Mr. Justice Whittaker and the four members of the Court who joined him were, of course, familiar with the alleged distinction which Convertible tried to draw between its rights with reference to the General Motors licensed cars on the one hand and the Ford unlicensed cars on the other. The district judge in his opinion drew the distinction,[3] Convertible's brief in this Court drew the distinction,[4] and MR. JUSTICE BRENNAN drew the distinction in his opinion by concurring in the Court's judgment with respect to replacement fabrics for General Motors cars but dissenting with respect to those for Ford cars. It is apparent, therefore, that to the majority who joined in Mr. Justice Whittaker's opinion the asserted distinction was simply irrelevant, since Convertible as the holder of a replacement patent could under no circumstances prevent others from making and supplying unpatented and unpatentable replacement parts for any element of the combination. The Court's opinion by Mr. Justice Whittaker made it crystal-clear that the Court was holding that with respect to combination patents like the one here,

"No element, not itself separately patented, that constitutes one of the elements of a combination patent is entitled to patent monopoly, however, essential it may be to the patented combination and no matter how costly or difficult replacement may be." 365 U.S., at 345.

Finally, the Court did not conclude its opinion with the words "reversed in part and affirmed in part," as it would have done if like MR. JUSTICE BRENNAN it had accepted Convertible's asserted distinction. The order in the opinion by Mr. Justice Whittaker was simply, "*Reversed*," which meant "*Reversed*," not "reversed in part and affirmed in part."

[3] 119 U.S.P.Q., at 124.
[4] One of Convertible's argument headings read, "The Proposed Rules of Law Propounded By Aro and the Government Cannot, Under the Facts of This Case, Extend to Ford Cars." Brief for Respondent, *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, No. 21, 1960 Term, p. 73. The argument extended over the next several pages. *Id.*, pp. 73–76.

If all this could have left any doubt that the Court reversed the judgment of the Court of Appeals in its entirety rather than in part only, that doubt would certainly have been removed by the action taken on Convertible's petition for rehearing or alternative motion for amendment or clarification of the Court's judgment. This motion specifically pointed out the alleged distinction between Convertible's rights with respect to Aro's replacement fabrics for the two kinds of cars. The Court denied the motion and the petition for rehearing, 365 U.S. 890, and in so doing rejected precisely the same argument [5] which today's Court is now accepting. Since the motion and petition for rehearing were rejected, five justices must have found Convertible's arguments without merit. At that time, April 17, 1961, Mr. Justice Whittaker was still a member of the Court. It can be assumed that there were four votes for rehearing—those of MR. JUSTICE BRENNAN, who had not joined the Court's judgment with reference to the fabric replacement for Ford cars, and of MR. JUSTICE HARLAN, Mr. Justice Frankfurter, and MR. JUSTICE STEWART, who had dissented from the Court's opinion in its entirety. Four votes could not grant the motion or the petition for rehearing, but five votes—those of MR. JUSTICE HARLAN, MR. JUSTICE BRENNAN, MR. JUSTICE STEWART, MR. JUSTICE WHITE, and MR. JUSTICE GOLDBERG—now reverse the earlier rulings of this Court. This is, of course, permissible, but there is no reason why today's action in departing from the prior holding should also be pointed to as, in the words the Court of Appeals used to describe our previous opinion, a "puzzling question." Compare *Legal Tender Cases*, 12 Wall. 457, overruling *Hepburn* v. *Griswold*, 8 Wall. 603. As to the merits of today's departure from our prior holding, I think that the old majority was right and the new majority is wrong, for all of the reasons set out in Mr. Justice Whittaker's opinion for the Court and in my concurring opinion, 365 U.S., at 346.

II

The Court now holds that although the fabric used on these car tops was unpatented and clearly unpatentable, the combination-patentee nevertheless is free to expand its monopoly beyond the patent's boundaries through preventing the sales of that single element, the unpatented fabric. The new majority relies largely on 35 U.S.C. § 271(c), as did MR. JUSTICE HARLAN, Mr. Justice Frankfurter, MR. JUSTICE STEWART and MR. JUSTICE BRENNAN the first time this case was here. As I said, I am satisfied with the answers given to the new majority's interpretaiton of § 271(c) by what was said in Mr. Justice Whittaker's opinion for the Court and in my concurrence. But since the new majority is now giving Convertible a legal monopoly over the unpatented fabric cover, I find it necessary to reach the constiutional question urged by Aro.

Article I, § 8 of the Constitution gives Congress the power to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The granting of patent monopolies under this constitutional authority represents a very minor exception to the Nation's traditional policy of a competitive business

[5] Respondent's Petition for a Limited Rehearing: or, in the Alternative, Motion for Amendment or Clarification of the Court's Opinion, *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, No. 21, 1960 Term, pp. 1–13. That the replacements for Ford cars should be treated differently from those for General Motors cars was the only argument made in the petition and motion.

economy, such as is safeguarded by the antitrust laws. When articles are not patentable and therefore are in the public domain, as these fabric covers were, to grant them a legally protected monopoly offends the constitutional plan of a competitive economy free from patent monopolies except where there are patentable "Discoveries." And the grant of a patent monopoly to the fabrics can no more be justified constitutionally by calling their sale by competitors "contributory infringement" than by giving it any other label. Cf. *Compco Corp.* v. *Day-Brite Lighting, Inc.*, 376 U.S. 234; *Sears, Roebuck & Co.* v. *Stiffel Co.*, 376 U.S. 225.

III

The Court holds, quite properly I think, that a patentee can get only one recovery for one infringement, no matter how many different persons take part in the infringement. In this case Ford, allegedly a direct infringer of the Convertible patent, made a settlement with Convertible for all past infringements in making its cars and obtained a license to use the patent in the future. The Court holds that while there can be only one recovery for the alleged infringement which Ford turned loose on the trade, Convertible should nevertheless have an opportunity to try to prove, if it can, that it settled with Ford for less than the full amount of its damages. This, I think, brings about an unjust result which the patent law does not compel. Here Ford, the principal infringer, obtained a complete release from all damages for its infringement, and I would hold that innocent purchasers of Ford cars containing the infringing devices are entitled to be released just as Ford has been. There is considerable merit and fairness in the idea that completely releasing from liability one of several persons, all of whom are obligated to another, releases them all. This is particularly so in the area of patent law, where the doctrine of contributory infringement is rested on the belief that a direct infringer may sometimes be collection-proof, and that in such a situation the patentee should be given a chance to collect its damages from a more solvent company which knowingly aided the infringement. The original infringement, if there was infringement here,[6] was Ford's. Fairness would require that if recovery can be had from the chief wrongdoer, here Ford, the first obligation of the injured person is to try to hold Ford completely responsible. This should be particularly true in instances like this, where one company infringes a patent and sells goods which enter into the channels of trade throughout the Nation, thereby subjecting an untold number of innocent dealers, future purchasers, and even repairmen to damages. The statutory right to sue for infringement—involving treble damages, punitive damages, attorney's fees, etc.—should not be construed in a way that permits unnecessary harassment of people who have bought their goods in the open market place. I can think of nothing much more unfair than to visit the infringement sins of a large manufacturer upon the thousands of ultimate purchasers who buy or use its goods.

IV

For the foregoing reasons I believe that Aro should not be held liable for any damages at all and that the District Court should be ordered to dismiss the case. A majority of the Court, however,

[6] For discussion of the doubtful validity of this combination patent, see my concurring opinion in the former decision of this case, 365 U.S., at 350–352.

remands the case for determination of whether and to what extent Aro is liable for damages. Whether Aro is liable for any damages at all depends on whether it and the persons to whose infringement Aro is alleged to have contributed can be held liable for damages even though they may have had no knowledge that a patent covered the top or that their conduct infringed or helped to infringe that patent. I would hold that unless there was such knowledge, there can be no infringement or contributory infringement.

Section 271(c), the section dealing with contributory infringers (which Aro is alleged to be), provides that whoever sells a component of a patented combination "constituting a material part of the invention, *knowing* the same to be especially made or especially adapted for use in an infringement of such patent . . . shall be liable as a contributory infringer."[7] Usually the word "knowing" means "knowing," and I am unwilling to say that in § 271(c) it means "unknowing." This statute to me means rather plainly that in order to violate it, one who sells an article must *know* that the article is to be used "in an infringement of such patent" and that it is "especially made or especially adapted" for that purpose. Furthermore, the legislative history of the statute confirms this interpretation.

As originally drafted § 271(c) provided:

"Whoever *knowingly* sells a component of a patented . . . combination . . . . especially made or especially adapted for use in an infringement of such patent . . . shall be liable as a contributory infringer."[8]

Several times the House Committee considering the bill was told that because of the position of the word "knowingly" in the section it was not clear exactly how much a person had to be shown to have known before he could be held liable as a contributory infringer.[9] Some witnesses expressed fear that the section might be construed to mean that a person could be held liable for selling an article even though he did not know that it was adapted for use in a patented device and that it would be used in an infringement.[10] On the other hand, advocates of a broad liability for contributory infringement said that there should be required only knowledge that an article was to be used in a particular device—that a person would be liable as a contributory infringer even if he did not know of the existence of any patent and of any likely infringement.[11] After hearing both sides the House Committee changed the language of the bill to read, as § 271(c) now provides:

"Whoever sells a component of a patented . . . combination . . . , *knowing* the same to be especially made or especially adapted for use in an infringement of such patent . . . shall be liable as a contributory infringer."[12]

Both the House and Senate reports explained that

"This latter paragraph is much more restricted than many proponents of contributory infringement believe should be the case. The sale of a component of a patented machine, etc., must constitute a material part of the invention and must be known to be especially made or especially adapted for use in the infringement before there can be contributory infringement . . . ."[13]

The House Committee thus attempted to make clear that innocent persons, who acted without any knowledge that the goods they sold were adapted for use in the infringement of a patent which they knew about, could not be held liable as contributory infringers. It is hard to believe that Congress intended to hold persons liable for acts which they had no reason to suspect were unlawful, and as I have pointed out the legislative history shows Congress did not. Therefore I am wholly unwilling to construe the section as meaning that one who sells an unpatented and unpatentable piece of fabric to be used to repair an automobile top can be held liable for treble damages as a contributory infringer even though he had absolutely no knowledge that there was a patent on the top and that the top had been sold without a license, and could not, because of this lack of knowledge, have sold the top "knowing the same to be especially made or especially adapted for use in the infringement of such patent."

Furthermore, to justify its result the Court today in defining "contributory infringement" expands the coverage of § 271(a), which deals with "direct infringement," so as to make every consumer or repairman who innocently buys or repairs an unmarked article which infringes a patent liable for damages as a direct infringer. In order for there to be contributory infringement, the Court admits, there must be a direct infringement which the alleged contributory infringer has aided. Here Ford was a direct infringer, but Aro sold nothing to Ford. And so, in order to find a direct infringer who used Aro fabrics, and thereby justify its result, the Court says that any individual who buys a product such as an automobile from an infringing manufacturer and devotes it to his personal use is without more liable as a direct infringer of the patent under § 271(a)—even though he did not know that the manufacturer of the product had infringed some patent, indeed, even though he perhaps did not know what a patent is.

The Court's interpretation of § 271(a) concerning the lack of necessity for knowledge before a person can be mulcted in damages for direct infringement is strangely inconsistent with another provision of the patent code, 35 U.S.C. § 287,[14] which states in unequivocal, easily understood language that "no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter." Yet the Court here is holding, with no support in any

[7] (Emphasis supplied.)
[8] § 231(c), H.R. 3760, 82d Cong., 1st Sess. (Emphasis supplied.)
[9] See, *e.g.*, Hearings before Subcommittee No. 3, Committee on the Judiciary, on H.R. 3760, 82d Cong., 1st Sess., Ser. No. 9, p. 215.
[10] The chief engineer and chairman of the board of a company which manufactures instruments to customers' specifications testified: "We make a large number of devices and people come to us in the industry from distant points. . . . When you realize that there are some 600,000 patents and millions of claims involved under the present status of the bill, . . . and we become liable as contributory infringers, you can see it would be impossible for us to know in all cases whether we infringed or not. . . .
"'Knowingly sells' will thus become highly controversial, and it will be construed by various patent lawyers to meet their particular situation." *Id.*, at 141–142.
When a witness from the Antitrust Division of the Justice Department raised the same objection, the following exchange took place:
"[Congressman] BRYSON. It seems to me that if he sells it at all he knows he sells it.
"Mr. FUGATE [of the Justice Department]. He knows he sells it; but, as in this case that I mentioned, the cutter of the metal plate according to a special pattern didn't know that it was to be used in an infringing manner, that it was to be used in a patented combination.
"[Congressman] ROGERS. Inasmuch as you recognize that the law still gives a cause of action against the contributor who helps infringe, would there be any objection on the part of the Justice Department to clarify that law in definite words so that there would not be the confusion that the gentlemen have testified to?" *Id.*, at 164–165.
[11] Mr. Giles S. Rich of the National Council of Patent Law Associations stated:
"'[K]nowingly sells a component of a patented machine' means to us that you know that the component is going into that machine. You don't have to know that it is patented. You don't have to know the number of the patent, and you don't have to know that the machine that it is going into constitutes an infringement. You just know its ultimate destination." *Id.*, at 175.
[12] (Empasis supplied.)
[13] H.R. Rep. No. 1923, 82d Cong., 2d Sess., p. 9; S. Rep. No. 1979, 82d Cong., 2d Sess., p. 8.
[14] "Patentees, and persons making or selling any patented article for or under them, may give notice to the public that the same is patented, either by fixing thereon the word 'patent' or the abbreviation 'pat.', together with the number of the patent, or when, from the character of the article, this can not be done, by fixing to it, or to the package wherein one or more of them is contained, a label containing a like notice. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice." 66 Stat. 813, 35 U.S.C. § 287.

judicial precedent [15] and certainly none in common sense or justice, that innocent consumers of patented products and those who equally innocently do no more than repair worn-out parts can be subjected to punitive or treble damages even though they neither knew nor suspected that any patent forbade them to buy, use or repair those products. It would be one thing to require those who sell new inventions for profit to check the records of the patent office. It is quite another to hold, as the Court now does, that every housewife, plumber, and auto repairman must do so.

The tremendous burden that the Court's construction of the patent laws will put on innocent bona fide dealers in or purchasers of unpatented products (if Congress does not change the Court's ruling) cannot be accurately predicted. The number of patented appliances of various kinds in automobiles is certainly not small. Just a few of those that have appeared in litigation in the courts are windshield sun visors, wheel attachments, drive-shaft bushing assemblies, automobile heaters and windshield defrosters, steering stabilizers, shock absorbers, pistons, steering gear checks, steering wheels, radiator shields, clutch release thrust bearings, mountings for rear-view mirrors, vacuum-operated gear-shift mechanisms, spark plug and coil connectors, wire springs for upholstered seat structures, steering gear idler arms, windshield wiper blade assemblies, and others." [16] After the Court's opinion in this case it will certainly behoove purchasers of new or second-hand cars and repair shops which mend those cars to hire experts, if they can find them, in order to try to ascertain whether or not any car which they have bought (maybe on credit from a second-hand dealer) or are asked to repair is a booby trap waiting to subject them to suits for infringement by reason of some one of the car's patented appliances, the name or existence of which the owner of the car may not even suspect. And automobiles are of course not the only equipment in which ordinary purchasers use patented devices. Purchasers of homes equipped with modern appliances, as well as millions of buyers of consumer goods in general, may soon be made unhappily aware of the broad scope of patent monopolies as interpreted by this Court. Entrepreneurs in the new corporate business of suing for infringements (Aro claimed that Convertible was such a corporation, set up with no other function) may soon become as common as patents themselves.

Neither the language nor the purpose of the patent laws requires that they be construed to bring about such threats on so wide a scale to the free functioning of our business economy and to purchasers of patented appliances who are wholly innocent of any intention to infringe patents. I do not believe that in construing the patent laws we should attribute to Congress the purpose of bringing about such unreasonable, absurd and wholly unjust results. Cf. *United States* v. *American Trucking Assns., Inc.*, 310 U.S. 534, 542–544; *Church of the Holy Trinity* v. *United States*, 143 U.S. 457, 459. I cannot believe that Congress intended to subject to damages thousands of ultimate consumers who do not know and have no reason to suspect that lawsuits are lurking in every patented contrivance concealed somewhere within the hidden recesses of their automobiles.

I would reverse the judgment of the Court of Appeals and send the case back to the District Court with instructions to dismiss it.

[15] The cases which the Court cites as contrary to this view neither considered nor decided the issue whether innocent persons entirely unaware that their conduct would either infringe or contribute to the infringement of a patent can be held liable as direct or contributory infringers. *Wine Ry. Appliance Co.* v. *Enterprise Ry. Equipment Co.*, 297 U.S. 387, held that a primary infringer, like Ford here, which ordered manufactured for itself and which sold for profit a patented door-latch could not escape liability for infringement simply because a statutory notice of the patent was not marked on the infringing latches. The Court pointed out that the patentee had never had an opportunity to attach a notice because the infringer was producing the latches without the patentee's knowledge. The situation in the case before us, involving an asserted liability of consumers of unmarked goods, rather than a seller of those goods for profit, does not even remotely resemble that in *Wine*. In none of the other cases relied on was § 287 interpreted or even considered by the Court.

[16] See 35 U.S.C.A. § 271, n. 139.

U.S. Court of Customs and Patent Appeals

IN RE PAUL ESSELMANN, HERMANN FISCHER, MICHAEL WIENAND, AND ADOLPH RISTAU

No. 7206. Decided June 25, 1964

[51 CCPA —; 333 F.2d 962; 142 USPQ 95]

1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.

"• • • the rejection, which was affirmed by the Board, did not accord proper consideration to what seems to us to be an important difference between high and low pressure polyethylene with respect to drawing. As pointed out in the affidavit of Dr. Neuschaffer, an expert familiar with the art, when *high* pressure polyethylene is drawn, the tensile and breaking strengthens *decrease* as the drawing temperature increases. However, as Dr. Neuschaffer's test data shows, in the case of *low* pressure polyethylene, the tensile and breaking strengthens *increase* with the drawing temperature. This apparent anomaly does not appear to be the type of difference which would have been obvious under the conditions specified in section 103. Instead, it appears to have been observed only upon comparative testing of both types of polyethylene after subjecting the materials to various draw ratios at various temperatures."

2. SAME—PARTICULAR SUBJECT MATTER—"PRODUCTION OF SHAPED OBJECTS FROM HIGH-MOLECULAR POLYOLEFINS."

The refusal of certain claims in an application entitled "Production of Shaped Objects From High-Molecular Polyolefins," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 547,023.

REVERSED.

Burgess, Dinklage & Sprung (*Arnold Sprung* of counsel) for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals sustaining the Examiner's rejection of appealed claims 13–17 as unpatentable over certain prior art. The statutory basis of the rejection is 35 U.S.C. 103.

Appellants' application,[1] as indicated by its title, is concerned with the "Production of Shaped Objects From High-Molecular [Weight] Polyolefins." Although some of the claims are drawn broadly to "polyolefins," it will be more convenient for purposes of this opinion to speak solely in terms of polyethylene, especially since appellants, for purposes of this case, do not contend that there is any patentable distinction between the various types of polyolefins disclosed.

As background, which will be helpful in understanding the significance of appellants' claimed process, it appears that there are two basic ways of producing polyethylene: (1) by high pressure polymerization, which results in relatively low molecular weight poly-

[1] Serial No. 547,023, filed November 15, 1955.

ethylene; and (2) by low pressure polymerization, which produces relatively high molecular weight polyethylene. The high pressure polymerization process appears to have been known for some time prior to the development of the low pressure process. It was also known, prior to the time of appellants' invention, that the tensile strength and breaking strength of *high* pressure polyethylene could be increased, and the percent elongation at breaking point decreased, by drawing the material. Drawing simply involves stretching the material to a certain non-reverting elongation.

Appellants' claims are drawn to a novel process for drawing *low* pressure polyethylene. The low pressure polyethylene is subjected to a draw ratio (drawn length divided by initial length) of from 6 to 20 at a temperature range of from just below the flow temperature of the material to 90 centigrade degrees below the flow temperature but not below 90° C. The drawing is effected after the material has been extruded, at its flow temperature or above, in the form of filaments or films. Appellants assert that their process results in a polyethylene having an unexpectedly high tensile strength and breaking strength and an unexpectedly low percent elongation at break.

Claim 13 is representative of the claims on appeal and reads as follows:

> 13. In the production of objects of low-pressure polymerization produced polyolefins, having a molecular weight of at least 40,000, by extrusion at least at their flow temperature, the improvement which comprises drawing the extruded polyolefin to at least six times its original length at a temperature within the range of from below said flow temperature to 90° below said flow temperature but not below 90° C.

The remaining appealed claims, 14–17, are dependent on claim 13, and merely define variations on the basic process. Appellants do not contend that the claims are in any way patentably distinct, and we shall therefore treat them as one for purposes of this appeal.

The appealed claims were held by the Examiner to be unpatentable over the following prior art patents:

Perrin et al., 2,210,774, August 6, 1940.
Martin, 2,367,173, January 9, 1945.
Tulloss, 2,763,029, September 18, 1956.

Perrin relates to the production of threads and fibers from *high* pressure polyethylene. The specification indicates that subjecting such fibers to cold drawing results in a product which is stronger and more pliable than the unworked material, and specifically states that:

> Fibers or threads of high strength can be obtained by selecting as the initial material a polymer of relatively high molecular weight and/or employing conditions which ensure a definite orientation of the molecules along the fiber axis. Such conditions are to draw out the relatively unoriented thread in the cold, when the length increases and the diameter decreases. During the drawing process, the molecules become more and more oriented in the direction of pull, and finally maximum orientation is obtained when the thread has been extended above five times its original length. • • • By cold drawing as the term is used herein we mean permanently elongating filaments, etc., at approximately room temperature [20° C.] or at temperatures below their softening point.

Thus, while Perrin teaches drawing high pressure polyethylene at a temperature which may range between room temperature and the softening point, with a draw ratio of about 5, it is to be noted that there is no suggestion as to what the disclosed treatment would do to *low* pressure polyethylene.

Martin also deals with a process for extruding *high* pressure polyethylene and discloses drawing the extruded material to the maximum extent possible in a water bath maintained at 75–80° C. The patent contains no disclosure as to what "the maximum extent possible" is, in terms either of percent elongation or draw ratio. As with Perrin, we likewise fail to find in Martin any suggestion that *low* pressure polyethylene could or should be substituted for the *high* pressure material disclosed.

Tulloss discloses a method for producing an optically clear polyethylene film. The specification states that:

> It has been found that polyethylene films can be made optically clear by orientation, as aforementioned, by means of stress working the film at a temperature below the melting point of polyethylene. The simplest means of stress working polyethylene films is by stretching the film.

The material used by Tulloss is *high* pressure polyethylene, and the temperature, although described generally as "below the melting point of polyethylene," is said to be preferably between about 49° and 88° C. Again, there is no suggestion that *low* pressure polyethylene would be a suitable material for use in such a process.

In setting forth the specific ground of rejection, the Examiner stated:

> Claims 13 to 17 are rejected as unpatentable over Perrin in view of Martin, Tulloss and applicants' admission that high-molecular weight, low pressure produced polyolefins were known prior to applicants' discovery. No invention is seen in carrying out the process of Perrin et al. substituting the admittedly old high-molecular weight polyolefin for the low-molecular weight polyolefin of Perrin et al. It is held that one skilled in the art working with high-molecular weight polyolefins would look for guidance to the prior art discussing low-molecular weight polyolefins. It is held that the disclosure of Perrin et al. suggests applicants' claimed process by calling for sufficient stretch to produce maximum orientation and temperatures below the softening point of the polyolefin. Even in the absence of the teaching of Perrin et al. to heat while stretching it is held that Tulloss clearly teaches that heating to facilitate stretching of polyolefin is desirable. It is held Martin's teaching that a polyolefin filament should be drawn to the maximum extent possible in a heated medium teaches applicants' high degree of stretch. It is held that determination of applicants' broadly recited operating conditions involves no more than routine testing following the procedures suggested by the references applied above. • • •

This rejection is essentially one for obviousness under section 103, although it employs the term "no invention" and is based on a mode of analysis no longer authorized by the statute. It will be observed that the Examiner did not clearly point out the *differences* between the prior art and appellants' claimed process. [1] Thus the rejection, which was affirmed by the Board, did not accord proper consideration to what seems to us to be an important difference between high and low pressure polyethylene with respect to drawing. As pointed out in the affidavit of Dr. Neuschaffer, an expert familiar with the art, when *high* pressure polyethylene is drawn, the tensile and breaking strengths *decrease* as the drawing temperature increases. However, as Dr. Neuschaffer's test data shows, in the case of *low* pressure polyethylene, the tensile and breaking strengths *increase* with the drawing temperature. This apparent anomaly does not appear to be the type of difference which would have been obvious under the conditions specified in section 103. Instead, it appears to have been observed only upon comparative testing of both types of polyethylene after subjecting the materials to various draw ratios at various temperatures.

Thus, while it is true that the prior art teaches drawing of *high* pressure polyethylene at temperatures near those employed by appellants, nowhere in the art is there a suggestion that higher drawing temperatures would produce better results with respect to strength, even with *high* pressure polyethylene. Indeed, the test results set forth in the Neuschaffer affidavit indicate exactly the opposite. And we find nothing in the art which have made it obvious to one of ordinary skill that the temperature response in the case of *low* pressure polyethylene would be the unexpectedly superior strength characteristics first disclosed to this art by appellants.

[2] For the foregoing reason, we reverse the decision of the Board.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

U.S. Court of Customs and Patent Appeals

LLEWELLYN HEARD (DECEASED), STANDARD OIL COMPANY, A CORPORATION OF INDIANA, ASSIGNEE SUBSTITUTED v. WILLIAM P. BURTON, HERMAN S. KAUFMAN, PHILIP A. LEFRANCOIS, AND EARL W. RIBLETT.

No. 7212. Decided June 25, 1964

[51 CCPA —; 333 F.2d 239; 142 USPQ 97]

1. INTERFERENCE—CONCEPTION—FAILURE TO RECOGNIZE INVENTION.

On the issue of conception, *Held* that "We agree with appellant that it is irrelevant that Heard never referred to or appreciated the support material to be *eta*-alumina or to contain *eta*-alumina *by that name*; but that • • • we consider it fatal to appellant's case that not until after appellees' filing date did Heard recognize that his 'ammonia-aged' catalyst, as appellees put it, *'contained any different form of alumina at all!'*"

2. SAME—SAME—SAME.

"We point out • • • that the count calls for a *particular* form of alumina and we think that appellant's failure to recognize that he had produced a new form, regardless of what he called it, is indicative that he never conceived the invention prior to appellees' filing date."

3. SAME—SAME—SAME.

"It is not enough that, viewed after the fact, appellant's catalyst compositions were 'reproducible.' Appellant never appreciated what he had, viz., a new form of alumina, a conclusion bolstered by the fact that appellant relegated the spent catalysts to storage cages where they would no doubt have remained but for Standard's renewed interest after appellees' filing date."

4. SAME—REDUCTION TO PRACTICE—NUNC PRO TUNC REDUCTION TO PRACTICE DEFECTIVE.

"We agree with appellees that this case is controlled by the precedents holding *nunc pro tunc* reduction to practice to be defective. As appellees say in their brief, 'The *nunc pro tunc* reduction to practice doctrine is such a well established part of our patent law as to require no citation of authority. • • • This doctrine is controlling here. In the present case it is the *recognition* and *appreciation* of the invention which was lacking to Dr. Heard prior to April 23, 1952 [appellees' filing date], and which Heard attempts now to provide by his later tests and acts after that date.'"

APPEAL from the Patent Office. Interference No. 89,283.

AFFIRMED.

Edward B. Beale (*Arthur G. Gilkes*, *Douglas G. Brace*, of counsel) for appellant.

John C. Quinlan (*Marylin Klosty*, *James W. Clement*, *Ernest Cheslow*, *Max Dressler*, of counsel) for appellees.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Interference awarding priority of invention to Burton et al., the senior party. The junior party, Standard Oil Company (Indiana) substituted as assignee for Llewellyn Heard, deceased, appeals. The junior party will be called "Standard."

Burton et al. are involved in this interference on application Serial No. 283,997, filed April 23, 1952. Standard is involved on application Serial No. 504,793, filed April 29, 1955, which is a continuation-in-part of Serial No. 416,415, filed March 15, 1954.

Burton et al. took no testimony and relied for priority solely on their 1952 filing date. Standard took testimony and submitted notebook records to prove conception and reduction to practice prior to appellees' filing date. The Board held Heard's evidence failed to establish either conception or reduction to practice and therefore awarded priority to Burton et al.

The sole count reads:

A process for reforming naphthas which comprises subjecting a naphtha under reforming conditions to contact with a *catalyst comprising platinum on eta alumina*. [Emphasis ours.]

The essence of the invention is using *eta*-alumina, a specific type of hydrated aluminum oxide, as support material for platinum in the reforming process. Appellees' brief describes reforming as "the conversion of low octane gasoline, or naphtha, to high octane gasoline."

By way of background, we quote from appellant's brief (all emphasis ours):

The first commercially practiced reforming process using a platinum-on-alumina catalyst was the Platforming process • • •. The catalyst • • • [used therein] and the attractiveness of such a process stimulated the inventive efforts of other scientists in the field, particularly in an effort to develop a regenerative-type platinum-alumina catalyst. The • • • [prior art] describes various procedures for preparing the catalyst including several methods for preparing the alumina support and methods for incorporating the platinum and halide, as a promoter, in the support. The support, by reason of the methods taught in the patent for its preparation, was recognized by those skilled in the art as a *gamma-type alumina*.

The gamma species of alumina is one of a family or series of closely related, nearly anhydrous forms of alumina which do not occur in nature but which are produced synthetically. [Footnote omitted]. These nearly anhydrous forms of alumina [which include both gamma and eta types] containing small amounts of combined water (2% or less) represent relatively stable transformation phases in the thermal dehydration of alumina hydrates by drying and calcining. The ultimate dehydrated form is the crystalline anhydrous alumina known as alpha-alumina. The alumina hydrates or "precursors" of the aluminas are prepared by first forming an aqueous sol of hydrous alumina (aluminum hydroxide) from aluminum metal or a salt of aluminum. The sol is coagulated to precipitate from solution the hydroxide or hydrate in the form of a gel. Depending upon the conditions employed, alumina monohydrates or trihydrates may be formed in the gelatinous mass. The gel then may be dried and calcined at elevated temperature (800° to 1000° F.) to obtain a highly porous adsorbent alumina of high surface area having value as a support in heterogeneous catalysis.

• • • • • • • •

Eta-alumina was first so-named in an article published • • • in July of 1950 • • •. The article reviewed the thermal decomposition of four alumina hydrates, namely, alpha-alumina trihydrate (gibbsite), beta alumina trihydrate (bayerite), alpha-alumina monohydrate (boehmite) and beta-alumina monohydrate. *Eta-alumina appeared as a phase in the dehydration of the beta-trihydrate.*

The authors described use of X-ray diffraction analysis to distinguish seven phase transformations [footnote omitted] in the thermal decomposition of these hydrates and thereby identify a series of distinct X-ray diffraction patterns

[one of which is for eta-alumina] in the region which previously had been designated loosely as gamma-alumina.

Appellant Standard's case for priority is predicated on activities of the inventor, Heard, in 1949–50 wherein Heard allegedly made catalysts of platinum on eta-alumina, although he did not at the time know or identify the alumina as *eta*-type.[1] Such catalysts were used in pilot plant reforming processes and found to be effective. Standard asserts that notwithstanding the fact Heard did not know in 1949–50 that the alumina of his catalyst support was *eta*-alumina, this is not fatal to his case since the support material he did make was reproducible and *in fact* contained eta-alumina, though such fact was established after Burton et al.'s filing date.

Appellees' position is that appellant's evidence of activity in 1949–50 fails to prove conception and reduction to practice since appellant never knew he had *eta*-alumina as catalyst support and, indeed, did not appreciate that he had a *new form* of alumina, by whatever name called. Further, appellees argue that tests made after appellees' filing date to establish the presence of *eta*-alumina in samples made in 1949–50 are of no moment since conception and reduction to practice cannot be established *nunc pro tunc*.

Before considering the merits of appellant's arguments regarding conception and reduction to practice, we are faced with a threshold issue of whether appellant's notebook records of 1949–50 are admissible as evidence under the so-called "decedent's exception" to the hearsay rule. Heard died in 1957 before the declaration of this interference.

Appellant argues that "a long-established exception to the hearsay rule exists in favor of the decedent Heard's records made in the course of business"; that such exception is "not to be confused with the so-called 'shop book' rule." Appellees contend there is no "decedent's exception" recognized in evidentiary interference law; that appellant must comply with the usual requirements of corroboration notwithstanding the death of Heard; and that in any event appellant's notebook records do not qualify as entries made "in the course of business." We find it unnecessary to consider this issue since, assuming arguendo all of appellant's evidence is admissible and probative, he cannot prevail for reasons hereinafter set out.

We turn to consideration of the chronology of events relied on by Standard to establish Heard's conception and reduction to practice. Heard was working in 1949–50 on synthesizing platinum-alumina compositions with a view to finding improved catalysts for naphtha reforming. His work included making compositions by adding a solution of platinum compound to an alumina sol, drying the mixture and calcining the composite to form porous alumina mass on which platinum is finely distributed.

While preparing catalyst of alumina and platinum by a method described in the prior art, Heard in 1949 accidently made what he described as "ammonia aged" catalyst which was subsequently tested and found effective in reforming naphtha. Apparently such "ammonia aged" catalyst contained eta-alumina, although Heard concededly did not know it at the time. In fact, there is nothing of record to indicate that Heard considered such catalyst to be anything other than what the prior art taught—gamma-alumina and platinum, even though it was considered an "effective catalyst." After several

[1] It appears from the record that the only way eta-alumina is identifiable is by its X-ray diffraction pattern.

reforming runs on naphtha, the catalyst was stored in a locked cage along with spent catalysts.

In 1954, almost 2 years after appellees' filing date, research personnel at Standard had reason to suspect that the "ammonia aged" catalyst of 1949 contained eta-alumina. A sample was removed from storage, subjected to X-ray diffraction analysis, and the presence of eta-alumina was confirmed.

In 1950, Heard made other catalysts by "ammonia aging." The record shows that such catalysts, in the preparatory stage, contained beta trihydrate alumina (bayerite), a precursor of eta-alumina. Appellant alleges that upon calcination of bayerite, eta-alumina formed so that his 1950 catalysts *inherently* contained eta-alumina. As with the 1949 catalyst, the record shows that Heard was not aware that he had made a *new form* of alumina, much less eta-alumina, notwithstanding that the catalyst was analyzed for surface area, pore structure, and platinum and fluorine content. See footnote 1, supra. In reforming tests, the catalysts proved highly effective and were reported as "one of the most active reforming catalysts prepared to date."

X-ray diffraction tests made in 1961, some 9 years after appellees' filing date, established that samples of the 1950 catalyst contained eta-alumina.

Still other catalysts were made in 1950, some of which, on X-ray diffraction analysis after appellees' filing date, were found to contain eta-alumina. But in no instance did Heard appreciate in 1950 that his catalysts contained a new form of alumina. In fact one witness, Dr. Ehrhardt, pointed out, as the Board noted, that "in the period 1949 to 1951, *no attempt was made to distinguish the different forms of alumina which were reported as gamma* * * *; that the X-ray procedures in this period were *not adapted to detect eta-alumina* * * *." [Emphasis ours.]

Based on Heard's 1949–50 activities the Board concluded:

> To prove conception, Heard must establish by a preponderance of the evidence that he was in possession of the invention of the count prior to his opponent's record date. This means that Heard must satisfactorily prove that he was in possession of the eta-alumina limitation of the count, inter alia, prior to Burton et al.'s record date. As pointed out above, the eta-alumina limitation of the count is its vitalizing feature and cannot be disregarded.
>
> The record, as briefly reviewed above, makes it abundantly clear that not only Heard but also no one else in Standard's employ knew, prior to Burton et al.'s record date, that the above mentioned "ammonia-aged" catalysts contained eta-alumina. Since Heard did not know or realize until late 1953, long after Burton et al.'s filing date, that eta-alumina was necessary to carry out the process of the count, he did not have a prior conception of the invention herein and this is fatal to his case for priority: *Jacobs et al. v. Buxton*, 30 CCPA 987, 135 F.2d 237, 553 O.G. 178, 57 USPQ 302.
>
> • • • • • • •
>
> In the instant case, in 1949–1950, there was no identification of eta-alumina in the catalysts but only gamma-alumina or Boehmite or Bayerite. Eta-alumina in the catalysts was not known to Heard and his associates until long after Burton et al.'s filing date. This knowledge came too late.
>
> • • • • • • •
>
> Counsel for Heard contends that since eta-alumina was not known until the article * * * [of July 1950] appeared, that excuses the lack of analysis for eta-alumina. The argument falls of its own weight since such an analysis could have been made anytime prior to Burton et al.'s filing date. * * *
>
> To summarize at this point, the foregoing discussion amply and clearly demonstrates that Heard had no conception of the invention of the count prior

to Burton et al.'s record date. On this ground alone Heard cannot prevail in this proceeding.

Appellant argues that the Board erred in requiring that for conception Heard must have known his catalyst contained, *by name*, eta-alumina; that Heard had in fact a "complete concept * * * of an effective operative means, namely, an ammonia-aged alumina * * * which he found had beneficial value as a support for platinum in naphtha reforming"; that "The only thing lacking was mere 'name'"; and that "the skilled in the art would have had no difficulty in recognizing the identity of the catalyst made by Heard through the method by which it was prepared."

Notwithstanding appellant's arguments, we sustain the Board since we are not convinced Heard had such a "definite and permanent idea of the complete and operative invention" (see *Townsend* v. *Smith*, 17 CCPA 647, 36 F.2d 292, 4 USPQ 269) as to constitute conception within the meaning of the patent law. We agree with appellees' statement in their brief:

> For appellant to show that he had an invention in 1950, it must be proved that Dr. Heard knew (*i*) he had a *better* catalyst carrier than gamma alumina, (*ii*) the improved catalyst carrier contained a crystalline form of alumina *different from gamma alumina*, and (*iii*) it was the other crystalline species (whether alone or mixed with gamma) which was *responsible for the improvement* he claimed to have found.

[1] We agree with appellant that it is irrelevant that Heard never referred to or appreciated the support material to be *eta*-alumina or to contain *eta*-alumina *by that name*. Nor do we interpret the Board's opinion as so requiring. However, we consider it fatal to appellant's case that not until after appellees' filing date did Heard recognize that his "ammonia-aged" catalyst, as appellees put it, "*contained any different form of alumina at all!*"

[2] We point out, as does appellees' brief, that the count calls for a *particular* form of alumina and we think that appellant's failure to recognize that he had produced a new form, regardless of what he called it, is indicative that he never conceived the invention prior to appellees' filing date.

[3] It is not enough that, viewed after the fact, appellants' catalyst compositions were "reproducible." Appellant never appreciated what he had, viz., a new form of alumina, a conclusion bolstered by the fact that appellant relegated the spent catalysts to storage cages where they would no doubt have remained but for Standard's renewed interest after appellees' filing date.

[4] We agree with appellees that this case is controlled by the precedents holding *nunc pro tunc* reduction to practice to be defective. As appellees say in their brief, "The *nunc pro tunc* reduction to practice doctrine is such a well established part of our patent law as to require no citation of authority. * * * This doctrine is controlling here. In the present case it is the *recognition* and *appreciation* of the invention which was lacking to Dr. Heard prior to April 23, 1952 [appellees' filing date], and which Heard attempts now to provide by his later tests and acts after that date."

To sum up: appellant has proved neither conception nor reduction to practice prior to appellees' filing date. Priority was properly awarded to appellees.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE MELVIN DE GROOTE, DECEASED (ASSIGNEE SUBSTITUTED PETROLITE CORPORATION)

No. 7184. Decided June 25, 1964

[51 CCPA —; 333 F.2d 247; 142 USPQ 89]

1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103—PERSON OF ORDINARY SKILL PRESUMED TO HAVE HIGH LEVEL OF TECHNICAL KNOWLEDGE.

"In determining whether * * * difference is such that appellant's subject matter as a whole would have been obvious to one of ordinary skill in the art under 35 U.S.C. 103, we note that the references other than Lundsted indicate that the art is developed to the extent that a person having ordinary skill therein must be presumed to have a relatively high level of technical knowledge."

2. SAME—COMPOUNDS—OBVIOUSNESS—SUBSTITUTION OF MEMBER OF SERIES OF WELL KNOWN COMPOUNDS OBVIOUS.

"* * * Lundsted teaches that ethylene glycol or any reactive hydrogen-containing compound may be used as the base component. Since the polyethylene glycols form a series of well known compounds of which ethylene glycol is the lowest member, we think that since Lundsted discloses ethylene glycol it would be obvious to a person of ordinary skill in this art to use polyethylene glycols in forming [polyoxyalkylene glycol] mixtures."

3. SAME—SAME—SAME—CLOSELY RELATED COMPOUNDS.

"We agree with the Examiner and the Board that the subject matter defined by appellant's claim covers but an obvious difference over the Lundsted disclosure. While Lundsted does not mention pentaethylene glycol specifically, we think the use of the higher polyethylene glycols would have been obvious to one of ordinary skill in this art in view of the known close relationship between the glycols embraced within the appealed claim and the ethylene glycol disclosed by Lundsted. While the polyethylene glycols are the higher members of a series beginning with the ethylene glycol taught by Lundsted, it is to be noted that Lundsted also teaches the use of any reactive hydrogen compound."

4. SAME—SAME—SAME—SAME—TRIAL AND ERROR IN HIGHLY EMPIRICAL ART.

"We think the specific teachings of the prior art as to the use of butylene glycol and pentanediol would make it obvious to use higher polyethylene glycols. This is especially true in the demulsifying art which is highly empirical. We think those of ordinary skill in this art, searching for demulsifiers on a trial and error basis, would be expected to have substituted the claimed glycols for the glycol disclosed by Lundsted, * * *."

5. SAME—SAME—SAME—EVIDENCE—UNEXPECTED PROPERTIES.

"In a proper case * * * a showing of unexpected properties or superior results may be persuasive evidence of unobviousness. In the present case, however, we are not persuaded by appellant's rather ambiguous test data nor by his analysis of it."

6. SAME—PARTICULAR SUBJECT MATTER—POLYOXYALKYLENE GLYCOL MIXTURE.

The decision of the Board of Appeals, refusing a claim to a polyoxyalklyene glycol mixture as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 739,454.

AFFIRMED.

John Boustead, *Martin J. Brown*, for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The single issue presented on this appeal is obviousness of the claimed invention under 35 U.S.C. 103. The claimed invention relates to compounds which are asserted to be useful as demulsifiers, in that they prevent, break or resolve emulsions of the water-in-oil type. Appellant in his brief defines the polyoxyalkylene glycol mixture of

claim 1 as: HO—(A)(B)(A)(B)(A)—H wherein A is polyoxyethylene $(C_2H_4O)_x$ and B is polyoxypropylene $(C_3H_6O)_y$ or polystraight-chain oxybutylene $(C_4H_8O)_y$. Claim 1,[1] reproduced in the margin, sets forth a more detailed statistical formula and gives the molar proportions of the radicals.

The Board of Appeals affirmed the Examiner's rejection of claim 1 on the following references:

Lundsted, 2,674,619, April 6, 1954.
Spriggs, 2,828,345, March 25, 1958.
De Groote et al. (I), 2,839,476, June 17, 1958.
De Groote et al. (II), 2,839,477, June 17, 1958.

Lundsted discloses polyoxyalkylene compounds which appellant describes in his brief as having the general formula:

HO—(A)(B)(Y)(B)(A)—H

wherein A is polyoxyethylene and B is polyoxypropylene and Y is broadly disclosed as the residue of a base compound which has furnished at least two reactive hydrogen atoms. Ethylene glycol is suggested as one such base compound. The specification indicates that it is preferable for the base compound to have a relatively low molecular weight, e.g., less than 200. Lundsted's polyoxyalkylene compounds have detergent and surfactant properties.

Spriggs discloses complex mixtures of compounds having polyoxyalkylene chains which have excellent surface active properties and which are excellent dispersing and emulsifying agents, prepared by reacting butylene glycol with first butylene oxide and then with ethylene oxide to produce polyoxyalkylene compounds.

De Groote et al. (I) discloses non-ionic surfactants, which are cogeneric mixtures prepared by reacting a glycol wherein one hydroxyl group is tertiary and the other is primary or secondary, or the reaction product of such a glycol with up to 4 moles of ethylene oxide, with first propylene oxide or butylene oxide or a mixture of the two, and then with ethylene oxide. The mixtures are said to have utility in various arts, including the resolution of petroleum emulsions of the water-in-oil type.

De Groote et al. (II) likewise discloses non-ionic surfactants which are cogeneric mixtures prepared by reacting 2-methyl-2,4-pentanediol, or its reaction product with up to 4 moles of ethylene oxide, with first propylene oxide or butylene oxide or a mixture of the two, and then with ethylene oxide to produce polyoxyalkylene compounds. These mixtures are said to be useful in various arts including the resolution of petroleum emulsions of the water-in-oil type.

Thus, the art teaches that mixtures closely related to those of the appealed claim were known and that such mixtures were known to be useful as demulsifiers and surfactants, prior to appellant's invention.

Appellant apparently considers Lundsted to be the most pertinent reference. Referring to the general formulae which appellant has used to represent in simplified form the compositions covered by claim 1 and those disclosed in Lundsted, it will be noted that the Lundsted formula has a (Y) at the middle whereas the formula of appealed

[1] Appealed claim 1 of appellant's application Serial No. 739,454, filed May 27, 1958 for Improvements in Polyalkylene Glycols, reads as follows:

1. A polyoxyalkylene glycol mixture of the general statistical formula

$$HO—(C_3H_6O)_{x'}(R)_y(C_3H_6O)_x(R')_{y'}(C_2H_4O)_{x''}—H$$

wherein x is at least 5 and not over 60, R and R' represent at least one radical selected from the group consisting of C_3H_6O and straight chain C_4H_8O, y plus y' is at least 5 and not over 220, and x' plus x'' is at least 4 and not over 60.

claim 1 has an (A) at the middle. In essence, the distinction is that in appellant's formula, (A) is said to be pentaethylene glycol or a higher polyethylene glycol containing specifically not more than 60 ethylene oxide units, while in Lundsted, (Y) is broadly disclosed to include a number of starting materials, among which may be ethylene glycol.

[1] Such then is the difference betwen the principal prior art and the invention defined in the appealed claim. In determining whether this difference is such that appellant's subject matter as a whole would have been obvious to one of ordinary skill in the art under 35 U.S.C. 103, we note that the references other than Lundsted indicate that the art is developed to the extent that a person having ordinary skill therein must be presumed to have a relatively high level of technical knowledge.

[2] As pointed out by the Examiner, Lundsted teaches that ethylene glycol or any reactive hydrogen-containing compound may be used as the base component. Since the polyethylene glycols form a series of well known compounds of which ethylene glycol is the lowest member, we think that since Lundsted discloses ethylene glycol it would be obvious to a person of ordinary skill in this art to use polyethylene glycols in forming such mixtures.

However, it is appellant's position that Lundsted teaches away from the claimed subject matter. After quoting a portion of the Lundsted patent, appellant's position is summarized in his brief as follows:

From the portion of the Lundsted patent just given, it is apparent that the definition of (Y) is extremely broad. Moreover, despite the breadth of the Lundsted patent in its definition of (Y), it is apparent that nowhere does Lundsted teach that the (A) which appears at the middle of formula (1) above can be pentaethylene glycol or a higher polyethylene glycol containing not more than 60 ethylene oxide units specifically. Indeed, if anything, the disclosure of the Lundsted patent is to a different effect, inasmuch as it teaches that in selecting (Y) "it is preferred to employ relative low molecular weight base compounds, e.g. less than 200." Pentaethylene glycol has a molecular weight of 238. We submit, therefore, that the compositions covered by claim 1 are not obvious in view of the teachings of the Lundsted patent.

We find ourselves unable to agree with this position. Lundsted, like each of the other references, teaches that the polyoxyalkylene mixtures disclosed are outstanding surface active agents or detergents, and the De Groote patents indicate that such surfactants are useful for resolving petroleum emulsions of the water-in-oil type. The advisability of using other polyoxyalkylene mixtures for that purpose seems to us to be clearly suggested by the prior art. With respect to using materials of a molecular weight less than 200, it is noted that Lundsted states that "ordinarily" such material is preferred, but he also states, the particular base compound used is "not critical."

[3] We agree with the Examiner and the Board that the subject matter defined by appellant's claim covers but an obvious difference over the Lundsted disclosure. While Lundsted does not mention pentaethylene glycol specifically, we think the use of the higher polyethylene glycols would have been obvious to one of ordinary skill in this art in view of the known close relationship between the glycols embraced within the appealed claim and the ethylene glycol disclosed by Lundsted. While the polyethylene glycols are the higher members of a series beginning with the ethylene glycol taught by Lundsted, it is to be noted that Lundsted also teaches the use of any reactive hydrogen compound.

Our view as to the obviousness of the claimed compound also finds support in the disclosure of each of Spriggs, De Groote et al. (I), or De Groote et al. (II). Each of these references discloses glycol reaction products which, we think, would make it obvious to one of ordinary skill in this art to use the herein claimed higher polyethylene glycol reaction products.

[4] We think the specific teachings of the prior art as to the use of butylene glycol and pentanediol would make it obvious to use higher polyethylene glycols. This is especially true in the demulsifying art which is highly empirical. We think those of ordinary skill in this art, searching for demulsifiers on a trial and error basis, would be expected to have substituted the claimed glycols for the glycol disclosed by Lundsted, particularly in view of the De Groote patents. These references state that the disclosed compounds are useful for resolving petroleum emulsions of the water-in-oil type. The disclosure of Spriggs also teaches that the compounds disclosed therein are useful as surfactants or detergents.

Appellant asserts, and has submitted test data in support thereof, that the claimed mixtures have superior properties as a demulsifier over those of the prior art. We have independently considered the affidavit showings of record but agree with the Board's conclusion that:

> • • • they are ineffective as a basis for reaching a different conclusion than that of the Examiner as indicated above. As indicated by both appellant and the Examiner, the petroleum demulsification art is highly empirical. This is borne out by the data and results shown in the affidavits. All the agents tested that fall within the terms of the instantly claimed compounds are not better than all of the other agents which are from the prior art or of the kind of those here claimed but outside of the limits of the compounds of the claims. The same agents are not necessarily effective for oils of different sources. The results compared are of the best of the agents of the various categories. This indicates that other compounds very close to those that are highly effective for a certain oil but also within the terms of the claims are not, or may not be, as effective as agents in other categories of those tested. • • •

[5] In a proper case, of course, a showing of unexpected properties or superior results may be persuasive evidence of unobviousness. In the present case, however, we are not persuaded by appellant's rather ambiguous test data nor by his analysis of it. Compare *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43.

[6] For the foregoing reasons, the decision of the Board is affirmed.
AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE WERNER COUPETTE AND ADOLF SICKBERT

No. 7177. Decided June 25, 1964

[51 CCPA —: 333 F.2d 250; 142 USPQ 239]

1. PATENTABILITY—PROCESS—OBVIOUSNESS—SUPERIOR PRODUCT.
   "Assuming, arguendo, that appellants' steel is 'superior' in mechanical properties at high temperatures, we are not convinced that such superiority results from anything unobvious in the process claimed. Vacuum casting is admittedly old and the art teaches that better mechanical properties result from such casting alone."
2. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF PRODUCING FERRITIC OR FERRITIC-PERLITIC STEEL ALLOYS."
   The refusal of the claims in an application entitled "Method of Producing Ferritic or Ferritic-Perlitic Steel Alloys," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 686,284.

AFFIRMED.

Michael S. Striker for appellants.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 6–8 and 10–12 of application Serial No. 686,284, filed September 26, 1957, for "Method of Producing Ferritic or Ferritic-Perlitic Steel Alloys." No claims are allowed.

The invention relates to a method for making steel by vacuum casting, which steel is said to have "good high temperature properties and exhibits a minimum tendency to embrittlement" and is useful in making "heavy forgings for turbine rotors and other major parts of machinery that will be subjected to high operational temperatures."

Claim 6 is representative and sufficiently describes the invention:

> 6. In a method of producing high quality steel castings, the step of casting molten low alloyed steel containing up to 0.25% manganese and up to 0.10% silicon, while subjecting said molten steel during the casting of the same to a sub-atmospheric pressure of less than 10 mm. mercury, whereby a steel casting of great mechanical resistance against the effects of exposure to high temperatures is formed.

Claims 7, 8 and 10 further recite use in the molten steel of "deoxidants" such as aluminum. Claim 11 says the steel is "capable of being refined by hardening with subsequent tempering" while claim 12 sets out specific percentages of alloying ingredients in addition to manganese and silicon.

The sole ground of rejection is obviousness of the claimed process under 35 U.S.C. 103 in view of the following prior art:

> Yensen, 1,277,523, September 3, 1918.
> Comptes Rendus, volume 226, June 1948, pages 2150 and 2151.
> Electric Furnace Steel Proceedings, volume 13, 1955 (pages 70–84).

The Examiner rejected claims 6, 11 and 12 as "unpatentable over *Comptes Rendus* in view of the *Proceedings* or vice versa" and rejected claims 7, 8 and 10 "as claim 6 in view of Yensen." The Board relied on Proceedings alone with respect to claims 6, 11 and 12 and Proceedings in view of Yensen for claims 7, 8 and 10.

Proceedings is a report of work done in degassing steels by vacuum ingot casting. Hydrogen dissolved in the steel is removed by casting at pressures of about 5 mm. of Hg, which removal prevents flaking of the steel during cooling of forgings. The reference lists, in addition to preventing flaking, other advantages of vacuum casting. The steel described in Proceedings, closest in Mn and Si content to that used in appellants' process, contains 0.63% Mn and 0.38% Si.

Comptes Rendus deals with making high chromium steels by vacuum melting. The Mn and Si content of representative disclosed alloys is within appellants' claimed range.

Yensen teaches melting relatively pure iron at pressures comparable with those contemplated by appellants followed by "the addition of silicon or aluminum to the molten bath while *in vacuo*" to reduce

the oxygen content. The reference is relied on to show that using deoxidizers such as aluminum with molten ferrous materials is old.

Appellants concede that, broadly, vacuum casting of steel is old but contend that when one employs a steel whose Mn and Si content is as claimed there is obtained a low alloyed steel of "great mechanical resistance against the effects of exposure to high temperatures" which is unobvious and thus patentable.

The gist of the Examiner's position is stated in his answer as follows:

> The use of vacuum casting and the inherent improvement in the mechanical properties of such casting would lead those skilled in the art to expect improved results in vacuum casting alloys of any composition.

The Board added:

> Appellants' argument places considerable emphasis on the improved mechanical properties of the steel produced by the claimed process. We are unimpressed by this argument as a basis for patentability for the reason that the Proceedings reference clearly discloses similar improvements as being obtained by the vacuum casting process. • • • Appellants point out that the Proceedings reference is referring to "high alloy" steels. This may be the case, but we are of the opinion that it would be obvious to those skilled in the art to try with any particular steel a casting process which had been found, as in the Proceedings, to be successful in improving mechanical properties of another steel. • • •
>
> • • • • • • • •
>
> While, in the view we take of the case, we consider the composition of the steel not to be the controlling factor in evaluating patentability of the appealed claims because, in our opinion, it would be obvious to apply the vacuum casting process to any steel, we note, as the Examiner points out, that Comptes Rendus discloses vacuum casting of a steel having manganese and silicon contents within the claimed range.

Appellants in their brief consider the issue thus:

> This appears to be the crucial issue, namely that appellants have surprisingly found that vacuum casting of steel of a defined composition gives vastly superior results as compared with vacuum casting of other steel compositions, and that the Board of Appeals takes the position that once vacuum casting of steel was disclosed for any type of steel even if the composition thereof might be greatly different from that of the steel composition according to the appealed claims, no patentable significance could be attached to the vacuum casting of a specific steel composition even through surprisingly superior results might be obtained thereby.

We find no reversible error in the Board's decision. Although appellants characterize their process and its results as "surprising" we fail to see that appellants have done anything unobvious to one skilled in this art. A fair reading of the Proceedings reference shows that vacuum casting is a technique of general applicability in casting steels and the reference points out that "The mechanical properties are likely to be influenced by the vacuum treatment; firstly, by reducing defects and improving purity in connection with the reduction of oxygen values." [1] Assuming, arguendo, that appellants' steel is "superior" in mechanical properties at high temperatures, we are not convinced that such superiority results from anything unobvious in the process claimed. Vacuum casting is admittedly old and the art teaches that better mechanical properties result from such casting alone.

With respect to manganese and silicon content, we do not consider the claimed values to be so different from those taught by the art as to render the process unobvious.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

WILLIAM C. RAINER, JOSEPH G. GERMAK, JAMES P. HAMILTON, ARTHUR W. SLOAN, WILLIAM D. STEWART AND KARL A. SCHELLENBERG
v.
HAROLD W. UNGER AND DONALD H. ZIPPER

No. 7102. Decided June 25, 1964

[51 CCPA —; 333 F.2d 244; 142 USPQ 23]

1. INTERFERENCE—PATENT AND APPLICATION—RIGHT TO MAKE—APPLICATION MUST CLEARLY SUPPORT COUNTS.

"All that Rainer need do here to establish that he is the first inventor of the subject matter of claims 1 and 5 of Unger's patent is to show that his application has support for those claims. That support must be clear and unambiguous."

2. SAME—SAME—SAME—SAME—DOUBTS RESOLVED AGAINST APPLICANT.

"Rainer, as one who has copied claims from a patent, is subject to the rule that 'all doubts must be resolved against the copier.' *Jepson* v. *Coleman*, [50 CCPA 1051]. As stated in Jepson, '• • • It is not a question of whether one skilled in the art *might* be able to construct the patentee's device from the teachings of the disclosure of the application. Rather, it is a question whether the application necessarily discloses that particular device.'"

APPEAL from the Patent Office. Interference No. 90,446.

AFFIRMED.

Cushman, Darby & Cushman, Alvin Guttag for appellants.

Fred S. Lockwood for appellees.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from a decision of the Board of Patent Interferences holding that Rainer et al. cannot make the two counts of the interference.

The invention resides in the incorporation of silicone in a gasket-forming composition of vinyl chloride resin before curing. The counts read:

> 1. A gasket forming composition comprising a vinyl chloride base resin and quantities of lecithin and silicone fluid, the latter ingredients being present in sufficient amounts so as to be present on the surface of a gasket formed from said composition and provide lubrication thereto.
>
> 2. A gasket forming composition comprising a vinyl chloride base resin and a quantity of silicone fluid, the latter ingredient being present in a sufficient amount, so as to be present on the surface of a gasket formed from said composition and provide lubrication thereto.

The gasket provides for a controlled frictional seal between a closure cap of the screw-on type, lug or screw securement, and a container such as a glass jar or bottle. The purpose of incorporating silicone in the gasket is to provide adequate sealing while preventing seizure of the cap to the container after it is rotated into sealing position. The silicone remains after the gasket-forming composition is cured and provides a lubricating coating or film on the sealing surface so that sticking of the gasket to the container is avoided.

The interference arose when Rainer copied claims 1 and 5 from the Unger patent. Although the Unger application matured to a patent first, Rainer was the first to file. Accordingly, Unger, as the junior party and having failed in his preliminary statement to allege any date prior to Rainer's filing date, was ordered to show cause why judgment should not be entered against him. In response Unger moved to dissolve the interference on the ground that Rainer is not entitled to make either of the counts on the basis of the disclosure of

his patent application. That motion was denied by the Primary Examiner who said:

It is urged in support of the motion that Rainer et al. cannot make the counts that the common invention in issue was not originally disclosed by them. But a sufficient answer to this argument appears to be afforded by referring particularly to the specification page 39, lines 27 and 28 and page 40, lines 1 to 15 and page 25, lines 3 to 6 and 26 and claims 1, 9 and 66 of the application of Rainer et al. If Counts 1 and 2 in issue are broader than the "plastisols" which form the basis of so large a part of the discussion in the specification of the party Unger et al., it is no less true that the "plastisols" of claims 1, 9 and 66 "read on" said Counts 1 and 2, in spite of the fact that the filler member of said claim 66 is "inorganic."

It is held that Rainer et al. can make the counts.

Unger then requested a final hearing on the matters raised by his Motion to Dissolve.

On August 29, 1962, the Board of Patent Interferences reversed the Examiner, stating:

In deciding whether the Primary Examiner reached the correct conclusion * * *, we must consider the applicable law, which requires an applicant who copies a claim from a patent to show that he is entitled to make the claim; which resolves doubts against him; and which requires that the disclosure should be clearer than to suggest that one skilled in the art *might* formulate the composition in a particular manner. * * *

The Board proceeded to consider the subject matter of Rainer's application, including those parts of his specification referred to by the Examiner, and concluded:

* * * We find no disclosure in the Rainer application of a composition comprising silicone fluid, either in the amount specified or any other amount, or in conjunction with lecithin or separately.

Rainer asserts that the Board erred in its interpretation of his disclosure. Those parts of his application which, Rainer contends, disclose incorporating silicone into the gasket-forming composition, read:

To prevent sticking to the mold, conventional release agents, such as Dow Cornings' Silicone release fluid (a polymethylsiloxane) can be employed. Alternatively, stearic acid can be incorporated into the plastisols at concentrations of 2.5% to 5%, to prevent sticking of plastisol to the hot mold without affecting adhesion of the foam to the Unichrome-coated shells adversely. Butyl stearate was similarly effective as a mold release agent and, like stearic acid, is nontoxic, but stearic acid is preferred in its overall characteristics. For example, butyl stearate served well as a mold release agent for plastisols pressured at 250 p.s.i. carbon dioxide, but was inferior to stearic acid at 500 p.s.i. Butyl stearate was less satisfactory as a replacement for the primary plasticizer in the range of 5 to 20%, as liners employing it, in some instances, leaked during the cycling test.

* * * * * * *

Rainer et al. claim 9 written in independent form:

A container closure comprising a shell having a cushion liner comprising a foamed vinyl chloride polymer plastisol including a mold lubricant in the liner.

Rainer's position is, essentially, that the words "alternatively, stearic acid can be incorporated into the plastisols * * *" indicates that "Dow Cornings' Silicone release fluid" was to be similarly employed.

On the other hand, Unger refers to Dow Corning literature showing their silicone release fluid being *applied* to the surface of molds as a "dressing on the mold." Unger contends that the word "alternatively" indicates that the stearic acid is to be used differently than the Dow Corning Silicone release fluid, which, he maintains, is intended to be used accordng to the pertinent Dow Corning literature.

To counteract whatever probative value the Dow Corning literature may have, Rainer cites a patent to Anspon and a textbook to show that it was known prior to the filing date of Rainer et al. to add a silicone directly to a plastic composition. The textbook referred to by Rainer states:

* * * But their poor solubility or compatibility in most resins (one reason why they are good mold-release agents) means that they are likely to bleed. Some means of incorporating them usefully into resins may yet be developed but so far their application in this field is limited. * * *

Rainer also refers to his original claim 9, set forth above in independent form, as further support for the incorporation of silicone in the resin.

With respect to that claim the Board stated:

Rainer's claim 9 covers the foamed vinyl chloride polymer plastisol of his claim 1 including *any* mold lubricant in the liner. Presumably, it is based on disclosure such as that contained in lines 2–13 of page 40 of the specification, which teach the use of stearic acid and butyl stearate in this manner. Claim 9 covers such use of stearic acid, butyl stearate and *any other* mold lubricant which might be incorporated in the composition *by later invention or development*. The fact that it is *broad enough* to include this manner of use of silicone fluid is in no way tantamount to a teaching or suggestion that silicone fluid be so used (*In re Mraz*, 36 App. D.C. 435, 1911 C.D. 316; *In re Collins*, 22 CCPA 1053, 1935 C.D. 417; *Minnesota Mining and Mfg. Co.* v. *Carborundum Co.*, 69 USPQ 293).

Our view of the applicable law leaves no room for doubt that we must affirm the Board. As this court recently stated in *Jepson* v. *Coleman*, 50 CCPA 1051, 314 F.2d 533, 136 USPQ 647,

When one copies claims from a patent for the purpose of instituting interference proceedings, in order to be successful, that person's application must clearly support those counts. See *Brand* v. *Thomas*, 25 CCPA 1053, 96 F.2d 301, 37 USPQ 505; *Crome* v. *Morrogh*, 44 CCPA 704, 239 F.2d 390, 112 USPQ 49. There must be no doubt that an applicant discloses each and every limitation of the claims and all doubts must be resolved against the copier. See *Louis H. Segall* v. *Marion W. Sims et al.*, 47 CCPA 886, 276 F.2d 661, 125 USPQ 394. * * *

[1] All that Rainer need do here to establish that he is the first inventor of the subject matter of claims 1 and 5 of Unger's patent is to show that his application has support for those claims. That support must be clear and unambiguous.

As we view the instant facts, there is substantial doubt whether the Rainer application does indeed contemplate the incorporation of silicone into the resin. None of the examples of the specification disclose incorporating silicone nor do they even mention silicone. The literature cited by both parties is of little help since it establishes that while silicone release agents have been incorporated in the mold, they are generally applied to the surface of the mold instead.

[2] Rainer, as one who has copied claims from a patent, is subject to the rule that "all doubts must be resolved against the copier." *Jepson* v. *Coleman*, supra. As stated in Jepson, "* * * It is not a question of whether one skilled in the art *might* be able to construct the patentee's device from the teachings of the disclosure of the application. Rather, it is a question whether the application necessarily discloses that particular device. See *Crome* v. *Murrogh*, supra."

Since we cannot find that Rainer's application *clearly* discloses the incorporation of silicone release agents into the gasket composition, we are obliged to affirm.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,461,345, G. W. Packer, PLAYGROUND SLIDE; **Des. 185,540**, R. E. Everly, PARK BENCH, **filed** Nov. 15, 1963, D.C., E.D. Mich. (Detroit), Doc. 24604, *Game-Time, Inc.* v. *Pioneer Wagon Works, Inc.* Judgment in favor of plaintiff; patents held valid and infringed; injunction granted effective July 1, 1964 (notice June 12, 1964).

2,466,643, S. H. Magid, APPARATUS FOR HEAT SEALING THERMOPLASTIC STRIPS ABOVE ELASTIC ELEMENTS; **2,490,451**, same, METHOD OF MAKING A THERMOPLASTIC COVER; **2,768,107**, same, THERMOPLASTIC SHEET MATERIAL PROVIDED WITH TUBULAR EDGING AND METHOD OF APPLYING SAID EDGING; **2,944,550**, same, THERMOPLASTIC GARMENTS; **2,957,792**, same, METHOD OF HEAT SEALING EDGE BINDINGS AROUND THE OPENINGS IN HOLLOW THERMOPLASTIC BODIES; **2,985,221**, same, APPARATUS FOR FORMING AND HEAT SEALING TUBULAR EDGINGS TO THERMOPLASTIC SHEET MATERIAL, **filed** May 7, 1963, D.C., S.D.N.Y., Doc. 63/1312, *Sidney H. Magid* v. *Dunlee Corp.* Order of dismissal June 12, 1964.

2,490,451. (See 2,466,643.)

2,493,602, V. C. Sterrett, PRESSURE FLUID MOTOR, **filed** Dec. 13, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2267, *Ortman-Miller Machine Co.* v. *International Basic Economy Corporation.* Stipulation and order of dismissal without prejudice May 28, 1964.

2,508,393, E. B. Jaeger, SHORTENING, **filed** June 1, 1964, D.C., N.D. Ohio (Cleveland), Doc. C 64–388, *Top-Scor Products, Inc.* v. *The H. C. Fisher Company et al.*

2,509,831, J. Martin, STABILIZER FOR INNER SPRING UNIT; **Reg. No. 378,578** (QUILTRESS in script), Eclipse Sleep Products, Inc., Mattresses; **Reg. No. 573,272** (POSTURGUARD), same; **Reg. No. 595,168** (QUILTFOAM), same, **filed** Aug. 19, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1476, *Eclipse Sleep Products, Inc.* v. *Sealy, Inc. et al.* Action dismissed without prejudice June 15, 1964.

2,517,126, M. E. Macksoud, INSTANTANEOUS STARTING ELECTRIC LAMP, **filed** June 30, 1964, D.C., W.D. Pa. (Pittsburgh), Doc. 64–673, *Duro-Test Corporation* v. *Westinghouse Electric Corporation.* **Same, filed** Dec. 11, 1963, D.C.N.J. (Newark), Doc. 1043–63, *Duro-Test Corporation* v. *Radiant Lamp Corporation.* Stipulation and order of dismissal Aug. 19, 1964.

2,517,703, F. F. Offner, SYNCHRONIZING APPARATUS; **2,697,908**, same, SYSTEM FOR ACCELERATING ENGINES TO SELECTED SPEEDS AND MAINTAINING THE SPEED SELECTED; **Re. 24,809**, same, ELECTRONIC ENGINE SPEED CONTROL SYSTEM, **filed** June 10, 1964, Ct. Cls., Doc. 174–64, *Technical Development Corporation et al.* v. *The United States.*

2,528,747, C. P. Gravelle, AUTOMATIC FELLING NOZZLE; **2,582,195**, L. H. Duerr, AUTOMATIC SHUT-OFF DISPENSING NOZZLE VALVE, **filed** June 2, 1964, D.C. Minn. (Minneapolis), Doc. 4–64–167, *Dover Corporation* v. *Automatic Nozzle Sales.*

2,536,003, H. P. Dupre, COAXIAL CABLE CONNECTION, **filed** June 21, 1962, D.C., S.D.N.Y., Doc. 62–2196, *Burndy Corp.* v. *Sealectro Corp.* Consent judgment June 5, 1964.

2,537,536, V. D. Lilienstern, DOLL HEAD WITH HAIR, **filed** Apr. 14, 1964, D.C., S.D.N.Y., Doc. 64/1166, *American Character, Inc. et al.* v. *Gimbel Bros., Inc.* Stipulation and order of dismissal June 18, 1964.

2,541,113, Smith, Jr., and Ball, PROCESS FOR CANNING AND STERILIZING FOOD PRODUCTS, **filed** June 26, 1964, D.C., W.D. Mo. (St. Joseph), Doc. 1273, *Food Processes, Inc.* v. *Swift & Company et al.*

2,569,079, M. E. Special, SHOE SANITIZERS, **filed** Apr. 3, 1963, D.C., S.D.N.Y., Doc. 63/948, *Atlantic Ultraviolet Co., Inc.* v. *American Machine & Foundry Co. et al.* Action dismissed June 11, 1964.

2,574,873, C. Jobst, SURGICAL STOCKING; **2,829,641**, same, GARMENT COMPENSATING FOR VASCULAR INSUFFICIENCY OF WEARER, **filed** June 9, 1964, D.C., E.D. Mich. (Detroit), Doc. 25431, *Jobst Institute, Inc.* v. *The F. A. Ritter Co.*

2,582,195. (See 2,528,747.)

2,602,902, G. L. Haugen, SWEEP AMPLITUDE CONTROL FOR MAGNETICALLY DEFLECTED CATHODE-RAY TUBES, **filed** June 17, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1060, *William R. Blair, Jr.* v. *Zenith Radio Corporation.* Complaint dismissed without prejudice Aug. 7, 1964.

2,624,162, H. Fleisher, AUTOMATIC SHARPENER FOR STRAIGHT KNIFE CLOTH CUTTING MACHINES, **filed** July 13, 1961, D.C., S.D.N.Y., Doc. 61/2468, *Beaver Cloth Cutting Machines, Inc.* v. *H. Mamin Co., Inc.* Patent held valid and infringed; defendants enjoined June 10, 1964.

2,625,095, J. A. Julian, APPARATUS FOR TREATING FOOD PRODUCTS, **filed** May 9, 1960, D.C., N.D. Ill (Chicago), Doc. 60c721, *John A. Julian et al.* v. *Drying Systems Co.* Patent held invalid and void; complaint dismissed; counterclaim for declaratory judgment of defendants is good and valid in law and sustained June 23, 1964.

2,635,549, W. E. Rupp, CENTRIFUGAL PUMP WITH SEPARABLE IMPELLER CASING, **filed** July 3, 1963, D.C. Md. (Baltimore), Doc. 14811, *The Gorman-Rupp Company* v. *Elphinstone, Inc. et al.* Stipulation and order dismissing complaint and counterclaim with prejudice Nov. 26, 1963.

2,654,920, W. P. Kessler, INSULATED METAL WINDOW CLOSURE, **filed** May 25, 1961, D.C., S.D. Wis. (Madison), Doc. 3449, *Victor M. Langsett et al.* v. *Marmet Corporation* Claims 1 through 7 of Pat. No. 2,654,920 held invalid; complaint dismissed June 29, 1964.

2,697,908. (See 2,517,703.)

2,699,172, Regimbal and Thurmer, MACHINE FOR STRIPPING HOP VINES, **filed** June 26, 1964, D.C., E.D. Wash. (Yakima), Doc. 1972, *Laurent Regimbal et al.* v. *Peter Scymanski et al.*

2,720,806, G. D. Stewart, MACHINE FOR FORMING PISTONS OF ELLIPTICAL CROSS SECTION, **filed** June 3, 1963, D.C., E.D. Mich. (Detroit), Doc. 23936, *Ex-Cell-O Corporation* v. *La Salle Machine Tool, Inc.* Stipulation and order dismissing complaint and counterclaim without prejudice related to patent infringement and with prejudice related to unfair competition June 8, 1964.

2,730,212, Rice and Stevens, RELEASABLE TORQUE TRANSMITTING APPARATUS, **filed** June 10, 1964, D.C.N.J. (Newark), Doc. 537–64, *Ingersoll-Rand Company* v. *Chicago Pneumatic Tool Company.* Action dismissed June 11, 1964.

2,740,739, D. R. Harwin et al., CARPET UNDERLAY, **filed** June 8, 1961, D.C., S.D. Calif. (Los Angeles), Doc. 711–61–TC, *National Sponge Cushion Co., Inc.* v. *The Mansfield Tire & Rubber Co.* Consent decree; patent held valid; defendant enjoined June 23, 1964. **Same, filed** Oct. 2, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1352–CC, *National Sponge Cushion Co., Inc.* v. *Sponge Cushion, Inc. et al.*

2,750,300, A. J. Kukoff, GLITTER CLOTH, **filed** June 25, 1964, D.C., S.D.N.Y., Doc. 64/1973, *Kukoff Shoe Products, Inc.* v. *Roller Process Corp., a subsidiary of Nailhead Creations, Inc.*

2,765,059, L. A. Amtsberg, TORQUE CONTROL CLUTCH DEVICE, **filed** Sept. 23, 1963, D.C.N.J. (Newark), Doc. 772–63, *Ingersoll-Rand Company* v. *Chicago Pneumatic Tool Company.* Order of dismissal June 26, 1964.

2,768,107. (See 2,466,643.)

2,782,421, J. Winson, MITTEN; **2,809,377** (included by amendment to complaint, June 1, 1964), same, METHOD OF MANUFACTURE OF MITTEN; **Des. 180,129** (included by amendment to complaint, June 1, 1964), same, MITTEN, **filed** Jan. 9, 1961, D.C., E.D. Wis. (Milwaukee), Doc. 61–C–4, *Air Baby, Inc.* v. *Plasticote Glove Co., Inc.* Consent decree; patents held valid and infringed June 1, 1964.

2,809,377. (See 2,782,421.)

2,815,941, H. W. Schmale, FEED AND GRAIN MIXING MACHINE, **filed** Aug. 28, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62–C–245, *Mill Mix, Inc.* v. *Gehl Bros. Manufacturing Co.* Stipulation of dismissal with prejudice June 9, 1964.

2,829,641. (See 2,574,873.)

2,859,737, J. J. Banker, TUBE SUPPORTING PROVISIONS FOR A VAPOR GENERATING UNIT, **filed** June 1, 1964, Ct. Cls., Doc. 169–64, *The Babcock & Wilcox Co.* v. *The United States.*

2,869,100, G. T. Adams, ANODE CONNECTOR, **filed** Dec. 6, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2194, *Mayfair Molded Products Corporation* v. *Raypar Electronics, Inc.* Consent judgment; action dismissed without prejudice June 24, 1964.

2,872,203, C. W. Hedstrom, CONVERTIBLE AND FOLDABLE BABY VEHICLES, **filed** June 30, 1964, D.C., S.D.N.Y., Doc. 64/2024, *Hedstrom Union Co.* v. *Groco-Rite Corp.*

2,877,501, R. Bradt, GLASS-REINFORCED THERMOPLASTIC INJECTION MOLDING COMPOUND AND INJECTION-MOLDING PROCESS EMPLOYING IT, **filed** July 13, 1964, D.C., S.D. Ind. (Evansville), Doc. EV 64–C–66, *Nypel Corporation* v. *Fiberfil, Inc.*

2,891,285, H. Kaplan, METHOD OF MAKING A MOLD FOR CASTING A SHOE LAST, **filed** June 13, 1963, D.C., S.D.N.Y., Doc. 63/1744, *Archmaster Shoe & Machinery Corp.* v. *Jerry Miller I.D. Shoes.* Stipulation and order of discontinuance without prejudice; counterclaim withdrawn without prejudice Mar. 20, 1964.

2,893,386, G. Sajeck, GAS DEMAND EQUIPMENT, filed Mar. 20, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c532, *George Sajeck* v. *Dacor Corporation.*

2,893,729, T. R. Persentka, SHEET SEPARATING MECHANISM FOR DUPLICATORS, **filed** June 11, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1018, *A. B. Dick Company* v. *General Binding Corporation.*

2,895,274, H. J. Mumma, MACHINE FOR HANDLING EGGS, **filed** Jan. 27, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c150, *WPC Enterprises, Inc.* v. *Food Machinery & Chemical Corporation.* Stipulation and order holding patent valid and infringed; judgment in favor of defendant; complaint dismissed with prejudice; defendants motion to have Diamond National joined as a party to this action overruled June 17, 1964.

2,895,950, V. K. Krieble, COMPOSITIONS CONTAINING HYDROPEROXIDE POLYMERIZATION CATALYST AND ACRYLATE ACID DIESTER; **2,901,099**, same, PACKAGED METAL FASTENERS AND BONDING AGENT; **3,041,322**, same, ANAEROBIC CURING COMPOSITIONS CONTAINING ACRYLIC ACID DIESTERS; **3,043,820**, R. H. Krieble, ANAEROBIC CURING SEALANT COMPOSITION HAVING EXTENDED SHELF STABILITY; **3,046,262**, V. K. Krieble, ACCELERATED ANAEROBIC CURING COMPOSITIONS, **filed** June 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c936, *Broadview Chemical Corporation* v. *Loctite Corporation et al.*

2,901,099. (See 2,895,950.)

2,911,339, J. J. Goodman, STREPTOMYCES AUREOFACIENS FERMENTATION PROCESS; **3,092,556**, Growich, Jr., and Deduck, TETRACYCLINE FERMENTATION, **filed** June 30, 1964, D.C. Del. (Wilmington), Doc. 2874, *American Cyanamid Company* v. *Chas. Pfizer & Co., Inc.*

2,917,790, V. F. Espenschied, PRE-ASSEMBLED DOOR AND CASING, **filed** Jan. 20, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–43, *F. E. Schumacher Company* v. *Chrysler Aluminum, Inc.* Consent decree; patent held valid and infringed; defendant enjoined June 1, 1964. **Same, filed** July 17, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–495, *F. E. Schumacher Company* v. *Minerva Aluminum Company.* **Same, filed** Aug. 11, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–542, *F. E. Schumacher Co.* v. *Alsco, Inc.* **Same, filed** Aug. 19, 1964, D.C., N.D. Ohio (Toledo), Doc. C64–132, *The F. E. Schumacher Company* v. *Airco Aluminum Products.*

2,921,660, J. P. Barkdoll, POWER DRIVING MECHANISM FOR INSTRUMENTALITIES OF TYPEWRITERS, **filed** Jan. 21, 1964, D.C., S.D.N.Y., Doc. 64/205, *SCM Corporation* v. *Royal McBee Corp.* Consent judgment; defendant enjoined June 16, 1964.

2,924,867, W. E. Perkins, PIPE LINING TROWELING APPARATUS, **filed** June 18, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–815–PH, *Perkins Pipe Linings, Inc. et al.* v. *Pipe Linings, Inc.*

2,944,550. (See 2,466,643.)

2,957,792. (See 2,466,643.)

2,985,221. (See 2,466,643.)

3,041,322. (See 2,895,950.)

3,043,820. (See 2,895,950.)

3,046,262. (See 2,895,950.)

3,092,556. (See 2,911,339.)

Re. 24,809. (See 2,517,703.)

Des. 180,129. (See 2,782,421.)

Des. 185,540. (See 2,461,345.)

REISSUES

NOVEMBER 17, 1964

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

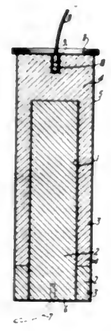
25,685

DETONATABLE CARTRIDGES HAVING INSENSITIVE EXPLOSIVE CORES

George L. Griffith, Coopersburg, and George A. Lyte, Bethlehem, Pa., and Franklin B. Wells, Wharton, N.J., assignors to Trojan Powder Company, a corporation of New York

Original No. 3,082,689, dated Mar. 26, 1963, Ser. No. 615, Jan. 5, 1960. Application for reissue Feb. 6, 1964, Ser. No. 354,191

12 Claims. (Cl. 102—24)



10. A detonatable explosive assembly consisting essentially of a core portion of an insensitive nitrate-based explosive as the principal explosive ingredient therein, said nitrate-based explosive being insensitive to detonation when filled in 3 inch to 8 inch spiral wound cartridges and detonation thereof is attempted with from 0.5 lb. to 2 lbs. of 50–50 Pentolite booster, said core portion being positioned in a shell portion of a detonatable explosive which substantially surrounds said core portion, the ratio of the weight of said detonatable explosive to the weight of said insensitive nitrate-based explosive being sufficient to detonate said nitrate-based explosive upon detonation of said detonatable explosive.

25,686

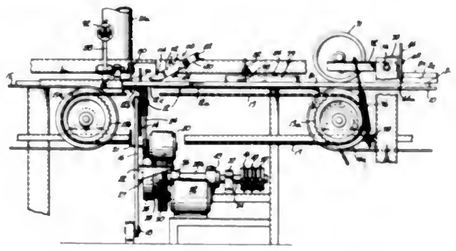
MARK SENSING LUMBER DEFECT CUTTER

Charles A. Sherman, Tacoma, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Original No. 3,044,508, dated July 17, 1962, Ser. No. 796,657, Mar. 2, 1959. Application for reissue Nov. 15, 1963, Ser. No. 332,986

13 Claims. (Cl. 143—46)

1. In a mark sensing lumber defect cutter having a transversely reciprocative cut-off saw, conveyor means to advance boards endwise in succession through the cutting plane of the saw, aligned stationary board supports interposed in the path of conveyance and having a gap therebetween at the cutting plane to pass the saw therebetween when reciprocated, and saw operating means operable to reciprocate the saw from a normally retracted position through a cutting stroke and back to said position; the combination therewith comprising reciprocative clamp means supported and movable independently of said cut-off saw and including a pair of clamp shoes, and means movably supporting said clamp shoes in normally retracted position withdrawn from but in registry with the respective board supports and guiding such shoes for movement thereof conjointly toward such supports to clamp and immobilize a board directly therebetween independently of saw movement, mark sensing means including pick-up means mounted adjacent one of the supports ahead of the cutting plane and operable to detect an applied defect-locating mark on an advancing board, electric circuit means responsively connected to said pick-up means and controllingly connected to said clamp means for energizing the same to apply said shoes to the board backed by said stationary supports in response to a passing mark so detected, electric switch means



arranged to be actuated in response to application of the clamp shoes to clamp a board and controllingly connected to the saw operating means to energize the same, thereby to initiate a cycle of saw reciprocation in response to such actuation, and additional switch means arranged to be automatically actuated by completion of said saw cycle and having means connected in said circuit means and also means connected in circuit with the first switch means operatively to withdraw the clamp shoes and to terminate energization of the reciprocative saw-operating means, respectively, in response to such latter actuation.

25,687

METHOD AND APPARATUS FOR SOLIDS BLENDING

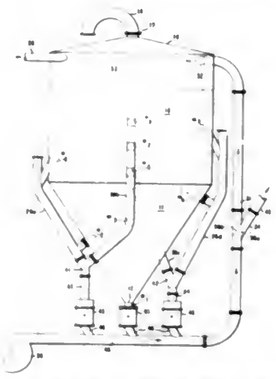
Alexander A. Arthur, Andrew L. Bolton, and George N. Brown, all of Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original No. 3,106,385, dated Oct. 8, 1963, Ser. No. 24,707, Apr. 26, 1960. Application for reissue Dec. 4, 1963, Ser. No. 337,117

7 Claims. (Cl. 259—180)

1. The method of blending solids comprising confining a mass of the heterogeneous solids in an elevated column, withdrawing from said mass in a generally vertical direction and within about one-fourth of the distance from the center of said mass to the confining wall of said column taken at the level of withdrawal inwardly from the periphery of said mass substantially equal amounts of said solids per unit time simultaneously by gravity flow from a multiplicity of regions disposed lengthwise of said mass

and substantially equiangularly around said periphery of said mass, and combining said substantially equal amounts



of said solids to produce a solids blend having improved homogeneity of composition.

25,688

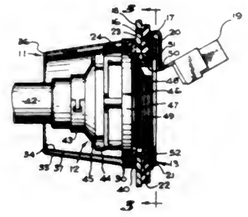
DE-ICER BOOT FOR BREATHING MASK

Aaron Bloom, Pasadena, and William D. Morton, Jr., Arcadia, Calif., assignors to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California

Original No. 3,073,302, dated Jan. 15, 1963, Ser. No. 102,025, Apr. 10, 1961. Application for reissue Mar. 2, 1964, Ser. No. 358,392

7 Claims. (Cl. 128—146)

1. A breathing mask assembly comprising an oro-nasal receptable of flexible material having a chamber therein, a face contacting sealing gasket on one side of the receptacle and a hose attachment area on the other side thereof, an annular mounting gasket for a supply tube on said other side defining an inhalation-exhaltion passage, a de-icer boot comprising an annular mounting ring adapted to be positioned against said hose attachment area, a sleeve of flexible material having a free outside end and an inside end, said sleeve comprising an exterior wall having an inside end impressed against the exterior of said mounting ring and an interior wall having an inside end lying against the interior of said mounting ring, outside ends of said walls being joined together and enclosing an insulating space between said walls, a supply



tube having an inhalation-exhalation valve housing thereon, said housing having a position within said boot, said housing comprising a connecting ring having a cylindrical exterior positioned against the inside end of the interior wall and an end face in engagement with the mounting ring, and a fastening sleeve having a retaining edge overlying the inside of said mounting gasket, said fastening ring having a threaded engagement with said connecting ring of the valve housing whereby said de-icer boot and the valve housing are simultaneously releasably attached to the receptacle in sealed position around the inhalation-exhalation passage.

PLANT PATENTS

GRANTED NOVEMBER 17, 1964

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,452

GLADIOLUS PLANT

Don Walker and Audrey Walker, both of 323 Aquetong Road, New Hope, Pa.

Filed Dec. 27, 1962, Ser. No. 247,777

1 Claim. (Cl. Plt.—85)

A new and distinct variety of gladiolus plant, substantially as herein shown and described, characterized by its true lavender color and its 9 to 11 leaves.

2,453

WATER LILY PLANT

George L. Thomas, Jr., Lilypons, Md.

Filed Nov. 1, 1963, Ser. No. 320,975

1 Claim. (Cl. Plt.—68)

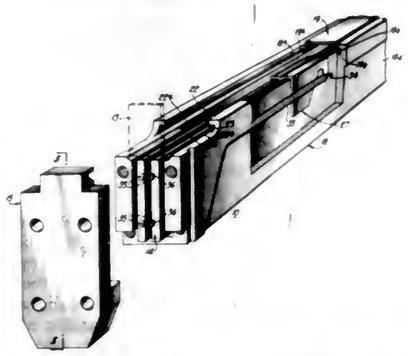
A new and distinct variety of tropical water lily plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of superior suitability for growth and blooming in aquariums, a small, dwarf-like size, distinctive and attractive Light Blue flowers which have fewer petals than regular tropical water lilies, long-lasting flower qualities, excellent shipping qualities, and a distinctive viviparous habit.

PATENTS

GRANTED NOVEMBER 17, 1964

GENERAL AND MECHANICAL

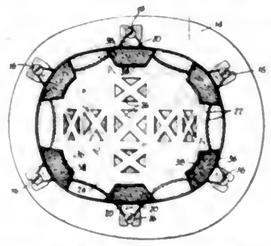
3,156,920
MAGAZINE CONSTRUCTION
Eugene J. Mysiak, Cicero, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Mar. 23, 1962, Ser. No. 181,976
7 Claims. (Cl. 1—3.1)



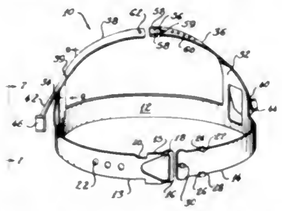
1. A fastener magazine for a fastener driving device for interchangeably supporting a plurality of staple-stype fasteners and nail-type fasteners in back-to-back relationship and for feeding said fasteners to a fastener drive track; said magazine comprising an elongated, generally U-shaped base member including a bottom portion and a pair of spaced leg portions extending upwardly from the bottom portion; a pair of spaced, longitudinally extending fastener support portions intermediate said spaced leg portions forming a staple support and guide for loosely supporting a strip of inverted U-shaped staple-type fasteners from their crown with the legs of said fasteners positioned adjacent the outer sides of said leg portions for guiding said fasteners along said support portions, and additionally defininig a nail guide groove between them for supporting a strip of nail-type fasteners from their heads with the shanks thereof loosely accommodated in said nail guide groove; a generally E-shaped fastener pusher having a pair of spaced end legs overlying the outer sides of said fastener support portions for engaging a staple-type fastener and having an intermediate leg in said groove for engaging a nail-type fastener; and spring means biasing said pusher toward said drive track.

3,156,921
PROTECTIVE HEADGEAR
Edward R. Dye, Orchard Park, N.Y., assignor to Pulmosan Safety Equipment Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 17, 1961, Ser. No. 132,125
3 Claims. (Cl. 2—3)

1. A protective helmet comprising, in combination, a substantially rigid outer shell having a central enlarged head-receiving section and a peripheral brim, a skull piece located within and spaced apart from the outer shell for supported engagement upon a head, a flexible cable, circumferentially spaced apart peripheral portions of said skull piece having mounting portions for secured engagement upon spaced apart portions of said cable, anchor means carried by spaced apart portions of said brim supporting said cable intermediate said mounting portions of said skull piece, a head band mounted upon said anchor means within said outer shell for projecting inwardly into the interior of said head-receiving section for engagement with the sides of the head of the wearer, said skull piece comprising a head-conforming skull plate having a plurality of apertures reducing the weight thereof and allowing the circulation of air therethrough, said peripheral mounting portions of said skull piece comprising segmental arcuate segments having reentrant tab portions receiving and freely embracing said spaced apart portions of said cable, and intermediate portions of said cable extending around said anchor means to form a series of catenaries along the length of said cable and between adjacent ones of said anchor means.



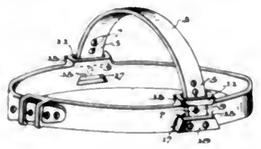
3,156,922
CRADLE ATTACHMENT FOR HEAD PROTECTIVE EQUIPMENT
Marshall N. Anderson, Grayslake, Ill., assignor to Sellstrom Manufacturing Company, Palatine, Ill., a corporation of Illinois
Filed Dec. 7, 1961, Ser. No. 157,637
4 Claims. (Cl. 2—3)



1. In head protective equipment a detachable cradle comprising a circumferentially extensible head band having the ends thereof adapted for lying in overlapped relationship, one end of said head band having a neck portion of reduced width adjacent to an enlarged terminal portion having a slot therein through which the distal end of said head band can be threaded, said end of the head band being provided also with a plurality of spaced aligned apertures, the distal end of said head band carrying a pair upwardly and inwardly extending flange members adapted to form a channel for reception of one end of said head band and an upstanding protuberance thereon adapted to reside within the spaced apertures located on said head band, said head band having two enlarged side portions thereon spaced apart approximately 180°, each of said enlarged

side portions having integrally connected thereto an outwardly and angularly extending protuberance, the free end of said protuberance benig spaced laterally from said band and being provided with a rounded disk member having an aperture therein for receiving fastening means for attachment to the head protective equipment, said disk member having a pair of spaced apart lugs on the periphery thereof to limit the pivotal movement of the cradle attachment with respect to the head protective equipment, a head strap adapted to rest on the head of the wearer comprising a pair of substantially vertically extending straps connecting with the enlarged side portions on said head band and having the free ends thereof adapted for lying in overlapped relationship, the free end of one of the said vertically extending straps being provided at its terminal end with a generally rectangular lip lying in a plane below and projecting outwardly therefrom so as to define a transverse slot between said lip and the end of said vertical strap and being provided also with a longitudinally extending slot and a plurality of spaced aligned apertures, the other vertically extending strap being provided with an upstanding protuberance adapted to reside within the spaced apertures provided within the first mentioned vertically extending strap.

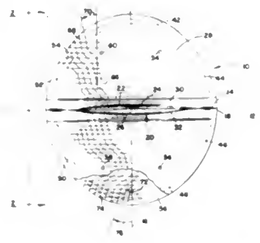
3,156,923
ADJUSTABLE HEADGEAR
Walter Timm, Pittsburgh, Pa., assignor to Mine Safety Appliance Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1962, Ser. No. 204,007
2 Claims. (Cl. 2—3)



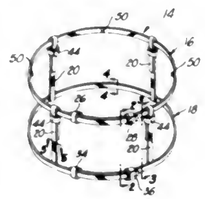
1. A head engaging suspension for face-protecting shields comprising an annular headband having opposed side portions and a crown strap having two end portions, the headband and crown strap being made of a material which is flexible but sufficiently rigid to tend to retain its shape, means to circumferentially adjust the size of the headband, a plurality of apertures spaced lengthwise in each said end portion, an integral U-shaped upper bracket on each opposing side portion and receiving said end portion comprising outwardly extending and upwardly diverging side walls, an integral outwardly extending stud spaced below each upper bracket and selectively pivotally engaging said apertures, an integral U-shaped lower bracket spaced below each stud and receiving a said end portion comprising outwardly extending downwardly diverging side walls, and means adapted to support a face protecting shield secured to said each lower bracket.

3,156,924
GARMENT SHIELD
Elizabeth M. Wonacott, 9301 Lenore Drive, Garden Grove, Calif.
Filed Feb. 1, 1963, Ser. No. 255,570
10 Claims. (Cl. 2—53)

1. A blank for a garment shield having multiple layers of material in sequence comprising: a first layer of nylon gauze having a bias thread in a first direction, a second layer of nylon gauze having a bias thread in a second direction, a third layer of moisture absorbing material, a fourth layer of very thin polyethylene, a fifth layer of nylon gauze having a bias thread in one direction, and a sixth layer of nylon gauze having a bias thread in a direction different than said last named layer of nylon gauze.



3,156,925
COVERING SUPPORTING HEAD FRAME
Beatrice Y. Brunelle, 5165 Fountain Ave., Los Angeles 29, Calif.
Filed May 5, 1961, Ser. No. 108,165
5 Claims. (Cl. 2—180)

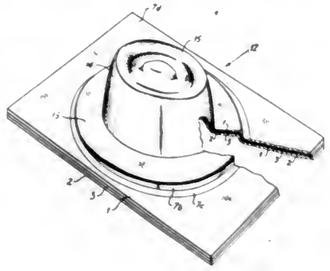


1. A covering supporting head frame, comprising: a lower annular head-encircling member including means for adjusting the effective size thereof; an upper annular member; and a plurality of supporting members of flexible, bendable material interconnecting said annular members in adjustable spaced-apart relationship, each of said supporting members including a lower end fastened to the lower annular member and an upper end encircling the upper annular member in sliding adjustable relationship, the upper end of each of said supporting members being freely bendable at various positions along the length thereof to vary the spacing between the upper and lower annular members.

3,156,926
METHOD FOR MAKING A MOLDED HAT
Stanley G. Hoffman, Norwalk, Fred C. Van Ess, Danbury, and Thomas J. Gillick, Jr., Glenville, Conn., assignors to Hat Corporation of America, Norwalk, Conn.
Filed Mar. 16, 1959, Ser. No. 799,745
3 Claims. (Cl. 2—194)

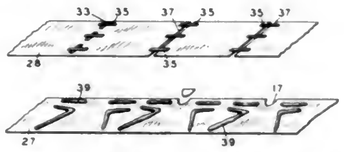
1. The method for making hat bodies consisting of a one piece crown and brim which comprises the steps of: forming a composite, flat, needle-felted fabric, consisting of at least one layer of woven thermoplastic synthetic fibers which shrink when heated, and at least one layer of fibers in the form of batts needle-felted to said layer of woven synthetic fibers; then cutting a suitable hat blank from said needle-felted fabric; then applying heat

to shrink the said woven thermoplastic layer; and then, while the said woven thermoplastic layer is still warm and in a plastic state, molding the said hat blank in an



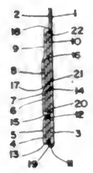
unheated mold of the desired shape to cause the said hat blank to be stretched and molded and to have a set, as a resulting hat body, in the form desired.

3,156,927
METHOD AND APPARATUS FOR MANUFACTURING GARMENTS
James J. Grimm, Columbus, and Donald R. Forry, Hilliard, Ohio, assignors, by mesne assignments, to Angelica Uniform Company, St. Louis, Mo., a corporation of Missouri
Filed Aug. 25, 1961, Ser. No. 133,955
10 Claims. (Cl. 2—243)



1. A method of producing garments such as gowns and the like from continuous webs of material, comprising the steps of: applying adhesive material to a first web in a pattern corresponding to the seams of a garment; cutting a plurality of slits substantially transversely in a second web; bridging said slits with tape; cutting between said slits to complete a transverse cut across said second web; laying said first and second webs together so that the adhesive material of the first web adheres to the second web; and cutting around the outline of the garment to remove it from said webs.

3,156,928
HEM CONSTRUCTION FOR LENGTHENING DRAPES AND THE LIKE
Nora P. Colignon, Chesterland, Ohio
(11 Nob Hill Drive, Chagrin Falls, Ohio)
Filed Oct. 2, 1962, Ser. No. 227,841
1 Claim. (Cl. 2—243)



An adjustable hem construction for an unlined drapery panel having a front face and a rear face, said construction comprising a plurality of flaps, as follows:

(1) a first flap consisting of three layers of fabric formed from the fabric of said panel by folding said fabric to provide

a first layer of fabric extending upwardly along the rear face of said drapery panel, from a first fold line extending across the width of said panel, along the bottom edge of said panel to a second fold line extending across the width of said panel;

a second layer of fabric extending downwardly and extending along the back of said first layer of fabric and almost to the first fold line and terminating in a third fold line, said third fold line extending across the width of said panel;

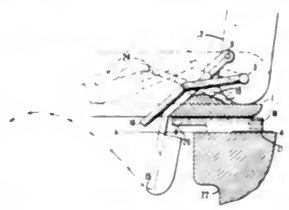
a third layer of fabric extending upwardly and having a first portion extending along the back of said downwardly extending second layer of fabric to the second fold line and a second portion extending upwardly beyond said second fold line and disposed against the rear face of said drapery panel along a portion substantially equal in length to the length of said first layer of fabric, said second portion constituting the first layer of the next succeeding flap; and

a line of removable stitching temporarily binding said first and second layers together along said third fold line;

(2) a plurality of additional flaps each constructed in the same manner as said first flap and extending between said first flap and a final flap, there being a line of removable stitching temporarily binding the first and second layers of fabric in each of said additional flaps along the fold line connecting the second and third layers of fabric of each of said additional flaps;

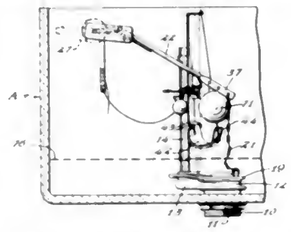
and (3) a final flap consisting of an upwardly extending extension of the third layer of fabric of the last of said additional flaps, folded over on itself and spaced from the rear face of said drapery panel by the downwardly extending end of said panel which results from said last folding over, and a line of removable stitching temporarily securing the folded over portion of said final flap to said drapery panel.

3,156,929
BIDET AND DOUCHE ATTACHMENTS FOR TOILET BOWLS
Charley W. Davis, Jr., 12 Wilmont Ave., White Plains, N.Y.
Filed Mar. 28, 1963, Ser. No. 268,684
4 Claims. (Cl. 4—7)



1. A bidet for use with a toilet bowl having a lid comprising, a nozzle rigidly fixed to said toilet bowl, means for connecting said nozzle to a source of fluid, said nozzle having an opening to direct a jet of fluid downwardly into said bowl, and an open fluid deflector mounted to said toilet bowl lid for swinging movement away therefrom when said lid is in raised position whereby to place said deflector under said jet, said deflector having curved means to deflect said jet up and out into the region of the toilet bowl opening.

3,156,930
WATER SAVER FOR FLUSH TANK TOILETS
Clayton J. Moulton, Rte. 1, Stillwater, Minn., and Melvin I. Johnston, 124 N. Lexington Ave., St. Paul, Minn.
Filed Oct. 28, 1963, Ser. No. 319,431
10 Claims. (Cl. 4—67)



1. A water saving device for use in conjunction with the flushing mechanism of a flush tank having a discharge opening at its lower end, a valve for controlling said discharge opening, a manually operable arm pivotally supported in said tank and means connecting said arm to said valve to lift said valve upon pivotal movement of said arm, said device including:

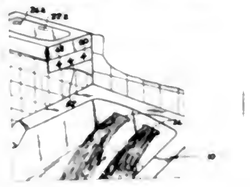
a pressure plate,

means movably supporting said plate above said valve for engagement with said valve,

a latch normally supporting said pressure plate out of engagement with said valve, and

manually operable means for releasing said latch to cause said pressure plate to exert a downward force on said valve.

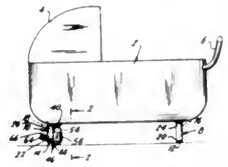
3,156,931
BATH TUB WITH CASCADING INLET MEANS
Harold R. Holtman, 55 Lorna Court, Twist St., Johannesburg, Transvaal, Republic of South Africa
Filed Aug. 9, 1962, Ser. No. 215,836
Claims priority, application Republic of South Africa, Aug. 24, 1961, R 61/1,252
2 Claims. (Cl. 4—166)



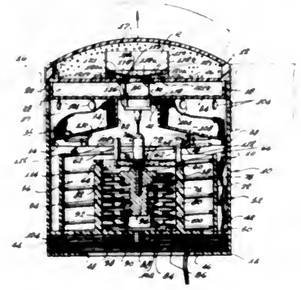
1. A bath tub which includes at least one water flow inlet opening in one of its walls, and dimensioned and arranged to direct a cascade of water into the vessel in a direction substantially normal to the plane of that wall; a drain outlet opening; an overflow outlet from the vessel, the water flow inlet opening being on a level at least as high as the overflow outlet; and connection means outside the bath for connecting the inlet opening to a water supply .

3,156,932
ROCKING CRADLE
Jacob E. Mautner, New Monmouth, N.J., assignor to Allied Doll & Toy Corp., Brooklyn, N.Y., a corporation of New York
Filed May 28, 1963, Ser. No. 283,921
20 Claims. (Cl. 5—109)

1. A rocking doll cradle comprising a cradle body and a pair of leg members depending therefrom to comprise a first assembly, one of said leg members having a curved bottom end and being adapted to rest on a supporting surface, a stationary support element adapted to rest on said supporting surface, a motor secured to said support element, said motor and said support element comprising a second assembly, means articulately connecting said second assembly to said first assembly and supporting said first assembly relative to said second assembly independently of said supporting surface, and an operative connection between said motor and said first assembly for causing the latter to articulate relative to said support member and thereby causing said cradle to rock, said operative connection being separate from said articulate connecting means.

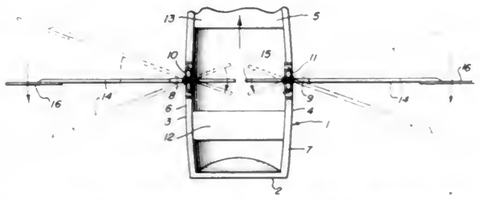


3,156,933
MARKER BUOY
Bert B. Brooks, Los Angeles, Calif.
(2609 Madison, Long Beach 10, Calif.)
Filed July 11, 1961, Ser. No. 123,154
7 Claims. (Cl. 9—9)



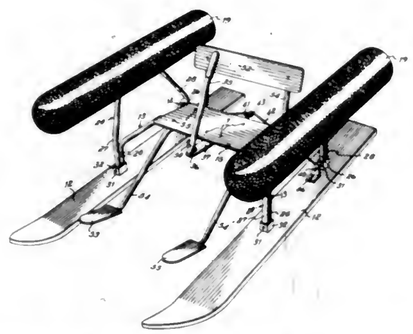
1. A marker buoy comprising a hollow, cylindrical base open at one end and having a transverse internal wall adjacent its other end, a hollow, circular float loosely fitted in said open end of said base, a bellows approximately coaxial with the central axis of said base and secured at one end to said transverse wall, a coaxial, cylindrical wall about said bellows secured at one end to said transverse wall and having in its other end a plurality of angularly spaced slots in planes including said axis, a plurality of latch members extending approximately parallel to said axis and loosely fitted at one end in said slots, respectively, means pivotally supporting said one end of said latch members on said cylindrical wall for swinging in said planes, respectively, said float including latch shoulder means extending about said other ends of said latch members, shoulders on said other ends of said latch members engageable over said latch shoulders for locking said float to said base, each latch member having a transverse arm at said one end extending over the other end of said bellows, means connecting said arms to said bellows so that said latch members are rocked to disengage their shoulders from said shoulder means upon axial contraction of said bellows under the action of a predetermined water pressure, and a long line joining said float and base.

3,156,934
ROWING DEVICE
John A. Kashew, Chicago, Ill., assignor to John W. Sereda, Chicago, Ill.
Filed Sept. 12, 1962, Ser. No. 223,052
2 Claims. (Cl. 9—25)



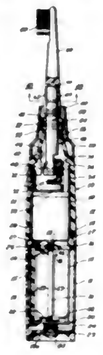
2. A bow facing rowing device for a boat having an oar paddle section and an oar handle section comprising interlocking means on the sections engaging one section with the other, link means disposed on the gear sections and pivotally interconnecting the oar sections providing in unison fore and aft motion thereof in a common plane, oar bracket means mounted on the boat including a pair of elements spaced apart from one another and each element being provided with a groove, oar carriage means having a pair of members and each member having an aperture in registry with a respective groove of the element, and key means removably extending through the apertures and the grooves and having locking portions extending in and reciprocally and rotatably extending through the apertures and grooves from a first unlocked position to a second locked position attendant to locking the elements with the members, and said key means having radial extension means engageable with the oar bracket means in the second position in limiting axial movement of the key means in the oar bracket means and preventing withdrawal of the key means from the mounting means.

3,156,935
WATER SKIING APPARATUS
Hubert O. Long, Box 248, Lawrenceburg, Ind.
Filed Jan. 30, 1963, Ser. No. 254,874
2 Claims. (Cl. 9—310)



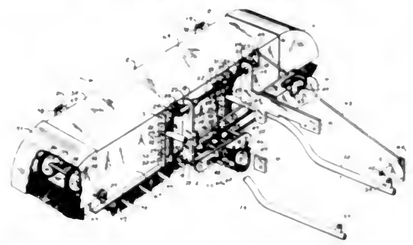
2. Water skiing apparatus comprising,
a support having downwardly depending legs on each side thereof,
a seat mounted on said support,
two spaced parallel skis each mounted on respective depending legs of said support for pivotal movement about longitudinal axes,
means mounted on said support for pivoting said skis in synchronism about said longitudinal axes, and
two floats one being mounted to said support on each side of and spaced above said seat.

3,156,936
ELECTRIC TOOTHBRUSHES
Herbert L. Hartman, Elyria, Ohio, assignor to The General Industries Company, Elyria, Ohio, a corporation of Ohio
Filed Nov. 21, 1962, Ser. No. 239,283
4 Claims. (Cl. 15—22)



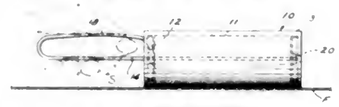
1. In a cordless electric toothbrush comprising battery means, an electric motor, a housing, adapted to be held in the hand, enclosing said battery means and said motor, said housing having an open end, drive means including a motor drive shaft, gas transmission means comprising a gear pinion on said drive shaft, bracket means disposed at one end of said motor, said bracket means carrying a gear-supporting shaft, a rotary face gear supported thereby, said face gear driven by said gear pinion, an elongated brush holder journalled eccentrically on said rotary face gear, said holder provided with an elongated guide slot, pin means extending transversely through said guide slot and journalled in said housing, said holder adapted to be projected through said open end of said housing with clearance, rotary movement of said rotary gear imparting reciprocating movement to said holder, said holder pivoting about said pin and effecting orbital movement of the brush secured thereto.

3,156,937
SWEEPER ATTACHMENT
James F. Weir, New Holstein, Wis., assignor to M-B Corporation, New Holstein, Wis., a corporation of Wisconsin
Filed Nov. 9, 1962, Ser. No. 236,651
5 Claims. (Cl. 15—80)



4. In a sweeper attachment for a tractor, the combination comprising:
a suspension system adapted to be fastened to said tractor;
a sweeper unit supported by said suspension system and having a vertically oriented frame defining a substantial enclosed area;
an endless brush carrier mounted about said frame to move through a path across a line of travel of said tractor and having a plurality of brush elements extending outward from its periphery to sweep debris from a surface;
a debris receptacle mounted in said enclosed area defined by said frame and adapted to receive debris swept from the surface by said brush elements.

3,156,938
LINT PICK-UP DEVICE
Marius W. Bills, 16220 Schoolcraft, Detroit, Mich.
Filed Apr. 24, 1963, Ser. No. 275,337
2 Claims. (Cl. 15—104)



1. A lint pick-up device comprising
a roller,
a length of pressure-sensitive tape wound around the periphery of the roller with the pressure-sensitive surface facing outwardly,
a wire comprising an axle portion extending through said roller and forming a shaft on which the roller is rotatably mounted,
means on the free end of said axle portion engaging said roller and preventing movement of said roller axially outwardly,
said wire being bent adjacent the end opposite said free end to form a closed loop handle adjacent the end of the roller,
the free end of said bent portion of said wire extending adjacent the axle portion and engaging said roller to prevent axially inward movement of said roller,
said handle having substantially all portions thereof extending on one radial side of said shaft.

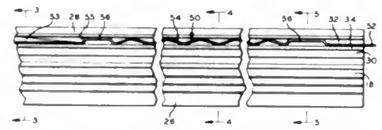
3,156,939
COMPOSITE PLOW CONSTRUCTION
Helmut E. Nimke, Brooklyn, Alexander H. McPhee, Manhasset, and Thomas H. Reid, Brooklyn, N.Y., assignors to Hepworth Machine Company, Inc., Long Island City, N.Y., a corporation of New York
Filed June 30, 1960, Ser. No. 39,875
2 Claims. (Cl. 15—246.5)



1. A plowing mechanism to unload a centrifugal machine which includes a vertical bar carrying the plowing mechanism and means for moving said bar vertically, said plowing mechanism comprising a hub member attached to said vertical bar, a plow member attached to said hub member, and a plow tip attached to said plow member, said plow member having a frangible portion which is strong enough to carry ordinary plowing forces but which is adapted to break when subjected to plowing overload.

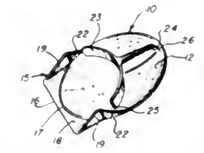
3,156,940
WINDSHIELD WIPER BLADE
John W. Anderson, 405 S. Huntington St., Gary, Ind.
Filed Sept. 10, 1962, Ser. No. 222,515
2 Claims. (Cl. 15—250.42)

2. A windshield wiper comprising an elongate squeegee and a flexor therefor,
said squeegee having spaced-apart longitudinally extending parallel grooves on opposite sides therefor,
said flexor having spaced-apart generally parallel portions seated in said grooves,
said flexor being formed from planar material and being flexible in a plane generally normal thereto and being substantially inflexible in a plane normal to the first-mentioned plane,



said flexor having a portion intermediate its ends provided with longitudinally disposed formations normal to the planar surface thereof to increase resistance to flexure, and at least one portion outwardly of the intermediate portion provided with transversely disposed formations normal to the planar surface thereof to decrease resistance to flexure, a plurality of said transverse deformations defining spaces for freely receiving spaced claw means of a pressure-transmitting superstructure within the confines of upper and lower extremities of said flexor.

3,156,941
COMBINATION DUSTPAN-WASTE RECEPTACLE COVER
Theodore J. Tomaiuolo, East Hartford, Conn. (653 Wethersfield Ave., Hartford, Conn.)
Filed Aug. 20, 1963, Ser. No. 303,346
4 Claims. (Cl. 15—257.1)

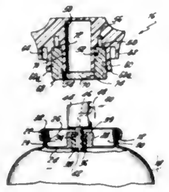


1. A fixture operative as a cover for a waste receptacle having an upper open end or as a dustpan comprising,
a concave-convex lid portion dimensioned to cover said open upper end with its concave surface facing downwardly,
a straight edged portion integral with said lid portion and extending therefrom and forming a ramp leading into the concave side of said lid portion whereby when said fixture is removed from said receptacle and inverted, it may be used as a dustpan, means on the concave side of said lid portion having terminal portions spaced from the perimeter of said lid portion adapted to fit within and thereby locate said fixture on said receptacle when used as a cover, and
handle means for said fixture accessible when said lid portion is in either of its operative positions.

3,156,942
AEROSOL CONTAINER ASSEMBLY WITH BUILT-IN LIQUID APPLICATOR
Robert Nyden, Manhasset, N.Y., assignor to Pittsburgh Plastics Division Heekin Can Co.
Filed June 19, 1963, Ser. No. 289,039
9 Claims. (Cl. 15—517)

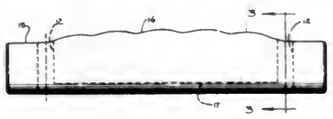
2. For use in an aerosol assembly including a container for pressurized fluid to be dispensed in spray form on a surface and requiring a wiping application on said surface after spraying, said container having projecting valve actuating means surrounded by a circular flange; a com-

bined closure cap and applicator for said container, said closure cap having a circular bottom portion sized to fit within the circular flange of said container to cover said valve actuating means, and an applicator member of ab-



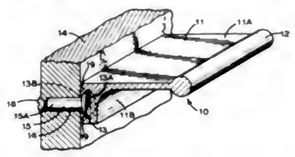
sorbent material secured to the bottom end of said closure cap and projecting beyond the bottom surface thereof, said closure cap in its mounted position on said container providing with said flange a removable mount for said applicator member on said container.

3,156,943
MOLDED ARTICLE
Jesse J. Groomer, Gary J. Groomer, and Mildred M. Groomer, all of 465 N. Baldwin Ave., Sierra Madre, Calif.
Filed June 19, 1961, Ser. No. 118,186
3 Claims. (Cl. 16—110)



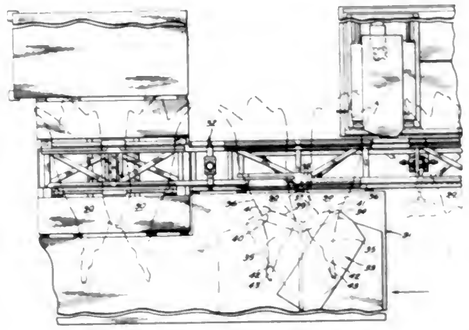
1. An article having a molded outer layer comprising an elongated rigid hollow core member closed at both ends having a layer of a hard setting plastic thereon, and an outer layer of a cushioning plastic, said member having a transverse aperture adjacent the ends thereof.

3,156,944
HANDLE CONSTRUCTION
Samuel Bohn, 606 Crescent Ave., Plainfield, N.J.
Filed Oct. 29, 1962, Ser. No. 233,781
8 Claims. (Cl. 16—111)



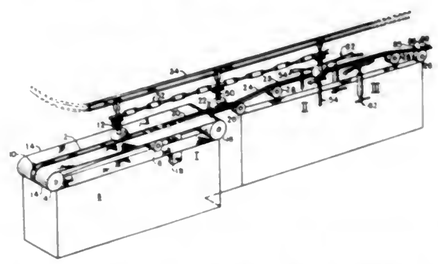
1. A handle construction comprising an elongated member having a portion adapted to be fitted against a surface to which the member is to be attached, said portion being provided with an elongated slot having a coextensive reduced opening in the surface of said portion, and means for securing said member to a supporting surface, said means including a stem and connected mounting plug having a flanged head portion, said flange head portion being adapted to be slidably received in said slot whereby the stem of said plug is extended through said opening whereby said plug is rendered readily adjustable along the length of said elongated slot, and a fastener adapted to be received in said plug for firmly securing said member in place on said supporting surface.

3,156,945
CARCASS BREAK-UP MEANS
Norman H. Vogt, Clawson, Mich., Harry W. Weprin, Chicago, Ill., and Samuel P. Pasutin, Royal Oak, Mich., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed July 6, 1961, Ser. No. 122,321
10 Claims. (Cl. 17—1)



5. In carcass break-up apparatus, a support member for supporting two carcass halves skin-side-down and in side-by-side relation, cutting means supported for movement toward carcass halves, means for moving said cutting means through said carcass halves in an angular M path, and means for moving the cutting means in an arc at each apex of the M path.

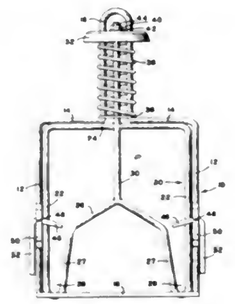
3,156,946
APPARATUS FOR PROCESSING CRABS
Jewett P. Moncure, 203 Nottingham Road, Richmond, Va.
Filed Apr. 26, 1961, Ser. No. 117,250
32 Claims. (Cl. 17—2)



1. In a machine for processing a crab: a conveyor system including a plurality of carriers; each of said carriers including means for holding and conveying the crab; and means mounted on each side of said conveyor means and proximate to the path of the carriers of said conveyor system for breaking off the claw, leg and fin members of the crab at the knuckles thereof.

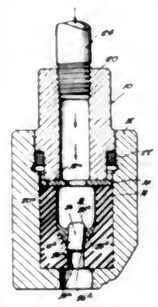
3,156,947
POULTRY SHACKLES
Lloyd M. Birchmier, Ottumwa, and Kenneth E. Birchmier, Pulaski, Iowa, assignors to L.B. Products Company, Ottumwa, Iowa, a corporation of Iowa
Filed May 15, 1963, Ser. No. 280,621
6 Claims. (Cl. 17—44.1)

6. A poultry shackle comprising a main supporting frame adapted for suspension from and movement with a conveyor, an auxiliary gripping frame guided on said supporting frame for vertical movement between predetermined relatively raised and lowered gripping and releasing positions respectively, said gripping frame being formed to define a pair of relatively horizontally spaced vertically extending notches open at their upper ends for reception of the legs of a fowl, resilient means operatively interconnected between said frames for resiliently urging said gripping frame upwardly relative to the supporting frame toward its gripping position, and latch means carried by said supporting frame in posi-



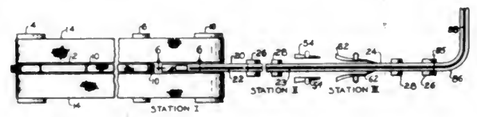
tion to project at least partially across and obstruct the open upper ends of the respective notches in the raised gripping position of said gripping frame, whereby movement of said gripping frame to its releasing position will result in movement of the open upper ends of said notches away from the latch means to permit removal of the said legs of a fowl through said open upper ends of the notches.

3,156,948
SCALLOP EVISCERATOR
Joseph A. Polito, Maywood, Ill., assignor to Continental Seafood Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 6, 1961, Ser. No. 93,406
8 Claims. (Cl. 17—45)



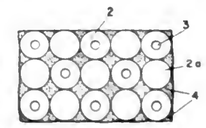
5. The process of cleaning scallop meat having viscera attached thereto intermediate the ends of the meat, said process comprising frictionally engaging and supporting said meat and attached viscera and applying fluid pressure directly to one end of said meat while frictionally engaged whereby said meat is separated from said viscera in the direction of the other end of said meat.

3,156,949
METHODS FOR PROCESSING CRABS
Jewett P. Moncure, 203 Nottingham Road, Richmond, Va.
Original application Apr. 26, 1961, Ser. No. 117,250. Divided and this application May 29, 1962, Ser. No. 202,932
21 Claims. (Cl. 17—45)



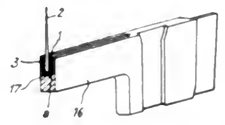
4. In a method of processing a crab through a series of steps: moving the crab along a path; and applying a vacuum to the abdomen of the crab during said movement, whereby said abdomen is drawn away from the thorax of said crab and the ventral groove in said thorax is exposed.

3,156,950
SPINNERETS AND METHODS OF MAKING THEM
Thomas Walton, Jr., Colwick, Cherry Hill, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,466
7 Claims. (Cl. 18—8)



1. A spinneret consisting of a plurality of contiguous rods disposed parallel to one another having terminal faces at their ends, at least some of said rods having capillary passages of uniform diameter of about 0.05 to about 0.3 mm., the passages extending between and opening into the terminal faces of the rods having capillary passages, and the rods being united into an integral unit by cementitious material disposed between the outer walls of the rods and filling the spaces between the rods.

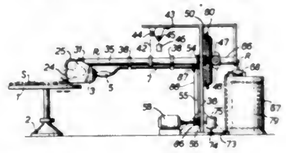
3,156,951
COMPOSITE FALLER BAR
Jean Frederic Herubel, Guebwiller, Haut-Rhin, France, assignor to N. Schlumberger & Cie, Guebwiller, Haut-Rhin, France
Filed May 10, 1962, Ser. No. 193,782
Claims priority, application France, May 19, 1961, 862,291
8 Claims. (Cl. 19—129)



4. A faller bar comprising a support member, a plurality of pins having a determinable annealing temperature, meltable means securing the pins to the support member to constitute a comb bar, said meltable means having a melting temperature above which the means is in liquid state and below which the means is in solid state, said means passing between respective states as said temperature is crossed irrespective of direction, said melting temperature being below the annealing temperature of the pins and at which melting temperature the

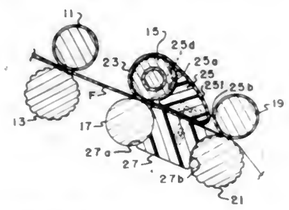
meltable means is liquid and the pins can be separated from the support, a faller bar body having a groove, said comb bar being supported in said groove and an intermediate layer of second meltable means in the groove between said comb bar and the faller bar body securing the comb bar to the latter, said second meltable means having a melting temperature which is lower than that of the first said meltable means.

3,156,952
PROCESS AND MEANS FOR SHEARING OR CLIPPING ANIMAL FIBRES AND FORMING THEM INTO A ROPE OR SLIVER
Donald Walker, 58 Bramley Lane, Lightcliffe, near Halifax, England
Filed Mar. 1, 1962, Ser. No. 176,674
6 Claims. (Cl. 19—150)



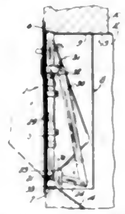
2. Combined means for clipping fibres from animal skins and for forming them into a rope, including a clipper head, power-driven shears in said head, at least one preliminary driven drawing-off roller operatively associated with said shears for drawing the cut fibres from said shears as a lap while maintaining said fibres substantially parallel, flexible support means along which said fibres are drawn from said preliminary roller, means adjacent to the front end of said support means for inserting a preliminary light twist to said lap to form a rope, means adjacent the rear end of said support means for drawing said rope along said support means, for giving said rope additional twist and for delivering said rope to a packaging point while maintaining substantially the original parallelism of the fibres on the skin.

3,156,953
TEXTILE DRAFTING APPARATUS
Russell B. Newton and William P. Warthen, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 178,885
10 Claims. (Cl. 19—245)



1. A drafting assembly comprising two spaced-apart pairs of drafting rolls, an endless fiber-control apron disposed about one roll of one pair of said rolls and extending between said one roll and an adjacent roll of the other of said pair of rolls, means guiding said apron to form a nose end between said one roll and said adjacent roll, said apron having a fiber-controlling run extending between said one roll and said nose end thereof, said means guiding said apron including a portion in apron cleaning and supporting engagement with said fiber-controlling run, and a fiber-supporting-and-guiding bridge element extending between and engaging in supported relation to the respective surfaces of the other two of said pairs of rolls, said bridge element having oppositely extending concave roll-engaging surfaces formed at opposite ends thereof and being in floating supported relation on its respectively oppositely engaged rolls.

3,156,954
HOPPER OR CHUTE DOOR ASSEMBLY
Glenn J. Haught, Cuyahoga Falls, Ohio, assignor to Wilkinson Chutes, Inc., Akron, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 272,988
2 Claims. (Cl. 20—16)



1. In a chute or hopper door assembly, or the like, including a frame means having an open center attachable to a structure at the margins of an opening therein to outline such opening, said frame having a pair of opposed side angles one of which has an aperture therein, a door being positioned in said opening, the improvement comprising

a tubular member secured to said door to aid in operably positioning it is said frame,

a support rod for said door extending through and protruding from both ends of said tubular member,

bearing means journalling said tubular member on said support rod,

a control arm fixedly secured to said tubular member adjacent one end thereof to extend therefrom to engage door control means,

one end of said support rod being positioned in said aperture,

an apertured support plate fixedly secured to said support rod at the other end thereof,

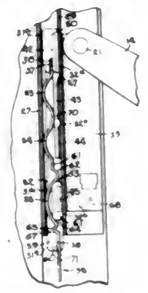
a support member secured to said frame adjacent said support plate and having an aperture therein with which the aperture in said support plate is aligned, and

means extending through said aligned apertures to secure said door in position but being operably connected to said support plate and said support member to permit adjustment therebetween to vary said door in position in said frame.

3,156,955
SLIDING SHOE FOR A CLOSURE MEMBER
Stuart W. Lindstedt, Belvidere, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Apr. 12, 1962, Ser. No. 187,053
10 Claims. (Cl. 20—42)

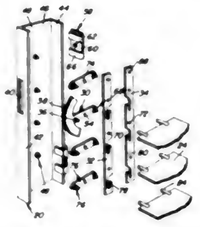
9. A shoe for a sliding closure member including, in combination, an elongated body having first and second laterally spaced bearing surfaces, a backing on said body spaced behind and facing toward said first bearing surface, an elongated spring bowed intermediate its ends with portions at opposite ends of the bow engaging said backing behind the spring and the intermediate portion of the bow projecting forwardly beyond said first bearing surface for engagement with a guide rail, abutment means on said body adjacent one end of said spring for holding said one end against said backing and resisting endwise sliding of the spring toward said one end while permitting sliding of the spring in the opposite direction, and means

for holding the spring releasably against endwise sliding in the opposite direction including an abutment spaced longitudinally along said spring from said abutment means and engaging the forward side of said spring beyond said bow at a point spaced from the other end of the spring



with the spring passing between said abutment and said backing and projecting beyond said abutment whereby the spring may be removed from said shoe by pulling on said projecting end portion and deforming the spring to pass endwise between said abutment and said backing.

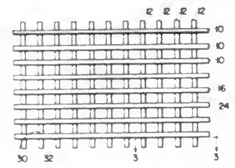
3,156,956
ADJUSTABLE WINDOW BLIND
Dale D. Jacobson, P.O. Box 387, Estherville, Iowa
Filed June 12, 1962, Ser. No. 201,849
3 Claims. (Cl. 20—62)



1. An adjustable window blind assembly comprising, a pair of spaced confronting channel members having flange portions extending toward each other, said flange portions of the respective channel members being interconnected by wall portions, vertically spaced stud elements mounted on said wall portions, lever elements rotatably mounted on said stud elements between the flange portions, parallel spaced link members pivotally connected to each of said lever elements between the flange portions of each channel member, said link members being provided with vertically spaced, confronting arcuate slots, a plurality of slats having spaced pins projecting from opposite longitudinal ends thereof seated in said confronting slots, and an adjustment sector portion connected to at least one of said lever elements projecting through a slot formed in one of the flange portions of the channel member.

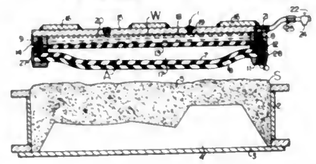
3,156,957
FLOOR MAT AND METHOD OF MAKING THE SAME
Robert C. Moeckel, Fort Wayne, Ind., assignor to Life Management, Incorporated, Fort Wayne, Ind., a corporation of Indiana
Filed Dec. 1, 1961, Ser. No. 156,383
9 Claims. (Cl. 20—78.3)

3. A mat comprising a first plurality of elongated rubber strips, said strips being rectangular in cross-section and having opposite parallel sides, said strips being spaced apart and parallel with all of the sides thereof also being parallel, each strip having a plurality of spaced apart rectangular apertures therein, material of each strip which immediately surrounds said apertures being solid and uninterrupted, the apertures of all said strips being transversely aligned, respectively, a second plurality of elongated rubber strips which are rectangular in cross-section to thereby be provided with opposite sides and edges respectively, said second strips having a plurality of longitudinally spaced notch pairs therein, each notch pair comprising two transversely aligned rectangular notches



which extend inwardly toward each other from the opposite edges of the respective second strip but which terminate short of each other to provide a web portion of said second strip therebetween, said first and second strips being interlocked together in transverse relationship with said web portions intimately fitting into respective apertures of said first strips and tightly engaging all sides thereof and with said notches straddling and intimately engaging the opposite sides of said first strips respectively, said first and second strips having the same cross-sectional dimensions between said apertures and notches, respectively.

3,156,958
FOUNDRY MOLDING MACHINE
Leon F. Miller, Rocky River, and Robert W. Ellms, North Olmsted, Ohio, assignors to Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed July 9, 1962, Ser. No. 208,200
14 Claims. (Cl. 22—42)

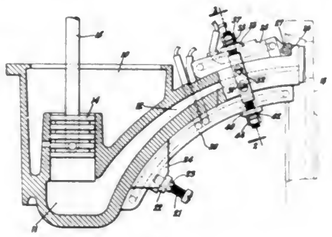


1. A squeeze head for foundry molding machines and the like comprising a downwardly opening cavity, a diaphragm peripherally secured to said cavity extending across the bottom thereof, a chamber in said cavity having a flexible wall vis-a-vis said diaphragm, a compressible fluid sealed in said cavity between said diaphragm and said flexible wall, and a substantially incompressible fluid sealed in said chamber.

3,156,959
LINECASTING MACHINES
Paul Hilpman, Garden City, and Leroy F. Albert, Brooklyn, N.Y., assignors to Eltra Corporation, a corporation of New York
Filed Sept. 4, 1959, Ser. No. 838,095
2 Claims. (Cl. 22—71)

1. In a metal pot for a linecasting machine having a reservoir in which metal is melted, an electrical heater for melting metal in the reservoir, a mouthpiece for engaging a mold, a discharge spout leading from said reservoir to said mouthpiece, a plunger for discharging molten metal from said reservoir through said mouthpiece, and an electrical heater element adjacent the mouthpiece for heating the mouthpiece, the improvement in combination

therewith of means for resiliently biasing said mouthpiece heater element into engagement with the upper part of the discharge spout comprising a pair of threaded studs, one secured to each side of the metal pot, a clamping member extending between said studs and overlaying the



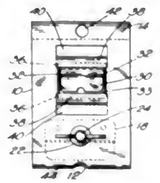
mouthpiece heater element, a high temperature compression spring fitted over each stud to urge said clamping member against said heater element, and a nut threaded onto each of said studs to position the springs on said studs.

3,156,960
MONOGRAM ATTACHMENT
William S. Klitzner, Cranston, R.I., assignor to Harry Klitzner Co., Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 11, 1963, Ser. No. 264,366
3 Claims. (Cl. 24—11)



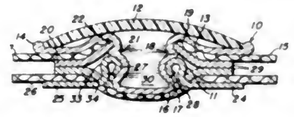
1. In a personal identification attachment, a clip member defined by an elongated body portion that is formed with a longitudinally extending groove, the side walls of which are generally inclined, there being a longitudinally extending slot formed in said groove between said inclined walls, and an insert for securement to said clip member including a body that is generally bowed in the initial formation thereof and that is formed with an under surface, an outer surface and inclined side walls, said under surface having a lateral dimension that is less than the lateral dimension of said outer surface and that generally corresponds to the lateral dimension of said slot, opposed lugs joined to the under surface of said insert, the lateral dimension of said lugs being less than that of said outer surface and corresponding generally to that of said inner surface, wherein said lugs are insertable within said slot, said insert being receivable within said groove so that said lugs project through said slot and the ends of said insert are located adjacent to the ends of said slot, said insert being depressed from the bowed configuration in said groove to a generally flat configuration, wherein the inclined side walls of said insert engage the inclined side walls of said groove, said lugs projecting beneath the ends of said slot for locking said insert in said clip member and the outer surfaces of said insert occupying substantially the full width of the portion of the groove in which it is located.

3,156,961
BUCKLE
Mike I. Garber and Hilary Goldberg, Johannesburg, Transvaal, Republic of South Africa, assignors to Miniwheel Limited, London, England
Filed May 31, 1962, Ser. No. 198,996
Claims priority, application Republic of South Africa, July 18, 1961, R 61/718
2 Claims. (Cl. 24—84)



1. A buckle comprising a base plate that is formed with two hooked ends, the hooks being of different type to engage two different categories of anchor, two spaced slots parallel to the ends of the base plate, the slots being formed by pressing out adjacent tongues from the base plate and the tongues being bent over to define opposed grooves between themselves, a rectangular plate with lugs projecting upwardly therefrom, and a clamping jaw hinged on the lugs, the rectangular plate being slidably and reversibly received in the grooves.

3,156,962
SNAP FASTENER
Mable R. Henson, Kingston, Ark.
Filed Dec. 10, 1962, Ser. No. 243,307
1 Claim. (Cl. 24—217)



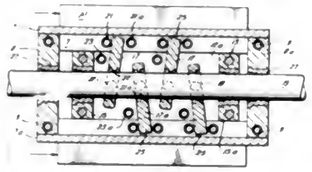
A snap fastener comprising first and second members adapted to be secured to associated portions of fabric by snap spring washers and adapted to be releasably interconnected by a stud extending from one member and a resilient socket formed in the other member, said stud having an enlarged head and an intermediate enlarged clamping bead, said socket having an inwardly extending claw like gripping portion of generally arcuate configuration adapted to be received between said enlarged portions of said stud and providing an enlarged clamping bead for securing an associated central portion of a washer thereto, the undersurface of said stud containing member being recessed adjacent said stud bead for securing an associated central portion of a washer therebetween, said central portions of said washers being concave and the stud bead being substantially even with the outside perimeter of the stud containing member so that the washers abut each other when the stud and socket are snapped together to more securely grip fabric associated therewith.

3,156,963
ONE-DIRECTIONAL CLUTCH
Tom E. Owen, Houston, Tex., assignor to Hudson Engineering Corporation, Houston, Tex.
Filed Jan. 19, 1962, Ser. No. 167,353
3 Claims. (Cl. 24—249)

1. A one-directional clutch comprising in combination a series of plates spaced from each other in side by side relationship and having aligned openings therethrough of size and shape to receive an elongate

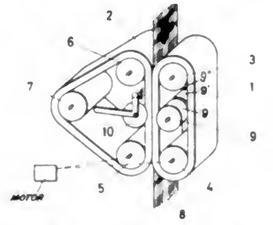
object loosely when the plates are substantially perpendicular to the elongate object and to grip the object when the plates are tilted; and

means for moving alternate plates in said series to and from oppositely sloped tilted gripping positions comprising a lost motion assembly enclosing said plates and having openings therethrough aligned with the openings in the plate including a plate carrying member carrying alternate plates tiltably into oppositely



sloped positions and a plate tilting member having stops thereon, one of said plate carrying member and plate tilting member being slidable within the other for a limited distance and said stops on the plate tilting member being arranged in a number of pairs equal to the number of plates with the stops of each pair disposed on opposite sides of a corresponding plate in position to contact and move the plate on relative sliding movement between the plate carrying member and the plate tilting member.

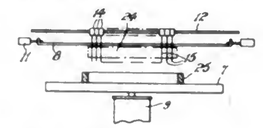
3,156,964
WEFT CORRECTING APPARATUS
Albert Leimer, Beimlerstrasse 15, Augsburg, Germany, and Siegfried Brunner, Leitershofen, near Augsburg, Germany; said Brunner assignor to said Leimer
Filed Feb. 20, 1962, Ser. No. 174,499
Claims priority, application Germany, Feb. 25, 1961, E 20,658
8 Claims. (Cl. 26—51.3)



1. Apparatus for treating woven cloth to straighten weft threads thereof including a first endless rubber band, support means for said band, means for applying a localised varying pressure to said band to cause variable stretching of a localized portion thereof, cloth support means including a second endless rubber band having a portion extending closely adjacent to said localized portion of said first band, and means for feeding a woven cloth between said adjacent portions of the first and second rubber bands.

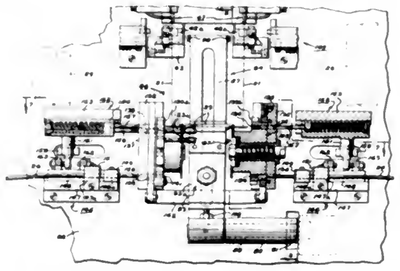
3,156,965
METHOD OF MAKING A COMPRESSED RUBBERIZED HAIR PAD
Harold A. Howard, London, England, assignor to The Hairlok Company Limited, London, England
Filed Nov. 27, 1961, Ser. No. 155,050
Claims priority, application Great Britain, Dec. 1, 1960, 41,324/60
5 Claims. (Cl. 28—72)

1. A method of making a pad of compressed rubberized hair comprising subjecting a sheet, consisting of at least one layer of adhesive coated hair, to lateral compression applied at closely spaced intervals within the thickness of the sheet and in a direction substan-



tially parallel to the plane of the sheet and subsequently effecting setting of the adhesive coating of the hair to maintain the laterally compressed condition thereof.

3,156,966
ARTICLE HANDLING AND WELDING APPARATUS
James C. Houda, Jr., Downers Grove, Kenneth F. Johnson, Oak Lawn, and Ben L. Wright, Chicago, Ill., assignors to Western Electric Company, Incorporated, a corporation of New York
Filed Feb. 24, 1961, Ser. No. 91,404
16 Claims. (Cl. 29—33)

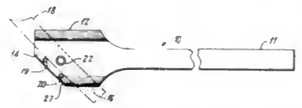


15. Apparatus which comprises, means for supporting an article, a first electrode for contacting the article, a reciprocating percussion assembly having a second electrode adapted to releasably grip a wire, said percussion assembly being movable toward the article for moving an end of the wire into engagement with the article so that the end of the wire is electrically welded thereto, tubing shear-and-feed means spaced from said support means for shearing tubing into preselected lengths and positioning a length of tubing over the article and a portion of the wire which has been welded to the article, article-transfer means for transferring the article with the wire welded thereto from said support means to said tubing shear-and-feed means, and operative to pull the wire through said percussion assembly, wire-cutting means for severing the wire to form a new end on the wire and to produce a length of wire welded to the article after the article has been transferred to said tubing shear-and-feed means by said transfer means, and means for operating said percussion assembly, said article transfer means, said wire-cutting means, and said tubing shear-and-feed means in timed relationship with respect to one another.

3,156,967
LATHE TOOL HOLDER
Frank R. Dansfield, 1701 Pine St., St. Joseph, Mich.
Filed July 13, 1962, Ser. No. 209,682
1 Claim. (Cl. 29—96)

A holder for a lathe cutting tool, comprising; an elongated shank of substantially rectangular cross-section, one end of said shank being enlarged and having a slot therein, said slot being inclined to the longitudinal axis of said shank; an upper leg and a lower leg of substantially

equal size formed in said enlarged end by said slot, each of said legs having a corner thereof removed along a line substantially parallel to the base of said slot; a plurality of threaded positioning means removably secured in one of said legs spaced equally from the base of said slot and forming a positioning surface overlying a tool positioned in the slot; each of said legs having a threaded



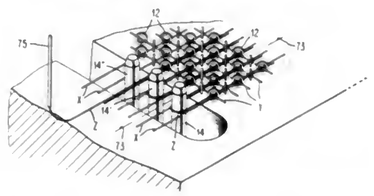
opening therein, said openings being substantially directly opposed and spaced inwardly from the positioning means toward the base of said slot; and a threaded securing member in each of said threaded openings, whereby a cutting tool may be removably positioned and secured within said slot to permit reversible right-hand and left-hand use of said holder.

3,156,968
PRESSURE ROLLER AND METHOD OF MANUFACTURE
William D. White, Jr., 148 Dracena Ave., Piedmont, Calif.
Filed Mar. 22, 1962, Ser. No. 181,701
13 Claims. (Cl. 29—123)



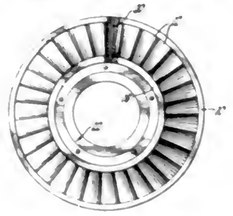
13. In a pressure roller having a cylindrical mandrel, a cylindrical rolling surface supported by said mandrel comprising a plurality of overlying layers of welding material in the form of beads, the beads of the two outermost layers being disposed transversely to each other, the outermost layer being smooth and forming a cylindrical rolling surface around said mandrel.

3,156,969
CAPSTAN WIRE HANDLER
Walter P. Shaw, Jericho, Vt., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 13, 1961, Ser. No. 95,296
7 Claims. (Cl. 29—155.5)



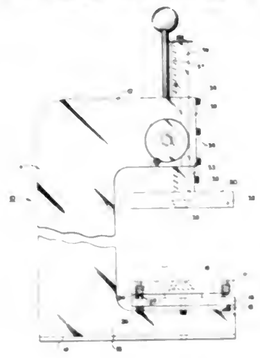
1. In a device for feeding a continuous filament over a serpentine path through rows of components arranged on X and Y wires within a frame, a nest for said frame and components, a plurality of capstans associated with said nest, one capstan between each row of components on an X wire, means for threading said filament through a row of said components after being wrapped about an adjacent capstan, and drive means for said capstans whereby said filament is fed by said capstans through all of said components already threaded.

3,156,970
TORQUE CONVERTER ELEMENTS AND METHODS OF MAKING THE SAME
Walter R. Zojac, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 14, 1961, Ser. No. 124,108
3 Claims. (Cl. 29—156.8)



1. The method of making a torque converter element which comprises die casting a one piece lineal element of suitable material having a portion providing a lineal strip of selected length including a smooth-surfaced side and a plurality of blades extending from said lineal strip at spaced intervals along said strip and having free ends, rolling said selected length of said strip into ring form, securing the ends of the strip together so as to form a smooth-surfaced ring thereby providing a shroud with blades extending therefrom and fastening a ring-like shroud member to the free ends of said blades.

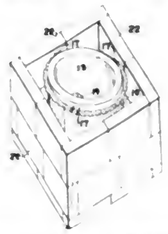
3,156,971
APPARATUS FOR ASSEMBLING MULTIPLE CAN PACKAGES
James C. De Shazor, Jr., 3314 Coy Drive, Sherman Oaks, Calif.
Filed July 31, 1963, Ser. No. 298,963
3 Claims. (Cl. 29—200)



1. An apparatus for assembling a multiple can package by uniting a plastic clip with a plurality of cans, each having a rim at one end thereof; said plastic clip having a body portion and depending portions engageable with said can rims, comprising: a rigid stand having an upper horizontal leg and a lower horizontal leg, a first horizontally extending plate affixed to the top side of said lower leg, a second horizontally extending movable plate positioned immediately above said first plate, biasing means operatively related between said first and second plates to normally maintain said second plate spaced from said first plate, a polygonal opening in the central portion of said second plate, a third plate integral with the first plate and freely received within said polygonal opening, holding means on said third plate to releasably maintain one of said plastic clips on said third plate,

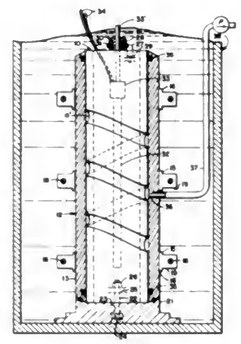
said depending portion of the plastic clip being above said second plate when said first and second plates are spaced from each other; an area being provided on the top face of said second plate to accommodate said plurality of cans to form said package, portion of said can rims being positioned over said clip on said third plate when the cans are located in said area on the second plate; a fourth rigid horizontally extending plate positioned immediately below the lower face of said upper leg, holding means affixed to the underside of said fourth plate to releasably maintain one of said plastic clips on said fourth plate; and power means operatively related to to said upper leg to move said fourth plate toward and away from said first and second plates.

3,156,972
METHOD FOR RELINING A COMBUSTION CHAMBER WITH REFRACTORY MATERIAL WITHOUT DISASSEMBLING THE CHAMBER
Anthony E. Cimochowski, Hillsborough Township, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Apr. 28, 1961, Ser. No. 106,246
3 Claims. (Cl. 29—401)



1. A method for forming a combustion chamber for reconditioning appliances having an internal cavity access to which is through an entrance passageway having a relatively small cross-sectional configuration comprising:
(*a*) providing a metallic sheet having a thickness between about 0.002 and 0.020 inches so that said metallic sheet is very flexible,
(*b*) providing said metallic sheet with a plurality of corrugations running substantially parallel to each other and to the free edges of said metallic sheet to impart dimensional stability to said metallic sheet in one direction and said metallic sheet having an opening therein,
(*c*) placing the free edges of said metallic sheet into overlapping relationship to form a tube having a predetermined transverse cross-sectional area,
(*d*) securing together the overlapped edges to retain said metallic sheet in said tubular form,
(*e*) folding said metallic sheet in said tubular form upon itself along lines extending generally parallel to the axis of said metallic sheet in said tubular form until the portions defining each half of the circumference thereof are adjacent to each other,
(*f*) forming said folded tubular metallic sheet into a generally tubular unit having a transverse cross-sectional area substantially smaller than the transverse cross-sectional area of said metallic sheet in said tubular form,
(*g*) inserting said generally tubular unit through said entrance passageway of said appliance into said internal cavity thereof,
(*h*) said entrance passageway having a transverse cross-sectional area larger than said transverse cross-sectional area of said generally tubular unit but substantially smaller than said transverse cross-sectional area of said metallic sheet in said tubular form,
(*i*) forming said generally tubular unit while within said internal cavity back into the original form of said metallic sheet in said tubular form,
(*j*) forming an integral flange on at least one end of said metallic sheet in said tubular form while within said internal cavity to impart strengthening characteristics thereto so that said metallic sheet in said tubular form is self-sustaining and
(*k*) providing said metallic sheet in said tubular form while within said internal cavity with a thermal insulating material inserted through said entrance passageway and said opening in said metallic sheet and placed in contiguous relationship with the internal surface of said metallic sheet in said tubular form.

3,156,973
METHOD OF PRODUCING INTERIOR SURFACE CONTOUR ON TUBULAR PART BY EXPLOSIVE FORMING
Irving Lieberman, Covina, and Louis Zernow and Paul B. Barnett, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Apr. 12, 1962, Ser. No. 186,986
3 Claims. (Cl. 29—421)

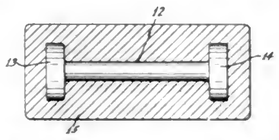


1. A method of producing a desired design recessed into the inner surface of a hollow part having at least one open side, comprising: removing material from portions of the outer surface of the part to produce the desired design when transferred to the inner surface of the part; positioning the part in a mold having a substantially continuous inner surface abutting the whole outer surface of the part from which material has not been removed, the inner surface of the mold continuing the contour thereof in spaced relationship over the portions of the outer surface of the part from which material has been removed; positioning a quantity of explosive in said part in an amount and in a form capable of exerting sufficient force when detonated to drive the material of the part underlying the portions of the outer surface of the part from which material has been removed into abutment with the inner surface of the mold; detonating the explosive by any suitable means; and removing the formed part from the mold.

3,156,974
METHOD FOR IMPROVING PROPERTIES OF ARTICLES
Alfred R. Bobrowsky, Florham Park, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Feb. 10, 1961, Ser. No. 88,420
11 Claims. (Cl. 29—423)

1. A method for hardening articles, which comprises encasing the article having a given compressibility in a solid non-elastomeric jacket having a larger compress-

ibility, applying a high hydrostatic pressure between about 20,000 and 30,000 atmospheres to the resulting assembly, releasing the pressure, repeating the application of high

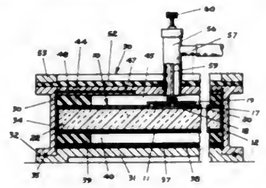


hydrostatic pressure and the subsequent release of pressure at least one time to produce hardening throughout the substantial entirety of the article, and removing the jacket from the thus-treated article.

3,156,975
METHOD OF MAKING HEAT INSULATING PANELS

Edward Wharton Shaw, Gibsons, British Columbia, Canada, assignor to Evacuated Insulation Research Ltd., Gibsons, British Columbia, Canada

Filed Feb. 16, 1959, Ser. No. 793,385
3 Claims. (Cl. 29—471.1)



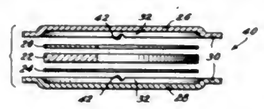
1. A method of making a heat insulating panel formed of an envelope having top and bottom plates and thin planar side walls with top and bottom flanges overlapping the closely spaced marginal edges of the plates, which method consists of treating the envelope parts for bonding together with a heat soluble bonding material, assembling the thin planar side walls with the bottom flanges thereof overlapping the closely spaced marginal edges of the bottom plate, filling the envelope with a wall supporting gas containing porous filler, assembling the top plate with the closely spaced marginal edges thereof overlapped by the top flanges on the thin planar side walls, enclosing the envelope in a jig wherein the side walls are rigidly and closely supported against outward movement and the top and bottom flanges are interposed between resilient members, heating the assembly to a temperature below the melting point of the heat soluble bonding material to degas the porous filler, evacuating the heated assembly, applying resilient and uniform clamping pressure to the top and bottom flanges and subsequently further raising the temperature to melt the heat soluble bonding material and thereby seal and bond the parts of the evacuated envelope.

3,156,976
METHOD OF MAKING COMPOSITE METAL PRODUCTS

Kempton A. Whiting, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 17, 1961, Ser. No. 96,411
5 Claims. (Cl. 29—471.5)

5. The method of making a composite metal product comprising the steps of providing three clean metal components respectively of platinum, copper and one selected from the group consisting of tantalum and niobium; assembling said components so that said platinum and copper components sandwich said one component therebetween; metallurgically bonding said assembled components together to provide a bonded composite assembly; forming said bonded assembly into a tubular shell with said platinum component disposed exteriorly and



said copper component disposed interiorly thereof; telescopically disposing a copper core within said tubular shell; and squeezing said core and shell to effect a reduction in cross-sectional area thereof and to tenaciously adhere said copper component to said copper core.

3,156,977
METHOD OF MAKING A GRAB BAR

Hugh H. Logan, Pasadena, Calif., assignor to Logan Hospital Equipment Co., Glendale, Calif., a corporation of California

Filed July 26, 1960, Ser. No. 45,377
1 Claim. (Cl. 29—475)



The method of making a grab bar which comprises the steps of:

machining the flats from relatively short end portions only of a metal rod of a polygonal cross section to form smooth, cylindrical end portions on the rod; and bending said cylindrical end portions through approximately 90°, and then securing a wall mounting plate to each extremity of the thus bent rod.

3,156,978
JOINING TITANIUM AND TITANIUM-BASE ALLOYS TO HIGH MELTING METALS

Dean K. Hanink, Indianapolis, Ind., and James C. Holzwarth, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

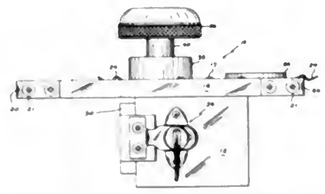
No Drawing. Original application Feb. 16, 1953, Ser. No. 337,214, now Patent No. 3,010,198, dated Nov. 28, 1961. Divided and this application Mar. 27, 1961, Ser. No. 98,332
4 Claims. (Cl. 29—495)

1. A method of forming a composite metal product which comprises assembling a titanium base metal article and a steel article into a desired structure wherein surfaces of said articles are in contact, passing the assembly thus formed into and out of a molten bath of a coating metal selected from the class consisting of aluminum and aluminum base alloys through a molten salt layer capable of absorbing titanium and aluminum oxides floating on said molten coating metal bath, said assembly being passed through said salt layer into said coating metal bath sufficiently quickly so that salt which solidifies on surfaces of said assembly does not remelt until immersed in said coating metal bath, said molten salt layer being at a temperature in excess of 1250° F. while said assembly is passing therethrough, said assembly being retained in said coating metal bath until the contacting surfaces of said assembly reach at least the melting point of said coating metal, and thereafter permitting said assembly to cool into a strongly bonded and coated composite metal product.

3,156,979
CONTAINER OPENER

Warren R. Hafstrom, New Carlisle, Ind., and George Boswinkle, St. Joseph, and Lester H. Hinkel, Benton Harbor, Mich., assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 19, 1963, Ser. No. 289,146
6 Claims. (Cl. 30—6.4)



1. A container opener for severing one end of a cylindrical container and installing a flexible mouthpiece or cover over the severed end of the container and comprising: a body having a vertical container receiving cavity, means pivotally joined to said body for releasably restraining the container within the cavity of said body, a top member slidable at the upper end of said body normal to the cylindrical axis of the container, a circular cutter at one end of said top member, said circular cutter being operable for severing the top end of the container, and a circular opening having an upwardly extending flange at the other end of said top member for attaching the flexible mouthpiece to the open end of the severed container as it is axially removed from the container opener through said circular opening.

3,156,980
SHEARS FOR CUTTING AND TRIMMING

James T. Vosbikian, 20th and Oxford Sts., Philadelphia, Pa.

Filed Dec. 14, 1962, Ser. No. 244,807
1 Claim. (Cl. 30—253)



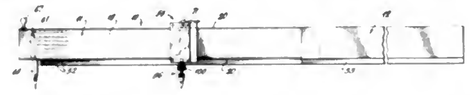
Shears, comprising a pair of blades forming a right and a left blade, a pair of handles one of which is fixed to the left blade and is provided with a lateral extension having at its lower portion a sleeve laterally offset from its handle and extending longitudinally along it, the other handle passing through said sleeve through the left blade and fixed to the right blade, and a spring between the second handle and said sleeve, maintaining said blades in frictional engagement.

3,156,981
GEOMETRICAL INSTRUMENTS

Dozier A. Sutton, 57 Bedford Road, Newport News, Va.

Filed Feb. 20, 1961, Ser. No. 90,481
7 Claims. (Cl. 33—27)

1. In a geometrical instrument, a scale bar comprising an elongate flat bar body having longitudinal top and bottom edge flanges projecting from one face, the opposite face forming the front of the bar and carrying longitudinally extending scales, a slide on the bar and comprising spaced head and base blocks having the scale bar therebetween and said blocks having confronting channels slidably receiving said flanges, a rigid flat coupling member between said blocks and lying across the front of the bar, a transparent hairline carrying pane extending across corresponding side faces of and connecting said blocks and overlying said face of the bar and coplanar

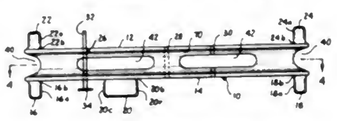


with said flat coupling member, releasable means carried by said head block and engaging the adjacent flange for holding the slide against free movement on the bar, a marking implement carried by the base block, a pivot pin secured to the bottom edge flange at one end of the bar, said marking implement and pivot pin being parallel and perpendicular to the flange, and means upon the said one face of the bar for supporting the latter flat on a surface with said slide blocks spaced from said surface to permit sliding movement of the slide on the bar.

3,156,982
MASON'S LINE ANCHOR

Irwin M. Wahlin, 439 Beacon Ave., St. Paul, Minn.

Filed Oct. 12, 1959, Ser. No. 845,770
2 Claims. (Cl. 33—86)



1. A mason's guide line anchoring device for use in laying a course of blocks between two spaced apart lead blocks, said device comprising a pair of elongated body members respectively having a pair of widely spaced apart lugs extended laterally thereof and having an intermediate lug disposed in spaced relation between said pair of lugs, said widely spaced lugs adapted to engage opposite sides of a large size lead block and anchor said body member thereto, said intermediate lug and one of said widely spaced lugs adapted to engage opposite sides of a small size lead block, line holding means on each of said lugs adjacent the juncture between said body and said lugs for holding a line extended therebetween said intermediate lugs for laying a course of small size blocks, and line holding means on each of said widely spaced lugs adjacent the juncture between said body and said widely spaced lugs for holding a guide line extended between said anchors for laying a course of large size blocks, and said body members being longitudinally channeled circumferentially thereof to receive a mason's guide line wound therearound without obstructing the line anchoring operative use of said anchors.

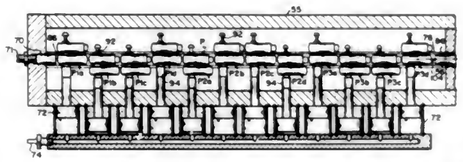
3,156,983
BINARY DECIMAL GAGE

Robert C. Benton, State College, Pa., assignor to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1962, Ser. No. 216,617
14 Claims. (Cl. 33—125)

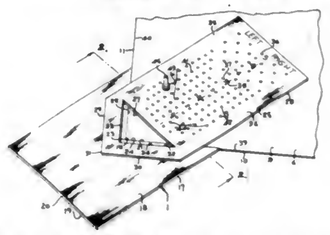
1. Gage mechanism comprising a consecutive series of binary sets of gage elements, the elements of each set being arranged in a plurality of pairs, and means for shifting a

selected element of each pair of gage elements into a point of longitudinal alignment with the other selected elements



for aggregating in length therewith an accurate gage reading desired.

3,156,984
LAYOUT TEMPLATE FOR PICTURE FRAMING MATS
Joanne V. Palmer, 9802 Bennington, Kansas City 34, Mo.
Filed July 16, 1962, Ser. No. 210,124
2 Claims. (Cl. 33—189)



1. A layout template for use in locating the interior corners of a picture framing mat blank having an upper surface and edges forming exterior corners, said template comprising:

(*a*) a planar guide plate having an upper surface and a periphery, said guide plate periphery including a first edge and a second edge extending at a selected angle to each other and together forming a notch for selectively receiving mat blank exterior corners with mat blank edges contacting said notch-forming edges, and

(*b*) a planar locating plate having a lower surface secured in fixed position to the upper surface of said guide plate, said locating plate being positioned with respect to said guide plate whereby said locating plate extends beyond said guide plate in the direction of opening of said notch forming a mat blank covering portion, said locating plate having means forming an opening therethrough exposing said notch and portions of said first and second edges forming said notch,

(*c*) said covering portion having a plurality of spaced locating means forming a row bisecting said notch,

(*d*) whereby interior corners are easily located on said mat blank by reference to a selected locating means.

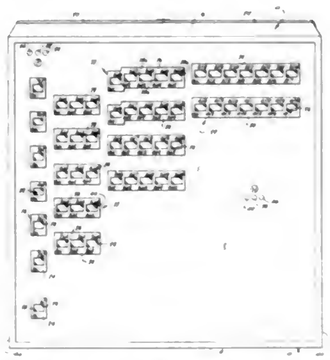
3,156,985
DEVICE FOR TEACHING ATOMIC STRUCTURE AND THE PROPERTIES OF ELEMENTS
Horace H. Bliss, 1320 Huntington Way, Norman, Okla., and Gerald B. Emory, 230 E. 26th St., Ada, Okla.
Filed Jan. 10, 1962, Ser. No. 165,328
10 Claims. (Cl. 35—18)

1. A device for teaching atomic structure and the properties of elements comprising:

display means having a generally vertically extending surface for visual display of indicia representing the periodic recurrence of similar chemical properties of the chemical elements;

indicia on said surface portraying chemical elements in an order and arrangement relative to each other such that the periods and groups of said elements may be visually discerned, said order and arrangement being based upon the sequential increase of energy of the extranuclear electrons in the atoms of each of said elements;

visual means associated with said indicia for graphically portraying the extranuclear electron structure of said elements, said visual means including individual light sources each representative of single extranuclear electrons with said light sources being correlated with said element portraying indicia in their respective positions on said board with the indicia and their respective extranuclear electron representing light sources arranged on said surface in vertically extending columns representative of families of elements, in horizontally extending rows representative of energy sublevels containing extra-



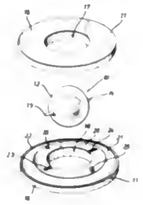
nuclear electrons and diagonal groupings representative of extranuclear electron shells or quantum levels, said light sources and indicia being further positioned on said board with those light sources and indicia representative of extranuclear electrons of relatively lower energy positioned generally lower on said board than those light sources and indicia representative of extranuclear electrons of relatively higher energy; and

means for selectively illuminating the several light sources of said visual means to emphasize the electron structure of at least one of said elements with said selective illumination being effected in a sequence corresponding to the sequence of formation of new elements by the inclusion in the atomic structrue of such new elements of electrons of successively higher energy levels.

3,156,986
EDUCATIONAL APPARATUS FOR SIMULATING ATOMIC AND MOLECULAR MODELS
Dora Strachan, Richmond Hill, Ontario, Canada, assignor to Atom Craft, Inc., New York, N.Y.
Filed June 24, 1963, Ser. No. 290,032
7 Claims. (Cl. 35—18)

1. Educational apparatus for illustrating the atomic and molecular structure of matter comprising: a first member comprising a sphere having a pair of diametrically opposed outwardly extending radial projections to represent a nucleus; a second member representing a K shell, said second member having a central hole therein adapted to receive said first member, said second member comprising a pair of matingly engageable complementary annular members, each having a pair of diametrically opposed recesses opening into the central hole thereof to receive said projections of said first member and a

channel adjacent the periphery thereof whereby said complementary members define a peripheral channel opening to the exterior through a reduced throat portion, and



a third member representing at least one planetary electron and a force exerted thereby pressureably engageable with said peripheral channel of said second member.

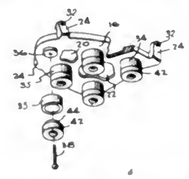
3,156,987
SPORT SHOE
Adolf Dassler, Am Bahnhof, Herzogenaurach, near Nurnberg, Germany
Filed Mar. 4, 1963, Ser. No. 262,616
Claims priority, application Germany, Oct. 24, 1962, D 40,119
4 Claims. (Cl. 36—2.5)



1. A sport shoe equipped with detachable spikes, said sport shoe having an outer sole provided with a plurality of integral bulges projecting beyond the lower surface of said outer sole, there being embedded in each of said bulges a respective supporting element which extends substantially from the upper surface of said outer sole down to the bottom of the bulge within which it is embedded, each supporting element having a lateral projection for anchoring the respective supporting element to said sole, each supporting element further having means for detachably receiving a respective spike, each of said spikes having a connecting portion which is received by the receiving means of a respective supporting element, each spike further having a flange portion which, when the connecting portion of the spike is received by the receiving means of a supporting element, bears against the bulge within which the respective supporting element is embedded, each such bulge having, at its lowermost surface region, an expanse whose area is substantially greater than that of the flange portion of the respective spike, in consequence of which there is obtained a distribution of the force between the spike and the sole.

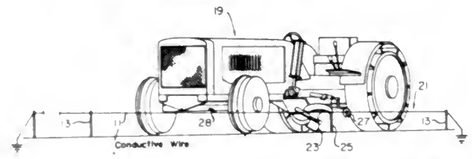
3,156,988
SHOE LIFT
Bohus B. Rause, 840 W. Castlegate, Lake Forest, Ill.
Filed Sept. 27, 1963, Ser. No. 312,078
9 Claims. (Cl. 36—81)

1. The combination with a shoe sole of a lift assembly comprising a plate underlying a part of the sole, means on the plate securably engaging the sole part, and at least one lift element secured to and extending downwardly from the plate, said lift element comprising a tubular spacer sleeve engaged with the undersurface of the plate, said sleeve having an open lower end, a rubber-like tip of the same outside diameter as the sleeve, said tip having a reduced diameter portion on its upper end



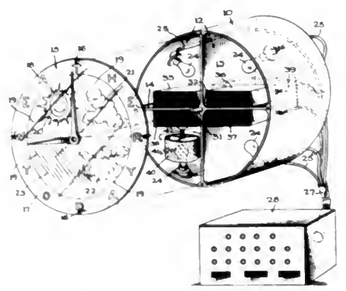
engaged in the lower end of the sleeve, and an axial screw secured to the tip and threaded into the plate.

3,156,989
BLADE CONTROL SYSTEM WITH REACTIVE PICKUP
Duane E. Atkinson, 102 Fey Drive, Burlingame, Calif.
Filed Nov. 30, 1960, Ser. No. 72,645
4 Claims. (Cl. 37—143)



1. In a vehicle control system, a vehicle having an adjustable blade, means for moving said blade responsive to an electrical signal, a lead line disposed above a surface to be leveled at a preselected elevation above the desired level surface, said line being electrically conductive, series connected reactance means affixed to said blade, a source of reference frequency, means for coupling said source of frequency to said reactance means, said reactance means being disposed on diametrically opposite sides of said conductive line whereby variation in the location of said line between said reactance means will cause a variation in the current phase within the reactance means, means for comparing the current phase within said reactance means with the reference frequency, said last named means producing an output signal representative of said comparison, and means responsive to said output signal for adjusting said blade.

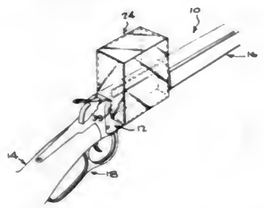
3,156,990
TIME AND WEATHER INDICATOR
Amy J. Dock, 26 Broadway, New York 4, N.Y.
Filed July 7, 1961, Ser. No. 122,478
3 Claims. (Cl. 40—132)



1. A time and weather indicator or the like comprising a casing having internal partition walls dividing the casing into a plurality of separate light chambers, a separate source of light in each chamber of the casing to

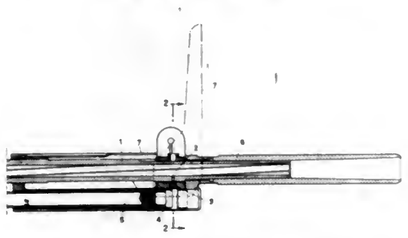
illuminate such chamber separately from all of the other chambers, a dial for the casing covering corresponding ends of said chambers and being at least in part translucent and bearing normally invisible indicia on separate areas thereof adjacent said chambers to indicate conditions of the weather upon being illuminated by the light sources in said chambers, normally invisible read-out devices in said chambers rearwardly of the dial and visible therethrough when illuminated to indicate additional weather conditions, time indicating indicia upon said dial, and clock hands associated with the dial for coaction with said time indicia of the dial.

3,156,991
EJECTED SHELL RECEPTACLE
Laverne G. Adams, 105 N. Smith St., Greenville, Mich.
Filed Apr. 17, 1962, Ser. No. 188,055
3 Claims. (Cl. 42—1)



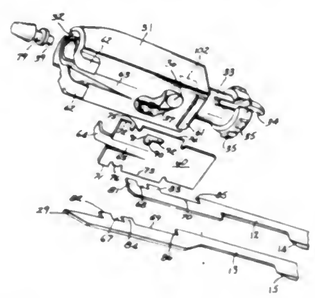
1. The combination with a repeating gun receiver having a top shell ejector opening, of an ejected shell receptacle mounted upon the receiver and having a bottom opening registered with the top opening of the receiver, said receptacle comprising end walls, first and second side walls, a top wall, and a partial bottom wall, said end walls having notches in their lower edges receiving the receiver, said notches having upper edges bearing upon the top of the receiver at the opposite ends of the ejector opening, said partial bottom wall extending laterally inwardly from one side wall and having an upstanding partition wall along its laterally inward edge, said partition wall and the other side wall of the receptacle bearing against related sides of the receiver.

3,156,992
COMBINATION GAS-OPERATED FIREARM AND BOMB OR GRENADE THROWER
Pier Carlo Beretta, Gardone Val Trompia, Brescia, Italy, assignor to Fabbrica D'Armi P. Beretta S.p.A., Gardone Val Trompia, Brescia, Italy, a company of Italy
Filed Sept. 18, 1962, Ser. No. 224,398
Claims priority, application Italy, Sept. 29, 1961, 17,659/61
2 Claims. (Cl. 42—1)



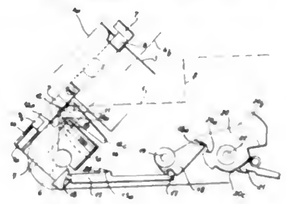
1. The combination with a gas-operated firearm, having
(*a*) a gun barrel which has a port in its annular wall adjacent the muzzle end thereof,
(*b*) a cylinder mounted beneath said barrel to hold the gas-operated mechanism for actuating the firearm,
(*c*) said cylinder having through its wall a port, and
(*d*) a tubular grenade and bomb holder mounted on said barrel with its bore aligning with the bore of said barrel and extending beyond the mouth of said barrel, of
(*e*) a cylindrical pin rotatably mounted between said barrel and cylinder to rotate about an axis transverse to the axes of said barrel and cylinder, and
(*f*) a manually operable lever secured to said pin to pivot about the first-named axis between an inactive position in which it extends over the top of said barrel parallel thereto, and an active position in which it projects upwardly from the top of said barrel normal thereto,
(*g*) said pin having therethrough a transverse passage,
(*h*) said passage registering with said ports to connect the same and to conduct the gas of explosion through said ports to said cylinder when said lever is in its inactive position, and said lever being operative upon movement to its active position to rotate said pin so that said passage is moved out of registry with said ports thereby to close off the connection between said ports whereby the force of the gas of explosion will be concentrated on a bomb or grenade mounted in said holder.

3,156,993
FIREARM BOLT-SLIDE ARM ASSEMBLY
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Sept. 24, 1963, Ser. No. 311,101
7 Claims. (Cl. 42—17)



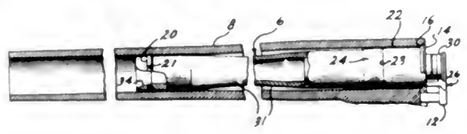
1. In combination, in a firearm, a bolt assembly, a cartridge carrier means, a pair of slide arms for actuating and reciprocating said bolt assembly, said assembly comprising a bolt slide, a bolt movably disposed in said bolt slide, a firing pin positioned in the bolt including spring means tending to drive the firing pin out of the bolt, said bolt slide being formed with a recess and a notch defining a first ramp, a bridge plate disposed in said recess, said bridge plate being formed with a mating second ramp and a tongue so that when the bridge plate is disposed within the bolt slide the tongue is operable to engage and to retain the firing pin and the mating ramps nest with one another, said bolt slide and said slide arms being formed with cooperating lugs and notches effective to make a releasable connection between the bolt slide and the slide arms through the instrumentality of said bridge plate.

3,156,994
EJECTING MECHANISM FOR SHOTGUNS
Frédéric Damon, 13 Cours Fauriel, Saint-Etienne, France
Filed Sept. 23, 1963, Ser. No. 310,618
Claims priority, application France, Oct. 2, 1962, 42,920, Patent 1,342,930
3 Claims. (Cl. 42—47)



1. In an ejecting mechanism for the fired cartridges of guns and the like of the class described having a rocking barrel assembly and a breech block, the combination of a spring operated ejecting hammer; a spring operated ejecting sear having a nose urged transversally towards the said ejecting hammer and an ejecting sear rod; a slidable cocking rod having a lateral tooth provided with a rear vertical face and with a cam surface engaging the end of the said ejecting sear rod during the operation of closing the gun; a pivotal cocking sear having a notch receiving a lateral lug integral with the rear end of the said cocking rod; a lug integral with the rocking barrel assembly and engaging the front end of the said cocking rod in order to urge the latter backwards when the gun is open; a pivotal hammer having a notch in which engages the said cocking sear at full-cock position, thus urging the said pivotal hammer in percussion direction under action of the said spring operated ejecting sear; and an extractor slidably mounted in the said rocking barrel assembly, which said extractor comes into abutment with a vertical face of the said breech block when the gun is closed and pushes back the said spring operating ejecting hammer.

3,156,995
SHOTGUN GAUGE ADAPTER
Erwin T. Mellor, Chicopee Falls, and John P. Konsevich, Chicopee, Mass., assignors to Emhart Corporation, a corporation of Connecticut
Filed Feb. 26, 1963, Ser. No. 261,042
3 Claims. (Cl. 42—77)



1. Shotgun gauge adapter to enable one gun to fire shells of different gauge, said adapter comprising a tube having an inner bore corresponding in diameter to the smaller gauge shells to be flared, said tube being provided with a flange at its breach end having a bevel corresponding to the bevel of the breech end of said shotgun and adjacent its muzzle end a flexible ring projecting from the outer surface of the tube and of sufficient diameter to fit snugly within the barrel of said shotgun, said flange and ring serving to center the tube in said barrel, the outer surface of the tube having a diameter less than said barrel to provide a clearance, said ring also serving as a seal to prevent the rearward escape of gases, an extractor disposed to be operated by the extractor of said shotgun, and a clamp holding the extractor of the adapter tube in place on said tube, said clamp being reversibly positionable on said tube to change the length of the stroke of the extractor carried by said tube.

3,156,996
LARGE CAPACITY MIDWATER TRAWL NET
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash.
Continuation of application Ser. No. 80,170, Jan. 3, 1961. This application Sept. 30, 1963, Ser. No. 313,724
22 Claims. (Cl. 43—9)



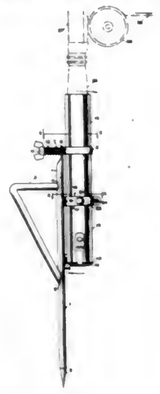
22. Trawling gear comprising a net proper including a codend of mesh open at its forward end and closed at its after end, curtains of light mesh diverging forwardly, in use, from the opposite sides of the net, suspenders having their after ends distributed about the secured to the open forward end of the codend, and extending thence forwardly to points of connection where their meshes are concentrated, the suspenders having their mesh of a twine size and oriented to assume collectively the strain of the codend and its load, a sweep line extending forwardly and outwardly from each point of connection at the forward end of a suspender to transmit the load of the net proper and its load, curtain lines also extending forwardly and outwardly from opposite sides of the net, from which said curtains are supported, and a door preceding each curtain, the sweep lines being secured to the respective doors in a manner to assume substantially the entire drag of the codend and its load, and the curtain lines being also secured to the respective doors in a manner to assume substantially the drag of the curtains alone.

3,156,997
COMBINED FISHING ROD HOLDER AND SIGNAL MEANS
William H. Smith, 8406 SE. Flavel St., Portland, Oreg.
Filed June 12, 1963, Ser. No. 287,332
3 Claims. (Cl. 43—17)

1. A fishing rod holder and a signal electrically operable by a pull on a fishing line paid out from the fishing rod, comprising in combination,
a normally substantially vertically disposed fishing rod-holding cylinder of dielectric material,
a metallic abutment secured transversely within said cylinder intermediate the ends thereof,
a metallic cylinder within said rod-holding cylinder in contact at its top end with said abutment and opening downwardly at its bottom end,
means anchoring said rod-holding cylinder in a fixed location,
means hingedly attaching said rod-holding cylinder to said anchoring means whereby the rod-holding cylinder is tiltable relative to said anchoring means,
an electric battery carried on the interior of said metallic cylinder and in circuit therewith at one of its ends through said metallic abutment,

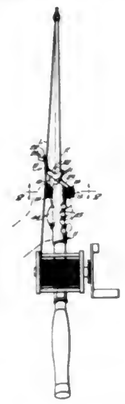
an electrically operable signal removably secured within said metallic cylinder and normally in open circuit therethrough with said battery,

pressure-responsive electric circuit-closing means carried by said signal adjacent said anchoring means



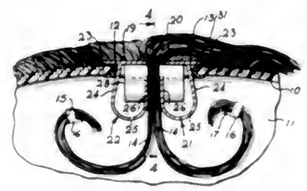
whereby tilting movement of said rod-holding cylinder toward said anchoring means will actuate the circuit closing means to close the circuit from the battery through said abutment, metallic cylinder and said electrical signal to energize the same.

3,156,998
MANUALLY OPERATED LEVEL WIND FOR A FISHING REEL
Henry R. McDaniel, 3358 SW. 2nd St., Miami, Fla.
Filed Apr. 12, 1963, Ser. No. 272,713
8 Claims. (Cl. 43—24)



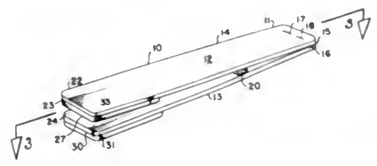
1. In a line leveler for fishing reels, the combination comprising, a support member for attachment to a fishing rod, an elongated guide lever, a first means pivotally supporting one end of said guide member with respect to said support member for relative swinging motion, a plurality of through openings spaced along the other end of said guide lever, an elongated link member, said link member comprising tubular upper and lower members fitted together and relatively movable in telescoping fashion, a compression spring within said tubular members and acting against opposed inner end portions thereof to normally hold said tubular members in relatively separated relation, said upper tubular member being of greater size than said lower tubular member for the reception of said lower tubular member in telescoping fashion, said upper tubular member being pivotally attached at its outer end to an intermediate portion of said guide lever, a second means pivotally supporting said lower tubular member at its outer end relative to said support member at a position spaced from said first pivotal support means, said upper tubular member being formed with a laterally-extending thumb piece facilitating manual telescoping of said tubular members against the reactive force of said compression spring for swinging said guide member from side to side.

3,156,999
HAIR DISPENSING HOLDER FOR DOLL'S HEAD
Jesse W. Dean and Voltairine Diana J. Dean, both of 1295 Sheridan Ave., Bronx 56, N.Y.
Filed Sept. 4, 1962, Ser. No. 221,296
7 Claims. (Cl. 46—172)



7. A hair dispensing holder for the head of a toy figure comprising; a head having an opening in the top thereof in communication with a cavity therein, a holder removably attached to said head and disposed in said opening and having a top wall provided with an open portion, oppositely disposed spring tension means attached to and carried by said top wall, said means being arranged in said cavity and disposed in spaced relation corresponding substantially to one dimension of said open portion, a lock of hair having inner and outer end portions, said lock being arranged with the inner end portion thereof disposed in said cavity, said lock extending between said oppositely disposed spring tension means and protruding therefrom through said open portion in the top wall of the holder with the outer end portion of said lock being adapted to be draped over the head of the figure, and said spring tension means being biased against said lock of hair to prevent too free dispensing thereof but permitting of withdrawal movement of the inner end portion of the lock of hair stored in said cavity to elongate the protruding portion thereof.

3,157,000
NOISE-MAKING PADDLE
Arthur C. Stavig, 3821 NE. 120th Ave., Seattle, Wash.
Filed Apr. 26, 1962, Ser. No. 190,297
2 Claims. (Cl. 46—191)



1. A paddle for creating noise upon striking an object, comprising:

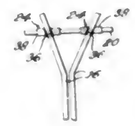
a justaposed pair of elongated blades,

means securing said pair of blades together at only one end,

a fulcrum member interposed between said blades more closely adjacent their secured together ends than their unsecured ends and causing said blades to diverge from their point of securement and normally to be held apart,

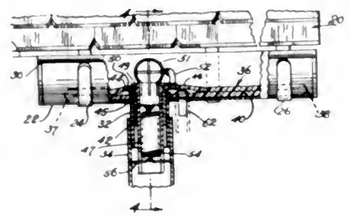
and resilient, sound-producing, cavity-defining means forming a percussion cup open towards the opposed face of the other of said blades on an inner face of one of said blades adjacent its unsecured end and remote from said fulcrum.

3,157,001
TRELLIS STRUCTURE
Arthur E. Vail, Griggsville, Ill., assignor to Trio Manufacturing Co., Griggsville, Ill., a corporation of Illinois
Filed Feb. 26, 1960, Ser. No. 11,203
6 Claims. (Cl. 47—47)



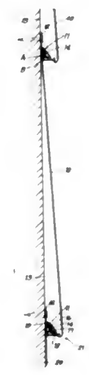
1. A knock-down trellis structure adapted to be readily assembled and disassembled and having at least a pair of elongate support members adapted to be connected transverse of one another to form a junction, the first member having resilient metal spring clip means forming a seat and the second member adapted to be removably engaged in said seat, and the members having cooperating male and female locating means to establish the position of said junction, said spring means having a body portion at an end thereof for securing same to said first member.

3,157,002
SELF-CLEANING EAVES GUTTER
Harold M. Herman, 6604 N. Whipple St., Chicago, Ill.
Filed Feb. 23, 1962, Ser. No. 174,955
5 Claims. (Cl. 50—5)



1. A self-cleaning eaves gutter comprising, in combination, a gutter adapted to be supported adjacent the eaves of a roof, a flexible lining mounted in said gutter so as to extend substantially along the length thereof, said lining comprising a sealed enclosure adapted to be inflated to expel debris from said gutter, the size of said lining relative to said gutter being such that said lining when inflated substantially fills said gutter and extends thereabove, fluid inlet and outlet means associated with said lining to permit inflation and deflation thereof, and a drainage tube which extends transversely through upper and lower layers of said lining to permit drainage therethrough when said lining is in its collapsed condition, said tube being sealed with respect to said lining to permit inflation of the latter.

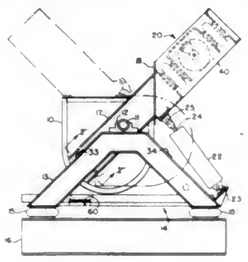
3,157,003
SHEET METAL SIDING
Robert A. Domar, Carpentersville, Ill., assignor to U.S. Aluminum Siding Corp., Franklin Park, Ill., a corporation of Illinois
Filed June 16, 1961, Ser. No. 117,757
1 Claim. (Cl. 50—230)



A siding for a building structure comprising a plurality of elongated sheet metal panels interengaged to form a continuous siding, each of said panels having a planar body portion and having along the upper marginal edge portion a nailing strip, an outwardly and downwardly inclined composite flange portion between said nailing strip and planar body portion and formed by an upper relatively flat portion inclined downwardly and outwardly from said nailing strip and an integral inner portion bent reversely from the lower margin of said flat portion on a rounded substantially semicircular edge and presenting a flat inclined section in abutting contact with said flat portion adjacent to the upper margin thereof whereat the composite flange may flex, a protruding bead on said inner portion having a maximum displacement from said flat portion between the upper and lower margins thereof, the lower longitudinal marginal edge portion of said panel being formed to provide an inwardly directed substantially horizontal flange, there being an integral longitudinally extending trough formation disposed below the plane of said flange and connecting said planar body portion and said horizontal flange, said trough formation having a series of spaced apertures therein, said horizontal flange having an end portion longitudinally bent first upwardly and outwardly and then upwardly and inwardly to form an inwardly directed longitudinally extending rib at said horizontal flange and an outwardly directed longitudinally extending rib thereabove, the horizontal flange of one panel being adapted to resiliently interengage with the composite flange portion of an adjacent panel and affording substantial resilient sealing along multiple longitudinal areas of contact, one of said areas of contact formed between said last-mentioned rib and the composite flange portion above said protruding bead in consequence of the springing of said last-mentioned rib into the restricted space defined by said bead and planar body portion, a second area of contact formed between said first rib and planar body portion, and a third area of contact formed between the lowermost rounded

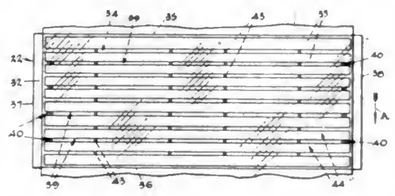
edge of the composite flange portion and the upper surface of said horizontal flange.

3,157,004
TILTABLE VIBRATING BURNISHING MACHINE
Albert Musschoot, Anchorage, Ky., assignor to Chain Belt Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 18, 1960, Ser. No. 29,964
13 Claims. (Cl. 51—7)



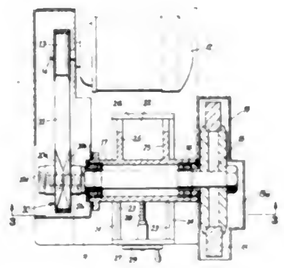
1. A vibratory burnishing machine, comprising in combination, a frame, resilient means supporting the frame, a container that is pivotally mounted on the frame for movement from an upright position to at least a horizontal position, a rectilinear vibration generator rigidly mounted on the container, said generator being adapted to apply vibratory force to the container along a substantially straight line inclined to the horizontal when the container is in either its upright or horizontal positions, and means for moving the container from one position to the other.

3,157,005
APPARATUS FOR SURFACING GLASS
Emmett L. Walters, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 24, 1961, Ser. No. 98,068
1 Claim. (Cl. 51—112)



In apparatus for simultaneously polishing the opposite surfaces of a glass sheet, the combination including a pair of opposed upper and lower surfacing tools between which said glass sheet travels in a substantially horizontal path, said upper surfacing tool comprising a generally rectangular upper polishing runner having a working face adapted for engagement with the upper surface of the glass sheet and said lower surfacing tool comprising a generally rectangular lower polishing runner having a working face adapted for engagement with the lower surface of the glass sheet, a plurality of generally parallel grooves provided in the working face of each of said polishing runners and extending longitudinally of said runners and transversely of the direction of travel of the glass sheet therepast, the grooves in both of said runners being open at their opposite ends with the grooves in the upper polishing runner extending throughout the length of the working face thereof and being of substantially uniform width throughout, means for introducing a polishing medium under pressure to the grooves of both the upper and lower polishing runners, and means communicating with the ends of at least a portion of the grooves in the working face of said lower polishing runner for restricting the rate at which the polishing medium will escape from said grooves, said restriction means comprising a member positioned in the groove adjacent each end thereof and including a portion which extends obliquely upwardly from the bottom of said groove in the direction of the adjacent end thereof, said portion being operable to be deflected away from the lower surface of the glass sheet being polished upon a predetermined pressure being built up in the groove by the polishing medium, whereby a restricted opening is provided between said member and said glass sheet.

3,157,006
GRINDING MACHINE WITH MEANS FOR COMPENSATING FOR GRINDING WHEEL WEAR
George Dewey Behlen, Cincinnati, Ohio, assignor to The United States Electrical Tool Co., South Fort Mitchell, Ky., a corporation of Ohio
Filed Sept. 10, 1963, Ser. No. 307,932
12 Claims. (Cl. 51—134.5)



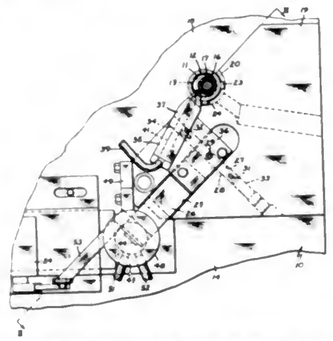
1. In a grinding machine having a motor, a drive shaft driven by said motor, a grinding wheel shaft, a grinding wheel fixed on said grinding wheel shaft, pulleys fixed on said drive shaft and on said grinding wheel shaft respectively, and a belt connecting said pulleys so as to transmit power from one to the other, the improvement which comprises: said pulley on said drive shaft being of fixed diameter, said pulley on said grinding wheel shaft being of variable diameter, and means to move said grinding wheel shaft from said drive shaft as said grinding wheel becomes worn, so that said belt moves from the outer periphery of said variable diameter pulley towards the center thereof, whereby to speed up rotation of said grinding wheel shaft and grinding wheel to compensate for the worn grinding wheel.

3,157,007
GRINDING MACHINE
George H. Lockwood, Worcester, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Dec. 20, 1962, Ser. No. 246,164
3 Claims. (Cl. 51—165)

1. Apparatus for use in grinding a first surface of revolution on a workpiece having another substantially concentric second surface of revolution, comprising

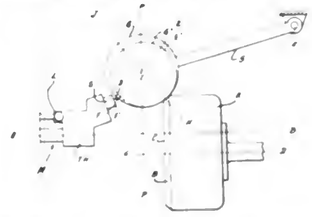
(*a*) a work support consisting of two surfaces whose contact points with the second surface of revolution form with the center of the workpiece a V, and

(*b*) a gaging means adapted to lie adjacent the first surface of revolution at a point lying on a line which



extends substantially at a right angle to a bisector of the V and which passes through the center of the workpiece.

3,157,008
MECHANISM FOR SHARPENING THE BELL KNIFE OF A SKIVING MACHINE
Edwin H. Beck, Lemay, Mo., assignor to Manufacturers Supplies Company, St. Louis, Mo., a corporation of Missouri
Filed May 18, 1962, Ser. No. 195,790
6 Claims. (Cl. 51—247)



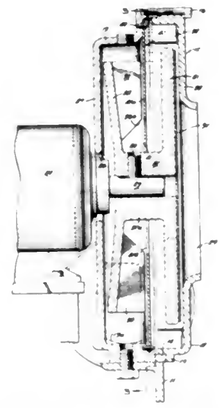
1. A mechanism for sharpening the bevelled cutting edge of a driven rotary bell shaped knife in a skiving machine comprising,

(1) a driven rotary grinding wheel mounted to move substantially in a plane containing the axis of rotation of said rotary bell shaped knife and having its axis of rotation substantially at right angles to the axis of rotation of said rotary bell shaped knife, said grinding wheel being arranged with a diameter thereof substantially perpendicular to a substantially conical surface formed by said bevelled cutting edge,

(2) a truing tool including a truing edge engaging the peripheral surface of said grinding wheel at a point on a grinding wheel diameter different from the diameter substantially perpendicular to the bevelled edge which forms substantially the same angle with respect to the axis of rotation of said knife as does the diameter thereof substantially perpendicular to the substantially conical surface formed by said bevelled cutting edge.

3,157,009
COMBINATION ABRADING AND EXHAUST UNIT
Charles Rex Barkley, New Lexington, Ohio, assignor to Evans Reamer and Machine Company, New Lexington, Ohio, a corporation of Ohio
Filed May 15, 1963, Ser. No. 280,655
2 Claims. (Cl. 51—273)

1. In an abrading machine; a supporting frame; a generally cylindrical, hollow, housing stationarily carried by said frame and including back, front and peripheral walls defining an internal, generally cylindrical chamber, the front wall of said housing being formed with a relatively reduced area access opening through which a work piece may be introduced to the interior of said housing; a motor carried by said frame rearwardly of said housing and including a drive shaft extending rotatably through the back wall of said housing and into said chamber; a combined, rotary abrasive disc and exhaust fan unit drivingly carried by said shaft within the chamber of said housing, said unit comprising a forward, abrasive-supporting disc portion positioned inwardly from the access opening formed in the front wall of said housing, a rearward, centrifugal discharge fan portion disposed in axially spaced relation behind said disc portion and a reduced diameter hub portion extending between and connecting said disc and fan portions, said unit being disposed in eccentric relation to



the chamber of said housing; an annular baffle wall carried by and extending radially inwardly of said housing between the disc and fan portions of said unit and defining a relatively restricted opening disposed in concentric, spaced relation to the hub portion of said unit, said baffle wall dividing the internal chamber of said housing into separate, abrading and exhaust compartments communicating with one another only by way of the opening in said baffle wall; means on said housing defining an exhaust port in tangential communication with said exhaust compartment; and a plurality of relatively spaced spoiler lugs stationarily carried by the peripheral wall of said housing and projecting inwardly of the abrading compartment toward the periphery of the disc portion of said unit, said spoiler lugs being inclined in the direction of rotation of said unit and being operable upon rotation of said unit to prevent a circumferential pocketing of air and entrained particles within the abrading compartment of said housing.

3,157,010
ABRADING ARTICLE
Aleck Block, Los Angeles, Calif., assignor to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 17, 1962, Ser. No. 166,893
17 Claims. (Cl. 51—377)

1. An abrasive device comprising:

a rotary support member having an operating face and having a recess within the operating face;

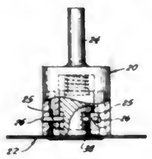
abrasive disk means;

hook means on said abrasive disk means;

complementary engagement means supported by the rotary support member and extending across the recess in the rotary support member for releasable en-

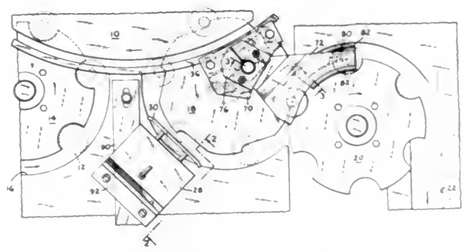
gagement by said hook means to hold the disk means adjacent said operating face of the support member; and

yielding means supported by the support member and extending beyond the operating face of the rotary



support member to create pressure between said rotary support member and said abrasive disk means to yieldingly maintain said rotary support member and said abrasive disk means in mutual engagement.

3,157,011
AIR ELIMINATION METHOD AND APPARATUS
William A. Wheatley, Ypsilanti, Mich., and James F. Walker, Atlanta, Ga., assignors to Electronic Assistance Corporation, Red Bank, N.J., a corporation of New York
Filed July 20, 1961, Ser. No. 125,451
3 Claims. (Cl. 53—22)



1. In a method of packaging an effervescent liquid in which the individual containers are continuously moved along a predetermined path during the packaging operation, the steps of partially filling each of the containers with said liquid, exciting the liquid in each of the containers at a point along said path to generate a foam tending to fill a portion of the remainder of the container, whereby a substantial portion of the air remaining in the container is expelled, thereafter applying under pressure a gas other than air to the open ends of the containers along a substantial length of said path subsequent to said point to displace air remaining in the containers, confining the excess gas applied to the containers to establish an atmosphere of said gas along said length of path at a level to envelop the open ends of the containers as they pass therethrough to prevent entry of additional air, and then hermetically sealing the open ends of the containers.

3,157,012
RECEPTACLE STOPPERING DEVICE
Vernell R. Shellman, Kalamazoo, and Carl J. Veley, Richland, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Sept. 29, 1961, Ser. No. 141,840
13 Claims. (Cl. 53—115)

1. A device for plugging a presented pipette with a quantity of coil stoppering material cut from a parent strand thereof, comprising the combination:

a guiding device adapted for receiving and guiding a pipette to be plugged to a position substantially coaxial with a predetermined operating axis;

start switch means operable by presentation of the pipette to said guiding device;

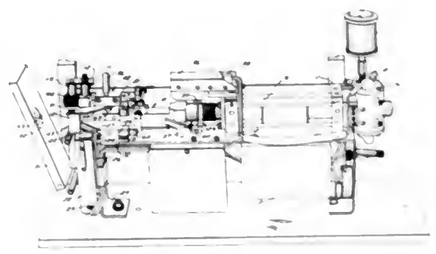
positive feeding means for introducing a portion of coil stoppering material into a zone located substantially adjacent said guiding device and on the opposite side thereof from a pipette in said position;

severing means comprising a fixed blade mounted adjacent said zone and a movable blade arranged for movement with respect to said fixed blade, said blades being cooperable with each other and positioned for severing a strand of material extending into said zone from said feeding means;

cam surfaces positioned on an edge of said movable blade;

a pair of holding plates positioned substantially on either side of said zone for engaging a severed portion of said material and movable into and out of engaging relationship therewith;

a ram reciprocable along said operating axis and a needle extending forwardly therefrom and positioned coaxially with said operating axis;



means including a ratchet for driving said feeding means;

a pawl and first and second cam operators carried on said ram, said pawl being operable with relation to said ratchet for effecting actuation of said feeding means on an advancing stroke of said ram, said cam operators actuating respectively and substantially simultaneously said severing means and said holding means and the cam operator which actuates said holding means releasing same substantially simutlaneously with the engagement by said needle of the severed portion of said material for carrying same through said guiding device and into said pipette;

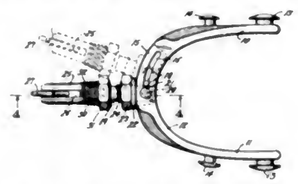
the cam operator associated with said severing device acting on the retraction stroke of said ram to return said severing device into its initial condition;

said start switch initiating an advancing stroke of said ram and second switch means operable as said ram reaches a predetermined point on said axis during said advancing stroke of said ram for effecting retraction thereof.

3,157,013
ADJUSTABLE SPUR FOR HORSEMEN
Frank S. Hayward, 7590 W. 29th Ave., Denver, Colo., and Arthur S. McCann, 129 N. 14th St., Colorado Springs, Colo.
Filed Aug. 8, 1963, Ser. No. 300,799
4 Claims. (Cl. 54—83)

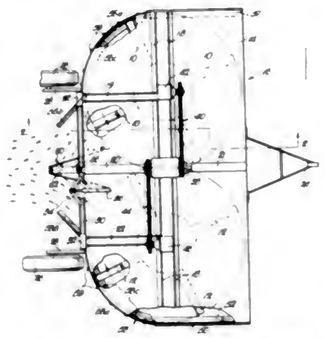
1. A horseman's spur comprising: a U-shaped heel yoke having two substantially parallel side portions joined by an arcuate rear portion; strap attachment means on each of the side portions; a rowel shank extending rearwardly from said arcuate rear portion; a rowel supported by said rowel shank; shiftable mounting means including an arcuate horizontal slot in and concentric with said

arcuate rear portion and connecting said shank to said arcuate portion so that said shank may be shifted side-



wardly in the plane of said yoke; and means for locking said shank in any selected shifted position.

3,157,014
MOWING AND WINDROWING MACHINE
Warren E. Bottenberg, Holton, Kans., assignor to B-M-B Company, Inc., a corporation of Kansas
Filed Sept. 10, 1962, Ser. No. 222,479
19 Claims. (Cl. 56—6)



17. In a power mower of the type having a pair of rotary cutters which are rotatable about laterally spaced vertical axes,

a housing for said cutters having a first material discharge chute for one cutter and a second material discharge chute for the other cutter,

said chutes being located at the rear of the housing and each having a pair of laterally spaced rearwardly converging walls whereby the rear end of each chute is narrower than the forward end,

the center line of each chute being approximately radial to the axis of the associated rotary cutter,

the rear ends of the two chutes being side-by-side and immediately adjacent to one another,

and the forward ends of the two chutes being spaced laterally apart from one another.

3,157,015
LEAF PULVERIZER FOR ROTARY MOWERS
Lionel E. Russell, Rte. 4, Claremore, Okla., and David F. McNabb, Rte. 1, Box 48, Catoosa, Okla.
Filed June 24, 1963, Ser. No. 289,943
1 Claim. (Cl. 56—25.4)

A mower comprising, in combination:

an inverted cup-shaped frame having an upwardly spiral outlet passage opening in one side thereof;

wheels supported to said frame whereby the mower may be moved about;

an engine supported on the exterior top of said frame;

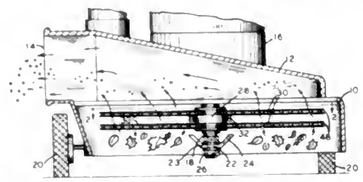
a vertical shaft extending downwardly from and rotated by the said engine;

a flat horizontally positioned cutting blade affixed in the center thereof to said shaft for rotation by said engine, said blade having cutting edges formed on each forward edge thereof;

integrally formed upswept wing portions at each end of said blade opposite said cutting edges;

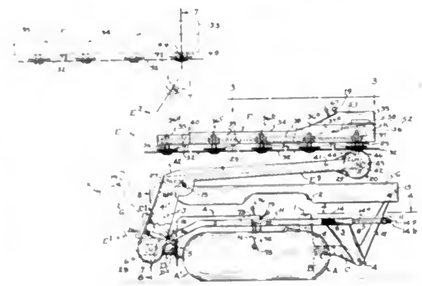
an axially bored collar member received by said shaft above said blade and within said inverted cup-shaped frame; and

at least two vertically spaced apart layers of horizon-



tally extending leaf masticating chain members, each of said layers comprising a multiplicity of lengths of flexible chain each affixed at one end thereof to said collar member, each of said chains comprising a plurality of links pivotally interconnected to move solely about substantially vertical axes, each of said chains being of a length wherein the outer end thereof is substantially the same distance from said shaft as the outer ends of said blade.

3,157,016
TREE TOPPER WITH RECIPROCATING CUTTER BOOM
Clyde O. Leydig and Yigal Michelson, both of P.O. Box 276, Exeter, Calif.
Filed May 2, 1963, Ser. No. 277,534
14 Claims. (Cl. 56—235)



1. In a device of the type described:

(*a*) a support;

(*b*) a reciprocating boom carried by said support;

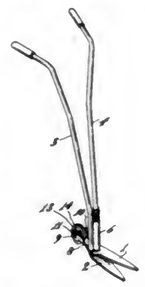
(*c*) a plurality of disc saws rotatably carried by said boom and having their axes paralleling each other and arranged in a single plane, and the planes of the saws coinciding with a single plane that is normal to the saw axes; and

(*d*) means for simultaneously rotating said saws about their axes and for reciprocating said boom for moving said saws in a plane that substantially parallels said single plane that extends through all of said saw axes.

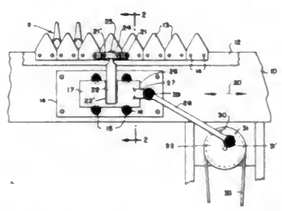
3,157,017
SHEARS WITH SUPPORTING WHEEL
James Thomas Vosbikian, 20th and Oxford Sts., Philadelphia, Pa.
Filed Dec. 18, 1962, Ser. No. 245,622
1 Claim. (Cl. 56—241)

A grass trimmer and edger, comprising handles bodily and laterally movable towards and away from each

other, a body portion containing one handle, said body portion having a sleeve laterally spaced from the first handle and containing the other handle, shears, each fixedly connected to the lower end of the handles, a spring acting against the sleeve and the handle within such sleeve, to maintain the blades in frictional engagement, a shaft extending through the rear ends of the shears, having enlarged ends to limit opening movement of the shears, a wheel rotatably mounted and longitudinally movable on said shaft, and springs between the wheel and the shears, tending to maintain the shears in open position.

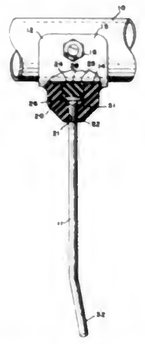


3,157,018
KNIFE DRIVE FOR A RECIPROCATING MOWER
Nicholas Toffin, 856 Nottingham Ave., Winnipeg 15, Manitoba, Canada
Filed June 14, 1962, Ser. No. 202,448
1 Claim. (Cl. 56—296)



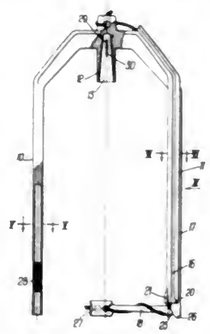
In a swather knife assembly, the combination of a horizontally elongated support plate having a front edge portion, a knife reciprocable on said front edge portion of said support plate, a horizontal mounting plate secured to said support plate rearwardly of said knife, front and rear pairs of mutually spaced upstanding pins provided on said mounting plate, front and rear pairs of anti-friction bearings mounted for rotation in a common horizontal plane on the respective front and rear pairs of pins, a slide block reciprocable on said mounting plate between said bearings in a direction parallel to the reciprocating movement of said knife, said slide block having front and rear edges provided with grooves having peripheral edge portions of the respective front and rear pairs of bearings disposed therein whereby to guide the reciprocating movement of the slide block, a finger-like drive member rigidly secured to said slide block and projecting forwardly therefrom, a retainer secured to said knife and having the front end portion of said drive member in engagement therewith whereby said knife may be reciprocated by reciprocating movement of the slide block, a drive wheel rotatable in a horizontal plane adjacent said support plate, a crank pin provided on said drive wheel, a horizontal arm pivoted at one end thereof on said crank pin and pivotally connected at its other end to said slide block whereby to impart reciprocation to the slide block by rotation of said drive wheel, and means for rotating said wheel.

3,157,019
REUSEABLE RESILIENT MOUNTING FOR A RAKE TINE
Warren H. Brackbill, Paradise, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,258
6 Claims. (Cl. 56—400)



1. A reuseable resilient mounting for a rake tine and for connecting the tine to a rake bar, comprising a bracket attached to said bar, a rubber block affixed to said bracket and extending outwardly from the bar, said block having a recess extending inwardly from one end of the block facing said rake bar and having an opening extending from said recess to the other end of the block, said bracket having an opening in register with said recess, a rake tine having a body generally perpendicular to said bar and which extends through said block opening, said body having an enlarged head at one end seated in said recess, said head filling only a portion of the depth of said recess whereby a space is formed between the head and said bar, and a rubber insert removably mounted in said recess and engaging both said head and said bar.

3,157,020
FLYER
Hans Georg Schwager, Chemin de la Plaisante 6, Lausanne, Switzerland
Continuation of application Ser. No. 787,004, Jan. 15, 1959. This application Jan. 18, 1961, Ser. No. 83,402
16 Claims. (Cl. 57—117)



1. A flyer comprising spaced arms, one of said arms provided with a frontal groove and a presser finger provided with a counterweight bar, having at least one edge, an inner and an outer reinforcing rib extending along said arm opposite said counterweight bar and imparting to the cross-section of the arm the form of a double T, and means to mount the finger and bar on said arm.

14. A flyer rotatable in a forward direction about a central axis comprising spaced arms formed upon a centrally disposed tube, each arm having a vertical portion with an inner surface facing the central axis, a presser finger, a counterweight bar having an inner surface secured to the finger, and means to pivot the finger and bar on one of the arms with the axis of the pivot lying along the rearward edge of the inner surface of the vertical portion, said inner surface of said counterweight bar forming a continuation of said inner surface of said arm on which said counterweight bar is pivoted.

3,157,021
STAPLE FIBER BLEND
Robert E. Kitson and Cecil E. Reese, Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 1, 1961, Ser. No. 92,515
10 Claims. (Cl. 57—140)

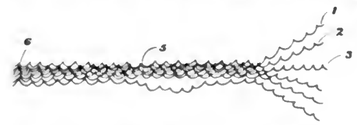


5. A textile fabric comprised of twisted yarns of a blend of staple-length fibers, said blend being comprised of from about 20% to about 80% synthetic linear condensation polyester fibers which in response to boiling in water for five minutes exhibit extension of at least 1%, and from about 80% to 20% of shrinkable fibers having a shrinkability of up to 15% in response to boiling in water for five minutes, said extensible fibers and said shrinkable fibers exhibiting a differential change in length of at least 3% when immersed in boiling water for five minutes.

10. A textile blend of staple length fibers prepared from a tow comprised of crimped, spontaneously and irreversibly extensible continuous filaments composed of a synthetic linear condensation polyester, the length change of the spontaneously and irreversibly extensible filaments averaging at least about 5%, comprised of from about 20% to about 80% of extensible staple fibers exhibiting an extension of from about 1% to about 30% and the remainder of said blend comprised of shrinkable staple fibers having a shrinkability of up to 15% in response to boiling in water for five minutes, said extensible fibers and said shrinkable fibers exhibiting a differential change in length of at least 3% when immersed in boiling water for five minutes.

3,157,022
RUG YARN
Carl J. Haynes, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 10, 1963, Ser. No. 250,666
6 Claims. (Cl. 57—140)

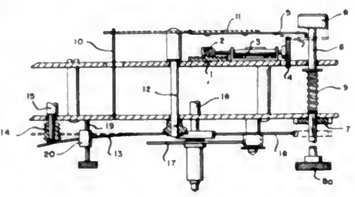
1. As a new article of manufacture a substantially untwisted, crimped, heat-treated textile yarn of a denier per filament of 2–20 and a total denier of 250 to 10,000, said yarn being comprised of a number of filaments of longitudinally oriented heat-treated polymeric compositions, said yarn being characterized by sufficient internal entanglement of the filaments to enable the yarn to be compacted with other yarns without said yarn losing its identity as a separate yarn, the crimped, heat-treated yarn being free of external loops and said yarn being of a



SCHEMATIC ENLARGED SKETCH OF ENTANGLED CRIMPED POLYMERIC YARN

dense structure with the crimp having a saw-tooth configuration.

3,157,023
DEVICE FOR AUTOMATIC REGULATION OF CLOCKS IN CONNECTION WITH SETTING OF THE HANDS
August Mutter, Schwenningen (Neckar), Germany, assignor to Muller-Schlenker, Uhrenfabrik, Schwenningen (Neckar), Germany, and VDO Tachometer Werk Adolf Schindling G.m.b.H., Frankfurt am Main, Germany
Filed July 22, 1957, Ser. No. 673,369
Claims priority, application Germany July 23, 1956
2 Claims. (Cl. 58—85.5)

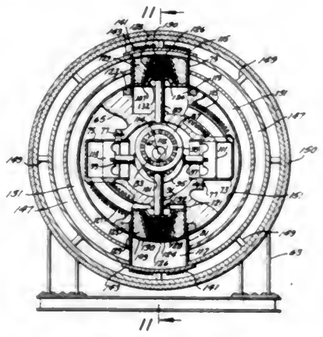


1. A device for automatic and simultaneous regulation of the escapement hair spring of a clock in connection with the setting of the hands of said clock comprising: a rotatable adjusting shaft for setting the hands of said clock and a crown gear affixed to the end of said adjusting shaft, a worm gear and shaft positioned at right angles to said adjusting shaft said worm gear being in engagement with regulating means for said hair spring, a spur gear affixed to the end of said worm gear shaft, a third shaft rotatably positioned parallel to said adjusting shaft and having a cross arm affixed to one end thereof, a spring finger projecting from the end of said cross arm into the space between said crown gear and said spur gear to engage between the two when said adjusting shaft is operated, a leaf spring affixed at one end to the opposite end of said third shaft, a stud having threads on the sides thereof and a rounded head against which the free end of said leaf spring is normally engaged, means connecting said stud with the drive shaft of said clock to rotate said stud, and spring means engaging said cross arm to urge said spring finger carried by said cross arm into a position wherein the extension of said spring finger would intersect the axis of said adjusting shaft.

3,157,024
REGENERATIVE THERMAL DEVICE
Rollin J. McCrory, Worthington, and William H. Wilkinson, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,327
15 Claims. (Cl. 60—24)

1. A regenerative terminal device comprising:
(*a*) a cylinder block rotatably mounted to rotate about a first axis;
(*b*) a plurality of cylinders supported by said cylinder block;

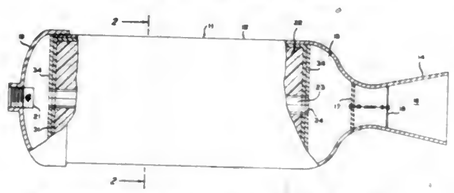
(c) a crankshaft rotatably mounted to rotate about a second axis, said second axis being spaced from said first axis;



(d) a plurality of pistons reciprocably disposed in said cylinders and rotatably mounted on cranks on said crankshaft; and

(e) means including a regenerator for connecting said cylinders to operate on a regenerative thermal cycle.

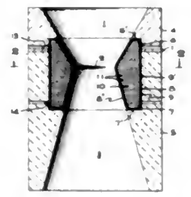
3,157,025
ROCKET MOTOR AND SOLID PROPELLANT CHARGE
Liles G. Herring, McGregor, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 10, 1959, Ser. No. 819,500
11 Claims. (Cl. 60—35.6)



11. A rocket motor having a casing defining a combustion chamber, an exhaust nozzle communicating with said chamber, and a solid propellant charge loaded in said chamber, said charge being cylindrical in shape and having an axial perforation defined by an exposed burning surface, said propellant charge comprising a major amount of an inorganic oxidizer and a minor amount of a fuel-binder comprising a copolymer of a conjugated diene and a vinyl-substituted heterocyclic nitrogen compound selected from the pyridine, quinoline, and isoquinoline series, and polyurethane material case-bonding the outer cylindrical surface of said propellant charge to said casing, said polyurethane material formed by reacting castor oil and monohydroxyethyltrihydroxypropylethylene diamine with a polyisocyanate selected from the group consisting of:

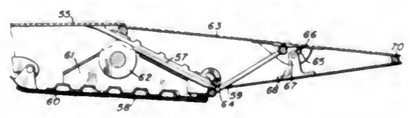
Toluene-2,4-diisocyanate
Toluene-2,3-diisocyanate
Toluene-2,6-diisocyanate
1,6-hexamethylene diisocyanate
Triphenylmethane triisocyanate
1,5-decamethylene diisocyanate
Cyclopentylene-1,3-diisocyanate
Cyclohexylene-1,3-diisocyanate
Diphenyl-4,4′-diisocyanate
Diphenyl-3,3′-diisocyanate
Toluene-2,5-diisocyanate
Benzene-1,3-diisocyanate
Benzene-1,4-diisocyanate
Benzene-1,2,4-triisocyanate
Toluene-2,4,6-triisocyanate
Benzene-1,3,5-triisocyanate
Benzene-1,2,3-triisocyanate
Toluene-2,3,4-triisocyanate

3,157,026
COMPOSITE NOZZLE STRUCTURE
Albert J. Lampert, Anaheim, Calif., assignor to Super-Temp Corporation, Santa Fe Springs, Calif., a corporation of California
Filed Oct. 19, 1962, Ser. No. 231,618
16 Claims. (Cl. 60—35.6)



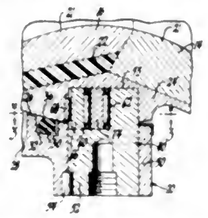
1. A composite nozzle construction comprising a nozzle body having an inlet and outlet and a throat section, a hollow metallic nozzle assembly positioned between said inlet and outlet and adjacent said throat portion having an interior conical wall, an outer circular ring wall, and a top wall and bottom wall connecting said conical wall and said ring wall, a plurality of wafers of pyrolytic graphite lamina positioned in said nozzle assembly, the laminar planes of said wafers being transverse to the axis of said nozzle, and layers of compressible material positioned between said wafers.

3,157,027
PROPULSION NOZZLES
Gordon Cyril May, Allestree Park, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Feb. 1, 1963, Ser. No. 255,462
Claims priority, application Great Britain, Feb. 12, 1962, 5,379/62
4 Claims. (Cl. 60—35.6)



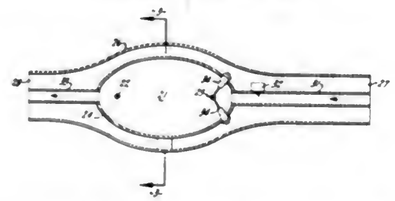
1. A jet engine having a convergent-divergent nozzle which comprises an assembly of first and second sets of nozzle members which may be moved to vary the size of the throat of the nozzle, such movement of the nozzle members involving radial movement of their downstream ends, said first and second sets of nozzle members respectively forming the convergent and divergent parts of the nozzle, an assembly of radially movable casing members within which the nozzle members are mounted, linkage means connecting together the assemblies of nozzle members and casing members so that said assemblies move in unison, a frusto-conical member which tapers axially in a downstream direction, the said second set of nozzle members being mounted at the downstream end of the frusto-conical member, power means for effecting axial movement of the frusto-conical member, and rollers on said first set of nozzle members, which rollers engage said frusto-conical member.

3,157,028
BEARING DESIGN
Arthur W. Gaubatz, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 10, 1961, Ser. No. 122,826
6 Claims. (Cl. 60—35.55)



4. The combination comprising a body having an outlet, a nozzle mounted on the body and adapted to discharge fluid from said outlet, and support means pivotally mounting the nozzle on the body for vectoring action about a vertical axis perpendicular to the nozzle, the support means being adapted to act against the fluid induced thrust on the vectored nozzle and thereby provide a reaction force to support the vectoring motion of the nozzle away from the axis, the support means comprising a first pivot between the nozzle and the body, a connecting member, a second pivot between the connecting member and the nozzle, and a third pivot between the connecting member and the body, said pivots being substantially parallel and mutually spaced.

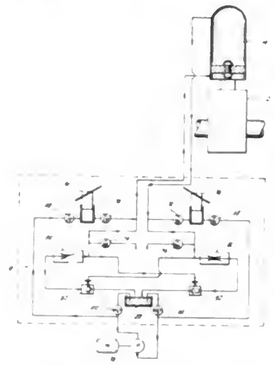
3,157,029
JET ENGINE
George B. Greene, 440 Buena Vista Drive, Pinole, Calif.
Filed Feb. 28, 1961, Ser. No. 92,314
13 Claims. (Cl. 60—39.77)



1. An improved engine comprising a shell defining a combustion chamber of prolate ellipsoid configuration, a carburetor feeding a lean mixture of volatile fuel and air into said chamber at a pressure below combustion conditions for said mixture, means initiating a single explosive energy release within the chamber at one of the foci thereof, whereby fuel is ignited to burn in the chamber at the foci thereof and energy is successively refocused at said foci to establish combustion conditions thereat for burning of said fuel and air mixture, and outlet means extending from the chamber to accommodate the passage of hot combustion gases therethrough from the chamber.

3,157,030
CONTROL UNIT
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 8, 1962, Ser. No. 229,133
7 Claims. (Cl. 60—52)

1. An integral control unit for a valve having a double acting piston operator, said control unit comprising: a housing having a longitudinal cylindrical bore therethrough, two inlet ports for selectively receiving flow from an external power supply, each inlet port positioned equidistant from the axial centerline of the housing and communicating with the cylindrical bore, a cylindrical chamber forming a reservoir, a detachable closure (32) for the reservoir, a passage (32) from the reservoir communicating with the cylindrical bore located on the axial centerline of the housing, two cylindrical chambers forming cylinders for a hand pump, each chamber communicating with the cylindrical bore and positioned equidistant from the axial centerline of the housing and more distant from said axial centerline than the inlet ports, a hand pump piston in each chamber; two cylindrical valve sections, one positioned in each end of said cylindrical bore and secured to the housing, the inner end of the sections terminating short of the axial centerline whereby there is a space between said sections which is in communication with the passage from the reservoir, each cylindrical section having an inlet annular peripheral groove mating with the inlet port of the housing, a first longitudinal passage extending from the inner end of the cylindrical section, a passage from the inlet annular peripheral groove to the first longitudinal passage, a first check valve in the first longitudinal groove, prohibiting passage of flow from the inlet port flowing into the space between the sections and permitting flow from the space



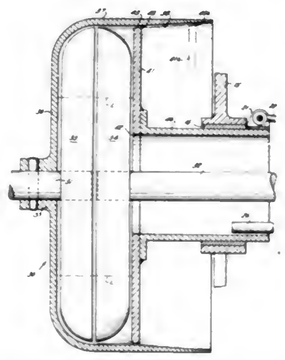
into the first longitudinal groove, a hand pump annular peripheral groove in communication with the hand pump cylinder, a second check valve in said hand pump peripheral groove in communication with the first longitudinal passage permitting flow from an inlet port to pass therethrough but prohibiting return flow, a third check valve in the hand pump peripheral groove in communication with the hand pump cylinder, a second longitudinal passage in communication with the third check valve, the axial outer end of said second longitudinal passage being one of the outlets of the control unit and arranged for connection to one side of the piston operator, the axial inner end of said second longitudinal passage being provided with a pressure relief valve which will dump excess pressure into the space between the cylindrical sections, a third longitudinal passage, a passage connecting the second and third longitudinal passages, an adjustable flow regulator valve in said third longitudinal passage communicating with the passage from the second longitudinal passage and metering flow therethrough, fourth and fifth longitudinal passages, a passage from the third longitudinal passage communicating with said fourth and fifth longitudinal passages, the passage from the third longitudinal passage receiving flow from the flow regulator valve, pilot check valves having a pilot portion and a check valve portion controlled by the pilot portion in said fourth and fifth longitudinal passages, the pilot

check valves extending into the respective passage in the other section and communicating with the space between the sections, the pilot check valves being oppositely positioned so that one will have the pilot portion receiving flow and the other will have the check portion receiving flow whereby when pressure is connected to inlet of one section such pressure will contact the pilot of one pilot check valve and open the valve in the other section permitting return flow from such section, and annular peripheral seals sealing the peripheral grooves from each other and from the inner and outer ends of the cylindrical sections.

3,157,031
FLUID TRANSMISSION COUPLINGS

Ralph C. Smith, New York, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 18, 1962, Ser. No. 245,482
6 Claims. (Cl. 60—54)



1. A transmission coupling having a variable output-input ratio, comprising:

(*a*) a housing with an annular wall and a pair of end walls defining a chamber;

(*b*) a pair of shafts rotatable on a common axis extending into the chamber, one being rotated to provide coupling input and the other to provide coupling output when rotated;

(*c*) a pair of bladed rotors disposed in spaced face to face relationship in the chamber, one being connected to the input shaft to drive fluid in a circular path in the chamber, and the other being connected to the output shaft and driven by such fluid;

(*d*) said housing having an inlet to receive fluid as a driving medium which forms an annulus adjacent the annular wall and is retained by the end walls when the coupling is in operation, and a discharge for such fluid; and

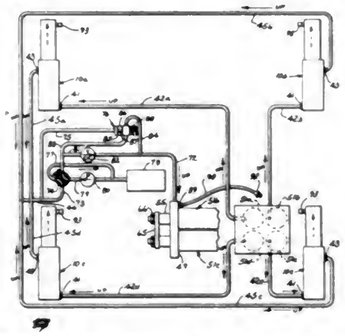
(*e*) at least one of the end walls being movable axially relative to the other to vary the width of the chamber for varying the level of driven fluid to vary the output-input ratio of the coupling.

3,157,032
HYDRAULIC FLOW EQUALIZER

William A. Herpich, Galion, Ohio, assignor to Hercules Galion Products, Inc., Galion, Ohio, a corporation of Delaware

Filed Sept. 20, 1962, Ser. No. 224,912
7 Claims. (Cl. 60—54.5)

1. A hydraulic apparatus comprising a plurality of hydraulic power cylinders to be simultaneously actuated, a source of hydraulic fluid under pressure, a fluid return to supply, an equalizer comprising a plurality of equalizer cylinders equal in number to and associated in pairs with said power cylinders, each of said power cylinders and each of said equalizer cylinders having a closed end, a piston and piston rod therein, one end of said piston rod extending out of the end opposite the closed end of the respective cylinder, a gland effecting a seal between each piston rod and the cylinder from which it projects, a captive oil line for each associated pair of power and equalizer cylinders, said captive oil line being connected to and in communication with the closed ends of said

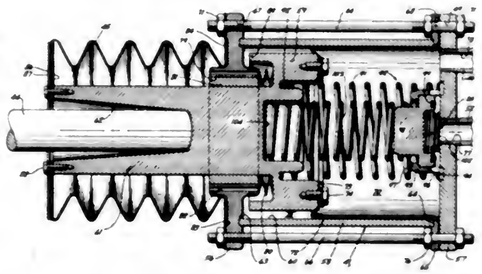


power and equalizer cylinders for forming an individual captive system, a common oil line leading to the piston rod end of all of said equalizer cylinders, a manifold, oil lines leading from said manifold to the piston rod ends of all of said power cylinders, means restraining said equalizer cylinders against movement relative to each other, means restraining said equalizer cylinder piston rods against movement relative to each other, valve means for alternately connecting said common line and said manifold to said source and to said return, and means for removing fluid out of said captive systems.

3,157,033
RAILROAD BRAKES

Howard B. Huntress and Thomas S. Taylor, Suffern, N.Y., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Mar. 16, 1962, Ser. No. 180,127
1 Claim. (Cl. 60—54.6)



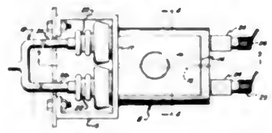
In a hydraulic master cylinder of the kind having a piston reciprocal with an inner bore; means affording an inlet to the bore adapted to be connected to a reservoir of hydraulic fluid being selectively operable to compensate for the amount of fluid within the bore; means affording an outlet for the bore adapted to be connected to a hydraulic power cylinder; valve means for regulating the fluid flow through the inlet; resilient means normally biasing the valve means to an open position for communicating said inlet with said bore and said outlet, whereby the reservoir may provide hydraulic fluid to compensate

for variations in volume of the hydraulic fluid, said valve means being moveable to a close position against the bias of said resilient means by actuation of the piston in a forward direction to thereby block fluid flow from the bore to the inlet of the master cylinder; a normally expandable spring means positioned between the end wall of the bore and the rear of the piston and effective to space the piston forwardly of its rearwardmost position in the cylinder, and said spring means being adapted to be contracted by fluid under pressure at the forward side of the piston when said reservoir of hydraulic fluid is inoperable so that said spring means may move said piston within said bore to compensate for variations in volume of the hydraulic fluid; a return spring means for returning said piston to a position within said bore, and a valve closing spring means reversely wound to said return spring means and operable by said piston to close said valve means.

3,157,034
DUAL MASTER CYLINDER

Herman Beavers, 5585 Garden St., Maple Heights, Ohio

Filed Dec. 4, 1962, Ser. No. 242,253
1 Claim. (Cl. 60—54.6)

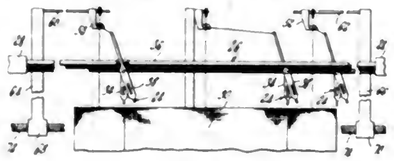


A dual master cylinder of the character described, comprising a mounting bracket which is substantially the shape of a capital letter U when viewed from the top, the ends of said bracket bent inward substantially at right angles, said ends having openings for use in securing the bracket to the firewall of a motor vehicle, a block of steel secured to the central portion of said bracket and extending outwardly from said bracket, a pair of tubular openings extending through said central portion of said bracket and into said block of steel, the normal mechanism of a master cylinder in each tubular opening, a piston rod extending from each master cylinder, and a flexible rubber boot surrounding each piston rod at the outer end of said master cylinder, the flexible rubber boots being within said mounting bracket.

3,157,035
PLATING ATTACHMENT FOR KNITTING MACHINE

Edward J. Boutillette, Oxford, Mass., assignor to M.K.M. Knitting Mills, Inc., Manchester, N.H., a corporation of New Hampshire

Filed July 30, 1962, Ser. No. 213,453
5 Claims. (Cl. 66—136)

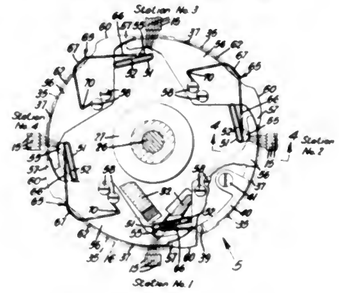


1. A plating attachment for a flat full-fashioned Cotton-type knitting machine having a press edge, a series of spring beard needles movable as a unit, knockover bits, and a series of sinkers movable to kink yarn successively about the shanks of the needles which comprises a yarn carrier assembly having traversing movement between limit positions including a yarn carrier rod, a pair of plating yarn carriers laying yarn to said sinkers relatively shiftable on said rod to reverse plating positions, and means for reversing said carriers to maintain the plating positions of the yarns unchanged during successive traverses in opposite direction comprising a control station on the machine located between the travel limits of said yarn carriers, and an actuator at said station operable to shift said yarn carriers during the preceding yarn laying traverse of said carriers.

3,157,036
YARN SEVERING MECHANISM FOR KNITTING MACHINES

Benjamin Franklin Coile, Athens, Ga., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1961, Ser. No. 145,834
10 Claims. (Cl. 66—140)

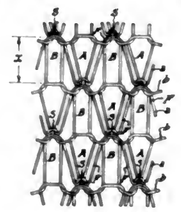


1. In a circular knitting machine having a rotarily operated circle of needles, a plurality of knitting stations, guide fingers for feeding yarns to said needles at each of said stations, and means for moving said guide fingers thereat between active positions in which said fingers feed their yarn to said needles and inactive positions, in combination with means for severing yarns associated with each station, and yarn control means associated with each station, said yarn control means at each of said stations acting to guide yarns moved to inactive positions thereat to the severing means associated with another of said stations for severence, and acting to guide yarns moved to active position thereat to the severing means associated therewith for severance.

3,157,037
RUN RESISTANT KNITTED STOCKINGS

Max Bruno Nebel, Waldstrasse 160, and Erhard M. Nebel, Helenenstrasse 28, both of Wiesbaden, Germany

Original application Aug. 17, 1962, Ser. No. 217,554. Divided and this application Nov. 19, 1962, Ser. No. 245,342
Claims priority, application Germany Feb. 18, 1961
6 Claims. (Cl. 66—178)



3. A circular knit stocking having

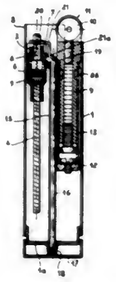
(*a*) a welt formed of fabric having stitches of substantially uniform size and

(*b*) a leg formed of a run-resistant fabric,

(*c*) said run-resistant fabric composed of

(1) alternate courses wherein yarn is formed into tuck loops in spaced wales and into knitted stitches in the intervening wales and
(2) courses immediately preceding the alternate courses wherein yarn is formed into relatively elongated knitted stitches in the spaced wales and into relatively short knitted stitches in the intervening wales,
(3) the length of yarn per course in said preceding courses being 70% or less of the length of yarn per course in the alternate courses.

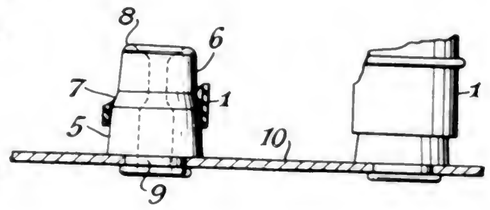
3,157,038
GAS LIGHTER
Emile Gilberton, Paris, France, assignor to Etablissements Genoud & Cie, Venissieux (Rhone), France, a company of France
Filed Mar. 4, 1963, Ser. No. 262,575
Claims priority, application France, Mar. 9, 1962, 42,370, Patent 1,326,426
8 Claims. (Cl. 67—7.1)



1. A hand operable gas lighter comprising a container, a cup-shaped member slidably carried by the bottom of said container on the outside thereof and adapted to be shifted towards and away from said bottom, a spring urging said cup-shaped member away from the container, a rod fixed to said cup-shaped member and extending longitudinally through said container to slide freely inside the latter, a flint-carrying tube carried inside said container, a knurled wheel fitted on the upper end of said flint-carrying tube to cooperate with a flint in the latter, a burner carried by the container in transverse registry with the knurled wheel, said burner including a valve closing said container, and a sliding member adapted to be shifted upwardly by said rod extending freely through said container for raising said valve upon hand operation of said lighter.

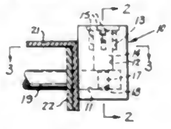
3,157,039
YARN DYEING APPARATUS
John T. Brandwood, Sale, England, assignor, by mesne assignments, to Dye Tube Developments Limited, Lancashire, England, a British company
Filed May 22, 1961, Ser. No. 111,535
2 Claims. (Cl. 68—198)

1. Textile dyeing apparatus comprising an apertured plate, a plurality of frustro-conical, hollow, ferrules, each mounted in one of the apertures of said plate, a plurality of rigid, tapered, plastic ring spinning tubes each having a closed upper end, a perforated intermediate area and an imperforate lower skirt with a circular terminal rim, the rim of said skirt being push fitted and firmly seated on the tapered face of one of said ferrules to form a liquid seal, a tapered interior face on each said tube for drivingly engaging a textile spindle, a pair of integral, circumferentially extending, spaced apart, ribs each at an opposite end of said perforated area on the exterior face of said tube to define the winding limits thereon and a tubular stem forming a fluid passage through each said hollow ferrule



for drawing dyeing liquid inwardly through the package and perforations of the tube seated thereon while more firmly seating and sealing the skirt rim thereof.

3,157,040
LOCKING DEVICE
Royce L. Raye, 1652 Perryton, Dallas, Tex.
Filed May 29, 1962, Ser. No. 198,515
3 Claims. (Cl. 70—57)

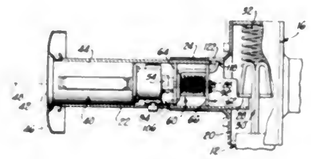


1. In a device for locking a first member to a second member, a locking bar having two end portions, one of said end portions bearing against said first member, the other of said end portions passing through an aperture in said first member and extending outwardly therefrom, portions of said locking bar defining a transverse bore therethrough adjacent said other end portion thereof and spaced from said first member, an element connected to said second member and having an aperture passing over said other end portion of said locking bar whereby said element is received between said first member and said bore, and locking means operatively engaged through said bore, said locking means comprising a lock block having a second bore therein into which said other end portion of said locking bar extends, and a third bore perpendicular to, and intersecting, said second bore and aligned with said bore in said locking bar, a lock plug in said third bore, said plug having threads on its lower end and corresponding threads in said third bore, a stud on the end of said plug engageable in said bore in said locking bar, and key controlled tumblers extensible from said plug into radial slots in said lock block to preclude rotation of said plug and hence withdrawal of said stud from said bore in said locking bar.

3,157,041
LOCK CONSTRUCTION FOR LOCK SETS
Kenneth F. Fryer, deceased, late of Anaheim, Calif., by Alma M. Fryer, executrix, Anaheim, Calif., assignor to Emhart Corporation, a corporation of Connecticut
Filed Nov. 27, 1961, Ser. No. 156,192
5 Claims. (Cl. 70—216)

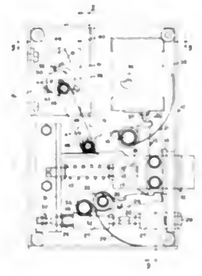
3. In a lock construction, the combination of: a housing; an elongated hollow spindle; a lock in said spindle

having a key plug; a support mounting said spindle for rotation; a mount in said spindle having spaced openings therein; a cam having a key plug engageable opening and an elongated shank mounted for rotation in said



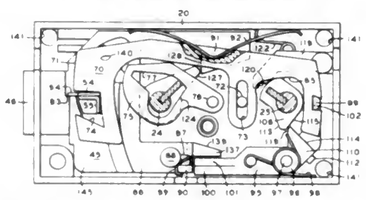
openings; and a dogging lever mounted on said shank having one end engageable by said cam and the other end engageable with said support to lock said spindle against rotation with respect to said support.

3,157,042
MOTOR-DRIVEN OR OPERATED LOCKS, AND THE LIKE
Francis T. Wolz, Joliet, Ill., assignor to Folger Adam, Joliet, Ill., a co-partnership of Joliet, Ill.
Filed Mar. 29, 1963, Ser. No. 269,099
6 Claims. (Cl. 70—279)



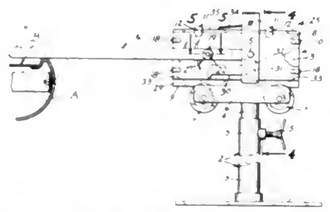
1. In a locking device, the combination of a lock element movable between a locking position and an unlocking position, spring means in connection with said lock element urging movement of the lock element in the locking direction, a movable lock element actuator having a part in driving engagement with the lock element, means to mount said lock element actuator for movement between a first lock element locked position and a second lock element unlocked position, a manual key operated unit having a key operated actuating pin in position to engage the lock element actuator for movement of said actuator towards the second lock element unlocked position, a motor unit having an output shaft, a crank pin in operative connection with said output shaft and having a starting position, and a link connection between the crank pin and the lock element actuator, said link connection including a lost motion connection constituted to permit full movement of the lock element actuator in the lock element unlocking direction without rotary movement of the motor output shaft when the crank pin is in the starting position, and constituted to cause movement of the lock element actuator in the lock element unlocking direction when the motor and output shaft are rotated with movement of the crank pin and the link from the starting position.

3,157,043
SAFE DEPOSIT BOX LOCK
Roy T. Ellis, 29–43 W. Apple St., Dayton 2, Ohio, and Stephen A. Denman, Piqua, Ohio; said Denman assignor to said Ellis
Filed Sept. 29, 1961, Ser. No. 141,771
8 Claims. (Cl. 70—339)



4. A lock having a housing, a bolt within the housing and movable between retracted and extended positions, a plurality of tumblers within the housing normally blocking retraction of the bolt, a guard key nose adapted to receive a guard key and a customer key nose adapted to receive a customer key, the key noses being positioned adjacent the tumblers so that each tumbler is moved by both the guard and customer keys, the tumblers being so arranged as to require movement by both the guard key and the customer key before the bolt can be retracted, and means to prevent removal of the guard key from its key nose until the customer key has been removed from its key nose.

3,157,044
SHOCK ABSORBER TESTING AND CONDITION INDICATING DEVICE
Charles E. Branick, % Branick Mfg. Co., Box 1937, Fargo, N. Dak.
Filed Nov. 24, 1961, Ser. No. 154,567
4 Claims. (Cl. 73—11)

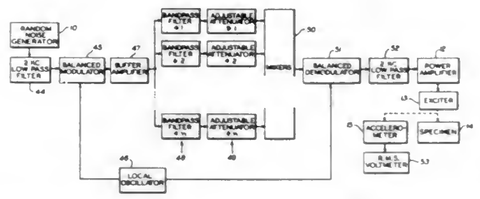


1. In a device of the class described, a support, a lever arm pivotally secured to said support for free swinging movements and having an outer end portion adapted to rest upon and be supported by a spring mounted portion of a vehicle, cooperating index and scriber elements, means mounting one of said elements on the inner end of said lever arm for common movements therewith, means mounting the other of said elements on said support for indexing movements in a path generally normal to the path of travel of said one of said elements, and means imparting indexing movements to said other of said elements responsive to swinging movements of said lever arm.

3,157,045
VIBRATION TESTING SYSTEM
Charles E. Maki, Branford, Conn., assignor to Textron Electronics, Inc., Providence, R.I., a corporation of Delaware
Filed Aug. 15, 1960, Ser. No. 49,546
22 Claims. (Cl. 73—71.6)

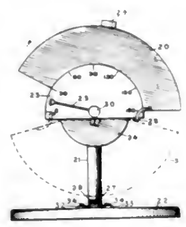
12. A vibration testing system comprising a source of random noise signals in the audio frequency range having a given bandwidth, a mixing circuit, a group of signal

channels coupled between said source and said mixing circuit, frequency changing means coupled before said signal channel and after said mixing circuit for causing the channel signal frequencies to lie above the audio frequency range while providing an output within said given audio frequency bandwidth, said channels each having a frequency selective input for collectively dividing the sig-



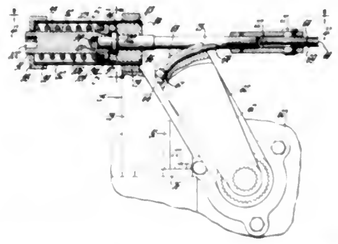
nals reaching said channels into a plurality of adjacent narrow frequency bands, a separate adjustable attenuator in each of said channels between the corresponding frequency selective input and said mixing circuit, a vibration exciter, means for energizing said exciter with said output from said frequency changing means, and means for monitoring the operation of the exciter.

3,157,046
IMPACT TEST MACHINE
George M. Orner, Cochituate, Mass., assignor to Manufacturing Laboratories, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 30, 1961, Ser. No. 120,979
5 Claims. (Cl. 73—101)



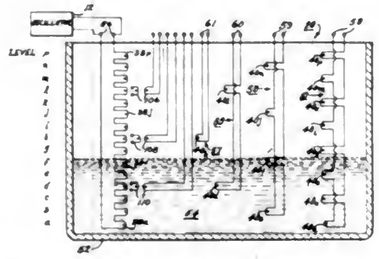
1. Impact test apparatus, comprising:
support base means;
yoke-shaped, anvil means mounted on and affixed to said support base means for carrying a test specimen; vertical post support means coupled to said base means;
axis-defining, rotary bearing, hollow axle, support means affixed to and extending from said vertical post means;
rotary bearing means having an inner race affixed to said axle means;
a disc-shaped plate centrally supported on said bearing means for rotation about said axis;
pendulous means including a sectorial, rotatable pendulous plate member coaxially pivotally supported on said bearing means adjacent said disc plate for rotation therewith about said axis in a circumferential path;
adjustable clamping means coupling said pendulous member and said disc plate for adjusting the initial angular position of said member relative to said disc plate;
stop means including a slidable stop shaft extending through said vertical post and engaging said disc plate for fixing an initial position;
lever means pivotally linking said post at a fulcrum point and said stop shaft at an end;
release means including a slidable release shaft extending through said hollow axle and said post and pivotally linking an end of said lever means;
resilience means supported on said release shaft and disposed between said post and lever means for maintaining said stop shaft in engagement with said disc plate, whereby the motion of said release shaft in opposition to said resilience means is transmitted through said lever and stop means to disengage said disc plate and enable said disc plate and pendulum freely to pivot about said axis, said member and said disc plate having a center of percussion exterior to said path;
an angle indicator plate means affixed to an end of said hollow shaft;
a rotatable indicator member coaxially, resiliently mounted adjacent said indicator plate for rotation about said axis; and
impeller means coupled to said pendulous member for rotating said indicator member to provide an indication of the maximum angular displacement of said pendulous member from an initial position.

3,157,047
METHOD OF TESTING A TRANSMISSION AND APPARATUS THEREFOR
Charles B. Urban, Speedway, and Robert E. Peale, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 18, 1961, Ser. No. 103,758
19 Claims. (Cl. 73—116)



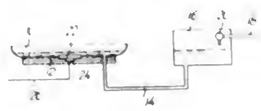
1. In apparatus for applying a predetermined force, a stationary support member, a first member axially movably mounted with respect to said support, a second member axially movably mounted with respect to said first member and said support member, means actuated by said second member to apply a predetermined thrust force in response to rotary movement of said second member, means between a first pair of two of said members operative in response to rotation of said second member to axially advance said second member to apply a thrust force, clutch means operatively connecting a different second pair of said members and operative when engaged to cause relative rotation of said first pair of said members and when disengaged inoperative to cause relative rotation between said first pair of two members, and spring means operatively connected between said second pair of members to transmit the thrust force between said second pair of members and normally operative to engage said clutch and operative in response to a predetermined thrust applied to compress and disengage said clutch to disable said drive means at a predetermined thrust force value.

3,157,048
DIGITAL TANK GAGING SYSTEM
Sidney B. Williams, Lexington, Mass., assignor to Trans-Sonics, Inc., Lexington, Mass.
Filed July 3, 1961, Ser. No. 121,537
20 Claims. (Cl. 73—304)



1. Fluid-depth sensing apparatus comprising, in combination, a plurality of sensors logically ordered in an array exposed to a fluid, each of said sensors having a sensing level, each sensor having a first pair of terminals and adapted to develop when immersed in said fluid below said sensing level a voltage therebetween having a characteristic substantially different from the voltage developed when the fluid level is below said sensing level, said sensors being arranged in said array so that additional sensing levels are immersed when the level of said fluid rises and being connected schematically in stacks with said first pairs of terminals in each stack being connected in series and adjacent sensors in each stack being connected so that said corresponding voltages thereof have opposite polarity.

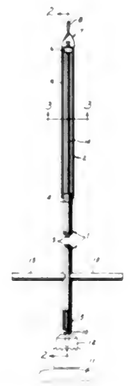
3,157,049
DEVICE FOR MEASURING MOISTURE TEMPERATURE
Gösta Enoch Ståhlberg, Farsta, Sweden, assignor to Regulator Aktiengesellschaft, Glarus, Switzerland, a corporation of Switzerland
Filed Mar. 23, 1961, Ser. No. 97,883
Claims priority, application Sweden, Mar. 25, 1960, 3,014/60
4 Claims. (Cl. 73—335)



1. In a device for measuring the evaporation temperature of an evaporable liquid component in a flowing gas stream; a container in the form of a shallow bowl of heat-insulating material, a flat heat-sensitive element in the bottom of the bowl, heat-insulating material covering the bottom of the bowl and thereby insulating the bowl and the heat-sensitive element from thermal influences from below, and means for maintaining a shallow layer of said evaporable component in the bowl and in covering relation with the heat-sensitive element.

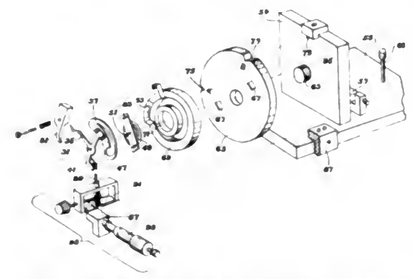
3,157,050
POWER-DRIVEN SAMPLING PROBE FOR EAR CORN
August J. Lipetzky, Rte. 2, Springfield, Minn.
Filed Jan. 19, 1962, Ser. No. 167,363
1 Claim. (Cl. 73—425.2)

An ear corn probe comprising:
(*a*) an elongated body,
(*b*) an elongated cross-sectionally U-shaped radially outwardly opening specimen collecting tray rigidly secured to and forming an axial extension of the front end of said body,
(*c*) a rotary shaft extending axially through said body and said tray and journalled in opposite end walls of each thereof,



(*d*) a pointed auger element fastened on the extreme outer end of said shaft immediately forwardly of said tray,
(*e*) means for imparting rotation to the rear end of said shaft rearwardly of said body,
(*f*) and radially outwardly projecting handle means on the rear end portion of said body,
(*g*) whereby specimens are fed into said tray under action of gravity under forward movements of said probe through a crib or bin when said tray is in an upwardly opening position.

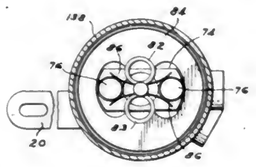
3,157,051
CONSTRUCTION, METHOD, AND APPARATUS FOR COUNTERWEIGHT BALANCING
Robert Westfall, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 18, 1963, Ser. No. 259,044
11 Claims. (Cl. 73—480)



10. The method of balancing a pointer element axially mounted in a measuring instrument and having a counterweight including a weight frictionally supported for movement in any direction within a channel member, said method comprising the steps of:
(*a*) supporting said instrument in a substantially horizontal plane normal to the axis on which said element is mounted and noting the position of said element relative to said instrument;

(*b*) transferring said instrument to a non-horizontal adjusting plane normal to the axis on which said element is mounted;
(*c*) moving said instrument in said adjusting plane to a first orientation in which the position of said element relative to said instrument is substantially the same as is noted when said instrument is supported in said horizontal plane;
(*d*) rotating said instrument about an axis substantially parallel to said element-mounting axis to a second orientation removed from said first orientation by an arc of substantially 90°;
(*e*) noting the change in said relative position of said element;
(*f*) trapping said element in its original position relative to said instrument in said first orientation; and
(*g*) sliding said weight in said channel member in a substantially horizontal direction and through a distance determined according to the imbalance of said element as indicated by the change in its relative position when said instrument is moved between said first and second orientations.

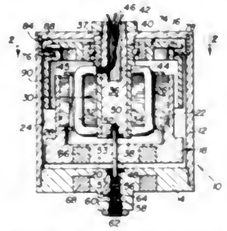
3,157,052
ANTI-SKID BRAKE SYSTEM
John V. Barnes, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,457
1 Claim. (Cl. 73—514)



An accelerometer adapted to actuate a control device sensitive to angular displacement between a rotatably mounted driving member and a rotatably mounted inertia member,
said members having a common axis of rotation,
said inertia member having a pair of leaf springs secured thereto with their centers adjacent said axis and their ends extending outwardly from said axis,
a cylindrical element positioned adjacent the center of each of said leaf springs radially outwardly of said axis and secured to said inertia member,
a pair of cylindrical pins spaced approximately ninety degrees with respect to said cylindrical elements and secured to said driving member,
each of said pins being interposed between and engaging a pair of adjacent ends of said leaf springs,
said pins being adapted to wrap one end of each of said leaf springs around said cylindrical elements upon angular displacement of said members in one direction and to wrap the other of said ends of said leaf springs around said cylindrical elements upon angular displacement in the opposite direction.

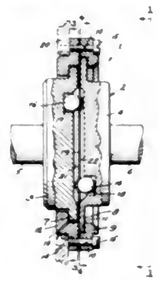
3,157,053
VERTICAL GYROSCOPE
Robert P. Hall, Hillsboro, Oreg., assignor to Tektron Instrument Co., Hillsboro, Oreg., a corporation of Oregon
Filed Nov. 20, 1961, Ser. No. 153,347
14 Claims. (Cl. 74—5.41)

1. A vertical gyroscope comprising:
a gyroscope frame,
a gyroscope rotor having a vertically extending axis,
means mounting said rotor in said frame for rotation about said axis and for limited movement axially of said rotor between an upper and lower position in said frame,
induction motor rotor windings carried by said rotor,
a stator secured to said frame and having induction motor stator windings thereon for producing a rotating magnetic field causing rotation of said rotor,
said rotor being a cup-shaped member having a disk-shaped body portion axially spaced from said stator with an axially extending peripheral flange surrounding said stator and carrying said rotor windings,



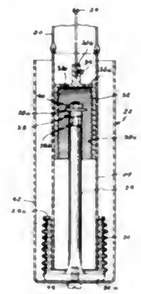
first annular permanent magnet means carried by said body portion of said rotor and having annular poles concentric with said axis,
second annular permanent magnet means carried by said frame below said first magnet means and having annular poles concentric with said rotor and positioned to repel said first magnet means and hold said rotor in said upper position
and a rotor shaft extending through said disk-shaped body portion and having one end journaled in said body portion and the other end journaled in one end of said stator.

3,157,054
ROTARY FRICTION SHAFT COUPLING
Vincent C. Dean, Ville St. Laurent, Quebec, Canada, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 17, 1962, Ser. No. 231,310
2 Claims. (Cl. 74—17.8)



1. A ball-diaphragm friction drive comprising a housing, said housing comprising a driving plate, a driven plate coaxially opposed with respect to said driving plate; means for transmitting rotation from said driving plate to said driven plate housed in the opposing faces of said driving and driven plates, said means comprising a series of recesses arranged in a circle on each inner face of said driving and driven plates, the circle on each plate being of equal diameter and a series of balls nestled, one each, in said recesses in said plates, said balls protruding from said recesses whereby the balls in said driving plate are dovetailed between the balls in said driven plate, there being milled out portions in the inner faces of said driving and driven plates to provide a space to accommodate the protruding portion of said balls: a sealing membrane disposed between said driving and driven plates, said means for transmitting rotational movement housed in said driving and driven plates; and means for clamping said driving and driven plates, said means for transmitting rotation and said membrane as a unitary structure.

3,157,055
VARIABLE LINEAR POSITIONER
Gustav K. Medicus, 7521 W. Hyland Ave., and Werner F. Jehn, 438 Twinning Drive, both of Dayton, Ohio
Filed Mar. 17, 1964, Ser. No. 352,697
12 Claims. (Cl. 74—18.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



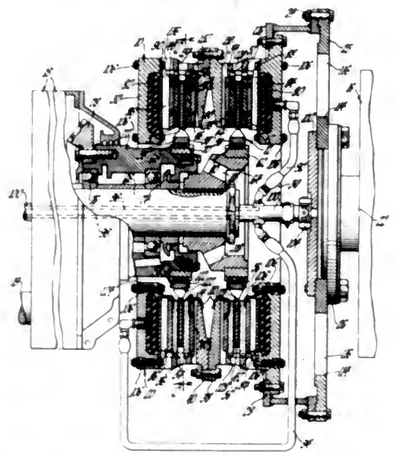
1. A variable linear positioner adapted for attaching to and positioning a terminal element within a closed vessel and comprising: a mounting and guide tube having an open rear end and an open forward end for joining to a vessel, an internally threaded thimble axially slidable within said mounting and guide tube and having means at the closed end for supporting a forwardly extending terminal element, an actuating rod having a forward end extending into the rear end of said mounting and guide tube and into the open end of said thimble, means joined to the forward end of said actuating rod for engaging the internal threads of said thimble, sealing means for nonrotatably and in a leakproof manner joining said actuating rod to said mounting and guide tube, and actuating means joined to said actuating rod for manipulating said actuating rod to axially move said thimble in said mounting and guide tube.

3,157,056
ENDLESS SPRING BELT ASSEMBLY
Frank P. Gray, 2600 E. Flora Place, and Abe D. Penn, 140 S. Eudora St., both of Denver, Colo.
Filed Sept. 19, 1962, Ser. No. 224,798
9 Claims. (Cl. 74—238)



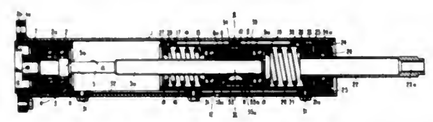
1. In combination in an endless spring belt, an elongate helical spring of uniform diameter throughout its length having a close-wound mid-section terminating at both ends in spaced coils forming loose-wound end portions, and an elastic plug-type connector having a generally cylindrical shape and a length approximately equal to the combined lengths of the loose-wound portions on the ends of the spring, said connector including at least one thread on each end of the cylindrical surface thereof sized and adapted to receive the loose-wound spring ends and receiving said loose-wound spring ends in an end-to-end non-entwining relation and forming a splice therebetween.

3,157,057
PLATE TYPE FRICTION COUPLING
William H. Palmer, Olmsted Falls, and Rolland B. Wallis, Lakewood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,429
10 Claims. (Cl. 74—378)



1. A torque transmitting mechanism comprising a cylindrical housing having spline teeth formed internally thereof, a shaft extending coaxially of said housing and having external spline teeth spacedly embraced by the internal spline teeth of said housing, a plate normal to and having internal spline teeth drivingly and slidably engaging the splines of said shaft, a pair of plates mounted within said housing in flanking relation to said first-mentioned plate and having external spline teeth slidably and drivingly engaging the internal splines of said housing, actuating means operable to effect frictional engagement between said plates, spring means acting on said flanking plates to release frictional engagement with said first-mentioned plate upon deenergization of the actuating means, and a plurality of leaf spring clips inserted and extending radially and axially between opposing root and outer lands of an angularly spaced plurality of the splines mounting said first-mentioned plate, said spring clips radially centering and frictionally damping axial movement of the first-mentioned plate relative to said shaft.

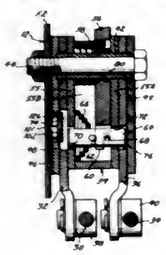
3,157,058
TRANSMISSION MEANS
Richard Haller, Brauerstrasse 51, Zurich, Switzerland
Filed Dec. 7, 1961, Ser. No. 157,697
Claims priority, application Switzerland Dec. 16, 1960
8 Claims. (Cl. 74—424.8)



1. A transmission means for the conversion of a rotary motion of a driving member into an axial motion of a drive member, comprising a screw threaded rotatable element for connection to the driving member, a nut means

formed of two axially aligned flanged nut elements keyed together mounted on said screw threaded rotatable element so that upon relative rotation between said rotatable element and said nut means said nut means will move axially on said rotatable element, an axially movable but nonrotatable sleeve surrounding said rotatable element and said nut means, a driven element connected to said non-rotatable sleeve for axial movement therewith, a generally axially disposed groove in the interior surface of said sleeve, at least one coiled spring clutch means encircling said nut means and having each end turned radially outwardly, its out-turned ends loosely engaging in said groove, the ends of said coiled spring clutch means being out of alignment with each other so that, as the rotatable element is rotated and the nut means is biased by friction to rotate with said rotatable element, an out-turned end of said coiled spring clutch means engages a wall of said generally axially disposed groove to activate said coil spring clutch means to normally hold said nut means against rotation, said generally axially disposed groove being of an axial length less than the length of said non-rotatable sleeve and terminating at an annular shoulder, biasing means to normally hold said nut means and the coiled spring clutch means in position with the ends of said coiled spring clutch means in said generally axially disposed groove, said biasing means being deflectable when axial movement of said non-rotatable sleeve along said rotatable element is prevented so that the end of said coil spring clutch means that is activated to normally hold said nut against rotation will be moved beyond the end of said generally axially disposed groove, and the coiled spring clutch disengages the said nut means, whereby damage to the device by further rotation of said rotatable element is prevented.

3,157,059
GEAR SHIFT MECHANISM
George H. Hurst, Jr., Abington, and William G. Campbell, Chalfont, Pa. (both of 341 W. Glenside Ave., Glenside, Pa.)
Filed Jan. 4, 1963, Ser. No. 249,511
5 Claims. (Cl. 74—473)



1. A gear shift mechanism for a transmission, said shift mechanism including,

a housing;

a gear selecting lever movable in a first direction to place the transmission in low gear and movable in a second direction to place the transmission in reverse gear,

there being a through opening in said selector lever,

an operating handle carried by said housing and mounted for rotation about a horizontal axis,

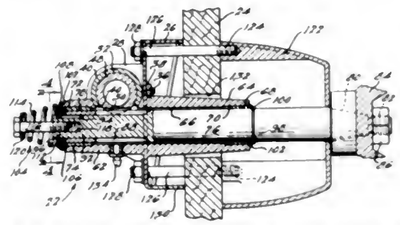
a pin carried by said operating handle,

said operating handle being movable in the direction of said axis to move said pin into said opening, to integrate said handle and said lever, said handle being also movable, transversely of said axis, in one direction to move said selector lever in said first direction, and being movable in the opposite direction to move said selector lever in said second direction,

a latch adjacent said selector lever, and

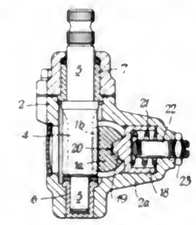
means biasing said latch into said opening concomitantly with the withdrawal of said pin from said opening, to stop the movement of said selector lever before total withdrawal of said pin from said opening.

3,157,060
STEERING MECHANISM
Russell G. Marr, Detroit, Mich., assignor to Marmac Products Inc., Detroit, Mich., a corporation of Ohio
Filed Nov. 6, 1961, Ser. No. 150,402
2 Claims. (Cl. 74—485)



1. In a steering system for a vehicle comprising a housing having a bore therein and a substantially flat surface thereon surrounding said bore, a manually rotatable steering shaft journaled in said bore, means including steering means supported adjacent one end of said steering shaft operable for reciprocal transverse movement relative to said steering shaft for controlling the movement of said vehicle, means adjacent said one end of said steering shaft engaging said steering means to control the direction of reciprocal movement thereof in response to the rotation of said steering shaft, and resisting means mounted at said one end of said steering shaft and operable between said steering shaft and said housing for resisting relative rotation of said steering shaft with respect to said housing, said resisting means including a substantially flat annular friction member nonrotatively mounted on said one end of said steering shaft for frictionally engaging said flat surface on said housing, resilient biasing means engaging an axially outer surface of said friction member for axially urging said friction member against said flat surface, and means threadedly mounted on said shaft and coaxial with said resilient biasing means for adjusting the compression thereof to impart an adjustable degree of stability to the steering system.

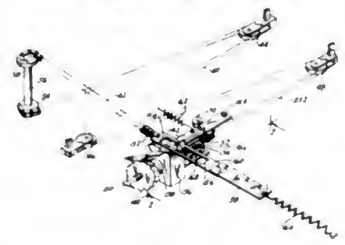
3,157,061
STEERING GEAR
Robert William Parker, Clevedon, Somerset, England, assignor to Engineering Productions (Clevedon) Limited, Clevedon, Somerset, England, a British company
Filed Mar. 22, 1962, Ser. No. 181,610
10 Claims. (Cl. 74—498)



1. In a rack and pinion steering gear for a vehicle, the combination of a pinion casing having side openings therein, an extension sleeve projecting from one side of said

casing in register with said openings, a steering pinion rotatably mounted in said casing, a toothed rack slidably supported in said sleeve and extending laterally through said casing side openings to mesh with said pinion, an extension housing opening from said casing behind said rack and substantially opposite said pinion, a spring-influenced plunger supported for axial movement in said extension housing, a projecting key on the inner head end of said plunger having side walls which converge towards the key extremity and a complementary keyway along the back of said rack in which said key slidably engages under said plunger spring-influence to prevent rotation of said rack in the pinion casing and also to maintain said rack firmly in mesh with said pinion, said key being shaped to permit lubrication of the rack keyway and to minimize resistance to sliding movement of the keyway.

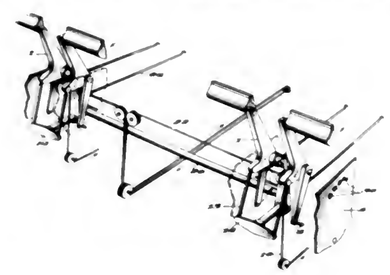
3,157,062
COMPENSATOR FOR CHAIN WEAR
Bernard Howard, Upper Saddle River, N.J., assignor to Mite Corporation, New Haven, Conn., a corporation of Delaware
Filed Feb. 8, 1962, Ser. No. 171,910
6 Claims. (Cl. 74—501.5)



1. In a mechanism comprising a flexible strand which is fixed at one end and movable back and forth at its other end under the influence of means intermediate the ends to effectively shorten or lengthen the strand, a compensating means to compensate for undesired stretch of the strand, said compensating means comprising a screw to which the fixed end of the strand is connected, with the axis of the screw extending in the same direction as the end portion of the strand, a nut on said screw, a ratchet wheel operatively connected to said nut to rotate the nut, a feed arm carrying a pawl for engaging said ratchet wheel, and a projection at the movable end of the strand, said projection being so located as to approach the feed arm when the strand is effectively lengthened, and to move the feed arm when the strand has acquired an additional undesired stretch, and the ratchet wheel and screw thread being so related that any ensuing axial movement of the screw shortens the strand and thereby tends to compensate for the undesired stretch.

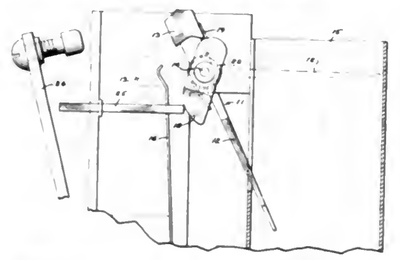
3,157,063
ADJUSTABLE CONTROL MEANS
Sydney Mussell, Bitterne Park, Southampton, England, assignor to Westland Aircraft Limited, Yeovil, England
Filed Nov. 25, 1960, Ser. No. 71,482
Claims priority, application Great Britain Dec. 4, 1959
11 Claims. (Cl. 74—512)

1. Adjustable pedal means for operating vehicle controls comprising, a pair of spaced fixed members, each having a plurality of detents; a hollow shaft transversely disposed between the fixed members and adapted to be located at its ends in more than one selected position between the fixed members; fore and aft control actuating pedals pivotably mounted on the shaft; means for positioning the shaft comprising a pair of spring loaded bearings in the ends of the shaft to releasably engage a selected pair of the detents; a common movable spindle passing through the shaft and means operatively connected to the spindle for moving the spindle; means operatively linking the bearings to the spindle to release the bearings from the selected pair of detents on movement of the spindle; a pair of swinging lever arms, each lever



arm pivotably mounted on said shaft adjacent one of the bearings between the respective fixed member and said pedals, the lever arms being pivotably attached to the fixed members at their ends remote from said shaft; the shaft and pedals being capable of positive repositioning by engagement of the bearings in another selected pair of said detents upon swinging of the shaft and pedals about by said swinging lever arms.

3,157,064
TRIGGERING APPARATUS
Lowell J. Moeller, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed July 25, 1961, Ser. No. 126,579
7 Claims. (Cl. 74—519)



1. Triggering apparatus responsive to the passage of articles, which comprises:

a pivotally mounted triggering arm having a normal, nontriggered position and a triggered position and being pivotable to the triggered position by an article engaging said triggering arm as it moves therepast;

means for releasably retaining said triggering arm in the nontriggered position;

a control element pivotally mounted for movement about the same axis as said triggering arm;

resilient means acting between said control element and said triggering arm and urging said control element and said triggering arm toward one particular angular orientation relative to each other so that said control element and said triggering arm may pivot freely as a unit without energization of said resilient means; and

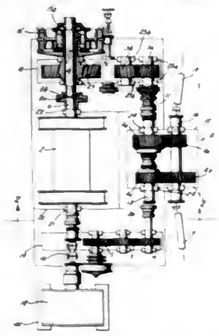
control means normally withdrawn from but actuatable to engage said control element for moving said triggering arm toward its nontriggered position through said control element and through said re-

silient means such that when an article prevents pivotal movement of said triggering arm from its triggered position to its nontriggered position said control element can pivot relative to said triggering arm.

3,157,065
LIFTING APPARATUS FOR EARTH BORING EQUIPMENT

Gustav Isenberg, Duisburg, and Friedrich Klapdohr, Rheinhausen-Friemersheim, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany

Filed Oct. 17, 1960, Ser. No. 63,145
1 Claim. (Cl. 74—661)

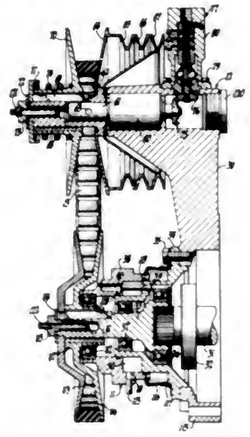


Lifting apparatus for earth boring equipment comprising a base frame, a winch drum having shaft means extending axially from each end thereof, a first housing removably secured to said base frame and journalling said winch drum shaft means whereby said winch drum, shaft means and first housing may be removed from the base frame, a reduction gear drive having a hollow drive shaft in axial alignment with the winch drum shaft means, a second housing removably secured to said base frame and journalling the hollow shaft, a driven shaft coaxial with and drivingly connected to said hollow shaft and winch drum shaft means, a releaseable coupling means interconnecting said winch drum shaft means and said driven shaft thereby enabling removal of the reduction gear drive from the base frame and separation thereof from the winch drum, a multiple ratio gear drive including an input shaft and an output shaft arranged parallel to and drivingly connected to said input shaft, releasable coupling means connecting said output shaft of the multiple ratio gear drive to the hollow drive shaft of the reduction gear drive, a third housing journalling said input and output shafts and being pivotal about the axis of said output shaft whereby the input shaft may be orientated in a position alongside of the output shaft and disposed exteriorly of the confines of the base frame or in a position above the output shaft within the confines of the base frame, said input shaft having universally connected drive shafts at each end thereof to receive power from prime movers, said hollow drive shaft in the reduction gear drive being connected to said coaxial driven shaft by a friction clutch means orientated at the opposite end of the coaxial driven shaft from its point of connection with said winch drum shaft means, said hollow drive shaft receiving a major portion of the coaxial driven shaft therein, a rotary table drive, a fourth housing journalling said rotary table drive and being removably secured to said base frame, said rotary table drive including an input member aligned with and releasably coupled to said output shaft of the multiple ratio gear drive at the end thereof opposite from the coupling between the hollow drive shaft of the reduction gear drive and said output shaft.

3,157,066
VARIABLE SPEED ACCESSORY DRIVE

Carson O. Donley, Dan B. Kuiper, Elias W. Schelbe, and Robert E. Morgan, all of Grand Rapids, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 10, 1961, Ser. No. 151,506
6 Claims. (Cl. 74—665)



1. A variable speed drive assembly for driving the accessories of an engine including a first variable diameter pulley driven by said engine, a second variable diameter pulley connected to drive said accessories, a belt connecting said variable diameter pulleys, a servo chamber associated with said first pulley adapted to receive fluid under pressure, spring means for urging said second variable diameter pulley to maximum diameter, means responsive to fluid pressure in said chamber for urging said first pulley to its maximum diameter, and governor means including a rotatable member rotated at a speed proportional to accessory speed and a valve operatively connected to said rotatable member for controlling the pressure in said servo chamber, said governor means being effective throughout a first speed range of rotation thereof to maintain a constant maximum pressure in said servo chamber irrespective of the speed of rotation of said governor in said speed range, said governor being effective in a second speed range of rotation thereof to progressively reduce the pressure in said servo chamber in response to increase in speed of rotation of said governor throughout said second speed range, said governor being effective in a third speed range of rotation thereof to connect said servo chamber to exhaust irrespective of changes in speed of rotation of said governor within said third speed range.

3,157,067
TRANSMISSION

Robert M. Tuck, Indianapolis, Paul B. Pritchard, Danville, and Mark E. Fisher, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 9, 1958, Ser. No. 708,038
46 Claims. (Cl. 74—754)

1. In an automatic transmission, a drive unit having fluid operated means operable to initiate engagement of a drive at a predetermined low pressure value range and to complete engagement of said drive at a predetermined high pressure value range, a source of fluid pressure regulated at a substantially constant value above said predetermined high pressure value range, means including an accumulator and flow means connecting said source through control valve means to said drive unit to engage said drive and to exhaust said drive unit to disengage said drive unit, said accumulator and flow means having means responsive to pressure engaging said drive unit to supply said drive unit with a high volume of fluid discharged from said accumulator and fluid supplied by said flow means when operating under a first condition at pressures below said predetermined low pressure value

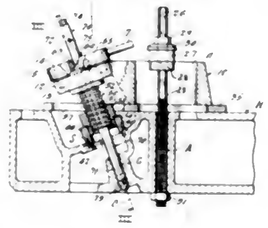


range and to supply fluid to said drive unit at a low rate due to the accumulation of fluid in said accumulator and the restricted flow of said flow means in a second condition in and between said predetermined low and high pressure value ranges and to supply fluid at a faster rate to said drive unit through said flow means in a third condition of operation without accumulation in or discharge from said accumulator above said predetermined high pressure value.

3,157,068
APPARATUS FOR RECONDITIONING VALVE GUIDES

Paul E. Rickert, Oregon, Ohio, assignor to Hall-Toledo, Inc., Toledo, Ohio, a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,378
14 Claims. (Cl. 77—2)



1. A guiding fixture for a tool for reconditioning valve guides for valves of internal combustion engines, comprising:

(*a*) a base member,

(*b*) means for removably anchoring said base member to an engine adjacent the valve guide to be reconditioned,

(*c*) bushing means to guide the shank of a cutting tool axially of the valev seat and valve guide for reconditioning said valve guide,

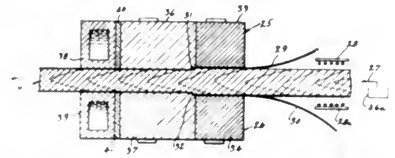
(*d*) means mounted on said guide means to align said guide means with said valve seat by engagement with said valve seat, and

(*e*) means engageable with said guide means for clamping said guide means in a position between said valve seat and said base member with said seat engaging means against said valve seat and with the end of said guide means remote from said valve seat against said base member.

3,157,069
HAMMER BOARD FOR DROP FORGE HAMMER

Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors, by mesne assignments, to Hoover Ball and Bearing Company

Filed Feb. 29, 1960, Ser. No. 11,763
6 Claims. (Cl. 78—25)

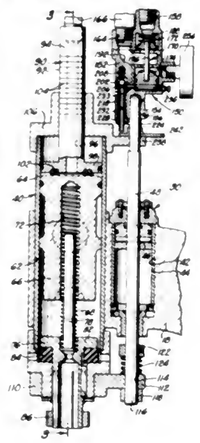


1. In combination in a drop forge hammer, a pair of counter-rotating hammer raising friction rolls, means for shifting the position of said friction rolls to raise or lower a forge hammer, a hammer board extending vertically between said friction rolls and being of wood with hardened outer layers facing the friction rolls having a specific gravity of 1.3 to 1.4 with the density of the outer layers decreasing inwardly substantially linearly to wood of its original density, a drop hammer secured to the lower end of the board, and a work support beneath said hammer.

3,157,070
IMPACT MACHINE

Richard E. Heidrich, 8558 S. Davista Drive, Whittier, Calif., assignor of one-half to Norman C. Nourse, Balboa, Calif.

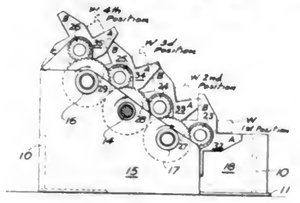
Filed June 26, 1961, Ser. No. 119,527
9 Claims. (Cl. 78—42)



1. In an impact machine adapted to drive an impact tool against a workpiece, the combination of: a support; an impact motor mounted on said support for driving an impact tool against a workpiece; a positioning motor on said support having a drive element supporting said impact motor and downwardly movable for lowering said impact motor into proximity to said workpiece or raising said motor away from said workpiece; a first control valve operatively connected to said positioning motor for energizing said drive motor; a second control valve operatively connected to said impact motor for energizing the same, said second control valve being operatively connected to said drive element whereby downward movement of said drive element relative to said impact motor will cause the operation of said second control valve to actuate said impact motor; and a brake operatively con-

nected to said second control valve an engageable with said impact motor upon operation of said second control valve whereby the return movement of said impact motor after an impact stroke has occurred may be dampened.

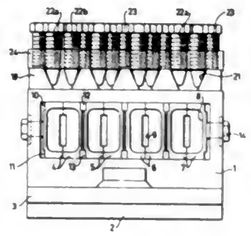
3,157,071
BILLET OR BAR TURNING MECHANISM
Thomas J. Pachell, 3519 Kirk Road, Youngstown, Ohio
Filed June 12, 1962, Ser. No. 201,848
1 Claim. (Cl. 80—48)



A bar lifting and turning mechanism for progressively lifting and turning a bar having a substantially square cross sectional configuration to present various surfaces of the bar in upright position, comprising a frame means, a plurality of substantially horizontally disposed elongated shafts rotatably supported by said frame means and being positioned in horizontally and vertically spaced parallel relationship to one another, drive means for rotating all of said shafts simultaneously and in the same direction, a plurality of bar engaging members fixedly secured to spaced portions of each of said shafts, the bar engaging members on adjacent shafts being offset longitudinally of the shafts to provide clearance for the bar engaging members, each of said bar engaging members having four substantially equally spaced radially extending arms positioned such that the arms on the bar engaging members of the shafts are adapted to receive a bar from the arms on the bar engaging members of an adjacent shaft, the side of each of said arms facing in the direction of rotation of the shafts and engaging and lifting a bar being substantially flat, the opposite side of each of said arms being angularly disposed, the relative position of the arms on the bar engaging members on different shafts being dissimilar such that the flat sides of the arms on the bar engaging members on adjacent shafts considered progressively from one side of the apparatus to the other side thereof are progressively angularly advanced in the direction of rotation of said shafts so that the lifting arms on the bar engaging members of one shaft act to push a bar onto the lifting arms of the bar engaging members of the next adjacent shaft, whereby during rotation of said shafts, a bar is turned approximately one-fourth a revolution each time it moves from the arms of the bar engaging members on one shaft to the arms of the bar engaging members on an adjacent shaft.

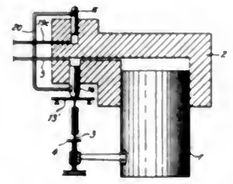
3,157,072
GUIDE-BOX FOR ROLLING-MILLS
Orlando Azzarri, Torshalla, Sweden, assignor to Nyby Bruks Aktiebolag, Nybybruk, Sweden, a company of Sweden
Filed May 25, 1962, Ser. No. 197,763
Claims priority, application Sweden May 31, 1961
6 Claims. (Cl. 80—51)

1. A roller guide for rolling mills comprising a box, means for securing said box to a rolling mill, a series of at least two auxiliary steering devices positioned side by side in said box, a plurality of U-shaped guides each having an arm positioned above and an arm positioned below said auxiliary steering devices, one roller guide being positioned between each adjacent pair of auxiliary steering devices and one roller guide being positioned laterally of each auxiliary steering device at each end



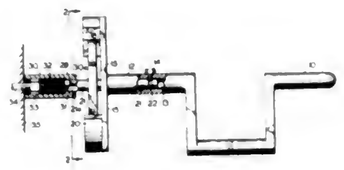
of said series of auxiliary steering devices, and a roller carried by each of said guides.

3,157,073
COMPENSATED SCREWDOWN MECHANISM FOR A ROLLING MILL
Paul Blain, Saint Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie, Saint Germain-en-Laye, France, a professional institution of France
Filed Oct. 30, 1959, Ser. No. 849,972
Claims priority, application France, Jan. 3, 1959, 783,209, Patent 1,226,445; Jan. 23, 1959, 784,813, Patent 1,226,478
5 Claims. (Cl. 80—56)



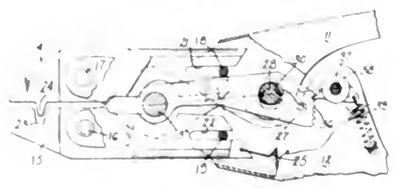
1. In a rolling mill having a predetermined mill spring, two rolls rotatable about respective axes for rolling a deformable material between opposite faces of said rolls intermediate the respective end portions of said rolls, four bearing means respectively supporting said end portions, said bearing means constituting two pairs, the members of each pair supporting coordinated end portions of respective rolls and being movable toward and away from one another transversely of said axes, jack means coordinated to each of said pairs for normally urging the members of each pair of bearing means toward one another, each jack means having a cylinder element and a piston element axially slidable in said cylinder element, said elements being respectively connected to the members of the coordinated pair for movement therewith and defining a pressure space in said jack means, a source of pressure fluid, valve means movable for selectively admitting pressure fluid from said source to said space, and for releasing said fluid from the latter, and valve control means, the valve control means of each of said jack means including a first control member movable in response to the pressure in said space, and a second control member movable relative to said first control member, said second control member being operatively connected to said piston element for movement in response to the movement of said piston element in said cylinder element, a resilient member opposed to movement of said first control member, the stiffness of said resilient member being lower than a stiffness sufficient to produce compensation of said spring of the rolling mill, whereby an overcompensation of the mill spring is obtained, and actuating means responsive to the relative position of said control members for actuating movement of said valve, whereby strips of a considerable length may be guided between the rolls and be urged into a stable axial position with reference to the rolls.

3,157,074
HAND OPERATED IMPACT WRENCH
Lloyd M. Durkee, 395 N. Elm St., Prineville, Oreg.
Filed June 27, 1962, Ser. No. 205,650
8 Claims. (Cl. 81—52.3)



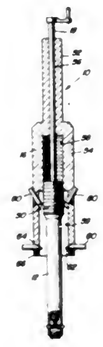
1. An impact wrench comprised by a first rotatable member, a crank on said first rotatable member, a second concentrically positioned rotatable member adapted to receive a wrench socket, a free running connection between said rotatable members, a first pair of arms on said first rotatable member, sector shaped hammer heads mounted on the outer ends of said arms, a second pair of arms on said second rotatable member, and sector shaped anvil members mounted on the outer ends of said latter arms having their tops aligned in the same cylindrical surface with the tops of said hammer heads, and being positioned intermediate the hammer heads and also aligned with the latter transversely of the axis of said rotatable members.

3,157,075
PLIER TYPE TOOL WITH MOTION-COMPELLING MECHANISM
George J. Filla, Shelton, Conn., assignor to Sargent & Company, New Haven, Conn.
Filed Jan. 17, 1962, Ser. No. 166,856
3 Claims. (Cl. 81—313)



1. In a tool of the type having first and second handles pivoted one to the other and first and second jaws, one mounted on each of said handles, the combination comprising a lever member pivoted to the handles through the pivot of the handles, said lever member having ratchet teeth defined thereon along one end thereof and having an aperture defined therethrough intermediate said teeth and the point to which said lever member is pivoted to the handle, a cam within said aperture and rotatably mounted on the first handle, a pawl pivotally mounted on the second handle, a spring attached between said pawl and the second handle to yieldably maintain said pawl in proper pivotal position to engage said teeth as the first and second handles are caused to close upon each other, whereby engagement of said pawl with one of said teeth will prevent opening of the handles until said pawl has traversed every one of said teeth, said cam upon rotation thereof being effective to engage the walls of said lever member defining the aperture and move said lever member about its pivot point to adjust the position of said ratchet, and means cooperating with said cam for locking said cam in any selected rotational position.

3,157,076
TOOL AND METHOD FOR CUTTING AND SHAPING TUBING
Glen H. Arthur, P.O. Box 1454, Alice, Tex.
Filed Mar. 24, 1960, Ser. No. 17,374
5 Claims. (Cl. 82—4)

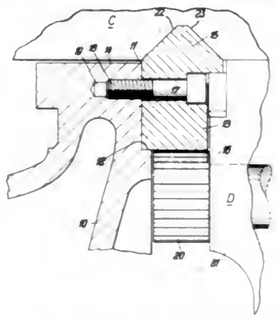


1. A tool for trimming the exterior surface of a tubing joint comprising a mandrel for insertion in a tubing joint to be trimmed, anchor means for fixedly securing said mandrel to the interior of a tubing joint, a sleeve spaced from and surrounding said mandrel for embracing a tubing joint, connecting means threadedly connecting said sleeve and one end of said mandrel for rotary and axial movement of the former on the latter, cutters mounted on said sleeve and extending into the interior thereof for cutting the exterior surface of a tubing joint disposed between said mandrel and sleeve upon rotation of the latter upon said mandrel, said mandrel having an axial bore therein, said anchor means including an adjusting rod engaged in said bore, transverse bores in said mandrel intersecting said axial bore, anchor pins slidable in said transverse bores and radially extensible from said mandrel an actuating member connecting said adjusting rods to said anchor pins and operable to project the latter from said mandrel into anchoring engagement with a tubing joint in which said mandrel is disposed.

3,157,077
LATHE
Hermann Schumacher, Faurndau, Goppingen, Wurttemberg, Germany, assignor to Gebr. Boehringer G.m.b.H., Goppingen, Wurttemberg, Germany, a limited-liability company
Filed Mar. 6, 1963, Ser. No. 263,237
Claims priority, application Germany, Mar. 8, 1962, B 66,264
2 Claims. (Cl. 82—32)

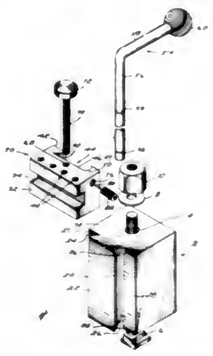
1. In a lathe, the combination comprising a bed having an upwardly facing plane horizontal shoulder, a hardened bar projecting laterally from one side of said bed and having a plane bottom surface seated on said shoulder and being formed with a prismatic guide portion having upwardly inclined, upwardly converging, longitudinally extending guide surfaces, a tool-carrying slide mounted to reciprocate directly on said guide portion, a longitudinally extending rack integral with said bar, a transmission

supported by said slide and including a pinion in mesh with said rack for imparting reciprocation to said slide



upon rotation of said pinion, and means for detachably securing said bar to said bed.

3,157,078
TOOL BLOCK
Richard J. Powers, 26 Cadish Ave., Hull, Mass.
Filed Dec. 12, 1961, Ser. No. 158,722
7 Claims. (Cl. 82—36)



1. A tool block comprising a base and a tool holder having cooperating dovetail sections with confronting oppositely curved surfaces, and rotatable means interposed between and engaging said confronting surfaces of said sections for forcing said sections into tight engagement with each other, whereby to prevent relative movement between said base and tool holder, and said rotatable means is an elongate rod having a curved outer surface defining an out-of-round cross section.

3,157,079
PIPE CUT-OFF MACHINE
Laffie Harper, 1192 Montgomery Ave., San Bruno, Calif.
Filed Nov. 24, 1961, Ser. No. 154,594
8 Claims. (Cl. 82—47)

8. The method of severing a cylindrical sheet metal pipe that comprises the steps of:

(*a*) supporting a length of said pipe in a horizontally extending position at a predetermined level above the ground;

(*b*) rotating said pipe at said level about its longitudinal axis through at least one complete revolution of said pipe and at the same time;

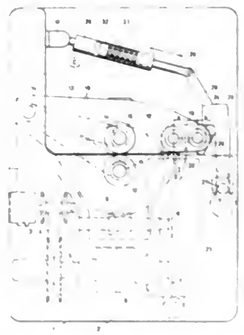
(*c*) cutting out contiguous, discrete pieces of said pipe at its lowermost side only along a pair of horizontally spaced parallel lines extending circumferentially of said pipe and that are in parallel planes perpendicular to said axis; and

(*d*) holding the portions of said pipe at the opposite outer sides of said pair of lines, and adjoining the



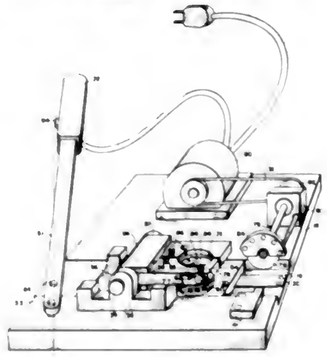
latter against deformation radially of said pipe whereby said pipe will be severed along said lines and said last mentioned portions will be substantially free from burrs.

3,157,080
SHEET METAL WORKING MACHINES
Eduard Hänni, Rosengartenstrasse 10, Zofingen, Switzerland
Filed June 24, 1960, Ser. No. 38,486
Claims priority, application Switzerland, June 24, 1959, 74,939
11 Claims. (Cl. 82—54)



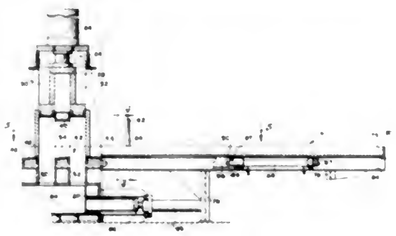
1. Sheet metal working machine for trimming cylindrical and non-cylindrical sheet metal parts, said machine comprising a machine frame, a movable bearing member mounted on said frame, two tool shafts of which one is mounted in said movable bearing member and the other on said machine frame, an operating catch pivotally mounted on said machine frame movable under the influence of a control device, said operating catch cooperating in one pivot position with the movable bearing member for temporarily locking the same in a fully open position and in another pivot position forms a part of a transmission for increasing the cutting pressure, said movable bearing member being formed as a swing arm pivotally mounted about an axis, a lever carried by said swing arm at the end remote from its pivoted axis, said lever being pivoted intermediate the ends thereof, said lever having a nose-like end extending beyond the swing-arm and being adapted to co-operate with the operating catch in that position of the swing arm in which the latter is pivoted toward the frame mounted tool shaft, and operating means connected to the other end of said lever for moving the same in a direction so as to move said tool shaft in said movable bearing member toward the other tool shaft and in oppoiste direction for separating said shafts to a maximum.

3,157,081
METHOD AND APPARATUS FOR FORMING RESISTANCE ELEMENTS
Virgil J. Abrams, Anaheim, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 23, 1961, Ser. No. 91,080
12 Claims. (Cl. 83—13)



1. A method of cutting a resistance element to fit the cavity of a particular housing comprising the steps of inserting a pair of caliper jaws separated by a gap within said cavity, increasing said gap until said jaws abut the peripheral surface of said housing cavity, said caliper jaws having support means integral therewith substantially defining the peripheral surface of said housing cavity, placing a resistance element upon said support means so that ends of said element overlap each other on said gap, and cutting said resistance element by suitable cutting means extended into said gap.

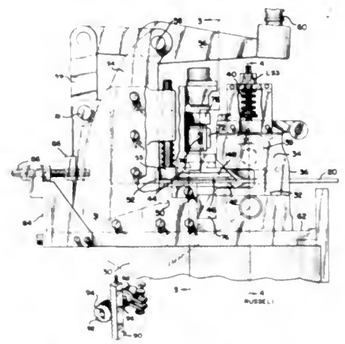
3,157,082
METHOD AND APPARATUS FOR WORKING SCRAP METAL
Wallace M. Thompson, Cordele, Ga., assignor to Harris Foundry & Machine Company, Cordele, Ga., a corporation of Georgia
Filed Jan. 12, 1962, Ser. No. 165,840
18 Claims. (Cl. 83—23)



1. A method of feeding scrap metal to a shear having at least one horizontal fixed blade comprising the steps of: placing scrap metal to be sheared on a horizontal support; moving the support at a relatively slow speed across the fixed blade, and then jerking the support from beneath the scrap metal at a speed sufficient to pull the support from beneath the scrap metal without substantially displacing the latter whereby the scrap metal will be positioned to be sheared across the fixed blade.

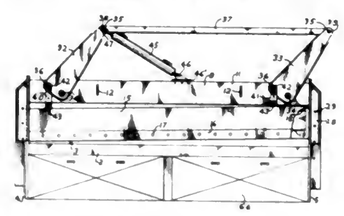
2. A method defined in claim 1 including the additional step of cutting the scrap metal into a plurality of longitudinally spaced chunks.

3,157,083
SCRAP CUTTER WITH MATERIAL RESPONSIVE CONTROL MEANS
Russell M. Roberts, Minster, Ohio, assignor to The Minster Machine Co., Minster, Ohio, a corporation of Ohio
Filed May 24, 1962, Ser. No. 197,322
7 Claims. (Cl. 83—80)



1. A scrap cutter for use with a press or the like comprising; a frame, shearing blades in the frame, feed rollers in the frame spaced from the shearing blades for feeding a strip of material to be cut toward said blades, said frame including a table portion over which the strip slides as it is fed from said feed rollers to said shearing blades, a stock guide over the table engaging at least one side edge of the strip, at least one of said rollers being resiliently biased toward the other thereof whereby when the end of a strip passes from between said rollers the rollers will move toward each other, and means operable automatically in response to movement of said rollers toward each other for moving said stock guide laterally to eject the strip end from the cutter.

3,157,084
HYDRAULIC SHEAR
Charles L. Meinholdt, 1928 N. Topeka Ave., Topeka, Kans.
Filed Aug. 20, 1962, Ser. No. 217,865
5 Claims. (Cl. 83—625)



1. A shearing apparatus comprising:

(*a*) a frame bed having laterally spaced standards extending upwardly therefrom,

(*b*) a fixed shearing blade secured to said frame bed and extending between said standards,

(*c*) an elongated cross beam secured to said standards and spaced above said frame bed,

(*d*) a movable blade support extending between said standards and having a movable shearing blade secured thereto,

(*e*) vertically extending guides associated with said standards and receiving portions of said movable blade support for guiding said movable blade in shearing cooperation with said fixed blade,

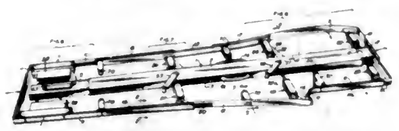
(*f*) a pair of arms each having a first, a second and a third pivotal connecting point in mutually spaced relation thereon forming respective connecting point patterns on said arms, said arms being pivotally mounted in spaced relation at said respective first connecting points on said cross beam,

(*g*) a rigid non-extensible strut pivotally mounted to said second connecting points for maintaining said arms in controlled pivotal relation to each other during pivoting about said first connecting points on said cross beam,

(*h*) means operatively connecting said third connecting points to said movable blade support for vertical suspension of said blade support, and

(*i*) a hydraulic ram having one end pivotally mounted on said cross beam and the other end connected to one of said arms in spaced relation to said respective first connecting point for selectively pivoting said arms about said first connecting points for producing shearing between said fixed and movable blade.

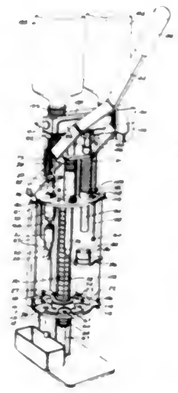
3,157,085
DIE PATTERN
Howard Wohlmuth, 6802 Cross Country Blvd., Baltimore 15, Md.
Filed Sept. 11, 1962, Ser. No. 222,899
6 Claims. (Cl. 83—657)



1. A cutting die pattern comprising a central longitudinally adjustable support member formed of sections arranged in longitudinal telescoping relation, a cutting assembly surrounding said support member and defining a predetermined basic pattern contour, said cutting assembly being formed by a series of contiguous, flexible, double-edged cutting strips respectively arranged with adjacent portions in overlapping, telescoping relation, said overlapping portions being slidably connected in laterally spaced relation by coacting guideways and tongue strips respectively mounted on and between their opposed faces, lateral connecting members longitudinally spaced on opposite sides of said central support member extending between respective telescoping sections of the latter and corresponding telescoping elements of said cutting assembly, respective connecting members including mechanisms for adjusting the spacing of selected areas of said cutting assembly from said support member and varying the bounding contour of said cutting assembly.

3,157,086
SHOTGUN SHELL RELOADER
Theodore J. Bachhuber, 725 Dayton St., Mayville, Wis.
Filed Jan. 18, 1962, Ser. No. 167,129
13 Claims. (Cl. 86—27)

1. A shell reloading machine comprising the combination with a table having an annular channel and a rim notched to afford access to the channel, of a turret disk having means mounting it for rotation in a position spanning the channel and having slots successively registrable with the notch of the rim and such width as to receive and confine shotgun shells for the propulsion thereof about said channel, a carriage, means mounting the carriage for vertical reciprocation respecting the channeled table, and angularly spaced tools mounted on the carriage for reciprocation therewith to and from operative engagement with shotgun shells positioned by the turret disk, the slots of the turret disk being at an angular spacing corresponding to the spacing of said tools, the table being provided with a primer cap discharge opening in its channel opposite said notch and the turret disk having apertures of a size to receive and propel primer caps, such apertures being located intermediate the slots of the turret disk, together with means including an anvil punch beneath the turret disk, a yieldable table portion normally registering substantially with the bottom of the channel and adapted to lower respecting the punch a



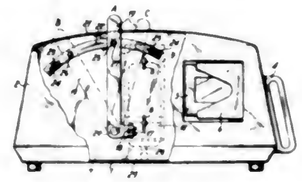
shotgun shell in registry therewith, one of the tools carried by the carriage comprising a ram for forcing a shotgun shell downwardly respecting the punch, the yieldable table portion having a socket registering with the punch and into which the punch enters when the yieldable table portion is forced downwardly by said ram and a shotgun shell on said yieldable portion, said socket being adapted to receive successive primer caps to be pressed by the punch into successive shells forced downwardly by said ram.

3,157,087
OPTICAL LIGHT DISTRIBUTION SYSTEM FOR A PHOTOGRAPHIC PROJECTION PRINTER
Karl J. Kallenberg, Minneapolis, Minn., assignor to Pako Corporation, Minneapolis, Minn.
Filed Dec. 26, 1961, Ser. No. 161,891
4 Claims. (Cl. 88—24)



1. In a light distribution system for a photographic projection printer interposed between a light source and an image forming lens, a plano-convex condenser lens for converging light rays emitted from a light source, a diverging lens coaxial with and in spaced relation to said first condenser lens, said diverging lens including a substantially central portion being concave in formation, the remaining outer portion of said diverging lens having parallel surfaces with substantially no effect on the light rays passing therethrough, said concave portion of said diverging lens adapted to diverge light rays passing therethrough from said first condenser lens to the outer areas of the light ray projection of said diverging lens to intensify said outer areas, a second condenser lens means positioned in spaced relation and adjacent said diverging lens for redirecting light rays passing from said diverging lens, a diffusing lens positioned in spaced relation to and adjacent said second condenser lens including a substantially central portion having parallel surfaces with substantially no effect on the light rays passing therethrough, the remaining outer portion diverging from the central portion to the outer edge for refracting the rays passing therethrough so that the same are received by the image-forming lens.

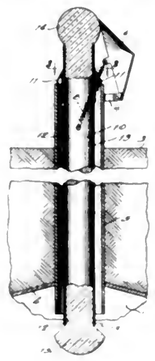
3,157,088
SLIDE PROJECTOR WITH COMBINED LAMP ADJUSTING AND EJECTING MEANS
Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Oct. 12, 1962, Ser. No. 230,185
Claims priority, application Germany, Oct. 27, 1961, Z 9,034
9 Claims. (Cl. 88—24)



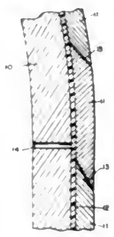
1. In a slide projector having a housing and an objective defining the optical axis of the projector, and constructed for use with a lamp having a locating pin projecting downwardly from its base: the combination comprising a lamp socket having a base apertured for projection of the lamp pin therethrough; means in said housing mounting said socket for reciprocation through a lamp adjusting range, for adjustment of a lamp mounted therein relative to said optical axis, and through an ejecting range beyond said lamp adjusting range; lamp ejecting abutment means in said housing aligned with the pin along the line of reciprocation of said socket; and operating means movably mounted on said housing and having a manipulating end projecting from said housing and an operating end coupled to said socket, to reciprocate said socket to effect adjustment of a lamp mounted therein in said lamp adjusting range; said abutment means, upon a predetermined movement of said socket through said ejecting range toward said abutment means by said operating means, engaging the pin of a lamp mounted in said socket to eject the lamp from said socket so that said pin also acts as an ejecting pin.

3,157,089
MEANS FOR ILLUMINATING INTERIOR OF UNDERGROUND SHELTERS
Jerry B. Menefee, 3541 La Joya Drive, Dallas, Tex.
Filed June 1, 1962, Ser. No. 199,319
2 Claims. (Cl. 88—58)

1. In an illuminating device for underground structures having a roof below the ground surface, in combination, a tubular housing arranged through the said roof and extending above the ground surface, a spring biased cap hinged to the top of said housing for normally closing the same, a retractable glass shaft formed with bulbous light refracting elements on each end, the said shaft having a light reflecting coating coextensive therewith between said light refracting elements, spring tensioned means on said shaft for supporting the same vertically concentrically of said housing whereby said shaft can be raised and lowered in said housing to expose the light refracting element on the upper end thereof to sunlight while holding the cap in open position against the tension of its spring, and whereby light is refracted through said shaft and said lower refracting element.



3,157,090
ARMOR PLATE
Louis Henri Denys Marie Ballu, Epernay, Champfleury, France
Filed Feb. 9, 1961, Ser. No. 88,012
5 Claims. (Cl. 89—36)

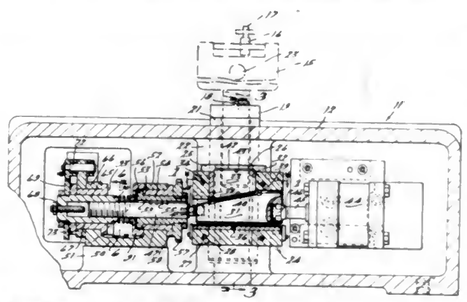


1. A method of making an armor, said method comprising the steps of forming an inner shell structure of easily machinable light alloy, machining separately plates of extra-hard steel having high elastic strength, bevelling the edges of said plates, and fastening said plates on the outer face of said inner shell structure by means of an elastomer cement compound to obtain an outer pre-armor plating upon said inner shell structure.

3,157,091
FEED MECHANISM
George Mickas, Grosse Pointe Woods, Mich., assignor to Michigan Tool Company, Detroit, Mich., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,912
11 Claims. (Cl. 90—1)

1. In a feed mechanism, a support, means guiding said support for rectilinear movement, threadably connected nut and screw members, means for adjustably holding one of said members in a predetermined angular position with respect to the other member, means holding said other member against rotation during adjustment of the adjustable holding means for said one member, means for successively rotating said other member through a plurality of angular increments while said one member is held by said adjustable holding means, means holding said other member against axial movement, and means operatively connecting said support to said one member, whereby said

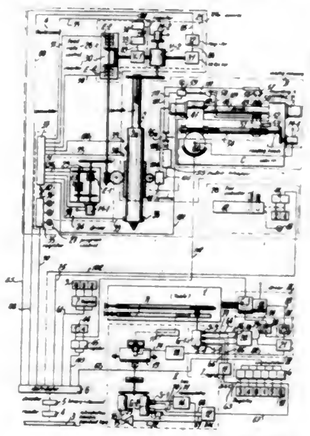
support will be movable in response to axial movement of said one member caused by adjustment of said adjustable holding means or by said successive rotation of said other member.



3,157,092
METHOD FOR THE AUTOMATIC CONTROL OF THE POSITIONING OF A PLURALITY OF MOVABLE MEMBERS AND APPARATUS TO CARRY OUT THE METHOD

Andre H. Mottu and Robert Viret, Geneva, Switzerland, assignors to Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, a corporation of Switzerland

Filed Apr. 2, 1962, Ser. No. 184,171
Claims priority, application Switzerland, Apr. 11, 1961, 4,259/61
17 Claims. (Cl. 90—13)

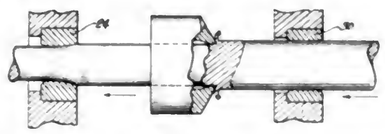


1. In a precision machine tool mechanism, a frame, a tool-carrying spindle movably mounted on said frame for axial and angular movements with respect thereto, power actuated means operatively connected to move said spindle in axial displacements, power actuated means operatively connected to rotate said spindle, a data carrying member having numeric control information recorded therein, reading means and distributor means receiving said numeric information from said reading means, a memory which stores groups of analogue information, selector means connected between said distributor means and said memory to numerically select one of said groups of analogue information stored therein, and control means electrically connected between said distributor means and both said power actuated means and also electrically connected to said memory, said control means controlling the axial and angular speeds of displacement of said spindle and defining the rest position of said spindle in accordance with said numeric control information, said control means additionally controlling the amplitude and positions of the working stroke of said spindle in accordance with the selected group of analogue information.

3,157,093
METHOD OF REMOVING METAL BY SHAVING

Milton C. Shaw, Lexington, and Prescott A. Smith and Nathan H. Cook, Concord, Mass., assignors to La Salle Steel Company, Hammond, Ind., a corporation of Delaware

Filed Oct. 22, 1957, Ser. No. 691,657
1 Claim. (Cl. 90—24)

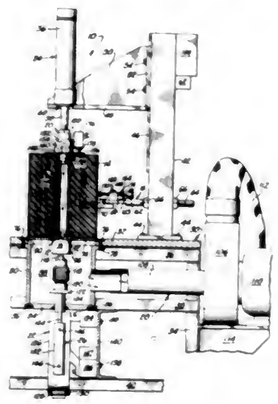


In the method of processing metal work of continuing cross-section comprising advancing the work continuously through a shaving tool, removing metal continuously from about the surfaces of the work during advancement through the shaving tool and continuously vibrating the shaving tool axially relative to the work during advancement of the work through the shaving tool.

3,157,094
METHOD AND APPARATUS FOR CUTTING A BEARING SURFACE IN HOLLOW CORED ROLL OF TOWELING

Theodore F. Swanson, La Habra, Calif., assignor to Towlsaver, Inc., Los Angeles, Calif., a corporation of California

Filed May 22, 1961, Ser. No. 111,731
5 Claims. (Cl. 90—14)

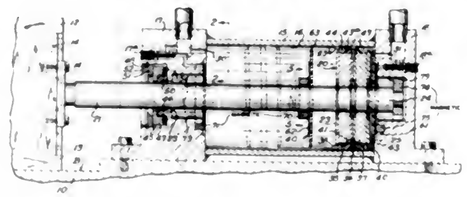


1. In an apparatus for cutting an annular groove in an end of a hollow cored roll of toweling the combination of: a support for said roll having an opening in communication with the hollow core of said roll; a rotary cutter operative through said opening for cutting said groove, said cutter being spaced from the edge margins of said opening to define a clearance space therewith, said cutter having open channels affording communication between said hollow core and said opening; and means for moving air through said hollow core, said open channels, and said opening to evacuate toweling cuttings away from said cutter.

3,157,095
PISTON AND CYLINDER DEVICE

Elmer F. Heiser, 5880 Lotusdale Drive, Parma Heights, Ohio

Filed Apr. 12, 1962, Ser. No. 187,070
4 Claims. (Cl. 91—395)



4. A piston and cylinder device having a cylinder with an axially extending bore therein, a piston head positioned in said bore and dividing said bore into two chambers, said piston head being movable axially within said bore through a stroke, means for supplying fluid air pressure to one of said chambers located on one side of said piston head, venting means for connecting the other of said chambers located on the other side of said piston head to an air pressure lower than said fluid air pressure to cause movement of said piston head toward said other side, resilient disk means movable into blocking position wherein said disk means blocks the flow of air through said venting means, said disk means being movable relative to said piston head, first magnetic means mounted on said piston rod and movable therewith, said disk means being at least partially formed of magnetic material and located in the path of movement of said magnetic means, said magnetic means being spaced from said piston head to move said disk means into blocking position prior to the end of said stroke of said piston head, and second magnetic means for maintaining said disk means in blocking position during movement of said piston head after said disk means is located in blocking position.

3,157,096
DEVICE ADAPTED TO BE USED IN THE PRODUCTION OF CONICAL PAPER CUPS

Werner Schmidt, Hamburg, Germany, assignor to Maschinenfabrik Rissen G.m.b.H., a corporation of Germany

Filed Dec. 27, 1962, Ser. No. 247,636
7 Claims. (Cl. 93—39.3)

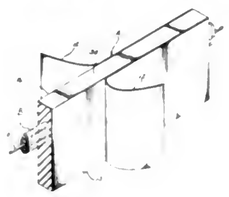


1. A device adapted to be used in the production of conical paper cups, comprising a mandrel about which a paper cutout may be wrapped, means for moving said mandrel along a curved path, guide means positioned adjacent the path of movement of said mandrel and cooperating therewith for wrapping a cut-out partly about said mandrel, and a pair of wrapping levers swingably mounted at opposite sides of said path of movement of said mandrel and operable, in response to the movement of said mandrel relative to said wrapping levers, to complete the wrapping of said cut-out about said mandrel with an overlapping seam, each of said wrapping levers comprising a pair of legs arranged in the manner of tongs, and resilient means for urging the associated pair of said legs yieldingly to approach one another.

3,157,097
JOINT SEAL STRIP AND METHOD OF APPLYING SAME

George J. Stinnett, Jr., San Antonio, and Franklin C. Morrow, South Houston, Tex., assignors to Gulf States Asphalt Co., Inc., a corporation of Texas

Filed Sept. 28, 1960, Ser. No. 59,003
3 Claims. (Cl. 94—18)

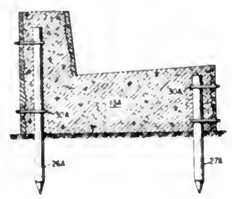


1. A method of applying a thermoplastic sealing strip having an insulated electrical wire therein between concrete sections, comprising the steps of, positioning the thermoplastic sealing strip with the insulated electrical wire therein in a position to form concrete sections prior to the hardening of the concrete, and applying a voltage across the electrical wire subsequently to the hardening of the concrete adjacent the strip to heat the sealing strip sufficiently to cause a sealing between the strip and the walls of the adjacent concrete sections and without causing any visible flow of said strip, whereby the same strip serves as the joint former and sealer between concrete sections said thermoplastic sealing strip including from about 0.5% to about 10% of an elastomer, from 0% to about 35% of a fibrous material, and asphalt, all of which are homogeneously mixed together to form a pliable material which is adhesive to concrete at temperatures as low as 0° F. and which is substantially nonflowing when heated to a temperature sufficient to render the external surface thereof adhesive to concrete.

3,157,098
METHOD OF MOLDING CONCRETE AND MOLD STRUCTURE

Irvin H. Mason, 201 Scott Drive, Fairfax, Va.

Filed Aug. 29, 1961, Ser. No. 134,743
1 Claim. (Cl. 94—31)



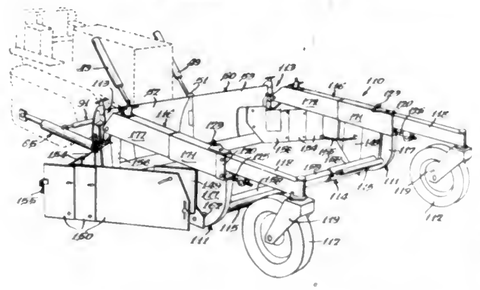
In a concrete structure which includes at least two surfaces extending normally from the ground, a concrete lamina facing along said surfaces comprising concrete sheets which are less than two inches in thickness and

which contain reinforcement means, and concrete stakes embedded in said structure extending into the ground therefrom, said stakes interconnected to said sheets.

3,157,099
EARTH MATERIALS HANDLING APPARATUS

Raymond M. Ulrich, Roanoke, Ill., assignor to Ulrich Manufacturing Co., Roanoke, Ill., a corporation of Delaware

Filed Sept. 6, 1960, Ser. No. 54,050
12 Claims. (Cl. 94—46)



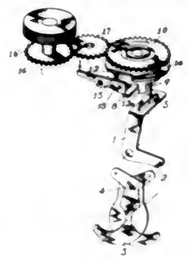
1. In a bulldozer including a tractor, a C-frame pivotally mounted on the tractor and a blade mounted on the C-frame ahead of the tractor, the improvement comprising a blade including a plurality of blade sections hingedly connected together on generally upright axes, first mounting means mounting said blade substantially centrally of its length on the center portion of the C-frame ahead of the tractor, said first mounting means comprising a multiple axis mounting device including means establishing a substantially upright hinge axis, a fore and aft tilting axis, and a transverse pitch axis, second mounting means comprising a pair of hydraulically extensible and contractable push arms connected at their opposite ends respectively to the outer end portions of said blade and adjacent respective portions of the bulldozer so as to be operative to V said blade sections forwardly or rearwardly around said hinge axis while said blade is traveling forwardly in a material moving operation, and third mounting means comprising a pair of hydraulically extensible and contractable struts connected respectively to said push arms and the respective outer end portions of the blade in vertically spaced relation to the connection thereto of the respective push arm so as to be operative to change the tilt angle of the blade about said tilting axis and the pitch angle of the blade about said pitch axis while the blade is traveling forwardly in a material moving operation, at least two of said first, second and third mounting means being extensible and retractable transversely of said blade, and means operatively connected to the tractor and said C-frame for raising and lowering said center portion thereof together with said multiple axis mounting device.

3,157,100
SHUTTER DEVICES FOR PHOTOGRAPHIC CAMERAS

Yoshihisa Maitani, Tokyo, Japan, assignor to Olympus Kogaku Kogyo Kabushiki-Kaisha, Tokyo, Japan, a corporation of Japan

Filed Sept. 21, 1961, Ser. No. 139,651
Claims priority, application Japan, Sept. 21, 1960, 35/39,338, 35/47,958, 35/47,959, 35/47,960; Dec. 21, 1960, 35/63,595
7 Claims. (Cl. 95—31)

1. A shutter driving device for a photographic camera having a shutter and a means for taking up film comprising the combination of a first rotatable member adapted to be rotated by the means for taking up film, a second rotatable member having a lug projecting therefrom and having means thereon adapted to be articulated to the shutter, said first member and said second member being rotatable about a common axis for rotational movement relative to each other, an operating spring member disposed about said common axis and having ends thereof connected to said first and second rotatable members re-

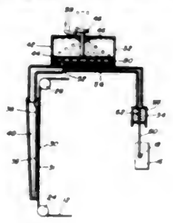


spectively, said first member having a projection thereon projecting into the path along which said lug on said second member is movable during rotation of said second rotatable member, and a rockable element adjacent said first and second rotatable members and rockable from a first position in which it abuts against said lug on said second member to prevent rotational movement of said second member to a position in which it is disengaged from said lug on said second member.

3,157,101
CAMERA WITH VACUUM HOLDER FOR FILM

Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Feb. 23, 1962, Ser. No. 175,052
5 Claims. (Cl. 95—31)



1. An actuation system for a camera which has a shutter operator and a vacuum platen to hold the camera film flush at the instant of exposure, the improvement comprising a manually cocked vacuum source, a vacuum operated mechanical actuator connected to said shutter operator, a conduit connecting said source with said platen and with said actuator thereby requiring said platen to be closed off by said film before sufficient vacuum is developed in said conduit to actuate said shutter operator, and a manual release to trigger the cocked source which draws the vacuum in said conduit.

3,157,102
PRINTER-PROCESSOR APPARATUS

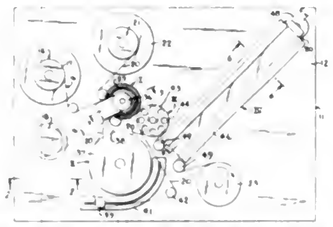
William A. Pfaff, Huntington, N.Y., assignor, by mesne assignments, to Victoreen Instrument Company, Cleveland, Ohio, a corporation of Ohio

Filed May 28, 1963, Ser. No. 283,936
8 Claims. (Cl. 95—75)

1. In a printer-processor apparatus for a "Kalvar" film of the type comprising a base and an emulsion com-

posed of a high-polymer plastic including a light-sensitive diazo compound, and having actuatable reel means for an elongated master and movable means operable for propelling said film through a path: the combination of

(*a*) a freely rotatable guide, a substantially point-type source of light disposed centrally of said guide, said master and film being guided in close proximity of each other arcuately along a major portion of the periphery of said guide for continuous light ray exposure through said master of succeeding portions of the film, shielding means operable to absorb at least some of the heat radiated by said point light source towards the film, means operable for cooling the shielding means, and shutter means positionable



for selectively varying the angle of exposure of said film portions from the point light source;

(*b*) a heater operable for developing said film by heating the successive film portions;

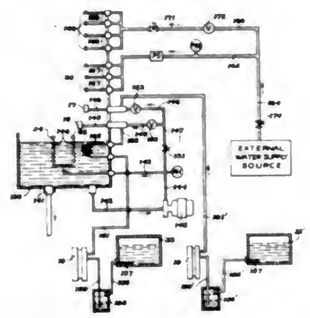
(*c*) a rotatable cooling member continuously being cooled and engaging said film continuously to draw heat from the film; and

(*d*) an elongated substantially linear type light source, said film being guided along two sides of said linear slight source and exposed to the light rays thereof for film fixing, a shield operable to absorb at least some of the heat radiated by said linear light source towards said film, and means operable for cooling the shield.

3,157,103
VISCOUS SOLUTION PROCESSING DEVICE ADAPTED FOR CONTINUOUS OPERATION

Harold D. Lowry and George E. Cummins, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 9, 1961, Ser. No. 130,353
2 Claims. (Cl. 95—89)



1. In a device for processing a movable web by applying thereto a viscous processing solution from removable, collapsible containers, the combination comprising:

a hopper including means for extruding a uniform layer of viscous processing solution onto the surface of a web being transported through the device;

conduit means connected at one end to the hopper and including a hollow probe at the other end selectively connectable with a removable collapsible container of viscous processing solution to permit feeding of the solution from the container to the hopper, and on emptying of the container, connectable with another container to provide continuous operation;

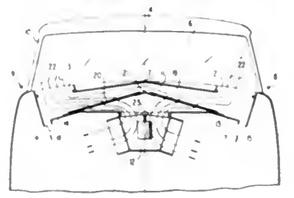
positive displacement metering pump means on the conduit means between the hopper and the probe to continuously feed the viscous processing solution to the hopper at a predetermined rate; and

air trap means on the conduit means between the pump means and the probe, the air trap means including means defining a reservoir partially filled with the viscous solution, a first conduit extending at one end to the reservoir portion unfilled with the processing solution and operatively connected at the other end to the portion of the conduit means adjacent the probe to permit viscous solution to feed into the reservoir from the container, and a second conduit having one end in the filled reservoir portion and operatively connected at the other end to the conduit means adjacent the pump means to permit feeding of solution from the filled reservoir portion to the hopper by the pump means.

3,157,104
VENTILATING OR AIR-CONDITIONING SYSTEM FOR VEHICLES

Friedrich K. H. Nallinger, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed May 15, 1961, Ser. No. 110,220
Claims priority, application Germany May 19, 1960
7 Claims. (Cl. 98—2)



1. Ventilating apparatus for a vehicle having a vehicle body including a passenger compartment, and a windshield, means forming a pair of air inlet openings through said body, said air inlet openings being provided essentially directly in front of and closely adjacent to lateral ends of said windshield in regions of said body between the high positive pressure point within the central longitudinal plane of the vehicle in front of the windshield and the points of highest negative pressure on either side of the vehicle laterally of the passenger compartment where the entering air pressure is essentially independent of the velocity of the vehicle, the surface of the body containing said air inlet openings being essentially parallel to the direction of air flow along said vehicle body in the vicinity of said inlet openings, channel means connecting said inlet openings with the interior of said vehicle and means within said channel means for equalizing any pressure differential between the air flow from the pair of air inlet openings.

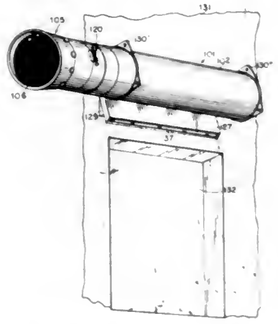
3,157,105
APPARATUS FOR PRODUCING AN AIR CURTAIN

Walter Tamm, Georgenstrasse 38, Munich, Germany, and Werner Knapp, Federburgstrasse 59, Ravensburg, Germany

Filed Aug. 1, 1961, Ser. No. 128,592
12 Claims. (Cl. 98—36)

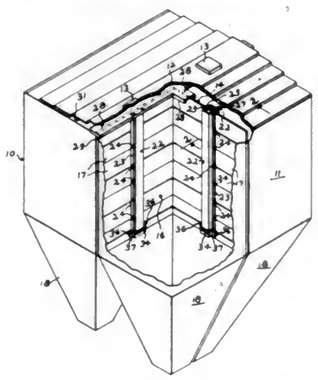
1. An apparatus for producing an air curtain to screen a generally rectangular door opening in an enclosure wall

against penetration by convection currents, comprising an elongated plenum chamber extending substantially horizontally above said opening, blower means coupled with said plenum chamber for supplying air thereto, an elongated nozzle on said plenum chamber communicating with the interior therewith, said nozzle having a pair of longitudinally extending parallel panels inclined with respect to said wall at an angle between substantially 15 and 25° for producing an air current across said opening downwardly diverging from said wall at said angle, said



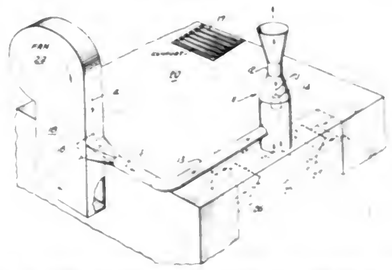
panels forming between them an air-outlet slot extending substantially over the full width of said opening and facing a floor surface near the bottom of said opening, one of said panels lying closer than the other to said wall, and sealing means between said one of said panels and said wall above the lower edge of said one of said panels forming a reflecting surface for upwardly circulating air branched off said air current at said floor surface, said one of said panels being provided with air-entrance means below said reflecting surface for aspirating part of said upwardly circulating air into said nozzle.

3,157,106
STORAGE BIN
Thurman H. Leach, P.O. Box 1010, Gadsden, Ala.
Filed Aug. 10, 1962, Ser. No. 216,098
7 Claims. (Cl. 98—55)



1. A storage bin for granular materials comprising:
(*a*) an outer housing,
(*b*) at least one upstanding wall within said outer housing defining separate storage compartments,
(*c*) a hopper mounted adjacent the lower end of each of said separate storage compartments,
(*d*) a first upstanding channel-like member having flanges extending inwardly into contact with one side of said wall intermediate the ends of said wall with the base of said first channel-like member spaced from said wall to define a vertical vent passageway,
(*e*) a second upstanding channel-like member at the other side of said wall directly opposite said first channel-like member and having flanges extending inwardly into contact with said other side of the wall with the base of said second channel-like member spaced from said wall to define a vertical vent passageway,
(*f*) means securing said first channel-like member to said second channel-like member adjacent the lower ends thereof,
(*g*) and means securing said first and second channel-like members to said wall along the lengths of said channel-like members,
(*h*) there being other vent passageways between said upstanding wall and said first and second channel-like members communicating said storage compartments with said vertical vent passageways for the passage of gases from said storage compartments to said vertical vent passageways.

3,157,107
APPARATUS FOR VENTILATING CHAMBERS IN POWER WASHERS AND THE LIKE
Peter Kosar, Garden City, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.
Filed Sept. 13, 1961, Ser. No. 137,808
3 Claims. (Cl. 98—115)

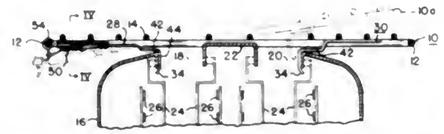


1. In a power washer or like apparatus having a tendency to develop corrosive, bacterial or odor conditions therein, the combination of a housing, a fan for flowing a ventilating atmosphere through said housing, said housing having at least one stagnant portion and normally unaffected by the main flow created by said fan, a main duct extending between said fan and said housing and adapted to handle at least a substantial portion of said main flow, a Venturi device comprising a constriction in the cross-sectional area of flow of said main duct and at least one orifice into said main duct at said constriction whereby a Venturi suction effect through said orifice is produced into said main duct, and an auxiliary duct connected from at least one of said stagnant portions of said housing and terminating around said orifice to conduct an auxiliary ventilating flow therealong.

3,157,108
WARMING AND COOLING RACK
Clarence M. McKenney, Jr., and Sarah K. McKenney, both of 6631-A Ridgeville St., Pittsburgh, Pa.
Filed June 13, 1961, Ser. No. 116,864
4 Claims. (Cl. 99—339)

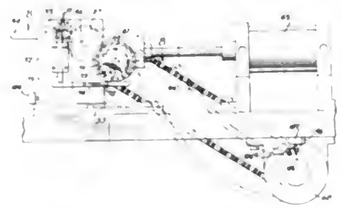
1. A warming and cooling rack for attachment to a toaster having pop-up slots comprising:
(*a*) a uniplanar grating frame;

(*b*) parallel wires affixed to the frame in closely spaced adjacency providing a grating;
(*c*) gaps in said grating adapted to be located in the vertical plane of toaster pop-up slots whereby the grating does not obstruct access of bread slices to the toaster; and,



(*d*) three supporting brackets affixed to the grating providing a three point suspension,
(1) one bracket being slidably mounted to the grating adjacent one side of the gaps, and
(2) a pair of said brackets being affixed to the grating adjacent the opposite side of said gaps.

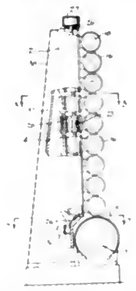
3,157,109
TYING MACHINE
William Thomas Flanigan, Crawfordsville, and Robert William Smith, Darlington, Ind., assignors to Mid-States Steel & Wire Company, Crawfordsville, Ind., a corporation of Indiana
Filed May 29, 1961, Ser. No. 113,472
7 Claims. (Cl. 100—26)



1. A tying machine comprising a support for an article to be tied, a wire guide loop encircling the support to guide a wire around the article, means to feed a wire around the loop to encircle an article therein and with the wire overlapping itself at one side of the article, means to pull the wire tight around the article, a twister head mounted for movement toward and away from the overlapping portions of the wire, reversible means to move the twister head toward the overlapping portions of the wire after the wire has been tightened around the article, a twister element on the twister head having an opening therein to receive the overlapping portions of the wire, reversible drive means operable independently of the reversible means connected to the twister element to turn it thereby to twist the overlapping portions of the wire together, control means operated by predetermined movement of the reversible drive means in one direction to reverse the reversible drive means, and control means operated by movement of the reversible drive means in the reverse direction to reverse the reversible means and move the twister head away from the wire.

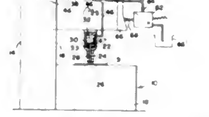
3,157,110
CALENDER
Denis A. Goddard, Beloit, Wis., assignor to Dominion Engineering Works, Limited, Montreal, Quebec, Canada
Filed Apr. 29, 1963, Ser. No. 276,486
Claims priority, application Canada, Dec. 13, 1962, 864,526
10 Claims. (Cl. 100—170)

1. A calender including a frame structure, a series of superimposed calender rolls, movable bearings in which the ends of each calender roll located above the bottom roll are rotatably journalled, fluid pressure cylinders slidably mounted for vertical movement in said frame structure on each side thereof and carrying said movable bearings, a piston positioned in each of said cylinders and a piston rod structure extending through the cylinders at each side of the frame structure and rigidly attached to



the pistons arranged within said cylinders, means normally holding the piston rod structures against vertical movement and means for routing pressure fluid alternatively to and from opposite ends of each cylinder to effect upward or downward movement of the cylinders and the bearings carried thereby relative to said pistons and piston rod structures.

3,157,111
WORK EJECTOR FOR PRESSES
George L. Andersen, Birmingham, Mich., assignor, by mesne assignments, to Avis Industrial Corporation, Roseville, Mich., a corporation of Michigan
Filed May 15, 1961, Ser. No. 110,207
18 Claims. (Cl. 100—218)



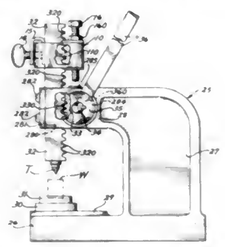
1. A press for shaping workpieces comprising a frame, a first work forming member on said frame, a ram mounted on said frame for reciprocation toward and away from said first forming member, a second work forming member on said ram cooperable with said first work forming member upon movement of said ram toward the latter to shape a workpiece, power means including a flywheel for reciprocating said ram, a work ejector adjacent one of said work forming members and operative to remove the workpiece from said one of said work forming members after shaping, and a hydraulic power device for operating said ejector, said power device being operatively connected to said flywheel to be operated by the inertia thereof during the return stroke of the ram.

3,157,112
STROKE LIMIT MEANS FOR HAND PRESSES
John A. Truhon, 16514 Blackstone, Detroit, Mich.
Filed July 3, 1963, Ser. No. 292,617
3 Claims. (Cl. 100—231)

1. In a hand press of the type including a base, a stanchion extending upwardly therefrom supporting an operating head, a work support on said base for accurately

supporting work thereon, a rack type ram means disposed over said work support and reciprocable through said operating head, said rack type ram having transversely disposed teeth formed in one side thereof, and lever operated pinion means carried by said operating head engaged with said rack type ram for raising and lowering the same,

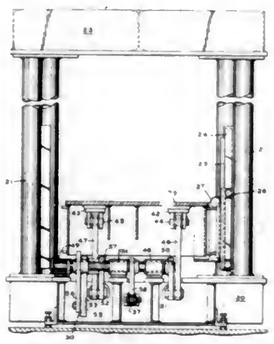
a stroke limit means consisting of a transversely toothed rack type anchor element telescopable over said ram and meshable with said ram teeth at a selected location therealong providing a coarse adjustment of said stroke limit means on said ram,



means removably drawing said anchor element to said rack in said selected location with the teeth thereof fully meshed whereby to removably fix said anchor element in said selected location,

stop bar means carried by said anchor element adjustably fixed to contact the top of said operating head providing a fine adjustment of the stroke of said ram toward work supported on said work support.

3,157,113
MACHINE ACTUATING MEANS
Walter L. Jewett, Royal Oak, Mich., assignor to Allied Welder Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 14, 1964, Ser. No. 359,630
3 Claims. (Cl. 100—272)



1. A machine having harmonic motion actuating means converting relatively small cam lever angular movement to relatively large shaft angular movement comprising

a shaft,

a torque arm on said shaft having a cam track extending radially of said shaft on a relatively short radius; said torque arm swinging back and forth in an arc of 180° on one side of said shaft between positions above and below said shaft;

a fulcrum pivot on the other side of said shaft relative to said arc described by said torque arm on said shaft,

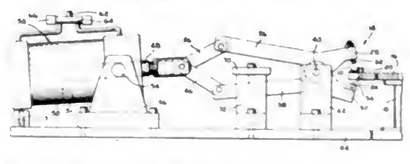
a cam lever having one end pivoted on said fulcrum point; said cam lever having an end extending from said fulcrum point on a relatively long radius past said shaft to the side of said shaft opposite to said fulcrum point so as to swing through said arc described by said torque arm,

a cam on said extending end of said lever lying in said cam track of said torque arm;

said cam lever swinging in an angular arc of 90° through said torque arm relatively large angular arc so as to intersect said torque arm arc at points above and below said shaft; and

means for swinging said cam lever and cam back and forth through said torque arm arc; said cam harmonically camming said torque arm back and forth in its angular movement between substantially null positions at the ends of cam and cam track travel above and below said shaft with smoothly accelerated and decelerated speed between said null positions.

3,157,114
DEVICE FOR MARKING ARTICLES
Richard E. Halverson, Westchester, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 12, 1963, Ser. No. 322,889
4 Claims. (Cl. 101—4)



1. An article marking device comprising:

mounting means;

a pair of levers supported intermediate their ends on said mounting means for pivotal movement about a horizontal first axis and having a pair of jaws on one end of the levers for clamping the article therebetween;

means on the lower one of said jaws for marking the article;

means for supporting the article in a predetermined position between said jaws;

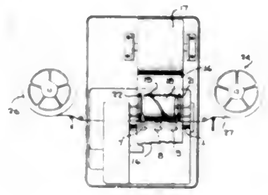
a pair of toggle links interconnecting the other ends of said levers;

a fluid-operated actuator supported at one end thereof on said mounting means for pivotal movement about a second axis parallel to said first axis and having a reciprocatory piston rod connected at one end to said toggle links for actuating said levers, said actuator in its unoperated condition being biased by its weight for movement about the second axis to an oblique position to effect the movement of the jaws to predetermined positions with the upper one of said jaws closer to said article, so that in response to the operation of the actuator the levers are actuated to effect the sequential engagement of the jaws with the article; and

means for supporting said actuator in said oblique position.

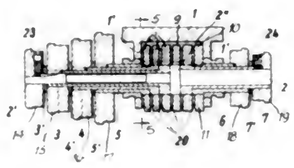
3,157,115
PRINTING MECHANISM
Charles F. West and James B. Allen, Melbourne, Fla., assignors to Soroban Engineering, Inc., Melbourne, Fla., a corporation of Florida
Filed Dec. 3, 1962, Ser. No. 242,853
11 Claims. (Cl. 101—93)

1. In a printing mechanism, a print member having "X" number of print locations extending longitudinally thereof wherein X is at least one; means for establishing an initial print position for said print member; means for moving said print member along its longitudinal axis; a recycling means for generating a displacement code designating the desired print position relative to said initial print position, said recycling means generating a maximum displacement code and, after a printing operation, employing such maximum displacement code, said recycling means generating a displacement code designating said initial print position; means



for generating a final code by combining said displacement code with a code representing the one of said "X" number of print locations which is to be adjacent the region where printing is to occur; and means for applying said final code to said means for moving said print member, said means for moving transporting said print member from a prior print position directly to the new print position.

3,157,116
DRUM SERIES TYPE WHEEL SETTING MEANS
Ernst Reiner, 16 Baumannstrasse, Furtwangen, Germany
Filed Oct. 1, 1962, Ser. No. 227,452
Claims priority, application Germany, Oct. 10, 1961, R 23,053
1 Claim. (Cl. 101—110)



A printing apparatus, particularly for stamping data on labels or the like, comprising

a frame,

a bearing mounted on said frame,

a plurality of printing type wheels disposed adjacent each other about a common axis,

a plurality of setting wheels disposed coaxially with said printing type wheels,

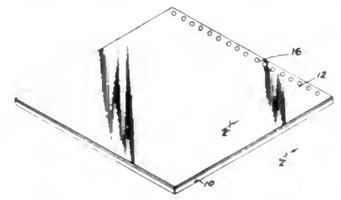
said bearing extending between said plurality of printing type wheels and said plurality of setting wheels,

a bushing connecting each of said printing type wheels with corresponding setting wheels,

all said bushings being disposed concentrically relative to each other and the outermost of said bushings being disposed rotatably in said bearing, and

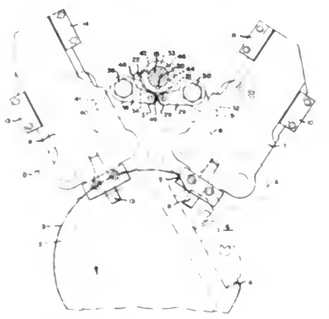
key means projecting radially inwardly from an inner bore of said printing type wheels and said setting wheels and said bushings having complementary keyways at the points where they connect with said printing type wheels and corresponding setting wheels.

3,157,117
LITHOGRAPHIC PLATES AND METHOD FOR MANUFACTURE
Earl B. Relph, Des Plaines, and Henry A. Dahl, Mount Prospect, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Oct. 31, 1957, Ser. No. 693,626
5 Claims. (Cl. 101—149.2)



1. A planographic printing plate, comprising a base sheet and a coating on the surface of the base sheet formed of a water-insoluble, hydrophobic, alkyd resin and a finely divided zinc oxide present in the ratio of 1–8 parts by weight of zinc oxide to 1 part by weight of the alkyd resin, and means on the plate clamping onto a plate cylinder.

3,157,118
PRINTING PRESS
Robert L. Mosemiller, Wilkinsburg, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 2, 1962, Ser. No. 206,936
10 Claims. (Cl. 101—247)



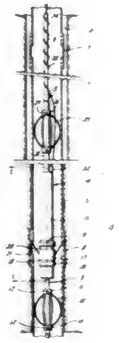
1. A printing press comprising a rotary form having a gap therein, form rollers for applying ink to the form, the space between form rollers being greater than the width of the gap so that on a non-printing cycle when the form rollers are to be retracted from the form all form rollers cannot while opposite the gap be simultaneously retracted, a cam shaft, means for turning the cam shaft in one direction on a non-printing cycle and thereafter in the opposite direction for a succeeding printing cycle and cam means on the cam shaft sequentially retracting the form rollers, each form roller while opposite the gap, upon turning of the cam shaft in the first mentioned direction.

3,157,119
DETONATING DEVICE
Layton F. Porter, 4022 Silverwood, Houston 25, Tex.
Filed Jan. 27, 1961, Ser. No. 85,363
4 Claims. (Cl. 102—21.8)

1. In a device for detonating an explosive charge in a tubular structure, the combination of;

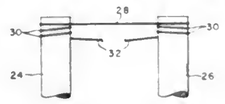
an elongated member having one end adapted for con-

nection to a line for suspending said member in a tubular structure;
means at the other end of said elongated member for securing said member against movement relative to said tubular structure when suspended therein;
support means carried by said elongated member;
said support means being movable on said elongated member;
means coupled to said support means for securing said support means against movement relative to said tubular structure when suspended therein;



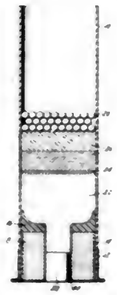
an explosive charge carried by said elongated member adjacent said support means;
firing means arranged to detonate said explosive charge,
said firing means including a firing assembly carried by said elongated member and responsive to a pre-determined relative displacement between said support means and said elongated member, caused by twisting the tubular structure, to initiate detonation of said explosive charge.

3,157,120
SOLID DIELECTRIC EXPLODING BRIDGEWIRE SERIES SAFETY ELEMENT
William C. Morgan, San Jose, and Robert C. Rhoades, Berkeley, Calif., and Richard H. F. Stresau, Spooner, Wis.
Filed Jan. 12, 1962, Ser. No. 165,923
1 Claim. (Cl. 102—28)



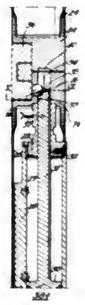
A solid dielectric exploding bridgewire series safety unit comprising:
(A) A pair of lead posts;
(B) An exploding bridgewire mounted upon and in close proximity to but in spaced relation to at least one of said lead posts and being adapted to "explode" upon the passing of an electric current through said wire;
(C) A solid dielectric insulation substantially coating and surrounding said entire bridgewire, said insulation separating said exploding bridgewire from at least one of said lead posts, whereby a series safety gap between said lead post and said bridgewire is formed to "stand off" uncontrolled voltages from firing said bridgewire; and
(D) Said bridgewire being wound around at least one of said lead posts to support said bridgewire thereon.

3,157,121
SHOTSHELL
Benjamin K. Daubenspeck, Stratford, Theodore A. Olson, Trumbull, Edward A. Rickey, Stratford, and Justin H. Whipple, Milford, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Apr. 5, 1963, Ser. No. 270,983
12 Claims. (Cl. 102—42)



1. A shot cartridge having a shell, said shell comprising a tubular casing having one end thereof closed off by a head, a propellant charge positioned within said casing and spaced from said head, a basewad positioned within the casing between the propellant charge and the head, flash hole means in said basewad adapted to receive a priming device, and an overlay means substantially completely enclosing said basewad thus providing a tight seal between the basewad and the head, the basewad and the tubular casing, and the basewad and the propellant charge.

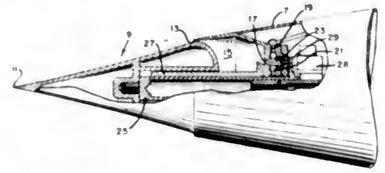
3,157,122
DEVICE FOR HIGH-SPEED ASSEMBLY AND DISASSEMBLY OF CYLINDRICAL MEMBERS
Marcellin Marie Laurent, Louis Besson, and Edouard Bartevian, Cannes, France, assignors to Sud-Aviation Société Nationale de Constructions Aeronautiques, Paris, France
Filed June 29, 1961, Ser. No. 125,903
Claims priority, application France, July 1, 1960, 831,705
8 Claims. (Cl. 102—49)



1. A device for high-speed assembly and disassembly of cylindrical members having a relatively large diameter such as the component parts of flying devices such as missiles, comprising a multiplicity of arcuate staples surrounding the contacting edges of the cylindrical members and divided up into equal groups, each staple having an external arcuate groove and being of an internal truncated V-shape in cross-section for engaging outwardly converging faces formed at a distance of the outer surface of said two cylindrical members on said contacting edges,

a thin metal strip secured on the outer surface of the staples of each group and defining gaps with the external arcuate grooves thereof, a strap element traversing the gaps of the staples of each group without connection with said staples, an arresting block secured on the middle part of each strap and engaging a housing formed in the contacting edges of said cylindrical members, conventional dismountable arching systems for interconnecting the adjacent ends of two successive strap elements and for tightening independently the two adjoining halves of said successive strap elements, whereby the strap elements freely slide over the staples and provide a substantially uniform tension over the whole periphery of the ring formed by said staples, strips, strap elements and arching systems without inducing any local deformation of said cylindrical members, the outer surfaces of said arching systems and strips lying flush with the outer cylindrical members, after assembly, so that said ring is devoid of any outward projection, a set of jacks carried by the front cylindrical member in alignment with said arching systems and with intermediate staples of said groups, a source of fluid under pressure, and means for simultaneously connecting said source with said jacks in order to obtain a high-speed separation of said members by the simultaneous action of said jacks on said arching systems and intermediate staples.

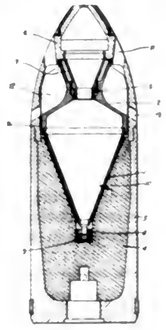
3,157,123
RETRO-NOZZLE
James C. Matheson, Jr., Lake Park, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 6, 1963, Ser. No. 256,736
2 Claims. (Cl. 102—50)



1. A drag augmented retro-nozzle comprising in combination:
(*a*) a missile having a nose in the form of a right, hollow, truncated cone with the smaller truncated end forward;
(*b*) a combustion zone within said nose;
(*c*) a spike fitting within said nose at the forward end and extending outwardly therefrom;
(*d*) spike-actuating means for moving the spike to first and second positions;
(*e*) said spike forming a substantially smooth continuation of the outer surface of the conical nose in the first position; and
(*f*) the structure providing an annular passage between the spike and the nose for the discharge of combustion gas when the spike is in the second position.

3,157,124
SPIN STABILIZED HOLLOW CHARGE PROJECTILE
Helmut Müller, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Jan. 3, 1962, Ser. No. 164,001
Claims priority, application Germany, Jan. 5, 1961, R 29,404
4 Claims. (Cl. 102—56)

1. Method of increasing the penetrating power of a hollow-charge projectile stabilized in flight by spin, comprising rotating the projectile body together with the explosive charge at a speed dependent on the spin at least



on reaching the target, and rotating the insert in the opposite direction to the point of approximate compensation of the movement due to the spin.

3,157,125
ROTOR SAFETY LOCK FOR MUNITION FUZE
Arthur M. Lohmann, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,894
7 Claims. (Cl. 102—78)



4. A munition fuze subject to setback and impact forces, including: a resiliently mounted firing pin; a movable carrier member having a first area thereon opposite said firing pin in a safe position and a second area thereon opposite said firing pin in an armed position; means for normally holding said carrier member in said safe position and for releasing said carrier member upon the occurrence of said setback force; means for driving said carrier member from said safe position to said armed position at a predetermined speed upon being released; a detonator mounted in said carrier member at said second area; means for driving said firing pin into said detonator upon the receipt of said impact force; and firing pin engaging means mounted in said carrier member between said first area and said second area to engage with and lock said firing pin to thereby lock said carrier member should said impact occur prior to said carrier member reaching said armed position.

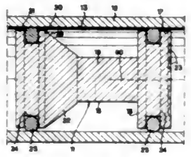
ERRATUM

For Class 102—91 see:
Patent No. 3,157,137

3,157,126
MISSILE FOR SPORTING GUNS
Roland Gilbert Auguste Blondeau, 37 Blvd. de la Republique, Nevers, France
Filed Feb. 1, 1962, Ser. No. 170,599
7 Claims. (Cl. 102—92.5)

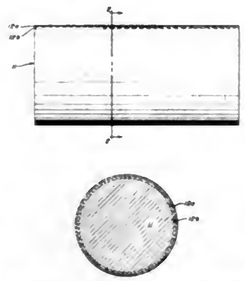
1. A ballistic missile, comprising a unitary hard metal body including an enlarged front end portion and an enlarged rear end portion of about the same diameter as the

front end portion, and a midportion of a diameter not more than about one-half the diameter of said end portions extending axially between and interconnecting said end



portions, said end portions having cylindrical outer peripheries of an axial extent substantially less than their diameter, the front surface of said front end portion being flat.

3,157,127
SOLID PROPELLANT GRAIN WITH CELLULOSE ACETATE COATING
Wayne A. Proell, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Mar. 15, 1962, Ser. No. 180,023
6 Claims. (Cl. 102—98)



3. A solid propellant consisting essentially of (I) a shaped body portion formed of ammonium nitrate as the major component and an oxidizable organic binder therefor, the surface of said body being characterized by the presence of exposed ammonium nitrate which has not been covered by said binder and (II) a sealer coat adhered to and adapted to seal that part of the surface of said body where direct burning is to be prevented, where said sealer coat has been obtained by (*a*) applying to the surface to be covered a layer of a liquid capable of plasticizing cellulose acetate, (*b*) applying powdered cellulose acetate to said liquid covered surface in an amount sufficient to form a seal coat thereon and (*c*) baking the acetate covered surface at a temperature of about 90°–120° C. for a time sufficient to form a seal coat of cellulose acetate on said surface.

3,157,128
LIQUID PUMP HAVING GAS-CUSHIONED BEARING MEANS
Edmond Hustinx, Loolersgracht 4, Maastricht, Netherlands
Filed Apr. 19, 1962, Ser. No. 188,793
7 Claims. (Cl. 103—87)

1. A liquid pump having gas-cushioned bearing means for the impeller drive rod thereof comprising

(*a*) a pump housing enclosing a liquid impeller and having a liquid supply inlet and pumped liquid outlet passages,

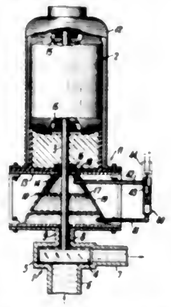
(*b*) said housing having an opening communicating with the pumped liquid outlet passage,

(*c*) a drive rod connected to said impeller for drive of the latter and extending upwardly through the opening substantially free of contact with edges of the opening, the intervening space permitting free flow of pumped liquid up through the opening about said drive rod,

(*d*) a fluid-tight casing above the opening enclosing a powered driving unit connected to an upper section of said drive rod,

(*e*) said casing having a bottom portion provided above said housing opening with another opening up through which an intermediate section of said drive rod extends substantially free of contact with edges of this casing opening and with intervening space permitting free flow of gas therethrough,

(*f*) means defining an upwardly tapered closed gas-containing chamber arranged between said openings in spaced relation about said drive rod intermediate

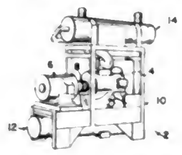


section and of progressively smaller cross-sectional area in an upper portion towards said casing opening with a bottom portion of said chamber connected in a fluid-tight manner to said housing about said housing opening and the chamber upper portion connected in a fluid-tight manner to said casing about said casing opening.

(*g*) said housing opening permitting entry of pumped liquid up about said drive rod into said chamber to trap a body of the gas thereabove in a head space of the chamber adjacent said casing opening, and

(*h*) said gas cushioned bearing means being of unisolated form and arranged about said drive rod as a guide therefor in the vicinity of said casing opening above the critical top level to which the pumped liquid will rise.

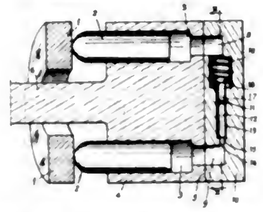
3,157,129
REFRIGERATION SYSTEM AND FLEXIBLE COUPLING FOR CONCENTRIC SHAFTS
Kenneth A. Ober, North Coventry, Conn., assignor to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut
Filed June 15, 1962, Ser. No. 202,754
7 Claims. (Cl. 103—87)



1. In a refrigeration system having an evaporator and a condenser and circuit means connected therebetween and a motor compressor unit for withdrawing refrigerant from the evaporator and delivering it at elevated pressure to the condenser, said motor compressor unit being of the type having an electric motor and a compressor with shafts upon substantially the same axis and mounted

in end-to-end relationship, a flexible coupling connecting the adjacent ends of said shafts and comprising, a pair of coupling members fixed respectively to the adjacent ends of said shafts and each having a plurality of brackets positioned at a predetermined radius from said axis with said brackets being equally spaced from each other, each of said brackets upon each coupling member being positioned arcuately between two of said brackets on the other coupling member, and a plurality of straps corresponding in number to the number of said brackets and serially positioned in circumferential relationship around said brackets with each strap having one end connected to a bracket on the coupling member fixed to the motor shaft and its other end attached to a bracket on the coupling member fixed to the compressor shaft whereby one-half of said straps constitute driving straps for transmitting driving forces from the motor to the compressor and the other straps constitute restraining straps.

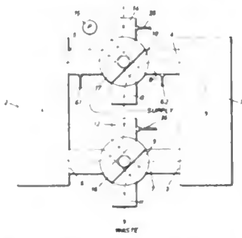
3,157,130
AUTOMATIC REGULATING DEVICES FOR HYDRAULIC BARREL-TYPE PUMPS OR MOTORS
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed Aug. 9, 1962, Ser. No. 215,818
Claims priority, application France, Sept. 11, 1961, 872,870, Patent 1,307,302
2 Claims. (Cl. 103—162)



1. Automatic adjustment device for hydraulic pumps and motors comprising a rotary barrel having multiple parallel piston-and-cylinder assemblies, said barrel having a face with apertures each communicating with a specific cylinder, a distributor plate having a face bearing against said barrel face having in front of said barrel face an inlet port and an exhaust port, said ports being so disposed that during the barrel rotation said apertures register successively with said ports, a swash plate for reciprocating said pistons in said cylinders, said distributor plate having in the face thereof an orifice spaced intermediate said ports, a passage interconnecting said two orifices, a slide-valve controlling said passage comprising a control cylinder communicating with said exhaust port, a control piston in said control cylinder controlling said slide-valve, a calibrated coil compression spring urging said slide-valve constantly in the opening direction and in the closing direction by the pressure prevailing in said exhaust port, the force of said spring and the cross-sectional area of said control cylinder being such that the displacement of said slide-valve in the closing direction takes place only when the delivery pressure exceeds a predetermined value.

3,157,131
STRAINING APPARATUS
John Paterson Brydon, Vancouver, British Columbia, Canada (514 Clifton Road, Richmond, British Columbia, Canada)
Filed June 10, 1960, Ser. No. 35,357
4 Claims. (Cl. 103—220)

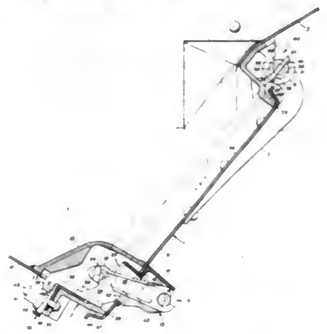
1. Straining apparatus comprising first filtering means, including a first filter and second filtering means including a second filter, said first filtering means having first inlet-outlet means and second inlet-outlet means, said second filtering means having third inlet-outlet means and fourth inlet-outlet means, said first filter being disposed in the liquid path between said first and second inlet-outlet means, said second filter being disposed in the liquid path between said third and fourth inlet-outlet means, first liquid carrying means connected between said first inlet-outlet means and said fourth inlet-outlet means, first valve means interposed in said first liquid carrying means, second liquid carrying means connected between said second inlet-outlet means and said third inlet-outlet means, second valve means interposed in said second liquid carrying means, a first inlet means in said first liquid carrying means for receiving a liquid to be filtered, a first outlet means in said first liquid carrying means for discharging a liquid which has passed through both of said filters, a second inlet means in said second liquid carrying means, a second outlet means in said second liquid carrying means, said first valve means being interposed between said first inlet and first outlet means and also being interposed between said first and fourth inlet-outlet means, said second valve means being interposed between said second inlet and second outlet means and also being interposed between said second and third inlet-outlet means, said first and second valve means being movable to first and second positions, means including a pump interconnecting said second inlet means and said second outlet means in fluid-flow relationship, said pump having a suction inlet and a discharge outlet, said suction inlet being connected to said second outlet means, said discharge outlet of said pump being connected only to said second inlet means



to discharge all of the liquid pumped by said pump into said second inlet means, and means for moving said first and second valve means into either said first position or said second position, said first valve means in said first position connecting said first inlet-outlet means and said first inlet means in fluid flow relationship and connecting said fourth inlet-outlet means and said first outlet means in fluid flow relationship, said second valve means in said first position connecting said second inlet-outlet means and said second outlet means in fluid flow relationship and connecting said second inlet means and said third inlet-outlet means in fluid flow relationship, said first valve means in said second position connecting said first inlet means and said fourth inlet-outlet means in fluid flow relationship and connecting said first inlet-outlet means and said first outlet means in fluid flow relationship, said second valve means in said second position connecting said third inlet-outlet means and said second outlet means in fluid flow relationship and connecting said second inlet-outlet means and said second inlet means in fluid flow relationship, said first valve means in either of said positions preventing any substantial direct liquid flow in said first liquid-carrying means between said first inlet-outlet means and said fourth inlet-outlet means and preventing any substantial direct liquid flow between said first inlet means and said first outlet means, said second valve means in either of said positions preventing any substantial direct liquid flow in said second liquid-carrying means between said second inlet-outlet means and said third inlet-outlet means and preventing any substantial direct

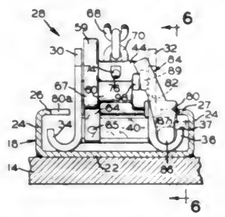
liquid flow between said second inlet means and said second outlet means other than through said means interconnecting said second inlet means and said second outlet means, all of the liquid passing into said straining apparatus during operation thereof through said first inlet means being constrained by said straining apparatus to pass through both of said filters in series and discharge from said straining apparatus through said first outlet means in both of said positions of said valve means.

3,157,132
HOPPER DOOR PIVOT AND LATCH ASSEMBLY
Walter L. Floehr, Toledo, Ohio, assignor to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio
Filed June 9, 1960, Ser. No. 35,063
16 Claims. (Cl. 105—253)



1. An assembly for a hopper door hinged at the top to a frame bounding a discharge opening of a hopper comprising means for locking said door in closed position, means acting through said locking mechanism on said door intermediate lateral extremities of said discharge opening for forcing said door against said frame at sides of said opening, and means actuatable exteriorly with the door closed for predetermining the fit at top and bottom between said door and said frame on subsequent closings of said door.

3,157,133
TIE-DOWN
Richard J. Wojcikowski, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Sept. 9, 1963, Ser. No. 307,417
14 Claims. (Cl. 105—368)



1. A tie-down device for use in securing an item of lading on a transporting structure comprising in combination,

(*a*) track means having a longitudinally elongated axis and being adapted to be secured to the transporting structure and including a first and a second laterally spaced longitudinally elongated and vertically extending flange,

(*b*) a first and a second longitudinally elongated lip carried by said first and second flanges respectively with each of said lips extending laterally from the flange carrying the same generally toward the flange carrying the other of said lips,

(*c*) tie-down means longitudinally movable relative to said track means and including first and second opposed side walls having at least a portion thereof disposed between said flanges,

(*d*) means fixedly interconnecting said side walls in laterally spaced-apart relationship,

(*e*) at least a portion of said first and of said second side walls projecting below the underside of said first and second lips respectively whereby said lips are operative to inhibit vertical movement of said tie-down means relative to said track means,

(*f*) a plurality of first engaging means provided with said first lip and longitudinally spaced at equal distances,

(*g*) said first side wall having a longitudinally extending laterally outer surface and a pair of longitudinally spaced and laterally extending surfaces facing in opposed longitudinal directions and each being operative as second engaging means,

(*h*) the space between said second engaging means being at a distance which is a multiple of the distance between said first engaging means whereby each of said second engaging means may be aligned with one of said first plurality of engaging means,

(*i*) a locking member for securing said tie-down means against longitudinal movement relative to said track means,

(*j*) said locking member having a longitudinally extending first portion carried by said tie-down for rotation about its longitudinal axis and a pair of locking means projecting therefrom in longitudinally spaced relationship with the distance therebetween substantially the same as the distance between said second engaging means,

(*k*) said locking member having an unlocked position wherein one of said locking means is disposed in engagement with one of said second engaging means and the other of said locking means is disposed in engagement with the other of said second engaging means and having a locked position wherein said one locking means is disposed in engagement with said one second engaging means and the one of said first engaging means aligned therewith and said other locking means is disposed in engagement with said other engaging means and the one of said first engaging means aligned therewith,

(*l*) said locking means in its unlocked position being inoperative to engage said second engaging means and being disposed laterally inwardly from the laterally outer surface of said side wall,

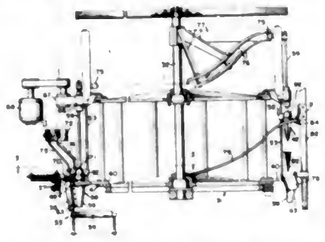
(*m*) said first portion of said locking means being rotatable about its longitudinally extending axis to move said second locking means between said locked and unlocked positions,

(*n*) said locking member including manually operable means for rotating the same,

(*o*) and a flexible element adapted to be secured to the item of lading and engaged by said tie-down whereby the item of lading is secured to the transporting structure.

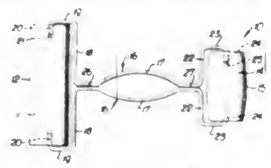
3,157,134
MACHINE FOR FORMING FLAT TOP ROLLED ICE CREAM CONTAINERS
Albert A. Heyman, Baltimore, Md., assignor to The Maryland Baking Company, Baltimore, Md., a corporation of Maryland
Filed Mar. 5, 1962, Ser. No. 177,653
15 Claims. (Cl. 107—4)

1. In a machine for manufacturing rolled containers from pastry wafers, said machine comprising a wafer baking unit and a rotatable turret, said turret being disposed adjacent the baking unit and having a rolling unit adapted to receive, as the turret rotates, a baked wafer from the baking unit at a transfer station and roll it into the shape of the container for discharge at a discharge station, said rolling unit comprising a female die part having an opening at its top secured to the turret, a rotatable male die part mounted on the turret for reciprocation between a position within the female die part and a position ele-



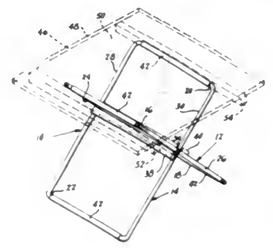
vated from and on the exterior of said female die part, an annular abutment member in the said opening between the die parts against which a portion of the wafer is pressed to shape the upper edge of the container, means for moving said male die part and member upwardly on said turret simultaneously while the rolling unit is carried by the turret between the transfer station and the discharge station, and means at said discharge station for moving the said member downwardly relative to the male die part.

3,157,135
PIZZA ROLLER DEVICE
Gene B. Fetrow and Gloria S. Fetrow, both of 764 W. Rosewood Court, Ontario, Calif.
Filed June 29, 1962, Ser. No. 206,399
1 Claim. (Cl. 107—50)



A composite roller device for facilitating spreading and uniform distribution of a relatively small globular mass of material over an initially large surface area and then over a relatively narrow marginal surface area, comprising the combination of: a long roller having a cylindrical surface for rapidly reducing the thickness of said mass of material and spreading material over said large area; a short roller having a longitudinally convexly curved surface for spreading material over narrow marginal surface areas, said short roller having a maximum diameter approximately the same as the diameter of the long roller, the axes of said rollers being parallel; and a planar interconnecting means extending between said rollers and comprising connecting members symmetrically arranged in back-to-back relation and secured together adjacent said rollers, said members having ends rotatably connected with said rollers at their axes, said connecting members having central portions of less width than the length of said short roller, said central portions and the surface of one roller serving as grasping and positioning means for a hand, the surface of said one roller providing a pressure surface for contact by the palm portion of a hand, said central portions and said one roller directing pressure to the other of said rollers in contact with said material for pressure spreading of said material.

3,157,136
FOLDABLE SUPPORTING STAND
Willard Bruce Moody, 1711 Hillcrest Drive, Durham, N.C.
Filed May 29, 1963, Ser. No. 284,128
3 Claims. (Cl. 108—155)



1. A simplified foldable supporting stand comprising a pair of substantially equal height rectangular frame members,

each having horizontally extending top and bottom elements and oppositely disposed, spaced apart, side elements connecting said top and bottom elements to form continuous frames,

the maximum width between said side elements of one of said frame members being slightly less than the minimum width between said side elements of the other of said frame members, whereby the side elements of said one frame member may fit partially crosswise and interiorly of the side elements of said other frame member when said tops and bottoms of the frames overlap each other,

a pair of horizontal pivot pin means interconnecting adjacent side elements of said frame members in crossed relationship at points above the midheight of said side elements, whereby said interconnected frame members may be moved between an almost flat collapsed position and a wide base supporting position,

and two similar stop bar means with upper faces located equally longitudinally below and close to said pin means, one stop bar means secured to and horizontally extending between two side elements of the frame member, and the other stop bar means secured to and horizonally extending between two side elements of the other member, each bar in use abutting by its upper face a portion of the side elements of the opposite frame member,

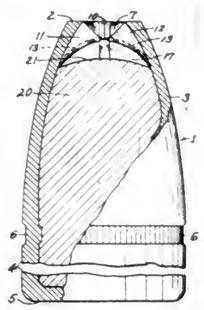
to thereby limit the maximum pivotal opening movement of said frame members in relation to each other when said frame members are moved from said almost collapsed position to said supporting position,

and whereby the horizontal distance between the center lines of each bottom element is at all times greater than the horizontal distance between the center lines of each top element thus providing improved table stability with simple stand structure.

3,157,137
EXPANDING POINT BULLET
Arthur H. Burns, Jr., Cheshire, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 1, 1963, Ser. No. 269,280
10 Claims. (Cl. 102—91)

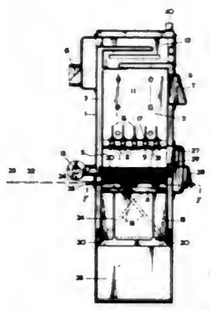
10. In an expanding bullet, the combination comprising a relatively hard jacket with a closed base and with a nose tapering to a partitioned aperture at the point of the bullet, and a relatively soft core engaging said jacket from said base and terminating short of said aperture to

define a hollow point in said nose, said jacket at the nose being folded inwardly to form a plurality of jacket staves each abutting adjacent staves around said hollow point



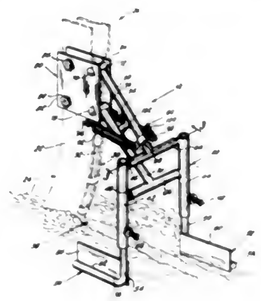
and aperture and to form intervening re-entrant folds defining jacket ribs extending inwardly into contiguity with adjacent ribs in said hollow point and radially subdividing said aperture into a multiplicity of hollows.

3,157,138.
CONSTRUCTION OF STOVES, FURNACES, CENTRAL HEATING BOILERS OR LIKE APPARATUSES
Theodoor Oswald Hubert Jules Dorren, Heerlen, Netherlands, assignor to N.V. Maatschappij Tot Exploitatie Van Limburgsche Steenkolenmijnen, Genaamd Oranje-Nassau Mijnen, Heerlen, Netherlands, a corporation of the Netherlands
Filed Sept. 27, 1962, Ser. No. 226,499
8 Claims. (Cl. 110—29)



1. A coal fired furnace or the like heating apparatus, comprising, in combination, a housing; a grate supported within said housing; a coal container positioned within said housing substantially above and in vertically spaced relation with said grate; means defining a combustion zone above said grate, said coal container communicating with said combustion zone to provide for passage of coal from said container into the combustion zone; flue gas discharge passage means communicating with said combustion zone adjacent the upper end thereof and below said coal container; means forming an adjustable combustion air inlet opening into said combustion zone; a plurality of heat conducting vertical plates arranged in horizontally spaced parallel relation to each other and extending transversely of said grate, said plates being positioned in vertically spaced relation with said grate and extending from the upper end of the combustion zone into said coal container; each of said plates being formed with a downwardly opening channel-like means along its lower edge for restricting flow of coal from said container into said combustion zone and for entrapping hot combustion gases of said combustion zone for heating of said plates to impart heat to coal passing therebetween for degassing of the coal.

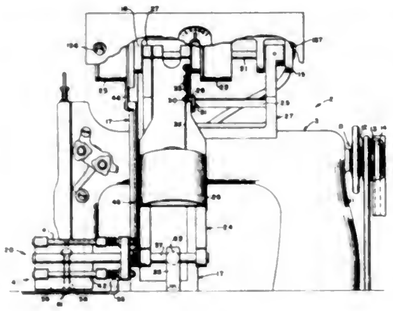
3,157,139
TRENCH CLOSER
Clemens E. Spindler, Sioux City, Iowa, assignor to The Broyhill Company, Dakota City, Nebr., a corporation of Nebraska
Filed Oct. 9, 1963, Ser. No. 315,040
5 Claims. (Cl. 111—7)



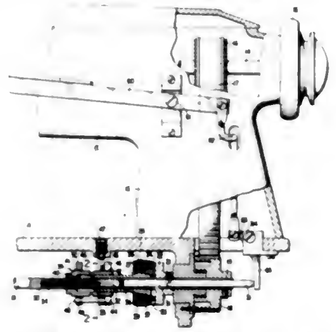
5. In apparatus for the subsurface discharging of agricultural chemicals and which includes a ground engaging knife for opening a trench or furrow in the soil as it is moved over the ground, the combination therewith of apparatus for closing such trench or furrow comprising:
- a frame disposed in a trailing position relative to said knife,
- a pair of spaced ground engaging paddle assemblies carried by said frame so as to be disposed at respective opposite sides of said trench,
- said paddle assemblies each including a vertically disposed planar paddle member,
- a support plate removably secured to said knife,
- a pair of elongated arms each pivotally connected at one corresponding end at vertically spaced points on said frame,
- the other corresponding ends of said arms pivotally connected at vertically spaced points on said support plate, and
- spring means extending between one of said elongated arms and said support plate to normally urge said paddle assemblies downwardly into ground engaging position.

3,157,140
PLEATER ASSEMBLY FOR SEWING MACHINE
James C. Williams, Jr., 1705 Houghton Road, Dallas, Tex., assignor of one-half to Sunny Isle, Inc., Dallas, Tex., a corporation of Texas
Filed Feb. 12, 1963, Ser. No. 257,954
10 Claims. (Cl. 112—134)

1. A pleater assembly for sewing machines, comprising: a cloth gathering blade assembly adapted to selectively form forward and reverse pleats in cloth, mechanical means for moving said blade assembly to a selected position for forming said selective pleat, and electrical means for controlling said mechanical means to provide pleats in a predetermined pattern in said cloth, and pneumatic means cooperating with said blade assembly for properly folding the cloth for said selective pleats.

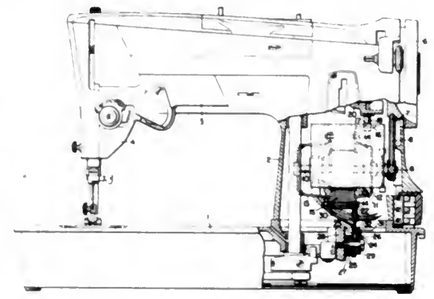


3,157,141
FEED ADJUSTING AND REVERSING MECHANISM FOR SEWING MACHINES
Gregory Goebel, Parsippany, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed Oct. 9, 1961, Ser. No. 143,954
5 Claims. (Cl. 112—210)



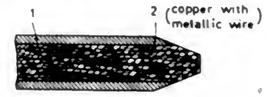
1. In a sewing machine having a frame, an actuating means in said frame including a rotary shaft for actuating a work feeding mechanism, a feed drive means including a feed driving eccentric, means supporting said feed driving eccentric for rotation with said rotary shaft and for shifting movement transversely of said rotary shaft to vary the eccentricity thereof, an eccentric adjusting member rotatable with said shaft and slidable lengthwise thereon, an eccentric engaging surface on said adjusting member inclined relatively to said rotary shaft, a radial abutment element fixed for rotation and lengthwise sliding movement with said eccentric adjusting member, operator influenced means for shifting said eccentric adjusting member lengthwise relatively to said rotary shaft for reversing the direction of feed, and means for limiting the lengthwise sliding movement of said radial abutment element and said eccentric adjusting member comprising means fixed relatively to said rotary shaft and having adjacent portions formed with screw threads of the opposite hand, a pair of stop nuts disposed one at each side of said radial abutment element and threadedly engaged each with one of said portions formed with screw threads of the opposite hand, and operator influenced means for restraining said stop nuts from rotation with said rotary shaft and thus move the stop nuts lengthwise relatively to said rotary shaft and vary the limits of lengthwise motion of said radial abutment member and said eccentric adjusting member.

3,157,142
DRIVE MEANS FOR SEWING MACHINES
Robert Rule Birch, Westerton, Bearsden, Glasgow, and Thaddeus Joseph Zylbert, Bearsden, Glasgow, Scotland, assignors to The Singer Company, a corporation of New Jersey
Filed Aug. 29, 1961, Ser. No. 134,662
Claims priority, application Great Britain July 25, 1961
2 Claims. (Cl. 112—220)



1. In a sewing machine having a frame and a main shaft journaled in said frame, a motor having a drive shaft disposed on an axis parallel to the axis of the main shaft, pulleys on said main shaft and said drive shaft, a belt entrained about said pulleys, and means for mounting said motor in said frame for adjustment of said drive shaft relatively to the main shaft to tighten said belt comprising a motor carrying member, means for securing the motor to said motor carrying member, said member having a slot, a fastening element extending through said slot and into said frame for releasably securing said member to said frame, and an eccentric on said fastening element and releasably secured by the same in angularly adjusted position, said eccentric being disposed in operative engagement with said motor carrying member for preventing displacement of said motor away from said main shaft and thereby defining a stop position and for adjustment of the stop position upon angular adjustment of said eccentric about the axis of said fastening element.

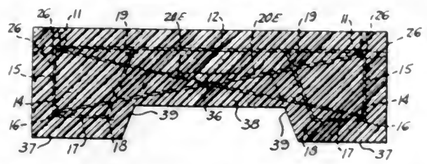
3,157,143
SOLDER TIP
Hendrik Johannes Meerkamp van Embden, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 14, 1960, Ser. No. 55,973
Claims priority, application Netherlands Sept. 18, 1959
5 Claims. (Cl. 113—111)



1. A soldering tip having at one end an active surface adapted to be rubbed against the surface of a metal workpiece, said tip comprising an elongated cylindrical body consisting of a hollow metal tube filled with a coherent

mass of wire embedded in copper, said wire being abrasive, substantially insoluble in molten copper and having a melting point of at least about 1200° C., the ends of said mass of wire extending through said active surface so as to make said surface abrasive.

3,157,144
MARINE FLOAT
A B De Jarnett, 1016 Maryland Ave., West Sacramento, Calif.
Filed Dec. 27, 1962, Ser. No. 248,837
4 Claims. (Cl. 114—.5)



1. A marine float comprised of a plurality of metal rods and a plurality of attached metal bolt socket elements, all joined to form a unitary box-like frame,

a cover of molded plastic foam completely encasing said frame, so as to provide a uniformly solid buoyant mass with the exception of said frame and bolt sockets,

the outside of the float being shaped as a rectangular parallelopiped

but deviating therefrom by the presence of a large central bottom cavity extending part way towards the float top,

said cavity being in transverse elevation of decreasing horizontal dimension upwardly with respect to a vertical center plane extending fore and aft of the float, and of a maximum transverse width about one-half the total beam of the float,

said cavity providing greater transverse stability against pitching than a float which is of exact rectangular parallelopiped shape,

said plurality of attached metal bolt socket elements all facing outwardly, some socket elements being horizontal and some socket elements being vertical, all socket elements attached to said frame at spaced points thereof and extending completely through the exterior skin portions of said molded plastic foam cover,

whereby during molding the frame may be supported and positioned with respect to its mold by threading horizontal bolts through the mold sides and into the horizontal socket elements,

and whereby during flotation use of the float, horizontal stringers may be compressed against the longitudinal sides of the cover of plastic foam by threading horizontal bolts through the stringers and into the horizontal socket elements,

and whereby during floatation use of the float, a deck may be compressed against the top of the cover of plastic foam by threading vertical bolts through such deck and into the vertical socket elements.

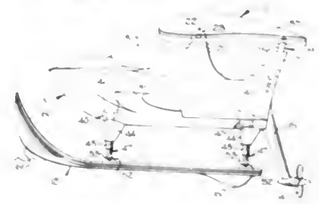
3,157,145
UNDERWATER GLIDER
Franklyn E. Farris, Candlewood Shores, Brookfield, Conn., and Woodford M. Rand, Stonybrook, N.Y., assignors to Oceanic Systems Corporation, Stonybrook, N.Y., a corporation of Delaware
Filed Dec. 7, 1960, Ser. No. 74,276
11 Claims. (Cl. 114—16)

1. An underwater glider propelled forwardly by a change in its buoyancy comprising a hull defining a ballast compartment, foils projecting transversely from said hull for cooperating to have hydro-dynamic lift forces imposed upon said foils, stabilizing means on said hull for stabilizing the glide path of said glider underwater, ballast changing means including a gas reservoir within said hull for changing the buoyancy of said glider by changing the ballast within said ballast compartment, actuating means on said glider for operating the ballast changing means in response to a selected parameter, control means



being actuated by said actuating means for releasing the gas within said reservoir in said ballast compartment for causing said glider to ascend, a further control means also being actuated by said actuating means for permitting the intake of ballast water to cause said glider to descend and a venturi being provided on said glider for providing a discharge passage for the ballast water when the gas in the compartment is released.

3,157,146
BOAT WITH HYDROFOIL AND WINGS
Wayne E. Billig, 513 Adams St., Sumter, S.C.
Filed Feb. 25, 1963, Ser. No. 260,675
4 Claims. (Cl. 114—66.5)



1. A boat comprising

(*a*) a body, said body being adapted to float upon the water when said boat is stationary and to be above the surface of the water when said boat is in motion,

(*b*) elongated ski means centrally mounted beneath said body, said ski means being transversely stepped along the major portion of its length and being adapted to be submerged in the water when the boat is stationary and to skim along the surface of the water when the boat is in motion,

(*c*) wing means extending transversely of said body and outwardly beyond the opposite sides thereof,

(*d*) means connecting said wing means to said body in a position elevated above said ski means for pivotal movement of said wing means about a transverse axis intermediate the forward and trailing edges of said wing means,

(*e*) resilient means disposed rearwardly of said pivotal connecting means and securing the trailing portion of said wing means to said body, said resilient means biasing said pivotally movable wing means to a position of equilibrium substantially parallel to the surface of the water,

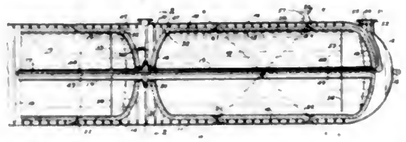
(*f*) motor means carried by said body for propelling the boat across the water,

(*g*) said wing means having upper and lower air foil surfaces across which air is adapted to flow for imparting lift to the boat to substantially sustain the weight of the boat at high forward speeds thereof for raising said body above and said ski means to the surface of the water, and

(*h*) said wing means being self-adjusting so as to pivot about said transverse axis against the biasing

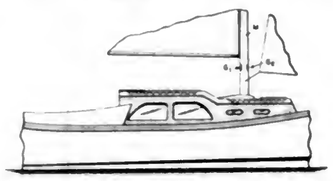
effect of said resilient means in response to fluctuations in the air flow across the air foil surfaces thereof to vary its angle of attack for maintaining a substantially constant lift on said boat, whereby said boat travels across the water under high forward speeds with said ski member skimming the surface of the water.

3,157,147
VESSEL FOR LIQUEFIED GAS
Milton Ludwig, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed May 9, 1963, Ser. No. 279,256
9 Claims. (Cl. 114—74)



1. A rigid cylindrical vessel for conveying a liquefied gas under pressure, comprising a cylindrical outer pressure hull having a plurality of inner circumferential frames, a plurality of insulated cylindrical liquefied gas chambers concentrically supported in said hull to be free of said frames, vent means for said chambers communicating with said hull to release vaporized material thereto and support means connecting each of said chambers to said hull, said support means comprising a pair of opposed frusto-conical skirts secured to said hull and to said chamber in such a position that a line extending inwardly normal to the surfaces of each of said skirts passes substantially through the midpoint of said chamber, to equalize expansion and contraction stresses in said chamber.

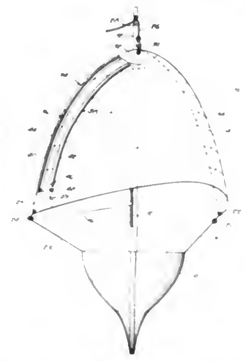
3,157,148
DRIVING FORCE INDICATOR FOR SAILBOATS
James H. Reed, 1230 Cedar Road, Ambler, Pa.
Filed Sept. 25, 1961, Ser. No. 140,346
2 Claims. (Cl. 114—90)



1. The combination comprising a sail boat having at least one mast and a sail carried thereby, said sail transmitting a forward driving force to said boat through said mast, a strain gauge positioned on said mast so as to detect the magnitude of the forward component of the strain imposed on said mast by said sail, and means connected to said strain gauge for indicating the magnitude of said forward component of strain.

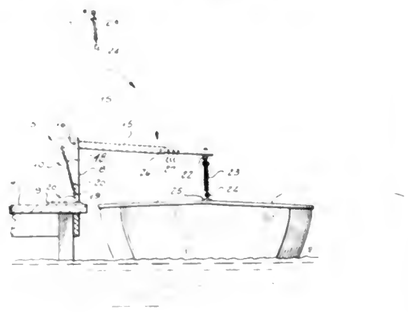
3,157,149
SAIL
Isaac F. Manchester, Jr., Shipyard Lane, South Dartmouth, Mass.
Filed Jan. 13, 1964, Ser. No. 337,385
12 Claims. (Cl. 114—104)

4. A sail embodying self-contained furling means, said furling means comprising an elongated fastening device comprising two elongated chains having quickly releasable interengaging means thereon, said chains being secured to a surface of the sail in spaced relation to each other and extending longitudinally of the sail, the body of



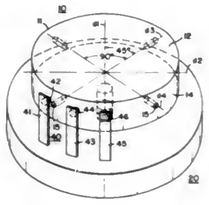
the sail being gathered under the portion of the sail between the chains and enclosed thereby upon engagement of the interengaging means.

3,157,150
MOORING APPARATUS
John Faber, Jr., 34 Zabriskie St., Haledon, N.J.
Filed Mar. 14, 1963, Ser. No. 265,225
2 Claims. (Cl. 114—230)



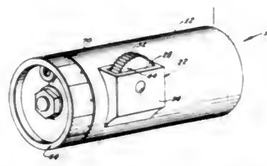
2. In boat mooring apparatus, a pair of spaced units each including an elongated and vertically extending housing adapted to be fixed to a dock and having a pair of spaced side walls, a lengthwise adjustable boat spacing arm having inner and outer ends and with said inner end disposed within and permanently pivoted to said housing between said walls, said arm extending laterally and outwardly from between said walls to a preselected adjusted mooring position for mooring a boat spaced from the dock, said arm engagable by said walls to preclude lateral displacement of said arm when in said mooring position, a spring device permanently secured directly to said outer end of said arm and depending therefrom for detachable connection to a section of a boat, an elongated spring in the housing and secured at one end to said housing and connected at the other end to said inner end of said arm at a point spaced from the pivot thereof in position to move said last-mentioned end downwardly for pivoting said arm to an upright position from said mooring position upon detachment of said spring device from the section of the boat, said spring devices and said arms of said units cooperating to moor the boat in said mooring position and permit limited movement of the boat while in said mooring position.

3,157,151
ULTRASONIC GENERATOR
Robert H. Whittaker, Franklin Township, Westmoreland County, and John H. Thompson, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1962, Ser. No. 190,118
8 Claims. (Cl. 116—137)



6. A mechanical resonator comprising, a vibrator resonant in a flexural mode having a plurality of nodal diameters, said vibrator having a pair of parallel circular planar surfaces with peripheral edge surfaces extending therebetween a pin extending outwardly from and concentric with one of said planar surfaces, said pin being integral with said vibrator, a hole extending inwardly from said peripheral side surfaces toward the axis of said vibrator, means for applying mechanical energy to said vibrator at a predetermined point on the surface thereof to actuate said vibrator into vibration in a flexural mode with a plurality of nodal diameters, said predetermined point and said axis defining a plane positioned at an angle of N times forty-five degrees with a second plane defined by the center of said hole and said axis where N equals any odd integer and means for applying energy to said vibrator in said second plane to actuate said vibrator into vibration.

3,157,152
TRANSDUCING SYSTEM
Harold F. Rieth, Pasadena, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 4, 1962, Ser. No. 221,144
7 Claims. (Cl. 116—137)



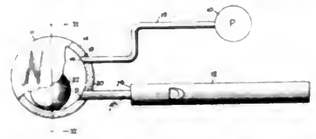
1. A transmitter for generating signals of a plurality of different frequencies comprising the combination of:
an elongated housing for being hand held, said housing having a passage extending axially therethrough.
a cylindrical array of resonant members disposed in said passage, each of said members being adapted to resonate at its own frequency to radiate signals of that frequency,
a striker assembly having a leaf spring secured to said housing in a predetermined fixed relation to the housing, said leaf spring being positioned adjacent said array of said resonant members and including a hammer positioned on said spring to strike and excite a preselected one of the members into vibrating at its resonant frequency,
a control wheel rotatably mounted on said housing with a portion of the wheel projecting from said housing to provide an exposed control surface, said wheel being disposed parallel to the resonant members in the array and being positioned to be actuated by a finger of a hand holding the housing so as to be rotated by the finger,
means for moving said cylindrical array of members inside of said housing relative to said striker assembly to thereby vary the preselected member, and means interconnecting said control wheel with said leaf spring to deflect the leaf spring and release it whenever said control wheel is rotated through a predetermined distance.

3,157,153
ULTRASONIC SYSTEMS
Lowell A. Moe, St. Paul, Minn., assignor to F. H. Peavey and Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 22, 1962, Ser. No. 231,965
2 Claims. (Cl. 116—137)



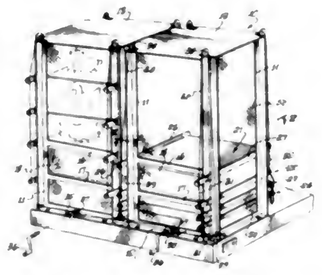
1. A resonator to produce ultrasonic sound waves comprising,
an elongated hollow body member having a tubular side wall and open at one end thereof to form an inlet for receiving a stream of pressurized fluid,
a baffle situated within said body member and comprising,
a solid oval-shaped member disposed at an angle to the longitudinal axis of said body member to intersect said longitudinal axis,
the peripheral edges of said baffle abutting the adjoining interior surface portions of said side wall to partition the interior of said body member into an inlet portion on one side of said baffle and a resonator cavity portion on the opposite side of said baffle,
means operative to securely mount said baffle on said side wall,
said side wall having formed therein an aperture of half-ovoid configuration,
the edges of said aperture including a vertical wall which lies in a first plane which intersects said longitudinal axis of said body member at right angles thereto and an oblique wall which lies in a second plane situated at an acute angle with respect to said longitudinal axis and which intersects said first plane on a line extending perpendicularly with respect to said longitudinal axis,
said oblique wall having a front edge and a back edge curvately formed and spaced apart from one another by a distance determined by the thickness of said side wall and the angle of inclination of said oblique wall, and
a flat top surface formed on said baffle and disposed in coplanar relation with said oblique wall for directing fluid from said inlet towards said front edge of said aperture and terminating at a front edge disposed in spaced relation with said oblique wall to form an opening therebetween,
thereby overcoming pressure build-up and collapse of oscillations at said front edge and sustaining an ultrasonic sound wave.

3,157,154
SPIN BALL PRESSURE INTERRUPTER
Lowell A. Moe, St. Paul, and Richard E. Warren, Minneapolis, Minn., assignors to F. H. Peavey and Company, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 13, 1962, Ser. No. 236,859
8 Claims. (Cl. 116—137)



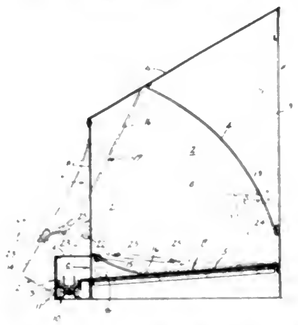
1. A system for producing ultrasonic sound waves having a constantly varying frequency comprising, in combination,
a source of pressurized fluid,
a fluid operated tubular resonator,
said resonator adapted to produce ultrasonic sound waves having a frequency varying with the pressure of the operating fluid,
a fluid pressure interrupter,
said interrupter comprising a substantially cylindrical side wall and a pair of end walls forming a chamber,
said side wall having an inlet port and an outlet port formed therein and opening into said chamber,
a substantially spherical fluid actuated ball carried within said chamber and rotatable therein to pass over said outlet port, and
connecting means to connect said source and said inlet port and said outlet port and said resonator,
whereby said fluid traveling from said source through said interrupter will rotate said ball over said outlet port thereby reducing the pressure of said fluid at said resonator.

3,157,155
POULTRY LOADER AND TRANSPORT ENCLOSURE
Leo Duntley, 11031 Aqua Vista, North Hollywood, Calif.
Filed Mar. 14, 1962, Ser. No. 179,544
3 Claims. (Cl. 119—19)



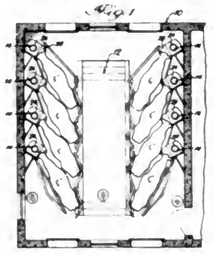
1. A poultry transporting device comprising, in combination: a vertically extending enclosure consisting of a rectangular skeleton framework covered by a screen material, said screen material having an access door in a lower side portion of said enclosure; an upper shelf and one or more underlying shelves disposed within said enclosure; adjustable support means for selectively positioning said upper shelf in a plurality of predetermined positions between an uppermost position a predetermined distance from the top of said enclosure and a lowermost position in which said upper shelf is proximate the lower edge of said access door; and, flexible means suspending each of said underlying shelves from the shelf above it when said upper shelf is in said uppermost position with the lowermost of said shelves being proximate the lower edge of said access door.

3,157,156
AUTOMATED POULTRY EJECTING EGG NEST
Seymour Peterson and John W. Granath, Dassel, Minn., assignors to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota
Filed Mar. 12, 1963, Ser. No. 264,655
5 Claims. (Cl. 119—45)



1. In a poultry nest having side and rear closure means and a nest-forming bottom which jointly define a nesting chamber having an open front,
(*a*) a combination sweep-barrier element,
(*b*) means pivotally mounting the forward end portion of said element for pivotal swinging movements of said element from a generally horizontal position wherein a portion thereof closely overlies said bottom to a generally upright tilted position adjacent said open front wherein it constitutes a barrier to said chamber,
(*c*) said sweep-barrier element having aperture means therein which readily permits passage of poultry eggs therethrough but which definitely prevents passage therethrough of egg laying poultry.

3,157,157
METHOD AND APPARATUS FOR DISPENSING FEED TO LIVESTOCK
Joseph B. Clay and Clarence E. T. Letson, Cedar Falls, Iowa, assignors to Clay Equipment Corporation, Cedar Falls, Iowa, a corporation of Iowa
Filed Nov. 20, 1961, Ser. No. 153,305
19 Claims. (Cl. 119—51.11)



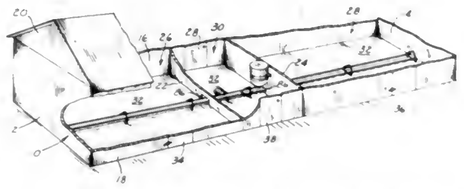
1. A cow feeding system for use with a cow-milking system wherein a plurality of cows are disposed in closely adjacent relationship and are milked substantially simultaneously during a pre-selected milking period; said cow feeding system comprising, in combination, means providing a separate feed box for each cow; and dispensing

means operatively associated with each feed box for dispensing a predetermined basic feed ration to each feed box during the entire milking period in sub-portion of the feed ration and timed actuator means operatively associated with said dispensing means for automatically actuating said dispensing means at sub-intervals of the milking period.

3,157,158
AUTOMATIC FEEDING MECHANISM FOR LIVESTOCK AND POULTRY

Freeda Roth Greenan, 403 S. Main, Hope, Ark., assignor of one-half to J. W. Fulton, Jr., Shreveport, La.

Filed Oct. 18, 1962, Ser. No. 231,369
4 Claims. (Cl. 119—51.11)

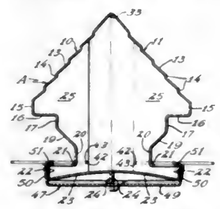


3. In a feeding mechanism for livestock and poultry,
a track structure,
a power means, said means including a reversible electric motor,
a power control means,
a trough movably supported on said track structure,
connecting means operatively connecting said trough and said power means, when attached, can move said trough on said track structure,
a feed supply hopper with a closable opening mounted over said trough,
said control means including a solenoid operatively connected to a closure gate on said hopper adjacent said opening; said solenoid being connected to a positive side of a source of electrical energy and connected to first and second timing elements which are parallel connected; said first and second timing elements being operatively connected to said reversible motor, said reversible motor being operatively connected to the negative side of a source of electrical energy,
said motor being operatively connected to said trough, said solenoid normally holding said closure gate in a closed position whereby said solenoid will open said gate when said motor is energized.

3,157,159
BIRD FEEDERS

George Howard Koistinen, Sioux Falls, S. Dak., and Lowell J. Schreiber, Breckenridge, Minn., assignors to Washburn Enterprises, Inc., Hartford, S. Dak., a corporation of South Dakota

Filed May 23, 1962, Ser. No. 197,058
10 Claims. (Cl. 119—52)

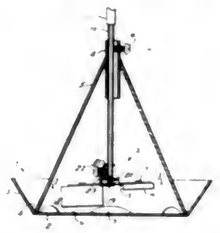


1. A bird feeder comprising a pair of similar hollow sections flexibly connected together along a hinge line, said sections terminating in edge abutting relation and including peripheral flanges extending about the abutting edges thereof, said flanges being in face contact and secured together, said sections having detachable areas defining openings therethrough adapted to provide access to the interior thereof, and perch means on said sections for supporting a bird adjacent to an opening thus formed.

3,157,160
AUTOMATIC CHICK WATERER

Richard W. Osier, R.F.D. 4, Waldoboro, Maine

Filed Dec. 30, 1963, Ser. No. 334,464
3 Claims. (Cl. 119—79)

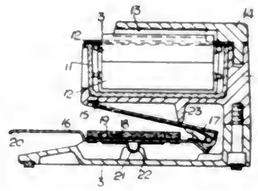


1. An automatic waterer comprising a shallow horizontal pan having a flat bottom and an upstanding peripheral rim, an upwardly extending cover inwardly tapered to an upper apex and having a base seated within the rim of the pan and retained by a bead with apertures at said base permitting water to pass therethrough from inside to outside of the cover, the apex having a vertically-extending pipe therein, a rigid water supply conduit adjustably contained in said pipe and extending substantially vertically down through the cover apex toward the bottom of the cover adjacent the pan and having an open lower end, and a water throttling and shut-off valve attached to the lower end of said conduit; said valve comprising a substantially horizontal straight member pivotally attached at one side of and spaced slightly below and transversely of the conduit lower end, a resilient valve seat on said member directly below said open lower end of the conduit, and a float on the end of said member on the other side of the conduit from the pivotal attachment.

3,157,161
ENVELOPE-SEALING APPARATUS

Harry Edward Lawes, Birmingham, England, assignor to M. Myers & Son Limited, Oldbury, near Birmingham, England

Filed May 17, 1963, Ser. No. 281,191
Claims priority, application Great Britain, May 21, 1962, 19,406/62
2 Claims. (Cl. 120—6)

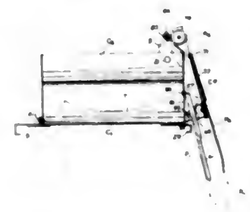


1. Envelope-sealing apparatus comprising a body having a receptacle for water, roller feed means mounted in said receptacle and adapted in use to transfer water from said receptacle to the gummed flap of a sealable envelope, a pair of substantially rigid clamping members arranged one above the other and mounted in a recess in said body beneath said receptacle, means pivotally connecting said clamping members together and means mounting the lower clamping member for pivotal movement relative to the body about an axis parallel to the axis of the pivotal connection between the two clamping members, an extension carried by said lower clamping member projecting laterally from the body and engageable in use by the hand of an operator, resilient means for urging said clamping members towards a relatively open position in which they provide a gap therebetween into which an envelope to be sealed can be inserted, and an abutment on the body extending into the recess engageable by the upper face of the upper clamping member whereby pivotal movement of said lower clamping member relative to the body effected by downward pressure on said extension will result in said upper clamping member engaging said abutment to move the upper clamping member downwardly towards the lower clamping member so that an envelope inserted into the gap therebetween will be gripped to effect adhesion of the previously wetted gummed flap to the rest of the envelope.

3,157,162
TAPE FOLDING ACCESSORY FOR TAPE PRINTING MACHINE

Glenn R. Millard, 2201 SW. Palatine, Portland, Oreg.

Filed Feb. 14, 1963, Ser. No. 258,506
2 Claims. (Cl. 120—32)

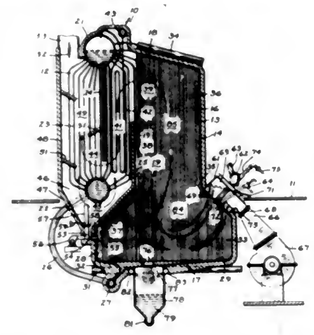


1. A tape folding accessory for handling prefolded tape to be printed by a printing machine, said accessory comprising
an upper tape container,
a lower tape container for containing a supply of prefolded tape to be withdrawn from said lower container and fed past a printing machine and then fed to said upper container,
guide means for guiding the prefolded tape during the just-mentioned travel,
said guide means including a rear guide plate associated with the lower container and extending downwardly therefrom and adapted to receive tape from said lower container and to guide the tape downwardly from said lower container to a roller on said printing machine, and a front guide plate associated with said upper container and extending downwardly therefrom and adapted to receive tape from the just mentioned roller and to guide tape upwardly toward the upper container,
said rear guide plate including upstanding lateral guide portions to engage the side edges of said prefolded tape leaving the lower container to guide the same,
the lower portions of said guide portions being curled inwardly to provide opposed channels to receive the side margins of said prefolded tape after the tape has left the upper portions of said guide portions,
and spring means for engaging said tape and pressing the same against said rear guide plate to flatten the creased portions thereof for ready entry into said channels.

3,157,163
STEAM GENERATING UNIT

Max H. Kuhner, Oakham, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Oct. 19, 1961, Ser. No. 146,123
4 Claims. (Cl. 122—235)



1. A steam generating unit, comprising a boiler having a steam-and-water drum, a furnace having front, rear, side, roof, and bottom walls defining a combustion chamber, a header parallel to the said drum underlying the floor wall of the chamber, water-wall tubes extending from the header over the floor wall, over the front wall, and along the roof wall to the steam-and-water drum, water-wall tubes extending from the header over the rear wall to the drum, the front wall having a downwardly-facing inclined portion adjacent the floor wall, the rear wall having a downwardly-facing inclined portion adjacent the floor wall, a rear housing wall defining with the said rear wall a back pass enclosing the said heat exchanger, the lower part of the said rear housing wall being inclined to the vertical and lying in opposition to the said inclined portion forming a V-shaped ash hopper which underlies the drum, the said inclined portions serving to define a high-temperature lower combustion chamber with the floor wall, the inclined portions of the front and rear walls extending toward one another, these walls having vertical portions extending upwardly from the upper parts of the inclined portions to provide a relatively narrow upper combustion chamber, a gas off-take through the rear wall adjacent the roof wall, a convection heat exchanger section connected to and underlying the said drum, the said section lying adjacent the vertical portion of the rear wall and lying over the said inclined portion, and at least one burner mounted on the said inclined surface of the front wall.

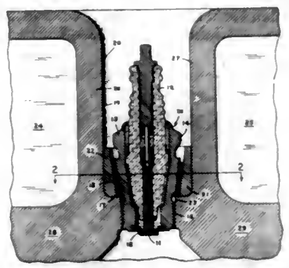
3,157,164
INTERNAL COMBUSTION ENGINE SPARK PLUG ASSEMBLY

Derek Woollatt, Buffalo, and Richard W. Szulewski, West Seneca, N.Y., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Sept. 20, 1963, Ser. No. 310,252
6 Claims. (Cl. 123—41.32)

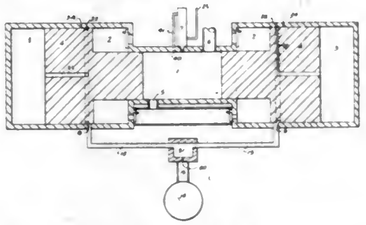
1. In a spark plug assembly for water jacketed internal combustion engines having at least one plug tube extending through said water jacket, said plug tube being connected by a combustion chamber opening with a combustion chamber, and a spark plug having an inner end positioned within said opening, the combination therewith of means positioned axially outwardly from said inner end for providing a continuous, metallic heat flux path between said spark plug and said plug tube, said means including a first frusto-conical surface on said spark plug tapering inwardly towards said inner end,

an adapter sleeve tightly engaging said plug tube radially outwardly of said first surface, and a second frustoconical surface on an inner wall of said adapter sleeve,



said second surface tapering inwardly toward said inner end of said spark plug, the taper of first and second surfaces being similar.

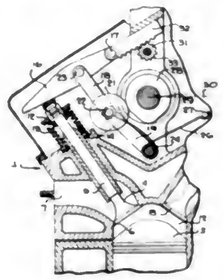
3,157,165
FREE PISTON ENGINE
Harold Kosoff, 1203 Hale St., Philadelphia, Pa.
Original application Mar. 9, 1961, Ser. No. 105,527. Divided and this application Apr. 18, 1963, Ser. No. 274,388
3 Claims. (Cl. 123—46)



1. A free piston engine comprising:
(*a*) a plurality of cylinders,
(*b*) a corresponding plurality of pistons arranged for reciprocating axial movement in said cylinders, said pistons each having a circumferential groove and also having a passageway, communicating therewith, said passageway opening into the respective rebounce chambers formed by the outer faces of said pistons and said cylinders,
(*c*) at least one opening in each cylinder wall located so as to communicate with said groove approximately at the end of the outward stroke of each piston,
(*d*) a source of gas under pressure coupled to each opening and arranged to apply said gas to said chamber when and to the extent said piston grooves communicate with said openings, and
(*e*) at least one vent in each cylinder to permit escape of said pressurized gas to a fluid receiver external to said cylinders.

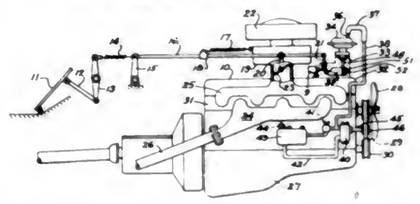
3,157,166
VARIABLE DWELL AND LIFT MECHANISM FOR VALVES
John H. MacNeill, Indialantic, Fla., assignor to Soroban Engineering, Inc., Melbourne, Fla., a corporation of Florida
Filed July 30, 1962, Ser. No. 213,174
9 Claims. (Cl. 123—90)

1. A variable dwell and lift mechanism for valves comprising a valve, a valve stem, a valve seat, means for biasing said valve into engagement with said valve seat, a valve actuator for engaging said valve stem and moving said valve relative to said valve seat, a toggle comprising a pair of links pivotally connected together at one end of each, the other end of a link of said pair of links being pivoted about a pivot point on said valve actuator, the other end of another of said pair of links being pivoted



about a pivot point remote from said actuator means, means for selectively moving one of said pivot points to alter the angle between said links and means for periodically reciprocating the point of pivotal connection between said links to alter the angle between said links so as to vary the length of said toggle and reciprocate said valve actuator.

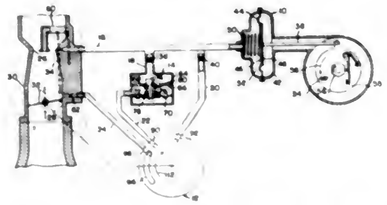
3,157,167
VARIABLE MAXIMUM THROTTLE POSITION FOR ENGINE
Brooks Walker and Fred V. Hall, both of 1280 Columbus Ave., San Francisco 11, Calif.
Filed Feb. 13, 1961, Ser. No. 88,867
4 Claims. (Cl. 123—103)



3. An engine throttle system comprising
a carburetor having a throttle valve,
first lever means connected to and controlling opening and closure of said valve,
damping means connected to said lever means,
second lever means pivotally connected at one end to said first lever means and having a second end and a stationary pivot between said ends,
stop means having a cammed surface adapted to be engaged by said second end to prevent further swinging of said second lever means and therefore preventing further movement of said first lever means tending to open said throttle valve, thereby controlling the maximum opening of said throttle valve,
a diaphragm to which said stop means is connected for movement therewith and consequent changing of the portion of said cammed surface engaged by said second end and therefore changing the maximum opening of said throttle valve,
biasing means exerting pressure on said diaphragm normally tending to move said cammed surface to a position where it permits only a minimum opening of said throttle valve,
positive displacement pump means driven by said engine in direct linear proportion to its speed,

a source of hydraulic liquid connected through said pump means to the opposite side of said diaphragm from said stop means for overcoming said biasing means by hydraulic pressure that increases with the increase in engine speed, so that the higher the engine speed, the greater the throttle opening permitted by said stop means, and
said porous media restriction means connected to conduit means for returning liquid from said pump to said source and thereby to govern the pressure thereof acting on said diaphragm so that said pressure is in substantially direct linear proportion to engine speed.

3,157,168
SPARK CONTROL VALVE FOR IGNITION DISTRIBUTORS
Melvin F. Sterner, Bloomfield Hills, and Kalin S. Johnson, Northville, Mich., and Fred S. Kerr, Reading, Mass., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Jan. 18, 1961, Ser. No. 83,441
15 Claims. (Cl. 123—117)



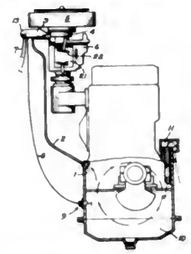
5. Spark timing control apparatus for an internal combustion engine which engine includes an air induction passage including a venturi providing a source of venturi vacuum, an engine manifold providing a source of manifold vacuum and a throttle valve in the air induction passage, comprising vacuum actuated spark advance mechanism, first means including a first restricted passage having a spark valve and a separate throttle actuated valve connected in series therein for connecting said spark advance mechanism to the source of manifold vacuum, second means including a second restricted passage between said spark advance mechanism and source of venturi vacuum for bleeding off a portion of said manifold vacuum and for connecting said spark advance mechanism to said source of venturi vacuum, and third means including a third restricted passage between said spark advance mechanism and the source of manifold vacuum distinct from said first means for bleeding off a portion of said venturi vacuum.

ERRATUM

For Class 123—119 see:
Patent No. 3,157,467

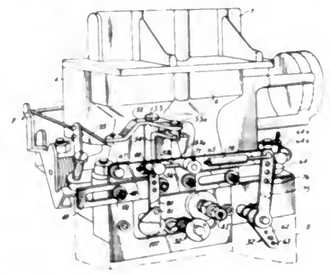
3,157,169
VACUUM CONTROL FOR CRANKCASE VENTILATION
Robert Drysdale, 22240 Prospect St., Hayward, Calif.
Filed Feb. 19, 1962, Ser. No. 174,044
4 Claims. (Cl. 123—119)

1. In combination with an internal combustion engine having a crankcase through which fumes and oil vapors circulate, a ventilating system for the crankcase to effect channeling of the fumes and oil vapors into the combustion chambers of the engine comprising a passageway including a conduit connected between the interior of the crankcase and the combustion chambers of the engine, means interposed in said passageway to draw fumes and oil vapors from the crankcase and impel them into the combustion chambers, and control means operatively associated with the crankcase and said impelling means in-



terposed in the passageway to increase or decrease the force with which said fumes and vapors are impelled into the combustion chambers of the engine in correlation to varying pressure conditions within the crankcase.

3,157,170
CARBURETORS
James S. Reid, Hudson, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 13, 1962, Ser. No. 187,234
16 Claims. (Cl. 123—119)

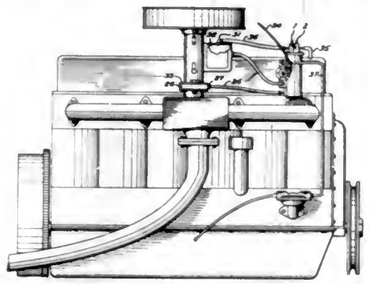


1. In a carburetor assembly having a body provided with a carbureting barrel for connection to the intake of an internal combustion engine and to which are directed primary valve means in said barrel actuatable between idle and accelerating positions for regulating the flow of carbureted fuel to said engine intake, means defining a carbureting chamber between said primary valve means and said engine intake, means for supplying a secondary source of fuel and air to said chamber, sensing means connected between said secondary valve means and said engine intake being responsive to a change in the vacuum conditions in the latter upon initiating the deceleration of said engine by returning said primary valve means to idle position effective to actuate said secondary valve means to an off position so as to disconnect said secondary fuel source from said chamber.

3,157,171
GASOLINE ECONOMIZER
Chester F. Smith, Breslau, Ontario, Canada (R.R. 3, Guelph, Ontario, Canada)
Filed Jan. 31, 1963, Ser. No. 255,737
6 Claims. (Cl. 123—119)

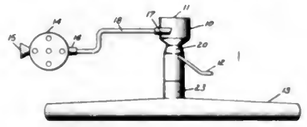
1. In combination, an apparatus or device for internal combustion engines and a new and improved fuel supply system therefor comprising a mixing chamber mixing in two stages crank case vapors and fumes with gasoline vapors from the carburetor, a crank case vapor collecting tube, a tube for collecting gasoline vapors from the

carburetor, adjustable valves to control intake of crank case vapors and gasoline fumes respectively and independently, a filter chamber comprising fine filter material



therein, a sealed mixing chamber and an outlet nipple and tube to conduct highly combustible vapors into an adaptor plate contining an intake nipple and outlet nozzle to discharge mixture into manifold of engine.

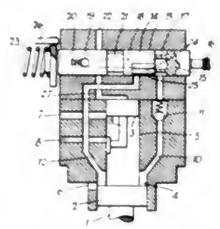
3,157,172
OZONIZING MEANS IN COMBUSTION ENGINES
Georg S. Mittelstaedt, 274 73rd St., Brooklyn, N.Y.
Filed May 16, 1963, Ser. No. 280,911
15 Claims. (Cl. 123—119)



1. In a multicylinder combustion engine having an intake line, a combustion zone, an exhaust line, and an ignition system including a distributor which comprises a base, a driveshaft, a breaker cam on the driveshaft operating a primary-circuit breaker, a condenser, a rotor mounted on the driveshaft over the breaker cam, a cap disposed on the distributor base, a series of high-tension terminals in the cap placed in a circle around a central high-tension terminal, a metal segment in the rotor arm sweeping past the outer high-tension terminals, and means connecting said segment to the center high-tension terminal, an air inlet and an outlet in the distributor, a connecting tube leading from said outlet to the exhaust line of the engine, and means producing flow through said inlet into the distributor, through said outlet out of the distributor, and through the connecting tube into the exhaust line of the combustion engine.

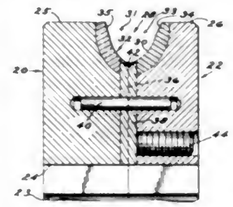
3,157,173
FUEL INJECTION PUMPS
Laurence Frederic Martyn, Walton-on-Thames, and Michael Pole, Southall, England, assignors to Mono-Cam Limited, London, England, a company of Great Britain
Filed June 29, 1962, Ser. No. 206,436
Claims priority, application Great Britain, June 29, 1961, 23,570
7 Claims. (Cl. 123—140)

1. A fuel injection pump for an internal combustion engine comprising a housing, a cylinder within said housing, a piston reciprocable within said cylinder by said engine to form a pumping assembly having a pumping stroke of the piston during at least a part of which fuel is injected into an engine cylinder and a suction stroke during which no fuel is injected to said engine cylinder, an enlargement of said pumping cylinder providing an auxiliary cylinder, an enlargement of said piston reciprocable in said auxiliary cylinder by said engine, a first fuel inlet passage opening into said pumping cylinder at a location blanked-off by said pumping piston during a pumping stroke to define the commencement of the period of injection of fuel to said engine cylinder and opening to the exterior of said housing for connection to a low pressure fuel supply, a second fuel inlet passage opening into said auxiliary cylinder at a location blanked-off by said auxilairy piston during a pumping stroke to generate a fuel pressure in said auxiliary cylinder as a function of engine speed and opening to the exterior of said housing for connection to said low pressure fuel supply, a governor sleeve in said housing, a first pressure transmitting passage extending between said auxiliary cylinder and said sleeve to transmit said generated fuel pressure to said sleeve, a non-return valve in said first pressure transmitting passage to prevent escape of said generated fuel pressure from said sleeve through said first pressure transmitting passage to said auxiliary cylinder during a suction stroke of said pumping piston, a second pressure transmitting passage extending from said sleeve to said auxiliary cylinder to permit the escape of said generated fuel pressure from said sleeve during the period of time between the end of a pumping stroke of said pumping piston and the commencement of the next succeeding pumping stroke of said pumping piston, a first restriction associated with said second pressure transmitting passage to control the escape of said generated fuel pressure from said sleeve



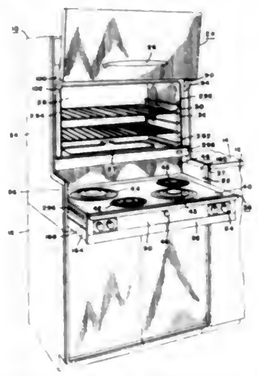
during said period of time whereby the fuel pressure in said sleeve at the commencement of the next succeeding pumping stroke of said pumping piston is a function of said period of time, a third pressure transmitting passage opening to said sleeve, a fourth pressure transmitting passage extending from said pumping cylinder and opening to the interior of said sleeve at a first location, a fifth passage communicating with the exterior of said housing and opening to the interior of said sleeve, a governor valve body displaceable in said sleeve away from an end position under the influence of said generated fuel pressure and operable to place said fourth and fifth passages in communication with each other upon displacement beyond a first predetermined distance from said end position to terminate injection and to place said third passage in communication with the exterior of said housing upon displacement beyond a second predetermined distance from said end position to permit escape of said generated fuel pressure, said second predetermined distance being greater than said first predetermined distance, a second restriction associated with said third passage to restrict the escape of said generated fuel pressure through said third passage and spring means opposing displacement of said valve body from said one end position and operable to move said valve body during said period of time to a starting position at the commencement of said next succeeding pumping stroke which starting position is a function of said period of time.

3,157,174
MULTIPLE SECTION CUTTING TOOL
Harold Lewis Emery, Warren, Mich., assignor to Koebel Diamond Tool Co., a corporation of Michigan
Filed May 31, 1962, Ser. No. 198,910
7 Claims. (Cl. 125—11)



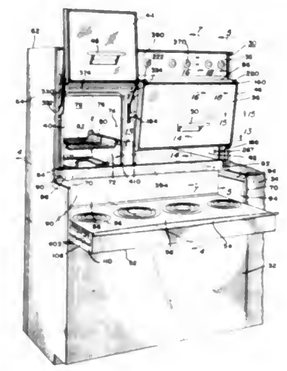
1. A rotary cutting tool of the type adapted to be mounted for rotation on an axis comprising a body composed of at least a pair of sections each having a circumferential surface formed about said axis with cutting means mounted thereon, means for detachably securing said sections together in end-to-end axially aligned relation whereby said cutting means may be individually formed, reformed and axially repositioned relative to each other as necessary during the life of the tool, an insert member having a cutting element mounted thereon, and means detachably securing said insert member to the tool body with said cutting element bridging the parting line between said body sections and forming a portion of the cutting means thereof.

3,157,175
DOMESTIC COOKING APPLIANCE
George C. Pearce, Dayton, Jesse L. Evans, Tipp City, Millard E. Fry, Dayton, and Frank L. Milburn, Bellbrook, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 19,081
18 Claims. (Cl. 126—37)



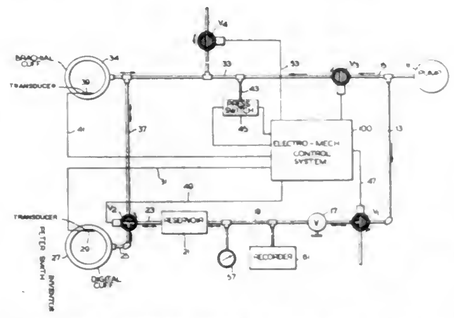
14. In combination, a range comprising, casing means defining an upper control compartment, an intermediate oven compartment and a lower compartment, said control compartment having a control panel spaced along one edge from said casing means to form an exhaust outlet from said control compartment, oven liner means in said oven compartment having an opening and spaced from said casing means along one side thereof to form a vent passage between said lower compartment and said control compartment, a door for closing said opening, means interconnecting said door and said casing means and extending through said vent passage for supporting said door between open and closed positions, means for heating in said oven liner means, means on said control panel remote from said exhaust outlet for controlling said heating means, drawer means slidably movable from a position within said lower compartment to a position outside of said lower compartment, and means including said drawer means defining an outside air inlet interconnecting said lower compartment with the atmosphere below said vent passage whereby an upsweep of air from said outside air inlet through said lower compartment, said vent passage, said control compartment and said exhaust outlet prevents portions of said casing means adjacent said oven liner means from overheating.

3,157,176
COOKING RANGE
George C. Pearce, Dayton, Jesse L. Evans, Tipp City, Millard E. Fry, Dayton, and Frank L. Milburn, Bellbrook, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 19,082
28 Claims. (Cl. 126—37)



8. In combination, a range adapted for installation in a countertop and comprising, a casing defining an upper control compartment having a front panel, an oven compartment and a surface cooking unit compartment, said oven compartment having a front opening below said front panel, a door having a first vertically disposed position for closing said opening and a second generally vertically disposed position above said first position and spaced in front of said front panel for exposing said opening, a surface cooking unit drawer for supporting a surface cooking unit and slidably movable from a position within said surface cooking unit compartment to a position outside of said surface cooking unit compartment, said surface cooking unit moving along a path in vertical alignment wtih said door and closely adjacent the bottom of said front opening, a cover interconnected with said drawer for simultaneous oppositely directed glideable movement, said cover having front and top walls for concealing said surface cooking unit when said drawer is in said position within said cooking unit compartment and for defining a coplanar surface with said countertop, and said cover exposing said surface cooking unit when said drawer is in said position outside of said surface cooking unit compartment, whereby said front wall forms a back splash for said surface cooking unit, said casing having a horizontal channel opening into said surface cooking unit compartment, and said cover having a pair of spaced rollers extending into said channel for supporting said cover.

3,157,177
SYSTOLIC DIASTOLIC BLOOD PRESSURE FOLLOWER
Peter Smith, Glendola, N.J., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Feb. 7, 1963, Ser. No. 257,014
14 Claims. (Cl. 128—2.05)



1. A systolic-diastolic blood pressure system comprising

a digital transducer,

a first inflatable cuff surrounding said digital transducer,

a brachial transducer,

a second inflatable cuff surrounding said brachial transducer,

a pneumatic pressure supply,

a first conduit connected between said first cuff and said pneumatic pressure supply,

a first two position solenoid valve in said first conduit, said valve supplying pressure to said first cuff when actuated and venting said first cuff to atmosphere when nonactuated,

a second two-position solenoid valve in said first conduit between said first valve and said first cuff,

a second conduit connected between said second valve and said second cuff, said second valve supplying pneumatic pressure to said second cuff when actuated and to said first cuff when nonactuated,

first electromechanical control means coupled between said first transducer and said first valve for actuating said first valve in response to signal outputs from said first transducer,

second electromechanical control means for actuating said second valve at predetermined intervals,

a third conduit interconnecting said second cuff and said pressure supply,

a third two-position solenoid valve in said third conduit, said third valve inflating said second cuff when in its actuated position,

means coupling said third valve to said second electromechanical control means for control thereof, said second electromechanical control means including a timer for temporarily actuating said second and third valves substantially simultaneously,

a pressure switch means connected in said third conduit and coupled to said second electromechanical control means for deactuating said third valve when the pressure in said second cuff reaches a predetermined amount,

means coupling said second transducer to said second electromechanical control means for maintaining said second valve in its actuated position during the period of signal outputs from said second transducer independent of said timer, said second valve returning to its nonactuated position at the cessation of signals from said second transducer,

means for detecting the pressure in said cuffs, and

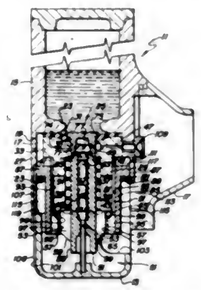
means for indicating the signal outputs of said transducers.

3,157,178
DRESSING
Itzhak Bentov, Belmont, Mass., assignor to Oneida, Ltd., Oneida, N.Y., a corporation of New York
Filed Dec. 14, 1961, Ser. No. 159,391
2 Claims. (Cl. 128—156)



1. A dressing comprising a body of elastic skeletonized plastic foam, the portion of the body for positioning adjacent a wound area being compressed to provide a shined surface for contact with a wound, said portion being only a small proportion of the thickness of said body, and a pair of members for attaching the dressing, said members being secured to the body respectively adjacent opposite ends of the body and being spaced apart from each other.

3,157,179
AEROSOL DEVICE
Clarence L. Paullus and William M. Allen, Columbus, Ohio, assignors, by mesne assignments, to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed Aug. 31, 1962, Ser. No. 220,599
19 Claims. (Cl. 128—211)



6. Apparatus for dispensing predetermined amounts of pressurized fluid and the like from a container containing said fluid and having an opening therein, said apparatus comprising:

(*a*) a seal around said opening in the container;

(*b*) a mouthpiece attached to the container;

(*c*) a valve body having a central bore and a communication passage from said central bore to said mouthpiece;

(*d*) a movable plunger positioned in said central bore and passing through said seal;

(*e*) a chamber within said plunger;

(*f*) an orifice from said chamber to the exterior surface of said plunger, said plunger being movable from a first position, where said orifice communicates with said communication passage, to a second position, where said orifice communicates with said container to isolate a predetermined amount of pressurized fluid from said container, and said plunger being movable back to said first position to release the pressurized fluid through said communication passage to said mouthpiece; and

(*g*) means, activated by the reduction in pressure in said mouthpiece resulting from the user's breath in-

take at said mouthpiece, for moving said plunger from said second position to said first position.

12. In an aerosol container and spray device for use in dispensing small measured amounts of the contents of the aerosol container, said device including:

(*a*) a container having an open end and including a propellant in the contents of said container;

(*b*) a generally cylindrical metering plunger, said metering plunger being movable axially toward and away from the interior of said container between a depressed position and an extended position relative to said container, the movement of said metering plunger from extended position to depressed position being against a restoring force provided by the propellant pressure of the contents of the container and any spring which may be provided tending to urge said metering plunger toward extended position;

(*c*) a gasket closing off said container near its open end, said gasket having an opening therein which fits around the exterior sidewall of the metering plunger and provides a seal thereat;

(*d*) a metering chamber in said metering plunger;

(*e*) an orifice communicating between said metering chamber and the sidewall of said metering plunger, said orifice being positioned axially on said metering plunger so that it is on the container side of said gasket when said metering plunger is in said depressed position and so that said orifice is on the exterior side of said gasket when said metering plunger is in said extended position; and

(*f*) operating means serving to move said metering plunger from extended position to depressed position at the start of a dispensing cycle to effect the filling of the metering chamber with the measured amount of the contents of the container, said operating means thereafter enabling said metering plunger to move, in response to said restoring force, from depressed position to extended position to effect the discharge of the contents of the metering chamber through said orifice;

the improvement wherein said operating means also includes mechanism, effective upon the initial operation of said operating means, to remove substantially all the air from said metering chamber before the metering plunger moves sufficiently to move said orifice from the exterior side of said gasket, and thereupon to prevent the inflow of air into said metering chamber while the metering plunger is moved to the depressed position, said mechanism, after said metering plunger is moved to the depressed position, operating to admit to the metering chamber sufficient of the contents of the aerosol container to fill the metering chamber, before the operating means renders the restoring force effective to move the metering plunger into the extended position.

17. In an aerosol container and spray device for use in dispensing small measured amounts of the contents of the aerosol container, said device including:

(*a*) a container having an open end and including a propellant in the contents of said container;

(*b*) a generally cylindrical metering plunger. said metering plunger being movable axially toward and away from the interior of said container between a depressed position and an extended position relative to said container, the movement of said metering plunger from extended position to depressed position being against a restoring force provided by the propellant pressure of the contents of the container and any spring which may be provided tending to urge said metering plunger toward extended position;

(*c*) a gasket closing off said container near its open end, said gasket having an opening therein which fits around the exterior sidewall of the metering plunger and provides a seal thereat;

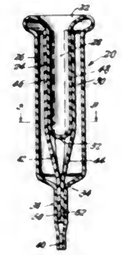
(*d*) a metering chamber in said metering plunger;

(*e*) an orifice communicating between said metering chamber and the sidewall of said metering plunger, said orifice being positioned axially on said metering plunger so that it is on the container side of said gasket when said metering plunger is in said depressed position and so that said orifice is on the exterior side of said gasket when said metering plunger is in said extended position; and

(*f*) operating means serving to move said metering plunger from extended position to depressed position at the start of a dispensing cycle to effect the filling of the metering chamber with the measured amount of the contents of the container, said operating means thereafter enabling said metering plunger to move, in response to said restoring force, from depressed position to extended position to effect the discharge of the contents of the metering chamber through said orifice;

the improvement wherein said operating means includes latch means for securing said metering plunger in the depressed position, and also includes release means, independently operable after the operating means has moved said metering plunger to the depressed position, for releasing said latch means and thereby enabling said metering plunger to move, in response to said restoring force, from the depressed position to the extended position to effect the discharge of the contents of the metering chamber through said orifice.

3,157,180
CATAMENIAL RECEPTACLE
Maurice I. Bakunin, 881 Lafayette St., Bridgeport, Conn.
Filed Apr. 3, 1962, Ser. No. 184,746
12 Claims. (Cl. 128—285)



1. An inflatable, flexible and resilient catamenial receptacle adapted to be inserted and retained in the vaginal cavity, comprising in combination:

(*a*) an elongate double-walled tubular body having an open mouth portion,

(*b*) the sides of said body being hollow and comprising spaced thin double walls,

(*c*) each of said thin walls comprising a vessel of elongate tubular configuration, each of said vessels having an end closure wall wholly comprising a reduced-diameter portion of the vessel,

(*d*) one vessel being disposed within the other, the inner vessel having a size sufficiently large to store a proportionately large quantity of liquid discharge,

(*e*) one pair of corresponding annular ends of the vessels being joined in sealing relation to constitute the double-walled mouth of the body,

(*f*) the inner vessel extending into the outer vessel for a distance greater than its width and the end closure wall of the inner vessel being wholly within and enclosed by the outer wall, said end closure end being continuous so as to constitute a leak-proof closure,

(*g*) the double-walled mouth of the body having a permanent outward flare for engagement with the

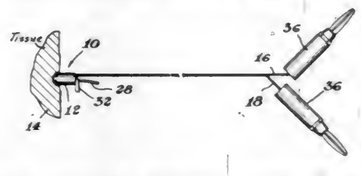
mouth of the womb and for the purpose of effecting a retention of the body in the vaginal passage,

(*h*) a pneumatic fitting connected with the outer vessel, through which air may be pumped into the body under pressure to inflate the same, said air tending to expand the flared mouth of the body and to separate the walls of the sides to increase the effective thickness of the latter,

(*i*) air check means at said fitting, for preventing egress of air from the outer vessel when the latter is inflated,

(*j*) anchorage means engaged with the inner vessel, preventing everting of the latter, said anchorage means being connected to the said outer vessel.

3,157,181
NERVE ELECTRODE APPARATUS
Leslie P. McCarty, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,763
7 Claims. (Cl. 128—404)



1. Nerve electrode apparatus comprising a casing formed of a substantially hydrophobic and chemically inert and electrically insulating material, said casing having an elongated channel therethrough of a cross-sectional configuration generally the same as that of a nerve to be placed therein, said channel providing openings at opposite ends of said casing, electric contacts formed in said casing and presenting exposed surfaces in said channel, and means associated with said contacts for conducting electrical impulses thereto and therefrom.

3,157,182
BRASSIERE
Maude Constance Fridolph, 269 Crescent Bay Drive, Laguna Beach, Calif.
Filed Aug. 21, 1961, Ser. No. 132,740
7 Claims. (Cl. 128—429)



1. A brassiere comprising

a front section including a pair of spaced apart cup portions,

lower main bands of substantial width connected to the outer edge of each cup portion at least at the lower outer edge thereof,

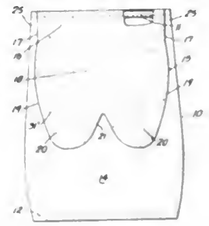
the bottom edge of each lower band extending downwardly and outwardly when in the flat and downwardly across the rib cage at an angle when on the wearer,

the outer ends of each lower band being connected together at the small of the back when on the wearer,

straps having one end connected to each cup portion at the top and connected to each lower band adjacent the outer end thereof,

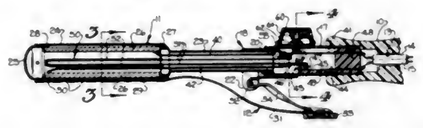
secondary upper bands extending substantially horizontally outwardly and rearwardly from an edge of each cup portion and connected to at least the outer edge of each cup portion at a point above the lowermost connections between the cup portions and the lower bands, and connected at their outer ends to said straps to provide lateral pull at the outer edges of the cup portions, and cooperating with said lower bands to insure desired support without wrinkling along the upper edge of said lower bands.

3,157,183
ALL-WAY STRETCH FABRIC GIRDLE WITH FRONT AND BACK LATEX REINFORCEMENTS
Ernest Bradd, Shawanese, Pa., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 22, 1961, Ser. No. 139,983
1 Claim. (Cl. 128—533)



An all-way stretch tubular fabric girdle of the character described having a waistband, latex reinforcing sections vulcanized on and adhered to the front and back of the girdle, both of said sections having waistband portions forming the major part of the waistband and closely spaced at sides of the girdle to form free extensible side waistband portions, the back section extending downwardly to provide a supporting area for the lower portion of the back of the wearer in the use of the girdle, said front section including a downwardly extending abdominal supporting area when the girdle is in use, the latex reinforcing sections conforming with the contour of surfaces only of the fabric to which the sections are adhered while maintaining stretch of the reinforced areas of the girdle, and a flock facing on both of said sections.

3,157,184
ELECTRIC CURLING IRON
Muriel O. Lee, 306 Pine Hill Drive, Wilmington, N.C., and Dorothy D. Kendrick, 1176 Aubra, Memphis, Tenn.
Filed Nov. 13, 1962, Ser. No. 236,832
2 Claims. (Cl. 132—37)



1. An electric curling iron for imparting curl to the hair of a user, said curling iron comprising

(*a*) a handle portion of heat insulating material adapted to be held in the hand of a user,

(*b*) an electric circuit extending into said handle portion and adapted to be connected to a source of electrical energy,

(*c*) a tubular shank portion mounted at one end in said handle portion and extending outwardly therefrom,

(*d*) an elongate, tubular hair curling portion of larger diameter than said shank portion carried by the other end of said shank portion and extending outwardly therefrom,

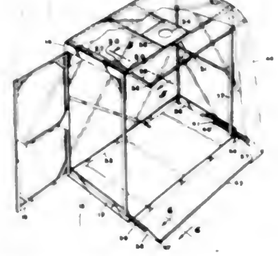
(*e*) a tubular heating element disposed only in said hair curling portion and being in good heat conducting relation thereto, said heating element extending for a major portion of the length of said hair curling portion and being connected to said electric circuit,

(*f*) switch means interposed in said electric circuit to said heating element,

(*g*) thermostatic sensing means disposed in said hair curling portion interiorly of said tubular heating element and being connected to said switch means for controlling the temperature of said heating element and thereby said hair curling portion, and

(*h*) an elongate clamping member pivotally mounted on said shank portion and having a portion extending into juxtaposed cooperating relation with said hair curling portion, asid clamping being biased about its pivot in a direction to move said portion thereof into clamping relation with said hair curling portion.

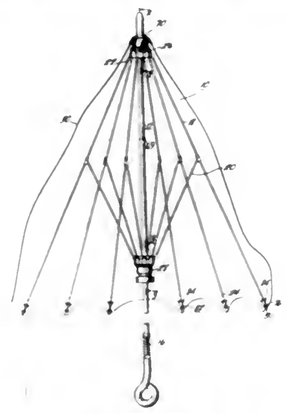
3,157,185
COLLAPSIBLE ICE SHELTER
John Schoenike, 147 8th St., Clintonville, Wis.
Filed July 21, 1961, Ser. No. 125,819
8 Claims. (Cl. 135—4)



1. In a collapsible shelter for ice fishing having a sled mounted floor section the combination of; a first frame section having the bottom edge thereof in hinged connection with one edge of the sled floor; a second frame section having one edge in hinged connection with the top edge of the said first frame section; a third frame section in hinged connection with the opposite end of the said second frame section; a lower extension means extending outwardly from one side of the sled floor and having an opening therein; top extension means coextensive with said lower extension means and extending outwardly from the said second frame section; and a flexible covering enveloping the outside of the structure aforesaid.

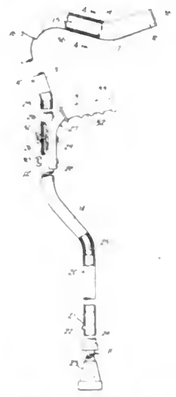
3,157,186
KNOCKDOWN UMBRELLA
Nathan Hammer, 29 Allen St., New York, N.Y.
Filed Nov. 6, 1961, Ser. No. 150,567
4 Claims. (Cl. 135—20)

4. In an umbrella comprising a shaft having a handle at one end, a first spider secured near the opposite end of said shaft, a plurality of ribs pivotally mounted in said spider, a second spider slidable on said shaft, a plurality of stretchers having one end pivotally held by said second spider and an opposite end pivotally connected to a respective rib, compression locking means for releasably securing said second spider in selected position on said shaft, comprising an end portion of said second spider extending toward said handle, said end portion being exteriorly threaded and interiorly recessed to define an annular space between said shaft and said end portion, a continuous annular member of readily deformable elastomeric material adapted to slidably fit around said shaft and into said annular space and to extend longitudinally



beyond said end portion; an annular cup-shaped nut, internally threaded to engage the external threads of said end portion and adapted when rotated in one direction to apply pressure to said annular elastomeric member in an axial direction and thereby deform said member to frictionally lock said second spider in its position until released by rotating said annular nut in the opposite direction whereupon said elastomeric member elastically resumes its original form.

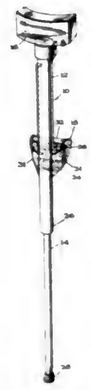
3,157,187
TUBULAR CRUTCH
Charles E. Murcott, Valley Drive, Bay Crest, Huntington, Long Island, N.Y.
Filed May 7, 1963, Ser. No. 278,631
3 Claims. (Cl. 135—49)



3. A crutch of the character defined comprising an elongated tubular body having a perpendicular straight shank, an outwardly offset upper straight end extending upwardly from said shank and terminating in an inwardly extending underarm member, an inwardly offset lower straight portion terminating in a downwardly extending lower perpendicular end disposed beneath said underarm

member, a foot element adjustably coupled with said lower end, a handgrip, means adjustably supporting the handgrip on said shank, a sleeve of cushioning material mounted on the unedrarm member, tape windings fixed to the underarm member at end portions of the sleeve for engaging and retaining said sleeve against movement and displacement on said underarm member, said underarm member intermediate said tape windings being rotatable on the tubular portion of said underarm member, said underarm member comprising an upwardly and downwardly curved outer part joining a reversely curved inner part in a straight portion, and said reversely curved inner part being arranged inwardly of said lower perpendicular end.

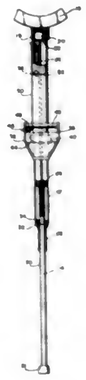
3,157,188
HYDRAULICALLY ACTUATED CRUTCH
George R. Farnham, Greenville, Tex., assignor to Far-Prit Associate, Incorporated, a corporation of Texas
Filed June 4, 1963, Ser. No. 285,476
6 Claims. (Cl. 135—50)



1. A variable length crutch comprising an upper cylinder section, a lower piston section having an upper portion telescopically received within said upper cylinder section; an arm pit rest secured to the upper extremity of said upper cylinder section; a hand hold assembly secured to said upper cylinder assembly; a hydraulic pump carried by said crutch for generating hydraulic pressure; an electrical driving motor for said pump carried by said crutch means for energizing said electrical pump driving motor conduit means for supplying said hydraulic pressure to the interior of said upper cylinder section above said piston section; and fingertip control means associated with said hand hold assembly for controlling the operation of said pump whereby the operation of said hydraulic pump may be selectively manually controlled, to supply hydraulic pressure to said upper cylinder for extending said cylinder and piston sections relative to each other under power to enable a handicapped user to be raised from a generally reclined position to a generally erect position.

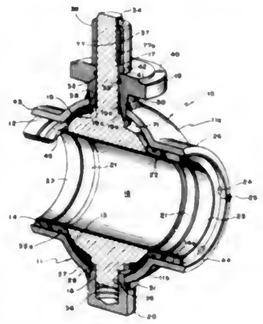
3,157,189
POWER ACTUATED CRUTCH
George R. Farnham, Greenville, Tex., assignor to Far-Prit, Associate, Incorporated, a corporation of Texas
Filed July 10, 1963, Ser. No. 293,937
8 Claims. (Cl. 135—50)

1. A variable length crutch for handicapped persons comprising an elongated body assembly having a pair of tubular load-bearing telescoping sections, an armpit rest disposed above said telescoping sections and supported thereby, hand hold means attached to one of said telescoping sections and located below said armpit rest, internal screw jack means connected between said telescoping sections for varying the length of said body assembly by causing said sections to telescope relative to



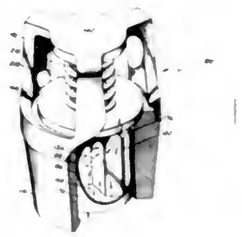
each other, electrical motive means carried by said crutch for actuating said screw jack means, and means to control the electrical motive means.

3,157,190
BALL VALVE
Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed May 26, 1960, Ser. No. 31,867
3 Claims. (Cl. 137—330)



3. A valve, comprising a valve body having a flowway extending longitudinally therethrough, a spherically shaped closure member within the valve body and having a port therethrough and stems fixed to its opposite sides, said valve body including separate parts each having a bearing thereon fitting over a stem of the closure member to mount it for rotation between flowway opening and closing positions, said body parts having longitudinal edges welded to one another along a plane passing through the axis of the flowway and perpendicular to the axis of rotation of the closure member, the inner surfaces of said body parts being curved to provide an enlarged central portion fitting relatively closely about the closure member intermediate end openings on said body parts which are smaller in diameter than the diameter of the closure member, each body part being unitary between its bearings, longitudinal edges, and its portions of the end openings, an annular seat engaged with an end of the closure member, means including a tubular member welded to the end opening in the welded body parts adjacent said end of the closure member and having an inwardly facing abutment surface thereon spaced outwardly of the enlarged central portion of the valve body, and spring means disposed between the abutment surface and an outwardly facing abutment surface on said seat for retaining the inner end of said seat in engagement with said closure member, each of the port through said closure member and the openings through said seat and tubular member having substantially the same diameter to provide a full opening passageway through the valve in its open position.

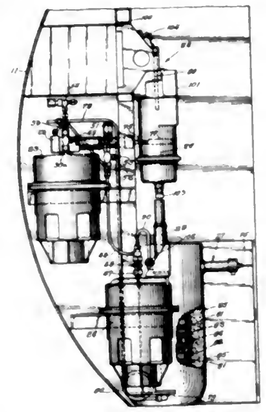
3,157,191
ROTATING CYLINDER GUIDED CHECK-VALVE ASSEMBLY
Richard H. Garrett and Gustav M. O'Kelff, Houston, Tex., assignors to Dixell Development and Manufacturing Company, Houston, Tex., a corporation of Texas
Filed Apr. 21, 1961, Ser. No. 104,722
4 Claims. (Cl. 137—332)



1. A fluid check valve comprising a tubular guide having inlet and outlet ends, the outlet end defining a valve seat, a valve head reciprocably mounted in seating relation to the guide, said head defining axial flow chambers and rotational transition flow ports communicant with the chambers of the head, said transition flow ports and flow chambers being bounded respectively by roof and vane each configured to collect at high pressure and to direct discharge at lower pressure from the flow ports, the configuration of the roof and vanes cooperating to effect rotation of the valve head during conditions of fluid flow, and restraining means urging the head into valving registry with the seat of the guide.

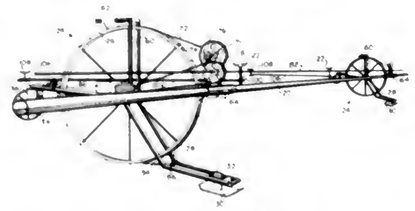
3,157,192
SPACE KITCHEN
Warren R. Hafstrom, New Carlisle, Ind., and Lester H. Hinkel, Benton Harbor, and George Boswinkle, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 27, 1961, Ser. No. 162,506
9 Claims. (Cl. 137—341)

1. A water supply system for use in space vehicles and the like, comprising: a closed storage tank; a closed heating tank; means for pumping water under pressure into said storage tank; a conduit connecting said tanks; means actuated by the pressure of water pumped into said water system for maintaining pressure in said water system and for causing water to pass from said storage tank through said conduit to said heating tank as water is



withdrawn from said heating tank; and means for selectively pumping water from said tanks.

3,157,193
IRRIGATION SYSTEM
Rufus J. Purtell, Brownfield, Tex., assignor to Robert B. Knight, J. B. Knight, and Jean Knight Jones, all doing business as J. B. Knight Company, all of Brownfield, Tex.
Filed Nov. 5, 1962, Ser. No. 236,474
21 Claims. (Cl. 137—344)

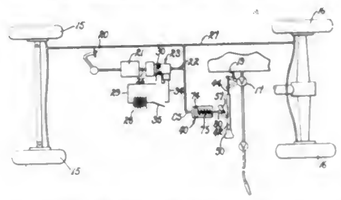


1. An irrigation system comprising:
(*a*) an elongated pipe adapted to carry water under pressure,
(*b*) said pipe resting on and supported by the ground while watering,
(*c*) a plurality of wheels,
(*d*) an arm rotatably mounted about the axis of each wheel,
(*e*) the pipe attached to each of the arms so that the axis of each wheel is parallel to the axis of the pipe,
(*f*) a frame for each wheel,
(*g*) each frame mounted for rotation about the axis of the wheel relative to both the wheel and the arm,
(*h*) an elongated shaft parallel to the pipe,
(*i*) the shaft journaled for rotation to each arm,
(*j*) a sprocket at each wheel mounted for rotation on the arm,
(*k*) means for rotating each of the sprockets responsive to rotation of the shaft,
(*l*) a chain extending around each of the wheels and sprockets to cause relative rotation between the wheel and arm responsive to rotation of the sprocket,
(*m*) a releasable lock means on each of the frame for locking frame to the wheel, and
(*n*) means on each of the arms for releasing the lock means when the arm is in a predetermined position.

3,157,194
INTERLOCK MECHANISM

Robert D. Stolte, Fresno, Calif., assignor to Gas Tools, Inc., Fresno, Calif., a corporation of California

Filed Sept. 21, 1962, Ser. No. 225,284
6 Claims. (Cl. 137—351)

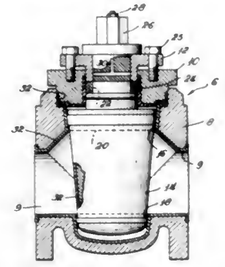


1. An interlock mechanism, between a first controllable member movable to and from first and second positions having a latch receiving segment, and a second controllable member having first and second positions, comprising first resilient means connected to and biasing said first controllable member to its first position, latch means registered with said latch receiving segment of said first controllable member, second resilient means engaging said latch means to urge the same into engagement with said latch receiving segment of the first controllable member, powered means operable incident to actuation of said second controllable member from its first to its second position, and connector means mounted on said powered means providing a lost-motion connection with said latch means to permit ratcheting of the latch means relative to said latch receiving segment during movement of said first controllable member from its first to its second position, and to retract said latch means from said latch receiving segment of the first controllable member incident to movement of said second controllable member from its second to its first position to allow said first resilient means automatically to return said first controllable member to its first position.

3,157,195
ROTARY VALVE

Donald L. McIntosh, Bay City, and William D. Waldron, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 19, 1962, Ser. No. 224,657
2 Claims. (Cl. 137—375)

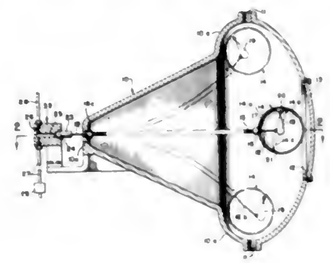


1. In a plastic lined corrosion-resistant rotary valve having a body portion with a flow passage therethrough, and a rotatable valve head therein, the improvement whereby high torque effort normally required to turn such a valve is substantially reduced, comprising at least one annular groove formed on the upper and on the lower surfaces of said valve head adjacent the area of contact with said body portion, each groove containing a snap-in ring formed of a chemically inert plastic, said rings projecting beyond the lined surface of the valve head to act as anti-friction bearing surfaces.

3,157,196
FLOAT OPERATED DEVICE

John V. Thomas, Box 2297–D, Pasadena, Calif.

Filed Aug. 7, 1961, Ser. No. 129,638
26 Claims. (Cl. 137—434)

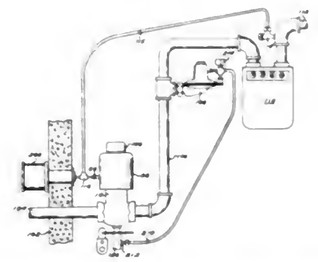


1. In combination: a hollow float, a stationary member, a flexible tube connecting the float to the stationary member, a weight member mounted to move within the interior of the float, and a mechanical element movable through the interior of the flexible tube in accordance with relative movement of the weight member and float occasioned by change in position of the float.

3,157,197
SAFETY CONTROL SYSTEM FOR FLUID DISTRIBUTION AND APPARATUS

Harold E. Handler, Jackson, Mich., assignor, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Rhode Island

Application Nov. 29, 1961, Ser. No. 155,702, which is a division of application Ser. No. 751,559, July 28, 1958, now Patent No. 3,021,866, dated Feb. 20, 1962. Divided and this application Sept. 17, 1962, Ser. No. 224,135
1 Claim. (Cl. 137—458)

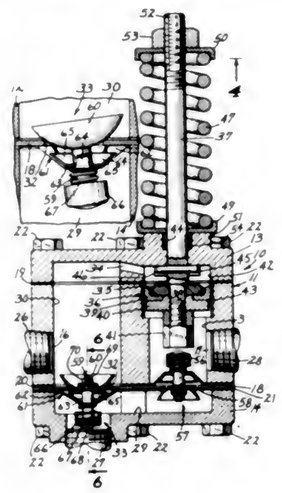


An automatic fluid flow control valve connected in a fluid line having inlet and outlet ports in communication through a valve seat and a valve element therefor normally held in open position, an automatic restrictedly vented pressure regulator downstream of said control valve, means releasing said valve element to engage said seat upon predetermined variations in the pressure of the fluid controlled, a valve element reset means associated with said valve element and operable upon manual actuation to restore the valve element to the normal open position, removable closure means enclosing said valve element reset means, by-pass regulator vent means bypassing the regulator restricting vent, and an interlock interposed between said closure and by-pass vent and effective in cooperation with said closure to close said by-pass when operative and opening said by-pass vent when rendered inoperative upon removal of said closure.

3,157,198
VALVE CONSTRUCTION

William F. Wanner, Minneapolis, Minn., assignor to Seeger-Wanner Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 31, 1962, Ser. No. 220,822
3 Claims. (Cl. 137—539)



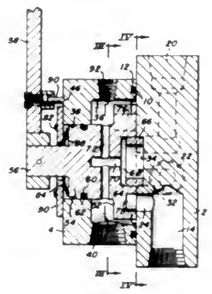
1. A check valve comprising
(*a*) a valve plate having a circular aperture therein,
(*b*) a stem extending loosely through said aperture,
(*c*) a cup-shaped valve element having a central opening for reception of a portion of said stem and having a convex wall seated in said aperture at one side of said valve plate,
(*d*) a generally conical spider including a relatively smaller diameter hub portion loosely journaling said stem, a relatively larger diameter rim portion slidably engaging the opposite side of said valve plate adjacent said circular aperture, and spokes diverging from said hub portion toward said rim portion and connecting the hub and rim portions to define ports for fluid passage therethrough,
(*e*) yielding means urging said stem in a direction to seat said valve element in said aperture,
(*f*) releasable fastening means securing said valve element on said stem, and
(*g*) an O-ring circumscribing said stem between said valve element and said fastening means and providing a seal therebetween.

3,157,199
DISC VALVE

John Banks, 5472 Broad St., Pittsburgh 6, Pa., and Edward J. Banks, 11221 Azalea Drive, Pittsburgh 35, Pa.

Filed Aug. 25, 1961, Ser. No. 133,941
2 Claims. (Cl. 137—625.11)

1. A multiport valve comprising a body member, a cover attached to said body member, said cover having a central generally circular opening in the side thereof adjacent said body member, said cover having an inlet port through the wall thereof extending into said opening and a reduced diameter axial hole extending from said opening to the side of said cover opposite said body member, said body member having a plurality of ports therein opening on the side thereof adjacent said cover, said port openings being arranged on a circle having its center substantially on the valve axis, a generally cylindrical valve disc in said cover opening having a length substantially less than the depth of said cover opening and a maximum diameter less than the diameter of said opening, a sealing chamber between said body member and said cover beyond said opening, a valve stem connected to said disc and extending through said cover opening and said axial hole in close fit therewith extending to the outside of said cover, a sealing member between said valve stem and said axial hole, said disc being positioned in said central cover opening against said body member so as to provide a fluid

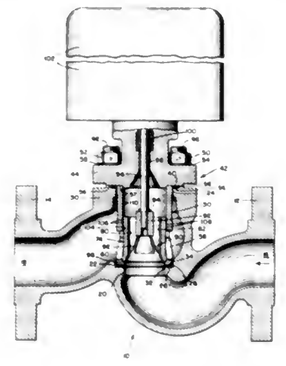


receiving opening communicating with said inlet port, said disc having at least one valve port therethrough, the center of said last named port being essentially on the same circle as the circle of the port openings in said body member, the diameter of said valve stem being at least one half the diameter of said valve disc, means for rotating said disc, said disc and body member having central circular aligned recesses therein, and a centering ring in said aligned recesses, said ring terminating short of the end of the recess in said disc to provide a cavity, said disc and stem having a conduit therein leading from the outer surface of said stem to said cavity.

3,157,200
RECIPROCATING CONTROL VALVE

William J. Rowan, Havertown, Pa., assignor to Honeywell Inc., a corporation of Delaware

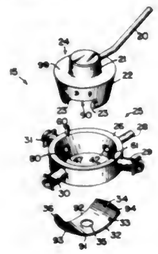
Filed Dec. 26, 1961, Ser. No. 161,944
9 Claims. (Cl. 137—625.33)



2. A balanced valve for regulating the flow of a fluid, comprising a hollow cage having a chamfered inner edge seat formed on an inner cylindrical end wall portion thereof, an elongated plug sealingly mounted within said

cage for sliding engagement toward, into engagement and away from the seat, the plug being constructed of a ridge-shaped cross-section along an entire circumferential outer-side wall surface portion thereon whose apex is positioned to be brought into line engagement with the seat, a plurality of passageways extending from one inner end portion of the plug to an opposite extreme end portion to permit the free passage of the fluid therethrough, the portions of said plug forming opposite ends thereof against which the pressure of the fluid is applied being of substantially the same area to thereby maintain the plug in a balanced position.

3,157,201
FLUID EXCHANGE VALVE
David Littmann, Belmont, Mass., assignor to Cardiosonics Medical Instrument Company, Belmont, Mass., a partnership
Filed Apr. 12, 1962, Ser. No. 187,009
11 Claims. (Cl. 137—625.47)



1. A catheterization valve having means for selectively connecting four fittings into four different arrangements for fluid exchange with one arrangement interconnecting a first and second fittings, a second arrangement interconnecting said first, second and fourth fittings, a third arrangement interconnecting said second and fourth fittings and a fourth arrangement interconnecting said third and fourth fittings, said valve comprising, a valve housing including an annular collar with four spaced radially arranged passageways extending through said angular collar,

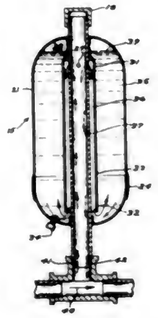
four fittings each comprising a tubular member aligned and interconnected with one of said passageways and secured at one end to a first surface of said annular collar,

a valve rotor having a sidewall shaped and dimensioned to fit in rotatable sliding and facing relation to a second surface of said annular collar with passages in said rotor extending to said rotor sidewall for interconnecting said passageways into said four different arrangements for fluid exchange on selective rotation of said rotor, said passages comprising a plurality of passages exceeding in number the number of said fittings with one end of each of said passages extending to an opening on the surface of said rotor sidewall and the other end of each of said passages opening on at least one of said other passages within said rotor, said one end of each of said passages being spaced from said one end of at least one other passage a distance corresponding to the distance on said second surface of said annular collar between at least two of said passageways,

means for selectively rotating said rotor relative to said housing into said four different arrangements, and

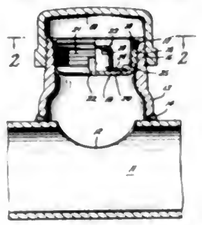
means for interlocking said rotor and said housing with said second collar surface in engagement with said rotor sidewall.

3,157,202
SURGE TANK
Harry J. Sadler, Minneapolis, and Ernest E. Cook, Anoka, Minn., assignors to Hypro Engineering, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 5, 1961, Ser. No. 136,086
3 Claims. (Cl. 138—26)



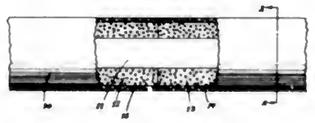
1. A surge tank comprising, a main tank, an upstanding surge tube extending into said tank, said surge tube defining a tube chamber partially extending into said main tank, a plurality of restrictive apertures spaced around said surge tube within said main tank, and a sleeve shield positioned about said surge tube and secured to said surge tube above said apertures at the upper end thereof, the annular cross-sectional area between said surge tube and said sleeve shield being greater than the total area of said plurality of restrictive apertures, said sleeve shield and said surge tube defining therebetween a surge chamber into which fluid flows from said restrictive apertures.

3,157,203
APPARATUS FOR CLOSING SIDE OPENINGS IN PIPELINES
Burton Ver Nooy, Tulsa, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed May 9, 1961, Ser. No. 108,934
5 Claims. (Cl. 138—89)



1. A plug for an internally threaded nipple having a cylindrical bore which comprises, in combination, an exteriorly threaded hollow cylindrical body having a closed bottom, a plate extending across the interior of the body with at least a central part of the plate spaced from the bottom of the body, an opening through said central part of the plate, said opening having a central portion and lateral extensions therefrom, an abutment beneath the plate positioned laterally from one side of one of said lateral extensions of said opening and adapted to engage a crossbar on a tool for turning the plug, and a downward projection on the underside of the plate facing the bottom of the body and positioned intermediate said abutment and said one side of said one of said lateral extensions of the opening.

3,157,204
INSULATING AND PROTECTIVE COVERING DEVICES
Morris T. Phillips, 10 Osage Road, Canton, Mass.
Filed Oct. 19, 1960, Ser. No. 63,619
10 Claims. (Cl. 138—137)

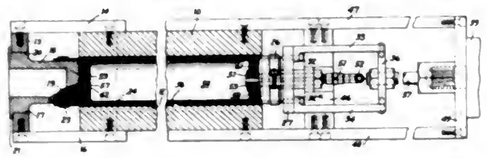


1. A preformed, unitary, elongated, insulating and protective covering member preshaped to the dimensions of final used and closed laterally so that an elongated article to be protected can only be introduced to said covering member longitudinally, said member comprising:

(1) a core of substantially rigid, cellular material of relatively uniform cross-sectional shape having at least one opening extending therethrough longitudinally of a size suitable for accepting said elongated article to be protected; and

(2) completely surrounding said core laterally, a continuous cladding layer of tough, non-cellular, internally reinforced, thermoset, synthetic resinous material, said cladding layer being thinner than said core but having by itself substantial load carrying strength and being compressively fitted around the outside of said core, thereby insuring uniform physical support between said core and said cladding layer and maximizing the load carrying strength and physical integrity of the complete unitary covering member.

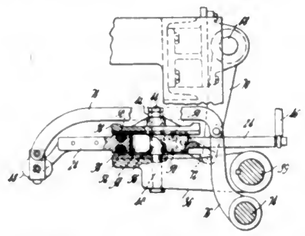
3,157,205
PRE-STRESSED HOLLOW ARTICLE
Elmer P. Warnken, Cincinnati, Ohio, assignor, by mesne assignments, to Studebaker Corporation, South Bend, Ind., a corporation of Michigan
Original application Oct. 9, 1957, Ser. No. 689,144, now Patent No. 2,984,870, dated May 23, 1961. Divided and this application Mar. 9, 1961, Ser. No. 94,634
3 Claims. (Cl. 138—145)



1. A tubular article which comprises a plurality of convolutions of resin-impregnated fibre glass material, the material of the convolutions being stressed in tension lengthwise and circumferentially of the article, and the resin of the article being in compression.

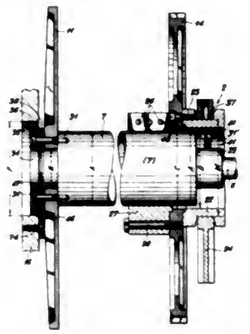
3,157,206
AXMINSTER TYPE LOOM
Wayne T. Harrison, Granby, and Raymond J. Carrigan, Thompsonville, Conn., assignors to Bigelow-Sanford, Inc., Thompsonville, Conn., a corporation of Delaware
Original application Oct. 4, 1960, Ser. No. 60,382, now Patent No. 3,077,906. Divided and this application Nov. 28, 1962, Ser. No. 246,853
3 Claims. (Cl. 139—7)

1. An Axminster carpet loom comprising the combination of means for supplying binder warps, means for shedding the binder warps, means for inserting wefts into the binder warp sheds, a lay for beating up the wefts, a tube frame having tubes for introducing pile yarns into the binder warp sheds, tube frame arms swingable about a vertical axis and movable linearly warpwise of the loom, clutches on said arms for engaging said tube frame and supporting it on said arms, a support for said arms movable to move said arms to move said clutches upwardly and downwardly, means for moving said arms to move



said clutches when in the weaving position warpwise linearly back and forth independently of said up and down motion, and means for rocking said clucthes on said arms about a weftwise axis independently of said up and down motion.

3,157,207
BEARING ARRANGEMENT FOR WARP BEAMS IN WEAVING MACHINES
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland
Filed Dec. 14, 1961, Ser. No. 159,224
Claims priority, application Switzerland Dec. 21, 1960
6 Claims. (Cl. 139—97)

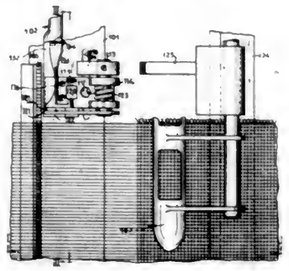


1. Bearing arrangement for a warp beam in a weaving machine, the warp beam having at least two coaxial parts having adjacent ends, each part including a warp beam tube, and the weaving machine including a weft thread inserting mechanism placed on one side of the machine, comprising two outer bearings for rotatably supporting the outer ends of the rotating warp beam, at least one intermediate bearing for the adjacent ends of the warp beam parts, the diameter of the running surface of at least the outer bearing which is located at the side of the weaving machine where the picking mechanism is located being at least equal to the diameter of the warp beam tube, affording pushing of the warp beam tube through said outer bearing, and a bearing element connected to each of the adjacent ends of the warp beam parts and adapted to rotate in said intermediate bearing, said bearing elements and said intermediate bearing surfaces of a diameter equal to the diameter of the running surface of said outer bearing which is located at the side of the weaving machine where the picking mechanism is located.

3,157,208
WEAVING FRAME HAVING IMPROVED WEFT HANDLING MEANS

Yves Juillard, Mulhouse, Haut-Rhin, France, assignor to Societe Alsacienne de Constructions Mecaniques, Mulhouse, Haut-Rhin, France, a company of France

Filed May 22, 1961, Ser. No. 111,702
Claims priority, application France Feb. 14, 1961
4 Claims. (Cl. 139—127)

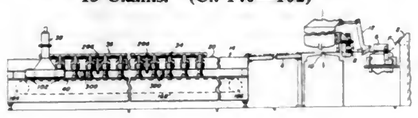


1. In a weaving frame the combination comprising a weft presser member reciprocable longitudinally of the frame; a weft shooting member reciprocable transversely of the frame along the presser member; means delivering weft yarn from a supply to the shooting member, displaceable spring-pressed-weft-engaging means carried by the shooting member; a weft-cutting and holding device carried by the presser member; first camming means cyclically operable once per longitudinal reciprocation of the presser member for operating said device to cut the yarn and simultaneously hold the yarn between the cut and the supply for subsequent engagement of said yarn by the engaging means; and second camming means cyclically operable once per transverse reciprocation of the shooting member for displacing the weft-engaging means to engage the weft yarn between said device and the supply, said cutting and holding device comprising a blade pivoted to the presser member and having a cutting edge and a holding edge and a pair of spaced parts carried by the presser member and cooperating with said respective edges to cut the weft yarn and hold said yarn ahead of the point of cut, and a first part projecting from said blade for movement within the space between said parts for clearing shreds of cut-off yarn therefrom, and said first camming means comprises a second part projecting from said blade and a cooperating part carried on the frame for camming interengagement with said projecting part as the weft presser member reaches the end of its longitudinal reciprocation for pressing the weft, said blade being spring-pressed toward a cutting and holding position relative to said spaced parts and said first camming means displacing the blade in opposition to said spring pressure.

3,157,209
APPARATUS FOR MAKING HINGED TWO PIECE WIRE FABRIC

Robert E. First, Willowick, Albert L. Stoeckel, Euclid, and William H. Stokes, Lakewood, Ohio, assignors to United States Steel Corporation, a corporation of New Jersey

Filed Mar. 22, 1961, Ser. No. 97,584
13 Claims. (Cl. 140—102)

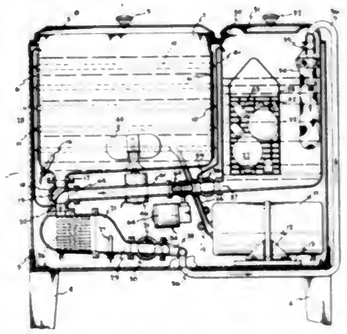


1. Apparatus for making hinged two piece fabric having longitudinal wires connected by cross wires which comprises means for supporting a section of fabric having the desired length and a width approximately equal to the total width of the two pieces, means adjacent one longitudinal edge of said supporting means for forming an open hook on the end of each of the cross wires adjacent thereto, means for separating the cross wires essentially on the longitudinal center of said section, a generally flat table on the exit side of said supporting means, means for feeding said fabric longitudinally to the entry end of said table, a carriage spanning said table and movable longitudinally thereof, a plurality of spaced apart lifting mechanisms mounted on said carriage across the width of said table for lifting the forward ends of said pieces of fabric, means for moving said carriage with the pieces of fabric supported thereby from the entry end of said table to the opposite end thereof, means for flipping over a piece of hooked fabric from one side of said table to the other, and means spaced apart longitudinally of said table for closing said hooks around the outside longitudinal wire of a fabric piece without hooks thereon.

3,157,210
APPARATUS FOR FILLING NURSING BOTTLES

James R. Palma, Miami, Fla.
(7 Arden Craig Drive, Albany 3, N.Y.)

Filed Nov. 3, 1960, Ser. No. 66,952
5 Claims. (Cl. 141—82)



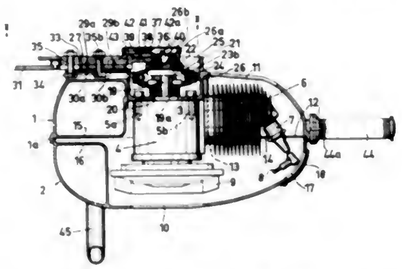
1. An apparatus for filling nursing bottles comprising, a tank for containing a liquid food, refrigerating means for the tank, a food chamber into which food is fed from the tank, heating means for the chamber, a food-dispensing flexible tube connected to the chamber and provided with means at one end by which it can be connected to an inlet opening in a nursing bottle whereby food may be fed from the chamber into said bottle, a sterilizing tank, a conduit connecting the sterilizing tank with the food chamber, a valve in said conduit, a valve disposed between the outlet of the food tank and the chamber, said last-mentioned valve being effective to connect the food tank to the chamber or to connect the sterilizing tank to the chamber, a valve disposed between the outlet of the food chamber and the dispensing tube, and a pump operative in the conduit between the sterilizing tank and the food chamber.

3,157,211
INTERNAL COMBUSTION ENGINE-DRIVEN HAND SAW

Rasmus Kristian Austraat Wiig, Svarstad, Norway

Filed June 20, 1960, Ser. No. 37,449
Claims priority, application Sweden June 26, 1959
10 Claims. (Cl. 143—32)

1. An engine driven hand saw for wood-cutting of the type comprising a chain-equipped guide bar and an internal combustion engine for driving said chain, said hand saw comprising an elongated substantially closed, continuously curved rigid hollow shell divided longitudinally into two sections, one of which serves as a lid for the opening in the other section, means for detachably securing said sections together, said shell having internal support faces for mounting the internal combustion engine with its accessories including a cooling fan, said shell having also external support faces for mounting the guide bar, transmission and handle, said shell being provided with openings for the engine control means, an air inlet opening in the wall of one section of said shell

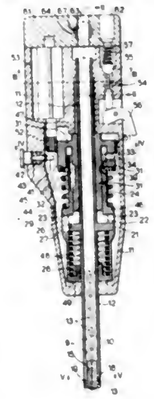


and an air outlet opening in the wall of the other section of said shell for the passage of a stream of cooling air through said shell, a fan mounted in said shell for propelling a stream of cooling air through said air inlet and air outlet openings, an engine mounted in said shell with its cylinder positioned in the path of said air stream and partition walls in said shell defining a fuel tank and a lubricant tank, the passage between the engine cylinder and the surrounding casing parts offering such a great resistance to the air propelled by the fan that a pressure considerably exceeding the atmospheric pressure is built up within the casing.

3,157,212
POWER OPERATED SCREW DRIVER FOR SCREW STICKS

Angelo Raiteri, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Nov. 7, 1962, Ser. No. 235,991
Claims priority, application Italy, Nov. 13, 1961, 20,540/61
8 Claims. (Cl. 144—32)



1. A power operated screw driver for use with screw sticks made of a plurality of coaxially arranged screws connected to each other by a frangible neck and having a prismatic head, comprising in combination:

(*a*) a tubular stick container rotatable for driving said screws and franging said neck,

(*b*) said container having an inwardly prismatic end portion for engaging the end screw of said stick and completely forcing same into the work piece,

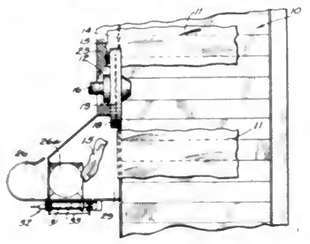
(*c*) a normally engaged clutch for rotating said container, said clutch being automatically disengageable upon attaining a predetermined torque,

(*d*) and means controlled by said clutch upon said disengagement for enabling said portion to frange the neck of said end screw by rotating the next following screw.

3,157,213
ANIMAL CARCASS TRIMMING MACHINE

Raymond N. Harris, Omaha, and Robert L. Knauss, Council Bluffs, Iowa, assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 27, 1962, Ser. No. 226,653
3 Claims. (Cl. 146—81)

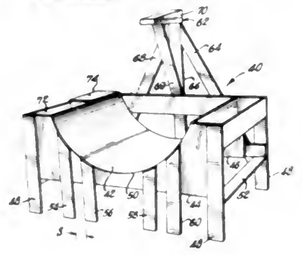


1. In apparatus for severing pieces from an animal carcass portion, a conveyor for supporting and carrying said carcass portion, a stationary platform mounted adjacent an edge of said conveyor and spaced therefrom, a circular knife supported for rotary movement and having its cutting edge between said conveyor and platform and spaced from said conveyor, and means for moving said conveyor and rotating said rotary knife, said platform having its top surface aligned with the top surface of said conveyor to support an edge portion of the carcass portion and being provided with longitudinal depressions for reducing friction.

3,157,214
BARREL ASSEMBLY JIG

Albert R. Smrek, Vienna, W. Va., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

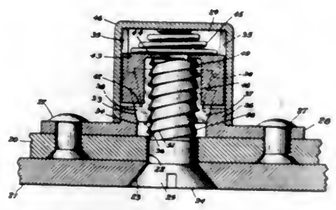
Filed Dec. 31, 1962, Ser. No. 248,433
6 Claims. (Cl. 147—3)



1. A jig for forming barrels from stave sections and a base, said base having skids affixed thereto, comprising: a framework including a cradle, said cradle forming lower stave supporting means; upstanding members positioned adjacently of one end of said cradle, said members being arranged in pairs with the members of each pair being

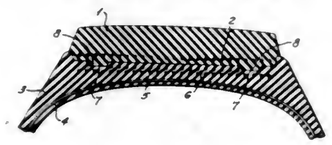
spaced to receive and retain therebetween the skid portions of said base; and elevated upper stave support means at the opposite end of said cradle.

3,157,215
QUICK-LOCKING FASTENER WITH PREVAILING TORQUE
Victor F. Zahodiakin, P.O. Box 689, Summit, N.J.
Filed Jan. 10, 1961, Ser. No. 81,737
2 Claims. (Cl. 151—19)



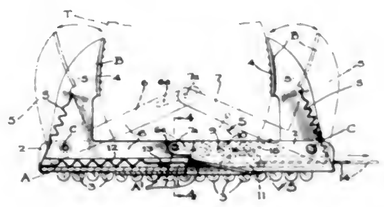
2. A fastening device of the quick-locking type having a receptacle and threaded stud insertable into said receptacle on a common axis therewith, comprising a pair of jaws in said receptacle, said jaws having internal screw threads for receiving said threaded stud and having four longitudinal edges facing each other in pairs at the arcuate ends of said threads, said jaws and receptacle having cooperating sloping faces for contracting said jaws by sliding said jaws toward the lower ends of said sloping surfaces, a movable key-ring overlying the upper ends of and in engagement with said jaws for effecting predetermined relation of said jaws to each other, said key-ring having a circular body engaging ends of said jaws and having a pair of diametrically opposed keys opposite faces whereof are parallel to each other and parallel to a medial diametric plane of the keys and circular body, said keys being located between and opposed to respective said longitudinal edges of the pairs of facing edges of the jaws, a spring pressing against said ring body at the opposite face thereof from said keys, thereby enforcing engagement of the ring body with said jaws and enforcing maximum insertion of said keys between the respective pairs of said jaw faces, said longitudinal facing edges of the jaws having planar portions parallel to and movable into contact with respective faces of said keys, and said keys providing a fixed engagement for all four of said longitudinal facing edges of the jaws and in conjunction with said engagement of the ring body with the ends of said jaws maintaining said planar portions of the jaws parallel to each other and maintaining the lead angle at all of the thread ends aligned for proper engagement with the stud threads.

3,157,216
PNEUMATIC TIRES OF THE REPLACEABLE TREAD TYPE
Luigi Maiocchi, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed Jan. 10, 1963, Ser. No. 250,552
Claims priority, application Italy Jan. 25, 1962
4 Claims. (Cl. 152—176)



1. A pneumatic tire having a replaceable tread consisting of a tread ring provided with an inextensible reinforcing structure and a carcass embodying a breaker structure comprising a plurality of breaker strips characterized in that on the outer surface of the carcass, in the zone adapted to contact said tread ring, there are substantially parallel longitudinally extending annular channels, symmetrical with respect to the mid-circumferential plane, said channels defining a central smooth portion having a width at least equal to the width of the radially outermost breaker strip, and in that the inner surface of the tread ring has a profile complementary to that of the carrying casing said radially outermost breaker strip being wholly confined within said central smooth portion between said channels.

3,157,217
AUTOMOBILE TIRE ACCESSSORY
Ernest Franklin Ledbetter, P.O. Box 8123, Chicago 80, Ill.
Filed Oct. 21, 1963, Ser. No. 317,509
7 Claims. (Cl. 152—230)



2. An automobile tire accessory adapted to be placed on an exposed portion of a vehicle tire initially by hand and automatically locked in operating position by moving the tire over it, including,

a ground engaging base (A),

a pair of spring urged bell crank type tire gripping levers (L) pivoted at their medial angular portions adjacent opposite ends of the base (A), said levers having their inner arm portions (6*a*+7*a*) slidably interlocked,

tire gripping members (B) on the outer portions (4+5) of said levers (L),

cooperating latch means (9+10) on one of the arms and the base for locking the accessory on said tire under its weight,

and manually operated means on the base for releasing said latch means.

3,157,218
PNEUMATIC TIRES HAVING IMPROVED TREADS
Robert J. Brown, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 30, 1962, Ser. No. 220,375
6 Claims. (Cl. 152—330)

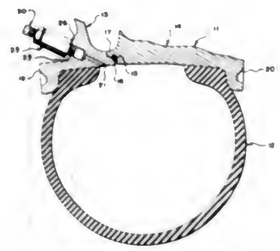
1. A pneumatic vehicle tire having a tread characterized by (1) an outer road-contacting cap comprised of from 20 to 75% by weight of a rubbery stock of polybutadiene having at least about 30% of its polymerized monomer units in a cis-1,4 configuration and no more than about 15% of its monomer units polymerized through 1,2 addition, and from 80 to 25% by weight of a rubbery stock of an elastomeric copolymer of butadiene and styrene and (2) a base portion underlying said road-contacting cap comprised of from 20 to 75% by weight of a rubbery stock of polybutadiene having at least about 30% of its polymerized monomer units in a cis-1,4 configuration and no more than about 15%

of its monomer units polymerized through 1,2 addition, and from 80 to 25% by weight of a rubbery stock of



polyisoprene in which at least about 80% is of cis-1,4 structure.

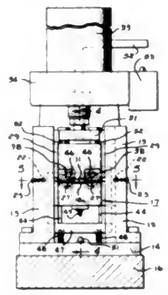
3,157,219
SAFETY DEVICE FOR VENTING TIRES
James M. Dimin, Solana Beach, and John M. Hudson, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Sept. 22, 1958, Ser. No. 762,513
6 Claims. (Cl. 152—427)



4. In combination, a heat operative tire venting device and a wheel having a tire mounted thereon, said wheel having a through passageway communicating with the interior of said tire for passage of air into and from said tire, said venting device comprising a body mounted in said through passageway, said body having a first passageway extending within said body and communicating at one end with said through passageway of said wheel and opening to atmosphere at its other end, said body adapted to mount a valve assembly at said other end of said first passageway of said body, said body having a second passageway communicating with and extending from said first passageway of said body to atmosphere, and a fusible means sealably positioned within said second passageway to prevent escape of air from within said tire to atmosphere, said fusible means being metallic and having a fusion temperature substantially below the failure temperature of said tire.

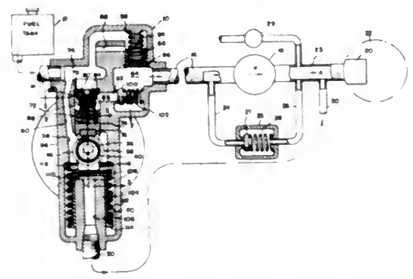
3,157,220
APPARATUS FOR FORMING WIRE
George Svoboda, Albuquerque, N. Mex., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 24, 1961, Ser. No. 112,346
10 Claims. (Cl. 153—2)

1. Apparatus for forming wire, which comprises a movable carriage, a cylindrical head in said carriage rotatable about its axis, a pin extending through an axial bore in said head, said head and said pin being movable axially relative to one another, resilient means for urging said head and said pin toward normal positions with respect to one another in which said pin projects beyond one end of said head, a forming element projecting from said one end of said head and spaced from said pin, means for moving said carriage, means responsive to the movement of said carriage for rotating said head where-



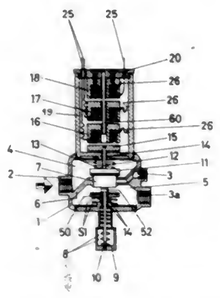
by a wire received between said pin and said forming element is bent by said forming element about said pin, and means responsive to the movement of said carriage for moving said head and said pin axially relative to one another against the action of said resilient means, whereby the formed wire may be stripped from said pin.

3,157,221
FLUID SUPPLY SYSTEM
Leonard W. Keil, Birmingham, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Aug. 7, 1961, Ser. No. 129,680
3 Claims. (Cl. 158—36.4)



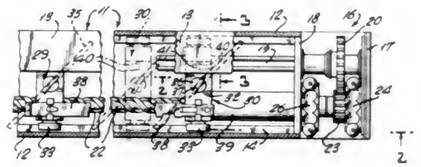
1. A fuel control system for an internal combustion engine having a fuel control device requiring delivery of fuel at a predetermined pressure, said system comprising a tank, a booster pump connected to said tank, an engine driven pump connected between said booster pump and the fuel control device, said booster pump being a positive displacement variable stroke pump, pressure regulating bypass means connected between said engine driven pump and said fuel control device set to open at said predetermined pressure, a bypass around said engine driven pump having a check valve therein set to open whenever pressure at the inlet of said engine driven pump exceeds pressure at its outlet by a small amount, said booster pump having an accumulator chamber at the outlet side thereof, a relief valve in said accumulator chamber set to open only when pressure therein exceeds said predetermined pressure, and means responsive to pressure at the outlet of said engine driven pump for controlling the stroke of said booster pump.

3,157,222
THERMOELECTRICALLY OPERATED SEMI-AUTOMATIC FLAME CONTROL DEVICE FOR TWO OR MORE BURNERS
Richard Hassa, Osnabruck, Germany, assignor to G. Kromschroder Aktiengesellschaft, Osnabruck, Germany
Filed Apr. 9, 1962, Ser. No. 186,132
Claims priority, application Austria, Apr. 8, 1961, 2,841/61; Feb. 28, 1962, 1,663/62
12 Claims. (Cl. 158—131)



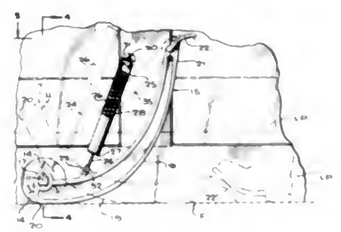
12. In a gas valve having a valve closure movable between a valve opened position and a valve closed position, resilient means urging said closure from said opened position toward said closed position, and a control device to normally hold said closure in the opened position, the improvement of said control device comprising: a plurality of electromagnet means sequentially positioned and operable to form a pile upon all being energized with one said means at one end of said pile and another said means at the other end of the pile, said one means being fixed and the other means being connected to said closure, said electromagnet means upon all being energized to hold said closure in said opened position and being operable upon any one becoming deenergized to release said closure to move to said closed position in response to said resilient means; and thermocouple means for each electromagnet means to energize the respective electromagnet means so long as said thermocouple means is heated.

3,157,223
VERTICAL BLINDS
Joseph P. Arena, Long Island City, and Robert J. Smith, New Rochelle, N.Y., assignors to Verticals, Inc., Bronx, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,600
7 Claims. (Cl. 160—168)



1. A vertical blind structure comprising a longitudinally extending guide member, a plurality of longitudinally spaced carriages longitudinally movable along said guide member and engaging respective vertical slats and including a leading carriage and a trailing carriage, spacer elements connecting successive of said carriages to limit the relative longitudinal movement thereof, means for selectively advancing and retracting said leading carriage whereby to expand and contract said carriages, a first abutment member located on said trailing carriage and a second stationary abutment member located on said guide member and disposed in the path of said first abutment member and just forward thereof when said trailing carriage is in its fully retracted position, at least one of said abutment members being resilient to releasably restrict the mutual bypassing of said abutment members.

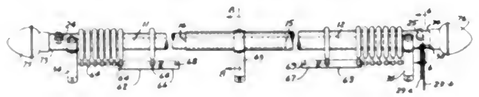
3,157,224
STARTING DEVICE FOR SLIDING DOORS
Joseph E. Spargur, 517 7th Ave. N., and Theodore C. Murr, 2001 Wentworth Ave., both of South St. Paul, Minn.
Filed Feb. 5, 1962, Ser. No. 171,190
3 Claims. (Cl. 160—189)



1. A starting device in combination with a vertically moveable garage door, including an operating arm, means mounting said operating arm on said door adjacent the lower end thereof, which end when said door is closed moves into engagement with a floor surface forming one edge of a door opening for said vertically movable door, said mounting means pivotally connecting said arm at its inner end to said door about a pivot axis which is substantially normal to the plane of said door and which is closely adjacent the end wall of the lower end of said door, said arm having adjacent its opposite outer end an upwardly directed foot pedal surface for downward foot pressure in a plane substantially parallel to the plane of said door, said arm further having on its lower edge between said pivot means and said foot pedal a floor engaging fulcrum surface, and resilient means biasing said arm and said fulcrum surface into a retracted position, whereby said fulcrum surface is normally out of engagement with said floor surface but may be moved into engagement therewith by the applied weight of a person operating said starting device, said fulcrum surface being in the form of an elongated, curved camming face directed toward and engageable with said floor surface when said door is closed, said camming face extending along said arm and having a relatively short radius adjacent said pivot means and a constantly increasing radius relative to said pivot means toward the outer end, whereby said door will be started slowly with maximum force and then will be moved more quickly but with lesser force a substantial distance toward open position.

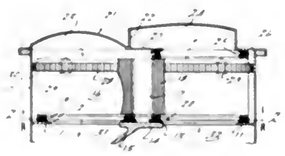
3,157,225
TRAVERSE MECHANISM FOR DRAPERIES AND CURTAINS
Eli Freydberg, Harrison, and Alfred Heym, Brooklyn, N.Y., assignors to Conso Products, Inc.
Filed Mar. 29, 1957, Ser. No. 649,362
4 Claims. (Cl. 160—345)

1. A tubular drapery and curtain suspending traverse mechanism, including a pair of thin-walled telescopable tubes whose thin wall extends around the entire outermost circumference thereof, each having a slit along its top extending from the telescoped end thereof to at least a point near the other end thereof to which the innermost marginal-zone of the drapery or curtain is to travel in its "open" position, the inner ends of said tubes being telescoped in relation to each other, with the slits thereof in registration with each other, a cord-guiding sheave secured within one of said tubes in the outer end-zone thereof, two cord-guiding sheaves secured within the other of said tubes in the outer end-zone thereof, a cord-passage opening in the wall of said last-mentioned tube in operative alignment with the sheaves therein, separate slit spacing and registering means in the telescoped zone of said tubes extending through the slit in each of the tubes, spacing the slits to a predetermined width and holding the slit of one tube in registration with the slit of the other tube, rings surrounding each of said tubes



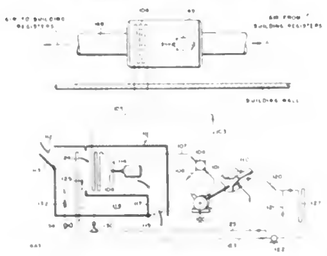
and resting directly and solely on said tubes, a cord-anchorage rigidly secured to at least one of the innermost rings on each tube and extending through said slit into the interior of the tube and having their cord-engaging portions entirely within the tube, a cord extending over the first-mentioned sheave and having two spans thereof extending therefrom to and over the two sheaves in the other tube and downwardly therefrom through said opening in alignment therewith and having pendant operating portions extending downwardly therefrom, one of said cord-anchorages being secured to one of said cord-spans and the other cord-anchorage being secured to the other of said cord-spans, the combined width, in a direction transversely of the tube, of the cord-engaging portion of the cord-anchorage and the portion of the cord secured thereto, being substantially greater than the transverse width of the aforementioned slit.

3,157,226
REGENERATOR SEAL
Clinton P. Atwood, Warren, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,150
11 Claims. (Cl. 165—9)



1. In a gas turbine engine, a rotatable regenerator, a gas passage conduit in communication with said regenerator, a sector plate having an opening therethrough defining a portion of said conduit, said sector plate also having one side in sliding and sealing engagement with the rotating surface of said regenerator entirely around said opening, a fixed support defining a portion of said conduit, a flexible sealing element extending entirely around said opening, means securing said sealing element to said support to effect a fluid sealing juncture therewith entirely around said opening, said sealing element having an edge welded to said sector plate at the inner edge of the latter defining said opening to effect a fluid sealing weld seam extending entirely around said opening and subjecting said inner edge to force directed inwardly of said opening tending to constrict the latter.

3,157,227
HEAT PUMP
Jewell S. Palmer, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 155,952
1 Claim. (Cl. 165—29)



In a heat pump system comprising a first duct containing a condensing coil and means passing air thereover, a compressor, an evaporating coil, and means fluidly connecting said compressor, said condensing coil, and said evaporating coil for circulation of a refrigerant in a closed system,

the improvement which comprises a housing having an air inlet and an air outlet,

wall means interiorly dividing said housing into a main duct and a recycle duct, said wall means terminating proximate to said outlet,

said evaporating coil being located in said main duct,

means for circulating air through said main duct and said recycle duct,

heating means in said housing,

first valve means associated with said air inlet and movable to an open position and a closed position,

second valve means associated with said air outlet and movable to an open position whereby said recycle duct is closed and said outlet is open, and to a closed position whereby said recycle duct is open and said outlet is closed,

first temperature sensing means located exteriorly of said housing,

means responsive to said temperature sensing means to move said first and second valve means to said closed positions over said air inlet and air outlet thereby opening said recycle duct means at a predetermined lower ambient temperature, and to said open positions over said air inlet and air outlet thereby closing said recycle duct means at a predetermined higher ambient temperature,

second temperature sensing means in said first duct,

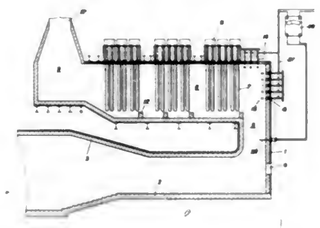
third temperature sensing means in said housing upstream of said evaporating coil,

and means responsive to both of said second and third sensing means for controlling said heating means.

3,157,228
APPARATUS FOR COOLING METAL RECUPERATOR GASES
John D. Keller, Pittsburgh, Pa., assignor to Hazen Engineering Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1961, Ser. No. 135,630
2 Claims. (Cl. 165—39)

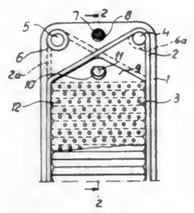
1. In an industrial heating furnace, a recuperator chamber, a gas flow passage connecting the furnace chamber

with said recuperator chamber, a plurality of metal tubes disposed in said recuperator chamber and spray nozzles mounted along the path of travel of the gases from said furnace chamber to the recuperator chamber for spraying water drops into the hot gases to lower the temperature thereof, said spray nozzles being provided with water flow control valves connected to be operated by a temperature controller in response to temperature conditions existing in the path of travel of the gases from the



furnace and apparatus for automatically retracting the spray nozzles away from the path of the hot gases when the water flow is shut off.

3,157,229
PLATE HEAT EXCHANGER FOR PROMOTING TURBULENT FLOW
Fritz Johan Wennerberg, Lund, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 22, 1960, Ser. No. 77,604
Claims priority, application Sweden Dec. 23, 1959
7 Claims. (Cl. 165—167)



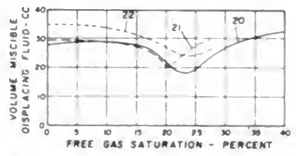
1. The combination of a pair of heat exchange plates disposed in generally parallel spaced relation, a packing cord compressed between said plates and extending along the marginal portions thereof, said plates and cord defining a longitudinal path for flow of a fluid medium between the plates from one end portion to the opposite end portion of the plates, said plates having spaced opposing surfaces located within the confines of the marginal packing cord and formed with corrugations defining ridges and valleys extending generally transversely of said longitudinal flow path to provide said flow path with a wave-like form, and a perforated plate member in said path releasably secured to one of the plates and lying wholly within the confines of the packing cord, whereby said member is removable from the plates independently of the packing cord, said perforated plate member extending transversely of the ridges while substantially spanning the valleys of the corrugations of each said opposing plate surface and having perforations positioned for flow of said fluid medium along said path in zig-zag fashion alternately on one side and then the other side of said plate member.

3,157,230
METHOD OF RECOVERING OIL FROM AN OIL-BEARING RESERVOIR
Carl Connally, Jr., Dallas, and Lorld G. Sharp, Irving, Tex., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,322
4 Claims. (Cl. 166—9)

1. In a method of recovering oil from a subterranean reservoir provided with at least one injection well and at least one production well the steps which comprise:

producing oil from said reservoir by primary production until the free-gas saturation within said reservoir is within the range of about 15 percent to about 30 percent of the hydrocarbon pore volume of said reservoir;

introducing into said reservoir through said injection well a quantity of fluid hydrocarbon material miscible with the oil remaining in said reservoir, said hydrocarbon material being injected at a pressure sufficient to establish miscibility with said oil;

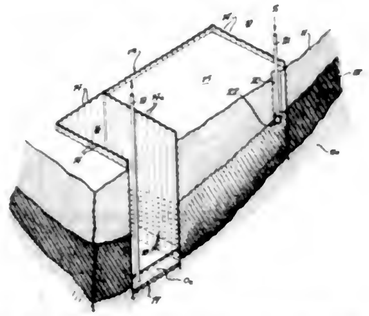


introducing into said reservoir through said injection well a driving fluid, said driving fluid being miscible with said hydrocarbon material and being introduced at a pressure sufficient to establish miscibility with said hydrocarbon material;

forcing said oil and said hydrocarbon material through said reservoir toward said production well by means of said driving fluid; and

producing oil from said reservoir through said production well.

3,157,231
PROCESS AND APPARATUS FOR EXTRACTING AND RECOVERING OIL IN SITU
David H. Darley, 101 School St., Angola, N.Y.
Filed July 6, 1961, Ser. No. 122,245
2 Claims. (Cl. 166—9)

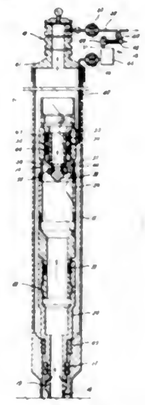


1. A process of extracting and recovering oil in situ from the oil encapsulated sand of a productive substratum deposit and which comprises: forming a contained area enclosing said deposit by driving interconnected piles into the earth to a depth below the bottom of said deposit; subdividing said contained area and deposit into an extraction area and a recovery area by driving additional interconnected piles into the earth to a depth below the bottom of said deposit; excavating said recovery area to the bottom of said deposit to form a reservoir; providing limited communication between said reservoir and said deposit in said extraction area by means of holes through said additional piles with said holes being of such a size as to permit free passage of oil but not any significant amount of sand; drilling a well in a remote portion of said extraction area in communication with the upper surface of said deposit therein; and introducing an oil extracting reagent into said well and creating a flow of said reagent across said upper surface and progressively down to the bottom of said deposit in said extraction area through said holes and into said reservoir, whereby oil extracted from the sand and carried by said reagent is recovered in said reservoir.

3,157,232
METHOD OF ACIDIZING WELLS
Joseph Ramos, Homer Charles McLaughlin, Jr., and Ronney R. Koch, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed June 19, 1961, Ser. No. 117,838
17 Claims. (Cl. 166—38)

1. A method of acidizing oil-bearing earthen formations to increase the productivity thereof which comprises charging a formaldehyde solution into a well as a first reactant, and, as a second reactant, an ammonium salt solution capable of reacting with the first reactant to form a free acid, contacting the first reactant with the second reactant thereby forming the free acid, and directing the acid formed into and throughout the oil-bearing earthen formation.

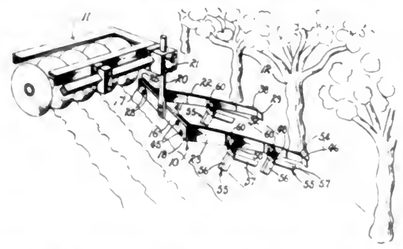
3,157,233
APPARATUS FOR CONTROLLING FLOW WITHIN A WELL
Phillip S. Sizer, Dallas, Tex., Vonner R. Cherry, Anaco, Anzoategui, Venezuela, and Lowell M. Wilhoit, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed June 20, 1956, Ser. No. 592,691
17 Claims. (Cl. 166—224)



1. Apparatus for controlling flow at a subsurface level within a well conduit comprising landing means disposed in said well conduit at a subsurface level, said landing means having an opening therethrough in substantial alignment with said well conduit to permit the running of well tools therethrough, valve means movable through said well conduit, means, for releasably locking said valve means in the opening of said landing means, said valve means being movable between open and closed positions to control flow through said opening, spring means for urging said valve means to closed position, said valve means including pressure-responsive means for urging said valve means to open position against the bias of said spring means, a source of fluid pressure at the surface of said well and conduit means connecting said source of fluid pressure to said pressure-responsive means.

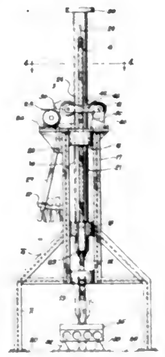
3,157,234
WEEDER TOOL
Paul A. Bezzerides, P.O. Box 1303, Orosi, Calif.
Filed Jan. 15, 1962, Ser. No. 166,146
13 Claims. (Cl. 172—142)

2. In a weeding tool, the combination of an elongated longitudinally flexible transversely substantially flat mounting blade having a transversely disposed longitudinally extended edge, means mounting said blade in transversely erect edgeward earth engagement for earth traversing movement in a direction oblique thereto and rearward flexing incident to obstruction engagement, and a



substantially flat auxiliary blade mounted on the mounting blade in substantially parallel relation to said edge of the mounting blade and downwardly spaced therefrom for earth engagement in following relation thereto.

3,157,235
SCRAP METAL BREAKER
Alexander Raizk and Lincoln Raizk, Clinton County, Ohio, assignors to Select Enterprises, Inc., Wilmington, Ohio, a corporation of Ohio
Filed Nov. 2, 1961, Ser. No. 149,772
2 Claims. (Cl. 173—53)



1. A scrap metal breaker comprising

(*a*) vertical guide channels,

(*b*) a frame holding said vertical guide channels, said frame including leg structures extending outwardly and downwardly to support said vertical guide channels above a floor,

(*c*) a cylindrical dropping bar having

(1) opposed protrusions parallel to the axis of said bar with said protrusions embraced in said guide channels,

(2) a gear rack on said dropping bar parallel to said protrusions, and

(3) a breaking tip fixed in one end of said dropping bar,

(*d*) a prime mover assembly mounted to be movable relative to said frame in a direction non-axial to said dropping bar, said prime mover assembly including

(1) a motor,

(2) first and second power take-offs from said motor,

(3) a speed reducing means,

(4) a gear shaped to engage said rack to move the cylindrical dropping bar vertically upwardly into an elevated position,

(5) a driving wheel having dropping-bar engaging means on its periphery,

(*e*) said first power take-off connected to said speed reducing means which is connected to drive said gear at reduced speed in a direction of rotation,

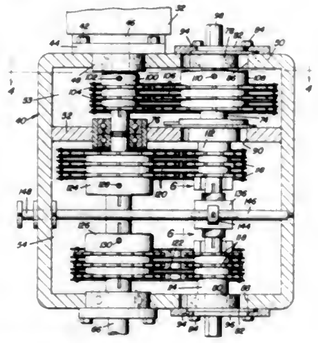
(*f*) said second power take-off connected to drive said driving wheel at a higher speed than said gear and in the same direction of rotation,

(*g*) a yoke rigidly positioning said gear and said driving wheel on opposite sides of said dropping bar a fixed distance from each other, said distance being greater than the diameter of said dropping bar,

(*h*) operating means to move said gear into and out of engagement with said rack and said driving wheel into and out of engagement with said dropping bar,

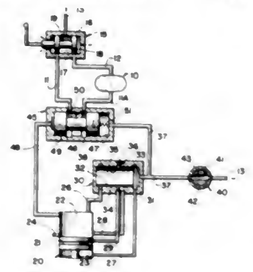
(*i*) and said rack extending along said dropping bar from the breaking tip a distance equal at least to the height that said prime mover assembly is above said floor whereby when said cylindrical dropping bar is in an elevated position and said gear is moved out of engagement with said rack said dropping bar drops vertically and whereby when said operating means moves said gear out of engagement with said rack and moves said driving wheel into engagement with said dropping bar said dropping bar is driven vertically downwardly.

3,157,236
SPROCKET GEAR REDUCTION DRIVE FOR POWER SWIVEL ASSEMBLY
Glen H. Arthur, % Mohawk Oil Well Service, P.O. Box 1454, Alice, Tex.
Filed Aug. 2, 1962, Ser. No. 214,219
14 Claims. (Cl. 173—57)



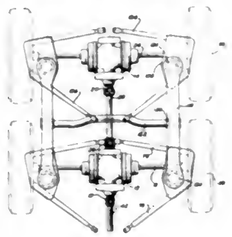
1. A power swivel assembly for the rotary drilling of deep wells comprising a tubular shaft adapted to be drivingly engaged with and support a drill string or the like, a fluid motor, a two-speed sprocket chain transmission unit driven by said motor, means drivingly connecting said transmission unit to said tubular shaft, said transmission unit including a casing and vertically aligned power input and power output shafts each extending from the interior to the exterior of said casing, a vertical counter shaft journaled in said casing and parallel to said input and output shafts, a pair of sprocket chain drives of different speed ratios connecting said countershaft to said output shaft, means for selectively rendering one of said chain drives operative while the other chain drive is rendered inoperative, means in said casing drivingly connecting said input shaft to said counter shaft.

3,157,237
ROCK DRILL
Ewald H. Kurt, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 18, 1962, Ser. No. 188,435
7 Claims. (Cl. 173—105)



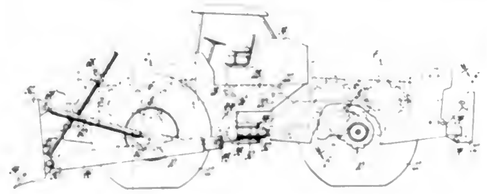
1. A power system for a rock drill having a drill steel, comprising a rotary fluid motor drivingly connected to the drill steel, valve means connected to the rotary fluid motor having an inlet to receive pressure fluid to drive said fluid motor for rotating the drill steel, means biasing the valve means to an open position for continuously rotating the steel, a drill motor having a reciprocally driven hammer piston to intermittently impart axial driving forces to the drill steel, said drill motor having inlet means to receive pressure fluid and passage means connecting the drill motor to the valve means to provide pressure fluid for closing the valve means against the biasing means as the hammer piston moves away from the drill steel to block the pressure fluid driving the rotary fluid motor and momentarily stop rotation of the drill steel when the drill motor imparts axial forces thereto.

3,157,238
INDEPENDENT BOGIE SUSPENSION
Robert E. Kraemer and John T. Kowall, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Dec. 24, 1959, Ser. No. 861,905, now Patent No. 3,077,942, dated Feb. 19, 1963. Divided and this application Jan. 2, 1962, Ser. No. 164,646
1 Claim. (Cl. 180—22)



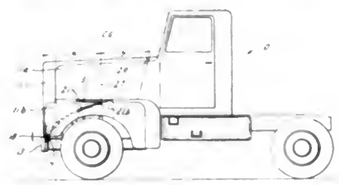
In a motor vehicle having a rigidly mounted engine, a power shaft extending from said engine, a pair of tandemly situated power receiving and distributing differential gear units, said gear units being secured to said vehicle, said power shaft being connected to one of said gear units, a second power shaft interconnecting said gear units, swing axles universally joined to said gear units, said axles extending laterally to the sides of said vehicle, ground engaging wheels secured to the outer ends of said axles, laterally extending support arms pivotally secured at their inner ends to said vehicle and rotatably secured to said axles at their outer ends, spring suspension means interconnecting said wheels, said means comprising an elongated rigid beam pivotally connected at its midpoint to said vehicle and coil springs interposed between the ends of said beam and said arms.

3,157,239
FOUR WHEEL DRIVE, TWO-ENGINE, ARTICULATED FRAME TRACTOR
Ralph Joseph Bernotas, South Euclid, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 148,302
14 Claims. (Cl. 180—51)



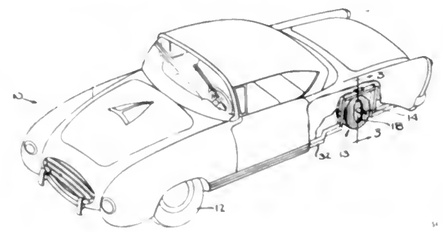
1. A vehicle comprising a first frame, a second frame, ground-engaging means mounted on and supporting each of said frames, a suspension member extending between and having spaced first and second points thereon respectively pivotally connected to said frames, and means pivotally interconnecting said frames at a third point substantially equidistantly spaced from the respective pivotal connections of said member to said frames for relative oscillation of the latter about a horizontal longitudinally extending axis through said third point, said first and second points being located on said frames in positions offset from said horizontal axis so that oscillation of one of said frame sections relative to the other about said horizontal axis causes said member to be placed in tension to stabilize such oscillation.

3,157,240
TILT HOOD TRACTOR CONSTRUCTION
Norman B. Chew, Portland, Oreg., assignor to Freightliner Corporation, Portland, Oreg., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,281
9 Claims. (Cl. 180—69)



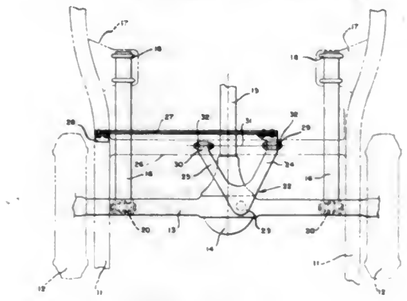
1. In an automotive vehicle having a body construction including a hood member, means hinging the hood member to the vehicle body to move about an axis disposed transversely of said vehicle from a first position wherein said hood member covers an interior portion of said vehicle to a second position tilted away from said vehicle and exposing said interior portion, support means for said hood member, said support means including at least one leaf spring anchored at one end to a portion of the vehicle fixed relative to the frame, with the other end free, the anchored end being disposed nearest said axis, a first fixed member extending laterally of said spring and serving to anchor said one end, a second fixed member extending generally parallel to said first member and spaced longitudinally of said spring relatively near said first member, said spring being disposed wherein with said hood member in said first position, said second member provides a fixed stop in back of said spring across which said leaf spring bends, the free end of said spring extending to terminate in a position removed from said axis and substantially centrally of said hood member, said leaf spring being disposed to apply an upward lifting bias to said hood member when in the first position, and means anchoring said hood member to said vehicle and acting in a direction opposed to said bias.

3,157,241
PNEUMATIC WHEEL SUSPENSIONS FOR AUTOMOTIVE VEHICLES
George H. Callum, South Bend, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 29, 1962, Ser. No. 183,514
13 Claims. (Cl. 180—71)



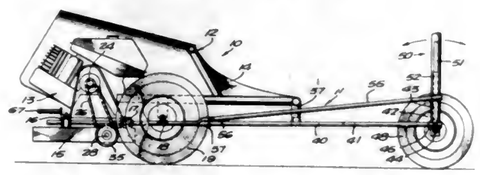
1. In an automotive vehicle having a chassis, a body supported by said chassis, a plurality of wheels, and drive elements mounted on said chassis and operatively connected with said wheels; the improvement comprising an underbody made of a watertight material rigidly secured to said chassis and extending across the latter therebelow so as to insulate said chassis and said drive elements against water and other foreign substances from the exterior of the vehicle, and a plurality of watertight suspension units rigidly connected, respectively, with said chassis interiorly of said underbody against the locations of said wheels and affording a watertight passage of the respective wheel axles from the wheels exteriorly of said underbody to said drive elements interiorly of said underbody; each of said suspension units comprising a rigid casing having a pair of opposite end walls and a peripheral wall extending therebetween, each of said end walls being provided with an aperture to permit the associated wheel axle to extend freely rotatably and radially movably through said casing, a hub disposed within said casing and provided with a substantially central bore adapted to accommodate the wheel axle with a watertight rotating seal, and a pair of inner and outer hollow, resilient members mounted on said hub within said casing and defining, respectively, an inner load-bearing element and an outer chamber within which said element is located, the outer crown surface of said outer member being secured in a watertight manner to the inner surface of said peripheral wall of said casing to seal the interior of said underbody against entry of foreign substances from exteriorly of the vehicle.

3,157,242
MOTOR VEHICLE ROAD WHEEL SUSPENSION
Henry J. Kozicki, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1960, Ser. No. 79,810
7 Claims. (Cl. 180—73)



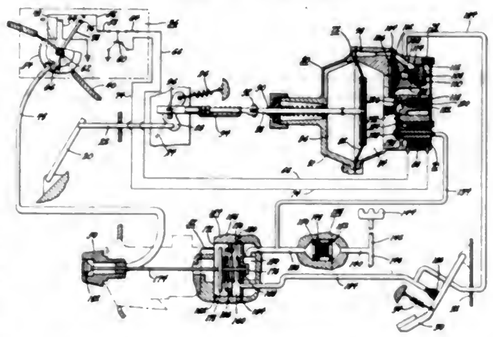
1. A motor vehicle having sprung components and unsprung components, said unsprung components including an axle, longitudinal leaf spring means interconnecting the outer ends of said axle with said sprung components, said longitudinal leaf spring means supporting a portion of the weight of said axle and resisting lateral movement of said sprung components with respect to said axle, a control arm, second spring means extending generally transversely of said vehicle and having transversely spaced portions thereof connected to said vehicle and said control arm respectively, a universal connection between said control arm and said axle adapted to allow for universal movement of said axle about said connection, a pivotal connection between said control arm and said vehicle longitudinally spaced from said universal connection and from said connection between said second spring means and said control arm, said second spring means supporting the remaining portion of said axle and torsionally resisting vertical movement of said axle with respect to the sprung components of the vehicle.

3,157,243
VEHICLE STEERING AND DRIVE MEANS
John W. Sellner, 7777 San Fernando Road, Sun Valley, Calif.
Filed Dec. 13, 1961, Ser. No. 159,186
3 Claims. (Cl. 180—77)



3. In a wheeled vehicle, in combination, a frame, a wheel assembly including at least one rear wheel, a wheel assembly including at least one front wheel, said front wheel having an axle, means comprising a control column including an upright member connected to said front wheel assembly, mounting means for said upright member providing for pivotal movement of the said control column whereby the front wheel assembly, including the said axle, may be swiveled for turning the vehicle, said mounting means having means providing for fore and aft swiveling movement of said upright member about an axis which is substantially the axis of said axle, a driving motor, a platform carrying said motor and mounted for fore and aft movement with respect to said vehicle, friction drive means and braking means carried by said platform on opposite sides of a rear wheel and means whereby the platform is movable by the control column.

3,157,244
VEHICLE SPEED WARNING AND CRUISE CONTROL SYSTEM WITH PREENGAGEMENT INHIBITING MEANS
Eugene C. McMurray and Robert C. Schniers, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,491
2 Claims. (Cl. 180—82.1)



1. In a vehicle road speed warning and cruise control system for a vehicle having an engine, said system comprising:

speed error signal generating means,

means limiting said generating means speed error signal generation to a predetermined range of vehicle road speed substantially less than the full range of vehicle road speed,

means for shifting said predetermined range of vehicle road speed through substantially said full range of vehicle road speed,

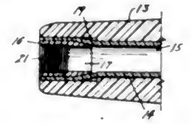
means receiving said speed error signal and producing therewith a fluid pressure proportional control signal when the actual vehicle road speed is within the predetermined range of vehicle road speed, a servo having opposed fluid pressure chambers separated by a power wall with one chamber fluid connected to said fluid pressure proportional control signal producing means and receiving said signal produced thereby, said servo power wall having means operatively connecting it to the vehicle engine so that said servo controls the engine in response to said fluid pressure proportional control signal,

and means selectively introducing a fluid pressure in the other opposed chamber of said servo opposing the fluid pressure proportional control signal and cooperating therewith in actuating said servo to maintain the system in a vehicle road speed cruise control mode;

the improvement comprising, fluid pressure control means connected in fluid flow relation between said servo and said introducing means and responsive to said fluid pressure proportional control signal at said servo and inhibiting introduction of fluid pressure from said introducing means into said servo unless and until said fluid pressure proportional control signal is being received by said servo;

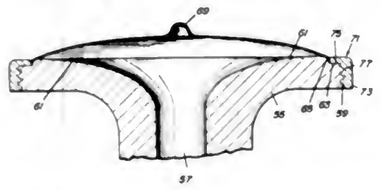
said fluid pressure control inhibiting means including a valve assembly having a first inlet fluid connected to atmospheric pressure and a second inlet fluid connected to said introducing means and a third inlet fluid connected to said one servo opposed chamber and an outlet fluid connected to said other servo opposed chamber, and a valve normally fluid connecting said first and second inlets and operable in response to the fluid pressure proportional control signal in said one servo opposed chamber as received through said third inlet to close said first inlet and fluid connect said second inlet and said outlet.

3,157,245
HEARING AID TUBE ATTACHMENT
Jack Bernstein, 6315 E. 12th Ave., Denver 20, Colo.
Filed Apr. 3, 1963, Ser. No. 270,297
5 Claims. (Cl. 181—23)



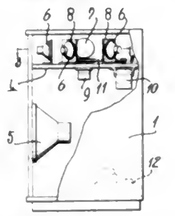
1. An ear piece for hearing aids comprising: a plastic element having a contour to fit into the convolutions of the external ear; a canal protuberance on said plastic element having a contour to fit into the auditory canal; a tube passage extending longitudinally of said protrusion; an enlarged cylindrical counterbore in the tube passage at the protruding extremity of said protuberance; a flexible expandable tube extending through said tube passage and through said counterbore; and a bushing contained within said tube having an external diameter larger than the internal diameter of the tube and of such an outer diameter as to expand said tube tightly within said counterbore.

3,157,246
DIAPHRAGM MOUNTING FOR STETHOSCOPE
William L. Howell, Washington, D.C., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Feb. 5, 1963, Ser. No. 257,361
7 Claims. (Cl. 181—24)



1. A head assembly for a stethoscope including a bowl, a diaphragm formed of a pliant material and having a major body portion and a peripheral portion and in operating condition said major body portion being arched upwardly away from said bowl a substantial distance to enable the tautness thereof to be varied dependent upon the degree of pressure at which said upwardly arched major body portion is applied against a body to thereby significantly widen the range of frequency response to the stethoscope, said bowl having a supporting surface and provided with an area in a plane below said supporting surface into which said peripheral portion of the diaphragm may be bent to maintain said major body portion of the diaphragm in its upwardly arched condition, and means adjustably connected with said bowl and in engagement with the peripheral portion of said diaphragm and operable thereon to bend and maintain the peripheral portion of the diaphragm in said area and the major body portion of the diaphragm in upwardly arched operative condition.

3,157,247
SOUND PRODUCING SYSTEM
Kazukiyo Ishimura, Shizuoka-ken, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan, a corporation of Japan
Filed Apr. 25, 1962, Ser. No. 190,133
4 Claims. (Cl. 181—27)



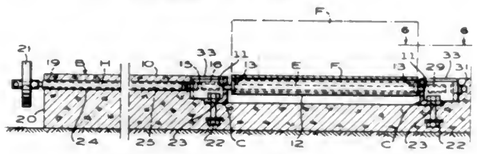
1. A sound producing system comprising a sound reflector adapted for rotating about an axis, and a plurality of speakers arranged around said reflector in spaced relation and facing inwardly towards said reflector, said reflector including a radial element extending from said axis towards said speakers and including a terminal end which successively faces the speakers as said reflector rotates about said axis, said reflector being a flat plate and said terminal end having a rectangular shape.

3,157,248
MOBILE EXTENDABLE SCAFFOLD
Fritz J. Nesslinger, College Point, and Arthur C. Borgman, Franklin Square, N.Y., assignors to The Patent Scaffolding Co., Inc., Long Island City, N.Y.
Filed Nov. 16, 1962, Ser. No. 238,216
27 Claims. (Cl. 182—152)



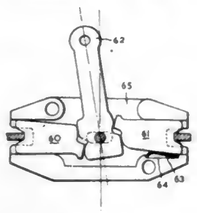
19. Scaffold apparatus comprising a ladder carrier, a main ladder releasably mounted thereon, an extendable ladder mounted for endwise adjusting movement on said main ladder, ladder braces each including an upper brace tube pivotally connected at each side of an upper end part of said extendable ladder and a lower brace tube having its lower end releasably secured to said carrier and its upper end projecting into and slidable in the lower end of said upper brace tube, locking devices including parts in said lower brace tube arranged and adapted normally to interlock said upper and lower tubes, devices cooperating with said devices in said lower brace tube and with said extendable ladder including a line for transmitting an actuating pull initially to said locking parts in the lower brace tube to release said interlock between said upper and lower tubes and then to raise the extendable ladder and with it to move said upper brace tube outwardly in relation to said lower brace tube.

3,157,249
VEHICLE-BLOCKING DEVICE
Kenneth J. Laverone, P.O. Box 353, San Juan Bautista, Calif., and Shelley J. Smith, Box 877, Sonora, Calif.
Filed Mar. 26, 1963, Ser. No. 268,177
9 Claims. (Cl. 188—32)



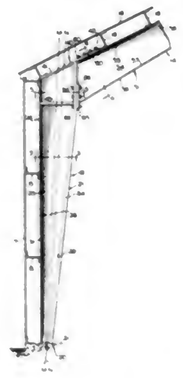
1. In a vehicle-blocking device:
(*a*) a substantially rectangular-shaped supporting frame embedded in and anchored to a driveway so as to be approximately flush with the surface of the driveway;
(*b*) the supporting frame defining spaced end members and spaced side members that extend longitudinally and transversely, respectively, of the driveway;
(*c*) a journal shaft disposed adjacent to one of the side members to extend transversely of the driveway, and being rotatably mounted in the longitudinal end members for turning movement in either direction;
(*d*) a swingable plate of substantially rectangular outline secured to the journal shaft for being turned by and with the latter;
(*e*) the plate being movable into a lowered position and dimensioned to form a continuous bridging cover over the supporting frame, disposed flush with the surface of the driveway for passage of a vehicle wheel thereover;
(*f*) the plate being swingable into raised position to provide an abutment against which the vehicle wheel may engage for arresting movement of the vehicle;
(*g*) an operating shaft having an inboard end removably coupled to a selected end of the journal shaft, and having an outboard end extending to a predetermined location relative to the driveway;
(*h*) and an operating element secured to the outboard end of the operating shaft, and being operable to turn this shaft in either direction, whereby the swingable plate may be raised and lowered.

3,157,250
SHOE ACTUATING MEANS FOR SHOE DRUM BRAKES
Frederick Thomas Riddy, Erdington, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed June 25, 1963, Ser. No. 290,466
11 Claims. (Cl. 188—78)



1. An actuator for the shoes of a drum brake comprising a stationary housing located between adjacent shoe ends, an angularly movable cam lever pivoting about a pin guided to slide in the housing substantially in the direction of the shoe ends, one end of the pin projecting through the housing and frictionally restrained by means carried by the housing, and at least one tappet slidably mounted in the housing and interposed between the cam lever and one of the shoes, portions carried by the inner ends of the tappet adapted to engage co-operating surfaces carried by the cam lever, whereby the inner end of the tappet is permitted to move transversely between the guide surfaces as the tappet is moved axially by the cam lever.

3,157,251
BUILDING CONSTRUCTION
Herman R. Rasch, Terre Haute, Ind., assignor to National Steel Corporation, a corporation of Delaware
Filed May 2, 1960, Ser. No. 27,466
26 Claims. (Cl. 189—1)

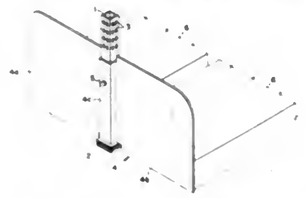


1. A structural member for a column of a rigid portal frame comprising an elongated web portion including a first longitudinal edge and a second longitudinal edge including a portion inclined at an angle with respect to the first longitudinal edge, the longitudinal edges at one end of the web portion terminating in spaced relation and the longitudinal edges at the other end of the web portion terminating in a plane disposed at an obtuse angle with respect to the first longitudinal edge, a first elongated flange portion joined to the first longitudinal edge of the web portion, a second elongated flange portion joined to the second longitudinal edge of the web portion, the first and second flange portions lying in planes perpendicular to the plane of the web portion and extending outwardly from both sides of the web portion, a flat plate member overlying the ends of the first and second flange portions at the other end of the web portion and disposed at an obtuse angle with respect to the first longitudinal edge of the web portion and being joined to the ends of the web portion and the first and second flange portions, the flat plate member including a coplanar portion extending outwardly beyond the second flange portion, the coplanar portion of the flat plate member including connecting means and plate members connected between the first and second flange portions on both sides of the web portion and joined to the web portion in a region of the web portion displaced from the connecting plate.

19. A rigid portal frame comprising a column including a web and inner and outer flanges joined to the longitudinal edges of the web and lying in planes perpendicular to the web and extending outwardly from opposite sides of the web, the ends of the web and at least one of the flanges of the column at one end of the column lying in a horizontal plane, a flat cap plate secured to the web and to at least one of the flanges at the one end of the column, a rafter member including a web and upper and lower flanges joined to the longitudinal edges of the web and lying in planes perpendicular to the web and extending outwardly from opposite sides of the web, the web of the rafter at one end of the rafter including a terminating edge disposed in a substantially vertical plane, an end plate secured to the terminating edge of the web of the rafter and extending outwardly from opposite sides of the web, the end plate extending from the upper flange of the rafter at least substantially throughout the terminating edge of the web of the rafter, the lower flange of the rafter including a horizontally disposed portion spaced from the terminating edge of the web of the rafter and adapted to overlie the flat cap plate adjacent the inner flange of the column, means including bolt and nut connecting means for joining the horizontally disposed portion of the lower flange of the rafter to the flat cap plate and means including bolt and nut connecting means joining the end plate to the outer flange of the column.

21. A rigid portal frame as defined in claim 19 in which the flanges of the column at the one end of the column are connected to the flat cap plate and in which the means joining the end plate to the outer flange of the column comprises a connecting plate overlying and joined to the outer flange of the column and including a portion overlying the end plate, and connecting means joining the end plate to the overlying portion of the connecting plate, the connecting means including members passing through openings in the end plate and the overlying portion of the connecting plate.

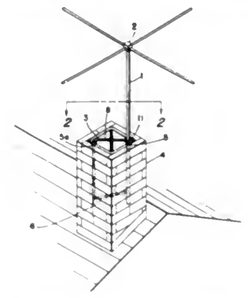
3,157,252
BASE BRACKET FOR SHELVES
Frank Philip Tucker, Gooseneck Point Road, Oceanport, N.J.
Filed July 13, 1960, Ser. No. 42,609
9 Claims. (Cl. 189—28)



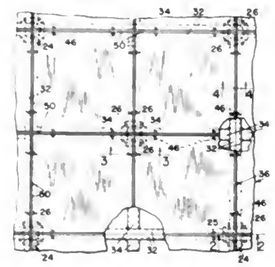
1. Improved shelf equipment having greater strength and rigidity which comprises in combination a vertically extending upright adapted to have shelving attached thereto by suitable means, a solid panel base member the faces of which extend vertically from a floor and the lower edge of which is adapted to be positioned along said floor and which extends outwardly from the center line of said upright at the lower end thereof, said base member having an opening, the axis of which is parallel to the planes of said faces, said opening extending therethrough and adapted to receive the lower end of said upright, said opening being of greater width than the thickness of said panel, and means for rigidly affixing said base member to said floor and to said lower end of said upright.

3,157,253
MAST MOUNTING FOR TELEVISION ANTENNAS
John Vanko, 682 Ridge Road, Hinckley, Ohio
Filed Oct. 3, 1961, Ser. No. 142,643
3 Claims. (Cl. 189—28)

1. A structure for supporting an aerial device over an open-ended vertical tubular base, said structure comprising a vertical tubular mast including an upper portion adapted for attachment of said device and a lower portion positionable within said open-ended tubular base and against an inner surface thereof, said lower portion including a plurality of apertures spaced therealong, a retainer comprising a substantially C-shaped resilient wire element including an outwardly bowed portion and integral upper and lower end portions inserted within a selected pair of said apertures whereby said bowed portion bears against an inner surface of said tubular base diametrically opposite said first named inner surface, the selection of said pair being effective to determine the arc of said bow and the resultant spacing of said bowed portion from said mast.



3,157,254
SECTIONAL FLOORING
Joseph W. Spiselman, New York, N.Y., and Walter F. Pawlowski, Holbrook, Mass., assignors to Floating Floors Inc., New York, N.Y., a corporation of New York
Original application Jan. 30, 1958, Ser. No. 712,271, now Patent No. 3,025,934, dated Mar. 20, 1962. Divided and this application Apr. 20, 1960, Ser. No. 23,415
2 Claims. (Cl. 189—34)

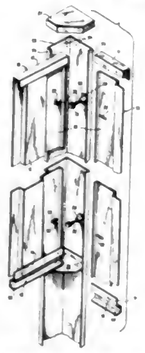


1. An elevated floor construction comprising a series of open supporting frames for said floor, said frames being in mutually abutting relation at their respective edges, panels mounted upon each of said frames, said panels each having upstanding peripheral edges and resilient means for forming an electrical contact with their supporting frames, said upstanding peripheral edges of said panels forming lips, flexible floor coverings mounted in each of said panels, the lips of said panels defining, containing and protecting said flexible floor material on said panels, the lips of adjacent panels lying adjacent each other at corresponding edges and forming in effect single lips of double width defining and outlining the floor material in the forms of the shapes of each of said panels.

3,157,255
SHEET METAL ENCLOSURES
Werner Sondheim, 5123 S. Angela, Memphis, Tenn., assignor to Preform Engineering Company, Memphis, Tenn., a corporation of Tennessee
Filed Jan. 8, 1963, Ser. No. 250,081
4 Claims. (Cl. 189—34)

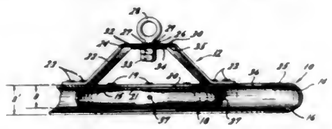
1. In a sheet metal enclosure structure, a plurality of prefabricated framed corrugated sheet metal panels having

horizontally extending slots therein near opposite ends thereof and near the tops and bottoms of the panels, supporting sheet metal posts for said panels adapted to be anchored in the ground and being prefabricated and including nuts welded thereto for registry with said panel



slots and horizontal support webs for the bottoms of said panels below said nuts, whereby the panels when resting upon said webs may have said slots substantially registering with said nuts, and screw-threaded fastener elements engageable through said slots and within said nuts to connect the panels with the posts.

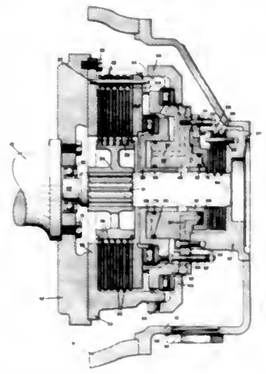
3,157,256
ICE ANCHOR
Samuel C. Latta, Jr., Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,965
7 Claims. (Cl. 189—90)



1. An ice-anchor comprising a first disk of rigid metal having a predetermined diameter and provided with an inturned marginal edge portion to define a larger pan-shaped member, a second disk of rigid metal having a diameter less than said first disk and provided with an inturned marginal edge portion to define a smaller pan-shaped member, and means fixedly interconnecting said disks concentrically with respect to each other, said smaller pan-shaped member being nested within the confines of said larger pan-shaped member.

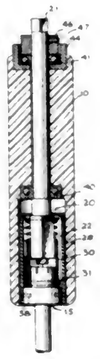
3,157,257
OIL IMMERSED, ACTUATED CLUTCH AND BRAKE ASSEMBLY
Robert S. Root, Syracuse, N.Y., assignor to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York
Filed Apr. 4, 1963, Ser. No. 270,666
11 Claims. (Cl. 192—18)

1. A heavy-duty clutch assembly comprising a driving member; a driven shaft coaxial with said driving member; clutch means to operatively connect said driving member and said driven shaft for rotation together; brake means to prevent said driven shaft from rotating; means to control and actuate said clutch means and said brake means to prevent simultaneous engagement of both clutch and brake means, said control and actuating means comprising a stationary annular support block spaced about the periphery of said driven shaft and situated axially between said clutch means and said brake means, a clutch pressure exerting means slidably positioned with respect to the clutch-facing-end of said block and forming therebetween a first expansible cavity, a brake pressure exerting means slidably positioned with respect to the brake-facing-end of said block and forming therebetween a second expansible cavity, means for directing hydraulic fluid under pressure into said first expansible cavity to engage said clutch, and means for directing hydraulic



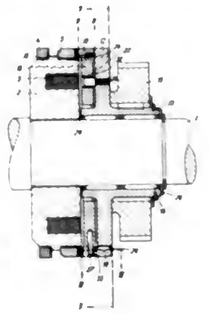
fluid under pressure into said second cavity to engage said brake; a housing about said clutch assembly; and wherein said support block comprises a radially outwardly extending flange, wherein said driving member comprises an extension projecting radially inwardly on the brake-facing-end of said support block flange; and means between said driving means extension and said block flange to transfer the clutch actuating pressure from said driving means to said support block so that thrust is not exerted through said driving means.

3,157,258
TORQUE LIMITING COUPLING AND POSITIVE CLUTCH MECHANISM
Frederick P. Cronholm, 5919 Lorelei, Lakewood, Calif., assignor of one-half to Vincent G. Dreesman
Filed June 16, 1961, Ser. No. 117,634
8 Claims. (Cl. 192—48)



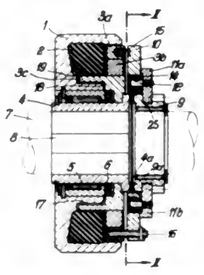
1. A torque limiting tool having a handle and a torque coupling encased within its handle and comprising a driving member fixedly attached to the handle and having an extended portion of polygonal cross section, a driven member extending from the handle and including a spring member fixedly attached to the driven member, the spring member being arranged to grip the polygonal extended portion of the driving member and having a slot extending along its length to permit the expansion of the spring so that the polygonal portion of the driving member may rotate relative to the spring member upon the application of excessive torque, and means within the handle adapted to lock the driving member and the driven member together to prevent relative rotation with respect to each other including mating surfaces enclosed by said spring on adjacent portions of the respective members and means for maintaining the mating surfaces out of engagement for one position of the tool.

3,157,259
ELECTROMAGNETIC CLUTCH
Franz Martin Bialek, Friedrichshafen am Bodensee, Germany, assignor to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen am Bodensee, Germany
Filed May 9, 1960, Ser. No. 27,904
Claims priority, application Germany May 16, 1959
9 Claims. (Cl. 192—84)



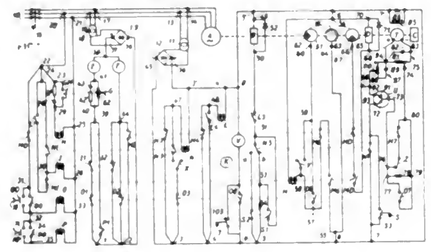
1. In a device of the class described, a shaft, an electromagnet mounted on said shaft, a collar having a radial flange mounted on said shaft, an armature carried by said flange and disposed with an initial air gap with respect to said electro-magnet when said electro-magnet is de-energized, a first resilient means for biasing said armature toward said flange, a tooth ring carried by said electromagnet, a tooth ring carried by said armature, a second resilient means intermediate said latter tooth ring and said armature, wherein said armature has relative longitudinal motion with respect to said latter tooth ring, said tooth rings being engageable when said armature is attracted to said electro-magnet upon energization thereof, said first resilient means being stressed upon initial motion of said armature toward said electro-magnet, said second resilient means being subsequently stressed upon engagement of said tooth rings when the air gap between said armature and said electro-magnet is substantially less than said initial air gap, said second resilient means having a high resistance to stressing so as to effect an initial rapid reverse movement of said armature in withdrawing from said electro-magnet upon de-energization thereof, said first resilient means effecting final reverse movement of said armature to the position of said initial air gap, said first resilient means having less resistance to stressing than said second resilient mean.

3,157,260
ELECTROMAGNETIC POSITIVE DRIVE CLUTCH
Hermann Straub, Friedrichshafen, Anselm Blum, Gunzenhaus, Gemeinde Kehlen, and Franz Bialek, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen am Bodensee, Germany
Filed Oct. 20, 1961, Ser. No. 146,571
6 Claims. (Cl. 192—84)



1. An electromagnetic clutch comprising a stationary magnet body having rotative bearing support on a hub, said hub being keyed to a rotary shaft and having an end face provided with a set of radial clutch teeth, an additional hub slidably splined to a second shaft and having an end face provided with a set of radial clutch teeth for meshing with the teeth of said first mentioned set, an armature carried by said second mentioned hub and relatively rotative thereto, a flux guide means comprising a pair of spaced integrally secured concentric magnetic rings secured to said armature for rotation therewith, said magnet body having a solenoid and said flux guide means being disposed intermediate said solenoid and said armature, said armature being slidably keyed to said flux guide means.

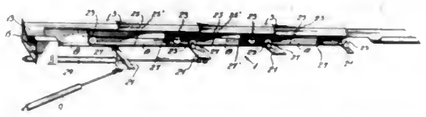
3,157,261
PROGRAMMED START AND STOP FOR A MACHINE SUCH AS A SEWING MACHINE
Luigi Bono, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy
Filed Sept. 7, 1961, Ser. No. 136,564
Claims priority, application Italy Feb. 10, 1961
20 Claims. (Cl. 192—142)



1. In combination, an operating machine adapted to perform a program of operations, an electric motor, an electromagnetic clutch connecting said motor to the machine, an electromagnetic brake operatively engaged with the machine, a programming member driven by the machine, means to fully energize said clutch to start the program of operations, means to simultaneously reduce the energization and to partially energize said brake at a predetermined point in said program, means to stabilize the machine speed at a reduced predetermined value immediately subsequent to said first-named predetermined point in the program, means to further reduce the speed of the machine at a subsequent point in the pro-

gram, and means responsive to the reduction of the speed of the machine to another predetermined value to fully energize said brake and stop the machine.

3,157,262
TELESCOPIC CHUTE
Louis Philippe Chapdelaine, 227 Rue Royale, Sorel, Quebec, Canada
Filed Apr. 1, 1963, Ser. No. 269,406
5 Claims. (Cl. 193—10)



1. A telescopic chute for the conveying of flowable material, comprising:

(*a*) three telescopically connected conveying sections movable from a retracted nested position to an extracted position wherein the sections are in the continuation of one another;

(*b*) said sections including a fixed first section followed by a second and third movable sections;

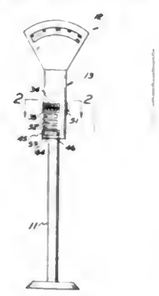
(*c*) a pulley at each end of said second section;

(*d*) a first cable having one end secured to said fixed section between the two pulleys, winding around one of said pulleys and secured, at the other end to the third section, between the two pulleys;

(*e*) a second cable having one end secured to said fixed section winding around said other pulley and secured at the other end to said third section, between the two pulleys;

(*f*) means for moving said second section to thus force corresponding movement of said third section.

3,157,263
PARKING METER WITH USER IDENTIFICATION
George S. Donev, 24312 Annapolis, Dearborn, Mich.
Filed July 9, 1963, Ser. No. 293,625
2 Claims. (Cl. 194—54)



1. In a parking meter, the invention comprising a housing on the meter; and a customer actuated identification means mounted within the housing and variably adjustable therein to visibly indicate the license numbers of successively parked vehicles, said identification means including a support;

and a series of parallel spaced wheels loosely journaled on the support, each wheel having upon its exterior peripheral edge a series of different digits or indicia;

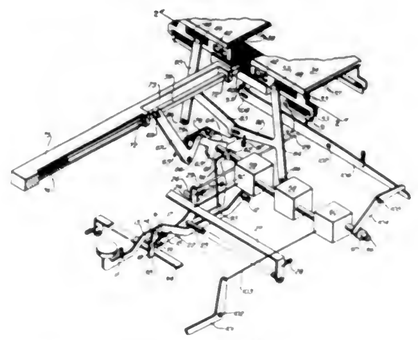
resilient means on said housing projecting between and frictionally engaging pairs of said wheels limiting free rotation thereof and retaining said wheels in adjusted position;

and a spring biased door having a window hinged on the housing opposite said series of wheels and openable for manual access to said wheels;

a latching means normally maintaining the door closed;

and a coin controlled means on the housing to release the latch means permitting manual opening of the door for manual access to said wheels.

3,157,264
TYPEWRITER EMPLOYING SLIDES TO REMOVABLY AND MAGNETICALLY HOLD INDIVIDUAL TYPE ELEMENTS
Kenneth R. Frechette, Bristol, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Jan. 12, 1962, Ser. No. 165,878
7 Claims. (Cl. 197—16)



3. Typewriter apparatus comprising a permanently magnetized hammer operable toward and away from a printing point,

a plurality of slides normally positioned out of the path of said hammer,

said slides having openings therein defined by permanently magnetized material,

type magnetically retained in said openings,

a plurality of key levers,

means operable in response to the depression of a key lever for selectively positioning an associated slide thereby to place a selected type carried thereby into the path of said hammer,

a power source,

a cam shaft,

clutch means responsive to the depression of a key lever for connecting a cycle of said source to said cam shaft,

means associated with said cam shaft for effecting the operation of said hammer through a positioned slide opening whereby the type therein is driven and magnetically held by said hammer to effect printing, said means effecting retraction of said hammer after printing thereby to redeposit said type in said slide,

and means associated with said cam shaft operative to reset said selected slide.

3,157,265
PRINT INTERLOCK FOR TYPEWRITER
Leon E. Palmer, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 29, 1962, Ser. No. 183,468
3 Claims. (Cl. 197—16)

1. In a typewriter having a print head with lower case and upper case characters formed on different portions of its surface,

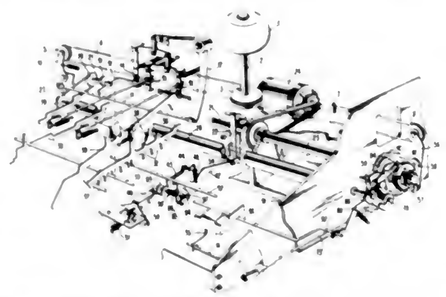
first key controlled means operable to effect case shift by moving said head to present either of said surface portions for the selection of characters,

second key controlled means for moving said head within the area of either of said portions presented to effect the selection of characters to be printed,

said second key controlled means including a clutch which is operable when engaged for positioning said head,

a control member movable between a first position holding said clutch disengaged and a second position permitting its engagements,

a latch for holding said control member in said first position,



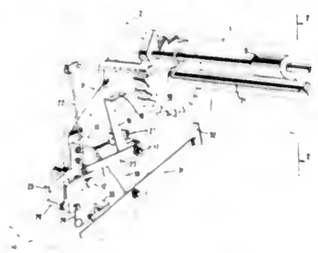
means yieldingly urging said control member to said second position,

means operating with said second key controlled means for releasing said latch,

an element movable into the path of said control member for blocking its movement toward said second position,

and means acting at the beginning of an operation by said first key controlled means for effecting movement of said element into the path of said control member.

3,157,266
PAPER ACTUATED BAIL
William L. Dollenmayer, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,196
5 Claims. (Cl. 197—138)



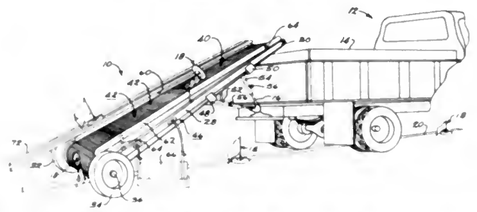
1. A bail mechanism for holding a sheet of paper against the platen of a typewriter comprising, in combination:

a bail engageable with said platen and movable to a position free of the latter;

means actuated by the leading edge of a sheet of paper as it is advanced by rotating said platen for effecting a swinging of said bail to a position free of said platen;

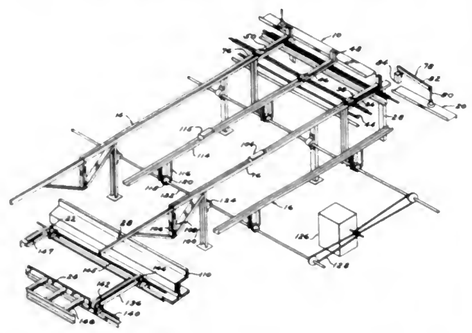
and means operating on further rotation of said platen in a paper feeding direction for driving said bail into engagement with said platen, said sheet of paper lying in the path of said bail as it moves toward said platen so the paper is engaged thereby and moved into engagement with said platen.

3,157,267
ROADWAY SIGNAL DEVICE RETRIEVER
Edward M. Asbury, 450 Burton Drive, Pittsburgh, Pa.
Filed Oct. 3, 1962, Ser. No. 228,093
12 Claims. (Cl. 198—7)



1. A metallic roadway signal device retriever for attachment to a vehicle comprising, conveying means including an endless conveyor for said metallic roadway signal devices, support means for said conveying means, connecting means for connecting said support means to a vehicle in a manner that one end of said conveying means is positioned to discharge into said vehicle and the other end of said conveying means is positioned adjacent the road surface, a tail pulley for said conveying means, said tail pulley positioned adjacent said road surface, said tail pulley including magnetic means arranged to pick up said metallic roadway signal devices and position said signal devices on said conveying means, and propelling means for said conveying means arranged to discharge said metallic roadway signal devices positioned on said conveying means into said vehicle.

3,157,268
AUTOMATIC EXTRUSION HANDLING EQUIPMENT
Richard N. Anderson, Rome, Ga., assignor to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky
Filed Sept. 5, 1961, Ser. No. 136,080
19 Claims. (Cl. 198—20)



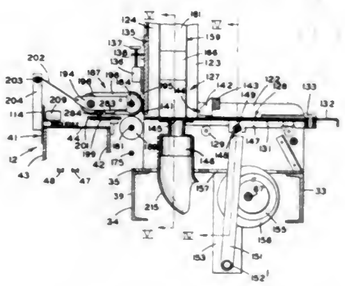
1. A runout conveyor for automatic extrusion handling equipment comprising continuous linear means, means for linearly moving said continuous linear means, extrusion supporting means secured to and movable with said continuous linear means for supporting extrusions extruded thereon, mechanical means operably associated with said linear means and extrusion supporting means movable transversely with respect to said linear means for removing extrusions from the extrusion supporting means and

coordinating means operably associated with said linear means, extrusion supporting means, mechanical means and extrusions for regulating the relative movement of the linear means and mechanical means to prevent interference therebetween.

3,157,269
BATTERY MAKING MACHINE

Herbert C. Winkel, Watervliet, Kenneth G. McGowan, Lawrence, and Charles H. McAlpine, Coloma, Mich., assignors, by direct and mesne assignments, to Winkel Machines Company, Inc., Watervliet, Mich., a corporation of Michigan

Original application Jan. 18, 1956, Ser. No. 560,004, now Patent No. 2,908,377, dated Oct. 13, 1959. Divided and this application Oct. 31, 1958, Ser. No. 771,039
2 Claims. (Cl. 198—23)



1. In a mechanism for feeding panels of relatively fragile material from a source of supply to an assembling conveyor which is moving through a closed path and has upstanding impellers at spaced intervals therealong;

a platform comprising a support means and a guide means, the upper surfaces of which are substantially coplanar and which are spaced apart from each other in a lateral direction with respect to said conveyor, said support means and said guide means being elongated in a direction lengthwise of said conveyor and extending substantially parallel therewith;

said support means and said guide means further being positioned above said conveyor but below the outer ends of said upstanding impellers, whereby said impellers will engage a panel resting on said support means and said guide means and move same onto said assembling conveyor;

upwardly angled means on one end of said platform for directing panels carried by said conveyor beneath said support means and said guide means;

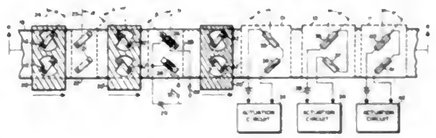
feeding means adjacent to said assembly conveyor for feeding panels, one at a time, in a direction transversely of said conveyor toward said support means and said guide means, said feeding means having a panel supporting feed surface substantially coplanar with said support means;

transfer feeding means including a belt conveyor normally horizontally disposed in a direction transversely of said assembling conveyor and extending from a point adjacent said panel supporting feed surface over said support means, the lower flight of said belt conveyor as said panels are fed being closely spaced from the upper surface of said support means and substantially parallel thereto, whereby a panel fed horizontally from its panel supporting feed surface by said feeding means is engaged and moved horizontally onto said supoprt means by said transfer feeding means and then moved onto said guide means while being maintained at all times in a substantially horizontal position by said belt conveyor.

3,157,270
ESCORT MEMORY DEVICE

Martin John Prucha and Robert A. Boudrias, Palo Alto, Calif., assignors to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed Nov. 26, 1962, Ser. No. 240,769
9 Claims. (Cl. 198—38)

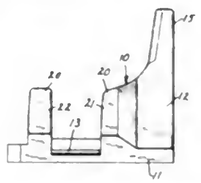


1. A memory system for a conveyor comprising a magnetic body mounted on the conveyor rotatable between a first stable position and a second stable position, means associated with each pair of said stable positions for applying a force to their associated magnetic body to tend to maintain said magnetic body in one or the other of said stable stable positions, means positioned in spaced relation to the conveyor for magnetically co-acting with and for selectively causing the magnetic body to shift from the first stable position to the second stable position, and sensing means positioned in spaced relation with the conveyor for sensing the magnetic body in the second stable position.

3,157,271
EGG COLLECTION DEVICE

Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota

Filed June 4, 1963, Ser. No. 285,390
4 Claims. (Cl. 198—131)



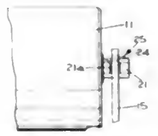
1. In an egg collecting system wherein the eggs are gravity fed to a discharge edge and deposited on a moving conveyor, said conveyor comprising a series of articulated link carrying tray members disposed generally parallel to but below said gravity discharge edge adjacent said conveyor, the improvement comprising longitudinally spaced pairs of upstanding skirted cradle forming fingers, a barrier means extending upwardly above said gravity discharge edge adjacent one end of each tray a distance sufficient to engage and hold an egg short of said edge, whereby to cooperate therewith and an egg on said tray to safely prevent passage of said egg to said discharge edge and on to a filled tray therebelow.

3,157,272
CLIP UNIT FOR HOLDING REMOVABLE AND REPLACEABLE IDLER ROLLERS IN A MOUNTING STAND

James Bay, Springfield, Ohio, assignor, by mesne assignments, to Jeffrey Galion Manufacturing Company, a corporation of Ohio

Filed May 1, 1961, Ser. No. 106,900
1 Claim. (Cl. 198—192)

In combination with a roller having a shaft extending from an end of the roller, a bracket for supporting the roller, said bracket having a notch in which the shaft is received, the roller being disposed at one side of the bracket, and the shaft extending from the roller through the notch to the opposite side of the bracket to provide an exposed end of the shaft at the opposite side of the bracket, an aperture in the bracket at each side of the notch, a spring clip for retaining the shaft in the bracket notch, said spring clip being a planar element that is symmetrically formed in a single plane about a line which is in alignment with the shaft axis when the spring clip is engaged with the shaft, said planar spring clip including an intermediate spring portion extending across the exposed end of the shaft and in engagement therewith to retain the shaft in the bracket notch, said intermediate spring portion of the spring clip having oppositely directed main spring arms extending to opposite sides of the shaft from a junction of said arms at the line of symmetry of the spring clip, each main spring arm including a leg extending through the apertures from said opposite side of the



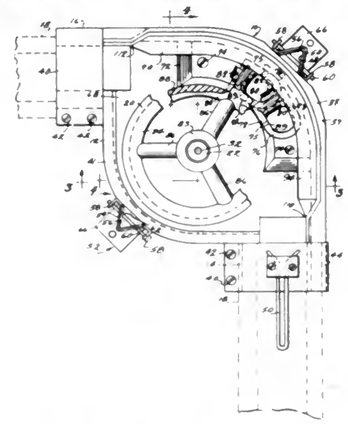
bracket to said one side thereof facing the roller, each leg having a terminal shoulder directed outwardly from the line of symmetry of the spring clip, each said terminal shoulder engaging said one side of the bracket facing the roller, and said intermediate spring portion of the spring clip being yieldably deformed by insertion of said legs into said apertures, said intermediate spring portion of the spring clip engaging the shaft at the junction of the main spring arms with the terminal shoulders being sprung into engagement with the bracket as aforesaid, said apertures being disposed substantially in alignment with the top of the exposed end of the shaft, and the spring clip laying in a plane which is slightly inclined with respect to the axis of the shaft and any tendency of the shaft to ride up in the notch causing the spring clip to be further inclined with respect to the axis of the shaft whereby the spring clip exerts a greater resistance tending to hold the shaft in the notch.

3,157,273
CORNER DIRECTION CHANGER

William W. Robinson, Jr., Signal Mountain, and Dempsie C. Camp, Dunlap, Tenn., assignors to Cumberland Case Company, Chattanooga, Tenn., a corporation of Tennessee

Filed Jan. 25, 1963, Ser. No. 253,796
8 Claims. (Cl. 198—204)

1. In combination with a mechanical poultry feed conveyer unit, a corner direction changer assembly adapted to effect the junction of adjacent angularly disposed trough lengths of said mechanical poultry feed conveyer unit and to effect a lateral direction change in the path of movement of an endless feed conveyer chain carried by feed trough lengths corresponding to the angular disposition of said adjacent trough lengths, said corner direction changer assembly comprising in combination a housing having a floor and upstanding sidewalls defining an entrance channel and an exit channel, an axle vertically positioned in said housing as to extend upwardly from said housing floor; an idler pulley journalled for free rotation on the axle within the housing, said idler pulley having a pair of vertically spaced substantially vertically directed chain engaging surfaces extending around the periphery thereof, the lower of the chain engaging surfaces being of lesser diameter than the upper chain engaging surface; an arcuate hard metal wear plate secured to the floor of the housing adjacent the idler pulley, the upper surface of the wear plate being slightly higher than the lower edge of the lower chain engaging surface of the idler pulley; and a conveyer chain of interconnected links passing into the housing through the entrance channel and having vertically spaced portions of each chain link engaging the vertically spaced surfaces of the idler pulley at the portion

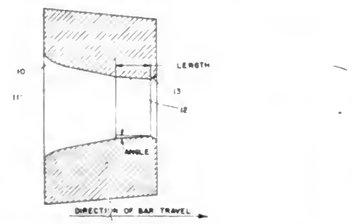


of the pulley periphery being substantially coextensive with the arcuate extent of the wear plate whereby said chain is retained in a transversely horizontal plane of movement during its lateral change of direction.

3,157,274
METHOD OF CONTROLLING RESIDUAL STRESSES IN MATERIALS DURING WORKING

Frank A. Kyle, Crown Point, Ind., and Maurice N. Landis and Thomas A. Kelly, Chicago, and Elliot S. Nachtman, Oak Park, Ill., assignors to La Salle Steel Company, Hammond, Ind., a corporation of Delaware

Filed Oct. 10, 1960, Ser. No. 62,073
4 Claims. (Cl. 205—26)



1. In the plastic deformation and reduction in cross-sectional area of a material which strain hardens, the steps of taking a major reduction in the material independent of the rate of reduction and in a final reduction step following the major reduction, taking a reduction at a predetermined rate corresponding to the slope of the hypotenuse of a right triangle having an included angle of 0°17′ to 3°30′ for a minimum length to cause plastic deformation to penetrate through the cross-section of the material at the rate of reduction.

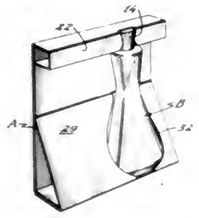
3,157,275
DISPLAY FOLDER AND METHOD OF MAKING SAME

William M. Tolaas, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed May 8, 1961, Ser. No. 108,604
4 Claims. (Cl. 206—45.14)

1. A package including a folder for displaying an elongated object having a relatively large periphery lower end

and a relatively smaller periphery upper end, the object having an intermediate portion above said lower end and adjacent thereto which is of a periphery smaller than said lower end and larger than said upper end, the folder including a back panel extending upwardly along the rear of said object, a top panel connected to the upper portion of said back panel and overlying said upper end of said object, a front panel connected to the forward edge of said top panel and extending downwardly therefrom, a partition panel extending rearwardly from the lower edge of said front panel and having an aperture therethrough through which the upper end of said object



extends, an intermediate panel connected to the rear edge of said partition panel and extending downwardly therefrom rearwardly of said object, a display panel inclining downwardly from the lower edge of said intermediate panel and having an aperture therethrough through which said intermediate portion of said object extends, said aperture being too small to accommodate the lower end of said object, a bottom panel underlying said object and means connecting said bottom panel and said back panel to hold the same in substantially right angular relation, while the object is positively retained and cannot be removed through the panel.

3,157,276
SOCK PACKAGE

Otto Hass, Jr., Charlotte, N.C., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Original application Dec. 27, 1960, Ser. No. 78,418. Divided and this application Feb. 23, 1962, Ser. No. 175,174

2 Claims. (Cl. 206—46)

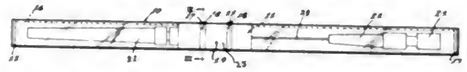


1. An article package, comprising:
a trapezoidal-shaped insert having first and second end edges and side edges;
said second end edge being diagonal to said side edges;
a flap hingedly connected to said insert adjacent said first end defining an aperture through said insert;
said flap having curvilinear side edges;
a first article extending through said aperture and draped around said insert and said second diagonal end edge;
a second article placed around said flap and draped around said insert and said second diagonal end edge;
said second article being contiguous with said first article;
a cover around said insert and said articles.

3,157,277
STERILE PACKAGING

James L. Sorenson, 2341 Logan Circle, Salt Lake City, Utah

Filed Aug. 7, 1961, Ser. No. 129,832
1 Claim. (Cl. 206—63.2)

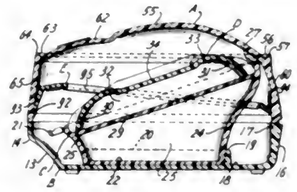


In combination with sterile surgical equipment having
a substantially cylindrical enlarged central body portion,
and diametrically reduced elongated portions extending axially outwardly from the body portion on each end thereof,
an envelope enclosing said equipment secured to said body portion and including an extended envelope portion enclosing each of said axially elongated portions of said equipment,
each of said envelope portions being hermetically sealed at the respective ends thereof opposite the body portion of said equipment,
and a tear strip on each of said envelope portions contiguous to and encircling said body portion and parallel to each other releasably sealing the respective envelope portions hermetically with respect to ambient atmosphere and each having an exposed pull tab,
each of said extended envelope portions being sealed with respect to the central body portion of the equipment and separately releasable by the respective tear strips thereon so that one of said extended envelope portions can be separated to expose the elongated equipment portion enclosed thereby while the other of said elongated equipment portions remains enclosed in sterile condition in its enclosing envelope portion.

3,157,278
HINGED WATCH BOX

Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products Inc., Middle Village, N.Y., a corporation of New York

Filed May 21, 1962, Ser. No. 184,411
12 Claims. (Cl. 206—75)

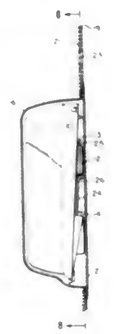


7. A molded plastic box having a front closure and a rear hinge for displaying watches and the like having a shallow lower container portion and deep upper cover portion, said portions having respectively upwardly and downwardly outwardly divergent side front and back thin side walls meeting and abutting at their upper and lower edges, said container having an upwardly and inwardly extending oblique peripheral frame portion having its lower edges attached to the upper interior edges of the side walls of the container portion, the frame having upwardly projecting upwardly concave front, back and side sections extending to a greater height at the front of the box than the rear and the side sections having downwardly extending vertical lips, an internal tray support having outwardly divergent lower inwardly curved and upper outwardly curved support extensions, said extensions extending to a higher position at the rear of the box than at the front of the box, and a forwardly inclined removable display tray mounted in said tray support and the rear side walls having a double wall structure and intervening recessed portions to form said hinge and an upstanding locator structure on the bottom of said container for said tray support.

3,157,279
DISPLAY PACKAGE

Rolf A. Samsing, Braintree, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Oct. 31, 1962, Ser. No. 234,370
11 Claims. (Cl. 206—78)

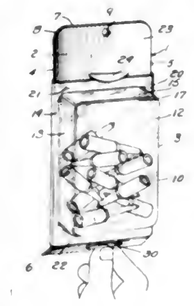


1. A display package comprising a safety razor case having a substantially rectangular base with undercut longitudinal guideways and projecting stop lugs adjacent thereto, in combination with an enclosure of sheet material having a rear panel with a partially severed flap fitting into said guideways and abutting said stop lugs, and a front panel carrying a transparent cover portion.

3,157,280
DISPLAY CONTAINER

David R. Perdue, John A. Perdue III, and Richardson M. Perdue, all % The Perdue Co., Inc., 209 W. 2nd Ave., Pine Bluff, Ark.

Filed Oct. 21, 1963, Ser. No. 317,526
2 Claims. (Cl. 206—78)

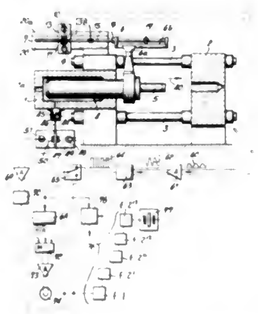


1. A display container adapted to hang from a rack, including
a flat card of elongated rectangular shape and having the longer edges extending continuously parallel from the top portion of the card to the bottom edge,
an article container having an open backed pocket portion extending outwardly of a front face of the card and having front and marginal walls terminating in laterally extending side, top and bottom portions in bearing contact with the face of the card and framing the open back of the pocket portion,
said side marginal portions having reversely extending side flanges to provide grooves receiving therein the side edges of the card to slidably retain the article container on the card,
said article container being of less height than the card to leave an upper projecting portion of the card for hanging the display container from the rack,
a stop on said upper portion of the card engaging the upper transverse margin of said article container,
said card having a relatively short lower finger gripping portion projecting below the lower transverse margin of the article container when the upper transverse margin is engaging said upper stop and the card is closing the open back of the pocket portion,
said card having a slit in said lower portion thereof and having ends extending in the direction of the bottom edge of the card and terminating near the bottom edge of the lower transverse margin of said article container to provide a tongue slightly overlapping the bottom transverse margin cooperating with said stop in retaining said article container immovable on the card, and
said lower projecting end of the card being flexible at a point in substantial registry with the bottom edge of the lower transverse margin to swing the tab formed by said tongue out of engagement to slide the container downwardly on said card and over the tongue after the bottom edge of said card is released to swing back into plane with the card for projecting the open back of the pocket beyond the lower edge of the card for unrestricted discharge of articles from the open back of said article container.

3,157,281
EXTRUSION PRESSES WITH MEANS FOR MEASURING AND REGULATING THE EXIT SPEED OF THE EXTRUDED PRODUCT

Wilhelm Schnettker, Aachen, and Ralf Schneider, Dusseldorf-Ratingen, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Dec. 2, 1960, Ser. No. 73,413
Claims priority, application Germany, Dec. 21, 1959, Sch 27,161
4 Claims. (Cl. 207—1)



1. A method of measuring and indicating the output speed of the extruded product of a hydraulic metal-extrusion press, comprising the steps of: measuring the

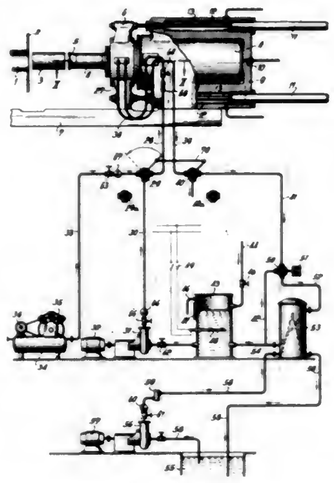
forward feeding movement of the press ram by means of a linear signal-emitter, measuring the hydraulic pressure in the extrusion cylinder of the press by means of a second linear signal-emitter, converting the signals from said emitters to separate rectangular digital pulses, counting the separate digital pulses emitted per unit of time, comparing the two separate numbers of digital pulses emitted per unit of time in an electronic computer, and digitally indicating the resultant value upon an indicating device.

2. A metal extrusion press including a press ram, a stationary press cylinder, means for measuring and indicating the exit speed of the extruded product and means for measuring hydraulic pressure charges in said cylinder, said speed measuring and indicating means comprising a diffraction-grating bar connected to said ram for movement therewith to provide a linear indicator of relatively small mass, a photo-electric cell operatively associated with said bar to provide a pulsating voltage, a converter connected to said cell to convert said pulsating voltage to rectangular digital pulses and a counter connected to said converter for counting said digital pulses per unit of time, said pressure measuring means comprising a pressure responsive device connected to said cylinder and having an element movable in response to changes in pressure in said cylinder, a diffraction-grating bar connected to said element, a second photo-electric cell operatively associated with said last-named bar to provide a positive or negative pulse, a second converter connected to said second cell to convert said positive or negative pulse to a positive or negative rectangular digital pulse, said second converter being connected to said counter whereby said positive or negative pulses are added to or substracted from the pulses received from said first converter and a visual indicator connected to said counter for providing a numerical indication of the output of said counter.

3,157,282
COOLING OF PRESS DISCS IN EXTRUSION PRESSES

Walter Haendeler, Dusseldorf, and Karl Seidel, Moers, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Apr. 21, 1960, Ser. No. 23,786
Claims priority, application Germany Apr. 23, 1959
5 Claims. (Cl. 207—16)



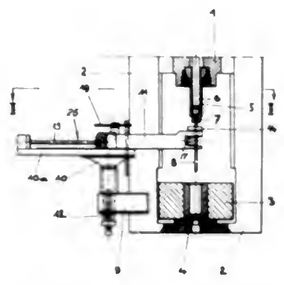
1. In combination with an extrusion press, a press disc to be interposed between the press ram and a billet which is to be extruded, and means for cooling the press disc, comprising:

a first conduit and a second conduit, both extending through the press ram, a first pipe connected with the first conduit, a first three-way valve in the first pipe, means for supplying a gaseous cooling fluid under pressure through the first three-way valve to the first pipe, a water tank, means for alternatively supplying cooling water from the tank through the first three-way valve to the first pipe, a second pipe connected with the second conduit, a second three-way valve in the second pipe, this second three-way valve being adapted to put the second pipe into communication either with the atmosphere or with the water tank, and the press disc being formed with ducts therein through which cooling fluid can pass from the first conduit to the second conduit.

3,157,283
CHANGING THE MANDREL OF A TUBE-EXTRUSION PRESS

Franz Maass, Dusseldorf-Gerresheim, and Werner Wehmeyer, Essen, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Nov. 13, 1961, Ser. No. 151,802
Claims priority, application Germany, Nov. 18, 1961, Sch 28,784
1 Claim. (Cl. 207—19)

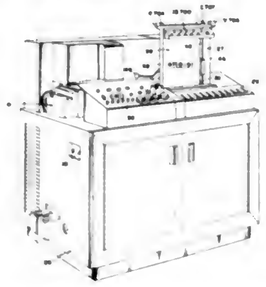


Mandrel-changing means for an extrusion press, comprising: a press ram, a mandrel-holder and a mandrel extending through the press ram, a mounting sleeve within the press ram connecting the lower end of the mandrel-holder with the mandrel, two arms, each movable towards and away from the axis of the press ram, one of these arms serving as a mandrel-removing appliance and the other as a mandrel-inserting appliance, actuating means for moving the arms, a controllable clamping gripper mounted on each of the arms, each of these grippers being capable of holding the mandrel fast, actuating means for the grippers, a rotatable wrench mounted on each of the arms, means for rotating each wrench about the axis of the mandrel, and means for raising and lowering each wrench into and out of engagement with the mounting sleeve, the wrench on the mandrel-removing appliance being adapted, by rotating the mounting sleeve, to release the mandrel from the mandrel-holder while the clamping gripper on the same appliance holds the mandrel fast, and the wrench on the mandrel-inserting appliance being adapted, by rotating the mounting sleeve, to lock the mandrel to the mandrel-holder while the mandrel is still held fast by the clamping gripper on the said mandrel-inserting appliance.

3,157,284
DEVICE FOR SELECTING AND SORTING DISCRETE DATA BEARING ELEMENTS

Claire L. James, Rochester, N.Y., and Robert W. Brooks, Sherborn, and Robert L. Massard, Wellesley Hills, Mass., assignors, by direct and mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 17, 1961, Ser. No. 132,023
30 Claims. (Cl. 209—72)



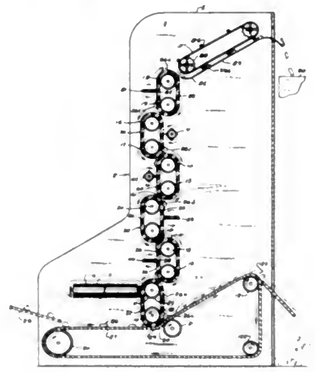
1. Data processing apparatus for selecting, sorting and rejecting discrete elements having information encoded thereon in accordance with information encoded on another medium, said apparatus comprising a supply receptacle, a group of receiving receptacles into which said elements can be inserted and from which said elements can be withdrawn, first scanning means for generating first signals representative of the encoded information on said medium in accordance with which said elements are to be selected and sorted, means for storing said first signals, second scanning means independent of said first scanning means for generating second signals from the encoded information on each element, means for transporting said elements individually from said supply receptacle past said second scanning means to any receptacle in said group of receptacles, respective transfer means for each of said receptacles, said transfer means associated with each of the receptacles in said group being selectively operative to insert an element into its respective receptacle, means responsive to said second signals derived from each of said elements for comparing said second signals with said stored first signals and with correspondence generating a select signal, means responsive to said select signal for rendering one of said transfer means operative when said element is aligned with the respective receptacle, means responsive to the absence of a select signal for rendering another of said transfer means operative when said element is aligned with the respective receptacle, means for selectively establishing a selecting, sorting or rejecting mode of operation, and means for interconnecting each of said transfer means associated with said group of receptacles to said signal comparing means in accordance with the selected mode of operation.

3,157,285
COTTON CLEANER

William E. Rood, Jr., 1500 S. 7th St., Phoenix, Ariz.

Filed Oct. 16, 1961, Ser. No. 145,109
3 Claims. (Cl. 209—78)

1. A cotton cleaner comprising a frame, a plurality of pairs of pickup belt rollers journaled in said frame, one of each pair of rollers being a lower roller and the other roller disposed above it being an upper roller, cotton pickup belts of the type having transverse cuts on their outer surfaces which open as the belts bend over said rollers, said belts returning over said rollers and forming lays between said rollers, power means for rotating said rollers to drive said belts, the upper and lower bends of successive adjacent belts being substantially in contact and said rollers being offset at said contact areas so that said belts will grip alternate sides of cotton tufts as said tufts are transferred from one belt to another, a flat feed belt running horizontally over rollers and traveling transversely to said pickup belts with its top lay running in contact with the lower bend of the lowermost pickup belt, a cleaned cotton receiving chute disposed to receive cotton released at the top bend of

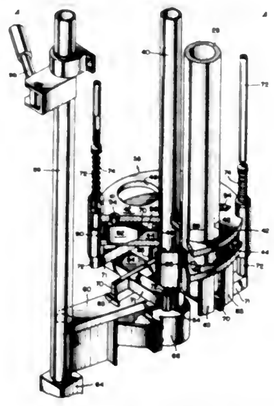


the uppermost pickup belt, a chain operated scraper operating in said chute to remove cotton along said chute, a transverse roller operating in contact with the underside of the top lay of said feed belt and being offset in the direction of the feed belt travel and forcing said feed belt around the lower outer quadrant portion of said pickup belt so that all unbendable material will be crushed and forced tangentially from the area of contact between the pickup belt and said feed belt.

3,157,286
DRILL ROD STORAGE AND HANDLING MEANS

Laszlo Gyongyosi, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

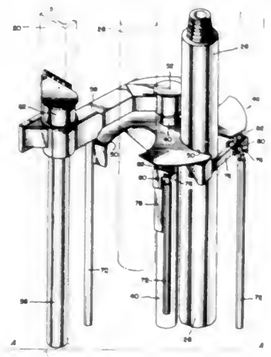
Filed Mar. 20, 1963, Ser. No. 266,603
5 Claims. (Cl. 211—1.5)



1. A drill pipe storing and handling device comprising:
(*a*) a swingable support;
(*b*) a rack for carrying a plurality of drill pipes mounted on said support to rotate about the axis of said rack independently of swinging of said support;

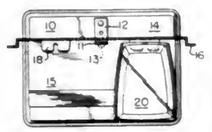
(*c*) locking means mounted on said rack and actuable by the weight of a drill pipe when said drill pipe is carried by said rack to lock said drill pipe in said rack;

(*d*) means for rotating said rack about its axis; and



(*e*) indexing means mounted on said support and cooperating with said locking means to limit rotation of said rack in one direction to a predetermined portion of a turn, in response to the weight of a pipe in said rack, by stopping the rotation of said rack at a point wherein said pipe is properly positioned for being removed from the rack and used in a drill operation.

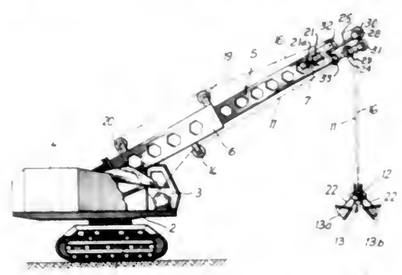
3,157,287
DISPLAY RACK
Robert L. Sinclair, Dedham, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Dec. 27, 1962, Ser. No. 247,638
3 Claims. (Cl. 211—49)



1. A stand-up display rack comprising a flat base, an upright rod secured thereto and having a projecting stop at an intermediate point above the base, the space above said flat base being unobstructed except for said upstanding rod, and a rectangular panel in engagement with said stop so as to be supported in spaced relation with respect to said base and having a forwardly projecting shelf at its lower edge and a marginal flange extending across its upper edge, said shelf and flange having aligned passages shaped to receive said rod in sliding engagement.

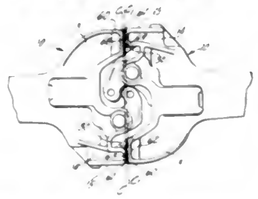
3,157,288
MULTI-PURPOSE EARTH MOVING MACHINE
Ernst Wieger, Budericher Strasse 13, Neuss (Rhine), Germany
Filed Dec. 6, 1961, Ser. No. 157,393
Claims priority, application Germany Dec. 8, 1960
3 Claims. (Cl. 212—42)

1. An earth moving machine which comprises in combination; supporting means, a boom member having one end pivoted to said supporting means on a horizontal axis whereby its free end is adjustable in a vertical plane, means connected to the free end of the boom member and forming a first horizontal pivot axis thereon, a ram member arranged on the boom member at the free end thereof and reciprocable lengthwise of the boom member, said ram member having its one end projecting beyond the free end of said boom member, means connected to said one end of said ram member and forming a second horizontal pivot axis thereon vertically spaced from said first



pivot axis, said first pivot axis and said second pivot axis being adapted respectively to receive coplanar pulley means for supporting lifting and opening cables for a grab bucket and alternately for connection to spaced points of a scraping bucket, and means for reciprocating said ram member for operating said opening cable and for manipulating said scraping bucket.

3,157,289
CAR COUPLER
Kenneth L. De Penti, Mayfield Heights, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 20, 1963, Ser. No. 303,366
8 Claims. (Cl. 213—1)



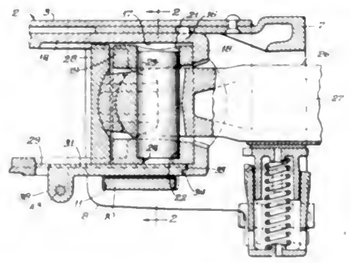
1. An automatic car coupler comprising:

a head facing in a forward direction for coupling with another coupler and having a longitudinal central axis adapted for making generally common alignment with the longitudinal central axis of said other coupler when in a coupled relation therewith, said head having a transverse coupling plane normal to said longitudinal central axis; and

anti-coupling abutment means fixed to the coupler extending beyond said coupling plane, said abutment means being disposed substantially equidistant from both sides of said axis in a horizontal plane for engaging abutment means of another similar coupler thereby preventing a fully coupled condition during an attempted coupling operation.

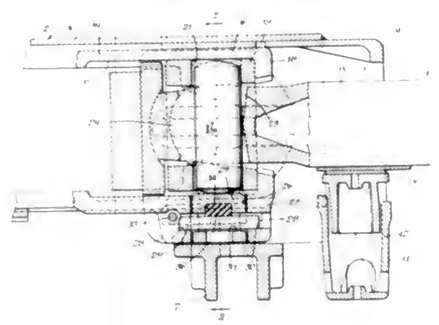
3,157,290
ROTARY COUPLER ARRANGEMENT
Frederick C. Kulieke, Alliance, Ohio, assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Feb. 13, 1963, Ser. No. 258,201
2 Claims. (Cl. 213—62)

1. In a rotary coupler arrangement, a yoke having a head portion provided with a cylindrical inner surface, a collar engaging said surface and rotatable relative to the yoke, a coupler shank within said collar, a pivot pin connecting said shank to said collar, said head portion having an elongated slot below said pivot pin, ledges provided on said head portion on opposite sides of said slot and intermediate the ends thereof, a shoulder provided on the head portion at one end of said slot, a pin retainer member within said slot and having lugs seated



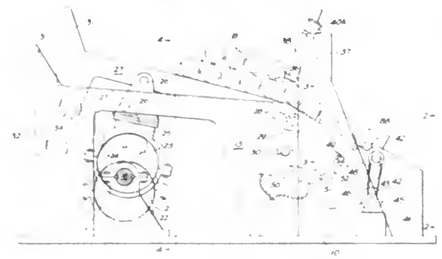
on said ledges, and having a lip on one end thereof seated on said shoulder, a depending boss on the end of said member remote from said lip, spaced ears depending from said head portion on opposite sides of said boss and having aligned apertures in registry with an opening in said boss, and a bolt extending through said apertures and said opening to secure said member to said head portion.

3,157,291
ROTARY COUPLER
Frederick C. Kulieke and Kenneth V. Livelsberger, Alliance, Ohio, assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Sept. 6, 1963, Ser. No. 307,128
1 Claim. (Cl. 213—62)



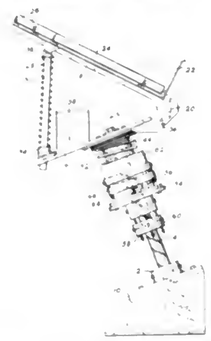
In a rotary coupler arrangement, a yoke having a head portion provided with a cylindrical inner surface, a collar mounted for rotational movement in said head portion, a coupler shank extending through said collar, a pivot pin extending through aligned openings in said collar and shank, said head portion having an aperture for registry with said aligned openings for the passage of the pivot pin therethrough, a plug mounted in said aperture in abutting engagement against an end of the pivot pin, said plug having a downwardly facing chamber, said head portion and plug having horizontally aligned retainer plate openings, a retainer plate extending through said retainer plate openings and operative to limit vertical movement of said plug relative to said head portion, a pad of resilient material mounted in said plug chamber and engaged against the upper surface of the retainer plate to bias the plug upwardly against the end of the pivot pin, and abutment means provided on said head portion engaging opposite ends of said plate.

3,157,292
BILLET UNSCRAMBLER
Thomas J. Pachell, 3519 Kirk Road, Youngstown, Ohio
Filed Sept. 10, 1962, Ser. No. 222,569
6 Claims. (Cl. 214—1)



1. In a billet or bar unscrambler having a plurality of spaced inclined frame members for receiving said billets or bars, spaced inclined tracks on said frame members adjacent one end thereof, a plurality of elongated inclined oscillating members movably positioned therebetween, an arm pivoted to one end of each of said oscillating members, the other end of said arm being pivoted to said frame, vertical extensions on the opposite end of each of said oscillating members, rollers on said vertical extensions engaged between said inclined tracks and eccentric devices engaging said oscillating members for imparting oscillating motion thereto and blocking means spaced above said first mentioned ends of said oscillating members and defining a passageway for said billets or bars.

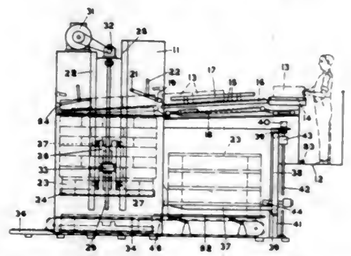
3,157,293
PACKAGE HANDLING MACHINE
Tom Walters, Point Pleasant, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Sept. 13, 1962, Ser. No. 223,467
8 Claims. (Cl. 214—1)



7. In a package handling machine, a shaft inclined at an acute angle to the vertical, a base plate mounted for sliding movement along said shaft and for rotation about the axis thereof, means normally urging said base plate upward along said shaft, a bed table, a substantially horizontal hinge connecting said bed table and said base plate, means normally urging said bed table upward about said hinge to an acute angle above said base plate, said bed table descending about said hinge when the

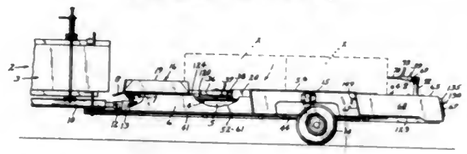
weight of a package on said bed table overcomes said bed table urging means to turn the package about a substantially horizontal axis, and cooperating means on said base plate and inclined shaft actuated by the weight of said package acting on said base plate overcoming said base plate urging means for turning the package about the axis of said inclined shaft.

3,157,294
PALLET LOADING MECHANISMS
William Noel Bolt, Holly House Farm, Great Sankey, Warrington, England
Filed Feb. 21, 1962, Ser. No. 174,869
3 Claims. (Cl. 214—6)



1. A pallet loading mechanism of the kind described, comprising a loading platform, a pallet carriage arranged adjacent the loading platform, a stripper plate mounted for movement into a load-receiving position above the pallet carriage and substantially in line with the loading platform and retractable to a position below the loading platform to strip a layer of articles off the plate, a pair of spaced tracks, rollers mounted on the stripper plate for engagement with the tracks, the portion of the tracks adjacent the forward edge of the loading platform being shaped to cause the rear edge of the plate to fall below the level of the platform during initial retracting movement of the plate, and a stripping abutment for engaging the rear face of the layer during the stripping action.

3,157,295
HAY BALE ACCUMULATOR
Clifford W. Pridgeon, Chinook, Mont., and Merriam Lee Gustafson, Minneapolis, Tim Lund, Excelsior, and William L. Huttner, Minneapolis, Minn., assignors to Daffin Corporation, Hopkins, Minn., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,903
20 Claims. (Cl. 214—6)



1. For use with mobile hay baling machines of the type having a discharge portion for delivery of bales from the baling machine,

(*a*) a generally horizontally disposed hay bale accumulator platform,

(*b*) means for connecting said platform to a baling machine adjacent its discharge portion for common traveling movements therewith,

(*c*) a portion of said platform being disposed for reception of bales from said discharge portion,

(*d*) bale transfer means for shifting said bales on said platform away from the path of delivery movement thereof from said baling machine to dispose said bales in a predetermined group arrangement,

(*e*) discharge mechanism for removing the group of bales from said platform to deposit said bales on the ground in said group arrangement,

(*f*) and control means for actuating said bale transfer means responsive to predetermined movement of a bale on said platform from said baling machine discharge portion and for actuating said discharge mechanism responsive to accumulation of a predetermined number of bales on said platform,

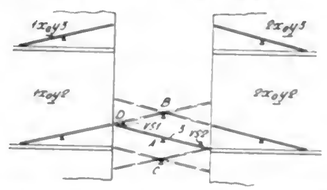
(*g*) said bale transfer means comprising,

(1) a reciprocatory transfer member elongated in the direction of delivery movement of bales from said baling machine and movable across the path of delivery movement of said bales toward and away from a normal position at one side of said path of delivery movement,

(2) means for imparting reciprocatory movement to said transfer member,

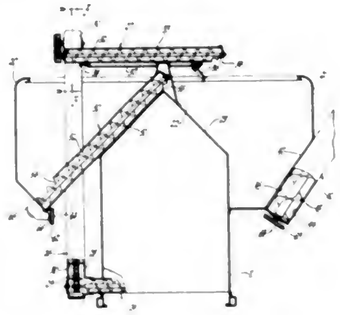
(3) and an elongated extension element rotatably mounted intermediate its ends on a vertical axis to the end of said transfer member nearest the discharge portion of said baling machine, said extension element cooperating with said transfer member during bale shifting movement thereof to shift said bales away from said path of delivery movement and being adapted to be rotated on said axis by a following bale during delivery thereof to said platform and during return movement of said transfer member to its normal position.

3,157,296
CONTROL SYSTEMS FOR LOAD-CONVEYING INSTALLATIONS
Thomas John Frederick Oldham, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 23, 1960, Ser. No. 71,337
Claims priority, application Great Britain Nov. 24, 1959
9 Claims. (Cl. 214—16.4)



1. A load conveying installation comprising a multi-level load storage structure; storage compartments in said structure; a load conveyor and driving means therefor; pivoted floors on the load conveyor and on said storage compartments; electrically actuated means for locking the pivoted floor of the conveyor to the pivoted floor of one of said storage compartments and permitting selective movement under gravity of a load between the conveyor and the said one storage compartment, said selective movement being dependent on a predetermined relative relationship between the conveyor and the said one compartment and the direction of inclination of the floors thereof; a multi-position selector switch adapted to be pre-set according to the desired selective movement; a plurality of sequence switches selectable by the setting of the multi-position selector switch and operable at predetermined intervals for initiating and controlling a desired sequence of operations, including operation of the electrically-actuated floor locking means; switching means for at least partly selecting the said storage compartment and for controlling said driving means for moving said conveyor to the predetermined relative relation adjacent the said selected storage compartment during at least one phase of the said sequence of operations; a plurality of conveyor vertical position responsive switches operable in predetermined sequence and at appropriate intervals by said selected sequence switch for providing relatively short vertical displacement of said conveyor, after actuation of the electrically actuated floor locking means at least during removal of a load from the said storage compartment, thereby providing the desired inclination of floors.

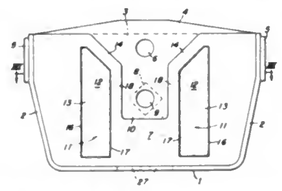
3,157,297
GRAIN TANK AND CONVEYOR MECHANISM FOR COMBINES
Ralph L. Tweedale, Southfield, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Nov. 29, 1962, Ser. No. 240,956
1 Claim. (Cl. 214—17)



An agricultural harvesting machine including a body portion enclosing grain cleaning and separating mechanisms with a pair of side tanks extending down along opposite sides of the machine body for temporarily storing harvested grain received from the cleaning and separating mechanisms, characterized by, a grain elevator adjacent one of said side tanks for lifting the harvested grain from the cleaning and separating mechanisms, a filling conveyor for receiving grain from said grain elevator and depositing the grain into said other side tank, a hood interconnecting said grain elevator and said filling conveyor, and a movable door pivotally mounted in the lower portion of said hood on a pin secured to the underside of the hood and positioned above said one side tank, said door being selectively positionable between an open position whereby grain is deposited by said grain elevator into said one side tank and an alternate closed position whereby grain from said grain elevator is transferred through said hood into said filling conveyor and is deposited into said other side tank.

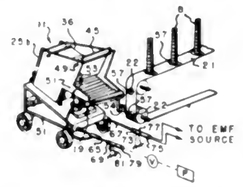
3,157,298
OPEN HEARTH CHARGING BOX
Frank Kennedy, Westmont, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed June 26, 1963, Ser. No. 290,787
5 Claims. (Cl. 214—26)

1. A peel head socket for an open hearth charging box comprising a pair of plates in longitudinally spaced and transversely extending positions at one end of said box, each of said plates having a pair of laterally spaced parallel key openings therein respectively positioned on opposite sides of the longitudinal axis of said box, and a pair of key blocks spanning the space between said plates and having end portions fitted in said key openings, said plates and blocks cooperating to define a socket opening for the reception of the head of a charging machine peel and said



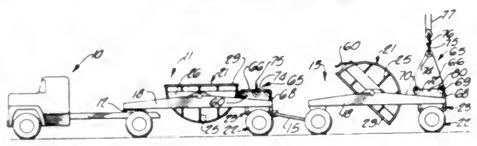
key blocks operating to hold said plates against twisting movement relative to each other.

3,157,299
BOBBIN HANDLING ARRANGEMENT
Robert M. Ingham, Jr., Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Original application Oct. 13, 1958, Ser. No. 767,013, now Patent No. 3,082,908, dated Mar. 26, 1963. Divided and this application Nov. 28, 1961, Ser. No. 155,357
2 Claims. (Cl. 214—44)



1. A bobbin serving device comprising a movable bobbin holding cart having a pneumatic use and an electrical use device thereon, a fixed loading station having a bobbin receiver thereat, a first dual purpose rigid pneumatic conduit and coupling in fixed position on said cart, a second dual purpose rigid pneumatic conduit and coupling mounted in fixed relation at said loading station, a first rigid electrical conduit and coupling on said cart in fixed spaced apart relation from said first pneumatic conduit and coupling, a second rigid electrical conduit and coupling mounted in fixed relation at said loading station and spaced from said second rigid pneumatic conduit, the respective parts of said couplings being complementary and at substantially the same height and spacing for direct fitting together in intercoupled relation to both positively removably position said cart in a predetermined positive relation to said bobbin receiver and to provide electrical and pneumatic connections between said loading station and said cart.

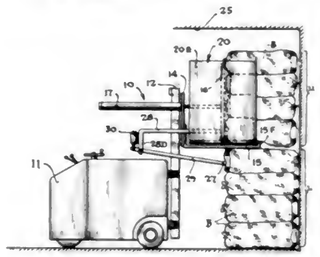
3,157,300
TRAILER FOR HAULING AND DUMPING LOOSE MATERIAL
Thomas J. Collins, 1517 Rexford Place, and Joseph W. Wells, 725 Rancho Circle, both of Las Vegas, Nev.
Filed May 13, 1963, Ser. No. 279,829
15 Claims. (Cl. 214—64)



1. A heavy-duty mobile trailer for hauling bulk loose material, said trailer having a generally horizontally disposed rectangular frame supported at its ends on separate

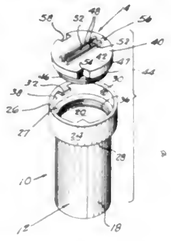
carriage means, heavy-duty shaft means extending transversely of the midportion of said frame, a semicylindrical cargo bucket journaled on said shaft means and including a tubular housing enclosing said shaft between the side walls thereof and having its ends secured to said side walls to hold the same in a desired relationship to one another, strong counterbalance spring means encircling said shaft means anchored at one end to said bucket and at its other end to a stationary part of said frame, said spring means urging said bucket to pivot away from dumping position toward its upright cargo-carrying position, and means for positively locking said bucket in said cargo-carrying position.

3,157,301
LOADING OF BAGGED MAIL
Joseph E. McWilliams, 1901 Lee St., Evanston, Ill.
Filed Oct. 18, 1962, Ser. No. 231,375
6 Claims. (Cl. 214—514)



1. In a powered lift truck having a mobile wheeled body with a lifting and unloading structure comprising a lifting carriage, and a lifting platform and a pusher plate supported for relative horizontal movement on said carriage, the improvement that comprises a horizontal retaining bar, and means supporting said bar on said structure for movement from a retracted position to an effective position wherein the forward face of the bar is disposed substantially in the plane of the forward face of the push plate and in downwardly spaced relation with respect to the platform whereby a load on the platform may be unloaded therefrom onto the top of a stack supported separate and apart from the lift truck by rearward movement of the platform and the lift truck while the pusher plate and the retaining bar are maintained in stationary engagement, respectively, with such load and an upper portion of the stack upon which said load is to be deposited.

3,157,302
CONTAINER
Albert S. Hakim, % York, 326 De Siard, Monroe, La.
Filed Mar. 3, 1964, Ser. No. 349,008
5 Claims. (Cl. 215—9)



1. A safety container for medicine or the like, the container comprising—

(I) A receptacle comprising:

(*a*) a base portion;

(*b*) a tubular wall extending from the base portion and having an upper end portion terminating in an end edge;

(*c*) the tubular wall having an inner surface and an outer surface;

(*d*) at least three inwardly projecting lugs of mutually distinct configuration extending from the inner surface of the tubular wall at the end edge thereof, the lugs including lower sides;

(*e*) the inner surface having screw thread means formed therein terminating at a location spaced a selected distance from the lug lower sides, there being a smooth wall between the thread means and the lug lower sides; and

(II) A receptacle closure comprising:

(*f*) a generally disc-shaped body portion having an upper side, an under side, and a side edge;

(*g*) thread means on the side edge of the body portion engageable with the screw thread means of the receptacle wall inner surface;

(*h*) the closure being of a depth from its upper side to its under side of less than said selected distance;

(*i*) an upwardly projecting boss on the body portion upper side having a turning slot therein; and

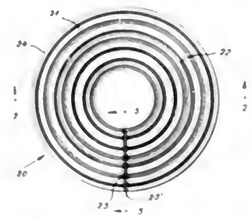
(*j*) at least three openings in the body portion adapted for registry with the lugs on the container wall whereby the closure is removable from the receptacle.

3,157,303
NURSING BOTTLE HOLDER
Harry Siegel, 620 Fort Washington Ave., New York, N.Y.
Filed Apr. 15, 1963, Ser. No. 273,059
2 Claims. (Cl. 215—11)



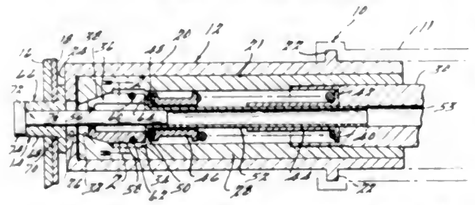
1. A container or holder for a nursing bottle, comprising a closed casing having walls joined together at edges thereof by seams, each of said walls having a laminated structure; said structure including a transparent plastic outermost layer, an intermediate colored layer juxtaposed to the outermost layer, and an inner liner; said liner including a pair of thin, smooth plastic sheets with a cellular, plastic foam pad disposed between the sheets, one of said sheets being juxtaposed to the intermediate layer, the other one of said sheets being exposed to the interior of the casing, a circular thermometer in one of said walls, said thermometer having a readable face exposed at the exterior of the casing, a slide fastener in another of said walls providing access to the interior of the casing, said thermometer having a metal member exposed inside the casing at the center of said one wall for sensing the temperature in a center zone inside the casing, and a pair of metal arms extending radially outward of said member in axial alignment with each other for conducting heat between said metal member at said center zone and other zones inside the casing, so that the thermometer indicates a temperature which is the average of the temperatures in said zones.

3,157,304
MULTI-PURPOSE COVERS FOR CONTAINERS
Patrick J. Judge, 473 72nd St., Brooklyn, N.Y.
Filed Oct. 29, 1963, Ser. No. 319,772
4 Claims. (Cl. 215—41)



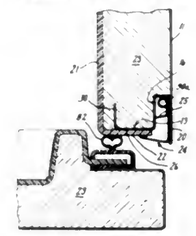
1. A cover for a circular rim of a container, comprising a circular flat, flexible, plastic member, having a plurality of concentric grooves in one side thereof defining a plurality of endless concentric ridges with cylindrical surfaces, each one of said grooves having a different diameter so that a rim of a container of different diameter may be frictionally engaged in any one of the grooves, each ridge having a bead extending radially inward of the groove all around said ridge to engage under a bead on the rim of a container engaged in the groove, the other side of said member having a plurality of concentric score lines disposed radially between the ridges on the one side of said member with a radial score line intersecting said concentric score lines, to facilitate tearing away annular portions of said member.

3,157,305
NOSE ASSEMBLY
Charles W. Baugh, St. Clair Shores, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 5, 1961, Ser. No. 143,209
13 Claims. (Cl. 218—42)



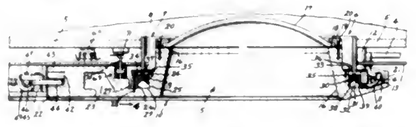
1. Apparatus for setting a fastener including a pin and a sleeve by providing an axial force relative to the pin and the sleeve comprising a generally tubular anvil member having a portion for engaging the sleeve, a generally tubular collet member slidably disposed within said anvil member and being movable axially relative to said anvil member and having a forward portion with an axial bore tapered radially outwardly and axially inwardly at a predetermined angle of inclination, a chuck jaw assembly comprising a plurality of radially disposed chuck jaw members movable to and from an opened and closed position responsively to axial movement of said collet member and having a frusto conically shaped forward portion with an angle of inclination substantially equal to said predetermined angle of inclination of said tapered bore, said chuck jaw assembly having said frusto conically shaped portion matably disposed in said tapered bore whereby axial movement of said collet member in one direction imparts radially inwardly and axially rearwardly directed components of force to said chuck jaw members, said chuck jaw assembly having a radially inwardly extending tooth peripherally disposed at the outer end of said frusto conically shaped portion, said predetermined angle of inclination having a magnitude to provide said radially and axially directed components of force in relative magnitudes to cause said chuck jaw members to move to said closed position and hence said tooth to move radially inwardly into the surface of the pin of the fastener to form a combined pulling and breakneck groove responsively to axially rearward movement of said collet, and means for applying an axial force through said combined pulling and breakneck groove relative to said collet and said anvil and for moving said collet axially relative to said anvil.

3,157,306
CABINET STRUCTURE
Iber C. Courson, Glenside, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,662
2 Claims. (Cl. 220—9)



2. A refrigerator cabinet comprising inner liner and outer shell elements spaced one from the other, means defining a forwardly presented channel extending along the forwardly presented edge portions of said liner and shell elements and including leg portions disposed between said shell and said liner elements, and trim means including a channel formed of flexible and resilient material, one leg portion of said trim means extending transversely of and disposed in frictional resilient engagement with opposed leg portions of said cabinet channel to retain said trim means, the other leg portion of said trim means extending from said outer shell element toward said liner element, over said first mentioned channel, whereby to form therewith a substantially continuous frontally presented frame for said forwardly presented edge portions.

3,157,307
PRESSURIZED DOOR FOR DRY CLEANING MACHINES AND THE LIKE
Leo P. Sullivan and Harold V. Dettman, Minneapolis, Minn., assignors to Consolidated Engineering Service, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 7, 1962, Ser. No. 235,956
2 Claims. (Cl. 220—46)



1. In a dry cleaning machine or the like having a tumbling chamber and also having an opening for the tumbling chamber which is framed by a generally annular flange:

(*a*) a door for the opening of said tumbling chamber,

(*b*) means mounting said door adjacent said opening

for pivotal swinging movements between an open condition and a closed condition,

(*c*) an annular recess defined by said door and opening in the direction of said annular flange and disposed so as to be generally aligned therewith when the door is in its closed condition, said annular recess having inner and outer side wall portions and also having a bottom wall portion,

(*d*) a generally annular compressible sealing member received in the annular recess of said door with one portion thereof disposed in spaced relationship to the bottom wall portion of said annular recess so as to define an annular pressure chamber behind said sealing member and with another side portion of said sealing member disposed so as to engage said annular flange when said door is in its closed condition, said one side portion of said sealing member being generally cross-sectionally V-shaped and defining opposed generally annular inner and outer sealing lips each of which is disposed in engagement with a different one of the opposed side wall portions of said annular recess,

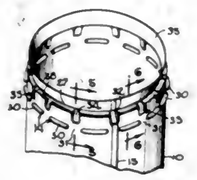
(*e*) means for introducing fluid under pressure into the annular pressure chamber defined behind said sealing member so as to force said annular sealing lips against the side wall portions of said annular recess and also releasably compress said sealing member against said annular flange when said door is in its closed condition, and

(*f*) latch means for releasably retaining said door in its closed condition.

3,157,308
CANISTER TYPE CONTAINER AND METHOD OF MAKING THE SAME

John A. Foster, Rockford, Ill., assignor to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Illinois

Filed Sept. 5, 1961, Ser. No. 135,949
3 Claims. (Cl. 220—72)



1. A partially formed container having, in combination, a tubular body composed of sheet metal, an inturned shoulder extending around said body and merging with the bottom of a groove extending continuously around and near one end thereof, and a plurality of outwardly opening depressions in said body extending longitudinally of said body and interrupting said shoulder at points angularly spaced around the shoulder, the bottoms of said depressions sloping longitudinally of said body and each merging at one end with the bottom surface of said groove and at the other end with the outer surface of said body at a point spaced beyond said shoulder.

3,157,309
CARRIER CARTON FOR CYLINDRICAL ARTICLES

Francis A. Childsey, Jr., Devon, and John V. Mahon, Norristown, Pa., and Richard S. Wolowicz, Chicago, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Mar. 15, 1963, Ser. No. 265,448
6 Claims. (Cl. 220—115)

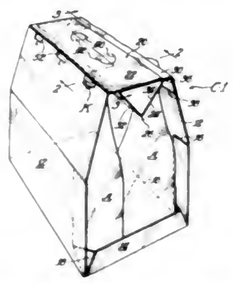
1. A sleeve-type, wrap-around, carrier carton, formed from a unitary blank of foldable paperboard, for enclosing two opposed, parallel rows of articles arranged in adjacent, side-by-side relation, comprising:

(*a*) a pair of vertically spaced, transversely disposed end walls;

(*b*) a pair of transversely spaced, vertically disposed side walls extending between and connected to respective end walls to form a generally tubular structure;

(*c*) the carried articles at corresponding end portions defining a space extending between the rows longitudinally of the carton;

(*d*) the one end wall of the above mentioned corresponding end portions of the carried articles being a composite wall including a pair of sections having corresponding edges hinged to the side walls and



having opposite edges extending beyond each other with portions thereof disposed in overlying relation;

(*e*) one of said sections defining thereby a single, flat, horizontal, outer panel;

(*f*) the other of said sections including a pair of inwardly directed inner panels projecting from spaced locations along the other section into the carton between the adjacent articles of the opposed rows and having inner edges thereof interconnected to form a continuous retaining member across the one end wall of the carton between the spaced rows;

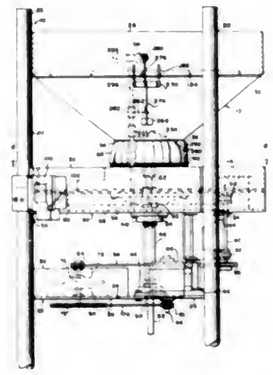
(*g*) the side walls and the inner panel of the retaining member having generally at the portions thereof adjacent the outer panel openings aligned longitudinally of the carton with each other for receiving and trapping thereby opposite end portions of said adjacent articles.

3,157,310
MATERIALS HANDLING MECHANISM FOR UNSCRAMBLING AND SORTING OF TUBULAR ARTICLES

Arthur G. Russell and Frank A. Clary, Jr., Bristol, Conn., assignors, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey

Original application May 7, 1956, Ser. No. 583,072, now Patent No. 3,033,416, dated May 8, 1962. Divided and this application May 25, 1961, Ser. No. 120,841
5 Claims. (Cl. 221—10)

1. A mechanism for handling and arranging articles comprising a rotary unscrambling table, a hopper having a bottom opening for discharge of articles upon the surface of said unscrambling table, said opening being substantially centered above said table, outwardly displaceable wall portions depending from the hopper margins surrounding said opening and normally forming a downward tubular extension of said hopper, a dispensing control table mounted for rotation about a substantially vertical axis centered approximately beneath said hopper opening and at a level normally to retain articles within said hopper and said tubular extension, means to move said control table about its axis with sufficient velocity to cause the articles thereon to displace said depending wall portions so as to be discharged by sliding from said control table surface outwardly from said axis in random directions, means for sensing the article loaded

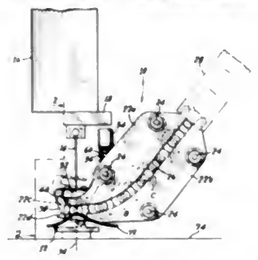


condition of said unscrambling table, and means for activating said control table moving means in response to sensing of a condition of insufficient loading of said unscrambling table, and for stopping said control table moving means in response to sensing of a condition of adequate loading of said unscrambling table.

3,157,311
MEANS FOR SUPPLYING BUTTONS TO A SEWING POINT

Benjamin Bronfman, 3395 Colony Drive, Baldwin, N.Y.

Filed Oct. 10, 1962, Ser. No. 229,656
8 Claims. (Cl. 221—186)

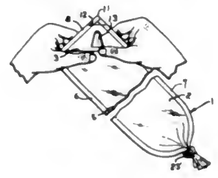


1. In a sewing machine having a sewing point, a fixed bracket and a mover member, the improvement comprising a chute movable by said mover member to and away from the sewing point and having a raceway along which buttons are supplied to the sewing point, means on said chute to releasably stop buttons in said raceway at the sewing point, clamp means movable with said chute and pivoted thereon to a position to engage a button stopped in said raceway by said stop means when said chute is moved to the sewing point, said clamp means being movable to a position to release a button when said chute is moved away from the sewing point, means urging said clamp means to pivot to its button releasing position, an actuator including a cam surface engageable with said clamp means and slidable relative thereto for the operation of said clamp means between button engaging and releasing positions, said clamp means being movable with said chute away from said sewing point, said actuator being mounted on and movable with said chute away from the sewing point and engaging said bracket which stops the movement of said actuator with said chute and causes said actuator to move relative to said chute to move said cam surface relative to and along said clamp means to enable said urging means to pivot said clamp means to its button releasing position.

3,157,312
DECORATION DISPENSER AND THE METHOD OF MAKING, FILLING, AND DISPENSING FROM THE SAME

Donald M. Kitterman, Kansas City, Kans.
(6100 Wilson Ave., Kansas City 23, Mo.)

Filed Dec. 18, 1961, Ser. No. 160,056
4 Claims. (Cl. 222—1)



3. The process of forming, filling, and thereafter dispensing from, a decoration dispenser comprising, forming an elongated envelope having an opening adjacent one end and a severance indicia adjacent the other end, inserting a nozzle of generally conical shape having a bore extending from the large end and terminating in a dispensing orifice at the small end thereof into said envelope, introducing a flowable quantity of decorative material through said opening into said envelope to partially fill same, securing portions of the envelope together between said decorative material therein and said opening to close said envelope and form a closed container having the nozzle and decorative material movable therein, turning the envelope whereby the flowable material moves away from the severance indicia, severing the envelope along said severance indicia to form an opening therein of a cross-section size substantially corresponding to the size of the cross-section of the a portion of the nozzle intermediate the large and small ends of the nozzle, and moving the small end of the nozzle through said opening whereby it projects from the envelope and forcing the nozzle into engagement with the margins of the envelope adjacent said opening to distend same and effect a sealing engagement thereof with said nozzle intermediate its ends so that decorative material is extruded from the envelope through the dispensing orifice in response to squeezing of said envelope.

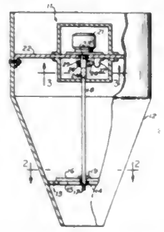
3,157,313
ELECTRICALLY OPERATED FEED METERING DEVICE

Frank Sarmento, 7420 N. Central Ave., Winton, Calif., and Louis B. Almeida, Rte. 2, Box 2660, Turlock, Calif.

Filed Apr. 19, 1962, Ser. No. 188,814
7 Claims. (Cl. 222—70)

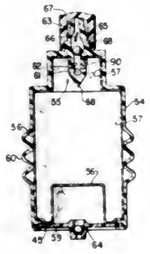
1. A feed metering device for use in grain feeding systems comprising a hopper, a plate disposed to close the bottom of said hopper, said plate having stepped parallel portions formed therein, said stepped parallel portions of said plate each having a feed opening disposed therethrough, a partial disc having an arcuate peripheral extent less than 180° disposed upon each of said portions to cover and uncover each of said feed openings upon rotation of said discs, said discs to be in stepped parallel relation to overlap one another when rotated, electric power means coupled to each of said discs to rotate

either of the latter when the former are energized, and switch means connected between said electric power



means and a power source to energize said power means upon closure of said switch means.

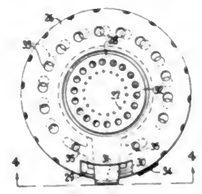
3,157,314
REFILLABLE DISPENSER WITH FLEXIBLE OUTER CASING
Emanuel Nadler, 116 Washington Place, New York 14, N.Y.
Filed Jan. 12, 1961, Ser. No. 82,191
1 Claim. (Cl. 222—88)



A refillable dispenser including a flexible outer casing having end walls at least one of which is removable, a disposable sealed flexible bag containing the material to be dispensed located within said outer casing, said flexible outer casing and said flexible bag being readily compressible when normal manual pressure is applied thereto, puncturing means integral with and immovable relative to one of said end walls, said puncturing means extending into said casing and having a passage extending therethrough, said puncturing means also having a conical portion adapted to pierce a hole in said flexible bag and a neck portion in back of, and of lesser diameter than the base of said conical portion, the portion of said flexible bag surrounding the pierced hole sealingly embracing said neck portion so that said flexible bag is held in sealing relation thereto, and means within said puncturing means for controlling the outward flow of the material within the bag.

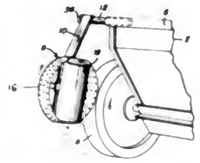
3,157,315
COMBINATION SALT AND PEPPER SHAKER
Elmo Bianco, 42 Seymour St., Torrington, Conn.
Filed Dec. 11, 1962, Ser. No. 243,855
4 Claims. (Cl. 222—142.5)

1. A combination salt and pepper shaker, comprising, a salt container which is circular when viewed from above and has an open end, a top having a cylindrical portion to fit over the open end of the salt container, means to secure the cylindrical portion to the salt container, the top being enlarged above the cylindrical portion and terminating in a closure portion, a disc which is smaller than the closure portion, which is over the center of the closure portion in contact therewith, a tongue extending radially from said disc along said closure portion and terminating in a downward extending tab, a shell having a marginal flange, the flange extending downward and slightly inward so that the shell fits over the top with the flange gripping the enlarged portion of the top, the shell having a central, circular aperture which is slightly smaller than the disc and an aperture in its flange to accommodate the tongue, a plurality of apertures in the shell and in the closure which are posi-



tioned to be brought into and out of registry by rotation of the shell, a plurality of openings in the disc and closure which can be brought into and out of registry by rotating the disc, a pepper container which is circular when viewed from its top and substantially the same diameter as the disc, and means to secure the open end of the pepper container to the underside of the closure beneath the disc.

3,157,316
ROW MARKER
Roy W. Garber, Elizabethtown, Pa., assignor to Jackson Manufacturing Company, Harrisburg, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1963, Ser. No. 250,883
9 Claims. (Cl. 222—169)



1. In a spreader, the improvement comprising a device for marking the path taken by said spreader, said marking device comprising a pivotal frame having a wheel rotatable about a substantially horizontal axis, a container having therein marking material, means rigidly holding said container to said wheel for rotation therewith, said container having at least one isolated discharge section with at least one discharge aperture therein in substantial alignment with the adjacent edge of the spreader, means for rotating said wheel in response to the movement of said spreader across a surface to be covered; whereby said container rotates with said wheel to periodically dispense said marking material along the edge of the spreader path.

3,157,317
HOLDER FOR BOTTLES AND THE LIKE
Robert W. Ramsbotham, Bristol, Conn., assignor, by mesne assignments, to Landers, Frary & Clark, New Britain, Conn., a corporation of Connecticut
Filed Aug. 28, 1961, Ser. No. 134,285
4 Claims. (Cl. 222—183)

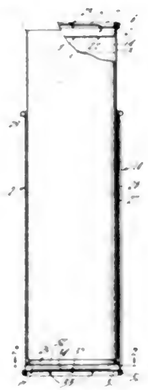
1. A holder for aerosol bottles and like containers including a tubular casing having a longitudinally extending aperture adjacent one end thereof and reversely bent flange portions on opposite sides of said one end providing lips spaced inwardly from the outer wall of said casing; a peripherally extending cap on said one end of the casing; a spider member in said casing having a base portion

extending transversely of the casing and a pair of arms extending along the side of said casing with the outer ends thereof secured between said lips and casing outer wall, said base portion having an aperture therein adapted to seat the upper portion of a bottle operatively assembled in said casing; a valve actuator slidably seated between



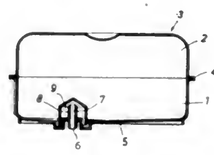
said spider member base portion and cap for movement vertically of the casing, said actuator being adapted to receive the valve portion of an aerosol bottle received in said holder during operative assembly and having a discharge nozzle opening in said aperture in the casing; and a closure member for the other end of said casing.

3,157,318
DUST GUN
Ralph Kennicott Pottle, Georgetown, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 29, 1962, Ser. No. 206,486
5 Claims. (Cl. 222—193)



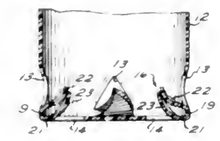
1. A fitting for a dust gun having an inner container wherein powdered materials are stored and disseminated under pressure and a pump sleeve telescopically surrounding said inner container, said fitting comprising a closure formed of resilient material and having a central panel wall and an outer surrounding wall, locking means on said surrounding wall for snap-in engagement with an end of said inner container, a perforation in said panel wall, an air pervious diaphragm secured to said panel wall for covering said perforation and preventing the discharge of the powdered materials through said perforation but permitting the ingress of air under pressure into the container, and a packing gasket formed integrally with said fitting and engageable against said pump sleeve for preventing the passage of air between said inner container and said pump sleeve.

3,157,319
DISPENSER FOR EASILY DRIPPING LIQUIDS
Georges Schwienbacher, Zurich, Switzerland, assignor to Photo-Entwicklungsgerate AG., Zurich, Switzerland
Filed Oct. 11, 1962, Ser. No. 229,933
Claims priority, application Austria, Oct. 12, 1961, A 7,684/61
4 Claims. (Cl. 222—207)



1. A container for dispensing easily dripping liquids, comprising top, side and bottom walls constituting a closed body adapted to contain the liquid to be dispensed, at least one of said walls being resiliently deformable, a tubular extension projecting upwardly from said bottom wall and having a duct extending the full length thereof for providing an overflow with the lower end of said duct defining a discharge opening, a hood supported by said bottom wall with its lower end being spaced from said bottom wall, said hood having greater height and width dimensions than said tubular extension and surrounding said tubular extension for providing a relatively large chamber communicating with said overflow, and means providing at least one channel of relative small cross-sectional area with respect to said chamber adjacent said bottom wall for defining a communicating path between said chamber and the interior of the body whereby upon pressure being applied to said at least one resiliently deformable wall, the liquid is displaced through said at least one channel into said chamber and thence through said overflow and discharge opening and upon pressure being relieved on said resiliently deformable wall, such wall re-assumed its original configuration thus drawing air into said chamber via said overflow with the liquid in said chamber through said at least one channel into the body.

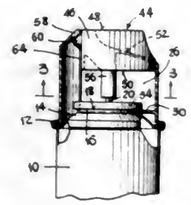
3,157,320
SOAP ADMIXING AND DISPENSING DEVICE
Louie H. Sherriffe, 1419 Seminary Ave., Oakland 12, Calif.
Filed Mar. 22, 1963, Ser. No. 267,182
6 Claims. (Cl. 222—251)



1. A soap admixing and dispensing device comprising a cylindrical container having a closed lower end and an open upper end to receive bits of soap and a stream of water, said container having a first plurality of circumferentially spaced triangular apertures in its peripheral wall, said apertures disposed with their bases lying upon a common transverse plane closely spaced to said closed end, said container having a second plurality of circumferentially spaced triangular apertures in its closed end, said second apertures disposed with their bases tangent to a circle in close radially spaced relation to the peripheral wall of said container pairs of said first and second apertures having their apices disposed upon common radial planes, said container having a plurality of triangular vanes projecting into its interior, said vanes having

their bases interposed between said first and second apertures of the respective pairs thereof, said vanes having their apices respectively disposed upon said radial planes, said vanes disposed at acute angles to said peripheral wall and said closed end.

3,157,321
MOLDED PLASTIC ACTUATOR-CAP FOR AEROSOL CONTAINERS
William R. O'Donnell, Trumbull, Conn., assignor, by mesne assignments, to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,467
5 Claims. (Cl. 222—394)



1. An actuator-cap for aerosol containers, said actuator-cap comprising, in combination:

(A) a molded, one-piece tubular cap body having a cylindrical vertically disposed side wall and open bottom and top ends,

(1) a ledge extending upwardly and inwardly from the upper region of said side wall at a location disposed at one side of the axis of said body,

said ledge having a medial slot therein opening out at the distal edge of said ledge,

(2) an inwardly extending detent flange disposed at a location on the opposite side of the axis of said body and in the lower region thereof,

said detent flange being disposed circularly within said body and being offset vertically with respect to said ledge thereby to enable said cap body to be readily molded in simple cavities without requiring retractable cavity parts;

(B) a valve actuator button vertically movable in said cap body and having a vertically disposed side wall comprising:

(1) a curvilinear portion which defines a partial cylinder having a diameter substantially equal to the interior surface diameter of said cap body and

(2) a flat surface portion extending in a vertical plane located to provide clearance for said ledge, thereby to enable said button to be inserted or withdrawn vertically from the open top of said cap body without interference,

(3) channel means extending through said actuator button from the bottom of said button to said flat surface thereof, said channel means being provided

(*a*) at said flat surface and laterally medially of the latter, with orifice means adapted for ejection of a fluid spray and

(*b*) at said bottom, with connector means adapted to connect with the valve stem of the aerosol container with which said cap and said button are to be operatively associated; and

(C) cooperable guide means provided on said cap body, on said interior surface thereof in the upper region thereof, and on said button, on said side wall thereof, for guiding said button vertically in said cap with

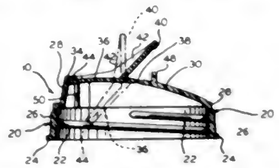
(1) said curvilinear portion of said side wall thereof in sliding abutment with said interior surface of said body,

(2) said flat surface of said button offset from said distal edge of said ledge on said body, and

(3) said orifice means in alignment with the slot in said ledge,

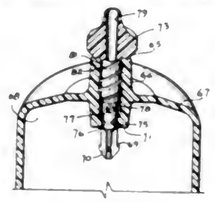
during all vertically sliding movement and positioning of said button in said body.

3,157,322
DISPENSING UNIT AND METHOD OF PRODUCING THE SAME
Rudolph Bernhardt, Wilmette, Ill., assignor to Nibot Corporation, a corporation of Illinois
Filed Sept. 14, 1961, Ser. No. 138,072
12 Claims. (Cl. 222—517)



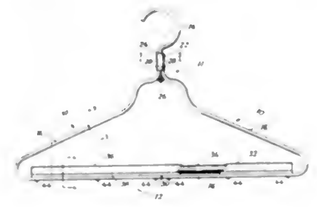
1. An integral one-piece self-closing dispensing unit of resilient plastic material comprising, a closure wall having an inner surface and an outer surface and a dispensing opening therein, and a closure flap joined integrally with said closure wall along one edge of said dispensing opening for closing said opening, said closure flap being adapted to occupy a first unstressed position extending inwardly through said dispensing opening and beyond said inner surface, said closure flap also being capable of being flexed and angularly movable from said first position through said dispensing opening and to a second position wherein said closure flap closes said dispensing opening, said closure flap being thereafter angularly movable to a third position extending outwardly from said outer surface to open said dispensing opening, the movement of said closure flap from said first position to said second position creating stresses in said resilient plastic material urging said closure flap toward said second position closing said dispensing opening.

3,157,323
VALVE CLOSURE FOR BOTTLES AND THE LIKE
Gary L. Kitterman, % National Products Co., 6100 Wilson Ave., Kansas City, Kans.
Filed Apr. 12, 1961, Ser. No. 102,530
9 Claims. (Cl. 222—520)



5. A closure means for containers comprising, a valve casing molded of resilient synthetic resin with a through passage with an inner end adapted for communication with a container and an outer end, said valve casing having a wall defining a section of said passage of reduced transverse area adjacent said inner end thereof, a one-piece valve member having a shank extending into said outer end of said passage and through said passage with said valve member being movable as a whole, a radially outwardly extending stop means on the shank below the upper outer end of the valve casing and engageable with said valve casing in one position of the valve member for limiting movement of the valve member from the valve casing, said valve member shank having a port located below the stop means thereon communicating with the valve casing passage outwardly of the section of reduced transverse area, said shank having a closed end below the port and a bore with which said port comunicates extending from said closed end outwardly through the shank and opening exteriorly of the valve casing, said port in the valve member being between the radially outwardly extending stop means on the valve member and the inner end of the valve casing, said valve casing passage and valve member having cooperating portions which with said port and bore form a dispensing channel extending from said container to the exterior of the valve casing when the valve member is in open postion, and a portion on said shank in the reduced portion of the passage and being of a size and shape for resilient sealing engagement with said wall and closing said channel when the valve member is in closed position.

3,157,324
GARMENT HANGERS
Epp R. Barnes, 200 Plainview Ave., Raleigh, N.C.
Filed Jan. 31, 1962, Ser. No. 170,080
6 Claims. (Cl. 223—88)

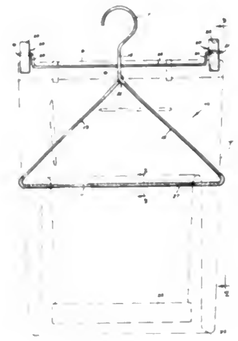


1. A garment hanger comprising a frame of generally triangular form, said frame comprising a bar of channel shaped cross section with internally facing grooves, said bar having a pair of straight terminal sections in contacting relationship at the upper central part of the frame with the grooves mutually facing and defining a split tube, a hook member having its shank rotatably journalled in said split tube, a retaining sleeve surrounding said split tube fixing said terminal sections in place, and a trouser support carried on the base of said frame, said support comprising an inner tube, a coating of fibrous material on said inner tube, a clamping bar having a longitudinal groove concentric with said inner tube and contacting said coating, said clamping bar having a rib received in the groove of the first-mentioned bar, and screws passing through said base, clamping bar and inner tube.

3,157,325
DISPLAY HANGER
Edward E. Schaefer, River Forest, Ill. (% Central Specialty Co., 3813 N. Harlem Ave., Chicago 34, Ill.)
Filed Nov. 23, 1962, Ser. No. 239,539
4 Claims. (Cl. 223—91)

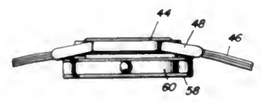
1. A display hanger for displaying slacks or trousers having a waistband, comprising a frame having an upper hook portion for suspending the hanger in upright position from a support and a lower laterally extending bar portion, means unitary with said frame providing a pair of clamp supports disposed in laterally spaced relation at opposite sides of said frame above said lower bar portion and below said hook portion, said clamp supports being offset outwardly from the plane of said frame, and a pair of clamps mounted on said clamp supports in outwardly spaced relation with respect to the plane of said frame, whereby the upper part of the slacks or trousers is adapted to hang freely from said clamps with the waistband uppermost, the lower part of said slacks or trousers being adapted to be folded inwardly therefrom and draped over said lower bar portion for reducing the over-all length of the displayed slacks or trousers.

2. A display hanger for displaying slacks or trousers having a waistband, comprising a frame having an upper hook portion for suspending the hanger in upright position from a support and a lower laterally extending bar portion, means unitary with said frame providing a pair of clamp supports disposed in laterally spaced relation



at opposite sides of said frame above said lower bar portion and below said hook portion and a pair of clamps pivotally mounted on said clamp supports, said means comprising a cross member rigidly secured to said frame and having opposite end portions and a center portion, said opposite end portions being disposed at a level spaced above said center portion and having said pair of clamps mounted thereon, whereby the waistband of said slacks or trousers is adapted to be secured by said clamps at a level above said center portion with the upper part of said slacks or trousers hanging freely therebelow and the lower part of said slacks or trousers draped over said lower bar portion for reducing the over-all length of the displayed slacks or trousers.

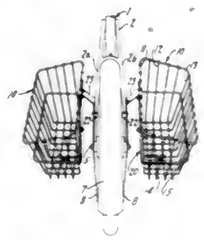
3,157,326
BRACELET WITH ATTACHED PILLBOX
Dasie Murphy, 633 E. 16th St., Brooklyn, N.Y.
Filed July 5, 1961, Ser. No. 121,860
4 Claims. (Cl. 224—28)



1. In combination with a wristwatch including a housing having a wrist-engaging strap means thereon, a pillbox underlying the wristwatch and including a top wall fixedly connected to the wristwatch housing, a bottom wall spaced from the top wall and rigidly connected thereto, a swingable drawer-like receptacle disposed between the top and

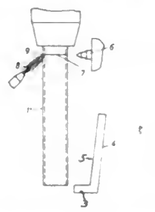
bottom walls for lateral swinging movement out of the area under the wristwatch for access to the interior thereof.

3,157,327
CARRIER ASSEMBLY
Henry Karbin, 2447 W. Lunt Ave., Chicago, Ill.
Filed Jan. 7, 1963, Ser. No. 249,638
7 Claims. (Cl. 224—30)



1. A saddle basket assembly for bicycles and the like including a support member generally inverted U-shaped in planar configuration, one parallel leg of said support member being offset from the other leg at a point adjacent the curved transverse portion of said support member, said offset leg portion being of sufficient length to bridge the angularly disposed rear forks of a bicycle for attachment thereto, the remainder of said support member being apertured at a plurality of spaced points thereon for reception of clamping members, a basket having an inner wire wall positioned adjacent the outer surface of said support member remainder portion for engagement with said clamping members.

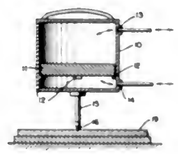
3,157,328
METHOD OF AND APPARATUS FOR CUTTING GLASS TUBES
Werner Hennings, Am Brunnen 12, Bunde, Westphalia, Germany, and Ehrenfried Zimmermann, Haus Danuser, Klosters, Graubunden, Switzerland
Filed Sept. 17, 1959, Ser. No. 840,730
Claims priority, application Germany Sept. 24, 1958
9 Claims. (Cl. 225—2)



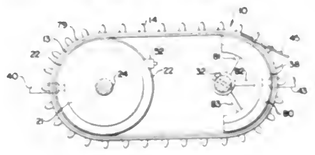
1. That method of severing a glass tube comprising, effecting relative rotation between the tube and a scoring device to effect a closed, endless, scored line exteriorly of, on and about the tube lying in a plane normal to the axis thereof, and thereafter applying heat to one point only on said line.

3,157,329
APPARATUS FOR BREAKING GLASS
Daniel De Gorter, 35 E. 35th St., New York, N.Y.
Original application Feb. 16, 1959, Ser. No. 793,417, now Patent No. 3,116,862, dated Jan. 7, 1964. Divided and this application Apr. 10, 1963, Ser. No. 271,988
9 Claims. (Cl. 225—93)

1. Apparatus for applying vibration to a surface which comprises a contact adapted to engage the surface, a cylinder attached thereto, a free piston in the cylinder, means to vibrate the piston in the cylinder, and means to transmit the vibrations to the contact.



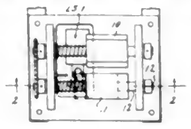
3,157,330
ELECTROSTATIC DRIVE APPARATUS
Neil D. Manor, Xenia, and Niyazi Aygun, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 5, 1962, Ser. No. 177,484
2 Claims. (Cl. 226—74)



1. An electrostatic drive apparatus suited for advancing perforated paper, comprising, in combination:
(*a*) a rotor adapted for continuous rotation,
(*b*) electrostatic resistance material carried by and encircling said rotor,
(*c*) a brake member,
(*d*) electrostatic resistance material carried by said brake member,
(*e*) a paper drive
(*f*) including an endless driven member extending around both said rotor said brake member and being in engagement with said electrostatic resistance material thereon, and
(*g*) including a pair of belts attached to said endless driven member in a laterally-spaced relationship for movement therewith,
(*h*) said pair of belts each carrying a plurality of pins projectable into the perforations to advance said paper in a generally linear direction,
(*i*) means for energizing said rotor to cause said endless driven member to be held thereto and said endless driven member and said belts to be moved thereby whereby advancement of said paper is effected, and
(*j*) means for simultaneously deenergizing said rotor and energizing said brake member to cause said endless driven member to be released from said rotor and to be held by said brake member whereby movement of said endless driven member and said belts is stopped and advancement of said paper is terminated.

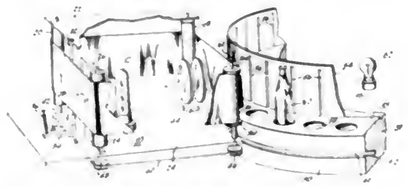
3,157,331
ROLLER DEVICE
John D. Heide, Ramsey, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1962, Ser. No. 242,289
4 Claims. (Cl. 226—100)

1. A device for axially transporting a rotatable generally cylindrical object comprising: a plurality of rollers intercoupled in sets rotatable in the direction of axial transport of the object, each roller having an axis of rotation transverse to the said direction of axial transport and having a substantially cylindrical surface portion of a given radius and a depressed surface portion, said rollers being intercoupled in such manner that at all times said cylindrical surface portion of at least one roller in each set is in supporting contact with said rotatable object and



the cylindrical surface portion of each roller is out of contact with said object during a portion of each revolution of each roller, said rollers being mounted reciprocably on their respective axes.

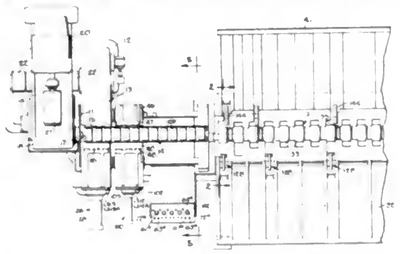
3,157,332
SYNCHRONIZED WINDOW FOR AUTOMATIC INSPECTION APPARATUS
Roger E. Schell, Woodbury, N.J., assignor, by mesne assignments, to Crown Cork and Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Original application Oct. 31, 1958, Ser. No. 771,021, now Patent No. 3,039,354, dated June 19, 1962. Divided and this application Jan. 8, 1962, Ser. No. 173,315
3 Claims. (Cl. 226—119)



1. In an endless web guiding system: a plurality of spaced apart rollers mounted for rotation about their respective axes and carrying an endless web, one of said rollers being mounted in a fixed position; means mounting an adjacent roller for movement relative to said one roller, said means including a rigid yoke having a pair of arms which rotatably mount said adjacent roller, a rigid support member mounted for rotation about an axis parallel to the axis of said one roller and means pivotally mounting said yoke on said support member for pivotal movement such that said adjacent roller may pivot in a plane which includes its axis; and means for urging said support member, said yoke and said adjacent roller in a direction opposite to the intended direction of movement of said web.

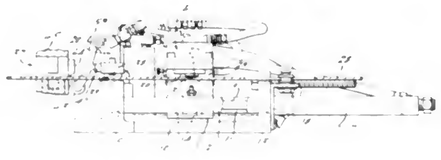
3,157,333
MACHINE FOR OPERATING ON ELONGATED WORKPIECES
Henry Walter Lewis and Thomas F. Birchall, Rockford, Ill., assignors to The Ingersoll Milling Machine Co., Rockford, Ill., a corporation of Illinois
Filed May 12, 1961, Ser. No. 109,745
8 Claims. (Cl. 226—135)

5. In a machine for operating on elongated workpieces, the combination of, a base adapted to support a workpiece, a slide mounted on said base to move toward and away from a predetermined position, a tool operable to cut a workpiece supported on said base, gripping means carried by said slide and adapted to grip the workpiece and advance the same toward said tool as the slide moves toward said position, a plurality of stop elements mounted on said base and spaced apart transversely of the direction of movement of said slide, said elements being spaced different distances from said position, a sensing device mounted on said slide to move transversely thereof for selective alinement with said stop elements, said sensing device and the selected one of said elements producing a signal when adjacent each other, and a reversible power actuator operable to move said slide away from said posi-



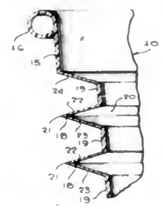
tion and reversible in response to said signal whereby the selected stop element determines the length of advance of the workpiece.

3,157,334
STOCK FEEDER
Glenn R. Bunnell, Dearborn, and Wayne M. Shields, Bloomfield Township, Mich., assignors to Special Engineering Service, Inc., Dearborn, Mich., a corporation of Michigan
Filed Sept. 24, 1962, Ser. No. 225,911
20 Claims. (Cl. 226—150)



5. In a stock feeding device, a reciprocable carriage, a piston motor for advancing said carriage, a gripper on said carriage, a gripper motor for moving said gripper to a gripping position, means for simultaneously applying fluid pressure from a common source to said motors, the effective area of said gripper motor means being substantially greater than the effective area of said carriage motor, means for connecting the carriage and gripper motors to exhaust, and an adjustably restricted orifice in the carriage motor exhaust connection.

3,157,335
PLASTIC CUP WITH SPACED AND TAPERED RADIAL HOLLOW PROJECTIONS OF 90 DEGREES OR LESS IN THE FINGER CONTACT AREA THEREOF
Curtis E. Maier, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,386
16 Claims. (Cl. 229—1.5)



1. A cup particularly adapted for holding hot beverages without unduly transferring the heat of beverages to a holder's hand, said cup comprising a thin walled

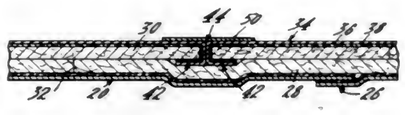
generally frusto-conical body and an open mouth, said body being entirely of a single walled construction throughout and including an upper gripping band below said open mouth, said gripping band being comprised of a plurality of vertically spaced outwardly directed substantially hollow protuberances disposed circumferentially around said body, each of said protuberances being horizontally V-shaped in cross-section and terminating in a sharp outer part with the enclosed angle being less than 90 degrees providing circulation of external cooling air above and below each protuberance to effect a good cooling of relatively stationary pools of liquid disposed within the protuberances to restrict heat transfer by the sharp outer part of each protuberance, the vertical spacing of said protuberances being relatively small and defined by flat intermediate portions of said cup body whereby when said gripping band is engaged by one's fingers and thumb, engagement with the cup is limited to said protuberances and in the vicinity of said protuberances sharp outer parts, the cup body having an enlarged extreme upper portion, said protuberances having a wall thickness less than the wall thickness of said cup body and terminating in sharp outer parts which are disposed along an imaginary projection of said enlarged upper portion, and a horizontal axis normal to the axis of the cup body bisecting the enclosed angle of said protuberances.

3,157,336

METHOD OF MAKING A FLUID-TIGHT CONTAINER BODY AND PRODUCT THEREOF

William Binford Elam, Oakland, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 13, 1961, Ser. No. 158,985
3 Claims. (Cl. 229—4.5)



1. A fluid-tight container body for holding a fluid product, comprising:

a helical body ply which is pervious to the fluid product,

a helical liner ply disposed inwardly of said body ply and comprising an inner layer which is impervious to the fluid product and an outer backing layer which is pervious to the fluid product,

said liner ply being wider than said pervious body ply and having its marginal edge portions folded outwardly around the edges of said body ply and disposed in a helical butt joint wherein the fluid impervious layers of said edge portions are in engagement;

said marginal edge portions being folded backwardly over said body ply and having the pervious backing layers thereof disposed in face-to-face engagement with and adhesively secured to the outer surface of said body ply, and

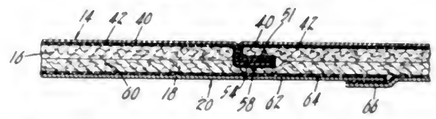
a helical sealing ribbon spanning said helical butt joint and comprising a layer which is impervious to the fluid product, said impervious ribbon layer being disposed in face-to-face engagement with said impervious liner ply layer on both sides of said butt joint and being adhesively secured thereto by an adhesive which is impervious to the fluid product to prevent passage of the fluid product through said butt joint.

3,157,337

HELICALLY WOUND FLUID-TIGHT CONTAINER

William Binford Elam, Oakland, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 20, 1961, Ser. No. 160,725
1 Claim. (Cl. 229—4.5)



A fluid-tight container body for holding a fluid product, said body comprising

a helical fibrous body ply having its helical edges disposed in slightly spaced relationship,

a helical liner ply of greater width than said body ply,

said liner ply comprising an inner layer of foil which is impervious to said fluid product and a paper backing layer which is pervious to said fluid product,

said liner ply completely covering the inner surface of said body ply and having its opposite marginal edge portions extending outwardly between the spaced helical edges of said body ply and then folded into overlapping and mutually co-extensive relationship against the outer surface of said body ply to form a lap seam wherein the impervious layer of said opposite marginal edge portions are disposed in face to face relationship,

and a product thermoplastic adhesive interposed between said mutually facing and co-extending impervious layers of said lap seam to seal the same and prevent access of said fluid product to said paper backing layer and said fibrous body ply.

3,157,338

CONTAINER AND METHOD OF MAKING THE SAME

Robert Hollister, Larchmont, and Arthur John White, Woodbury, N.Y., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed May 29, 1962, Ser. No. 198,524
2 Claims. (Cl. 229—4.5)



1. A container body comprising:

a tubular fibrous wall having its opposed longitudinal marginal edge portions disposed in overlapping relationship to thereby comprise an underlap and an overlap, and

a protective label laminated to the outer surface of said body wall,

one longitudinal edge portion of said label extending under said overlap and terminating short of the longitudinal edge of said underlap to thereby leave the fibrous marginal edge portion of said underlap between said longitudinal underlap edge and said longitudinal label edge uncovered by said label,

the outer surface of the fibrous marginal edge portion of said underlap between said edge of said underlap and the edge of said label being adhesively secured to the inner surface of the fibrous marginal edge portion of said overlap to form a lap seam,

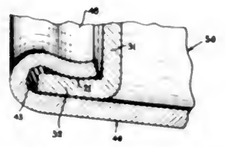
said label extending from between said lap seam completely around the fibrous body and terminating in substantial alignment with the longitudinal edge of said overlap.

3,157,339

PAPER CUP WITH CAULKED BOTTOM AND METHOD OF MAKING

Kaiji Negoro, Clarendon Hills, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed July 18, 1961, Ser. No. 124,894
14 Claims. (Cl. 229—5.5)



1. A paper cup comprising a cup body and a cup bottom telescoped within said cup body, said cup bottom having a depending peripheral flange opposing the inner surface of said cup body, said cup body having a reversely turned lower portion terminating in a peripheral flange telescoped within said cup bottom peripheral flange and opposing the inner surface thereof, said reversely turned lower portion being spaced axially of said cup bottom peripheral flange and defining a pocket, and caulking compound disposed in said pocket and sealing said cup bottom relative to said cup body against leakage.

3,157,340

PAPERBOARD HOGSHEAD

Jacob Douglas Gay, Jr., and Frederic W. Joswig, Paris, Ky., assignors to Gay-Bell Corporation, Paris, Ky., a corporation of Kentucky

Filed June 27, 1957, Ser. No. 668,393
3 Claims. (Cl. 229—5.7)



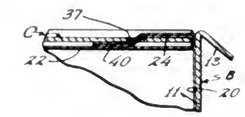
1. A paperboard hogshead comprising a paperboard blank having first score lines defining a plurality of staves; said blank having a pair of second score lines disposed parallel to and adjacent each longitudinal edge of said blank whereby said blank is folded to present a longitudinal edge comprised of three layers of said paperboard; means to hold said layers together; a pair of metal hoop-and-liners, one for each longitudinal edge of said blank, each said hoop-and-liner comprising an outer band flush with one of said three layers, an interrupted inner band flush with another of said three layers, all three layers being disposed between said bands, an intermediate portion of said hoop-and-liner abutting the extreme folded edge of said blank, and a series of slanting members depending from said intermediate portions and return bent to join said inner band whereby to form a series of hollow chimes; means engaged through said outer hoop-and-liner band, said inner hoop-and-liner band and said three layers whereby to hold same together; a top abutting a said hollow chime; a bottom abutting a said hollow chime; and lacing means inside said hollow chimes whereby to pull and hold said blank and hoops-and-liners about said top and bottom.

3,157,341

LINED CONTAINERS

Iver L. Nelson, Minneapolis, Minn., assignor to Waldorf Paper Products Company, Wabash, Minn., a corporation of Minnesota

Filed June 7, 1962, Ser. No. 200,734
8 Claims. (Cl. 229—14)



1. A reinforcing pad for use in combination with a rectangular box liner having generally parallel ends, and triangular ears hingedly connected to opposite parallel edges of each of said ends, the pad comprising,

a body of relatively rigid paperboard substantially equal in shape and size to said liner ends,

said body having a pair of generally parallel slots extending therethrough, and

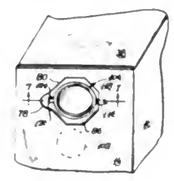
said slots being so positioned and so shaped as to accommodate the ends of the triangular ears extending therethrough.

3,157,342

CARTON

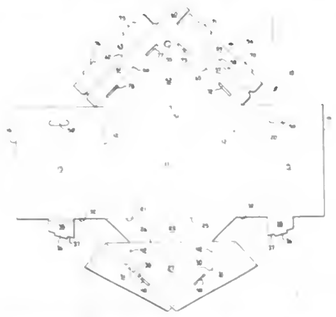
James M. Grady, Mount Prospect, Ill., assignor to Morton Salt Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,910
16 Claims. (Cl. 229—14)



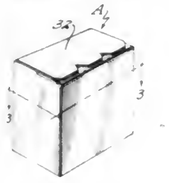
6. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

3,157,343
CONTAINER
Ovid M. Kendall, 1909 Roxbury Lane, Muncie, Ind.
Filed Feb. 7, 1963, Ser. No. 256,888
3 Claims. (Cl. 229—22)



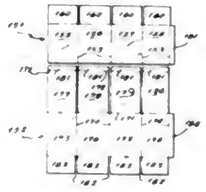
1. A triangular container comprising a piece of cardboard including a first rectangular section, a pair of rectangular sections connected to two of the opposite edges of said rectangular section, each of said pair of rectangular sections having distal ends which are taped to one another, said pair of rectangular sections being at right angles to one another, a triangular section defining the bottom of said container, said triangular section having a base equal in length to the distance between said two opposite edges of said rectangular section, said triangular section having two equal sides each of which are slightly longer than the distance from said taped connection to either foldable connection of said rectangular sections, said triangular section sloping downwardly from said first rectangular section to said taped connection, and a right triangular section defining a top for said container foldably connected by its hypotenuse side to the fourth side of said first rectangular section, said triangular section having downturned projections from its right angled sides, said downturned projections normally overlapping the pair of rectangular sections when said top is closed.

3,157,344
COMPARTMENTED CARTON
Russell J. Hennessey, St. Paul, Minn., assignor to Waldorf Paper Products Company, Ramsey County, Minn., a corporation of Minnesota
Filed Aug. 31, 1961, Ser. No. 135,201
4 Claims. (Cl. 229—27)



1. A foldable partitioned rectangular carton including alternate side and end walls hingedly connected along parallel fold lines, closing flaps hingedly connected to the upper and lower ends of said side and end walls, a separate auxiliary web having an intermediate panel secured to one side wall at some area parallel to the end edges of the side wall and intermediate the end walls to overlie the center portion of said one side wall, partition panels foldably connected to opposite edges of said intermediate panel along parallel fold lines, said partition panels being substantially equal in width to said end walls and greater in width than the distance between one of said edges and the nearest of said fold lines, anchoring flaps hinged to said partition panels along fold lines substantially parallel to the previously described fold lines, said anchoring flaps being secured in face contact with the other side wall and both said anchoring flaps extending from said partition panels toward the same one of said end walls, and means securing said side and end walls in tubular relation, said closing flaps secured to said side walls including transverse weakened lines of separation which terminate adjacent to the adjacent ends of the partition panels when the carton is closed.

3,157,345
CONTAINER
Walter C. George, St. Louis, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Original application Nov. 14, 1956, Ser. No. 624,711, now Patent No. 3,007,622, dated Nov. 7, 1961. Divided and this application Sept. 18, 1961, Ser. No. 139,338
1 Claim. (Cl. 229—23)

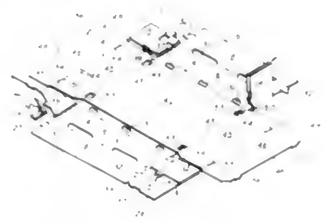


A rectangular container of three panel wall thickness throughout formed of two complementary telescoping inner and outer tubular sections formed of an aggregate of twelve wall forming panels defined by longitudinal and transverse scores, each section comprising four wall forming panels hingedly connected together in side-by-side relation with the side marginal edges secured to form a tubular sleeve, the container interior section having four reinforcing panels each hingedly connected in end-to-end relation respectively with one end of the said side-by-side panels and superimposed in flatwise secured relation thereon forming side walls of double panel thickness throughout that section, means flexibly connecting the adjacent side marginal edges of each reinforcing panel, flap extension means hingedly secured to each of the reinforcing panels at the terminal ends thereof opposite the hinged connection to each of the wall forming panels, closure flaps connected to the four side-by-side panels of the interior section opposite the connection of the four reinforcing panels, said closure flaps disposed in infolded and secured relation to provide a container bottom closure, the outer container section having closure flaps connected to one end of each wall panel thereof and disposed in infolded secured relation providing the container top closure, the opposite end of each wall panel of said outer section being free of flaps, the reinforcing panels of the inner section being substantially coextensive with both the wall panels of the inner section and the wall panels of the outer section.

3,157,346
STACKING PAPERBOARD LUG BOX
Joseph Portola Hamilton, Emeryville, Calif., assignor to American Box Corporation of California, San Francisco, Calif., a corporation of California
Filed June 26, 1962, Ser. No. 205,446
4 Claims. (Cl. 229—23)

1. A lug box comprising:
(*a*) a pair of separate blanks of fiberboard, each having

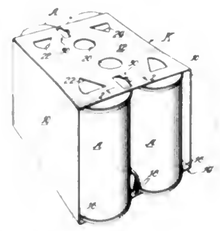
(*b*) substantially corresponding, horizontally disposed, rectangular central portions,
(*c*) said central portions being secured together with their edges substantially in registration to provide a pair of bottom panels, one being an upper panel and the other being a lower panel,
(*d*) a pair of vertically disposed opposed end walls integral with one panel of said bottom panels;
(*e*) a pair of vertically disposed opposed side walls integral with the other panel of said bottom panels;
(*f*) said end walls being portions of one panel of said pair folded on themselves to provide an inner layer and an outer layer of fiberboard relative to the inside of said box with said inner layer and said outer layer at each end of the box integrally joined along a fold line defining the upper edge of each end wall;
(*g*) means integrally connecting said side walls with said other panel of said bottom panels comprising



relatively narrow panels extending slantingly upwardly and outwardly relative to each other from said other panel of said bottom panels to said side walls,
(*h*) ventilating openings formed in said narrow panels,
(*i*) means integral with said side walls at their lower ends positioned at right angles to said side walls and disposed between the inner and outer layers of said end walls against which said narrow panels are held in their said slanted positions, and
(*j*) interlocking means at the upper edges of said end walls and integrally connected with said side walls for holding said side walls vertical and for holding said narrow panels in their said inclined positions,
(*k*) said inner layer of each end wall and the means integral with said side walls against which said narrow panels are held being disposed over and substantially in engagement with the uppermost of said bottom panels for supporting the box against collapse from superimposed loads.

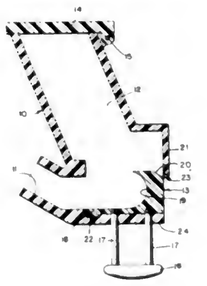
3,157,347
CAN CARRIER WITH CHIME ENGAGING TABS
Joseph B. Higgs, Arlington Heights, Richard W. Carpenter, Park Ridge, and Henry G. Van der Eb, Lake Forest, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Mar. 13, 1963, Ser. No. 264,791
2 Claims. (Cl. 229—40)

1. An open-ended, sleeve-type, wrap-around, carrier carton formed from a unitary blank of foldable paperboard, for enclosing two opposed rows of chimed cans arranged in adjacent, parallel, side-by-side relation, comprising:
(*a*) a pair of parallel, vertically disposed, transversely spaced side wall panels; and
(*b*) a pair of parallel, vertically spaced top and bottom walls extending transversely between and connected at their side edges to the upper edges of respective side wall panels to define a tubular structure open at the ends;
(*c*) one of said walls having cut therefrom and hinged thereto a retaining tab extending into the carton between end portions of a pair of adjacent cans of opposed rows;
(*d*) said tab having a main section hinged to said one wall on a horizontal fold line extending longitudinally of the carton and located substantially midway between and parallel to the side edges of said one wall;



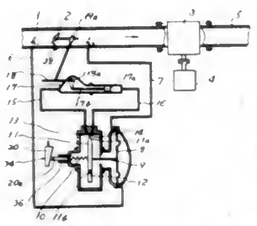
(*e*) said main section having hinged to its opposite side edges along substantially vertical fold lines a pair of side sections;
(*f*) said side sections being folded 180° into parallel, face-to-face contact with opposite surfaces of said main section;
(*g*) said side sections being of lesser length than said main section to provide a space between the inner surface of said one wall and the adjacent edges of said side sections for receiving portions of the chimes of said pair of cans to limit vertical movement of the cans relative to said one wall.

3,157,348
NOZZLE DEVICE
Daniel A. Danko, 8200 Mason Ave., Canoga Park, Calif.
Filed Mar. 7, 1963, Ser. No. 263,553
6 Claims. (Cl. 239—316)



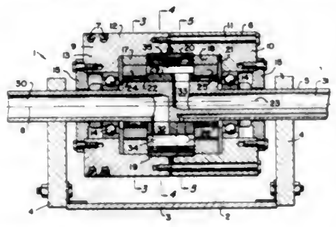
1. An apparatus comprising a casing, said casing having an inlet and an outlet, said inlet and said outlet being in communication with each other, a portion of said casing comprising a chamber, said chamber being closed at a first end by a closure means and being open at a second end; and a movable means, said movable means being mounted for movement such that it is capable of closing the second end of said chamber to form a completely closed chamber, said movable means also being capable of movement such that it simultaneously opens the second end of said chamber whereby said chamber is brought into communication with said outlet and renders the size of said outlet substantially smaller than the size of said inlet.

3,157,349
METHOD AND APPARATUS FOR PREVENTING SURGING IN A BLOWER OR THE LIKE
Matsuki Itaya, 61 Ohokayama, Meguro-ku; Hidetoshi Kusama, 88 Kamimeguro-1-chome; and Shigeru Tsuji, 24-1 Denenchofu-1-chome, all of Tokyo, Japan
Filed Aug. 7, 1962, Ser. No. 232,319
Claims priority, application Japan, Oct. 2, 1957, 24,189/57
9 Claims. (Cl. 230—115)



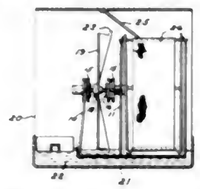
1. In a variable capacity blower including a suction line and a discharge line, said blower requiring a minimum of resistance pressure in said suction line to prevent surging of said blower, the improvement comprising means for preventing surging of said blower including adjustable pressure loss resistance means disposed in said suction line, means to sense pressure in said suction line on each side of said adjustable pressure loss resistance means, and control means connected to said pressure sensing means and to said adjustable pressure loss resistance means to adjust said pressure loss resistance means to maintain a pressure difference between each side of said adjustable pressure loss resistance means at a value above the minimum resistance pressure to prevent surging.

3,157,350
ROTARY FLUID MACHINE
Grover D. Fraser, Painted Post, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 11, 1963, Ser. No. 287,105
5 Claims. (Cl. 230—140)



1. A rotary fluid machine comprising:
(*a*) a support frame;
(*b*) a drum rotatively mounted on said frame about a first axis;
(*c*) a pair of axially-spaced internally-toothed rotors fixed in said drum to rotate with it on said support frame;
(*d*) a pair of axially-spaced externally-toothed rotors eccentrically pivoted on said frame about a second axis which is parallel with and spaced from said first axis and engaging said internally-toothed rotors to form fluid displacement chambers between the rotor teeth which are alternately expanded and reduced in volume as said rotors are rotated with said drum about said first axis;
(*e*) means carried by the drum and sealing the outer ends of said fluid displacement chambers;
(*f*) a stationary plate mounted on said support frame between both pairs of said axially spaced rotors and sealing the inner ends of said fluid displacement chambers;
(*g*) and fluid inlet and outlet conduits provided in said stationary plate and opening into said fluid displacement chambers at appropriate locations for conducting fluid into and from said chambers as said drum is rotated, said fluid inlet conduit having inlet ports opening into the fluid displacement chambers on both sides of said stationary plate at the same angular location about said first axis, so that the fluid pressures at the inlet ports are equal on both sides of said stationary plate, and said fluid outlet conduit having outlet ports opening into the fluid displacement chambers on both sides of said stationary plate at the same angular location about the first axis, and angularly spaced from said inlet ports, so that the fluid pressures at the outlet ports are equal on both sides of the stationary plate.

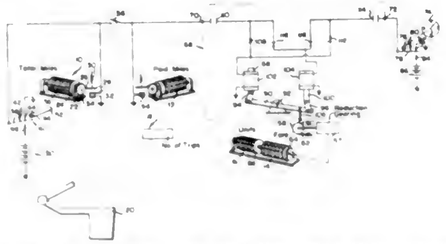
3,157,351
BEARING ASSEMBLY
Robert J. Sevald, Royal Oak, Mich., assignor to William T. Sevald, Royal Oak, Mich.
Filed Oct. 19, 1961, Ser. No. 146,220
6 Claims. (Cl. 230—232)



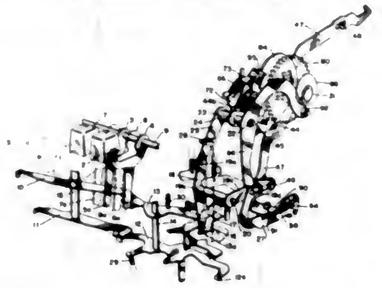
1. A fan assembly particularly suitable for a humidifier comprising paired spaced supports having opposite sides; said supports having axially aligned apertures; paired resilient grommets disposed in said support apertures; each said grommet having a core portion lying within said support apertures and each said grommet having flanges radially extending from said core overlying the opposite sides of each said support positioning said grommets on said supports; said cores having axial apertures; said resilient grommets being insertable in said support apertures via deformation permitted by their resilient characteristics and their core aperture; a tubular lubricant holding casing having a closed end and an open end disposed in each said grommet aperture so as to assist in locking each said grommet in each said support aperture, an apertured bearing disposed in each said tubular casing open end, an exle having opposite ends rotatably disposed in said apertured bearings and an intermediate portion spanning the space between said bearings; said casing storing and feeding lubricant to said bearings and axle and fan disposed on said axle intermediate portion; said resilient grommets yielding to permit said axle to self align said bearings relative to said axle, cushioning said bearing relative to fan rotational load on said axle and bearings, and permitting said bearings to floatingly move to dynamically balance said fan and axle during loaded rotation.

3,157,352
ALL-ELECTRIC TAXIMETER
William P. Caywood, Murrysville, Pa., assignor to Rockwell Manufacturing Company, a corporation
Filed July 24, 1961, Ser. No. 126,118
17 Claims. (Cl. 235—30)

1. In a taximeter having a total mileage register, a paid mileage register, a fare register and a first signal generator for generating a first impulse train having a uniform pulse recurrence rate, a second signal generator for generating a second impulse train having a pulse recurrence rate variable in accord with the speed of the vehicle in which said meter is installed, means connecting said second generator to actuate said total mileage register in response to each impulse produced by said second generator, selectively actuate means for connecting said second generator to actuate said paid mileage register in response to each impulse produced by said second generator while said selectively actuated means is actuated, and a pulse recurrence rate comparator connected to said first generator and to the output of said selectively actuated means and operative to actuate said fare register in accord with the more rapid pulse recurrence rate.

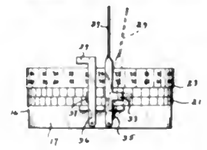


3,157,353
CALCULATING MACHINES
Sture Efraim Toorell, Atvidaberg, Sweden, assignor to Aktiebolaget Atvidaberg-Facit, Atvidaberg, Sweden, a joint-stock company of Sweden
Filed Mar. 5, 1963, Ser. No. 262,975
Claims priority, application Sweden, Mar. 5, 1962, 2,400/62
4 Claims. (Cl. 235—62)



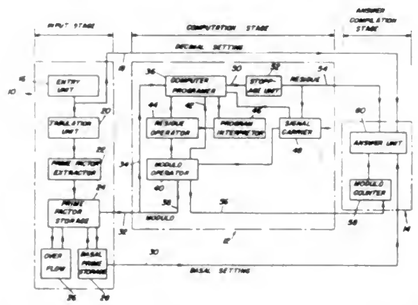
1. In a calculating machine of the type having a rotary actuator operable in one direction to perform addition and in the opposite direction to perform subtraction, and operation keys for determining the sense of rotation of the rotary actuator; drive means for the actuator, and means for coupling said drive means to the actuator for drive thereof in a selected direction comprising, in combination, a pair of axially aligned drive gears adapted to rotate in opposite senses, a coupling member disposed between said drive gears, a pair of starting pawls pivotally mounted on said coupling member for movement in planes transverse to the gear axis, each said pawl being adapted to engage a corresponding one of said drive gears, a starting cam assembly comprising a plurality of cams, a pulling lever pivotally mounted adjacent one of said starting cams for actuation thereby, a pulling hook mounted for reciprocatory movement and for actuation by said pulling lever, said hook having a T-shaped head and being adapted to be tipped in either direction transversely of its line of movement, means for tipping said lever in a particular direction upon actuation of a corresponding operation controlling key, a pair of pivotally mounted coupling levers arranged for selective actuation by said pulling hook in accordance with the tipping movement imparted thereto and a pair of starting levers each operated by the corresponding coupling lever, said starting levers cooperating with said starting pawls to engage said coupling member with that one of said drive gears operating in the proper sense to perform the operation selected by an operation controlling key.

3,157,354
COUNTER MEANS
Lyell D. Henry, 2234 Knapp St., Ames, Iowa
Filed May 16, 1962, Ser. No. 195,095
3 Claims. (Cl. 235—119)



1. In a counting means, comprising, in combination,
a base,
a post shaft on said base,
a wheel rotatably mounted on said post shaft having ratchet teeth extending around its periphery,
a second wheel operatively rotatably mounted around said post shaft having ratchet teeth extending around its periphery,
a finger engaging the ratchet teeth of said first and second wheels capable of movably rotating said two wheels the distance of one of their respective teeth when it is moved in one direction, said finger pivotally mounted to said base and movable about an axis normal to the axis of said post shaft,
means for preventing the rotation of said two wheels in a direction opposite from that of their movements actuated by said movable finger,
indicia on one of said wheels,
and an indicator on the other wheel reading on the wheel having the indicia;
the other of said wheels having a less number of teeth than the number of teeth on the wheel having the indicia.

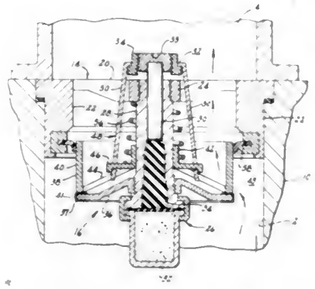
3,157,355
SYNCHRONOUS HARMONIC COMPUTER
Iver B. Iverson, P.O. Box 244, Valdez, Alaska
Filed July 3, 1961, Ser. No. 121,646
19 Claims. (Cl. 235—201)



1. A system of computation comprising: means for representing a plurality of entries by characteristic series formed by repeating cycles of terms; means for phasing

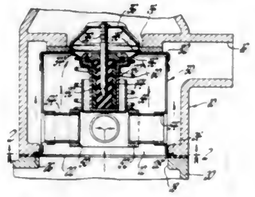
and synchronizing the cycles with respect to each other; means for comparing the phased series until coincidence between terms of residue value occurs; means for counting the number of terms at which coincidence occurs; and means for compiling the values of said coinciding residue value and the count of said number of terms to obtain the product of all of the entries.

3,157,356
LIQUID LINE THERMOSTAT
Charles E. Karppinen, Royal Oak, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 270,048
9 Claims. (Cl. 236—34)



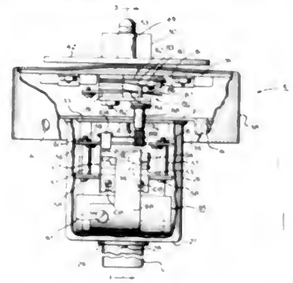
1. A liquid line thermostat comprising a hollow casing structure; a thermostatic power element comprising a fixed housing structure disposed generally within the casing structure, and a piston slidably extending from the housing structure; a valve seat carried solely by the power element housing structure upstream from the casing structure; and a piston-operated tubular metering element slidably supported on the external surface of the power element housing structure for movement toward and away from the seat.

3,157,357
BY-PASS THERMOSTAT VALVE ARRANGEMENT
Charles S. Bailey and William J. Orr, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 3, 1962, Ser. No. 164,116
6 Claims. (Cl. 236—34.5)



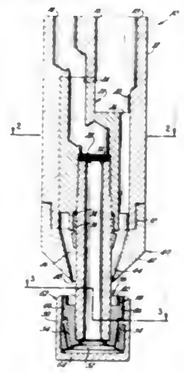
1. A thermostat valve arrangement adapted to be mounted in a housing having one inlet, one main outlet and one bypass outlet, said valve arrangement having a casing, a peripheral mounting flange and an inlet opening at one end of said casing, an outlet opening at the other end of said casing adapted to lead to said main outlet, said casing defining an intermediate port between said ends and adapted to serve as a bypass leading to said bypass outlet, a pellet-type motor having two relatively movable parts coaxial with said casing outlet opening and intermediate port, one of said motor parts being a pin fixed to said casing, the other of said motor parts being a plug slidable on said pin, a main valve carried by said other motor part and arranged to control said casing outlet opening, a secondary valve member on said other motor part and adapted slidably to fit within said intermediate port, and spring means urging said main valve toward said casing outlet opening.

3,157,358
SNOW MELTING CONTROL APPARATUS
Henry P. Birkemeier, Chicago, Ill., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Oct. 8, 1962, Ser. No. 228,975
11 Claims. (Cl. 237—1)



1. In apparatus for controlling the application of heat to a body exposed in an ambient of proper temperature and humidity, a first moving member located in a position to be subject to deposition thereon of snow and ice, a fixed member located with respect to said moving member and adapted to restrain the movement of said moving member when snow and ice have built up thereon, driving means for said moving member, a clutch interposed between said moving member and said driving means, said clutch being disengaged when restraint is imposed on said moving member, means regulating the period that heat is to be applied to said body, and circuit means operable upon actuation of said clutch for initiating the operation of said last named means.

3,157,359
LARGE VOLUME LIQUID ATOMIZER EMPLOYING AN ACOUSTIC GENERATOR
William K. Fortman, Syosset, N.Y., assignor to Astrosonics, Inc., Syosset, N.Y.
Filed Dec. 24, 1962, Ser. No. 246,733
13 Claims. (Cl. 239—102)

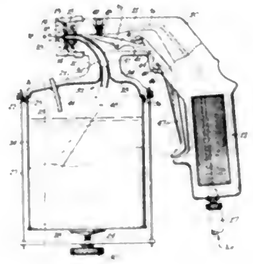


1. A liquid atomization device comprising:
a hollow body member having a gas inlet port;
a nozzle including an orifice in communication with said gas inlet port;
a cavity resonator having a well that is coaxial with and in spaced opposition to said gas orifice; and
liquid orifice means to direct a curtain of liquid coaxially about and axially towards said gas orifice in a direction substantially opposite to the flow of gas from said nozzle.

ERRATUM

For Class 239—316 see:
Patent No. 3,157,348

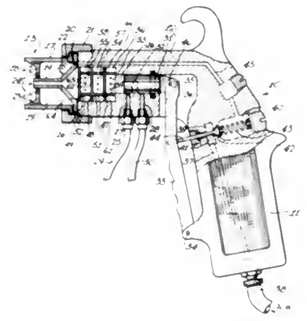
3,157,360
SPRAY GUN HAVING VALVED FLEXIBLE LINER
William L. Heard, Milton, Ontario, Canada
Filed Feb. 25, 1963, Ser. No. 260,554
3 Claims. (Cl. 239—354)



1. A spray gun comprising a body having a nozzle section, a handle section, a liquid container-supporting section, and a liquid passage extending through said nozzle and container-supporting sections, said passage having a relatively short section of relatively great cross-sectional area in said container-supporting section and a relatively long section of relatively small cross-sectional area in said nozzle section, a unitary liner of flexible sheet material lining said liquid passage from end to end thereof and conforming to the contours of said passage, said container-supporting section having an annular edge portion constituting the mouth of said passage, said edge portion having an internal annular shoulder, said liner having an end portion overlying said shoulder, and a container-holding bracket carried by said container-supporting section and having a threaded member actuable to exert clamping pressure on said liner end portion and shoulder to retain said liner in position, said liner being otherwise unattached to said container-supporting section to permit withdrawal therefrom, an arm pivotally mounted in said body and engaging the exterior surface of said relatively long section of said liner, a spring imposing pressure on said arm to collapse said liner and close said liquid passage, and a manually operable lever mounted on said body and engaging said arm to move said arm against the action of said spring and out of collapsing engagement with said liner.

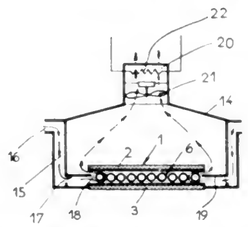
3,157,361
DISC-LIKE MIXING DEVICE
William L. Heard, P.O. Box 325, Milton, Ontario, Canada
Filed Apr. 8, 1963, Ser. No. 271,096
7 Claims. (Cl. 239—427)

1. A spraying device comprising a spray gun body having therein a cylindrical mixing chamber and a valve chamber, a tubular nozzle member, said mixing chamber being open at one end and communicating through said open end with the interior of said nozzle member and having a side wall and an end wall at its other end, said mixing chamber having an opening in said end wall communicating with said valve chamber, and a liquid components mixing device in said mixing chamber comprising a plurality of diametrically extending axially spaced discs, a tubular section extending from each of said discs and having an external diameter less than the diameter of said mixing chamber, said discs and tubular sections forming a plurality of axially aligned liquid receiving



cylindrical zones in said mixing chamber and an annular zone concentric with and radially outward of each said cylindrical zone, each said tubular section having a plurality of circumferentially arranged openings therein for radially directed liquid flow therethrough, one of said discs having a plurality of openings therein leading from one to another of said annular zones for axially directed liquid flow therethrough, and the adjacent one of said discs having an axially directed opening therein leading from one to another of said cylindrical zones for axially directed liquid flow therethrough.

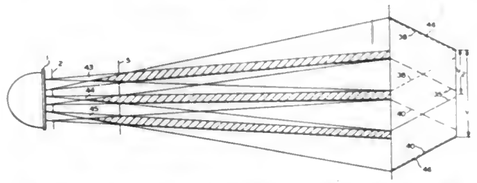
3,157,362
DEVICE FOR PRODUCING A STRONG PHOTO-LUMINESCENT LIGHT
Moustapha Waly, Geneva, Switzerland, assignor to Anicet Anstalt, Vaduz, Liechtenstein
Filed July 6, 1962, Ser. No. 207,999
Claims priority, application Switzerland, June 4, 1962, 6,844/62
21 Claims. (Cl. 240—20)



1. A lighting device acting as a photoluminescent lamp and comprising a relatively flat chamber formed with two opposite, relatively closely spaced walls consisting of two substantially plane and parallel plates leaving a gap therebetween and coated on their confronting inner faces respectively with a phosphor-forming layer of stable fluorescent substances of inorganic origin selected to have their maximum photosensitivity for the radiation of 2537 angstroms wavelength, at least one of said plates being made of translucent light-diffusing glass selected from the group including ground glasses and opaline glasses and the thickness of the phosphor-forming layer on said translucent

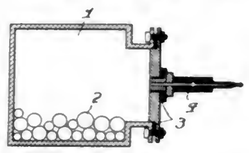
plate ranging from 10 to 30 microns, a source of electromagnetic radiations consisting of a set of at least one group of cylindrical electric discharge tubes of the mercury vapor type generating an emission of ultra-violet rays of 2537 angstroms wavelength, said tubes being connected in series and located in the gap left between said two plates, and means for destroying the ozone produced during the operation of said tubes.

3,157,363
RANGING BEAM BEACON
Erik Pørsberg, Stockholm, Sweden, assignor to Svenska Aktiebolaget Gasaccumulator, Lidingo, Sweden, a corporation of Sweden
Filed Sept. 30, 1960, Ser. No. 59,555
Claims priority, application Sweden Nov. 5, 1959
4 Claims. (Cl. 240—46.1)



1. Ranging beam beacon comprising a light source for emitting substantially parallel light rays, a light diverging element, a plurality of plane screening members having their length dimension disposed in the direction of said light rays, said plurality including a group of adjacent screening members disposed in a mutual parallel arrangement and further including a collection of adjacent screening members disposed in a mutual diverging arrangement and in said direction of the light rays, the light passing between any two adjacent of said screening members forming one light channel, the angle of the light cone passed through said channels formed by said collection of screening members being determined by a ratio of the spacing between said two screening members and the length of said two screening members in said direction of the light rays, the axis of one light channel formed by said collection of screening members differing from parallelism with an adjacent light channel of said collection by an angle equal to one-half of said angle of said light cone passed through said channel, and said channels formed by said group superimposing the light passing therethrough so that there is obtained a light strength and a light distribution pattern showing a marked maximum light strength in the vicinity of the boundary between said group and said collection of screening members for forming a ranging beam.

3,157,364
METHOD OF PULVERIZING GRAPHITE
Akinori Muta and Yasuhiko Uehara, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a company of Japan
Filed Oct. 9, 1961, Ser. No. 143,746
7 Claims. (Cl. 241—16)



1. A process of manufacturing fine graphite particles which comprises:

placing coarse graphite particles in an air-tight impact pulverizing rotatable vessel;

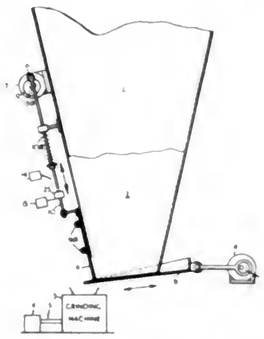
removing water vapor and oxygen from within the confines of said vessel until the qauntity of water vapor and oxygen adsorbed on the surfaces of said particles becomes less than a monomolecular layer;

thereafter rotating said vessel, thereby comminuting said coarse graphite particles;

continuing said comminuting until said coarse particles have been impact pulverized to fine graphite particles of a predetermined size; and

recovering said fine graphite particles from said vessel.

3,157,365
AUTOMATIC CONTROL OF MATERIALS PROCESSING MACHINES
Thomas J. A. Brown, Buxton, and Philip Hunter Wolfenden, Coventry, England, assignors to Henry Simon Limited, Stockport, England, a British company
Filed Jan. 19, 1962, Ser. No. 167,248
Claims priority, application Great Britain, Jan. 20, 1961, 2,336/61
4 Claims. (Cl. 241—35)



1. A feed control means for automatically controlling the operation of material processing machines wherein a reversible feed-rate control motor has its output shaft rotatively coupled to a cam on which rides a cam follower coupled to a feed-rate determining mechanism, said cam having a cam surface which, along its periphery, changes in radial distance from its rotative centre, said changes in radial distance being such that for each successive equal movement of the cam the rate of change of feed-rate provided by the feed-rate determining mechanism, is directly proportional to the feed-rate applying at the time.

3,157,366
PULVERIZER
Wayne C. Rogers, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 4, 1962, Ser. No. 242,300
14 Claims. (Cl. 241—188)

1. An attrition pulverizer, comprising

(*a*) a tubular housing having radial end plates,

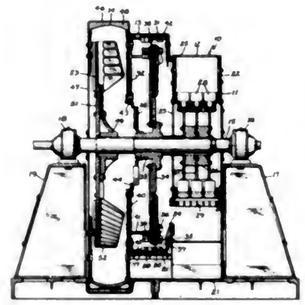
(*b*) a shaft extending axially of the housing and carrying a radial rotor plate,

(*c*) movable pegs extending parallel to the axis from the plate adjacent the periphery thereof, each peg having a base,

(*d*) stationary pegs extending parallel to the axis from an end plate toward the movable pegs,

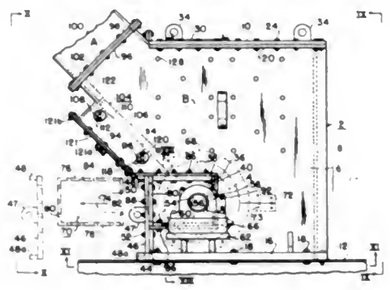
(*e*) a wear plate fastened to the rotor plate surrounding each movable peg, the wear plate having a socket in which the base of the peg fits snugly, and

(*f*) a block of extremely hard material fastened in the wear plate with an edge which forms a portion



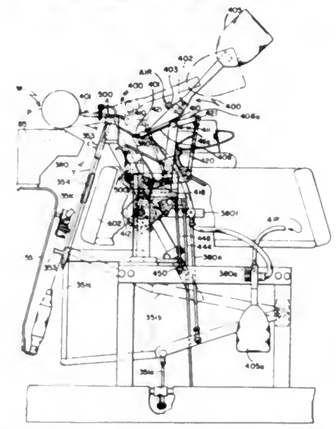
of the surface of the socket in an area where extreme wear normally takes place.

3,157,367
ROTARY IMPELLER TYPE IMPACT APPARATUS
Frank E. Rath, Butler, Pa., assignor to Spang & Company, Butler, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 71,100, Nov. 12, 1960. This application Aug. 22, 1963, Ser. No. 306,983
21 Claims. (Cl. 241—274)



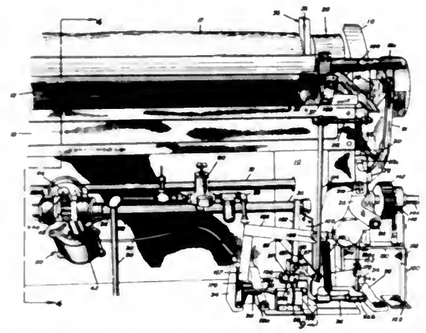
1. Impact crushing apparatus comprising a housing having side walls, end walls and a top wall defining an impact chamber; means for feeding material to be crushed into said chamber through one of said end walls, said means including an angularly adjustable guide plate; an impact wall located in said impact chamber adjacent the other of said end walls and opposite said material feeding means, said impact wall comprising a plurality of independently replaceable contact members exposed to the interior of said chamber and shock absorbing means between said contact members and said end wall; a rotary impeller within said chamber located in the path of the material fed to said chamber from said guide plate, said guide plate being positioned with respect to said impeller so that the material is delivered to the impeller in a substantially tangential direction; means for rotating said impeller at a selected speed to throw the material against said impact wall, whereby the angle of said guide plate and the speed of said impeller are selected to confine the crushing of the material to said replaceable contact members and thereby eliminate wear on said side walls and top wall of said chamber.

3,157,368
AUTOMATIC WINDING MACHINE
Winthrop L. Perry, Milford, N.H., assignor to Abbott Machine Co., Inc., Wilton, N.H., a corporation of New Hampshire
Original application Sept. 29, 1961, Ser. No. 141,884. Divided and this application July 19, 1962, Ser. No. 210,996
9 Claims. (Cl. 242—35.6)



1. In an automatic winding machine, a yarn package drive roll, means for driving said roll in a winding direction and means for rotating the same roll in an unwinding direction, a package holder permitting the package axis to recede from the roll as the package grows, an end-finding nozzle having a mouth for drawing in a yarn from the package, and means for moving the nozzle toward a package on said roll until the nozzle is stopped by the package periphery materially distant circumferentially from the line of nip between package and roll, the axis of the package on said roll having a variable position dependent upon the attained size of the package, the direction of movement of the nozzle mouth in the region in which said nozzle is stopped by the package being approximately toward the package axis, notwithstanding said variable position of the package axis.

3,157,369
LAP FORMING PICKER OR THE LIKE
Rodeheaver H. Rogers, Startex, S.C., assignor to Quality Textile Industries, Inc., Spartanburg, S.C., a corporation of South Carolina
Filed Jan. 25, 1962, Ser. No. 168,650
20 Claims. (Cl. 242—55.1)



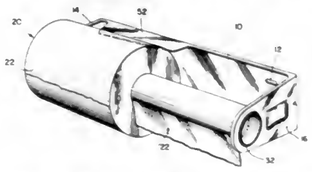
20. In a lap package-forming machine, comprising a frame, parallel drive rolls for a lap arbor on which a lap

package is to be wound, said rolls providing an arbor-supporting bight, frame provided arbor receiving seats at opposite sides of the machine and aligned with said roll-provided bight, frame provided drive means for said arbor drive rolls, a control member for said drive means, and said control member carried by the frame adjacent one of said seats and the bight between said arbor drive rolls for operation by an arbor to actuate said roll drive means.

3,157,370
SUPPORT BRACKET FOR TOILET PAPER ROLLS

Edward A. Govatsos and William H. Corey, both of 215 Turnpike St., Canton, Mass.

Filed Oct. 25, 1961, Ser. No. 147,677
12 Claims. (Cl. 242—55.2)

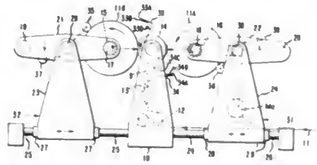


1. A bracket support for a plurality of rolls of toilet tissue, comprising a back member, parallel arms projecting out from said back member and spaced apart a distance slightly greater than the combined lengths of the rolls to be supported thereby, an arbor extending through and supported by said arms, rigid means on said bracket support for clamping all the rolls on said arbor except one from rotation thereon, and means including said clamping means and the rolls clamped thereby for locking said arbor against axial movement relative to said arms.

3,157,371
METHOD AND APPARATUS FOR WINDING

John G. S. Billingsley, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 15, 1961, Ser. No. 110,135
5 Claims. (Cl. 242—56.2)

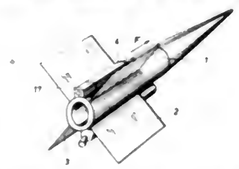


1. In a web winding apparatus which comprises, in combination, a positively-driven surface winding drum and means for driving said surface winding drum; a core-supporting, positively-driven mandrel spaced from, in the same horizontal plane with the axis of, and parallel to the axis of said surface winding drum; means for driving said core-supporting, positively-driven mandrel; a core, upon which the web is wound, mounted on said core-supporting mandrel, said surface winding drum being in peripheral rotating contact with the web being wound on said core; the improvement wherein a support assembly is provided to support said core-supporting mandrel, said support assembly having bearing elements on which said core-supporting mandrel is rotatably supported, said support assembly also having base portions and low friction bed ways, said base portions mounted on said low friction bed ways and said support assembly adapted to move on said low friction bed ways positioned in a horizontal plane different from the first-mentioned plane and movable in a direction to and fro with respect to said surface-winding drum such that said core-supporting mandrel moves correspondingly to and away from said surface-winding drum with the axes of said drum and said mandrel always parallel and in the same horizontal plane, as said web is wound on the core to form a roll on said core under the influence of a coefficient of friction of 0.002–0.01; and means are provided for applying a predetermined pressure on said support assembly whereby a controlled density throughout the thickness of the roll on the core is obtained.

3,157,372
GUIDABLE FLYING BODIES

Peter Nauschütz, Munich, Erich Planitzer, Nurfingen, and Werner Schindler, Ottobrunn, near Munich, Germany, assignors to Bolkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany, a corporation of Germany

Filed Dec. 15, 1959, Ser. No. 859,819
Claims priority, application Germany Dec. 16, 1958
6 Claims. (Cl. 244—14)

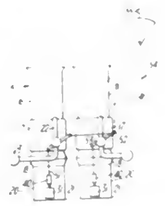


1. In combination, an oblong guidable flying body having attached thereon at its outside a projection substantially perpendicular to said body, mechanical guiding means and first electrical connecting means extending from said projection in a direction parallel to said body, and an elongated battery enclosure having at one end second electrical connecting means, and along its outer surface an elongated recess slidably fitting over said guiding means in said parallel direction so as to permit said enclosure to be slid on said guiding means thereby electrically connecting said first and said second electrical connecting means.

3,157,373
VERTICAL LIFT GAS TURBINE ENGINE

Gordon Cyril May, Allestree Park, Derby, and Alexander Stewart, Spondon, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain

Filed Jan. 15, 1963, Ser. No. 251,544
10 Claims. (Cl. 244—23)

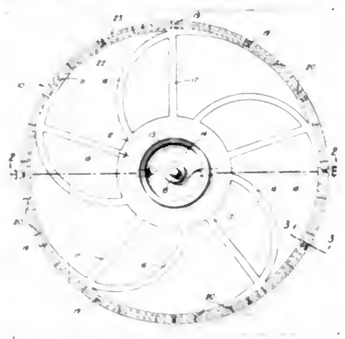


8. In an aircraft adapted for vertical take-off and landing, a plurality of vertical lift engines each of which comprises in flow series a compressor, combustion equipment, a turbine and a final nozzle; a bleed conduit arranged upstream of the respective combustion equipment and extending externally of the respective engine; means for supplying said bleed conduit with a proportion of the air compressed by the respective compressor; and means for varying the effective area of the respective final nozzle so as to vary the speed of the respective turbine and compressor and hence the amount of air supplied to the respective bleed conduit; and a nozzle means on said aircraft for effecting attitude control; the bleed conduit of the vertical lift engines supplying air to said nozzle means.

3,157,374
AIRPORT DESIGN

James R. Conrey, 409 N. Mangoustine Drive, Sanford, Fla.

Filed Jan. 18, 1963, Ser. No. 252,536
1 Claim. (Cl. 244—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A landing facility having in combination:
a substantially circular runway,
said circular runway having an inner and outer edge and a varying average slope of increasing magnitude between the inner and outer edges at a rate of one and one-half degrees per predetermined unit of runway width,
high speed turn-offs provided at approximately every 72 degrees banked at one and one-half degrees to the left in the direction of the turn per said predetermined unit of width and leading tangentially from the edge of the runway towards the centers of the circular runway whereby aircraft can land at various ground speeds at various radial positions on the runway and exit from the runway at high rates of speed, and
radial taxiways for departing aircraft.

3,157,375
RAILROAD SIGNAL SYSTEM

Samuel R. Seese, 1206 Nottingham Ave., Orlando, Fla.

Filed Aug. 30, 1960, Ser. No. 52,844
2 Claims. (Cl. 246—126)

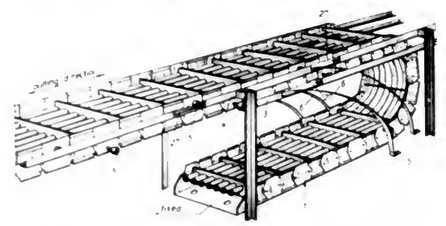


1. In combination with a track mounted vehicle, a system for signalling approach of the vehicle to a location at which a warning device is mounted comprising, a current conducting rail electrically connected to said warning device, a contact unit having a pair of non-conductively spaced contact elements, means mounting said contact unit on the vehicle for yieldable engagement of both of the contact elements with said rail as the vehicle approaches the warning device, said contact elements being electrically bridged by the rail when engaged therewith, a source of electrical current mounted on the vehicle, selectively controlled means connecting one of said contact elements to the source for supply of current to the warning device through the rail by contact thereof with said one of the contact elements, an alarm device mounted on the vehicle, and means electrically connecting the other of said contact elements with the alarm device for supply of current thereto through the rail by said bridging of the contact elements, whereby the warning and alarm devices are simultaneously operated through parallel circuits established through the rail.

3,157,376
ARRANGEMENT FOR FEEDING CONSUMER MEANS THROUGH CONVEYING MEANS TO PARTS MOVABLE ON TRACKS

Herbert Merker, Siegen, Westphalia, and Kurt Loos, Dreistiefenbach, Germany, assignors to Kabelschlepp G.m.b.H., Siegen, Westphalia, Germany

Filed Oct. 27, 1961, Ser. No. 148,145
Claims priority, application Germany Oct. 29, 1960
12 Claims. (Cl. 248—49)



1. A link chain system for supporting elongated flexible conveying means such as flexible conduit means, which includes: a link chain having an upper chain portion and a lower chain portion and an arcuate interconnecting portion extending between said upper and lower portions, said link chain also having means for receiving and supporting said conveying means, first supporting means for the chain in the form of spaced supporting rollers, and second supporting means for the chain in the form of supporting rails for supporting engagement with said first supporting means, said second supporting means being provided with openings therethrough so spaced as to permit said first supporting means to pass through said second supporting means where the chain links move from the lower chain portion around said arcuate portion to the upper chain portion and vice versa, one of said first and second supporting means being carried by said chain for movement therewith and projecting laterally therefrom, and the other one of said first and second supporting means being arranged stationarily and being laterally spaced to receive the chain.

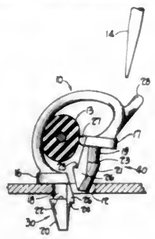
3,157,377
CABLE SUPPORTING CLIP

Emil H. Orenick, 9011 W. Moreland Road, Parma, Ohio

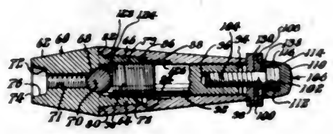
Filed Apr. 17, 1963, Ser. No. 273,761
2 Claims. (Cl. 248—71)

1. In combination with a panel wall having a preformed circular opening therethrough and an electric cable to be mounted on said panel, clip means, to permanently anchor said cable to the panel, comprising, a strap of resilient material bent upon itself to form a cable embracing loop having complementary wall penetrating plugs at either end thereof, formed integral therewith, and adapted to be fitted in opposition through said panel wall opening; each plug having a base portion positioned crosswise of the strap end, and a depending semi-frusto-conical head mounted on the lower face of the base through a semi-cylindrical shank, the radius of the base end of the head being greater than the radius of the shank to define a stop at their junction, the heads also having oppositely

oriented teeth on their opposed inner faces; the bent strap being normally elliptical in shape with the opposed plugs offset both laterally and vertically; the strap being deformed to a substantially circular shape when the plugs are positioned in direct opposition through the wall opening with their stops engaged with the far side of the wall, and their teeth interlocked to prevent relative longitudinal movement between the heads, whereupon, the inherent resiliency of the strap acts to urge the plugs apart, into pressed engagement with the sides of the wall opening, to permanently anchor the clip in the opening.



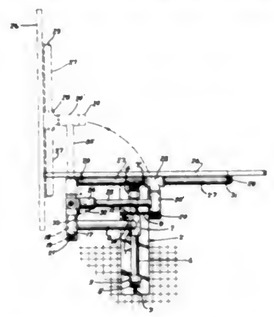
3,157,378
FASTENER ASSEMBLY
Louis Blum, Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed Dec. 18, 1961, Ser. No. 160,012
9 Claims. (Cl. 248—230)



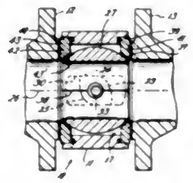
1. A fastener assembly adapted for attachment to a post of a railing structure comprising a generally U-shaped member adapted to fit against the side of a post received through the open end thereof, a bolt threadedly received between the legs of said member and extending therefrom in longitudinal continuation thereof, the threaded end of said bolt being adapted for engaging the side of said post thereby to affix said member to said post, a sleeve fitted over said bolt and abutting said member, and means at the opposite end of said bolt for securing a railing component thereto.

3,157,379
WALL MOUNTED FURNITURE BRACKET
Peter Platakis, 862 22nd Ave. SE., Minneapolis 14, Minn.
Filed Oct. 9, 1961, Ser. No. 143,876
7 Claims. (Cl. 248—278)

1. In an apparatus of the class described, an elongated mounting plate having means for securing it to a wall surface, vertically aligned bearing elements secured to said plate adjacent to its ends, an upright supporting member mounted in said bearing elements, a sleeve member mounted on said upright supporting member for vertical and rotary adjustments, a first horizontal supporting arm having one end secured to said sleeve member and provided at its opposite end with an upright tubular bearing member, the bore in said sleeve being slightly larger than the diameter of said upright supporting member whereby when weight is placed upon the outer end of said first supporting arm, said sleeve is tilted sufficiently on the supporting member whereby the wall of the bore in said sleeve will grip said member and retain the sleeve in adjusted position thereon, a notched arcuate plate slidably and non-rotatably mounted on said upright supporting member above said sleeve, a latch pivotally mounted on said first supporting arm and engageable with said notched plate to secure the first supporting arm against rotation on said upright supporting member, a second supporting arm having an upright cylindrical member at one end rotatably fitting in the tubular bearing member of said first arm, said second arm having an upright tubular bearing member at its outer end adapted to rotatably support an article of furniture such as a table top, said first and second arms cooperating to provide an articulated arm to increase the horizontal adjustment of the table top.

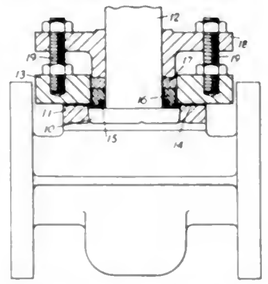


3,157,380
BALL VALVES
Robert B. Sivyer, 1314 Beutel, Houston, Tex.
Filed June 27, 1962, Ser. No. 205,737
8 Claims. (Cl. 251—163)



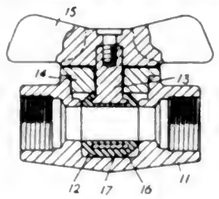
1. A ball valve comprising: a valve body having end surfaces arranged for positioning between pipe flanges, said end surfaces having openings to a hollow interior, disc-like, metal sealing, annular rings received in said openings, said rings being adapted for retention in said openings between said valve body and pipe flanges, said rings having facing sealing surfaces, a ball member received in said hollow interior, said ball member having a full opening passageway, means coupled to said ball member for providing pivotal movement of said ball member in said valve body between an open position where said passageway is in fluid communication with said body openings and a closed position where said passageway is sealed off from said body openings by sealing contact between said ball member and said sealing surfaces, said ball member having a slot in its outer surface extending in the same direction as said passageway, said ball member having a single slit therein extending between said passageway and said slot, cam means in said valve body cooperable with said slot and slitted ball member in a closed position of said ball member to separate said ball member at said slit and thereby expand said ball member into sealing contact with said sealing surfaces, said cam means being diametrically positioned relative to said pivotal movement means.

3,157,381
CARTRIDGE-RETAINED VALVE STEM SEALING MEANS
Terence John Floyd, Wellington, England, assignor to Audco Limited, Newport, Shropshire, England
Filed Dec. 8, 1961, Ser. No. 157,926
Claims priority, application Great Britain, Jan. 11, 1961, 1,142/61
3 Claims. (Cl. 251—214)



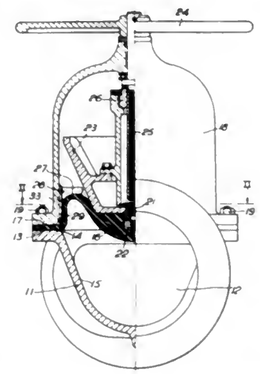
1. A fluid controlling valve comprising a body having a passage therein for fluid flow and a valve means accommodating opening, a valve means rotatably mounted in said body for controlling fluid flow through said passage, said valve means including a flow controlling member operatively related within said passage and opening and a stem projecting beyond said opening, a rigid annular carrier surrounding the stem and having an annular recess in its inner periphery at one axial end thereof, an apertured diaphragm surrounding said opening and having a portion in engagement with said flow controlling member with the stem passing through the aperture, said diaphragm being provided around the periphery of the aperture therein with an axially projecting flange which extends into said annular recess of the carrier, a single resilient annular sealing element in said annular recess at the juncture of the stem and the flow controlling member in contact with the stem and the diaphragm and means co-operable with said sealing element for urging said sealing element into sealing engagement with said stem and diaphragm and thereby preventing leakage of fluid in the axial and radially outward directions respectively.

3,157,382
FLUID-CONTROLLING VALVES
Cecil William Perry, Barnwood, Gloucester, England, assignor to Audco Limited, Newport, England
Filed May 28, 1962, Ser. No. 197,949
Claims priority, application Great Britain, June 1, 1961, 19,766/61
2 Claims. (Cl. 251—312)



1. A fluid controlling valve assembly comprising a valve body having a fluid flow passage extending therethrough, said valve body including spaced apart valve seats concentric with respect to said fluid flow passage, a rotatable valve member located within said body between said valve seats for controlling the fluid flow through the passage, said valve member including a metal tube disposed concentrically with respect to said passage and having a length dimension less than the distance between the spaced apart valve seats, said body having an aperture in communication with the passage between the valve seats, a stem secured to said tube and projecting from the body at right angles to the axis of the tube through said aperture, a facing of resilient material anchored to the exterior and interior of the tube, said facing having part spherical seating surfaces at each end thereof for coaction with said valve seats and the diameter of the facing being sufficient to provide an interference fit between opposed surfaces of the body whereby the facing is compressed in a direction transverse to the axis of the tube for providing a seal between the stem and the aperture in the body through which the stem projects.

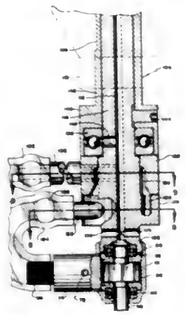
3,157,383
DIAPHRAGM VALVE
Richard Hector Price, Cwmbran, England, assignor to Saunders Valve Company Limited, Cwmbran, England, a British company
Filed June 10, 1963, Ser. No. 286,751
Claims priority, application Great Britain, June 12, 1962, 22,608/62
10 Claims. (Cl. 251—331)



1. A diaphragm valve of the kind comprising a diaphragm clamped at its margin between a bonnet, a flat diaphragm clamping surface of which makes a rounded junction with the internal wall thereof, and a valve casing having a substantially straight bore of substantially constant cross-sectional area and a seating formed in part by the surface of a lateral opening which from a rounded sweep of large radius joining it to a flat diaphragm clamping surface on the valve casing extends inwardly at a substantial taper, the tapering sides of the opening running smoothly into the cross-section of the bore which thereby completes the seating, the diaphragm when free corresponding to the closed position of the valve except at its margin which slopes in the same direction but less steeply than the tapering part, the diaphragm in the closed position of the valve being pressed by an actuator to which it is attached, against the seating inward of the rounded sweep and being slightly stretched in the region of the rounded sweep, and when the valve is opened being retracted by the actuator and forming an outward corrugation into the bonnet within the clamped margin, characterised in this, that the actual clamping surface on the bonnet over most of the periphery lies outside the line at which the clamping surface on the casing joins the rounded sweep but over a narrow zone on each side extends inwards so that in these zones a greater radial width of the diaphragm is firmly clamped, without the inward extension being great

enough to interfere with the correct formation of the outward corrugation when the valve is opened.

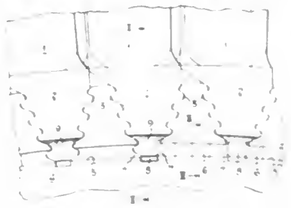
3,157,384
HIGH SPEED TOOL
David E. S. Gotwald, Jr., and Carl J. Munchel, York, Pa., assignors to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Original application May 20, 1960, Ser. No. 30,673, now Patent No. 3,077,333, dated Feb. 12, 1963. Divided and this application July 10, 1962, Ser. No. 208,723
3 Claims. (Cl. 253—2)



1. A high speed tool comprising, in combination, a head having a cavity extending axially thereof and openings at opposite ends communicating with said cavity, a neck member projecting laterally from one side of said head transversely to the axis of said head and having a passage extending therethrough opening radially into said head cavity, a turbine rotor having radial vanes thereon and supported within said cavity of said head for rotation about the axis thereof and having means to be connected to a tool extending through one of the openings in one end of said head for rotation by said rotor, connecting means carried by the other end of said head, supporting means having connecting means on one end thereof complementary to and engaging said connecting means on said other end of said head to support said head therefrom with the axis of the rotor coaxial with the axis of said supporting means, a distributor having inlet means for gaseous fluid under pressure and carried by said supporting means to permit rotation of said supporting means about its axis relative to said distributor, said inlet means extending outward from said supporting means, first conduit means connected between said distributor and the passage in said neck member, and second conduit means connectable between a source of gaseous fluid under pressure and the inlet means of said distributor, thereby to deliver gaseous fluid under pressure to said head to drive the turbine rotor therein.

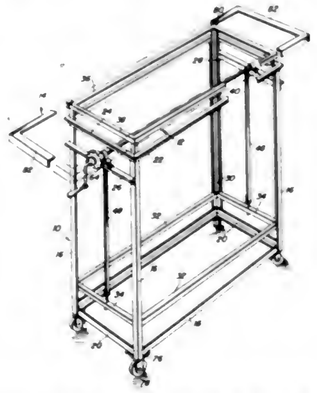
3,157,385
BLADE LOCKING MEANS FOR TURBINES OR COMPRESSORS
George Jenson, Manchester, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Sept. 24, 1962, Ser. No. 225,635
Claims priority, application Great Britain Oct. 17, 1961
3 Claims. (Cl. 253—77)

1. A turbo-machine bladed rotor disc, comprising:
(*a*) a central disc;
(*b*) a multiplicity of blade elements, each including a blade and a root at one end of the blade;
(*c*) an equal multiplicity of substantially axially directed slots in and spaced evenly around the periphery of the disc, the roots of the blades being inserted axially into the slots and each slot and root having sides of complementary shapes which cooperate to prevent radial movement of the blade element;
(*d*) an annular dovetail groove in each axially directed face of the disc, the radius of the radially innermost edge of the groove being at least equal to the radius of a hypothetical circle joining the bases of the slots, so that the groove opens into each slots;



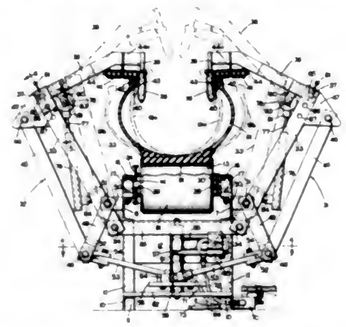
(*e*) a multiplicity of packers of dovetail section fitting the grooves, the length of each in the circumferential direction of the rotor being such that it can be passed in an axial direction into the base of a slot and slid circumferentially into the groove;
(*f*) a locking plate extending through each slot between the tip of the blade root and the base of the slot, each end of the plate being bent radially outward to lie over a part, circumferentially, of the width of the end of the root, the packers occupying close-fitting positions in the grooves between the ends of the locking plates, and at least one of the packers adjacent to each locking plate overlapping the remainder of the end of the root.

3,157,386
ADJUSTABLE BUILDING PANEL SCAFFOLD
Arch T. Higgins, 1601 S. 6th, Ponca City, Okla.
Filed Feb. 2, 1962, Ser. No. 170,619
7 Claims. (Cl. 254—4)



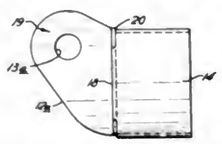
4. A building scaffold comprising a base, a vertically telescoping, vertically adjustable carriage slidingly and guidingly mounted upon said base and projectable upwardly thereabove and an auxiliary platform removably supported upon the top of said carriage, said base, carriage and platform each consisting of an open framework construction having each an open frame top with said tops being disposed in overlying relation whereby access may be had therethrough from therebeneath to a panel or other object supported upon said platform, said base and carriage having at their corners vertical nested and slidingly engaged legs, means connected to said carriage for adjustably raising and lowering the latter upon said base, said platform having side members with depending flanges embracing therebetween the sides of the carriage open-frame top, said platform overlying said carriage top and projecting beyond and overhanging at least one marginal edge of said carriage top, said platform top including depending transverse intermediate members releasably embracing therebetween the ends of said carriage top and releasably but stationarily securing said platform in position upon said carriage top.

3,157,387
AUTOMATIC TIRE SPREADER
George A. Pinter, Alliance, and Ernest W. Walter, Canton, Ohio, assignors to Van-Kay, Inc., Canton, Ohio, a corporation of Ohio
Filed Nov. 6, 1962, Ser. No. 235,626
2 Claims. (Cl. 254—50.3)



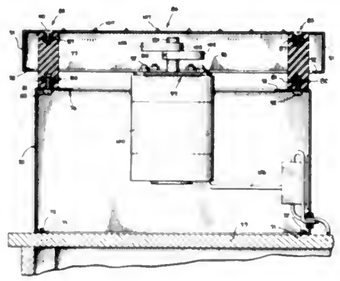
1. In a device for inspecting pneumatic tire casings wherein means for rotating a tire in the upright position are mounted on a base, and wherein a pair of opposed tire spreader arms are mounted on opposite sides of said rotating means; the improvement in which each spreader arm includes an elongated lever, a lever extension, and a link, each lever having a lower end pivotally mounted on the base, the lever extension being pivotally mounted on the upper end of the lever, tire bead-engaging rollers on the lever extension remote from the lever, means for rotating the arms about the lever pivot points between an upright position adjacent the tire rotating means and an inclined position away from said means, said rotating means including each link pivotally connected at one end to a corresponding lever and including a shaft rotatably mounted on the base and connected to the links of each arm, and reversible means for rotating the shaft on the base.

3,157,388
FIXTURE FOR SUPPORTING FENCE RAILS OR THE LIKE
Edwin A. Nelson, deceased, late of Waukegan, Ill., by Maxie R. Nelson, administratrix, Waukegan, Ill.
Filed July 14, 1961, Ser. No. 124,234
2 Claims. (Cl. 256—68)



2. A fixture comprising a sheet metal body portion originally of elongated rectangular outline bent to form a substantially cylindrical cup, the ends of said body portion coming together at one end of said cup and diverging toward the other end, and a pair of ears extending from one edge of said body portion and being enlarged adjacent the body portion and tapering outwardly from their enlargements, said ears being bent toward each other at right angles to said body portion with portions of their enlargements together forming an end wall for said cup overlapping the diverging ends of said body portion, said ears being reversely bent at right angles to said end wall with their tapered portions together forming a lug projecting from said end wall, the tapered portions of said ears being bent to opposed shallow S-shape in cross section to provide springiness.

3,157,389
PLANT SETTING DEVICE
Winfred Lee Williams, Rte. 2, Marshville, N.C.
Filed Oct. 6, 1961, Ser. No. 143,491
1 Claim. (Cl. 259—1)

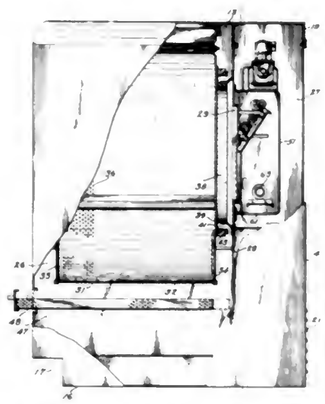


A plant setting device comprising a stationary hollow housing having vertical sides and an inturned upper flange portion extending from the upper periphery of said housing, a plurality of rubber cylinders, a pair of internally threaded nuts molded into each of said rubber cylinders with the axes of said threads coaxial with the respective rubber cylinders, a horizontal flat element having a plurality of sharp projections extending upwardly therefrom said sharp projections being spaced in a regular pattern over the upper surface of said flat element and adapted to engage a wooden flat, screws extending through said flat element with each screw tightly threaded into one of the nuts of a respective rubber cylinder screws extending through said housing with each screw tightly threaded into the other nut of a respective rubber cylinder, said flat element having a downturned flange portion extending from the periphery of said flat element and an inturned flange portion extending from the lower edge of said downturned flange portion, a horizontal mounting plate secured to said inturned flange portion and extending from one side of said flat element to the other, a motor fixed to said mounting plate and projecting downwardly into said housing, said motor having an upwardly extending drive shaft terminating below said flat element, and eccentric weights adjustably fixed to said drive shaft.

3,157,390
COMBINATION GAS AND ELECTRIC HEATER FOR A CLOTHES DRIER
Peyton W. Douglas, Syracuse, N.Y., assignor to Blackstone Corporation, a corporation of New York
Filed Apr. 3, 1961, Ser. No. 100,129
3 Claims. Cl. 263—33)

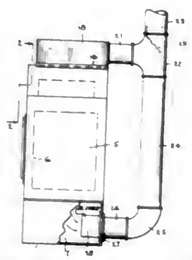
1. In a clothes drier having a cabinet and a bulkhead vertically dividing the interior thereof into a front rotatable drum compartment and a rear heater compartment, an air heating unit in said rear compartment em-

bracing an opening in said bulkhead leading into said front compartment, said unit comprising an enclosure having inlet ports, an electric heater in the upper portion of said enclosure, a gas burner in the lower portion of said enclosure, means in said unit for deflecting heat from said burner around said heater and through said bulkhead opening into said front compartment, manually controlled means connecting said burner and said heater with their respective sources of supply, said means in-



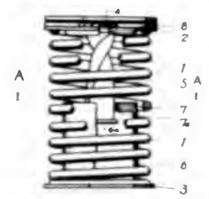
cluding gas supply means having a solenoid valve and circuitry operating said solenoid valve and said heater, said circuitry including switch means connected with an electrical current supply and operable to selectively and combinedly activate said solenoid valve and said heater, and automatically operated temperature responsive means associated with said burner and said heater for individually terminating their operation when a predetermined temperature has been reached in said front compartment.

3,157,391
HEAT RECLAIMER FOR GAS FIRED DRYERS
James J. Angelone, 5613 Madison St., Hollywood, Fla.
Filed Oct. 18, 1961, Ser. No. 145,814
1 Claim. (Cl. 263—33)



A heat reclaimer, in combination with a clothes dryer of the type comprising a casing that includes an upper heat generating chamber means, an intermediate chamber means including rotary drum dryer means and a lower lint chamber means, said chambers all being communicating, said upper chamber being open at the top, a hot plate supported in the opening at the top of the upper chamber and flush with said opening, said hot plate being provided with a longitudinal slot, a gas burner supported upon a partition element arranged between the upper and intermediate chambers in a manner to direct a flame against the hot plate, means for supplying fuel to the burner, baffles suported within said upper chamber for directing the flame from the burner directly against the bottom of the hot plate, a cap plate extending across the opening of the heat chamber to close the opening for its major width and to define a relatively narrow opening leading into the heat chamber for conducting air to the heat chamber, the said cap plate comprising reinforcing lips at its opposite ends which seat upon the marginal edges of opposite side walls of the casing, the said cap plate being provided with a longitudinal slot which is in alignment with the slot in said hot plate, a hood fixed upon said cap plate, said hood communicating with a conduit at its rear end, said lint chamber being provided with a suction blower, said suction blower communicating with a conduit rearwardly of said casing, the first and second named conduits being coupled to a vertical conduit for the escape of heated air that is passed downwardly from said heat generating chamber and through the rotary drum dryer means in the intermediate chamber and to the lint chamber, a discharge stack connected to said vertical conduit, couplings connecting said first and second named conduits to said vertical conduit and an angled baffle plate disposed in the coupling for the first named conduit whereby air flowing from said blower will have a portion thereof deflected by said baffle plate to said hood and downwardly through the slots of said cap plate and said hot plate, a portion of the air passing upwardly and about said baffle to said discharge stack.

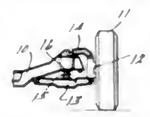
3,157,392
SPRING APPARATUS FOR THE SUSPENSION OF VEHICLES
Kenzaburo Kitamura, 38 Fukakusainarinakano-cho, Fushimi-ku, Kyoto, Japan
Filed May 3, 1962, Ser. No. 192,167
1 Claim. (Cl. 267—1)



An improvement in coil springs comprising a base plate, a top plate, a coil spring having one end fixed to said base plate and the opposite end fixed to said top plate, a cylinder fixedly mounted on said base plate within said coil spring and having a rectangular opening in the head thereof, said cylinder head having a recess surrounding said rectangular opening, ball bearings being positioned in said cylinder head recess, a twisted guide plate fixedly mounted on and extending from said top plate through said head opening over said ball bearings for being rotated thereby upon movement of said guide plate through said head opening and a thrust bearing mounted on said top plate.

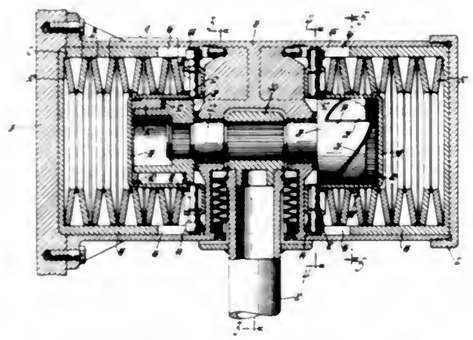
3,157,393
VEHICLE STABILIZING UNIT
Brouwer D. McIntyre and William D. McIntyre, Monroe, Mich., assignors, by mesne assignments, to Monroe Auto Equipment Company, a corporation of Michigan
Filed July 16, 1962, Ser. No. 210,015
4 Claims. (Cl. 267—8)

1. An auxiliary suspension device for automobiles comprising a hydraulic direct-acting tubular shock absorber including a tubular pressure cylinder, a piston slidably mounted in said pressure cylinder, valve means associated with said piston for controlling the flow of hydraulic fluid from one side of said piston to the other side thereof, a reserve chamber tube concentrically surrounding said cylinder in spaced relation thereto, valve means normally closing one end of said pressure cylinder and providing communication between said pressure cylinder and said reserve chamber tube, a piston rod connected to said piston, means closing the upper ends of said pressure cylinder and reserve chamber tube and slidably receiving said piston rod, means on the lower end of said reserve chamber and on the upper end of said piston rod for connecting said parts to the unsprung and sprung assemblies of the vehicle, said reserve chamber tube being formed with portions of three different diameters decreasing in size from the lower end thereof to the upper end thereof and forming shoulders of different diameters therebetween, the lowermost shoul-



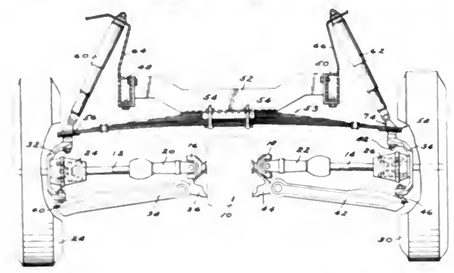
der constituting a spring seat, the intermediate diameter portion forming a centering boss, a coil spring sleeved over said reserve chamber tube and engaging said centering boss to center said spring and engaging said shoulder to support one end of said spring, the outer diameter of said spring being no greater than the outer diameter of said shoulder, a tubular member of nonmetallic material sleeved over the smallest diameter portion of said reserve chamber tube and extending from the outer end of said reserve chamber tube to a point adjacent the other of said shoulders to prevent metal-to-metal contact between said spring and said reserve chamber tube, the outer diameter of said tubular member being no greater than the outer diameter of said latter shoulder, and means on the piston rod for supporting the other end of said spring.

3,157,394
VEHICLE SUSPENSION MECHANISM
Oliver K. Kelley, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 31, 1962, Ser. No. 234,438
15 Claims. (Cl. 267—15)



4. A suspension mechanism for a track-laying vehicle having a plurality of track-engaging wheels, said mechanism comprising a cylindrical housing fixed to the vehicle, a pack of variable rate Belleville springs disposed in the housing, a shaft rotatably supported by the housing on an axis parallel to the longitudinal axis of the housing, a suspension arm having one end thereof rigidly connected to the shaft on a transverse axis, the other end of the suspension arm rotatably supporting one of said wheels on an axis parallel to said longitudinal axis of the housing, an annular cam driver fixed to said shaft and having a plurality of curved surfaces connected by circumferentially spaced axially extending straight surfaces, an annular cam follower having surfaces complementary to the surfaces of the cam driver for engagement therewith and having a surface contact area substantially less than that provided by said curved and straight surfaces of said cam driver, a plurality of needle bearings interposed between the curved surfaces of the cam driver and follower, a cage supported for axial movement by the housing, said cam follower non-rotatably mounted in said cage, a portion of said cage engaging said springs so that upon movement of the suspension arm in one direction about the shaft axis the cooperating cam surfaces cause the cage to the shifted to load the spring pack.

3,157,395
VEHICLE SUSPENSION CONSTRUCTION
Theodore J. Budzynski, Detroit, and James R. Johnston, Tecumseh, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,744
4 Claims. (Cl. 267—19)

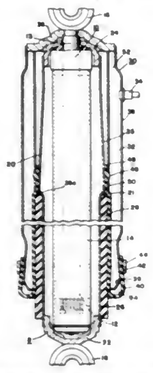


2. A vehicle suspension construction having a leaf spring, a wheel spindle, a shock absorber, and a ball and socket type joint;
the socket portion of said joint being secured to the end of said spring;
the ball portion of said joint being secured to said spindle; and,
a pivotal connection between said shock absorber and said socket portion.

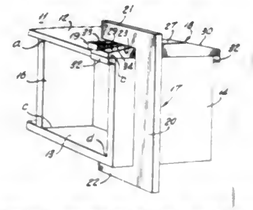
3,157,396
SHOCK ABSORBER AND AIR SPRING DEVICE
Paul J. Long, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 17, 1963, Ser. No. 281,103
4 Claims. (Cl. 267—64)

1. In an automobile suspension system, the combination of a tubular type shock absorber and an air spring means, said tubular type shock absorber having a main wall and a wall portion of a lesser diameter than the main wall and a sleeve of elastomeric material disposed in said lesser diameter wall portion, and being of sufficient thickness to fill the lesser diameter wall portion and bring the overall outside diameter in this area to a dimension greater than the main wall portion, said air spring arrangement including a cap, a resilient wall portion and a cylindrical metallic portion firmly attached to said resilient wall portion on one end and to the cap on the other end forming a pressurizing chamber around the outer wall of the tubular type shock absorber, said resilient wall portion of the air spring being of a slightly smaller diameter than the tubular main wall to cause a biased attachment thereto, said resilient wall portion of the air spring means being adapted to suddenly deform and progressively roll to con-

tinue the deformation on the sleeve of elastomeric material of the shock absorber during operation of said combination thereby causing a flexing of the sleeve of elastomeric material which expels any accumulation of foregin matter from the resilient wall portion.



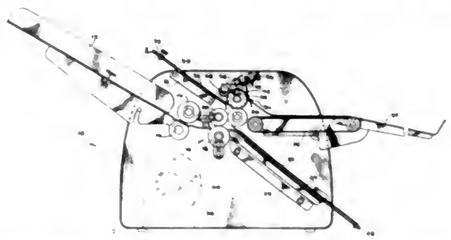
3,157,397
CLAMPING DEVICE
Mark Furst, 138—40 68th Drive, Kew Garden Hills, Queens, N.Y.
Filed June 26, 1962, Ser. No. 205,440
1 Claim. (Cl. 269—86)



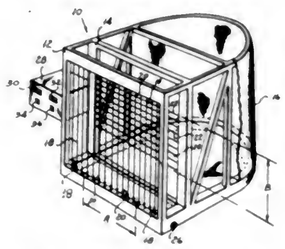
A clamping device comprising in combination at least one clamp member including a longitudinally extending bar terminating at opposite ends in laterally projecting parallel arms having confronting parallel inner faces, an elongated clamp bar having a substantially flat underface terminating at opposite ends in laterally extending depending lips and an upper face provided with upwardly inwardly inclined end sections at a first acute angle to said underface, and at least one wedge member having flat opposite faces forming a dihedral angle substantially equal to said first angle.

3,157,398
SCORING MECHANISM
George J. Zahradnik, North Riverside, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1961, Ser. No. 146,285
12 Claims. (Cl. 270—68)

1. A mechanism for scoring material which is passing between a pair of rollers comprising a ring mounted on one of said rollers, said ring having a diameter slightly greater than the diameter of said one roller whereby said ring is adapted to cant relative to said one roller, a ridge formed in said ring for scoring said material, and guide means for adjusting and maintaining the position of said ring with respect to said one roller, a transverse supporting means mounted parallel with the axes of said rollers, said guide means being mounted on said supporting means whereby the guide means is adapted to be moved laterally with respect to said one roller to thereby effect movement of said ring along said one roller, said movement being accomplished by the application of slight pressure to said guide means while said one roller is rotating, this pressure operating to cant said ring whereby said one roller can drive said ring laterally until said pressure is released.



3,157,399
BASEBALL PITCHING PRACTICE TARGET WITH BALL AND STRIKE INDICATORS
Frederick J. Gaudet, New York, N.Y., assignor, by mesne assignments, to Psychological Training Devices Corporation, New York, N.Y., a corporation of New York
Filed May 4, 1960, Ser. No. 26,786
6 Claims. (Cl. 273—26)



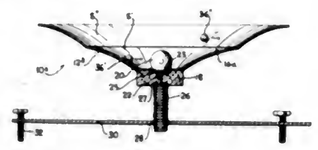
1. A baseball pitching practice device for scoring in response to the passage of a pitch thrown toward the device through a strike zone having a vertical extent and a lateral extent including in combination respective laterally spaced first actuatable means for defining the lateral extent of the strike zone, respectively vertically spaced second actuatable means for defining the vertical extent of said strike zone, means mounting the first and second actuatable means one behind the other in the path of pitches to define said strike zone, a plurality of first counting means adapted to be energized to generate respective counts, a plurality of second counting means adapted to be energized to generate respective counts, means connecting the first actuatable means to said first counting means, means connecting said second actuatable means to the second counting means, and means responsive to the sequential actuation of a first actuatable means and a second actuatable means for totalizing the counts provided by the respective corresponding counting means associated with the first and second actuatable means.

3,157,400
CAPTIVE BALL PADDLE TOY
Henry S. Schmid, 7800 W. Vienna Ave., Milwaukee 22, Wis.
Filed July 23, 1962, Ser. No. 211,559
1 Claim. (Cl. 273—97)

A captive ball toy comprising a circular plate paddle portion, an integral handle tangentially disposed thereon, an integral bracket on the opposite end of said handle disposed on the same side as the paddle portion, a swivel element extending laterally of said bracket, a cord having one end looped engaging said swivel element, and a resilient ball secured to the free end of said cord, said cord being of a length to permit said ball to strike centrally of each face of said paddle when the handle is moved in pendulum swinging movement.



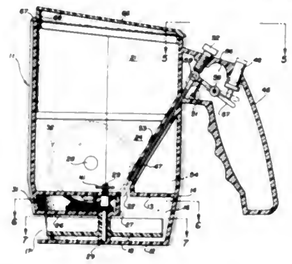
3,157,401
PIVOTED MOVING SATELLITE SIMULATING SPACE TOY
Bernard Wallach, 365 Knickerbocker Road, Englewood, N.J.
Filed Mar. 15, 1963, Ser. No. 265,523
3 Claims. (Cl. 273—110)



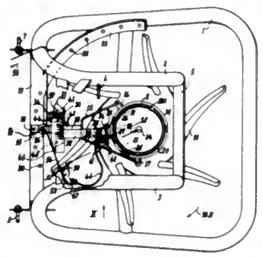
1. A space flight toy, comprising a circular member having an intended surface for supporting a rolling ball simulating a satellite in orbit, a spherical knob centrally disposed on said surface and simulating a central sun, a universal joint support for said surface permitting said member to be tilted in various vertical planes on horizontal axes, and a leveling plate carrying said joint support for positioning said member to an axially vertical position, said member being formed of rigid material, said surface having two annular concentric bands outwardly of said spherical knob, said surface at each of said bands having a convex curvature radially of said member, there being an abrupt change in curvature of one concentric band relative to the other concentric band at the abutting edges of said concentric bands.

3,157,402
MATERIAL SPREADING AND BROADCASTING DEVICE
William D. Love, Jr., 2002 Davis St., Orinda, Calif.
Filed Oct. 3, 1960, Ser. No. 59,947
3 Claims. (Cl. 275—12)

1. A material spreading and broadcasting device comprising, a housing having bottom, side and internal walls formed and connected to define a bottom impeller chamber, superimposed gear and material storage chambers, a first material discharge opening between said storage and impeller chambers, and a second material discharge opening for said impeller chamber; said gear chamber being of L shape having a horizontally disposed portion located between said impeller chamber and said material storage chamber, and a vertical portion extending from said horizontal portion; a hand crank journalled on said side wall and having a shaft extending into said vertical portion; an impeller mounted in said impeller chamber and having a vertical shaft extending into said horizontal portion; gears mounted in said gear chamber and connecting said crank and vertical shaft; a first interior wall in said storage chamber sloping downwardly to adjacent said first opening and defining with said side wall an interior compartment; a manually engageable handle mounted on said housing side wall and having a hollow compartment in registration with said last named interior compartment; a closure member mounted in said interior compartment for reciprocal movement parallel to said interior wall and having an interior lower end moveable on reciprocation of said member across said first discharge opening for regulating the flow of material therethrough the upper end of said closure member extending into said handle compartment; a finger engageable and displaceable operating member carried by said handle and extending into said handle compartment; means in said handle compartment connecting said upper end of said closure member and said finger engaging member for flow regulating displacement of said closure member by said finger member; spring means biasing said closure member to flow restricting position; and manually adjustable means carried by said handle and extending into said handle compartment for engagement with said closure member for limiting the extent of opening movement thereof by said finger engageable operating member to limit the maximum rate of discharge of material from said storage chamber into said impeller chamber.



3,157,403
AGRICULTURAL IMPLEMENTS
Ary van der Lely, Maasland, Netherlands, assignor to C. van der Lely N.V., Maasland, Netherlands, a limited-liability company of the Netherlands
Filed Aug. 8, 1961, Ser. No. 130,092
Claims priority, application Netherlands Aug. 26, 1960
20 Claims. (Cl. 275—15)



1. In an agricultural implement having a hopper and a rotatable spreader for receiving material from the lower end of said hopper, the combination of control means located between said hopper and said spreader for regulating the flow of material to said spreader, said control means including a member having at least one outlet port and movable masking means for covering said port, adjusting means for positioning said masking means relative to said port, said adjusting means including a turnable arm connected to said masking means, a relatively

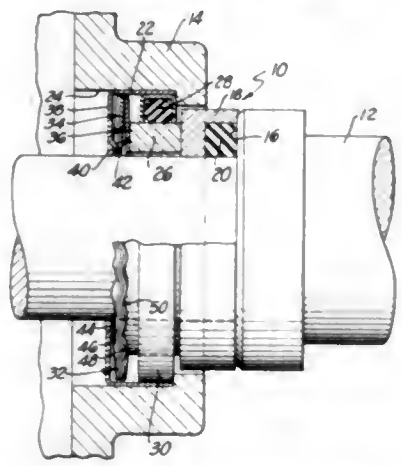
stationary arm provided with a pin and spring-mounted stop means associated with said turnable arm for engaging said pin and biasing said turnable arm in a direction whereby said masking means is positioned relative to said port.

3,157,404

SHAFT SEAL WITH CORRUGATED FRUSTO-CONICAL SPRING FOR DRIVING OR RESTRAINING SEALING MEMBER

Warren Doble, North Hollywood, Calif., assignor to Jabsco Pump Company, Costa Mesa, Calif., a corporation of California

Filed Mar. 19, 1962, Ser. No. 180,548
5 Claims. (Cl. 277—93)



1. In a shaft seal, the combination of:
(*a*) rotary and nonrotary sealing members engageable in face to face relation;
(*b*) an annular spring seat spaced axially from one of said sealing members;
(*c*) annular spring means between and engaging said spring seat and said one sealing member for maintaining said sealing members in said face to face engagement;
(*d*) said spring seat, said spring means and said one sealing member being provided with meshed, circumferentially spaced, radial corrugations which key said one sealing member to said spring seat through said spring means; and
(*e*) said spring means comprising two Belleville springs arranged in face to face relation and having meshed, circumferentially, spaced radial corrugations, the corrugations of one of said Belleville springs being meshed with the corrugations of said spring seat and the corrugations of the other of said Belleville springs being meshed with the corrugations of said one sealing member.

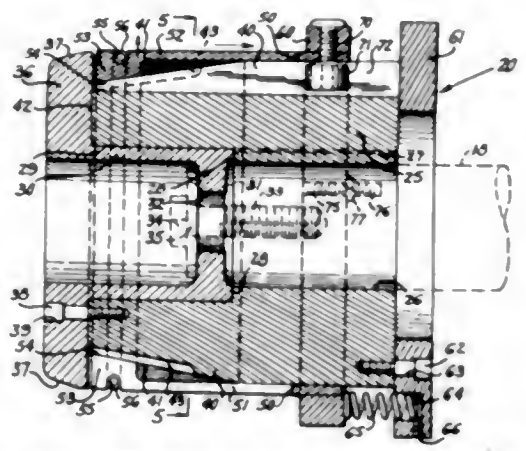
3,157,405

CHUCK

Robert W. Hafemeister, 321 Willow Lane, Menasha, Wis.

Filed Jan. 30, 1963, Ser. No. 255,022
4 Claims. (Cl. 279—2)

1. A chuck for holding articles having portions defining a bore therein with a face surface surrounding the bore comprising an inner sleeve having two ends, a multiplicity of peripherally spaced, radially extending, flutes on said inner sleeve having inclined outer surfaces over at least a portion of their length ranging from a minimum diameter adjacent one of said ends of said inner sleeve to a maximum diameter toward the other of said ends of the same, an outer sleeve having two ends, a corresponding multiplicity of peripherally spaced, radially extending, flexible fingers defined by said outer sleeve, one of said flexible fingers being associated with each of said flutes, a protuberance carried by each of said flexible fingers adjacent one of said ends of said outer sleeve, each of said protuberances having an inner surface inclined in conformity to the configuration of its associated flute, resilient means surrounding said flexible fingers over said protuberances maintaining said inclined inner surface of each protuberance in sliding engagement with the inclined outer surface of its associated flute, and an annulus



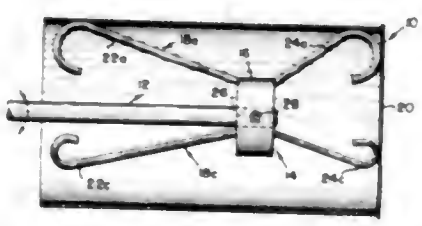
carried by the other end of said outer sleeve fixing the diameter of the same, said annulus being engaged by the face surface of the article surrounding the bore to slide said inclined inner surface of each protuberance along said inclined outer surface of its associated flute to expand said flexible fingers into clamping engagement with the portions of the article defining the bore.

3,157,406

HOLDER

Horace L. Smith, Jr., Richmond, and George B. Vogeleer, Hopewell, Va., assignors to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Feb. 25, 1963, Ser. No. 260,913
5 Claims. (Cl. 279—2)



1. A spider type holder for supporting hollow articles, comprising:
(*a*) a body member; and
(*b*) not less than three spring arms attached to said body member at substantially equidistant intervals around its periphery and providing two sets of spaced apart article supporting contact points radially and longitudinally displaced from the body member, the spring arm end portions at one end of said holder being turned radially inward to provide stops for positioning an article longitudinally of said body member; and
(*c*) replaceable wear and friction reducing sleeves on said spring arms.

3,157,407

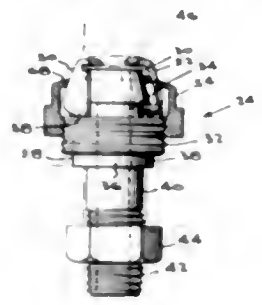
ADJUSTABLE CARTRIDGE CASE HOLDER

William E. Aulabaugh, P.O. Box 72, Los Molinos, Calif.

Filed Aug. 31, 1962, Ser. No. 220,641
6 Claims. (Cl. 279—36)

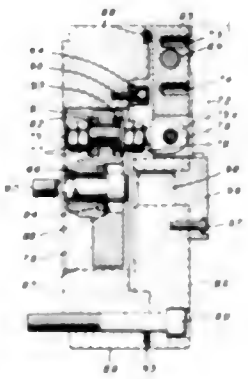
6. A holder for cartridge cases or the like comprising a main body with external threads, an outwardly-converging head, and a neck portion between said body and said head, a plurality of jaws having inturned, outer flanges, and arranged to nest with said head, and having

flanges engaged in said neck portion, an internally-threaded ring engaged on said threads and having a flange adapted to contact said jaws to urge them toward said head in a



camming action, spring means on said head urging said jaws away from said head, and detent means arranged to prevent movement of said jaws peripherally of said head.

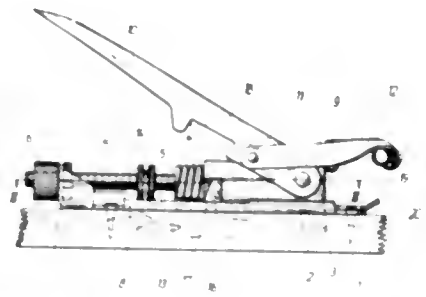
3,157,408
CHUCK CONSTRUCTION
Charles J. Mann, 1048 Peninsula Drive, Traverse City, Mich.
Filed May 31, 1962, Ser. No. 199,056
5 Claims. (Cl. 279—106)



1. A chuck structure, comprising:
a frame;
a plurality of jaws pivotally mounted for limited reciprocating movement in said frame in angularly spaced relationship about a frame axis, and said jaws each having an axis of rotation with respect to said frame disposed in a plane substantially perpendicular to said frame axis, said jaws each having a gripping portion disposed with respect to said jaw axis to generate a movement having a radial component with respect to said frame axis as said jaws pivot;
actuating means including a rod having substantially axial reciprocating movement with respect to said frame;
a transverse plate carried by said rod with freedom of angular articulation with respect to said rod; and
a link connecting each of said jaws to said plate.

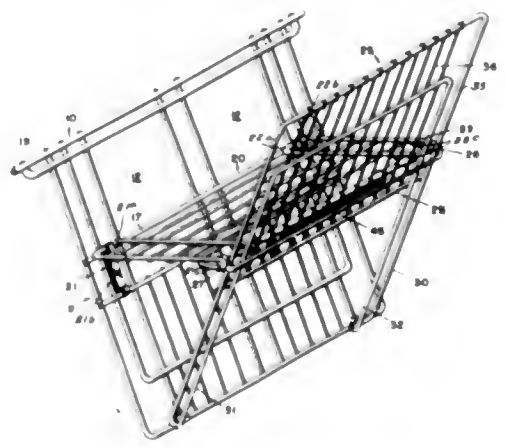
3,157,409
RELEASE DEVICE FOR THE FRONT TIGHTENING MEMBER OF SKI BINDINGS
Alfred Gembruch, Jun., Ludenscheid, Germany, assignor to Alfred Gembruch K.G., Ludenscheid, Germany
Filed Apr. 17, 1962, Ser. No. 188,176
Claims priority, application Germany Apr. 21, 1961
2 Claims. (Cl. 280—11.35)

1. A release mechanism for use in connection with a ski having a support connected thereto, a housing slidably guided on the support, a spindle adjustably mounted on the support, a spring connected to the spindle at one end, a tightening member, pivot means connecting the other end of the spring and said tightening member to the housing, said release mechanism comprising lateral wall members connected to said tightening member and dependent therefrom on opposite sides of the housing and provided with inclined surfaces, a slide adjustably connected to said spindle so as to be displaceable relative to said tightening member and provided with inclined surface means for sliding engagement with said inclined surfaces in response to an overload on said tightening member for



moving said tightening member toward release position, a cable clamp element pivoted to said tightening member and being provided with a release nose, and abutment means on said slide inclined upwardly and engageable with said release nose in response to an overload on said tightening member moving said cable clamp member to tend to release said tightening member.

3,157,410
SHOPPING CART SEAT
Ralph G. Hummer, Oklahoma City, Okla., assignor to Folding Carrier Corporation, Division of Union Asbestos & Rubber Company, Oklahoma City, Okla.
Filed Nov. 21, 1962, Ser. No. 239,222
4 Claims. (Cl. 280—33.99)

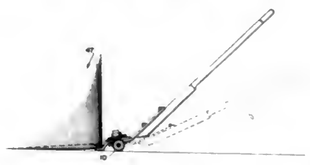


1. A collapsible seat structure comprising a wall member having apertures forming leg holes arranged therein, a hinge rod fixed to the wall member adjacent the base portion of the leg holes, a seat member hingedly secured to said hinge rod at the base of the leg holes, a back member of substantially planar form pivotally secured at its lower extremity to said wall member, said seat member including a slide rod at its inner marginal edge, said slide rod including a rotatable bearing surface and being positioned to lie adjacent said back member and to travel therealong when the parts are relatively moved, a freely pivoted bail member embracing said back member and having its terminals projecting inwardly and pivotally connected to said slide rod, and a pair of spaced end wires overlying and fixed to said seat member at each end portion, said wires being looped at their inner ends about said slide rod at each side of said bail terminals to prevent displacement of the latter.

3,157,411
LEVER DOLLY

James D. Rhodes, 421 E. Jefferson St., Falls Church, Va., assignor of one-third to Washington Scale and Equipment Company, Inc., Washington, D.C., a corporation of the District of Columbia, and one-third to Nelson P. Greller and Associates, Washington, D.C.

Filed Sept. 19, 1961, Ser. No. 139,119
19 Claims. (Cl. 280—47.29)

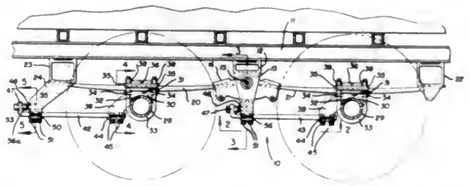


1. A lever dolly comprising an axle, wheels mounted on said axle, a bolster plate rotatably mounted with respect to said axle and adapted to rotate with respect to the horizontal axis of said axle, a swivel plate rotatably supported with respect to said bolster plate to permit relative rotation between said bolster plate and said swivel plate about an axis substantially perpendicular to the axis of said axle, said axis passing through said axle axis, a swivel shaft rotatably mounted with respect to said axle and forming a connection between said bolster plate and said swivel plate, said swivel shaft being coincident with said axis which is substantially perpendicular to the axis of said axle, and a nose portion on said swivel plate extending forwardly from said swivel plate at a lower level than said swivel plate to engage beneath a load to be lifted and to support said load while being transported.

3,157,412
SINGLE LEAF SPRING SUSPENSION

Van L. Frazier, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio

Filed Dec. 21, 1961, Ser. No. 161,065
4 Claims. (Cl. 280—104.5)

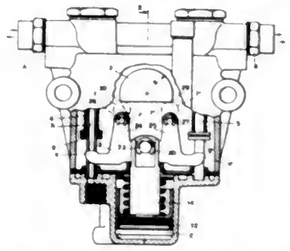


1. In a tandem suspension system for vehicles having tandem axles and vehicle frame members on each side of the vehicle; downwardly disposed spring hanger brackets mounted on said vehicle frame members, tandem single leaf springs on each side of said vehicle and disposed beneath said vehicle frame members, one end of each said single leaf spring slidably received in one of said spring hanger brackets, downwardly disposed equalizing means rockably connected to said vehicle frame members by equalizer hanger brackets, the other end of each said single leaf spring slidably received in said equalizing means, spring chairs connecting said axles to the medial portion of said springs, a forwardly and downwardly extending leg portion on each said spring chair, a stabilizer seat on the lower extremity of said leg portion, a stabilizer for each said single leaf spring, the rearward end of each said stabilizer secured to the seat on its respective spring chair, additional stabilizer seats secured to and extending downwardly from said frame members forwardly of and in paired relation with the stabilizer seats on said spring chairs, the forward end of each stabilizer seated in its respective additional seat, said stabilizers being vertically resilient to flex with the vertical oscillation of said single leaf spring at a different spring rate than said spring to dampen resonance and prevent flipping contraflexure thereof.

3,157,413
LEVELING DEVICE FOR A PNEUMATIC SUSPENSION

Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a company of Italy

Filed Apr. 2, 1958, Ser. No. 725,890
Claims priority, application Italy, Apr. 4, 1957, 569,787; July 20, 1957, 604,484
8 Claims. (Cl. 280—124)

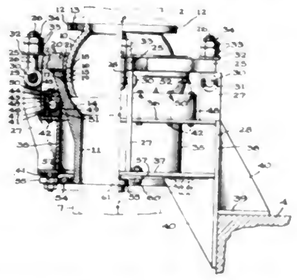


1. A levelling device for use between the axle and the pneumatic suspension of a vehicle comprising a rocker, a control member adapted for rocking said rocker, a lever coupled between the axle and the control member, two actuating sections controllable by said rocker for controlling the pressure in elements of said pneumatic suspension, a mechanical coupling member supporting said rocker between said control member and said actuating sections and normally in a position whereat it is spaced from said control member, and a pneumatic element controllable by an operator for regulating the operation of said mechanical coupling to move said rocker to a position whereat it is engageable by said control member.

3,157,414
SWIVEL JOINT FOR HYDRAULIC DREDGE PIPE LINES

Patrick Henry Sturm, Riviera Beach, Fla., assignor to Trans-State Dredging Company, Fort Pierce, Fla., a corporation of Florida

Filed Aug. 28, 1961, Ser. No. 134,188
8 Claims. (Cl. 285—61)



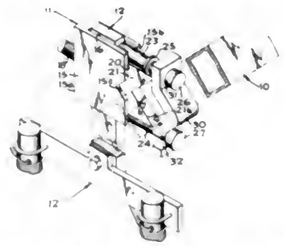
1. A swivel joint of the class described, comprising a pair of tubular members having cooperatively opposed ends disposed in coaxial alignment for relative rotation about a fixed axis, a stationary mounting frame encircling said joint, and anti-friction means interposed between

said frame and one of the tubular members for allowing free rotary movements of said latter tubular member relative to the opposed tubular member, the cooperative ends of the tubular members being respectively of ball and socket form, said anti-friction means being disposed in the zone of the socketed end of one tubular member and serving to support the weight of the joint, and additional anti-friction means interposed between the frame and the latter tubular member in axially spaced relation to the first-mentioned anti-friction means for resisting lateral thrusts imposed on the latter tubular member and preventing misalignment thereof with respect to the opposed tubular member.

3,157,415
INTERCONNECTING CLAMP FOR TOOL AND CULTIVATOR BAR

Edward Martin, 8141 Fairview Road, Hollister, Calif.

Filed July 6, 1962, Ser. No. 208,016
4 Claims. (Cl. 287—54)



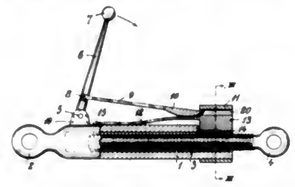
1. A clamp for securing a tool to a cultivator bar comprising a body formed with an end opening for receiving a tool, said body being formed with a lateral opening communicating with said end opening, a slidable block received by said lateral opening and having a portion thereof projectable into said end opening, rails fixed to said body and projecting therefrom adjacent opposite ends of said lateral opening and in the direction of sliding movement of said slidable block, means on said slidable block for receiving one of said rails to support said slidable block in a sliding guiding movement, said slidable block being disposed between said rails in its sliding guiding movement, a retaining member supported by said rails and facing said slidable block for gripping a cultivator bar therebetween, said retaining member being formed with an opening to receive said one rail to be supported thereby, and locking means supported by said body for engaging the tool received by said end opening to urge said tool to move into engagement with said slidable block for urging said slidable block to move toward said retaining member for securely gripping the cultivator bar therebetween and for locking said tool in said end opening.

3,157,416
ADJUSTABLE STAY FOR TRACTOR OR THE LIKE

Josef Sandbakken, Brumunddal, Norway

Filed Aug. 1, 1962, Ser. No. 214,131
4 Claims. (Cl. 287—58)

1. An adjustable stay for tractors or the like comprising two axially displaceable elements, one of said elements being sleeve-shaped and the second element being a spindle-shaped element axially displaceable in the sleeve-shaped element and the spindle-shaped element being a threaded spindle, a locking member at one end of said sleeve-shaped element, said locking member provided with threads corresponding to the threads on the spindle-shaped element, a resilient means for the locking member secured to the sleeve-shaped element, and biasing said locking member away from said spindle-shaped element, a collar secured on said one end of the sleeve-shaped element and overlying said locking member, a handle pivotally secured on the other end of the sleeve-shaped element, and a wedge pivotally secured on the handle, said wedge extending toward said one end and being movable between said collar and said

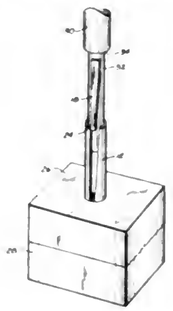


locking member upon movement of said handle, whereby said wedge presses said locking member against the force of the resilient means and into engagement with the threaded spindle-shaped element by thread engagement of the latter and the locking member.

3,157,417
EXPANSION PINS

Henry Ruskin, Bayside, N.Y., assignor to Ruskin Development & Mfg. Corp., Flushing, N.Y.

Filed Mar. 26, 1962, Ser. No. 182,525
5 Claims. (Cl. 287—127)



1. A multi-part pin including a body and a wedge, said body being in the form of a hollow cylinder of sheet-metal having a slit extending from end to end, the edges forming said slit having a small angular separation and diverging at a small angle toward an end of the cylinder, said wedge including a longitudinally tapered portion receivable between said edges and adapted to expand said cylinder when driven between said edges, the wall of said body being sufficiently thin and resilient so as to have its radius of curvature enlarged when the wedge is driven between said edges, said wedge including a further portion that is proportional to extend from said tapered portion diametrically across the cylindrical axis and into contact with the inside surface of the cylinder at least at an area along the length of the wedge opposite said slit edges when said tapered portion is received between said slit edges so as to prevent the tapered portion from becoming displaced from between said slit edges and shifting into the hollow of the cylinder.

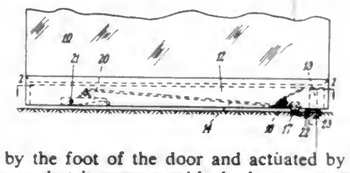
3,157,418
DOOR FITTINGS

Robert Duncan, 11/13 W. Campbell St., Glasgow C. 2, Scotland

Filed Sept. 9, 1963, Ser. No. 307,540
6 Claims. (Cl. 292—229)

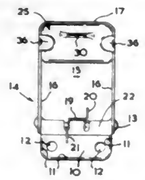
1. A door provided with fittings comprising a keeper or stop sunk into the floor at a position remote from the

hinge side thereof, a fixture in the form of a cam or ramp located at the hinge side of the door, a member



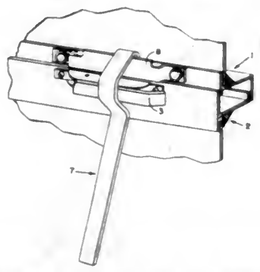
carried by the foot of the door and actuated by the cam or ramp so that it engages with the keeper or stop when the door is opened.

3,157,419
LUGGAGE FITTINGS
William E. Chance, Hockley, Birmingham, England, assignor to C. W. Cheney & Son Limited, Birmingham, England, a British company
Filed Oct. 10, 1962, Ser. No. 229,606
Claims priority, application Great Britain, Oct. 31, 1961, 38,825
6 Claims. (Cl. 292—281)



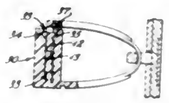
1. A luggage fitting comprising a hasp adapted to be mounted on an article of luggage and engageable with a second part of the fitting, said hasp including a pair of metal pressings, a first of said pressings constituting a cover and being visible when the hasp is engaged with said second part of the fitting, a second of said pressings constituting a loop-plate and carrying means engageable with said second part of the fitting, said loop plate being secured to said cover, said cover and loop plate each comprising a base and side-walls, wherein the side-walls of the loop plate fit between the side-walls of the cover and are formed with apertures adjacent the base of the loop plate, the cover having integral tabs which extend from the free edges of its side walls, pass through said apertures, and are folded on to the base of the loop plate.

3,157,420
LATCH LOCK FOR CASEMENT WINDOW
Milton A. Sulkowski, Canonsburg, Pa. (166th Ordnance Detachment, A.P.O. 36, New York, N.Y.)
(Granted under Title 35, U.S. Code (1952), sec. 266)
Filed Dec. 13, 1961, Ser. No. 159,190
1 Claim. (Cl. 292—288)



In combination with a casement type window having a movable section, a stationary section, and a pivotable latch disposed on said stationary section whereby said movable section is firmly locked to said stationary section whenever said latch is aligned parallel with the stationary section; a bracket disposed on said movable section so as to be adjacent said latch when the window is closed, and an auxiliary securing means for securing said latch in its locked position comprising a clamping bar having a handle, a first leg portion connected to said handle and disposed in angular relation thereto, a second leg portion connected to said first leg portion and disposed in angular relation thereto, a third leg portion having one of its two ends connected to said second leg portion and disposed in angular relation thereto, and the other end of said third leg portion terminating in a hook-shaped portion, said hook-shaped portion being adapted to engage said bracket disposed on said movable section and said first leg portion being adapted to exert a camming clamping action on said pivotable latch thereby retaining said latch in its locked position.

3,157,421
HASP SEAL
Henry Nierhaus, Scarsdale, N.Y., assignor to Stoffel Seals Corporation, Tuckahoe, N.Y.
Filed May 22, 1961, Ser. No. 111,795
1 Claim. (Cl. 292—322)



A unitary seal comprising a locking member having enclosed sides and bottom and an opening in its top, said locking member having a relatively thin recess therewithin communicating with said opening, a spring finger projecting across said recess and inclined from its base to its tip away from the opening, said opening being larger in section than the recess and providing a countersunk area, said member having a relatively thin, stiff, flexible strap with a main portion extending from the bottom of the member remote from said opening, the other end of the strap having a locking portion at substantially right angles to the main portion of the strap, said locking portion having an end portion adapted to be snugly received in said recess, said end portion having a slot for receiving said spring finger when the end portion is received in said recess, said locking portion having shoulders adapted to be snugly received within the countersunk portion of said locking member, whereby when said end portion is inserted into the recess said finger will initially be depressed and then received in said aperture and said shoulders will seat in said countersunk portion to prevent insertion of a tool into said recess.

3,157,422
HAND IMPLEMENT
Ralph A. Sloan, 636 42nd St., and Ralph E. Addy, 620 42nd St., both of Des Moines, Iowa
Filed July 15, 1963, Ser. No. 295,133
1 Claim. (Cl. 294—19)

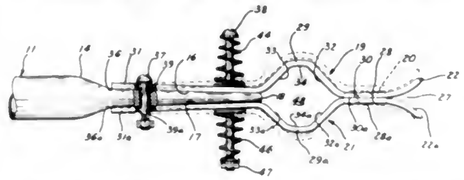
A hand implement usable to pick up elongated objects from the ground comprising:

(*a*) an elongated handle means having an end section with a pair of flat opposite surfaces,

(*b*) at least one pair of finger members positioned adjacent said flat surfaces and extended beyond the end section of the handle means,

(*c*) each finger member having a first flat portion engageable with a flat surface of the handle means and terminating in a transverse edge, a convex curved mid-portion, and a second portion having a flat longitudinally extended grip section terminating in an outwardly curved and pointed lip end, the grip sections of said second portions of said finger members normally positioned in abutting relationship,

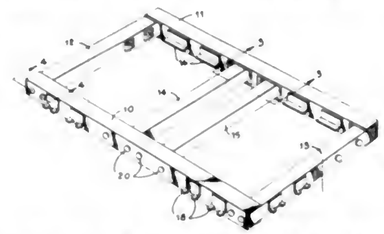
(*d*) means mounting each finger member on the end



section of the handle means for pivotal movement relative to the transverse edge thereof, and

(*e*) means operatively connected to each of said finger members for biasing the finger members toward each other.

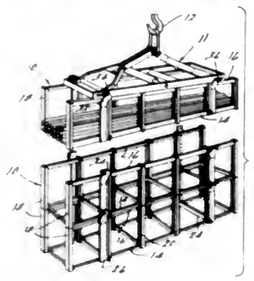
3,157,423
MULTIPLE PALLET UNITIZING FRAME
Emile H. Brie, Sr., 5708 Surrey Ave., Newport News, Va.
Filed Oct. 19, 1962, Ser. No. 231,876
5 Claims. (Cl. 294—67)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A load unitizing frame for loaded cargo pallets comprising a pair of side members, a pair of end members having a length less than the length of said side members, said frame being usable with said side members disposed in spaced apart and coterminous relationship and said end members extending between said side members at corresponding ends of the frame, intermediate members extending between said side members adjacent to the midlength location of the said side members, and fastening means detachably connecting said end members and intermediate members at the ends thereof to said side members, each of said side and end members having pin receiving apertures therein and each of said fastening means comprising an apertured tab spaced from and parallel to an apertured wall of a corresponding side or end member, a collar secured to said tab in registry with the tab aperture and a spring retainer carried by said collar, and a pin having a shank inserted through aligned apertures in the corresponding frame member wall and the tab and into the corresponding collar, and a head at one end of said shank bearing against the frame member wall, said shank having at its opposite end a groove in which the spring retainer engages.

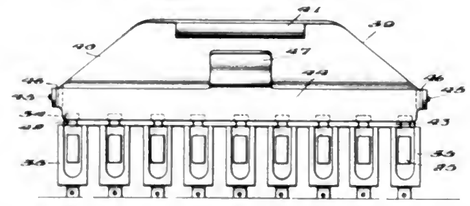
3,157,424
STORAGE RACK
Lee Z. Hall, Huntington Woods, Mich., assignor to Palmer-Shile Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 10, 1962, Ser. No. 243,541
14 Claims. (Cl. 294—67)

1. In a bar rack, the combination including a pair of side units each comprising a pair of horizontally extending longitudinal members disposed in vertically spaced parallel relationship and a plurality of vertically disposed upright members spaced longitudinally of said rack and extending between and being rigidly fixed to said longitudinal members, each of said members having a partially closed channel shaped cross section including a web, a first pair of spaced flanges projecting from said web and a second pair of flanges extending toward each other from said first flanges in parallel relationship to said web and terminating in spaced relationship so as to define a slot, the end portions of the web of each upright



member having an inwardly extending recess intermediate said first flanges adapted to receive said longitudinal members, said longitudinal members extending through the slots and the recess in said upright members at the ends thereof, and a plurality of transverse members spaced longitudinally of said rack and extending between said side units, the end portions of said transverse members being fixed to said second flanges of the longitudinal members adjacent the lower edges of said side units to form a unitary structure open at the top and at each end.

3,157,425
DEVICE FOR HANDLING A PLURALITY OF INFORMATIONAL MEDIUMS
William C. Thomas, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 23, 1961, Ser. No. 133,513
6 Claims. (Cl. 294—87)



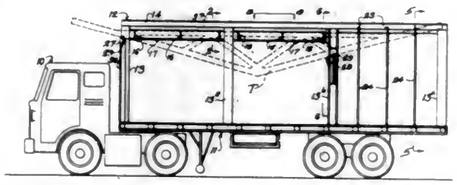
1. Apparatus for handling and simultaneously positioning a plurality of stacks of informational mediums in prearranged magazines receiving the stacks, the apparatus comprising:

a plurality of vertically elongated support members each supporting a stack of informational mediums, and each support member having a detachable retaining member at the lower end thereof to retain the stack;

a carrier including edge means defining a plurality of open ended slots, each slot being shaped to receive the upper end of one of said support members through its respective open end and the slots being spaced on the carrier in an arrangement corresponding to a preselected arrangement of stack receiving magazines, and the carrier further including retaining means yieldably urging the upper ends of the support members in the slots against the edge means to selectively retain the support members thereon; and

release means including means to selectively engage the retaining members on the lower ends of the support members held by the carrier and means to simultaneously detach and remove the retaining members to permit utilization of the informational mediums.

3,157,426
VEHICLE FOR TRANSPORTING COMPONENTS OF PREFABRICATED BUILDINGS AND THE LIKE
Marshall O. Groat, Fort Payne, Ala., assignor to Kingsberry Homes Corporation, a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,820
2 Claims. (Cl. 296—3)



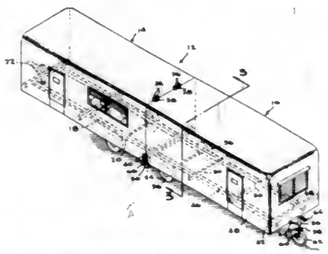
1. In a vehicle for transporting components of prefabricated buildings and the like having a flat deck body with a longitudinally centered spine-like superstructure having bays between spaced apart vertical columns, the upper ends of which are connected by a horizontal beam,

(*a*) a plurality of vertical disposed load restraining members spaced apart on either side of the longitudinal center of the vehicle adjacent at least one of said bays,

(*b*) a plurality of flexible members depending from said beam and being connected to the upper ends of said vertically disposed members, and

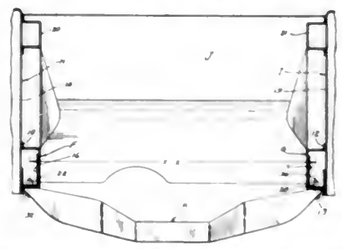
(*c*) there being sockets in the deck of the vehicle adapted to slidably receive the lower ends of said vertically disposed members.

3,157,427
TRAILERS HAVING LATERALLY SWINGABLE SECTIONS
Robert H. Reynolds, Memphis, Tenn.
(P.O. Box 22068, Fort Lauderdale, Fla.)
Filed June 9, 1961, Ser. No. 116,086
3 Claims. (Cl. 296—23)



1. A trailer comprising a wheeled forward section and a wheeled rear section, draft means on said forward section, said sections having meeting ends, means on said meeting ends for separably connecting the sections together in tandem towing relationship, said connecting means being separable to permit the rear section to be swung laterally relative to the forward section, and pivot means secured to the sections adjacent to their meeting ends, said pivot means comprising a longitudinally horizontal extension arm extending rearwardly from the forward trailer section at one side of the sections, and a ball and socket joint connecting said extension arm at its rear end to the said one side of the rear section at a location spaced rearwardly from the forward end of the rear section.

3,157,428
VEHICLE BODY CONSTRUCTION
Alan R. Kishline, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Aug. 6, 1962, Ser. No. 215,182
7 Claims. (Cl. 296—28)



1. A vehicle body assembly comprising: a floor panel extending longitudinally of the body; sills at either side of the floor panel, integral therewith and extending lengthwise of the floor panel; spaced side walls extending lengthwise of the floor panel and projecting upwardly from the sills; a portion of the sills and side walls projecting forwardly beyond the forward end of the floor panel to form a generally U-shaped structure; a cross member spaced from the forward terminus of the floor panel and anchored at one of its ends to one sill and at its other end to the other sill; an alignment washer anchored to one end of the cross member and having an elongated opening therein with its longest dimension directed substantially longitudinally of the cross member, said washer having a substantially frusto-conical wall circumscribing the elongated opening; an additional washer anchored at the opposite end of the cross member and spaced a predetermined distance from the alignment washer; a bolt secure with reference to one of the sills and having a threaded shank projecting through the opening in the alignment washer; means associated with the bolt for coacting with the frusto-conical wall of the washer to effect a predetermined spacing of the sills to reflect the spacing of the washers on the cross member.

3,157,429
VEHICLE BODY COMPARTMENT CLOSURE OPERATING MECHANISM
William J. Harms, Dearborn, and Alfred E. Leininger, Ypsilanti, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Mar. 2, 1960, Ser. No. 12,436, now Patent No. 3,059,962. Divided and this application Apr. 16, 1962, Ser. No. 187,782
7 Claims. (Cl. 296—76)

1. In a motor vehicle body;

a rear deck lid pivotally connected to said body and providing a storage space therebeneath;

power operated means for raising and lowering said deck lid,

said power operated means comprising extensible means mounted on said vehicle body;

bracket means mounted on said deck lid,

said bracket means having an abutment portion thereon;

lever means pivotally mounted on said bracket means and operatively pivotally coupled to said extensible means for movement by the latter;

latch means carried by said deck lid;

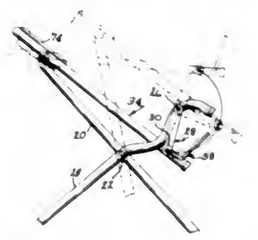
and link means coupling said latch means to said lever means;

said lever means in deck lid lowered position being movable by said extensible means to a degree sufficient to unlatch said latch means and having a part



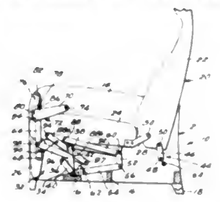
thereof engageable with said abutment means to transmit lifting force from said extensible means directly to said deck lid to open the latter.

3,157,430
INFANT'S CHAIR
Earl F. Hamilton, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Aug. 31, 1960, Ser. No. 53,144
9 Claims. (Cl. 297—19)



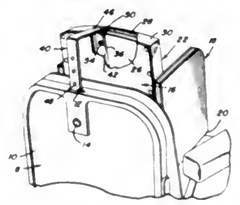
1. An infant's chair, comprising a base having a pair of laterally spaced elongated members, pairs of intersecting front and rear legs pivotally joined together at their points of intersection, said pair of rear legs being pivotally connected at their upper ends to the lateral stretches of a seat frame and pivotally interconnected at their lower ends to said elongated base members for pivotal and longitudinal movement with respect to said base members, each of said front legs being pivotally connected at its lower end to one of said base members and pivotally connected at its upper end to a toggle link pivotally connected to the seat frame, said toggle links being swingable in a first position of adjustment above the front legs for effecting freedom of relative pivotal movement between said front legs and seat frame upon said movement of the rear legs with respect to the base members for vertical reciprocation of said seat frame toward and away from said base and movable into a second position of adjustment in which said links bear against the front legs below their connections thereto to support said seat frame on the front legs in a stationary tilted position, a back frame mounted on said seat frame, an infant-supporting sling mounted on said seat and back frames, and resilient means urging said seat frame upwardly when said toggle links are in said first position of adjustment.

3,157,431
RECLINING CHAIR OF THE MULTIPLE MOVEMENT TYPE
Peter S. Fletcher, Delray Beach, Fla., assignor to Anton Lorenz, Boynton Beach, Fla.
Continuation of application Ser. No. 8,564, Feb. 15, 1960. This application Aug. 5, 1963, Ser. No. 303,201
10 Claims. (Cl. 297—84)



1. A reclining chair comprising a support, body-supporting means including a seat and back-rest adapted to be mounted on said support for inclining and reclining movement respectively, a control linkage operatively connected between said support and said body-supporting means and providing respective first and second paths of movement for said body-supporting means during first and second movement phases, a holding link, means operatively connected to and flexibly mounting said holding link on one of said control linkage and said support for turning movement during said first movement phase, means operatively connecting said holding link to said body-supporting means, said holding link cooperating with said control linkage during said first movement phase to maintain a substantially rigid relationship between said seat and back-rest, said holding link being inactive to maintain said rigid relationship between said seat and back-rest during said second movement phase.

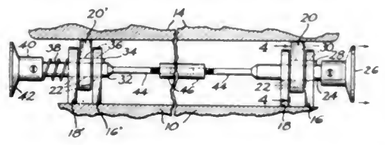
3,157,432
CHILD'S CHAIR WITH ADAPTER BRACKET
Willie R. Watkins, R.F.D. 7, Box 649, Greensboro, N.C., assignor of one-half to Alfred T. Staples, Greensboro, N.C.
Filed July 29, 1963, Ser. No. 298,115
2 Claims. (Cl. 297—254)



1. In combination, a barbershop chair embodying a horizontally disposed occupant's seat and a complemental back generally vertical to and cooperable with said seat and provided on an upper rearward side with a latch-equipped socket member, a readily applicable and removable child's chair embodying a pair of opposed vertical side members having horizontal bottom portions disposed in spaced apart parallel coplanar relationship, straight from end to end, and capable of residing flatwise on a floor, the top portions of said side members providing armrests, a vertical backrest having vertical marginal portions interposed and mounted between rearward interior surfaces of said side members, the rearward exterior surface of said backrest being flush with the rear vertical marginal portions of the side members, the top portion of said backrest being disposed in a plane elevated above the top marginal portions of said side members, a horizontal seat at right angles to said backrest and projecting for-

wardly therefrom and interposed between median portions of the interior vertical surfaces of said side members, and means for handling, carrying and mounting said child's chair on said barbershop chair comprising a one-piece adapter bracket embodying an inverted U-shaped portion including a depending rear vertical leg fitting telescopically into the socket of said socket means, said latch being releasably engageable with a keeper seat provided therefor in said leg, a front leg, and a bight portion connecting the upper ends of said legs, said front leg being provided at a lower end thereof with a forwardly projecting right angular disposed limb, said adapter bracket being confined to a position midway between the lefthand and righthand vertical marginal portions of said backrest, said front leg being linearly straight and disposed at an oblique angle relative to the rear leg and being fixedly secured to said backrest, and said limb being fixed secured to a rigid component part of said seat.

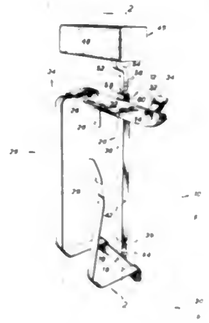
3,157,433
SAFETY LOCK FOR PIVOTED SEAT BACKS
Thomas A. Davis, 1735 SW. Prospect Drive, Portland, Oreg.
Filed Oct. 15, 1962, Ser. No. 230,342
5 Claims. (Cl. 297—379)



4. In a seat assembly including a seat, a seat back, and spaced pairs of pivot brackets on the seat and seat back, one bracket of each pair being mounted on the seat and the other bracket of each pair being mounted on the seat back, and each pair of pivot brackets having aligned pivot openings therein adapted to receive a pivot shaft forming the axis of pivotal movement of the seat back relative to the seat: the combination therewith a safety lock for the seat back, comprising a pivot shaft extending slidably through the pivot openings of at least one of said pairs of pivot brackets for longitudinal adjustment between locking and unlocking positions, locking means on the pivot shaft and associated pivot brackets arranged for mutual engagement in the locking position of the pivot shaft to secure the seat back against pivotal movement relative to the seat and for mutual disengagement in the unlocking position of the pivot shaft to release the seat back for pivotal movement relative to the seat, and operator means on the shaft for moving the latter.

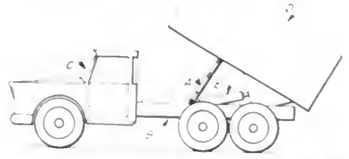
3,157,434
HEAD REST ATTACHMENTS FOR AUTOMOBILE SEATS
Nicholas Gianvecchio, 82 Woodrow Ave., Toronto, Ontario, Canada
Filed July 15, 1963, Ser. No. 294,906
3 Claims. (Cl. 297—397)

1. A head rest attachment for vehicle seats comprising an elongated rigid support for engaging the rear surface of a vehicle seat, an elongated lower cross member freely, intermediately pivoted at a lower portion of said rigid support, an elongated upper cross member extending transversely of and fixedly secured to an upper portion of said support, said upper cross member including a laterally projecting bearing plate for engaging the upper edge of said vehicle seat, a pair of flexible, separable belt assemblies at respective terminal ends of said cross members for engagement on the forward surface of said vehicle seat to mount the attachment thereon, and a head



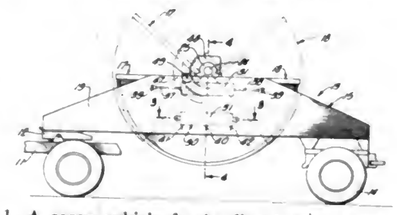
rest element mounted on the upper end of said support and including a cushioning member projecting forwardly of said bearing plate.

3,157,435
SAFETY PROP FOR DUMP TRUCKS AND THE LIKE
Vern H. Sherven, Charlson, N. Dak.
Filed Aug. 1, 1963, Ser. No. 299,310
8 Claims. (Cl. 298—17)



1. In a safety prop for truck dump bodies, a hollow supporting member, a dump body engaging member telescopically carried within said supporting member, spring means within said supporting member for normally urging said dump body engaging member into an extended dump body engaging position, and latching means for releasably locking said dump body engaging member when it is retracted within said supporting member against the pressure of said spring means by the weight of the dump body.

3,157,436
CARGO VEHICLE WITH CLAM SHELL HOPPER
Thomas J. Collins, 1517 Rexford Place, Las Vegas, Nev.
Filed May 1, 1963, Ser. No. 277,373
8 Claims. (Cl. 298—25)



1. A cargo vehicle for hauling loose material over a highway comprising a wheeled chassis having a main

frame including a pair of spaced-apart main frame members extending lengthwise along either side of the vehicle and generally parallel to one another, a pair of clam shell buckets pivotally supported between the midlengths of said main frame members on shaft means effective to hold said frame members in spaced-apart parallel relation and arranged to close against one another by gravity action, and a pair of pressurized fluid motor means located one across the opposite ends of said clam shell buckets and connected thereto for opening said buckets away from one another to discharge the contents thereof, and reaction connection means between said pair of pressurized fluid motor means and the adjacent one of said frame members.

3,157,437
CONTINUOUS MINING MACHINE OF THE OSCILLATING HEAD TYPE
Joseph Gonski, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1962, Ser. No. 224,675
12 Claims. (Cl. 299—71)

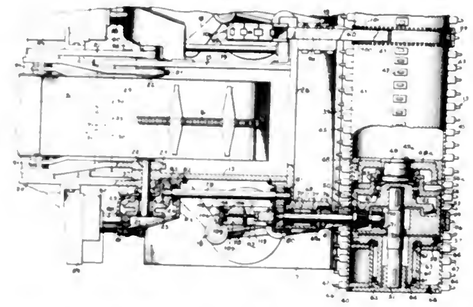


1. In a continuous mining machine,
a frame,
a rotary mining head spaced in advance of said frame,
mounting means for said mining head mounting said mining head for rotation about an axis extending transversely of said frame,
support means for said mounting means mounting said mounting means for rotation about an axis extending longitudinally of said frame and for sidewise oscillation,
means for rotatably driving said mining head and simultaneously rotating said mounting means about said longitudinal axis,
and other means for oscillatably moving said support means to effect sidewise oscillatable movement of said mining head during rotation thereof about said longitudinal and transverse axes.

3,157,438
RIPPER TYPE CONTINUOUS MINING MACHINE HAVING A SECTIONAL CUTTER DRUM
Richard C. Lundquist, Palos Heights, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed May 2, 1963, Ser. No. 277,540
8 Claims. (Cl. 299—73)

1. In a continuous mining machine, a main frame, cutting means spaced in advance of said main frame and mounted thereon for angular movement about a horizontal axis extending transversely of said main frame, said cutter means comprising a cutter drum extending across the front of said main frame and at least one additional cutter drum spaced laterally from an end thereof and forming an axial continuation thereof, a common support for said drums extending into adjacent ends of said drums radially inwardly of the peripheries of said drums and forming a bearing support means therefor, drive means carried by said support and having driving connection with said drums in the space therebetween, and a cutter chain extending over the space between said drums and guided for movement along said support member and driven by said drums, for cutting the core left in the space between said drums.

6. In a continuous mining machine, a mobile main frame, a sectional cutter drum, rotatable about a horizontal transverse axis, a pair of parallel spaced arms supporting said drum in advance of said main frame and transversely pivoted thereto for movement together about a common horizontal axis and feeding said cutter drum vertically along a working face of a mine, transversely extending coaxial cylindrical housings mounted on said arms at the forward ends thereof and extending forwardly therefrom and forming a support for said cutter drum, said cutter drum including an inner cutter drum extending along the peripheries of said housings into positions closely adjacent said arms and end cutter drums extending about the peripheries of said cylindrical housings from positions adjacent said arms outwardly beyond the outer ends of said housings, longitudinal drive shafts journalled

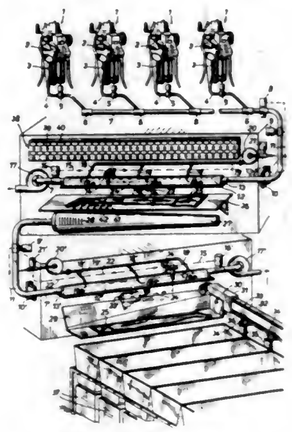


in said arms adjacent their rear ends and extending along said arms into said housings, bearing support means for the forward end portions of said shafts carried by said housings within the peripheral limits thereof and a separate bevel pinion on each shaft within the peripheral limits of an associated housing, a separate bevel gear spaced radially inwardly of the outer cylindrical wall of each housing and meshed with an associated bevel pinion, each bevel gear having a hub, bearing support means for said hub rotatably mounting said bevel gear within the peripheral limits of said housing, a support and drive member mounted on said hub and having supporting and driving connection with one of said cutter drums of said sectional drum, a shaft driven by said bevel gear and forming a drive member for another of said cutter drums of said sectional drum, and bearing support means on said housing spaced radially inwardly of the peripheral limits of the cylindrical wall of said housing and forming a bearing support for another of said cutter drums of said sectional drum on said housing.

3,157,439
TRANSFER APPARATUS
Enrique Salmona, 1 Vespri Siciliani, Milan, Italy
Filed Dec. 7, 1961, Ser. No. 157,671
Claims priority, application Italy Dec. 10, 1960
15 Claims. (Cl. 302—27)

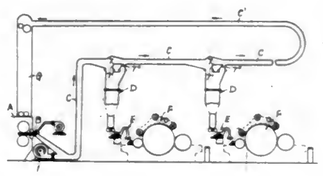
1. Apparatus for individually transferring products arriving at a plurality of receiving stations at definite sequential intervals of time, comprising pneumatic conveyor means including a conveyor conduit for transferring said products, connecting tubes individually connecting each receiving station to said conduit, a normally closed delivery valve in each of said connecting tubes, and programming means controlling the opening of all said delivery valves in a cyclic sequence to deliver products to

said conveyor conduit one by one, the duration of each cycle being shorter than the shortest of said sequential intervals of time at any of the receiving stations to there-



by deliver said products to said conveyor conduit one by one whereby discharge of said products from the conveyor conduit is in timewise sequence related to the sequence of opening of the delivery valves.

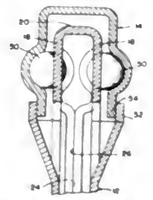
3,157,440
FIBROUS RAW MATERIAL FEEDING ARRANGEMENTS FOR SPINNING MACHINES
Kenji Hijiya, Amagasaki, Hyogo Prefecture, Yasuhiro Nakano, Tarumi-ku, Kobe, Hyogo Prefecture, and Ichisaburo Kaino, Nayagawa, Osaka, Japan, assignors to Nihon Spindle Mfg. Co., Ltd., Amagasaki, Japan, and Nitto Boseki Co., Ltd., Fukushima, Japan
Filed Jan. 22, 1962, Ser. No. 167,851
Claims priority, application Japan, Jan. 25, 1961, 36/2,394
7 Claims. (Cl. 302—28)



1. A fibrous material feeding means comprising a duct, through which said fibrous material is conveyed by means of an air stream, and a resisting block positioned at a branching point of said duct to receiving means so as to direct a portion of said material to said receiving means, said resisting block having a continuous front wall on the side of air-fiber impingement and being positioned at an intermediate cross-section of said duct so as to deflect air while defining upper and lower channels for fluid flow about said resisting block and defining a subsidiary passage communicating said duct with said receiving means along the rear wall of said resisting block.

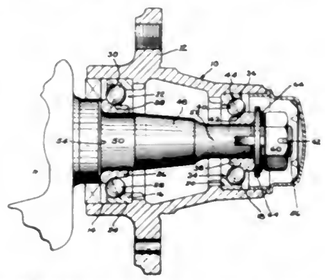
3,157,441
VEHICLE SEAT TRACK
Joseph Pickles, Dearborn, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan
Filed June 18, 1962, Ser. No. 203,253
1 Claim. (Cl. 308—3.8)

A slidable seat track assembly comprising a substantially horizontally elongated stationary member of inverted U-shaped cross-section having a pair of side walls which are spaced apart, said side walls having inwardly pressed grooves formed therein extending lengthwise thereof and adjacent the front and rear thereof, the portions of said side walls beneath said grooves being pressed inwardly into surface to surface contact with one another to strengthen said stationary member, the intermediate laterally extending surfaces of said side walls at the ends of said grooves forming ball retaining abutments, a seat supporting slide member of inverted U-shaped cross-section having a pair of downwardly turned flanges which are spaced laterally outwardly from said walls, said flanges having outwardly pressed grooves formed therein extending lengthwise thereof and located opposite the grooves



in said side walls to define therewith a pair of front and a pair of rear ball races, a ball in each of said races for guiding said slide member during lengthwise movement with respect to said stationary member, the longitudinal movement of said slide member with respect to said stationary member in either direction being limited by the engagement of said balls with the opposite ball retaining abutments, and means carried by said stationary member for laterally restraining said flanges against displacement under load, said means comprising a plurality of longitudinally spaced lugs integrally connected to and bent laterally outwardly from portions of said walls which are spaced apart, said lugs overlying the edges of said flanges and located beyond the ends of said ball races.

3,157,442
BEARING MOUNTING
Arthur W. Gaubatz, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,464
3 Claims. (Cl. 308—191)



1. In an adjustable antifriction wheel mounting having a pair of axially preloaded antifriction bearings provided with inner and outer race rings, a wheel hub supporting and axially positioning the outer race rings in spaced relation, a wheel spindle slidably mounted in both inner race rings and having a shoulder engaging one of the inner race rings, an adjustment nut threaded on the spindle adjacent the other inner race ring, and a dished resilient washer deformably clamped to a nearly flattened condition between the nut and said other ring to yieldably provide the desired axial preload on said bearings, said resilient washer rapidly increasing the preload while the washer is being deformed to a nearly flat condition and thereafter only slightly changing the preload when the washer is further deformed to a flat condition.

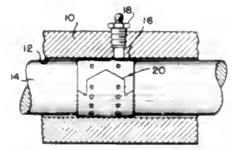
3,157,443
BEARING RETAINER
Herbert T. Draudt, 3612 Clague Road, North Olmsted, Ohio
Filed May 18, 1962, Ser. No. 195,902
2 Claims. (Cl. 308—201)



2. A retainer for ball bearings comprising a unitary, molded plastic structure having an axis and an unyielding annular base portion normal to said axis and about half as thick as the balls to be retained and having an end wall and hemispheric recesses notched in said base and opening axially away from said end wall, each said recess having a radius slightly greater than that of the ball to be retained therein, said retainer also comprising dividers between each adjacent pair of said recesses extending axially away from said end wall, adjacent pairs of said dividers having opposed spherical, concave, faces coincident with and in spherical extension of each recess and defining a pocket of slightly larger size than the ball to be retained therein, said faces having continuous, external circular edges struck from the great circle of the centers of said pockets and extending for more than 180° around said great circle and preventing inadvertent displacement from each pocket of each ball to be retained therein, the diameter of said circular edges being between about 60 to 80 percent of the diameter of the balls to be retained, each divider having a pair of said faces back-to-back with tapered resilient support for said edges and each divider being solid and unyielding to compressive forces exerted by retained balls in the direction of said great circle.

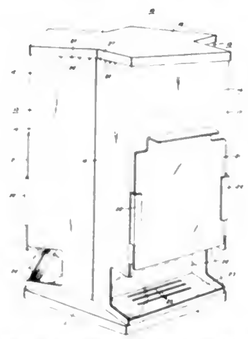
3,157,444
SLOTTED BEARING SLEEVE WITH LUBRICANT RETAINING MEANS
Walther F. Scheel, Detroit, Mich., assignor to Rockwell-Standard Corporation, Coraopolis, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1962, Ser. No. 230,161
9 Claims. (Cl. 308—238)

1. A thin walled split bearing sleeve of tough wear resistant non-metallic plastic having smooth slippery outer and inner bearing surfaces and having a non-linear slot extending axially between and opening to the opposite side edges of the sleeve, said slot comprising an intermediate reservoir section in which the slot edges may move circumferentially toward or from each other during contraction or expansion of the split sleeve, substantially circumferentially extending slot sections having ends connected to opposite ends of said reservoir section and in which the adjacent slot edges are fitted for relative sliding circumferentially of the sleeve but so closely as to effectively block against displacement of



grease out of the reesrvoir section ends, and inclined slot portions connecting with the other ends of said circumferential sections in an acute angle and which extend outwardly to the side edges of the sleeve.

3,157,445
DISPENSER FOR HAIR ROLLERS AND THE LIKE
Vincent J. Aversa, 1140 Banner Ave., Brooklyn, N.Y.
Filed Oct. 10, 1962, Ser. No. 229,616
1 Claim. (Cl. 312—45)

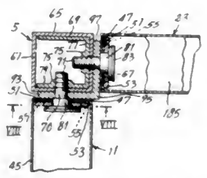


A hair roller dispenser comprising a base member, a plurality of individual dispenser units supported by said base member, and cover means for said dispenser units, each of said dispenser units comprising a front member having a dispensing aperture at the lower portion thereof, two side members, a back member, means including a movable door supported from said front member for variably changing the height of said diaspensing aperture to accommodate different size rollers, and means for varying the distance between said front and back members, said last-mentioned means compristing a plurality of parallel slots in said base member, a plurality of parallel slots in the upper portion of each of said side members, a projection member on the lower end of said back member to engage said base slots, and a pair of ears in the upper portion of said back member to engage said side slots.

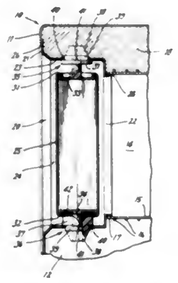
3,157,446
FURNITURE CONSTRUCTION
Forest G. Stark, Jamestown, N.Y., assignor to Art Metal, Inc., Jamestown, N.Y., a corporation of New York
Filed Sept. 22, 1960, Ser. No. 57,806
28 Claims. (Cl. 312—195)

11. A desk construction comprising a drawer pedestal, a hollow panel member having a vertically disposed panel wall and a transverse vertically disposed end wall, said transverse end wall being provided with a keyhole opening therethrough, a stud engaging a portion of said drawer pedestal and provided with an enlarged head spaced along said stud from said pedestal and adapted to pass through the enlarged part of said keyhole opening so as to be disposed adjacent and at the inner side of said transverse

wall, said stud having a shank portion adapted to be received in the slot of said keyhole opening with said head of said stud in bearing engagement with said inner side of said transverse wall for securing the edge portion of said hollow panel to said pedestal, and a spacer disposed between said transverse wall and said pedestal, the edge of said spacer being offset inwardly with respect to the exterior faces of said panel and of said pedestal to provide a recess therebetween.

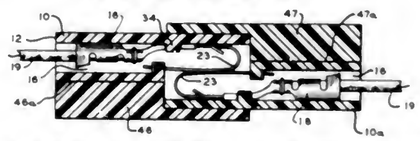


3,157,447
REFRIGERATOR CABINET WITH INNER DOOR AND HINGE ASSEMBLY
Michael H. Devery, Ambler, and John W. Cross, Jr., Southampton, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,280
4 Claims. (Cl. 312—329)



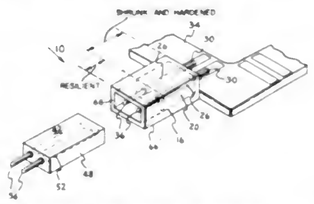
1. In a refrigerator cabinet including a refrigerated inner shell defining a freezing compartment with a generally rectangular open front, an inner door and hinge assembly comprising a frame having a generally rectangular recessed portion surrounding the compartment open front and provided with confronting apertured upper and lower corner areas, an upper bearing snugly fitted in the aperture of the mentioned upper corner area and having a pintle-receiving collar underlying the recessed portion at said upper corner area, a lower bearing snugly fitted in the aperture of the mentioned lower corner area and having a pintle-receiving collar overlying the recessed portion at said lower corner area, a generally rectangular door mounted within the recessed portion, and a pair of axially aligned pintles formed integrally with the door, one of said pintles extending upwardly and being slidably received in the upper bearing collar, the other pintle extending downwardly and being slidably received in the lower bearing collar, the lower bearing collar being extended upwardly in the recessed portion to support the door therein in alignment with the open front of the freezing compartment shell, and the upper bearing terminating at a level providing for movement of the door within the recessed portion and with respect to the bearings, whereby the pintles can be brought into and out of engagement with the bearing collars for mounting and dismounting of the door within the recessed portion.

3,157,448
TERMINAL CONNECTOR
David J. Crimmins, Nutley, and Joseph B. Marcsanyi, Passaic, N.J., said Marcsanyi now by change of name Joseph Marshall, assignors, by mesne assignments, to The Kent Manufacturing Co., Elizabeth, N.J., a corporation of New Jersey
Filed May 28, 1962, Ser. No. 198,130
2 Claims. (Cl. 339—49)



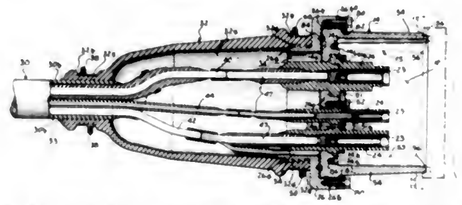
1. A terminal connector for electrically interconnecting a plurality of wire terminals, each of said terminals having marginal locking slots and a resilient contact finger located in a different plane, comprising: a pair of flat elongated plate members having side wall means, said plate members being adapted to be interengaged in opposed inverse relation, each of said plate members having a terminal receiving section extending for a portion of the width thereof, said section being provided with a plurality of parallel transverse apertures therethrough to receive said wire terminals, each aperture having a wide portion and a narrow portion to define a T-shaped cross-section, the narrow portion being adapted to receive the resilient contact finger of a wire terminal, said fingers in the coupled condition of the connector being in contact with each other, a plurality of upstanding wall members on each of said plate members extending from said terminal receiving sections and parallel to the apertures therein, said wall members defining passageways of the same width as the wide portion of the apertures and in line therewith for reception of the marginal edges of said terminals, and bosses on said plates within the passageways for locking engagement with said marginal locking slots.

3,157,449
ELECTRICAL CONNECTORS
William M. Hennessey, Roslyn, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 11, 1962, Ser. No. 186,699
2 Claims. (Cl. 339—66)



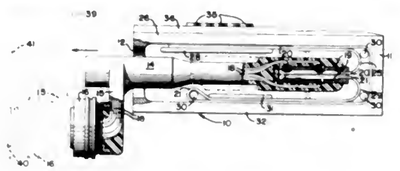
1. Electrical connection means including
a first insulating body having first conductive members extending unsupported therefrom,
said conductive members being fragile and movable,
a second insulating body having conductive members embedded therein and adapted to engage the conductive members extending from said first body,
and a sleeve of insulating material surrounding and enclosing said first insulating body and the conductive members extending therefrom,
said sleeve including a first hard, shrunken, rigid portion surrounding said insulating body and a second flexible, larger diameter portion surrounding the conductive members of said first body and adapted to easily receive said second insulating body whereby the conductive members of said second body may engage the conductive members of said second body and said second flexible portion of said sleeve holds said second insulating body in place.

3,157,450
ELECTRIC CABLE CONNECTOR
William Bradley Harrison, Sr., Oak Park, and William Bradley Harrison, Jr., Western Springs, Ill., assignors to Brad Harrison Co., Hillside, Ill., a corporation of Illinois
Filed May 2, 1961, Ser. No. 107,171
3 Claims. (Cl. 339—94)



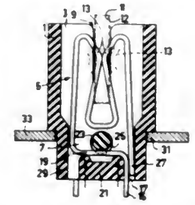
3. An electrical connector for high voltage cables comprising: at least one bell shaped boot made of insulating material, said boot having a first open end that is sealed to the cable jacket of one of said cables, said boot having an air insulated wiring chamber, said boot having a second open end with connecting members protruding therefrom, said connecting members being integrally molded with insulating jackets with projecting hub portions molded therearound, said connecting members having integral leads electrically connected to said high voltage cable's conductors inside of said wiring chamber, said boot's second open end being associated with a first sealing member in a sealed relationship, said first sealing member being cylindrically shaped and having a base with recessed apertures therein to allow said connecting members to protrude therethrough and have said hub portions of said insulating jackets nested in the recesses of said apertures, a retaining plate compressibly fastened to said first sealing member and having openings therein which are disposed so that the connecting members together with their integrally molded insulating jackets may protrude therethrough, said retaining plate creating a casket effect between said hub portions of said insulating jackets and said recessed openings of said first sealing member, said first sealing member having a cylindrical wall which is tapered on one side and straight on the other, said wall having a tapered edge portion, said first sealing member's base having a tapered cylindrical groove with an O-ring disposed therein, and a second sealing member having mating connecting members protruding through its base and being associated with a cable, said second sealing cylindrical member also having a cylindrical wall which is tapered on one side and straight on the other, said second sealing cylindrical member also having a tapered cylindrical groove with an O-ring disposed therein, said second cylindrical sealing member's wall also having a tapered edge portion, the tapered sides of said walls of said first and second cylindrical sealing members fitting together to form a chamber to enable the connecting members that are fastened to different cables to have electric contact inside of said chamber, said tapered edges of said walls of each of said sealing members fitting in said tapered O-ring grooves of each other, said O-ring grooves being sized and tapered to engage said tapered edges of said walls to enable said walls to contact said O-rings to compress them without crushing said O-rings when said sealing cylindrical members are held tightly together by said tapered edges and O-ring grooves, and means for holding said cylindrical sealing members tightly together.

3,157,451
RETRACTABLE ELECTRICAL CONNECTOR
Wilbert G. Martini, Dundalk, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 14, 1962, Ser. No. 217,783
4 Claims. (Cl. 339—101)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A retractable electrical connector for electrically connecting together two structures prior to blind mating of the two structures, comprising a hollow housing having an open end and an oppositely disposed closed end, a terminal board mounted on said housing near the open end thereof, an electrical cable normally within said housing and coaxially aligned therewith, said cable having a rigid portion partially extending through the open end of said housing and a flexible portion entirely within said housing and being electrically connected to said terminal board, said flexible portion being folded back upon itself in a direction parallel to the axis of said housing in such a manner that a smooth bend is formed in said flexible portion, whereby the rigid portion of said cable may be partially withdrawn from said housing to facilitate the making of an electrical connection between said two structures prior to blind mating thereof so that the cable is protected from injury when said two structures are blind mated, said housing having longitudinal grooves formed in the interior wall thereof, said rigid portion of said cable having projections extending radially outwardly therefrom to slidably engage said grooves to facilitate longitudinal movement of the rigid portion of said cable relative to said housing while precluding relative rotational movement therebetween, the rigid portion of said cable comprising a molded member of dielectric material having electrical conductors embedded therein, and a sleeve connector mounted on one end of said molded member exteriorly of said housing.

3,157,452
SOCKET CONNECTOR FOR PRINTED CIRCUIT BOARDS
Hendrik Dorjee and Jan Lesterhuis, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1961, Ser. No. 92,694
Claims priority, application Netherlands Mar. 4, 1960
3 Claims. (Cl. 339—176)



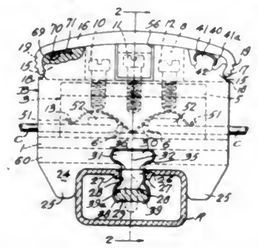
1. A socket for a printed circuit board and the like comprising a housing member of insulating material having a longitudinally extending slot and a plurality of laterally extending compartments formed therein, a gen-

erally M-shaped resilient contact member positioned in a plurality of said compartments, a lateral portion at the base of and integral with said contact members, a longitudinal bore in said housing member, and a rod of insulating material within said bore operatively associated wtih the lateral portions of said contact members for securing said contact members within said compartments.

3,157,453
ELECTRIC TERMINAL BLOCK WITH MOUNTING RAIL

Leslie Emil Lanczi, 5360 Walkley Ave., Apt. 18, Montreal, Quebec, Canada

Filed June 19, 1961, Ser. No. 117,971
9 Claims. (Cl. 339—198)

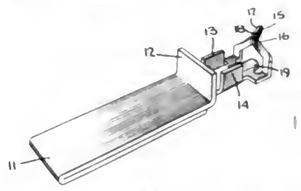


1. An electric terminal block adapted for use in combination with a terminal block-receiving rail, comprising a molded insulating body having a top portion and a base portion, a plurality of inwardly extending recesses in said body top and base portions, a metallic resilient cable-receiving member located centrally within and extending longitudinally of one of said body recesses, said resilient metallic cable-receiving member being of U-shaped formation in cross-section, and a leaf spring mounted in and extending longitudinally of said metallic member, adjustable securing means mounted on said body top portion, a resilient clip located within a further one of said body recesses located in said base portion, said securing means being adjustably engaged with said insulating body and adapted to engage said metallic member, said resilient clip being provided with a pair of outwardly extending legs adapted to resiliently engage said receiving rail, said body base portion also being provided with two outwardly extending projections adapted to engage said receiving rail at portions opposed to those contacted by said resilent clip outwardly extending legs.

3,157,454
WIRE AND INSULATION ATTACHMENT FOR ELECTRIC TERMINALS

Joseph C. Collins, Scituate, R.I., assignor to North American Philips, New York, N.Y., a corporation of Delaware

Filed May 31, 1962, Ser. No. 199,138
2 Claims. (Cl. 339—223)

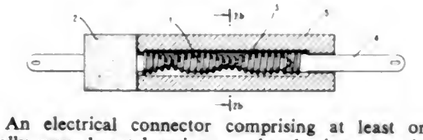


1. A terminal for attachment to one end of an insulated wire, said terminal comprising: a sheet metal body portion; a pair of wire-crimping members formed of the sheet metal of said body portion at opposite sides of a central region thereof and bent into a generally U-shaped configuration to receive the bare end of said wire; and a bifurcated end of said body portion, said bifurcated end comprising a pair of insulation-crimping members extending from the outermost side regions of said body portion and formed integrally therewith each said insulation crimping members being bent substantially upright from the plane of said body portion and twisted about their longitudinal axes in opposite directions so that the major surfaces of each said member are substantially parallel to permit the insulation of said wire adjacent to said bare end to be received between said insulation-crimping members and to permit said insulation-crimping members thereafter to be folded across said insulation with a major surface of said pair of insulation crimping members engaging the insulation of said wire and said members terminating in side by side abutting relation overlying said wire.

3,157,455
ELECTRICAL CONNECTOR

Eisuke Takano, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Dec. 24, 1962, Ser. No. 246,778
9 Claims. (Cl. 339—256)

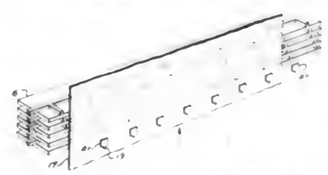


1. An electrical connector comprising at least one helically wound metal spring member having a portion with an elliptical cross section, and an elongate metal plug member adapted for insertion into said spring member, one of said members being axially twisted, said plug member having a set of opposite edges for engaging the individual coils of said spring member, said plug member further having a width approximately equal to the major axis of said elliptical cross section to cause torsional displacement of spaced coils relative to one another upon insertion of said plug member into said spring member, whereby contact pressure between said edges and said coils is produced by said torsional displacement upon insertion of said plug member as aforesaid.

3,157,456
PRINTER

Yoshiyasu Kikuchi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Jan. 31, 1963, Ser. No. 255,348
4 Claims. (Cl. 346—78)



1. An arrangement for electrically printing characters comprising

a printing head,

said printing head including a plurality of conductive comb-like members disposed generally parallel to one another and separated from one another by means of layers of insulation whereby a sandwich-like structure is formed,

the projections of said comb-like members each comprising a conductive dot printing element,

adjacent dot printing elements on each comb-like member being distantly spaced from one another compared with the dimensions of transverse cross sections of said elements,

corresponding dot printing elements on adjacent comb-like members being offset with respect to one another so that the corresponding elements form a step-like series,

and a recording medium positioned closely adjacent the ends of said dot printing elements and adapted for movement in a direction transverse to said elements.

CHEMICAL

3,157,457
DYEING POLYPROPYLENE

Albertus G. Lutgerhorst, Arnhem, Netherlands, assignor to N.V. Onderzoekingsinstituut Research, Arnhem, Netherlands, a corporation of the Netherlands

No Drawing. Filed Apr. 23, 1962, Ser. No. 189,256
Claims priority, application Netherlands, May 5, 1961, 264,447
8 Claims. (Cl. 8—4)

1. In a method for dyeing shaped articles of polypropylene with disperse dyes in the presence of an aromatic compound as carrier, the steps of employing as carrier an alkyl phenol the alkyl group of which contains from 6 to 15 carbon atoms.

3,157,458
PROCESS FOR DYEING WOOLEN TEXTILES WITH METAL COMPLEX AZO DYESTUFFS

Timothy Leslie Dawson and John Glover Graham, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 4, 1962, Ser. No. 192,340
Claims priority, application Great Britain, May 10, 1961, 16,999/61
2 Claims. (Cl. 8—43)

1. A process for dyeing woolen textile materials which comprises treating the woolen textile material with an aqueous solution containing:

(1) a member selected from the class consisting of 1:2-chromium and cobalt complexes of azo dyestuffs, free from sulphonic acid and non-chelated carboxylic acid groups, and containing a member selected from the group consisting of reactive halogen atoms and reactive groups capable of reacting with the woolen textile material in the dyeing reaction to form a chemical bond therein;

(2) an anionic surface-active agent; and

(3) a condensate of ethylene oxide with an aliphatic amine.

3,157,459
PROCESS OF ALKYLATING SHAPED, ORIENTED LINEAR POLYMERS

Guy C. Murdoch, Wycombe, and Robert G. Minton, Levittown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 11, 1961, Ser. No. 102,130
7 Claims. (Cl. 8—115.5)

1. In the process of treating a shaped product having at least one small dimension and formed of linear polymer molecules at least partially oriented longitudinally of at least one long dimension of the product, at least part thereof being formed of at least one monovinyl aromatic compound and at least part thereof being formed of at least one linear aliphatic polyene monomer, the polymeric mass of which product is formed having an apparent second order transition temperature of at least 20° C., with an alkylation catalyst under conditions including temperature at which aromatic nuclei of the polymeric mass are alkylated by polymerized units of the polyene, the treatment being carried out for a sufficient time to render the product resistant to solvents, the improvement consisting of using an alkylation catalyst selected from the group consisting of HF and mixtures of HF and BF_3.

3,157,460
PROCESS OF CYANOETHYLATING COTTON FIBERS AND GRAFT POLYMERIZING THERETO ACRYLONITRILE WITH IONIZING RADIATION

Jett C. Arthur, Jr., Metairie, and Robert J. Demint, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,836
4 Claims. (Cl. 8—120)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for producing cyanoethylated cotton fibers, having degrees of substitution from about 0.3 to 1.3 cyanoethyl groups per anhydroglucose unit of the cotton cellulose, that exhibit textile properties, decreased stiffness, and increased elongation-at-break comprising cyanoethylating the cotton fibers to a degree of substitution from about 0.3 to 1.3 cyanoethyl groups per anhydroglucose unit of the cotton cellulose; padding the cyanoethylated cotton fibers to about a two- to four-fold wet pick-up with an aqueous solution containing about 30 weight percent of acrylonitrile monomer and about 50 weight percent of zinc chloride; irradiating the padded fibers to a dosage ranging from about 200,000 to 1,000,000 roentgens with high energy gamma ionizing radiation from radioactive cobalt-60 to polymerize the acrylonitrile monomer within the cotton fibers to the extent that the irradiated cyanoethylated cotton fibers contain about 35 to 55 weight percent of acrylonitrile polymer; and washing the irradiated, cyanoethylated cotton fibers with N,N-dimethyl formamide to remove the loosely adhering acrylonitrile polymer from the surfaces of the irradiated, cyanoethylated cotton fibers.

3,157,461
DOUBLE OXIDE OF URANIUM AND COPPER

James S. Gill, Knoxville, and William L. Marshall, Oak Ridge, Tenn.

Filed July 27, 1960, Ser. No. 45,650
11 Claims. (Cl. 23—14.5)

1. The compound $CuO \cdot 3UO_3$.

4. The process of producing a solid double oxide of copper and uranium comprising mixing uranium oxide and copper oxide with a solvent, said solvent comprising water and an ionic inorganic compound containing an oxide-solvating antion, heating the resulting solution to a temperature between approximately 100° C. and 300° C. under pressure to produce equilibrium between the liquid and solid phases and separating the double oxide from the liquid phase.

3,157,462
PROCESS FOR SEPARATING URANIUM AND VANADIUM VALUES

Angus V. Henrickson, Boulder, Colo., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 617,678, Oct. 23, 1956. This application Aug. 9, 1960, Ser. No. 48,342
17 Claims. (Cl. 23—14.5)

3. A process for recovering vanadium values substantially free of uranium from a solution containing uranyl tricarbonate complex and pentavalent vanadium comprising contacting the solution at a pH greater than 10.5 and less than the pH at which uranium is precipitated

with a first portion of water insoluble strong base anion exchange resin, the quantity of the first portion of resin being sufficient to adsorb the uranium tricarbonate complex content of the solution, separating the first portion of resin and the uranium tricarbonate complex content adsorbed thereby from the solution, adjusting the pH of the resulting uranium-barren solution to a value between about 7.0 to 10.5, contacting the solution with a second portion of water insoluble strong base anion exchange resin, at least a portion of the vanadium content of the solution being adsorbed by the second portion of resin, separating the second portion of resin and vanadium values adsorbed thereby from the solution, and then recovering vanadium values substantially free of uranium from the second portion of resin.

3,157,463
EXTRACTION OF PLUTONIUM AND URANIUM VALUES FROM AQUEOUS SOLUTION

Leland L. Burger, Richland, Wash., assigror to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed May 19, 1961, Ser. No. 111,408
2 Claims. (Cl. 23—14.5)

1. A process of separating plutonium and uranium values from fission product values present together in an aqueous nitric acid "dissolver" solution, consisting in contacting said liquid aqueous solution with a liquid extractant, at least one of said liquids containing colloidal matter and said extractant consisting of and being selected from the group consisting of hexone and an organic solution of tributyl phosphate, said contact being carried out while said liquids are in contact with about 50 to about 350 parts by weight of a finely divided material per million parts by weight of said aqueous solution, said material consisting of and being selected from the group consisting of bentonite and talc, whereby said colloidal matter is taken up by said material by a purely physical action and a scum is formed, whereby a distinct aqueous phase containing said fission product values and a distinct extract phase containing said uranium and plutonium values are formed and said scum settles in the interface between said aqueous and extract phases, whereby the formation of new colloidal matter is prevented and whereby said values are retained in said phases and separating said scum, said aqueous phase and said extract phase.

3,157,464
PERCHLORATES OF TITANIUM AND BERYLLIUM

Roy J. Laran, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 26, 1962, Ser. No. 176,863
2 Claims. (Cl. 23—85)

1. The process for preparing anhydrous titanium tetraperchlorate which comprises reacting anhydrous titanium tetrachloride with an excess of anhydrous perchloric acid at a temperature in the range of from −75° to +25° C., and separating anhydrous titanium tetraperchlorate from the reaction mixture.

2. The process for preparing anhydrous beryllium perchlorate which comprises reacting anhydrous beryllium chloride with an excess of anhydrous perchloric acid at a temperature in the range of from −75° to +25° C., and separating anhydrous beryllium perchlorate from the reaction mixture.

3,157,465
PROCESS FOR THE PRODUCTION OF N-ALKALI DIALKALI PHOSPHORAMIDATE

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

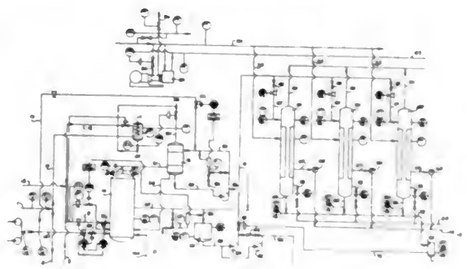
No Drawing. Filed Dec. 2, 1959, Ser. No. 856,658
2 Claims. (Cl. 23—101)

1. Process for the production of N-alkali dialkali phosphoramidate selected from the group in which the alkali is sodium, lithium, potassium, rubidium and cesium which comprises heating together a mixture of an alkali amide selected from the group in which the alkali is sodium, lithium, potassium, rubidium and cesium and phosphoric anhydride, the proportion of the amide being from 1.5 to 4.5 gram moles per gram atom of phosphorus, at a temperature of 100 to 300° C.

3,157,466
PROCESS FOR PRODUCING AMMONIUM NITRATE

John A. Ruth, Carterville, Ill., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland

Filed Nov. 21, 1958, Ser. No. 775,411
9 Claims. (Cl. 23—103)



4. The process for preparing molten NH_4NO_3 which comprises contacting in countercurrent heat exchange relationship an aqueous alkaline NH_4NO_3 solution with a hot inert gas, said aqueous NH_4NO_3 solution containing initially between about 80 and about 85 percent by weight of NH_4NO_3, said contacting being for a sufficient length of time, at a sufficient rate and at a sufficient temperature to evaporate sufficient water from the NH_4NO_3 solution to yield a solution containing between about 96 and about 97 percent by weight of NH_4NO_3 and to reduce the pH of the initial solution to slightly acidic, contacting the resulting NH_4NO_3 solution with a gaseous mixture of a hot inert gas and NH_3 in countercurrent heat exchange relationship for a sufficient length of time at a sufficient rate and at a sufficient temperature to yield molten NH_4NO_3 having a pH substantially neutral and an NH_4NO_3 concentration of at least about 99.5 percent by weight.

3,157,467
CRANKCASE VENTILATOR DEVICE

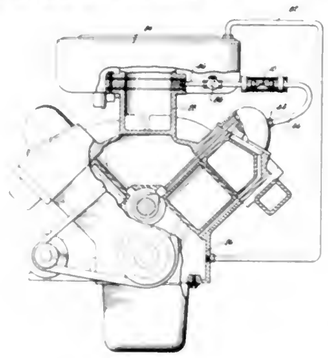
Harold D. Daigh, Rolling Hills Estates, and Rondo H. Patzig, Bellflower, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,483
19 Claims. (Cl. 123—119)

1. In a crankcase ventilating system for internal combustion engines having an opening in the engine above the oil level through which blowby fluids can escape the engine and conduit means providing fluid communication between said opening and the induction system of said engine, said opening being subject to the crankcase pressure, said conduit means having a discontinuity therein with two open spaced apart conduit ends, and wherein flexible tubular valve means normally closed in response to manifold vacuum and adapted to open in response to pressure buildup in said crankcase to pass blowby fluids through said conduit means into said induction system

are operably positioned between said conduit ends, the improvement comprising:

a frame apparatus for holding said conduit means in



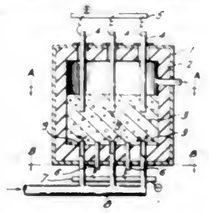
substantially axial alignment, and

means associated with said frame apparatus for subjecting said tubular valve means to tension.

3,157,468
APPARATUS AND PROCESS FOR PRODUCTION OF HYDROGEN CYANIDE

Douglas J. Kennedy, Shawinigan, Quebec, and Noel B. Shine, Shawinigan South, Quebec, Canada, assignors to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed July 17, 1961, Ser. No. 124,372
5 Claims. (Cl. 23—151)



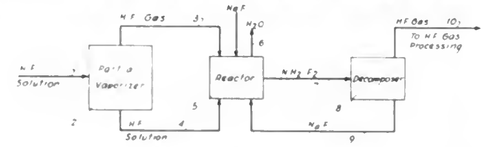
3. A process for producing hydrogen cyanide from a gas comprising ammonia in a heat insulated enclosure containing a bed of electrically conductive carbon particles adapted to be fluidized by the said gas, comprising passing an electric current through the said bed between at least one bottom electrode which makes contact with the lower portion of the bed and a plurality of top electrodes each making contact with the upper portion of the bed, while simultaneously passing a stream of said gas upwardly into said bed through a plurality of gas inlets in the bottom of the bed corresponding in number to the number of top electrodes, with each gas inlet admitting said gas to said bed directly under a corresponding top electrode.

3,157,469
CONTROLLED PROCESS FOR PRODUCING ALKALI METAL BIFLUORIDE AND SUBSTANTIALLY ANHYDROUS GASEOUS HYDROGEN FLUORIDE

Lewis E. Tufts, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,821
10 Claims. (Cl. 23—153)

1. A process for preparing a substantially anhydrous hydrogen fluoride gas comprising contacting a substantially dry alkali metal fluoride with an aqueous solution and a gas containing hydrogen fluoride, reacting said alkali metal fluoride, gas and solution to form an alkali metal bifluoride, proportioning the gas and the solution so as to provide a combined gas and liquid feed of at least 20 percent gas by weight, maintaining the reaction at a temperature whereby the alkali metal fluoride remains substantially dry without application of external heating and cooling to the reaction, thereafter raising the temperature of the thus-formed alkali metal bifluoride to an elevated temperature above the decomposition temperature thereof for a period of time sufficient to effect the decomposition of the alkali metal bifluoride and form hydrogen fluoride gas and alkali metal bifluoride, and recovering the thus-formed, substantially anhydrous hydrogen fluoride gas.



3,157,470
TEST FOR CAVITOMA

Charles M. Andrews, 927 Bradly, Lubbock, Tex.

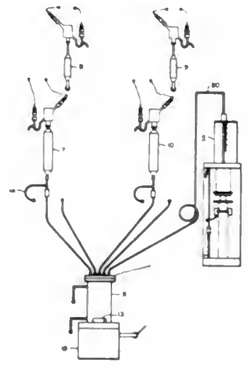
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,871
6 Claims. (Cl. 23—230)

1. The method of testing cotton for Cavitoma damage comprising: contacting cotton with an acidic aqueous solution of a member selected from the group consisting of benzidine, 3,3'-dimethylbenzidine and 3,3'-dimethoxybenzidine, and the hydrogen chloride derivatives thereof and acetic acid derivatives thereof, observing the degree of color change in the solution which comes in contact with the cotton, and comparing the observed color change with standard colors which relate to the degree of cotton damage.

3,157,471
AUTOMATIC TITRATOR

Walter J. Harrison, Pittsburgh, Pa., assignor to Fisher Scientific Company, Pittsburgh, Pa.

Filed Sept. 27, 1960, Ser. No. 58,723
2 Claims. (Cl. 23—253)



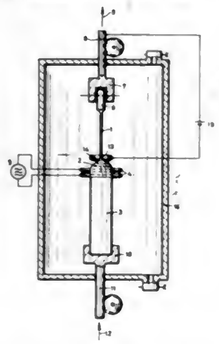
1. Apparatus for automatic titrations for analysis of discrete samples comprising a reaction cell in which the samples to be analyzed are placed and in which the titrations are conducted, means for dispensing titrant into said cell continuously at controlled rates, an electric drive for said dispensing means, electrodes in the reaction cell for receiving the electrical output of reactions in said cell during titrations and an electric circuit responsive to said electrical output for driving the dispensing means at a

rate which is rapid as compared to the rate at which the dispensing means is driven near the end of the titration until the titration reaches a predetermined point in advance of the end point, for decreasing the speed of said drive after the titration has reached said predetermined point to a rate proportional to the decreasing electrical output from said reaction cell, and for stopping said drive when the output is zero and the end point has been reached.

3,157,472
DRAWING SEMICONDUCTOR CRYSTALS

Rudolf Kappelmeyer, Heufeld-Waldheim, and Hans-Friedrich Quast, Freiburg im Breisgau, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, a corporation of Germany

Filed Sept. 2, 1960, Ser. No. 53,648
Claims priority, application Germany Sept. 11, 1959
2 Claims. (Cl. 23—301)



1. In the art of drawing from a semiconductor melt relatively thin rodlike semiconductor crystals with the aid of a seed crystal which is dipped into said melt and thereupon gradually withdrawn therefrom, whereby the strand of liquid material carried along by the seed crystal solidifies successively to form a rodlike crystal with a cross-section depending upon the drawing speed, the method of continuously forming said rodlike crystal with a substantially uniform diameter, comprising surrounding the liquid material strand, which is being carried along by the seed crystal, with an annular electrode and applying a direct voltage between the latter and said strand to produce a substantially uniform electrostatic field concentrically acting upon said strand substantially at the level of the interface between the liquid and solidified portions thereof, the strength and orientation of said electrostatic field being with respect to the liquid material strand such that the surface tension is reduced to avoid occurrence of periodic constrictions in the solidified material strand.

3,157,473
ELECTRICAL CONNECTIONS TO THIN CONDUCTIVE LAYERS

John Reginald Acton, Kegworth, England, assignor to Ericsson Telephones Limited, London, England, a British company

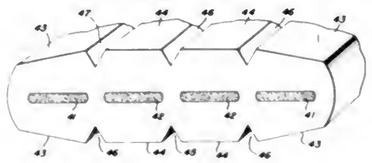
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,499
Claims priority, application Great Britain, Apr. 7, 1961, 12,565/61
4 Claims. (Cl. 29—183.5)

1. An electrical connection between an electrical metallic conductor and a thin layer of conductive material selected from the group consisting of copper, silver and gold bonded to a layer of epoxy resin, comprising a relatively massive homogeneous bond adhering to both the thin layer of conductive material and the conductor, the thickness of said layer being in the range of from 0.01 micron to 25 microns, the thickness of said massive bond being in the range of from 100 microns to 5000 microns, said bond being formed of a metal selected from the group consisting of indium, a eutectic alloy of indium and silver, and a eutectic alloy of indium and tin.

3,157,474
PREPARATION OF EXPANDABLE LAMINATE STOCK AND BILLET THEREFOR

Ants Hansson, Evanston, and Curtis E. Maier, Riverside, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 7, 1959, Ser. No. 832,282
31 Claims. (Cl. 29—187)

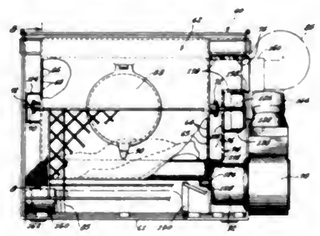


16. A billet for rolling to form a multi-wide expandable laminate strip having a plurality of laterally spaced, longitudinally extending internal anti-welding core residues, comprising a metal body having a multiplicity of internal longitudinally extending core channels for anti-welding material spaced across the width thereof and having each core channel surrounded with metal, each core channel and metal therearound constituting a unit region of cross-section, the body having flat parallel surfaces at the center of width and convergent surfaces extending from said parallel surfaces toward the lateral longitudinally extending edges of the billet, the body having a greater amount of metal between its upper and lower surfaces at unit regions near the center of width than between said surfaces at unit regions adjacent the lateral longitudinally extending edges.

3,157,475
COMBINATION CLOTHES AND HAIR DRYER

Hubert L. Stainbrook, Glendale, Ariz., assignor to Your Pleasure Corporation, El Segundo, Calif., a corporation of California

Filed Feb. 17, 1961, Ser. No. 90,051
8 Claims. (Cl. 34—91)

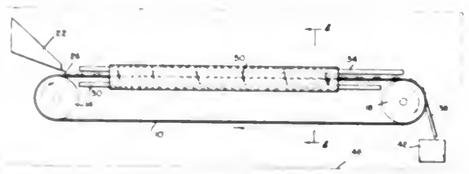


1. A dryer for household use comprising: a support structure; a tumbler; said tumbler having an opening through which articles to be placed within said tumbler may be passed; a closure for said opening; exhaust air, outlet means for the tumbler; a blower carried by said support structure to create a stream of air; means to heat the stream of air; a trunnion element fixedly mounted on one end of the tumbler; means to journal the other end of the tumbler on said support structure; a bearing element to journal said trunnion element; means on said support structure slidably connected to said bearing element to permit limited vertical movement of the bearing element relative to the support structure; power means operatively connected to said blower for actuation thereof; a flexible conduit for connection at one of its ends to said blower to convey the heated air from the blower; means forming an air input port for said tumbler; means to connect the second end of the flexible conduit to said input port whereby heated air is delivered interiorly of said tumbler, said connecting means being releasable to permit the conduit to direct the heated air for a drying operation exteriorly of the tumbler; rotary drive means actuated by said power means, said one end of the tumbler normally resting on the rotary drive means for rotation of the tumbler by the power means; and manually operable means to lift said one end of the tumbler out of contact with said rotary drive means whereby the power means may be disconnected from the tumbler to deliver all of its power to said blower when the second end of the flexible conduit is disconnected from said input port.

3,157,476
RADIANT ENERGY HEAT TREATING IMPROVEMENTS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Nov. 13, 1961, Ser. No. 151,824
8 Claims. (Cl. 34—218)



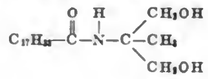
1. Radiant energy heat treating apparatus comprising a thin endless metallic heat conductive flexible corrosion resistant carrier belt having a highly polished radiation reflective low emissivity outer material-carrying surface and an inner heat conductive, highly radiation absorptive and emissive surface comprised of a glass frit enamel coating and material-bearing and return legs; temperature modifying means disposed on opposite sides of at least one of said legs adjacent each of said belt surfaces; means for driving said belt between said temperature modifying means; means for feeding a relatively thin layer of material to be treated to said belt adjacent one end of said material-bearing leg; means for removing the treated material; and means for removing the vapors and gases evolved from said material in its passage between said temperature modifying means whereby substantial increased efficiency of radiant energy utilization is attained.

3,157,477
N-ACYLATED AMINOHYDROXY COMPOUND AS A MULTI-FUNCTIONAL GASOLINE ADDITIVE

Donald D. Emrick, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,475
4 Claims. (Cl. 44—56)

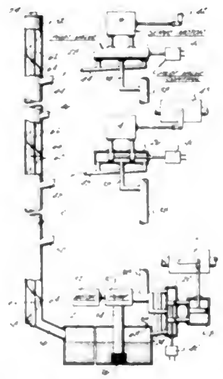
1. A hydrocarbon fuel of the gasoline boiling range containing from 0.001 to 0.05 wt. percent of



3,157,478
HYDRAULIC FLUID RETURN LINE AIR ELIMINATOR

William M. Edwards, West Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 28, 1960, Ser. No. 78,932
8 Claims. (Cl. 55—36)

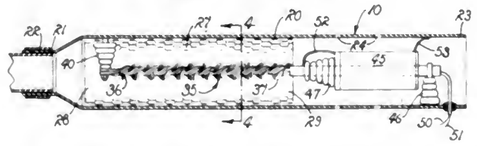


2. The method of preventing air pumping and air entrainment in oil in a vented vertical oil gravity return pipe receiving oil slugs comprising feeding the oil in slugs into said pipe, interrupting the free gravity drop of one side of said slug and converting the free drop along and around the inside of said pipe to a spiral path, interrupting the free drop of other side of said slug at the next succeeding turn of the spiral path, limiting the thickness of the oil layer in the spiral path by spilling oil over one edge of said path to the next succeeding turn of the spiral path until the oil layer guided in the spiral path and confined by the pipe inner surface flows in a smooth stream with a vented air layer above the stream.

3,157,479
ELECTROSTATIC PRECIPITATING DEVICE

Arthur F. Boles, 3129 N. Angus, Fresno, Calif.

Filed Mar. 26, 1962, Ser. No. 182,415
6 Claims. (Cl. 55—146)



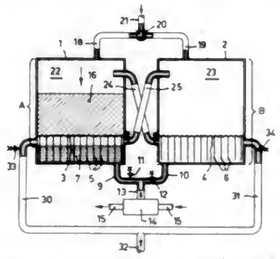
1. An electrostatic precipitating device for an automobile exhaust system comprising a tubular mounting member through which a stream of contaminated gas is adapted to flow, a tubular collector electrode having a perforate wall providing a multiplicity of inwardly extended contact points slidably positioned within said mounting member and being frictionally constrained within the mounting member in circumscribing relation to said stream of gas, a substantially cylindrical discharge electrode providing a multiplicity of outwardly extended discharge points, dielectric means mounted on said collector electrode in radially inwardly extended relation to mount said discharge electrode concentrically within said collector electrode in said stream of gas with said discharge points spaced inwardly from said contact points of the collector electrode, said dielectric mounting means permitting unitary removal of the electrodes from the mounting member, an electrical transformer mounted within

said mounting member in coaxial alignment with said discharge electrode having electrical conductive connection to said discharge electrode and to said collector electrode, and means having conductive connection to said transformer providing a unidirectional electrical pulsating current thereto.

3,157,480
DEVICE FOR SEPARATING OUT IN THE SOLID STATE COMPONENTS FROM A GAS MIXTURE BY COOLING

Henricus Cornelis Johannes van Beukering, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 25, 1961, Ser. No. 105,352
Claims priority, application Netherlands May 6, 1960
2 Claims. (Cl. 55—269)



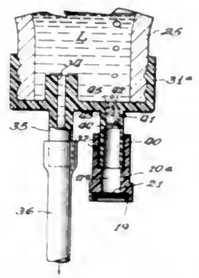
1. A device for separating out impurities in a solid state by cooling a gas mixture, comprising at least two separators, each of said separators having an inlet duct and an outlet duct, a gas permeable partition in each separator located between said inlet and outlet ducts for dividing each said separator into a first chamber adjacent and connected with said inlet duct and a second chamber adjacent and connected with said outlet duct, a cold source operatively connected to the second chamber of each separator, extensions attached to said partition of each separator and extending away from said partition for physical contact with the cold source of the separator, whereby the impurities to be separated out are deposited on a selected partition in the form of a snow layer which gradually enlarges, first valve means in said inlet and outlet ducts of each separator whereby said separators may be operated alternatively, two connecting ducts, one of said connecting ducts connecting the first chamber of one of said separators with the second chamber of the other of said separators, the other of said connecting ducts connecting the first chamber of said other of said separators with the second chamber of said one of said separators, and second valve means in said connecting ducts, said first and second valve means being operative to pass said gas mixture through said two separators in series.

3,157,481
AIR FILTER ASSEMBLY

Albert F. Bujan, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

Filed Dec. 11, 1961, Ser. No. 158,372
2 Claims. (Cl. 55—417)

1. An air filter assembly comprising a hollow, open-ended fitment adapted to communicate with a parenteral fluid, a hollow plastic body defining a main bore and an auxiliary bore of greater diameter than said main bore and interconnected by a shoulder to said main bore, a plurality of vertically spaced sealing rings mounted in said auxiliary bore and sealingly engaging the outer surface of said fitment, the proximal end of said fitment being sealingly seated against said shoulder, a second shoulder near the proximal end of said hollow member, an air filter disc comprising structurally reinforced copolymer of tetrafluoroethylene and hexafluoropropylene in sealing abutting relating on one side at its marginal edge with



said second shoulder, and an integral crimped flange on the proximal end of said plastic body sealingly and supportingly embracing the other side of said marginal edge.

3,157,482
METHOD OF USING LAYERED GLASS-WORKING TOOL

Anthony P. Nero, Corning, and James W. Ryan, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

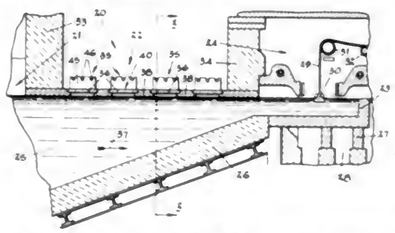
Filed Feb. 14, 1962, Ser. No. 173,259
3 Claims. (Cl. 65—17)

1. A method of producing glass comprising the step of bringing the glass, in a molten state, into contact with a glassworking tool characterized by a molybdenum body portion, a platinum surface cladding, and a diffusible carbon level in the molybdenum body portion and at the molybdenum-platinum interface of less than 0.01%.

3,157,483
TEMPERATURE CONTROL OF MOLTEN GLASS

Donald W. Dunipace, Perrysburg, Ohio, assignor to Libby-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Apr. 10, 1958, Ser. No. 727,584
8 Claims. (Cl. 65—204)



1. In apparatus for producing flat drawn window glass, the combination with a cooling chamber and a working receptacle from which a continuous glass ribbon is drawn, said cooling chamber and working receptacle defining a path along which a stream of molten glass flows, of high heat transmitting cover in close proximity to the surface of the stream of molten glass and extending from side to side of at least a portion thereof to thereby establish a blanket of hot stagnant air in the space between said cover and the surface of the molten glass stream and inhibit turbulence in said blanket of air, a portion of said cover having uniform heat transmitting properties over its entire area to allow heat to escape from the surface of the molten glass through the air blanket and said cover by radiation only and means associated with said cover for dissipating heat transmitted by said cover.

3,157,484
TREE KILLING AGENTS

Lewis C. Swain, Exeter, N.H.; Helen D. Swain, executrix of said Lewis C. Swain, deceased, assignor to Joseph Selberlich, Brookfield, N.H., and Herman L. Smith, Exeter, N.H.

No Drawing. Filed Sept. 14, 1961, Ser. No. 137,954
2 Claims. (Cl. 71—2.2)

1. A tree killing agent comprising an aqueous solution of sodium arsenite and a film forming gel, the sodium arsenite being present in the range of from 20% to 40% by weight and the film forming gel being present in the range of from .1% to .2% by weight, the gel being selected from the group consisting of carboxymethylcellulose, methylcellulose and sodium alginate; said agent having a viscosity of about 328 centipoises and a density of about 1.487 at 25° centigrade.

3,157,485
WEED KILLING COMPOSITION AND METHOD

Jeremiah F. Twomey, 433 Lyndale Drive, St. Boniface, Manitoba, Canada

No Drawing. Filed July 17, 1961, Ser. No. 124,340
Claims priority, application Canada July 29, 1960
6 Claims. (Cl. 71—2.4)

1. A weed-killing composition comprising a herbicidal amount of a plant hormone, an assimilatable manganese compound and an assimilatable arsenic compound adapted to provide an unbalanced mixture to increase the deficiencies in weeds to which said plant hormone has been applied in herbicidal amounts.

3,157,486
PESTICIDAL DISPERSION AND METHOD FOR PREPARING THE SAME

Thomas S. Harrison, New Canaan, Conn., and Clarence A. Littler, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

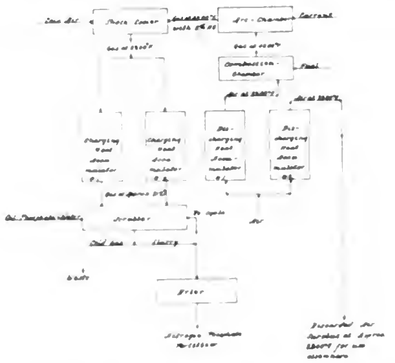
No Drawing. Filed Dec. 20, 1962, Ser. No. 246,021
14 Claims. (Cl. 71—2.4)

4. A concentrated, substantially homogeneous, thixotropic aqueous dispersion of substantially non-flocculated, finely divided particles of a pest control agent selected from the group consisting of water-insoluble fungicides, herbicides and methoxychlor, said dispersion having the characteristics of being substantially free of settling of the particles to a hard, difficultly resuspendable cake upon standing and being extendible with water to form a dilute mixture wherein the particles settle only after prolonged standing and when settled are readily redispersible with mild agitation, the dispersion comprising the pest control agent, water, a suspending agent which is a water-swellable, hydrous, colloidal mineral silicate of the group consisting of hydrated attapulgite and montmorillonite group clays, and a dispersing agent of the group consisting of lignin sulfonic acid, sodium lignin sulfonate, sodium salts of polymerized alkylaryl and arylalkyl sulfonic acids, polyvinyl alcohol, methyl cellulose, methylhydroxyethyl cellulose, carboxymethyl cellulose, and polyoxyethylene compounds which are reaction products of ethylene oxide with sorbitol-fatty acid esters and with mixtures of resin and fatty acids, in the proportions, by weight, of about from 20% to 65% of pest control agent, 0.5% to 10% of suspending agent, and 0.5% to 25% of dispersing agent, the total of said ingredients not exceeding 70%, and at least 30% of water, the suspending agent being swelled and deagglomerated, and at least 90% by weight of the pest control agent having a particle size less than 10 microns.

3,157,487
METHOD OF MAKING A NITRATE-PHOSPHATE FERTILIZER

Alfred M. Thomsen, 265 Buckingham Way, Apt. 402, San Francisco 27, Calif.

Continuation of application Ser. No. 35,783, June 13, 1960. This application Sept. 19, 1962, Ser. No. 224,618
1 Claim. (Cl. 71—39)



The method of making a nitrate-phosphate fertilizer which comprises; heating air by passage through a previously charged heat accumulator to a temperature of approximately 2800° F.; further heating said air by burning sufficient fuel therein until a temperature of approximately 4200° F. is obtained; maintaining said temperature by the use of the electric arc during sustained formation of nitric oxide until substantial equilibrium has been obtained; shock-cooling the resultant gases by commingling in a state of violent turbulence with cold air in the amount of 50% by weight of the hot gases, thus causing a substantially instantaneous drop in temperature to approximately 2800° F., thus obtaining substantial stability of the resident nitric oxide and avoiding all difficulties in subsequent heat recuperation; storing the heat still remaining in said gases in heat accumulators; subsequently transferring said heat to incoming, traversing air which thus becomes heated to approximately 2800° F.; dividing said air, heated by heat recuperation, into two portions representing approximately one-third and two-thirds respectively; re-cycling the larger portion to the combustion step previously prescribed and discarding the smaller portion from the nitrogen fixation cycle for use elsewhere, said discard representing substantially the heat equivalent of the fuel consumed in the combustion step; scrubbing the nitric oxide containing gases that were previously cooled by passage through heat accumulators with a slurry consisting of a water suspension of finely divided tri-calcium phosphate to produce a mixture of calcium nitrate and plant assimilable phosphates; continuously re-cycling a portion of said slurry and drying the remainder to form a nitrate-phosphate fertilizer.

3,157,488
METHOD FOR DIRECT REDUCTION OF METAL OXIDES

Charlton A. Taylor, P.O. Box 435, Garrettsville, Ohio

Filed Sept. 27, 1960, Ser. No. 58,671
3 Claims. (Cl. 75—34)

1. A batch method of direct reduction of metal oxides within a heated closed chamber rotatable about its horizontal axis, comprising the steps of:

(*a*) charging a measured batch of pulverized metal oxides into the chamber, not in excess of about one-half the capacity thereof,

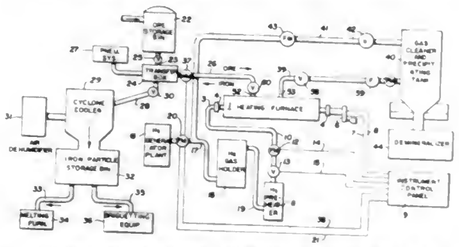
(*b*) rotating the chamber in alternate opposite directions while raising the temperature of the interior

thereof and its contents to about 1000° F. for removing moisture and other volatizable matter from the oxides,

(*c*) discontinuing rotation of the chamber and withdrawing the volatile matter therefrom,

(*d*) charging a measured volume of a gaseous reductant therein which is less than that to reduce the oxide to metal and resuming rotation of the chamber in alternate opposite directions while maintaining a chamber interior temperature and its contents above the temperature of reaction and below a temperature causing tackiness of the surface of the oxide particles to effect at least partial reduction thereof,

(*e*) discontinuing chamber rotation and withdrawing the spent gaseous reductant and other volatiles from the chamber interior,



(*f*) charging an additional measured volume of gaseous reductant into the chamber interior in an amount raising the total volume thereof applied to the batch of oxides to an amount in excess of the stoichiometric amount to reduce all the oxide to metal,

(*g*) resuming rotation of the chamber in alternate opposite directions and maintaining the reducing temperature to expose all the oxides to the reductant and reduce them to metal,

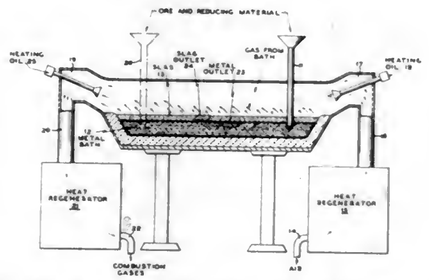
(*h*) discontinuing chamber rotation and withdrawing therefrom the spent reductant and other volatiles, then purging the chamber interior and the fully reduced oxides with an inert gas to cool and remove reductant therefrom before discharging the reduced metal particles from the chamber.

3,157,489

METHOD FOR REDUCING METAL OXIDES

Frans Martin Wiberg, Bromma, Sweden, assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Filed Mar. 9, 1961, Ser. No. 108,218
1 Claim. (Cl. 75—40)



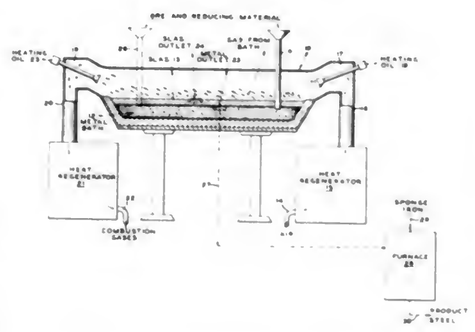
A method for reducing metal oxides which comprises maintaining a molten metal bath superimposed by a slag layer floating thereon, on a substantially continuous basis introducing a carbonaceous reducing material below the surface of said bath to maintain a fixed carbon content of said molten metal bath and simultaneously introducing discrete granules consisting of an oxide of said metal below the surface of said bath as a confined stream under a fluid pressure elevated above the static pressure of the bath at the introduction point so that the said reagents are first contacted with the molten metal below the surface of said bath, said discrete granules being reduced to metal below the surface of said bath thereby maintaining a low content of said metal oxide in the slag layer, and removing molten metal from said bath.

3,157,490

METHOD FOR REFINING OF METALS

Frans Martin Wiberg, Bromma, Sweden, assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Filed Oct. 23, 1961, Ser. No. 146,934
15 Claims. (Cl. 75—40)



1. A method for producing an iron-containing product which comprises providing a molten ferrous metal bath, introducing carbonaceous reducing material below the surface of said bath to carburize the metal of said bath and simultaneously introducing a material comprising discrete granules of a metal oxide below the surface of said bath as a confined stream so that said materials are first contacted with said molten metal below the surface of said bath and said granules are reduced therein, withdrawing reduced material from said bath having a relatively high carbon content and passing said reduced material to a reaction zone, providing in said zone a molten iron derived from sponge iron having a low carbon content relative to said reduced material and intermixing said constituents in said zone under an elevated temperature to produce an iron-containing product of desired composition.

3,157,491

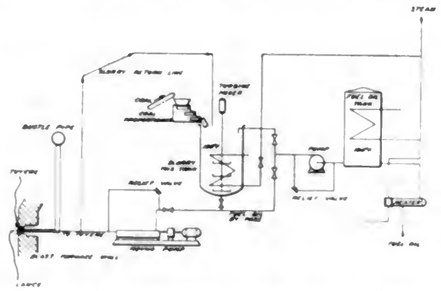
METHOD OF OPERATING A BLAST FURNACE

Ogden A. Thomas, Huntington, W. Va., and Leo L. Meinert and Harold G. Houlton, Ashland, Ky., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Jan. 23, 1962, Ser. No. 168,200
10 Claims. (Cl. 75—42)

1. The method which comprises, sizing coal to a maximum particle size of about 1/16" to 3/8", mixing said coal with a fuel oil having a viscosity in the range of about 75–1000 seconds S.F. at 122° F. to form an unstable slurry which consists essentially of said coal and said oil and in which said coal is suspended in said oil, said coal comprising about 40–70% by weight of said slurry and said oil comprising about 60–30% of said slurry,

heating said oil and maintaining it at a temperature of about 150–300° F. as said coal is being mixed therewith, whereby the viscosity of said slurry is reduced, maintaining said coal in suspension in said slurry by agitating said slurry and keeping said slurry in movement, and introducing said slurry into a furnace.

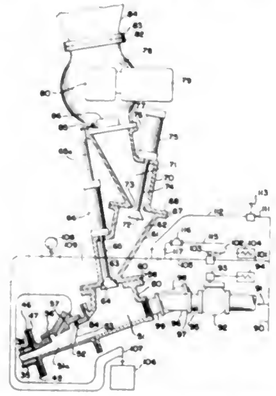


3,157,492

INJECTION OF SOLID MATERIAL INTO MOLTEN METAL

Richard K. Matuschkovitz, Chicago, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 11, 1963, Ser. No. 272,395
9 Claims. (Cl. 75—51)



1. Method of treating molten metal which comprises intermittently injecting solid particulate material into said molten metal below the surface thereof in the well of a furnace, the injection being conducted in a continuous gas stream of sufficient pressure to overcome the static pressure of the molten metal and the solid particulate material being blasted into said continuous gas stream with a second intermittent gas stream of higher pressure, thereby causing said particulate material to pass at high speed in said combined gas stream into said molten metal.

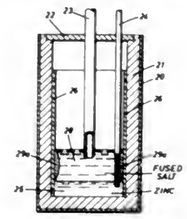
3,157,493

PRODUCTION OF NIOBIUM

Joseph Newton Robinson, Trail, British Columbia, Canada, assignor to The Consolidated Mining and Smelting Company of Canada Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Jan. 22, 1962, Ser. No. 167,764
8 Claims. (Cl. 75—84.5)

1. In a method for the production of niobium from niobium pentachloride in which niobium pentachloride is reacted in a fused salt bath with an alkali metal fluoride to form an alkali metal niobium fluoride, the improvement which comprises reacting alkali metal niobium fluoride in the fused salt bath with zinc in elemental form whereby a niobium-zinc reduction product is produced as a solid precipitate, and recovering niobium from said niobium-zinc reduction product.



3,157,494

METHOD OF PRODUCING AN ALUMINUM ALLOY

William B. Larson, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. **Filed Feb. 12, 1962, Ser. No. 172,763**
7 Claims. (Cl. 75—134)

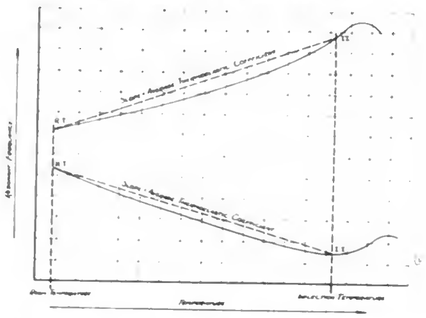
5. A silicon base prealloy for addition to aluminum to produce an aluminum base casting alloy having a fine grain structure, said silicon base prealloy consisting essentially of about 0.06% to 0.3% boron, 0.3% to 1.5% titanium and the balance substantially all silicon.

3,157,495

ALLOY CHARACTERIZED BY CONTROLLED THERMOELASTICITY AT ELEVATED TEMPERATURES

Herbert L. Eiselstein, Huntington, and James K. Bell, Milton, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 22, 1962, Ser. No. 232,084
22 Claims. (Cl. 75—134)



1. An age-hardenable alloy consisting essentially of nickel and cobalt proportioned in correlated amounts according to the relationship

$$1.235\ (\%\ \mathrm{Ni}) + \%\ \mathrm{Co} = 62.2 \text{ to } 64.8$$

with at least about 16% nickel and at least about 24% cobalt, columbium and tantalum in amounts such that the total of the percent columbium plus one-half the percent tantalum is from about 4.5% to about 6% of the alloy, with the weight of tantalum being from about 1% to about 20% of the total weight of columbium and tantalum in the alloy, about 0.5% to about 1.5% titanium, up to about 1% each of silicon, maganese and aluminum, up to about 0.1% carbon, less than 1% each of chromium,

tungsten and molybdenum, and the balance essentially iron in an amount not less than about 31% of the alloy, said alloy being characterized in the annealed and age hardened condition by a uniform and controllable thermoelastic coefficent of absolute value not greater than about 20×10^{-6} per degree Fahrenheit up to a temperature of at least about 900° F. and by a rupture life of at least 200 hours when subjected to a tensile load of 90,000 pounds per square inch at 900° F.

3,157,496
MAGNESIUM BASE ALLOY CONTAINING SMALL AMOUNTS OF RARE EARTH METAL

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 78,318, Dec. 27, 1960. This application Sept. 13, 1962, Ser. No. 223,526

11 Claims. (Cl. 75—168)

1. The improvement in thorium-free magnesium base alloys consisting essentially of a rare earth metal content in the range of 0.05 to 2 percent by weight and a zinc content in the range of 0.05 to 0.5 percent by weight, and the balance magnesium which consists in:

maintaining the proportion of zinc in the range from 1 to ⅓ part of zinc per part of rare earth metal in compositions containing up to about 0.6 percent by weight of rare earth metal and the proportion of zinc being in the range of from 0.2 to 0.5 percent by weight in compositions containing from about 0.6 to 2 percent by weight of rare earth metal.

3,157,497
METHOD OF FORMING A CEMENTED CARBIDE COMPOSITION

Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 1, 1961, Ser. No. 128,377

4 Claims. (Cl. 75—204)

1. A method of forming a grade powder which comprises providing a metallic halide in which the metal is selected from the group consisting of iron, nickel and cobalt, dissolving said metallic halide in a non-aqueous organic solvent having a high solubility for said metallic halide, mixing a carbide powder in the formed solution, the non-aqueous organic solvent being free of water to prevent oxidation of the carbide powder, evaporating said solvent to result in a powder, placing said powder in a reducing atmosphere, and reducing said metallic halide to the metal thereof.

3,157,498
METHOD AND APPARATUS FOR EXPLOSIVELY FORMING COMPACTS FROM POWDERED MATERIAL

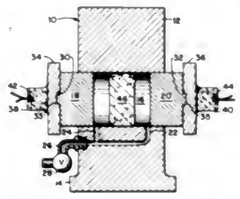
Louis Zernow, Glendora, Irving Lieberman, Covina, and Martin Corney, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Oct. 23, 1961, Ser. No. 146,975

9 Claims. (Cl. 75—226)

1. A method of forming powdered refractory material into a solid form comprising the steps of inserting the powdered material in a female die, surrounding the powdered material in the female die by a monatomic gas atmosphere, and explosively driving a male die member into the female die with enough force to adiabatically compress the powdered material and the gas and thereby cause a rapid and substantial temperature increase in the monatomic gas sufficient to raise the temperature of the material in the female die enough to sinter the powdered material into a solid form.

5. An apparatus of the class described comprising in combination a female die having an interior for holding material to be formed and a predetermined gas therein, said female die having conduits therein communicating with the interior for the introduction of the predetermined gas to the female die interior, a male die member associated with said female die and movable into the interior, and means for explosively moving said male die



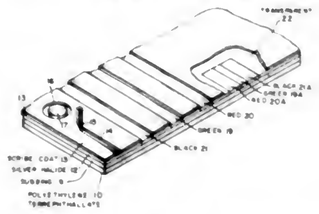
member into the interior with enough velocity and force to adiabatically compress the introduced predetermined gas and the material in the interior of the said female die to produce a short time high temperature heat source to heat the material, whereby the combination of the high temperature heat source and the force is sufficient to form the material in the female die.

3,157,499
SCRIBE COAT ON SILVER HALIDE POLYESTER FILM

Frank M. Trusheim, Oakhurst, N.J., assignor to Keuffel & Esser Co., Hoboken, N.J., a corporation of New Jersey

Filed Dec. 28, 1959, Ser. No. 862,340

11 Claims. (Cl. 96—27)



1. The method of making a light transmitting master from a dimensionally stable light transmitting sheet material having a silver halide emulsion photographic layer thereon and a selectively removable coat superimposed on the photographic layer, comprising removing said coat from a first area of appreciably less than the area of the sheet material uncovering a first area of the photographic layer to permit developing fluids to contact the first area of the photographic layer where the selectively removable coat has been removed, and performing a developing operation on said first area of said photographic layer by a dye coupling developer of sodium sulfate, sodium carbonate, potassium bromide, and a compound selected from the group consisting of p-aminodiethylaniline hydrochloride and 2-amino-5-diethylaminotoluene hydrochloride with at least one color former from the group consisting of 1-naphthol, 2,4-dichloro-1-naphthol, o-phenyl phenol, 4-chloro-o-phenyl phenol, 4,6-dibromo-o-cresol, 2,5-dichloroacetoacetanilide, acetoacetanilide, 1-phenyl-3-methyl-5-pyrazolone, p-nitrophenylacetonitrile, o-chloroacetoacetanilide, and ethyl acetoacetate, thereafter bleaching in a solution of potassium ferricyanide and potassium bromide, fixing the color in said first area, removing said coat from a second area uncovering a second area of said photographic layer and developing with a dye coupling developer and color former producing a different color in the second area from the color in the first area, bleaching the second area, fixing the color image in said

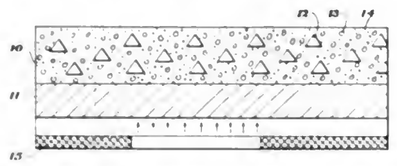
second area and repeating the sequence of operations for other areas to obtain a multi-colored master of any desired number of areas.

3,157,500
PHOTOGRAPHIC PRODUCTS CONTAINING MAGNETIC PARTICLES AND PROCESSES THEREFOR

Thomas I. Abbott and Edwin B. Wyand, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 11, 1962, Ser. No. 222,861

8 Claims. (Cl. 96—28)



1. A method of photographic reproduction which comprises developing an exposed gelatino-silver halide emulsion layer containing a mixture of substantially unhardened gelatin, silver halide, a gelatin tanning silver halide developing agent and magnetic particles selected from the class consisting of nickel, cobalt and ferromagnetic particles, with an alkaline solution to obtain a hardened gelatin, magnetic particles and silver image in the exposed areas of the emulsion layer and substantially unhardened gelatin, magnetic particles and silver halide in the unexposed areas of the emulsion layer, said development being such as to prevent any substantial tanning of the emulsion layer in said unexposed areas, passing the said emulsion layer across the pole of a magnet causing the undeveloped silver halide and its surrounding gelatin to be removed by the magnetic field.

3,157,501
PRODUCTION OF DYED POLYMERIC IMAGES

Walter F. Burrows, Greene, and Andre K. Schwerin, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,170

12 Claims. (Cl. 96—35)

1. A photographic element comprising a support having coated thereon a photosensitive layer comprising a photographic colloid carrier having dispersed therein, a normally liquid to solid dispersible monomer containing the grouping $CH_2{=}C{=}$, an essentially water insoluble straight chain carboxylic aliphatic acid having a chain length of from 10 to 27 carbon atoms and a light-sensitive ferric salt.

3,157,502
STABILIZED PHYSICAL DEVELOPERS CONTAINING IONOGENIC SURFACTANTS

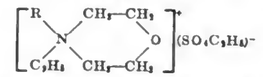
Hendrik Jonker and Cornelis Johannes Dippel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 8, 1959, Ser. No. 845,098

Claims priority, application Netherlands Oct. 11, 1958

7 Claims. (Cl. 96—49)

1. A stabilized photographic physical developer comprising an acid aqueous solution of a water soluble silver salt reducible to metallic silver, a photographic reducing agent for reducing said silver salt to silver and at least one cationic surfactant said cationic surfactant being selected from the group consisting of water soluble salts of primary alkylamines wherein the alkyl moiety is hydrophobic and contains at least 8 carbon atoms, cetyl pyridinium halides, the methyl sulphate of monostearylamidoethylene-trimethyl-amine, imidazolidine derivatives containing an alkyl of 16 carbon atoms attached to a carbon atom of the heterocyclic nucleus and a lower alkyl attached to a nitrogen of the heterocyclic nucleus, tolylundecylammonium compounds, benzyldimethyl {2{2-[4(Cl,1,3,3 - tetramethylbutyl) tolyloxy]-ethoxy}ethyl} ammonium compounds, N-lauryl (aminosulpho) β-aminobutyric acid, trimethyl-2-oleoylamino-ethyl ammonium compounds, trimethyl-2-stearylamino-ethyl ammonium compounds and morpholine compounds of the formula



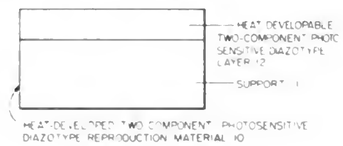
wherein R is alkyl of 16 to 24 carbon atoms, said surfactant being present in an amount sufficient to increase the life of the developer at least 50% when compared to the life of an identical developer without said surfactant.

3,157,503
DIAZOTYPE REPRODUCTION MATERIALS

Jaromir Kosar, Beechhurst, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Filed Mar. 19, 1963, Ser. No. 266,231

9 Claims. (Cl. 96—49)



6. A method for thermally developing a photosensitive diazo layer comprising a photosensitive diazonium compound and a coupler therefor, which comprises the steps of:

exposing said layer to image wise actinic radiation; and heating said layer in intimate contact with a support at 140° C. to 160° C. for a few seconds to form a dye image in said layer, said support being resistant to the scorching effects of heat at the conditions of thermal development and coated with a thermosensitive base-releasing agent and said agent being a member selected from the group consisting of: hexamethylene tetramine, thiosemicarbazide, and mixtures of hexamethylene tetramine with one of the following: semicarbazide hydrochloride, carboxymethyl trimethyl ammonium chloride hydrazine, carbohydrazide, succinhydrazide, and acetone semicarbazone.

3,157,504
METHOD OF INHIBITING DISCOLORATION OF COLOR PHOTOGRAPHIC LAYERS CONTAINING DYE IMAGES AND RESULTING PHOTOGRAPHIC PRODUCTS

Charleston C. Bard, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,494

7 Claims. (Cl. 96—61)

1. A method of inhibiting discoloration of a photographic element which has been exposed, processed to a photographic record comprising at least one dye image, and residual silver and silver salts removed from the element which comprises imbibing in said processed element and aqueous solution comprising a water-soluble glucoheptonate.

3,157,505
PHOTOPOLYMERIZABLE ELEMENTS

Norman Thomas Notley, Highland Park, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 23, 1959, Ser. No. 788,501
4 Claims. (Cl. 96—68)

1. An unexposed photopolymerizable element comprising a support and at least two adjacent solid photopolymerizable layers each being from 1 to 100 mils in thickness and containing as essential ingredients throughout its entire thickness:

(1) at least one preformed organic polymer of high molecular weight,

(2) a non-gaseous, addition polymerizable ethylenically unsaturated compound having a normal boiling point above 100° C., a molecular weight less than 1500, containing at least two ethylenic groups and being capable of forming a high polymer by photoinitiated addition polymerization in the presence of an addition polymerization initiator activatable by actinic light, and

(3) an addition polymerization initiator activatable by actinic light; the amount of constituents (2) and (3) being substantially the same in the adjacent photopolymerizable layers; the upper photopolymerizable layer containing at least two such preformed organic polymers and the lower layer containing at least one less of said organic polymers and the concentration of at least one of said preformed copolymers in the element is different in said adjacent layers to the extent that the lower layer has an effective rate of addition polymerization greater than that in the upper layer so that the ratio of the exposure required to completely fill in a reverse, line image in the upper layer to the exposure required to give a well-formed raised image with slightly sloping sides in the lower layer, when the two layers are exposed independently, is at least 1.4.

3,157,506
PHOTOGRAPHIC FILM BASE SUBBED WITH ACID-COOKED PIGSKIN GELATIN

John W. Gates, Jr., Paul E. Miller, Robert R. Phillips, and Gale F. Nadeau, all of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Nov. 8, 1957, Ser. No. 695,205, now Patent No. 2,992,213, dated July 11, 1961. Divided and this application Mar. 9, 1961, Ser. No. 94,431
5 Claims. (Cl. 96—87)

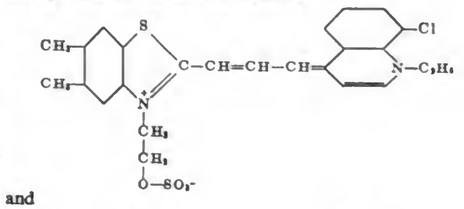
5. A photographic product comprising a photographic film base, a subbing layer thereon of acid-cooked pigskin gelatin which had been treated for 1–6 hours with an aqueous solution at 35–55° F. of a base selected from the group consisting of ammonia and the basic alkali metal compounds having a pH of 8–9.5 and thereover a gelatin-silver halide photographic emulsion layer.

3,157,507
OPTICAL SENSITIZATION OF PHOTOGRAPHIC MATERIALS SUITABLE FOR THE SILVER-DYE BLEACHING PROCESS

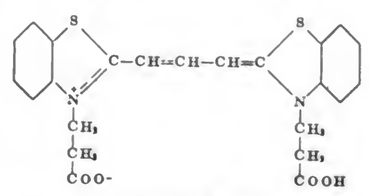
Heinrich Bruengger, Basel, and Helmut Boehl, Bottmingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Nov. 30, 1959, Ser. No. 856,017
Claims priority, application Switzerland, Dec. 4, 1958, 66,913
1 Claim. (Cl. 96—99)

Photographic material having at least one light-sensitive silver halide emulsion layer containing an azo dyestuff containing phenolic hydroxyl groups and which is capable of being bleached out in the silver dye bleaching process and containing dyestuff selected from the group consisting of compounds of the formula



and

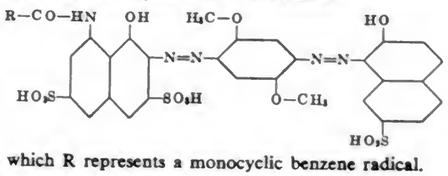


3,157,508
PHOTOGRAPHIC MATERIAL FOR THE SILVER DYE BLEACHING PROCESS

Paul Dreyfuss, Basel, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,301
Claims priority, application Switzerland, Jan. 9, 1962, 186/62
5 Claims. (Cl. 96—99)

1. Photographic material for the silver dyestuff bleaching process, which contains on a support a layer containing a red sensitized gelatino-silver halide emulsion and at least one dyestuff of the formula



in which R represents a monocyclic benzene radical.

3,157,509
PHOTOGRAPHIC EMULSIONS CONTAINING NOVEL FOG-INHIBITING ADDENDA

Jean E. Jones, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,158
17 Claims. (Cl. 96—109)

1. A photographic silver halide emulsion containing an antifoggant amount of a substituted 1,2,3-triazole selected from the group consisting of

a 4-carbalkoxy-5-alkyl-1,2,3-triazole,
1,2,3-triazole-4-carboxaldehyde,
1,2,3-triazole-4-carboxylic acid,
4,5-dicarboxy-1-hydroxy-1,2,3-triazole,
a dialkyl-1,2,3-triazole-4,5-dicarboxylate,
1-phenyl-1,2,3-triazole-4,5-dicarbohydrazide, and
4,5-dicarboxy-1,2,3-triazole.

3,157,510
SILVER-RESIN PRINT PAPER

Charles F. Amering and Edward C. Yackel, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,562
7 Claims. (Cl. 96—114)

1. A photographic element from which photographic prints resistant to tropical conditions may be prepared

which comprises a support bearing a layer comprising photosensitive silver halide and a vehicle therefor composed of about 60–95% by weight of a water-insoluble resin selected from the group consisting of the homopolymers of alkyl acrylates, the alkyl being 1–4 carbon atoms and their copolymers with acrylonitrile in which the level of the acrylonitrile units is no more than about 50% of the total weight of the monomer units dispersed in unhardened, low jelly strength gelatin of less than 100 grams Shoom jelly strength.

3,157,511
ANIMAL FEEDS

Jonas Kamlet, New York, N.Y., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 1, 1960, Ser. No. 40,176
15 Claims. (Cl. 99—4)

1. Animal feeds containing a growth-promoting amount, in the proportion of from 5 to 100 grams per ton, of a member of the group consisting of beta-nitropropionic acid, the alkali metal and alkaline earth metal salts thereof.

3,157,512
STABILIZATION OF ANIMAL AND POULTRY FEEDS CONTAINING ANTIBIOTICS

Siegfried Arthur Muller, Closter, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application June 22, 1960, Ser. No. 37,853. Divided and this application Dec. 1, 1961, Ser. No. 157,868
10 Claims. (Cl. 99—9)

1. A process for the production of dried fermentation harvest mash solids containing a tetracycline antibiotic which comprises adjsting the pH of the harvest mash to a pH of around 0.1–3 with a mineral acid raising the pH of the acidulated harvest mash to a pH of around 8.5–13 and thereafter filtering and drying the harvest mash so as to stabilize the mash solids against loss in antibiotic potency.

3,157,513
ENZYMATIC TREATMENT OF CEREAL GRAINS

Winston F. Allen and Joseph J. Thompson, both of Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,675
7 Claims. (Cl. 99—17)

1. The method for the preparation of high protein, enzyme-digested liquid from cereals which comprises digesting an initially alkaline aqueous slurry of finely subdivided raw cereal grain with proteolytic enzyme, and separating and recovering a liquid containing a major amount by weight of the protein content of said cereal grain in the form of soluble and colloidal partially digested proteins from unconverted granular starch content, and thereafter heating said liquid to inactivate its enzyme content.

3,157,514
METHOD FOR PREPARING QUICK-COOKING RICE

Raul Donde Gorozpe, Mexico City, Mexico, assignor to Corn Products Company, New York, N.Y., a corporation of Delaware

Filed Dec. 20, 1961, Ser. No. 161,777
8 Claims. (Cl. 99—80)

1. A process for preparing a quick-cooking rice product which comprises hydrating rice grains with an aqueous medium below the gelatinization temperature of the rice until the moisture content is increased to between 25 and about 40%, partially gelatinizing the hydrated rice over a period of about 3 to about 10 minutes by intermittently continuing hydration of the rice with water having a temperature above about 55° C. and intermittently maintaining the rice in an atmosphere of steam, continuing gelatinization for an additional period of about 3 to about 10 minutes by intermittently continuing hydration of the partially gelatinized rice with water having a temperature below about 55° C. and intermittently keeping the rice in an atmosphere of steam, whereby overgelatinization of the portion already gelatinized is avoided.

3,157,515
PASTRY MIX HAVING THIOLATED GELATIN INCORPORATED THEREIN AND METHOD UTILIZING SAID MIX

Lewis M. Berkowitz, Yonkers, N.Y., and Myron D. Shoaf, Danbury, and Ralph E. Schachat, Bloomfield, Conn., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,166
11 Claims. (Cl. 99—92)

1. A pastry mix, comprising thiolated gelatin having about 2 to 20 mercapto equivalents per mole of gelatin and flour.

8. The method of preparing a baked pastry product, which comprises commingling thiolated gelatin having about 2 to 20 mercapto equivalents per mole of gelatin and a thiolated gelatin oxidizing agent, blending the mixture with flour and other conventional pastry forming ingredients and sufficient water to form a batter, and baking the batter.

3,157,516
PROCESS OF PREPARING A FLAVORING SUBSTANCE AND THE RESULTING PRODUCT

Louis J. Huber and Simpey Kuramoto, Minneapolis, and Fred Smith, Wayzata, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed May 18, 1962, Ser. No. 195,965
9 Claims. (Cl. 99—140)

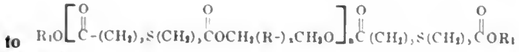
1. A process of preparing a flavoring substance which comprises reacting an acid selected from the group consisting of ascorbic acid and isoascorbic acid with a cysteine compound in the presence of water at an elevated temperature.

3,157,517
FATTY MATERIALS STABILIZED WITH THIODIALKANOIC POLYESTERS

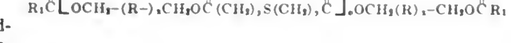
Clarence E. Tholstrup, Alan Bell, and Charles J. Kibler, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,862
24 Claims. (Cl. 99—163)

1. A composition of matter consisting essentially of a normally oxidizable fatty organic edible material stabilized with from about 0.001% to about 5% by weight of said normally oxidizable fatty material of a complex polyester selected from the group consisting of compounds having the formulas



and



wherein n is an integer from 1 to 20, R_1 is selected from the group consisting of a hydrogen atom, alkyl, cycloalkyl, and aryl radicals, R is selected from the group con-

sisting of methylene, oxydimethylene, thiodimethylene, cycloalkyl aryl and $-CH_2(R-)_xCH_2OH$ radicals, x is an integer from 0 to 10, and y is an integer from 2 to 3.

3,157,518
COATINGS OF CELLULOSE CRYSTALLITE AGGREGATES

Orlando A. Battista, Drexel Hill, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Feb. 23, 1960, Ser. No. 10,072
4 Claims. (Cl. 99—166)

1. A food package consisting essentially of a food material selected from the group consisting of vegetables, ice cream, frozen confections, butter, cheese and meat and a self-adherent continuous coating of mechanically disintegrated cellulose crystallite aggregates having a size in the range of from less than one micron to about 300 microns, the crystallite aggregates being characterized by having an average level-off D.P. in the range of 15 to 375 anhydroglucose units.

3. A method of packaging a food material selected from the group consisting of vegetables, ice cream, frozen confections, butter, cheese and meat which comprises freezing the food material, applying a dispersion in water of mechanically disintegrated cellulose crystallite aggregates having a particle size of from less than one micron to 300 microns, the crystallite aggregates having an average level-off D.P. in the range of 15 to 375 anhydroglucose units to the food material to provide a continuous coating thereon, the dispersion containing at least 0.5% by weight of the disintegrated crystallite aggregates, drying the coating and maintaining the food material in a frozen condition.

3,157,519
METHOD OF PACKAGING VISCOUS MATERIALS

Frederick J. Butt, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1962, Ser. No. 202,061
4 Claims. (Cl. 99—171)

1. A method of packaging a viscous material in a thermoplastic resinous container, the viscous material on standing at ambient temperatures retains gas bubbles which do not rise to the upper surface thereof, the steps of the method comprising:

introducing a quantity of said material into said container at a temperature of at least 160° Fahrenheit,

subjecting said container to ultrasonic vibrations, having a frequency of from about 15 kilocycles per second to about 2 megacycles per second until no gas is observed rising within the material,

sealing said container hermetically,

cooling said container and contents to a temperature below 160° Fahrenheit and

thereby providing a reduced pressure therein.

3,157,520
CAULKING COMPOUND

Ray W. Hoeppel, Box 5, Oak View, Calif.; and Elmo S. Sorenson and Jerry E. Sorenson, both of 2002 Laird Drive, Salt Lake City, Utah

Filed June 13, 1961, Ser. No. 116,766
1 Claim. (Cl. 106—33)

A caulking compound consisting essentially of substantially hemp fiber 37.5%; hectorite 37.5%; sorbitol 15%; water 8%; paraformaldehyde 1%; and copper carbonate 1%.

3,157,521
INFRARED LENS CEMENT

Donald S. Cary, William F. Parsons, and Edward Carnall, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 6, 1952, Ser. No. 324,605
3 Claims. (Cl. 106—47)

1. An infrared transmitting adhesive for glass and the like having high infrared transmitting efficiency, excellent adhesive affinity for infrared transmitting glass surfaces, freedom from volatile residues, and freedom from substantial physical changes over a wide range of temperatures, consisting essentially of about 1 part of sulfur, about 5.4 parts of selenium and about 1–2%, based on the combined weights of the sulfur and selenium, of a crystallization inhibitor selected from the group consisting of the oxides and sulfides of boron, phosphorus, silicon and arsenic, the ingredients being combined in a uniform, vitreous composition.

3,157,522
LOW EXPANSION GLASS-CERAMIC AND METHOD OF MAKING IT

Stanley D. Stookey, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Mar. 3, 1958, Ser. No. 718,398
5 Claims. (Cl. 106—52)

1. A transparent glass having an expansion coefficient greater than 30×10^{-7} per ° C., which is capable of conversion by heat treatment to a semicrystalline ceramic having a lower expansion coefficient and a higher deformation temperature and containing a crystalline lithium aluminum silicate selected from the class consisting of beta-eucryptite and beta-spodumene, consisting essentially on the oxide basis by weight of 55–75% SiO_2, 3–7% TiO_2, 2–15% Li_2O and 12–36% Al_2O_3, the weight ratio Li_2O/Al_2O_3 being 0.1 to 0.6, the total SiO_2, TiO_2, Li_2O and Al_2O_3 being at least 95%.

3,157,523
MANGANESE OXIDE CERAMICS AND METHODS FOR THEIR PREPARATION

Gerhard Bayer, Obere Halden, Hinteregg, Zurich, Switzerland, assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed July 3, 1961, Ser. No. 121,344
4 Claims. (Cl. 106—65)

1. A ceramic product made by sintering a compacted intimate admixture consisting essentially of particulate alumina and a particulate manganese compound at a sintering temperature in the range from 1200 to about 1500° C., in a free oxygen-containing oxidizing atmosphere, said manganese compound being selected from the group consisting of Mn_3O_4 and a compound convertible to Mn_3O_4 under the conditions of sintering, the ratio of Al_2O_3 to manganese compound being such that the ratio of Al_2O_3 to Mn_3O_4 equivalent of said manganese compound is from 1/99 to 1/4.

3,157,524
PREPARATION OF COLLAGEN SPONGE

Charles Artandi, Highland Park, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Original application Oct. 25, 1960, Ser. No. 64,703. Divided and this application Mar. 13, 1962, Ser. No. 180,930
13 Claims. (Cl. 106—122)

2. A method of making a collagen sponge having interconnected pores throughout, which comprises freezing a mass of acid swollen collagen fibrils containing 0.5% to 4.0% by weight collagen fibrils, immensing the frozen mass into a water miscible organic solvent containing sufficient base to neutralize the acid present in said dispersion whereby the collagen fibers are dehydrated and coagulated, and drying the resulting collagen mass to form a collagen sponge.

3,157,525
COATING COMPOSITIONS

Robert Arnold Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Nov. 15, 1961, Ser. No. 152,639, now Patent No. 3,090,790, dated May 21, 1963. Divided and this application Aug. 8, 1962, Ser. No. 215,506
1 Claim. (Cl. 106—287)

A liquid coating composition consisting essentially of 2,4,5,7,8-pentavinyl-1,3,6-trioxacyclooctane and a cobalt drier.

3,157,526
THERMO-SENSITIVE COPY SHEET AND METHOD OF MAKING

Ronald B. Johnson, Cloquet, and Duane H. Schroeder, Minneapolis, Minn., assignors to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,269
12 Claims. (Cl. 117—36.8)

1. A thermo-sensitive copying sheet for the reproduction of graphic images which comprises a base material in sheet form carrying thereon a heat sensitive material comprising a uniformly dispersed mixture of at least one zinc salt selected from the class consisting of zinc lower alkyl di-substituted di-thiocarbamates, the substituted radicals of which have from one to five carbon atoms, and zinc aryl di-substituted di-thiocarbamates, and at least one heavy metal salt of a higher fatty acid which is non-reactive with said zinc salt at normal room and storage temperature and is reactive therewith at temperatures above the melting point of said zinc salt to produce a color change.

3,157,527
PROCESS FOR THE PRODUCTION OF GRAFT COPOLYMERS

André Fournet, Gilbert Christen, and René Jean Marcel Chambard, Lyon, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body corporate

No Drawing. Filed May 4, 1960, Ser. No. 26,680
Claims priority, application France May 26, 1959
6 Claims. (Cl. 117—47)

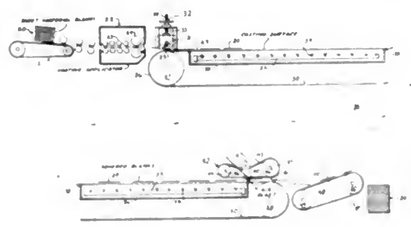
1. Process for the production of articles of grafted polyvinyl alcohol which comprises impregnating a preshaped article of polyvinyl alcohol, while maintaining its physical structure unchanged, with a solution of a free-radical generating initiator of polymerisation in an aqueous non-reactive solvent, which is chemically inert towards polyvinyl alcohol, contacting the resultant impregnated article with an ethylenically unsaturated polymerisable monomer in fluid phase and holding it in contact therewith at a temperature at which the polymerisation initiator is decomposed, the free radicals produced by this thermal decomposition being the sole initiators of the grafting of said monomer to the polyvinyl alcohol, and the whole process being carried out in the substantial absence of artificially induced high energy irradiation.

3,157,528
APPARATUS AND METHOD FOR CAST COATING SHEET MATERIAL

George A. Strahl, St. Louis, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Oct. 5, 1961, Ser. No. 143,190
6 Claims. (Cl. 117—64)

1. The method of cast coating discrete blanks of paperboard material comprising the steps of applying a plastic coating to a succession of discrete blanks, placing the coated blanks into contact on a continuous moving casting belt having a generally horizontal upper surface terminating at opposite ends around circular rotating means, advancing the casting belt and blanks thereon until the coating is substantially solidified, releasing the blanks upwardly from the horizontal surface of the casting belt

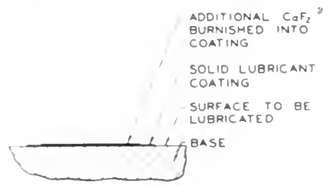


by means of one or more high velocity streams of air directed at a margin of said blank at an acute angle to the belt and in normal relation to the direction of travel thereof, restraining the separated blank from unrestricted displacement from the belt, returning the blank to the horizontal moving belt, moving said separated blank on said belt to the curved end portion thereof where said blank is permanently separated from said belt.

3,157,529
BONDED SOLID LUBRICANT COATING

Harold E. Sliney, Maple Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 13, 1961, Ser. No. 145,007
27 Claims. (Cl. 117—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A lubricant coating composition comprising 75% CaF_2, and 25% of a ceramic binder therefor, said binder comprising 60% CoO, 20% BaO, and 20% B_2O_3, all percentages being expressed by weight.

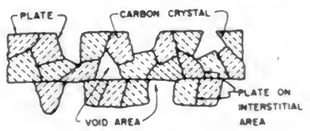
3,157,530
COATING REGENERATED CELLULOSE FILM AND PROCESS FOR MAKING SAME

William Paul Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 2, 1961, Ser. No. 149,503
15 Claims. (Cl. 117—76)

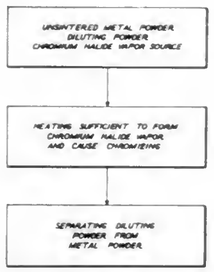
2. A regenerated cellulose film impregnated with a thermo-set resin having at least one surface coated with a composition consisting essentially of 80–99% of a polyhydrocarbon prepared by polymerizing at least one ethylenically unsaturated alpha olefin, 0.5–10% of a compound having a plurality of $-N{=}C{=}X$ groups wherein X is a chalcogen of atomic weight less than 35, and 0.5–10% of a cyclized natural rubber.

3,157,531
PROCESS FOR THE MANUFACTURE OF CARBONACEOUS SOLID BODIES
Vello Norman and Thomas P. Whaley, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 21, 1960, Ser. No. 3,721
2 Claims. (Cl. 117—98)



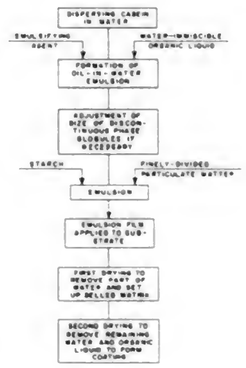
1. A process for the preparation of a heterogeneous metal plated graphite body which process comprises:
(1) heating a porous graphite body having an apparent porosity ranging from 1 to about 50 percent to a temperature of from about 400° C. to about 700° C.,
(2) contacting said heated porous graphite body with the vapors of a Group VI–B metal hexacarbonyl compound in a non-oxidizing atmosphere to coat the interstitial surface areas defining the pores of the graphite body, and
(3) continually contacting the heated graphite body with said compound in a non-oxidizing atmosphere to effect thereon a coating ranging from about 0.01 to about 50 mils thick.

3,157,532
METHODS OF TREATING METALLIC POWDERS
Philippe Galmiche, Paris, France, assignor to Office National d'Etudes et de Recherches Aerospatiales called O.N.E.R.A., Chatillon-sous-Bagneux, France, a society of France
Filed Feb. 21, 1962, Ser. No. 174,666
Claims priority, application France Mar. 14, 1956
19 Claims. (Cl. 117—100)



1. A method of treating an unsintered powder the grains of which have as a principal component a metal of the group consisting of iron, nickel, cobalt, molybdenum, tungsten, and alloys of at least two of said elements together, which method comprises heating, at a temperature at which chromium diffuses into said metal but below the melting points of chromium and said metal, in a non-oxidizing atmosphere, an intimate mixture of said powder with at least one substance capable, at least when heated below said temperature, of giving chromium powder, with a diluting powder of a substance chemically inert with respect to chromium and to said metal and capable of resisting the effects of heating at said temperature while preventing sintering of the grains of the two first mentioned powders, and with a powder of at least one halide capable of forming, at said temperature, within said mixture, vapors of at least one chromium halide from which chromium diffuses into the whole surface of said metal grains, thus chromizing said unsintered powder, and separating said diluting powder from the chromized powder after the heating step.

3,157,533
STARCH STABILIZED CASEIN COATING EMULSIONS
John J. Clancy, Westwood, David W. Lovering, Needham, Richard S. Brenneman, Natick, and Robert C. Wells, Arlington, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 17, 1963, Ser. No. 295,724
24 Claims. (Cl. 117—156)



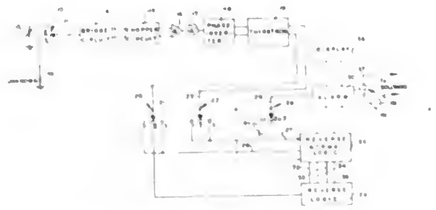
1. A coating composition suitable for high-speed application to a substrate to form on said substrate a bright, opaque film exhibiting good printing characteristics and controlled ink holdout, comprising an oil-in-water emulsion having
(*a*) a continuous phase comprising
(1) an aqueous dispersion of a film-forming binder-matrix material selected from the group consisting of casein, alpha protein, water-dispersible elastomers and mixtures thereof,
(2) starch, and
(3) a particulate additive; and
(*b*) a discontinuous phase comprising globules of a volatile water-immiscible organic liquid having a boiling point above water and present in a globule size range between about 0.5 and about 1.5 microns with no appreciable number exceeding 5 microns; said starch being present in a quantity sufficient to significantly reduce the viscosity of said coating composition under high shear and to stabilize the viscosity of said coating composition over a temperature range from 70° F. to 120° F.

3,157,534
SILICONE COATED ARTICLES AND METHOD
Joseph J. Domicone, Elmira, and Martin E. Nordberg, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Jan. 25, 1960, Ser. No. 4,172
11 Claims. (Cl. 117—212)

8. A method of improving the surface resistance of an electrical component embodying a vitreous silicate member that has been metallized in part which comprises etching the exposed vitreous surface with hydrofluoric acid and thereafter applying a hydrophobic silicone coating to the new surface thus created and curing said coating.

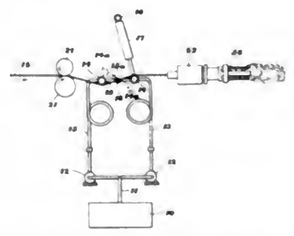
3,157,535
MONITORING APPARATUS FOR AUTOMATIC PRODUCTION OF MICROCIRCUITS
Richard P. Radke, Northridge, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,323
3 Claims. (Cl. 118—7)

1. Means for monitoring vapor depositions wherein a source of material is to be evaporated and deposited as



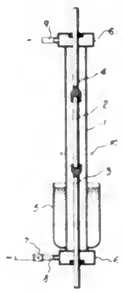
a thin film upon a substrate and wherein means are provided which are capable of ceasing the deposition of the material at a predetermined electrical resistance value of said thin film, comprising:
electrical means for measuring the electrical resistance of the thin film deposited material;
storage means operatively associated with said electrical means;
means for setting into said storage means a predetermined electrical resistance value;
said storage means being connected to said means for ceasing the deposition of said material such that when said electrical means measures the electrical resistance value equal to the value set into said storage means, said storage means operates said means to cease said material from being further deposited and
a display unit to display the electrical resistance values measured by said electrical means, said display unit being electrically connected to said electrical means such that said display unit only displays diminishing electrical values.

3,157,536
APPARATUS FOR APPLYING PLASTICIZER TO FILTER TOW
James F. Caines, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 20, 1962, Ser. No. 211,326
4 Claims. (Cl. 118—225)



1. Apparatus for applying plasticizer to a band of multifilament tow comprising a tube with closed ends having a slot orifice extending along a substantial portion of the length thereof, a conduit entering one end of said tube for conducting plasticizer therein, and a wire mesh positioned over said slot to support the tow out of contact with said slot orifice.

3,157,537
CRITICAL COOLING IN CRUCIBLE FREE DRAWING PROCESS TO PRODUCE LOW MELTING MATERIALS OF HIGHEST PURITY
Herbert Jacob, Burghausen, Upper Bavaria, Germany, assignor to Wacker-Chemie G.m.b.H., Munich, Germany, a corporation of Germany
Filed Jan. 15, 1963, Ser. No. 251,507
Claims priority, application Germany Jan. 24, 1962
2 Claims. (Cl. 148—1.6)



1. Process for drawing a rod of highly pure semiconductor material whose melting point is below 1,000° C., which comprises mounting said rod vertically within a walled enclosure out of contact with the wall of said enclosure, forming a melting zone about the lower end of said rod and thereby rendering molten the portion of said rod which is in said melting zone, pulling the upper end of the rod vertically upwardly within said enclosure to draw out the molten portion of said rod, moving said melting zone vertically in a direction toward the upper end of said rod while continuing to draw said rod vertically upwardly within said enclosure, and continuously passing a gas into said enclosure about the lower end of said rod and thence upwardly along said rod and then out of said enclosure, said gas being at a temperature below 0° C. immediately before it reaches said melting zone.

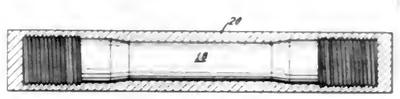
3,157,538
GRAIN ORIENTED SILICON STEEL CONTAINING SELENIUM AND METHOD OF MAKING THE SAME
Mitsuo Imai, Hyogo-ku, Kobe, Tatsuo Nakayama, Takarazuka, Isamu Goto and Hiroshi Shimanaka, Ashiya, Kazuo Tsuruoka, Suma-ku, Kobe, Isao Matoba, Ashiya, Yutaka Ono, Nada-ku, Kobe, and Akio Kamada, Higashi-Nada-ku, Kobe, Japan, assignors to Kawasaki Steel Corporation, Kobe-shi, Japan
Filed Dec. 12, 1960, Ser. No. 75,435
Claims priority, application Japan May 17, 1960
5 Claims. (Cl. 148—112)

1. The process of producing grain oriented silicon steel comprising the steps of adding 0.001 to 0.100 percent by weight of selenium into molten silicon steel so as to form a silicon steel composition consisting essentially of 2 to 4 percent by weight of silicon, 0.001 to 0.100 percent by weight selenium, the balance being iron, for casing an ingot, and hot working said ingot to a hot rolled strip, and subjecting said strip to at least one cold rolling treatment and final high temperature anneal.

3,157,539
METHOD OF PRODUCING SHAPED METALLIC BODIES HAVING A COPPER ALLOY BASE AND A NOBLE METAL OUTER COATING
Manfrid Dreher, Emilienstrasse 15, Pforzheim-Sonnenberg, Baden-Wurttemberg, Germany
No Drawing. Filed Sept. 28, 1961, Ser. No. 141,293
6 Claims. (Cl. 148—127)

1. In a method of producing a shaped metallic body of predetermined configuration, the steps of shaping a heat-hardenable copper alloy in unhardened condition, said copper alloy being selected from the group consisting of copper-beryllium alloys, copper-silicon-manganese alloys and copper-silicon-nickel alloys, so as to form of said copper alloy an unhardened shaped body of said predetermined configuration; applying to at least a portion of the thus-formed unhardened shaped body a coating consisting of a metal selected from the group consisting of gold and gold alloys and adapted to be firmly joined to said shaped copper alloy body by being subjected to a diffusion-causing heat treatment; and subjecting the thus-formed metal coated unhardened copper alloy body to heat-hardening including heating at a temperature within the range of between about 350° C. and 600° C. and at which said heat-hardenable copper alloy will be heat hardened and at which simultaneously diffusion between the same and said metal will take place thereby firmly adhering said metal coating to the thus hardened copper alloy body.

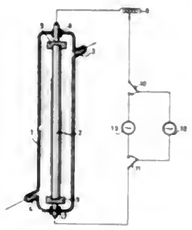
3,157,540
HIGH PRESSURE PROCESS FOR IMPROVING THE MECHANICAL PROPERTIES OF METALS
Alfred R. Bobrowsky, Florham Park, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed May 31, 1960, Ser. No. 32,888
8 Claims. (Cl. 148—131)



1. A process for improving the mechanical properties of metal specimens without substantial dimensional change thereof which comprises the steps of encasing the specimen in a solid non-elastomeric jacket, said jacket having compressibility greater than that of the encased specimen, and subjecting the encased specimen to high hydrostatic pressure between 1,000 and 50,000 atmospheres.

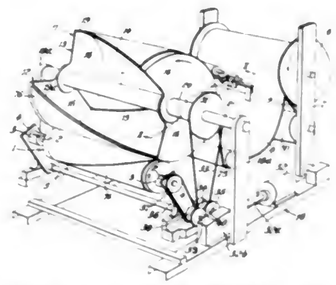
3,157,541
PRECIPITATING HIGHLY PURE COMPACT SILICON CARBIDE UPON CARRIERS
Walter Heywang and Erhard Sirtl, both of Munich, and Rudolf Kappelmeyer, Heufeld-Waldheim, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Sept. 25, 1959, Ser. No. 842,495
Claims priority, application Germany Oct. 23, 1958
15 Claims. (Cl. 148—174)

1. A method of producing highly pure silicon carbide by precipitation thereof from a gaseous phase upon a suitable carrier, comprising causing a mixture of highly pure gaseous silicon compound and hydrocarbon substance to flow past a carrier of pure silicon while maintaining the surface temperature thereof above the formation threshold of silicon carbide (above about 1150° C.) but below the melting point of silicon (about 1430° C.) to cause thermal decomposition of said mixture upon



said heated carrier surface and therewith precipitation thereon of said highly pure silicon carbide.

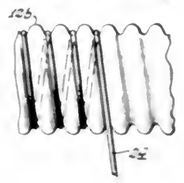
3,157,542
PRODUCTION OF PNEUMATIC TYRES
Henry William Trevaskis, Blackdown, near Leamington Spa, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Aug. 22, 1962, Ser. No. 218,683
Claims priority, application Great Britain, Sept. 1, 1961, 31,458/61
18 Claims. (Cl. 156—133)



1. A method of building a pneumatic tyre from rubber or rubberised fabric sheet material comprising laying one surface of one end portion of a continuous sheet of the material on a pair of supporting members positioned so that one edge of the first of the said members is parallel with and closely adjacent to an edge of the second of said members, severing the material between said edges to leave a first severed portion of said sheet material on a surface of the first member and to leave an end portion of the remainder of said continuous sheet supported on a surface of said second member which is similar to said surface of said first member preparatory to the application of a second severed portion of the sheet by the second member to a former, pressing said first severed portion into contact with the surface of a rotatable former or the surface of a partly-built tyre carried on the former, wrapping the first severed portion around, and transferring the portion to, the former, by simultaneously rotating the former and moving said surface of the first supporting member in a direction substantially tangential to the former surface.

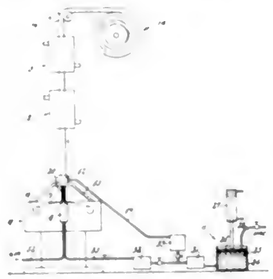
3,157,543
METHOD OF MAKING REINFORCED, HELICALLY CORRUGATED FLEXIBLE HOSE
Fred T. Roberts and Robert E. Roberts, Wilton, Conn., assignors to Fred T. Roberts & Company, Wilton, Conn., a partnership of Connecticut
Filed June 26, 1959, Ser. No. 823,085
11 Claims. (Cl. 156—143)

1. The method of making a reinforced, helically corrugated flexible hose comprising forming a tubular body of a moldable elastomeric material, inserting the body in a mold cavity having helically corrugated walls, applying fluid pressure to the interior of the body and expanding the body into engagement with the corrugated walls of the mold cavity to form the helically corrugated hose, setting the hose in molded shape to form a self-sustaining body, thereafter winding a continuous rein-



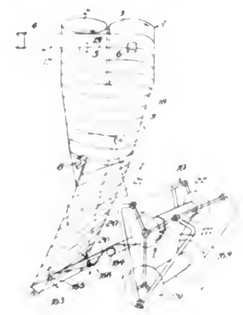
forcement of resilient, rust-proofed wire directly on the exterior of the molded self-sustaining hose body to extend along the corrugations thereof and to lie in predetermined relation to the corrugations and prevent the hose from expanding thereat, and securing at least the ends of the wire to the hose to hold the wound wire in position thereon.

3,157,544
METHOD OF MAKING PLASTIC LINED WOVEN FABRIC HOSE
Frank Lichtey, Saddle River, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed July 11, 1960, Ser. No. 42,160
1 Claim. (Cl. 156—148)



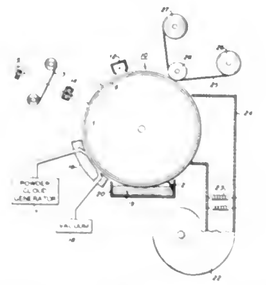
A method of continuously producing an indefinite length of hose, reinforced with tubular fabric, having an inner surface and an outer surface, at least one of which surfaces is covered with a smooth, continuous and fluid-impervious covering of plastic material having a uniform thickness, comprising in combination the steps of providing a vinyl resin plastigel in the form of a thixotropic gel having a viscosity of from 250,000 to 1,000,000 centipoises, continuously interlacing fibrous textile yarns together to form a tubular fabric reinforcement, continuously advancing the said tubular fabric, continuously metering the said plastigel under a pressure of about 500 to 800 p.s.i. to a surface of the advancing tubular fabric that it is desired to cover in the form of a covering of a definite desired thickness, said plastigel interlocking with surface fibers of the said yarns and extending into interstices between the yarns, the interior spaces between the fibers of the yarns being devoid of plastigel, continuously introducing air under a pressure of about 5 to 8 ounces per square inch into the interior of the advancing tubular fabric, heating the tubular fabric to a temperature of from 350° to 475° F. for a period of time of from about 2 to 10 minutes to fuse the plastigel while continuing to advance the tubular fabric, and subsequently cooling the tubular fabric.

3,157,545
METHOD AND APPARATUS FOR MAKING CONTINUOUS LENGTHS OF RUBBERIZED BIAS-CUT FABRIC FROM A TUBULAR LENGTH
Felix Walter Waldron, Little Aston, Streetly, Harold Hurdley Green, Castle Bromwich, and William Douglas Bennett, Weston-Super-Mare, Somerset, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
Filed Mar. 29, 1962, Ser. No. 183,461
Claims priority, application Great Britain, Mar. 30, 1961, 11,628/61
43 Claims. (Cl. 156—184)



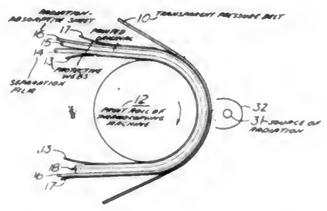
1. A method of producing a tubular length of unvulcanised rubber or rubber covered fabric material comprising continuously helically winding a strip of said material upon a pair of spaced-apart drums rotatable on axes inclined one with respect to the other with the edges of successive turns of said strip joining to form a tubular length, and continuously consolidating the helical joint between adjacent helical turns.

3,157,546
IMAGE TRANSFER
Paul W. Cover, Columbus, Ohio, assignor, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed Apr. 19, 1960, Ser. No. 23,208
3 Claims. (Cl. 156—231)



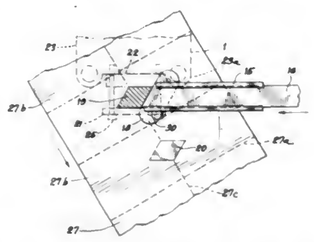
1. The method of transferring an unconsolidated submicron sized xerographic powder image from a temporary support surface to which the powder image is held by electrostatic force comprising applying a low viscosity film forming liquid to said temporary support surface, drawing a doctor blade across said liquid to form a thin layer thereof, causing said layer to dry into a cohesive film and removing said film with all of the powder image encapsulated therein from said temporary support surface.

3,157,547
SEPARATION FILM AND PROCESS
Donald J. Newman, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 17, 1961, Ser. No. 103,454
5 Claims. (Cl. 156—234)



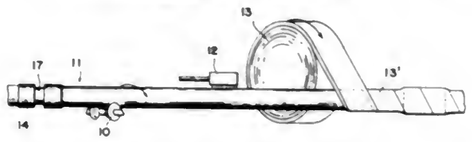
1. Process for the preparation of a clear and sharp projection transparency from a printed original which comprises the steps of (*a*) briefly exposing to intense radiation under moderate pressure a composite of thin flexible sheet materials comprising, in order, a first thin protective web, a radiation-absorptive heater sheet, an original printed on transfer paper, a heat-activatable adhesive separation film, and a second thin protective web, to cause brief moderate heating of said composite and bonding of said film to the printed surface of said original; (*b*) soaking the adherently bonded original and film in aqueous detergent solution to soften the transfer paper surface; (*c*) removing the paper and any residual non-image areas thereof from said film; and (*d*) applying to the exposed roughened print-carrying surface of said film a thin coating of resinous film-forming, vinyl copolymer aqueous latex and drying the coating, to clarify and protect the said surface.

3,157,548
TAG MAKING AND REINFORCING MACHINE AND METHOD
Irvin L. Young, 2435 N. Sheffield Ave., Chicago 14, Ill.
Filed Apr. 13, 1962, Ser. No. 187,383
4 Claims. (Cl. 156—252)



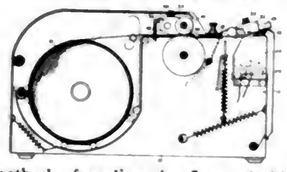
3. The method of making tags and reinforcing-patches applicable to the same, comprising the scoring of a tag material web longitudinally on a center line and transversely at intervals to define tags two-abreast with head portions adjoining the center line, advancing the web in longitudinal direction, running a relatively narrow patch material tape in longitudinal direction in a plane substantially parallel to the tag material web, cutting quadrilateral blanks periodically from the advancing end of the tape, and setting the tape at an angle to the web suitable to locate opposite vertices of said blanks on said center line, the halves of the blanks divided by the latter forming patches for said head portions.

3,157,549
METHODS OF PROTECTING LENGTHS OF METAL PIPE
Clifford F. Morain, Burgett Road, Youngstown, Ohio
Filed Oct. 30, 1961, Ser. No. 148,764
5 Claims. (Cl. 156—253)



5. The method of protecting metal pipe which consists of placing over each portion of discrete lengths of the pipe a protective sleeve, forming a continuous length of the pipe by positioning said discrete lengths with said sleeves so applied thereon in general end-to-end relation, passing said continuous length through pipe coating apparatus to apply a coating to said continuous length, and longitudinally separating said continuous length at points intermediate said sleeves into said discrete lengths each now having a coating layer intermediate its ends and a coating layer overlying said sleeves at its end portions.

3,157,550
METHOD OF PREPARING AND APPLYING SEALING TAPE
Theodore H. Krueger, Shelton, Conn., and Nicholas Campanaro, Newton Centre, Mass., assignors to Better Packages, Incorporated, Shelton, Conn., a corporation of New York
Original application Apr. 15, 1957, Ser. No. 652,953, now Patent No. 3,037,477. Divided and this application Apr. 17, 1962, Ser. No. 188,142
4 Claims. (Cl. 156—320)

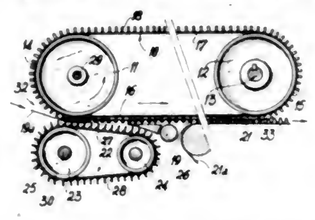


1. The method of sealing the flaps of shipping cases with pieces of laminated tape having water softening adhesive coatings on the surfaces thereof and having reinforcing layers including heat softenable material causing the tape to have greater flexibility when heated, said strips being longer than the flap edges, which consists in feeding the strips intermittently over moistening means for moistening the adhesive coatings, heating the end portions of the strips while stationary prior to application of the strips to the shipping case, manually applying the strips to successive shipping cases, permanently sealing the same thereto by the action of the water softened adhesive, and bending down the heated end portions of the strips and sealing them to the ends of the shipping cases also by the water softened adhesive, the water softened adhesive constituting the sole means for permanently sealing the shipping case flaps.

3,157,551
APPARATUS FOR PRODUCING ASYMMETRICALLY CORRUGATED STRIPS OF CARDBOARD, AND THE LIKE
Enrico Granozio, 1 Viale Corsica, Milan, Italy
Filed Sept. 10, 1958, Ser. No. 760,181
Claims priority, application Italy Sept. 17, 1957
3 Claims. (Cl. 156—471)

1. In an apparatus for corrugating a continuous strip of pliable sheet material, in combination, combined means for transporting a first sheet of pliable sheet material at

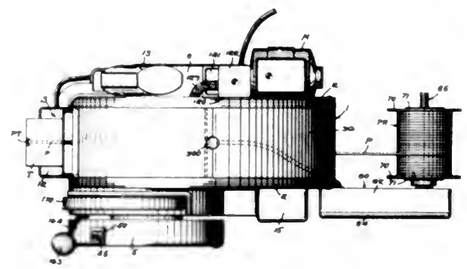
uniform speed in one direction from an entrance end portion toward an exit end portion of said apparatus, for bending said sheet into corrugations and for subsequently supporting said corrugations during further transportation of the corrugated sheet, said means comprising a first roll located in the region of said entrance end portion, a first elongated flexible carrier means partially wound about said roll and adapted to move in said one direction from said entrance to said exit end portion, a plurality of rigid first forming members arranged spaced from each other along said flexible carrier means at a predetermined fixed distance from each other and each fixedly secured in such position at one end portion thereof to said carrier means and projecting with the other free end portion thereof from said carrier means, means cooperating with said fixedly spaced rigid first forming members in the region of said entrance end portion and comprising a second roll mounted for turning movement about an axis substantially parallel to the axis of said first roll and located in the region of said entrance end portion forwardly offset with respect to said first roll, second elongated flexible carrier means partially wound about said second roll and adapted to move in a direction acutely inclined to the direction of movement of said first elon-



gated flexible carrier means, a plurality of rigid second forming members arranged spaced from each other along said second flexible carrier means and each fixedly secured at one end portion thereof to said second carrier means and projecting with the free end portion from said second carrier means, said rigid second forming members in the region of said entrance end portion intermeshing with said rigid first forming members for pressing portions of said pliable first sheet against said free end portions and into the spaces between said fixedly spaced rigid first forming members so as to form said first pliable sheet into a corrugated sheet with the corrugations thereof supported by said free end portions of said fixedly spaced rigid first forming members which transport said corrugated sheet toward said exit end portion during the travel of said carrier means; and feeding means in the region of said exit end portion for feeding a second sheet of pliable sheet material against the crests of said corrugations supported by said end portions of said fixedly spaced rigid first forming members, said second sheet being adapted to be secured to said crests of said corrugations while they are still supported by said fixedly spaced rigid first forming members to thus maintain the spacing and shape of said corrugations.

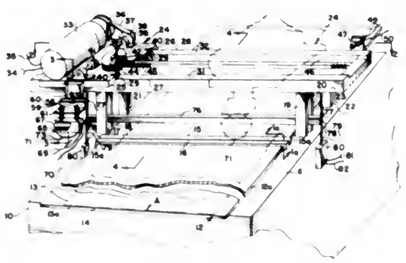
3,157,552
GUMMED TAPE AND TEAR STRAND DISPENSING APPARATUS
Arnold J. Eisenberg, Nashua, N.H., assignor to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Oct. 27, 1959, Ser. No. 849,005
14 Claims. (Cl. 156—436)

1. In a gummed tape dispensing machine having a housing frame with tape roll rotatably supporting means, opposed rolls for feeding the tape, moistening means for the gummed face of the tape, transverse severing means for the tape between the feeding and the moistening means, and operating and control provisions for all said means for effecting successive cycles of tape feed, moistening and severance; in combination therewith a rearward extension of the machine frame, a spindle rotatably mounted on the extension for holding a spooled supply of a tear-strand in tandem relation to the tape roll, guide means for such strand directing it into the tape path rearwardly of the feed rolls for parallel travel with the tape medially of the adhesively conditionable tape face, auxiliary moistener means also rearwardly of the feed



rolls for applying moisture to the strand before face-contacting entry thereof into the tape path en route to the feed rolls, and opposed strand-thickness compensating medial peripheral formations on the feed rolls at the path of the strand for feeding the tape and the strand synchronously at the same linear rate for adhesively laminating the moistened strand to the adjoined face of the tape, said medial peripheral formations comprising a raised zone on one feed roll and on aligned compressibly yielding zone on the other feed roll.

3,157,553
APPARATUS FOR CUTTING LENGTHS OF HEAT-FUSIBLE FABRIC AND SEALING THE CUT EDGES THEREOF
James P. Spallina, Clifton, N.J., assignor to Bartmann & Bixer, Inc., New York, N.Y., a corporation of New York
Filed Oct. 31, 1962, Ser. No. 234,480
9 Claims. (Cl. 156—515)



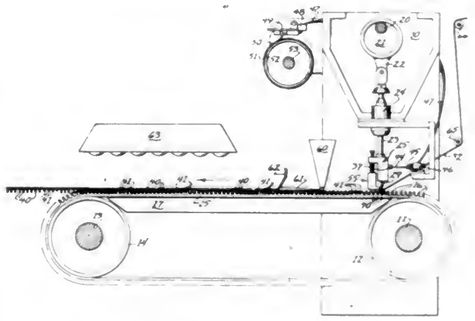
1. In an apparatus for cutting lengths of heat-fusible fabric and sealing the cut edges thereof, a base member, a flat work-supporting board supported by said base member, said board being movable longitudinally to selected operative positions with respect to said base member, an anvil disposed transversely along said board and positioned to receive thereover a web of said fabric operatively supported by said board, said anvil being adjustably movable to selected operative positions with respect to said

board, a cutting member positioned at a level for operative engagement with the top of said anvil when the latter is in an operative position below the cutting member, heating means connected to said cutting member, a track member in fixed relation to said base member and disposed at a level above that of said anvil and extending in parallel relation thereto, a carriage supporting said cutting member and said heating means and movable along said track member, and means for moving said carriage along said track member, whereby said cutting member will operatively engage, cut and seal the portion of said fabric overlying said anvil along a line parallel to the path of travel of said carriage when the anvil is in its said operative position below said cutting member.

3,157,554
APPARATUS FOR MAKING PATTERNED PILE FABRIC

Max M. Beasley, Chattanooga, Tenn., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 10, 1960, Ser. No. 61,766
4 Claims. (Cl. 156—435)

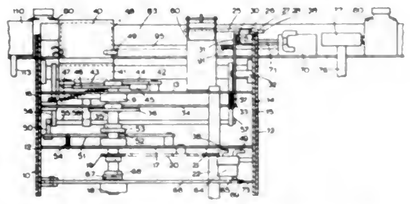


4. An apparatus for making patterned pile fabric comprising a plurality of uniformly and longitudinally spaced transverse slats, means for moving said slats in one longitudinal direction, means for feeding a yarn across said slats in said one direction, a pile forming carrier, means for continuously receprocating said carrier in a direction normal to the plane of movement of said slats between an operative position adjacent said slats and an inoperative position remote from said slats, a guideway in said carrier having an axis parallel to said normal direction, a plunger adapted to carry a portion of said yarn snugly between a pair of adjacent slats, said plunger being received in said guideway for reciprocable axial movement therein, a latch pin, means in said carrier for slidably receiving said latch pin for selectively latching said plunger in said carrier to carry a portion of said yarn to a first deep position between a pair of adjacent slats to form a high loop when said carrier is in operative position and for unlatching said plunger, a keyway formed on one side of said plunger and a key in said carrier extending into said keyway, the axial dimension of said keyway being greater than the axial dimension of said key by a distance equal to the difference in the depth between said first deep position and a second shallow position of said plunger, said key being adapted to engage one end of said keyway to maintain said plunger in said shallow position when said plunger is unlatched and when said carrier is in operative position, and means for coating the yarn portions connecting said loops to form a backing for said pile fabric.

3,157,555
LABELLING

Robert John Newman, Barnet, England, assignor to Newman Labelling Machines Limited, Barnet, England, a British company

Filed Aug. 24, 1962, Ser. No. 219,230
Claims priority, application Great Britain, Aug. 24, 1961, 30,557/61
6 Claims. (Cl. 156—572)



1. In a labelling machine for applying a label to an article while the article is being moved uninterruptedly by a conveyor along a predetermined linear path, the provision of

(*a*) a framework;

(*b*) a label stack support mounted on said framework;

(*c*) a cold suction box mounted on said framework and movable in a linear path at right angles to said predetermined linear path to and away from said label stack support and adapted to pick off the labels in turn;

(*d*) a shaft supported horizontally by said framework and arranged in parallel relationship to said predetermined path;

(*e*) a transfer device in the form of a heated suction box pivotally mounted on said shaft and arranged to reciprocate linearly along said shaft between a first position where the heated suction box comes between the cold suction box and the stack when the cold suction box is away from said label stack support and a second position where the label is applied to the article; and

(*f*) means for partially rotating said heated suction box, when in its first position, in one direction about the shaft towards the cold suction box to receive a label and rotating the heated suction box in the opposite direction to its original angular position in relation to the shaft, and for partially rotating said heated suction box, when in the second position, in one direction about the shaft towards the article whilst said heated suction box is moving together with the article along said path for a predetermined distance and rotating the heated suction box in the opposite direction back to its original angular position in relation to the shaft at the end of said predetermined distance.

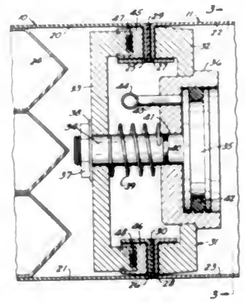
3,157,556
CLAMP

Paul H. Wilson, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, a corporation of Delaware

Original application Mar. 25, 1957, Ser. No. 648,073, now Patent No. 3,070,195, dated Dec. 25, 1962. Divided and this application Feb. 14, 1962, Ser. No. 173,196
4 Claims. (Cl. 156—583)

1. An elongate compact clamp member fitting between, and adapted for use in adherently bonding together, two structural panel members in the assembling of a bonded multiple-panel wall structure as herein described and wherein each panel member comprises two parallel thin sheet metal surface or skin elements separated and supported by an interposed insulative supporting structure, the two elements being oppositely doubly edge folded to

provide extended narrow flat reinforced edges for cooperatively connecting with the corresponding edges of an adjacent panel, said edges being directed toward the interior of the panel and being separated from each other; said clamp member comprising first and second elongate shallow U-beams having continuous opposing flat edge portions forming two pairs of jaw elements; and, com-

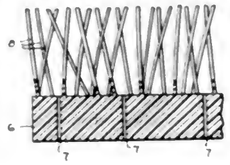


pactly disposed between said beams, multiple pressure-applying means for forcing together the opposing jaw elements to impart substantially uniform high unit pressure across cooperating sets of panel edges therebetween, and means for separating the opposing jaw elements on release of said pressure-applying means.

3,157,557
PLASTIC SOD

Richard Neal Palmer, West Hollywood, Fla. (Star Rte., Ravena, N.Y.)

Filed Apr. 6, 1961, Ser. No. 101,169
1 Claim. (Cl. 161—19)



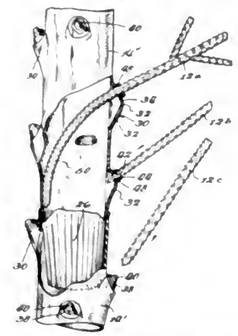
An integrally molded plastic sod of the character described to simulate natural grass comprising an elongated rectangular flat and relatively flexible base of relatively thick plastic material having a multiplicity of relatively closely arranged flexible leaf or blade-like plastic stems molded integral with the base and with the stems being promiscuously arranged and interlaced to simulate natural grass and with the stems having a natural inclination corresponding to natural grass, the stems being spaced apart substantially an equal distance over the entire surface of the base and normally biased to the upstanding position, the stems being slightly arcuate transversely throughout their length corresponding to natural grass leaves, the said base being provided with a multiplicity of drain openings in spaced apart predetermined relation with respect to the area of the base.

3,157,558
ARTIFICIAL FOLIAGE DISPLAY STRUCTURE

Joseph I. Adler, Jr., Glencoe, Ill., assignor to Adler Enterprises, Inc., Glencoe, Ill., a corporation of Illinois

Filed Aug. 13, 1962, Ser. No. 216,397
2 Claims. (Cl. 161—22)

1. An artificial foliage display structure comprising a plurality of branch members each bearing characteristic foliage thereon and a hollow molded trunk member having means for securing said branch members in angular relation thereto along the length thereof, said means comprising a plurality of individual, normally imperforate, hollow dome-shaped formations on the circumference of said trunk member and integral therewith, spaced along the length thereof, and protruding outwardly therefrom,

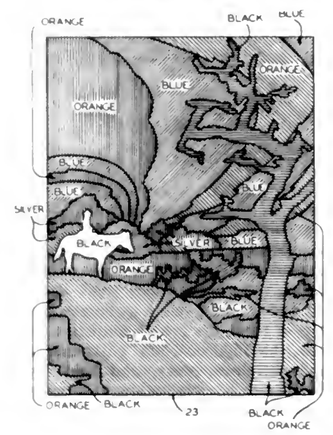


each formation having a puncturable diaphragm at the outer end thereof, said diaphragm being of gradually decreasing thickness in a direction toward said outer end thereof whereby to collapse, upon puncture and to comprise an inwardly depending collar frictionally to receive a branch member therethrough to hold same.

3,157,559
HIGHLIGHTING PICTORIAL REPRESENTATION AND PROCESS OF MAKING SAME

Lawrence D. Menconi, 915 Helen Drive, Melrose Park, Ill., and Harold E. Laser, 1380 Jefferson St., Des Plaines, Ill.

Filed Mar. 24, 1961, Ser. No. 98,033
7 Claims. (Cl. 161—34)



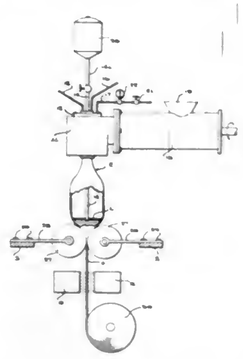
1. A multi-color pictorial representation characterized by highlighting effects, said pictorial representation including a metallic foil covered sheet having colored areas formed thereon of inks having translucent properties so that the sheen of said metallic foil covered sheet appears therethrough, said metallic foil covered sheet being deformable and being deformed subsequent to the emplacement of said colored areas thereon by striations in said metallic foil covered sheet and in said colored areas, all of the striations in a given colored area extending along parallel axes, and all of the striations of contiguous colored areas extending in different directions from the striations of a contiguous colored area.

4. The process of making a multi-color pictorial representation characterized by highlighting effects and having areas of different substantially discrete colors, which comprises making a master having outlined areas corresponding to the aforesaid discrete color areas, cutting a first lined screen along an outline corresponding to one of said outlined areas and placing the same on a corresponding area of said master, cutting similar lined screens along outlines corresponding to the other discrete color areas and placing the same on corresponding areas but making the lines thereof extend in directions different from the screens covering contiguous areas, making an engraving from the master so superimposed with the aforesaid lined screens, reproducing said color areas on a metallic foil, and embossing said foil by said engraving.

3,157,560
METHOD AND APPARATUS FOR MAKING LAMINATE STRUCTURES AND PRODUCT THEREOF

Daniel I. Livingston, Akron, Ohio, and Emil J. Maxion, Park Forest, and Robert B. Mesrobian, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 22, 1960, Ser. No. 77,552
26 Claims. (Cl. 161—106)



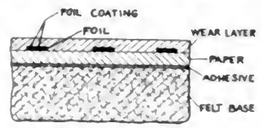
1. An article of manufacture comprising a layer of a polymer of an ethylenically unsaturated organic material having a thickness of 0.1 to 10 mils and in coherent relation thereto an envelope of a substrate material surrounding said layer on both flat sides and the lateral edges thereof and in graft relation thereto, said substrate material selected from the group consisting of hydrocarbon polymers, halohydrocarbon polymers, regenerated cellulose, and cellulose esters, and said layer grafted within said substrate by irradiation of strength equal to a beta radiation source of 0.2 to 5 mev.

3,157,561
HARD SURFACE FLOOR COVERING AND METHOD OF MANUFACTURE

John C. Miller, Allentown, and Edward R. Erb, Jr., Gerville, Pa., assignors to Sandura Company, Jenkintown, Pa., a corporation of Delaware

Filed Jan. 25, 1960, Ser. No. 4,228
10 Claims. (Cl. 161—164)

1. A multiple layer hard surface floor covering comprising as one layer a vinyl resin-saturated paper sheet, a decorative layer at one side of the paper sheet comprising pieces of aluminum foil, and a transparent vinyl resin wear layer superimposed on the decorated side of the sheet, said pieces of aluminum foil carrying an adherent layer of vinyl chloride-acetate-maleic anhydride copolymer and said adherent layer being fused with the saturant in the paper sheet and with the transparent wear layer.



3,157,562
BONDED NON-WOVEN FIBROUS PRODUCTS AND METHODS OF MAKING THEM

Benjamin B. Kine, Levittown, Vincent J. Moser, Abington, and Hugo A. Alps, Huntingdon Valley, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 27, 1959, Ser. No. 829,492
15 Claims. (Cl. 161—170)

1. As an article of manufacture, a soft non-woven fibrous product resistant to dry-cleaning and laundering in which the fibers are distributed in random array, fibers in the product being bonded together by a binder comprising a heat-cured product of a water-insoluble linear copolymer, having a T_1 value not over 20° C., and a molecular weight of 100,000 to 10,000,000, of copolymerizable monoethylenically unsaturated molecules comprising 0.5 to 6% by weight of an N-methylolamide of the formula

$$H_2C=C-(CH_2)_{n-1}H$$
$$\quad\quad\quad

3,157,570
METHODS OF COMBATTING MICROORGANISMS
Walter T. Reichle, Millington, N.J., and Anthony A. Sousa, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 26, 1963, Ser. No. 290,584
5 Claims. (Cl. 167—30)

1. The method of controlling mildew which comprises contacting the causative organism with effective amounts of 1,1-diphenyl-3,3,5,5-tetrachlorophosphonitrile.

3,157,571
PESTICIDES FOR THE PROTECTION OF USEFUL FISHES
Otto Scherer, Heinz Frensch, and Gerhard Stähler, all of Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Feb. 10, 1958, Ser. No. 714,028
Claims priority, application Germany, Nov. 6, 1957, F 24,339
10 Claims. (Cl. 167—31)

10. A method for controlling sea lampreys which comprises adding to a body of water inhabited by said lampreys 3-trifluoromethyl-4-nitrophenol.

3,157,572
PARENTERAL DIURETIC COMPOSITIONS OF 5-ACYLIMINO-4-SUBSTITUTED-Δ^2-1,3,4 - THIADIAZOLIDINE-2-SULFONAMIDES
Roger Bruce Card, Nyack, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Jan. 6, 1961, Ser. No. 80,971
2 Claims. (Cl. 167—51.5)

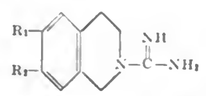
1. A pharmaceutical product adapted for parenteral use comprising a clear solution of from 3.0% to 9.0% by weight of a 5-acylimino-4-substituted-Δ^2-1,3,4-thiadiazoline-2-sulfonamide selected from the group consisting of

5-formylimino-4-methyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-acetylimino-4-methyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-acetylimino-4-ethyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-acetylimino-4-butyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-acetylimino-4-benzyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-acetylimino-4-p-nitrobenzyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-propionylimino-4-methyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-propionylimino-4-ethyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-propionylimino-4-butyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,
5-butyrylimino-4-methyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide and
5-butyrylimino-4-benzyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide,

dissolved in a mixture of polyethylene glycols having an average molecular weight of about 400.

3,157,573
ANTIHYPERTENSIVE 3,4-DIHYDRO-2(1H)-ISOQUINOLINECARBOXAMIDINE
Wilhelm Wenner, Upper Montclair, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,426
13 Claims. (Cl. 167—55)

1. The process of producing a hypotensive effect which comprises administering to a host a compound selected from the group consisting of compounds of the formula



and pharmaceutically acceptable acid addition salts thereof

wherein R_1 and R_2 are individually selected from the group consisting of hydrogen, lower alkoxy, and, taken together, lower alkylenedioxy.

3,157,574
METHOD OF REDUCING CHOLESTEROL LEVELS
Arthur E. Heming, Lafayette Hill, Pa., and Dorsey E. Holtkamp, Lebanon, Ohio, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed May 1, 1959, Ser. No. 810,213
5 Claims. (Cl. 167—65)

1. The method of treating hypercholesterolemia in humans which comprises administering a composition consisting essentially of 3,5,3'-d-triiodothyronine.

3,157,575
COMPOSITIONS AND PROCESS RELATING TO MACROCYTIC ANEMIAS
Adrian Leonard Luhby, 2794 Webb Ave., New York 68, N.Y.
No Drawing. Filed June 16, 1959, Ser. No. 820,596
12 Claims. (Cl. 167—65)

1. A method for the alleviation of megaloblastic macrocytic anemias which comprises administering to a human host afflicted with such an anemia a member of the group consisting of histidine and the non-toxic salts thereof in a dosage of from about 5 to about 33 grams, calculated as free base, daily.

3,157,576
VACCINE FOR ALEUTIAN DISEASE (HYPERGAMMAGLOBULINEMIA) IN MINK
James D. Russell, Madison, Wis., and Edward C. Muehlfelt, Cary, Ill., assignors to American Scientific Laboratories, Inc., a corporation of Wisconsin
No Drawing. Filed May 10, 1962, Ser. No. 193,854
11 Claims. (Cl. 167—78)

1. A composition for use as a vaccine in the treatment of mink, said composition comprising:

(*a*) an aqueous suspension medium,
(*b*) a quantity of finely divided tissues obtained from animals affected with agents causing Aleutian disease in mink,
(*c*) said tissues being suspended in said liquid suspension medium,
(*d*) said Aleutian disease causing agents in said suspended animal tissue having been inactivated.

3,157,577
ANTISERUM AND PLASMA FOR ALEUTIAN DISEASE (HYPERGAMMAGLOBULINEMIA) IN MINK
James D. Russell, Madison, Wis., and Edward C. Muehlfelt, Cary, Orville Howard Grosse, Palatine, and Alexander J. Ott, Cary, Ill., assignors to American Scientific Laboratories, Inc., a corporation of Wisconsin
No Drawing. Filed May 10, 1962, Ser. No. 193,855
11 Claims. (Cl. 167—78)

1. In a process for producing an antiserum for use in the treatment of mink, the steps of:

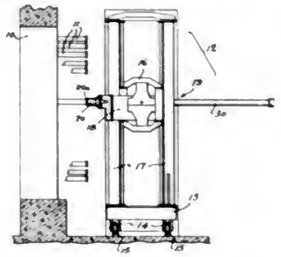
(*a*) homogenizing a suspension of finely divided tissue obtained from animals affected with Aleutian disease in a liquid suspension medium,

(*b*) inoculating a donor animal with said homogenized suspension to produce a condition of hyperimmunization in said animal,
(*c*) withdrawing a quantity of blood from said hyperimmunized donor animal,
(*d*) separating the antiserum from the cellular product in said blood.

3,157,578
PERMANENT DEFORMATION OF HAIR
Charles Zviak, Franconville, Seine-et-Oise, and Jean Rouet, Le Blanc-Mesnil, Seine-et-Oise, France, assignors to Societe anonyme dite: L'Oreal, Paris, France
No Drawing. Filed July 25, 1960, Ser. No. 169,158
Claims priority, application France July 23, 1959
14 Claims. (Cl. 167—87.1)

1. An aqueous solution for use in effecting the permanent deformation of hair and other keratinous material comprising a salt of a mercaptocarboxylic acid selected from the group consisting of thioglycollic acid and thiolacetic acid with at least one organic base selected from the group consisting of guanidine, monoethylamine, monoethanolamine, diethanolamine, monoisopropanolamine and morpholine and a carbonate of said organic base, the pH value of the solution being from 7 to 9.

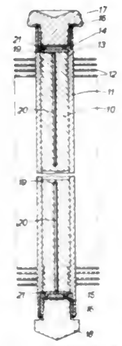
3,157,579
NUCLEAR REACTOR FUELING MACHINE
Frederick S. Hummel, Islington, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation
Filed Mar. 5, 1962, Ser. No. 177,567
8 Claims. (Cl. 176—30)



1. In combination,

(*a*) a nuclear reactor having at least one fuel tube and a sealing plug sealing an end of said tube, said plug having respective inner and outer coaxial members axially movable relative to each other and means locking said plug to said tube end, said locking means being connected to said plug members for operation by said relative movement,
(*b*) and a fueling machine for said reactor, said machine including a ram mechanism comprising
(i) an outer, tubular ram member terminating in an outer snout member for engagement with said outer plug member,
(ii) an inner ram member terminating in an inner snout member for engagement with said inner plug member,
(iii) means mounting said ram members coaxially with each other,
(iv) means for moving said ram mechanism relative to said machine to bring said outer snout member into engagement with said outer plug member and said inner snout member into engagement with said inner plug member,
(v) further locking means mounted on said inner and outer snout members for locking said outer snout member to said outer plug member and for locking said inner snout member to said inner plug member,
(vi) an elongated latch member mounted coaxially between said ram members,
(vii) means for moving said latch member longitudinally relative to said ram members to actuate said further locking means and thereby establish locking engagement between said outer snout and plug members and between said inner snout and plug members,
(viii) and means for moving said inner ram member longitudinally relative to said outer ram member to move said inner plug member relative to said outer plug member and operate the first-mentioned locking means to release the plug from the tube end.

3,157,580
FUEL ELEMENTS FOR NUCLEAR REACTORS
Donald Williams, Beckermet, Cumberland, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Jan. 16, 1961, Ser. No. 82,879
Claims priority, application Great Britain Jan. 19, 1960
4 Claims. (Cl. 176—68)



1. A fuel element comprising a nuclear fuel member enclosed in a protective sheath and having a capsule containing radioactive gas disposed within the fuel member, said capsule being made of a magnesium alloy having a melting temperature below the safe working temperature of the fuel member.

3,157,581
FUEL ELEMENT AND CORE FOR A NEUTRONIC REACTOR
Frank E. Jamerson, 3251 Newgate Road, Birmingham, Mich.
Filed May 4, 1961, Ser. No. 107,869
15 Claims. (Cl. 176—70)
(Granted under Title 35, U.S. Code (1952), sec. 266)



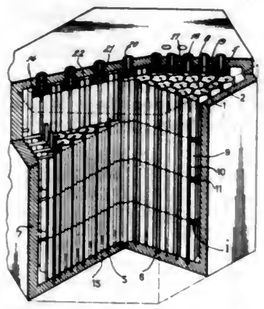
1. An elongated, relatively narrow in width fuel plate for a fuel assembly of a self-sustaining neutronic reactor core in which said fuel plate comprises at least two linearly extending homogeneous fuel containing por-

tions extending through the width of said fuel plate, and a fuel free portion through said plate extending through the width thereof between and continuous with said fuel containing portions in axial alignment therewith along the linear axis wherein the total length of said fuel containing and fuel free portions extend substantially the entire length of said elongated fuel plate.

3,157,582
NUCLEAR REACTOR MODERATOR STRUCTURES

René Babule, Gif-sur-Yvette, Georges Lemesle and Roger Martin, Paris, and Pierre Rougé, Gif-sur-Yvette, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed Oct. 13, 1959, Ser. No. 846,080
Claims priority, application France, Oct. 18, 1958, 776,971
7 Claims. (Cl. 176—84)



1. In a nuclear reactor moderator structure, a plurality of spaced moderator columns, a plurality of regular prismatic superimposed bars of moderator material having lateral planar faces axially disposed in each said columns, a duct in certain of said bars extending axially through at least certain of said columns, keying means connecting two adjacent bars in a column and connecting at least one bar in an adjacent column, said means being disposed along a lateral face of each of the connected bars with its median plane passing through the axes of the connected columns and connecting the bars for free independent axial and radial expansion and contraction of the columns when subjected to radiation without breaking the ducts, and rigid means for mechanically securing the periphery of the plurality of columns.

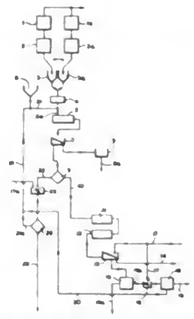
5. In a nuclear reactor moderator structure, a plurality of parallel adjacent columns, a plurality of prismatic axially superimposed bars of moderator material having lateral faces and in direct contact one with the other in each of said columns, a duct extending throughout at least certain of said columns, longitudinal keyways formed in the lateral surfaces of and extending the length of said bars and keymeans disposed in the plane including the axes of the connected columns slidably engaging the lateral walls of the keyways to connect the bars laterally, radial clearances being provided between adjacent columns and between cooperating keymeans and keyways whereby free lateral expansion of the bars is permitted, said keymeans extending the length of said columns and extending in at least three different directions from each of said columns.

7. In a nuclear reactor moderator structure, a plurality of right prismatic parallel adjacent bars of moderator material having a regular hexagonal cross-section, at least three longitudinal keyways formed in the lateral surfaces of each of said bars and extending the length of said bars and having their midplanes directed in three different directions, each including the bar axis, and keymeans disposed in the plane including the axes of the connected bars slidably engaging the lateral walls of the keyways and extending the length of said keyways to connect the bars laterally, radial clearances being provided between adjacent bars and between cooperating keymeans and keyways.

3,157,583
PROCESS FOR THE PRODUCTION OF FERMENTED MALT BEVERAGES

Morton William Coutts, 464 Remuera Road, Remuera, Auckland, New Zealand

Filed Nov. 13, 1961, Ser. No. 151,615
Claims priority, application New Zealand, Nov. 14, 1960, 127,825; Sept. 27, 1961, 130,336
2 Claims. (Cl. 195—14)



1. In a method for the production of a clarified malt extract, the steps of germinating barley to optimum point for enzyme formation, making a slurry of said germinated barley by disintegrating said germinated barley and adding water thereto, substantially separating the starch from the said slurry to give an effluent rich in barley enzymes and protein, said barley enzymes including protein conversion and diastatic enzymes, activating the said protein conversion enzymes in the substantially starch-free effluent, clarifying the said effluent to yield a clear effluent rich in starch conversion enzymes admixed with amino acids and soluble proteins, remixing the clarified effluent with said separated starch, and converting the starch to soluble sugars by enzymic action thereby obtaining a malt extract of soluble sugars admixed with amino acids and soluble protein.

3,157,584
METHOD FOR THE PREPARATION OF FRANGULIN

Charles Pouchet, % Droit et Pharmacie, 5 bis Rue de Berri, Paris 8, France

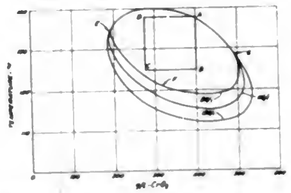
No Drawing. Filed Apr. 13, 1961, Ser. No. 102,654
Claims priority, application France, Apr. 15, 1960, 825,286, Patent 1,263,282; Jan. 10, 1961, 849,466
8 Claims. (Cl. 195—65)

1. A process for the preparation of 1,3,8-trihydroxy-6-methylanthraquinone-1-rhamnoside by selective extraction of Rhamnaceae which comprises subjecting said Rhamnaceae to enzymatic autohydrolysis in the presence of water and an acidity-neutralizing, insoluble non-toxic carbonate added in a proportion of about 10% by weight of the Rhamnaceae, filtering the resulting mixtures to recover a solid residue, washing said residue with cold water and rinsing said cold water-washed residue with boiling water, drying the resultant washed residual material, extracting said residual material with a hot solvent composed of a mixture of ethyl acetate and ethyl alcohol having a volume ratio in the range of from about 1:1 to about 3:1, respectively, to provide an extract containing refined frangulin, and recovering essentially pure frangulin from said extract.

3,157,585
CHROMIUM PLATING

Rollie P. Durham, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 18, 1959, Ser. No. 860,436
5 Claims. (Cl. 204—41)



1. A method of forming a multi-layer decorative chromium coating which comprises electrodepositing a nickel coating onto the surface of a metal part, electrodepositing a first bright decorative chromium layer onto the surface of said part under an average cathode current density of approximately 90 amperes per square foot to 140 amperes per square foot from a bath at a temperature of approximately 95° F. to 115° F. containing approximately 20 ounces per gallon to 35 ounces per gallon CrO_3 and about .20 ounce per gallon (avdp.) to .35 ounce per gallon (avdp.) H_2SO_4, and then, without intervening abrasive treatment of said chromium plated surface and under an average cathode current density of approximately 130 amperes per square foot to 300 amperes per square foot, electrodepositing onto said first layer a second decorative chromium layer which has a denser crack pattern than said first layer using a bath at a temperature of approximately 120° F. to 150° F. containing about 40 ounces per gallon to 70 ounces per gallon CrO_3 and .45 ounce per gallon (avdp.) to .70 ounce per gallon (avdp.) H_2SO_4.

3,157,586
COPPER PYROPHOSPHATE ELECTROPLATING BATHS

Frederick Herbert Wells, Erdington, and Derek Martin Lyde, Stourbridge, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, Birmingham, Warwickshire, England, a British company

No Drawing. Filed July 3, 1962, Ser. No. 207,421
Claims priority, application Great Britain July 14, 1961
21 Claims. (Cl. 204—52)

1. An aqueous solution for electroplating metal substrates with copper which contains dissolved therein: a copper salt; an alkali metal pyrophosphate in an amount at least sufficient to form the complex $X_6Cu(P_2O_7)_2$, wherein X represents an alkali metal; and from 0.5 part per million to saturation of a brightness additive which is selected from the group consisting of 2-mercaptothiazole and 2-mercaptobenzthiazole in which the benzene moiety may be substituted with at least one alkyl group having 1 to 4 carbon atoms.

3,157,587
PREPARATION OF BARRETTERS

Howard L. Martin, Safety Harbor, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed May 17, 1962, Ser. No. 195,539
8 Claims. (Cl. 204—228)

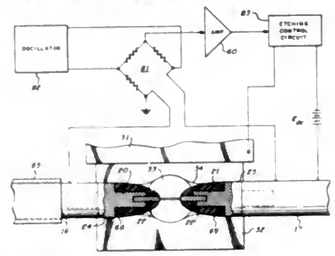
1. Apparatus for use in electrolytically etching a power absorbing resistance wire comprising,

means for supporting two conductive members in spaced apart relationship,

means for supporting an electrolyte in a region between said conductive members,

means connected to said spaced conductive members comprising the arms of known resistance values of a resistance measuring bridge circuit,

means for connecting a source of direct current between



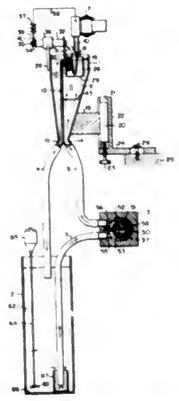
one of said spaced conductors and said electrolyte supporting means, and

means responsive to an output signal of said bridge circuit to disconnect said direct current source only when said output signal is of a predetermined value.

3,157,588
ELECTROPHORETIC COATING APPARATUS

Edward D. Parent, Jr., Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 14, 1960, Ser. No. 75,834
2 Claims. (Cl. 204—299)



1. In an electrophoretic coating apparatus, the combination comprising: an open-topped container for a coating suspension, said container adapted to receive articles of work for electrophoretic coating, said container being formed with upwardly diverging walls; a partition dividing said container into a coating chamber and an overflow chamber, said coating chamber having an inlet and said overflow chamber having an outlet, the upper edge of said partition forming a horizontally extending weir adjacent the top thereof for overflow of suspension from said coating chamber into said overflow chamber for maintenance of a suspension surface of a predetermined level in said coating chamber, the horizontal cross sectional area of said coating chamber increasing continuously from the bottom thereof towards the top for the major portion of its length, means for suspending an article to be electrophoretically coated below the top of the suspension surface of said coating chamber; means for imposing an electric potential upon said suspension between said article and an electrode; means for applying to said article an electric potential which is opposite to

that of said suspension, whereby particles in said suspension will migrate toward said article and coat thereupon; a reservoir disposed in cyclic flow relation with said container; first conduit means connecting said reservoir to the inlet of said coating chamber; second conduit means connecting the outlet of said overflow chamber to said reservoir; pump means disposed in said first conduit between said reservoir and the inlet to said coating chamber, whereby coating suspension will be pumped from said reservoir into said coating chamber through said first conduit and will flow over said weir into said overflow chamber into said second conduit means and back into said reservoir, means to agitate said suspension in said reservoir.

3,157,589
PROCESS FOR UPGRADING PETROLEUM NAPHTHAS

John W. Scott, Jr., Ross, Calif., and Frank M. Hazard, Jr., Ras Tanura, Saudi Arabia, assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed May 12, 1961, Ser. No. 112,742
6 Claims. (Cl. 208—80)

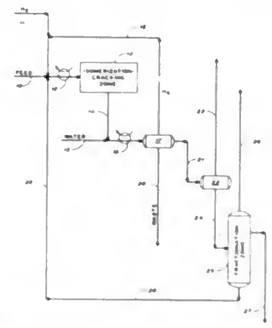
1. A process for upgrading a petroleum distillate boiling in the range of from about 175 to 850° F. and having a boiling range of at least 100° F., which comprises fractionating said distillate to separate the same into at least two feed fractions each having an appreciable boiling range; separately passing each of said feed fractions, along with at least 1500 s.c.f. of hydrogen per barrel thereof, in contact with a catalyst comprising at least one hydrogenating-dehydrogenating component and an active cracking catalyst support in an isomerization-cracking zone for a given on-stream period, said zone being maintained at a pressure of at least 600 p.s.i.g. and at an average temperature between about 400 and 900° F., and recovering from the effluent from said isomerization-cracking zone, as a product of the conversion reaction occurring therein, a product fraction boiling essentially below the initial boiling point of the particular feed fraction employed; said conversion reaction being accompanied by a net consumption of from about 800 to 3000 s.c.f. of hydrogen per barrel of feed converted to synthetic product in said zone.

3,157,590
HYDROCARBON CONVERSION PROCESS WITH A NITROGEN CONTAINING DISTILLATE FEED STOCK

John W. Scott, Jr., Ross, Calif., Lyman S. Stanton, Bountiful, Utah, and Harold F. Mason, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed May 11, 1962, Ser. No. 199,552
3 Claims. (Cl. 208—111)

1. In an isomerization-cracking process wherein a nitrogen-containing petroleum distillate, containing less than 500 p.p.m. nitrogen and boiling below about 750° F., is converted to products including a gasoline having a relatively high octane rating and having a boiling range below the feed boiling range, by passage of fresh distillate, unconverted cycle stock, recycle gas, and a fresh gas containing at least 1500 s.c.f. of hydrogen per barrel of total feed into contact in an isomerization-cracking zone at temperatures above about 500° F., pressures of at least 600 p.s.i.g. and a space velocity of about 0.3 to 5.0 LHSV with a catalyst comprising at least one group VIII hydrogenating-dehydrogenating component associated with an active cracking support, the improvement which comprises minimizing catalyst deactivation, minimized methane production and increasing per-pass conversions by maintaining the reaction temperature in said isomerization-cracking zone below 750° F. during the major portion of the catalyst on-stream period including the initial



portion of said period, recovering from the effluent from said zone an ammonia-free, hydrogen-rich gas stream, and recycling said gas stream to said zone.

3,157,591
SILICA-ALUMINA-MAGNESIA CATALYST AND METHOD OF CONVERTING HYDROCARBONS

Richard Joseph De Feo, Baton Rouge, La., and Elroy M. Gladrow, Edison Township, Middlesex County, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,970
11 Claims. (Cl. 208—120)

6. A method of cracking higher boiling hydrocarbons to produce increased yields of naphtha and heating oil and decreased yields of gas, coke and 650° F.+ material which comprises contacting high boiling hydrocarbons at a conversion temperature with a silica-alumina-magnesia catalyst containing between about 20 and 40 wt. percent Al_2O_3 and between about 2 and 10 wt. percent MgO and the rest SiO_2 made by mixing silica hydrosol made by treating an alkali metal silicate solution with a cation exchange material with aluminum alcoholate to form a slurry of silica and alumina, adding a magnesium compound, adjusting the pH of said slurry to about 7.0 and then gelling the mixture, aging the gelled material for about 24 to 72 hours at room temperature and then drying the aged mixture.

3,157,592
SELECTIVE SEPARATION OF AROMATICS FROM PARAFFINS

Ernst Fuerst, Neustadt an der Weinstrasse, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

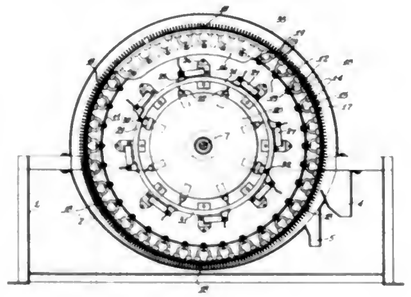
No Drawing. Filed Apr. 24, 1962, Ser. No. 189,685
Claims priority, application Germany, Apr. 27, 1961, B 62,293
2 Claims. (Cl. 208—324)

1. A process for treating a hydrocarbon mixture to selectively separate the aromatic and paraffinic components thereof which comprises mixing a mixture of aromatics and paraffinic hydrocarbons with a selective solvent from the group consisting of N-hydroxyethyl pyrrolidone, N-hydroxy-n-propyl pyrrolidone and N-hydroxyisopropyl pyrrolidone and 5–25% water, based on said selective solvent, allowing the resultant mixture to separate into two phases to obtain a raffinate and an extract, the latter being rich in the aromatic hydrocarbon component of said hydrocarbon mixture.

3,157,593
MAGNETIC APPARATUS

Alexander S. Watson, P.O. Box 34, Dunham, Quebec, Canada

Filed Oct. 21, 1960, Ser. No. 64,159
2 Claims. (Cl. 209—219)



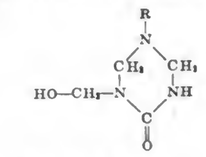
1. Magnetic ore sorting apparatus comprising an annular member having its axis horizontally disposed, a movable disc supporting said member for rotation about said axis, a plastic composition ring fixed to said member in radially outward relation thereto, a plurality of horseshoe-shaped magnetizable members embedded in said ring, each said magnetizable member having a winding on the legs thereof embedded in said ring, electrodes embedded in said ring and electrically connected to said windings, said legs of said magnetizable members having end portions projecting radially outwardly from said ring, said end portions being arranged in a plurality of circumferentially extending rows and having ends disposed in a substantially common circular plane, means for alternately magnetizing and de-magnetizing said magnetizable members, comprising a stationary disc having a pair of contact rings mounted on the periphery thereof, a plurality of contact members fixed to said movable disc and engaging said contact rings, each of said contact rings having a plurality of disconnected sections, said electrodes and said contact members being electrically connected, and electrical supply leads connected to one of said contact ring sections of each said pair, and an ore-receiving pan mounted below said plastic composition ring, and successively receiving a plurality of said end portions for sweeping of said pan by said end portions in response to rotation of said annular member.

3,157,594
METHOD OF FLOCCULATION

Ashley D. Nevers, King of Prussia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 6, 1963, Ser. No. 306,989
8 Claims. (Cl. 210—52)

1. In the process of treating turbid water, the improvement which comprises adding to said water a flocculating amount of a gelatinized starch derivative obtained by reacting 1 to 10 parts by weight of starch with 1 part by weight of a methylol triazone of structure

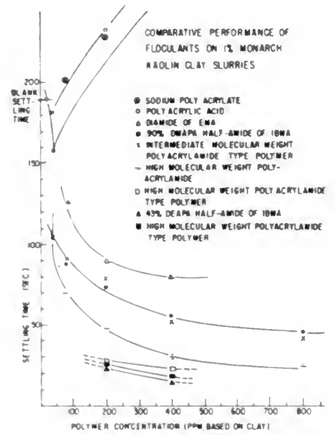


where R is a lower alkyl group.

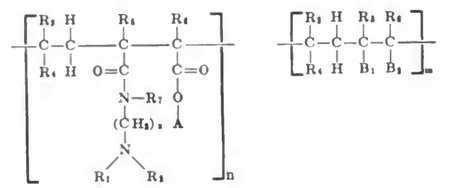
3,157,595
CLARIFICATION OF WATER WITH COPOLYMERS CONTAINING HALF-AMIDES OF OLEFINIC ANHYDRIDES

John H. Johnson, Ross M. Hedrick, and Joseph E. Fields, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

Filed Sept. 16, 1959, Ser. No. 840,284
30 Claims. (Cl. 210—54)

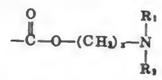


2. A method of treating water containing suspended particles to promote the settling of said particles comprising adding to said water polymers of the formula

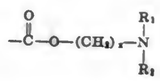


wherein $m+n$ is an integer in the range of about 10 to about 10,000 with 25 to 90% being n's and the balance m's, A is selected from the class consisting of hydrogen, alkali metals and the ammonium radical; B_1 and B_2 are selected from the class consisting of an anhydride group when taken together and when taken separately carboxyl, ammonium carboxylate, alkali metal carboxylate, alkyl carboxylate esters having not more than 4 carbon atoms in the alkyl groups, amide and alkyl-substituted amide radicals having not more than 4 carbon atoms in the alkyl groups; x is an integer from 2 to 6; R_1 and R_2 are selected from the class consisting of the 5 to 6 membered heterocyclic radicals morpholino, piperidino, pyrrolino, pyrrolidino, pyrazoline and mixtures thereof when taken together and when taken separately alkyl radicals having not more than 4 carbon atoms, cyclohexyl radicals and phenyl radicals having not more than 2 methyl substituents, provided that not more than one of R_1 and R_2 is aromatic; R_3 and R_4 are selected from the group consisting of hydrogen, halogens, alkyl radicals having not more than 4 carbon atoms, alkoxy radicals having not more than 4 carbon atoms, carboxy radicals, amide radicals, amino radicals,

alkanoate radicals having not more than 4 carbon atoms, alkyl carboxylate esters having not more than 4 carbon atoms in the alkyl groups, phenyl radicals having not more than 2 halo and 2 methyl substituents and

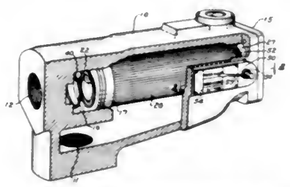


radicals where x, R_1 and R_2 are as defined hereinabove, provided that not more than one of R_3 and R_4 is an aromatic, alkoxy, carboxy, amide, amino, alkanoate, alkyl carboxylate ester and a



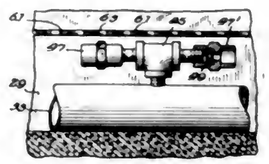
radicals; R_5 and R_6 are selected from the class consisting of hydrogen, halogen, phenyl and alkyl radicals having not more than 4 carbon atoms, provided that not more than one of R_5 and R_6 is a phenyl radical; and, R_7 is selected from the class consisting of hydrogen and alkyl radicals having not more than 4 carbon atoms; the amount of said polymers which is added being such as to produce in said water a concentration not in excess of about 0.1% by weight basis solids but at least a sufficient amount to promote the settling of suspended particles.

3,157,596
OIL FILTERS
Nils O. Rosaen, Detroit, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Dec. 8, 1960, Ser. No. 74,667
4 Claims. (Cl. 210—90)



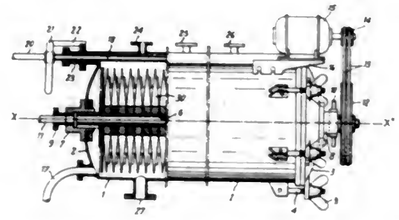
1. In a fluid filtering device comprising a housing having a fluid inlet and a fluid outlet, a movable filter cartridge positioned within said housing between said inlet and said outlet and having one end thereof abutting an end wall of said housing, spring biasing means urging said filter cartridge against said end wall, said filter cartridge movable whenever the pressure differential between said inlet and said outlet exceeds the strength of said biasing means, means for indicating movement of said filter cartridge comprising an indicating arm rotatably mounted exteriorly of said housing and carried by a shaft extending through a wall of said housing, a second arm carried by the inner end of said shaft with the end of said second arm engaging said filter cartridge, suitable indicia carried by said housing and correlated with respect to said indicator arm to convey the condition of said filter cartridge element, means for biasing said indicating means to follow at all times the movement of said filter cartridge including spring biasing means mounted about said shaft with one end of said biasing means anchored to the housing and the other end yieldingly bearing against said indicating arm.

3,157,597
CONTROLLED-FLOW-INLET SWIMMING POOL SYSTEM
Bernard T. Burba, Clarendon Hills, Ill., assignor to Recreation Supply Company, Arlington Heights, Ill., a corporation of Illinois
Filed Mar. 14, 1961, Ser. No. 107,607
6 Claims. (Cl. 210—137)



4. A swimming pool supply system for supplying water to pool structures having variable depth which comprises a supply manifold extending substantially longitudinally of the pool and substantially at the bottom region thereof for supplying inlet water for replacement and recirculation, the manifold pressure being adapted to change at the supply and at varying distances along the manifold therefrom, a plurality of controlled-flow inlet devices spaced along the manifold to supply inlet water to the pool, each controlled-flow inlet device having an orifice of variable size determined by instantaneous manifold pressure and being of such capacity relative to each other as to maintain a selected inlet flow volume at different pool regions along the manifold which is proportioned to the reservoir depth at the region of each regulator, means to receive and filter overflow water from the reservoir, and means to recirculate the filtered overflow with fresh water replacement to the manifold for supplying the pool.

3,157,598
SELF-CLEARING FILTERS
Gérard Rebiscoul, 20 Rue Charles Chefson, Bois-Colombes, France
Filed Aug. 6, 1962, Ser. No. 214,583
5 Claims. (Cl. 210—327)



1. A filtering apparatus comprising a cylindrical fluid-tight container, a series of filtering elements disposed on a central shaft coaxial with the said cylindrical container, the said central shaft being hollow and adapted to be rotated by any suitable means, the said filtering elements being constituted by two filtering walls, a semi-rigid internal frame supporting said filtering walls of each filter element, a central ring strung on the said hollow central shaft and connected to said frame, the said central ring communicating with apertures provided along the entire length of the said central shaft, one of the two

filtering walls having a plurality of deflector devices disposed angularly spaced from each other obliquely in relation to the radii of the filtering elements and projecting from the outer surface thereof, so that when the hollow central shaft is rotated, thus driving all the filtering elements, for the clearing operation, the deflector devices effect in the portion of the filtering elements which turns in the liquid on the one hand a deflection of the liquid in the direction of the central portion of the filtering elements and on the other hand a bending of the said filtering elements in a zone comprised between the bottom end of the deflectors and the central ring of the said filtering elements.

3,157,599
DRILLING FLUID
Walter E. Gloor, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 7, 1961, Ser. No. 122,422
10 Claims. (Cl. 252—8.5)

1. A drilling fluid comprising an aqueous suspension of finely divided, solid, inorganic material and as a water-loss preventive an agent prepared from divinyl ether and maleic anhydride in the molar ratio of about 1:2 and selected from the group consisting of divinyl ether-maleic anhydride copolymers, alkali metal, ammonium, half amide-half ammonium, and alkyl amine salts of divinyl ether-maleic anhydride copolymers, water-soluble partial esters of lower monohydroxy aliphatic alcohols with divinyl ether-maleic anhydride copolymers and water-soluble partial esters of alkanol amines with divinyl ether-maleic anhydride copolymers.

3,157,600
SYNTHETIC ESTER LUBRICANT CONTAINING A POLYESTER OF CHLORENDIC ACID
Howard J. Matson, Harvey, Ill., assignor, by mesne assignments, to Sinclair Research Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 6, 1961, Ser. No. 101,086
4 Claims. (Cl. 252—54.6)

1. A lubricant composition consisting essentially of a synthetic ester lubricant, said synthetic ester lubricant being of an alkanol of 4 to 12 carbon atoms and an alkane carboxylic acid of 4 to 12 carbon atoms and a minor amount sufficient to improve load carrying capacities of said fluid of a base oil-compatible polyester reaction product of a material selected from the group consisting of chlorendic acid and chlorendic acid ester wherein said ester group is a lower alkyl radical of 1 to 5 carbon atoms, and a polyglycol having the structural formula:

$$H[O \cdot R]_n OH$$

wherein R is a divalent aliphatic hydrocarbon radical of 3 to 12 carbon atoms and n=2 to 50, the molar ratio of said selected material to said polyglycol reacted being about 0.5 to 2.0:1.

3,157,601
METHOD FOR THE PREPARATION OF METAL OXIDE SOLS WITH TWO OXIDE CONSTITUENTS
Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 7, 1960, Ser. No. 41,241
5 Claims. (Cl. 252—301.1)

1. A process for the preparation of an aqueous sol of particles consisting of uranous oxide coated with thoria, which comprises the steps of preparing a solution of uranous chloride and thorium chloride, adding a quantity of urea at least equal to the amount stoichiometrically required to effect hydrolysis, heating the solution to about 100° C. for about 40 hours, interrupting the hydrolysis by cooling to room temperature at the point where the pH rises above 3 and deposition shifts from deposition of thoria to deposition of urania and continuing the hydrolysis until the pH rises to about 5, removing the electrolyte contaminants by decanting the supernatant liquid from the particles, redispersing the particles and passing the resulting sol through an ion exchange resin bed and recovering the product sol.

3. A process for preparing a sol of particles of thoria coated with uranic oxide in which the uranic oxide is present in an amount up to about 10% which comprises the steps of preparing an aqueous solution of thorium and uranyl sols, adjusting the pH of the solution to about 2, refluxing the solution while adding a hydrolytic agent capable of releasing ammonia selected from the group consisting of ammonium carbamate, potassium cyanate, hexamethylene tetramine, acetamide, formamide and urea, in a quantity at least equal to the stoichiometric amount required to effect hydrolysis and increase the pH to about 4.5 to 5, removing the electrolyte contaminants by centrifuging the sol and redispersing the particles, passing the redispersed sols through an ion exchange resin bed and recovering the product thoria-uranic oxide sol.

3,157,602
PROCESS FOR PREPARING PYROSILICATE PHOSPHORS
Richard C. Ropp, Towanda, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Filed Dec. 28, 1961, Ser. No. 162,993
2 Claims. (Cl. 252—301.6)

1. In the process of preparing phosphors of the class $M_2NSi_2O_7$, where M is at least one alkaline earth metal and N is at least one member selected from the group consisting of magnesium, zinc and cadmium, the steps which comprise: mixing together ingredients necessary to form a phosphor of said class and including in said phosphor mixture 0.01 to 0.30 mole of fluoride flux per mole of pyrosilicate; firing said mixture in a first firing and then admixing the product of said first firing with 0.5 to 12% by weight chloride flux and 0.5 to 10% by weight fluoride flux; firing the admixture and recovering a phosphor of said class $M_2NSi_2O_7$, said fluxes having at least one cation selected from the group consisting of alkaline earth metals, ammonia, magnesium, cadmium, zinc, aluminum and lead.

3,157,603
PROCESS FOR PREPARING CALCIUM HALOPHOSPHATE PHOSPHORS
Richard W. Mooney and Michael A. Ala, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Filed Mar. 29, 1962, Ser. No. 183,410
2 Claims. (Cl. 252—301.6)

2. In the manufacture of a calcium halophosphate phosphor the steps which comprise: mixing ingredients necessary to form said calcium halophosphate phosphor together with for every 3 moles PO_4, 0.01 to 0.1 mole $Cd_2Sb_2O_6(X)$, where X is at least one member selected from the group consisting of O, OH and F; firing said mixture to form a calcium halophosphate phosphor containing cadmium and antimony.

3,157,604
POLYMERIZATION INITIATORS
Charles W. Strobel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 24, 1960, Ser. No. 64,278
10 Claims. (Cl. 252—431)

1. A method of preparing a polymerization initiator composition which comprises contacting lithium with a

monomer selected from the group consisting of conjugated dienes having 4 to 12 carbon atoms per molecule and vinylidene-substituted benzene and naphthalene compounds having other hydrocarbon substituents totaling up to 12 carbon atoms in a medium of ether having the formula R—O—R wherein each R is an alkyl group containing from 2 to 12 carbon atoms in the presence of about 0.005 to 2 moles per mole of said monomer of a promoter selected from the group consisting of polycyclic aromatic compounds and polyaryl-substituted ethylenes containing from 2 to 4 aryl groups selected from the group consisting of phenyl and naphthyl at about —40 to 170° F. for at least about 10 minutes, the amount of said ether being about 1 to 20 moles per mole of said monomer, and the ratio of lithium to monomer being at least about 1 gram atom of lithium per mole of monomer.

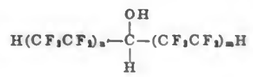
3,157,605

PROCESS FOR PURIFYING OMEGA-HYDROPERFLUOROALKANOLS

Charles Depew Ver Nooy III, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 18, 1960, Ser. No. 50,325
3 Claims. (Cl. 260—633)

1. A process for reducing the bis-(omega-hydroperfluoroalkyl)carbinol content of mixtures of said bis-carbinols and omega-hydroperfluoroalkyl carbinols, said bis-carbinol having the formula



wherein n' and m are integers having a value of from 1 to 5, and said omega-hydroperfluoroalkyl carbinol having the formula

$$H(CF_2CF_2)_nCH_2OH$$

wherein n is an integer having a value of from 2 to 10, which process comprises heating said mixtures to within the reaction temperature range of about 80° C. to 160° C. with aqueous caustic alkali taken from the group consisting of sodium hydroxide and potassium hydroxide, said aqueous caustic alkali having a concentration of from 10 to 30 parts of said alkali in 100 parts of water and being present in the mixture in an amount sufficient to neutralize completely the fluorine ions which would be formed if all the fluorine in the bis-(omega-hydroperfluoroalkyl)carbinol were split off as HF, allowing the reaction mixture to form an aqueous alkali layer and an oily layer which are subsequently separated, and obtaining from the oily layer said omega-hydroperfluoroalkyl carbinol.

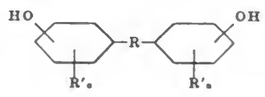
3,157,606

FATTY OIL MODIFIED POLYCARBONATE RESINS AND PROCESSES FOR PRODUCING SAME

Rudolph D. Deanin, West Hartford, Conn., and Ann V. Pinter, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 12, 1961, Ser. No. 109,489
20 Claims. (Cl. 260—18)

1. A polycarbonate resin produced by reacting (1) an ester forming derivative of carbonic acid selected from the group consisting of phosgene and a carbonic acid diester, and (2) the reaction product obtained by heating a mixture of from about 10 to about 90 weight percent of a fatty oil and from about 90 to about 10 weight percent of a bisphenol selected from the group consisting of bisphenols having the structure



in which R is a member of the group consisting of the divalent alkane and saturated alicyclic radicals and the divalent aryl and aralkyl radicals containing only aromatic unsaturation, R′ is a monovalent alkane radical and n is an integer from 0 to 4, and the derivatives of those bisphenols which contain halogen attached to carbon in an aromatic ring, wherein at least 0.1 mol of said ester forming derivative of carbonic acid is employed per mol of the bisphenol.

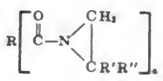
3,157,607

CURABLE COMPOSITION COMPRISING AN ADMIXTURE OF POLYESTER POLYMER, A POLYMERIC POLYMER, AND A POLYALKYLENEAMIDE POLYMER

Murray I. Bassin, Los Angeles, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 7, 1960, Ser. No. 952
1 Claim. (Cl. 260—22)

A process which comprises curing at a temperature below 100° C. an admixture of an aliphatically saturated polyester polymer containing a plurality of active hydrogens selected from the group consisting of hydroxyl groups and carboxyl groups and having a molecular weight between about 1000 and about 5000 prepared from a mixture containing at least one compound of the group consisting of an alcohol and an acid having at least three functional groups, and a liquid aliphatic polymer containing at least two amine groups prepared from a polyene fatty acid and a polyfunctional amine and having a molecular weight between about 500 and about 15,000 with a polyalkylenamide represented by the following formula:



wherein R is an n-valent organic radical having 4 to about 55 carbon atoms, and R′ and R″ are selected from the group consisting of hydrogen, a substituted alkyl radical and a non-substituted alkyl radical, and n is 2 to 4, to produce a cured product.

3,157,608

EMULSION POLYMERIZATION

Ralph Emerson McNay, Baytown, Tex., assignor, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed July 13, 1960, Ser. No. 42,475
8 Claims. (Cl. 260—27)

1. A method of preparing a synthetic rubber polymer by the emulsion polymerization of a member selected from the group consisting of a butadiene-1,3 and a butadiene-1,3 with at least one different ethylenic compound copolymerizable therewith, which comprises: conducting the emulsion polymerization in contact with a hydrocarbon soluble extract of the plant Grindelia obtained by extracting said plant with a hydrocarbon, said extract being in the form of a salt selected from the group consisting of the alkali metal and ammonium salt, and recovering the polymer thus formed.

3,157,609

TREATMENT OF SYNTHETIC RUBBER

Ralph E. McNay and William R. Peterson, Baytown, Tex., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,116
5 Claims. (Cl. 260—27)

1. In the processing of a solid synthetic rubber polymer, the method of imparting improved processing characteristics to said polymer which comprises: adding to the polymer as a processing aid about 1.0–30% by weight of the polymer of a combination consisting essentially of a physical rubber softener selected from the group consisting of an aromatic petroleum oil, pine tar and rosin acid soap and a hydrocarbon soluble extract of the plant Grindelia obtained by extracting said plant with a hydrocarbon, said softener and said extract being in a ratio by weight of about 10:1.5–1.5:10, and processing the resultant mixture comprising said solid polymer and said processing aid.

3,157,610

PETROLEUM WAX-ETHYLENE ALKENE COATING COMPOSITION

Eugene E. Richardson, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,858
8 Claims. (Cl. 260—28.5)

1. A coating composition characterized as being capable of forming a non-brittle coating on paper board food containers, which coating retains flexibility at low temperatures, consisting of (A) a paraffin wax having a melting point of from about 120 to about 150° F. which when applied by itself to such food containers forms a brittle coating thereon, and (B) from about 0.01 to about 5 percent of a copolymer having a molecular weight of from about 30,000 to about 50,000 selected from the group consisting of an ethylene-propylene copolymer containing from about 5 to about 8 mole percent propylene and an ethylene-butene-1 copolymer containing from about 3 to about 5 mole percent of butene-1, said copolymer overcoming the brittle characteristics of said paraffin wax.

3,157,611

AQUEOUS FILM FORMING COMPOSITIONS CONTAINING POLYVINYL ALCOHOL AND A PHOSPHATE ESTER

Martin K. Lindemann, Somerville, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed May 12, 1961, Ser. No. 109,524
5 Claims. (Cl. 260—29.6)

3. An aqueous film forming composition consisting essentially of an aqueous solution of polyvinyl alcohol, said polyvinyl alcohol having a percent hydrolysis of from 79 to 86% and a plasticizer consisting essentially of a mixed phosphate ester represented by the formula

$$(C_4H_9O)_xPO[O(CH_2CH_2O)_yH]_{3-x}$$

wherein x is an integer of from 1 to 2 and y is an integer of from 1 to 4, said plasticizer being present in an amount of from about 30 to about 45 parts by weight based on 100 parts by weight of polyvinyl alcohol, said aqueous solution containing from about 5 to about 30% by weight of polyvinyl alcohol based on a combined weight of polyvinyl alcohol and water.

3,157,612

REDUCING DIE SWELL OF EXTRUDED ETHYLENE POLYMERS WITH AN ADDITIVE OF IRON PHTHALOCYANINE AND ZINC PENTACHLOROTHIOPHENOL

Roger M. McGlamery, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,738
6 Claims. (Cl. 260—30.2)

1. A method for reducing the tendency of a polymer of ethylene to swell upon being extruded, which comprises incorporating in said polymer an additive comprising in admixture iron phthalocyanine and zinc pentachlorothiophenol in an amount in the range of 0.01 to 5 parts by weight of additive per 100 parts of polymer, the amount of iron phthalocyanine in said additive being from 5 to 95 weight percent and the amount of zinc pentachlorothiophenol being from 95 to 5 weight percent based on the total weight of the iron and zinc compounds.

5. A plastic composition comprising in admixture a polymer of ethylene and an additive comprising in admixture iron phthalocyanine and zinc pentachlorothiophenol in an amount in the range of 0.01 to 5 parts by weight of additive per 100 parts of polymer, the amount of iron phthalocyanine in said additive being from 5 to 95 weight percent and the amount of zinc pentachlorothiophenol being from 95 to 5 weight percent based on the total weight of the iron and zinc compounds.

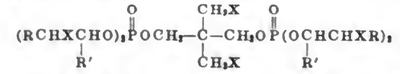
3,157,613

FLAME RESISTANT COMPOSITION CONTAINING AN ORGANIC POLYMER AND A HALOGENATED DIPHOSPHATE

Richard M. Anderson, St. Louis, and Gail H. Birum, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,965
24 Claims. (Cl. 260—30.6)

1. An organic flame resistant composition comprising an organic polymer in admixture with up to 50 percent of the total composition, of a halogenated diphosphate having the formula



wherein each X is selected from the group consisting of bromine and chlorine; each R is selected from the group consisting of hydrogen, and hydrocarbyl, halohydrocarbyl, hydrocarbyloxy, hydrocarbyloxyalkyl, and hydrocarbyl-C(O)O-alkyl radicals having from 1 to 18 carbon atoms; and each R′ is selected from the group consisting of hydrogen, lower alkyl, and lower haloalkyl radicals and is hydrogen when R is a hydrocarbyloxyalkyl and when R is hydrocarbyl-C(O)-O-alkyl the carbon atom content of each of the phosphorus bonded ester moieties containing R and R′ being from 2 to 20 carbon atoms, with the proviso that the average carbon content in the phosphorus bonded ester radicals containing R and R′ of a given halogenated diphosphate molecule is from 2 to about 12 carbon atoms for each of such ester moieties.

3,157,614

NONELASTOMERIC MATERIALS CONTAINING PLATY TALC AND PROCESS OF PRODUCING SAME

Wilbur F. Fischer, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 1, 1960, Ser. No. 53,335
10 Claims. (Cl. 260—41)

6. A composition comprising a talc comprising essentially platy particles, as a filler, compounded with a non-

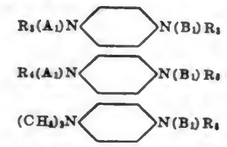
elastomeric material selected from the group consisting of polyolefins produced from monoolefins of from 2 to 12 carbon atoms per molecule, polyvinyl chloride, polydiolefins produced from conjugated diolefins of from 4 to 6 carbon atoms per molecule and copolymers of said diolefins with ethylenically unsaturated monomers, polydiolefins produced from conjugated diolefins of from 4 to 6 carbon atoms per molecule admixed with monomeric crosslinking agents, and copolymers of conjugated diolefins with ethylenically unsaturated monomers admixed with monomeric crosslinking agents, said composition containing a sufficient amount of said talc to have a dielectric strength of more than 1,000 volts per mil.

3,157,615
ANTIOZONANTS AND ANTIOZONANT COMPOSITIONS FOR ELASTOMERS

Eldon E. Stahly, Birmingham, Mich., assignor, by direct and mesne assignments, of three-fourths to Oliver W. Burke, Jr., Grosse Pointe, Mich., and one-fourth to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 28, 1956, Ser. No. 606,767
5 Claims. (Cl. 260—45.9)

1. A sulfur vulcanizable rubber normally subject to cracking containing, in sufficient amount to retard said cracking, a substituted p-phenylene diamine selected from the group consisting of the tetra- substituted p-phenylene diamines having the formulae:



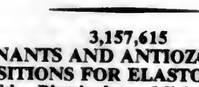
wherein A_1 and B_1 are cyanohydrocarbon radicals containing from 1 to 19 carbon atoms, R_2 is an alkyl radical containing from 3 to 9 carbon atoms, R_3 is a radical selected from the group consisting of cyclohexyl radical, phenyl radical, and secondary alkyl radicals containing from 3 to 9 carbon atoms, R_4 and R_5 are radicals selected from the group consisting of cycloalkyl and alkyl substituted cycloalkyl radicals containing from 3 to 9 carbon atoms, and R_6 is a secondary alkyl radical containing from 8 to 9 carbon atoms.

3,157,616
ANTIOZONANT RUBBER COMPOSITIONS CONTAINING ALKYLENE BIS-HYDRAZINES

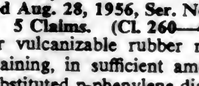
Hugh W. Stewart, deceased, late of Woodbury, Conn., by Ruthmarie Stewart, executrix, Middlebury, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 9, 1962, Ser. No. 186,271
7 Claims. (Cl. 260—45.9)

1. A composition comprising 100 parts by weight of a rubbery polymer selected from the group consisting of diolefin polymers and ethylene-propylene copolymers, and from 1/10 to 5 parts by weight of a bishydrazine selected from the group consisting of those of the formulas:



and



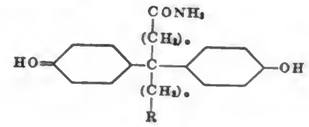
wherein x=2 to 10 and R_1 through R_4 are selected from the group consisting of alkyl groups having 1 to 8 carbon atoms and cycloalkyl groups having 5 to 8 carbon atoms.

3,157,617
NITRILE-CONTAINING POLYCARBONATE

Richard Butterworth, Manor Township, Lancaster County, and John A. Parker, Lancaster Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 1, 1960, Ser. No. 66,437
9 Claims. (Cl. 260—47)

1. The method of forming a polymeric polycarbonate comprising reacting phosgene at a temperature in the range of minus 20° C. to plus 60° C. in the presence of an inert acid-accepting medium with a diphenolic acid amide of the formula



wherein R is selected from the group consisting of hydrogen and an alkyl group containing 1–6 carbon atoms, n is a number from 0 to 6, and the alkylideneamide group contains 2–8 carbon atoms, sufficient phosgene being reacted to form a polycarbonate from said alkylideneamide, and to convert the amide group on said alkylideneamide to a nitrile group.

3,157,618
OXIDES OF TIN AS CATALYSTS IN THE PREPARATION OF POLYESTERS

Louis R. Le Bras, Pittsburgh, and Donald F. Stahr, Arnold, Pa., assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 31, 1959, Ser. No. 803,083
4 Claims. (Cl. 260—75)

1. A method of preparing a polymeric polyester which comprises forming a mixture of:

(A) a free alcohol containing at least two hydroxyl groups;

(B) a free carbonyl compound selected from the class consisting of a dicarboxylic acid and the anhydride thereof, said alcohol and said compound consisting of atoms of carbon, hydrogen and oxygen, the alcohol being present in an amount to provide a polyester having a hydroxyl value in a range between 40 and 700; and

(C) stannous oxide, and heating the mixture to a temperature to evolve water and to form said polymeric polyester by direct esterification reaction, heating being continued until an acid value of less than about 3 is attained.

3,157,619
PREPARATION OF ELASTOMERIC POLYMERS

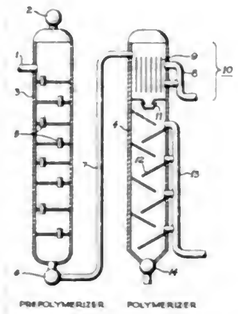
Alan Bell, Charles J. Kibler, and James G. Smith, all of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 10, 1961, Ser. No. 151,557
20 Claims. (Cl. 260—75)

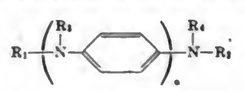
1. A process for the preparation of a highly elastic highly polymeric polyester having an inherent viscosity of 1.4 to 2.5 which comprises reacting a mixture of (A) at least one compound selected from the class consisting of the dibasic carboxylic acids and their lower alkyl esters and (B) at least one member of the group consisting of the cis- and trans-isomers of 1,4-cyclohexanedimethanol and (C) the ether-glycol having the structural formula:

$$HO(CH_2CH_2CH_2CH_2O)_nH$$

wherein n is an integer of from 14 to 70 in the presence of an alcoholysis catalyst at a pressure of 0 to 150 p.s.i. and a temperature in the range of 180–310° C. until the



alcoholysis stage of the reaction is essentially completed and thereafater subjecting the resulting reaction product to a vacuum of less than 50 mm. of mercury until the inherent viscosity of the polymeric reaction product is between 1.4 and 2.5, said process being characterized by having present in said mixture during the preparation of the polymer, 0.01 to 5% by weight of the finished polymer, of an aromatic amine having the structural formula:



wherein n is a cardinal member of from zero to one, R_1 is a member selected from the group consisting of phenyl, alkyl substituted phenyl, 1-naphthyl and 2-naphthyl and R_2 is a member selected from the group consisting of alkyl groups of 1–20 carbon atoms and aryl groups of 6–20 carbon atoms and wherein each of R_3 and R_4 is a substituent selected from the group consisting of hydrogen, alkyl groups of 1–20 carbon atoms and aryl groups of 6–20 carbon atoms.

3,157,620
SOLVENT SOLUBLE BAKING TYPE RESINS

Benjamin A. Bolton, Gary, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Mar. 17, 1960, Ser. No. 15,550, now Patent No. 3,067,158, dated Dec. 4, 1962. Divided and this application Aug. 9, 1961, Ser. No. 130,262
5 Claims. (Cl. 260—76)

1. A composition consisting essentially of the resin polyester condensation reaction product of (*a*) a benzene tricarboxylic acidic member selected from the group consisting of trimellitic acid, trimellitic anhydride, trimesic acid, hemimellitic acid, and hemimellitic anhydride, (*b*) aliphatic dicarboxylic acids containing a total of at least 4 carbon atoms, and (*c*) aliphatic polyol-benzoic acid ester containing two free-hydroxyl groups, wherein the mole ratio of acidic member:dicarboxylic acid:ester is between about 1:1:2 and about 10:1:25, which resin is characterized by solubility in oxygenated organic solvents and cures to a thermoset solid at a temperature of about 400° F.

3,157,621
POLYETHER BASED URETHANES PREPARED IN THE PRESENCE OF AMMONIUM ACETATE

Edward R. Degginger, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 30, 1960, Ser. No. 39,764
2 Claims. (Cl. 260—77.5)

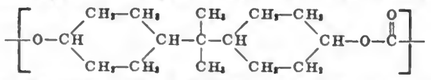
1. In a process for the production of urethane by reaction of an alkylene oxide polyether polyhydroxyl compound with an organic polyisocyanate, the improvement which comprises effecting said reaction in the presence of 20–60 parts per million of ammonium acetate based on the alkylene oxide polyether polyhydroxyl compound.

3,157,622
RESINOUS COMPOSITIONS

Eugene P. Goldberg, Des Plaines, Ill., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 3, 1961, Ser. No. 80,019
3 Claims. (Cl. 260—77.5)

1. A linear, high molecular weight carbonate polymer consisting of recurring structural units of the formula



said carbonate polymer having a softening point of at least 225° C. and being substantially insoluble in pyridine.

3,157,623
COPOLYMERS OF A VINYL SUBSTITUTED ETHYLENE GLYCOL

Robert Arnold Braun, North Star, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 13, 1961, Ser. No. 88,605
7 Claims. (Cl. 260—80.5)

1. A copolymer of about 0.1–25 parts by weight of a compound of the following empirical formula:



and 99.9–75 parts by weight of at least one other ethylenically unsaturated monomer copolymerizable therewith, wherein R is a member of the class consisting of hydrogen, C_1–C_{10} alkyl and aryl radicals, and R′ is an alkenyl radical, said other ethylenically unsaturated monomer(s) being from the class consisting of acrylonitrile, methacrylonitrile, acrylamide, acrylic acid, methacrylic acid, acrylic ester of C_1–C_{10} alkanol, methacrylic ester of C_1–C_{10} alkanol, methoxy ethyl acrylate, vinyl acetate, vinyl chloride, vinylidene chloride, ethylene, propylene, butylene, styrene and alpha-methyl styrene.

3,157,624
COPOLYMER OF A STRAIGHT CHAIN OLEFIN AND A STYRENE

Louis de Vries, Kentfield, and Richard E. Lyle, El Cerrito, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,153
2 Claims. (Cl. 260—88.2)

1. An oil soluble copolymer compound prepared from (A) of at least one straight-chain 1-olefin of from 10 to 20 carbon atoms and (B) at least one member of the group consisting of styrene and alkyl ring substituted styrenes substituted in aromatic ring with alkyl groups containing 1 to 5 carbon atoms, said copolymer being prepared in the presence of a cocatalyst reaction product of trialkyl aluminum and titanium tetrachloride aluminum chloride complex of stoichiometrical propor-

tions of about 3 mols of titanium trichloride to about 1 mol of aluminum chloride in an inert solvent at a temperature down to at least −10° C., said copolymer having a 1-olefin to styrene mol ratio of from 4 to 14, said copolymer having a molecular weight from about 100,000 to about 1,000,000 as determined by standard viscosity measurements.

3,157,625

FREE-RADICAL CURE OF ETHYLENE-PROPYLENE COPOLYMER RUBBER WITH SUPPORTED NITROGEN OXIDE AS A PROMOTER

Edwin T. Yates, Highland Park, and Harold K. Garner, Wayne, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 12, 1962, Ser. No. 209,318
3 Claims. (Cl. 260—88.2)

1. In a method of curing ethylene/propylene copolymer rubber by heating said copolymer rubber in the admixture with a free-radical source and a promoter, the improvement comprising employing as the said promoter a nitrogen oxide selected from the group consisting of nitric oxide and nitrogen dioxide, adsorbed on a solid, finely divided support.

3,157,626

PREPARATION OF CRYSTALLINE POLY(VINYL ALKYL ETHERS) WITH A CATALYST FORMED FROM A TRANSITION METAL FLUORIDE AND A METAL ALKOXIDE

Richard F. Heck, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,313
4 Claims. (Cl. 260—91.1)

1. The process of polymerizing vinyl alkyl ethers which comprises contacting at least one of said ethers with a catalyst formed by mixing a fluoride of a metal selected from the group consisting of titanium, zirconium, vanadium, iron, and cobalt with an alkoxide of a metal selected from the group consisting of aluminum, titanium, gallium, indium, tin, vanadium, and zirconium in which alkoxides all valences of the metal are satisfied by alkoxide groups having 1 to 8 carbon atoms.

3,157,627

CATALYTIC CONVERSION AND CATALYSTS

Herbert N. Friedlander, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 28, 1956, Ser. No. 574,363
17 Claims. (Cl. 260—94.9)

1. In a process for the preparation of a normally solid polymer, which comprises contacting a normally gaseous, unbranched 1-alkene capable of undergoing addition polymerization under polymerization reaction conditions, including a temperature between about 10° C. and about 175° C. and a pressure below 2000 p.s.i.a., with a polymerization catalyst prepared by admixing

(A) an alkali reagent selected from the class consisting of:
  (1) alkali metal
  (2) alkali metal hydride
  (3) hydrocarbon derivative of an alkali metal, and
  (4) mixtures of said alkali reagents, with
(B) a polyvalent metal salt of a metal selected from the Groups 4a, 5a, 6a and 8 of the Mendeléeff Periodic Table, the improvement of effecting said contacting in the presence of an organic peroxide in a proportion sufficient to effect substantial promotion of the activity of said polymerization catalyst of from about 0.01 to about 20 percent by weight of said alkali reagent, and recovering a polymer thus produced.

3,157,628

PROCESS FOR INHIBITING GEL FORMATION IN POLYETHYLENE BY USE OF A-STAGE PARA - TERTIARYALKYLPHENOL - FORMALDEHYDE RESINS

Russell P. Hill and William J. Tabar, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,347
5 Claims. (Cl. 260—94.9)

1. In a process for the production of solid polyethylene by polymerization of ethylene wherein a longitudinally flowing mass of ethylene at elevated temperature and pressure and in contact with a free-radical initiator is maintained in an elongated reaction zone, extending from a reaction zone inlet to a reaction zone outlet at which the polymerization reaction product is withdrawn, the improvement which comprises introducing into said elongated reaction zone within a region extending from about the mid-point of said elongated reaction zone to said reaction zone outlet a small amount, sufficient to reduce gel formation in said solid polyethylene, of an A-stage para-tertiaryalkylphenol-formaldehyde resin wherein the tertiaryalkyl group of the para-tertiaryalkylphenol contains from 4 to about 20 carbon atoms.

3,157,629

TREATMENT OF TALL OIL FATTY ACIDS

Paul D. Patrick, Jr., South Windermere, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Feb. 13, 1959, Ser. No. 793,172
3 Claims. (Cl. 260—97.5)

1. The method of treating a tall oil fatty acid product containing less than 10% rosin acids and substantial quantities of both linoleic and oleic acids which taken together constitute a major portion of the tall oil product, which consists of the step of heating said tall oil product at a temperature between 450 and 550° F. in the presence of iodine in an amount equal to between 0.01 and 2% of the weight of the tall oil for a period of time between 10 minutes and 6 hours sufficient to reduce the iodine value of the tall oil to between 60 and 110.

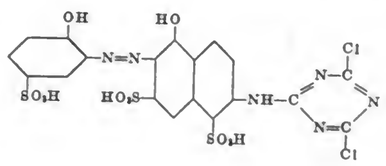
3,157,630

COPPER-CONTAINING MONOAZO DYESTUFFS HAVING A CYANURIC HALIDE RADICAL

William Elliot Stephen, Colin George Tilley, and Cyril Eric Vellins, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 18, 1958, Ser. No. 742,718
Claims priority, application Great Britain July 5, 1957
1 Claim. (Cl. 260—146)

The copper complex of the dyestuff of the formula:



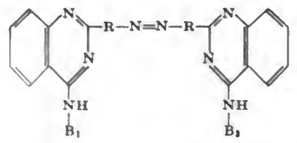
3,157,631

AZO VAT DYES

Hans Weidinger, Limburgerhof, Pfalz, and Hans Gottfried Haese, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 2, 1963, Ser. No. 292,457
Claims priority, application Germany July 6, 1962
4 Claims. (Cl. 260—154)

1. A dye of the formula:



where R is selected from the group consisting of 1,4-phenylene, 1,3-phenylene and 4,4′-diphenylene and B_1 and B_2 are selected from the group consisting of anthraquinonyl-(1), anthraquinonyl-(2), 3-chloranthraquinonyl-(1), 4-benzoylanthraquinonyl-(1), 5-benzoylanthraquinonyl-(1), 1-amino-2-acetyl-anthraquinonyl-(4), anthraquinon(1(N)-2-benzacridone)-yl-(4), 1′-chloro-anthraquinone-1(N)-2-benzacridonyl-(4′), 1-amino-2-[2-phenyloxdiazolyl-(5)]-anthraquinonyl-(4), 1-amino-2-[(2-phenylene)-oxdiazolyl-(5)]-anthraquinone, anthrapyrimidinyl-(4) and anthrapyrimidinyl-(5).

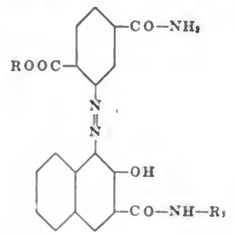
3,157,632

WATER-INSOLUBLE MONOAZO-DYESTUFFS AND PROCESS FOR PREPARING THEM

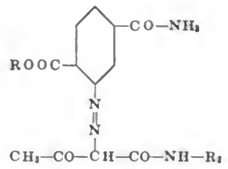
Joachim Ribka, Offenbach (Main), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,219
Claims priority, application Germany, Nov. 24, 1960, F 32,608
5 Claims. (Cl. 260—193)

1. A water-insoluble monazo-dyestuff whose formula is selected from the group consisting of



and



in which R represents a member selected from the group consisting of methyl, ethyl and propyl, R_1 represents a member selected from the group consisting of hydrogen, phenyl, methylphenyl, methoxyphenyl, ethoxyphenyl, nitrophenyl, methylsulfonylaminophenyl, benzenesulfonylaminophenyl, hydroxyphenyl, methylchorophenyl, methoxychlorophenyl, dimethylphenyl, methylmethoxyphenyl, dimethoxyphenyl, dimethoxychlorophenyl, naphthyl, carbamylphenyl, methoxycarbamylphenyl, methylsulfamylphenyl and methoxydiphenylene oxide, and R_2 represents a member selected from the group consisting of methylphenyl, methoxyphenyl, hydroxyphenyl, acetylaminophenyl, propionylaminophenyl, benzoylaminophenyl, benzenesulfonylaminophenyl, dimethylphenyl, methylchlorophenyl, dimethoxyphenyl, methoxychlorophenyl, methylmethoxyphenyl, methylacetylaminophenyl, methoxyacetylaminophenyl, acetylaminochlorophenyl, bisacetylaminophenyl, methylmethoxychlorophenyl, dimethoxychlorophenyl, methylacetylaminochlorophenyl, methoxyacetylaminochlorophenyl and naphthyl.

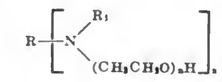
3,157,633

POLYETHYLENEOXY FUGITIVE TINTS

Hans H. Kuhn, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed Nov. 28, 1960, Ser. No. 71,926
10 Claims. (Cl. 260—200)

1. A water soluble fugitive tint compound of the formula



wherein R is an organic dyestuff radical, R_1 is a member selected from the group consisting of hydrogen, lower alkyl, aryl and aralkyl containing from six to 12 carbon atoms, and $—(CH_2CH_2O)_nH$, n is at least 15, x is from 1 to 6, and the product of n times x is at least 30.

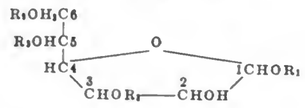
3,157,634

GLUCOFURANOSIDES AND PROCESS FOR THEIR PREPARATION

Jean Druey, Riehen, and Georg Leo Huber, Allschwil, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Dec. 30, 1959, Ser. No. 862,799
Claims priority, application Switzerland, Jan. 10, 1959, 68,170; Nov. 6, 1959, 80,318; Nov. 30, 1959, 81,247
26 Claims. (Cl. 260—210)

10. A glucofuranoside of the formula:



in which R_1 represents a radical selected from the group consisting of $—(CH_2)_n—H$, n being at least 2, lower alkenyl and lower alkinyl and such radicals substituted by at least one member selected from the group consisting of amino, hydroxy, mercapto, lower mono- and dialkyl-, alkenyl-, cycloalkyl-, cycloalkenylamino, alkyleneimino, mono-aza-lower alkyleneimino, mono-oxa-lower alkylene-imino, lower alkoxy, lower alkylmercapto, carboxy, carbalkoxy, carbamyl, cyano, and halogen groups; cycloalkyl, lower alkyl-cycloalkyl, cycloalkenyl, lower alkyl-cycloalkenyl; cycloalkyl-lower alkyl, cycloalkenyl-lower alkyl; phenyl-, lower alkoxyphenyl-, halogenphenyl-, lower alkylphenyl-, trifluoromethylphenyl-lower alkyl; phenyl, lower alkoxyphenyl, halogenphenyl, lower alkylphenyl, trifluoromethylphenyl; thienyl-, furyl- and pridyl-methyl; and each of the radicals R_3, R_5 and R_6 stands for a member selected from the group consisting of R_1, n being at least 1, and of acyl radicals selected from the group consisting of those of benzene-, lower alkoxy-benzene-, lower alkylbenzene, trifluoromethylbenzene-, halogenobenzene-, pyridine, thiophene, furan-, pyrrole-, pyrazole-, pyridazine-, pyrazine- and pyrimidine-carboxylic acids.

3,157,635
SULFONIC ACID CATION EXCHANGE RESIN PURIFICATION OF NUCLEOTIDES

Kuniyoshi Tanaka, Toyonaka, Komei Mizuno and Yasushi Sanno, Osaka, and Yukihiko Hamuro, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed July 31, 1961, Ser. No. 127,888
Claims priority, application Japan, Aug. 5, 1960, 35/34,088
9 Claims. (Cl. 260—211.5)

1. Process for separating 5'-nucleotides comprising contacting aqueous solution of said nucleotides at pH of 1 to 2, said solution being substantially free of cation impurities, with free form of sulfonic acid cation exchange resin, and subsequently eluting said nucleotides with aqueous sodium chloride solution.

3,157,636
METHOD FOR PURIFICATION OF 5'-PURINE-NUCLEOTIDES

Yasushi Sanno, Osaka, Kiyoshi Nara, Nishinomiya, Sinpei Minato, Ashiya, and Yutaka Hirose, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Aug. 10, 1961, Ser. No. 130,474
16 Claims. (Cl. 260—211.5)

1. A method for separating 5'-purine-nucleotides selected from the group consisting of 5'-inosinic acid and 5'-guanylic acid from 5'-mononucleotide mixture obtained by hydrolyzing nucleic acid, which comprises crystallizing disodium salts of said 5'-mononucleotide mixture from a mixed solvent system consisting of water and a hydrophilic organic solvent selected from the group consisting of methanol, ethanol, n-propanol and acetone, whereupon a mixture substantially consisting of the disodium salts of said 5'-purine-nucleotides is separated.

3,157,637
METHOD OF SEPARATING NUCLEOTIDES

Joseph X. Khym, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed May 21, 1963, Ser. No. 282,177
10 Claims. (Cl. 260—211.5)

1. A method of separating at least one nucleotide selected from the group consisting of di-, tri-, and tetraphosphates of adenosine, uridine, cytidine, and guanosine from an aqueous solution containing said nucleotide comprising the steps of providing said aqueous solution with a water-soluble salt, adjusting the pH of said solution to a value from 2.5 to 7.0, contacting the resulting salt solution with a substantially water-immiscible organic solution comprising an organic diluent and a primary amine salt, the cation of said salt being represented by the formula

$$[RNH_3]^+$$

where R is a saturated aliphatic hydrocarbon, and separating the resulting nucleotide-containing organic solution from the aqueous solution.

3,157,638
PROCESS FOR THE PRODUCTION OF HEXAKIS (AZIRIDINYL) PHOSPHONITRILE

Gerhard F. Ottmann, Hamden, Roy P. Alexander, Killingworth, and Ehrenfried H. Kober, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 17, 1962, Ser. No. 210,551
5 Claims. (Cl. 260—239)

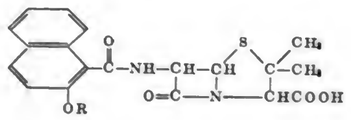
1. A process for the production of hexakis(aziridinyl)-phosphonitrile which comprises reacting trimeric phosphonitrilic chloride with ethyleneimine in a water-aromatic hydrocarbon medium, wherein the ratio of water to hydrocarbon is about 1:0.1 to 3, in the presence of an excess of alkali metal hydroxide.

3,157,639
SYNTHETIC PENICILLINS

Frank Peter Doyle, Betchworth, Surrey, and John Herbert Charles Nayler, Dorking, Surrey, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company

No Drawing. Filed Aug. 16, 1960, Ser. No. 49,850
Claims priority, application Great Britain, Aug. 19, 1959, 28,377/59
9 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of an acid having the formula:



wherein R represents (lower)alkyl; and its nontoxic pharmaceutically acceptable salts.

3,157,640
D-(—)-α-AMINOBENZYLPENICILLIN TRIHYDRATE

David A. Johnson, Fayetteville, and Glenn A. Hardcastle, Jr., Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,807
1 Claim. (Cl. 260—239.1)

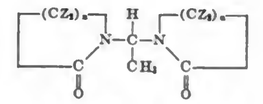
D-(—)-α-aminobenzylpenicillin trihydrate.

3,157,641
PREPARATION OF N,N'-ETHYLIDENE BIS (N-HETEROCYCLIC) COMPOUNDS

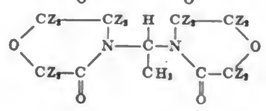
Wilhelm E. Walles, William W. Bakke, and William F. Tousignant, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 6, 1960, Ser. No. 27,286
17 Claims. (Cl. 260—239.3)

1. Method for the preparation of N,N'-ethylidene bis (N-heterocyclic) compounds selected from the group of those having the structural formulae:

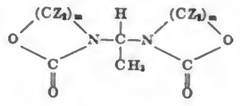


(I)



(II)

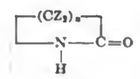
and



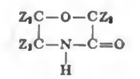
(III)

wherein each Z is independently selected from the group consisting of hydrogen and alkyl radicals of from 1 to

about 4 carbon atoms; *n* is an integer from 3 to 5; and *m* is an integer from 2 to 3; which method comprises mixing a starting material selected from the group of cyclic lactams, cyclic amides and cyclic carbamates consisting of those having the structural formulae:

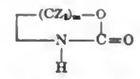


(Ia)



(IIa)

and



(IIIa)

wherein the values of Z, *n* and *m* are the same as in the Formulae I, II and III, with an alkyl vinyl ether that contains from about 1 to 10 carbon atoms in the alkyl group and between about 1 and 10 weight percent, based on the weight of the reactant mixture, of a catalyst selected from the group consisting of mercuric acetate, phenyl mercuric acetate, mercuric benzoate, mercuric citrate, mercuric oxalate, mercuric fluoride, mercuric iodide, mercuric sulfate, mercuric nitrate, mercuric chloride, mercuric thiocyanate, mercurous sulfate, cuprous chloride, nickel bromide, nickel iodide, cobalt chloride, antimony trichloride, ferric chloride, bismuth nitrate, arsenic trichloride, sodium bisulfate, normally solid sulfonated polystyrene, normally solid sulfonated polyvinyltoluene and mixtures thereof; then heating the mixture at an elevated temperature between about 90° C. and 200° C. until at least a portion of said starting material of the Formulae I*a*, II*a* and III*a* has been converted to an N,N'-ethylidene bis(N-heterocyclic compound); and subsequently removing the thereby obtained product N,N'-ethylidene bis(N-heterocyclic compound of the Formulae I, II and III from the reaction mixture.

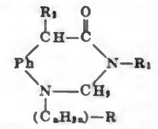
13. The method of claim 1, wherein said starting material is epsilon-caprolactam and said product is N,N'-ethylidene bis(2-caprolactam).

3,157,642
2,3,4,5-TETRA-HYDRO-1H-1,3-BENZO-DIAZEPIN-4-ONES

George de Stevens, New Providence, N.J., assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,179
7 Claims. (Cl. 260—239.3)

1. A member selected from the group consisting of a compound of the formula



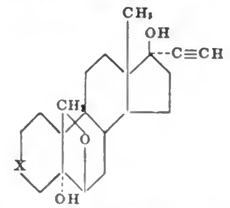
in which Ph is a member selected from the group consisting of (lower alkyl)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (lower alkenyloxy)-1,2-phenylene, (lower alkylenedioxy)-1,2-phenylene, (halogeno)-1,2-phenylene, (nitro)-phenylene and (trifluoromethyl)-1,2-phenylene, R is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, naphthyl and pyridyl, the letter *n* stands for a member selected from the group consisting of the numbers 1, 2 and 3, R_1 stands for a member selected from the group consisting of lower alkyl and phenyl, and R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and a pharmacologically acceptable acid addition salt thereof.

3,157,643
PROCESS AND 5-OXYGENATED INTERMEDIATES FOR THE MANUFACTURE OF 19-NORSTEROIDS OF THE ANDROSTANE SERIES

Raphael Pappo, Skokie, and Leonard N. Nysted, Highland Park, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,570
5 Claims. (Cl. 260—239.55)

3. A compound of the formula



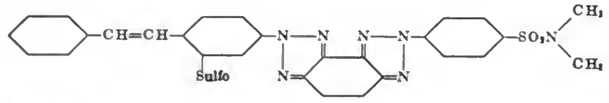
wherein X is selected from the group of radicals consisting of carbonyl and β-hydroxymethylene.

3,157,644
BRIGHTENING AGENTS

Franz Marschall and Harlan B. Freyermuth, Easton, Pa., and William W. Williams, New York, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 4, 1956, Ser. No. 575,925
3 Claims. (Cl. 260—240)

1. A compound having the formula:

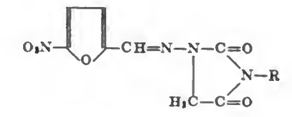


3,157,645
3-ALKENYL OR ALKINYL 1-(5-NITROFURFURYLIDENEAMINO) HYDANTOINS

Claude F. Spencer, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,567
5 Claims. (Cl. 260—240)

1. A chemical compound represented by the formula:



wherein R represents a member of the group consisting of allyl, 2-methylallyl, 2-butenyl and 2-propynyl.

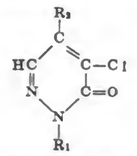
3,157,646

4-CHLORO-3-OXO-PYRIDAZINE-5-AMIDINES

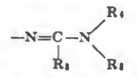
Franz Reicheneder and Karl Dury, Ludwigshafen (Rhine), Adolf Fischer, Mutterstadt, Pfalz, and Herbert Stummeyer, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,238
Claims priority, application Germany, Nov. 17, 1961, B 64,828
7 Claims. (Cl. 260—240)

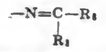
1. A compound selected from the group consisting of a compound of the formula



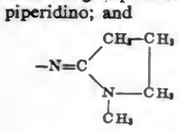
and an acid salt of said compound wherein, in said formula, R_1 represents a member selected from the group consisting of lower alkyl, phenyl and cyclohexyl, and R_2 represents a member from the group consisting of



wherein R_3 is selected from the group consisting of hydrogen and lower alkyl and R_4 and R_5 are each lower alkyl;



wherein R_3 has the significance aforestated and R_6 is a member selected from the group consisting of pyrrolidino, morpholino and piperidino; and



4. N - [4 - (1 - phenyl - 5 - chloropyridazon - (6) - yl)]-N'-pyrrolidinoformamidine.

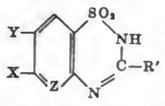
3,157,647

PROCESS FOR PRODUCING N-ALKYL AND N-ARALKYL THIADIAZINE COMPOUNDS

John T. Sheehan, Middlesex, and Harry Louis Yale, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 31, 1960, Ser. No. 65,935
8 Claims. (Cl. 260—243)

1. A process for the addition of an alkyl group of up to 15 carbon atoms to a nitrogen atom of the thiadiazine ring of a compound of the formula



wherein X is a member of the group consisting of hydrogen, halogen, alkyl up to 15 carbon atoms, halo-lower alkyl, lower alkoxy, lower alkylmercapto and cyano, Y is a member of the group consisting of hydrogen and sulfamyl, Z is a member of the group consisting of carbon and nitrogen and R' is a member of the group consisting of hydroxy, alkyl up to 15 carbon atoms, R''''-phenyl lower alkyl, halo-lower alkyl, lower alkoxy-lower alkyl, lower alkylmercapto-lower alkyl, and cyano-lower alkyl, which comprises reacting said compound with an ortho acid ester of the formula

$$(RO)_3C-R''$$

wherein R is a member of the group consisting of alkyl up to 15 carbon atoms, R''''-phenyl lower alkyl, R'''-alkyl wherein the alkyl has up to 15 carbon atoms and R''''-phenyl lower alkyl, R'' is a member of the group consisting of hydrogen, alkyl up to 15 carbon atoms and R'''-alkyl wherein the alkyl has up to 15 carbon atoms, R''' is a member of the group consisting of halogen, lower alkoxy, lower alkylmercapto and cyano, and R'''' is a member of the group consisting of halogen, alkyl up to 15 carbon atoms, lower alkoxy, lower alkylmercapto and cyano,

at a temperature above about 125° C. in the absence of water.

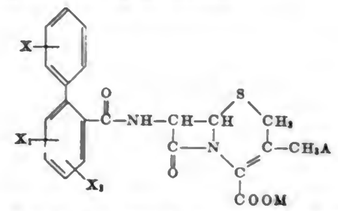
3,157,648

DERIVATIVES OF 7-AMINOCEPHALOSPORANIC ACID

Bruce M. Collins, Philadelphia, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 25, 1961, Ser. No. 133,776
9 Claims. (Cl. 260—243)

1. Compounds having the formula:



wherein each of X, X_1 and X_2 is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, amino or cyano, A is selected from the group consisting of hydrogen, lower alkanoyloxy, benzoyloxy, hydroxy, N-pyridinium, and a monovalent carbon-oxygen bond when taken together with M; and M is selected from the group consisting of hydrogen, an anionic charge when A is N-pyridinium, a monovalent carbon-oxygen bond when taken together with M, and pharmaceutically acceptable non-toxic cations.

3,157,649

POTASSIUM DICHLOROISOCYANURATE

William F. Symes, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 20, 1960, Ser. No. 57,129
10 Claims. (Cl. 260—248)

1. The process for making potassium dichloroisocyanurate particles which do not appreciably coalesce or lump during storage which comprises intimately admixing solid particles of potassium dichloroisocyanurate containing less than 0.3% by weight of moisture, at a temperature of about 100° C. to about 150° C. with from about 2% to about 10% by weight, based on the weight of said potassium dichloroisocyanurate, of solid particles of a partially to completely anhydrous hydratable, water soluble, non-deliquescent, crystalline, inorganic compound selected from the group consisting of alkali metal phosphates, silicates, carbonates and sulfates and having a rate of hydration greater than 160 milligrams percent per hour at a temperature of 25° C. and a relative humidity of 100% until a dry, stable, free flowing potassium dichloroisocyanurate product is formed, said product being characterized in having an available chlorine content of from about 53.1% to about 59.4%.

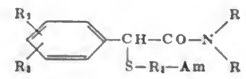
3,157,650

AMIDES OF 2-ARYL-ETHANOIC ACIDS

Ernst Habicht, Schaffhausen, Switzerland, assignor to Cilag-Chemie Limited, Schaffhausen, Switzerland, a Swiss company

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,330
12 Claims. (Cl. 260—247.1)

1. A compound selected from the group consisting of an amide of a 2-aryl-2-aminoalkylmercapto-ethanoic acid, its pharmaceutically acceptable acid addition salts and its sulfoxides, said amide being of the formula

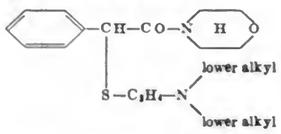


wherein R_1 and R_2 are members of the class consisting of hydrogen, chlorine, bromine, alkyl, alkoxy, alkylmercapto and together methylenedioxy, whereby R_1 and R_2 contain together not more than 4 carbon atoms, R_3 is alkylene from 2 to 4 carbon atoms, Am is a member of the class consisting of lower mono-alkylamine, di-lower alkylamino, pyrrolidino, piperidino, morpholino and N'-lower alkyl piperazino and



is a member selected from the class consisting of amino, mono-lower alkylamino, di-lower alkylamino, di-lower alkenylamino, mono-benzylamino, mono-cycloalkylamino, pyrrolidino, piperidino, morpholino and N'-lower alkylpiperazino containing not more than 12 carbon atoms.

5. A compound of the formula



3,157,651

TRIAZINE COMPOUNDS

John Reginald Atkinson and Sidney Hartley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 30, 1962, Ser. No. 241,171
Claims priority, application Great Britain, Dec. 4, 1961, 43,243/61
6 Claims. (Cl. 260—248)

1. Triazine compound of the formula:



wherein A stands for a member selected from the group consisting of pyrene, anthracene, acenaphthene, and chrysene; R_1 stands for a member selected from the group consisting of chloro, monocyclic carbocyclicarylamino morpholino, lower alkyl amino, hydroxy lower alkyl amino, carboxylic acyloxy lower alkyl amino, sulfato lower alkyl amino, lower alkoxy, hydroxy lower alkoxy, monocyclic carbocyclic aryloxy, lower alkyl thio, and carboxy lower alkyl thio; and R_2 stands for a member selected from the group consisting of monocyclic carbocyclicarylamino morpholino, lower alkyl amino, hydroxy lower alkyl amino, carboxylic acyloxy lower alkyl amino, sulfato lower alkyl amino, lower alkoxy, hydroxy lower alkoxy, monocyclic carbocyclic aryloxy, lower alkyl thio, and carboxy lower alkyl thio.

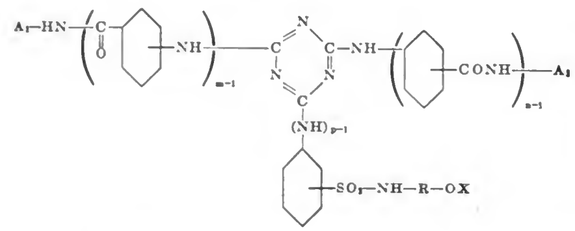
3,157,652

N-SULFATOALKYLSULFONAMIDO SUBSTITUTED s-TRIAZINYL AMINO ANTHRAQUINONE DYESTUFFS

Kurt Weber and Max Staeuble, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 14, 1961, Ser. No. 89,127
Claims priority, application Switzerland Mar. 1, 1960
9 Claims. (Cl. 260—249)

1. A vat dyestuff of the formula



in which A_1 and A_2 each is α-anthraquinolyl, *m*, *n* and *p* each represents a whole positive number up to 2 and R represents an alkylene chain containing 4 to 5 carbon atoms and X is a sulfo group bound to the —O— atom through its sulfur atom.

3,157,653

SULFATOALKYLAMINO DERIVATIVES OF TRIAZINE AND PYRIMIDINE VAT DYESTUFF

Max Staeuble and Kurt Weber, Basel, and Paul Hugelshofer, Otelfingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,200
Claims priority, application Switzerland, Nov. 22, 1960, 13,071/60; Oct. 18, 1961, 12,052/61
5 Claims. (Cl. 260—249)

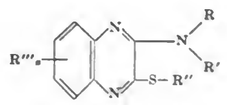
1. A vat dye of the formula D—NH—X wherein D is dibenzanthrone and X is a member selected from the group consisting of the pyrimidine and the 1:3:5-triazine radical bound through one of its carbon atoms to the —NH-bridge and bearing at two of its further carbon atoms a lower sulfatoalkyl-amino group bound by its amino nitrogen atom, the fourth carbon atom of the pyrimidine nucleus bearing a member selected from the group consisting of the chlorine and the lower sulfatoalkylamino substituents.

3,157,654
AMINO, MERCAPTO QUINOXALINES

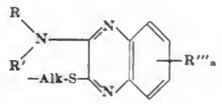
Klaus Sasse, Cologne-Stammheim, Richard Wegler, Leverkusen, and Günter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1961, Ser. No. 83,889
Claims priority, application Germany Jan. 22, 1960
10 Claims. (Cl. 260—250)

1. A quinoxaline compound of the formula

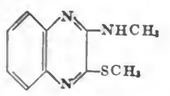


in which R and R′ taken individually stand for a member selected from the group consisting of hydrogen, alkyl having up to 12 carbon atoms, allyl, cyclohexyl, phenyl-lower alkyl, hydroxy-lower alkyl, lower alkoxy lower alkyl, amino-lower alkyl, lower alkyl amino lower alkyl, carboxy-lower alkyl and carbo-lower alkoxy-lower alkyl; and, when R and R′ are taken with the nitrogen atom, morpholino and thiomorpholino in which R″ stands for a member selected from the group consisting of hydrogen, alkyl having up to 12 carbon atoms, allyl, cyclohexyl, phenyl-lower alkyl, hydroxy-lower alkyl, lower alkoxy-lower alkyl, amino-lower alkyl, lower alkyl amino lower alkyl, carboxy-lower alkyl, carbo-lower-alkoxy-lower alkyl, lower alkyl-mercapto-lower alkyl, and



Alk being lower alkylene; in which R‴ stands for a member selected from the group consisting of hydrogen, lower alkyl, halogeno, trifluoromethyl, nitro and lower alkoxy; and in which *n* is a whole number up to 4.

2. The compound of the following formula



3,157,655
PYRAZOLOPYRIMIDINE DERIVATIVE

Akira Takamizawa, Ibaraki-shi, Osaka, Yoshio Hamashima, Nishinomiya-shi, Hyogo, and Hisao Sato, Takatsuki-shi, Osaka, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Aug. 10, 1962, Ser. No. 216,058
Claims priority, application Japan May 18, 1962
2 Claims. (Cl. 260—256.4)

1. 2,3,6 - trimethyl - 7 - aminopyrazolo[1,5 - a]pyrimidine.

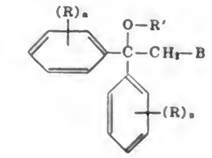
2. 2,3,6 - trimethyl - 7 - aminopyrazolo[1,5 - a]pyrimidine hydrochloride.

3,157,656
(2-ALKOXY-2,2-DIPHENYLETHYL)-HETEROCYCLIC COMPOUNDS

John Krapcho, New Brunswick, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 20, 1960, Ser. No. 44,024
6 Claims. (Cl. 260—268)

1. A member selected from the group consisting of compounds of the formula:



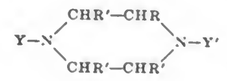
wherein *n* is a positive integer less than four; R is a member selected from the group consisting of hydrogen and lower alkyl; R′ is lower alkyl; and B is selected from the group consisting of di-(lower alkyl)amino, alkylaralkylamino, pyrrolidino, lower alkyl pyrrolidino, piperidino, lower alkyl-piperidino, 4-lower alkyl-piperazino, 4-phenyl-piperazino and 4-(monocyclic aryl-lower alkyl)-piperazino; and the non-toxic acid-addition salts thereof.

3,157,657
CATALYTIC SYNTHESIS OF TRIETHYLENEDIAMINE

Walter H. Brader, Jr., Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,778
6 Claims. (Cl. 260—268)

1. A method for preparing a C-substituted triethylenediamine which comprises contacting an ethylenic compound with alumina at a temperature within the range of about 200° to about 600° C. to form the corresponding C-substituted triethylenediamine, said ethylenic compound having the formula:



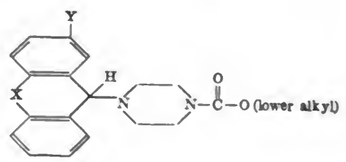
Wherein R is selected from the group consisting of C_1 to C_4 alkyl;
Wherein R′ is selected from the group consisting of H and R;
Wherein Y is —CH_2—CH_2—X;
Wherein Y′ is selected from the group consisting of H and Y; and
Wherein X is selected from the group consisting of —OH and —NH_2.

3,157,658
1-CARBALKOXY-4-(9-XANTHENYL)PIPERAZINES AND RELATED COMPOUNDS

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,686
6 Claims. (Cl. 260—268)

1. A compound of the formula



wherein X is selected from the group consisting of O and S; and Y is selected from the group consisting of hydrogen and chlorine.

3,157,659
PROCESS FOR PREPARING 2,9-DICHLOROQUINACRIDONE

Werner Deuschel, Fribourg, Switzerland, and Berthold Honigmann, Ludwigshafen (Rhine), Werner Jettmar, Mannheim-Feudenheim, and Hans Schroeder, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland, Pfalz, Germany

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,817
Claims priority, application Germany Oct. 10, 1959
3 Claims. (Cl. 260—279)

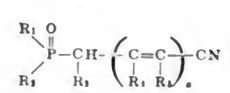
1. A process for the production of a pigment dye wherein 2,9-dichloro-7,14-dioxo-5,7,12,14-tetrahydroquinolino-[2,3-b]-acridine in fine particle size is brought into contact with sulfuric acid of the concentration 60% to 75% and at temperatures of 145° C. to 175° C. until an X-ray diffraction pattern shows at a goniometer angle of 27.8° one line of great intensity, at 5.4°, 15.3°, 23.0° and 23.4° four lines of medium intensity and at 16.6°, 19.3°, 21.3°, 24.5°, 25.3°, 26.7°, 29.0° and 30.7° eight lines of low intensity.

3,157,660
PRODUCTION OF ALPHA,BETA-UNSATURATED NITRILES

Walter Stilz and Horst Pommer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 2, 1960, Ser. No. 12,260
Claims priority, application Germany, Mar. 4, 1959, B 52,337
3 Claims. (Cl. 260—283)

1. A process for the production of alpha,beta-unsaturated nitriles which comprises reacting a carbonyl compound selected from the group consisting of aldehydes and ketones at a temperature between about −20° C. and +100° C. in the presence of a proton acceptor with a compound of the formula



in which R_1 represents an alkoxy radical containing 1 to 4 carbon atoms, in which R_2 represents a substituent selected from the group consisting of alkoxy radicals containing 1 to 4 carbon atoms, alkyl radicals containing 1 to 4 carbon atoms and phenyl, in which R_3, R_4 and R_5 represent a member selected from the group consisting of hydrogen and alkyl radicals containing 1 to 4 carbon atoms, and in which *n* is an integer of from 0 to 4, inclusive.

3,157,661
SOLVENT-SOLUBLE WATER-REPELLENCY COMPOSITIONS CONTAINING WAX, LIQUID TITANIUM ESTER AND STABILIZER

Charles Louis Gray, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

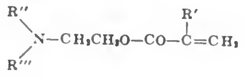
No Drawing. Filed Nov. 25, 1960, Ser. No. 71,405
6 Claims. (Cl. 260—28.5)

1. A process of imparting water-repellency to textile material whose fibers are contaminated with residual quantities of an organic detergent material from a prior dry cleaning, which comprises treating said material with a bath consisting essentially of a non-polar organic solvent, a wax, a liquid titanium ester and a stabilizer, said wax being one which melts within the range of 33° to 90° C. and is soluble in non-polar organic solvents, said titanium ester being a compound selected from the group consisting of (*a*) tetraalkyl titanates of 3 to 8 C-atoms in each alkyl radical and (*b*) tetraalkyl titanates as aforementioned in which up to three of the O-alkyl radicals have been replaced by the enolic radical of an aceto-acetyl compound of the formula

$$CH_3COCH_2CO—Z$$

Z being a radical of the group consisting of CH_3, C_2H_5, OCH_3 and OC_2H_5, said titanate being present in quantity bearing a ratio of from 0.12:1 to 0.7:1 to the weight of the wax in said solvent bath, and said stabilizer being a basic arcylate copolymer containing neutral acrylic components and basic components selected from the group consisting of alkylaminoethyl acrylates and alkylaminoethyl methacrylates, said stabilizer being present in quantity bearing a ratio of from 0.1:1 to 0.5:1 to the weight of said titanate in the solvent bath.

3. A composition of matter consisting essentially of as active ingredients essentially 100 parts by weight of a liquid titanium ester, and from 5 to 50 parts by weight of a basic acrylate copolymer, said titanium ester being a liquid composition selected from the group consisting of (*a*) tetraalkyl titanates of 3 to 8 C-atoms in each alkyl radical and (*b*) tetraalkyl titanates as aforementioned in which up to three of the O-alkyl radicals have been replaced by the enolic radical of an aceto-acetyl compound of the formula $CH_3COCH_2CO—Z$, Z being a radical of the group consisting of CH_3, C_2H_5, OCH_3 and OC_2H_5, and said basic acrylate copolymer being a polymer formed from 10 to 90 parts of an alkylaminoethyl acrylate of the formula



wherein R′ designates H or CH_3, R″ designates an alkyl radical of 1 to 4 C-atoms, while R‴ is selected from the group consisting of hydrogen and an alkyl radical of 1 to 4 C-atoms; and neutral olefinic compounds selected from the group consisting of, neutral alkyl esters of acrylic acid and neutral alkyl esters of methacrylic acid said neutral alkyl ester being present in an amount of from 90 to 10 parts by weight, respectively, of said alkylaminoethyl acrylate, said composition of matter being liquid at room temperature, and being readily miscible with non-polar organic solvents containing paraffin wax to produce a water-repellency agent for textile fiber.

3,157,662
CATALYSTS FOR PREPARING CARBODIIMIDES

Kenneth C. Smeltz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 28, 1961, Ser. No. 155,501
5 Claims. (Cl. 260—288)

1. A process for preparing organic carbodiimides which comprises heating in the range of from about 100° C. to 250° C. under anhydrous conditions in organic isocyanate containing 1 to 3 isocyanate groups and selected from the group consisting of carbocyclic aromatic isocyanates containing from one to three rings, saturated aliphatic isocyanates containing from two to eighteen carbons in the aliphatic group, pyridine isocyanates and quinoline isocyanates, said isocyanate being free of Zerewitinoff active hydrogen, and an organometallic catalyst of the formula

$$M'[R_aM^2(OR')_{4-a}]_w$$

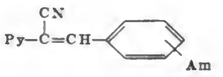
where M′ is selected from the group consisting of the alkali metals and the alkaline earth metals, M^2 is selected from the group consisting of boron and aluminum, R and R′ are Zerewitinoff active hydrogen free alkyl groups, *w* is the valence of M′ and *a* is from 0 to two.

3,157,663
3-(AMINO-PHENYL)-2-(PYRIDYL)-ACRYLONITRILES

William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,089
4 Claims. (Cl. 260—294.9)

1. A member selected from the group consisting of a compound of the formula



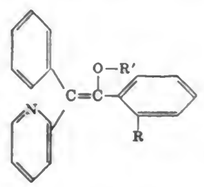
in which Py is pyridyl, and Am is a member selected from the group consisting of amino, N-lower alkyl-amino and N,N-di-lower alkyl-amino, and a pharmaceutically acceptable, non-toxic acid addition salt thereof.

3,157,664
ENOLIC ETHERS AND ESTERS

Horace A. De Wald, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,041
7 Claims. (Cl. 260—295)

1. A compound of the formula



where R is a member of the class consisting of lower alkyl and halogen, and R' is a member of the class consisting of lower alkyl and lower alkanoyl.

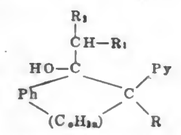
2. 2 - (α-phenyl-β-lower alkoxy-o-methylstyryl)-pyridine.

3,157,665
1-ALKYL-1-HYDROXY-2-PYRIDYL-BENZ[b]CYCLOALKANES

William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,001
3 Claims. (Cl. 260—297)

1. A member selected from the group consisting of a compound of the formula



in which Ph is a member selected from the group consisting of 1,2-phenylene, lower alkyl-1,2-phenylene, hydroxy-1,2-phenylene, lower alkoxy - 1,2 - phenylene, halogeno-1,2-phenylene, nitro - 1,2 - phenylene and amino-1,2-phenylene, Py is pyridyl, R stands for lower alkyl, each of the groups R_1 and R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and the group of the formula $—(C_nH_{2n})—$, in which the letter *n* stands for a whole number from one to seven, stands for alkylene and separates Ph from the carbon atom carrying Py and R by one to three carbon atoms, an acid addition salt thereof, an N-oxide thereof, and an acid addition salt of an N-oxide thereof.

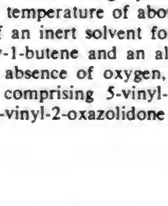
3. 1,2-dimethyl-2-(3-pyridyl) - 1,2,3,4-tetrahydro-naphthalen-1-ol.

3,157,666
α-PHENYL-α-(2-PYRIDYL)-ARYLONES

Horace A. De Wald, Roger D. Westland, and John R. Dice, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,080
9 Claims. (Cl. 260—297)

1. A compound of the formula



where Ar is a member of the class consisting of o-methylphenyl, o-ethylphenyl, o-isopropylphenyl, o-chlorophenyl, o-bromophenyl, o-fluorophenyl, o-methoxyphenyl, o-methylthiophenyl, o-trifluoromethylphenyl, 1-naphthyl, 2,3 - dichlorophenyl, 2,4 - dichlorophenyl, 2,6 - dichlorophenyl, 2,4-dimethylphenyl and 2,6-dimethylphenyl.

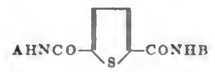
2. α-Phenyl-α-(2-pyridyl)-2-methylacetophenone.

3,157,667
ORGANIC DYESTUFFS

Walter Kern, Sissach, Willy Mueller, Riehen, and Adolf Emil Siegrist, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 19, 1962, Ser. No. 203,435
Claims priority, application Switzerland, June 21, 1961, 7,270/61; May 9, 1962, 5,555/62
8 Claims. (Cl. 260—303)

1. A compound of the formula



wherein A and B each represents a radical selected from the group consisting of anthraquinonyl-1, 5-benzoylamino-anthraquinonyl-1, 4-methoxy-anthraquinonyl-1, isothiazole-anthronyl-1 and 1-amino - 2 - carbo-isobutoxy-anthraquinonyl-4.

3,157,668
PRODUCTION OF 5-VINYL-2-OXAZOLIDONE

Edwin D. Little, Hopewell, and Donald Pickens, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 29, 1961, Ser. No. 134,575
6 Claims. (Cl. 260—307)

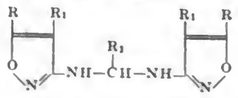
1. A process for the preparation of 5-vinyl-2-oxazolidone which comprises reacting cyanuric acid with 3-4-epoxy-1-butene at temperature of about 100° to 200° C. in the presence of an inert solvent for the cyanuric acid and the 3,4-epoxy-1-butene and an alkaline catalyst and in the substantial absence of oxygen, thereby forming a reaction mixture comprising 5-vinyl-2-oxazolidone, and recovering said 5-vinyl-2-oxazolidone from the reaction mixture.

3,157,669
PREPARATION OF ISOXAZOLE COMPOUNDS

John Thomas Plati, Rutherford, and Wilhelm Wenner, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 17, 1962, Ser. No. 210,580
7 Claims. (Cl. 260—307)

1. A compound of the formula:



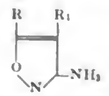
wherein R and R_1 are selected from the group consisting of hydrogen and lower alkyl wherein at least one of R and R_1 is lower alkyl, and R_3 is selected from the group consisting of hydrogen and lower alkyl having less than 7 carbon atoms.

3. A compound of the formula:



wherein R and R_1 are selected from the group consisting of hydrogen and lower alkyl wherein at least one of R and R_1 is lower alkyl.

5. A process for the preparation of a compound of the formula:



I

wherein R and R_1 are selected from the group consisting of hydrogen and lower alkyl, wherein at least one of R and R_1 is lower alkyl,

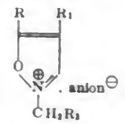
comprising the steps of:

(*a*) treating a compound of the formula:



I_1

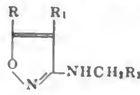
wherein R and R_1 have the meaning given above, with a compound selected from the group consisting of a lower alkyl sulfate, a lower alkyl halide, and a lower alkyl ester of p-toluenesulfonic acid to form a compound of the formula:



III

wherein R and R_1 have the meaning given above, R_3 is selected from the group consisting of hydrogen and lower alkyl having less than 7 carbon atoms, and anion represents an anion selected from the group consisting of halide, alkosulfate, and p-toluenesulfonate;

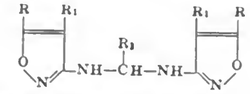
(*b*) treating the compound of Formula III with a compound selected from the group consisting of hydroxylamine and an acid addition salt thereof to form a compound of the formula:



IV

wherein R, R_1, and R_3 have the meaning given above;

(*c*) treating the compound of Formula IV with potassium permanganate to form a compound of the formula



VI

wherein R, R_1, and R_3 have the meaning given above; and

(*d*) treating the compound of Formula VI with an alkali metal bisulfite to form a compound of Formula I.

3,157,670
3-AMINO-4-ACYLAMINO-2-PYRAZOLIN-5-ONES

Noel F. Albertson, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 6, 1961, Ser. No. 87,067, now Patent No. 3,102,132, dated Aug. 27, 1963. Divided and this application Feb. 23, 1962, Ser. No. 180,917
1 Claim. (Cl. 260—310)

3-amino-4-benzyloxycarbonylamino-2-pyrazolin-5-one.

3,157,671
1,1-DIETHYL-3-HYDROXYPYRROLIDINIUM BROMIDE BENZILATE ESTER

Ralph Edward Bowman, Northolt, Middlesex, John Frederick Cavalla, Isleworth, Middlesex, and John Davoll, Shepperton, Middlesex, England, assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Continuation of application Ser. No. 641,830, Feb. 25, 1957. This application Feb. 14, 1962, Ser. No. 173,128
Claims priority, application Great Britain Feb. 22, 1956
1 Claim. (Cl. 260—326.3)

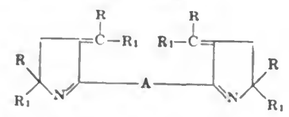
1,1-diethyl-3-hydroxypyrrolidinium bromide benzilate ester.

3,157,672
α,ω-BIS(3-ALKYLIDENE-5,5-DIALKYL-1-PYRROLINYL-2) ALKANES AND ETHERS

Albert I. Meyers, New Orleans, La., assignor to Board of Supervisors of Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La.

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,935
7 Claims. (Cl. 260—326.5)

1. A compound of the formula:



wherein R and R_1 are each selected from the group consisting of methyl and ethyl, A is selected from the group consisting of $—(CH_2)_2O(CH_2)_2—$ and $—(CH_2)_n—$, and *n* is an integer from 2 to 10.

3,157,673
PROCESS FOR THE PREPARATION OF THIOPHENE-2,5-DICARBOXYLIC ACID

Peter Liechti, Binningen, Adolf Emil Siegrist, Basel, and Erwin Maeder, Muenchenstein, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

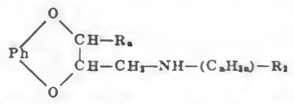
No Drawing. Filed Dec. 19, 1961, Ser. No. 160,650
Claims priority, application Switzerland, Dec. 23, 1960, 14,394/60
8 Claims. (Cl. 260—332.2)

1. Process for the manufacture of thiophene-2,5-dicarboxylic acid, which comprises treating tetrahydrothio-

phene-2,5-dicarboxylic acid in aqueous mineral acidic medium with molecular chlorine and then splitting off hydrogen chloride from the resulting chlorination product in the aqueous mineral acidic medium at an elevated temperature.

3,157,674
2-(CYCLOALIPHATIC-ALKYL-AMINOMETHYL)-BENZODIOXANES
Lincoln Harvey Werner, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 30, 1963, Ser. No. 276,993
12 Claims. (Cl. 260—340.3)

1. A member selected from the group consisting of a compound of the formula



in which R_a is a member selected from the group consisting of hydrogen and lower alkyl, the letter *n* stands for a whole number from one to seven, R_2 stands for a member selected from the group consisting of cycloalkyl having from three to eight ring carbon atoms and cycloalkenyl having from five to eight ring carbon atoms, and Ph stands for a member selected from the group consisting of 1,2-phenylene, lower alkyl-1,2-phenylene, hydroxy-1,2-phenylene, lower alkoxy-1,2-phenylene, phenyl-lower alkoxy-1,2-phenylene, halogeno-1,2-phenylene, and lower alkanoyl-1,2-phenylene, and pharmaceutically acceptable acid addition salts thereof.

3,157,675
ESTERS OF THIONOPHOSPHORIC ACID WITH ACETAL-ALCOHOLS
Enrique R. Witt, Corpus Christi, Tex., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 19, 1960, Ser. No. 43,732
6 Claims. (Cl. 260—340.7)

6. An ester of thionophosphoric acid with an acetal-alcohol which acetal-alcohol is the reaction product of:
(1) a polyol selected from the group consisting of trimethylolpropane, trimethylolethane, pentaerythritol, erythritol, glycerol and inositol; and
(2) a compound selected from the group consisting of formaldehyde, crotonaldehyde and acetone.

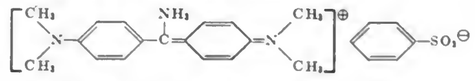
3,157,676
PROCESS FOR OBTAINING TRIVERNOLIN
Charles F. Krewson, Abington, William E. Scott, Levittown, and Jesse S. Ard, Glenside, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Oct. 11, 1961, Ser. No. 144,516
4 Claims. (Cl. 260—348)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The process for obtaining a high yield of trivernolin from the seed of *Vernonia anthelmintica* Willd. comprising subjecting the intact seed to steam heat at a temperature of about from 115° to 120° C. to inactivate the enzyme present therein which is capable of hydrolyzing trivernolin, preparing the thus-heated seed for solvent extraction, extracting the prepared seed with petroleum ether to give an extract containing trivernolin and a very low content of free fatty acids and which is essentially free of divernolin, and separating trivernolin from the extract.

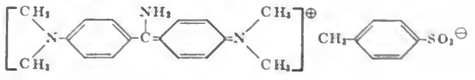
2. The process for obtaining a high yield of trivernolin from the seed of *Vernonia anthelmintica* Willd. comprising subjecting the intact seed to dry heat at a temperature of about from 130° to 150° C. to inactivate the enzyme present therein which is capable of hydrolyzing trivernolin, preparing the thus-heated seed for solvent extraction, extracting the prepared seed with petroleum ether to give an extract containing trivernolin and a very low content of free fatty acids and which is essentially free of divernolin, and separating trivernolin from the extract.

3,157,677
SULFONIC ACID SALTS OF AURAMINE
Walter Seibert, Fritz Schubert, and Hans Otterbach, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Apr. 29, 1960, Ser. No. 25,515
Claims priority, application Germany May 9, 1959
2 Claims. (Cl. 260—396)

1. The compound of the formula



2. The compound of the formula

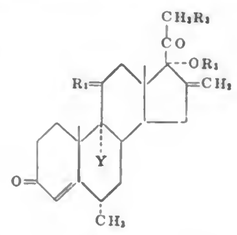


3,157,678
METHOD OF PRODUCING A CRYSTALLINE ESTER OF VITAMIN D_3 AND CRYSTALLINE VITAMIN D_3 WHICH MAY BE OBTAINED THEREFROM
Menso Pieter Rappoldt, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 8, 1960, Ser. No. 41,470
Claims priority, application Netherlands Aug. 4, 1959
2 Claims. (Cl. 260—397.2)

1. A method of producing a cholesterol and 7-dehydrocholesterol free crystalline vitamin D_3 which comprises the steps of crystallizing, in a single step, vitamin D_3 butyrate from a solution of said butyrate containing less than 8% of the butyrates of said cholesterol and said 7-dehydrocholesterol, treating the vitamin D_3 butyrate with a metal hydride selected from the group consisting of metal hydrides of two different metals and metal alkyl hydride to thereby form vitamin D_3 and then, without the addition of digitonin, separating out pure crystalline vitamin D_3 by crystallization.

3,157,679
PROCESS FOR THE PREPARATION OF 6α-METHYL-16-METHYLENE-STEROIDS
Karl-Heinz Bork, Griesheim, near Darmstadt, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany, a corporation of Germany
No Drawing. Filed Oct. 25, 1961, Ser. No. 147,458
Claims priority, application Germany, Oct. 29, 1960, M 46,980
10 Claims. (Cl. 260—397.4)

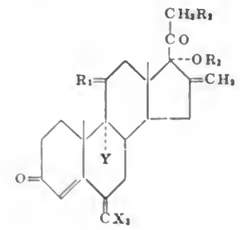
1. In a process of preparing 6α-methyl-16-methylene steroids selected from the group consisting of compounds of the Formula I:



wherein:

R_1 is a member of the group consisting of (H,H), (αH,βOH), and keto;
R_2 is a member of the group consisting of H, OH and O—R_4;
R_3 is a member of the group consisting of H and R_5; and
R_4 is a member of the group consisting of the acid moieties of alkanoic acids having a carbon content up to 12 carbon atoms, succinic acid, amino acetic acid, diethylamino acetic acid, tetrahydrophthalic acid, phosphoric acid and sulfuric acid;
R_5 is a member of the group consisting of the acid moieties of alkanoic acids having a carbon content from 1 to 12 carbon atoms;
Y is a member of the group consisting of H and F

and the 1-dehydro derivatives thereof the step which comprises treating with hydrogen a member of the group consisting of a compound of the Formula II:



wherein:

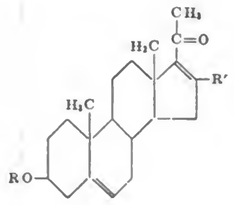
R_1, R_2, R_3 and Y have the above meanings and
wherein:
X is a member of the group consisting of chlorine and bromine

and the 1-dehydro derivatives thereof, in the presence of a catalyst selected from the group consisting of palladium and platinum and a proton acceptor at about atmospheric pressure and at about room temperature.

5. Method of converting 6,6-dibromomethylene-16-methylene-17α-hydroxy-progesterone to 6α-methyl-16-methylene-17α-hydroxy-progesterone which comprises hydrogenating 6,6-dibromomethylene-16-methylene-17α-hydroxy-progesterone in the presence of a solvent, a proton acceptor and a catalyst selected from the group consisting of palladium and platinum.

3,157,680
PREPARATION OF 16-ALKYL-16-DEHYDRO-PREGNENOLONE
Robert Philip Graber and LeRoy George Hickman, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed May 14, 1962, Ser. No. 194,696
2 Claims. (Cl. 260—397.4)

1. A process for preparing steroid compounds of the formula

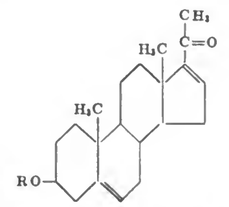


where R is selected from the group consisting of H and

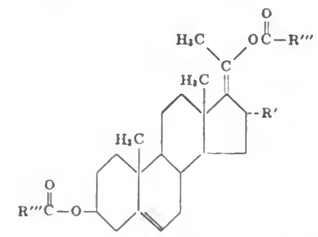


where R''' is an aliphatic hydrocarbon group having from 1 to 11 carbon atoms and R' is an alkyl group having from 1 to 8 carbon atoms, comprising the sequence of steps of

(A) treating a compound of the formula

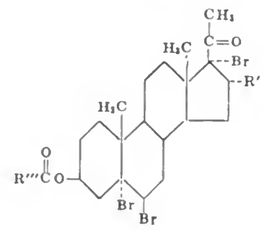


where R is an previously defined, with an alkyl magnesium halide in which the alkyl group has from 1 to 8 carbon atoms followed by treatment with an aliphatic hydrocarbon acylating agent having from 1 to 12 carbon atoms to provide a mixture of the cis and trans forms of



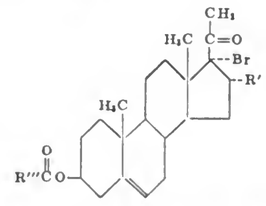
where R' and R''' are as previously defined.

(B) treating the product of (A) with a glacial acetic acid solution of bromine thereby providing



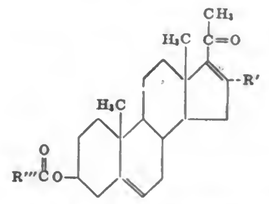
where R' and R''' are as previously defined,

(C) treating the product of (B) with sodium iodide thereby providing



where R' and R''' are as previously defined and.

(D) treating the product of (C) with a solution of lithium chloride and lithium carbonate thereby providing



where R′ and R‴ are as previously defined.

3,157,681
POLYMERIC FAT ACIDS
Eugene M. Fischer, St. Paul, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed June 28, 1962, Ser. No. 205,835
2 Claims. (Cl. 260—407)

1. A process of polymerizing higher unsaturated fatty acids comprising heating said acids in the presence of an acid clay selected from the group consisting of Clays A and B having a pH of about 5.7 and a Karl Fischer moisture content of about 10 to 17% and substantially the analysis:

	Clay A	Clay B
SiO_2	59.12	58.40
Al_2O_3	21.80	18.48
Fe_2O_3	4.50	4.51
FeO	0.18	0.20
MgO	2.32	2.66
CaO	1.40	2.00
Na_2O	0.92	0.61
K_2O	0.72	0.24
TiO_2	0.34	0.25
SO_3	0.45	0.22

thereby providing a polymeric fat acid having a dimer to trimer ratio greater than 4.0, a Gardner color not greater than 8, an acid value not less than 185 and a saponification value not less than 196.5.

3,157,682
OIL-SOLUBLE LIQUID CHELATE COMPOUNDS AND THEIR PREPARATION
Hugh E. Ramsden, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Nov. 4, 1960, Ser. No. 67,171
3 Claims. (Cl. 260—429)

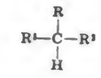
1. A process for making liquid metal organic chelates comprising admixing a β-keto ester with an aqueous basic solution containing from 50 to 98% by weight of the theoretical base, said β-keto ester having the formula:



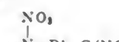
in which R_1 and R_2 are organic radicals containing from 1 to 30 carbon atoms each, and which are selected from the group consisting of alkyl, cycloalkyl, aralkyl, aryl, and alkaryl radicals, and R_3 is an organic radical selected from the group of hydrogen and an alkyl radical having from 1 to 12 carbon atoms; reacting said basic ester solution with an ionic metal salt in the theoretical quantity necessary to form the β-keto ester chelate of the metal; and recovering a liquid oil-soluble metal β-keto chelate compound from the non-aqueous layer of the solutions.

3,157,683
β-N-NITRO-N-TRINITROALKYL ISOCYANATES AND DERIVATIVES THEREOF
Henry Feuer, West Lafayette, Ind., and William A. Swarts, Niagara Falls, N.Y., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana
No Drawing. Filed Nov. 26, 1958, Ser. No. 777,812
7 Claims. (Cl. 260—453)

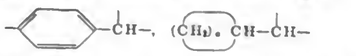
1. The composition having the following structural formula:



where R is the radical



R^1 is a radical selected from the group consisting of



and alkylene having up to six carbon atoms; R^2 is the radical $-(CH_2)_{n_1}-R^3$; R^3 is a radical selected from the group consisting of —NCO, and —NH—COOR⁴; R^4 is alkyl having up to five carbon atoms; and R^5 is selected from the group consisting of hydrogen, alkyl having up to ten carbon atoms, R substituted alkyl having up to ten carbon atoms and R^3 substituted alkyl having up to ten carbon atoms, n is an integer between 3 and 9 and n_1 is an integer between one and ten.

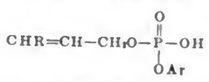
3,157,684
TRITIATED-2-METHYL-NAPHTHAQUINOL-(1,4)-DIPHOSPHORIC ACIDS
Denis Haigh Marrian, Cambridge, and Eustace Anthony Evans, Rickmansworth, England, assignors, by direct and mesne assignments, to United Kingdom Atomic Energy Authority, London, England, a British authority
No Drawing. Filed Feb. 7, 1962, Ser. No. 171,561
Claims priority, application Great Britain Feb. 13, 1961
13 Claims. (Cl. 260—461)

1. Sodium salts of 2-methyl-naphthaquinol-(1,4) di-(phosphoric acid) in which at least one of the four normal hydrogen atoms in the non-substituted ring is replaced by tritium.

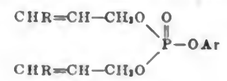
6. Process for the manufacture of sodium salts of 2-methyl-naphthaquinol-(1,4) di(phosphoric acid) in which at least one of the four normal hydrogen atoms in the non-substituted ring is replaced by tritium, which process comprises reductively dehalogenating, using tritium gas in the presence of a hydrogenation catalyst, a 2-methyl-naphthaquinol-(1,4) di(phosphoric acid) tetrasodium salt which is halogen-substituted in at least one of positions 5, 6, 7 and 8.

3,157,685
PARTIAL ESTERS OF PHOSPHORIC ACID AND A METHOD OF PREPARING THEM
Karoly Szabo, Yonkers, N.Y., and Joseph R. Froli, Jr., San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 6, 1962, Ser. No. 177,739
3 Claims. (Cl. 260—461)

1. A method of preparing a diester phosphate as represented by the following general formula:



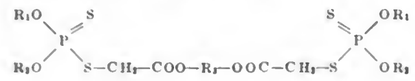
wherein R is selected from the class consisting of hydrogen and lower alkyl and Ar represents an aromatic hydrocarbon residue selected from the class consisting of naphthyl, phenyl and substituted phenyl wherein the substituents are selected from the class consisting of chlorine, lower alkyl, nitro, lower alkoxyl and bromine, which comprises cleaving, in the presence of an amine salt selected from the class consisting of the hydrochlorides of lower trialkylamine and pyridine, a neutral triester phosphate of the following formula



wherein R and Ar have the significance as above set forth and isolating the so-formed diester phosphate from the reaction mixture.

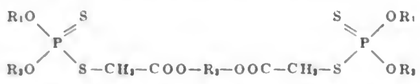
3,157,686
DIOL ESTERS OF DITHIOPHOSPHORYLACETIC ACIDS AND PROCESS FOR THEIR PRODUCTION
Heinz Pohlemann and Heiner Dickhaeuser, Ludwigshafen (Rhine), and Richard Sehring, Ingelheim (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,371
Claims priority, application Germany, Dec. 23, 1961, B 65,330
4 Claims. (Cl. 260—461)

1. A compound of the formula

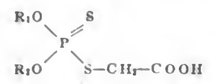


wherein:
R_1 and R_2 each represent lower alkyl; and
R_3 represents the alkylene residue of a 2 to 6 carbon atom diol.

3. A process for the production of a compound having the formula



wherein R_1 and R_2 each represent lower alkyl and R_3 represents the alkylene residue of a 2 to 6 carbon atom diol, which process comprises: reacting a compound of the formula



wherein R_1 and R_2 each represent lower alkyl, with a 2 to 6 carbon atom alkylene-diol in an inert organic solvent at a temperature of about 20° C. to 140° C.

3,157,687
PYROMELLITONITRILE/ALCOHOL REACTION PRODUCT
Bernard S. Wildi, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware
Filed Feb. 29, 1960, Ser. No. 11,897
6 Claims. (Cl. 260—465)

1. A reaction product of substantially two moles of a lower alkyl alcohol per mole of pyromellitonitrile, said reaction product having been made by heating a lower alkyl alcohol and pyromellitonitrile at at least reflux temperatures but temperatures insufficient to cause substantial pyrolysis of the reaction product, and separating said reaction product from unreacted alcohol and pyromellitonitrile.

3,157,688
CATALYTIC PROCESS FOR THE PREPARATION OF NITRILES
Charles Arnold, Jr., Woodbury, Jurgen M. Kruse, Pitman, and Edward L. Reilly, Woodbury, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 16, 1960, Ser. No. 15,275
9 Claims. (Cl. 260—465.3)

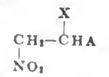
1. In the process for the preparation of acrylonitrile which comprises catalytically reacting nitric oxide with propylene, the improvement of effecting said reaction at a temperature of about from 250 to 700° C. in the presence of a catalyst containing about from 0.5 to 90% by weight of thallium ion.

3,157,689
CYANOETHYLATED AMINO HYDROXY NITRILES
Edgar R. Rogier, Hopkins, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Apr. 1, 1960, Ser. No. 19,170
8 Claims. (Cl. 260—465.5)

1. 9-β-cyanoethyl-amino-10-hydroxystearonitrile.

3,157,690
PROCESS FOR SPLITTING OFF NITRIC ACID FROM ORGANIC NITRATE COMPOUNDS
Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 16, 1961, Ser. No. 117,515
Claims priority, application Switzerland July 18, 1960
7 Claims. (Cl. 260—465.7)

1. A process for splitting off nitric acid from compounds of the formula



wherein A is selected from the class consisting of COOH, CN, CHO, and COR and COOR radicals wherein R is aliphatic hydrocarbon having from 1 to 6 carbon atoms, and X is the chlorine atom, comprising treating the nitrate compounds at a temperature in the range of about 20°–40° C., with at least double the stoichiometric amount of potassium fluoride based on the amount of nitric acid to be split off.

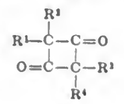
3,157,691
PREPARATION OF AROMATIC POLYCARBOXYLATED COMPOUNDS
Willis C. Keith, Lansing, Ill., assignor to Sinclair Refining Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Oct. 20, 1958, Ser. No. 768,016
9 Claims. (Cl. 260—475)

1. A method for the preparation of benzene polycarboxylated compounds which comprises oxidizing in the presence of molecular oxygen and in the liquid phase an alkyl benzene carboxylic acid ester having at least one carbo-lower-alkoxy group and at least one nuclearly attached non-tertiary lower alkyl at a temperature of about 150 to 300° C. while in the presence of a catalyst consisting of hydrogen bromide and a solvent selected from the group consisting of water, acetic acid, and mixtures of the same.

3,157,692
PREPARATION OF ALKALI METAL ENOLATES OF 2,2,4,4-TETRAALKYLACETOACETIC ESTERS
Raymond D. Clark and Ronald G. Nations, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 20, 1961, Ser. No. 139,365
5 Claims. (Cl. 260—483)

1. The process for preparing a metal enolate of a 2,2,4,4-tetraalkylacetoacetic ester which comprises form-

ing a reaction mixture free of substances having a labile hydrogen atom, and comprising a 2,2,4,4-tetraalkyl-1,3-cyclobutanedione of the formula:

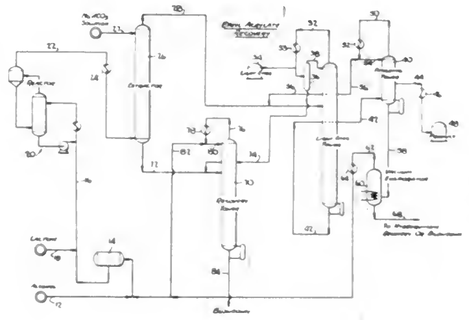


and an alkali-metal alkoxide of an alkanol of 1 to 12 carbon atoms; said reaction mixture containing at least one mole of said alkoxide per mole of said dione, and maintaining the reaction mixture at a reaction temperature of 0° C. to 150° C.; wherein each of R^1, R^2, R^3, and R^4, individually, is an alkyl group of 1 to 4 carbon atoms and wherein the groups R^1 and R^2 and the groups R^3 and R^4, taken together with the carbon atom to which they are attached, form a saturated carbocyclic ring of 5 to 6 members.

3,157,693
RECOVERY OF ACRYLIC ACID ESTERS BY WATER WASHING AND FRACTIONATION

Edward N. Wheeler, Gene J. Fisher, and Arthur W. Schnizer, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

Filed Mar. 5, 1959, Ser. No. 797,410
15 Claims. (Cl. 260—486)



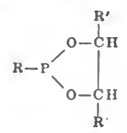
1. A process for recovering an acrylic acid ester of a 1–3 carbon alcohol in high purity which comprises; washing the crude acrylate ester which contains unreacted alcohol and acrylic acid as impurities with a dilute water solution of sodium bicarbonate, thereafter fractionating the washed acrylate ester to separate the acrylate ester in high puriy from both more volatile and less volatile components present in the washed ester.

3,157,694
METHOD FOR MAKING BISPHOSPHINIC ACID COMPOUNDS

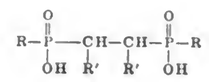
Harold James Harwood, Cuyahoga Falls, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 7, 1960, Ser. No. 67,510
5 Claims. (Cl. 260—500)

1. The method which comprises reacting a cyclic phosphonite ester of the formula



wherein R is selected from the group consisting of alkyl, aryl, and alkaryl radicals having up to 8 carbon atoms, and each R′ radical is selected from the group consisting of hydrogen, and alkyl radicals having from 1 to 6 carbon atoms with a catalyst selected from the group consisting of alkyl iodides and alkyl bromides and dibromoalkanes having from 1 to 6 carbon atoms, and chloride, bromide, and iodide salts of aluminum, tin, zinc, magnesium, iron, titanium, bismuth, antimony, and boron under anhydrous conditions, at a temperature of from about 20° C. to about 200° C. to form a polymeric material and hydrolyzing the resulting polymeric material to form a compound selected from the group consisting of a compound of the formula



wherein R and R′ are as defined above. and a salt thereof.

3,157,695
GUANIDINE DERIVATIVES

Pierre Lafont, Lyon, and Henri Francois Albert Menand, Saint-Fons, France, assignors to Rhone-Poulenc S.A.

No Drawing. Filed July 24, 1961, Ser. No. 125,990
Claims priority, application France July 27, 1960
4 Claims. (Cl. 260—501)

1. A member of the class consisting of cyclododecylguanidine and acid addition salt thereof with non-phytotoxic acids.

3,157,696
3,3′-(2,2,4,4-TETRAALKYLCYCLOBUTANE-1,3-DIOXY)BISPROPIONIC ACID

Edward U. Elam and James C. Martin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Sept. 22, 1960, Ser. No. 57,638, now Patent No. 3,099,679, dated July 30, 1963. Divided and this application Oct. 22, 1962, Ser. No. 237,782
2 Claims. (Cl. 260—514)

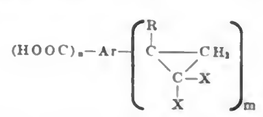
1. A 3,3′-(2,2,4,4-tetraalkylcyclobutane-1,3-dioxy)bispropionic acid of which the alkyl groups contain one to four carbon atoms.

3,157,697
1-(2,2-DIHALOCYCLOPROPYL) AROMATIC CARBOXYLIC ACIDS

Joseph M. Sandri and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Oct. 30, 1959, Ser. No. 849,752
4 Claims. (Cl. 260—515)

1. A 1-(2,2-dihalocyclopropyl) aromatic carboxylic acid having the formula



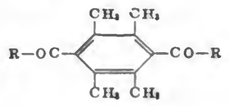
wherein Ar is an aromatic hydrocarbon group, *n* is a number from 1 to 4 inclusive, *m* is a number from 1 to 2 inclusive and wherein R is selected from the class consisting of hydrogen and a methyl group and X is selected from the class consisting of bromine and chlorine.

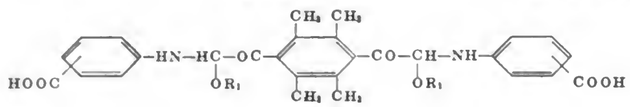
3,157,698
DURENE BISGLYOXAL DERIVATIVES

Elvin L. Anderson, Moorestown, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

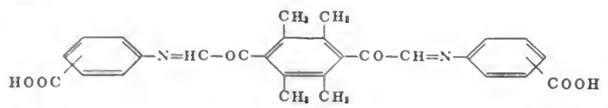
No Drawing. Filed Feb. 16, 1962, Ser. No. 173,798
5 Claims. (Cl. 260—518)

1. A chemical compound selected from the group consisting of compounds of the formula:





and



in which

R is a member selected from the group consisting of —CHO,



in which M is a nontoxic alkali metal and



and

R_1 is a member selected from the group consisting of hydrogen, alkyl of 1 to 12 carbon atoms inclusive and benzyl.

3,157,699
RECOVERY OF AGARITINE

Edward G. Daniels, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 17, 1961, Ser. No. 103,223
2 Claims. (Cl. 260—519)

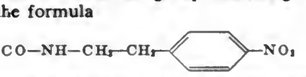
1. A process for the recovery of crystalline L(+)-glutamic acid 5-[2-(α-hydroxy)-p-tolyl hydrazide] which comprises the steps of mixing mushrooms of genus Agaricus with a lower alkanol, separating the liquid phase from the resulting mixture, concentrating said liquid phase at a temperature below about 350° C., contacting the resulting concentrate at a temperature between about 0° C. and 50° C. with an anion-exchange resin selected from the group consisting of an aromatic amine-formaldehyde condensation product, melamine condensation product containing free tertiary amino and quaternary ammonium groups, and polystyrenes containing quaternary ammonium groups, eluting the anion-exchange resin with water, adjusting the eluate pH to between about 6.0 and 7.5, contacting the eluate thus obtained at a temperature between about 0° C. and 50° C. with a sulfonated cation-exchange resin, fractionally eluting the cation-exchange resin with water, and concentrating the eluted fractions.

3,157,700
NEW SULFONYLUREAS

Paul Schmidt, Therwil, and Kurt Eichenberger and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,651
Claims priority, application Switzerland, Dec. 23, 1960, 14,400/60; Oct. 20, 1961, 12,202/60
4 Claims. (Cl. 260—553)

1. A member selected from the group consisting of a sulfonyl-urea of the formula



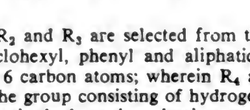
in which Ph is a member selected from the group consisting of phenyl, lower alkylphenyl and halogeno-phenyl, and the non-toxic alkali metal and alkaline earth metal salts thereof.

3,157,701
DIHALOPHOSPHONIUM SALTS

Angelo John Speziale, Creve Coeur, and Kenneth Wayne Ratts, Overland, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 18, 1962, Ser. No. 196,001
16 Claims. (Cl. 260—558)

1. A chemical compound having the structure



wherein R_1, R_2 and R_3 are selected from the group consisting of cyclohexyl, phenyl and aliphatic hydrocarbon having up to 6 carbon atoms; wherein R_4 and R_5 are selected from the group consisting of hydrogen, cyclohexyl, phenyl, aliphatic hydrocarbon having up to 6 carbon atoms, provided that not more than one of the R_4 and R_5 is hydrogen; wherein Y is of the group consisting of chlorine and bromine; and wherein X is selected from the group consisting of chlorine, bromine and iodine.

4. Triphenyl-N,N-diallylcarbamyl dichloromethyl phosphonium chloride.

3,157,702
CHEMICAL PROCESS FOR PREPARING CYCLOHEXANONE OXIME

Carl B. Flack, Woodbury, and David O. Halvorson, Pitman, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 16, 1960, Ser. No. 69,567
11 Claims. (Cl. 260—566)

1. A process which comprises adding to a mass having a pH of at least about 7 and containing a major proportion of cyclohexanone oxime and a lesser proportion of cyclohexylamine an amount of aqueous sulfuric acid sufficient to adjust the pH of the mass to one in the range of from about 4 to 7 at a temperature in the range of from about 25 to 200° C.; allowing the acidified mass to stratify into an aqueous phase and an organic phase;

separating said aqueous phase and said organic phase; and thereafter recovering purified cyclohexanone oxime from said organic phase.

3,157,703

MANUFACTURE OF ALDEHYDES AND KETONES

Volker Franzen, Heidelberg-Wieblingen, Germany, assignor to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,020
Claims priority, application Germany Apr. 5, 1961
11 Claims. (Cl. 260—586)

1. A process of preparing a carbonyl compound of the group consisting of aldehydes and ketones comprising reacting trimethylamine oxide with an alkylating agent having a formula selected from the group consisting of



and R_2CHX

where R is selected from the group consisting of hydrogen, alkyl and aryl;

R_1 is selected from the group consisting of alkyl, alkenyl, aryl, aralkenyl, nitroaryl and haloaryl;

R_2CH is selected from the group consisting of cycloalkyl and cycloalkenyl;

and X is selected from the group consisting of halogen, R_3SO_2O —where R_3 is selected from the group consisting of alkyl and aryl,



where R_4 is alkyl, and



where R_5 is alkyl.

3,157,704

PREPARATION OF GLYCOLS FROM DISUBSTITUTED ACETYLENES

Klaus Arthur Saegebarth, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 2, 1959, Ser. No. 850,042
4 Claims. (Cl. 260—618)

1. A process for preparing glycols, which process comprises (1) contacting, in an inert atmosphere, (*a*) from about 2 to 3 moles of a disubstituted acetylene having the formula R—C≡C—R′, (wherein R and R′ are independently selected from the group consisting of alkyl, benzyl, phenyl, naphthyl and benzyl, phenyl and naphthyl radicals substituted with a member taken from the group consisting of lower alkyl, lower alkoxy, fluorine, chlorine and bromine, with (*b*) one mole of diborane, in the presence of at least two moles of an ether selected from the group consisting of a dialkyl ether, 1,3-dioxane, tetrahydrofuran, and tetrahydropyran, in an inert solvent, at a temperature within the range of about —80° C. to 100° C., said ether compound being one (i) which can coordinate with said diborane, (ii) which has no substituents reactive with diborane under said reaction conditions and (iii) which is stable toward cleavage under said reaction conditions, (2) followed by isolating the organoborine compound resulting from step (1), (3) oxidizing said organoborine compound in an inert solvent with about 3 moles of oxygen for each mole of organoborine compound isolated in the step (2), (4) followed by hydrolyzing the oxidized organoborine compound resulting from step (3) with at least 6 moles of water per mole thereof and (5) recovering the glycol resulting from step (4).

3,157,705

PRODUCTION OF ALCOHOLS

Norman Henry Pearce, Hull, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Nov. 28, 1960, Ser. No. 71,918
Claims priority, application Great Britain Jan. 6, 1960
7 Claims. (Cl. 260—631)

1. A process of producing an alcohol which comprises dispersing a halide selected from the group consisting of lower alkyl and cyclohexyl chlorides, bromides and iodides in an N:N′dimethyl amide of a saturated carboxylic acid and contacting the dispersion with water selected from the group consisting of formic acid and acetic acid, at a temperature between 15° C. and the boiling point of the reaction mixture.

3,157,706

PROCESS FOR THE PRODUCTION OF DINITROTOLUENE

Azuhiro Ozeki and Akira Kanemaru, Tsurusaki-shi, Oita, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,251
Claims priority, application Japan, Feb. 9, 1962, 37/4,939
6 Claims. (Cl. 260—645)

1. In the process of the production of dinitroluene by nitration of mononitrotoluene with a mixed acid containing nitric acid and sulfuric acid, an improvement comprising employing a mixed acid containing 60% to 65% by weight of sulfuric acid and in such an amount that the amount of nitric acid in the mixed acid is 1.01 to 1.08 times as much as the theoretical amount based upon mononitrotoluene, and carrying out the nitration reaction at a temperature below 75° C.

3,157,707

METHOD OF REACTING TETRACHLOROETHYLENE, CHLORINE AND HYDROGEN FLUORIDE

Jared W. Clark, Charleston, and Joseph P. Henry and Charles E. Rectenwald, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 20, 1961, Ser. No. 90,187
3 Claims. (Cl. 260—653.7)

1. A process which comprises contacting a vapor phase mixture comprising tetrachloroethylene, chlorine and hydrogen fluoride with a Cr_2O_3 catalyst at a temperature between 200° C. and 450° C. and recovering trichlorotrifluoroethane and dichlorotetrafluoroethane as products.

3,157,708

PROCESS FOR MAKING CYCLODODECATRIENE

William J. Munley, Jr., North Plainfield, and Herbert K. Wiese, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 1, 1960, Ser. No. 19,184
12 Claims. (Cl. 260—666)

1. An improved catalyst for the trimerization of butadiene to cyclododecatriene prepared by dissolving a material selected from the group consisting of $AlEt_3$ and $AlEt_2Cl$ along with $TiCl_4$ in a hydrocarbon solvent, allowing these materials to react to reduce the $TiCl_4$ to $TiCl_3$ and adding $AlCl_3$ to the reaction mixture in an amount sufficient to bring the molar ratio of ethyl to aluminum to 0.9 to 1.3:1.

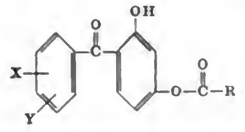
3,157,709

COMPOSITION COMPRISING A POLYESTER AND A MONOESTER OF A DIHYDROXY-SUBSTITUTED BENZOPHENONE

Paul E. Hoch, Youngstown, N.Y., and Richard J. Bellet, Mountain Lakes, N.J., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

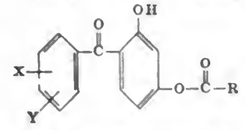
No Drawing. Filed May 8, 1959, Ser. No. 811,811
6 Claims. (Cl. 260—861)

1. A composition of matter comprising (A) an unsaturated polyester resin having esterified therein the Diels-Alder reaction product of hexachlorocyclopentadiene and maleic anhydride, and (B) a compound having the formula:



wherein R represents an unsaturated radical and wherein X and Y are each substituents selected from the group consisting of hydrogen, alkyl, halogen, hydroxyl and alkoxyl provided that hydroxyl and alkoxyl substituents can only occur in the 2,4 and 6 positions.

2. A composition of matter comprising (A) an unsaturated polyester resin which comprises the esterification product of a dihydric alcohol and the Diels-Alder reaction product of hexachlorocyclopentadiene and maleic anhydride, and (B) a compound having the formula:



wherein R represents an unsaturated radical and wherein X and Y are each substituents selected from the group consisting of hydrogen, alkyl, halogen, hydroxyl and alkoxyl provided that hydroxyl and alkoxyl substituents can only occur in the 2,4 and 6 positions.

3,157,710

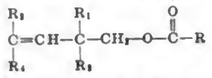
PROCESS FOR THE PREPARATION OF 1,1,4,4-TETRAALKYL-1,3-BUTADIENE

Vinton A. Hoyle, Jr., and Herman E. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,913
12 Claims. (Cl. 260—681)

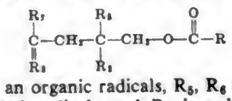
1. The method which comprises contacting an acid catalyst at a temperature in the range of about 125° to about 250° C., with a carboxylic acid ester having a formula selected from the group consisting of:

(1)



where R is an organic radical and R_1, R_2, R_3 and R_4 are each lower alkyl radicals, and

(2)



where R is an organic radicals, R_5, R_6 and R_7 are each lower alkyl radicals and R_8 is a lower alkylidene radical.

3,157,711

SUPPORTED COBALT CATALYSTS AND THEIR USE

Darrell W. Walker and Edward L. Czenkusch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 22, 1961, Ser. No. 139,846
11 Claims. (Cl. 260—683.9)

8. A process for hydrogenating a hydrogenatable unsaturated hydrocarbon which comprises contacting said hydrocarbon under hydrogenating conditions in admixture with hydrogen with a catalyst consisting essentially of an intimate mixture of a porous particulate support selected from the group consisting of silica, alumina, titania, zirconia, thoria, boria, and mixtures thereof and a minor but effective amount of the green reaction product of biscyclopentadienyl cobalt and water vapor.

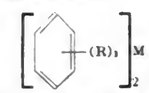
3,157,712

POLYMERIZATION PROCESS USING SUPPORTED DIARENE METAL CATALYSTS

Darrell W. Walker and Edward L. Czenkusch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 11, 1961, Ser. No. 109,270
12 Claims. (Cl. 260—683.15)

1. A process for polymerizing a 1-olefin of 2 to 8 carbon atoms which comprises contacting said olefin under polymerizing conditions in an ambient free of O_2 and moisture with a catalyst consisting essentially of a solid porous support selected from the group consisting of silica, alumina, and silica-alumina having impregnated therein a compound having the structure



wherein M is a metal selected from the group consisting of chromium and vanadium and R is selected from the group consisting of hydrogen and alkyl radicals having 1 to 6 carbon atoms so as to produce olefin polymer.

3,157,713

METHOD OF MAKING RIGID MATERIALS FROM VINYL CHLORIDE POLYMER AND POLYMERIZABLE PLASTICIZER

Leonard Leese, Brantham, Suffolk, England, assignor to B.X. Plastics Limited, London, England

No Drawing. Filed June 26, 1961, Ser. No. 119,348
Claims priority, application Great Britain, June 30, 1960, 22,997
12 Claims. (Cl. 260—884)

1. A process for the manufacture of an at least semi-rigid shaped material, wherein a composition comprising (1) a paste grade polymer selected from the group consisting of vinyl chloride homopolymers and copolymers of vinyl chloride with a minor proportion of a monomer selected from group consisting of vinyl acetate and vinylidene chloride, (2) as a polymerizable plasticizer at least one ethylenically unsaturated monomer which has a boiling point exceeding 125° C. and which allows gelation of the polymer (1) by heating at a temperature within the range of 125° C. to 155° C. for a period decreasing from 10 minutes at 125° C. to 2 minutes at 155° C., the proportion of the polymerizable plasticizer (2) not exceeding 50% of the total weight of (1) and (2), and (3) at least 0.2% and not more than 2%, calculated on the weight of polymer (1), of a free radical polymerization initiator having a half-life time in benzene of 5 to 100 minutes at 135° C., is heated at a temperature within the range of 125° C. to 155° C. to effect gelation of the polymer (1), the polymerization, initiator, temperature and time of cure being so chosen that the time of cure does not exceed two half-lives of the initiator at the selected

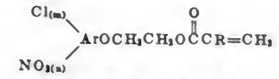
temperature so that at the end of the cure the initiator persists and is providing free radicals at a rate not less than 25% of the initial rate of production of free radicals by the initiator.

3,157,714
FIBER-FORMING COMPOSITIONS

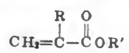
Edward M. La Combe, Charleston, and Byron Stewart, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,309
8 Claims. (Cl. 260—898)

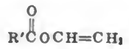
1. A dyeable fiber-forming composition comprising a blend of (*a*) from about 70 percent to about 98 percent by weight of a fiber-forming polymer of at least one olefinically unsaturated monomer, containing at least 35 percent by weight of polymerized acrylonitrile and (*b*) from about 2 percent to about 30 percent by weight of a modifying polymer selected from the group consisting of (i) homopolymers of aromatic esters represented by the general formula:



wherein Ar designates an aryl radical selected from the group consisting of the phenyl and naphthyl radicals, R designates a member selected from the group consisting of the hydrogen atom and the methyl radical, *m* designates a value of from 0 to 5, *n* designates a value of from 0 to 2, and wherein the sum of the values designated by *m* and *n* is a value of from 1 to 5, and (ii) copolymers of said aromatic ester with an unsaturated aliphatic ester selected from the group consisting of the alkyl acrylate and alkyl methacrylate esters represented by the general formula:



and the vinyl alkanoate esters represented by the general formula:

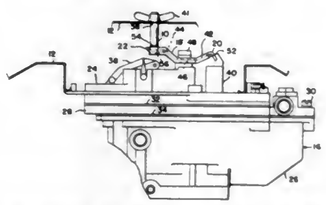


wherein R is as defined above and R′ designates an alkyl radical containing from 1 to about 12 carbon atoms, said copolymer containing at least about 10 percent by weight of said aromatic ester polymerized therein.

3,157,715
CARBURETOR

Melvin F. Sterner, Bloomfield Hills, Neil M. Romeo, St. Clair Shores, Frederick J. Marsee, Hazel Park, and Claude W. Miles, Jr., Warren, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Apr. 3, 1961, Ser. No. 100,139
8 Claims. (Cl. 261—1)

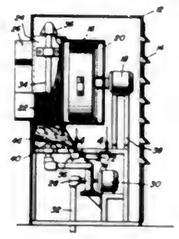


1. A carburetor having an air intake passage for drawing air into the carburetor to be mixed with fuel therein, an air filter for filtering air drawn into the air intake passage, a mounting bracket secured to the carburetor adjacent said air intake passage having a portion of downwardly opening U-shaped cross section extending transversely of, and over the air intake passage including a non-circular opening extending therethrough substantially centrally of the air intake passage, and a center stud having a similarly non-circular shank portion inserted through the opening in the mounting bracket, the leg portions of the U-shaped cross section of the mounting bracket adjacent said opening extending downwardly to secure the stud in an axially fixed position.

3,157,716
AUTOMATIC CONTROL FOR EVAPORATIVE COOLER

Noel J. Morris, 333 W. Bilby Road, Tucson, Ariz.

Filed Aug. 3, 1962, Ser. No. 214,585
6 Claims. (Cl. 261—27)



6. An evaporative cooler comprising vertical cooler pad means, water pump means for delivering water to the upper end of the pad means, blower means for directing a flow of air through the cooler pad means, control means for automatically turning said pump means on and off responsive to the presence of a predetermined amount of water moving through the pad means, said control means including a weight controlled switch, a tank associated with said switch for opening said switch upon an increase in the weight of the tank, and closing said switch upon decreasing the weight of the tank, said tank being located below the cooler pad means and in water receiving communication therewith for receiving the water flowing through the pad means, said water increasing the weight of the tank so as to open the switch, said tank including a limited outlet means for allowing a gradual discharge of water so as to decrease the weight of the tank and open the switch.

3,157,717
REPAIR OF RELIEF IMAGES

Glen Anthony Thommes, Middletown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

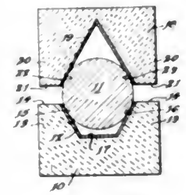
No Drawing. Filed Feb. 2, 1961, Ser. No. 86,590
6 Claims. (Cl. 264—36)

1. In a process for restoring compression-deformed relief images made from a photopolymerizable element comprising a support bearing a solid layer of a photopolymerizable composition comprising (1) a preformed, compatible, polymer binding agent, (2) a non-gaseous ethylenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure, being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization in the presence of an addition polymerization initiator therefor activatable by actinic radiation and (3) from 0.0001 to 10% by weight of the layer of such an initiator which is inactive thermally below 85° C., by exposing it imagewise to actinic radiation, removing the unexposed portions of said photopolymerizable layer with a solvent for the unexposed portion of the layer to form relief images of addition polymer and subsequently subjecting said relief images to a compressive force, the improvement characterized by treating the said compression-deformed relief images with a liquid having a plasticizing action therefor, said liquid having no deleterious effect on the said relief images, and heating the photopolymerized element until said compression-deformed images are restored to essentially their original shape and size.

3,157,718
METHOD OF SINTERING CERAMIC SHAPES

William J. O'Leary, Claymont, Del., and Eugene A. Fisher, Fostoria, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 14, 1962, Ser. No. 237,778
2 Claims. (Cl. 264—57)

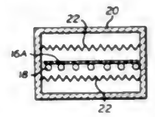


1. A method of maintaining the straightness and roundness during firing of an elongated circular shape, comprising placing it within an upright truncated-V-shaped trough thereby supporting it along the two straight parallel lines where the circumference of the shape rests against sides of the trough, and as the diameter of the shape decreases to its minimum due to shrinkage during the firing, supporting it from below along a third straight line parallel with its axis formed by contact of its circumference with the bottom of the trough; meanwhile placing above the shape an inverted truncated-V-shaped trough, thereby exerting downwardly compressive forces along the two straight parallel lines where the sides of the inverted trough rest against the circumference of the shape, and as the diameter of said shape decreases to its minimum due to shrinkage during the firing, supporting the outer edges of the inverted V-shaped trough on those of the upright trough, thereby abating the downwardly compressive forces exerted thereby.

3,157,719
PRODUCTION OF VACUUM-SHAPED ARTICLES OF POLYPROPYLENE

Marco Ferrari, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed Apr. 2, 1958, Ser. No. 725,809
Claims priority, application Italy Apr. 11, 1957
2 Claims. (Cl. 264—92)

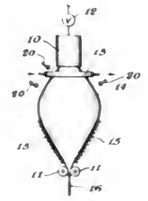


1. A process for making a shaped article from a sheet of polypropylene consisting prevailingly of isotactic macromolecules, which process comprises preheating the sheet without holding the sheet in a rigidly fixed condition and while the sheet is in relatively loose, substantially tension-free condition, for from about 2 to 3 minutes at a temperature of from about 130–140° C., placing the sheet over a mold, heating the sheet to the softening temperature of the polypropylene, applying a vacuum between the sheet and the inner surface of the mold to thereby cause the sheet to conform to and take the shape of the mold, and thereafter cooling the shaped sheet.

3,157,720
METHOD AND APPARATUS FOR TRAPPED BUBBLE STRETCHING OF THERMOPLASTIC FILM

Harold G. Ahlich, Fairview Park, Ohio, and Floyd L. Kreger and James L. Amos, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 13, 1960, Ser. No. 42,603
8 Claims. (Cl. 264—95)

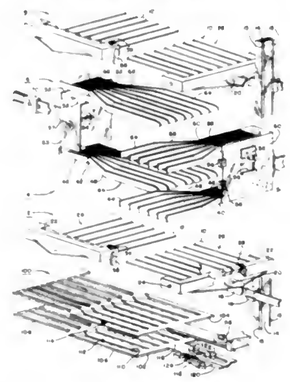


5. A method for the control of the thickness of an aromatic polymer film extruded by the trapped bubble process wherein a hollow metal ring of internal diameter greater than that of the orifice of the tube forming extruder, but smaller than that of the inflated tube to be produced, is in engagement with the expanding thermoplastic tube adjacent the die and provided with means to cool said ring and said tube, said ring being provided with means to cool said tube along the single circumferential line of contact with said inflated tube, the improvement which comprises selectively heating a portion of the periphery of said bubble to a temperature sufficient to alter the thickness thereof by means of radiant heat directed at a selected portion of said bubble.

3,157,721
METHOD AND APPARATUS FOR POSITIONING AND ASSEMBLING WIRES AND THE LIKE

Benjamin J. Barish, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 7, 1959, Ser. No. 857,592
14 Claims. (Cl. 264—157)



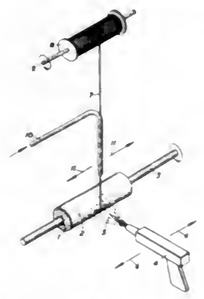
12. A method for positioning and assembling a plurality of wires or the like in a required critical spatial relationship, comprising: engaging the wires at spaced points thereof to position the span therebetween in an uncritical spatial relationship; engaging said span by spacing elements having first portions engageable with the uncriti-

cally-spaced wires and second portions spaced in accordance with said required critical spatial relationship; effecting relative movement between said wires and said spacing elements to cause said wires to move from said first portions of said spacing elements to said second portions; fixing said wires in their required spatial relationship assumed at said second portions of said spacing elements; gripping said wires at one of said spaced points; severing said fixed portion of said wires; withdrawing said spacing elements; and moving said wires by said gripping means to provide a new span of uncritically-spaced wires in position to be engaged by said spacing elements.

3,157,722
METHOD OF MAKING REINFORCED REFRACTORY BODIES

Norman C. Moore, Greens Norton, England, assignor to The Plessey Company Limited, London, England, a British company

Filed Dec. 28, 1960, Ser. No. 79,080
Claims priority, application Great Britain, Jan. 6, 1960, 465/60
4 Claims. (Cl. 264—266)

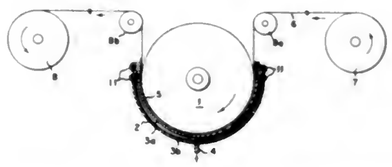


1. A process for making a ceramic refractory body including mechanical reinforcement consisting of fibrous material comprising the steps of heat spraying a fusible ceramic material so that it becomes deposited in a substantially unchanged chemical condition onto a former and simultaneously incorporating therewith the fibrous material in the form of a filament allowing the ceramic to cool and solidifying, and subsequently removing resulting refractory body from former.

3,157,723
PROCESS AND APPARATUS FOR EMBOSSING SHEET MATERIAL

Jerome Hochberg, Newburgh, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 5, 1961, Ser. No. 121,996
8 Claims. (Cl. 264—284)



7. A method for embossing by applying heat and pressure uniformly over the surface of a heat moldable sheet material in contact with an embossing member which comprises passing said sheet material through an extended nip formed by a moldable heated rigid embossing member and a rubbery inflated enclosure readily conformable with said movable embossing member and supported by a non-rigid restraining member, a slip-sheet being disposed between the sheet material being embossed and the inflated enclosure.

3,157,724
PRODUCTION OF HIGH STRENGTH ORIENTED ETHYLENE/VINYL ACETATE COPOLYMER FILM

Ival O. Salyer and Harry P. Holladay, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 26, 1959, Ser. No. 848,551
1 Claim. (Cl. 264—288)

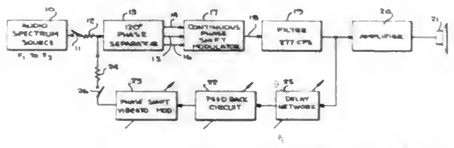
The method of obtaining a high strength, oriented film which comprises stretching an ethylene/vinyl acetate copolymer of vinyl acetate content of about 10% to 20% by weight at temperatures of about 30° C. to 60° C., an amount equivalent to about 70% to 90% of its breaking point, and annealing the resulting film at about 40° C. to 60° C. while holding the said film in the stretched condition.

ELECTRICAL

3,157,725
SYSTEM FOR PROCESSING MUSICAL SPECTRA

William C. Wayne, Jr., South Fort Mitchell, Ky., assignor to D. H. Baldwin Company, a corporation of Ohio

Filed June 1, 1961, Ser. No. 114,078
13 Claims. (Cl. 84—1.24)

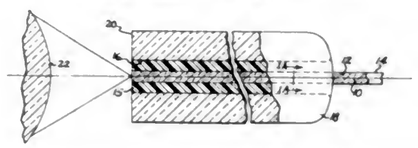


9. In a system for processing audio tone signals, a carrier-suppressed modulator having a carrier input circuit for connection to a source of said audio tone signals, and having an output circuit, and a feed-back circuit connected between said output circuit and said input circuit.

3,157,726
OPTICAL ENERGY TRANSMITTING DEVICES AND METHOD OF MAKING SAME

John W. Hicks, Jr., Fiskdale, and Elias Snitzer and Harold Osterberg, Sturbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Mar. 1, 1960, Ser. No. 12,128
6 Claims. (Cl. 88—1)



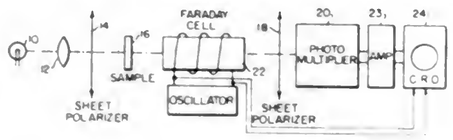
1. An optical device for use in exciting and propagating a single readily distinguishable dielectric wave guide mode in optical energy in accordance with the predetermined wavelengths of light being supplied thereto, said device

comprising a thin elongated filament having a generally circular central core of very small cross-sectional size and formed of a transparent material having a known refractive index, a cladding of transparent material completely surrounding said core throughout its length and in optical contact therewith, and having a relatively lower refractive index, the mean diameter of said core being of such a size as to fall within a range of sizes corresponding approximately to the shortest wavelength of light to be transmitted thereby and up to approximately five times the longest wavelength thereof, and the thickness of said cladding being at least equal to two microns, the opposite ends of said filament having optically finished end surfaces formed thereon so as to readily transmit light impinging thereon, the difference between the refractive indices of said core and said cladding being such in relation to the mean diameter of said core and the mean wavelength of the light to be transmitted thereby that said filament will propagate a readily distinguishable dielectric wave guide mode of optical energy which when designated, M_{nm}, and wherein the sub-letter m, indicative of the number of generally concentric light rings of the mode pattern, has a numerical value within a range of values from 1 to 53, and wherein the sub-letter n, indicative of the number of divisions of light in a half circle portion of any one of said light rings, has a numerical value within a range of values from 0 to 13.

3,157,727
POLARIMETER

Arthur C. Hardy, Wellesley, Paul J. Fopiano, Winchester, and Milton B. Trageser, Waltham, Mass., assignors, by mesne assignments, to Massachusetts Institute of Technology, a corporation of Massachusetts

Application Dec. 20, 1956, Ser. No. 630,433, now Patent No. 2,974,561, dated Mar. 14, 1961, which is a continuation of application Ser. No. 284,072, Apr. 24, 1952. Divided and this application Mar. 13, 1961, Ser. No. 95,258
12 Claims. (Cl. 88—14)

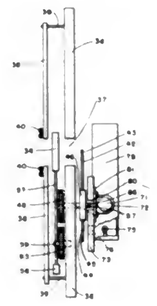


1. In a polarimeter which includes a light source, means for polarizing the light from said source, and an analyzer having an axis of polarization, the improvement that comprises means for accurately determining a relative position for said analyzer axis and the average value of the direction of the plane of polarization of light incident thereon so that said axis and the average value of said direction are at right angles comprising, in combination, electromechanical means for causing periodic relative rotary movement between the direction of the plane of polarization of light incident on said analyzer and the axis of polarization of said analyzer, photoelectric means for generating a first electrical signal, said photoelectric means being located such that said photoelectric means are responsive to the oscillating polarized light passed by said analyzer, means providing a second periodically varying electrical signal whose variations are synchronized in frequency with said electromechanical means, means for measuring the amplitude and relative phase of an electrical signal supplied thereto, means applying said first and second signals to said measuring means whereby the amplitude and relative phase of the first harmonic content of said first electrical signal may be measured and said analyzer positioned such that said first harmonic signal is a minimum.

3,157,728
METHOD AND MEANS FOR MEASURING HIGH TEMPERATURES

Daniel F. Comstock, Jr., Cohasset, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 2, 1961, Ser. No. 92,796
7 Claims. (Cl. 88—22.5)



1. A pyrometer adapted to measure the temperature of a sample heated by a source of radiant flux which is directed onto said sample by an optical path providing an intermediate image of said sample and an intermediate image of said source, comprising in combination:

(*a*) radiant energy detecting means;

(*b*) sample viewing means adapted to periodically view said image of said sample and to transmit radiant energy therefrom to said radiant energy detecting means;

(*c*) source viewing means adapted to periodically view said source of radiant flux and transmit radiant energy therefrom to said radiant energy detecting means;

(*d*) chopper means located between said source of radiant flux and said sample viewing means and adapted to periodically cut off said radiant flux from said sample; and

(*e*) driving means associated with and coordinating the operation of said sample viewing means, said source viewing means and said chopper means, said driving means being adapted to move said source viewing means and said sample viewing means alternately and successively into positions to view separately said source and said sample image, respectively, and to move said chopper means into positions to alternately block and unblock the flow of said radiant flux from said source to said sample when said sample viewing means is in successive viewing positions, whereby said sample viewing means alternately transmits radiant energy emitted by said sample and radiant energy reflected plus radiant energy emitted by said sample, to said radiant energy detecting means.

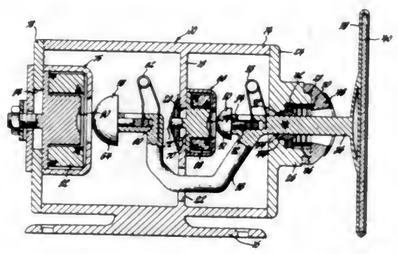
3,157,729
REAR VIEW MIRROR

Samuel B. Robbins, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 28, 1961, Ser. No. 162,719
11 Claims. (Cl. 88—98)

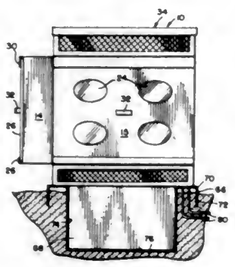
1. A rear view mirror assembly for a vehicle, comprising a housing adapted to be fixed in position on said vehicle, a mirror support having a projection extending from the rear surface thereof, first means universally pivotally connecting the projection on said housing, a

plunger member having a convex surface portion, said plunger being reciprocably supported on said projection at a point spaced from said means, a seating member having a concave surface portion for accommodating the convex surface of the plunger member and being supported on said housing, second means operatively connected with one of said members for causing said plunger to move into engagement with the seating member, third



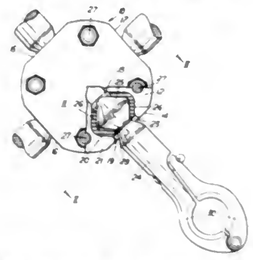
means frictionally supporting the seating member on said housing so that manual movement of the mirror support causes the seating member to move relative to the housing to an adjusted position when said members are engaged, said third means adapted to hold said seating member in position after movement thereof so that subsequent engagement of said members serves to automatically move the mirror support to said adjusted position.

3,157,730
VENTILATED PROTECTIVE ENCLOSURE FOR SURFACE MOUNTED TRANSFORMERS
J. Hebden Willox, 1432 N. State Parkway, Chicago, Ill.
Filed Dec. 14, 1961, Ser. No. 159,389
10 Claims. (Cl. 174—16)



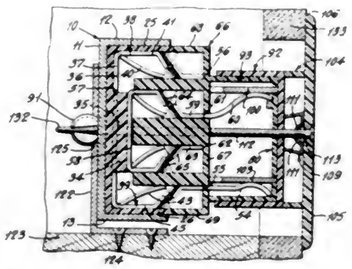
5. In combination with a protective enclosure for a transformer to be surface mounted, a supporting base comprising an upper overhanging sill portion in contact with the ground and providing an upper member having a horizontal flat upper wall surface for supporting the enclosure and having an outer leg member integrally formed on the periphery of the upper member, and extending downwardly therefrom at right angles to penetrate the ground a substantial distance for engagement with the ground, a plurality of openings through said upper member adjacent the periphery thereof within said outer leg member for the passage of underground cables from beneath into the enclosure, and a downwardly extending well portion integrally formed with and centrally located within the upper member for receipt of the lower portion of the transformer.

3,157,731
CABLE SPACERS FOR MULTI-CONDUCTOR ELECTRICAL OVERHEAD TRANSMISSION LINES
Ralph Percival Torr, New Malden, England, assignor to Andre Rubber Company Limited, Tolworth, Surrey, England, a British company
Filed Dec. 4, 1962, Ser. No. 242,130
Claims priority, application Great Britain, Dec. 5, 1961, 43,477/61
4 Claims. (Cl. 174—40)



1. A spacing device for spacing the individual conductors of an overhead electrical transmission line, said device comprising a central rigid hub that is generally symmetrical about a central axis and having therein a plurality of cavities, each said cavity having an opening in the periphery of said hub, each said cavity having a plurality of diverging straight sides at least in the cross-sections perpendicular to the axis of symmetry of said hub; a corresponding plurality of rigid arms each extending at one of its ends through one of the said hub openings and having at that one end a knob similar in shape to but smaller in overall dimensions than the cavity and its opening in which it is housed; and elastomeric material at least partially embracing each knob and maintained under compression within each cavity.

3,157,732
MULTI-PART ELECTRICAL JUNCTION BOX AND PLUG-IN ACCESSORY
Henry I. Richards, Arlington, Va., assignor to R-B Corporation, Arlington, Va., a corporation of Virginia
Filed Apr. 3, 1963, Ser. No. 270,357
14 Claims. (Cl. 174—53)



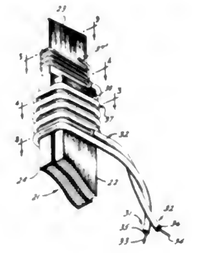
13. An electrical junction box for installation in a building, said box comprising a generally rectangular open top base having bottom, side and end walls and an outwardly projecting flange adjacent the upper edge of each end wall, a generally rectangular body of insulating material disposed in said base, said body having a bottom wall portion engaging said bottom wall, side wall portions and end wall portions providing an upwardly opening recess, a generally U-shaped sheet metal contact member comprising a web and spaced legs, each leg being formed to provide an intermediate portion and a separate side portion, each intermediate portion being disposed inwardly of each side portion, an inwardly projecting contact lug on each side portion, an outwardly projecting contact lug on each intermediate portion in alignment with the lug on said side portions, one intermediate portion being longer than the other and terminating in a contact prong, a shoulder on said one intermediate portion disposed at substantially the same level as the end of said other intermediate portion, said contact member being disposed in said recess, a second generally U-shaped sheet metal contact member comprising a web and spaced legs, each of said last-named legs being formed to provide a second intermediate portion and a second separate side portion on one side of each second intermediate portion, each second intermediate portion being disposed inwardly of said second side portions, a second inwardly projecting contact lug on each second side portion, a second outwardly projecting contact lug on each second intermediate portion in alignment with the lugs on said second side portions, one second intermediate portion being longer than the other and terminating in a second contact prong and a shoulder on said one second intermediate portion disposed at substantially the same level as the end of said other second intermediate portion, said second contact member being disposed in said recess with said other second intermediate and side portions adjacent and spaced from said one first intermediate and side portions and with said one second intermediate and side portions adjacent and spaced from said other first intermediate and side portions, a cover of insulating material having a top wall, side walls and end walls, an upstanding generally rectangular hollow housing integral with said top wall, said housing having top, side and end walls, said top and end walls of said housing having spaced slots therein, means to secure said cover to said base with said prongs received in said housing adjacent said slots and a resilient fastening member depending from said base for engaging an aperture in a bracket to secure said junction box thereto, said shoulders engaging the top wall of said cover serving to yieldably maintain said cover spaced from the flanges on said base.

3,157,733
ELECTRIC CIRCUIT PANEL FOR COMPONENTS
Ernest F. M. De Masi, 9108 Colonial Road, Brooklyn 9, N.Y.
Filed May 11, 1962, Ser. No. 194,093
1 Claim. (Cl. 174—68.5)



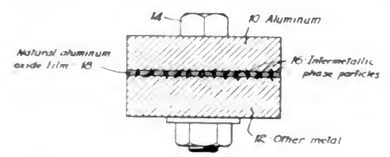
An electric circuit panel comprising a plate of dielectric material having a plurality of grooves engraved on one side thereof and having drilled apertures extending therethrough at the ends of the grooves, said apertures each having a counterbore at the side of said plate having said grooves therein, an electrically conductive wire pressed in each of said grooves extending from one aperture to the other aperture of said grooves, said engraved grooves having a depth such that outer surface of said wire is flush with surface of said plate, and an electrically conductive eyelet in each of said apertures having a flange portion overlying and in electrical connection with an end of one of said wires, said flange portions and the ends of said wires being disposed in said counterbores.

3,157,734
DOUBLE WIRE WRAP CONNECTION OF JUXTAPOSED TERMINALS
Ernest T. Derkas, Chester County, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 26, 1962, Ser. No. 247,152
5 Claims. (Cl. 174—88)



3. In a multiple electrical terminal structure:
a system of parallel, juxtaposed, rigid metallic lugs insulated from each other, comprising first and second lugs; and
a system of juxtaposed, flexible metallic conductors extending along portions of each other and around the system of rigid lugs, the first flexible conductor being insulated from the second rigid lug and being electrically connected with the first rigid lug, and the second flexible conductor being insulated from the first rigid lug and being electrically connected with the second rigid lug.

3,157,735
METALLIC PARTICLE COMPOSITIONS FOR MECHANICALLY JOINED ELECTRICAL CONDUCTORS
Philip T. Stroup, New Kensington, and Jay W. Atman, Canonsburg, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 27, 1961, Ser. No. 119,811
9 Claims. (Cl. 174—94)



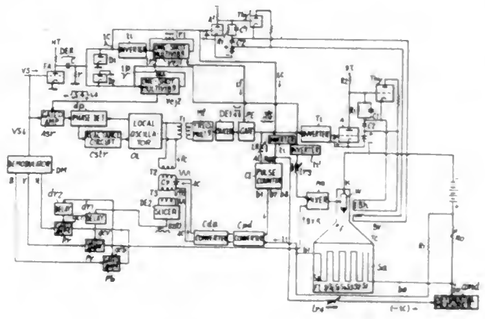
1. Metallic particles for disposition between contacting interfaces of electrical conductors in a pressure-retrained joint therebetween, which particles serve to reduce initial and extended electrical contact resistance of the joint, said particles being frangible and irregular in shape and consisting of at least 74 percent by weight of at least one intermetallic phase, said intermetallic phase consisting essentially of aluminum and at least one metal combined therewith by an atomic bond ranging from metallic to ionic in nature and the balance of said composition of said particles being composed of up to 26 percent by weight of at least one element present in the intermetallic phase in excess of that required to form the phase, and said particles exhibiting a Tyler Standard Screen Sieve

particle size range between 28 to 235 and a minimum Vickers Microhardness Number of 240.

3,157,736
ELECTRONIC DEVICE FOR SYNCHRONIZING COLOUR TELEVISION RECEIVERS

Georges Valensi, 3 Rue des Chaudronniers, Geneva, Switzerland

Filed Oct. 31, 1962, Ser. No. 234,367
Claims priority, application France Feb. 28, 1962
5 Claims. (Cl. 178—5.4)



1. Device for synchronizing a colour television receiver having a cathode ray tube with a tri colour viewing panel made of successive blue, green and red stripes scanned by the electron beam, comprising:

inside said tube, in front of and parallel to said viewing panel, a few metallic wires marking the geometry of said panel and brought out to external terminals where are produced when said electron beam strikes said wires, on the one hand a pulse for processing the initial framing of the received television pictures and on the other hand timing pulses providing periodical information concerning the imperfections of the scanning motion of said electron beam;

a local oscillator reproducing the colour sub-carrier, and maintained, by the received colour burst, at the same frequency and phase as the sub-carrier generator of the distant transmitting station, said oscillator acting as basic clock for synchronizing said colour television receiver;

a pulse counter energized by said local oscillator for producing reference pulses marking periodically the geometry of the televised scene because the frequency and phase of said colour sub-carrier are in close correlation with the scanning of said scene at the distant transmitting station;

an electronic sampler energized by said local oscillator for modulating the intensity of said electron beam sequentially by the three primary colour signals derived from the received composite video signals;

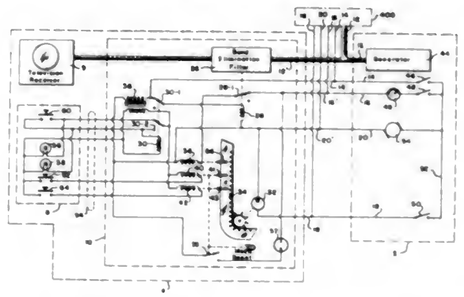
and an electronic pulse comparator receiving simultaneously said timing pulses and said reference pulses, and producing a signal for correcting the imperfections of the scanning motion of said electron beam,

said pulse comparator and said sampler acting together so that, at each given instant, said electron beam, positioned on a blue, or on a green, or on a red stripe of said viewing panel, has precisely an intensity proportional to the intensity of the corresponding blue, or green, or red component of the light emitted by the point of the televised scene being scanned at said instant.

3,157,737
SUBSCRIPTION TELEVISION DISTRIBUTION SYSTEM WITH RECORDING MEANS AT THE RECEIVER

Hubert J. Schlafly, Jr., Hollis, N.Y., assignor to Teleprompter Corporation, New York, N.Y., a corporation of New York

Filed June 20, 1960, Ser. No. 37,251
4 Claims. (Cl. 178—6)

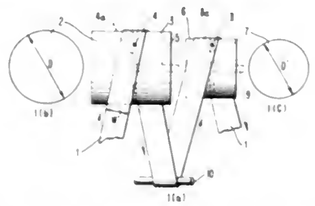


1. A signal distribution system comprising a central station and a plurality of subscriber's stations, a source of intelligence signals at the central station, a signal reproducing device at each subscriber's station, a first transmission line connected to said signal source, a separate branch transmission line connecting each of said subscriber's stations with said first transmission line, separate signal blocking means removably insertable into each of said branch lines, separate electrical means for each subscriber's station operable in one of two states of energization to insert said blocking means, means operable from the central station to condition said separate electrical means to the state of energization in which said blocking means are inserted, means at each subscriber's station selectively operable to cancel at such subscriber's station the operation of said conditioning means, record medium means advanceable under control of the central station, separate participation switch means at each subscriber's station, and means to record for each individual subscriber's station the operation of said cancelling means and said participation switch means on said record medium means.

3,157,738
STANDARDS CONVERSION FOR TELEVISION SIGNALS

Shiro Okamura, 2–26 Shiroganedaimachi, Shiba, Minatoku, Tokyo, Japan

Filed Oct. 19, 1962, Ser. No. 231,723
Claims priority, application Japan, Oct. 24, 1961, 36/38,341
8 Claims. (Cl. 178—6.6)



1. A video signal recording and reproducing system comprising

a first curved member and a second curved member positioned in spaced relation thereto,

a flexible elongated strip adapted to be passed consecutively over the surface of each of said members, said strip containing a film of magnetically sensitive material,

means for moving said strip in the direction of its longitudinal axis,

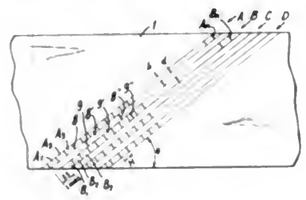
magnetic field producing means adapted to scan said strip at a given rate in the region of said first member to thereby produce a recorded video signal pattern on said strip in accordance with signal information applied to said magnetic field producing means,

and signal reproducing means for scanning said strip in the region of said second member at a rate different from said given rate to thereby produce a replica of said video signal, said replica being characterized by having a frame frequency different from that of said recorded video signal.

3,157,739
SIGNAL RECORDING AND REPRODUCING SYSTEM

Shiro Okamura, 26 2-chome, Shiroganedaimachi, Shiba, Minatoku, Tokyo, Japan

Filed Nov. 27, 1962, Ser. No. 240,258
13 Claims. (Cl. 178—6.6)



1. An arrangement for recording and reproducing periodic signals comprising

movable signal recording means for receiving said signals to develop a magnetic field in response thereto,

a movable recording medium for receiving magnetic impressions of said signals when said medium is scanned by said means,

said magnetic impressions being in the form of a plurality of tracks of identical shape and spaced equidistantly from one another,

and a pair of reproducing heads adapted to simultaneously scan said impressions to thereby develop output signals,

said heads each having an effective width substantially equal to the width of said tracks and being positioned in complementary relationship so that when one of said heads scans one of said tracks in a position of substantially perfect alignment therewith the other of said heads scans the spacing between said tracks,

and switching means for alternately selecting the output signals from said heads when the rate at which said reproduced signals are developed is different from the rate at which said periodic signals are recorded.

3,157,740
TRANSMITTER AND RECEIVER FOR PHASE MODULATED SIGNALS OF THE RELATIVE PHASE SHIFT TYPE

Cecil A. Crafts, Santa Ana, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware

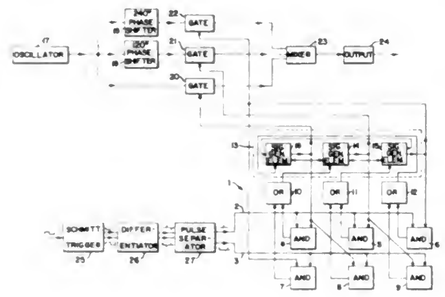
Filed Nov. 17, 1960, Ser. No. 69,878
17 Claims. (Cl. 178—66)

1. In a communication system wherein information is transmitted on a single frequency carrier wave in the form of keyed shifts of phase each equal to $n\theta$ where $N\theta=360°$, N is an odd integer larger than 2, and n is an integer from 1 to $N-1$, transmitter apparatus comprising

an oscillator operating at said frequency,

phase shifting means for altering the phase of said carrier wave in n selectable multiples of θ,

N gating circuits each connected for selective control of said phase shifting means,



means developing mark and space signals in separate circuit lines,

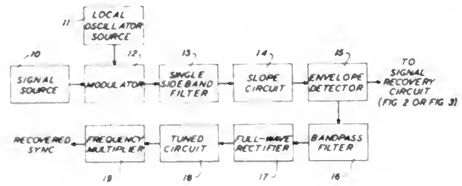
means responsive to a signal in one said line for selecting one value of $n\theta$ and operating a said gate circuit in response thereto, and

means responsive to a signal on another said line for selecting a different value of $n\theta$ and operating another said gate circuit in response thereto.

3,157,741
DATA TRANSMISSION SYSTEM

William R. Bennett, Morristown, and Fritz E. Froehlich, New Shrewsbury, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 29, 1961, Ser. No. 134,649
12 Claims. (Cl. 178—66)



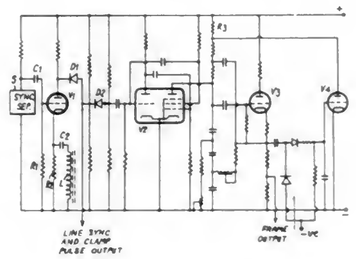
1. In a data communications system in which binary digital data are encoded at a synchronous rate in pairs as relative phase shifts of a carrier wave in multiples of 45 electrical degrees, means for recovering a synchronizing signal from a carrier wave phase shifted in accordance with binary digital data at a synchronous rate comprising a slope circuit operating on the phase-shifted carrier wave for deriving a signal representative of the time derivative of the synchronous rate occurring therein, an envelope detector for separating from the time derivative signal derived in said slope circuit a frequency component representing said synchronous rate and other frequency components including the frequency of said carrier wave, a full-wave rectifier for removing polarity ambiguities from the frequency component at said synchronous rate separated by said detector and producing

a unipolar output, and means smoothing the unipolar output of said rectifier into a single frequency wave indicative of said synchronous rate.

3,157,742
FRAME AND LINE SYNCHRONIZING SIGNAL SEPARATOR USING SINUSOIDAL KEYING PULSES

Michael J. D. Nurse, Cambridge, England, assignor to Pye Limited, Cambridge, England, a company of Great Britain

Filed May 21, 1962, Ser. No. 196,224
Claims priority, application Great Britain May 24, 1961
5 Claims. (Cl. 178—69.5)



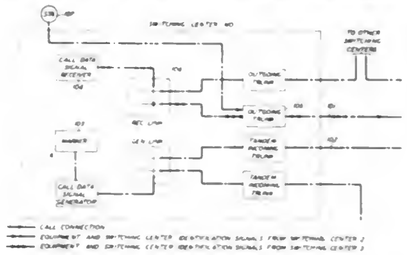
1. A circuit arrangement for producing output pulses of different amplitude for line synchronising pulses and for frame synchronising pulses fed to said circuit, said circuit arrangement comprising means for differentiating the line and frame synchronising pulses, a valve having an anode, a cathode and a control grid, a series tuned circuit connected to the cathode of said valve which is resonant at a frequency which is high with respect to the line synchronising pulse frequency, an amplitude sensitive clipping circuit connected to the anode of said valve, means for feeding the differentiated line and frame synchronising pulses to the control grid of said valve to make it conduct to cause sinusoidal pulses of current at the anode of the valve which are of the same phase for the line synchronising pulses and for the frame synchronising pulses, but of greater amplitude for the frame synchronising pulses, means for deriving said frame synchronising pulses of greater amplitude from one part of said amplitude sensitive clipping circuit which only passes said greater amplitude pulses and means for deriving said line synchronising pulses of lesser amplitude from a second part of said amplitude sensitive clipping circuit.

3,157,743
TELEPHONE CALL PROGRESS RECORDING SYSTEM

Robert C. Avery, Jackson Heights, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 6, 1962, Ser. No. 177,815
19 Claims. (Cl. 179—8)

1. A telephone switching system comprising a call originating switching center and a second switching center connected by a trunk, and means for establishing a call connection between said switching centers over said trunk; said second switching center comprising generator means for generating a switching center identification signal unique to said second switching center, and means responsive to a call over said trunk from said call originating switching center for transmitting said switching center identification signal back over said trunk to said call originating switching center; said call originating switching center comprising receiver means and recorder means, said receiver means responsive to said switching center

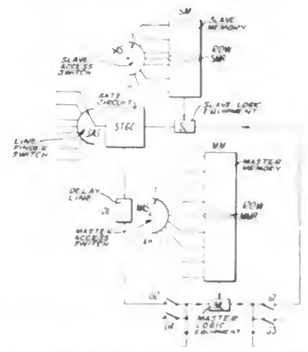


identification signal to control said recorder means in recording indicia representative of said second switching center.

3,157,744
SYSTEM FOR COORDINATING A PLURALITY OF SYNCHRONIZED TIME DIVISION MULTIPLEX SYSTEMS

Esmond Philip Goodwin Wright and John Christopher Emerson, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of New York

Filed June 7, 1960, Ser. No. 34,452
11 Claims. (Cl. 179—15)

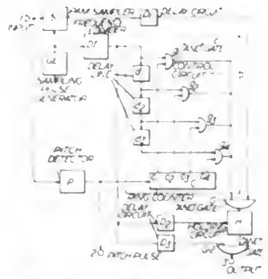


1. In a telecommunication exchange system for extending connections between calling and called ones of a plurality of multi-channel lines, a plurality of synchronized time division multiplex systems each serving a different group of said lines, a memory device in each of said multiplex systems and individual thereto, each of said individual memory devices including a separate group of storage devices for each channel of the associated multiplex system and including reading and recording means, means including the said reading and recording means for cyclically reading and recording associated multiplex system line connection information in the associated group of storage devices at a scanning rate equal to the frequency of said multiplex systems, control means common to all said multiplex systems including a common memory device, said common memory device including a separate group of common storage devices for each channel of each of said systems and including common reading and recording means, and means including the common reading and recording means for cyclically reading and recording line connection information for all of said multiplex systems in the said groups of common storage devices at a scanning rate which is a submultiple of the said multiplex system frequency.

3,157,745
BAND WIDTH COMPARISON TRANSMISSION SYSTEM FOR RECURRING SIMILAR SIGNALS UTILIZING SELECTIVE PULSE INDICATIONS

Kenichi Maezono, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed June 20, 1961, Ser. No. 118,290
Claims priority, application Japan, June 21, 1960, 35/29,032
6 Claims. (Cl. 179—15.55)



1. A system for producing a series of band-compressed output pulse indications representative of an input signal having a form approximately recurring in regular periods, said signal being represented by a first train of m pulse indications containing a predetermined number of groups of K of said pulse indications, comprising:

(a) means for selecting the first pulse indication from each of said groups during a first regular period,

(b) means for selecting the next succeeding pulse indications successively during the following $K-1$ regular periods,

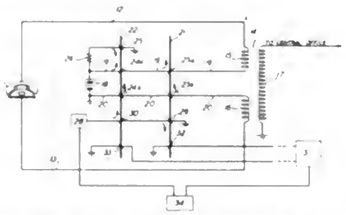
(c) means for transmitting the selected pulse indications, and

(d) means for successively repeating similar selection and transmission of pulse indications for successive groups of K regular periods.

3,157,746
SUPERVISORY CIRCUIT FOR TELEPHONE SUBSCRIBER'S LINE

Terrell N. Lowry, Boonton, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 7, 1959, Ser. No. 857,608
15 Claims. (Cl. 179—18)

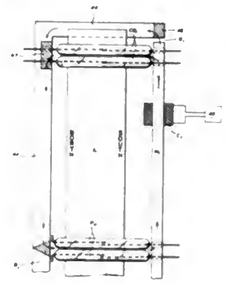


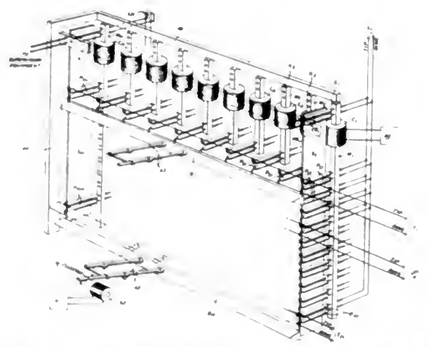
1. A supervisory circuit for determining changes-of-condition in a subscriber subset loop comprising first and second substantially identical magnetic cores displaying a substantially rectangular hysteresis characteristic, each of said cores having set and reset states of remanent magnetization and saturation states, current biasing means coupled to said first core for normally maintaining said first core in a reset saturation state, said second core being normally in said remanent reset state, means coupling each of said cores to said subset loop for enabling direct current in said loop to maintain said second core in a set saturation state and said first core in one of said states of remanent magnetization, an interrogating means coupled to each of said cores for switching said first core from said remanent reset state to said remanent set state when direct current flows in said subset loop and for switching said second core from said remanent set state to said remanent reset state in the absence of direct current in said subset loop, and utilization means coupled to each of said cores for detecting changes in flux direction in said cores.

3,157,747
AUTOMATIC SELECTING SWITCH

Alexander Feiner, Boonton, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 10, 1960, Ser. No. 28,149
23 Claims. (Cl. 179—27.54)





15. An arrangement for simultaneously closing a first dry-reed switch and opening a second dry-reed switch comprising in combination with said switches a first low magnetic reluctance member associated with first terminals of each of said switches, a second low magnetic reluctance member associated with second terminals of each of said switches, permanent magnetic means associated to produce a flux in a like sense in each of said switches sufficient to maintain said switches closed but insufficient to initiate the closing of said switches, and means for producing a flux in said first low magnetic reluctance member sufficient to initiate the closing of said switches.

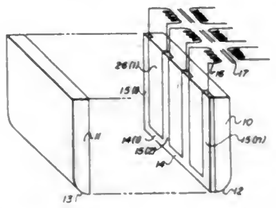
3,157,748
MAGNETIC TRANSDUCER

Kenneth R. Eldredge, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York

Filed Mar. 24, 1961, Ser. No. 98,248
3 Claims. (Cl. 179—100.2)

1. A magnetic transducer for producing signals in response to movement of magnetized portions of a magnetic medium adjacent thereto comprising; first and sec-

ond juxtaposed core members formed of magnetic material and having abutting inner surfaces and portions adapted to form pole tips; a first groove in the inner surface along the pole tip of said first core member to form

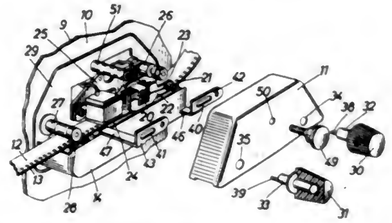


a signal transducing gap; a plurality of grooves joining said first groove and extending substantially perpendicular thereto across said inner surface of said first core member; and a nonmagnetic material having high electrical conductivity in said grooves.

3,157,749
METHOD AND APPARATUS FOR SUPERIMPOSING AN ADDITIONAL RECORDING UPON AN EXISTING SOUND RECORD

Karl Bammesberger, Munich-Allach, and Wolfgang Straub and Peter Ungnadner, Unterhaching, near Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany

Filed Oct. 11, 1961, Ser. No. 144,353
Claims priority, application Germany Oct. 15, 1960
13 Claims. (Cl. 179—100.2)

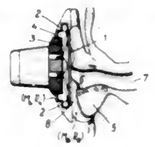


3. An apparatus for adapting a magnetic sound recording device incorporating means for transporting a magnetic tape, an erasing head, a recording head, and manually operable switch means for switching said apparatus from recording to playback operations and from playback to recording operations, wherein said erasing head is switched on during recording operation and whereby said recording head is usable for blending an additional recording into an existing sound record upon said magnetic tape, said apparatus comprising means for moving said erasing head to a non-effective position during recording operations, a movable support mounting said recording head for movement toward and away from said tape in a plane substantially perpendicular to the plane of said tape, said movable support allowing movement of said recording head from a position providing effective magnetic contact with said tape to a remote position out of effective magnetic contact with said tape, an elevating linkage mounted upon said device in operative connection with said recording head, manual operating means connected to said linkage, and motion-reducing means incorporated in said linkage for facilitating the gradual movement of said recording head toward and away from effective magnetic contact with said tape.

3,157,750
DYNAMIC HEADPHONE

Bernhard Weingartner, Vienna, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria

Filed July 6, 1961, Ser. No. 122,216
Claims priority, application Austria, July 15, 1960, A 5,465/60
5 Claims. (Cl. 179—115.5)

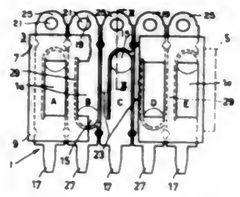


1. An electrodynamic headphone which comprises a vibratory system including a diaphragm having an effective area larger than the average entrance area of a human ear and means defining a small-depth air chamber with the rear side of said diaphragm, said headphone further comprising means defining at least one opening leading into the open from said air chamber for presenting to said vibratory system an impedance which is more dependent mass than friction substantially down the lower end of the bass range and causing an air mass in said opening to be at resonance in conjunction with the restoring force of said small-depth air chamber, at a frequency in the range of 800–5000 cycles per second, whereby the air in said opening constitutes vibrating mass means virtually in phase with the diaphragm throughout a substantial low-frequency range and the headphone when loosely applied to the ear establishes a close-range sound field corresponding to a first-order omnidirectional radiator.

3,157,751
SLIDING SWITCH CONSTRUCTION

Petrus Johannes van den Berk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 25, 1961, Ser. No. 105,430
Claims priority, application Netherlands June 23, 1960
7 Claims. (Cl. 200—16)



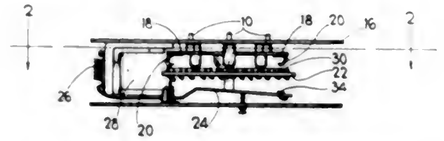
1. In a sliding switch the combination comprising an open frame member having spaced parallel longitudinal fillet means defining a plurality of first openings in said frame in a first plane normal to the longitudinal axis of said switch, a plurality of spaced parallel rod means interconnecting and supporting said fillets and defining a plurality of second openings in said frame normal to the longitudinal axis of said switch and the said first openings, a central longitudinal passage through said frame member, a sliding member in said passage, said sliding member having a plurality of contact pieces in spaced parallel rows adjacent the longitudinal edges of said sliding member, and a plurality of spring contacts secured in said frame, said spring contacts comprising a conductive plate having a resilient tongue portion and soldering tags at the longitudinal extremities thereof projecting beyond said fillets of said frame, said spring contacts being

secured in said frame for access thereto through at least one of said openings to adjust the tension of said tongue portion.

3,157,752
ACTUATOR FOR AN ELECTRIC CURRENT CONSUMPTION RECORDER

Harold F. Eichacker, Wethersfield, Conn., assignor, by mesne assignments, to Ripley Company, Incorporated, Middletown, Conn., a corporation of New York

Filed Apr. 13, 1960, Ser. No. 21,946
5 Claims. (Cl. 200—18)

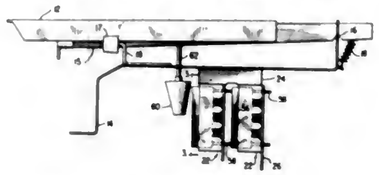


4. A meter for indicating and recording electric current consumption comprising a base, a plurality of parallel shafts mounted therein rotation of which determines the current consumption, wiping contactors carried by said shafts, a plurality of contacts arranged in circular series respectively concentric with said shafts, respectively engaged by rotation of said wiping contactors, a pivotally movable plate on which said series of contacts are mounted, circuits for a current recorder closed by each of said wiping contactors engaging individual contacts of each of said circular series, said contacts being maintained normally out of contact with said wiping contactors, and an electromagnet to pivotably move said plate when energized to actuate said series of contacts into momentary contact with said wiping contactors when a meter reading is being recorded, said plate being supported on a pivotally mounted lever forming the armature for said electromagnet.

3,157,753
ELECTRIC SWITCHING ASSEMBLY USEFUL AS A KEY ACTION FOR ORGANS

Paul A. Klann, P.O. Box 2398, Waynesboro, Va.

Filed Feb. 13, 1962, Ser. No. 172,989
8 Claims. (Cl. 200—18)

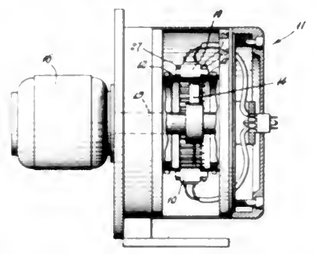


1. An electric switching assembly useful as a key action for organs comprising, an insulating support base, a guide block covering the base including a plurality of rows of parallel guide tracks and guide slots positioned transversely to the rows of tracks in columnar fashion, stationary switch contacts secured to the base in columnar fashion beneath the guide slots, a printed circuit on the base electrically connecting the stationary switch contacts to an edge of the base, a plurality of planar coupler contact slides, each slide longitudinally slidably mounted in one of the parallel guide tracks and crossing the columns of switch contacts, resilient contact tongues integral with and struck from the contact slides and spaced therein equal to the spacing between the columns of stationary contacts, means to move the contact slides longitudinally a short distance, a push bar positioned transversely of the slides in each guide slot adjacent the resilient tongues for each column of switch contacts and movable to force the tongues of the contact slides toward the support base to selectively make contact with the stationary contacts depending upon the longitudinal position of the slide.

3,157,754
MEANS FOR ADJUSTABLY MOUNTING SWITCH UNITS

George M. Beardow, Redding Ridge, Conn., assignor to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware

Filed Mar. 14, 1963, Ser. No. 265,258
12 Claims. (Cl. 200—22)



1. A control unit comprising a frame, a plurality of switch units, each having contacts therein and provided with a projecting reciprocable operator member for said contacts, mounting means for mounting said units on the frame, and movable actuating means on the control unit movable in a predetermined path for sequentially operating the operator members of said switch units, adjustable means in the mounting means including a first means in the mounting means for each switch unit for moving the operator member toward or away from the path of movement of said actuating means for controlling the period of contact closure in the switch and a second means in the mounting means for moving said operator member transversely in the path of movement of the actuating means for controlling the timing of the actuation thereof by said actuating means whereby the plurality of switch units can be individually adjusted and controlled as to the time sequence and operation thereof.

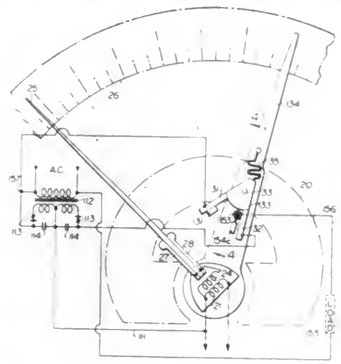
3,157,755
METER RELAY HAVING THROWABLE CONTACTS AND AN ADDITIONAL CONTACT IN THE REGION OF A CENTER POST STOP

George E. Hammond, Willoughby, and George J. Crowdes, Chesterland, Ohio, assignors to Assembly Products, Inc., Chesterland, Ohio, a corporation of Ohio

Filed May 10, 1961, Ser. No. 199,211
3 Claims. (Cl. 200—56)

1. In an electrical meter of the type having a signal coil rotatable by reaction with a magnet, having a reference scale, having a signal coil position indicator cooperative with said reference scale for viewing, having a control contact carried by said signal coil position indicator, having a throwable control contact which is pivotally mounted so that it may assume a first position at which it is arranged to mate with the control contact carried by the signal indicator and may assume a second or thrown position in which it is not engageable by the control contact carried by the signal indicator, having means for assuring movement of said throwable control contact from its first to its second position when such movement is initiated by the indicator control contact, means including a second throwable contact mechanically associated with the first throwable contact for returning the first throwable contact from second to first position, having an adjustable set pointer on which both throwable contacts are mounted and which adjustable pointer is

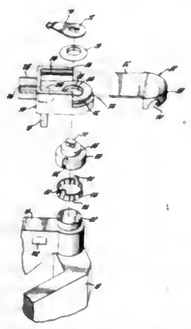
cooperative for viewing with said reference scale to indicate the adjusted position at which throwable contact actuation may take place, the novel combination of a center post stop located on said adjustable set pointer arranged between the throwable contacts and for stopping the motion of the assembly of throwable contacts as either of said contacts hits the stop when driven by motion of the other, an additional contact in the region of the center post stop and for mating with at least a portion of at least one of the throwable contacts, and means including connections from said one of the throwable contacts and from said additional contact to complete a circuit through a load upon the mating of said last mentioned contacts.



3,157,756
AUTOMATICALLY ADJUSTABLE HINGE SWITCH

Albert R. Close, Oak Park, and Wilson H. West, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 10, 1962, Ser. No. 229,622
7 Claims. (Cl. 200—61.7)

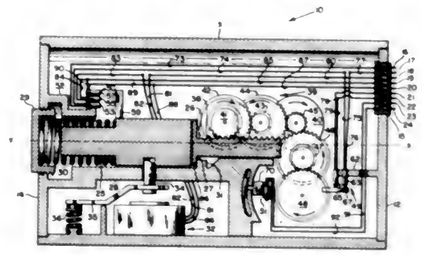


1. In a vehicle body, the combination comprising hinge means including a pair of pivotally interconnected hinge members movable relative to each other through a predetermined range of movement to move a vehicle body closure between open and closed terminal positions, switch means mounted on said hinge means and operated by movement of said hinge means relative to each other, said switch means including a stationary contact mounted on one of said hinge members and a movable contact mounted on the other of said hinge members, said movable contact being located out of engagement with said stationary contact in one terminal position of said closure and being located in engagement with said stationary contact in the other terminal position of said closure, and means operative upon movement of said closure to automatically index said first and second contacts relative to each other and locate said contacts in their desired relative positions corresponding to the terminal positions of said closure.

3,157,757
DUAL MASS ACCELERATION SENSITIVE SWITCHING MECHANISM

Alan A. Lorenz, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware

Filed Sept. 27, 1962, Ser. No. 226,602
9 Claims. (Cl. 200—61.45)

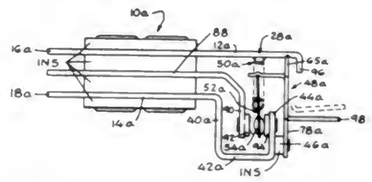


1. An acceleration responsive mechanism for producing signals which are a function of acceleration incident to forces acting in a direction of a sensitive axis through said mechanism including a signal proportional to the double integral of the acceleration it detects comprising, a bias mass responsive to acceleration forces along said sensitive axis of said mechanism, a seismic mass responsive to acceleration force along said sensitive axis of said mechanism and movable toward a switching position, means for restraining the relative movement of said seismic mass to said bias mass comprising gear and flywheel means disposed for rotational motion with the axial movement of said seismic mass for mechanical double integration of said acceleration force with respect to time, means disposed for activation when said seismic mass has moved along the sensitive axis to said switching position.

3,157,758
SNAP-ACTION ELECTRIC SWITCH

George J. Bury, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,587
8 Claims. (Cl. 200—67)

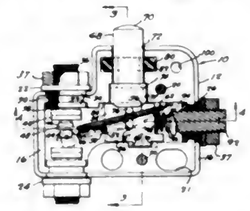


7. A relatively open skeleton type switch comprising, first and second relatively thin elongated metallic elements spaced from each other by first insulation means adjacent one end thereof and at least one of said elements carrying a fixed contact means on the other end thereof and the other of said elements being substantially straight and having anchor means and pivot means spaced apart thereon, movable contact means having a first position and movable to a second position relative to said fixed contact means, said movable contact means comprising spring means, a first movable member engaged with said pivot means for movement between an at-rest position and an actuated position and including an arm portion extending angularly therefrom with a pivot connection spaced from and generally aligned with said anchor means, and a contact carrying member pivoted to the pivot connection on said arm portion, said spring means engaging said contact carrying member and said anchor means to maintain the pivotal connection between said contact carrying member and said first movable member and to provide a snap action to movement of said movable contact means upon over center movement of the pivot connection between said arm portion and the contact carrying member, said first movable member being engageable by operator means to afford movement thereof from its at-rest position.

3,157,759
READILY ADJUSTABLE SNAP-ACTION SWITCH

Edwin J. Kudalis, 504 Busse Road, Mount Prospect, Ill.

Filed Jan. 15, 1963, Ser. No. 251,631
14 Claims. (Cl. 200—67)

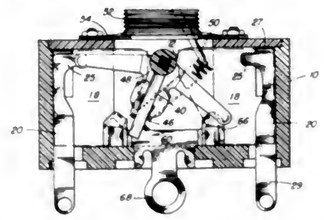


13. A snap-action switch comprising: a housing with a plurality of terminals; a block of electrically-conducting material mounted for sliding movement in said housing; an arm swingably carried by said block, and adapted to alternately contact said terminals, a pair of tension springs connected to said arm, at a point apart from its axis of swing, and anchored to said housing on the other side of said axis; said block having an elongated opening; a pin in said opening and adapted to contact said springs at a point medially of its length, while moving transversely to its length in said opening, a plunger adapted to urge said pin into contact with said springs, and means to adjust the tension of said springs through sliding movement of said block; said means including a common terminal of the switch.

3,157,760
SNAP ACTION TOGGLE SWITCH FOR HIGH ALTITUDE USE

Louis A. Yeske, West Hartford, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut

Filed May 22, 1963, Ser. No. 282,317
7 Claims. (Cl. 200—67)

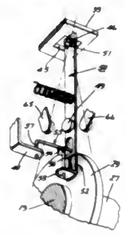


1. In an electric switch for operation under extreme differences of pressure and temperature as are encountered in jet aircraft operation, an overcenter mechanism comprising a yoke of insulating material having a crank arm, an insulating casing supporting said yoke, an operating lever and an overcenter spring between said lever and yoke for moving the latter, a stamped sheet metal contact mounted on said crank arm, said contact having notches for reception of spaced parts of said crank arm, portions of said contact adjacent said notches being bent to lie flush against the surface of said yoke on opposite sides thereof to receive the thrust of said yoke as it is moved from one position to another by said overcenter spring.

3,157,761
SPEED RESPONSIVE SWITCH HAVING A PIVOTALLY MOUNTED OPERATING MEMBER WITH AN INTEGRAL CONTACT

Richard E. Seely, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Aug. 30, 1961, Ser. No. 135,006
6 Claims. (Cl. 200—80)

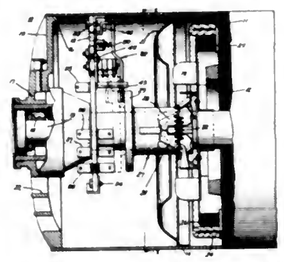


1. In a motor having a switch actuating device, a switch assembly comprises a set of spaced apart stationary contact elements, at least one outstanding bracket, a switch operating member for moving electrical means selectively into and out of engagement with said spaced apart contact elements, means pivotally supporting a first section of said member, link means pivotally connected to and journaled between a second section of said member and a segment of said bracket for swinging said second section of said member around said segment of said bracket whereby said switch operating member moves said electrical means into selective engagement with said stationary contact elements at predetermined times.

3,157,762
SPEED RESPONSIVE SWITCH ARRANGEMENT FOR USE IN CONTROLLING WINDING CIRCUITS OF SINGLE PHASE REVERSIBLE ELECTRIC MOTORS

Richard E. Seely, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

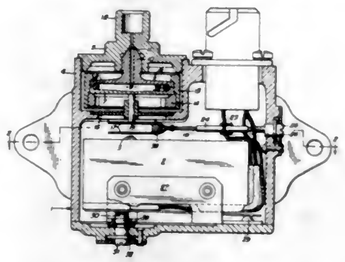
Filed Aug. 30, 1961, Ser. No. 135,007
10 Claims. (Cl. 200—80)



8. In a single phase reversible motor having a speed responsive switch actuating device, a switch assembly comprising at least two pairs of spaced apart contact elements, each of said pairs including movable and stationary contact elements normally biased to the closed position, a switch operating member arranged to selectively

open said elements, a base having a pair of spaced apart outstanding brackets, means movably attaching one end of said member to one bracket, the other bracket having means including a wear resistant block formed with a substantially V-shaped channel with its apex disposed toward said base, the other end of said switch operating member projecting through said channel and arranged to be moved along said channel by the speed responsive device, and means biasing said member away from the apex of said channel and into engagement with one of the movable contact elements to selectively open one pair of said elements, said switch operating member adapted to be moved out of engagement with the movable contact element by the speed responsive device and into the apex of the channel thereby overcoming the biasing means whereby both of said pair of contact elements are in the closed position when the motor operates below a predetermined speed.

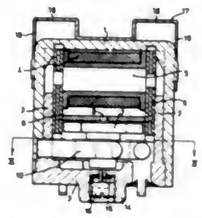
3,157,763
APPARATUSES COMPRISING DIAPHRAGMS
Etienne Rohacs, 56 Rue d'Eaubonne, St. Gratien, France
Filed Feb. 27, 1962, Ser. No. 176,144
Claims priority, application France Mar. 18, 1961
5 Claims. (Cl. 200—83)



1. In a pressure responsive switch of the type including a movable contactor adapted to be moved to complete a circuit, a pressure chamber comprising a pair of shells each provided with a transversely extending peripheral flange extending toward the other with their free edges in mutual contact to thereby define a pressure chamber whereby both shells are free to respond to changes in pressure within the chamber, means for clamping the shells together comprising a pair of rings respectively abutting the outer surfaces of the shells about their marginal edges and having cooperating means for detachably securing them together to tightly clamp the flange edges against each other, a support, means at the center of one of the shells for freely suspending them and the attached clamping means from the support in fixed relation thereto, conduit means in said support whereby the inside of said pressure chamber may be connected to a pressure source, and means operated by the other of the shells for transmitting movements thereof in response to changes of pressure in the chamber to said contactor.

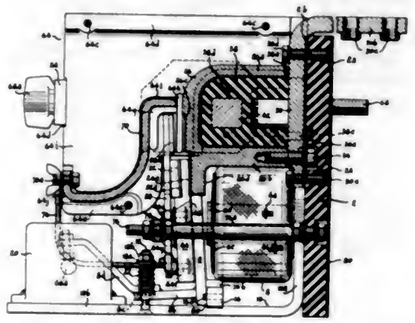
3,157,764
ELECTROMAGNETIC RELAY
Berend S. Loman, Almelo, Netherlands, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,903
11 Claims. (Cl. 200—87)

1. An electrical switching device comprising a housing, a coil and a pair of pole pieces; an armature disposed within said housing intermediate said pole pieces; said armature being in a magnetic circuit with said coil and pole pieces; shaft means mounting said armature for rotation about an axis which is substantially perpendicular to the longitudinal axis of said coil and for rotation between a first position in which said armature is aligned with said pole pieces and a second position in which said armature is out of alignment with said pole pieces; substantially U-shaped electrically conductive spring means including a pair of legs interconnected adjacent one end thereof by a bight portion; said shaft means including a member of substantially rectangular cross



section rotatable in response to rotation of said armature; said substantially rectangular member being disposed intermediate the legs of said electrically conductive U-shaped spring means; said legs being biased for movement toward each other and into engagement with said substantially rectangular portion; each of said legs adjacent the other ends thereof carrying an electrical contact positioned for engagement with a respective one of a pair of stationary electrical contacts mounted within said housing.

3,157,765
MOUNTING STRUCTURE FOR ELECTROMAGNETIC CONTACTOR
Robert C. Gutberlet, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,943
7 Claims. (Cl. 200—87)



1. In an electromagnetic switch having a mounting panel of electrically insulating material adapted to be mounted so that its rear surface bears against a supporting structure, stationary contacts mounted on the front surface of said panel, movable contacts normally separated from said stationary contacts, and means comprising an electromagnetic actuator for moving said movable contacts into engagement with said stationary contacts and restoring means for returning said movable contacts out of engagement with said stationary contacts, the improvement comprising:

means mounting said stationary contacts on said mounting panel to afford access from the front of said panel for ready removal thereof comprising:

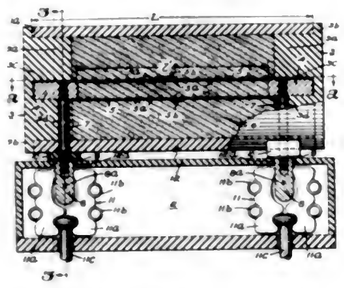
a plurality of electrical connector members, there being one such connector member for each stationary contact;

each said connector member having a first portion lying along the front face of said panel and an angular portion extending over an edge of said panel and beyond the rear surface thereof providing a terminal which is readily accessible for connection to an external circuit when said panel is mounted on its supporting structure;

means mechanically and electrically connecting each stationary contact on said first portion of its associated connector member to be supported by the latter and to afford connection thereof to an external circuit;

and readily removable means accessible from the front of said panel for rigidly securing said first portion of each connector member to said panel whereby said connector members and the respective stationary contacts secured thereto are readily removable from the front side of said panel while the latter remains mounted in its supporting structure.

3,157,766
DEAD FRONT FUSE WITH IMPROVED TERMINAL CLAMPING MEANS
William S. Edsall, Boston, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Dec. 10, 1962, Ser. No. 243,483
2 Claims. (Cl. 200—132)



1. An electric dead-front fuse comprising:

(*a*) a tubular casing of insulating material having a predetermined inner diameter and a predetermined length and forming a pair of annular rims at the axially outer ends thereof;

(*b*) ribbon-shaped fuse link means having a predetermined thickness arranged inside of said casing extending in a direction longitudinally thereof;

(*c*) a pair of insulating plugs having axially inner ends of relatively small diameter equal to said predetermined inner diameter of said casing fitted into said casing and having axially outer ends equal in diameter to the outer diameter of said casing and arranged in abutting relation to said pair of rims, each of said pair of plugs defining an axially extending recess closed at the axially outer end thereof and open at the axially inner end thereof, and each of said pair of plugs defining a radial passageway having a radially inner end communicating with said recess;

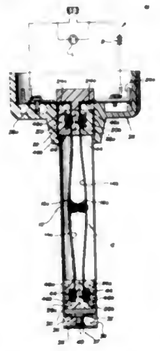
(*d*) a pair of terminal blocks each having a thickness being a multiple of said predetermined thickness of said fuse link means and each being inserted into said axially extending recess of one of said pair of insulating plugs, each of said pair of terminal blocks defining a radially extending internally screw-threaded passageway in registry with said radial passageway in one of said pair of insulating plugs;

(*e*) means conductively connecting each of the axially outer ends of said fuse link means to one of said pair of terminal blocks;

(*f*) a pair of studs each projecting transversely through said casing and through said radial passageway in one of said pair of insulating plugs, each of said pair of studs having a radially inner screw-threaded end cooperatively engaging said internally screw-threaded passageway in one of said pair of insulating plugs, and each of said pair of studs having a radially outer screw-threaded end; and

(*g*) a pair of screw nuts each mounted on said radially outer screw-threaded end of one of said pair of studs and each stressing one of said pair of studs in a direction longitudinally thereof and thereby clamping one of said pair of terminal blocks in position inside said recess of one of said pair of insulating plugs, each of said pair of screw nuts having an outer substantially cylindrical contact surface.

3,157,767
TEMPERATURE RESPONSIVE SWITCH WITH IMPROVED STRUT ARRANGEMENT
William O. Lee, 112 E. Whitlock Ave., Salt Lake City, Utah
Filed Dec. 12, 1961, Ser. No. 158,822
3 Claims. (Cl. 200—137)

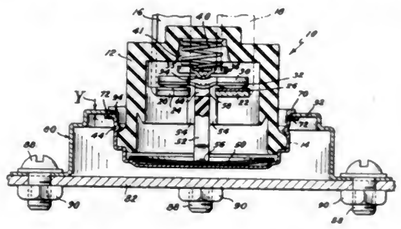


1. A strut for a thermostatic switch mechanism of the type described comprising a strip of spring metal having longitudinal edges constructed to taper from the opposite ends of said strip toward a mid point thereof, a contact bead provided at said mid point, angular anchoring blocks secured to said strip at end portions thereof with an edge of said blocks disposed substantially at right angles to the longitudinal axis of said strip, and mounting plugs of a dielectric plastic molded around said end portions and said anchoring blocks.

3,157,768
THERMALLY RESPONSIVE ELECTRICAL SWITCHES
Robert H. Ladd, Frankfort, and Robert M. Glidden, Versailles, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,222
11 Claims. (Cl. 200—138)

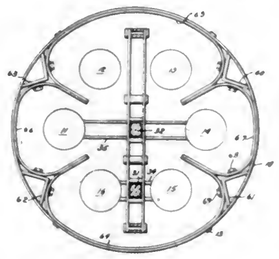
1. In combination: an electrical switch including a pair of electrical contacts and a thermally responsive member operatively connected to actuate said contacts; a hollow housing enclosing said contacts and thermally responsive member; support means for mounting said switch in thermal juxtaposition to something whose temperature is to be sensed; said support means including an opening receiving at least part of said housing which

includes said thermally responsive member; said opening being sufficiently larger than required to accommo-



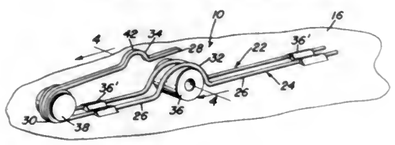
date said part of said switch housing to impede heat transfer between said support means and housing; and means detachably locking said housing to said support means.

3,157,769
BAFFLE STRUCTURE FOR OIL CIRCUIT BREAKER TANK
James R. McCloud, Burbank, Calif., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1962, Ser. No. 185,685
3 Claims. (Cl. 200—150)



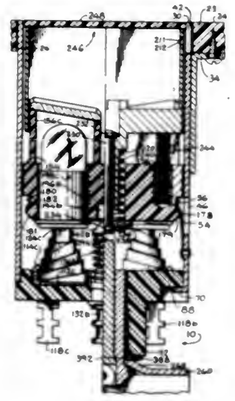
1. In an oil circuit breaker; a tank containing oil, a plurality of interrupter structures supported within said tank, a plurality of insulation sheets interposed between adjacent interrupters of said plurality of interrupters, and a support means for supporting said plurality of insulation sheets; said support means comprising angle members secured to the interior surface of said tank and extending parallel to the axis of said tank; said angle members having their apex facing toward the center of said tank; each of said plurality of said sheets having a portion thereof extending along the interior of said tank and having an intermediate portion of said sheet secured to one face of a respective angle member; the remaining portion of each of said insulation sheets extending from its said respective angle member and toward the interior of said tank.

3,157,770
SLIDING CONTACT BRUSHES
Roland J. Beaulieu, 531 Montgomery St., Fall River, Mass.
Filed Oct. 11, 1961, Ser. No. 144,478
5 Claims. (Cl. 200—166)



1. An electrical brush assembly composed of conductive material for conducting current between relatively rotating surfaces comprising a base adapted to be connected to one of the surfaces, a member having a contact surface for engaging and sliding on another of the surfaces, resilient means connecting the member to the base, said resilient means comprising a coil spring which telescopically receives and retains a resilient cylindrical member.

3,157,771
LIGHTED PUSH BUTTON SWITCH ASSEMBLY
John O. Roeser, Park Ridge, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Jan. 10, 1961, Ser. No. 81,862
24 Claims. (Cl. 200—167)

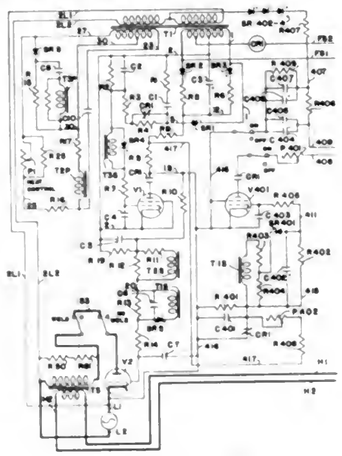


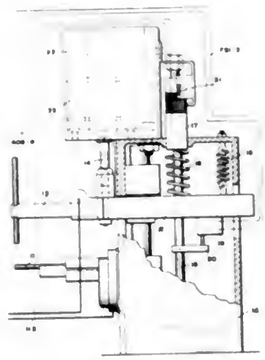
1. A circuit controlling device comprising, a hollow casing means having open ends, terminal block means fixedly mounted in one end of the casing means and having a through opening, a push button unit mounted in the other end of the casing means and moveable relative thereto, said unit having a depending stem portion, lamp holder means located entirely within and latchably fixed to said casing means intermediate said unit and said terminal block means, switch means including actuator means for said switch means mounted in and extending through said opening in said terminal block means, and motion transmitting means associated with said push button unit stem and said actuator means of said switch means and extending through said lamp holder means and operable upon actuation of said push button unit to transmit motion to said actuator means to actuate said switch means, said motion transmitting means permitting overtravel of said push button unit without moving said lamp holder means.

3,157,772
RESISTANCE WELDER WITH ELECTROMAGNETIC FORCE APPLYING MEANS
Joseph J. Riley and Emmanuel V. Dethier, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Jan. 22, 1962, Ser. No. 167,492
12 Claims. (Cl. 219—86)

1. In electric resistance welding apparatus having a pair of relatively movable welding electrodes, means to supply welding current to said electrodes, means to supply an initial squeeze pressure to said electrodes, and a low-inductance electromagnetic device mechanically coupled to one of said electrodes operative to impart a forging force to said one of said electrodes, the improvement comprising

(*a*) an energy storing capacitor connected to said device through a controlled discharge valve and having a charging circuit,

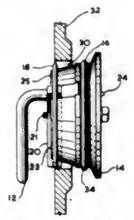




(*b*) means to condition for operation said means to supply welding current, and

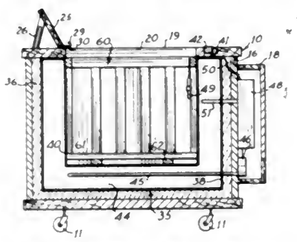
(*c*) means to initiate conduction in said valve after the elapse of a preselected time interval following conditioning of said welding current supply means.

3,157,773
ENGINE BLOCK HEATER ASSEMBLY
Bernard H. Pickard, 755 Avenue Road, Toronto, Ontario, Canada
Filed Mar. 11, 1963, Ser. No. 264,386
5 Claims. (Cl. 219—205)



1. An engine block heater adapted to be mounted within a frost plug opening in an engine block wall, said heater comprising a plug body of which a part thereof is shaped and sized to fit snugly in said opening, stop means carried by said body to prevent said plug body from passing completely through said opening, sealing means carried by said plug body to effect a fluid-tight seal between said plug body and said engine block wall, an electrical heating element carried by the plug body at the opposite end from said stop means whereby said heating element is positioned within the engine block when said block body is mounted in said opening, terminal means electrically connected with said heating element and accessible from the outside of said engine block whereby electrical connection with an outside source of electrical power can be effected, and locking means carried by said plug body for releasably locking said heater within said opening, said locking means comprising an expansible ring having a diameter in its unexpanded condition which is less than the diameter of said opening, ring carrying means carried by said plug body and extending inwardly of said opening, said ring being slidably mounted on said ring carrying means with the axis of said ring being co-extensive with the axis of said plug body, said ring carrying means having outer surfaces which are outwardly divergent towards said plug body, and means carried by said plug body and operable from outside said engine block wall for moving said ring towards said plug body along said divergent surfaces, said divergent surfaces being dimensioned to cause said ring to expand a sufficient degree to prevent withdrawal of the plug body from said opening.

3,157,774
PORTABLE BATH FOR PHYSIOLOGICAL HEAT TREATMENT
Jack E. Moore and Ann M. Moore, Granite Falls, N.C.
Filed Oct. 4, 1962, Ser. No. 228,486
2 Claims. (Cl. 219—326)

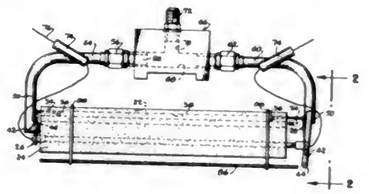


1. A bath for physiological heat treatment comprising an outer container, a cabinet, said outer container being received in said cabinet and insulated therefrom, an inner container disposed within said outer container and spaced therefrom, said inner container being constructed of a heat conducting material, a liner positioned within said inner container formed of open struts of a non-heat conducting material, heating means placed between said outer container and said inner container, and thermostatic control means to control said heating means including a sensing element attached to said liner; a first drain means arranged to drain said outer container including a first drain pipe having a first valve selectively to close said first drain pipe, and a second drain means arranged to drain said inner container including a second drain pipe having a second valve selectively to close said second drain pipe.

3,157,775
RADIANT HEATER
Henry Neil Harmon, Seattle, Wash., assignor to Pyrometrics, Inc., Seattle, Wash., a corporation of Washington
Filed May 3, 1961, Ser. No. 107,407
9 Claims. (Cl. 219—347)

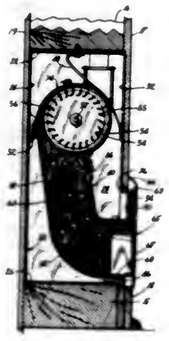
1. A radiant heater, said heater comprising a reflector and a lamp, said reflector having a base and two spaced-

apart sides, a first end seal and a second end seal, said lamp being of a rod-like configuration and having a longitudinal dimension longer than its cross-sectional dimension, said lamp having an external electrode at each end, means for supporting the lamps by the end seals, a first tube positioned adjacent to the first end seal and having means to direct a cooling gas over the external



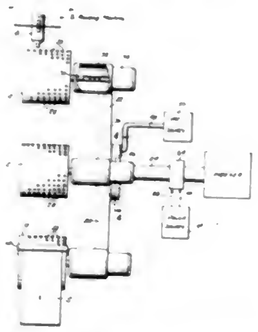
electrode near the first end seal, a second tube connecting with the second end seal and positioned to direct a cooling gas toward the first end seal and in a path substantially parallel to the base of the reflector and to the lamp, said lamp being spaced apart from the base of the reflector so as to allow gas to flow around the lamp, and said first and second tubes connecting with a source of cooling gas.

3,157,776
WALL MOUNTED HEATER
John P. Sohn, Columbus, Ind., and Matthew C. Kuepfer, Battle Creek, Mich., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 23, 1961, Ser. No. 146,970
12 Claims. (Cl. 219—369)



1. A wall mounted heater, comprising a housing having front, rear, side, top, and bottom walls mountable in a recessed position in a wall structure and having an opening formed in its front wall adjacent one end of the housing and disposed in an opening formed in said wall structure, a duct mounted in said housing and having a first generally cylindrical portion in open communication with the interior of said housing along substantially the entire length of said first portion and continuous with an open-ended second portion closed to the interior of said housing and having one of its ends in open communication with said first portion and its opposite end disposed in said front wall opening, said duct having a vertical extent substantially larger than the vertical extents of the openings in said front wall and wall structure and a transverse cross-sectional extent less than the transverse cross-sectional extents of said front wall and wall structure openings, a cylindrical blower wheel mounted in said first duct portion, means for rotating said blower wheel, a plurality of heating elements mounted in said second duct portion, and a grille extending across the opening in said wall structure and operatively associated with said housing and duct to define an air inlet at said front wall opening and air outlet separated from said air inlet and connected to said opposite end of said second duct portion whereby said blower wheel will pull air into said first duct portion through said air inlet and housing and force said air over said heating elements for discharge through said air outlet.

3,157,777
INDEXING MOVER FOR SHEETS
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 23, 1961, Ser. No. 112,019
17 Claims. (Cl. 235—61.11)

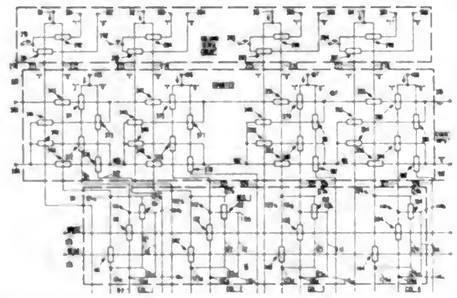


10. For use with a reading machine which has a movable scan means providing one component of motion for scanning a document, a document handling mechanism comprising a support provided with a plurality of drums, means to index said support to bring successive drums into successive stations, one of said stations being a document loading station, another being an acceleration station, another being a reading station and another being a document discharge station, means to rotate the drum at said loading station at a first speed, means to accelerate the drums at said acceleration station to a higher speed at which the drum in said reading station is operating while in said reading station, the rotation of the drum at said reading station providing another component of scan motion, and means to rotate the drum in said discharge station at a speed lower than said higher speed to facilitate discharge of the documents from the drum and to a utilization device.

3,157,778
MEMORY DEVICE
Munro K. Haynes, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 18, 1960, Ser. No. 30,030
4 Claims. (Cl. 235—92)

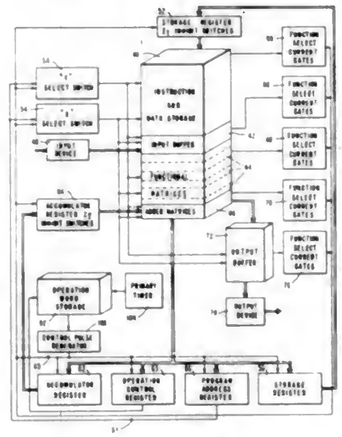
1. A cryogenic storage device comprising persistent current storage loops arranged in columns and rows to form a plurality of registers, means coupled to each of said columns and each of said rows for writing information in said storage loops, means coupled to each of said columns and each of said rows for reading information from said storage loops simultaneously as the information is written therein, and counter means coupled to

each of said columns to increment by one the value of the information stored in any selected register, whereby the



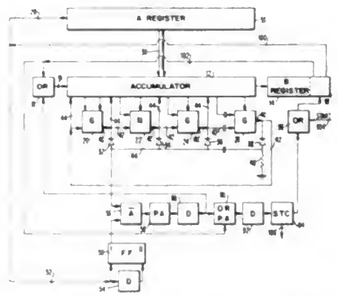
incremented information may be rewritten in the selected register or in any other register.

3,157,779
CORE MATRIX CALCULATOR
Harry W. Cochrane, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1960, Ser. No. 39,315
14 Claims. (Cl. 235—157)



1. In an information processing device, in combination, a memory unit, a plurality of registers including a storage register and a control information register, individual control means for said registers, a plurality of processing units, said memory unit and said processing units employing circuit elements which are responsive to impulses supplied by drive lines extending bodily through said units, and which supply outputs in sense lines which extend bodily through said units, unit selection means for said memory unit and said processing units, at least one distinctive drive line for each said processing unit and for said memory unit, said drive line extending through said unit to said unit selection means, common sense lines extending through said memory unit and said processing units to said registers, common transmission lines extending from the output of said storage register through said memory unit and said processing units, and control lines extending from the output of said control information register to said register control means, said memory unit and said unit selection means, said control lines serving to control selective transfer of information from said memory unit to a plurality of said registers or from any said processing unit to said storage register over said common sense lines, and to control selective transfer of information from said storage register to said memory unit or to any said processing unit over said common transmission lines.

3,157,780
PULSE TRAIN SENSING CIRCUITRY
William N. Carroll, Rhinebeck, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 27, 1960, Ser. No. 38,811
3 Claims. (Cl. 235—164)



3. In an electronic digital computer, apparatus for performing arithmetic operations comprising

first register means having a plurality of stages for storing binary signals representative of a first value,

second register means having a corresponding number of stages for storing binary signals representative of a second value,

means including an adder having a corresponding number of stages to perform a summing operation on the numbers held in said first and second registers,

each adder stage having a carry gate connected thereto for passing a carry pulse generated by that stage during the summing operation,

said summing operation producing a serial train of carry pulses overlapping in time,

and means to detect a change in said serial train of carry pulses produced during said summing operation comprising a diode corresponding to each stage of said adder,

each said diode having first and second terminals,

one of said terminals of each diode being connected to the output of the carry gate of the associated adder stage to sense generated carry pulses and the other terminal being connected to the like terminals of the other diodes in a common circuit so that carry pulses generated by said adder are applied to said common circuit and provide a level output indicative of carry propagation,

and signal generating means for converting a transition in said level output to a pulse signal indicative of termination of carry propagation in said adder including a transistor having emitter, base, and collector electrodes, said transistor being connected in common emitter configuration, a pulse transformer connected to the collector electrode of said transistor,

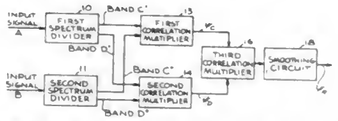
and means to apply said level output to the base electrode of said transistor so that a transition in said level output causes said transistor to change its state of conduction and causes said pulse transformer to

produce a pulse signal indicative of the completion of a summing operation at that time.

3,157,781
SIGNAL CORRELATION SYSTEM

Wolf J. Gruen, Tarzana, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Oct. 27, 1960, Ser. No. 65,384
12 Claims. (Cl. 235—181)

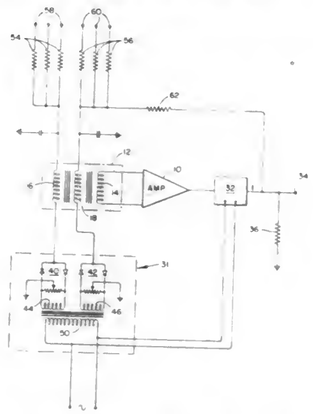


1. A system for correlating two input signals including first A.-C. correlator means responsive only to a first frequency band of each of the two input signals for providing a first A.-C. product signal at a first offset frequency, second A.-C. correlator means responsive only to a second frequency band of each of the two input signals, the first and second frequency bands being of different frequencies and mutually exclusive, the second A.-C. correlator means providing a second A.-C. product signal at a second offset frequency having a predetermined difference from the first offset frequency, and third A.-C. correlator means coupled to receive the first and second A.-C. product signals for providing a system output signal from signal components at the predetermined difference frequency.

3,157,782
ANALOG COMPUTER AMPLIFIER WITH TRANSFORMER INPUT

Jean C. Lejon, Paris, France, assignor to Controle Bailey, Paris, France, a company of France

Filed Apr. 15, 1959, Ser. No. 806,628
Claims priority, application France May 6, 1958
2 Claims. (Cl. 235—193)

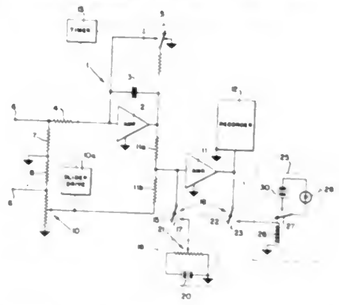


1. An analog device for producing a D.-C. output signal of the same polarity as a D.-C. input signal, comprising, an electronic A.-C. amplifier having an input and an output circuit, means for establishing a positive D.-C. feedback signal corresponding to the A.-C. signal in said output circuit, means for establishing a D.-C. input signal of the same polarity as said feedback signal and means including interrupting and transformer means having oppositely wound primary windings for impressing upon said input circuit an A.-C. potential corresponding to the difference between said like polarity D.-C. input and feedback signals.

3,157,783
UTILIZATION LEVEL PREDICTOR

Thomas A. Patchell, Havertown, and Thomas V. Reddington, Jr., Levittown, Pa., assignors to Honeywell Inc., a corporation of Delaware

Filed Mar. 24, 1960, Ser. No. 17,389
10 Claims. (Cl. 235—193)

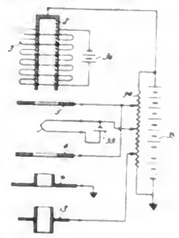


1. A utilization level predictor comprising, in combination, means for connecting to a source of a signal representative of the rate of utilization of a measured variable, integrator means for integrating an input signal during an integration period, multiplier means for multiplying a first signal by a second signal, means for applying a first portion of said signal representative of the rate of utilization of a measured variable to said integrator means, means for applying a second portion of said last-mentioned signal to said multiplier means as a first signal, means for applying a second signal to said multiplier means, said second signal being representative of the amount of time remaining in said integration period, and summing means for summing an output signal from said integrator means and from said multiplier means for producing an output signal representative of the sum of the input signals to said summing means.

3,157,784
ION SOURCE FOR A MASS SPECTROMETER

John E. M. O'Meara, Westbury, N.Y., assignor to Crosby-Teletronics Corporation, Syosset, N.Y., a corporation of New York

Filed Dec. 7, 1961, Ser. No. 157,690
6 Claims. (Cl. 250—41.9)



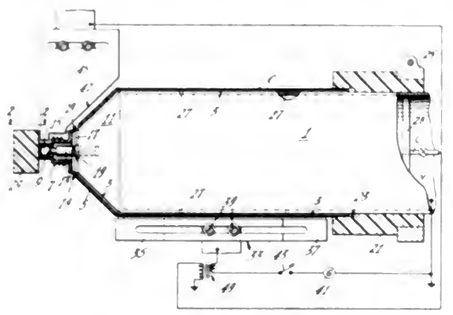
1. An ion source, said source being closed at one end and open at the opposite end for discharge of an ion stream, said source comprising a gas connection for supply of a gas to be ionized, an electron-emitting cathode, a long drift tube disposed on the side of the cathode remote from the discharge end of the source, a magnet surrounding the drift tube, a focusing electrode between the cathode and the drift tube, the opposite side of the cathode leading to the open end of the source having focusing and accelerating electrodes, means to polarize the drift tube positively relative to the cathode, and means to appropriately polarize the focusing and accelerating electrodes, said cathode being the sole source of electrons, the arrangement being such that an electron stream flows in reverse direction through the drift tube toward the closed end of the source, and resulting ions flow in a forward direction opposite to the direction of the electron stream and through the focusing and accelerating electrodes toward the discharge end of the source.

5. An ion source for use in a mass spectrometer, said source being closed at one end and open at the opposite end for discharge of an ion stream into the spectrometer tube, said source comprising a gas connection for supply of a gas to be ionized, an electron-emitting cathode, a long drift tube disposed on the side of the cathode remote from the discharge end of the source, a magnet surrounding the drift tube, a first focusing electrode between the cathode and the drift tube, the opposite side of the cathode leading to the discharge end of the source having in succession a second focusing electrode and an accelerating electrode and a third focusing electrode, means to heat the cathode, means to polarize the drift tube positively relative to the cathode, and means to polarize the first and second focusing electrodes at a positive potential less than that of the drift tube, and to polarize the third focusing electrode more negatively than the cathode, and the accelerating electrode more negatively than the third focusing electrode, said cathode being the sole source of electrons, the arrangement being such that an electron stream flows in reverse direction through the drift tube toward the closed end of the source, and resulting ions flow in a forward direction opposite to the direction of the electron stream and through the focusing and accelerating electrodes toward the discharge end of the source.

3,157,785
CORONA TREATING OF HOLLOW PLASTIC ARTICLES

Frank Egremont Dobson, Groton, Charles Arthur Badavas, Newton Highlands, and Richard Stearns Flint, South Acton, Mass., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 30, 1961, Ser. No. 99,548
8 Claims. (Cl. 250—49.5)

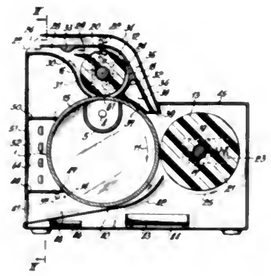


1. A device for corona treating hollow open-end articles comprising a perforate conductive mandrel loosely fitting the interior of the articles to be treated, a collar surrounding the mandrel and having a recess for frictionally exteriorly receiving the open end of the article, means for introducing fluid under pressure through the mandrel perforation to space the article slightly from the mandrel surface, an electrode mounted adjacent the mandrel, and means for impressing a high level alternating voltage between said electrode and mandrel to generate a corona discharge at the article surfaces.

3,157,786
THERMOGRAPHIC APPARATUS FOR COPYING IMAGES

Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG., Hamburg, Germany

Filed Apr. 17, 1962, Ser. No. 188,018
Claims priority, application Germany, Apr. 29, 1961, L 38,875
5 Claims. (Cl. 250—65)



1. In an apparatus for producing dry copies from an original on a copying sheet comprising, in combination, mounting means, a thermal image-retaining transfer and heat storage cylinder rotatably supported on said mounting means, said cylinder having an upper portion, heat radiating means mounted within said cylinder, said radiating means irradiating said cylinder upper portion, first roller pressing means rotatably supported on said mounting means at a location outside of said cylinder and in such a manner that said pressing means resiliently engages said upper portion of said cylinder which is irradiated by said heating radiating means, second roller pressing means rotatably supported on said mounting means at a location outside of said cylinder spaced in the direction of rotation relative to said first pressing means and resiliently engaging said cylinder, a first feed channel having an inlet and an outlet, said outlet being adjacent said cylinder in the peripheral zone thereof between said first and said second pressing means and extending toward said second pressing means, storage means defined within said mounting means intermediate said cylinder and said first channel outlet and having an outlet opening disposed adjacent the outlet of said first channel and intermediate said first channel outlet and said cylinder, closure means selectively opening and closing said storage means outlet opening, spring means biasing said closure means toward its closed position, actuating means defined on said closure means extending into the outlet of said first channel and operable by a copying sheet being advanced through said first channel so as to open said closure means during the passage of said sheet, a second feed channel having an inlet for feeding an original intermediate said first pressing means and said cylinder, and drive means driving said cylinder.

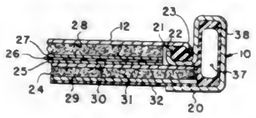
3,157,787
LIGHTWEIGHT RIGID RADIOGRAPHIC FILM CASSETTE

Casimir Kendziorski, Jr., and Richard E. Hora, Milwaukee, Wis., assignors to General Electric Company, a corporation of New York

Filed Sept. 5, 1962, Ser. No. 221,492
9 Claims. (Cl. 250—68)

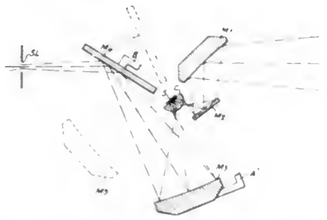
1. A radiographic film cassette comprising frame means, a cover hinged to the frame means for closing one side thereof, a radiation permeable front panel that is

fastened about its perimeter to the frame means, said front panel comprising parallel spaced sheets and a lightweight



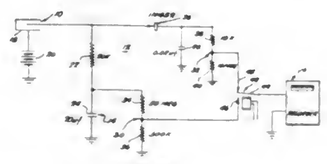
rigid cellular core material occupying the space between the sheets and adhered thereto.

3,157,788
ATTENUATED TOTAL REFLECTANCE INFRA RED SAMPLING DEVICE
John M. Roche, Bethel, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Nov. 27, 1962, Ser. No. 240,367
15 Claims. (Cl. 250—83)



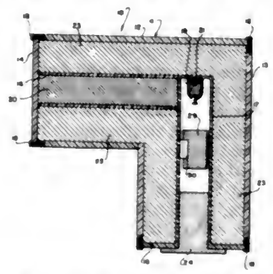
1. In an infrared spectrophotometer, in combination, means for focusing a beam of radiation at the primary focal length plane of a hemicylindrical high refractive index crystal to reflect partially at the plane surface of said crystal, a swingable toroid mirror for receiving the reflected beam and directing it along a path, a swingable plane mirror in said path, both said last named mirrors being mounted for rotation about the same axis.

3,157,789
RADIATION DETECTION SYSTEM COMPRISING A PULSE INTEGRATOR
Harold A. Thomas, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,796
6 Claims. (Cl. 250—83.6)



4. A radiation measuring device comprising an ionization chamber, a source of direct current, a resistance, a first capacitor, said chamber, said source, said resistance, and said first capacitor being connected in series, a serially connected second capacitor and uni-directional circuit element coupled to said resistance so that the voltage across said second capacitor is proportional to the voltage drop across said resistance, means for indicating voltage, and means for selectively coupling said indicating means to said first and to said second capacitor.

3,157,790
NEUTRON CONVERTER
Rex L. Callaway, Gainesville, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 20, 1962, Ser. No. 174,464
4 Claims. (Cl. 250—84.5)



1. A neutron converter comprising: a column of hydrogenous material having an end adapted to be exposed to a neutron source, a shielded target disposed adjacent the other end of said column of hydrogenous material adapted to emit high energy neutrons in response to thermal neutron bombardment, and a second shield column angularly related to said first mentioned column adapted to receive high energy neutrons emitted from said target.

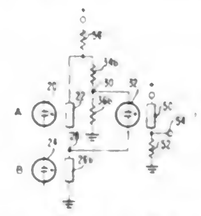
3,157,791
MULTI-STATE PHOTOCONDUCTIVE LOGIC CIRCUITS
René H. Terlet, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 27, 1961, Ser. No. 127,301
7 Claims. (Cl. 250—209)



6. A multi-state reversible photologic ring circuit comprising a main lamp for each state, a starting lamp for each state, each starting lamp having a photoconductor arranged for illumination thereby and connected to energize the associated main lamp, a conditioning lamp associated with each main lamp, each of said main and conditioning lamps having a latching photoconductor arranged for illumination thereby and connected to supply a maintaining voltage thereto when the lamp is once illuminated, each conditioning lamp having a condition photoconductor arranged for illumination thereby and connected to supply a voltage to the associated main lamp, each main lamp having the following photoconductors arranged to receive illumination therefrom; a shut-off photoconductor connected in shunt with the associated

conditioning lamp and a right shift pick-up photoconductor and a left shift pick-up photoconductor and right and left shift hold-off photoconductors respectively connected in shunt with the next succeeding main lamps to the right and to the left, all of said right shift pick-up photoconductors being connected in a common right shift power supply circuit to be energized in response to a right shift signal and all of said left shift pick-up photoconductors being connected in a common left shift power supply circuit to be energized in response to a left shift signal, said condition photoconductors being connected to a source of energizing voltage through a common condition supply circuit, said latching photoconductors for said main lamps being connected to a source of energizing voltage through a common latch supply circuit, an advance lamp arranged to be illuminated whenever a change in state is required, two photoconductors arranged to receive illumination from said advance lamp and respectively connected to ground said common condition supply and latch supply circuits, and an output photoconductor arranged to receive illumination from at least one of said main and conditioning lamps.

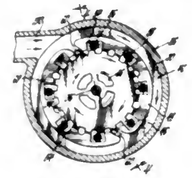
3,157,792
EXCLUSIVE-OR PHOTORESPONSIVE LOGICAL CIRCUITS
Paul R. Low and Rex Rice, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 21, 1960, Ser. No. 3,861
15 Claims. (Cl. 250—210)



2. A logical apparatus for providing an optical output in response to a plurality of optical inputs comprising a voltage responsive light source having two terminals, an impedance network for each of said terminals, a voltage source, each of said impedance networks comprising at least two impedances connected in series circuit relationship across said voltage source with the associated light source terminal connected to the juncture therebetween, at least two of said impedances having photoconductive properties to control the voltage at the terminal respectively associated therewith in response to optical inputs received thereby, said light source having an effective circuit impedance between said terminals which is very low in relation to the dark impedance of each of said photoconductive impedances.

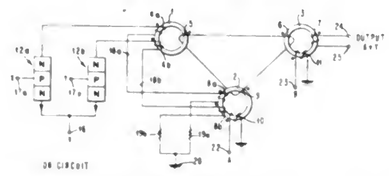
3,157,793
TURBO-ALTERNATOR GENERATOR
Harold T. Adkins, St. Clair Shores, Mich., assignor to Curtiss-Wright Corporation, Utica, Mich., a corporation of Delaware
Filed July 31, 1961, Ser. No. 128,091
2 Claims. (Cl. 290—52)

1. The combination of a fluid driven turbine and an electrical power generator, comprising: a turbine housing having a generator stator provided therein, a turbine rotor mounted concentrically within said stator, said turbine rotor including a plurality of axially spaced parallel discs receptive of rotor driving fluid flow therebetween, means provided through said stator and axially through said rotor discs near the center thereof for rotor driving fluid flow through said housing, said stator and rotor being of magnetic laminar construction and having peripherally adjacent edges thereof formed to include alternately aligned and misaligned pole faces conductive of magnetic flux therebetween, said stator being provided



by a plurality of parallel and axially aligned annular discs, and alternate of the latter discs being formed to provide nozzle means for the passage of rotor driving fluid flow therethrough.

3,157,794
MAGNETIC CORE LOGICAL CIRCUITS
Allan A. Kahn, Bronx, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 20, 1959, Ser. No. 854,476
4 Claims. (Cl. 307—88)



1. A logical circuit comprising:
(*a*) first, second and third rectangular hysteresis loop magnetic cores having at least an input winding and an output winding, and additional windings as required;
(*b*) closed loop means connecting the output windings of said first and second cores and the input winding of said third core in series, the output windings of said first and second cores having turns relationship and orientation to induce negligible output on the closed loop upon simultaneous switching of said first and second cores;
(*c*) data input means coupled similarly to the input windings of both said first core and second core to set said first and second cores;
(*d*) clock means for generating interleaved A and B pulse trains; and
(*e*) clock connection means, for applying the A pulse train to an additional winding on said second core to reset said second core and thereby to switch said first and third cores part way to their reset and set states respectively, and for applying the B pulse train to an additional winding on said third core to reset said third core, and thereby provide output and reset said first core.

3,157,795
TRANSISTOR INVERTER UTILIZING AN IMPEDANCE DIRECTLY CONNECTED BETWEEN BASE AND COLLECTOR TO PREVENT SATURATION
Abraham I. Pressman, Elkins Park, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,755
12 Claims. (Cl. 307—88.5)

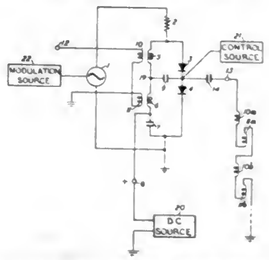
1. A circuit comprising: a transistor having a base, an emitter and a collector; an impedance element connected at one end to said collector; means for applying operat-

ing potentials to the other end of said impedance element and to said emitter; a resistor and an inductor serially connected directly between said collector and said base; a unidirectional conducting device having one electrode connected to said base and being poled with its easy



current flow direction in opposition to the easy current flow direction of the emitter-base diode of said transistor; and means for varying the potential at the other electrode of said device between a first level and a second level for forward biasing and reverse biasing said device, respectively.

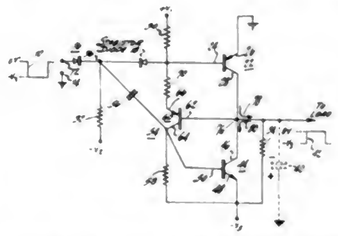
3,157,796
TUNNEL DIODE SUB-HARMONIC CIRCUIT WITH MEANS CONTROLLING OUTPUT PHASE
Harold Noel Coates, East Grinstead, England, assignor to International Computers and Tabulators Limited
Filed Feb. 28, 1962, Ser. No. 176,193
Claims priority, application Great Britain, Mar. 15, 1961, 9,463/61
5 Claims. (Cl. 307—88.5)



1. An electrical logic circuit, including a series circuit comprising a serially-connected pair of similar two terminal active circuit elements exhibiting an operating characteristic having first and second positive resistance regions separated by a negative resistance region, said active elements being connected in the same sense for current flow through said series circuit; a first junction between said active elements; a series pair of first reactance elements connected across said series circuit; a second junction between said first reactance elements; a second reactance element connected between said first and second junctions, said first and second reactance elements together forming a tuned circuit; means to apply a uni-directional voltage across said serially-connected pair of active elements; means to apply across said pair of active elements an alternating driving voltage having a frequency substantially twice the resonant frequency of said tuned circuit; means to derive from said tuned circuit an output signal which is at said resonant frequency and which has, selectively, one or two phases which are relatively displaced by 180°; and means to apply to said first junction a control signal to select the phase of said output signal.

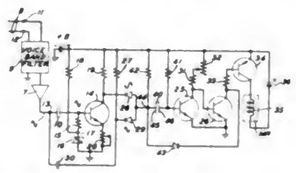
3,157,797
SWITCHING CIRCUIT
Charles R. Eshelman, Granada Hills, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 214,073
6 Claims. (Cl. 307—88.5)

1. A switching circuit comprising:
a first transistor of one conductivity type having first base, collector and emitter electrodes;
a second transistor of the opposite conductivity type having second base, collector and emitter electrodes;
means connecting the second collector and emitter electrodes to the first said collector and emitter electrodes respectively;
input means for applying signal pulses between said first base and emitter electrodes, said pulses having an amplitude and polarity to render said first transistor conductive;



a differentiating network having an input connected to said input means and an output connected to said second base electrode for rendering said second transistor conductive in response to the trailing edge of an input pulse;
and a third transistor of said one conductivity type having base and collector electrodes connected to said second collector and base electrodes, respectively, and an emitter electrode connected to the first base electrode.

3,157,798
NOISE IMPULSE COUNTER FOR SIGNALLING CIRCUITS
Theodore C. Anderson, Morristown, and David L. Favin, Whippany, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,207
22 Claims. (Cl. 307—88.5)



1. Apparatus for counting impulse voltages, comprising a source of said impulse voltages having positive and negative polarities, means for translating said impulse voltages of positive polarity into impulse voltages of negative polarity, said means having an input terminal connected to said source and also including an output terminal, unidirectional conductive means poled in a direction toward said source and normally positively biased in forward and reverse directions to nonconduction, said unidirectional means having two input terminals and an output terminal, one of said two input terminals connected to said translating means output terminal and the other to said source, said unidirectional means rendered conductive in the reverse direction by discrete impulse voltages of negative polarity to transmit the last-mentioned voltages through said unidirectional means in the reverse direction to be counted, means connected to said unidirectional means output terminal and activated by said impulse voltages of negative polarity transmitted through said unidirectional means in the reverse direction to effect a count thereof, said counting means having a finite time to operate and return to normal upon the

counting of each of said last-mentioned impulse voltages but tending to jam in an endeavor to count other impulse voltages of negative polarity transmitted through said unidirectional means in the reverse direction during said finite time, and means responsive to the activation of said counting means to bias said unidirectional means additionally in the forward direction to re-establish nonconduction in said last-mentioned means in the reverse direction thereby blocking the transmission of said other impulse voltages of negative polarity through said last-mentioned means in the reverse direction during said finite time.

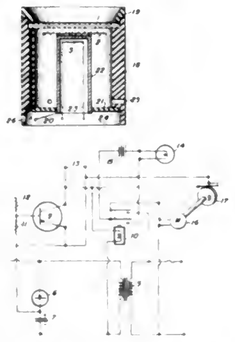
3,157,799
SYSTEM FOR SELF-DRYING CONTROL CONDUCTORS IN MOIST ATMOSPHERE
John R. Smith, Denver, Colo., assignor to Stearns-Roger Manufacturing Company, Denver, Colo., a corporation of Colorado
Filed Dec. 5, 1960, Ser. No. 73,591
4 Claims. (Cl. 307—92)



1. An electric load control system having control means remote therefrom and connected by conductors adapted to pass through an electrically conductive atmosphere which includes water comprising in combination a first solenoid actuated switch adapted on actuation to connect a load to a first electric current source, a second solenoid actuated switch adapted on actuation to connect the actuating coil of the first solenoid actuated switch to the first electric current source, a circuit isolation and current limiting means consisting of a transformer having primary and secondary windings, said transformer being of a type that when the secondary winding is short circuited, the voltage therein drops to a minimum value and the current flow therein is limited to a predetermined maximum, nondestructive amount, said transformer having its primary winding connected to the first current source with the secondary winding forming a second electric current source, and switch means for connecting the actuating coil of the second solenoid actuated switch to the second electric source wherein a short circuit in the control circuit occasioned by the conductive atmosphere is cured by heat generated in the conductors in the evaporation of the water.

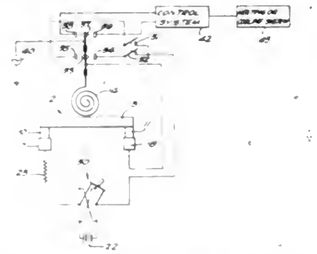
3,157,800
SNOW AND SLEET DETECTORS AND SYSTEMS
Garwood N. Burwell, Maplewood, N.J., assignor to The Rails Company, Maplewood, N.J.
Filed Oct. 30, 1961, Ser. No. 148,658
3 Claims. (Cl. 307—116)

1. A snow and sheet detector system including a transistor, comprising
a precipitation sensing head having a pair of spaced grids one below the other,
a thermostat positioned in the ambient air,
a power supply,
and the input of the transistor
all in series with said spaced grids,
a continuous acting heater element in said head below said lower grid and across said power supply,
a relay in the output circuit of said transistor,
means to sense the action of said detector, comprising
a timer motor, controlled by said relay, having a cam switch actuated by said motor and
connected across the output of said transistor.
2. A unified precipitation sensing head comprising
a casing having a top member,



a conducting grid member comprising a coarse screen held to said casing by said top member,
a second conducting grid member of finer mesh spaced below said first grid within said casing,
a hollow metal support therefor to which said fine screen is attached and
a heater member within said support below said second grid member,
electrical connections to said grids and heater member,
said casing having drainage means around its periphery below said grids,
and sealing means for the base of said casing.

3,157,801
COOLING MEANS FOR THERMOSTATS
Winston G. Shequen, La Crescenta, Calif., assignor to International Telephone and Telegraph Corporation, Baltimore, Md., a corporation of Maryland
Filed Mar. 7, 1960, Ser. No. 13,184
2 Claims. (Cl. 307—117)



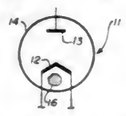
1. A control system of the character described comprising a single-pole double-throw switch having a movable contact and two stationary contacts selectively engageable therewith; a heat-responsive means for moving said contact into selective engagement with said stationary contacts; an element in heat relationship to said means for influencing the operation of the same; said element having two end portions, one of said end portions being in heat-conductive relationship with a P-type material,

the other one of said end portions being in heat-conductive relationship with an N-type material; a first heat sink in heat-conductive relationship to said N-type material; a second heat sink in heat-conductive relationship with said P-type material; said first and second heat sinks conveying heat produced by said switch away from said element; a first switch for connecting said element in a first series circuit with said first series circuit comprising: said first switch, one of said stationary contacts, said movable contact, said P-type material, said element and said N-type material; a second switch for connecting said element in a second series circuit with said second series circuit comprising: said second switch, the other one of said stationary contacts, said movable contact, said P-type material, said element and said N-type material; means rendering said first and second switches alternately effective to complete said first and second series circuits; a source of unidirectional voltage having a pair of terminals; and two-position reversing switching means for alternately connecting said terminals in said first and second series to produce current flow in opposite directions through said element corresponding to the position of said reversing switching means.

3,157,802
THERMIONIC ENERGY CONVERTER

Raymond Fox, Oakland, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 21, 1960, Ser. No. 57,595
6 Claims. (Cl. 310—4)

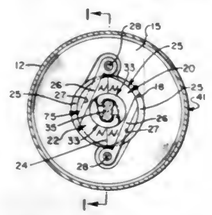


1. In a method for improving the efficiency of a thermionic energy converter containing a cathode, an anode, and cesium vapor the steps comprising adding barium vapor to said cesium vapor within said converter, maintaining the cathode at a high temperature relative to the anode within said converter, and maintaining the pressure of said barium vapor within said converter at a value to create an optimum cathode work function for the cathode temperature maintained.

3,157,803
SPLIT-ARMATURE ROTARY SOLENOID

Sterling Graydon, Jr., 2901 Via La Selva, Palos Verdes Estates, Calif.

Filed June 28, 1961, Ser. No. 120,222
13 Claims. (Cl. 310—24)

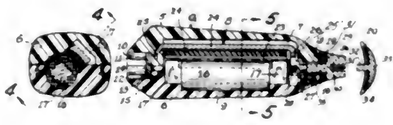


1. In a rotary solenoid construction:
a magnetizing coil providing an axial opening;
a magnetizable casing surrounding said coil;
a pair of opposed arcuate armature members disposed within said coil about the axis thereof and movable toward and from said axis and toward and from each other;
a rotary shaft disposed along said coil axis and between said armature members;
engageable driven means formed on said shaft for rotary movement of the shaft; and
drive means on said armature members engaging said driven means for rotary movement of the latter upon magnetic separation of said armature members under magnetizing influence of said coil.

3,157,804
RAZOR MOTOR AND CASING THEREFOR

Hoyle T. Goodwin, Durham, N.C., assignor to Goodwin Manufacturing & Development Company, Inc., Durham, N.C., a corporation of North Carolina

Filed Sept. 12, 1961, Ser. No. 137,625
10 Claims. (Cl. 310—29)

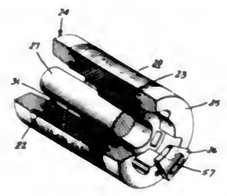


1. In an electric safety razor, a casing comprising a pair of molded, complementary longitudinal sections adapted to be secured together, an electromagnet, one of said sections being molded about and completely enclosing said magnet, said electromagnet lying along the longitudinal axis of said section and angularly rotated with respect to the plane of section separation in a fixed position less than a right angle in one direction about said section axis.

3,157,805
ROTOR END RING ARRANGEMENT FOR DYNAMOELECTRIC MACHINES

William R. Hoffmeyer and John H. Johnson, both of Holland, Mich., assignors to General Electric Company, a corporation of New York

Filed May 8, 1961, Ser. No. 108,416
6 Claims. (Cl. 310—61)

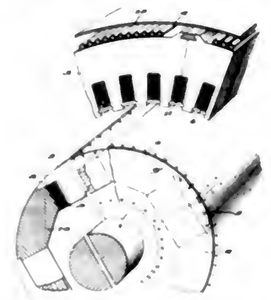


1. In an electric motor having a stator and a frame assembly, a shaft, a rotor mounted on said shaft and comprised of a plurality of laminations, said rotor being formed with a plurality of cooling ducts extending axially through said rotor and having apertures at the ends thereof, said rotor including a plurality of slots for accommodating rotor conductors, a plurality of conductors positioned in said slots, means for rotatably supporting said shaft, and a pair of end rings disposed at the respective ends of said rotor and joining said conductors, at least one of said end rings having a plurality of scalloped portions disposed in a partially circumscribing relationship with the apertures of said cooling ducts, said scalloped portions dividing said end ring into segmental portions projecting inwardly of said scalloped portions, said segmental portions providing a heat sink for absorbing heat from said scalloped portions during operation of the motor.

3,157,806
SYNCHRONOUS MACHINE WITH SALIENT POLES

Eugen Wiedemann, Wettingen, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Nov. 3, 1960, Ser. No. 66,960
Claims priority, application Switzerland Nov. 5, 1959
5 Claims. (Cl. 310—64)



1. In a synchronous dynamo electric machine having stator and rotor members, a winding on said stator, said rotor member being provided with salient poles spaced around the periphery thereof and windings on said poles of the direct liquid cooled type, the improvement wherein the gaps between adjacent poles are completely closed by wall surfaces thereby to reduce the friction and ventilation losses.

3,157,807
SPEED CONTROL FOR MAGNETIC CLUTCH

Wilmer H. Kimberly, Jr., Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed May 22, 1962, Ser. No. 196,786
3 Claims. (Cl. 310—95)

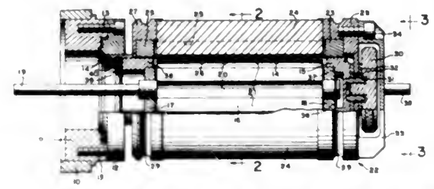


1. A speed control for controlling the level of energization of the control winding of a magnetic clutch interconnecting a driving means and a driven means comprising: a controlled rectifier having a gate and an anode-cathode circuit, said anode-cathode circuit connected to said control winding and to a source of positive unidirectional cyclically varying reference voltage; a unijunction transistor for apply a gating pulse to the gate of said controlled rectifier during each cycle of said reference voltage; a storage capacitor for charging said unijunction transistor to firing level; first transistor means for charging said capacitor to the unijunction transistor firing level; means sensing the speed of said driven means and producing a control signal representative thereof; and second transistor means connected to said first transistor means and responsive to said control signal to vary the time in each cycle of said reference voltage said first transistor means charges said capacitor to the unijunction transistor firing level to vary the energization of said clutch control winding in accordance with said control signal.

3,157,808
HIGH VACUUM APPARATUS

William A. Lloyd, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Dec. 30, 1960, Ser. No. 79,700
2 Claims. (Cl. 310—104)

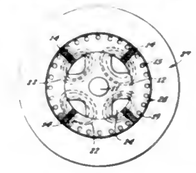


1. Apparatus for transmitting motion into a high vacuum system comprising a cylindrical housing, said cylindrical housing having a closed end and an open end adapted to communicate with an opening in the vacuum wall of a high vacuum chamber, supporting means adapted to support said cylindrical housing outside the vacuum chamber by attachment to the vacuum wall, said cylindrical housing adapted to form with the vacuum wall a continuous vacuum tight enclosure upon attachment thereto, a cup-shaped driving means including a permanent magnet, the external surface of said cup-shaped driving means forming a circumferential groove adapted to accommodate a belt drive for supplying power thereto, a driven means including a magnetic rotor adapted to transmit motion into the vacuum chamber in response to movement of said cup-shaped driving means, said driven means positioned within said cylindrical housing, said cup-shaped driving means rotatably mounted on said cylindrical housing and adapted for easy removal so as to allow high temperature baking of said cylindrical housing and said driven means, and adjustable mechanical locking means for preventing rotary movement of said cup-shaped driving means.

3,157,809
ELECTRIC MOTOR HAVING LOW CURIE POINT MAGNETIC BRIDGE BETWEEN POLES

Andrew Bekey, Los Angeles, Calif., assignor to Genisco, Incorporated, Los Angeles, Calif., a corporation of California

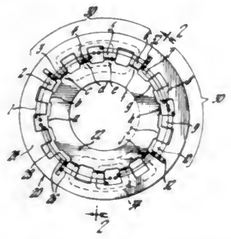
Filed Feb. 21, 1961, Ser. No. 90,756
13 Claims. (Cl. 310—156)



1. A synchronous motor, including, a stator, and a rotor concentric with said stator for running at a synchronous speed and having a permanent magnet centrally located in said rotor, a cylindrical member concentric with said magnet and in contact with said magnet, said cylindrical member being made of a magnetic material having a high permeability, and defining a plurality of radial slots, and a bar positioned in each of the radial slots of said cylindrical member, said bar being made of a material having a Curie point such that the temperature

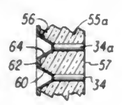
of the rotor reaches said Curie point simultaneously as the rotor speed approaches synchronous speed during starting, said bars when below said Curie point being effective to provide a low reluctance to the slots to thereby form a continuous cylindrical path having a low reluctance, said bars when above said Curie point being effective to provide a high reluctance in the slots to thereby divide the cylindrical member into a plurality of magnetic segments and cause the rotor to run at the synchronous speed.

3,157,810
INDUCTOR ALTERNATOR
Harold T. Adkins, Marshfield, Mass., assignor to Curtiss-Wright Corporation, Utica, Mich., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,339
5 Claims. (Cl. 310—168)



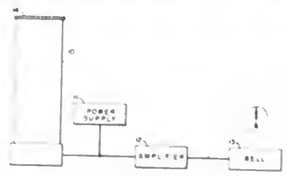
1. An inductor alternator generator, comprising a rotor having uniformly spaced pole faces provided thereon, a stator having a plurality of pole faces formed thereon and facing the rotor, said stator pole faces being in separate groups of multiple poles, and said groups being spaced equally around the inner periphery of the stator, power windings disposed around adjacent stator pole portions, and successively around said stator, field windings forming loops around stator pole pieces of adjacent groups, and said stator groups having their boundaries defined by comparatively narrow flux switching slots, said slots receiving only turns of the power windings.

3,157,811
ELECTROSTATIC PRINTING TUBE HAVING UNIQUE ANODE STRUCTURE
Joseph James Stone, Jr., Glenview, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Mar. 14, 1960, Ser. No. 14,686
4 Claims. (Cl. 313—73)



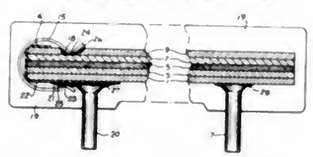
3. An electrostatic printing tube in which a plurality of conductors extend from the interior to the exterior surface of the dielectric face of the tube and are charged successively by an electron beam for enabling a discharge through a dielectric recording material for reproducing an image, the improvement comprising an undulating interior surface for said face with each of said conductors extending from the point at which a respective undulation is closest to the exterior surface, and a conductive coating covering said interior surface and thereby connecting said conductors in common, and means connecting said coating to a source of bias.

3,157,812
TEFLON COATED PHOTON COUNTER TUBE
Herbert Friedman, 2643 N. Upshur St., Arlington, Va., and Peter King, 314 Cameron Road, Alexandria, Va.
Filed Apr. 27, 1962, Ser. No. 190,839
4 Claims. (Cl. 313—94)
(Granted under Title 35, U.S. Code (1952), sec. 266)



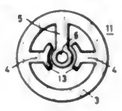
1. A flame detector which comprises a photomultiplier tube, said photomultiplier tube including a window operable in a desired light waveband, an ultraviolet light transparent unpigmented Teflon coating having a thickness of from a monolayer to about one mil on said window, said Teflon coating being capable of repelling dirt and oil contaminants.

3,157,813
ELECTROLUMINESCENT CELL HAVING ELECTRICAL CONTACT WITH INCREASED RELIABILITY
Robert S. Bowser, Wakefield, and Richard P. De La Chapelle, Gloucester, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,426
8 Claims. (Cl. 313—108)



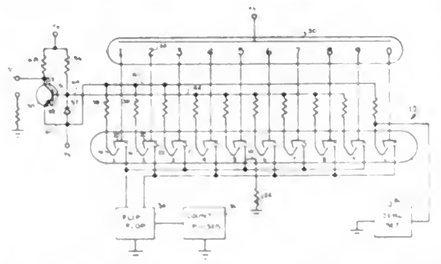
1. An encapsulated electroluminescent lamp having at least two superposed electrodes, at least one of which is light transmitting, and a layer of light-emitting material including an electroluminescent phosphor interposed between said electrodes; means to conduct current to at least one electrode in said device comprising an electrical connector disposed in electrical conducting relation with said electrode, a fluid layer of electrically conductive grease interposed between said connector and said electrode; an encapsulating layer of hardened resin surrounding said electroluminescent device, said conductive grease, and said electrical connector.

3,157,814
DELAY LINE FOR TRAVELLING WAVE TUBES
Franz Gross, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Dec. 12, 1960, Ser. No. 75,198
Claims priority, application Germany Apr. 11, 1960
5 Claims. (Cl. 315—3.5)



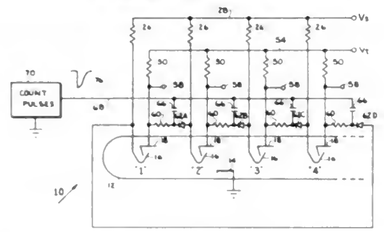
1. A delay line for amplifying millimeter waves in connection with travelling wave tubes, comprising a plurality of sheet metal members of at least two different types defining a hollow wave guide comprising stripshaped transverse webs extending alternately from and electrically interconnected with oppositely positioned wall portions thereof, said transverse webs extending into the space of reciprocal action between a wave propagated along the line and an electron beam propagated through openings formed in the transverse webs, and means forming two longitudinally directed, substantially continuously extending webs arranged symmetrically with respect to the transverse webs, said longitudinally directed webs extending from the inner wall of the wave guide into relatively close proximity with said transverse webs, wherein said sheet metal members include a first type which represents the cross sectional extent of the wave guide and the cross sectional extent of the transverse web, a second type which represents the cross sectional extent of the wave guide, and another of the first type adjacent the second type and displaced by 180° relative to the first said first type, said sheet metal members being stacked and mutually interconnected, assuring a wide band width and a stable amplifying operation with the forwardly propagated first partial wave.

3,157,815
BEAM-SWITCHING TUBE COUNTER WITH TRANSISTOR AMPLIFIER GENERATING CARRY PULSE, DEPENDENT ON THE CONFIGURATION OF THE SPADE ELECTRODES
Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 24, 1962, Ser. No. 225,644
3 Claims. (Cl. 315—8.5)



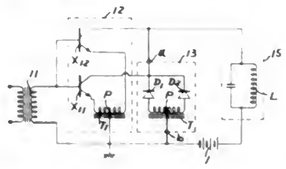
1. A counter circuit including an electron beam switching tube operable as a counting tube and including a cathode and a plurality of groups of electrodes; each group of electrodes including a target electrode which receives an electron beam and produces an output signal therefrom, a spade electrode which holds an electron beam on its associated target electrode, and a switching electrode which serves to switch an electron beam from one group of electrodes to the next;
said cathode being coupled to a source of reference potential;
the switching electrode in each group of electrodes being coupled to a source of switching pulses;
the spade electrode in each of a plurality of said groups of electrodes being coupled to a first bus;
the spade electrode in each of other of said groups of electrodes being coupled to a second bus;
said first and second buses carrying different and alternating potentials as said tube executes a counting operation;
a transistor having base, emitter, and collector electrodes and provided for generating a carry pulse from said beam switching tube;
said emitter electrode being coupled to a source of reference potential and to said first bus;
said collector electrode being coupled to signal input means;
said second bus being coupled to the base electrode of said transistor whereby said transistor is turned on and off alternately as the potential of said second bus changes during the execution of said counting operation by said tube;
the length of time during which said transistor is on or off being determined generally by the number of groups of electrodes whose spade electrodes are coupled to each bus.

3,157,816
BEAM SWITCHING TUBE COUNTING CIRCUIT WITH PARTICULAR TRANSFER MEANS BETWEEN ELECTRODE GROUPS
Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 31, 1962, Ser. No. 248,402
5 Claims. (Cl. 315—8.5)



1. A counter circuit including an electron beam switching tube having a cathode and a plurality of groups of electrodes; each group comprising a tube position to which an electron beam can flow from said cathode and including a target electrode which receives an electron beam and produces an output signal therefrom, and a spade electrode which holds an electron beam on its associated target electrode, and also serves to switch an electron beam from one group of electrodes to the next;
said cathode being connected to a reference potential;
first means coupling said spade and target electrodes to operating potentials;
second means coupling each target electrode to the next leading spade electrode; and
an input signal line coupled to each of said second means between each target and the next leading spade electrode;
the operating potentials and said second means being such that when an electron beam flows to a tube position, only the next leading spade electrode which is coupled thereto is able to receive an input signal from said input signal line.

3,157,817
TRANSFORMER CIRCUIT FOR BALANCING CURRENT FLOW THROUGH PARALLEL SEMICONDUCTORS
Satoshi Shimada, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Aug. 24, 1960, Ser. No. 51,576
Claims priority, application Japan Aug. 24, 1959
3 Claims. (Cl. 315—27)



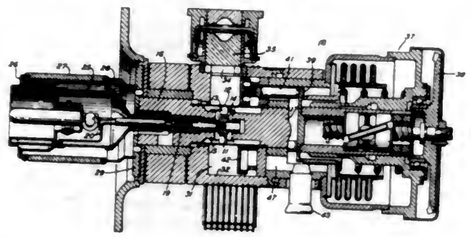
1. In a semiconductor parallel connection system,
a pair of transistors each having first, second and third electrodes,

first, second and third circuit points,
means connecting both of said first electrodes to said first circuit point,
transformer means including two inductively coupled windings connected between said second electrodes and said second circuit point,
means connecting both of said third electrodes to said third circuit point,
a deflection coil,
a supply voltage source,
means including said deflection coil and said supply voltage source connected in series between said first and second circuit points,
and means for applying a horizontal deflection signal between said third circuit point and one of the other circuit points to control current flow between said first and second electrodes and thereby control current flow through said deflection coil.

3,157,818
COAXIAL CAVITY MAGNETRON TUNING RING

Hilding M. Olson, Jr., Mohnton, and Lawrence J. Smith, Wayne, Pa., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 18, 1961, Ser. No. 146,038
4 Claims. (Cl. 315—39.77)



1. A magnetron comprising: a cylindrical cathode; a cylindrical anode wall surrounding said cathode; a plurality of anode resonators defined by a plurality of radially extending anode vanes and said anode wall; an output resonator defined by an outer wall and said anode wall; means for adjusting the resonant frequency of said output resonator within a predetermined range comprising a movable cylindrical tuning ring within said output resonator; and means for suppressing spurious modes in said output resonator comprising a circumferential array of equally spaced axial empty slots in the outer periphery of said tuning ring, the number of slots in the tuning ring being the smallest integral number N that will satisfy the inequality:

$$N > \frac{\pi D f}{c}$$

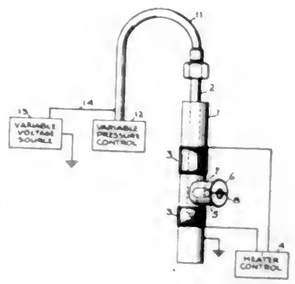
where D is the outside diameter of the tuning ring, c is the free-space velocity of light, and f is the highest frequency in cycles per unit of time within said predetermined frequency range.

3,157,819
APPARATUS FOR PRODUCING CHARGED LIQUID PARTICLES

Victor E. Krohn, Jr., Woodland Hills, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Nov. 22, 1960, Ser. No. 70,956
12 Claims. (Cl. 315—111)

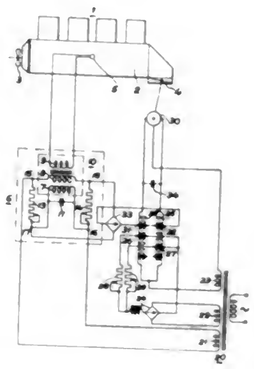
1. Apparatus for generating a stream of charged particles having a controllable charge-to-mass ratio comprising a container having a nopening therein, a supply of liquid metal within the opening, means for applying a variable pressure to the container, a grounded metal shield surrounding the container and having an aperture opposite said opening, and a variable voltage source connected to the container for establishing a variable electric field at said opening.



3,157,820
GAS-FILLED LIQUID CATHODE ELONGATED RECTIFIER HAVING CONDENSER CHAMBER AND AUTOMATIC TANK COOLING MEANS THEREFOR

Birger Funke and Rune Samuelsson, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Oct. 18, 1960, Ser. No. 63,375
Claims priority, application Sweden, Oct. 28, 1959, 10,036/59
4 Claims. (Cl. 315—113)

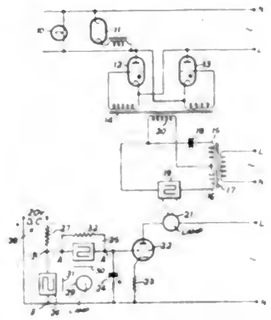


1. In a liquid cathode rectifier having a condensing chamber, said chamber comprising a horizontally placed elongated tank; means for cooling said tank comprising a cooling casing surrounding said tank, a fan driving a current of cooling air through said cooling casing along the surface of the tank and longitudinally thereof in such quantities that the increase of the temperature of the air is kept below a fixed value; a damper controlling the current of air, and means operatively connected to said damper and responsive to the temperature of the tank to close the damper fully when the temperature of the tank increases to a certain other and higher value; cooling ribs arranged on the surface of said tank, the cooling area of said ribs increasing in the direction of the current of cooling air.

3,157,821
CONTROL OF LIGHTING EFFECTS

Charles Rivers Passmore and Thomas William Shaw, both of London, England, assignors to Thorn Electrical Industries Limited, London, England, a British company

Filed Mar. 11, 1960, Ser. No. 31,506
Claims priority, application Great Britain Mar. 13, 1959
15 Claims. (Cl. 315—155)



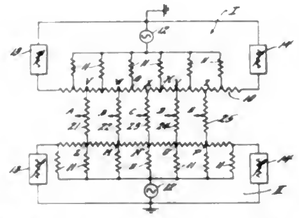
1. Lighting control apparatus including a lamp, a source of energising current for the lamp, means coupling the source to the lamp, said coupling means comprising a first variable impedance element for controlling the magnitude of the current through the lamp and a second variable impedance element for controlling the rate of change of the said current from one magnitude to another, operating means coupled to the variable impedance elements to vary their impedances stepwise in a predetermined sequence, whereby the brightness of the lamp is changed in accordance with a predetermined programme, a group of sources of illumination to be controlled, an energising source for said illumination sources, and means connecting said illumination sources to said energising source, said connecting means including a photoconductive device co-operatively disposed with respect to said lamp for illumination thereby, whereby the illumination sources are energised in accordance with the variations in brightness of the lamp, the photoconductive device being connected in one arm of a bridge circuit including a reactance element forming a second arm of said bridge circuit, a centre-tapped secondary winding of an energising transformer forming third and fourth arms of said bridge circuit, a primary winding of a coupling transformer connected between the tap of the said secondary winding and the junction of the photocell and the reactance element to form the diagonal of the said bridge circuit, two thyratrons connected in parallel and in opposite senses in the feed circuit to the group of sources of illumination, and two secondary windings of said coupling transformer connected one in each of the grid-cathode circuits of said thyratrons.

3,157,822
IMPEDANCE NETWORKS AND DISPLAY PANELS UTILIZING THE NETWORKS

Boris Haskell, 3715 Underwood St., Chevy Chase, Md.

Filed Dec. 30, 1960, Ser. No. 79,654
20 Claims. (Cl. 315—169)

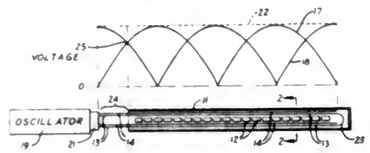
1. An electroluminescent display panel comprising: an electroluminescent panel, a first grid of substantially parallel electrical conductors on one face of said panel, a second grid of substantially parallel electrical conductors on the other face of said panel, the conductors of one grid being oriented at an angle to the conductors of the other grid to provide a plurality of intersecting points between the conductors of one grid and the conductor of the other grid; a scanning network associated with each grid; each scanning network comprising first and second network units; each network unit comprising an impedance member having two terminals, a plurality of impedance elements for coupling one side of an input voltage source to spaced points along said member intermediate said terminals, means for coupling both terminals of said member to each other and to the other side of said voltage source, and means for varying the effective impedance midpoint of the network unit; impedance means coupling spaced points along said member of one unit to spaced points along said member of the other unit of the scanning network; and means coupling the conductors of each grid to respective ones of said impedance means of the scanning network associated with such grid.



3,157,823
LUMINOUS BODIES ENERGIZED BY STANDING WAVES

Fred D. Clapp, Berkeley, Calif., assignor to Etzon Corporation, Berkeley, Calif., a corporation of California

Filed Jan. 9, 1962, Ser. No. 165,133
13 Claims. (Cl. 315—169)



1. An illuminating device adapted to be illuminated by high-frequency standing waves, comprising a light transmissive body assembly, said body assembly incorporating a series of discrete, confined and sealed spaces containing a low pressure ionizable gas, high-frequency electrical means for providing standing waves, antenna means electrically connected to the high-frequency electrical means for propagating the illuminating high-frequency waves, said antenna means including a first pair of conductors extending along the effective length of the body assembly for providing a first standing wave adjacent the spaces containing said gas, a second pair of conductors extending along the effective length of the body assembly for providing a second standing wave adjacent the spaces containing said gas, and means associated with said first and said second pair of conductors for spacing the standing waves along the length of the body assembly so that the maxima of one wave is substantially at the minima of the other.

3,157,824
SIMPLIFIED MEMORY CIRCUIT FOR X-Y PLOTTER

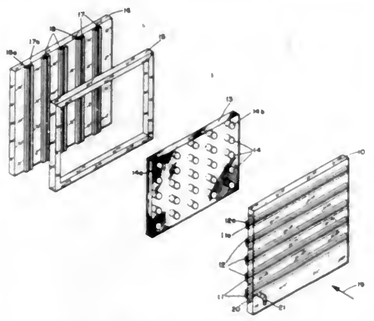
William H. Jones, Santa Monica, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Filed Apr. 4, 1962, Ser. No. 185,075
4 Claims. (Cl. 315—169)

1. An X–Y display panel consisting essentially of:
a first plate having a first side and a second side and

having a plurality of gas-containing holes arranged in columns and rows therein,

a second transparent plate, having a first set of a plurality of pairs of elongated firing and holding electrodes thereon, superposed on the first side of said first plate with said first set of electrodes juxtaposed to said first side of said first plate, each pair of a said firing electrode and a said holding electrode intersecting each hole in a said row of holes,

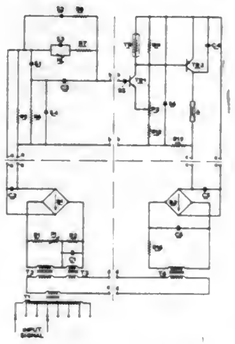


a third plate, having a second set of a plurality of pairs of elongated firing and holding electrodes thereon, superposed on the second side of said first plate with said second set of electrodes juxtaposed to said second side of said first plate, each pair of a said firing electrode and a second holding electrode intersecting each hole in a said column of holes,

the electrodes in said second set of electrodes intersecting the electrodes in said first set of electrodes substantially at right angles, and

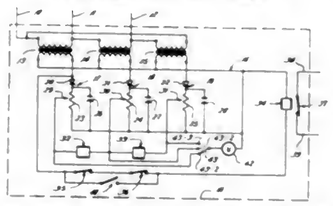
means sealing the peripheral edge of said panel gastight.

3,157,825
ELECTRIC PROTECTIVE RELAYS
Eugeniusz Antoszewski and John William Frederick Sherriff, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed June 3, 1960, Ser. No. 33,795
Claims priority, application Great Britain June 11, 1959
9 Claims. (Cl. 317—36)



1. An electric circuit for giving a unidirectional output signal exceeding a first predetermined value in response to a unidirectional input signal exceeding a second predetermined value after a time delay dependent on the value of said input signal, said circuit comprising a pair of output terminals, a capacitor connected thereacross, at least one input terminal and connecting means between a said input terminal and one side of said capacitor, said connecting means including a first rectifier connected in the blocking direction with respect to the polarity of said input signal and second means including a second rectifier connected in the blocking direction with respect to the polarity of said input signal and a resistor connected to be energized by said input signal through said second rectifier, said second means being connected so that said output signal comprises the potential drop across said capacitor and a potential drop across said resistor, so that, when said input signal has a relatively small value, said resistor carries only a relatively small current and, when said input signal has a relatively large value, said resistor carries a relatively large current owing to the non-linear reverse-direction resistance characteristic of said second rectifier.

3,157,826
DETECTOR FOR PHASE FAILURE IN POLYPHASE ELECTRICAL SYSTEMS
Robert L. Norton, Houston, Tex., assignor to Powell Electrical Manufacturing Company, Houston, Tex., a corporation of Texas
Filed Dec. 30, 1959, Ser. No. 862,884
2 Claims. (Cl. 317—46)

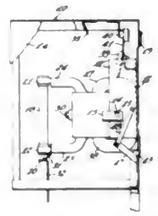


1. A phase failure detector for use on an A.-C. polyphase system comprising, a plurality of phase voltage source conductors, a like plurality of single phase transformers, each having a primary and a secondary winding, a primary winding connected to each of the phases of said polyphase source, one end of each of said secondary winding connected to a common conductor, a plurality of D.-C. circuits, one of said D.-C. circuits connected between the other ends of said secondary windings and the common conductor, said D.-C. circuits each having a rectifier means and a potential dropping means connected in series therein, said potential dropping means having a variable potential dividing tap, and a potential storing means shunting said potential dropping means, a plurality of signal means responsive to D.-C. voltage differentials to indicate phase failure, one of said signal means connected between the potential dividing taps in a first and second of said D.-C. circuits, another signal means connected between the potential dividing tap in a third of said D.-C. circuits and the potential dividing tap in the second of said D.-C. circuits, the potential dividing taps adjusted to balance the D.-C. voltage across each signal means when normal operational voltages are present in the sources and to produce an unbalanced D.-C. voltage across one signal means to activate same upon a predetermined unbalance in A.-C. voltage between any two source conductors or between one source conductor and the remaining source conductors.

3,157,827
TILT OUT TRUNNION ARRANGEMENT FOR ENCLOSED SWITCHBOARD STRUCTURES
John O. Tjebben, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 31, 1960, Ser. No. 66,280
8 Claims. (Cl. 317—99)

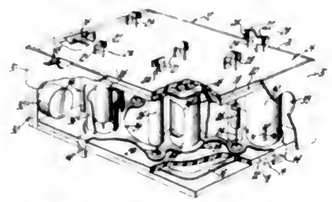
1. An enclosed switch structure comprising: an enclosure having an access opening therein, an electrical contact terminal disposed within said enclosure inwardly

of said opening, a tilt out carrier comprising a base mounted for rotation within said opening between engaging position and a nonengaging position, a barrier plate



pivotably mounted at one end of said opening, said base connected to and combining with said plate to form a barrier between said electrical contact terminal and said opening in both said positions.

3,157,828
ENCAPSULATED PRINTED CIRCUIT MODULE WITH HEAT TRANSFER MEANS
James H. Flaherty, Shorewood, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1960, Ser. No. 49,028
1 Claim. (Cl. 317—100)



A printed circuit package comprising a pair of spaced parallel printed circuit boards, each of said boards having an inner and outer panel of dielectric material, circuit conductors disposed between said panels and connection tabs extending from said conductors through said outer panel, a plurality of electrical components extending between said circuit boards and having terminal wires extending through said boards and welded to said tabs, heat transfer surfaces surrounding at least some of said components and being connected for heat transfer therefrom by additional heat transfer surfaces in engagement with said inner panels of the circuit boards, said additional surfaces having a portion thereof extending through one of said panels and adapted to be connected to a heat sink external to said package whereby excess heat is removed from said package and the components are maintained at thermally stable operating points, and a foamed dielectric material encapsulating the entire assembly.

3,157,829
INTEGRATING AMPLIFIER
Warren R. Wood, Palo Alto, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 21, 1961, Ser. No. 154,080
5 Claims. (Cl. 317—151)

1. A pulse integrating amplifier comprising:

an input terminal means for receiving electrical pulse energy;

a first D.C. isolation means;

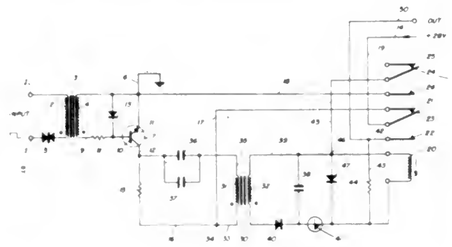
an amplitude discriminator means connected in circuit relationship between said input terminal means and said D.C. isolation means for conducting only electrical pulse energy of a predetermined amplitude;

a second isolation means;

amplifier means coupled between said first and said second isolation means for amplifying pulse energy passed by said first isolation means;

an integrating means coupled in circuit relationship to said second isolation means for storing said pulse energy until a predetermined voltage is reached;

a current responsive switch means;

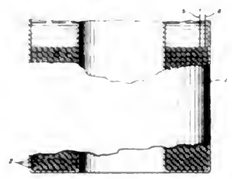


a semi-conductor diode connected to said integrating means and said curernt responsive switch means;

said semiconductor diode providing curernt to operate said current responsive switch means only after a predetermined pulse charge has been stored on said integrating means; and

contact means associated with said current responsive switch means for closing upon actuation of said current responsive switching means.

3,157,830
MOLYBDENUM-TECHNETIUM SUPER-CONDUCTING COMPOSITION AND MAGNET
Bernd T. Matthias, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 10, 1961, Ser. No. 101,954
6 Claims. (Cl. 317—158)

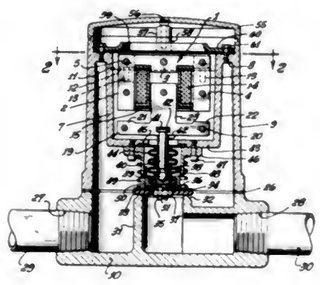


4. A superconducting magnet comprising a plurality of turns of an alloy of the Mo-Tc system comprising from 5 to 75 atomic percent Mo and from 95 to 25 atomic percent Tc, together with means for maintaining the said turns at a temperature in a range limited by a maximum value equal to the critical temperature for the said alloy.

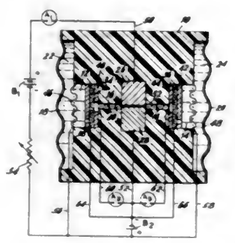
3,157,831
LAMINATED CORE ELECTROMAGNET
William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, Baltimore, Md., a corporation of Maryland
Filed Mar. 30, 1959, Ser. No. 802,922
29 Claims. (Cl. 317—165)

1. In an electromagnet structure: a core; a coil carried by the core; a movable armature cooperating with the core; wall means supporting the core; an actuator carried

by the armature and extending through the wall means; a sealing resilient bellows surrounding said actuator and joined thereto so as to maintain said wall means impervious; and a sleeve disposed around the actuator and made of material that produces low friction between it and the inner folds of the bellows.



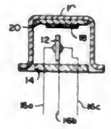
3,157,832
FULL WAVE ELECTROCHEMICAL LINEAR DETECTOR
Ray M. Hurd, Austin, Tex., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 16, 1962, Ser. No. 166,619
5 Claims. (Cl. 317—231)



1. A full wave electrochemical linear detector comprising a body portion including therein a pair of compartments and a corridor between said compartments, one wall of each of said compartments having therein a flexible diaphragm, said compartments each containing an electrolyte solution comprising a reversible redox system; an electrode in each of said compartments; a pair of detecting electrodes in said corridor, each one of which is adjacent to each of said compartments; a scavenging electrode in each of said compartments in close proximity to one of said detecting electrodes; a generating electrode between said detecting electrodes in said corridor and a pick-up electrode oppositely spaced from said generating electrode.

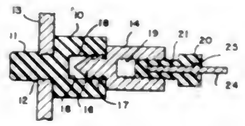
3,157,833
TRANSISTOR AMPLIFIER ENCLOSED IN AN ATMOSPHERE OF CAMPHOR NAPHTHALENE OR COMBINATION THEREOF
Akira Kawaji, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed June 5, 1962, Ser. No. 200,085
3 Claims. (Cl. 317—234)

1. In combination, an enclosure, a semiconductor amplifying element mounted within said enclosure and surrounded by an atmosphere, said enclosure being provided with means for making electrical connections between said element and the outside of said enclosure, and a charging material disposed within said enclosure for charging the atmosphere surrounding said element to thereby enhance



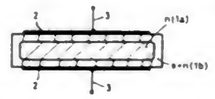
the amplification factor of said element, said charging material comprising a material selected from the group including camphor, naphthalene and a combination thereof.

3,157,834
SUBMINIATURE VARIABLE CAPACITOR
William H. Kumm and William L. Letsch, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed July 6, 1961, Ser. No. 122,364
1 Claim. (Cl. 317—249)



A subminiature variable capacitive device comprising: an elongated metal body having a bore hole centrally located and threaded along a substantial length of the longitudinal axis of said metal body, a polytetrafluoroethylene spacer member retained within said centrally located and threaded bore hole, said spacer member having a cylindrical bore hole, a metal pin having a circular cross-section snugly fitted within said cylindrical bore hole of said spacer member, a raised shoulder on said metal pin for securing said pin in said spacer, means on said spacer for rotating the spacer within said centrally located and threaded bore hole for adjusting the axial position of said metal pin with respect to said elongated metal body, a second polytetrafluoroethylene support having a central bore hole therein, means on said elongated metal body for engaging said bore hole within said second polytetrafluoroethylene support for securing said elongated metal body to said second polytetrafluoroethylene support and a mounting projection on said support at the end remote from said metal body.

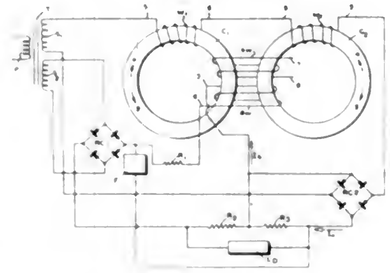
3,157,835
CERAMIC BLOCKING LAYER CAPACITOR
Werner Cirkler and Harald Löbl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a Germany corporation
Filed Dec. 20, 1960, Ser. No. 77,140
Claims priority, application Germany, Apr. 29, 1960, S 68,273
12 Claims. (Cl. 317—262)



1. A blocking layer capacitor exhibiting high voltage stability, high rated voltage, high insulation resistance, and low loss angle, comprising a ceramic body made of a mixture of metal titanate and titanium dioxide, wherein barium titanate is used as metal titanate and wherein the titanium dioxide content amounts to 2 to 10 mole percent, said body being formed with a highly dielectric interiorly

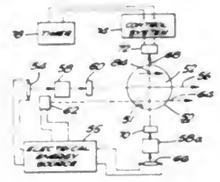
doped structure and a marginal zone bordering on metal coating provided thereon, said marginal zone acting as blocking layer and containing spatially delimited areas with electron yielding impurity centers.

3,157,836
SATURABLE REACTOR BIASING CIRCUIT
Willard B. Jarvinen, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 24, 1961, Ser. No. 84,622
3 Claims. (Cl. 323—89)



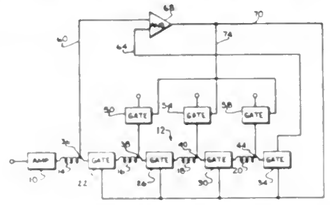
1. A saturable reactor device having a pair of reactors, a winding on each reactor, a bias winding common to said reactors, a resistor connected to said reactor windings, another resistor connected to said bias winding, the turns ratio of the reactor winding and the bias winding being equal to the ratio of their respective resistors, an input winding common to said reactors, and an output derived across the said resistors in series.

3,157,837
ANGULAR MOTION RESPONSIVE APPARATUS AND METHOD UTILIZING OPTICALLY ALIGNABLE MAGNETIC MOMENTS
John Milton Andres, Rolling Hills Estates, Calif., assignor to Space Technology Laboratories, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Feb. 12, 1960, Ser. No. 8,453
12 Claims. (Cl. 324—.5)



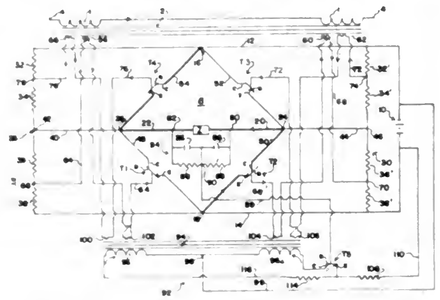
6. A method of measuring an angular rotation rate of a body about a preselected axis by utilizing the optically alignable magnetic moments of a magnetic field responsive medium comprising the steps of: irradiating the medium with a beam of optical pumping electromagnetic radiation in a first direction to align the magnetic moments in the first direction; subjecting the medium to a variable intensity unidirectional magnetic field in the first direction; rotating the body about the preselected axis to induce a rotation of the magnetic field and the optical pumping electromagnetic radiation; irradiating the medium with a beam of optical detection electromagnetic radiation in a direction substantially parallel to the preselected axis to detect a component of the magnetic moment parallel to the preselected axis; and measuring changes in the intensity of the optical detection electromagnetic radiation.

3,157,838
DESTRUCTIVE READOUT OF DELAY LINE
David Glaser, Greenbrook, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 13, 1961, Ser. No. 151,834
4 Claims. (Cl. 328—121)



1. A signal storing and transmitting circuit comprising a delay line including a plurality of output taps by means of which signals may be extracted from said delay line;
said delay line being adapted to receive a plurality of signal pulses enclosed by a pair of bracket pulses;
a gate positioned in said line adjacent to each of said output taps;
output means coupled to said line for extracting said pair of bracket pulses;
an AND gate coupled to said output means and adapted to receive said bracket pulses and provide a control signal therefrom;
said control signal being coupled to said gates for rendering said gates nonconductive after the desired signals have been removed from said delay line.

3,157,839
TRANSISTORIZED BRIDGE AMPLIFIER WITH A BIAS COMPENSATING CIRCUIT THEREFOR
Harry B. Brown, 524 S. Spring St., Falls Church, Va., and Charles R. Banks, 3487 S. Wakefield St., Arlington, Va.
Filed Feb. 1, 1962, Ser. No. 170,597
8 Claims. (Cl. 330—18)



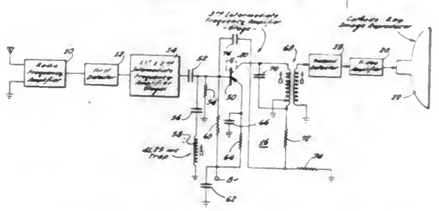
1. In an amplifier including an electrical circuit in bridge configuration characterized by two pairs of opposed arms and two pairs of opposed corners, each of said arms including an amplifying device having input and output electrodes in series therewith and a control electrode for varying the conductivity between the input and output electrodes, means for connecting opposite sides of a source of electric potential across one of said opposed corner pairs, said circuit including means for connecting an impedance load across the other corner pair, and control circuit means for alternately applying control signals to the control electrodes of the amplifying devices in said opposed pairs of arms whereby to bias the devices in one opposed pair of arms in the sense to increase conductivity thereof with respect to the amplify-

ing devices in the other opposed pair of arms, thereby applying said potential in alternating opposite senses across said load, the improvement which comprises: means for sensing the average potential appearing between points in said circuit means on opposite sides of said load; comparison means connected to said sensing means and having an output varying in accordance with differences between the sensed average potential and a standard potential, and means responsive to said comparison means for applying compensating biases to the control electrodes of the amplifying devices in said opposite arms in senses tending to maintain the average potential appearing between said points on opposite sides of said load in predetermined ratio with said standard potential.

3,157,840
MEANS FOR NEUTRALIZING AMPLIFIER CIRCUITS

Gerald L. Caprio, Carpentersville, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Mar. 20, 1961, Ser. No. 97,096
2 Claims. (Cl. 330—27)



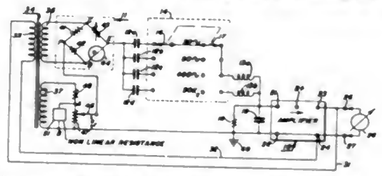
1. An amplifier including a transistor having a base electrode and an emitter electrode and a collector electrode, an input circuit coupled to said base and emitter electrodes, an output circuit coupled to said collector and emitter electrodes, said transistor exhibiting collector-base interelectrode capacity having a tendency to feed back an unwanted signal to said input circuit, an inductance coil included in said output circuit and having a neutralizing winding across which a neutralizing signal is developed, first and second resistors series connected across said neutralizing winding, means connecting one side of said first resistor to a reference point, said first resistor having substantially less resistance than said second resistor and providing the neutralizing signal thereacross, a capacitor connected between the other side of said first resistor and said base electrode for feeding back the neutralizing signal to neutralize the unwanted signal, whereby said first resistor forms a source impedance for the neutralizing signal which is less than the impedance of said neutralizing winding.

3,157,841
VARIABLE FREQUENCY OSCILLATOR AMPLITUDE STABILIZED BRIDGE AND SELF-DERIVED REFERENCE VOLTAGE

Everett A. Gilbert, Denville, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey

Filed Jan. 5, 1961, Ser. No. 80,807
3 Claims. (Cl. 331—110)

1. A stabilized A.C. power supply comprising,
(*a*) an A.C. amplifier,
(*b*) a resistance bridge having a current-dependent resistance element forming one arm thereof,
(*c*) a transformer having a primary winding connected to the output circuit of the amplifier, a first secondary winding connected to the input terminals of said bridge, and a second secondary winding,
(*d*) an inductance-capacitance network connected between one output terminal of said bridge and one input terminal of the amplifier,
(*e*) means energized by the voltage developed in the said second secondary winding and providing an A.C.

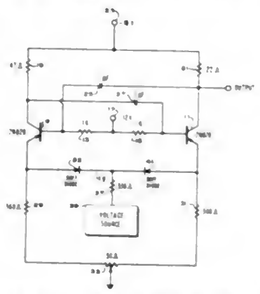


reference voltage of predetermined substantially constant magnitude, and
(*f*) circuit elements applying the said reference voltage between the other output terminal of the bridge and the other input terminal of the amplifier.

3,157,842
MULTIVIBRATOR CIRCUITS USING STEP RECOVERY DIODES AS TIMING ELEMENTS

Bas Hoeks, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed June 1, 1962, Ser. No. 199,434
5 Claims. (Cl. 331—113)



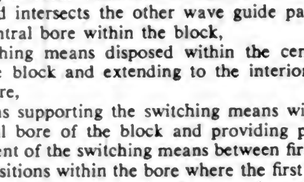
5. A multivibrator comprising a pair of amplifiers, each having first and second electrodes forming an input circuit and having said second electrode and a third electrode forming an output circuit, means connected to the second and third electrodes of said amplifiers for supplying bias signals thereto; each of said amplifiers forming an output signal at the third electrode thereof in response to a change in the conductivity of said amplifier, means coupling the first electrode of each of said amplifiers to the third electrode of the other of said amplifiers, first and second step recovery diodes having junctions about which the gradient of impurity concentration increases rapidly with distance from the junction, said diodes being capable of storing charge in the immediate vicinity of the junction during forward conduction of current therethrough and being capable of sustaining reverse conduction in the presence of stored charge, and means including said first and second diodes serially connected in conduction opposition between the input circuits of said amplifiers for altering the conductivity of one of said amplifiers in response to the sudden depletion of stored carriers in one of the first and second diodes.

3,157,843
SOLID STATE MODULATOR FOR PHOTOTRANSISTORS

Raymond E. Koncen, Oxon Hill, Md.
(5690 Bock Terrace SE., Washington 21, D.C.)

Filed Feb. 28, 1962, Ser. No. 176,457
7 Claims. (Cl. 332—31)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A solid state circuit for modulating a D.C. supply to provide an A.C. signal to a phototransistor and to provide an A.C. output signal whose amplitude is proportional to the intensity of the light impinging upon the phototransistor comprising a phototransistor adapted to have its photosensitive area illuminated by light, said phototransistor having at least emitter and collector electrodes, transistor switching means having an output connected to the emitter elecrode of said phototransistor, and electronic oscillating means connected across said

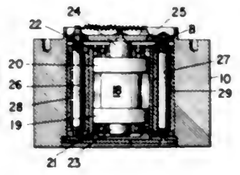


D.C. supply and adapted to modulate said D.C. supply at a selected frequency, said modulated supply being connected to and actuating said transistor switching means with said transistor switching means and electronic oscillating means providing an A.C. signal to said phototransistor whereby the output signal of the solid state circuit is an A.C. signal whose amplitude is proportional to the intensity of the light impinging upon the phototransistor.

3,157,844
WAVE GUIDE SWITCH

Donald H. Lanctot, Malibu, Calif., assignor to Don-Lan Electronic, Inc., a corporation of California

Filed June 2, 1961, Ser. No. 114,504
8 Claims. (Cl. 333—7)

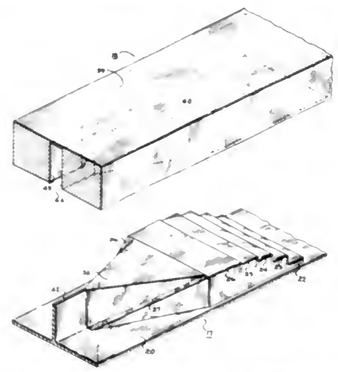


1. A wave guide switch, including:
a block having a central bore defined by an interior wall, the block also having four side faces each having a wave guide passage which extends inwardly from the face and which has a disposition constituting a linear extension of one of the other passages and intersects the other wave guide passages at the central bore within the block,
switching means disposed within the central bore of the block and extending to the interior wall of the bore,
means supporting the switching means within the central bore of the block and providing pivotal movement of the switching means between first and second positions within the bore where the first position provides a communication between first and second of the four bores and between third and fourth of the four bores and where the second position provides a communication between the first and third of the four bores and between the second and fourth of the four bores,
means operatively coupled to the switching means for biasing the switching means to the first pivotal position,
electromagnetic means operatively coupled to the switching means for controlling the pivotal movement of the switching means from the first pivotal position to the second pivotal position upon an electromagnetic excitation of the electromagnetic means, and
electromagnetic exciting means disposed within the block between the wave guide passages and electromagnetically coupled to the electromagnetic means for electromagnetically exciting the electromagnetic means to obtain a movement of the switching means from the first pivotal position to the second pivotal position.

3,157,845
RECTANGULAR TO RIDGED WAVEGUIDE TRANSITION HAVING SEPARATE MODE CONVERTING AND IMPEDANCE MATCHING SECTIONS

Richard M. White, Berkeley, Calif., assignor to General Electric Company, a corporation of New York

Filed Jan. 29, 1963, Ser. No. 254,793
7 Claims. (Cl. 333—21)



7. A transition for coupling a rectangular waveguide to a ridged waveguide comprising first and second sections coupled together; said first section comprising a hollow rectangular waveguide portion, the height of said portion progressively decreasing in a direction along the length of said first section from one end to the other end thereof, the internal cross section of said first section at said one end thereof being the same as the internal cross section of said rectangular waveguide; said second section comprising a hollow outer member and a ridged member disposed within said outer member, said outer member decreasing in internal width and increasing in internal height in a direction along the length of said second section from one end to the other end thereof, said ridged member decreasing in width and increasing in height in said direction along the length of said second section, the internal cross section of said second section at said other end thereof being the same as the internal cross section of said ridged waveguide; and said one end of said second section being joined to said other end of said first section.

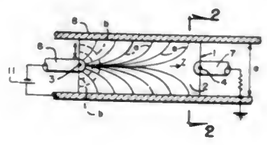
3,157,846
CARD ATTENUATOR FOR MICROWAVE FREQUENCIES

Bruno O. Weinschel, Bethesda, Md., assignor to Weinschel Engineering Co., Inc., Kensington, Md., a corporation of Delaware

Filed Aug. 23, 1962, Ser. No. 219,053
8 Claims. (Cl. 333—81)

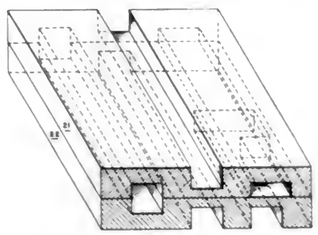
1. A microwave attenuator comprising an insulating member having at least one surface; a thin layer of

resistive material on said surface; a coaxial connector having an outer conductive grounded member and an inner conductive current member coaxially spaced and insulated from said outer member, the periphery of the surface having two opposed and spaced linear sides and two opposed and spaced linear ends, said resistive



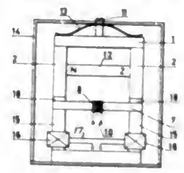
material along at least one of said sides being in conductive contact along the side legnth with said outer conductive member, and said inner conductive member being in contact with the resistive material at a restricted area adjacent one of said ends and spaced from said sides.

3,157,847
MULTILAYERED WAVEGUIDE CIRCUITRY FORMED BY STACKING PLATES HAVING SURFACE GROOVES
Robert M. Williams, Philadelphia, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 11, 1961, Ser. No. 123,320
1 Claim. (Cl. 333—95)



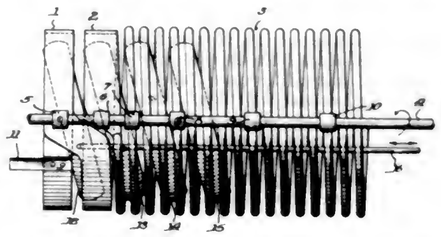
A wave guide module comprising:
at least three flat faced elements in stacked relation;
a first of said elements having at least one groove in each of the opposite flat faces thereof, the surfaces of said grooves and at least a portion of said flat faces being of an electrically conductive material;
a second of said elements having at least one groove in at least one of the opposed flat faces thereof said second of said elements having the surface of said grooves and of portions of said flat faces of an electrically conductive material;
said first element mounted with one of its flat faces adjacent one of the flat faces of said second element in said stack with said electrically conductive surfaces of the one in registry with at least one of of grooves in the other element to form wave guide sections;
a third of said elements having electrically conductive portions on the flat surfaces thereof and mounted in said stack with one first surface thereof adjacent the other flat surface of said first element and with at least one of said electrically conductive portions in registry with at least one of the grooves in said first element, whereby a wave guide module containing a plurality of wave guide sections is assembled.

3,157,848
ADJUSTABLE MAGNETIC FLUX-SOURCE
Egbert Hendrik Bolten, Pijnacker, Netherlands, assignor to The Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands
Filed Oct. 19, 1959, Ser. No. 847,262
Claims priority, application Netherlands, Oct. 28, 1958, 232,675
5 Claims. (Cl. 336—110)



1. A modulator which is controllable by premagnetization, comprising a control coil and oscillation means comprising an oscillator coil, each coil having terminals and wound around a core with end poles, the said cores being made of non-metallic, magnetically soft material of high permeability, said control coil terminals constituting means for connection of an external control signal source, an adjustable magnetic flux source having a yoke of non-metallic, magnetically soft material of high permeability and high specific resistance, said yoke being divided into parts by at least one permanent ring magnet, said magnet being rotatably mounted and frictionally engaged between the parts of the yoke, said yoke being provided with end poles, each of said end poles being magnetically connected to one end pole of each of said cores, and said permanent magnet being made of a non-metallic, magnetic material and being magnetized with alternate north and south poles near its circumference.

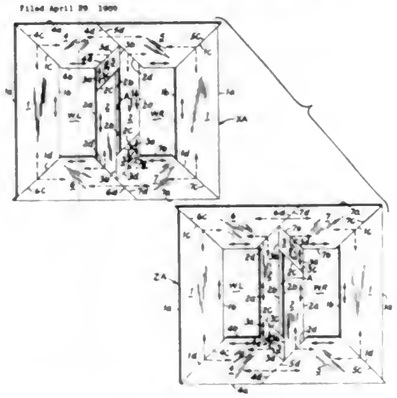
3,157,849
BRUSHLESS VARIOMETER FOR AN EXTENDED FREQUENCY RANGE
Rudolf Michler, Berlin-Siemensstadt, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, a corporation of Germany
Filed Nov. 24, 1961, Ser. No. 154,428
Claims priority, application Germany Dec. 2, 1960
4 Claims. (Cl. 336—150)



1. A brushless variometer for continuously variable operation over a large frequency range, comprising a coil having windings, the inductance of which is variable in coarse stages by means of range switches for the operative connection or disconnection of windings, shunt rings disposed in the interior of the coil, and means for supporting said rings for rotative movement to vary the inductance for providing a bridging of the coarse stages, the angle of inclination of the shunt rings, to the coil axis, and therewith to the direction of the magnetic main field being adjustable, the coil windings which initially are operatively connected at smaller inductance values having a

greater cross-sectional area than those windings which are additionally operatively connected at higher inductance values.

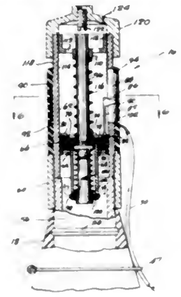
3,157,850
MAGNETIC CORES
David F. Winter and Albert T. Chase, Kirkwood, Mo., assignors to Moloney Electric Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 29, 1959, Ser. No. 809,865
26 Claims. (Cl. 336—216)



1. In a magnetic core for electrical induction apparatus having leg and yoke members, one of said members including a plurality of layers each of which comprises a plurality of strips and an insert of grain-oriented magnetic material, each strip having parallel side edges extending in the direction of its grain orientation and end edges at least one of which is oblique to its side edges, each insert having parallel side edges extending in the direction of its grain orientation and parallel end edges oblique to its side edges, the strips in a given layer being positioned side-by-side in laterally spaced parallel relation, the insert in a given layer being positioned endwise of one of the strips in said layer with one end edge of said insert in butt joint contact with the said oblique end edge of said strip along the entire extent thereof and with one side edge of said insert longitudinally aligned with one side edge of the respective associated strip which it abuts, the width of said insert being greater than the width of its respective associated strip.

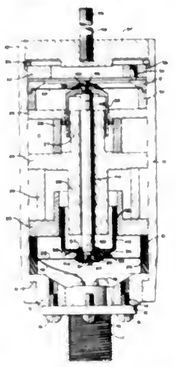
3,157,851
TIRE PRESSURE WARNING DEVICE
Hilliard T. Henderson, 5368 Springhill Drive, Pensacola, Fla.
Filed May 16, 1961, Ser. No. 110,363
8 Claims. (Cl. 338—37)

1. A warning device, responsive to tire pressures comprising a tubular housing adapted for mounting on a tire valve stem, an air-sealing piston slidably mounted in said tube, a rheostat carried by said housing and electrically insulated therefrom, a sliding contact adapted to engage said rheostat carried by said piston and grounded through said housing, said piston having a tubular, depending portion having a bottom with air passages and a central opening, a rod mounted for sliding movement axially of said opening, and having a radially extending collar medially of its length, a seat at one end of said rod below said bottom, and having a resilient washer to seal said air passages, a spring surrounding said rod, and acting between said bottom and said collar to retain said washer against said passages, a spring surrounding said rod above said piston, an abutment for the upper end of said latter spring comprising a nipple threadedly carried in said housing for adjustable positioning axially of said



housing, and said nipple having air passages, a vented cap on said housing, and a threadedly adjustable abutment carried by said cap and positioned for contact by said rod during axial movement of said rod.

3,157,852
VOLTAGE GENERATING SEISMIC VIBRATORY PICKUP DEVICE
Ralph A. Campbell, Theodore Ongaro, and Glen H. Thomas, Columbus, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio
Filed Feb. 1, 1960, Ser. No. 5,753
5 Claims. (Cl. 340—17)



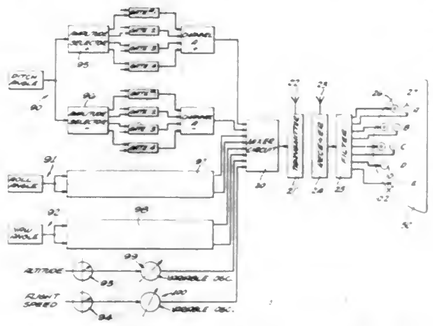
1. In a seismic vibration pickup instrument including a case having an internal chamber and an inductive coil adapted to oscillate in a first magnetic field to generate electrical signals responsive to the vibrations of said case, the improvement comprising a first nonmetallic spool upon which said coil is wound, a second metallic spool secured in rigid relation to said first spool and adapted to oscillate in unison with said first spool, and a separate second magnetic field extending through said second spool but isolated from said inductive coil.

3,157,853
TACTILE COMMUNICATION SYSTEM
Joseph Hirsch, 1117 Fiske St., Pacific Palisades, Calif.
Filed Dec. 6, 1957, Ser. No. 701,087
7 Claims. (Cl. 340—27)

3. A communication system for transmitting information relating to the operational conditions of a vehicle to an operator at a position removed from the vehicle, including,

a plurality of sensing devices mounted on the vehicle and so disposed that the devices are constructed to sense attitudes of the vehicle relative to a plurality of different axes,

computer means coupled to said plurality of sensing devices for analyzing the signals emanating from said devices and for transmitting to the removed position signals of different tactually distinguishable frequency characteristics representing the accelerations or decelerations of the vehicle relative to said different axes and the magnitudes of said accelerations or decelerations,

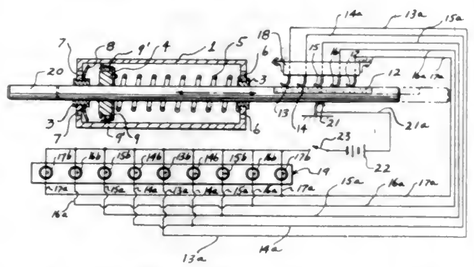


means at the removed position for receiving the transmitted signals,

filter means responsive to the received signals and including a plurality of lines for introducing the signals of different frequencies to the individual lines in the plurality, and

tactually sensory means mounted in contact with the operator and operatively coupled to the individual lines in the plurality in the filter means for providing tactual indications to the operator of the accelerations of the vehicle relative to the different axes.

3,157,854
VEHICLE DECELERATION INDICATOR
Alfred B. Riley, 2 Hesketh St., Chevy Chase, Md.
Filed Apr. 3, 1962, Ser. No. 184,812
3 Claims. (Cl. 340—71)



1. A vehicle deceleration indicator of the character described comprising, vehicle stop-light means, said stop-light means including a light band having a variable linear dimension, inertia actuated switch means adapted for mounting on a vehicle, a plurality of electrical circuits, including a source of current severally connected to the inertia actuated switch means and to the vehicle stop-light means, whereby upon braking of the vehicle, the inertia actuated switch means moves in a direction to sequentially energize the electrical circuits, to thereby illuminate the stop-light means while simultaneously increasing the linear dimension of the light band in response to the braking rate of the vehicle, whereby the driver of a vehicle following the first-mentioned vehicle will be warned of the rate at which the first-mentioned vehicle is being braked, said inertia actuated switch means moving in the opposite direction to sequentially de-energize said electrical circuits when the first-mentioned vehicle comes to rest to thereby decrease the linear dimension of the light band, and dampening means operatively connected to said inertia actuated switch means to retard said opposite movement of the inertia actuated switch means, said dampening means being constructed and arranged with respect to the inertia actuated switch means, whereby to permit free movement of the switch means in a direction to sequentially energize the electrical circuits, and to retard movement of said switch means in an opposite direction to sequentially de-energize said electrical circuits.

3,157,855
OPTICAL READING MACHINE WITH ROTARY MASKS
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 21, 1961, Ser. No. 139,711
11 Claims. (Cl. 340—146.3)



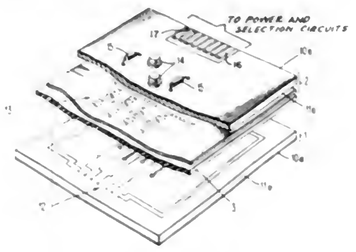
1. In an optical mask reading machine where the masks are arranged in groups with at least some of the groups containing an assertion mask and a negation mask, a rotary member supporting said mask groups, means to project a plurality of images of an unknown character on said mask-groups which are sequentially presented to said images, photosensitive means for sequentially providing signals which correspond to the degree of match between the character images and each mask-group, a character-identity code rotatable with said member and associated with each mask group, selection means for detecting and storing the signal representing the highest correlation between said images and said mask groups as they are sequentially presented to the images due to rotation of said member, and means responding to said selection means for remembering the code associated with the mask group responsible for the highest correlation and for replacing the remembered code with a new code each time that the new correlation signal is stored in said storing means.

3,157,856
DIGITAL INPUT SYSTEM
Charles H. Propster, Jr., Saratoga, Calif., assignor to General Electric Company, a corporation of New York
Filed June 13, 1961, Ser. No. 116,819
6 Claims. (Cl. 340—147)

1. A scanning device comprising: a plurality of input terminals; a plurality of series circuits one for each input terminal, each series circuit having two terminals and comprising a current switch and an impedance element, one terminal being connected to a respective one of said input terminals; a source of reference potential, a current detecting means having an input terminal connected to the second terminal of each of said series circuits and an output terminal for producing an output signal in response to an input current signal through any one of said impedance elements, said current detecting means having a low input impedance relative to the impedance of a given one of said impedance elements, whereby a current signal through any one of said impedance elements is substantially short-circuited to said source of reference potential; a source of potential; means for selectively connecting said source of potential to one of said input terminals; and a plurality of actuating means coupled to said current switches, one actuating means for each current switch for rendering it conductive.



3,157,857
PRINTED MEMORY CIRCUIT
Charles H. Stapper, Jr., Fishkill, and Lawrence E. La Fave, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,860
6 Claims. (Cl. 340—173)

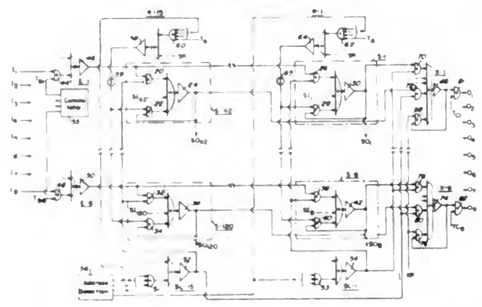


1. Printed memory apparatus for storing information in a storage cell mounted exteriorly of the memory apparatus and having a bistable storage device and an impedance element for establishing the operating characteristics of the device, the information being manifested in the form of pulses provided from a plurality of sources to the device, comprising

means comprising a plurality of laminations of interior printed circuit selection lines coupled to the sources and separated from each other by an insulating layer and interior sets of printed memory conductors of whirl formation in circuit with each other and with the cell for inductively coupling the pulses from the lines to the cell,

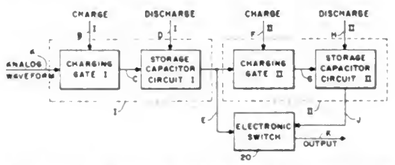
and surface plane shields mounted exteriorly in the laminations enabling the conductors to have electrical connections therethrough for coupling to the cell and for decoupling the selection lines and memory conductors from the device.

3,157,858
ELECTRICAL STORAGE APPARATUS
Charles J. Barbagallo, Needham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 156,017
7 Claims. (Cl. 340—173)



1. A data storage device comprising a plurality of storage units each including a gate buffer amplifier adapted to store a single binary digit by recirculation, said storage units being organized in a matrix configuration having at least columns and rows, means for providing input data from a plurality of channels each corresponding to one of said rows, gating means for simultaneously presenting the data in each channel to each storage unit of the corresponding row, strobing means for activating said last-recited gating means in sequence for the respective matrix rows, means for deriving address selection signals, gating selection means responsive to said last-recited signals for enabling the storage units of a chosen matrix column to receive the applied input data, an exit unit corresponding to each of said rows, each of said exit units comprising a gate buffer amplifier including a separate gate coupled to each storage unit of its corresponding row, means responsive to said address selection signals for simultaneously energizing appropriate ones of said last-recited gates to transfer the data frame stored in said selected column to said exit units, and gating means responsive to said strobing means for sequentially reading data out of respective ones of said exit units.

3,157,859
ELECTRONIC ANALOG STORAGE DEVICE
Loyd C. Moore, Arlington, and Klaus J. Hecker, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 19, 1963, Ser. No. 303,190
8 Claims. (Cl. 340—173)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electronic analog storage device comprising:

(*a*) first and second boxcar circuits connected in series,

(*b*) each said boxcar circuit including a gate means and a storage means,

(*c*) the storage means of said first boxcar circuit having a short time constant which allows rapid charging and rapid discharging thereof, the storage means of said second boxcar circuit having a long time constant and requiring a longer time for charging and discharging thereof,

(*d*) pulse means for initiating the discharging of the storage means of said first boxcar circuit,

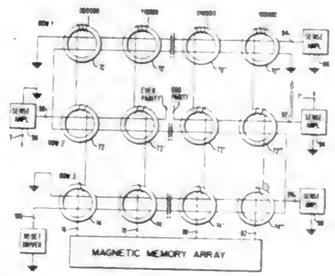
(*e*) pulse means for opening the gate means of said first boxcar circuit and allowing a pulse to charge the storage means thereof,

(*f*) pulse means for initiating the discharging of the storage means of said second boxcar circuit,

(*g*) pulse means for opening the gate means of said second boxcar circuit after the storage means of said second boxcar circuit is discharged allowing the charge on the storage means of said first boxcar circuit to be transferred to the storage means of said second boxcar circuit,

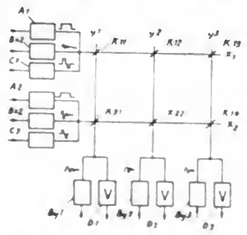
(*h*) means, connected to the output of the storage means of both said first and said second boxcar circuits, whose output level will indicate the value of the larger of the outputs of said two storage means.

3,157,860
CORE DRIVER CHECKING CIRCUIT
James V. Batley, Kingston, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1958, Ser. No. 745,507
2 Claims. (Cl. 340—174)



1. A checking circuit for a core memory unit employing *n* current drivers wherein each current driver includes a winding that is identifiable with a particular instruction being sent to said core memory comprising: three rows of *n* bistable cores in each row, each core in a row being threaded by a single current driver winding so that there are *n* columns of three bistable cores threaded by individual current drivers, each core in a column being wound with different turns of winding of said current driver so as to tend to switch from a nonstore state to a store state when a current pulse is applied to a current driver common to said column, each core in a given column having a different reluctance to being switched in response to the same driving current than another core in the same column, due to said different turns, each core in a column being wound with turns of winding of said current driver sufficient to normally cause switching of two cores in a column in response to current flowing in said turns of winding, whereby in the absence of the switching of two cores a first error is indicated: first detection means coupled to a first one of said three rows of cores and responsive to the simultaneous switching of more than one core in said first row to indicate the appearance of a second error; second detection means coupled to a second row of said three rows of cores, said second detection means including means coupled to those cores of said second row that are threaded by current drivers representative of an instruction having odd parity and including means coupled to those cores of said second row that are threaded by current drivers representative of an instruction having even parity, whereby said second detection means detects whether an even parity core or an odd parity core in said second row has switched; and third detection means coupled to all of the cores of the third row of said three rows of cores and responsive to the switching of anyone of said cores in said third row to indicate the appearance of a third error.

3,157,861
METHOD AND DEVICE IN MAGNETIC MEMORY MATRICES
Jöns Kurt Alvar Olsson, Sundbyberg, and Sven Arne Olsson, Hagersten, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed July 10, 1958, Ser. No. 747,733
Claims priority, application Sweden July 19, 1957
3 Claims. (Cl. 340—174)

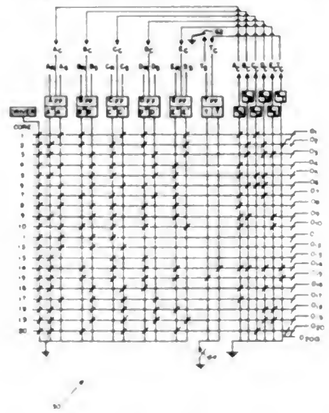


1. A register for recording and non-destructive reading of binary information, said register comprising, in combination, a matrix formed by two sets of rows of cores crossing each other, each of said cores including a magnetic ring core made of a material having high remanence and saturation characteristics and supporting a read-out winding, a high impedance means for each row in one set of rows connected and arranged for feeding to the cores in said one set of rows a magnetizing current pulse having a duration and amplitude such that the respective cores are magnetized to a state of remanence with a saturation characteristic significant for reading pulses, recording and reading means for each row in both sets of rows for feeding simultaneously two coincident signals for changing the magnetization of each core at the crossing point of two rows to a state of magnetization having no saturation characteristics significant for reading pulses, said recording and reading means being also connected and arranged for feeding to the rows of cores in said one set of rows two successive reading pulses having different polarities and low amplitudes, said reading pulses leaving unchanged the state of remanence of the cores in said one set of rows due to the low amplitudes of said reading pulses, an indicating means for each row in the other set of rows connected to the cores in said other set and indicating voltage pulses induced by said reading pulses in the windings of cores at the crossing points between each two rows.

3,157,862
CONTROLLER FOR A COMPUTER APPARATUS
Joseph J. Eachus, Cambridge, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 30, 1959, Ser. No. 843,515
17 Claims. (Cl. 340—174)

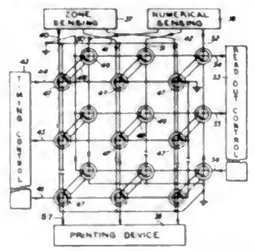
1. A sequencing control for a programmed computer comprising a plurality of saturable magnetic core elements, a plurality of wires adapted to be selectively coupled to said core elements, a plurality of bistable current

sources each connected to one of said wires to saturate, when active, any core element coupled thereto and each having an input for controlling the bistable state and thereby the output current from said current source, a driver coupled to each of said core elements for changing the flux within any core which is not saturated, means



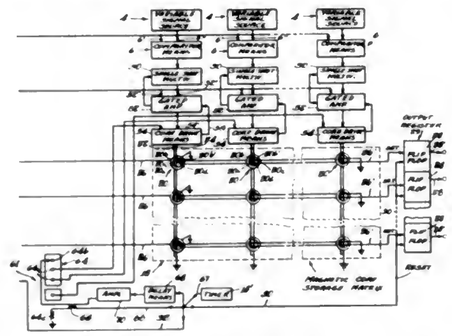
coupled to said core elements to sense any core element which is switched by said driver, and means connected to said last named means to feed back a signal to said current sources to selectively alter the bistable state and thereby the outputs of one or more of said current sources so that a different core element may be selected.

3,157,863
READ-OUT OF BISTABLE MEMORY ELEMENTS BY RESETTING FROM A FURTHER ELEMENT
John Bernard James, Stevenage, England, assignor to International Computers and Tabulators Limited, London, England
Filed June 8, 1960, Ser. No. 34,743
Claims priority, application Great Britain, June 9, 1959, 19,490/59
7 Claims. (Cl. 340—174)



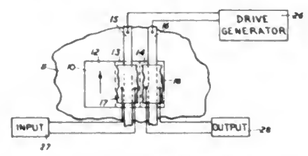
1. A binary information storage device, including a solid state bistable information storage element; a solid state bistable control element, said storage and control elements each being switchable between first and second stable states; means to set the storage element in said first state to store an item of information; coupling means coupling said storage and control elements and operative to apply a signal to said storage element in response to the switching of said control element; means operative to switch the control element slowly from said first state to said second state so that the signal applied by said coupling means to said storage element is insufficient to cause switching of said storage element, and operative to switch the control element quickly from said second state to said first state so that the signal applied by said coupling means to said storage element causes switching of said storage element from said first state to said second state to read out said item of information; and means responsive to the reading out of said item to generate an output signal.

3,157,864
CONTROL FOR MAGNETIC MEMORY MATRIX
Robert W. Hoedemaker, Princeton, N.J., and Charles Molnar, Somerville, Mass., assignors to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Jan. 9, 1961, Ser. No. 81,410
9 Claims. (Cl. 340—174)



1. A control circuit for setting and resetting matrix magnetic core storage units, said control circuit comprising: a magnetic core drive unit comprising a saturable magnetic core, a read-in control winding on said core, a read-out control winding on said core, a first output winding on said core in which a half current set pulse is induced when the core is set, a second output winding on said core in which a full current reset pulse is induced when said core is reset, a read-in pulse circuit connected to said read-in control winding for generating a set pulse which drives said core from a reset to a set state of saturation to generate a half current set pulse in said first output winding, rectifier means in series with said first output winding for blocking current flow therein only when the core is reset, a read-out pulse circuit connected to said read-out control winding for generating a reset pulse which resets said core to generate a full current reset pulse in said second output winding, and rectifier means in series with said second output winding only when said core is set.

3,157,865
THIN FILM MAGNETIC DEVICES
Edward Michael Bradley, Stevenage, England, assignor to International Computers and Tabulators Limited, London, England
Filed Sept. 7, 1961, Ser. No. 136,630
Claims priority, application Great Britain, Sept. 13, 1960, 31,489/60
6 Claims. (Cl. 340—174)



3. A magnetic device including first and second drive conductors extending parallel to one another; an area

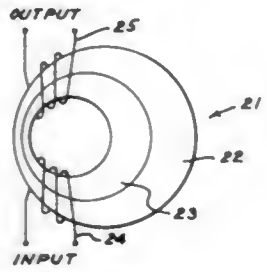
of magnetic film of single domain thickness having an easy direction of magnetisation parallel to said conductors and a hard direction of magnetisation transverse to said conductors, first and second elements of said area being coupled to the first and second conductors respectively and to one another, said elements each having two stable magnetic states in which the magnetisation is aligned with the easy direction; means to apply a first current pulse to the first conductor to switch the first element to the hard direction and to apply a second current pulse in overlapping time relation with the trailing edge of said first current pulse to the second conductor to switch the second element to the hard direction; a third conductor coupled to the first element and extending transverse to the easy direction; and means to apply a write-in current pulse to the third conductor in overlapping time relation with said first current pulse to cause the first element to relax into a selected one of its stable states on termination of said first pulse whereby on termination of the second pulse the second element relaxes under the influence of the stable magnetic state of the first element into the opposite stable state to that of the first element.

3,157,866

RING-TYPE MAGNETIC MEMORY ELEMENT

Dallas H. Lien, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 25, 1961, Ser. No. 147,566
4 Claims. (Cl. 340—174)



1. A magnetic memory device comprising:

a closed magnetic circuit including a first magnetically retentive ring having a cross-sectional area that varies from a minimum at a first point to a maximum at a second point diametrically opposed to said first point, and second non-magnetically retentive ring positioned within said first ring and having a cross-sectional area that varies from a minimum at said first point to a maximum at said second point,

said first magnetically retentive ring being composed of a material having a low reluctance and a high permeability,

said second non-magnetically retentive ring being composed of a material having a high reluctance and high coercive force,

first coil means inductively coupled to said magnetic circuit for applying a predetermined intensity pulse to magnetically saturate the first ring at a cross-sectional area removed from said first point whereby the residual flux following termination of said pulse flows partially through said minimum cross-sectional area of said second non-magnetically retentive ring, and

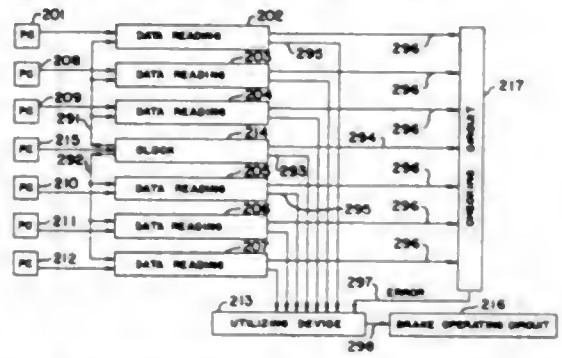
second coil means inductively coupled to said magnetic circuit for picking up an output pulse in response to the application of a read out pulse to said first coil means which is of an intensity less than said predetermined intensity.

3,157,867

TAPE HANDLING APPARATUS

John H. Burns, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 18, 1958, Ser. No. 749,537
22 Claims. (Cl. 340—174.1)



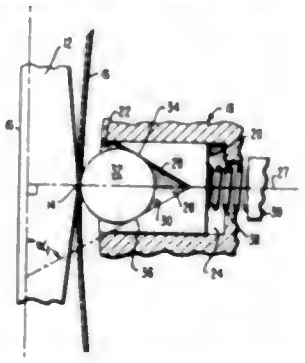
1. Record tap handling apparatus comprising, in combination, a supporting pathway along which a record tape having a plurality of data channels and a clock channel is adapted to be moved; driving means for moving said tape with respect to said pathway; a reading station located adjacent said pathway and comprising a plurality of data sensing means, each adapted for scanning one of said channels to provide data signals from each channel in accordance with the data recorded thereon; further sensing means for scanning the clock channel on said record tape to provide a plurality of timed clock signals; means for applying one of said clock signals to the data sensing means along with any input signals thereto to re-time said input signals to a common instant as determined by the clock signal; output paths for the re-timed data signals; a checking circuit for checking the number of data signals produced coincidentally at any time; means for applying a further one of said clock signals to said checking circuit; and means for applying the data signals from each of said channels to said checking circuit, said checking circuit being operable to produce an error signal in the event of reading of a simultaneous number of data signals, which number is other than that required by the predetermined code being read.

3,157,868

WEAR RESISTANT PRESSURE PAD

Walter S. Buslik, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 6, 1960, Ser. No. 891
16 Claims. (Cl. 340—174.1)

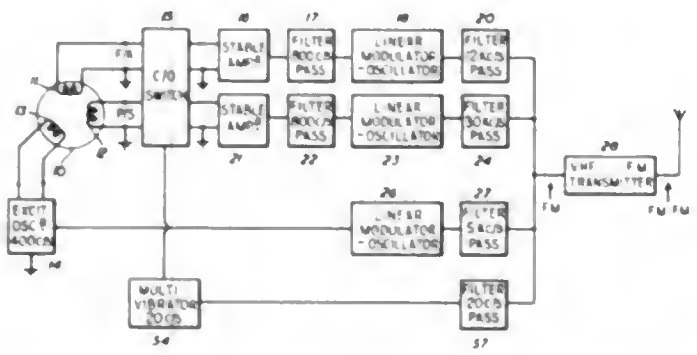


4. A wear resistant pressure pad for use with a transducer head adapted to momentarily contact, in sequence, a plurality of spaced, information bearing documents moving linearly at high velocity past said head, said pressure pad comprising: a block member positioned adjacent said transducer head, means for supporting said block member for lateral movement toward and away from said head, said block member including a V-shaped recess formed on the surface thereof facing said head,

a roller positioned within said V-shaped recess, means biasing said block member toward said transducer head, said line of contact between said roller and said transducer head forming frictional angles δ_1 between said roller and said transducer head, and δ_2 between said roller and the sides of said V-shaped recess, an angle α_1 being formed between a line extending along the side of said V-shaped recess remote from the line of entry of said moving document and a line drawn tangent to said roller at the line of contact of said roller with said transducer head, and an angle α_2 being formed between a line extending along said other side of said V-shaped recess and said tangent, said apparatus so constructed as to satisfy the following condition:

$$\frac{\sin \delta_1}{\sin \delta_2} = \frac{\cos\left(\delta_1+\delta_2+\frac{\alpha_2-\alpha_1}{2}\right)}{\cos\left(\frac{\alpha_1+\alpha_2}{2}\right)}$$

3,157,869
ELECTRIC REMOTE INDICATING SYSTEMS
Michael Edward Clibbon, Harmondsworth, West Drayton, England, assignor to McMichael Radio Limited
Filed May 27, 1960, Ser. No. 32,245
Claims priority, application Great Britain, June 2, 1959, 18,790/59
7 Claims. (Cl. 340—197)



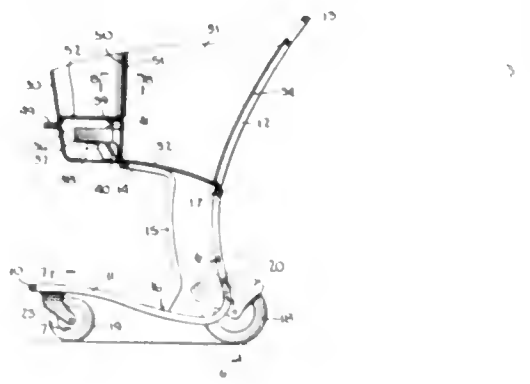
1. An intelligence transmission system comprising a plurality of transmission channels extending between a first location and a second location, said channels including a first discrete channel having a first intelligence signal input at said first location and a first intelligence signal output at said second location, said channels including also a second discrete intelligence channel having a second intelligence signal input at said first location, a first switching means at said first location and a second switching means at said second location, signal comparison means at said second location for comparing the amplitudes of signals appearing at said first and second outputs in response to signals applied to said first and second intelligence signal inputs, a control signal source at one of said locations and signal means for transmitting the control signal over a third channel from the said one to the other of said locations thereby to correlate in time the operations of said switching means, said switching means being effective periodically to apply to the first and second inputs of said first and second channels and in lieu of said intelligence signals test signals of predetermined relative amplitudes and at that time at the second location to render effective said signal comparing means, whereby said signal comparing means responds to the transmission gain of said first and second channels for intelligence signals, and means at said second location for varying the relative gain, for intelligence signals, of said first and second channels.

3,157,870
METHOD AND MEANS OF VOLTAGE TESTING
Joseph A. Marino, Clark, and John H. St. John, Bogota, N.J., assignors to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware
Filed May 9, 1961, Ser. No. 110,304
10 Claims. (Cl. 340—249)



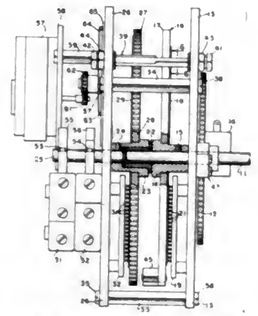
1. A system for sensing D.C. voltage in a power source comprising:
(A) first and second terminals for connection to a source under test;
(B) first and second resistances connected in series to said terminals, at least one of said first and second resistances comprising an indicating device;
(C) a third resistance interconnecting said terminals;
(D) a first switching device interconnecting said first terminal and a point on said third resistance;
(E) a second switching device having an energizing circuit selectively interconnecting said first and second terminals and having an interrupting circuit selectively interconnecting a point between said first and second resistances and said second terminal; said first switching device completing said energizing circuit upon occurrence of a given potential across said first device; said energizing circuit operating said second switching device, thereby completing said interrupting circuit and shunting said second resistance.

3,157,871
SHOPPING CART PROVIDED WITH RADIO RECEIVING APPARATUS
Martin Umanoff, Huntington, N.Y., assignor, by mesne assignments, to R. A. MacPlum Industries, Inc., a corporation of New Jersey
Filed Mar. 21, 1960, Ser. No. 16,206
11 Claims. (Cl. 340—280)



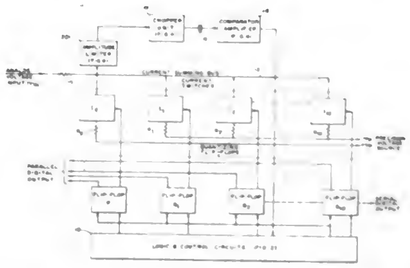
11. For use in connection with a wheeled shopping cart intended to be moved about freely within a prescribed shopping area: a local radio transmitter located within said area for broadcasting a signal of predetermined frequency, and a radio receiving apparatus carried by said cart and tuned to receive only the signal emanating from said transmitter, said shopping cart having an enclosure adapted to contain said radio receiving apparatus and said enclosure including means preventing ready access to said radio receiving apparatus.

3,157,872
LEVEL ENCODER
Norman J. Bose, North Hollywood, and David A. Break, La Crescenta, Calif., assignors to General Precision, Inc., a corporation of Delaware
Filed Feb. 7, 1962, Ser. No. 171,759
1 Claim. (Cl. 340—347)



An analog-to-digital encoder comprising:
(A) an input shaft,
(B) a gear wheel mounted on said input shaft,
(C) a coded disc mounted on said input shaft,
(D) a coded gear wheel mounted for rotation adjacent and concentric with said coded disc,
(E) a transfer pinion mounted for rotation in engagement with the wheel on the periphery of said gear wheel and with alternate teeth positioned to engage the periphery of said coded disc,
(F) an index block on said coded disc having at least one transfer tooth adapted to engage the wheel on said transfer pinion and rotate said coded wheel by one increment for each complete revolution of said coded disc,
(G) a brush block positioned adjacent the surface of each of said coded disc and coded gear wheel and having the plurality of brushes adapted to contact the coded surface,
(H) a locking mechanism mounted adjacent said gear and adapted to be actuated for engagement with the teeth on said gear for moving said gear and said coded disc to a position where said brushes are correctly positioned with respect to the code to provide an accurate and unambiguous readout from said disc and gear wheel coded surface having:
  (1) a slidable guide shaft,
  (2) a guide housing adapted to receive said guide shaft and mounted adjacent said gear wheel,
  (3) a solenoid adapted to actuate said guide shaft horizontally in said guide housing,
  (4) a gear stop housing affixed to said guide shaft and having an inclined recess therein,
  (5) a gear stop pivotally mounted in said inclined recess of said gear stop housing and adapted to engage the teeth of said gear wheel when positioned therewith by said guide shaft,
  (6) means biasing said pivoted gear stop toward said teeth of said gear wheel, and
  (7) a gear stop adjustment adapted to adjust the angle of said gear stop toward said teeth of said gear wheel,
(I) a stepping motor adapted to receive a series of input pulses and provided with an output shaft having scanning brushes connected thereto,
(J) a commutator positioned adjacent said scanning brushes and having a plurality of segments connected sequentially to said readout brushes for sequential scanning of said readout brushes to provide a digital code indicative of the position of said input shaft,
(K) a shaft connected to said coded gear wheel and provided with a pair of high and low cams, and
(L) a pair of microswitches having roller actuators adapted to engage said high and low cams respectively for providing an indication of high and low limits of said input shaft position.

3,157,873
VOLTAGE-TO-DIGITAL CONVERTER
Charles B. Slack, Glendale, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Feb. 21, 1962, Ser. No. 174,894
14 Claims. (Cl. 340—347)



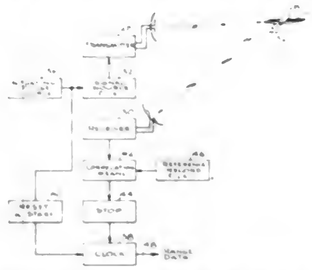
8. In an analog-to-digital converter system for converting an analog input voltage into a corresponding multi-digital output signal, said system including: a register having a plurality of digitizing flip-flops, feedback circuit means coupled to said register for producing a feedback reference voltage corresponding to the settings of the digitizing flip-flops, input circuit means to which an analog input voltage may be applied, summing circuit means coupled to said feedback circuit means and to said input circuit means for producing a control voltage representative of the difference between said input voltage and said feedback voltage, said summing circuit means including a plurality of precision resistance elements, and a corresponding plurality of switching circuits connected to respective ones of said precision resistance elements and to corresponding ones of said digitizing flip-flops to connect said precision resistance elements selectively into said summing circuit when said flip-flops are actuated from one state to the other, each of said switching circuits includes a pair of switching devices, means for connecting said switching devices to a precision voltage source, one of said switching devices being connected to a corresponding one of said precision resistance elements, a balancing resistance element having a value corresponding to the value of the corresponding one of said precision resistance elements and connected to a point of reference potential and to the other of said switching devices, and input circuit means connected to a corresponding one of said digitizing flip-flops and to said switching devices to derive complementary output signals from said flip-flop so as to render said switching devices conductive and non-conductive in an alternate relationship.

3,157,874
SIGNALLING SYSTEMS
William Altar, Los Angeles, and Emory Lakatos, Santa Monica, Calif., assignors to Thompson Ramo Wooldridge Inc., Los Angeles, Calif., a corporation of Ohio
Filed June 22, 1959, Ser. No. 821,836
6 Claims. (Cl. 343—5)

2. A signal transmitting system for launching a wave designated for selective reception by a receiving system, comprising in combination: means for launching wave energy, the waveform of which is determined by the waveform of control signals to which said launching means

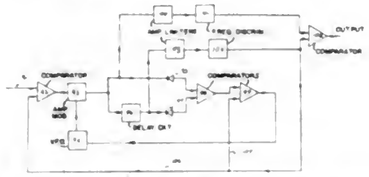
is responsive; and means coupled with said launching means for delivering thereto a control signal, the waveform of which is such that substantially the entire energy launched by said means for launching wave energy is defined by at least one logarithmic magnitude-versus-time function of a character such that, when expressed on a logarithmic time scale, the function appears periodic.

3. In an echo range determining system for detecting objects which conditionally bear relative motion with respect to the range determining system, the combination of: burst producing means for producing an electrical signal burst of finite time, said burst being substantially fully definable by waveform components each of which is, in turn, described by an amplitude-versus-time function defining a plurality of zero crossings about its axis, the time duration between any two zero crossings being substantially equal to the product of a given constant multiplied by the time duration between one of said two zero crossings and the next immediate higher time value zero



crossing; means responsive to said burst producing means for effectively launching energy representing the waveform of said burst into an environment in which an object may be present; echo receiving means for receiving echo information including representations of said launched energy as conditionally reflected from objects in the launching environment; signal correlation means having reference signal information representing the amplitude-versus-time functions describing the waveform components defining said burst and means for accepting echo information from said echo receiving means for cross-correlating said echo information with said reference signal information; and means responsive to said signal-correlation means for detecting what portions, if any, of the received echo information effectively contain representations of said reflected energy thereby to develop range information as to the distances between the system and objects conditionally present in the launching environment.

3,157,875
MOVING TARGET RADAR DELAY LINE FILTER
Isao Matsukasa and Yasutoshi Ishizaki, both of Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 5, 1962, Ser. No. 170,912
Claims priority, application Japan Feb. 6, 1961
8 Claims. (Cl. 343—7.7)



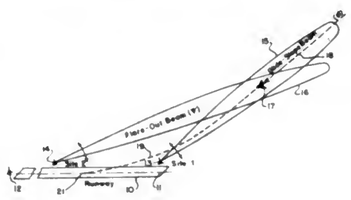
2. A delay line filter for use in Moving Target Indication radar comprising an input, an amplitude modulator coupled to said input, a delay line coupled to said modulator, means for detecting and comparing the amplitude modulator output with the output of said delay line, means for frequency demodulating and comparing the amplitude modulator output with the output of said delay line, and means for frequency modulating said amplitude modulator with the result of said first mentioned comparison.

3,157,876
VELOCITY MEASURING SYSTEM
Frank Ramsey Dickey, Jr., De Witt, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 16, 1961, Ser. No. 89,878
10 Claims. (Cl. 343—8)



1. Apparatus for measuring the velocity of a body relative to a spatial reference comprising: at least two displaced, wave radiating means for providing a standing wave pattern with respect to said spatial reference; first and second probe antennae arranged on said body at displaced positions along an axis for which the velocity measurement is to be made; and receiving means connected to said antennae and adapted to measure the time differential between which the substantially like signal trains are received at said antennae.

3,157,877
AIRCRAFT LANDING SYSTEM
Abraham Tatz, Levittown, and Frederick H. Battle, Jr., Seaford, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 28, 1961, Ser. No. 123,928
9 Claims. (Cl. 343—108)



1. Aircraft apparatus for use in an aircraft landing system wherein an elevation guidance beam is transmitted from a site adjacent a runway and beyond the intended touchdown region, comprising:
(a) means responsive to the guidance beam to produce an angle signal representative of the angular elevation of the aircraft with respect to the site,

(*b*) flare-out computer means for representing a function of such angular elevation that corresponds to a desired flare-out path to said touchdown region, and producing an error signal in response to departure of said angle signal from a value that satisfies said function,

(*c*) means responsive to said error signal for guiding the aircraft toward and substantially along the desired flare-out path,

(*d*) means for producing a second positional signal representative of the value of a second coordinate of the position of the aircraft, and

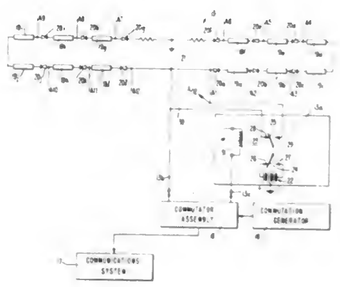
(*e*) means responsive at least in part to said second positional signal for guiding the aircraft along an initial approach path that precedes said flareout path and is directed toward a forward aiming point in advance of the intended touchdown region.

3,157,878

BROADBAND ANTENNA ARRAY

Paul G. Hansel, Greenvale, Frederick G. Richter, Huntington, and William H. Paulstich, Merrick, N.Y., assignors to Servo Corporation of America, Hicksville, N.Y., a corporation of New York

Filed Sept. 26, 1960, Ser. No. 58,420
4 Claims. (Cl. 343—113)



1. In combination, an antenna array comprising a plurality of antenna elements, a communication system, commutating means coupled to said communication system for connecting each of said elements in succession with said communication system, each of said antenna elements including a plurality of antenna segments, dynamic impedance means coupling each adjacent pair of segments and having a normally high impedance for inhibiting parasitic reradiation from the element, and means coupled to said commutating means for reducing the dynamic impedances in an antenna element while said element is coupled to said communication system.

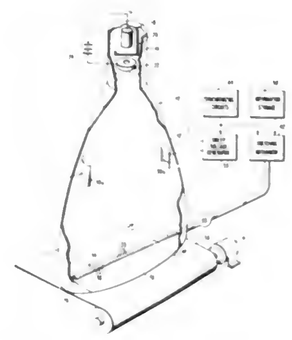
3,157,879

APPARATUS FOR PRINTING BY MEANS OF AN ELECTRON BEAM

Jack D. Kuehler, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1959, Ser. No. 862,324
6 Claims. (Cl. 346—74)

1. A printing apparatus comprising an evacuated envelope, an electron-emitting electrode provided within said envelope, an electron-permeable window provided in said envelope opposite said electrode, a member of dielectric material having a plurality of channels adapted to pass electrons arranged over said window, means for blocking selected ones of said channels to the passage of electrons to establish electron passing areas of desired



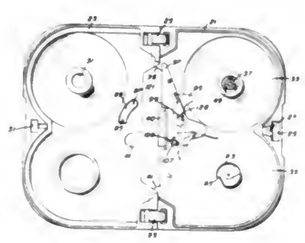
conformation, and means for sweeping the electrons emitted by said electrode over said member.

3,157,880

CASSETTE WITH FILM REEL SENSOR

Donald O. Easterly and Morris E. Brown, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 7, 1962, Ser. No. 243,079
7 Claims. (Cl. 352—72)



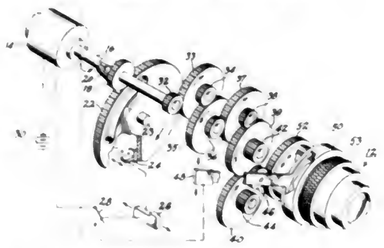
1. In a film cassette for insertion into a camera, said camera having motor means for driving film past an exposure aperture and including a spindle driving member, a film supply spindle for receiving a spool of film, a film take-up spindle to drivingly engage said spindle driving member when said cassette is inserted into said camera for taking up said film driven from said supply spindle past said exposure aperture by said motor means, and a film sensor movable to and from an operative position in accordance with the amount of film stored on said spool when said spool is initially received by said film supply spindle, the improvement comprising: a stop member movable to and from a limiting position in which it limits movement of said film sensor into its operative position, connecting means biasing said film sensor into engaging relation with said stop member for causing said stop member to be positioned in its limiting position in response to said film sensor moving into its operative position and allowing said film sensor to move from its operative position independently of said stop member when said stop member is held in its limiting position, and means for locking said stop member in its limiting position.

3,157,881

ZOOM LENS DRIVE MECHANISMS FOR PHOTOGRAPHIC CAMERAS

Gerald L. Jenkins, Walter C. Miller, and Raymond F. Finzer, all of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 6, 1961, Ser. No. 122,287
5 Claims. (Cl. 352—166)



1. In a motion picture camera having a taking lens system including at least one zoom lens movable axially in either of two directions to adjust the magnification thereof, means including a rotatable input member for moving said zoom lens, a cyclically operable shutter, and an electric drive motor, the combination comprising:

a normally open electric circuit operable, upon completion thereof, for supplying energy to said motor;

a slip clutch coupling said motor to said shutter;

brake means normally blocking operation of said shutter;

manually operable means on said camera for releasing said brake means and for completing said circuit to energize said motor and enable operation of said shutter;

power transmission means coupled to said motor and having a pair of output members oppositely rotatable in response to energization of said motor; and

control means manually operable in either of two directions for closing said circuit independently of said manually operable means to energize said motor and for coupling one of said oppositely rotatable members to said input member for adjusting said zoom lens in a corresponding direction.

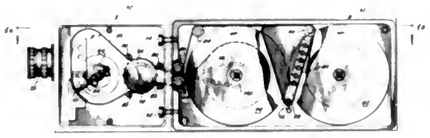
3,157,882

PULSE OPERATED CAMERA

John Sterling Barnett, Sepulveda, Calif., assignor, by mesne assignments, to Data Recording Systems, Inc., Newbury Park, Calif., a corporation of Delaware

Filed Apr. 14, 1958, Ser. No. 728,372
32 Claims. (Cl. 352—131)

1. In a device for handling a strip of ribbon-like material and having means to shift the strip intermittently along a path through an operating zone of the device, the combination of: a first reel to supply the strip to said shifting means for movement through said zone; a second reel to take up the strip after the strip passes through the zone; a longitudinally resilient belt to drive



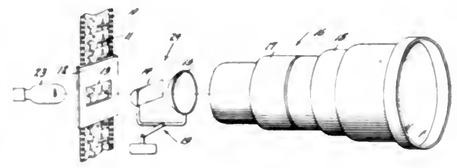
said second reel; a drive sheave engaging said belt; and means operating in time relation with said shifting means to rotate said drive sheave intermittently to tension said belt to store energy therein for rotation of said second reel.

3,157,883

WIDE SCREEN PROJECTION SYSTEM FOR STANDARD PRINTS

Glenn J. Easter, 402 Redstone St., Republic, Pa.

Filed June 7, 1960, Ser. No. 34,476
7 Claims. (Cl. 352—139)

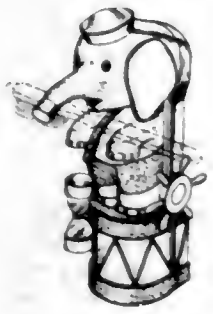


1. In combination, a conventional anamorphosing projection and exhibition system of the character employed for projecting and exhibiting film prints having frames of standard width and wherein the image within the frame is horizontally compressed to distort the proportions thereof, including an anamorphosing lens assembly and a wide viewing screen disposed forwardly thereof, and a supplementary lens assembly mounted rearwardly of said anamorphosing lens assembly, said supplementary lens assembly having optical elements for converting film print images of normal proportions to images having said distorted proportions while substantially maintaining said standard frame width prior to projection thereof through said anamorphosing lens assembly, whereby film prints having normally-proportioned images may be projected and exhibited by said conventional anamorphosing system without removal of said anamorphosing lens assembly.

DESIGNS

NOVEMBER 17, 1964

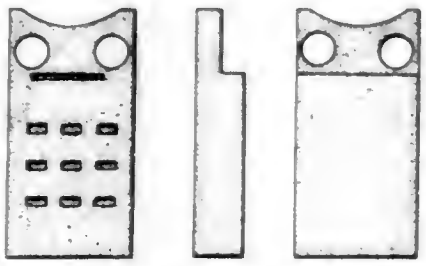
199,557
COMBINED TOOTHBRUSH HOLDER AND TOOTH PASTE DISPENSER
Seymour Lefco, 2837 N. Grant Blvd., Milwaukee, Wis.
Filed Aug. 1, 1963, Ser. No. 76,072
Term of patent 14 years
(Cl. D4—3)



199,558
LEATHER BOOT
Sidney E. Cohn, Clarksville, Tenn., assignor to Acme Boot Company, Inc., Clarksville, Tenn., a corporation of Tennessee
Filed Dec. 10, 1963, Ser. No. 77,743
Term of patent 7 years
(Cl. D7—7)



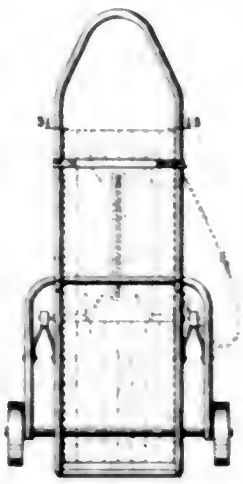
199,559
BATHING AID SPONGE
Dale W. Rowley, Firesteel, S. Dak.
Filed Mar. 5, 1963, Ser. No. 73,831
Term of patent 7 years
(Cl. D9—2)



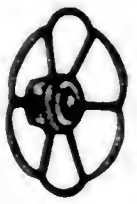
199,560
BATTERY-OPERATED POWER HANDLE FOR A TOOTHBRUSH, MANICURE IMPLEMENT OR SIMILAR ARTICLE
Arnold M. Thompson, Wheaton, Ill., assignor to Thompson Designs, Inc., Addison, Ill., a corporation of Illinois
Filed July 1, 1963, Ser. No. 75,596
Term of patent 14 years
(Cl. D9—2)



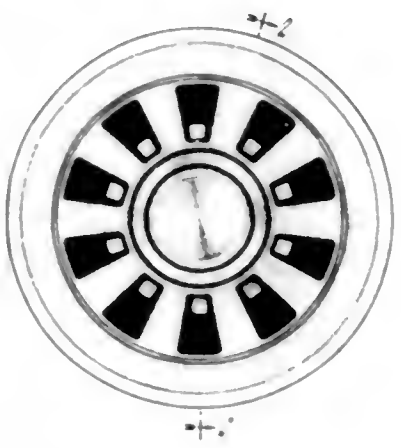
199,561
COMBINATION GOLF CLUB HOLDER AND A WHEELED EASEL MOUNT
Robert B. Cotton, 1503 Old Orchard Road, Media, Pa.
Filed Nov. 26, 1963, Ser. No. 77,570
Term of patent 14 years
(Cl. D14—3)



199,562
HANDLED STEERING WHEEL
John T. Le Rose, New York, N.Y.
(35—35 72nd St., Jackson Heights, N.Y.)
Filed Nov. 13, 1963, Ser. No. 77,393
Term of patent 7 years
(Cl. D14—30)



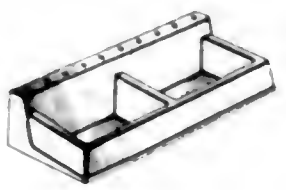
199,563
WHEEL COVER
Paul H. Deesen, Rochester, and Wayne R. Vieira, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 2, 1964, Ser. No. 79,314
Term of patent 7 years
(Cl. D14—30)



199,564
COMBINED SEAM RIPPER AND TWEEZERS
Howard E. Koss, Elmwood Park, Ill., assignor to The Boye Needle Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 29, 1963, Ser. No. 76,383
Term of patent 14 years
(Cl. D22—3)



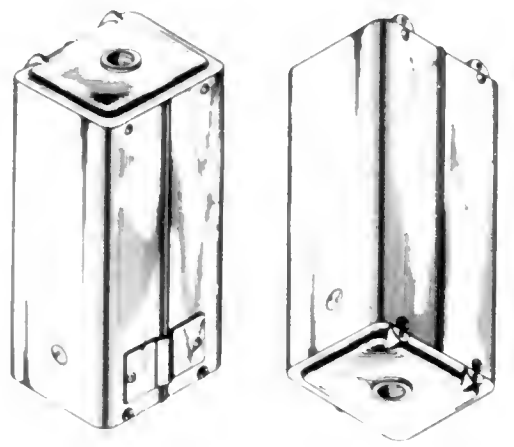
199,565
STORAGE RECEPTACLE AND BASE FOR ELEMENTARY ARITHMETIC INSTRUCTION SET
Charles E. Jones, Evanston, Robert H. Crowle, Mount Prospect, and William G. Crowle, Deerfield, Ill., assignors of one-half to Science Research Associates Inc., Chicago, Ill., a corporation of Delaware, and one-half to Western Publishing Company, Inc., Chicago, Ill., a corporation of Wisconsin
Filed Apr. 29, 1963, Ser. No. 74,645
Term of patent 14 years
(Cl. D25—1)



199,566
HOUSING FOR TEACHING MACHINES
Donald G. Wolfe, Sr., Cedar Rapids, Iowa, assignor to Donald H. Schuster, Cedar Rapids, Iowa
Filed May 7, 1964, Ser. No. 79,877
Term of patent 14 years
(Cl. D25—1)



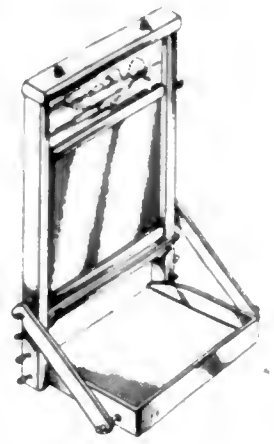
199,567
TRANSFORMER CASE
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 72,777
Term of patent 14 years
(Cl. D26—15)



199,568
FISHING LURE
Mary E. Hanna, 721 W. Nevada, Ontario, Calif.
Filed Apr. 20, 1964, Ser. No. 79,611
Term of patent 7 years
(Cl. D31—4)



199,569
COMBINED MEMO BOARD AND ADJUSTABLE UTILITY TRAY
Lowell W. Bodenbach, 1000 Brice Road, Rockville, Md.
Filed May 31, 1963, Ser. No. 75,132
Term of patent 7 years
(Cl. D33—3)



199,570
COMBINED VALET STAND AND GARMENT HANGER
Laurence W. Van Dusen, Escondido, Calif., assignor to Mission Industries, Escondido, Calif., a corporation of California
Filed Nov. 7, 1962, Ser. No. 72,423
Term of patent 14 years
(Cl. D33—8)



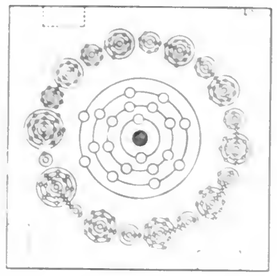
199,571
TABLE OR THE LIKE
Herbert Ritts, P.O. Box 64336, Los Angeles, Calif.
Filed Jan. 21, 1963, Ser. No. 73,243
Term of patent 7 years
(Cl. D33—14)



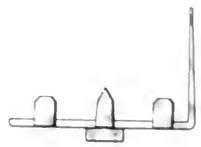
199,572
NOVELTY HORSE HEAD
Phyllis M. Williams, 216 N. Cordova, Apt. D, Burbank, Calif.
Filed Sept. 18, 1962, Ser. No. 71,742
Term of patent 14 years
(Cl. D34—2)



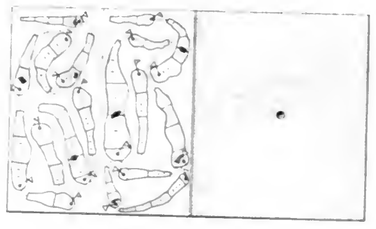
199,573
GAME BOARD
Guadalupe Rojo, North Chicago, Ill. (1015 Lenox, Waukegan, Ill.)
Filed Sept. 25, 1963, Ser. No. 76,731
Term of patent 14 years
(Cl. D34—5)



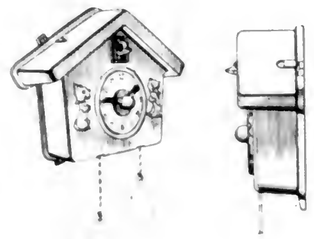
199,574
GOLF CLUB GUIDE
Harry E. Dayton, 13132 Vener Drive, Garden Grove, Calif.
Filed Feb. 4, 1964, Ser. No. 78,503
Term of patent 7 years
(Cl. D34—5)



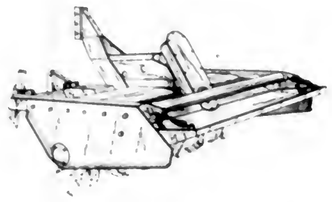
199,575
GOLF GAME BOARD
Vincent Crupi, 230 Greenwich St., Reading, Pa.
Filed May 13, 1964, Ser. No. 79,974
Term of patent 14 years
(Cl. D34—5)



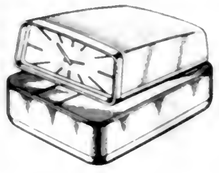
199,576
TOY CUCKOO CLOCK
Albert Stubbmann, Flushing, N.Y., assignor to Kohner Bros., Inc., New York, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 76,785
Term of patent 14 years
(Cl. D34—15)



199,577
ROTARY TILLER
Willie F. Brewer, Minden, La., assignor to Dealer Associates, Inc., Minden, La., a corporation of Louisiana
Filed Mar. 1, 1963, Ser. No. 73,769
Term of patent 14 years
(Cl. D35—2)



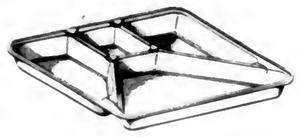
199,578
TIME CLOCK
Shuichi Amano, 438 Hiyoshi-cho Kohoku-ku, Yokohama, Japan; Kazuo Tomikawa and Kazutaka Yoshikawa, both of Osaka-fu, Japan; and Yasuo Shino, Osaka-shi, Japan
Filed May 1, 1962, Ser. No. 69,925
Term of patent 3½ years
(Cl. D42—7)



199,579
DRINKING CUP OR SIMILAR ARTICLE
Paul Davis, Beverly, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Mar. 20, 1964, Ser. No. 79,094
Term of patent 14 years
(Cl. D44—9)



199,580
FROZEN FOOD TRAY
Glenn David Boyd, Haddonfield, N.J., assignor to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed Nov. 12, 1963, Ser. No. 77,343
Term of patent 14 years
(Cl. D44—10)



199,581
HOLDER FOR SILVER FLATWARE
Robert W. Kraeft, 60 Commercial Ave., Moonachie, N.J.
Filed Nov. 1, 1963, Ser. No. 77,252
Term of patent 14 years
(Cl. D44—29)



199,582
WATCH BRACELET OR SIMILAR ARTICLE
Kurt Speck, Palisades Park, N.J., assignor to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Jan. 9, 1963, Ser. No. 73,110
Term of patent 7 years
(Cl. D45—4)



199,583
CANDLE LAMP
Charles J. Rogers, Jr., 707 Jackson, River Forest, Ill.
Filed Aug. 9, 1963, Ser. No. 76,164
Term of patent 14 years
(Cl. D48—2)



199,584
DRAW BOLT FOR LUGGAGE OR THE LIKE
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Garfield, N.J., a limited partnership
Filed May 12, 1964, Ser. No. 79,946
Term of patent 14 years
(Cl. D50—7)



199,585
ANCHOR STRAP
Lawrence M. Curtiss, Mountainside, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 8, 1963, Ser. No. 76,144
Term of patent 14 years
(Cl. D54—1)



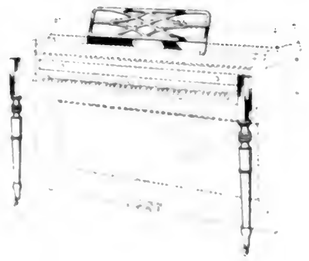
199,586
ANCHOR STRAP
Lawrence M. Curtiss, Mountainside, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 8, 1963, Ser. No. 76,145
Term of patent 14 years
(Cl. D54—1)



199,587
CABLE STRAP
Raymond F. Piasecki, Hazlet, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 12, 1963, Ser. No. 76,194
Term of patent 14 years
(Cl. D54—1)



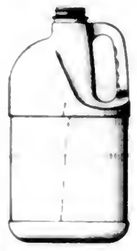
199,588
PIANO
Wilbur M. Day, Kenwood, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 3, 1963, Ser. No. 76,846
Term of patent 14 years
(Cl. D56—9)



199,589
HAND MAGNIFIER
Paul A. Hoogesteger, Brighton, and Richard L. Pitchford, Brockport, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 4, 1962, Ser. No. 72,715
Term of patent 14 years
(Cl. D57—7)



199,590
JUG
Robert E. Sarafan, San Francisco, Calif., assignor to Flexible Plastics Corp., South San Francisco, Calif.
Filed Mar. 15, 1963, Ser. No. 73,992
Term of patent 14 years
(Cl. D58—5)



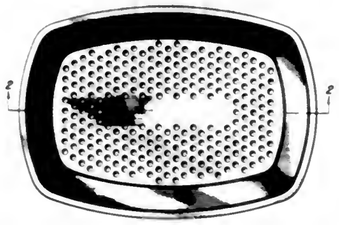
199,591
JUG
Wallace L. Speicher, Kansas City, Mo., assignor to Container Supply Company, Kansas City, Mo., a corporation of Missouri
Filed Dec. 9, 1963, Ser. No. 77,712
Term of patent 14 years
(Cl. D58—5)



199,592
INSULATED JUG
Joseph Tolciss, Bayside, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 15, 1964, Ser. No. 78,204
Term of patent 14 years
(Cl. D58—5)



199,593
MOLDED PULP FOOD TRAY
Richard F. Reifers, New Canaan, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 78,359
Term of patent 14 years
(Cl. D58—12.6)



3,199,594
BUCKET
William J. Rathaus, 296 Bowles Ave., Fenton, Mo.
Filed Mar. 11, 1963, Ser. No. 73,927
Term of patent 14 years
(Cl. D58—17)



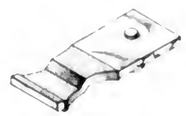
199,595
AUTOMATIC TRANSMISSION FILLER SPOUT
Frank H. Liljemark, Minneapolis, Minn., assignor to Electro-Specialty Manufacturing Co., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 16, 1962, Ser. No. 71,334
Term of patent 14 years
(Cl. D58—26)



199,596
PULL TAB FOR A CONTAINER OR THE LIKE
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 77,107
Term of patent 14 years
(Cl. D58—26)



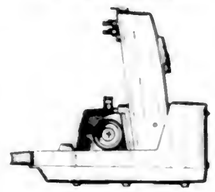
199,597
PULL TAB FOR CONTAINERS OR THE LIKE
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 77,119
Term of patent 14 years
(Cl. D58—26)



199,598
SLIDE VIEWER
Richard W. Lanigan, 1525 N. Patton Ave., Arlington Heights, Ill.
Filed Feb. 25, 1964, Ser. No. 78,775
Term of patent 14 years
(Cl. D61—1)



199,599
MOTION PICTURE PROJECTOR
Neil G. Seely, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 30, 1964, Ser. No. 79,746
Term of patent 14 years
(Cl. D61—1)



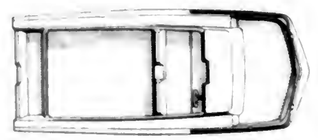
199,600
CONTROL KNOB
Herbert Morrison, Yonkers, N.Y., and George L. Schick, New Canaan, and Paul O. Rawson, Trumbull, Conn., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed Dec. 9, 1963, Ser. No. 77,715
Term of patent 14 years
(Cl. D70—2)



199,601
AEROSPACE CRAFT
Lawrence B. Rellis, 3317—1 Cowley Way, San Diego, Calif.
Filed Oct. 22, 1962, Ser. No. 72,210
Term of patent 14 years
(Cl. D71—1)



199,602
BOAT
Richard C. Cole, 19701 Whispering Pines Road, Miami, Fla.
Filed Mar. 4, 1963, Ser. No. 73,791
Term of patent 14 years
(Cl. D71—1)



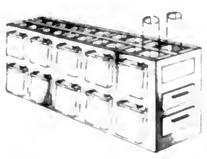
199,603
BELL
David W. Osborne, 163 Columbia Ave., Elmhurst, Ill.
Filed July 29, 1963, Ser. No. 76,000
Term of patent 14 years
(Cl. D72—1)



199,604
MANNEQUIN'S HEAD, OR SIMILAR ARTICLE
Phyllis M. Williams, 216 N. Cordova, Apt. D, Burbank, Calif.
Filed Sept. 18, 1962, Ser. No. 71,751
Term of patent 14 years
(Cl. D80—8)



199,605
DISPLAY COUNTER OR THE LIKE
Saul Gershon, 7749 Whitsett Ave., North Hollywood, Calif
Filed May 16, 1962, Ser. No. 70,158
Term of patent 3½ years
(Cl. D80—11)



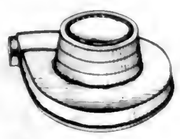
199,606
APPLICATOR FOR MEDICAMENTS OR THE LIKE
Neil S. Waterman, Stamford, Conn., assignor to Atlantic Plastics Incorporated, Stamford, Conn., a corporation of Connecticut
Filed June 18, 1962, Ser. No. 70,582
Term of patent 14 years
(Cl. D83—12)



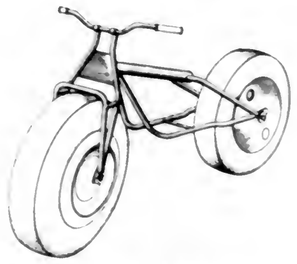
199,607
SMOKING PIPE OR SIMILAR ARTICLE
Mohammed Aslam Zia, Karachi, Pakistan (% Pakistan Restaurant, Pakistan Pavilion, New York's World Fair, Flushing, N.Y.)
Filed May 27, 1964, Ser. No. 80,173
Term of patent 3½ years
(Cl. D85—8)



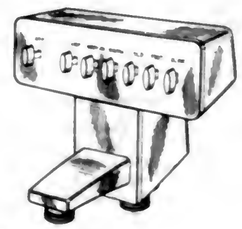
199,608
HAIR DRYER
Ivar Jepson, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1963, Ser. No. 74,263
Term of patent 14 years
(Cl. D86—10)



199,609
MOTORCYCLE BODY UNIT
Charles H. Fehn, Thousand Oaks, Calif., assignor to Nethercult Industrial Corporation, Sylmar, Calif., a corporation of California
Filed Aug. 20, 1963, Ser. No. 76,290
Term of patent 14 years
(Cl. D90—8)



199,610
WATER FAUCET
James R. Boyles, 9595 Gregory St., La Mesa, Calif.
Filed Mar. 9, 1964, Ser. No. 78,909
Term of patent 3½ years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF NOVEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Arthur, Alexander A., A. L. Bolton, and G. N. Brown, to E. I. du Pont de Nemours and Co. Method and apparatus for solids blending. Re. 25,687, 11–17–64, Cl. 259—180.
Bloom, Aaron, and W. D. Morton, Jr., to Sierra Engineering Co. De-icer boot for breathing mask. Re. 25,688, 11–17–64, Cl. 128—146.
Bolton, Andrew L.: *See*—
Arthur, Alexander A., Bolton, and Brown. Re. 25,687.
Brown, George N.: *See*—
Arthur, Alexander A., Bolton, and Brown. Re. 25,687.
Du Pont de Nemours, E. I., and Co.: *See*—
Arthur, Alexander A., Bolton, and Brown. Re. 25,687.
Griffith, George L., G. A. Lyte, and F. B. Wells, to Trojan Powder Co. Detonatable cartridges having insensitive explosive cores. Re. 25,685, 11–17–64, Cl. 102—24.
Lyte, George A.: *See*—
Griffith, George L., Lyte, and Wells. Re. 25,685.
Morton, William D., Jr.: *See*—
Bloom, Aaron, and Morton. Re. 25,688.
Sherman, Charles A., to Weyerhaeuser Co. Marking sensing lumber defect cutter. Re. 25,686, 11–17–64, Cl. 143—46.
Sierra Engineering Co.: *See*—
Bloom, Aaron, and Morton. Re. 25,688.
Trojan Powder Co.: *See*—
Griffith, George L., Lyte, and Wells. Re. 25,685.
Wells, Franklin B.: *See*—
Griffith, George L., Lyte, and Wells. Re. 25,685.
Weyerhaeuser Co.: *See*—
Sherman, Charles A. Re. 25,686.

LIST OF PLANT PATENTEES

Thomas, George L., Jr. Water lily plant. 2,453, 11–17–64, Cl. 68.
Walker, Audrey: *See*—
Walker, Don and A. 2,452.
Walker, Don and A. Gladiolus. 2,452, 11–17–64, Cl. 85.

LIST OF DESIGN PATENTEES

Acme Boot Co., Inc.: *See*—
Cohn, Sidney E. 199,558.
Amano, Shuichi, K. Tomikawa, K. Yoshikawa, and Y. Shino. Time clock. 199,578, 11–17–64, Cl. D42—7.
Atlantic Plastics Inc.: *See*—
Waterman, Neil S. 199,606.
Baldwin, D. H., Co.: *See*—
Day, Wilbur M. 199,588.
Bausch & Lomb Inc.: *See*—
Hoogesteger, Paul A., and Pitchford. 199,589.
Bodenbach, Lowell W. Combined memo board and adjustable utility tray. 199,569, 11–17–64, Cl. D33—3.
Boyd, Glenn D., to Campbell Soup Co. Frozen food tray. 199,580, 11–17–64, Cl. D44—10.
Boye Needle Co., The: *See*—
Koss, Howard E. 199,564.
Boyles, James R. Water faucet. 199,610, 11–17–64, Cl. D91—3.
Bozek, John S., to Continental Can Co., Inc. Pull tab for a container or the like. 199,596, 11–17–64, Cl. D58—26.
Bozek, John S., to Continental Can Co., Inc. Pull tab for containers or the like. 199,597, 11–17–64, Cl. D58—26.
Brewer, Willie F., to Dealer Associates, Inc. Rotary tiller. 199,577, 11–17–64, Cl. D35—2.
Campbell Soup Co.: *See*—
Boyd, Glenn D. 199,580.
Cohn, Sidney E., to Acme Boot Co., Inc. Leather boot. 199,558 11–17–64, Cl. D7—7.
Cole, Richard C. Boat. 199,602, 11–17–64, Cl. D71—1.
Container Supply Co.: *See*—
Spelcher, Wallace L. 199,591.
Continental Can Co., Inc.: *See*—
Bozek, John S. 199,596.
Bozek, John S. 199,597.
Cotton, Robert B. Combination golf club holder and a wheeled easel mount. 199,561, 11–17–64, Cl. D14—3.
Crowle, Robert H.: *See*—
Jones, Charles E., and R. H. and W. G. Crowle. 199,565.
Crowle, William G.: *See*—
Jones, Charles E., and R. H. and W. G. Crowle. 199,565.
Crupi, Vincent. Golf game board. 199,575, 11–17–64, Cl. D34—5.
Curtiss, Lawrence M., to The Thomas & Betts Co., Inc. Anchor strap. 199,585, 11–17–64, Cl. D54—1.
Curtiss, Lawrence M., to The Thomas & Betts Co., Inc. Anchor strap. 199,586, 11–17–64, Cl. D54—1.
Davis, Paul, to Sweetheart Plastics, Inc. Drinking cup or similar article. 199,579, 11–17–64, Cl. D44—9.
Day, Wilbur M., to D. H. Baldwin Co. Piano. 199,588, 11–17–64, Cl. D56—9.
Dayton, Harry E. Golf club guide. 199,574, 11–17–64, Cl. D34—5.
Dealer Associates, Inc.: *See*—
Brewer, Willie F. 199,577.
Deesen, Paul H., and W. R. Vieira, to General Motors Corp. Wheel cover. 199,563, 11–17–64, Cl. D14—30.
Diamond National Corp.: *See*—
Reifers, Richard F. 199,593.
Eastman Kodak Co.: *See*—
Seely, Neil G. 199,599.
Electro-Specialty Mfg. Co.: *See*—
Liljemark, Frank H. 199,595.
Esquire, Inc.: *See*—
Moore, Buell. 199,567.
Fehn, Charles H., to Nethercult Industrial Corp. Motorcycle body unit. 199,609, 11–17–64, Cl. D90—8.
Flexible Plastics Corp.: *See*—
Sarafan, Robert E. 199,590.
Gehrie, Charles S., to Presto Lock Co. Draw bolt for luggage or the like. 199,584, 11–17–64, Cl. D50—7.
General Motors Corp.: *See*—
Deesen, Paul H., and Vieira. 199,563.
Gershon, Saul. Display counter, or the like. 199,605, 11–17–64, Cl. D80—11.
Hanna, Mary E. Fishing lure. 199,568, 11–17–64, Cl. D31—4.
Hoogesteger, Paul A., and R. L. Pitchford, to Bausch & Lomb Inc. Hand magnifier. 199,589, 11–17–64, Cl. D57—7.
Jepson, Ivar, to Sunbeam Corp. Hair dryer. 199,608, 11–17–64, Cl. D86—10.
Jones, Charles E., R. H. and W. G. Crowle, ½ to Science Research Associates, Inc., and ½ to Western Publishing Co., Inc. Storage receptacle and base for elementary arithmetic instruction set. 199,565, 11–17–64, Cl. D25—1.
Kohner Bros., Inc.: *See*—
Stubbmann, Albert. 199,576.
Koss, Howard E., to The Boye Needle Co. Combined seam ripper and tweezers. 199,564, 11–17–64, Cl. D22—3.
Kraeft, Robert W. Holder for silver flatware. 199,581, 11–17–64, Cl. D44—29.
Kreisler, Jacques, Mfg. Corp.: *See*—
Speck, Kurt. 199,582.
Lanigan, Richard W. Slide viewer. 199,598, 11–17–64, Cl. D61—1.
Lefco, Seymour. Combined toothbrush holder and tooth paste dispenser. 199,557, 11–17–64, Cl. D4—3.
Le Rose, John T. Handled steering wheel. 199,562, 11–17–64, Cl. D14—30.
Liljemark, Frank H., to Electro-Specialty Mfg. Co. Automatic transmission filler spout. 199,595, 11–17–64, Cl. D58—26.
Mission Industries: *See*—
Van Dusen, Laurence W. 199,570.
Moore, Buell, to Esquire, Inc. Transformer case. 199,567, 11–17–64, Cl. D26—15.
Morrison, Herbert, G. L. Schick, and P. O. Rawson, to The Singer Co. Control knob. 199,600, 11–17–64, Cl. D70—2.
Nethercult Industrial Corp.: *See*—
Fehn, Charles H. 199,609.
Osborne, David W. Bell. 199,603, 11–17–64, Cl. D72—1.
Piasecki, Raymond F., to The Thomas & Betts Co., Inc. Cable strap. 199,587, 11–17–64, Cl. D54—1.
Pitchford, Richard L.: *See*—
Hoogesteger, Paul A., and Pitchford. 199,589.
Presto Lock Co.: *See*—
Gehrie, Charles S. 199,584.
Rathaus, William J. Bucket. 199,594, 11–17–64, Cl. D58—17.
Rawson, Paul O.: *See*—
Morrison, Herbert, Schick, and Rawson. 199,600.

Reifers, Richard F., to Diamond National Corp. Molded pulp food tray. 199,593, 11–17–64, Cl. D58—12.6.
Reilly, Lawrence B. Aerospace craft. 199,601, 11–17–64, Cl. D71—1.
Ritts, Herbert. Table or the like. 199,571, 11–17–64, Cl. D33—14.
Rogers, Charles J., Jr. Candle lamp. 199,583, 11–17–64, Cl. D48—2.
Rojo, Guadalupe. Game board. 199,573, 11–17–64, Cl. D34—5.
Rowley, Dale W. Bathing aid sponge. 199,559, 11–17–64, Cl. D9—2.
Sarafan, Robert E., to Flexible Plastics Corp. Jug. 199,590, 11–17–64, Cl. D58—5.
Schick, George L.: *See*—
Morrison, Herbert, Schick, and Rawson. 199,600.
Schuster, Donald H.: *See*—
Wolfe, Donald G., Sr. 199,566.
Science Research Associates, Inc.: *See*—
Jones, Charles E., and R. H. and W. G. Crowle. 199,565.
Seely, Neil G., to Eastman Kodak Co. Motion picture projector. 199,599, 11–17–64, Cl. D61—1.
Shino, Yasuo: *See*—
Amano, Shuichi, Tomikawa, Yoshikawa, and Shino. 199,578.
Singer Co., The: *See*—
Morrison, Herbert, Schick, and Rawson. 199,600.
Speck, Kurt, to Jacques Kreisler Mfg. Corp. Watch bracelet or similar article. 199,582, 11–17–64, Cl. D45—4.
Speicher, Wallace L., to Container Supply Co. Jug. 199,591, 11–17–64, Cl. D58—5.
Stubbmann, Albert, to Kohner Bros., Inc. Toy cuckoo clock. 199,576, 11–17–64, Cl. D34—15.
Sunbeam Corp.: *See*—
Jepson, Ivar. 199,608.
Sweetheart Plastics, Inc.: *See*—
Davis, Paul. 199,579.
Thomas & Betts Co., Inc., The: *See*—
Curtiss, Lawrence M. 199,585.
Curtiss, Lawrence M. 199,586.
Piasecki, Raymond F. 199,587.
Thompson, Arnold M., to Thompson Designs, Inc. Battery-operated powerhandle for a toothbrush, manicure implement or similar article. 199,560, 11–17–64, Cl. D9—2.
Thompson Designs, Inc.: *See*—
Thompson, Arnold M. 199,560.
Tolciss, Joseph, to United States of America, Army. Insulated jug. 199,592, 11–17–64, Cl. D58—5.
Tomikawa, Kazuo: *See*—
Amano, Shuichi, Tomikawa, Yoshikawa, and Shino. 199,578.
United States of America, Army: *See*—
Tolciss, Joseph. 199,592.
Van Dusen, Laurence W., to Mission Industries. Combined valet stand and garment hanger. 199,570, 11–17–64, Cl. D33—8.
Vieira, Wayne R.: *See*—
Deesen, Paul H., and Vieira. 199,563.
Waterman, Neil S., to Atlantic Plastics Inc. Applicator for medicaments or the like. 199,606, 11–17–64, Cl. D83—12.
Western Publishing Co.: *See*—
Jones, Charles E., and R. H. and W. G. Crowle. 199,565.
Williams, Phyllis M. Novelty horse head. 199,572, 11–17–64, Cl. D34—2.
Williams, Phyllis M. Mannequin's head or similar article. 199,604, 11–17–64, Cl. D80—8.
Wolfe, Donald G., Sr., to D. H. Schuster. Housing for teaching machines. 199,566, 11–17–64, Cl. D25—1.
Yoshikawa, Kazutaka: *See*—
Amano, Shuichi, Tomikawa, Yoshikawa, and Shino. 199,578.
Zia, Mohammed A. Smoking pipe or similar article. 199,607, 11–17–64, Cl. D85—8.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF NOVEMBER, 1964

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ACF Industries, Inc.: *See*—
Anderson, Clifford E. 3,157,030.
Abbott Laboratories: *See*—
Bujan, Albert F. 3,157,481.
Abbott Machine Co., Inc.: *See*—
Perry, Winthrop L. 3,157,368.
Abbott, Thomas I., and E. B. Wyand, to Eastman Kodak Co. Photographic products containing magnetic particles and processes therefor. 3,157,500, 11–17–64, Cl. 96—28.
Abrams, Virgil J., to Beckman Instruments, Inc. Method and apparatus for forming resistance elements. 3,157,081, 11–17–64, Cl. 83—13.
Acton, John R., to Ericsson Telephones Ltd. Electrical connections to thin conductive layers. 3,157,473, 11–17–64, Cl. 29—183.5.
Adams, Laverne G. Ejected shell receptacle. 3,156,991, 11–17–64, Cl. 42—1.
Adam, Folger: *See*—
Wolz, Francis T. 3,157,042.
Addor, Roger W., and D. P. Wright, Jr., to American Cyanamid Co. Method of controlling insects with cyanide hydrazones. 3,157,569, 11–17–64, Cl. 167—30.
Addy, Ralph E.: *See*—
Sloan, Ralph A., and Addy. 3,157,422.
Adkins, Harold T., to Curtiss-Wright Corp. Turbo-alternator generator. 3,157,793, 11–17–64, Cl. 290—52.
Adkins, Harold T., to Curtiss-Wright Corp. Inductor alternator. 3,157,810, 11–17–64, Cl. 310—168.
Adler Enterprises, Inc.: *See*—
Adler, Joseph I., Jr. 3,157,558.
Adler, Joseph I., Jr., to Adler Enterprises, Inc. Artificial foliage display structure. 3,157,558, 11–17–64, Cl. 161—22.
Aerojet-General Corp.: *See*—
Lieberman, Irving, Zernow, and Barnett. 3,156,973.
Zernow, Louis, Lieberman, and Corney. 3,157,498.
Agfa Aktiengesellschaft: *See*—
Bammesberger, Karl, Straub, and Ungnadner. 3,157,749.
Ahlich, Harold G., F. L. Kreger, and J. L. Amos, to The Dow Chemical Co. Method and apparatus for trapped bubble stretching of thermoplastic film. 3,157,720, 11–17–64, Cl. 264—95.
Ala, Michael A.: *See*—
Mooney, Richard W., and Ala. 3,157,603.
Air Reduction Co., Inc.: *See*—
Lindemann, Martin K. 3,157,011.
Ajem Laboratories, Inc.: *See*—
Kosar, Peter. 3,157,107.
Akustiche U. Kino-Gerate Gesellschaft m.b.H.: *See*—
Weingartner, Bernhard. 3,157,750.
Albert, Leroy F.: *See*—
Hilpman, Paul, and Albert. 3,156,959.
Albertson, Noel F., to Sterling Drug, Inc. 3-amino-4-acylamino-2-pyrazolin-5-ones. 3,157,670, 11–17–64, Cl. 260—310.
Albright & Wilson (Mfg.) Ltd.: *See*—
Wells, Frederick H., and Lyde. 3,157,586.
Alexander, Roy P.: *See*—
Ottmann, Gerhard F., Alexander, and Kober. 3,157,638.
Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Leveling device for a pneumatic suspension. 3,157,413, 11–17–64, Cl. 280—124.
Allen, Herbert, to Cameron Iron Works, Inc. Ball valve. 3,157,190, 11–17–64, Cl. 137—330.
Allen, James B: *See*—
West, Charles F., and Allen. 3,157,115.
Allen, William M.: *See*—
Paulius, Clarence L., and Allen. 3,157,179.
Allen, Winston F., and J. J. Thompson, to Kellogg Co. Enzymatic treatment of cereal grains. 3,157,513, 11–17–64, Cl. 99—17.
Allied Chemical Corp.: *See*—
Deanin, Rudolph D., and Pinter. 3,157,606.
Degginger, Edward R. 3,157,621.
Little, Edwin D., and Pickens. 3,157,668.
Allied Doll & Top Corp.: *See*—
Mautner, Jacob E. 3,156,932.
Allied Welder Corp.: *See*—
Jewett, Walter L. 3,157,113.
Allis-Chalmers Mfg. Co.: *See*—
Tjebben, John O. 3,157,827.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Funke, Birger, and Samuelsson. 3,157,820.
Almeida, Louis B.: *See*—
Sarmento, Frank, and Almeida. 3,157,313.
Alps, Hugo A.: *See*—
Kine, Benjamin B., Moser, and Alps. 3,157,562.
Altar, William, and E. Lakatos, to Thompson Ramo Wooldridge Inc. Signalling systems. 3,157,874, 11–17–64, Cl. 343—5.
Aluminum Co. of America: *See*—
Stroup, Philip T., and Atman. 3,157,735.
American Box Corp. of California: *See*—
Hamilton, Joseph P. 3,157,346.
American Brake Shoe Co.: *See*—
Huntress, Howard B., and Taylor. 3,157,033.
American Can Co.: *See*—
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Elam, William B. 3,157,336.
Elam, William B. 3,157,337.
Hollister, Robert, and White. 3,157,338.
Pottle, Ralph K. 3,157,318.
Russell, Arthur G., and Clary. 3,157,310.
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Addor, Roger W., and Wright. 3,157,569.
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American Home Products Corp.: *See*—
O'Donnell, William R. 3,157,321.
American Motors Corp., The: *See*—
Kishline, Alan R. 3,157,428.
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American Radiator & Standard Sanitary Corp.: *See*—
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American Scientific Laboratories, Inc.: *See*—
Russell, James D., and Muehlfelt. 3,157,576.
Russell, James D., Muehlfelt, Grosse, and Ott. 3,157,577.
Amering, Charles F., and E. C. Yackel, to Eastman Kodak Co. Silver-resin print paper. 3,157,510, 11–17–64, Cl. 96—114.
Amerock Corp.: *See*—
Lindstedt, Stuart W. 3,156,955.
Amos, James L.: *See*—
Ahlich, Harold G., Kreger, and Amos. 3,157,720.
Amsted Industries Inc.: *See*—
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Kulieke, Frederick C., and Livelsberger. 3,157,291.
Andersen, George L., to Avia Industrial Corp. Work ejector for presses. 3,157,111, 11–17–64, Cl. 100—218.
Anderson, Clifford E., to ACF Industries, Inc. Control unit. 3,157,030, 11–17–64, Cl. 60—52.
Anderson, Elvin L., to Smith Kline & French Laboratories. Durene bisglyoxal derivatives. 3,157,698, 11–17–64, Cl. 260—518.
Anderson, John W. Windshield wiper blade. 3,156,940, 11–17–64, Cl. 15—250.42.
Anderson, Marshall N., to Sellstrom Mfg. Co. Cradle attachment for head protective equipment. 3,156,922, 11–17–64, Cl. 2—3.
Anderson, Richard M., and G. H. Birum, to Monsanto Co. Flame resistant composition containing an organic polymer and halogenated diphosphate. 3,157,613, 11–17–64, Cl. 260—30.6.
Anderson, Richard N., to V. E. Anderson Mfg. Co. Automatic extrusion handling equipment. 3,157,268, 11–17–64, Cl. 198—20.
Anderson, Theodore C., and D. L. Favin, to Bell Telephone Laboratories, Inc. Noise impulse counter for signalling circuits. 3,157,798, 11–17–64, Cl. 307—88.5.
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Anderson, Richard N. 3,157,268.
Andre Rubber Co. Ltd.: *See*—
Torr, Ralph P. 3,157,731.
Andres, John M., to Space Technology Laboratories, Inc. Angular motion responsive apparatus and method utilizing optically alignable magnetic moments. 3,157,837, 11–17–64, Cl. 324—.5.
Andrews, Charles M. Test for cavitoma. 3,157,470, 11–17–64, Cl. 23—230.
Angelica Uniform Co.: *See*—
Grimm, James J., and Forry. 3,156,927.
Angelone, James J. Heat reclaimer for gas fired dryers. 3,157,391, 11–17–64, Cl. 263—33.
Antoszewski, Eugeniusz, and J. W. F. Sherriff, to The English Electric Co. Ltd. Electric protective relays. 3,157,825, 11–17–64, Cl. 317—36.
Ard, Jesse S.: *See*—
Krewson, Charles F., Scott, and Ard. 3,157,676.
Arena, Joseph P., and R. J. Smith, to Verticals, Inc. Vertical blinds. 3,157,223, 11–17–64, Cl. 160—168.
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Harris, Raymond N., and Knauss. 3,157,213.
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Armstrong Cork Co.: *See*—
Butterwork, Richard, and Parker. 3,157,617.
Arnold, Charles, Jr., J. M. Kruse, and E. L. Reilly, to E. I. du Pont de Nemours and Co. Catalytic process for the preparation of nitriles. 3,157,688, 11–17–64, Cl. 260—465.3.
Arrow-Hart & Hegeman Electric Co., The: *See*—
Yeske, Louis A. 3,157,760.
Art Metal, Inc.: *See*—
Stark, Forest G. 3,157,446.
Artandi, Charles, to Ethicon, Inc. Preparation of collagen sponge. 3,157,524, 11–17–64, Cl. 106—122.
Arthur, Glen H. Tool and method for cutting and shaping tubing. 3,157,076, 11–17–64, Cl. 82—4.

Arthur, Glen H. Sprocket gear reduction drive for power swivel assembly. 3,157,236, 11–17–64, Cl. 173—57.

Arthur, Jett C., Jr., and R. J. Demint, to United States of America, Agriculture. Process of cyanoethylating cotton fibers and graft polymerizing thereto acrylonitrile with ionizing radiation. 3,157,460, 11–17–64, Cl. 8—120.

Arvin Industries, Inc. : *See*—
Sohn, John P., and Kuepfer. 3,157,776.

Asbury, Edward M. Roadway signal device retriever. 3,157,267, 11–17–64, Cl. 198—7.

Ashland Oil & Refining Co. : *See*—
McNay, Ralph E. 3,157,608.
McNay, Ralph E., and Peterson. 3,157,609.
Thomas, Ogden A., Melnert, and Houlton. 3,157,491.

Assembly Products, Inc. : *See*—
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Associated Electrical Industries Ltd. : *See*—
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Oldham, Thomas J. F. 3,157,296.

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Fortman, William K. 3,157,359.

Atkinson, Duane E. Blade control system with reactive pickup. 3,156,989, 11–17–64, Cl. 37—143.

Atkinson, John R., and S. Hartley, to Imperial Chemical Industries Ltd. New triazine compounds. 3,157,651, 11–17–64, Cl. 260—248.

Atman, Jay W. : *See*—
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Perry, Cecil W. 3,157,382.

Aulabaugh, William E. Adjustable cartridge case holder. 3,157,407, 11–17–64, Cl. 279—36.

Aversa, Vincent J. Dispenser for hair rollers and the like. 3,157,445, 11–17–64, Cl. 312—45.

Avery, Robert C., to Bell Telephone Laboratories, Inc. Telephone call progress recording system. 3,157,743, 11–17–64, Cl. 179—8.

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Aygun, Niyazi : *See*—
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Azzarri, Orlando, to Nyby Bruks Aktiebolag. Guide-box for rolling-mills. 3,157,072, 11–17–64, Cl. 80—51.

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Braun, Samuel. 3,157,278.

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Leese, Leonard. 3,157,713.

Babule, René, G. Lemesle, R. Martin, P. Rouge, and S. Y. Gif, to Commissariat a l'Energie Atomique. Nuclear reactor moderator structures. 3,157,582, 11–17–64, Cl. 176—84.

Bachhuber, Theodore J. Shotgun shell reloader. 3,157,086, 11–17–64, Cl. 86—27.

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Bailey, Charles S., and W. J. Orr, to General Motors Corp. By-pass thermostat valve arrangement. 3,157,357, 11–17–64, Cl. 236—34.5.

Bakke, William W. : *See*—
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Bakunin, Maurice I. Catamenial receptacle. 3,157,180, 11–17–64, Cl. 128—285.

Baldwin, D. H., Co. : *See*—
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Ballu, Louis H. D. M. Armor plate. 3,157,090, 11–17–64, Cl. 89—36.

Bammesberger, Karl, W. Straub, and P. Ungnadner, to Agfa Aktiengesellschaft. Method and apparatus for superimposing an additional recording upon an existing sound record. 3,157,749, 11–17–64, Cl. 179—100.2.

Banks, Charles R. : *See*—
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Banks, Edward J. : *See*—
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Banks, John and E. J. Disc valve. 3,157,199, 11–17–64, Cl. 137—625.11.

Barbagallo, Charles J., to Honeywell Inc. Electrical storage apparatus. 3,157,858, 11–17–64, Cl. 340—173.

Bard, Charleston C., to Eastman Kodak Co. Method of inhibiting discoloration of color photographic layers containing dye images and resulting photographic products. 3,157,504, 11–17–64, Cl. 96—61.

Barish, Benjamin J., to Burroughs Corp. Method and apparatus for positioning and assembling wires and the like. 3,157,721, 11–17–64, Cl. 264—157.

Barkley, Charles R., to Evans Reamer and Machine Co. Combination abrading and exhaust unit. 3,157,009, 11–17–64, Cl. 51—273.

Barnes, Epp R. Garment hangers. 3,157,324, 11–17–64, Cl. 223—88.

Barnes, John V., to Ford Motor Co. Anti-skid brake system. 3,157,052, 11–17–64, Cl. 73—514.

Barnett, John S., to Data Recording Systems, Inc. Pulse operated camera. 3,157,882, 11–17–64, Cl. 352—131.

Barnett, Paul B. : *See*—
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Bassin, Murray I., to Minnesota Mining and Mfg. Co. Curable composition comprising an admixture of polyester polymer, a polymeric polymer and a polyalkyleneamide polymer. 3,157,607, 11–17–64, Cl. 260—22.

Batley, James V., to International Business Machines Corp. Core driver checking circuit. 3,157,860, 11–17–64, Cl. 340—174.

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Baugh, Charles W., to Huck Mfg. Co. Nose assembly. 3,157,305, 11–17–64, Cl. 218—42.

Baum, Bernard O., to Union Carbide Corp. Safety glass. 3,157,563, 11–17–64, Cl. 161—204.

Bay, James, to Jeffrey Galion Mfg. Co. Clip unit for holding removable and replaceable idler rollers in a mounting stand. 3,157,272, 11–17–64, Cl. 198—192.

Bayer, Gerhard, to Owens-Illinois Glass Co. Manganese oxide ceramics, and method for their preparation. 3,157,523, 11–17–64, Cl. 106—65.

Beardow, George M., to Vitramon, Inc. Means for adjustable mounting switch units. 3,157,754, 11–17–64, Cl. 200—22.

Beasley, Max M., to The Singer Co. Apparatus for making patterned pile fabric. 3,157,554, 11–17–64, Cl. 156—435.

Beaulieu, Roland J. Sliding contact brushes. 3,157,770, 11–17–64, Cl. 200—166.

Beavers, Herman. Dual master cylinder. 3,157,034, 11–17–64, Cl. 60—54.6.

Beck, Edwin H., to Manufacturers Supplies Co. Mechanism for sharpening the bell knife of a skiving machine. 3,157,008, 11–17–64, Cl. 51—247.

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Behlen, George D., to The United States Electrical Tool Co. Grinding machine with means for compensating for grinding wheel wear. 3,157,006, 11–17–64, Cl. 51—134.5.

Bekey, Andrew, to Genisco, Inc. Electric motor having low Curie point magnetic bridge between poles. 3,157,809, 11–17–64, Cl. 310—156.

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Bencze, William L., to Ciba Corp. 3-(amino-phenyl)-2-(pyridyl)-acrylonitriles. 3,157,663, 11–17–64, Cl. 260—294.9.

Bencze, William L., to Ciba Corp. 1-alkyl-1-hydroxy-2-pyridyl-benz [b] cycloalkanes. 3,157,665, 11–17–64, Cl. 260—297.

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Benton, Robert C., to Centre Circuits, Inc. Binary decimal gage. 3,156,983, 11–17–64, Cl. 33—125.

Bentov, Itzhak, to Oneida, Ltd. Dressing. 3,157,178, 11–17–64, Cl. 128—156.

Beretta, Pier C., to Fabbrica D'Armi P. Beretta S.p.A. Combination gas-operated firearm and bomb or grenade thrower. 3,156,992, 11–17–64, Cl. 42—1.

Berkowitz, Lewis M., M. D. Shoaf, and R. E. Schachat, to General Foods Corp. Pastry mix having thiolated gelatin incorporated therein and method utilizing said mix. 3,157,515, 11–17–64, Cl. 99—92.

Bernhardt, Rudolph, to Nibot Corp. Dispensing unit and method of producing the same. 3,157,322, 11–17–64, Cl. 222—517.

Bernotas, Ralph J., to General Motors Corp. Four wheel drive, two-engine, articulated frame tractor. 3,157,239, 11–17–64, Cl. 180—51.

Bernstein, Jack. Hearing aid tube attachment. 3,157,245, 11–17–64, Cl. 181—23.

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Bialek, Franz M., to Zahnradfabrik Friedrichshafen, Aktiengesellschaft. Electromagnetic clutch. 3,157,259, 11–17–64, Cl. 192—84.

Bianco, Elmo. Combination salt and pepper shaker. 3,157,315, 11–17–64, Cl. 222—142.5.

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Billingsley, John G. S., to E. I. du Pont de Nemours and Co. Method and apparatus for winding. 3,157,371, 11–17–64, Cl. 242—56.2.

Bills, Marlus W. Lint pick-up device. 3,156,938, 11–17–64, Cl. 15—104.

Birch, Robert R., and T. J. Zylbert, to The Singer Co. Drive means for sewing machines. 3,157,142, 11–17–64, Cl. 112—220.

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Birchmier, Lloyd M. and K. E., to L. B. Products Co. Poultry shackles. 3,156,947, 11–17–64, Cl. 17—44.1.

Birkemeier, Henry P., to International Telephone and Telegraph Corp. Snow melting control apparatus. 3,157,358, 11–17–64, Cl. 237—1.

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Blain, Paul, to Institute de Recherches de La Siderurgie. Compensated screwdown mechanism for a rolling mill. 3,157,073, 11–17–64, Cl. 80—56.

Bliss, Horace H., and G. B. Emory. Device for teaching atomic structure and the properties of elements. 3,156,985, 11–17–64, Cl. 35—18.

Block, Aleck, to Merit Products, Inc. Abrading article. 3,157,010, 11–17–64, Cl. 51—377.

Blondeau, Roland G. A. Missile for sporting guns. 3,157,126, 11–17–64, Cl. 102—92.5.

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Straub, Hermann, Blum, and Bialek. 3,157,260.

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Bobrowsky, Alfred R., to Engelhard Industries, Inc. Method for improving properties of articles. 3,156,974, 11–17–64, Cl. 29—423.

Bobrowsky, Alfred R., to Engelhard Industries, Inc. High pressure process for improving the mechanical properties of metals. 3,157,540, 11–17–64, Cl. 148—131.

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Bohn, Samuel. Handle construction. 3,156,944, 11–17–64, Cl. 16—111.

Bolten, Egbert H., to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer. Adjustable magnetic flux-source. 3,157,848, 11–17–64, Cl. 336—110.

Boles, Arthur F. Electrostatic precipitating device. 3,157,479, 11–17–64, Cl. 55—146.

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Bolt, William N. Pallet loading mechanisms. 3,157,294, 11–17–64, Cl. 214—6.

Bolton, Benjamin A., to Standard Oil Co. Solvent soluble baking type resins. 3,157,620, 11–17–64, Cl. 260—76.

Bono, Luigi, to Necchi Societa per Azioni. Programmed start and stop for a machine such as a sewing machine. 3,157,261, 11–17–64, Cl. 192—142.

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Bose, Norman J., and D. A. Break, to General Precision, Inc. Level encoder. 3,157 872, 11–17–64, Cl. 340—347.

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Boswinkle, George : *See*—
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Bowman, Ralph E., J. F. Cavalla, and J. Davoll, to Parke, Davis & Co. 1,1-diethyl-3-hydroxypyrrolidinium bromide benzilate ester. 3,157,671, 11–17–64, Cl. 260—326.3.

Bowser, Robert S., and R. P. De La Chapelle, to Sylvania Electric Products Inc. Electroluminescent cell having electrical contact with increased reliability. 3,157,813, 11–17–64, Cl. 313—108.

Brackbill, Warren H., to Sperry Rand Corp. Reuseable resilient mounting for a rake tine. 3,157,019, 11–17–64, Cl. 56—400.

Bradd, Ernest, to William Gluckin & Co., Inc. All-way stretch fabric girdle with front and back latex reinforcements. 3,157,183, 11–17–64, Cl. 128—533.

Brader, Walter H., Jr., to Jefferson Chemical Co., Inc. Catalytic synthesis of triethylenediamine. 3,157,657, 11–17–64, Cl. 260—268.

Bradley, Edward M., to International Computers and Tabulators Ltd. Thin film magnetic devices. 3,157,865, 11–17–64, Cl. 340—174.

Brafford, Donald A., to Beloit Corp. Method of incorporating resin in molded pulp products. 3,157,566, 11–17–64, Cl. 162—146.

Brandwood, John T., to Dye Tube Developments Ltd. Yarn dyeing apparatus. 3,157,039, 11–17–64, Cl. 68—198.

Branick, Charles E. Shock absorber testing and condition indicating device. 3,157,044, 11–17–64, Cl. 73—11.

Braun, Robert A., to E. I. du Pont de Nemours and Co. Coating compositions. 3,157,525, 11–17–64, Cl. 106—287.

Braun, Robert A., to E. I. du Pont de Nemours and Co. Copolymers of a vinyl substituted ethylene glycol. 3,157,623, 11–17–64, Cl. 260—80.5.

Braun, Samuel, to B.C.N. Design Products Inc. Hinged watch box. 3,157,278, 11–17–64, Cl. 206—75.

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Bose, Norman J., and Break. 3,157,872.

Brenneman, Richard S. : *See*—
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Bristol-Myers Co. : *See*—
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Bronfman, Benjamin. Means for supplying buttons to a sewing point. 3,157,311, 11–17–64, Cl. 221—186.

Brooks, Bert B. Marker buoy. 3,156,933, 11–17–64, Cl. 9—9.

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Brown, Boveri & Cie, Aktiengesellschaft : *See*—
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Brown, Harry B., and C. R. Banks. Transistorized bridge amplifier with a bias compensating circuit therefor. 3,157,839, 11–17–64, Cl. 330—18.

Brown, Morris E. : *See*—
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Brown, Robert J., to The Goodyear Tire & Rubber Co. Pneumatic tires having improved threads. 3,157,218, 11–17–64, Cl. 152—330.

Brown, Thomas J. A., and P. H. Wolfenden, to Henry Simon Ltd. Automatic control of materials processing machines. 3,157,365, 11–17–64, Cl. 241—35.

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Bruengger, Heinrich, and H. Boehl, to Ciba Ltd. Optical sensitization of photographic materials suitable for the silver-dye bleaching process. 3,157,507, 11–17–64, Cl. 96—99.

Brunelle, Beatrice Y. Covering supporting head frame. 3,156,925, 11–17–64, Cl. 2—180.

Brunner, Siegfried : *See*—
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Brydon, John P. Straining apparatus. 3,157,131, 11–17–64, Cl. 103—220.

Budzynski, Thedore J., and J. R. Johnston, to Ford Motor Co. Vehicle suspension construction. 3,157,395, 11–17–64, Cl. 267—19.

Bujan, Albert F., to Abbott Laboratories. Air filter assembly. 3,157,481, 11–17–64, Cl. 55—417.

Bunnell, Glenn R., and W. M. Shields, to Special Engineering Service, Inc. Stock feeder. 3,157,334, 11–17–64, Cl. 226—150.

Burba, Bernard T., to Recreation Supply Co. Controlled-flow-inlet swimming pool system. 3,157,597, 11–17–64, Cl. 210—137.

Burger, Leland L., to United States of America, Atomic Energy Commission. Extraction of plutonium and uranium values from aqueous solution. 3,157,463, 11–17–64, Cl. 23—14.5.

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Burns, Arthur H., Jr., to Olin Mathieson Chemical Corp. Expanding point bullet. 3,157,137, 11–17–64, Cl. 102—91.

Burns, John H., to The National Cash Register Co. Tape handling apparatus. 3,157,867, 11–17–64, Cl. 340—174.1.

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Burrows, Walter F., and A. K. Schwerin, to General Aniline & Film Corp. Production of dyed polymeric images. 3,157,501, 11–17–64, Cl. 96—35.

Burwell, Garwood N., to The Rails Co. Snow and sleet detectors and systems. 3,157,800, 11–17–64, Cl. 307—116.

Bury, George J., to Illinois Tool Works, Inc. Snap-action electric switch. 3,157,758, 11–17–64, Cl. 200—67.

Buslik, Walter S., to International Business Machines Corp. Wear resistant pressure pad. 3,157,868, 11–17–64, Cl. 340—174.1.

Butt, Frederick J., to The Dow Chemical Co. Method of packaging viscous materials. 3,157,519, 11–17–64, Cl. 99—171.

Butterworth, Richard, and J. A. Parker, to Armstrong Cork Co. Nitrile-containing polycarbonate. 3,157,617, 11–17–64, Cl. 260—47.

Cadiou, Jean, to Societe Anonyme Andre Citroen. Automatic regulating devices for hydraulic barrel-type pumps or motors. 3,157,130, 11–17–64, Cl. 103—162.

Caines, James F., to Eastman Kodak Co. Apparatus for applying plasticizer to filter tow. 3,157,536, 11-17-64, Cl. 118—225.

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Scott, John W., Jr., Stanton, and Mason. 3,157,590.

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Campbell, Ralph A., T. Ongaro, and G. H. Thomas, to International Research and Development Corp. Voltage generating seismic vibratory pickup device. 3,157,852, 11-17-64, Cl. 340—17.

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Card, Roger B., to American Cyanamid Co. Parenteral diuretic compositions of 5-acylimino-4-substituted-Δ^2-1,3,4-thiadiazolidene-2-sulfonamides. 3,157,572, 11-17-64, Cl. 167—51.5.

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Carroll, William N., to International Business Machines Corp. Pulse train sensing circuitry. 3,157,780, 11-17-64, Cl. 235—164.

Cary, Donald S., W. F. Parsons, and E. Carnall, to Eastman Kodak Co. Infrared lens cement. 3,157,521, 11-17-64, Cl. 106—47.

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Caywood, William P., to Rockwell Mfg. Co. All-electric taximeter. 3,157,352, 11-17-64, Cl. 235—30.

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Chance, William E., to C. W. Cheney & Son Ltd. Luggage fittings. 3,157,419, 11-17-64, Cl. 292—281.

Chapdelaine, Louis P. Telescopic chute. 3,157,262, 11-17-64, Cl. 193—10.

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Chew, Norman B., to Freightliner Corp. Tilt hood tractor construction. 3,157,240, 11-17-64, Cl. 180—69.

Chidsey, Francis A., Jr., J. V. Mahon, and R. S. Wolowicz, to Container Corp. of America. Carrier carton for cylindrical articles. 3,157,309, 11-17-64, Cl. 220—115.

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Cimochowski, Anthony E., to Johns-Manville Corp. Method for relining a combustion chamber with refractory material without disassembling the chamber. 3,156,972, 11-17-64, Cl. 29—401.

Cirkler, Werner, and H. Loebl, to Siemens & Halske Aktiengesellschaft. Ceramic blocking layer capacitor. 3,157,835, 11-17-64, Cl. 317—262.

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Clancy, John J., D. W. Lovering, R. S. Brenneman, and R. C. Wells, to Arthur D. Little, Inc. Starch stabilized casein coating emulsions. 3,157,533, 11-17-64, Cl. 117—156.

Clapp, Fred D., to Etron Corp. Luminous bodies energized by standing waves. 3,157,823, 11-17-64, Cl. 315—169.

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Clark, Jared W., J. P. Henry, and C. E. Rectenwald, to Union Carbide Corp. Method of reacting tetrachloroethylene, chlorine and hydrogen fluoride. 3,157,707, 11-17-64, Cl. 260—653.7.

Clark, Raymond D., and R. G. Nations, to Eastman Kodak Co. Preparation of alkali metal enolates of 2,2,4,4-tetraalkylacetoacetic esters. 3,157,692, 11-17-64, Cl. 260—483.

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Clay, Joseph B., and C. E. T. Letson, to Clay Equipment Corp. Method and apparatus for dispensing feed to livestock. 3,157,157, 11-17-64, Cl. 119—51.11.

Clibbon, Michael E., to McMichael Radio Ltd. Electric remote indicating systems. 3,157,869, 11-17-64, Cl. 340—197.

Close, Albert R., and W. H. West, to General Motors Corp. Automatically adjustable hinge switch. 3,157,756, 11-17-64, Cl. 200—61.7.

Coates, Harold N., to International Computers and Tabulators Ltd. Tunnel diode sub-harmonic circuit with means controlling output phase. 3,157,796, 11-17-64, Cl. 307—88.5.

Cochrane, Harry W., to International Business Machines Corp. Core matrix calculator. 3,157,779, 11-17-64, Cl. 235—157.

Colle, Benjamin F., to Textile Machine Works. Yarn severing mechanism for knitting machines. 3,157,036, 11-17-64, Cl. 66—140.

Colignon, Nora P. Hem construction for lengthening drapes and the like. 3,156,928, 11-17-64, Cl. 2—243.

Collins, Bruce M., to Smith Kline & French Laboratories. Derivatives of 7-aminocephalosporanic acid. 3,157,648, 11-17-64, Cl. 260—243.

Collins, Joseph C., to North American Philips Co., Inc. Wire and insulation attachment for electric terminals. 3,157,454, 11-17-64, Cl. 339—223.

Collins, Thomas J. Cargo vehicle with clam shell hopper. 3,157,436, 11-17-64, Cl. 298—25.

Collins, Thomas J., and J. W. Wells. Trailer for hauling and dumping loose material. 3,157,300, 11-17-64, Cl. 214—64.

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Commercial Solvents Corp.: *See*—
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Comstock, Daniel F., Jr., to Arthur D. Little, Inc. Method and means for measuring high temperatures. 3,157,728, 11-17-64, Cl. 88—22.5.

Connally, Carl, Jr., and L. G. Sharp, to Socony Mobil Oil Co., Inc. Method of recovering oil from an oil-bearing reservoir. 3,157,230, 11-17-64, Cl. 166—9.

Conrey, James R. Airport design. 3,157,374, 11-17-64, Cl. 244—114.

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Cook, Nathan H.: *See*—
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Courson, Iber C., to Philco Corp. Cabinet structure. 3,157,306, 11-17-64, Cl. 220—9.

Coutts, Morton W. Process for the production of fermented malt beverages. 3,157,583, 11-17-64, Cl. 195—14.

Cover, Paul W., to Xerox Corp. Image transfer. 3,157,546, 11-17-64, Cl. 156—231.

Crafts, Cecil A., to Robertshaw Controls Co. Transmitter and receiver for phase modulated signals of the relative phase shift type. 3,157,740, 11-17-64, Cl. 178—66.

Crimmins, David J., J. B. Marcsanyi, now by change of name, J. Marshall, to The Kent Mfg. Co. Terminal connector. 3,157,448, 11-17-64, Cl. 339—49.

Cronholm, Frederick P., ½ to V. G. Dreesman. Torque limiting coupling and positive clutch mechanism. 3,157,258, 11-17-64, Cl. 192—48.

Crosby-Teletronics Corp.: *See*—
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Cross, John W., Jr.: *See*—
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Cusic, John W., and P. Yonan, to G. D. Searle & Co. 1-carbalkoxy-4-(9-xanthenyl)piperazines and related compounds. 3,157,658, 11-17-64, Cl. 260—268.

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Pearce, George C., Evans, Fry, and Milburn. 3,157,176.

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Fox, Raymond, to United States of America, Atomic Energy Commission. Thermionic energy converter. 3,157,802, 11–17–64, Cl. 310—4.

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Friedman, Herbert, and P. King. Teflon coated photon counter tube. 3,157,812, 11–17–64, Cl. 313—94.

Froehlich, Fritz E.: *See*—
Bennett, William R., and Froehlich. 3,157,741.

Froll, Joseph R., Jr.: *See*—
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Fry, Millard E.: *See*—
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Pearce, George C., Evans, and Fry. 3,157,176.

Fryer, Alma M.: *See*—
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Fryer, Kenneth F., deceased (A. M. Fryer, executrix), to Emhart Corp. Lock construction for lock sets. 3,157,041. 11–17–64, Cl. 70—216.

Fuerst, Ernst, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Selective separation of aromatics from paraffins. 3,157,592, 11–17–64, Cl. 208—324.

Fulton, J. W., Jr.: *See*—
Greenan, Freeda R. 3,157,158.

Funke, Birger, and R. Samuelsson, to Allmanna Svenska Elektriska Aktiebolaget. Gas-filled-liquid cathode elongated rectifier having condenser chamber and automatic tank cooling means therefor. 3,157,820, 11–17–64, Cl. 315—113.

Furst, Mark. Clamping device. 3,157,397, 11–17–64, Cl. 269—86.

Galmiche, Philippe, to Office National d'Etudes et de Recherches Aerospatiales called O.N.E.R.A. Methods of treating metallic powders. 3,157,532, 11–17–64, Cl. 117—100.

Garber, Mike I., and H. Goldberg, to Miniwheel Ltd. Buckle. 3,156,961, 11–17–64, Cl. 24—84.

Garber, Roy W., to Jackson Mfg. Co. Row marker. 3,157,316, 11–17–64, Cl. 222—169.

Garner, Harold K.: *See*—
Yates, Edwin T., and Garner. 3,157,625.

Garret, Richard H., and G. M. O'Keiff, to Dixell Development and Mfg. Co. Rotating cylinder guided check-valve assembly. 3,157,191, 11–17–64, Cl. 137—332.

Gas Tools, Inc.: *See*—
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Gaubatz, Arthur W., to General Motors Corp. Bearing design. 3,157,028, 11–17–64, Cl. 60—35.55.

Gaubatz, Arthur W., to General Motors Corp. Bearing mounting. 3,157,442, 11–17–64, Cl. 308—191.

Gaudet, Frederick J., to Psychological Training Devices Corp. Baseball pitching practice target with ball and strike indicators. 3,157,399, 11–17–64, Cl. 273—26.

Gay, Jacob D., Jr. and F. W. Joswig to Gay-Bell Corp. Paperboard hogshead. 3,157,340, 11–17–64, Cl. 229—5.7.

Gay-Bell Corp.: *See*—
Gay, Jacob D., Jr., and Joswig. 3,157,340.

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Gembruch Jun., Alfred. 3,157,409.

Gembruch Jun., Alfred, to Alfred Gembruch, K.G. Release device for the front tightening member of ski bindings. 3,157,409, 11–17–64, Cl. 280—11.35.

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General Dynamics Corp.: *See*—
Dimin James M., and Hudson. 3,157,219.
Thomas, Harold A. 3,157,789.

General Electric Co.: *See*—
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Eldredge, Kenneth R. 3,157,748.
Goldberg, Eugene P. 3,157,622.
Hoffmeyer, William R., and Johnson. 3,157,805.
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Seely, Richard E. 3,157,762.
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White, Richard M. 3,157,845.

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General Industries Co., The: *See*—
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General Mills, Inc.: *See*—
Fischer, Eugene M. 3,157,681.
Graber, Robert P., and Hickman. 3,157,680.
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Pearce, George C., Evans, Fry, and Milburn. 3,157,176.
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Genoud & Cie, Etablissements: *See*—
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George, Walter C., to Crown Zellerbach Corp. Container. 3,157,345, 11–17–64, Cl. 229—23.

Gianvecchio, Nicholas. Head rest attachments for automobile seats. 3,157,434, 11–17–64, Cl. 297—397.

Gilbert, Everett A., to Radio Frequency Laboratories, Inc. Variable frequency oscillator amplitude stabilized bridge and self-derived reference voltage. 3,157,841, 11–17–64, Cl. 331—110.

Gilberton, Emile, to Genoud & Cie, Etablissements. Gas lighter. 3,157,038, 11–17–64, Cl. 67—7.1.

Gill, James S., and W. L. Marshall. Double oxide of uranium. 3,157,461, 11–17–64, Cl. 23—14.5.

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Sinclair, Robert L. 3,157,287.

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Glaser, David, to Burroughs Corp. Destructive readout of delay line. 3,157,838, 11–17–64, Cl. 328—121.

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Goldberg, Eugene P., to General Electric Co. Resinous compositions. 3,157,622, 11–17–64, Cl. 260—77.5.

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Goodwin, Hoyle T., to Goodwin Mfg. & Development Co., Inc. Razor motor and casing therefor. 3,157,804, 11–17–64, Cl. 310—29.

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Goto, Isamu: *See*—
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Gotwald, David E. S., Jr., and C. J. Munchel, to The Dentists Supply Co. of New York. High speed tool. 3,157,384, 11–17–64, Cl. 253—2.

Govatsos, Edward A., and W. H. Corey. Support bracket for toilet paper rolls. 3,157,370, 11–17–64, Cl. 242—55.2.

Graber, Robert P., and L. G. Hickman, to General Mills, Inc. Preparation of 16-alkyl-16-dehydropregnenolone. 3,157,680, 11–17–64, Cl. 260—397.4.

Grace, W. R., & Co.: *See*—
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Grady, James M., to Morton Salt Co. Carton. 3,157,342, 11–17–64, Cl. 229—14.

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Dawson, Timothy L., and Graham. 3,157,458.

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Gray, Charles L., Jr., to E. I. du Pont de Nemours and Co. Solvent-soluble water-repellency compositions containing wax, liquid titanium ester and stabilizer. 3,157,661, 11–17–64, Cl. 260—28.5.

Gray, Frank P., and A. D. Penn. Endless spring belt assembly. 3,157,056, 11–17–64, Cl. 74—238.

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Greenan, Freeda R., ½ to J. W. Fulton, Jr. Automatic feeding mechanism for livestock and poultry. 3,157,158, 11–17–64, Cl. 119—51.11.

Greene, George B. Jet engine. 3,157,029, 11–17–64, Cl. 60—39.77.

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Gremler, Enrique, to The Black Clawson Co. Apparatus for impregnation of cellulosic material. 3,157,565, 11–17–64, Cl. 162—236.

Grimm, James J., and D. R. Forry, to Angelica Uniform Co. Method and apparatus for manufacturing garments. 3,156,927, 11–17–64, Cl. 2—243.

Groat, Marshall O., to Kingsberry Homes Corp. Vehicle for transporting components of prefabricated buildings and the like. 3,157,426, 11–17–64, Cl. 296—3.

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Groomer, Jesse J., G. J. and M. M. Molded article. 3,156,943, 11–17–64, Cl. 16—110.

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Gross, Frans, to Siemens & Halske Aktiengesellschaft. Delay line for travelling wave tubes. 3,157,814, 11–17–64, Cl. 315—3.5.

Grosse, Orville H.: *See*—
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Gulton Industries, Inc.: *See*—
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Gustafson, Merriam L.: *See*—
Pridgeon, Clifford W., Gustafson, Lund, and Huttner. 3,157,295.

Gutberlet, Robert C., to Cutler-Hammer, Inc. Mounting structure for electromagnetic contactor. 3,157,765, 11–17–64, Cl. 200—87.

Gyongyosi, Laszlo, to Ingersoll-Rand Co. Drill rod storage and handling means. 3,157,286, 11–17–64, Cl. 211—1.5.

Haas, Otto, Jr., to Weyerhaeuser Co. Sock package. 3,157,276, 11–17–64, Cl. 206—46.

Habicht, Ernst, to Ciag-Chemie Ltd. New amides of 2-arylethanoic acids. 3,157,650, 11–17–64, Cl. 260—247.1.

Haendeler, Walter, and K. Seidel, to Schloemann Aktiengesellschaft. Cooling of press discs in extrusion presses. 3,157,282, 11–17–64, Cl. 207—16.

Haese, Hans G.: *See*—
Weidinger, Hans, and Haese. 3,157,631.

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Hafstrom, Warren R., G. Boswinkle, and L. H. Hinkel, to United States of America, Air Force. Container opener. 3,156,979, 11–17–64, Cl. 30—6.4.

Hafstrom, Warren R., L. H. Hinkel, and G. Boswinkle, to Whirlpool Corp. Space kitchen. 3,157,192, 11–17–64, Cl. 137—341.

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Hall, Robert P., to Tektron Instrument Co. Vertical gyroscope. 3,157,053, 11–17–64, Cl. 74—5.41.

Haller, Richard. Transmission means. 3,157,058, 11–17–64, Cl. 74—424.8.

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Hamilton, Earl F., to Hamilton Cosco, Inc. Infant's chair 3,157,430, 11–17–64, Cl. 297—19.

Hamilton, Joseph P., to American Box Corp. of California. Stacking paperboard lug box. 3,157,346, 11–17–64, Cl. 229—23.

Hammer, Nathan. Knockdown umbrella. 3,157,186, 11–17–64, Cl. 135—20.

Hammond, George E., and G. J. Crowdes, to Assembly Products, Inc. Meter relay having throwable contacts and an additional contact in the region of a center post stop. 3,157,755, 11–17–64, Cl. 200—56.

Hamuro, Yukihiko: *See*—
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Handley, Harold E., to Textron, Inc. Safety control system for fluid distribution and apparatus. 3,157,197, 11–17–64, Cl. 137—458.

Hanink, Dean K., and J. C. Holswarth, to General Motors Corp. Joining titanium and titanium-base alloys to high melting metals. 3,156,978, 11–17–64, Cl. 29—495.

Hanni, Eduard. Sheet metal working machines. 3,157,080, 11–17–64, Cl. 82—54.

Hansel, Paul G., F. G. Richter, and W. H. Paulstich, to Servo Corp. of America. Broadband antenna array. 3,157,878, 11–17–64, Cl. 343—113.

Hansson, Ants, and C. E. Maier, to Continental Can Co., Inc. Preparation of expandable laminate stock and billet therefor. 3,157,474, 11–17–64, Cl. 29—187.

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Hardy, Arthur C., P. J. Fopiano, and M. B. Trageser, to Massachusetts Institute of Technology. Polarimeter. 3,157,727, 11–17–64, Cl. 88—14.

Harmon, Henry N., to Pyrometrics, Inc. Radiant heater. 3,157,775, 11–17–64, Cl. 219—347.

Harms, William J., and A. E. Leininger, to Ford Motor Co. Vehicle body compartment closure operating mechanism. 3,157,429, 11–17–64, Cl. 296—76.

Harper, Laffie. Pipe cut off machine. 3,157,079, 11–17–64, Cl. 82—47.

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Harrison, Thomas S., and C. A. Littler, to E. I. du Pont de Nemours and Co. Pesticidal dispersion and method for preparing the same. 3,157,486, 11–17–64, Cl. 71—2.4.

Harrison, Walter J., to Fisher Scientific Co. Automatic titrator. 3,157,471, 11–17–64, Cl. 23—253.

Harrison, Wayne T., and R. J. Carrigan, to Bigelow-Sanford, Inc. Axminster type loom. 3,157,206, 11–17–64, Cl. 139—7.

Harrison, William B., Jr.: *See*—
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Harrison, William B., Sr., and W. B. Harrison, Jr., to Harrison, Brad, Co. Electric cable connector. 3,157,450, 11–17–64, Cl. 339—94.

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Hartman, Herbert L., to The General Industries Co. Electric toothbrushes. 3,156,936, 11–17–64, Cl. 15—22.

Harwood, Harold J., to Monsanto Co. Method for making bisphosphinic acid compounds. 3,157,694, 11–17–64, Cl. 260—500.

Haskell, Boris. Impedance networks and display panels utilizing the networks. 3,157,822, 11–17–64, Cl. 315—169.

Hassa, Richard, to G. Kromschroder Aktiengesellschaft. Thermoelectrically operated semi-automatic flame control device for two or more burners. 3,157,222, 11–17–64, Cl. 158—131.

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Haught, Glenn J., to Wilkinson Chutes, Inc. Hopper or chute door assembly. 3,156,954, 11–17–64, Cl. 20—16.

Haynes, Carl J., to Eastman Kodak Co. Rug yarn. 3,157,022, 11–17–64, Cl. 57—140.

Haynes, Munro K., to International Business Machines Corp. Memory device. 3,157,778, 11–17–64, Cl. 235—92.

Hayward, Frank S., and A. S. McCann. Adjustable spur for horsemen. 3,157,013, 11–17–64, Cl. 54—83.

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Scott, John W., Jr., and Hazard. 3,157,589.

Hazen Engineering Co.: *See*—
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Heald Machine Co., The: *See*—
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Heard, William L. Spray gun having valved flexible liner. 3,157,360, 11–17–64, Cl. 239—354.

Heard, William L. Disc-like mixing device. 3,157,361, 11–17–64, Cl. 239—427.

Heck, Richard F., to Hercules Powder Co. Preparation of crystalline poly(vinyl alkyl ethers) with a catalyst formed from a transition metal fluoride and a metal alkoxide. 3,157,626, 11–17–64, Cl. 260—91.1.

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Heide, John D., to United States Rubber Co. Roller device. 3,157,331, 11–17–64, Cl. 226—100.

Heidrich, Richard E., ½ to N. C. Nourse. Impact machine. 3,157,070, 11–17–64, Cl. 78—42.

Heiser, Elmer F. Piston and cylinder device. 3,157,095, 11–17–64, Cl. 91—395.

Heming, Arthur E., and D. E. Holtkamp, to Smith Kline & French Laboratories. Method of reducing cholesterol levels. 3,157,574, 11–17–64, Cl. 167—65.

Henderson, Hilliard T. Tire pressure warning device. 3,157,851, 11–17–64, Cl. 338—37.

Hennessey, Russell J., to Waldorf Paper Products Co. Compartmented carton. 3,157,344, 11–17–64, Cl. 229—27.

Hennessey, William M., to Burroughs Corp. Electrical connectors. 3,157,449, 11–17–64, Cl. 339—66.

Hennings, Werner, and E. Zimmermann. Method of and apparatus for cutting glass tubes. 3,157,328, 11–17–64, Cl. 225—2.

Henrickson, Angus V., to Kerr-McGee Oil Industries, Inc. Process for separating uranium and vanadium values. 3,157,462, 11–17–64, Cl. 23—14.5.

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Henry, Lyell D. Counter means. 3,157,354, 11–17–64, Cl. 235—119.

Henson, Mable R. Snap fastener. 3,156,962, 11–17–64, Cl. 24—217.

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Herpich, William A., to Hercules Galion Products, Inc. Hydraulic flow equalizer. 3,157,032 11–17–64, Cl. 60—54.5.

Herring, Liles G., to Phillips Petroleum Co. Rocket motor and solid propellant charge. 3,157,025, 11–17–64, Cl. 60—35.6.

Herubel, Jean F., to N. Schlumberger & Cie. Composite faller bar. 3,156,951, 11–17–64, Cl. 19—129.

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Heyman, Albert A., to The Maryland Baking Co. Machine for forming flat top rolled ice cream containers. 3,157,134, 11–17–64, Cl. 107—4.

Heywang, Walter, E. Sirtl, and R. Kappelmeyer, to Siemens & Halske Aktiengesellschaft. Precipitating highly pure compact silicon carbide upon carriers. 3,157,541, 11–17–64 Cl. 148—174.

Hickman, LeRoy G.: *See*—
Graber, Robert P., and Hickman. 3,157,680.

Hicks, John W., Jr., E. Snitzer, and H. Osterberg, to American Optical Co. Optical energy transmitting devices and method of making same. 3,157,726, 11–17–64, Cl. 88—1.

Higgins, Arch T. Adjustable building panel scaffold. 3,157,386, 11–17–64, Cl. 254—4.

Higgs, Joseph B., R. W. Carpenter, and H. G. van der Eb, to Container Corp. of America. Can carrier with chime engaging tabs. 3,157,347, 11–17–64, Cl. 229—40.

Hijiya, Kenji, Y. Nakano, and I. Kaino, to Nihon Spindle Mfg. Co. Ltd. and Nitto Boseki Co., Ltd. Fibrous raw material feeding arrangements for spinning machines. 3,157,440, 11–17–64, Cl. 302—28.

Hill, Russell P., and W. J. Tabar, to Union Carbide Corp. Process for inhibiting gel formation in polyethylene by use of A-stage paratertiaryalkylphenolformaldehyde resins. 3,157,628, 11–17–64, Cl. 260—94.9.

Hilpman, Paul, and L. F. Albert, to Eltra Corp. Linecasting machines. 3,156,959, 11–17–64, Cl. 22—71.

Hinkel, Lester H.: *See*—
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Hirsch, Joseph. Tactile communication system. 3,157,853, 11–17–64, Cl. 340—27.

Hoch, Paul E., and R. J. Bellet, to Hooker Chemical Corp. Composition comprising a polyester and a monoester of a dihydroxy-substituted benzophenone. 3,157,709, 11–17–64, Cl. 260—861.

Hochberg, Jerome, to E. I. du Pont de Nemours and Co. Process and apparatus for embossing sheet material. 3,157,723, 11–17–64, Cl. 264—861.

Hoedemaker, Robert W., and C. Molnar, to Gulton Industries, Inc. Control for magnetic memory matrix. 3,157,864, 11–17–64, Cl. 340—174.

Hoeks, Bas, to Hewlett-Packard Co. Multivibrator circuits using step recovery diodes as timing elements. 3,157,842, 11–17–64, Cl. 331—113.

Hoeppel, Ray W., and E. S. and J. E. Sorenson. Caulking compound. 3,157,520, 11–17–64, Cl. 106—33.

Hoffman, Stanley G., F. C. Van Ess, and T. J. Gillick, Jr., to Hat Corp. of America. Method for making a molded hat. 3,156,926, 11–17–64, Cl. 2—194.

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Lee, William O. Temperature responsive switch with improved strut arrangement. 3,157,767, 11–17–64, Cl. 200—137.

Leese, Leonard, to B. X. Plastics Ltd. Method of making rigid materials from vinyl chloride polymer and polymerizable plasticizer. 3,157,713, 11–17–64, Cl. 260—884.

Leimer, Albert, and S. Brunner; said Brunner assignor to said Leimer. Weft correcting apparatus. 3,156,964, 11–17–64, Cl. 26—51.3.

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Walters, Emmett L. 3,157,005.
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Lieberman, Irving, L. Zernow, and P. B. Barnett, to Aerojet-General Corp. Method of producing interior surface contour on tubular part by explosive forming. 3,156,973, 11–17–64, Cl. 29—421.
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Limberger, Walter, to Lumoprint Zindler KG. Thermographic apparatus for copying images. 3,157,786, 11–17–64, Cl. 250—65.
Lindemann, Martin K., to Air Reduction Co., Inc. Aqueous film forming compositions containing polyvinyl alcohol and phosphate ester. 3,157,611, 11–17–64, Cl. 260—29.6.
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Little, Edwin D., and D. Pickens, to Allied Chemical Corp. Production of 5-vinyl-2-oxazolidone. 3,157,668, 11–17–64, Cl. 260—307.
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Logan, Hugh H., to Logan Hospital Equipment Co. Method of making a grab bar. 3,156,977, 11–17–64, Cl. 29—475.
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Manchester, Isaac F., Jr. Sail. 3,157,149, 11–17–64, Cl 114—104.
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Moore, Jack E. and A. M. Portable bath for physiological heat treatment. 3,157,774, 11–17–64, Cl. 219—326.
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Wiberg, Frans M. 3,157,490.
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Rath, Frank E., to Spang & Co. Rotary impeller type impact apparatus. 3,157,367, 11–17–64, Cl. 241—274.
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Raye, Royce L. Locking device. 3,157,040, 11–17–64, Cl. 70—57.
Rebiscoul, Gerard. Self-clearing filters. 3,157,598, 11–17–64, Cl. 210—327.
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Burba, Bernard T. 3,157,597.
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Reicheneder, Franz, K. Dury, A. Fischer, and H. Stummeyer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. 4-chloro - 3-oxo-pyridazine-5-amidines. 3,157,646, 11–17–64, Cl. 260—240.
Reichle, Walter T., and A. A. Sousa, to Union Carbide Corp. Methods of combatting microorganisms. 3,157,570, 11–17–64, Cl. 167—30.
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Ribka, Joachim, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Water-insoluble monoazo-dyestuffs and process for preparing them. 3,157,632, 11–17–64, Cl. 260—193.
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Riley, Alfred B. Vehicle deceleration indicator. 3,157,854, 11–17–64, Cl. 340—71.
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Robinson, William W., Jr., and D. C. Camp, to Cumberland Case Co. Corner direction changer. 3,157,273, 11–17–64, Cl. 198—204.
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Rogers, Wayne C., to Riley Stoker Corp. Pulverizer. 3,157,366, 11–17–64, Cl. 241—188.
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Robecq, Etienne. Apparatuses comprising diaphragms. 3,157,763, 11–17–64, Cl. 200—83.
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Russell, James D., and E. C. Muehlfelt, to American Scientific Laboratories, Inc. Vaccine for aleutian disease (hypergammaglobuelnemia) in mink. 3,157,576, 11–17–64, Cl. 167—78.
Russell, James D., E. C. Muehlfelt, O. H. Grosse, and A. J. Ott, to American Scientific Laboratories, Inc. Antiserum and plasma for aleutian disease (hypergammaglouebinemia) in mink. 3,157,577, 11–17–64, Cl. 167—78.
Russell, Lionel E., and D. F. McNabb. Leaf pulverizer for rotary mowers. 3,157,015, 11–17–64, Cl. 56—25.4.
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Schmidt, Paul, K. Eichenberger, and M. Wilhelm, to Ciba Corp. New sulfonylureas. 3,157,700, 11–17–64, Cl. 260—553.
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Scott, John W., Jr., L. S. Stanton, and H. F. Mason, to California Research Corp. Hydrocarbon conversion process with a nitrogen containing distillate feed stock. 3,157,590, 11–17–64, Cl. 208—111.
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Seely, Richard E., to General Electric Co. Speed responsive switch arangement for use in controlling winding circuits of single phase reversible electric motors. 3,157,762, 11–17–64, Cl. 200—80.
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Sliney, Harold E., to United States of America, National Aeronautics and Space Administration. Bonded solid lubricant coating. 3,157,529, 11–17–64, Cl. 117—69.
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Somlyody, Arpad, to Burroughs Corp. Beam switching tube counting circuit with particular transfer means between electrode groups. 3,157,816, 11–17–64, Cl. 315—8.5.
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Sorenson, James L. Sterile packaging. 3,157,277, 11–17–64. Cl. 206—63.2.
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Spallina, James P., to Bartmann & Bixer, Inc. Apparatus for cutting lengths of heat-fusible fabric and sealing the cut edges thereof. 3,157,553, 11–17–64, Cl. 156—515.
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Spargur, Joseph E., and T. C. Murr. Starting device for sliding doors. 3,157,224, 11–17–64, Cl. 160—189.
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Spencer, Claude F., to The Norwich Pharmacal Co. 3-alkenyl or alkinyl 1-(5-nitrofurfurylideneamino) hydantoins. 3,157,643, 11–17–64, Cl. 260—240.
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Martin, Howard L. 3,157,587.
Speziale, Angelo J., and K. W. Ratts, to Monsanto Co. Dihalophosphonium salts. 3,157,701, 11–17–64, Cl. 260—558.
Spindler, Clemens E., to The Broyhill Co. Trench closer. 3,157,139, 11–17–64, Cl. 111—7.
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Staeuble, Max, K. Weber, and P. Hugelshofer, to Ciba Ltd. Sulfatoalkylamino derivatives of triazine and pyrimidine vat dyestuff. 3,157,653, 11–17–64, Cl. 260—249.
Stahlberg, Gosta E., to Regulator Aktiengesellschaft. Device for measuring the moisture temperature. 3,157,049, 11–17–64, Cl. 73—335.
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Stahly, Eldon E., ¾ to O. W. Burke, Jr., and ¼ to Eastman Kodak Co. Antiozonants and antiozonant compositions for elastomers. 3,157,615, 11–17–64, Cl. 260—45.9.
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Proell, Wayne A. 3,157,127.
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Sandri, Joseph M., and Fields. 3,157,697.
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Stapper, Charles H., Jr., and L. E. La Fave, to International Business Machines Corp. Printed memory circuit. 3,157,857, 11–17–64, Cl. 340—173.
Stark, Forest G., to Art Metal, Inc. Furniture construction. 3,157,446, 11–17–64, Cl. 312—195.
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Stephen, William E., C. G. Tilley, and C. E. Vellins, to Imperial Chemical Industries Ltd. Copper-containing monoazo dyestuffs having a cyanuric halide radical. 3,157,630, 11–17–64, Cl. 260—146.
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Sterner, Melvin F., K. S. Johnson, and F. S. Kerr, to Holley Carburetor Co. Spark control valve for ignition distributors. 3,157,168, 11–17–64, Cl. 123—117.
Sterner, Melvin F., N. M. Romeo, F. J. Marsee, and C. W. Miles, Jr., to Holley Carburetor Co. Carburetor. 3,157,715, 11–17–64, Cl. 261—1.
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Stookey, Stanley D., to Corning Glass Works. Low expansion glass-ceramic and method of making it. 3,157,522, 11–17–64, Cl. 106—52.
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Peterson, Seymour, and Granath. 3,157,156.
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Straub, Hermann, A. Ilium, and F. Hialek, to Zahnradfabrik Friedrichshafen, Aktiengesellschaft. Electromagnetic positive drive clutch. 3,157,260, 11–17–64. Cl. 192—84.
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Swain, Lewis C., deceased; H. D. Swain, executrix, to J. Serberlich and H. L. Smith. Tree killing agents. 3,157,484, 11–17–64, Cl. 71—2.2.
Swanson, Theodore F., to Towlsaver, Inc. Method and apparatus for cutting a bearing surface in hollow cored roll of toweling. 3,157,094, 11–17–64, Cl. 90—14.
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Szabo, Karoly, and J. R. Froli, Jr., to Stauffer Chemical Co. Partial esters of phosphoric acid and a method of preparing them. 3,157,685, 11–17–64, Cl. 260—461.
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Thomas, Ogden A., L. L. Meinert, and H. G. Houlton, to Ashland Oil & Refining Co. Method of operating a blast furnace. 3,157,491, 11–17–64, Cl. 75—42.
Thomas, William C., to Eastman Kodak Co. Device for handling a plurality of informational mediums. 3,157,425, 11–17–64, Cl. 294—87.
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Tomaluolo, Theodore J. Combination dustpan-waste receptacle cover. 3,156,941, 11–17–64, Cl. 15—257.1.
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Classification of Designs

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 17, 1964 Volume 808 Number 3

TRADEMARKS

NOTICES

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held Tuesday, February 9, 1965.

With the exception of former patent examiners for whom the examination is waived, all persons recognized for practice before the Patent Office in patent cases must, pursuant to the noted rule, pass the examination. Those passing the examination do not thereby qualify for recognition for practice in trademark cases. Recognition for practice in trademark cases is governed by Rule 2.12 of the Trademark Rules of Practice, which does not require the passing of an examination.

The examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities of the country in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be directed to the Commissioner of Patents and filed in the Patent Office not later than January 8, 1965.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Room 3718, Department of Commerce Building, Washington, D.C. 20231.

EDWIN L. REYNOLDS,
Oct. 19, 1964. *Chairman, Committee on Enrollment.*

Notice of Tentative Recordation of a Trade Name

[T.D. 56280]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., Oct. 5, 1964.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946, and section 11.16, Customs Regulations:

"ROSS ELECTRONICS CORPORATION," a corporation organized under the laws of the State of Illinois, located and doing business at 320 West Ohio Street, Chicago, Illinois, which trade name is used in connection with radios and electronic appliances, manufactured in Japan, Hong Kong, and Taiwan, Formosa.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after November 10, 1964, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after November 10, 1964, of any opposition proceeding.

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] 15,640
Date of oldest new application ..... Mar. 2, 1964
Date of oldest amended application ..... Feb. 21, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-2-64	3-2-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-2-64	2-21-64
Renewals (All Classes)	9-8-64	9-29-64
Sec. 12 (c) Publications (All Classes)	9-14-64	----

Applications filed during the month of September 1964—2175

Registrations Issued ..... 393—No. 780,088 to No. 780,480
Renewals Issued 50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Until 45 days after November 10, 1964, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

(Signed) LESTER D. JOHNSON,
Acting Commissioner of Customs.

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

The C. Von Allmen Preserving Co., Louisville, Ky., Reg. No. 214,873, Canc. No. 8326.

Sayles Biltmore Bleacheries, Inc., by change of name from Lorraine Manufacturing Company, New York, N.Y., Reg. No. 426,090, Canc. No. 8312.

Joseph Rubenstein, Chicago, Ill., Reg. No. 430,180, Canc. No. 8340.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 35,089 (GE AND DESIGN), General Electric Company, Certain named machinery, electrical apparatus, and supply parts therefor; **Reg. No. 319,639** (G.E.C.O.), same, Electric lamp sockets, electric switches, electric cord connectors, electric fuses, etc.; **Reg. No. 320,304** (GENERAL ELECTRIC AND DESIGN), same, Dynamo electric machines and parts thereof, electrical induction machines and parts thereof, capacitors and parts thereof, etc., **filed** July 31, 1963, D.C., S.D.N.Y., Doc. 63/2289, *General Electric Company v. Gruenberg Electric Company, Inc.* Stipulation and order of discontinuance June 1, 1964.

Reg. No. 242,227 (SWEETARTS AND DESIGN), Sweetarts Company, Dried prunes, **filed** June 4, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C–226(2), *Sweetarts, Inc. v. Sunline, Inc. et al.*

Reg. No. 306,582 (CALGON), The Buromin Company, Water softening and water conditioning chemical for industrial, laundry, and semi-industrial use; **Reg. No. 323,524** (CALGON WORKS WONDERS WITH WATER), same; **Reg. No. 358,518** (CALGON BOUQUET), Calgon, Inc., Perfumed water softening chemical for use in the bath and for laundering delicate fabrics; **Reg. No. 549,515** (CALGON), same, Metal cleaners and detergents for general use; **Reg. No. 570,365**, same, Water softening and water conditioning chemicals for industrial, laundry, wet cleaning, and home use; **Reg. No. 598,665** (CALGON MAKES ANY WATER SILKY WATER), same; **Reg. No. 699,145** (CALGON PLUS), Hagan Chemicals & Controls, Inc., Synthetic all-purpose detergent in powdered or granular form for general domestic and industrial use, **filed** June 25, 1964, D.C., S.D.N.Y., Doc. 64/1972, *Calgon Corp. v. Drug Research Corp. et al.*

Reg. No. 319,639. (See Reg. No. 35,089.)

Reg. No. 320,304. (See Reg. No. 35,089.)

Reg. No. 323,524. (See Reg. No. 306,582.)

Reg. No. 358,518. (See Reg. No. 306,582.)

Reg. No. 378,389 (WHO'S WHO IN AMERICA), A. N. Marquis Company, Publications in the nature of a directory published approximately once every two years; **Reg. No. 506,802** (WHO'S WHO IN COMMERCE AND INDUSTRY), same, Publication in the nature of a directory published from time to time; **Reg. No. 696,098** (WHO'S WHO IN THE SOUTH AND SOUTHWEST), Marquis-Who's Who, Inc., same; **Reg. No. 696,099** (WHO'S WHO IN THE MIDWEST), same; **Reg. No. 696,100** (WHO'S WHO IN THE WEST), same; **Reg. No. 696,101** (WHO'S WHO IN THE EAST), same; **Reg. No. 729,754** (WHO'S WHO OF AMERICAN WOMEN), same, filed Feb. 18, 1964, D.C., S.D.N.Y., Doc. 64/528, *Marquis-Who's Who, Inc. v. James H. Heineman, Inc.* Stipulation and order of dismissal June 3, 1964.

Reg. No. 378,528 (GELUSIL), William B. Warner & Co., Inc., Medicinal preparation for the rational control of gastro intestinal hyperacidity, **filed** June 23, 1964, D.C., S.D.N.Y., Doc. 64/1928, *Warner-Lambert Pharmaceutical Company v. Alexander's Department Stores, Inc.* **Same,** Doc. 64/1929, *Warner-Lambert Pharmaceutical Company v. Falk Surgical Corportation.* **Same, filed** June 23, 1964, D.C., E.D. Mich. (Detroit), Doc. 25490, *Warner-Lambert Pharmaceutical Co. v. Fedco Vitamins, Inc.*

Reg. No. 378,578 (QUILTRESS in script), Eclipse Sleep Products, Inc., Mattresses; **Reg. No. 573,272** (POSTURGUARD), same; **Reg. No. 595,168** (QUILTFOAM), same; **2,509,831**, J. Martin, STABILIZER FOR INNER SPRING UNIT, **filed** Aug. 19, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1476, *Eclipse Sleep Products, Inc. v. Sealy, Inc. et al.* Action dismissed without prejudice June 15, 1964.

Reg. No. 507,914 (MALT-A-PLENTY), Malt-A-Plenty, Inc., Non-alcoholic semi-frosen dairy food beverage and a preparation for making the same, composed of milk products, sugars, gelatins, and flavoring, **filed** June 6, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1026, *Malt-A-Plenty, Inc. v. Foremost Dairies, Inc.*

Reg. No. 508,802. (See Reg. No. 378,389.)

Reg. No. 510,519 (HOOVER), The Hoover Company, Electrical domestic and commercial suction cleaners and parts therefor; **Reg. No. 604,676**, same, Dirt collecting bags, **filed** Dec. 6, 1963, D.C., S.D.N.Y., Doc. 63/3566, *The Hoover Company v. Western Vacuum Bag Manufacturing, Inc. et al.* Consent judgment; defendants enjoined June 16, 1964.

Reg. No. 522,187 (HIDE-A-BED in script), Simmons Compay, Studio couches, sofa beds, and lounges, **filed** June 15, 1964, D.C., W.D. Tenn. (Memphis), Doc. 5219, *Simmons Company v. New Railroad Salvage Co., Inc. et al.* Final consent judgment; trademark held valid and infringed; defendants enjoined June 25, 1964.

Reg. No. 549,515. (See Reg. No. 306,582.)

Reg. No. 554,332 (BELTONA), The Decca Record Company Limited, Mechanically grooved gramophone records, **filed** Aug. 17, 1961, D.C., S.D.N.Y., Doc. 61/2951, *The Decca Record Company Limited v. Beltone Recording Corp.* Consent judgment; defendant enjoined June 18, 1964.

Reg. No. 570,365. (See Reg. No. 306,582.)

Reg. No. 571,798 (ROQUEFORT), The Community of Roquefort, Cheese, **filed** June 25, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42515, *Community of Roquefort et al. v. Scully Drug Co. et al.* **Same,** Doc. 42516, *Community of Roquefort et al. v. Gustin & Co. et al.*

Reg. No. 573,272. (See Reg. No. 378,578.)

Reg. No. 588,580 (HEBREW NATIONAL AND DESIGN), Hebrew National Kosher Sausage Company, Inc., Corned beef, tongue, salami, bologna, frankfurters, pastrami, **filed** May 27, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–552, *Hebrew National Kosher Foods, Inc. v. Judea National Kosher Provision Co., Inc.*

Reg. No. 595,168. (See Reg. No. 378,578.)

Reg. No. 598,665. (See Reg. No. 306,582.)

Reg. No. 604,676. (See Reg. No. 510,519.)

Reg. No. 606,999 (RIVIERA), United Silver and Cutlery Company, Stainless steel tableware—namely, steak knives; **Reg. No. 732,935** (RIVIERA in script), same, Chromed steel hollowware—namely, bowls, bread plates, and tidbits plates, **filed** Dec. 2, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2167, *United Silver and Cutlery Company v. Riviera Appliance Corporation et al.* Consent decree; defendants enjoined June 22, 1964.

Reg. No. 652,172 (NIKOLAI), Leroux and Company, Inc., Vodka; **Reg. No. 664,531**, same, **filed** May 9, 1963, D.C. Md. (Baltimore), Doc. 14662, *Joseph E. Seagram & Sons, Inc. v. Majestic Distilling Company, Incorporated.* Case dismissed without prejudice June 25, 1964.

Reg. No. 659,989 (FABROID), Weatherguard Products Corp., Synthetic rubberised impermeable roll sheeting for use as a waterproofing barrier, **filed** June 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–569, *Weatherguard Products Corp. v. Structural Specialties Corp.*

Reg. No. 664,531. (See Reg. No. 652,172.)

Reg. No. 676,136 (AI AUTOMATION INSTITUTE COURSES AND DESIGN), Automation Institute of America, Inc., Classroom instruction courses in business automation, **filed** June 8, 1964, D.C., S.D. Calif. (San Diego), Doc. 3078–SD–C, *Automation Institute of America et al. v. San Diego School of Business.*

Reg. No. 684,697 (PRO-TEXTION RAY), Edward S. Gremse, doing business as Atlantic Ultraviolet Co., Electrically operated ozone-producing devices employing ultra-violet ray lamps, for sanitising the inside of footwear, **filed** Apr. 3, 1963, D.C., S.D.N.Y., Doc. 63/948, *Atlantic Ultraviolet Co., Inc. v. American Machine and Foundry Co. et al.* Action dismissed June 11, 1964.

Reg. No. 690,057 (MEADOW GOLD AND DESIGN), Cornbelt Products, Inc., Hay baler twine, **filed** June 22, 1964, D.C. Nebr. (Omaha), Doc. 02063, *Corn Belt Products Company, Inc. v. Erwin Equipment, Inc.* Stipulation and order of dismissal without prejudice; defendant enjoined July 27, 1964.

Reg. No. 691,019 (REPRESENTATION OF DEVIL), William Underwood Company, Devilled ham; **Reg. No. 759,785** (UNDERWOOD AND DESIGN), same, Canned foods—namely, devilled ham, clams, sardines, etc., **filed** May 25, 1964, D.C. Mass. (Boston), Doc. 64–412–SC, *William Underwood Company v. Banner Candy Mfg. Corp. et al.*

Reg. No. 696,098. (See Reg. No. 378,389.)

Reg. No. 696,099. (See Reg. No. 378,389.)

Reg. No. 696,100. (See Reg. No. 378,389.)

Reg. No. 696,101. (See Reg. No. 378,389.)

Reg. No. 699,145. (See Reg. No. 306,582.)

Reg. No. 706,783 (LEATHER CARE), Leathercare Corporation, Liquid polish for leather, **filed** June 17, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–633, *Sidney J. Kupetz v. Theodore Charney et al.*

Reg. No. 721,716 (SAFEWAY), Safeway Stores, Incorporated, Retail grocery services, **filed** June 18, 1964, D.C. Nebr. (Omaha), Doc. 02060, *Safeway Stores, Incorporaird v. Save-way Stations et al.*

Reg. No. 724,141(a) (CONTAC), Smith, Kline & French Laboratories, Oral nasal decongestant; **Reg. No. 746,140** (MENJ), Menley & James Laboratories, Ltd., Cold preparation, **filed** June 4, 1964, D.C. Md. (Baltimore), Doc. 15607, *Menley & James Laboratories, Ltd. v. American Drug Centers Corporation.* **Same, filed** July 7, 1964, D.C. Md. (Baltimore), Doc. 15684, *Menley & James Laboratories, Ltd. v. Topps of Baltimore, Inc.* **Same, filed** July 9, 1964, D.C. Md. (Baltimore), Doc. 15695, *Menley & James Laboratories, Ltd. v. Dart Drug Corporation et al.*

Reg. No. 724,141(b) (CONTAC), Smith, Kline & French Laboratories, Oral nasal decongestant, **filed** Aug. 10, 1964, D.C. Puerto Rico (San Juan), Doc. 353–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia La. Mia.* **Same,** Doc. 354–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Zorielu.* **Same,** Doc. 355–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Maritza.* **Same,** Doc. 356–64, *Menley & James Laboratories v. Farmacia Marquez.* **Same,** Doc. 357–64, *Menley & James Laboratories, Ltd. et al. v. Mendez Patent Medicine Store.* **Same,** Doc. 358–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Raquel.* **Same,** Doc. 359–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Rebecca.* **Same,** Doc. 360–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Tonita.* **Same,** Doc. 361–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Excel, Inc.* **Same,** Doc. 362–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Teresa.* **Same,** Doc. 363–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Dory.* **Same,** Doc. 364–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Vilches.* **Same,** Doc. 365–64, *Menley & James Laboratories, Ltd. et al v. Farmacia San Francisco.* **Same,** Doc. 366–64, *Menley & James Laboratories, Ltd. et al. v. Farmacia Popular.*

Reg. No. 729,754. (See Reg. No. 378,389.)

Reg. No. 732,935. (See Reg. No. 606,999.)

Reg. No. 738,878 (LUCKIE MAGIC), Luckie Magic Corporation, Pharmaceutical product, specifically, an insecticide for killing roaches, water bugs, ants, and mice, **filed** July 11, 1962, D.C., S.D. Fla. (Jacksonville), Doc. 4949–J, *Luckie Magic Corporation v. McCall Mfg. Co., Inc.* Consent decree and judgment for defendant June 23, 1964.

Reg. No. 742,445 (LA CRIOLIA BRAND), Avelino Maldonado, doing business as Depend-On Spice Co., Foods and ingredients for foods, specifically, spices, olive oil for culinary use, corn meal, rice flour, etc., **filed** Oct. 28, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1926, *La Criolia Foods v. Las Criollas Produce.* Consent judgment; trademark held valid and infringed; defendant enjoined (notice June 2, 1964).

Reg. No. 746,140. (See Reg. No. 724,141(a).)

Reg. No. 759,785. (See Reg. No. 691,019.)

Reg. No. 762,615 (FRESH-START BY POND'S), Chesebrough-Pond's, Inc., Medicated preparation for acne and pimples, **filed** June 4, 1964, D.C., S.D.N.Y., Doc. 64/1740, *Chesebrough-Pond's, Inc. v. Revlon, Inc.*

Reg. No. 764,454 (FLIMBOARD), Edmund F. Lindner, Planning and production of pilot films for television commercials, **filed** June 9, 1964, D.C., S.D.N.Y., Doc. 64/1785, *Edmund F. Lindner v. Animatic Productions, Ltd.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 162,396. Acton Laboratories, Inc., Acton, Mass. Filed Feb. 11, 1963.

ACTON

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Instruments—Namely, Commutators.

First use July 31, 1962.

Class 26—Measuring and Scientific Appliances

For Phase Meters, Phase Standards, and Envelope Delay Meters.

First use Aug. 10, 1962.

SN 170,839. Kings Point Machinery, San Francisco, Calif. Filed June 12, 1963.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Marine Equipment, Machinery and Fittings, Industrial Hardware—Namely, Scuppers, Drain Fittings, Traps, Vent Check Valves, Deck Boxes, Cleats, Chocks, and Bollards.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Dumb Waiters and Automatic Wire Rope Lubricators.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Steam Heat Exchangers.

First use in or about August 1961.

SN 177,052. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd., Kawasaki, Japan. Filed Sept. 16, 1963.



The mark consists in part of a fanciful representation of the letters "F" and "S." Owner of Japanese Reg. Nos. 163,899–I, dated Nov. 5, 1924; 334,324, dated Aug. 30, 1940; and 605,582, dated Feb. 18, 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

For Generators; Transformers; Rotary Condensers; Static Condensers; Circuit Breakers; Electrical Transmission Switch Boards; Rectifiers of the Mercury Arc, Selenium and Silicon Type; Rotary and Contact Converters; D.C. and A.C. Motors; Electric Traction Motors; Electric Motor Starters and Speed Regulators; Voltage Regulators and the Like; Magnetic Switches; Vacuum Cleaners; Electric Fans; Electric Juicers; Toasters; Hot Plates and Irons; Electric Foot Warmers; Bed Warmers and Body Warmers; Electric Stoves; Dry Batteries; Flash Lights; Bulbs and Fluorescent Lamps; Switches for Electrical Transmission Switch Boards; Disconnecting Switches and Knife Switches; Induction Voltage Regulators; and Relays.

Class 26—Measuring and Scientific Appliances

For Watt-Hour Meters; Pyrometers; Gas Analysers; Hygrometers; Salinometers; pH Meters; Pressure Gauges; Electronic Recorders; Vacuum Meters, and Flow Meters for Water, Steam, Gas and Air; and Level Meters.

SN 177,054. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd., Kawasaki, Japan. Filed Sept. 16, 1963.

FUJI DENKI

The Japanese word "Denki" translated means "electric." The word "Denki" is disclaimed apart from the mark as a whole. Owner of Japanese Reg. Nos. 446,020, dated June 10, 1954; and 449,767, dated Aug. 16, 1954.

Class 21—Electrical Apparatus, Machines, and Supplies

For Generators; Transformers; Rotary Condensers; Static Condensers; Circuit Breakers; Electrical Transmission Switch Boards; Rectifiers of the Mercury Arc, Selenium and Silicon Type; Rotary and Contact Converters; D.C. and A.C. Motors; Electric Traction Motors; Electric Motor Starters and Speed Regulators; Voltage Regulators and the Like; Magnetic Switches; Vacuum Cleaners; Electric Fans; Radios; Television Sets; Combination Stereophonic Radio, Phonograph, and Tape Recording Sets; Electric Juicers; Toasters; Hot Plates and Irons; Electric Foot Warmers, Bed Warmers and Body Warmers; Electric Stoves; Dry Batteries; Flash Lights; Bulbs and Fluorescent Lamps; Switches for Electrical Transmission Switch Boards; Disconnecting Switches and Knife Switches; Induction Voltage Regulators; and Relays.

Class 26—Measuring and Scientific Appliances

For Watt-Hour Meters; Telemetry and Telecontrol Equipment; Pyrometers; Gas Analysers; Hygrometers; Salinometers, pH Meters; Pressure Gauges; Vacuum Meters, and Flow Meters for Water, Steam, Gas and Air; and Level Meters.

SN 177,055. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd., Kawasaki, Japan. Filed Sept. 16, 1963.

FUJI

Owner of Japanese Reg. Nos. 420,417, dated Jan. 22, 1953; and 423,568, dated Apr. 3, 1953.

Class 21—Electrical Apparatus, Machines, and Supplies

For Generators; Transformers; Rotary Condensers; Static Condensers; Circuit Breakers; Electrical Transmission Switch Boards; Rectifiers of the Mercury Arc, Selenium and Silicon Type; Rotary and Contact Converters; D.C. and A.C. Motors; Electric Traction Motors; Electric Motor Starters and Speed Regulators, Voltage Regulators and the Like; Magnetic Switches; Vacuum Cleaners; Electric Fans; Electric Juicers; Toasters; Hot Plates and Irons; Electric Foot Warmers, Bed Warmers and Body Warmers; and Electric Stoves.

Class 26—Measuring and Scientific Appliances

For Switches for Electrical Transmission Switch Boards; Disconnecting Switches and Knife Switches; Induction Voltage Regulators; Relays; and Watt-Hour Meters.

SN 186,602. Continental Copper & Steel Industries, Inc., New York, N.Y. Filed Feb. 13, 1964.

FIBERWEL

Class 12—Construction Materials

For Reefer Doors.

Class 19—Vehicles

For Lifeboats, Punts, and Rescue Boats.

Class 22—Games, Toys, and Sporting Goods

For Lifeguard Chairs, Platforms, and Floats.

First use Nov. 10, 1961.

SN 191,396. The Ironees Company, Philadelphia, Pa. Filed Apr. 17, 1964.

IRONEES

Owner of Reg. No. 554,252.

Class 6—Chemicals and Chemical Compositions

For Fabric Softener.

Class 52—Detergents and Soaps

For Steam Iron Cleaner.

First use Mar. 8, 1961.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 189,121. Union Carbide Corporation, New York, N.Y. Filed Mar. 19, 1964.

UCET

Owner of Reg. No. 701,179.
For Acetylene Black.
First use on or about Feb. 19, 1964.

SN 190,088. Thompson Chemical Company, Pawtucket, R.I. Filed Mar. 31, 1964.

TRULON

For Plastic Material—Namely, Polyvinyl Chloride Resin in Powdered Form.
First use Oct. 15, 1956.

SN 190,469. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICASET

For Polyvinyl Acetate in Emulsion or Dry Form.
First use July 15, 1954.

SN 190,533. Monsanto Canada Limited, La Salle, Quebec, Canada. Filed Apr. 7, 1964.

DRAFTACOVER

Owner of Canadian Reg. No. 132,767, dated Sept. 20, 1963.
For Plastic Sheet Materials.

Class 2—Receptacles

SN 176,000. Imperial Packaging Corporation, Baltimore, Md. Filed Aug. 29, 1963.



The words "Carrier Box" are disclaimed apart from the mark as shown.

For Collapsible Reinforced Paper Bag With Closable Top and Carrying Handle.

First use July 22, 1963.

SN 176,877. Bemis Bro. Bag Company, Minneapolis, Minn. Filed Sept. 13, 1963.

VENT-LOK

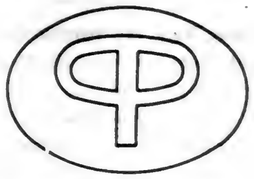
Owner of Reg. Nos. 619,247, 712,333, and others.
For Multiwall Bags Made of Paper and Plastic.
First use July 26, 1963.

SN 180,132. Southern Can Company, Tallapoosa, Ga. Filed Oct. 30, 1963.

SOUTHERN

For Cans Made of Metal, or Fibre, Cardboard or Paper, Combined or Not Combined With Metal.
First use Sept. 18, 1963.

SN 181,060. The Pantasote Company, Passaic, N.J. Filed Nov. 13, 1963.



The mark consists of "double P" symbol within a circle design.
For Plastic Tray-Like Protective Packaging Receptacles for Shipping Fragile or Perishable Goods Such as Fruits, Pharmaceuticals or Electronic Parts.
First use January or February 1962.

SN 182,540. Peak-Pac Corporation, Dearborn, Mich. Filed Nov. 18, 1963.

PEAK-PAC

For Rigid Containers for Bulk Commodities.
First use Sept. 2, 1963.

SN 186,297. White Sewing Machine Corporation, Lakewood, Ohio. Filed Feb. 7, 1964.

APEX

Owner of Reg. No. 760,713.
For Tanks, Trays, Bottles, Pressure Vessels, Tubs, Containers and Housings of Fibre-Glass Reinforced Plastic.
First use on or about Feb. 23, 1955.

SN 187,767. Lion Packaging Products Co., Inc., Hicksville, N.Y. Filed Mar. 2, 1964.

BUTCH-R-BOY

For Dispenser Boxes for Cotton Stockinette To Be Used as a Meat Wrapping.
First use Jan. 7, 1964.

SN 188,304. Triad Plastics Products, Inc., West Monroe, La. Filed Mar. 9, 1964.



For Water Tanks, Fertilizer Tanks, and Hoppers.
First use Oct. 31, 1963.

SN 192,510. Nooter Corporation, St. Louis, Mo. Filed May 1, 1964.

PLYWALL

For Hollow Vessels for High Pressure Processes and Storage Requirements for Liquids, Gases, and Combination Thereof Under Pressure.
First use Apr. 6, 1964.

SN 192,533. Union Bag-Camp Paper Corporation, New York, N.Y. Filed May 1, 1964.

FRESH-LOK

For Egg Cartons.
First use Dec. 1, 1961.

SN 195,102. Hedwin Corporation, New York, N.Y. Filed June 8, 1964.



Owner of Reg. No. 712,330.
For Plastic Bottles.
First use Oct. 18, 1963.

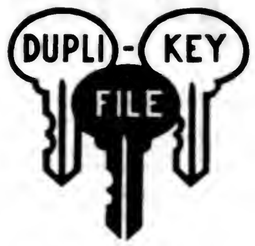
SN 199,306. Pabst Brewing Company, Milwaukee, Wis. Filed Aug. 5, 1964.



For Plastic Carriers for Cans of Beverages.
First use May 20, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 181,538. David J. Forman, Hartsdale, N.Y. Filed Nov. 20, 1963.



For Key-Carrying Folders.
First use Nov. 13, 1963.

SN 184,022. Atlantic Products Corporation, Trenton, N.J. Filed Jan. 6, 1964.

COSMO-PAK

For Hand Luggage.
First use July 1, 1963.

Class 4 — Abrasives and Polishing Materials

SN 193,457. R. O. Dahlstrom, d.b.a. R. O. "Rub" Dahlstrom & Sons, Milaca, Minn. Filed May 14, 1964.

RED-E-RUB

For Sanding Blocks.
First use Mar. 16, 1964.

SN 193,828. Vangard Chemical Corporation, St. Louis, Mo. Filed May 19, 1964.

PEACOCK

For Shoe Dressing and Polish.
First use Apr. 28, 1964.

Class 5 — Adhesives

SN 179,010. Allegheny Steel Corporation, Bryn Mawr, Pa. Filed Oct. 15, 1963.

FORMULA T-308

The term "Formula" is disclaimed apart from the mark as shown.
For Tire Sealing Compound.
First use Feb. 1, 1963.

SN 179,042. Harrison Auto Paint Shop, Inc., Los Angeles, Calif. Filed Oct. 15, 1963.

"DURA-MASK"

For Adhesive-Coated Tape Such as Masking Tape and Liquid Adhesive Products for General Household and Commercial Purposes.
First use Mar. 30, 1963.

SN 179,699. Corrosion Products, Inc., St. Louis, Mo. Filed Oct. 24, 1963.

CP262

For Adhesives for Bonding Plastic Materials—Namely, Adhesives for Improving the Bonding Properties of Plastic Tapes.
First use Apr. 5, 1962.

SN 193,601. Adhesive Engineering Company, San Carlos, Calif. Filed May 18, 1964.



For Synthetic Resin Adhesives for Filling Voids and Cracks in Structures, Bonding Structures Together, Patching or Grouting Structures, Surfacing of Structures, and for General Construction Purposes; and Adhesion Primers.
First use September 1956.

SN 194,055. Magic Garter Company, Inc., Torrance, Calif. Filed May 22, 1964.

MAGIC GARTER

No registration rights are claimed for the word "Garter" apart from the mark as shown; but the applicant waives none of its common law rights in said mark or any feature thereof.
For Fabric Adherent for Holding Up Hose.
First use Feb. 29, 1964.

Class 6 — Chemicals and Chemical Compositions

SN 162,725. Foseco International Limited, Birmingham, England. Filed Feb. 14, 1963.

PELLOIDS

For Preparations for Deoxidizing and Increasing the Fluidity of Copper Base Alloys—Namely, Brass, Gunmetal, and Tin-Bronze Alloys Containing Lead and Which Are Especially Suitable for Ladle Treatment.
First use Oct. 11, 1960; in commerce Oct. 11, 1960.

SN 171,639. General Aniline & Film Corporation, New York, N.Y. Filed June 24, 1963.

B_1D

For Chemical Butanediol.
First use Apr. 3, 1963.

SN 171,640. General Aniline & Film Corporation, New York, N.Y. Filed June 24, 1963.

B_2D

For Chemical Butenediol.
First use Apr. 3, 1963.

SN 171,642. General Aniline & Film Corporation, New York, N.Y. Filed June 24, 1963.

B_3D

For Chemical Butynediol.
First use Apr. 3, 1963.

SN 172,341. Roure-Dupont, Inc., New York, N.Y. Filed July 2, 1963.

ROURE DUPONT

The black rectangle shown in the drawing is for background purposes only and forms no part of the mark.
For Perfume Concentrates for Inclusion in Cosmetics, Toiletries, Insecticides, Detergents, and Other Perfumed Goods.
First use approximately 1940.

SN 172,344. Roure-Dupont, Inc., New York, N.Y. Filed July 2, 1963.

ROURE DUPONT

For Perfume Concentrates for Inclusion in Cosmetics, Toiletries, Insecticides, Detergents, and Other Perfumed Goods.
First use approximately 1940.

SN 176,749. Roure-Dupont, Inc., New York, N.Y. Filed Sept. 11, 1963.

ROURE

For Perfume Concentrates for Inclusion in Cosmetics, Toiletries, Insecticides, Detergents, and Other Perfumed Goods.
First use approximately 1940.

SN 177,230. Chipman Chemical Company, Burlingame, Calif. Filed Sept. 18, 1963.

BUTOXONE

For Weed Killer.
First use Mar. 30, 1962.

SN 177,628. Grow Solvent Company, Inc., Detroit, Mich. Filed Sept. 24, 1963.

GS

For Chemicals and Chemical Compositions—Namely, Solvents for Paint, Lacquer, and Synthetic Resins.
First use 1950.

SN 177,629. Grow Solvent Company, Inc., Detroit, Mich. Filed Sept. 24, 1963.

GS CO

The letters "CO" are disclaimed apart from the mark.
For Chemicals and Chemical Compositions—Namely, Hydrocarbon Solvents, Chlorinated Solvents, Alcohols, Ketones, Esters, Lighter Fluid, and Thinners for Paint, Lacquer, and Synthetic Resins.
First use 1947.

SN 177,630. Grow Solvent Company, Inc., Detroit, Mich. Filed Sept. 24, 1963.

GROW

For Chemicals and Chemical Compositions—Namely, Hydrocarbon Solvents, Chlorinated Solvents, Alcohols, Ketones, Esters, Lighter Fluid, and Thinners for Paint, Lacquer, and Synthetic Resins.
First use Dec. 1, 1934.

SN 178,425. The Dow Chemical Company, Midland, Mich. Filed Oct. 7, 1963.

HEVIWATER

For Chemical Compositions Useful as a Completion Fluid or Packer Brine in Underground Earth Formations.
First use Aug. 23, 1963.

SN 178,426. The Dow Chemical Company, Midland, Mich. Filed Oct. 7, 1963.

EZEFLO

For Surface Active Agent.
First use Mar. 28, 1960.

SN 179,351. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Oct. 18, 1963.

GRAVINDEX

For Diagnostic Reagents.
First use Sept. 12, 1963.

SN 179,378. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 18, 1963.

LOXSIT

For Neutralising and Bactericidal Composition for Commercial Laundries.
First use June 25, 1963.

SN 180,962. William T. Sakai, d.b.a. Medica Media, Palo Alto, Calif. Filed Nov. 12, 1963.

STREPLATE

For Preparation in a Petri Dish for Screening Hemolytic Streptococcus for Laboratory Use.
First use Jan. 10, 1958.

SN 182,844. Syncro-Mist Controls, Inc., New York, N.Y. Filed Dec. 11, 1963.

KANCEL

For Germicide and Room Deodorant in Aerosol Form for Household and Industrial Use.
First use July 24, 1958.

SN 186,630. The Moreland Chemical Company, Spartanburg, S.C. Filed Feb. 13, 1964.

M

For Industrial Chemicals—Namely, Sodium Hydroxide, Sulfuric Acid, and Acetic Acid.
First use October 1955.

SN 188,689. West Chemical Products, Inc., Long Island City, N.Y. Filed Mar. 13, 1964.

BUG-A-BYE

For Aerosol Insecticide.
First use Feb. 26, 1964.

SN 188,957. Champion Chemicals, Inc., Odessa, Tex. Filed Mar. 18, 1964.

YELLOW HAMMER

The drawing is lined for yellow.
For Agricultural Pesticides.
First use July 1, 1963.

SN 189,412. Woodbury Chemical Company, St. Joseph, Mo. Filed Mar. 23, 1964.

HEPTALUBE

For Insecticide Seed Treatment Compound.
First use Apr. 25, 1961.

SN 189,438. Checkmate Chemicals, Inc., Greenville, S.C. Filed Mar. 24, 1964.

KNIGHTSET

For Fabric Stabilizing Resin.
First use Mar. 17, 1964.

SN 190,837. The Tanatex Chemical Corporation, Lyndhurst, N.J. Filed Apr. 10, 1964.

MIGRASSIST

For Leveling Agent for Cationic Dyes.
First use July 17, 1963.

Class 7 — Cordage

SN 171,083. Broderick & Bascom Rope Company, St. Louis, Mo. Filed June 17, 1963.

300 FS

For Wire Rope and Slings.
First use Apr. 19, 1963.

SN 192,989. Chicago Printed String Co., Chicago, Ill. Filed May 8, 1964.

bonette

For Rayon Ribbon and Prefabricated Bows Thereof.
First use on or about Feb. 16, 1964.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 195,796. Lane Limited, New York, N.Y. Filed June 16, 1964.

BLACK KNIGHT

Owner of Reg. No. 659,722.
For Pipes.
First use April 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 176,638. Diamond National Corporation, New York, N.Y. Filed Sept. 10, 1963.

D N

Owner of Reg. Nos. 167,347, 771,379, and others.
For Matches.
First use Mar. 29, 1961.

Class 10 — Fertilizers

SN 183,034. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Dec. 16, 1963.

BREA

Owner of Reg. Nos. 585,148 and 603,175.
For Fertilizers—Namely, Ammonia, Ammonium Compounds, Phosphate Compounds, and Superphosphates.
First use April 1958.

SN 183,196. American Agricultural Chemical Company, New York, N.Y. Filed Dec. 18, 1963.

AGRI-TONE

Owner of Reg. Nos. 170,622, 754,426, and others.
For Water Soluble Plant Food.
First use Aug. 21, 1963.

Class 12 — Construction Materials

SN 175,882. Service Industries, Philadelphia, Pa. Filed Aug. 27, 1963.

ROBUST

For Patching Material for Driveways, Parking Lots, Road, Street, and Sidewalk Hole Repairs.
First use July 25, 1963.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 133,520. Air Space Devices, Inc., Burbank, Calif. Filed Dec. 7, 1961.

SAF-T-CLIMB

For Safety Climbing Device for Ladders, Towers and Tall Buildings Comprising a Belt, Locking Sleeve and Notched Rail.
First use Aug. 1, 1961.

SN 152,255. Taco, Inc., Cranston, R.I., by change of name from Taco Heaters, Incorporated, Cranston, R.I. Filed Aug. 30, 1962.

SCOOP-VENT

Owner of Reg. No. 610,535.
For Deaerating Pipe Fitting Device Insertable in the Outlet Pipe of a Hot Water Heating System Boiler To Permit the Escape of Air.
First use Feb. 14, 1962.

SN 160,005. Aurelio Porciani, d.b.a. Ettore Porciani & Figlio, Pistoria, Italy. Filed S.R. Dec. 31, 1962; Am. P.R. Jan. 30, 1964.

bongusto

For Cooking Pots of Metal, That Is of Copper, Brass, Nickel, Nickel-Silver, Steel, Iron, and Enameled Iron.
First use September 1949; in commerce May 1953.

SN 173,844. Illinois Tool Works, Inc., Chicago, Ill. Filed July 26, 1963.

SHAKEPROOF FASTENING RESEARCH, DEVELOPMENT AND PRODUCTION HEADQUARTERS

Owner of Reg. Nos. 514,706, 555,592, and others.
For Thread Cutting Screws, Locking Screws, Assembled Screws and Washers, Lockwashers, Plain Metal Washers, Nuts, Quick Opening Fasteners for Industrial Use, Machine Screws, Set Screws, Drive Screws, and Molding Clips.
First use July 11, 1963.

SN 182,851. The Weatherhead Company, Cleveland, Ohio. Filed Dec. 11, 1963.

SERMETO

Owner of Reg. No. 328,353.
For Couplings and Fittings for Pipes, Tubes, and the Like.
First use on or about Dec. 9, 1963.

SN 184,263. The Stafford Specialty Products, Incorporated, Stafford Springs, Conn. Filed Jan. 8, 1964.

TOPIC

For Cast Bells.
First use Oct. 14, 1963.

SN 186,298. White Sewing Machine Corporation, Lakewood, Ohio. Filed Feb. 7, 1964.

APEX

Owner of Reg. No. 760,713.
For Pipe and Tubing of Fibre-Glass Reinforced Plastic.
First use on or about June 6, 1960.

SN 191,527. Elastic Stop Nut Corporation of America, Union, N.J. Filed Apr. 20, 1964.

the red nylon ring O *of reliability*

The drawing is lined for red. Owner of Reg. Nos. 611,674, 620,297, and 724,118.
For Lock Nuts.
First use Mar. 9, 1964.

SN 195,701. Parker Trading Company, San Francisco, Calif. Filed June 15, 1964.

PASCO

For Valves for Industrial, Agricultural, and Domestic Purposes, Including Oil, Irrigational, and Plumbing Valves.
First use June 9, 1959.

SN 195,950. Manning, Maxwell & Moore, Incorporated, Stratford, Conn. Filed June 18, 1964.

MAXIFLOW

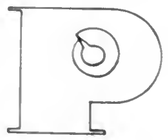
For Steam Safety Valves.
First use Jan. 27, 1964.

SN 196,075. Stephen A. Young Corporation, Flora, Ind. Filed June 19, 1964.

LUCKY 7

For Plumbing Fixtures—Namely, Tub Fillers Including Valve Body Units, Handles, Escutcheons, Spouts, Diverter Bath and Shower Valves, Diverter Tub and Shower Spouts, Shower Heads, Over-Rim Spouts, Plain Shower Valves, Sink Faucets, Lavatory Drains, Lavatory Faucets, Bath Faucets, Trip-Lever Drains, Bibbs and Stops; and Parts Therefor—Namely, Handles, Flanges, Stems, Bonnets, Renewable Seats, Nipples, Lift Rods, Waste T's, Slip Nuts, Canopies, Shower Arms and Sink Faucet Spouts.
First use in or about February 1964.

SN 196,105. The Bishop and Babcock Corporation, Toledo, Ohio. Filed June 22, 1964.



For Sheet Metal Fastening Devices, Including J-Shaped Clips, C-Shaped Clips, Flat Nuts Having Screw-Receiving Impressions; Bridge Spacers, Capacitor Clips, Push-On Fasteners, Tube and Wire Clips, Yoke Clamp Fasteners, Snap Nut Fasteners, Retainer Rings, Angle Bracket Fasteners, and Vehicle Body Fasteners.
First use June 1964.

SN 196,136. Florida Pipe & Foundry Co., Haines City, Fla. Filed June 22, 1964.

Sim-pli'ci-ty

For Plumbing Fittings, Including One-Piece Carriers for Fixture Support, Tiling Frames and Covers for Wall Hung Fixtures, Tiling Frame for Floor Mounted Fixtures, Copper Adaptors, Lead Adaptors, and Hanger Type Adaptors.
First use May 15, 1964.

SN 196,152. H-P Products, Inc., Louisville, Ohio. Filed June 22, 1964.

H-P

Owner of Reg. No. 593,523.
For Tubings and Fittings for Conveying and Handling Liquids, Gases or Air Using Either Negative or Positive Pressure.
First use Jan. 28, 1964.

SN 197,243. American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. Filed July 7, 1964.



Owner of Reg. No. 753,963.
For Irrigation Pipe, Pipe Couplers, and Pipe Jacketing.
First use Feb. 4, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 179,613. Chase Brass & Copper Co., Waterbury, Conn. Filed Oct. 23, 1963.



The drawing is lined for blue.
For Brass Rod.
First use in or about March 1961.

SN 185,196. Columbia Steel Casting Co., Inc., Portland, Oreg. Filed Jan. 23, 1964.



Applicant disclaims the exclusive right to the words "Armor-Tough," and "Manganese Steel," except as shown herein.
For Metal Castings.
First use on or before Sept. 1, 1958.

SN 197,242. American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. Filed July 7, 1964.



Owner of Reg. No. 753,963.
For Aluminum Products in Various Shapes Including Sheet, Strip, Foil, Tubing, Pipe, Rod, Bar and Plate; Corrugated Sheet and Strip and Prepainted Sheet and Strip Materials.
First use Feb. 4, 1964.

Class 15 — Oils and Greases

SN 163,092. Western Beeswax Candle Co., Ltd., Creston British Columbia, Canada. Filed Feb. 19, 1963.

HONEY



LITE

Applicant disclaims exclusive right in the word "Lite" apart from the mark as shown.
For Candles.
First use September 1962; in commerce September 1962.

SN 164,025. Erickson Petroleum Corporation, Minneapolis, Minn. Filed Mar. 6, 1963.

Holiday

The drawing is lined for the colors red and blue.
For Gasoline.
First use Aug. 15, 1956.

SN 164,026. Erickson Petroleum Corporation, Minneapolis, Minn. Filed Mar. 6, 1963.

Holiday

The drawing is lined for the colors red and blue.
For Gasoline.
First use Aug. 15, 1956.

SN 182,834. Randall's United Petroleum Company, Inc., Los Angeles, Calif. Filed Dec. 11, 1963.

"C#362" GREASE

No claim is made to the word "Grease" apart from the mark as shown.
For Lubricating Grease for Machinery.
First use Sept. 6, 1963.

SN 194,427. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHISPIN

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use January 1952.

SN 194,428. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHISTOK

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use January 1952.

SN 194,430. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHILIFT

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use November 1960.

SN 194,431. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

FACTOIL

Owner of Reg. No. 190,708.
For Lubricant for Industrial Use.
First use January 1952.

SN 194,434. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHITEK

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use January 1952.

SN 194,435. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHIMIL

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use March 1957.

SN 194,436. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHIFILM

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use October 1957.

SN 195,559. The Standard Oil Company, Cleveland, Ohio. Filed June 12, 1964.

SOHIOTRAK

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use March 1957.

SN 195,561. The Standard Oil Company, Cleveland, Ohio. Filed June 12, 1964.

STANJUR

For Lubricant for Industrial Use.
First use January 1952.

SN 197,440. Texaco Inc., New York, N.Y. Filed July 8, 1964.

COOLTEX

For Metal Working Fluid.
First use June 1957.

Class 16—Protective and Decorative Coatings

SN 183,668. Detroit Graphite Company, Inc., Rockford, Ill. Filed Dec. 27, 1963.

ACRI/GARD

For Maintenance Coatings in the Nature of Paint for Industrial and Public Buildings, and Industrial Equipment.
First use about Apr. 12, 1963.

SN 184,706. Detrex Chemical Industries, Inc., Detroit, Mich. Filed Jan. 16, 1964.

BOOTH-TROL

For Paint Additives To Prevent the Fouling of Spray Booths and Spray Booth Equipment.
First use Nov. 14, 1963.

SN 185,727. Standard Oil Company of California, San Francisco, Calif. Filed Jan. 30, 1964.

CHEVRON

Owner of Reg. No. 660,010 and others.
For Thinners and Solvents for Paints, Lacquers, Enamels, and Varnishes.
First use May 21, 1963.

SN 186,819. Ultra Adhesives, Inc., Paterson, N.J. Filed Mar. 16, 1964.

Leolac

For Interior and Exterior Paint for Masonry, Stucco, Brick, Plaster, Concrete, Wood, Wallboard, and the Like.
First use Oct. 6, 1962.

Class 17—Tobacco Products

SN 194,836. Smokers' Haven, Inc., Columbus, Ohio. Filed June 3, 1964.



For Pipe Tobacco.
First use July 17, 1962.

SN 195,220. Garcia y Vega, Inc., New York, N.Y. Filed June 9, 1964.

DAPPER

For Cigars.
First use on or about May 15, 1964.

SN 195,305. Lane Limited, New York, N.Y. Filed June 10, 1964.

ACHIEVEMENT

For Smoking Tobacco.
First use April 1964.

SN 195,306. Lane Limited, New York, N.Y. Filed June 10, 1964.

MELBOURNE

For Smoking Tobacco.
First use April 1964.

SN 196,103. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed June 22, 1964.

COMPACTO

For Cigars.
First use May 22, 1964.

SN 196,112. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

NASSORD

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,113. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

CORNELI

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,114. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

CONWEY

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,116. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

CULVERT

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,117. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

CAMDRON

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,118. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

KIK

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 196,454. P. Lorillard Company, New York, N.Y. Filed June 25, 1964.

ERIK

For Cigars.
First use May 11, 1964.

SN 197,786. Societe de Financement Industriel, Commercial et Agricole—S.O.F.I.C.A.L., Paris, France. Filed July 13, 1964.



Owner of French Reg. No. 8,418, dated Aug. 28, 1961 (Algiers); Natl. Inst. No. 170,588.
For Tobacco, Cigars, and Cigarettes.

SN 198,894. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

PHASE III

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

SN 198,896. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

VAPOSORB

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

SN 172,398. Norden Laboratories, Inc., Lincoln, Nebr. Filed July 3, 1963.

FUNGIDEX

For Therapeutic Preparation for Treatment of Superficial Fungous Infections and as an Antipruritic, Used in Veterinary Medicine.
First use June 4, 1954.

SN 176,666. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed Sept. 10, 1963.

DURAC

For Analgesic Preparation.
First use Aug. 28, 1963.

SN 179,430. Kwik Veterinary Products, Inc., East Aurora, N.Y. Filed Oct. 21, 1963.

KWIK

For Veterinary Preparations—Namely, Liniment and Tightener, Freeze and Paint.
First use in or about February 1951.

SN 181,730. Abbott Laboratories, North Chicago, Ill. Filed Nov. 22, 1963.

CALMANYL

For Pharmaceutical Preparation Having Tranquilising Antihypertensive Properties.
First use Oct. 25, 1963.

SN 182,148. American Home Products Corporation, New York, N.Y. Filed Dec. 2, 1963.

ALL BETTER

For Antiseptic and Analgesic First Aid Preparation.
First use Nov. 5, 1963.

SN 182,678. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Dec. 9, 1963.

SEQUENYL

For Steroid Hormone Preparation for Oral Use in Contraceptive and Other Sequential Therapy Indications.
First use Oct. 30, 1963.

SN 182,709. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 10, 1963.

HANDY-BAND

For First-Aid Preparation for Minor Injuries Such as Cuts, Burns, Scrapes, and Non-Poisonous Insect Bites.
First use May 15, 1963.

SN 183,720. A. H. Robins Company, Inc., Richmond, Va. Filed Dec. 30, 1963.

SULLA

For Medicinal Preparation for Use in the Treatment of Urinary and Upper Respiratory Infections.
First use Dec. 10, 1963.

SN 186,820. Dawe's Laboratories, Inc., Chicago, Ill. Filed Feb. 17, 1964.

FLAVONNE

Owner of Reg. No. 407,392.
For Soluble Vitamin Supplement Used in Combination With Animal and Poultry Feeds.
First use Sept. 20, 1939.

SN 190,063. Concentrates Development Co., Oakland, Calif. Filed Apr. 1, 1964.

Conxde

For Dietary Concentrates; Vitamin Complexes, Including Vitamin C, Vitamin E, Vitamin A; Liver Complexes; Lypotropic-Adjunct; and Digestive Adjunct.
First use Jan. 27, 1964.

SN 190,476. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. Filed Apr. 7, 1964.

FINTAN

Owner of Swedish Reg. No. 107,731, dated Oct. 18, 1963.
For Pharmaceutical Preparations for the Treatment of Anemias.

SN 195,072. The Dow Chemical Company, Midland, Mich. Filed June 8, 1964.

TISSUVAX

Owner of Reg. No. 764,956.
For Canine Distemper Vaccine.
First use June 27, 1960.

SN 195,235. Neisler Laboratories, Inc., Decatur, Ill. Filed June 9, 1964.

LEXAR

For Skeletal Muscle Relaxant.
First use May 22, 1964.

Class 19 — Vehicles

SN 180,690. Trailex, Inc., Canfield, Ohio. Filed Nov. 7, 1963.

TRAILEX

For Open Metal Frame Trailers for Boats and Other Articles.
First use Aug. 1, 1963.

SN 187,918. Dura Corporation, d.b.a. Page & Page Co., Oak Park, Mich. Filed Mar. 4, 1964.



For Automotive Trailers for Transporting Logs, Heavy Machinery, Automobiles and the Like; Suspension Systems for Automotive Trucks and Trailers; and Devices for Mounting and Securing Vehicles on Railroad Flat Cars.
First use October 1951.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 149,387. Gotham Lighting Corp., Long Island City, N.Y. Filed July 19, 1962.



For Plastic Enclosures for Lighting Fixtures.
First use 1946.

SN 167,055. The Staver Company, Inc., Bay Shore, N.Y. Filed Apr. 18, 1963.

THERMO-FLAG

For Heat Dissipating Elements for Electronic Components and Particularly for Semi-Conductors.
First use July 26, 1962.

SN 167,056. The Staver Company, Inc., Bay Shore, N.Y. Filed Apr. 18, 1963.

THERMO-FLUE

For Heat Dissipating Elements for Electronic Components and Particularly for Semi-Conductors.
First use Nov. 27, 1962.

SN 167,057. The Staver Company, Inc., Bay Shore, N.Y. Filed Apr. 18, 1963.

THERMO-SINK

For Heat Dissipating Elements for Electronic Components and Particularly for Semi-Conductors.
First use Oct. 9, 1962.

SN 167,058. The Staver Company, Inc., Bay Shore, N.Y. Filed Apr. 18, 1963.

THERMO-VANE

For Heat Dissipating Elements for Electronic Components and Particularly for Semi-Conductors.
First use Oct. 11, 1962.

SN 167,716. Far Eastern Commerce Corporation, New York, N.Y. Filed Apr. 29, 1963.

TELSTAR

For Flashlights, Lanterns, Warning and Signalling Lamps of the Flashlight Type, and Dry Cell Batteries.
First use Apr. 11, 1963.

SN 175,358. Monroe Electronics, Inc., Middleport, N.Y. Filed Aug. 16, 1963.

ISOPROBE

For Electronic Adaptors for Isolating Loads From Their Driving Sources.
First use Mar. 22, 1962.

SN 178,892. Erie Technological Products, Inc., Erie, Pa. Filed Oct. 4, 1963.

ERIE

WHERE IMAGINATION
CREATES VALUE
IN ELECTRONICS

Owner of Reg. Nos. 541,627, 754,957, and others.
For Electrical Circuit Components—Namely, Capacitors, Resistors, Semiconductors, and Combinations Thereof.
First use Sept. 24, 1963.

SN 178,886. Crown Radio Corporation, New York, N.Y. Filed Oct. 14, 1963.

NICCAD

For Radios.
First use July 2, 1963.

SN 178,945. Model Engineering and Manufacturing Corporation, Salt Lake City, Utah. Filed Oct. 14, 1963.

MONTEK

For Amplifiers and Amplifier Systems, Closed Circuit Television Systems, and Radio Communication Systems.
First use May 28, 1955.

SN 180,163. Alcron, Inc., New York, N.Y. Filed Oct. 31, 1963.

ALCRON

For Flashlights, Lanterns, Batteries, and Warning Lights.
First use Sept. 19, 1963.

SN 184,859. Vernitron Corporation, Farmingdale, N.Y. Filed Jan. 17, 1964.

DEWALD

For Amplifiers, Radio Parts and Accessories—Namely, Tuners, Adapters, and Transceivers.
First use July 1, 1929.

SN 186,242. Fairchild Camera and Instrument Corporation, Mountain View, Calif. Filed Feb. 7, 1964.

MWμL

For Semiconductor Integrated Circuits.
First use Jan. 30, 1964.

SN 186,896. Rival Manufacturing Company, Kansas City, Mo. Filed Feb. 17, 1964.

ARISTOCRAT

Owner of Reg. No. 776,937.
For Electrical Appliances—Namely, Can Openers, Ice Crushers, Food Grinders, and Food Blenders.
First use July 1, 1959, on can openers.

SN 187,539. Thompson-Starrett Company, Inc., New York, N.Y. Filed Feb. 26, 1964.

SHAW

For Radios, Televisions, Radio and Television Combinations, and Radio, Television, and Phonograph Combinations.
First use Jan. 4, 1955.

SN 188,585. Sensatronics, Inc., Davenport, Iowa. Filed Mar. 12, 1964.

TEL-A-LERT

For Alarm, Warning and Communication Systems Employing Electrical Apparatus.
First use Aug. 5, 1963.

SN 190,417. New England Instrument Company, Natick, Mass. Filed Apr. 6, 1964.

nei

Owner of Reg. No. 728,812.
For Electrical Resistors—Namely, Potentiometers.
First use at least as early as Aug. 9, 1963.

SN 190,520. Illinois Tool Works Inc., Chicago, Ill. Filed Apr. 7, 1964.

VERTICAP

For Small Electronic Components Comprising Modules, Capacitors, Resistors, Transistors, Diodes, and Precision Ceramic Parts for the Foregoing.
First use Mar. 19, 1964.

SN 190,867. Bretford Manufacturing, Inc., Schiller Park, Ill. Filed Apr. 13, 1964.

BRETFORD

For Supporting Stands for Sun Lamps, Incandescent Lamps and the Like.
First use June 27, 1949.

SN 190,877. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

ALPHA-VU

For Indoor Antennas.
First use Mar. 20, 1964.

SN 190,879. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

KAPPA-VU

For Indoor Antennas.
First use Mar. 20, 1964.

SN 190,880. Channel Master Corp., Ellenville, N.Y. Filed Apr. 13, 1964.

LAMBDA-VU

For Indoor Antennas.
First use Mar. 20, 1964.

SN 191,102. Hav-Tek Designers Inc., Endicott, N.Y. Filed Apr. 10, 1964.



For Printed Electronic Circuit Boards.
First use Nov. 5, 1958.

SN 193,587. Sunbeam Lighting Company, Los Angeles, Calif. Filed May 15, 1964.

SELECTRA

For Recessed Fluorescent Lighting Fixtures.
First use on or about Feb. 3, 1964.

SN 197,434. Signetics Corporation, Sunnyvale, Calif. Filed July 8, 1964.

UTILOGIC

For Integrated Solid State Logic Elements.
First use July 1, 1964.

SN 198,592. Scoville Manufacturing Company, Waterbury, Conn. Filed July 27, 1964.

DYNATRON

For Flash Lights.
First use Mar. 1, 1963.

Class 22 — Games, Toys, and Sporting Goods

SN 177,176. Jolly Toys, Inc., New York, N.Y. Filed Sept. 17, 1963.

CUTIE PIE

For Dolls.
First use Aug. 26, 1963.

SN 183,763. Jak-Pak, Inc., Milwaukee, Wis. Filed Dec. 30, 1963.

JINGLE JUMP

For Amusement and Exercising Device Adapted for Attachment to One Foot and Having an Orbiting Ball Tethered by a Cord Adapted To Be Skipped Over by the Other Foot.
First use Oct. 15, 1963.

SN 184,274. L. K. Hecht Co., Inc., New York, N.Y. Filed Jan. 7, 1964.

PEWEE THE WOOD PECKER

No claim of exclusive right is made to "The Wood Pecker" for the goods recited.
For Woodpecker Toy.
First use June 10, 1952.

SN 186,485. Volkswagen of America, Inc., Englewood Cliffs, N.J. Filed Feb. 11, 1964.

TOURISMO

For Equipment (or Apparatus) Constituting a Unit for Playing a Sightseeing Game.
First use Jan. 16, 1964.

SN 187,019. Bruce J. Johnson, Shawnee Mission, Kans. Filed Feb. 19, 1964.

BID 'N' BUY

For Equipment Sold as a Unit for Playing a Parlor-Type Auction Game.
First use Nov. 27, 1963.

SN 187,060. Advance Casting Corporation, Santa Monica, Calif. Filed Feb. 20, 1964.

CENTER ℄ LINE

For Golf Clubs.
First use on or before Feb. 5, 1964.

SN 188,127. Momoi Company, Inc., Long Beach, Calif. Mar. 6, 1964.

LIVLON

For Fishnetting, Said Fishnetting Being Especially Fabricated in Such Configuration and of Such Material as To Be Particularly Intended for Fabrication Into Fish Nets.
First use Feb. 3, 1955.

SN 188,254. Louis Marx & Co. Inc., New York, N.Y. Filed Mar. 9, 1964.

PRESENTATION SERIES

No claim is made to the word "Series" apart from the mark as shown.
For Toy Guns.
First use Jan. 24, 1964.

SN 189,865. Richard D. Bottorff, Mishawaka, Ind. Filed Mar. 30, 1964.

PORT-A-CORT

For Basketball Goal Standard.
First use July 30, 1963.

SN 190,080. J. Halpern Company, Pittsburgh, Pa. Filed Apr. 1, 1964.

PAK-O-FUN

For Halloween Costume and Bag Set.
First use Jan. 7, 1964.

SN 190,321. American Russkit Company, Los Angeles, Calif. Filed Apr. 6, 1964.

R

For Model Car Bodies; Scale Metal and Plastic Parts for Construction of Scale Racing Cars; Wheels, Tires, Axles, Bearings, and Electrical Controllers for Scale Racing Cars; Decals for Model Racing Cars; Plastic Coating for Model Racing Car Bodies; Kits for Building Scale Racing Dragsters.
First use September 1962.

SN 190,521. Jaymar Specialty Company, Brooklyn, N.Y. Filed Apr. 7, 1964.

KLIK POOL

For Game Apparatus Comprising Inclined Tracks Along Which Balls Are Propelled to Stops Having Score Values.
First use Mar. 27, 1964.

SN 190,605. Flex Products, Inc., Detroit, Mich. Filed Apr. 8, 1964.



For Boomerangs.
First use Oct. 17, 1963.

SN 190,607. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

BLABBER MOUTH

For Artificial Fish Lures.
First use Jan. 30, 1964.

SN 190,608. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

BASSPIRIN

For Artificial Fish Lures.
First use Jan. 30, 1964.

SN 190,609. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

NIMBLE NOSE

For Artificial Fish Lures.
First use Jan. 30, 1964.

SN 190,610. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

BUMP 'N' GRIND

For Artificial Fish Lures.
First use Jan. 30, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 148,533. Projecting AB, Stockholm, Sweden. Filed July 6, 1962.

RADIKON

Owner of Swedish Reg. No. 102,347, dated Mar. 23, 1962.
For Centrifugal Separators for Separating Discrete Particles From Gaseous and Liquid Fluids; Centrifugal Particle Separators for Separating Discrete Particles in Suspensions; Hydrocyclone Separators for Separating Discrete Particles in Gaseous and Liquid Fluids; and Parts of the Afore-Listed Types of Separators.

SN 157,634. Mosstype Corporation, Waldwick, N.J. Filed Nov. 20, 1962.

SNAP-LOK

For Printing Plate Cylinders and Plate Carriers for Rotary Printing Presses.
First use Oct. 17, 1962.

SN 160,446. Seitz-Werke G.m.b.H., Bad Kreuznach, Germany. Filed Jan. 9, 1963.



Priority claimed under Sec. 44(d) on German application filed Oct. 4, 1962; Reg. No. 784,296, dated Feb. 21, 1964. The term "Three Chamber System" is hereby disclaimed apart from the mark. Owner of U.S. Reg. No. 667,676.
For Counter-Pressure Filling Machines for Liquids.

SN 169,374. Henschel-Werke Aktiengesellschaft, Kassel, Germany. Filed May 21, 1963.

HENSCHEL

Owner of German Reg. No. 687,109, dated Feb. 1, 1956.
For Locomotives, Diesel Engines for Land and Water Vehicles and for Power Generators, Road Building and Earth Moving Equipment—Namely, Rollers, Graders, Wheeldozers, Motor Scrapers, Tractors, Fluidising Mixers and Extruders, Machine Tools—Namely, Milling, Drilling, Boring, Tapping Machinery and Gear Shapers, Cast and Forged Parts Plant and Equipment—Namely, Presses, Rolling Mills, Pickling Plants, Can Making Machines, Castings and Forgings, Axles and Transmissions—Namely, Driven Steering Axles for Road Traction Vehicles, Non-Driven Steering Axles for Road Traction Vehicles, Transfer Cases for Road Traction Vehicles, Reverse Reduction Gears for Rail Traction Vehicles, Shift Transmissions and Final Drives for Construction Equipment.
First use prior to 1954; in commerce 1954.

SN 169,776. Societe pour la Diffusion de Techniques Nouvelles et de Machinisme Agricole, Epernay, Marne, France. Filed May 27, 1963.



The drawing is lined for yellow and blue, which colors are claimed as elements of the mark. Owner of French Reg. No. 9,655, dated Feb. 5, 1957 (d'Epernay); Natl. Inst. No. 87,737.
For Agricultural Machinery and Apparatus—Namely, Tractors and Specialized Tractors, Pumps, Pulverization Turbines, Pulverizers, and Reservoirs With or Without Pulverization Means, Both Self Propelling and Dependent.

SN 171,693. Niagara Machine & Tool Works, Buffalo, N.Y. Filed June 24, 1963.

MULTI-BENDER

For Power Operated Press Brakes.
First use June 1, 1963.

SN 178,660. Link-Belt Company, Chicago, Ill. Filed July 24, 1963.

VIBRA-FLOW

For Vibratory Conveyors, Vibratory Feeders, Vibratory Feeder Machines, Feeder Machines With Vibratory Hoppers, and Vibratory Screens.
First use May 1, 1936.

SN 178,122. Imperial International Corp., New York, N.Y. Filed Oct. 1, 1963.

PALAZZO

For Stainless Steel Flatware, Tableware and Kitchen Cutlery, Utensils and Tools.
First use June 1, 1963.

SN 178,519. American Truck Washing and Detergent Co., d.b.a. American Truck and Bus Washing Equipment Company, Kansas City, Mo. Filed Oct. 8, 1963.

AMER-O-MATIC

For Truck, Bus and Car Washing Systems Sold as a Unit.
First use Sept. 24, 1962.

SN 178,580. Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio. Filed Oct. 9, 1963.

DD2

For Fluid Pressure Operated Actuators.
First use Apr. 3, 1963.

SN 178,581. Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio. Filed Oct. 9, 1963.

SD3

For Fluid Pressure Operated Actuators.
First use Mar. 5, 1963.

SN 178,988. Stewart-Warner Corporation, Chicago, Ill. Filed Oct. 14, 1963.

KOTER-KING

For Equipment for Spraying Protective Coating to Steel Strips or Sheets of Material.
First use at least as early as Jan. 2, 1963.

SN 179,523. Emerson Electric Co., St. Louis, Mo., by change of name from The Emerson Electric Manufacturing Company, St. Louis, Mo. Filed Oct. 22, 1963.

ENDOLUBE

For Pulley Structures Forming a Part of Variable Ratio Transmission Mechanisms.
First use Aug. 31, 1963.

SN 182,354. Red Devil Tools, Union, N.J. Filed Dec. 4, 1963.

WINDO ZIPPER

For Tool for Cutting the Paint Film Around a Window To Facilitate Opening Thereof.
First use on or about Sept. 12, 1956.

SN 182,409. Dorr-Oliver Incorporated, Stamford, Conn. Filed Dec. 5, 1963.

MERCO BOWL

Owner of Reg. Nos. 509,271, 659,799, and others.
For Centrifugal Separating Devices.
First use May 22, 1963.

SN 187,383. American Steel Foundries Incorporated, Chicago, Ill. Filed Feb. 25, 1964.

GENERAL METALS

For Excavating Teeth.
First use July 1959.

SN 189,703. The Huffman-Wolfe Company, Columbus, Ohio. Filed Mar. 26, 1964.

THE WHITE GLOVE LINE

For Cleaning Machines for General Industrial Use for Cleaning Metal and Plastic Articles.
First use on or about Feb. 26, 1964.

SN 193,736. Garret H. Vandermolen, d.b.a. Vandermolen Export Co., North Caldwell, N.J. Filed May 15, 1964.

Twin-Flo

For Machinery for Spraying Insecticides, Fungicides, etc.
First use Mar. 27, 1963.

SN 194,042. The Felt Company, Inc., New York, N.Y. Filed May 22, 1964.

FEITSEW

For Sewing Machine Parts and Supplies Including Needles.
First use about 1957.

SN 194,213. Patterson Industries, Inc., East Liverpool, Ohio. Filed May 25, 1964.



For Machinery—Namely, Agitators, Ball Mills, Colloid Mills Grinding Mills, Grain Mills, Flour Mills, Pebble Mills, Rod Mills, Blenders, Distillation Columns, Extraction Columns, Dryers, Extruders, Mixers, Process Vessels, Screens, and Valves, and Parts Therefor.
First use June 1, 1963.

SN 194,825. Morton Engineering, Inc., Omaha, Nebr. Filed June 3, 1964.

Morton
CastAmatic

For Die Casting Machines.
First use Jan. 4, 1963.

SN 195,265. AMP Incorporated, Harrisburg, Pa. Filed June 10, 1964.

AMPACT

Owner of Reg. Nos. 405,714, 761,875, and others.
For Portable Tools To Apply Electrical Connectors.
First use Feb. 24, 1964.

SN 195,404. Hahn, Inc., Evansville, Ind. Filed June 11, 1964.

HI-BOY

Owner of Reg. No. 619,452.
For High-Clearance Agricultural Equipment.
First use Mar. 31, 1949.

SN 195,647. Conco Engineering Works, Inc., Mendota, Ill. Filed June 15, 1964.



Owner of Reg. No. 442,837.
For Machines for Cleaning Sewer Lines, Drain Lines, Sink Lines and Soil Lines, Parts Thereof, and Accessories Therefor.
First use 1948.

SN 195,690. Midland-Ross Corporation, Highland Park, N.J. Filed June 15, 1964.

DRYJECTOR

For Air-Current Drying Apparatus for Manufacturing and Industrial Operations.
First use in or about January 1921.

SN 195,755. Alkirk Inc., Seattle, Wash. Filed June 16, 1964.

ALKIRK

For Apparatus for Cutting, Boring, Drilling and Like Operations in Solid Materials Such as Earth, Ore, Rock and Ice, and Parts Thereof.
First use about July 1958.

SN 195,756. Alkirk Inc., Seattle, Wash. Filed June 16, 1964.

PILOT PULL

For Apparatus for Cutting, Boring, Drilling and Like Operations in Solid Materials, Such as Earth, Ore, Rock and Ice, and Parts Thereof.
First use about July 1958.

SN 195,783. Greenlee Bros. & Co., Rockford, Ill. Filed June 16, 1964.

GREENLEE

Owner of Reg. Nos. 224,193, 514,730, and others.
For Metal Working Machinery and Tools and Woodworking Machinery and Tools.
First use June 1945; 1892 as to the name "Greenlee."

SN 195,784. Greenlee Bros. & Co., Rockford, Ill. Filed June 16, 1964.

B & T

For Die Casting Machines.
First use approximately 1948.

SN 195,790. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed June 16, 1964.

PERMALIFE

Owner of Reg. No. 861,345.
For Chain.
First use on or about June 10, 1964.

SN 195,795. Krauss-Maffei Aktiengesellschaft, Munich-Allach, Germany. Filed June 16, 1964.

KM

Owner of Reg. Nos. 686,902 and 756,529.
For Machines for Kneading, Mixing, and Treating Plastics.
First use 1950; in commerce May 18, 1961.

SN 196,058. Precision Automotive Components Company, Ballwin, Mo. Filed June 19, 1964.

Copsul-Pac

The drawing is lined for red. Owner of Reg. No. 770,548.
For Carburetor Tune-Up Parts Kits.
First use on or before May 31, 1963.

SN 196,135. Firth Sterling, Inc., Pittsburgh, Pa. Filed June 22, 1964.

STERLOK

For Cutting Tool Assembly or Tool Holder of Metal Construction Comprising a Holder Shank and an Inset Cutting Element or Part.
First use Mar. 4, 1964.

SN 196,144. Goodall Manufacturing Corporation, Minneapolis, Minn. Filed June 22, 1964.

START-ALL

For Electromechanical Starting Equipment for Internal Combustion Engines.
First use Aug. 28, 1963.

SN 196,145. Goodall Manufacturing Corporation, Minneapolis, Minn. Filed June 22, 1964.

CLEAN-ALL

For Mechanical Parts Washers.
First use Apr. 21, 1964.

SN 196,146. Goodall Manufacturing Corporation, Minneapolis, Minn. Filed June 22, 1964.

PRESS-ALL

For Hydraulic and Mechanical Presses.
First use May 28, 1964.

SN 196,149. H & H Machine Tool Co., Inc., Dayton, Ohio. Filed June 22, 1964.

ANGSTROMATIC

For Precision Boring, Facing, and Turning Machine Tools, and Parts Therefor.
First use Sept. 20, 1963.

SN 197,819. Hans Oetiker, Horgen, Switzerland. Filed July 7, 1964.

OETIKER

Owner of Swiss Reg. No. 164,221, dated Mar. 25, 1957.
For Machines and Apparatus for Fastening Hose Clamps.
First use 1955; in commerce 1955.

SN 197,670. Carmel Chemical Corporation, Westfield, Ind. Filed July 13, 1964.



For Chemical Fog Generators and Parts Therefor.
First use August 1963.

SN 197,744. The Monarch Marking System Company, Dayton, Ohio. Filed July 13, 1964.

POUCHOMATIC

For Machines for Applying Labels to Merchandise.
First use July 7, 1964.

Class 24 — Laundry Appliances and Machines

SN 196,870. Owl, Inc., Chicago, Ill. Filed July 22, 1964.

OWL INC.

For Drapery Pleating and Pressing Machines.
First use Mar. 4, 1964.

Class 25 — Locks and Safes

SN 179,545. Keso Ltd., Richterswil, Zurich, Switzerland. Filed Oct. 22, 1963.

KESO

For Locks, Keys, Key Blanks, Metal Fittings for Locks, Safety Cylinder Locks.
First use August 1958; in commerce July 3, 1963.

Class 26 — Measuring and Scientific Appliances

SN 112,949. Chicago Aerial Industries, Inc., Barrington, Ill. Filed Feb. 2, 1961.

SONNE

For Aerial Photographic Equipment and Systems—Namely, Photographic Cameras and Magazines, Photographic Printers, Camera Mounts, Camera Controls, Projectors, Stereo Comparators, View Finders and Associated Instrumentation for Use in Aerial Photography.
First use May 1946.

SN 160,745. Burleigh Brooks Inc., Englewood, N.J. Filed Jan. 16, 1963.

STOPOMATIC

For Photographic Lenses.
First use May 18, 1953.

SN 165,184. Richard B. Hunt, d.b.a. Custom Contacts, San Francisco, Calif. Filed Mar. 21, 1963.

Custom CONTACTS

The words "Custom Contacts" are disclaimed except when used as a part of the mark as shown.
For Contact Lenses.
First use Feb. 1, 1960.

SN 173,067. Tuthill Pump Company, Chicago, Ill. Filed July 15, 1963.

MAISCH

For Metering Pumps Used for Industrial, Sanitary and Biological Applications.
First use January 1953.

SN 173,661. Link-Belt Company, Chicago, Ill. Filed July 24, 1963.

VIBRA-FLOW

For Weigh Feeder Machines With Timed Batch Discharge and Continuous Flow Discharge and Gravimetric Feeders.
First use May 1, 1936.

SN 176,775. Cannon Instrument Company, State College, Pa. Filed Sept. 12, 1963.

ZEITFUCHS

For Viscometers.
First use Aug. 27, 1941.

SN 178,142. John P. Squier, d.b.a. John P. Squier Company, Dallas, Tex. Filed Oct. 1, 1963.

EVERITE

For Instrument Ink Reservoir and Feed for Pens of Recording Instruments.
First use Aug. 1, 1952.

SN 178,267. Eastman Kodak Company, Rochester, N.Y. Filed Oct. 3, 1963.

VERI-PAN

Owner of Reg. Nos. 284,948, 589,339.
For Sensitized Photographic Film.
First use August 1957.

SN 178,307. Tacoma Millwork Supply Co., Tacoma, Wash. Filed Oct. 3, 1963.

MONOROCK

For Resin Impregnated Natural Stone Counter Tops for Scientific Laboratory Cabinets.
First use Mar. 29, 1963.

SN 178,839. The Victoreen Instrument Company, Cleveland, Ohio. Filed Oct. 11, 1963.

FEMTOMETER

For Dynamic Capacitor Electrometer.
First use January 1963.

SN 178,946. Model Engineering and Manufacturing Corporation, Salt Lake City, Utah. Filed Oct. 14, 1963.

MONTEK

For Missile Measuring and Control Systems—Namely, Automatic Rocket Impact Predictors, Antennas, and Power Supplies; Navigation Monitor Equipment; Telemetry Systems; Instrumentation for Reactors and Reactor Control Systems—Namely, Control Rod Position Indicators, Area Radiation Monitoring System, and Actuators for Irradiation Test Loops; Engine Speed Controls; Measuring and Recording Instruments and Systems—Namely, Data and Control Instrumentation Systems, Weather Data Systems, Weather Compucorders, Data Reduction Systems, Stack Gas Monitoring Systems, and Fuel Rupture Detectors; and Electronic Physiological Scanners.
First use May 28, 1955.

SN 181,985. Kontes Glass Company, Vineland, N.J. Filed Nov. 27, 1963.

CHROMAFLEX

For Chromatographic Columns.
First use Apr. 22, 1963.

SN 184,174. Owens-Illinois Glass Company, Toledo, Ohio. Filed Jan. 7, 1964.

KIMAX-34

Owner of Reg. Nos. 646,480, 705,996, and others.
For Chemical, Laboratory, and Scientific Glassware.
First use Nov. 4, 1963.

SN 184,414. Techne (Cambridge) Limited, Duxford, England. Filed Dec. 30, 1963.

TEMPETTE

Owner of British Reg. No. 841,397, dated Nov. 6, 1962.
For Thermostatically Controlled Heating Apparatus and Parts Thereof for Scientific and Laboratory Use.

SN 186,438. Buck Engineering Company, Inc., Freehold, N.J. Filed Feb. 11, 1964.

ELECTRO-GUARD

For Electrical Meters To Measure Voltage.
First use Dec. 30, 1963.

SN 186,899. Sears, Roebuck and Co., Chicago, Ill. Filed Feb. 17, 1964.

COPY KING

For Photocopy Machines.
First use on or about Mar. 18, 1938.

SN 190,796. Eaton Paper Corporation, Pittsfield, Mass. Filed Apr. 10, 1964.

SUPERFAX

For Heat Sensitive, Coated Facsimile Paper.
First use Feb. 7, 1964.

SN 191,456. Telsco Industries, Dallas, Tex. Filed Apr. 17, 1964.

WEATHERMATIC

Owner of Reg. Nos. 592,722 and 614,209.
For Automatic Time Controllers for Lawn and Turf Irrigation Systems.
First use Aug. 24, 1953.

SN 191,804. Soroban Engineering, Inc., Melbourne, Fla. Filed Apr. 22, 1964.

FLUID-FLOW READING

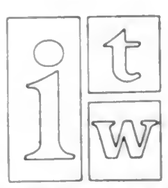
Applicant hereby disclaims the words "Fluid-Flow Reading" apart from the mark as shown.
For Perforated Member Sensing Mechanism—Namely, Punched Paper Tape and Punched Card Reading Mechanisms.
First use Dec. 4, 1963.

SN 192,559. Cardinal Scale Manufacturing Company, Webb City, Mo. Filed May 4, 1964.

Cardinal-MATIC

For Weighing Scales and Control Panels Therefor.
First use Dec. 1, 1960.

SN 192,829. Illinois Tool Works Inc., Chicago, Ill. Filed May 6, 1964.



Owner of Reg. Nos. 650,060, 730,743, and others.
For Measuring Instruments and Equipment—Namely, Involute Profile Measuring Machines; Helical Lead Measuring Machines; Automatic Tooth Space Comparators; Analytical Comparators; Hob and Worm Lead Measuring Machines; Hand Rolling Measuring Machines and Fine Pitch Hand Rolling Measuring Machines, and Mechanical Recorders Therefor; Internal Gear Rolling Machines; Universal Hob and Worm Measuring Machines; Hob Tooth Profile Measuring Machines; Hob and Cutter Sharpening Checkers; Worm and Worm Gear Measuring Machines; Bevel Hypoid Gear Charters; Parallelism Checking Machines; Bevel Gear Hand Rolling Machines; and Other Surface Measuring Instruments and the Like.
First use on or about Jan. 31, 1957.

SN 192,872. Airguide Instrument Company, Chicago, Ill. Filed May 7, 1964.

AIRGUIDE

Owner of Reg. Nos. 512,390, 644,460, and 691,248.
For Sonic Depth Sounders, Radio Direction Finders, Marine Engine Synchronizers, Field Glasses, Sport Glasses, Opera Glasses, Barometers, Thermometers, Hygrometers, Combination Hygrometer-Thermometer, Combination Thermometer-Hygrometer-Barometer, Tachometers, Compasses, Altimeters and Speedometers.
First use October 1932 on combination hygrometer-thermometer.

SN 192,982. Bear Manufacturing Company, Rock Island, Ill. Filed May 8, 1964.

TRU-TOE

For Wheel Alinement Testing Apparatus.
First use May 5, 1964.

Class 27 — Horological Instruments

SN 182,089. Kabushiki Kaisha Hattori Tokeiten, Chuo-ku, Tokyo, Japan. Filed Nov. 29, 1963.

DIASHOCK

For Watches, Clocks and Parts Thereof.
First use February 1958; in commerce July 1959.

SN 182,090. Kabushiki Kaisha Hattori Tokeiten, Chuo-ku, Tokyo, Japan. Filed Nov. 29, 1963.

GOLDFEATHER

Owner of Japanese Reg. No. 569,134, dated Apr. 1, 1961.
For Watches, Clocks and Parts Thereof.

SN 185,252. Sunbeam Corporation, Chicago, Ill. Filed Jan. 23, 1964.

THE STARTIME

For Clocks.
First use Feb. 6, 1963.

SN 193,647. Everbrite Watch Co., Inc., New York, N.Y. Filed May 18, 1964.

CONDOR

For Watches and Clocks.
First use Feb. 12, 1943.

SN 200,817. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 28, 1964.

AQUATRON

Owner of Reg. No. 709,055.
For Watches and Parts Thereof.
First use Aug. 25, 1964.

SN 201,059. Sunbeam Corporation, Chicago, Ill. Filed Sept. 1, 1964.

FANFARE

For Clocks.
First use June 29, 1964.

SN 201,174. Amida S.A. (Amida Limited), Montreux, Switzerland. Filed Sept. 3, 1964.

DONAR

Owner of Swiss Reg. No. 138,202, dated June 12, 1951.
For Watches, Parts of Watches of All Types, Clocks, Alarm Clocks, and Watch Cases.

SN 201,404. Elgin National Watch Company, Elgin, Ill. Filed Sept. 8, 1964.

MICROMATIC

For Horological Instruments—Namely, Watches and Clocks.
First use on or about Aug. 24, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 193,942. Coro Incorporated of Rhode Island, Providence, R.I. Filed May 21, 1964.

PEARL WARDROBE

The term "Pearl" is disclaimed apart from the mark as shown.
For Jewelry.
First use May 5, 1964.

SN 196,213. Vargas Manufacturing Co., Providence, R.I. Filed June 22, 1964.

VARGAS

Owner of Reg. No. 426,592.
For Jewelry.
First use on or about June 1, 1945.

SN 196,507. Continental Charms, Inc., New York, N.Y. Filed June 26, 1964.



The term "14K" is disclaimed.
For Fine Jewelry (14K gold).
First use Apr. 15, 1964.

SN 197,246. American Stay Company, Malden, Mass. Filed July 7, 1964.

AMFLEX

For Wrist Watch Bands and Bracelets.
First use Dec. 6, 1963.

Class 29 — Brooms, Brushes, and Dusters

SN 178,678. Wilhela Cushman, d.b.a. Willa Cee Products, New York, N.Y. Filed Oct. 10, 1963.



For Disposable Mop Covers.
First use June 1963.

SN 194,874. James D. Gainsley, d.b.a. Bufferino Company, St. Louis Park, Minn. Filed June 4, 1964.

BUFFERINO

For Combination Hand-Type Brush and Polishing Pad.
First use May 6, 1964.

Class 32 — Furniture and Upholstery

SN 140,469. Mauser Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. Filed Mar. 22, 1962.

MULTIFORM

Owner of German Reg. No. 735,990, dated Apr. 27, 1960.
For Office Desks, Chairs, Tables, File Stands, Stools, Cabinets and Stands for Filing Cases and Boxes, Made of Steel, Wood, Synthetic Materials, or a Combination of These Materials.
First use January 1964; in commerce January 1954.

SN 176,546. Albert M. Lock & Son, Inc., Boston, Mass. Filed Sept. 9, 1963.



For Living Room, Dining Room, and Breakfast Room Furniture.
First use Jan. 5, 1959.

SN 186,248. Gingher Manufacturing Company, Inc., Scranton, Pa. Filed Feb. 7, 1964.



Owner of Reg. No. 655,823.
For Valet Racks, Folding Portable Valets, Clothes Hangers, Steel Shelving, Hat and Coat Racks, and Display Units.
First use on or about Mar. 29, 1958, on valet racks.

SN 190,741. National Sleep Products, Inc., Detroit, Mich. Filed Apr. 9, 1964.

SLEEPMORE

For Mattresses and Box Springs.
First use Mar. 20, 1964.

SN 192,639. Shady Sam, Inc., Oak Park, Mich. Filed May 4, 1964.

SHADY SAM

For Window Shades.
First use July 9, 1963.

SN 194,100. Ad-Lithograph, Inc., Pittsburgh, Pa. Filed May 20, 1964.

MAIL-A-STAND

For Easel.
First use Jan. 30, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 153,402. Brule Incinerator Corporation, Blue Island, Ill., assignee of Goder Incinerator Corporation, Blue Island, Ill. Filed Sept. 18, 1962.



For Incinerators, Furnaces, Stacks, Gas Burners, Oil Burners, Blowers, Combustion Safeguard Control Equipment, and Wet and Dry Dust-Collecting Equipment.
First use on or before Aug. 23, 1962.

SN 195,695. Gordon E. Mycue, Corcoran, Minn. Filed June 15, 1964.



For Candle Lighter.
First use May 25, 1964.

SN 196,642. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed June 29, 1964.

DIXLOK

For Graphite Stoppers for Use in Containers for Molten Metal.
First use May 13, 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 177,508. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Sept. 23, 1963.

LEXINGTON

For Tires.
First use June 4, 1963.

SN 180,242. Sterling Packing & Gasket Company, Inc., Houston, Tex. Filed Oct. 31, 1963.

STERLING SPIROFLEX

For Metal and Asbestos Gaskets.
First use Sept. 4, 1958.

SN 190,688. Anderson Tires, Inc., Los Angeles, Calif. Filed Apr. 9, 1964.

VANGUARD

For Automotive Tires and Tubes.
First use in or about the summer of 1954.

SN 191,332. United Manufacturing Company, Wheeling, W. Va. Filed Apr. 16, 1964.



No claim is made to the word "Lining" apart from the mark as shown.
For Brake Linings.
First use Feb. 24, 1964.

Class 36 — Musical Instruments and Supplies

SN 176,041. Specialty Distributing Co., Inc., Atlanta, Ga. Filed Aug. 29, 1963.



For Phonograph Needles.
First use Mar. 20, 1963.

SN 176,272. Arc Sound Limited, Scarboro, Ontario, Canada. Filed July 19, 1963.



For Phonograph Records.
First use May 20, 1959; in commerce Dec. 29, 1959.

SN 179,124. Dampp-Chaser, Inc., Hendersonville, N.C. Filed Oct. 16, 1963.

GUIDED-FINGERS

For Music Rolls.
First use Oct. 2, 1963.

SN 189,123. V-M Corporation, Benton Harbor, Mich. Filed Mar. 19, 1964.

TONE-O-MATIC

Owner of Reg. No. 623,959.
For Compensated Volume Controls for Sound Recording and Sound Reproducing Equipment.
First use May 17, 1954.

Class 37 — Paper and Stationery

SN 185,093. Windsong, Inc., Minneapolis, Minn. Filed Jan. 21, 1964.

YOUR DAY

For Combined Book-Type Calendars and Appointment Books.
First use Jan. 8, 1964.

SN 186,743. Nashua Corporation, Nashua, N.H. Filed Feb. 14, 1964.

COPYTHERM

For Heat Responsive Copying Paper.
First use Jan. 15, 1964.

SN 190,591. The Carter's Ink Company, Cambridge, Mass. Filed Apr. 8, 1964.

STYLE-RITER

Owner of Reg. No. 530,708.
For Marking Devices.
First use March 1964.

SN 190,648. School House Products, Inc., New York, N.Y. Filed Apr. 8, 1964.

PAINT·CRAYS

For Coloring Sticks.
First use Mar. 15, 1964.

SN 190,681. Whiting & Company, Inc., Holyoke, Mass. Filed Apr. 8, 1964.

INVERNESS

For Text Paper.
First use Feb. 3, 1964.

SN 197,320. Hans Oetiker, Horgen, Switzerland. Filed Jan. 9, 1964.

OETIKER

Owner of Swiss Reg. No. 164,221, dated Mar. 25, 1957.
For Suspension Folders.
First use 1955; in commerce 1955.

Class 38 — Prints and Publications

SN 179,081. United California Bank, Los Angeles, Calif. Filed Oct. 15, 1963.

TELLER TUTOR

For Regularly Issued Books Intended Primarily for Use by Banks and Banking Institutions.
First use Aug. 20, 1963.

SN 185,877. Marjorie H. Duncan, d.b.a. Slide-A-Rule Co., North Wales, Pa. Filed Feb. 3, 1964.

SLIDE-A-RULE



Owner of Reg. No. 643,932.
For Pamphlets and Sliding Charts Dealing With the Subject of Parliamentary Procedure and Parliamentary Law.
First use Oct. 15, 1955.

SN 186,649. Stanley Hurst Smith, Los Angeles, Calif. Filed Feb. 13, 1964.



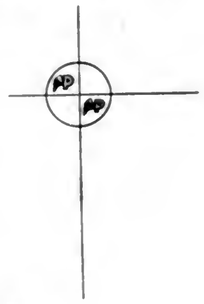
No claim is made to the right to the exclusive use of "American," "Pictures," or "Productions" apart from the mark as a whole.
For Motion Pictures—Namely, Short Subjects, Features, Cartoons, Documentaries, and Newsreels.
First use May 15, 1955.

SN 187,326. Bernard Platt, Rye, N.Y. Filed Feb. 24, 1964.

TIMEBUYER

For Pamphlet.
First use Feb. 29, 1960.

SN 188,698. James R. Tyson, d.b.a. Pegasus Press, New York, N.Y. Filed Mar. 16, 1964.



For Books and Booklets.
First use Dec. 13, 1963.

SN 188,800. Harvey H. Richards, Jr. and/or Lois A. Richards (joint owners), Sierra Vista, Ariz. Filed Mar. 16, 1964.

Huachuca Herald

For Newspaper.
First use Oct. 7, 1955.

SN 189,685. Cowles Magazines and Broadcasting, Inc., New York, N.Y. Filed Mar. 26, 1964.



VENTURE THE TRAVELER'S WORLD

For Regularly Issued Magazine.
First use Mar. 5, 1964.

SN 189,686. Cowles Magazines and Broadcasting, Inc., New York, N.Y. Filed Mar. 26, 1964.

VENTURE
THE TRAVELER'S WORLD

For Regularly Issued Magazine.
First use Jan. 24, 1964.

SN 189,687. Cowles Magazines and Broadcasting, Inc., New York, N.Y. Filed Mar. 26, 1964.



For Regularly Issued Magazine.
First use Mar. 5, 1964.

SN 189,718. Musicall, Inc., New York, N.Y. Filed Mar. 26, 1964.

Musicall

The drawing is lined for purple, yellow, red, brown, and orange.
For Music Instruction Books.
First use Mar. 14, 1964.

Class 39 — Clothing

SN 124,534. Empire Manufacturing & Distributing Company, Denver, Colo. Filed July 24, 1961.

TWINKLE CRAFT

For Children's Night Gowns and Pajamas.
First use on or before June 1, 1956; July 16, 1954, in a different form.

SN 146,692. Charles Weiss & Sons, Inc., New York, N.Y. Filed June 11, 1962.

STREAMLINE

For Girdles and Brassieres.
First use Mar. 6, 1962.

SN 164,730. International Shoe Company, St. Louis, Mo. Filed Mar. 15, 1963.

leather guard

For Ingredient Incorporated Into Shoes To Render Same Water Repellent and Soil Resistant.
First use Feb. 8, 1963.

SN 167,761. Dunhill Shirt Company, Lexington, Mo. Filed Apr. 22, 1963.

Dunbrooke

For Men's and Boys' Dress, Sport, and Bowling Shirts; and Ladies' and Girls' Bowling Shirts, and Blouses.
First use Mar. 16, 1963.

SN 170,580. Witty Bros., Inc., New York, N.Y. Filed June 7, 1963.

WITTY BROTHERS

Owner of Reg. No. 630,060.
For Suits, Topcoats, Winter Overcoats, Tuxedos, Raincoats, Sportcoats, Slacks, Vests, Suburban Coats, Jackets, Shirts, Sport Shirts, Polo Shirts, Sweaters, Neckwear, Ascots, Pajamas, Robes, and Hose.
First use Oct. 15, 1953; about 1900 as to "Witty Brothers" on men's suits and overcoats.

SN 177,061. Lansdale Clothes, Incorporated, New York, N.Y. Filed Sept. 16, 1963.

FABREL

For Boys' and Men's Slacks.
First use Aug. 1, 1963.

SN 178,388. Girl Scouts of the United States of America, New York, N.Y. Filed Oct. 4, 1963.

CADETTE GIRL SCOUT

For Blouses, Skirts, Berets, Hosiery, Neckwear, and Sweaters.
First use Sept. 4, 1963.

SN 178,389. Girl Scouts of the United States of America, New York, N.Y. Filed Oct. 4, 1963.

cadette

For Blouses, Skirts, Berets, Hosiery, Neckwear, and Sweaters.
First use Sept. 4, 1963.

SN 180,184. David Clark Company Incorporated, Worcester, Mass. Filed Oct. 31, 1963.

Firmflex

For Brassieres.
First use Apr. 25, 1963.

SN 186,299. White Sewing Machine Corporation, Lakewood, Ohio. Filed Feb. 7, 1964.

APEX

For Protective Hats, Caps, and Helmets.
First use on or about June 1, 1959.

SN 189,627. A. Schreter & Sons Co., Inc., Baltimore, Md. Filed Mar. 25, 1964.

MR. SID

"Mr. Sid" is a fanciful name.
For Apparel—Namely, Neckties, Jackets, Slacks, Sweaters, Trousers, Walking Shorts, Outerwear Shirts, and Socks.
First use Mar. 10, 1964.

SN 191,656. Belk Stores Services, Inc., Charlotte, N.C. Filed Apr. 21, 1964.

LADY MANSTYLE

Owner of Reg. No. 540,580 and 758,890.
For Ladies' Raincoats.
First use Apr. 12, 1947.

SN 192,273. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed Apr. 29, 1964.

Living

For Men's and Young Men's Suits, Topcoats, and Overcoats.
First use on or about July 24, 1933.

SN 192,303. Maidenform, Inc., New York, N.Y. Filed Apr. 29, 1964.

BARE DEVIL

For Foundation Garments.
First use Apr. 14, 1964.

SN 192,574. Davis Cup Apparel Limited, London, England. Filed May 4, 1964.

DAVIS CUP

For Shirts.
First use December 1961; in commerce February 1962.

SN 192,599. Janed, Inc., Quakertown, Pa. Filed May 4, 1964.

corner house

For Men's and Women's Clothing—Namely, Shirts, Slacks, Sweaters, Shorts, Skirts, Suits, Jackets, Coats, Raincoats, Dresses, and Bathing Suits.
First use Mar. 20, 1960.

SN 192,642. United States Rubber Company, New York, N.Y. Filed May 4, 1964.

BRASS RINGER

For Canvas Shoes.
First use Dec. 13, 1963.

SN 192,905. Duofold, Inc., Mohawk, N.Y. Filed May 7, 1964.

duofold

Owner of Reg. No. 195,983.
For Knitted Underwear—Namely, Shirts, Drawers, Tights, and Union Suits, for Men, Women, and Children; Turtleneck Shirts, Sweaters, Sportsman's Doublets; and Quilted Underwear—Namely, Tops, Pants, Socks, and Vests.
First use Feb. 10, 1964; Aug. 6, 1906, as to the mark "Duofold."

Class 40—Fancy Goods, Furnishings, and Notions

SN 194,542. Velcrotex Societe Anonyme, Aubonne, Vaud, Switzerland. Filed May 28, 1964.

SOBICO

Priority claimed under Sec. 44(d) on Swiss Reg. No. 201,812, dated Dec. 12, 1963.
For Hairdressing Articles—Namely, Roller-Type Hair Curlers.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 174,706. Pepperell Manufacturing Company, New York, N.Y. Filed Aug. 8, 1963.

NapGuard/SuperLoft

Owner of Reg. No. 726,547.
For Blankets Which Have Been Treated To Improve Retention of Loft.
First use February 1961.

SN 174,905. Pextile Corporation of America, Greensboro, N.C. Filed Aug. 12, 1963.

PEXLOCK

Owner of Reg. No. 731,896.
For Scrim Backing for Carpets.
First use Mar. 1, 1963.

SN 175,222. Toscony, Inc., Passaic, N.J. Filed Aug. 16, 1963.

TUFFCORE

For Three-Ply Reinforcing Fabric.
First use May 1, 1963.

SN 176,879. Milton C. Blum, Inc., New York, N.Y. Filed Sept. 13, 1963.

SUNNI CANE

For Piece Goods for Making Women's Blouses, Dresses, and the Like.
First use March 1963.

SN 179,266. Royalmetal Corporation, New York, N.Y. Filed Oct. 17, 1963.

ROYALWEAVE

For Fabrics for Furniture.
First use July 22, 1963.

SN 183,261. Gloversville-Continental Mills, Inc., Gloversville, N.Y. Filed Dec. 19, 1963.

ELEGANZA

For Piece Goods Used in Making Robes, Dresses, Sportswear, and Coating.
First use Sept. 15, 1963.

SN 183,724. American Finishing Company, Memphis, Tenn. Filed Dec. 30, 1963.

THERMO-FAB

For Insulated Cloth Lining for Fabric Material.
First use Dec. 17, 1963.

SN 183,863. Abaco Fabrics Corp., New York, N.Y. Filed Jan. 2, 1964.

DUBLINK

For Fabrics Composed of Silk, Wool, Cotton Synthetics, and Any Combination Thereof.
First use Nov. 1, 1963.

SN 185,557. Blue Ridge Textile Company, Inc., Bangor, Pa. Filed Jan. 29, 1964.

Wincama

For Knitted Fabrics Used in Making Ladies' Robes, Dresses, Blouses, Sportswear, and Coats; and Men's Outerwear, and the Like.
First use Sept. 11, 1963.

SN 186,580. United Elastic Corporation, Easthampton, Mass. Filed Feb. 12, 1964.

SHRINK NIX

For Elastic Webbing.
First use Jan. 7, 1964.

SN 136,981. United Elastic Corporation, Easthampton, Mass. Filed Feb. 18, 1964.

MONOSTRETCH

For Elastic Webbing.
First use Jan. 15, 1964.

SN 187,393. C. Haedke & Co., Inc., New York, N.Y. Filed Feb. 25, 1964.

Lethakin

For Fabrics in the Piece Composed of Cotton Suede Chemically Coated With Polyurethane.
First use Apr. 1, 1963.

SN 187,911. Chatham Manufacturing Company, Elkin, N.C. Filed Mar. 4, 1964.

SPRINGFIELD

Owner of Reg. Nos. 407,285 and 407,286.
For Blankets and Fabrics in the Piece Adapted for Use in Making Suits, Coats, Dresses, Jackets, Raincoats, and the Like.
First use Apr. 30, 1903, on blankets.

SN 191,744. E. T. Barwick Mills, Inc., Chamblee, Ga. Filed Apr. 22, 1964.

ROMAINE

For Rugs.
First use Jan. 6, 1964.

SN 191,840. Dan River Mills, Incorporated, Danville, Va. Filed Apr. 23, 1964.

RIVERWHIP

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, Including Stretch Fabrics.
First use Mar. 19, 1964.

SN 192,266. Cabin Crafts, Inc., Dalton, Ga. Filed Apr. 29, 1964.

CLEANPATH

For Rugs and Carpets.
First use Apr. 6, 1964.

SN 192,373. Deering Milliken, Inc., New York, N.Y. Filed Apr. 30, 1964.

SUEDORA

Owner of Reg. No. 200,552.
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use July 1, 1924.

SN 192,592. HMH Publishing Co., Inc., Chicago, Ill. Filed May 4, 1964.



For Beach Towels.
First use on or about Mar. 12, 1964.

SN 192,640. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 4, 1964.

FEATHER-FLUFF

Owner of Reg. No. 241,309.
For Piece Goods of One or More Natural Fibers Including Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use Apr. 24, 1964.

SN 192,652. Williamsburg Restoration, Incorporated, Williamsburg, Va. Filed May 4, 1964.

WILLIAMSBURG

Owner of Reg. Nos. 682,243, 706,631, and others.
For Bedspreads.
First use July 1963.

SN 192,653. Williamsburg Restoration, Incorporated, Williamsburg, Va. Filed May 4, 1964.

WILLIAMSBURG C W RESTORATION

Owner of Reg. Nos. 682,244, 706,632, and others.
For Bedspreads.
First use July 1963.

SN 192,919. M. Lowenstein & Sons, Inc., New York, N.Y. Filed May 7, 1964.

THE SOFTEST TOUCH OF ALL!

For Bed Sheets, Made of Cotton and/or Synthetic Fibres.
First use Feb. 27, 1964.

SN 192,954. Sparks, Inc., Dalton, Ga. Filed May 7, 1964.

DEBUT

For Textile Rugs and Carpeting.
First use Apr. 1, 1964.

SN 192,993. Cone Mills, Inc., New York, N.Y. Filed May 8, 1964.

PRESSLOKT

For Piece Goods Made From Cotton, Synthetic Fibers, and Blends of Cotton and Synthetic Fibers.
First use Apr. 29, 1964.

SN 192,996. Crompton Company, New York, N.Y. Filed May 8, 1964.

VENTNOR

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Apr. 1, 1964.

SN 192,997. Crompton Company, New York, N.Y. Filed May 8, 1964.

RIATA

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Apr. 9, 1964.

SN 193,255. Ardsley Curtain Co., Inc., New York, N.Y. Filed May 12, 1964.

INTA-LINING

For Lining for Draperies.
First use Dec. 6, 1963.

Class 43 — Thread and Yarn

SN 186,894. Revonah Spinning Mills, Hanover, Pa. Filed Feb. 17, 1964.

REVONAH

For Jute Yarns Used in the Manufacturing and Construction of Floor Coverings, Particularly Rugs and Carpets.
First use July 1, 1927.

SN 187,919. Emile Bernat & Sons Company, Uxbridge, Mass. Filed Mar. 4, 1964.

"DUNDEE"

Owner of Reg. No. 746,778.
For Hand Knitting Yarns.
First use about 1958.

SN 189,603. Melrose Yarn Co., Inc., Brooklyn, N.Y. Filed Mar. 25, 1964.

Candlesheen

For Yarn of Mohair and Synthetic Fibers.
First use Mar. 12, 1964.

SN 192,470. Brunswick Worsted Mills, Inc., Moosup, Conn. Filed May 1, 1964.

FAIRHAVEN

For Knitting Yarn.
First use about Apr. 1, 1960.

SN 192,549. Emile Bernat & Sons Co., Uxbridge, Mass. Filed May 4, 1964.

MONTESSA

For Hand Knitting Yarns.
First use Apr. 16, 1964.

SN 192,813. FMC Corporation, Philadelphia, Pa. Filed May 6, 1964.

FIBER 60

No claim is made to the use of the word "Fiber" except as a part of the mark as shown.
For Yarns, Threads, Yarn and Thread Filaments.
First use Apr. 2, 1964.

SN 193,050. Sellers Manufacturing Company, Inc., Saxapahaw, N.C. Filed May 8, 1964.

SPANLILE

For Elastic Yarn.
First use Apr. 6, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 153,350. Unitek Corporation, Monrovia, Calif. Filed Sept. 17, 1962.

TWIST-FLEX

For Dental Orthodontic Appliances, Such as Ligature Wires.
First use Aug. 29, 1962.

SN 156,298. Eugenie Haagen, New York, N.Y. Filed Oct. 31, 1962.

"ROLL BACK THE YEARS"



For Skin Lifting and Temporary Wrinkle Removing Elastic Headbands.
First use Aug. 23, 1962.

SN 178,326. The W. E. Bassett Company, Derby, Conn. Filed Oct. 4, 1963.

Preen

For Manicuring Implements—Namely, Fingernail Clippers, Toenail Clippers, Tweezers, Emery Boards, and Nail Files, Sold Alone, and in Cases and Kits.
First use December 1962.

SN 182,367. Silva Inc., La Porte, Ind. Filed Dec. 4, 1963.

SILVA

Owner of Reg. Nos. 378,365, 381,413, and 585,073.
For Prefabricated Sauna Bathrooms.
First use February 1963.

SN 183,353. Alan Jay-Clarolyte Company, Roselle Park, N.J. Filed Dec. 23, 1963.

Little Angel



For Nursery Accessories—Namely, Nursery Hot Plates, Nursery Jar Sets, Nursery Pacifiers, Nursery Teethers, Nursery Comb and Brush Sets, and Nursery Rattles.
First use 1952.

SN 184,828. Millers Forge Mfg. Corp., New York, N.Y. Filed Jan. 17, 1964.

NAILAID

Owner of Reg. No. 866,690.
For Scissors, Cuticle and Nail Nippers, Fingernail Clips, Tweezers, Nail Files, Blackhead Removers, Cuticle Pushers, and Cuticle Knives.
First use Oct. 5, 1938.

SN 187,692. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Feb. 28, 1964.

EKOLINE 20

For Medical Diagnostic Ultrasonoscope.
First use July 9, 1963.

SN 195,033. Zimmer Manufacturing Company, Warsaw, Ind. Filed June 5, 1964.

ZIMALOY

For Special Metal Alloy Incorporated Into Orthopedic Appliances.
First use Nov. 15, 1958.

Class 46 — Foods and Ingredients of Foods

SN 142,952. Manfred Kombrecht, d.b.a. Ceytea Import G.m.b.H., Hamburg, Germany. Filed Apr. 24, 1962.

iCeyTea

Priority claimed under Sec. 44(d) on German application filed Nov. 18, 1961; Reg. No. 760,534, dated Apr. 16, 1962.
The word "Tea" is disclaimed apart from the mark as shown.
For Extracts of Tea.

SN 155,129. E. J. Brach & Sons, Chicago, Ill. Filed Oct. 15, 1962.

JOTS

Owner of Reg. Nos. 549,359 and 720,414.
For Candy—Namely, Sugar Coated and Panned, Pill-Like Candies in Various Colors.
First use Oct. 7, 1946.

SN 155,390. Dixie Lily Milling Co., Tampa, Fla. Filed Oct. 18, 1962.

DIXIE LILY

For Punch Beverage Concentrate.
First use on or about Jan. 15, 1961.

SN 155,391. Dixie Lily Milling Co., Tampa, Fla. Filed Oct. 18, 1962.



The words "Variety Punch Concentrate Vitamin 'C'" are disclaimed apart from the mark as shown.
For Punch Beverage Concentrate.
First use on or about Jan. 15, 1961.

SN 162,232. Thomas Carvel, Yonkers, N.Y. Filed Feb. 7, 1963.

TWICE ON
SUNDAE

Applicant disclaims the word "Sundae" apart from the mark as shown.
For Frozen Confections Consisting of Ice Cream, Syrups, Toppings, Fruits, and Nuts.
First use Nov. 24, 1962.

SN 163,428. Superfrut International Inc., Miami, Fla. Filed Feb. 25, 1963.

BONIATILLO

For Canned Sweet Potato Pudding.
First use Jan. 28, 1963.

SN 173,975. Sokol & Company, Chicago, Ill. Filed July 29, 1963.

PEANUT-FROSS

For Cake Frosting.
First use June 1963.

SN 175,084. Florasynth Laboratories, Incorporated, New York, N.Y. Filed Aug. 15, 1963.

RESINOL

For Food Flavoring Extract.
First use Dec. 31, 1916.

SN 176,366. General Foods Corporation, White Plains, N.Y. Filed Sept. 5, 1963.

BAKER'S CHAMPION

Owner of Reg. Nos. 156,994, 755,621, and others.
For Flavored Syrups Used in Association With Foods and Beverages and Flavored Syrup Toppings Used on Desserts.
First use Apr. 26, 1963.

SN 178,909. General Foods Corporation, White Plains, N.Y. Filed Oct. 14, 1963.

KERNEL-FRESH

For Salt for Nuts; Salted Nuts of Various Varieties—Namely, Peanuts, Pecans, Cashews, Brazils, Filberts, and Almonds; Uncooked Popcorn, Cooking Oil for Nuts, Coconut, and Caramel Coating for Making Caramel Corn.
First use March 1945 on salt for nuts.

SN 178,955. National Biscuit Company, New York, N.Y. Filed Oct. 14, 1963.

OLD HOMESTEAD

For Bread.
First use Sept. 19, 1963.
Subj. to Intf. with SN 179,409.

SN 179,409. Fairway Foods, Inc., St. Paul, Minn. Filed Oct. 21, 1963.

HOMESTEAD

For Bakery Products—Namely, Bread, Buns, Rolls, and Doughnuts.
First use Aug. 12, 1963, on bread.
Subj. to Intf. with SN 178,955.

SN 180,605. I. J. Nickerson, d.b.a. Nickerson Farms, Eldon, Mo. Filed Nov. 6, 1963.

Nickerson Farms

For Candies, Jams, and Jellies.
First use Mar. 15, 1963.

SN 180,606. I. J. Nickerson, d.b.a. Nickerson Farms, Eldon, Mo. Filed Nov. 6, 1963.



No claim of exclusive right is made to the word "Honey," said word being the name of the goods.
For Processed Honey.
First use Mar. 15, 1963.

SN 182,325. General Foods Corporation, White Plains, N.Y. Filed Dec. 4, 1963.

FRUIT MOLD SUPREME

The words "Fruit" and "Mold" are disclaimed apart from the mark as shown.
For Prepared Gel Dessert.
First use Oct. 14, 1963.

SN 182,465. Central Soya Company, Inc., Fort Wayne, Ind. Filed Dec. 6, 1963.

BUTTER TENDER

No claim is made to the word "Tender" apart from the mark as shown.
For Frozen Dressed Turkeys.
First use Oct. 12, 1958.

SN 183,923. Ralston Purina Company, St. Louis, Mo. Filed Jan. 2, 1964.

WHITE STAR

Owner of Reg. No. 93,078.
For Canned Fish.
First use 1885.

SN 183,924. Ralston Purina Company, St. Louis, Mo. Filed Jan. 2, 1964.

WHITE STAR

Owner of Reg. No. 93,078.
For Canned Fish.
First use 1885.

SN 183,947. Abbey Garden, Inc., New York, N.Y. Filed Jan. 3, 1964.

ABBEY GARDEN

Owner of Reg. No. 615,915.
For Dried, Canned, and Glass Contained Vegetables; Dried and Canned Fruits; Baked Apples; Applesauce; Canned Figs, Fruit Salad, Fruit Cocktail and Prunes; Jams, Jellies, Fruit Preserves, and Marmalades; Fancy and Wild Rice; Soups; Canned Chicken and Egg Noodles; Canned Salmon, Coffee, Tea and Tea Bags; Unshelled Walnuts; Canned Tomato Juice; Tomato Juice Cocktail; Tomato Catsup; Grapefruit Juice and Prune Juice; Chili Sauce; Cranberry Sauce; Mayonnaise; Salad Dressing; Chocolate Pudding and Chocolate Flavored Starch Pudding; Gelatine; Food Flavoring Extracts; Spices; Vinegar; Olives; Olive Oil for Culinary Purposes; and Salt.
First use Jan. 1, 1931.

SN 184,887. The Chunky Corporation, Brooklyn, N.Y. Filed Jan. 20, 1964.



For Candy.
First use on or about Oct. 15, 1963.

SN 185,452. Sue Ann Food Products Corporation, d.b.a. Sunnyhill Farm Products, Chicago, Ill. Filed Jan. 27, 1964.

SOUR QUEEN

For Dip for Potato Chips and the Like and Dressing for Baked Potatoes, Vegetables, Salads and the Like Comprising a Vegetable Oil Product in Viscous Form Containing Vegetable Oil, Cultures and Flavor (Chive, Onion, Garlic, and Pizza).
First use on or about Jan. 13, 1964.

SN 185,928. Pecheurs Unis de Quebec–Quebec United Fisherman, Montreal, Quebec, Canada. Filed Feb. 3, 1964.

BARACHOIS

Owner of Canadian Reg. No. N.S. 183/46,517, dated Dec. 17, 1953.
For Heavy Salted Dried Codfish, and Fish of All Kinds and Packed in All Forms.

SN 186,071. General Foods Corporation, White Plains, N.Y. Filed Feb. 5, 1964.

SUN-UPS

For Food Product, Dough-Like in Nature, With or Without a Fruit Filling To Be Prepared in a Pop-Up Toaster.
First use Oct. 23, 1963.

SN 186,648. Frank Ryser Co., Chicago, Ill. Filed Feb. 13, 1964.

NORD-OST

The words "Nord" and "Ost" are Swedish, meaning "north" and "cheese," respectively. Applicant makes no claim to the word "Ost" apart from the mark as shown. Owner of Reg. No. 382,820.
For Cheese.
First use June 1, 1940.

SN 187,682. National Biscuit Company, New York, N.Y. Filed Feb. 28, 1964.

HOO-RAYS

For Biscuits and Crackers.
First use Feb. 13, 1964.

SN 189,570. Food Technology, Inc., Chicago, Ill. Filed Mar. 25, 1964.

HONI-BAKE

For Honey and Starch Composition for Use in Making Breads, Muffins, Pancakes, Cakes, Cake Mixes, Cookies, Sweet Yeast Raised Baked Goods, Milkshakes, and Frozen Confections.
First use Sept. 6, 1962.

SN 189,571. Food Technology, Inc., Chicago, Ill. Filed Mar. 25, 1964.

HONI-FLAKE

For Honey and Starch Composition for Use in Making Breads, Muffins, Pancakes, Cakes, Cake Mixes, Cookies, Sweet Yeast Raised Baked Goods, Milkshakes, and Frozen Confections.
First use Sept. 6, 1962.

SN 191,122. Broughton's Farm Dairy, Inc., Marietta, Ohio. Filed Apr. 15, 1964.



Owner of Reg. Nos. 608,823, 733,883, and others.
For Angel Food Cake Mix.
First use on or about Feb. 18, 1964; Apr. 20, 1933, as to "Broughton."

SN 191,799. Frank Ryser Co., Chicago, Ill. Filed Apr. 22, 1964.



No claim of exclusive right is made to the word "Cheese" as the name of the goods identified herein.
For Cheese.
First use Apr. 7, 1934.

Class 47 — Wines

SN 179,923. Svendborg Vinkompagni, A.m.b.A., Svendborg, Denmark. Filed Oct. 28, 1963.



The name "Prince of Denmark" does not refer to any specific prince. The portrait is purely the phantasy of an artist and is not intended to resemble any person living or dead. The lining shown on the drawing is part of the mark and does not indicate color.
For Danish Fruit Wine Specialties.
First use May 19, 1948; in commerce Feb. 10, 1958.

SN 180,840. Champagne Taittinger Compagnie Commerciale & Viticole Champenoise, Reims (Marne), France. Filed Nov. 12, 1963.

FÊTE DU COCHELET

"Fête du Cochelet" is the French equivalent of the English words "festival of the cart."
For Champagne Wines.
First use Jan. 21, 1963; in commerce Jan. 21, 1963.

SN 180,841. Champagne Taittinger Compagnie Commerciale & Viticole Champenoise, Reims (Marne), France. Filed Nov. 12, 1963.

CUVÉE DES COTEAUX

"Cuvée des Coteaux" is the French equivalent of the English words "tubful from the little hill." No claim is made to the word "Cuvée" apart from the mark as shown.
For Champagne Wines.
First use May 3, 1963; in commerce May 3, 1963.

SN 187,478. Continental Beverages, Inc., Winter Haven, Fla. Filed Feb. 26, 1964.

RIO DE ORO

The English translation of "Rio de Oro" is "river of gold."
For Wines.
First use Nov. 11, 1963.

Class 49 — Distilled Alcoholic Liquors

SN 167,315. Ed. Phillips & Sons Co., Minneapolis, Minn. Filed Apr. 22, 1963.



For Alcohol Beverage Containing Brandy and Peppermint Schnapps.
First use Jan. 10, 1963.

SN 186,634. Old Stanley Distillery, Inc., d.b.a. Old Repeater Distillery, Stanley, Ky. Filed Feb. 13, 1964.

OLD REPEATER

For Whiskey.
First use July 10, 1963.

SN 188,882. J. & G. Oldfield Limited, Worcester, England. Filed Mar. 17, 1964.



The Latin phrase "Deus Meam Fortunam Guvernat" means "God directs my fortune." Owner of British Reg. No. 731,754, dated July 2, 1954.
For Blended Scotch Whisky.
First use on or about July 2, 1954; in commerce Nov. 6, 1963.

SN 189,065. Foreign Vintages, Inc., New York, N.Y. Filed Mar. 19, 1964.

CANADIAN TRAPPER

No claim of exclusive right is made to the word "Canadian" apart from the mark as shown.
For Canadian Whisky.
First use Mar. 6, 1961.

SN 189,277. Distillers Corporation (S.A.) Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Mar. 23, 1964.

PAUL REVERE

The name "Paul Revere" refers to the famous colonial figure. Owner of South African Reg. No. 62/3898, dated Nov. 16, 1962.
For Brandy.

SN 189,833. Parrott & Co., San Francisco, Calif. Filed Apr. 17, 1964.

MacTaggart's EXTRA SPECIAL

Applicant disclaims the words "Extra Special" apart from the mark as a whole. The drawing is lined for red.
For Scotch Whisky.
First use Oct. 16, 1963.

SN 189,883. Douglas MacNiven & Co., Limited, Leith, Scotland. Filed Mar. 30, 1964.

GLEN NIVEN

For Scotch Whisky.
First use Feb. 7, 1964; in commerce Feb. 7, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 180,835. California Metal Enameling Company, Los Angeles, Calif. Filed Nov. 12, 1963.



For Porcelain Enamel Road Directions Signs.
First use Sept. 4, 1963.

SN 183,315. Coggins Granite Industries, Inc., Elberton, Ga. Filed Dec. 20, 1963.

ETERNAL FLAME

Owner of Reg. Nos. 352,207 and 352,208.
For Stone Monuments, Tablets, Memorials, and Tombstones.
First use Dec. 17, 1963.

SN 189,885. Dymo Industries, Inc., Emeryville, Calif. Filed Mar. 30, 1964.



For Embossing Tapes of Plastic and Metal.
First use on or about Mar. 5, 1964; January 1963 in Association with the word "Dymo."

SN 197,998. Sterneo Industries, Inc., Allendale, N.J. Filed July 16, 1964.

Regency

For Aquariums.
First use May 4, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 165,174. Roger & Gallet S.A., Paris, France, assignee of Roger & Gallet, New York, N.Y. Filed Mar. 21, 1963.

R & G

Owner of Reg. No. 35,737.
For Perfume, Toilet Water, Lotion, Cologne, Cologne Spray, Sachet (Dry Perfume), Face Powder, Talcum Powder, Hair Preparation, Brilliantine, and Lip Pomade.
First use June 1958; in commerce June 1958.

SN 172,340. Roure-Dupont, Inc., New York, N.Y. Filed July 2, 1963.

ROURE DUPONT

The black rectangle shown in the drawing is for background purposes only and forms no part of the mark.
For Perfumes, Colognes, and Toilet Water.
First use approximately 1940.

SN 186,177. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Feb. 6, 1964.

BUT NATURALLY

Owner of Reg. No. 444,307.
For Hair Coloring.
First use Jan. 23, 1964.

SN 187,266. Paul B. Elder Company, Bryan, Ohio. Filed Feb. 24, 1964.

RVP

For Ointment for Human Use Which Protects the Skin From the Sun's Rays.
First use May 23, 1963.

SN 187,269. Ford Model Agency, Incorporated, New York, N.Y. Filed Feb. 24, 1964.

EILEEN FORD

"Eileen Ford" is the name of a living individual whose consent is of record.
For Cosmetic Products—Namely, Face Powder, Face Cream, Cleansing Cream, Liquid Makeup, Eye Shadow, Lipstick, Mascara, Liquid Base for the Lips, Eyebrow Pencil, and Powder Base.
First use Jan. 15, 1963.

SN 189,321. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

KELDERMA

For Massage Cream for Use by Embalmers.
First use June 10, 1960.

SN 190,112. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 1, 1964.

SCOPE

Owner of Reg. Nos. 708,186 and 708,188.
For Mouthwash.
First use Jan. 9, 1964.

SN 190,163. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 2, 1964.

TENDER TOUCH

Owner of Reg. Nos. 692,190, 735,790, and 757,877.
For Cold Permanent Waving Lotion.
First use on or about Mar. 6, 1964.

SN 191,303. Lehn & Fink Products Corporation, New York, N.Y. Filed Apr. 16, 1964.

COLORATURA

For Hair Coloring Preparations.
First use Mar. 26, 1964.

SN 201,110. Erich Dybal, Bregenz am Bodensee, Austria. Filed Sept. 2, 1964.

SNIK

Owner of Austrian Reg. No. 41,596, dated July 3, 1959.
For Suntan Cosmetics.
First use January 1957; in commerce Aug. 27, 1963.
Subj. to Intf. with SN 184,827.

Class 52 — Detergents and Soaps

SN 172,342. Roure-Dupont, Inc., New York, N.Y. Filed July 2, 1963.

ROURE DUPONT

For Toilet Soaps.
First use approximately 1940.

SN 180,747. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Nov. 8, 1963.

LIQUID POWER

For Wax Stripper and Heavy Duty Cleaner.
First use Sept. 24, 1963.

SN 181,552. Lime-Out Co., Inc., Westmont, Ill. Filed Nov. 20, 1963.

ALL OUT

For Cleansing Preparations for Removing Lime, Rust, and Mineral Deposits.
First use May 23, 1963.
Subj. to Intf. with SN 190,791.

SN 186,178. Martens Chemical Corp., College Point, N.Y. Filed Feb. 6, 1964.

UNIT SUDZ

Applicant disclaims the exclusive right to the word "Sudz" except in combination with the rest of the mark shown.
For Detergent Compound for Commercial Laundry Use.
First use Oct. 7, 1957.

SN 187,885. Purex Corporation, Ltd., d.b.a. Turco Products, Inc., Wilmington, Calif. Filed Mar. 3, 1964.

CARBOSTRIP

For Cleaning Agent for Removing Paint, Grease, Varnish, Carbon, and Other Adhesive Soils.
First use June 10, 1954.

SN 188,688. West Chemical Products, Inc., Long Island City, N.Y. Filed Mar. 13, 1964.

WESTGRIP

For Liquid Cleaner and Conditioner for Concrete Floors.
First use Feb. 20, 1964.

SN 189,335. Mayfair Markets, Los Angeles, Calif. Filed Mar. 23, 1964.

Mayfair

For All Purpose Detergents in Powder and Liquid Forms.
First use at least as early as 1956.

SN 190,761. Stanson Chemicals, Edgewater, N.J. Filed Apr. 9, 1964.

BIO-D

For Household Detergent.
First use Oct. 2, 1963.

SN 190,791. Damon Chemical Company, Inc., Alliance, Ohio. Filed Apr. 10, 1964.

ALL OUT

For Drain Solvent and Cleaner.
First use Dec. 18, 1962.
Subj. to Intf. with SN 181,552.

SERVICE MARKS

Class 100 — Miscellaneous

SN 185,271. The College Placement Council, Inc., Bethlehem, Pa. Filed Jan. 24, 1964.

For Services in the Area of College Placement—Namely, Dissemination of Information on Current Salaries and Employment Opportunities; Research in Placement Problems; Maintenance of Liaison With Government Agencies Whose Activities Affect College Placement; and Acting as a Medium for Exchange of Ideas and Services Between College Placement Officers.
First use Oct. 28, 1957.

SN 186,962. National Audubon Society, Inc., New York, N.Y. Filed Feb. 18, 1964.



For Association Services—Namely, Dedication to Conservation of Wildlife, Plants, Soil, and Water in Relation to Human Progress.
First use in about 1944.

Class 106 — Material Treatment

SN 186,512. Barry J. Brose, d.b.a. Highland Laboratories, San Francisco, Calif. Filed Feb. 12, 1964.

The mark consists of the letters "HL."
For Color Film Processing and Film Laboratory Services.
First use Mar. 30, 1961.

Class 107 — Education and Entertainment

SN 183,168. Famous Artists Schools, Inc., New York, N.Y. Filed Dec. 17, 1963.

For Instruction in All Phases of Photography by Means of Correspondence Courses.
First use Oct. 11, 1963.

SN 186,509. Robert E. Baumann, d.b.a. The Apollos, West Sacramento, Calif. Filed Feb. 12, 1964.

THE APOLLOS

For Instrumental, Vocal, Comedy, and Variety Show Entertainment Services Through the Medium of Television, Recordings, Radio, and by Personal Appearances.
First use Nov. 30, 1958.

CERTIFICATION MARKS

Class A — Goods

SN 187,986. The American Sunbathing Association, Inc., Mays Landing, N.J. Filed Feb. 10, 1964.

The mark certifies that the material contained in the goods has met with the requirements of the association and is in accord with the statement of principles of the association set forth in its by-laws.
For Books, Periodicals, Motion Pictures, and Other Literature.
First use Sept. 1, 1953.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

780,088. VICLAN. Imperial Chemical Industries Limited. SN 130,075. Pub. 5–8–62. Filed 10–17–61.

780,089. CP AND DESIGN. Chemical Products Corporation. SN 172,470. Pub. 9–1–64. Filed 7–5–63.

780,090. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,891. Pub. 9–1–64. Filed 8–12–63.

780,091. CELANESE. Celanese Corporation of America. SN 180,561. Pub. 9–1–64. Filed 11–6–63.

780,092. TERSON. Plymouth Cordage Industries, Inc. SN 181,274. Pub. 9–1–64. Filed 11–15–63.

780,093. LEDBREST AND DESIGN. Brown's Ledbrest, Inc. SN 181,612. Pub. 9–1–64. Filed 11–21–63.

780,094. SCULPTURED. Armour and Company. SN 183,655. Pub. 9–1–64. Filed 12–27–63.

780,095. INTRIGUE. Interchemical Corporation. SN 185,896. Pub. 9–1–64. Filed 2–3–64.

780,096. GENERAL GRAPHIC. Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Company. SN 194,103. Pub. 9–1–64. Filed 5–20–64.

Class 2 — Receptades

780,097. WOODPECKER WOODWARE AND DESIGN. Burn-Strauss, Inc., d.b.a. Woodpecker Woodware. SN 164,593. Pub. 9–1–64. Filed 3–14–63.

780,098. ZESTERS. Continental Marketing Corporation. SN 173,742. Pub. 9–1–64. Filed 7–25–63.

780,099. MIX-KIT. DPR Incorporated. SN 179,323. Pub. 9–1–64. Filed 10–18–63.

780,100. BARBAGE PAIL. Julian V. Pace. SN 181,170. Pub. 9–1–64. Filed 11–14–63.

780,101. SEAL-SHEEN. Waldorf Paper Products Company. SN 184,770. Pub. 9–1–64. Filed 1–16–64.

780,102. FEDSTEEL. Federal Steel Corporation. SN 189,457. Pub. 9–1–64. Filed 3–24–64.

780,103. EZ AND DESIGN. Gulf States Paper Corporation. SN 191,285. Pub. 9–1–64. Filed 4–16–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

780,104. CLAUDE RIVIERE. Claude Riviere, S.A.R.L. MULTIPLE CLASS (Classes 3 and 39). SN 171,920. Pub. 9–1–64. Filed 6–26–63.

Class 5 — Adhesives

780,105. AEROBOND. Adhesive Engineering Company. SN 188,408. Pub. 9–1–64. Filed 3–11–64.

780,106. GENERAL GRAPHIC. Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Company. SN 194,104. Pub. 9–1–64. Filed 5–20–64.

Class 6 — Chemicals and Chemical Compositions

780,107. LUCKIE-MACK. McCall Manufacturing Co., assignee of Luckie Magic Corporation. SN 160,194. Pub. 8–27–63. Filed 1–4–63.

780,108. KORATRON. Koratron Company, Inc., assignee of Koret of California, Inc. SN 172,499. Pub. 9–1–64. Filed 7–5–63.

780,109. C–58. Hooker Chemical Corporation. SN 181,549. Pub. 9–1–64. Filed 11–20–63.

780,110. BENTROL. Amchem Products, Inc. SN 181,827. Pub. 9–1–64. Filed 11–26–63.

780,111. CERTROL. Amchem Products, Inc. SN 181,828. Pub. 9–1–64. Filed 11–26–63.

780,112. CELESTAPRINT. Crompton & Knowles Corporation. SN 182,043. Pub. 9–1–64. Filed 11–29–63.

780,113. RESOGEN. Crompton & Knowles Corporation. SN 182,046. Pub. 9–1–64. Filed 11–29–63.

780,114. GAFCOL. General Aniline & Film Corporation. SN 182,262. Pub. 9–1–64. Filed 12–3–63.

780,115. ORIENTAL SCENERY. Nagaoka & Co. Ltd., d.b.a. S. Nagaoka and Sasuke Nagaoka. SN 187,035. Pub. 9–1–64. Filed 2–19–64.

780,116. S. NAGAOKA AND DESIGN. Nagaoka & Co. Ltd., d.b.a. S. Nagaoka and Sasuke Nagaoka. SN 187,036. Pub. 9–1–64. Filed 2–19–64.

780,117. V-C AND DESIGN. Socony Mobil Oil Company, Inc. MULTIPLE CLASS (Classes 6, 10, and 52). SN 189,952. Pub. 9–1–64. Filed 3–30–64.

Class 7 — Cordage

780,118. MARICHROME. M. Dursin and Sons' Inc. SN 194,710. Pub. 9–1–64. Filed 6–2–64.

Class 10 — Fertilizers

780,117. (See Class 6 for this trademark.)

Class 12 — Construction Materials

780,119. "WALJOHN'S." Waljohn Plastics, Inc. SN 166,959. Pub. 9–1–64. Filed 4–17–63.

780,120. ASTROSHIELD. Aeronca Manufacturing Corporation. SN 168,131. Pub. 9–1–64. Filed 5–6–63.

780,121. CONGOLEUM-NAIRN FINE FLOORS AND DESIGN. Congoleum-Nairn Inc. SN 189,555. Pub. 9–1–64. Filed 3–25–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

780,122. DUO-TEMP. Rheem Manufacturing Company. SN 140,292. Pub. 9–1–64. Filed 3–20–62.

780,123. AC AND DESIGN. Akron Brass Company. SN 165,015. Pub. 9–1–64. Filed 3–20–63.

780,124. BANDLOCK. Irrigation Equipment Co. Inc. SN 171,456. Pub. 9–1–64. Filed 6–20–63.

780,125. COPPERCRAFT. Bardes Manufacturing Co. SN 174,072. Pub. 9–1–64. Filed 7–31–63.

780,126. ROYAL SOVEREIGN. The West Bend Company, assignee of U.S. Industries, Inc. SN 174,296. Pub. 9–1–64. Filed 8–2–63.

780,127. VENT RAK AND DESIGN. Herbert S. Fall. SN 174,358. Pub. 9–1–64. Filed 8–5–63.

780,128. TAP-N-VALVE. Dresser Industries, Inc. SN 175,645. Pub. 9–1–64. Filed 8–23–63.

780,129. TEAR-DROP. Essex Wire Corporation. SN 179,030. Pub. 9–1–64. Filed 10–15–63.

780,130. ADAMS RITE. Adams Rite Manufacturing Company. SN 181,595. Pub. 9–1–64. Filed 11–21–63.

780,131. TRI-FRI. P. G. Atwood Company. SN 185,976. Pub. 9–1–64. Filed 2–4–64.

780,132. ASTROMATIC. Astroweld Corporation. SN 186,681. Pub. 9–1–64. Filed 2–14–64.

780,133. HELLAN. Eaton Manufacturing Company. SN 186,825. Pub. 9–1–64. Filed 2–17–64.

780,134. EASYFLATE. Eaton Manufacturing Company. SN 187,655. Pub. 9–1–64. Filed 2–28–64.

780,135. UNICRON. The Meadowbrook Company. SN 189,338. Pub. 9–1–64. Filed 3–23–64.

780,136. HRC AND DESIGN. Halkey-Roberts Corporation. SN 189,580. Pub. 9–1–64. Filed 3–25–64.

780,137. CS. American International Tool Corporation. SN 190,577. Pub. 9–1–64. Filed 4–8–64.

Class 14 — Metals and Metal Castings and Forgings

780,138. BACO. The British Aluminium Company Limited. SN 175,546. Pub. 9–1–64. Filed 8–22–63.

Class 15 — Oils and Greases

780,139. KLEAR-KOOL AND DESIGN. Synthelube, Inc. SN 170,239. Pub. 9–1–64. Filed 6–3–63.

780,140. SECO. Sun Oil Company. SN 174,059. Pub. 9–1–64. Filed 7–30–63.

780,141. TRANS-X. Xpelo Products Co. SN 192,446. Pub. 9–1–64. Filed 4–30–64.

780,142. VAN ESTAN. Humble Oil & Refining Company. SN 192,482. Pub. 9–1–64. Filed 5–1–64.

780,143. AROMIN. Humble Oil & Refining Company. SN 193,011. Pub. 9–1–64. Filed 5–8–64.

Class 16 — Protective and Decorative Coatings

780,144. BE AND DESIGN. Bee Chemical Company. SN 170,980. Pub. 9–1–64. Filed 6–14–63.

780,145. PAINT-PEP. ITT Bell & Gossett Inc., assignee of Bell & Gossett Company. SN 171,956. Pub. 8–25–64. Filed 6–27–63.

780,146. VALANE. The Valspar Corporation. SN 174,302. Pub. 9–1–64. Filed 8–2–63.

780,147. VALUMA. The Valspar Corporation. SN 174,303. Pub. 9–1–64. Filed 8–2–63.

780,148. HOT STUFF. Marson Corporation. SN 177,713. Pub. 9–1–64. Filed 9–25–63.

780,149. MINIT-GLAZE. M. A. Bruder & Sons, Incorporated. SN 180,560. Pub. 9–1–64. Filed 11–6–63.

780,150. SNO-FALL AND DESIGN. Philip Kramer, d.b.a. Murd Company. SN 181,819. Pub. 9–1–64. Filed 11–22–63.

780,151. VANAJ. R. T. Vanderbilt Company, Inc. SN 185,960. Pub. 9–1–64. Filed 2–3–64.

780,152. SPACE-COTE. Evansville Paint & Varnish Co. SN 188,224. Pub. 9–1–64. Filed 3–9–64.

780,153. CONGOLEUM-NAIRN FINE FLOORS AND DESIGN. Congoleum-Nairn Inc. SN 189,556. Pub. 9–1–64. Filed 3–25–64.

Class 17 — Tobacco Products

780,154. TARGET AND ARROW (DESIGN). Brown & Williamson Tobacco Corporation. SN 169,512. Pub. 9–1–64. Filed 5–23–63.

780,155. MIDDLETON 5. John Middleton, Inc. SN 176,107. Pub. 9–1–64. Filed 8–30–63.

780,156. STYLIZED INDIAN HEAD (DESIGN). The American Tobacco Company. SN 183,949. Pub. 9–1–64. Filed 1–3–64.

780,157. TYCOON. Stephano Brothers. SN 189,117. Pub. 9–1–64. Filed 3–19–64.

780,158. GRESHAM AND DESIGN. The Universal Tobacco Company Limited. SN 189,227. Pub. 9–1–64. Filed 3–20–64.

Class 18 — Medicines and Pharmaceutical Preparations

780,159. ANASMIN. American Home Products Corporation, assignee of Tri-Kem Corporation. SN 122,860. Pub. 9–24–63. Filed 6–26–61.

780,160. NARILET. Boehringer Ingelheim, G.m.b.H., assignee of C. H. Boehringer Sohn. SN 180,065. Pub. 9–1–64. Filed 10–30–63.

780,161. GASTROENTERASE. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 181,337. Pub. 9–1–64. Filed 11–18–63.

780,162. KEL-GARD. Kellogg Company. SN 186,626. Pub. 9–1–64. Filed 2–13–64.

780,163. TOPIGEL. Reed & Carnrick. SN 187,797. Pub. 9–1–64. Filed 3–2–64.

780,164. DID. Chesebrough-Pond's Inc. SN 187,854. Pub. 9–1–64. Filed 3–3–64.

780,165. PHOS-FLUR. Hoyt Pharmaceutical Corporation. SN 188,106. Pub. 9–1–64. Filed 3–6–64.

780,166. IMMEDEX. Lever Brothers Company. SN 188,116. Pub. 9–1–64. Filed 3–6–64.

780,167. CADENCE. Menley & James Laboratories, Ltd. SN 188,256. Pub. 9–1–64. Filed 3–9–64.

780,168. CELLUCARPINE. American Home Products Corporation. SN 188,411. Pub. 9–1–64. Filed 3–11–64.

780,169. IMMUGLOBIN. Savage Laboratories, Inc. SN 188,664. Pub. 9–1–64. Filed 3–13–64.

780,170. MANSONIL. Farbenfabriken Bayer Aktiengesellschaft. SN 188,740. Pub. 9–1–64. Filed 3–16–64.

780,171. TOLFERINIC. B. F. Ascher & Company, Inc. SN 188,946. Pub. 9–1–64. Filed 3–18–64.

780,172. TRIPTIL. Merck & Co., Inc. SN 188,988. Pub. 9–1–64. Filed 3–18–64.

780,173. WYETH SERVICE TO MEDICINE AND DESIGN. American Home Products Corporation. SN 189,032. Pub. 9–1–64. Filed 3–19–64.

780,174. ANBECAINE. Anbesol Company, Inc. SN 189,033. Pub. 9–1–64. Filed 3–19–64.

780,175. ZODYS AND DESIGN. Hartfield Stores, Incorporated. SN 189,074. Pub. 9–1–64. Filed 3–19–64.

780,176. CATALGIX. Societe des Usines Chimiques Rhone-Poulenc. SN 189,114. Pub. 9–1–64. Filed 3–19–64.

780,177. 4-CAST. The Chattanooga Medicine Co., d.b.a. Chattem Laboratories. SN 189,144. Pub. 9–1–64. Filed 3–20–64.

780,178. HOMO-TET. Savage Laboratories, Inc. SN 189,377. Pub. 9–1–64. Filed 3–23–64.

Class 19 — Vehicles

780,179. AMERON. The Kelly-Springfield Tire Company. SN 175,038. Pub. 9–1–64. Filed 8–14–63.

780,180. AMERON. The Kelly-Springfield Tire Company. SN 175,042. Pub. 9–1–64. Filed 8–14–63.

780,181. VALLEY. Valley Tow-Rite, Inc. SN 175,143. Pub. 9–1–64. Filed 8–15–63.

780,182. JET PILOT. American Machine & Foundry Company. SN 175,831. Pub. 9–1–64. Filed 8–27–63.

780,183. ONE TRANSVERSE RED BAND ON BICYCLE BRAKE HUB (DESIGN). The Bendix Corporation. SN 184,345. Pub. 9–1–64. Filed 1–10–64.

780,184. ARTICOVER. Frank William Renwick. SN 193,697. Pub. 9–1–64. Filed 5–18–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

780,185. CONSUL. General Consolidated Ltd. SN 156,401. Pub. 9–1–64. Filed 11–1–62.

780,186. CONSUL-AIR. General Consolidated Ltd. SN 156,402. Pub. 9–1–64. Filed 11–1–62.

780,187. MUTRON AND DESIGN. Mutron Corporation. SN 159,762. Pub. 9–1–64. Filed 12–26–62.

780,188. DYNAMICON. The Machlett Laboratories, Inc. SN 171,024. Pub. 9–1–64. Filed 6–14–63.

780,189. LITE-A-LAMP. Ebert Electronics Corp. SN 174,945. Pub. 9–1–64. Filed 8–13–63.

780,190. MIN E LITER AND DESIGN. Ebert Electronics Corp. SN 174,946. Pub. 9–1–64. Filed 8–13–63.

780,191. STREET LITER. Ebert Electronics Corp. SN 174,947. Pub. 9–1–64. Filed 8–13–63.

780,192. IMPERIAL AND DESIGN. The Imperial Electric Co. SN 179,503. Pub 9–1–64. Filed 10–21–63.

780,193. MAXI-LIGHTER. Allmand Brothers, Inc. SN 179,577. Pub. 9–1–64. Filed 10–23–63.

780,194. DEEP SWEEP ETC. AND DESIGN. The Regina Corporation. SN 181,801. Pub. 9–1–64. Filed 11–22–63.

780,195. HIGHLANDER. Union Carbide Corporation. SN 182,684. Pub. 9–1–64. Filed 12–9–63.

780,196. DYNAD. Philadelphia Sign Company. MULTIPLE CLASS (Classes 21 and 50). SN 189,100. Pub. 9–1–64. Filed 3–19–64.

780,197. MIDGI-TRIM. Edcliff Instruments, Conelco Division. SN 190,166. Pub. 9–1–64. Filed 4–2–64.

780,198. SOL/STAR AND DESIGN. Solar Light Manufacturing Co. SN 192,092. Pub. 9–1–64. Filed 4–27–64.

780,199. WHIZ-WIRE. Circle F Mfg. Company. SN 192,990. Pub. 9–1–64. Filed 5–8–64.

780,200. HV AND DESIGN. Globe-Union Inc. SN 193,161. Pub. 9–1–64. Filed 5–11–64.

780,201. THUNDER BOLT. Flo-Tronics, Inc., d.b.a. Northern Signal Co. SN 193,395. Pub. 9–1–64. Filed 5–13–64.

780,202. MARKETMASTER. Ultronic Systems Corp. SN 193,592. Pub. 9–1–64. Filed 5–15–64.

780,203. NEXUS AND DESIGN. Nexus Research Laboratory, Inc. SN 194,910. Pub. 9–1–64. Filed 6–4–64.

Class 22 — Games, Toys, and Sporting Goods

780,204. PRETZEL. Transogram Company, Inc. SN 180,247. Pub. 9–1–64. Filed 10–31–63.

780,205. BLIND DATE. The House of Ideas, Inc. SN 181,358. Pub. 9–1–64. Filed 11–18–63.

780,206. IT'S A CINCH. O.D. Bait Specialties. SN 181,669. Pub. 9–1–64. Filed 11–21–63.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

780,207. LITTLE GIANT. Little Giant Crane & Shovel, Inc. SN 136,573. Pub. 9–1–64. Filed 1–25–62.

780,208. LITTLE GIANT AND DESIGN. Little Giant Crane & Shovel, Inc. SN 136,574. Pub. 9–1–64. Filed 1–25–62.

780,209. TYPHOON. Great Neck Saw Manufacturers, Inc. SN 150,780. Pub. 9–1–64. Filed 8–8–62.

780,210. BUCKSTAG. Utica Cutlery Company. SN 164,671. Pub. 9–1–64. Filed 3–14–63.

780,211. JIFFY. Jiffy Bailing Company. SN 173,004. Pub. 9–1–64. Filed 7–15–63.

780,212. SIEMAG. Siemag Siegener Maschinenbau Gesellschaft mit Beschränkter Haftung. SN 173,515. Pub. 9–1–64. Filed 7–22–63.

780,213. AMBA. Philip Goldblatt. SN 174,763. Pub. 9–1–64. Filed 8–9–63.

780,214. AEROFEED. Maschinenfabrik Rieter AG. SN 175,302. Pub. 9–1–64. Filed 8–19–63.

780,215. ROOD AND DESIGN. Garland Sales Company. SN 175,748. Pub. 9–1–64. Filed 8–26–63.

780,216. GRIPHOIST. Griphoist, Inc. SN 175,994. Pub. 9–1–64. Filed 8–29–63.

780,217. SHAFTALIGN ETC. AND DESIGN. Metal Bellows Corporation. SN 176,383. Pub. 9–1–64. Filed 9–5–63.

780,218. SANG BRAND. Schreiber & Goldberg, Inc. SN 177,553. Pub. 9–1–64. Filed 9–23–63.

780,219. MISC. DESIGN. Waldes Kohinoor, Inc. SN 177,585. Pub. 9–1–64. Filed 9–23–63.

780,220. MISC. DESIGN. Gambin S.A. SN 177,625. Pub. 9–1–64. Filed 9–24–63.

780,221. VARI DRAULIC. Eaton Manufacturing Company. SN 178,266. Pub. 9–1–64. Filed 10–3–63.

780,222. TRACETRONIC. Seneca Falls Machine Company. SN 178,568. Pub. 9–1–64. Filed 10–8–63.

780,223. LA SALLE. La Salle Machine Tool, Inc. SN 179,050. Pub. 9–1–64. Filed 10–15–63.

780,224. DERBY. Minnesota Mining and Manufacturing Company. SN 179,439. Pub. 9–1–64. Filed 10–21–63.

780,225. ANCHOR HOCKING. Anchor Hocking Glass Corporation. SN 180,057. Pub. 9–1–64. Filed 10–30–63.

780,226. HYDRO DRIVE. Hydro Drive Corporation, assignee of Hydro Marine, Inc. SN 180,095. Pub. 9–1–64. Filed 10–30–63.

780,227. GARDENHOUSE. Gerald W. Epstein, d.b.a. John M. Shawvan Company. SN 180,501. Pub. 9–1–64. Filed 11–5–63.

780,228. POLY-GLIDE. W. S. Shamban & Co. SN 180,613. Pub. 9–1–64. Filed 11–6–63.

780,229. TRIMCO AUTOMATIC INDEXER. Trim-Master Corporation. SN 181,077. Pub. 9–1–64. Filed 11–13–63.

780,230. WHITMAN & BARNES. United-Greenfield Corporation. SN 181,283. Pub. 9–1–64. Filed 11–15–63.

780,231. ANGELUS. Angelus Sanitary Can Machine Co. SN 181,296. Pub. 9–1–64. Filed 11–18–63.

780,232. ORBITAIRE. Char-Lynn Company. SN 181,752. Pub. 9–1–64. Filed 11–22–63.

780,233. STING RAY. Gelco Mfg. Inc. SN 181,770. Pub. 9–1–64. Filed 11–22–63.

780,234. H-H AND DESIGN. H.H. Products Co., Inc. SN 181,774. Pub. 9–1–64. Filed 11–22–63.

780,235. NORDSON. Nordson Corporation. SN 181,993. Pub. 9–1–64. Filed 11–27–63.

780,236. AIR-CHAMP. Horton Manufacturing Company, Inc. SN 182,266. Pub. 9–1–64. Filed 12–3–63.

780,237. BEE LINE AND DESIGN. Bee Line Company. SN 183,025. Pub. 9–1–64. Filed 12–16–63.

780,238. FORCE FLOW. St. Regis Paper Company. SN 183,114. Pub. 9–1–64. Filed 12–16–63.

780,239. PO-STIK. Cono Christian School, Dept. of Bible Presbyterian Church of Cono Center. SN 183,522. Pub. 9–1–64. Filed 12–4–63.

780,240. RHOMBUS AND BAR (DESIGN). Diamond Chain Company, Inc. SN 184,039. Pub. 9–1–64. Filed 1–6–64.

780,241. PURPOSEFUL GROWTH IN POWER TRANSMISSION AND DESIGN. Diamond Chain Company, Inc. SN 184,040. Pub. 9–1–64. Filed 1–6–64.

780,242. McGOVERN. Young Corporation. SN 184,323. Pub. 9–1–64. Filed 1–9–64.

780,243. DYNAWHIRLPOOL AND DESIGN. American Zinc Lead and Smelting Company. SN 185,009. Pub. 9–1–64. Filed 1–21–64.

780,244. SINCE 1885 CROWELL. Crowell Manufacturing Corporation. SN 185,114. Pub. 9–1–64. Filed 1–22–64.

780,245. ARROW (DESIGN). Applied Power Industries, Inc. SN 185,642. Pub. 9–1–64. Filed 1–30–64.

780,246. NATIONAL. Package Machinery Company. SN 185,709. Pub. 9–1–64. Filed 1–30–64.

780,247. CONTRO MIL AND DESIGN. Entoleter, Inc. SN 185,768. Pub. 9–1–64. Filed 1–31–64.

780,248. INJECTOSET. Pennsalt Chemicals Corporation. SN 185,809. Pub. 9–1–64. Filed 1–31–64.

780,249. WILDON KEY-CRAFT AND DESIGN. Donald J. Wilson, d.b.a. Wilson Key-Craft. SN 185,842. Pub. 9–1–64. Filed 1–30–64.

780,250. BB AND DESIGN. Bonis Bros. Fur Machinery Corp. SN 186,435. Pub. 9–1–64. Filed 2–11–64.

780,251. SIX-SIXTY. Masten Corporation. SN 186,546. Pub. 9–1–64. Filed 2–12–64.

780,252. FANCY FREE. Oneida Ltd. SN 186,554. Pub. 9–1–64. Filed 2–12–64.

780,253. LOC-A-DEX. The Valeron Corporation. SN 186,792. Pub. 9–1–64. Filed 2–14–64.

780,254. TROJAMATIC. Elvin R. Goodrich, d.b.a. Goodrich Maintenance Supply Co. SN 187,415. Pub. 9–1–64. Filed 2–25–64.

780,255. SENSOMATIC. The Monarch Marking System Company. SN 187,680. Pub. 9–1–64. Filed 2–28–64.

780,256. FOAM HOG. Peterson Products of San Mateo, Inc. SN 187,957. Pub. 9–1–64. Filed 3–4–64.

780,257. PLANTASTIC. Imports Unlimited, Inc. SN 188,635. Pub. 9–1–64. Filed 3–13–64.

780,258. GOLDEN SHIELD. Golden Shield Corporation. SN 189,169. Pub. 9–1–64. Filed 3–20–64.

780,259. WATCO AND DESIGN. Watson Manufacturing Company, Inc. SN 189,408. Pub. 9–1–64. Filed 3–23–64.

780,260. PRODUCTION MASTER. Esco Corporation. SN 189,456. Pub. 9–1–64. Filed 3–24–64.

780,261. CHEF. International Electronic Research Corporation. SN 189,477. Pub. 9–1–64. Filed 3–24–64.

780,262. HUNTER. Lambert Incorporated, d.b.a. Hunter Industries. SN 189,481. Pub. 9–1–64. Filed 3–24–64.

780,263. STERLING. SCM Corporation. SN 189,504. Pub. 9–1–64. Filed 3–24–64.

780,264. MINIT-MASTER. York Label Corporation. SN 189,522. Pub. 9–1–64. Filed 3–24–64.

780,265. PINCH-PAK. West Virginia Pulp and Paper Company. SN 189,966. Pub. 9–1–64. Filed 3–30–64.

780,266. NASSAU. Great Neck Saw Manufacturers, Inc. SN 190,003. Pub. 9–1–64. Filed 3–31–64.

780,267. KETTMA. Kettma Hamburger Kettelmaschinenfabrik Erich Hahn K.G. SN 190,936. Pub. 9–1–64. Filed 4–13–64.

780,268. HI MOLY. Future Plastics, Incorporated. SN 191,043. Pub. 9–1–64. Filed 4–14–64.

780,269. RAKE-O-VAC. Goodwin Manufacturing Company. SN 191,544. Pub. 9–1–64. Filed 4–20–64.

780,270. SCORE-AWL. Score-Awl Tool Company. SN 191,615. Pub. 9–1–64. Filed 4–20–64.

780,271. LAFANA. Fabrique Nationale de Lames de Rasoirs. SN 191,756. Pub. 9–1–64. Filed 4–22–64.

780,272. REV JET. Revley Corporation. SN 192,204. Pub. 9–1–64. Filed 4–28–64.

780,273. HAYBINE. Sperry Rand Corporation. SN 192,223. Pub. 9–1–64. Filed 4–28–64.

780,274. VARI-TORQ. Eaton Manufacturing Company. SN 192,378. Pub. 9–1–64. Filed 4–30–64.

780,275. TOW-A-LIFT. Champ Sales Corp. SN 192,564. Pub. 9–1–64. Filed 5–4–64.

780,276. CHAMP. Champ Sales Corp. SN 192,565. Pub. 9–1–64. Filed 5–4–64.

780,277. CHALLENGER. Champ Sales Corp. SN 192,566. Pub. 9–1–64. Filed 5–4–64.

Class 24 — Laundry Appliances and Machines

780,278. DRYNAMIC. Challenge-Cook Bros., Incorporated. SN 187,722. Pub. 9–1–64. Filed 3–2–64.

780,279. SONIC. Sonic Engineering Corporation. SN 189,389. Pub. 9–1–64. Filed 3–23–64.

Class 26 — Measuring and Scientific Appliances

780,280. BYRUM. Bychrome Co. SN 163,802. Pub. 9–1–64. Filed 3–4–63.

780,281. DANA AND DESIGN. Dana Laboratories, Inc. SN 170,298. Pub. 9–1–64. Filed 6–4–63.

780,282. TEMPLE SNUGGERS. Eugene Hefling. SN 170,472. Pub. 9–1–64. Filed 6–6–63.

780,283. LUMOFAX. Lumoprint Zindler, K.G. SN 171,460. Pub. 9–1–64. Filed 6–20–63.

780,284. TELECOUNT. Laboratory for Electronics, Inc. SN 172,203. Pub. 9–1–64. Filed 7–1–63.

780,285. CUBIC. Cubic Corporation. SN 173,432. Pub. 9–1–64. Filed 7–22–63.

780,286. REPRESENTATION OF A GLOBE IN A CUBE. Cubic Corporation. SN 173,433. Pub. 9–1–64. Filed 7–22–63.

780,287. REBIC. Motorola, Inc. SN 174,209. Pub. 9–1–64. Filed 8–1–63.

780,288. TRABIC. Motorola, Inc. SN 174,210. Pub. 9–1–64. Filed 8–1–63.

780,289. SAFE-GARD. Owens-Illinois Glass Company. SN 175,056. Pub. 9–1–64. Filed 8–14–63.

780,290. PI TAPE. Pi Tape. SN 175,674. Pub. 9–1–64. Filed 8–23–63.

780,291. BAS-PED. Irving P. Filderman. SN 180,389. Pub. 9–1–64. Filed 11–4–63.

780,292. GAERTNER. The Gaertner Scientific Corporation. SN 183,907. Pub. 9–1–64. Filed 1–2–64.

780,293. KALVATONE. Kalvar Corporation. SN 184,078. Pub. 9–1–64. Filed 1–6–64.

780,294. SSL AND DESIGN. Rayflex Exploration Company. SN 184,397. Pub. 9–1–64. Filed 1–10–64.

780,295. SHELF-PACK. Owens-Illinois Glass Company. SN 187,512. Pub. 9–1–64. Filed 2–26–64.

Class 27 — Horological Instruments

780,296. BIFIX. Erismann-Schinz S.A. SN 173,438. Pub. 9–1–64. Filed 7–22–63.

780,297. KIT CAT KLOCK. Clifford A. Stone, d.b.a. Allied Plastic Sales. SN 182,370. Pub. 9–1–64. Filed 12–4–63.

Class 28 — Jewelry and Precious-Metal Ware

780,298. IDENTIFIED DIAMONDS. C. A. Kiger Company. SN 185,520. Pub. 9–1–64. Filed 1–28–64.

780,299. FIFTH AVENUE JEWELS. C. Ray Randall Manufacturing Company. SN 186,761. Pub. 9–1–64. Filed 2–14–64.

780,300. T AND DESIGN. Sears, Roebuck and Co. SN 188,584. Pub. 9–1–64. Filed 3–12–64.

780,301. EUROWED ETC. AND DESIGN. Brody, Williams & Son Inc. SN 191,356. Pub. 9–1–64. Filed 4–17–64.

780,302. MONOCROWN. Monocrown, assignee of Gemex Precision Metals, Inc. SN 191,760. Pub. 9–1–64. Filed 4–22–64

Class 29 — Brooms, Brushes, and Dusters

780,303. SPIRAL STRIPE ON A PAINT ROLLER COVER (DESIGN). The Wooster Brush Company. SN 143,194. Pub. 9–1–64. Filed 4–26–62.

780,304. ELEPHANT AND DESIGN. La Brosse et J. Dupont Reunis. SN 188,035. Pub. 9–1–64. Filed 3–5–64.

Class 32 — Furniture and Upholstery

780,305. HAPPY HOME. F. W. Woolworth Co. SN 168,375. Pub. 9–1–64. Filed 5–7–63.

780,306. PORTA-FILE AND DESIGN. Hamilton-Skotch Corporation. SN 173,251. Pub. 9–1–64. Filed 7–18–63.

780,307. PORTA-FILE AND DESIGN. Hamilton-Skotch Corporation. SN 173,252. Pub. 9–1–64. Filed 7–18–63.

780,308. PORTA CHECK FILE AND DESIGN. Hamilton-Skotch Corporation. SN 173,253. Pub. 9–1–64. Filed 7–18–63.

780,309. SNOW GOOSE AND DESIGN. Comfort Pillow & Feather Co., d.b.a. Comfort Pillow and Feather Co. SN 173,339. Pub. 9–1–64. Filed 7–19–63.

780,310. GLAMOURLAMB AND DESIGN. Illinois Sheepskins, Inc. SN 174,959. Pub. 9–1–64. Filed 8–13–63.

780,311. VENTEX. Institutional Industries, Inc. SN 176,305. Pub. 9–1–64. Filed 9–4–63.

780,312. STANDARD. Standard Furniture Company. SN 179,075. Pub. 9–1–64. Filed 10–15–63.

780,313. LAD & LASSIE. Shamrock-Neatway Products, Inc. SN 184,519. Pub. 9–1–64. Filed 1–13–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

780,314. KINSLEY. Sims Corporation. SN 161,566. Pub. 9–1–64. Filed 1–28–63.

780,315. SPEED-PAK. Hydrotherm, Inc. SN 164,621. Pub. 9–1–64. Filed 3–14–63.

780,316. PARACOIL. Aqua-Chem, Inc., assignee of Capitol Products Corporation. SN 166,063. Pub. 9–1–64. Filed 4–4–63.

780,317. THE FIREPLACE DOCTOR "HEARTH TO CHIMNEY TOP" AND DESIGN. Thomas L. Gaddle, d.b.a. The Fireplace Doctor. SN 166,861. Pub. 9–1–64. Filed 4–11–63.

780,318. "WALJOHN'S." Waljohn Plastics, Inc. SN 166,960. Pub. 9–1–64. Filed 4–17–63.

780,319. SWING-LOK. Graham Manufacturing Co., Inc. SN 177,984. Pub. 9–1–64. Filed 9–30–63.

780,320. UTICA AQUA-FIN. Utica Radiator Corporation. SN 178,066. Pub. 9–1–64. Filed 9–30–63.

780,321. NPC ETC. AND DESIGN. National Propane Corporation. SN 180,671. Pub. 9–1–64. Filed 11–7–63.

780,322. ARISTO-RAY. The Broaster Co. SN 181,454. Pub. 9–1–64. Filed 11–19–63.

780,323. SPUTTERFLY. Milton D. Sobelson, d.b.a. Crafts Guild. SN 188,149. Pub. 9–1–64. Filed 3–6–64.

780,324. ELECTRA. Electro Refractories & Abrasives Corporation. SN 188,218. Pub. 9–1–64. Filed 3–9–64.

780,325. ALITA. Auto-Heat Corporation. SN 188,694. Pub. 9–1–64. Filed 11–5–63.

780,326. THERMO-PRIDE AND DESIGN. Thermo-Products, Inc. SN 188,817. Pub. 9–1–64. Filed 3–16–64.

780,327. BRADFORD AND DESIGN. W. T. Grant Company. SN 192,284. Pub. 9–1–64. Filed 4–29–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

780,328. MISCELLANEOUS DESIGN. Laminated Shim Company, Inc. SN 171,147. Pub. 9–1–64. Filed 6–17–63.

780,329. GILLETTE DELIVERY 15. United States Rubber Company. SN 184,528. Pub. 9–1–64. Filed 1–13–64.

780,330. SUPER SAFETY 800–XP. United States Rubber Company. SN 185,330. Pub. 9–1–64. Filed 1–24–64.

780,331. PROTECTO-SEAL. Berg Mfg. & Sales Co. SN 187,002. Pub. 9–1–64. Filed 2–19–64.

Class 36 — Musical Instruments and Supplies

780,332. DISC-WHISK. Rollin J. Lobaugh, Inc., d.b.a. Corey of California. SN 185,225. Pub. 9–1–64. Filed 1–23–64.

Class 37 — Paper and Stationery

780,333. FONE RITE AND DESIGN. Bissonnette and Company. SN 156,264. Pub. 9–1–64. Filed 10–31–62.

780,334. SURE SPLICE AND DESIGN. Consolidated Papers, Inc. SN 159,337. Pub. 9–1–64. Filed 12–18–62.

780,335. VAN-GARD. International Paper Company. SN 175,412. Pub. 9–1–64. Filed 8–20–63.

780,336. PERFICUT. Nekoosa-Edwards Paper Company. SN 182,107. Pub. 9–1–64. Filed 11–29–63.

780,337. FLEXI-LINKT. Uarco Incorporated. SN 182,449. Pub. 9–1–64. Filed 12–5–63.

780,338. CLIP UP AND DESIGN. Burgess Vibrocrafters, Inc. SN 184,029. Pub. 9–1–64. Filed 1–6–64.

780,339. POCKETEACHER. Ray Lewis Clark. SN 187,246. Pub. 9–1–64. Filed 2–24–64.

780,340. COLOR WRITES POSTALS. Bee Zee Originals. SN 189,777. Pub. 9–1–64. Filed 3–27–64.

780,341. THRIFT SNAP AND DESIGN. Systomatic Business Forms, Inc. SN 190,035. Pub. 9–1–64. Filed 3–31–64.

780,342. MASTERPIECE II. Blaisdell Pencil Company. SN 190,328. Pub. 9–1–64. Filed 4–6–64.

780,343. HAMMERMILL TEXTOPAQUE. Hammermill Paper Company. SN 190,718. Pub. 9–1–64. Filed 4–9–64.

780,344. SPHINX. Saxon Paper Corporation. SN 190,756. Pub. 9–1–64. Filed 4–9–64.

780,345. SPHINX (DESIGN). Saxon Paper Corporation. SN 190,757. Pub. 9–1–64. Filed 4–9–64.

780,346. NE AND DESIGN. Nekoosa-Edwards Paper Company. SN 190,821. Pub. 9–1–64. Filed 4–10–64.

780,347. SURE TIE. Paterson Pacific Parchment Company. SN 190,964. Pub. 9–1–64. Filed 4–13–64.

Class 38 — Prints and Publications

780,348. VICKERS AND DESIGN. Sperry Rand Corporation, by merger from Vickers Incorporated. MULTIPLE CLASS (Classes 38, 100, 103, and 107.) SN 139,706. Pub. 9–1–64. Filed 3–12–62.

780,349. INSIDE THE TURRET. Bean Publishing Company, Inc. SN 172,463. Pub. 9–1–64. Filed 7–5–63.

780,350. U AND I CULTIVATOR AND DESIGN. Utah-Idaho Sugar Company. SN 181,718. Pub. 9–1–64. Filed 11–21–63.

780,351. RETROSPECT. Ace Books, Inc. SN 185,968. Pub. 9–1–64. Filed 2–3–64.

780,352. MRS. FITZ. The Hearst Corporation. SN 186,531. Pub. 9–1–64. Filed 2–12–64.

780,353. THE ROPE MAKER. Rochester Ropes, Inc. (Virginia corporation), by assignment and change of name from Rochester Ropes, Inc. (New York corporation). SN 186,645. Pub. 9–1–64. Filed 2–13–64.

780,354. ROFLOK. Rose Patch & Label Company. SN 186,768. Pub. 9–1–64. Filed 2–14–64.

780,355. DIRECTION AND DESIGN. Joint Council on Economic Education. SN 186,953. Pub. 9–1–64. Filed 2–18–64.

780,356. AHS AND DESIGN. American Heat-Seal, Inc. SN 190,050. Pub. 9–1–64. Filed 4–1–64.

780,357. SOAP AND CHEMICAL SPECIALTIES. MacNair-Dorland Company. SN 196,874. Pub. 9–1–64. Filed 7–1–64.

Class 39 — Clothing

780,104. (See Class 3 for this trademark.)

780,358. TRICO TREAT. Burlington Industries, Inc., by merger, change of name and assignment from Flexnit Company, Inc. SN 152,507. Pub. 3–17–64. Filed 9–5–62.

780,359. REPRESENTATION OF A BUTTERFLY. City Stores Company. SN 153,382. Pub. 9–1–64. Filed 9–18–62.

780,360. GRO CUP. Teenform, Inc. SN 153,703. Pub. 9–1–64. Filed 9–21–62.

780,361. MAJER SLACKS AND DESIGN. The Majer Brand Company, Inc. SN 159,831. Pub. 9–1–64. Filed 12–27–62.

780,362. SWIVELASTIC. Sunstate Sportswear, Inc. SN 160,450. Pub. 9–1–64. Filed 1–9–63.

780,363. "FINGER-FIT." Kayser-Roth Corporation. SN 161,886. Pub. 9–1–64. Filed 2–1–63.

780,364. LONDON BRIDGE. London Bridge Shoes, Inc., by change of name from American Footwear Corporation. SN 163,688. Pub. 8–25–64. Filed 2–28–63.

780,365. DESIGN OF TWO SNAKES. Impermeabili San Giorgia Societa per Azioni. SN 170,750. Pub. 9–1–64. Filed 6–11–63.

780,366. IMPERMEABILI SAN GIORGIO. Impermeabili San Giorgio Societa per Azioni. SN 170,751. Pub. 9–1–64. Filed 6–11–63.

780,367. LADY NIP N' TUCK. Max Ulman, Inc. SN 170,847. Pub. 9–1–64. Filed 6–12–63.

780,368. INVADER. Michaels Stern & Company Incorporated. SN 171,158. Pub. 9–1–64. Filed 6–17–63.

780,369. GOOD-MIXER. Hughes & Hatcher, Inc. SN 172,064. Pub. 9–1–64. Filed 6–28–63.

780,370. SYBURNE. Unimart, Inc. SN 172,858. Pub. 9–1–64. Filed 7–10–63.

780,371. SHU-LIFE ETC. AND DESIGN. Knapp Brothers Shoe Manufacturing Corporation. SN 169,638. Pub. 9–15–64. Filed 5–24–63.

780,372. ROBERT HALL'S WONDERFUL WORLD OF CLOTHES AND DESIGN. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 173,455. Pub. 9–1–64. Filed 7–22–63.

780,373. ROBERT HALL'S WONDERFUL WORLD OF CLOTHES. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 173,456. Pub. 9–1–64. Filed 7–22–63.

780,374. WONDERFUL WORLD OF CLOTHES. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 173,457. Pub. 9–1–64. Filed 7–22–63.

780,375. BY MIA BETTA AND DESIGN. Mia Betta, Inc. SN 174,887. Pub. 9–1–64. Filed 8–12–63.

780,376. HILL & HOLT LTD. Blue Bell, Inc. SN 175,836. Pub. 9–1–64. Filed 8–27–63.

780,377. "GOOD TASTE COSTS NOTHING." Al Levy's, Inc. SN 176,661. Pub. 9–1–64. Filed 9–10–63.

780,378. XCENTRIX. Antics, Inc. SN 176,701. Pub. 9–1–64. Filed 9–11–63.

780,379. CHEVRON-ETTES AND DESIGN. Acme Boot Company, Inc. SN 177,209. Pub. 9–1–64. Filed 9–18–63.

780,380. STUART McGUIRE. Ortho-Vent Shoe Company, Inc. SN 178,562. Pub. 9–1–64. Filed 10–8–63.

780,381. CUSTOM MADE BY MINI RHEA. Mini Rhea. SN 179,926. Pub. 9–1–64. Filed 10–28–63.

780,382. LILLI PICHELLE. Louis H. Salvage Shoe Company, Inc. SN 182,659. Pub. 9–1–64. Filed 12–9–63.

780,383. JUNIOR FALCON. Georgia Shoe Manufacturing Company, Inc. SN 182,791. Pub. 9–1–64. Filed 12–11–63.

780,384. O AND DESIGN. Olga Company. SN 183,445. Pub. 9–1–64. Filed 12–23–63.

780,385. OLGA AND DESIGN. Olga Company. SN 183,446. Pub. 9–1–64. Filed 12–23–63.

780,386. GAITERS. Sweet-Orr & Co., Inc. SN 183,933. Pub. 9–1–64. Filed 1–2–64.

780,387. DAVINO. Henry Levine Co., Inc. SN 183,983. Pub. 9–1–64. Filed 1–3–64.

780,388. ROMALMA. Romalma Knitwear of Italy, d.b.a. Gregg, Inc. SN 184,512. Pub. 9–1–64. Filed 1–13–64.

780,389. CRUSH IT . . . KNOT IT . . . EVEN WASH IT . . . FRESH AS NEW! AND DESIGN. Wembley, Inc. SN 184,674. Pub. 9–1–64. Filed 1–15–64.

780,390. AQUA-NAUTS. Wm. Bach & Co. SN 184,785. Pub. 9–1–64. Filed 1–17–64.

780,391. ACTION-TREAD AND DESIGN. Dan Cohen Company. SN 185,022. Pub. 9–1–64. Filed 1–21–64.

780,392. SWAN-TEX. White Swan Uniforms, Inc. SN 185,544. Pub. 9–1–64. Filed 1–28–64.

780,393. BANDBOX TRAVELER. Bandbox Sportswear, Inc. SN 185,551. Pub. 9–1–64. Filed 1–29–64.

780,394. AMERICAN GIRL. American Girl Shoe Co. SN 186,044. Pub. 9–1–64. Filed 2–5–64.

780,395. ROUTE 66. Lucky Stride Shoes, Inc. SN 186,089. Pub. 9–1–64. Filed 2–5–64.

780,396. MAGIC NEEDLE. Varsity Pajamas, Incorporated, d.b.a. Varsity Pajamas, Inc. SN 186,210. Pub. 9–1–64. Filed 2–6–64.

780,397. HONDO. Blue Bell, Inc. SN 186,229. Pub. 9–1–64. Filed 2–7–64.

780,398. WHOOPEETITES. A. H. Schreiber Co. Incorporated. SN 186,399. Pub. 9–1–64. Filed 2–10–64.

780,399. LOVE BUG. Infanta Knitting Mills. SN 186,537. Pub. 9–1–64. Filed 2–12–64.

780,400. LIVING. International Latex Corp. SN 186,538. Pub. 9–1–64. Filed 2–12–64.

780,401. IN-GENIUS. Peter Pan Foundations, Inc. SN 186,757. Pub. 9–1–64. Filed 2–14–64.

780,402. ROYALTY. Brooklyn Mills, Inc. SN 186,810. Pub. 9–1–64. Filed 2–17–64.

780,403. ON THE TOWN. Raleigh Manufacturers, Inc. SN 186,970. Pub. 9–1–64. Filed 2–18–64.

780,404. NATURALIZER. Brown Shoe Company, Inc. SN 187,006. Pub. 9–1–64. Filed 2–19–64.

780,405. STUART 18. Famous-Sternberg, Inc. SN 187,097. Pub. 9–1–64. Filed 2–20–64.

780,406. TOPSALL. F. W. Woolworth Co. SN 187,184. Pub. 9–1–64. Filed 2–21–64.

780,407. VOOMERANG. Melville Shoe Corporation. SN 187,503. Pub. 9–1–64. Filed 2–26–64.

Class 40 — Fancy Goods, Furnishings, and Notions

780,408. FLATOPPER. Amerace Corporation. SN 194,851. Pub. 9–1–64. Filed 6–4–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

780,409. REEVAIR SUPERIMPOSED ON AN ARK IN THE RAIN. Reeves Brothers, Inc. SN 156,659. Pub. 9–1–64. Filed 11–5–62.

780,410. REPRESENTATION OF ARK IN RAIN. Reeves Brothers, Inc. SN 156,660. Pub. 9–1–64. Filed 11–5–62.

780,411. NOB HILL. L. Myers Company. SN 162,474. Pub. 9–1–64. Filed 2–11–63.

780,412. BRIDAL SUITE. L. Myers Company. SN 162,475. Pub. 9–1–64. Filed 2–11–63.

780,413. "BACK TO BACK." William Heller, Inc. SN 170,907. Pub. 9–1–64. Filed 6–13–63.

780,414. KENDIX AND DESIGN. Internationale Textiel Organisatie Kendix N.V., d.b.a. International Kendix. SN 171,063. Pub. 9–1–64. Filed 6–11–63.

780,415. Q-TEST. Victor S. Noerdlinger Inc. SN 175,201. Pub. 9–1–64. Filed 8–16–63.

780,416. SCOTTALIA. Forsythe Woolen Co., Inc. SN 176,650. Pub. 9–1–64. Filed 9–10–63.

780,417. H_2O. J. P. Stevens & Co., Inc. SN 177,461. Pub. 9–1–64. Filed 9–20–63.

780,418. LEMARK. Harlemark International, Inc. MULTIPLE CLASS (Classes 42 and 44). SN 181,637. Pub. 9–1–64. Filed 11–21–63.

780,419. BIG BRASS. Deering Milliken, Inc. SN 185,277. Pub. 9–1–64. Filed 1–24–64.

780,420. MILLIMATIC. Deering Milliken, Inc. SN 185,281. Pub. 9–1–64. Filed 1–24–64.

780,421. BEAUTY LOFT. Beacon Manufacturing Company. SN 185,352. Pub. 9–1–64. Filed 1–27–64.

780,422. SENTEENA. United Merchants and Manufacturers, Inc. SN 185,459. Pub. 9–1–64. Filed 1–27–64.

780,423. VIBRONIC. Callaway Mills Company. SN 186,929. Pub. 9–1–64. Filed 2–18–64.

780,424. MONTEREAU. Fieldcrest Mills, Inc. SN 187,016. Pub. 9–1–64. Filed 2–19–64.

780,425. AHS AND DESIGN. American Heat-Seal, Inc. SN 190,051. Pub. 9–1–64. Filed 4–1–64.

Class 43 — Thread and Yarn

780,426. STAR DE LUXE. The American Thread Company. SN 178,754. Pub. 9–1–64. Filed 10–10–63.

780,427. STAR SIX CORD. The American Thread Company. SN 178,765. Pub. 9–1–64. Filed 10–11–63.

780,428. CUDDLESPUN. Emile Bernat & Sons Co. SN 182,311. Pub. 9–1–64. Filed 12–4–63.

780,429. STA-BOND. Standard Thread Co., Inc. SN 186,785. Pub. 9–1–64. Filed 2–14–64.

Class 44 — Dental, Medical, and Surgical Appliances

780,418. (See Class 42 for this trademark.)

780,430. A VITAL LINK IN THE NATION'S HEALTH. Popper & Sons, Inc. SN 173,501. Pub. 9–1–64. Filed 7–22–63.

780,431. MI AND DESIGN. Howard B. Bymel, d.b.a. Medical Industries. SN 174,164. Pub. 9–1–64. Filed 8–1–63.

780,432. SPIREC. The Star Dental Manufacturing Co., Inc., d.b.a. Star Dental Manufacturing Company, Inc. and Star Dental Mfg. Co., Inc. SN 176,685. Pub. 9–1–64. Filed 9–10–63.

780,433. C. D. SCOPE. Mediplastics Corporation. SN 180,936. Pub. 9–1–64. Filed 11–12–63.

780,434. PLASTISCOPE. Mediplastics Corporation. SN 180,937. Pub. 9–1–64. Filed 11–12–63.

780,435. DISPOSOSCOPE. Mediplastics Corporation. SN 180,938. Pub. 9–1–64. Filed 11–12–63.

780,436. MEDISCOPE. Mediplastics Corporation. SN 180,939. Pub. 9–1–64. Filed 11–12–63.

780,437. FABRILON. The Veratex Corporation. SN 183,134. Pub. 9–1–64. Filed 12–16–63.

Class 46 — Foods and Ingredients of Foods

780,438. PETITJEAN. Petitjean, Gay & Cie. SN 153,110. Pub. 3–10–64. Filed 9–13–62.

780,439. CHERRY MASH AND DESIGN. Chase Candy Company. SN 153,937. Pub. 9–1–64. Filed 9–26–62.

780,440. O-AT-KA. O-At-Ka Milk Products Cooperative Incorporated. SN 174,224. Pub. 9–1–64. Filed 8–1–63.

780,441. OPTILAC. Carnation Company. SN 174,573. Pub. 9–1–64. Filed 8–7–63.

780,442. KING. Mangels, Herold Company, Inc. SN 177,265. Pub. 7–7–64. Filed 9–18—63.

780,443. GRO-FRESH. Avon Frosted Foods, Inc. SN 177,748. Pub. 9–1–64. Filed 9–26–63.

780,444. SOLU-SPICE. Stange Co., by change of name from Wm. J. Stange Co. SN 186,409. Pub. 9–1–64. Filed 2–10–64.

780,445. FIRMIT. Meat Industry Suppliers, Inc. SN 187,773. Pub. 9–1–64. Filed 3–2–64.

780,446. FAMILY KITCHEN. Hayden Flour Mills. SN 188,235. Pub. 9–1–64. Filed 3–9–64.

780,447. FLY LIMIT AND DESIGN. Vit-A-Way, Incorporated. SN 188,488. Pub. 9–1–64. Filed 3–11–64.

780,448. CHAM-PIN-YONN. Hodges Research and Development Company, Inc. SN 188,868. Pub. 9–1–64. Filed 3–17–64.

780,449. SATELLITE. H. K. Webster Company. SN 190,472. Pub. 9–1–64. Filed 4–6–64.

780,450. AMORA. Ida Mae Salads, Inc., d.b.a. Amora Foods. SN 190,619. Pub. 9–1–64. Filed 4–8–64.

Class 49 — Distilled Alcoholic Liquors

780,451. KAOKA. The American Distilling Company. SN 181,294. Pub. 9–1–64. Filed 11–18–63.

Class 50 — Merchandise Not Otherwise Classified

780,196. (See Class 21 for this trademark.)

780,452. GATHER-ALL. Automatic Poultry Feeder Company. SN 192,548. Pub. 9–1–64. Filed 5–4–64.

780,453. FUTURAPIKS. Zoo-Piks. SN 192,577. Pub. 9–1–64. Filed 5–4–64.

Class 51 — Cosmetics and Toilet Preparations

780,454. MAGIC-CURL. Crowning Glory, Inc. SN 161,854. Pub. 2-18-64. Filed 2-1-63.

780,455. AS YOU WERE. Beauty Specialties, Inc. SN 183,954. Pub. 9-1-64. Filed 1-3-64.

780,456. SMOKE SCREEN. Normal Pharmacal, Inc. SN 190,107. Pub. 9-1-64. Filed 4-1-64.

Class 52 — Detergents and Soaps

780,117. (See Class 6 for this trademark.)

780,457. GENERAL GRAPHIC. Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Company. SN 177,562. Pub. 9-1-64. Filed 9-23-63.

780,458. BRONNLEY. H. Bronnley & Co., Limited. SN 181,750. Pub. 9-1-64. Filed 11-22-63.

Service Marks

Class 100 — Miscellaneous

780,348. (See Class 38 for this trademark.)

Class 101 — Advertising and Business

780,459. FLEET TRACTOR STORES AND DESIGN. Fleet Tractor Stores, Inc. SN 145,822. Pub. 9-1-64. Filed 5-31-62.

780,460. REALY STATE. Realy State, Inc., assignee of A. T. Beckwith. SN 177,676. Pub. 7-28-64. Filed 9-25-63.

780,461. CREATIVE MONEY MANAGEMENT C.M.M. AND DESIGN. Israel Unterman, Inc. SN 182,228. Pub. 9-1-64. Filed 12-2-63.

Class 102 — Insurance and Financial

780,462. "THAT'S THE BANK FOR MY MONEY." Denver United States National Bank. SN 132,646. Pub. 9-1-64. Filed 11-24-61.

780,463. CAPS. CAPS, Inc. SN 180,809. Pub. 9-1-64. Filed 11-8-63.

Class 103 — Construction and Repair

780,348. (See Class 38 for this trademark.)

Class 106 — Material Treatment

780,464. HI-PUFF. T.P. Corporation. SN 181,426. Pub. 9-1-64. Filed 11-18-63.

Class 107 — Education and Entertainment

780,348. (See Class 38 for this trademark.)

780,465. GLOBAL GOLF. A & W Root Beer Co. SN 174,146. Pub. 9-1-64. Filed 8-1-63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

780,473. H. B. Hunter Company, Inc., Norfolk, Va. SN 155,803. Filed P.R. 10-24-62; Am. S.R. 9-11-64.

THOROUGHGOOD

Class 45—Soft Drinks and Carbonated Waters

For Non-Alcoholic Mixes for Making Cocktail Drinks.

Class 46—Foods and Ingredients of Foods

For Lemon Butter Sauce Used as Dessert Topping and Also Used To Flavor Meat, Fish and Vegetables; Syrups Used as Dessert Topping and Also Used for Other Purposes.

First use Oct. 12, 1962.

SECTION 2

Class 2 — Receptades

780,466. Imperial Packaging Corporation, Baltimore, Md. SN 175,996. Filed P.R. 8-29-63; Am. S.R. 9-15-64.

CARRIER BOX

For Collapsible Reinforced Paper Bag With Closable Top and Carrying Handle.
First use July 22, 1963.

Class 6 — Chemicals and Chemical Compositions

780,467. Gould's 'Dell' Products, Williamsport, Pa. SN 177,983. Filed P.R. 9-30-63; Am. S.R. 8-5-64.

FLAVORIZED
RATKakes

For Rodenticide.
First use Feb. 9, 1960.

Class 14 — Metals and Metal Castings and Forgings

780,468. New Hermes Engraving Machine Corp., New York, N.Y. SN 179,153. Filed P.R. 10-16-63; Am. S.R. 9-25-64.

QuickType

For Engraving Type.
First use Aug. 15, 1963.

Class 19 — Vehicles

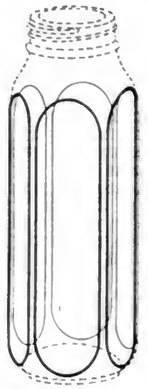
780,469. Beacon Cycle and Supply Co., Milwaukee, Wis. SN 153,059. Filed P.R. 9-13-62; Am. S.R. 7-17-63.

Bike Pak

For Structural Bicycle Parts and Accessories Sold in Packaged Condition, Namely, Air Horns, Mechanical Horns, Bells, Hand Grips, Mirrors, Pedals and Pedal Blocks, and Saddle Covers.
First use on or about Oct. 15, 1961.

Class 22 — Games, Toys, and Sporting Goods

780,470. Dunhill International, Inc., New York, N.Y. SN 161,024. Filed 1-21-63.



The mark consists of six equally spaced apart panels on the side of the bottle.
For Toy Nursing Bottles and Bottle Components of Toy Nursers and Toy Nursing Units.
First use Feb. 24, 1953.

Class 39 — Clothing

780,471. Modern Juniors Inc., New York, N.Y. SN 156,637. Filed P.R. 11-5-62; Am. S.R. 9-14-64.

MODERNO KNITS

For Ladies Sportswear, Namely, Skirts, Blouses, Jackets and Suits, Made of Knit Woolen Goods.
First use June 1, 1962.

780,472. The Bennett Corporation, Passaic, N.J. SN 181,846. Filed P.R. 11-26-63; Am. S.R. 9-18-64.

BENNETT

For Men's Shirts.
First use Sept. 6, 1963.

Class 46 — Foods and Ingredients of Foods

780,473. See Section 1 (Combined Certificate).

780,474. William E. Uckele, Blissfield, Mich. SN 178,152. Filed P.R. 10-1-63; Am. S.R. 9-24-64.

Uckele's
SUPER PIG PRODUCER



For Swine Feed (Premix).
First use Aug. 20, 1963.

780,475. Kal Kan Foods, Inc., d.b.a. Meaty-Fresh Company, Los Angeles, Calif. SN 184,386. Filed P.R. 1-10-64; Am. S.R. 6-29-64.

Meaty-Fresh

For Packaged Ground Beef With Meat By-Products for Dogs and Cats.
First use Mar. 5, 1942.

Class 49 — Distilled Alcoholic Liquors

780,476. Distillerie Konig G.m.b.H., Lisihus, Zug, Switzerland, by change of name from Puschkin G.m.b.H., Lisihus, Zug, Switzerland. SN 142,449. Filed P.R. 4-17-62; Am. S.R. 9-23-64.

PUSCHKIN

For Vodka.
First use Oct. 21, 1959; in commerce Oct. 14, 1961.

780,477. Schenley Distillers, Inc., New York, N.Y. SN 178,049. Filed P.R. 9–30–63; Am. S.R. 9–23–64.

ASHBURNE'S

For Gin.
First use Aug. 13, 1963.

780,478. Ross & Cameron Limited, Leith, Scotland. SN 187,641. Filed 2–26–64.



The drawing is lined for shading purposes only. The Latin words "Memone Impune Lacessit" mean "No One Injures Me With Impugnity."
For Scotch Whisky.
First use on or about June 19, 1961, 1800 in a different form; in commerce on or about June 19, 1961.

Class 51 — Cosmetics and Toilet Preparations

780,479 Avon Products, Inc., New York, N.Y. SN 158,130. Filed P.R. 11–29–62; Am. S.R. 9–15–64.

SKIN-SO-SOFT

For Bath Oil.
First use May 6, 1962.

Service Mark

Class 100 — Miscellaneous

780,480. Ramada Inn, Inc., Chicago, Ill. SN 143,867. Filed P.R. 5–4–62; Am. S.R. 9–23–64.

LUXURY FOR LESS

For Hotel and Inn Services.
First use Feb. 1, 1960.

TRADEMARK REGISTRATIONS RENEWED

182,655. PRINCESSE ROYALE AND DESIGN. Cl. 51. 4–15–24.
183,286. RANDLEIGH. Cl. 46. 4–29–24.
187,771. RAMBLER. Cl. 17. 8–12–24.
188,234. WHITE PEARL. Cl. 46. 8–19–24.
188,667. MALINA. Cl. 42. 9–2–24.
188,668. MIRELLA. Cl. 42. 9–2–24.
188,769. CHEVRONETTE. Cl. 42. 9–2–24.
188,770. CHEVRONEEN. Cl. 42. 9–2–24.
188,946. PANT-EASE. Cl. 39. 9–9–24.
188,986. RAISED TRANVERSE RIB ON FLATTENED NEEDLE STEM. Cl. 23. 9–9–24.
189,613. ENCHANTA SILK. Cl. 39. 9–23–24.
190,604. WATERTONE. Cl. 52. 10–14–24.
190,744. ARMORBOND AND DESIGN. Cl. 16. 10–21–24.
190,868. ADAMANT. Cl. 12. 10–28–24.
191,306. DUOFOLD. Cl. 37. 11–4–24.
191,831. FLAV-O-LAC. Cl. 46. 11–18–24.
192,535. STURDY STRIDE AND DESIGN. Cl. 39. 12–9–24.
192,628. NORTHERN LIGHTS. Cl. 42. 12–9–24.
192,773. CELTA. Cl. 43. 12–9–24.
195,162. GLASSAD. Cl. 37. 2–17–25.
195,214. NO. 019. Cl. 37. 2–17–25.
195,476. BLUEBIRD AND DESIGN. Cl. 28. 2–24–25.
196,049. SNO-KIST. Cl. 46. 3–10–25.
417,095. VEL-O-TEEN. Cl. 46. 5–16–44.
407,978. VENTILO CLOTH. Cl. 42. 7–11–44.
408,311. MAGIC TOUCH. Cl. 46. 8–1–44.
409,013. ALKATHENE. Cl. 6. 9–12–44.
409,125. FIBROUS CORE OF WIRE-ROPE OR CABLE. Cl. 7. 9–19–44.
409,240. BARNESITE. Cl. 4. 9–26–44.
409,584. PROLITE. Cl. 40. 10–10–44.
409,654. CORO RADIANCE AND DESIGN. Cl. 28. 10–17–44.
409,722. PROLITE. Cl. 40. 10–17–44.
409,750. MAIN EVENT. Cl. 42. 10–17–44.
409,942. PLUS-FIFTY. Cl. 6. 10–31–44.
410,091. PLYAMINE. Cl. 1. 11–7–44.
410,225. AUTOFORM. Cl. 44. 11–14–44.
410,226. PEDOPLASTIK. Cl. 44. 11–14–44.
410,495. STRICTLY BUSINESS. Cl. 38. 11–28–44.
410,533. IMPERIAL. Cl. 16. 11–28–44.
410,543. GOULD. Cl. 21. 11–28–44.
410,569. SARGENT. Cl. 26. 12–5–44.
410,677. TROL. Cl. 51. 12–12–44.
411,039. THE HOUSE OF ALL SIZES AND DESIGN. Cl. 39. 1–2–45.
411,189. GRIER'S ALMANAC. Cl. 38. 1–9–45.
411,522. SLAG-X. Cl. 1. 1–23–45.
411,896. BEATREME. Cl. 46. 2–6–45.
411,969. DESIGN OF MAN'S HEAD. Cl. 39. 2–13–45.
412,107. KINGS MEN. Cl. 51. 2–20–45.
412,166. CASIDE. Cl. 18. 2–20–45.
412,317. PHILCO. Cl. 38. 2–27–45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

650,813. EVER-START AND DESIGN. Cl. 21. 8–27–57.
650,835. SMOKEMASTER. Cl. 21. 8–27–57.
651,214. STATE OF MIND. Cl. 38. 9–3–57.
651,215. PULSE & PRESSURE. Cl. 38. 9–3–57.
652,494. CHERIKA. Cl. 47. 10–1–57.
653,812. PAJAMA PARTY. Cl. 39. 10–29–57.
654,265. TEXTURE LIFE. Cl. 8. 11–5–57.
654,272. ILLINOIS MALLEABLE IRON-PRODUCTS IM ETC. AND DESIGN. Cl. 13. 11–5–57.
654,275. HIEGER. Cl. 23. 11–5–57.
654,945. BAG BEAUTY. Cl. 6. 11–26–57.
660,342. BALCO. Cl. 31. 4–8–58.

The following registrations issued Sept. 30, 1958

667,555. CALYPSO CALF AND DESIGN. Cl. 1.
667,558. MERCURON. Cl. 1.
667,559. SATELLON. Cl. 1.
667,560. ORBITON. Cl. 1.
667,561. HEWITEX. Cl. 1.
667,562. NOPCOCELL. Cl. 1.
667,565. ASTERON. Cl. 1.
667,566. HERITAGE. Cl. 2.
667,567. SURINO. Cl. 2.
667,568. HAMMOND. Cl. 2.
667,573. PROTYL. Cl. 6.
667,574. FILM-ALL. Cl. 6.
667,582. HOME-TEX AND DESIGN. Cl. 12.
667,587. MOLER-SUPRA. Cl. 12.
667,588. TEC-PAN. Cl. 12.
667,591. ARROW RIVIERA METAL PRODUCTS. Cl. 12.
667,598. TEND-ALL HANGER AND DESIGN. Cl. 13.
667,602. FABULETTE. Cl. 13.
667,608. TIPPER TIE. Cl. 13.
667,611. PLAS-TEX AND DESIGN. Cl. 13.
667,612. SANIRAK. Cl. 13.
667,614. CHICAGO SASH HOLDER CO. AND DESIGN. Cl. 13.
667,620. WATER-SWEEP. Cl. 13.
667,626. SPRAYFOAM. Cl. 16.
667,628. ACOUSTEX. Cl. 16.
667,635. COLDENE. Cl. 18.
667,636. HEALTHCO. Cl. 18.
667,642. RAUMALGINE. Cl. 18.
667,644. COMPRESSOLINE. Cl. 15.
667,649. SLUDG-MASTER. Cl. 15.
667,650. ROUGH NECK. Cl. 19.
667,653. SU-MARK AND DESIGN. Cl. 19.
667,654. WALL ST. Cl. 22.
667,656. FIRE GLASS AND DESIGN. Cl. 22.
667,661. CRANKMASTER. Cl. 21.
667,663. GEOMETRICAL DESIGN. Cl. 21.
667,664. FLOATING SOUND. Cl. 21.
667,665. BANDELET. Cl. 21.
667,667. PRELUDE. Cl. 21.
667,668. OVERTURE. Cl. 21.
667,673. GUSTO AND DESIGN. Cl. 23.
667,674. RAINBOW. Cl. 23.
667,677. POWERIDE. Cl. 23.
667,678. SET T WRENCH. Cl. 23.
667,679. CREW-CHIEF. Cl. 23.
667,681. EEE. Cl. 23.
667,685. US BERKEL JIM VAUGHAN AND DESIGN. Cl. 23.
667,689. SOLO. Cl. 23.
667,694. EAU CLAIRE. Cl. 23.
667,696. H.E.B. PILOT. Cl. 23.
667,699. THE GRIFFIN WELLPOINT ETC. AND DESIGN. Cl. 23.
667,702. WONDA-SCOPE. Cl. 26.
667,714. RECOMP I AND DESIGN. Cl. 26.
667,716. KEMART-PAWO. Cl. 26.
667,718. MINI-LAB. Cl. 26.
667,719. FLOC-STIR. Cl. 26.
667,721. EFFECTON. Cl. 26.
667,723. LITHALOID. Cl. 26.
667,727. LURAFLEX. Cl. 26.
667,728. MINI-FAX. Cl. 26.
667,729. RONDEAN. Cl. 26.
667,731. HARVEST SUPREME. Cl. 31.
667,732. EVCO. Cl. 32.
667,733. TRADEWIND. Cl. 32.
667,735. TRIENNALE. Cl. 32.
667,748. PURPLETONE AND DESIGN. Cl. 36.
667,760. FLORIDA SUN. Cl. 38.
667,765. BLISS ORIGINALS. Cl. 39.
667,766. ELLIS STONE. Cl. 39.
667,771. IRIS ANN. Cl. 39.
667,772. AIRFOAM SANDWICH. Cl. 39.
667,774. GALLANETTE. Cl. 39.
667,775. BAREFOOT DRESS. Cl. 39.
667,777. BAND-O-LINK. Cl. 39.
667,780. SWANKIES. Cl. 39.
667,781. MARDI GRAS. Cl. 40.
667,783. UNI-LOK. Cl. 42.
667,784. WALLCO. Cl. 42.
667,785. BANGU AND DESIGN. Cl. 42.
667,787. STALLION. Cl. 42.
667,793. SINAI KOSHER SAUSA CORP. AND DESIGN. Cl. 46.
667,795. PHILLIPS AND DESIGN. Cl. 46.
667,797. CLEO. Cl. 46.
667,809. ALBA. Cl. 46.
667,812. MOULI. Cl. 46.
667,824. SLIM WHIP. Cl. 46.
667,825. PIASTEN. Cl. 46.
667,828. KAY-DEC. Cl. 46.
667,844. APPLES OF THE EARTH. Cl. 46.
667,850. THEBA. Cl. 46.
667,851. GILA. Cl. 46.
667,852. SUN•BOW AND DESIGN. Cl. 46.
667,854. TENDER SPRAY. Cl. 46.
667,857. LAUREL. Cl. 46.
667,861. PABST BLUE RIBBON. Cl. 48.
667,865. FLEXI-DATABOARD. Cl. 50.
667,868. PLANT-A-PLATE. Cl. 50.
667,870. LIXIT AND DESIGN. Cl. 50.
667,871. CAPILATOR. Cl. 50.
667,876. THE WEDGE BANK AND DESIGN. Cl. 102.
667,881. FAMOUS FOR STAINLESS AND DESIGN. Cl. 2.
667,883. DRIVE-THRU. Cl. 21.
667,885. BETROTHA-RING. Cl. 28.
667,888. 1000 HINTS YOUR HAIR-DO. Cl. 38.
667,889. 1000 HINTS-DIET. Cl. 38.
667,892. SOIGNEE. Cl. 39.
667,893. STAFFORD. Cl. 42.
667,896. HEAT WAVE. Cl. 51.

Section 18

220,129. SWEET SIXTEEN. Cl. 39. 11–2–26.
434,250. MEDI-KOTE. Cl. 39. 11–11–47.
677,965. ALFRED. Cl. 21. 5–5–59.
684,034. ALFRED. Cl. 26. 8–25–59.

Section 37

716,288. PEP. Cl. 45. 5–30–61.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

190,593. OLDFORGE. Cl. 23. 10–14–24. Quality Tools Corporation, New Wilmington, Pa. Amended to appear:

OLDFORGE

287,800. LOLENE. Cl. 39. 10–13–31. Hoover Hosiery Company. Wiscassett Mills Company, Albemarle, N.C. Amended to appear:

Lolene

411,278. PEMCO MIRAC. Cl. 1. 1–9–45. Pemco Corporation. The Glidden Company, Cleveland, Ohio. Amended to appear:

PEMCO MIRAC

415,959. DOUBLE-DUTY SOUR. Cl. 6. 8–21–45. Diamond Alkali Company, Pittsburgh, Pa. Amended to appear:

DOUBLE-DUTY SOUR

776,525. TMC ETC. AND DESIGN. Cl. 21. 9–8–64. The Technical Materiel Corporation, Mamaroneck, N.Y. Corrected: In the statement, column 2, line 3, "cannel" should be deleted and *channel* should be inserted.

776,827. CONEX AND DESIGN. Cl. 2. 9–15–64. Illinois Tool Works, Inc., Chicago, Ill. In the statement, column 1, line 1, "Illinois" second occurrence, should be deleted and *Delaware* should be inserted.

777,098. BROLI. Cl. 44. 9–15–64. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. In the statement, column 1, line 1, "Fabrike" should be deleted and *Fabriker* should be inserted.

INDEX OF REGISTRANTS

NOVEMBER 17, 1964

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A & W Root Beer Co., Santa Monica, Calif. 780,465, pub. 9–1–64. Cl. 107.
Ace Books, Inc., New York, N.Y. 780,351, pub. 9–1–64. Cl. 38.
Acme Boot Co., Inc., Clarksville, Tenn. 780,379, pub. 9–1–64. Cl. 39.
Adams Rite Mfg. Co., Glendale, Calif. 780,130, pub. 9–1–64. Cl. 13.
Adco, Inc., Sedalia, Mo. 654,265, canc. Cl. B.
Adhesive Engineering Co., San Carlos, Calif. 780,105, pub. 9–1–64. Cl. 5.
Aeronca Mfg. Corp., Middletown, Ohio. 780,120, pub. 9–1–64. Cl. 12.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 667,721, canc. Cl. 26.
Akron Brass Co., Wooster, Ohio. 780,123, pub. 9–1–64. Cl. 13.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 777,098. Am. 7(d). Cl. 44.
Aktieselskabet Skarrehage Molervaerk, Nykobing, Mors, Denmark. 667,587, canc. Cl. 12.
Alfred Electronics, Palo Alto, Calif. 667,965, canc. Cl. 21.
Alfred Electronics, Palo Alto, Calif. 684,034, ren. 11–17–64. Cl. 26.
Allen, James L., La Mesa, Calif. 667,614, canc. Cl. 13.
Allied Plastic Sales: *See*—
Stone, Clifford A.
Allmand Bros., Inc., Holdredge, Nebr. 780,193, pub. 9–1–64. Cl. 21.
Alsa S.A., Basel, to Societe de la Viscose Suisse, Emmenbrucke, Switzerland. 192,773, ren. 11–17–64. Cl. 43.
Alton Banking & Trust Co., Alton, Ill. 667,876, canc. Cl. 102.
Amchem Products, Inc., Ambler, Pa. 780,110–11, pub. 9–1–64. Cl. 6.
Amerace Corp., New York, N.Y. 780,408, pub. 9–1–64. Cl. 40.
American Distilling Co., The, New York, N.Y. 780,451, pub. 9–1–64. Cl. 49.
American Footwear Corp.: *See*—
London Bridge Shoes, Inc.
American Girl Shoe Co., Boston, Mass. 780,394, pub. 9–1–64. Cl. 39.
American Heat-Seal, Inc., Milwaukee, Wis. 780,356, pub. 9–1–64. Cl. 38.
American Heat-Seal, Inc., Milwaukee, Wis. 780,425, pub. 9–1–64. Cl. 42.
American Home Products Corp., New York, N.Y., from Tri-Kem Corp., Washington, D.C. 780,159, pub. 9–24–63. Cl. 18.
American Home Products Corp., New York, N.Y. 780,168, pub. 9–1–64. Cl. 18.
American Home Products Corp., New York, N.Y. 780,173, pub. 9–1–64. Cl. 18.
American International Tool Corp., Miami, Fla. 780,137, pub. 9–1–64. Cl. 13.
American Lady Corset Co., Detroit, Mich. 220,129, canc. Cl. 39.
American Lead Pencil Co., to Venus Pen & Pencil Corp., New York, N.Y. 195,214, ren. 11–17–64. Cl. 37.
American Machine & Foundry Co., New York, N.Y. 780,182, pub. 9–1–64. Cl. 19.
American Photocopy Equipment Co., Chicago, Ill. 667,574, canc. Cl. 6.
American Potash & Chemical Corp.: *See*—
Barnes, John, and W. F., Co., The.
American Thread Co., The, New York, N.Y. 780,426–7, pub. 9–1–64. Cl. 43.
American Tobacco Co., The, New York, N.Y. 780,156, pub. 9–1–64. Cl. 17.
American Zinc Lead and Smelting Co., St. Louis, Mo. 780,243, pub. 9–1–64. Cl. 23.
Amora Foods: *See*—
Ida Mae Salads, Inc.
Anbesol Co., Inc., Newark, N.J. 780,174, pub. 9–1–64. Cl. 18.
Anchor Hocking Glass Corp., Lancaster, Ohio. 780,225, pub. 9–1–64. Cl. 23.
Angelus Sanitary Can Machine Co., Los Angeles, Calif. 780,231, pub. 9–1–64. Cl. 23.
Ansul Co., The: *See*—
Dugas Engineering Corp.
Antics, Inc., New York, N.Y. 780,378, pub. 9–1–64. Cl. 39.
Applied Power Industries, Inc., West Allis, Wis. 780,245, pub. 9–1–64. Cl. 23.
Aqua-Chem, Inc., Waukesha, Wis., from Capitol Products Corp., Mechanicsburg, Pa. 780,316, pub. 9–1–64. Cl. 34.
Arkin, Leonard, & Son, New York, N.Y. 667,892, canc. Cl. 39.
Armour and Co., Chicago, Ill. 780,094, pub. 9–1–64. Cl. 1.
Arrow Metal Products Corp., Haskell, N.J. 667,591, canc. Cl. 12.
Ascher, B. F., & Co., Inc., Kansas City, Mo. 780,171, pub. 9–1–64. Cl. 18.
Astroweld Corp., Linden, N.J. 780,132, pub. 9–1–64. Cl. 13.
Atwood, P. G., Co., Chicago, Ill. 780,131, pub. 9–1–64. Cl. 13.
Auto-Heat Corp., Montreal, Quebec, Canada. 780,325, pub. 9–1–64. Cl. 34.
Automatic Poultry Feeder Co., Zeeland, Mich. 780,452, pub. 9–1–64. Cl. 50.
Avon Frosted Foods, Inc., Avon, N.Y. 780,443, pub. 9–1–64. Cl. 46.
Avon Products, Inc., New York, N.Y. 780,479. Cl. 51.
B.V.D. Co., Inc., The: *See*—
Beau Brummell Ties, Inc.
Bach, Wm., & Co., New York, N.Y. 780,390, pub. 9–1–64. Cl. 39.
Balfour, Guthrie & Co., Ltd., New York, N.Y. 660,342, canc. Cl. 31.
Bandbox Sportswear, Inc., New York, N.Y. 780,393, pub. 9–1–64. Cl. 39.
Bardes Mfg. Co., Cincinnati, Ohio. 780,125, pub. 9–1–64. Cl. 13.
Barnes, John and W. F., Co., The, Rockford, Ill., to American Potash & Chemical Corp., Los Angeles, Calif. 409,240, ren. 11–17–64. Cl. 4.
Beacon Cycle and Supply Co., Milwaukee, Wis. 780,469. Cl. 19.
Beacon Mfg. Co., Swannanoa, N.C. 780,421, pub. 9–1–64. Cl. 42.
Bean, D. D., & Sons Co., Jaffrey, N.H. 667,783, canc. Cl. 42.
Bean Publishing Co., Inc., Elizabethtown, Ky. 780,349, pub. 9–1–64. Cl. 38.
Beatrice Creamery Co., to Beatrice Foods Co., Chicago, Ill. 408,311, ren. 11–17–64. Cl. 46.
Beatrice Creamery Co., to Beatrice Foods Co., Chicago, Ill. 411,896, ren. 11–17–64. Cl. 46.
Beatrice Foods Co.: *See*—
Beatrice Creamery Co.
Beau Brummell Ties, Inc., Cincinnati, Ohio, to The B.V.D. Co., Inc., New York, N.Y. 411,969, ren. 11–17–64. Cl. 39.
Beauty Specialties, Inc., Chicago, Ill. 780,455, pub. 9–1–64. Cl. 51.
Beckwith, A. T.: *See*—
Realy State, Inc.
Bee Chemical Co., Lansing, Ill. 780,144, pub. 9–1–64. Cl. 16.
Bee Line Co., Davenport, Iowa. 780,237, pub. 9–1–64. Cl. 23.
Bee Zee Originals, Chesterfield, Mo. 780,340, pub. 9–1–64. Cl. 37.
Bell & Gossett Co.: *See*—
ITT Bell & Gossett Inc.
Bendix Corp., The, Detroit, Mich. 780,183, pub. 9–1–64. Cl. 19.
Bennett Corp., The, Passaic, N.J. 780,472. Cl. 39.
Berg Mfg. & Sales Co., Des Plaines, Ill. 780,331, pub. 9–1–64. Cl. 35.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 780,428, pub. 9–1–64. Cl. 43.
Big Y Growers, Inc.: *See*—
Yakima Fruit Growers Association.
Bissonnette and Co., Chicago, Ill. 780,333, pub. 9–1–64. Cl. 37.
Blaisdell Pencil Co., Bethayres, Pa. 780,342, pub. 9–1–64. Cl. 37.
Blue Bell, Inc., Greensboro, N.C. 780,376, pub. 9–1–64. Cl. 39.
Blue Bell, Inc., Greensboro, N.C. 780,397, pub. 9–1–64. Cl. 39.
Boehringer, C. H., Sohn: *See*—
Boehringer Ingelheim, G.m.b.H.
Boehringer Ingelheim, G.m.b.H., from C. H. Boehringer Sohn, Ingelheim (Rhine), Germany. 780,160, pub. 9–1–64. Cl. 18.
Bonis Bros. Fur Machinery Corp., New York, N.Y. 780,250, pub. 9–1–64. Cl. 23.
Botfield, Leonard B., d.b.a. Botfield Refractories Co., to Botfield Refractories, Inc., Philadelphia, Pa. 190,868, ren. 11–17–64. Cl. 12.
Botfield Refractories Co.: *See*—
Botfield, Leonard B.
Botfield Refractories, Inc.: *See*—
Botfield, Leonard B.
Bould's 'Dell' Products, Williamsport, Pa. 780,467. Cl. 6.
Boushey, Lawrence J., d.b.a. Lawrence J. Boushey Potato Co. East Grand Forks, Minn. 667,844, canc. Cl. 46.
Boushey, Lawrence J., Potato Co.: *See*—
Boushey, Lawrence J.
Boyd's: *See*—
Gushner Brothers.
Breen & De Rose Records, Inc., New York, N.Y. 667,748, canc. Cl. 36.
Bristol Trading Corp., New York, N.Y. 667,797, canc. Cl. 46.
British Aluminum Co. Ltd., The, London, England. 780,138, pub. 9–1–64. Cl. 14.
Broaster Co., The, Rockton, Ill. 780,322, pub. 9–1–64. Cl. 34.
Brody, Williams & Son Inc., New York, N.Y. 780,301, pub. 9–1–64. Cl. 28.
Bronnley, H., & Co., Ltd., London, England. 780,458, pub. 9–1–64. Cl. 52.
Brooklyn Mills, Inc., Englewood, N.J. 780,402, pub. 9–1–64. Cl. 39.
Brown Shoe Co., Inc., St. Louis, Mo. 780,404, pub. 9–1–64. Cl. 39.

Brown & Williamson Tobacco Corp., Louisville, Ky. 780,154, pub. 9–1–64. Cl. 17.
Brown's Ledbrest, Inc., Springdale, Ark. 780,093, pub. 9–1–64. Cl. 1.
Bruder, M. A., & Sons, Inc., Philadelphia, Pa. 780,149, pub. 9–1–64. Cl. 16.
Buchanan & Co., Inc., New York, N.Y. 667,644, canc. Cl. 15.
Bullock, Georgia, Inc., Los Angeles, Calif. 667,775, canc. Cl. 39.
Burgess Vibrocrafters, Inc., Grayslake, Ill. 780,338, pub. 9–1–64. Cl. 37.
Burlington Industries, Inc., from Flexnit Co., Inc., New York, N.Y. 780,358, pub. 3–17–64. Cl. 39.
Burn-Strauss, Inc., d.b.a. Woodpecker Woodware, Los Angeles, Calif. 780,097, pub. 9–1–64. Cl. 2.
Bychrome Co., Columbus, Ohio. 780,280, pub. 9–1–64. Cl. 26.
Bymel, Howard B., d.b.a. Medical Industries, Chatsworth, Calif. 780,431, pub. 9–1–64. Cl. 44.
California Tackle Co., Bell, Calif. 667,656, canc. Cl. 22.
Callaway Mills Co., La Grange, Ga. 780,423, pub. 9–1–64. Cl. 42.
Capitol Products Corp.: *See*— Aqua-Chem, Inc.
Caps, Inc., Silver Spring, Md. 780,463, pub. 9–1–64. Cl. 102.
Carnac Cottons, Inc., to Carnac, Inc., to Carnac, Inc., New York, N.Y. 407,978, ren. 11–17–64. Cl. 42.
Carnac, Inc.: *See*— Carnac Cottons, Inc.
Carnation Co., Los Angeles, Calif. 780,441, pub. 9–1–64. Cl. 46.
Celanese Corp. of America, New York, N.Y. 780,091, pub. 9–1–64. Cl. 1.
Challenge-Cook Bros., Inc., Los Angeles, Calif. 780,278, pub. 9–1–64. Cl. 24.
Champ Sales Corp., El Monte, Calif. 780,275–7, pub. 9–1–64. Cl. 23.
Char-Lynn Co., Minneapolis, Minn. 780,232, pub. 9–1–64. Cl. 23.
Chase Candy Co., St. Joseph, Mo. 780,439, pub. 9–1–64. Cl. 46.
Chattanooga Medicine Co., The, d.b.a. Chattem Laboratories, Chattanooga, Tenn. 780,177, pub. 9–1–64. Cl. 18.
Chattem Laboratories: *See*— Chattanooga Medicine Co., The.
Chemical Products Corp., East Providence, R.I. 780,089, pub. 9–1–64. Cl. 1.
Chesapeake Shoe Co. of California: *See*— Glaser Shoe Co.
Chesebrough-Pond's Inc., New York, N.Y. 780,164, pub. 9–1–64. Cl. 18.
Chrominum Mining & Smelting Corp., Ltd., Sault Ste. Marie, Canada. 411,522, ren. 11–17–64. Cl. 1.
Ciba Pharmaceutical Products Inc., Summit, N.J. 651,214–15, canc. Cl. 38.
Cimex-Fraser Tuson Ltd., Orpington, England. 667,689, canc. Cl. 23.
Circle F Mfg. Co., Trenton, N.J. 780,199, pub. 9–1–64. Cl. 21.
City Stores Co.: *See*— Hearn, James A., & Son, Inc.
City Stores Co., New York, N.Y. 780,359, pub. 9–1–64. Cl. 39.
Clark, Ray L., Dayton, Ohio. 780,339, pub. 9–1–64. Cl. 37.
Cohen, Dan, Co., Cincinnati, Ohio. 780,391, pub. 9–1–64. Cl. 39.
Cohn & Roseberger, Inc., to Coro, Inc., New York, N.Y. 409,654, ren. 11–17–64. Cl. 28.
Colorado Fuel and Iron Corp., The: *See*— Roebling's, John A., Sons Co.
Comfort Pillow & Feather Co., d.b.a. Comfort Pillow and Feather Co., Somerville, Mass. 780,309, pub. 9–1–64. Cl. 32.
Companhia Progresso Industrial do Brasil, Rio de Janeiro, Brazil. 667,785. canc. Cl. 42.
Colgoleum-Nairn Inc., Kearny, N.J. 780,121, pub. 9–1–64. Cl. 12.
Congoleum-Nairn Inc., Kearny, N.J. 780,153, pub. 9–1–64. Cl. 16.
Cono Christian School, Dept. of Bible Presbyterian Church of Cono Center, Walker, Iowa. 780,239, pub. 9–1–64. Cl. 23.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 780,334, pub. 9–1–64. Cl. 37.
Consolidated Sewing Machine Corp., New York, N.Y. 667,694, canc. Cl. 23.
Continental Marketing Corp., Houston, Tex. 780,098, pub. 9–1–64. Cl. 2.
Cope Bros. & Co. Ltd., Liverpool and London, England, to Cope & Lloyd (Overseas) Ltd., London, England. 187,771, ren. 11–17–64. Cl. 17.
Cope & Lloyd (Overseas) Ltd.: *See*— Cope Bros. & Co. Ltd.
Coro, Inc.: *See*— Cohn & Roseberger, Inc.
Crafts Guild: *See*— Sobelson, Milton D.
Crawford, David L., Arlington, Va. 667,654, canc. Cl. 22.
Creative Chemical Co.: *See*— Williams, Edward R.
Crompton & Knowles Corp., Worcester, Mass. 780,112–13, pub. 9–1–64. Cl. 6.
Crowell Mfg. Corp., Brooklyn, N.Y. 780,244, pub. 9–1–64. Cl. 23.
Crowning Glory, Inc., Whittier, Calif. 780,454, pub. 2–18–64. Cl. 51.
Cubic Corp., San Diego, Calif. 780,285–6, pub. 9–1–64. Cl. 26.
Curtis, Helene, Industries, Inc., Chicago, Ill. 667,781, canc. Cl. 40.
Dairy Laboratories, The, Philadelphia, Pa. 191,831, ren. 11–17–64. Cl. 46.
Dana Laboratories, Inc., Santa Ana, Calif. 780,281, pub. 9–1–64. Cl. 26.
Daniel, John B., Inc., d.b.a. Grier's Publishing Co., to Grier's Almanac Publishing Co., Atlanta, Ga. 411,189, ren. 11–17–64. Cl. 38.
Deacon, William T., d.b.a. Solvents and Plastics Co., St. Louis, Mo. 667,626, canc. Cl. 16.
Deering Milliken, Inc., New York, N.Y. 780,419–20, pub. 9–1–64. Cl. 42.
De La Viscose Swisse, Societe: *See*— Alsa S.A.
Dell Publishing Co., Inc., New York, N.Y. 667,888–9, canc. Cl. 38.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 780,161, pub. 9–1–64. Cl. 18.
Denver United States National Bank, Denver, Colo. 780,462, pub. 9–1–64. Cl. 102.
Diamond Alkali Co., Pittsburgh, Pa. 415,959. Am. 7(d). Cl. 6.
Diamond Chain Co., Inc., Indianapolis, Ind. 780,240–1, pub. 9–1–64. Cl. 23.
Dietzgen, Eugene, Co., Chicago, Ill. 667,728, canc. Cl. 26.
Distillerie Konig GmbH, from Puschkin GmbH, Lisihus, Zug, Switzerland. 780,476. Cl. 49.
Dr. Pepper Co., Dallas, Tex. 716,288, canc. Cl. 45.
DPR Inc., Belleville, N.J. 780,099, pub. 9–1–64. Cl. 2.
Dresser Industries, Inc., Dallas, Tex. 780,128, pub. 9–1–64. Cl. 13.
Drexel Furniture Co., Drexel, N.C. 667,733, canc. Cl. 32.
Drexel Furniture Co., Drexel, N.C. 667,735, canc. Cl. 32.
Droney, Timothy D., Jr., Lancaster, Pa. 667,602, canc. Cl. 13.
Dugas Engineering Corp., to The Ansul Co., Marinette, Wis. 409,942, ren. 11–17–64. Cl. 6.
Dunhill International, Inc., New York, N.Y. 780,470. Cl. 22.
Dursin, M., and Sons' Inc., Woonsocket, R.I. 780,118, pub. 9–1–64. Cl. 7.
E & E Engineering, Inc., Detroit, Mich. 667,681, canc. Cl 23.
Eaton Mfg. Co., Cleveland, Ohio. 780,133–4, pub. 9–1–64 Cl. 13.
Eaton Mfg. Co., Cleveland, Ohio. 780,221, pub. 9–1–64. Cl. 23.
Eaton Mfg. Co., Cleveland, Ohio. 780,274, pub. 9–1–64. Cl. 23.
Eau de Cologne Fabriek J. C. Boldoot, to Eau de Cologne Fabriek J. C. Boldoot N.V., Amsterdam, Netherlands. 182,655, ren. 11–17–64. Cl. 51.
Eau de Cologne Fabriek J. C. Boldoot N.V.: *See*— Eau de Cologne Fabriek J. C. Boldoot.
Ebert Electronics Corp., Floral Park, N.Y. 780,189–91, pub. 9–1–64. Cl. 21.
Edcliff Instruments, Conelco Division, San Bernardino, Calif. 780,197, pub. 9–1–64. Cl. 21.
Edio, Inc., San Francisco, Calif. 667,824, canc. Cl. 46.
Electro Refractories & Abrasives Corp., Buffalo, N.Y. 780,324, pub. 9–1–64. Cl. 34.
Ellis, Stone & Co., Inc., Greensboro, N.C. 667,766, canc. Cl. 39.
Empro Intangibles, Inc.: *See*— "42" Products, Inc.
Endo Laboratories Inc.: *See*— Endo Products Inc.
Endo Products Inc., New York, N.Y., to Endo Laboratories Inc., Garden City, N.Y. 412,166, ren. 11–17–64. Cl. 18.
Entoleter, Inc., New Haven, Conn. 780,247, pub. 9–1–64. Cl. 23.
Epstein, Gerald W., d.b.a. John M. Shawvan Co., Forest Park, Ill. 780,227, pub. 9–1–64. Cl. 23.
Erismann-Schinz S.A., La Neuveville, Bern, Switzerland. 780,296, pub. 9–1–64. Cl. 27.
Esco Corp., Portland, Oreg. 780,260, pub. 9–1–64. Cl. 23.
Essex Wire Corp., Fort Wayne, Ind. 780,129, pub. 9–1–64. Cl. 13.
Estate of William G. McNair: *See*— McNair, Louise R.
Evansville Paint & Varnish Co., Evansville, Ind. 780,152, pub. 9–1–64. Cl. 16.
Evans, L. G., & Co., Chicago, Ill. 667,732, canc. Cl. 32.
Fabrique Nationale de Lames de Rasoirs, Poissy, Seine et Oise, France. 780,271, pub. 9–1–64. Cl. 23.
Fall, Herbert S., Indianapolis, Ind. 780,127, pub. 9–1–64. Cl. 13.
Famous-Sternberg, Inc., New Orleans, La. 780,405, pub. 9–1–64. Cl. 39.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 780,170, pub. 9–1–64. Cl. 18.
Farm Devices, Inc., Gravette, Ark. 667,883, canc. Cl. 21.
Federal Steel Corp., New York, N.Y. 780,102, pub. 9–1–64. Cl. 2.
Ferguson Products Co., Inc., Ferguson, Mo. 667,612, canc. Cl. 13.
Fieldcrest Mills, Inc., Spray, N.C. 780,424, pub. 9–1–64. Cl. 42.
Filderman, Irving P., Memphis, Tenn. 780,291, pub. 9–1–64. Cl. 26.
Fireplace Doctor, The: *See*— Gaddie, Thomas L.
Fleet Tractor Stores, Inc., St. Cloud, Minn. 780,459, pub. 9–1–64. Cl. 101.
Fleming-Joffe, Ltd., New York, N.Y. 667,555, canc. Cl. 1.
Flexnit Co., Inc.: *See*— Burlington Industries, Inc.
Flo-Trinics Inc., d.b.a. Northern Signal Co., Minneapolis, Minn. 780,201, pub. 9–1–64. Cl. 21.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 188,667–8, ren. 11–17–64. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 188,769–70, ren. 11–17–64. Cl. 42.
Forsythe Woolen Co., Inc., New York, N.Y. 780,416, pub. 9–1–64. Cl. 42.
Four Wheel Drive Auto Co., The, Clintonville, Wis. 667,650, canc. Cl. 19.
"42" Products, Inc., d.b.a. Windsor House, Ltd., Los Angeles, Calif., to Empro Intangibles, Inc., Chicago, Ill. 412,107, ren. 11–17–64. Cl. 51.
Frederiksen, Robert O., Mountain View, Calif. 667,870, canc. Cl. 50.
Fuller, D. B., & Co. Inc., New York, N.Y. 667,787, canc. Cl. 42.
Future Plastics, Inc., Gastonia, N.C. 780,268, pub. 9–1–64. Cl. 23.
Gaddie, Thomas L., d.b.a. The Fireplace Doctor, Dallas, Tex. 780,317, pub. 9–1–64. Cl. 34.
Gaertner Scientific Corp., The, Chicago, Ill. 780,292, pub. 9–1–64. Cl. 26.
Gallant, Frank, Inc., New York, N.Y. 667,774, canc. Cl. 39.
Gambin S.A., Vius en Sallaz, Haute Savoie, France. 780,220, pub. 9–1–64. Cl. 23.
Garland Sales Co., Phoenix, Ariz. 780,215, pub. 9–1–64. Cl. 23.
Geico Mfg. Inc., Van Nuys, Calif. 780,233, pub. 9–1–64. Cl. 23.
General Aniline & Film Corp., New York, N.Y. 780,114, pub. 9–1–64. Cl. 6.
General Consolidated Ltd., New York, N.Y. 780,185–6, pub. 9–1–64. Cl. 21.
Georgia Shoe Mfg. Co., Inc., Flowery Branch, Ga. 780,383, pub. 9–1–64. Cl. 39.
Gemex Precision Metals, Inc.: *See*— Monocrown.
Gila River Ranch, Inc., Gila Bend, Ariz. 667,850–1, canc. Cl. 46.
Glaser Shoe Co., to Chesapeake Shoe Co. of California, San Francisco, Calif. 192,535, ren. 11–17–64. Cl. 39.
Glidden Co., The: *See*— Pemco Corp.
Globe-Union Inc., Milwaukee, Wis. 780,200, pub. 9–1–64. Cl. 21.
Goldblatt, Philip, St. Petersburg, Fla. 780,213, pub. 9–1–64. Cl. 23.
Golden Shield Corp., Great Neck, N.Y. 780,258, pub. 9–1–64. Cl. 23.
Goodrich, Elvin R., d.b.a. Goodrich Maintenance Supply Co., Oklahoma City, Okla. 780,254, pub. 9–1–64. Cl. 23.
Goodrich Maintenance Supply Co.: *See*— Goodrich, Elvin R.
Goodwin Mfg. Co., Manteca, Calif. 780,269, pub. 9–1–64. Cl. 23.
Gould-National Batteries, Inc.: *See*— National Battery Co.
Graddy, Joseph E., from Monarch Paint Products, Inc., New York, N.Y. 667,628, canc. Cl. 16.
Graham Mfg. Co., Inc., Great Neck, N.Y. 780,319, pub. 9–1–64. Cl. 34.
Grant, W. T., Co., New York, N.Y. 780,327, pub. 9–1–64. Cl. 34.
Great Neck Saw Manufacturers, Inc., Mineola, N.Y. 780,209, pub. 9–1–64. Cl. 23.
Great Neck Saw Manufacturers, Inc., Mineola, N.Y. 780,266, pub. 9–1–64. Cl. 23.
Gregg, Inc.: *See*— Romaima Knitwear of Italy.
Grier's Almanac Publishing Co.: *See*— Daniel, John B., Inc.
Grier's Publishing Co.: *See*— Daniel, John B., Inc.
Griffin Wellpoint Corp., New York, N.Y. 667,699, canc. Cl. 23.
Gripholst, Inc., San Francisco, Calif. 780,216, pub. 9–1–64. Cl. 23.
Gulf States Paper Corp., Tuscaloosa, Ala. 780,103, pub. 9–1–64. Cl. 2.
Gushner Bros., d.b.a. Boyd's, Philadelphia, Pa. 411,039, ren. 11–17–64. Cl. 39.
H. Ernault-Batignolles, S.A., Paris, France. 667,696, canc. Cl. 23.
H. & A.: *See*— Hottle, Dwight E.
H.H. Products Co., Inc., Milwaukee, Wis. 780,234, pub. 9–1–64. Cl. 23.
Halkey-Roberts Corp., Paramus, N.J. 780,136, pub. 9–1–64. Cl. 13.
Hall, Robert, Clothes: *See*— Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 780,372–4, pub. 9–1–64. Cl. 39.
Haloid Co., The: *See*— Haloid Xerox Inc.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 667,723, canc. Cl. 26.
Hamilton-Skotch Corp., Hamilton, Ohio. 780,306–8, pub. 9–1–64. Cl. 32.
Hammermill Paper Co., Erie, Pa. 780,343, pub. 9–1–64. Cl. 37.
Hammond Iron Works, Warren, Pa. 667,568, canc. Cl. 2.
Harlemark International, Inc., Framingham Center, Mass. 780,418, pub. 9–1–64. Multiple Class (Classes 42 and 44).
Hartfield Stores, Inc., Los Angeles, Calif. 780,175, pub. 9–1–64. Cl. 18.
Haveg Industries, Inc., Wilmington, Del. 667,558–60, canc. Cl. 1.
Haveg Industries, Inc., Wilmington, Del. 667,565, canc. Cl. 1.
Hayden Flour Mills, Tempe, Ariz. 780,446, pub. 9–1–64. Cl. 46.
Healthco, Inc., Franklin Square, N.Y. 667,636, canc. Cl. 18.
Hearn, James A., & Son, Inc., to City Stores Co., New York, N.Y. 189,613, ren. 11–17–64. Cl. 39.
Hearst Corp., The, New York, N.Y. 780,352, pub. 9–1–64. Cl. 38.
Heming, Eugene, West Palm Beach, Fla. 780,282, pub. 9–1–64. Cl. 26.
Heller, William, Inc., New York, N.Y. 780,413, pub. 9–1–64. Cl. 42.
Henshel Co., Inc., The, New York, N.Y., to Stein & Ellbogen Co., Chicago, Ill. 195,476, ren. 11–17–64. Cl. 28.
Hester Battery Mfg. Co., Inc., Nashville, Tenn. 650,813, canc. Cl. 21.
Heubleln, Inc., Hartford, Conn. 667,854, canc. Cl. 46.
Hewitt-Robins Inc., New York, N.Y. 667,561, canc. Cl. 1.
Hidro Drive Corp., from Hidro Marine, Inc., Kirkland, Wash. 780,226, pub. 9–1–64. Cl. 23.
Hidro Marine, Inc.: *See*— Hidro Drive Corp.
Hodges Research and Development Co., Inc., New York, N.Y. 780,448, pub. 9–1–64. Cl. 46.
Hoffman Electronics Corp., Los Angeles, Calif. 667,664, canc. Cl. 21.
Hooker Chemical Corp., Niagara Falls, N.Y. 780,109, pub. 9–1–64. Cl. 6.
Hoover Hosiery Co. Wiscassett Mills Co., Albemarle, N.C. 287,800. Am. 7(d). Cl. 39.
Horton Mfg. Co., Inc., Minneapolis, Minn. 780,236, pub. 9–1–64. Cl. 23.
Hottie & Associates: *See*— Hottie, Dwight E.
Hottie, Dwight E., d.b.a. Hottie & Associates and H. & A., Akron, Ohio. 667,678, canc. Cl. 23.
House of Ideas, Inc., The, Spencer, Ohio. 780,205, pub. 9–1–64. Cl. 22.
Hoyt Pharmaceutical Corp., Needham Heights, Mass. 780,165, pub. 9–1–64. Cl. 18.
Hughes & Hatcher, Inc., Detroit, Mich. 780,369, pub. 9–1–64. Cl. 39.
Humble Oil & Refining Co., Houston, Tex. 780,142–3, pub. 9–1–64. Cl. 15.
Hunter, H. B., Co., Inc., Norfolk, Va. 780,473. Cl. 45.
Hunter Industries: *See*— Lambert Inc.
Hydrotherm, Inc., Northvale, N.J. 780,315, pub. 9–1–64. Cl. 34.
ITT Bell & Gossett Inc., from Bell & Gossett Co., Morton Grove, Ill. 780,145, pub. 8–25–64. Cl. 16.
Ida Mae Salads, Inc., d.b.a. Amora Foods, Brentwood, Md. 780,450, pub. 9–1–64. Cl. 46.
Illinois Malleable Iron Co., Chicago, Ill. 654,272, canc. Cl. 13.
Illinois Sheepskins, Inc., Nokomis, Ill. 780,310, pub. 9–1–64. Cl. 32.
Illinois Tool Works, Inc., Chicago, Ill. 776,827. Am. 7(d). Cl. 2.
Imperial Chemical Industries Ltd., London, England. 409,013, ren. 11–17–64. Cl. 6.
Imperial Chemical Industries Ltd., London, England. 780,088, pub. 5–8–62. Cl. 1.
Imperial Electric Co., The, Akron, Ohio. 780,192, pub. 9–1–64. Cl. 21.
Imperial Packaging Corp., Baltimore, Md. 780,466. Cl. 2.
Impermeabili San Giorgia Societa per Azioni, Genoa, Italy. 780,365–6, pub. 9–1–64. Cl. 39.
Imports Unlimited, Inc., New York, N.Y. 780,257, pub. 9–1–64. Cl. 23.
Industrial Marking Equipment Co., Inc., The, Brooklyn, N.Y. 667,674, canc. Cl. 23.
Infanta Knitting Mills, Rockledge, Pa. 780,399, pub. 9–1–64. Cl. 39.
Institutional Industries, Inc., Cincinnati, Ohio. 780,311, pub. 9–1–64. Cl. 32.
Interchemical Corp., New York, N.Y. 780,095, pub. 9–1–64. Cl. 1.
International Electronic Research Corp., Burbank, Calif. 780,261, pub. 9–1–64. Cl. 23.
International Kendix: *See*— Internationale Textiel Organisatie Kendix N.V.
International Latex Corp., Dover, Del. 780,400, pub. 9–1–64. Cl. 39.
International Paper Co., New York, N.Y. 780,335, pub. 9–1–64. Cl. 37.
Internationale Textiel Organisatie Kendix N.V., d.b.a. International Kendix, Waalre, Netherlands. 780,414, pub. 9–1–64. Cl. 42.
Irrigation Equipment Co. Inc., Eugene, Oreg. 780,124, pub. 9–1–64. Cl. 13.
Jarl Products, Inc., Minneapolis, Minn. 667,677, canc. Cl. 23.
Jiffy Balling Co., Rockford, Minn. 780,211, pub. 9–1–64. Cl. 23.
Joint Council on Economic Education, New York, N.Y. 780,355, pub. 9–1–64. Cl. 38.
Kal Kan Foods, Inc., d.b.a. Meaty-Fresh Co., Los Angeles, Calif. 780,475. Cl. 46.
Kalvar Corp., New Orleans, La. 780,293, pub. 9–1–64. Cl. 26.
Kayser-Roth Corp., New York, N.Y. 780,363, pub. 9–1–64. Cl. 39.
Keller Research Corp., Detroit, Mich. 654,275, canc. Cl. 23.
Kellogg Co., Battle Creek, Mich. 780,162, pub. 9–1–64. Cl. 18.
Kelly-Springfield Tire Co., The, Cumberland, Md. 780,179–80, pub. 9–1–64. Cl. 19.
Kemart Corp., San Francisco, Calif. 667,716, canc. Cl. 26.
Kenan, William R., Jr., Lockport, N.Y. 183,286, ren. 11–17–64. Cl. 46.

Kettma Hamburger Kettelmaschinenfabrik Erich Hahn K.G., Hamburg-Bramfeld, Germany. 780,267, pub. 9–1–64. Cl. 23.

Kiger, C. A., Co., Kansas City, Mo. 780,298, pub. 9–1–64. Cl. 28.

Knapp Brothers Shoe Mfg. Corp., Brockton, Mass. 780,371, pub. 9–15–64. Cl. 39.

Knomark Mfg. Co., Inc., Brooklyn, N.Y. 654,945, canc. Cl. 6.

Koratron Co., Inc., from Koret of California, Inc., San Francisco, Calif. 780,108, pub. 9–1–64. Cl. 6.

Koret of California, Inc.: *See*—
Koratron Co., Inc.

Kramer, Philip, d.b.a. Murd Co., Philadelphia, Pa. 780,150, pub. 9–1–64. Cl. 16.

Laboratory for Electronics, Inc., Boston, Mass. 780,284, pub. 9–1–64. Cl. 26.

La Brosse et J. Dupont Reunis, Paris, France. 780,304, pub. 9–1–64. Cl. 29.

Lambert Inc., d.b.a. Hunter Industries, Dayton, Ohio. 780,262, pub. 9–1–64. Cl. 23.

Laminated Shim Co., Inc., Stamford, Conn. 780,328, pub. 9–1–64. Cl. 35.

La Rosa, V., & Sons, Inc.: *See*—
Tharinger Macaroni Co.

La Salle Machine Tool, Inc., Warren, Mich. 780,223, pub. 9–1–64. Cl. 23.

Laurel Biscuit Co.: *See*—
Swaim, E. H.

"Le Moulin-Legumes," Manufacture d'Emboutissage de Bagnolet (Seine) (M.E.B.) Anciens Etablissements Mantelet & Boucher, Bagnolet (Seine), France. 667,812, canc. Cl. 46.

Lever Brothers Co., New York, N.Y. 780,166, pub. 9–1–64. Cl. 18.

Levine, Henry, Co., Inc., Boston, Mass. 780,387, pub. 9–1–64. Cl. 39.

Levy's, Al, Inc., Montgomery, Ala. 780,377, pub. 9–1–64. Cl. 39.

Little Giant Crane & Shovel, Inc., Des Moines, Iowa. 780,207–8, pub. 9–1–64. Cl. 23.

Lobaugh, Rollin J., Inc., South San Francisco, Calif. 780,332, pub. 9–1–64. Cl. 36.

London Bridge Shoes, Inc., from American Footwear Corp., Westminster, Md. 780,364, pub. 8–25–64. Cl. 39.

Louis, Sidney, d.b.a. Shrell Products, Chicago, Ill. 667,598, canc. Cl. 13.

Luckie Magic Corp.: *See*—
McCall Mfg. Co.

Lucky Stride Shoes, Inc., Maysville, Ky. 780,395, pub. 9–1–64. Cl. 39.

Ludlow Corp.: *See*—
McLaurin-Jones Co.

Lumoprint Zindler, K.G., Hamburg, Germany. 780,283, pub. 9–1–64. Cl. 26.

Lundberg, A. O., & Son, Inc., Chicago, Ill. 667,661, canc. Cl. 21.

Machlett Laboratories, Inc., The, Springdale, Conn. 780,188, pub. 9–1–64. Cl. 21.

MacNair-Dorland Co., New York, N.Y. 780,357, pub. 9–1–64. Cl. 38.

Major Brand Co., Inc., The, New York, N.Y. 780,361, pub. 9–1–64. Cl. 39.

Mangels, Herold Co., Inc., Baltimore, Md. 780,442, pub. 7–7–64. Cl. 46.

Marson Corp., Revere, Mass. 780,148, pub. 9–1–64. Cl. 16.

Maschinenfabrik Rieter AG, Winterthur, Switzerland. 780,214, pub. 9–1–64. Cl. 23.

Masten Corp., Chicago, Ill. 780,251, pub. 9–1–64. Cl. 23.

Mastic Asphalt Corp., South Bend, Ind. 667,582, canc. Cl. 12.

McCall Mfg. Co., Jasper, from Luckie Magic Corp., Miami, Fla. 780,107, pub. 8–27–63. Cl. 6.

McLaurin-Jones Co., Brookfield, to Ludlow Corp., Needham, Mass. 195,162, ren. 11–17–64. Cl. 37.

McLellan Foods, Inc., Belmont, Mass. 667,828, canc. Cl. 46.

McNair, Louise R., Warsaw, to Estate of W. G. McNair, d.b.a. Pant-Ease Infant Wear Co., Arcade, N.Y. 188,946, ren. 11–17–64. Cl. 39.

Meadowbrook Co., The, Edina, Minn. 780,135, pub. 9–1–64. Cl. 13.

Meat Industry Suppliers, Inc., Northfield, Ill. 780,445, pub. 9–1–64. Cl. 46.

Meaty-Fresh Co.: *See*—
Kal Kan Foods, Inc.

Medical Industries: *See*—
Bymel, Howard B.

Medi-Kote Co., Inc., New York, N.Y. 434,250, canc. Cl. 39.

Mediplastics Corp., Troy, N.Y. 780,433–6, pub. 9–1–64. Cl. 44.

Melville Shoe Corp., New York, N.Y. 780,407, pub. 9–1–64. Cl. 39.

Menley & James Laboratories, Ltd., Philadelphia, Pa. 780,167, pub. 9–1–64. Cl. 18.

Merck & Co., Inc., Rahway, N.J. 780,172, pub. 9–1–64. Cl. 18.

Metal Bellows Corp., Sharon, Mass. 780,217, pub. 9–1–64. Cl. 23.

Mia Betta, Inc., Los Angeles, Calif. 780,375, pub. 9–1–64. Cl. 39.

Miami Beach Sun Publishing Co., Miami Beach, Fla. 667,760, canc. Cl. 38.

Middleton, John, Inc., King of Prussia, Pa. 780,155, pub. 9–1–64. Cl. 17.

Sobelson, Milton D., d.b.a. Crafts Guild, Maplewood, N.J. 780,323, pub. 9–1–64. Cl. 34.

Minnesota Mining and Mfg. Co., St. Paul, Minn. 780,224, pub. 9–1–64. Cl. 23.

Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 780,090, pub. 9–1–64. Cl. 1.

Model Brassiere Corp., Cortland, N.Y. 667,777, canc. Cl. 39.

Model Brassiere Corp., Cortland, N.Y. 667,780, canc. Cl. 39.

Modern Juniors Inc., New York, N.Y. 780,471. Cl. 39.

Modern Process Co., Phoenix, Ariz. 667,665, canc. Cl. 21.

Monarch Marking System Co., The, Dayton, Ohio. 780,255, pub. 9–1–64. Cl. 23.

Monarch Paint Products, Inc.: *See*—
Graddy, Joseph E.

Monocrown, Newark, N.J., from Gemex Precision Metals, Inc., Union, N.J. 780,302 pub. 9–1–64. Cl. 28.

Morris, Nathan K., d.b.a. N. K. Morris Mfg. Co., Avon by the Sea, N.J. 667,702 canc. Cl. 26.

Morris, N. K., Mfg. Co.: *See*—
Morris, Nathan K.

Motorola, Inc., Franklin Park, Ill. 780,287–8, pub. 9–1–64 Cl. 26.

Murd Co.: *See*—
Kramer, Philip.

Mutron Corp., Brockton, Mass. 780,187, pub. 9–1–64. Cl. 21

Myers, L., Co., San Francisco, Calif. 780,411–12, pub. 9–1–64. Cl. 42.

Nagaoka & Co. Ltd., d.b.a. S. Nagaoka and Sasuke Nagaoka, Higashinada-ku, Kobe, Japan. 780,115–16, pub. 9–1–64. Cl. 6.

Nagaoka, S. and Sasuke Nagaoka: *See*—
Nagaoka & Co. Ltd.

National Battery Co., to Gould-National Batteries, Inc., St. Paul, Minn. 410,543, ren. 11–17–64. Cl. 21.

National Propane Corp., Garden City, N.Y. 780,321, pub. 9–1–64. Cl. 34.

Nekoosa-Edwards Paper Co., Port Edwards, Wis. 780,336, pub. 9–1–64. Cl. 37.

Nekoosa-Edwards Paper Co., Port Edwards, Wis. 780,346, pub. 9–1–64. Cl. 37.

New Hermes Engraving Machine Corp., New York, N.Y. 780,468. Cl. 14.

Nexus Research Laboratory, Inc., Canton, Mass. 780,203, pub. 9–1–64. Cl. 21.

Noerdlinger, Victor S., Inc., New York, N.Y. 780,413, pub. 9–1–64. Cl. 42.

Nopco Chemical Co., Harrison, N.J. 667,562, canc. Cl. 1

Nordson Corp., Amherst, Ohio. 780,235, pub. 9–1–64. Cl. 23

Normal Pharmacal, Inc., Oakland, Calif. 780,436, pub. 9–1–64. Cl. 51.

North American Aviation, Inc., Los Angeles, Calif. 667,714, canc. Cl. 26.

Northern Signal Co.: *See*—
Flo-Trinics, Inc.

O.D. Bait Specialties, Topeka, Kans. 780,206, pub. 9–1–64. Cl. 22.

O-At-Ka Milk Products Cooperative Inc., Batavia, N.Y 780,440, pub. 9–1–64. Cl. 46.

Odell Co., Inc., The, to The Odell Co., Inc., Newark, N.J 410,677, ren. 11–17–64. Cl. 51.

Olga Co., Van Nuys, Calif. 780,384–5, pub. 9–1–64. Cl. 39

Oneida Ltd., Oneida, N.Y. 780,252, pub. 9–1–64. Cl. 23.

Organon Inc., Orange, N.J. 667,642, canc. Cl. 18

Ortho-Vent Shoe Co., Inc., Salem, Va. 780,380, pub. 9–1–64. Cl. 39.

Owens-Illinois Glass Co., Toledo, Ohio. 780,289, pub. 9–1–64. Cl. 26.

Owens-Illinois Glass Co., Toledo, Ohio. 780,295, pub. 9–1–64. Cl. 26.

Pabst Brewing Co., Chicago, Ill. 667,861, canc. Cl. 48.

Pace, Julian V., New York, N.Y. 780,100, pub. 9–1–64. Cl. 2

Package Machinery Co., East Longmeadow, Mass. 780,246, pub. 9–1–64. Cl. 23.

Pant-Ease Infant Wear Co.: *See*—
McNair, Louis R.

Parker Pen Co., The, Janeville, Wis. 191,306, ren. 11–17–64. Cl. 37.

Paterson Pacific Parchment Co., Sunnyvale, Calif. 780,347, pub. 9–1–64. Cl. 37.

Pemco Corp. The Glidden Co., Cleveland, Ohio. 411,278. Am. 7(d). Cl. 1.

Pennsalt Chemicals Corp., Philadelphia, Pa. 780,248, pub. 9–1–64. Cl. 23.

Peter Pan Foundations, Inc., New York, N.Y. 780,401, pub. 9–1–64. Cl. 39.

Peterson Products of San Mateo, Inc., Belmont, Calif. 780,256, pub. 9–1–64. Cl. 23.

Petitjean, Gay & Cie, Le-Pre-Saint-Gervais, Seine, France. 780,438, pub. 3–10–64. Cl. 46.

Philadelphia Sign Co., Philadelphia, Pa. 780,196, pub. 9–1–64. Multiple Class (Classes 21 and 50).

Philco Corp., to Philco Corp., Philadelphia, Pa. 412,317, ren. 11–17–64. Cl. 38.

Phillips Packing Co., Inc., Cambridge, Md. 667,795, canc. Cl. 46.

Pi Tape, Lemon Grove, Calif. 780,290, pub. 9–1–64. Cl. 26.

Piasten Kakao- und Schokoladenfabrik Gesellschaft mit beschrankter Haftung, Forchheim, Oberfranken, Germany. 667,825, canc. Cl. 46.

Plas-Tex Corp., The, Los Angeles, Calif. 667,611, canc. Cl. 13.

Plymouth Cordage Industries, Inc., Boston, Mass. 780,092, pub. 9–1–64. Cl. 1.

Popper & Sons, Inc., New York, N.Y. 780,430, pub. 9–1–64. Cl. 44.

Process Chemicals Co., Los Nietos, Calif. 667,573, canc. Cl. 6.

Pro-phy-lac-tic Brush Co., Northampton, Mass., to Pro-phy-lac-tic Brush Co., Florence, Mass. 409,584, ren. 11–17–64. Cl. 40.

Pro-phy-lac-tic Brush Co., Northampton, Mass., to Pro-phy-lac-tic Brush Co., Florence, Mass. 409,722, ren. 11–17–64. Cl. 40.

Publishers Newspaper Syndicate: *See*—
Publishers Syndicate.

Publishers Syndicate, to Publishers Newspaper Syndicate, Chicago, Ill. 410,495, ren. 11–17–64. Cl. 38.

Puschkin G.m.b.H.: *See*—
Distillerie Konig G.m.b.H.

Quality Tools Corp., New Wilmington, Pa. 190,593. Am. 7(d). Cl. 23.

Queen Knitting Mills, Inc., Philadelphia, Pa. 667,771, canc. Cl. 39.

Raleigh Manufacturers, Inc., New York, N.Y. 780,403, pub. 9–1–64. Cl. 39.

Ramada Inn, Inc., Chicago, Ill. 780,480. Cl. 100.

Randall, C. Ray, Mfg. Co., North Attleboro, Mass. 780,299, pub. 9–1–64. Cl. 28.

Rayflex Exploration Co., Richardson, Tex. 780,294, pub. 9–1–64. Cl. 26.

Reading Briquet Co.: *See*—
Shuron Optical Co., Inc.

Realy State, Inc., South Miami, Fla., from A. T. Beckwith, Coral Gables, Fla. 780,460, pub. 9–28–64. Cl. 101.

Reed & Carnrick, Kenilworth, N.J. 780,163, pub. 9–1–64. Cl. 18.

Reeves Brothers, Inc., New York, N.Y. 780,409–10, pub. 9–1–64. Cl. 42.

Regal Shoe Mfg. Co., Whitman, Mass. 667,765, canc. Cl. 39.

Regina Corp., The, Rahway, N.J. 780,194, pub. 9–1–64. Cl. 21.

Reichhold Chemicals, Inc., White Plains, N.Y. 410,091, ren. 11–17–64. Cl. 1.

Renwick, Frank W., Toronto, Ontario, Canada. 780,184, pub. 9–1–64. Cl. 19.

Revley Corp., Meadville, Pa. 780,272, pub. 9–1–64. Cl. 23.

Revlon, Inc., New York, N.Y. 667,896, canc. Cl. 51.

Rhea, Mini, Bensenville, Ill. 780,381, pub. 9–1–64. Cl. 39.

Rheem Mfg. Co., New York, N.Y. 780,122, pub. 9–1–64. Cl. 13.

Riviere, Claude, S.A.R.L., Paris, France. 780,104, pub. 9–1–64. Multiple Class (Classes 3 and 39).

Rochester Ropes, Inc., from Rochester Ropes, Inc., Culpeper, Va. 780,353, pub. 9–1–64. Cl. 38.

Roebling's, John A., Sons Co., Trenton, N.J., to The Colorado Fuel and Iron Corp., Denver, Colo. 409,125, ren. 11–17–64. Cl. 7.

Romalma Knitwear of Italy, d.b.a. Gregg, Inc., Los Angeles, Calif. 780,388, pub. 9–1–64. Cl. 39.

Rose Patch & Label Co., Grand Rapids, Mich. 780,354, pub. 9–1–64. Cl. 38.

Rosenholz, J., Inc., to Rosewood Fabrics, Inc., New York, N.Y. 409,750, ren. 11–17–64. Cl. 42.

Rosewood Fabrics, Inc.: *See*—
Rosenholz, J., Inc.

Ross & Cameron Ltd., Leith, Scotland. 780,478. Cl. 49.

Rust Master Chemical Corp., Cambridge, Mass. 667,649, canc. Cl. 15.

St. John & Co., Chicago, Ill. 667,881, canc. Cl. 2.

St. Regis Paper Co., New York, N.Y. 780,238, pub. 9–1–64. Cl. 23.

Salvage, Louis H., Shoe Co., Inc., Boston, Mass. 780,382, pub. 9–1–64. Cl. 39.

Sargent, E. H., & Co., Chicago, Ill. 410,569, ren. 11–17–64. Cl. 26.

Savage Laboratories, Inc., Houston, Tex. 780,169, pub. 9–1–64. Cl. 18.

Savage Laboratories, Inc., Houston, Tex. 780,178, pub. 9–1–64. Cl. 18.

Saxon Paper Corp., New York, N.Y. 780,344–5, pub. 9–1–64. Cl. 37.

Schneider, Raymond C., Palo Alto, Calif. 667,865, canc. Cl. 50.

Schenley Distillers, Inc., New York, N.Y. 780,477. Cl. 49.

Scholl Mfg. Co., Inc., The, Chicago, Ill. 410,225–6, ren. 11–17–64. Cl. 44.

Schrank, M. C., Co., Bridgeton, N.J. 653,812, canc. Cl. 39.

Schreiber, A. H., Co., Inc., New York, N.Y. 780,398, pub. 9–1–64. Cl. 39.

Schreiber & Goldberg, Inc., New York, N.Y. 780,218, pub. 9–1–64. Cl. 23.

SCM Corp., New York, N.Y. 780,263, pub. 9–1–64. Cl. 23.

Score-Awl Tool Co., Salisbury, N.C. 780,270, pub. 9–1–64. Cl. 23.

Seagram, Joseph E., & Sons, Inc., New York, N.Y. 667,635, canc. Cl. 18.

Sears, Roebuck and Co., Chicago, Ill. 780,300, pub. 9–1–64. Cl. 28.

Seneca Falls Machine Co., Seneca Falls, N.Y. 780,222, pub. 9–1–64. Cl. 23.

Shamban, W. S., & Co., Culver City, Calif. 780,228, pub. 9–1–64. Cl. 23.

Shamrock-Neatway Products, Inc., Minneapolis, Minn. 780,313, pub. 9–1–64. Cl. 32.

Shawvan, John M., Co.: *See*—
Epstein, Gerald W.

Shrell Products: *See*—
Louis, Sidney.

Shuron Optical Co., Inc., from Reading Briquet Co., Pottsville, Pa., from Shuron Optical Co., Inc., Geneva, N.Y. 667,729, canc. Cl. 26.

Siemag Siegener Maschinenbau Gesellschaft mit Beschrankter Haftung, Dahlbruch Westphalia, Germany. 780,212, pub. 9–1–64. Cl. 23.

Sims Corp., Providence, R.I. 780,314, pub. 9–1–64. Cl. 34.

Sinai Kosher Sausage Corp., Chicago, Ill. 667,793, canc. Cl. 46.

Sipe, James B., and Co., Pittsburgh, Pa. 190,744, ren. 11–17–64. Cl. 16.

Skalet Mfg. Co., Inc., New York, N.Y. 667,885, canc. Cl. 28.

Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 780,176, pub. 9–1–64. Cl. 18.

Socony Mobil Oil Co., Inc., New York, N.Y. 780,117, pub. 9–1–64. Multiple Class (Classes 6, 10, and 52).

Solar Light Mfg. Co., Melrose Park, Ill. 780,198, pub. 9–1–64. Cl. 21.

Solvents and Plastics Co.: *See*—
Deacon, William T.

Sonic Engineering Corp., Norwalk, Conn. 780,279, pub. 9–1–64. Cl. 24.

Sperry Rand Corp., New Holland, Pa. 780,273, pub. 9–1–64. Cl. 23.

Sperry Rand Corp., New York, N.Y., from Vickers Inc., Troy, Mich. 780,348, pub. 9–1–64. Multiple Class (Classes 38, 100, 103, and 107).

Standard Food Products Corp., Long Island City, N.Y. 652,494, canc. Cl. 47.

Standard Furniture Co., Herkimer, N.Y. 780,312, pub. 9–1–64. Cl. 32.

Standard Thread Co., Inc., New York, N.Y. 780,429, pub. 9–1–64. Cl. 43.

Stange Co., from Wm. J. Stange Co., Chicago, Ill. 780,444, pub. 9–1–64. Cl. 46.

Stange, Wm. J., Co.: *See*—
Stange Co.

Stanley Aviation Corp., Aurora, Colo. 667,718, canc. Cl. 26.

Star Dental Mfg. Co., Inc.: *See*—
Star Dental Mfg. Co., Inc., The.

Star Dental Mfg. Co., Inc., The, d.b.a. Star Dental Mfg. Co., Inc., and Star Dental Mfg. Co., Inc., Philadelphia, Pa. 780,432, pub. 9–1–64. Cl. 44.

Stein & Ellbogen Co.: *See*—
Henshel Co., Inc., The.

Stephano Bros., Philadelphia, Pa. 780,157, pub. 9–1–64. Cl. 17.

Stern, Michaels, & Co. Inc., Rochester, N.Y. 780,368, pub. 9–1–64. Cl. 39.

Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.

Stevens, J. P., & Co., Inc., New York, N.Y. 780,417, pub. 9–1–64. Cl. 42.

Steward Co., The: *See*—
Steward Printers and Lithographers.

Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Co., Los Angeles, Calif. 780,096, pub. 9–1–64. Cl. 1.

Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Co., Los Angeles, Calif. 780,106, pub. 9–1–64. Cl. 5.

Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Co., Los Angeles, Calif. 780,457, pub. 9–1–64. Cl. 52.

Stoll, Kurt, K.G. Maschinenfabrik, Neidlingen/Teck, Germany. 667,673, canc. Cl. 23.

Stone, Clifford A., d.b.a. Allied Plastic Sales, Seattle, Wash. 780,297, pub. 9–1–64. Cl. 27.

Strong, Hewat & Co., Inc., North Adams, Mass. 192,628, ren. 11–17–64. Cl. 42.

Su-Mark, Inc., Walpole, Mass. 667,653, canc. Cl. 19.

Sun Glo Studios, New York, N.Y. 667,868, canc. Cl. 50.

Sun Oil Co., Philadelphia, Pa. 780,140, pub. 9–1–64. Cl. 15.

Sunflo Specialty Co. Inc., Richmond Hill, N.Y. 667,852, canc. Cl. 46.

Sunstate Sportswear, Inc., Tampa, Fla. 780,362, pub. 9–1–64. Cl. 39.

Sun Valley Mfg. Co., Boston, Mass. 667,772, canc. Cl. 39.

Swaim, E. H., d.b.a. Laurel Biscuit Co., Dayton, Ohio. 667,857, canc. Cl. 46.

Swartz, Henry D., d.b.a. Swartz Mfg. Co., Dorchester, Mass. 667,566, canc. Cl. 2.

Swartz Mfg. Co.: *See*—
Swartz, Henry D.

Sweet-Orr & Co., Inc., New York, N.Y. 780,386, pub. 9–1–64. Cl. 39.

Swift and Co., to Swift & Co., Chicago, Ill. 417,095, ren. 11–17–64. Cl. 46.

Synthelube, Inc., Cleveland, Ohio. 780,139, pub. 9–1–64. Cl. 15.

Systomatic Business Forms, Inc., Paramus, N.J. 780,341, pub. 9–1–64. Cl. 37.

T.P. Corp., Duryea, Pa. 780,464, pub. 9–1–64. Cl. 106.

Technical Materiel Corp., The, Mamaroneck, N.Y. 776,525, cor. Cl. 21.

Tectum Corp., Columbus, Ohio. 667,588, canc. Cl. 12.

Teenform, Inc., New York, N.Y. 780,360, pub. 9–1–64. Cl. 39.

Textile Machine Works, Wyomissing, Pa. 188,986, ren. 11–17–64. Cl. 23.

Tharinger Macaroni Co., Milwaukee, Wis., to V. La Rosa & Sons, Inc., Brooklyn, N.Y 188,234, ren. 11–17–64. Cl. 46.

Thermo-Products, Inc., North Judson, Ind. 780,326, pub. 9–1–64. Cl. 34.

Thermos Ltd., London, England. 667,567, canc. Cl. 2.

Thompson Distributing Co., Algona, Iowa. 667,731, canc. Cl. 31.

Tipper Tie Products of New Jersey, Inc., Union, N.J. 667,608, canc. Cl. 13.

Transogram Co., Inc., New York, N.Y. 780,204, pub. 9–1–64. Cl. 22.

Tri-Kem Corp.: *See*—
American Home Products Corp.

Trim-Master Corp., Temple, Pa. 780,229, pub. 9–1–64. Cl. 23.

Uarco Inc., Barrington, Ill. 780,337, pub. 9–1–64. Cl. 37.

Uckele, William E., Blissfield, Mich. 780,474. Cl. 46.

Ulman, Max, Inc., New York, N.Y. 780,367, pub. 9–1–64. Cl. 39.

Ultronic Systems Corp., Pennsauken, N.J. 780,202, pub. 9–1–64. Cl. 21.

Unimart, Inc., Los Angeles, Calif. 780,370, pub. 9–1–64. Cl. 39.

Union Carbide Corp., New York, N.Y. 780,195, pub. 9–1–64. Cl. 21.

United-Greenfield Corp., Chicago, Ill. 780,230, pub. 9–1–64. Cl. 23.

United Merchants and Manufacturers, Inc., New York, N.Y. 780,422, pub. 9–1–64. Cl. 42.

U.S. Industries, Inc.: *See*—
West Bend Co., The.
United States Rubber Co., New York, N.Y. 780,329–30, pub. 9–1–64. Cl. 35.
U.S. Slicing Machine Co., Inc., La Porte, Ind. 667,685, canc. Cl. 23.
United Steel & Wire Co., Battle Creek, Mich. 667,679, canc. Cl. 23.
Universal Optical Co. Inc., Providence, R.I. 667,727, canc. Cl. 26.
Universal Tobacco Co. Ltd., The, London, England. 780,158, pub. 9–1–64. Cl. 17.
Unterman, Israel, Inc., New York, N.Y. 780,461, pub. 9–1–64. Cl. 101.
Utah-Idaho Sugar Co., Salt Lake City, Utah. 780,350, pub. 9–1–64. Cl. 38.
Utica Cutlery Co., Utica, N.Y. 780,210, pub. 9–1–64. Cl. 23.
Utica Radiator Corp., Utica, N.Y. 780,320, pub. 9–1–64. Cl. 34.
Valeron Corp., The, Detroit, Mich. 780,253, pub. 9–1–64. Cl. 23.
Valley Tow-Rite, Inc., Lodi, Calif. 780,181, pub. 9–1–64. Cl. 19.
Valspar Corp., The, Rockford, Ill. 780,146–7, pub. 9–1–64. Cl. 16.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 780,151, pub. 9–1–64. Cl. 16.
Varsity Pajamas, Inc., d.b.a. Varsity Pajamas, Inc., New York, N.Y. 780,396, pub. 9–1–64. Cl. 39.
Venus Pen & Pencil Corp.: *See*—
American Lead Pencil Co.
Veratex Corp., The, Detroit, Mich. 780,437, pub. 9–1–64. Cl. 44.
Vickers Inc.: *See*—
Sperry Rand Corp.
Vit-A-Way, Inc., Fort Worth, Tex. 780,447, pub. 9–1–64. Cl. 46.
W. & W. Tool and Die Mfg. Co., Burlingame, Calif. 667,620, canc. Cl. 13.
Waldes Kohinoor, Inc., Long Island City, N.Y. 780,219, pub. 9–1–64. Cl. 23.
Waldorf Paper Products Co., St. Paul, Minn. 780,101, pub. 9–1–64. Cl. 2.
Waljohn Plastics, Inc., Brooklyn, N.Y. 780,119, pub. 9–1–64. Cl. 12.
Waljohn Plastics, Inc., Brooklyn, N.Y. 780,318, pub. 9–1–64. Cl. 34.
Wallco Kjemisk Industri A/S, Oslo, Norway. 667,784, canc. Cl. 42.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Ward Leonard Electric Co., Mount Vernon, N.Y. 667,663, canc. Cl. 21.
Water Products Co., Union, N.J. 667,719, canc. Cl. 26.
Watson Mfg. Co., Inc., Jamestown, N.Y. 780,259, pub. 9–1–64. Cl. 23.
Webcor, Inc., Chicago, Ill. 667,667–8, canc. Cl. 21.
Webster, H. K., Co., Lawrence, Mass. 780,449, pub. 9–1–64. Cl. 46.
Weldon Farm Products, Inc., New York, N.Y. 667,809, canc. Cl. 46.
Wembley, Inc., New Orleans, La. 780,389, pub. 9–1–64. Cl. 39.
West Bend Co., The, West Bend, Wis., from U.S. Industries, Inc., New York, N.Y. 780,126, pub. 9–1–64. Cl. 13.
West Virginia Pulp and Paper Co., New York, N.Y. 780,265, pub. 9–1–64. Cl. 23.
White Swan Uniforms, Inc., New York, N.Y. 780,392, pub. 9–1–64. Cl. 39.
Whit-Mor Mfg. Co., Inc., Brooklyn, N.Y. 667,893, canc. Cl. 42.
Williams, Edward R., d.b.a. Creative Chemical Co., Pittsburgh, Pa. 190,604, ren. 11–17–64. Cl. 52.
Wilson Capilator Corp., Brooklyn, N.Y. 667,871, canc. Cl. 50.
Wilson, Donald J., d.b.a. Wilson Key-Craft, Chicago, Ill. 780,249, pub. 9–1–64. Cl. 23.
Wilson-Imperial Co., Newark, N.J. 410,533, ren. 11–17–64. Cl. 16.
Wilson Key-Craft: *See*—
Wilson, Donald J.
Windsor House, Ltd.: *See*—
"42" Products, Inc.
Wiscassett Mills Co.: *See*—
Hoover Hosiery Co.
Woodpecker Woodware: *See*—
Burn-Strauss, Inc.
Woolworth, F. W., Co., New York, N.Y. 780,305, pub. 9–1–64. Cl. 32.
Woolworth, F. W., Co., New York, N.Y. 780,406, pub. 9–1–64. Cl. 39.
Wooster Brush Co., The, Wooster, Ohio. 780,303, pub. 9–1–64. Cl. 29.
Xpelo Products Co., Los Angeles, Calif. 780,141, pub. 9–1–64. Cl. 15.
Yakima Fruit Growers Association, to Big Y Growers, Inc., Yakima, Wash. 196,049, ren. 11–17–64. Cl. 46.
York Label Corp., York, Pa. 780,264, pub. 9–1–64. Cl. 23.
Young Corp., Seattle, Wash. 780,242, pub. 9–1–64. Cl. 23.
Zachar & Fries, Inc., Cedar Rapids, Iowa. 650,835, canc. Cl. 21.
Zoo-Piks, North Hollywood, Calif. 780,453, pub. 9–1–64. Cl. 50.

U.S. GOVERNMENT PRINTING OFFICE 0—1964

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 24, 1964 Volume 808 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1964

Examiner affirmed	271
Examiner affirmed in part	57
Examiner reversed	105
Total	433

Failure To Perfect Appeal to CCPA

If appeal is taken to the United States Court of Customs and Patent Appeals following an adverse decision of the Board of Appeals and no claims stand allowed, failure to file the record on time (CCPA Rule 25) results in termination of proceedings as of the expiration date for appeal to the court. Rule 197(c).

This is called to the attention of the Examiners because continuity under 35 U.S.C. 120 between such an application and another may be lost.

RICHARD A. WAHL,
Acting Superintendent
Patent Examining Corps

Nov. 4, 1964.

Disclaimer

2,967,447.—*John M. Hanert*, Des Plaines, Ill. APPARATUS FOR TRANSLATING ELECTRICAL MUSICAL TONE SIGNALS INTO SOUND. Patent dated Jan. 10, 1961. Disclaimer filed Oct. 19, 1964, by the assignee, *Hammond Organ Company*.

Hereby enters this disclaimer to claims 1, 2 and 4 of said patent.

Erratum

All references to Patent No. 3,154,422, to Emery I Valyi, for Container, appearing in the OFFICIAL GAZETTE of October 27, 1964, should be deleted as the application was erroneously issued.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,671,129, R. C. Moore, Electrical system, decided Aug. 1, 1961, Interference No. 87,418, claims 1, 2, 3, 4, 5, 6, 8, 9 and 10.

Patent No. 2,813,260, M. Kaplan, Magnetic device, decided July 17, 1964, Interference No. 90,645, claims 1, 5, 6 and 7.

Patent No. 2,828,182, N. D. Cheronis and A. Schatz, Use of chelating agents in fertilizers to enhance the growth of plant life, decided Dec. 17, 1962, Interference No. 90,333, claim 3.

Patent No. 2,838,993, K. Hinrichs, Selective printer responsive to sound track on record card, decided June 30, 1964, Interference No. 91,053, claim 9.

Patent No. 2,946,924, K. A. Gerlach and K. Wittig, Capacitor discharge circuit, decided Aug. 10, 1962, Interference No. 92,169, claim 1.

Patent No. 2,988,368, D. R. Kerr, Sand spreading mechanism with reversible conveyor, decided Sept. 28, 1964, Interference No. 93,109, claims 4, 5, 6 and 7.

Patent No. 2,996,524, M. N. Huffman, 17α lower alkyl-2-androsten-17β-ol, decided Sept. 29, 1964, Interference No. 92,401, claims 1, 2 and 9.

Patent No. 3,015,048, R. N. Noyce, Negative resistance transistor, decided Sept. 28, 1964, Interference No. 93,753, claims 1, 3 and 4.

Patent No. 3,018,125, D. E. Cain, Flexible link assembly for transmitting linear motion, decided Oct. 14, 1964, Interference No. 93,597, claims 1, 3, 6, 11 and 12.

Patent No. 3,019,143, R. Dessauer, Process of coloring anodized aluminum, decided July 22, 1964, Interference No. 93,755, claim 1.

Patent No. 3,064,452, A. K. Gast, Jr., Plug and pin assembly for shade rollers, decided Sept. 28, 1964, Interference No. 94,168, claim 1.

Patent No. 3,083,237, R. N. Hasseldine, Chemical process, decided Oct. 7, 1964, Interference No. 94,123, claim 11.

Patents Available for Licensing or Sale

2,551,149. Reel. Mrs. Clarence McCampbell, 19301 Parkmount Ave., Cleveland, Ohio, 44135.

3,104,420. Masticator for Plastic Materials. Gerhard Kestermann K G., Bochum, Germany. Correspondence to: Karl F. Ross, 305 Broadway, New York 7, N.Y.

3,149,694. Bucket Adaptor. Frederick Loyal Smithee, 9326 Emily St., Elk Grove, Calif.

Correspondence concerning the following 2 patents should be addressed to: Bailey, Stephens & Huettig, 1317 F St., NW., Washington, D.C., 20004.

2,939,469. Method and Apparatus for Feeding Materials.

3,096,779. Dual Characteristic Additive Feeding Machine.

New Applications Received During September 1964

Patents	7,119
Designs	424
Plant Patents	4
Reissues	20
Total	7,567

Issue—November 24, 1964

Patents	983	No. 3,157,884 to No.	3,158,866, incl.
Designs	50	No. 199,611 to No.	199,660, incl.
Plant Patents	1	No. 2,454	
Reissues	2	No. 25,689 to No.	25,690, incl.
Total	1036		

Correspondence concerning the following 5 patents should be addressed to: Ionics, Inc., 152 6th St., Cambridge, Mass., 02142.

2,599,558. Method of Regenerating Anion Exchange Materials and Composition Therefor.

2,609,341. Method of Purifying Water.

2,660,558. Method for the Purification of Water by Ion Exchange.

2,692,855. Method of and Apparatus for Sterilizing Liquids.

2,767,135. Electrolytic Transfer of Salts.

General Electric Company is prepared to grant non-exclusive licenses under the following 46 patents under reasonable terms to domestic manufacturers.

Applications for license under the following 31 patents may be addressed to: Hotpoint Division, 5600 W. Taylor St., Chicago, Ill., 60644. Attn: Patent Counsel.

2,686,372. Clothes Drying Machine.

2,686,373. Clothes Drying Machine.

2,701,421. Clothes Drying Machine.

2,752,769. Control Circuits for Automatic Washing Machines.

2,820,304. Clothes Drying Machines.

2,869,698. Drive Mechanism.

2,881,633. Combination Washer-Dryer Drive Mechanism.

2,885,876. Control Circuits for Automatic Clothes Washing Machines.

2,942,444. Domestic Appliance.

3,022,654. Lint Filter for Clothes Laundering Machine.

3,028,740. Automatic Clothes Washing Machine With Multiple-Compartment Dispenser.

3,033,427. Dispenser for Clothes Washing Machine.

3,043,125. Clothes Washing Machine.

3,044,000. Control Circuits for Home Appliances or the Like.

3,046,772. Washing Machine Drive System.

3,050,966. Clutch Mechanism.

3,058,328. Clothes Laundering Machine Having a Lint Filter.

3,072,386. Automatic Speed Adjustment for Clothes Dryers.

3,090,472. Drive Mechanism for Washing Machine.

3,100,030. Brake Mechanism for Washing Machine.

3,102,551. Adjustable Water Level Control for Clothes Washing Machines.

3,102,796. Laundry Machine.

3,102,940. Coil Mounting Structure.

3,116,626. Laundry Machine for Washing and Centrifuging With Slip Clutch.

3,122,426. Laundry Dryer Control Mechanism.

3,123,939. Dryer Venting Arrangement.

3,132,004. Shielded Temperature Control Device.

3,132,005. Clothes Dryer Condensing System.

3,140,595. Control Circuit for Clothes Washing Machine.

3,145,551. Clothes Washing Machine.

3,145,818. Switch Mechanism.

Applications for license under the following 5 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

2,525,457. Liquid Cooling Means for Electrical Apparatus.

2,547,658. Electric Switch Contact.

2,590,803. Tank Joint.

3,005,737. Method and Apparatus for Making Laminated Transformer Cores.

3,034,124. Surge Voltage Recorder.

Applications for license under the following 10 patents may be adressed to: Patent Counsel, Turbine Division, General Electric Company, 1 River Road, Bldg. #53, Schenectady 5, N.Y.

2,999,951. Dynamoelectric Machine Cooling.

3,138,010. Flexible Shafting.

3,141,313. Torque-Limiting Shaft Coupling Assembly.

3,141,384. Hydraulic Reciprocating Device.

3,145,314. Dynamoelectric Machine With Liquid Cooled Excitation Supply Means.

3,141,476. Steam Valve Disk Assembly With Internal Bypass Valve.

3,148,282. Integral Turbine-Generator Set.

3,149,502. Automatic Balancing Apparatus.

3,149,504. Reduction Gear With Circular Casing.

3,014,139. Direct-Cooled Cable Winding for Electromagnetic Device.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

The List Below Reflects the Oldest Actual Filing Dates for Cases Awaiting Action; In Column 1 (New) and Column 2 (Amended)

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	5- 4-56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11-30-62	6- 1-54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g. Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	12- 5-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	2-26-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g., Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	3-11-57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-16-62	4- 9-56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	9-24-57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	8- 1-60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	1-28-54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	7-17-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	6-13-58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4- 5-56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	1- 2-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	12- 6-62	11-22-57

Total number of pending applications (excluding Designs)	212,033*
Total number of Design applications pending	5,795*
Total number of applications awaiting action (excluding Designs)	135,475*
Total number of Design applications awaiting action	2,483*
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

* As of October 1, 1964.

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*

Patents ..... Numbers 2,429,972 to 2,431,669, inclusive

Plant Patents ..... Numbers 766 to 767, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action (1) New	(2) Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-25-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

JOHN E. MAHAN v. THOMAS F. DOUMANI AND CLARENCE S. COE

Nos. 7014 and 7015. Decided June 25, 1964

[51 CCPA —; 333 F.2d 896; 142 USPQ 19]

1. INTERFERENCE—BENEFIT OF FILING DATE OF PARENT APPLICATION—35 U.S.C. 120.

"We agree with appellant that 35 U.S.C. 120 is applicable in any situation where one seeks 'Benefit of earlier filing date in the United States.' No exception has been written into the statute for interference situations. We find nothing in the *Den Beste* v. *Martin, Fried et al.* v. *Murray et al.* or *Farrington et al.* v. *Mikeska* cases • • • which is inconsistent with the law as codified in 35 U.S.C. 120."

2. SAME—SAME—SAME—SUBJECT MATTER OF COUNT NEED NOT BE "BEST MODE" OF PARENT APPLICATION—35 U.S.C. 112.

"The 1944 [parent] application, in order to support the counts, need not list the specific fuels of the counts as 'the best mode contemplated by the inventor of carrying out his invention' (35 U.S.C. 112). Only a 'written description of the invention' must be found in the 1944 application when considered in its entirety."

APPEALS from the Patent Office. Interference Nos. 87,638 and 89,790.

AFFIRMED.

J. Arthur Young, Donald J. Quigg, L. Malcolm Oberlin, Paul L. Gomory for appellant.

Laurence and Laurence (*Dean Laurence, Herbert I. Sherman*, of counsel) for appellees.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decisions of the Board of Patent Interferences in two related interferences, Nos. 87,638 and 89,790, consolidated for review by this court as a result of motions by appellant. The same inventors are involved in each interference and the subject matter is closely related. In each case, appellees were awarded priority below on the basis of the disclosure in Patent No. 2,645,079, which issued from application Serial No. 539,030 filed June 6, 1944 (hereinafter the 1944 application). Neither party took testimony.

In No. 7014, appellant relied on the filing date of his patent application,[1] which was earlier than the filing date of appellees' application.[2] However, appellees' application is a continuation-in-part of the application maturing into the above mentioned patent, and they moved to shift the burden of proof to appellant in the interference. The Primary Examiner denied the motion and the case went to final hearing on the issue of whether appellees were entitled to rely on the filing date of their parent 1944 application. The Board reversed the Examiner, finding support for the count in the 1944 application.

Similarly, in No. 7015, appellant relied on the filing date of another application[3] which was senior to appellees' continuation-in-part application. Appellees relied on the filing date of the same applica-

[1] Serial No. 204,074, filed January 2, 1951.
[2] Serial No. 261,184, filed December 12, 1951.
[3] Serial No. 254,970, filed November 5, 1951.

tion as in No. 7014 and moved to shift the burden of proof to appellant on the basis of the filing date of the 1944 application. Appellees' motion was denied by the Examiner for lack of support in the parent, but the Board reversed at final hearing.

Thus, the sole issue for our determination is whether the 1944 application of appellees provides support for the counts in the two appeals.

The subject matter in issue relates to rocket propulsion fuels and methods of developing thrust by hypergolic[4] reaction of fuel and oxidizer in a rocket combustion chamber.

The count in No. 7014 reads:

1. A method of rocket propulsion which comprises injecting separately and essentially simultaneously into the combustion chamber of a rocket motor a hypergolic fuel consisting essentially of diethyl disulfide and an oxidizer selected from the group consisting of red fuming nitric acid and white fuming nitric acid, in an amount and at a rate sufficient to initiate a hypergolic reaction with and to support combustion of the fuel.

The count in No. 7015 reads:

1. In the method for developing thrust by the combustion of bipropellant components in a combustion chamber of a reaction motor the steps comprising separately and simultaneously injecting a stream of an oxidant component and a fuel component consisting essentially of methyl thiophene into contact with each other in the combustion chamber of said motor, in such proportions as to produce spontaneous ignition.

The specification of the 1944 Doumani et al. application, on which appellees rely to support the counts, relates to "jet-propulsion motors" which are defined as

* * * motors which derive their driving power from the escape through a jet or nozzle, of the relatively large volume of products resulting from the combustion of a fuel by means of an oxidizing agent. The jet may be exhausted into the open air as in the rocket type of motor, or it may be trained on a movable piece of machinery such as the blades of a fan as in the turbine type of motor.

The specification first discusses a number of fuels, particularly nitrogen-containing compounds in admixture with hydrocarbon fuels. Then oxidizers are listed where necessary "with the above fuels." The oxidizers listed include both white and red fuming nitric acid. In discussing the combustion chamber, the specification states:

The combustion chamber may be provided with an igniting device such as a spark plug or a detonating device where necessary, although in certain instances the contact of the fuel with the oxidizer produces spontaneous combustion.

The specification concludes with a paragraph beginning:

Besides the above nitrites and nitrates, other organic compounds have been found useful as fuels or fuel additives for jet-propulsion motors.

Included in this paragraph is a large number of compounds, among which appear "* * * thiophene, *methyl*, ethyl, polymethyl, and polyethyl*thiophenes*, * * *" and "dimethyl, *diethyl*, phenyl-isopropyl, and cycyclopentyl sulfides, and the corresponding *disulfides*, sulfoxides, and sulfones, * * *." [Emphasis supplied.]

The Examiner denied appellees' motion to shift the burden of proof, saying:

* * * the earlier Doumani et al. application is lacking in a specific embodiment, such as is required under 35 U.S.C. 112, and Rule 71, to support the present count * * *.

He reasoned that

There is no indication in what respect these "other" fuels are equivalent to the

[4] Webster's Third New International Dictionary (1961) defines "hypergolic" as "igniting upon contact of components without spark or external aid."

nitrites and nitrates, nor in which of the several jet propulsion systems disclosed they are to be used. More specifically, there is no indication which of these "organic compounds" listed on pages 9 and 10 [the concluding paragraph] will react spontaneously and which will require a spark plug for ignition. * * *

Nor is there any indication which of the oxidizers listed on page 7 in the earlier Doumani et al. application will react spontaneously with diethyl disulfide. It is a well known fact that there is a specificity, or selectivity of reaction between oxidizers and fuels, in order to produce a hypergolic reaction therebetween. In other words, where one fuel will ignite spontaneously with a specific oxidizer, another fuel may not. The most that can be said of diethyl disulfide, even if it were mentioned specifically, as ascertained from the disclosure, is that it is a "fuel," with no indication of whether it is hypergolic or non-hypergolic.

In a split decision, the Board reversed. The majority stated:

It is not necessary that each limitation in a count must be expressly set forth in haec verba in the disclosure relied upon. It is sufficient if, as in this case, the specification is so worded that the necessary and only reasonable construction to be given to disclosure by one skilled in the art is one which will lend support to each positive limitation in the count; *Binstead et al.* v. *Littman et al.* 44 CCPA 839, 242 F.2d 766, 718 O.G. 439, 113 USPQ 279, 282. Since Doumani et al.'s disclosure at page 8, lines 12 to 14, conforms to Mahan's definition of a hypergolic fuel we will consider this limitation in the count to be supported by the earlier Doumani et al. specification.

The red and white fuming nitric acids are disclosed on page 7, lines 26 to 33. Contrary to the Examiner's statement on page 3, lines 18 and 19, diethyl disulfide is specifically disclosed at page 10, lines 18 to 20; *Garrett* v. *Cox*, 43 CCPA 927, 233 F.2d 343, 708 O.G. 262, 110 USPQ 52; *Bluestone* v. *Schmerling*, 46 CCPA 842, 265 F.2d 948, 744 O.G. 900, 121 USPQ 417, 419; *Te Grotenhuis* v. *Yaeger*, 48 CCPA 1058, 290 F.2d 951, 772 O.G. 15, 129 USPQ 416. Under the practice set forth in these citations, and contrary to the Examiner's position (page 6, lines 3 to 5 up), Doumani et al. were justified in piecing together portions of an earlier disclosure to meet the terms of the count. [Emphasis present.]

The majority was of the opinion that "no elaborate experimentation by a person skilled in the art would be necessary" to determine whether spontaneous combustion would result with the fuels and oxidizers of the counts.

The dissenting member of the Board found the parent specification lacking in disclosure of the principle of, or the specific conditions necessary for, combining the reactants of the counts to initiate a hypergolic reaction. On reconsideration, the dissent said:

In my judgment the 1944 specification not only fails to teach practice of the specifically recited features of the count of use of a fuel *consisting essentially* of diethyl disulfide and an oxidizer, selection of red or white fuming nitric acid as the oxidizer, and use of rate and ratio sufficient to initiate a hypergolic reaction, but it leaves the persons skilled in the art lost in a sea of literally hundreds of thousands of alternatives, instead of setting forth (35 U.S.C. 112) "the best mode contemplated by the inventor of carrying out his invention." [Emphasis present.]

Appellant contends that, in order for appellees to rely on their 1944 application, 35 U.S.C. 120 requires that the parent application must contain "a written description of the invention," as defined in 35 U.S.C. 112, and that there is no written description of the invention in the 1944 application. Appellant's brief states:

The invention of the counts resides in the discovery that methyl thiophene and diethyl disulfide are hypergolic when mixed with an oxidant in a reaction motor, that is, that spontaneous ignition will occur under these conditions * * *. There is no written description of this invention in the 1944 application.

The compounds employed in the counts are "suggested," appellant argues, "amidst a disclosure of thousands of alternates * * * to the 'nitrates and nitrites of this invention.'" The disclosure in the 1944

application does not give any "certain instance" where a fuel is hypergolic, although it recognizes that "in certain instances," spontaneous combustion may occur.

Appellant argues that the 1944 application has no written description of the specific fuels in combination with the specific oxidizers in the proportions and conditions required by the counts. The specific amounts of each material must be shown and the rate of mixing must be precise in order to result in a hypergolic reaction.

Appellees take issue with the contention of appellant that to rely on the 1944 application it must comply with 35 U.S.C. 120. They argue that section 120 "applies to situations other than interferences" and that in interference situations the rule is "that one is entitled to rely on an application which supports the counts in issue in such manner as to constitute a constructive reduction to practice of the invention defined therein." Appellees rely on *Den Beste* v. *Martin*, 45 CCPA 798, 252 F.2d 302, 116 USPQ 584; *Fried et al.* v. *Murray et al.*, 46 CCPA 914, 268 F.2d 223, 122 USPQ 361; and *Farrington et al.* v. *Mikeska*, 33 CCPA 1073, 155 F.2d 412, 69 USPQ 509, as support for the proposition that 35 U.S.C. 120 does not apply to interference situations.

However, appellees argue that even if section 120 is applicable, the 1944 application does in fact meet the requirements of 35 U.S.C. 112. They rely on *In re Stokes et al.*, 50 CCPA 874, 311 F.2d 826, 136 USPQ 193, where a limitation was found to be inherently supported by the disclosure and state in their brief:

> The majority of the Board had no difficulty in finding that the earlier Doumani et al. application actually discloses the diethyl disulfide and methyl thiophene hypergolic fuels required by the counts • • • but, should this court disagree, it matters not because the undisputed stubborn fact remains that diethyl disulfide and methyl thiophene do react hypergolically with fuming nitric acid, and this inherently supports the recitation of a hypergolic fuel.

Appellees point out that every limitation of the counts may be found in the specification either expressly or inherently. As a specific example of hypergolicity, appellees rely on the disclosure in the specification of "an example of the operation of a similar motor in which a separate fuel and oxidizer are employed" in which a methyl nitrite-gasoline fuel is "allowed to react" with fuming nitric acid. Appellees contend that the "resulting combustion is spontaneous," and that the disclosure of "the other fuels • • • of this invention," under which the fuels of the counts are listed, are "in effect incorporated by reference into the example as an alternate to the methyl nitrite-gasoline fuel."

It appears that the counts in issue are susceptible to more than one construction when examined *in vacuo*. Appellant contends that "the very essence of the invention" is the discovery that diethyl disulfide or methyl thiophene is hypergolic. Appellees, on the other hand, describe the invention defined by the counts as follows:

> The invention therein resides in a method of operating rocket or jet propulsion motors, by injecting separately and simultaneously into the combustion chamber of the motor a hypergolic fuel i.e. diethyl disulfide or methyl thiophene, with an oxidizer (in Appeal 7014, the oxidizer is specifically red or white fuming nitric acid).

Since hypergolic fuels are broadly disclosed, and the specific fuels are also disclosed, appellees argue that the "hypergolic" limitation of the counts is satisfied.

The language of the counts lends some credence to the interpretations suggested by each of the parties.

There seems to be little question that each limitation of the counts may be found *somewhere* in the 1944 specification. The issue is whether the broad disclosure that "in certain instances" some fuels may react hypergolically with oxidizers is sufficient to indicate that the combination in the counts of diethyl disulfide or methyl thiophene with oxidizer is hypergolic.

[1] We agree with appellant that 35 U.S.C. 120 is applicable in any situation where one seeks "Benefit of earlier filing date in the United States." No exception has been written into the statute for interference situations. We find nothing in the *Den Beste* v. *Martin*, *Fried et al.* v. *Murray et al.* or *Farrington et al.* v. *Mikeska* cases, supra, which is inconsistent with the law as codified in 35 U.S.C. 120.

Applying the standard of the first paragraph of 35 U.S.C. 112 to the facts presented, as required by section 120, we find no error in the analysis of the Board.

Although there is no express statement in the 1944 application that the particular chemical compounds diethyl disulfide and methyl thiophene are hypergolic, these compounds are specifically suggested as alternate fuels. There is a recognition in the disclosure of the property of hypergolicity in some of the fuels disclosed even though there is no detailed categorization of which fuels are hypergolic and which are not. An igniting device is called for in the specification only "where necessary." In view of the disclosure, we think it likely that one skilled in the art would not employ an igniting device in carrying out the method if one is not needed. There is nothing to indicate that selection of the materials of the count will not inherently produce spontaneous combustion. The affidavit of Scott is not concerned with the fuels of the count. Appellant, and the dissent below, imply that there are certain undisclosed "*specific conditions*" which must be carefully followed to carry out the method without an igniting device, and that one skilled in the art would not be aware of these conditions after reading the 1944 application. We do not find this contention persuasive because it would be reasonable to assume that any critical conditions would be defined in the method of the counts. There is nothing to indicate that the conditions of the counts differ from those shown in the 1944 application. Moreover, even if unusual conditions were necessary according to appellant's disclosures, though not recited in the counts, we cannot give weight to the conditions in the absence of the specifications from the record. For similar reasons, the implication that "proportions," or "amounts," or "rates" are required which are different from what one of ordinary skill in the art would employ, must be rejected. It is the established practice to accord counts of an interference the broadest meaning which they will reasonably support. *Bocciarelli* v. *Huffman*, 43 CCPA 873, 232 F.2d 647, 109 USPQ 385.

We agree with the finding of the Board that:

> • • • no elaborate experimentation by a skilled person in this art would be necessary under this disclosure, to determine whether or not mixing diethyl sulfide and fuming nitric acid would give rise to spontaneous combustion. More importantly, and an element that cannot be ignored, is that the Doumani et al. earlier application definitely discloses spontaneous combustion of a fuel and an oxidizer. In short, the first filed Doumani et al. application has a disclosure sufficient to enable one skilled in the art to employ diethyl disulfide with red or white fuming nitric acid • • •.

The only reasonable view which we can take of the "hypergolic" aspect of the reaction is that it is inherently met by appellees' 1944 specification. *In re Spencer*, 47 CCPA 751, 273 F.2d 181, 124 USPQ 175.

[2] We agree with appellees that "a valid exemplary teaching" of the use of diethyl disulfide is provided by the suggestion to substitute "other fuels" for that of the specific example in the specification in which fuming nitric acid is the oxidizer. The 1944 application, in order to support the counts, need not list the specific fuels of the counts as "the best mode contemplated by the inventor of carrying out his invention" (35 U.S.C. 112). Only a "written description of the invention" must be found in the 1944 application when considered in its entirety. See *Hall* v. *Taylor* (PA 7158), 51 CCPA —, — F.2d —, — USPQ —.

Finding no error in the decision appealed, we accordingly affirm.

AFFIRMED.

MARTIN, *J.*, sat but did not participate in decision.

U.S. Court of Customs and Patent Appeals

ALBERT LORENZ *v.* CHARLES W. FINKL

No. 7125. Decided June 25, 1964

[51 CCPA —; 333 F.2d 885; 142 USPQ 26]

1. APPLICATION—ABANDONED APPLICATION—FAILURE TO PROSECUTE WITHIN SIX MONTHS—35 U.S.C. 133.

"* * * failure of an applicant to 'prosecute' an application within six months after any action therein, of which notice has been given or mailed to the applicant, results in the application becoming abandoned. An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the Examiner to the Board. Thus an applicant need only 'prosecute' an application within six months after any action by the Patent Office on the application or he may appeal to the Board from the decision of Examiner after any of the claims had been twice rejected. We think it apparent, however, that Congress did not intend that an applicant should be able to 'prosecute' his application indefinitely before the Patent Office. An orderly administrative process demands an end to prosecution."

2. SAME—SAME—SAME—INTERFERENCE—PRIORITY.

"* * * since the clear import of the Examiner's letter of December 23, 1959 was that the proposed amendment of December 7, 1959, did not constitute a complete and proper response to the Examiner's final action of June 19, 1959, and since appellant did not file an appeal within the six month statutory time period, we agree with the Board that the Lorenz application is abandoned. As a result Lorenz is not entitled to prevail in the interference."

3. SAME—SAME—REVIVAL OF ABANDONED APPLICATION—35 U.S.C. 133—RULE 137.

"We do not consider the Examiner's letter suggesting a claim for interference on May 20, 1960, and his subsequent actions to have the effect of saving Lorenz's application from abandonment. Section 133 permits revival of an abandoned application when 'it be shown to the satisfaction of the Commissioner,' that delay in prosecuting was unavoidable and no such showing was made. Authority for so reviving an application has not been delegated to the Examiner but is retained by the Commissioner under Patent Office Rule 137."

4. INTERFERENCE—QUESTIONS ANCILLARY TO PRIORITY—ABANDONMENT OF APPLICATION.

"We * * * do not agree with Lorenz that the Board lacks the right to review the Examiner's actions. The question of whether an application in interference is abandoned is ancillary to priority. That question having been properly raised by Finkl, the Board had the responsibility of deciding it."

APPEAL from the Patent Office. Interference No. 91,281.

AFFIRMED.

Burgess, Dinklage & Sprung, Martin T. Fisher (*Ralph Dinklage* of counsel) for appellant.

Parker & Carter, James G. Staples, Arthur H. Boettcher, for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority of invention to the junior party Finkl [1] in Interference No. 91,281 on the sole basis that the other application in the interference, Serial No. 750,167, filed July 22, 1958 by the senior party Lorenz, is an abandoned application.

The record reveals that all the claims of the Lorenz application numbered 1 through 6 were finally rejected solely on art by the Examiner on June 19, 1959.[2] The end of the six month statutory period for response fell on December 19, 1959, and this being a Saturday, Lorenz had until December 21, 1959, to make such response as the condition of the case required.

On December 7, 1959, Lorenz submitted a paper requesting that certain amendments be made in finally rejected claims 1, 4 and 6 [3] "to more succinctly define the present invention and to render the claims patentably definitive over the cited references." In that paper, he also argued patentability over the cited art. Lorenz did not file an appeal to the Board of Appeals.

On December 23, 1959, the Examiner sent a letter to Lorenz which is reproduced in toto as follows:

> Responsive to amendment filed December 7, 1959.
> Additional reference made of record:
> Vogt, 2,003,666, Sept. 21, 1927, 266–34 Vac. Dig.
>
> The amendment dated December 7, 1959 has been considered. If and when requested, the amendment will be entered for purposes of appeal only.
>
> For purposes of showing that the use of a closed unitary zone is an expedient of the art, Vogt is cited.

On May 20, 1960, the Examiner in a letter to Lorenz suggested a claim, "found allowable," for purposes of interference. Thereupon Lorenz in an amendment of June 3, 1960 requested that the suggested claim [4] be entered for purposes of interference.

On August 16, 1960, the interference was declared. In the final paragraph of the letter of that date of Lorenz, the Examiner stated:

> Claims 1–6 will be held subject to rejection as unpatentable over the issue in the event of an award of priority adverse to applicant.

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[1] The Finkl application involved in the interference is Serial No. 777,664, filed on December 2, 1958.

[2] The following claim appears illustrative of the finally rejected claims in the Lorenz application as of June 19, 1959:

> 1. The method of degasifying molten metal which comprises arranging the metal in the molten state in a container, exposing the upper surface of the metal to a pressure effective to cause gas dissolved in the molten metal adjacent said upper surface to escape from the molten metal, said pressure being ineffective to cause dissolved gas in the molten metal remote from the upper surface to escape due to the weight of the metal, and introducing a gas into the molten metal a substantial distance below said upper surface in an amount sufficient to cause bubbling of the introduced gas through the molten metal and to circulate the molten metal within the container causing portions thereof to move to adjacent the exposed surface, whereby improved degasification of the molten metal within the container is effected.

[3] With respect to illustrative claim 1 (see footnote 2) the amendment apparently involved changing that claim so that the method of degasifying the molten metal is carried out in a "closed unitary zone" rather than in a "container" and also the introduction of the gas into the molten metal in the claimed method is "in a downwardly inclined direction."

[4] The suggested claim which is the count of the interference reads:

> A method of removing deleterious gases from a confined volume of molten metal in a receptacle, said method including the steps of subjecting the surface of the confined volume of molten metal to a vacuum sufficient to degas the molten metal, and simultaneously passing a sufficient quantity of a carrier agent upwardly through the molten metal to induce a circulation entirely within the receptacle which brings substantially undegassed molten metal from remote areas in the receptacle to the surface.

On March 2, 1961, the Interference Examiner stated that Finkl alleged no date in his preliminary statement prior to the filing date of Lorenz and gave notice that judgment on the record would be entered against Finkl unless on or before May 17, 1961, he showed good and sufficient cause why such action should not be taken.

On May 17, 1961, Finkl filed a motion to dissolve the interference contending that "there has been such informality or irregularity in declaring the same as will preclude the proper determination of the question of priority of invention." Finkl urged that the "irregularity or informality in the declaration of the interference is based on the fact that the Lorenz application was abandoned long prior to the institution of this interference." [5]

On October 12, 1961, the Examiner [6] denied Finkl's motion to dissolve stating:

> • • • The sole judge as to what constitutes "appropriate action" is the Commissioner of Patents and, through his delegated authority, the Examiner. It is obvious that the Examiner had reversed his decision as to patentability of the Lorenz application after the presentation of the amendment dated December 7, 1959; that the amendment was responsive under Rules 113, 116 and 135 and that the application was in condition for allowance.

On November 21, 1961, Finkl petitioned the Commissioner of Patents to (*a*) set aside the Examiner's decision of October 12, 1961, (*b*) declare the Lorenz application abandoned, and (*c*) direct the Examiner to dissolve the interference.

The Commissioner on December 7, 1961 denied Finkl's petition stating:

> Whether or not an application involved in interference has become abandoned is a question which is ancillary to priority and can be considered in due course by the tribunals passing on that qeustion (*Bain et al.* v. *Hasselstrom et al.*, 1948 C.D. 167, 35 CCPA 811, 76 USPQ 302). It is ordinarily desirable that this issue be considered in that matter and no sufficient reason is found for making an exception in the present case. Accordingly, the petition is denied without prejudice to the right of the petitioner to raise the issue of abandonment of the Lorenz application in subsequent proceedings in this interference.

The Board then on September 28, 1962, held that the Lorenz application was abandoned and awarded priority of the subject matter in issue to Finkl. It stated:

> It is apparent that the amendment [of Dec. 7, 1959] was refused entry and the final rejection was not withdrawn. It is also apparent that the Examiner was not impressed with the proposed amendment since his action indicated that changing "a container" which necessarily operated under vacuum conditions to "closed unitary zone" presented no patentable change. The Vogt patent accordingly was cited as showing that the proposed change represented only an "expedient of the art."
>
> It is clear that for the response to be such as the condition of the case required, the amendment should be such as to place the case in condition for allowance or better condition for appeal and if the latter, the filing of an appeal. These requisites should have been accomplished before the statutory period expired. Lorenz met neither of these requirements. It would seem in view of the plain requirements of Rule 116 that ordinary prudence would have dictated the filing of an appeal not later than December 21, 1959 if Lorenz intended to save the case from abandonment. In this connection it is to be noted that Rule 116(a) states (with respect to amendments placing the case in better form for consideration on appeal):
>
> • • • the admission of any such amendment or its refusal, and any proceedings relative thereto, shall not operate to relieve the application from its condition as subject to appeal or to save it from abandonment under Rule 135.
>
> * * * * * * *
>
> It is true, of course, that the Examiner could reverse his opinion on patentability and withdraw the final rejection if the amendment of December 7th had placed the case in condition for allowance. The Examiner's action of December 23rd plainly shows he took no such action and the proposed amendment was not entered. Since no appeal was taken, it is believed manifest that Lorenz made no response within the statutory period such as the condition of the case required. • • •

Referring to the Examiner's letter of May 20, 1960, the Board stated:

> • • • It is true that the Examiner found allowable matter in the Lorenz application five months later when he suggested the present count on May 20, 1960, but we cannot agree that even then the case was in condition for allowance, since the case still contained six claims under rejection without appropriate action by Lorenz.

The Board further stated that the "subsequent finding of allowable subject matter came too late since the Examiner has no power to in effect revive an abandoned application."

Referring to a contention by Lorenz that Finkl is in effect attacking an action or ruling by the Commissioner, the Board found it without merit stating:

> • • • The Examiner has never held in the involved Lorenz application that the proposed amendment of December 7th was an "appropriate action." Under the circumstances there is nothing before us for review in this regard and the contention that we have no authority to review the action of the Commissioner needs no comment other than to say we well recognize we have no such authority. This is not to say that we cannot review the Examiner's action since his action manifestly was not the Commissioner's action.

Appellant urges that the December 23, 1959 action could and did validly withdraw the finality of the rejection of the Lorenz application. Appellant contends that even if the December 23, 1959 action did not withdraw the finality of the rejection, it did not irreversibly spell out abandonment of the Lorenz application, and the May 20, 1960 action could and did validly withdraw the finality of the rejection. Appellant further argues that the Board of Patent Interferences did not have the right to review the Examiner's actions.

Appellee, on the other hand, argues that abandonment of an application is ancillary to priority and that the Lorenz application became abandoned December 21, 1959, by operation of law for lack of of complete and proper response to the final rejection of June 19, 1959. The appellee contends that the Examiner has no discretionary power to waive the requirements of the rules of practice.

The issue before us is whether or not the application of Lorenz is an abandoned application. The determination of that issue is governed by the Patent Act of 1952.

[1] According to that act, failure of an applicant to "prosecute" an application within six months after any action therein, of which notice has been given or mailed to the applicant, results in the application becoming abandoned.[7] An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision

[5] Finkl also moved to dissolve on the basis that Lorenz has no right to make the claim in the interference. The Examiner denied the motion to dissolve on that ground and the record indicates that Finkl did not appeal the Examiner's decision on this point.

[6] The record indicates that the same Examiner was involved in the letter of December 23, 1960, the letter of May 20, 1960 suggesting the claim for interference, the declaration of interference on August 16, 1960, and the decision of October 12, 1961.

[7] 35 U.S.C. 133 reads:

> § 133. Time for prosecuting application
>
> Upon failure of the applicant to prosecute the application within six months after any action therein, of which notice has been given or mailed to the applicant, or within such shorter time, not less than thirty days, as fixed by the Commissioner in such action, the application shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

of the Examiner to the Board.[8] Thus an applicant need only "prosecute" an application within six months after any action by the Patent Office on the application or he may appeal to the Board from the decision of Examiner after any of the claims had been twice rejected. We think it apparent, however, that Congress did not intend that an applicant should be able to "prosecute" his application indefinitely before the Patent Office. An orderly administrative process demands an end to prosecution.

Rather, Congress authorized the Commissioner to establish rules or regulations not inconsistent with law for the conduct of proceedings in the Patent Office.[9] These rules include:

Rule 135 (in part):

135. Abandonment for failure to respond within time limit. (a) If an applicant fails to prosecute his application within six months after the date when the last official notice of any action by the Office was mailed to him, * * * the application will become abandoned.

(b) Prosecution of an application to save it from abandonment must include such complete and proper action as the condition of the case may require. The admission of an amendment not responsive to the last official action, or refusal to admit the same, and any proceedings relative thereto, shall not operate to save the application from abandonment.

Rule 113 (in part):

113. Final rejection or action. (a) On the second or any subsequent examination or consideration, the rejection or other action may be made final, whereupon applicant's response is limited to appeal in the case of rejection of any claim (rule 191), or to amendment as specified in rule 116. * * * Response to a final repection or action must include cancellation of, or appeal from the rejection of, each claim so rejected and, if any claim stands allowed, compliance with any requirement or objection as to form.

Rule 116 (in part):

116. Amendments after final action. (a) *after final rejection* or action (rule 113) *amendments may be made canceling claims or complying with any requirements of form which has been made, and amendments presenting rejected claims in better form for consideration on appeal may be admitted; but the admission of any such amendment or its refusal, and any proceedings relative thereto, shall not operate to relieve the application from its condition as subject to appeal or to save it from abandonment under rule 135.* [Emphasis ours.]

Applying the above rules to the factual situation before us, the action of the Examiner on June 19, 1959 on the Lorenz application was a final action. Although an appeal was due on December 21, 1959 Lorenz did not file an appeal. As of December 21, 1959, the end of the statutory period for prosecuting the application, we think the record shows that Lorenz had not filed an amendment which was a "complete and proper action as the condition of the case may require" to save the application from abandonment. The claims stood finally rejected solely on art. The proposed amendment filed December 7, 1959 was not accepted as overcoming the art rejection by December 21, 1959 as is evident from the Examiner's action of December 23, 1959, which indicated that the December 7 amendment, would be entered if and when requested for purposes of appeal *only*. If the

[8] 35 U.S.C. 134 reads:

§ 134. Appeal to the Board of Appeals
An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Board of Appeals, having once paid the fee for such appeal.

[9] 35 U.S.C. 6 reads:

§ 6. Duties of Commissioner
The Commissioner, under the direction of the Secretary of Commerce, shall superintend or perform all duties required by law respecting the granting and issuing of patents and the registration of trademarks; and he shall have charge of property belonging to the Patent Office. He may, subject to the approval of the Secretary of Commerce, establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

Examiner had regarded the amendment as a complete and proper response to the final rejection, he necessarily would have found the application allowable and there would have been no reason for the Examiner to refer to an appeal.[10]

Moreover, we think it clear from the December 7 amendment itself that Lorenz did not necessarily anticipate this amendment to be a complete and proper response to the Examiner's final action of June 19. In his remarks accompanying that amendment Lorenz specifically recognized that an appeal might be necessary using the following language:

In view of the foregoing reconsideration of the rejection and allowance of the claims as amended is respectfully requested. In any event entry of the instant amendment is urged as it is believed to place the application in allowable condition *or at least in better condition on appeal.* [Emphasis ours.]

[2] Accordingly, since the clear import of the Examiner's letter of December 23, 1959 was that the proposed amendment of December 7, 1959, did not constitute a complete and proper response to the Examiner's final action of June 19, 1959, and since appellant did not file an appeal within the six month statutory time period, we agree with the Board that the Lorenz application is abandoned. As a result Lorenz is not entitled to prevail in the interference.

[3] We do not consider the Examiner's letter suggesting a claim for interference on May 20, 1960 and his subsequent actions to have the effect of saving Lorenz's application from abandonment. Section 133 [11] permits revival of an abandoned application when "it be shown to the satisfaction of the Commissioner," that delay in prosecuting was unavoidable and no such showing was made. Authority for so reviving an application has not been delegated to the Examiner but is retained by the Commissioner under Patent Office Rule 137.[12]

[4] We further do not agree with Lorenz that the Board lacks the right to review the Examiner's actions. The question of whether an application in interference is abandoned is ancillary to priority. That question having been properly raised by Finkl, the Board had the responsibility of deciding it. *Bain et al.* v. *Hasselstrom et al.*, 35 CCPA 811, 165 F.2d 436, 76 USPQ 302.

For the foregoing reasons, the decision of the Board is affirmed.

AFFIRMED.

RICH, *J.*, dissenting.

The majority opinion, with all due respect, though full of the sound and fury of many statutes and rules, overlooks three significant factors.

A

Preliminarily, this is not a case in which an applicant is being held to strict compliance with the Rules of Practice of the United States Patent Office in the interest of preserving sound procedural requirements.

[10] Although the record indicates that the Examiner on October 12, 1961 in his decision on Finkl's motion stated, for the first time, that Lorenz's amendment dated December 7, 1959 was responsive and that the application was in condition for allowance, the record indicates that that amendment has never been entered in the application.

[11] See footnote 7.

[12] Rule 137 reads:

137. Revival of abandoned application. An application abandoned for failure to prosecute may be revived as a pending application if it is shown to the satisfaction of the Commissioner that the delay was unavoidable. A petition to revive an abandoned application must be accompanied by a verified showing of the causes of the delay, by the proposed response unless it has been previously filed, and by the petition fee.

This is a case in which an applicant, who has proceeded entirely to the *satisfaction* of the Patent Office,[13] and has become involved in an interference *due to procedures initiated by the Patent Office*, is losing an award of *priority* to another inventor who, on the record, is the *later* inventor—a junior party.

This junior party, attempting to *avoid* the contest on priority which the Patent office set up and maintained through the decisions on motions, is raising a hue and cry based on a technicality having no bearing on the public interest or on the maintenance of proper procedure in the Patent Office. Having been put under an order to show cause why priority should not be decided *against* him, the *junior party* asserts the Lorenz application was "abandoned," though the Patent Office, under its own rules and practice, did not consider it to be.

I will now take up the three important considerations which in my opinion demonstrate error in the conclusion of the majority and in the reasoning by which it is reached.

I

The first matter overlooked by the majority is that its decision flies straight in the face of this court's own holding in *Bain et al.* v. *Hasselstrom et al.*, 35 CCPA 811, 165 F.2d 436, 76 USPQ 302. That was a very carefully considered case on this very issue of an application becoming abandoned by failure to respond to a final rejection and being put into an interference wherein the party who was defeated on dates attempted to win the *priority* decision by a technical claim of "abandonment," based on failure to respond to a final rejection.

I know there are factual differences on the basis of which an attempt might be made to distinguish the present case from the *Bain* case, but no such attempt has yet been made. However, there are *questions* there dealt with and decided by this court which cannot be distinguished from.

Bain was the junior party. He tried to win, just as Finkl does here, by a motion to dissolve on the ground of informality in declaring the interference in that the Hasselstrom application was abandoned by failure to reply to the final rejection. Bain's case was even stronger than Finkl's. *No response was ever made to the final rejection.* This court held there was no abandonment.

The Examiner had sent Hasselstrom a letter suggesting a claim for interference, he made it and the interference was declared, as here. The only difference from the instant case was that that Examiner's letter was mailed before the 6-month period ended. The interference was declared *after* the 6 months were up.

What this court decided, after briefing by the Patent Office, on request, as well as by the parties, was that *suggesting claims to an applicant for interference purposes is a new action in the case and* that the provisions of the rules (then Rule 77, now 135) about abandonment no longer apply.

A "leading case" in the Patent Office was cited in *Bain* in which the claims were not *made* by the applicant until *after* the period allowed for response to a rejection (then one year). *Coulson* v. *Callender et al.*, 1902 C.D. 395. Several other cases also were cited following it, including *Ex parte Kohn et al.*, 1932 C.D. 9, and *Ex parte Larner*, 1929 C.D. 18. This court wrote a supplemental opinion on rehearing reiterating its position that *suggesting a claim is a new Patent Office action.* It accepted what the Patent Office stated to be its policy in the *Kohn* case, as follows:

> Where claims are suggested to an applicant for interference purposes such action is deemed, as held in the above referred to *Coulson* v. *Callender et al.* decision, a new action in the case. In effect such action is an offer to the applicant of the allowance of claims for his invention if presented in the suggested form and if he can prove he is the prior inventor. The provisions of Rule 77 are not deemed to extend to actions in cases in which claims are suggested for interference provided of course such claims are presented within the designated period.

The result in the *Bain* case, of course, was that Hasselstrom et al. were held *not* to have abandoned their application *though they never made any response whatever to the final rejection*, because they copied suggested claims within the time given them to do so, that suggestion having been a *new action* by the Patent Office.

I know of nothing to prevent an Examiner from withdrawing a final rejection, sua sponte, to put an application into an interference in order to assure that the patent goes to the proper first inventor. The majority cites none. In section III hereof I show it is proper procedure.

It seems to me that what the Examiner did here is in the public interest. I cannot agree with the unsupported notion of the majority opinion that Primary Examiners are without authority to revive abandoned applications because of Rule 137 and an empty theory that the "Commissioner" alone retains that authority. But, as shown infra, we are not dealing with *revival* here. Every act done in the Patent Office below the level of the boards is in the name of the Commissioner.

Attention is called to Rules 182 and 183 under which the "Commissioner" "when justice requires" *can* act outside of any rules he has made. These rules are not mentioned in the majority opinion.

II

The second point overlooked is that whether the application was ever in a state of "abandonment" was entirely dependent on whether the amendment, timely filed on December 7, 1959, was or was not responsive.

If it *was* responsive, of course there was no abandonment. *Either it was or it was not*, and what anybody *thought* about it is not controlling until there is a final authoritative decision on that issue. Included here are the first thoughts of the Examiner and the probable thoughts of the attorney. They are quite irrelevant.

Let it not be overlooked that in this case, within all the rules and statutes cited by the majority, applicant made *timely* response to the final rejection, which response is alleged to be sufficient, under all the rules and statutes, to put the application in condition for allowance.

If it in fact did so, there was never any abandonment.

On October 12, 1961, the Examiner held the amendment to *be* "repsonsive under Rules 113, 116 and 135 and that the application *was* in condition for allowance." [My emphasis.]

It is also to be inferred that earlier, on May 20, 1961, in his "new action" suggesting the claim, he found the application to be allowable, at least with that claim in it. Only "allowable" applications

[13] Up to the decision of the Board of Patent Interferences, which was the last act and the only round of the fight lost by appellant.

can be put into interference. Rule 201(b). Interference Law and Practice, Revise & Caesar, Chap. II.

The Board of Patent Interferences said:

It is *true, of course*, that the Examiner could reverse his opinion on patentability and withdraw the final rejection if the amendment of December 7th had placed the case in condition for allowance. [My emphasis.]

It also said:

* * * an Examiner can reverse his judgment as to whether or not an amendment was responsive and *act on a case which he previously held abandoned*. This is correct but does not fit the situation here, since the Examiner never *held* the amendment *was* responsive and never previously held the case was abandoned. We cannot read into the Examiner's actions holdings which he did not make on the record. [My emphasis.]

I do not understand the last statement. The words following "This is correct" seem (*a*) a complete non-sequitur and (*b*) contrary to the fact of the Examiner's October 12 holding of sufficiency quoted above. What did the Board demand, a label on the paper saying "Allowance, final rejection withdrawn?" I do not see how the Examiner could have made a clearer ruling.

I am unable to find how the Board arrived at a finding of a holding by the Examiner of non-responsiveness except by denying to him the very right to change his mind which it held he had. See infra part III for further on this right.

The Board did not go into the merits of the amendment as a response and, if I understand its confusing opinion at all, it held "there is nothing before us for review in this regard."

Consequently the *responsiveness* of the amendment is not before this court for review as it was either not before the Board or not decided by it if it was.

The Examiner having held that the amendment put the case in condition for allowance, there *never was* any abandonment.

III

The unstated presumption underlying the rationalization of the majority opinion is that a reversal in this case would play havoc with established procedures in the Patent Office. The situation is quite otherwise. It is the affirmance that will play havoc with them.

The place we look to see what the procedure now is—or is supposed to be—is the Manual of Patent Examining Procedure (MPEP), upon which appellant here strongly relies and which the majority wholly fails to mention, even those sections considered by the Board.

The fallacy into which the majority reasoning falls is the same one which the MPEP warns the Examiners against in 711.03(c), the failure to distinguish between (1) "A petition to revive an *abandoned* application" and (2) "a petition from an Examiner's *holding* of abandonment." [My emphasis.] In other words, a *holding* does not create an abandonment. If there *is* an abandonment, you have to *revive* the application. But *if there is only a holding, you can argue that it was wrong*. As the cited paragraph points out—and I note this particularly in refutation of the majority opinion footnotes 11 and 12 and their related text—if one is petitioning to *revive*, the application is *assumed* to be "abandoned," the matter falls under Rule 137 and the petition requires a fee of $10. If the issue is *whether* the application ever became abandoned "the petition from such a holding comes under Rule 181 and does not require a fee." The majority does not seem to appreciate this crucial difference and

ignores the existence of Rule 181 and the procedure established under it.

What we have in this case—the sole issue in the case—is only a question of *whether* the application was ever abandoned and until it is clear that it was, revival and the law and rules relating to revival are wholly irrelevant. 35 U.S.C. 133 does *not* control in this situation because it applies only where there *is* failure to prosecute within six months and the issue we are deciding is whether there *was* such failure. *If* our decision is affirmative on that issue, then the application falls within section 133; if it is negative, the secton does not apply at all. Therefore *on the issue* the section is irrelevant. To utilize it in deciding the issue before us is to indulge the logical fallacy of *petitio principii*, or begging the question.

But to get back to what the existing practice is. MPEP 706.07(e) says, in part (my emphasis):

The Examiner may withdraw the rejection of *finally* rejected claims *whenever* he deems the conditions appropriate for such action. If, for example, new facts or reasons are presented such as to *convince the Examiner* that the previously rejected claims are in fact allowable, then the *final* rejection *should be withdrawn*.

• • • • • • •

When a final rejection is withdrawn, all amendments filed after the final rejection are ordinarily entered.

This is my answer to the majority opinion's statement that the Examiner here did not have the "authority" to do what he did because that authority (assumed to be but actually not authority to "revive") "is retained by the Commissioner under Patent Office Rule 137."

Another significant paragraph showing what is the practice is MPEP 1101.01(n), as follows (my emphasis):

If *claims are suggested* in an application near the end of the statutory period running against the case, and the time limit for making the claims extends *beyond the end of the period*, such claims will be admitted if filed within the time limit *even though outside the six months' period AND EVEN THOUGH NO AMENDMENT WAS MADE RESPONSIVE TO THE OFFICE ACTION OUTSTANDING AGAINST THE CASE AT THE TIME OF SUGGESTING THE CLAIMS*. However, if the suggested claims are not thus made within the specified time, the case *becomes* abandoned in the absence of a responsive amendment filed within the six months' period. Rule 203(c).

Therein I see a clear recognition of what this court held in *Bain et al.* v. *Hasselstrom et al.* I deem the majority decision to be inconsistent with the spirit if not the letter of this recognized Patent Office practice.

But it seems to me that the complete answer to the entire majority position and to the erroneous position taken by the Board is in MPEP 711.03(a) which reads (my emphasis):

711.03(a) HOLDING BASED ON INSUFFICIENCY OF RESPONSE

Applicant may deny that his response was incomplete.

While the Examiner has no authority to act upon an application in which *no action* by applicant was taken *during* the statutory period, he *may reverse* his holding as to whether or not an amendment *received during such period* was responsive and act on a case of such character which he has *previously held abandoned*. *THIS IS NOT A REVIVAL OF AN ABANDONED APPLICATION BUT MERELY A HOLDING THAT THE CASE WAS NEVER ABANDONED*. See also 714.03.

I cannot say more than that. The section fits the present situation like the proverbial glove. But, since the appellant put pivotal emphasis on that section, I am at a loss to understand why there is no mention of it in the majority opinion. It is clear to me that if the

majority decision as now expressed is to govern the practice, then changes are certainly going to be required in the Manual because the Examiner is no longer going to be authorized to give thoughtful reconsideration to his erroneous, sometimes hasty, first responses and correct them by withdrawing or otherwise undoing erroneous holdings of abandonment.

If the Examiner's first word is the last word on abandonment, as the majority now seems to hold,[14] then I do not see how any tribunal, including this court, can ever correct it.

I think the decision below must be reversed to maintain the present salutary practices in the Patent Office.

SMITH, *J.*, concurring.

The majority opinion reaches what I consider to be the proper result in this case and I fully agree with it. The purpose of this concurring opinion is to point out wherein I disagree with the views expressed in the dissenting opinion. To do so requires but a brief recital of facts which are not discussed in the dissenting opinion but which in my opinion make 35 U.S.C. 133 determinative of the issue.

After the final rejection of June 19, 1959, Lorenz submitted an amendment on December 7, 1959. This amendment was not *entered*. This is clear from the Examiner's letter of December 23, 1959 which states:

> The amendment dated December 7, 1959 has been considered. *If and when requested, the amendment will be entered* for purposes of appeal only. [Emphasis added.]

Thus, on December 23, 1959, more than 6 months after the final rejection, *there was no responsive amendment* entered in the case. Appellant might well have requested entry of the amendment for purposes of appeal but in order to prevail presumably would have been required to show to the satisfaction of the Commissioner that the delay in so requesting its entry "was unavoidable." Instead, this record shows that appellant did nothing. Thus, it seems to me that 35 U.S.C. 133 is controlling. Under these circumstances, applicant had *not* prosecuted the application within 6 months from the date of the final rejection and this section of the statute requires that in such case the application "shall be regarded as abandoned by the parties thereto." The abandonment stands "unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable." It is clear from the record here that appellant made no such showing.

There is no provision in Title 35 U.S.C. which authorizes the *sua sponte* revival by the Patent Office of an application which has become abandoned under 35 U.S.C. 133. Section 133 authorizes revival of such an abandoned application only upon a showing "to the satisfaction of the Commissioner" that the delay was unavoidable. There is no such showing here.

It seems to me that it but confuses the issue to concern ourselves with the respective authority of the Examiner and the Commissioner in this situation. The fact is that the statute itself requires a showing of unavoidable delay to overcome the abandoned status of an application where the abandonment results from the failure of the applicant to respond timely to an office action.

Likewise I find it irrelevant to discuss the relative position of the parties in an interference proceeding. Abandoning an application under the conditions specified in section 133 may be some evidence of an intent either to abandon the invention or to conceal it, within the meaning of 35 U.S.C. 102(c) and (g).

There is a public interest not only in awarding a patent to the first inventor but also in not awarding it to one who has by abandonment of his patent application taken a first step in perhaps depriving the public of knowledge of his invention. In such a situation the reasoning in *Mason* v. *Hepburn*, 13 App. D.C. 86, 95–96 (1898), seems to be particularly appropriate. The court stated:

> Considering, then, this paramount interest of the public in its bearing upon the question as presented here, we think it imperatively demands that a subsequent inventor of a new and useful manufacture or improvement who has diligently pursued his labors to the procurement or a patent in good faith and without any knowledge of the preceding discoveries of another, shall, as against that other, who has deliberately concealed the knowledge of his invention from the public, be regarded as the real inventor and as such entitled to his reward.
>
> • • • • • • • •
>
> The true ground of the doctrine, we apprehend, lies in the policy and spirit of the patent laws and in the nature of the equity that arises in favor of him who gives the public the benefit of the knowledge of his invention, who expends his time, labor, and money in discovering, perfecting, and patenting, in perfect good faith, that which he and all others have been led to believe has never been discovered, by reason of the indifference, supineness, or wilful act of one who may, in fact, have discovered it long before.

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[14] The majority opinion says:

> • • • *since the clear import of the Examiner's letter* of December 23, 1959 *was* that the proposed amendment of December 7, 1959, did not constitute a complete and proper response to the Examiner's final action of June 19, 1959, *and since appellant did not file an appeal* within the six month statutory time period, we agree with the Board that the Lorenz application is abandoned.

U.S. Court of Customs and Patent Appeals

IN RE HELMUT KLUG AND KARL-HEINZ MITTELBERGER

No. 7160. Decided July 9, 1964

[51 CCPA —; 333 F.2d 905; 142 USPQ 161]

1. PATENTABILITY—CRITICALITY—CRITICAL TEMPERATURE—EVIDENCE.
   "That the recited temperature limitation is critical is evidenced by the fact that chlorination of the identical low pressure polyethylene under the same conditions except for the reaction temperatures, produces products having entirely different physical properties, albeit the same chemical structure."
2. SAME—PRODUCT—PATENTABILITY OF PRODUCT INDEPENDENT FROM PROCESS.
   "Whether a product is patentable depends on whether it is known in the art or it is obvious and is not governed by whether the process by which it is made is patentable."
3. SAME—OBVIOUSNESS—DOUBT RESOLVED IN FAVOR OF APPELLANTS.
   "Although the Solicitor's arguments have created some doubt, we feel justified, on the facts here, in resolving that doubt in favor of appellants."
4. SAME—PARTICULAR SUBJECT MATTER—PROCESS OF CHLORINATING LOW PRESSURE POLYETHYLENE AND THE PRODUCT PRODUCED THEREBY.
   The decision of the Board of Appeals refusing claims to a process of chlorinating low pressure polyethylene and to the product produced thereby, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 643,499.

REVERSED.

Connolly and Hutz (*Earl Christensen* of counsel) for appellants.

Clarence W. Moore (*Joseph Schimmel* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Klug and Mittelberger appeal from the Board's affirmance of the rejection of claims 26, 27, 39, 40, 43 to 46 and 48, of their patent application.[1]

The invention relates to a process of chlorinating low pressure polyethylene and the product produced thereby. The low pressure polyethylene to be chlorinated is characterized by a predominantly linear molecular structure and a high degree of crystallinity.

Claims 39 and 48 read:

39. The process for the manufacture of solid chlorinated polyethylene which comprises suspending solid granular polyethylene having predominantly a linear molecular structure, a high degree of crystallinity, a molecular weight in the range from 12,000–2,000,000 and an individual grain diameter of 0.1–300 microns, in 3 to 30 parts of water for each part of polyethylene and contacting this suspended polyethylene with chlorine at a temperature in the range from 100 to 110° C., as a lower limit, to 150° C. as the upper limit, the chlorinated polyethylene formed at this temperature being non-crystalline, the lower temperature limit depending on the molecular weight of polyethylene in such a way that the higher temperature is employed with the polyethylene of the higher molecular weight, whereby the polyethylene may be chlorinated to a chlorine content of up to 70% by weight.

48. A solid chlorination product of a polyethylene having a molecular weight of 12,000 to 2,000,000 and individual grain diameter of 0.1–300 microns, said chlorination product having predominantly linear molecular structure and being non-crystalline, said product being obtained by chlorinating a predominantly linear, highly crystalline polyethylene in an aqueous suspension at a temperature in the range from 100–110° C. as lower limit to 150° C. as the upper limit.

The references are:

Taylor, 2,592,763, April 15, 1952.
Becker et al., 2,695,899, November 30, 1954.
Fotis et al., 2,829,136, April 1, 1958.

Taylor discloses the chlorination of polyethylene having a molecular weight of 18,000 to 20,000 in an aqueous suspension of 9 to 30 parts of water per part of polyethylene, at a temperature of 10° to 100° C., with temperatures about 100° C. where superatmospheric pressure is used. The polymer made by Taylor has a chlorine content of about 25% to 35%.

Becker discloses the chlorination of polyethylene at temperatures of about 60° C. to 150° C. under pressure. Products having up to 70% chlorine content are said to be obtained.

Fotis discloses a process for producing low pressure polyethylene "having molecular weights ranging upwardly from 300 or specific viscosities, as hereinafter defined, above about 1000." Throughout the specification Fotis refers to his polyethylene products as "high molecular weight, normally solid polymers." In describing the utility of his low pressure polyethylene products, Fotis mentions that they may be halogenated.

The Board held that it would be obvious to substitute Fotis' low pressure polyethylene for the high pressure polyethylene chlorinated by Taylor and Becker. As to the temperature limitations the Board said they were not cirtical. Klug had submitted two affidavits of Frey, which show that chlorination of the same low pressure polyethylene polymer at 70° C. and at 115–117° C. under otherwise identical conditions produces products of completely different physical properties.[2] Referring to those affidavits the Board said:

• • • The affidavit showings do not present anything more than what appellants disclosed in their specification as filed. Appellants disclose on page 4 of their specification that when operating the chlorination at a temperature ranging from 50 to 100 or 110° C., a hard powder of chlorinated polyethylene is obtained which consists mainly of crystallites and when operating at a temperature above 100–110° C., and not exceeding 150° C., products of different physical behavior, being flocculent to amorphous constituting of rubber-like to hard substances, are obtained. It is evident therefore that there is no criticality in the temperatures of operation to which the appealed claims are directed. It is simply a matter of what kind of products are desired to be obtained.

[1] Serial No. 643,499, filed March 4, 1957.

[2] Samples of the two products were submitted as exhibits before the Board and this court. Klug's product is elastic and rubbery while the product obtained at lower temperatures is relatively inflexible and smooth. The products are different in appearance and physical properties.

We are unable to agree with that reasoning for we cannot find any recognition in the cited art that different products may be obtained, of the same starting material, simply by varying the temperature between two adjacent temperature ranges, namely, below about 100° C., and upwards of 100–110° C. Thus, absent Klug's own disclosure, it is not "simply a matter of what kind of products are desired."

We agree with the Board and the Solicitor that there is nothing unobvious in substituting low pressure polyethylene. e.g. disclosed by Fotis, for high pressure polyethylene in the processes of Taylor or Becker. In fact, reference to Fotis seems hardly necessary, since, for the purpose of our present decision, one may assume that the chlorination of low pressure high molecular weight polyethylene is described in the prior art. The difference then, between the prior art and the subject matter claimed, is the discovery of a critical limitation in the reaction temperatures employed in the prior art. [1] That the recited temperature limitation is critical is evidenced by the fact that chlorination of the identical low pressure polyethylene under the same conditions except for the reaction temperatures, produces products having entirely different physical properties, albeit the same chemical structure.

We appreciate the Solicitor's argument that chlorination of polyethylene is conventional but we think more is involved here than the mere substitution of one starting material for another. Klug has discovered that above and below a certain critical temperature, he can form different products from the same starting material under otherwise identical conditions, employing the standard chlorination procedure. The cited art is devoid of any disclosure from which that discovery by Klug can be held obvious.

With respect to product claim 48, we note that the Board failed to mention it in either its original opinion or on reconsideration. The Solicitor urges that the product is unpatentable because it is made by a conventional process. We disagree. [2] Whether a product is patentable depends on whether it is known in the art or it is obvious[3] and is not governed by whether the process by which it is made[4] is patentable.

The Examiner, in his "answer" before the Board, said:

• • • In addition, applicants' product does not distinguish over that of Becker et al. and Taylor who both have a chlorination product of polyethylene having a molecular weight of 12,000 to 2,000,000, a *predominantly* linear structure, and being non crystalline. The article itself must be the product of invention even if claimed as one produced by a new process.

Although we agree that the patentability of a product is to be determined independently of the patentability of the process for making it, we cannot agree that either Taylor or Becker discloses the claimed product or that the substitution of Fotis' low pressure polyethylene

[3] 35 U.S.C. §§ 102, 103.

[4] It is important to recognize here that the claimed process' temperature limitation is critical because it unexpectedly gives rise to *different* products. Whether those different products are themselves patentable is another matter.

in Taylor's process would inherently produce the claimed product. There is no indication that by raising the reaction temperature in Taylor's process an amorphous rubbery like product would be obtained in contract with Taylor's stiff non-tacky products. Furthermore, Fotis' low pressure polyethylene is described as having a molecular weight of over 300. Although characterized by Fotis as a high molecular weight polymer, there is no indication that it has a molecular weight of 12,000 to 2,000,000. We cannot, therefore, find the chlorinated polyethylene of claim 48 to be disclosed in, or obvious from, the prior art of record.

[3] Although the Solicitor's arguments have created some doubt, we feel justified, on the facts here, in resolving that doubt in favor of appellants.

[4] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE ALAN J. LEMIN

No. 7139. Decided June 11, 1964

[51 CCPA —; 332 F.2d 839; 141 USPQ 814]

1. PATENTABILITY—OBVIOUSNESS—CRITICALITY—EVIDENCE.

In connection with the limitation on claimed herbicidal compositions, broadly disclosed by the reference patentee, of 5 to 12 carbon atoms on the total number of carbon atoms in the ester and ether substituents of a benzoic acid ester having an ether group on the phenyl ring; and upon reference to a finding in an affidavit of one Steinhards, submitted by appellant, Lemin, that when the carbon atoms in the substituents totaled between 5 and 12 the herbicidal compositions proved effective against crabgrass without injuring the desired rye, fescue and bluegrass; and on review of the rejection of the claims on appeal, maintained on the basis that there was no showing of criticality in the limitation when the compounds were applied to all other undesired plants falling within the generic disclosure of the reference patentee, *Held* that, generally speaking, there is nothing unobvious in choosing "some" among "many" indiscriminately, but that the choice by Lemin "is based on a discovery by Lemin that some compounds, falling within a prior art genus, have a special significance" and that "Lemin has found that when the total number of carbon atoms in the ester and alkoxy substituents is within the range of 5 to 12, the compounds involved will have selective and potent herbicidal action."

2. SAME—SAME—SAME—SAME.

"• • • in the absence of art showing that crabgrass is different from white clover, oxalis, chickweed, or any other plant, there is no basis upon which to restrict the showing of Steinhards. That is, Steinhards' affidavit establishes the criticality of the total number of carbon atom limitation with respect to crabgrass. The application and the claims affirmatively set up an equivalence between crabgrass and all other 'undesired vegetation' insofar as the herbicidal effectiveness of the instant compounds are concerned."

3. SAME—SAME—SAME—SAME.

"• • • *on this record*, we feel obliged to hold that the Steinhards' affidavit with respect to crabgrass is equally applicable to other undesired vegetation and satisfactorily establishes that the 5 to 12 carbon atom limitation is a critical factor in the herbicidal activity of the instant compounds. Since there is nothing in the cited art to suggest the criticality of that range, we do not find that limitation obvious."

4. SAME—PARTICULAR SUBJECT MATTER—HERBICIDES.

The decision of the Board of Appeals, refusing certain claims to herbicidal compositions and to a method for controlling undesired vegetation employing those compositions, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 747,362.

REVERSED.

George T. Johannesen (*Eugene O. Retter* of counsel) for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

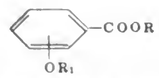
WORLEY, *Chief Judge*, delivered the opinion of the court.

Lemin appeals from the Board's affirmance of the rejection of claims 1, 11 to 14 and 19 of his application [1] for a patent entitled "Compositions of Matter and Method."

The invention relates to herbicidal compositions and method for controlling the growth of undesired vegetation by applying the compositions to the locus to be treated The active ingredient in those compositions is a benzoic acid ester having an ether group on the phenyl ring.

Claims 1 and 11 read:

1. A method of controlling undesired vegetation which comprises applying to the vegetation, in an amount sufficient to exert a herbicidal effect, a compound having the formula



wherein R and R_1 represent lower aliphatic hydrocarbon radicals, selected from the class consisting of alkyl having from 1 to 11 carbon atoms, inclusive, alkenyl having from 3 to 11 carbon atoms, inclusive, alkynyl having from 2 to 11 carbon atoms, inclusive, cycloalkyl having from 4 to 11 carbon atoms, inclusive, and cycloalkenyl having from 5 to 11 carbon atoms, inclusive, such that the total number of carbon atoms in the radicals R and R_1 is not less than five and not more than twelve.

11. A herbicidal composition comprising a herbicidally effective amount of n-butyl 2-allyloxy-benzoate, a surfactant and a carrier.

The sole reference is a patent to Jones, 2,394,916, dated February 12, 1946.

Jones discloses the selective killing of "weeds," a term which he defines broadly as "a plant which persists in growing where it is not wanted" by applying thereto a herbicidal composition. The active ingredient in Jones' herbicidal composition includes "the phenyl, naphthyl, tetralyl and anthracene monocarboxylic aliphatic acids, their esters and salts. The ring portion of the compounds may contain one or more substituents such as halogen, hydroxyl, NH_2, HSO_3, NO_2, or an alkyl or alkylene group such as for instance methyl, ethyl, propyl, butyl, methoxy and ethoxy." Jones proceeds to exemplify the acids and esters that are intended for use. It is clear that Jones broadly discloses the instant compounds, as defined in claims 1 and 11. He also suggests use of lower alkoxy substituents on the ring.

The compounds of claims 1 and 19 are limited, however, by the total number of carbon atoms that the ester and ether substituents may possess, namely 5 to 12 carbon atoms. Composition claims 11 to 14 employ specific compounds which comply with the foregoing 5 to 12 carbon atom limitations.

Thus the issue is whether the limitation on the total number of carbon atoms in the substituents of those compounds is critical.

Lemin submitted an affidavit of Steinhards to establish that the 5 to 12 carbon atom limitation is critical. Steinhards tested various compounds wherein the total number of carbon atoms in the substituents varied from 3 to 23. The tests were performed on crabgrass

[1] Serial No. 747,362, filed July 9, 1958.

in the presence of rye, fescue and bluegrass. Steinhards found that when the carbon atoms in the substituents totaled between 5 and 12 the herbicidal compositions proved effective against crabgrass without injuring the desired rye, fescue and bluegrass. When the total number of carbon atoms fell below 5 or above 12, the compounds "exhibited no significant herbicidal activity against crabgrass."

After considering the affidavit the Examiner allowed all claims directed to the control of crabgrass. The rejection of the instant claims was maintained, however, because there was no showing of criticality in the number of carbon atoms limitation when the compounds were applied to all other undesired plants falling within the generic disclosure of Jones.

The position of the Patent Office is, essentially, that Lemin has done no more than pluck a subgenus out of a generic disclosure by Jones, and has used that subgenus in precisely the manner taught by Jones.

[1] Generally speaking, there is nothing unobvious in choosing "some" among "many" indiscriminately. *In re Rosicky*, 47 CCPA 859, 276 F.2d 656, 125 USPQ 341. Here, however, the choice is based on a discovery by Lemin that some compounds, falling within a prior art genus, have a special significance. In short, Lemin has found that when the total number of carbon atoms in the ester and alkoxy substituents is within the range of 5 to 12, the compounds involved will have selective and potent herbicidal action. [2] Furthermore, in the absence of art showing that crabgrass is different from white clover, oxalis, chickweed, or any other plant, there is no basis upon which to restrict the showing of Steinhards. That is, Steinhards' affidavit establishes the criticality of the total number of carbon atom limitation with respect to crabgrass. The application and the claims affirmatively set up an equivalence between crabgrass and all other "undesired vegetation" [2] insofar as the herbicidal effectiveness of the instant compounds are concerned. The Examiner cited no art, and the Board referred to none, which would show that proof of criticality with respect to crabgrass was insufficient with respect to other undesired vegetation.

[3] Therefore, *on this record*, we feel obliged to hold that the Steinhards' affidavit with respect to crabgrass is equally applicable to other undesired vegetation and satisfactorily establishes that the 5 to 12 carbon atom limitation is a critical factor in the herbicidal activity of the instant compounds. Since there is nothing in the cited art to suggest the criticality of that range, we do not find that limitation obvious.

[4] The rejection of claims 1, 11 to 14 and 19 is reversed.

REVERSED.

[2] For example, claim 19 incorporates a Markush group of the following undesired vegetation: " • • • Crabgrass, white clover, oxalis, chickweed, foxtail, and *Poa annua*, • • •

U.S. Court of Customs and Patent Appeals

IN RE ANDREW JOHN MANSON

No. 7140. Decided June 25, 1964

[51 CCPA —; 333 F.2d 234; 142 USPQ 35]

1. INTERFERENCE—RULE 204(b)—UTILITY—UTILITY REQUIREMENT FOR PROCESS—35 U.S.C. 101.

"• • • the Board would require that before an applicant may have his claims to a new *process* placed in interference to determine the issue of priority of invention pursuant to 35 U.S.C. 135, he must show that a utility for the *compound* produced by the process was known at the time he invented the process. This requirement cannot be justified in view of 35 U.S.C. 101. As there defined, a process is a separate category of patentable invention. Clearly, a process which operates as disclosed to produce a known product is 'useful' within the meaning of section 101. To add to this section the further requirement that such a process is 'useful' only when a 'use' for a known end product is disclosed seems to us to be an improper arrogation of the authority delegated to Congress by the Constitution. Had such a restriction been intended by Congress, we believe it would have been directly stated either in section 101 or in the definition of a process found in section 100(b)."

2. SAME—SAME—SAME—SAME—SAME—*Dickinson and Zenitz* CONSTRUED.

"In the *Dickinson and Zenitz* case we held that for purposes of a prima facie showing of actual reduction to practice of a chemical compound, the utility requirement of section 101 was satisfied by alleging merely that 'the utility [of the claimed compound] was obvious to us at the time we submitted the compound for testing which was prior to August 16, 1955 [the critical date].' It is our opinion that, if the requirement of a prima facie showing of utility of a claimed compound may be satisfied by the statement that such utility was 'obvious' at the time the invention was made, then *a fortiori* the requirement is satisfied where no question is raised as to the operability of the claimed chemical process to produce a known compound."

3. SAME—SAME—SAME—SAME—SAME—*In re Bremner et al.* AND *In re Wilke et al.*, 50 CCPA 964, CONSTRUED.

"In the *Bremner* case [*In re Bremner et al.*, 37 CCPA 1032, 182 F.2d 216, 86 USPQ 74, 75] this court said, 'It was never intended that a patent be granted upon a product, or a process producing a product, unless such product be useful.' That this statement is correct with respect to *produce* claims is beyond doubt. 35 U.S.C. 101. As to whether a specification must show *how to use* the product of a claimed *process*, however, our holding in *Wilke* made it abundantly clear that it is not necessary so to do. In the present case, our holding that where a claimed process produces a known product it is not necessary to show utility for the product eradicates, as to process claims, whatever remained of the so-called 'rule of Bremner' subsequent to our decision in *Wilke*."

4. SAME—SAME—SAME—SAME—SAME.

"• • • a process is 'useful,' as a matter of law, if it operates as disclosed to produce its intended result or perform its intended function and if it is not, in operation or result, detrimental to the public interest."

5. SAME—SAME—SAME—SAME—SAME.

"• • • appellant's process *works* and is not alleged to be detrimental to the public interest. Under such circumstances, appellant's affidavits under Rule 204(b) have made a legally sufficient prima facie showing as to his actual reduction to practice of the claimed process prior to the filing date of Ringold. He is, therefore, entitled under section 135 to a determination as to the issue of priority of invention."

APPEAL from the Patent Office. Serial No. 3,693.

REVERSED.

Laurence and Laurence (*Dean Laurence*, *John L. White* of counsel) for appellant.

Clarence W. Moore (*Joseph Schimmel* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The single legal issue presented by this appeal is whether an applicant for a patent on a *new process* for making a *known compound* must establish a utility for such *compound*, in order to satisfy the

requirements of Rule 204(b) preparatory to having an interference declared between his application and a prior patent.

It is unnecessary to encumber this opinion with any of the technical details of the process covered by appealed claims 2 and 3 of appellant's application.[1] These claims stand rejected as "obviously fully met" by a patent to Ringold et al.[2] Appealed claim 3 corresponds to claim 4 of the Ringold patent and was so written for the purpose of provoking an interference with that patent. Appealed claims 2 and 3 differ only in scope and we shall therefore treat both claims as one for purposes of this opinion.

As required by Rule 204(b), appellant filed certain affidavits which purported to show that he was prima facie entitled to an award of priority of invention relative to the filing date of the Ringold patent. Among other things, these affidavits alleged that the compound produced by the claimed process was known in the art and that its utility was obvious to appellant at the time he invented the process. The Examiner, however, took the position that the affidavits were deficient in that they did not clearly show a utility for the compound produced by the claimed process and thus that appellant had not shown that he had made a "useful" invention prior to the filing date of the Ringold patent. This position was summarized by the Board as follows:

> It does not appear that the Examiner questions the affidavits filed under the provisions of Rule 204(b) except as to the showing relative to the utility of the compounds produced by the process of claim 3. The issue presented is whether the affidavits are sufficient in the [this?] respect. • • •

The Board, placing its reliance on language found in inter partes interference decisions dealing with what constitutes a reduction to practice of an invention, then concluded:

> • • • we cannot agree that a process is *prima facie* useful merely because the product is disclosed in the literature unless the product was known to be useful.

[1] Thus the Board would require that before an applicant may have his claims to a new *process* placed in interference to determine the issue of priority of invention pursuant to 35 U.S.C. 135, he must show that a utility for the *compound* produced by the process was known at the time he invented the process. This requirement cannot be justified in view of 35 U.S.C. 101. As there defined, a process is a separate category of patentable invention. Clearly, a process which operates as disclosed to produce a known product is "useful" within the meaning of section 101. To add to this section the further requirement that such a process is "useful" only when a "use" for a known end product is disclosed seems to us to be an improper arrogation of the authority delegated to Congress by the Constitution. Had such a restriction been intended by Congress, we believe it would have been directly stated either in section 101 or in the definition of a process found in section 100(b). We take the omission of any such requirement to be determinative of the issue here.

We had hoped that our views set forth in *In re Dickinson and Zenitz*, 49 CCPA 951, 299 F.2d 954, 133 USPQ 39, as to the Commissioner's duties and responsibilities under the statutory provisions and the rules of practice here in issue, would have been considered as determinative of the issues here. While we agree with the Board

[1] Serial No. 3,693, filed January 20, 1960, for "Preparation of Organic Compounds."
[2] No. 2,908,693, issued October 13, 1959 entitled "Production of 2-Methyl-Dihydrotestosterones."

that the *facts* in the *Dickinson and Zenitz* case distinguish it from the *facts* here, we think what was there said is pertinent as to the basic legal right of the appellant to have the issue of priority of invention duly determined as provided in section 135. To the end that there shall be no mistake as to the portions of the *Dickinson and Zenitz* opinion which we think should have been applied in this case, they are quoted as follows (49 CCPA at 957–58):

> There is no question but that under 35 U.S.C. 135, the Commissioner is required to initiate interference proceedings by giving notice to the parties whenever, *in his opinion*, an application would interfere with any pending application or with any unexpired patent.
>
> Further, under 35 U.S.C. 6, subject to the approval of the Secretary of Commerce, he "may establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office." Also, it is equally clear that, unless specifically prohibited by law, the Commissioner may delegate his duties.
>
> On the other hand, in performing his duties, the Commissioner cannot usurp the functions or impinge upon the jurisdiction of the Board of Patent Interferences established by 35 U.S.C. 135.
>
> In applying these principles to the case at bar, it is obvious that the Commissioner could promulgate a rule to cover the factual situation that is presented in this and similar cases. This he did in establishing Rule 204(b). Also, he could delegate to the Primary Examiner and the Assistant Commissioner his responsibilities under section 135, and they could decide in the first instance whether a prima facie case had been presented by applicant.
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> • • • • • • •
>
> The "opinion" of the Commissioner that is required in section 135 pertains to the factual question of whether the claims of the application would interfere with the claims of the patent, and whether a prima facie case has been alleged. The question of priority is to be determined by the Board of Patent Interferences and such factors, as what is necessary to show reduction to practice in a particular case, come within the exclusive jurisdiction of that board. It should be kept in mind, however, that a patentee ought not to be compelled to go through an interference proceeding without reasonable cause.
>
> Although Rule 204(b) indicates that the required affidavit must be in the nature of that specified in Rule 131, obviously, any provision of Rule 131 which requires more than the statute contemplates in connection with a Rule 204(b) proceeding would not be applicable, as in the case at bar. • • •

[2] In the *Dickinson and Zenitz* case we held that for purposes of a prima facie showing of actual reduction to practice of a chemical compound, the utility requirement of section 101 was satisfied by alleging merely that "the utility [of the claimed compound] was obvious to us at the time we submitted the compound for testing which was prior to August 16, 1955 [the critical date]." It is our opinion that, if the requirement of a prima facie showing of utility of a claimed compound may be satisfied by the statement that such utility was "obvious" at the time the invention was made, then *a fortiori* the requirement is satisfied where no question is raised as to the operability of the claimed chemical process to produce a known compound.

It seems clear from the present record that the Patent Office refused to accept appellant's affidavits on the philosophical basis that unless a compound is known to be useful, a process for making the compound is not useful under section 101 and hence not patentable. Thus the case of *In re Wilke and Pfohl*, 50 CCPA 964, 314 F.2d 558, 136 USPQ 435, cited by appellant and argued by both parties, is not directly controlling here since it dealt with the adequacy of the specification with respect to a disclosure of "how to use" under section 112. *Wilke* is of value, however, in that it indicates the recent thinking of this court with respect to utility issues. In *Wilke*, speaking to the section 112 issue, we said:

• • • We decline to apply to these process claims the statement in the *Bremner* case from which the Patent Office has extracted the so-called "rule of Bremner," i.e., that the specification must teach a use for the product of a claimed process. Had this been the intent of Congress, we are certain that it would have been so stated in 35 U.S.C. 112. • • •

The relevance of this statement to the present case seems clear. If, to be patentable, a process must not only produce a product but a product known or proved to be useful, then it follows that an application for a patent on such a process would have to disclose how to use the product. But the holding in *Wilke* is to the contrary. See also *In re Adams et al.*, 50 CCPA 1185, 316 F.2d 476, 137 USPQ 333.

[3] In the *Bremner* case [*In re Bremner et al.*, 37 CCPA 1032, 182 F.2d 216, 86 USPQ 74, 75] this court said, "It was never intended that a patent be granted upon a product, or a process producing a product, unless such product be useful." That this statement is correct with respect to *product* claims is beyond doubt. 35 U.S.C. 101. As to whether a specification must show *how to use* the product of a claimed *process*, however, our holding in *Wilke* made it abundantly clear that it is not necessary so to do. In the present case, our holding that where a claimed process produces a known product it is not necessary to show utility for the product eradicates, as to process claims, whatever remained of the so-called "rule of Bremner" subsequent to our decision in *Wilke*. See also *In re Szwarc*, 50 CCPA 1571, 319 F.2d 277, 138 USPQ 208.

Neither the Solicitor nor appellant has cited a case, nor have we found any, which is contrary to our present holding. To be sure, in *Petrocarbon Ltd.* v. *Watson*, 247 F.2d 800, 114 USPQ 94 (D.C. Cir. 1957), the court relied on the *Bremner* case in affirming a rejection of certain chemical process claims. However, as we pointed out in the *Szwarc* case, supra, the decision made no distinction between product and process claims and was based on the insufficiency of the disclosure of how to use the product produced by the claimed process *as required by section 112*. At any rate, for whatever the *Petrocarbon* case may be said to stand, we have already indicated, at some length, our disagreement with it in both the *Szwarc* case and *In re Nelson et al.*, 47 CCPA 1031, 280 F.2d 172, 126 USPQ 242, and it would serve no useful purpose to labor the point further here.

[4] The law regarding utility has enjoyed an uncommon stability over the years, in contrast to many other areas in the patent law. In the *Nelson* case, supra, we considered in some depth the ancient and persistent requirement of utility as a condition for patentability. As indicated by the many authorities there discussed, a process is "useful," as a matter of law, if it operates as disclosed to produce its intended result or perform its intended function and if it is not, in operation or result, detrimental to the public interest.

As long ago as 1817, in *Bedford* v. *Hunt*, 3 Fed. Cas. 37 (No. 1217) (C.C.D. Mass.), Justice Story articulated the basis for this general statement, when he said:

• • • By useful invention, in the statute, is meant such a one as may be applied to some beneficial use in society, in contradistinction to an invention, which is injurious to the morals, the health, or the good order of society. It is not necessary to establish, that the invention is of such general utility, as to supersede all other inventions now in practice to accomplish the same purpose. It is sufficient, that it has no obnoxious or mischievous tendency, that it may be applied to practical uses, and that so far as it is applied, it is salutary. *If its practical utility be very limited, it will follow, that it will be of little or no profit to the inventor; and if it be trifling, it will sink into utter neglect. The law, however, does not look to the degree of utility; it simply requires, that it shall be capable of use, and that the use is such as sound morals and policy do not discountenance or prohibit.* • • • [Emphasis added.]

And again in the same year, in *Lowell* v. *Lewis*, 15 Fed. Cas. 1018 (No. 8568) (C.C.D. Mass.), Justice Story said:

• • • All that the law requires is, that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society. The word "useful," therefore, is incorporated into the act in *contradistinction to mischievous or immoral*. For instance, a new invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention. *But if the invention steers wide of these objections, whether it be more or less useful is a circumstance very material to the interests of the patentee but of no importance to the public.* If it be not extensively useful, it will silently sink into contempt and disregard. • • • [Emphasis added.][3]

This basic rationale has persisted, unchanged, down to the present day, in this court as well as in the District of Columbia Circuit. As recently as 1961, the District Court for the District of Columbia stated, in *Commonwealth Engineering Co.* v. *Ladd*, 199 F. Supp. 51, 131 USPQ 255, 257:

This court held in *Isenstead* v. *Watson*, 157 F. Supp. 7, 115 USPQ 408, that the term "utility" is a broad term and implies, among other things, capacity to perform the function or attain the result claimed by the applicant in his disclosure. It further held that, in connection with a composition of matter, the test of utility is whether the invention will attain the purpose and will operate as disclosed and claimed by the inventor. Similarly, *in connection with an invention consisting of a process or a method, the term utility must necessarily mean whether the process will operate as claimed and will produce the result intended by the inventor.* [Emphasis added.]

In the present case it is admitted that appellant's claimed process meets these requirements. It operates as claimed and produces the result intended by the inventor. In addition, it has not been shown to be contrary to sound morals and policy. [5] To put it another way, appellant's process *works* and is not alleged to be detrimental to the public interest. Under such circumstances, appellant's affidavits under Rule 204(b) have made a legally sufficient prima facie showing as to his actual reduction to practice of the claimed process prior to the filing date of Ringold. He is, therefore, entitled under section 135 to a determination as to the issue of priority of invention.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, dissenting.

The Patent Office has given Manson an opportunity to show that his product is useful. Although that is his obligation he has been either unable or unwilling to do so. Therefore, the Patent Office quite properly rejected his application and should be affirmed.

I am aware of no authority for the novel proposition that a process which produces a useless product is patentable. Such a premise is wholly contrary to the Constitution and I am satisfied Congress did not intend the statutes enacted thereunder to be so construed.

In *In re Oberweger*, 28 CCPA 749, 115 F.2d 826, 47 USPQ 455, this court quoted with approval an earlier statement from *In re Perrigo*, 18 CCPA 1323, 48 F.2d 965, 9 USPQ 154:

Neither the Patent Office tribunals nor the court may properly grant patents

[3] In commenting on this language, one court has said that "A study of the cases reveals that the legal significance of 'useful' in the patent statute differs from the general conversational connotation of the word." *Cusano* v. *Kotler*, 159 F.2d 159, 162, 72 USPQ 62 (3d Cir. 1947). In that case the court held that the creation of a new game conforms to the patent requirement of being useful.

See also *Callison* v. *Dean*, 70 F.2d 55, 21 USPQ 240 (10th Cir. 1934), which held that a device which may be used for innocent amusement possesses utility.

upon a mere possibility that a device might do the things claimed for it and be useful. There must be definiteness. Neither the Constitution nor the statutes contemplate the granting of patents upon theories, nor giving a monopoly upon intellectual speculations embodied in devices incapable of scientific analysis.

In *Libbey Owens* v. *Celanese*, 57 USPQ 258, the Sixth Circuit Court of Appeals held:

Controlling is the fact that such method claims are limited to the use of plastic compositions, with the identical ingredients and in the proportions of the three product claims, which have been already held to be insufficiently disclosed and inoperative, and the process, therefore, lacks the further requisite of utility.

I appreciate the fact that Manson's product is a known compound which may—or may not—someday prove to be useful. However, for his process to possess the requisite statutory utility, it must presently be more than a mere invitation to others to determine that it is useful.

PATENT SUITS

Notices under 35 U.S.C. 290: Patent Act of 1952

2,703,083, W. J. Gross, ADHESIVE BANDAGE, **filed** Mar. 1, 1955, D.C., N.D. Ill. (Chicago), Doc. 55c336, *Johnson & Johnson* v. *The Kendall Co. et al.* Order holding patent valid and infringed; defendants' motion for summary judgment as to Count II denied; counterclaim dismissed with prejudice Mar. 14, 1963. Order staying above judgment thirty days pending appeal Mar. 14, 1963. Final judgment pursuant to the decision of the U.S. Court of Appeals, 7th Cir., dated Jan. 22, 1964, and its mandate dated May 25, 1964, holding said patent invalid as to claims 1, 2, 4, 5, 8, 9, 11 and 12; complaint dismissed with prejudice; defendants' counterclaim sustained as to invalidity of the claim in suit June 12, 1964.

2,879,949, H. Jordan, GARBAGE DISPOSAL APPARATUS, **filed** Oct. 26, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1990, *In-Sink-Erator Manufacturing Co.* v. *Waste King Corporation*. Defendant enjoined; defendant's counterclaim and Count I of plaintiff's complaint dismissed with prejudice May 28, 1964.

2,928,562, C. R. Golinick, REFUSE COLLECTING AND TRANSPORTING EQUIPMENT, **filed** June 17, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1069, *Leach Company* v. *Bynal Products, Inc. et al.* Patent held valid; claims 1, 2, and 4–13 of said patent infringed; injunction to issue restraining defendants; counterclaim dismissed June 12, 1964.

2,932,913, D. F. Hannon, IDENTIFICATION CARD, **filed** June 9, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c996, *Laminators, Incorporated* v. *General Binding Corporation*.

2,939,738, R. J. Lyons, SUPPORT MEANS FOR HINGED COVERS; **3,067,453**, same, TORSIONALLY BALANCED HATCHWAY DOOR CONSTRUCTIONS, **filed** June 26, 1964, D.C. Minn. (Minneapolis), Doc. 4–64/199, *The Bilco Company et al.* v. *American Hatch Corporation*. Consent judgment granting injunction (notice Aug. 31, 1964).

2,949,978(a), J. N. Halstead, VEHICLE LIFTING APPARATUS, **filed** Sept. 1, 1961, D.C., S.D. Calif. (Los Angeles), Doc. 1158–61 MC, *Western Manufacturing Co.* v. *The Joyce-Cridland Company*. Stipulation and order of dismissal with prejudice June 4, 1964.

2,949,978(b), J. N. Halstead, VEHICLE LIFTING APPARATUS; **2,956,643**, same, AUTOMATIC SAFETY LEG, **filed** July 24, 1961, D.C., N.D. Calif. (San Francisco), Doc. 40074, *J. H. Halstead* v. *Globe Hoist Company*. Judgment for plaintiff June 25, 1964.

2,953,404, Miller and Makeham, LATCH FOR TOOL BOXES AND THE LIKE, **filed** June 1, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 10,944, *Old Pal, Inc.* v. *Liberty Steel Chest Corporation*.

2,955,064, S. H. Frohmader, MINERAL COATED LIQUID-GAS CONTACT PAD, **filed** June 26, 1964, D.C., E.D. Mich. (Detroit), Doc. 25,496, *Research Products Corporation* v. *Auto Flo Corporation*.

2,956,643. (See 2,949,978(b).)

2,956,761, M. N. Weber, SELF-LEVELLING AND WEIGHING DEVICE; **2,965,372**, R. D. Cavanaugh, PNEUMATIC ISOLATOR; **3,115,944**, M. N. Weber, SUPPORTING AND WEIGHING DEVICE WITH ELASTOMER SEALING RING; **Re. 23,743 (of 2,610,017)**, Lambert, Jr. and Crede, VIBRATION ISOLATOR, **filed** May 27, 1964, D.C. Mass. (Boston), Doc. 64–421–W, *Marshall, Neil & Pauley, Inc.* v. *Barry Wright Corp. and National Testing and Research Laboratories, Inc.* Complaint dismissed without prejudice as to National Testing and Research Laboratories, Inc. Final consent judgment as to Barry Wright Corp. and above patents (notice Sept. 8, 1964).

2,957,793, J. W. Dickey, METHOD OF LAMINATING POLYURETHANE FOAM, **filed** Mar. 20, 1962, D.C.N.J. (Newark), Doc. 228–62, *Reeves Brothers, Inc.* v. *Textilfoam, Inc. et al.* Consent judgments for injunction as to Martin Rudolph, Robert Abramovitz and Arthur Goring. Stipulation and order of dismissal as to Textilfoam, Inc. (notice June 17, 1964).

2,958,593, H. L. Hoover et al., LOW DENSITY ABRASIVE ARTICLE, **filed** Dec. 19, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2286, *Minnesota Mining and Manufacturing Co.* v. *Union Carbide Corp. et al.* Patent held valid; defendant, James H. Rhodes & Co., Inc., dismissed by consent; defendants, Union Carbide Corp. and Fiber Bond Corp., have infringed claims 1–8; defendants enjoined May 22, 1964.

2,965,372. (See 2,956,761.)

2,968,296, F. J. Kaehni, IGNITION SYSTEMS FOR MULTI-CYLINDER ENGINES, **filed** June 16, 1964, D.C., N.D. Ohio (Toledo), Doc. C64–91, *The Economy Engine Company* v. *Eltra Corporation*.

2,979,119, H. Kramer, WEB-TO-TUBE FASTENINGS; **3,042,113**, same; **3,092,177**, same, **filed** June 3, 1964, D.C., S.D.N.Y., Doc. 64/1704, *Hy Kramer Enterprises* v. *Duralite Company, Inc.*

2,981,668, A. Brasch, METHOD FOR IMPROVING THE PROPERTIES OF POLYMERIZED MATERIALS, **filed** June 16, 1964, D.C. Mass. (Boston), Doc. 64–455–J, *Electronized Chemicals Corporation* v. *ITT Surprenant, Inc.*

2,984,036, J. I. Adler, GARLAND CONSTRUCTION, **filed** Oct. 20, 1961, D.C., S.D.N.Y., Doc. 61/3726, *Adler Enterprises, Inc.* v. *Frankel Associates, Inc.* Consent order of discontinuance June 18, 1964. **Same**, Doc. 61/3727, *Adler Enterprises, Inc.* v. *Joseph Markovits*. (Order of dismissal entered 2–25–64 vacated.) Consent judgment; patent held valid and infringed; defendant enjoined July 1, 1964. **Same**, **filed** July 6, 1961, D.C., S.D.N.Y., Doc. 61/2376, *Adler Enterprises, Inc.* v. *Noel Decorations, Inc. et al.* Consent judgment; patent held valid and infringed; defendant enjoined July 1, 1964.

2,987,782, W. J. Kurowski, REFRIGERATOR DOOR, **filed** June 24, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42,508, *Aluminum Refrigerator Door Co.* v. *Barr Manufacturing Co.*

3,042,113. (See 2,979,119.)

3,067,453. (See 2,939,738.)

3,092,177. (See 2,979,119.)

3,115,944. (See 2,956,761.)

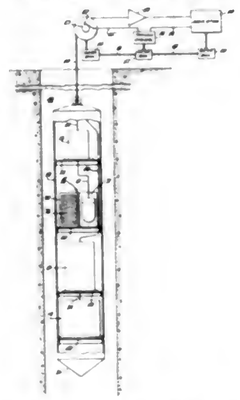
Re. 23,743. (See 2,956,761.)

REISSUES

NOVEMBER 24, 1964

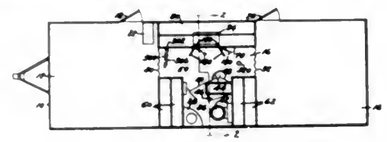
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,689
RADIOACTIVE BOREHOLE LOGGING APPARATUS
Herbert C. Pollock, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Original No. 2,867,728, dated Jan. 6, 1959, Ser. No. 465,331, Oct. 28, 1954. Application for reissue Aug. 22, 1960, Ser. No. 51,247
3 Claims. (Cl. 250—83.3)



9. Logging apparatus comprising: a source of neutrons for irradiating at least one material to be examined; a detector means sensitive to the reflected and induced products of said neutron irradiation adapted to be placed in proximity to said material for generating electrical signals chronologically related to, and representative of, said reflected and induced products; an indicating means, including circuit means for coupling to said detecting means, for representing discretely each of said signals chronologically as generated from said detecting means; and means for pulsing said neutron source to produce neutron pulses of duration less than the time required for a slow neutron propagating from said material, commencing at said material's location closest to said detector, to reach said detector; said pulsing means including a timed signal source coupled to said neutron source and to said indicator to control the time of neutron emission; whereby a time dependent indication of the characteristics of said material is obtained.

25,690
COMBINATION HALLWAY AND DISAPPEARING DRESSING ROOM
Harold A. Paulsen, 546 S. 26th St., Omaha, Nebr.
Original No. 2,884,666, dated May 5, 1959, Ser. No. 451,485, Aug. 23, 1954. Application for reissue Oct. 6, 1959, Ser. No. 844,840
8 Claims. (Cl. 20—2)



1. In a trailer of a type having a [centrally disposed] hallway, a combination of features for transforming the hallway area into a dressing room at desired times, the said combination of features being as follows: the provision of operable closure means for closing each end of the hallway to separate the hallway area from the remainder of the trailer whereby the hallway area can serve as a dressing room, the trailer further having on one side of the hallway a closet area and being provided with a wall extending vertically and separating the closet area from the hallway, the said wall having a recess therethrough and extending into the closet area and disposed extending upwardly from the floor of the trailer, said recess being of a size for accommodating the knees and toes of a person sitting in the hallway whereby the recess through the wall serves as a part of a built-in vanity, mirror facilities mounted on the wall above said vanity recess, whereby substantially all of the floor space available for the use of the hallway as such is also available when the hallway is transformed into a dressing room.

PLANT PATENTS

GRANTED NOVEMBER 24, 1964

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,454
BLACK LOCUST TREE
William E. Silva, 408 Watertrough Road, Sebastopol, Calif.
Filed June 27, 1963, Ser. No. 291,608
1 Claim. (Cl. Plt.—51)

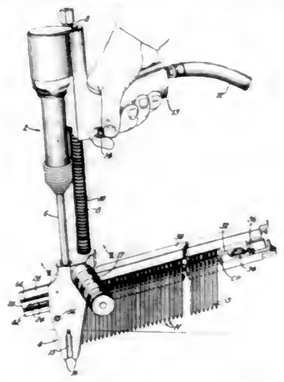
A new and distinct variety of black locust tree, substantially as shown and described, particularly characterized by its large blooms comprising pendulous racemes having florets of purple color; by its vigorous habit of growth and abundance of foliage; and by its habit of blooming earlier than other varieties of black locust grown in the same locality.

PATENTS

GRANTED NOVEMBER 24, 1964

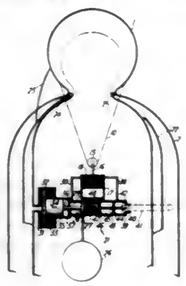
GENERAL AND MECHANICAL

3,157,884
FASTENER INSERTING TOOLS
Harold T. Decot, Wenham, and Norman S. Derrah, Lynn, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 10, 1962, Ser. No. 243,343
11 Claims. (Cl. 1—53)



1. A tool for inserting fasteners having heads and shanks comprising, in combination, means for guiding fasteners for feeding movement with their heads uniformly oriented and with their shanks in a common plane, a driver movable along a predetermined path adjacent the delivery end of the guiding means and laterally offset from said guiding means in a direction normal to the plane defined by the fastener shanks, and means for locating a portion of one fastener at a time in the path of said driver.

3,157,885
AUTOMATICALLY PRESSURIZED FLYING SUIT
Marcel Jules Odilon Lobelle, Slough, England, assignor to M. L. Aviation Company Limited, Slough, England, a British company
Filed Mar. 12, 1962, Ser. No. 178,940
Claims priority, application Great Britain, Mar. 14, 1961, 9,312/61



1. In combination with a pressurized flying suit including helmet and body portions, apparatus for preventing relative vertical movement between said helmet and body portions, comprising: a cylinder having an inlet and an outlet, said cylinder forming a first one of two relatively movable members; a piston mounted for movement within said cylinder and forming a second one of said members, one of said members being fixed to said suit and the other of said members having a connection to said helmet; a source of air at a pressure greater than the pressure within said helmet; a first valve connected between said source and said cylinder inlet and responsive to said helmet pressure for regulating supply of said air from said source to said cylinder; a second valve also responsive to helmet pressure and connected to said outlet of said cylinder for regulating the rate of exhaust of air from said cylinder, said response of said valves being such that said members maintain their relative positions whatever the value of said helmet pressure so that said helmet does not rise relative to said suit.

3,157,886
NECKTIE STABILIZER
William P. Farrell, 269 E. Argyle St., Valley Stream, N.Y.
Filed Oct. 19, 1961, Ser. No. 146,131
1 Claim. (Cl. 2—153)



In combination with a necktie having a knotted portion with front and rear portions freely hanging therefrom and said rear portion being adjustable relative to said knotted portion, a tie stabilizer comprising a body portion of relatively thin resilient material having upper and lower end portions joined by inwardly curved side portions, upper and lower prongs projecting axially outwardly from said upper and lower end portions respectively, said upper prong being embedded in the rear external surface of the knotted portion of the tie and said lower prong being embedded in the rear surface of the rear portion of the tie to restrain said rear portion against relative movement with respect to the knotted portion, said curved portions extending the entire longitudinal length of said body portion to provide increased resiliency, and each of said end portions extending laterally on either side of its associated prong defining shoulders to prevent undue penetration into said tie portions.

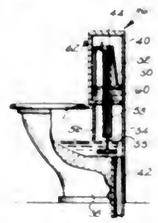
3,157,887
HEAD COVERING
Stanley Kenneth Rothstein, 80 Darling Ave., New Rochelle, N.Y.
Filed Apr. 29, 1963, Ser. No. 276,273
3 Claims. (Cl. 2—203)

1. A cap consisting of a tubular fabric element having a first end and a second end, said tubular fabric element having a fold line being located nearer to said first end than to said second end so as to form a first tubular portion between said fold line and said first end and a second tubular portion between said fold line and said second end, so that said second tubular portion is longer than said first tubular portion by an annular portion of predetermined length, said first tubular portion being folded along said fold line into said second tubular portion with said first end of said tubular fabric element adjacent to said second end thereof, said adjacent first and second ends of said tubular fabric element being closed and said annular portion of said second tubular portion being turned upon itself so as to form an annular cuff at a point thereof



spaced from said fold line, and each of said first and second tubular portions provided with an aperture, said apertures being spaced equidistant from said fold line at a distance smaller than the distance of said annular cuff from said fold line and aligned in axial direction of said tubular fabric element so as to be superimposed upon each other when said first tubular portion of said tubular fabric element is folded into said second tubular portion thereof; and securing means securing said first and second tubular portions of said tubular fabric element to each other at at least one point located between said fold line and said cuff.

3,157,888
DOUBLE DUTY TOILET
John B. Violette, Billerica, Mass. (Jordan Road, East Billerica, Mass.)
Filed July 22, 1963, Ser. No. 296,726
2 Claims. (Cl. 4—10)



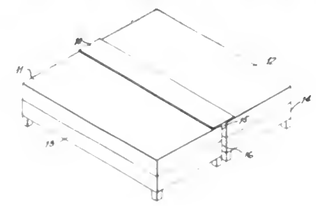
1. A toilet comprising a rotary impeller having internal blade means for driving an elongated shaft which extends downwardly within an elongated hollow sleeve from a water reservoir tank and said impeller is driven by water pressure from a toilet faucet within said tank.

3,157,889
CONVERSION OF TWIN BEDS TO A DOUBLE BED
Mortimer L. Chanko, 250 Kingsland Terrace, South Orange, N.J.
Filed Oct. 22, 1963, Ser. No. 318,037
2 Claims. (Cl. 5—352)

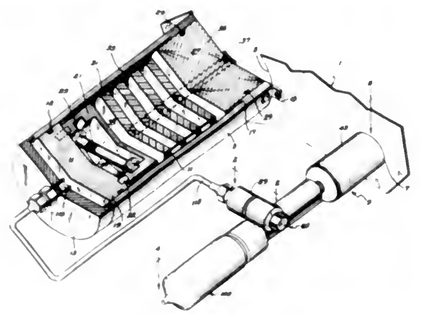
1. A device for transforming a pair of twin beds into one bed comprising:

a strip of flexible foamed material of a width to bridge the space between, and overlap the adjacent marginal top surfaces of mattresses of twin beds in closely adjoining substantially abutting relation;

a bottom, generally rectangular, central, dependent rib on the strip engageable between opposed adjoining vertical sides of the mattresses for positioning the strip as a bridge across a space between the mattresses, said rib being relatively thick and frictionally engageable between the vertical sides of the mattresses to hold the strip in flat engagement with the adjacent marginal top surfaces of the mattresses.



3,157,890
EJECTION DEVICE FOR AIRCRAFT CRASH DYE MARKER
John J. Mellon, Jr., Woodbury Heights, Jonathan Harding, Camden, and William James Zarkowski, Jr., Stratford, N.J., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1963, Ser. No. 327,160
4 Claims. (Cl. 9—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A release mechanism for an air-sea rescue device wherein a marker buoy is carried in a housing secured to an aircraft and adapted to be released upon submergence of the aircraft, comprising in combination:

(*a*) a hydrostatic pressure responsive valve secured to the aircraft and adapted to permit water to enter therein;

(*b*) an electric cell of the water-activated type connected to said valve and capable of generating an electric current only when water becomes accessible to said valve;

(*c*) an explosive charge;

(*d*) an electrically operated firing means for exploding said charge, said firing means being connected to said electric cell;

(*e*) a sealed cartridge of compressed gas;

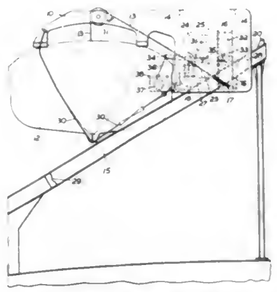
(*f*) piercing means responsive to said exploding charge to puncture the sealed cartridge and release the compressed gas;

(*g*) release means connected with the said cartridge and being responsive to the compressed gas to eject the buoy from the aircraft.

3,157,891
SHIPS' LIFEBOAT DAVITS

John Devonport, Blackheath, Birmingham, England, assignor to Samuel Taylor & Sons (Brierley Hill) Limited, Brierley Hill, Staffordshire, England

Filed Sept. 17, 1963, Ser. No. 309,549
Claims priority, application Great Britain, Oct. 13, 1962, 38,836/62
2 Claims. (Cl. 9—35)

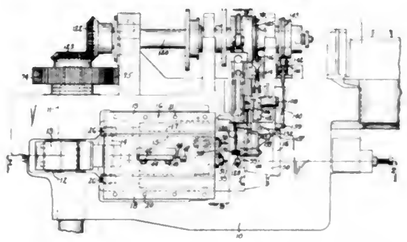


1. A ship's lifeboat davit of the gravity type having a pair of inclined tracks extending laterally and downwardly from the side of a ship, a pair of davit arms each of which is provided with a sheave at the outboard end thereof for receiving a fall from which a lifeboat is suspended, a bridge structure rigidly interconnecting said davit arms, said bridge structure extending in a fore and aft direction between the inboard ends of the davit arms, each of said davit arms provided with means engaging said inclined tracks for enabling gravitational movement of said davit arms, bridge structure and suspended lifeboat along said inclined tracks from the inboard ends toward the outboard ends thereof, means including a winch mounted on said bridge structure for controlling said movement, a second winch mounted on said bridge structure substantially amidship of the span between the davit arms for controlling said falls and the lowering of the lifeboat, said second winch provided with a brake, a brake release lever carried by said bridge structure for releasing said brake, said lever projecting over the suspended lifeboat, and means for operating said brake release lever from the suspended lifeboat after movement thereof to the outboard ends of said inclined tracks to control the lowering of the lifeboat comprising a manually operable flexible line extending into the lifeboat and having one end thereof secured to said brake release lever.

3,157,892
MACHINE FOR FORMING METAL ARTICLES

Raymond H. Carlson, Rockford, Ill., assignor to Textron Industries, Inc., Rockford, Ill., a corporation of Delaware

Filed Feb. 1, 1960, Ser. No. 5,705
9 Claims. (Cl. 10—12)

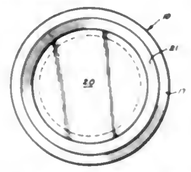


1. A heading machine comprising:
(*a*) a frame,
(*b*) a housing having a cylindrical opening mounted on said frame;
(*c*) a cylindrical ram reciprocably mounted in said opening;
(*d*) two punches fixedly mounted on the forward face of said cylindrical ram,
(*e*) each of said punches being adapted to coact with a corresponding die mounted on the frame;
(*f*) means carried by the frame for reciprocating said ram,
(*g*) said means comprising a crank shaft rotatably carried by the frame,
(*h*) a pitman having one end connected to said crank shaft,
(*i*) a crank pin pivotally connecting the other end of said pitman to said ram,
(*j*) the ends of said crank pin extending laterally beyond said ram,
(*k*) and guide means mounted on the housing and the extended ends of the crank pin, respectively, and adapted for cooperative engagement with each other to prevent rotation of said ram about its longitudinal axis during its reciprocating movement.

3,157,893
METHOD FOR MAKING A HEADED FASTENER

William R. Dickie, Manhattan Beach, Calif., assignor to Hi-Shear Rivet Tool Company, Torrance, Calif., a corporation of California

Filed June 29, 1959, Ser. No. 823,539
1 Claim. (Cl. 10—27)



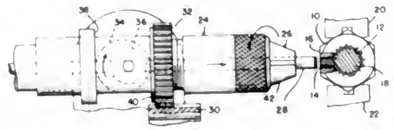
A process for making a fastener with a central axis, which fastener has a cylindrical shank and a head that includes a face which at least partially overhangs the shank and a cylindrical wall on the periphery of the head at the edge thereof which is closest to the face, said process comprising the steps of: (1) forming a unitary member which includes a shank and a head with a first face adjacent to the shank and perpendicular to the central axis thereof and a second central planar face on the other side of said head, the outer periphery of said planar face merging into a raised ring portion; (2) reducing the shank to a desired dimension; (3) supporting said blank at the first face only thereof adjacent the shank; (4) simultaneously confining the cylindrical wall of said head to prevent lateral deformation thereof and applying axial pressure to said raised ring portion to axially displace the outer periphery of said head beyond the portion of the first face adjacent the shank to form an overhanging portion without altering the shank; and (5) terminating such axial pressure substantially at the plane of said second face.

3,157,894
METHOD AND APPARATUS FOR PRODUCING A DEVICE HAVING A FRICTION PLUG ROTATABLY INSERTED THEREIN

Richard B. Wallace, Bloomfield Hills, Mich., assignor to The Oakland Corporation, Birmingham, Mich., a corporation of Michigan

Filed Apr. 30, 1962, Ser. No. 190,985
13 Claims. (Cl. 10—72)

1. Apparatus for inserting a lock plug in a threaded plug-receiving opening extending from a side wall to a central opening of an annular body comprising a support for the body, a mandrel shaped to enter the central opening with predetermined radial clearance, a rotary head having a portion shaped to grip a length of plug material, means for advancing said head to thread the plug material into said plug-receiving opening and op-

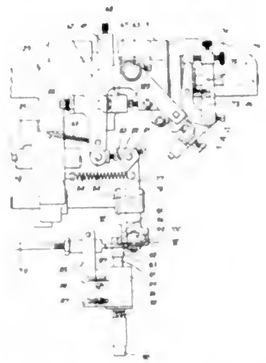


erable to continue driving said plug material in rotation until the inner end thereof is arrested by said mandrel, at which time said plug material twists off substantially along the crest of the first outer convolution of thread within said plug-receiving opening, and means for effecting an advance of plug material relative to said head between successive advance movements of said head.

3,157,895
SAFETY DEVICE FOR USE WITH AUTOMATIC LATHES

Guillaume Ernest Megel and Henri Mancia, Moutier, Canton of Bern, Switzerland, assignors to Usines Tornos Fabrique de Machines Moutier S.A., Moutier, Switzerland, a company of Switzerland

Filed May 14, 1962, Ser. No. 194,612
Claims priority, application Switzerland, May 16, 1961, 5,694/61
5 Claims. (Cl. 10—89)

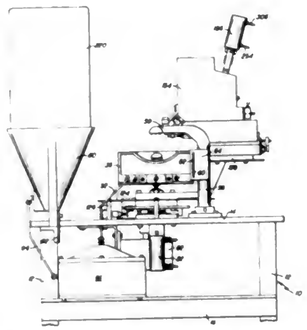


1. For use with automatic lathes arranged for machining workpieces out of a bar of stock and provided with a thread cutting tool provided to follow its own helical path, with cycling means controlling all the operations of the lathe and with a feeding device automatically supplying a new bar of stock when the bar worked on has been exhausted, a safety device having means operatively connecting it to the lathe cycling means and the thread cutting tool so that it is responsive to the controlling action both of the lathe cycling means and of the thread cutting tool to stop these cycling means if the thread cutting tool does not follow its own helical path, said safety device comprising releasing means which upon actuation thereof put it out of action, said releasing means having means operatively subjecting it to the action both of the thread cutting tool when the latter follows its own helical path and of the stock feeding device when the same is operated, thus avoiding stopping the lathe cycling means both when the thread cutting tool works satisfactorily and when there is no stock in the lathe.

3,157,896
APPARATUS FOR APPLYING CEMENT TO A SHOE SOLE AND APPLYING STEAM TO A SHOE UPPER

Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass., and Robert B. Dunlap, Medway, Mass.; said Dunlap assignor to said Kamborian

Filed Mar. 22, 1962, Ser. No. 181,682
28 Claims. (Cl. 12—4.1)

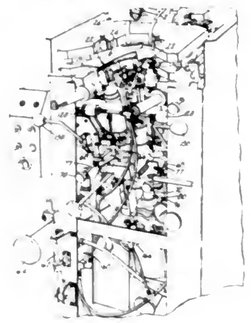


1. An apparatus for concomitantly applying cement to the toe portion of a shoe insole and applying steam to the toe portion of a shoe upper, wherein the insole is located on the bottom of a last and the toe portion of the upper is draped loosely about the toe of the last, comprising: a steam chamber adapted to receive the toe portion of the upper; means for supplying steam to the chamber; a support on the top of the chamber adapted to support the vamp of the last; a hold-down above the support; means for imparting relative heightwise movement between the steam chamber and the hold-down to clamp the last and insole therebetween; and means for applying cement to the insole while it is thus clamped.

3,157,897
LASTING MACHINES

John D. Morrill, Boxford, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

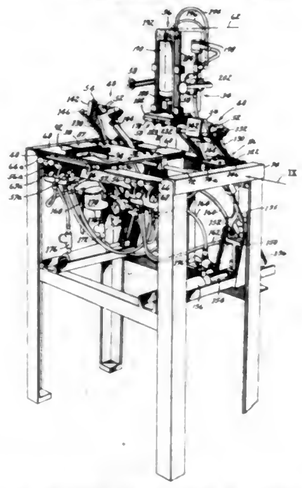
Filed June 25, 1962, Ser. No. 204,837
10 Claims. (Cl. 12—10.5)



1. In a machine for lasting a shoe upper assembled on a last, a support for the last, grippers mounted for independent movement heightwise relative to said support and adapted to grip the margin of the upper at opposite sides of the last, locking means operable to fix each gripper against heightwise movement, means for moving the support heightwise to move the last against the upper held by the grippers while fixed by said locking means

thereby causing the upper to be tensioned over the last, operator controlled means for retracting the support to relieve the tension on the upper and for causing the locking devices to release the grippers for heightwise movement, and means for adjusting the grippers independently heightwise while the upper is gripped for bodily adjusting the upper widthwise of the last, said controlled means also being effective at the will of the operator to cause the locking means to fix the grippers in adjusted position and to cause the support to be returned to its upper tensioning position.

3,157,898
MACHINES FOR FORMING OUTSOLE-HEEL UNITS
Gordon V. Sprague, Jr., Danvers, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 8, 1962, Ser. No. 228,922
25 Claims. (Cl. 12—16.2)



1. In a machine for forming a unitary outsole and heel adapted to be attached to a shoe, trimming means, a carrier including means for positioning and holding left and right outsoles, a pair of units each comprising means for positioning a heel, means for clamping said heel against movement, and means for applying a heel breast covering flap of an outsole on the carrier to the breast of the heel, a frame, means for securing on the frame said carrier in two predetermined positions in either of which one or the other of the outsoles on the carrier has its rear end portion arranged in a predetermined position with relation to said trimming means and the other outsole, which is mounted on the carrier and has already had a heel breast flap formed at its rear end, is arranged opposite one of said units, power means for operating said trimming means to form a heel breast covering flap on the rear end portion of said one outsole, power means for operating the heel clamping means, and power means for operating the flap applying means.

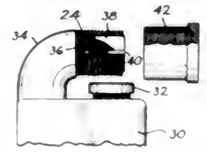
3,157,899
METHOD OF MAKING A BOOT LAST
George H. Bingham, Jr., Westminster, Md., assignor to Cambridge Rubber Company, Taneytown, Md., a corporation of Maryland
Filed June 28, 1961, Ser. No. 120,273
2 Claims. (Cl. 12—146)

1. That method of making a boot last which comprises as steps: providing a template whose edge is a curve which is a composite of the curves of the center lines of the leg portions of each of several selected conventional lasts of different styles and sizes, and, in making lasts of



each of said several styles and sizes, shaping the front of the leg portion of each such last to conform to the curvature of the edge of said template.

3,157,900
APPARATUS FOR CLEANING MOTION PICTURE FILM AND THE LIKE
Millard V. Thompson, 516½ Western Ave., Medford, Oreg.
Filed Apr. 3, 1962, Ser. No. 184,692
1 Claim. (Cl. 15—100)



Apparatus for cleaning motion picture film and like strip material, comprising:

(*a*) a container for cleansing liquid,

(*b*) a hollow unitary conduit mounted on and projecting outward from the container,

(*c*) the conduit communicating at its inner end with the interior of the container and having opposed slits extending inward from its outer end dimensioned to receive freely therethrough strip material to be cleaned,

(*d*) an elongated liquid absorbent wick supported frictionally in the conduit for longitudinal sliding movement therethrough,

(*e*) the wick having an inner portion disposed within the container for contact with cleansing liquid therein,

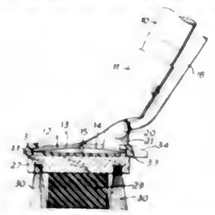
(*f*) the wick having at its outer end a transverse slit registering with the slits in the conduit for receiving slidably therethrough strip material to be cleaned,

(*g*) the wick being movable through the conduit in the direction of the outer end of the latter for presenting successive clean wick portions between the conduit slits as preceding portions of the wick become soiled by the strip material being cleaned.

3,157,901
SPONGE MOP HAVING A DETACHABLE HEAD
Hugh Murphy, Hockering, Woking, Surrey, England, assignor to The Prestige Group Limited, London, England, a British company
Filed Apr. 20, 1962, Ser. No. 189,019
Claims priority, application Great Britain, Apr. 25, 1961, 14,956/61
3 Claims. (Cl. 15—244)

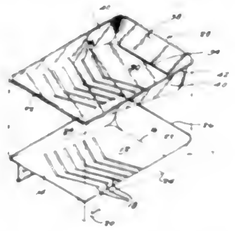
1. A mop having a slab of plastic sponge material, a rigid base to which said slab is fixed in totally underlying relation to said base, said base having means in fixed association therewith defining an upwardly facing

area commensurate with the peripheral limits of said base, a pair of recesses along spaced parallel lines adjacent opposite edge portions of said area, said recesses facing toward portions of said area between said edge portions, a carrier plate including a pair of wings joined by a hinge, said wings presenting edge portions remote from and parallel to said hinge which are receivable in said recesses when said wings of the carrier plate are in out-



spread relation and from which said wings are disengageable when said wings are moved from outspread to folded position, and stop means with which edge portions of said wings are adapted to abut along lines extending lengthwise of the distance between said opposite edge portions of said area to prevent withdrawal of said wings from an engaged position within said recesses in directions extending axially of the hinge joining said wings.

3,157,902
DISPOSABLE PAINT TRAY LINER
Thomas L. Hardwick, Buffalo, N.Y. (P.O. Box 153, West Seneca, N.Y.)
Filed Jan. 4, 1963, Ser. No. 249,479
3 Claims. (Cl. 15—257.06)



1. The combination, with a paint tray including a bottom wall having a pair of first and second ends, the bottom wall having a plurality of upwardly projecting paint distribution ribs thereon, a pair of legs at the first end of the bottom wall supporting the bottom wall in a position slanted downwardly from the first end to the second end, an outwardly and upwardly inclined end wall at the second end of the bottom wall, upstanding side walls, and a rolled peripheral flange extending about the first end of the bottom wall, the side walls, and the end wall, of a disposable molded plastic tray liner, comprising:

(*a*) a liner bottom wall overlying the tray bottom wall throughout substantially the full length and width thereof;

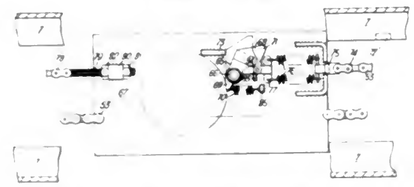
(*b*) the liner bottom wall having a plurality of upstanding liner ribs overlying and engaging the ribs of the tray bottom wall;

(*c*) a liner end wall bearing against and overlying the tray end wall;

(*d*) liner side walls bearing against and covering the tray side walls; and

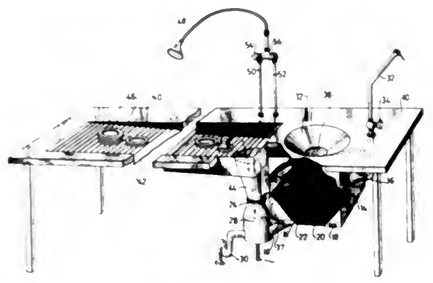
(*e*) a relatively resilient, peripheral snap brim extending about the liner and dimensioned to grip the rolled flange of the tray.

3,157,903
FLUID HEATER CLEANERS
Eric J. Matthews, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company
Filed Dec. 17, 1962, Ser. No. 245,119
Claims priority, application Great Britain, Dec. 21, 1961, 45,780/61
2 Claims. (Cl. 15—317)



1. In a fluid heater cleaner having a rotatable nozzle tube movable longitudinally to advance the nozzle tube from, and to withdraw the nozzle to, a retracted position, a main carriage supporting and connected with the nozzle tube movable with the nozzle tube along an essentially horizontal track and operating mechanism including a fixed driving motor connected with the main carriage through a driving chain secured to the main carriage and passing over front and rear guide wheels mounted at the ends of the track, said track being formed with a series of abutments, a spring-biassed catch pivotably mounted on the carriage and movable between an operative position to which it is biassed by said spring and in which the catch is engageable with the series of abutments to prevent forward movement of the carriage along the track and an inoperative position in which the catch is held clear of the series of abutments, said driving chain being secured at one end to the main carriage and at the other end, through tensioning spring means, to the catch to hold the catch in the inoperative position.

3,157,904
DEVICE FOR SEPARATING TABLEWARE AND FOOD-LEAVINGS ON CLEANING CROCKERY, PLATES AND SIMILAR UTENSILS
Dick Arne Flodell, Strandvagen 11, Saltsjobaden, Sweden
Filed Apr. 26, 1961, Ser. No. 105,650
Claims priority, application Sweden May 3, 1960
4 Claims. (Cl. 15—511)

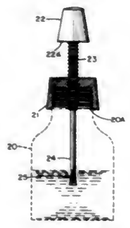


1. A device for separating tableware and food-leavings on cleaning of crockery, plates and similar utensils, characterized by resilient members disposed in a dump-opening with such a spacing and mutual relation as to allow the specifically heavier tableware to pass, but to retain the specifically lighter food-leavings, a conical funnel disposed above the dump-opening, said funnel having its smallest diameter at the bottom, which diameter is smaller than the length of at least ordinary knives and forks so as to

compel them to assume an inclined position in passing the funnel.

3,157,905
CLOSURE ASSEMBLY WITH MOVABLE FLUID APPLICATOR

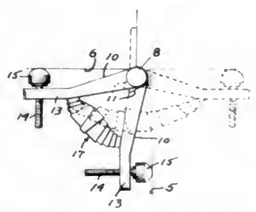
Carol L. Levy, 115C Robert Lane, Wilmington, Del.
Filed Aug. 9, 1963, Ser. No. 301,139
7 Claims. (Cl. 15—517)



1. A closure assembly for engaging with the threaded neck of a container, comprising a cap having two concentric sets of threads, the inner set of threads defining the perimeter of an aperture in said cap, and an applicator sub-assembly comprising a handle, threaded shaft for mounting said sub-assembly within the aperture in said cap and engaging it with the inner set of threads on said cap, applicator holder and applicator, the concentric sets of threads on the cap each of essentially the same lead and the same direction such that rotation of the cap to disengage it from the container effects movement of the cap relative to the container without effecting substantial travel of the applicator sub-assembly relative to the container when the applicator handle is suitably restrained from rotation by external means.

3,157,906
DOOR STOP AND CLOSER

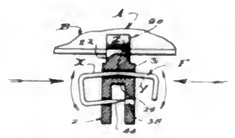
Emanuel Wolf, 122 Winchester St., Brookline 46, Mass.
Filed Apr. 6, 1961, Ser. No. 101,095
1 Claim. (Cl. 16—50)



A combined door stop and door closing attachment for a hinge connecting a door member to a casing member, said attachment comprising a pair of arms, each arm including first and second angularly disposed sections, the first section of each arm having a hole for a hinge pin by which the two arms are to be pivotally mounted on one end of the hinge pin with the second section of each arm defining an angle greater than the angle defined by the first section of each arm with respect to a plane passing through the hinge pin, the first section of each arm also including stop portions interengageable to limit the extent to which the two arms may be swung towards each other when interconnected by a hinge pin, spring means between said arms urging said arms apart, and an element carried by at least one said second section of each of said arms and at right angles thereto for engagement with a member and adjustable relative thereto to lessen the extent to which said arms may be swung towards each other before said stop portions interengage.

3,157,907
TRAVERSE ROD GLIDE

Orville T. Stall, 7908 Chatfield Ave., Whittier, Calif.
Filed Mar. 25, 1963, Ser. No. 267,688
6 Claims. (Cl. 16—87.4)



1. A glide engageable in a traverse rod and with a drapery including, an upper rod-engaging head, a lower drapery-engaging yoke with a header and a pair of laterally-spaced depending legs to occur at the opposite sides of a drapery, an upper transverse pin-receiving opening in the yoke and a pair of axially-aligned lower transverse pin-receiving openings in the legs of the yoke and a pin having a lower portion engageable through the lower openings to bridge the legs and project through the drapery engaged therebetween, an upper portion slidably engaged through the upper opening and an intermediate portion connecting the said upper and lower portions at one end thereof, said upper portion of the pin being greater in longitudinal extent than the lower portion thereof, whereby the upper portion of the pin remains engaged in the upper opening in the yoke when its lower portion is shifted laterally from within the space between the legs.

3,157,908
TRACK AND WHEEL TRUCK FOR ROLLING DOOR

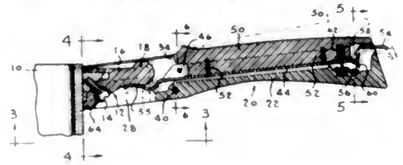
John J. Frueh, 806 W. 167th St., Gardena, Calif.
Filed Nov. 21, 1962, Ser. No. 239,154
4 Claims. (Cl. 16—95)



1. In operative combination: a tubular structure forming an internal track therealong, having means for disposing the structure generally horizontally above and longitudinally extending beyond the upper edge of a doorway for operative suspension and movement of a slidable door therealong, said internal track being formed with a longitudinally open slot extending along one side thereof; at least two suspension-roller units spaced apart along the track in position jointly to suspend a sliding door dependently held between them, each unit comprising a wheel truck and a U-shaped head disposed with its arms spaced vertically apart, one of said arms of each head being inserted through said longitudinal slot of the tube in pivotal connection with said respective wheel truck, and said other arm being disposed outside the track and fixed to a rotatable stem adapted to support the edge of a sliding door; a generally U-shaped channel connecting said units within the tubular structure and longitudinally slidable along said track jointly with the connected units, the wheel truck of each unit including one roller held partly within said open slidable channel and rotatable along the track on an axis transverse thereto, and a second roller disposed outside the slidable channel and rotatable along the track on an axis transverse to the axis of said first roller, the pivotal connection of each inserted U-arm of the respective suspension roller unit, to said wheel truck being intermediate said two rollers and said inserted U-arm being movable approximately 90° by joint rotation of said stem, thereby to seat and unseat a sliding door which may be dependently held by and between a pair of such stems and U-shaped heads spaced apart along said channel, which channel is longitudinally slidable along said track of the tubular structure with rotation of said rollers.

3,157,909
DETACHABLE HANDLE

Arthur J. Schmitt, West Bend, Wis., assignor to The West Bend Company, West Bend, Wis., a corporation of Wisconsin
Filed Aug. 31, 1961, Ser. No. 135,204
5 Claims. (Cl. 16—114)



5. A detachable handle for use with a utensil having a laterally extending fixed lip, said detachable handle comprising, in combination,

an elongated hand grip portion having a longitudinally extending groove therein,

a lip engaging portion connected to one end of and forming an extension of said hand grip portion and including a clamping surface arranged for engagement with said fixed lip,

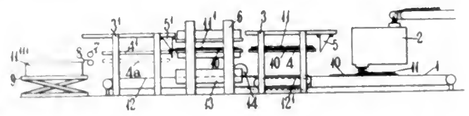
a lever pivotally supported in and extending exteriorly of said groove to be engaged when said hand grip portion is gripped and pivoted in said groove in response to gripping action on said hand grip portion, a portion of said lever extending therefrom into opposed relation with the clamping surface of said lip engaging portion and arranged for movement toward said clamping surface in response to pivotal movement of said lever as a result of said gripping action so that said lip is selectively clamped between said lever portion and said clamping surface to attach said detachable handle to said utensil,

and latch means arranged in said hand grip portion for engagement with said lever when said lever portion is moved toward said clamping surface to engage said fixed lip and operative to lock said lever with said lever portion in engagement with said fixed lip.

3,157,910
PRESSING ROAD FOR PRESSING PLATES ON SUPPORT SHEETS

Gerhard Schlipphak, Munich, Germany, assignor to Horst Gerlach, Munich, Germany
Filed Sept. 15, 1961, Ser. No. 138,473
1 Claim. (Cl. 18—4)

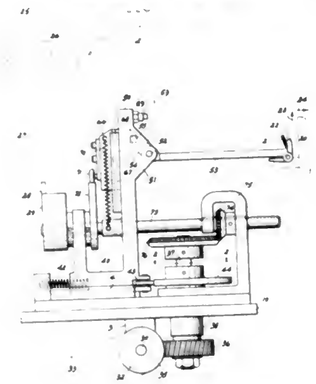
In a plant for the production of plates of pressed material such as plywood, chipboard and the like plates in which such pressed plates are formed on support plates moved in a closed cycle through the plant, and in which said plant includes a press structure comprising a press for receiving the support plates carrying the material to be pressed and for pressing said material into pressed plates, a feeding device located at one side of the press structure for receiving support plates carrying material to be pressed from an adjacent material supply device and for feeding them into the press, a discharge device on the side of the press opposite the feeding device for receiving support plates carrying plates of pressed material from the press, means for separating the plates of pressed material from the support plates at the discharge device, and conveyor means for receiving and returning the support plates from the discharge device to the device for supplying material to the support plates, the improvement including a cooling device located in the press structure below the press proper, and in which said conveyor



means comprises a first conveyor extending from the cooling device to the press feeding device and the material supply device, for receiving the support plates from the cooling device and conveying said cooled support plates first to the material supply device and then for moving the support plates having material thereon to the press feeding device, a second conveyor extending from the press discharge device through the cooling device for receiving plates from said discharge device and conveying them to the cooling device, and means for detachably coupling said first and second conveyors whereby the second conveyor is immobile, with a support plate thereon in the cooling device while the first conveyor is charging a support plate from the material supply device and returning said plate to said press feeding device.

3,157,911
APPARATUS FOR REMOVING ARTICLES FROM CAVITIES OF MOLDS

Hobart T. Campbell and Jack J. Monahan, Allentown, and Joseph A. Roeder, Quakertown, Pa., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1961, Ser. No. 158,048
3 Claims. (Cl. 18—5)



2. An apparatus for removing from a mold a first component joined to a second component by a connection of molding material, each component having a pair

of oppositely extending leads resting on the mold and extending beyond the edges of the mold, comprising:

a pair of first jaws, each being positioned beneath and in contact with one of the leads of said first component,

a pair of second jaws, each having a notch being positioned over one of the leads of said first component, and each having a surface formed thereon and positioned over and in contact with one of the leads of said second component,

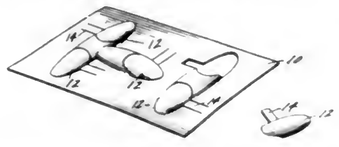
means for biasing said second jaws toward said first jaws, and

means for lowering the mold to render effective the biasing means:

to move downwardly the notches of said second jaws to engage the edges of said notches with the leads of said first component to hold said leads of said first component between said edges and said first jaws, and

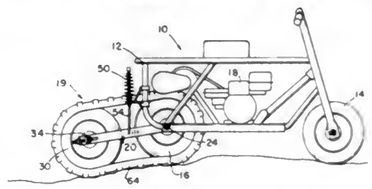
to move downwardly said surfaces of said second jaws to break the connection joining said components to drop said second component back into said lowered mold, while retaining said first component between said edges and said first jaws.

3,157,912
FINGER AND TOE NAIL MOULDS FOR CREATING ARTIFICIAL FINGER AND TOE NAILS
Dorothy Lisczawka, 453 F.D.R. Drive, New York 2, N.Y.
Filed May 8, 1962, Ser. No. 193,231
2 Claims. (Cl. 18—5.1)



2. As an article of manufacture, a plastic sheet of the kind described comprising a plurality of cut-out preformed mould forms corresponding in shape and contour to the nail of an individual finger of a human hand or toe of a human foot, tabs integral with said mould forms cut-out from the body of the sheet and integrally connected therewith along portions of its perimeter, whereby deflection of said mould forms and associated tabs outwardly from said sheet will effect breakage of said tabs at the said portions of its perimeter from said sheet to permit bodily removal of said mould forms, said mould forms being usable to form artificial nails or to repair broken nails.

3,157,913
ATTACHMENT FOR TRAIL SCOOTER
William H. Hubert, 2721 N. Lombard, Portland, Oreg.
Filed May 3, 1963, Ser. No. 277,790
1 Claim. (Cl. 180—9.24)



In combination a land vehicle having a frame and a driven rear wheel mounted thereon, and an attachment therefor, said attachment comprising,

a subframe including a pair of elongate side members mounted on said vehicle adjacent said rear wheel one on each side thereof,

a cross bracket rigidly securing said members together,

said side members each having a longitudinal slot in one end thereof receiving the axle of said vehicle rear wheel,

an idler wheel rotatably mounted between said side members in tandem with said rear wheel,

an endless crawler element extending about said rear wheel and said idler wheel,

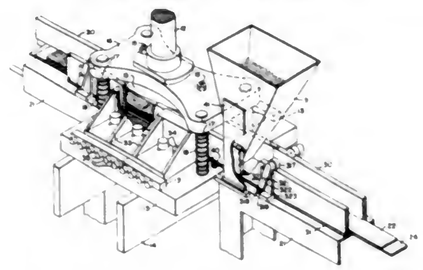
means mounting said idler wheel on said side members for movement toward and from said rear wheel so as to provide tension on said crawler element and urge said members into engagement with said axle,

a pair of spring brackets mounted on said vehicle frame above said subframe,

a pair of helical tension springs mounted one on each of said brackets,

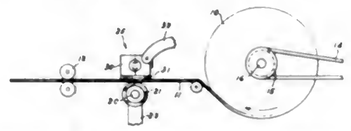
a pair of push rods fixed at one end one to each to the top of said springs and at the other end to said subframe so as to urge the same downwardly.

3,157,914
AUTOMATIC APPARATUS FOR PRODUCING MEMBERS FROM POWDERS
Charles Deibel, Pittsburgh, Frank Emley, Penn Hills Township, Allegheny County, and Olaf A. Olausen, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1962, Ser. No. 186,488
6 Claims. (Cl. 18—16)



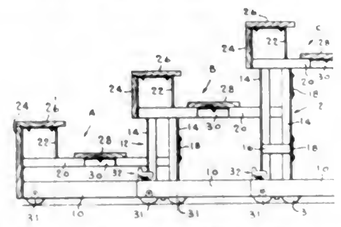
1. In an apparatus for the automatic continuous compaction of powder, a press having a pressing head thereon for compacting a powder, a trough movable beneath the pressing head, a hopper for dispensing powder into said trough, means for imparting movement to said trough, said pressing head capable of reciprocating movement toward and away from powder in said trough, the pressing head having a pressing surface thereon for contacting the powder, the pressing surface comprising a leading portion parallel to the trough base, a curved fairing portion comprising a surface tangential at one end to the leading portion and at the other end smoothly joining a trailing portion, the trailing portion being a smooth surface longer than said leading portion and angled away from the trough base at an angle not exceeding 15° with respect to the leading portion, pressure responsive means capable of terminating the compaction stroke of the pressing head and reversing its direction of movement, means limiting movement of said pressing head in the opposite direction away from the trough and reversing its said opposite direction of movement, means for detecting approach of said pressing head to powder in said trough and responsive to such approach to halt movement of said trough so that during compaction the powder is at rest.

3,157,915
CONTROL DEVICE
Charles F. Gilbo, Lancaster, Pa., assignor to Geo. W. Bollman & Co., Inc., Adamstown, Pa., a corporation of Pennsylvania
Filed July 9, 1959, Ser. No. 825,964
6 Claims. (Cl. 19—106)



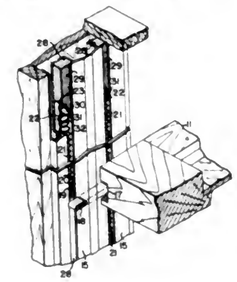
5. Apparatus for automatically controlling the density and thus the weight per unit length of a web emanating from a textile machine responsive to the rotation of a rotary element, wherein the web is of such character that radiation may pass therethrough comprising, in combination, means projecting radiation through said web from one side thereof and across a substantial portion of the width of the web, a transducer comprising radiation responsive means disposed at the opposite side of said web and across a material portion thereof to receive radiation passing through the web, condenser means connected to said transducer to continuously receive the output therefrom and the potential of the condenser means varying according to present and past output of the transducer whereby radiation variations are averaged over a period of time, speed regulating means connected to said rotary element, and means interconected between said condenser means and said speed regulating means and responsive to variations in the potential of the condenser means for controlling the operation of said speed regulating means.

3,157,916
LOCKING MECHANISM FOR COLLAPSIBLE BLEACHER
Robert E. Puestow, Milwaukee, Wis., assignor to Safway Steel Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 18, 1960, Ser. No. 29,853
5 Claims. (Cl. 20—1.126)



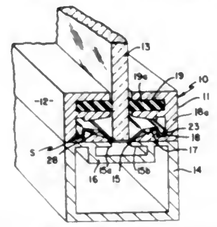
1. A row lock and trip mechanism for a retractable seating structure having a plurality of movable seat sections adapted to nest one within the other when retracted comprising, a lock bar member mounted on a first section, a row lock member pivotally mounted on a second section adjacent said first section, said row lock member adapted for engagement with said lock bar member to lock the first and second sections together, and a trip finger mounted on a third section adjacent said second section, said trip finger adapted to engage said row lock member to thereby unlock said first section from said second section as said seat structure is retracted, said row lock member having a trip nose and a locking nose thereon, said trip nose located a short distance directly above the pivot point of said row lock member and adapted for engagement by said trip finger to pivot said row lock member in one direction and unlock said first and second sections as said seat structure is retracted, said locking nose adapted for engagement by said lock bar member to thereby pivot said row lock in the other direction and lock said first and second sections together as said seat structure is extended.

3,157,917
BALANCE SPRING MECHANISM
Lowell E. Peters, 2386 Grandin Road, Cincinnati, Ohio
Filed Sept. 20, 1962, Ser. No. 225,091
5 Claims. (Cl. 20—42)



1. Balance mechanism for a tilt out window comprising, a side jamb for slidably receiving window sash, a balance spring fixed at an upper end to said side jamb, and a resilient block secured to said side jamb immediately adjacent the upper end of said spring and engageable by said spring.

3,157,918
GLASS SETTING ASSEMBLY
James E. Adams, Curtice, Ohio, assignor to The Bishop and Babcock Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 21, 1962, Ser. No. 174,845
3 Claims. (Cl. 20—56.4)

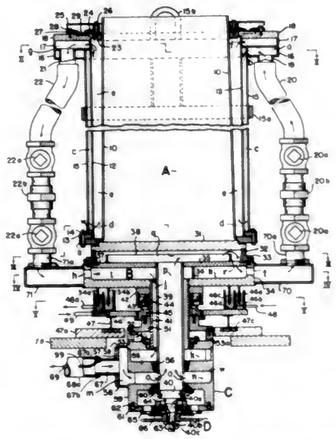


1. A glass setting assembly for supporting a glass panel on edge comprising a pair of stop members arranged on opposite sides of the glass panel, a support beam on which said stop members rest and having a longitudinal slot in the upper wall thereof, each stop member including a web portion and an upper flange for contact with a side of the glass panel and a lower flange bearing against said beam with its inner edge terminating short of said slot, said lower flange having an upper surface including a groove extending substantially parallel to the associated web portion, a spring clip having a central portion against which the lower edge of the glass panel rests and also having two arms extending oppositely from said central portion and integral therewith, oppositely extending hooks depending from said central portion engaging the side edges of the slot in the supporting beam for attaching the clip thereto, each arm extending upwardly from said central portion and terminating in a downwardly extending lip in seating engagement with said groove, and each arm including an intermediate downturned prong impinging on the adjacent upper surface of the respective lower flange.

3,157,919
APPARATUS FOR PRODUCING IMPROVED INGOT METAL

Robert K. Hopkins, West New Brighton, N.Y., assignor to Firth Sterling, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 13, 1960, Ser. No. 28,877
9 Claims. (Cl. 22—57)



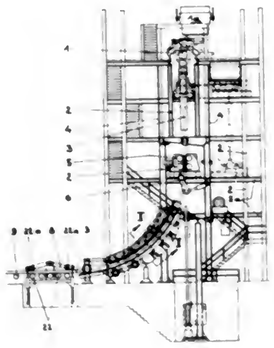
1. In an improved apparatus for electrically-melting metals such as high quality alloys and forming a cast metal ingot therefrom within an ingot mold, employing a rotating table for carrying the ingot mold, employing a secondary table below the rotating table for rotatably supporting it, and employing means for rotating the rotating table; an outer peripheral side wall about the ingot mold defining a mold body having a metal melting and casting chamber therein and cooling-fluid-jacketing thereabout, a bottom closure member carried on an upper portion of the rotating table to removably-liftably receive said mold body and support and close-off the melting and casting chamber therein at a bottom end of said body, fluid inlet and outlet chests carried by said rotating table, and removably-coupled and valved fluid-flow connections between said fluid inlet and outlet chests and said cooling-fluid-jacketing of said mold body, whereby said mold body and a formed cast metal ingot therein may be lifted-off said bottom closure member and the rotating table for stripping the metal ingot.

3,157,920
CONTINUOUS CASTING PLANT WITH DEFLECTION OF THE CASTING

Walter Hess, Dusseldorf, Germany, assignor to Concast AG, Zurich, Switzerland

Filed Apr. 3, 1962, Ser. No. 184,835
6 Claims. (Cl. 22—57.2)

1. A continuous casting plant comprising a vertical open-ended mold adapted to cast molten metal poured therein into a strand, a cooling chamber positioned below said mold and adapted to cool said strand issuing from said mold, drive rolls positioned below said cooling chamber to engage said strand and to extract said strand from said mold, bending means positioned below said drive rolls and cooperating therewith to arcuately bend said strand from the vertical to a horizontal course, a horizontally disposed strand straightening bed to receive said strand and to straighten said strand, a delivery conveyor to receive the straightened strand, a chute extending between said bending means and said straightening bed and being curved in an arc corresponding to the arc of said bent strand, said chute being provided with rails extending the length thereof, a supporting chain movable along said rails in said chute, means for driving said supporting chain upwardly into said chute to contact the end of the bent strand within said chute and to support the weight of said strand, and means to withdraw

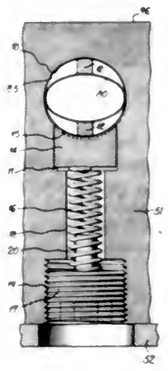


said chain while supporting said strand so that a strand which is shorter than the distance between said straightener and said drive rolls will not be unsupportably dropped during traversement of the distance between the drive rolls and the straightener.

3,157,921
COOLING MOLDS FOR CASTING METAL

Carroll B. Porter, Metuchen, N.J., assignor to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey

Filed May 23, 1963, Ser. No. 282,734
5 Claims. (Cl. 22—57.2)

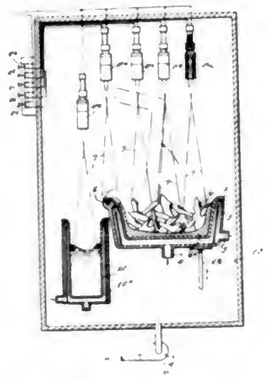


5. In a mold for continuously casting metal, said mold comprising a body including a graphite block, said block having a mold pocket open at one end to receive molten metal and open at the other end to discharge the congealed casting, said block having internal passages arranged around said mold pocket, cooling tubes in said passages, backing strips in said passages disposed on the sides of said tubes remote from the mold pocket, auxiliary springs disposed between said body and said backing strips for urging said backing strips against said tubes to press said tubes against the walls of said passages adjacent the mold pocket.

3,157,922
METHOD AND APPARATUS FOR PRODUCING CASTINGS OF METALS HAVING HIGH MELTING POINTS

Helmut Gruber, Hanau am Main, Germany, assignor to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany

Filed June 7, 1961, Ser. No. 128,282
Claims priority, application Germany June 25, 1960
4 Claims. (Cl. 22—73)

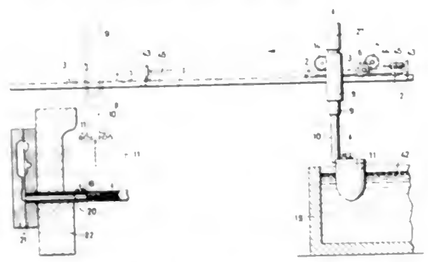


1. A method of producing castings of metals having a melting temperature of at least about 2500° C. comprising the steps of filling a water-cooled crucible in a chamber with at least one metal, evacuating said chamber, bombarding said metal in said crucible directly with a series of electron beams emitted from several electron sources disposed above said crucible so as to melt the metal while maintaining a skull in said crucible, then tilting said crucible so as to pour the molten metal from said crucible over a pouring lip thereof into at least one mold, and while tilting said crucible and pouring the molten metal, successively switching off the electron sources in the direction toward said pouring lip so as to prevent the electron beams from said sources from striking upon the crucible itself, and switching on at least one additional electron source disposed in a position so that the electron beam emitting therefrom will strike upon the molten metal pouring from said crucible into said mold.

3,157,923
APPARATUS FOR TRANSPORTING MOLTEN METAL

Fritz Hodler, 28 Ave. Collonge, Territet, Switzerland

Filed July 31, 1961, Ser. No. 128,111
Claims priority, application Germany Sept. 8, 1960
8 Claims. (Cl. 22—79)



1. An apparatus for transporting molten metal from an open-topped melting bath to a mold charging aperture horizontally spaced from said bath a predetermined distance, said apparatus comprising, in combination:

(*a*) elongated stationary guide means adapted to extend from a first location adjacent the open top of said melting bath over said distance to a second location adjacent said mold charging aperture;

(*b*) a carriage mounted on said guide means for movement thereon between said two locations in said direction;

(*c*) rigid carrier means slidably guided on said carriage for vertical movement in a fixed path relative to said carriage;

(*d*) moving means on said carriage for vertically moving said carrier means in said path;

(*e*) a charging container rigidly mounted on said carrier means, said container having a bottom portion and being formed with an outlet aperture in said bottom portion thereof; and

(*f*) closing means for selectively closing said outlet aperture.

3,157,924
METHOD OF CASTING

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 101,687, Apr. 10, 1961. This application Feb. 12, 1964, Ser. No. 344,190
10 Claims. (Cl. 22—196)

1. A method of casting comprising the steps of imbedding in a mold body of clean, free-flowing, dry and substantially unbonded sand a form combustible substantially without residue on subjection to a molten casting charge and shaped for exact reproduction as a casting; forming in said mold body a gate leading to said imbedded form and pouring into said gate a molten casting charge for burning and vaporizing said imbedded form in said mold body.

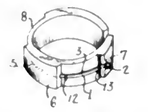
ERRATUM

For Class 22—216.5 see:
Patent No. 3,157,926

3,157,925
LOSSPROOF PEN BAND

Constancio R. Gallamos, Malasiqui, Pangasinan, Philippines

Filed Dec. 13, 1963, Ser. No. 330,405
1 Claim. (Cl. 24—13)



A band comprising a ring-shaped body of strong but pliable material, said band being severed at one side, thus making it adaptable to be slipped or clamped firmly to the cap of an ordinary writing pen, there being a thin portion running crosswise on said band, a canal having been made longitudinally and in conformity with the curvature of said band, one end of said canal ending at said thin portion, a curved ordinary pin, the curved portion of which being of the same length as the said canal, and the head of which said pin being abruptly deflected such that it is perpendicular in relation to the portion of said pin immediately beside it, said curved pin being fitted into the said canal such that the deflected head of said pin is sticking out of said canal, one-half or so of said canal, the one which is on the side of the sharp point of said curved pin, being covered, and the end of said canal, the one at the side of the deflected pinhead, being closed by means of a project-

ing strip, thus movably imprisoning said curved pin in the said canal, there being a hollow at the side of the thin portion immediately opposite the sharp point of the curved pin, in which said hollow the sharp point of said curved pin is located when said curved pin is in its operative position, one end of a pliant member being permanently attached to the outside surface of said band at a point as near as practicable to the covering of the covered portion of said canal such that the free portion of said pliant member is in a crosswise position in relation to the canal and the free tip of the same not quite reaching the opposite side of said canal, one end of another pliant member identical to the above-described pliant member being similarly attached to the outside surface of the band at a point as near as practicable to the projecting strip which closes the canal at the side of the deflected head of the curved pin.

3,157,926
MAKING FINE GRAINED CASTINGS
Robert A. Horton, Cleveland, and Richard L. Ashbrook, Chesterland, Ohio, and Roy C. Feagin, Mountain Lakes, N.J., assignors to Howe Sound Company, a corporation of Delaware
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,828
12 Claims. (Cl. 22—216.5)

1. The method of making a fine grained cast metal article of an alloy containing at least one metal selected from the group consisting of iron, nickel, cobalt, chromium and copper which comprises

(*a*) forming a refractory mold having a surface layer comprising at least about 0.01 percent by weight of an oxidic compound of a metal selected from the group consisting of nickel and cobalt,

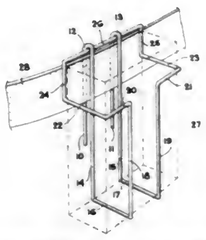
(*b*) heating the mold to a temperature above 1000° F.,

(*c*) introducing a melt of the alloy into the heated mold, in contact with the surface comprising said oxidic compound, and

(*d*) cooling the alloy in the mold to below its freezing temperature

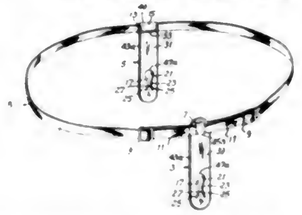
whereby nucleation of said alloy is catalyzed by said oxidic compound during initial solidification of the melt.

3,157,927
CIGARETTE PACKAGE HOLDER
Ted K. Roden, 612 N. Sierra Bonita, Los Angeles 36, Calif.
Filed Nov. 7, 1962, Ser. No. 236,043
1 Claim. (Cl. 24—3)



A cigarette package holder comprising, in combination: an integral wire defining a frame including hook shaped means formed from the end portions of said wire and adapted to hook over a belt, said frame including parallel bottom members extending forwardly from the lower end of said hook shaped means and thence extending upwardly in parallel relationship, thence outwardly in opposite directions, thence rearwardly in parallel relationship, thence upwardly and thereafter towards each other to connect together and define a substantially rectangularly shaped upper opening when viewed in plan for receiving said cigarette package and to define a step for initially receiving one edge of said cigarette package to guide same into said frame, said end portions extending upwardly in parallel relationship, thence folding downwardly to merge into said bottom members whereby said entire frame is defined by a single integral wire, said forwardly extending bottom members and upwardly extending portions thereof defining an open channel therebetween so that said cigarette package may be lifted upwardly by pressure on that bottom portion exposed between said bottom members.

3,157,928
FASTENING DEVICE
Irvin S. De Woskin, St. Louis, Mo., assignor to Beltx Corporation, St. Louis, Mo., a corporation of Missouri
Filed Oct. 30, 1961, Ser. No. 148,528
9 Claims. (Cl. 24—150)



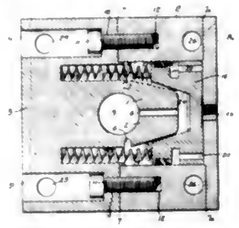
1. An elongate tab for a sanitary belt comprising outer layers of flexible heat-sealable sheet plastic material, a cushion layer of soft heat-sealable plastic foam material between said outer layers and coextensive in width with said outer layers, an insert of relatively stiff heat-sealable sheet plastic material between said cushion layer and one outer layer toward one end of the tab, said insert being coextensive in width with said outer layers and cushion layer but shorter in height than the length of the tab, said tab having an opening through said outer layers, cushion layer and insert formed to receive and grip an end of a sanitary napkin, and said outer layers, cushion layer and insert being heat-sealed at mutual boundaries around said opening.

3,157,929
ADJUSTABLE STRAP CONNECTOR
Alden Y. Warner, Farmington, Wilbur J. Craven, East Hartford, and John Stacherl, New Britain, Conn., assignors to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed May 22, 1962, Ser. No. 196,759
3 Claims. (Cl. 24—196)



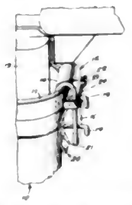
1. An adjustable strap connector comprising a frame having end walls and a pair of side walls, defining a strap-receiving aperture therein, one of said end walls providing a stationary gripping face extending across the frame between said side walls, a cross-member extending across said frame between said side walls, means mounting said cross-member for limited movement longitudinally of said frame with the plane of the bottom surface of the cross-member spaced above but closely adjacent the plane of the top surface of said one said end walls, said cross-member having a lower edge adjacent said stationary gripping face forming a second gripping face cooperable with the stationary gripping face, said cross-member being movable toward said stationary gripping face to clamp a strap therebetween, said stationary and movable gripping faces being transversely contoured to provide a distance therebetween which gradually increases from the center of said gripping faces to the ends thereof.

3,157,930
FLUID OPERATED CLAMP
Robert P. Newman, North Massapequa, N.Y., assignor to Specialties, Incorporated, a corporation of New York
Filed Sept. 19, 1963, Ser. No. 310,027
2 Claims. (Cl. 24—257)



1. In a fluid operated clamping device, a clamping member including a pair of spaced clamping jaws integral therewith and projecting therefrom, said jaws having curved surfaces of tapered radius relative to the axis of said jaws, said clamping member having a circular opening therethrough with an axis at right angles to the axis of said jaws, each said jaw having a groove therearound adjacent said opening, a second member having a cylindrical space therein coaxial with said jaws, a piston in said cylindrical space and having a frusto-conical inner surface for engaging said jaws, means attaching said second member to said clamping member, said piston having a groove therearound and a channel leading from said groove to the face of said piston, spring means for moving said piston out of contact with said jaws, said second member having a port for admitting fluid to said cylindrical space to force said piston into contact with said jaws.

3,157,931
BACKING PLATE HANGER
Cornelius J. McKeown, Natick, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed July 29, 1963, Ser. No. 298,509
6 Claims. (Cl. 24—263)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a clamping structure including first and second spaced and opposed elongated rigid legs for receiving a part to be clamped therebetween, said legs being integrally connected by a bight portion, said first leg being formed with at least first and second internally threaded holes therethrough in longitudinally spaced relation, clamping screws threaded through said holes, there being an upper screw in the region of said bight; the improvement comprising a backing plate, said plate being disposed between said legs and extending longitudinally thereof and adapted to be engaged by said screws to clamp an article between said plate and said second leg, said plate including a pair of spaced and opposed ears fixed thereto in the region of said bight, said ears straddling said first leg and having terminal portions extending laterally outwardly thereof, and readily removable anchoring means extending between said ears laterally outwardly of said first leg and above said upper screw to secure said plate in assembled relation with said clamping structure.

3,157,932
QUICK RELEASE CLAMP
Gilbert M. Kyrias, Littleton, Colo., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 7, 1963, Ser. No. 300,711
4 Claims. (Cl. 24—271)



1. A quick release clamp mechanism for a hose comprising: two substantially semicircular clamping members; a hinge member interconnecting said clamping members; a latch on one of said clamping members attached to the end thereof remote from said hinge; a toggle link support member on the other of said two clamping members attached to the end remote from said hinge; a toggle mechanism having a toggle locking member and a toggle link member; said toggle link member being pivotably connected to said toggle link support member; said toggle locking member having a projection thereon adapted to be located in locking engagement with said latch; means located on said one clamping member adjacent said latch, for holding said toggle locking member in engagement with said latch in an unstable locking position; means for selectively releasing said holding means; clamp tightening means, on one of said clamping members, for providing a clamp releasing force for said clamp.

3,157,933
EXTRUDER
Robert Boggild, 5463 Hill and Dale Drive, Cincinnati 13, Ohio, and William L. Dale, 197 Ireland Ave., Cincinnati 18, Ohio
Continuation of application Ser. No. 849,645, Oct. 29, 1959. This application Aug. 15, 1963, Ser. No. 303,721
6 Claims. (Cl. 25—11)

3. A toy extruder for modeling compound comprising,

a housing having a top wall and four side walls,

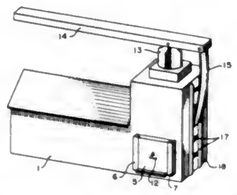
an L-shaped bore in said housing having a vertical leg opening out of said top wall and a horizontal leg opening out of said side wall,

a plunger in the vertical leg of said bore,

a lever pivoted intermediate its ends to the top of said plunger,

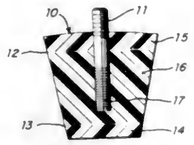
and an elongated pawl pivoted at its upper end to said lever on an axis located above one of said side walls, said pawl having a hook at its lower end, said pawl being bowed away from said side wall thereby

causing said hook to swing toward said side wall beyond a vertical projection of the pivot axis of said pawl,



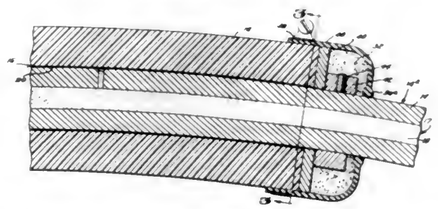
said last named side wall having a plurality of vertically spaced notches engageable by said hook.

3,157,934
CORE MEMBER
Frederick P. Williams, 713 N. Euclid Ave., Dayton 7, Ohio
Filed Apr. 28, 1961, Ser No. 106,404
3 Claims. (Cl. 25—128)



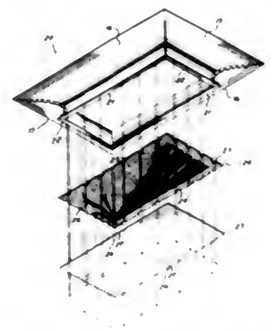
3. For use with structure having a concrete forming surface, a core member consisting of a solid body of high molecular weight material provided with a transversely extending solid end portion consisting entirely of relatively soft, readily deformable, flexible, resilient material adapted to engage the concrete forming surface and to conform to any irregularities thereof as the end portion firmly seals against the surface, the core also having a transversely extending solid second portion which joins the end portion, the second portion being relatively rigid and hard and resistant to deformation, the second portion being spaced from said concrete forming surface, support means secured to the second portion.

3,157,935
CLOTH EXPANDING ROLL MECHANISM
Clifford W. Birch, Lexington, Mass., assignor to Birch Brothers, Inc., Somerville, Mass., a corporation of Massachusetts
Filed Sept. 25, 1962, Ser. No. 226,111
3 Claims. (Cl. 26—63)



1. Apparatus of the class described, including a frame, a bowed shaft fixed on the frame in the path of travel of a liquid bearing web, a flexible expander sleeve mounted around the bowed shaft having an inner diameter greater than the outer diameter of said shaft to define an annular clearance therebetween and rotatable when engaged by the traveling web, said shaft being formed with a centrally located compartment and having a reservoir of solid lubricant therein, orifice means for transferring lubricant from said reservoir through the periphery of the bowed shaft to provide in the clearance between the shaft and expander sleeve a thin layer of lubricant which is constantly displaced in directions axially of the shaft during rotative movement of the expander sleeve around the bowed peripheral surface of the shaft due to compression of the expander sleeve towards the shaft, a pair of resilient sealing boot members secured around opposite outer ends of the expander sleeve and rotatable therewith, a pair of plate elements located around the shaft and in abutting relation to opposite ends of the expander sleeve to resiliently confine lubricant in the thin layer between the bowed shaft and flexible expander sleeve, said plate elements being supported for rotation with respective boot members and said sealing boot members having reduced sealing ring portions sealably engaging around adjacent surfaces of the bowed shaft and spaced from the plate elements to form chambers in which small volumes of lubricant are resiliently confined, and lubricant passages connecting the boot chambers and the thin layer of lubricant between the expander sleeve and shaft.

3,157,936
SIMULATED UPHOLSTERY FOR CASKETS
George Carl Hillenbrand, Batesville, Ind., assignor to Batesville Casket Company, Inc., Batesville, Ind., a corporation of Indiana
Filed May 8, 1962, Ser. No. 193,090
3 Claims. (Cl. 27—19)

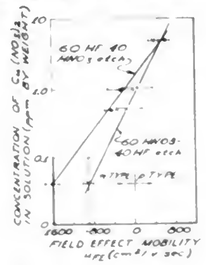


1. A simulated upholstery insert for caskets comprising roll members in engagement at their ends to form a frame, each said roll member having a flange at its inner edge, a flat paperboard panel backing member stapled at a plurality of positions to said flanges, and a decorative plastic sheet stapled centrally to said backing member and having its peripheral edges sandwiched between the edges of said backing member and said flanges, said sheet having slots in its edges formed at the location of said staples whereby said panel is free to expand and contract without bowing.

3,157,937
METHOD OF MAKING A SEMICONDUCTOR DEVICE
Richard J. Billette, Excelsior, and Stanley R. Morrison, Hopkins, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Sept. 30, 1960, Ser. No. 59,759
8 Claims. (Cl. 29—25.3)

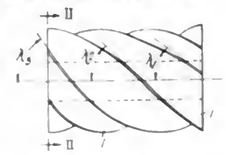
4. The method of treating the base surface of an etched germanium junction semiconductor device for assuring a substantial matching of the surface characteristics and the bulk characteristics thereof when in the finished state, said method comprising the steps of immersing said device in a bath consisting essentially of

cupric ions ranging in concentration from about 1 to about 50 parts per million of copper to drive said surface characteristics in the p-type direction relative to said bulk



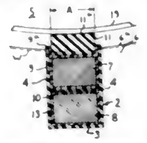
characteristics and applying a forward electrical bias to said junction with respect to said base during said immersion to prevent said driving influence of said cupric ions in the area of said junction.

3,157,938
CYLINDRICAL MILLING CUTTERS
Amar Jit Parkash Sabberwal, Denton, near Manchester, and John Hatton, West Gorton, Manchester, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Sept. 18, 1962, Ser. No. 224,387
Claims priority, application Great Britain, Sept. 22, 1961, 34,101/61
5 Claims. (Cl. 29—103)



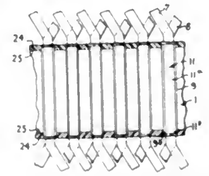
1. A cylindrical milling cutter comprising a central body portion and at least one cutting tooth supported on said central body portion, said cutting tooth being provided with a cutting edge which extends helically about the outer periphery of said central body portion, the helix angle of said cutting edge decreasing continuously from its leading end to its trailing end.

3,157,939
METHOD OF INSULATING AND RETAINING CONDUCTORS IN SLOTS
Roy L. Balke, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Apr. 6, 1961, Ser. No. 101,166
5 Claims. (Cl. 29—155.5)



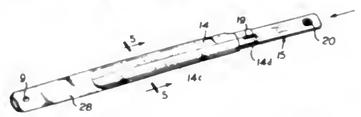
5. The method of insulating and retaining conductors in open top conductor-receiving slots of electrical members which comprises: inserting electrical insulating material into each of said slots to provide a slot-liner therefor whose edges extend to at least the open top of the slot; inserting electrical conductors into each of the slots so lined; providing an electrically insulating top stick dimensioned for loose insertion on top of the conductors in each of said slots; applying an electrically insulating bonding material between the top of said electrical conductors and the surface of said top stick adjacent thereto; temporarily retaining inserted top sticks as successive top sticks are being inserted into the remaining slots; applying a compressive force to the top surface of each of said top sticks simultaneously to seat said top sticks and said conductors a predetermined depth into said slots; at least partially curing the bonding material between said top stick and said conductors to bond the top stick and the conductors in each slot together; and maintaining said compressive force on the top surfaces of said top sticks while subjecting said electrical member to a resin impregnation and curing treatment.

3,157,940
METHOD OF INSULATING AND RETAINING CONDUCTORS IN SLOTS
Donald W. Underwood, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Apr. 6, 1961, Ser. No. 101,167
3 Claims. (Cl. 29—155.5)



1. In the manufacture of dynamoelectric machines having a stator with open slots therein communicating with the bore of said stator and adapted to receive conductors therein, said stator having surfaces defining the ends thereof, a method of insulating said slots and retaining conductors therein comprising, lining each of said slots with insulating material having portions extending at least to the stator bore, and a small distance beyond said end surfaces, inserting conductors in said slots, closing said slots by inserting insulating top sticks of essentially the same length as said lining means into each of said lining means having a slip fit therewith on top of said conductors and retaining said top sticks therein as successive top sticks are inserted, simultaneously applying a compressive force to the top sticks on the stator bore side thereof to properly seat said conductors and said top sticks in said slots, applying an annulus of bonding material to at least one of said stator end surfaces including said conductors, lining means, and top sticks extending from each slot to secure together and to the stator said conductors, lining means and top sticks.

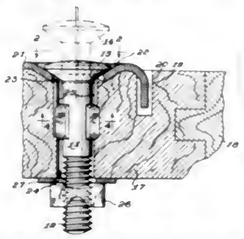
3,157,941
DEVICE FOR INSERTING TABS INTO IDENTIFICATION BRACELETS
James C. White, Bronx, N.Y., assignor to Propper Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York
Filed May 4, 1962, Ser. No. 192,412
3 Claims. (Cl. 29—241)



1. An inserting device for inserting an identification tab into a band of an identification bracelet, comprising a relatively stiff longitudinally extending member having

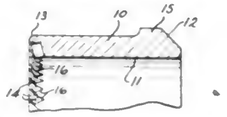
a rounded forward end substantially corresponding to the contour of one end of the tab and a clip spaced from said forward end a distance substantially corresponding to the length of the tab, said clip having a first portion laterally spaced from the plane of said member a distance substantially corresponding to the thickness of a single tab and opening towards said forward end to releasably secure said tab and a second portion which extends between and connects the first portion of the clip to the surface of the said member, said second portion of the clip being an abutment for applying pushing force to said tab during insertion thereof into said bracelet.

3,157,942
METHOD OF APPLYING SECURING MEANS
John A. MacLean, Jr., Winnetka, Ill., assignor, by mesne assignments, to MacLean-Fogg Lock Nut Co., Chicago, Ill., a corporation of Delaware
Filed Feb. 1, 1960, Ser. No. 5,586
1 Claim. (Cl. 29—432)



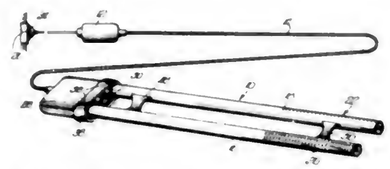
In the method of securing a concentrically prebored and countersunk sheet metal protective wear plate in flush surface contact with a planar wood floor of a railway car by a bolt having a finned shank of a diameter materially smaller than said bore in said plate, said shank being threaded at one end and having a head at the other end which head has a smooth frusto-conical surface adjacent the shank and corresponds in contour to the countersink in said wear plate, and said shank having thereon at a position between the threads and the head a pair of diametrically opposed radially projecting fins which extend longitudinally of the bolt shank and whose span radially of the shank is also smaller than the diameter of said bore; the steps which follow the placement of said wear plate in position on the planar wood floor comprising indiscriminately drilling through said countersunk bore in the wear plate and providing an oversize bolt hole through the subjacent wood floor having a diameter smaller than the bore and the radial span of said fins on the bolt shank and materially larger than the diameter of said bolt shank for lateral movement of the bolt shank therein, inserting the threaded end of the bolt shank through said countersunk bore and into said oversize bolt hole in the wood floor, rotatively positioning said bolt to a position in which the radial plane of said fins extends laterally of the peripheries of the said oversize belt hole and countersunk bore at the point on said peripheries at which they approach one another most closely, then driving the finned shank of said bolt into said oversize bolt hole in said rotated position to cause the fins thereof to cut into the wall along the oversize bolt hole in said wood floor, drawing the bolt down tightly against the wear plate to bring the frusto-conical surface of the bolt head into engagement with the countersink in the wear plate to thereby and thereafter force alignment of the axis of the bolt with the axis of the bore in the wear plate by causing the finned bolt shank to correspondingly shift in said oversize bolt hole in the wood floor by one fin cutting deeper into said wall and the other receding in the plane thereof as the bolt is drawn down to final flush seating of its head in said wear plate.

3,157,943
METHOD FOR FORMING CUTTER RINGS
Paul D. Wurzburger, Cleveland Heights, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Original application Feb. 11, 1959, Ser. No. 792,507, now Patent No. 3,092,405, dated June 4, 1963. Divided and this application Nov. 16, 1961, Ser. No. 152,761
2 Claims. (Cl. 29—541)



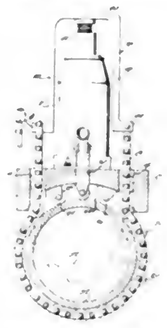
1. A method of forming cutter rings for tube couplings with teeth having cutting edges comprising the steps of forming a metal ring with a bore and a smooth face adjacent thereto from metal which work hardens, pressing said face against a tool having complemental teeth formed therein coining the metal of said ring at the radially inner portion of said face and plastically flowing such metal to form work hardened teeth while leaving the radially outer portion of said face unworked, and thereafter cutting away metal displaced radially inward within said bore by such flowing thereby forming sharp axially facing cutting edges on said teeth.

3,157,944
POWER OPERATED SHAVER HAVING REVERSIBLE CUTTERS
Robert N. Stoehr, 2844 18th St. B, Moline, Ill.
Filed Apr. 13, 1962, Ser. No. 187,431
2 Claims. (Cl. 30—43.6)



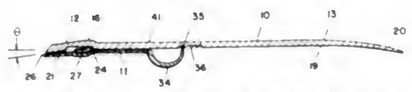
1. A shaver for use in cooperation with a shaving lather or the like to cut a beard which includes a housing having mounted therein power transmitting means, two longitudinally extending, tubular shaving heads attached to said housing, each of said shaving heads having therein a cutter which is connected to a shaft, each of said shafts being connected to said power transmitting means, an electric motor connected to a coaxial, flexible cable, said cable transmitting rotational power from said motor to said power transmitting means, said power transmitting means including means to rotate said cutters in opposite directions, each of said shaving heads having a shaving area having a plurality of holes which extend through said shaving heads and communicate with the interior of said shaving heads, each of said cutters having helically disposed, outwardly extending cutting blades with two cutting sides thereon, said blades having outer edges which conform substantially to the contour of said interior of said shaving heads whereby hair extending through said holes in said shaving area is cut off by said cutting blades and said lather enters said shaving head to lubricate between the shaving head and the cutting blade, each of said cutters having first and second ends, means on each of said first and second ends for connecting the respective cutter to its associated shaft whereby said cutter may be reversed to utilize both cutting sides of its blades.

3,157,945
CHAIN TYPE PIPE CUTTER
Rueben P. Picking, 2148 W. Cris Ave., Anaheim, Calif.
Filed Mar. 20, 1963, Ser. No. 266,551
3 Claims. (Cl. 30—101)



1. In a pipe cutter including a chain having cutting wheels arranged in spaced relation therealong, a base, spaced means operatively connected to said base for securement thereto of end portions of said chain, said means including a yoke having outturned ends engaged with said chain, and a pair of cutting wheels arranged in aligned relation with respect to each other and in alignment with respect to the cutting wheels of said chain, said pair of cutting wheels being rotatably mounted on said base, a third cutting wheel disposed on said base in the space between the wheels of said pair of wheels, said third cutting wheel being operatively connected to said base for movement toward and away from said pair of cutting wheels, and means adjustably securing said third cutting wheel in any position of its movement, said base including a pair of openings defining guide means for the chain.

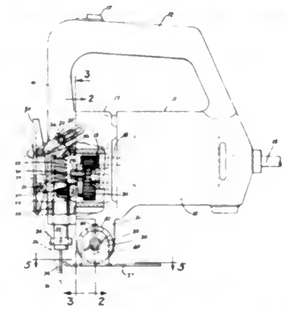
3,157,946
SCRAPER AND CUTTER
Florian Smecko, 1351 Wingra Drive, Madison, Wis.
Filed Nov. 13, 1962, Ser. No. 237,091
13 Claims. (Cl. 30—169)



1. A scraper of the removable blade type consisting of a removable blade and two elements, each of said elements having one of its ends formed in the general outline of said removable blade to serve as a blade support surface, one of said two elements having its blade support surface contoured to engage said blade and being slidable relative to the other element to move said blade and thereby adjust the distance an exposed portion of said blade extends beyond the adjacent end of said other element, and means to lock said slidable element in one of a plurality of preselected positions.

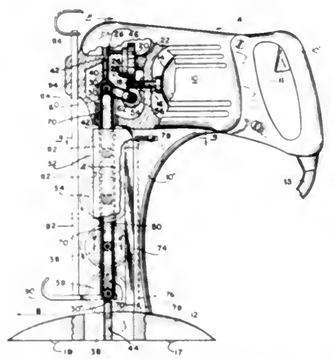
3,157,947
POWER CHISEL
Kenneth H. Oleson, 600 Superior St., Storm Lake, Iowa
Filed Nov. 13, 1962, Ser. No. 236,916
5 Claims. (Cl. 30—273)

1. A reciprocating tool structure comprising a frame, a rotary power means secured to said frame, a rotatable drive member secured to and supported by said rotary power means, a pair of spaced apart rotatable elements connected in driving engagement with the rotatable drive member for rotation in opposite directions on parallel axes on said frame adjacent the drive member, a shaft slidably mounted in said frame adjacent to said rotatable elements, a lift plate secured to said shaft, a pair of followers, one such followers being secured to each of said rotatable elements and both followers engaging said lift plate in the portion of the circular path of said followers when said followers rotate in an upward direction,



a spring secured to said shaft and said frame to apply spring tension to said shaft in a downward direction, said rotary power means rotating said drive member whereby both of said rotatable elements carry said followers on a path commencing below said lift plate and engaging it from the underside, lifting it for a time and then releasing it as said followers move beyond the end of said lift plate, said shaft including a portion extending beyond said frame and means for securing a cutting tool to the portion of said shaft projecting beyond said frame.

3,157,948
SHEET CUTTING MACHINE
Harry M. Schwartz, 5310 Lynview Ave., Baltimore 15, Md.
Filed June 6, 1963, Ser. No. 286,053
3 Claims. (Cl. 30—273)



1. A sheet cutting machine comprising in combination:
(*a*) a base having a convexed upper surface;
(*b*) a narrow vertical supporting standard having one end fixed to the base and extending upwardly therefrom;
(*c*) a motor housing fixed to the upper end of the standard having an electric motor including a rotatable shaft supported within the housing and extending toward the front of the machine;
(*d*) a vertical reciprocal bar reciprocating in front of

and in a plane with the standard having means for maintaining the bar in a vertical alignment with the standard;

(*e*) a vertical positioned bearing positioned adjacent the front of the motor housing supporting the upper end of the bar and a vertical positioned bearing positioned adjacent the lower end of the vertical reciprocating bar and in front of the standard supporting the lower end of the bar during its reciprocating motion;

(*f*) a plurality of circular cutting elements closely and equally spaced in a vertical plane and rotatably supported upon and along the vertical bar and reciprocating therewith and having their cutting edge on the opposite side of their axis from the supporting standard, and the cutters being rotatably secured to the bar in the same vertical plane and in a vertical plane parallel and adjacent that of the reciprocating bar;

(*g*) means cooperating between the rotatable motor shaft and the reciprocal bar for reciprocating the bar through a distance substantially equal to one-half the diameter of the circular cutter elements;

(*h*) means operatable by the rotatable motor shaft and extending along the bar for rotating the rotary cutter elements;

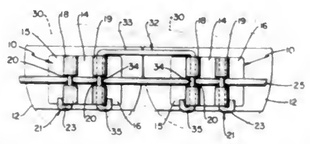
(*i*) the base having a narrow slot in the same plane with the rotating cutter elements and of such depth as to receive substantially one-half the diameter of the lower rotor cutter;

(*j*) the bar reciprocating means lifting the lower rotor cutter to a highest point where the outer circumference thereof is slightly below the plane of the top surface of the base;

(*k*) a driving means for said rotary cutters extending vertically along and adjacent the bar and means at the upper end of the reciprocating bar for operating the cutter driving means at a substantially constant speed, a single fixed drive engaging means carried by each of the cutter elements for engaging the vertical driving means for rotating the cutters;

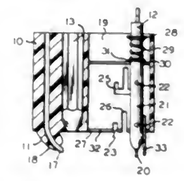
whereby the front edge of the rotary cutters is always in contact with the material from the upper surface of the base to the upward position of the upper rotary cutter and at a constan speed.

3,157,949
SEGMENTED ARCH WIRE BRACKET
William A. Elsasser, 511 El Cerrito Plaza, El Cerrito, Calif.
Filed Nov. 13, 1961, Ser. No. 151,738
2 Claims. (Cl. 32—14)



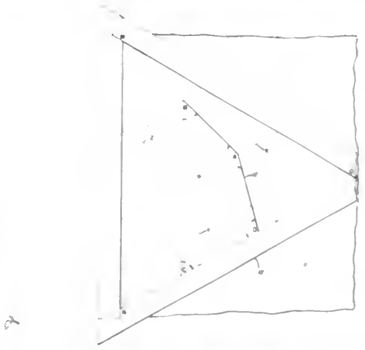
1. In combination, a plurality of brackets and a connecting pin for interconnecting adjacent brackets in connected relation to a pair of teeth thereby to apply correctional forces to the teeth, each bracket comprising a base portion for attachment to a tooth band, vertical connecting pin-receiving channels arranged in spaced horizontal relation on said base, said channels having aligned slotted areas accommodating an arch wire therein, each connecting pin extending between adjacent brackets and including anchoring means at each end inserted in a respective channel on adjacent brackets and locked therein retaining the arch wire in said slotted areas.

3,157,950
DEVICE FOR SIMULTANEOUSLY RULING A PLURALITY OF LINES
Lee G. Duncan, 2983 Ringle Road, Chamblee, Ga., and Harold D. Jones, Jr., 711 Candler Bldg., Atlanta, Ga.
Filed June 15, 1961, Ser. No. 117,337
6 Claims. (Cl. 33—41)



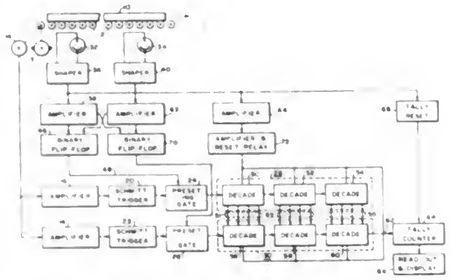
1. A writing device comprising, in combination, an adapter unit having a fixed writing element with a writing point, an elongated chamber with an upper shoulder and a lower shoulder on each elongated side and slots in each elongated side, and a channel between said fixed writing element and said elongated chamber; a writing instrument inserted into the channel and having its single writing point adjacent to the writing point of the fixed writing element; a movable writing element positioned within the chamber in slidable contact with the upper shoulder and lower shoulder on each elongated side of the chamber and having pins extending through the slots in each elongated side of the chamber, said movable writing element having a flange and being fixedly but movably positionable with its writing point at either of two specific distances from the writing point of the writing instrument in the plane engaged by both the writing point of the writing instrument and the writing point of the fixed writing element or with its writing point above said plane; a spring surrounding a portion of the movable writing element and extending from the flange of the movable writing element to the upper shoulder on each elongated side of the chamber; and a guide integrally attached to the movable writing element and having a surface which is perpendicular to a straight line extending through the writing points of the fixed writing element, the writing instrument, and the movable writing element.

3,157,951
DEVICE FOR ORTHOGRAPHIC-ISOMETRIC PROJECTION
Wayne L. Shick, 1204 W. Charles St., Champaign, Ill.
Filed May 29, 1959, Ser. No. 816,964
4 Claims. (Cl. 33—77)



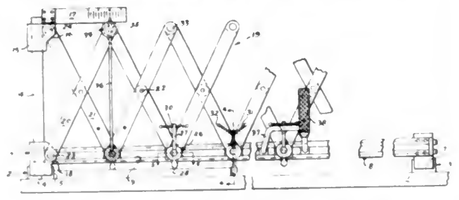
1. A device for the orthographic-isometric projection of an isometric view and of top, side and front orthographic views peripherally positioned within a hexagon having a first set of alternate interior angles of 150° with each of said views being positioned respectively at the apexes of a second set of alternate interior angles of 90° along reference lines formed by the sides of said hexagon adjacent said 90° interior angles which comprises an equilateral triangular frame comprising three interconnected legs constructed to circumscribe said hexagon, and a quadrangle sheet cooperating with said triangular frame and having an orthographic projection edge comprising an included angle of 150° and a pair of sides with the remaining interior angles being 105°, 60°, and 45°, respectively, said remaining angles being positioned clockwise from said 150° interior angle, the apex of said 150° interior angle lying on a locus parallel with a leg of said frame upon which the side of said quadrangle intermediate said 105° and 60° interior angles is abutting and at a distance one third of the altitude of said frame.

3,157,952
DIMENSIONAL GAGE
John F. Laycak, Duquesne, and Richard R. Webster, Bethel Park, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1962, Ser. No. 217,736
17 Claims. (Cl. 33—141)



1. Apparatus for measuring the edge-to-edge dimension of an article comprising first and second edge sensing devices spaced along said dimension, means for producing relative movement between the article and the sensing devices along a path extending parallel to said dimension whereby each sensing device will intercept both edges of the dimension being measured, the first of said devices to intercept an edge of the article being adapted to produce a first signal when it intercepts said edge and the second of said devices to intercept the same edge being adapted to produce a second signal when it intercepts said edge, means for producing an oscillatory signal having a frequency which varies as a function of the rate of said relative movement, a first counter for counting said oscillations after said second device intercepts said edge, a second counter for counting said oscillations, means responsive to said first signal from the first of said sensing devices for causing said second counter to count oscillations, and means responsive to said second signal from the second of said sensing devices for causing the second counter to stop counting oscillations, and presetting connections between the first and second counters such that the first counter will be preset to count the number of oscillations counted by the second counter between the occurrences of said first and second signals.

3,157,953
PICKET SPACING MECHANISM
Hyman Brier, 1423 Kumler Ave., Dayton, Ohio
Filed Dec. 5, 1960, Ser. No. 73,766
11 Claims. (Cl. 33—192)

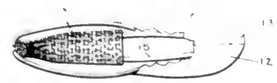


1. For use on a flat base, measuring and marking apparatus comprising parallel guide means, further guide means oriented at right angles to said parallel guide means, anchor means vertically mounted for movement longitudinally of said parallel guide means, said further guide means extending between and connecting to said anchor means for conjoint movement therewith, expansible means connected at one end to one of said anchor means and expansible towards the other of said anchor means, means slidably interconnecting said expansible means and further guide means to provide a straight line expansion of said expansible means and having therein means defining continuously equidistant points on said expansible means selectively and variably adjustable to transmit the positions of the points to the surface of an article oriented on the flat base.

ERRATUM

For Class 35—9 see:
Patent No. 3,157,955

3,157,954
SLIPPER
Mark L. Cunniff, 15 Woodland St., Holliston, Mass.
Filed July 5, 1962, Ser. No. 207,643
3 Claims. (Cl. 36—2.5)

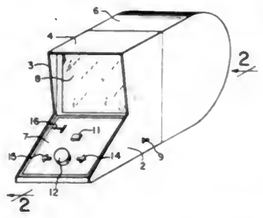


1. A slipper having an upper which has a counter, a heel and toe portions, said upper formed of two quarters of soft material, said quarters being seamed together in a lengthiwse direction at said toe portion and forming an inner and outer periphery, an elastic band sewn to the inner part of the lower periphery of at least the toe portion of said upper, an elastic web connecting both quarters and encompassing said heel and counter portions, whereby the quarters are spaced laterally for a substantial distance below their top margins at the rear of the slipper, and an innersole and an outersole extending from the toe portion completely around said counter and heel portions.

3,157,955
TEACHING MACHINE
Harry F. Pfeiffer, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 29, 1961, Ser. No. 120,607
6 Claims. (Cl. 35—9)

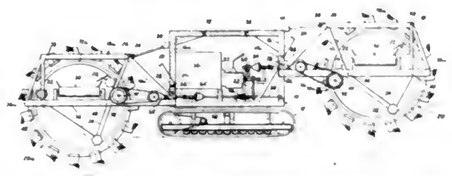
1. A teaching machine including; a movable film including a series of adjacent frames; an optical projector to

project light through said film; a viewing screen for receiving the projected image from said film; a manually operated mechanical linkage operatively connected to said film for transporting said film past said projected light; means for engaging and disengaging said mechanical linkage from said film; means including a shutter member for blocking out a portion of the image of said film from



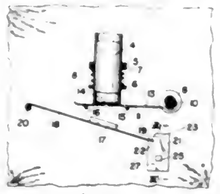
said viewing screen when said film is being transported between frames; a view control member for opening said shutter member, said view control member operatively connected to said means for engaging and disengaging said mechanical linkage from said film to disengage said mechanical linkage from said film when said shutter member is opened.

3,157,956
EXCAVATING MACHINE WITH FORE AND AFT VERTICALLY DISPLACED DIGGING UNITS
Vincent S. Penote, 18555 Parkland Drive, Shaker Heights, Ohio
Filed Mar. 13, 1962, Ser. No. 179,331
10 Claims. (Cl. 37—97)



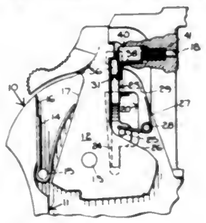
5. In a mobile excavating machine having a chassis, traction mechanism supporting said chassis for movement along the ground, an endless digging unit including a plurality of excavating buckets oriented about the outer periphery of the digging unit, means projecting generally longitudinally outwardly from the rearward end of said chassis and movably supporting said digging unit thereon adjacent the rearward end of the chassis, said means including means providing for selective positioning of said digging unit in a generally vertical plane and with respect to the traction mechanism, for varying the depth of excavation of the digging unit, the combination therewith of other means projecting generally longitudinally outwardly from the forward end of said chassis and another endless digging unit including a plurality of excavating buckets oriented about the outer periphery of said other digging unit, said other digging unit being movably supported on the last mentioned means adjacent the forward end of the chassis, said last mentioned means including means for selectively positioning said other digging unit in a generally vertical plane and with respect to the traction mechanism, for varying the depth of excavation of said other digging unit whereby said other digging unit may be positioned to dig at a shallower depth than the first mentioned digging unit, and means for simultaneously driving said digging units in a common direction to cause coincident excavating thereby.

3,157,957
BODY BORNE CHARGE FIRING ARRANGEMENT
Samuel Lewis, 670 Riverside Drive, Apt. 4G, New York, N.Y.
Filed Apr. 12, 1963, Ser. No. 272,638
4 Claims. (Cl. 42—1)



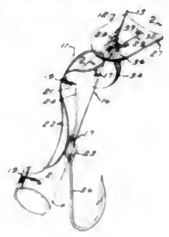
1. A charge firing arrangement comprising, in combination:
(*a*) a sleeve member;
(*b*) means for winding said sleeve member in a pliable loop about a body portion of a bearer under a predetermined transmitted pressure;
(*c*) fastening means on said sleeve member for fastening an explosive charge to a portion of said sleeve member;
(*d*) firing means on said sleeve member for firing said charge when fastened to said sleeve member portion; and
(*e*) trigger means responsive to an increase in the pressure transmitted between said loop and said body portion for actuating said firing means, said trigger means including
(1) a trigger member movable transversely of said loop and normally projecting therefrom in an inward direction toward said body portion when said sleeve member is fastened to said body portion, and
(2) yieldably resilient means permanently urging said trigger member to move in said inward direction.

3,157,958
HAMMER SAFETY FOR FIRE ARMS
Karl R. Lewis, Ogden, Utah, assignor to Browning Industries, Inc., Ogden, Utah
Filed Feb. 27, 1963, Ser. No. 261,336
8 Claims. (Cl. 42—70)



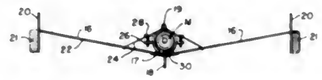
1. In a fire arm having a frame, a hammer pivotally mounted on said frame, a firing pin mounted on said frame and actuated by said hammer, abutment means mounted on said frame and engaging said hammer preventing said hammer from contacting said firing pin, a safety member movably mounted on said frame, means mounted on said safety member cooperatively engaging said hammer for movably positioning said safety member into alignment with said firing pin upon the cocking of said hammer in a prescribed manner, and cooperative holding means mounted on said safety member and said frame and retaining said safety member in alignment with said firing pin until said firing pin has been actuated.

3,157,959
FISH LURES WITH SINUOUS ACTION
Paul W. Anderson, 732 Central Ave., Alameda, Calif.
Filed Apr. 12, 1963, Ser. No. 272,623
3 Claims. (Cl. 43—42.03)



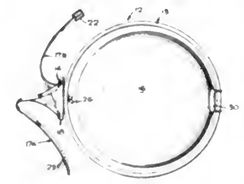
1. A head for a fishing lure comprising a rigid rod frame having a first end portion adapted for attachment to a lure, a second end portion inclined with respect to the first end portion, and an eye interconnecting the first and second end portions, a transversely upwardly curved rudder having a longitudinal axial slot adjacent one end and an axially aligned aperture adjacent the other end, said eye projecting freely through said slot and the second end portion of said frame being subjacent said rudder with the end of said second portion having a hook extending freely through said aperture, and a counterweight having a shank secured to the underside of said rudder in alignment with its longitudinal axis and forwardly adjacent said slot, said shank having a notch traversed by said second portion of said frame.

3,157,960
MODEL ROCKET-GLIDER
John F. Schutz, Canon City, and Vernon D. Estes, Penrose, Colo., assignors to Estes Industries, Inc., a corporation of Colorado
Filed July 23, 1962, Ser. No. 211,560
8 Claims. (Cl. 46—81)



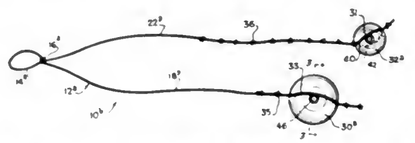
1. A model rocket-glider adapted to be propelled by a model rocket motor having a pyro-propulsion charge adapted to be jetted from the trailing end thereof and an ejection charge adapted to flare from the leading end thereof after the propulsion charge burns out, and comprising, in combination therewith:
(*a*) a longitudinally extended body section,
(*b*) a socket associated with the body adapted to receive and hold the rocket motor,
(*c*) an adjustable airfoil means adapted to be shifted to a first position to render the model suitable for flight as a rocket and to be shifted to a second position to render the model suitable for flight as a glider,
(*d*) a shiftable airfoil holding means adjacent to the socket associated with the rocket motor within the socket and adapted to be set at a holding position to hold the airfoil means at its said first position and to be shifted responsive to the burning of the ejection charge to thereupon release the airfoil means; and,
(*e*) an airfoil shifting means adapted to urge and to hold the airfoil means towards and at its said second position whenever it is released by the said holding means,
whereby, with the motor within the socket, the rocket-glider is set to fly as a rocket, as during the burning of the propulsive charge and upon the subsequent burning of the ejection charge the rocket-glider is set to fly as a glider.

3,157,961
AMUSEMENT DEVICE COMPRISING AN ECCENTRICALLY ROTATABLE BALL-LIKE OBJECT
Alford R. Payne, 2004 E. 119th St., Los Angeles 59, Calif.
Filed May 28, 1962, Ser. No. 198,370
4 Claims. (Cl. 46—51)



1. In a device of the type described, means adapted to be fastened about the body of a user, a hoop carried by said means, said hoop being mounted to extend outwardly of the body of the user, and a ball rotatably mounted at its periphery upon a portion of the hoop spaced from the body of the wearer, said ball being of smaller diameter than the inner diameter of the hoop whereby the ball may swing around and through said hoop.

3,157,962
TWIN BALL TOY WITH MEANS FOR ADJUSTING THE BALLS ALONG THE LENGTH OF A CORD
Rafael D. Bonnelly, 105 Haven Ave., New York 32, N.Y.
Filed June 11, 1962, Ser. No. 201,396
1 Claim. (Cl. 46—52)



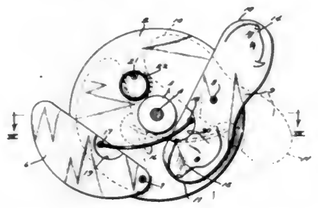
A twin ball toy, comprising a single cord having two series of spaced knots formed opposite free ends thereof respectively, and two spherical, flexible plastic balls on said free ends respectively, said balls having diametral bores with spaced enlargements, said free ends of the cord passing through the bores in the balls with the knots on the free ends seated in the enlargements of the bores so that the balls are adjustably positioned on the cord, each ball having a semicircular slit extending in a plane parallel to and terminating at the bore in the ball for inserting the cord into the ball and for removing the cord therefrom, and a knotted loop formed intermediate the ends of the cord for manual grasping while revolving the balls in differently directed circular paths, each of the balls having a different size, said knotted loop dividing the cord into two sections of unequal length, the larger one of said balls being engaged on the shorter one of the two sections and the smaller one of the balls being engaged on the longer one of the two sections.

3,157,963
ANIMATED TOY
John H. Snobeck, 336 W. Harding Road, Lombard, Ill.
Filed July 10, 1962, Ser. No. 208,807
6 Claims. (Cl. 46—107)

1. In an animated toy,
a pair of confronting discs,
spacer means between and secured to said discs,

a pair of spaced blocks freely pivoted between said discs, and

a stiff link connecting said blocks between said discs to



cause said blocks to move in unison with a portion of each block alternately projecting radially beyond the discs and assuming a position within the confines of said discs.

3,157,964

POLYMERIC COMPOSITIONS AND THEIR USE FOR SUPPLYING AND MAINTAINING PLANT MOISTURE

Carl S. Ferguson, Fort Lauderdale, and Roland D. Earle, Hollywood, Fla., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,637
32 Claims. (Cl. 47—1)

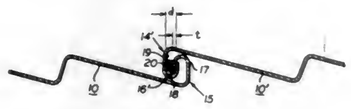
1. The method of supplying and maintaining plant moisture, which comprises coating at least part of a plant with a nontoxic, aqueous composition comprising water, a polyhydric alcohol humectant and a salt of an addition polymer of an alpha, beta-ethylenically unsaturated carboxylic acid, wherein said alpha, beta-ethylenically unsaturated carboxylic acid comprises from about 5 to 100 mole percent of the monomeric units in said addition polymer and wherein said addition polymer comprises from about 5 to 86 weight percent of the combined dry weight of humectant and addition polymer.

3,157,965

STRUCTURAL MEMBERS

George E. Watson, Dallas, Tex., assignor to Howe Sound Company, New York, N.Y., a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 104,879
3 Claims. (Cl. 50—201)



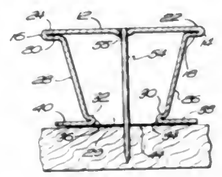
1. A preformed lock-joint structural assembly for sheathing, comprising a plurality of sheet material sections each having at its opposite longitudinal edges serially complemental interengageable members comprising non-deformable U-shaped channels, said channels having substantially parallel spaced legs, the terminal portion of a leg at each edge extending in a diametrically opposite direction to that at the opposite edge, the relative spacing of said legs being greater than the caliper of the material of said sections and providing for freedom of manipulation of a leg of one of said sections through an arcuate path relative to the leg of another previously assembled complemental section, a compressible resilient sealing member interposed in the terminal portion of one section and between a leg thereof and the leg of an adjacent section, the relative juxtaposed assembly of the faces of said legs serving to press the terminal portions of said sections into face-to-face relation and thereby distortably compress said resilient member between said juxtaposed faces of said legs to prevent leakage between the assembled sheathing members.

3,157,966

CONCRETE INSERT

Philip C. Sherburne, Rumford, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware

Filed July 10, 1961, Ser. No. 122,984
7 Claims. (Cl. 50—468)



1. A concrete forming construction comprising:

(A) a wood form for supporting concrete to be poured therein, said form including:

(1) a substantially flat surface,

(B) an elongate substantially channel shaped cross-sectioned insert secured to said form surface, said insert including:

(1) two spaced side wall portions defining a longitudinal gap adjacent said form surface,

(2) a top wall portion joining said side wall portions and spaced from said form surface a distance significantly greater than the thickness of the channel walls, said top wall portion including:

(*a*) an outer surface,

(*b*) an inner surface,

presented generally toward said form surface,

(*c*) at least one aperture through said top wall portion, said aperture,

(i) being defined by a peripheral edge formed by the intersection of the sides of a hole formed through said top wall portion and said outer surface of said top wall portion, and,

(ii) being slightly depressed below said outer surface,

(C) a driven elongate fastening means extending through said aperture and into said wood form and gripped thereby, said fastening means,

(1) being unsupported between said top wall portion and said form surface,

(2) being engaged and gripped about a portion of its periphery by a major extent of the circumference of said aperture,

(3) having a maximum cross-sectional dimension,

(*a*) considerably smaller than said gap defined by said side wall portions,

(4) having a portion which engages said peripheral edge of said aperture in a fit not exceeding a press fit,

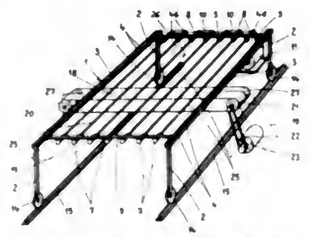
whereby, said fastening means may be readily drawn through said aperture in the direction of insertion upon removal of said wood form.

3,157,967

MACHINE FOR WORKING THE SURFACE OF ELONGATED WORKPIECES

André Paul Victor Lacheré, 13 Rue des Victor Tournelles, Annemasse, Haute-Savoie, France

Filed Apr. 25, 1961, Ser. No. 105,431
Claims priority, application France Apr. 25, 1960
8 Claims. (Cl. 51—144)



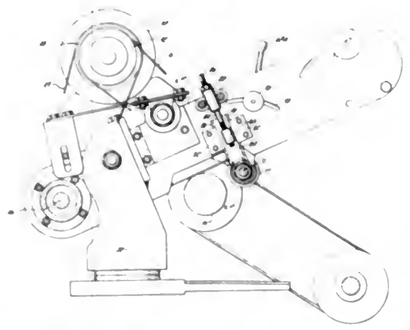
3. A machine for working the surface of elongated workpieces, comprising substantially horizontal rail means, a carriage provided with wheels supported on said rail means, a first and a second set of juxtaposed workpiece-holding elements rotatable about coplanar axes and disposed in mutual alignment at two locations on said carriage spaced apart in the direction of said rail means for substantially horizontally supporting between them a plurality of workpieces parallel to said rail means, drive means coupled with one of said sets for imparting rotation to said workpieces, an endless abrasive tape disposed in a direction substantially transverse to said rail means and provided with a substantially horizontal run having an operating surface close to the plane of said axes, a pair of rollers on opposite sides of said carriage embraced by said tape, a set of pressure elements positioned between said rollers close to said run for deflecting said operating surface toward said workpieces, a support for said pressure elements, mounting means for said support enabling vertical displacement of said pressure elements, operating means coupled with said support for changing the elevation of said pressure elements in a manner bringing said tape to bear upon said workpieces, and actuating means coupled with one of said rollers for driving said belt.

3,157,968

METHOD AND MEANS FOR BELT LAPPING AND FINISHING

Cyrus B. Kurtz, 3372 Mayfield Road, Cleveland, Ohio

Filed Sept. 9, 1960, Ser. No. 55,008
10 Claims. (Cl. 51—145)



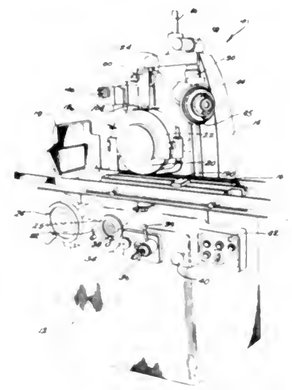
1. A machine for finishing the surface of a workpiece having a hard microscopically rough, cylindrical surface, which surface comprises elongated microscopic ridges rising above and between microscopic valleys whose bottoms are proximate the smoother and truer finished surface that is sought, said machine comprising means for rotating the work about a fixed axis with its surface coaxial thereof a light, flexible, abrasively charged belt for conveying abrasive particles across said surface in a plane approximately tangent to said intended finished surface and in clean cutting engagement with only the ridges of the rough surface and at high speeds as from about 8,000 to 12,000 feet per minute and in a substantially straight line and in a plurality of angular relations to said axis and with selectably restrained radial pressures upon and controlled engagement with said surfaces, means for supporting, tensioning and driving said belt with its work engaging strand held taut and substantially planar and engageable with said surface of the work tangentially thereof in approximately a line of contact parallel with the axis of the work, means for supporting said belt for pivotal movement about an axis parallel to said axis of the work about which said strand may be adjustably inclined and for pivotal movement about an axis normal to the path of said strand and about which the path of said strand may be adjustably rotated, means for moving said belt bodily toward and away from the work, and means spaced remotely ahead of said line of contact, in the sense of belt travel, for deflecting said strand from its said planar predisposition toward the work, and means disposed between said last named means and said line of contact for selectively restraining said deflection.

3,157,969

COMPENSATOR

William J. Fant and Adrain Van Wyk, Grand Rapids, Mich., assignors to Gallmeyer & Livingston Company, Grand Rapids, Mich., a corporation of Michigan

Filed Dec. 4, 1962, Ser. No. 242,209
6 Claims. (Cl. 51—165)

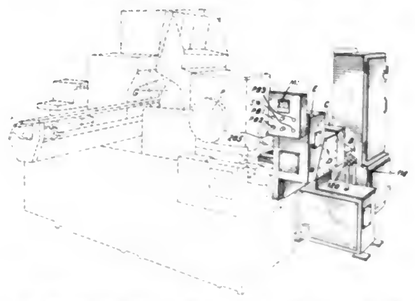


1. In a grinder, a workpiece support bed, and support means for a grinding wheel and wheel dresser adjustable with respect to said bed; grinding feed means to feed said wheel and dresser toward said bed to grind a workpiece; means including a stepping motor to feed said dresser towards said wheel controlled increments; a second stepping motor operably connected with said support means and independent of said grinding feed means to advance said grinding wheel and dresser independently of said grinding feed means; and electrical switch means operably connected with both of said stepping motors to simultaneously actuate both said stepping motors; said stepping motors and feed means being arranged to cause equal feeds thereof and thereby enable compensation of said wheel with dressing thereof, for wheel loss and wear.

3,157,970
GRINDER CONTROL

Don A. Cargill, Birmingham, Mich., and Avrel Mason, Moorestown, N.J., assignors to Cargill-Detroit Corporation, Clawson, Mich., a corporation of Michigan

Continuation of application Ser. No. 554,825, Dec. 22, 1955. This application Nov. 7, 1962, Ser. No. 236,766
19 Claims. (Cl. 51—165)

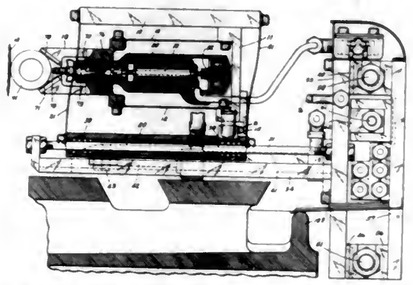


1. A uniform part size control system for a production machine having adjustable means for varying completed part size, characterized by means for gauging completed parts, means for producing distinguishable energy signals in response to deviations of the completed parts on either side of an exact nominal size, said last means being characterized by having a single null balance point corresponding to said nominal size on either side of which an energy signal is produced, and means responsive to said distinguishable energy signals for actuating said adjustable means, said last means being characterized by means for integrating all energy signals to produce required adjustment.

3,157,971
SIZE CONTROL DEVICE ADAPTABLE TO DIFFERENT DIAMETERS

Glenn M. Snyder, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.

Filed Feb. 7, 1963, Ser. No. 256,865
10 Claims. (Cl. 51—165)

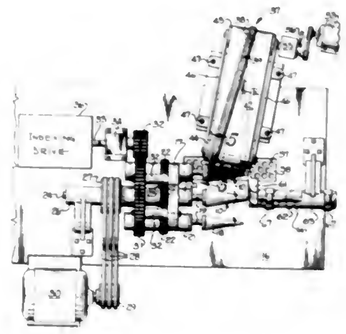


1. In a machine tool for successively machining axially spaced portions of a workpiece, each having a different diameter, means for rotatably supporting said workpiece, a cutting tool, a feed mechanism for advancing and retracting said cutting tool relative to said workpiece, a caliper movable into and out of engagement with said portions of said workpiece, means for exerting a uniform pressure of said caliper against successive portions of a workpiece regardless of diameter, comprising a caliper support member movable toward and away from said workpiece and means for moving said caliper support member, resilient elements for supporting said caliper on said support member, and co-acting control elements on said support member and on said resilient elements operable after said caliper engages said workpiece and in response to continued movement of said support member against said resilient elements, to stop said means for moving said support member.

3,157,972
METHOD OF TREATING PLASTIC SURFACES

James R. Spencer, Four Winds, Greave, Romiley, England, assignor to Sonoco Products Company, Hartsville, S.C.

Filed Nov. 26, 1962, Ser. No. 240,056
3 Claims. (Cl. 51—328)

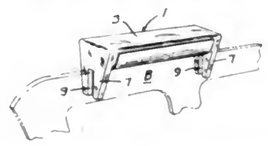


1. A method of treating the plastic surface of a tubular plastic article comprising the steps of, providing a strip of card clothing having upstanding, substantially identical wire teeth secured at one end thereto and arranged in laterally spaced relationship, said wire teeth being bent uniformly to provide an inclined free end portion on said teeth, engaging said plastic surface with said teeth and rotating said tubular plastic article relative to said teeth in a direction opposite from that of the inclined free end portion of said teeth with said teeth in engagement with said plastic surface to abrade said surface and produce a velvet-like slip-resistant finish thereon.

3,157,973
ICE SKATE SHARPENER

Howard G. Chattillion, 422 Dianne, Columbia, Ill.

Filed Feb. 15, 1962, Ser. No. 173,520
6 Claims. (Cl. 51—392)

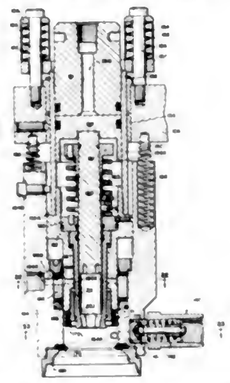


1. An ice skate sharpener comprising a body having an arcuate surface and provided with plate-like ends extending transversely of the arcuate surface and both slotted along a common radius of the arcuate surface, with the radially outer ends of the slots open, the slots being of suitable width to slidably receive the blade of the skate and the width of the arcuate surface being substantially greater than that of the slots, said arcuate surface mounting a sheet of flexibly-backed abrasive material.

3,157,974
APPARATUS FOR PRODUCTION PACKAGING OF AEROSOL PRODUCTS

Richard B. Stanley, Park Ridge, and Roy S. Rousseau, Mount Prospect, Ill., assignors to The Kartridg Pak Co., Davenport, Iowa, a corporation of Iowa

Filed Apr. 6, 1962, Ser. No. 185,644
21 Claims. (Cl. 53—88)



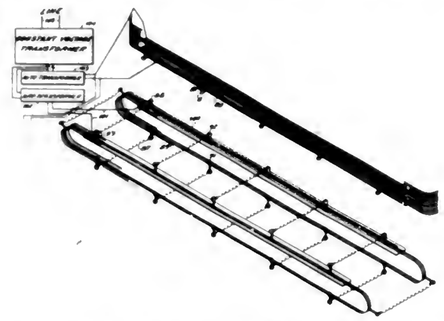
1. A filling and sealing machine comprising a mounting niche for receiving and supporting a container, said container having a top opening equipped with a cap loosely positioned therein, a head positioned above said niche, driving means for jointly moving said head and niche along a prescribed path, first means on said head for producing a seal around the top opening of the container, second means connected through said head for drawing a vacuum in said container, third means on said head for engaging the cap and supporting the same in an elevated position above the top opening of the container, fourth means connected through said head for feeding a predetermined quantity of propellant into the container, said third means and said cap being raised above said container top opening by pressure of said propellant, fifth means in said head for lowering said third means to seat the cap in said top opening and for crimping the cap onto the container, and means responsive to joint movement of said container and mounting niche along said path for actuating said first, second, third, fourth and fifth means in predetermined sequence.

3,157,975
SEALING APPARATUS

Frank Altman, Jr., Dearborn, Mich., assignor to Eagle-Picher Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 16, 1961, Ser. No. 89,689
5 Claims. (Cl. 53—379)

1. Apparatus for conveying and sealing goods comprising a support, two spaced threaded rods rotatably mounted in said support, a pair of spaced frame members mounted on said threaded rods and being movable toward and away from each other upon rotation of said threaded rods, a pair of longitudinally spaced vertical shafts mounted on each of said frames, cog pulleys mounted on said shafts, cog type conveyor belts drivably connected to said pulleys, a pair of horizontal splined shafts rotatably mounted on said support below said pulleys, cog pulleys mounted on said horizontal shafts, a horizontal cog type conveyor belt mounted on said puleys, timer pulleys fixed to each of said horizontal and vertical shafts, timer belts passing around said cog pulleys to synchronize movement of all conveyor belts, aligned longitudinally spaced beaters disposed on all conveyor belts, means electrically connecting all heaters on respective belts in parallel, spaced commutator strips mounted adjacent the inner surface of each said conveyor belt, means electrically

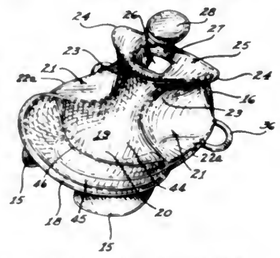


connecting at least some of said heaters to said commutator strips, and means for connecting said commutator strips to a source of voltage.

3,157,976
SADDLE CONSTRUCTION

Rex Cooper Ellsworth, 3985 Schaefer Ave., Chino, Calif.

Filed Sept. 18, 1961, Ser. No. 138,823
2 Claims. (Cl. 54—44)



1. A saddle comprising in combination:
(A) back portions,
(B) front portions,
(C) laterally spaced horseback engaging pads extending between said back and front portions,
(D) a seat portion formed in said saddle characterized by a broad totally closed concave bottom having forwardly and rearwardly upwardly sloping seat surfaces extending from the center depressed portion of said concave seat bottom portion,
(E) a high cantle above said back portion sloping forwardly and downwardly to and merging with the rearward upper portion of said rearwardly upwardly sloping seat surface of said seat portion,
(F) and side jockey portions formed integral with the forward part of said seat portion including laterally extending substantially horizontal surfaces having downwardly rounded side edges to provide a maximum area of upward and laterally outward support for the thighs of a rider immediately forward of the seat portion so as to allow free lateral outward swinging of the rider's legs for maximum comfort for the rider.

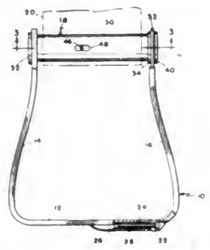
3,157,977
SAFETY STIRRUP

John D. Kitchingham, Jr., 2908 Myrtle, San Diego, Calif.

Filed Aug. 20, 1962, Ser. No. 218,017
4 Claims. (Cl. 54—49)

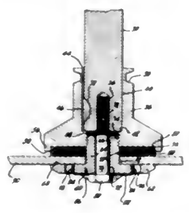
1. A safety stirrup, comprising:
a transverse lower foot rest;

an upwardly extending fixed side arm on one side of said foot rest;
an upwardly extending release arm pivotally attached to the other side of said foot rest;
a cross bar fixed at one end to the upper end of said fixed side arm;
the pivotal axis of said upwardly extending release arm



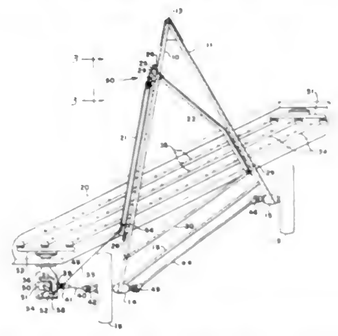
being generally parallel to the axis of said cross bar;
a plunger axially slidably mounted in said cross bar;
said plunger having a retaining plug engageable with the upper end of said release arm;
and means biasing said plunger to hold said release arm on said retaining plug until released by a predetermined force on the release arm.

3,157,978
LOCKING HUB FOR A ROTARY DISC LAWN MOWER BLADE
Frederick L. McMullen, 179 S. West Ave., Hillsdale, Mich.
Filed June 5, 1963, Ser. No. 285,743
9 Claims. (Cl. 56—295)



1. A locking hub blade adapter for a rotary lawnmower comprising, in combination, a driven shaft having an end, a flange member, a first bore defined in said flange member adapted to fixedly receive said end of said driven shaft, a threaded bore defined in said flange member concentric with said first bore, a radially extending lower surface defined on said flange member, a lock cap, a radially extending flange defined on said lock cap having an upper and a lower surface, a threaded stem defined on said lock cap adapted to matingly cooperate with the threads defined in said threaded bore of said flange member, a concentric, threaded bore defined in said end of said shaft, a bore defined in said lock cap concentrically extending through said stem, a threaded lock bolt extending through said lock cap bore mating with the threads of said threaded bore defined in said shaft, a shoulder defined on said bolt adapted to operatively abut said lock cap lower surface upon tightening of said bolt into said shaft, the threads of said stem and said lock bolt being of like hand and different pitch, the pitch of the threads of said stem being greater than that of the threads of said lock bolt, a rotary mower blade being adapted to be clamped between said lower surface of said flange member and the upper surface of said lock cap.

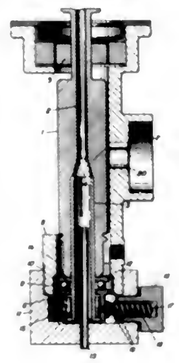
3,157,979
HAY RAKE
Roland P. Gehman, Akron, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 15, 1963, Ser. No. 280,518
2 Claims. (Cl. 56—377)



1. A side delivery hay rake comprising a frame adapted to be towed behind a tractor, a ground engaging wheel mounted on said frame, a raking reel mounted on said frame, drive means connected to said reel and said wheel to drive the reel from said ground engaging wheel upon movement of the frame over the ground, said drive means including a clutch having an actuating member movable between a first position wherein said clutch effects driving engagement of said drive means and a second position wherein said clutch effects disengagement of said drive means, spring means biasing said actuating member to said first position, and control means to move said actuating member from its first position to its second position in opposition to the biasing force of said spring means and to lock said actuating member in said second position and prevent accidental driving engagement of said clutch during road transport of the rake, said control means comprising a lever, pivot means mounting said lever on said frame for pivotal movement between a first position and a second position, means operatively connecting said lever to said clutch actuating member to move the actuating member from its first position to its second position in opposition to said biasing spring means upon movement of said lever from its first position to its second position, a latch member having an elongated slot therein, said pivot means passing transversely through said slot and thereby mounting said latch member on said frame for sliding movement and pivotal movement relative to said pivot means, said latch member having a first portion and a second portion selectively movable, respectively, into engagement with said lever and said frame to lock said lever in its second position upon movement of said latch member to dispose said pivot means at one end of said slot, and said latch member being pivotal out of locking engagement with said lever and frame upon movement of said latch member to dispose said pivot means at the other end of said slot.

3,157,980
HOLLOW TEXTILE SPINDLE
André Edmond Eugène Kelecom, Uccle, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven), S.A., a corporation of Belgium
Filed May 23, 1963, Ser. No. 282,763
Claims priority, application Belgium, May 28, 1962, 618,171; Oct. 25, 1962, 624,035
11 Claims. (Cl. 57—18)

1. A textile spindle comprising a hollow vertically mounted spindle, an upper thrust and self-aligning bearing for said spindle, a resiliently mounted bottom bearing for said spindle, a cover member for said bottom bearing in which said bottom bearing is mounted to receive damping fluid covering said bottom bearing, and a tube mounted centrally in said cover member and extending into the interior of said hollow spindle to a height above the level of the fluid contained in said cover member.



3,157,981
TRAVELER FOR USE WITH SPINNING RINGS
Andrew J. Wayson, Needham, Mass., assignor to Merriman Bros., Inc., Boston, Mass., a corporation of Massachusetts
Filed Nov. 1, 1962, Ser. No. 234,692
8 Claims. (Cl. 57—125)

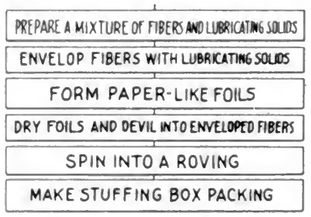


1. A traveler for use with a spinning ring, said traveler being made of a strip comprising two different materials extending longitudinally back-to-back and having at least one twist intermediate its ends, the ends bent toward each other to form hook portions and an interior face, whereby there will be different materials at different portions of the said interior face of the traveler.

3,157,982
PROCESS FOR MANUFACTURING CREPE FABRICS WITH MULTIFILAMENT TEXTILE YARNS OF SYNTHETIC ORIGIN
Albert Marcel Cyprien Alexandre, Saint-Pierre-de-Colombier, France
No Drawing. Filed Aug. 20, 1962, Ser. No. 218,133
Claims priority, application France Aug. 25, 1961
12 Claims. (Cl. 57—157)

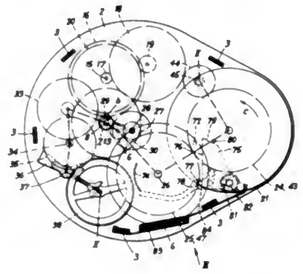
1. A process for producing crepe fabrics by the use of synthetic fibers highly twisted to form so-called crepe yarns, which comprises using at least some fibers free from any shrinkage in a crepe yarn for the fabrication operation and thereafter submitting the fabric obtained to a thermal treatment by steam for a short period at a temperature which produces a complete shrinkage without decomposition of the least heat resistant synthetic fiber used in said fabric, and keeping said fabric loose and unfolded during said treatment.

3,157,983
METHOD FOR THE MANUFACTURE OF STUFFING BOX PACKINGS
Rudolf Radke, 53 Am Schwalbenschwanz, Frankfurt am Main, Eschersheim, Germany
Filed Aug. 18, 1958, Ser. No. 755,450
7 Claims. (Cl. 57—164)



1. In a process for producing stuffing box packings made up of oriented fibers formed into yarns and solids having lubricating properties on said fibers, the steps which comprise preparing a mixture including staple fibers and lubricating solids in small flake form, the volume of the solids being at least 30% of the fibers and solids combined, forming a paper-like foil of the mixture and drying the foil, deviling the foil to form individual fibers, subsequently carding the fibers to form a sliver, intertwining the sliver into a yarn and forming the packing from said yarn in a suitable manner, whereby every individual fiber is substantially completely enveloped by the solids.

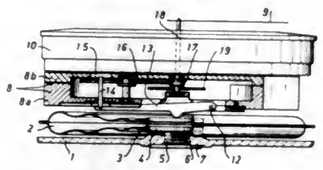
3,157,984
TIMEPIECE MOVEMENT FOR ELECTRIC METERS
Jean-Paul Vuilleumier and Pierre-Frédéric Pfister, Sonceboz, Switzerland, assignors to Société Industrielle de Sonceboz S.A., Sonceboz, Berne, Switzerland, a joint-stock company of Switzerland
Filed Aug. 13, 1962, Ser. No. 216,685
Claims priority, application Switzerland, Aug. 11, 1961, 9,442/61
11 Claims. (Cl. 58—26)



1. In a timepiece movement, in combination, a motion work, a synchronous motor adapted for running at speeds ranging between a minimum and a maximum value, but having a predetermined average value, first motion transmitting means including a first free-wheel mechanism and connecting said synchronous motor to said motion work for driving the same, a reserve mechanism adapted for running uninterruptedly, and second motion transmitting means including a second free-wheel mechanism and connecting said reserve mechanism to said motion work for driving the same, said reserve mechanism being adjusted so as to be able to drive said motion work at a predetermined speed lower than that at which said motion work is driven by said synchronous motor, when the same is running at a speed equal to said predetermined average value, but higher than that at which said motion

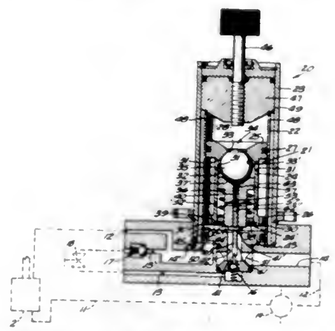
work would be driven by said synchronous motor, when the same is running at a speed equal to said minimum value.

3,157,985
WATCH INCORPORATING A BAROMETER
Willy Zenger, La Chaux-de-Fonds, Switzerland, assignor to Holding Favre Leuba S.A., Zug, Switzerland, a Swiss company
Filed Feb. 8, 1962, Ser. No. 172,001
Claims priority, application Switzerland, Feb. 11, 1961, 1,645/61
1 Claim. (Cl. 58—152)



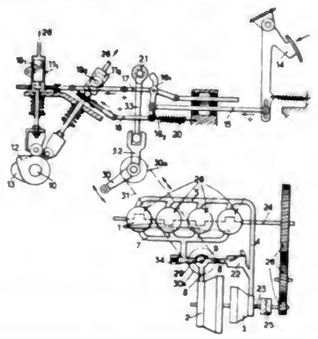
In combination with a watch movement and an aneroid barometer casing, the provision of a case enclosing the movement and the barometer casing in superposed relationship and including a bottom the central section of which is of an increased thickness and is tapped axially throughout, a connection between the barometer casing and the enclosing case, including a threaded cylindrical tenon raised axially on the outer surface of the lower wall of said casing and screwed into the tapped central section of the case bottom and a packing surrounding said tenon and fitted between the casing and the central section of the case bottom, and a flat cover-plate extending over the outer end of the tapping in said central section.

3,157,986
POSITIONING SYSTEM AND ITS CONTROL
Ralph R. Gordon, 5391 Ocean View Blvd., La Canada, Calif.
Filed Aug. 15, 1962, Ser. No. 216,997
15 Claims. (Cl. 60—10.5)



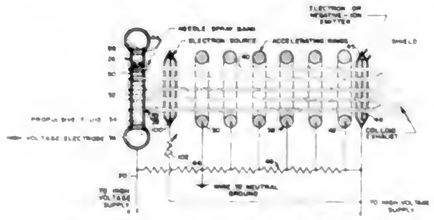
1. A precision positioning system adapted to operate reliably over a wide variety of conditions comprising:
(*a*) a positioning means for an object being manipulated, said positioning means being operated by fluid flow alternately into and out of its opposite sides;
(*b*) an adjustable valve means for directing fluid flow alternately into and out of the opposite sides of said positioning means, the first side of said positioning means being operatively connected directly to the first side of said adjustable valve means by a fluid conduit;
(*c*) at least a first and a second parallel fluid conduit, one pair of adjacent ends of said parallel fluid conduits being operatively connected to the second side of said positioning means and the other pair of adjacent ends being operatively connected to the second side of said adjustable valve means;
(*d*) a first check valve means in said first parallel fluid conduit adapted to normally permit fluid flow only from said adjustable valve means toward said positioning means;
(*e*) a second check valve means in said first parallel fluid conduit adapted to permit fluid flow only from said positioning means toward said adjustable valve means;
(*f*) a metering valve means in said first parallel fluid conduit adapted to permit fluid flow therethrough at a predetermined rate; and
(*g*) a regulating valve means in said second parallel fluid conduit, said regulating valve means comprising:
(I) a piston in a cylinder therein adapted to move freely through a stroke of predetermined length, said piston having a fluid conduit therethrough,
(II) a third check valve means in the fluid conduit in said piston adapted to permit fluid flow only in a direction from said positioning means toward said adjustable valve means,
(III) a first stop means mounted on said piston for arresting its movement at one end of its predetermined stroke and actuating means on said piston for opening said first check valve means when said piston is at said one end to permit fluid flow from said positioning means to said adjustable valve means in said first parallel fluid conduit, and
(IV) a second stop means mounted in said cylinder for arresting the movement of said piston at the other end of said predetermined stroke and means in said cylinder for opening said third check valve means to permit fluid flow from said adjustable valve means to said positioning means in said second parallel fluid conduit.

3,157,987
INTERNAL COMBUSTION ENGINES SUPERCHARGED BY MEANS OF A TURBO-BLOWER
Robert Pouit, 3 Rue Auguste Mayet, Asnieres, Seine, France
Filed Mar. 1, 1962, Ser. No. 176,683
Claims priority, application France Mar. 11, 1961
9 Claims. (Cl. 60—13)



1. In combination, an internal combustion engine having a shaft an intake space and an exhaust space, said engine being of the diesel type and having at least one cylinder and one piston slidable therein to form therewith a working chamber where fuel combustion takes place, first fuel injection means operatively connected with said shaft for feeding fuel into said chamber during a first period where the volume of said chamber is practically constant, second fuel injecting means operatively connected with said shaft for feeding fuel into said chamber during a second period where the pressure in said chamber is practically constant, a supercharger comprising a gas turbine and an air blower coupled with said turbine, a first conduit leading from said exhaust space to the intake of said gas turbine, a second conduit leading from the output of said blower to said engine intake space, a by-pass conduit leading from an intermediate point of said second conduit to an intermediate point of said first conduit, a valve in said by-pass conduit to control the flow of air therethrough, adjusting means for varying the relative value of the amount of fuel fed by said first fuel injection means with respect to the amount of fuel fed by said second fuel injection means, and control means operatively connected on the one hand with said valve and on the other hand with said adjusting means so as to increase the relative value of the amount of fuel fed during said second period with respect to the amount of fuel fed during said first period while reducing the degree of opening of said valve, and inversely.

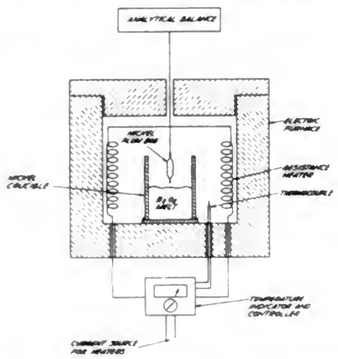
3,157,988
PROPULSION SYSTEM
Robert D. Schultz, Whittier, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Oct. 19, 1961, Ser. No. 146,099
12 Claims. (Cl. 60—35.3)



1. A method of creating thrust in a vacuum atmosphere comprising the steps of applying an electrical potential to a body of purified liquid having a vapor pressure not greater than 10^{-5} mm. Mg about 20° centigrade and an electrical conductivity greater than 6×10^{-8} mho/centimeter but less than 10^{-5} mho/centimeter, which is confined in a means having a minute openings; directing said charged liquid to the extremities of dispersion means associated with said openings, whereby charged liquid particles of colloidal size will be formed at said dispersion means extremities; directing negatively charged particles from an external source to said colloidal particles; ejecting said particles from said dispersion means in a beam; focusing and accelerating said beam particles; and neutralizing the effect of space charge on said beam of particles.

3,157,989
HIGH ENERGY FUEL AND METHOD OF MINIMIZING BORON OXIDE DEPOSITS
William H. Schechter, Zelienople, and David K. Eads, Allison Park, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 10, 1958, Ser. No. 714,427
9 Claims. (Cl. 60—35.4)

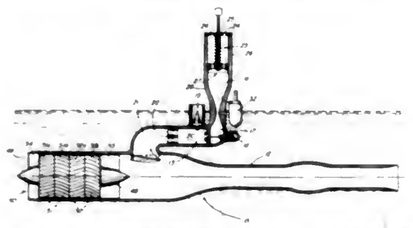
1. In a method of operating an engine wherein a boron containing fuel and an oxidizer therefor are introduced into a combustion zone of said engine and burned and the resulting exhaust from said combustion zone contains molten boric oxide which tends to build up along the exhausting zone of said engine, the improvement which comprises including in said fuel fed to said combustion zone an alkali metal component, in an amount of about 0.005 to 0.05 pound moles per pound atom of boron present which, after combustion of the resulting mixture, results in a solution of molten boric oxide of a viscosity lower than the viscosity of molten boric oxide alone.



3,157,990
METHOD OF OPERATING MONOPROPELLANT GAS GENERATORS AND PRECONDITIONING MIXTURE THEREFOR
James J. Ward, Los Angeles, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
No Drawing. Filed July 2, 1962, Ser. No. 207,101
8 Claims. (Cl. 60—35.4)

1. A preconditioning mixture for monopropellant gas generators which consists essentially of ethylene oxide having admixed therein 0.2% to 0.5% of a deposit-inhibiting additive selected from the group consisting of tricresyl phosphate and tributyl phosphate.

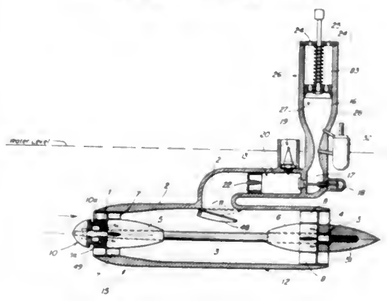
3,157,991
FLOW REGULATING DEVICE FOR JET PROPULSION ENGINE
Miklos Kemenczky, Maquoketa, Iowa, assignor to Kemenczky establishment, Vaduz, Liechtenstein
Filed Apr. 16, 1963, Ser. No. 273,336
5 Claims. (Cl. 60—35.6)



1. A jet propulsion engine for use on watercraft or as a fluid pump, comprising a thrust tube having a fluid inlet opening and a discharge opening, a combustion chamber with means for supplying a combustible mixture of fuel and air to said combustion chamber, an ignition means for igniting said fuel mixture in said combustion chamber, a discharge means for connecting said thrust tube with said combustion chamber so that the combustion gases from said combustion chamber may pass through said discharge means into said thrust tube to eject water from said thrust tube through said discharge opening and a flow regulating device com-

prising a plurality of turbine wheels in said thrust tube positioned on a common shaft, said flow regulating device permitting free flow of fluid into said thrust tube through one of said openings and having means for locking the turbine wheels in a stationary position, whereby the flow of fluid is inhibited, when the flow of fluid is in the opposite direction.

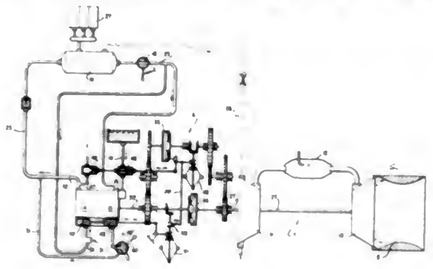
3,157,992
FLOW CONTROLLING DEVICE
Miklos Kemenczky, Maquoketa, Iowa, assignor to Kemenczky Establishment, Vaduz, Liechtenstein
Filed Apr. 16, 1963, Ser. No. 273,340
1 Claim. (Cl. 60—35.6)



A jet propulsion engine for use on watercraft or as a fluid pump, comprising a thrust tube having a fluid inlet opening and a discharge opening, a combustion chamber with means for supplying a combustible mixture of fuel and air to said combustion chamber, and an ignition means for igniting said fuel mixture in said combustion chamber, a discharge means for connecting said thrust tube with said combustion chamber so that the combustion gases from said combustion chamber may pass through said discharge means into said thrust tube to eject water from said thrust tube through said discharge opening and a flow controlling device comprising a pair of turbine wheels in said thrust tube positioned on a common shaft, the first of said turbine wheels having a greater moment of inertia than the second of said turbine wheels and being rigidly attached to said shaft downstream of said discharge means, the second of said turbine wheels being located in the forward position on the shaft near the inlet opening and being free to rotate independently of the shaft when the fluid pressure on the outside of said inlet opening is greater than the fluid pressure on the inside of said second turbine wheel, and said second turbine wheel being adapted to lock in place on said shaft to rotate in the same direction as said first turbine wheel when the pressure within said thrust tube is greater than the pressure outside the inlet opening of said thrust tube.

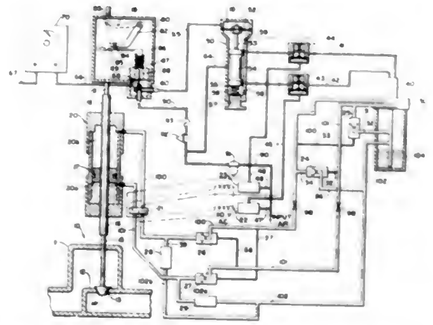
3,157,993
STARTER ARRANGEMENT
Peter Düttmann, Rommelshausen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 20, 1961, Ser. No. 153,377
Claims priority, application Germany, Nov. 26, 1960
5 Claims. (Cl. 60—39.14)

1. A starter system for starting a drive unit, especially for airplanes, comprising rotary piston starter means effectively providing a starter motor with a suction line as well as a compressor, compressed air tank means, line means operatively connecting said starter means with said compressed air tank means for starting said starter means by the contents of said compressed air tank means including valve means in said suction line operatively connecting said starter motor during starting thereof with said air tank means and operatively connecting said starter motor with the atmosphere during starting of said drive unit, means operatively connecting said starter means



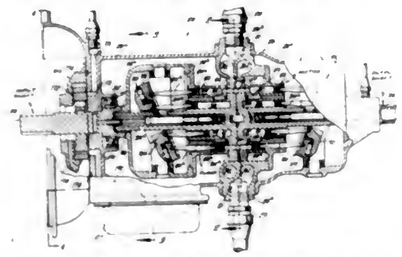
with said drive unit to start the latter by the former, and speed-responsive means for rendering said starter means operative as compressed air producer means during operation of said drive unit to cover the compressed air needs of the installation.

3,157,994
CONTROL SYSTEM
Warren H. Brand, Blue Bell, Pa., assignor to Conoflow Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 6, 1962, Ser. No. 207,943
19 Claims. (Cl. 60—52)



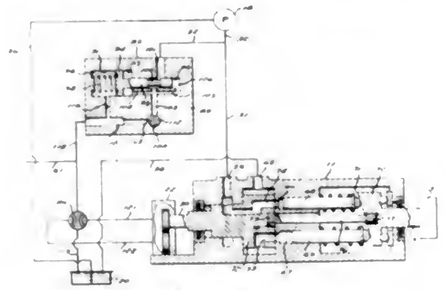
1. In a control system for a final control element, the combination comprising:
(A) a hydraulically powered motor adapted to be joined to said final control element,
(B) a hydraulic pump for supplying liquid under pressure to said motor,
(C) means connecting said pump and said motor for transmitting liquid under pressure from said pump to said motor,
(D) a second motor connected to said pump to drive said pump,
(E) variably movable apparatus for controlling the application of power to said second motor,
(F) continuously variable means for regulating said apparatus,
(G) means operative in response to variations in the value of a condition for adjusting said regulating means, and
(H) means adapted to be moved by said control element for readjusting said last mentioned means to neutralize changes imposed by said regulating means.

3,157,995
HYDROMECHANICAL POWER TRANSMISSION
John F. Swift, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed July 11, 1962, Ser. No. 209,149
11 Claims. (Cl. 60—53)



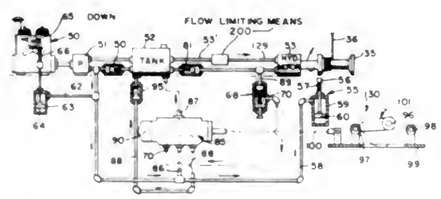
11. For an infinitely variable speed ratio hydromechanical transmission having an input shaft and an output shaft, a multi-cylinder hydraulic pump unit driven by said input shaft and a multi-cylinder hydraulic motor unit in drive relation with said output shaft, at least one of said units being of variable displacement with a tiltable swash plate axially rotatable with one of said shafts, said units being hydraulically interconnected operatively for transmitting power hydromechanically from said input shaft to said output shaft, a telemetric control with follow-up means for selectively varying the tilt angle of said swash plate comprising: a control body axially rotatable with said swash plate, a displacement control ram disposed in said body operatively connected for tilting said swash plate, a displacement control valve having an externally operable valve element communicatively connected to said ram, and a source of fluid pressure connected to said control valve for energizing said ram whereby said ram is energized to move said swash plate to a tilt angle corresponding to the position of said valve element for controlling the displacement of said unit.

3,157,996
HYDROSTATIC TRANSMISSION
Tadeusz Budzich, 3344 Colwyn Drive, Shaker Heights, Ohio
Filed July 18, 1962, Ser. No. 210,663
17 Claims. (Cl. 60—53)



1. A variable speed hydrostatic transmission for driving a rotatable load from a prime mover comprising a fluid motor having a stationary cylinder barrel with a plurality of cylinders therein, pistons reciprocable in each of said cylinders, an output shaft adapted to rotatably drive said load, a cam plate on said output shaft adapted to be rotated by said pistons on their outward strokes and to return said pistons on their inward strokes, a variable volume pump adapted to be driven by said prime mover, a pressure compensated control adapted to vary the volume of said pump, pressure and exhaust conduit means interconnecting said pump and said motor, valve means having pressure and exhaust zones connected to said conduit means and adapted to sequentially alternatively connect said cylinders with said zones, said motor having a rotatable input shaft angularly movable with respect to said output shaft and adapted to operate said valve means, and control motor means to rotate said input shaft whereby fluid pressure from said pump drives said load when said input shaft leads said output shaft and applies a braking force on said load when said input shaft lags said output shaft and said pressure compensated control varies the pump volume in response to the volume of flow through said motor to maintain substantially constant pressure in said pressure conduit means.

3,157,997
BUILDER'S HOIST
Michael Grunfeld, Los Angeles, Calif., assignor to Tubular Structures Corp. of America, Los Angeles, Calif., a corporation of California
Filed Nov. 8, 1962, Ser. No. 236,248
6 Claims. (Cl. 60—53)

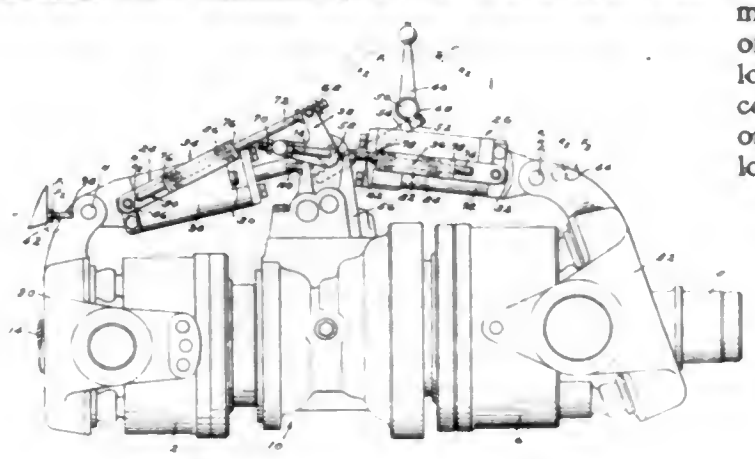


1. In a power hoist system including:
(*a*) a hydraulic pump;
(*b*) a reservoir for hydraulic fluid connected to said pump by conduit means;
(*c*) a hydraulic motor connected to said reservoir by conduit means;
(*d*) conduit means connecting said hydraulic pump and motor containing a first valve means, said first valve means
(I) being connected to said reservoir, and
(II) having an "up" position for raising a hoist in which said hydraulic pump delivers pressurized hydraulic fluid to said hydraulic motor and a "down" position for lowering said hoist in which said hydraulic motor acts as a pump delivering hydraulic fluid to said reservoir through said first valve means;
the improvement comprising a flow limiting means in the conduit between said reservoir and hydraulic motor adapted to restrict the flow of hydraulic fluid to said hydraulic motor when said first valve means is in a "down" position to an amount sufficient to lubricate said hydraulic motor but insufficient to prevent said hoist from coming down at a rate of substantially free fall.

3,157,998
HYDROSTATIC TRANSMISSION CONTROL
Dennis Harris, Birmingham, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 28, 1963, Ser. No. 261,681
Claims priority, application Great Britain, Mar. 19, 1962, 10,346/62
12 Claims. (Cl. 60—53)

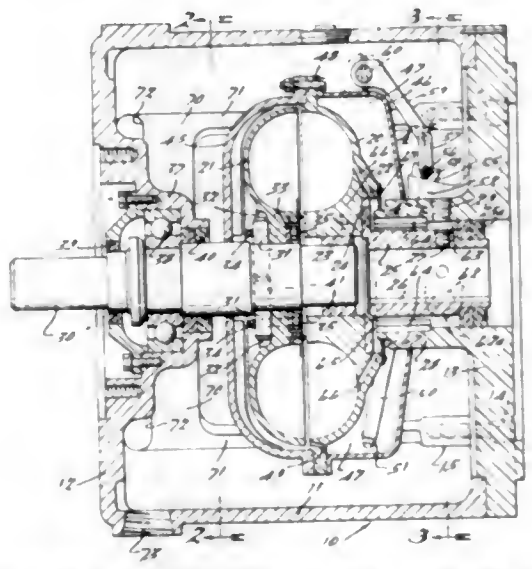
3. A fluid pressure operated servo system, including servo means, conduit means connected to said servo means and containing fluid under pressure, valve means in said conduit means movable to predetermined positions for

directing the fluid to different portions of said servo means, other means for moving said valve means, and extendable force transmitting means between said other



means and said valve means accommodating overtravel of said other means beyond positions placing said valve means in said predetermined positions.

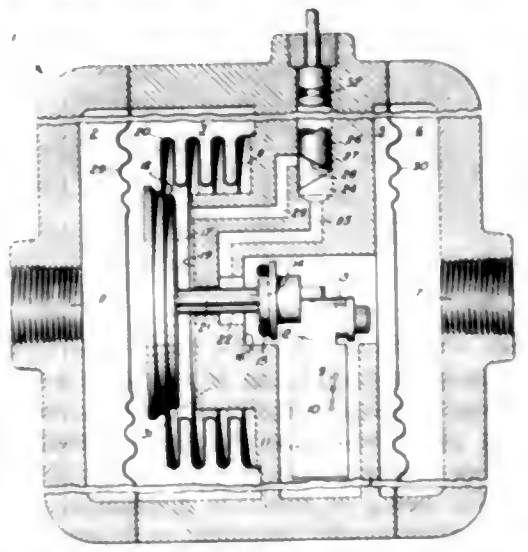
3,157,999
FLUID COUPLING
Gilbert E. Nelson, Holly, Mich., assignor to Liquid Drive Corporation, Holly, Mich., a corporation of Michigan
Filed Sept. 5, 1962, Ser. No. 221,607
5 Claims. (Cl. 60—54)



2. In a flow-through type of fluid coupling comprising a stationary housing, an impeller and casing in said housing rotating at input speed, and a drain opening in the housing for the fluid, and wherein said rotating parts cause a swirling of the fluid resulting in a disturbance thereof sufficient to substantially reduce the flow of fluid out of the drain, that improvement which comprises, a plurality of circumferentially spaced, radially extending baffle members carried by the inner face of an end wall of said housing, and a plurality of longitudinally extending baffle members carried by the outer wall of said housing, said baffle members projecting into the path of the fluid on opposite sides of said drain to substantially arrest the swirling motion of the fluid to permit the fluid to flow out the drain at a rate adequate to prevent flooding of the coupling.

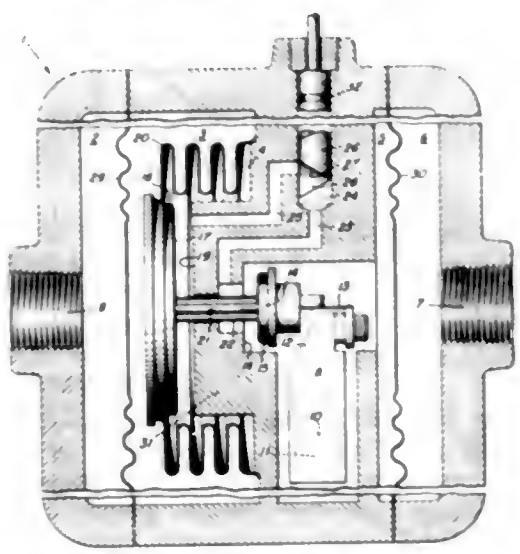
3,158,000
METER
Paul A. Aldinger, Warminster, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,864
3 Claims. (Cl. 60—54.5)

2. In a pressure responsive device having a sensing element adapted to move in response to the difference in pressure applied to the opposite faces thereof, the improvement including, an overload protecting device, including, a rigid case in which said sensing element is mounted and having inlet ports through the wall thereof, a pair of seals each mounted in said case and each located between one of said inlet ports and a liquid-filled conduit formed in the interior of said case and located on opposite sides of said sensing element, a pair of overload valves each controlling the flow of liquid through



a portion of said conduit and adapted to trap liquid in said conduit and thereby support said sensing element by said liquid against excessive pressure applied thereto. means for controlling the amount of liquid that can flow through that portion of the passage controlled by each said overload valves, and a guide tube associated with said overload valves in said case and extending in the direction of travel of said overload valves for a greater distance than the distance of travel of said overload valve.

3,158,001
METER
William E. Bauer, Palmyra, and William F. Newbold, Springfield Township, Montgomery County, N.J., and Robert B. Watrous, Arcadia, Calif., assignors to Honeywell Inc., a corporation of Delaware
Filed May 13, 1963, Ser. No. 280,023
3 Claims. (Cl. 60—54.5)



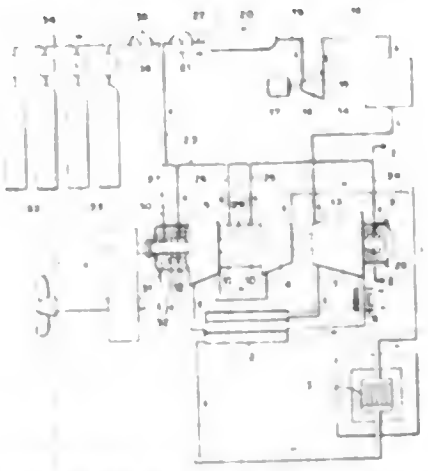
1. In a presssure responsive device having a sensing element adapted to move in response to a difference in pressure applied to the opposite faces thereof, the improvement comprising means for preventing said sensing element from shifting due to changes in the ambient temperature or static pressure applied to the device, said improvement including, a rigid case in which said sensing element is mounted and having inlet ports passing through the wall thereof, a pair of seals of substantially equal area

and spring gradient each mounted in said case and each located between one of said inlet ports and a liquid-filled conduit formed in the interior of said case and having portions of equal volume located on opposite sides of said sensing element, and a pair of overload valves each controlling the flow of liquid through a portion of said conduit and adapted to trap liquid in said conduit and thereby support said sensing element against pressure applied thereto.

3,158,002
OPERATION OF A THERMAL POWER PLANT WITH NUCLEAR REACTOR

Werner Spillmann, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland

Filed Dec. 8, 1961, Ser. No. 157,949
Claims priority, application Switzerland, Dec. 22, 1960, 14,292/60
4 Claims. (Cl. 60—59)



1. In the operation of a thermal power plant having turbomachines with circulation of a gaseous working medium, which is raised to an elevated pressure, is heated by heat generated in a nuclear reactor, then expanded while doing work, and is finally cooled and recompressed to said elevated pressure, a process comprising continuously withdrawing a medium part from the circulating working medium; purifying said medium part from any radioactive impurities contained therein; using the so-purified medium as bearing gas and lubricant for the turbomachines of the thermal power plant; and then re-admixing the said gas with the circulating working medium.

3,158,003
SECTIONAL PIER

Don A. Dally, P.O. Box 181, Pillager, Minn.

Filed Mar. 28, 1961, Ser. No. 98,904
2 Claims. (Cl. 61—48)

1. For use in a sectionalized pier structure, a unit for chainwise coupling comprising a rectangular block having a first, generally planar face, and an opposite face with co-planar, marginal portions on its four sides extending downwardly from said opposite face, and diagonal webs extending downwardly from said opposite face, with recessed areas bounded by said portions and said webs, said block having perforations in said recessed areas, and bores in corner areas common to adjacent pairs of said marginal portions, a rectangular tab on one side of said block, medially thereof, extending therefrom, and extending depthwise from said first face to a plane inwardly of the plane of said marginal portions, and said tab having a rectangular, through opening depthwise, the opposite side of said block from said one side having a rabbeted recess in its upper corner, sized and disposed in complementary relation to said tab, including a rectangular boss extending upwardly through the recess to said first planar face and adapted to mate with the opening in the tab, whereby the recess of one block may receive the tab of another, in interlocking relation, and the other two sides of said block, respectively, having a recess and a tab of structure identical with the first mentioned recess and tab.

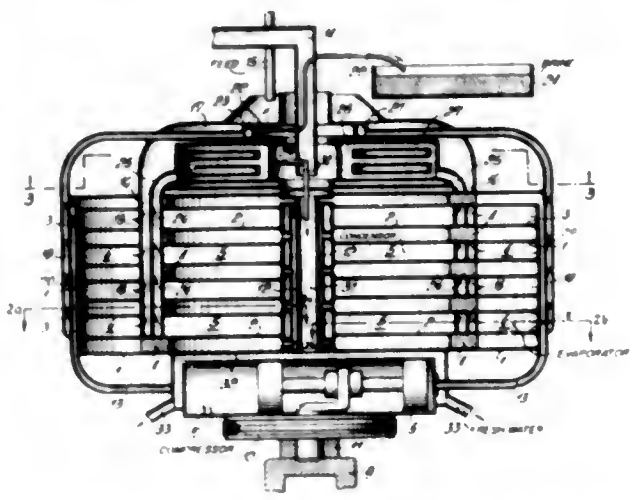
ERRATUM

For Class 62—45 see:
Patent No. 3,158,459

3,158,004
APPARATUS FOR FREEZE CONCENTRATION

Siegfried Klencke, 33 Stuckenborstel uber Rotenburg, Hannover, Germany

Flled Nov. 2, 1961, Ser. No. 149,687
7 Claims. (Cl. 62—124)

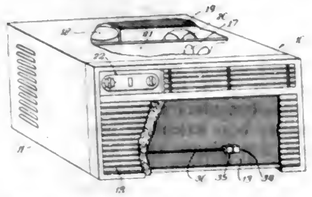


1. An apparatus for the freeze concentration of aqueous liquids containing solids, and comprising an assembly of hollow annular members spaced vertically above each other to define a plurality of vertically arranged annular spaces and a refrigerating system connected to said hollow annular members for circulating a refrigerant therethrough so that the inner portions of said annular spaces define condensers and the outer portions thereof define evaporators, a vertical tube in the center of said assembly of annular members, means on the outer ends of said condensers and connected to said vertical tube for withdrawing ice crystals and melted ice crystals from said annular spaces, a plurality of tubes in said vertical tube and connected with said refrigerating system, means connected to said plurality of tubes for circulating a refrigerant through said condensers and evaporators and returning the refrigerant to the refrigerating system, means for introducing an aqueous liquid containing solids into the inner ends of said evaporators, means on the outer ends of said evaporators for withdrawing liquid concentrate therefrom, and means for rotating said assembly of annular members.

3,158,005
STRUCTURE FOR PROVIDING IMPROVED TEMPERATURE SENSING IN REFRIGERATION APPARATUS

Luther J. Jungemann, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware

Filed June 19, 1962, Ser. No. 203,548
12 Claims. (Cl. 62—156)

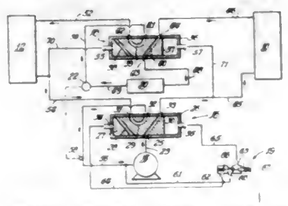


1. In an air conditioner having an evaporator including fins defining an air passage, means for refrigerating the evaporator, and means for circulating air to be cooled through said air passage in heat transfer association with said fins, control means comprising: thermostat means for controlling said refrigerating means; and means for providing temperature indications to said thermostat means including a temperature sensing bulb, a block of resilient material having a preselected limited thermal conductivity, said bulb being substantially enveloped by said block in thermal transfer engagement therewith, and a clip urging said block resiliently into intimate thermal transfer engagement with said fins.

3,158,006
REVERSE CYCLE REFRIGERATION APPARATUS

Alfred E. Skeats, Spring Garden Township, York County, John C. Reier, York Township, York County, and Merle A. Clark, West Manchester Township, York County, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 30, 1963, Ser. No. 320,146
6 Claims. (Cl. 62—324)



1. In a closed circuit, reverse cycle refrigeration apparatus:

a compressor;

an inside heat exchanger;

an outside heat exchanger;

a refrigeration circuit connecting said compressor and said inside and outside heat exchangers, said circuit comprising:

a first reversing valve adapted to selectively and alternately direct refrigerant gas discharged from said compressor to said inside heat exchanger or said outside heat exchanger;

conduit means including, in series, a filter-drier means and an expansion valve;

a second reversing valve interconnecting said inside heat exchanger, said outside heat exchanger and s d conduit means, said second reversing valve being arranged to reverse flow of refrigerant between said inside heat exchanger and said outside heat exchanger through said conduit means while maintaining refrigerant flow through said conduit means in the same direction regardless of the direction of the refrigerant flow between said inside and outside heat exchangers;

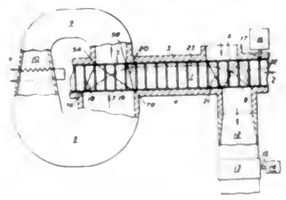
means for actuating said first reversing valve; and

means associated with said first reversing valve to selectively direct high pressure refrigerant gas to said second reversing valve, said gas being effective to actuate said second reversing valve whereby said second reversing valve is actuated in response to said first reversing valve.

3,158,007
PRESSURE EXCHANGERS

John Alan Charles Kentfield, Worthing, England, assignor to Power Jets (Research & Development) Limited, London, England, a British company

Filed Oct. 16, 1961, Ser. No. 145,383
Claims priority, application Great Britain Oct. 14, 1960
12 Claims. (Cl. 62—401)

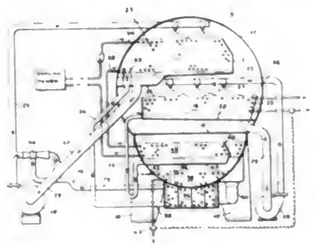


1. A pressure exchanger incorporating a ring of open-ended cells, end-plates effective to close the ends of the cells but having ports therein for the admission of fluid to and the extraction of fluid from the cells, means to effect relative movement between the cells and the end-plates, an inlet port and an outlet port of the said ports serving as a low-pressure scavenging stage and a further inlet port and a further outlet port of the said ports serving as a higher-pressure scavenging stage, ducting interconnecting the low-pressure scavenging stage outlet and inlet ports, the opening edge of the low-pressure scavenging stage inlet port being in advance, considered in the direction of relative movement, of the opening edge of the low-pressure scavenging stage outlet port and the low-pressure scavenging stage inlet port providing for a higher volumetric flow of fluid than the low-pressure scavenging stage outlet port.

3,158,008
ABSORPTION REFRIGERATION APPARATUS

David Aronson, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Oct. 10, 1962, Ser. No. 229,632
6 Claims. (Cl. 62—476)



1. In an absorption refrigeration apparatus circulating a saline solution comprising a vaporizable refrigerant and an absorbent, and having an absorber, a generator, and conduit means communicating said absorber and generator for carrying streams of weak and strong solution therebetween, said generator defining a reservoir holding hot solution for vaporizing refrigerant therefrom, and having heating means cooperative with said reservoir to heat solution held therein:

(*a*) heat exchange means interposed in said conduit means and having first and second passages disposed in heat exchange relationship with each other,

(*b*) said first passage being connected to the conduit means carrying one of said streams of solution from the absorber to the generator,

(*c*) said second passage being connected in the conduit means and carrying hot solution from the generator to the absorber,

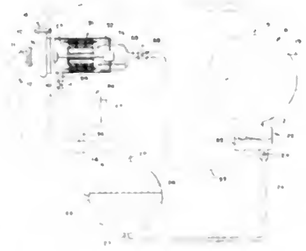
(*d*) said heat exchange means being positioned adjacent to and in direct heat exchange contact the generator defining said reservoir holding hot solution, to heat at least one of said first and second passages,

(*e*) whereby solution in the heat exchanger will be maintained at a temperature above crystallization temperature thereof during operation of said apparatus.

3,158,009
REFRIGERATION APPARATUS INCLUDING COMPRESSOR MOTOR COOLING MEANS

Raymond E. Rayner, Colonia, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Jan. 23, 1963, Ser. No. 253,480
3 Claims. (Cl. 62—505)



1. In a closed refrigeration system circulating volatile refrigerant, a compressor including a suction inlet and having a drive motor connected thereto, a condenser, an evaporator holding liquid and vaporous refrigerant at a pressure less than condenser pressure, said evaporator being connected to receive condensate from the condenser and to deliver vaporous refrigerant to the compresssor suction inlet, a high pressure receiver connected downstream of the condenser holding saturated liquid refrigerant under substantially condenser head pressure;

(*a*) said drive motor connected to the compressor having a hermetic casing including inlet and outlet means,

(*b*) first conduit means communicating the high pressure receiver to the hermetic casing inlet means carrying a saturated liquid refrigerant stream for introduction to the hermetic casing at substantially condenser pressure,

(*c*) injection means connected to said first conduit means and having a liquid atomizing nozzle positioned in the hermetic casing forming the saturated liquid into a stream of dispersed liquid droplets,

(*d*) said drive motor including a rotor having an axial shaft supported in the hermetic casing,

(*e*) means in said rotor forming a central chamber extending longitudinally of the shaft,

(*f*) passage means disposed in said rotor in communication with said central chamber,

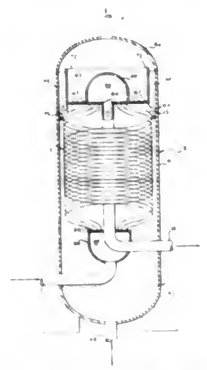
(*g*) said injection means being disposed to direct atomized refrigerant into said central chamber,

(*h*) and means carried in said central chamber and rotatable therewith, urging the refrigerant stream therethrough.

3,158,010
TWO PHASE FLUID HEAT EXCHANGER

Richard D. Kuerston, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,343
5 Claims. (Cl. 62—525)



5. Heat exchanging apparatus comprising a housing having a substantially cylindrical casing, an upper closure member and a lower closure member; an upper tube sheet and a lower tube sheet positioned inside of said casing and substantially perpendicular to the axis of said casing; a first head connected to the lower side of said lower tube sheet to form a first chamber; a second head connected to the upper side of said upper tube sheet to form a second chamber; a plurality of tubes connected between said upper and lower tube sheets and in fluid communication with said first and second chambers; a first conduit means passing through said housing to provide fluid communication between said second chamber and said first conduit means; a second conduit means passing through said housing to provide fluid communication between said first chamber and said second conduit means; means for separating a two phase fluid into a liquid portion and a vapor portion; means for passing said vapor portion downwardly in said housing and in substantially equal heat exchanging relationship with each of said pluralitv of tubes, means adjacent said upper tube sheet for spraying said liquid portion against said plurality of tubes in substantially equal heat exchanging relationship with each of said plurality of tubes, and third conduit means connected to a lower portion of said housing for withdrawing therefrom the two phase fluid after it has been passed in contact with said plurality of tubes.

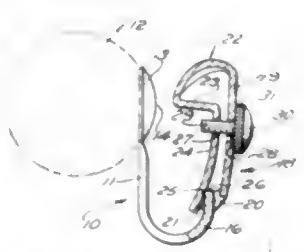
3,158,011
EAR CLIP HAVING ADJUSTABLE LEAF SPRING

William Anthony Carroll, Warwick, R.I., assignor to The Lorac Company, Inc., a corporation of Rhode Island

Filed Mar. 8, 1963, Ser. No. 263,986
1 Claim. (Cl. 63—14)

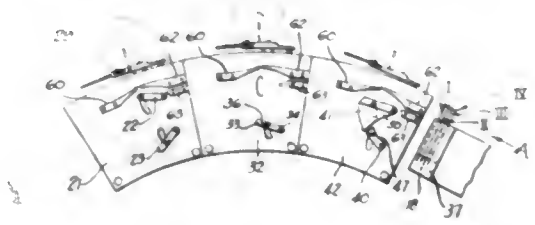
An ear ornament of the clip type comprising a J-shape body member having a long leg and a short leg, a jaw member, hinged means adjacent the end of the short leg connecting said members, said jaw member carrying a resilient arm engaging the end portion of said short leg and having a threaded opening therethrough spaced from

said hinge, said jaw member having an opening registering with said threaded opening, and a screw having a head and a shank, said head including means engaging said jaw member and preventing passage of said head through said jaw member opening, said shank passing freely through said jaw member opening and having



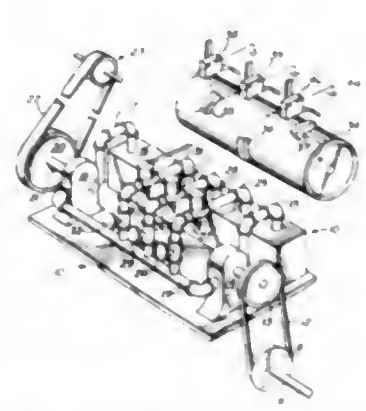
threaded engagement with said threaded opening in said resilient arm for adjusting the pressure thereof on said short leg, said jaw member and resilient arm being of one piece of stock, said piece being folded to form a relatively large ear contacting head from which said jaw member and resilient arm extend.

3,158,012
KNITTING MACHINES
Jeno Kahan, 925 Prospect Place, Brooklyn, N.Y.
Filed Dec. 12, 1961, Ser. No. 158,770
5 Claims. (Cl. 66—31)



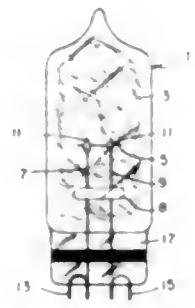
1. In a knitting machine having a needle bed carrying at least four different types of latch needles, some cam sections, said needle bed and said cam sections being movable relatively to each other, one type of said four types of needles having a long front butt, a second type having a short front butt and a long rear butt, a third type having a short front butt and an elongated shank, and a fourth type having a short front butt and a short rear butt, and thread feeders carried on each of the cam sections; the improvement of selector means for selecting and moving each type of needle to a knit position engaging a thread feeder independently of the movement of the other types, said selector means comprising: a cam mounted on one of said cam sections and being movable thereon from an inoperative to an operative position wherein the cam surface of said cam engages the front butt of the first type of needle for moving said needle to a knit position when said needle bed and said cam section are moved relatively to each other; another cam mounted on the last-mentioned cam section and being movable thereon from an inoperative to an operative position wherein the cam surface of said cam engages the rear butt of the second type of needle for moving said needle to a knit position when said needle bed and said cam section are moved relatively to each other; another cam mounted on another one of said cam sections and being movable thereon from an inoperative to an operative position wherein the cam surface of said cam engages the shank end of the third type of needle for moving said needle to a knit position when said needle bed and said other cam section are moved relatively to each other; cam means mounted on a third one of said cam sections and operable when said needle bed and said third cam section are moved relatively to each other for simultaneously moving said second and fourth types of needles toward a knit position, said cam means being further adapted for moving said second type of needle back out of a knit position before the fourth type of needle engages a thread in the thread feed carried by said third cam section.

3,158,013
SPEED CHANGER FOR KNITTING MACHINE
Zephyr Monday, Mount Airy, N.C., assignor to U-Stretch Corporation, Mount Airy, N.C., a corporation of North Carolina
Filed Apr. 9, 1962, Ser. No. 186,134
2 Claims. (Cl. 66—56)



1. In a knitting machine having knitting mechanism powered through an input shaft on said machine; a drive shaft from which said input shaft is driven; a liquid fluid electrically controlled speed change mechanism interposed between said input shaft and said drive shaft including a fluid motor driving said input shaft, a fluid pump driving said motor and driven by said drive shaft and pipe means adapted to bypass pumped fluid around said motor; remotely operable electrically controlled valve means effective to open and close said pipe means almost instantaneously; and a pattern mechanism including control means effective to operate said valve means at predetermined times whereby to control the amount and timing of said fluid bypass and thereby establish the speed sequence of said machine in coordination with the operation of said pattern mechanism.

3,158,014
PHOTOFLASH LAMP
David Y. Bronse, Williamsport, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 247,893
3 Claims. (Cl. 67—31)

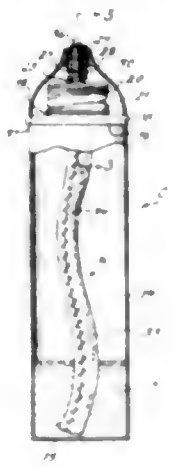


1. A photoflash lamp comprising: a sealed light-transmitting envelope; a combustion-supporting gas filling in said envelope; a quantity of filamentary zirconium disposed in said envelope, said zirconium being characterized by crystal grains in the range of about 0.0003" to about 0.0006" average diameters; and ignition means disposed in said envelope in operative relationship with respect to said filamentary zirconium.

3,158,015
ARTIFICIAL CANDLE

Frederick W. Renwick, Sr., and Grace Bush, both of Maple Shade, N.J., assignors to Hollwick, Inc., Maple Shade, N.J., a corporation of New Jersey

Filed Dec. 11, 1961, Ser. No. 158,255
3 Claims. (Cl. 67—53)

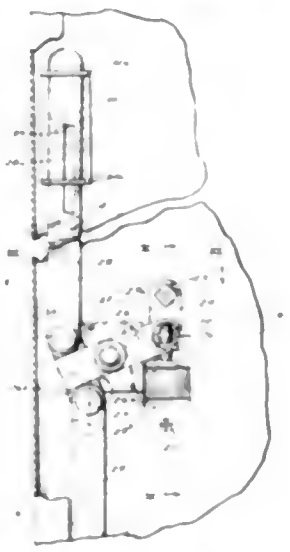


1. In an artificial candle including a casing defining a fuel reservoir and having a top wall formed with a neck, a cap on said neck, a wick holder carried by said cap and having a wick opening and a snuffer screwed on to said wick holder, the improvement consisting of: a wick assembly comprising an outer fabric sleeve housed within said casing and inner twin cords housed within said casing and passing through and completely filling said wick opening.

3,158,016
DOOR LATCH FOR MODULAR CABINET

Lawrence J. Fay, Elgin, Ill., assignor to Equipto Electronics Corporation, Naperville, Ill., a corporation of Illinois

Filed Oct. 30, 1961, Ser. No. 148,618
5 Claims. (Cl. 70—82)

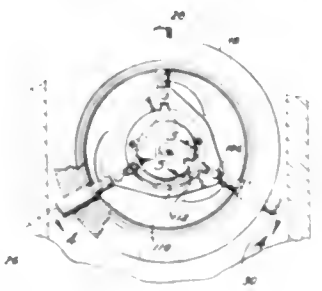


5. A latching mechanism for a locker cabinet door comprising a handle assembly including a handle pivoted intermediate its ends, a pin disposed on one end of said handle, a latch plate pivoted on an axis extending in a direction at right angles to the direction in which the axis of the handle pivot extends, said pin interconnected with said latch plate on one side of the latch plate pivot, a latch bar means pivotally connected to said latch plate on the opposite side of said latch plate pivot, keepers with said latch bar engage, said handle upon being rocked on its pivot operating to move said pin and latch plate to disengage said latch bar from said keepers, latch bar guides secured to the door panel and with said latch bar means extending through guide legs on said guides, said latch bar means having latches movable with respect to said legs and the keepers each disposable between said guide legs on an associated one of said guides and engaged by one of said latches upon latching, said latch plate upon being rocked on its pivot through actuation of said handle causing said latch bar means to be moved for disengaging said latches from said keepers.

3,158,017
BURGLAR PROOF SAFE LOCKING BOLT ASSEMBLY

Oscar Guze, Jr., 226 N. Vincent Ave., West Covina, Calif.

Filed Feb. 15, 1962, Ser. No. 173,470
6 Claims. (Cl. 70—119)

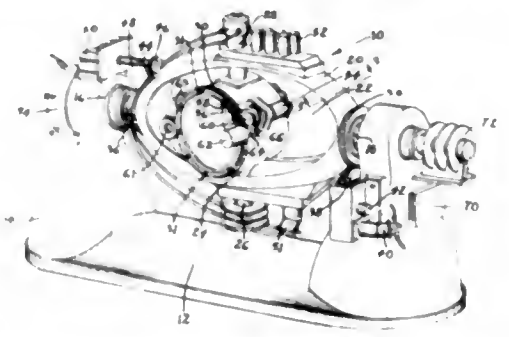


1. A locking bolt assembly comprising a door, means comprising a plurality of bolts retractable inwardly and extendable outwardly relative to the door, said bolts in their extended positions engaging wall means to lock the door, bolt-actuating means for extending and retracting the bolts, and a punch proofing member carried by and actuable with said bolt-actuating means, and said member being configurated to provide surfaces which are positioned closely juxtaposed against the inner ends of the respective locking bolts when the bolts are in their extended locking positions, whereby an inward force against one of the locking bolts is received by said member, whereby a substantial part of the load is transmitted to one or more of the other bolts and to associated structure, whereby inward movement of said bolt is prevented.

3,158,018
3-D FLIGHT TABLE

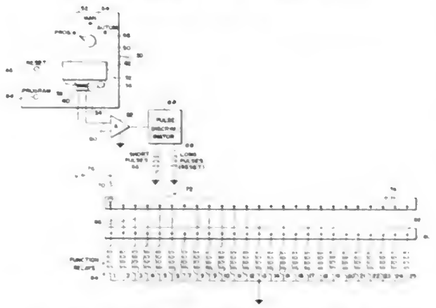
Charles M. Edwards, Royal Oak, and Murray Kanes, Birmingham, Mich., Paul F. Fischer, Fullerton, Calif., Franklin O. Geiger, Livonia, Mich., Melvin S. Feder, Bethpage, N.Y., and John R. Farron, Oak Park, Mich., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 13, 1958, Ser. No. 735,076
4 Claims. (Cl. 73—1)



1. A flight table comprising a supporting base, a first gimbal pivotably mounted on said base, wherein said first gimbal comprises two thin metal shells separated by a plastic foam core, a second gimbal pivotably mounted on said first gimbal rotatable in a plane which is orthogonal to the plane in which said first gimbal rotates, electro-hydraulic servo means geared to said gimbals whereby said gimbals are responsive to said electro-hydraulic servo means.

3,158,019
CHROMATOGRAPHIC ANALYZER
Ralph A. Dora, Anaheim, and Donald D. Richards, La Habra, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed July 16, 1962, Ser. No. 210,123
2 Claims. (Cl. 73—23.1)



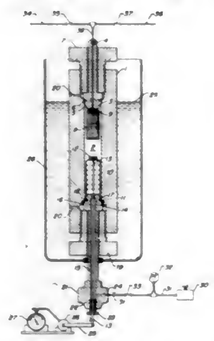
1. In a chromatograph analyzer capable of performing multiple operations and having a plurality of means energizable to initiate the performance of said operations, the combination comprising:

a controller, said controller including a magnetic recording media, a read-write transducer, drive means for driving said media past said transducer, means for selectively establishing said transducer in a write or read state, said transducer being operable in its write state to record information on said media and operable in its read state to produce output signals in response to information stored on said media;

means for establishing a select sequence in which said energizable means are energizable; and

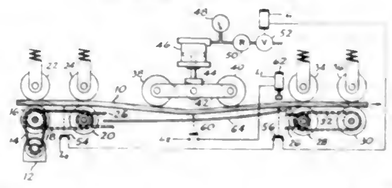
means coupled to said transducer responsive to said output signals and responsive to the information being recorded on said media when said transducer is being operated in its write state for energizing said energizable means in the sequence selected.

3,158,020
POROSIMETER
George R. Donaldson, Barrington, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 14, 1961, Ser. No. 117,033
7 Claims. (Cl. 73—38)



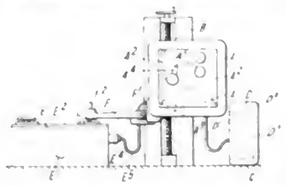
1. Apparatus for determining the pore volume distribution of a porous solid which comprises in combination a fluid-tight chamber defined by a substantially rigid longitudinal casing and a pair of end closure members, one of said end closure members comprising a removable sealing member, and the other of said end closure members comprising a bellows which is expandable inwardly of the chamber, a shaft connected to the free end of the bellows and extending through the bellows to the exterior of said chamber, valved conduit means communicating with the interior of said chamber, means for introducing a fluid under pressure to the interior of said bellows, means for varying the pressure of said fluid, means coupled to said shaft outside the chamber for measuring shaft displacement, and means for measuring the pressure within the chamber.

3,158,021
LUMBER TESTING APPARATUS
Earl O. Walters and Bernarr E. Welch, Milwaukie, Oreg., assignors to Western Pine Association, Portland, Oreg., a corporation of Oregon
Filed Feb. 6, 1961, Ser. No. 87,234
9 Claims. (Cl. 73—100)



1. Lumber testing apparatus comprising conveyor means having spaced apart drive means for continuously conveying lumber past a loading station, one piece at a time, loading means for applying to each piece as it passes the loading station a load predetermined to effect a deflection which represents a predetermined minimum stress capacity requirement for the pieces to be tested, and detecting means positioned for detecting when the magnitude of deflection exceeds the deflection which represents said predetermined minimum stress capacity.

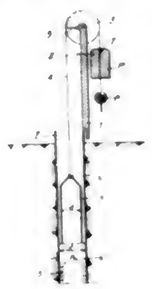
3,158,022
APPARATUS FOR MEASURING OR INDICATING SURFACE ROUGHNESS
George Ormerod Rawstron and Thomas William Clifford, Leicester, England, assignors to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Apr. 19, 1961, Ser. No. 104,125
Claims priority, application Great Britain, Apr. 20, 1960, 13,830/60
5 Claims. (Cl. 73—105)



1. An attachment for adapting to the testing of a surface of revolution of small radius on a test body a main apparatus for indicating the roughness of a surface, said main apparatus being of the kind comprising drive means for linearly traversing over a test surface a pick-up head which produces an electrical output indicative of the roughness of said surface together with an electrical measuring or indicating instrument electrically connected to and controlled by the electrical output of the pick-up head, said attachment comprising in combination a supporting framework, a stationary plate detachably

mounted on the framework and having an orifice, a seating for a test body in such orifice whereby a portion of the surface of the test body is exposed through the orifice to the reverse side thereof, a stylus for engaging with such exposed portion of the test surface, means whereby the stylus is movably mounted on the framework, a friction pad for engaging with the surface of the test body opposite said stylus, an arm carrying the friction pad, a member to which such arm is pivoted, means whereby such member can be coupled in place of said pick-up head to the drive means of the main apparatus whereby the friction pad is linearly driven by said drive means and is thereby caused to exert a frictional force which rotates the test body on its seating, thus causing a circular section of the test surface to be traversed past the stylus, whereby such stylus is caused to perform small working movements in an approximately radial direction relatively to the axis of rotation of the test body in accordance with the roughness of the test surface, a transducer in the framework responsive to the working movements of the stylus, and means for coupling the transducer to the measuring or indicating instrument of the main apparatus to control said instrument in accordance with the electrical output of the transducer.

3,158,023
METHOD AND MEANS FOR MEASURING PERMEABILITY IN SITU
Jacques Brillant, Paris, France, assignor to Societe dite: Soletanche (Societe a responsabilite limitee), Paris, France
Filed May 26, 1961, Ser. No. 112,917
Claims priority, application France, June 1, 1960, 828,753, Patent 1,267,195
8 Claims. (Cl. 73—155)



1. An apparatus for measuring the liquid permeability of earth formations having a bore hole therein containing water up to an initial level, said apparatus comprising

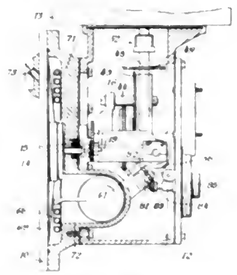
(A) a downwardly opening bell having an opening of small cross-section at its upper end so as to be adapted to sink to a lower position of equilibrium in the bore hole and thereby become filled with water as air escapes from said bell through said opening,

(B) means operative, after sinking of said bell, to continuously exert an upward pull of predetermined magnitude on said bell, thereby to raise said bell from said lower position of equilibrium to an upper position of equilibrium.

(C) valve means operative to close said opening at the top of the bell in response to the exertion of said upward pull on the latter so that the water in said bell remains in the latter as the bell is raised to said upper position of equilibrium while the level of the water in the bore hole around said bell undergoes a corresponding transient decline below said initial level, and

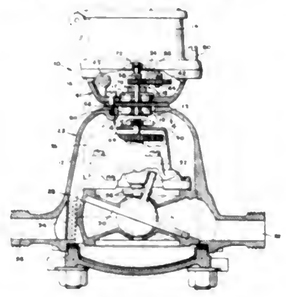
(D) means for periodically recording the upward movements of said bell from said upper position of equilibrium as water drains into the bore hole around said bell for return to said initial level.

3,158,024
ROTARY LIQUID METER WITH TEMPERATURE RESPONSIVE MEANS
Eric William Absolon, Chessington, England, assignor to Avery-Hardoll Limited, Chessington, England
Filed Mar. 12, 1962, Ser. No. 179,124
Claims priority, application Great Britain, Mar. 20, 1961, 10,104/61
6 Claims. (Cl. 73—233)



1. In a liquid meter of the rotary type including a meter body, a vaned rotor rotatable in said meter body, a meter output shaft driven by said vaned rotor, a gear casing, variable ratio gearing in said gear casing, an indicating mechanism, said variable ratio gearing being operatively connected between said meter output shaft and said indicating mechanism, and ratio-changing means for said gearing, the improvements comprising means defining a cavity within said gear casing, passage means connecting said cavity with said meter body to cause liquid flowing through said meter body also to flow through said cavity, temperature responsive means in said cavity, and a member operated by said temperature responsive means and passing through the wall of said cavity into said gear casing, said member acting on the ratio changing means to change the gear ratio in response to changes of liquid temperature.

3,158,025
MAGNETIC DRIVE FOR FLOWMETER
Ralph J. Colatrella, Newark, and Herman W. Schaub, Livingston, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,419
8 Claims. (Cl. 73—272)



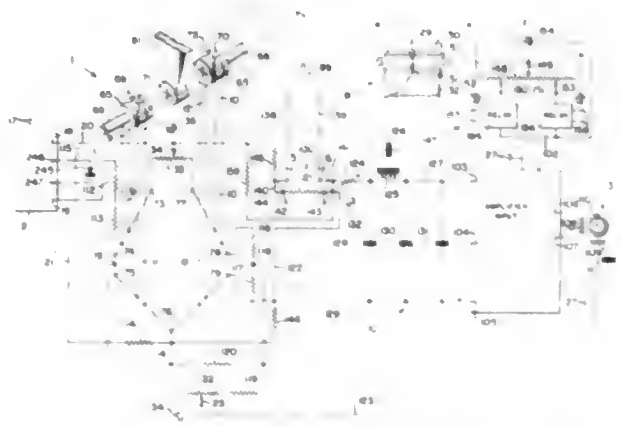
1. A magnetic drive comprising

(*a*) a casing,

(*b*) a non-magnetic diaphragm in said casing to form a chamber in said casing on either side thereof,

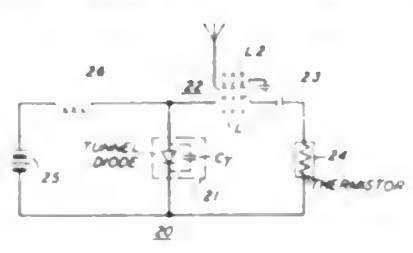
(*c*) a mechanism disposed in each of said chambers,
(*d*) one of said mechanisms adapted to drive and the other mechanism adapted to be driven,
(*e*) a magnetic coupling member disposed on either side of said diaphragm to form a magnetic couple therebetween,
(*f*) one of said magnetic coupling members having a predetermined axial position and adapted to rotatably engage said mechanism in the chamber therewith,
(*g*) the other of said magnetic coupling members being mounted for rotatable movement on an axis which is laterally shiftable; being attracted into axial alignment with said one magnetic coupling by said one magnetic coupling,
(*h*) a bearing disposed on said second mentioned magnetic coupling member to engage said diaphragm,
(*i*) connecting means connected to said second mentioned magnetic coupling member and adapted to engage said mechanism in the chamber therewith to transmit rotatable motion thereby.

3,158,026
SELF-BALANCING MEASURING APPARATUS
John D. McGhee, Plymouth Meeting, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 23, 1960, Ser. No. 51,378
14 Claims. (Cl. 73—361)



1. Self-balancing measuring apparatus, comprising a balancing device including four strain-sensitive resistors electrically connected as the arms of a bridge circuit and a positionable member mechanically coupled to said resistors to cause the strain thereon to be dependent upon the position of said member, movement of the latter in a given direction causing the strain on one diagonally disposed pair of said resistors to increase and the strain on the other diagonally disposed pair of said resistors to decrease simultaneously, said bridge circuit having a pair of input terminals adapted to be connected to a source of bridge energizing voltage and having a pair of output terminals between which there is produced a balancing voltage of a value dependent upon the position of said member, a pair of measuring terminals adapted to be connected across a source of a voltage of a value to be measured, an amplifier having an input connected between a pair of input terminals and having a pair of output terminals, a comparison circuit in which one of said bridge circuit output terminals is connected to one of said measuring terminals, in which the other of said measuring terminals is connected to one of said amplifier input terminals, and in which the other of said bridge circuit output terminals is connected to the other of said amplifier input terminals to apply said balancing voltage and said voltage to be measured in opposed polarity comparative relation to said input of said amplifier to produce an error signal therein, said amplifier producing between its said output terminals an amplified version of said error signal of a value related to the difference between said balancing voltage and said voltage to be measured, an electric motor having a winding connected to said amplifier output terminals and having a shaft mechanically coupled to said member for repositioning the latter in response to said error signal in the direction and to the extent required to reduce said error signal substantially to zero and hence to establish a condition of balance between said balancing voltage and said voltage to be measured, and exhibiting means coupled to said member and responsive to the position thereof, the value exhibited by said exhibiting means for said condition of balance being a measure of the value of said voltage to be measured, wherein said measuring terminals and the connections thereto are so constructed and arranged that there is substantially zero thermal E.M.F. developed between said measuring terminals, wherein said source of said voltage to be measured is a thermocouple having its leads connected between said measuring terminals, the connection of the leads of the thermocouple to said measuring terminals causing the reference junction of the thermocouple to be formed between the leads at the point of juncture with said measuring terminals, wherein a temperature-sensitive compensating resistor is included in said comparison circuit and is arranged to be maintained at substantially the same temperature as said measuring terminals, and wherein energizing means are connected to said resistor for causing a substantially constant current to flow therethrough, the resulting voltage drop across said resistor in said comparison circuit effectively modifying the total voltage produced between said measuring terminals by the thermocouple, so as to leave for comparison with said balancing voltage in said amplifier input an opposing voltage representative of solely the temperature of the hot junction of the thermocouple.

3,158,027
ELECTRONIC THERMOMETER
Lynden U. Kibler, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 5, 1961, Ser. No. 121,917
2 Claims. (Cl. 73—362)

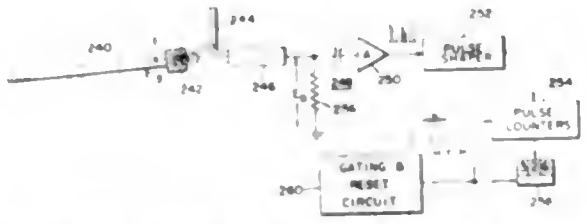


1. An oscillator for converting temperature changes into frequency changes comprising a tunnel diode, a thermally sensitive resistor and a blocking capacitor serially connected in shunt with said tunnel diode, an inductance connected in a path which shunts said tunnel diode, said inductance being resonant with the junction capacitance of said tunnel diode at the upper frequency limit of operation, and direct-current means for biasing said tunnel diode to its negative resistance region.

3,158,028
PHYSICAL CONDITION MEASURING SYSTEMS
Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Sept. 19, 1960, Ser. No. 56,849
10 Claims. (Cl. 73—398)

2. A digital transducer for measuring pressure or other physical variable that can be coupled to a moving plate of a condenser, a condenser with one fixed plate and one variable plate whose position is changed in accordance

with changes in a measured variable, an oscillator with tank circuit consisting of an inductor and the said condenser, an electronic clipper circuit to produce a train of unidirectional pulses related in number to the physical variable being measured, a pulse counting circuit, a digital readout device for registering the count of the pulses



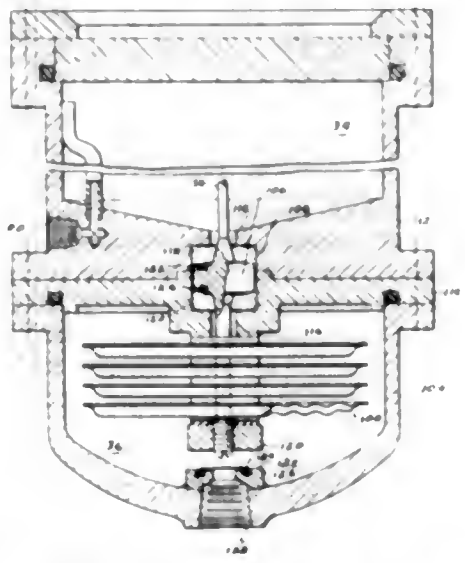
counted by said circuit, and a gating circuit to provide consecutive gating period pulses and to reset said counting circuit and readout device at the end of each gating period, said counting circuit being controlled by the said gating circuit to count and totalize pulses received from the said clipper during each consecutive gating period.

3,158,029

PRESSURE MEASURING INSTRUMENT FOR HIGH STATIC PRESSURE ATMOSPHERES

Franz Fischer, Port Chester, N.Y., assignor to Melchior International Corporation, New York, N.Y., a Panamanian corporation

Filed June 7, 1962, Ser. No. 200,679
5 Claims. (Cl. 73—407)



1. A differential pressure measuring instrument for measuring relatively small differences between first and second high static pressure comprising: a case having a first and second pressure chamber, a common wall separating said first and second chamber and defining said chamber and having an aperture extending therethrough; a plurality of differential pressure measuring capsules, said capsules being stacked and mounted in said second pressure chamber, said stacked capsules being mounted on said wall separating said first and second chambers and enclosing said aperture so that said aperture communicates between said first chamber and the interior of said stacked capsules, a first fitting in the wall of said first chamber to couple said first static pressure to said first chamber to apply said first static pressure to the interior of said stacked capsules through said first chamber and said aperture in said wall, a second fitting in said second chamber to couple said second static pressure to said second chamber and to apply said second static pressure to the exterior of said stacked capsules, indicator means coupled to said stacked capsules to indicate movement of the unmounted end of the capsule stack as the stacked capsules expand and contract in response to differences between said first and second pressures applied respectively to the interior and exterior of said capsules, a first valve coupled to the unmounted end of the capsule stack to seal said aperture when the capsule stack has expanded to the designed limit of expansion, and a second valve coupled to the unmounted end of the capsule stack to engage said second fitting to seal said second chamber against pressure loss when said capsules have expanded to the designed limit of expansion, said sealing of said aperture and said second fitting occurring substantially simultaneously so that, on sudden reduction of static pressure applied to the second chamber, the difference in pressure applied to the interior and exterior of said stacked capsule will not exceed the pressure differential for which the capsules are designed.

3,158,030

MECHANICAL COAL SAMPLER

Gordon Buford Cross, Kingston, Tenn., assignor to Tennessee Valley Authority, a corporation of the United States

Filed Oct. 13, 1960, Ser. No. 62,512
4 Claims. (Cl. 73—423)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A core-type coal-sampling apparatus comprising a vertical sampler tube, rectangular in horizontal cross section; rigid cutting means secured to the bottom edge of said sampler tube, said cutting means juxtaposed to the peripheral surface of said sampler tube; and core-keeper means to secure coal cores therein for removal with said sampler tube, said core-keeper means operatively mounted contiguous to the core-receiving end of said sampler tube and comprising clams hingedly mounted in apertures formed in two opposite walls of said sampler tube for operation by remotely controlled operatively engaged closing means, said clams, when in the open position, and said closing means disposed outwardly from said vertical sampler tube walls.

3,158,031

RECOVERY OF DRY CHEMICAL FIRE EXTINGUISHING POWDERS USED FOR TEST PURPOSES

Raymond R. Neill, Forest Heights, and Henry B. Peterson, Oxon Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 15, 1962, Ser. No. 173,595
3 Claims. (Cl. 73—432)
(Granted under Title 35, U.S. Code (1952), sec. 266)

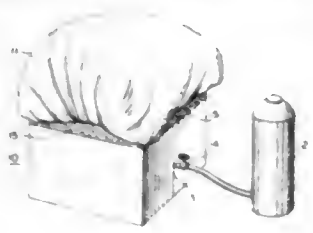
1. A method of recovering dry chemical fire extinguishing powders discharged during testing of a fire extinguisher by an expandable gas under high pressure which comprises:

(*a*) securing an expansible cover over the open end of an open ended container,

(*b*) purging the interior of said covered container by

use of a dry gas from a group consisting of a dry nitrogen and dry air,

(*c*) inserting a fire extinguisher nozzle, of a fire extinguisher to be tested, into an opening in one side of said container at a height greater than the final height of powders after being expended from said fire extinguisher,



(*d*) discharging said powders from said fire extinguisher,

(*e*) directing said expended powders toward the side of said container directly opposite from the side through which said nozzle is inserted, and

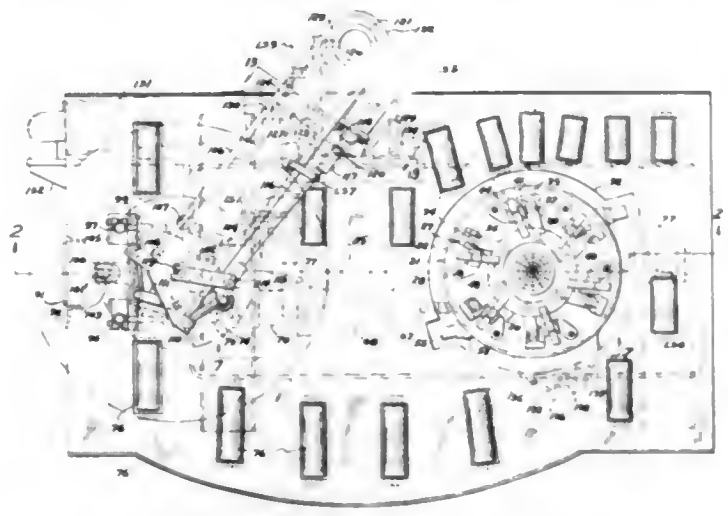
(*f*) removing said fire extinguisher nozzle from said container after expending all of the powders therein.

3,158,032

UNIVERSAL AUTOMATIC BALANCING MACHINE

Robert J. Lannen, Detroit, Mich., assignor to Micro-Poise Engineering and Sales Company, Detroit, Mich., a partnership

Filed Nov. 30, 1961, Ser. No. 156,080
8 Claims. (Cl. 73—485)



1. In a machine for testing the universal balance of pneumatic tires of two predeterminedly disparate diametrical sizes, fed continuously to the machine in a random sequence of such sizes, the combination with a carrier, an upright support for such carrier, means universally pivoting the carrier on the support substantially at a vertical axis, and a frame, mounting said support, of

(*a*) a plurality of work clamping jaws supported by the carrier to move toward said axis to alternatively occupy one of two positions for deposit or removal of a tire, said positions respectively accommodating said respective sizes, and away from said axis to a clamping position upon a circumferential surface of any such tire,

(*b*) a ring rotatable about said axis,

(*c*) actuating connections from said ring to said jaws,

(*d*) a first drive means to rotate said ring to cause said actuating connections to move said jaws alternatively to assume said alternative positions, and normally to one position for one diametrical size, rather than the other position,

(*e*) a second drive means urging said jaws toward said clamping position,

(*f*) means to deliver a tire to and from said chuck, and

(*g*) means engageable with said circumferential surface to position a tire on said delivery means for deposit thereby upon said chuck when said jaws are appropriately positioned,

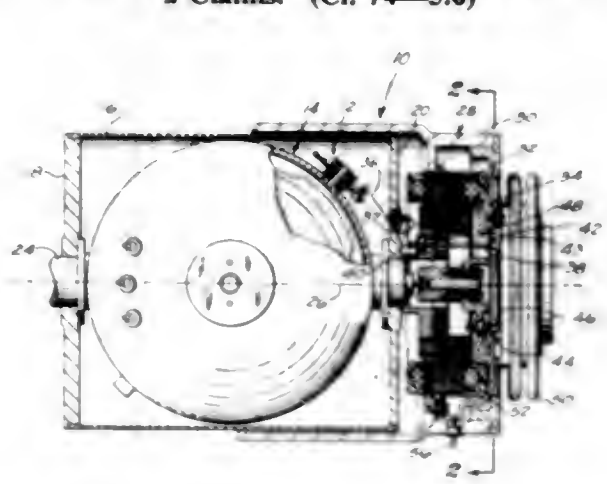
(*h*) control means responsive to said engagement by said means (*g*) with a circumferential surface of one diametric size to cause said first drive means (*d*) to move said jaws (*a*) to said other position, for deposit or removal of a tire of said diametric size so engaged.

3,158,033

SPIN MOTOR MONITOR INCLUDING A VARIABLE RELUCTANCE TYPE PICKUP

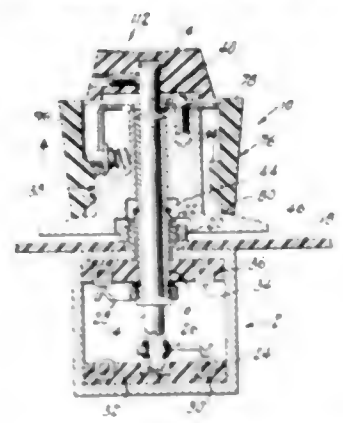
Robert J. Cohen, Wyckoff, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Nov. 24, 1961, Ser. No. 154,608
2 Claims. (Cl. 74—5.6)



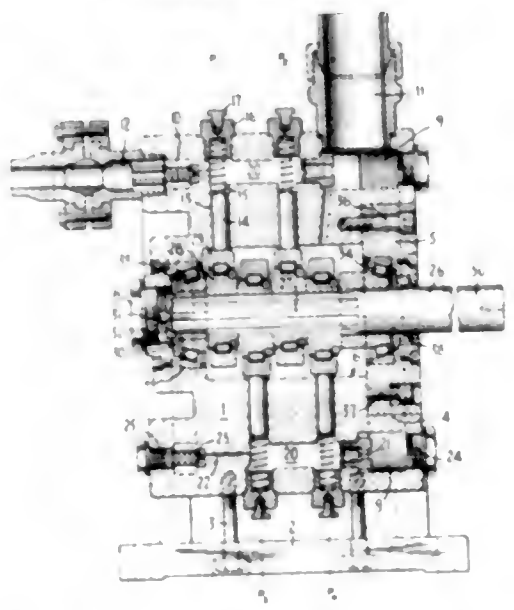
1. A generator for a gyro motor comprising a gyro motor housing, a gyro wheel rotatably mounted within said housing, a ring of magnetic material on the periphery of the gyro wheel, having alternately disposed protruding segments and recessed segments, an opening in the wall of said housing overlying the periphery of said ring, a cup-shaped housing of magnetic material having a cylindrical wall and an end wall substantially closing off one end thereof, a pickup coil positioned within said cup-shaped housing concentrically therewith, a permanent magnet positioned within said pickup coil concentrically therewith for producing flux passing from one end thereof through said end wall and said cylindrical wall of the cup-shaped housing and across an air gap between the open end of the cup-shaped housing to the other end of said magnet, said cup shaped housing being mounted on said gyro motor housing at said opening therein so that said air gap is exposed to the interior of said housing and closely overlies the alternately disposed segments of said ring, a gimbal housing surrounding said gyro motor housing, stub shafts projecting from opposite sides of said gyro motor housing in position to define a precession axis perpendicular to the spin axis of the gyro motor, said stub shafts being journaled in opposite walls of said gimbal housing, a torquer housing mounted on said gimbal housing in position to define a chamber adjacent to one of said walls of the gimbal housing, a torquer rotor positioned within said torquer housing and fixed to the stub shaft journaled in said wall for pivotal movement therewith, a torquer stator surrounding said torquer rotor and fixed to said torquer housing, means for grounding one end of said pickup coil, a first terminal fixed to and electrically insulated from said cup-shaped housing, the other end of said pickup coil being electrically connected to said terminal, a second terminal mounted on said one wall of said gimbal housing, a taut electrical lead wire interconnecting said first and second terminals, and electrical connecting means including a flexible lead for connecting said second terminal to an external terminal.

3,158,034
ACTUATORS
Harry A. Williamson, Red Bank, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed June 28, 1962, Ser. No. 206,036
9 Claims. (Cl. 74—10)



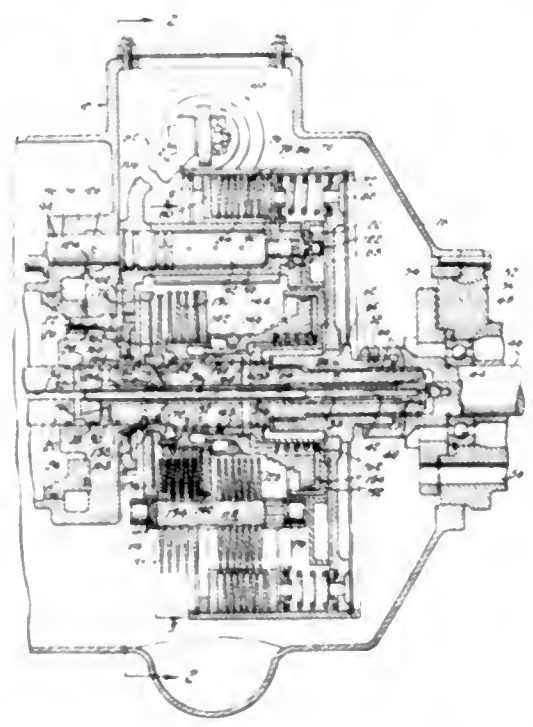
1. An actuator for a device having a pair of telescoped control shafts, operating means for said inner control shaft, said operating means being secured adjacent the free end of said inner shaft, an actuator body secured adjacent the free end of the outer control shaft, an actuator knob, means mounting said actuator knob on said actuator body in driving engagement with said body and for longitudinal axial movement relative to said body between a first position and a second position, said actuator knob substantially enshrouding the operating means for said inner shaft in said first position and exposing said operating means in said second position, and means for retaining said actuator knob in said first and second positions selectively.

3,158,035
MULTI-BANK RADIAL TYPE MACHINE
Oreste Flavio Alfredo Biginelli, 22 Rue du Marechal Foch, Clermont-Ferrand, France
Filed Sept. 9, 1960, Ser. No. 55,041
Claims priority, application France, Nov. 26, 1959, 811,342, Patent 1,241,097
2 Claims. (Cl. 74—49)



1. In a machine having a plurality of cylinders and pistons reciprocable therein, said cylinders being arranged in separate planes, each plane having a plurality of cylinders arranged angularly disposed therein, the improvement which comprises means for reciprocably actuating said pistons and for balancing the reaction forces of said pistons, the last mentioned means comprising a driven shaft rotatably mounted, said shaft having a plurality of substantially linear, elongated, axially extending grooves disposed substantially parallel and angularly spaced in a circumferential direction thereon and terminating at one end of said shaft, a plurality of removable bearings having outer peripheral surfaces for reciprocably driving said pistons, said bearings having an inner bore having projections for complementary fitting into said grooves for rotatably driving said bearings with said shaft, said bearings being mountable on said shaft over said end of said shaft and slipped off therefrom, disposed in operation axially on said shaft with one bearing in each of said planes, said planes being disposed axially along said shaft, each passing through a respective bearing, said cylinders being further arranged and said bearings having their bores eccentric each in a direction for displacing the pistons radially in alternate ones of said planes in opposite directions to cause the reaction forces of one of said planes to compensate by opposite reaction forces generated in a next adjacent plane.

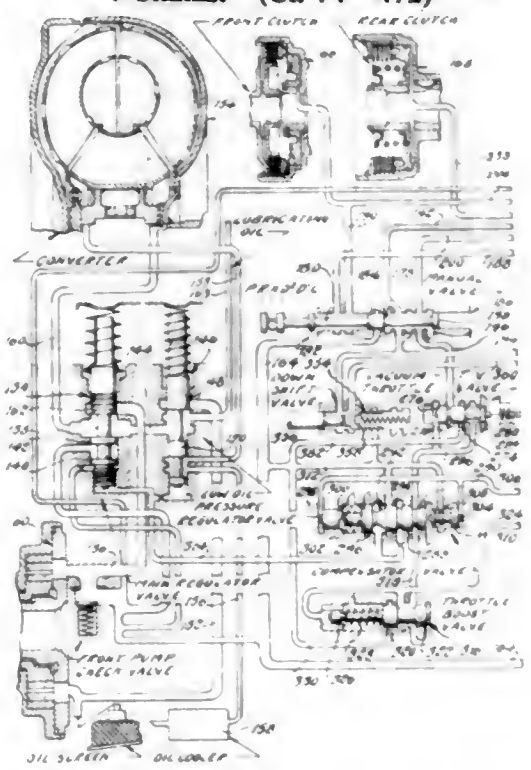
3,158,036
FRICTION DRIVE MECHANISM
Douglas Hughson, Royal Oak, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 11, 1963, Ser. No. 272,367
13 Claims. (Cl. 74—199)



1. In a friction disc drive comprising driving and driven members, a first discs mounted upon said driving member for rotation about a first axis, second discs connected to said driven member and mounted for rotation about a second axis, said first discs engaging said second discs in frictional driving relationship, an idler control disc mounted coaxially and relatively rotatably with respect to said first discs, said idler disc frictionally engaging said second discs and having an effective diameter that differs from the corresponding diameter of said first discs, a fluid pressure operated servo means for applying a clamping pressure to said first and second discs to maintain the same in driving relationship, a pressure source, pressure distributor passage structure communicating with said pressure source and extending to said servo means, and valve means for regulating the magnitude of the pressure made available to said servo means by said passage structure including cooperating valve parts carried by said idler disc and by said driving member, said valve parts defining a port communicating with said servo means and forming a part of said passage structure whereby the degree of communication between

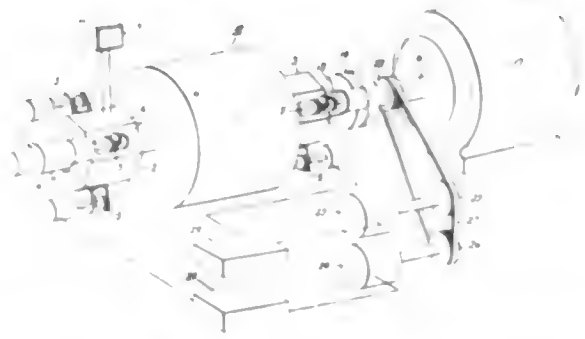
said pressure source and said servo means is determined by the degree of slip between said first discs and said second discs.

3,158,037
CONTROL VALVE SYSTEM
John J. Searles, Garden City, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,105
4 Claims. (Cl. 74—472)



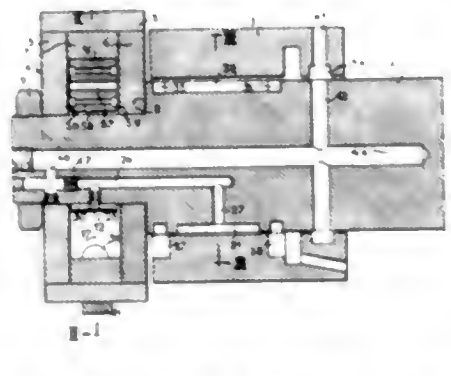
1. In a control system for a power transmission mechanism adapted to deliver torque from an engine to a driven member in a forward driving direction and in a reverse driving direction, fluid pressure actuated friction members adapted to establish in part torque delivery paths between said engine and said driven member, one friction member being engaged during torque delivery in a reverse driving direction and disengaged during torque delivery in a forward driving direction, a fluid pressure source, conduit structure interconnecting said source and said friction members, a movable selector valve means in said conduit structure for distributing pressure selectively to different regions of said conduit structure, one friction member being located in one region and another friction member being located in another region, valve means for establishing a regulated pressure signal that is influenced in magnitude by engine torque demand, separate branch passages extending from said selector valve means to each region, a regulator valve system having a regulator valve means for controlling the magnitude of the pressure made available by said pressure source, said selector valve means being adapted to cause one region to be pressurized upon movement thereof to one position thereby establishing a forward driving torque delivery path and to cause another region to be pressurized upon movement thereof to another position thereby establishing a reverse driving torque delivery path, said regulator valve system and said signal establishing valve means being in fluid communication whereby the magnitude of the controlled pressure of said source is made dependent upon torque demand, said selector valve means being adapted to control distribution of fluid pressure to said signal establishing valve means upon movement thereof from said one position to said other position whereby the influence of said signal upon the regulating characteristics of the regulator valve means is modified upon movement of said selector valve means to a position corresponding to reverse drive operation, the pressure regulator valve means being semi-isolated from said friction member and insensitive to changes in the distribution of pressures to said regions upon movement of said selector valve means between its two positions.

3,158,038
ROTOR VIBRATION REDUCING DEVICE
Thomas P. Goodman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 18, 1961, Ser. No. 160,182
13 Claims. (Cl. 74—573)



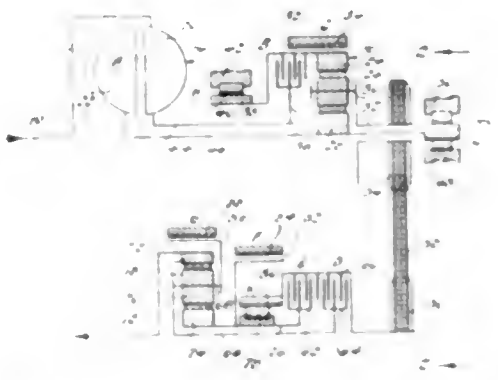
1. In combination, a rotor having a shaft, a bearing for supporting the shaft and force generating means associated with said bearing, said force generating means comprising rotatable weights, the axes of rotation of said weights being diametrically opposed with respect to the shaft axis, and means for driving the weights synchronously with the rotor to provide forces acting on the rotor tending to cancel unbalance therein.

3,158,039
DYNAMIC BALANCING SYSTEM FOR ROTATING STRUCTURES
Paul Favrot, Lyon, France, assignor, by mesne assignments, to Landis Gendron S.A., Rhone, France, a company of France
Filed Feb. 19, 1962, Ser. No. 174,160
Claims priority, application France Feb. 28, 1961
8 Claims. (Cl. 74—573)



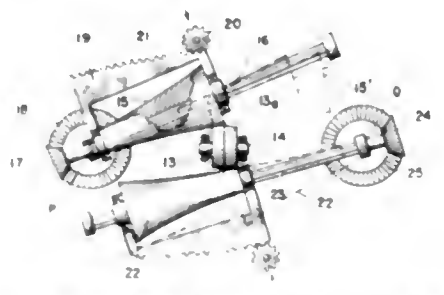
1. The combination with a revolving assembly having a shaft rotatable in at least one bearing, of dynamic balancing means for said assembly comprising a plurality of chambers, equi-angularly disposed at the periphery of said shaft between said shaft and said bearing, raceway means defined in said assembly coaxially surrounding said shaft; a plurality of balancing elements positioned in the raceway for displacement along arcuate paths therein and defining a plurality of spaces between said elements, equal in number to said chambers; passage means connecting each chamber with a related space, and means for supplying fluid under pressure to said passage means, said fluid under pressure supporting at least partially said shaft; whereby a pressure change occurring in any one of said chambers due to dynamic unbalance of the revolving assembly will induce a compensatory shift in the relative position of said elements.

3,158,040
TRANSFER DRIVE WITH COUNTERSHAFT AND INDEPENDENT PLANETARY SETS
Victor C. Moore, Plymouth, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 163,148
1 Claim. (Cl. 74—688)



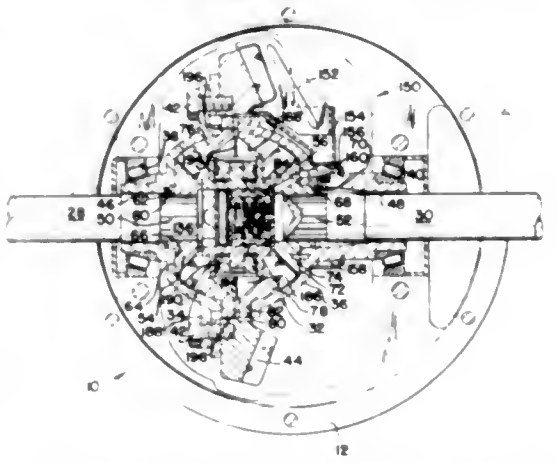
A torque transmitting mechanism comprising, a first longitudinally extending transmission having a forwardly rotating power input shaft axially aligned with a power output shaft, and means drivingly connecting said shafts, a second longitudinally extending transmission positioned parallel to and spaced radially from said first transmission and having axially aligned power input and output shafts, and means drivingly connecting said second transmission power shafts, and power transfer means for transferring the power in both directions between the power output shaft of said first transmission and the power input shaft of said second transmission, said transmissions each having a planetary gearset each having sun and ring gears and a planet carrier, said first transmission having a fluid coupling capable of being filled and emptied of fluid to control the transmission of torque therethrough, said coupling having a pump connected to said power input shaft and a turbine connected to said sun gear, said carrier being connected to said power output shaft, separate over-running brakes for holding said ring and sun gears against reverse rotation while permitting overrun thereof in a forward direction, a selectively engageable clutch connecting said pump and said ring gear, a selectively engageable brake for holding said ring gear against rotation in either direction, the selective filling and emptying of said coupling together with the selective engagement of said brake and clutch and the automatic operation of said overrun brakes providing a plurality of different drives through said first transmission, said power transfer means including separate wheels secured to said first transmission power output shaft and said second transmission power input shaft, a flexible torque transmitting member trained about said wheels for transferring a drive therebetween, said second transmission having a dual clutch having one portion connected to said power input shaft and separate selectively engageable portions connected to said second transmission sun gear and carrier, said separate portions connected to said second sun gear including a parallel connection having an overrunning clutch preventing overrun of said sun gear in one direction relative to said one second transmission input shaft while permitting it be overrun in the opposite direction, the engagement of the clutch portion in parallel therewith bypassing the drive around said overrun clutch and providing a two-way drive between the sun gear and power input shaft, selectively engageable brakes for said second sun gear and carrier, respectively, preventing rotation thereof in either direction, the engagement of the portion of said dual clutch connecting said carrier and input shaft, together with the selective engagement of the second transmission brakes and the automatic operation of said overrun clutch providing a plurality of drives through said second transmission to at times compound the drive transferred from said first transmission through said power transfer means.

3,158,041
VARIABLE SPEED GEAR APPARATUS
Randolph S. Rae, 11740 Sunset Blvd., Los Angeles 49, Calif.
Filed Mar. 11, 1963, Ser. No. 264,340
6 Claims. (Cl. 74—690)



1. A variable speed gear apparatus comprising, in combination: a first rotatable member having a tractrix surface of revolution about its axis of rotation defined by a tractrix curve; a splined shaft axially passing through said first member to mount said member for rotation with said shaft and permit longitudinal movement of said member along said shaft; input means for rotating said shaft coupled to said shaft at a given point normal to the axis of said shaft so that said shaft is free to swing about said normal while said shaft is rotating; actuating means coupled to said first rotatable member to shift its position longitudinally along said shaft; a second rotatable member having a substantially conical surface whose projected apex coincides with said given point, sai dconical surface being in engagement with said tractrix surface; an output shaft mounting said second rotatable member for rotation in a fixed position; and an actuating means for shifting the longitudinal position of said first rotatable member along said splined shaft and simultaneously urging said tractrix surface into continuous surface engagement with said conical surface whereby the speed imparted to said conical surface by said tractrix surface is variable to vary the relative speeds of said splined shaft and said output shaft.

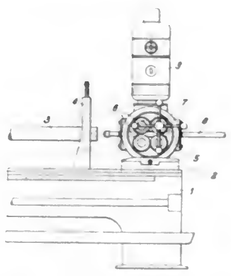
3,158,042
HYDRAULIC LOCKING DIFFERENTIAL
Curt Saurer, Oak Park, Mich., assignor to Thornton Products Company, Dearborn, Mich., a corporation of Michigan
Filed July 31, 1961, Ser. No. 128,226
13 Claims. (Cl. 74—711)



1. In combination, a differential housing adapted to contain lubricating oil and having oppositely disposed openings therein adapted to be closed by axle shaft housings, coaxial wheel driving shafts extending into said housing through said openings, a differential drive mecha-

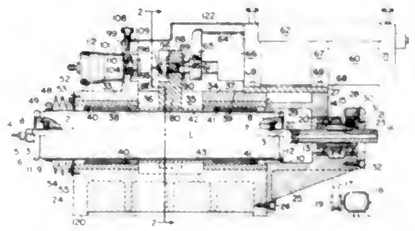
nism disposed within said housing and including a drive pinion, a differential case rotatably mounted on the axis of said shafts and carrying a ring gear coaxially disposed around its outer periphery and in mesh with said drive pinion, differential side gears positioned within said case and mounted on said wheel driving shafts for rotation therewith and for axial outward movement into frictional engagement with said case to restrict relative rotation of said case and the side gears, a spider coaxially arranged within said case for rotation therewith and having its legs extending radially outwardly, differential pinion gears rotatably mounted on the legs of said spider and in mesh with said side gears, said differential pinion gears being movable outwardly on their axes for effecting frictional engagement with the inner wall of said case and thereby to restrict free rotation of the differential pinion gears relative to the case, said legs of the spider having piston chambers therein opening to the outer ends thereof, pistons in said chambers adapted when urged outwardly to move said differential pinion gears into effective frictional engagement with said case, the hub of said spider defining a pump chamber therein, passageways communicating between said pump chamber and the inner ends of said piston chambers, other passageways communicating between said pump chamber and the lubricating oil-containing portion of said housing, means in said housing operable to supply oil to said pump chamber, and pump means within said pump chamber, said pump means including a pair of members which are reciprocally movable relative to each other and are mounted in engagement with said side gears for imparting axial thrust thereto, said pump means being responsive to relative turning of said driving shafts to move said reciprocally movable members in opposite directions so as to urge said side gears into frictional engagement with said case and to supply lubricating oil under pressure to said piston chambers to move said pistons for restricting turning of said differential pinion gears relative to said case to thereby restrict relative turning of said driving shafts with respect to one another.

3,158,043
DEEP HOLE BORING
Karl Burgsmueller, Kreiensen, Germany (% Patentanwalt Dr.-Ing. Helmut Jooss, 33 Braunschweig, Steinweg 5, near Rathaus, Germany)
Filed Oct. 24, 1962, Ser. No. 232,740
Claims priority, application Germany, Oct. 28, 1961, B 64,574
14 Claims. (Cl. 77—5)



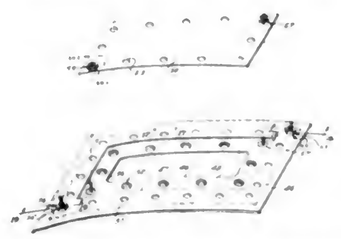
1. The method of deep hole forming which comprises
gripping and continuously rotating a workpiece,
bringing a tool into engagement with the workpiece while the workpiece is being rotated,
and progressively frictionally gripping and moving the tool into the workpiece as the workpiece is being rotated.

3,158,044
PRECISION MACHINING APPARATUS
William A. Jones, Hingham, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Apr. 24, 1961, Ser. No. 104,997
2 Claims. (Cl. 77—33.5)



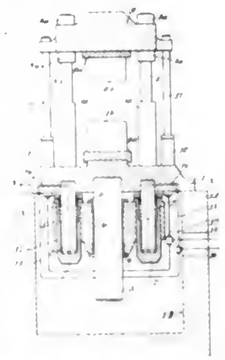
1. A precision machining apparatus comprising a feed slide, at least a pair of anti-friction bearings supporting said feed slide for movement along a machining axis, a housing supporting said bearings, said bearings being spaced apart along said axis and compressed between said feed slide and said housing and thereby pre-loaded to restrain said feed slide against canting movement with respect to said housing, a quill shaft for supporting a cutting tool, said quill shaft rotatably mounted in said feed slide for movement therewith along said axis, motive means arranged for rectilinear movement along a further axis parallel to and offset from said machining axis, an arm secured to said slide axially intermediate of said bearings and secured to said motive means for movement of said slide along said machining axis, and stop abutment means adapted to brake said feed slide in a preselected axial position thereof, said stop abutment means supported in said housing along said further axis for direct interference with said motive means in a position of said motive means corresponding to said predetermined position of said feed slide, whereby said arm is relieved of braking torque.

3,158,045
TOOLING STRUCTURES AND METHODS
Joseph T. Siler, 205½ E. Louisiana, McKinney, Tex.
Filed Sept. 11, 1961, Ser. No. 137,166
18 Claims. (Cl. 77—62)



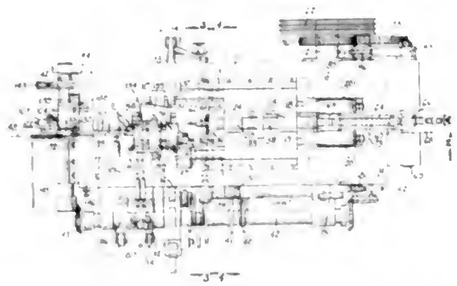
14. The method of fabricating a drilling tool having therein fastener positioning openings corresponding to fastener openings in a master tool including the steps of, forming in the drilling tool fastener positioning openings to relatively large tolerances, positioning in the openings in the drilling tool adjustable tooling bushings having drill receiving bores infinitely adjustable over a given area, alining the drilling tool and the master tool, and adjusting the tooling bushings in the drilling tool to aline their drill receiving openings with the axes of the fastener positioning openings in the master tool.

3,158,046
HYDRAULIC FORGING PRESS
Ewald Steinfort, Dusseldorf, and Albert Hertl, Duisburg, Germany, assignors to Hydraulik G.m.b.H., Duisburg, Germany
Filed May 19, 1960, Ser. No. 30,268
Claims priority, application Germany, May 20, 1959, H 36,427
12 Claims. (Cl. 78—13)



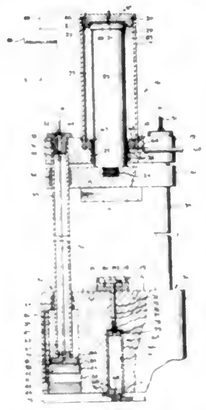
1. In a forging press, in combination, first and second crosshead means; stationary carrier means disposed between said crosshead means; column means connecting said crosshead means for reciprocating movement in unison with respect to said carrier means; means comprising at least one guide shaft connected with said carrier means and slidably received in one of said crosshead means for guiding said crosshead means in parallelism with said column means and for relieving said column means from bending stresses when said press is subjected to eccentric forging pressure; and fluid operated lifting means laterally spaced from and independent of said guide shaft and connected to said stationary carrier means and one of said crosshead means for lifting said crosshead means while the same are guided by said guide shaft.

3,158,047
MACHINE FOR MAKING HEADED ARTICLES
Raymond H. Carlson, Rockford, Ill., assignor to Textron Industries, Inc., Rockford, Ill., a corporation of Delaware
Filed July 6, 1959, Ser. No. 825,363
14 Claims. (Cl. 78—17)



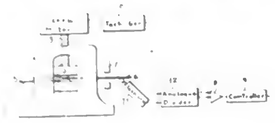
1. A header having a cut-off station through which a length of stock is fed, an extruding die station adjacent the cut-off station, cutter mechanism to sever a workpiece from said stock and carry it to the extruding station, an extruding punch, means for actuating said punch to eject the workpiece from the cutter mechanism into said extruding die station and to effect partial extrusion of said workpiece therein, a heading die and cooperating heading punch, means to transfer the workpiece from the extruding die station to said heading die, and means to actuate the extruding punch independently of and in timed relation with the heading punch.

3,158,048
IMPACT MACHINE
Leo C. Bollar, Pomona, Calif., assignor, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1960, Ser. No. 64,759
6 Claims. (Cl. 78—42)



1. A high energy sudden impact machine comprising a pair of vertically spaced upper and lower platens both vertically movable, a cylinder above the upper platen and connected to the lower platen to be vertically movable therewith, a ram contained in the cylinder and connected to the upper platen so that opposite relative axial movements of the cylinder and ram move the platens relatively toward and away from each other, said cylinder including a head containing a bore which receives and has sealing engagement with a peripheral surface of the upper end of the ram, means for introducing high pressure gas to the cylinder, means operable to displace said ram, said ram having open annular spacing from the cylinder throughout the extent of the ram travel therein to provide a compressed gas chamber, means for supplying compressed gas to said chamber, and an annular piston in said chamber about the ram and operable to elevate the ram into said cylinder head bore.

3,158,049
AUTOMATIC GAUGE CONTROL SYSTEMS
Keith Gordon Huntley, Dukeswood, Gerrard Cross, England, assignor to Rank Precision Industries Ltd., London, England, a British company
Filed Sept. 21, 1961, Ser. No. 139,788
4 Claims. (Cl. 80—56)



1. In a system for automatically controlling the gauge of a material produced in continuous longitudinally ex-

tending form by passing it through a gauge defining forming device regulatable through the operation of power means, the combination comprising, a servo loop including gauge sensing means responsive to the gauge of the material emerging from said gauge defining device to produce an electrical gauge signal proportional to said gauge, an amplifier for said gauge signal, and an electrical controller responsive to the amplified gauge signal for regulating the speed of said power means so as to regulate said gauge defining device with a servo-loop action enabling a correction to be applied to the gauge of the emerging material tending to maintain said gauge within predetermined limits defining a tolerance band, first electrical means responsive to the speed of operation of said power means, second electrical means responsive to the speed of the emerging material, means producing a rate modifying signal proportional to the ratio of said first electrical means to said second electrical means, and means applying said rate modifying signal as a negative feedback in said servo-loop from said electrical controller to said power means thus tending to reduce the loop gain whereby the rate at which correction is applied to the gauge of the material in response to a given error outside the tolerance band is made proportional to the speed of the emerging material and inversely proportional to the speed of said power means thereby to counteract the effect of transportation lag.

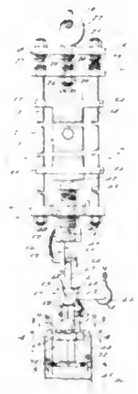
3,158,050
ROTATABLE IMPACT WRENCHES AND THE LIKE
Frederick Shandel, Albion, Calif.
Filed Mar. 4, 1963, Ser. No. 262,500
4 Claims. (Cl. 81—52.3)



1. An impact wrench comprising
(*a*) a spindle,
(*b*) means on an end of said spindle for engaging the object to be turned,
(*c*) a flange extending radially outwardly of said spindle
(*d*) a pair of abutments extended from said flange spaced in opposite directions from said spindle and projecting generally parallel with the axis of said spindle
(*e*) a cross-arm journalled on said spindle being freely rotatable about the axis of said spindle
(*f*) weights on the opposite end portions of said cross-arm
(*g*) said cross-arm abutting against said abutments so as to impart an impact for rotating said spindle,
(*h*) a handle extension on said spindle extended beyond said flange and beyond said cross arm,
(*i*) and a rotatable handle sleeve on said handle extension.

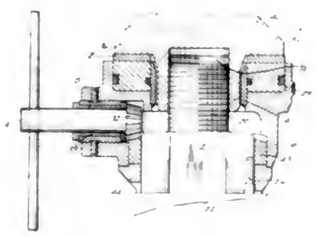
3,158,051
STUD HANDLING TOOL
LeRoy S. DeMart, Lancaster, Ohio, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed Jan. 9, 1961, Ser. No. 81,294
15 Claims. (Cl. 81—53)

1. In a tool for handling studs or the like, a frame, means for suspending said frame from a hoist, said last-mentioned means including resilient means for permitting limited vertical shifting movement between said hoist and frame, a vertically disposed screw threadably carried by



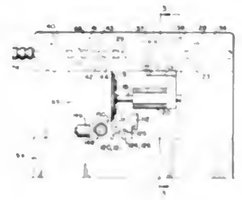
said frame and having the same pitch as the stud threads, means for rotating said screw, and means at the lower end of said screw for detachably securing the upper portion of a stud thereto.

3,158,052
TENSIONING APPARATUS
John L. Biach, Cranford, N.J., assignor to Biach Industries, Inc., Cranford, N.J., a corporation of New Jersey
Filed Oct. 4, 1961, Ser. No. 142,868
2 Claims. (Cl. 81—54)



1. A bolt tensioning apparatus including in combination a housing having an upper face formed with an annular channel and a fluid conducting port communicating therewith, a load transmitting assembly comprising a ring within said channel, a head overlying said ring and an interiorly threaded boss fixed with respect to said head and extending downwardly into said housing, said housing and boss being free of parts obstructing the complete withdrawal of the boss under manual elevation of the head of said load transmitting assembly, said head being rotatable with respect to said housing whereby to permit coupling and uncoupling of the boss threads with the threads of a bolt to be tensioned, said ring being projectable from said channel under the action of fluid pressure and thrusting throughout the entire area of its upper face against the underside of said head to elevate said assembly, a nut-engaging wrench mounted for movement within the lower end of said housing, and removable means for normally retaining said nut-engaging wrench in position within said housing and said wrench being withdrawable from the housing upon said retaining means being detached therefrom.

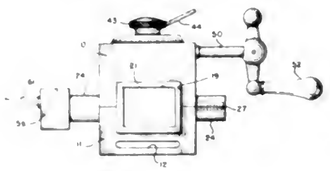
3,158,053
MULTI-SPINDLE LATHE
Paul O. H. Lange, Bielefeld, Germany, assignor to Werkzeugmaschinenfabrik Gildemeister & Comp., Aktiengesellschaft, Bielefeld, Germany
Filed May 3, 1960, Ser. No. 26,534
7 Claims. (Cl. 82—3)



1. In a multi-spindle lathe including a plurality of workpiece mounting spindles, means for indexing said spindles to successive work stations, means for rotating each of said spindles, and rotatable tool feed control cam means connected to said spindle rotating means for rotation in timed relationship with said spindles; the improvement comprising first and second tool carriers, there being one tool carrier at each work station and operatively associated with respective spindle at each work station, each tool carrier being mounted for reciprocation toward and away from its associated spindle, first cams included in said feed control cam means and each associated with a respective first tool carrier, first feeding means each mechanically connecting a first cam to its associated first tool carrier to reciprocate the latter in accordance with the position of said feed control cam means, electric motor operated second feeding means each operable to reciprocate a respective second tool carrier toward and away from its associated spindle, each electric motor operated feeding means including planetary gearing means having two input elements and an output element, the output element being connected to the associated second tool carrier, a high-speed tool positioning motor connected to one of the input elements, and a relatively slow-speed tool feed motor connected to the other of the input elements, second cams included in said feed control cam means and each associated with a respective second tool carrier, each second cam, in accordance with the position of said feed control cam means, energizing the high-speed tool positioning motor of its associated second tool carrier feeding means, and cooperating cam and switch means operable by movement of each second tool carrier towards its associated spindle, said cooperating cam and switch means deenergizing the associated tool positioning motor after a predetermined travel of the associated second tool carrier and energizing the associated tool feed motor, and deenergizing the associated tool feed motor and reversely energizing the associated tool positioning motor responsive to a further predetermined movement of the associated second tool carrier.

3,158,054
ADJUSTABLE RADIUS TURNING TOOL HOLDER APPARATUS
Mieczyslaw Janicki, 275 Decorah Road, West Bend, Wis.
Filed Dec. 13, 1962, Ser. No. 244,479
2 Claims. (Cl. 82—12)

1. A tool-holding apparatus for use with a lathe having a workpiece mounted thereon, said apparatus comprising: a housing having front and rear walls, and having a bottom adapted to rest on the lathe bed, said housing having two separable sections; clamping means for detachably securing said housing on the lathe; a traversing bar slidably positioned on said housing bottom and movable in a plane transverse to the axis of the workpiece, said bar having a transverse bore therethrough intermediate its length, and said bar having a transverse slotted top opening intermediate its length communicating with said bore; a spindle slidably mounted in said traversing bar bore and projecting through elongated openings in said housing front and rear walls, there being a top aperture in said spindle intermediate its length, said spindle being movable rectilineally of the workpiece, and said spindle being in substantial aligment with the vertical mid-point of said workpiece; a calibrated scale on the rearward projecting end of said spindle; a cutting tool mounted in the forward end of said spindle, said tool being engageable with the workpiece; a disc unit



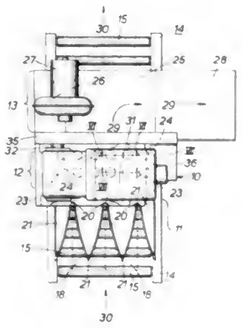
rotatably mounted horizontally in said housing above said traversing bar and spindle members, said disc unit having a channel extending substantially across its underside; dial means on the housing exterior keyed to said disc unit; a block slidably carried in said disc unit channel, said block being of a length less than the diameter of said disc; a drive pin rigid on and depending from said block adjacent one end thereof, said pin projecting downwardly through the slot in said traversing bar and into the aperture in the top of said spindle, the slidable nature of said block within said channel permitting the shifting of said drive pin to a selected eccentric position relative to the disc unit axis; means for releasably locking said block in a desired position in said disc unit channel; and means on the exterior of said housing for rotataing said disc unit, rotation of said disc causing the drive pin thereon to move said traversing bar laterally while simultaneously moving the spindle carried thereby rectilineally of the workpiece.

3,158,055
FLAP CUTTER
Kenneth Atkinson Fisher, Lethbridge, Alberta, Canada, assignor to Molson Breweries Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Oct. 15, 1962, Ser. No. 230,659
Claims priority, application Canada, July 27, 1962, 854,717
4 Claims. (Cl. 83—98)

1. A carton flap removing machine comprising:
(*a*) a main frame,
(*b*) a conveyor on said main frame for feeding cartons to said machine and away from said machine,
(*c*) a plurality of sets of counter-rotating, overlapping, rotary shears, each shear positively driven and being rotatable about a vertical axis,
(*d*) a plurality of ploughs for engaging and pivoting said flaps of said carton to a vertically upstanding

position to be severed by an associated set of said shears,

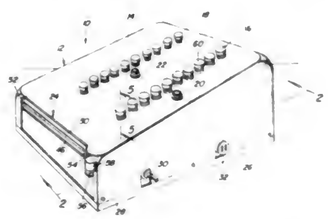
(*e*) said conveyor advancing said carton to said



counter-rotating shears in spaced relation to the frontal faces of said shears, and

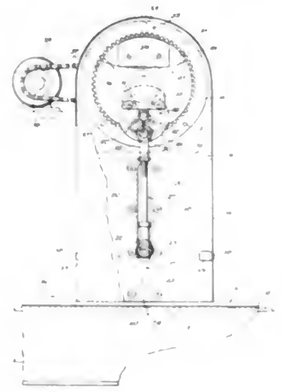
(*f*) means for disposing of said severed flaps.

3,158,056
STAMP AND TAPE DISPENSER
Richard L. Whitmore, P.O. Box 616, Kenbridge, Va.
Filed July 5, 1961, Ser. No. 121,862
16 Claims. (Cl. 83—210)



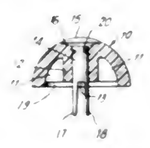
1. Apparatus for dispensing a continuous sheet of unmarked stamps or the like comprising, housing means, supply means mounted in the housing means, cut-off means mounted on the housing means spaced from the supply means, supporting bed means mounted in the housing means for supporting said continuous sheet between the supply means and cut-off means, feeding means engageable with the continuous sheet and rendered operative for continuous feeding of the sheet toward the cut-off means, selectively operable physically marking means for marking the continuous sheet at a selected position on the supporting bed means, mark sensing means continuously disposed in operative contact with said continuous sheet in spaced relation to the selectively operable marking means to deenergize the feeding means in response to sensing of a mark on the sheet, and start means operatively connected to the feeding means for displacement of the continuous sheet by a limited amount to move the mark out of alignment with the sensing means rendering the feeding means continuously operative until another mark becomes aligned with the sensing means.

3,158,057
GUILLOTINE TYPE CINNAMON ROLL CUTTER HAVING EPICYCLE GEARING MEANS CONNECTED TO THE CUTTER BLADE
James B. Hartman, Kansas City, Mo., assignor to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,537
7 Claims. (Cl. 83—355)



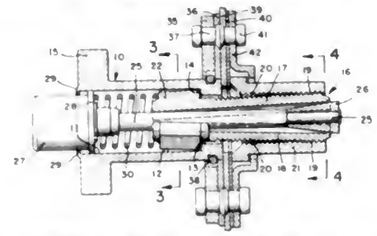
1. A dough cutter for cutting into transverse segments a ribbon of dough moving longitudinally along a path, said cutter comprising: a frame; a knife mounted on said frame for linear movement toward and away from said dough, said knife having a cutting edge transverse to said path; epicycle gearing means having a member moving along a course having at least two lobes and connected to said knife to move the knife into and out of said path as said member traverses one of said lobes to thereby move said knife quickly into and out of said path and to hold said knife out of the path of said dough for a substantially longer time than the time that the knife is in the path of the dough; and power means connected to the epicycle gearing means.

3,158,058
STUD RIVETS
Martin Marx, 14 Briarcliff Drive, Monsey, N.Y.
Filed Sept. 14, 1961, Ser. No. 138,121
2 Claims. (Cl. 85—38)



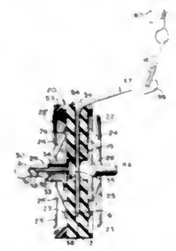
1. A dome-shaped stud consisting of a semi-rigid hollow polyethylene body wall, integral circumferentially spaced radial partitions in said dome and extending to the wall of said dome and thinner than the dome body wall, a central tube having a wall in which said partitions terminate, said tube and partitions terminating substantially coextensively near but short of the base of said dome, and a metal rivet having a head lying in a depression on said wall and the top surface of said head being curved to form a continuation of said dome wall, said rivet having a body in said tube and split prongs projecting beyond the tube and wall, and a projection on said shank tending to hold it in the tube.

3,158,059
RELEASABLE FASTENER
Paul D. Myers, La Canada, Calif., assignor to Aerpat Aktien Gesellschaft, Glarus, Switzerland, a corporation of Switzerland
Filed Mar. 1, 1960, Ser. No. 12,054
5 Claims. (Cl. 85—77)



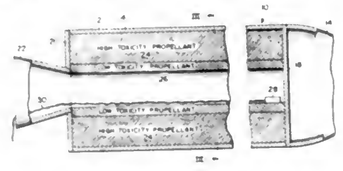
1. A releasable fastener for engaging within an internally threaded socket, comprising in combination: a tubular shell having a central axial opening and provided with an internal annular shoulder, a split sleeve member having an enlarged head slidably received in said opening and provided with an annular abutment engaging said shoulder, co-operating means on the shell and sleeve member preventing relative rotation between said split sleeve and said tubular shell, said split sleeve member having a reduced stem portion projecting outside said tubular shell and provided with external threads for engagement with the internally threaded socket, said split sleeve member being split throughout its length into at least two longitudinal segments having externally threaded portions which are supported out of contact with the threads of said socket when the abutments on the head portions of said segments are seated flat on said annular shoulder, a plunger extending axially through the split sleeve member and having a tapered enlargement extending out of the threaded end of said split sleeve, and resilient means mounted within said shell and acting on said head portions to yieldably press said abutments into flat seating engagement with said shoulder, said plunger being movable longitudinally in a direction to cause said tapered enlargement to spread the projecting ends of the segments into threaded engagement with the socket.

3,158,060
WAFER SWITCH HAVING QUICK RELEASE CONNECTOR
Robert H. Semenoff, Silver Spring, and William J. Donahue, Takoma Park, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 2, 1961, Ser. No. 149,792
8 Claims. (Cl. 89—1.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A weapon release and arming system comprising; means carried by an aircraft for supporting and releasing said weapon while the aircraft is in flight, electrical means for connecting said weapon to an arming system, said electrical means including an umbilical cord and a switch disposed between said cord and said weapon, said switch including removeable insulator means permanently connected to the aircraft whereby, upon release of said weapon by said releasing means, said insulator means is automatically withdrawn from said switch thereby activating said weapon.

3,158,061
LOW TOXICITY ROCKET MOTOR
Samuel E. Lager, La Cumbra Road, Box 385, Somis, Calif.
Filed Oct. 29, 1962, Ser. No. 233,981
3 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A missile rocket motor which operates on rocket fuel and disperses a minimum of toxic gases at and for a predetermined period after launch comprising:

a combustion chamber in said rocket motor;

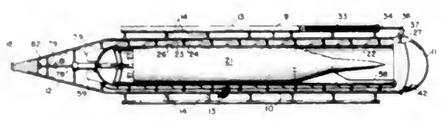
a rocket propellant of high toxicity formed in the outer portion of said combustion chamber;

a rocket propellant of low toxicity formed over said propellant of high toxicity intermediate said propellant of said high toxicity and the center portion of the combustion chamber;

said combustion chamber being closed at its forward end and having a nozzle at its after end; and

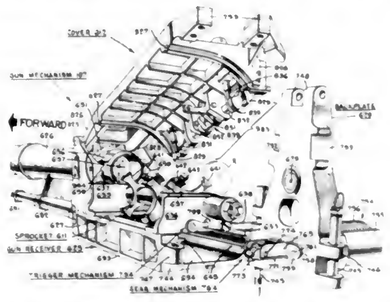
igniting means positioned along the inner surface of said propellant of low toxicity so that from the time of ignition of said igniting means to the end of a selected period of time thereafter exhaust gases emanating from said combustion chamber will have substantially no toxic effect on personnel in the vicinity of the launch site.

3,158,062
MISSILE CONTAINER AND LAUNCHER
Alfred M. Feiler, Palisades, Calif., assignor, by mesne assignments, to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 12, 1959, Ser. No. 845,752
6 Claims. (Cl. 89—1.7)



3. A missile transporting and launching mechanism comprising an elongated fluid tight housing, a normally closed hinged end cap on one end of said housing movable to an open position clear of the end of said housing, a launching tube in said housing, and resilient means between the housing and launching tube resiliently supporting the launching tube in said housing for limited movement relative thereto in all directions, a chamber in said launching tube filled with compressed fluid, valved means operable to release said fluid from said chamber to eject a missile from said tube when said end cap is opened, and lock means between said tube and housing including means operated by release of fluid from said chamber to prevent relative axial movement between said tube and housing.

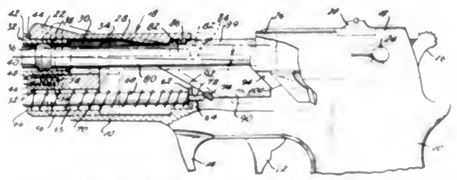
3,158,063
SEAR AND TRIGGER MECHANISM
David F. Anderson, McLean, Va., and Robert Butterworth, District Heights, and Richard E. Taylor, Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 3, 1957, Ser. No. 663,318
4 Claims. (Cl. 89—137)
(Granted under Title 35, U.S. Code (1952), sec. 266)



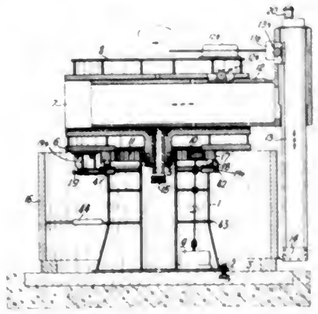
1. In an automatic weapon having a barrel, a receiver defining a transverse round passage, drive means for moving rounds into a firing position and carried in the receiver, a gas operated reciprocable slide connected to said drive means for effecting movement of the latter upon the firing of each round, and a sear and trigger mechanism for the slide comprising; sear means engageable with the slide for restraining the latter against movement, release means for moving said sear means to a disengaged position relative to said slide upon round passage into the receiver, and a firing pin mechanism for firing successive rounds in the receiver after each round is placed in a predetermined position by the drive means, said sear means comprising a housing and means for aligning the latter during sear engagement and disengagement with said slide, latch means pivotally mounted within said housing for latching engagement with said slide when the latter has been driven to a predetermined position by the firing of a round, and means for actuating said latch means to a position of disengagement with said slide when the succeeding round enters the receiver, said latch means comprising a plurality of series of projections on said slide and a latch rotatably mounted in said housing and engageable with at least one of the series of said projections, said actuating means comprising means on said latch forward of the pivot point of the latter and defining a vertically aligned slot, a cam member rotatably mounted in said slot and having a series of arms formed thereon, one of said arms being a latch engaging arm in engagement with a forward face of said latch at a point vertically spaced from the latch pivot point, another of said arms being vertically depending and engageable with another of said projections during forward and rearward movement of the slide.

3,158,064
FIREARM WITH A PIVOTABLE BARREL HAVING A SPHERICAL HUMP ENGAGING A SLIDE MEMBER
Dwayne W. Charron, Chicopee, Mass., assignor to Smith and Wesson, Inc., Springfield, Mass., a corporation of Massachusetts
Filed Jan. 23, 1962, Ser. No. 168,187
5 Claims. (Cl. 89—196)

1. In a firearm, the combination of a slide having a bore formed therein; a bushing threadedly received in the forward end of said slide, said bushing having a cylindrical portion and a flange at the outer end of said slide, said flange having a plurality of notches formed in its periphery; a plunger removably and selectively received in one of said notches, said plunger being received in said slide; a barrel received in the bore of said bushing, said barrel having a spherical hump thereon engaging the inner surface of said bushing.



3,158,065
SWIVELLING BASE LATHE
Jan Kořenek and Karel Kulhánek, Plzen, Czechoslovakia, assignors to Zavody V. I. Lenina Plzen, Narodni Podnik, Plzen, Czechoslovakia
Filed Dec. 8, 1961, Ser. No. 158,026
Claims priority, application Czechoslovakia, Dec. 12, 1960, 7,418/60
6 Claims. (Cl. 90—12)



1. A rotatable base lathe comprising: a stationary stand; a base including a bottom portion mounted rotatably on top of said stand and a central portion and top portion removably secured on said bottom portion; a horizontally movable arm mounted in said central portion of the rotatable base and having a head at an outer end of said arm for movement radially with respect to the axis of rotation of said base in response to retraction and extension of said arm relative to said base; a vertically movable slide mounted in said head with the longitudinal axis of said slide extending at right angles to the longitudinal axis of said arm so that said slide lies close to said rotatable base when said arm is retracted in the latter; and means at one end of said slide for holding a cutting tool.

3,158,066
APPARATUS FOR RECONDITIONING TUBES
Reuben Wesley Salisbury, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,706
6 Claims. (Cl. 90—14)

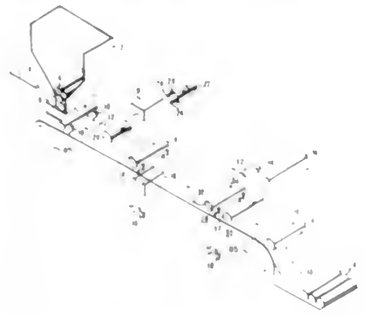
1. An improved machine for sequentially resurfacing the ends of a plurality of rotatable tubular elements adapted for winding up and carrying filamentary textile materials, said machine comprising in combination,

a storage and feeding unit at a first position in the machine for receiving a plurality of such tubes in parallel alignment and for feeding the tubes sequentially to

a moving conveyor means mounted in the machine for conveying said tubes in a path of movement from the said first position to a second position, from the second position to a third position and from said third position to a fourth position in said machine

a cutter means mounted in said machine and positioned in operative alignment with said conveyor means and path of movement of said tubes for engaging and resurfacing the ends of a tube

a tube positioning and securing means mounted in said machine in operative alignment and association with said conveyor means and said cutter means and adjacent the path of movement of the tubes at said second position for sequentially securing tubes carried by said conveyor means in a position of alignment and engagement with said cutter means so that resurfacing is accomplished and subsequently releasing the resurfaced tubes for further movement by said conveyor means,



a tube gauging means mounted in the machine and positioned between said second and third positions in operative association with the conveyor means and the path of movement of the tubes to gauge the length of each tube moved by the conveyor means along the path of movement between said second and third positions and detect tubes having a length greater than a given predetermined length

a tube ejecting means mounted in said machine operatively connected to said gauging means and positioned in operative alignment with said conveyor means adjacent the path of movement of the tubes at said third position, said tube ejecting means responsive to the action of said gauging means in detecting certain tubes to remove from said conveyor means and said machine all tubes having a length less than said given predetermined length,

said conveyor means constructed and arranged at said fourth position to discharge the remaining resurfaced tubes from said machine.

3,158,067
RELAY FOR LOW-SPEED SENSING SYSTEM
James B. Wagner, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Sept. 23, 1963, Ser. No. 310,723
7 Claims. (Cl. 91—49)

1. A hydraulic relay for use in a low speed sensing system including a rotor member with circumferential portions adapted to alternately cover and uncover a pair of circumferentially spaced nozzles to provide two signal pressures fluctuating as a function of rotor speed, said relay including:

housing means forming a first actuating cylinder and a second timing relay cylinder,

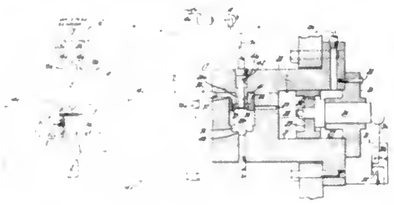
an actuating piston disposed in the first cylinder and forming therewith a first inlet pressure chamber at one side of the piston and a second outlet pressure chamber at the opposite side of the piston,

means for supplying actuating fluid at substantially constant inlet pressure to the first chamber,

restricted bypass passage means communicating fluid from the first chamber to the second chamber,

walls defining a drain passage communicating with the second chamber and opening into an intermediate portion of the second cylinder,

a timing relay piston disposed in the second cylinder and forming therewith a third signal pressure inlet



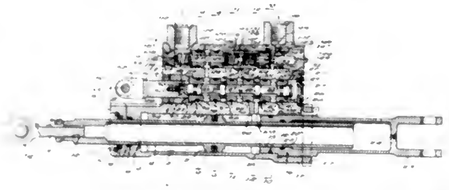
chamber at one side of the piston and a fourth drain chamber at the opposite side of the piston,

conduit means for supplying one of the fluctuating speed signal pressures to the third chamber,

restricted bypass passage means communicating fluid from the third chamber to the fourth chamber,

and means biasing the timing relay piston toward the third chamber to effect communication between said drain passage and the fourth drain chamber, whereby the second chamber is drained to effect movement of the actuating piston when the length of the low-pressure portion of the fluctuating pressure signal equals the length of time required for the timing relay piston to uncover the drain passage.

3,158,068
HYDRAULIC ACTUATOR AND CONTROL UNIT
Marinus C. Bokelman, Pacific Palisades, Calif., assignor to Conair, Inc., Glendale, Calif., a corporation of California
Filed Dec. 28, 1961, Ser. No. 162,661
9 Claims. (Cl. 91—216)



1. A hydraulic actuator and control unit comprising a body having a cylinder, a piston reciprocable in said cylinder; said piston having piston rod means slidably engaging stuffing box means at both ends of said cylinder, means for attaching one end of said cylinder and one end of said piston to separate elements of mechanism to be given relative movement by said actuator, a hydraulic fluid inlet port in said body, a hydraulic fluid outlet port in said body, a control valve means in said body normally occupying a position in which both ends of said cylinder are subjected to equal pressures and said valve means being operable in opposite directions from said normal position to admit pressure fluid from said

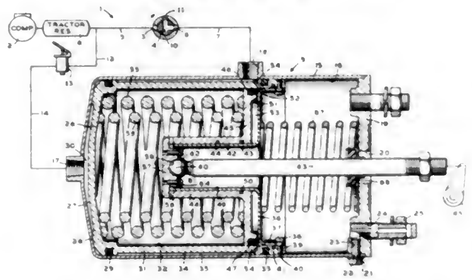
inlet port to a selected end of said cylinder and simultaneously connecting the opposite end of said cylinder with said outlet port, means limiting the extent of movement of said control valve relative to said body, a valve seat in said body, a valve element responsive to differential pressures normally engaging said valve seat; one side of said valve element being exposed to the pressure in said inlet port and said inlet pressure tending to hold said valve element on said seat and the other side of said valve element being exposed to pressure of fluid being discharged from either end of said cylinder, and spring means constantly imposing a bias in addition to that of the inlet pressure to said one side of said valve element whereby said valve element is yieldingly maintained on said seat to prevent fluid flow through said valve seat in a direction toward said one side of said valve element unless it is unseated by pressure of fluid issuing from said cylinder in response to abnormal loads on the elements of a mechanism connected to said actuator sufficient to effect movement of said body relative to said control valve with resultant creation of pressures on said other side of said valve element which are greater than the combined load imposed on said one end thereof by said spring means and the inlet pressure.

3,158,069

BRAKE OPERATING MECHANISM

Norman E. Edwards, Bridgeton, and Raymond F. Stelzer, Berkeley, Mo., assignors to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Apr. 6, 1962, Ser. No. 185,708
4 Claims. (Cl. 92—51)



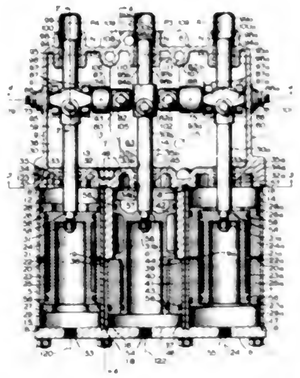
1. An actuating cylinder comprising a housing having an annular sidewall with a bore therein and an endwall, a first piston including an integral sleeve portion slidable rectilinearly in said housing bore and a free end on said sleeve portion, a sleeve bore in said sleeve portion and coaxial with said housing bore, a first chamber in said housing bore between the endwall thereof and said first piston, an annular recess in the peripheral surface of said sleeve portion and sealing means on said first piston at each end of said annular recess, said annular recess defining a second chamber with said sidewall of said housing bore, a first fluid pressure port in the endwall of said housing bore connecting with said first chamber, a second fluid pressure port in the sidewall of said housing connecting with said second chamber, a retaining member fixedly positioned in said sleeve bore including an integrally formed cylinder extending coaxially into said sleeve bore, a cylinder bore extending axially through said cylinder, a second piston slidable rectilinearly in said sleeve bore, an integral extension on said second piston extending coaxially into said sleeve bore, an extension bore in the extension of said second piston slidably positioned on the cylinder of said retaining member, spring means in said sleeve bore between the endwall thereof and said second piston to urge said second piston into abutment with said retaining member, a third chamber in said sleeve bore between said second piston and retaining member, passage means in said sleeve portion connecting said third chamber in fluid pressure communication with said second chamber at all times, said second piston being movable in response to fluid pressure in said second port above a predetermined amount to move said extension into abutment with the endwall of said sleeve bore and to compress said spring means, and a push rod pivotally received in the endwall of the extension bore in radially spaced relation with the cylinder bore and having a work producing end extending exteriorly of said housing bore, said first and second pistons being concertly movable in response to fluid pressure in said first fluid pressure port to actuate said push rod and the work producing end thereof and the compressive force of said spring means serving to move said second piston in said sleeve bore independently of said first piston to actuate said push rod and the work producing end thereof when the fluid pressure in said second fluid pressure port is reduced below the predetermined amount.

3,158,070

MULTI-POSITION FLUID MOTOR MECHANISM

Paul E. Olson, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1961, Ser. No. 98,073
7 Claims. (Cl. 92—52)



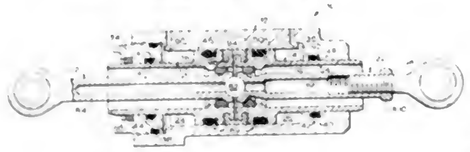
1. A fluid motor device comprising a cylinder having a bore, a fixed piston stop means carried by said cylinder intermediate the ends thereof and projecting into the bore of said cylinder, a pair of coaxially aligned cylindrical hollow pistons, each open at both ends, respectively slidably operable in said bore on opposite sides of said stop means and each having at its outer end a flange extending radially inward, a cylindrical power piston member slidably operable at its opposite ends within said hollow pistons respectively between said flanges, a piston rod secured to one end of said cylindrical power piston member and extending therefrom, and a pair of removable pressure heads closing opposite ends respectively of the bore in said cylinder and providing access to the bore when removed from said cylinder, said pressure heads cooperating respectively with a corresponding one of said hollow pistons and a corresponding end of said cylindrical power piston member and said cylinder to form a pair of chambers one on each side of said cylindrical power piston, said hollow pistons being shiftable by the force thereon of fluid under pressure supplied simultaneously to the corresponding chamber on one and on the other side of said cylindrical power piston member to one position determined by contact of the adjacent ends of said hollow pistons with the said fixed piston stop means, to cause the corresponding inwardly extending flanges on said hollow pistons to correspondingly shift the cylindrical power piston member to an intermediate position in said cylinder, and each one of said hollow pistons being shiftable out of its said one position by said cylindrical power piston member when fluid under pressure is vented from the corresponding chamber on the one or on the other side of said cylindrical power piston member to a different position in which the respective hollow piston is in contact with the corresponding pressure head and which determines the limit of movement of the cylindrical power piston member in a corresponding direction out of its intermediate position.

3,158,071

HYDRAULIC ACTUATOR FITTED WITH PIVOTED JOINT

Stanley J. Gut, Passaic County, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Aug. 15, 1963, Ser. No. 302,382
7 Claims. (Cl. 92—109)



1. A hydraulic actuator comprising:
a cylinder;
a piston made of two hollow piston sections disposed in said cylinder and dividing said cylinder into two variable-volume working chambers for longitudinal displacement in unison relative thereto and forming a space therebetween for automatic take-up movement toward each other;
first means defining a coaxial, annular internal bearing surface in the interior of said first piston section, second means defining a similar coaxial, annular internal bearing surface in the interior of said second piston section;
a backlash-free pivotal bearing means clamped between said first and second piston sections, and rotatable relative thereto, having a first portion defining an annular external bearing surface which engages said internal bearing surface of said first piston, and having a second portion defining an annular external bearing surface which engages said internal bearing surface of said second piston, said external surfaces in said portions of said pivotal bearing means being dual-base spherical segments of substantially equal radius with a common center; and
at least one thrust link mounted on one of said portions of said pivotal bearing means and extending through one of said hollow piston sections.

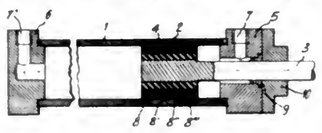
3,158,072

DRIVING CYLINDERS ACTUATED BY FLUID UNDER PRESSURE

René Détrez, 54 Ave. Gabriel Peri, Le Perreux, France

Filed Sept. 1, 1961, Ser. No. 136,403
Claims priority, application France Sept. 16, 1960
8 Claims. (Cl. 92—168)

1. A driving unit actuated by fluid under pressure, comprising in combination, a rigid cylinder, a piston comprising rigid outer surfaces engaging and guided by rigid inner surfaces of said cylinder, a rigid piston rod, means connected with at least one end of said cylinder for engaging and guiding said piston rod, and at least one flexible member interposed between said piston and said piston rod and firmly connected therewith, said piston, said flexible member and said piston rod being rectilinearly



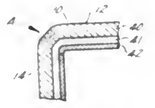
reciprocated as a single unit by said fluid, whereby said flexible member compensates for concentricity imperfections in said cylinder and said piston.

3,158,073

TREATMENT OF CARTON SCORES

George G. Rumberger, Portage Township, Kalamazoo County, Mich., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware

Filed Aug. 23, 1961, Ser. No. 133,491
21 Claims. (Cl. 93—36)



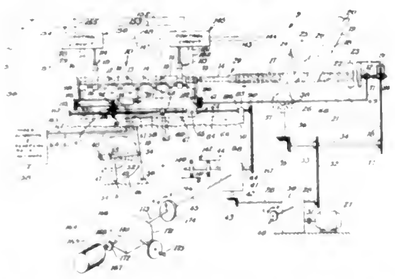
1. The method of improving the protective properties of a folding carton produced from sheet materials laminated to each other by a thermoplastic adhesive, by a process which includes scoring such sheet materials, folding at a score line to provide a panel intersection, and erecting the carton, wherein said thermoplastic adhesive between said sheet materials is disturbed or ruptured at said score line by scoring or folding during the process of constructing or erecting the carton, which comprises the step of applying heat in the vicinity of said score line at said panel intersection to reconsolidate the thermoplastic adhesive laminant between said sheet materials into an essentially continuous layer at said score line.

3,158,074

METHOD AND APPARATUS FOR MANUFACTURING SPIRALLY WOUND CONTAINERS WITHOUT TRIM LOSS

Roger S. Brigham, Crete, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

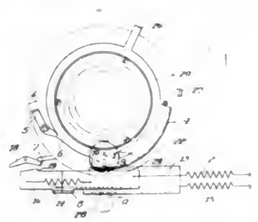
Filed Mar. 28, 1963, Ser. No. 268,705
7 Claims. (Cl. 93—80)



1. A machine for the production of spirally wound tubular bodies from strip material including: means for winding strip material on a mandrel to form a tube having periodically recurring circumferential registration lines thereon, and for moving the tube axially along the mandrel; cutting means positioned adjacent the being

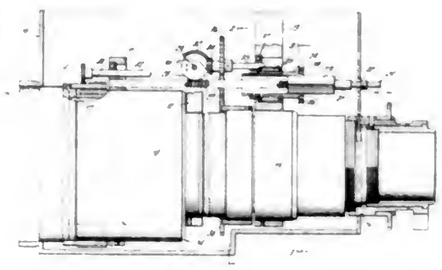
formed tube for severing tubular bodies therefrom; and means for moving the cutting means cyclically back and forth parallel to the axis of the mandrel; said cutting means including a first cutter mounted for movement with a first observing means for observing a first registration line during a portion of the cyclical movement of the cutting means in which the tube and cutting means are moving in the same direction and at substantially the same speed; said cutting means including a second cutter mounted for movement with a second observing means for observing a second registration line during the same interval that the first registration line is being observed; first adjusting means independent of the means for cyclically moving the cutting means, being able to continuously adjust the position of the first observing means and first cutter with respect to the being wound tube during the said portion of the cyclical movement of the cutting means; first control means continuously responsive to a deviation of the first said registration line from a desired position with respect to the said first observing means, said first control means being operatively associated with the said first adjusting means so as to continuously cause to be minimized any such said deviation that may be present prior to the severing of the tube by the first cutter; second adjusting means independent of the means for cyclically moving the cutting means, being able to continuously adjust the position of the second observing means and second cutter with respect to the being wound tube during the said portion of the cyclical movement of the cutting means; second control means continuously responsive to a deviation of the second registration line from a desired position with respect to the said second observing means, said second control means being operatively associated with the said second adjusting means so as to continuously cause to be minimized any such said deviation that may be present prior to the severing of the tube by the second cutter; said second observing means being spaced from the first observing means in a direction opposite the direction of advance of the being wound tube; a third cutter disposed intermediate the said first and second cutters, said third cutter being adjustably movable back and forth parallel with respect to the being wound tube and proportioning means associated with the first, second and third cutters operative to maintain the third cutter in a pre-set proportional spaced relationship between the first and second cutters as they are shifted by the first and second adjusting means.

3,158,075
SINGLE-LENS REFLEX CAMERA
Naoyuki Ohara, 436 1-chome, Soshigaya, Setagaya-ku, Tokyo-to, Japan
Filed May 29, 1961, Ser. No. 113,175
Claims priority, application Japan, June 1, 1960, 35/26,156
4 Claims. (Cl. 95—42)



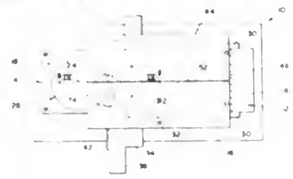
1. Photographic single-lens reflex camera having a shutter means, diaphragm means, a frame and a pivotally displaceable viewing mirror, which comprises a basic member operatively connected to the viewing mirror, and an auxiliary member, straight line path means provided in said frame having two ends, said basic and auxiliary members being positioned in end-to-end relationship along said straight line path means and being respectively movable along said straight line path, a first spring means connecting said members to bias said members toward each other, a second spring means connecting said auxiliary member and a fixed point on said frame at a point remote from said auxiliary member in the direction of said basic member, and a cocking means for displacing said auxiliary member along said path means to one end of its movable range, said first and second spring means being simultaneously tensioned by said displacement by said cocking means and said members, mean to release said basic member and means to release said auxiliary member, said first and second spring means and said basic and auxiliary members being so related that when said basic member is released said basic member is made to move by said first spring means toward said auxiliary member in one direction, and when said auxiliary member is released said basic member is made to move in the other direction by the movement of said auxiliary member under the influence of the said second spring means, thus achieving the reciprocating motion of said basic member and enabling said mirror for viewing to rise and fall and take a photograph.

3,158,076
CONTROL DEVICE FOR ZOOM LENS SYSTEMS
Frank G. Back, 55 Seacliff Ave., Glen Cove, N.Y., and Willi H. Schrader, Glen Cove, N.Y.; said Schrader assignor to Frank G. Back, doing business as Research and Development Co., Glen Cove, N.Y.
Filed Nov. 30, 1962, Ser. No. 241,219
13 Claims. (Cl. 95—45)



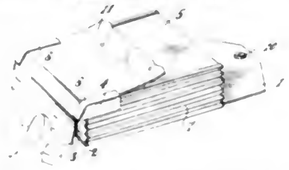
1. A control device for a mechanically compensated zoom lens system having a rotatable barrel for focusing and a rotatable barrel for driving the movable zoom lens elements comprising a housing, a longitudinally slidable and rotatable control rod in said housing, a collar portion on said control rod having a non-circular cross-sectional shape, a fixed bushing journaled within the housing to slidably receive the collar portion of the rod and having a non-circular opening therein to prevent rotation of the collar within the bushing, a worm section on the control rod, a first gear means driven by the worm section portion on the control rod, a ring gear secured to the rotatable zoom barrel and operatively coupled to the first gear means to rotate the said rotatable zoom barrel, a second gear means carried by the fixed bushing and responsive to the rotary motion of the control rod, intermediate driven means coupled to the second gear means, an elongated gear on the rotatable focusing barrel and means including the driven means to rotate the elongated gear of the rotatable focusing barrel to focus the varifocal lens system.

3,158,077
METHOD AND APPARATUS FOR REPRODUCING DESIGNS
Henry L. Miller, Pittsburgh, and Thomas R. Ramsden, Mars, Pa., assignors to West Penn Screen Service, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1963, Ser. No. 283,791
15 Claims. (Cl. 95—73)



1. The method of producing a stencil screen for the transfer of a design onto a conical surface and at a fixed radius comprising the steps of preparing a radius negative of said design whose radius is of a predetermined dimension; producing a straight-line positive of said design by photographically distorting said radius negative, said straight-line positive having a corresponding radius equal to said predetermined dimension; reproducing said straight-line positive photographically to produce a second straight-line positive bearing said design and having a corresponding radius equal to said fixed radius, and employing a sensitized stencil screen for contact printing said second straight-line positive to produce a stencil screen bearing a negative of said design in straight-line form having a corresponding radius equal to said fixed radius.

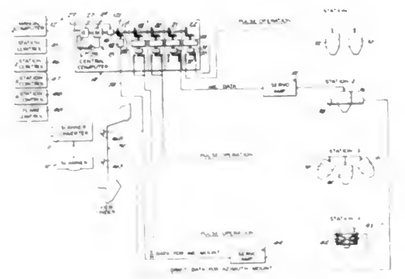
3,158,078
DEVICE FOR STRAIGHTENING, STORING AND COATING PICTURES
John Trautinger, 355 E. Eleanor St., Philadelphia, Pa.
Filed May 8, 1962, Ser. No. 195,361
1 Claim. (Cl. 95—100)



A device for straightening film, comprising a container having a front wall merging at its bottom into a first strip extending inwardly and downwardly and merging into a flat portion, said flat portion merging into a second angle strip merging into the rear wall of the container, film guides secured in spaced relationship on said front wall and curving downwardly and inwardly over said angle strip to terminate in proximity to said flat portion, whereby two straightening edges are provided, one where the front wall merges with the first angle strip and one where the first angle strip merges into said flat portion.

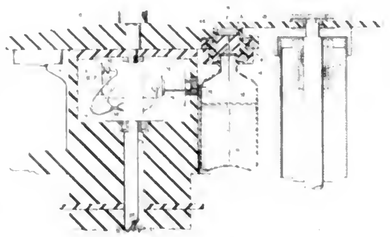
3,158,079
CONTROL SYSTEM FOR AERIAL PHOTOGRAPHY
Samuel P. Willits, Barrington, and William L. Mohan, Prospect Heights, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Original application Mar. 28, 1957, Ser. No. 649,078, now Patent No. 2,967,470, dated Jan. 10, 1961. Divided and this application Jan. 9, 1961, Ser. No. 81,440
12 Claims. (Cl. 95—12.5)

1. A control system for providing image motion compensation in an aerial camera mount comprising a rotatable shaft, velocity servo motor means for causing said shaft to rotate at a speed corresponding to the aircraft velocity to altitude ratio, synchro transmitter means coupled to said rotatable shaft for transmitting electrical signals in accordance with the shaft rotation, actuating means coupled to the camera mount for rocking the mount, said actuating means comprising synchro receiving means connected to said synchro transmitting means, a servo motor,



a clutch, means coupling said servo motor to said synchro receiving means and to said clutch, a pulse actuated solenoid operative when energized to couple said servo motor through said clutch to said mount to rock the latter at a speed determined by the servo motor speed and during intervals determined by the energization rate of said solenoid, and pulse switching means operatively associated with said rotatable shaft connected to said solenoid for energizing the latter at a selectable rate.

3,158,080
LIQUID APPLICATOR
Nicholas J. Blazensky, Jr., Glastonbury, Conn., and Robert L. Buckingham, White Plains, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1960, Ser. No. 78,674
2 Claims. (Cl. 95—89)



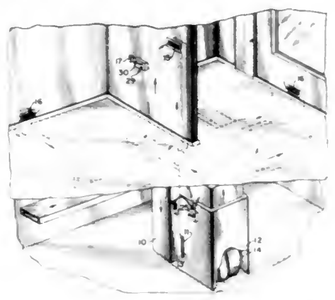
2. In apparatus for applying a coating liquid to a surface by moving said surface past an applicator with a space between said surface and said applicator but with said surface in contact with a coating liquid supplied from said applicator,

an applicator having a horizontal substantially circular upper surface to which said liquid is supplied, and

means for supplying said liquid to said upper surface sufficient to fill said space with a substantially circular meniscus of said liquid forming a stable body having a flattened oval cross-section and to replenish the

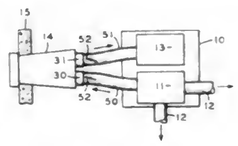
liquid which is carried away on the coated surface so there is no excess flow from said applicator.

3,158,081
AIR TREATMENT SYSTEM
Jack Frost, 3055 Glenrich Parkway, Columbus, Ohio
Filed June 18, 1962, Ser. No. 203,394
2 Claims. (Cl. 98—30)



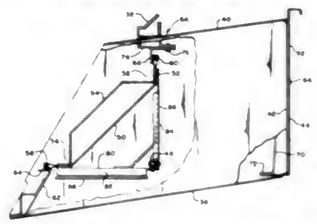
1. In a heating and air conditioning system including a central unit, air distribution and return lines, means for circulating air, and control means for said circulating means, spray device means associated with said system in a manner to discharge the spray into the return air line in said system, said spray device means including a container for the material to be sprayed and means for controlling the discharge from said container from a remote location, and including automatic means for causing the intermittent operation of said spray device and additional means for rendering said automatic means inactive to permit said spray device to be operated manually from said remote location when said means for circulating air is in operation.

3,158,082
AIR CONDITIONING SYSTEM AND VENTILATOR THEREFOR
Theodore L. Dillingham, 10108 Royal Drive St., and John R. Rinehart, 10141 Royal Drive St., both of St. Louis, Mo.
Filed May 10, 1961, Ser. No. 109,051
7 Claims. (Cl. 98—33)



1. In an air conditioning system, an enclosure, an air distributing unit including an air return, an air feeder for recirculating a portion of the conditioned air to said enclosure and means for conditioning the air between the air return and the air feeder, a duct bypassing said enclosure and communicating the feeder with the atmosphere outside of said enclosure to provide an outgoing flow line for a portion of the conditioned air, a second duct bypassing said enclosure and communicating the said return with the atmosphere outside of said enclosure to provide an incoming flow line for fresh air.

3,158,083
BYPASS DAMPER CONSTRUCTION
Dale L. Selhost, Rock Island, Ill., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Mar. 10, 1961, Ser. No. 94,744
4 Claims. (Cl. 98—38)



1. In a unit ventilator of the bypass damper type having a cabinet provided with air admission and air discharge openings:

opposite vertical partition means defining a central air passageway between said air inlet and air outlet means;

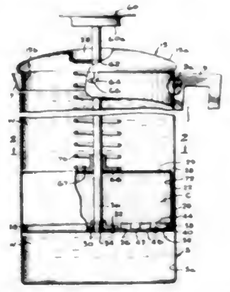
heat exchanger means disposed in said central air passageway to extend forwardly across a portion of said central air passageway;

a unitary bypass damper assembly including a housing having opposite end walls, separate from said vertical partition means, and a plurality of cross members extending between said opposite end walls to define a bottom air inlet and a first air outlet and a second air outlet, and a bypass damper disposed within said housing for displacement between opposite extreme positions selectively closing off said first and said second air outlets;

and means for releasably mounting said assembly in said central air passageway with said first air outlet connected to direct air passing therethrough to said heat exchanger means, and said second air outlet connected to direct air passing therethrough around said heat exchanger means;

said bypass damper includes a hollow closure portion formed of a pair of trough-shaped panels secured in opposed relation and carrying resilient sealing means along the opposite longitudinal edges.

3,158,084
COFFEE MAKER
Harold J. Cohn, 826 Tigertail Road, Los Angeles, Calif.
Filed Apr. 8, 1963, Ser. No. 271,145
7 Claims. (Cl. 99—297)



7. A device for making coffee comprising an open-topped cylindrical receptacle adapted to contain a charge of water to be used in making coffee, a hollow cylindrical plunger adapted to contain ground coffee received in said receptacle for movement axially thereof and having perforations in its top and bottom, a seal ring carried by said plunger and interposed between said plunger and the inner surface of said receptacle, a detachable cover for said container having a rod-passing opening, a plunger rod attached to said plunger and extending thereabove and slideably through said opening in the cover, a handle on the outer end of said rod, and a compression spring between said cover and said plunger for forcing said plunger downwardly through the water in the container.

3,158,085
BROILER UNIT
Richard I. Page, Excelsior, and Ronald D. Walther, Minneapolis, Minn., assignors to Foley Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed June 25, 1962, Ser. No. 204,694
1 Claim. (Cl. 99—402)



A broiler unit comprising:

(*a*) a generally horizontally extending upper broiler rack, said upper broiler rack having opposite end portions which each define a pair of generally horizontally spaced connector elements each having a reduced portion,

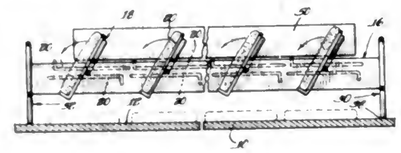
(*b*) a generally horizontally extending lower broiler rack generally similar to said upper broiler rack and spaced vertically therebelow, said lower broiler rack having opposite end portions which each define a pair of generally horizontally spaced connector elements,

(*c*) a pair of horizontally spaced generally upstanding rack-supporting standards each one disposed adjacent the opposite end portions of said vertically spaced upper and lower broiler racks, said standards both being generally of inverted U-shape form and said standards each comprising:

(1) an upper intermediate handle portion, and

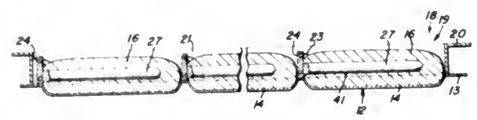
(2) a pair of depending legs each one disposed on an opposite side of said intermediate handle portion, said legs of each of said standards being generally horizontally aligned with one another and each of said legs comprising an upper angle portion connected to said intermediate handle portion and which upper angle portion extends generally downwardly and angularly inwardly generally toward said broiler racks, and each leg further comprising a lower portion having a plurality of vertically spaced slots disposed for selective engagement with the adjacent connector element of said lower broiler rack, each of said legs further comprising a knee portion disposed generally at the junction of said lower portion thereof with said upper angle portion thereof and said knee portion thereof defining a slot for engagement with the reduced portion of the adjacent connector element of said upper broiler rack, and the knee portions of each of said standards being more widely spaced than the spacing between the reduced portions of said spaced connector elements of said upper broiler rack whereby to require a slight movement of said leg of each of said standards inwardly toward one another to permit engagement and disengagement between the same and said upper broiler rack connector elements.

3,158,086
APPARATUS FOR CHARGING HAMBURGER PATTIES ONTO A GRIDDLE
Ralph E. Weimer, 1261 Lawler Ave., Lombard, Ill.
Filed Mar. 21, 1960, Ser. No. 16,443
6 Claims. (Cl. 99—423)



2. For use in making cooking hamburger patties in large numbers, a hamburger patty loading device adapted to deposit a plurality of hamburger patties at once in optimum cooking positions on a cooking grill or the like and comprising, in combination, a frame movable into and out of overlying relation to a cooking surface, a plurality of hamburger patty loading elements disposed on said frame alongside each other; each of said loading elements including hamburger patty support structure formed of wire and defining an elongated, fenestrated patty support face extending longitudinally along one side of the loading element and having a width which is substantially uniform throughout the length of the support face, means supporting said respective loading elements on said frame for rotation between the patty loading positions in which said support faces face upwardly for supporting patties and patty unloading positions in which the support faces face downwardly in generally horizontal positions for dumping patties, actuating means connected with all of said loading elements to rotate the latter in unison between said loading and unloading positions thereof, and said frame being shaped to define an unobstructed patty depositing space extending from the structure of said loading elements defining said support faces downwardly to the extreme lowermost portion of the loading device.

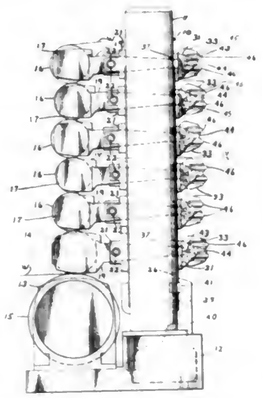
3,158,087
SANDWICH BUN MOLD
Marjorie E. Hedglin, 1029¾ E. 6th St., Tucson, Ariz.
Filed Dec. 21, 1962, Ser. No. 246,595
3 Claims. (Cl. 99—439)



1. A two-piece bun baking mold comprising a mold pan and a mold frame cooperating therewith and detachably mounted thereon, said mold pan having a closed horizontal wall with a laterally projecting coplanar marginal flange together with a plurality of portions downwardly dished from said wall defining baking compartments and disposed in a transverse row, said mold frame having side and end walls and being open at its top and bottom, said frame walls being removably seated at their

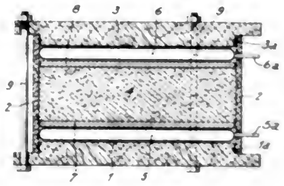
lower edges upon said pan flange, a support bar having its ends pivotally journaled in said side walls and extending transversely across said frame adjacent said transverse row of compartments, a plurality of mold cores fixedly mounted upon and projecting laterally in coplanar relation from said support bar, the lowermost edges of said mold cores and said lower edges of said frame walls being substantially coplanar, said support bar being movable about its pivoted ends between a baking position with its cores disposed in the frame plane and with each core in overlying medially positioned relation to one of said compartments with its lowermost edge substantially in the plane of said pan wall and a dumping position with the frame removed from said pan and with its cores disposed perpendicularly to and downwardly of the frame plane, a support arm on said support bar intermediate the ends thereof and extending in the direction of and substantially in the plane of said cores, said arm being engaged with said pan wall and supporting and retaining said support bar and the associated cores in said baking position and being disengaged from said pan and freeing said support bar and cores for gravity movement into said dumping position when said frame is removed from said pan.

3,158,088
CALENDER NIP CONTROL DEVICE
Karl H. Seidel, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed July 11, 1963, Ser. No. 294,337
9 Claims. (Cl. 100—163)



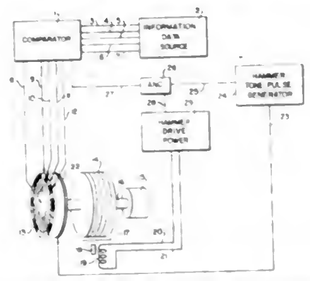
1. In a paper machine, a multi-nip calender comprising a calender frame, a stack of calender rolls movably supported in said frame including a bottom roll rotatable about a stationary horizontal axis and a plurality of superposed rolls rotatable about vertically movably axes, separate and independent bearings for supporting opposite ends of said superposed rolls, an individual lift lever supporting each bearing, means pivotally mounting said lift levers to said frame for movement about axes parallel to the axes of rotation of said rolls and extending transversely of said lift arms, a pivoted load lever in association with each lift lever having facing engaging surfaces engageable with opposite sides of said lift arm, and fluid pressure operated means for moving said load levers in one direction to engage the associated lift arms and pivot said arms in a direction to relieve the calender rolls from the weight of the support of the bearings therefor and to move said load levers to engage opposite sides of said lift arms and move said lift arms in a direction to increase the nip pressures between said calender rolls.

3,158,089
DEVICE FOR PRESSING GRUYERE CHEESES
Robert Fillol, 87 Rue de Lourmal, Paris, France
Filed Sept. 25, 1961, Ser. No. 140,500
Claims priority, application France, Sept. 29, 1960, 839,845, Patent 1,275,488
4 Claims. (Cl. 100—244)



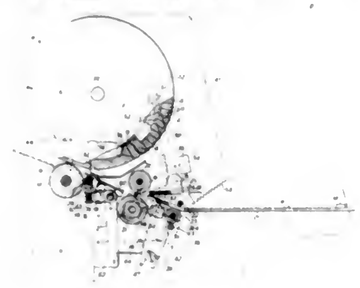
1. In a press adapted to press a Gruyere cheese which becomes progressively more rigid as the pressing operation continues, in combination: an upper transverse movable circular plate member adapted for engagement with an upper surface of the cheese, a lower transverse movable circular plate member adapted for engagement with a lower surface of the cheese directly below said upper surface, a common cylindrical wall means surrounding said cheese and said movable plate members, end closure means closing opposite ends of said wall means, said end closure means having edge portions which extend past said wall means, removable tie rods extending bebtween the closure means and passing through openings in said edge portions to clamp the wall means between said end closure means, said end closure means being removable at will to open at least one end of said wall means, said end closure means defining a separate space between said closure means and each of said movable plate members, a deformable hollow air-tight member in each space, and means for inflating said air-tight members.

3,158,090
HIGH SPEED HAMMER PRINTERS WITH CODE SIGNAL MEANS
Carl I. Wasserman, Queens Village, N.Y., assignor to Potter Instrument Co., Inc., Plainview, N.Y., a corporation of New York
Continuation of application Ser. No. 60,601, Oct. 5, 1960. This application Nov. 21, 1963, Ser. No. 329,936
(Filed under Rule 47(b) and 35 U.S.C. 118)
4 Claims. (Cl. 101—93)



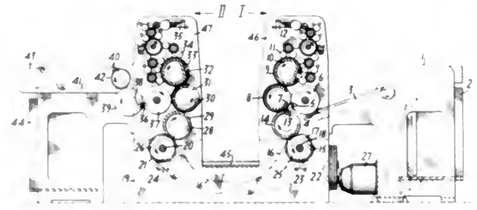
1. In a high speed printing system, the combination of, a printing type carrier including means to move printing type in a predetermined order past a printing station, means to effect a transfer of information from the printing type to a recording medium, circuit means to initiate the information transfer in response to a predetermined signal, a comparator circuit to produce the predetermined signal in response to an information data signal and a printing type identification signal, a code wheel including rotatable support means and having code generating characteristics spaced apart in a predetermined arrangement, a plurality of parallel code detecting elements including couplings spaced apart about said code wheel for deriving predetermined combinations of signals from said code wheel which comprise coded representations of the characters on said type wheel, and hammer tone generating means on the support means with the code wheel for accurately timing the predetermined signal.

3,158,091
ROTARY HECTOGRAPHIC DUPLICATING MACHINES
Stephen Matthews, Hadley Wood, Barnet, and Roland Brown, Friern Barnet, London, England, assignors to Block & Anderson Limited, London, England, a British company
Filed Apr. 25, 1961, Ser. No. 105,495
Claims priority, application Great Britain, Apr. 29, 1960, 15,176/60
4 Claims. (Cl. 101—132.5)



1. A rotary hectographic duplicating or like machine which comprises a rotatable printing drum having means for securing an image-carrying master sheet thereabout with the text or copy lines thereof extending parallel to the axis of said printing drum, a counterpressure member for forming a printing couple in conjunction with said printing drum to impress the image of said master sheet against the copy sheet in the printing bight thereof, means for causing intermittent printing pressure between said printing drum and said counterpressure member in synchronism with the passage through said printing bight of said copy sheet and said master image to effect selective line printing, copy sheet conveyance means defining a travel path for said copy sheet up to said printing bight, first copy sheet restraining means at a first position along said copy sheet travel path, said first copy sheet restraining means bearing against both sides of the copy sheet moving therepast so as to exert a retarding drag thereon and being separated from said printing bight by a portion of said copy sheet travel path which is devoid of any further continuously effective copy sheet restraining means, movable supplementary copy sheet restraining means located at a second position along said copy sheet travel path between said first position and said printing bight, said supplementary copy sheet restraining means being movable between an operative position in which it is effective to impose restraint upon movement of said copy sheet along said path and an inoperative position in which it does not impede the free travel of said copy sheet along said travel path, copy sheet sensing means located in the immediate vicinity of said first position for detecting the presence or absence of a copy sheet at said first position, and operating means for said movable supplementary sheet restraining means responsive to said sheet sensing means to move said supplementary copy sheet restraining means to an inoperative position whenever a copy sheet is present at said first position.

3,158,092
ROTARY LETTERPRESS HAVING A MIRROR IMAGE CYLINDER ARRANGEMENT
Karl Barthel, Heidelberg, Germany, assignor to Schnellpressenfabrik Aktiengesellschaft Heidelberg, Heidelberg, Germany, a corporation of Germany
Filed Mar. 14, 1963, Ser. No. 265,223
Claims priority, application Germany, Mar. 27, 1962, Sch 31,196
3 Claims. (Cl. 101—177)

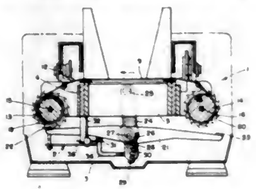


1. A rotary letterpress printing press for color-relief or offset printing comprising, in combination, at least one pair of series printing units, each pair of printing units comprising a first printing unit and a second printing unit spaced from the first unit and disposed in series therewith, means to deliver sheet stock individually to said first unit for printing an impression thereon, means to automatically transfer and deliver said sheets individually from said first printing unit to said second unit for printing on a same side on which the first-mentioned impression is printed thereon, each printing unit comprising printing elements including a plurality of cylinders comprising at least three cylinders comprising a central cylinder, an uppermost cylinder comprising a form cylinder cooperative with said central cylinder, a lower cylinder cooperative with said central cylinder and inking mechanism comprising inking rollers upwardly of said uppermost form cylinder, said second unit having all of its cylinders including its central cylinder, form cylinder, lower cylinder, and inking mechanism including inking rollers disposed vertically symmetrically with said first unit in a mirror arrangement of said first printing unit, a single operators stand having a single principal level intermediate of said two units from which all of said cylinders and said inking mechanism are accessible, said principal level of said operators stand being disposed at a level lower than any of all of said cylinders, and said means to automatically transfer said sheets individually from said first printing unit to said second printing unit comprising driven means disposed in each of said printing units at least partially above said principal level operators stand in a mirror image arrangement for effecting transfer of sheets between said lower cylinder of each unit and said means to automatically transfer said sheets individually from said first printing unit to said second printing unit and comprising delivery means disposed below said operators stand.

3,158,093
PRINTING DEVICES
John W. Carlson, 5625 N. Kolmar Ave., Chicago 30, Ill.
Filed Aug. 8, 1961, Ser. No. 130,052
3 Claims. (Cl. 101—310)

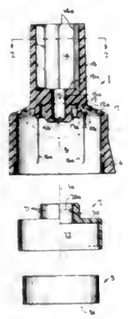
1. In a printing mechanism including supporting means, a platen arm pivotally mounted on supporting means for oscillation between a printing position and a normal at-rest position, an inked ribbon extending across said printing position, two spools rotatably supported by said supporting means in substantially parallel relation to each other, said ribbon being wrapped on said spools and supported thereby, each of said spools having a ratchet wheel thereon, and an elongated lever selectively operatively

engageable with said ratchet wheels and reciprocable longitudinally to thereby rotate said ratchet wheels and spools and thereby move said inked ribbon across said printing position, means for so reciprocating said lever and thereby rotate said spools in timed relation to said oscillation of said platen arm, said last-mentioned means including another lever pivotally mounted on said supporting means for oscillation through a predetermined path of movement, a link operatively connecting said other lever to said elongated lever in position to so reciprocate said elongated lever upon said oscillation of said other lever,



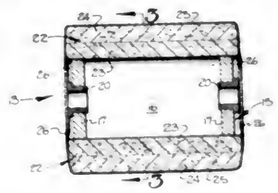
said other lever having an elongated slot therein, and linkage means, said linkage means including a link operatively connected to said platen arm for movement thereby during said oscillation of said platen arm, and a third lever operatively connected to said last mentioned link for movement thereby during said movement of said last mentioned link, said third lever including a member operatively disposed in said slot in position to so oscillate said other lever during all of said oscillation of said platen arm except for a fractional portion of said last mentioned oscillation at one end thereof.

3,158,094
RECIPROCATING MARKING STAMP WITH REMOVABLE PRINTING ELEMENT
William C. Harris and Philip L. Crowell, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 27, 1963, Ser. No. 268,286
5 Claims. (Cl. 101—327)



1. A retractable stamping device comprising an integral unit having a first cup and shank, said first cup comprising a body portion and a depressible shoulder portion connected to said shank, said shoulder and shank together forming the top of said first cup, said first cup and shank each having an opening with said openings being in opposite directions, a second unit associated with said first cup comprising a second cup opening in the same direction as said first cup having a smaller diameter and shorter height than said first cup and containing an ink retaining material fixedly secured therein, and means for locking said second cup into said first cup and shank, said first cup, shank, and second cup having the same vertical axis, whereby said ink retaining material and second cup are contained completely within said first cup when in a reposed position and in contact with a working surface when said shank and shoulder are depressed.

3,158,095
INKING ROLLER FOR A PRINTING APPARATUS OR THE LIKE
John A. West and William R. Eppes, Charlotte, N.C., assignors to Idento Label Company, Charlotte, N.C., a corporation of North Carolina
Filed Mar. 12, 1963, Ser. No. 264,574
5 Claims. (Cl. 101—367)



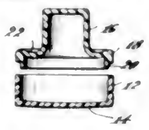
5. An inking roller for use with a printing apparatus or the like comprising

(*a*) a cylindrical core member adapted to be rotatably mounted on a printing apparatus,

(*b*) an inner tubular covering mounted on said core member in surrounding relation thereto and for rotation therewith and being adapted to contain a supply of ink for delivery to the printing apparatus, said inner covering comprising two concentric layers of felt material, each of said layers being from 0.343 to 0.407 inch in thickness and each of said felt layers having a fine texture, a specific gravity of 0.181, at least 95% actual wool content, about 400% liquid absorption by weight of a liquid having a specific gravity of 1.000, 88% absorption by volume of such a liquid, and a tensile strength of at least 225 pounds per square inch, and

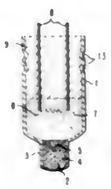
(*c*) an outer tubular covering of fabric material comprising interwoven cotton warp and filling yarns, said fabric having a weave density of about 180 yarns per inch.

3,158,096
STAMP ASSEMBLY
Arnold F. Arnold, Miller Place, N.Y., assignor to Parker Brothers, Inc., Salem, Mass., a corporation of Maine
Filed Sept. 14, 1961, Ser. No. 138,013
2 Claims. (Cl. 101—368)



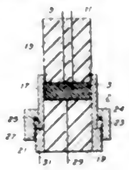
1. A hand stamp comprising a hollow cylindrical body of right-circular section closed at one end and open at the other, said closed end bearing, in relief, a geometric figure, the surface of which is spherically convex and said open end being bounded by a flat annular edge, and a cover including attaching means and a handle, said cover comprising a cylindrical body having an outside diameter corresponding to the outside diameter of the cylinder, said attaching means comprising an annular flange extending from one side of the body, said flange having an outside diameter corresponding to the inside diameter of the cylinder for frictional engagement therewith, providing an annular shoulder at the junction of the flange and the body for engagement with the edge of the cylinder, and said handle comprising a cylindrical stem of smaller diameter than the body projecting from the other side of the body, peripherally of which, at its junction with the body, is a concave annular depression.

3,158,097
EXPLOSIVE INITIATOR
William R. Brockway, Thorofare, and George A. Noddin, Mantua, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,420
5 Claims. (Cl. 102—28)



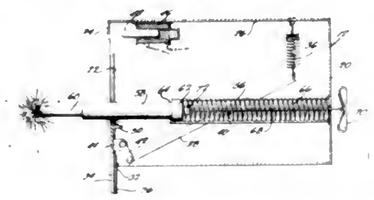
1. An initiator which comprises a tubular shell having two extremities, one of the extremities being integrally closed by a closure member of lesser thickness than the sidewalls of the shell, and an ignition assembly inserted into and closing the other extremity, the shell having positioned sequentially therein from said integral closure member, up to about 1 grain of base charge, up to about 1 grain of priming charge, and an ignition composition, said base and priming charges having a combined columnar length of at least about ¼ inch and being in peripheral contact with the shell, the ratio of said length to the diameter of said charges being from about 1.5 to about 3.0.

3,158,098
LOW VOLTAGE DETONATOR SYSTEM
Robert J. Reithel, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 9, 1963, Ser. No. 301,213
1 Claim. (Cl. 102—28)



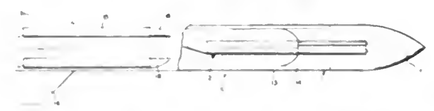
A secondary explosive detonator comprising a mass of PETN explosive material, an igniting gold metal bridge wire supported in contact with the explosive material, a firing circuit connected in series, electrically with said bridge wire, and means capable of withstanding an internal pressure of at least 550 pounds per square inch hermetically enclosing said mass of PETN and said bridge wire, said bridge wire having a length of 0.040 inch and a diameter of the order of 0.0015 inch, said PETN having a density of 1.6 grams per cubic centimeter, said firing circuit consisting of a direct current potential source having a potential of the order of 8 volts, a capacitor having a capacitance of the order of 1330 microfarads, and an inductance having a reactance of the order of 19 microhenries, means electrically connecting the capacitor in shunt with the potential source, means electrically connecting one terminal of the voltage source to one end of the inductance, means electrically connecting the other end of the inductance to one end of the bridge wire, and means including a switch electrically connecting the other end of the bridge wire to the other terminal of the potential source.

3,158,099
FLARE IGNITING AND SUPPORTING DEVICE
Michael Dzvonik, 226 Sherman Ave., Whitaker, Pa.
Filed Apr. 10, 1963, Ser. No. 272,011
8 Claims. (Cl. 102—37.4)



1. A flare igniting and supporting device comprising in combination a housing having one end open, a support within said housing and facing said housing open end, a holder for a flare slidably mounted in said support for movement toward and away from said housing open end, and spring means biasing said holder toward asid housing open end, a sliding door normally closing said housing open end and slide guide means cooperatively connected to said housing for facilitating sliding movement from the normal position to an open position out of closing relation in a transverse manner with respect to said housing open end, lock keeper means carried by said door, other spring means urging said door to the open position, and a releasable lock member connected to said housing and selectively engageable with said keeper means on said door for releasably holding said sliding door in the normal closed position.

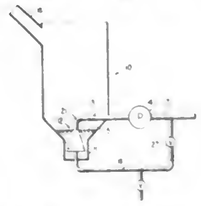
3,158,100
ROCKET PROPELLED RECONNAISSANCE VEHICLE
Jack D. Finley, Dayton, Ohio, assignor, by mesne assignments, to Data Corporation, Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 44,613, July 22, 1960. This application Mar. 4, 1963, Ser. No. 263,381
17 Claims. (Cl. 102—49)



1. An aerial reconnaissance vehicle for gathering information over a designated target area and returning said information to the area of an initial launching site, comprising, a delivery stage racket including a hollow body section, a nose section, and a tail section, mounting means secured within said hollow body section, a recovery stage rocket having a nose section and a tail section, said recovery stage rocket being reversely mounted within said hollow body section by said mounting means, whereby the nose section of said recovery stage rocket is positioned adjacent the tail section of said delivery stage rocket, information gathering means carried by said recovery stage rocket, altitude responsive control means carried by said vehicle for activating said information gathering means when the vehicle reaches a predetermined first altitude over said target area, and altitude responsive launching control means mounted within said vehicle to cause the launching of said recovery stage rocket from the tail section of said delivery stage rocket

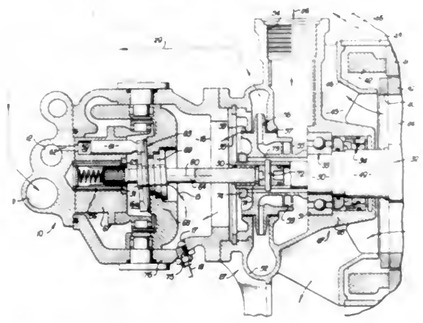
subsequent to the activation of said information gathering means when said vehicle reaches a second predetermined altitude over said target area, said recovery stage rocket being capable of returning said information gathering means to the area of said initial launching site upon detachment from said delivery stage rocket.

3,158,101
FLOTATION DEVICE
Billy Dollar, Box 3, Anawalt, W. Va.
Filed Sept. 28, 1961, Ser. No. 141,435
7 Claims. (Cl. 103—5)



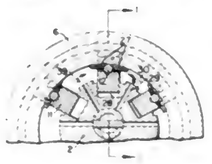
1. An apparatus for assisting the pumping of liquid-solid slurries from vessels containing such slurries comprising a hollow conical member, said hollow conical member having an aperture at the apex, a fluid conduit communicating at one end with said aperture and attached to said hollow conical member at said aperture, a pump, said conduit communicating at its other end with the intake of said pump for withdrawing a liquid-solid slurry from said vessel, said hollow conical member having an open mouth communicating with said slurry and a series of louvered slots through the wall of said hollow conical member positioned around said open mouth.

3,158,102
COOLING AND SEALING OF ROTARY EQUIPMENT
Elmer F. Ward, Orange, Calif., assignor to Task Corporation, Anaheim, Calif., a corporation of California
Filed Feb. 4, 1963, Ser. No. 255,935
3 Claims. (Cl. 103—5)



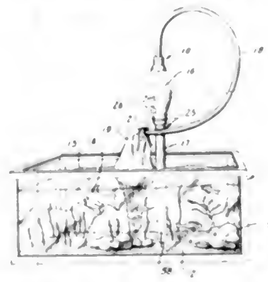
1. In combination, an assembly including a fluid pressure boost pump, a high pressure pump, a rotary electrical motor, a rotary drive for transferring power from said motor to said pumps, means for sealing said drive to prevent fluid access to the motor, the boost pump having a fluid inlet in communication with the pump side of said means opposite the motor interior to maintain said pump side of said means at boost pump inlet pressure, the boost pump connected to discharge fluid to the intake of the high pressure pump, the assembly including housing structure to receive any fluid leaking between relatively moving parts of both pumps and to drain said leaking fluid remotely from said electrical machine, said leaking fluid passing in lubricating proximity to said drive, said drive to said high pressure pump being sufficiently unsealed beyond said means to facilitate said leakage.

3,158,103
VANE ASSEMBLY IN ROTARY FLUID MACHINES
Karl Eickmann, Talmuehle, Kreis Calw, Germany (2420 Isshiki, Hayama-Machi, Kanagawa-Ken, Japan)
Original application Feb. 9, 1959, Ser. No. 792,001, now Patent No. 3,099,964, dated Aug. 6, 1963. Divided and this application Mar. 2, 1962, Ser. No. 176,945
Claims priority, application Japan Mar. 13, 1958
6 Claims. (Cl. 103—136)



1. A rotary vane type engine comprising a casing having an inner circumferential surface defining a working chamber for receiving and discharging fluids, a rotor in said working chamber having an axis eccentric with respect thereto and provided with radial slots, vanes substantially radially slidable in said rotor slots and forming with said rotor and with said working chamber, expanding and contracting intervane spaces in which said fluid is received, said rotor extending in said casing axially and radially outwardly beyond the axial ends of said working chamber and said rotor slots in said rotor extending axially and radially outwardly beyond the ends of said working chamber, said vanes having corresponding end portions extending axially and radially outwardly beyond said working chamber in the extensions of said rotor slots, the portion of each vane within said working chamber having a radially outer top face substantially normal to the vertical axis of the vane, the end portions of each vane extending radially outwardly beyond said top face and having transverse medial faces substantially normal to said top face and radially inwardly terminating at the axial ends of said top face, a bearing groove arcuate in cross-section extending longitudinally in said top face normal to said transverse medial faces, a corresponding arcuate bearing groove extension passing longitudinally through each end portion of the vane, each said groove extension having at least a partial cylindrical bearing surface extending more than 180°, a substantially cylindrical rocker rod having a correspondingly dimensioned arcuate bottom bearing portion pivotally and snugly fitting in said groove with the ends of the rod pivotally and snugly fitting in said groove extensions, and a slide element disposed on said rod and extending axially to the ends of the working chamber, said slide element having a radially outer face and a radially inner face, said radially inner face having a partial cylindrical groove defined longitudinally therein extending circumferentially more than 180° and correspondingly dimensioned with respect to the radius of said rod to enclose pivotally and snugly the portion of said rod within said working chamber for permitting limited pivotal movement between said slide element and said rod and between said rod and said groove and groove extensions, the radially outer face of said slide element being slidably disposed against and in sealing contact with the casing inner surface, and the axial ends of said slide element having transverse end faces normal to the vane top face and parallel to the adjacent transverse medial faces of said vane end portions and extending radially in sealing pivotal abutment with said transverse medial faces, respectively.

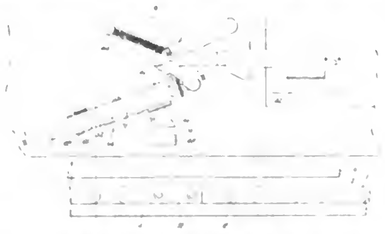
3,158,104
AQUARIUM CLEANING DEVICE
Clyde E. Hutchinson, 3958 Alla Road, Los Angeles 66, Calif.
Filed Dec. 20, 1961, Ser. No. 160,871
3 Claims. (Cl. 103—148)



1. In an aquarium cleaning device comprising an inlet tube, and an outlet tube and manually operable pump means intermediate of said tubes for pumping water from an aquarium, said inlet tube having one end communicating with said pump means and an opposite end adapted to receive water from the aquarium, said outlet tube having one end communicating with an opposite end of said pump means for receiving water therefrom and an opposite free open end, a filter means supported on the said open end of the outlet tube discharging water into the aquarium through said filter means,

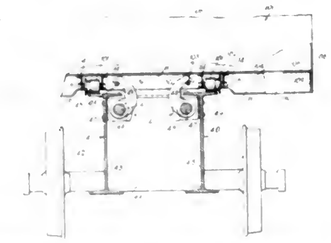
releasable holding means on said inlet tube for releasably holding said outlet tube thereon adjacent said filter means to support said filter means superjacent the water in said aquarium.

3,158,105
CONVEYOR APPARATUS
Joseph Robbins and Frank Richard Smith, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Sept. 5, 1962, Ser. No. 221,552
Claims priority, application Great Britain May 12, 1962
2 Claims. (Cl. 104—172)



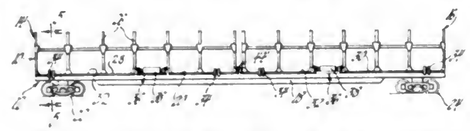
1. A stop mechanism for use with a conveyor system of the type described, comprising a support arm mounted for lateral movement between a stop position in which the mechanism is in position for engagement with towing mechanism of an article carrying device to cause said mechanism to become disengaged from a towing chain and a pass position in which the mechanism is out of said position, means biasing said support arm to the pass position, a downwardly biased latch arm disposed on said support arm adapted to latch said arm in the stop position, an upwardly inclined disengaging member disposed on the support adapted to cam a towing mechanism of an article carrying device out of operative relation with the towing chain, said disengaging member being movable downwardly on engagement by said towing mechanism, and latch operating means responsive to said downward movement of the disengaging member to release said latch.

3,158,106
FREIGHT TRANSPORTATION SYSTEMS
Deodat Clejan, Chicago, Ill., assignor, by mesne assignments, to General American Transportation Corporation, Chicago, Ill., a New York corporation
Filed May 18, 1959, Ser. No. 813,957
4 Claims. (Cl. 105—366)



1. A freight transportation unit comprising, a vehicle including a longitudinally extending narrow rigid frame, the upper side edges of said frame constituting rails providing a laterally extending track on the top side thereof, a freight carrier including a longitudinally extending rigid frame provided with a narrow substantially centrally disposed and longitudinally extending saddle in the bottom thereof, said saddle having a width only somewhat greater than that of said vehicle frame between the upper side edges thereof and adapted to straddle laterally the same with the bottom of said saddle supported on the tops of said upper side edges so as to mount said freight carrier frame upon said track on the top of said vehicle frame, said saddle straddling laterally the tops of said upper side edges accommodating guided longitudinal movements of said freight carrier frame upon the top of said vehicle frame incident to placement and to removal of said freight carrier frame with respect to said vehicle frame, and mechanism carried by said vehicle frame and selectively operative between active and inactive positions with respect to said freight carrier frame when it is mounted upon the top of said vehicle frame, said mechanism in its active position engaging said freight carrier frame so as to hold it in place in its mounted position upon the top of said vehicle frame and in its inactive position disengaging said freight carrier frame so as to release it in order to accommodate the removal thereof from said vehicle frame.

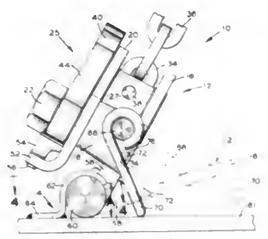
3,158,107
CARRIER RACK ASSEMBLY FOR USE ON TRANSPORTATION VEHICLES
Donald J. Blunden, Detroit, Mich., assignor to Whitehead & Kales Company, River Rouge, Mich., a corporation of Michigan
Filed Apr. 3, 1961, Ser. No. 100,256
3 Claims. (Cl. 105—368)



1. In combination, a railway flat car having an elongated horizontal deck, side rails extending horizontally at and secured to opposite side edges of said deck and having portions projecting upwardly above the upper surface

of said deck, a pair of longitudinally extending longitudinally movable elongated freight carrying racks disposed substantially in end-to-end relation and freely mounted upon said deck between said side rails, a pivotal connection between the adjacent ends of said racks, said racks being held against lateral displacement relative to said deck by the upwardly projecting portions of said side rails, said racks having substantially horizontal longitudinally extending rail members at opposite sides thereof, longitudinally spaced brackets upon the outer sides of and secured to said side rails, means secured to said brackets and extending over the rail members of said racks for holding said racks against vertical displacement relative to said deck, and means respectively carried by said rail members and by the upwardly projecting portions of said side rails for restraining said racks against longitudinal movement relative to said deck, including shock absorber units having longitudinally extending elongated housings containing shock absorbing means including alternately arranged rigid and resilient elements, said housings being located above the upwardly projecting portions of the side rails of said flat car and secured to the rail members of said racks, horizontal arms extending through opposite ends of the housing of each shock absorber unit and engaging certain of the rigid elements of said shock absorbing means, said horizontal arms being provided at their outer ends with blocks, and stops rigidly mounted upon the upwardly projecting portions of the side rails of said flat car in longitudinally spaced relation to opposite ends of said housings and in the path of and constituting abutments for said blocks.

3,158,108
TIE-DOWN WINCH AND ANCHOR ASSEMBLY
Everett H. Sharp, Lambertville, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Sept. 25, 1961, Ser. No. 140,517
3 Claims. (Cl. 105—369)



2. A device for tying down an item on a structure comprising in combination,

(*a*) securing means adapted to engage the item,

(*b*) means for adjustably connecting said securing means to said structure including

(1) a guide rail means having a longitudinally elongated axis and being adapted to be connected to the structure, and

(2) anchoring means cooperable with said guide rail means and being longitudinally adjustably movable relative thereto and being pivotally movable relative thereto in a direction transverse to the longitudinal axis of said guide rail means,

(*c*) said guide rail means having a plurality of longitudinally spaced first registering means fixedly positioned thereon,

(*d*) said anchoring means comprising,

(1) a single adjusting bar movably received by said guide rail means for longitudinal movement and for transverse pivotal movement relative thereto in a first and an opposite direction and being engageable with said guide rail means whereby relative movement therebetween other than said longitudinal and transverse pivotal is inhibited,

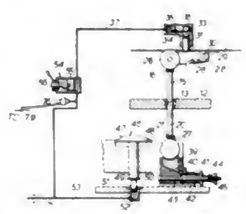
(2) second registering means connected to and unitarily movable with said adjustable bar and registerable with said first registering means upon pivotal movement of said adjusting bar in said first direction for locking said bar against longitudinal movement relative to said guide rail means and being displaced from registration with said first registering means upon pivotal movement of said adjusting bar in a direction opposite to said first direction,

(3) winch means carried by said anchor means and attached to said securing means, and

(*e*) means adjustably and supportingly connected to said anchoring means and adapted to maintain said registering means in registration,

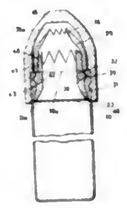
(*f*) whereby with said registering means in registration and said supporting means maintaining such registration said anchoring means and guide rail means are inhibited from moving longitudinally relative to each other.

3,158,109
MULTI-LAYER TABLET MAKING MACHINES
Frank T. Stott, Rochdale, England, assignor to John Holroyd & Company Limited, Lancashire, England
Filed Feb. 4, 1963, Ser. No. 255,967
Claims priority, application Great Britain, Feb. 21, 1962, 6,666/62
8 Claims. (Cl. 107—17)



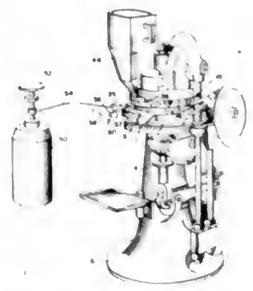
1. A multi-layer tablet making machine comprising, a rotary die table having a plurality of dies spaced thereabout and having an upper and lower punch associated with each die, a plurality of powder feeding stations past which the dies are moved upon rotation of the die table to feed successive powder fills to each die, means for controlling the positions of the upper and lower punches in their dies as the die table rotates so as to raise each upper punch as its die reaches each powder feeding station, sampling means for sampling any of the successive powder fills, and adjustable compression means for causing a light compression of a powder fill between a die and its corresponding punch in said die table at a location between said powder feeding stations and their corresponding sampling means in response to the condition of said corresponding sampling means during normal machine operation when said corresponding sampling means is inoperative and when said sampling means is in an operative condition for effecting a stronger compression of the powder fill sufficient to ensure the integrity thereof prior to its ejection from the respective die.

3,158,110
COLLAPSIBLE CONTAINER WITH INTERCHANGEABLE SPOUTS
Allan Day Ross, Orillia, Ontario, Canada (% Canadian Research and Development Foundation, 1434 Queen St. W., Toronto 3, Ontario, Canada)
Filed June 30, 1961, Ser. No. 121,175
2 Claims. (Cl. 107—52)



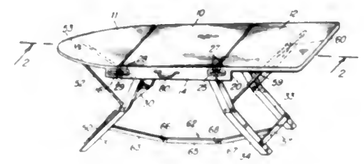
1. A container including a flexible, collapsible baglike body member having one open end; a substantially rigid, resilient annular sealing ring; said open end being attached to and defined by said sealing ring; said sealing ring having a groove formed in the periphery of the inner wall thereof; a dispensing spout having an inner end and an outer end; said inner end having its outer wall in mating configuration with said inner wall of said sealing ring including a peripheral protuberance engageable with said groove in said sealing ring to hold said sealing ring and said spout in sealed engagement; said outer end of said spout being serrated; a second spout means attachable to said outer end of said spout and in axial alignment therewith whereby the size or design of the column being dispensed may be readily changed; and a closure cap detachably attachable to said sealing ring.

3,158,111
METHOD AND APPARATUS FOR FORMING TABLETS
Allan M. Raff, Elkins Park, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 6, 1962, Ser. No. 200,468
4 Claims. (Cl. 107—54)



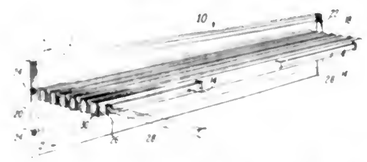
1. The steps in the method of forming a pharmaceutical tablet in a tablet compressing machine of the type having a mold and punch means adapted to cooperate with the mold, comprising periodically spraying the punch means and the interior of the mold with a pharmaceutical tablet lubricant in an aerosol spray, repeatedly introducing a pharmaceutical tablet mix substantially free of tablet lubricant into the mold and compressing the mix with the punch means to form a tablet.

3,158,112
FOLDING IRONING BOARD
Eugene Smith, Long Beach, N.Y., assignor to Cahill Metals Corporation, New York, N.Y., a corporation of New York
Filed Mar. 26, 1963, Ser. No. 268,035
8 Claims. (Cl. 108—36)



1. In a folding ironing board, in combination, first and second table sections, hinge means connecting said first and second table sections in endwise relation, an upper leg member having a lower end portion and a longitudinal channel, and a lower leg member dimensioned to fit within said channel, said upper leg member further having an upper end portion pivotally mounted on the underside of said first table section for rotation through an angle greater than 90° between a position in which said upper member underlies said first section parallel thereto with said channel opening toward said first section and a position in which said upper member extends diagonally downwardly therefrom in the direction of said second section, and said lower member having an upper end portion pivotally mounted in the lower end portion of said upper member for rotation through an angle greater than 90° between a position in which said lower member lies within the channel of said upper member and a position in which said lower member extends diagonally downward from said upper member in the direction of said second section.

3,158,113
EXTENSIBLE SHELF AND RACK ASSEMBLY
Walter R. Johnson, Chicago, Ill., assignor to The Borg-Erickson Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 28, 1962, Ser. No. 240,493
5 Claims. (Cl. 108—64)



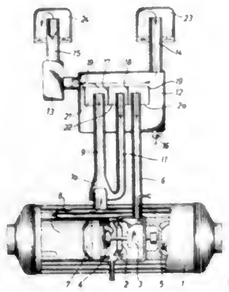
1. An extensible shelf and rack assembly comprising, in combination: elongated support means adapted to be connected to a wall; a pair of hinge bar members connected to and extending outwardly from said support means, said hinge bar members each comprising a first part fixedly connected at one end to said support means and having a free end and a second part pivotally connected to said free end of said first part; and a plurality of cross members supported on said hinge bar members, said cross members having a combined width which is less than the length of a first part of a hinge bar member, whereby in a first mode of use, all the cross members are supported on said first parts of said hinge bar members to define a shelf and the second parts of the hinge bar members are pivoted to a position adjacent the cross members furthest from the wall and in a second mode of use, the second parts of the hinge bar members are pivoted into alignment with a longitudinal axis of the first parts

of the hinge bar members and the cross members are spaced from one another on both the first and second parts of the hinge bar members to define a drying rack.

3,158,114
MEANS FOR DISCHARGING THE EXHAUST FROM HEATERS

Franz Nikodem, Stockdorf, near Munich, Germany, assignor to Webasto Werk G.m.b.H., Stockdorf, near Munich, Germany

Filed June 20, 1963, Ser. No. 289,318
Claims priority, application Switzerland, July 6, 1962, 8,079/62
6 Claims. (Cl. 110—162)

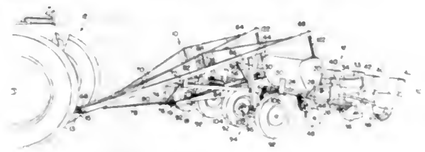


1. The combination with a heater having a combustion chamber, an inlet passage and an outlet passage each having one of their ends communicating with said combustion chamber, and a heater blower for delivering air to said combustion chamber through said inlet passage for causing the products of combustion to be exhausted from said combustion chamber through said outlet passage, of a protective chamber having a combustion air inlet and a spaced exhaust gas outlet, first conduit means providing communication between the inlet passage for said combustion chamber and the interior of said protective chamber, second conduit means providing communication between the outlet passage for said combustion chamber and the interior of said protective chamber, and blower means communicating with said protective chamber for maintaining a flow of air through said protective chamber.

3,158,115
WHEEL TRACK IMPLEMENT

Harold V. Hansen, Hillsdale, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 275,879
21 Claims. (Cl. 111—52)

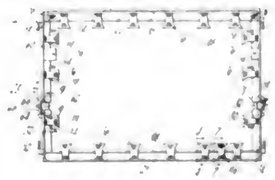


14. In combination with a tractor having a drawbar and a planter having a plurality of ground-engageable seed dispensing means and means normally adapted to raise and lower the seed dispensing means relative to the ground, an implement comprising a generally longitudinally disposed frame including two substantially straight members joined together at their forward ends, means to secure said forward ends to the tractor drawbar for independent swing movement of said implement relative to the tractor, the rearward portions of said members being spaced apart and disposed above said planter, link means interconnecting said rearward portions and said planter, and soil compacting means carried by midportions of said members and adapted to support said rearward portions in a generally elevated position when the forward ends are connected to the tractor drawbar, said soil compacting means being held in vertically fixed relationship relative to said longitudinal frame whereby the weight of the longitudinal frame is carried by said soil compacting means.

3,158,116
QUILTING MACHINES

Frederick E. Kalning, Quincy, Mass., assignor to United Mattress Machine Co., Inc., Quincy, Mass., a corporation of Maine

Filed July 11, 1960, Ser. No. 41,881
4 Claims. (Cl. 112—119)

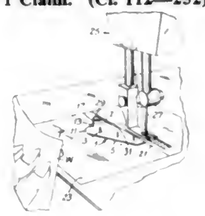


1. For use in a panel stretcher frame for holding a quilting panel in a stretched out condition for the insertion of lines of stitching starting from and returning to a single starting and return position adjacent the periphery of said frame, a series of quilting panel gripping clamps mounted at spaced intervals about the periphery of said frame, each said clamp comprising a pair of jaws, and a biasing means engaging said jaws providing a yieldable nip adjusted to permit a limited slippage of the panel in said jaws corresponding in extent to the shrinkage of the stretched quilted panel, and said series of clamps including a clamp about said periphery adjacent said starting and return position having a panel cramping device operable when the jaws of said latter clamp are engaged to provide a substantially positive non-slippage panel cramping nip of said latter clamp with the panel, and thereby to provide a fixed position of the portion of said panel receiving said starting and return stitches.

3,158,117
THREAD CUTTER

Donald W. Samuels, Ollvette, Mo., assignor to Weiss-Samuels, Inc., St. Louis, Mo., a corporation of Missouri

Filed Mar. 26, 1962, Ser. No. 182,164
1 Claim. (Cl. 112—252)



A thread cutter adapted for attachment to the slide plate of a sewing machine, said thread cutter comprising a sheet metal member having an elongate flat body portion, said body portion having left and right side edges and forward and rearward ends, said body portion having a V-shaped notch in its rearward end, the tip of the body portion on the right of the notch extending farther rearward than the tip of the body portion on the left of the notch and being bent upward away from the plane of the body portion, and a tongue integral with said body portion projecting from the right side edge of said body portion spaced from the rearward end of said body portion and bent under said body portion to provide a clip whereby said member may be clipped on the edge of the slide plate toward the needle of the sewing machine with said body portion wholly overlying the top of the slide plate and with said notch at the rear, the right side edge of said notch being sharpened to provide a thread cutting edge, whereby a sewing thread used in the sewing machine may be pulled under the bent-up tip of the body portion at the right of the notch, entered in the notch and cut off against said sharpened edge, leaving a portion of said thread clamped under the region of said body portion at the right of the notch.

3,158,118
ATTACHING METHOD FOR SLIDE FASTENER ELEMENTS

Arthur Steingruebner, Bonn, Germany, assignor to Wahl Brothers, New York, N.Y., a partnership

Filed July 11, 1960, Ser. No. 42,035
Claims priority, application Germany July 14, 1959
5 Claims. (Cl. 112—265)

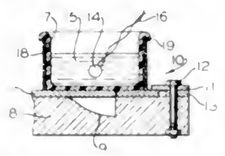


3. A method of producing slide fastener chain including two continuous elongated carriers and two interlocked strands of fastener elements respectively secured to said continuous carriers, which comprises longitudinally feeding to a sewing station two continuous elongated carriers and two continuous interlocked strands of fastener elements, each strand consisting of an integral substantially filament shaped member, respective portions of said member constituting said elements; and sewing the elements of said strands to said carriers respectively at said sewing station while the elements of said strands are mutually interlocked.

3,158,119
METAL WORKING

Kenneth J. Thaller, St. Louis County, Fred T. Callahan, Jennings, and Harold F. Weisenstein, St. Louis County, Mo., assignors to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia

Filed Jan. 18, 1961, Ser. No. 83,468
12 Claims. (Cl. 113—44)

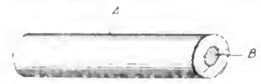


1. A method for forming an integral annular flange extending from the surface of a uniformly thick strain hardened sheet metal element comprising forming an opening through said element adjacent the portion thereof which is to be formed into said flange with said portion circumscribing and abutting the periphery of said opening and being of the same thickness as the remainder of said element, annealing said portion while retaining substantially all of the remainder of said element in said strain hardened condition, and subjecting said portion on the side thereof opposite said surface to sufficient explosive forces to move said portion into the desired configuration of said flange and to work harden said portion to the desired strain hardened condition.

3,158,120
CORE SOLDER

Frederick Von Hessert, West Orange, N.J., assignor to Fairmount Chemical Co., Inc., Newark, N.J., a corporation of New Jersey

Filed Oct. 17, 1960, Ser. No. 62,967
4 Claims. (Cl. 113—110)

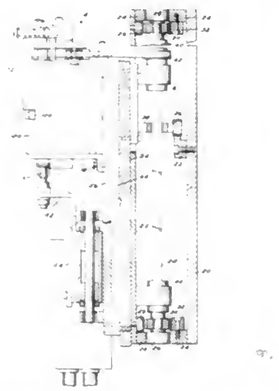


1. A core solder having external tubular sheath of a lead-tin alloy containing one and one-half to 3% of central core consisting essentially of a hydrazine hydrohalide salt containing 2 to 10% of water and 1/10 to 1% of a surfactant and said hydrazine salt being selected from the group consisting of hydrazine hydrochloride and hydrazine hydrobromide and said surfactant being selected from the group consisting of an alkyl aryl polyethylene ether and a cationic quaternary ammonium surfactant.

3,158,121
MECHANICAL MEMORY DEVICE

John H. Brems, Southfield, Mich., assignor to Motomation, Inc., Detroit, Mich., a corporation of Michigan

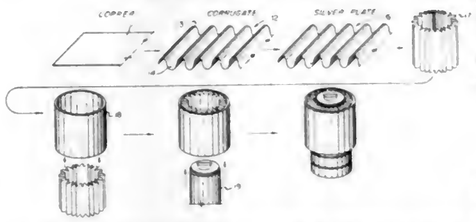
Filed Mar. 3, 1960, Ser. No. 12,522
13 Claims. (Cl. 113—134)



1. In a tool moving device of the type having a basic frame member, a carriage for a work head slidably disposed on said frame member, a probe movably supported on said carriage for moving over a work line as said carriage moves along said frame, and a work head supported on said carriage, an improvement in means for positioning said workhead in response to motion of said

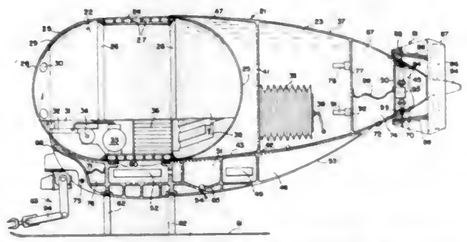
probe relative to said carriage comprising a master cam having the shape of the planned contour of the work line secured to said frame, means to support the carriage for progressive movement along said planned contour, a rotating drum carried by said carriage, means on said drum circumferentially spaced thereon and axially shiftable relative thereto comprising a plurality of plungers, means for locking said plungers at certain portions of travel as said drum rotates, means responsive to motion of said probe relative to said carriage reflecting disparity between said master cam and said work line for setting said plungers axially relative to said drum, and means adjacent the drum supporting said workhead responsive to the positioning of said plungers to move the workhead in a path related to that followed by the probe a predetermined distance behind said probe.

3,158,122
METHOD OF BRAZING ELECTRON TUBE COOLING FINS
Louis P. de Give, Woodside, Calif., assignor to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Filed Sept. 15, 1960, Ser. No. 56,265
3 Claims. (Cl. 113—118)



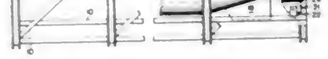
1. The method of forming a cooling fin structure which comprises forming a corrugated silver plated copper sheet, bending said sheet into cylindrical form and placing it into a cylindrical copper shell, urging a copper anode into the cylindrical opening defined by the corrugations so that the outer ridges of the corrugations are in physical contact with the shell and the inner ridges of the corrugations are in physical contact with the adjacent anode, raising the temperature of the assemblage to form a silver copper eutectic which flows to the contact areas, and subsequently cooling the assembly.

3,158,123
UNDERSEAS VEHICLE
Harold E. Froehlich, Minneapolis, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Original application Aug. 29, 1961, Ser. No. 134,597. Divided and this application Mar. 27, 1963, Ser. No. 268,416
7 Claims. (Cl. 114—16)



1. A diving and deep sea floor exploring underwater vehicle operable independently of surface vehicles consisting of a pressure chamber bow portion, a lifting fluid containing stern portion and a separable fluid ballast and battery carrier portion, said pressure chamber bow portion, stern portion and carrier portion comprising a streamlined body wherein the said bow portion has a reinforced cylindrical body portion closed at either end by hemisphere portions and capable of withstand high hydrostatic stressing forces, said stern portion being formed of lighter material and incapable of withstanding the high hydrostatic stressing forces of said bow portion and comprising a fluid chamber adapted to be filled with lifting fluid which can be discharged to aid in descent of the said vehicle, reinforcing rib means in said stern portion, a bellows means in said stern portion, conduit means connecting the interior of said bellows means with the outside surface of said stern portion and adapted to freely permit sea water to enter into and exit from said bellows and equalize the internal and external pressures on said stern portion and said carrier portion through the medium of said lifting fluid contained therein, said separable carrier portion comprising a series of chambers including a battery chamber, a ballast chamber and lifting fluid chamber having interconnected fluid passageways, magnet holding and battery circuit means attaching said separable carrier portion to said bow portion, a plurality of independent motor and propelling means for moving said vehicle, and control means operable from within said bow portion for operating each of said motor and propelling means and additional control means for breaking said circuit to said magnet holding means.

3,158,124
MISSILE LAUNCHING APPARATUS
Manuel Chevillon, Silver Spring, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 24, 1962, Ser. No. 212,766
5 Claims. (Cl. 114—21)



1. Vehicle-based apparatus for launching an elongated underwater missile of the type designed to receive electrical guidance signals from a control station on the vehicle over a wire trailing behind the missile while the latter is traveling through the water toward a target, said apparatus comprising a box-like framework of structural members designed to be based on said vehicle and within which the missile is slidably carried so that its longitudinal axis lies essentially horizontal, a reel upon which is wound the wire one end of which is attached to the missile and the other end of which is secured to said reel, a housing for said reel also slidably carried by said framework, means frangibly attaching said housing to the aft portion of said missile, and means for causing said missile and said reel housing to slidably move as a unit with respect to said framework for a limited distance when the missile is launched, at the end of which limited movement said reel housing will break away from said missile and remain supported by said framework while the latter remains based on said vehicle as said missile continues its movement to thereby cause said wire to unwind from said reel without any likelihood of the wire becoming entangled in said framework.

3,158,125
HULL SHAPE AND A METHOD OF DRAWING A HULL OF SAID SHAPE
Nils Johan Malmberg, Caloniusgatan 4A8, Helsingsfors, Finland
Filed May 2, 1961, Ser. No. 107,166
Claims priority, application Finland, May 2, 1960, 771/60
2 Claims. (Cl. 114—56)



1. A hull surface having a bow portion, a stern portion and a keel portion extending from said bow portion to said stern portion, a center plane extending substantially vertically through said keel portion, a plurality of frame planes intersecting said center plane at right angles, a chine and a railing, said hull surface comprising a single curved surface including a plurality of straight lines wholly within said curved surface extending from said chine to said railing at an inclination to said frame planes, said single curved surface intersecting said frame planes in curved lines and being bent at said plurality of straight lines to connect said chine with said rail.

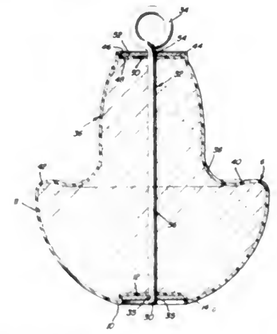
3,158,126
TROLLING DEVICE FOR REDUCING THE EFFECTIVENESS OF A PROPELLER
William M. Gewin, 601 N. 4th St., Dupo, Ill.
Filed Sept. 29, 1961, Ser. No. 141,713
5 Claims. (Cl. 114—145)



1. In combination, a trolling device for outboard motors comprising a mounting bracket, spaced opposed flanges extending rearwardly from said mounting bracket, opposed keyhole slots in said flanges, a water diverter plate, spaced opposed arms extending from said water diverter plate, and a mounting button at the free end of each arm, said buttons being disposed in selected slots freely suspending said water diverter plate from said mounting bracket.

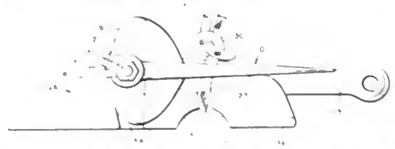
3,158,127
BOAT ANCHOR
Thomas L. Gallaugher, Chillicothe, Ohio, assignor to World Marine, Inc., Chillicothe, Ohio, a corporation of Ohio
Filed Jan. 3, 1964, Ser. No. 335,501
3 Claims. (Cl. 114—206)

2. A boat anchor comprising a hollow shell having a recessed apertured bottom portion and a recessed apertured top portion, the hollow shell portion of which is adapted to be loaded and thus weighted with sand or equivalent media, a first washer seated and confined in the bottom recess, a second washer seated and confined in the top recess, and an eye bolt comprising a shank with a line-attaching eye at the upper end of the shank, said shank extending through the washer and top aperture with the eye of the bolt exposed and engaging the top washer, then downwardly and axially through the hollow portion, the lower end of the shank passing through the aperture in the recessed bottom and being separably connected to said first washer, said lower end being provided



with locking kerfs, said first washer having a keying slot extending radially from the center of the washer and opening through a marginal edge, said kerfs being fitted and retained in the slot.

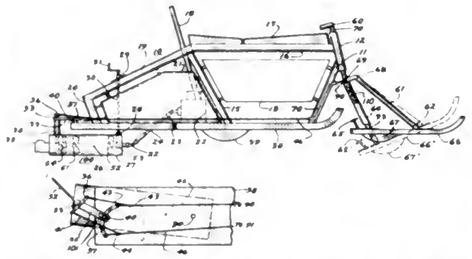
3,158,128
MARINE ANCHOR AND STORAGE BRACKET
William M. Sarns, Rte. 2, Morley, Mich.
Filed Nov. 23, 1962, Ser. No. 239,685
5 Claims. (Cl. 114—210)



5. In combination with an anchor having a stock and fluke members on opposite sides of said stock, said fluke members being axially movable with respect to each other responsive to the angular relationship of said fluke members to said stock;

a support bracket having a portion receivable between said fluke members in the expanded position thereof, and to be gripped by said fluke members in a contracted position thereof.

3,158,129
AQUATIC VEHICLE
Helmut Horst Mauer, 1923 Aldrich Ave. S., Minneapolis, Minn.
Filed May 22, 1962, Ser. No. 196,765
6 Claims. (Cl. 115—70)

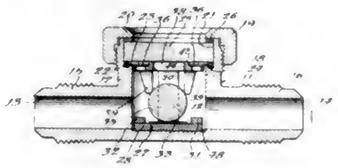


1. In a self-propelled aquatic vehicle of the type wherein stationary and steerable skis are utilized to support a rider upon movement over a body of water; a

propulsion tube means mounted for lateral rotational movement at its top forward end below the rear end of a stationary ski and rotatably mounted at its top rearward end to one end of a movable mounting therefor, said movable mounting being rotatably journalled at its other end in proximity to the rear end of said stationary ski; and manually operable means for rotating said movable mounting.

6. A self-propelled aquatic vehicle comprising in combination; a buoyant longitudinally extending frame having a generally vertically extending shaft, including manual driving means therefor, rotatably journaled at the forward extremity of said frame; a first ski mounted on the bottom of said frame; a second ski pivotally connected to the lower end of said shaft for rotation about an axis extending laterally of said shaft; means mounted on the top rearward portion of said last named ski for engagement by an operator of the vehicle for rotating said ski to an initial starting position; motor means carried within the frame and including a waterproof housing; and means connecting said motor means to a driving means disposed beneath said first ski.

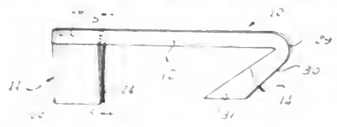
3,158,130
FLUID INDICATOR
Donald M. Szymanski, Chicago, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Feb. 25, 1963, Ser. No. 260,394
11 Claims. (Cl. 116—117)



1. A device for providing two indications relative to a fluid, comprising: a body defining a chamber arranged to receive a fluid, said body further having an opening extending through a first portion thereof and opening inwardly into said chamber; a light transmitting closure extending across said opening; first indicating means in said chamber for providing one indication relative to the fluid therein, said means including a first support abutting said body opposite said opening, an indicator on the support viewable through said closure, and means disposed between said indicator and said closure for varying the appearance of said indicator as seen through said closure as a function of one characteristic of fluid in the chamber; a second support disposed subjacent said closure, said second support having means for retaining said appearance varying means; second indicating means for indicating another characteristic of the fluid in said recess, said second indicating means being carried by said second support to be viewable through said closure; and means urging said closure inwardly toward said chamber, said closure including means for retaining said second indicating means on said second support and said second support in association with said appearance varying means to retain said appearance varying means interposed between said indicator and said closure.

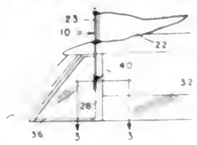
3,158,131
BOOKMARK
Stephen J. Salayka, 103 Berry St., Brooklyn, N.Y.
Filed Dec. 19, 1962, Ser. No. 245,936
4 Claims. (Cl. 116—119)

1. A bookmark having an elongated arm, means on one end of the arm adapted for attachment to a cover of a book adjacent the binding thereof with the arm overlying and generally parallel to one edge of the pages of the book, and a tab on the other end of the arm adapted to lie between two consecutive pages of the book, the tab extending toward the arm-attaching means at an acute angle with respect to the length of the arm, the arm and tab of the bookmark being made of an integral sheet of elastic plastic material and being sufficiently stiff to be self-sustaining when the bookmark is held supported from



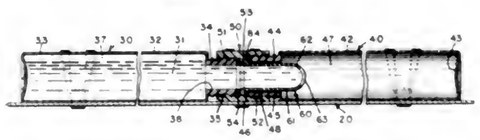
the end of the arm bearing the arm-attaching means with the arm horizontal but being sufficiently soft and resilient for the arm to be bent away from the edge of the page of the book which it confronts and to be twisted about its longitudinal axis as the page engaged by the tab is turned in a normal manner, thereby permitting escape of such page past the tab and the tab and arm to resume their relaxed shape with the tab overlying the edge of the next page of the book.

3,158,132
PENNANT HOLDER
Lyle D. Guthrie, 3780 Keating St., San Diego 1, Calif.
Filed Oct. 24, 1961, Ser. No. 147,371
13 Claims. (Cl. 116—173)



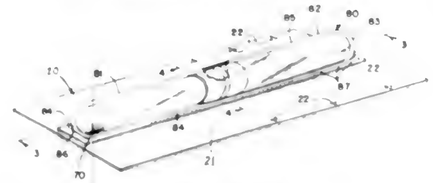
1. A pennant holder comprising:
a Z beam having two substantially parallel longitudinal surfaces and a transverse portion;
a resilient pad mounted on the inner face of each said longitudinal portions; and
a pennant shaft mounted on the outer portion of said Z beam adjacent the junction of the transverse portion with one of said longitudinal portions and parallel to the axis of said Z beam.

3,158,133
CATTLE STANDING HEAT DETECTOR
Herbert J. Larson, 124 Vine St., Fergus Falls, Minn.
Filed Nov. 28, 1962, Ser. No. 240,658
13 Claims. (Cl. 119—1)



13. In a cattle standing heat detector,
(*a*) a base for attachment to the back of the cow to be bred,
(*h*) an elongated container open at one end and closed at its other end and mounted on said base, said container extending in the general direction of the backbone of the cow, said container being constructed of flexible material,
(*i*) an elongated transparent receptacle open at one end and closed at its other end and mounted on said base, said receptacle being disposed in alignment with said container and ahead of the same with the open ends juxtaposed,
(*k*) said container and receptacle having necks facing one another,
(*hh*) means for connecting said necks together defining a sealed enclosure,
(*ii*) and a valve having a movable part and disposed at the locality of said necks and controlling the flow of fluid therebetween.

3,158,134
CATTLE STANDING HEAT DETECTOR
Herbert J. Larson, 124 Vine St., Fergus Falls, Minn.
Filed Aug. 26, 1963, Ser. No. 304,346
5 Claims. (Cl. 119—1)



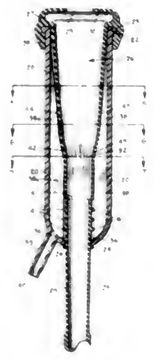
1. In a cattle standing heat detector,
(*a*) a base for attachment to the back of the cow to be bred,
(*b*) a container mounted on said base and constructed from resilient material and having a tubular wall,
(*c*) a colored liquid within said container,
(*d*) a transparent receptacle for the colored liquid mounted on said base ahead of said container,
(*e*) means for connecting said container to said receptacle for communication therebetween, and defining a sealed enclosure,
(*f*) a partition between said container and receptacle,
(*g*) said partition and wall forming a valve having a movable part and disposed between said container and receptacle.

3,158,135
METHOD FOR RAISING BASS AND FROGS
Howard J. Kimmerle, 5602 Long Beach Blvd., Long Beach, Calif.
No Drawing. Filed Mar. 21, 1962, Ser. No. 181,465
7 Claims. (Cl. 119—3)

2. The method of raising wild fresh water aquatic food life by providing a pond water habitat having accelerated growth properties, including the steps of determining optimum oxygen content of the pond, stimulating growth of bacteria and diatome life by adding organic fertilizer to said pond water, accelerating the growth and colonization of midges and Daphnia by feeding them on said bacteria and diatome life, stocking the pond with minnows and immature or young aquatic life, grading the resulting mature aquatic food life to size groups to avoid cannibalism, and selectively adding organic fertilizer to said pond water to maintain said optimum oxygen content thereof, whereby a continuous life cycle of the aquatic life is thereby provided for.

3,158,136
MILKING MACHINE TEAT CUP
Paul R. George, Cambridge City, Ind., assignor to Golay & Co., Inc., Cambridge City, Ind.
Filed May 1, 1963, Ser. No. 277,363
6 Claims. (Cl. 119—14.52)

1. A milking machine teat cup comprising
a rigid shell having an upper end opening substantially circular in contour, and an opposite lower end circular opening of lesser diameter than that of the upper end;
an internal passageway having a wall merging from said circular opening into an elliptical contour decreasing by transverse, minor axis lengths to a shell zone spaced from said upper end, the ellipitical wall contour continuing with a fixed minor axis length from said zone to said opposite end;
a slot laterally extending from said passageway wall centered approximately on said minor axis and extending approximately throughout the length of said passageway; and
an air conducting member carried by the shell adjacent said opposite end and having a passageway therethrough opening into said slot; and
an inflation having one end portion fitting snugly over said shell upper end;

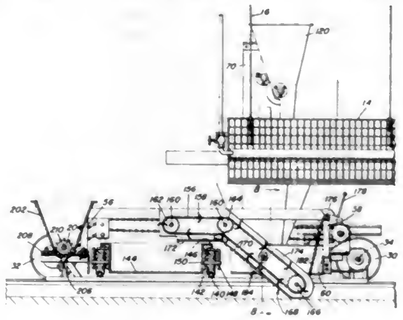


a major, circular tubular body length fixed to said portion and extending through said shell passageway to and through said passage zone for a distance within said fixed minor axis length; and
a circular tube of diameter less than that of said body extending from the body and through said shell opposite end opening;
said inflation body length being flexible and elastic and normally approximately cylindrical and being distorted from its cylindrical shape adjacent said shell upper end into elliptical shape of decreasing minor axis by contact with said passageway wall through said zone; and
said tube having a wall less flexible than the wall of said body and remaining approximately of constant diameter.

3,158,137
AUTOMATIC CHICKEN FEEDER AND MANURE REMOVER
Benjamin F. Summerour, 237 N. Peachtree St., Norcross, Ga.
Filed Jan. 19, 1962, Ser. No. 167,316
7 Claims. (Cl. 119—22)

1. The combination of a feed dispenser and manure droppings remover means for use with an elongated line of cages having a continuous feed trough comprising, a movably supported carriage, means for propelling the carriage along the row of cages, feed hopper means mounted on said carriage, conveying means operatively associated with said feed hopper means for conveying feed from the hopper to said trough, said manure droppings remover comprising an endless pick-up conveyor having a plurality of scrapers mounted on said carriage

and extending laterally beneath the row of cages for removing manure droppings from the floor surface be-



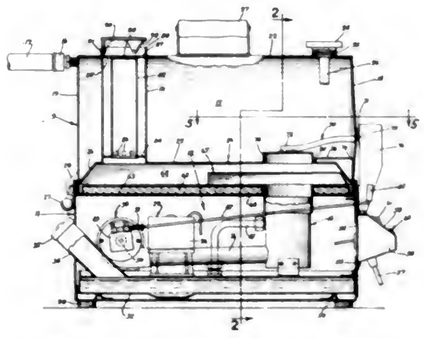
neath said cages, receptacle means mounted on said carriage adjacent said endless pick-up conveyor for receiving the manure droppings.

3,158,138
WRITING INSTRUMENT
Helmut Karl Bross, 40 Weichselgartenstrasse, Altenberg, uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.
Filed Nov. 20, 1961, Ser. No. 153,374
2 Claims. (Cl. 120—42.1)



1. A ballpoint pen comprising: a tubular casing having an upper and a lower end and open only at said ends; upper and lower tubular hoods extending through said ends of said casing and longitudinally movable relative to said casing; springs within said barrel urging said hoods outwardly relative to said casing; a rigid writing assembly having an upper writing point and a lower writing point at a fixed distance from each other, said assembly including a tubular cartridge connecting member and upper and lower ballpoint cartridges carried by said connecting member, said assembly being longitudinally movable within said barrel between (1) a first position wherein said lower writing point extends through the outer end of said lower hood and said upper writing point is concealed within said upper hood and (2) a second position wherein said upper writing point extends through said outer end of said upper hood and said lower writing point is concealed within said lower hood; and latching means defined by said connecting member and said casing to selectively hold said assembly in said first and said second positions against normal writing pressure applied to the extended writing point, but yieldable upon the application of inwardly directed pressure to said extended writing point and the adjacent hood in excess of normal writing pressure; said inwardly directed pressure being obtainable and said assembly being shifted between said positions by pressing said extended writing point and said adjacent hood into contact with a rigid surface to thereby longitudinally move said extended writing point and said adjacent hood inwardly into said casing and then releasing said extended writing point and said adjacent hood from said contact, whereby (*a*) said adjacent hood returns to its original position, (*b*) said extended writing point has now been moved to a concealed position within said adjacent hood and (*c*) said assembly has been shifted from one of said positions to the other of said positions.

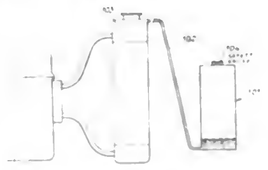
3,158,139
WALLPAPER STEAMERS
Willis A. Prain, P.O. Box 421, Excelsior, Minn.
Filed Jan. 29, 1962, Ser. No. 169,521
12 Claims. (Cl. 122—504)



1. A wallpaper steamer of improved design and compactness comprising a boiler consisting of front and rear end walls, left and right side walls, a top wall, a contoured bottom wall having a generally rectangular flat portion with downwardly inclined edge portions, a water inlet, and a steam outlet; heating means below said boiler for bringing the water in said boiler to boiling temperature including an open-top burner, means within said boiler for conveying exhaust gases from said heating means to the atmosphere, a fuel tank with an upper surface adapted to fully support said heating means, fuel conveying means adapted to receive the fuel from said tank and pump it to said burner to maintain fuel therein, and means for forcing air into said burner comprising a motor-driven blower and air duct intercommunicating with said blower and said burner; controlling means including electrical circuit means with electrical switches for independently controlling the flow of electrical energy to said blower and said fuel conveying means; and housing structure for enclosing said heating means and being adapted to support said boiler.

3,158,140
DEVICES FOR ENSURING THE FLUID-TIGHTNESS OF HYDRAULIC COOLING SYSTEMS OF ENGINES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France
Filed Sept. 24, 1962, Ser. No. 225,541
Claims priority, application France, July 2, 1960, 831,881, Patent 1,269,341
1 Claim. (Cl. 123—41.51)

A hydraulic cooling system for an engine, comprising a radiator having fluid inlet and outlet means adapted to connect said radiator to an engine to be cooled, said radiator being normally substantially full with cooling liquid, an expansion vessel normally substantially empty of any liquid, open conduit means connecting the uppermost portion of said radiator directly to the lowermost portion of said vessel, the lowermost portion of said vessel being located at a distance below the uppermost portion of said radiator so that a stable liquid level may be maintained

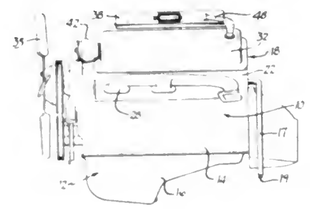


in said vessel when equal pressure conditions exist in said vessel and radiator, said radiator, conduit means, and expansion vessel being sealed from atmosphere so that constant above atmospheric pressure conditions may be maintained in said radiator, conduit means, and expansion vessel.

3,158,141
REGULATING VALVE SYSTEM
James E. Harris, Palmyra, N.J.
(521 Summit Ave., Fort Washington, Pa.)
Filed Apr. 9, 1962, Ser. No. 186,176
9 Claims. (Cl. 123—103)

1. In an internal combustion engine of an automotive vehicle having a carburetor and an intake manifold, a regulator system for automatically controlling the flow of fuel-air mixture from the carburetor to the manifold, said regulator system comprising a regulating valve connected between the outlet of the carburetor and the inlet of the manifold, said valve adapted to be moved between an open position and a closed position to control the flow of the fuel-air mixture from the carburetor to the manifold, and means exposed to the vacuum in the manifold for operating said valve between its positions upon a change in the manifold vacuum, said operating means comprising a piston slidably mounted in a cylinder and connected to the valve, means connecting one portion of the cylinder to the manifold to be maintained at the manifold vacuum, and means for applying a force on said piston in a direction opposite to the force applied on the piston by the manifold vacuum, said means for applying the opposing force on the piston including a source of reference vacuum applied to the other side of the piston, and means for maintaining said vacuum source at a desired pre-set vacuum, said operating means including means providing a leakage path from one side of the piston to the other side thereof, and said vacuum source comprising a chamber connected to the portion of the cylinder on the other side of the piston so that the leakage path admits manifold vacuum to said chamber to develop said reference vacuum, and a check valve connecting said chamber to the atmosphere, said check valve permitting flow of air into said chamber when the vacuum in said chamber increases beyond the desired pre-set vacuum.

3,158,142
CRANKCASE VENTILATION
George W. Bradshaw, 622 McDougall, Detroit 7, Mich.
Filed Dec. 5, 1961, Ser. No. 157,111
12 Claims. (Cl. 123—119)



1. In a ventilation system for an internal combustion engine having a crankcase, a carburetor connected in fluid-flow relation to an air filter housing having an air inlet opening, the improvement of
an air modulating flow control valve connected to the inlet opening,
and conduit means connected at one end into the crankcase and at the other end into the air filter housing.

3,158,143
IGNITION SYSTEM INCLUDING THERMOSTATICALLY CONTROLLED MEANS FOR REDUCING POWER OUTPUT
Richard C. Heidner, Libertyville, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,715
6 Claims. (Cl. 123—148)

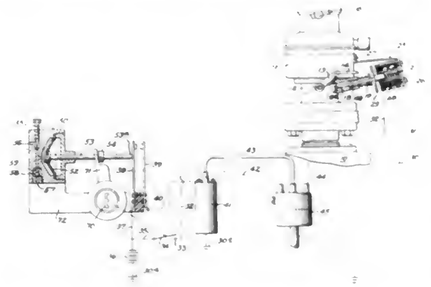


1. In an ignition system for spark ignition, multicylinder internal combustion engines including ignition means for firing of spark plugs associated with the cylinders, the improvement which comprises thermostatically controlled means operable incident to heating of the engine above a predetermined level for preventing the firing of at least one of said spark plugs while permitting continued firing of at least another one of the spark plugs.

3,158,144
ENGINE SHUT OFF
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif.
Filed Aug. 27, 1962, Ser. No. 219,586
5 Claims. (Cl. 123—198)

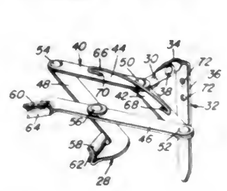
1. An engine having an ignition system, a carburetor, idle jets in said carburetor, a combination switch for said engine, said switch having an on and off position, a remote control for said idle jets including an off and an on position, said combination switch including a first switch to control said idle fuel shut off, a time delay device of more than two seconds, said combination switch

including a second switch, said second switch controlling said ignition system, the action of said second switch being partially controlled automatically by said time de-



lay mechanism so that said ignition is shut off no sooner than two seconds after said combination switch has been turned from said on position to said off position.

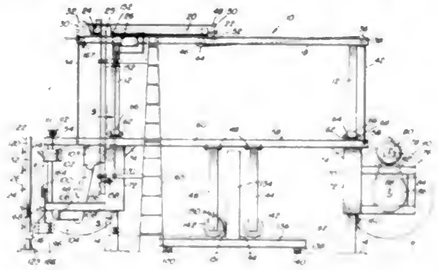
3,158,145
BOW ARROW HOLDER
Raymond L. Handy, Waldron, Ark.
(Rte. 4, Box 40–G, Henderson, Tex.)
Filed Mar. 6, 1962, Ser. No. 177,861
13 Claims. (Cl. 124—41)



12. A bow arrow holder comprising a pair of jaw members having coacting confronting faces adapted to grip an arrow shaft therebetween, said holder including means adapted to support said holder from a bow and means mounting said jaw members for relative movement toward and away from each other, said mounting means including means adapted to urge said jaw members toward each other in response to axial displacement of an arrow shaft in one direction relative to said holder when said arrow is between and frictionally engaged with said jaw members and means normally urging said jaw members away from each other.

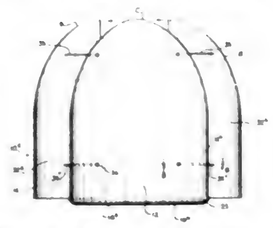
3,158,146
SWINGING FRAME CONTOUR WIRE SAW
Clifford R. Allen, % Granite City Iron Works Co., 19 4th Ave. N., St. Cloud, Minn.
Filed May 28, 1962, Ser. No. 197,948
6 Claims. (Cl. 125—21)

1. In a machine for cutting stone or the like, a driven endless sawing wire with means for mounting and driving it to provide a cutting run that is disposed horizontally, said means permitting the cutting run to swing back and forth and be shifted downwardly, including a vertically extending pattern holder, and means in said holder for readily removably securing a selected pattern thereto to control the swing of the cutting run, said first mentioned means also including a saddle frame mounted for controlled vertical travel downwardly, vertically movable carriage means, pivot means suspending said saddle means on said carriage means, stylus means fixed on said saddle



frame and extending from said saddle frame against said pattern, and means urging said stylus means against said pattern to control the swing path of said cutting run.

3,158,147
BUNSEN BURNER SHIELD GUARD AND REFLECTOR
Edward J. Catania, 480 Henry St., Brooklyn 31, N.Y.
Filed Apr. 24, 1963, Ser. No. 275,279
2 Claims. (Cl. 126—86)



1. A reflector attachment for a Bunsen burner, said attachment comprising a cylindrically curved plate formed as an oblique section of a cylinder with substantially straight lateral edges and with holes therein, a circularly curved bottom edge and an arcuate upper edge, a base plate extending forwardly from the bottom of the concave side of said curved plate, said base plate being formed as a sector of a circle with a forwardly extending apex and edges angularly disposed to each other, said base plate having a curved rear edge registering with the curved bottom edge of the curved plate, said base plate having a hole near said apex for engaging on a tip of the Bunsen burner post, a pair of cylindrically curved wing plates slidably abutted to the rear convex side of the curved plate and having spaced slots and rivets anchored in the holes in the curved plate and engaged in the spaced slots for slidably holding the wing plates as lateral extensions of the curved plate in continuation of the cylindrical curvature thereof, whereby the wing plates are selectively extensible with respect to the curved plate for adjusting the width of the reflector attachment, said curved plate, base plate and wing plates having highly polished surfaces to reflect and concentrate heat of the flame at a tip of the Bunsen burner.

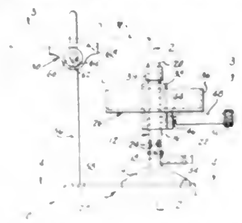
3,158,148
DENTAL APPARATUS
Euel Lee Utley, 1762 W. Santa Barbara Ave., Los Angeles, Calif.
Filed Oct. 11, 1963, Ser. No. 315,553
3 Claims. (Cl. 126—226)

1. A dental apparatus including a Bunsen burner having a base portion and a vertically extending gas tube

with a lower end secured to the base portion and including means defining a gas inlet, an adjustable air inlet, and an open upper end,

also an open top container means for receiving and keeping warm a quantity of wax, said container including an upstanding peripheral outer wall, a vertical central sleeve with a central opening therein of greater internal diameter than the outer diameter of said gas tube, and a substantially flat bottom between said wall and said sleeve,

said sleeve possessing a first portion extending from

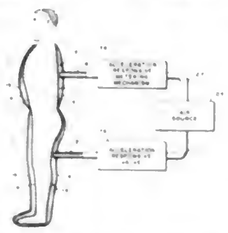


above the height of said outer wall to said bottom and spaced from the gas tube, and a second portion in contact with said tube and extending from said bottom towards but stopping short of said air inlet,

a plurality of thin circumferentially spaced apart rib means integral with said second portion of said sleeve and extending towards and making a sliding fit with the adjacent gas tube,

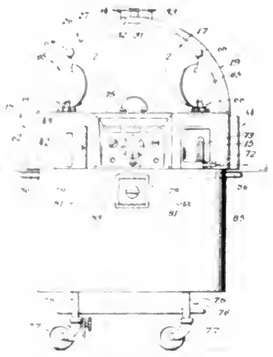
and threaded means circumferentially spaced from each of said rib means and passing horizontally through said sleeve and variably contacting said gas tube to attach said container at desired heights thereon.

3,158,149
ACCELERATION PROTECTIVE APPARATUS
Reuben F. Gray, Levittown, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 29, 1959, Ser. No. 823,786
4 Claims. (Cl. 128—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



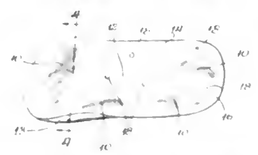
2. Apparatus for protecting a subject against the adverse effects of acceleration comprising, a pneumatically inflatable jacket section, a pneumatically inflatable trousers section, said jacket and trousers sections each being constructed of an inner substantially pliable member adapted to conform in contiguous relation with the body contour of said subject and joined to an outer relatively flexible member having a substantially unyielding characteristic, a pressurized source of pneumatic fluid, means coupled with said pressurized source of pneumatic fluid and said trousers section operable to supply a constant fluid pressure to the trousers section proportional to an accelerative level, and means coupled with said pressurized source of pneumatic fluid and said jacket section for operably admitting to the jacket section a quantity of said pneumatic fluid for a time interval solely proportional to the acceleration and thereupon operable to close said jacket section to the entrance of additional fluid, whereby the fluid pressure within the jacket section varies in accordance with the respiration of the subject.

3,158,150
INCUBATORS FOR PREMATURE INFANTS
Frederick George Croasdaile, London, England, assignor to Oxygenaire (London) Limited, London, England
Filed Nov. 20, 1962, Ser. No. 238,890
Claims priority, application Great Britain, Nov. 23, 1961, 42,000/61
11 Claims. (Cl. 128—1)



1. An incubator for premature infants comprising an infant receiving chamber, an air intake chamber and a domed cover for the infant receiving chamber, said infant receiving chamber being defined by a base wall separating it from said air intake chamber, heating means in said air intake chamber for heating air admitted thereto, said domed cover comprising two spaced walls, each of which have an opening adjacent the top portion thereof, means for feeding a first portion of the heated air from the air intake chamber to the space between the domed walls, means for feeding a second portion of the heated air from the air intake chamber into the infant receiving chamber, whereby said first and second portions of heated air escape through the openings in the domed cover.

3,158,151
FOOT-ADJUSTING INSERT AND METHOD
Joseph A. Misiak, 1554 W. Howard, Chicago 26, Ill.
Filed May 13, 1960, Ser. No. 28,925
3 Claims. (Cl. 128—2)



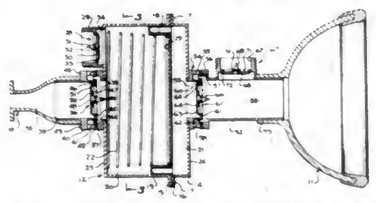
1. The method of preparing an adjusting insert, for footwear and analogous uses, which comprises: approximating the desired shape in a model of yielding material having negligible restitution when stress is removed; positioning the approximate model in a patient's shoe and subjecting it to service loading and stresses with the patient's foot in the shoe and thereby generating surface impressions in the model in the nature of striations corresponding to those of the skin or garment transmitting

the working load to the model; readjusting the thickness of the model locally over small areas, which small areas jointly include the entire load bearing superficies of said model, to change the pressure distribution into a new and more regular pattern by lowering areas where the impressions are deep and filling up areas where the impressions are light or completely missing and thereby smoothing out the first set of service impressions; subjecting the readjusted model to a second application of service loading and stresses; repeating the cycle of service loading, readjustment, smoothing out and loading, until a final shape is arrived at in which the service loading follows a relatively uniform and physiologically helpful pattern, in harmony with the anatomical idiosyncrasies of the user; and from the finally adjusted model preparing a permanent insert of durable material and of identical shape, adapted to carry service loads and retain its shape unaltered.

3,158,152
MOUTH TO MOUTH RESUSCITATOR

Aaron Bloom, Pasadena, Calif., assignor to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California

Filed Sept. 16, 1960, Ser. No. 56,458
4 Claims. (Cl. 128—29)



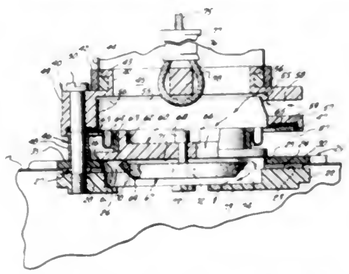
1. A mouth to mouth resuscitator comprising a supply chamber member and a pressure chamber member attached to the supply chamber member, an imperforate movable partition separating the interiors of said members from communication with each other, an operator mouthpiece in communication with the interior of the pressure chamber member, a patient mouthpiece in communication with the interior of said supply chamber member, the interior of said supply chamber member and a space adjacent the operator mouthpiece each having a separate fresh gas supply port in communication between the respective interior and the exterior, each said supply port having an inflow check valve therein, a passageway between the interior of each of the chamber members and the respective mouthpiece, the passageway adjacent the patient mouthpiece having an inflow check valve therein and the other passageway having an outflow check valve therein, and a valved vent port from the pressure chamber member and from the passageway adjacent the patient mouthpiece to the exterior.

3,158,153
PASSENGER MASK ASSEMBLY

Aaron Bloom, Pasadena, and Orland W. Wilcox, Sierra Madre, Calif., assignors to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California

Filed June 15, 1959, Ser. No. 820,269
8 Claims. (Cl. 128—142)

3. A breathing mask assembly for passing sequentially breathing gases to a subject comprising a flexible walled face receptacle, means forming a gas passage through the said receptacle, a multiple valve member having a passageway therethrough adapted to communicate with said gas passage and an annular outwardly facing exhaust valve seat surrounding said passageway, a valve body on said receptacle and spaced means separating said body from the receptacle at a location surrounding said passageway and forming exhaust passage means therebetween, said multiple valve member having an annular valve element reciprocably mounted therein at a location adapted to engage said exhaust valve seat and having a mixed gas supply passage therethrough, an inflow check valve for said mixed gas supply passage, a chamber in said body,

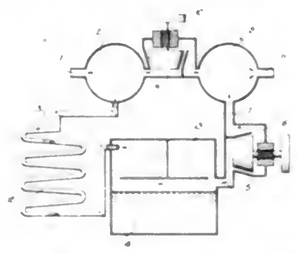


means forming ambient air passage means through said body to said chamber on the upstream side of said inflow check valve and inflow check valve means for said ambient air passage means, a flexible compensator bag attached to said body and in constant communication with the mixed gas supply passage, and a flexible supply tube connected to said bag.

3,158,154
ANESTHESIA VAPORIZER

Peter Schreiber, Lubeck, Germany, assignor to Otto Heinrich Dräger, Lubeck, Germany

Filed Sept. 28, 1962, Ser. No. 226,864
Claims priority, application Germany, Nov. 18, 1961, D 37,494
2 Claims. (Cl. 128—188)

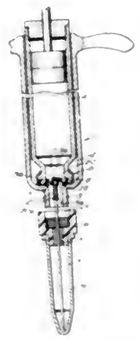


1. In a vaporizer for an anesthetic, liquid at normal temperatures, as used in an anesthesia apparatus, said vaporizer having a gas inlet distributor chamber, pipe means for supplying gas into said distributor chamber, a liquid anesthetic vaporizer unit, first pipe means joining said distributor chamber to said vaporizer unit for leading intake gas from said distributor chamber into said unit, a gas mixing chamber, second pipe means connecting said vaporizer unit to said mixing chamber for leading vaporized gas from said unit to said mixing chamber, by-pass pipe means joining said distributor chamber to said mixing chamber, valve means for controlling the flow of gas through said vaporizer, and outlet tube means for exhausting gas from said mixing chamber, the improvement in which said first pipe means has a relatively long length as compared to said second pipe means to prevent normal gas backflow from said vaporizer unit due to pressure pulsations caused by the breathing of the user of the vaporizer from reaching said distribution chamber and said by-pass pipe means.

3,158,155
HYPODERMIC SYRINGE AND CARTRIDGE

Simon Myerson and Richard L. Myerson, Newton, Mass., assignors to Myerson Tooth Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed June 14, 1961, Ser. No. 117,055
9 Claims. (Cl. 128—215)



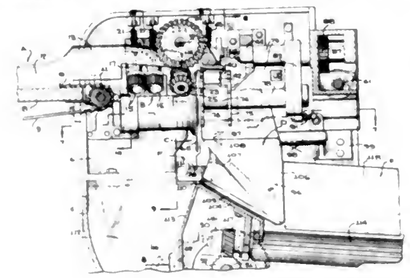
1. In combination, a cartridge and syringe having a barrel, said cartridge being removably placed in said barrel and having a needle puncturable closure cap at one end, a hypodermic needle extending through a needle receiving passage in said syringe to said closure cap of said cartridge and having a slidable sleeve normally mounted with a slidable friction fit around the cartridge entrant end of said needle, said cartridge entrant end of said needle being adapted to be inserted with said sleeve therearound into said needle receiving passage in said syringe to said closure cap, said cap comprising a seal and a clamping member having a needle puncturable wall overlying said seal, the circumferential surface area of said clamping member protruding below its central needle puncturable area to provide a centrally recessed area to prevent contact of said needle puncturable area with the syringe, said sleeve being slidable back on said needle by engagement with said recessed area to expose said cartridge entrant end of said needle, said needle puncturable area being pierced by said exposed entrant end of said needle with said sleeve slid back on said needle to a position intermediate the ends of said needle and outside said closure cap, said recessed area being concave inwardly, said slidable sleeve having a flange at its leading end, said concave recess being deep enough and wide enough to receive said flange.

3,158,156
CORN HUSKING MACHINE

Ralph Cover, P.O. Box 390, Westminster, Md.

Filed July 2, 1962, Ser. No. 206,585
32 Claims. (Cl. 130—5)

1. In a corn husking machine, husking rolls disposed on a downward incline and having cooperating rotating surfaces presenting a corn ear receiving "bite" and between which husks on the corn ears engage to be rapidly stripped from the corn ears, said "bite" including an upper husk bearing corn ear receiving end and a lower husked corn ear delivering end, corn ear directing means disposed at a higher elevation than and in advance of the husking rolls for delivering debutted corn ears to follow serially downward at a point in advance of the receiving end of the roll "bite" and with their longitudinal axes horizontally disposed, and receiving chute means placed to receive each falling ear individually and positioned on a downward incline effective to direct each ear tip end foremost into the receiving end of the roll "bite" and with its longitudinal axis inclined slightly forward and downward with relation to the roll "bite," said corn ear directing means including means repeatedly patting each falling

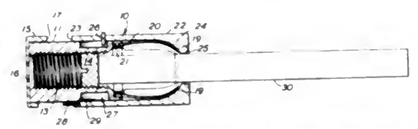


ear at each side to control the falling thereof and accurately direct the same onto the chute means to pass therefrom directly into the receiving end of the roll "bite."

3,158,157
CIGARETTE PERFORATOR

George Risk, 2659 Pershing Road, Columbus, Nebr.

Filed May 4, 1964, Ser. No. 364,422
3 Claims. (Cl. 131—170)



3. A device for circumferentially perforating a cigarette to a pre-selected depth at any pre-selected longitudinal position along the cigarette, said device comprising:

(A) A circumferentially grooved cylindrical plunger member, a first end of said cylindrical plunger being provided with a cylindrical socket along the central axis thereof, a second end of said cylindrical plunger member being threadedly perforate along the central axis thereof,

(B) A circumferentially threaded plug engaged by said threaded perforation, the end of said plug closest to the second end of said cylindrical plunger member being slotted,

(C) A cylindrical cap member integral with the second end of said cylindrical plunger member, the cylindrical cap member being perforate along the central axis thereof, the terminus of said cylindrical cap member nearer to the plunger member grooved portion being of a cam-like contour, said cap member nearer to the cam-like terminus being provided with graduated indicia,

(D) A cylindrical comb member comprising a plurality of sharply pointed teeth spaced around and integrally joined to a cylindrical web, said sharp teeth having portions thereof colinear with the outer surface of said cylindrical web and adjacent thereto, said sharp teeth being resiliently deflectable perpendicular to the central axis of said cylindrical comb member, said cylindrical comb member being positioned within said plunger member first end cylindrical socket and being held tightly against the walls of said cylindrical socket by means of a centrally perforate split ring,

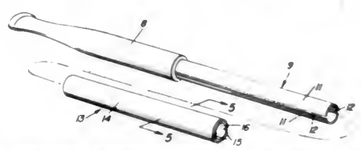
(E) A thin-walled hollow barrel member revolvably and slidably enclosing said plunger member first end, the inside contour of said barrel member being cylindrical near a top end thereof and of hemispherical configuration at the bottom end, said hollow barrel member being perforate along the central

axis thereof through the bottom of said inside contour,

(F) A restraining peg passing through the side wall of said hollow barrel member perpendicular to the central axis thereof, said restraining peg extending into the grooved portion of said cylindrical plunger member, and

(G) A spacing pin colinear with the barrel wall and attached thereto at its top end, said spacing pin functioning as a pointer for the cap member indicia and being of sufficient length whereby when the top end of the hollow barrel member is moved toward the cam-like contour of the cap member, the sharply pointed teeth of the comb member are converged by the bottom end inside contour of the barrel member and whereby the spacing pin will engage the cam-like contour before the concurrently moving restraining peg is restricted in its movement by the plunger member grooved portion.

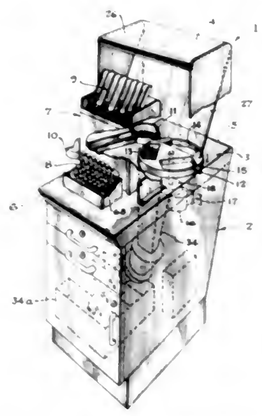
3,158,158
SMOKING DEVICE
Eugene S. Womack, P.O. Box 791, Mexia, Tex., assignor of one-half to Joe King, Mexia, Tex.
Filed Feb. 27, 1962, Ser. No. 175,967
10 Claims. (Cl. 131—191)



10. A smoking device comprising a mouthpiece, a first tube for the reception of a cigarette and projecting longitudinally from said mouthpiece, said tube having longitudinal slots therein, an outer tube slidable on the first-named tube, blades mounted longitudinally in said outer tube and operable in the slots for slitting he wrapper of the cigarette in said first tube preparatory to the removal of said wrapper, and a disk in the outer tube engageable with one end of the cigarette for retaining the tobacco thereof during removal of the wrapper, said disk being mounted on and between the blades in spaced, concentric relation to the outer tube for the passage of the wrapper therebetween.

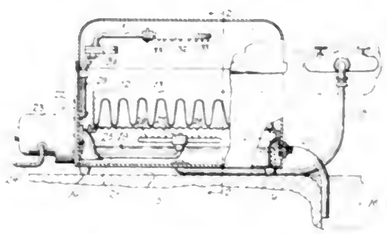
3,158,159
MONEY-HANDLING DEVICES
Carl Weber, Chicago, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed Dec. 12, 1961, Ser. No. 158,848
4 Claims. (Cl. 133—3)

4. A money-handling device comprising supporting means, guard means mounted on said supporting means, a receiving station on one side of said guard means, said station being accessible from said one side of said guard means and inaccessible from the other side thereof, an intermediate station, a discharging station, said last two-mentioned stations being disposed on said other side of said guard means and being accessible from said other side of said guard means and inaccessible from said one side of said guard means, a turntable having three upwardly opening receptacles therein, means operatively connected to said turntable for rotating the latter through a path of movement effective to sequentially move each of said receptacles through all of said stations, each of said receptacles having a bottom movable between open and closed positions, means mounted on said supporting means and engageable with said bottoms during said rotation of said turntable in position to hold said bottoms in closed position at said receiving and intermediate stations, and to permit said bottoms to move into open position at said discharge station, and means at said discharge station for restoring said bottoms to a closed position during movement of said turntable, and in which said means



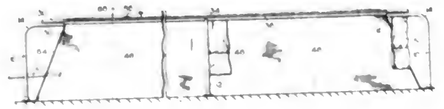
engageable with said bottoms comprises a bar yieldingly mounted on said supporting means in position to yieldingly supportingly engage said bottoms in all positions except when disposed at said discharge station.

3,158,160
PORTABLE DISH WASHER
Ramon D. Estandian, 482 Sanchez St., San Francisco, Calif.
Filed Apr. 21, 1964, Ser. No. 361,328
1 Claim. (Cl. 134—93)



In a portable dish washing machine the combination of an enclosing housing having a removable cover forming a water tight compartment, a removable basket in said housing for dishes to be washed, a water supply conduit for introducing water into the bottom of said housing, a connection located above the bottom of said housing for directing water above a predetermined level to a drain, a pump having an intake disposed below the level of water in said housing, said pump having a first discharge conduit terminating above said basket and a second discharge conduit terminating below said basket and above the level of water in said housing, a rotating sprinkler head mounted upon said second discharge conduit, a detergent carrying chamber communicating with and carried by said first discharge conduit from which a detergent therein will be introduced into the dish washing cycle, said detergent carrying chamber being formed with a relatively movable cover portion, and a sprinkler head carried by said cover portion adapted and arranged to open said chamber for the reception of a detergent when in the inoperative position and to close said chamber when in its operating position within said housing.

3,158,161
SWIMMING POOL COVER
Robert R. Knodel, 12341 Gilbert St., Garden Grove, Calif.
Filed Nov. 20, 1962, Ser. No. 238,883
11 Claims. (Cl. 135—5)



8. A swimming pool guard comprising upright frame members adapted for placement adjacent the edge of the pool, end and side track means supported at the upper end of the frame members, at least one outwardly leading extension in said track means forming a storage area, and curtain means slidably supported on said track means, a portion of said curtain means being movable into said outwardly leading extension.

3,158,162
BLIND MAN'S WALKING CANE
Roy C. Reel, 814 Escambia Drive, Sanford, Fla.
Filed May 9, 1962, Ser. No. 193,376
2 Claims. (Cl. 135—47)



1. A walking cane for facilitating locomotion by a person unable to see properly, comprising,

a tubular shaft including a lower hollow portion which telescopically receives an upper shaft portion having a handle at its upper end,

spring means resiliently urging said upper portion outwardly relative to said lower portion,

means limiting the telescopic action of said shaft portions,

a plurality of vibratory obstruction detectors mounted on said shaft and disposed in a plane substantially at right angles to the handle and each comprising,

a relatively stiff elongated and slim wire,

a coil formed in one end of said wire and extending along the axis thereof,

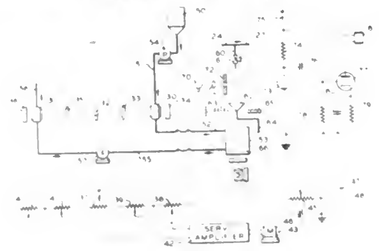
a mounting portion for the free end of said coil,

means fixedly mounted on said shaft having extensions thereon at opposite sides of said shaft lying in said plane substantially at right angles to said handle,

means for pivotally attaching said mounting portion to said fixedly mounted means whereby said vibratory detectors are angularly outwardly positionable on opposite side of said shaft,

said vibratory detectors transforming the shock of impact against obstructions during the use of the cane into induced mechanical vibrations for transmission through said shaft to the handle thereon thereby to increase the sense of perception to the user of the cane.

3,158,163
FLOW CONTROL PROCESS AND APPARATUS
Harry N. Claudy, Ridgefield, Conn., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 24, 1959, Ser. No. 861,892
5 Claims. (Cl. 137—8)

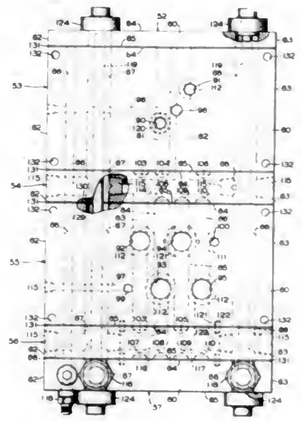


4. A method of adding a liquid to a container which comprises causing the liquid to fall drop-by-drop from a point above the container into the container, passing a beam of radiation through the falling liquid, counting a predetermined number of interruptions of said beam and establishing a first signal representative thereof, establishing a second signal representative of a predetermined time interval, the steps of counting and establishing a second signal commencing simultaneously, increasing the rate of supply of liquid to said point above said container responsive to the length of the interval between the time of occurrence of said first and second signals when said second signal occurs before said first signal and decreasing the rate of supply of liquid to said point above said container responsive to the length of the interval between the time of occurrence of said first and second signals when said first signal occurs before said second signal to maintain the flow of liquid from said point above the container into said container at a predetermined rate.

3,158,164
MULTIPLE BLOCK FLUID DISTRIBUTION PANEL FOR MOUNTING FLUID CONTROL DEVICES AND METHOD OF DIRECTING FLUID FLOW THROUGH THE BLOCKS
Bruce G. Barton, Livonia, Mich., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 5, 1961, Ser. No. 143,184
8 Claims. (Cl. 137—15)

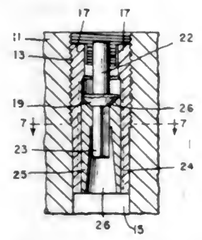
1. The method of directing fluid flow through at least one valve mounting panel block to a device to be operated, wherein the individual panel blocks include a plurality of passages therein, each passage terminating at each side of the block at an opening spaced from the other openings a predetermined fixed amount, comprising: providing additional passage means in each valve mounting block, said passage means extending from one side to the other and communicating with one surface of the block to form as a group a valve subplate, the number of additional passages being determined by the number of ports on the valve to be mounted on the individual block; said additional passages opening at both ends at the respective side, each opening corresponding with any one of a predetermined number of specifically located positions spaced along one side; providing a circuit block having parallel sides and having a plurality of main passages therein extending from side to side terminating in openings having the same spacing as the openings in the sides of the valve mounting panel blocks, each circuit block having a plurality of drilled recesses spaced along said

sides at prescribed points corresponding in spacing to the location of the said additional passages, providing a passage means in said circuit block extending transversely of all of said drilled recesses and connecting with said main passages, drilling into said passage means at selected ones of said drilled recesses to interconnect the additional



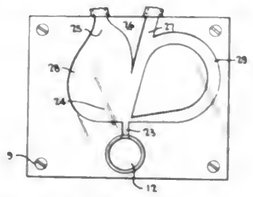
passages in the adjacent blocks, selectively blocking said passage means with respect to the main passage means depending upon the desired circuitry between valve mounting blocks, and disposing said mounting panel blocks and circuit blocks in tandem fluid tight relationship to provide communication between the valve ports in accordance with the prescribed circuitry.

3,158,165
VALVE ASSEMBLY AND METHOD OF MAKING IT
Carl F. Benson, Torrington, and John H. Cowles, Forestville, Conn., assignors to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed June 20, 1961, Ser. No. 118,400
4 Claims. (Cl. 137—68)



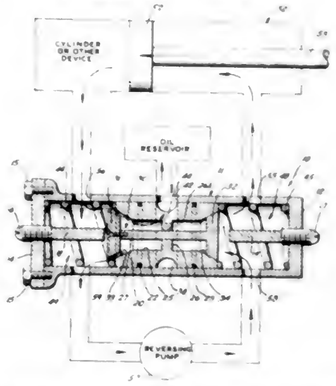
1. A valve assembly comprising a housing having an axial bore inwardly from one end, spaced longitudinal ribs on the wall of said bore, a valve having a narrow rim contacting the housing at the inner end of said bore, said valve rim and the adjacent surface of the housing having complementary fractured surfaces, a stem projecting from the free end of the valve, an abutment in the housing bore, said abutment having a polyhedral axial bearing, a polyhedral guide stem on the adjacent end of the valve slidable in said bearing, and means to hold the abutment from rotation and axial movement.

3,158,166
NEGATIVE FEEDBACK OSCILLATOR
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 7, 1962, Ser. No. 215,472
2 Claims. (Cl. 137—81.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a fluid-operated oscillator:
(*a*) a fluid power source,
(*b*) a fluid power nozzle connected to said power source for providing a fluid stream,
(*c*) divider means,
(*d*) a first and a second receiver means,
(*e*) said first receiver means being an asymmetric chamber, defined by one side of said divider means, said power nozzle, an outlet means and a curved sidewall extending from said power nozzle to said outlet means, said sidewall being remote from said power stream,
(*f*) said second receiver means being defined by a lock-on wall and a first channel having a portion of said lock-on wall as one side thereof and the other side of said divider means as the other side thereof,
(*g*) and a second channel for feeding back a portion of the power stream connected to said second receiver and to said asymmetric chamber at the end of said lock-on wall in the vicinity of said power nozzle.

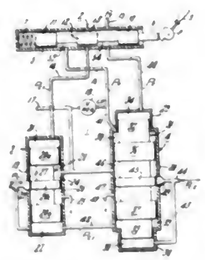
3,158,167
DIRECTIONAL CONTROL AND RELIEF VALVES
Paul E. Redelman and Glen E. Childress, Chicago, Ill., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,623
4 Claims. (Cl. 137—87)



1. A directional control and relief valve comprising a housing having a pair of stops located in respective chambers of the housing, a slide disposed in the housing for movement between the stops, said housing having ports in communication with said chambers enabling fluid under pressure to flow into and from said chambers, a unitary shuttle valve supported by said slide and having a valve

head at each end thereof opposite a stop and adapted to close on a valve seat at the corresponding end of the slide when there is fluid under pressure in the chamber associated with the closed valve head, said slide having passage means in communication with said valve seats and in communication with a drain port in said housing adapted to be connected to a reservoir or the like for fluid at low pressure, said valve heads being so spaced that when one valve head closes as aforesaid the other is displaced from its seat communicating the chamber having the displaced valve with the passage means in the slide that communicates with said drain port, and resilient means for normally holding the slide stationary and being yieldable to pressure of a predetermined magnitude acting at one end of the slide having a closed valve head enabling the latter valve and the slide to move together until the displaced valve head strikes its stop, whereupon the closed valve is moved away from its seat to communicate its chamber with the drain port.

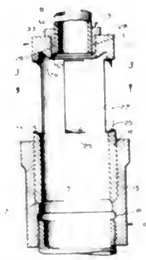
3,158,168
PRESSURE-DIVIDER FOR HYDRAULIC CONTROL
Per Erik A. Larsson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 26, 1962, Ser. No. 233,339
7 Claims. (Cl. 137—101)



7. A combination pressure relay and hydraulic computing servo-device comprising:
a cylinder having a force-balanced piston therein,
said cylinder and piston defining first and second pressure chambers on one end thereof and third and fourth opposing pressure chambers on the other end thereof,
said first chamber containing hydraulic fluid at a varying control pressure,
said second chamber containing hydraulic fluid at a substantially constant pressure,
said third chamber containing hydraulic fluid at a third varying pressure intermediate that of the first and second chambers, and
value means actuated by the piston to control the admission of fluid from a pressurized supply source to the fourth chamber,
said piston having equal areas exposed to the first, second, third and fourth chambers, whereby the sum of pressures in the first and second chambers will be equal to the sum of pressures in the third and fourth chambers.

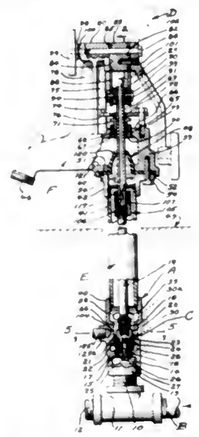
3,158,169
AIR GAP FITTING FOR DRAINAGE SYSTEMS
Arthur J. Smith, 4037 Golf Road, San Jose, Calif.
Filed Jan. 22, 1962, Ser. No. 167,538
4 Claims. (Cl. 137—216)

1. In a vertically disposed drainage system, a pipe with a hub, and an air gap fitting telescopically disposed within the hub of said pipe in close tolerance fit for establishing sealing engagement therebetween, said air gap fitting comprising a first inner cylindrical wall forming a first axial opening for establishing a flow path for waste therethrough, said first inner cylindrical wall being formed with air gap ports communicating with said first axial opening, a second inner cylindrical wall disposed above said first inner cylindrical wall and forming a second axial opening, said second axial opening communicating with said first axial opening and having a diameter less than the diameter of said first axial opening, said second inner cylindrical wall having a lower portion thereof projecting



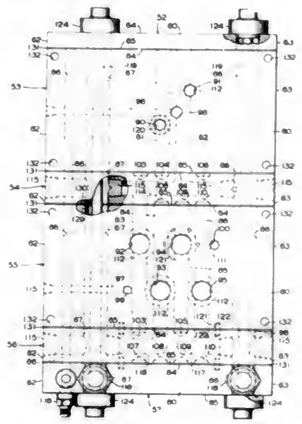
into said first axial opening for establishing a flow path for waste with said first axial opening, whereby waste discharged through said second axial opening passes through said first axial opening without escaping through said air gap ports, and a third wall interconnecting said first and second inner cylindrical walls, said third wall being disposed at an angle relative to said first and second inner cylindrical walls and being directed upwardly and outwardly to reduce the tendency of waste to adhere to the wall surfaces.

3,158,170
YARD HYDRANT
Howard A. Tubbs, 406 S. Elizabeth St., Whitewater, Wis.
Filed Mar. 7, 1961, Ser. No. 93,906
3 Claims. (Cl. 137—218)



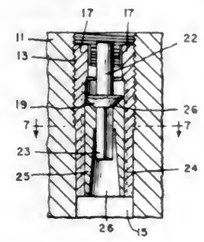
1. A water hydrant for use with an underground water supply pipe comprising: a hollow casing extending below ground level and having a water inlet in communication with the interior of the water supply pipe; a first valve within the casing beneath ground level for controlling the opening and closing of the water inlet; a water drainage outlet in communication with the interior of the casing and situated below ground level; a water dispensing housing situated above ground level and having its interior in

sides at prescribed points corresponding in spacing to the location of the said additional passages, providing a passage means in said circuit block extending transversely of all of said drilled recesses and connecting with said main passages, drilling into said passage means at selected ones of said drilled recesses to interconnect the additional



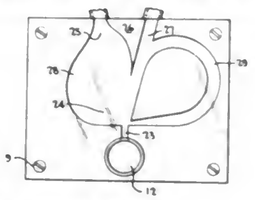
passages in the adjacent blocks, selectively blocking said passage means with respect to the main passage means depending upon the desired circuitry between valve mounting blocks, and disposing said mounting panel blocks and circuit blocks in tandem fluid tight relationship to provide communication between the valve ports in accordance with the prescribed circuitry.

3,158,165
VALVE ASSEMBLY AND METHOD OF MAKING IT
Carl F. Benson, Torrington, and John H. Cowles, Forestville, Conn., assignors to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed June 20, 1961, Ser. No. 118,400
4 Claims. (Cl. 137—68)



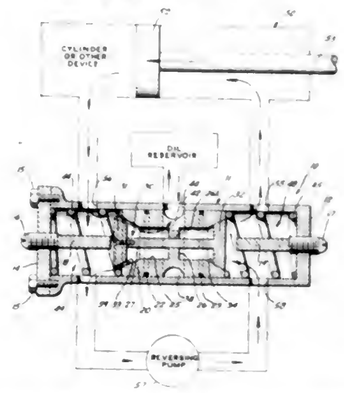
1. A valve assembly comprising a housing having an axial bore inwardly from one end, spaced longitudinal ribs on the wall of said bore, a valve having a narrow rim contacting the housing at the inner end of said bore, said valve rim and the adjacent surface of the housing having complementary fractured surfaces, a stem projecting from the free end of the valve, an abutment in the housing bore, said abutment having a polyhedral axial bearing, a polyhedral guide stem on the adjacent end of the valve slidable in said bearing, and means to hold the abutment from rotation and axial movement.

3,158,166
NEGATIVE FEEDBACK OSCILLATOR
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 7, 1962, Ser. No. 215,472
2 Claims. (Cl. 137—81.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a fluid-operated oscillator:
(*a*) a fluid power source,
(*b*) a fluid power nozzle connected to said power source for providing a fluid stream,
(*c*) divider means,
(*d*) a first and a second receiver means,
(*e*) said first receiver means being an asymmetric chamber, defined by one side of said divider means, said power nozzle, an outlet means and a curved sidewall extending from said power nozzle to said outlet means, said sidewall being remote from said power stream,
(*f*) said second receiver means being defined by a lock-on wall and a first channel having a portion of said lock-on wall as one side thereof and the other side of said divider means as the other side thereof,
(*g*) and a second channel for feeding back a portion of the power stream connected to said second receiver and to said asymmetric chamber at the end of said lock-on wall in the vicinity of said power nozzle.

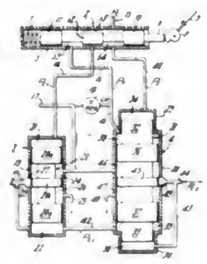
3,158,167
DIRECTIONAL CONTROL AND RELIEF VALVES
Paul E. Redelman and Glen E. Childress, Chicago, Ill., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,623
4 Claims. (Cl. 137—87)



1. A directional control and relief valve comprising a housing having a pair of stops located in respective chambers of the housing, a slide disposed in the housing for movement between the stops, said housing having ports in communication with said chambers enabling fluid under pressure to flow into and from said chambers, a unitary shuttle valve supported by said slide and having a valve

head at each end thereof opposite a stop and adapted to close on a valve seat at the corresponding end of the slide when there is fluid under pressure in the chamber associated with the closed valve head, said slide having passage means in communication with said valve seats and in communication with a drain port in said housing adapted to be connected to a reservoir or the like for fluid at low pressure, said valve heads being so spaced that when one valve head closes as aforesaid the other is displaced from its seat communicating the chamber having the displaced valve with the passage means in the slide that communicates with said drain port, and resilient means for normally holding the slide stationary and being yieldable to pressure of a predetermined magnitude acting at one end of the slide having a closed valve head enabling the latter valve and the slide to move together until the displaced valve head strikes its stop, whereupon the closed valve is moved away from its seat to communicate its chamber with the drain port.

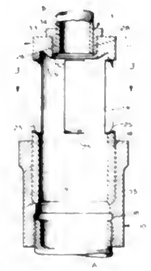
3,158,168
PRESSURE-DIVIDER FOR HYDRAULIC CONTROL
Per Erik A. Larsson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 26, 1962, Ser. No. 233,339
7 Claims. (Cl. 137—101)



7. A combination pressure relay and hydraulic computing servo-device comprising:
a cylinder having a force-balanced piston therein,
said cylinder and piston defining first and second pressure chambers on one end thereof and third and fourth opposing pressure chambers on the other end thereof,
said first chamber containing hydraulic fluid at a varying control pressure,
said second chamber containing hydraulic fluid at a substantially constant pressure,
said third chamber containing hydraulic fluid at a third varying pressure intermediate that of the first and second chambers, and
value means actuated by the piston to control the admission of fluid from a pressurized supply source to the fourth chamber,
said piston having equal areas exposed to the first, second, third and fourth chambers, whereby the sum of pressures in the first and second chambers will be equal to the sum of pressures in the third and fourth chambers.

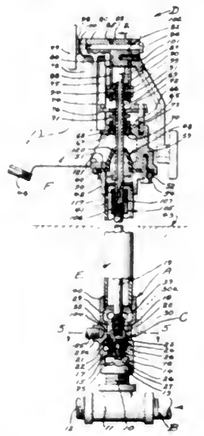
3,158,169
AIR GAP FITTING FOR DRAINAGE SYSTEMS
Arthur J. Smith, 4037 Golf Road, San Jose, Calif.
Filed Jan. 22, 1962, Ser. No. 167,538
4 Claims. (Cl. 137—216)

1. In a vertically disposed drainage system, a pipe with a hub, and an air gap fitting telescopically disposed within the hub of said pipe in close tolerance fit for establishing sealing engagement therebetween, said air gap fitting comprising a first inner cylindrical wall forming a first axial opening for establishing a flow path for waste therethrough, said first inner cylindrical wall being formed with air gap ports communicating with said first axial opening, a second inner cylindrical wall disposed above said first inner cylindrical wall and forming a second axial opening, said second axial opening communicating with said first axial opening and having a diameter less than the diameter of said first axial opening, said second inner cylindrical wall having a lower portion thereof projecting



into said first axial opening for establishing a flow path for waste with said first axial opening, whereby waste discharged through said second axial opening passes through said first axial opening without escaping through said air gap ports, and a third wall interconnecting said first and second inner cylindrical walls, said third wall being disposed at an angle relative to said first and second inner cylindrical walls and being directed upwardly and outwardly to reduce the tendency of waste to adhere to the wall surfaces.

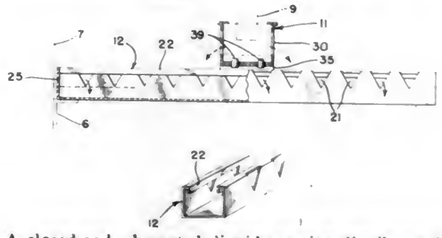
3,158,170
YARD HYDRANT
Howard A. Tubbs, 406 S. Elizabeth St., Whitewater, Wis.
Filed Mar. 7, 1961, Ser. No. 93,906
3 Claims. (Cl. 137—218)



1. A water hydrant for use with an underground water supply pipe comprising: a hollow casing extending below ground level and having a water inlet in communication with the interior of the water supply pipe; a first valve within the casing beneath ground level for controlling the opening and closing of the water inlet; a water drainage outlet in communication with the interior of the casing and situated below ground level; a water dispensing housing situated above ground level and having its interior in

communication with the interior of the hollow casing; a rod extending through the casing and being connected to the first valve; a second valve actuated by the rod for opening and closing the water drainage outlet with reference to the interior of the casing; a third valve within the housing for closing off communication between the interior of the housing and the interior of the casing to prevent return flow of the water; said rod having a passage opening to atmosphere and also opening to the interior of the casing between the third valve and drainage outlet and a fourth valve for controlling the opening and closing of such passage into or out of communication with the interior of the casing.

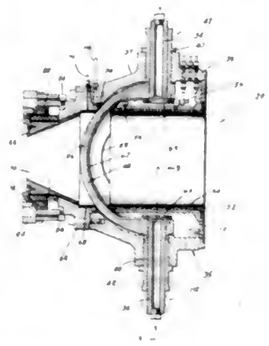
3,158,171
DISTRIBUTOR
John S. Eckert, Silver Lake, Ohio, assignor to The United States Stoneware Company, Tallmadge, Ohio, a corporation of Ohio
Filed Aug. 31, 1962, Ser. No. 220,728
1 Claim. (Cl. 137—262)



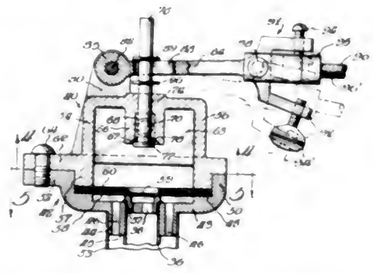
A closed-end, elongated, liquid-carrying distributor for a chemical treating tower, the side walls and bottom of which are fabricated from one piece of sheet metal, said walls being spaced by the bottom which is integral therewith, with a flange of the metal at the top of each of said side walls turned in and down substantially at right angles to provide open access from below, which flanges are integral with the wall and continuous from one end of the wall to the other, with openings in each wall adjacent the flange for the overflow of liquid therethrough.

3,158,172
HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE
Angelo Giovannetti, Jr., San Jose, Russel M. Himmelright, Menlo Park, and Kenneth A. Meyer and Hakuzo Nitta, Palo Alto, Calif., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 2, 1960, Ser. No. 47,123
1 Claim. (Cl. 137—340)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A valve comprising a casing have a passageway extending therethrough about a longitudinal axis and surrounded by a valve seat, a spherical segment valve element having a closure section and a gate section and mounted in said casing for rotation between a closed position with the closure section closing said passageway and an open position with the gate section aligned with said passageway, said valve seat comprising a circular sealing member, said sealing member forming a seal with the surface of said valve element, and means connected to said valve element for effecting sequential opening and closing of said valve element, said last specified means operating to open said passageway by sequentially moving said valve element along said passageway away from said valve seat, pivotally rotating said valve element to the position in which said gate section is aligned with said passageway and seating said gate section against said sealing member by moving said valve element along said passageway toward said valve seat, said last specified means operating to close said passageway by a reverse sequence of the operations required to open it, a fluid-cooled inlet nozzle supported in said casing on the upstream side of said valve seat and said valve element, said nozzle having a longitudinal axis in alignment with said passageway longitudinal axis, means connected to said casing for cooling said sealing member when said valve element is in motion, means connected to said valve element for cooling said valve element, said cooling means comprising a two-section hollow shaft connected to said valve element, a source of cooling fluid coupled to said shaft, a master pipe, a circular manifold for diverting fluid from the hollow of said valve element shaft into said master pipe, and a system of distributing pipes internally of said valve element, said fluid being forced into one section of said valve element shaft, circulated internally of said valve element through said system of pipes and out the other section of said valve element shaft.

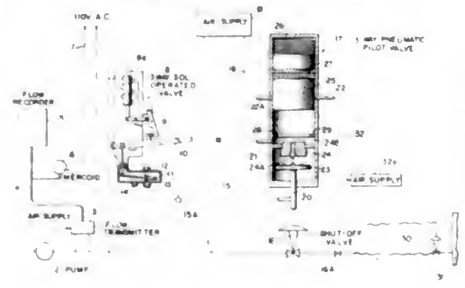


3,158,173
TYPE OF BALL COCK
Herman Bachli, Chicago, and Eugene B. Shapiro, Skokie, Ill., assignors to Chicago Specialty Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1961, Ser. No. 139,157
1 Claim. (Cl. 137—414)



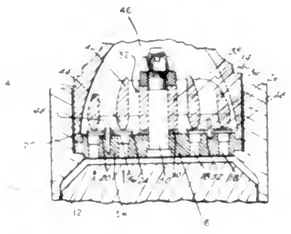
Control means for a flush tank, comprising a water inlet pipe, a chamber communicating with the inlet pipe, a first outlet from said chamber communicating with the flush tank, a diaphragm supported in said chamber above said first outlet for closing said first outlet, an upper chamber above said diaphragm, said diaphragm having an opening permitting the passage of water from the inlet pipe to said upper chamber when said diaphragm has closed said first outlet, a depending portion extending into said upper chamber and providing a first communicating passageway with said upper chamber, a lateral passage communicating with said first communicating passageway and forming a second outlet, a plunger extending into said first communicating passageway for vertical movement, valve means on said plunger wholly within said upper chamber for closing the entrance to said first communicating passageway, means for operating said valve means so that the water in the upper chamber discharges through said second outlet and reduces the hydrostatic pressure on said diaphragm and allows said diaphragm to move to open said first outlet and permit water from the inlet pipe to pass through said first outlet, and an arm extending above the top of said upper chamber and having a first lost-motion connection with said plunger, float means having a pivotal second lost-motion connection with said arm for operating said arm and providing the sole means for moving said plunger vertically in either an upward or downward movement, said first and second lost-motion connections permitting the valve to remain in its extreme position until the second lost-motion connection has been moved to its upper or lower position.

3,158,174
SAFETY SHUT OFF FOR FLUID LOADING
Frederick I. Stalnecker and William O. Suydam, both of Lake Charles, La., assignors to Cities Service Oil Company, Tulsa, Okla., a corporation of Delaware
Filed June 20, 1961, Ser. No. 118,403
1 Claim. (Cl. 137—460)



A safety system comprising: a fluid transfer line, first biased closed valve means in a first portion of said transfer line, pressure responsive means effective upon application of a first sufficient pressure to open said first valve means, means for supplying said first sufficient pressure to said pressure responsive means, means to reduce said first sufficient pressure by an amount rendering said first pressure responsive means ineffective whereby said biasing means closes said first valve means, said pressure reducing means comprising pressure operated piston valve means biased to open position and held in closed position by a predetermined pressure from a second pressure source, pressure responsive bleed orifice means effective to reduce said predetermined pressure and biased to pressure relieving position, the application of pressure from said second source when acting on said pressure responsive bleed orifice means being sufficient to maintain said bleed orifice biasing means ineffective, second biased closed valve means in a second portion of said transfer line, second pressure responsive means effective upon application of said second sufficient pressure to open said second valve means, means including a supply and exhaust valve to either establish communication between said second pressure source and both said second pressure responsive means and said pressure responsive bleed orifice means or to shut off communication of said second pressure source and vent said second pressure responsive means and said pressure responsive bleed orifice means to atmosphere so as to relieve said second sufficient pressure and bleed orifice sufficient pressure, said supply and exhaust valve means having means for releasably holding said valve means in said communicating position and for releasing to non-communicating position, solenoid means to effect the release of said valve means, means including flow transmitter means and switch means to effect energization of said solenoid to release said valve means upon predetermined excess flow in said fluid transfer line.

3,158,175
COMPRESSOR VALVES
Franz Jaklitsch, 823 Marywood, Royal Oak, Mich.
Filed Feb. 8, 1963, Ser. No. 257,825
1 Claim. (Cl. 137—516.19)
(Granted under Title 35, U.S. Code (1952), sec. 266)

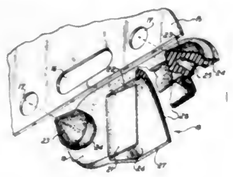


In a ring type high speed compressor valve operating in the range of 2500 revolutions per minute comprising a thin ring disc-valve element, said disc-valve movable to and from its closed position in response solely to aerodynamic forces, a valve seat having circular slots adapted to be closed by said disc-valve, a hollow cylindrically shaped damper having its axis of rotation coaxial with the center of said disc-valve, said damper having its side walls shaped in airfoil cross-section taken through the axis of rotation of said damper, the continuous leading edge contact surface of said airfoil damper located adjacent said valve seat and furnishing an uninterrupted annular support for said disc-valve, the maximum thickness of said airfoil cross-section being substantially equal to the radial width of said slots, the chord line of said airfoil cross-section being in substantial alignment with the mean diameter of said disc-valve whereby when said leading edge contact surface of said damper contacts said disc-valve at least fifty percent of the upper surface area of said disc-valve is exposed to aerodynamic forces, said leading edge contact surface of said airfoil damper allowing the free portions of said disc-valve to elastically deform about its mean diameter upon impact with said damper whereby the elastic energy combines with said aerodynamic forces to initiate and support the closing lift.

3,158,176
SEALING MEANS FOR A DRAIN OPENING
Thomas J. Toland, Flat Rock, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,480
4 Claims. (Cl. 137—525)

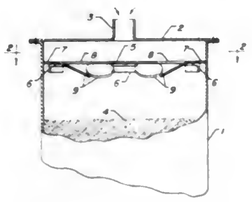
1. In combination, a sheet metal troughlike structure having a drain hole and apertures spaced from each end of said drain hole in a wall thereof, a sealing device attached to one surface of said wall, said device having a body, a shield, and a diaphragm valve portion, said shield and said valve portion being integrally molded with said body from a flexible resilient material, said diaphragm portion being separated in part from said body by at least one longitudinally extending slit, said diaphragm valve portion being thinner in cross section that said body, said flexible valve portion overlapping the surface adja-

cent the drain hole edges and normally maintaining said drain hole closed against entry of foreign matter into said troughlike structure from the exterior thereof, said valve portion being adapted to be flexed away from said surface adjacent at least one of said drain hole edges in response to pressure thereagainst exerted by water in the interior of said troughlike structure, fastening means carried by



said body projecting through said apertures in said wall to maintain said diaphragm valve portion in a drain hole spanning position, the distance between said fastening means being less than the distance between said apertures to place said diaphragm valve portion under tension, and said shield projecting outwardly from said body and encompassing three sides of said diaphragm valve portion, said shield being generally triangular in cross section.

3,158,177
FLOW STREAM DIFFUSER MEMBER
Henry A. Schulz, Arlington Heights, and Robert M. Nichols, Oak Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Illinois
Filed Sept. 9, 1963, Ser. No. 307,504
2 Claims. (Cl. 137—592)



1. A diffuser member for use in distributing a gaseous flow stream from a single inlet port to a larger cross-sectional area contact zone, such member comprising in combination,

(*a*) a transverse flat plate section sized to connect with and traverse the cross-sectional area of said contact zone,

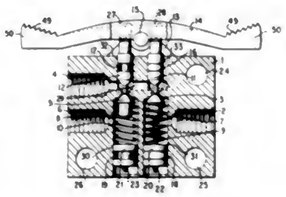
(*b*) a non-perforate center portion for said plate section,

(*c*) narrow open slot means adjacent the periphery of such plate section providing inlet stream flow inwardly along the inside wall of said contact zone,

(*d*) a plurality of inlet openings through said plate section in a spaced symmetrical annular pattern around said non-perforate center portion thereof and

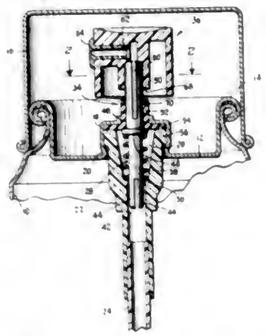
(*e*) a flow stream deflector member sloping away from the outer downstream edge of each of said spaced inlet openings, with each of said deflector members sloping in a downstream direction toward an axis that is normal to the center of said diffuser plate section and of said contact zone whereby there is opposing downstream angular gaseous stream flow through each of said spaced inlet openings and a resulting diffused flow into the contact zone.

3,158,178
SHIFTING MECHANISM
Ernst J. H. Fiala and Rudolf Andres, both of Sindelfingen, Kreis Boblingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 6, 1961, Ser. No. 122,330
Claims priority, application Germany July 12, 1960
1 Claim. (Cl. 137—596.2)



A mechanically actuated hydraulic shifting mechanism, especially for adjusting installations in motor vehicles, having a housing provided with two bores of substantially identical and parallel construction and extending through the entire housing, each of said bores being provided with a stepped portion and being further provided with portions having respectively different diameters, parallelly arranged spring-loaded valve means in the greater diametered portion of each of said bores sealingly abutting said stepped portion, said housing being provided with a first hydraulic connecting channel opening into the smaller-diametered portion of one of said bores, a second hydraulic connecting channel effectively terminating in the greater-diametered portion of the other of said bores, and a third hydraulic connecting channel effectively terminating in the greater-diametered portion of said one of said bores, line means connecting the smaller-diametered portions of both said bores, said line means having coaxial terminal portions, and means including shifting pins guided respectively within said smaller diametered portions for directly and alternately actuating said valve means so as to selectively connect said second and said third hydraulic connecting channel with said first hydraulic connecting channel, the axes of said bores and the axes of said first, second and third connecting channels and of said line means being disposed in a common plane, said first-named axes extending transversely to said second-named axes, each said first, second and third hydraulic connecting channel comprising portions of differing diameters, the smaller-diametered portion of said first hydraulic connecting channel being coaxial with said line means, the smaller-diametered portion of said second hydraulic connecting channel terminating in said greater-diametered portion of the other of said bores, the smaller diametered portion of said third connecting channel terminating in said greater diametered portion of said one of said bores, said greater-diametered portions of said first, second and third connecting channels being adapted to receive hydraulic line connections, said greater-diametered portions of said first, second and third connecting channels being threaded, said shifting pins being provided with annular grooves, sealing rings received in said grooves and contacting said smaller-diametered portions of said bores, each said spring-loaded valve means comprising a spool-like sealing plug in said greater-diametered portion of each of said bores, a sealing ring carried by said plug and sealingly engaging said greater-diametered portion.

3,158,179
AEROSOL METERING VALVE CONSTRUCTION
Herbert G. Lehmann, Easton, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,088
14 Claims. (Cl. 137—627.5)



1. In an aerosol valve construction, in combination:

(*a*) a valve housing having an upper annular valve seat,

(*b*) a valve stem movable in the valve seat and having an enlargement cooperable with the seat to close the passage therethrough,

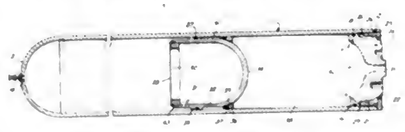
(*c*) said stem having a portion of reduced cross section above the enlargement to permit passage of aerosol substance through the seat when the stem is shifted downward,

(*d*) a depress button comprising a head enlargement carried by the stem to effect downward movement thereof,

(*e*) said head enlargement having a discharge passage through it, and

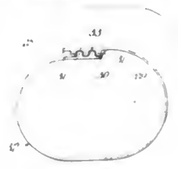
(*f*) a pair of cooperable mutually engageable normally separated conduit means connected respectively with the depress button and annular valve seat, providing a continuous passage surrounding portions of the stem located above the said enlargement and also located between the seat and the discharge passage of the button when the button and the valve stem are in downwardly shifted position, thereby to conduct the contents of the valve housing out through the passage in the button, both of said conduit means extending completely around and encompassing at least part of the portion of reduced cross section of the valve stem, one of said conduit means being resilient and yielding when engaged under pressure by the other.

3,158,180
BLIND SHELL PISTON ACCUMULATOR
Edward M. Greer, Beverly Hills, Calif., assignor to Greer Hydraulics, Inc., a corporation of New York
Filed Dec. 28, 1960, Ser. No. 78,936
4 Claims. (Cl. 138—31)



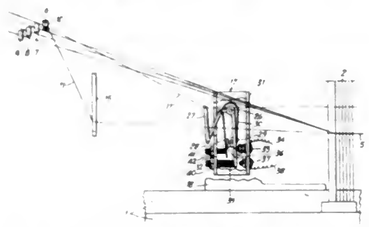
1. A pressure vessel comprising a cylindrical forged casing having a cylindrical opening at one end and having its other end closed and substantially hemispherical, said closed end being an integral part of the casing, a piston having a hemispherical portion at one end, said piston being slidably mounted in said casing, the end of the piston in the chamber of said pressure vessel adjacent the hemispherical end of the casing having its outer periphery bevelled and adapted to abut against the inner surface of the hemispherical end of said casing, a plug releasably secured in the open end of the casing, said plug having a recess in its inner end of curvature complementary to the curvature of the hemispherical end of said piston to receive the latter, said plug having a port therethrough for fluid, said closed end having a port therethrough of diameter a fraction of the diameter of said casing.

3,158,181
POLYMERIC TUBATE PRODUCT AND PROCESS
Wilbert L. Gore, Newark, Del., assignor to W. L. Gore & Associates, Inc.
Filed May 11, 1959, Ser. No. 812,314
6 Claims. (Cl. 138—168)



1. As a new article of manufacture, an assembly made of unsintered tetrafluoroethylene resin and mainly in sheet form having near one edge a plurality of tubes extending upwardly from the flat plane of the sheet, having at the parallel edge opposite said first edge but on the opposite side of said sheet at least one tube extending downwardly from the plane of the sheet, and in each of the said tubes means for stiffening and filling said tubes, the said tubes on the one side being adapted to be brought into intermeshing and locking relationship with the said tubes on the other side to convert the said assembly into a new tubular structure.

3,158,182
DEVICE FOR CONTROLLING THE WEFT IN CONTINUOUS-FEED WEAVING MACHINES
Raymond Dewas, 120 Blvd. de Saint-Quentin, Amiens, Somme, France
Filed Sept. 5, 1962, Ser. No. 221,541
Claims priority, application France Sept. 8, 1961
8 Claims. (Cl. 139—370)



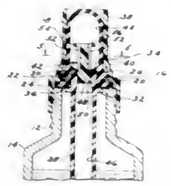
1. In a loom wherein a shed is formed in the warp to receive each weft, said loom having a reciprocating lay, a reed, weft inserting means carried by said lay for inserting a weft thread into the shed, and power means for driving said loom; a weft guiding and detecting device comprising a finger-like member, means carried by said lay and supporting said member for movements of short amplitude thereon in a plane at right angles to the direction of movement of said lay, said member being adapted to guide said weft thread between the weft supply and the shed, spring means resiliently opposing the movement of said member in response to traction exerted on the weft thread drawn into the shed, the force of said

spring means permitting movement of said member during normal traction, and electrical circuit means including a switch actuated by said member when action of said spring means exceeds action of tension of the weft thread on said member due to absence of weft thread or insufficient tension thereof, a relay energized by said switch, and a loom control actuated by said relay to make said power means inoperative upon actuation of said switch.

3,158,183
PUSH BUTTON DROPPER

Frank E. Brown, Glendale, Calif., and Richard G. Sherman, Utica, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

Filed July 25, 1962, Ser. No. 212,347
10 Claims. (Cl. 141—24)



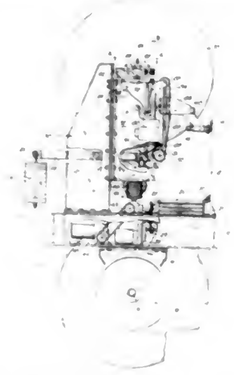
1. A liquid dispensing device for use with a container for liquid having an outlet comprising a closure adapted to be removably secured to the container for closing the outlet, a hollow stem adapted to project into the container, a flexible bulb having a walled air chamber therein adapted to be collapsed by flexing said bulb and communicating with the interior of said hollow stem, and a valve positioned for closing the communication between said hollow stem and said bulb chamber, said valve being adapted for movement to open position by flexing said bulb to collapse said chamber and means for opposing return movement of said valve to said closed position thereof such that the bulb may thereafter be operated to alternately draw liquid into said hollow stem and to expel the same therefrom in response to expansion and collapse of the bulb chamber.

3,158,184
BAND MILL WITH TILT ADJUSTING MEANS AND CROSS-LINE ADJUSTING MEANS

Milton H. Mater, Corvallis, Oreg., assignor to Appleton Machine Company, Appleton, Wis., a corporation of Wisconsin

Filed May 2, 1960, Ser. No. 26,007
7 Claims. (Cl. 143—27)

1. A band mill comprising a base, a lower band wheel mounted upon said base, supporting means mounted upon said base and extending upwardly therefrom, said supporting means including a pair of guide means extending vertically in parallel relation to each other, spaced apart in the axial direction of said lower band wheel and on opposite sides thereof, a pair of frames respectively mounted on said guide means for vertical sliding movement toward and away from said base, an upper band wheel, means journaling said upper band wheel on and between said frames substantially in vertical alignment with said lower band wheel, with the axes of said wheels substantially parallel and lying substantially in a vertical plane, and means to raise or lower one of said frames independently of the other to effect tilt adjustment of said upper band wheel, said means journaling said upper band wheel comprising a band wheel axle, a pair of vertically extending band wheel axle pivot members respectively mounted on said frames, said pivot members passing respectively through the ends of said axle to prevent rotation thereof while permitting angular horizontal shifting of said axle whereby crossline adjustment of said upper band wheel may be effected, and means for shifting either

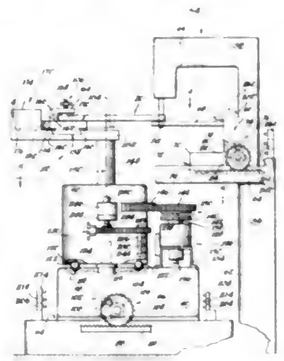


of said pivot members bodily in a direction substantially normal to said vertical plane whereby to effect said crossline adjustment.

3,158,185
APPARATUS FOR CUTTING A PIANO KEYBOARD BLANK

Clifford W. Andersen, De Kalb, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed May 4, 1962, Ser. No. 192,594
8 Claims. (Cl. 144—2)

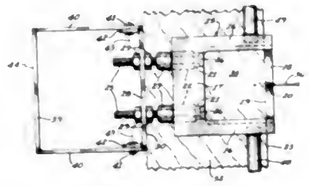


1. Apparatus to be used in forming a series of transverse deflected slots penetrating edgewise into but not completely across a keyboard blank in the production of keys for pianos and analogous musical instruments, said apparatus comprising: cutting means including a saw blade and a drive for said blade; carrier means for supporting and manipulating a keyboard blank generally in a plane perpendicular to said saw blade, including a stationary base, a platform member adapted to receive said keyboard blank, relatively movable first and second carrier members mounting said platform member on said base, first guide means for directing rotary movement of said first carrier member about an axis generally perpendicular to said plane, and second guide means for directing reciprocating movements of said second carrier member in a path generally toward and away from said saw blade; drive means connected to said second carrier member for causing movement of said second carrier member in a path generally toward and subsequently away from said saw blade whereby to converge said saw blade and said keyboard blank into cutting relationship in forming a first straight-line cut in said blank starting at the rear edge thereof and whereby to separate said blade and said blank after the formation of a second straight-line cut confluent with and laterally deflected from said first cut; rotary drive means connected to said first carrier member for rotating said first carrier member and thereby said keyboard blank through a predetermined angle upon completion of a said first cut, said predetermined angle corresponding to the angle of deflection between said first and second cuts, said rotary drive reversibly rotating said first carrier member through said predetermined angle upon completion of said second cut and upon withdrawal of said blade to the deflection point between said cuts; drive means operatively connected to one of said cutting means and said carrier means for incurring straight-line, relative converging and separating movements thereof between the rotation and the reversible rotation of said first carrier member for urging said saw blade and said keyboard blank into cutting relationship in forming said second straight-line cut; and indexing means for incurring relative stepwise transporting movements between said cutting means and said keyboard blank upon separation of said saw blade and said blank, said stepwise movements occurring along a path in said plane and generally parallel with the longitudinal axis of said blank, said stepwise movements corresponding to the spacings between the individual deflected slots being made in said blank.

3,158,186
HINGE SETTING APPARATUS

Lawrence Heathington, 2742 W. Madison St., Phoenix, Ariz.

Filed Feb. 21, 1963, Ser. No. 260,114
3 Claims. (Cl. 144—27)

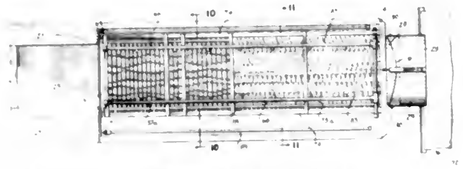


3. A hinge setting device comprising in combination:
(A) a frame consisting of,
(B) a tie block member,
(C) side members integrally connected at one end to said tie block member having locating surfaces on the inner faces thereof,
(D) a locating bar connected integrally with the other ends of said side members having a laterally extending abutment surface,
(E) spring retainer cylinders mounted in outer enlarged portions of guide bores formed in said tie block,
(F) compression springs in said spring retainer cylinders,
(G) tension bolts extending through said springs parallel to said side members and having heads engaging one end of said springs and threaded ends extending outwardly therefrom,
(H) a jamb abutment plate adjustably locked to the outer ends of said tension bolts and having a jamb abutment surface facing toward and parallel to said laterally extending abutment surface of said locating bar,
(I) a swinging door abutment plate having laterally extending abutment surface parallel to and facing said locating bar when swung to operative position,
(J) a pair of arms having their inner ends pivotally mounted on said frame adjacent the ends of said jamb abutment plate and having their outer ends integrally connected to the opposite face of said swinging door abutment plate adjacent the ends thereof,
(K) a cutting tool assembly movably mounted on said frame comprising,
(L) a tool carriage block slidable between guide surfaces formed on said side members while moved in sliding contact with the work surface to be machined,
(M) and a rabbeting and pilot hole cutting tool journaled in said tool carriage block about an axis at right angles to the direction of sliding movement of said tool carriage block.

3,158,187
VEGETABLE PEELING AND CLEANING APPARATUS

Duane E. Smith and Melvin E. Seymour, Creston, Iowa, assignors to Veg-A-Peel Company, Incorporated, Creston, Iowa, a corporation of Iowa

Filed Aug. 2, 1962, Ser. No. 214,369
12 Claims. (Cl. 146—50)



1. A produce peeling apparatus comprising:
(*a*) a hollow body having end enclosures,
(*b*) an inlet opening in one of said enclosures and an outlet opening in the other of said closures,
(*c*) a plurality of parallel shafts journaled in said end closures and extending therebetween,
(*d*) said shafts being spaced in a curved pattern adjacent the bottom edge of said outlet opening to form a curved support in the bottom of said body,
(*e*) eccentrics mounted on said shafts in spaced relation, with the eccentrics being angularly offset from each other at the same angle and in the same direction on any given shaft,
(*f*) drive means to rotate all of said shafts and eccentrics about their individual axes,
(*g*) a removable basket structure rigidly mounted in said hollow body and having U-shaped support members disposed adjacent the curve of said spaced shafts and passing between the spaced eccentrics on said shafts,
(*h*) whereby the eccentrics extend above said members during rotation to peel produce contained in said basket by contact therewith.

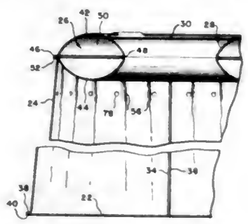
3,158,188
COLLAPSIBLE CONTAINER

Joseph J. Esty, 1812 Tustin St., San Diego 6, Calif.

Filed Apr. 17, 1961, Ser. No. 103,332
4 Claims. (Cl. 150—48)

1. An upwardly-inwardly tapering, inherently stable and collapsible container comprising in combination, a bottom wall; a circumferentially endless side wall of flexible material; a closed hollow top of flexible material having an opening extending therethrough and joined with the upper edge of the side wall; and a valve in the top for the ingress of air, said hollow top being so shaped that the inflation thereof causes a reduction in the width of the top and the formation of substantially vertical

wrinkles in said side wall, the material of the side wall having substantially the same circumferential length

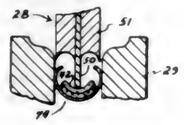


throughout the entire height thereof when the top is deflated, said top and side wall having substantially the same circumferential length when the top is deflated.

3,158,189
CRIMPING MACHINE

Davis M. Balsam, 21—50 33rd Road, Long Island City, N.Y; Irving Sheroff, 3804 Bedford Ave., Brooklyn 29, N.Y.; and Alexander Shatz, 220—54 77th Ave., Bayside, N.Y.

Filed Nov. 20, 1962, Ser. No. 238,884
3 Claims. (Cl. 153—1)



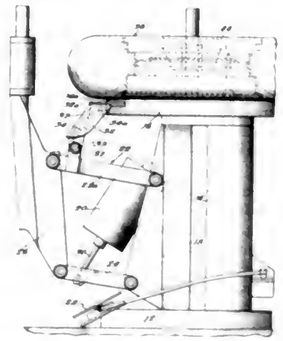
1. In a machine for crimping closure member material about a handle, the combination of an anvil die, first means for urging closure member material partially into said anvil die thereby preforming and severing the same, second means for urging said closure member material further into said anvil die thereby causing said closure member material to partially encircle a handle, third means for urging said closure member material to the bottom of said anvil die causing said closure member material to lock into said handle, wherein said second means is partially contained within said third means and connected thereto by a compression spring, stop means to discontinue the action of said second means at a predetermined point, and means to actuate said third means whereby said second means and said third means will be actuated together until said second means is halted by said stop means.

3,158,190
DOUBLE LOWER BEAD BREAKER SHOE FOR TIRE CHANGING STANDS

James R. Foster, Webster City, Iowa, assignor to The Coats Company, Inc., a corporation of Iowa

Filed Aug. 13, 1962, Ser. No. 216,508
8 Claims. (Cl. 157—1.17)

1. A device for removing a vehicular tire from a wheel rim of the drop center type, comprising: a support for a wheel rim with a tire casing thereon; a pair of shoes mounted on the support in position cooperatively to engage one side of the tire on said wheel rim; means for moving the pair of shoes against the tire for forcing the tire casing toward the drop center of the wheel rim, the first of said shoes being positioned to engage the side wall of the tire outwardly from the wheel rim and push such side wall toward the opposite side wall of the tire, the second shoe being positioned to engage the tire casing intermediate the first shoe and the juncture of the tire

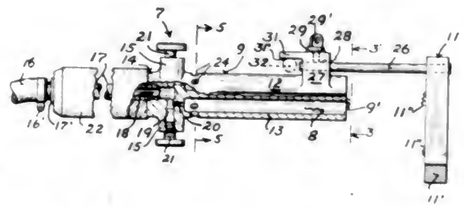


casing and wheel rim, and means for moving the shoes conjointly in said contact with the tire casing to push the tire bead into the drop center of the wheel rim.

3,158,191
SOLDERING IRON AND TORCH UNIT

Adolf H. Menke, 435 23rd Ave., Oakland 6, Calif.

Filed Oct. 31, 1962, Ser. No. 234,292
7 Claims. (Cl. 158—26)



1. In a gas-fueled heating torch, a one-piece body providing a plurality of mutually coplanar straight and parallel fuel-aerating ducts adapted to discharge aerated fuel therefrom solely at a planar forward body end transverse to the duct plane, open air-inlet ports extending into said body to side point of said ducts adjacent and forwardly of the inlet ends of the ducts, means of the body providing a fuel-supply duct connecting the inlet ends of said fuel-aerating ducts, and a means intermediately connecting said supply duct of the body with an external source of the fuel under pressure whereby the flow of the fuel into said fuel-aerating ducts is operative to effect an aerating flow of air through said air-inlet ports into the different aerating ducts by induction whereby the ignition of the aerated fluid streams from the ducts beyond said forward body end is adapted to provide a combined planar heating jet thereat.

3,158,192
BOOSTER HEATER

Donald E. Mizer, Grosse Pointe Woods, Mich., assignor to Heat-King Corporation, Hazel Park, Mich., a corporation of Michigan

Original application Dec. 16, 1957, Ser. No. 702,906. Divided and this application Feb. 7, 1963, Ser. No. 256,896
2 Claims. (Cl. 158—28)

1. In a booster heater, the combination which comprises

a generally cylindrical sheet metal tube,

means within said tube defining a spiral passageway for combustion gases,

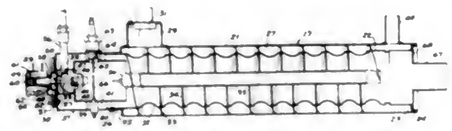
and a burner assembly for directing hot gases axially through said tube comprising a first substantially imperforate cylindrical cup mounted on one end of said tube and communicating with the interior of said tube,

said tube having an axial outlet of diameter less than the diameter of the tube at the end thereof opposite said first cup,

the internal diameter of said first cup being substantially the same as the internal diameter of said tube,

a second cylindrical cup positioned within said first cup with the walls thereof spaced from the walls of said first cup and the interior thereof communicating with the interior of said tube,

said first cup having a radial air inlet through which air may be directed into the space between the bases of said first and second cups,



said second cup being provided with air openings in the base and side walls thereof,

whereby air may flow through the space between the side walls of the cups to the interior of the tube without restriction and through said openings in said second cup to the interior of said second cup,

the bases of said first and second cups being provided with aligned axial openings,

a block mounted on the outer surface of the base of the first cup and extending axially into the space between said cups,

a nozzle mounted on the end of said block and extending through the axial opening in said second cup for directing a spray of fuel axially toward said tube,

said block having an axial passageway extending entirely therethrough to said nozzle,

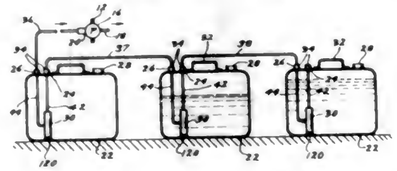
means for supplying fuel to the other end of said axial passageway,

and means for igniting the mixture of air and fuel within the second cup.

3,158,193
FUEL SUPPLY SYSTEM

Glenn R. Anderson, Minneapolis, Minn., assignor to McCulloch Corporation, Scott Division, Minneapolis, Minn., a corporation of Minnesota

Filed July 14, 1961, Ser. No. 124,047
3 Claims. (Cl. 158—36.3)

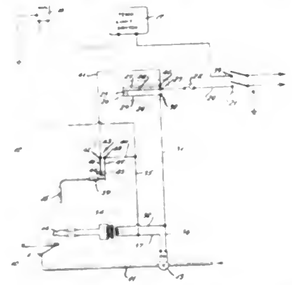


1. A fuel tank transfer system for an engine comprising in combination a plurality of connected fuel storage tanks, each such storage tank having a fuel port and fuel outlet therein, and each tank including a float operated valve, each such float operated valve comprising a first valve seat communicating between the outlet of its tank and the port of its tank, and a movable valve element including a first valve face adapted to cooperate with said first valve seat, a second valve seat communicating between the outlet of said its tank and the interior of said its tank, a movable valve element including a second valve face adapted to cooperate with said second valve seat, float means operatively connected to the first said movable valve element to move said first valve face into contact with said first valve seat when said float means is urged upwardly by the fuel in said tank and out of contact with said first valve seat when said float means is moved downwardly thereby allowing fuel to flow from said port to said outlet when the level in said tank falls below the level of said float means, said float means operatively connected to the second said movable valve element adapted to move said second valve face onto said second valve seat when said first valve face is out of contact with said first valve seat and out of contact with said second valve seat when said first valve face is in contact with said first valve seat and duct means connecting the outlet of one of said tanks to said engine and the port thereof to the outlet of another of said tanks.

3,158,194
SAFETY CUTOFF FOR HEATER

Philip Joseph Thomas Rawlins, Tarboro, N.C., assignor to Long Manufacturing Company, Tarboro, N.C.

Filed Nov. 15, 1960, Ser. No. 69,462
1 Claim. (Cl. 158—123)



A safety cutoff for a fluid material burner of the ignition fired type, comprising a first electrical circuit having the normally closed contacts of a time delay relay switch in series with an electrically operated valve for the supply of fluid and with the ignition, a second circuit having the impedance of the thermal delay relay switch in series with the contact points of a second normally closed relay, said circuits being in parallel for connection to a source of electrical energy, and temperature responsive means mounted adjacent to said burner and operatively associated with said second relay and adapted to open its contact points in response to the attainment of a predetermined temperature by said temperature responsive means.

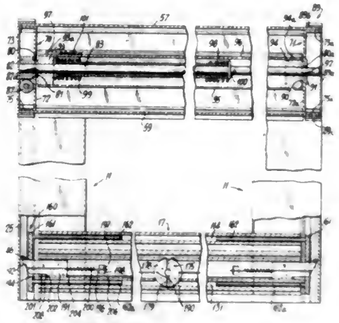
3,158,195
ROLL UP WINDOW SCREENS

Eugene J. Ney, Yonkers, N.Y., assignor to Ney-Land, Inc., Mount Vernon, N.Y., a corporation of New York

Filed Apr. 23, 1962, Ser. No. 189,585
1 Claim. (Cl. 160—26)

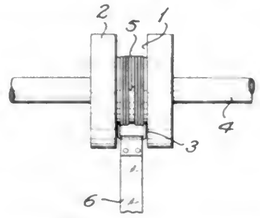
A window screen comprising a pair of parallel, vertical, spaced guides, a torsion spring actuated roller rotatably mounted at the upper ends of said guides, a screen cloth having its upper end attached to said roller, an operating bar attached to the lower end of said screen cloth, and a pair of members having first portions engaging said guides for vertical sliding engagement with vertical inner surfaces of said guides, and second portions fixed to said first portions, respectively, and engaging said operating bar for horizontal sliding movement relative to said bar,

said guides each comprising spaced opposed walls and an outer wall forming a channel open at its inner side, and the outer ends of said operating bar projecting into said guides through their open inner sides, for vertical and horizontal sliding movement in said channels, the spaced walls of said guides having opposed parallel



grooves, and said first portions comprising guide bars having opposed edges received in said parallel grooves to provide said sliding engagement of said first parts with said guides, said operating bar having a pair of horizontal, parallel grooves, and said second portions each comprising parallel pins fixed to said guide bars and slidable in said horizontal grooves.

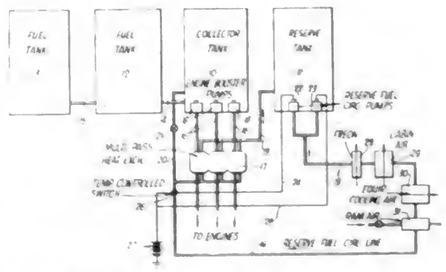
3,158,196
VENETIAN BLIND
Isamu Fukuoka, 998 Zaimokuza, Kamakuro-shi, Kanagawa-ken, Japan
Filed June 24, 1963, Ser. No. 290,025
Claims priority, application Japan, June 25, 1962, 37/33,242
3 Claims. (Cl. 160—173)



1. In a slat lifting mechanism for a Venetian blind, the improvement comprising a lifter shaft, a lifter drum mounted on said shaft, a blind slat lifting tape adapted to be wound up onto the lifter drum, and frictional means which is fixed to the upper end of the lifter tape and frictionally engages with the lifter drum by a load applied to the lifter tape.

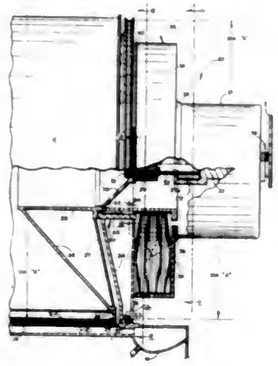
3,158,197
COOLING BY HEAT EXCHANGE WITH LIQUID FUEL IN AIRCRAFT
Leonard Blezard, Hayes, Middlesex, England, assignor to Hawker Siddeley Aviation Limited, Kingston-upon-Thames, England
Filed Aug. 31, 1961, Ser. No. 135,261
Claims priority, application Great Britain, Sept. 1, 1960, 30,196/60
7 Claims. (Cl. 165—40)

1. In an aircraft having liquid-fuel-burning engines for propulsion, a system comprising a first fuel tank, a fuel-to-fuel first heat exchanger having a first inlet and outlet for a main fuel feed flow and a second inlet and outlet for reserve fuel flow, main fuel feed lines connecting said first fuel tank to said first inlet of said first heat exchanger and connecting said first outlet of said first heat exchanger to said engines, a reserve second fuel tank, a second heat exchanger having a first inlet and outlet for reserve fuel and a second inlet and outlet for cooling fluid flow, a reserve fuel circulating line connecting said second fuel tank and said first inlet of said second heat exchanger, connecting said first outlet of said second heat exchanger and said second inlet of said first heat exchanger, and connecting said second outlet of said first heat exchanger and said second fuel



tank, main feed pump means for delivering fuel from said first fuel tank through said main fuel feed lines and said first head exchanger to said engines, reserve fuel circulating pump means for circulating fuel from said second tank through said reserve fuel circulating line and said second and first heat exchangers and back to said second tank, and cooling fluid conduit means delivering aircraft cooling fluid through said second heat exchanger by way of said second inlet and outlet thereof, whereby the circulating reserve fuel is passed in turn into heat exchange relationship with said cooling fluid in said second heat exchanger and with the fuel supply to said engines in said first heat exchanger.

3,158,198
SPACE RADIATOR AND METHOD FOR TRANSFERRING HEAT
Frank B. Hunter, Jr., Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed Apr. 3, 1961, Ser. No. 100,171
13 Claims. (Cl. 165—86)



1. A capacitance type radiator in combination with a craft adapted to fly in a rarified environment, said craft having a wall portion thereon substantially circular in cross-section adapted to become heated at an inner surface thereof, said radiator comprising at least one rotatable roller member substantially circular in cross-section constructed and arranged adjacent an outer surface of said wall portion, drive means operatively connected to said rotatable roller member for causing a rotation thereof, a belt means constructed and arranged between said roller member and said wall portion to have at least one predetermined first portion thereof in abutting relation to said roller member and a predetermined second portion thereof in abutting relation to said wall portion, whereby when said roller member is rotated by said drive means the second portion of said belt means is moved out of abutting relation with the wall portion of said craft and into said rarified environment and means operatively connected to said roller member for orbiting said roller member about said cylindrically-shaped wall portion such that no sliding contact exists between said belt means and said wall portion.

3,158,199
TREATMENT OF SUBTERRANEAN FORMATIONS
Warren E. Parkhurst, Dallas, Tex., assignor, by mesne assignments, to Socony Mobil Oil Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 11, 1955, Ser. No. 527,865
8 Claims. (Cl. 166—42)

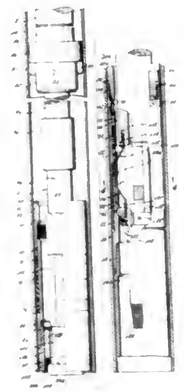
1. A method for the treatment of a subterranean formation containing petroleum oil and also containing water which is susceptible to emulsification with oil with consequent impedance of the flow of petroleum oil from said formation comprising subjecting said formation to the action of a solution in oil of polyoxyethylene ether of nonyl phenol having an oxyethylene chain containing a given number of moles of ethylene oxide between 1 and 6 and thereafter subjecting said formation to the action of a solution in oil of polyoxyethylene ether of nonyl phenol having an oxyethylene chain containing a number of moles of ethylene oxide between 1 and 6 greater than said given number.

3,158,200
PUMPING APPARATUS FOR ANCHORING IN A WELL BORE
Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Aug. 9, 1961, Ser. No. 130,306
14 Claims. (Cl. 166—106)



2. A well tool for connection with a well string to be lowered into a well bore and anchored whereby the well string may be reciprocated to pump well fluids therein including, anchor means for connection to a well string whereby the well tool may be positioned in a well bore, a pump section connected in the well string above said anchor, said pump section including valve means therein, said valve means so constructed and arranged to conduct well fluid therethrough to actuate said anchor means, said valve means operable after said anchor means is actuated and upon reciprocation of the well string to pump fluid in the well string.

3,158,201
LINER HANGER AND SETTING TOOL
Amos D. Springer, Long Beach, Calif., assignor to Alad Oil Tool, Inc., Long Beach, Calif., a corporation of California
Filed Oct. 31, 1961, Ser. No. 149,056
16 Claims. (Cl. 166—120)



1. A liner hanger and setting tool assembly comprising: a hanger body; an annular sleeve member threadedly coupled concentrically within said body and thereby movable longitudinally therein by rotation relative to said body; slip means and slip expander means carried by said body, said slip means being movable on said expander means between retracted and extended positions relative thereto; means coupling said annular sleeve member to said slip means, whereby longitudinal movement of said sleeve member attendant upon rotation of said sleeve member relative to said body moves said slip means on said expander means between said retracted and extended positions; and setting tool means connected to said body and rotatable relative thereto, said setting tool means including means detachably engaging said annular sleeve member for transmitting rotation of said setting tool to said sleeve member relative to said body, thereby to move said slips as aforesaid.

3,158,202
RETRIEVABLE BRIDGE PLUG
William R. Lewis, Willie W. Farrar, and James R. Lindley, Wichita Falls, Tex., assignors to Kiva Corporation, Wichita Falls, Tex., a corporation of Texas
Filed Apr. 18, 1963, Ser. No. 274,037
16 Claims. (Cl. 166—121)

1. A bridge plug adapted to be retrievably positioned within a well casing, comprising:
- a body adapted for longitudinal movement within a well casing;
- sleeve means slidably disposed on the body;
- drag means carried by the sleeve means and adapted to slidably position the sleeve means within the casing;
- upper and lower slip members carried by the sleeve means and adapted to be actuated into gripping engagement with the well casing for anchoring the bridge plug within the well casing;

a double cone expander means carried by the body between and adapted to actuate said slip members;

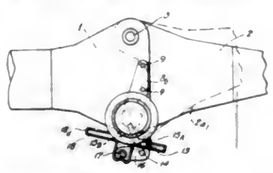
sealing means carried by the body above the sleeve means and slip members and adapted to cooperate with the well casing for sealing off fluid pressure both above and below the plug, said sealing means being responsive to fluid pressure exerted thereon to



longitudinally slide the body relative to the sleeve means so that the expander means actuates said slip members into gripping engagement with the casing; and

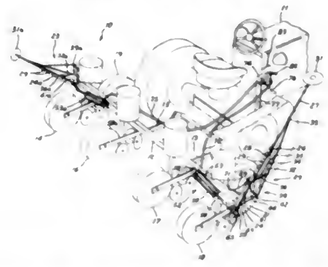
valve means carried by the body for directing fluid through the body when the plug is longitudinally moved within the casing.

3,158,203
HELICOPTER ROTORS
Jean Grunfelder, Paris, France, assignor to Sud-Aviation, Societe Nationale de Constructions Aeronautiques, Paris, France, a company of France
Filed Jan. 15, 1963, Ser. No. 251,593
Claims priority, application France, Jan. 19, 1962, 885,354; July 20, 1962, 904,673
6 Claims. (Cl. 170—160.12)



1. A helicopter rotor comprising a plurality of blades of which at least one comprises a conically apertured root portion; a rotor hub having means for pivotally carrying said one blade and a conically apertured forked portion adapted for cooperation with said root portion in registering relationship of said conical apertures when said one blade is in operative position; a frusto-conical pin adapted for clamping said one blade with respect to said hub by entering said registering apertures; a tubular recessed base member secured to said hub forked portion coaxially with the conical apertures thereof; a two-limbed spring for supporting said pin coaxially in said member in waiting position, said spring limbs being yieldingly held towards one another by engagement of their ends in one recess of said base member; and a mechanical transmission carried by said hub having one element protruding in said forked portion, said transmission being adapted for urging said spring away from said one recess for disengaging said limbs from said recess when said one element of said transmission is encountered by the said root portion during pivotal motion of said blade toward said operative position.

3,158,204
ROW MARKER
James Stuart Martin, Rte. 2, Shenandoah, Iowa
Filed Sept. 16, 1963, Ser. No. 308,979
3 Claims. (Cl. 172—126)



1. An implement mountable on a tractor having a source of fluid pressure comprising:

(*a*) a tool bar mounted on the tractor and extended transversely thereof,

(*b*) ground working tool means mounted on the tool bar,

(*c*) first marker means including an outer end section having an earth-working tool mounted thereon and an inner end section comprising spaced-apart mounting members having a pair of substantially aligned apertures therein, and crank arm means secured to one of said mounting members and having a fulcrum aperture therein in substantial alignment with said aligned apertures and having a member depending therefrom,

(*d*) mounting means for said first marker means including an angle-bar member mounted on one end of said tool bar at substantially right angles thereto, a brace member connected to said angle-bar member and said tool bar at acute angles with respect to each for maintaining the perpendicular relationship therebetween, end flanges on said angle-bar member at right angles thereto spaced apart a distance substantially equal to the spacing between said mounting members, said end flanges having a pair of substantially aligned apertures, and a bolt extending through all of said aligned apertures for mounting said marker means on said angle-bar member for pivotal movement with respect thereto about the axis defined by said aligned apertures,

(*e*) first fluid motor means connected to said tool bar and said depending member of said crank arm means, said first fluid motor means operable in response to fluid pressure from said soure to move the outer end section of the first marker means from a working position to a raised position,

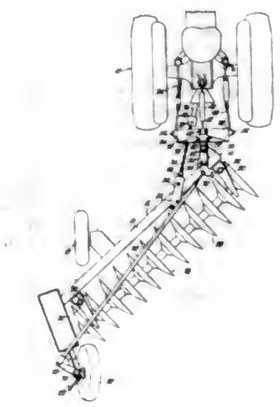
(*f*) second marker means including an outer end section having an earth-working tool mounted thereon and an inner end section comprising spaced-apart mounting members having a pair of substantially aligned apertures therein, and crank arm means secured to one of said mounting members and having a fulcrum aperture therein in substantial alignment with said aligned apertures and having a member depending therefrom,

(*g*) mounting means for said second marker means including an angle-bar member mounted on the other end of said tool bar at substantially right angles thereto, a brace member connected to said angle-bar member and said tool bar at acute angles with respect to each for maintaining the perpendicular relationship therebetween, end flanges on said angle-bar member at right angles thereto spaced apart a distance substantially equal to the spacing between said mounting members, said end flanges having a pair of substantially aligned apertures, and a bolt extending through all of said aligned apertures for mounting said marker means on said angle-bar member for pivotal movement with respect thereto about the axis defined by said aligned apertures,

(*h*) second fluid motor means connected to said tool bar and said depending member of said crank arm means of said second marker means, said second fluid motor means operable in response to fluid pressure from said source to move the outer end section of the second marker means from a working position to a raised position, and

(*i*) operator-actuated control means operable to separately connect and disconnect the first and second fluid motor means with the tractor source of fluid pressure and to concurrently connect and disconnect the first and second fluid motor means with the tractor source of fluid pressure.

3,158,205
SEMIMOUNTED ONE-WAY PLOW
Glenn E. Frager and Francis H. Stansel, Hutchinson, Kans., assignors to Krause Corporation, Inc., Hutchinson, Kans., a corporation of Kansas
Filed Nov. 17, 1961, Ser. No. 152,986
6 Claims. (Cl. 172—285)



1. In combination:

(*a*) a tractor having a power lift and a horizontally swingable drawbar;

(*b*) an implement having a frame extending rearwardly from the tractor and obliquely to the normal path of travel of the tractor and implement;

(*c*) a hitch;

(*d*) a coupling between the hitch and the lift and spaced from said drawbar;

(*e*) a hinge connection between the hitch and one end of the frame, disposed for supporting said one end above the ground and for permitting swinging movement of the frame about an upright axis as the connection supports said end;

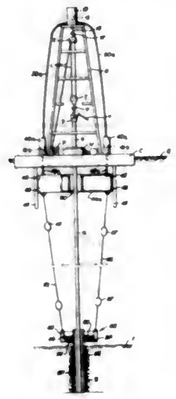
(*f*) a towline;

(*g*) a joinder between one end of the towline and the drawbar;

(*h*) a fastener between the opposite end of the towline and the frame intermediate the ends of the latter whereby the tractor pulls the implement during advancement of the tractor, said fastener being disposed on the frame to normally place the drawbar and the towline on a line of draft that is in angular relationship to said path of travel; and

(*i*) a yieldable device interposed in said towline, permitting limited swinging movement of the frame in one direction about said axis.

3,158,206
HYDRAULIC WEIGHT CONTROL AND COMPENSATING APPARATUS
Archer W. Kammerer, 800 N. Raymond Ave., Fullerton, Calif., assignor of one-fifth to Jean K. Lamphere, Fullerton, Calif., and one-fifth to Archer W. Kammerer, Jr., Houston, Tex.
Filed July 26, 1962, Ser. No. 212,689
19 Claims. (Cl. 175—5)

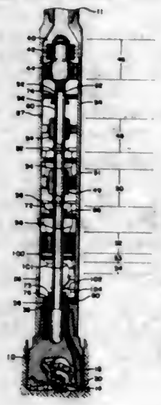


1. In apparatus for maintaining a predetermined stress in a running-in string disposed in a well bore underlying a body of water and which is supported by a rig mounted on a barge, or the like, floating in the body of water: cylinder means; piston means slidable in said cylinder means; a first of said means being adapted for operative connection to the running-in string and a second of said means being adapted for operative connection with the rig; means for maintaining fluid under pressure in said cylinder means as said piston means and cylinder means move longitudinally relative to each other, whereby the stress in the running-in string is transferred through said first means and having fluid therein at substantially the same pressure as said cylinder means and fluid to said second means and to the rig; and an expansion chamber in fluid communication with said cylinder means to allow fluid under pressure to transfer between said cylinder means and chamber as the rig and barge move vertically in the body of water.

3,158,207
COMBINATION ROLLER CONE AND SPARK DISCHARGE DRILL BIT
David S. Rowley, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed Aug. 14, 1961, Ser. No. 131,143
3 Claims. (Cl. 175—16)

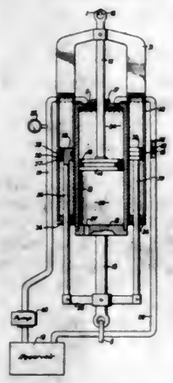
1. In a method of drilling a borehole in the earth by rotating a roller cone-type, multi-cutter drill bit against the bottom of the borehole while loading the bit and circulating a liquid drilling fluid within the borehole,

the improvement which comprises generating electrical spark discharges intermittently around the periphery of



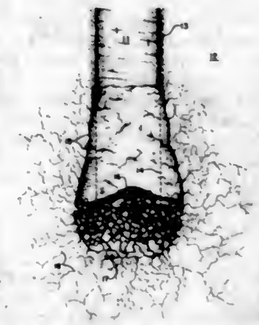
the borehole and adjacent the lower end of said bit concurrently with said rotation and said loading.

3,158,208
SAFETY WEIGHT CONTROL AND COMPENSATING APPARATUS FOR SUBSURFACE WELL BORE DEVICES
Archer W. Kammerer, 800 N. Raymond Ave., Fullerton, Calif., assignor of one-fifth to Jean K. Lamphere, Fullerton, Calif., and one-fifth to Archer W. Kammerer, Jr., Houston, Tex.
Filed Apr. 6, 1962, Ser. No. 185,554
10 Claims. (Cl. 175—27)



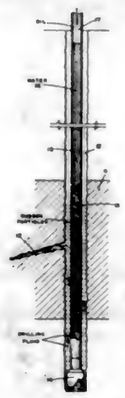
1. In an apparatus for maintaining a predetermined stress in a running-in string disposed in a well bore and which is supported by a rig: elongate cylinder means; piston means slidable longitudinally in said cylinder means; one of said means being adapted for operative connection to the running-in string; the other of said means being adapted for operative connection to the rig; means for maintaining fluid under pressure in said cylinder means on one side of said piston means as said piston means and cylinder means move longitudinally relative to one another in both longitudinal directions, whereby the stress of said running-in string is transferred between said piston means and cylinder means to the rig; and means for restricting relative longitudinal movement between said cylinder means and piston means at an abnormal rate upon loss of pressure in said cylinder means and while said piston means is between the ends of its relative travel in said cylinder means.

3,158,209
METHOD OF SAMPLING UNDERGROUND FORMATIONS
Julius P. Gallus, Gerald D. Ortloff, and Bertram T. Willman, Tulsa, Okla., assignors to Jersey Production Research Company, a corporation of Delaware
Filed July 30, 1962, Ser. No. 213,349
7 Claims. (Cl. 175—59)



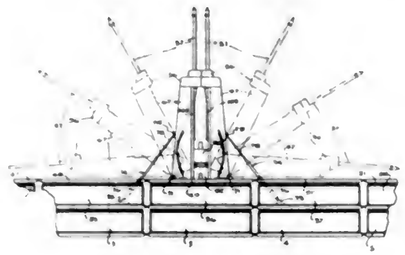
5. A method for recovering a sample of essentially unaltered fluid content from a subterranean stratum penetrated by a borehole which comprises at least partially filling said borehole with a non-invading fluid, substantially instantaneously separating a plurality of fragments from a region of said stratum adjacent said borehole, whereby the resulting fragments are immediately sealed by exposure to said fluid, and then raising at least one of said fragments to the earth's surface while maintaining a pressure thereon which is not substantially less than the natural pressure of said stratum.

3,158,210
METHOD OF REGAINING LOST CIRCULATION
George E. Cannon and Floyd A. Smith, Houston, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,170
6 Claims. (Cl. 175—72)



1. A method for restoring lost drilling fluid circulation when drilling a well bore in which is located a zone of circulating fluid loss comprising: pumping into said zone of loss in a water suspension a slug of a granular high molecular weight hydrocarbon composition having the property of cold flow at temperatures and pressures encountered in said well bore; and following said water suspension with a slug of liquid hydrocarbons adapted to cause said high molecular weight hydrocarbon granules to fuse together and swell to plug passages between said granules and form a solid mass of said high molecular weight composition in said zone of loss.

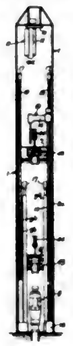
3,158,211
WELL DRILLING APPARATUS
Alfred W. McCue, Detroit, Paul S. Diamond and Doyle L. Kintigh, Livonia, Joseph V. O'Neill, Inkster, and Jesse R. Moser, Dearborn, Mich., assignors, by mesne assignments, to Leyman Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 16, 1957, Ser. No. 684,176
18 Claims. (Cl. 175—85)



1. Well drilling apparatus comprising five elongated skids in aligned abutting relation with each other along their longitudinal axes; slide structures carried on the endmost skids for longitudinal movement therealong; derrick superstructure and fluid cylinder means pivotally connected thereto carried by each of said slide structures; slide members carried by the next innermost skids for longitudinal movement therealong; derrick sections hingedly carried by said slide members; and mating fastener means carried by the adjacent derrick superstructures and derrick sections; whereby the slide structures can be moved toward the slide members to position the derrick structures against the derrick sections, after which the slide members can can be moved from said next innermost skids onto the middle skid and the derrick sections pivoted upwardly about their hinge axes to upright operative positions wherein the derrick superstructures positioned against one another.

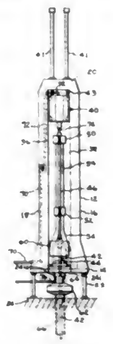
3,158,212
EARTH DRILLING RIGS
Hew Dalrymple Fanshawe, Wendover, and William Edward Digby, Bilton, Rugby, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Aug. 4, 1958, Ser. No. 753,595
Claims priority, application Great Britain, Aug. 9, 1957, 25,258/57
21 Claims. (Cl. 175—85)

7. In an earth drilling rig, the combination of at least two lifts each traversable in opposite directions along the drilling axis of the rig for raising and lowering a drill pipe string, pipe engaging means carried by each of said lifts, each of said pipe engaging means being composed of two sections, means for mounting said sections on the associated lift for movement towards and away from one another, means for bringing the sections of one of said pipe engaging means together about the drilling axis while the one associated lift is traversed in one direction along the drilling axis, and means for separating the sections of the other of said pipe engaging means and removing them



to either side of the drilling axis while the other associated lift is traversed in the other direction along the drilling axis.

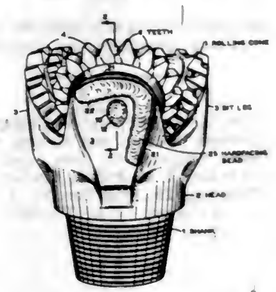
3,158,213
DRILL STRING SUSPENSION ARRANGEMENT
Joseph V. O'Neill, Inkster, and George Homanick, Livonia, Mich., assignors, by direct and mesne assignments, to Leyman Corporation, Cincinnati, Ohio
Filed Aug. 26, 1960, Ser. No. 52,274
4 Claims. (Cl. 175—85)



1. In earth boring apparatus,
a derrick carrying a cross head in spaced relationship above the surface of the earth,
fluid cylinder means including a piston and rod carried by said cross head,
drill string suspension means connected to said fluid cylinder means for vertical movement on said derrick,
said drill string suspension means including a rotatable spindle to connect to the upper end of a pipe section,
a joint loosening-tightening mechanism carried by said derrick in spaced relationship beneath said drill string suspension means to make a connection between the lower end of said section and the top end of a drill string,
a temporary suspension means carried by said derrick beneath said joint loosening-tightening mechanism to temporarily support the drill string adjacent the upper end,
and an elongated pipe section transfer arm pivotally mounted at one end adjacent the base of the derrick and provided with means to move a section between horizontal storage position and working position in alignment between said drill string suspension means and said joint loosening-tightening mechanism by movement through a vertical plane,

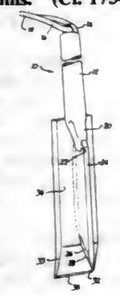
whereby lowering of said drill string suspension means by said cylinder while said spindle is rotated is effective to make a connection between said drill string suspension means and the upper end of said temporarily supported section and thereafter on release of said section by said transfer arm, to rotate said section and make a connection between the bottom end of said section and the top end of said temporarily supported string, and said joint loosening-tightening mechanism being adapted to thereafter complete said string connection to desired torque.

3,158,214
SHIRTTAIL HARDFACING
Allen E. Wisler and Stanley R. Scales, Houston, Tex., assignors to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Mar. 15, 1962, Ser. No. 179,857
9 Claims. (Cl. 175—375)



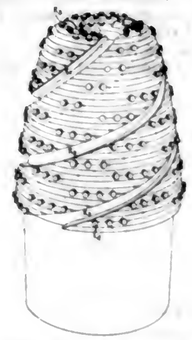
5. A hardfacing structure on the shirttail and bit leg of a rock bit or other tool comprising a narrow bead of a tough, hard, homogeneous metal alloy welded on the outer surface of said shirttail immediately adjacent the corner thereof and a band of hardfacing material welded on said surface above said metal bead and in contact therewith, said hardfacing material being a heterogeneous combination of wear resistant particles in a tough alloy binder.

3,158,215
ICE SPUD
Burton W. Russell, Union Lake, Mich., assignor to Pontiac Specialties Mfg. & Dist. Corp., a corporation of Michigan
Filed Apr. 16, 1962, Ser. No. 187,838
6 Claims. (Cl. 175—398)



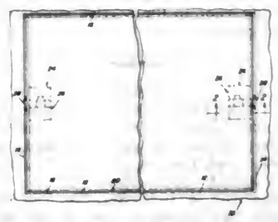
1. An ice spud for cutting a hole in a layer of ice comprising an elongated handle, a chipping element and a cutting element on the lower end of the handle, said cutting element having a cutting edge for striking and cutting the ice along the periphery of an opening to be cut in a layer of ice, said chipping element having a cutting edge inclined downwardly and laterally away from the cutting element and terminating in a chipping point spaced from the cutting element, said chipping point being in close proximity above the cutting edge and acting to strike and fracture the ice at a point within the periphery of the opening to be cut in the ice.

3,158,216
HIGH SPEED DRILL BIT
Guy Baron, Colombes, and Anatole Veronneau, Dourdan, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France
Filed Apr. 20, 1962, Ser. No. 189,052
Claims priority, application France Apr. 27, 1961
18 Claims. (Cl. 175—402)



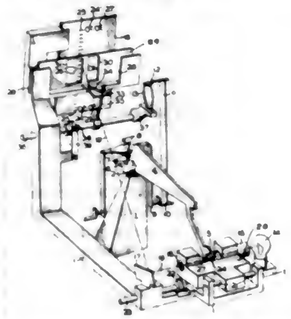
1. A drill bit operable at high rotary speeds, and comprising a support member having an external surface substantially shaped as a paraboloid and having a central recess adapted for the formation of a core thereinto, said support being provided with cutting parts projecting by an even height above said external surface which is at least equal to 2 millimeters, said cutting parts being positioned on said external surface along the direction of a helical spiral of varying pitch.

3,158,217
SCALE LOAD PLATFORM LOCK
Dennis T. Johnson, 1315½ N. Washington St., Hutchinson, Kans.
Filed June 26, 1961, Ser. No. 119,428
4 Claims. (Cl. 177—134)



1. In combination with a scale pit having a scale load platform mounted therein for vertical movement and also limited horizontal shifting, a scale load platform lock comprising first and second coacting latch means adapted to intermittently rigidly support said scale load platform in said scale pit, one of said coacting latch means secured to said scale load platform and the other latch means secured to a wall of said scale pit, said first latch means comprising a socket member, and said second latch means comprising a support frame, a locking pawl slidably mounted in said frame for reciprocal movement between first a locked position seated in said socket member and second a retracted position withdrawn from engagement with said socket member, and means secured between said support frame and locking pawl for intermittently urging said locking pawl toward said first position, said socket member defining a conical socket having inwardly convergent side walls and said locking pawl having a conical free end portion including outwardly convergent side surfaces complementary to said socket, lock means automatically and releasably securing said locking pawl in said first position upon movement of said locking pawl to said first position, said lock means including releasable spring urged latch means engageable with said actuator upon movement of the latter in said one direction, means yieldably urging said locking pawl toward said second position, said yieldable urging means comprising spring means normally urging said actuator in the direction opposite said one direction.

3,158,218
PRECISION BALANCE
Albert Hendrik van der Meer, Glarnischstrasse 210, Mannedorf, Zurich, Switzerland
Filed Aug. 1, 1963, Ser. No. 299,316
Claims priority, application Switzerland, Feb. 18, 1963, 2,011/63
2 Claims. (Cl. 177—178)



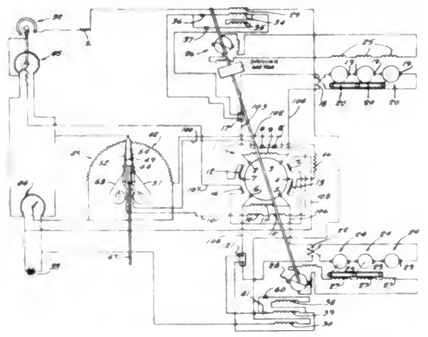
1. A precision balance comprising a weighing beam, a measuring plate fixed to said beam, two rows of numbers inscribed on said measuring plate, the number sequence in one row being complementary to the number sequence in said other row, an optical reading device for reproducing an image of those numbers of said rows which are in its optical path, a continuously adjustable taring device, a change-over device having adjusting means in said optical path to permit the numbers in only one of said rows to be made visible at will, and a lifting member operatively connected to said change-over device for depositing a control weight on a pan-carrier suspended from said weighing beam when one of said rows of numbers is made visible and lifting said control weight off said pan-carrier as soon as said other row of numbers has been made visible.

3,158,219
METADYNE DRIVE AND CONTROL SYSTEM FOR SELF-PROPELLED VEHICLE
Theodoric B. Edwards, 5311 Neptune Drive, Alexandria, Va.
Filed Sept. 7, 1962, Ser. No. 222,246
11 Claims. (Cl. 180—6.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An electric drive and control system for a self-propelled vehicle having a left and a right track or wheel group comprising:

(*a*) A metadyne generator adapted to deliver a plurality of currents and having speed and steering field windings controlling said currents;

(*b*) Electric motors having armatures connected to the brushes of said metadyne generator and adapted to drive the left track and right track of the vehicle separately;



(*c*) Speed control means for supplying a selected current simultaneously to all of said speed and steering field windings;

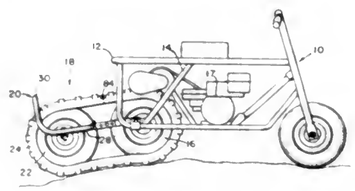
(*d*) Steering control means for supplying a selected current individually to some of said speed and steering field windings; and

(*e*) Braking means for absorbing excess current generated during braking of the vehicle.

ERRATUM

For Class 180—9.24 see:
Patent No. 3,157,913

3,158,220
CRAWLER ATTACHMENT FOR A TRAIL SCOOTER
Lee F. Griffith, Portland, Oreg., assignor to Katagote, Inc., a corporation of Oregon
Filed May 6, 1963, Ser. No. 278,038
7 Claims. (Cl. 180—9.24)



1. A land vehicle having a frame and a driven rear wheel,

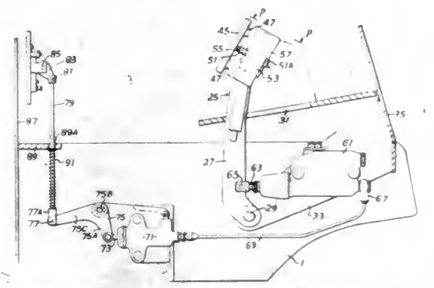
a crawler unit comprising a subframe including a pair of elongate side members,

means mounting side members on said vehicle frame, one on each of opposite sides of said rear wheel for pivotal movement about an axis parallel to the axis of rotation of said rear wheel and positioned above said axis of rotation,

an idler wheel rotatably mounted on said subframe between said side members and rearwardly of said rear wheel,

and an endless, flexible crawler element trained about said idler wheel and said rear wheel.

3,158,221
FORK-LIFT TRUCKS
Jack Hauxwell and Basil B. Haden-Scott, both of Orwell Works, Ipswich, Suffolk, England
Filed Dec. 1, 1961, Ser. No. 156,210
Claims priority, application Great Britain Oct. 27, 1961
9 Claims. (Cl. 180—77)



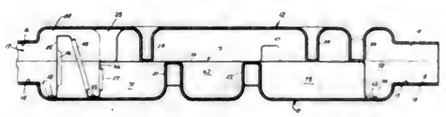
1. An electric motor driven vehicle having first electrical instrumentalities for varying the speed of the motor, and second electrical instrumentalities for controlling the direction in which the motor operates, said vehicle being characterized by the following:

(A) control of both speed and direction of travel of the vehicle are provided for by a single control element which is mounted on the vehicle for motion in opposite directions along a first defined path, and for motion in opposite directions between defined limits along a second defined path;

(B) the control element is operatively connected with said first electrical instrumentalities to effect regulation of the speed at which the motor is operated either forwardly or backwardly solely in accordance with the position of said control element along its first defined path; and

(C) the control element is operatively connected with said second electrical instrumentalities to effect operation of the motor in one direction at a speed determined by the position of the control element along said first defined path when the control element is at one of its limits of motion along said second defined path and to effect operation of the motor in the opposite direction at a speed determined by the position of the control element along said first defined path when the control element is at the other of its limits of motion along said second defined path.

3,158,222
MUFFLER
Thomas C. Richmond, Chesterland, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 2, 1962, Ser. No. 206,819
5 Claims. (Cl. 181—59)



1. A muffler assembly comprising a first shell and a second shell having matching marginal edges which are arranged to abut to form a gas-tight enclosure having a gas inlet and a gas outlet,

said first shell having a plurality of integral ribs extending transversely of said first shell,

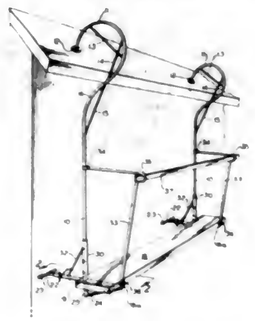
said second shell having a pair of baffles in confronting relationship in close proximity to said gas inlet, said baffles having a space therebetween for permitting the passage of gas therethrough,

said second shell also having a longitudinally extending flow dividing means rearwardly of the confronting baffles in the direction of gas flow,

and a plate confined between said shells,

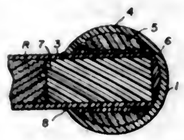
said plate having baffle means and apertures therein which cooperate with the ribs, baffles, and flow dividing means on said shells to define a plurality of resonant chambers and expansion chambers for gases passing between said inlet and said outlet.

3,158,223
SCAFFOLD SUPPORT
Ronald Brown, 4057 Moreland Way, San Jose, Calif.
Filed Sept. 10, 1962, Ser. No. 222,548
4 Claims. (Cl. 182—36)



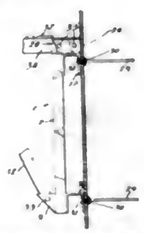
1. A scaffold support of the type adapted to be used for supporting a scaffold plank along the side of a low building for use by painters and like workmen comprising an elongated element having a substantially straight body portion and a curved portion at the top of said body portion, the free end of said curved portion having means for gripping the roof of the building, said elongated element being of relatively light weight so that the workman may grip the bottom part of said body portion and place said means on the top of the roof in position for use, said curved portion being adapted to extend around the eave of the building roof for supporting said straight body portion depending under said eave substantially vertically under said means so that said substantially straight body portion is supported by said curved portion substantially parallel to and adjacent to the side of the building, a spacer arm attached to the lower part of said straight body portion and extending laterally therefrom to engage the aforesaid side of the building, a scaffold plank supporting element attached to the lower part of said body portion, said plank supporting element extending laterally from said body portion in a direction opposite to that of said spacer arm to support the scaffold plank adjacent to the aforesaid side of the building and well beneath the eave of the building so that the scaffold plank may be used as a support for workmen painting, finishing or repairing the aforesaid side of the building, an inverted L-shaped member, means for removably attaching the upper part of said last mentioned member to said substantially straight body portion, means for detachably attaching the bottom part of said last mentioned member to said plank supporting element, said last mentioned means comprising an outwardly extending pin attached to the lower end part of said last mentioned member, said plank supporting element having an upstanding end part of the outer end thereof provided with a hole for receiving said outwardly extending pin when said lower end part of said last mentioned member is positioned between said scaffold plank and said upstanding end part, and means for removably attaching a guard rail to said inverted L-shaped member.

3,158,224
TUBULAR STRUCTURES
Joseph M. Van Name, Blue Bell, and Gerald A. Zimmerman, Malvern, Pa., assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Oct. 9, 1961, Ser. No. 143,772
3 Claims. (Cl. 182—46)



1. A ladder comprising a rail having a tubular glass fiber reinforced plastic shell and a cellular plastic core within the shell, and a rung having a tubular glass fiber reinforced plastic shell enclosing a cellular plastic core, an end of the rung being entered in a hole in the shell of the rail and the shell of the rung being adhesively bonded to the shell of the rail, and reinforcing means within the rung comprising a solid mass of substantially incompressible material filling a length of the rung in a zone aligned with the hole in the shell of the rail and extending outwardly beyond said shell, said mass being adhesively bonded to the shell of the rung.

3,158,225
SCAFFOLD BRACKET
Carl W. Almgren, 6167 N. Moody, Chicago, Ill.
Filed Aug. 8, 1962, Ser. No. 215,614
3 Claims. (Cl. 182—87)



1. A scaffold support structure for use with a concrete wall form having a panel, a plurality of spaced vertical studs secured to and rigidifying said panel, and a plurality of spaced horizontal tie rods having an enlargement or head at each end thereof and extending through said panels which comprises,

a vertical member,

a brace holder member secured to the upper end of said vertical member,

a horizontal brace member,

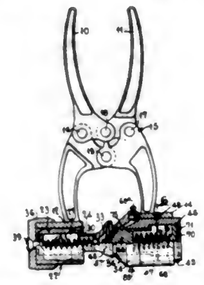
means to fixedly connect said horizontal brace member to said brace holder member,

an angle brace connected to the lower end of said vertical member and connected at its upper end to said horizontal brace member,

and upper and lower U-flanges secured at the upper and lower ends of said vertical member each positioned to form a hook for seating over a waler and each having an upper horizontal plate portion for resting on the top of the waler and a vertical outer plate portion for hooking behind the waler,

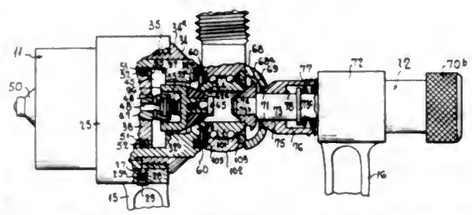
said outer plate portions having vertical slots extending upwardly from the lower edge thereof with the upper end of the slot having a downwardly facing surface for engaging on the rod so that said slot slides over a headed tie rod with the tie rod head engaging the inner surface of the vertical plate portion at the sides of the slot.

3,158,226
LUBRICANT INJECTORS
John Williamson, Memphis, Tenn., assignor to Drake Engineering, Inc., Southfield, Mich., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,744
10 Claims. (Cl. 184—1)



1. In an apparatus for lubricating a bearing provided with an outer member having an inner member mounted for relative rotation therein, the space between said members being exposed at the exterior surface of the bearing, the combination of a mechanical pressuring device, a pair of relatively movable jaws between which said bearing is adapted to be interposed, joint mechanism interconnecting said pressuring device and said jaws whereby movement of the pressuring device will effect relative movement of the jaws toward and away from said interposed bearing and transmit pressure upon the latter, a lubricant dispensing nozzle mounted on one of said jaws and adapted to register with said space of the interposed bearing, spring-actuated means normally holding said nozzle in closed position and operable in response to said transmitted pressure to open the nozzle and to permit the discharge of lubricant therefrom into said space, and a second spring-actuated means on the other of said jaws for resisting said transmitted pressure including pressures exceeding those required to open said nozzle.

3,158,227
METHOD AND MEANS FOR LUBRICATING BEARINGS
John Williamson, St. Louis, Mo., assignor to Drake Engineering, Inc., Southfield, Mich., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,693
15 Claims. (Cl. 184—1)



4. That method of lubricating a bearing provided with substantially concentric inner and outer relatively rotatable bearing components with an annular clearance between said components, comprising the step of establish-

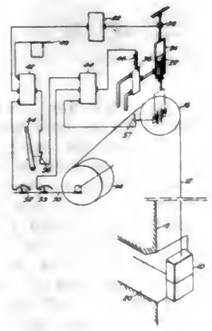
ing a disconnectable pressure-sealed connection between one end of said clearance and a source of mixed lubricant and air, and the concurrent steps of introducing said mixture under continuous pressure from said source into said end of said clearance, alternately opening and closing the other end of the clearance to intermittently release and confine the lubricant pressures in the clearance, and maintaining a sealing at said pressure-sealed connection in direct proportion to said mixture pressure.

3,158,228

ROPE STRETCH COMPENSATOR FOR SUSPENDED CONVEYANCES IN MINE HOISTING EQUIPMENT

Desmond M. Bentley, Johannesburg, Transvaal, Republic of South Africa, assignor to Anglo American Corporation of South Africa Limited, Johannesburg, Transvaal, Republic of South Africa

Filed July 16, 1962, Ser. No. 210,111
Claims priority, application Republic of South Africa July 18, 1961
14 Claims. (Cl. 187—32)



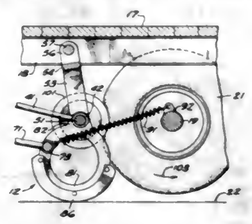
1. Mine hoisting equipment including a shaft, a hoist, a cage within the shaft, a hoist drum, a rope between the drum and the cage, a head sheave above the shaft over which the rope passes, means to vary the height of the head sheave and means so to govern the height-varying means as to hold the cage at a predetermined level.

3,158,229

EMERGENCY BRAKING DEVICE

Aurelio Sancioni, Rte. 1, Box 277, Corning, Calif.

Filed Feb. 11, 1963, Ser. No. 257,464
2 Claims. (Cl. 188—4)



1. An emergency braking device for a wheeled vehicle comprising:

(*a*) a spaced pair of arms each rockably mounted at one end on the vehicle frame forward of the vehicle's rear wheels for angular movement of said arms in a fore and aft direction;

(*b*) a transverse shaft journalled on the other ends of said arms to partake of said angular movement thereof;

(*c*) means connected to said shaft for selectively urging said shaft and said other ends of said arms in said fore and aft direction;

(*d*) a spaced pair of rings each having an enlarged peripheral portion mounted on said shaft to partake of the motion thereof, said rings being swingable on said shaft between a first position removed from the ground and a second position in engagement with the ground;

(*e*) resilient means for urging said rings in a direction toward said first position thereof;

(*f*) means connected to the periphery of said rings for biasing said rings in a direction toward said second position thereof in opposition to said resilient means; and,

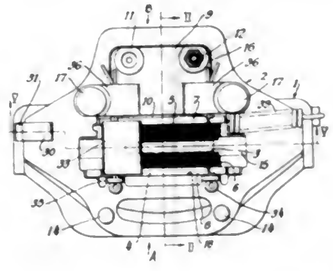
(*g*) means for concurrently actuating said shaft urging means in an after direction and said ring biasing means in a direction toward said second position.

3,158,230

SLIDING PLATE-TYPE SPOT DISC BRAKES

Leslie Cyril Choulings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Sept. 11, 1961, Ser. No. 137,239
Claims priority, application Great Britain, Sept. 12, 1960, 31,385/60
11 Claims. (Cl. 188—73)



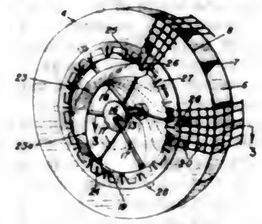
11. A disc brake assembly for a rotating brake disc comprising a one-piece fixed support member forming a closed loop with a central opening perpendicular to the plane of rotation of the brake disc, a single sliding member forming a closed loop with a central opening perpendicular to the plane of rotation of the brake disc, said fixed and sliding members having their openings in vertical alignment with each other, means connecting said single sliding member to the top surface of said fixed support member to permit slidable movement in one direction only with respect to said fixed member when a braking force is applied, a rotating brake disc extending into said central openings, brake pad means disposed in said openings on opposite sides of and adjacent said brake disc for applying a braking force thereto, brake actuating means disposed in said central opening of said sliding member and fixed thereto for movement therewith, said actuating means being disposed adjacent one of said brake pad means and opposite said rotating disc for forcing said pad means against said brake disc.

3,158,231

HOISTING UNIT

Walter Marti, Reichenbach, near Frutigen, Bern, Switzerland, assignor to Jakob Wyssen, Reichenbach, near Frutigen, Bern, Switzerland

Filed Jan. 21, 1963, Ser. No. 252,858
Claims priority, application Switzerland, Jan. 22, 1962, 718/62
3 Claims. (Cl. 188—90)



1. A cable hoisting unit comprising a cable drum, a driving motor operatively connected with said drum, an air vortex brake operatively connected with said driving motor and said cable drum, said air vortex brake comprising a rotary air displacing impeller, a shutter assembly disposed on the suction side of said impeller for regulating the rate of admission of air to said impeller, said shutter assembly comprising a series of pivotally movable shutter elements each having a radially inwardly circular arc-shaped limiting edge, a fixed annular member surrounding the suction opening of said impeller, a series of circumferentially spaced fixed hinge pins on said annular member, one end of each shutter element being pivotally connected to one of said hinge pins, a rotatably mounted adjusting ring supported by said annular member, the other end of each of said shutter elements being connected to said ring, a shaft for said impeller having an axial bore, a stationary rod engaging said axial bore to which said annular member is secured on which said shaft is rotatably mounted and being held in said bore against axial thrust caused by the damaging pressure of the air.

3,158,232

PNEUMATIC VIBRATION DAMPERS

Hans Peter Doetsch, 32 Altdrossenfeld, Uber Bayreuth, Germany, and Wilfried F. Roos, 47a Moselstrasse, Guls (Mosel), Germany

Filed Dec. 5, 1963, Ser. No. 328,413
3 Claims. (Cl. 188—94)



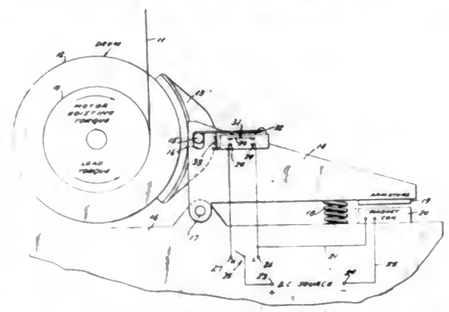
1. A pneumatic through-flow piston vibration damper with high internal pressure, wherein for the adjustment of the degree of damping a helical spring is arranged in force-locking fashion on the piston rod, the end of which spring is made slightly conical and passes, parallel with the piston rod, through a through-flow opening in the damping piston.

3,158,233

LOAD RESPONSIVE BRAKE RELEASE

Gustave E. Heberlein, Bryn Mawr, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 24, 1962, Ser. No. 246,723
7 Claims. (Cl. 188—171)



1. A load responsive brake comprising a brake drum, a brake shoe, support means for said brake shoe, a brake engaging means, a brake release means, a motion responsive switch means, and a lost motion connection means; said lost motion connection means being connected to said brake shoe by said lost motion connection means, said support means being movable with respect to said brake drum between a brake engaging and a brake disengaging position; said brake engaging means comprising a biasing spring connected to said support means for normally biasing said brake shoe into engagement with said brake drum; said brake release means comprising magnet coil means energizable for moving said support means toward said brake disengaging position against the biasing force of said biasing spring; said lost motion connection means permitting rotation of said brake drum for a predetermined distance while said brake shoe engages said brake drum; said motion responsive switch means being operatively connected to said lost motion connection means; said switch means being closed when both said brake drum and said brake shoe rotate through said predetermined distance; and an energizing circuit for energizing said magnet coil; said energizing circuit being connected in series with said switch means.

3,158,234

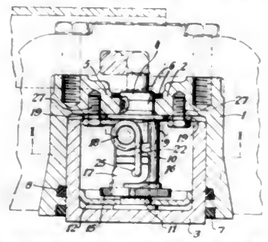
AUTOMATIC ADJUSTING DEVICES FOR DISC BRAKES

Henry B. Henderson, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Apr. 4, 1963, Ser. No. 270,651
Claims priority, application Great Britain, Apr. 6, 1962, 13,361/62
5 Claims. (Cl. 188—196)

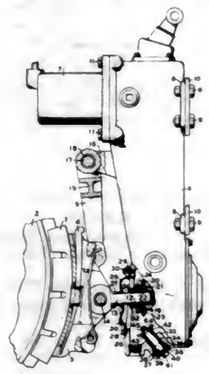
1. An adjusting device for a brake comprising a cylinder open at one end, a piston disposed in the open end of said cylinder and having an open end facing the closed end of said cylinder, a push rod extending through the closed cylinder end and into said piston for moving the piston against a brake pad, an enlarged head on said rod adjacent said closed cylinder end for abutting said closed cylinder end when the piston is retracted, an internally threaded sleeve secured to said rod disposed within said cylinder and coaxially therewith, a threaded rod in said cylinder threaded into said sleeve and extend-

ing therefrom for acting against said piston, a ratchet wheel formed on said sleeve adjacent its end from which said threaded rod extends, an elongated pawl lever extending parallel to the cylinder axis and having one end adjacent to and adapted to engage the teeth of said ratchet wheel, bracket means secured to and disposed in said cylinder adjacent the closed cylinder end, pivot pin means secured to said bracket and disposed perpendicular to the axis of said push rod, sleeve and threaded rod, said pawl lever being pivotally connected to said pivot pin means to swing in a plane parallel to the axis of said push



rod, sleeve and threaded rod, spring means having an axis coincident with the pivotal axis of said lever, stop means on another end of said lever adjacent said enlarged head and disposed for engagement by said enlarged head, one end of said spring means being disposed in an opening in the end of said lever adjacent said ratchet wheel, whereby said pawl lever is pivoted by movement of said push rod and head toward a braking position to engage the next adjacent tooth in the ratchet wheel, and upon retraction from a braking position to rotate the ratchet wheel to cause relative movement of the sleeve inwardly to adjust for brake wear.

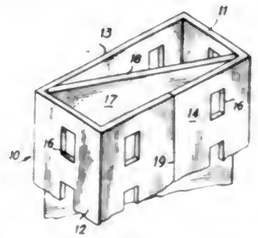
3,158,235
MANUALLY OPERABLE SLACK ADJUSTER FOR VEHICLE BRAKES
Earl E. Allan, Pitcairn, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1962, Ser. No. 246,051
1 Claim. (Cl. 188—197)



A unitary type wheel tread brake assembly for applying a braking force to a wheel of a railway car truck, said brake assembly comprising, in combination:

(*a*) a casing immovably secured to the car truck,
(*b*) a brake-shoe-carrying brake head movably mounted on said casing,
(*c*) power means for actuating said brake-shoe-carrying brake head including a movable brake rod having threadedly interengaging rod and sleeve elements, and
(*d*) a manually operable slack adjuster mechanism carried by said casing and comprising:
(i) a first clutch member carried by and secured to the sleeve element of the brake rod intermediate the ends of said sleeve element for effecting rotation thereof with respect to the rod element to vary the length of the brake rod,
(ii) a rotary shaft mounted in said casing in a position below and at an angle to said sleeve element and shiftable axially,
(iii) a second clutch member carried at one end of said shaft,
(iv) biasing means for normally biasing said shaft axially to a position in which said second clutch member is out of clutching engagement with said first clutch member, and
(v) manually operable means carried at the other end of said shaft and accessible from beneath the car truck for effecting shifting of said shaft axially against the yielding resistance of said biasing means to cause engagement of said clutch members and for effecting rotation of said clutch members while engaged.

3,158,236
FIRE RESISTANT STUDS
Henry P. Caligiuri, 241 E. 137th St., Bronx, N.Y.
Filed Mar. 12, 1963, Ser. No. 264,513
2 Claims. (Cl. 189—34)



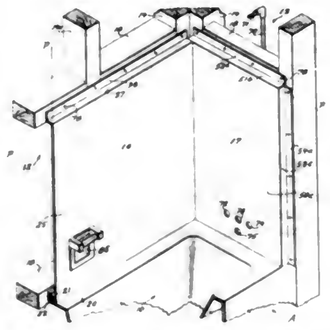
1. As an article of manufacture a tubular integral sheet metal partition stud for separating rooms, having apertures in the opposing sides thereof and a planar, non-apertured, flexible removeably disposed firewall disposed substantially diagonally between and engaging in hermetically sealed relationship said opposing sides, said planar firewall being of a slightly larger dimension than the diagonal dimension of the stud so that the firewall is bent when inserted into said stud and upon release of the bent shape a spring tension engagement of said firewall and said stud is obtained.

3,158,237
METAL PANEL WALL CONSTRUCTION FOR A BATHTUB COMPARTMENT
Nathan Schooler, Beechurst, N.Y. (% Flush-Metal Partition Corp., 46—10 11th St., Long Island City 1, N.Y.)
Filed Feb. 26, 1962, Ser. No. 175,610
19 Claims. (Cl. 189—85)

1. In a bathtub compartment including a rectangular bathtub and roughed-in walls surrounding the bathtub on three sides thereof as defined by the transverse end sides of the bathtub and the rear longitudinal side of the bathtub:

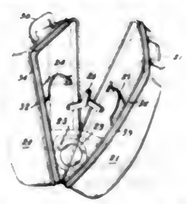
(*a*) a metal panel wall construction for placement on said roughed-in walls comprising,
(*b*) a left end panel,
(*c*) a longitudinal side panel,

(*d*) a right end panel,
(*e*) inverted channel means along the bottom edge of each panel and integral therewith for interlocking with a top rim edge portion of a corresponding side of the bathtub,
(*f*) groove means at the vertical sides of the longitudinal panel and integral therewith,
(*g*) tongue means at the inner vertical side of each end panel and integral therewith to be fitted within an



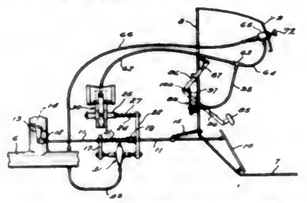
adjacent groove means of the longitudinal side panel, and
(*h*) attaching means along the top edge of each panel and along the outer vertical side of each end panel for securing the same to an associated roughed-in wall,
(*i*) whereby to provide in the assembly of said panels a finished continuous panel wall along said three sides of the roughed-in wall extending upwardly from the rim of the bathtub.

3,158,238
CARRYING BAG CONSTRUCTION
Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed Mar. 7, 1961, Ser. No. 93,946
2 Claims. (Cl. 190—48)



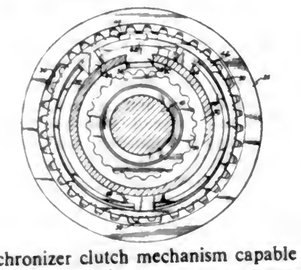
1. In combination, a first bag half, a second bag half, a zipper closure, and first and second reinforcing means; said first and second bag halves being of a relatively rigid material; said zipper closure having extending first and second fabric portions; said first reinforcing means and said first fabric portion of said zipper closure being secured around at least a portion of the end of said first bag half; said second reinforcing means and said second fabric portion of said zipper closure being secured around at least a portion of the end of said second bag half; said first and second bag halves being substantially identical; said first and second reinforcing means including a first and second high strength elongated member respectively and a first and second elongated housing member respectively at least partially encircling its respective elongated member; one side of said first and second elongated housing members being secured to said first and second bag halves respectively; the other side of said first and second elongated housing members being secured to said first and second fabric portions respectively; each of said first and second elongated housing members being an extruded housing having respective openings therein for receiving said first and second elongated members; said first and second extruded housings having lip portions extending over the end of said first and second shell halves respectively; said lip portions having extensions thereon; said extensions receiving fastening means for fastening said respective housing members to said first and second bag halves respectively.

3,158,239
THROTTLE CONTROL
Ralph T. Marette, Cleveland Heights, Ohio, and Ellis M. Wellman, Erie, Pa., assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed June 2, 1960, Ser. No. 33,506
16 Claims. (Cl. 192—3)



1. A throttle control for motor vehicles having an intake manifold, a throttle valve, a foot pedal and a throttle rod connecting the foot pedal and said throttle valve comprising a member operatively connected to said throttle rod and resiliently urged toward a predetermined position relative thereto, a clamping assembly mounted adjacent said member operable to clamp said member against movement, said clamping assembly including clamping means fixed against movement with said member operative to clamp said member against movement, a vacuum-responsive actuator operatively connected to operate said clamping means, a conduit line connecting said actuator and said intake manifold, first valve means in said line to connect said actuator to said intake manifold or to the atmosphere, a brake pedal, and second valve means operated by said brake pedal connecting said actuator to atmosphere when said brake pedal is operated.

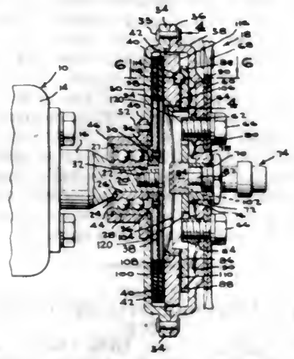
3,158,240
FULL PHASE REGENERATIVE SYNCHRONIZER CLUTCH
Donald J. Harrington, Beverly Hills, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,222
5 Claims. (Cl. 192—53)



1. A synchronizer clutch mechanism capable of establishing a driving connection between two torque delivery members that are mounted for rotation about a common axis, a clutch sleeve carried by one of said members, said

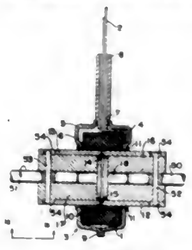
sleeve being adapted to shift axially, internal clutch teeth formed on said sleeve, external clutch teeth carried by the other of said members, said internal teeth being engageable with said external teeth upon shifting movement of said sleeve in one direction, a synchronizer ring disposed adjacent said external teeth said ring being split to define two juxtaposed ends, the periphery of said ring being situated in the path of shifting movement of said internal teeth and engageable therewith when said sleeve is shifted in said one direction to establish tangential friction forces, a first abutment element having a portion disposed between the ends of said ring, a second abutment element fixedly connected to said other member, said abutment elements being disposed at the same angular position with respect to said axis, an anchor member disposed within said ring at a location that is substantially 180 degrees away from said abutment elements with respect to the common axis of said members, said anchor member being tangentially slidable upon said other member and means for distributing tangential friction forces from said ring to said other member including a pair of resilient arcuate segments located within said ring, one end of each segment being engageable with said anchor member, each arcuate segment being adapted to exert a radial pressure upon the inner periphery of said ring during operation when it yields under the influence of end forces acting thereon.

3,158,241
SELF ENERGIZING FRICTION CLUTCH
Richard A. Bloom, Syracuse, N.Y., assignor to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York
Filed Dec. 26, 1961, Ser. No. 162,001
5 Claims. (Cl. 192—82)



1. A friction clutch assembly comprising a driving member rotatable on a fixed axis of rotation, a driven member journaled for rotation about the axis of rotation of said driving member, means normally maintaining said driven member out of driving engagement with said driving member, activating means mounted on said driven member for axial movement along the axis of rotation of said driving member and subject to a predetermined condition for overcoming said first mentioned means for permitting engagement between said driving and driven members and causing simultaneous rotation thereof about said axis of rotation, said driving member including a friction disc axially displaceable along said axis of rotation of said driving member, said driven member comprising a housing enclosing said friction disc and including a confronting surface engageable with said friction disc, said driven member including an axially displaceable first pressure plate disposed within said housing, said means maintaining said driven member out of driving engagement with said driving member comprising spring means within said housing and terminally secured between said pressure plate and said housing member opposite said confronting surface, and lost motion means interposed between said activating means and said housing member for compensating for over-travel of said activating means, said lost motion means comprising a sleeve circumposed about said activating means and reciprocably supported for axial movement on said housing along the axis of rotation of said driving member and axially spaced therefrom, and a spring element interposed between said sleeve and said housing and normally urging said sleeve toward an activating position in opposition to said spring means maintaining the driven member out of driving engagement with said driving member.

3,158,242
MINIATURE CLUTCH
Wilhelm Binder and Rudolf Hauer, Villingen, Black Forest, Germany, assignors to Binder Magnete K.G., Villingen, Black Forest, Germany
Filed Mar. 23, 1960, Ser. No. 17,109
Claims priority, application Germany Mar. 24, 1959
5 Claims. (Cl. 192—84)

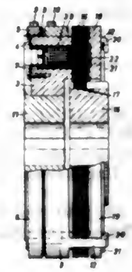


1. In an electromagnetically actuated miniature clutch, a stationary magnetic housing, an annular electric coil for generating electromagnetic flux in said housing, which coil is supported by said housing, and at least one magnetizable armature being centrally guided in said housing for axial displacement relative thereto, said armature being adapted to be coupled to a rotatable shaft for rotation therewith, the armature further being arranged to cooperate by means of at least one of its end faces with the end face of at least one coupling member aligned therewith to transmit the torque from a shaft connected to the coupling member to the shaft connected to said armature, said magnetic housing including two identically formed annular housing shells enclosing said coil and being arranged symmetrically with respect to the central radial plane of said coil, each of said shells being formed of drawn sheet metal, and said shells being held together by a central thin-walled sleeve of non-magnetizable material which is flanged over at its end edges on the outside of said shells.

3,158,243
MAGNETIC CLUTCHES AND BRAKES
Arthur Croft, Rawdon, and Edwin Whiteley, Eccleshill, Bradford, England, assignors to Crofts (Engineers) Limited, Bradford, England, a British company
Filed Nov. 28, 1960, Ser. No. 72,214
Claims priority, application Great Britain, Dec. 8, 1959, 41,677/59
4 Claims. (Cl. 192—84)

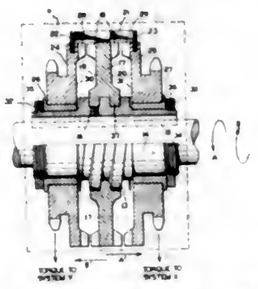
1. In a magnetic coupling such as a clutch or brake, the combination comprising a rotatable body of magnetic material connectible to a driving member, so as to be rotated, and exciter coil mounted on said body of magnetic material, a plurality of fingers secured to and projecting co-axially from said body and distributed around the periphery thereof in spaced relation, a driven member

mounted co-axially with said driving member, an annular closing plate of magnetic material forming an armature and which surrounds said driven member, a pack of separable friction plates interposed between said closing plate and said body of magnetic material and through which the magnetic field passes, said plate pack being comprised of one group of alternate plates arranged to be driven by said fingers and a second group of alternate plates arranged in driving relation to said driven member,



said closing plate serving to determine the amount of the air-gap between said plates and being provided with circumferentially spaced slots through which said fingers project, and a removable retaining spring ring secured by and located between the outer ends of said fingers and the corresponding side of said closing plate for restraining said closing plate against axial movement in a direction away from said body of magnetic material whereby the main parts of said coupling are releasably held together as a unit.

3,158,244
REVERSIBLE DOUBLE-DRIVE CLUTCH
James P. Lanigan, Jr., Metairie, Eugene F. Wallace, Chalmette, and James I. Kotter and Harold L. Salaun, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Nov. 29, 1962, Ser. No. 241,080
1 Claim. (Cl. 192—43)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A reversible double-drive clutch comprising in combination:

(*a*) a driven shaft,

(*b*) a first clutch member, having an outer and an inner face and a peripheral edge, rotatably mounted on said shaft in fixed axial position,

(1) said first clutch member generally disc shaped with toothed clutch elements integral the inner face and torque transfer elements integral the outer face,

(*c*) a second clutch member, having an outer and an inner face and a peripheral edge, rotatably mounted on said shaft in fixed axial position,

(1) said second clutch member generally disc shaped with toothed clutch elements integral the inner face and torque transfer elements integral the outer face,

(*d*) a third clutch member, having a central bore and a peripheral edge, mounted on said shaft between said first and said second clutch members,

(1) said third clutch member generally disc shaped with toothed clutch elements integral each disc face,

(2) said third clutch member movable axially on said driven shaft via a screw thread within the central bore of said third clutch member and matching screw thread integral the portion of the driven shaft intermediate the said first and second clutch members.

(*e*) indexing means to verify opposing tooth register relative facing elements of clutch members incipient to engagement consisting of

(1) an indexing bar located on and extending axially from each side the peripheral edge of said third clutch member,

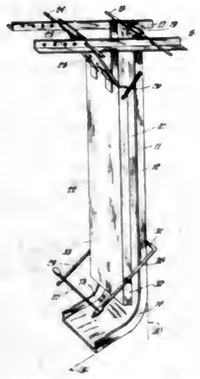
(2) an indexing pin located on and extending radially from the peripheral edge of each of the said first clutch member and the said second clutch member, said indexing bar adapted to contact the indexing pin of a proximal adjacent clutch member and concurrently align opposing teeth of the facing clutch elements prior to engagement and said indexing bar adapted to clear the indexing pin of a distal adjacent clutch member, whereby rotation of the driven shaft in one direction urges via the screw thread mounting, the third clutch member into engagement with an adjacent clutch member to establish a drive path in a first direction from the driven shaft through the engaged clutch members to the torque transfer means of the engaged and adjacent clutch member and whereby reversing the rotation of the driven shaft disengages and moves the third clutch member from the proximal adjacent clutch member toward the distal adjacent clutch member and into engagement therewith to establish a drive path in a second and opposite direction from the driven shaft through the engaged clutch members to the torque transfer means of the engaged clutch member.

3,158,245
GRAVITY CONVEYORS
Aloysius N. Budjinski, 405 Bartlett St., Roselle, N.J., and James D. Georgia, 143 Ege Ave., Jersey City, N.J.
Filed Nov. 19, 1962, Ser. No. 238,814
2 Claims. (Cl. 193—32)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A gravity conveyor comprising, in combination,
dual aligned frame members;
a chute having a bed;
the upper portion of said chute being transversely mounted between said frame members;
a receiving-section,
the upper portion of which is pivotally mounted between said frame members at a predetermined distance from the bed of said chute;
a pressure-shoe overhead the bed of said chute,
the upper portion of said shoe operatively connected to the lower end of said receiving-section;
spring-tensioning means mounted between the upper portion of said shoe and the upper portion of said chute;
dual levers,

each of which is pivotally mounted on an opposite side of the lower portion of said shoe,

one end of each of said levers extending below the bed of said chute and the other end of each of said levers extending above the top surface of said shoe;



a rigid member extending between the ends of each of said levers that extend below the bed of said chute; and

means of applying a downward pressure to the portion of said lever that extends above the top surface of said shoe and a corresponding upward pressure to said rigid member.

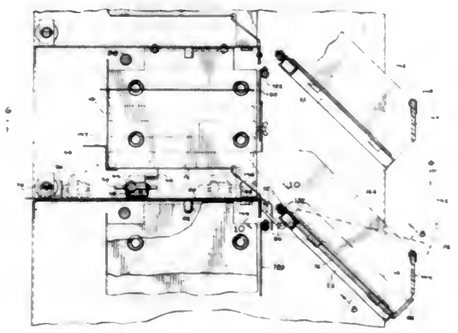
3,158,246

VENDING MACHINE

Francis T. Murphy, Chicago, Ill., assignor, by mesne assignments, to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 28, 1962, Ser. No. 176,273

16 Claims. (Cl. 194—2)



1. A vending machine comprising a plurality of compartments for storing articles to be vended, inclined trays positioned adjacent the floors of said compartments and extending downwardly and outwardly therefrom, retaining means provided adjacent each of said trays for holding articles thereon, vend initiating means, including means operatively connected to said retaining means and selectively actuatable for moving said retaining means to release articles from said trays; article-engaging means provided for each of said compartments and having operative and inoperative positions, means operatively associated with said vend initiating means including means selectively positioned thereby for interfering engagement with said article-engaging means when the latter are appropriately driven to sequentially actuate the same to operative and inoperative positions during the initial and final stages, respectively, of a vend cycle; means for driving said article-engaging means toward and away from said means positioned for engaging the same, each said article-engaging means when actuated to operative position being adapted to subsequently engage articles in an associated one of said compartments and to deposit the same on an associated one of said trays, and means for restoring said retaining means to article-holding position after release of articles from said trays and before the deposit of additional articles therein.

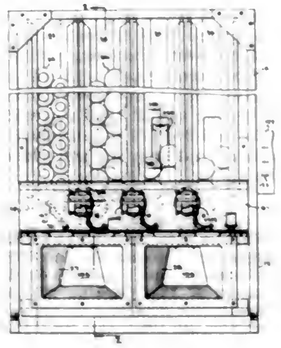
3,158,247

DISPENSING MACHINE FOR BEVERAGES IN BOTTLES OR CANS

Ronald Gale, Hagerstown, Md., assignor to Victor Products Corporation, Hagerstown, Md., a corporation of Maryland

Filed Apr. 28, 1961, Ser. No. 106,338

11 Claims. (Cl. 194—10)



1. In a vending machine of the character described, a support including a coin passage containing coin-operated switch means including a normally closed first set of contacts and a normally open second set of contacts, said support including a vending chamber adapted to contain a pluraliy of vertically stacked objects to be vented, a pivoted vending member mounted on said support below said chamber and adapted to support the stacked objects, said vending member being operable to release the lowermost object responsive to its pivotal movement through a predetermined angle, motor means mounted adjacent said chamber and being constructed and arranged to effect pivotal movement of said vending member through said predetermined angle responsive to energization thereof, a vending relay, an auxiliary relay, respective sets of contacts operated by said vending relay and auxliliary relay, an energizing circuit connected to said motor means through said sets of contacts, whereby said motor means becomes energized responsive to the simultaneous energization of both said vending relay and said auxiliary relay, a further set of contacts operated by said vending relay, an energizing circuit connected to said auxiliary relay through said normally closed first set of contacts and said further set of contacts, and means to energize said vending relay responsive to closure of said second set of contacts, whereby said motor means cannot become energized unless said first set of contacts recloses subsequent to movement of a coin through said passage.

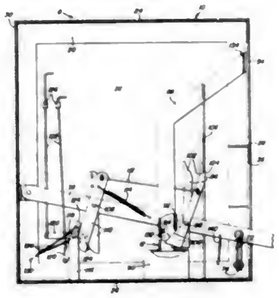
3,158,248

NEWSPAPER VENDING MACHINE WITH COIN CONTROL MECHANISM

Clarence L. Hawks, P.O. Box 68, Manti, Utah

Original application May 25, 1959, Ser. No. 815,515, now Patent No. 3,082,912, dated Mar. 26, 1963. Divided and this application Mar. 13, 1963, Ser. No. 264,968

6 Claims. (Cl. 194—71)



1. For use with an article vending machine of the type having an operating handle operatively connected to a feeder mechanism for dispensing articles from said machine, a coin control mechanism for controlling movement of said operating handle comprising at least two coin chutes, coin triggers equal in number to said coin chutes adapted to be pivotally secured to said operating handle, a lock frame adapted to be rigidly secured in said vending machine, one end of each of said coin triggers normally engaging said lock frame to prevent movement of said operating handle to actuate said feeder mechanism, an opening formed in one edge of each coin chute, the other end of each coin trigger having a cam surface thereon normally projecting through said opening partially blocking the passage of a coin through said chute, stop means in each of said chutes above said openings adjacent the other edge, cooperating with the associated cam surface whereby when a coin is positioned between said cam surfaces and said stop means said triggers will be pivoted toward an inoperating position with said one end of said triggers disengaged from said lock frame upon movement of said operating handle to effect operation of said feeder mechanism, means for adjustably retaining one or more of said coin triggers in an inoperable position, said retaining means comprising one or more rocker arms adapted to be pivotally secured to said operating handle equal in number to said coin triggers with one end of each rocker arm operatively connected to the corresponding coin trigger at the corresponding end thereof, means for positioning each of said rocker arms in a rotated position with its associated coin trigger in the inoperable position.

3,158,249

APPARATUS FOR ELECTROPLATING

Willard J. Harper, Colts Neck, David S. Ackerman, Linden, and Merrill Feldman, Cherry Hill, N.J., assignors to Hanson-Van Winkle-Munning Company, Matawan, N.J., a corporation of New Jersey

Continuation of application Ser. No. 820,235, June 15, 1959. This application July 25, 1962, Ser. No. 214,785

23 Claims. (Cl. 198—19)

1. For use with a machine having treatment stations,

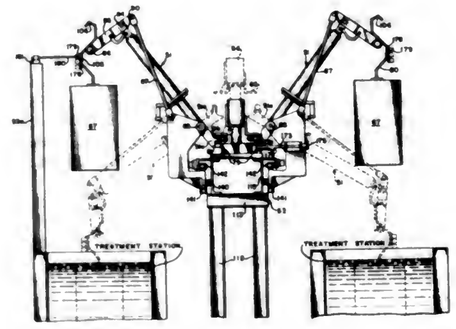
(*a*) a horizontal conveyor and elevating means,

(*b*) a work carrier and right line lift mechanism comprising a carriage adapted to be connected to and driven by said horizontal conveyor,

(*c*) a work carrying side arm pivoted proximate its inner end to said carriage and having its outer end movable toward and away from said treatment station,

(*d*) said work carrying arm having a portion proximate its pivoted inner end positioned to be engaged by said elevating means,

(*e*) work hanger means connected to the outer end of said arm, and



(*f*) conversion means connected between said work hanger means and said carriage to impart a substantially right line path of lift to the work hanger means upon arcuate elevation of the arm about its pivot incident to its being actuated by said elevating means.

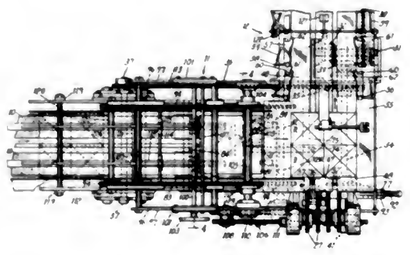
3,158,250

CONVEYOR SYSTEM

John W. Smith, Battle Creek, Mich., assignor to Battle Creek Packaging Machines, Inc., Battle Creek, Mich.

Filed May 31, 1963, Ser. No. 284,569

12 Claims. (Cl. 198—21)



1. A conveyor system arranged to receive rolls of toilet tissue in pairs on parallel receiving belts with the axes of the rolls parallel to the belts and forward the rolls in single or double tandem pairs parallel to their axes to a wrapping machine having a vertically reciprocable initial wrap forming element, said system comprising,

a flat way terminating at its forward end in adjacent roll transfer relation to the lowered position of said initial wrap forming element with a fixed stop at its forward edge,

laterally adjustable side walls mounted alongside of said way and projecting along the sides of said initial forming element in retaining and guiding relation to the ends of the rolls in said tandem pairs,

said side walls terminating below the tops of said rolls at approximately the centers thereof,

a roll forwarding conveyor including a chain loop driven in timed relation to said initial wrap element and extending beyond the ends of said way and the wrap element,

flights tiltably connected to said chain and having depending actuating fingers,

a support track located under said way and extending beyond the rear in-feed end of the way to engage said fingers and project said flights to upright roll advancing position,

said way having slots formed therein through which the ends of said flights project,

a plurality of roll restraining arms pivotally mounted on the tops of said side walls and having roll restraining pads on their swinging ends spring biased into frictionally dragging engagement with the upper portions of said rolls, said roll restraining levers including two with extra high pads located at the sides of said initial fold element,

means for introducing said pairs of rolls to said way including a receiving plate at the rear end of said way located over said support track and above the level of said belts with a stop wall at one side as a continuation of one of said side walls,

a vertically reciprocable elevator rod with interchangeable elevator plates attachable to its upper end reciprocable between the level of said belts and the level of said receiving plate on the opposite side of the receiving plate from said stop wall,

a second stop wall positioned along the end of said elevator plates to the edge of said receiving plate,

sensing switches having actuating elements located at said second stop wall to sense the location of single or tandem pairs of rolls on said elevator plates,

a supporting framework positioned on opposite sides of said elevator and having slideways thereon above the level of said receiving plate, transfer conveyor support plates slidably supported on slideways and having racks thereon,

a load adjusting shaft journaled in said framework and projecting through slots in said support plates with gears on the shaft engageable with said racks to move said support plates between single pair and double pair roll transferring positions,

an overhead conveyor having spaced chain loop guides supported from said support plates,

a drive shaft journaled in the leading ends of said support plates and guides and having sprockets thereon driving spaced transfer chain loops around said guides,

pusher flights rockably carried on cross bars connected between said transfer chain loops and maintained in vertical positions at the leading ends of said transfer chain loops by links connected to other cross bars trailing said first cross bars on the loops,

roll hold down rails longitudinally adjustably mounted over said belts and under said pusher flights,

a drive connection from said forwarding conveyor to said belts connected to continuously drive said belts,

alternate bearing mountings for supporting idler pulleys at the leading ends of said belts adjacent the edges of said interchangeable elevator plates,

means including a cyclically operated clutch driven from said wrapping machine and connected to reciprocate said elevator rod,

and an electrically actuated control connected to condition said clutch to engage in timed relation to said roll forwarding conveyor,

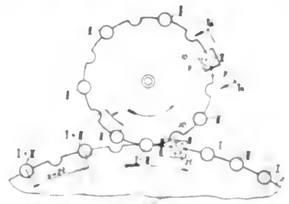
said control being electrically connected through said sensing switches to be actuated only when the prescribed load is on the selected elevator plate.

3,158,251

CONTINUOUSLY TRANSFERRING AND ARRANGING ROD-SHAPED ARTICLES

Antonín Skála and Karel Hrbotický, Praha, Czechoslovakia, assignors to Závody v. l. Lenina, Plzen, Czechoslovakia

Filed July 5, 1960, Ser. No. 40,859
Claims priority, application Czechoslovakia, July 4, 1959, PV 3,941/59
9 Claims. (Cl. 198—32)



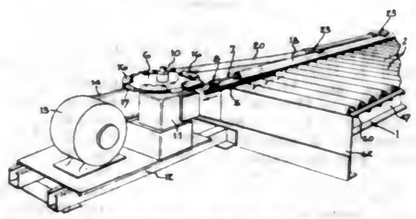
1. A method of continuously arranging a succession of rod-shaped members; comprising the steps of placing rod-shaped articles, each of which is divided into a plurality of parts constituting said members, into axially extending grooves spaced apart equally in the circumferential direction on the surface of a working roller, with at least one empty groove being left on said working roller between the successive grooves of the latter in which said articles are placed, rotating at least one transfer roller at the same circumferential speed as said working roller and tangentially to the latter, with said transfer roller having axially extending grooves in the surface thereof which are circumferentially spaced apart by distances equal to the spacing between said grooves of the working roller and which register successively with the latter grooves during rotation of the working and transfer rollers, the number of said transfer rollers being smaller by at least one than the number of said parts into which each of said articles is divided, retaining one of said parts of each article in the groove of the working roller in which the article has been placed while transferring at least another of said parts to a groove of said transfer roller which registers with an article containing groove of the working roller, the number of grooves in the transfer roller being selected so that, upon a revolution of the transfer roller, a groove of the latter to which said other part of an article has been transferred then registers with an empty groove of said working roller, and returning said other part of the article to said empty groove of the working roller.

3,158,252

LIVE ROLLER CONVEYOR SYSTEM

Rudolph B. Vogt, Cincinnati, Ohio, assignor to The E. W. Buschman Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 30, 1961, Ser. No. 121,170
7 Claims. (Cl. 198—127)



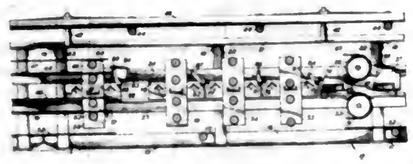
1. A live roller conveyor system comprising, a conveyor frame, a series of conveyor rollers having opposite end portions rotatably journalled in said frame, a driving tube extending parallel with said conveyor frame and having a longitudinal slot formed therein, said longitudinal slot facing said rollers, a flexible stranded driving cable passing through said tube, a plurality of driving elements connected to said cable in spaced relationship and projecting outwardly through said slot toward the rollers, said driving elements including bearing means slidably confined within said driving tube, a ripple belt mounted on the outer portion of said driving elements, yieldable means connected to the driving tube and urging the driving tube toward said conveyor rollers, whereby the portion of the driving tube opposite said slot is yieldably held in sliding bearing engagement with the bearing means of said driving elements, thereby urging the driving elements toward the rollers and urging the ripple belt in frictional engagement with the surface of said rollers, and power means for advancing said driving cable and ripple belt relative to the driving tube, whereby the ripple belt is adapted to impart rotary motion to said rollers, thereby to advance an article resting on said rollers.

3,158,253

MOVABLE ROLLER SUPPORTS FOR EXTENSIBLE BELT CONVEYOR

Donald C. Reilly, Downers Grove, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 16, 1963, Ser. No. 273,355
8 Claims. (Cl. 198—139)



1. In an extended take-up section for a belt conveyor; a frame;

nests of belt supporting rollers adapted to move forward and back along said frame;

releasable coupling means on said roller nests for connecting said nests to each other; and

selective engaging apparatus spaced along said frame adapted to de-couple preselected roller nests at preselected locations along said frame.

3,158,254

PREFORMED RESILIENT CLAMP FOR IDLER ROLLERS

William N. Poundstone, Morgantown, W. Va., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 22, 1960, Ser. No. 44,603
3 Claims. (Cl. 198—192)



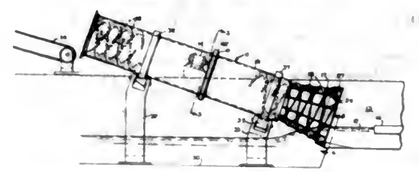
2. A troughing idler roller assembly comprising a shaft member transversely spanning a pair of longitudinally extending, spaced flexible side frame members each having generally cylindrical external surfaces, said shaft member having end portions each removably secured to one of said side frame members by a clamp, each of said clamps including a preformed resilient member having a shank end portion, an intermediate bight portion and a handle portion, securing means to secure each of said clamps to said respective shaft member end portion, said bight portion being generally cylindrical and having a cylindrical internal surface with a relaxed internal radius less than the radius of said respective flexible side frame member external surface whereby said bight portion may clampingly engage said flexible side frame member external surface, said handle portion being effective upon movement away from said shank end portion to distort said preformed resilient member and increase the effective radius of said bight portion internal surface to permit said bight portion cylindrical internal surface to be positioned in engaging relation over said respective flexible side frame member external surface, said shaft member including means to permit deepening the trough of said idler roller by permitting said side frame members to be drawn laterally toward each other, a plurality of roller members supported by said shaft member, and said shaft member including limiting means to limit the depth of said idler roller trough by inhibiting the movement of said side frame members toward each other at a minimum distance from each other.

3,158,255

PRE-BARKING CONVEYOR

Auxilius P. Schnyder, Bogota, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Nov. 7, 1961, Ser. No. 150,838
4 Claims. (Cl. 198—215)



1. A conveyor apparatus for handling logs comprising a flume with a stream for floatingly conveying logs therealong, and elongated hollow conveyor structure having internal spiraled rib means, said rib means presenting edges at the interior of said structure for engagement with the logs being transported therethrough, means for rotatably supporting said structure with one end thereof extending into said stream for intercepting floating logs therefrom, said one end being an open grillage structure including part of said rib means thereat to intercept logs from said flume but to permit the flow of at least part of the flume stream through said grillage structure, means for rotating said conveyor structure in a direction such that said spiral rib means effects progressive transport of said logs from said one end to the other end of said structure.

3,158,256

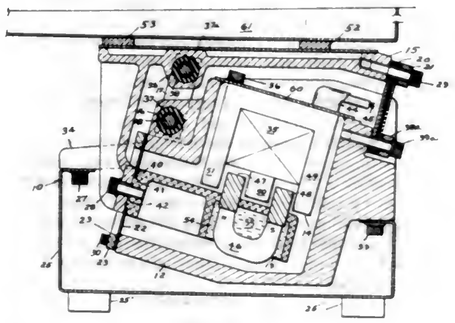
FEEDER AND SPRING WITH INHERENT DAMPING

Rodney J. Torrey, Erie, and Leo W. Marxer, Pittsburgh, Pa., assignors to Eriez Manufacturing Co., Erie, Pa., a corporation of Pennsylvania

Filed Feb. 15, 1961, Ser. No. 89,407
2 Claims. (Cl. 198—220)

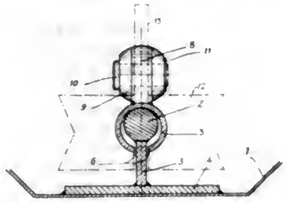
1. A vibratory device comprising a body, a tie bar, a feeder trough supported on said tie bar, an elongated member made of material having the properties of a material made of polyester resin with glass fibers impotted therein, one end of said elongated member being attached to said tie bar and the other end to said body, a lever arm, each end of said lever arm being attached to a cylindrical member, a hollow cylindrical sleeve like resilient member supported on each said cylindrical member and bonded thereto, the outside of said sleeve member being bonded to said tie bar and the outside of the other said resilient member being bonded to said bar, a perma-

nent U-shaped magnet supported on said tie bar, and an electromagnet having an E-shaped frame supported on said body, said electromagnet E-shaped frame receiving



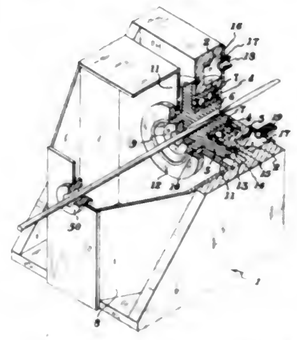
the legs of said U-shaped magnet whereby said tie bar is vibrated when an alternate current is impressed on said E-shaped electromagnet.

3,158,257
DEVICES FOR COLLECTING AND DISCHARGING CUTTINGS FROM MACHINE TOOLS
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Nov. 28, 1960, Ser. No. 72,230
Claims priority, application France, Nov. 27, 1959, 811,490, Patent 1,250,018
1 Claim. (Cl. 198—221)



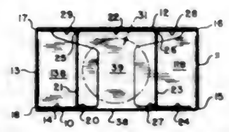
Conveyor means for cuttings and similar waste materials comprising a collecting channel having a curved portion including a horizontal portion which has a radius of curvature bent into an inclined portion, a guide section secured to said collecting channel over substantially the full length of said horizontal and inclined portions, said section consisting of a vertical flat plate having its lower edge secured to said channel and a circular bar member having its bottom secured to the upper edge of said plate, said bar member and plate having a radius of curvature corresponding to the curved portion of said channel, and curved hollow elongated split tubular members slidably disposed over said member so the split portion of the hollow members straddles said vertical plate with its split edges spaced from opposite side of said plate, said hollow tubular members having a diameter substantially larger than said bar member to provide a substantial space between the inner surface of said hollow members and the outer circumference of said bar member around the bottom and opposite side portions thereof to allow free play therebetween to enable said tubular members to slide over the curved portion of the guide bar member adjacent the curved portion of said channel, and link members connecting said hollow members together, and material pusher members carried by said hollow members.

3,158,258
WIRE AND METHOD OF ITS PRODUCTION
Roy M. Kelday and Frederick L. Hayden, Hamilton, Ontario, Canada, assignors to The Steel Company of Canada Limited, Hamilton, Ontario, Canada
Original application June 2, 1954, Ser. No. 434,034, now Patent No. 2,928,528, dated Mar. 15, 1960. Divided and this application June 17, 1959, Ser. No. 820,947
3 Claims. (Cl. 205—15)



1. The method of drawing wire with a general cross-sectional shape which is non-circular and of which the orientation varies helically along the length of the wire, which comprises drawing through a die, having a passage which is non-circular in general cross-sectional shape over a substantial part of its working length and is helically twisted about its longitudinal axis throughout said part, a wire of which the general cross-sectional shape is circular and of which the radius is smaller than the maximum radial dimension but larger than the minimum radial dimension of the effective cross-section of the die passage, and permitting said die to rotate about the longitudinal axis of the passage while preventing it from moving along said axis.

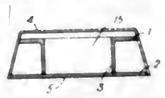
3,158,259
PROTECTIVE DISPLAY CARTON
Vincent R. Pantalone, Closter, N.J., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed Mar. 20, 1962, Ser. No. 180,990
4 Claims. (Cl. 206—45.14)



1. A display carton comprising spaced parallel front and rear walls and spaced parallel end walls, the front wall having a vertical window therein for an article-holding pocket, the window having side edges parallel with and spaced inwardly from the carton end walls, the pocket being formed by a sheet member which is U-shaped in cross-section having the base portion thereof secured to the rear wall of the carton and constituting the rear wall of the pocket, the legs of the U-shaped member being parallel and extending to the front wall of the carton, the legs having flanged portions glued to the inner surface of the carton front wall along the respective vertical edges of the window, the carton walls having foldable closure flaps at each end for retaining within the pocket an article placed therein, and the pocket side walls having each a pair of projecting fingers the tips of which are in proximity to said closure flaps at one end of the carton when the

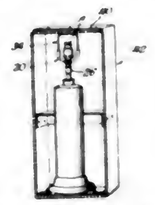
flaps are folded to closed position, the edges of such fingers providing an inverted V formation in the direction of the opened closure flaps for guiding the article into the pocket when it is inserted through such open flaps.

3,158,260
CONTAINER FOR MICROPHONES OR THE LIKE
Ernst Pless, Vienna, Austria, assignor to Akustische u. Kino-Geräte Gesellschaft m.b.H., Vienna, Austria, a firm
Filed Apr. 4, 1962, Ser. No. 185,141
Claims priority, application Austria, May 12, 1961, A 3,769/61
2 Claims. (Cl. 206—46)



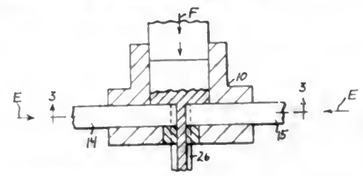
1. A package comprising a microphone and an enclosure therefor composed of a base and a cover; said base including an annular upright core forming an upwardly open microphone-receiving compartment, a bottom plate for said compartment rigid with said core, a first flange projecting horizontally outwardly from the lower peripheral edge of said core in the plane of said base plate, and a second flange projecting horizontally outwardly from the upper peripheral edge of said core for a lesser distance than said first flange and defining therewith an annular gap, said core and upper flange being provided with a slot interconnecting said compartment and said gap; said microphone resting on said bottom plate in said compartment and being provided with a cord passing outwardly through said slot into said gap, the greater part of said cord being wound about said core in said gap; said cover having a downwardly diverging peripheral wall removably engaging said base along the outer edges of said flanges, said peripheral wall having a bottom edge in contact with the outer edge of said first flange and having a zone below its top in contact with the outer edge of said second flange whereby said top is held elevated above said core and second flange.

3,158,261
MEANS FOR PROTECTING THE LAMP SOCKET IN A LAMP DURING SHIPMENT
Theophile A. Stiffel, 525 W. Superior St., Chicago, Ill.
Filed Dec. 10, 1962, Ser. No. 243,571
3 Claims. (Cl. 206—46)



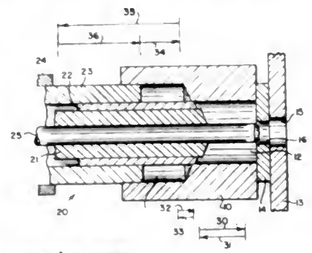
1. A package carton comprising a protecting means attached to a lamp socket in a lamp during shipment, said socket including a supporting bracket having a pair of upwardly extending arms provided with channel shaped ends, said protecting means comprising a generally U-shaped member having legs detachably secured and received in said channel shaped ends positioning said member in an inverted U-shaped position with the top of said member in said inverted position extending above the top of the socket and in spaced relation thereto, and the top of said inverted U-shaped member lying adjacent and engaging the end wall of the carton.

3,158,262
METAL EXTRUSION
Albert W. Scribner, 6 Country Club Road, Darien, Conn.
Original application Nov. 1, 1961, Ser. No. 149,300, now Patent No. 3,146,886, dated Sept. 1, 1964. Divided and this application Sept. 6, 1963, Ser. No. 307,140
4 Claims. (Cl. 207—9)



2. In an extrusion press:
a container having a work receiving chamber formed therein;
a feed ram slidably mounted in said container for work feed movement into said chamber;
an extrusion die formed with an extrusion orifice and operatively mounted at one end of said chamber; and
at least one laterally disposed extrusion ram slidably mounted in said container for movement into said chamber and toward the axis of said die orifice at a location immediately adjacent to the front operative face of said die; the inner end of said ram being contoured so as to correspond to the adjacent portion of the profile of the die orifice, and the inner limit of movement of the extrusion ram being such as to position the contoured surfaces of said inner ram end in substantially coextensive alignment with respect to the said adjacent portion of the profile of said die orifice.

3,158,263
EXTRUSION PRESS
Albert W. Scribner, 6 Country Club Road, Darien, Conn.
Original application Oct. 18, 1960, Ser. No. 63,360, now Patent No. 3,107,787, dated Oct. 22, 1963. Divided and this application Sept. 9, 1963, Ser. No. 307,700
1 Claim. (Cl. 207—9)



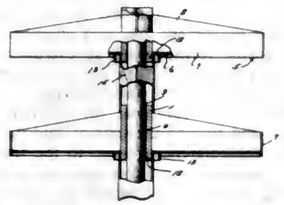
In an extrusion press:
A container;
said container having an extrusion chamber and a feed chamber formed in said container in coextensive end to end relation;
an extrusion die operatively mounted in the walls defining said extrusion chamber;
a group of three telescopically arranged rams disposed at one end of said container, said group including an extrusion ram slidably mounted at one end of said extrusion chamber, said extrusion ram having a cross sectional area substantiallly less than that of said extrusion chamber;
a valving ram telescopically mounted on said extrusion ram and having an outer cylindrical surface that is adapted to move into and out of sliding engagement

with the walls defining said end of said extrusion chamber; and

a feed ram telescopically mounted on said valving ram and having an outer cylindrical surface that is adapted to move into and out of sliding engagement with the walls defining the said feed chamber;

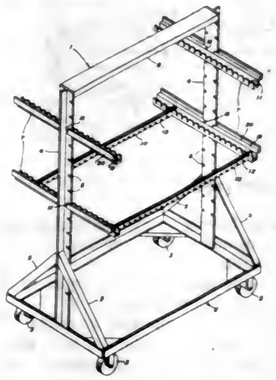
said three telescopically arranged rams being adapted to be power actuated in timed relation so as to apply a continuous extrusion force to work material in said extrusion chamber.

3,158,264
REVOLVING FLOORSTAND
Ernst Bittner and Albert Schilpp, Frankfurt am Main, Germany, assignors to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Sept. 22, 1961, Ser. No. 139,960
Claims priority, application Germany Dec. 7, 1960
3 Claims. (Cl. 211—131)



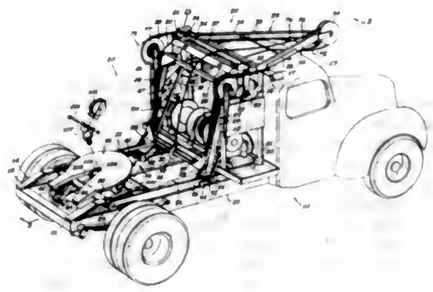
1. In a revolving floorstand, a base, a supporting rod upstanding from said base, a plurality of trays each having a central bearing for disposition around said rod, means disposed around said rod to support the lower tray a distance above said base, a spacer sleeve between adjacent trays above said lower tray, a telescopic connecting configuration formed on each end of each tray bearing, and each spacer sleeve having telescopic end configurations complemental to those of said tray bearings and in telescopic engagement therewith.

3,158,265
SMOKE RACK
Joseph J. Thimons, Tarentum, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,112
3 Claims. (Cl. 211—177)



1. A smoke rack comprising a base, a pair of spaced upright members providing oppositely disposed front faces supported on said base, said members each having a pair of horizontally spaced open-ended slots in the marginal edges of said oppositely disposed front faces, and a pair of oppositely disposed, horizontally aligned hangers having a lower portion of each hanger bearing against the front face of the upright member and having two spaced upper portions of each hanger turned outwardly and upwardly, each hanger being removably mounted in the said horizontally spaced slots of the upright members so that the said upper portions of the hanger engage the rear side of the upright member.

3,158,266
TRUCK ATTACHMENT
Carl W. Manaugh, 9610 Trumbull Ave. SE., Albuquerque, N. Mex.
Filed Apr. 29, 1963, Ser. No. 276,459
16 Claims. (Cl. 212—8)



1. A truck attachment comprising in combination:

a base;

a tripartite segmented boom pivotally connected at one of its ends to said base, said boom having pivotally interconnected lower, intermediate and upper segments;

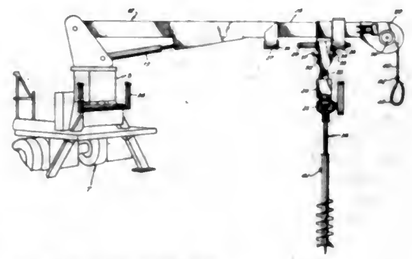
means attached to said lower segment for rotating said boom upward from a ⌐ -shaped attitude of repose to a straight line, thence to a rearward over-center position;

means joining said lower and upper segments for maintaining parallel relationship therebetween and for urging alignment thereof with said intermediate segment;

means mounted on said base for urging said boom into said attitude of repose;

and hoisting means operating in conjunction with said boom.

3,158,267
UTILITY EQUIPMENT
Ralph E. Carbert, Minneapolis, and Harry R. Larson, Long Lake, Minn., assignors to Tel-E-Lect Products, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 30, 1961, Ser. No. 148,677
1 Claim. (Cl. 212—55)



In utility type apparatus,

(*a*) a vehicle,

(*b*) a boom pivotally mounted on said vehicle for movement in a vertical plane,

(*c*) means carried by said vehicle and operatively connected to said boom for moving the outer end portions of said boom vertically,

(*d*) a stinger telescopically carried by the outer end of the boom and being extendable and retractable relative thereto,

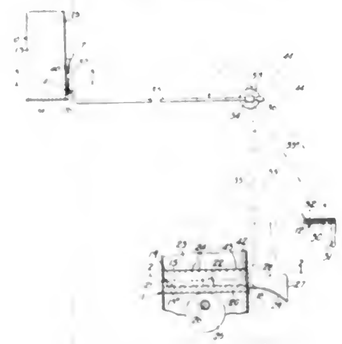
(*e*) means carried by the vehicle and operatively connected to said stinger for extending and retracting said stinger relative to said boom,

(*f*) a rotary cable-carrying winch structure mounted on the extreme outer end of said stinger, and opening outwardly therefrom,

(*g*) power means carried by said vehicle and operatively connected to said winch for operating the same to pay out and retract cable on the winch,

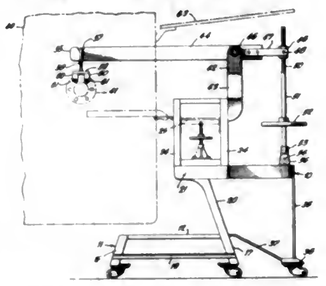
(*h*) said cable-carrying winch being mounted on said stinger adjacent the outer end thereof and thereby effecting a fixing of a predetermined length of cable depending below the outer end portion of the stinger while the stinger is telescopically being extended or retracted relative to the boom.

3,158,268
MULTIPLE STATION TRANSFER UNIT
Gerald Kleiman, Elizabeth, N.J., assignor to Process Equipment & Automation, Inc., Linden, N.J., a corporation of New Jersey
Filed Aug. 15, 1961, Ser. No. 131,615
5 Claims. (Cl. 214—1)



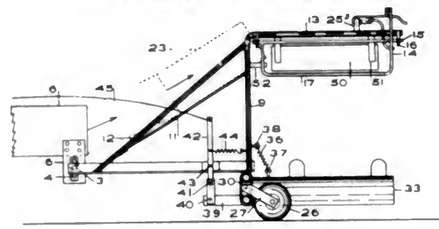
1. In apparatus employing a raised pickup station, a work station lower than the pickup station and a delivery station, a transfer unit for moving a card from the pickup station to the work station and then to said delivery station, said unit comprising a tubular arm having a horizontal axis, a thin suction pad at the free end of said arm for engaging and supporting a card at the pickup station, means for swinging the arm in one vertical plane, means to move the pad and a card supported thereby in said vertical plane from the pickup station to said work station, then to said delivery station and return the pad to the pickup station in one cycle of operation of said unit, means to remove suction from the pad releasing the card from the pad to thereby release the card from the pad at said delivery station, said tubular arm being arranged at one side of said pad, and the other side of the pad having a plurality of apertures therein in communication with the bore of said tubular arm and opening through said other side for establishing suction engagement and support of the card on said pad.

3,158,269
GENERATOR REMOVER APPARATUS
Samuel S. Corso, 77—22 14th Ave., Brooklyn, N.Y.
Filed Mar. 21, 1962, Ser. No. 181,255
9 Claims. (Cl. 214—1)



1. An apparatus for removing a generator and the like from an enclosed space comprising a box like frame, leg members extending below said frame, roller means on the lower ends of said leg member, at least two leg members extending a substantial distance above said frame, a substantially horizontally extending support member connected to the upper end of said two leg members, a box like structure disposed on said support member, generator support means mounted on said box structure and vertically movable with respect thereto, means for actuating said support table upwardly and downwardly, spaced legs extending vertically above said box structure, a crane member having a front and rear end pivotally connected to said vertically spaced legs for removing a generator from an enclosed space, and other means for actuating the front end of said crane member upwardly and downwardly about its point of pivotal connection.

3,158,270
STOOKER FOR TRAVELING BALER
Wilfred Prentice, Assiniboia, Saskatchewan, Canada
Filed May 15, 1962, Ser. No. 194,915
5 Claims. (Cl. 214—6)



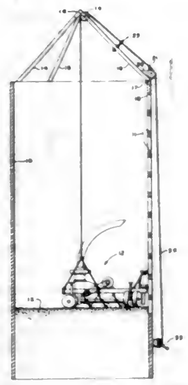
1. In a bale stooker for attachment in following relation to a traveling baler, the stooker having a carrier for receiving bales, the carrier including a forward cross frame bar and bale guide plates mounted on the cross frame bar rearwardly extending for supporting a pile of bales thereon, means mounting the bale carrier attached to the rear end of the baler, said means comprising a pair of side frame bars forwardly pivotally attached to the baler one to each side thereof and extending rearwardly, a tubular axle bar transversely attached in rearward supporting relation to the side frame bars, castor wheels mounted in forked arms, pins attaching the forked arms in supporting relation to the axle bar, and straps in the form of loops engaging the axle bar and the carrier cross frame bar suspending said cross frame bar from the axle bar parallel therewith and free to swing forward and backward.

3,158,271
SORTER
Milton B. Cook, Seattle, Wash., assignor to Production Systems, Inc., Seattle, Wash., a corporation of Washington
Filed Mar. 2, 1960, Ser. No. 12,468
3 Claims. (Cl. 214—11)



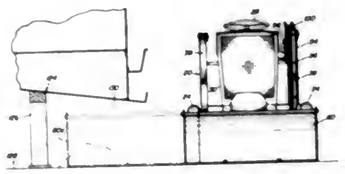
1. A sorter, said sorter comprising a series of shelves and a memory system, said shelves being vertically spaced, a feeder mechanism for feeding the material being sorted to said shelves, said mechanism comprising an ascending ramp leading to the shelves, a first means to move the material upwardly on the ramp toward the shelves, a second means for bridging the gap between the ramp and the shelves so as to allow the material to move from the ramp and onto the shelves, said memory system comprising a guide channel, said channel being movable between plural positions, a third means to move said channel to a predetermined position, a movable support, said support moving adjacent said channel and across the path of said channel, a lug, said lug being capable of moving on said support, upon movement of the support across the guide channel said channel acting upon said lug to move the same to a predetermined position on the support, and a fourth means associated with the second means so that with said lug actuating the fourth means the second means is actuated to allow the material to move from the ramp to the shelves.

3,158,272
SILO UNLOADER SUSPENSION
Shaun A. Seymour, New Holland, and William E. James, Ephrata, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,294
3 Claims. (Cl. 214—17)



1. Apparatus for suspending a silo unloader within a silo having an upright cylindrical wall, said apparatus comprising a support structure at the top of said silo wall and having at least three support legs, means mounting one end of each of said support legs on said silo wall, means connecting the other ends of said legs together above and substantially equidistant from said one ends of said legs, a pulley mounted on one of said legs at said other end thereof, winch means mounted adjacent said silo wall in a vertical plane common to said one of said support legs and below said pulley, a cable having sufficient tensile strength to support a silo unloader, said cable having one end connected to said winch means and the other end supportingly connected to said silo unloader, said cable extending upwardly from said winch means along the upper side of said one of said support legs to and around said pulley and then downwardly within said silo to said silo unloader, the weight of said silo unloader on said cable acting through said pulley to exert force on said one of said supporting legs attempting to bend said leg when said unloader is suspended on said cable, and means carried by said one support leg intermediate the ends thereof and engaging said cable to apply tension force from said cable resulting from the weight of said silo unloader to said one leg in a direction to oppose bending of the leg.

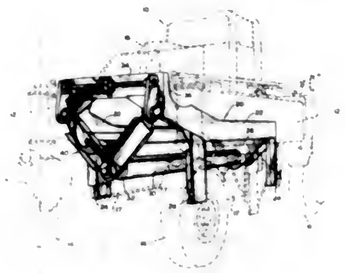
3,158,273
SIDE SHIFT LOADER
Thomas L. Brown, Lemon Grove, Calif., assignor to Southern Equipment & Supply Co., San Diego, Calif., a corporation of California
Filed Dec. 26, 1962, Ser. No. 247,194
8 Claims. (Cl. 214—140)



1. Material removing apparatus, comprising in combination:
(A) a vehicle;
(B) supporting means carried by the vehicle;
(C) a forwardly extending arm;
(D) means on the supporting means for supporting said arm for pivotal movement about a horizontally extending axis;
(E) means for raising and lowering the arm;
(F) a scoop;
(G) means pivotally carrying said scoop on the free end of the arm for swinging movement about a horizontally extending axis and for translatably moving said scoop horizontally relative to said arm;
(H) means for oscillating said scoop about said pivotal means;
(I) and means for translatably shifting said scoop at right angles relative to said arm and to one side of the front of the vehicle.

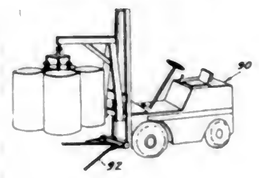
3,158,274
CARRYING RAM, GATE, AND HYDRAULIC CONTROL
Ovie C. Mensinger, St. Joseph, and Roger W. Spencer, Benton Harbor, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Continuation of application Ser. No. 742,164, June 16, 1958. This application Mar. 13, 1961, Ser. No. 95,776
9 Claims. (Cl. 214—394)

1. A material handling device comprising frame means, a ram member secured at one end to said frame means, gate means supported from said frame means and movable between open and closed positions relative to the other end of said ram member, elevator means for raising said frame means, and control means operatively connected to said elevator means providing in said elevator means a relatively large load lifting capacity when said



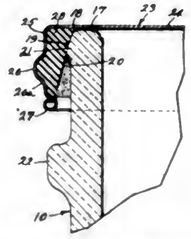
gate means is in its closed position and a relatively small load lifting capacity when said gate means is in its open position.

3,158,275
DRUM LIFTER
Walter R. Hart, 33 5th Ave., Port Washington, N.Y.
Filed Apr. 24, 1962, Ser. No. 189,793
13 Claims. (Cl. 214—655)



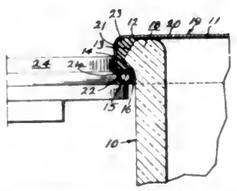
1. Drum gripping device for gripping a plurality of drums having outwardly rolled beaded rims and used with lifting apparatus, said drum gripping device comprising: an equalizing support member having oppositely disposed surfaces; a suspension hook swivelly secured to said support member in the center of one said oppositely disposed surface; grip means equally spaced apart and secured to said support member adjacent the periphery of the other of said oppositely disposed surfaces, each of said grip means comprising a loosely connected pantograph linkage and terminating in jaws automatically closed by their own weight and adapted to unreleasably engage the rim of a drum when said drum is supported by said drum lifting device, the force closing said jaws being directly proportional to the supported weight; orienting means attached to said support member intermediate said peripherally spaced grip means and extending therebeyond for contacting the rims of adjacent drums to slide therebetween and thereby rotate said support member around said swivelled suspension hook to bring said grip means over said drum rims for automatic engagement of said jaws therewith; and jaw releasing means centrally mounted on the other of said oppositely disposed surfaces of said support member and pivotally connected with said grip means and operable for holding open said jaws when said drums are otherwise supported whereby said grip means is released from said otherwise supported drums and the device can be raised for moving to engage a new load.

3,158,276
CONTAINER WITH REMOVABLE AND REPLACEABLE CLOSURE AND METHOD OF MAKING IT
Paul R. Luertzing, Vineland, N.J., assignor to Luertzing Corporation, Vineland, N.J., a corporation of New Jersey
Filed Mar. 19, 1963, Ser. No. 266,415
2 Claims. (Cl. 215—40)



1. A container comprising a body having an end opening with an end surface encircling the opening and an exterior finish lying adjacent to the end surface and including a circumferential rib lying inward from the end surface, a closure for the opening of the body formed of a metallic cap having a circular panel of a diameter greater than the maximum diameter of the rib and lying in close proximity to and spaced from the end surface of the container and a cylindrical skirt connected to the peripheral edge of the panel and extending coaxially of the container, the skirt being formed with a deformable outwardly projecting circumferential zone defining a channel open to the interior of the skirt and extending inwardly beyond the rib, said skirt having its inner edge out of contact with the surface of the body and lying inward a substantial distance from the rib, and a resilient sealing body adhering to the inner surface of the panel over an annular area adjacent to the periphery of the panel and substantially entirely outwardly from the end surface of the container, the sealing body occupying the area defined by the panel and the skirt and filling the channel and adhering to the inner surface of the skirt, including the channel, from the panel to the upper end of the bead, the sealing body tapering in cross-section from the panel to the bead said circumferential zone of the skirt adapted to be displaced radially inwardly to press the sealing body against the exterior finish of the container including the circumferential rib of the container to provide an effective seal therebetween.

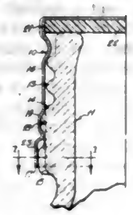
3,158,277
HERMETICALLY SEALED CONTAINER
Paul R. Luertzing, Vineland, N.J., assignor to Luertzing Corporation, Vineland, N.J., a corporation of New Jersey
Filed Mar. 19, 1963, Ser. No. 266,417
3 Claims. (Cl. 215—40)



1. A sealed container, comprising in combination: a hollow non-metallic container body of generally cylindrical form having an end opening at at least one end thereof, said container having a flat annular radial end surface and an exterior annular rib adjacent said end surface; said rib having an axially outer frusto-conical sealing surface portion tapering toward the radial end

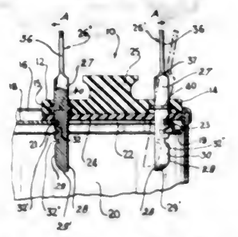
surface, a rounded surface portion at its maximum diameter, and an axially inner frusto-conical sealing surface portion tapering toward the outer side of the container body; a metallic closure for the end opening of the container body, said closure having a circular end panel of a diameter greater than the maximum diameter of said rib, a circumferential cylindrical skirt extending axially inwardly beyond the inner frusto-conical portion of said rib, said skirt having an outwardly rolled bead at its lower edge; and an annular sealing strip of resilient material disposed within the annular outer portion of said closure; the sealing strip having an axial length to extend from said cap end panel to the axially upper edge of the rolled bead within said skirt, the sealing strip filling the corner between the end panel and the skirt portions of said cap, tapering outwardly on its inner surface from said cap end panel to said bead and having an angle of inclination substantially matching the angle of said outer frusto-conical sealing surface portion and seating thereon when the end panel of the closure is disposed adjacent to but spaced a slight distance from the end surface of the container; in final assembly sealing position of the closure on the container, the skirt bead and lower end of the skirt together with the thin lower end of the sealing strip being disposed beneath the axially inner frusto-conical surface portion of the container rib.

3,158,278
CONTAINER CLOSURE
Ralph P. Knapp and Claude C. Alexander, Chicago, Ill., and Eli Frank Andersen, Devon, Pa., assignors to The West Company, Inc., Phoenixville, Pa., a corporation of Pennsylvania
Filed Feb. 4, 1960, Ser. No. 6,655
4 Claims. (Cl. 215—42)



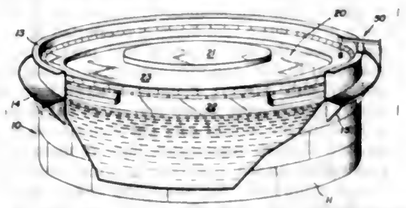
1. In combination, a container and a closure member adapted to be removably secured to the container; said container having an open ended neck portion with at least one external spiral thread portion thereon, an annular flange on said neck at the opposite side of said thread portion from the open end of said neck, said flange having a series of ribs positioned about the periphery thereof extending generally parallel to the axis of said neck portion, said closure member including a generally cylindrical cap portion having one end adapted to seat on the neck of said container to close the same and an annular side wall extending downwardly from said one end, a retaining ring portion formed integrally with said cap portion and connected to the annular side wall of said cap portion in a position coaxial with the cap portion, at least one fracturable bridge member at the junction between said retaining ring and the annular side wall of said cap portion so that said retaining ring may be readily broken away from said cap portion, means defining a plurality of closely spaced grooves positioned uniformly about said retaining ring in a direction parallel to the axis of said retaining ring and said annular side wall of said cap portion, said grooves extending longitudinally of said retaining ring from the end of said retaining ring remote from said junction and terminating short of said junction and corresponding in shape to the shape of the ribs on said container flange, said closure member being adapted to be positioned over said container neck portion with the grooves in said retaining ring overlying the ribs of said container, and the annular side wall of said cap portion being deformable to conform to the shape of the spiral thread portion on said container neck.

3,158,279
RESEAL PLUG FOR CANS
Louis G. Callegari, 34—06 45th St., Long Island City, N.Y.
Filed Aug. 12, 1963, Ser. No. 301,375
8 Claims. (Cl. 220—24)



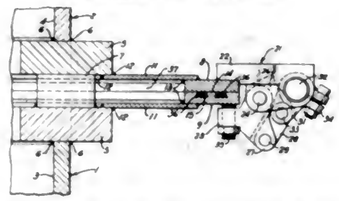
1. A sealing device for a diametral opening in a circular end of a can, said opening having a keyhole-shape with rounded opposite ends, said can having an annular bead at the periphery of the can end with one end of said opening located near said bead, comprising a plate having a curved end conforming in curvature to the bead of the can, a resilient pad attached to one side of the plate for entering and sealing said opening, said plate and pad being longer and wider than said opening for completely closing the same, and a pair of blades pivotably supported by said plate and pad and extending therethrough in parallel disposition near opposite ends of the plate and pad, each of said blades having at least one notch in an outer edge thereof facing toward an adjacent end of the plate and pad for engaging one of the ends of the can opening, said plate being formed of a resilient material slightly less flexible than the pad attached to the plate to serve as a reinforcement and support for the pad and a yielding support for the pivotable blades, whereby said blades can be pivoted outwardly of said opening at upper ends of the blades to disengage the notches of the blades from the ends of said opening.

3,158,280
FLOATING ROOF ANTI-ROTATIONAL MECHANISMS
John H. Wiggins, 801 C El Camino Real, Menlo Park, Calif.
Filed Nov. 1, 1962, Ser. No. 234,805
20 Claims. (Cl. 220—26)



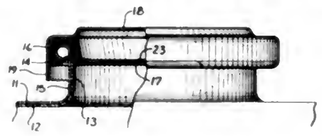
1. In a tank for storing liquids, such as petroleum products, including an upstanding substantially cylindrical side wall, a substantially disk-shaped piston-like floating roof arranged in said tank in floating relation with the stored liquid and movable in the vertical direction with respect to said side wall in accordance with the head of the stored liquid, said floating roof being positioned radially inwardly with respect to said side wall to provide a substantially annular space therebetween, and substantially annular sealing structure carried by the periphery of said floating roof and arranged in said annular space and disposed in sliding sealed engagement with said side wall, whereby said floating roof is subject to rotation in a generally horizontal plane with respect to said side wall; mechanism for controlling and limiting said rotation of said floating roof comprising upper anchor structure rigidly carried by said side wall adjacent to the top thereof and projecting generally radially inwardly into overhanging relation with respect to the outer peripheral portion of said floating roof, lower anchor structure rigidly carried by said side wall adjacent to the bottom thereof and projecting generally radially inwardly into underhanging relation with respect to the outer peripheral portion of said floating roof, said upper and lower anchor structures being arranged substantially in vertical alignment with each other, an outer peripheral portion of said floating roof having an upstanding passage therethrough, a strong flexible resilient cable arranged in said tank and secured in taut condition between said upper and lower anchor structures and extending through said upstanding passage, said floating roof having a normal rotary centered position with respect to said side wall wherein said upstanding passage is disposed in a position of vertical alignment with said upper and lower anchor structures and said cable occupies substantially a vertical position, and a cable guiding device carried by said floating roof adjacent to said upstanding passage and engaging the intermediate section of said cable and accommodating ready feeding of said cable therethrough and through said upstanding passage incident to vertical movement in either direction of said floating roof with respect to said side wall, said cable guiding device also being operative to accommodate radial movement in either direction of said floating roof with respect to the intermediate section of said cable without corresponding deflection thereof from its substantially vertical position and to accommodate circumferential movement in either direction of said floating roof with respect to the intermediate section of said cable with corresponding deflection thereof from its substantially vertical position, whereby said thus deflected cable exerts a force through said cable guiding device upon said floating roof that is productive of a torque thereupon tending to restore said floating roof back into its normal rotary centered position.

3,158,281
SEAL FOR VACUUM VESSEL HAVING REMOVABLE HEAD
John H. Adams and Thomas S. James, Pittsburgh, Pa., assignors to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,273
8 Claims. (Cl. 220—46)



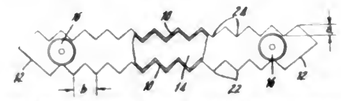
1. In a large diameter vacuum vessel having a shell and a removable head, means for sealing the joint between head and shell, comprising: separate reinforcing flanges welded to the edges of shell and head adjacent the joint, interrupted spacing means located between the reinforcing flanges for separating those flanges in their assembled position, a pair of annular sealing flanges, means sealingly supporting one of the sealing flanges from the shell in outwardly spaced relation to the joint, separate means sealingly supporting the other sealing flange from the head in outwardly spaced relation to the joint, the two sealing flanges having opposing mating surfaces, the supporting means for at least one of the sealing flanges being flexible in response to stressees normal to the plane of the mating surface of that flange, and releasable clamping means for clamping the mating surfaces of the sealing flanges into sealing conformity.

3,158,282
SHIPPING CONTAINER
Jan Floris Ingen Housz, Heemstede, Netherlands, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,824
Claims priority, application Great Britain Jan. 10, 1961
6 Claims. (Cl. 220—63)



4. A shipping container comprising, in combination, a rigid hollow shell, said shell having an opening formed therein, means associated with said shell defining a rigid annular collar surrounding said opening, said collar having a circumferentially disposed bead formed thereon, a non-metallic liner received within said shell, said liner having a neck projecting outwardly through said opening and through said collar, said neck terminating in an outwardly and downwardly extending skirt portion encompassing said bead, a flexible non-metallic cap having a circumferentially disposed downwardly and inwardly projecting lip, said lip being snapped over said bead, the top central portion of said cap having a recess formed therein, a rigid cup-shaped support mounted in said recess, a thin metal seal cap, said seal cap having an annular skirt encompassing said lip and being deformed inwardly beneath said lip so that said lip and the skirt portion of said liner neck are crimped between said collar and the skirt of said seal cap, and means on said thin metal seal cap for destroying said cap while leaving said flexible cap intact.

3,158,283
CORRUGATED CONTAINER FOR THE LOW TEMPERATURE PRESERVATION OF BIOLOGICAL SUBSTANCES
Arthur P. Rinfret, Buffalo, and Clement W. Cowley, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 24, 1961, Ser. No. 105,190
10 Claims. (Cl. 220—64)



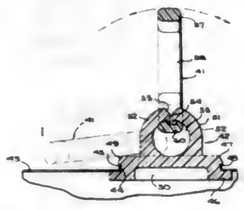
1. A storage container for the low temperature freeze preservation of biological substances by indirect heat exchange with a heat transfer fluid which comprises at least two corrugated walls arranged and positioned in parallel relationship and being joined at their opposing ends by other walls of sufficient width so as to form an enclosed space between said corrugated walls for storing said biological substances, the peaks of the corrugations of one wall being aligned with the troughs of the corrugations of the opposing parallel wall; sterile opening means com-

municating with said enclosed space for filling and emptying said container; said container walls being constructed of a material having a K/L value greater than 2500 wherein K is the thermal conductivity of said material in B.t.u./(hr.) (ft.) (° F.) and L is the material thickness in feet.

3,158,284
PLASTIC HANDLE AND CLEAT ATTACHMENT FOR CONTAINERS

John Henchert, River Forest, and Henry E. Frankenberg, Berwyn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 30, 1961, Ser. No. 99,567
27 Claims. (Cl. 220—91)

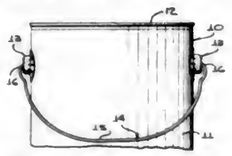


27. A handle construction for containers of the type having an apertured wall, said handle construction comprising a cleat and a handle, said cleat including a base portion, an elongated sleeve of resilient material connected to said base portion, said sleeve having a longitudinally extending narrow entrance opening remote from said base portion, said entrance opening having a flared entrance portion to facilitate spreading apart of portions of said sleeve on opposite sides of said entrance opening and permit the edgewise movement of said bar therethrough, and said handle including a continuous loop portion of which a flattened bar forms a lowermost part, said bar extending entirely through said sleeve and being freely rotatable therein except when said handle is in an upright loaded position, said sleeve portions having depending ears adjacent said entrance opening and said flattened bar having an upper recess receiving said ears to prevent spreading apart of said sleeve portions under load.

3,158,285
WELDED BAIL EAR WITH SEGMENTED FLANGE

Alan F. Curtiss, La Grange, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 31, 1962, Ser. No. 234,416
2 Claims. (Cl. 220—91)

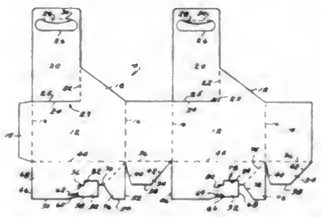


2. The combination of a container having a body including an external wall surface, and a plurality of bail ears having recessed interiors, each of said bail ears including a peripheral segmented flange secured to the external wall surface of the body, an annular shoulder forming an integral portion of said segmented flange, said shoulder being displaced from said external wall surface, and a plurality of circumferentially spaced radial notches in said segmented flange terminating within said shoulder thereby forming a plurality of weep holes which prevent water from being trapped in the recessed interior of each of the bail ears.

3,158,286
CARRIER CARTON

Floyd L. Phillips, Jr., Lynchburg, Va., assignor to Old Dominion Box Company, Inc., Lynchburg, Va., a corporation of Virginia

Filed May 16, 1962, Ser. No. 195,140
4 Claims. (Cl. 220—115)

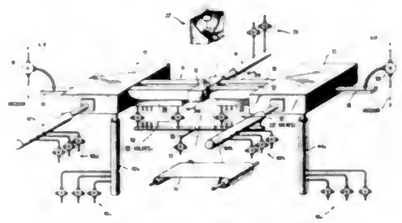


1. In a carton-forming blank which comprises a pair of opposite-side-forming portions each having a bottom-forming portion integral therewith along a longitudinal fold line, said bottom-forming portions being adapted to interlock with each other to form a carton bottom which connects said opposite side portions, the improved construction which provides a merchandise-separating structure projecting upwardly from said bottom, said improved construction including a tab integral with each bottom-forming portion only along a substantially straight fold line which is transverse to said bottom forming portion and to said side forming portion and which extends from a point near the outer edge of said bottom-forming portion inwardly toward said side-forming portion, said blank being cut from said point to the outer edge of said bottom-forming portion, each of said tabs having generally the shape of a rectangle from a corner of which a smaller rectangle has been cut away whereby said tab has an outer straight edge defining a part of the outer edge of said bottom-forming portion, an irregular inner edge facing inwardly toward said side-forming piece, a straight end which is coextensive with said fold line and said cut and a free end opposite said fold line and cut, said free end being of greater width than the sum of said fold line and said cut.

3,158,287
DOCUMENT RETRIEVAL SYSTEM

Richard K. Wilmer, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 9, 1963, Ser. No. 271,816
7 Claims. (Cl. 221—13)



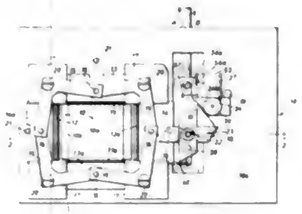
1. A record retrieval system comprising:
a utilization station;
a first and a second bin, each having a plurality of record receiving positions and both bins having a position corresponding to each record;
means for indicating in which bin a requested record is stored;

means for indicating in which record receiving position of the indicated bin a requested record is stored;
means operable for moving a selected record from a bin to said utilization station;
positioning means operable in response to the indications in said bin indicating means and said record receiving position indicating means for positioning the indicated bin relative to said record moving means;
means operable when said bin is properly positioned for actuating said record moving means;
means operable after said actuating means for causing information as to the next requested record to be applied to said bin indicating means;
said positoning means being operable in response to the new indication in said bin indicating means and the indication in said position indicating means for causing the bin not indicated by said bin indicating means to be positioned to receive the first requested record;
and means for actuating said record moving means to move said first requested record to said last mentioned bin.

3,158,288
COIN OPERABLE RELEASE MECHANISM

Alois Muller, Toronto, Ontario, Canada, assignor, by mesne assignments, to Opal Manufacturing Co. Limited, Toronto, Ontario, Canada

Filed June 27, 1960, Ser. No. 39,164
1 Claim. (Cl. 221—67)

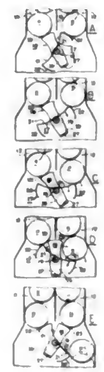


Release mechanism for cross-stacked identical rectangular flat articles of greater length than width and comprising in combination: a base plate having a rectangular opening therein adapted freely to accommodate a stack of said articles therethrough; four article support shelves hingably connected to said base plate within said opening along respective sides thereof said shelves being adapted normally to depend freely within said opening for free passage of said stacked articles therethrough; a pair of shelf actuating plates for each support shelf; means slidably guiding each said plate in a horizontal plane into and out of a position of support underlying its said support shelf and in a direction normal to the axis of the hinge; vertically pivoted linkage means operatively relating said actuating plates and effecting motion of one disposed pair of actuating plates to a supporting position for the support shelves associated therewith and effecting corresponding outward motion of the remaining shelf actuating plates effecting withdrawal of the latter from support of the associated shelves; a reversible two stroke actuating plate, an operating member connected to said actuating plate for manual operation of said pairs of actuating plates; transmission means interconnecting said linkage means and said operating member and moving one pair of said actuating plates into a shelf supporting position upon one actuation of said operating member and effecting withdrawal of the other pair of said slidable actuating plates from said position.

3,158,289
APPARATUS FOR DISPENSING ARTICLES ALTERNATELY FROM TWO ADJACENT COLUMNS

Le Roy C. Van Brunt, Palmer, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 14, 1958, Ser. No. 708,778
11 Claims. (Cl. 221—116)



1. In a machine for dispensing elongated articles of generally circular cross section, a magazine for storing at least two separate columns of stacked articles, said magazine being open at its lower end to permit articles to be delivered therefrom, a releasing member disposed adjacent the lower end of said magazine and having a pair of article engaging surfaces disposed respectively beneath said article columns, said releasing member being supported for swinging movement about a horizontal axis for alternately raising and lowering said article engaging surfaces to deliver individual articles alternately from said columns, a holding member disposed adjacent the lower end of said magazine, said holding member having an article engaging surface and being supported for swinging movement about a horizontal axis whereby said surface can be positioned beneath either of said columns, said holding member being movable with respect to said releasing member, means for oscillating said releasing member, and means for driving said holding member in predetermined relation to movements of said releasing member, said last named drive means delaying removal of the said surface of said holding member from beneath one of said article columns until said releasing member is moved to a position in which the article engaging surface thereof which is beneath said one article column is raised to substantially the same elevation as said holding member surface whereby the weight of the articles in said one column is transferred gently to said releasing member from said holding member.

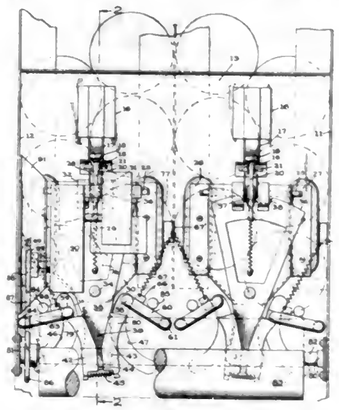
3,158,290
RETARDER FOR DISPENSING MECHANISM FOR ARTICLES IN A STACK

David C. Hafley, Harry R. Payne, and William G. Raoul, Chattanooga, Tenn., assignors, by mesne assignments, to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 21, 1962, Ser. No. 239,192
5 Claims. (Cl. 221—290)

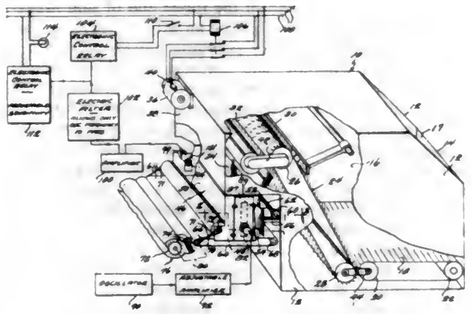
1. In a vending mechanism of the type in which an article is dispensed from the bottom of a stack of articles by an article support which when released descends with said article by gravity to an article dispensing position, means for retarding the rate of descent of said support and article comprising a retarder normally disposed in

standby position for engagement by said support when released, and a substantially constant speed energy conversion means actuated simultaneously with release of said



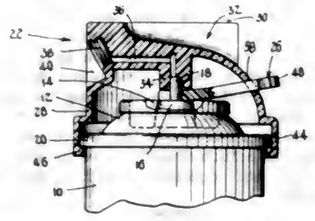
support for providing descending movement of said retarder in the path of movement of said descending support to said dispensing position.

3,158,291
TEXTILE FIBER WEB FORMER AND ELECTRICAL MEANS FOR MAINTAINING CONSTANT THICKNESS THEREOF
Kenneth G. Lytton and Cecil S. Wise, Gastonia, N.C., assignors to Fiber Controls Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Sept. 13, 1961, Ser. No. 137,910
20 Claims. (Cl. 222—39)



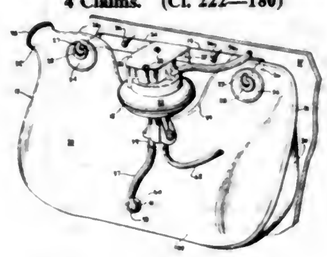
1. Fiber feeding apparatus comprising: a tubular chute generally rectangular in cross-section for forming and holding a column of fibers; means for withdrawing fibers from the lower end of said chute at a uniform rate in the form of an endless substantially uniform web; means for feeding fibers in an open condition into said chute; means for creating and directing from one side to an opposite side of said chute, through and at a predetermined level in a column of fibers therein, a beam of wave energy of constant intensity and of a frequency such that the attenuation of said beam at said chute opposite side is proportional to the density, throughout a substantial range, of that portion of the column of fibers which intercepts said beam; and means responsive to variations in the intensity of said beam at said chute opposite side for modifying the rate of feed of said fiber feeding means to maintain a substantially constant density at said level to thereby maintain a substantially constant weight per increment of length of said web.

3,158,292
ACTUATOR FOR AEROSOL DISPENSERS
William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Dec. 27, 1962, Ser. No. 247,669
8 Claims. (Cl. 222—153)



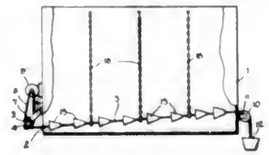
7. A cap-actuator for an aerosol dispenser, comprising in combination:
(*a*) an inverted shell,
(*b*) a fitting carried in the shell to engage the valve stem of an aerosol container for depressing the latter when the shell is depressed,
(*c*) discharge channel means in the shell, for directing aerosol substance being discharged from the valve stem and said fitting,
(*d*) manually operable lock means carried by the shell for preventing depressing movement of the same and of the valve stem, said means being removable from the shell to unlock the latter,
(*e*) said lock means comprising a member adapted to engage a portion of the container to prevent the said depressing movement,
(*f*) a pressurized aerosol container and hollow depressible valve stem projecting from the top of the container,
(*g*) a shoulder carried by the container, surrounding the valve stem,
(*h*) said lock means being interposed between the valve stem fitting and the shoulder surrounding the valve stem,
(*i*) said lock member having a forked end engaged with the said shoulder, valve stem, and valve stem fitting.

3,158,293
WINDSHIELD WASHER
John R. Oishei, Buffalo, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Feb. 17, 1961, Ser. No. 89,974
4 Claims. (Cl. 222—180)



1. A windshield washer combination comprising a pump having a combined closure and bracket, an extended portion forming a part of said closure, means adapted to be secured to said extended portion for securing said pump on the wall of a vehicle, a reservoir of the flexible knapsack type having an upper portion and a lower portion, means on said extended portion adapted to be secured to said upper portion of said reservoir to mount said reservoir, said washer pump and said reservoir both extending downwardly from said combined closure and bracket, a portion of said reservoir being positioned between said wall and said pump, and conduit means fastened between said pump and said lower portion of said reservoir for conveying washer solvent to said pump, said reservoir also lying between said wall of said vehicle and said conduit means whereby the positioning of said reservoir between said wall of said vehicle and said pump and the attachment between said pump and said reservoir through said conduit means assists in maintaining said reservoir stabilized in mounted position on said bracket.

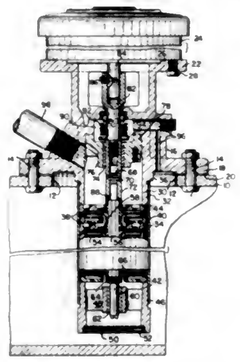
3,158,294
MATERIAL CONVEYING APPARATUS FOR BINS
James C. Handlee, Jacksonville, Fla. (Box 158, Star Rte., Fort George, Fla.)
Filed Feb. 5, 1959, Ser. No. 791,501
16 Claims. (Cl. 222—227)



14. A material conveying apparatus for use in a material receiving bin having an elongated substantially horizontal bottom and a discharge opening at the bottom of the bin, a plurality of substantially horizontally disposed material removing flights within the bin, means for supporting said flights in juxtaposition to the bottom of said bin, means for reciprocating the flights to carry material in the bin toward the discharge opening and to penetrate the material in the bin preparatory to reverse discharge movement toward the discharge opening, and material agitating means within the bin swingingly secured between the supporting means and the bin, said material agitating means being actuated by the flight reciprocating means.

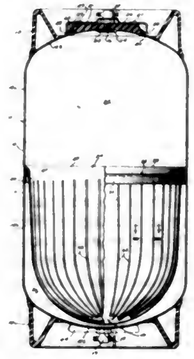
3,158,295
SUBMERSIBLE PUMP
James W. McConaghy, Ashland, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Mar. 14, 1962, Ser. No. 179,549
2 Claims. (Cl. 222—333)

1. A pump especially adapted for mounting in a wall of a container comprising; a housing including flange means for mounting the housing on the wall of a container, a cylindrical projection on the container side of said housing, a pump sleeve threaded on said projection and extending into the container, a plurality of impellers, diffusers and spacers in stacked relation in said sleeve, a suction head threaded in the outer end of the sleeve, said diffusers and spacers alternating in stacked aligned relationship within said sleeve and being clamped therein between said cylindrical projection and said suction head, a pump drive shaft extending through said plurality of impellers, said impellers having hubs drivingly connected to said pump drive shaft and abutting one another so that said impellers and pump drive shaft form a solid unit, the side of the housing opposite said projection having a flange to receive a face mounted motor, said housing having a cavity communicating through said projection with the discharge side of said impellers, a member in said cavity dividing it into a lower and upper chamber, said lower chamber receiving the discharge from said impellers, said member having an opening therein, a sleeve bearing fixed in the opening in said member, a drive sleeve supportingly fixed to said pump drive shaft and rotatably mounted in said sleeve bearing, a connector



supportingly fixed at one end to said drive sleeve and having a socket formed in the other end thereof, and means for supportingly fixing the output shaft of said motor mounted on the said flange of said projection in said socket, said housing having a passage therein connecting said upper chamber with the surface of said housing adjacent said cylindrical projection.

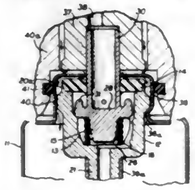
3,158,296
FLUID STORAGE AND DISCHARGE APPARATUS
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Mar. 8, 1962, Ser. No. 178,501
9 Claims. (Cl. 222—386.5)



1. Fluid discharge apparatus for discharging a fluid comprising:
(*a*) a rigid tank having a fluid port at one end to receive and to discharge the fluid, and having a pressurizing port at the opposite end, said tank ends each having an internal contour; and
(*b*) a molded reversible flexible diaphragm secured at its periphery to said tank along the length thereof, and having a central portion engageable at one side thereof with the internal contour of one of said tank ends, said one diaphragm side including a series of elongated ribs directly engageable with the internal

contour of said one tank end and extending generally axially of said tank and converging near the port in said one tank end, and each operative to space the adjacent non-ribbed portion of the diaphragm from the interior surface of the tank to vent to such port any entrapped pocket which may tend to form.

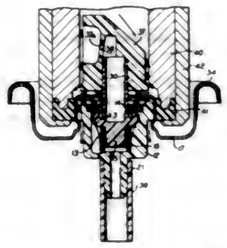
3,158,297
AEROSOL VALVE WHICH ALSO FUNCTIONS AS A PRESSURE FILLING MEANS
Royal T. Ferry, Jr., Southport, Conn., and Richard A. Mellgren, Freeport, N.Y., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 17, 1961, Ser. No. 145,614
5 Claims. (Cl. 222—394)



1. A completely assembled aerosol valve unit for closing the open top of a container which may thereupon be pressurized or discharged through said unit which comprises a container closure cap member supporting a tubular housing having therein a chamber formed with axial portions of different diameters, an elastomeric sealing washer seating within the chamber portion of largest diameter and providing a fluid-tight seal with the inner wall of said chamber portion, a valve member having a tubular stem extending upwardly through and slidable in the hole in the washer with a fluid-tight fit and a spring normally biasing the valve into closing position against said washer; said cap member having an inwardly directed top flange overlying the washer and terminating in a central opening larger than the valve stem exposing the central portion of the washer and an axial tubular portion surrounding said housing and said washer and providing with the peripheries of said housing and said washer communicating fluid passages, and means for normally holding resiliently the sealing washer and the flange overlying the washer in fluid-tight engagement and thereby sealing off fluid communication between the central opening in the top flange and the aforementioned communicating fluid passages, whereby when fluid under pressure is exerted against the exposed central portion of the washer externally of the valve stem and valve chamber through the central opening in the top of the flange, the washer will be displaced by said pressure completely out of sealing engagement with the inwardly extending flange and provide a passage for such fluid from said central opening in the flange to the communicating passages between the axial tubular part of the cap member and the peripheries of said washer and said tubular housing.

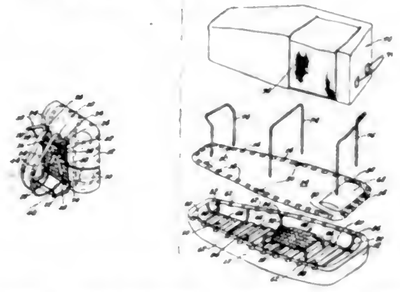
3,158,298
AEROSOL VALVE—FAST PRESSURE FILL TYPE
Joseph Briechle, New Canaan, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 20, 1962, Ser. No. 225,087
6 Claims. (Cl. 222—394)

1. A completely assembled aerosol valve unit, for closing the open top of a container which may be thereupon pressurized or discharged through said unit, which comprises a container closure cap member supporting a tubular housing having therein a valve chamber of different diameters, an elastomeric sealing washer seating within the chamber portion of largest diameter and providing a fluid-tight seal with the inner wall of said chamber portion, a valve member in said chamber having a tubular stem extending upwardly through and slidable in the hole in the washer with a fluid-tight fit and a spring normally biasing the valve into closing position against said washer, said cap member having an inwardly directed top flange with a central opening larger than the valve stem overlying and exposing the central portion of the washer and an axial tubular portion surrounding said housing and said washer and providing with the outer peripheries of said housing and said washer communicating fluid passages, the improvements residing in that the chamber portion of largest diameter has an axial dimension greater than the axial thickness of the washer, that the washer is



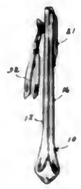
slidably mounted in said chamber portion in fluid-tight engagement with both the wall of said chamber portion and the tubular valve stem and is normally held in unclamped fluid-tight engagement with the underside of the top flange of the cap member by the spring biased valve member and seals off communication between said central opening in the top flange of the cap member and the fluid passages, whereby when fluid under pressure is applied to the exposed central portion of the washer externally of the valve stem through the central opening in the top flange of the cap member, the washer will bodily move inwardly out of sealing engagement with the inwardly extending top flange and provide free access for such applied fluid from said central opening in the flange to the communicating passages while maintaining the fluid-tight sealing engagement between the tubular housing and the tubular valve stem.

3,158,299
COMBINATION CAMPING OUTFIT
Donald G. Weir, 1682 25th St., Harbor City, Calif., and John Le Roy Luke, 1457 W. 228th St., Torrance, Calif.
Filed Oct. 19, 1962, Ser. No. 231,681
4 Claims. (Cl. 224—25)



1. A camping outfit including: a foldable rack adapted to be opened out to define a structure having sides and a bottom and an open top; a strip of waterproof flexible material adapted to encompass the bottom and sides of said rack to form the hull of a boat; a plurality of clips secured to said strip at spaced distances around the periphery thereof for releasably attaching said strip to said rack; means including a carrying bracket assembly having a flexible web-like fabric central portion and adapted to be removably mounted on said strip of flexible material for enabling the outfit to be carried on a person's back, said carrying bracket assembly including rigid tubular side members configured to provide legs for the outfit when the outfit is removed from the person's back; and means mounted on the bottom of said rack for receiving said legs of said carrying bracket assembly to enable the carrying bracket assembly to be mounted in said hull so as to constitute a seat for said boat.

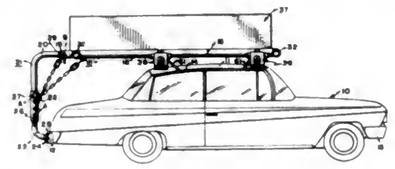
3,158,300
BELT POUCH
Kenneth C. Withee, 3012 E. Euclid, Des Moines, Iowa
Filed Apr. 2, 1962, Ser. No. 184,145
2 Claims. (Cl. 224—6)



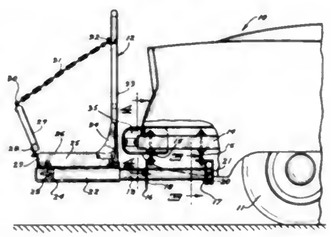
1. The method of producing a pouch from a single sheet of material, comprising,
the forming of an elongated rectangular sheet having blunted corners and an integral flap portion extending centrally from one end thereof,
the forming of an opening in said sheet,
the folding of the flap inwardly onto the sheet,
securing the free edge of said flap to said sheet by sewing,
the downward folding of said sheet at its longitudinal central area,
the folding of said sheet upwardly from each side of downward fold line; said two upper fold lines being spaced from the center fold line,
said last folding creating a back portion and a front portion, and said blunted corners being in overlapping relationship to provide said pouch with blunted corners at its top,
the securing of the adjacent side edges of said front portion and said back portion by sewing,
the turning of the unit inside out,
the folding of the top open edge area of said front portion inwardly, and
the securing of the upper edges of the front portion and the back portion together by sewing.

3,158,301
SUPPORT STRUCTURE FOR VEHICLES
Edward B. Hedgepeth, 2819 St. Mary's Way, Salt Lake City, Utah
Filed Aug. 2, 1962, Ser. No. 214,397
5 Claims. (Cl. 224—42.07)

1. A support structure for a vehicle including, in combination, a horizontal frame to be positioned above the top of a vehicle carrying the same, support means engaging the rear of said frame and means to engage the rear bumper of said vehicle, for support of said support means, and at least one, elongate, flexible saddle means disposed transversely with respect to and spaced underneath said frame and so constructed and arranged as to be adapted to conform to and uniformly receive the transverse contour of the top of said vehicle at a selected region thereof, and means for constraining said elongate saddle means in spaced relationship with respect to said frame, to enable said saddle means to conform to said vehicle top transverse contour, under the load of said frame, and wherein said constraining means includes a cross-bar disposed underneath and extending substantially beyond the outer edges of said frame and supporting said frame, means respectively affixed to the extremities of said cross-bar and to the extremities of said saddle means for securing the same respectively together, said constraining means further including mutually spaced, depending leg means affixed to and depending from said cross-bar and thrustingly and slidably engaging said saddle means at medial areas thereof under the load of said frame, spacing said saddle means below said cross-bar and delineating that portion of said saddle means which encompasses the transverse periphery of said vehicle which is received thereby.

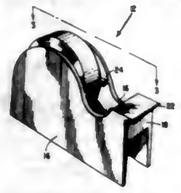


3,158,302
UTILITY CARRIER
James O. Dickerson, Butte, Mont., assignor to Handy Hauler, Inc., Butte, Mont., a corporation of Montana
Filed Aug. 9, 1961, Ser. No. 130,286
1 Claim. (Cl. 224—42.43)



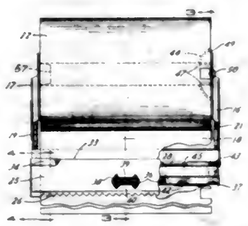
A readily removable luggage carrier for automobiles comprising a plurality of longitudinally extending spaced apart supporting members, a plurality of pairs of longitudinally spaced apart mounting brackets secured to the frame of an automobile and having axially aligned openings therethrough to respectively receive the supporting members when in one rotative position but positively locking the same against longitudinal movement when in another rotative position, a carrier mounted on said supporting members, releasable latching means for positively locking said supporting members against rotation when in mounted position, each of said supporting members having a radially outwardly extending pin fixed thereto, and each of said aligned brackets having an access slot formed therein of a size to receive said locking pin when the same is in registration therewith to permit the same to be inserted or withdrawn therethrough when in one rotative position with said brackets positively locking said supporting members when said pin is rotated out of registered alignment with said access opening.

3,158,303
TAPE DISPENSER
Albert C. Petitto, Hudson, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,557
11 Claims. (Cl. 225—66)



1. A device for dispensing material from a roll; comprising a body portion including at least two spaced walls; bridge means spacing said walls; deformable bearing means removably mounted between said walls; supporting means on said walls adapted to cooperate with said bearing means to releasably lock said bearing means between said spaced walls.

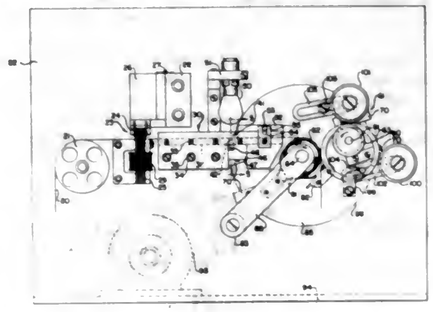
3,158,304
WEB DISPENSER
Philip A. Wooster, 102 I St., San Rafael, Calif.
Filed July 27, 1961, Ser. No. 128,930
2 Claims. (Cl. 225—74)



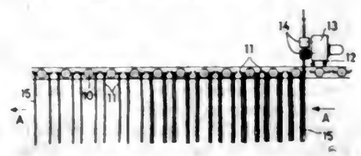
1. In apparatus for dispensing webbing from a wound roll of the same, a pair of mounting means for rotatably supporting such a roll, an upright wall disposed between said mounting means, a tear off bar extending the length of the roll and pivoted with respect to said upright wall, said bar being disposed to overlie a length of webbing extending from the roll and passing between said upright wall and the bar, a tear off edge extending along one edge of the bar, a braking surface adjacent the opposite edge of the bar, said braking surface of the bar being positioned in proximity with said upright wall whereby upon pivotal movement of the bar by a paper tear off operation said braking surface is urged toward the upright wall, such that a length of webbing passing between the upright wall and the bar is clamped therebetween and braked against further movement.

3,158,305
RECORD MEDIA HANDLING APPARATUS
Cebern B. Trimble, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 14, 1960, Ser. No. 14,888
14 Claims. (Cl. 226—34)

1. In a record media handling apparatus for controlling the movement of record media, the combination comprising a first continuously driven rotating rigid cylindrical element having a cylindrical surface normally engaging one side of the record media; a second continuously driven rotating rigid cylindrical element having a cylindrical surface normally engaging the other side of the record media, the two cylindrical elements cooperating to apply a predetermined urging force to the record media which is insufficient to drive said media; control means positioned within the cylindrical surface of the first continuously driven rotating rigid cylindrical element, rotatable therewith, and effective when energized to cause movement of the cylindrical surface of the second rigid cylindrical element toward the cylindrical surface of the first rigid cylindrical element to squeeze the record media between the two cylindrical surfaces, thereby frictionally imparting to the record media the combined driving force of the two driving means to drive the record media; and an operating circuit capable of operating said control means to effect rapid starting of record media movement.



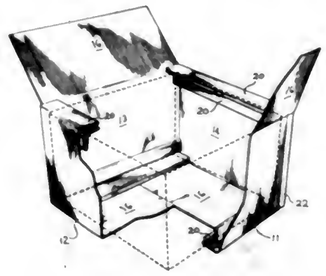
3,158,306
APPARATUS FOR TREATING BANDLIKE MATERIALS
Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Fleissner G.m.b.H., Frankfurt am Main, Germany, a company of Germany
Filed Oct. 20, 1961, Ser. No. 146,646
Claims priority, application Germany, Nov. 2, 1960, F 32,461
8 Claims. (Cl. 226—105)



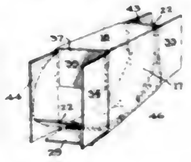
1. Apparatus for treating band-like material comprising a plurality of parallel rods, a plurality of horizontal pins extending in a row from each of said rods in perpendicular relation thereto, feed means disposed in fixed vertical attitude for feeding said material downwardly towards said pins, drive means coupled to the feed means for moving the latter across said pins so that the feed means deposits the materials vertically downwardly onto the pins sequentially in loops, and means for advancing the rods in a direction perpendicular to the rods such that the feed means can deposit material onto the pins of successive rods whereby a multitude of loops can be formed aligned in a plurality of parallel rows.

3,158,307
SHIPPING CONTAINER
Louis Mayer, Elmhurst, N.Y., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,344
1 Claim. (Cl. 229—14)

A shipping container for packaging a parallelepiped-shaped article comprising four side wall panels foldably connected together into a tubular configuration, said side wall panels surrounding but spaced from the sides of said article, top closure flaps foldably connected to the upper edges of said side wall panels and arranged to close the upper end of said tubular configuration, bottom closure flaps foldably connected to the lower edges of said tubular configuration, said bottom closure flaps arranged to close the lower end of said tubular configuration, said closure flaps being spaced from the ends of said article to be packaged, a pair of flaps foldably attached to one of the opposed pair of said side wall panels, transverse, parallel score lines on each of said pair of flaps forming it into at least four foldably connected subpanels so that, when folded, plural subpanels are disposed between their said side wall panels and the article to be packaged and other plural subpanels are disposed between said top closure flaps and said article, a second pair of flaps foldably attached to the other opposed pair of said side wall panels, transverse, parallel score lines on each of said pair of flaps forming it into at least four foldably connected subpanels so that, when folded, plural subpanels are disposed between their said side wall panel and said article and other subpanels are disposed between said bottom closure flaps and said article.

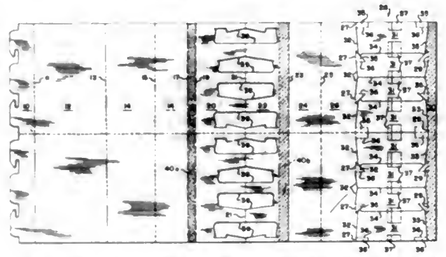


3,158,308
BOX WITH CRADLE SUPPORT
Glenn E. Struble, Hamilton, Ohio, assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,147
7 Claims. (Cl. 229—14)



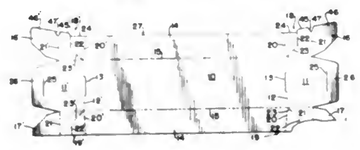
1. A blank for producing cartons with additional support for the objects packaged therein comprising a first, second, third and fourth side wall panel, an intermediate connecting panel connected by one of its edges to said fourth side wall panel, a supporting panel connected to said intermediate connecting panel on its opposite edge, adhesive means connecting said intermediate connecting panel with said first side wall panel, and a pair of end flaps for each of said side wall panels with one each of said flaps located at opposite ends of each of said side panels, said supporting panel having an end to end distance greater than the width of each of said side panels.

3,158,309
EGG CARTON
David Levkoff, 36 Barstow Road, Great Neck, N.Y.
Filed Nov. 17, 1961, Ser. No. 153,008
2 Claims. (Cl. 229—28)



1. A single-piece carton composed essentially in serially-arranged order, a tuck flap, a cover panel, a first side wall, a first imperforated bottom wall panel, a bottom rail panel folded downwardly, a thin, longitudinal partition panel comprising a first central portion folded upwardly in adhesive engagement with the bottom rail and a second longitudinal central portion folded downwardly in adhesive engagement with the first central portion, a second imperforated bottom wall panel, a second side wall, a transverse partition panel positioned above the bottom wall panels, and a glue flap adhesively secured to the inner surface of the first side wall, said transverse partition panel being formed with a plurality of hinged transverse partition sections adapted to be folded downwardly into the interior of the carton to form transverse vertical partitions therein, each of said transverse vertical partition having a pair of gates located along their upper and lower edges adapted to engage the longitudinal partition panel and hold said longitudinal and transverse partitions in a stationary vertical position, the upper portion of the longitudinal partition panel being formed with a plurality of cut-out openings each of which is adapted to receive the central portion of one of said transverse vertical partitions.

3,158,310
CARTON
Henry S. Levkoff, Great Neck, N.Y. (% Standard Folding Trays Corp., 85th St. and 24th Ave., Jackson Heights 69, N.Y.)
Filed Aug. 8, 1962, Ser. No. 215,571
1 Claim. (Cl. 229—31)



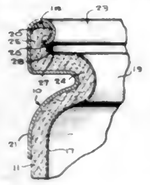
In a blank for a tray-type carton comprising a bottom panel, a side panel on each side thereof, end panels projecting from the opposite ends of the bottom panel and connected thereto by a hinge score, and end panel portions each connected to the respective end panels and to said side panels by a gusset fold portion, said gusset fold portions and said end panels being joined by hinge scores to said side panels and said bottom panel respectively, the improvement which comprises providing each gusset fold portion and each end panel portion on one of the side panels with a laterally projecting lock tab for intermeshing the adjacent gusset fold portions and end panel portions with the opposite side gusset fold portions and end panel portions when the side panels and their connected gusset fold portions

and end panel portions are folded against the bottom panel, and said end panel portion lock tab being separated from said gusset fold portion lock tab by a small distance and extending outwardly a greater distance from said end panel portion than the gusset fold panel portion lock tab extends from said gusset fold portion.

3,158,311
FIBER CONTAINER WITH PLASTIC LINER SEALED IN THE CHIME THEREOF

Donald S. Thompson, Pound Ridge, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 20, 1961, Ser. No. 146,467
3 Claims. (Cl. 229—14)

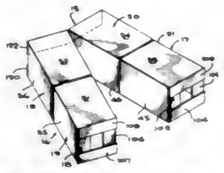


1. The combination of a fiber container, a liner and a chime; said fiber container including a tubular container body having an upper end portion terminating in a peripheral end surface, said liner being received in said container body, said liner having a liner body and an upper outwardly directed peripheral supporting flange, said supporting flange being relatively thicker than said liner body, said supporting flange being seated wholly upon said peripheral end surface whereby said liner is supported therefrom by said supporting chime, said chime overlying and gripping said supporting flange against the peripheral end surface of said container body to positively clampingly secure and retain said supporting flange between said peripheral end surface and said chime, and said container body being provided with an internal shoulder at the upper end portion to which the chime and liner body are adapted to conform.

3,158,312
FOLDED CARTON HAVING SEPARABLE UNITS

Daniel Simkins, Wheeling, W. Va., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 5, 1961, Ser. No. 157,094
9 Claims. (Cl. 229—51)

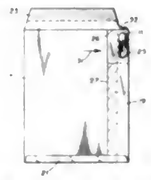


1. A one-piece folded carton comprising a pair of tubular units disposed in side-by-side relation, end flaps at opposite ends of said tubular units closing said tubular units, said end flaps including at least one wide end flap at each end of said carton extending across the ends of said tubular units with said wide end flaps forming the sole connection between said tubular units, each of said tubular units having an intermediate partition structure dividing each tubular unit into a plurality of sections, each tubular unit being of a generally rectangular cross-section and having four walls, and said intermediate partition structure being formed by pairs of intermediate portions of said walls disposed generally normal to the plane of respective ones of said walls, said intermediate portions of first two opposite pairs thereof being integrally connected, and said intermediate portions of second two opposite pairs thereof being separated and spaced apart with said intermediate portions of said first two pairs disposed therebetween and secured thereto.

3,158,313
DUAL COMPARTMENT MAILING PIECE

Samuel B. Hubbard, 3025 Taylor St., Dallas, Tex.

Filed Nov. 1, 1962, Ser. No. 234,636
7 Claims. (Cl. 229—71)

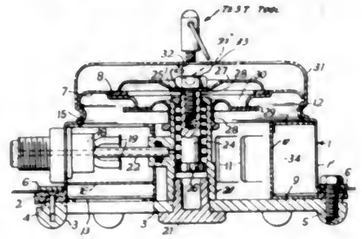


3. An envelope for two mailing pieces one of which is an address insert which comprises a main pocket having an opening at the top with a closure flap therefor with one side panel formed from oppositely folded side flaps one of which overlaps the other and extends a distance from the edge of said envelope substantially equal to one dimension of said insert and which flap adheres to the other flap from the bottom of said pocket to a point spaced from the top a distance substantially equal to the other dimension of said insert thereby to form a secondary pocket at said top, said one of said flaps being provided with a window therein in the region between said point and said top and below the area of said one side panel covered by said closure flap.

3,158,314
INFLATING DEVICES FOR INFLATABLE OBJECTS

David H. Young, Eastcote, Middlesex, John O. Marsh, Chalfont St. Peter, and Derrick M. Pohler, Harrow, Middlesex, England, assignors to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey

Filed Feb. 21, 1962, Ser. No. 174,900
6 Claims. (Cl. 230—95)

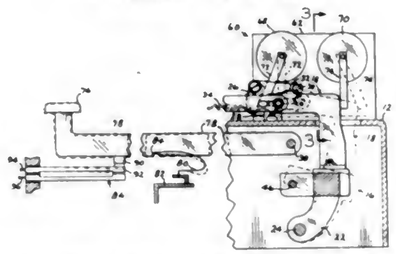


1. An aspirator device for installation in inflation bags such as inflatable dinghies and life rafts, comprising a rounded outer body, a rounded inner body eccentrically arranged within said outer body to define an annular space between said bodies, a first member at one end of said bodies and a second member at the other end of said bodies enclosing said annular space, an air inlet opening in said first member, an air outlet opening in said second member substantially adjacent said inlet opening, a baffle positioned in said annular space between said inlet and said outlet for directing air flow from said inlet into a curved path extending obliquely to the length of the bodies around said annular space to said outlet, gas nozzle means placed in the path between said inner and outer bodies and arranged to direct a stream of gas along said curved path, and valve means at said air inlet means for shutting off the passage of air through the device.

3,158,315
TAPE PERFORATOR ELECTRIC SHIFT AND UNSHIFT

O. V. Hollis, Oklahoma City, Okla.
(3 Court, Wapakoneta, Ohio)

Filed May 2, 1960, Ser. No. 26,187
5 Claims. (Cl. 234—96)



1. In a control form perforating apparatus of the class described having a frame, a set of character selecting keys, shift and unshift keys, key levers and counting selector bars, a shift bail connected to one end portion of the counting selector bars and a shift bail extension, an improvement which comprises: an upstanding bracket mounted on said frame adjacent said shift bail extension; a pair of rotary solenoids mounted in horizontal spaced-apart relation on said bracket; an elongated bar connected in depending relation to the shaft of each said solenoid, the depending end portion of each said bar contacting opposing edge surfaces of said shift bail extension; an electric switch mounted on said frame below said shift and said unshift keys, respectively; and wiring connecting said switches and said solenoids with a source of electrical energy.

3,158,316
WRITE-IN VOTING CARD FOR VOTING MACHINE SYSTEMS

Ruel R. Clark, Salt Lake City, Utah, assignor to Larrie D. White, Salt Lake City, Utah

Filed Aug. 1, 1963, Ser. No. 299,221
7 Claims. (Cl. 235—50)

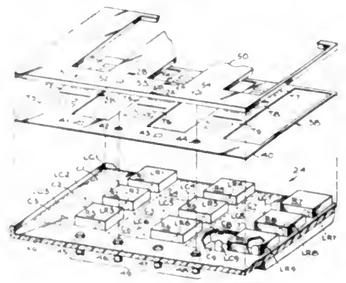


1. A write-in voting card for automatic voting machine systems, said voting card including, in combination, a base card provided with a multiplicity of write-in candidate writing spaces and a plurality of perforations in respective registry therewith, and a multiplicity of covering strips, individual ones of which are individually removably affixed to said base card and removably disposed over respective ones of said writing spaces and also over corresponding one of said perforations.

3,158,317
CONTROL DEVICE

Irving H. Alexander, Canoga Park, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Maryland

Filed July 8, 1963, Ser. No. 293,529
20 Claims. (Cl. 235—145)



1. In combination with a computer storing a plurality of routines, in which each routine may include a plurality of subroutines, a device coupled to the computer and including

first means for dispatching a coded message to the computer identifiable with a particular routine, and

second means for dispatching coded messages to the computer identifiable with particular subroutines in any routine,

said second means including a plurality of subroutine actuating keys,

said first means including a sheet having at least one opening for selectively preventing actuation of switch means by said sheet to generate a code identifiable with a particular routine,

said sheet being receivable over said keys with said keys projecting through second openings, and

labels on said sheet adjacent each of said second openings for indicating the subroutine corresponding to each key.

3,158,318
DETENT CONTROLLING MECHANISM

George C. Beason and Calvin E. Stichweh, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Sept. 12, 1963, Ser. No. 308,382
5 Claims. (Cl. 235—146)

1. In a machine of the class described, constructed and arranged to perform a machine operation, the combination of

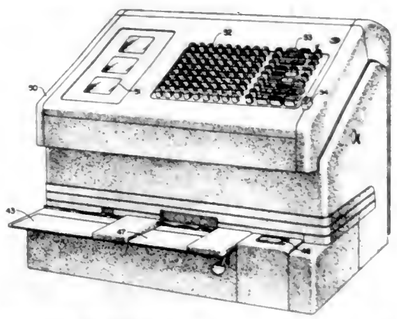
(*a*) a plurality of differentially-settable members;

(*b*) a plurality of keys mounted on a keyboard including a first set of keys for controlling the extent of movement of the settable members during each machine operation;

(*c*) a plurality of detent members slidably mounted in said keyboard, said detent members disabling said plurality of keys when moved to a first position;

(*d*) means for moving said detent members to said first position during each machine operation including

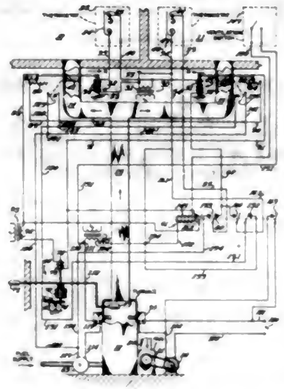
(*e*) a shaft mounted adjacent said plurality of detent members;
(*f*) means interconnecting each of said detent members with said shaft, whereby, upon rotation of said shaft, each of said detent members is moved to said first position;
(*g*) a pair of cycle control actuating means operated during each machine operation;
(*h*) means for actuating said shaft when operated including a yoke member having a stop portion;
(*i*) a link assembly having two members resiliently connected, said assembly being actuated by one of said cycle control means during the first part of a machine operation to yieldingly engage one of said link members against said stop portion;
(*j*) a second link actuated by the other of said cycle control actuating means for operating said shaft actuating means thereby moving each of said detent members to said first position, said operation of



said shaft actuating means also rotating the stop portion of said yoke member out of engagement with said link member whereby the link member moves to a position blocking the return movement of said stop position;
(*k*) means for disabling the return movement of said link member from its blocking position by said cycle control means during the second part of the machine operation including
(*l*) a plurality of control discs differentially settable under control of said differential settable members during each machine operation; said control discs having a plurality of spaced high and low surfaces;
(*m*) and sensing means mounted adjacent said control discs and connected to said link assembly, said sensing means being operated by said cycle control means during the second part of the machine operation to sense said control discs whereby said link assembly is disabled from movement upon the sensing of a high surface by said sensing means.

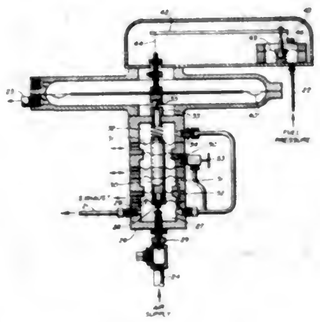
3,158,319
CONTROL APPARATUS
Lorne W. Nelson, Bloomington, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,687
4 Claims. (Cl. 236—9)

4. In a zone temperature control system, heat furnishing means for providing a supply of heated air, conduit means for individually connecting a plurality of zones to said heat furnishing means, individual control means for each of said conduit means for controlling the quantity of air delivered to each zone, heat scheduling means connected to said heat furnishing means to vary the temperature of said heated air in response to an environmental condition effecting the need of heat to said zones, a plurality of zone thermostats, circuit means connecting each of said thermostats to control said individual control means, circuit means for selectively connecting one of



said thermostats to control said heat furnishing means for a single zone control system and to render said heat scheduling means ineffective.

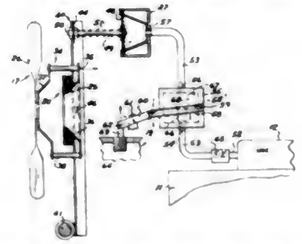
3,158,320
COMBUSTION CONTROL SYSTEM
Robert P. Duncan, 5807 S. Louisville, Tulsa, Okla.
Filed Aug. 3, 1962, Ser. No. 214,606
5 Claims. (Cl. 236—15)



1. Apparatus for the control of combustion including,
a first housing portion,
a first pressure sensitive diaphragm mounted in the first housing portion and subjected directly to the fuel supplied the combustion so as to respond to the full pressure of the fuel,
a pivoted beam mounted in the first housing portion and connected to the first pressure sensitive diaphragm so the beam will pivot in one of two directions by the force generated by the full fuel pressure applied to the pressure sensitive diaphragm,
a second housing portion mounted on the first housing portion,
a second pressure sensitive diaphragm mounted in the second housing portion as one wall of a pressure chamber in the housing portion that is connected to the combustion chamber by a passage which conveys discharge air from a control chamber to the combustion chamber whereby the pressure on the diaphragm is substantially equal to the combustion chamber pressure,
a movable control valve element connected to the second pressure sensitive diaphragm,

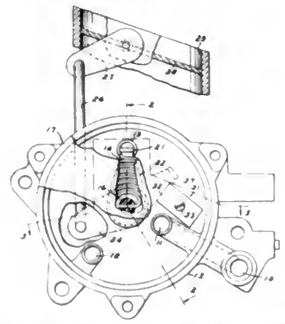
a mechanical connection extending through aligned openings in the first and second housing portions between the second pressure sensitive diaphragm and the beam to pivot the beam in the second of the two directions by the force of the pressure in the combustion chamber,
a third housing portion mounted on the second housing portion,
a control chamber in the third housing portion,
a supply of air connected to the control chamber,
a fixed wall of the control chamber with an orifice therethrough receiving the movable control valve element to regulate the discharge of air from the control chamber,
a movable wall of the control chamber moving in response to the pressure established by the movable control valve element position in the orifice,
a relay mounted in the third housing portion and connected to the movable wall of the control chamber to establish an output air pressure,
and a control apparatus for the flow of combustion air connected to the relay and positioned by the output of the relay.

3,158,321
THERMOSTATICALLY CONTROLLED CLUTCH FOR VEHICLE FAN
Chester R. Brown, Onaway, Mich.
(1245 Forest Ave., Roger City, Mich.)
Filed Sept. 12, 1963, Ser. No. 308,506
5 Claims. (Cl. 236—35)



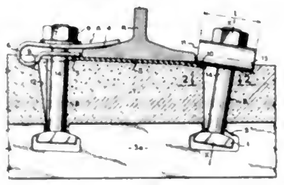
1. In combination with an engine having an intake manifold, a support shaft, a power driven pulley journaled thereon, a cooling system and a fan;
the improvement comprising an annular driving clutch plate axially secured to said pulley for rotation therewith;
said fan including a hollow cylindrical hub axially journaled on said support shaft, longitudinally movable thereon and at its outer end projected axially outward thereof;
a closure cap over the outer end of said hub longitudinally spaced from the shaft;
a longitudinally reciprocal driven clutch plate secured to said hub and including a cone cooperatively registerable with said driving clutch plate;
a coiled spring within said hub interposed between said cap and support shaft normally urging said cone into driven relation with said driving clutch plate;
an open frame surrounding said clutch plate pivotally mounted upon said engine;
a manifold operated motor mounted on the engine including a reciprocal diaphragm connected to said frame; and
a thermostatically operated valve control to actuate said motor when the normal efficient operating temperature is below a pre-determined value for flexing said diaphragm and moving said frame into operative engagement with said driven clutch plate for disengaging the cone from said driving clutch plate.

3,158,322
AUTOMATIC CHOKE
John H. Furbacher, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1960, Ser. No. 79,699
6 Claims. (Cl. 236—48)



1. An automatic choke mechanism for an internal combustion engine, comprising choking means, temperature responsive means for moving said choking means between choked and open positions in response to temperature variations, and a magnetic latch positioned adjacent a portion of said automatic choke mechanism in the open position of the latter to restrain movement of said choking means toward choked position.

3,158,323
RAIL FIXING MEANS FACILITATING THE LAYING OF THE RAILS IN LONG BARS
Roger Paul Sonneville, 5 Rue Maurice Ravel, St. Cloud, France
Filed Feb. 12, 1963, Ser. No. 258,018
Claims priority, application France, Feb. 27, 1962, 889,311, Patent 1,326,628
3 Claims. (Cl. 238—283)



1. Rail fixing means comprising a concrete sleeper, a resilient pad placed on the upper face of the sleeper and acting as a support for the flange of the rail, fasteners for fastening the rail to the sleeper and bolts for tightening down the fasteners and mounted in vertical passageways in the sleeper in such manner as to be pivotable in a direction perpendicular to the bearing face of the rail, wherein the pad projects laterally on both sides of the bearing face of the flange of the rail, the arrangement of the vertical passageways, of the bolts and of the fasteners being such that the bolts in pivoting are capable of assuming such outward inclination that their axis is at a distance from the flange of the rail, at the level of the latter, which is equal to at least one half the width of the fasteners, whereby the fasteners can be turned through 90° about the bolts so as to release the rail and yet maintain the pad in position on the sleeper by bearing on said projecting portions of the pad, the upper face of the sleeper comprising recesses for receiving the outer end of the fasteners when the latter have been turned through 90°, these

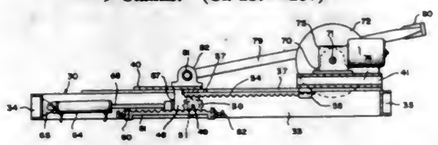
recesses having their axis perpendicular to both the longitudinal axis of the rail and to the axis of the bolts when the latter are in the extreme outer position of inclination.

3,158,324
SPRAYER BOOM
William P. Oehler and John W. Ackley, both of Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 10, 1961, Ser. No. 151,561
8 Claims. (Cl. 239—159)



3. In an apparatus of the character described; a boom; a plurality of mounting brackets slidably mounted on the boom, each of said mounting brackets including a section having an opening therein; a plurality of nozzles, each of said nozzles including a Y-shaped body having inclined inlet and outlet arms converging to a discharge leg extending through the opening in said section, said leg having a peripheral rib abutting the section, the discharge leg being threaded below the peripheral rib, and a nut threadedly mounted on the leg and holding the section between the peripheral rib and the nut; and a plurality of flexible conduits interconnecting the arms of the nozzles.

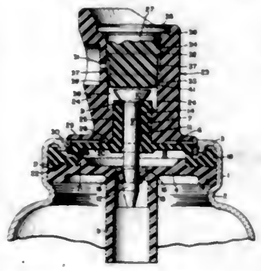
3,158,325
OSCILLATING NOZZLE ASSEMBLIES FOR HYDRAULIC LOG BARKERS
Denis G. Riches and Ray B. Jorgensen, Seattle, Wash., assignors to Nicholson Manufacturing Company, Seattle, Wash.
Filed Oct. 11, 1963, Ser. No. 315,612
9 Claims. (Cl. 239—187)



1. A nozzle assembly for a hydraulic barker through which logs are adapted to be longitudinally moved, said nozzle assembly comprising a tubular arm, said arm having a nozzle at one end and being connected at the other end to a source of fluid under pressure, means supporting said arm for swinging movement about an axis substantially normal to the longitudinal axis of the arm with the arm a preselected distance from the surface of the log, oscillating means intermediate the length of the arm adapted to move the nozzle through a preselected stroke and means for moving the oscillating means relative to the arm whereby to vary the stroke.

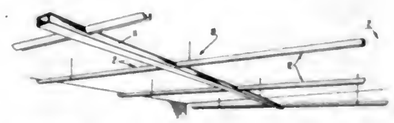
3,158,326
AEROSOL VALVE DEVICE
Roger Remané, Sainte-Colombe-les-Vienne, France, assignor, by mesne assignments, to Airkem, Inc., New York, N.Y., a corporation of New York
Filed July 5, 1961, Ser. No. 122,021
Claims priority, application France July 29, 1960
8 Claims. (Cl. 239—573)

1. An aerosol valve device comprising a substantially flat rigid base member having an annular downwardly ribbed periphery adapted for downward bearing engagement with annular bearing means of a container part, a flexible diaphragm having an annular ribbed periphery adapted for fluid-tight bearing engagement with the periphery of said base member, thereby forming between said diaphragm and base member a fluid chamber, said base member having an aperture permitting communication between said fluid chamber and the interior of an associated container, said diaphragm having a center opening providing an annular valve seat outwardly of said diaphragm, a valve member having an enlarged portion registering with said valve seat and an elongated stem



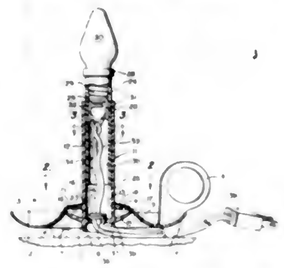
extending through said fluid chamber and interlocked with retaining means on said base member, the tension of said flexible diaphragm acting to normally support said valve seat in engagement with said valve member while permitting the disengagement of said valve member and seat in the downward flexing of said diaphragm, and the central portion of said flexible diaphragm being closely spaced from said base member whereby said fluid chamber is shallow and of limited fluid capacity.

3,158,327
FLUORESCENT LIGHTING UNIT
Ray C. Dameral, Pleasant Hill, Calif., assignor to Herst Lighting Corporation, doing business as Peerless Electric Company, San Francisco, Calif., a corporation of California
Filed Sept. 15, 1961, Ser. No. 138,467
7 Claims. (Cl. 240—9)



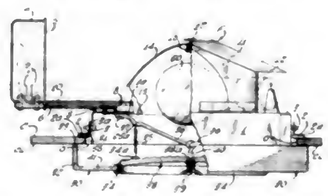
1. A modular lamp housing unit comprising a ballast housing joiner member adapted for laterally outwardly facing attachment to a ballast housing and having a generally parabolic end wall, said end wall having opposed cusp shaped notches in the side edge portions thereof and curved notches at the lower terminations of said cusp shaped notches, at least one lamp housing joiner and hanger member having spaced end walls conformed to the end wall of said ballast housing joiner member, said spaced end walls integrally interconnected and having suspension means therebetween, an end member having an end wall conformed to that of said ballast housing joiner member, a plurality of longitudinally elongated curved side members engaging the opposite side edge portions of the respective end walls of said ballast housing joiner member, lamp housing joiner and hanger members, and end member and extending therebetween, said side members having inwardly turned rims adjacent their upper edges with vertical slots therein and defining V-notches adjacent the upper terminations of the cusp shaped notches in said end walls, said side members having inwardly turned rounded lips adjacent their bottom edges engaging the curved notches of said walls, said side members having inwardly projecting ribs intermediate said rims and lips terminating adjacent the apices of said cusp shaped notches, a plurality of spring clips projecting transversely from said ballast housing joiner member, said lamp housing joiner and hanger members, and said end member into engagement with the rim slots of said side members, cusp shaped side reflectors extending longitudinally between said ballast housing joiner member, lamp housing joiner and hanger members, and end member, said reflectors end engaging the cusp shaped notches of said end walls, the upper edges of said reflectors engaging the V-notches of said side members, the lower edges of said reflectors engaging the lips of said side members, the apices of said reflectors being engaged by the ribs of said side members, fluorescent lamp sockets secured to said end walls, and central reflectors secured to and extending longitudinally between said end walls in underlying relation to said sockets.

3,158,328
LIGHT MOUNTING FIXTURE
Hubert A. Kubak, 6123 W. Roscoe St., Chicago, Ill.
Filed June 26, 1961, Ser. No. 119,381
5 Claims. (Cl. 240—16)



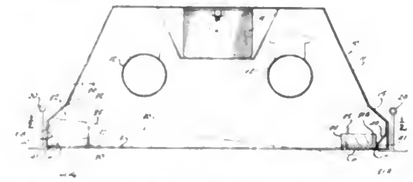
5. A lamp structure having a column with axially extensible and contractible elements, said elements having complementary oval peripheries in complementary relation in unlocked position and in noncomplementary locked position, said elements being flexible and temporarily distortable into said locked position, a pair of axially opposed clamping members on the column, one of said members comprising a flexible thin normally flat disc having an aperture noncomplementally tightly receiving the column and distorted into concavo-convex shape in wedging relationship with the column.

3,158,329
RECESSED CEILING LIGHTING FIXTURE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 8, 1960, Ser. No. 74,723
6 Claims. (Cl. 240—78)



1. A lighting fixture comprising a reflector, a light source in front of said reflector, means for mounting said source and said reflector inwardly of a surface in an opening therein, a glass lens, means for supporting said lens spaced from said source and said reflector outwardly of the surface, a synthetic thermoplastic resinous light transmitting trim member framing said lens, the major portion of reflected and direct light being incident upon said lens, a minor portion of light direct from said source passing between the peripheries of said reflector and said lens and being incident upon said trim member, said trim member extending radially outwardly from said lens and including walls extending upwardly from the outer periphery thereof, said walls extending to the surface and around the outer periphery of the opening, said walls including prisms directing light from said light source and intercepting lines of sight directed from below and toward said opening and directing said lines of sight upwardly away from said opening and downwardly away from said opening depending upon which faces of said prisms intercept said lines of sight, whereby the edges of the opening are obscured.

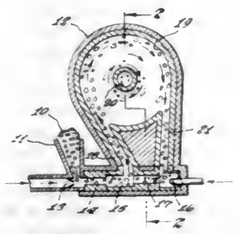
3,158,330
LIGHTING FIXTURE
Frank Van Steenhoven, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,930
1 Claim. (Cl. 240—147)



A luminaire comprising, a fixture incorporating elongated fluorescent lamps and having inwardly extending end and side flanges, said fixture flanges having horizontally oriented substantially flat upper surfaces, the inner edges of said fixture end and side flanges defining a horizontally oriented opening, a rectangular diffuser movable between a horizontally closed position and a vertical opened position and constructed from a single piece of plastic material and having upwardly extending side and end strengthening flanges, complementary coaxial pivot means on said diffuser end flanges and on said fixture adjacent one side strengthening flange, said complementary pivot means on said diffuser end flanges lying completely above the lowermost plane of said diffuser and said fixture end flanges when said diffuser is in the horizontal closed position, said diffuser having a dimension between its sides greater than the distance between said fixture side flanges and overlying said fixture side flanges in supported relationship upon said upper surfaces of said fixture side flanges when said diffuser is in said horizontal closed position and a dimension between its ends slightly smaller than the distance between said fixture end flange to permit movement thereof in transverse planes to said vertical opened position via said pivot means when the sides of said diffuser are free from such supported relationship upon said fixture side flanges, the construction and arrangement being such that when said diffuser is in said horizontal closed position in supported relationship upon said fixture flanges, said complementary pivot means on said diffuser and on said fixture are out of contact with one another and the engagement between the sides of said diffuser and the upper surfaces of said fixture side flanges constitutes the sole support for said diffuser, said complementary pivot means comprising pivot bosses extending from said diffuser end flanges and means extending upwardly directly from the horizontally oriented flat upper surfaces of said fixture end flanges

and spaced inwardly from the fixture side flanges and inwardly of said pivot bosses and defining the inner-most points of corner areas along said horizontally oriented flat upper surfaces of said end flanges, said corner areas freely receiving said pivot bosses of the diffuser for pivotal support of the diffuser only when the diffuser is moved from the closed horizontal position off of its support upon said side flanges and the free side of said diffuser is swung downward to dispose said diffuser in vertical opened position, said upwardly extending means comprising stop means past which said pivot means may not move during pivotal support of said diffuser in said corner areas, diffuser guide means overlying the side flanges and sloping downwardly and inwardly of the fixture toward the inner edges of the side flanges and supporting the pivoted side of the diffuser as the diffuser is pivoted upwardly toward the closed position, said guide means providing a surface along which the pivoted side of the diffuser slides downwardly and inwardly to the upper surface of its associated side flange when the free side of the diffuser is pivoted above its associated side flange, whereby the diffuser is guided to the horizontal closed position supported along its sides on the side flanges, and vertical abutment means extend downwardly from said guide means at the bottom thereof and position and restrain the diffuser in said fixture opening against further transverse displacement.

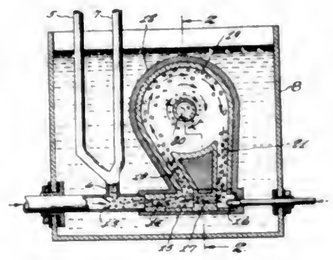
3,158,331
SLURRY COLLOIDAL ZIRCONIUM OXIDE GRINDING PROCESS
Wilbert Moody Wilson, Morristown, and William B. Kinyon, Helmetta, N.J., assignors to George W. Helme Company, Helmetta, N.J.
Filed May 27, 1963, Ser. No. 283,493
1 Claim. (Cl. 241—5)



The continuous re-cycle process of cold grinding zirconium oxide in a Trost jet mill comprising introducing said zirconium oxide as an aqueous slurry of from about 12 percent to about 20 percent oxide into the inlet air stream of said jet mill, cold grinding said zirconium oxide in the presence of vaporizing water to obtain particles within the colloidal range, separating centrifugally said colloidal oxide from said cold still expanding water vapors to produce substantially dry colloidal zirconium oxide and re-cycling the non-separated particles to further cold grinding.

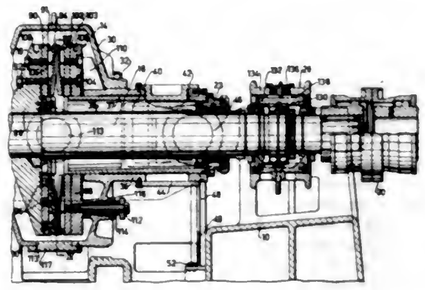
3,158,332
METHOD OF PREPARING SUBLIMATE COLLOIDAL IODINE
Wilbert Moody Wilson, Morristown, N.J., assignor to George W. Helme Company, Helmetta, N.J.
Filed May 27, 1963, Ser. No. 283,492
3 Claims. (Cl. 241—5)

1. In the process of preparing colloidal iodine by use of inlet and recycle opposing jet streams of air in a Trost colloid mill the improvement comprising adding iodine sublimate to a protective colloid solution to form a slurry mixture of a suitable amount of liquid, introducing said slurry mixture to the inlet air jet stream, vaporizing with



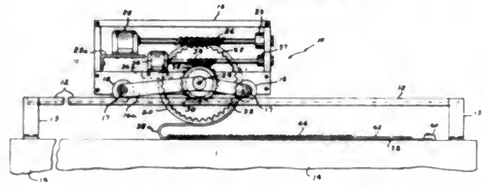
cooling said liquid by expansion in the grinding chamber and grinding said iodine sublimate particles with recycle iodine particles in said vaporous atmosphere.

3,158,333
GRINDING APPARATUS FOR FIBROUS MATERIALS
Arne Johan Arthur Asplund, Bromma, Lars Penten, Lidingo, and Johan Gunnar Inge Johansson, Nasbypark, Sweden, assignors to Defibrator Aktiebolag, a corporation of Sweden
Filed Nov. 7, 1961, Ser. No. 150,819
Claims priority, application Sweden Nov. 8, 1960
2 Claims. (Cl. 241—244)



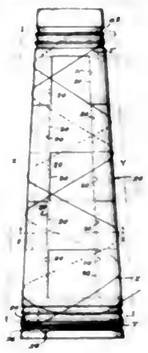
1. A grinding apparatus for treating fibrous material comprising, a frame, a housing disposed in said frame, two grinding members disposed in said housing, one of said grinding members being secured in said housing and the other mounted on a rotatable shaft passing through said housing and mounted on either side of said housing on bearings carried by said frame, and compressing members adapted to create a grinding pressure between said grinding members, characterized in that said housing is secured to said frame at its end facing said compressing members for transmitting the tensile load between the housing and frame, the opposite end of the housing being mounted on a support permitting axial movement of the housing relative to the frame with the center position remaining practically unchanged, said support being rigidly secured to said housing as well as to said frame and having ample radial extension between its points of securement so as to be adapted on an axial displacement of the housing to perform a swinging movement about its point of securement to the frame.

3,158,334
ROLLING MACHINE FOR FORMING CENTERLESS ROLLED BLANKETS
Burns A. Cash, Madison, Wis., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 28, 1963, Ser. No. 261,916
3 Claims. (Cl. 242—54.4)



1. A rolling machine for centerless rolling a blanket formed of fibrous material spread on a flat ductile backing material, said machine being linearly movable on guides in fixed relationship to a substantially plane horizontal surface and comprising: a frame, a plurality of wheels rotatably joined to said frame and supporting said machine, means for moving said machine along said guides, a winding drum for rotation normal to the linear movement of said machine along said guides and journaled in said frame to provide a predetermined clearance between the bottom of said winding drum and the said plane horizontal surface, means for rotating said winding drum, and a flat ductile belt having one end joined to said winding drum and having the other end joined to said plane horizontal surface; said belt initially providing a flat surface for receiving said blanket and having a convolute loop rearward of said winding drum as the machine moves forward to roll the blanket in the loop portion of said belt as the said winding drum winds the said belt onto itself.

3,158,335
WINDING CORE FOR TEXTILE YARN PACKAGES
Helmut Deussen, Charlotte, N.C., assignor to American Schlafhorst Company, Inc., a corporation of North Carolina
Filed July 3, 1962, Ser. No. 207,277
11 Claims. (Cl. 242—172)



1. In combination with a textile yarn package of the type that is wound through surface contact with a winding drum and in which each yarn wrap follows a relatively high-pitch traverse extending from end to end of the package, the improvement which comprises a winding core having a body member presenting an exterior surface of revolution on which yarn may be wound to form a package and which has portions thereof substantially relieved in a pattern that provides for adequate winding drum contact continuously about the circumference of said body member at said surface of revolution while modifying said winding surface significantly so that the beginning wraps of a textile yarn package wound thereon are all appreciably shortened in relation to the length that said wraps would assume if said winding surface were not relieved and in differential relation to said pattern of relief and to each other.

3,158,336
ASSEMBLY FOR RECOVERING A CAPSULE
Alfred P. Warren, Huntsville, and Billy D. Lawson, Madison, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 5, 1962, Ser. No. 221,945
6 Claims. (Cl. 244—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



4. A device for stabilizing and decelerating a capsule comprising:

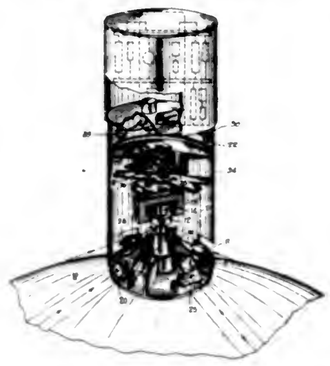
(A) a plurality of flaps pivotally mounted on said capsule for movement between collapsed positions and opened positions;

(B) a spring urged plate rotatably mounted about a rotary axis on said capsule;

(C) a plurality of pivotable links interposed between said spring urged plate and said plurality of flaps; and

(D) a latching mechanism positioned between said spring urged plate and said capsule and adapted to latch said plurality of flaps in said opened positions.

3,158,337
CONTROL SYSTEM FOR SPACE DEVICE
Patrick E. Lannan, Parma Heights, Ohio, assignor, by mesne assignments, to International Resistance Company, Philadelphia, Pa., a corporation of Delaware
Filed May 28, 1959, Ser. No. 816,504
8 Claims. (Cl. 244—14)



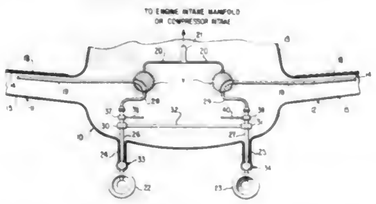
1. A scanning system for use in the control of the attitude of a space-travelling device comprising: a first

scanning means including a radiant energy collector for scanning independently of the motion of said device the horizon of a body with respect to which a control is to be established to receive energy at different times during said scan from a relatively small portion of said body and a correspondingly small portion of space adjacent said body; a second scanning means including a radiant energy collector having a scanning direction which is fixed with relation to that of said first scanning means for scanning independently of the motion of said device a different portion of the horizon of said body to receive energy at different times during said scan of said second scanning means from a relatively small portion of said body and a correspondingly small portion of space adjacent said body; means for simultaneously operating said first scanning means and said second scanning means; and means responsive to the time relationship between the simultaneous receipt by said first scanning means of energy from said body and from space and the simultaneous receipt by said second scanning means of energy from said body and from space for operating means to control the attitude of said device.

3,158,338
SUSTAINING AIRFOILS HAVING VARIABLE CONFIGURATIONS TO VARY LIFT CHARACTERISTICS

Walton W. Cushman, 401 N. Penn St., Webb City, Mo.

Filed Feb. 18, 1963, Ser. No. 259,136
21 Claims. (Cl. 244—44)



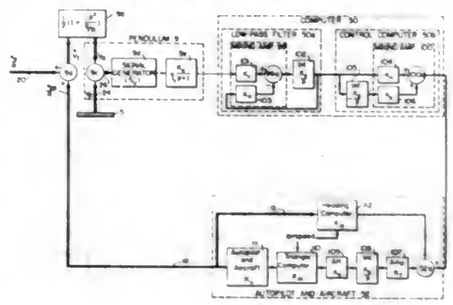
1. In a sustaining airfoil for engine driven aircraft including upper and lower surfaces and having an aerodynamic cross sectional configuration, a flexible supplemental airfoil surface mounted in overlying relation on the upper surface only of said sustaining airfoil, said supplemental airfoil being distendable in response to differential pressure on opposite sides thereof created by movement of the sustaining airfoil through a fluid medium to cause relative movement between the same and the upper surface of said sustaining airfoil, and vacuum control means in communication with the under side of said flexible supplemental airfoil and operable to regulate the relative movement between said supplemental airfoil and the upper surface of said sustaining airfoil to change the aerodynamic cross sectional configuration and lift characteristics of said sustaining airfoil.

21. In an engine driven aircraft having a rotary hub and sustaining airfoils the combination including flexible distendable supplemental airfoils mounted on said sustaining airfoils, vacuum induced means to produce a pressure differential on opposite sides of said supplemental airfoils to normally maintain the same in contact with the sustaining airfoils during rotation thereof, means to control the pressure differential on the opposite sides of said supplemental airfoil to allow controlled distention thereof, said rotary hub and sustaining airfoils tiltable to control the direction of flight of the aircraft, and said pressure differential producing vacuum induced means responsive to the movement of flight of the aircraft and the movement of said sustaining airfoils to effect cyclic distention of said supplemental airfoils.

3,158,339
GUIDANCE SYSTEM

Roger B. Woodbury, Waltham, John F. Hutzenlaub, Winchester, and Donald J. Atwood, Cambridge, Mass., assignors, by mesne assignments, to Massachusetts Institute of Technology, a corporation of Massachusetts

Filed Aug. 14, 1952, Ser. No. 304,386
7 Claims. (Cl. 244—77)



1. In a guidance system for holding on course a vehicle which contains automatic piloting apparatus and a member which is fixed with respect to a line normal to the course plane: means for detecting accelerations and generating an output signal proportional thereto, so mounted on the member as to detect accelerations which are substantially horizontal and normal to the course, connections to activate the autopilot from said signal, and function generating means to modify said signal to move the vehicle in a direction opposite to the direction of the accelerations with a velocity which is proportional to

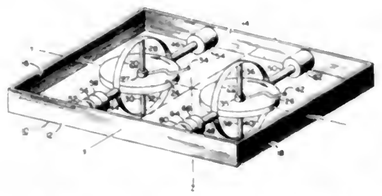
$$\frac{\sum C_n p^n}{\sum T_m p^m}$$

times the signal (where C and T are constants, m and n are integers and m is at least one greater than n, and p is the differential operator).

3,158,340
GYROSCOPIC CONTROL APPARATUS

Donald F. Sellers, Dallas, Tex., assignor, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,516
9 Claims. (Cl. 244—79)

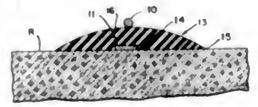


1. Gyroscopic control apparatus comprising a support, a pair of torque-producing devices mounted on said support, an input circuit for each of said torque-producing devices, a pair of gyroscopes each mounted for angular displacement with respect to said support by operation of one of said torque-producing devices, said gyroscopes having rotors adapted to spin simultaneously in opposite directions, said torque-producing devices being adapted to cause angular displacement of said gyroscopes in opposite directions in response to a common command signal supplied to each of said input circuits, means for deriving feedback signals representing the amounts of angular displacement of each of said gyroscopes with respect to said support, means for deriving additional feedback signals representing the amounts of torque produced by each of said torque-producing devices tending to cause such angular displacement, and means for supplying each of said feedback signals to the input circuit of the respective torque-producing device associated therewith.

3,158,341
SUPPORT SYSTEM FOR AIRCRAFT ARRESTING CABLES

Howard Saunders Green, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware

Filed July 19, 1962, Ser. No. 210,931
4 Claims. (Cl. 244—110)

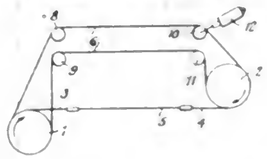


2. An aircraft arrest cable support system for runway surfaces comprising support means with a substantially flat base surface for resting on the runway surface and a convex top surface on the transverse mid-point of which rests portions of an aircraft arrest cable, and elongated positioning means transverse the said runway and the said flat base surface of the support means for retaining said support cable supporting means in position on the runway surface prior to an arrest action said elongated positioning means on said base surface comprising a strap secured in a groove in the flat base surface of said support means.

3,158,342
ARRANGEMENT FOR ARRESTING LANDING AIRPLANES BY MEANS OF A WIRE

Per Borje Fonden, Hejdegaten 3, and Kari Ove Torgny Walander, Vasavagen 49, both of Linkoping, Sweden

Filed Jan. 10, 1963, Ser. No. 250,618
Claims priority, application Sweden, May 23, 1962, 5,776/62
4 Claims. (Cl. 244—110)



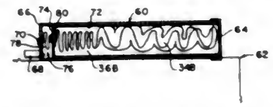
4. An arrangement for arresting landing aeroplanes comprising, a pair of spaced-apart brakes having rotative drums, an arresting cable extending between the brakes, pulleys located forwardly of the brakes in the direction of the landing movement of an aeroplane, an endless brake-synchronizing cable separate from the arresting cable extending around the brake drums and engaging with the pulleys, said cable being disposed below the arresting cable, and a tension device operative on the synchronizing cable to tension the same during the aeroplane-arresting operation.

3,158,343
CONTROLLED DRAG MEANS

Robert B. Cotton, Media, Pa., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware

Filed July 23, 1963, Ser. No. 297,121
5 Claims. (Cl. 244—110)

1. In a means for decelerating a load body from a first to a second velocity, including a drag body, housing means for storing said drag body on said load body and ejecting said drag body therefrom to initiate deceleration thereof, said housing means comprising an elongated chamber having a fixed walled end and a releasably capped end, a substantially coextensive and conformally shaped container in said chamber containing said drag body and having an

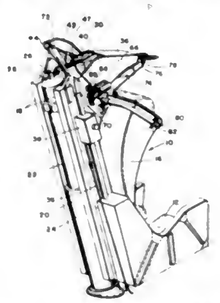


open end adjacent and a closed end adjacent said capped end and said fixed wall end of said chamber, respectively, to thereby form a gas chamber between said fixed walled end and closed ends, means tethering said closed end to said fixed walled end, connecting means for tethering said drag body to said closed end, and expansible fluid generating means communicating with said gas chamber.

3,158,344
EJECTION SEAT FACE CURTAIN RESTRAINT SYSTEM

Chris T. Koochembere, Glendora, N.J., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 30, 1963, Ser. No. 312,807
5 Claims. (Cl. 244—122)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an aircraft ejection seat having sides, a parachute disposed on said seat having a lift line, a face curtain disposed in an upper portion of said seat adapted to be drawn downwardly over a seat occupant's head,

(*a*) anchoring means secured to said upper portion of said seat;

(*b*) a strap connected at one end to a rearward portion of said curtain;

(*c*) an elongated flexible member secured at one end to a forward portion of said face curtain; means connected to said lift line releasably securing the other ends of said strap and said elongated flexible member to said anchoring means for releasing said ends with deployment of said parachute;

(*d*) and means training said elongated flexible member downwardly and forwardly from said anchoring means on the side of said seat to said forward portion of said face curtain.

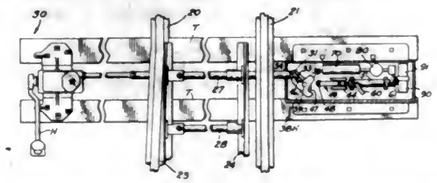
3,158,345
RAILWAY SWITCH ACTUATING MECHANISM

John R. Wilhelm, Chicago, Ill., and Thomas S. Taylor, Suffern, N.Y., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Sept. 19, 1961, Ser. No. 139,090
3 Claims. (Cl. 246—258)

1. In a railroad switch of the kind wherein a pair of switch points are movable between two limit positions

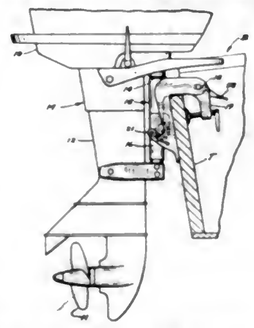
with respect to stock rails by a throw rod interconnecting the switch points, means for moving said switch points between said two limit positions comprising, a cam member mounted for rotation in opposite directions about a fixed pivot, link means secured for rotation with the cam member and connected to the throw rod to translate rotary movement of the cam member into linear movement of the throw rod, and means to rotate the cam member to throw the switch, the last-named means including: an hydraulically operated piston in a cylinder to be moved from a retracted position in a forward direction to engage and rotate the cam as aforesaid in an advanced position and thereafter to be moved from the advanced position immediately in a reverse direction back to said retracted position in a single cycle of operation, conduits connected to the opposite ends of the cylinder and alternately effective in said cycle of operation to direct fluid under pressure into one end of the cylinder while connecting the opposite end of the cylinder to the hydraulic reservoir for piston movement in a forward direction, and vice versa for piston movement in the reverse direction, said conduits being connected to a solenoid-type directional valve having a first solenoid which, when energized, determines one operative position of the valve corresponding



to the forward direction of the piston and a second solenoid which, when energized, determines another operative position of the valve corresponding to the reverse direction of the piston, and electrical control means for initiating a cycle of operation of the hydraulic apparatus which cycle is inclusive of movement of the piston from its initial position to its advanced position followed by immediate reversal, said control means including a manually operable normally open start switch, a first control switch adapted to be closed when the piston is in its initial retracted position to complete a circuit to the first solenoid when the start switch is closed causing the piston to advance, a first limit switch adapted to be closed when the piston is in its advanced position to complete a circuit to the second solenoid causing the piston to retract to its initial position, holding circuits for the first and second solenoids and means operable upon closure of said first limit switch to break the holding circuit for the first solenoid at the time the second solenoid is energized, a second limit switch for breaking the holding circuit for the second solenoid when the piston arrives at its fully retracted position, said limit switches being spaced one from another by a distance corresponding to the length of the stroke of the piston, and cam means carried by the piston for operating said limit switches.

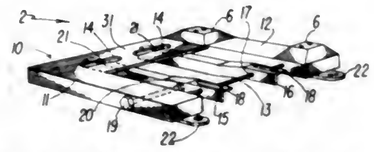
3,158,346
REVERSE LOCK FOR OUTBOARD MOTORS
William M. Jagger, St. Paul, Minn., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Mar. 26, 1962, Ser. No. 182,215
7 Claims. (Cl. 248—4)

1. In an outboard motor, a power unit, a boat bracket, means mounting the power unit on the boat bracket for fore and aft tilting movement about a fixed axis between an upright and a forwardly tilted position, a catch member mounted on the boat bracket, a latch pivotally mounted on the power unit for movement between a catch engaging and a catch releasing position, retention means for yieldably holding the latch in either of such positions, and the latch having a guide portion extending when the latch is in catch releasing position to engage the catch member



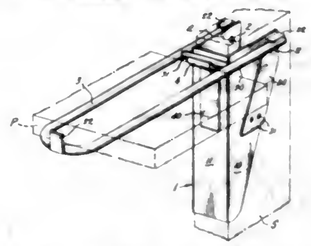
as the power unit is tilted from its forwardly tilted to its upright position to move the latch against the holding force of said retention means into a catch engaging position.

3,158,347
MOTOR BASE
Benjamin L. Sommer, 5821 N. Briarwood Lane, Peoria, Ill.
Filed Oct. 10, 1961, Ser. No. 144,161
6 Claims. (Cl. 248—23)



1. A motor support comprising a substantially U-shaped member having a base and two legs, said base having two slots therein, a pair of brackets each having one end movably supported upon a support member and another end freely extending beneath said base, said support member being supported by said legs of said U-shaped member, said brackets having longitudinal slots which are respectively at about 90° angles to the slots in the base of said U-shaped member, and means associated with each of said brackets to lock said brackets in position when a motor is rigidly secured to said brackets.

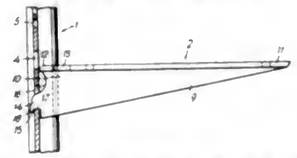
3,158,348
MOUNTING BRACKET
Wilson J. Rutter, 11911 28th SW., Seattle, Wash.
Filed July 1, 1963, Ser. No. 291,775
17 Claims. (Cl. 248—240.4)



1. A mounting bracket comprising a channel-shaped body formed to straddle a wooden stud or the like, at

least one bit supported at a side of the channel-shaped body, and directed inwardly towards the stud, a lever pivotally mounted upon said body, said lever including at least one arm moveable alongside a side of the body, and an article support extending from said arm beyond the body, when in position for use, and cam means operatively connected to said bit, and positioned for engagement by said arm as the lever swings during pivotal movement, and aranged to urge the bit inwardly into engagement with the stud as the article support moves towards its position for use.

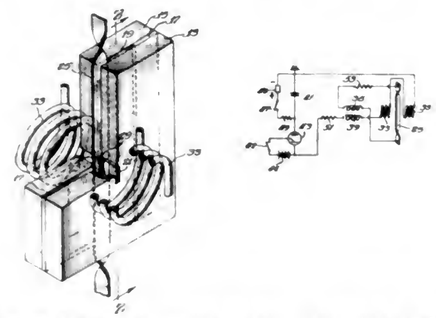
3,158,349
VERTICALLY ADJUSTABLE SHELF BRACKET AND CHANNEL SUPPORT
Evar Wilhelm Bergström, Mossgatan 4, Nassjo, Sweden
Filed Mar. 5, 1962, Ser. No. 177,501
Claims priority, application Australia, Mar. 17, 1961, 2,647/61
1 Claim. (Cl. 248—243)



A support device consisting of an arm having a web part and a T-shaped end part and a channel-shaped bar having, in its base wall, at least one aperture and, from each side wall, a side flange projecting inwardly towards the opposite side wall; said bar being adapted, in use, to be fixed in an upright position, said T-shaped end part fitting closely in the bar between said side flanges and base wall of the bar to restrict movement of the arm away from, and transversely to the longitudinal axis of the bar channel, said T-shaped end part being provided with a protruding inner edge facing said base wall and bearing thereon, and the web of the T-shaped part having a projection fitting into the aperture in the bar to prevent the arm sliding, in use, downwardly along the channel, said projection having a hook-like part extending through said aperture to engage the opposite side of the base wall so as to prevent the arm, in use, from being pivoted upwardly with the flange of the T-shaped part as fulcrum, and there being a cut-away part in the web between the flange and the projection of the T-shaped part serving simultaneously to permit, by pivoting the arm upwardly and sidewardly, a side channel wall to enter the cut-away part to move the flange into a position in which it is approximately parallel to the channel axis so that the arm can be removed from the bar, and to form a sharp angle at the protruding inner edge of the flange of the T-shaped part.

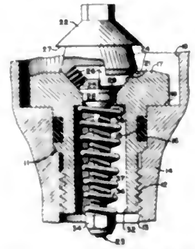
3,158,350
ELECTROMAGNETICALLY DRIVEN SHUTTER AND VALVE
Harry W. Fulbright, Rochester, N.Y., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed May 31, 1961, Ser. No. 113,728
10 Claims. (Cl. 251—137)

1. A device for selectively controlling the passage of a medium into or out of a predetermined area, said device comprising means defining an aperture, means formed at least partially of a medium-obstructing material supported adjacent said aperture and adapted for selective movement to and between an obstructing and non-obstructing position relative to said aperture so as to selectively control the passage of a medium therethrough, said medium-obstructing means being formed at least partially of a current-conducting material, coil means disposed adjacent said medium-obstructing means for establishing a high intensity magnetic field which intersects the conducting portion of said medium-obstructing means, and means for applying a high amperage pulse of direct current through said field-producing coil means and for



inducing a pulse of current in said conducting portion of said medium-obstructing means, the interaction of said induced current with the field produced by the passage of the applied current through said coil means being effective to cause movement of said obstructing means relative to said aperture so as to control passage of a medium therethrough.

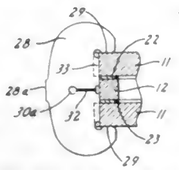
3,158,351
CHARGING VALVE
Samuel H. Kauffman and Richard W. Holden, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 20, 1962, Ser. No. 211,459
4 Claims. (Cl. 251—322)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a charging valve for pressurizing underwater apparatus, a valve housing having a conical seat at one end thereof and a cylindrical bore therethrough extending from said seat to the other end of said housing, an annular shoulder formed in said housing between said conical seat and said cylindrical bore, said housing having means at said one end thereof for fluid connection to charging apparatus, a valve stem slidably mounted in said bore and having a head portion shaped to be received in said seat and to be raised therefrom by the charging apparatus while a pressure charge is applied thereto, said head portion having an annular groove therein, sealing means mounted in said groove to engage said seat when said head portion is received therein, said stem having a threaded portion adjacent the end thereof within said bore, a nut retainably received on said stem threaded portion, a circular coil spring of greater diameter than the opening in said conical seat surrounding said stem and having the ends thereof in abutment with said annular shoulder and said nut respectively so that the interior of said circular coil spring is in direct fluid communication

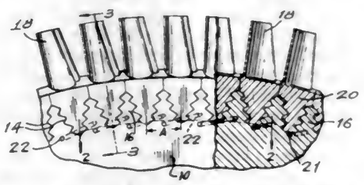
with the opening in said conical seat, and a quasi-elliptical coil spring surrounding said stem and having the coils thereof alternating with the coils of said circular coil spring in a manner to reinforce the bias of the circular coil spring and to also prevent said circular coil spring from being compressed to a solid height as the head portion of the valve is raised from said seat by the charging apparatus, whereby free flow of fluid from the charging apparatus through the conical seat into the interior of the coil spring and then between the coils of springs to the exterior of said springs is always assured.

3,158,352
CLAMPED GATE VALVE BODY
Marvin H. Grove, 340 Hillside Ave., Piedmont, Calif.
Filed Aug. 16, 1961, Ser. No. 131,804
2 Claims. (Cl. 251—329)



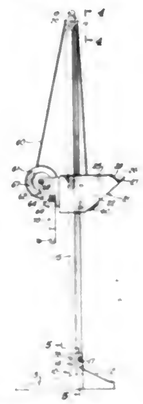
1. In a valve construction, a valve body formed of separate side plate-like parts together with an intermediate part, said parts encompassing a valve body space, the body having aligned side openings for connection with associated piping, sealing means between the body parts, and C-type clamping devices for clamping the edge margins of the plate-like parts together upon the intermediate part, each of said devices comprising metal end portions engaging the exterior surfaces of the side plate-like parts adjacent the edges thereof and a metal throat portion connecting said end portions, the throat portion being of substantial width in a direction extending outwardly from the adjacent edge margins, an inner part only of said throat portion being interrupted by a slot that is bridged with weld metal, whereby said weld metal carries clamping forces in tension.

3,158,353
BLADE LOCKING DEVICE FOR CONICAL BROACHED DISCS
Alexander L. Reid, Greenfield Park, Quebec, and Trevor L. Salt, Beloeil, Quebec, Canada, assignors to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed July 16, 1962, Ser. No. 210,618
1 Claim. (Cl. 253—77)



In a rotor construction of the type having a conical blade supporting disc provided with a plurality of integral projections on its periphery defiining between said projections axially extending slots following the taper of and being open at the periphery of the disc, a row of blades extending radially outwards from the periphery of the disc and each having a root portion corresponding to and fitting within said slots, said slots and root portions having interengaging surfaces to prevent radial outward movement of the blades; means to prevent movement of each of said blade root portions in the direction of said inter-engaging surfaces comprising a retaining member passing diagonally, axially and through said disc periphery from side to side from the base of one of said disc integral projections on one transaxial surface of said disc to the base of an adjacent one of said projections on the other transaxial surface of said disc, each of said retaining members engaging a single blade and at least sufficient of the base of said blade rotor portion in the lower portion of the blade slot to provide a retaining shear surface, each of said retaining members comprising a pin and each of said pins extending diagonally through said disc periphery from substantially the center of the base of one of said disc integral projection on the other side.

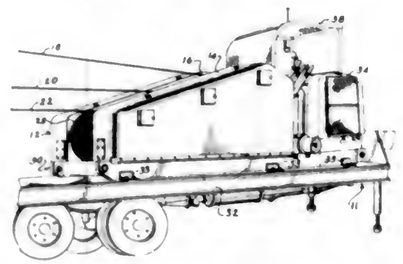
3,158,354
LIFTING DEVICE
Ralph E. Ward, Rialto, Calif., assignor to Precision Welding of Rialto, Rialto, Calif., a partnership
Filed Sept. 7, 1962, Ser. No. 221,978
5 Claims. (Cl. 254—47)



1. A lifting device comprising:
a vertically directed post, said post having a substantially square cross section,
a pulley rotatably mounted adjacent to the upper end of said post,
a frame mounted for vertical movement upwardly and downwardly along said post, said post extending vertically through said frame and being disposed diagonally with respect to said frame so that one corner of said post is directed toward the front of said frame and the diagonally opposite corner of said post is directed toward the rear of said frame,
lifting means carried by said frame for engaging an object to be lifted,
a first roller rotatably mounted on said frame adjacent to the rear corner of said post, said roller having a pair of inwardly directed right angular walls of substantially equal size forming a V adjacent to its center, said wall being disposed so as to engage both sides of said post simultaneously and equally adjacent to the rear corner thereof and to move vertically therealong,
a second roller rotatably mounted on said frame adjacent to the front corner of said post on the opposite side of said post from said first roller, said second roller having a pair of inwardly directed right angular walls of substantially equal size forming a V adjacent to its center, said walls being disposed so as to engage both sides of said post simultaneously and equally adjacent to the front corner thereof and to move vertically therealong,

a cable attached at its lower end to said frame,
a reel rotatably mounted on the rear of said frame, the opposite end of said cable being attached to said reel, and
means for rotating said reel to move said frame and lifting means vertically upwardly and downwardly along said post.

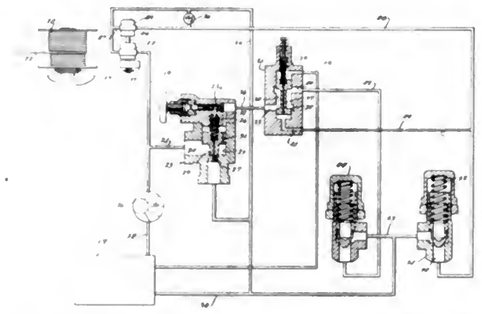
3,158,355
MULTI-DRUM WINCH
John Hart Wilson, % Wilson Mfg. Co., Inc., P.O. Box 1031, Wichita Falls, Tex.
Filed Jan. 8, 1962, Ser. No. 164,864
1 Claim. (Cl. 254—173)



A portable unit for pulling at least one high tension line by a cable being wound onto a winding drum with the high tension line having substantially uniform tension imparted thereto; which unit comprises
(*a*) a base,
(*b*) at least one drum shaft journaled on said base,
(*c*) a winding drum mounted on and secured to said drum shaft for rotation therewith,
(*d*) an air actuated clutch mounted on said drum shaft,
(*e*) a source of power,
(*f*) a source of air pressure,
(1) conduit means connecting said air actuated clutch with said source of air pressure,
(*g*) transmission drive means connecting said air actuated clutch in driving relation with said source of power,
(*h*) means selectively connecting said clutch in driving relation wtih said winding drum,
(*i*) cable contact means mounted on said base and being engageable with the layers of cable on said winding drum as the layers of cable are built up thereon or payed out therefrom,
(*j*) air pressure regulator within said conduit intermediate said air actuated clutch and said source of air pressure,
(*k*) means interconnecting said cable contact means and said air pressure regulator to actuate said air pressure regulator to direct air under pressure to said air actuated clutch to exert a constant tension on the cable being wound onto said drum in accordance with the layers of cable thereon.

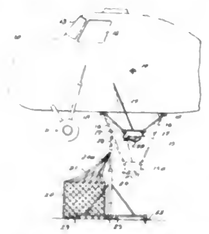
3,158,356
AUTOMATIC REGULATOR FOR CABLE REEL
Melvin G. Carlson, Oak Lawn, and Herman Linkowski, Chicago, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 23, 1962, Ser. No. 175,095
11 Claims. (Cl. 254—173)

1. In a fluid pressure system for maintaining a substantially uniform tension on a member, as the member is drawn in and paid out,
(*a*) a fluid pressure motor providing the power to effect the drawing in of the member, said motor being driven by the member as a pump during paying out of the member and supplying the driving torque to draw in the member,
(*b*) a second fluid pressure motor driven as a pump during paying out of the member,
(*c*) a pump supplying fluid under pressure to said first motor,



(*d*) a relief valve between said pump and said first motor by-passing fluid under pressure from said first motor,
(*e*) and valve means connected with said relief valve and operated by pressure generated by said second motor when operating as a pump, for reducing the pressure of opening of said relief valve to provide a reduced back pressure to said first motor when driven as a pump.

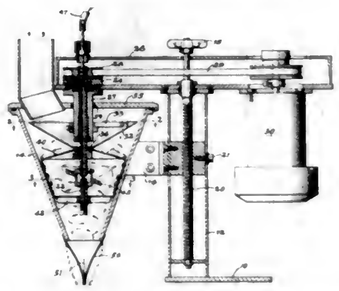
3,158,357
CARGO PICK-UP FOR HELICOPTER TYPE AIRCRAFT
Harris S. Campbell, Bryn Athyn, Pa., assignor to Eastern Rotorcraft Corporation, Doylestown, Pa., a corporation of Pennsylvania
Original application June 17, 1959, Ser. No. 821,055, now Patent No. 3,068,034, dated Dec. 11, 1962. Divided and this application Oct. 10, 1962, Ser. No. 229,714
4 Claims. (Cl. 258—1.2)



1. A direct loading cargo pick-up system for aircraft of the helicopter type including
(*a*) a structural frame, having depending struts,
(*b*) a pivotal attachment structure between said struts and an aircraft,
(*c*) a cargo hook attached to the lower end of said frame, said cargo hook having a generally horizontally loading cantilever beam and having remotely operable release mechanism,
(*d*) a position adjusting control element connected to said structural frame and extending to an aircraft fuselage,
(*e*) said frame being swingable about a longitudinal axis on its pivotal structure from a laterally disposed position where the cargo hook is positioned

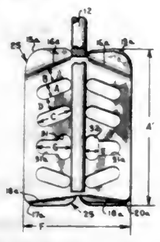
to extend beyond an aircraft fuselage during pick-up to a pendular stable position underneath an aircraft fuselage.

3,158,358
MATERIALS BLENDING MACHINE
John J. Fischer, East Stroudsburg, Pa., assignor to The Patterson-Kelley Co. Inc., East Stroudsburg, Pa.
Filed Mar. 11, 1963, Ser. No. 264,105
6 Claims. (Cl. 259—24)



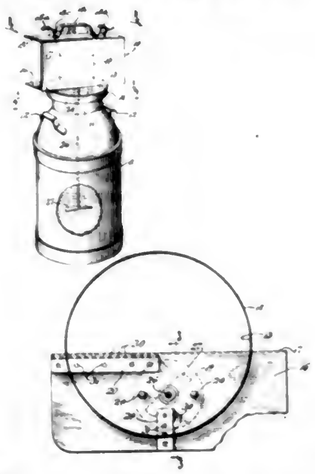
1. A multiple feed material blending machine comprising in combination, a generally conically shaped housing, a power driven spindle disposed vertically and centrally within said housing, a solids material inlet opening at the top of said housing, a slinger disc keyed to said spindle and operable to throw solid feed materials radially and spirally therefrom against the side wall of said housing, means directing feed materials from said inlet opening to the center portion of said slinger disc, a radial fan device carried by said spindle in the lower apex end portion of said housing and operating to create a circulation of air and suspended materials directed radially against the side wall of said housing and upwardly thereagainst in opposition to gravity-induced downward movements of the solid materials, and a liquid spray device carried by said spindle intermediately of said slinger and said fan device.

3,158,359
DISPERSAL VANE
Hugh A. Stiffler, 956 N. Layman St., Indianapolis, Ind.
Filed Jan. 9, 1963, Ser. No. 250,401
5 Claims. (Cl. 259—134)



1. A liquid-paste dispersal member comprising an elongated flat plate rotatably driven and having a plurality of slots therethrough;
a number of said slots being in spaced apart arrangement and inclined alike in one direction from a major axis of the plate;
at least one of said slots other than in said number being spaced from those of said number and inclined in an opposite direction from said axis;
drive means engaging said plate and centrally disposed thereof; and
a lip extending from the top of and angularly from said plate upwardly and forwardly on one side of said drive means;
a second lip extending angularly from the bottom of said plate downwardly and forwardly on said one side of the drive means;
a third lip extending angularly upwardly and rearwardly from the top of said plate on the other side of said drive means;
a fourth lip extending angularly downwardly and rearwardly from the bottom of said plate from said other side of the drive means;
said top lips increasing in area from said drive means to their outermost end portions; and
said bottom lips decreasing in area from said drive means to their outermost end portions.

3,158,360
MIXER
Lyman D. Dunn, 60 E. 25th St., Chicago, Ill.
Continuation of application Ser. No. 851,084, Nov. 5, 1959. This application Dec. 3, 1962, Ser. No. 243,702
3 Claims. (Cl. 259—135)

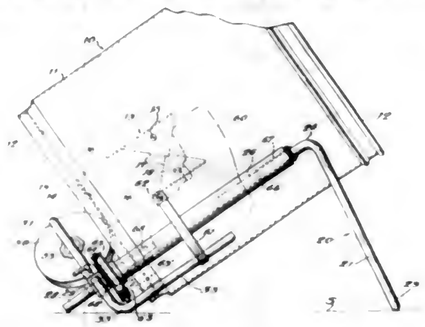


1. A mixer of the character described designed for use in performing mixing operations on ingredients in a mixing container having a substantially vertically disposed loading mouth, comprising: a mixer body having a bottom; mixing means and means for driving said mixing means positioned on said body, with said driving means being located closely adjacent said bottom whereby said body has a relatively low center of gravity; and fastening means comprising two rows of downwardly extending teeth having relatively long flanks positioned on said body bottom and disposed substantially at right angles to each other, so that the mouth of said mixing container can be solidly held at spaced areas thereon after random disposal of said mixer thereover to fasten said mixer to said container and support it thereon in a substantially vibrationless manner for mixing operations.

3,158,361
MINIATURE CONCRETE MIXER
Arthur M. Brenneke, 923 Maplewood Drive, New Castle, Ind.
Filed June 20, 1963, Ser. No. 289,218
7 Claims. (Cl. 259—177)

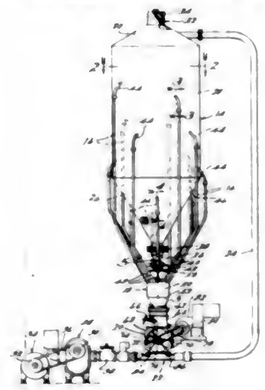
1. In combination, a support having a first frame member; said first frame member having an upwardly open

generally V-shaped front leg with spaced ends and rearward legs each extending downwardly from a front leg end; a second frame member spanning said first frame member rearward legs; means securing said second frame member to said first member rearward legs; abutment



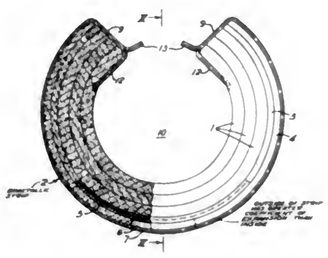
means on said second frame member; a drum removably positioned between said first frame member rearward legs and engaging said abutment means; and means for rotating said drum including a driven member rotatably mounted on a first frame member rearward leg and frictionally engaging said drum.

3,158,362
METHOD OF BLENDING GRANULAR MATERIALS
John H. Seifarth, Riverton, N.J., assignor to Acheson Industries, Inc., Port Huron, Mich., a corporation of Michigan
Filed June 7, 1962, Ser. No. 200,858
4 Claims. (Cl. 259—180)



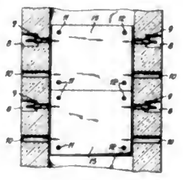
1. The method of uniformly mixing solid particulated materials which comprises the steps of consolidating the materials to be mixed in a tank, withdrawing the consolidated material from said tank in substantially equal amounts at a plurality of diverse geometrically similar locations to achieve uniform sampling of the material therein, transferring the material withdrawn downwardly through a plurality of conduits by gravity, discharging the material from each of said plurality of conduits into a collector manifold at substantially the same discharge level, allowing the level of the material in said manifold to rise to a level wherein at least a portion of the discharge opening of each of said plurality of conduits is blocked with material maintaining a controlled gravitational discharge of material therefrom into said manifold, and withdrawing the material from said manifold below the upper surface of the material at a controlled rate and maintaining at least a partial blocking of each of said discharge openings.

3,158,363
CLIP-ON HEATER
Davis T. Breckenridge, Lutherville, Md., assignor to Catalyst Research Corporation, Baltimore, Md., a corporation of Maryland
Filed June 10, 1963, Ser. No. 286,615
10 Claims. (Cl. 263—4)



1. A clip-on heater suitable for heating a substantially cylindrical member, said heater comprising a bimetallic clamp adapted to extend more than half way around the member to which it is to be applied, said clamp having ends between which such a member is receivable into the clamp, and a body of consumable heating material mounted in said clamp, the outer layer of the bimetallic clamp having a greater coefficient of expansion than the inner layer so that said ends will be moved closer together when the clamp is heated by said heating mateial, whereby when the clamp is on a cylindrical member the clamp will continue to press said body toward that member as the heating material is consumed.

3,158,364
METHOD OF HEATING TUNNEL KILNS AND A TUNNEL KILN FOR CARRYING THE METHOD INTO EFFECT
Gottfried Cremer, Steyrerweg 6, Cologne-Junkersdorf, Germany, and Heinz Behrens, Hauptstrasse 20, Schwarzenfeld, Oberpfalz, Germany
Filed June 30, 1961, Ser. No. 121,135
Claims priority, application Germany July 5, 1960
9 Claims. (Cl. 263—28)

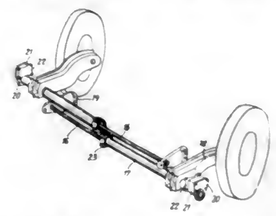


1. A method of heating tunnel kilns which comprises introducing pulses of fuel thereby forming spaced discontinuous streams thereof without substantial admixture of a combustion-maintaining gas into the combustion chamber of the tunnel kiln, and introducing gas for maintaining combustion into the combustion chamber in streams spatially separated from and substantially parallel to the streams of fuel.

3,158,365
MOUNTING OF WHEEL SUSPENSION ARMS OF VEHICLES

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France a French works

Filed Dec. 17, 1962, Ser. No. 245,203
Claims priority, application France, Jan. 23, 1962, 885,662, Patent 1,320,120
4 Claims. (Cl. 267—22)

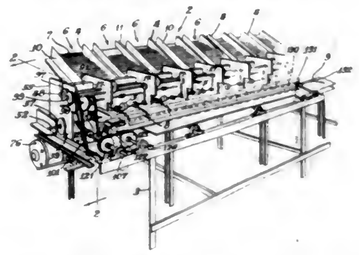


1. Mounting of wheel suspension arm for a vehicle which comprises a wheel carrier arm having a pivot bar extending on either side of the arm and connected to the frame of the vehicle through the medium of a resilient mounting, characterized in that said pivot bar has one first end connected to the frame of the vehicle through at least one resilient bushing having a principal flexibility perpendicular to said pivot bar for the absorption of the wheel beats and its other end also connected to the frame through a bearing socket constituting the centre of the angular displacement of said bar which is permitted by the resilient mounting of said first end.

3,158,366
COLLATING DEVICE WITH SELECTIVE DISPENSING MEANS

Edward S. Godlewski, 2835 Martin Ave., Melrose Park, Ill.

Filed Mar. 1, 1962, Ser. No. 176,705
1 Claim. (Cl. 270—58)

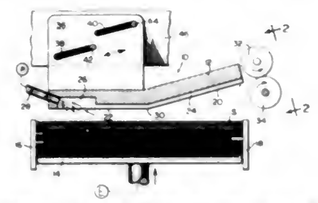


In a collator, the combination of a feeding source comprising a plurality of feeding stations, each station comprising a chute and metering roller means at the bottom of the chute, said roller means comprising substantially semi-cylindrical sections of different substance providing areas of relatively high and relatively low coefficient of friction to accommodate slippage of articles passing therealong at the areas of low coefficient of friction, pullout means disposed in intercepting relation to the metering roller means and spaced therefrom a distance less than the length of one of said articles, said pullout means operating in timed relation with and at a greater speed than said metering roller means and upon faulty feeding of articles from the metering roller means said pullout means drawing said faultily fed articles away from the metering roller means when the areas of low coefficient of friction of said metering roller means are in slipping engagement with the article.

3,158,367
PNEUMATIC SHEET SEPARATOR

Robert R. Tarbuck, West Chester, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 23, 1959, Ser. No. 848,441
7 Claims. (Cl. 271—26)

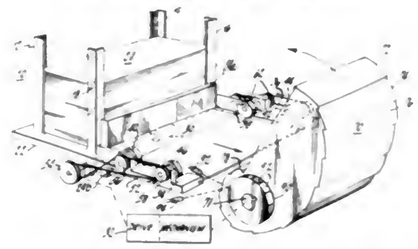


1. A device for separating the end sheet from a stack of sheets comprising, an elongated body having a first flat surface and a second flat surface at an angle to the first flat surface and having a groove in said surfaces extending longitudinally of the body from one end of said second flat surface, means for positioning said body with the first surface adjacent and substantially parallel to the end sheet of said stack and said second surface at an acute angle to said sheet, and means for optionally applying a stream of high velocity air under vaucuum or positive pressure longitudinally through a portion of the groove in the first surface to cause said sheet to adhere successively to said first and second flat surfaces and seal as least a portion of said groove, the air continuing to flow through said groove through said one end after said sealing of said portion of said groove.

3,158,368
CARD FEED MECHANISM

Steven M. Shelley, Oaklyn, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 19, 1962, Ser. No. 210,888
13 Claims. (Cl. 271—53)



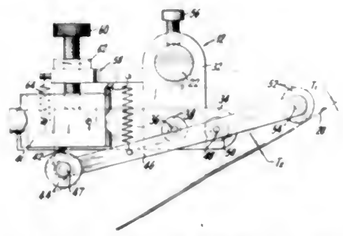
1. Apparatus for controlling the movement of a record member in a number of incremental steps comprising: a stepped, spiral-shaped gate positioned in the path of movement of said member and rotatable in one direction only about an axis which is transverse to the leading edge of said member, the outer surface of said gate having a number of stepped portions located at different distances from said axis; and means continuously urging said record member in the direction of said gate.

3,158,369
DOUBLE SHEET DETECTOR FOR PRINTING PRESSES

Aaron Blenner, 120—22 231st St., Cambria Heights, Queens, N.Y., and Robert Callahan, 6802 Narrows Ave., Brooklyn, N.Y.

Filed Dec. 10, 1962, Ser. No. 243,440
6 Claims. (Cl. 271—57)

1. A plural paper sheet detector for printing presses having a shaft oscillating in timed relation to the feed of individual sheets of paper and a feed board comprising:
an oscillating rocker shaft mounted transverse the printing press feed board in spaced relation thereto;
connective means secured to both said printing press oscillating shaft and said rocker shaft for transmitting the timed oscillation of said printing press shaft to said rocker shaft;
a support block adjustably secured to said rocker shaft said support block being arranged to oscillate together with said rocker shaft;
a spring loaded switch having an external contact button;

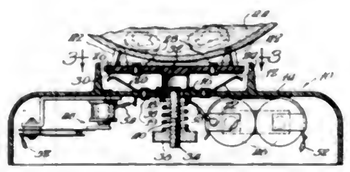


support means for said switch, said support means being pivotally mounted on said support block said support means being arranged to oscillate together with said rocker shaft whereby said switch is also oscillated; and
an actuator pivotally supported on said support block and in positive, biased engagement with said switch, said actuator being positioned proximate the printing press feed board only when the paper is being fed past said actuator, whereby the feeding of more than one thickness of paper between said actuator and said feedboard will disengage said actuator from said switch.

3,158,370
SKILL GAME COMPRISING A DISPLACEABLE BOWL FROM WHICH OBJECTS ARE TO BE WITHDRAWN

Charles Pearson, Jr., 396 Huntington Lane, Elmhurst, Ill.

Filed Mar. 7, 1962, Ser. No. 178,008
4 Claims. (Cl. 273—1)

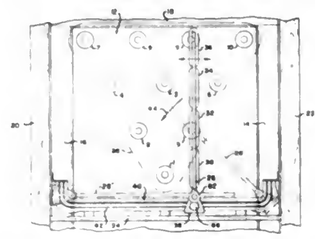


4. A game device comprising a base, a bowl supporting member supported on said base in a normal horizontal position, a bowl having an open top resting on said bowl supporting member and adapted to receive objects to be manually withdrawn through said open top, with said objects being positioned in said bowl to normally maintain said bowl supporting member in a horizontal position, the area above said bowl being unobstructed so as to permit insertion of a player's hand directly into said bowl for removal of said objects, normally separated contact members associated with said bowl supporting member and said base, means for connecting said members to an electrical circuit comprising a battery and a signal member, said bowl supporting member adapted when tilted by manual pressure inadvertently applied thereto during withdrawal of said objects to cause said contact members to engage each other and close the circuit to operate said signal member, and means for restoring said supporting member to normal position to open said circuit immediately upon release of said manual pressure.

3,158,371
APPARATUS INCLUDING A RECIPROCABLE PIN SENSING MEMBER FOR USE IN DETECTING PINFALL IN A BOWLING GAME

Alton L. Kemp, Youngstown, Ohio, assignor, by mesne assignments, to The Cleveland Trust Co., trustee, Cleveland, Ohio, a banking institution

Filed Mar. 14, 1962, Ser. No. 179,667
6 Claims. (Cl. 273—54)

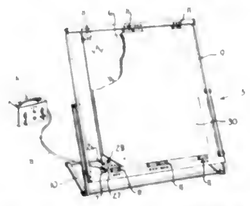


1. Apparatus for passing a standing-pin sensing member over the tops of bowling pins on a bowling alley pin deck with the sensing member extending parallel to the long dimension of the alley as it passes over the pins, and for automatically pivoting said sensing member inwardly into a position perpendicular to the long dimension of the alley when the sensing member reaches an edge of the alley in its pass thereacross comprising, in combination, track means having a straight portion extending transversely across the alley at one end of the pin deck and having curved portions at its opposite ends bent toward the other end of the pin deck, a carriage reciprocable on said track means, and a standing-pin sensing member supported on the carriage above said bowling pins, the arrangement being such that when the carriage moves across the straight portion of the guideway, the sensing member will extend parallel to the long dimension of the alley, whereas when the carriage reaches each curved portion, the sensing member will be rotated into a position wherein it extends transverse to the alley.

3,158,372
SIGNALING DEVICE FOR SCORING GUNNERY TARGET PRACTICE

John Alex Ingvar Ohlund, Huskvarna, and Karl Ragnar Andersson and Gunnar Alexius Wallgard, Jonkoping, Sweden, assignors to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

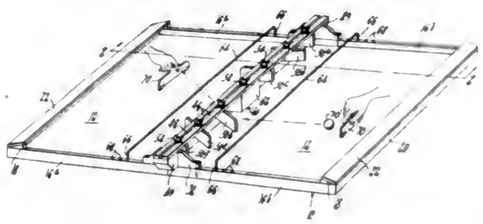
Filed Feb. 16, 1962, Ser. No. 173,636
Claims priority, application Sweden Feb. 20, 1961
11 Claims. (Cl. 273—102.2)



1. In a device for producing signals that can be used to obtain indications of accuracy of aim during target practice: a target plate of substantially rigid vibration transmitting material, defining an area in which shots are to be placed; means for supporting the target plate in

a position normal to a line of target practice fire, said supporting means engaging only a small portion of the target plate so as to permit shock waves to travel unimpeded through the target plate; a directional vibration responsive transducer for generating an electrical signal in response to a vibration impulse along one axis of the transducer, and which is substantially nonresponsive to vibration impulses along other axes; and rigid vibration transmitting means securing the transducer to an edge portion of the target plate with the transducer so oriented that its said one axis is parallel to the plane of the target plate, so that the transducer produces an electrical signal only when a projectile strikes the target plate and thereby propagates an edgewise traveling shock wave therethrough, and so that the transducer is nonresponsive to vibrations normal to the plane of the target plate, such as those due to air shock waves from projectiles that pass near the target plate without striking it.

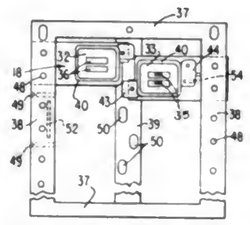
3,158,373
COMPETITIVE PADDLE PROJECTILE GAME
Whitney Hastings, Six Acres, Newfield, Middletown, Conn.
Filed Dec. 22, 1961, Ser. No. 161,673
5 Claims. (Cl. 273—118)



1. A game apparatus which comprises a transversely opposed pair of vertically extending side walls, a longitudinally opposed pair of trapping end zones defining with said side walls a playing area, a transversely extending obstructor apertured from the lower edge thereof intermediate of said end zones, and a projectile having an outer configuration which is a circle in cross-section, said obstructor including a multiplicity of rebound panels, a bounce-back block, and locking means, at least one of said rebound panels being of a width greater than the diameter of said circle, at least one of said rebound panels being of width different from at least another thereof, all of said rebound panels being selectively rotatable about a vertical axis and selectively transversely slidable, said bounce-back block including opposed bounce-back surfaces and being selectively rotatable about a vertical axis, said locking means comprising means to lock all said rebound panels against rotation and transverse movement in use, and means to lock said bounce-back block against rotation in use.

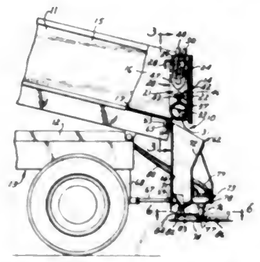
3,158,374
TRANSDUCER HEADS
Franklyn G. Nickl, Santa Barbara, Calif., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,226
6 Claims. (Cl. 274—11)

1. A transducer head assembly for a tape unit comprising a supporting structure, plate means removably and adjustably affixed to said supporting structure and vertically adjustable with respect thereto, first guide means for limiting movement of said plate means to vertical movement, a head housing affixed to said plate means and rotatable with respect thereto, second guide means for limiting movement of said plate means to rotative



movement, and a transducer head affixed to said head housing and movable therewith.

3,158,375
PORTABLE MATERIAL SPREADER
Bennie T. Vig, 413 W. 3rd St., Willmar, Minn.
Filed Jan. 21, 1963, Ser. No. 252,898
3 Claims. (Cl. 275—8)



1. A material spreader for a vehicle having a frame, wheels supporting said frame, and a wagon box having a floor and opposed sides mounted on said frame for pivotal movements of the wagon box at the rear end of said frame between a horizontal position and an inclined position, said wagon box having a tail gate pivotally connected at its upper end to the rear end of each of said sides for limited opening and closing movements of the lower edge of said tail gate toward and away from the rear end of said wagon box, said material spreader comprising,

(*a*) a feeder frame including opposed side walls, a rear wall, and a cross-sectionally arcuate bottom wall,

(*b*) means for detachably mounting said feeder frame to said tail gate within said wagon box for common opening and closing movements with said tail gate and with said rear wall in face-to-face relation to the tail gate and with said arcuate bottom wall overlying said wagon box floor when the tail gate is closed,

(*c*) said arcuate bottom wall having a forward edge portion disposed in overlying engagement to a rear edge portion of said wagon box floor when said tail gate is at its limit of opening movement,

(*d*) said arcuate bottom wall further having a discharge opening adjacent one end disposed rearwardly of said wagon box floor when said tail gate is at its limit of opening movement,

(*e*) means cooperating with said rear wall and one of said side walls to provide a hood overlying said discharge opening to isolate said discharge opening from the wagon box and defining an opening spaced from said discharge opening,

(*f*) a generally horizontally disposed feed auger closely overlying said arcuate bottom wall and including a shaft journalled in said feeder frame side walls and an auger flight a portion of which projects generally radially outwardly from said shaft, said auger flight portion extending through said hood opening, said auger flight terminating above the central portion of said discharge opening,

(*g*) said auger flight portion being closely received in said hood opening and cooperating with said hood to prevent passage of material to said discharge opening when said feed auger is inoperative,

(*h*) a rotary spreader element mounted on said vehicle frame independently of said feeder frame and in underlying relation to said discharge opening when said tail gate is open, to receive material delivered through said discharge opening,

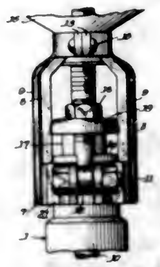
(*i*) and means for imparting rotary movements to said feed auger and rotary spreader element.

3,158,376
LOW PRESSURE SEAL
John H. Rentschler, Minneapolis, Minn., assignor to Minnesota Rubber Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 10, 1963, Ser. No. 279,486
13 Claims. (Cl. 277—205)



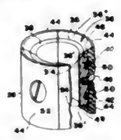
1. A sealing device comprising a continuously formed ring-like member made of a resilient flowable material such as rubber throughout and adapted to be fitted into a sealing groove of ring-like configuration, said ring-like member in its free form having a main body portion which is generally rectangular in cross-sectional configuration, said member having a pair of axially spaced sides and a pair of radially spaced sides and, when considered cross-sectionally, having a pair of elongated cantilevered sealing elements projecting outwardly from its said main body portion at one of its sides at adjacent corners of the rectangular cross-sectional configuration and having convexly shaped lobes at its remaining corners.

3,158,377
FABRICATED STUFFING BOX WITH GLAND EYE-BOLT ARRANGEMENT
George E. Hansen, Elmwood Park, and Anton Korzenowski, Brookfield, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed July 23, 1963, Ser. No. 297,085
4 Claims. (Cl. 277—105)



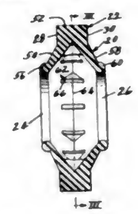
1. In a valve construction or the like for supporting an actuating mechanism with a shouldered annular portion, the combination including an integral stuffing box-bonnet member and a separable yoke assembly, the yoke having a pair of integral spaced-apart arms, pivotally mounted gland bolts of eye-bolt configuration for the stuffing box, retainer means for the said gland bolts, the said retainer means including said yoke comprising a pair of superposed spaced-apart clamp members at each end of said yoke arms respectively for engagement with said integral stuffing box bonnet member and said actuating mechanism, means cooperating with the gland bolts for drawing said yoke clamp members together, the lower one of said superposed clamp members providing for said pivotal mounting of said gland bolts, the said yoke clamp members having inner arcuate surface portions closely engaging said spaced-apart annular shoulder portions of said stuffing box member and said shouldered portions on said actuating mechanism whereby to fixedly retain said clamp members at opposite ends of said yoke arms against longitudinal and rotational movements upon assembly of said clamp members with the stuffing box-bonnet member and said actuating mechanism.

3,158,378
COMPOSITE BACK-UP RING STRUCTURE
Glenn L. Loomis, P.O. Box 728, Pasadena, Tex.
Filed Feb. 2, 1962, Ser. No. 170,538
10 Claims. (Cl. 277—198)



1. A composite expansible back-up ring for use with a resilient packer set in a plastic lined well pipe or the like, said back-up ring comprising: a plurality of arcuate metallic segments; a plurality of non-metallic arcuate shaped elements, each of said non-metallic elements covering the entire exterior surface of each of said metallic segments; means for attaching each of said non-metallic elements to one of said metallic segments; and resilient means circumscribing said arcuate metallic segments and interposed between the same and said non-metallic arcuate-shaped elements for retaining them in a retracted position as a unit.

3,158,379
BUTTERFLY SEALING GLAND
Joseph A. Nava, Villa Park, Ill., and Robert Lee Hume, Parma Heights, Ohio, assignors to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 8, 1960, Ser. No. 7,467
2 Claims. (Cl. 277—206)



1. A sealing gland for an electrical connector comprising,

an electrical connector housing having

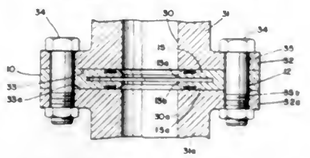
an annular ring in the interior thereof,

said annular ring having an opening therein through which a current-continuing member extends,

and a pair of flexible sealing membranes extending radially inwardly and mutually diverging from said annular ring into said opening in a conical configuration,

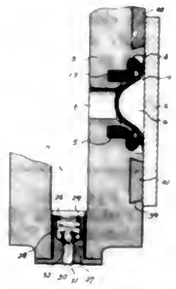
each of said membranes having an inner end disposed for conforming engagement with the current-continuing member,
and an annular bead on each inner end of greater diameter than the cross-sectional thickness of the membrane,
said beads being radially spaced from said annular ring and forming axially aligned openings for conformably and sealingly engaging the current-continuing member,
said membranes being yieldable without stressing the beads in conforming contact with the current-continuing member,
and a plurality of radially aligned, circumferentially spaced, resiliently stretchable walls axially joining said membranes and said annular ring,
said stretchable walls terminating inwardly in radially spaced relationship to said beads,
thereby to stabilize the gland perpendicular to the axis of the current-continuing member.

3,158,380
JOINT SEAL
Theodore R. Carrell, Los Angeles, and Tommy J. McCuistion, Playa Del Rey, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 1, 1961, Ser. No. 128,581
1 Claim. (Cl. 277—235)



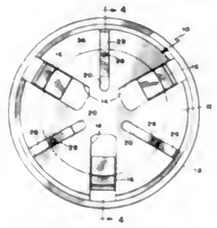
A sealing washer for interposition between a pair of members having opposed surfaces, said washer being annular and having a central co-axial opening for passage of fluid therethrough, an annular radially disposed channel means formed in said sealing washer and extending radially outward from said opening and communicating therewith throughout the full circumferential extent, said channel means splitting said sealing washer transversely to define substantially identical but opposed lips, each lip having a transverse outer face and a transverse inner face, said inner faces defining said channel means, each transverse outer face having an annular groove therein overlying said channel means and dividing said outer face into radially inner and outer portions, said groove having a radial extent that is greater than the radial extent of said inner portion and less than the radial extent of said outer portion, said outer portion having a radially inward edge, a resilient sealing element of a material capable of cold flow being disposed in said annular groove and partially protruding therefrom, said groove having a sufficient volume to receive all of said sealing element when same is under compression, the portion of each said lip separating the groove from the channel being of substantially less thickness than the thickness of adjacent portions of said lip, said inner faces being subjectable to fluid pressure action in said channel for deforming said lips to move said inner and outer portions into contact with adjacent portions of said opposed surfaces, the said portions of said lips between said grooves and said channel being sufficiently thin to deflect under fluid pressure, each inner portion acting as a fulcrum point, the parts being so constructed and arranged that the resultant of forces generated by said fluid pressure on said inner faces of said lips acts to force the radially inward edges of said outer portions into surface to surface contact with the adjacent opposed surface.

3,158,381
VACUUM CHUCK
Shinjiro Yamamura, Amagasaki, Japan, assignor to Kabushiki Kaisha Amagasaki Kosakusho, Amagasaki, Japan
Filed Oct. 11, 1962, Ser. No. 229,909
Claims priority, application Japan, Mar. 5, 1962, 37/8,859, 37/8,860; Apr. 2, 1962, 37/13,294, 37/13,295
4 Claims. (Cl. 279—3)



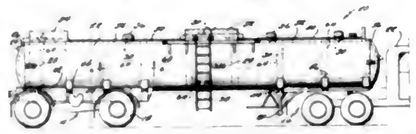
1. In a vacuum chuck, the combination comprising a chuck board having a work holding surface and a plurality of surface openings, an annular groove in said work holding surface for each surface opening surrounding the same in concentric relationship, an annular sucker body of elastic material for each surface opening, said sucker body having an annular portion mounted in its corresponding annular groove and having a central flexible portion covering its corresponding opening, said flexible portion having one side facing a workpiece and having an opposite side facing its corresponding opening, passage means in said chuck board communicating with said surface openings, and evacuation means including pump means communicating with said passage means and being operative to flex said flexible portion inwardly into its corresponding opening to create a vacuum between the one side of said flexible portion and the workpiece.

3,158,382
CHUCK FACING PLATE ADAPTER
James W. O'Neill, 108 F St., San Diego, Calif.
Filed Mar. 11, 1963, Ser. No. 264,361
3 Claims. (Cl. 279—123)



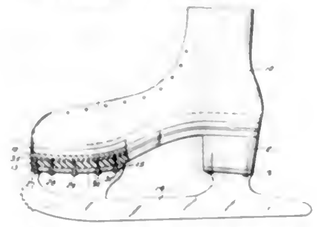
1. A chuck jaws adapter for spacing a work piece from the face of a chuck having adjustable jaws to hold the work piece, comprising:
an adapter plate engageable against the face of a chuck and having slots extending substantially radially therein, the sides of said slots being parallel and adapted to snugly receive the chuck jaws whereby said adapter plate is self centering on said chuck;
said adapter plate having spacing elements of selected thickness removably secured thereto and extending substantially perpendicularly relative to the chuck face to engage and support a work piece.

3,158,383
CHASSISLESS TANK TRUCK
Thomas F. Anderson, Wilmington, Del., and John H. Lux, Charlestown, Md., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 162,632
8 Claims. (Cl. 280—5)



3. A generally cylindrical tank suitable for use as a chassisless tank trailer and having a capacity of at least 1000 gallons, said tank having sufficient strength to be supported on a pair of cradles located at or near its ends, the tank being of plural shell construction, said shells including a unitary inner corrosion-resistant thin plastic shell enclosed by an outer thin plastic shell, one of said shells being reinforced with fiberglass; an insulating foam polymer layer interposed between the inner and outer shells and a plurality of ring-like ribs of fiberglass reinforced plastic material extending through said insulating foam polymer and uniting the inner and outer shells to one another.

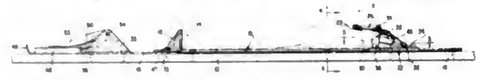
3,158,384
SHOE ATTACHING MEANS FOR ICE SKATE CONSTRUCTION
Stanley Kardon, 3707 Walnut St., Philadelphia, Pa.
Filed Feb. 23, 1962, Ser. No. 175,157
1 Claim. (Cl. 280—11.3)



An ice skate; said ice skate comprising a boot and a blade; said boot having an insole and an outsole; said blade having a front face plate; said front face plate being secured to the outer surface of said outsole; a plurality of self-tapping threaded members; said front face plate having a plurality of openings therein for receiving respective self-tapping threaded members of said plurality of said self-tapping members; a rigid plate being positioned between said insole and said outsole; said plurality of said self-tapping threaded members extending from said front face plate, through said outsole and into said rigid plate for rigidly securing said blade to said boot; said plate being of relatively thin aluminum; said outsole being of a material characterized in being unable to rigidly retain said self-tapping threaded members; said self-tapping threaded members being removable and reconnectable through said outsole and into said plate to adjust the position of said blade.

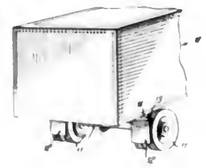
3,158,385
SKI BINDING
Raymond L. Hall, Caldwell, N.J., assignor to Ski-Dek Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,037
9 Claims. (Cl. 280—11.35)

1. A ski binding comprising a base plate adapted for attachment to a ski intermediate the ends thereof, a fixed toe piece on the ski near the forward end of the base plate, a slide plate movably engaging the base plate rearwardly of said toe piece, a pull bar connected with said slide plate and extending longitudinally of the base plate and forwardly of the base plate and toe piece and movable lengthwise relative thereto with said slide plate, a heel clamping plate above said slide plate and having sliding and rocking contact therewith, linkage means pivotally



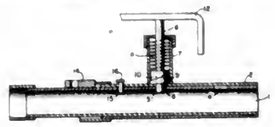
connected with said pull bar and bearing upon the top of said heel clamping plate and operable to draw the latter into clamping engagement with the heel of a ski boot when the pull bar and slide plate are shifted forwardly relative to said base plate and toe piece, and manually operable means on the ski forwardly of said toe piece and adjacent a forward portion of the pull bar and engageable therewith to feed the pull bar forwardly and to releasably lock the same in a selected adjusted position.

3,158,386
STRESS REMOVABLE SPLASH GUARD
David G. Tillinghast and Gerald J. Kunze, Cincinnati, Ohio, assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,946
3 Claims. (Cl. 280—154.5)



1. A splash guard comprising
a sheet of flexible material,
said sheet having a plurality of spaced bolt receiving slots at the upper edge thereof,
a plurality of inwardly directed wedges of compressible material spaced along the top of said sheet,
a fixed plate and a movable plate clamping the top edge of said sheet therebetween,
and bolts passing through said plates and the slots in said sheet for securing said movable plate to said fixed plate.

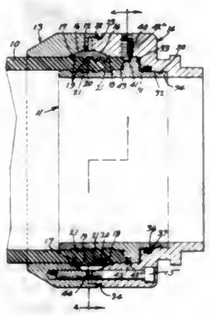
3,158,387
EXTENSIBLE DRAW BAR
Hiram V. Martin, 1321 N. Riverside Ave., Medford, Oreg.
Filed Oct. 2, 1962, Ser. No. 227,923
1 Claim. (Cl. 280—478)



An extensible drawbar comprising inner and outer tubular interfitting horizontally directed sections slidably engaging each other, the inner section having two diametric apertures longitudinally spaced apart from each other, the outer section having one diametric aperture adapted to be aligned with either of said two apertures, a vertically directed sleeve fixedly connected to said outer sec-

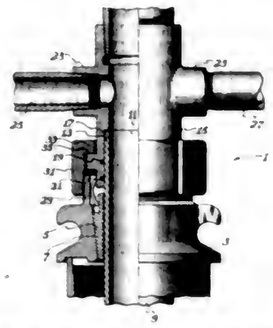
tion, a reciprocatory bolt working in said sleeve, said bolt normally engaging the aperture of the outer section and one of the two apertures of the inner section, to lock the sections together in contracted relationship and being adapted to engage the aperture of the outer section and the other aperture of the inner section to lock the sections together in extended relationship, a lower cam in said sleeves fixedly connected thereto, an upper cam in said sleeve fixedly connected to said bolt, and a coiled spring in said sleeve tensioned to press said cams together and to exert tension upon said bolt to hold its locking engagement with said apertures, characterized in that said upper and lower cams are each plane-surfaced, each of said planes being oriented at a comparatively low angle to the horizontal of approximately twenty-three degrees and having their highest and lowest points diametrically opposite, the upper cam being rotatable 180 degrees upon the lower cam to withdraw said bolt from said apertures, the peripheral edge of the upper cam riding upon the peripheral edge of the lower cam during said bolt withdrawal, whereby said bolt is automatically held partially or completely withdrawn against the tension of said spring during its withdrawal without attention of the operator.

3,158,388
HOSE COUPLING CONNECTION
Don J. Marshall, Edgewater, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 13, 1962, Ser. No. 209,519
9 Claims. (Cl. 285—90)



1. A hose coupling connection for a hose having an elastomeric outer covering, comprising in combination, a nipple having a cylindrical hose-supporting surface terminating in a radial annular surface engaged by the end wall of the hose when assembled, a plurality of, and at least four, circumferentially spaced hard rigid gripping wedge segments disposed around the outer periphery of the hose when the hose is telescoped on the nipple, said wedge segments having interior axially-spaced circumferentially extending projections with rounded interior ends for engaging and penetrating the covering of the hose and also having broad intermediate land surfaces between the projections which engage the outer surface of the covering when the projections have penetrated into the covering, said wedge segments having axially oppositely directed axially continuous tapered wedge surfaces on the exterior side free from exterior projections at the adjacent high ends which would interfere with the full passage thereover of clamping means, said wedge segments by cam action exerted on their tapered wedge surfaces from opposite axial direction having their interior projections forced into the covering of the hose, means for clamping and holding said wedge segments in engagement with the hose, said clamping means including axially opposed clamping rings having annular wedge-shaped interior surfaces engaging the tapered outer wedge surfaces of said wedge segments, and one of said clamping rings having a circumferentially complete annular ring extension overlying an axial extension of said nipple located beyond the end of the hose, said ring and nipple extensions embracing reaction elements for taking axial reaction forces between them tending to separate them axially due to internal fluid pressure, said clamping rings at their axially remote ends completely embracing and extending beyond the remote ends of said wedge segments, axially aligned circumferentially spaced clamping elements between said clamping rings disposed radially outside said wedge segments for pulling said clamping rings together, and means for holding said wedge segments in evenly spaced position circumferentially of the hose until the projections of the segments penetrate into the outer surface of the hose, said wedge segment positioning means comprising cooperating portions of said wedge segments and said axially aligned ring clamping elements which separate radially as the connection is tightened on the hose.

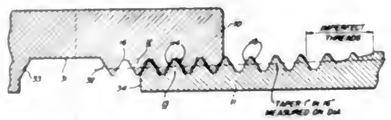
3,158,389
GAS AND OIL WELL CASING HEAD ASSEMBLY
Clyde T. Turner, 5615 S. Lewis Ave., Tulsa, Okla.
Filed Aug. 10, 1960, Ser. No. 48,692
1 Claim. (Cl. 285—133)



A gas and oil well casing head assembly comprising a casing support having an externally screw-threaded upper edge portion, means supporting a length of casing in the casing support with the casing terminating a short distance above said means in an upper end portion having a smooth cylindrical outer surface, a casing head having a smooth cylindrical bore in its lower end with said cylindrical outer surface of the casing disposed slidably in the bore, said bore having at least one annular radially inwardly opening recess therein, an O-ring disposed in each said at least one recess and in sealing engagement with the casing, said bore terminating upwardly in an inwardly directed abutment in contact with the upper end of the casing when the upper end of the casing is fully inserted in the casing head, an external radial shoulder on the casing head above the upper edge of the casing support and below said abutment and spaced a substantial distance above the lower edge of the casing head, said externally screw-threaded upper edge portion of the casing support being spaced a substantial distance above the lower edge of the casing head and extending radially inwardly beyond the radially outermost portion of said external radial shoulder on the casing head, the radially inner surface of said upper edge portion being spaced a substantial distance radially outwardly from the radially outer surface of the casing head adjacent said lower edge thereof, and means for exerting a uniform force on said radial shoulder comprising a union nut having internal screw threads in engagement with

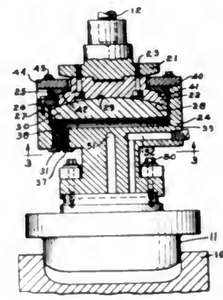
the external screw threads of the casing support and having an inwardly directed flange above and in contact with said radial shoulder to draw the casing head down upon the casing upon rotation of the union nut in one direction and to release the casing head from securement with the casing upon rotation of the union nut in the other direction, the casing and the casing head overlapping each other a vertical distance which is substantially greater than the vertical distance by which the casing support and the union nut overlap each other when the casing is fully seated in the casing head, so that upon assembly, the casing enters the casing head a substantial distance before the screw threads of the union nut and the casing support can engage each other, the union nut when in screw-threaded engagement with the casing support being coaxial with the casing and the casing support and the casing head and bearing evenly on said radial shoulder thereby to avoid canting the casing head relative to the casing when the upper end of the casing is in the bore above said radial shoulder.

3,158,390
TAPERED THREAD FLUID SEAL CONNECTION
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio
Filed Aug. 28, 1962, Ser. No. 220,094
1 Claim. (Cl. 285—334)



A tapered pipe thread fluid seal connection comprising, male and female threaded members having respectively male and female threads for effecting a solid mating sealing engagement with each other upon assembly of said members to their wrench-tight full make-up connection, said female threaded member having an enlarged internal annular wall defining a recess at the small diameter end of the female threads, said recess eliminating imperfect female threads normally occurring at the small diameter end thereof and leaving only full-size female threads except for the incomplete thread portion at each end thereof, said male threaded member having full-size male threads disposed for engagement with said full-size female threads, all of said full-size female threads and all of said full-size male threads respectively formed on the same taper and with the same pitch with due variations allowed for manufacturing tolerances, all of said full-size female threads and all of said full-size male threads having full-size V-shaped side surfaces, each full-size V-shaped side surface of all of said full-size female threads and all of said full-size male threads respectively having the same included angle therebetween with due variations allowed for manufacturing tolerances, all of said full-size V-shaped side surfaces at their root diameter being spaced apart and interconnected by a root truncation surface, all of said full-size V-shaped side surfaces if extended beyond said root truncation surface to a theoretical edge would define with said root truncation surface a helical triangular section, said root truncation surface having a maximum width of .006, .007, .007, .009 and .011 of an inch for threads respectively having a pitch of 27, 18, 14, 11½ and 8 threads per inch and having a minimum width of .004, .005, .005, .006 and .008 of an inch respectively for the same said pitch threads with due variations allowed for manufacturing tolerances, all of said full-size V-shaped side surfaces at their crest diameter being spaced apart and interconnected by a crest truncation surface forming a helical penetrating portion, said crest truncation surface having a width less than that of said root truncation surface by an amount comprising a distance of .002 to .003 of an inch with due variations allowed for manufacturing tolerances, said crest truncation surface on said full-size male threads having a greater radial dimension than said root truncation surface on said full-size female threads for the same corresponding longitudinal thread positions which are disposed to coincide with each other at said wrench-tight full make-up connection and said crest truncation surface on said full-size female threads having a smaller radial dimension than said root truncation surface on said full-size male threads for the same corresponding longitudinal thread positions which are disposed to coincide with each other at said wrench-tight full make-up connection, said crest and said root truncation surfaces of all of said full-size threads in mating contact resisting relative rotation therebetween to effect a hand-tight make-up connection before both said full-size V-shaped side surfaces make a full flanking solid mating sealing engagement, said recess having an internal diameter to receive the small diameter end of said male threaded member as said members are rotated to wrench-tight full make-up connection, relative rotation of said male and female threaded members from said hand-tight make-up connection to said wrench-tight full make-up connection forcing said helical penetration portion of all said engaged full-size threads to embed itself into said helical triangular section to make a penetrating solid mating sealing engagement with each other to seal off any helical clearance therebetween before bringing both said full-size V-shaped side surfaces together to effect a full flanking solid mating sealing engagement therewith, all of said full-size female threads and all of said full-size male threads making contact therewith at said wrench-tight full make-up connection having both said penetrating solid mating sealing engagement and said full flanking solid mating sealing engagement and constituting the only resistance to relative rotation of said male and female members at said wrench-tight full make-up connection.

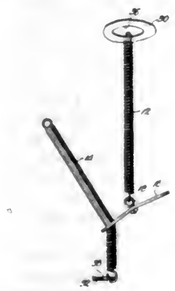
3,158,391
GLASS PRESSING APPARATUS
Arieh Carmi and Thomas J. Rayeski, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 20, 1961, Ser. No. 160,836
2 Claims. (Cl. 287—130)



1. In a coupling between a pressing head adapter and a plunger, a pressing plunger adapter having a lower end for attachment to a plunger with an upper end embodying an open topped cavity, a socket for attachment to a pressing head adapter arranged within such cavity having a spherical under surface and an oppositely disposed annular spherical surface of like radii, an annular member having a spherical under surface mating with the upper spherical surface of said socket, an annular cap for the plunger adapter cavity preventing the withdrawal of said annular member and said socket from its cavity, a plate

member having a top spherical surface mated with the under surface of said socket, an annular support assembly embodying resilient material upon which said plate rests, and resilient members embodied in a portion of said plunger adapter below the cavity therein and bearing against the underside of said assembly.

3,158,392
HOLDER FOR AUTOMOBILE TRUNK LIDS
Kerry Lester Shell, Hopkins, Mo.
Filed Oct. 15, 1962, Ser. No. 230,342
4 Claims. (Cl. 292—288)



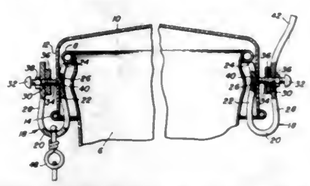
1. Apparatus for biasing an automobile trunk lid downwardly when the same is maintained in an open position by an article between the lid and the automobile, said apparatus comprising:

an elongated spring adapted to be secured adjacent one end thereof to said trunk lid and to extend toward said automobile;

an elongated element adapted to be secured adjacent a first extremity thereof to said automobile, said element comprising a coil spring; and

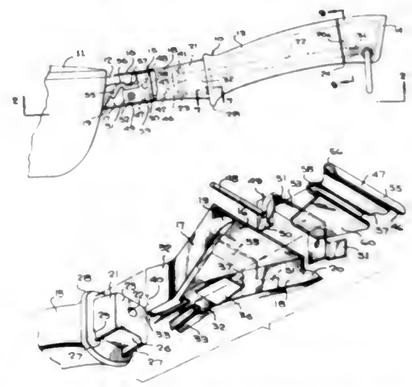
means movable along the length of said element and releasably secured thereto for interconnecting said element with said spring adjacent the opposite end of the latter whereby the effective length of said spring may be varied to permit articles of various shapes and sizes to be carried between the trunk lid and the automobile without subjecting said spring to excessive stresses.

3,158,393
RECEPTACLE COVER LATCH
Charles H. King, Rte. 2, Berkshire, N.Y.
Filed Jan. 24, 1963, Ser. No. 253,679
4 Claims. (Cl. 292—288)



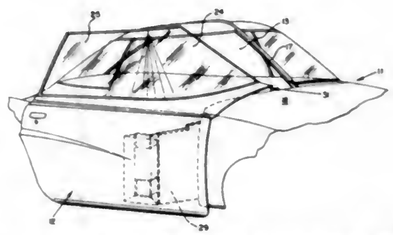
1. In combination, a receptacle comprising a top bead and a removable cover including a depending flange encircling the receptatcle, a pair of generally U-shaped clips straddling the flange on diametrically opposite sides thereof and engageable at one end beneatth the bead for latching the cover to the receptacle, means for rockably securing the clips on the flange, and means for disengaging one of said clips from said flange, said first-named means including fulcrums on the flange, one of the legs of the clips having depressions therein receiving said fulcrums, and reaction screws threadedly mounted for adjustment on the other legs of the clips and engaged with the flange for retaining said one leg of said clips on said fulcrums.

3,158,394
DETACHABLE SAUCEPAN HANDLE
Anthony W. Serio, Elmira, N.Y., assignor to Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1961, Ser. No. 144,416
9 Claims. (Cl. 294—31)



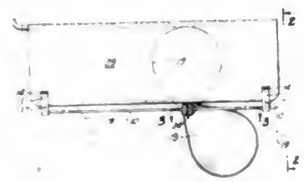
1. A detachable handle for a utensil such as a saucepan, comprising an elongate handle section having a forward end extension, means on the forward end of the handle for coupling the latter to a utensil, said means including a plate body having a forward end, side flanges and a rearward end, the rearward end of the plate body having top and side flanges engaging around said forward end extension, said side flanges having inwardly extending portions engaging an underside of said handle extension, means forming an interlocking coupling between said inwardly extending portions securing said rear end of the body and flanges to the handle extension, and inturned lug members carried by the rear ends of said side flanges and engaging in recesses in said handle end extension and preventing relative longitudinal movement between the handle and the plate body.

3,158,395
VEHICLE DOOR AND WINDSHIELD STRUCTURE
Raymond P. Smith, Huntington Woods, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,217
6 Claims. (Cl. 296—44)



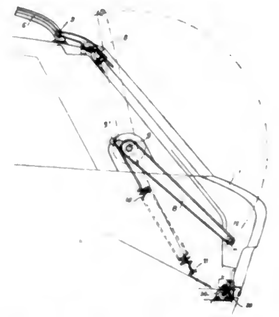
1. In a vehicle body having a body opening defined at least in part by a generally vertically extending front pillar and a windshield post; a closure structure for said body opening mounted on said vehicle body for movement between closed and opened positions, said closure structure comprising a lower partial door structure having a cowl forming extension and a transparent glass panel including a side window and windshield forming portion extending upwardly from said cowl forming extension; a control means pivotally connected at one end to said front pillar and at the other end to said inside surface of said lower door structure intermediate its edges; a follower attached to said cowl forming extension; and a guide receiving said follower attached to said vehicle body; said control means and guide coacting with said closure structure to control the latter during movement from its closed position outwardly and forwardly of the vehicle body opening, said lower partial door structure and side window being maintained in a plane substantially coincident with said vehicle body opening during initial phase of opening movement, said closure structure then being angularly displaced with respect to said body opening during further opening movement of said closure structure to its maximum opened position.

3,158,396
GLARE SHIELD ATTACHMENT FOR AUTOMOTIVE VEHICLES
Hans Berger, 17647 Belinda St., Encino, Calif.
Filed July 26, 1963, Ser. No. 297,880
6 Claims. (Cl. 296—97)



1. A glare shield attachment for the sun visor of an automotive vehicle comprising an elongated rod substantially equal in length to the visor, said rod having a substantially square cross-section, a pair of attaching clips disposed adjacent to the opposite ends of said rod, each of said attaching clips including a pair of integral substantially U-shaped bars extending substantially parallel to each other, said bars having adjacent their free ends a pair of inwardly directed integral clamps adapted to removably engage the opposite sides of the visor adjacent the lower edge thereof, each of said clips having adjacent its closed end a substantially four-sided rod receiving channel, said rod being held within said channel, a spring clip mounted for sliding longitudinal movement along said rod between said attaching clips, said spring clip including a pair of resilient sides normally extending at an angle with respect to said rod, said sides having aligned openings therein of somewhat larger dimension than the cross-section of said rod, said rod extending through said openings, the edges of said openings normally engaging said rod to prevent the longitudinal movement of said spring clip along said rod, said sides adapted to be moved toward each other to a more parallel position to permit the longitudinal movement of said spring clip along said rod, a glare shield having its upper end rotatably connected to said spring clip, and a spring washer engaging the upper end of said glare shield and a stationary part of said attachment to provide frictional engagement normally holding said glare shield in any angular position to which it is rotated, while permitting free manual rotation of said glare shield.

3,158,397
REAR DOORS AND LIDS OF AUTOMOBILE VEHICLES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 21, 1963, Ser. No. 266,995
Claims priority, application France, Mar. 28, 1962, 892,542, Patent 1,327,780
4 Claims. (Cl. 296—106)



1. An automobile door such as the rear door of an estate wagon, comprising, a pair of laterally spaced guideways adapted to be attached to the roof of said wagon, a door member, laterally spaced rollers attached to the upper portion of said door member and engaging respective ones of said guideways, a pair of laterally spaced arms pivotally attached at one end to a transverse pivot means and adapted to be pivotally attached at their other ends to the body of said wagon, said transverse pivot means being attached to a lower portion of said door member, a clamping device adapted to lockingly engage said pivot means so as to prevent pivoting of said spaced arms about said pivot means, a movable door handle extending exteriorly of said door member, a door holding member adapted to be attached to the body of said wagon, a locking device attached to the interior side of said door member and being lockingly engageable with said holding member, said door handle being operatively connected to said clamping device and to said locking device whereby actuation of said handle in turn actuates said clamping and locking devices between respective locking and unlocked positions.

3,158,398
SEAT CONSTRUCTION
Lloyd Lee Stryker, Kalamazoo, Mich., assignor to Stryker Corporation, a corporation of Michigan
Filed Sept. 14, 1962, Ser. No. 223,628
1 Claim. (Cl. 297—333)



A portable seat construction for a wheel chair having a seat supporting frame, comprising:

a substantially flat and rigid base member;

mounting means on said base member removably engageable with said frame for supporting and positioning said base member upon said frame;

a flat and rigid seat support member, and seat cushion means thereon;

a pair of similar, spaced and coaxial hinge assemblies secured to said seat member and said base member so that the axis of said hinge assemblies is adjacent to and substantially parallel with an edge of said seat member and an edge of said base member, each hinge assembly including first bracket means connected to said base member and second bracket means connected to said seat member, a pivot pin concentric with said axis and operably connected to said first and second bracket means, and an axially elongated sleeve rotatably supported upon said pivot pin;

a pair of torsion spring means respectively and operatively associated with said pair of hinge assemblies, each spring means including a coil closely encircling said sleeve and a pair of integral end elements extending from the opposite ends of said coil transversely of said axis, said elements being respectively engaged with said seat member and said base member for urging same to pivot away from each other;

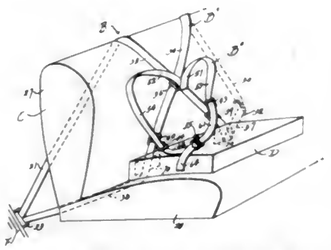
cooperating latch means on said seat member and said base member for releasably holding said seat member adjacent to and substantially parallel with said base member, said latch means including a latch hook on said seat member near the edge thereof remote from said hinge axis, and an elongated lever pivotally mounted between the ends thereof on the base member for movement around an axis substantially perpendicular to the plane of said base member, one end of said lever being engageable by said hook member for holding said seat member substantially parallel with said base member and the other end of said lever being manually engageable adjacent said hinge axis;

resilient means continuously urging said lever into a position for engagement by said hook member;

gripping means on said base member engageable with said lever for releasably holding same out of said position against the contrary urging of said resilient means; and

an elongated flexible element positively limiting movement of said seat member away from said base member under the urging of said spring means.

3,158,399
SAFETY HARNESS
John J. M. Pragnell, Tilford, near Farnham, Surrey, England, assignor to Irving Air Chute Co., Inc., Lexington, Ky., a corporation of New York
Original application Mar. 27, 1962, Ser. No. 182,784. Divided and this application Feb. 20, 1963, Ser. No. 259,954
4 Claims. (Cl. 297—389)



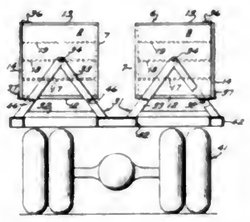
3. In a safety strap structure for vehicles, the combination of a vehicle frame including a seat with a seat back, side connectors rigidly attached to said frame, back straps connected to said connectors extending upwardly in convergent relation at the rear of the seat back and extended over the top of the seat and thence downwardly over the front of the seat in crossing relation and at their lower ends being extended laterally in divergent relation and attached to said connectors, said straps at the point of crossing at the front of the seat back having a ring fitting and below said ring fitting being doubled upon themselves to provide looped portions in spaced relation, friction fittings holding said loop portions in looped relation, and webbing attaching fittings mounted upon the bights of said loops.

3,158,400
CHURCH PEW
Eugene W. Tuhtar, 424 Elm Lane, Janesville, Wis.
Filed Dec. 10, 1962, Ser. No. 243,530
9 Claims. (Cl. 297—460)



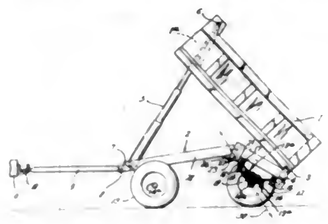
1. A church pew comprising a thin, one-piece back panel which unstressed is flat, and means supporting said panel stressed in a curve in nonpermanent, elastic deformation with its forward side convex and its rearward side concave, said panel constantly elastically urging return to its former flat condition but is held in said curve and held against such return by said means.

3,158,401
APPARATUS FOR BULK HANDLING OF PRODUCE AND THE LIKE
Hashem Naraghi, Rte. 2, Box 750, Escalon, Calif.
Filed June 13, 1960, Ser. No. 35,505
2 Claims. (Cl. 298—8)



1. A bulk storage and transport unit including a wheeled vehicle having a plurality of spaced longitudinally extending structural elements defining the vehicle body with the space therebetween being generally open, a bin supporting frame mounted on said elements, a bin pivotally mounted on said frame for rotation about a generally horizontal axis, said bin having a bottom wall, end walls, side walls and an open top, a removable closure for said top, and a plurality of spaced partitions extending generally parallel to said end walls, the space between adjacent partitions being substantially less than the normal height of said bin, said partitions being parallel to said axis of rotation whereby said bin may be filled through said open top, transported with said partitions in horizontal position, and dumped by completely inverting the same.

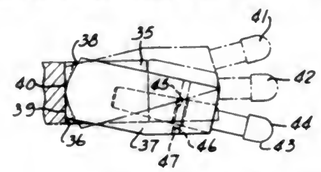
3,158,402
ARTICULATED CHASSIS DUMP TRAILER
Frank L. Clement, % Clement-Braswell, Inc., P.O. Box 696, Minden, La.
Filed Oct. 5, 1962, Ser. No. 228,610
3 Claims. (Cl. 298—20)



1. A self-supporting unitary dump trailer comprising, in combination: a chassis including a longitudinal frame and supporting non-steerable front and rear wheel and dead axle assemblies therefor disposed adjacent the front and rear ends respectively of the frame; said frame comprising forward and rearward frame sections arranged end-to-end and in longitudinal alignment and means pivotally connecting the adjacent ends of the frame sections together whereby said sections may be articulated with respect to one another about a transverse axis; the forward frame section being substantially longer than the rearward frame section and the axis of articulation of said sections being disposed closely adjacent the axle of said rear wheel and axle assembly; releasable means for locking said frame section against articulation; a dump body of length substantially coextensive with said longitudinal frame and being positioned thereon so that its major length extends forwardly of said axis of articulation; means pivotally interconnecting the dump body and the rearward frame section in manner as permits bodily upward tilting movement of said dump body with respect to said rear frame section about a transverse axis extending across the rearward end of said rearward frame section; an extensible lift device for bodily tilting said dump body about said rear-end axis, said lift device being connected at its uper end to the front end of the dump body and at its lower end to the front end of the forward frame section; and a tow bar pivotally connected to and extending forwardly from the forward frame section; the construction and arrangement being such that when the locking means is effective to lock the frame sections as aforesaid, the dump body may be tilted to a low angle dumping position without frame articulation and that when the locking means is released, the dump body may be selectively tilted either to a first higher position as permitted by articulation of the frame sections with respect to one another or to a second yet higher position as permitted by the upward tilting movement of the dump body with respect to the rearward frame section.

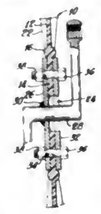
3,158,403
SELECTIVELY PREPOSITIONED BIT HOLDER
George L. Adams, Salem, Ohio, and Charles T. Govin, Wauwatosa, Wis., assignors to The Salem Tool Company, Salem, Ohio, a corporation of Ohio
Original application Feb. 24, 1960, Ser. No. 10,773, now Patent No. 3,074,703, dated Jan. 22, 1963. Divided and this application July 5, 1962, Ser. No. 207,743
3 Claims. (Cl. 299—90)

1. A rotary cutter mounted for rotation and having a rotary axis including a bit holder comprising a block with front and back parallel surfaces and having a top and bottom, a bit socket in said block having a longitudinal axis and open in said top of said block, faces angularly disposed relative to each other on said bottom of said block, spaced transverse slots on the forward end of the rotary cutter having opposed parallel sides to receive and embrace said front and back surfaces of said block, a flat surface in the bottom of each of said slots and disposed in a plane transversely of the rotary axis



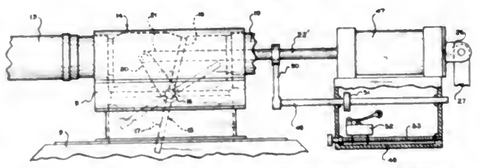
of the rotary cutter, a selected face of said angularly disposed faces engaging the flat surface in said slot and prepositioning said block with the longitudinal axis of said socket in a selected angular position relative to the rotary axis of said cutter, and means to secure said block in the selected position in each of said slots.

3,158,404
MOLDED PLASTIC WHEEL
Gordon E. Noakes, 3950 Napier, Plymouth, Mich.
Filed Mar. 26, 1963, Ser. No. 267,739
3 Claims. (Cl. 301—63)



1. A wheel assembly comprising an annular web of molded plastic material such as polystyrene or the like having a central opening therethrough, a thickened annular rib integral with said web and coaxial with said opening located in adjacent spaced relationship to said opening, a thickened tire receiving rim integral with said web defining the outer periphery of said web, a plurality of thickened radially extending ribs integral with said web and extending from said annular rib to said rim, a pair of annular metallic washer elements disposed on opposite sides of said web radially inwardly of said annular rib, and means fixedly securing said washer elements to said web.

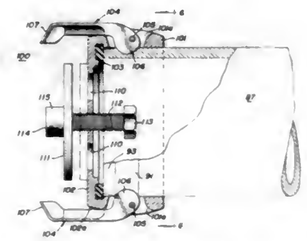
3,158,405
PNEUMATIC CONVEYOR SYSTEM
Norman O. Krenke, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Nov. 2, 1961, Ser. No. 149,606
3 Claims. (Cl. 302—3)



1. In a fluid conveying system having longitudinal conduit means through which fluid entrained particulate material may be conveyed: a container having an inlet opening in communication with said conduit means intermediate the ends of the latter, said inlet opening extending

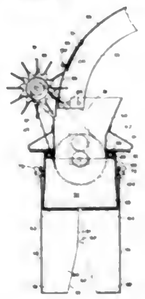
transversely of said conduit means; flow control means movable from a first position in which it blocks said conduit means and diverts material from said conduit means into said container via said inlet, to a second position in which said flow control means blocks said inlet to disable the entry of material into said inlet and enables said material to be conveyed along said conduit means bypassing said container; and operating means connected to said control means and operable in response to predetermined amounts of material being delivered to said container to move said control means from said first position to said second position in successive increments.

3,158,406
COMBINATION CLOSURE AND VALVE MECHANISMS FOR USE IN CONJUNCTION WITH UNLOADING NOZZLES FOR STORAGE HOPPERS
Edmund R. Aller, Gary, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed July 19, 1962, Ser. No. 211,066
6 Claims. (Cl. 302—52)



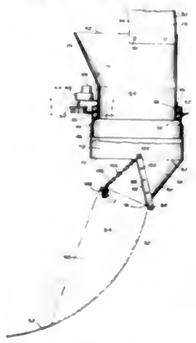
1. A removable cap for an outlet nozzle of the type including an elongated suction tube provided with outwardly projecting open ends and an intermediate section communicating with the bottom of an associated hopper, wherein the outlet nozzle is employed for the purpose of unloading granular material from the hopper and one end of the suction tube is adapted removably to carry said cap and the other end of the suction tube is connectible to an associated suction conduit, and wherein the one end of the suction tube is substantially cylindrical and has an annular groove disposed in the exterior surface thereof and spaced inwardly with respect to the adjacent end face thereof to define an adjacent ring therebetween; said cap comprising a substantially cylindrical side wall adapted to fit over the one end of the suction tube in telescopic relation therewith and to enclose the ring when said cap is in its carried position, an end wall closing the outer end of said side wall, a resilient sealing gasket carried by said end wall and surrounded by said side wall, locking mechanism carried by said side wall and selectively operable into locking and unlocking positions with respect to the groove when said cap is in its carried position, said locking mechanism in its locking position engaging behind the ring and urging said end wall toward the end face of the one end of the suction tube in order to compress said sealing gasket therebetween when said cap is in its carried position, said end wall having a valve port formed therethrough, and a valve element carried by said end wall in cooperating relation with said valve port, said valve element being selectively operable between a closed position and a variable open position with respect to said valve port, whereby intake air may be supplied from the exterior through said valve port with said valve element in its open position when said cap is in its carried position and into the one end of the suction tube and may pass therethrough and from the other end thereof and into the suction conduit when the suction conduit is in its connected position, with the result that the granular material in the storage hopper may be drawn therefrom into the intermediate section of the suction tube and may be conveyed with the air passing therethrough from the other end thereof and into the suction conduit.

3,158,407
SILAGE DISTRIBUTOR
Hermann K. Cymara, R.D. 2, Newfield, N.Y.
Filed Oct. 2, 1962, Ser. No. 227,858
3 Claims. (Cl. 302—60)



1. A silage distributor adapted to receive silage from a silo discharge spout, comprising a hopper sleeve adapted to be attached to a silo discharge spout, an annular outwardly disposed flange at the lower end of said hopper sleeve, a discharge duct extending downwardly from the sleeve having an inwardly extending annular flange overlying the sleeve flange, anti-friction bearing means disposed between the flanges, an annular drive plate secured to the duct flange, drive means mounted on the sleeve and drivably coacting with said drive plate for rotating said duct about a vertical axis, laterally spaced chutes pivoted to a lower side edge of the duct, each of said chutes having adjacent inner side edges spaced apart and diverging away from each other in the direction away from the lower side edge, and means coacting between said chutes and duct for securing each of said chutes independent of the other in a desired angular relationship with respect to the duct.

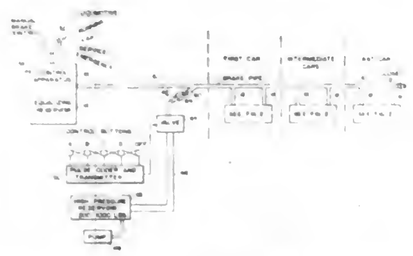
3,158,408
SILO DISTRIBUTOR
Hermann K. Cymara, R.D. 2, Newfield, N.Y.
Filed Nov. 7, 1963, Ser. No. 322,121
5 Claims. (Cl. 302—60)



1. A silage distributor adapted to receive silage from a silo discharge spout comprising a hopper sleeve adapted to be supported in the upper end of a silo beneath a silo discharge spout, said sleeve having a lower cylindrical

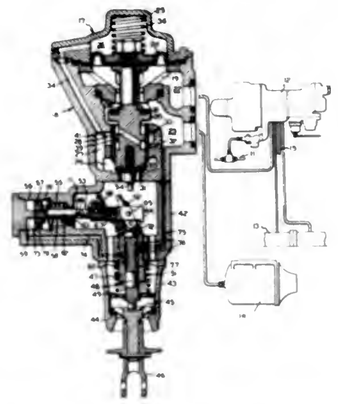
portion terminating in an annular outwardly projecting flange and lower ball bearing raceway, an annular Z section member affixed externally to said cylindrical portion in uniformly spaced relation from said flange, said Z member having an annular intermediate portion extending radially outward from said cylindrical portion and forming an upper ball bearing raceway, and its outer annular portion depending downwardly to form a ball retaining skirt, an annular bearing plate having its inner peripheral portion disposed midway between said flange and radially outwardly extending portion of said Z member, and upper and lower annular rows of bearing balls disposed on opposite sides of said plate and rolling on said upper and lower ball bearing raceways respectively, a cylindrical discharge sleeve having an upper outwardly extending flange affixed to the underside of said plate, and surrounding said lower raceway and acting to confine the lower row of bearing balls and enter said plate with respect to said cylindrical portion, said plate having gear teeth formed in its outer periphery, a motor and reduction gear mounted on the side of said hopper sleeve and having a depending drive shaft and depending pin wheel in meshing relation with said gear teeth, a distributor discharge spout affixed to one side of the lower end of said discharge sleeve having a lower transverse lip, distributor chute means supported from said spout and pivoted in respect to said distributor spout on a substantially horizontal axis adjacent said lip, and means for varying the angular relation of said chute means in reference to said distributor spout.

3,158,409
BRAKE CONTROL SYSTEM FOR RAILWAY TRAINS
J Donald Hughson, Sydney W. Freeman, and Percy W. Smith, Rochester, N.Y., assignors to General Signal Corporation
Filed Sept. 18, 1961, Ser. No. 138,761
17 Claims. (Cl. 303—15)



1. A system for operating the brakes of a train of railroad cars comprising a pressure reservoir on each car for supplying air under pressure to its respective brake cylinder, a brake pipe extending the length of the train and having branch lines operatively connected to each of the pressure reservoirs, means for supplying air under pressure to each of said reservoirs through said brake pipe to charge said brake pipe and reservoirs with gas of a predetermined pressure, valve means communicating with the interior of said brake pipe effective when operated to introduce gas into said brake pipe at a pressure in excess of said predetermined pressure, means effective to operate said valve means repeatedly to introduce a series of blasts of said gas into said brake pipe, receiving means on each car operatively connected to said brake pipe and said reservoir effective upon sensing said series of blasts to cause air from said reservoir to be supplied to said brake cylinder for operating the brakes of the train.

3,158,410
FLUID PRESSURE BRAKE APPARATUS
Lynn I. Pickert, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Aug. 8, 1962, Ser. No. 215,555
3 Claims. (Cl. 303—69)



1. In a brake cylinder release valve, adapted for interposition between the control valve and brake cylinder of a fluid pressure brake controlling system, of the type including a valve housing having therein a control pipe chamber, for connection to the control pipe of the control valve, a brake cylinder chamber, for connection with the brake cylinder, and an exhaust connection, a main valve means shiftable between a normal position in which the chambers are interconnected, but isolated from the exhaust connection and a release position in which the control pipe chamber is isolated from the brake cylinder chamber and the brake cylinder chamber is connected with the exhaust passage, and fluid pressure operated means effective to maintain the main valve means in release position when control pipe chamber pressure exceeds brake cylinder chamber pressure, the improvement which comprises means to shift the main valve means toward release position comprising in combination:

(*a*) a manually operable thrust member having a first position in which it is ineffective to shift said main valve means toward release position and a second position;

(*b*) means normally ineffective but capable of being rendered effective to connect said thrust member operatively with the main valve means, whereby the main valve means may be shifted from normal toward release position by the thrust member;

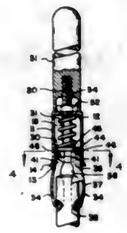
(*c*) a fluid pressure motor capable when energized and only when the thrust member is in first position of rendering the normally ineffective means effective; and

(*d*) means connected with said thrust member to energize said motor when the thrust member is in second position and to maintain said motor energized for a predetermined interval of time after the thrust member is returned to first position.

3,158,411
TOOL HOLDER
Florimond J. A. Moulin, 260 White Road, Duncan, British Columbia, Canada
Filed May 28, 1962, Ser. No. 198,341
7 Claims. (Cl. 306—29)

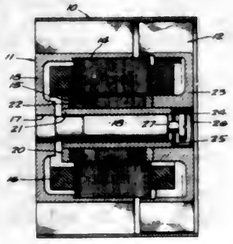
1. A tool holder comprising a socket having an outwardly flaring outer end, a shank extending longitudinally

of the socket, a head on the shank near the opening of the socket and having a working surface facing into the socket, a pair of opposed gripping jaws having inner ends enclosing said head and shaped slidably to fit in the socket, securing means on the inner ends of the jaws removably engaging said working surface, cam surfaces on the inner ends of the jaws, a pressure plate slidably mounted on the shank, resilient pressure means urging the pressure plate against the jaw cam surfaces to press the jaw securing means against the shank head thereby



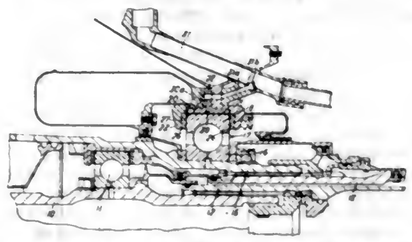
tending to press said head outwardly of the socket, and operating means connected to the shank operable to move the head thereof into the socket and to permit said pressure means to move the head outwardly relative to the socket, said jaws being shaped so as to close when drawn inwardly relative to the socket to grip a tool, and the action of the pressure plate against said cam surfaces under the influence of the pressure means forcing the jaws apart in the flaring outer end of the socket as said jaws are moved outwardly when the operating means is operated to permit the shank head to move outwardly.

3,158,412
AIR BEARING
Walter W. Willhoeft, Jamaica, and Arthur H. Mankin, Huntington, N.Y., assignors to IMC Magnetics Corp.
Filed Oct. 16, 1962, Ser. No. 230,840
4 Claims. (Cl. 308—9)



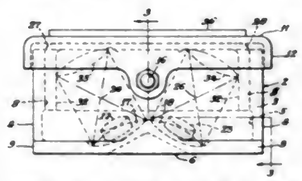
1. In a machine having a rotor having a central bore therein, a cylindrical bearing member in the bore of the rotor with a fluid film between the cylindrical member and the rotor, means forming an enclosure at one end of said cylindrical member having communication with said film and providing a cavity, a disc-shaped member in said cavity and a stem of smaller diameter extending between said disc-shaped member and said cylindrical member whereby relative axial movement between the rotor and the cylindrical member in either direction is inhibited by action of the surfaces of said disc member on the fluid in said cavity.

3,158,413
BEARING ASSEMBLY
Thomas Shelley, Breaston, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed June 22, 1962, Ser. No. 204,308
Claims priority, application Great Britain, July 5, 1961, 24,367/61
4 Claims. (Cl. 308—35)



1. A bearing assembly comprising a bearing member, a pair of axially spaced and transversely extending thrust surfaces, an axially movable outer race which is mounted with clearances between it and said thrust surfaces, said outer race also being spaced from the bearing member by a clearance, an inner race, rolling elements between said inner and outer races, and means for providing each of said clearances with a film of oil which provides a hydrostatic film bearing.

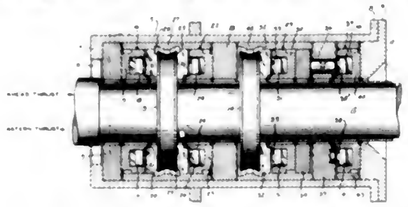
3,158,414
RAILWAY TRUCK SIDE BEARING
Carl E. Tack, Elmhurst, and Fred E. Bachman, Chicago, Ill., assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Oct. 3, 1962, Ser. No. 228,096
5 Claims. (Cl. 308—138)



1. In a railway truck side bearing, a base having a chamber defined by a bottom, side walls and end walls, a cover enclosing the upper end of said base, two friction shoes in said chamber and having flat triangular-shaped top walls and depending side and end flanges, and resilient means seated on said bottom and acting to urge said shoes against said cover and toward diagonal corners of said chamber to frictionally engage said flanges against their respective side and end walls, said means comprising two helical compression springs having their axes diverging upwardly toward diagonal portions of the chamber.

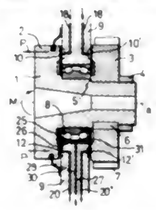
3,158,415
EQUALIZING ARRANGEMENTS FOR TANDEM THRUST BEARINGS
Willis W. Gardner, New Berlin, Wis., assignor to Waukesha Bearings Corporation, Waukesha, Wis., a corporation of Wisconsin
Filed June 6, 1963, Ser. No. 285,926
9 Claims. (Cl. 308—160)

1. In a thrust bearing assemblage wherein there is a shaft subjected to end thrust having spaced thrust collars thereon, a first thrust bearing unit surrounding said shaft and positioned to be engaged by one of said collars in response to thrust in one direction, a second thrust bearing unit surrounding said shaft and positioned to be engaged by the other thrust collar in response to thrust in the same direction, a common output thrust bearing unit including a thrust transmitting ring having fixed thrust projections, means between said first thrust bearing unit and ring for transmitting thrust from said first thrust



collar to said common output unit through said fixed thrust projections, movable thrust elements movably supported relative to said thrust transmitting ring and positioned to act on said common output thrust bearing unit, and means between said second thrust bearing unit and movable thrust elements for transmitting thrust from said second collar to said common output thrust bearing unit.

3,158,416
MOUNTING OF THE SPINDLE OF A MACHINE TOOL
Manfred Widmer, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Sept. 4, 1962, Ser. No. 221,004
Claims priority, application Switzerland, Sept. 15, 1961, 10,731, 10,732
8 Claims. (Cl. 308—168)



1. Mounting of the spindle of a machine tool comprising a spindle formed with a small diameter portion between two large diameter portions; a fixed support arranged between the large diameter portions; a single self-adjusting radial bearing arranged between the support and the small diameter portion; an axial bearing arranged between the support and each large diameter portion; said axial bearings being provided with at least one pair of peripherally spaced liquid cushions; and means for individually varying the liquid supply to said cushions so as to vary the angular position of the spindle axis.

3,158,417
VENDING MACHINE ROTARY ARTICLE CARRIER HAVING CAPACITY INCREASING DIVIDER STRUCTURE
Elmer C. Johnson, Raytown, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed May 20, 1963, Ser. No. 281,633
11 Claims. (Cl. 312—97.1)

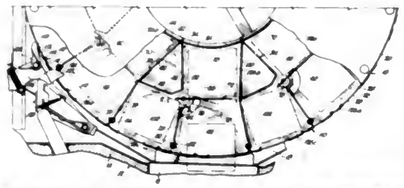
1. In a vending machine having a product delivery opening therein:

a support unit adapted to be mounted within the machine adjacent said delivery opening;

a rotatable product carrier mounted on said support unit and having structure thereon defining a series of product-receiving compartments independently registrable with the delivery opening upon rotation of the carrier;

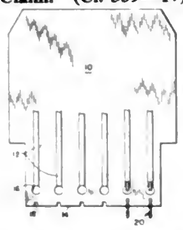
shiftable means on said carrier dividing each of the compartments into forward and rear chambers each adapted to receive one of said products; and

means on the support unit and operably associated with said shiftable means for maintaining the latter in disposition permitting customer access to only the forward chamber of a respective compartment when



the latter is located in a first position in substantial alignment with said product delivery opening and permitting shifting of said shiftable means into a location providing customer access to the rear chamber of the respective compartment when the latter is in a second position in substantial alignment with the product delivery opening whereby the capacity of the vending machine is increased by enlarging the number of chambers from which products are vended.

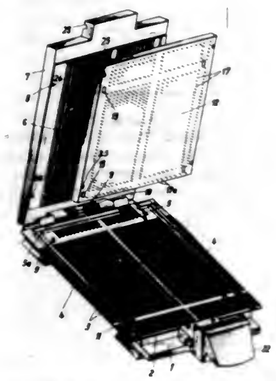
3,158,418
PIN CONTACT FOR PRINTED CIRCUIT BOARDS
Thomas L. Rush, Manhattan Beach, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 2, 1962, Ser. No. 170,847
1 Claim. (Cl. 339—17)



The combination with a printed circuit board of the type carrying thereon at least one planar conductor terminating adjacent the periphery of said board, said board being formed with a circular aperture therein at the edge of which said conductor terminates, said board also having along the periphery thereof a notch aligned with both said conductor and said circular aperture, of a contact pin formed of electrically conductive material and comprising a body portion, a cylindrical prong extending from said body portion, an elongated side member extending from the body portion of said contact pin in a direction generally opposite to the general direction in which said prong extends, an L-shaped extension formed on said elongated side member near the furthest extremity thereof, said L-shaped extension, together with the terminal portion of said side member, defining a first U-shaped recess, and a projection extending from the body portion of said contact pin in the region of the said side member, said projection, together with that portion of said side member lying in the region thereof, defining a second U-shaped recess, whereby, when said contact pin is positioned adjacent said board so that the longitudinal axis of said pin as defined by the axis of said cylindrical prong is parallel to the plane of

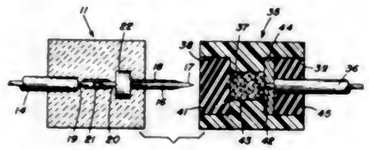
said board, a transverse movement of said contact pin will cause the L-shaped extension thereof to enter said circular aperture and the pin projection to pass through said notch, whereupon a further movement of said pin parallel to the plane of said board will cause the terminal portion of said planar conductor to enter said first U-shaped recess in said pin to establish electrical engagement therebetween, while at the same time a portion of said circuit board adjacent said notch enters the said second U-shaped recess in said contact pin, and a generally cylindrical locking plug receivable in the circular aperture of said circuit board, said locking plug having a cut-out portion arranged to pass by the L-shaped extension on said contact pin following the relative movements between said pin and said board by means of which said electrical engagement has been established.

3,158,419
PUNCH-CARD PROGRAMMER
Werner Meyer and Hans Elsner, Wilhelmshaven, Germany, assignors to Olympia Werke A.G. Wilhelmshaven, a corporation of Germany
Filed Dec. 7, 1962, Ser. No. 243,127
Claims priority, application Germany, Dec. 12, 1961, O 8,427
6 Claims. (Cl. 339—18)



1. A punch-card programmer comprising a first insulating support, a second insulating support removably overlying said first support, a set of input terminals on said first support, a set of output terminals on said first support, a first array of parallel conductor strips disposed on said first support, a second array of parallel conductor strips disposed on said second support in orthogonally intersecting relationship with said first array, a third array of conductor strips disposed on said first support and insulated from said first array, the conductor strips of said first array being connected to respective terminals of one of said sets, the conductor strips of said third array being connected to respective terminals of the other of said sets, a carrier plate interposed between said supports, a first set of resilient connectors traversing said carrier plate at respective junction points of the conductor strips of said first and second arrays for establishing conductive contact therewith, and a second set of resilient connectors traversing said carrier plate at locations registering with individual conductor strips of said second array and respective conductor strips of said third array for establishing conductive contact therewith, said carrier plate and said first support being separable to receive a punch card therebetween with perforations penetrable by certain of said connectors whereby circuits are completed between selected input and output terminals via the associated conductor strips and connectors.

3,158,420
UNDERWATER ELECTRICAL CONNECTOR
Le Roy O. Olson and Stanley Reed Murphy, Seattle, Wash., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 24, 1963, Ser. No. 333,239
1 Claim. (Cl. 339—96)



An underwater electrical connector for connecting a pair of insulated electrical conductors comprising:

a plug member;

a needle-like conductive member within said plug member and having one end thereof shaped in a point and the other end thereof connected to one of said electrical conductors;

insulating means disposed adjacent said other end of said one conductive member to render this end and the connection thereto fully isolated from an atmosphere of use;

an insulating sheath disposed on said conductive member and extending therealong from just short of said pointed end at least to said insulating means;

a socket member including a rigid non-conductive portion having a chamber disposed therein and a pair of openings into said chamber, said chamber containing a quantity of a fibrous conductive substance;

one of said openings being substantially completely filled with a resilient rubber-like substance that has self-sealing qualities;

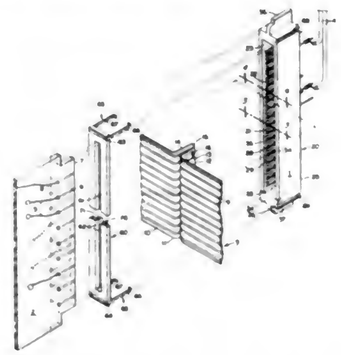
sealing means insertable within said other opening comprising an annular gasket having a central aperture through which the other insulated conductor can pass, the external dimensions of said gasket being such that it forms a force fit in said other opening with said other insulated conductor passing therethrough; and

a rigid washer disposed within said other opening and retained therein by said gasket, said washer being soldered to said portion of said other conductor and in electrical contact with the fibrous conductive substance filling the chamber;

whereby said washer acts as a retainer to prevent said other insulated conductor from inadvertently being pulled from said socket and at the same time to serve as an electrical contact for the socket.

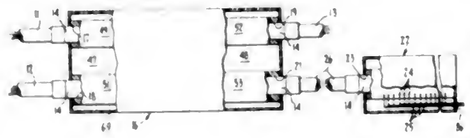
3,158,421
ELECTRICAL CONNECTOR FOR A PRINTED CIRCUIT BOARD AND CABLE
Raymond J. Hasenauer, Jr., Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,612
8 Claims. (Cl. 339—176)

1. An electrical connector comprising, in combination, a printed circuit board having a plurality of electrical contact elements spaced apart a given distance along one face thereon and terminating near one edge thereof, a flat flexible longitudinal cable having a folded portion transverse to the longitudinal axis thereof for receiving said one edge of said printed circuit board, said flat cable having a plurality of exposed coplanar conductors in said folded portion corresponding to selected ones of said contact elements on said printed circuit board, a body member including a cavity on a proximal face thereon for supporting said folded portion of said cable and said printed circuit board therebetween, means for fixing said folded portion of said flat cable to said body member, a first plurality of insulated individual contact clips detachably mounted in said cavity of said body member in cooperative relation with said cable and said printed circuit board for yieldingly urging said longitudinal coplanar conductors in said cable to said corresponding selected



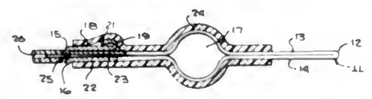
ones of said contact elements on said printed circuit board whereby electrical contact is made therebetween, and a plurality of pairs of insulated contact springs detachably mounted in said cavity of said body member and interchangeable with said insulated individual contact clips for concurrently electrically contacting corresponding other ones of said contact elements on said printed circuit board.

3,158,422
MULTIPLE CONDUCTOR CABLE CONNECTION
Charles J. Bowden, 600 Amador St., Richmond, Calif., and Elwood C. Frisvold, 2619 Arlington Blvd., El Cerrito, Calif.
Filed Feb. 12, 1963, Ser. No. 257,941
10 Claims. (Cl. 339—183)



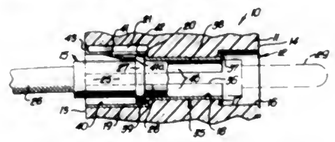
1. Multiple conductor cable connecting means comprising a hollow plug of insulating material adapted to receive an end of a multiple conductor cable, a plurality of electrically conducting terminal contacts having exterior resilient fork portions disposed in the outer periphery of said plug and adapted for connection to the respective conductors of said cable, a connector of insulating material having at least one jack therein for receiving said plug, a second plurality of electrically conducting terminal contacts carried by said connector and having projecting knife portions disposed within said jack, side knife portions complementary to the exterior fork portions of said contacts of said plug and resiliently engageable therein, at least one additional plurality of terminal contacts carried by said connector, and printed circuit means connecting said second plurality of contacts to said additional pluralities of contacts in predetermined relationship.

3,158,423
SUBMINIATURE ELECTRONIC CONNECTOR
Thomas L. Price, Orlando, Fla., assignor to Radiation, Incorporated, Melbourne, Fla., a corporation of Florida
Filed June 11, 1962, Ser. No. 201,488
6 Claims. (Cl. 339—213)



1. A sub-miniature female connector that is at will connected to and removed from a flat male jack having a thickness on the order of 0.06" comprising a pair of flat mating fingers having mutually adjacent surfaces, at least one of said surfaces being electrically conductive, means for normally compressing said surfaces together, said means for compressing including a cylindrical elastic sleeve surrounding said fingers and contacting said fingers at all of their exterior surfaces, said fingers being separable by distances only on the order of 0.06 inch for entry of the male jack between said adjacent surfaces and being urged by said sleeve into holding contact with the flat surfaces of the jack, one of said fingers having an outwardly extending bulge thereon, said sleeve fitting tightly around said bulge for maintaining said fingers and said sleeve in a predetermined, fixed, longitudinal position.

3,158,424
CONTACT MOUNTING
Roger Bowen, Pasadena, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Continuation of application Ser. No. 127,091, July 25, 1961. This application Feb. 13, 1964, Ser. No. 344,599
11 Claims. (Cl. 339—217)

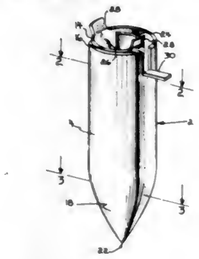


1. An electrical connector unit comprising a body having a bore therethrough from a front face to a rear face thereof, an electrical termination structure in said bore, a spring member in said bore having a portion inclined forwardly and inwardly with respect to the axis of said bore retained by the body against axial shifting and embodying stop means blocking said structure against axial movement in a rearward direction, means blocking axial movement of said structure in a forward direction, and a peripherally continuous clearance space between said structure and the wall of the bore open to the rear face of said body for the insertion of a tool from the rear in a forward direction, the inclined portion of said spring member being adapted to be radially deflected outwardly by the tool to free the stop means from blocking relation to said structure to thereby permit withdrawal of said structure rearwardly from the bore.

3,158,425
PIN SOCKET FOR PRINTED CIRCUIT BOARD
James Pritulsky, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 25, 1961, Ser. No. 112,625
4 Claims. (Cl. 339—258)

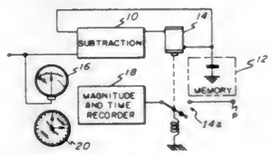
1. An integral pin socket comprising a seamed barrel portion having free, relatively slidable overlapping sides at

the seam to define the main body of the socket to adapt it for resiliently fitting within an aperture, and a spring portion within and extending from an edge of said barrel



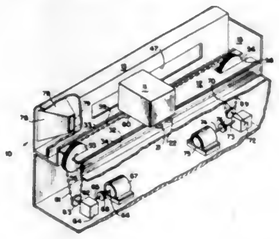
portion for resiliently gripping a pin inserted in the barrel portion.

3,158,426
RECORDING APPARATUS
Charles H. Doersam, Jr., and Robert W. King, Jr., Port Washington, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Apr. 3, 1962, Ser. No. 184,839
9 Claims. (Cl. 346—20)



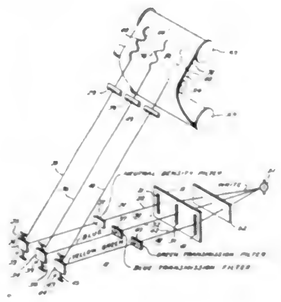
9. Apparatus for producing a record of how a parameter is changed with respect to time comprising means producing periodically representations of the values of said parameter, clock means, means comparing successive representations of said parameter and responsive to a difference between two successive representations for producing an output signal, and recording means responsive to the said output signal to record the later occurring of the two compared representations and its time of occurrence, whereby a record is provided to show the changes of said parameter and when they occur.

3,158,427
OSCILLOGRAPH EMPLOYING GALVANOMETER TRANSPORT
James F. Johnson, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1957, Ser. No. 702,640
4 Claims. (Cl. 346—33)



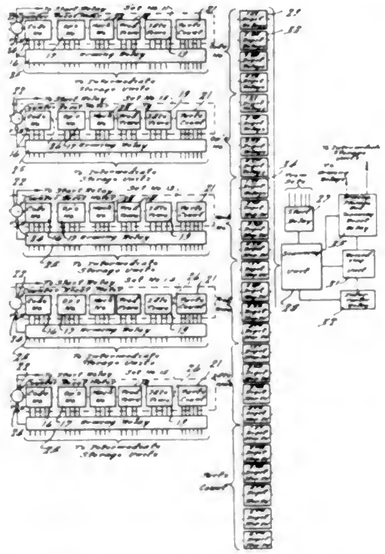
1. A recording oscillograph which includes a table, a carriage mounted for reciprocating movement across said table, a mirror galvanometer mounted on said carriage, a light source mounted on said carriage, an optical system mounted on said carriage for directing a ray of light from said light source and reflected by said mirror galvanometer transversely to the line of movement of said carriage across said table, means for mounting a photosensitive web adjacent to one side of said table and extending lengthwise of the line of movement of said carriage thereby to intercept said ray of light as said carriage is moved across said table, means for reeling said web transversely to the line of movement of said carriage, playback means for cyclicly reproducing a recorded transient signal, said playback means having an electrical output signal cyclicly corresponding to said transient signal and including a motor drive, means for delivering said output signal as an input signal to said mirror galvanometer, and means slaved to the drive motor of said playback means for driving said carriage across said table.

3,158,428
MULTICHANNEL RECORDER
Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 28, 1962, Ser. No. 240,657
3 Claims. (Cl. 346—46)



1. In a recorder for monitoring the values of metered conditions,
a recording member,
means projecting a beam of light including at least a first and a second color;
said recording member including a distinct first film defining a first light-sensitive surface susceptible of becoming exposed by said first color,
a distinct second film defining a second light-sensitive surface susceptible of becoming exposed by said second color, and
a third surface sandwiched between said first and said second surfaces for absorbing light of said first color, said first and said second films being displaced under normal operating conditions continuously at a predetermined speed;
means positioned in the path of said beam to reflect the beam onto said first surface by an angle dependent on the value of a metered condition, and
means positioned in the path of said beam to selectively absorb light either of said first color or of said second color thereby allowing the beam to become respectively recorded either on said second surface or on said first surface.

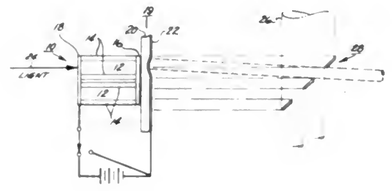
3,158,429
SYSTEM FOR RECORDING REGISTERED DATA
Charles F. Kohler, Parma, Mich., assignor, by mesne assignments, to Hancock Telecontrol Corporation, Jackson, Mich., a corporation of Ohio
Original application Sept. 19, 1958, Ser. No. 762,165, now Patent No. 3,099,512, dated July 30, 1963. Divided and this application Dec. 10, 1962, Ser. No. 248,828
1 Claim. (Cl. 346—52)



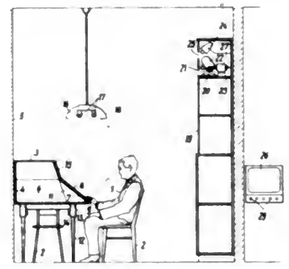
In combination, a plurality of indicator sets capable of accumulating data, a recording system connectable to each indicator set for recording the data accumulated therein, manually operable means at each indicator set movable to a recording position when said indicator set is to have data to be recorded, recorder connecting means associated with each indicator set, a stepping switch having a first set of contacts connected to said manually operable means and a second set of contacts connected to said recorder connecting means, operating means connected between said first and second sets of contacts, said operating means being responsive to the arrival of said stepping switch at an indicator set having accumulated data to cause said stepping switch to halt and the corresponding recorder connecting means to move to its connecting position, means responsive to the completion of data recording for said indicator set to cause said stepping switch to advance, said manually operable means comprising a printed circuit receptacle, means in said recording system for recording data relating to an operator assigned to a machine with which the indicator set is associated, means connecting said receptacle to said last-mentioned means and to said first set of stepping switch contacts, and a printed circuit for insertion in said receptacle.

3,158,430
TRANSDUCING APPARATUS
Joseph T. McNaney, La Mesa, Calif., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed July 5, 1960, Ser. No. 40,793
12 Claims. (Cl. 346—77)

1. The combination comprising: a plurality of bundled conductive light guides, the ends of said guides forming two surfaces; a transparent conductive coating positioned on one said surface whereby a potential may be applied thereto; said coating normally having a planar outer surface adapted to reflect light impinging thereupon; a film of photoconductive material positioned on said other surface whereby when light traverses selected said light guides said potential is applied to the areas of said photoconductive material adjacent to the ends of said selected light guides; a material, that is deformable by an electrostatic field, positioned adjacent said photoconductive material; a layer of conductive material positioned contiguously with the other side of said deformable material; and means for applying a potential between said conductive coating and said conductive material to produce irregularities in said normally planar outer surface of said coating in regions adjacent to the ends of said selected light guides.



3,158,431
PSYCHOLOGICAL TESTING ARRANGEMENT
Gert Gutjahr, Seckenheimer Landstrasse 133, and Bernt Spiegel, Erzberger Strasse 19, both of Mannheim, Germany
Filed Apr. 5, 1963, Ser. No. 270,997
Claims priority, application Germany Apr. 17, 1962
10 Claims. (Cl. 346—107)

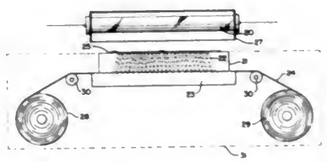


1. In a testing arrangement, in combination:
(*a*) a first support;
(*b*) holding means for holding reading matter on said support in a predetermined position;
(*c*) a second support adapted to hold a person in a reading position with respect to reading matter held in said predetermined position;
(*d*) motion picture camera means trained on said first support for recording sequential images of said reading matter;
(*e*) light deflecting means on said first support for deflecting light received from a person in said reading position to said motion picture camera means and for simultaneous recording of sequential images of said person and of said reading matter by said camera means;

(*f*) illuminating means for illuminating said person and said reading matter in said respective positions thereof; and

(*g*) hiding means for hiding said camera means from said person.

3,158,432
TAG PRINTERS
Robert K. Arend, Xenia, and William R. Horst, Spring Valley, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 10, 1963, Ser. No. 250,687
1 Claim. (Cl. 346—108)



A printing mechanism for reproducing on a strip of record material the images of punched data-representing holes contained in merchandise tags for use with an optical reader apparatus in a data-processing operation, comprising, in combination,

(*a*) a first support member having a recessed portion;

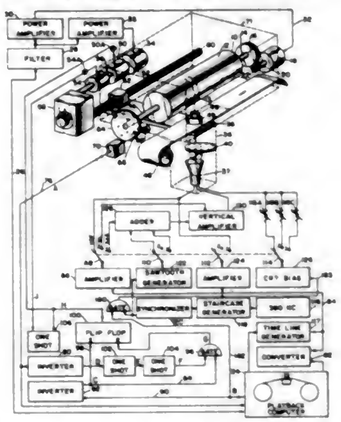
(*b*) a second support member mounted on said first support member and forming a slot with said recessed portion, said second member supporting a plurality of light-channeling open-ended glass pipes, each light-channeling pipe having at least one end positionally oriented to define a field of positionally-coded holes used to represent data on merchandise tags;

(*c*) a record material having a light-sensitive coating, said record material being positioned within said recessed portion and adjacent the other ends of said light-pipes;

(*d*) means located on the second support member for positioning a merchandise tag containing a plurality of data-representing punched holes on said member so as to orientate each of said punched holes with the top opened end of one of said glass pipes;

(*e*) and a light source positioned adjacent said second support member whereby light waves emitted from said source are transmitted through the punched holes of the merchandise tag and their associated glass pipes to the light-sensitive coating of the record material to produce a visible reproduction of the punched holes on the record material.

3,158,433
SEISMIC SYSTEM
Warren A. Alexander, Donald J. Robinson, and Daemon L. Lighthizer, Tulsa, Okla., assignors to Jersey Production Research Company, a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 234,975
10 Claims. (Cl. 346—110)



1. A system for reproducing in visual form seismic signals in a side-by-side relationship which have been stored in a storage means which is capable of reading sequentially the next stored seismic signal upon receiving a synchronizing pulse, said storage means being capable of generating a distinctive print command pulse when reading out a seismic signal which is different from a no print command pulse generated when no seismic signal is being read out which comprises: a rotatable drum having a photosensitive recording medium thereon; means to produce a synchronizing pulse upon each rotation of said drum; transmission means for transmitting the synchronizing pulse to said storage means; cathode ray tube means; means to continually move the cathode ray tube means laterally along a line parallel to the axis of said rotating drum; means for exposing the photosensitive recording medium to a selected area of the face of said cathode ray tube means; means to control the visual character of the beam of light on said selected area as a function of the seismic signal; means to rotate said drum at a speed in proportion to the movement of said cathode ray tube means; and means to stop the lateral movement of said cathode ray tube means and render it inoperative during the time that the storage means is not reading out a seismic signal.

CHEMICAL

3,158,434
VAT DYES AND DYEINGS WITH TETRAALKYL-BUTYNE DIOLS
Maurice H. Fleysher, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 22, 1961, Ser. No. 118,786
20 Claims. (Cl. 8—34)

10. A vat dye composition containing a mixture of

(*a*) a water-insoluble vat dye in the form of finely divided solid particles in an aqueous medium, and

(*b*) as an inhibitor of migration of said particles when said mixture is applied to a fabric and then heated to remove water, a small amount of a water-soluble 1,1,4,4-tetraalkyl-butyne-1,4-diol, the amount of said diol being at least 1 part per 100 parts of vat dye, by weight.

3,158,435
PROCESS FOR DYEING POLYOLEFINS
Ermanno Gaetani, Milan, Ugo Moiso, Cesano Maderno, and Sisto Papa, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy
No Drawing. Filed Dec. 20, 1960, Ser. No. 77,002
Claims priority, application Italy Dec. 24, 1959
13 Claims. (Cl. 8—41)

1. A process for the direct dyeing of an olefin polymer which comprises contacting said polymer in an aqueous dye bath which is maintained at its boiling temperature with a polyazo dye having the following general formula:

$$X_1—R—N=N—R_1—N=N—R_2X$$

wherein R and R_1 each represents a member of the group consisting of unsubstituted phenyl groups and substituted

phenyl groups substituted with at least one member of the group consisting of alkyl, halogen, nitro, trifluoromethyl, mono-alkyl substituted amino and di-alkyl substituted amino groups; R_2 represents a member of the group consisting of (*a*) unsubstituted heterocyclic groups selected from the group consisting of pyrazolone, indazole, thiazole, benzothiazole and thiaphene, (*b*) substituted heterocyclic groups consisting of said heterocyclic groups recited above in (*a*), which are substituted with a member from the group consisting of alkyl, aryl, oxyalkyl, halogen, nitro and trifluoromethyl groups, and (*c*) an open chain ketoenolic group capable of coupling with diazo compounds; X represents a member of the group consisting of hydroxyl groups positioned ortho to the —N=N— group, amino, mono-substituted amino and di-substituted amino groups substituted with a member from the group consisting of alkyl, cyanoalkyl and aryl groups; and X_1 represents a member of the group consisting of X and H.

3,158,436
METHOD OF BLEACHING COTTON FABRICS WITH A CHLORINATED ACETONE-UREA CONDENSATION PRODUCT
Michael Kokorudz, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Original application May 4, 1961, Ser. No. 107,629, now Patent No. 3,104,260, dated Sept. 17, 1963. Divided and this application Aug. 11, 1961, Ser. No. 130,776
2 Claims. (Cl. 8—108)

1. A method for bleaching cotton fabrics which comprises contacting said fabrics with an aqueous solution of the produce of the process which comprises suspending an acetone-urea condensation product, formed by introducing a strong dehydrating mineral acid selected from the group consisting of hydrochloric acid and sulfuric acid into mixed urea and acetone containing a molar excess of acetone, in water having a pH of less than about 12.5, cooling the resulting mixture to a temperature in the range of about 0–30° C., and passing chlorine gas into the cooled mixture while maintaining the temperature at no more than about 30° C. for a time sufficient to effect the formation of a chlorinated acetone-urea condensation product.

3,158,437
METHOD FOR PREPARING METAL ALUMINUM HYDRIDES
Frank P. Del Giudice, Beverly, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts
No Drawing. Filed Apr. 7, 1960, Ser. No. 20,554
20 Claims. (Cl. 23—14)

1. The method for preparing a metal aluminum hydride having the formula $M(AlH_4)_x$ where M is a metal selected from the group consisting of alkali metals and alkaline earth metals and *x* is the valence of the selected metal which comprises heating in a confined reaction zone a material selected from the group consisting of alkali metals, alkaline earth metals and hydrides of such metals with finely divided aluminum metal and a catalytic amount of a complex hydride as a reaction promoter in an amount from about 0.1 to 25 percent by weight based upon the weight of said selected material used in an inert liquid carrier at a temperature above about 100° C. but below the decomposition temperature of any compound in the reaction mixture in the presence of hydrogen under superatmospheric pressure above about 2500 p.s.i. while agitating the mixture until reaction between said selected material, aluminum and hydrogen is complete, said complex hydride having the formula $M(BH_4)_x$ where M is a metal selected from alkali metals, alkaline earth metals and aluminum and *x* is the valence of the metal.

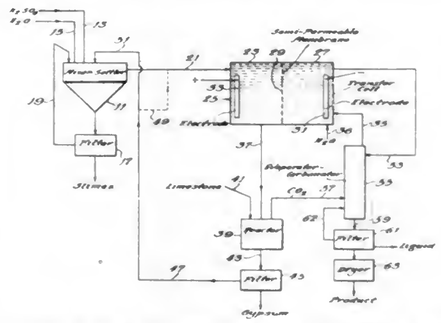
3,158,438
SOLVENT EXTRACTION PROCESS FOR RECOVERING TUNGSTEN VALUES FROM CONTAMINATED AQUEOUS SOLUTIONS
Charles R. Kurtak, Bishop, Calif., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 19, 1962, Ser. No. 224,828
4 Claims. (Cl. 23—22)

1. In a process for recovery of tungsten values from molybdenum and silicon contaminated aqueous solutions of tungsten wherein said tungsten is separated from other ore contaminants by extraction with an amine dissolved in an organic liquid solvent, the improvement comprising the sequential steps of first treating said contaminated aqueous tungsten bearing solution, prior to the amine organic solvent extraction step, to selectively remove molybdenum therefrom by adjusting the pH of said molybdenum contaminated aqueous solution to at least about 8, adding to said aqueous solution essentially at least 170 percent of the amount of alkali sulfide stoichiometrically required to convert the molybdenum contaminant in said aqueous solution to the thiomolybdate complex ion, digesting said aqueous solution at elevated temperature until the molybdenum contaminant is converted to the thiomolybdate complex ion; acidifying said aqueous solution to a pH below about 3.0 whereby the molybdenum contaminant is precipitated as molybdenum trisulfide, separating the molybdenum trisulfide precipitate from the aqueous molybdenum free solution, contacting the aqueous solution with said amine dissolved in an organic liquid solvent thereby extracting said tungsten and silicon contaminant into the organic solvent liquid phase, separating the organic solvent phase and the aqueous phase, contacting said organic solvent phase with an aqueous solution of ammonium hydroxide and stripping said tungsten and silicon from the organic phase into said aqueous solution; separating said organic phase and aqueous solution, adjusting and maintaining the concentration of ammonium hydroxide in the silicon-contaminated tungsten-containing aqueous ammonium hydroxide solution to at least about 2 molar, adjusting and maintaining the temperature of the aqueous silicon-contaminated ammonium hydroxide solution to at least 50° C., digesting the aqueous silicon contaminated and tungsten-bearing ammonium hydroxide solution at said temperature while maintaining a concentration of ammonium hydroxide in said silicon contaminated solution of at least 2 molar to cause selective precipitation of silicon oxide therefrom and concentrating the resultant tungsten-bearing solution to precipitate ammonium paratungstate substantially free of silicon and molybdenum therefrom.

3,158,439
PRODUCTION OF POTASSIUM CARBONATES
Arthur N. Baumann, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, a corporation of New York
Filed Nov. 17, 1960, Ser. No. 69,999
12 Claims. (Cl. 23—63)

1. A process for producing a carbonate of potassium from potassium sulfate which comprises introducing an aqueous solution of potassium sulfate into one compartment of a transfer zone which is divided into two compartments by a semi-permeable membrane, introducing an aqueous medium having a potassium ion concentration lower than in said aqueous solution into the other compartment of said transfer zone, said semi-permeable membrane having characteristics which permit potassium ions to pass from said aqueous solution through said membrane into said aqueous medium, carbonating the aqueous medium to produce a carbonate of potassium, withdrawing from said one compartment an aqueous solution of potassium sulfate having a potassium ion concentration less than in said solution introduced into said

one compartment, reacting said withdrawn aqueous solution with a basic calcium compound to form a calcium sulfate precipitate, separating said calcium sulfate pre-



cipitate from the potassium sulfate containing aqueous solution and recycling at least a portion of said potassium sulfate containing aqueous solution to said transfer zone.

3,158,440
PRODUCTION OF POTASSIUM BICARBONATE

Alfred F. Nylander, Carlsbad, N. Mex., assignor to International Minerals & Chemical Corporation, a corporation of New York

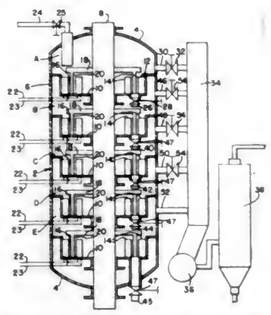
No Drawing. Filed Nov. 8, 1960, Ser. No. 67,910
12 Claims. (Cl. 23—64)

1. In a process for the preparation of potassium bicarbonate in which an aqueous solution containing at least about 40 weight percent up to saturation of a water soluble potassium salt is treated with carbon dioxide, the improvement which comprises effecting the treating in the presence of a detergent sulfonate selected from the group consisting of alkyl sulfonates and alkylaryl sulfonates.

3,158,441
SEMI-CONTINUOUS MATERIAL TREATMENT PROCESS

Norbert J. Stevens, Alhambra, Calif., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 7, 1962, Ser. No. 178,052
10 Claims. (Cl. 23—122)



1. A method of calcining gypsum comprising the steps of: simultaneously heating a plurality of portions of gypsum consisting of a first portion at least one intermediate portion and a final portion at successively higher pressure stages increasing consecutively from said first portion to said final portion, sequentially venting said portions to atmospheric pressure beginning with said final portion and progressing inversely of said pressures to said first portion, discharging said final portion from said highest pressure stage, sequentially transporting the remaining ones of said portions to the next higher pressure stage respectively subsequent to said venting of the respective portion.

3,158,442
METHOD OF MAKING HIGH COMPRESSIVE STRENGTH SILICON CARBIDE AND THE PRODUCT THEREOF

Howard T. Hall, Provo, Utah, assignor to Research Corporation, New York, N.Y., a corporation of New York

Filed Sept. 25, 1961, Ser. No. 140,506
4 Claims. (Cl. 23—208)

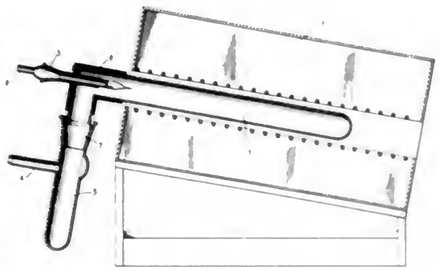
1. A dense, fine-grained, at least partially resolidified silicon carbide having a compressive strength of at least 150,000 pounds per square inch.

3. A method of making high compressive strength silicon carbide comprising subjecting low-compressive strength silicon carbide simultaneously to a temperature of at least 3,000° C. and a pressure of at least 40,000 pounds per square inch for at least thirty seconds.

3,158,443
PRODUCTION OF TELLURIUM

Roger Champ, Bourg-la-Reine, France, assignor to La Societe les Produits Semi-Conducteurs, Paris, France

Filed Apr. 10, 1961, Ser. No. 101,983
Claims priority, application France Mar. 13, 1961
9 Claims. (Cl. 23—209)



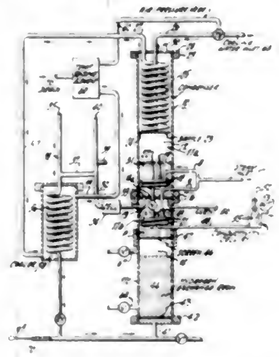
1. In the manufacture of tellurium having no more than about one part per million of each impurity, particularly of selenium, the process of sublimation which comprises preparing tellurium of high purity containing substantially more than one part per million of at least one metallic impurity, heating the tellurium under vacuum of the order of 10^{-3} mm. Hg absolute to a temperature of about 400–500° C., isolating the first fraction until 5–10% of the tellurium has been removed, isolating the residue raising the pressure over the residue to the order of several mm. Hg and subliming the residue at about 650° C., and isolating the extra pure tellurium.

3,158,444
APPARATUS AND METHOD FOR DETERMINING STEAM PURITY

Thurston E. Larson, 116 W. Florida, Urbana, Ill., and Russell W. Lane, 806 Charles St., Champaign, Ill.

Filed Sept. 13, 1961, Ser. No. 138,241
10 Claims. (Cl. 23—230)

4. In a method of determining the purity of steam in which a steam sample is condensed and held at the boiling point to eliminate carbon dioxide, the improvement which comprises subjecting said sample at a controlled temperature below half the boiling point temperature to ion exchange sufficient to remove cations derived from ammonia and amines, reboiling the so-treated sample, and then

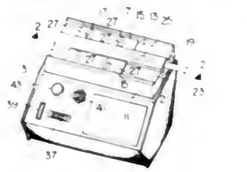


measuring and recording the conductivity of the reboiled treated sample at approximately 98.5° C.

3,158,445
APPARATUS FOR DETERMINING PROTHROMBIN TIME

Carl Huff, Los Altos, Calif., assignor to Oxford Laboratories, Redwood City, Calif., a corporation of California

Filed July 6, 1960, Ser. No. 41,169
2 Claims. (Cl. 23—253)





1. A prothrombin time determining apparatus comprising a block of metal having upper and lower surfaces, means for transmitting light between said upper and lower surfaces, said means for transmitting light including a translucent rod, a transparent slide disposed on the upper surface of said block of metal, the transparent slide including at least one concave dimple on the upper surface thereof for receiving blood and reagent, said dimple being disposed above said means for transmitting light, and a source of light disposed adjacent said means at the lower surface of said block of metal whereby a change of light transmissivity may be detected when said blood and reagent coagulate.

3,158,446
GAS DETECTOR

James C. Sternberg and David T. L. Jones, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California

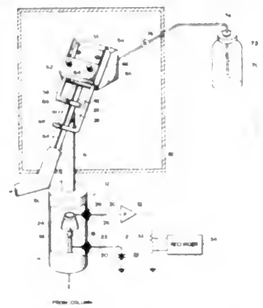
Filed Jan. 15, 1962, Ser. No. 168,570
13 Claims. (Cl. 23—254)

1. A detector for determining the presence of various compounds in the effluent of a chromatographic column comprising in combination:

means for forming a flowing thin film of electrolyte;

means for directing said effluent onto said thin film of electrolyte whereby said compounds are dissolved in said electrolyte;

a pair of metal electrodes in contact with said thin film; and

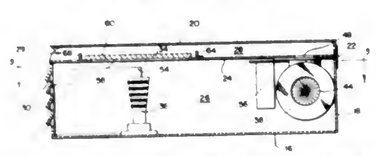


indicating means coupled to said electrodes for indicating changes in conductivity in said thin film resulting from the dissolution of said compounds in said electrolyte.

3,158,447
METHOD FOR DRYING PHOTOGRAPHIC SHEET MATERIALS

Arthur J. Sable, Boston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 105,993
3 Claims. (Cl. 34—18)



1. The method of drying photographic sheet materials comprising:

(*a*) placing the sheet to be dried with one surface thereof in substantially continuous contact with a solid, heat-conducting plate;

(*b*) radiating heat from a heat source to the side of said plate opposite that side on which said sheet is placed;

(*c*) heating an air supply by means of said heat source; and

(*d*) moving said air supply, subsequent to heating thereof, over the other surface of said sheet, whereby said one surface of said sheet receives heat conducted through said plate and said other surface receives heat from said air supply.

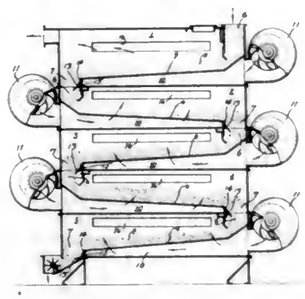
3,158,448
DRIER WITH GAS-MOVED BED OF MATERIAL

Sven Warner Wallin, Jonkoping, and Gustav Öholm, Bromma, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Nacka, Sweden

Filed Sept. 1, 1960, Ser. No. 61,040
Claims priority, application Sweden, Sept. 2, 1959, 8,131/59
2 Claims. (Cl. 34—85)

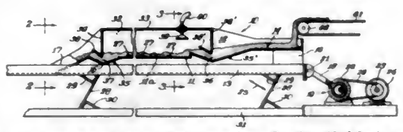
1. Apparatus for treating and moving a bed of loose fluent material by a gaseous medium under pressure, comprising in combination: a housing having extended vertical side walls and end walls defining an enclosure for a plurality of separate treatment units; each treatment unit comprising an imperforate horizontal top wall extending

from a connected end at one housing end wall to an end at a point spaced a short distance from another and opposite housing end wall, an imperforate horizontal bottom wall extending from a connected end at said other housing end wall to a point spaced from said one housing end wall, and a perforate intermediate slightly inclined material supporting floor wall extending from a connected end at said other housing end wall to a point spaced from said one housing end wall; the connected end of said floor wall being spaced vertically below the spaced end of said top wall, and the spaced end of said floor wall being spaced vertically above the spaced end of said bottom wall; a vertical shaftway wall connecting the spaced end of said floor wall with the spaced end of said bottom wall and defining with the adjacent housing end wall and side walls a vertical shaftway down which advancing material falls; said floor wall and said bottom wall defining, with the housing side walls, a fluid duct



for a gaseous medium beneath said perforate floor wall; means for introducing a gaseous medium into the housing end wall-connected end of said duct under sufficient pressure to flow through the openings of said floor wall and the bed of material and lift material thereon to cause it to flow down said inclined floor wall and down said shaftway; said shaftway wall having an opening at the end and bottom of said duct leading into said shaftway; and a closure for said duct opening hinged at the top and inclined inward into the shaftway so as to be held closed when material is flowing thereover as it falls down said shaftway but opening by the pressure of said gaseous medium when material is not passing over the closure to permit the gaseous medium to blow dust and other refuse from the duct into said shaftway; each treatment unit being reversed in endwise disposition, floor wall inclination, and shaftway location relative to the treatment unit or units next adjacent thereto.

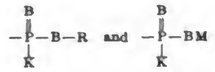
3,158,449
APPARATUS FOR TREATING FINELY DIVIDED MATERIAL WITH A GAS
Robert L. Opila, Westchester, Ill., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware
Original application Sept. 30, 1959, Ser. No. 843,519, now Patent No. 3,114,656, dated Dec. 17, 1963. Divided and this application Sept. 14, 1962, Ser. No. 223,758
6 Claims. (Cl. 34—164)



1. In an apparatus for treating finely divided material including a vibratory conveyor for transporting said material, and a tunnel member fixed to and covering a portion of the length of said conveyor, the improvement which comprises forming a transverse substantially V-shaped depression in the surface of said conveyor at each end of said tunnel and providing end walls for said tunnel extending downwardly from the top thereof into said respective depressions to a level below the top of said depressions but above the floor of said conveyor, thereby forming traps through which said material must pass when entering and leaving said tunnel.

3,158,450
TRIAZINYL DERIVATIVES AS GASOLINE ADDITIVES
Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Dec. 7, 1961, Ser. No. 157,856
20 Claims. (Cl. 44—63)

1. A fuel consisting essentially of gasoline, a minor amount of a tetraalkyl lead anti-detonant sufficient to impart anti-knock properties to said fuel and 0.0005–3 moles, per mole of said tetraalkyl lead anti-detonant, of a s-triazinyl phosphonium compound having at least one and no more than three phosphonium radicals attached to the carbon atoms of said s-triazinyl nucleus, said phosphonium radical being selected from the class consisting of



radicals, wherein B is an atom selected from the class consisting of oxygen and sulfur, R represents a radical selected from the class consisting of hydrogen, hydrocarbon radicals having no more than 20 carbon atoms therein, and derivatives of said hydrocarbon radicals having only derivative groups attached thereto selected from the class consisting of hydroxy and halo radicals, K represents a radical selected from the class consisting of —BR, —BM and $—NR_2$, and M is a metal selected from the class consisting of alkali and alkaline earth metals.

3,158,451
GASOLINE CONTAINING ORGANIC BORON-PHOSPHORUS ADDITIVE
Richmond T. Bell, Grayslake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Aug. 4, 1958, Ser. No. 753,087
10 Claims. (Cl. 44—69)

1. A gasoline containing an antiknock quantity of tetraalkyl lead and a small amount, sufficient to suppress preignition, of an organic boron- and phosphorus-containing compound having the general formula:

$$[R_{3-n}PBR'_{3-n}]_{4-m}$$

wherein n is a value selected from the group consisting of 0 and 1 and m is a value taken from the group consisting of 3, 1 and 0, when n is 1, m being selected from the group consisting of 0 and 1, when n is 0, m being 3; wherein R is selected from the class consisting of hydrogen and alkyl radicals, at least one of said R group representing an alkyl radical, and wherein R′ is selected from the class consisting of hydrogen and alkyl radicals.

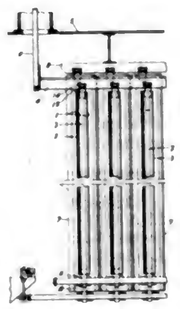
3,158,452
ESTERS OF BORON PHOSPHATE AS GASOLINE ADDITIVES
Charles S. Wright, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Mar. 1, 1962, Ser. No. 176,766
14 Claims. (Cl. 44—69)

1. A composition consisting essentially of gasoline and a small amount, sufficient to inhibit combustion-chamber deposits and spark-plug deposits, and improve engine performance, of a compound selected from the esters of boron phosphate having the formula

$$Y_a—B—O—P(O)X_b$$

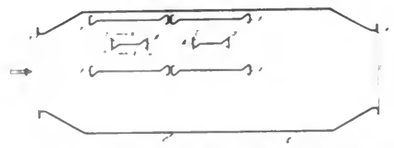
where Y is selected from the group consisting of =O and —OR, a being 1 when Y is =O and 2 when Y is —OR, X is selected from the group consisting of =O and —OR, b being 1 when X is =O and 2 when X is —OR, at least one of the groups X and Y being —OR, wherein each of the groups —OR represents the residue of a member of the group consisting of alcohols, phenols, and polyols denoted by the formula $R(OH)_x$ where x is 1 to 7.

3,158,453
EMISSION ELECTRODE SYSTEM
Sten Maartman, Klinten, and Stig Gustafsson, Jonkoping, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed July 15, 1960, Ser. No. 43,169
Claims priority, application Sweden, Oct. 21, 1959, 9,805/59
3 Claims. (Cl. 55—112)



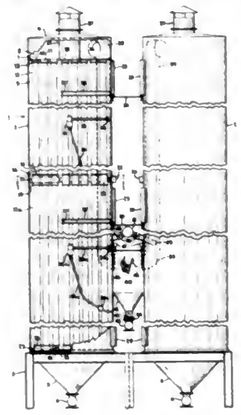
1. An electrostatic precipitator comprising a casing adapted to have a gas to be cleaned flowing therethrough, a plurality of emitting and collecting electrodes in said casing, means pivotally suspending said electrodes in said casing in rows aligned longitudinally with the direction of flow of gas to be cleaned, the rows in a direction transversely of the direction of gas flow being arranged in alternating rows of emitting and collecting electrodes, each row of said emitting electrodes comprising a plurality of longitudinally spaced substantially flat strips disposed transverse to the direction of flow of the gas to be cleaned, interconnecting stiffening means secured between and uniting said strips in pairs, said stiffening means each comprising a sheet metal member having an intermediate web and attachment element on opposite sides of said intermediate web, said attachment elements each being secured to a respective one of said strips, rapping means operatively connected to the bottom ends of said emitting and collecting electrodes and arranged to rap the electrodes in the direction of the length of the rows of electrodes, said interconnecting stiffening means forming with said strips units of sufficient rigidity to permit effective cleaning of the units by rapping the lower ends of the full length units.

3,158,454
ARRANGEMENT IN EMISSION ELECTRODES FOR ELECTROSTATIC PRECIPITATORS
Stig Gustafsson, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed May 12, 1961, Ser. No. 109,603
Claims priority, application Sweden, May 12, 1960, 4,706/60
2 Claims. (Cl. 55—152)



1. An emission electrode for electrostatic precipitators in which a number of plate-like electrodes are arranged in parallel rows, said emission electrode comprising a continuous smooth plane plate bent at each longitudinal edge to form a transverse stiffening plate element, and each said transverse stiffening plate element including a flat portion extending approximately perpendicularly to said plane plate, said flat portion having a first bent edge portion extending from one edge of said flat portion and connected to said plane plate, and a second bent edge portion extending from the opposite edge of said flat portion, and integral struck-out pointed emitting flaps extending outwardly from the bent edge portions of said flat portion and coplanar to said flat portion.

3,158,455
APPARATUS FOR SEPARATING SOLID MATERIAL FROM GAS
Roland L. Lincoln, Allentown, Pa., assignor to Fuller Company, a corporation of Delaware
Filed Aug. 18, 1959, Ser. No. 834,531
8 Claims. (Cl. 55—292)

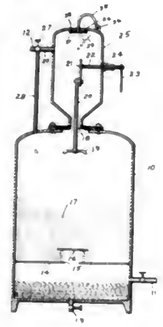


1. A gas-material separator comprising a cylindrical chamber having an inlet and an outlet, filter means in the chamber interposed in the gas-material flow path between the inlet and the outlet, a wave generator in a region intermediate the length of the filter means and in the region of the cross sectional center of the filter means, said filter means being distributed substantially uniformly and arcuately with respect to the cross sectional area of the chamber and concentrically with respect to the cylindrical chamber and the wave generators, and means for causing a flow of gas successively through the inlet, the filter means and the outlet.

3,158,456
AIR DRIER AND CHARGING MEANS COMBINATION

Orlo Clair Norton, 544 Virginia Ave., Erie, Pa.

Filed May 3, 1961, Ser. No. 107,439
1 Claim. (Cl. 55—388)



In combination, an air drier and a charging device, said air drier comprising a tank having an inlet and an air drier outlet and a partition therebetween,

chemical desiccant material supported on said partition and adapted to absorb moisture and to go into solution with said moisture and collect as an aqueous solution in the bottom of said tank,

said charging device comprising a storage tank,

an opening in said drier tank connecting said air drier tank and said storage tank,

a connecting valve having means for opening and closing said opening in said drier tank,

a charging opening in said storage tank,

a sealing plate,

means on the outside of said storage tank movably connecting said sealing plate to said storage tank,

said sealing plate being movable from a position in closing relation with said charging opening in said storage tank to a position inside said storage tank,

and a three-way valve having means to selectively connect said air drier outlet to an outlet line and to said storage tank,

said sealing plate being adapted to be urged into sealing relation with said charging opening when air is connected from said air drier tank to said storage tank by said three-way valve,

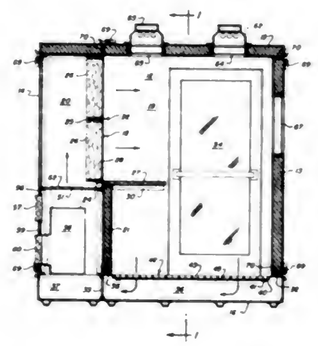
manual means for opening said connecting valve when said air is connected from said air drier outlet to said storage tank and for maintaining said connecting valve in sealing relation with said drier tank around said opening therein connecting said storage tank and said drier tank when said three-way valve connects said air drier outlet to said outlet line.

3,158,457
ULTRA-CLEAN ROOM

Willis J. Whitfield, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed May 14, 1962, Ser. No. 194,740
9 Claims. (Cl. 55—472)

1. A substantially dust-free device of the character described comprising closure means forming an enclosed volume including therein a plenum chamber occupying a major part of said volume, air moving means including a blower and air duct structures in registry with the plenum chamber, the cross sectional area of said air duct structures being substantially less than that of the plenum chamber, a work area disposed adjacent to said enclosed volume, a portion of said closure means forming a common wall separating the enclosed volume from said work area and having an opening therethrough for providing communication between said plenum chamber and said work area, said opening having a major dimension substantially coextensive in length with a cross sectional length of the plenum chamber, a sub-micron air-filter disposed within said opening, said blower when in operation discharging air into said plenum chamber to form a body of air maintained at a pressure above

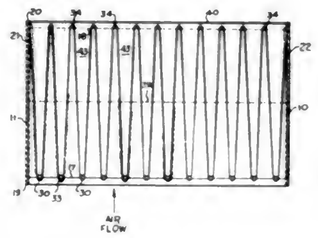


ambient pressure, said sub-micron air-filter providing a restrictive outlet for the flow of pressurized air from said plenum chamber into the work area such as to create a pressure drop across said sub-micron air-filter for assuring that air flows into said work area through said air-filter at substantially equal volume and velocity throughout all portions thereof, and an additional air-filter of lesser efficiency than said sub-micron air-filter disposed intermediate the work area and an inlet to said blower for pre-filtering the air.

3,158,458
MULTI-PLEATED AIR FILTER

John F. Babbitt, Louisville, Ky., assignor to Continental Air Filters, Inc., Louisville, Ky., a corporation of Delaware

Filed Mar. 6, 1961, Ser. No. 93,626
1 Claim. (Cl. 55—499)



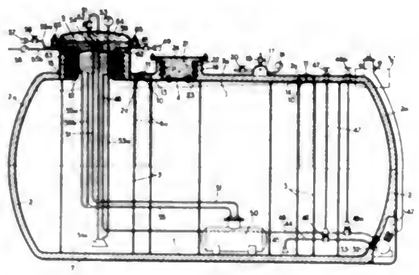
A multi-pleated air filter having in combination an open-ended rectangular frame including first and second pairs of opposite side walls, a pair of panels of corrugated material affixed to the respective interior surfaces of each of said second pair of side walls and having spaces therein extending generally parallel to the direction of air flow through said filter, a filter medium comprising a flexible sheet arranged in multiple pleated formation with its respective ends secured to the respective first pair of side walls and its respective side edges secured

to the respective panels, a first series of pleat-supporting rods extending between said panels and with their ends engaged in the spaces of the respective panels adjacent the upstream end of the filter, roller-like members comprising wire wound in helical form and rotatably surrounding the central portions of a plurality of said first series of rods and having a diameter greater than the rod diameter and with said filter medium being looped over said roller-like members, a second series of pleat-supporting rods having the filter medium looped thereover, said second series of rods extending between said panels and with their ends engaged in the spaces of the respective panels adjacent the downstream end of said filter, and a plurality of non-metallic pleat-distending members having portions in contact with the respective pleats on the filtered air side thereof, each of said supporting rods being mounted separately from each other and from said distending members, and each of said distending members being spaced from each other and being separately attached to the interior surfaces of said first pair of side walls.

3,158,459
SELF-DISCHARGING CONTAINER FOR CONVEYING AND STORING LOW TEMPERATURE FLUIDS OR OTHER MATERIALS

Jacques Guilhem, Cite la Neuville, Le Trait, France, assignor of one-half to Societe Anonyme dite: Ateliers & Chantiers de la Seine Maritime, Paris, France

Filed Mar. 20, 1961, Ser. No. 97,058
Claims priority, application France, Mar. 22, 1960, 822,109, Patent 1,266,486; Oct. 3, 1960, 840,175; Dec. 13, 1960, 846,803
13 Claims. (Cl. 62—45)



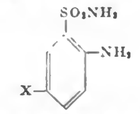
1. A container for very low temperature materials, particularly liquefied or solidified gas, said container comprising an inner fluid tight tank, an outer tank surrounding and spaced from said inner tank, and laminated heat insulation between said tanks, said heat insulation comprising a plurality of layers, each composed of a plurality of rigid insulating panels, the panels of each layer being separated from the other panels in the same layer by strips of yielding material, and the surfaces of at least some of the panels in each layer being slidable with respect to the surfaces of the adjacent panels in adjacent layers to allow free thermal contraction and expansion of said insulating panels.

3,158,460
METHOD AND COMPOSITION FOR INHIBITING THE GERMINATION OF SEEDS

Olav Rosenlund Hansen, 1 Vognborgvej, Copenhagen, Denmark

No Drawing. Filed Dec. 15, 1960, Ser. No. 75,929
Claims priority, application Great Britain, Dec. 23, 1959, 43,733/59
14 Claims. (Cl. 71—2.6)

9. A composition for inhibiting the germination of seeds of plants, and containing, as an active component, an effective concentration of a water soluble salt of 5-halogen-orthanilamide having the formula



wherein X designates a halogen atom, and a diluent.

3,158,461
METHOD OF CONTROLLING WEEDS

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 2, 1960, Ser. No. 25,842
7 Claims. (Cl. 71—2.7)

1. A method for the control of plant growth which comprises applying to the media to be treated a phytotoxic amount of a composition having the formula:



where R, R′ and R″ are monovalent radicals chosen from the group consisting of lower alkyl, lower alkenyl, lower haloalkyl, lower aminoalkyl, lower alkylaminoalkyl, lower dialkylaminoalkyl, lower hydroxyalkyl, lower carboxyalkyl, where R, R′ and R″ each have one carbon atom linked directly to the phosphorus atom and X is selected from the elements consisting of oxygen and sulfur.

3,158,462
FUNGISTATIC NON-CAKING, SUBSTANTIALLY DUST FREE, WATER LEACHABLE FERTILIZER

Wilbert Moody Wilson, Morristown, N.J., assignor to George W. Helme Company, Helmetta, N.J.

No Drawing. Filed June 24, 1963, Ser. No. 290,159
2 Claims. (Cl. 71—4)

1. A fungistatic, non-caking, substantially dust free, water leachable fertilizer composition consisting essentially of fertilizer granules coated with a polymerizable styrene resin having a boiling point of between 187° and 300° F. and containing from about two to about twenty percent styrene, and from about twenty to about fifty-five percent polystyrene and from about six to about thirty percent sulfur.

3,158,463
AGGLOMERATION OF ORES

Frank Petkovich, Onaping, Ontario, and Paul Ewald Carroll, Falconbridge, Ontario, Canada, assignors to Falconbridge Nickel Mines Limited

Filed Feb. 17, 1961, Ser. No. 89,957
4 Claims. (Cl. 75—5)

1. In the method of producing hardened agglomerates from green moisture-bearing agglomerates formed of finely divided metal sulphides containing a substantial amount of pyrrhotite, the improvement which comprises:

(*a*) establishing an upright column of the agglomerates in a heat treatment zone;

(*b*) feeding the green moisture-bearing agglomerates at a predetermined rate to the top of the column;

(*c*) passing a free-oxygen-bearing gas through the column of agglomerates;

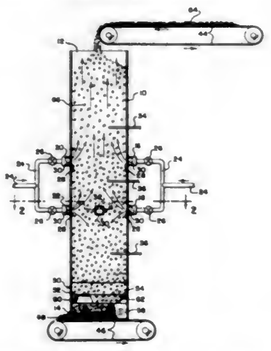
(*d*) setting up an exothermic reaction between the oxygen of the gas and the moisture and the pyrrhotite of the agglomerates to produce in situ solid oxidation products including oxides and sulphates and elemental sulphur and gaseous oxidation products including sulphur dioxide and sulphur trioxide and to deplete the gas in oxygen;

(*e*) forming the solid oxidation products on the surfaces of the sulphide particles;

(*f*) depositing the gaseous oxidation products for the greater part on the green agglomerates in the upper part of the column;

(*g*) said solid and gaseous oxidation products forming intergranular binders on the surfaces of the sulphide particles;

(*h*) controlling the extent of the exothermic reaction to maintain the temperature of the column well below that at which incandescence begins by limiting the amount of free oxygen admitted to the column;



(*i*) maintaining the temperature of the column well below that at which incandescence begins but above that at which moisture is vaporized to prevent sintering together and roasting of, and to retain hydrated sulphates on and within, the agglomerates;

(*j*) vaporizing moisture from the agglomerates to mingle with the oxygen-depleted gas and to form a wet gas thereby;

(*k*) separating wet gas from the agglomerates;

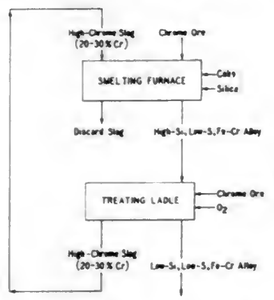
(*l*) permitting the agglomerates in the column to descend by gravity through the heat treatment zone; and

(*m*) withdrawing hardened agglomerates from the bottom of the column substantially as fast as the green agglomerates are fed to the column.

3,158,464
FERROCHROMIUM PRODUCTION

William Chynoweth, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed May 23, 1963, Ser. No. 282,607
2 Claims. (Cl. 75—51)



1. A process for the production of ferrochromium alloys which comprises smelting oxidic chrome ore with carbonaceous material and silica, in the absence of additional lime, in a metallurgical furnace, to produce a molten high-silicon, low sulfur intermediate ferrochromium alloy and a discard slag; tapping said molten intermediate ferrochrome alloy into a ladle at a tapping temperature of between 1500° C. and 1600° C.; and contacting the tapped molten metal with oxidic chromium ore and treating the tapped molten metal with gaseous oxygen at a rate such that the temperature of the metal does not exceed 1760° C. to produce a low-silicon, low-sulfur, ferrochromium alloy and a re-cyclable chromium-rich slag.

3,158,465
METALLURGICAL MATERIAL AND PROCESS FOR TREATING IRON THEREWITH

William A. Brown, Rector, Pa., and John F. Drenning, Birmingham, Ala., assignors to Kerchner, Marshall & Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 7, 1961, Ser. No. 136,446
3 Claims. (Cl. 75—57)

1. A briquette that is useful for treating molten iron by addition thereto, comprising a major portion of silicon carbide and up to 15% by weight of an alkaline modifying agent containing a hygroscopic material, up to 40% by weight of the modifying agent comprising sodium chloride, the lower limit of the modifying agent in the briquette being an amount effective to enhance the action of the silicon carbide in the molten iron, and the lower limit of sodium chloride in the modifying agent being an amount effective to counteract the hygroscopic characteristics of said material.

3,158,466
PRODUCT FOR REFINING EFFERVESCENT, QUIESCENT AND SEMI-QUIESCENT STEEL IN THE CASTING

Guillaume Muller, Strasbourg, Bas-Rhin, France, assignor to Prochirhin, S.A., Strasbourg-Robertsau, Bas-Rhin, France

No Drawing. Filed Jan. 19, 1961, Ser. No. 83,619
Claims priority, application France Jan. 21, 1960
1 Claim. (Cl. 75—58)

An alkaline refining product for steel adapted to be incorporated into said steel during its casting at a ratio of 0.01 kg. to 2 kg. per metric ton,

said alkaline refining product consisting of a mixture of

about 80% of anhydrous borax,
about 10% of sodium fluoride,
about 1% of sodium carbonate,
about 1% of potassium carbonate,
about 5% of graphite and
about 3% of lampblack.

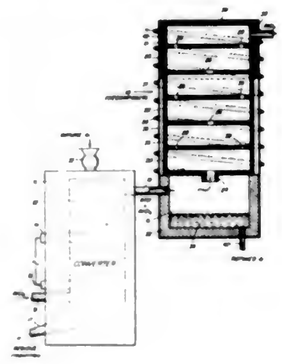
3,158,467
DECOMPOSING METHOD AND APPARATUS FOR SUBHALIDE DISTILLATION

Ethan A. Hollingshead, Norman W. F. Phillips, and Frederick William Southam, all of Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Dec. 14, 1960, Ser. No. 75,734
8 Claims. (Cl. 75—68)

1. A decomposer for deriving liquid aluminum from gaseous aluminum subhalide, comprising means composed of graphite and having internal baffles and arranged to provide a confined, baffled path for gaseous aluminum subhalide, for transferring heat from the gaseous subhalide to the graphite to decompose the subhalide and deposit liquid aluminum on the graphite inside said means, said means having confining wall structure of graphite for receiving said transferred heat by conduction, and an outer metallic casing surrounding said wall and having cooling means, said graphite wall structure of the first-mentioned means being spaced inwardly of said casing, for transfer of heat by radiation from the

wall structure across the space to the casing, and said first-mentioned means being internally arranged for flow of the deposited liquid aluminum to a locality of collection of same, said cooling means comprising fluid-coolant-contact means arranged for isolation of the coolant from exposure to said space.



3,158,468
SEPARATION OF AN ACTINIDE METAL FROM AN ALLOY

Harry Pearlman, Tarzana, and Lloyd A. Hanson, Canoga Park, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 22, 1962, Ser. No. 204,595
7 Claims. (Cl. 75—84.1)

1. A method for the separation of an actinide metal from an alloy selected from the class consisting of Th-Mg, Th-Zn, and U-Zn, which comprises contacting said alloy in a molten state with lithium under an inert gas atmosphere, and then separating the resulting actinide metal precipitate from the resulting molten lithium alloy.

3,158,469
ELECTRICAL CONTACT

John C. Kosco, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,514
5 Claims. (Cl. 75—134)

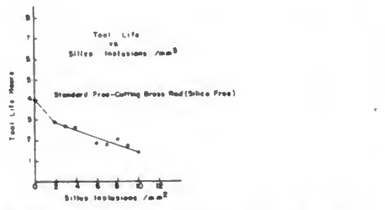
1. An electrical contact member consisting essentially of, by weight, about 45 to 78 percent of a metal of the group consisting of silver and copper, and about 55 to 22 percent of a hard phase, said hard phase consisting essentially of titanium carbide of about 15.5 to 18.5 percent of combined carbon and up to 3 percent of free carbon.

3,158,470
COPPER BASE ALLOYS AND THE METHOD OF TREATING THE SAME TO IMPROVE THEIR MACHINABILITY

Henry L. Burghoff and Frederick Gerald Parker, Waterbury, Conn., assignors to Chase Brass & Copper Co. Incorporated, Waterbury, Conn., a corporation of Connecticut

Filed May 8, 1961, Ser. No. 119,009
8 Claims. (Cl. 75—135)

1. A leaded-brass of superior machinability which has been treated to reduce silica and zinc sulfide inclusions commonly present in the untreated metal, said treated brass containing a reagent metal selected from the group consisting of at least one of the following components



in the retained amount specified: magnesium from about 0.01% to about 0.30%; and calcium from about 0.001% to about 0.05%.

3,158,471
GOLD ALLOY SOLDER FOR SEMICONDUCTOR DEVICES

Kurt Kadelburg, Los Angeles, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,043
3 Claims. (Cl. 75—165)

1. A solder for soldering metallic contacts to a silicon wafer; said solder consisting essentially of approximately 80% by weight of gold, 16% by weight of tin, and 4% silver.

3,158,472
PROCESS FOR PRODUCING SINTERED ARTICLES

Ludwig von Bogdandy, Essen-Frintrop, and Iwan Nikola Stranski, Berlin-Dahlem, Germany, assignors to Huttenwerk Oberhausen AG., Oberhausen, Rhineland, Germany, a corporation of Germany

Filed Oct. 19, 1961, Ser. No. 146,174
Claims priority, application Germany Oct. 20, 1960
5 Claims. (Cl. 75—200)



1. A process for producing a sintered article from a coarse-grain and a fine-grain fraction of iron powder, the bulk of said coarse-grain fraction consisting of particles greater than 0.1 mm. in diameter, the bulk of said fine-grain fraction consisting of particles less than 0.1 mm. in diameter, comprising the steps of increasing the internal stresses of the particles of said fine-grain fraction relatively to those of the particles of said coarse-grain fraction by mechanically compacting the particles of said fine-grain fraction, recomminuting said fine-grain fraction to substantially its original particle size, mixing a major proportion of said coarse-grain fraction with a minor proportion of said fine-grain fraction, said minor fraction constituting between substantially 5% and 40% by weight of the mixture, molding the mixture into a blank of an article to be produced, and sintering said blank.

3,158,473
METHOD FOR PRODUCING COMPOSITE BODIES

Arno Gatti, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,771
4 Claims. (Cl. 75—206)

1. A method for producing composite bodies having a metal matrix and a metal oxide dispersion in the matrix

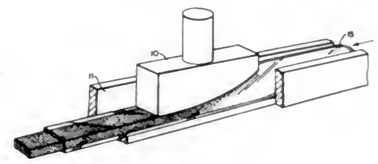
comprising, preparing a mixture of submicron-size matrix metal oxide particles and submicron-size dispersion metal oxide particles, reducing the matrix metal oxide particles to the metallic state while retaining the dispersion particles in oxide form, subjecting the metal-metal oxide mixture to an environment rendering the submicron-size matrix metal particles non-pyrophoric, comminuting the mixture in a liquid medium nonoxidizing to the matrix metal and dispersion metal oxide particles to reduce the size of any agglomerates formed during reduction of the matrix metal oxide particles, shaping the mixture to form a green body and firing for a time sufficient to remove residual liquid media carried from the comminuting operation, and effecting a second compaction and simultaneous firing to increase the density of the compact.

3,158,474

COMPACTION PROCESS

Thor A. Andersen, Plum Boro, Monroeville, and Charles Deibel, Shadyside, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 7, 1960, Ser. No. 61,290
6 Claims. (Cl. 75—214)



1. In a process for the compaction of metal powder in which a presser head compacts the powder in a die having a cavity of predetermined configuration, the steps of, (1) confining a quantity of flowable metal powder within a relatively thin, flexible, and resilient envelope of organic material having a shape closely approximating said predetermined configuration, with said powder completely filling said envelope, (2) sealing said envelope, (3) intermittently moving the powder-filled envelope through said die in contact with the walls thereof, (4) compacting the envelope and metal powder when at rest in the die to produce a powder compact element by employing the presser head to force the powder-filled envelope into forming contact with the walls of said cavity, (5) removing the compacted metal element with the adherent envelope from the die, and (6) removing the envelope from the compact.

3,158,475

ELECTROPHOTOGRAPHIC MATERIAL

Paul Maria Cassiers, Jean Marie Nys, and Jozef Frans Willems, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Feb. 4, 1960, Ser. No. 6,625
Claims priority, application Great Britain Feb. 5, 1959
1 Claim. (Cl. 96—1)

An electrophotographic copying process which comprises exposing an electrostatically charged photoconductive insulating layer comprising p,p′-dibenzoyl aminostilbene to a light image whereby the light struck area is discharged and developing said image of electrostatic charges with an electroscopic material.

3,158,476

PROCESS FOR THE IMPROVEMENT OF FIXED ELECTROPHOTOGRAPHIC PRINTING PLATES WHICH ARE WATER-CONDUCTIVE IN THE IMAGE-FREE PARTS

Fritz Uhlig, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 14, 1961, Ser. No. 152,141
Claims priority, application Germany Jan. 13, 1961
10 Claims. (Cl. 96—1)

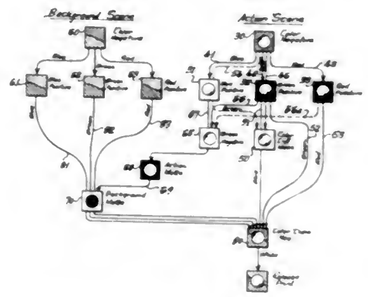
1. A process for improving an electrophotographic printing plate having, on a support, a fixed image formed by developing a latent electrostatic image with an electroscopic material, the plate being hydrophilic in the image-free areas, which comprises coating the plate with an aqueous coloidal agent, which colloidal agent adheres to the non-image areas, drying, treating the plate with a lacquer containing an organic solvent, whereby only the image areas are removed and the said lacquer adheres to the said support in the image areas, and treating the plate with water whereby the coating is removed only in the non-image areas.

3,158,477

COMPOSITE COLOR PHOTOGRAPHY

Petro Vlahos, Los Angeles, Calif., assignor to Motion Picture Research Council, Inc., Los Angeles, Calif., a corporation of California

Filed Apr. 2, 1959, Ser. No. 803,767
19 Claims. (Cl. 96—5)



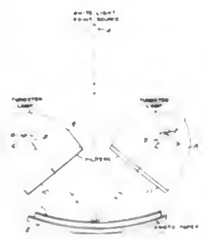
16. The process for making a composite color photograph without using a dense foreground matte, which process comprises making a photographic record of a background scene, making respective red, green and blue color separation negatives of a foreground scene illuminated by essentially white light before a backing illuminated by substantially pure blue light, producing from the green and red negatives respective green and red color separation positives having dense background areas corresponding to the blue backing illumination, exposing an actinic layer to light transmitted through the blue negative and a green positive in superposition and developing the actinic layer to produce a color difference mask having densities at its respective foreground areas that correspond essentially to the densities of a blue color separation positive minus the densities of a green color separation positive, the background area of the color difference mask being essentially clear, printing the blue component of the foreground scene by exposure through a green color separation positive and the color difference mask in superposition, the dense background area of that green separation positive acting as a foreground matte during such exposure, printing the green and red color components of the foreground scene by exposure through respective green and red color separation positives, the dense background areas thereof acting as foreground mattes during such printing, producing a dense background matte, and printing the background scene by exposure through the photographic record of the background scene and the background matte in superposition.

3,158,478

METHOD OF PHOTOGRAPHIC DODGING

Richard E. Eaton, Springfield, and John K. Dixon, Falls Church, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Aug. 31, 1960, Ser. No. 53,107
5 Claims. (Cl. 96—27)



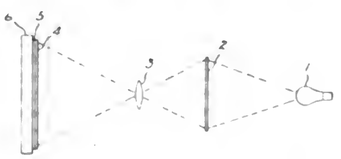
1. A method of dodging in photography wherein a print is to be produced on printing paper from a negative, said paper being of variable contrast emulsion sensitive to wavelengths associated with all colors, a surface of said paper being located on a spherical surface, comprising placing the negative on a spherical surface concentric with the surface of the printing paper but spaced therefrom by approximately 0.05″, forming an image on the paper by directing white light through said negative onto said paper from essentially a point source in a direction perpendicular to said surface while said paper and negative are located on said concentric surfaces, partially erasing said image by directing long wavelength diffuse light through said negative onto said paper in directions making an acute angle greater than zero with respect to said direction perpendicular to said surfaces.

3,158,479

METHOD OF PRODUCING HALFTONES

Paul Pluess, Lakewood, Ohio (% Pluess Lithograph Co., 1125 Rockwell Ave., Cleveland, Ohio)

Filed Mar. 14, 1963, Ser. No. 274,365
5 Claims. (Cl. 96—45)



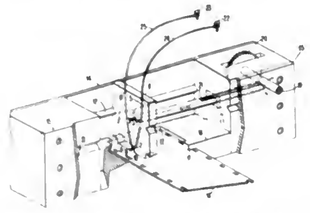
1. The method which comprises projecting a continuous-tone light image onto a light-sensitive surface through a halftone screen for one exposure, turning the screen in its plane through an angle of from about 28° to about 37°, again projecting the image on the light-sensitive surface through the screen in its new position for another exposure and developing and fixing the exposed light-sensitive surface.

3,158,480

SPARK DEVELOPMENT OF PHOTOSENSITIVE VESICULAR PRINT MATERIAL

John L. Adkisson, Peter Betts, and Claris L. Donelson, all of San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 20, 1960, Ser. No. 44,186
1 Claim. (Cl. 96—48)



A process for the heat development of a latent image in photosensitive vesicular print material comprising the steps of:

positioning the photosensitive vesicular print material so that the latent image lies within the developable area,

positioning a pair of electrodes having portions within a chamber in an insulating block so that an aperture in the chamber lies adjacent but spaced from the latent image to be developed, and

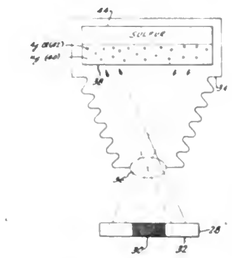
heating the material in the area of the latent image with an arc discharge between the electrodes within the chamber.

3,158,481

DRY PHOTOGRAPHIC PROCESS

Daniel J. Shanefield, South Orange, N.J., assignor to Sci-Tech Corporation, Princeton, N.J., a corporation of New Jersey

Filed Apr. 2, 1962, Ser. No. 184,237
5 Claims. (Cl. 96—48)



1. Process for forming an image corresponding to an object to be reproduced, which operates in the absence of liquid reagents, comprising providing a first, continuous layer free of substantial discrete voids and of varying permeabilities to gas whereby said gas diffuses readily through non-image areas of said first layer and is obstructed against passage to varying degrees through said image areas thereof, providing a second, image-receiving, layer which contains a material which is converted to a visible condition by contact with said gas, superposing said first and second layers, causing said gas to pass through permeable portions of said first layer to said superposed second layer, and permitting the gas to convert the material in the second layer to visible condition.

4. Process for forming an image corresponding to an object to be reproduced, which operates in the absence of

liquid reagents, comprising providing a first, continuous layer free of substantial discrete voids and of varying permeabilities to gas whereby said gas diffuses readily through non-image areas of said first layer and is obstructed against passage to varying degrees through image areas thereof, providing a second, image-receiving, layer which contains a material from the group consisting of mercury compounds, silver compounds, sulfur, gold chloride, yellow lead oxide, reduced fluorescein, silver metal, p-methylamino phenol and p-phenylene diamine, which is converted to a visible condition by contact with said gas, superposing said first and said second layer, causing said gas to pass through permeable portions of said first layer to said superposed second layer, and permitting the gas to convert the material in the second layer to visible condition.

3,158,482

DRY PHOTOGRAPHIC PROCESSING FORMULATION

Christopher Lucas, Long Branch, N.J.

No Drawing. Filed July 28, 1961, Ser. No. 127,744
4 Claims. (Cl. 96—66)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A dry photographic developing formulation consisting in parts by weight of 2 parts pyrocatechin, 1 part sodium hydroxide and 3 parts taken from a mixture of 20 parts of potassium citrate, 47.7 parts of sodium bicarbonate, 25.2 parts of tartaric acid, and 16.2 parts of citric acid.

3,158,483

PHOTOGRAPHIC DEVELOPERS CONTAINING POLYALKYLENE GLYCOLS

Wesley G. Lowe and Judith A. Schwan, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Substituted for abandoned application Ser. No. 644,746, Mar. 8, 1957. This application Feb. 9, 1962, Ser. No. 172,097
5 Claims. (Cl. 96—66)

1. A photographic developer capable of producing high contrast images upon photographic development comprising a developing solution containing

a p-dihydroxybenzene developing agent,

an amount of dissociated sulfite less than about 5 grams per liter, and

an alkylene oxide polymer selected from the class consisting of (1) condensation products of alkylene oxide with glycols, and (2) condensation products of an alkylene oxide with aliphatic compounds selected from the class consisting of aliphatic monohydric alcohols, aliphatic monobasic acids, aliphatic monoamines and monohydric phenols,

said alkylene oxide containing from 2 to 4 carbon atoms and said alkylene oxide polymer having a molecular weight of at least 400, and said developer containing susbtantially only said p-dihydroxybenzene developing agent as developing agent for silver halide.

3,158,484

LIGHT-SENSITIVE COLLOID SILVER HALIDE PHOTOGRAPHIC ELEMENTS

Jozef Frans Willems, Wilrijk-Antwerp, Robrecht Julius Thiers, Brasschaat-Antwerp, and Joseph Louis De Munck, Beveren-Waas, Belgium, assignors to Gevaert Photo-Producten N.V. Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Oct. 24, 1961, Ser. No. 149,809
Claims priority, application Great Britain, May 7, 1959, 15,695/59; Netherlands, Oct. 24, 1960, 257,213
2 Claims. (Cl. 96—107)

1. A light-sensitive photographic material comprising a support and at least one gelatino silver halide emulsion layer containing an alkylene oxide polymer in an amount between 0.2 g. and 7.00 g. per mol silver halide, said alkylene oxide polymer being a condensation product of a polyalkylene glycol with a molecular weight between 100 and 1500, and an organic compound of the class consisting of an aliphatic aldehyde, an aliphatic diisocyanate, alkyl phosphites, alkyl phosphates and polyepoxides, said alkylene oxide polymer having the general formula:

$$R-O-(R_1-O)_x-\left[Q-(R_1-O)_x\right]_y-R$$

wherein:

R_1 is an alkylene group of from 2 to 3 carbon atoms;
x and y each is a positive integer of from 2 to 35;
Q is a member of the group consisting of

(1) a $-CHO-$ group, wherein R_3 is a member of the group

$$\begin{array}{c}|\\R_3\end{array}$$

consisting of hydrogen and an alkyl radical containing from 1 to 4 carbon atoms.

(2) a $-C-NH-R_4-NH-C-O-$ group, wherein R_4 is a

$$\begin{array}{c}\|\\O\end{array} \qquad \begin{array}{c}\|\\O\end{array}$$

bivalent aliphatic hydrocarbon radical of from 2 to 20 carbon atoms;

(3) a $-P-O-$ group wherein R_5 has the same value as R_3;

$$\begin{array}{c}|\\O\,R_5\end{array}$$

(4) a $-P-O-$ group wherein R_6 has the same value as R_3; and

$$\begin{array}{c}O\\\|\\P\\|\\O\,R_6\end{array}$$

(5) a $-CH_2-CHOH-R_7-CHOH-CH_2-O-$ group wherein R_7 is a member of the group consisting of a chemical bond and a bivalent polyether radical;

R is a member of the group consisting of

(1) a hydrogen atom;

(2) a $-CHOH-$ group where Q represents a $-CHO-$ group;

$$\begin{array}{c}|\\R_3\end{array} \qquad \begin{array}{c}|\\R_3\end{array}$$

(3) a $-C-NH-R_8-NH_2-$ group where Q is a

$$\begin{array}{c}\|\\O\end{array}$$

$-C-NH-R_8-NH-C-O-$ group;

$$\begin{array}{c}\|\\O\end{array} \qquad \begin{array}{c}\|\\O\end{array}$$

(4) a $-P(OR_9)(O)-$ group where Q is a $-P(OR_9)(O)-O-$ group;

(5) a $-P(O)(OR_9)-$ group where Q is a $-P(O)(OR_9)-O-$ group;

(6) a $-CH_2-CHOH-R_9-CH(O)-CH_2-$ group where Q is a

$$\begin{array}{c}\\O\end{array}$$

$-CH_2-CHOH-R_9-CHOH-CH_2-O-$ group.

3,158,485

COFFEE SUBSTITUTE AND THE METHOD OF MAKING IT AND OTHER FOOD PRODUCTS

Vincent De Santa Luce, 12424 S. Atlantic Ave., Compton, Calif., assignor of twenty-one and seventy-five hundredths percent to Carl C. Anderson, Sr., Albuquerque, N. Mex., nine and three-hundred and seventy-five thousandths percent to George Jonovich, nine and three-hundred and seventy-five thousandths percent to John Wilnau, seven and five-tenths percent to Allen Belluzzi, and ten percent to Donald J. Baumann, all of Scottsdale, Ariz., and eleven percent to Maxie L. Anderson and eleven percent to Carl C. Anderson, Jr., both of Albuquerque, N. Mex.

No Drawing. Filed Apr. 25, 1961, Ser. No. 105,287
25 Claims. (Cl. 99—75)

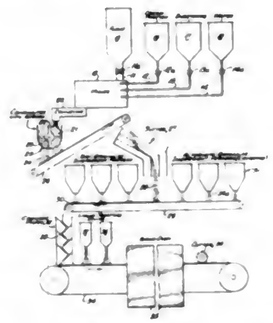
1. A food product containing a coffee substitute which comprises essentially the combination of a liquid mix derived from the vines of tomatoes and a liquid mix derived from dandelions.

3,158,486

PREPARATION OF BAKED FOOD PRODUCTS

Roland A. Morck, Glen Rock, Meade C. Harris, Rutherford, and David W. Miller, Fair Lawn, N.J., assignors to National Biscuit Company, a corporation of New Jersey

Filed Oct. 10, 1960, Ser. No. 61,466
5 Claims. (Cl. 99—86)



3. Process for producing cookies comprising forming a cream mass comprising sugar, shortening and water, incorporating the cream mass in flour in such proportions as to form a relatively dry dough, comminuting the dry dough into separate, non-adherent granules, sizing said granules through a sieve, depositing said granules on a supporting surface, liquid treating the deposited granules, and baking the deposited granules to fuse said granules together.

3,158,487

EMULSIFIER AND METHOD OF MAKING SAME

Edward J. Reid, Dumont, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,775
8 Claims. (Cl. 99—94)

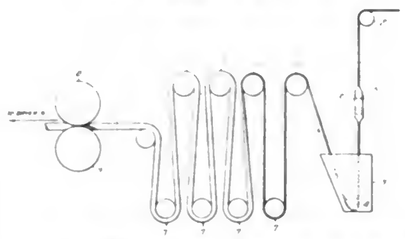
1. A cake mix comprising flour, baking powder and sugar intimately blended with a shortening comprising: (*a*) from about 8 to 16% by weight of the shortening of a mixture of lactylated higher fatty acid esters of glycerol and lactylated higher fatty acid esters of propylene glycol, from about 10 to 90% by weight of said mixture being composed of lactylated propylene glycol higher fatty acid monoesters and (*b*) an edible triglyceride.

3,158,488

DRY SAUSAGE PREPARATION AND CASINGS THEREFOR

John W. Firth, Chicago, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 20, 1962, Ser. No. 217,805
9 Claims. (Cl. 99—109)



1. A regenerated cellulose tubular sausage casing for processing dry sausage, said casing having the inner surface thereof coated with 0.01–1.0% of an acetylated monoglyceride of a fatty acid and 0 to 0.5% gelatin, whereby the casing shrinks with and adheres to the surface of dry sausage therein.

3,158,489

SALAD OILS AND METHOD OF MAKING THEM

Frederic J. Baur, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,956
12 Claims. (Cl. 99—118)

1. A clear glyceride salad oil having superior resistance to deposition of high-melting solids and comprising a base salad oil having dissolved therein at least about 0.001%, by weight, of fatty acid ester of dextrin, said dextrin being esterfied with an average, per glucose unit, of from about ½ to 2 mols of saturated fatty acid having from 14 to 22 carbon atoms, the balance of the fatty acids being selected from the group consisting of fatty acids having from 2 to 12 carbon atoms and unsaturated fatty acids having from 14 to 22 carbon atoms, said ester having an average of not more than 1½ unesterified hydroxyl groups per glucose unit.

3,158,490

SALAD OILS AND METHOD OF MAKING THEM

Fredric J. Baur and Edward S. Lutton, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,957
10 Claims. (Cl. 99—118)

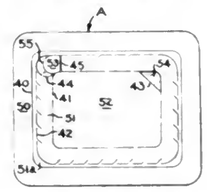
1. A clear glyceride salad oil having superior resistance to deposition of high-melting solids and comprising a base salad oil having dissolved therein at least about 0.001%, by weight, of disaccharide fatty acid ester, the disaccharide being esterified with an average of from about 15% to 85%, based on the total fatty acid in the ester, of saturated fatty acid having from 14 to 22 carbon atoms, the balance of the fatty acid being selected from the group consisting of fatty acids having from 2 to 12 carbon atoms and unsaturated fatty acids having from 14 to 22 carbon atoms, said ester having an average of not more than 5 unesterified hydroxyl groups per molecule.

3,158,491

FOOD CONTAINER

Robert A. Farrell, Menasha, and George V. Skowronski, Neenah, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 26, 1963, Ser. No. 261,566
7 Claims. (Cl. 99—171)



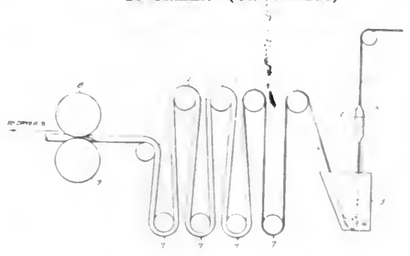
1. A tamperproof sealed package comprising a leakproof receptacle portion having a bottom panel and side walls connected to said bottom panel, and a continuous outwardly extending flange connected to the upper edges of said side walls; a product contained in said receptacle portion; and a cover substantially coextensive with the outer perimeter of said flange closing said receptacle portion, said cover comprising a frangible material sealed to said flange by a layer of liquid impermeable heat-activated coating extending over substantially the entire inner surface of said material, said frangible material having a tear

strip with a pull tab defined by a pair of spaced substantially parallel lines of weakness positioned adjacent and inwardly of the flange of the receptacle portion.

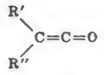
3,158,492
SAUSAGE CASING WITH RELEASE COATING

John W. Firth, Chicago, Ill., assignor to Tee Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 8, 1962, Ser. No. 215,725
10 Claims. (Cl. 99—176)



1. A meat casing having the meat-contacting surface thereof coated with a lower alkyl cellulose and a dimer of a ketene of the formula



where R′ and R″ are selected from the group consisting of hydrogen and C_4–C_{20} alkyl, aryl, and cycloalkyl radicals, not more than one of the groups R′ and R″ being hydrogen, at least said ketene dimer being chemically combined with the casing, and said lower alkyl cellulose being present in an amount sufficient to mitigate fatting out of sausages when encased therein.

3,158,493
ADHESIVE COMPOSITION AND METHOD

Louis Long, Jr., Concord, and Erik Vis, Cochituate, Mass., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Original application Nov. 21, 1960, Ser. No. 70,895, now Patent No. 3,127,361, dated Mar. 31, 1964. Divided and this application Oct. 9, 1961, Ser. No. 146,073
4 Claims. (Cl. 106—162)

1. A strong transparent adhesive composition essentially consisting of tetra-O-p-tolylsulfonyl-sucrose plasticized with at least one member selected from the group consisting of sucrose acetate isobutyrate, tri-ethyl citrate, dioctyl phthalate, furfuryl alcohol, citral, and tricresyl phosphate.

3,158,494
COATED POLYMERIC THERMOPLASTIC SHEET MATERIAL

Tore Eikvar, Maplewood, Lester C. Krogh, Roseville, and Fred R. Luecke, Jr., White Bear, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Aug. 21, 1962, Ser. No. 218,423
11 Claims. (Cl. 117—45)



1. A strong, flexible, dimensionally stable sheet material which is capable of withstanding repeated creasing even at extremely low temperatures and which has a graphite- and ink-receptive surface from which graphite marks can be erased without substantial injury thereto, said sheet material being capble of retaining its desirable properties even when exposed to ultraviolet light, water, alcohols, hydrocarbons, esters, and ketones at a wide range of temperatures, said sheet material comprising a polyalkylene terephthalate film coated on at least one surface with a film-forming pigment-containing resin comprising the flexible cured reaction product of reactants consisting essentially of a polyfunctional isocyanate and a polyol selected from the group consisting of polyesters and polyethers, said polyol having an aliphatic hydroxyl content of between 0.1% and 8% and an acid number less than 5, said polyol being present in amounts sufficient to provide up to about 0.5 hydroxyl group per isocyanate group supplied by said polyfunctional isocyanate.

3,158,495
SOLID LUBRICANT COATINGS AND COATING COMPOSITIONS

Sylvester F. Murray, Schenectady, and Marshall B. Peterson, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

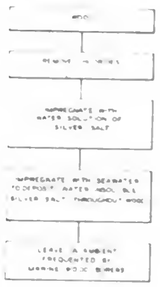
No Drawing. Filed Sept. 30, 1960, Ser. No. 59,492
1 Claim. (Cl. 117—46)

A method for providing a bearing lubricant to a substrate which comprises coating the substrate with a mixture containing polysiloxane adhesive and an oxidizable non-corrosive solid lead compound in ratios yielding 2 parts silica and 98 parts lead oxide to 22 parts silica and 78 parts lead oxide and heating the coating in air at temperature of at least 1300° F. for a sufficient time to form a vitreous product of lead oxide and silica.

3,158,496
METHOD FOR PREVENTING THE DESTRUCTION OF WOOD BY WOOD-BORING ANIMALS

Dixy L. Ray, Bethesda, Md., and Cornelis B. Van Niel, Carmel, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 5, 1961, Ser. No. 101,027
3 Claims. (Cl. 117—59)

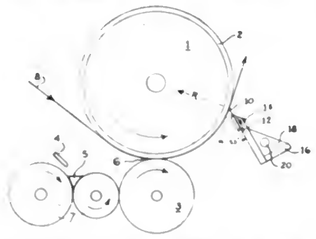


1. The method of protecting wood from destruction by marine wood-boring animals which comprises removing existing chlorides from the wood by autoclaving the wood with distilled water until the surrounding water no longer gives a chloride reaction with silver nitrate; thereafter autoclaving the wood in a strong solution of silver nitrate until the wood is thoroughly saturated therewith; and thereafter exposing said wood to contact with sea water whereby there is achieved an essentially continuous distribution of insoluble silver chloride throughout the wood matrix.

3,158,497
PAPER COATING METHOD EMPLOYING HIGH FLEXIBLE BLADE PRESSURES

Harold G. Fird, Kimberly, Wis., and Herman B. Justice, Centerville, Ohio, assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Aug. 17, 1961, Ser. No. 132,036
1 Claim. (Cl. 117—102)



In a process for the production of coated paper in which a traveling uncoated, absorptive paper web is coated with an aqueous mineral coating composition which is subject to the inclusion therein of scratch producing particles and which web is continuously drawn in the coating process on a resiliently covered rotating backing roll from a first pressure nip formed between the resiliently covered backing roll and a driven applicator roll to a second pressure nip formed between the said backing roll and a flexible blade having a thickness of between about 0.012 and 0.024 inch, the steps of:

(*a*) driving the said backing roll and said coating applicator roll in counter-rotation and in the direction of web travel;

(*b*) applying to said web with said applicator roll an excess of the aqueous mineral coating composition having a viscosity of 50 to 80 poises and a solids content of about 60 to 64 percent by weight, said web having a basis weight (25" x 38" x 500 sheets) of at least about 60 pounds;

(*c*) passing the said web on said backing roll to said second pressure nip formed by said flexible blade and said backing roll at a position spaced around the backing roll from the first pressure nip; and

(*d*) pressing said blade into contact with said web on said roll surface to trowel excess of coating composition from the web, to smooth the remainder of coating composition on the web and produce a pressure radially of the backing roll on the web of between about 6½ to 9 pounds per inch over the length of blade contact with the web, said pressure being at least 300 pounds per square inch and which square inch area is based on the area of contact of the blade with the web.

3,158,498
METHOD OF BLADE-COATING UTILIZING HIGH ANGLES OF FLEXIBLE BLADES

Russell T. Carpenter, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Nov. 13, 1961, Ser. No. 151,957
2 Claims. (Cl. 117—102)

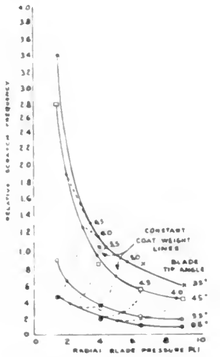
1. The process of producing a coated paper web on a continuous basis which comprises the steps of:

(*a*) driving in counter-rotation a coating applicator roll and a resiliently covered backing roll which is disposed vertically above the coating applicator roll and forms with the coating applicator roll an open gap;

(*b*) supporting a substantially dry, uncoated paper web, which is of insufficient thickness to close said gap, on the periphery of the said backing roll and passing the web through said gap while applying an excess of an aqueous mineral coating composition with said applicator roll to said web in the gap;

(*c*) disposing a flexible blade with a tip thereof on the backing roll-supported web along a longitudinal line of blade contact which is 30 to 45° below a horizontal radius of the backing roll and at least 45° around the backing roll in the direction of backing roll rotation from the said gap;

(*d*) disposing said flexible blade along said line of blade contact such that in the unpressed condition of the flexible blade the angle formed between a tangent to the backing roll at the line of blade contact and the unpressed blade is greater than 58° and less than about 75°;



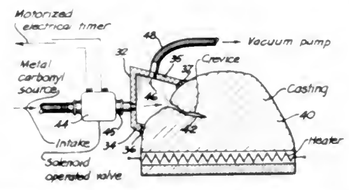
(*e*) pressing the so-disposed flexible blade to the said line of blade contact such that the blade is flexed to a substantial degree and the angle formed between the tangent to the backing roll and the tip of the blade decreases but is between about 55° and 65°;

(*f*) and removing the excess portion of the applied mineral coating composition from the said web on the said backing roll while smoothing the remainder on the web by withdrawing the web substantially continuously between the blade and backing roll while the flexible blade is so pressed to the web on the backing roll, and whereby the tendency of such flexible blade pressing on the aqueous mineral coating composition to produce scratches in the coating on the web is minimized.

3,158,499
METHOD OF DEPOSITING METAL COATINGS IN HOLES, TUBES, CRACKS, FISSURES AND THE LIKE

William C. Jenkin, Dayton, Ohio, assignor to Union Carbide Corporation, New York, N.Y.

Filed July 7, 1961, Ser. No. 122,577
2 Claims. (Cl. 117—107.2)



1. A method of depositing metal in small cavities and dead end fissures which comprises the steps of introducing a thermally decomposable gaseous metal compound into the area to be plated with metal under con-

tinuous pulsating gas pressure conditions, and contacting said areas with the continuously pulsating gas while said areas are at a temperature to cause decomposition of said pulsating gas and deposition of metal on the bottom and side walls of said cavities and dead end fissures, said pulsating pressure of the plating gas being effected by providing shutting off and on the flow of gas to the areas being treated.

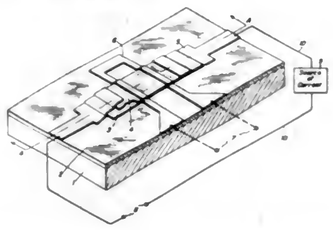
3,158,500
PROCESS FOR ELECTROLESS DEPOSITION
Jerome S. Sallo, St. Louis Park, and James I. Swenson, Minnetonka, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,592
8 Claims. (Cl. 117—119)

1. An improved process for the electroless plating of nickel from a transport controlled system comprising the steps of: providing an aqueous solution maintained at a pH value in the range of about 3 to about 7, said solution being composed essentially of a soluble nickel salt and a soluble hypophosphite salt; immersing a suitable substrate material in said solution; maintaining said solution within a temperature range from about 70° C. to about 90° C.; decreasing the pressure on said solution to a value below the ambient atmospheric pressure and above the vapor pressure of said solution; and plating said substrate material by auto-catalytic reaction of said nickel salt and said hypophosphite salt.

3,158,501
WRINKLE RESISTANT FABRIC AND METHOD
Rosser L. Wayland, Jr., Danville, Va., assignor to Dan River Mills, Incorporated, Danville, Va., a corporation of Virginia
Filed Dec. 10, 1956, Ser. No. 627,461
7 Claims. (Cl. 117—139.4)

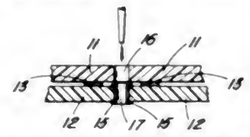
5. A cellulosic textile fabric of high wrinkle resistance being free of deleterious chlorine retention produced by the heat curing of a woven cellulosic fabric uniformly impregnated with an aqueous solution of 1,3-dimethylol tetrahydro-2(1)-pyrimidone containing catalytic quantities of $MgCl_2$ as acidic catalyst.

3,158,502
METHOD OF MANUFACTURING ELECTRICALLY INSULATED DEVICES
John W. Bremer, Sunnyvale, Calif., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1960, Ser. No. 63,197
4 Claims. (Cl. 117—212)



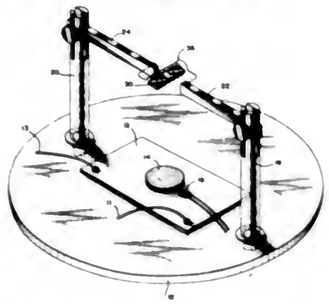
1. The process of providing a base for a printed cryogenic device comprising the steps of depositing a very thin layer of insulating material comprising silicon monoxide over a superconducting underlayer having the property of requiring a higher magnetic field to render it resistive than the printed cryogenic device, oxidizing the insulating material in place by heat at a temperature of at least 350° C., in order to fill imperfections in the insulating layer with oxidized material, and depositing at least a second partial superconducting layer over the oxidized insulating material.

3,158,503
METALLIZING HOLES
Lawrence John Young, Woodbridge, Suffolk, England, assignor to Young Research Laboratories Limited, London, England, a British company
Filed May 11, 1962, Ser. No. 193,985
8 Claims. (Cl. 117—212)



1. A method of producing a metallized hole through a board, such as a printed circuit board, which method comprises aligning a hole of a first board with the hole which is to be metallized of a second board, introducing into the hole of the first board a flexible metallic paste and thereafter transferring the paste from the hole of the first board by directing a jet of a gaseous medium under pressure to the hole of the first board to blow the metallic paste out from said hole of the first board to pass into the hole of the second board thereby coating at least a substantial portion of the wall of the hole of the second board.

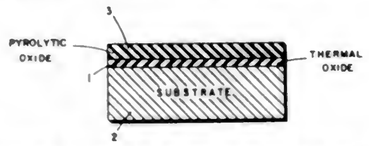
3,158,504
METHOD OF ALLOYING AN OHMIC CONTACT TO A SEMICONDUCTOR
Robert E. Anderson, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 7, 1960, Ser. No. 61,310
5 Claims. (Cl. 117—213)



1. A method for forming an ohmic contact to a silicon body that comprises positioning a silicon body in proximity to a source of gold in a vacuum, heating the silicon body to a temperature of about 300° C., and evaporating the gold so that vaporized particles thereof are deposited upon the surface of the silicon body to form an alloy therewith.

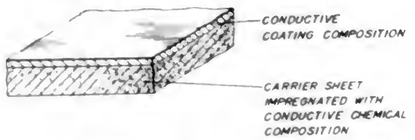
3,158,505
METHOD OF PLACING THICK OXIDE COATINGS ON SILICON AND ARTICLE
José Estebau Sándor, Menlo Park, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,857
4 Claims. (Cl. 117—215)

1. A method of obtaining silicon oxide layers upon a silicon substrate which comprises:
growing a first layer of silicon oxide on said substrate by exposing said substrate to heat in an oxidizing atmospbere of at least 3,000 A. in thickness; and



pyrolytically growing a second layer of silicon oxide upon said first layer.

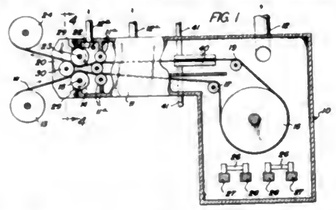
3,158,506
RECORDING MATERIALS AND THEIR MANUFACTURE
Michael C. Ellison, Indialantic, Fla., assignor to Graphic Controls Corporation, Buffalo, N.Y., a corporation of New York
Filed Sept. 11, 1961, Ser. No. 137,027
18 Claims. (Cl. 117—216)



3. An electrosensitive and heat-sensitive recording paper comprising a substantially dry impregnated and coated paper sheet,
an electrosensitive and heat-sensitive composition intimately and substantially uniformly dispersed throughout said sheet,
said composition comprising:
an alkali metal acid carbonate responsive to heat applied to the surface of said sheet to release carbon dioxide and to form an alkali metal hydroxide in said sheet,
a pH indicator type dye responsive to the presence of alkali to undergo a marked visible color change,
moisture in a small amount but in an amount sufficient to provide a solvent phase for said alkali metal hydroxide and said dye to facilitate reaction therebetween;
and an electro-conductive backing layer coating one surface of said sheet,
said electro-conductive backing layer comprising a conductive backing material selected from the group consisting of carbon and metals, said conductive backing material being bonded to said surface of said paper sheet;
whereby contact of a heated stylus and contact of an electrical stylus with said sheet at selectable areas of the other surface of said sheet are each effective to initiate a chemical reaction between said alkali metal hydroxide and said dye to produce visible marks on said sheet in said selectable areas of said last mentioned surface of said sheet.

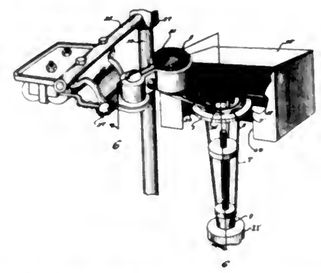
3,158,507
FLOATING ROLLER SEAL
Paul Alexander, deceased, late of Princeton, N.J., by Irene Alexander, executrix, Princeton, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 11, 1960, Ser. No. 1,655
6 Claims. (Cl. 118—49)

5. In combination with a chamber structure having an opening for receiving sheet material in elongated strip form and including sheet material guide means for reversing the direction of movemenet of the sheet material and returning the sheet material out of the chamber structure through the same opening, means for reducing the pressure within the chamber below atmospheric pressure, a device within the chamber for treating the material, a seal comprising first and second sealing guide rolls mounted in the opening and spaced apart on parallel axes with the peripheries thereof spaced at a distance greater than twice the maximum thickness of the sheet material, a third sealing roller loosely positioned adjacent said first and second sealing rolls and having a diameter greater than the distance between the peripheries of said first and second rolls, said third roller having its axis located outside the plane through the said first and second rolls whereby the pressure differential urges the third roller toward the nip of said first and second rolls with said first sealing roll to define a first sheet material passage, said



third roller also defining with said second sealing roll a second sheet material passage for outgoing sheet material, means connected to said first sealing roll for rotating said first sealing roll to feed sheet material into said chamber toward said material guide means, means connected to said second sealing roll for separately rotating said second sealing roll in the same angular direction as the rotation of said first sealing roll and at the same peripheral speed to feed sheet material from said material guide means and out of said chamber, independent means on the chamber structure for loosely positioning the ends of the third roller adjacent the respective ends of the first and second sealing rolls and effective for controlling the return of the respective end of the third roller after it has been moved away from a respective first or second roll by a greater thickness of material passing therebetween.

3,158,508
APPARATUS FOR PRODUCING GLAZING COATINGS
Nicholas Reinhardt, Cambridge, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed July 3, 1962, Ser. No. 208,667
1 Claim. (Cl. 118—64)



Apparatus for applying a hot molten annulus of substantially bubble-free material of uniform thickness to a planar surface of an article that comprises:
a base;
a self-centering chuck rotatingly mounted from said

base and adapted to hold said article with said planar surface horizontal and directed upward;

electric motor means mounted on said base rotatingly connected to said chuck to rotate, when energized, said chuck and said article around an axis perpendicular to said planar surface at a predetermined rate;

a standard affixed to said base and displaced from said chuck and motor;

an electric oven extending from said standard and having a side opening, said oven being adapted to be moved from a rest position to a position enclosing said rotating chuck and article, and when energized to heat said article in cooperation with the rotation thereof to a uniform temperature at which each particle of the coating material of predetermined size will substantially instantaneously melt upon contacting said heated planar surface of said article when applied at a predetermined rate, and to maintain said temperature while said particles are being applied; and

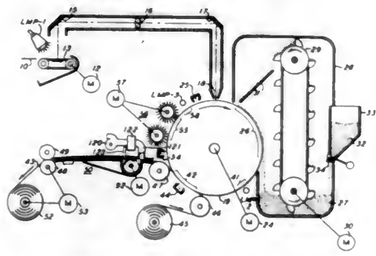
particle application means extending from said standard and adapted to be moved from a rest position to a position adjacent said side opening in said oven while said rotating planar surface is being maintained at said temperature, comprising

an inclined chute having a mouth located at a predetermined point above said rotating planar surface of said article when said article application means is moved to said position,

a strainer cup mounted at the entrance to said chute and having a sifting screen and adapted when vibrated to supply particles of coating material of said predetermined size to said chute and by gravity therethrough and through said mouth at said predetermined point upon said heated rotating planar surface to form a hot molten annulus of coating material of uniform thickness thereupon, and

an electric vibrator connected to said strainer cup and adapted when energized to vibrate said cup causing said coating material of predetermined size to fall through said sifting screen.

3,158,509
XEROGRAPHIC FIXING APPARATUS
Frederick W. Hudson, West Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 27, 1962, Ser. No. 190,757
9 Claims. (Cl. 118—637)



7. In a xerographic apparatus including means to reproduce copy in the form of powder images having a solvent soluble component loosely adhering on a web sheet, means to advance the sheet, and fusing means adapted to affix the powder image to the surface of the sheet during the course of its movement, an improved fusing means comprising in combination:

(*a*) an elongated fusing chamber including spaced top wall, bottom wall and side walls secured substantially vapor tight to each other and defining an internal generally unobstructed and enclosed passage extending at least partially the length thereof to permit a substantially unimpeded vapor flow along a surface of a web sheet therein;

(*b*) an entrance and exit defined by at least one chamber wall and connecting to said passage for the passing of a web sheet therethrough;

(*c*) a solvent reservoir adjacent the passage of said chamber for containing a quantity of liquid solvent for the soluble component of the powder material comprising the powder image;

(*d*) dispensing means extending from the reservoir into said defined passage to uniformly wipe a metered quantity of liquid solvent from said reservoir against an advancing portion of the non-image supporting surface of the moving web sheet;

(*e*) heating means within said passage beyond said dispensing means in the direction of web movement and adapted to apply heat to the non-image supporting surface of the web after application of liquid solvent thereto to vaporize solvent from the web; and,

(*f*) seal means at the exit of said chamber to substantially prevent the solvent vaporized by said heating means from escaping therepast and to effectively cause vaporized solvent to drift in said passage away from the vicinity of said exit in a direction toward said entrance along portions of powder image on the web sheet.

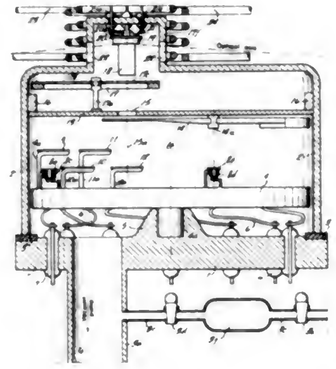
3,158,510
CATALYTIC FUEL CELL ELECTRODE AND METHOD OF MAKING SAME
Gerhardt Talvenheimo, Chester, Pa., assignor, by direct and mesne assignments, of one-half to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware, and one-half to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware
No Drawing. Filed July 25, 1961, Ser. No. 126,496
5 Claims. (Cl. 136—122)

1. The method for making a porous matrix for a catalytic fuel cell electrode which comprises the steps of: forming separate raw mixes of non-porous carbonaceous material and high surface area activated carbon, each with a heavy liquid binder; forming said raw mixes into thin flat bodies of the desired matrix shape by compressing the same at a pressure in the range of 1500–2500 p.s.i.g.; alternately superimposing layers of said non-porous carbon and activated carbon bodies face-to-face to form a laminar pattern; recompressing the composite body at a pressure in the aforementioned range for a period sufficient to assure equilibrium of said binder and intimate intermingling of carbon particles throughout the several interfaces; subjecting said composite to initial baking at a temperature in the range of 150–250° C. for a period of 12–24 hours; gradually raising the temperature of said composite to about 1000° C. over a period of 1–2 hours; and subjecting said composite to a final baking by holding the attained high temperature substantially constant for a period of 30–90 minutes, followed by cooling at ambient temperature.

3,158,511
MONOCRYSTALLINE STRUCTURES INCLUDING SEMICONDUCTORS AND SYSTEM FOR MANUFACTURE THEREOF
Jean Jules Achille Robillard, Sharon, Mass., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 569,421, Mar. 5, 1956. This application Nov. 3, 1959, Ser. No. 19,975
5 Claims. (Cl. 148—1.5)

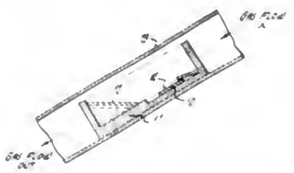
1. Method to observe the degree to which the monocrystalline form is exhibited by a sheet of semiconductor material as the sheet grows by vacuum deposition of said material in pure form onto a substrate monocrystal of

different chemical composition than said material but having a lattice constant approximately that of said material, and as an amount of doping agent is added to said sheet by condensing an amorphous overlay of an alloy of said material and agent onto said sheet, and by heating said sheet and overlay to dissipate the latter and to concurrently diffuse said agent into the material of said sheet, said method comprising, generating a beam of monochromatic light, elliptically polarizing the light in said beam, reflecting said beam of elliptically polarized light from the surface of said sheet when said sheet is



growing by condensation of said pure material, generating from light in said reflected beam a signal indicating the degree of elliptical polarization thereof as a measure of the degree to which said growing sheet is assuming monocrystalline form, thereafter reflecting said beam from the surface of said overlay when said layer and overlay are being heated as described, and generating from light in the beam reflected from said overlay surface a signal indicating the degree of elliptical polarization of the light reflected from said overlay surface as a measure of the degree to which the amorphous overlay has been dissipated by said heating.

3,158,512
SEMICONDUCTOR DEVICES AND METHODS OF MAKING THEM
Herbert Nelson, Princeton, and Carl W. Benyon, Jr., Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,466
3 Claims. (Cl. 148—1.5)



1. The method of introducing a rectifying barrier in an epitaxial layer of semiconductive material on a crystalline semiconductive wafer, comprising the steps of

(*a*) preheating said semiconductive wafer while exposing one major face thereof;

(*b*) preparing a charge comprising a semiconductive material, a solvent capable of dissolving said material, said solvent being selected from the group of metals and alloys which are electrically neutral with respect to said material, a conductivity modifier which is an acceptor in said material, a conductivity modifier which is a donor in said material, said acceptor modifier and said donor modifier having differential solubilities in said material, the solubility of one said modifier in said material decreasing rapidly with decreasing temperature, while the solubility of the other said modifier in said material decreases slowly with decreasing temperature, the amount of said one modifier present in said charge being in excess of the amount of said other modifier present;

(*c*) separately preheating said charge to a temperature above the melting point of said charge but below the melting point of said semiconductive wafer;

(*d*) flooding said exposed face of said heated wafer with the molten charge;

(*e*) cooling said molten charge and said wafer so that a first portion of said semiconductive material in said charge precipitates from said charge and recrystallizes on said exposed wafer face as an epitaxial layer, said first recrystallized portion having dissolved therein both said conductivity modifiers, said one modifier being present in excess in said first recrystallized portion;

(*f*) continuing to cool said molten charge so that a second portion of said semiconductive material in said charge precipitates from said charge and recrystallizes on said exposed wafer face, said second recrystallized portion having dissolved therein both said conductivity modifiers, said other modifier being present in excess in said second recrystallized portion, thereby forming a rectifying barrier within said epitaxial layer between said first and second portions;

(*g*) and decanting the remainder of said molten charge.

3,158,513
METHOD OF MANUFACTURING DISC-SHAPED ANODES FOR ROTARY-ANODE X-RAY TUBES
Lambertus Bernardus Joseph Janssen and Willem Mijndert Hogendoorn, both of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1960, Ser. No. 2,690
5 Claims. (Cl. 148—13)

1. In the method of manufacturing anode discs for use in rotary anode X-ray tubes, in which method the anode material is subjected to a heat treatment after the mechanical shaping, the step of heating a narrow annular strip intended to serve as the path of the focal spot to a temperature at which a comparatively thin layer of material below the surface is converted from a fiber structure to an isotropic structure by recrystallization before the anode is mounted in the X-ray tube.

3,158,514
CARBONITRIDING PROCESS
John B. Saxton, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,377
1 Claim. (Cl. 148—16.5)

A process for carbonitriding a metal chosen from the group consisting of nodular iron and gray iron comprising completely austenitizing the metal, cooling the austenitized metal from the austenitizing temperature to a selected temperature which selected temperature is high enough to insure substantially complete stability of the austenitic structure during the carbonitriding cycle, which selected temperature is low enough to insure substantial stability

of the carbonitriding atmosphere and which selected temperature is not substantially lower than 1500° F., carbo-



nitriding the metal at the selected temperature to produce a very hard case, and quenching the carbonitrided metal to produce a hard core.

3,158,515
METAL TREATMENT IN MOLTEN ALKALI-BARIUM-BORO-SILICATE GLASS AND COMPOSITION
Harold J. Michael, Columbus, Ohio, assignor to North American Aviation, Inc.
No Drawing. Filed May 22, 1962, Ser. No. 196,616
12 Claims. (Cl. 148—20)

1. A method of heat-treating a metal part by heating and cooling to and from a temperature substantially greater than 600° F. to 700° F., comprising the steps of:

(*a*) Covering said metal part with molten alkali-barium-boro-silicate glass while the temperature of said metal part is less than 600° F. to 700° F.,

(*b*) Heating said molten glass-covered metal part from a temperature of less than 600° F. to 700° F. to a temperature substantially greater than 600° F. to 700° F.,

(*c*) Cooling said heated, molten glass-covered metal part from said temperature substantially greater than 600° F. to 700° F. to a temperature whereat the molten glass covering said heated metal part becomes solidified in adhering relation to the surface of said heated metal part, and

(*d*) Completely spalling said adhered solidified glass from said cooled metal part by further cooling said metal part to a temperature below 600° F. to 700° F.

3,158,516
METHOD FOR PRODUCING ALLOY BODIES HAVING IMPROVED MAGNETIC PROPERTIES
John L. Walter, Scotia, and Howard C. Fiedler, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 119,555, June 26, 1961. This application May 11, 1964, Ser. No. 366,530
2 Claims. (Cl. 148—108)

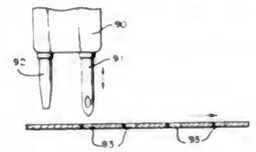
1. A method for improving the magnetic characteristics of a sheet-like body composed of body-centered cubic magnetic material consisting essentially of at least 92 percent iron, up to 5 percent silicon, up to 5 percent molybdenum, and up to 8 percent aluminum having an initial magnetostriction greater than zero and having a majority of the constituent grains thereof in the (100) [001] orientation to provide two directions of easiest magnetization in the plane of said sheet-like body, said method comprising heating said sheet-like body to an elevated temperature at about the Curie point and cooling said body while simultaneously subjecting it to an applied magnetic field acting substantially parallel to one of the easiest directions of magnetizations to align the magnetic domains and cause the body to have a magnetostriction of from about −0.5 to 1.0 when subjected to a magnetic field of about 15.5 kilogausses applied generally parallel to one of the easy directions of magnetization.

3,158,517
PROCESS FOR FORMING RECESSES IN SEMICONDUCTOR BODIES
Horst Schwarzenberger, Hellbronn, Germany, assignor to Telefunken Gesellschaft mit beschrankter Haftung, Hannover, Germany
No Drawing. Filed Oct. 27, 1960, Ser. No. 65,267
Claims priority, application Germany Nov. 5, 1959
6 Claims. (Cl. 156—17)

1. In a process of forming a recess in a semi-conductor body, the steps comprising coating the semi-conductor body with a photo-resist lacquer; eliminating the lacquer from areas, in which the recess is to be formed; and applying a substantially neutral aqueous etchant consisting essentially of ammonium fluoride and hydrogen peroxide to the uncovered area of the semiconductor body to form a recess therein.

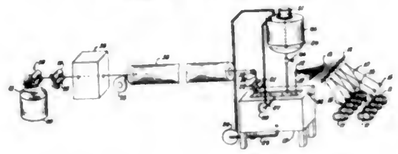
3. A composition for etching a semi-conductor body and consisting essentially of 1000 milliliters H_2O, 100 grams ammonium fluoride, and 2 milliliters of a 30% solution of hydrogen peroxide.

3,158,518
METHOD FOR MAKING A PRE-FORMABLE METAL BASE PILE MATERIAL
Milton Kessler, 4535 Grove Drive, Youngstown, Ohio
Filed Mar. 17, 1961, Ser. No. 96,551
3 Claims. (Cl. 156—72)



1. The method of making metal-backed pile material comprising the steps of punching a number of spaced apertures one after another in a solid sheet of semi-rigid deformable metal, threading a yarn of loose threads through each of said apertures immediately after it is made and punching the next aperture during said threading step, to form a series of loops one after another on one side of said metal sheet, and cutting each of said loops to form a pile of individual threads on said one side of the sheet.

3,158,519
CONTINUOUS PROCESS FOR PRODUCING MOLDING COMPOUNDS
Richard F. Shannon, Lancaster, and Frank P. McCombs, Granville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed June 30, 1960, Ser. No. 39,836
2 Claims. (Cl. 156—180)



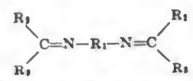
1. Method of producing a thermosetting resin molding compound comprising gathering a plurality of glass strands to form an advancing roving, combining said advancing roving with an aqueous slurry of phenolformaldehyde resin and a filler having an average particle diameter less than about 15 microns selected from the group consisting of clay and calcium carbonate, said slurry having a resin to filler ratio of from 60:40 to 80:20 and a viscosity of from 750–1500 centipoises at from 70–75° F., flexing the roving to accomplish substantially complete impregnation of the roving, adjusting the resin to roving ratio by removing excess resin so that the glass content of the mix is from about 45 to 46.5% by weight, partially curing the phenol-formaldehyde resin to produce a choppable roving and resin composite, and chopping the composite to form moldable particles.

3,158,520
METHOD OF SEALING PLASTIC FILM
Lee O. Edmonds and James A. Shotton, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Mar. 3, 1961, Ser. No. 93,047
6 Claims. (Cl. 156—307)

1. In the process of sealing plastic film, which comprises contacting a surface of the plastic film prepared form a polymer of 1-olefins having a maximum of six carbon atoms per molecule with another surface of a plastic film prepared from a polymer of 1-olefins having a maximum of six carbon atoms per molecule, and heating at least a portion of the contact area; an improvement which comprises coating at least one of said surfaces prior to the heating step solely with a material selected from the group consisting of stearic acid, vegetable drying oils, mineral oils, drying oils prepared from fish oils and a low molecular weight wax from the pyrolysis of polyethylene.

3,158,521
PRODUCTION OF BONDED BODIES OF AT LEAST TWO DIFFERENT HALOGENATED NATURAL OR SYNTHETIC RUBBER BODIES
Max Goecke, Bad Homburg vor der Hohe, and Rudolf Nagelschmidt, Hanau (Main), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Mar. 3, 1960, Ser. No. 12,515
Claims priority, application Germany, Mar. 3, 1959, D 30,104
12 Claims. (Cl. 156—310)

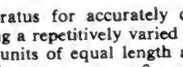
1. A process for bonding a layer of a halogen containing rubber selected from the group consisting of poly-2-halobutadiene, halo sulfonated polyethylene, halo sulfonated propylene, halogenated natural rubber, rubber hydrohalide, polychloro trifluoroethylene and hexafluoro propylene-vinylidene fluoride copolymers with the surface of a layer of another halogen containing rubber selected from said group which comprises associating such layers in bonding relationship in the presence of an organic polyisocyanate compound containing at least two isocyanate groups and at least one compound selected from the group consisting of Schiff's bases containing at least two $-N=C<$ groups in non-cyclic linkage of the formula



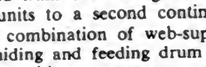
wherein R_1 represents a radical selected from the group consisting of aliphatic radicals containing 1 to 18 carbon atoms, araliphatic radicals containing up to 24 carbon atoms, cycloaliphatic radicals containing up to 24 carbon atoms and heterocyclic radicals containing up to 20 carbon atoms, the carbon atoms in such radicals only being bonded to at least one of the following atoms: hydrogen, oxygen, carbon, nitrogen, sulfur and phosphorus, R_2 and R_3 represent a member selected from the group consisting of hydrogen, aliphatic radicals containing 1 to 18 carbon atoms, araliphatic radicals containing up to 24 carbon atoms, cycloaliphatic radicals containing up to 24 carbon atoms and heterocyclic radicals containing up to 20 carbon atoms, the carbon atoms in such radicals only being bonded to at least one of the following atoms: hydrogen, oxygen, carbon, nitrogen, sulfur and phosphorus and monomeric N,N′-dimethylol compounds of polyamines of the formula

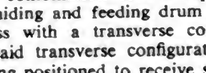
wherein A is a divalent radical selected from the group consisting of

(I)

(II) 

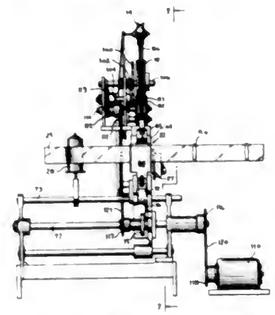
(III) 

(IV) 

(V) 

wherein each of R and R′ taken separately are selected from the group consisting of hydrogen, aliphatic radicals containing 1–18 carbon atoms, aromatic radicals containing up to 24 carbon atoms, araliphatic radicals containing up to 24 carbon atoms and heterocyclic radicals containing up to 20 carbon atoms and R and R′ taken together form a closed ring; R″ is the same as R and R′ taken separately; *n* is a number from 0 to 18 and *m* is a number from 2 to 8; and applying heat to such associated layers to effect the bond, the quantity of each of said compounds employed being 0.1 to 8% by weight based upon the rubber content of such layers.

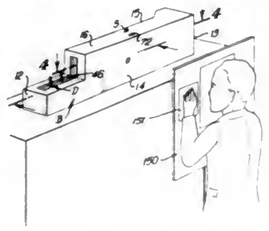
3,158,522
CONFIGURED WEB-CUTTING APPARATUS
John A. Dreher, Trucksville, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 12, 1961, Ser. No. 144,782
6 Claims. (Cl. 156—519)



1. An apparatus for accurately cutting a continuous first web having a repetitively varied transverse configuration into web units of equal length and of uniform relationship to said transverse configuration and for applying the web units to a second continuous web, which comprises the combination of web-supply means, a rotatable web-guiding and feeding drum having a circumferential recess with a transverse configuration corresponding to said transverse configuration of said web, said drum being positioned to receive said first web in a first direction and to feed said first web in said first direction, cutting means downstream of said rotatable drum to cut said web, means for feeding a second web in a

direction transverse to said first direction and to feed said second web to place said second web adjacent said first web with said first web in overlying relationship with respect to said second web, and activating means for intermittent rotary movement of said rotatable drum to feed one of said web units with each said movement of said rotatable drum and for intermittent operation of said cutting means to cut said web unit from said web after each said movement while said first web overlies said second web with a portion of the web unit extending beyond the edge of said second web, and means for sealing said web unit to said second web, said last-named means being mounted to be actuated in synchronism with said cutting means.

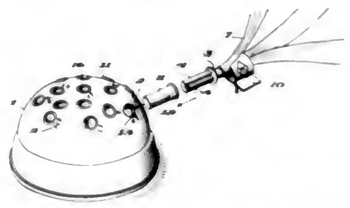
3,158,523
APPARATUS FOR PRODUCING IDENTIFICATION CARDS
Thurlow M. Morrow, Pasadena, Calif., assignor to George Almgren, Bakersfield, Calif.
Filed Jan. 23, 1961, Ser. No. 84,426
14 Claims. (Cl. 156—522)



1. An apparatus for producing a laminated in plastic identification card with photographic images of a subject person's face and hands thereon including, an elongate box-like body having a loading station at one end, a light-proof photographic sensitizing compartment adjacent to and communicating with the loading station, a light-proof camera compartment adjacent to and communicating with the sensitizing compartment, a light-proof photographic developing compartment adjacent to and communicating with the camera compartment and a laminating compartment adjacent to and communicating with the developing compartment, transport means extending longitudinally of the body and adapted to receive a form card, having a portion reserved for the photographic images, at the loading station and transport said card through said compartments, means in the photographic sensitizing compartment adapted to apply a light-sensitive photographic chemical on said area of the card, camera means in the camera compartment operable to expose said area of the card, means in the developing compartment adapted to deposit a developing reagent on the area of the card, laminating means in the laminating compartment adapted to laminate the card in plastic and control means for the transport means responsive to the position of the card and the operation of the several other means, whereby the transport means is intermittently operated to advance the card through the compartments and into and out of engagement with said other means.

3,158,524
ARTIFICIAL FLORAL DISPLAY
Duncan Tong, 23C Robinson Road, 3rd Floor, Hong Kong, China
Filed May 12, 1961, Ser. No. 109,715
5 Claims. (Cl. 161—27)

1. The combination of a base for an artificial floral display, said base having a plurality of holes therein, a corresponding number of artificial flower stems each having a floral array fixed thereon and one end portion thereof extending into a hole, and means in the hole for removably keying the stem to the base at a predetermined angle taken horizontally from a vertical plane through the base whereby the floral array displayed thereon is disposed



within a predetermined floral arrangement about the plane, said means for removably keying the stem to the base including a longitudinally extending key-way in the wall of the hole and a longitudinally extending complemental key on the stem end portion.

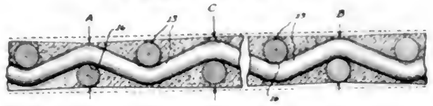
3,158,525
RESIN COATED UNWOVEN FABRIC
Donald N. Reynolds, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 26, 1960, Ser. No. 58,167
7 Claims. (Cl. 161—72)

1. An article useful for book binding comprising a non-woven fabric coated with pyroxylin, said non-woven fabric consisting essentially of continuous synthetic organic filaments having a random disposition and loopy configuration within the plane of the fabric and containing between about 3% and about 50% by weight of a synthetic organic polymer binder which is dispersed throughout the fabric and bonds the fibers at spaced points, the binder having an initial tensile modulus (Mi) of between about 0.002 and about 25 grams per denier and being present in an amount such that

$$\text{Percent binder} \times \sqrt[3]{Mi\ (\text{binder})} < 40$$

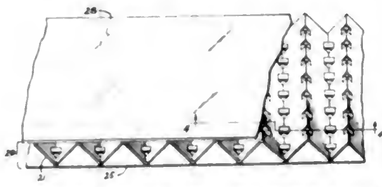
the fabric having a weight of about 2 to 5 oz./sq. yd. and the coating having a weight of about 2 to 10 ounces per square yard.

3,158,526
REINFORCED GASKET PRODUCTS
Franklin W. Farnam, Wheaton, and Robert G. Farnam, Glen Ellyn, Ill., assignors to F. D. Farnam Co., a corporation of Illinois
Filed Nov. 20, 1961, Ser. No. 153,548
4 Claims. (Cl. 161—95)



1. In a gasket, a calendered sheet of compressible and normally resilient sheet packing material having a predetermined thickness and adapted throughout a predetermined allowable range of compression to retain its normal resiliency, and a woven metal wire screen embedded substantially centrally in said sheet packing material and spaced from opposite faces of the sheet packing material, said wire screen having knuckles of predetermined thickness equal to at least one-half of said predetermined thickness of said sheet for limiting compression of the sheet packing material to said allowable range, and said wire screen constituting a relatively small percentage of the volume of said calendered sheet so that said sheet is made up primarily from compressible packing material.

3,158,527
PLAITED STRUCTURE AND METHOD OF FORMING SAME
Stephan B. Faccin, Oak Lawn, Erich H. Koeller, Chicago, William E. Reynolds, Riverside, and Rudolph E. Stern, Skokie, Ill., assignors, by mesne assignments, to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed June 10, 1960, Ser. No. 35,164
1 Claim. (Cl. 161—113)



A composite board structure comprising at least one planar facing sheet and at least one plaited member, the plaited member having planar wall elements angularly disposed and foldably connected in alternating relation forming apices on the respective sides of the plaited member, each apex having spaced apart indents each defined by a pair of parallel free edges conforming to the contour of the apex and including between said paired free edges truss members integral with the respective converging wall elements and spaced from the fold connections, the truss members disposed in substantially parallel relation to the plane of the apices on each side of the plaited member and reinforcing and connecting the respective adjacent wall elements in determined angular relation, the at least one facing sheet and the plaited member apices on the respective one side in contacting secured relation, adhesive means securing said facing sheet and the plaited member apices, said adhesive means disposed in part in the indents and in part in the angular juncture of the planar elements effectively buttressing the apices and rigidifying the board structure.

3,158,528
SILICEOUS REINFORCED RESINS
Alfred Windsor Brown, Woonsocket, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed June 12, 1961, Ser. No. 116,304
8 Claims. (Cl. 161—140)

1. A hardenable composition consisting essentially of between 20 to 70% by weight of a continuous phase (A) consisting essentially of a liquid synthetic resin, and between 30 to 80% by weight of a discontinuous phase (B) consisting essentially of between 10 to 70% by weight of glass flakes having a thickness of between 1 to 20 microns and a diameter of between 50 microns and three-quarters of an inch, and between 5 to 80% by weight of mica particles which are smaller than said glass flakes, said mica particles having a thickness of between 0.2 to 3.0 microns and a diameter of between 3 to 450 microns.

3,158,529
POLYURETHANE SANDWICH STRUCTURES
Paul Robitschek, Granville, Ohio, and Stephen M. Creighton, Niagara Falls, and Raymond R. Hindersinn, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,329
13 Claims. (Cl. 161—161)

1. The fire-resistant, sandwich structure which comprises two protective skins in spaced-apart relationship and contained between said skins and adhering directly to the inner surfaces thereof, a polyurethane foam having reacted therein an adduct of hexahalocyclopentadiene and a dienophile having a plurality of functional groups capable of esterification, where the halogen is selected from the group consisting of fluorine, chlorine, and bromine and mixtures thereof; at least one of said skins comprising a thermoset polyester resin having reacted therein an adduct of hexahalocyclopentadiene and a dienophile having a plurality of functional groups capable of esterification, wherein the halogen is selected from the group consisting of fluorine, chlorine, bromine and mixtures thereof.

3,158,530
PROCESS FOR MAKING USABLE WASTE PAPER CONTAINING BITUMENS
Charles O. Anastasio, Saddle Brook, N.J., assignor to Lowe Paper Company, Ridgefield, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 16, 1961, Ser. No. 145,501
3 Claims. (Cl. 162—5)

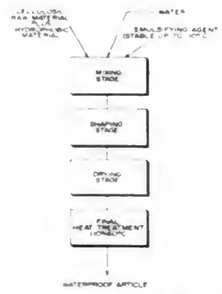
1. A process for making waste paper, which contains bituminous contaminants, usable by chemical treatment, comprising the steps of:

(*a*) dissolving the contaminants from said waste paper with an aliphatic hydrocarbon;

(*b*) adding an alkali metal hydroxide as a stabilizer to the solution of contaminants, in an amount to result in a pH range of about 8.5 to about 9.5; while maintaining the temperature in steps (*a*) and (*b*) below the boiling point of said hydrocarbon; and

(*c*) heating the hydrocarbon solution to approximately 200° F., evaporating sufficient solvent to cause the contaminants to become deposited as microscopic particles in dispersion in the waste paper.

3,158,531
PROCESS FOR THE PRODUCTION OF WATERPROOF MATERIALS FROM WASTE PAPER CONTAINING BITUMEN AND/OR WAX
Ernst Rohrer, Buchs, Sankt Gallen, Switzerland
Filed Aug. 17, 1962, Ser. No. 217,527
Claims priority, application Switzerland Aug. 18, 1961
7 Claims. (Cl. 162—5)



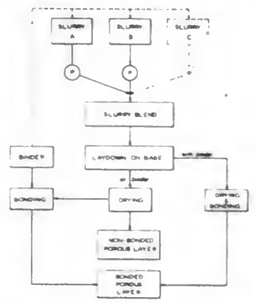
1. A process for the preparation of waterproof sheet-like articles from fibrous cellulosic materials which comprises: (1) combining a starting material selected from the group consisting of (*a*) raw materials comprising tar, bitumen and/or wax-containing waste-paper; (*b*) mixtures of fibrous cellulosic waste materials free of tar, bitumen and/or wax with an appropriate separately added amount of said tar, bitumen and/or wax; and (*c*) mixture of (*a*) and (*b*); water; and a quaternary ammonium emulsifying agent containing at least one paraffinic hydrocarbon chain of more than 10 carbon atoms and which agent is stable at temperatures up to at least about 100° C. to about 110° C. and which decomposes at a temperature above about 110° C. in an amount sufficient

to maintain a stable emulsion during the whole subsequent processing of the pulp; (2) mixing to obtain a homogeneous pulp; (3) processing the pulp by shaping and drying to obtain sheetlike articles therefrom; and (4) subjecting the sheets so obtained to a heat treatment which is carried out at a temperature above the decomposition temperature of the emulsifying agent.

3,158,532
TAPERED PORE FILTER ELEMENTS

David B. Pall, Roslyn Heights, and Cyril A. Keedwell, Levittown, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York

Filed Dec. 6, 1960, Ser. No. 74,130
18 Claims. (Cl. 162—103)

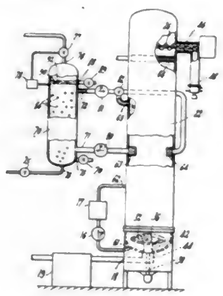


1. A process for preparing porous depth filters having pores which vary in diameter and configuration from surface to surface of the material, comprising blending continuously at least two separate suspensions comprising particulate material suspended in a fluid, the separate suspensions severally comprising particulate material of different sizes while varying the proportions blended of particulate material of each size sequentially, and depositing the mixture thus produced upon a base to form a porous material, thereby producing a material having a pore diameter and pore configuration varying from surface to surface thereof.

3,158,533
CONTINUOUS PULPING EXTRACTION APPARATUS

Elmer R. Burling, Nashua, and Lawrence A. Carlsmith, Amherst, N.H. (both % Improved Machinery Inc., Nashua, N.H.)

Filed Sept. 21, 1962, Ser. No. 225,285
12 Claims. (Cl. 162—237)



1. Apparatus for continuously treating wood chips and simultaneously continuously extracting separable fluids therefrom, comprising a generally upright elongated reaction vessel having wood chip lifter means for feeding a wood chip-liquid mixture into the lower end of said reaction vessel to maintain a compacted mass of wood chips within the reaction vessel while feeding said mass upwardly through said reaction vessel and discharging treated wood chips from the upped end of said reaction vessel, said reaction vessel having liquid access openings positioned a substantial distance above the lower end of said reaction vessel, strainer means covering at least one of said openings adapted for discharging liquid through said strainer means from said reaction vessel, others of said access openings adapted for introducing liquid into said reaction vessel, an elongated extraction vessel having an upper fluid outlet opening and upper and lower liquid openings connected to said reaction vessel through said liquid access openings for flow of liquid thereinto, and means for circulating said liquid through said extraction vessel from said one opening through said strainer means from said reaction vessel and causing flow of said liquid within said reaction vessel from one access opening to another access opening, and level control means maintaining a discrete liquid level in said extraction vessel.

3,158,534
SYNERGISTIC FUNGICIDAL COMPOSITIONS

Paul-Ernst Frohberger, Burscheid, Bezirk Dusseldorf, and Ewald Urbschat, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,179
Claims priority, application Germany Oct. 28, 1960
8 Claims. (Cl. 167—22)

2. A fungicidal composition containing as principal active ingredient an effective amount of a mixture consisting of

(A) a component selected from the group consisting of p-amino-benzene-azo-sulfonate and p-amino-phenyl hydrazine-sulfonate and

(B) a component selected from the group consisting of pentachloronitrobenzene and tetramethylthiuram disulfide;

the ratio of (A) to (B) being about 33:67 parts by weight.

3,158,535
PYRETHRIN-ELASTOMER INSECTICIDAL COMPOSITION AND METHOD

Alan Beerbower, Westfield, Harry W. Rudel, Roselle, and Frederick A. Baumle, Rahway, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 2, 1961, Ser. No. 142,032
6 Claims. (Cl. 167—24)

1. An improved method for killing insects, which method comprises: spraying on said insects an insecticidal composition containing a small amount of a pesticidal toxicant comprising pyrethrins and a small amount of a compound sufficient to enhance the insecticidal characteristics of said composition of an oil soluble, high molecular weight, amorphous, essentially linear hydrocarbon compound selected from a group consisting of unvulcanized natural rubber and synthetic elastomers obtained by the polymerization of from 85 to 99.5 weight percent of a C_4 to C_8 olefin with a C_4 to C_{14} multiolefin.

3,158,536
METHOD FOR CONTROLLING FUNGI WITH BIS-(PENTACHLOROCYCLOPENTADIENYL)

Edward D. Weil, Lewiston, and Dale W. Young, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 2, 1962, Ser. No. 176,905
8 Claims. (Cl. 167—30)

1. A method for the control of fungus diseases of plants which comprises applying a fungitoxic amount of bis (pentachlorocyclopentadienyl) to the locus to be protected.

3,158,537
REPELLING BIRDS

Lyle D. Goodhue, Bartlesville, Kenneth E. Cantrel, Dewey, and Rector P. Louthan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 28, 1959, Ser. No. 836,597
31 Claims. (Cl. 167—46)

1. A method of repelling birds from seed in a field which comprises treating said seed before distributing it in said field with N,N-di-n-butylphenylsulfenamide.

3,158,538
ANTIDIARRHEAL COMPOSITIONS AND METHOD OF USING

Slaughter W. Lee, Short Hills, N.J., assignor to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,972
8 Claims. (Cl. 167—55)

1. Antidiarrheal compositions comprising a swellable resin, which resin is a cross-linked interpolymer of 98 to 99.8 percent by weight of a polymerizable alpha-beta, monoolefinically-unsaturated, lower-aliphatic carboxylic acid and 0.2 to 2.0 percent by weight of a polyunsaturated copolymerizable cross-linking agent, in admixture with an anticholinergic agent having a selective effect in inhibiting intestinal hypermotility.

3,158,539
LAXATIVE COMPOSITION CONTAINING GLEDITSIA MUCILAGE AND METHOD OF USING SAME

Roland Y. Mauvernay, Riom, France, assignor to Laboratoire d'Analyses et de Recherches R. Y. Mauvernay, Riom, France

No Drawing. Filed Dec. 5, 1960, Ser. No. 73,508
2 Claims. (Cl. 167—56)

1. A method of relieving constipation which comprises orally administering to a patient suffering from constipation gleditsia mucilage extracted aqueously from the berry of a gleditsia plan and having a water content of between about 8–10% by weight.

3,158,540
METHOD FOR ALLEVIATING THE WITHDRAWAL SYMPTOMS OF DRUG ADDICTS

Paul Francis O'Hollaren, 4511 E. 38th St., Seattle, Wash.

No Drawing. Filed Jan. 30, 1963, Ser. No. 255,111
6 Claims. (Cl. 167—67)

1. A method of alleviating the withdrawal symptoms of drug addicts which comprises administering to a drug addict a composition consisting of diphosphopyridine nucleotide and a liquid, non-toxic, pharmaceutical carrier.

3,158,541
PRODUCT FOR REDUCTION OF BLOOD CHOLESTEROL CONCENTRATION

Leslie H. Sutherland, Wilton, Conn., assignor to Escambia Chemical Corporation, Wilton, Conn., a corporation of Delaware

No Drawing. Filed Dec. 18, 1959, Ser. No. 860,352
6 Claims. (Cl. 167—65)

1. A product physiologically effective in the reduction of blood cholesterol concentration which comprises a mixture of lower alkyl esters of polyunsaturated fatty acids, at least 60 percent thereof having at least 20 carbon atoms and retaining predominantly their substantially unconjugated natural cis configuration.

3,158,542
SUBSTITUTED DIACETYLBENZENES REACTED WITH AN AMINE TO YIELD A COLORED PRODUCT FOR DYEING HAIR

Gregoire Kalopissis, Paris, France, assignor to Societe Anonyme dite: L'Oreal, Paris, France, a corporation of France

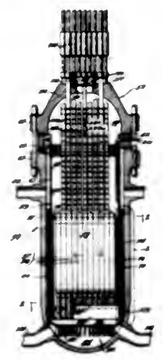
No Drawing. Filed May 29, 1961, Ser. No. 113,134
Claims priority, application France, June 2, 1960, 828,990, Patent 1,304,654
7 Claims. (Cl. 167—88)

1. A process for dyeing live human hair which comprises; impregnating the hair with a solution containing about 0.1% to 10% of at least one of the diketone compounds selected from the group consisting of 1,2-diacetylbenzene, 4 - nitro - 1,2 - diacetylbenzene, 5,6-dimethoxy-2-acetyl propiophenone and 1,2-diacetyl-cyclohex-4-ene, allowing the solution to remain in contact with the hair for a period of time preferably between 5 minutes and 10 minutes so as to permit the said solution to penetrate the hair and react with a compound comprising free amino groups present on the hair.

3,158,543
FUEL ASSEMBLY SUPPORT SYSTEM FOR NUCLEAR REACTOR

Jerome Sherman, Pittsburgh, John E. Sharbaugh, West Mifflin, William L. Fauth, Jr., Canonsburg, Nunzio J. Palladino, Centre County, and Philip G. De Huff, Bethel Park, Pa., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Original application Aug. 14, 1959, Ser. No. 833,898, now Patent No. 3,060,111, dated Oct. 23, 1962. Divided and this application June 4, 1962, Ser. No. 207,838
3 Claims. (Cl. 176—17)



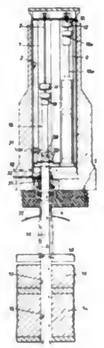
1. A nuclear reactor comprising a core containing a plurality of vertically disposed seed and blanket fuel assemblies, said seed assemblies containing enriched uranium and said blanket assemblies containing natural uranium, each of said seed assemblies including a control rod channel extending axially of the assembly, control rods having operating shafts extending thereabove capable of axial movement in the control rod channels, tubular shrouds enclosing said control rod operating shafts, and module frames attached to each shroud adapted to bear on a seed assembly and adjacent blanket assemblies to restrain them from vertical movement.

3,158,544

FUEL CHARGING/DISCHARGING SYSTEM FOR GAS COOLED NUCLEAR REACTOR

Everett Long, Gordon Packman, Herbert Chilvers Knights, and Ernest Edward Jerkins, all of Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Jan. 21, 1960, Ser. No. 3,885
Claims priority, application Great Britain June 3, 1959
4 Claims. (Cl. 176—32)



1. In a gas-cooled nuclear reactor having a pressure vessel enclosing a core structure which defines a lattice of fuel element channels, tubular fuel elements in the channels, and means for passing a gaseous coolant through said channels to cool the tubular fuel elements therein and access pipes which are aligned with said fuel channels through said pressure vessel, the provision of a refueling machine provided with at least one compartment for containing fuel elements having a nose piece sealable with said access pipes, means for feeding gas into said refueling machine, guide means for causing the fed gas to flow annular-wise through said nose piece out of the refueling machine into the reactor, means for withdrawing gas from said refueling machine at a discharge point more remote from the nose piece than the point of entry of said fed gas and restrictor means between the points of entry and discharge, said restrictor means operable, when the compartment is occupied by a tubular fuel element, to cooperate with a portion of a fuel element extending between said restrictor means towards said fuel element channels so as to prevent coolant flowing from the nose-piece to said discharge point without first passing through the interior of said fuel element.

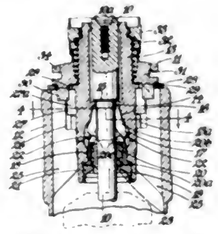
3,158,545

SAFETY DEVICES FOR NUCLEAR REACTORS

Peter Harris Jones, Littleover, England, assignor to Rolls-Royce & Associates Limited, Derby, England, a British company

Filed June 6, 1960, Ser. No. 34,256
Claims priority, application Great Britain, June 25, 1959, 21,909
8 Claims. (Cl. 176—36)

4. In a nuclear reactor having a reactor space, fuel elements in said space, absorber elements movable in the direction of their length between the operative position in which the absorber elements are disposed between the fuel elements and effect maximum neutron absorption and an inoperative position in which the absorber elements are withdrawn clear of the fuel elements and the reactivity of the reactor is high, power means connected to effect movement of the absorber elements between said operative and inoperative positions, scram means permitting rapid movement of the absorber elements into their operative positions, said direction having a first disposition in space when the reactor is upright; a safety device including locking means having a locking setting in engagement with the absorber elements preventing movement of the absorber elements towards their inoperative positions, and having an inoperative setting out of engagement with the absorber elements, said locking means being sensitive to the disposition of said direction in space and being moved from their inoperative setting to their locking setting on tilting of said direction through a selected angle from said first disposition due to tilting of the reactor from the upright, stationary structure and a vertical rod carrying each absorber element, the locking means comprising for each absorber element an associated lock structure through which the rod extends, which lock structure is mounted in the stationary structure and comprises a series of channels in said lock structure, said channels converging at a selected angle upwardly towards the rod, a corresponding series of movable jamming elements disposed around the rod one in each of said channels, jamming shoulders in the lock structure above said channels and adjacent the rod, so that on excessive tilting of the reactor from the upright at least one of the jamming elements moves along its channel into a jamming position between said jamming shoulders in the lock structure and the rod to limit movement of the rod and absorber element towards its inoperative position, the lock structure comprising an abutment sleeve having a bore which includes an upwardly-tapering frusto-conical portion and an inwardly-projecting radial flange at the narrower end of the frusto-conical portion defining one of the jamming shoulders, a cage accommodated within the sleeve below the frusto-conical portion of its bore, the cage having a series of angularly-spaced fingers projecting into the frusto-conical portion of the bore and having ramps between the fingers, which ramps are inclined at an angle to the axis of the rod and converge with the axis in a direction towards the frusto-conical portion, said fingers and said ramps defining the channels, the jamming elements being accommodated between the fingers and having an inoperative position between the ramps and the sleeve and on excessive tilting of the reactor rolling down the ramps into jamming engagement with the frusto-conical portion of the bore and the rod.



3,158,546

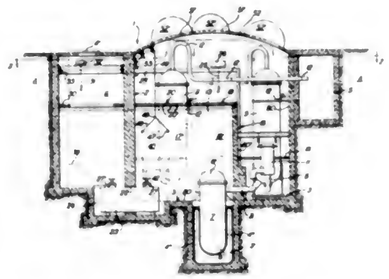
NUCLEAR REACTOR CONTAINMENT METHOD AND APPARATUS

Roland Cordova, Lafayette, Calif., assignor, by mesne assignments, to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Filed Oct. 21, 1960, Ser. No. 64,085
9 Claims. (Cl. 176—37)

1. Within a closed nuclear reactor containment first vessel, said first vessel provided with a pressurized second vessel separately encasing a reactor core, a method for containment of fluids carrying radioactivated material accidentally liberated within said containment first vessel, comprising the steps of disposing at a preselected location within said containment first vessel a hygroscopic chemical substance capable of absorbing said liberated fluids, such chemical substance being normally isolated from the normal atmosphere within said reactor containment first vessel, and exposing the chemical substance to the reactor containment first vessel atmosphere substantially simultaneously with a change in condition of said atmosphere occasioned by the liberation of said fluids therein, whereby said liberated fluids are absorbed by said hygroscopic chemical substance and are removed from the reactor containment first vessel atmosphere.

8. In a nuclear reactor device the combination of a containment vessel; a pressure vessel encasing a reactor core mounted in said containment vessel; a steam-producing means associated with said pressure vessel in said containment vessel; a primary loop means the contents of which comprise a fluid carrying radioactivated material disposed in said containment vessel and connected to said pressure vessel and said steam-producing means; a secondary loop means mounted in said containment vessel and connected to said steam-producing means; and means for preventing the build-up of excess pressures in said containment vessel as the result of accidental liberation of at least part of the fluid of the primary loop means and for containing said liberated fluid within the containment vessel, said last-mentioned means comprising a reservoir of a hygroscopic chemical substance disposed at a preselected location within said containment vessel and normally isolated from the inner atmosphere of said containment vessel, said substance being present in an amount sufficient to absorb the said liberated fluid of the primary loop means and removable seal means for said hygroscopic chemical substance, said seal means being substantially immediately responsive to the liberation of the said fluid within said containment vessel for bringing said liberated fluid into intimate contact with the absorbing hygroscopic chemical substance.



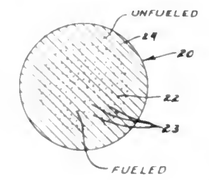
3,158,547

METHOD OF ENCAPSULATING A GRAPHITE BODY CONTAINING METALLIC AND CERAMIC PARTICLES

Mark J. Smith, Wilson, N.Y., assignor, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York

Filed June 30, 1961, Ser. No. 121,041
21 Claims. (Cl. 176—69)

11. An encapsulated fuel sphere comprising a core including compacted powder of carbonaceous material loaded with damageable fuel elements which are coated and which are uniformly distributed through the compacted powder; the core having a generally spherical outside contour covered by a compacted powder encapsulation of unloaded carbonaceous material; characterized by densely associated carbonaceous material of the respective encapsulation and core pressed inwardly and outwardly respectively against one another in intimate relation as is produced at an ultimate density by co-pressing at the common ultimate compaction pressure; the encapsulation being of generally uniform thinness and conformed inherently under the co-pressure to the contour of the core, whereby the encapsulation has a generally spherical outside contour and whereby said densely associated carbonaceous material of the respective encapsulation and the core unites the encapsulation and the core in an uninterrupted subsurface region of the sphere.



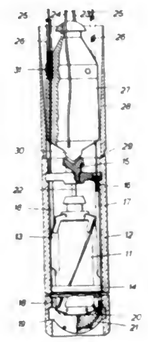
15. In the manufacture of a nuclear fuel article made from particles and including elements of nuclear fuel, the method which comprises mixing nuclear fuel elements with powdered carbonaceous material and a binder, molding the mixture to form a core for the fuel article, encapsulating the core with a shell of another mixture of powdered carbonaceous material and binder, the other mixture being free of nuclear fuel elements, compressing the core and shell to unite their adjacent particles integrally with one another, and then removing ingredients from the binder by heating the integrally encapsulated core to a temperature no less than about 900° C.

3,158,548

NUCLEAR REACTORS AND FUEL ELEMENTS THEREFOR

Shirley Russell Hopkins, Lymm, England, assignor to United Kingdom Atomic Energy Authority, London, England

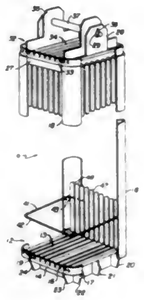
Filed June 15, 1962, Ser. No. 202,865
Claims priority, application Great Britain July 4, 1961
3 Claims. (Cl. 176—77)



1. A string of elongate nuclear reactor fuel elements superposed one upon another to form a column, two open ended tubes for each element extending at diametrically opposed positions lengthwise along each element and a removable, freely flexible ligament passing through the open ended tubes supporting the lowermost

element in an upright attitude and linking the string of fuel elements together.

3,158,549
FUEL ASSEMBLY FOR NEUTRONIC REACTOR
Wayne D. Fowler, Poway, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 19, 1963, Ser. No. 274,362
8 Claims. (Cl. 176—78)



1. In a lightweight nuclear reactor fuel rod assembly structure, the combination comprising a generally rectangular base having a grating platform upper surface area adapted to support the bases of a plurality of nuclear reactor component rods thereon, elongated linear corner support members secured to the corners of said base and extending upwardly therefrom, plate members joining the upper portions of said corner support members and defining a generally rectangular opening providing access to the space within said corner members, a cover locking bar receiver means secured to an oppositely disposed pair of said plate members, a cover comprising a generally rectangular frame member adapted to fit within said opening at the upper portion of said corner support members and a grating secured within said frame, handle bar means associated with said cover for engaging said locking bar receiver means, and at least one spacer member including a grid of deformable wire members supported within the space enclosed within said corner support members in which grid the interstices are adapted to receive nuclear fuel and other rod components inserted through the aforesaid opening.

3,158,550
FERMENTATION PROCESS FOR PRODUCING GLYCEROL
Herman Schwarcz, Bronx, N.Y., assignor of eighty-six percent to Tibor T. Polgar, Bronx, N.Y., seven percent to Nathaniel H. Brower, New York, N.Y., and seven percent to Irving Seidman, New York, N.Y.
No Drawing. Filed Apr. 3, 1962, Ser. No. 184,668
2 Claims. (Cl. 195—38)

1. The method of increasing the glycerol yield from fermented starch containing materials, comprising fermenting said starch containing materials in the presence of lactic acid and sulfuric acid acclimatized yeasts, said mixture of yeasts also containing a mixture of naturally derived lactic acid, and sulfuric acid, said lactic acid having a concentration of from 0.6 N to 0.9 N, said sulfuric acid having a concentration of from 0.3 N to 0.7 N and the total concentrations of the combined acids being from 0.9 N to 1.6 N.

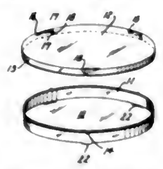
3,158,551
MALTING PROCESSES INVOLVING TREATMENT WITH A GIBBERELLIC ACID PRODUCT
Alan Macey and Keith Christopher Stowell, Newark-on-Trent, England, assignors to Associated British Maltsters Limited, Newark-on-Trent, England, a British company
No Drawing. Filed June 15, 1962, Ser. No. 202,973
Claims priority, application Great Britain, June 23, 1961, 22,910/61
13 Claims. (Cl. 195—70)

1. A process for the malting of cereal grain, which comprises the steps of heating the grain to between 85° F. and 160° F. to arrest growth of the grain embryo without damage to the grain and treating the heated grain with a gibberellic acid product in the proportion of 0.05 to 5 parts per million in respect to the dry weight of the grain to be treated.

3,158,552
PROCESS FOR THE MANUFACTURE OF DESFERRIOXAMINES
Ernst Gaeumann and Vladimir Prelog, Zurich, Hans Bickel, Binningen, and Ernst Vischer, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 13, 1962, Ser. No. 202,079
Claims priority, application Switzerland, June 29, 1961, 7,642/61; Mar. 2, 1962, 2,579/62
14 Claims. (Cl. 195—80)

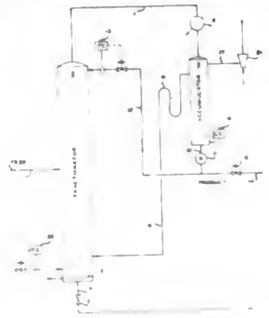
1. Process for the manufacture of desferrioxamines with the use of microorganisms selected from the group consisting of those of the genera Streptomyces and Nocardia. wherein the cultivation is performed in a nutrient solution containing at most 10^{-7} mol of iron salt per liter until a substantial quantity of desferrioxamine has formed and the desferrioxamine is isolated from the nutrient solution.

3,158,553
PETRI DISH
Theodore J. Carski, Baltimore, Md., assignor to Baltimore Biological Laboratory, Inc., Baltimore, Md., a corporation of Maryland
Filed Dec. 29, 1961, Ser. No. 163,249
4 Claims. (Cl. 195—139)



1. A Petri dish capable of being readily used as a sealed unit and as an open unit during incubation, said dish including a base and rim extending upwardly therefrom, said base ad rim defining a shallow cylinder, said rim having an upper circumferentially extending, cover-sealing peripheral edge; a cup-shaped cover having the same shape but of a greater diameter to fit loosely thereon, said cover including a top having an outer circumferentially extending periphery having inner surfaces, a depending side wall defining a corner with said top extending laterally and integrally from the outer periphery of said top; and further elevation means being disposed between said rim and said side wall and being provided by surfaces thereof for permitting said cover to be elevated with respect to the rim edge and relocated in a spaced relationship with respect thereto, said elevation means including a plurality of spaced nibs and a corresponding number of nib receiving bodies having surfaces inclined to the horizontal such that upon relative rotation of said dish and cover said nibs are adapted to ride in contact with said inclined surfaces to elevate said cover with respect to the rim edge and relative rotation of said dish and cover in the reverse direction will lower said cover on to said dish with the rim edge adapted to seal with surfaces of the top of said cover.

3,158,554
METHOD AND APPARATUS FOR STARTING UP THE DISTILLATION OF A LIQUID WHICH TENDS TO BOIL UP AS A LIQUID
Robert B. Moore, Lake Park, Fla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 26, 1959, Ser. No. 848,609
3 Claims. (Cl. 202—40)



1. A method for starting up a distillation column in which heat is supplied to the column to boil the bottoms therein and to which column there is fed for distillation a liquid material which tends to boil-up as a liquid, through and out the top of the column as a liquid, thus flooding with non-distilled liquid, a provided reflux accumulator, normally receiving only overhead which has been a vapor and has been condensed and is an overbead distillate suitable for refluxing the column, as distinguished from said boiled-over liquid, and in which column operation, when boil-over is occurring, there has been generated insufficient real reflux to prevent said boil-over, thus involving a loss of product, and substantial filling of said accumulator with boiled over liquid which is unsuited to reflux the operation, said liquid tending to overflow said accumulator, which comprises the step of directly returning from the accumulator the accumulating boil-over liquid, as a liquid, which tends to overflow the accumulator, to the bottoms being boiled in said column.

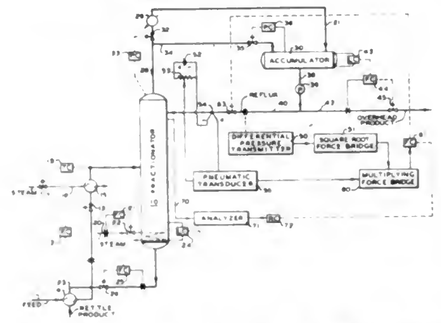
3,158,555
EXTRACTIVE SEPARATION PROCESS
David Cornell, Stillwater, Okla., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 26, 1961, Ser. No. 119,268
15 Claims. (Cl. 202—39.5)

1. The method of separating classes of hydrocarbons from a mixture comprising hydrocarbons of the classes consisting of paraffins, monoolefins, diolefins, naphthenes, and aromatic hydrocarbons which comprises contacting the said mixture with a phosphorus amide having the following structural formula:



wherein R and R' represent alkyl radicals and R'' is selected from the group consisting of alkyl and cycloalkyl radicals in an extractive distillation separation, withdrawing a vapor fraction containing the more volatile of the said classes, and also withdrawing a liquid fraction containing the less volatile classes dissolved in the said phosphorus amide and thereafter separating the individual hydrocarbon classes from each of said fractions by conventional means and stripping the said phosphorus amide from the hydrocarbons dissolved therein.

3,158,556
FRACTIONATION CONTROL
Edward E. Hopper, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 24, 1959, Ser. No. 842,085
2 Claims. (Cl. 202—160)



1. In a fractionation system wherein a fluid mixture of two or more components is directed to a fractionation column, a vapor stream is removed from said column, said vapor stream is cooled to condense at least a part of same, and at least a part of the resulting condensate is returned to the column as external reflux, a control system comprising means to establish a first signal representative of the flow of external reflux to said column, a thermocouple positioned to establish a second signal representative of the temperature of said external reflux, an adjustable voltage source for establishing a third signal representative of a predetermined desired fixed reference temperature which approximates the bubble point temperature of the external reflux at the pressure within said column, means responsive to said second and third signals to establish a fourth signal

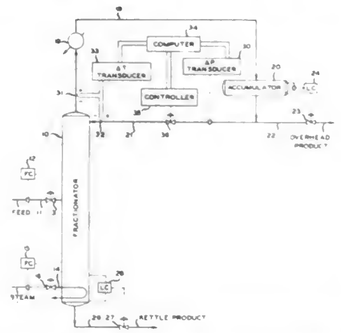
$$\left(1+\frac{C_p}{\lambda}\Delta T\right)$$

where C_p is the specific heat of said external reflux, λ is the heat of vaporization of liquid in the top of said column, and ΔT is the difference between said third and second signals, means to multiply said first signal by said fourth signal to establish a fifth signal representative of internal reflux in said column, and means responsive to said fifth signal to control the operation of said column by regulating the flow of said external reflux.

3,158,557
FRACTIONATION CONTROL
Ernest D. Tolin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 16, 1960, Ser. No. 36,602
4 Claims. (Cl. 202—160)

1. In a fractionation system wherein a feed mixture of two or more components is directed to a fractionation column, a vapor stream is removed from the top of said column, said vapor stream is cooled to condense at least a part of same, and at least a part of the resulting condensate is returned to said column as external reflux; a system to compute the internal reflux in said column comprising first means to establish a first electrical signal representative of the rate of flow of external reflux to said column, second means to establish a second electrical signal representative of the temperature difference between said vapor stream and said external reflux, third

means responsive to said first means to establish a third electrical signal representative of the logarithm of said first signal, fourth means responsive to said second means to increase said second signal by a preselected amount and then to establish a fourth electrical signal representative of the logarithm of the increased second signal, fifth means responsive to said third and fourth means to establish a fifth electrical signal representative of the sum of said third and fourth signals, and sixth means responsive to said fifth means to establish a sixth signal

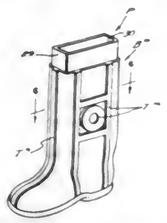


representative of the antilogarithm of said fifth signal, said sixth signal being representative of said internal reflux, said first and third means comprising an orifice positioned in the external reflux flow, means to establish a seventh signal representative of the pressure differential across said orifice, means to multiply said seventh signal by a constant to establish an eighth signal, means to establish a ninth signal representative of the logarithm of said eighth signal, and means to divide said ninth signal into two equal signals, one of which is said third signal.

3,158,558
METHOD OF MAKING A HOLLOW MOLD

George H. Bingham, Jr., Westminster, Md., assignor to Cambridge Rubber Company, Taneytown, Md., a corporation of Maryland

Filed Jan. 23, 1962, Ser. No. 168,100
3 Claims. (Cl. 204—8)



1. That method of preparing a mold to be used in the manufacture, by the slush-molding procedure, of a boot, one side, at least, of whose leg has an all-over ornamental design, said method comprising as steps: providing a basic boot of approximately the size and shape of the boot to be manufactured by the use of the intended mold but which is substantially devoid of ornamentation, stretching the leg portion of the boot in the front-to rear direction while narrowing it transversely so that it becomes substantially rectangular in horizontal section, the outer surfaces of the right and left walls of the boot leg being substantially parallel and flat, while its front and rear surfaces are narrower than the side wall surfaces, each of the flat side surfaces being of adequate extent to receive and support an all-over design of extended area, appliqueing, to at least one of said flat side surfaces, elements of ornament of selected thickness and which collectively form the desired design thus constituting a model boot having, on one side wall at least, the desired ornamental design in relief, electroplating the model boot thus prepared to form a thin metallic shell, and removing the model boot from the shell thereby producing a hollow metallic mold whose side walls are approximately flat, while the inner surface of at least one of said side walls has cavities corresponding in shape, size and location to the elements of ornament which were appliqued to the basic boot.

3,158,559
PROCESS FOR ISOMERIZATION OF OLEFINIC HYDROCARBONS

James M. Caffrey, Jr., Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1961, Ser. No. 123,436
6 Claims. (Cl. 204—162)

1. A process for the double bond isomerization of 1-olefins having more than 3 carbon atoms in the molecule comprising adsorbing said 1-olefin on a molecular sieve adsorbent, gamma irradiating said adsorbed 1-olefin with not less than about $.5\times10^6$ roentgens, desorbing the molecular sieve adsorbent and recovering the resultant product.

3,158,560
PROCESS FOR ISOMERIZATION OF OLEFINIC HYDROCARBONS

James M. Caffrey, Jr., Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,523
5 Claims. (Cl. 204—162)

1. A process for the double bond isomerization of 1-olefins having more than 3 carbon atoms in the molecule comprising gamma irradiating a molecular sieve adsorbent with not less than about $.5\times10^6$ roentgens, adsorbing said 1-olefin on said irradiated molecular sieve adsorbent, desorbing the molecular sieve adsorbent and recovering the resultant product.

3,158,561
LIQUEFACTION OF COAL

Martin B. Neuworth and Leslie A. Herédy, Pittsburgh, Pa., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,402
7 Claims. (Cl. 208—8)

1. A process for treating coal to recover liquid constituents therefrom which comprises reacting said coal with phenolic-BF_3 complex.

3,158,562
TRANSFER LINE CATALYTIC CRACKING

Nick P. Peet, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Oct. 27, 1961, Ser. No. 148,085
3 Claims. (Cl. 208—74)

1. A method of obtaining a highly aromatic specialty oil boiling within the catalytic heating oil range from a virgin gas oil containing from about 20% to about 60% aromatic hydrocarbons and naphthenes and boiling within the range of 400° F. to 950° F.

in a system comprising a first reaction zone and a second reaction zone,

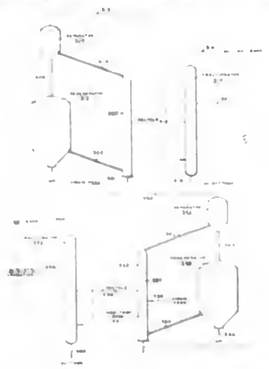
said second reaction zone having a normal temperature zone and a high temperature zone,

which comprises separating said virgin gas oil into a first portion boiling within the range of 400° F. to 650° F. and a second portion boiling about 650° F.,

contacting said first portion in said first reaction zone with a cracking catalyst under catalytic cracking conditions including a temperature within the range of 900° F. to 975° F., to obtain a first cracked hydrocarbon stream,

recovering from said first cracked hydrocarbon stream an first oil fraction boiling within the range of 400° F. to 650° F.,

contacting said oil fraction in said high temperature zone of said second reaction zone with a cracking catalyst under catalytic cracking conditions including a temperature within the range of 1000° F. to 1200° F., a hydrocarbon residence time of 0.5 second to 5.0 seconds, and a catalyst residence time within the range of 1.0 second to 20 seconds,



passing the total effluent of said high temperature cracking zone into said normal temprature zone of said second reaction zone,

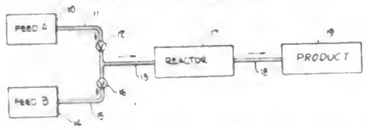
contacting said total effluent with said second portion of said virgin gas oil under cracking conditions including a temperature within the range of 925° F. to 950° F., to obtain a second cracked hydrocarbon stream,

recovering from said second cracked hydrocarbon stream a specialty oil fraction of increased aromaticity and charging a portion of said specialty oil fraction into said high temperature zone of said second reaction zone along with said oil fraction boiling within the range of 400° F. to 650° F. which was recovered from said first cracked hydrocarbon stream.

3,158,563
PROCESS FOR REJUVENATION OF HYDROCRACKING CATALYSTS

Harold A. Strecker, Bedford, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 27, 1962, Ser. No. 182,796
7 Claims. (Cl. 208—111)



1. A hydrocracking process comprising contacting a hydrocracking catalyst in a conventional hydrocracking reaction zone with a first reduced crude oil feed having a nitrogen content above 500 parts per million by weight and boiling above 800° F. under hydrocracking conditions until the catalyst in said reaction zone becomes deactivated to a substantial degree, discontinuing the flow of said first reduced crude feed and substituting as the feed to said reaction zone while maintaining hydrocracking conditions a second reduced crude oil containing less than about 10 parts per million by weight of nitrogen and having a boiling range of 350 to 750° F. until the catalyst has been substantially regenerated, repeating the foregoing sequence of feeds and continuously recovering from the reactor the hydrocracked product.

3,158,564
PROCESS FOR HYDROCARBON CONVERSION

Edward L. Cole, Glenham, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 26, 1961, Ser. No. 84,990
4 Claims. (Cl. 208—122)

1. A method of effecting catalytic conversion of a hydrocarbonaceous material which comprises passing said hydrocarbonaceous material under conversion conditions of temperature and pressure through an elongated reaction zone having a relatively small and substantially uniform internal cross-sectional area with walls formed of a metal selected from the group consisting of aluminum, tantalum and titanium and having an oxide film of at least 0.5 mil thickness integral with the inner surface thereof produced by anodic oxidation of said metal.

3,158,565
CRACKING A POISONED HYDROCARBON FEEDSTOCK

Robert A. Sanford, Homewood, Ill., and Earl C. Gossett, Hammond, Ind., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,336
20 Claims. (Cl. 208—120)

1. A method for producing gasoline in a hydrocarbon cracking system consisting essentially of a catalytic cracking zone and a catalyst regeneration zone between which catalyst is cycled, which consists essentially of cracking at elevated temperature in said cracking zone, a hydrocarbon feedstock heavier than gasoline and containing more than about 0.3 p.p.m. nickel impurities, with a calcined catalyst consisting essentially of about 10 to 65% total alumina prepared by the addition of about 3 to 100 parts by weight of a synthetic alumina hydrate gel to 100 parts of a solid silica-alumina substrate having particles greater than colloidal in size.

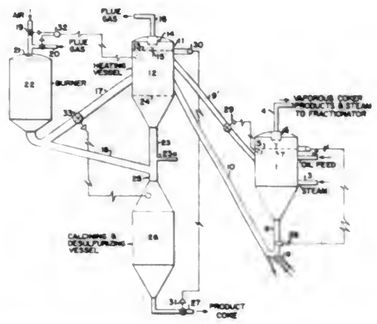
3,158,566
COMBINATION FLUID COKING AND CALCINING

Charles W. Tyson, Summit, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 3, 1961, Ser. No. 80,196
10 Claims. (Cl. 208—127)

1. An integrated coking and calcining process which comprises the steps of coking hydrocarbons by contacting the same with hot coke particles in a coking zone wherein the hydrocarbons are converted to product vapors and carbonaceous solids are deposited on the coke particles, removing product vapors from the coking zone, continuously removing a portion of the coke particles from the coking zone and transferring them to a main heating zone, passing hot combustion gases through said main heating zone in order to increase the temperature of said coke particles, returning a portion of the heated coke particles from the main heating zone to the coking zone, passing a confined stream of coke particles without substantial cooling from said main heating zone through

a transfer line heating zone, passing hot combustion gases obtained from the burning in a separate burning zone of an extraneous fuel in the absence of coke particles concurrently with said stream of coke particles through said transfer line heating zone in order to heat the coke particles to calcining temperature, separating at least a portion of the thus heated coke from the said combustion gases, supplying said combustion gases from



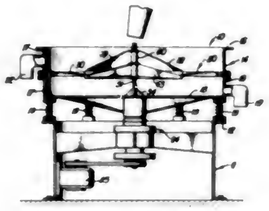
said transfer line heating zone to the bottom of said main heating zone for passage therethrough and heating of the coke particles therein as specified above, passing the hot coke from said transfer line heating zone to a calcining zone, maintaining the coke particles in the calcining zone at a temperature in the range of 1600° F. to 3000° F. for from about 1 minute to 10 hours and removing calcined coke from the calcining zone.

3,158,567
HYDROGENATION PROCESS
Edward L. Cole, Glenham, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 16, 1961, Ser. No. 96,080
6 Claims. (Cl. 208—143)

1. A process for the hydrogenation of hydrogenatable hydrocarbons which comprises contacting said hydrocarbons with hydrogen at an elevated temperature and pressure in the presence of a catalytic structure consisting essentially of an extended support of a metal selected from the group consisting of aluminum, titanium, tantalum, zirconium and hafnium having an adherent coating of the oxide of the same metal produced artificially on the surface of said metal support and integral therewith and an added hydrogenation catalyst material deposited upon said oxide coating and adherent thereto.

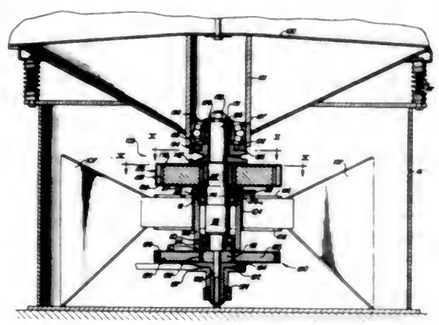
3,158,568
GYRATORY SCREEN TENSIONING MEANS
Lee Butler Holman, Whittier, Calif., assignor to State Steel Products, Inc., City of Industry, Calif., a corporation of California
Filed Aug. 21, 1961, Ser. No. 132,974
12 Claims. (Cl. 209—274)

2. In combination with a gyratory separator having a generally circular screen fabric means connected with a peripheral frame member of a resiliently supported screen frame, said screen frame having a bottom member extending thereacross in fixed relation to the peripheral frame member, said circular screen fabric means having a central opening therein, the provision of a screen tension bolt fixed to said bottom member, extending axially of said frame, and through said central opening; means operably connecting said bolt with said screen fabric means at said opening including a virtually rigid means transversely extending across said opening and connected to said screen fabric means; elongated sleeve means receiving said bolt therethrough and supported by said rigid means, said elongated sleeve means including



an outer sleeve member connected with said transverse rigid means, said elongated sleeve means having a close fit with said bolt to limit lateral play of the sleeve means with respect to the bolt; and means carried by the bolt for moving the elongated sleeve means and said transverse rigid means relative to the bolt for tensioning the screen fabric means.

3,158,569
GYRATORY SEPARATOR
Lee B. Holman, Whittier, Calif., assignor to State Steel Products Inc., City of Industry, Calif., a corporation of California
Filed June 27, 1960, Ser. No. 38,825
10 Claims. (Cl. 209—332)



1. In combination with a gyratory separator having a drive shaft portion extending into a bearing housing, the provision of: adjustable eccentric connection means between the shaft portion and the bearing housing including an inner sleeve member turnable relative to the shaft portion, an outer sleeve member turnable relative to the bearing housing and the inner sleeve member, mating surfaces between the inner and outer sleeve members in eccentric relation to the shaft portion, external laterally extending axially spaced flanges on said sleeve member; means extending between said flanges and cooperable therewith to selectively turn each sleeve member relative to the shaft portion to adjust eccentricity; lock means for holding said sleeve members in selected position; means connecting the lock means to the shaft portion for rotation of the sleeve members therewith.

3,158,570
FLOTATION OF METALLIC SOAP
James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed June 5, 1963, Ser. No. 285,599
19 Claims. (Cl. 210—44)

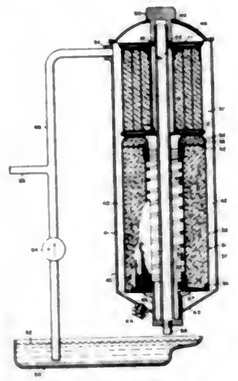
1. A method for clarifying a dilute aqueous dispersion of particles of metallic soap which comprises:

incorporating finely-divided water-insoluble particles into said dispersion, said water-insoluble particles being capable of floating in said dispersion when a cationic nitrogenous flotation reagent is incorporated therein,

while agitating said dispersion containing water-insoluble particles so as to maintain solids in said dispersion in suspension, incorporating therein a cationic nitrogenous flotation reagent,

and subjecting said dispersion thus treated to froth flotation, thereby producing a froth product which is a concentrate of particles of metallic soap originally in said dispersion in intimate association with said finely-divided water-insoluble particles that were incorporated into said dispersion and a machine discharge product which is an aqueous liquid of substantially reduced metallic soap content as compared with the metallic soap content of the original dilute aqueous dispersion.

3,158,571
MULTI-STAGE FILTER SYSTEM
William M. Supinger, 2806 Fairmount Ave., San Diego, Calif.
Original application Aug. 18, 1958, Ser. No. 755,616, now Patent No. 2,988,225, dated June 13, 1961. Divided and this application Mar. 28, 1961, Ser. No. 98,886
2 Claims. (Cl. 210—314)



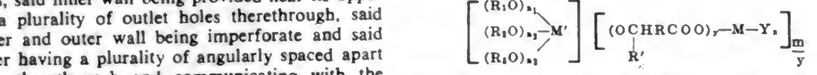
1. A multi-stage filter comprising, in combination: a hollow sealed generally cylindrical housing; a sealed cylindrical casing disposed within the upper portion of said housing, said casing having upper and lower covers; inner and outer cylindrical vertical walls connected to said covers, said inner wall being provided near its upper end with a plurality of outlet holes therethrough, said upper cover and outer wall being imperforate and said lower cover having a plurality of angularly spaced apart inlet holes therethrough and communicating with the interior of the casing between the inner and outer cylindrical walls; a body of filter material substantially filling the interior of said casing; a vertical outlet tube extending concentrically up inside said housing and casing with the upper and lower covers being sealed to the outlet tube, said outlet tube near its upper end and between said covers having an opening therethrough adapted to convey filtered liquid which has passed up through said body of filter material and through said outlet holes; a long annular filter mounted in said housing below said casing, said filter having a fabric outer wall spaced from said housing to provide an annular passage therebetween and a fabric cylindrical inner wall concentric with said outlet tube and spaced therefrom to provide therebetween a vertical flow passage which communicates directly with the inlet holes in said lower cover, said filter having a porous top wall pressing against said lower cover to support the entire weight of said casing and means at the bottom thereof for sealing said annular passage from said vertical flow passage; and means for conveying pressurized liquid to be filtered into said annular passage to substantially fill said passage whereby the liquid passes radially inward through said porous fabric and annular filter and then upward through said vertical flow passage and the inlet holes in said lower cover and said body of filter material.

3,158,572
HIGH BARIUM CONTENT COMPLEX SALTS OF SULFONIC ACIDS AND METHOD FOR PREPARING SAME
Harry J. Andress, Jr., Pitman, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Original application June 10, 1957, Ser. No. 664,465, now Patent No. 3,046,224, dated July 24, 1962. Divided and this application May 14, 1959, Ser. No. 813,070
8 Claims. (Cl. 252—33)

1. A method for preparing a high barium content complex salt of a sulfonic acid which comprises the steps of (1) subjecting a hydrocarbon solution of a basic barium salt of a sulfonic acid, selected from the group consisting of alkaryl sulfonic acids and petroleum sulfonic acids, to treatment with carbon dioxide while maintaining the temperature of said hydrocarbon solution at a level of from about 150° C. to about 250° C., the amount of carbon dioxide employed during said treatment being at least about 1 mol per mol of basic barium sulfonate salt in said hydrocarbon solution, (2) lowering the temperature of the reaction mixture from step 1 to a level of from about 25° C. to about 60° C., (3) adding barium methylate to the reaction mixture from step 2 in an amount to provide at least about 1 equivalent of barium per mol of basic barium sulfonate salt employed in step 1, (4) raising the temperature of the reaction mixture to a level of about 150° C. to about 250° C. and (5) filtering the reaction mixture to recover a hydrocarbon solution of the high barium content complex salt of sulfonic acid.

3,158,573
METAL ESTERS
John A. Kearney, Pennsauken, N.J., assignor to E. F. Houghton & Co., Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 11, 1961, Ser. No. 81,955
14 Claims. (Cl. 252—33.6)

1. A lubricating grease consisting essentially of an oleaginous base fluid and a thickening amount of an ortho ester of a hydroxy-substituted fatty acid soap of the formula:



where R_1, R_2 and R_3 are each selected individually from the group consisting of hydrocarbon, halohydrocarbon, hydrocarbonoxyhydrocarbon and halo-hydrocarbonoxy-hydrocarbon radicals of from 1 to 18 carbon atoms, and R and R′ are aliphatic hydrocarbon radicals containing together from 10 to 22 carbon atoms; M′ is an element selected from the group consisting of Al, Si and Ti and

M is a metal of Groups I–III of the periodic table; Y is an anion; a_1, a_2 and a_3 are integers each selected individually from 0 and 1, $a_1+a_2+a_3=n-m$, n and m are integers, n is the valence of M', m has a value of from 1 to n, and x and y are integers the total of which equals the valence of M.

3,158,574
LITHIUM GREASES

John Greenwood, Didcot, and Ernest Augustus Saxon-Napier, Reading, England, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,473
Claims priority, application Great Britain Dec. 6, 1960
5 Claims. (Cl. 252—36)

1. A process for preparing a lubricating grease composition which comprises:

(*a*) incorporating a grease-forming amount of lithium soap of C_{12}–C_{24} hydroxy fatty acid in a lubricating oil vehicle to thereby form a mixture,

(*b*) heating said mixture for a period of time sufficient to cause dehydration,

(*c*) further heating said mixture to a maximum temperature of about 375–425° F.,

(*d*) adding from 1–4 weight percent of glycerol, based on the total weight of said grease composition, to said mixture at about said maximum temperature, and

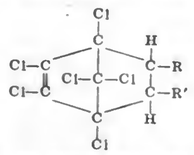
(*e*) cooling said mixture to form said grease composition.

3,158,575
CALCIUM BASE GREASES CONTAINING CHLORINATED BICYCLOHEPTENE COMPOUNDS

Terence B. Jordan, Fishkill, and Howard A. Kirsch, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application June 13, 1958, Ser. No. 741,744, now Patent No. 3,072,571, dated Jan. 8, 1963. Divided and this application June 21, 1962, Ser. No. 204,073
8 Claims. (Cl. 252—40.7)

1. A lubricating grease consisting essentially of an oleaginous liquid as the chief component thickened to a grease consistency with a calcium fatty acid soap and containing a minor amount, sufficient to impart improved extreme pressure properties to the composition, of a chlorinated bicycloheptene compound represented by the formula



wherein R and R' are selected from the group consisting of hydrogen and —COOR'' groups, wherein R'' is an aliphatic hydrocarbon group containing 1–10 carbon atoms, at least one substituent represented by R and R' being a —COOR'' group.

3,158,576
POLYHYDRIC ALCOHOL ESTERS OF ALKYL MERCAPTO FATTY ACIDS AND OIL COMPOSITIONS CONTAINING SAID ESTERS

Harry W. Rudel, Roselle, and William Seitz, Union, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1960, Ser. No. 78
4 Claims. (Cl. 252—48.6)

1. A rust inhibited composition comprising a major amount of liquid mineral hydrocarbon and a rust inhibiting amount of an ester of the general formula:

RSR'COOR''OH

wherein R is a C_4 to C_{22} alkyl radical, R' is a C_1 to C_4 aliphatic saturated hydrocarbon radical and R'' is a hydroxy substituted radical selected from the group consisting of hydroxy substituted aliphatic saturated hydrocarbon radicals and hydroxy substituted ether interrupted hydrocarbon radicals, said hydroxy substituted hydrocarbon radicals containing 1 to 5 hydroxy groups and a total of 2 to 18 carbon atoms.

3,158,577
METHOD OF TREATING RADIOACTIVE WASTE

Lane A. Bray and Earl C. Martin, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 20, 1963, Ser. No. 289,452
1 Claim. (Cl. 252—301.1)

A method of reducing the concentration of members of the class consisting of nitric acid, nitrous ion and nitrate ion in a radioactive aqueous solution produced by dissolving spent fuel elements from a nuclear reactor, comprising adding a disaccharide to the solution in the ratio of one mole of disaccharide to form about 17 to about 22 moles of said class members, heating the solution to a temperature of between 85° C. and the boiling point of the solution and maintaining it thereat for at least four minutes, and thereafter maintaining the temperature of the solution at between 50° C. and the boiling point until the residual carbon of the disaccharide is completely destroyed.

3,158,578
PROCESS FOR PRODUCING SULFUROUS ACID TREATED ALUMINA

Walter A. Pons, Jr., and James C. Kuck, New Orleans, and Vernon L. Frampton, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Nov. 16, 1961, Ser. No. 152,949, now Patent No. 3,087,946, dated Apr. 30, 1963. Divided and this application May 7, 1962, Ser. No. 197,559
1 Claim. (Cl. 252—436)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A process for preparing an activated alumina which is effective for bleaching refined cottonseed oil and which will remove the Halphen test response from refined cottonseed oil consisting of:

(*a*) soaking activated alumina, ground to pass at least a four hundred mesh sieve in a 1.2 to 1.7 molar aqueous solution of sulfurous acid until the alumina surface is saturated with respect to sulfurous acid as indicated by acidic reaction of the supernatant solution, the ratio of activated alumina to sulfurous acid solution being about one part by weight of alumina to about ten parts by weight of sulfurous acid solution,

(*b*) separating the soaked sulfurous acid saturated alumina from the aqueous acid solution, and

(*c*) drying the alumina product from step (*b*) to a moisture content of from about 10% to about 17%.

3,158,579
MOLECULAR SIEVE SORBENTS BONDED WITH ION-EXCHANGED CLAY

Ernest L. Pollitzer, Hinsdale, and Bruno Kvetinskas, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,567
11 Claims. (Cl. 252—455)

1. A process for increasing the selectivity and capacity of a metal alumino-silicate molecular sieve sorbent formed into discrete particles by compositing crystals of the metal alumino-silicate with a clay binder and pressing the mixture into said discrete particles which comprises contacting said clay binder with an aqueous solution of a salt of the metal in said metal alumino-silicate at ion-exchange reaction conditions for a time sufficient to substantially exchange foreign metal ions present in said clay with ions of the metal in said metal salt.

3,158,580
POLY(EPIHALOHYDRIN)S

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 11, 1960, Ser. No. 14,201
12 Claims. (Cl. 260—2)

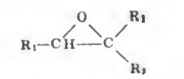
1. As a new composition of matter, a solid, rubbery poly(epihalohydrin) characterized by being essentially wholly amorphous as determined by X-ray analysis, soluble in acetone at room temperature, and having a reduced specific viscosity of at least about 0.2 as measured on a 0.1% solution of the polymer in α-chloronaphthalene at 100° C.

3,158,581
POLYMERIC EPOXIDES

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 27, 1960, Ser. No. 45,530
8 Claims. (Cl. 260—2)

1. A solid, rubbery, essentially wholly amorphous copolymer of an epoxide containing at least one aliphatic halogen group and at least one other epoxide having the formula



where R_1, R_2 and R_3 are radicals selected from the group consisting of hydrogen, alkyl, and alkoxyalkyl, but at least one of said R radicals being hydrogen, said copolymer having a reduced specific viscosity of at least about 0.5 as measured on a 0.1% solution of the copolymer in α-chloronaphthalene at 100° C.

3,158,582
NOVEL POLYMERS OF HYDRAZINE AND DIORTHOESTERS OF TEREPHTHALIC ACID

Seymour J. Lapporte, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Jan. 13, 1961, Ser. No. 82,377
3 Claims. (Cl. 260—2)

1. A hard brittle polymer having a softening point in excess of 250° C. prepared by reacting hydrazine at polymerization temperature in the range of about 125° to 300° C. with a hexalkyldiorthoester of terephthalic acid, with the evolution of alkanol, wherein the mole ratio of hydrazine to diorthoester is in the range of about 2:1 to 10:1.

3,158,583
SULPHONATION OF CROSS-LINKED VINYLBENZENE POLYMERS

Herbert Corte, Leverkusen, Otto Netz, Cologne, and Hans Seifert, Bergisch-Neukirchen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 11, 1961, Ser. No. 81,950
Claims priority, application Germany Jan. 21, 1960
5 Claims. Cl. 260—2.2)

1. Process for sulphonating cross-linked polymers of monovinylbenzene hydrocarbons which comprises contacting said cross-linked polymers with a sulphonating agent selected from the group consisting of chlorosulphonic acid and concentrated sulphuric acid at a temperature range of about 0–150° C. for chlorosulphonic acid and of about 80–150° C. for concentrated sulphuric acid to obtain sulphonated products containing about 0.7 to 1 sulphonic acid group per benzene nucleus, contacting said sulphonated products at a temperature range of about 50–120° C. with oleum containing from about 10 to 70% by weight of free SO_3, to obtain a final sulphonated product containing 1.5 to 2 sulphonic acid groups per aromatic nucleus.

3,158,584
DIMER ACID CONTAINING ALKYD RESINOUS COATING COMPOSITIONS AND PROCESS OF PREPARING THE SAME

Ralph E. Layman, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 9, 1960, Ser. No. 74,792
11 Claims. (Cl. 260—22)

1. An alkyd resin composition comprising the esterification reaction product of a phthalic acid, a polyhydric alcohol and a dimer of an ethylenically unsaturated aliphatic monocarboxylic acid having between 14 and 22 carbon atoms, wherein said polyhydric alcohol is present at least in part as a glycol in an amount sufficient to constitute at least 65% by weight based on the total weight of polyhydric alcohols present in said reaction product and wherein said dimer acid is present in an amount varying between about 10% and 32% by weight based on the total weight of the aforesaid reactants in the composition.

3,158,585
STAIN RESISTANT VINYL CHLORIDE POLYMER COMPOSITIONS CONTAINING DI(TETRAHYDROPYRAN - 2 - METHYL)PHTHALATE OR MIXED TETRAHYDROPYRAN - 2 - METHYL ALKOXYALKYL PHTHALATE PLASTICIZER

Robert G. Kelso, St. Albans, Ralph D. Eppley, South Charleston, and George H. Potter, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 9, 1961, Ser. No. 115,917
5 Claims. (Cl. 260—30.4)

1. A stain resistant plasticized vinyl chloride polymer composition which comprises a vinyl chloride polymer having a reduced viscosity in the range of from 0.02 to 2.0, determined in a solution of 0.2 gram of polymer per 100 milliliters of nitrobenzene at 20° C., and a plasticizing amount of a mixture of esters of phthalic acid wherein the alcohol moieties of said esters are selected from the group consisting of tetrahydropyran-2-methyl, alkyloxyalkylene groups having from three to eight carbon atoms, and lower alkyl groups having from one to five carbon atoms; provided that at least 10 mole percent of the alcohol moieties of said esters are tetrahydropyran-2-methyl groups, and further provided that at least 30 weight percent of the alcohol moieties are groups containing ether oxygen.

3,158,586
SEALANT FROM AN ISOCYANATE-TERMINATED POLYOL, A DIGLYCIDYL POLYETHER, AND A POLYOL

Arthur H. Krause, Belmont, Mass., assignor, by mesne assignments, to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 14, 1960, Ser. No. 14,534
6 Claims. (Cl. 260—40)

1. A pasty sealant composition curable at room temperature to resilient condition consisting essentially of the combination of (A) the liquid reaction product of (1) a member of the class consisting of (*a*) poly(alkylene ether) glycols having a molecular weight above about 2000 and a hydroxyl number of from about 20 to 65 and (*b*) alcoholic hydroxyl terminated polyesters having molecular weights above about 2000 and hydroxyl numbers of from about 20 to 65, said polyesters being con-

densates of (*i*) saturated dicarboxylic acids and (*ii*) alcohols selected from the class consisting of dihydric alcohols and mixtures thereof with small amounts of trihydric alcohols, with (II) from about 1.5 to about 5 times the amount of aromatic diisocyanate required to provide one —NCO group for reaction with each hydrogen of the alcoholic hydroxyl groups of said member, (B) a liquid low molecular weight diglycidyl ether of a polyhydric phenol having a vic-epoxy equivalent of between 170 and 210, an OH value of from 80 to 90 and a viscosity not over about 20,000 cps. at 25° C., (C) an amine from the group consisting of 4,4' methylene bis (2 chloro-aniline), diamino diphenyl sulfone, and a liquid eutectic mixture of cumene diamine and m-phenylene diamine and triethanol amine and (D) a member of said class consisting of (*a*) poly(alkylene ether) glycols and (*b*) alcoholic hydroxyl terminated polyesters,

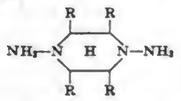
said sealant comprising, based on the sum of the weights of the components (A), (B), (C) and (D) at least 50% by weight of said liquid reaction product (A), from about 5% to about 12% by weight of said diglycidyl ether (B), from 3.5% to 9% by weight of said amine (C), and an amount of said member (D) of said class consisting of (*a*) poly-(alkylene ether) glycols and (*b*) alcoholic hydroxyl terminated polyesters, sufficient to provide an amount of alcoholic hydroxyl groups supplying active hydrogen which taken with the active hydrogen of the amino groups of said amine (C) is about equal to the available —NCO groups in said reaction product (A).

3,158,587
DIAMINO-PIPERAZINES AS STABILIZERS FOR ORGANIC MATERIALS

Hugh W. Stewart, Woodbury, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 20, 1960, Ser. No. 63,726
8 Claims. (Cl. 260—45.8)

1. A composition of matter comprising 100 parts of a chemically unsaturated organic material selected from the group consisting of sulfur-vulcanizable diolefin polymer rubber and edible fat and oil which is protected from deterioration by oxygen by the presence of from 0.1 to about 5.0 parts of an antioxidant represented by the structural formula,



where R is selected from the group consisting of a hydrogen atom and an alkyl radical containing from 1 to 4 carbon atoms.

3,158,588
FIRE RETARDANT POLYMER COMPOSITIONS CONTAINING A DIMER OF HEXACHLOROCYCLOPENTADIENE

Arnold N. Johnson, Pines Lake, Wayne, N.J., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 30, 1961, Ser. No. 85,488
12 Claims. (Cl. 260—45.75)

1. A fire retardant polymer composition comprising a polymer of an ethylenically unsaturated hydrocarbon, and the dimer of hexachlorocyclopentadiene having the formula $C_{10}Cl_{12}$ and having a melting range of 483 to 487 degrees centigrade in sufficient proportion to improve the fire retardancy of the polymer composition.

6. A fire retardant polymer composition comprising a polymer of an ethylenically unsaturated hydrocarbon, the dimer of hexachlorocyclopentadiene having the formula $C_{10}Cl_{12}$ and having a melting range of 483 to 487 degrees centigrade in sufficient proportion to improve the fire retardancy of the polymer composition and an antimony compound.

3,158,589
POLYMERIZATION OF PYRROLIDONE AND PIPERIDONE; PROCESS EMPLOYING HALIDES AND OXYHALIDES OF SULFUR AND PHOSPHORUS

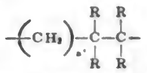
Samuel A. Glickman, Easton, Edgar Shelley Miller, Bethlehem, and Saul R. Buc, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 4, 1958, Ser. No. 726,343
9 Claims. (Cl. 260—78)

1. In the process of polymerizing lactams of the formula



wherein Z represents



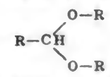
where *n'* is an integer from 1 to 2 and R represents a member of the group consisting of H and lower alkyl groups of 1 to 4 carbon atoms under essentially anhydrous conditions in the presence of a minor amount up to about 10 mole percent based on said lactam of an alkali metal lactam as the polymerizaion catalyst; the improvement comprising carrying out said polymerization in the presence of a minor amount up to about 10 mole percent based on said lactam, but less than the amount of said catalyst of a compound selected from the group consisting of halides and oxyhalides of sulfur and phosphorous.

3,158,590
RESINS FROM EPOXY ACETALS

Benjamin Phillips and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,905
25 Claims. (Cl. 260—78.4)

1. The polymerized product obtained by the polymerization of an epoxy acetal of the formula:



wherein R is a monovalent hydrocarbon group and contains up to 22 carbon atoms, with the proviso that at least one R contains a vicinal epoxy group, and at least one R contains an additional group selected from the class consisting of vicinal epoxy and ethylenic groups; said vicinal epoxy groups being at least one carbon atom removed from etheric oxygen atoms.

2. The polymerized product obtained by the polymerization of an alkyl aldehyde di(epoxyalkyl) acetal and an active organic hardener selected from the group consisting of polycarboxylic acids, polycarboxylic acid anhydrides, polyfunctional amines and polyols.

3,158,591
COPOLYMERS OF EPIHALOHYDRINS AND ETHYLENICALLY UNSATURATED EPOXIDES

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 26, 1960, Ser. No. 4,594
12 Claims. (Cl. 260—88.3)

1. A solid copolymer of an epihalohydrin and at least one other epoxide, at least one of which said other epoxide is an ethylenically unsaturated epoxide selected from the group consisting of ethylenically unsaturated glycidyl ethers and monoepoxides of polyenes, said copolymer being essentially a linear polyether having repeating units derived only from said epihalohydrin and epoxides, and having a reduced specific viscosity of at least about 0.2 when measured as a 0.1% solution in α-chloronaphthalene at 100° C., said copolymer containing at least about 5% by weight of repeating units derived from epihalohydrin and at least about 0.5% by weight of repeating units derived from said ethylenically unsaturated epoxides.

3,158,592
METHOD OF MANUFACTURE OF FURFURYL ALCOHOL CONDENSATES

Erik R. Nielsen, 1481 Brown St., Des Plaines, Ill.

No Drawing. Filed Jan. 10, 1961, Ser. No. 81,695
7 Claims. (Cl. 260—88.5)

1. The method of condensing furfuryl alcohol comprising heating furfuryl alcohol to a temperature effecting volatilization of furfuryl alcohol, contacting the furfuryl alcohol vapors with granular activated alumina in a catalyst zone communicating with but separate from the zone of heating of furfuryl alcohol and containing between about 1% and about 20% of activated alumina by weight of the furfuryl alcohol being heated, said catalyst being maintained at a temperature above about 250° F., removing from the catalyst zone in the form of vapors the water split out by the intermolecular condensation of furfuryl alcohol and at least a portion of the unreacted furfuryl alcohol and withdrawing a liquid product of furfuryl alcohol condensation from said catalyst zone.

3,158,593
ALUMINUM CHLOROFLUORIDE POLYMERIZATION CATALYSTS

John D. Calfee, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 24, 1958, Ser. No. 730,542
5 Claims. (Cl. 260—94.9)

1. The process of polymerizing ethylene to solid high molecular weight polymer which comprises contacting ethylene with an aluminum chlorofluoride catalyst having a fluoride content of 9.7% to 72.8% based on the total halide content of said aluminum chlorofluoride.

2. In the process of polymerizing ethylene to high molecular weight polymer at temperatures from about 0° C. to about 120° C., the improvement which comprises contacting ethylene with a catalyst composition consisting essentially of one part aluminum chlorofluoride having a fluoride content of 9.7% to 72.8% based on the halide content of said aluminum chlorofluoride and from 0.1 to 10.0 parts by weight of a co-catalyst selected from the group consisting of antimony pentachloride, antimony trichloride, tin tetrachloride, titanium tetrachloride, titanium trichloride, silicon tetrachloride, ferric chloride, aluminum bromide, chromium trichloride, zirconium tetrachloride, and zinc chloride in the presence of a liquid inert diluent.

3,158,594
POLYMER PROCESS AND CATALYST

Roger Michel Weil, New York, N.Y., and Frederick C. Foster, Verona, N.J., assignors to W. R. Grace & Co., Clarksville, Md., a corporation of Connecticut

No Drawing. Filed Nov. 20, 1959, Ser. No. 854,242
6 Claims. (Cl. 260—94.9)

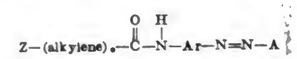
1. The method of preparing polyethylene having a density in the range of 0.94–0.95 that comprises contacting, at a temperature of from about 200° F. to about 395° F., ethylene in an inert hydrocarbon diluent with a catalyst prepared by adding, as the sole essential catalyst components, a tri lower alkyl aluminum to chromia, CrO_3, supported on silicia-alumina and activated by fluidizing the supported chromia in an air at a temperature of 1200–1350° F.

3,158,595
PROCESS OF DIAZOTIZING, COUPLING AND HYDROLYZING

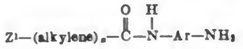
Milton Green, Newton Highlands, and Helen P. Husek, Lincoln, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,128
8 Claims. (Cl. 260—162)

1. The process of preparing compounds of the formula:



wherein Z is p-dihydroxyphenyl; A represents the residue of an azo coupler; *n* is selected from the group consisting of 0 and 1; and Ar is selected from the group consisting of arylene and lower alkoxy substituted derivatives thereof; which comprises diazotizing a compound of the formula:



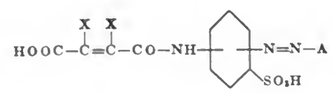
wherein Z^1 represents an acylated derivative of said Z, coupling the diazo product thereof with said azo coupler; and hydrolyzing the resulting product to effect removal of the protecting groups.

3,158,596
WATER-SOLUBLE ORGANIC DYESTUFFS

Karl Seitz, Allschwil, and Henri Riat, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Sept. 25, 1958, Ser. No. 763,168
Claims priority, application Switzerland Sept. 27, 1957
2 Claims. (Cl. 260—163)

1. A water-soluble monoazo dyestuff which contains at least one sulfonic acid group and corresponds to the formula



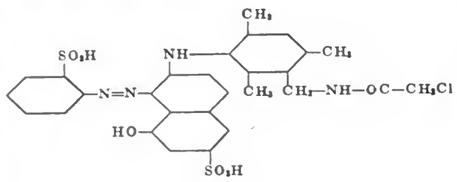
wherein A represents 3-methyl-5-pyrazolonyl bound in its 4-position to the azo linkage, one of the two X's is a chlorine atom and the other X is a hydrogen atom.

3,158,597
REACTIVE AZO DYES

Ulrich Blass and Hans Ischer, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed June 21, 1961, Ser. No. 118,543
Claims priority, application Switzerland June 24, 1960
1 Claim. (Cl. 260—199)

The dye of the formula

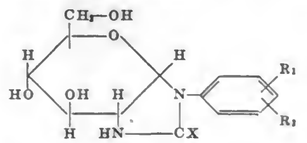


3,158,598
N-ARYLCARBAMYL-GLUCOSAMINES

Charles Morel, Arlesheim, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,877
Claims priority, application Switzerland, June 21, 1960, 7,017/60
4 Claims. (Cl. 260—211.5)

1. A compound of the formula



in which

R_1 represents a member selected from the group consisting of halogen, lower alkyl, lower alkoxy, trifluoromethyl and nitro,

R_2 represents a member selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy, and

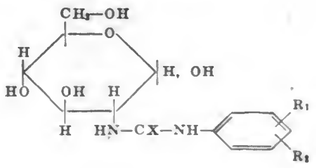
X represents a member selected from the group consisting of oxygen and sulfur.

3,158,599
N-(ARYLCARBAMOYL)- AND N-(ARYLTHIO-CARBAMOYL)-GLUCOSAMINES

Charles Morel, Arlesheim, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,878
Claims priority, application Switzerland, June 21, 1960, 7,017/60
4 Claims. (Cl. 260—211)

1. A compound of the formula



in which

R_1 represents a member selected from the group consisting of halogen, lower alkyl, trifluoromethyl and nitro, and, in the case of X being oxygen, also lower alkoxy,

R_2 represents a member selected from the group consisting of hydrogen, halogen and lower alkyl, and

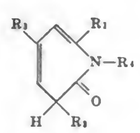
X represents a member selected from the group consisting of oxygen and sulfur.

3,158,600
N-SUBSTITUTED 1,3-DIHYDRO-2H-AZEPIN-2-ONES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 9, 1962, Ser. No. 236,715
6 Claims. (Cl. 260—239.3)

1. A compound of the formula:



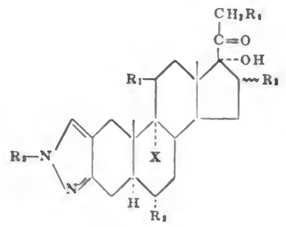
wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive, wherein R_3 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and wherein R_4 is selected from the group consisting of alkyl of 1 to 6 carbon atoms, inclusive, alkenyl of 2 to 6 carbon atoms, inclusive, alkynyl of 3 to 6 carbon atoms, inclusive, cycloalkyl of 5 to 10 carbon atoms, inclusive, and aralkyl of 7 to 11 carbon atoms, inclusive.

3,158,601
5α-PREGNENO-[3,2-c] PYRAZOLES AND PROCESS OF PREPARING THEM

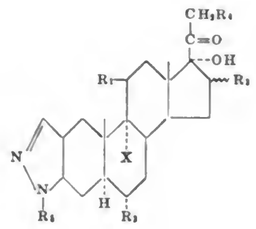
Paul Buchschacher, Plainfield, and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 26, 1962, Ser. No. 233,428
18 Claims. (Cl. 260—239.5)

1. A compound selected from the group consisting of compounds having structural Formulas A and B:



A



B

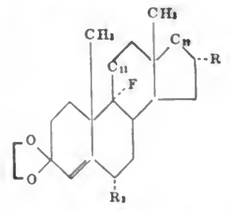
wherein R_1 is a member of the group consisting of hydrogen, β-halogen, β-hydroxy and keto, but β-halogen is present at R_1 only when X is halogen, R_2 is a member of the group consisting of hydrogen, α-fluoro and α-methyl, R_3 is a member of the group consisting of hydrogen, α-methyl, β-methyl and α-fluoro, R_4 is a member of the group consisting of hydrogen, hydroxy, lower hydrocarbon carboxylic acyloxy, fluoro, iodo, the dihydrogen phosphate and the alkali metal salts of said dihydrogen phosphate, and the methylsulfonyloxy-radical, R_5 is a member of the group consisting of hydrogen, lower alkyl, lower aralkyl, lower hydrocarbon aryl, halophenyl, lower alkoxy phenyl, nitrophenyl, pyridyl, pyridyloxide and pyrimidyl, and X is a member of the group consisting of hydrogen and halogen, and pharmacologically acceptable salts of the foregoing compounds.

3,158,602
METHODS OF PREPARING 3-ALKYLENEDIOXY Δ^4 STEROIDS AND PRODUCTS RESULTING THEREFROM

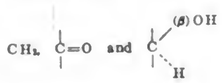
John J. Brown, Pearl River, N.Y., Robert H. Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 2, 1962, Ser. No. 176,910
18 Claims. (Cl. 260—239.55)

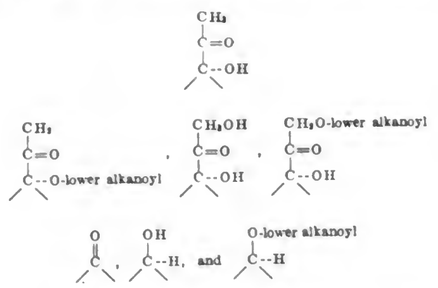
1. A method of preparing steroids having the formula:



wherein R at C_{16} is a member selected from the group consisting of hydrogen, methyl, hydroxyl and lower alkanoyloxy, R_2 at C_6 is a member selected from the group consisting of hydrogen and methyl with the proviso that only one of R and R_2 can be methyl, C_{11} is selected from the group consisting of

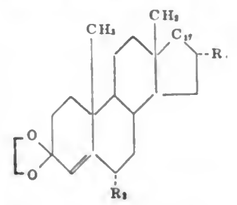


radicals and C_{17} is selected from the group consisting of

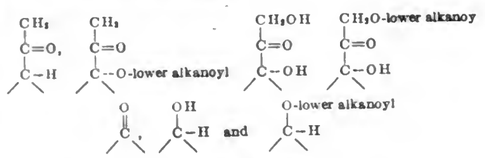


which comprises heating the corresponding 3-ketosteroid with ethylene glycol and an acid having a pKa value within the range of about 1 to about 5 in the presence of a water-immiscible solvent and recovering the 3-ketal steroid therefrom.

8. A steroid having the formula:



wherein R at C_{16} is a member selected from the group consisting of hydrogen, methyl, hydroxyl and lower alkanoyloxy, R_2 at C_6 is a member selected from the group consisting of hydrogen and methyl with the proviso that only one of R and R_2 can be methyl and C_{17} is selected from the group consisting of



3,158,603
PROCESS FOR THE MANUFACTURE OF 2β,19-OXIDO-STEROIDS

Albert Wettstein, Riehen, and Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,846
Claims priority, application Switzerland, Sept. 22, 1961, 11,073/61; Aug. 31, 1962, 10,403/62
12 Claims. (Cl. 260—239.55)

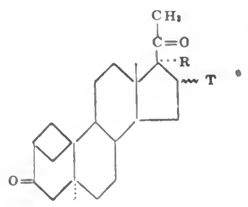
1. Process for the manufacture of 2β,19-oxido-steroids selected from the group consisting of androstanes and pregnanes, wherein a corresponding 19-unsubstituted 2β-hydroxy-5α-steroid is reacted with an acylate of tetravalent lead derived from a member selected from the group consisting of a lower aliphatic, lower cycloaliphatic, monocyclic carbocyclic aryl lower aliphatic and monocyclic carbocyclic aromatic carboxylic acid in an inert solvent.

3,158,604
2,19-CYCLO-PREGNANE DERIVATIVES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,828
20 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen, hydroxyl and a hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms; T is a member of the group consisting of hydrogen, α-hydroxyl, α-hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms; α-methyl and β-methyl; and T and R together form the group



in the 16α,17α-positions wherein R^2 and R^3 are selected from the group consisting of hydrogen and a hydrocarbon residue of up to 8 carbon atoms.

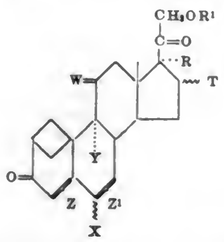
5. 16α,17α-isopropylidenedioxy - 2,19 - cyclo-allopregnane-3,20-dione.

3,158,605
2,19-CYCLO-DERIVATIVES OF CORTICAL HORMONES

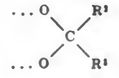
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,829
20 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein Y is selected from the group consisting of hydrogen, fluorine and chlorine; W is selected from the group consisting of a β-hydroxyl group and a keto group; X is a member of the group consisting of hydrogen, α-fluorine, β-fluorine, α-chlorine and β-chlorine; Z is selected from the group consisting of a double bond and a saturated linkage between C–4 and C–5; Z^1 is selected from the group consisting of a double bond and a saturated linkage between C–6 and C–7, and when Z is a saturated linkage, Z^1 is a saturated linkage; R is a hydroxyl group· T is selected from the group consisting of hydrogen, α-hydroxyl, α-hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms, α-methyl and β-methyl; T and R together form the group



in the 16α,17α-positions wherein R^2 and R^3 are selected from the group consisting of hydrogen and a hydrocarbon residue of up to 8 carbon atoms; and R^1 is selected from the group consisting of hydrogen and hydrocarbon carboxylic acyl group of less than 12 carbon atoms.

2. 21 - acetoxy - 16α,17α - isopropylidenedioxy - 2,19-cyclo-allopregnan-11β-ol-3,20-dione.

3,158,606
METHOD OF RECOVERING SAPONINS AND SAPOGENINS FROM FERMENTED PLANT JUICE

Ernst Wenzler, Bochingen, and Karl Zeile and Karl Heinz Hauptmann, Ingelheim, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,715
7 Claims. (Cl. 260—239.55)

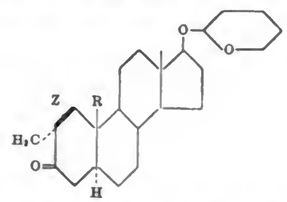
1. In a process for recovering hecogenin from an aqueous slurry obtained by autolysis of heconin-containing sisal agave sap, said slurry consisting essentially of insoluble solids and an aqueous liquid, which comprises the steps of separating the insoluble solids from the aqueous liquid, drying the separated solids, subjecting the dried solids to acid hydrolysis and extracting hecogenin from the hydrolyzed product, the improvement which comprises effecting the separation of the insoluble solids in the aqueous slurry from the aqueous liquid by floatation, said floatation consisting essentially of passing a stream of air upwardly through the aqueous slurry, whereby the insoluble solids are caused to float on the surface of the aqueous liquid, and removing the aqueous liquid from below the floating insoluble solids, prior to drying the separated solids.

3,158,607
17-TETRAHYDROPYRANYL ETHERS OF 2-METHYL, 3-KETO ANDROSTANES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 18, 1963, Ser. No. 324,243
Claims priority, application Mexico, Jan. 3, 1963, 70,369
3 Claims. (Cl. 260—239.55)

1. A compound represented by the general formula:



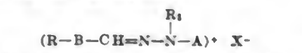
wherein R is methyl and Z is selected from the group consisting of a saturated linkage and a double bond.

3,158,608
BASIC HYDRAZONE DYESTUFFS

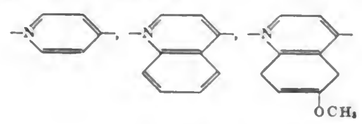
Roderich Raue, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

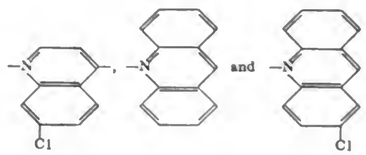
No Drawing. Filed Aug. 5, 1960, Ser. No. 47,605
Claims priority, application Germany Aug. 8, 1959
9 Claims. (Cl. 260—240)

9. A dyestuff of the formula

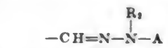


wherein R is a member selected from the group consisting of hydrogen, saturated lower alkyl, unsaturated lower alkyl, benzyl and chlorobenzyl, B is a nucleus selected from the class consisting of





in which nuclei R is attached to the nitrogen atom and the residue



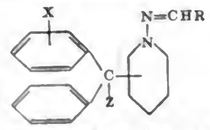
is attached to the carbon atom standing in the p-position to N, R_3 is a member selected from the group consisting of lower alkyl, phenyl and benzyl, A is a member selected from the group consisting of benzene, diphenyl, azobenzene, diphenylether, napthalene and benzthiazole series, and X is the residue of an acid used for salt formation of basic dyestuffs.

3,158,609
DIPHENYLMETHYL-1-AMINOPIPERIDINE HYDRAZONES AND CONGENERS

Robert W. Hamilton, Wilmette, and Kurt J. Rorig, Glenview, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,873
11 Claims. (Cl. 260—240)

1. A compound of the formula



wherein X is a member of the class consisting of hydrogen and chlorine, Z is a member of the class consisting of hydrogen and hydroxyl, and R is a member of the class consisting of lower alkyl, phenyl, hydroxyphenyl, diethylaminoethoxyphenyl, cyanophenyl, 2 - hydroxy - 1-naphthyl, 3,4-methylenedioxyphenyl, pyridyl, 4-quinolyl, and thienyl.

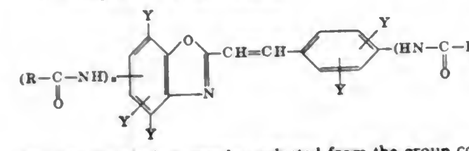
2. 4-(p-chloro-α-phenylbenzyl) - 1 - (p-hydroxybenzylideneamino)piperidine.

3,158,610
2-STYRYLBENZOXAZOLE BRIGHTENERS

Bennett George Buell, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

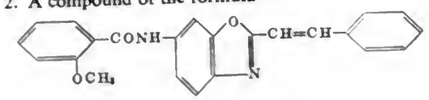
No Drawing. Filed Jan. 3, 1964, Ser. No. 335,679
8 Claims. (Cl. 260—240)

1. Compounds of the formula



wherein each R is a member selected from the group consisting of hydrogen, alkyl of up to seventeen carbons, aryl of less than three six-membered rings, benzyl, phenethyl, alkoxy of up to eighteen carbons, amino, mono lower alkylamino, di-lower alkylamino and anilino, N-lower alkylanilino, any substituents on aryl radicals being selected from the group consisting of halo, alkyl of up to eighteen carbons, alkoxy of up to eighteen carbons, hydroxy, carboxy, cyano, di-lower alkylamino, lower alkanamido, lower alkylthio, lower alkylsulfonyl, carbamyl and sulfamyl; each Y radical is a member selected from the group consisting of hydrogen, lower alkoxy, halogen and lower alkyl; and *n* and *p* are integers less than two such that their sum is a positive integer less than three.

2. A compound of the formula



3,158,611
CONVERTING UREA TO MELAMINE IN THE GAS PHASE OVER A FLUIDIZED BED OF A POROUS PARTICULATE MATERIAL

Edgar I. Crowley, Minneapolis, Minn., and Johnstone S. Mackay, Milton Manes, and Frank J. Vancheri, Pittsburgh, Pa., assignors to Pittsburgh Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Dec. 22, 1959, Ser. No. 861,272, now Patent No. 3,095,416, dated June 25, 1963. Divided and this application Jan. 15, 1963, Ser. No. 251,663
2 Claims. (Cl. 260—248)

1. A process for converting urea to a vapor mixture free of melamine comprising gasifying urea over a fluidized bed of a particulate porous material selected from the group consisting of activated alumina, diatomaceous earth and activated carbon which does not catalyze the decomposition of urea to melamine at the temperature employed, said process being carried out at atmospheric pressure and at a temperature of 230–300° C. and in the presence of ammonia as a fluidizing gas.

3,158,612
SYNTHESIS OF 2-AMINO-3-METHOXY 5-CHLORO PYRAZINE

Luigi Bernardi, Milan, and Giovanni Larini and Anselmo Leone, Settimo Torinese, Turin, Italy, assignors to Societa Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Original application Nov. 3, 1961, Ser. No. 149,852. Divided and this application Sept. 17, 1962, Ser. No. 230,023
Claims priority, application Italy, Nov. 7, 1960, 19,284/60
1 Claim. (Cl. 260—250)

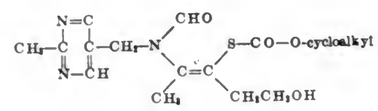
A process for preparing 2-amino-3-methoxy-5-chloropyrazine which comprises reacting 2,3,5-trichloro-pyrazine with aqueous ammonia, to make 2-amino-3,5-dichloro-pyrazine, and reacting said product with sodium methylate in methanol to make 2-amino-3-methoxy-5-chloro-pyrazine.

3,158,613
THIAMINE DERIVATIVES

Akira Takamizawa, Ibaraki-shi, and Kentaro Hirai, Teramachi-dori, Shimogyo-ku, Kyoto-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka-shi, Japan

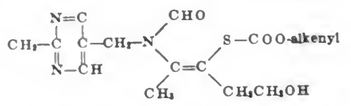
No Drawing. Filed June 21, 1962, Ser. No. 204,056
Claims priority, application Japan Sept. 20, 1960
9 Claims. (Cl. 260—256.5)

1. S-substituted thiol-type thiamine of the formula



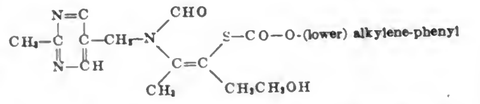
wherein the cycloalkyl group is selected from the class consisting of cyclopentyl and cyclobexyl.

2. S-substituted thio-type thiamine of the formula

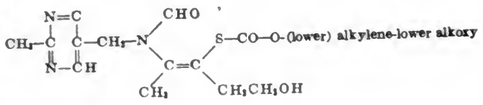


wherein the alkenyl group is selected from the class consisting of allyl, crotyl and pentenyl.

3. S-substituted thiol-type thiamine of the formula



4. S-substituted thiol-type thiamine of the formula



3,158,614
PROCESS OF PRECIPITATING PLUTONIUM AND COMPOUNDS FORMED THEREBY

Glenn T. Seaborg, John E. Willard, and Stanley G. Thompson, Chicago, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 24, 1945, Ser. No. 624,330
4 Claims. (Cl. 260—270)

3. An organic chelate complex of 8-hydroxyquinoline and plutonium.

4. A process of separating plutonium values from impurities present together in an aqueous solution, comprising adding to said aqueous solution an organic compound selected from the group consisting of 8-hydroxy-quinoline, quinaldinic acid, salicylaldoxime, salicylic acid, salicylaldehyde and 2,3-dihydroxy, 5-tertiary butyl benzal ethylene diamine, whereby a chelate complex is formed between said organic compound and said plutonium values, and separating said chelate complex from the aqueous solution.

3,158,615
STABILIZED POLYMERIZABLE VINYL PYRIDINES

Jesse T. Dunn, Charleston, and David T. Manning, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 20, 1960, Ser. No. 43,994
9 Claims. (Cl. 260—290)

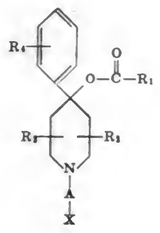
1. A composition of matter consisting of a polymerizable vinylpyridine compound and an effective stabilizing amount of para-nitrobenzenethiol.

3,158,616
N-SUBSTITUTED 4-ARYL-4-ALKANOYLOXY-PIPERIDINES

Franz Adickes and Karl Zeile, Ingelheim (Rhine), Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,319
10 Claims. (Cl. 260—293.4)

1. A compound selected from the group consisting of N-substituted 4-phenyl-4-alkanoyloxy-piperidines of the formula



wherein R_1 is lower alkyl,

R_2 and R_3 are selected from the group consisting of hydrogen and lower alkyl,

R_4 is selected from the group consisting of hydrogen, lower alkyl and lower alkoxy,

A is selected from the group consisting of alkylene of 5 to 8 carbon atoms, $CH_2—CH_2—CH=CH—CH_2—(CH_2)_m—Y—(CH_2)_n—$ and

$$—(CH_2)_m—Y—(CH_2)_n—Y—(CH_2)_o—$$

where *m*, *n* and *o* are integers from 2 to 4, inclusive, the sum of *m*, *n* and *o* is an integer from 5 to 8, inclusive, and Y is selected from the group consisting of oxygen and sulfur, and

X is selected from the group consisting of halogen, nitro and thiocyano,

and their non-toxic, pharmacologically acceptable acid addition salts.

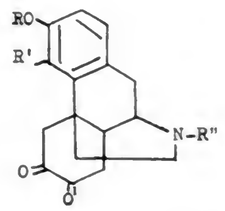
6. N - [3' - (3'' - chloropropyl - 1'' - mercaptyl) - n-propyl-1']-4-phenyl-4-acetoxy-piperidine hydrochloride.

3,158,617
C-NORMORPHINAN DERIVATIVES AND PRODUCTION THEREOF

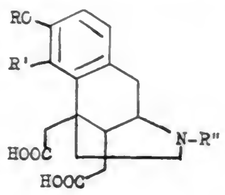
Yoshiro Sawa, Hyogo Prefecture, and Naoki Tsuzi, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,188
Claims priority, application Japan Apr. 6, 1962
19 Claims. (Cl. 260—294)

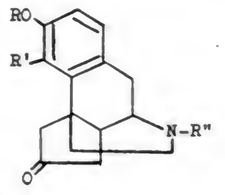
1. Process for preparing C-normorphinan derivatives which comprises reacting a compound represented by the plane formula:



wherein R represents lower alkyl, R' represents a member selected from the group consisting of hydrogen, phenyloxy and substituted phenyloxy wherein the substituent is a member selected from the group consisting of lower alkyl, lower alkoxy, nitro and amino and R'' represents a member selected from the group consisting of hydrogen, lower alkyl, benzyl and phenethyl with hydrogen peroxide in an inert organic solvent medium and reacting the thus-produced compound represented by the plane formula:



wherein R, R' and R'' each has the same significance as designated above with lower alkanoic anhydride to produce the C-normorphinan represented by the plane formula:



wherein R, R' and R'' each has the same significance as designated above.

3,158,618
N-(ACYLAMINO)-EPHEDRINES

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 194,691
5 Claims. (Cl. 260—295)

1. An N-acylamino-ephedrine in which the acyl group has the formula:



wherein Z is selected from the group consisting of tertiary butyl, pyridyl, thienyl, furyl, unsubstituted phenyl and phenyl substituted with from one to three substituents selected from the group consisting of fluorine, chlorine, bromine, lower alkyl and lower alkoxy.

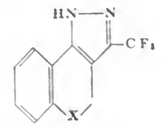
4. 1 - methyl-1(1-methyl-2-hydroxy - 2 - phenylethyl)-2(isonicotinoyl) hydrazine.

3,158,619
CERTAIN SULFUR-CONTAINING ORTHO-FUSED POLYCYCLIC PYRAZOLE DERIVATIVES

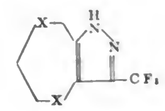
Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 14, 1962, Ser. No. 202,372
5 Claims. (Cl. 260—310)

1. A compound selected from the group consisting of a compound of the formula



and a compound of the formula



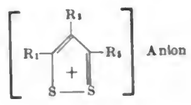
wherein X is selected from the group consisting of —S— and —SO_2—.

3,158,620
PYRAZOLE COMPOUNDS AND PROCESS THEREFOR

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 12, 1962, Ser. No. 201,769
4 Claims. (Cl. 260—310)

1. A process of preparing a pyrazole compound which comprises reacting a 1,2-dithiolium salt of the formula:

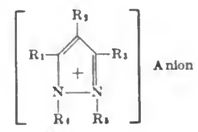


wherein R_1, R_2 and R_3 are individually selected from the group consisting of hydrogen, lower alkyl, monocyclic ar(lower alkyl), phenyl, nitrophenyl, chlorophenyl, lower monohaloalkyl, lower monocyanoalkyl, lower monohydroxyalkyl and lower monoalkoxyalkyl, and Anion is selected from the group consisting of iodide, perchlorate, bromide, hydrogen sulfate and thiocyanate

with a molar quantity of a hydrazine having at least one hydrogen atom on each nitrogen and no more than two substituents selected from the group consisting of lower alkyl, lower monohydroxyalkyl, monocyclic ar(lower alkyl), phenyl, nitrophenyl, chlorophenyl, bromophenyl, bromomethylphenyl, carboxyphenyl, naphthyl, benzothiazylyl and di-lower alkylaminophenyl

and separating the product thus formed.

3. A compound of the formula:



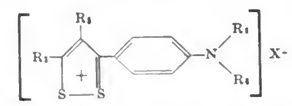
wherein R_1, R_2 and R_3 are individually selected from the group consisting of hydrogen, lower alkyl, benzyl, phenethyl, phenyl, nitrophenyl, chlorophenyl, lower monohaloakyl, lower monocyanoalkyl, lower monohydroxyalkyl and lower monoalkoxyalkyl. Anion is a member selected from the group consisting of iodide, perchlorate, bromide, hydrogen sulfate and thiocyanate, and R_4 and R_5 are individually members selected from the group consisting of phenyl, nitrophenyl, carboxyphenyl, chlorophenyl, naphthyl and benzothiazolyl.

3,158,621
DITHIOLIUM COMPOUNDS AND THEIR PREPARATION

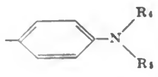
Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 20, 1962, Ser. No. 203,723
6 Claims. (Cl. 260—327)

3. A compound of the formula:



wherein R_2 is a member selected from the group consisting of hydrogen, halogen, phenyl, naphthyl, furyl, thienyl, benzyl and lower alkyl, said phenyl and naphthyl groups bearing up to three substituents selected from the group consisting of halogen, nitro, lower alkyl and lower alkoxy; R_3 is a member selected from the group consisting of R_2 and the radical:



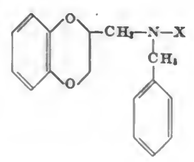
X is an anion of an acid having a pKa not above 4; and R_4 and R_5 are individually selected from the group consisting of lower alkyl, β-hydroxyethyl, phenyl and benzyl, said phenyl moieties having up to three substitutents selected from the group consisting of halogen, lower alkyl and lower alkoxy.

3,158,622
N - BENZYL - N - (1,4 - BENZODIOXAN - 2 - METHYL)-HYDRAZINE AND CORRESPONDING HYDRAZONES

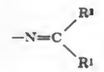
Daniele Bovet, Rodolfo Landi Vittory, and Giovanni Battista Marini-Bettolo, all of Rome, Italy, assignors to Istituto de Angeli, Milan, Italy, a body corporate of Italy

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,400
Claims priority, application Great Britain, Dec. 13, 1960, 43,911/60
6 Claims. (Cl. 260—340.3)

1. A compound selected from the group consisting of (1) a compound of the formula



where X is a member selected from the group consisting of $—NH_2$ and



R^1 and R^2 each being a member selected from the group consisting of hydrogen, lower alkyl and phenyl and (2) a physiologically non-toxic acid addition salt thereof.

3,158,623
5-NITRO-2-FURYLTHIOAMIDE

Anne Mary Von Esch, North Chicago, Ill., and William Reese Sherman, University City, Mo., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,217
1 Claim. (Cl. 260—347.2)

5-nitro-2-furylthioamide.

3,158,624
PREPARATION OF TRICHLOROFUROYL-CHLORIDE

Edward Leon, Tonawanda, Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 2, 1961, Ser. No. 114,321
5 Claims. (Cl. 260—347.3)

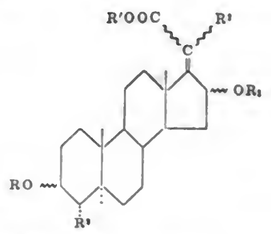
1. A process for preparing 3,4,5-trichloro-2-furoyl chloride which comprises heating tetrachlorocoumalin to a temperature of from about 200 degrees to about 340 degrees centigrade and maintaining the temperature in said range until a substantial amount of 3,4,5-trichloro-2-furoyl chloride is formed.

3,158,625
20-(LOWER ALIPHATIC HYDROCARBON)-$\Delta^{17(20)}$-PREGNEN-21-OIC ACIDS

Albert Bowers and Pierre Crabbé, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 17, 1963, Ser. No. 288,497
20 Claims. (Cl. 260—397.1)

3. A compound represented by the formula:



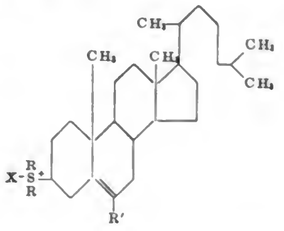
wherein R is selected from the group consisting of hydrogen and an acyl group containing less than 12 carbon atoms; R^1 is selected from the group consisting of hydrogen, a lower alkyl group and an alkali metal; R^2 is an aliphatic hydrocarbon radical containing from 1 to 8 carbon atoms, inclusive; R^3 is selected from the group consisting of hydrogen and an acyl group containing less than 12 carbon atoms, and R^6 is a lower alkyl group.

3,158,626
3-THIOSTEROIDS AND METHOD OF PREPARATION

Clarence G. Stuckwisch, Las Vegas, N. Mex., and Nathan F. Blau, Wichita, Kans., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Aug. 31, 1961, Ser. No. 143,265
(Filed under Rule 47(a) and 35 U.S.C. 116)
16 Claims. (Cl. 260—397.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

4. A composition of matter, 3-thio derivatives of cholesterol having the formula



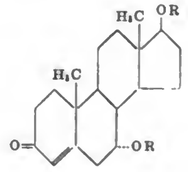
wherein X^- is an arylsulphonate, X^- and S^+ indicating an ionic nature of the compound in which X^- is an anion and S^+ is a positive charge-bearing ion, R is a radical selected from the group consisting of lower alkyl and aryl, and R′ is a radical selected from the group consisting of hydrogen, lower alkyl, and aryl.

3,158,627
7,17β-DIOXYGENATED ANDROST-4-EN-3-ONE

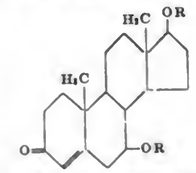
Stephen Kraychy, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,581
5 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of a compound of the formula



and a compound of the formula



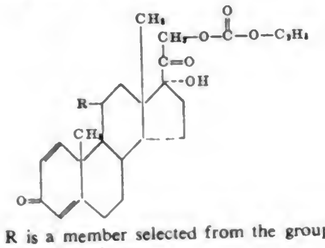
wherein R is selected from the group consisting of hydrogen and lower alkanoyls.

3,158,628
21-CARBETHOXYLATES OF PREDNISONE AND PREDNISOLONE

John A. Hogg, Kalamazoo Township, Kalamazoo County, and Jerome Korman, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed May 10, 1956, Ser. No. 583,926
3 Claims. (Cl. 260—397.45)

1. A compound of the formula



wherein R is a member selected from the group consisting of β-hydroxy and oxo.

3,158,629
6α,16α-DIMETHYL-Δ^4-PREGNEN-17α-OL-3,20-DIONE-17-ACYLATES

Carl Djerassi and Howard J. Ringold, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Nov. 14, 1958, Ser. No. 773,818
Claims priority, application Mexico, June 27, 1958
9 Claims. (Cl. 260—397.4)

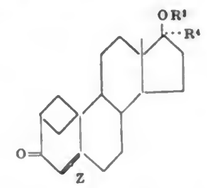
1. The propionate of 6α,16α-dimethyl-Δ^4-pregnen-17α-ol-3,20-dione.

3,158,630
2,19-CYCLO STEROIDS AND PROCESS THEREFOR

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,827
21 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



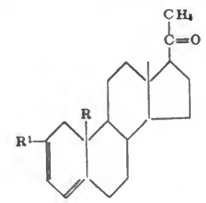
wherein R^3 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; R^4 is a member of the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkinyl and Z is selected from the group consisting of a double bond and a saturated linkage between C–4 and C–5.

3,158,631
$\Delta^{2,4}$-PREGNADIENE DERIVATIVES

Albert Bowers and James C. Orr, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,679
14 Claims. (Cl. 260—397.3)

1. A compound of the following formula:



wherein R and R^1 are selected from the group consisting of hydrogen and methyl.

3,158,632
α-SULFONATION OF SATURATED FATTY ACIDS AND THEIR DERIVATIVES

Bruno Blaser, Dusseldorf-Urdenbach, Werner Stein, Dusseldorf-Holthausen, Herbert Weiss, Cologne-Deutz, and Otto Koch, Hilden, Rhineland, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a German corporation

Filed May 15, 1962, Ser. No. 194,786
Claims priority, application Germany Aug. 8, 1961
9 Claims. (Cl. 260—400)

1. In the process for the α-sulfonation of a member selected from the group consisting of fatty acids, fatty acid esters, and mixtures thereof having a substantially saturated fatty acid radical with 6 to 28 carbon atoms and being substantially free of alcoholic hydroxyl groups, the improvement which comprises initially introducing about 1.1–1.8 mols of gaseous SO_3 per mol of fatty acid radical to be sulfonated into said group member at a temperature below the temperature of effective sulfonation, thereafter raising the temperature to above the temperature of effective sulfonations but not in excess of about 70° C. maintaining such temperature until at least 50% of said group member has been sulfonated and thereafter increasing the temperature to at least 75° C. to substantially complete the sulfonation.

3,158,633
PROCESS FOR PREPARATION OF VINYL ESTERS

William S. Port, Lawrence, Mass., and Harry A. Monroe, Jr., Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 2, 1962, Ser. No. 207,480
13 Claims. (Cl. 260—410.9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for preparing a vinyl ester comprising heating a saturated aliphatic carboxylic acid and at least an equimolar amount of vinyl acetate in the presence of mercuric acetate and of about from 0.5 to 2%, based on weight of carboxylic acid, of an alkanesulfonic acid to produce the vinyl ester of said carboxylic acid, and separating said vinyl ester from the reaction mixture.

3,158,634
INEDIBLE RENDERING PROCESS
Sam Marsh, Newark, N.J., assignor to Marsh Associates, Newark, N.J., a corporation of New Jersey
Filed Aug. 10, 1961, Ser. No. 131,966
5 Claims. (Cl. 260—412.6)

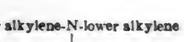
1. A rendering process for continuously rendering bone, fat, and offal animal matter including chunks of about two inches and less in size comprising the steps of:
(1) preheating and simultaneously admixing said animal matter with recycle fat to form a processing fluid mixture containing from about 5 to 80 percent solids, said preheating being maintained at a temperature in the range of about 120° F. to 250° F.;
(2) moving said fluid mixture into a pressurized reaction zone of a pressurized reaction zone of a large volume capacity and maintaining therein a substantial body of said fluid mixture under a pressure in the excess of about 50 p.s.i.a. and at a temperature of at least 250° F.;
(3) pressure rendering said fluid mixture in said reaction zone in the presence of live steam for an average time period of from 1 to 10 minutes;
(4) pressure flashing the reacted mixture from said pressurized reaction zone to an approximately atmospheric pressure zone whereby a portion of the associated water is removed from said fluid mixture;
(5) separating the fat and remaining water in said fluid mixture from the solids in said fluid mixtures; and
(6) recycling a portion of the processed fat to said admixing step.

3,158,635
BIS-ADDUCTION PRODUCTS AND METHODS OF PREPARING SAME
Charles Kezerian, Los Angeles, and William M. Ramsey, Downey, Calif., assignors to Stauffer Chemical Company, a corporation of Delaware
No Drawing. Filed Mar. 18, 1959, Ser. No. 800,116
28 Claims. (Cl. 260—429)

1. A compound selected from the group consisting of: (*a*) a compound of the formula:



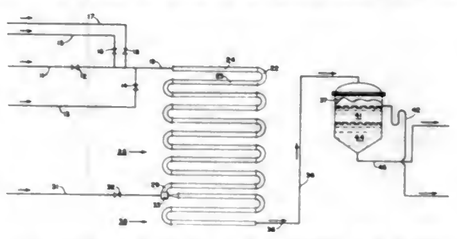
wherein Z_1 and Z_2 are saturated acyclic bis-adduction groups derived from the class consisting of lower alkenyl, 1,4 conjugated polycarboxylic acids having at least 2 and not more than 3 carboxyl groups, and salts thereof and R_5 is a member of the class consisting of lower alkylene, phenylene-lower alkylene-phenylene, lower alkylene-phenylene-lower alkylene, and



groups;
(*b*) chelates of the compound of (*a*) and a polyvalent metal ion; and
(*c*) esters of the compound of (*a*) and a lower alkanol.

3,158,636
MANUFACTURE OF MIXED ALKYLLEAD COMPOUNDS
Henry H. Wall, Jr., Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 29, 1963, Ser. No. 319,856
7 Claims. (Cl. 260—437)

1. The improved process for the manufacture of a mixed alkyl-tetraalkyllead product comprising reacting a mixture comprising tetraethyllead, tetramethyllead and an inert liquid diluent hydrocarbon in proportions of from about 15 to about 30 weight percent based upon the tetramethyllead, and a group III–A element catalyst selected from the group consisting of boron trifluoride, aluminum trialkyls having from 1 to 4 carbon atoms in each alkyl group and alkyl aluminum chlorides having from 1 to 4 carbon atoms in each alkyl groups, said group III–A element catalyst being in proportions providing about 0.005 to about 0.02 atom of III–A element per atom of the lead of the tetraalkyllead components fed, the tetraethyllead being in the proportions of from about 0.2 to 8 moles per mole of tetramethyllead, said reac-



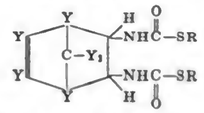
tion mixture being reacted in an elongated flow stream in a series of successive horizontal segments connected by return bends, and having a hydraulic radius of from about one-fourth to one inch, for a total reaction period of not more than about two minutes, and then injecting an alkali metal hydroxide aqueous solution at the beginning of a treating segment, the injection being at a sufficiently high velocity to provide a decrease in the static pressure of the mixture, whereby the catalyst component is substantially immediately neutralized, and the settling the so-treated reacted mixture in a settling zone and stratifying into an organolead-organic phase and an aqueous phase.

3,158,637
PREPARATION OF ESTERS OF ANTIMONOUS ACIDS
Burton S. Marks, Palo Alto, Calif., and Blaine O. Schoepfle, Snyder, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,086
6 Claims. (Cl. 260—446)

1. A process for the preparation of esters of antimonous acid which comprises heating at a temperature of at least about 180 degrees centigrade, antimony trioxide with an alcohol which boils at a temperature of at least about 180 degrees centigrade, and separating the water formed from the reaction media thereby producing said ester of antimonous acid at a yield of at least about 80 percent of theoretical.

3,158,638
POLYHALOGENATED BICYCLIC THIOURETHANES
Paul E. Hoch, Youngstown, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,024
3 Claims. (Cl. 260—455)

1. A compound having the formula:

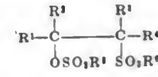


wherein Y is selected from the group consisting of fluorine, chlorine, bromine and mixtures thereof; and R is selected from the group consisting of alkyl, aryl, chloro-

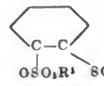
substituted alkyl, and chloro-substituted aryl, wherein alkyl has one to twelve carbon atoms and aryl has six to fourteen carbon atoms.

3,158,639
REACTION PRODUCTS OF ALCOHOLS WITH CARBYL SULFATES
Donald L. Klass, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed July 22, 1960, Ser. No. 44,529
6 Claims. (Cl. 260—456)

1. A compound selected from the group consisting of compounds of the formula,



and



and alkali metal-, alkaline earth metal-, ammonia-, and organic nitrogen base salts thereof, where R^1, R^2, R^3 and R^4 are selected from the group consisting of hydrogen, alkyl radicals and aryl radicals, and



is a cycloalkene radical, and one of the radicals R^5 and R^6 is hydrogen and the other is a C_1–C_{22} alkyl radical.

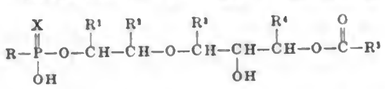
3,158,640
METHOD FOR PREPARING PHOSPHONO-ALCOHOLS
William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio
No Drawing. Filed Feb. 8, 1961, Ser. No. 87,768
12 Claims. (Cl. 260—461)

1. A process for preparing polyphosphono-substituted polyols which comprises reacting a hydrocarbon phosphite in which the hydrocarbon groups are inert and which is selected from the class consisting of mono-substituted and di-substituted phosphites, with an alpha, delta-di-oxo-hydrocarbon in the presence of a small amount of a basic inorganic metal compound.

12. An alpha,delta,di-(hydrocarbon-substituted phosphono)-alpha,delta-alkanediol wherein the alkanediol radical contains from 4 to about 30 carbon atoms and wherein the hydrocarbon substituents of the phosphono radical are selected from the class consisting of alkyl of up to about 30 carbon atoms, cyclohexyl, phenyl, naphthyl, alkylphenyl, and phenyl lower alkyl.

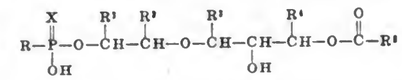
3,158,641
HYDROCARBONTHIOPHOSPHONOXY-HYDROXY-OXAHEXYL ALKENOATES
David D. Reed, Glenham, and James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,653
6 Claims. (Cl. 260—461)

1. A thiophosphonoxy alkenoate of the formula:

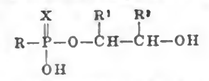


where R is a monovalent hydrocarbon derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, R^1, R^2, R^3, and R^4 are members selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, R^5 is alkenyl from 2 to 20 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen.

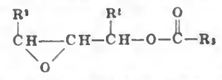
3. A method of preparing a thiophosphonoxy alkenoate of the formula:



where R is monovalent hydrocarbon derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1, R^2, R^3 and R^4 are members selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, R^5 is an alkenyl of from 2 to 20 carbons, X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen comprising contacting a hydroxalkyl hydrocarbonthiophosphonate of the formula:



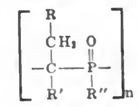
with an epoxyalkyl alkenoate of the formula:



where R, R^1, R^2, R^3, R^4, R^5 and X are as heretofore defined at a temperature between about 50 and 150° C., in a mole ratio of epoxyalkyl alkenoate to thiophosphonate reactant of between about 0.5:1 and 2:1.

3,158,642
PHOSPHINE OXIDE POLYMERS
Earl C. Chapin and Albert Y. Garner, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Mar. 15, 1961, Ser. No. 95,814
1 Claim. (Cl. 260—465)

As a composition of matter, a phosphine oxide polymer corresponding to the general formula:



wherein R'' is a hydrocarbon radical free of ethylenic and acetylenic unsaturation containing from 1 to 10 carbon atoms, *n* is an integer of from 5 to 5,000, and R and R' are radicals independently selected from the group consisting of hydrogen, hydrocarbon radicals free of ethylenic and acetylenic unsaturation containing from 1 to 10 carbon atoms, and hydroxymethyl, cyanomethyl, cyano and carboxyl radicals; at least one of said R and R' radicals being selected from the group consisting of said hydroxymethyl, cyanomethyl, cyano and carboxyl radicals.

3,158,643
CYANOETHYLATED AMINOHYDROXY AMINES
Richard W. Fulmer, Minneapolis, and Edgar R. Rogier, Hopkins, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed May 5, 1961, Ser. No. 107,943
15 Claims. (Cl. 260—465)

1. (Beta - cyanoethyl) - aminohydroxystearyl - (beta-cyanoethyl) amine wherein the (beta-cyanoethyl)-amino and hydroxy groups are on adjacent carbon atoms which

carbon atoms are separated from the terminal amine group by at least one —CH_2— group.

8. 9 - anilino - 10 - hydroxystearyl - (beta-cyanoethyl) amine.

3,158,644
ALICYCLIC KETOESTERS AND PROCESS FOR THEIR MANUFACTURE
Edouard Demole, Geneva, Switzerland, and Edgar Lederer, Sceaux, France, assignors to Firmenich & Cie, Geneva, Switzerland
No Drawing. Filed Feb. 24, 1961, Ser. No. 91,334
Claims priority, application Switzerland, Feb. 25, 1960, 2,121/60; July 27, 1960, 8,563/60
7 Claims. (Cl. 260—468)

1. A lower alkyl ester of a 2-alkyl-3-oxo-cycloalkyl-acetic acid wherein the ester lower alkyl has from 1 to 2 carbon atoms, the alkyl radical in the 2-position has from 4 to 6 carbon atoms, and the cycloalkyl nucleus has from 5 to 6 members.

3,158,645
2,3,6-TRICHLOROBENZYL-2,4-DICHLORO-PHENOXY-ACETATE
Jack S. Newcomer, Wilson, Edward D. Weil, Lewiston, Edwin Dorfman, Grand Island, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Original application Feb. 13, 1958, Ser. No. 714,951. Divided and this application Apr. 12, 1962, Ser. No. 186,844
1 Claim. (Cl. 260—473)

2,3,6-trichlorobenzyl 2,4-dichlorophenoxyacetate.

3,158,646
PROCESS FOR HYDROGENATING 2,5-DICHLORO-3-NITROBENZOIC ACID
Edwin Dorfman, Grand Island, Edward D. Weil, Lewiston, and Robert J. Gruber, Tonawanda Township, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Apr. 17, 1961, Ser. No. 103,254
4 Claims. (Cl. 260—501)

1. The process of preparing salts of 3-amino-2,5-dichlorobenzoic acid comprising the steps of admixing in a closed pressure reactor system a noble metal selected from the group consisting of Group VIII Series 6 and Group VIII Series 8 of the Periodic Table, and a water solution of a salt selected from the group consisting of the ammonium, lower alkylammonium, lower dialkylammonium, lower trialkylammonium and hydroxyalkylammonium salts of 2,5-dichloro-3-nitrobenzoic acid, agitating the above mixture of aqueous salt and noble metal, contacting said admixed and agitated mixture with hydrogen gas under positive pressure until a substantial amount of the corresponding 3-amino-2,5-dichlorobenzoic salt is produced.

3,158,647
QUATERNARY AMMONIUM FATTY, PHENATE AND NAPHTHENATE SALTS
Earl E. Myers, Cheswick, Pa., assignor to Gulf Research & Development Company, a corporation of Delaware
No Drawing. Original application Oct. 5, 1955, Ser. No. 538,799, now Patent No. 3,029,136, dated Apr. 10, 1962. Divided and this application Sept. 29, 1961, Ser. No. 141,620
5 Claims. (Cl. 260—501)

1. A quaternary ammonium salt wherein two of the covalent N-bonds are attached to aliphatic hydrocarbon substituents containing 7 to 30 carbon atoms selected from the group consisting of alkyl, alkenyl and alkadienyl radicals containing 8 to 22 carbon atoms and the remaining covalent N-bonds are attached to open-chain saturated aliphatic hydrocarbon radicals containing 1 to 4 carbon atoms, and wherein the ionic N-bond is attached to an anionic salt-forming radical derived from a material selected from the group consisting of (*a*) oil-soluble organic monocarboxylic acids selected from the group consisting of fatty acids and naphthenic acids and (*b*) oil-soluble mono-, di- and tri-substituted monohydric phenols whose substituents are open-chain aliphatic hydrocarbon radicals, said phenols having attached to the aromatic nucleus at least one hydrocarbon substituent containing at least 4 carbon atoms, and having not more than one substituent in the ortho position that contains more than one carbon atom.

3,158,648
DIRECT RESOLUTION OF α-METHYL-3,4-DIHYDROXYPHENYLALANINE
Robert T. Jones, Plainfield, Kenneth H. Krieger, Chatham, and James Lago, Murray Hill, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,815
20 Claims. (Cl. 260—519)

7. The process of revolving racemic α-methyl-3,4-dihydroxyphenylalanine which comprises, in combination, the steps of

(*a*) dissolving said racemate in a polar solvent selected from the group consisting of water, lower alkanols, dioxane, acetone and mixtures thereof containing 0 to 0.9 equivalent of a salt-forming acid per mole of said alanine, the said salt-forming acid being a water-soluble, nonamphoteric acid having at least one acidic hydrogen with an ionization constant greater than 10^{-3}, the said polar solvent comprising at least 10% water when other than a lower alkanol,

(*b*) separating any undissolved racemate,

(*c*) forming a supersaturated solution of the dissolved racemate having from 0 to 90% of said alanine compound present as the amine salt of said salt-forming acid,

(*d*) contacting said supersaturated solution with one of the enantiomorphs in crystalline form whereby additional of said enantiomorph over the amount of said enantiomorph added as seed crystallizes leaving a first mother liquor still supersaturated in the second enantiomorph,

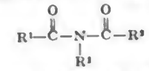
(*e*) separating said first mother liquor from said crystals and contacting it with the said second enantiomorph in crystalline form, whereby a portion of said second enantiomorph separates from said first mother liquor leaving a second mother liquor containing essentially racemate in solution.

3,158,649
PROCESS FOR EXTRACTING ORGANIC ACIDS PRODUCED BY FERMENTATION
Pierre Colin and Maurice Mention, Melle, France, assignors to Les Usines de Melle (Societe Anonyme), Melle, France, a corporation of France
Filed June 13, 1962, Ser. No. 202,253
Claims priority, application France, June 20, 1961, 865,493
5 Claims. (Cl. 260—527)

1. A process for extracting an organic acid selected from the group consisting of citric acid and itaconic acid from aqueous solutions thereof produced by fermentation which comprises extracting said solutions with a solvent consisting essentially of a mixture of tri-n-butyl phosphate and from about 5% to about 30% by volume with respect to the tri-n-butyl phosphate of at least one liquid diluent selected from the group consisting of white spirit, kerosene, n-butyl chloride, n-butyl ether, methyl isobutyl ketone, octyl alcohols and n-butyl, isobutyl, secondary butyl, amyl and isoamyl formate, acetate and butyrate esters.

3,158,650
HERBICIDAL N-SUBSTITUTED ARYLIMIDES
Edward David Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 25, 1961, Ser. No. 112,528
10 Claims. (Cl. 260—562)

1. An N-substituted arylimide having the structure



wherein R^1 is a monovalent radical selected from the group consisting of alkyl and alkenyl of two to five carbon atoms, said radical being branched with a methyl group at the alpha carbon thereof when it is of three to five carbon atoms, R^2 is selected from the group consisting of hydrogen, alkyl and alkenyl of from one to nine carbon atoms, and R^3 is selected from the group consisting of 3-chloro-4-methylphenyl and 3,4-dichlorophenyl.

3,158,651
BIS(C-ALKYLHYDROZINO) DECABORANES AND METHOD OF MAKING SAME
John E. Paustian, Whippany, Stanley Mutnick, Old Bridge, and Marvin M. Fein, Westfield, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Nov. 23, 1960, Ser. No. 71,358
11 Claims. (Cl. 260—564)

1. A member selected from the group consisting of bis(C-alkylhydrazino) decaborane and bis(C-alkylhydrazino alkyl decaborane.

3,158,652
PREPARATION OF ALKYLATED DECABORANE
Robert K. Jordan, Tonawanda, N.Y., assignor, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 31, 1955, Ser. No. 544,067
5 Claims. (Cl. 260—606.5)

5. A method for preparing an alkyl decaborane which comprises reacting decaborane and a lower alkyl monohalide in the presence of aluminum as the catalyst and recovering the alkyl decaborane produced.

3,158,653
PREPARATION OF ALKYLATED DECABORANE
Hugo Stange, Niagara Falls, N.Y., assignor, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 31, 1955, Ser. No. 544,068
8 Claims. (Cl. 260—606.5)

1. A method for the preparation of an alkylated decaborane which comprises reacting decaborane and an alkyl monohalide selected from the class consisting of alkyl monochlorides, alkyl monobromides and alkyl monoiodides having from 1 to 5 carbon atoms while the reactants are in admixture with as an alkylation catalyst a catalytic amount of an alkyl aluminum sesquihalide selected from the class consisting of alkyl aluminum sesquichlorides and alkyl aluminum sesquibromides having from 1 to 4 carbon atoms in each alkyl radical.

3,158,654
PREPARATION OF LIQUID REACTION PRODUCTS OF DECABORANE AND MONOOLEFIN HYDROCARBONS
John W. Ager, Jr., Buffalo, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Jan. 15, 1959, Ser. No. 787,089
3 Claims. (Cl. 260—606.5)

1. A method for the preparation of liquid reaction products of decaborane and a normally gaseous monoolefin hydrocarbon which comprises reacting decaborane and normally gaseous monoolefin hydrocarbon while the reactants are in admixture with a compound of the class $B_{10}H_{13}M$ wherein M is an alkali metal at a pressure within the range of 40 to 400 p.s.i.g. and a temperature within the range of 170° to 350° C.

3,158,655
ORGANOBORON ALCOHOLS AND METHOD FOR THEIR PREPARATION
Roy P. Alexander, Lewiston, and Theodore L. Heying, Tonawanda, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 25, 1959, Ser. No. 801,961
9 Claims. (Cl. 260—606.5)

1. A method for the production of an organoboron alcohol compound useful as a fuel which comprises hydrolyzing by reaction with an aqueous lower alkanol solution of an alkali metal hydroxide, wherein the proportion of water in the aqueous lower alkanol solution ranges from about 30% to about 70% by volume, a compound of the class $RR'B_{10}H_8(CR''CR''')$ wherein R and R' are each selected from the class consisting of hydrogen and an alkyl radical containing from one to five carbon atoms, wherein R'' and R''' are each selected from the class consisting of hydrogen, halogen, alkyl, and haloalkyl radicals, at least one of R'' and R''' being a halogen atom, the total number of carbon atoms in R'' and R''' taken together not exceeding eight.

8. $RR'B_{10}H_8(CR''CR''')$ wherein R and R' are each selected from the class consisting of hydrogen and an alkyl radical containing from 1 to 5 carbon atoms and wherein R'' and R''' are each selected from the class consisting of hydrogen, alkyl radicals, hydroxyl radicals and haloalkyl radicals, at least one of R'' and R''' being a hydroxyl radical, the total number of carbon atoms in R'' and R''' taken together not exceeding eight.

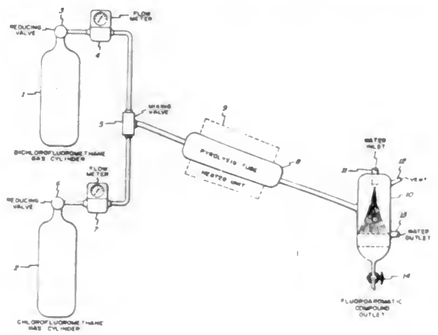
3,158,656
ORGANOBORON ALCOHOLS AND THEIR PREPARATION
Roy P. Alexander, Lewiston, and Theodore L. Heying, Tonawanda, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 28, 1959, Ser. No. 809,570
7 Claims. (Cl. 260—606.5)

1. A method for the preparation of an organoboron alcohol compound useful as a fuel which includes reacting successively with a material selected from the class consisting of alkali metal alkyls and alkali metal aryls, a 1,2-alkylene oxide, and water, a compound of the class $RR'B_{10}H_8$ $(CR''CR''')$ wherein R and R' are each selected from the class consisting of hydrogen and an alkyl radical containing from one to five carbon atoms, wherein R'' and R''' are each selected from the class consisting of hydrogen, an alkyl radical and a monoalkenyl hydrocarbon radical, at least one of R'' and R''' being hydrogen, and the total number of carbon atoms in R'' and R''' taken together not exceeding eight, the ratio of reactants being in the range of 0.1 to 10 moles of the said material per mole of said compound, 0.1 to 20 moles of 1,2-alkylene oxide per mole of said compound, and 0.1 to 20 moles of water per mole of said compound.

3,158,657
CO-PYROLYSIS METHOD FOR THE PREPARATION OF FLUOROAROMATIC COMPOUNDS
Frank R. Callihan, Huntington Station, and Charles L. Quatela, Great Neck, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 226,052
7 Claims. (Cl. 260—650)

1. The method for the preparation of fluoroaromatic compounds comprising the steps of co-pyrolyzing dichlo-

rofluoromethane and chlorofluoromethane at molar ratios within the range from about 0.8 to about 1.4 at a temperature within the range from about 600° C. to about 800° C. and separating the resulting fluoroaromatic compounds from the pyrolysate.



3,158,658
PRODUCING A PHOSPHORUS FLUORIDE CONTAINING GAS AND REACTION THEREOF WITH CARBON

Meyer M. Markowitz, Ardmore, Pa., assignor to Foote Mineral Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 8, 1961, Ser. No. 115,599
7 Claims. (Cl. 260—653)

1. The method of producing a phosphorus fluoride containing gas which comprises heating an alkali metal fluoride with an alkali metal phosphate having an alkali metal oxide to phosphorus pentoxide ratio of up to 2 at a temperature and for a time sufficient to produce a substantial decrease in the combined weight of said fluoride and said phosphate in the reaction mixture by evolution of a phosphorus fluoride containing gas therefrom.

5. In the method of fluorinating elemental carbon with a phosphorus fluoride containing gas the improvement comprising, heating a mixture of:

(1) an alkali metal fluoride,

(2) an alkali metal phosphate, said phosphate having an alkali metal oxide to phosphorus pentoxide ratio of up to 2, and

(3) elemental carbon,

at a temperature and for a time sufficient to produce a substantial decrease in the combined weight of said alkali metal fluoride and said alkali metal phosphate in the reaction mixture, by evolution of a phosphorus fluoride containing gas therefrom.

3,158,659
NOVEL DERIVATIVE OF THEOPHYLLINE

Albert Schlesinger, Jackson Heights, N.Y., assignor to Endo Laboratories, Inc., Richmond Hill, N.Y., a corporation of New York

No Drawing. Filed July 11, 1961, Ser. No. 123,109
4 Claims. (Cl. 260—253)

1. A member of the group consisting of 7-(2'-di-isopropylaminoethyl)-theophylline and the pharmaceutically acceptable acid addition salts thereof.

3,158,660
PRODUCTION OF CYCLOHEXADIENE

Lawrence J. Hughes, Hitchcock, Tex., assignor to Monsanto Company, a corporation of Delaware

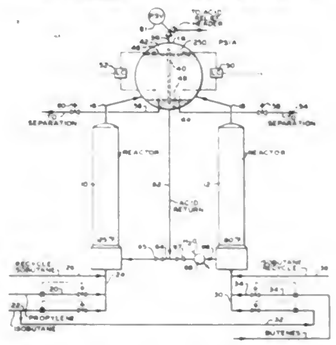
No Drawing. Filed July 21, 1960, Ser. No. 44,275
2 Claims. (Cl. 260—666)

1. A process for the production of cyclohexadiene which comprises passing allyl chloride through a pyrolysis zone packed with an inert finely divided material of high surface area and heated to a temperature from about 600° C. to about 630° C. at a rate such that said allyl chloride is maintained at said temperature for from about 0.5 to about 4 seconds.

3,158,661
ALKYLATION PROCESS AND APPARATUS

William E. Plaster and Rolland E. Dixon, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed May 11, 1961, Ser. No. 121,800
19 Claims. (Cl. 260—683.48)



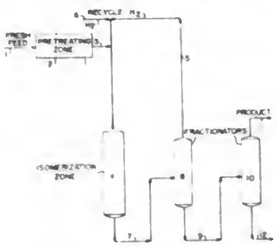
1. Apparatus for separately alkylating two different streams of alkylatable hydrocarbon comprising first and second alkylators each having an inlet for acid, an inlet for hydrocarbon feed comprising an isoparaffin and an olefin and an outlet for alkylated product; an acid settler in the form of a closed vessel having an upright baffle extending laterally therethru from wall to wall but spaced from the top and bottom thereof; a pair of feed inlets in a lower section of said settler on opposite sides of said baffle; an acid outlet in the bottom of said settler; a pair of effluent alkylate lines extending from said settler at a level intermediate the top and bottom of said baffle and on opposite sides thereof, each having a motor valve therein; a pair of liquid level controllers on said settler on opposite sides of said baffle, one being connected to one of said motor valves and one to the other, thereby being adapted to maintain a liquid level on each side of said baffle below the top and substantially above the bottom thereof; conduit means connecting the outlet of said first alkylator to one of the feed inlets in said settler; conduit means connecting the outlet of said second alkylator to the other of said feed inlets; and an acid return line from said acid outlet to each of said acid inlets.

15. A process for simultaneously and separately alkylating a first stream consisting principally of propylene and isobutane and a second stream consisting principally of butylenes and isobutane comprising passing said first stream in admixture with an acid alkylation catalyst thru a first alkylation zone under alkylating conditions, including a temperature in the range of about 110–125° F., to form a first alkylate stream; simultaneously passing said second stream in admixture with said acid alkylation catalyst thru a second alkylation zone under alkylating conditions, including a temperature in the range of about 60 to 80° F., to form a second alkylate stream; passing said first alkylate stream and said second alkylate stream into separate settling zones for separating acid and vapor from the alkylates; allowing acid catalyst to settle from both said settling zones into a common acid recovery zone, whereby the temperature of said acid is below the temperature in said first alkylation zone; allowing vapor to escape from both said settling zones into a common vapor recovery zone; withdrawing vapor from said common vapor recovery zone in a single stream to control pressure in said settling zones; withdrawing a single stream of said acid catalyst from said acid recovery zone and passing at existing temperature a portion thereof at existing temperature to said first alkylation zone; passing a remaining portion of the recovered acid thru a heat exchange zone to cool same to below the temperature in a said second alkylation zone and passing the cooled acid to said second alkylation zone, thereby effecting all of the heat exchange required in the acid catalyst in a single heat exchange zone; maintaining separate bodies of first and second alkylates in said separate settling zones; and withdrawing separate streams of said first alkylate and said second alkylate from said separate bodies thereof.

3,158,662
ISOMERIZATION PROCESS

Alfred Douglas Reichle and Arthur Lewis Reitemeier, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 26, 1960, Ser. No. 52,241
10 Claims. (Cl. 260—683.75)



1. In the isomerization of C_5 or C_6 paraffins by contact with a supported platinum catalyst containing aluminum chloride at a temperature of about 200 to 400° F., a pressure of about 400 to 1500 p.s.i., in the presence of about 300 to 2000 standard cubic feet of hydrogen per barrel of feed; the improvement which comprises maintaining the said temperature, pressure and hydrogen concentrations at conditions to maintain between 20 and 95% of the said paraffins in liquid phase, and continuously including from 5 to 500 p.p.m. of aluminum chloride in the feed.

3,158,663
LATEX FOAM STABILIZED WITH AN ALKYLATED POLYETHER-POLYTHIOETHER GLYCOL

Hanswilli von Brachel, Cologne-Sulz, Heinz Esser, Cologne-Stammheim, and Gustav Sinn, Bergisch Neukirchen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 27, 1960, Ser. No. 45,562
Claims priority, application Germany July 28, 1959
5 Claims. (Cl. 260—723)

1. In a process wherein a natural rubber latex is converted into a foam and the latter is then coagulated and vulcanized to a solid foam rubber, the improvement which comprises stabilizing the foamed latex so that it does not collapse prior to coagulation by incorporating therein as a foam stabilizer a polysulfonium compound which is prepared by the alkylation of polyether-polythioether glycols, said polyether-polythioether glycols being prepared by reacting at a temperature of 140–220° C. in the presence of a dehydration catalyst (1) a polyether glycol of the general formula:

$$HO(CHR_1CHR_2O)_m—R—O—(CHR_3CHR_4O)_n—H$$

in which R is selected from the group consisting of an alkylene, a cycloalkylene, and an arylene radical which can carry hydroxyl groups and wherein R_1 to R_4 represent a member selected from the group consisting of a hydrogen atom and a lower alkylene group and wherein m and n are whole numbers, with (2) a thioether glycol of the general formula:

$$HO(CHR_1CHR_2—S—CHR_3CHR_4O)_p—H$$

in which R_1, R_2, R_3 and R_4 represent a member selected from the group consisting of hydrogen, alkyl, cycloalkyl and aryl radicals, while p represents a whole number.

3,158,664
POLYMER BLENDS CONSISTING OF A RIGID VINYL CHLORIDE POLYMER AND A RUBBERY INTERPOLYMER OF ISOBUTYLENE AND BUTADIENE OR ISOPRENE AND PROCESS OF PREPARING THE SAME

Massimo Baer, Longmeadow, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 22, 1958, Ser. No. 781,862
1 Claim. (Cl. 260—888)

A method for preparing intimate binary fusion blends which consists of comalaxating a mixture of 80–95 parts by weight of a rigid vinyl chloride polymer and, correspondingly, 20–5 parts by weight of a rubbery interpolymer of at least 90 weight percent of isobutylene and, as the only other component of the interpolymer, up to 10 weight percent of a conjugated diene of the group consisting of isoprene and butadiene for at least 10 minutes at a temperature of 300–375° F.

3,158,665
BINARY POLYBLENDS OF STYRENE/ACRYLONITRILE COPOLYMER AND CHLOROSULFONATED ETHYLENE POLYMER

James A. Herbig and Ival O. Salyer, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

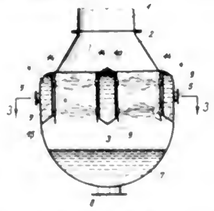
No Drawing. Filed July 21, 1960, Ser. No. 44,262
6 Claims. (Cl. 260—897)

1. A styrene/acrylonitrile copolymer polyblend composition comprising styrene/acrylonitrile copolymer and from 1% to 15% by weight of a chlorosulfonated ethylene polymer.

3,158,666
HEAVY-DUTY MIXING CONDENSER

Laszlo Heller, Laszlo Forgo, and Arpad Bakay, all of Budapest, Hungary, assignors to Licencia Talalmanyokat Ertekesito Vallalat, Budapest, Hungary

Filed Sept. 11, 1961, Ser. No. 138,223
4 Claims. (Cl. 261—118)



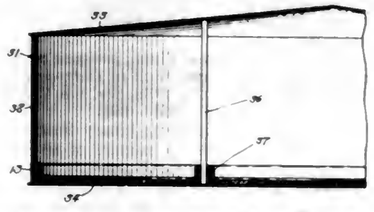
1. Apparatus for condensing steam comprising a generally rectangular chamber having a longitudinal axis, a vertical and longitudinal side wall, a further vertical and longitudinal wall spaced from, parallel to, opposing and

coextensive with said side wall, said chamber having a top opening through which steam can be forced transversely downwardly between said walls to be condensed, and a sump having an outlet conduit below said walls through which the condensate can flow out of the chamber, and steam condensing means comprising longitudinally successive means in said side wall and spacedly disposed along the entire length thereof injecting cooling water into said chamber in each instance in the form of a generally planar vertical film transversely to said longitudinal axis and propelled so as to strike said further wall.

3,158,667
METHOD OF FORMING A PLASTIC SPRAY COATED FLOATING ROOF

Ernest E. Michaels, Chicago, Ill., assignor to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois

Filed May 10, 1961, Ser. No. 109,172
6 Claims. (Cl. 264—45)

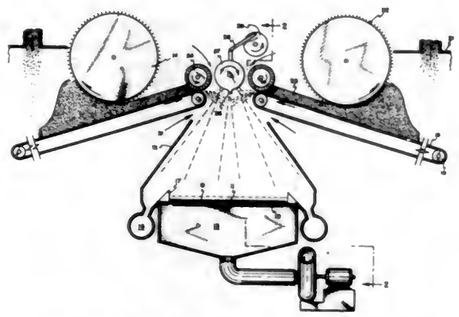


1. The method of forming a floating roof in place within a vessel for the storage of volatile liquids comprising the steps of securing a sheet of a thin material in a substantially horizontal position covering substantially the entire cross-sectional area of said vessel, securing an upstanding rim seal to the edge of said sheet adjacent the wall of said vessel to form a buoyant structure, coating said sheet and said rim seal with a layer of a polymerizable plastic material which in its polymerized form is relatively light and unaffected by contact with said volatile liquids, and polymerizing said plastic material.

3,158,668
METHOD AND APPARATUS FOR MAT FORMING

Earl A. N. Johnson, 1044 Sprague St., P.O. Box 100, Edmonds, Wash.

Filed Dec. 19, 1960, Ser. No. 76,961
6 Claims. (Cl. 264—116)

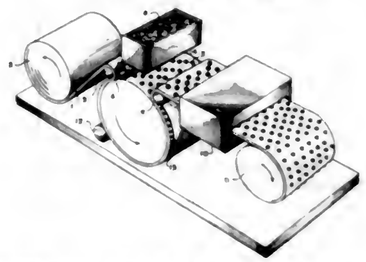


1. The method of forming a compacted mat from finely-divided fibers comprising the steps of forming from such fibers a non-compacted first mat of substantially uniform depth, continuously disintegrating successive portions of said mat into substantially individual fibers and reforming such fibers into a relatively compacted mat by continuously entraining them in a downwardly directed high velocity fluid jet emitted from an orifice at an initial velocity of at least about 7500 f.p.m. and having a reduced pressure zone at its vena contracta by introducing such fibers into air flowing toward said reduced pressure zone of said high velocity jet thence passing said fluid jet through a horizontal fluid-pervious surface adapted to retain the fibers on its surface.

3,158,669
ROTARY INTAGLIO PRINTING OF RUBBER GASKETS AND SIMILAR SHAPES

David G. Greenlie, Weston, and Edward W. Merrill, Belmont, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Apr. 3, 1961, Ser. No. 100,064
7 Claims. (Cl. 264—153)

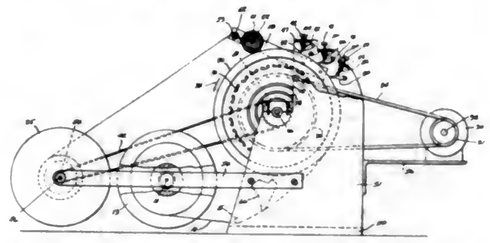


1. A method of forming a multiplicity of gasket shapes comprising filling a multiplicity of molded cavities of the desired shape in a printing surface with a liquid polymeric gasket-forming composition having a viscosity between about 10 and 300 centipoises at 21° C. and capable of setting to a form-stable solid at an elevated temperature, firmly and evenly placing a form-stable, paper-reinforced, gas impervious substratum against said printing surface, applying heat to the interior portion of said mold cavities to obtain setting of said composition to the form-stable shapes, removing the composite of said substratum with said shapes adhered thereto from said printing surface and thereafter punching the resulting composite into individual gasket units.

3,158,670
METHOD AND MEANS FOR PRODUCING MAGNETIC RECORD MEMBERS

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, a corporation of Illinois

Filed May 15, 1961, Ser. No. 109,962
4 Claims. (Cl. 264—293)



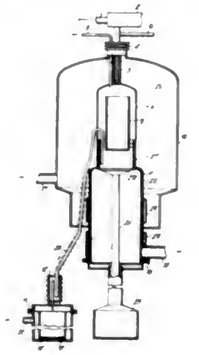
2. Apparatus for treating a magnetic record medium having a layer containing magnetizable material and providing an active external surface of the record medium comprising means defining respective smoothing surface portions of substantially greater smoothness than the active surface for engaging respective portions of the active surface of the record medium, means for moving the active surface of the magnetic record medium and the smoothing surface portions at substantially the same speed, means for placing the active surface of the magnetic record medium in a softened flowable condition while in contact with said smoothing surface, at least three metal pressure edges disposed for engagement with the surface of the magnetic record medium opposite the active surface with the edges extending transversely to the direction of movement of the record medium, and means for urging the metal pressure edges against the surface of the record medium to press the active surface of the magnetic record medium into conforming engagement with the respective smoothing surface portions.

3,158,671
APPARATUS FOR PRODUCING TITANIUM SPONGE

Miniato Socci, Novara, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

Original application July 28, 1955, Ser. No. 525,026. Divided and this application Sept. 9, 1959, Ser. No. 838,948
Claims priority, application Italy Aug. 12, 1954
10 Claims. (Cl. 266—24)

1. An apparatus for making titanium sponge by reducing titanium tetrachloride with a reducing metal, comprising enclosure structure means for applying heat, reactor casing means at least partly within said enclosure means, the casing means providing a reaction chamber, a reaction vessel in said reactor casing means, the reaction vessel having a bottom wall sufficiently imperforate to retain thereon a growing body of the resulting titanium sponge and to retain the molten reducing metal and the resulting molten chloride of said reducing metal, the reaction vessel having foraminous side wall surface, the foramina thereof being distributed over said surface circumferentially at a plurality of levels to provide a multiplicity of vents, the foramina being of a diameter sufficiently small to retain the molten reducing metal but large enough to pass said resulting molten chloride, the foramina starting at a region sufficiently removed from the bottom wall to retain thereon at least a thin layer of the said resulting chloride, the foramina remaining open throughout the operation, for passage of said chloride, an upper part of the reaction vessel having an opening for ingress of titanium chloride and said reducing metal, conduit means for supplying titanium chloride and said reducing metal to said opening, movable means providing a chamber to receive the molten chloride from the reaction vessel, means for removing the molten chloride from the latter chamber, a condenser, cooling means for



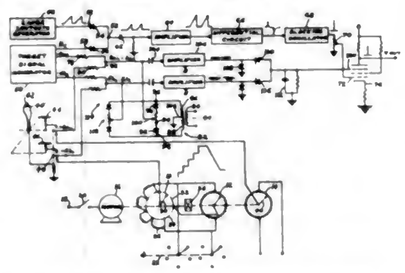
the wall surface of the condenser, the movable means and the casing means having cooperating structure for sealing the lower part of the reaction chamber provided by the reactor casing means, means to raise and to lower said movable means, to seal the said cooperating structure upon raising, and to unseal it upon lowering to provide a vent for vapors into the condenser, the vapors constituting residues of salt and reducing metal distilled from the reactor casing means, said condenser being situate in a lower extension of said reactor casing means.

ELECTRICAL

3,158,672
ANTENNA BEAM WIDTH SIMULATOR

George M. Trinite, Jr., Sykesville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 8, 1962, Ser. No. 178,516
8 Claims. (Cl. 35—10.4)



1. A device for producing an electrical analog of the sweep of a radar antenna comprising an elevation scanning simulation means for producing a voltage which varies in two directions between a maximum and a minimum level, in one direction in a number of periodic steps and in the other continuously, azimuth scanning simulation means for producing a voltage which varies continuously between a maximum and a minimum level covering the entire azimuth range and having the same rate of change when the voltage decreases from a maximum to a minimum as when the voltage increases from a minimum to a maximum, while the voltage produced by said elevation scanning simulation means is at each periodic step and while it varies continuously, whereby a X–Y plot with azimuth with respect to time plotted along the horizontal, and elevation with respect to time plotted along the vertical, would show a number of horizontla parallel lines indicating azimuth joined together alternately at one end then the other by vertical lines representative of elevation, with a diagonal line joining points indicative of maximum and minimum elevation to form a continuous zigzag line joined at its extremities by a diagonal.

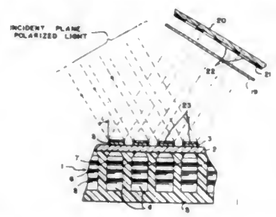
3,158,673
INSTANTANEOUS MULTIPLE PLOTTER AND VISUAL READOUT DEVICE

Frank J. Sites, U.S. Air Force, 29B Boatner, Eglin Village, Eglin A.F.B., Fla.

Filed Mar. 10, 1961, Ser. No. 94,953
1 Claim. (Cl. 88—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A plotting device for receiving rectangular coordinate information in digital form and producing a visual plot of the points represented by said digital information, comprising: means providing a flat plotting surface having

thereon a large number of minute closely spaced areas of magnetic material in a thin film, said film areas having different coordinates relative to a pair of rectangular coordinate axes on said surface; magnetizing means beneath said surface and individual to each film area for equally magnetizing the film areas with the magnetic vector at right angles to said surface, said magnetizing means normally magnetizing said film areas with the same predetermined polarity; decoding and switching means electrically coupled to said magnetizing means and having a first input circuit for digital signals representing film area coordinates along one of said axes and a second input circuit for digital signals representing film area coordinates along the other of said axes, said decoding and switching means operating in response to input signals representing the coordinates of a particular film area to

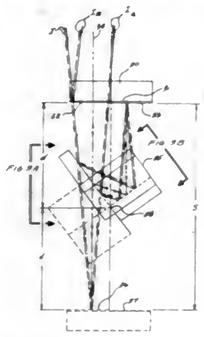


reverse the magnetic polarity of the magnetizing means associated with said film area and thereby the magnetic polarity of said film area; means for illuminating the entire said plotting surface with collimated plane polarized light at an angle of incidence such that said magnetic vector has a substantial component in the direction of light propagation; a light dispersing viewing screen positioned to receive all of the light reflected from said plotting surface; an analyzer situated to intercept the reflected light before reaching said screen, said analyzer being oriented to extinguish the light reflected from film areas having said predetermined magnetic polarity; and a mask situated to intercept the reflected light before it reaches said screen, said mask having openings so positiond as to permit the light reflected from the magnetized film areas to reach said screen but to block light reflected from all other areas of said plotting surface from said screen.

3,158,674
INTERFEROMETER FOR MEASURING DISTANCES NORMAL TO A PLANE

Robert A. Woodson, Vestal, N.Y., assignor to General Precision, Inc., a corporation of Delaware

Filed Oct. 27, 1958, Ser. No. 769,736
8 Claims. (Cl. 88—14)

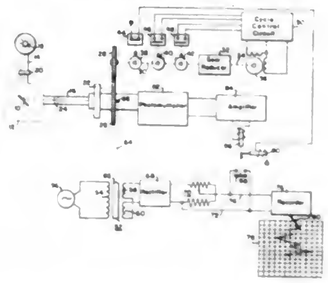


1. In an interferometer, an optically flat member, a partial reflector on a first portion of said optically flat member for receiving incident radiation, a substantially full reflector on a second substantially coplanar portion of said optically flat member, a retroreflector positioned to retroreflect that portion of said radiation which is transmitted by said partial reflector portion of said optically flat member to the full reflector portion thereof and to retroreflect the radiation reflected by said full reflector portion back to said partial reflector portion for recombination of a portion of said radiation with that portion of said radiation which has been originally reflected by said partial reflector.

3,158,675
APPARATUS FOR MEASURING THE THICKNESS OF THIN TRANSPARENT FILMS

Thomas P. Murray and George T. Hanyo, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 10, 1959, Ser. No. 852,061
12 Claims. (Cl. 88—14)



12. Apparatus for measuring the thickness of a thin transparent film on the surface of reflective material comprising, in combination, optical means for producing a beam of plane-polarized light having a plane of polarization dependent upon the thickness of said film, an optical analyzer in the path of said beam of plane-polarized light, motor means for automatically rotating said analyzer in one direction from a starting point for a predetermined number of degrees and then in the opposite direction through said starting point for said predetermined number of degrees on the other side of the starting point, a photoelectric device responsive to the intensity of the light passing through said analyzer and adapted to produce an electrical signal indicative of the intensity of said light, and means including a transducer device operatively connected to said analyzer and responsive to the electrical signal from said photoelectric device for permanently recording the angle on either side of said starting point where the intensity of the light passing through the analyzer reaches a predetermined magnitude.

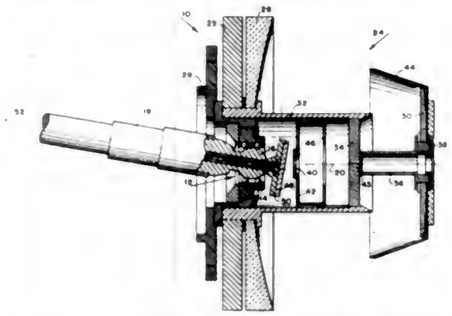
3,158,676
GYROSCOPE MOUNTED CASSEGRAIN TELESCOPE WITH CENTRAL SUPPORT FOR SECONDARY MIRROR

Francis McCaffrey, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 30, 1954, Ser. No. 472,267
4 Claims. (Cl. 88—32)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a Cassegrain telescope comprising a primary and a secondary mirror and a hollow tubular member between said primary and secondary mirrors, said telescope forming an integral portion of the rotor of a gyroscope, one end of said tubular member being fixedly mounted at the center of the primary mirror of the telescope, a transparent glass disc fixedly mounted within the other

end of said tubular member, a post fixedly mounted on the center of said glass disc, and means mounted on said post for fixedly securing the secondary mirror with

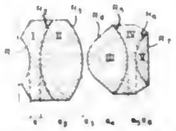


respect to the primary mirror, whereby radiant energy from sources within the field of view of the telescope is transmitted with substantially constant attenuation to the focal point of the telescope.

3,158,677
WIDE ANGLE OCULARS

Pierre J. B. Lacomme, 4 Rue Francois Mouthon, Paris, France, and Jean L. Demarcq, 10 Rue Vaillant, Vigny, Seine-et-Oise, France

Filed Dec. 19, 1960, Ser. No. 76,624
6 Claims. (Cl. 88—57)



1. Convergent ocular of wide apparent field comprising at least two groups of lenses, one group constituting an eye glass and the other group constituting a field glass, said field glass comprising at least two lenses and having two external surfaces, the concavity of said surfaces being adapted for simultaneous orientation towards an objective, said field glass comprising cemented lenses whose total thickness is between $0.7f$ and $1.6f$, f being the focal length of the ocular, the face of said field glass remote from said eye glass having a radius of curvature between $1.3f$ and $2f$ and the face of said field glass adjacent said eye glass having a radius of curvature between $1.5f$ and $2.3f$, said eye glass having a surface of rotation facing said field glass with a meridian defined by the following algebraic equations:

$$x=f(y) \text{ when } 0<y<y^0$$

$$x=f(y)+\epsilon(y-y^0)^\alpha \text{ when } y>y^0$$

$f(y)$ being a continuous function of y, ϵ being a numerical coefficient and α a positive number at least as great as 3, and $f(y)$ being a function of the second degree corresponding to

$$x=ay^2$$

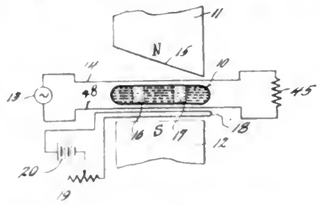
a being a constant.

3,158,678
OPTICAL DEVICE

Harold C. Anderson, Silver Spring, Md., assignor to Litton Systems, Inc., College Park, Md.

Filed June 20, 1961, Ser. No. 118,407
25 Claims. (Cl. 88—61)

1. A light controlling device responsive to radio frequency beams comprising a mixture of substances that is transparent to light above a critical temperature, and relatively opaque below said critical temperature, means for heating said mixture above its critical temperature in response to a radiant microwave radio beam, said means

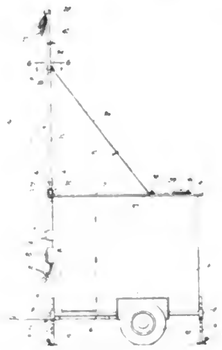


including a radio frequency absorbing material in proximity to said mixture to absorb energy from said microwave radio beam thereby to produce heat and transfer the heat to said mixture.

3,158,679
PORTABLE FOLDING UTILITY-CONNECTION TOWER

Leslie J. Ware, San Jose, Calif.
(1450 Dell Ave., Campbell, Calif.)

Filed Oct. 5, 1962, Ser. No. 228,717
8 Claims. (Cl. 174—1)



1. A portable utility-connection structure comprising a supporting vehicle, a tubular tower unit mounted on and upstanding from the vehicle when the tower is in operation, wiring projecting from the upper end of the tower unit for connection to pole-mounted circuit cables and from the lower end of the tower unit for connection to electrical devices, the tower unit comprising upper and lower members, means mounting the lower member rigidly on the vehicle, and means permanently connecting the members at their adjacent ends for folding movement of the upper member downwardly over the vehicle in one direction from a vertical position.

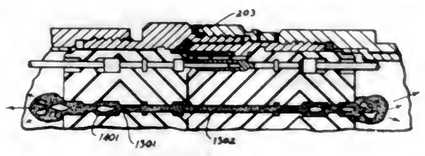
3,158,680
TELEPHONE CABLE SYSTEM

Billy J. Lovitt, New Canaan, Conn., Ludwik Jachimowicz, Elizabeth, N.J., and Andrew Nosty, Elmhurst, N.Y.; said Lovitt assignor to General Telephone & Electronics Corporation, New York, N.Y., a corporation of New York; and said Jachimowicz and said Nosty assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Feb. 1, 1962, Ser. No. 170,435
8 Claims. (Cl. 174—88)

1. A telephone line comprising a plurality of lengths of multi-conductor cable, each of said cable lengths com-

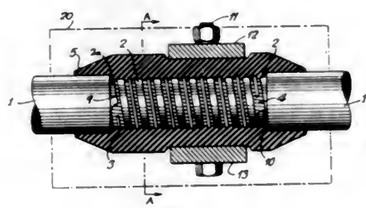
prising a plurality of telephone conductor pairs encased within a shield and a jacket, a plug on one end of said cable, said plug having a plurality of socket contacts, each of said telephone conductors being coupled to a socket contact in a predetermined pattern, a receptacle on the other end of said cable, said receptacle having a plurality of pin contacts to engage said socket contacts in the plug of another cable length, said pin contacts being spaced close together and having a pin-to-pin air gap breakdown strength of the order of 2,500 volts, each of said telephone conductors being coupled to a pin contact in matching predetermined pattern, said receptacle and said plug being securely attached to the jacket of said cable length in a pressure tight seal thereto, said receptacle and said plug being electrically coupled to said shield, the plug on one cable length being coupled to the receptacle in the next cable length to couple the conductors in said lengths together in a water and air tight connection, said coupling electrically connecting the shields of said coupled cable lengths, an insulating compound positioned between mating plugs and receptacles and filling the space therebetween with a bubble-free mass so that the conductor-to-conductor breakdown voltage exceeds 10,000 volts, means preventing the formation of voids in said mass, and means for equalizing the internal pressures in said cable lengths to prevent displacement of said insulating compound from its position between a coupled plug and receptacle.



3,158,681
PROCESS FOR THE ANCHORAGE OF ARMORED CABLES AND CABLE LINE OBTAINED THEREFROM

Paolo Gazzana Priaroggia and Nicola Palmieri, Milan, Italy, assignors to Pirelli Società per Azioni, Milan, Italy, a corporation of Italy

Filed Nov. 7, 1961, Ser. No. 150,788
Claims priority, application Italy Nov. 15, 1960
9 Claims. (Cl. 174—135)

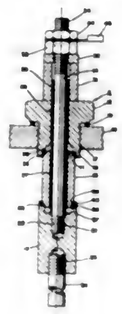


5. An anchorage for an armored cable comprising inner and outer armor layers and an insulating sheath surrounding said armor layers, said sheath terminating at opposite ends of a predetermined zone of said cable and said outer armor layer being interrupted in said zone but said zone having spaced turns of metal secured to said inner layer in the space between the ends of said sheath, and said anchorage comprising a sleeve of thermosetting resin bonded to said inner layer, surrounding said turns and extending over and surrounding said ends of said sheath.

3,158,682
HIGH PRESSURE ELECTRICAL PROBE

Allan R. Goellner, Parma Heights, Ohio, assignor, by mesne assignments, to The Clark-Reliance Corp., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,379
9 Claims. (Cl. 174—151)

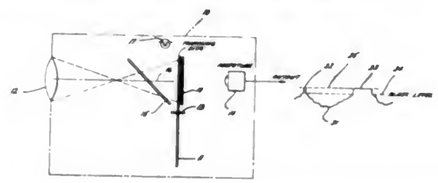


1. An electrical probe for use in a pressure vessel, comprising in combination,
a hollow insulator body,
a hollow metal body adjacent one end of said insulator body,
a metal head adjacent the other end of said insulator body,
means to mount said metal body to a pressure vessel with said insulator body within the vessel,
a soft metal washer disposed at each end of said insulator body,
substantially complementary conical mating surfaces between said washers and the respective ends of said insulator body,
means establishing said insulator body in compression between said metal body and said metal internal head to establish pressure-tight joints at each of said mating surfaces with the conical surfaces of said washers deformed and maintaining said insulator body in radial compression,
an external terminal on said probe,
and means providing an electrical connection between said metal head and said external terminal.

3,158,683
COMPOSITE SIGNAL-PRODUCING APPARATUS WITH MEANS FOR PRODUCING SYNC PULSES BY OFFSETTING BLACK LEVEL

Richard E. Waggener, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 21, 1961, Ser. No. 153,981
9 Claims. (Cl. 178—7.2)

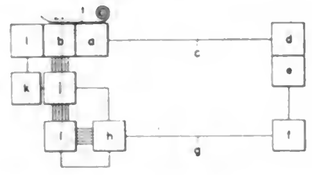


1. In a composite signal-producing apparatus wherein an image is scanned in successive lines by a moving scanning member which permits passage of light from the image to light-responsive signal-producing means, the improvement which comprises means for providing over the image area a constant low level of illumination, thereby to establish a "black" level in the produced signal, and means for interrupting the light passage to said signal-producing means between succesisve line scans of the image, thereby to provide in said signal synchronizing pulses on the "blacker-than-black" side of said level.

3,158,684
SYSTEM FOR DETECTING PERFORATION ERRORS IN SYNCHRONOUS PRINTING TELEGRAPHIC APPARATUS

Sanjiro Maejima, % Fuji Denki Seiko Co., Ltd., 182 2-chome, Omori, Ota-ku, Tokyo, Japan

Filed Oct. 13, 1961, Ser. No. 144,988
Claims priority, application Japan Dec. 28, 1960
2 Claims. (Cl. 178—23)

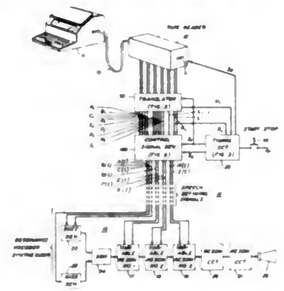


1. An apparatus for detecting errors in the groups of code perforations made in a tape in a synchronous printing telegraphic apparatus, said error detecting apparatus comprising a photoelectric device having a rotating disk and a light adapted to be positioned on opposite sides of the transmission tape of the telegraphic apparatus for sequentially scanning the number and position of light beams passing the punched hole positions in which the perforations of a group of code perforations are located on the transmission tape, said photoelectric device also having means for converting the series of light pulses passed through a group of code perforations in the transmission tape and through said rotating disk into a series of electric signals, means coupled to said photoelectric device for transmitting said series of electric signals, a receiving set receiving said series of electric signals, a punching mechanism coupled to said receiving set and actuated by said receiving set for punching a receiving tape with a group of perforations corresponding to the group of perforations on the transmission tape, a signal producing device coupled to said printing mechanism for producing a series of signals for the actions of the punching device in punching the group of perforations in the receiving tape, a memorizing device coupled to said signal producing device for receiving and memorizing the series of signals produced in response to the group of perforations punched in said receiving tape, a comparing device coupled to said photoelectric device and to said memory device for comparing the number and position of the light beams passed through the group of perforations in the transmission tape with the series of signals memorized by said memorizing device and producing a signal when there is a difference between the series and the number and position of the light beams, a clutch control means coupled to said photoelectric device through which said photoelectric device is driven, said clutch control means being coupled to said comparing device for being actuated to be disengaged when a signal is produced by said comparing device, and an erasing device coupled to said memory device for periodically erasing the series of signals memorized by said memory device.

3,158,685
SYNTHESIS OF SPEECH FROM CODE SIGNALS

Louis J. Gerstman, Bernardsville, and John L. Kelly, Jr., Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 4, 1961, Ser. No. 107,697
8 Claims. (Cl. 179—1)

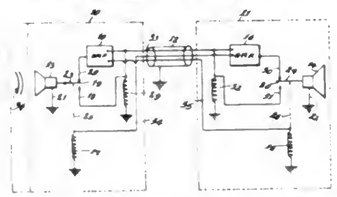


1. Apparatus for the production of artificial speech-like sounds which comprises, a source of speech phoneme representations ordered according to a desired phonetic sequence, means for selectively analyzing selected sequences of said phoneme representations to produce a code signal for each individual phoneme in said sequence and for the vowel-consonant structure of said phoneme sequence associated with each inidividual phoneme, means responsive to said code signals representative of successive phonemes and associated vowel-consonant structures for developing a set of speech defining signals which together specify the acoustic parameters of said sequence of phonemes and the transitions between phonemes as a function of time, and synthesizer means continuously supplied with all of said speech defining signals for generating artificial speech-like sounds.

3,158,686
COMMUNICATION SYSTEM

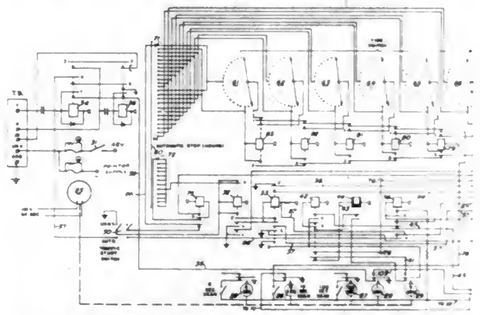
Arie Liberman, Skokie, Ill. (% Talk-A-Phone Co., 5013 N. Kedzie Ave., Chicago 25, Ill.)

Filed July 5, 1962, Ser. No. 207,634
4 Claims. (Cl. 179—1)



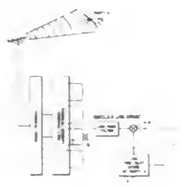
1. A communication system comprising: a first station including a first transducer coupled to a first switch and including a first amplifier having a first input and first output, said first input connectable to said first transducer through said first switch; a second station including a second transducer coupled to a second switch and including a second amplifier having a second input and second output, said second input connectable to said second transducer through said second switch, means interconnecting the outputs of said amplifiers; a first relay in said first station coupled to said second amplifier for actuating said first switch in response to actuation of said second amplifier to couple said first transducer to said output of said second amplifier; and a second relay in said second station coupled to said first amplifier for actuating said second switch in response to actuation of said second amplifier to couple said second transducer to said output of said first amplifier.

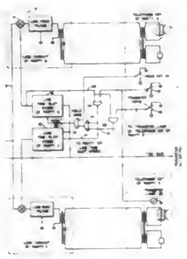
3,158,687
RECORDING TRAFFIC ANALYZER
Glen F. Long, Dallas, Tex., assignor to Universal Controls Corporation, Dallas, Tex., a corporation of Texas
Filed Feb. 19, 1962, Ser. No. 174,166
19 Claims. (Cl. 179—8)



10. A traffic recorder for use in recording the busy conditions of lines, for instance, in a telephone system comprising in combination, accumulating counter wheels, means for automatically scanning said lines successively and periodically at accurate intervals, means for using the individual potentials of the busy lines of a selected group of such lines when scanned for directly advancing said accumulating counter wheels one digit per potential impulse, type faces on said counted wheels, and means for periodically printing a record directly from said type at intervals substantially greater than the scan intervals.

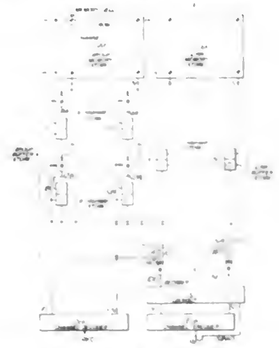
3,158,688
TIME DIVISION MULTIPLEX TELEPHONE CIRCUITRY FOR PROVIDING RAPID TRANSFER OF A CALL FROM ONE CALLED PARTY TO ANOTHER
William F. Bartlett, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 6, 1960, Ser. No. 34,041
10 Claims. (Cl. 179—15)





1. In a time division multiplex telephone system, first, second, and third line circuits, a common transmission channel, first, second, and third gates for coupling said first, second, and third line circuits respectively to said common transmission channel, first, second, and third time slot stores for enabling an associated one of said gates, means for inserting information representing the same time slot into said first and second time slot stores so as to couple said first line circuit to said second line circuit, means for transferring said information in said second time slot store into said third time slot store, and means responsive to the operation of said means for transferring for clearing said second time slot store.

3,158,689
SYSTEM FOR DETERMINING AND SELECTING FREE ALIGNED TELECOMMUNICATION CHANNELS
Jean Louis Masure, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1960, Ser. No. 55,647
9 Claims. (Cl. 179—15)

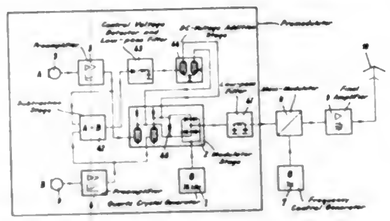


1. An electronic switching system comprising a plurality of time division multiplex highways, each of said highways having N number of aligned channels individually identified by N number time slots; a channel selection system comprising memory means, buffer storage means, and lockout means; said memory means comprising at least one rectangular matrix having rows and columns of memory cells, each of said rows corresponding to an associated one of said highways and each of said columns corresponding to an associated one of aligned channels on said highways; said buffer storage means comprising a plurality of coincidence gates connected to said memory cells for giving an indication when all aligned channels are idle, there being a coincidence gate for each of said channels; said lockout means comprising means responsive to said buffer storage means for selecting, busying, and freeing time slots when connections are initiated or released; and means for storing a busy signal in the memory cells connected to said one coincidence gate when a channel becomes busy.

3,158,690
FM TIME DIVISION MULTIPLEX SYSTEM HAVING INPUTS SUPERIMPOSED WITH POSITIVE AND NEGATIVE D.C. VOLTAGES
Egon Frank, Berlin-Mariendorf, Germany, assignor to Loewe Opta Aktiengesellschaft, Berlin, Germany, a company of Germany
Filed Apr. 3, 1961, Ser. No. 100,475
Claims priority, application Germany, Apr. 6, 1960, L 35,831
6 Claims. (Cl. 179—15)

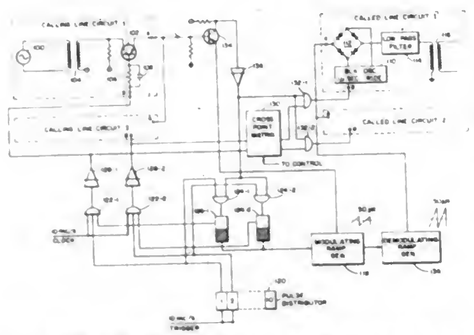
1. In a frequency modulation transmission system using two low-frequency signals on a common high frequency carrier according to the time multiplex system for compatible two-channel stereophonic transmission, comprising a transmitter and at least one receiver, said transmitter having a stereophonic pre-modulator, containing

a frequency modulator and means for switching in turn in supersonic frequency the first low-frequency signal representing the left audio information with a superimposed positive direct voltage and then the second low-frequency signal representing the right audio information with a superimposed negative direct voltage to said frequency modulator using a variable sub-carrier amplitude, means for increasing the sum signal portion of both said low-frequency signals and of reducing the difference sig-



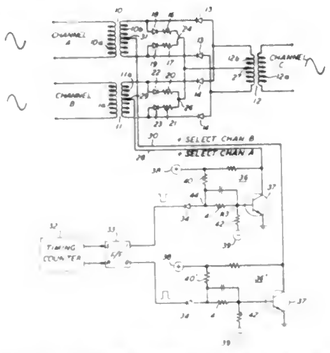
nal portion of both said low-frequency signals enabling to form the stereophonic signal in comparison to the amplitude of the sub-carrier and of the compatible sum signal portion which both are equal-sized in amplitude in case of modulation with identical low-frequency signals for left and right audio information, and further means for controlling the sub-carrier in its respective amplitude solely proportional to the difference signal value so that the sub-carrier likewise completely disappears when the difference signal components are completely missing.

3,158,691
RAMP PULSE POSITION MULTIPLEX SYSTEM
Barrie Brightman, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 7, 1961, Ser. No. 115,373
5 Claims. (Cl. 179—15)



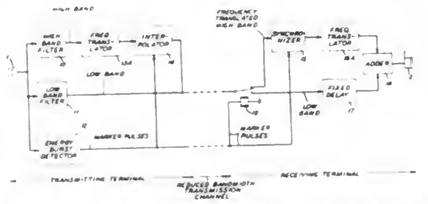
1. Pulse position apparatus for transmitting an analog signal from an originating point to a terminating point, said apparatus comprising a modulating ramp generator for generating a periodic modulating ramp signal, first means having said analog signal and said modulating ramp signal applied thereto for producing an output pulse in response to the instantaneous amplitude of said analog signal being substantially equal to the instantaneous amplitude of said modulating ramp signal, a lowpass filter at said terminating point, a demodulating ramp generator for generating a periodic demodulating ramp signal isochronous with said modulating ramp signal, a normally closed gate for applying said demodulating ramp signal as an input to said filter, and means for applying said output pulse to said gate to effect the momentary opening thereof.

3,158,692
CHANNEL SELECTING CIRCUIT UTILIZING DIODE CONNECTION MEANS
Otto F. Gerkensmeier, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 19, 1961, Ser. No. 139,580
10 Claims. (Cl. 179—15)



5. A channel selecting circuit comprising three transformers, each having a first winding adapted to be connected to a different communication channel and each having a second winding with a center tap thereon, pairs of transmission diodes connecting second winding terminals of a first transformer to second winding terminals of the other transformers, respectively, additional means connecting the second winding terminals of said other transformers to the second winding center tap of said first transformer, and means applying bias control signals to second winding center taps of said other transformers for biasing the pair of transmission diodes connected to at least one of said other transformer second windings into conduction while at the same time biasing corresponding diodes connected to the remaining other transformers to nonconducting conditions.

3,158,693
SPEECH INTERPOLATION COMMUNICATION SYSTEM
James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 7, 1962, Ser. No. 215,429
8 Claims. (Cl. 179—15.55)



7. Apparatus for reconstructing a replica of a voice wave which comprises

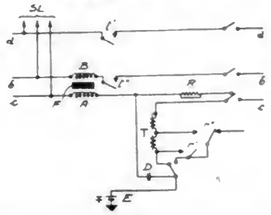
a source of a reduced bandwidth signal comprising selected low-frequency portions of the energy bursts of a voice wave separated by selected high-frequency portions of said energy bursts, each of said low-frequency portions being followed by the high-frequency portion of the same energy burst,

means for delaying each of said low-frequency portions of said reduced bandwidth signal for a preassigned length of time,

synchronizing means for bringing the high-frequency portion of each energy burst into time-coincidence with the delayed low-frequency portion of the same energy burst, and

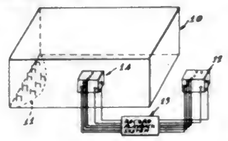
means for combining said synchronized low-frequency and high-frequency portions to reconstruct a replica of the original voice wave.

3,158,694
THIRD PARTY CALLING SIGNAL FOR AUTOMATIC TELEPHONE SYSTEM
Benito Sciretti and Giovanni Aceti, both of Via Sanfelice 12, Milan, Italy
Filed May 24, 1960, Ser. No. 31,303
Claims priority, application Italy, May 26, 1959, 8,909/59; Dec. 1, 1959, 20,005/59
3 Claims. (Cl. 179—84)



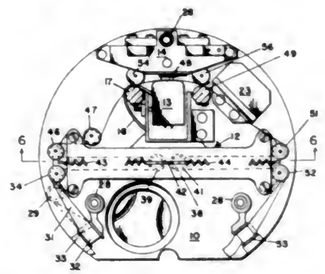
1. In an automatic telephone system having at least one first calling and one called station and a second calling station, each station having a call relay in a preselector circuit, said call relay of any such station having a coil which is shunted when the respective station is busy after having called another station, and first and second wires serving to connect said calling and called stations, and a service wire serving to connect said preselector circuits thereof, in combination, in each of said first calling and called stations a "notification of call" signal producing means including inductive coupling means arranged between the respective preselector circuit and one of said first and second wires, for causing transmission of calling pulses emanating from said second calling station to said one of said first and second wires connecting said first calling and called stations while said call relay of said calling station is in shunted condition, so that during a conversation taking place between said first calling and called stations an audible "notification of call" signal corresponding to said calling pulses of said second calling station is transmitted to said first calling and called stations.

3,158,695
STEREOPHONIC SYSTEM
Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed July 5, 1960, Ser. No. 40,761
4 Claims. (Cl. 179—100.1)



1. Apparatus for transducing a time varying acoustic field from a larger volume to a smaller volume displaced from said larger volume comprising a volumetric array of microphones disposed about four sides of and above a pick-up volume within said larger volume and substantially corresponding to the dimensions of said smaller volume, said microphones all being directed outwardly of said pick-up volume with the microphones being sensitive to sound waves impinging upon said pick-up volume from the exterior thereof but being relatively insensitive to any sound waves within the pick-up volume which tend to impinge on the microphones, a volumetric array of loudspeakers arranged in said smaller volume substantially in spacial correspondence to corresponding microphones of said pick-up volume, and means for transmitting the output of each microphone of said pick-up volume to the corresponding loudspeaker of said smaller volume for recreating in said smaller volume substantially the acoustic field which would have been effectively perceived by a listener in the pick-up volume of said larger volume.

3,158,696
TAPE RECORDER
Paul F. Hayner, Nashua, N.H., Daniel Blitz, Boston, Mass., and Kenneth E. Mayo and Edgar R. Bernier, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 3, 1961, Ser. No. 80,068
5 Claims. (Cl. 179—100.2)



1. A signal actuated tape recording mechanism wherein the recording tape is not moved past the recording head except in the presence of a signal to be recorded, said mechanism including

a signal input to parallel electrical paths, one of said electrical paths being connected to actuate the recording mechanism and the other of said parallel paths being connected to the recording head to transmit the incoming signal thereto for recording on tape passing thereby, said other path having a delay line therein to slow the transmission of said signal to said recording head until after said recording mechanism has been actuated and tape is moving past said recording head at proper recording speed,

said mechanism including a continuously rotating capstan connected to a continuously rotating flywheel, said flywheel being motor driven through a point drive contact at sufficient power to overcome friction, said rotating capstan being connected to a takeup tape reel through a slip drive mechanism whereby in the absence of further friction, tape would be wound on the reel,

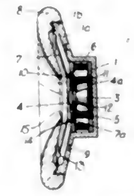
a counter-rotating capstan, said counter-rotating capstan having a slip friction drive to the tape supply reel to exert a substantially equal and opposite torque on the tape whereby said tape does not move under the influence of said rotating capstan,

a spring urged pad for urging said tape against said recording head to thereby compensate for any difference in torque to said tape by said capstans,

a signal responsive pinch roller mechanism for exerting additional forward torque to said tape to cause movement thereof, said pinch roller mechanism consisting of an armature with rollers on both ends, each positioned to engage the tape, and to be urged against said capstans, said armature being first energized by a fast acting solenoid consisting of an impulse actuated start coil and thereafter by a low-power consumption hold coil, said armature being actionable in the reverse direction by a reverse coil which urges the other of said rollers against said counter-rotating capstan for rapid reverse winding of the tape,

and a tape reservoir for supplying tape for transmission past the recording head before the takeup and supply reels have reached operating speed, said tape reservoir comprising a tape loop carriage having a spring balanced roller guide positioned centrally thereon and adapted for transverse movement, a plate on one side of said carriage and the tape supply reel housing on the other side of said carriage, grooves in said plate and said supply reel housing adapted to receive said roller guide and permit translational movement thereby, tape from said supply reel passing over one of the rollers on said roller guide, thence past the recording head and over the other of said roller guide rollers before being wound on the takeup reel, whereby torque on said tape in one direction will move the tape loop carriage in the other direction to thereby provide an amount of tape for movement past the recording head before the takeup and supply reels have reached operating rotational speed.

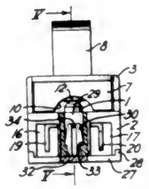
3,158,697
TWO-SYSTEM DYNAMIC EARPHONE
Rudolf Görike, Vienna, Austria, assignor to Akustische u. Kino-Geräte Gesellschaft m.b.H., Vienna, Austria
Filed Apr. 4, 1962, Ser. No. 185,157
Claims priority, application Austria, Apr. 28, 1961, A 3,350/61
4 Claims. (Cl. 179—116)



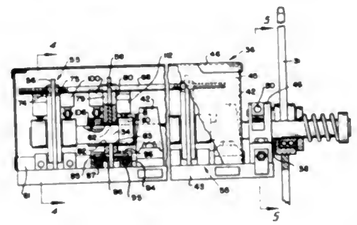
1. A dynamic earphone which comprises at least one earpiece having a portion adapted to contact a human ear, said portion defining an annular cavity, said earpiece incorporating inner and outer actuating systems which are concentrically arranged relative to each other and comprise each a diaphragm and a movable coil energizable to actuate said diaphragm, said inner system being designed for a preferential reproduction of relatively high tones and said outer system being designed for a preferential reproduction of relatively low tones, said diaphragm of said outer system extending into said cavity.

3,158,698
ELECTRIC SLIDE SWITCH WITH SHIELDED TERMINALS
Dudley H. Campbell, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1961, Ser. No. 137,898
4 Claims. (Cl. 200—16)

4. An electric slide switch comprising an insulating base member, fixed contacts mounted on top of said base member in a row extending lengthwise thereof, electric terminals mounted on the bottom of said base member and joined to said contacts, a movable contact slidable along said row of contacts, a housing covering said contacts and secured to said base member, and an insulating plate member normally engaging the bottom of the base member, one of said members being provided with a pair of parallel longitudinal channels receiving said terminals and having open ends, the central portion of said one member between the channels having a socket facing the other of said members and provided inside with shoulders, and said other member having a projection extending vertically into said socket and provided with shoulders fitting over said socket shoulders to connect the plate member to the base member.



3,158,699
CAM OPERATED GANG SWITCH ASSEMBLY WITH ROTATABLY MOUNTED AND MANUALLY ADJUSTABLE SUPPORTING PLATE MEANS
Karsten Vegsund, Burnaby, British Columbia, Canada, assignor to Canadian Forest Products Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Nov. 26, 1962, Ser. No. 239,953
5 Claims. (Cl. 200—18)

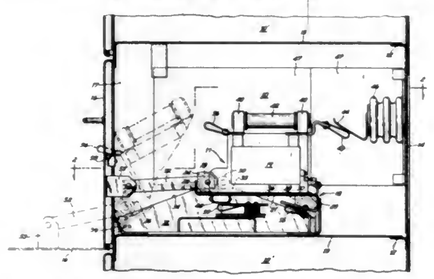


1. Control apparatus for operating any selected one of a plurality of electrical circuits, comprising a shaft mounted for angular rotation from a zero position, means connected to the shaft through which said shaft can be rotated from the zero position and adapted to permit the return of the shaft to the zero position after a selected circuit has been operated, a plurality of cams fixedly mounted on the shaft, a support plate rotatably mounted on the shaft adjacent each cam, means for individually adjusting the support plates around the shaft and retaining said plates in the adjusted positions, and a micro switch mounted on each plate adapted to control one of said circuits and having a depressible plunger projecting therefrom into the path of the cam adjacent said plate to be depressed by the latter cam during rotation of the shaft, each switch being operated when its plunger is depressed, said switches being located in different angular positions around the axis of the shaft and having their plungers depressed by their respective cams upon predetermined angular movement from said zero position of the respective cams.

3,158,700
MOUNTING ASSEMBLY FOR DRAWOUT SWITCHGEAR UNIT HAVING TRACK FOR FORWARDLY TILTING UNIT IN DISCONNECTED POSITION

Frederick W. Packard, Canonsburg, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Mar. 10, 1961, Ser. No. 94,787
11 Claims. (Cl. 200—50)

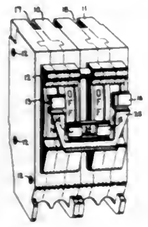


1. In a horizontal drawout switchgear assembly, an enclosure having a front access panel movable from a closed position to an open position and stationary disconnect contacts on the interior thereof, a switchgear unit having disconnect contacts for cooperatively engaging said stationary disconnect contacts, drawout means coupled to said switchgear unit for moving said unit out of engagement with said stationary disconnect contacts and from a connected position adjacent said stationary disconnect contacts to a disconnected position adjacent said front access panel, and guide means for supporting and guiding said switchgear unit in its movement between its connected and disconnected positions, said guide means supporting said switchgear unit in a substantially horizontal manner when it is in its connected position and in a forwardly tilted manner when it is in its disconnected position adjacent said front access panel, said guide means including means adjacent said front access panel for preventing movement of said switchgear unit outwardly of said enclosure.

3,158,701
MULTIPLE CIRCUIT BREAKER ASSEMBLY

Herman A. Nadeau, Forestville, Conn., assignor to General Electric Company, a corporation of New York

Filed July 31, 1962, Ser. No. 213,702
2 Claims. (Cl. 200—50)

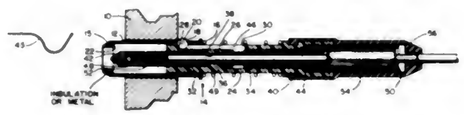


1. A multiple circuit breaker assembly comprising:
(*a*) four circuit breakers in side-by-side alignment in a row, each of said circuit breakers having a top wall and a handle projecting therefrom, each of said handles having an "on" position and an "off" position spaced apart a predetermined distance, all of said handles being in alignment when in said "on" and said "off" positions respectively,
(*b*) means rigidly connecting said circuit breakers together in said side-by-side relation,
(*c*) the first and second circuit breakers in said row having a common line terminal and separate load terminals,
(*d*) the third and fourth circuit breakers in said row having a common line terminal and separate load terminals,
(*e*) a rigid handle tie bar interconnecting said handles of said second and third circuit breakers for simultaneous operation,
(*f*) a generally U-shaped rigid handle tie member of sheet metal material interconnecting said handles of said first and fourth circuit breakers, said U-shaped handle tie member having its bight portion extending parallel to and substantially co-planar with said first handle tie bar, the legs of said U-shaped handle tie member being of greater length than said predetermined distance between said "on" and "off" positions of said handle, to permit operation of said first and fourth circuit breaker handles to said "on" position while said second and third circuit breaker handles remain in said "off" position,
(*g*) each of said legs of said U-shaped handle tie member having a notch therein opening outwardly of said U-shaped handle tie member,
(*h*) said handles of said first and fourth circuit breakers having grooves therein receiving portions of said handle tie member and cooperating with said notches to retain said handle tie member in assembled relation on said handles when said circuit breakers are in said side-by-side relation.

3,158,702
PATCHCORD CONNECTOR

Richard J. Vanderbilt, Rumson, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed Nov. 15, 1961, Ser. No. 152,439
11 Claims. (Cl. 200—51)



1. A plug connector comprising an elongated hollow insulating sleeve having at least one longitudinal opening therein, a pair of metallic elements disposed in a spaced end-to-end relationship within said sleeve, an elongated sleeve member disposed coaxially of said insulating sleeve and movable with respect thereto along the longitudinal axis thereof, and a contact element disposed within said longitudinal opening and movable therein along the length thereof upon movement of said sleeve member to limit relative movement of said insulating sleeve and sleeve member in one direction and to establish electrical contact with one of said metallic elements upon relative movement of said insulating sleeve and said sleeve member in an opposite direction.

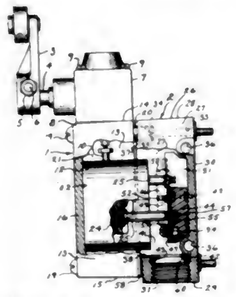
3,158,703
CONTROL STATION COMPRISING IN COMBINATION A RECEPTACLE WITH REMOVABLY PLUGGED-IN SWITCH UNIT

Woodrow A. De Smidt, Whitefish Bay, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 12, 1962, Ser. No. 187,076
3 Claims. (Cl. 200—51)

1. A plug-in limit switch comprising the combination of:
a junction box receptacle having an open front side and a lead-in opening for introducing circuit wires therein;

a terminal block of insulating material mounted in said receptacle with a central channel extending across the face thereof, said channel being in alignment with said lead-in opening to receive circuit wires;
a set of resilient connectors mounted upon said terminal block and being disposed on opposite sides of said channel, each connector having one end anchored with respect to the terminal block for electrical junction with a circuit wire and extending from the anchored end in a form coiled upon itself to terminate in a movable end facing the open front of the junction box receptacle, which end is deflectable in a direction toward and away from said open front;
a bias spring means disposed between the back of each



resilient connector and said terminal block to urge the movable end of the connector toward the open front of the box receptacle;
a limit switch unit mountable upon said junction box receptacle including a switch mechanism, terminals for such mechanism, and an open back facing the open front of said junction box receptacle when mounted thereon;
and a set of conductive jumper posts electrically secured to said switch mechanism terminals which protrude out of the open back of said switch unit and engage the movable ends of said resilient connectors upon mounting the switch unit upon the junction box receptacle.

3,158,704
ELECTRIC SWITCH WITH FREE-FLOATING CONTACT LEVER

Wesley T. Sorenson, West Hartford, Conn., assignor, by mesne assignments, to Seasons Unlimited, Inc., West Hartford, Conn., a corporation of Connecticut

Filed May 18, 1962, Ser. No. 195,738
13 Claims. (Cl. 200—67)

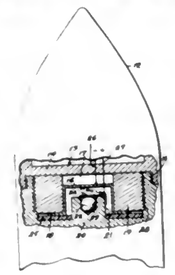


1. An electric switch comprising a case, a pair of spaced apart contacts in said case, a pair of spaced apart fulcrums in said case intermediate said contacts, a contact lever made of a single piece of electrically conductive metal, said lever being movable slideably and pivotably on both of said fulcrums simultaneously, a slot in said lever, and a spring biased actuating element mounted movably in said case, a portion of said actuating element extending through said slot and moving freely between said fulcrums, the movement of said actuating element causing said lever to move rectilinearly in respect of said case and pivotally in respect of said fulcrums.

3,158,705
COMBINATION GRAZE AND IMPACT SWITCH

Robert W. Bliss, Champaign, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Dec. 4, 1962, Ser. No. 242,336
2 Claims. (Cl. 200—61.08)



1. A combination graze and impact switch for closing a projectile electric firing circuit and including a laminated assembly secured in said projectile, said assembly comprising a crushable member; a first electrical conducting member, a spacing element disposed between said crushable member and said first conducting member whereby said crushable member is spaced from said first conducting member to form an air gap therebetween; a second electrical conducting member; a nonconducting member between said first conducting member and said second conducting member whereby said second conducting member is spaced from said first conducting member, whereby upon a direct target impact of said projectile, said crushable member is crushed against said first conducting member to cause said first conducting member to deform and contact said second conducting member to close said switch; and a graze actuated means carried by said second conducting member comprising a steel ball housed in said second conducting member and a leaf spring connected at one of its ends to said second conducting member and normally retaining said steel ball against movement out of said second conducting member, said steel ball, upon projectile graze, moving out of said second conducting member against the bias of said spring to contact said first conducting member and close said switch.

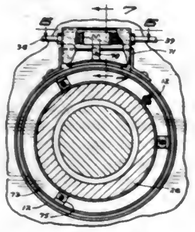
3,158,706
PNEUMATIC TIRE PRESSURE DIFFERENTIAL SENSING DEVICE

David Craig, 3854 Unity Ave. N., and Kenneth J. Goodrie, 5424 Unity Ave. N., both of Minneapolis, Minn.

Filed Oct. 23, 1962, Ser. No. 232,446
3 Claims. (Cl. 200—61.22)

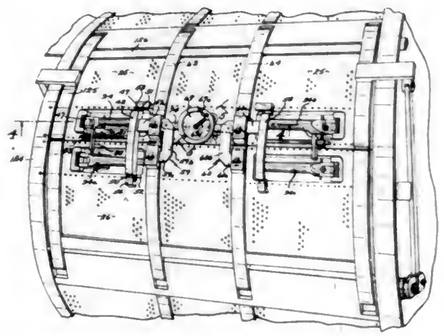
1. A tire pressure sensing device in connection with a pair of pneumatic tires having in combination,
a housing having a chamber therein,
a pair of axially aligned spring pressed bellows,
a member disposed between said bellows spacing the adjacent end portions thereof,
a plate member, means in said housing suspending said plate member to tilt the same,
said first mentioned member engaging said means to tilt said plate member responsive to axial movement of said bellows,

a contact member, said plate member being spaced above said contact member to engage the same upon being tilted, and



means providing communication between said bellows and said tires respectively for passage of air therebetween.

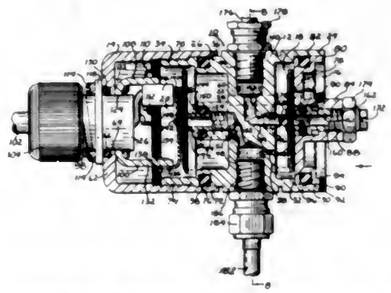
3,158,707
DOOR INTERLOCK
William C. Files, Cincinnati, Ohio, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,422
14 Claims. (Cl. 200—61.64)



1. In a latching and locking mechanism for a door movable between open and closed positions in a door frame, said mechanism including a latch bolt movably mounted on said door, said frame having a retainer socket in alignment with the path of movement of said bolt so as to receive an end of said bolt in door-latching position, a handle carried on said door, means operatively connecting said handle and said bolt whereby, upon handle swing, said bolt is moved to latched or unlatched positions, clamping means carried on said door and movable to retain said handle when said handle is moved to door-latched position, a rotatable member also carried on said door, a toggle linkage, one end of said toggle linkage being connected to said rotatable member and the other end to said clamping means, and means for rotating said rotatable member whereby said toggle linkage is actuated, and said clamping means is moved to handle-clamping position.

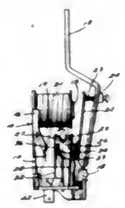
3,158,708
ICING DETECTION APPARATUS AND SYSTEM
Andrew J. Nelson, Stratford, and John Butka, Trumbull, Conn., assignors to Butkin Tool and Manufacturing Corporation, Milford, Conn., a corporation of Connecticut
Filed Feb. 28, 1961, Ser. No. 92,410
10 Claims. (Cl. 200—83)

9. For use in an ice detection apparatus, a switch control unit comprising: a casing having a switch chamber and a pressure regulating chamber; a passage connecting said chambers whereby the pressures therein remain substantially equal; an outlet port adapted to have tube means that communicates with a source of vacuum connected thereto; said outlet port communicating with said pressure regulating chamber; means in said pressure regulating chamber for maintaining the pressure therein at a predetermined level; an inlet port adapted to have tube means that communicates with a location being monitored for the formation of ice connected thereto; said inlet port



communicating with said pressure regulating chamber through a small diameter port; an expansible and contractible switch actuating means in said switch chamber and having one side subject to the pressure therein; passage means freely connecting said inlet port with the other side of said switch actuating means and to subject said other side to the pressure in said port; said switch actuating means being arranged to contract whenever the pressure differential across its sides is zero and to expand whenever it reaches a predetermined level.

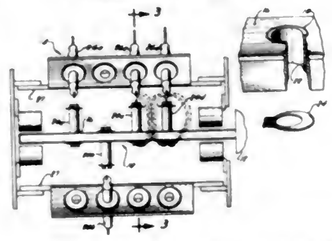
3,158,709
ELECTROMAGNETIC RELAY ASSEMBLY FOR INDICATING UNBALANCE OF A VIBRATING MACHINE
Samuel A. Findley, Bronson, and William B. Dull, Coldwater, Mich., assignors to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Jan. 4, 1962, Ser. No. 164,299
2 Claims. (Cl. 200—87)



1. An assembly for indicating a condition of unbalance in a vibratory machine comprising
(*a*) a support frame,
(*b*) a magnetizable core carried by said support frame
(*c*) a coil wound about said core,
(*d*) an armature having one end held by said support frame and its opposite end disposed in confronting relation to siad core in sufficiently close proximity to be attracted by said core upon energization of said coil,
(*e*) a first switch arm carried by said support frame and resiliently biasing said opposite end portion of said armature away from said core,
(*f*) a second switch arm carried by said support frame in close proximity to said first switch arm,
(*g*) a third switch arm carried by said support frame and in electrical contact with said second switch arm to provide a normally closed switch therewith, and
(*h*) an actuating arm abutting said armature and positioned to move said armature into closer proximity to said core,
said first switch arm being positioned to open said normally closed switch when said actuating arm moves said armature into closer proximity to said core.

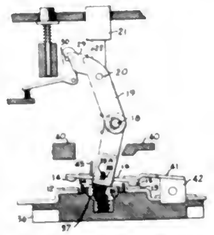
(*e*) magnetically operable means operable upon said contact bridging member when in said closed circuit position to tilt said contact bridging member about the engagement of one of said contact portions with the corresponding one of said stationary contacts to move the other of said contact portions away from the other of said stationary contacts whereby to substantially increase the electrical impedance between said stationary contacts.

3,158,710
CODE MECHANISM HAVING A PERMANENT MAGNET SLIDABLY RECEIVED IN AN APERTURE IN A MAGNETIC MEMBER
Edgar H. Paglee, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Jan. 29, 1962, Ser. No. 169,405
7 Claims. (Cl. 200—87)



7. A device for storing a code comprising a bar of magnetic material having at least one aperture therethrough, a permanent magnet slidably received within said aperture and having a length greater than the length of said aperture, and means adjacent each end for maintaining said magnet within said aperture.

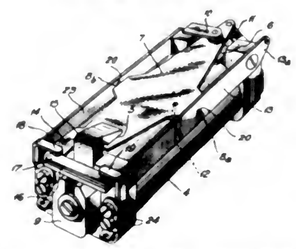
3,158,711
CURRENT LIMITING CIRCUIT BREAKER
Benjamin A. Piteo, Forestville, Conn., assignor to General Electric Company, a corporation of New York
Filed Aug. 23, 1962, Ser. No. 218,945
3 Claims. (Cl. 200—87)



1. An electric circuit breaker comprising:
(*a*) a support,
(*b*) at least two stationary contacts supported on said support in spaced apart electrically isolated relation,
(*c*) a movable contact bridging member movably supported on said support and having a pair of contact portions engageable with said stationary contact respectively,
(*d*) means for moving said movable contact member between an open position in which said contact portions are out of engagement with said stationary contacts and a closed position in which said contact portions are in engagement with said stationary contacts, and

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3,158,712
ELECTROMAGNETIC RELAY HAVING SEVERAL RIGID CONTACTS
Wladimir de Fligue, 203 Rue d'Aulnay, Plessis-Robinson, France
Filed Nov. 29, 1962, Ser. No. 240,868
Claims priority, application France, Jan. 17, 1962, 885,057
4 Claims. (Cl. 200—87)

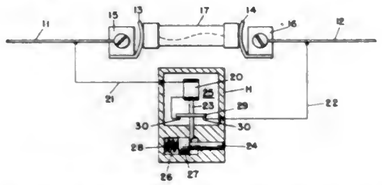


1. In an electromagnetic relay comprising an elongated flat armature having two ends and two surfaces, pivoting means for supporting said armature around a substantially medial transverse axis, means providing electromagnetic forces for tilting said armature about said axis in one direction and means for providing restoring forces for tilting said armature about said axis in the reverse direction, at least one of said means for providing forces acting on both said ends of said armature, means for restricting the displacements of said armature when said armature is tilted, a first rigid contact surface carried by one of said ends of said armature on one of said surfaces thereof, two adjacent rigid contact surfaces carried by the other of said ends of said armature on the other of said surfaces thereof, said two adjacent contacts being symmetrically disposed with respect to a plane which is perpendicular to said axis and said first rigid contact surface being disposed so that the aforementioned perpendicular plane passes through said first contact surface, and three stationary rigid contact members respectively cooperating with said first and two adjacent contact surfaces.

3,158,713
APPARATUS FOR INDICATING AN OPEN ELECTRICAL CIRCUIT
Gerald Margulies, 9130 Bradford Road, Silver Spring, Md.
Continuation of application Ser. No. 58,861, Sept. 27, 1960. This application May 22, 1963, Ser. No. 285,187
1 Claim. (Cl. 200—87)
(Granted under Title 35, U.S. Code (1952), sec. 266)

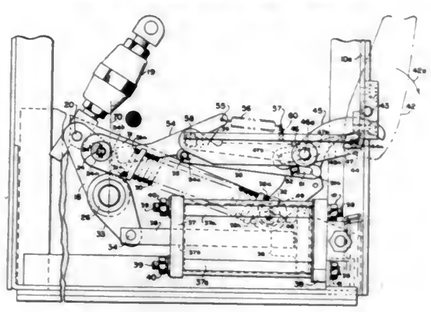
Apparatus for visually indicating that an electrical load circuit is open which comprises:
(*a*) an electromagnet formed of a coil and having a core movable from a forward position to a retracted position when the coil is energized,
(*b*) a parallel circuit between the coil and the load circuit having a switch therein formed of a contactor fixed to said core and a pair of contacts,
(*c*) said switch being closed when the core is in its forward position,

(*d*) a pin mounted for movement in a path normal to said core,
(*e*) said pin having a flange portion and an elongate portion extending therefrom,
(*f*) said flange portion having a side wall and an end wall generally normal to each other,
(*g*) spring means positioning the flange side wall to abut the end of the core and prevent its movement to the forward position in order to maintain the switch open,



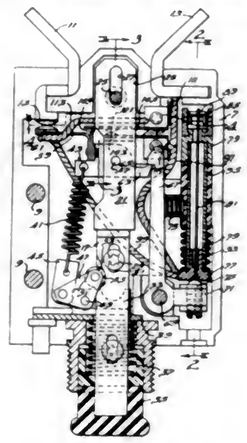
(*h*) said pin being movable against the spring means to adjust the position of the flange and permit the core to ride over the end wall of the flange and advance to its forward position and close the switch and
(*i*) means for holding the flange in this position until the coil becomes energized by current passing through the parallel circuit and the core moves to its retracted position whereby the pin is moved by the spring means to a position indicating that the load circuit is open.

3,158,714
SPRING-CLOSE HIGH SPEED BREAKER
James C. Craig, Mount Ephraim, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1961, Ser. No. 93,805
14 Claims. (Cl. 200—106)



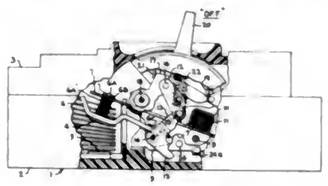
3. In combination, a pair of cooperating contacts movable between an engaged and a disengaged position, toggle means movable between an extended and a collapsed position operatively connected to said cooperating contacts, manual charging means, cam means abutting said charging means, spring means mounted between said toggle means and said cam means, said spring means being adapted to move said toggle means to said extended position in response to actuation of said charging means, latch means abutting said toggle means to retain said toggle means in said collapsed position during the charging operation of said spring means, releasing means connected between said latch means and said cam means for moving said latch means out of engagement with said toggle means, said releasing means including a lost motion mechanism to release said latch means from said toggle means when said closing spring means is fully charged.

3,158,715
ELECTRIC SWITCH INCORPORATING AN AUTOMATIC CIRCUIT BREAKER
Richard C. Ingwersen, Jackson, Mich., assignor, by mesne assignments, to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware
Filed Jan. 18, 1961, Ser. No. 83,502
7 Claims. (Cl. 200—116)



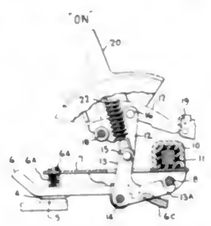
5. An electrical circuit breaker comprising a pair of terminals, a fixed main contact electrically connected to one of said terminals, a movable main contact engageable with said fixed contact, a releasable operating mechanism for effecting separation of the main contacts, current responsive means electrically connected to said movable contact and to the other one of said terminals operable upon the occurrence of a predetermined electrical condition to effect release of the operating mechanism, a pair of separable shunt contacts, one of said shunt contacts being electrically connected to said movable contact, the other of said shunt contacts being connected to the other one of said terminals, and means on the operating mechanism for closing said shunt contacts upon separation of said main contacts to provide a conductive path between said movable contact and said other terminal shunting said current responsive means.

3,158,716
ELECTRIC CIRCUIT BREAKER
Leonide P. Koval, Far Rockaway, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 17, 1962, Ser. No. 210,375
4 Claims. (Cl. 200—116)



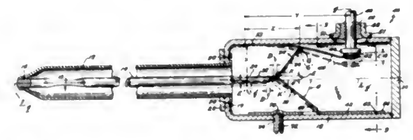
1. An electric circuit breaker comprising:
(*a*) a support,
(*b*) at least one movable contact arm pivotally supported on said support,
(*c*) operating means for operating said movable contact arm between open and closed circuit positions, said operating means comprising a releasable toggle-supporting member pivotally supported on said support,
(*d*) upper toggle links pivotally connected to said releasable support at one end,
(*e*) a pair of lower toggle links pivotally connected to said movable contact arm at one end,
(*f*) a knee pin interconnecting said upper and lower toggle links,
(*g*) a handle member pivotally supported on said support,
(*h*) an operating spring having one end connected to said handle member and its other end connected to said knee pin of said toggle linkage,
(*i*) latch means normally restraining said releasable toggle-supporting member in latched position and operable in response to predetermined current conditions to release said releasable toggle-supporting member,
(*j*) stop means rigidly attached to said support and spaced from said pivotal connection of said toggle links to said contact arm, and
(*k*) said lower toggle links including means engaging said stop means following release of said releasable means and maintaining said toggle linkage in a partially collapsed position following release of said releasable means.

3,158,717
ELECTRIC CIRCUIT BREAKER INCLUDING STOP MEANS FOR LIMITING MOVEMENT OF A TOGGLE LINKAGE
Charles L. Jencks, Avon, and Frank H. Murphy, Hartford, Conn., assignors to General Electric Company, a corporation of New York
Filed July 18, 1962, Ser. No. 210,641
4 Claims. (Cl. 200—116)



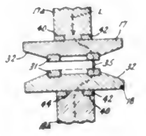
1. An electric circuit breaker comprising:
(*a*) a support,
(*b*) at least one movable contact arm pivotally supported on said support;
(*c*) operating means for operating said movable contact arm between open and closed circuit positions,
(*d*) said operating means comprising a releasable toggle supporting member pivotally supported on said support,
(*e*) a pair of interconnected toggle links having one end pivotally connected to said movable contact arm and the other end pivotally connected to said releasable support,
(*f*) a handle member pivotally supported on said support,
(*g*) an operating spring having one end connected to said handle member and its outward end connected to the knee of said toggle linkage,
(*h*) latch means normally restraining said releasable toggle link support in latched position and operable in response to predetermined current conditions to release said releasable toggle support,
(*i*) a pivot pin pivotally supporting said contact arm on said support, and
(*j*) said toggle linkage having means rigidly connected thereto engaging said pivot pin following release of said releasable means and maintaining said toggle linkage in a partially collapsed position.

3,158,718
MOTION AMPLICATION SWITCH MEANS
Henry J. McCarrick, Middleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,733
28 Claims. (Cl. 200—137)



26. A motion amplifying device comprising a substantially Y-shaped member having a base leg and a pair of intersecting diverging interconnected legs connected at their intersection to said base leg; said base leg being connected at its free end with means movable under predetermined conditions; one of said diverging legs being connected to support means to restrain longitudinal movement thereof; the other of said diverging legs extending at an angle greater than 0° but less than 180° to an actuator member and being connected to an actuator member at a portion spaced from one end of said actuator member to impart amplified movement of said movable means to said actuator member, said actuator member being mounted on said support means in spaced relation to said one of said diverging legs.

3,158,719
CONTACT STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER
George Polinko, Jr., Levittown, and Democritos J. Veras, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed Apr. 3, 1962, Ser. No. 184,705
8 Claims. (Cl. 200—144)



1. An electric circuit interrupter comprising:
(*a*) an axially-extending conductive rod,
(*b*) a pair of separable contacts, one of which is electrically and mechanically joined to said conductive rod,
(*c*) said contacts having arc-initiating regions between which an arc is drawn upon separation of said contacts and arc-running region which are displaced in a laterally-outward direction with respect to said axially-extending rod from said arc-initiating regions,
(*d*) current-directing means for forcing the net current flowing through said contacts and an arc present at any point on said arc-initiating regions to follow a loop-shaped path which bows in a laterally-outward direction with respect to said axially extending rod

in the immediate vicinity of said arc to provide a laterally outwardly acting magnetic force on said arc,

(*e*) said current-directing means comprising a recess formed in the conductive structure immediately behind one of said arc-initiating regions and generally aligned with said one arc-initiating region, said recess extending in a laterally inward direction behind said one arc-initiating region to at least the laterally-innermost edge of said one arc-initiating region,

(*f*) said current-directing means also comprising an insert of high resistivity material compared to that of the surrounding material located in said recess to force most of the current flowing through the associated contact to follow a path that bypasses said recess, said insert engaging the opposite walls of said recess to resist deformation of the material adjacent said recess,

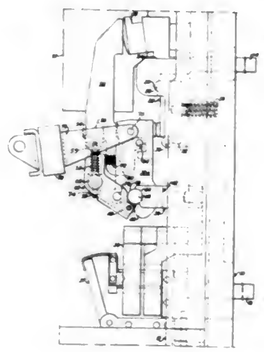
(*g*) the shape of said recess being such that the path of the net current through said associated contact to an arc located at any point on its arc-initiating region is more effectively lateral in the vicinity of the arc than if the net current could flow directly across said recess.

3,158,720

CONTACT ASSEMBLY HAVING HINGE MEANS UTILIZING ELECTRODYNAMIC FORCES OF CURRENT FLOW THERETHROUGH

Dominik Wiktor, Irvington, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware

Filed Feb. 17, 1961, Ser. No. 89,977
6 Claims. (Cl. 200—146)



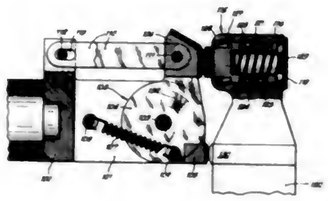
1. A circuit breaker including first and second terminal members, a movable contact arm, a companion contact mounted on said first terminal member, said contact arm being pivotally mounted on said second terminal member for movement from a closed position abutting said companion contact to an open position, a driving link connected to said arm for moving said arm between said open and said closed position, a current loop being formed by said terminals, said companion contact and said contact arm in its closed position, said second terminal being provided with a hinge element including a hinge shaft, said contact arm being provided with a complementary hinge element partially encompassing said shaft and providing electrical connection and mechanical articulation thereto, said complementary hinge element having an opening formed therein directed away from said current loop, said hinge elements being driven together in a given direction by electrodynamic forces due to high currents flowing in said loop, and spring means normally biasing said hinge elements together in said given direction.

3,158,721

MAIN AND AUXILIARY CONTACTS WHEREIN MAIN RELATIVELY STATIONARY CONTACT IS PIVOTALLY MOUNTED TO MOVE IN OPPOSITE DIRECTION TO SWITCH ARM

Augustine P. Delaney, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed June 11, 1962, Ser. No. 201,604
2 Claims. (Cl. 200—146)



1. In a circuit interrupter, the combination of, a stationary contact assembly, a pivotally mounted switch arm, a movable contact assembly mounted on the free end of said switch arm, said movable contact assembly including a first main contact and a first auxiliary contact, said first auxiliary contact being mounted for movement on said switch arm in a direction toward said stationary contact assembly, a first biasing means urging said first auxiliary contact in said direction, stop means limiting the movement of said first auxiliary contact, said stationary contact assembly including a contact member mounted for limited rotational movement about an axis intermediate its ends, a second main contact being mounted adjacent one end of said contact member and a second auxiliary contact mounted adjacent the other end thereof, said first and second main contacts and said first and second auxiliary contacts being respectively engageable when said switch arm is in a closed position, a second biasing means urging said contact member to rotate in a direction which moves the other end of said contact member toward said switch arm, said first biasing means exerting a greater torque on said contact member than said second biasing means so that said other end of said contact member will initially rotate in a direction away from said switch arm after a switch opening operation begins, the engagement of said first auxiliary contact with said stop means a lowing said contact member to rotate toward said switch arm so that said main current carrying contacts will move in opposite directions and said auxiliary arcing contacts will be held in engagement for a limited time when said switch arm begins pivoting toward an open position.

3,158,722

COIL STRUCTURE FOR PRODUCING A MAGNETIC FIELD IN AN ELECTRIC CIRCUIT INTERRUPTER

Joseph William Porter, Media, Pa., assignor to General Electric Company, a corporation of New York

Filed Nov. 14, 1962, Ser. No. 237,532
11 Claims. (Cl. 200—147)

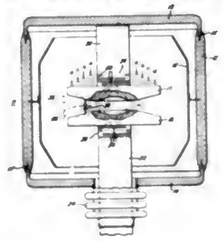
1. In an electric circuit interrupter that comprises a pair of electrodes between which an arc is adapted to be established,

(*a*) an elongated rod of highly conductive material for supporting one of said electrodes,

(*b*) means for electrically connecting said one electrode to said rod at the inner end of the rod,

(*c*) current-directing means for forcing current flowing through said rod to or from said one electrode to follow a generally helical path in the region of said rod adjacent said one electrode,

(*d*) said current-directing means comprising a plurality of slots extending transversely of said rod at locations closely spaced-apart longitudinally of said rod in the region adjacent said one electrode,



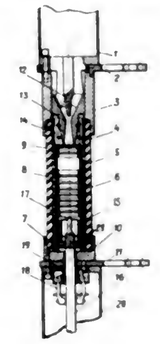
(*e*) each of said slots extending only partially through said rod to leave a portion of said rod intact in a region of said rod longitudinally aligned with said slot.

3,158,723

ARC-EXTINGUISHING MEANS FOR POWER SWITCHES HAVING STATIONARY AND MOVABLE CONTACT PIECES

Gerhard Buechner, Zurich, Switzerland, assignor to Oerlikon Engineering Company, Zurich, Switzerland, a corporation of Switzerland

Filed Mar. 3, 1961, Ser. No. 93,252
Claims priority, application Switzerland, Mar. 16, 1960, 2,985/60
1 Claim. (Cl. 200—148)



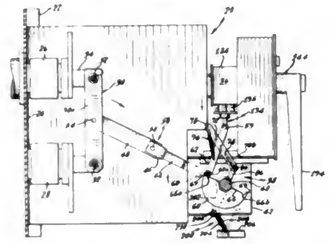
An electric switch including stationary and movable contact pieces and arc-quenching means, each of said contact pieces comprising a central arc-carrying contact and an annular current-carrying contact surrounding and spaced from said central contact; said current-carrying contacts being adapted to engage to close the switch and to disengage to open the switch, disengagement of said current-carrying contacts engendering an arc between them; said arc-quenching means including an annular nozzle surrounding said current-carrying contacts, means for directing a fluid blast through said nozzle toward the interior of said annular contacts in order to shift the arc from said current-carrying contacts to said arc-carrying contacts, and means for directing a fluid blast along the axis of said current-carrying contacts after said nozzle-directed blast has been effective long enough to shift the arc, said fluid-directing means including a piston movable with said movable contact piece and a cylinder within which said piston moves, the interior surface of the cylinder having annular recesses so spaced that during the initial portion of the piston stroke in the direction of switch opening the contact between the piston and cylinder is greater than during the later portion of the piston stroke, said cylinder being filled with quenching fluid and being provided with a communication between the region behind the piston and said annular nozzle, whereby the blast created during said initial portion of piston travel is directed mainly through said communication while the blast created during the later portion of piston travel is mainly past said piston in the axial direction of the cylinder.

3,158,724

QUICK-MAKE, QUICK-BREAK ELECTRIC DISCONNECT SWITCH

Gerald J. Emerick, Spotswood, and Ernest W. Stohr, Scotch Plains, N.J., assignors to Federal Pacific Electric Company, a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,783
6 Claims. (Cl. 200—153)



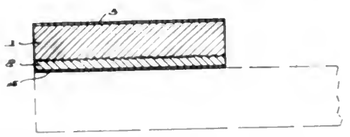
1. A switch having a first terminal and a second terminal, a contact arm pivotally mounted on said first terminal for movement between open circuit and closed circuit positions, a companion contact mounted on said second terminal for engagement by said contact arm in the closed circuit position, a toggle connected to said contact arm and operable into an erect condition for moving the contact arm into its closed circuit position, and into a collapsed condition for moving the contact arm into its open position, stored energy operating means for said toggle including an energy storage spring, means for charging the spring, and a releasable detent for holding the spring in its charged condition, said energy storage means having uni-directional power strokes alternating with return recharging strokes and means including a reversing mechanism coupling said stored energy means and said toggle for moving the contact arm between said open and said closed circuit positions, and vice versa, in response to successive uni-directional power strokes of said stored energy means.

3,158,725

WELDABLE ELECTRIC CONTACT WITH READILY DISCERNABLE IMPROVED WELDING FACE

Alfred J. Schutz, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Dec. 26, 1962, Ser. No. 248,181
2 Claims. (Cl. 200—166)



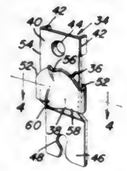
1. A weldable electric contact comprising a body having a silver-colored contact face and a back, and a layer of silver solder containing copper united with said back and having a copper-film welding face providing a more wettable and flowable surface for the welding operation,

said faces also being clearly distinguishable from each other only by their colors, whereby the weldable side of the contact is readily discernable.

3,158,726
SWITCH BUTTON RETAINER FOR VEHICLE DOORS

Robert C. Morgan, 1310 S. Quincy St., Topeka, Kans.

Filed Feb. 7, 1962, Ser. No. 171,676
4 Claims. (Cl. 200—169)

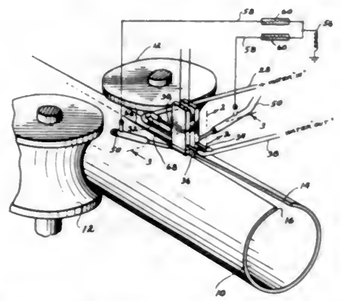


1. A two-part switch button retaining and releasing attachment for a vehicle door frame having a door responsive button-equipped vehicle interior light switch mounted, as is customarily done, on said door frame comprising: an elongated adapter plate having a fastener accommodating hole at an upper end and also having a keyhole slot therein at a lower end of the plate, a median substantial lengthwise portion of said plate being outwardly offset, said offset portion being provided with a hole which functions to accommodate a switch button, and a switch button depressing and hold-down clip slidingly keyed on the outwardly offset portion of the plate, said clip having a concavo-convex detent aligned with and functioning to receive and temporarily seat the button and in this manner to engage and to forcibly depress the button but also to use and rely on the button as a ways and means of holding said clip in the position to which it has been moved, said clip having a free edge which is adjacent to and cooperates with said detent and is designed and expressly adapted to merely rest atop an intended surface of the switch button in such a manner that when the button is in its normal projected on position the button cooperating with said edge holds the detent up and causes it to assume an out-of-the-way button-freeing and releasing position.

3,158,727
WELDING USING A PLASMA ARC

Augustin L. Woelz, Rua Texas 309, Sao Paulo, Brazil

Filed July 3, 1962, Ser. No. 207,290
10 Claims. (Cl. 219—60)

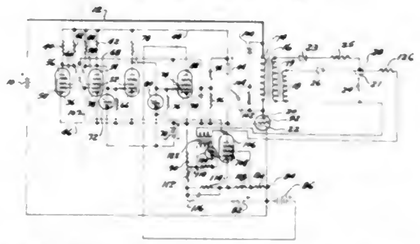


1. The method of welding a seam extending along opposed edges of two elongated metal portions which comprises advancing said portions while their edges pass along the line of the desired seam and past a weld point, firmly urging said edges together as they reach the region of the weld point, establishing a plasma arc in contact with said metal portions at a distance substantially in advance of said weld point and coupling high frequency energy to said metal portions through said plasma arc to establish a current flow along the edges of said metal portions to heat said edges to substantial depth and to melt said edges to weld said edges together at said region of welding, the frequency of said electric energy being sufficiently high to restrict current flow substantially to the edges of said metal portions.

3,158,728
HIGH VOLTAGE-REVERSE POLARITY EDM

Robert S. Webb, Bloomfield Hills, Mich., assignor to Elox Corporation of Michigan, Troy, Mich., a corporation of Michigan

Filed July 26, 1960, Ser. No. 45,336
7 Claims. (Cl. 219—69)

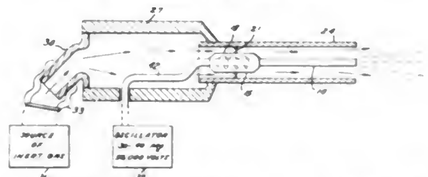


1. The process of eroding a conductive workpiece by means of electrical discharges across a gap between the workpiece and an electrode which comprises, maintaining a dielectric coolant in the gap, supplying to the gap power pulses of a polarity such that the polarity of the electrode is positive and the polarity of the workpiece is negative, said pulses of a voltage magnitude at a predetermined level in excess of 150 volts, and maintaining sufficient gap spacing between said electrode and workpiece to provide an anodic discharge area on said electrode substantially greater than the cathodic discharge area on said workpiece.

3,158,729
PLASMA TORCH

Jenoe Gross, 655 Montgomery St., Brooklyn, N.Y.

Filed Jan. 26, 1962, Ser. No. 169,043
5 Claims. (Cl. 219—75)



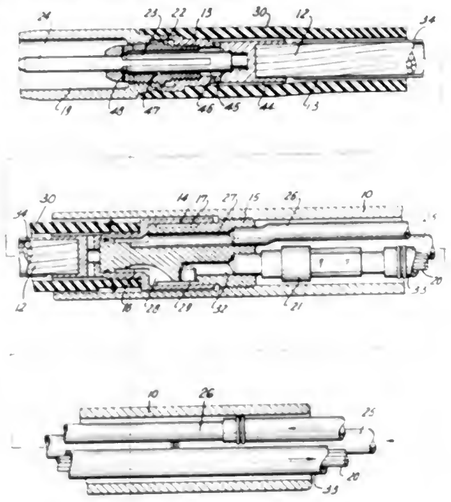
1. A plasma torch comprising an electrically conducting metallic rod, gas source means for effecting a flow of inert gas axially thereof and surrounding said rod, and electrical means for providing a high frequency magnetic field in said rod of an intensity sufficient to effect vibration thereof to an extent to ionize an inert gas flowing in contiguity with said rod and to effect a heat manifestation thereof.

3,158,730
GAS SHIELDED ARC TORCH

Clifford W. Hill, Mountainside, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 8, 1962, Ser. No. 236,775
3 Claims. (Cl. 219—75)

1. Gas shielded arc torch comprising a handle having an insulated shell and a metallic insert inside said shell, a bundle of flexible solid metal wires having their rear ends secured to the front end of said metallic insert and extending longitudinally forward therefrom, an electrode contactor secured to the forward end of said wires, means for supplying electric current to said metallic insert on through said wires to an electrode in said contactor, a gas directing nozzle surrounding said electrode, and a

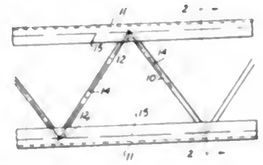


flexible insulating sheath surrounding said wires and forming an annular gas passage therebetween extending from said handle to said nozzle, said wires being sized in diameter from 0.030 in. minimum to 0.090 in. maximum, and numbered to produce a total cross-sectional metal area of from 9,000 to 350,000 circular mils for an overall diameter of the bundle of from 0.11 to 0.67 in.

3,158,731
LIGHT WEIGHT TRUSSES AND APPARATUS FOR THE FABRICATING OF SAME

Richard Allan Gordon Cape, Lachine, Quebec, Canada, assignor to Dominion Bridge Company, Limited, Montreal, Quebec, Canada

Filed Jan. 17, 1961, Ser. No. 83,228
19 Claims. (Cl. 219—79)

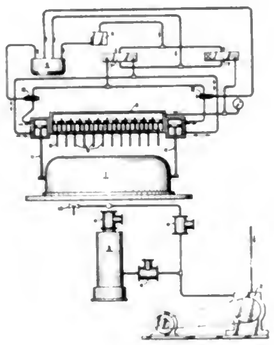


1. A machine for fabricating automatically a light weight truss having a pair of chords of strip material and a wire web welded to the said chords, the said machine comprising a pair of cold forming units to shape the said chords from a continuous strip of material, the said cold forming units being located on either side of the centre line of the machine, a web bender on said centre line of the machine, the said web bender having a series of slidable tongues adapted to bend the said wire web into a continuous series of V shapes in the plane of said pair of chords, means to guide the said chords into juxtaposed relation with the apices of the said V shaped formed web, a drive for said web bender and said cold forming units, the said drive continuously moving the said pair of chords through the said machine, a pair of resistance welding means located beyond the said web bender, the said welding means welding the apieces of the said V shaped web to the said pair of chords, a carriage on which the said welding means are mounted, means associated with said carriage to advance the carriage during the welding operation between pairs of opposing points of said web and the adjacent chords, means for disconnecting said carriage advancing means from the said drive when the welding operation is complete, and means to return the said carriage when the said carriage is disconnected from the drive means for the start of another welding cycle.

3,158,732
METHOD OF DIFFUSION JOINING IN VACUUM OF METALS, ALLOYS AND MATERIALS DIFFERENT IN KIND

Nicolay Fedotovich, Ul. Gorkovo 44, Apt. 10, Moscow, U.S.S.R.

Filed Feb. 27, 1961, Ser. No. 94,958
3 Claims. (Cl. 219—117)



1. A method of joining to each other, metals, alloys and rare metals different in kind and for joining metals to non-metallic materials, said method comprising the steps of subjecting the articles to be joined to a high vacuum of the order of 10^{-2} to 10^{-7} mm. Hg, heating said articles to a temperature greater than the recrystallization temperature but less than the fusion temperature of one or more of said articles and applying a clamping pressure to said articles of the order of from one to two kg. per sq. mm. but below deformation pressure, whereby diffusion of atoms and molecules occurs between said articles to join said articles together.

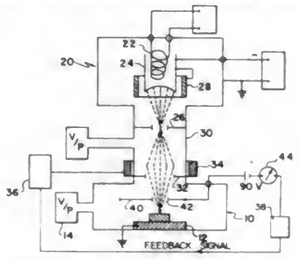
3,158,733
FOCUS CONTROL FOR ELECTRON BEAM HEATING

Clifton B. Sibley, Needham, Mass., assignor, by mesne assignments, to National Research Corporation, a corporation of Massachusetts

Filed Sept. 12, 1962, Ser. No. 223,125
4 Claims. (Cl. 219—117)

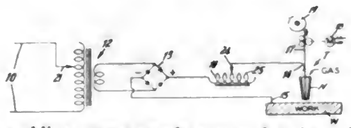
1. In an electron beam machine for performing metal machining operations such as welding, melting, etching and the like, wherein a self-accelerated gun emits a beam of electrons to impinge on a small area of the workpiece with a high watt density whereby low energy electrons are thermionically emitted, the improvement comprising: a pickup electrode located in line-of-sight relation to the area of the workpiece subject to impingement by the beam, means for biasing the electrode positive to the workpiece

so that the electrode attracts said thermionically emitted electrons and electric circuit means including indicator



means connected to said electrode for generating an output signal varying as a function of degree of focus of said beam of electrons.

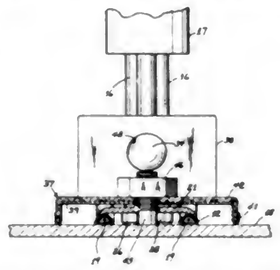
3,158,734
GAS SHIELDED-METAL ARC WELDING
August F. Manz, Newark, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 13, 1961, Ser. No. 95,158
6 Claims. (Cl. 219—131)



1. A welding power supply system for short-circuiting type metal transfer between an electrode wire and the work toward which such wire is fed in circuit therewith, comprising a transformer having an A.C. input circuit, a full wave rectifier the input circuit of which is connected by means of a relatively low impedance circuit to the output circuit of said transformer, the D.C. output circuit of said rectifier being adapted to be connected directly to the input circuit of a sigma welding set-up, said rectifier output circuit containing a series connected filter choke the inductance of which is selected to smooth the welding current wave form and provide adequate speed of response under short-circuiting sigma welding conditions, said transformer comprising preselectable means for adjusting the open circuit output voltage thereof through a range of 10 to 30 volts, inclusive, in increments no greater than 0.5 volt each to yield suitable operator control over the welding operation, the resulting characteristic being such that undesirable spatter and erratic arc action are minimized by virtue of the fact that such characteristic has a minimum short-circuit current of $I_M=(400\pi rS)^{1/2}$ in which r=radius of the wire electrode, and S=surface tension of the molten metal transferred from such wire to the work to thereby minimize objectionable spatter of the so-transferred molten metal.

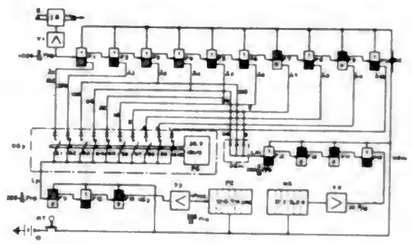
3,158,735
WELDING PREHEATER
Nicholas J. Burger, Silver Spring, Md., and Eberhard W. Meng, Washington, D.C., assignors to Electro-Therm, Inc., Laurel, Md.
Filed Apr. 29, 1963, Ser. No. 276,418
16 Claims. (Cl. 219—342)

3. In a welding preheater, a heating element having a pair of spaced leg portions, a plurality of spaced plate-like cross members rigidly secured at their ends to and connecting said leg portions, said cross members lying in planes extending parallel to the plane of said leg portions, at least one of said cross members being formed with an aperture adapted to receive on upstanding anchoring stud on a subjacent plate to be preheated, housing means positioned over and covering said heating element and being provided with an aperture adapted to receive



said upstanding stud, and detachable means cooperable with the stud and preheater for clamping the preheater to the plate.

3,158,736
AUTOMATIC METERING DEVICE
Peter J. I. Toth, Bombachstrasse 25, Zurich 10/49, Switzerland
Filed June 2, 1960, Ser. No. 33,505
4 Claims. (Cl. 235—164)



1. Apparatus for counting the total unit volume of fluid passing through a conduit or the like and the total price of that volume based upon a price per unit volume comprising, in combination,

(*a*) impulse generating means for producing an impulse for each predetermined volumetric quantity passing through said conduit or the like,

(*b*) binary counting means coupled to said impulse generating means and having a plurality of bistable elements connected in cascade,

(*c*) each bistable element having an output line on which impulses appear equal in number to one half the number of impulses applied to it by the preceding bistable element in the cabin of cascade-connected bistable elements, said impulses on the respective output lines of said bistable elements representing at any instant bits in a binary number,

(*d*) a first impulse collector line,

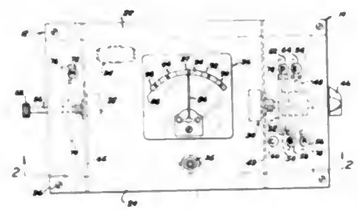
(*e*) switch means for connecting selected ones of said output lines to said first impulse collector line to thereby convert impulses on said output lines representative at any instant of bits in a binary number to impulses on said collector line which are cumulatively representative of a digital number,

(*f*) means for counting impulses on said first impulse collector line and for visually indicating the total price of fluid delivered through the conduit as a function of the number of impulses counted,

(*g*) a second impulse collector line connected to a plurality of said output lines from the bistable elements, and

(*h*) means for counting impulses on said second impulse collector line and for visually indicating the total volume of fluid delivered through the conduit as a function of the number of impulses counted by said last-mentioned counting means.

3,158,737
ELECTRO-MECHANICAL VALUE-AVERAGING INSTRUMENT
Haig D. Tarpinian, 1244 Bishop Road, Grosse Pointe Park 30, Mich.
Filed Jan. 30, 1962, Ser. No. 169,881
7 Claims. (Cl. 235—179)



1. An electro-mechanical value-averaging instrument for ascertaining the average of a multiplicity of quantities wherein each quantity represents one of a series of different pre-assigned values, said instrument comprising

an electrical circuit adapted to be connected to a voltage source and including

a totalizing potentiometer having a first resistance element connected across said voltage source and also having a first voltage pickoff member selectively movable intermittently step-by-step along said first resistance element for picking off therefrom a portion of the voltage drop thereacross,

a current-indicating meter having an indicating meter having an indicating scale graduated in said average values and having first and second connection terminals,

bridging resistor means connected across said voltage source,

said first terminal of said meter being connected to said bridging resistor means intermediate the connections of said resistor means to said voltage source,

an averaging variable resistor having a second resistance element connected at one end to said second meter terminal,

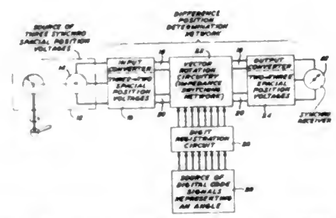
said averaging variable resistor having a second voltage pickoff member selectively movable intermittently step-by-step along said second resistance element and electrically connected to said first voltage pickoff member;

means for intermittently moving said first voltage pickoff member step-by-step in steps of predetermined fixed magnitudes of resistance forward and backward along said first resistance element, each such first voltage pickoff step spanning a resistance magnitude corresponding to one of said pre-assigned values,

and means for intermittently moving said second voltage pickoff member along said second resistance element,

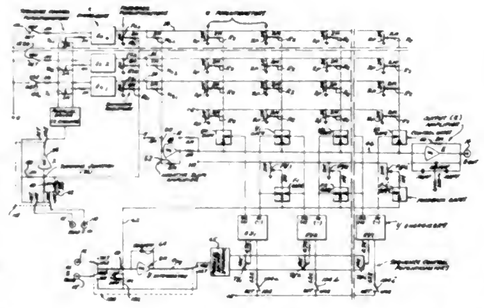
each such second voltage pickoff step also spanning a resistance magnitude corresponding to one of said pre-assigned values.

3,158,738
DIGITAL-TO-ANALOG COMBINATIONAL CONVERTERS
Sigmund B. Pfeiffer, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 21, 1957, Ser. No. 691,491
11 Claims. (Cl. 235—187)



1. Apparatus for producing output voltages representative of the difference between two shaft positions located at remote points comprising means for receiving spacial voltages representative of the position of a first shaft, means for receiving digital code groups representative of the position of a second shaft, voltage approximation means responsive to a plurality of the more significant code digits for simultaneously weighting said significant digits and modulating said spacial voltages in accordance with said weighting to produce voltage magnitudes indicative of the shaft position difference to a first approximation, and linear evaluation means responsive to the remaining code digits for receiving said first approximation voltages and simultaneously weighting said remaining code digits to adjust the magnitude of said first approximation voltages in accordance with said evaluation weighting to produce output voltages indicative of the shaft position difference.

3,158,739
THREE DIMENSIONAL FUNCTION GENERATOR
Hans K. Herzog, Bellevue, Wash., assignor to Boeing Airplane Company, Seattle, Wash., a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 82,838
26 Claims. (Cl. 235—197)



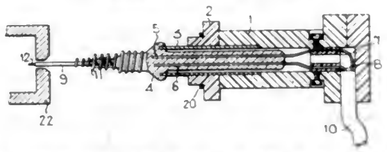
21. Computer means for interpolating for values of a function $z=f(y)$ between two predetermined values of z, comprising first and second conductors carrying the respective predetermined values for z, a computer output means, including sources of reference voltages representing the coordinate values of y for the respective predetermined values of z, controllable by an electrical value of y and operable to connect the computer output to the first and second conductor alternately in rapid sequence for time periods inversely proportional to the differences be-

tween the respective coordinate values of y and the instantaneous value of y, and means in the output detecting the time-weighted average of such applied values.

3,158,740
MASS SPECTROMETER SAMPLE INSERTION DEVICES

Robert Derek Craig, Bowdon, and Edward Willdig, Stretford, England, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed Aug. 30, 1962, Ser. No. 220,409
Claims priority, application Great Britain, Sept. 4, 1961, 31,744/61
3 Claims. (Cl. 250—41.9)

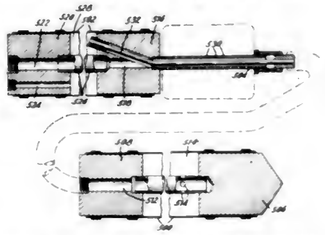


1. A sample insertion device for use in a mass spectrometer ion source comprising, a body portion, a heating element adapted to support said sample, and flexible spring means for attaching said heating element to said body portion so that when said device is inserted into said ion source the position of said heating element relative to said body portion can be adjusted in order that said sample may be located accurately within the ionization region of the ion source, and said sample can be heated.

3,158,741
URANIUM ORE DETECTION

John E. Skvarla, Tuxedo Park, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed June 26, 1961, Ser. No. 119,653
4 Claims. (Cl. 250—43.5)



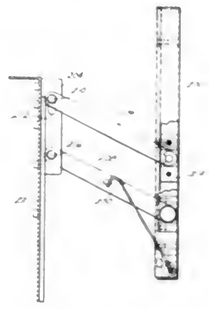
1. A method for the location of uranium-ore deposits comprising drilling a hole into the substrata region to be probed, evacuating a quantity of gas from the substrata region while preventing dilution of such gas by atmospheric air by sealing the hole at a point between the region being evacuated and the open end of the hole, passing the collected gas through a radon adsorber to collect radon present in the gas, and thereafter measuring the quantity of radon adsorbed by radiometric means for determining the gamma ray activity to provide a measure of the amount of uranium producing the radon.

3,158,742
X-RAY TABLE MOVABLE IN TWO MUTUALLY PERPENDICULAR DIRECTIONS WITH A RETRACTABLE RADIATION SHIELD

Frans Alfons Maria Morel, Antwerp, Belgium, and John J. Vlach, Concord, Mass., assignors, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Oct. 20, 1961, Ser. No. 146,498
5 Claims. (Cl. 250—54)

1. An X-ray table comprising a base, a table top carriage mounted on said base for movement back and forth along a first axis, and a table top mounted on the carriage and movable back and forth along a second axis at right angles to said first axis, wherein said base has a well formed on one side, and further including a radiation shield plus means pivotally attached to said base and said shield for supporting said shield so that it can nest in said well and also be moved upward and outwardly from said well into an elevated position to protect a radiologist standing next to the table, said means arranged to maintain said shield substantially vertical as it is moved into said elevated position.

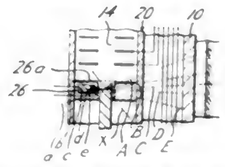


5. An X-ray table comprising a base, a table top carriage mounted on said base for movement back and forth along a first axis, a table top mounted on said carriage and movable back and forth along a second axis at right angles to said first axis, said carriage comprising a pair of slide rods on which said table top is slideably mounted for movement along said second axis, means for selectively moving said table top back and forth along said slide rods, said means comprising a pair of chains, means connecting the ends of one chain to one side of said table top, means connecting the ends of the other chain to the other side of said table top, sprocket means attached to said carriage and supporting said chains, said sprockets defining circuits of movement for said chains in a plane parallel to said table top, and reversible drive means for moving said chains in said circuits so that simultaneously both chains urge said table top in the same direction along said second axis.

3,158,743
SEMICONDUCTOR JUNCTION DEVICE FOR MONITORING RADIOACTIVITY IN A WELL LOGGING SONDE

John T. Dewan, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Feb. 23, 1961, Ser. No. 91,240
2 Claims. (Cl. 250—83.3)

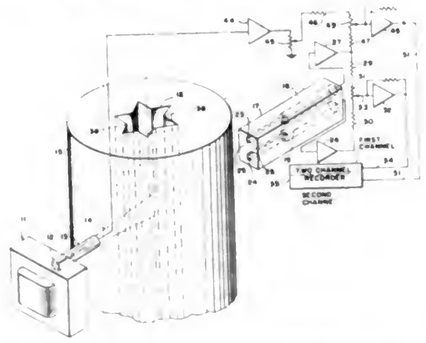


1. Radioactivity well logging apparatus comprising a pressure resistant housing adapted to be lowered through a well bore, a radiant energy detector in said housing comprising a junction-type semiconductor elongated in a direction transverse to its junction, means for supporting said semiconductor with its elongated dimension extending radially of said housing so as to be primarily sensitive to radiant energy directed radially with respect to the well bore, and means coupled with said detector for deriving indications primarily representative of radiant energy incident upon said semiconductor in said radial direction.

3,158,744
FLAW DETECTION APPARATUS USING TWO DETECTORS TO ASSURE UNBALANCE IN A COMPARISON CIRCUIT

Stanley Bernstein, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York

Filed Apr. 21, 1961, Ser. No. 104,649
5 Claims. (Cl. 250—83.6)



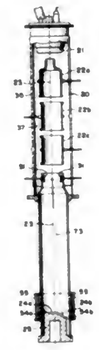
1. A flaw detection system comprising: a source of penetrating ray energy; means for supporting an object to be inspected for flaws; two penetrating ray detectors, said detectors being disposed relative to said source and to said support means such that said inspection object when mounted on said support means in interposed between said source and said detectors, whereby each of said detectors has an effective field of view on and through said inspection object; said detectors being spaced from each other along an imaginary line hereinafter referred to as the two-detector line; means for providing relative motion between said inspection object and said detectors having a translational component of motion parallel to said two-detector line and a cyclical component of motion in a plane perpendicular to said two-detector line; said relative motion providing means including means for constraining said translational component of motion to a magnitude equal to or less than twice the sum of the distance between the fields of view of said two detectors in the direction of said two-detector line and the length of said field of view in the direction parallel to said two-detector line, during each complete cycle of said cyclical component of motion; whereby no flaw in said inspection object can at any point in time simultaneously intercept the fields of view of both detectors without intercepting the field of view of solely one of said detectors at some other point in time.

3,158,745
X-RAY TUBE WITH MEANS TO SELECTIVELY DEFLECT THE ELECTRON BEAM TO PLURAL TARGETS

Gordon P. Stanhope, Berea, Ohio, assignor to General Electric Company, a corporation of New York

Filed Aug. 14, 1962, Ser. No. 216,794
1 Claim. (Cl. 250—99)

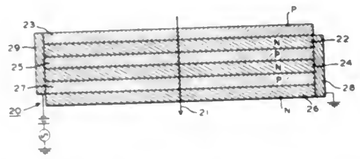
An X-ray tube comprising: an anode; a cathode; means for accelerating the electrons from said cathode in a beam to said anode; said anode having at least two distinct electron target surfaces defined by two planes intersecting at an angle, one of said planes being disposed perpendicular to the longitudinal axis of said X-ray tube deflecting electrodes disposed on either side of the path of said electron beam between said cathode and said anode for deflecting said electron beam between said two surfaces, means to selectively vary the direction of the deflection forces from said deflecting electrodes; an output X-ray tube window substantially transparent to X-radiation and cylindrical in shape circumscribing said anode, said cylindrical window being coaxial with the longitudinal axis of said X-ray tube; said electron accelerating means comprising a plurality of accelerating electrodes tapped off a resonant transformer providing an accelerating voltage of magnitude sufficiently great to generate a circumferential beam of X-rays when said electron beam impinges upon said perpendicular target surface and a conical beam when said electron beam impinges upon other of said target surfaces, but insufficiently great to permit said electron beam and the X-rays generated thereby to pass through said anode and out of said tube at any point other than through said cylindrical window.



3,158,746
LIGHT MODULATION IN A SEMICONDUCTOR BODY

Kurt Lehovec, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Dec. 27, 1960, Ser. No. 78,590
3 Claims. (Cl. 250—199)

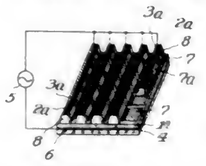


1. Apparatus for modulating the intensity of a light beam by an electric signal, said apparatus comprising a semiconducting body having at least two PN junctions, means for projecting a light beam substantially perpendicular to said PN junctions, a space-charge layer at each PN junction capable of transmitting said light, a region in said semiconducting body adjacent said space-charge layer which is less transmissive of light than said space-charge layer, said PN junctions biased in the blocking direction by an applied electric signal, means to vary the magnitude of said blocking bias whereby the width of the space-charge layer is varied to effectively alter the width of the less transmissive region, thereby causing a modulation in the intensity of the light passing essentially perpendicular to said PN junctions.

3,158,747
SOLID STATE LIGHT AMPLIFYING DEVICE WITH SINTERED PHOTOCONDUCTOR

Mitsuru Oikawa, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Apr. 3, 1961, Ser. No. 100,344
Claims priority, application Japan, Apr. 9, 1960, 21,034/60
4 Claims. (Cl. 250—213)

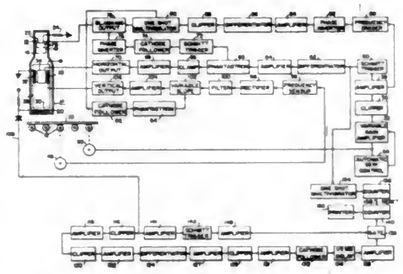


1. A solid state light-amplifying apparatus, which comprises a heat resistant insulating post having on its top surface a photoconductive layer sintered in situ thereon, a first electrode on said layer and a second electrode on a side surface of said post, said photoconductive layer being positioned between and contacting said first and second electrodes, an electroluminescent layer having a third electrode on one surface, said insulating post being adhesively bonded on said one surface of the electroluminescent layer with the second and third electrodes in electrical contact, a transparent electrode positioned on the opposite side of said electroluminescent layer and a voltage source connected across said first electrode and said transparent electrode, said voltage being applied through said photoconductive layer and said second electrode to said electroluminescent layer.

3,158,748
ELECTRONIC SURFACE INSPECTION SYSTEM EMPLOYING FULL FRAME SCANNING

John Francis Laycak and Angelo Domina, Pittsburgh, Pa., and Reginald David Langman, Moorgate, Rotherham, England, assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 21, 1961, Ser. No. 153,901
14 Claims. (Cl. 250—219)

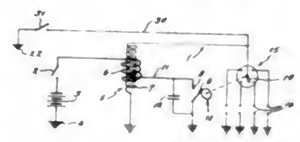


1. In apparatus for detecting defects on the surface of moving material in which the defects have a different optical appearance than the remainder of the material, the combination of means including an electron-optics device for full frame scanning an image of the surface of said moving material with an electron beam wherein the beam scans transverse and substantially parallel to the direction of movement of the material, the output of the electron-optics device being a pulsed signal in which a pulse is produced each time the electron beam scans over a defect, and means for counting at least part of the pulses at the output of said eletcron-optics device to obtain an indication of the surface condition of said material.

3,158,749
ANTI-THEFT DEVICE

Jack S. McAllister, 467 N. 73rd St., Centerville, Ill.

Filed May 6, 1960, Ser. No. 27,337
2 Claims. (Cl. 307—10)

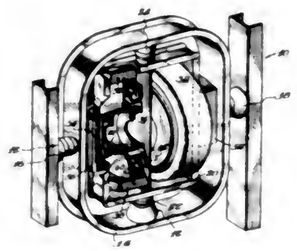


1. In combination with an internal combustion engine ignition system having a coil and a distributor, said distributor having a casing housing a distributor arm, said distributor arm being electrically connected, by a conductor extending through said casing, with the secondary of the coil, an anti-theft device comprising a grounding conductor electrically connected at said distributor to, and physically encompassed within a common insulating sheath with, the conductor electrically connecting said secondary and said distributor arm, and a switch electrically connected to said grounding conductor and to ground whereby said grounding conductor can selectively be connected to and disconnected from ground.

3,158,750
ENERGY STORAGE DEVICE

John B. Roes, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 10, 1961, Ser. No. 88,515
4 Claims. (Cl. 307—84)

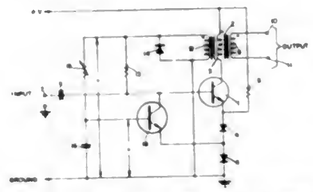


1. An energy storage device comprising a frame, a pair of rotors, means on said frame for rotatably supporting said rotors in coaxial relationship, magnetic means carried by each rotor for establishing a series of magnetic fields, a pair of synchronous armature windings on said frame, one of said synchronous armature windings being disposed in the magnetic fields of one of said rotors, and the other of said windings being disposed in the magnetic fields of the other rotor, coupling means connected to said armature windings for supplying alternating current thereto and receiving alternating current therefrom, means connected to said coupling means for supplying alternating current thereto under a first set of conditions and thereby rotating said rotors at an angular velocity determined by the frequency of the alternating current, means coupled to said supplying means and responsive to the angular velocity of said rotors for gradually increasing the frequency when said frequency is below a predetermined maximum, the armature windings being connected so that the rotors rotate in opposite directions, and means connected to said coupling means for receiving alternating current therefrom under a second set of conditions.

3,158,751
BLOCKING OSCILLATOR WITH DELAY MEANS IN FEEDBACK LOOP

Alan H. Nelson, Downey, Calif., assignor to North American Aviation, Inc.

Filed Sept. 22, 1959, Ser. No. 841,597
9 Claims. (Cl. 307—88.5)

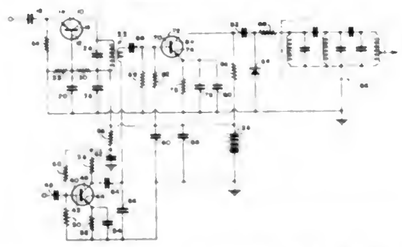


1. A monostable blocking oscillator comprising an electron valve having a first electrode, a second electrode, and a control electrode, said control electrode connected to be responsive to input trigger pulses for initiating conduction in said electron valve, a primary winding connected to said second electrode, a secondary winding inductively coupled to said primary winding, a first current path including a resistor for coupling said secondary winding to said control electrode to feed back to said control electrode at least a portion of the voltage developed across said primary winding for maintaining conduction in said electron valve, and a second current path for connecting said secondary winding to said control electrode for cutting off conduction in said electron valve, said second current path comprising a second electron valve having at least a first electrode, a second electrode, and a control electrode, said second electrode of said second electron valve being connected to the control electrode of said first electron valve and said first electrode of said second electron valve being connected to the first electrode of said first electron valve, a time delay means having an input sensitive to at least a portion of the voltage developed across said secondary winding and having an output which is delayed in time a predetermined amount from said sensed input voltage, said time delay means having its input responsively connected to said secondary winding and its output connected to said control electrode of said second electron valve; the control electrode of said second electron valve being responsive to the output of said time delay means for terminating conduction in said first electron valve.

3,158,752
FREQUENCY SPECTRUM GENERATOR UTILIZING DIODE AND RC COMBINATION TO EFFECT AMPLIFICATION AND HARMONIC GENERATION

Dean A. Strief, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed May 1, 1961, Ser. No. 106,904
4 Claims. (Cl. 307—88.5)

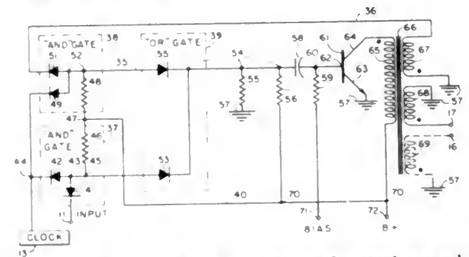


1. In a generator for producing signals having a relatively wide spectrum of harmonic frequencies sequentially spaced from a given carrier frequency at intervals equal to a given modulation frequency, the combination comprising: a high frequency carrier source; a relatively low frequency modulation source; means for supermodulating said high frequency carrier source with signals from said low frequency modulation source; a solid state semiconductor device including a forward-biased diode junction; a resistive and capacitive load circuit; means connecting said supermodulated source in circuit with said device and said resistive and capacitive load circuit for saturably driving said diode junction, and means for deriving from across said device and said load a wide spectrum of harmonics, said spectrum being centered at said carrier frequency and spaced at intervals equal to said modulation frequency and having a relatively constant amplitude over a wide range.

3,158,753
DIGITAL SHIFT REGISTER USING OUTPUT TRANSFORMER OVERSHOOT PULSE AS SEQUENCING TRIGGER PULSE

Cyrus J. Creveling, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Continuation of abandoned application Ser. No. 803,036, Mar. 30, 1959. This application July 28, 1961, Ser. No. 132,256
3 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A digital shift register comprising first and second cascaded stages, each having an input and an output, each stage comprising an "or" gate having an output and at least two inputs, first and second "and" gates, each having an output and at least two inputs, the output of said first "and" gate connected to one of said "or" gate inputs and the output of said second "and" gate connected to another of said "or" gate inputs, a clock pulse source connected to one input of each of said first and second "and" gates, a regenerative amplifier connected to the output of said "or" gate, output means at the output of said first stage connected to said second stage for producing an output signal and an overshoot pulse, said overshoot pulse being produced at a time later than the beginning of said output signal, feedback circuit means connected between said output means and said second "and" gate, means in said second stage responsive to said overshoot pulse for operating said second stage at a time differing from the time of operation of said first stage by a time delay which is equal to a clock pulse length, whereby a shift is provided by each stage.

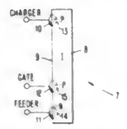
3,158,754
DOUBLE INJECTION SEMICONDUCTOR DEVICE

Hwa N. Yu, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 5, 1961, Ser. No. 143,132
13 Claims. (Cl. 307—88.5)

1. A signal translating device comprising a body of substantially intrinsic semiconductive material, a pair of opposite conductivity contacts, each disposed at respec-

tively opposite ends of said body, biasing means connected to said opposite conductivity contacts for producing injection of holes and electrons respectively into said body



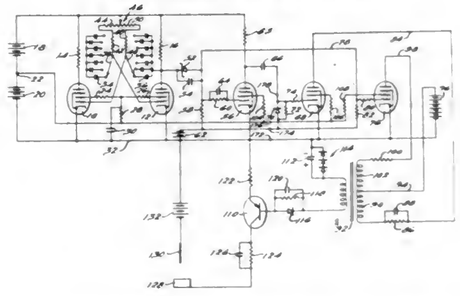
and at least one predetermined conductivity electrode making contact along a surface of said body between said end electrodes and forming thereby a junction within said body.

3,158,755

VACUUM TUBE-TRANSISTOR COUPLING CIRCUIT COUPLING DRIVE POWER FROM VACUUM TUBE TO POWER TRANSISTOR TO LOAD

Robert S. Webb, Bloomfield Hills, Mich. (1830 Stephenson Highway, Troy, Mich.)

Filed Dec. 18, 1961, Ser. No. 160,156
38 Claims. (Cl. 307—88.5)



1. A coupling circuit for connecting drive power from a periodically conductive, vacuum tube amplifier to at least one power transistor, having a base, emitter and collector, said transistor having a load and a power source connected in series across its emitter and collector and operable to receive input signals across its emitter and base comprising, a pluse transformer having its primary operatively connected to the output of said amplifier and its secondary connected across said base and emitter of said transistor, an inductance connected across said secondary for accelerating turn OFF of said transistor, and a biasing means connected in series with said secondary for maintaining said transistor nonconductive for a selected time duration after turn OFF signal.

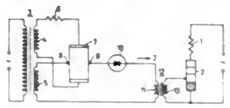
3,158,756

MAGNETIC-FIELD RESPONSIVE ELECTRIC SWITCHING DEVICE

Julius Brunner and Friedrich Kuhrt, Nurnberg, and Erich Rainer, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin - Siemensstadt, Germany, a corporation of Germany

Filed Feb. 26, 1962, Ser. No. 175,611
Claims priority, application Germany, Feb. 25, 1961, S 72,723
9 Claims. (Cl. 307—88.5)

1. A magnetic-field responsive electric switching device, comprising a Hall plate having an energizing circuit and having a Hall electrode circuit for providing a magnetic-field responsive Hall voltage; auxiliary alternating-voltage supply means; and a tunnel diode connected to produce an output pulse and disposed in said Hall electrode circuit in series with said voltage supply means, said voltage supply means having a voltage amplitude below the trigger voltage of said tunnel diode whereby an output pulse is produced when the sum of said Hall voltage and auxiliary voltage exceeds a value corresponding to said trigger voltage.

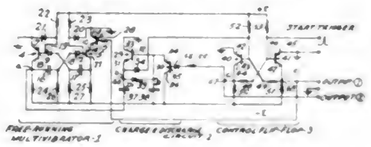


3,158,757

LONG INTERVAL TIMER CIRCUIT

John Rywak, Bells Corners, Ontario, Canada, assignor to Northern Electric Company, Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Apr. 23, 1962, Ser. No. 189,348
7 Claims. (Cl. 307—88.5)



1. A long interval timing circuit comprising in combination:

a free-running and a bi-stable transistor multivibrator, each having two states, said multivibrators having first, second, third and fourth transistors of the same conductivity, each having an emitter, collector and base electrode, the emitter electrode of the first, third and fourth transistor being grounded,

a circuit including a fifth and sixth transistor, the conductivity of the fifth transistor being opposite to the conductivity of the other said transistors, each transistor having an emitter, collector and base electrode; the base electrode of the fifth transistor being connected to the emitter electrode of the sixth transistor, means to ground the collector electrode of the fifth transistor,

a first and second capacitor having their first sides connected individually to the emitter electrodes of the fifth and sixth transistor respectively, with the second side of the first capacitor connected to the collector electrode of the first transistor, and the second side of the second capacitor connected to the load potential of the second and third transistors,

a first diode connected between the first sides of the capacitors, with the anode and cathode connected to the emitter electrodes of the fifth and sixth transistors respectively,

a second diode, poled in the same direction as the first diode, connected to the emitter electrode of the fifth transistor and to the base electrode of the third transistor,

a third diode with the anode connected to the base electrode of the sixth transistor and the cathode connected to the collector electrode of the third transistor through a resistor,

means for connecting the base electrode of the third and fourth transistor to a source of common potential,

a seventh transistor, of the same conductivity as the second transistor, having an emitter, collector and base electrode, with the collector electrode connected to the emitter electrode of the second transistor, the emitter electrode, through a diode with the cathode connected to the emitter electrode of the seventh transistor and the anode to the base electrode of the second transistor, to the base electrode of the second transistor, and the base electrode, through a resistor to the collector electrode of the fourth transistor,

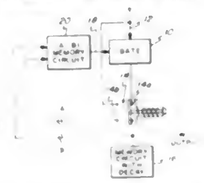
means for connecting the collector electrode of the sixth transistor to the load potential.

3,158,758

SWITCH APPARATUS

Paul E. Pearson, Jr., Scottsdale, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,565
8 Claims. (Cl. 307—88.5)



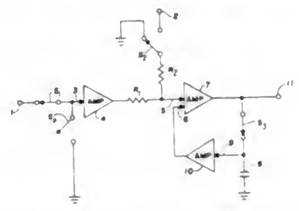
1. An electronic switch comprising circuit means for passing an applied signal continuously after application thereto of a certain signal level and until the conduction of said signal through said circuit means is interrupted, means for producing and applying to said circuit means a signal level proportional to the difference between two signals applied thereto, means for storing for a predetermined time a signal representative of the instantaneous output signal from said circuit means, switch means for applying on actuation a signal representative of the input signal to said circuit means to said means for producing a signal level, said switch means being connected to a closed series circuit with said circuit means only when not actuated, said means for producing a signal level receiving continually the signal stored by said signal storing means producing a signal level representing the difference between the stored signal subtracted from the signal representative of the input signal to said circuit means.

3,158,759

SYSTEM FOR SAMPLING, HOLDING AND COMPARING CONSECUTIVE ANALOG SIGNALS

Leslie L. Jasper, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 31, 1962, Ser. No. 234,359
2 Claims. (Cl. 307—88.5)



1. A system for comparing analog signals comprising differential amplifier means having two inputs and an output, feedback means coupling said output to one of said inputs, said feedback means including serially coupled switch means and amplifying means, said switch means being coupled to said output, storage means coupled to the junction between said switch means and said amplifying means, said switch means being operative to connect and disconnect said feedback means, whereby said differential amplifier means has a low and high gain respectively, means for applying an analog signal to the other of said inputs, said means for applying an analog signal to the other of said inputs including input switch means for sampling said analog signal and means having a high input impedance and a low output impedance coupling said input switch means to said other of said inputs, another input switch means coupled to said means having a high input impedance and a low output impedance, and switching means for coupling a reference potential to said means having a high input impedance and a low output impedance.

3,158,760

PHASE SHIFT SEMICONDUCTOR APPARATUS

Richard Taylor, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 25, 1963, Ser. No. 253,963
6 Claims. (Cl. 307—88.5)



1. A semiconductor phase shift device comprising:

a semiconductor element including a body of substantially intrinsic semiconductor material, a pair of opposite conductivity type contacts, one of said pair of contacts located at each end of said body for producing injection of holes and electrons respectively into said body, and at least two predetermined conductivity electrodes in contact with said body between said end contacts,

a first source of potential coupled to one of said end contacts,

a second source of potential connected to one of said electrodes,

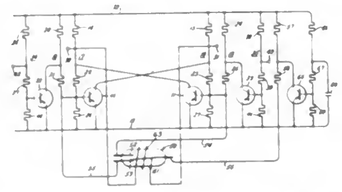
and a feedback circuit connected between said one of said end contacts and the other one of said electrodes for producting an oscillating output signal from said one of said end contacts.

3,158,761

LOGIC CIRCUIT UTILIZING A LATCH TYPE SWITCHING DEVICE AS A PERMANENT MEMORY ELEMENT

Earl R. Bullock, Palos Verdes Estates, Calif., assignor to General Electric Company, a corporation of New York

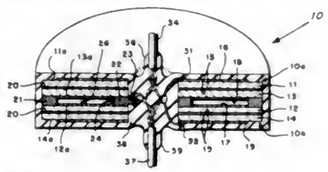
Filed Mar. 6, 1963, Ser. No. 263,170
13 Claims. (Cl. 307—88.5)



1. An electrical circuit shiftable between bistable conditions comprising; a pair of direct current supply terminals, a pair of electronic valves connected to be supplied from said terminals and cross-connected to define a bi-

stable circuit such that either of said valves may be in a high conduction state but not both simultaneously, means for shifting said circuit between its bistable conditions, a switch transferable between a pair of circuit controlling conditions, energizable means for transferring said switch between its conditions connected to be energized by currents of opposite polarity depending upon which of said valves is in a high conduction state, said switch being transferred to one or the other of its conditions depending upon the polarity of energization of said energizable means, said switch having a latching characteristic so that it remains in the condition to which it is transferred subsequent to deenergization of said energizable means, and a pair of bias circuits for said valves each operatable when in an effective condition to cause its associated valve to conduct to a greater extent than the other valve in response to application of power to said terminals, said switch controlling the effective conditions of said bias circuits such that a separate bias circuit is placed in an effective condition for each condition of the switch, said switch being in a condition effective to place a selected bias circuit in an effective condition when the valve associated with the selected bias circuit is last in a high conduction state prior to a power interruption.

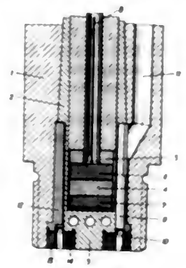
3,158,762
BILAMINAR TRANSDUCERS
John J. Horan, Willow Grove, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 27, 1962, Ser. No. 247,768
5 Claims. (Cl. 310—8.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a transducer,
a first relatively thin sensitive element in the form of an annular ring having exposed faces and inner and outer circumferential areas,
a second relatively thin sensitive element in the form of an annual ring having exposed faces and inner and outer circumferential areas,
an outer metallic support ring means secured to said outer circumferential areas and an inner metallic support ring means secured to said inner circumferential areas, said ring means being interposed between said first and second annular elements for supporting said elements and forming an air gap therebetween,
and electrode means formed on said exposed faces of said first and second annular elements.

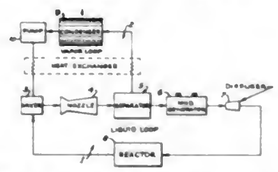
3,158,763
PIEZOELECTRIC GAUGE
Siegfried Busch, Graz, Rudolf Hatschek, Vienna, and Franz Pischinger, Graz, Austria, assignors to Hans List, Graz, Austria
Filed Dec. 5, 1961, Ser. No. 157,172
Claims priority, application Austria Jan. 2, 1961
5 Claims. (Cl. 310—8.7)

1. A piezoelectric pressure transducer, particularly for measuring pressure variations in the cylinders of internal combustion engines, comprising a casing, piezoelements in said casing, a head in said casing for transmitting pressure to the said piezoelements, said casing and head having a ring slot formed between the casing and the head, a membrane closing said ring slot and forming a torus over the entire width of said ring slot, said torus presenting an annular cross-section at least in its central portion with a center of said cross-section being located approximately in a seating of the membrane on the casing and the head, the said



membrane being ring-shaped forming a central perforation with outer and inner peripheral contact surfaces and positively clamped with its contact surfaces in the casing and the head, the front surface of the head being outwardly exposed at least in the area of the central perforation of the membrane.

3,158,764
TWO-FLUID MAGNETOHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of David G. Elliott
Filed July 25, 1962, Ser. No. 212,496
11 Claims. (Cl. 310—11)

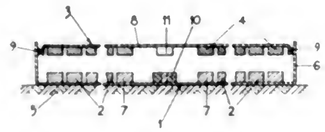


1. A method of producing electrical energy, characterized by:
(*a*) mixing a heated conductive liquid medium and a condensed vapor medium at a temperature to vaporize said condensate;
(*b*) expanding and accelerating the mixture thereby to impart high velocity to said liquid medium;
(*c*) separating the liquid medium from the vapor medium to form a liquid medium stream continuing to travel at high velocity;
(*d*) and passing said conductive liquid medium stream through a magnetic field to generate electrical energy.

3,158,765
MAGNETIC SYSTEM OF TRANSPORTATION
Geoffrey Richard Polgreen, Wendover, England, assignor to The General Electric Company Limited, London, England
Filed Aug. 25, 1959, Ser. No. 835,987
Claims priority, application Great Britain, Aug. 27, 1958, 27,516/58; Dec. 12, 1958, 40,162/58; Apr. 17, 1959, 13,179/59
12 Claims. (Cl. 310—12)

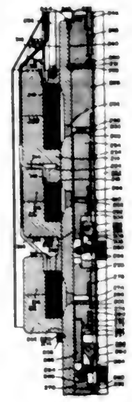
1. A system of transportation including at least one vehicle, a trackway with which said vehicle is arranged to cooperate, and means to propel the vehicle from place to place along the trackway, wherein permanent magnets

each having a constant flux are provided in the trackway and on the vehicle, the mutual repulsion between the permanent magnets on the vehicle and adjacent permanent magnets in the trackway being solely the function of the loaded weight of the vehicle and such that there is no



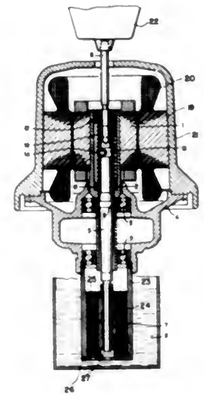
load bearing contact between the vehicle and the trackway, and wherein the trackway includes a substantially continuous, longitudinally-extending part which is raised with respect to the remainder of the trackway, the vehicle being provided with guidance means which are arranged to co-operate with said part.

3,158,766
GRIPPER TYPE LINEAR MOTION DEVICE
Erling Frisch, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1962, Ser. No. 191,218
13 Claims. (Cl. 310—14)



3. In a linear motion device, the combination comprising a housing of tubular configuration, a linearly movable element disposed in said housing, a stop member fixedly mounted on the inner wall of said housing in spaced relationship with said linearly movable element, said linearly movable element having a plurality of spaced teeth thereon, a gripper member, a pair of movable support members for said gripper member mounted in said housing adjacent said stop member, motive means for moving one of said support members toward and away from said stop member, means for pivotally mounting said gripper member on said support members, said last-mentioned means being formed to cause pivotal movement of said gripper member into and out of engagement with said teeth upon movement of said one support member relative to the other of said support members, and motion resisting means engaging said other support member for preventing the movement of said other support member during a portion of the movement of said one support member.

3,158,767
ELECTRIC SPINNING-POT MOTOR
Rudolf Schöning, Bad Neustadt an der Saale, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed May 9, 1961, Ser. No. 108,834
Claims priority, application Germany, May 17, 1960, S 68,546
7 Claims. (Cl. 310—75)

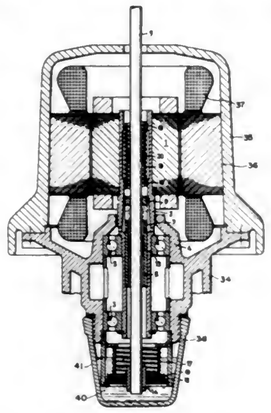


1. Electric spinning-pot motor comprising a vertical hollow rotor shaft, an inner shaft extending with radial clearance through said hollow shaft and having an upper portion protruding upwardly from said hollow shaft for supporting a spinning-pot, said inner shaft being displaceable in non-peripheral directions relative to said hollow shaft, an axially elongated helical spring surrounding said inner shaft within said hollow shaft, said spring having its ends torque-transmittingly joined with said hollow shaft at respective locations axially spaced from each other, said spring having a middle portion torque-transmittingly joined with said inner shaft and being laterally bendable between said two locations, whereby said spring forms an elastic centering means for said inner shaft as well as a coupling for transmitting torque to said inner shaft.

3,158,768
SPINNING-POT MOTOR
Siegfried Schönwald, Bad Neustadt an der Saale, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed May 9, 1961, Ser. No. 108,833
Claims priority, application Germany, May 13, 1960, S 68,497
10 Claims. (Cl. 310—157)

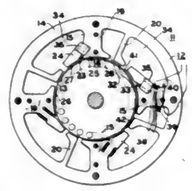
1. Electric spinning-pot motor comprising a vertical hollow rotor shaft, an inner shaft extending with radial clearance through said hollow shaft and having an upper portion protruding upwardly from said hollow shaft for supporting a spinning-pot, a torque-transmitting connection between said hollow shaft and said inner shaft for driving the latter, and universal pivot means on one of said shafts and engaging the other shaft, said pivot means being located near said torque-transmitting connection and defining substantially a center point about which said inner shaft is angularly deflectable in all directions relative to said hollow shaft, said inner shaft having a lower portion protruding downwardly from said hollow shaft, and

oscillation damping means glidingly engaging said lower portion of said inner shaft, and resilient return means



intermediate said shafts at a location above said pivot point for biasing said inner shaft toward the center of said hollow shaft.

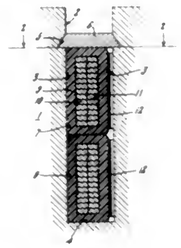
3,158,769
ECCENTRIC WINDING ALTERNATING CURRENT DYNAMOELECTRIC MACHINE
Wayne J. Morrill, % Electric Motors & Specialties Inc., Garrett, Ind.
Continuation of application Ser. No. 719,827, Mar. 7, 1958. This application Jan. 8, 1962, Ser. No. 164,758
17 Claims. (Cl. 310—172)



1. A pole piece for an alternating current motor, comprising, first, second, and third pole face portions disposed in that order on said pole piece, first and second energizing winding means energizable from an external source acting on said pole piece and establishing a first magnetomotive force at said second pole face portion and a second magnetomotive force of lesser magnitude at said third pole face portion, and third winding means establishing a magnetomotive force at said first pole face portion displaced in phase from said first magnetomotive force.

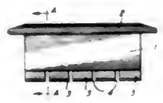
3,158,770
ARMATURE BAR VIBRATION DAMPING ARRANGEMENT
Almy D. Coggeshall and Joseph I. Whittlesey, Schenectady, and William L. Darby, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 14, 1960, Ser. No. 75,721
3 Claims. (Cl. 310—214)

1. A vibration-damped conductor bar assembly for an alternating current dynamoelectric machine comprising an armature core defining circumferentially spaced radially directed slots each having a flat-sided slot portion, an armature winding including at least one armature bar having a substantially flat-sided bar portion disposed in each of said slots and subject to electrical forces tending to cause vibratory radial movement of the armature bar in the slot, means retaining the armature bars against radial displacement from said slots, and leaf spring means disposed in each of said slots between one side wall of



the slot and an armature bar and exerting a transverse force against the side of the armature bar biasing the flat side portion of the bar into frictional engagement with said flat-sided slot portion to frictionally resist radial vibration of the bar in the slot.

3,158,771
FIELD SPIDER AND POLE PIECE FOR ELECTRICAL MACHINES
Karl Abegg, Zurich, Switzerland, assignor to Oerlikon Engineering Company, Zurich, Switzerland, a corporation of Switzerland
Filed Nov. 29, 1960, Ser. No. 87,730
Claims priority, application Switzerland, Dec. 8, 1959, 81,609/59
2 Claims. (Cl. 310—218)



1. In an electrical machine having a revolving field member comprising a field spider and pole pieces secured to said spider:

said spider being a one-piece element and each of said pole pieces being a one-piece element,

said spider being provided around it periphery with dovetail grooves and each of said pole pieces being provided along its inner side with a dovetail tenon for cooperation with one of said dovetail grooves,

the lands flanking each of said dovetail grooves in said spider having a series of peripheral slots transversely intersecting said groove, the slots of each series being spaced apart to thereby divide each of said lands into a plurality of separate lands,

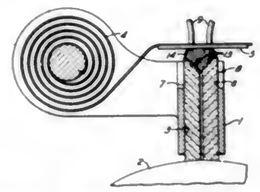
the slots in said lands extending below the depth of their respective grooves,

the tenon of each of said pole pieces having a series of transverse slots spaced apart along the length of said tenon to thereby divide said tenon into a plurality of individual tenons,

the slots in each of said pole pieces extending into the body of said pole piece past the point where the tenon meets the body of said pole piece, and

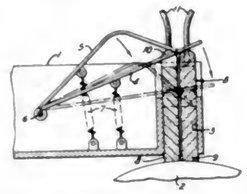
a plate covering each end of each of said dovetail grooves, said plates being secured to the ends of said spider.

3,158,772
TWIN ELECTRIC BRUSH ASSEMBLY WITH PRESSURE ARM WEDGE
Walter G. Krellner, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1962, Ser. No. 245,451
3 Claims. (Cl. 310—246)



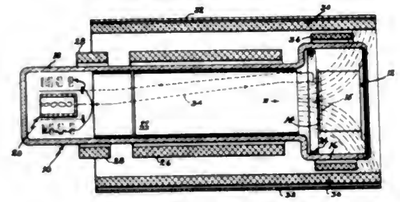
1. An electric brush assembly adapted to be slidably mounted in a brush holder, comprising a pair of thin carbon brush half-sections disposed side by side and having inner and outer side faces and inner and outer ends, the outer end portions of said sections being provided with a pair of opposed notches each having end walls diverging toward the inner end of the brush and spaced apart by a side wall inclined across the brush section from near its outer face toward its inner face and end, said notches together forming a socket having side walls converging toward the inner end of the brush and having end walls diverging toward said inner end, and a wedge in said socket having side walls slidingly engaging said socket side walls, whereby when the wedge is pushed toward the inner end of the brush it will force said sections apart, and said wedge having inwardly diverging end walls adjacent said socket end walls to keep the wedge from accidentally slipping out of the socket.

3,158,773
BRUSH HOLDER WITH SPLIT BRUSH
John E. Diehl, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1962, Ser. No. 247,108
3 Claims. (Cl. 310—246)



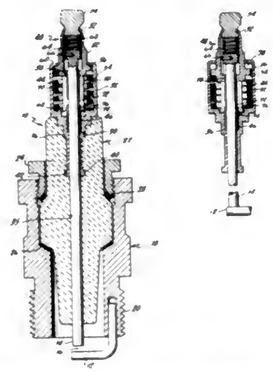
1. The combination with a brush holder having a brush-receiving passage therethrough disposed radially of a rotating cylindrical member adjacent its inner end, of a pair of thin carbon brush half-sections disposed face to face in said passage with their opposite ends projecting therefrom, a pair of arms each engaging the outer end of a different one of said sections and being pivotally mounted at one side of said holder and having a free end portion extending obliquely across the brush section end engaged by it, said arms engaging the brush sections at points between said faces and the central planes of said sections, and resilient means for pressing said arms against the brush sections to press those sections inwardly against said rotating member and simultaneously laterally away from each other against the opposite sides of said passage.

3,158,774
IMAGE ORTHICON FOCUSING COIL AND FIELD FLARING RING
Joel F. Fleming, Bloomington, Ind., and Daniel C. Buck, Horseheads, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed June 8, 1962, Ser. No. 201,224
1 Claim. (Cl. 313—84)



A television camera tube having a means for producing a beam of electrons at one end of said tube, a photocathode remote from said first-mentioned means at the other end of said tube, a target structure at said other end of said tube and spaced from said photocathode for receiving a charge pattern from said photocathode, means for scanning said beam over said target, means for producing a magnetic field for focusing said beam, said means comprising a solenoid around said tube and extending from said photocathode to said means for producing a beam, and means adjacent the end of said tube containing said photocathode and said target for flaring the magnetic field from said focus solenoid from said target toward said photocathode, said last-mentioned means comprising a ring of high permeable magnetic material intermediate said solenoid and said picture tube, and extending from said photocathode portion of said tube to said target portion of said tube.

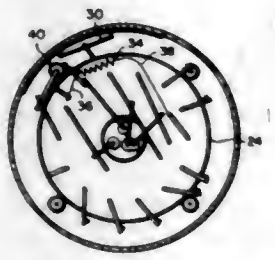
3,158,775
SPARK PLUG HAVING A GAP WHICH IS AUTOMATICALLY ADJUSTABLE FROM WITHOUT THE ENGINE
Joseph T. Gelardi, 65 Salisbury Road, Yonkers, N.Y., and Pellegrino Pisaniello, 4226 Murdock Ave., Bronx, N.Y., assignors of one-half to Milton Katz, Reuben Spencer, and Louis Alfred Schwartz, all of New York, N.Y.
Filed Apr. 19, 1962, Ser. No. 188,717
6 Claims. (Cl. 313—125)



1. A spark plug comprising insulation means mounting a first electrode in fixed relation and a second electrode for movement relative to said first electrode, means for moving said second electrode comprising gripping means in normally engaged relation with said second elec-

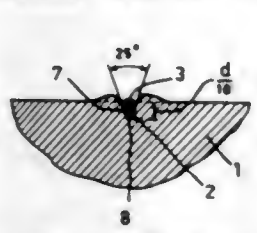
trode and operable to move said second electrode toward engagement with said first electrode, spring means operable from a relaxed to a stressed condition thereof in response to said operation of said gripping means, and means operable in response to the return of said spring means to said relaxed condition thereof to space said second electrode a predetermined distance from said first electrode to define a predetermined spark gap therebetween.

3,158,776
HEATING OF GETTER MATERIAL WITH THORIATED TUNGSTEN FILAMENT
James L. McIntyre, Big Flats, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1961, Ser. No. 149,087
6 Claims. (Cl. 313—179)



3. The method of removing gases from an envelope comprising the steps of positioning a quantity of a gettering material within said envelope, heating said gettering material by induction heating to evaporate a coating of said gettering material on the wall of said envelope, positioning a filament of thoriated tungsten adjacent said deposited coating and heating said filament to a temperature of about 2000° C. after said envelope is tipped off to break down certain gases in said envelope so that the gases may be gettered by said coating while simultaneously gettering certain other of the gases within said envelope.

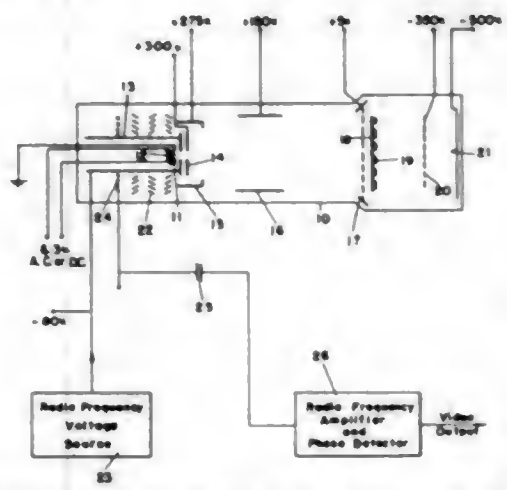
3,158,777
GRID FOR ELECTRON TUBES
Albert Stecker, Hamburg-Lockstedt, and Hartmut Hildebrandt, Hamburg, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 24, 1960, Ser. No. 31,360
Claims priority, application Germany June 16, 1959
5 Claims. (Cl. 313—350)



1. A grid for an electron discharge tube comprising a stay rod provided with notches the sides of which form an angle of about 25° in which a wire, softer than the material of the stay-rod, is pressed and deformed to accommodate the sides of the notch and filling the notch, said notches having a depth which is about one-tenth the diameter of the support rod.

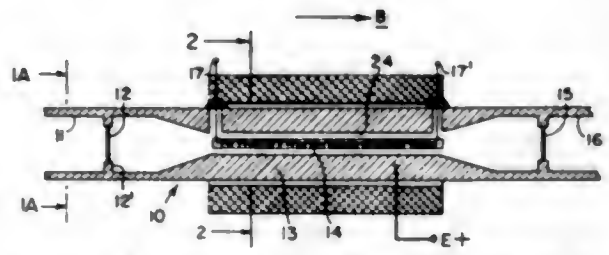
3,158,778
PHASE MODULATED TELEVISION CAMERA TUBE
Robert H. Johns, Bryn Athyn, Pa.
Filed Mar. 7, 1962, Ser. No. 178,214
5 Claims. (Cl. 315—11)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A television camera system including means for establishing on a target electrical charges representative of a scene, means for producing an electron beam interrupted at a radio-frequency rate, means for causing said beam to scan said target whereby said beam is



phase modulated in accordance with said charges, and an output electrode energized by said phase-modulated beam.

3,158,779
TRAVELING-WAVE ELECTRONIC MICROWAVE INTERACTION GUIDE DEVICES
Kazuo Ayaki, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan
Filed Sept. 29, 1960, Ser. No. 59,212
Claims priority, application Japan, Oct. 3, 1959, 34/31,442
7 Claims. (Cl. 315—39.3)



1. In an electronic microwave guide device, a ridge wave guide comprising a conductive envelope having an input and an output end; a longitudinal, substantially cylindrical space region and two spaced gap regions extending from and communicating with said space region, and a longitudinal cathode mounted within said longitudinal space region along the longitudinal axis of said cylindrical space region, whereby electrons emitted by said cathode interact with microwave signals propagated along said ridge wave guide to impart amplification energy to the signals; said cylindrical space region and said gap regions communicating with said input and output ends; said cylindrical space region being continuous and substantially straight between said input and output ends; the width of said gap regions adjacent said cylindrical space region being substantially less than the diameter of said cylindrical space region; the length of said gap regions being equal to the length of said cylindrical space region.

3,158,780
VOLTAGE-TUNEABLE MAGNETRON
Horst W. A. Gerlach, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 21, 1961, Ser. No. 161,321
4 Claims. (Cl. 315—39.55)
(Granted under Title 35, U.S. Code (1952), sec. 266)

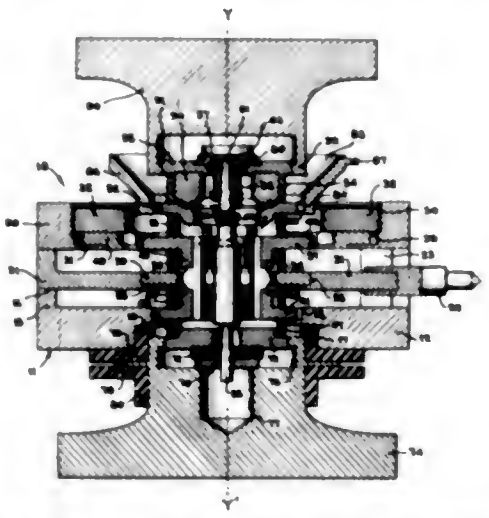
4. An electron discharge device of the voltage tuneable magnetron type comprising in combination;
(*a*) cavity means,
(*b*) cold cathode means,
(*c*) electron beam injection means disposed at one end of said cold cathode means,

(*d*) means for applying a magnetic field within said cavity means,

(*e*) a cylindrical anode assembly surrounding said cathode means centrally disposed in said cavity means, said anode assembly including a series of axially extending anode fingers, said anode fingers connected to form two sets of said anode fingers, said sets of anode fingers interdigitated with respect to one another,

(*f*) an upper disc, a lower disc, and a central disc,

(*g*) a first set of said anode fingers connected to said upper and said lower discs, and the second set of anode fingers connected to said central terminal disc,



(*h*) broad band output means including TEM mode transmission means having an upper ground plane and a lower ground plane, and a centrally disposed conductor, said upper ground plane connected to and surrounding said upper disc, said lower ground plane connected to and surrounding said lower disc, and said centrally disposed conductor connected to and surrounding said central disc, and

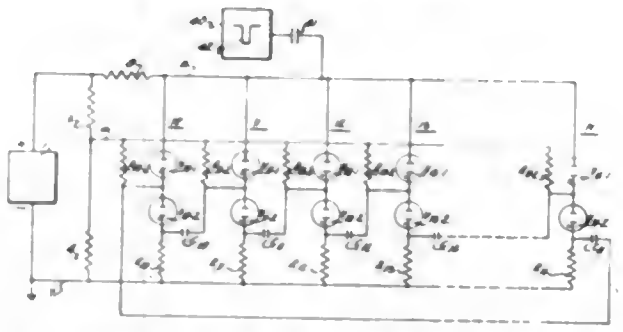
(*i*) said first set of anode fingers comprised of one set of fingers extending downward from said upper disc and another set extending upward from said lower disc in axial alignment with said one set of fingers.

3,158,781

GAS DIODE COUNTER CIRCUIT

Edward K. Howell, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed May 24, 1961, Ser. No. 112,445
7 Claims. (Cl. 315—84.5)



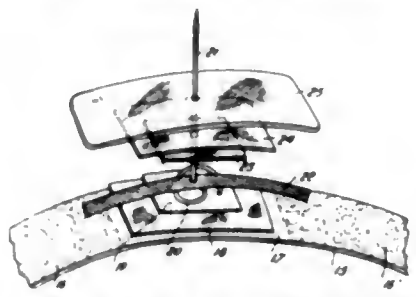
1. A counter circuit for counting pulses applied thereto comprising, a plurality of stages each having a first and a second gas diode electrically connected in series to form a series circuit, means for simultaneously applying pulses to said series circuits, a source of electric potential, means electrically connecting each of said series circuits to said source of electric potential in parallel with each of the other of said series circuits, and means for preconditioning one of said series circuits for causing conduction therein after a pulse is received by said series circuits, said conditioning means comprising a capacitor connected between the junction of the first and second diodes of the series circuit to be preconditioned and a different one of said series circuits.

3,158,782

MEANS FOR ELIMINATING STATIC CHARGES FROM VEHICLES

Paul Maratuech, La Garenne-Colombes, and René Bernada, Paris, France, assignors, by mesne assignments, to Inventions Finance Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 1, 1960, Ser. No. 66,623
Claims priority, application France Nov. 16, 1959
10 Claims. (Cl. 317—2)



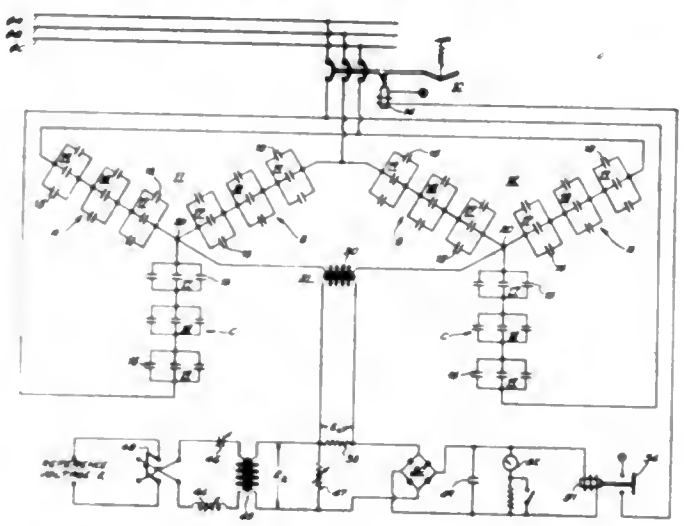
1. In combination with a primary supporting roadway vehicle wheel of the type comprising a central hub member with tire engaging side rims and a tire carried by said hub and having a tread portion and spaced side wall portions extending inwardly thereof and terminating in beads engaging said rim whereby to define an enclosed cavity between said tread portion, said spaced sidewall portions and said hub: an static removal means comprising a conductive element extending from said cavity through said tread portion for engagement with a roadway, and conducting means within said cavity for electrically connecting said conductive element with said hub.

3,158,783

CAPACITOR BANK PROTECTIVE MEANS HAVING UNBALANCE CURRENT COMPENSATION

Peter M. Minder, Basel, Switzerland, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

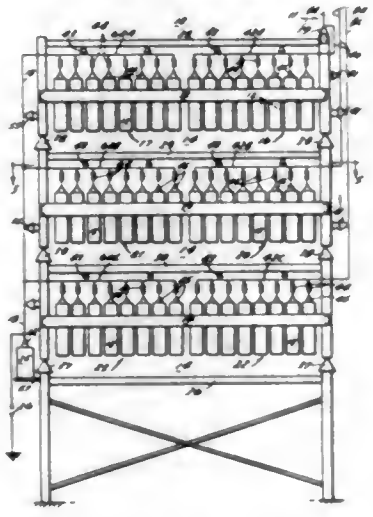
Filed Sept. 29, 1958, Ser. No. 763,925
14 Claims. (Cl. 317—12)



1. In combination with a polyphase alternating current power system, a plurality of individual capacitor units adapted to be connected in two star portions to said power system a current transformer connected between the neutrals, of said star portions, the values of the individual capacitor units varying from rated capacitance and causing variations in impedance between corresponding phases in said star portions and an unbalance current to flow between said neutrals, whereby an alternating current signal is developed by said current trans-

former, means for deriving an alternating current voltage of the same frequency as the voltage of said power system, means including a variable reactance for varying the magnitude and shifting the phase of said derived voltage, means for adding the voltage output from said last-named means and the voltage developed across said current transformer, and voltage sensitive means actuated by the output of said adding means.

3,158,784
SHUNT CAPACITOR BANK
Donald J. Lemens, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 6, 1961, Ser. No. 136,303
6 Claims. (Cl. 317—12)



1. In combination, a three phase alternating current power line, a three phase capacitor bank comprising a plurality of capacitor units connected in star to said line, individual fuses for said capacitor units, the casings of said capacitor units being mounted on a metallic frame, said metallic frame supporting the neutral of said star connected capacitor units, unbalance detecting means including a transformer connected to said neutral for protecting said capacitor bank, base insulators between said metallic frame and ground, and a gap connected between said metallic frame and ground, the sixty cycle and impulse sparkover potential of said gap being less than that of said base insulators, whereby the insulation level of said base insulators can be lower than the phase-to-phase voltage of said power line, said star bank so gapped to ground being adapted to bypass surges on the conductors of said power line to ground and to interrupt the flow of power-frequency current to ground without disconnecting said capacitor bank from said power line.

3,158,785
DEVICES FOR DETECTING EARTH FAULTS IN ELECTRIC DISTRIBUTION NETWORKS
Claude Gagniere, Nogent-sur-Oise, and Pierre Belugou, Paris, France, assignors to Charbonnages de France, Paris, France, a public institution of France
Filed June 26, 1962, Ser. No. 205,429
Claims priority, application France, July 3, 1961, 886,785; Mar. 15, 1962, 891,213
12 Claims. (Cl. 317—18)

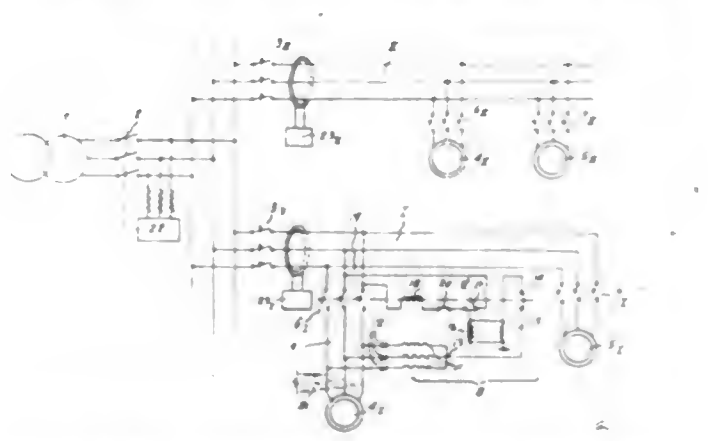
1. A device for detecting and localizing earth faults in electrical networks comprising network sections and current-breaking apparatus in each of said network sections, said device comprising in combination, for each of said network sections:

an electrical connection coupling each of the phases of said section to earth through the intermediary of a common point;

electrical switch holding means adapted to cause the putting in circuit of said electrical connection between the network section and earth, under the influence of the opening of the current-breaking apparatus of said network section;

said electrical switch holding means including a holding winding for effecting the operation of the current breaking apparatus and connected on the source side of said current-breaking apparatus;

a contact means in said electrical connection held in the closed position between phases and earth by the

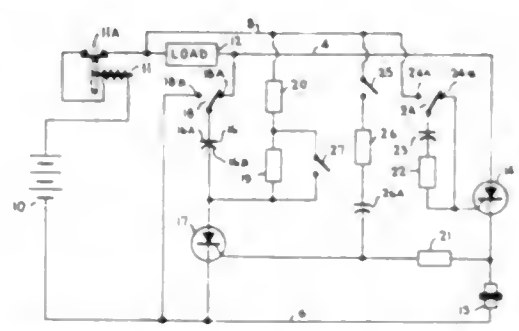


opening of the current-breaking apparatus of the network section;

a relay means in the circuit of said electrical connection between phases and earth supplied through series circuitry with said contact means, immediately after the opening of the current-breaking apparatus of the network section, by the energy stored in said network section which is supervised; and

a contactor in circuit with said holding winding and controlled by said relay means for movement to a locked open position.

3,158,786
OVERCURRENT PROTECTION DEVICE
Ralph L. Hurtle, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed June 26, 1962, Ser. No. 205,405
6 Claims. (Cl. 317—33)



1. An electrical protective circuit comprising:

(*a*) a main current control device,

(*b*) means for connecting said main current control device electrically in series with a power consuming load across a source of electrical power,

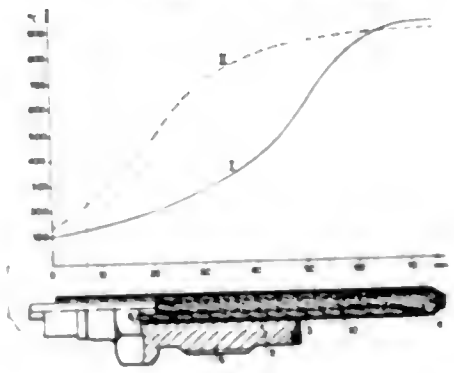
(*c*) electrical charge storage means,

(*d*) means for connecting said electrical charge storage means electrically in parallel with said main current control device upon the occurrence of predetermined current conditions in said load circuit, whereby said charge of said charge storage means is permitted to be discharged through said power source and said power consuming load,

(*e*) a pair of relatively separable contacts, means for restraining said contacts in closed condition, and

(*f*) trip means connected electrically in series in said discharge path of said charge storage means for causing automatic opening of said contacts upon discharge of said charge storage means.

3,158,787
GLOW PLUGS EQUIPPED WITH ARMOURED RESISTANCES
Francesco Testerini, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed June 20, 1961, Ser. No. 118,457
Claims priority, application Italy June 28, 1960
1 Claim. (Cl. 317—98)



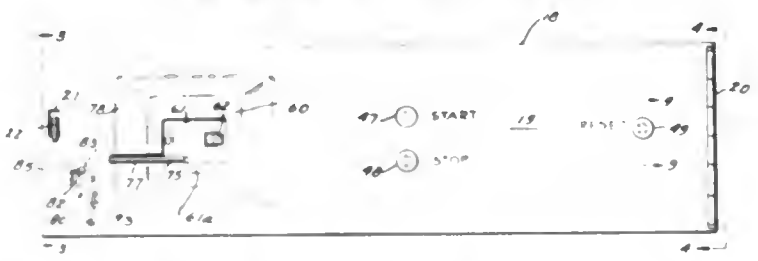
A glow plug for internal combustion engines, comprising an elongated plug body, having a central axial bore hole extending through its entire length, an elongated tubular metal sheath having a portion housed within said bore hole and engaging the inner walls of said bore hole in heat exchange therewith, and another portion extending beyond said glow plug body and terminating in a closed nose; a current feeder, extending into the first-mentioned portion of the sheath, and an electrical conductor located in said sheath and consisting of a spirally wound wire coil, said coil conductor having a terminal connected with said current feeder and located within the first-mentioned portion of the sheath, the other end of said coil conductor being conical and connected with said closed nose, said conical end being located within the second-mentioned portion of said sheath; said coil conductor having a central tubular portion connected with said terminal and said conical end, said terminal having a substantially constant spiral coil diameter from the end of the current feeder to said central tubular portion of said coil conductor, said conical end having a diameter increasing in the direction of said closed nose, the pitch of said spiral coil conductor decreasing in the direction of said closed nose; said coil conductor consisting of a material having a resistance which increases proportionately to the rise in temperature, and an insulating packing material situated within said sheath and embedding said coil conductor.

3,158,788
SOLID-STATE CIRCUITRY HAVING DISCRETE REGIONS OF SEMI-CONDUCTOR MATERIAL ISOLATED BY AN INSULATING MATERIAL
Jay T. Last, Palo Alto, Calif., assignor, by mesne assignments, to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Aug. 15, 1960, Ser. No. 49,717
2 Claims. (Cl. 317—101)



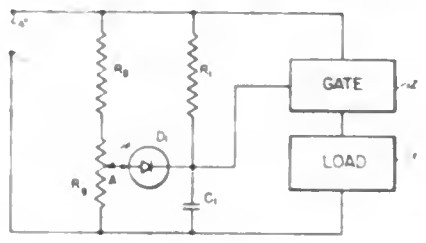
2. An improved unitary electronic circuit comprising: a body having a plurality of zones or semiconductor material separated from each other by insulating material which extends completely through the body in bonded contact with said zones; circuit components in said zones; a protective insulating coating over said body; and electrical connections overlying said coating and extending through said coating into selective contact with said circuit components in different ones of said zones, thereby electrically connecting same together to form said unitary electronic circuit.

3,158,789
CIRCUIT PROTECTOR
George H. Farnsworth, Grosse Pointe Woods, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1962, Ser. No. 188,662
6 Claims. (Cl. 317—119)



1. A unit of the class described comprising an enclosure having an openable cover, a circuit breaker including a case mounted within said enclosure, a depression in said cover having an aperture at the bottom thereof, said circuit breaker including an operating handle extending from said case through said aperture into said depression so as to be operable within the confines of said depression when said cover is in a closed position, a slider plate within said enclosure interposed between said case and said cover, said plate connected to said handle for movement in unison therewith, said plate constructed to cover said aperture for all positions of said handle, said slider plate including a locking tang movable through a slot-like extension portion of said aperture, said tang having a lock receiving opening which is accessible with said cover closed only when said handle is in an Off position, portions of said cover defining said depression operatively positioned to cooperate with a lock received by said opening to prevent operation of said handle to an On position.

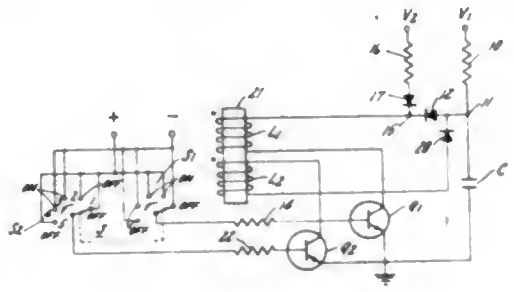
3,158,790
TIMING CIRCUIT
Joseph A. Garratt, Simsbury, Conn., assignor to HI-G Incorporated, Windsor Locks, Conn., a corporation of Connecticut
Filed Oct. 31, 1961, Ser. No. 149,028
5 Claims. (Cl. 317—142)



1. A time delay circuit for actuating a load device comprising a first branch network including a first fixed resistance and a condenser series connected, said first fixed resistance constituting a first charging current path for said condenser, a second branch network including a resistive impedance, means connecting said first and second branch networks in parallel across a source of charging current, a uni-directional current conducting device connected between said resistive impedance and said condenser and poled to thereby form with said resistive impedance a second charging current path for said condenser, a gate

monitoring the charging potential of said condenser, said gate being arranged to switch to an operative condition when said condenser reaches a predetermined voltage, a load device operatively connected to said gate to be actuated when said gate is operated, whereby said second charging current path for said condenser carries substantially all of the charging current therefor during the initial portion of the charge cycle, said initial portion being terminated when the voltage across said condenser reverse biases said device so that said first charging current path carries all of the charging current therefor subsequent to said initial portion of said charging cycle.

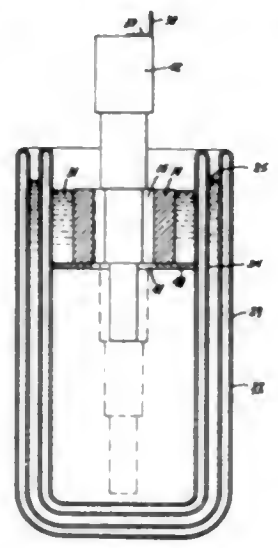
3,158,791
ENERGY RECOVERY COIL DRIVER
Raymond J. Deneen, Jr., and Frank H. Heissenbuttel III, Baltimore, and Kenneth E. Wood, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1962, Ser. No. 228,508
9 Claims. (Cl. 317—148.5)



1. A circuit for driving inductive means and for recovering the driving energy therefrom comprising:
two mutually inductive means magnetically coupled in a uniform polarized manner;
a storage means;
a primary circuit coupled through one of said mutually inductive means and in parallel with said storage means, said primary circuit having said one of said mutually inductive means, a unidirectional means, and a switch means in series;
a secondary circuit coupled through the other of said mutually inductive means and in parallel with said storage means, said secondary circuit having said other of said mutually inductive means and a unidirectional means in series; and
a voltage means coupled to said storage means for charging same to establish conduction when said primary circuit switch means is closed whereby energy induced in said one of said mutually inductive means from said storage means when said primary circuit is closed will be induced in said other of said mutually inductive means when said primary circuit is opened to restore a substantial portion of the energy to said storage means.

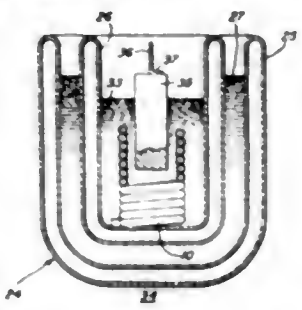
3,158,792
SUPERCONDUCTIVE DEVICES
Paul S. Swartz and Carl H. Rosner, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 2, 1961, Ser. No. 149,595
6 Claims. (Cl. 317—158)

1. A high field superconductive device comprising a solid high field superconductive body having a uniform diameter aperture therethrough, means to produce a magnetic field generally parallel to the axis of said aperture within the aperture of said body, means to maintain the temperature of said body below its critical temperature, and a non-uniform diameter, high field superconductive member maintained at a temperature below its



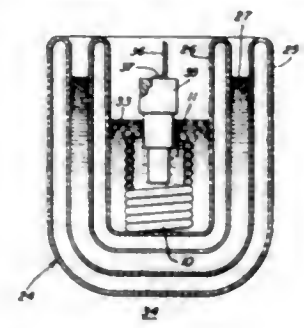
critical temperature, said member adapted to be inserted into the aperture of said body for compressing variably said magnetic field.

3,158,793
SUPERCONDUCTIVE DEVICE
Paul S. Swartz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 8, 1962, Ser. No. 201,184
10 Claims. (Cl. 317—158)



1. A high field superconductive device comprising a high field superconductive solenoid having an aperture therethrough, a coating of non-superconducting material on said solenoid, means to produce a magnetic field generally parallel to the axis of said aperture within the aperture of said solenoid, means to maintain the temperature of said solenoid below its critical temperature, and means for compressing said magnetic field.

3,158,794
SUPERCONDUCTIVE DEVICE
Paul S. Swartz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 8, 1962, Ser. No. 201,185
11 Claims. (Cl. 317—158)



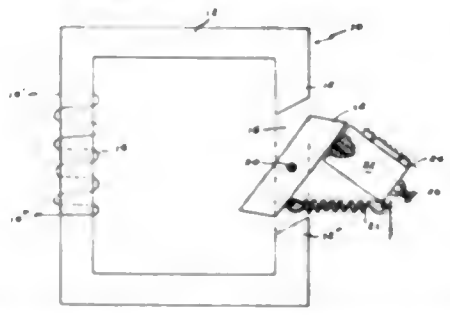
1. A high field superconductive device comprising a high field superconductive solenoid having an aperture therethrough, a coating of non-superconducting material on said solenoid, means to produce a magnetic field gen-

erally parallel to the axis of the aperture substantially within the aperture of said solenoid, means to maintain the temperature of said solenoid below its critical temperature and means for compressing variably said magnetic field.

3,158,795
MAGNETIC SWITCH OVERLOAD DEVICE

William F. Carr, Santa Monica, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 2, 1963, Ser. No. 292,504
3 Claims. (Cl. 317—172)

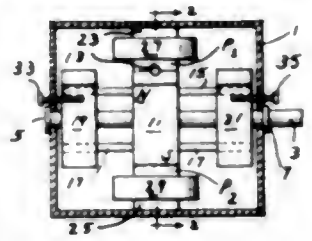


1. A contactless magnetic overload device comprising a discontinuous core having an air gap, a winding on the body of said core, a magnetizable member mounted rotatably in the air gap for rotation between first and second positions characterized by relatively high and greatly reduced magnetic reluctances in the air gap, respectively, keeper means magnetically coupled to said member for biasing it to its first position, and mechanical spring means coupled to said member for opposing the biasing force of said keeper means to such a degree that when the flux density in the air gap exceeds a predetermined intensity the net magnetic and mechanical moment with respect to the axis of rotation of said member is sufficient to annul the biasing force of said keeper means and thereby cause said member to be actuated to its second position with a snap action.

3,158,796
ELECTROMECHANICAL ACTUATORS

Daniel D. Musgrave, 8201 Caraway St., Cabin John, Md.

Filed Nov. 23, 1962, Ser. No. 239,480
5 Claims. (Cl. 317—187)

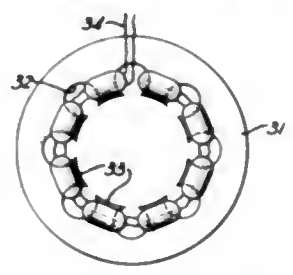


1. An electromagnetic actuator comprising: a coil adapted for producing an electromagnetic field; a core positioned within said coil; actuating means normally retained at an inoperative position and movable to an operative position; first movable magnetic means operatively connected to said actuating means and normally magnetically attracted to said core; second movable magnetic means operatively connected to said actuating means and normally repelled from said first movable magnetic means to a first position; detent means engaging said second movable magnetic means thereby retaining said actuating means at said inoperative position; means for mounting said coil, said core, said actuating means and said detent means; and means for applying an electric current alternately in opposite directions to said coil; whereby upon a current pulse in one direction being impressed on said coil said second movable magnetic means is attracted to said core and moved to a second position whereat said second movable magnetic means is disengaged from said detent means; and whereby upon a subsequent current pulse in an opposite direction being impressed on said coil said first and second movable magnetic means are repelled from said core thereby moving said actuating means from said inoperative position to said operative position.

3,158,797
DEVICE FOR MAGNETIZING CIRCULAR MAGNETS

Lewis D. Andrews, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Oct. 31, 1961, Ser. No. 148,949
4 Claims. (Cl. 317—203)

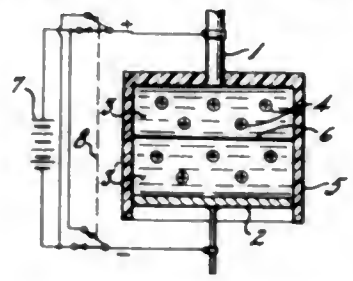


1. A device for magnetizing circular magnets, comprising a circular magnetic return member provided with an even number of laterally spaced radial poles, and a continuous electrical conductor having a first portion extending from pole to pole around said member in one direction and having a second portion extending back in reverse direction around said member from pole to pole, said first portion of the conductor extending around the odd number poles in one direction and around the even number poles in the opposite direction, and said second portion of the conductor extending in the same direction around each pole as said first portion, the conductor being insulated from said poles.

3,158,798
CHEMICAL MEMORY CELL

William C. Sauder, Lexington, Va.
(248 Stanmore Road, Baltimore, Md.)

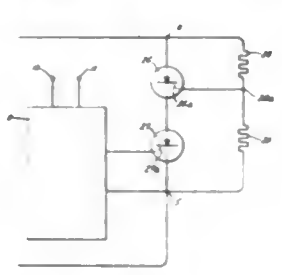
Filed Nov. 17, 1959, Ser. No. 853,664
4 Claims. (Cl. 317—231)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A memory unit particularly adapted for use in a computer circuit comprising a container, a plurality of electrochemical circuits mounted within said container, said plurality of electrochemical circuits being capable of existing in either one of two distinct potential states, said plurality of electrochemical circuits comprising a plurality of spaced metallic switching electrodes mounted to extend into said container, a single metallic electrode spaced from said switching electrodes and common to all of said switching electrodes, said single electrode being mounted to extend into said container, said metal of said electrodes being selected from the electromotive series, a metallic ion-containing electrolytic solution, said electrolytic solution comprising a first group and a second group of metallic ions, said first group of metallic ions being in contact with said plurality of switching electrodes and different from and having a higher electromotive

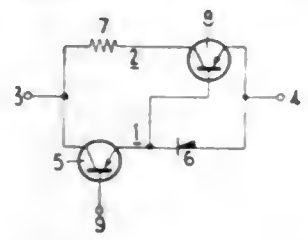
activity than the metal of said plurality of switching electrodes and said second group of metallic ions being in contact with said single electrode and similar to the metal of said single electrode, and a porous membrane positioned between said plurality of switching electrodes and said single electrode in order to maintain a separation therebetween.

3,158,799
FIRING CIRCUIT FOR CONTROLLED RECTIFIERS
Fred W. Kelley, Jr., Media, Pa., Georges R. Lezan, Haddonfield, N.J., and Charles E. Rettig, Havertown, Pa., assignors to General Electric Company, a corporation of New York
Filed Jan. 18, 1960, Ser. No. 3,143
11 Claims. (Cl. 321—27)



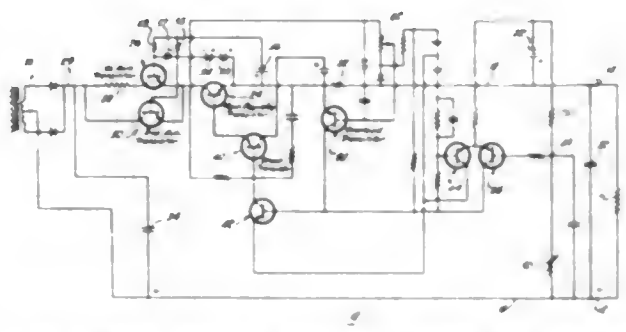
1. In combination, a pair of terminals adapted to be connected to a source of supply, a plurality of controlled rectifiers connected in series relationship across said terminals and each having an anode, a cathode and a gate control electrode, means for supplying a gating current signal impulse to the gate of a first of said rectifiers to initiate conduction therein, and means for sympathetically firing each of the remaining unfired rectifiers substantially simultaneously with the firing of said first rectifier and for balancing the voltages across said controlled rectifiers comprising an impedance voltage divider connected in parallel with said rectifiers and having a plurality of similar sections connected in series to provide a plurality of intermediate voltage points on said divider, each corresponding to the gate of a different one of said remaining rectifiers and an immediate electrical connection from each of the gates of said remaining rectifiers to a corresponding one of said intermediate voltage points for supplying a gate current signal from said voltage divider to the gate of each of said remaining rectifiers in response to initiation of conduction in an adjacent rectifier.

3,158,800
VARIABLE-IMPEDANCE ELECTRIC CIRCUITS
John Wemyss McPherson, Hayes, England, assignor to The General Electric Company Limited, London, England
Filed Aug. 26, 1960, Ser. No. 52,238
Claims priority, application Great Britain, Aug. 28, 1959, 29,539/59
8 Claims. (Cl. 323—22)



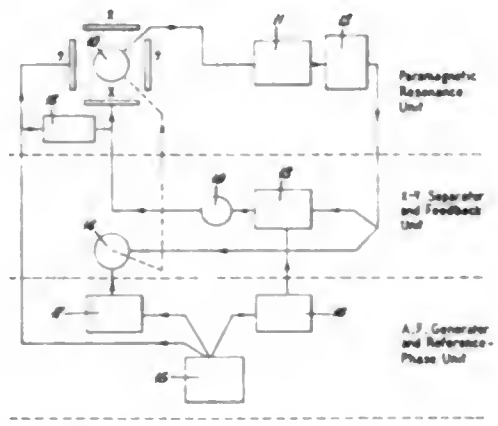
1. A variable-impedance electric circuit comprising a first terminal, a second terminal, first and second transistors each having a control electrode and two further electrodes, a non-linear resistance element, a linear resistance, the first terminal being directly connected to one of said further electrodes of the first transistor the other further electrode of which is connected by way of said non-linear resistance element only to the second terminal, the first terminal also being connected by way of said linear resistance to one of said further electrodes of the second transistor the other further electrode of which is directly connected to the second terminal, a direct connection between the further electrode of the first transistor adjacent said non-linear resistance element and the control electrode of the second transistor, and a path connected to the control electrode of the first transistor over which a control bias may be supplied to said control electrode, the arrangement being such that the impedance of the circuit, measured between the first and second terminals, may be varied by varying the value of said control bias.

3,158,801
REGULATED POWER SUPPLY
Donald J. Tighe and Robert E. Graham, Chatham, N.J., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 24, 1961, Ser. No. 105,189
6 Claims. (Cl. 323—22)



1. In a power supply having a regulating element connected to control the output power and an amplifier connected to control the conductivity of said element, a first element and a resistor connected in series with said regulating element, a second element connected in shunt with said serially connected resistor and first element, circuit means so connected to receive the voltage across said regulating element as to render one of said first and second elements more conductive as said voltage varies between first and second selected values and to render the other of said first and second elements more conductive as said voltage varies beyond said second value.

3,158,802
RESONANCE ABSORPTION APPARATUS AND METHOD FOR MEASURING MAGNITUDE AND DIRECTION OF A MAGNETIC FIELD
Paul Jung, Brussels, and Jean Leon Van Cakenberghe, Beersel, Belgium, assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 12, 1959, Ser. No. 852,249
2 Claims. (Cl. 324—.5)



1. Apparatus for measuring the magnitude and direction of an external magnetic field comprising: a para-

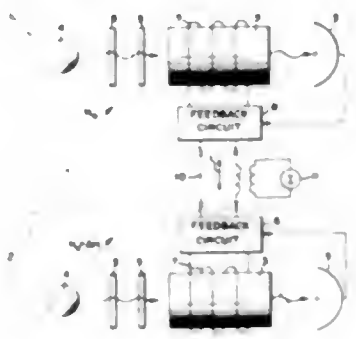
magnetic substance having a determinable magnetic resonance absorbtion frequency and magnitude characteristic; first generator means for imposing on said paramagnetic substance a high frequency magnetic field, second generator means for imposing on said substance a low frequency magnetic field parallel to said high frequency field and having a frequency and a magnitude less respectively than the characteristic magnetic resonance absorption frequency and magnitude of said paramagnetic substance, and third generator means for imposing on said substance a magnetic field of constant magnitude less than the magnetic resonance absorption magnitude of said paramagnetic substance rotating with a constant angular velocity less than the angular velocity corresponding to the magnetic resonance absorption frequency of said paramagnetic substance in a plane perpendicular to the axis of said low frequency field; and means for measuring asymmetrical variations in the absorption of said paramagnetic substance.

3,158,803

APPARATUS FOR MONITORING MAGNETIC FIELD GRADIENTS

William E. Bell, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 21, 1962, Ser. No. 174,919
3 Claims. (Cl. 324—.5)



1. Apparatus for monitoring magnetic field gradients comprising: first and second magnetic resonance oscillators having first and second sensing samples respectively being disposed in spaced-apart relation, each said oscillator being adapted to generate an output frequency signal dependent upon the strength of an external magnetic field passing through each said sample; means bilaterally coupling together the output circuits of said oscillators so that each said oscillator oscillates phase-locked to the other said oscillator at a common output frequency whereby a signal is derived in variable accordance with the difference between the strength of the magnetic field passing through said first sample and the strength of the magnetic fluid passing through said second sample; and moni.oring means responsive to said derived signal for measuring said difference between the strength of said magnetic field existing at each said sample.

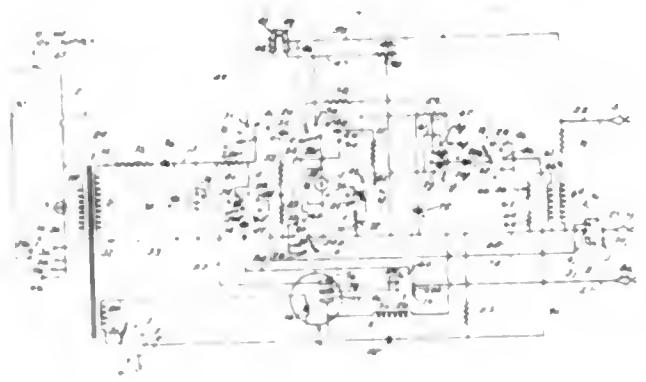
3,158,804

IGNITION TESTING SYSTEM FOR SELECTIVELY TESTING SPARK PULSE, CONDENSER, COIL, R.P.M., AND CIRCUIT CONTINUITY

Laurence J. Weissert, Otsego, Mich., assignor to Kal-Equip Company, Inc., Otsego, Mich., a corporation of Michigan

Filed Aug. 17, 1959, Ser. No. 834,315
2 Claims. (Cl. 324—15)

1. An ignition system tester inclusive of single cylinder internal combustion engines comprising an indicator means, a first metering circuit means including a first and a second test lead adapted to be connected, respectively, to a high tension lead and to a grounded portion of an engine under test, and a multi-position switch means which, in a second position thereof, operatively connects said first metering circuit means in circuit with said indicator means; said first metering circuit means also including a capacitor and a diode connected in series combination and first means operatively connecting said combination to said first test lead whereby a single short duration high tension pulse produced by an engine ignition system in satisfactory operating condition and appearing at said first test lead will result in a visual indication appearing upon said indicator means for an interval of time sufficiently long to obtain a visual reading; said tester also comprising means for producing a regulated D.C. potential derived from an A.C. source, and control means including a thyratron connected to said D.C. potential; said first test lead connected to a control element of said thyratron; a second metering circuit means including an impedance element serially connected between said thyratron and said D.C. potential; said switch means being selectively operable to a third position whereby said indicator means is operatively connected in circuit with said second metering circuit means whereby an indication of current flow



through said impedance element is obtained on said indicator means with this current flow being a function of engine speed; a third metering circuit means including said diode and an impedance element serially connected to said diode, and a third test lead adapted to be connected to an ungrounded terminal of an engine ignition system element; said switch means operable to a fourth position wherein said third metering circuit means is operatively connected in circuit with said indicator means; said tester further including a vibrator means operatively connected in circuit to alternately connect said third test lead to said D.C. potential and said third metering circuit means when said switch means is in said fourth position; a fourth metering circuit means including said first metering circuit means and an adjustable impedance connected in parallel with said indicator means; said switch means operable to a fifth position wherein said fourth metering circuit means is operatively connected in circuit with said indicator means; said vibrator means alternately connecting said third test lead to said D.C. potential and said fourth metering circuit means when said switch is in said fifth position.

3,158,805

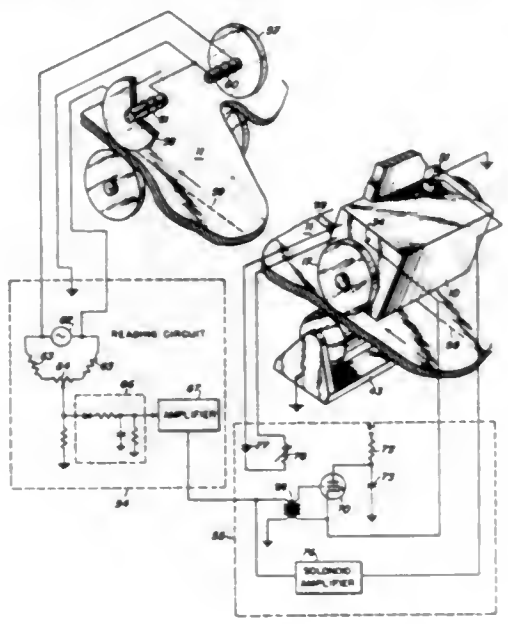
METHOD AND APPARATUS FOR MAGNETICALLY MARKING SHEET STEEL BY DEPOSITION OF METAL IONS

David C. Kalbfell, 941 Rosecrans St., San Diego, Calif.

Filed June 2, 1958, Ser. No. 739,101
10 Claims. (Cl. 324—34)

5. In combination: first and second magnetizable metallic means having first and second permeability values, respectively; means for alloying a portion of said first magnetizable means with said second magnetizable means at a predetermined surface part whereby said predetermined part has a permeability value differing from said first permeability value of the remaining surface

part; and permeability difference detecting means respectively associated with said remaining surface part of the



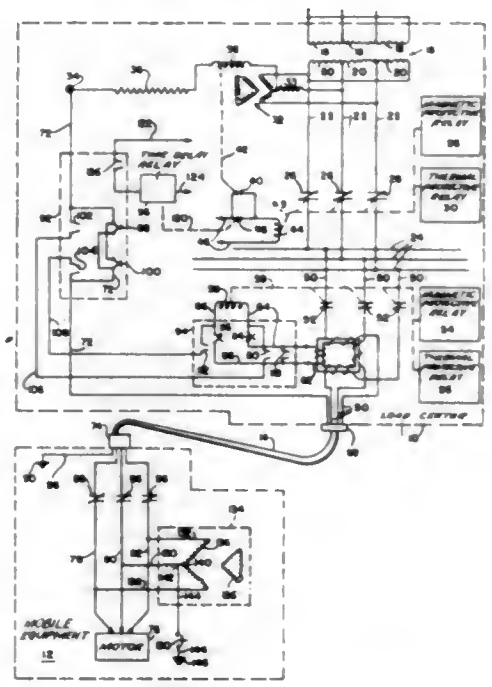
first magnetizable means and said predetermined part thereof for detecting said predetermined part.

3,158,806

APPARATUS FOR PERFORMING A GROUND LINE CONTINUITY TEST AT REDUCED VOLTAGE

Chester S. Conrad, Fairmont, W. Va., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 3, 1960, Ser. No. 59,877
3 Claims. (Cl. 324—51)



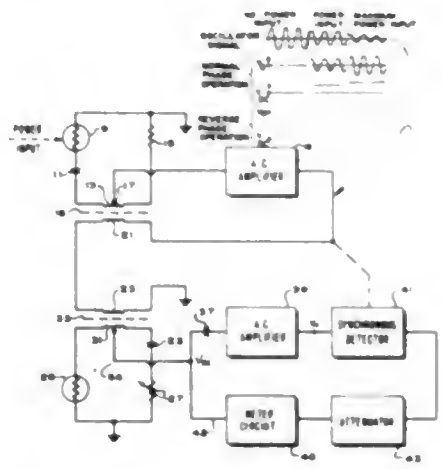
1. In an electrical power system including a source of current available in a load center at a predetermined line voltage, circuit means including a circuit breaker and conductors to conduct said current from said source to a consuming device, a circuit breaker trip coil mechanically connected to said circuit breaker, a ground line connecting said consuming device to a ground within said load center in order to ground said consuming device, and a current transformer electrically connected to said conductors and to said circuit breaker trip coil to excite said trip coil upon the occurrence of a ground fault to operate said circuit breaker to thereby open said circuit breaker, the improvement comprising a continuity testing means for said ground line, said testing means including means to selectively disconnect said current transformer from said circuit breaker trip coil, means to selectively connect said ground line to said ground through said trip coil within said load center so that current flowing in said ground line flows through said trip coil, and test transformer means in said circuit means and on said consuming device to selectively provide a ground fault test current to said ground line at a voltage substantially lower than said line voltage.

3,158,807

POWER METER USING COUPLED AND AUTOMATICALLY REBALANCED BOLOMETER BRIDGES

Georg C. Jung, Menlo Park, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Mar. 30, 1961, Ser. No. 99,526
3 Claims. (Cl. 324—106)



3. An instrument for measuring power, said instrument comprising:

a signal amplifier;

first and second bolometer elements, each having an impedance which varies with the operating temperature thereof;

a first bridge circuit including said first bolometer element, said first bolometer element being disposed to receive said power;

means including said first bridge circuit and providing a feedback path between the output and the input of the signal amplifier for producing an oscillatory signal having an amplitude that is related to the operating temperature of the first bolometer element;

a second bridge circuit including said second bolometer element;

means connected to the second bridge circuit for applying said oscillatory signal thereto;

detector means connected to receive the oscillatory signal and an unbalance signal from said second bridge and responsive to the unbalance of the second bridge circuit for producing a direct-current signal for a selected phase relationship between said oscillatory signal and the unbalance signal from the second bridge, the direct current signal having an amplitude that is related to the operating temperature of the second bolometer element;

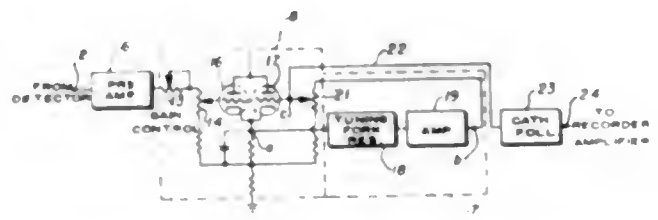
means to apply said direct-current signal to the second bolometer element; and

a meter circuit connected to receive said direct-current signal for providing an indication of the amplitude thereof.

3,158,808
CONSTANT-GAIN VARIABLE BANDWIDTH AMPLIFIER SYSTEM

Gunther U. Sorger, Rockville, Md., assignor, by mesne assignments, to Weinschel Engineering Co., Inc., Kensington, Md., a corporation of Delaware

Filed Apr. 1, 1960, Ser. No. 19,311
4 Claims. (Cl. 324—123)

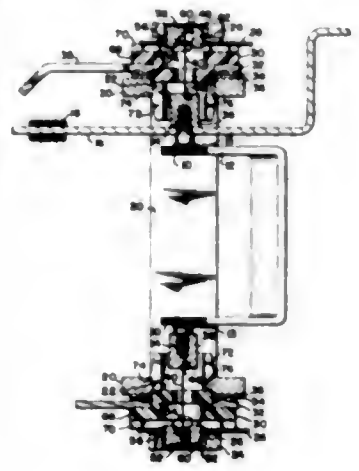


4. A constant-gain variable bandwidth system for use in measuring a received electrical signal of a predetermined frequency, comprising a differential amplifier and mixing circuit having two input circuit terminals and an output circuit terminal; said received signal being supplied to one of said input terminals; a normally narrow-band tuned amplifier circuit tuned to said predetermined frequency, and having its input connected to said mixer circuit output terminal, and its output connected as a negative feedback circuit through a variable control element for supplying a controllable portion of the feedback signal to the other of said two input circuit terminals of said mixing circuit; an output signal terminal connected to said other mixer input circuit terminal to provide an output signal having a substantially constant amplitude relationship to said received signal supplied to the mixer input terminal, whereby said variable control element controls the bandwidth of the output, said controllable portion of the feedback signal being at least five times greater than the signal supplied to the feedback circuit, and measuring means connected to the system output.

3,158,809
SUSPENSION SYSTEM FOR MOVABLE ELEMENTS OF ELECTRICAL INDICATING INSTRUMENTS

John W. Higley, Glen Ridge, and William R. Brophy, Roselle Park, N.J., assignors to Weston Instruments, Inc., a corporation of Texas

Filed June 28, 1962, Ser. No. 206,051
3 Claims. (Cl. 324—154)



1. A system for suspending a movable element, having an axis of rotation, from the movement bracket of an electrical instrument, said system comprising:

a pair of ribbons, each being substantially free of bends along its entire length and having a major axis,

a first pair of terminating members, each secured to an opposite side of the movable element at its axis of rotation,

each of the first pair of terminating members having a slot in the side of the member remote from the movable element adapted to receive one end of a different one of the ribbons, one side of each slot being planar and substantially coinciding with the axis of rotation,

a first pair of wedges adapted to be driven into the slots of the first pair of members to secure the one end of the ribbons to the respective one side of the slots substantially in the axis of rotation,

a second pair of terminating members secured to the movement bracket in spaced relation to the first pair of terminating members,

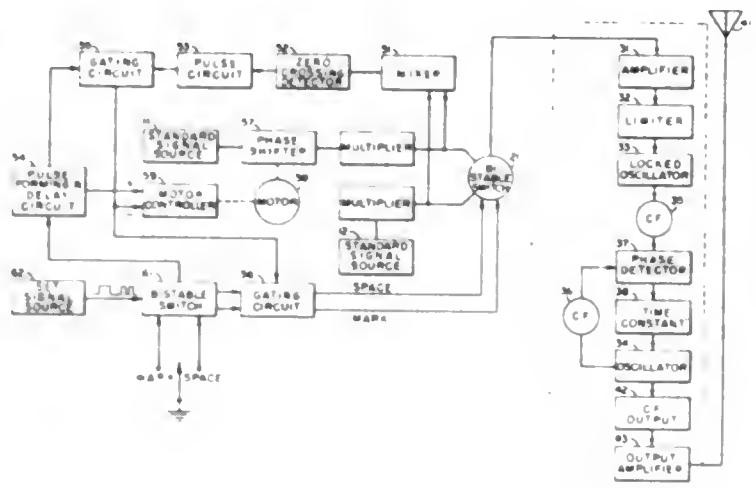
each of the second pair of terminating members being hollow to receive a different one of the ribbons and having a slot in the side of the member remote from the movable element adapted to receive the other end of a different one of the ribbons, one side of each slot being planar and substantially coinciding with the axis of rotation, and

a second pair of wedges adapted to be driven into the slots of the second pair of members to secure the other end of the ribbons to the respective one side of the slots such that the major axes of the ribbons and the axis of rotation substantially coincide.

3,158,810
FSK KEYING SYSTEM EMBODYING PHASE COHERENCE

Robert R. Stone, Jr., Rosecroft Park, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 28, 1962, Ser. No. 227,677
4 Claims. (Cl. 325—163)
(Granted under Title 35, U.S. Code (1952), sec. 266)



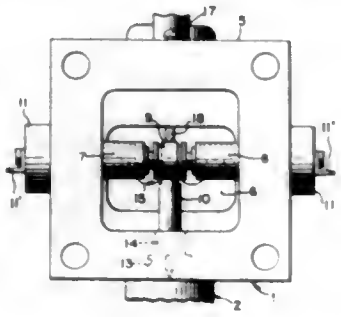
4. In a frequency shift keyer including constant factor frequency multipliers, the outputs of which are alternately gated to a constant factor frequency divider, a phase correction circuit comprising:

zero-crossing detecting means receiving and comparing the signals to be keyed by said alternate gating means,

said zero-crossing detecting means providing an output pulse at each in-phase coincidence of said signals to be keyed;

time delay means providing a constant width output pulse for each input pulse received;
an AND gate, said AND gate providing an output upon the coincidence of input signals from said time delay means and said zero-crossing detecting means;
control means actuating said alternate gating means upon receipt of an output signal from said AND gate and simultaneously providing an input pulse to said time delay means;
and phase shift means connected to said AND gate and to said time delay means, said phase shift means to adjust the phase of one of said signals to be keyed in a direction determined by the difference between the signals supplied to said phase shift means by said AND gate and said time delay means,
whereby said signals to be keyed are in phase and in synchronization with the actuation of said alternate gating means.

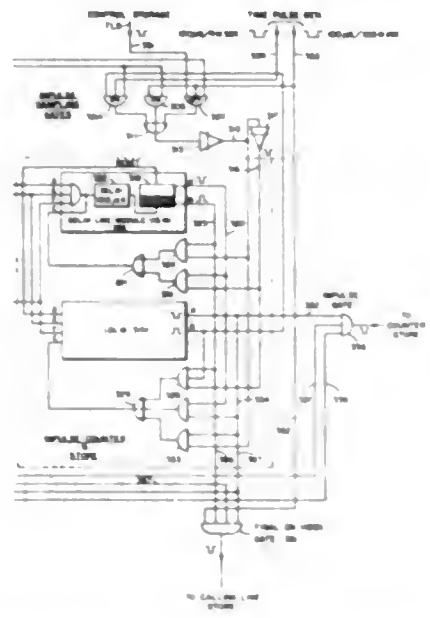
3,158,811
ORTHOGONAL MODE WAVEGUIDE BALANCED MIXER CONTAINING A DUMBBELL-SHAPED IRIS AND ATTENUATOR STRIP
Bernard M. Schiffman, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 24, 1961, Ser. No. 126,034
14 Claims. (Cl. 325—446)



1. In a waveguide hybrid junction; a waveguide section capable of supporting a pair of orthogonally polarized dominant transverse electric waveguide modes established by first and second waves propagating, respectively, through a pair of junction connections adjoining said section, the junction connection for said first wave including a dumbbell-shaped iris; an attenuator means positioned across said dumbbell-shaped iris; a microwave source closely-coupled to said waveguide section and producing said first wave; a pair of responsive means directionally responsive to the electric field of said modes and means for distorting said modes to produce electric fields of opposite direction in each connection with one mode and electric fields of the same direction in each connection with the other mode.

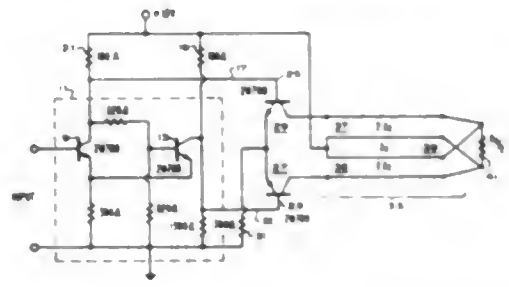
3,158,812
IMPULSE ANALYZER FOR TIME DIVISION MULTIPLEX SWITCHING SYSTEMS
William F. Bartlett, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Mar. 30, 1961, Ser. No. 99,400
8 Claims. (Cl. 328—42)

1. In combination, a binary counter having a first and second stage, a first clock pulse source, a second clock pulse source for producing a lower frequency pulse train than the pulse train produced by said first clock pulse source, a data source for producing a first or second condition, means responsive to said first condition for applying the pulses produced by said first clock pulse source to said binary counter, and means responsive to the storage of a bit in said second stage for preventing the application of the pulse train produced by said first clock



pulse to said binary counter and for causing the pulse train produced by said second clock pulse source to be applied to said binary counter.

3,158,813
PULSE-FORMING CIRCUITS INCLUDING A PLURALITY OF TRANSMISSION LINES
Merrill W. Brooksby, Cupertino, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 11, 1963, Ser. No. 250,860
7 Claims. (Cl. 328—56)



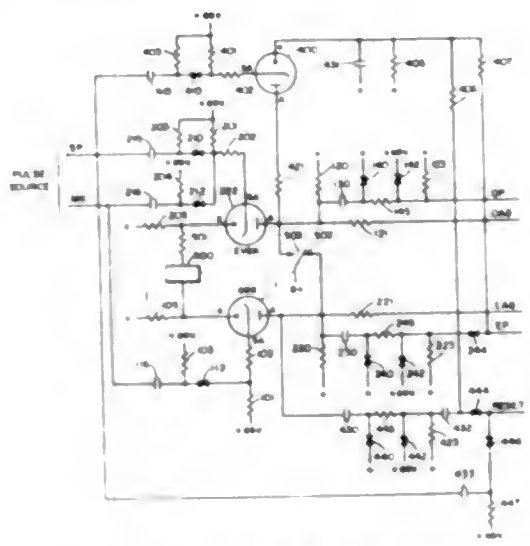
1. A pulse-forming circuit comprising:
a trigger circuit having a pair of outputs and being operative only in either one of two operating states;
means to apply signal to said trigger circuit to produce changes in the operating states thereof;
said trigger circuit producing signals in phase opposition at the outputs thereof in response to changes in the operating states thereof;
a pair of transmission lines each having an input end and an output end;
means connecting the outputs of said trigger circuit to the inputs of said transmission lines;
a utilization circuit;
means connecting the output ends of said lines in parallel across said utilization circuit for applying the signals appearing at the input ends of the transmission lines to said utilization circuit in in-phase relationship;
another transmission line having an input end and a shorted end remote from said input end;
and means connecting the input end of said other transmission line across said utilization circuit.

3,158,814

PULSE REPEATER EMPLOYING ALTERNATELY CONDUCTING DEVICES RESPONSIVE TO CONTROL MEANS ALTERNATELY PRIMING AND CUTTING-OFF SAID DEVICES

Donald A. Brewin, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Jan. 16, 1963, Ser. No. 251,796
11 Claims. (Cl. 328—210)



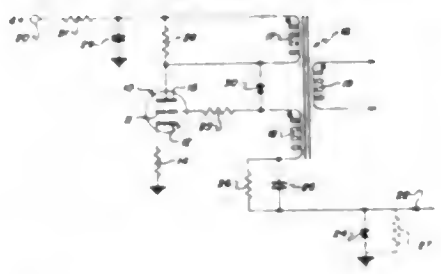
1. In a pulse repeater, first and second devices each having an anode, a cathode, and a starter anode, a source of pulses having a predetermined minimum potential with respect to a reference potential, a bistable device, first circuit means for applying the pulses from said source to the starter anodes of both of said first and second devices, said bistable device including control means for rendering said first device conductive in response to the application of one of said pulses to its starter anode only when said bistable device is in a first of its stable states and for rendering said second device conductive in response to an application of one of said pulses to its starter anode only when said bistable device is in a second of its bistable states, second circuit means coupled to said first and second devices for setting said bistable device to its first and second states when said second and first devices, respectively, are rendered conducting, first and second output terminals, and means for producing an output pulse at said first and second terminals in response to the setting of said bistable device to its first and second states, respectively, whereby pulses are alternately applied to said first and second terminals in response to successive pulses from said pulse source.

3,158,815

BARKHAUSEN OSCILLATION ELIMINATION MEANS

John P. Hoice, Albuquerque, N. Mex., and George L. Anderson, Boulder, Colo., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed July 24, 1962, Ser. No. 212,175
2 Claims. (Cl. 328—215)



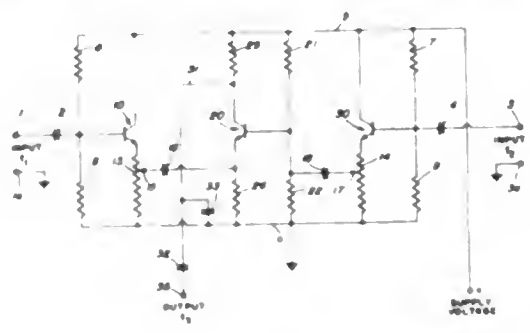
1. A triggered monostable blocking oscillator circuit comprising in combination a multielement vacuum tube having at least an anode, a cathode, and a control grid, inductive feedback means connected between said anode and said control grid, a source of D.C. potential, circuit means for supplying said D.C. potential to said anode, trigger input means, said control grid being connected to said trigger input means through said feedback means in series with a parallel resistive-capacitive network, said cathode being connected to ground through a self-biasing resistor, a dropping resistor and a diode connected in series between said control grid and said anode, said diode oriented such that its forward bias condition occurs when the junction of said diode and said dropping resistor becomes positive with respect to said anode.

3,158,816

PRODUCT DEMODULATOR

Buell E. Harris, Jr., 444 Pine St., Melbourne, Fla.

Filed June 28, 1962, Ser. No. 206,106
2 Claims. (Cl. 329—50)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A demodulator comprising:
first and second common collector transistors, and a third common emitter transistor, each having base collector and emitter electrodes;
means for applying a D.C. bias to said transistors;
means for coupling the emitter of said first transistor to the base of said third transistor;
means for coupling the emitter of said second transistor to emitter of said third transistor;
means for applying a single-sideband suppressed carrier information signal having an intermediate frequency component to the base of said first transistor; and
means for applying an unmodulated sinusoidal signal, equal in frequency to the intermediate frequency component, to the base of said second transistor.

3,158,817

FREQUENCY RESPONSIVE APPARATUS WITH DUAL OUTPUT FILTER

Donald M. Lauderdale, Austin, Tex., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 30, 1961, Ser. No. 135,086
8 Claims. (Cl. 329—119)



5. In a frequency responsive apparatus, a dual output filter, an input signal of varying frequency being applied

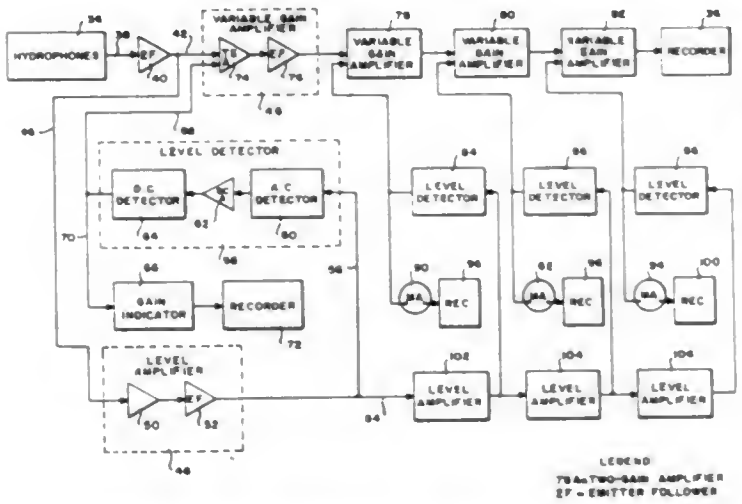
to the input of said filter, said filter having two branches for operating on said input signal to change said input signal into two separate signals, said filter having output means for combining said separate signals into additive and difference signals having a ninety degree phase shift at the center frequency of the filter, and a phase discriminator coupled to said filter, said additive and difference signals being applied individually to the input of said discriminator whereby the output of said discriminator is a direct current voltage of varying amplitude representing the change in frequency of the input signal from the center frequency.

3,158,818

AUTOMATIC GAIN CONTROL SIGNAL TRANSLATING SYSTEM

David J. Plumpe, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1962, Ser. No. 213,837
3 Claims. (Cl. 330—29)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A system for recording a signal having a range of amplitude greater than the response range of the recording medium comprising:

an input terminal for receiving the signal;

a plurality of variable gain amplifier means connected sequentially in series, the first variable gain amplifier means of said series being connected directly to said input terminal;

a plurality of level amplifiers connected sequentially in series, the output of each being connected directly to the output of the succeeding amplifier, the first amplifier of said series being connected directly to said input terminal;

said plurality of level amplifiers corresponding in number to said plurality of variable gain amplifier means;

a plurality of level detecting means, one of each of said plurality of detecting means respectively connected between sequentially corresponding variable gain amplifier means and the level amplifier in said series;

the last of said variable gain amplifier means being connected to a recording device;

each of said variable gain amplifier means having at least two selectable predetermined levels of gain;

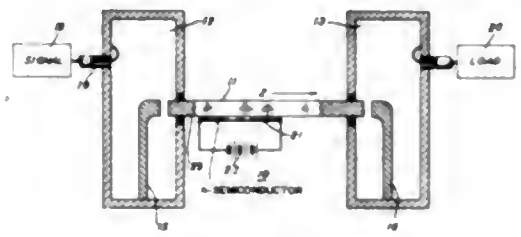
each of said level detecting means producing an output signal which is fed to its corresponding variable gain amplifier means for selecting the desired level of gain when the signal amplitude at the detector is less than a predetermined level and for selecting another level of gain when the signal amplitude exceeds a predetermined level.

3,158,819

TRAVELING ACOUSTIC WAVE AMPLIFIER UTILIZING A PIEZOELECTRIC MATERIAL

Ping K. Tien, Chatham Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 26, 1961, Ser. No. 105,679
8 Claims. (Cl. 330—35)



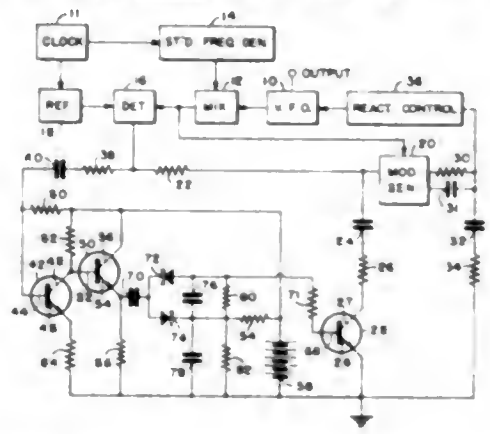
3. In combination: an elongated piezoelectric element, means for exciting in the piezoelectric element acoustic wave energy at a predetermined frequency to propagate in a predetermined direction, an elongated semiconductive element contiguous with one side of the piezoelectric element, means for increasing the acoustic wave energy at said predetermined frequency in the piezoelectric element, said last-mentioned means comprising means for causing current carriers to flow in the semiconductive element in the same direction as the acoustic wave propagation.

3,158,820

ELECTRONIC SERVO SYSTEM FOR AUTOMATICALLY LOCKING TWO ALTERNATING CURRENT SOURCES IN PHASE

Joseph J. Lamplot, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed May 1, 1961, Ser. No. 106,750
12 Claims. (Cl. 331—4)



1. A system for synchronizing the phase of the output of an adjustable frequency source with the phase of the output of a reference generator comprising:

phase comparison means receiving both of said outputs and delivering an output control voltage having a magnitude and frequency proportional to the phase displacement between said outputs;

control means for said adjustable frequency source, said control means receiving said output control voltage, said control means being responsive to said control voltage for adjusting the frequency of the output from said adjustable frequency source in a direction towards phase synchronization with said output from said reference generator;

a coupling network interposed between the output from said phase comparison means and said control means, said coupling means including a reactive branch presenting a low impedance shunt to frequencies produced by relatively large variations from said phase comparison means, and a current flow control device effectively enabling and disabling said reactive branch;

said current flow control device having a collecting electrode, an emitting electrode, and a current flow controlling electrode, said emitting and collecting electrodes being connected in series with said reactive branch across said phase comparison means, the operating bias for said collecting and emitting electrodes being provided solely from the output of said phase comparison means through said reactive branch;

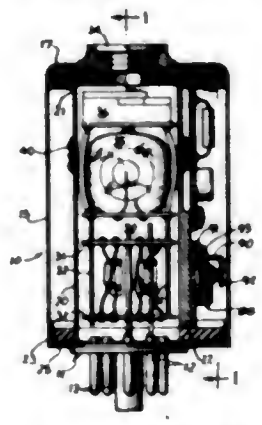
and frequency responsive means coupled to the output of said phase comparison means for providing a direct voltage back bias for said control electrode in proportion to the frequency of said output control voltage from said phase comparison means, whereby said electronic current flow control device is rendered non-conductive and said reactive branch is disconnected when the frequency of said output control voltage exceeds a predetermined frequency.

3,158,821

OVEN FOR PIEZOELECTRIC CRYSTALS

Peter G. Sulzer, Potomac, Md., assignor, by mesne assignments, to The James Knights Company, Sandwich, Ill., a corporation of Delaware

Filed May 13, 1960, Ser. No. 28,949
10 Claims. (Cl. 331—69)



2. In a crystal oven the combination comprising a housing, an anvil of thermally conductive material in said housing and having provision for mounting a crystal therein so that the temperature closely follows that of the anvil, a heating element surrounding the anvil for heating the same, a temperature sensing device thermally coupled to the anvil at a point spaced from the outer surface of said heating element for producing a signal which varies with the temperature of the anvil, means including an amplifier associated with the sensing device and responsive to the signal therefrom, said amplifier having transistors including an output transistor of the power type with the heating element connected in its output circuit for controlling the heating element in accordance with the signal to correctively change the temperature of the anvil, the transistors being located in the housing and said power type transistor being arranged at the base of the anvil so that the heat from the latter is released within the housing, and an auxiliary heating element connected to the output of the power type transistor and thermally coupled to the temperature sensing device.

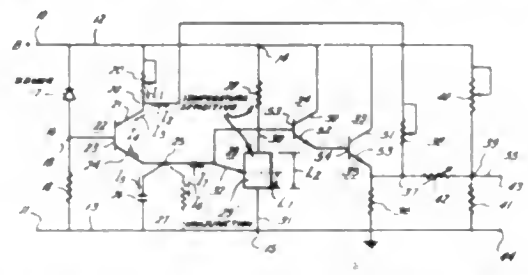
3,158,822

SAW-TOOTH WAVE FORM GENERATOR HAVING FEEDBACK MEANS TO COMPENSATE FOR LEAKAGE CURRENT OF THE CHARGING CAPACITOR

George E. Brechling, Levittown, Pa., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut

Filed Mar. 27, 1961, Ser. No. 98,460
5 Claims. (Cl. 331—111)

1. A saw-tooth wave form generator comprising in combination: a charging capacitor, a variable direct current source for charging said capacitor, a voltage level detector connected to said capacitor, the detector impedance changing from a very high to a very low value when the voltage on said capacitor attains a characteristic voltage level, a load impedance, a buffer amplifier coupled between said load impedance and said capacitor, a resistive element connected between said load impedance and said current source for shunting a fraction of the current of said source, said fraction decreasing as the voltage on said capacitor increases thereby compensating for the rising leakage current in said capacitor and developing



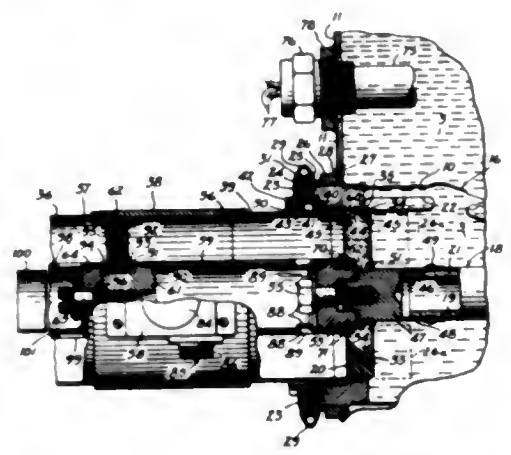
across said load impedance long linear voltage ramps forming a low-frequency, saw-tooth wave form, a voltage divider network including a first variable resistor and a fixed resistor connected in series and having a common junction, a second variable resistor one end of which is connected to said common junction and the other end is connected to a reference voltage source, the resistance value of said first variable resistor determining the slope and the resistance value of said second variable resistor determining the level of the voltage ramps appearing across said fixed resistor.

3,158,823

COAXIAL LINE COUPLING AND PARTITION DEVICE

James R. Bird, Chagrin Falls, Blossy D. Frederico, Cleveland, and Herbert H. Heller, Cleveland Heights, Ohio, assignors to Bird Electronic Corporation, Solon, Ohio, a corporation of Ohio

Original application Oct. 4, 1954, Ser. No. 460,042, now Patent No. 2,958,830, dated Nov. 1, 1960. Divided and this application Oct. 7, 1959, Ser. No. 844,933
18 Claims. (Cl. 333—22)



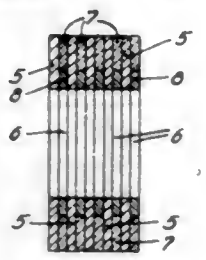
1. A junction for joining coaxial line sections each of which comprises an inner and a tubular outer conductor, said junction comprising an annular outer connector for extending between and electrically connecting the outer conductors of the line sections, an inner connector for extending between and electrically connecting the inner conductors of the line sections, insulating means surrounding the inner connector and supporting it coaxially within the outer connector, and means having a surface inclined to the axis of the connectors providing a dovetail annular interlock between the insulating means and one of the connectors, said inclined surface engaging the insulating means over a relatively small fractional portion only of the radial extent of the insulating means.

3,158,824

TUBULAR WAVE GUIDE FOR TRANSMITTING CIRCULAR-ELECTRIC WAVES

Herbert Larsen, Munich, and Herbert Bauhof, Berlin-Spandau, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin-Siemensstadt and Munich, Germany, a German corporation

Filed Mar. 25, 1958, Ser. No. 723,723
Claims priority, application Germany, Mar. 27, 1957, S 52,877
3 Claims. (Cl. 333—95)



1. Tubular wave guide for transmitting electromagnetic waves of the transverse circular-electric mode, particularly TE_{01} waves, comprising peripheral portions jointly constituting an elongated tubular guide structure having a hollow and air-filled transmission space of round cross section, the cross-sections of said portions defined by a plane passing through the longitudinal axis of the wave guide being substantially rectangular and forming peripheral slots between each other, the tube wall of said guide structure being interrupted by said slots, an outer damping layer of dielectric material situated in the outer portions of said slots and having high wave-energy dissipation compared with said tubular structure, an intermediate dielectric layer situated in said slots inwardly of said damping layer and located between said outer layer and said space, said intermediate layer having a dielectric constant graduated between those of said outer layer and of said air in said transmission space respectively.

3,158,825

MOVABLE RESONANT CAVITY TUNING PROBE IN DIELECTRIC SLEEVE HAVING NONUNIFORM OUTER SURFACE

Maurice J. Vetter, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce

Filed May 10, 1962, Ser. No. 193,887
2 Claims. (Cl. 333—83)



1. A tuning device for a resonant cavity comprising: an envelope of selected dielectric material positioned in said cavity, said envelope having a plurality of surfaces, each defined by a respective line drawn substantially parallel to and rotated around the longitudinal axis of said envelope, a probe, and means for selectively positioning said probe in said envelope.

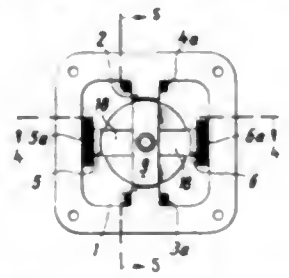
3,158,826

ANGULAR POSITION SIGNAL GENERATOR

Rudolf Beck, Konigstein, Taunus, Germany, assignor to Hans J. Zimmer Verfahrenstechnik, Frankfurt am Main, Germany

Filed Mar. 4, 1963, Ser. No. 262,703
Claims priority, application Germany, Mar. 5, 1962, Z 9,268
5 Claims. (Cl. 336—30)

1.. A device for generating an electrical signal which is a function of the angular position of a shaft, said device comprising a rotor carried by the shaft and a stator having a plurality of poles surrounding said rotor; there being four main poles which are spaced apart equal angular distances and form two pole pairs each including two opposite poles, said stator further having four supplemental poles two of which are arranged axially spaced from and on opposite sides, respectively, of one of the main poles of one of said pole pairs, the remaining two further supplemental poles being arranged axially spaced from and on opposite sides, respectively, of the other of said main poles of said one pole pair; said rotor having a circular disk portion which has a peripheral edge surface and a plate portion which extends at right angles to said disk portion, is symmetrical with respect to a diameter of the latter, has end faces, and has edge surfaces that are part of a cylindrical surface to form a continuation with the peripheral edge surface of said disk portion, said plate portion having an axially extending symmetrical



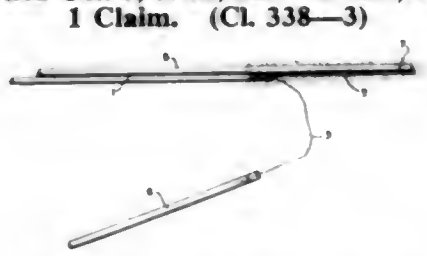
slot whose ends are spaced from the end faces of said plate portion, and said disk portion having, generally in alignment with said slot, two recesses on opposite sides of said plate portion, respectively, said recesses having, in circumferential direction, a width which is at most equal to the circumferential width of said main poles, said disk portion being in axial alignment with said main poles and said plate portion being axially of sufficient length to extend from the supplemental poles on one side of said main poles of said one pair to the supplemental poles on the other side of said last-mentioned main poles; each of said main poles carrying a winding, the windings of the main poles of one of said pole pairs being primary windings to which an alternating voltage is applied and the windings of the main poles of the other of said pole pairs being secondary windings from which are derived signals representing the angular position of the rotor, and hence of the shaft carrying said rotor.

3,158,827

TEMPERATURE COMPENSATED ELECTRICAL STRAIN GAGE

Paul Beckman, 944 Henrietta Ave., Huntingdon Valley, Pa.

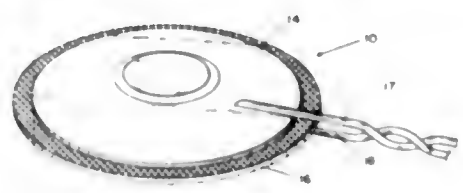
Filed Oct. 8, 1962, Ser. No. 229,061
1 Claim. (Cl. 338—3)



A temperature-compensated strain gage of the electrical resistance filament type comprising a strain sensitive filament, leads connected to each end of that filament, a temperature compensating filament disposed in a transverse direction with respect to the strain sensitive filament, and means for bonding the two filaments and leads as a self-contained unit, said combination being further characterized in that the temperature compensating filament is connected to one of the leads and a third lead is connected to the other end of the temperature compensating filament, the three leads being disposed along side of each other with the strain sensitive filament lying along

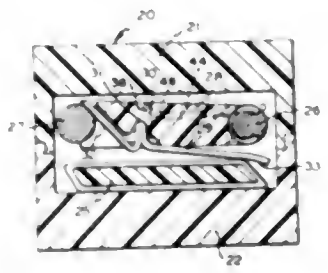
the lengthwise portion of one end of one of its leads, the temperature compensating filament being wound around the strain sensitive filament in a direction extending between the ends of the two leads connected to the strain sensitive filament, and all of the leads and filaments being bonded together and insulated from one another by a bonding material.

3,158,828
THERMISTOR
David W. Bargen, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed May 7, 1963, Ser. No. 278,564
6 Claims. (Cl. 338—28)



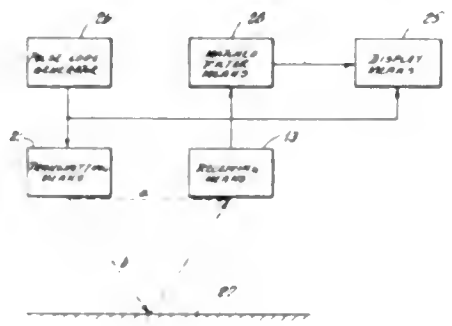
1. A thermistor device comprising a solid thermistor body of semiconductive material having a specified temperature coefficient of resistance, first and second foil means connected to opposite sides of said body, said foil means being formed partially about said body toward each other and thereby forming an enclosure for said body, and said foil means having border portions projecting from said body substantially parallel to each other and extending around the perimeter of said body to increase the thermal contact area of said thermistor over that of said body, insulating means separating said border portions of said foil means and adherently bonded to said border portions for sealing said enclosure, and electrical connector means connected to said foil means.

3,158,829
POTENTIOMETER
Fred E. Dole, Rocky Hill, Conn., assignor to Ace Electronics Associates, Inc., a corporation of Massachusetts
Filed Apr. 30, 1963, Ser. No. 276,825
10 Claims. (Cl. 338—180)



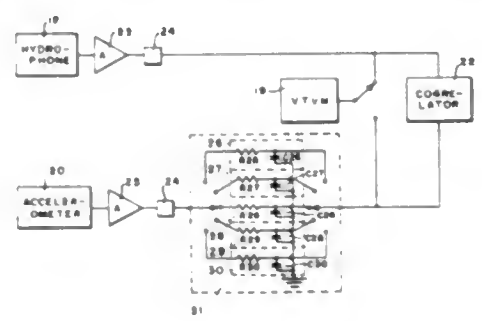
1. In a potentiometer or rheostat having an elongate resistance element, a lead screw extending along said element, a slider assembly, means for restraining said assembly against rotation about the lead screw axis, and means threadingly coupling said assembly to said lead screw, whereby upon rotation of said lead screw said assembly is caused to traverse along said lead screw and resistance element; the improvement wherein said slider assembly includes a block having one side located adjacent said lead screw and having an opening therein transverse to said side, and said coupling means comprises a length of resilient wire located in said opening and having a free end portion projecting therefrom transversely to said side, said projecting portion being positioned in the groove of the lead screw defined by the screw threads thereof.

3,158,830
SIGNAL CORRELATION METHOD AND MEANS
Clarence S. Clay, Jr., Hastings, N.Y., assignor to the United States of America
Filed Apr. 4, 1961, Ser. No. 113,973
2 Claims. (Cl. 340—3)



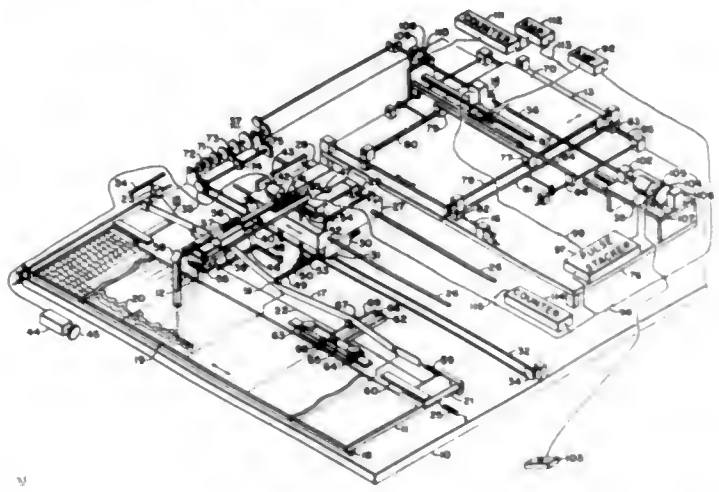
1. A signal correlation device for use in a noisy medium comprising, in combination: signal generating means for producing a pulse-coded electrical signal having a plurality of successive impulses, the time separation of the impulses being in accordance with a predetermined schedule; transducing means for changing said electrical signal into a corresponding sound signal and for propagating said sound signal in said noisy medium; receiving means for receiving sound signals from the noisy medium and for changing the received sound signals into corresponding electrical signals; matched-filter signal delay means for delaying said corresponding electrical signals in inverse relation to the time relationships between succeeding impulses of the original generated pulse-coded signal, so that the individual impulses of any portion of said corresponding electrical signals which matches the time schedule of said original generated signal are delayed by different amounts of time to allow all the impulses to pass out of said delay means simultaneously; signal combination means for combining all impulses simultaneously proceeding from said delay means and producing a representative signal therefrom; and means for indicating said representative signal.

3,158,831
UNDERWATER ACOUSTIC INTENSITY METER
George L. Boyer, Endicott, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 31, 1961, Ser. No. 113,966
10 Claims. (Cl. 340—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



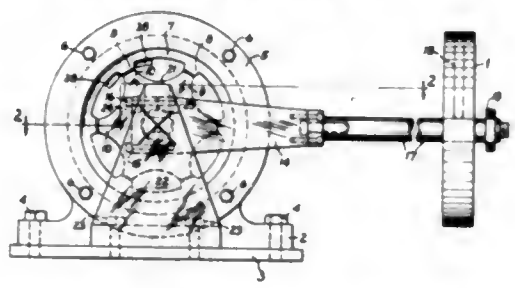
1. An underwater acoustic intensity meter comprising a stiffness controlled accelerometer having an output integrating means connected to said accelerometer, a pressure sensitive hydrophone mounted near said accelerometer, and measuring means connected to said integrating means and to said hydrophone for measuring the sound intensity over a wide frequency range.

3,158,832
CYCLE BREADTH TRANSCRIBER EMPLOYING A SAWTOOTH GENERATOR
Jesse D. Skelton, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed Oct. 28, 1959, Ser. No. 849,321
23 Claims. (Cl. 340—15.5)



12. A method for translating oscillographic seismic trace records to a cycle breadth trace record which comprises scanning along an oscillographic trace to detect zero crossings of said trace, simultaneously recording variations in the breadth between said crossings in the oscillographic trace as intensity variations in a second trace, varying the rate of a scan of oscillographic trace relative to the rate of recording of the second trace to incorporate spread correction along the reproducible trace, further varying the rate of scan of the oscillographic trace relative to the recording of said second trace to keep said traces in seismic time synchronism.

3,158,833
SEISMOMETER
Rudolph F. Hantly, 630 Kirkshire, Kirkwood, Mo.
Filed July 5, 1960, Ser. No. 40,891
4 Claims. (Cl. 340—17)



1. In a seismometer having a reference frame, a rotary magnetic suspension system consisting of a hollow cylindrical stator magnet integral with said reference frame, a rotor magnet magnetically suspended within said stator magnet and rotatable with respect thereto, a shaft disposed through the central axis of said rotor magnet and integral therewith, a U-shaped yoke mounted on said shaft, and a mass mounted upon the yoke, said mass subject to relative vertical motion with respect to said reference frame, said vertical motion reflected by relative rotation between said stator and rotor magnets.

3,158,834
AIRCRAFT LANDING AID
Nicholas A. Evans, 440 Mount Vernon Road, Newark, Ohio
Filed Nov. 13, 1962, Ser. No. 237,409
3 Claims. (Cl. 340—26)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A device for aiding the pilot of an aircraft to follow a correct approach path to touchdown on a landing area of restricted size, said device being controllable by an observer of said craft stationed in the vicinity of said landing area, said device comprising:

(*a*) a horizontal row of constantly-energized light sources located to one side of said landing area and facing in the direction from which said aircraft approaches;

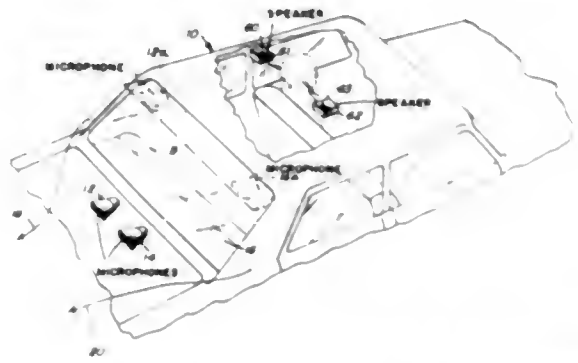
(*b*) a further constantly-energized signal light source movable vertically from a location above said row to a location below said row, said row of light sources thus constituting a reference level for a signal displayed to the pilot of said aircraft in accordance with

the instantaneous vertical position of said movable light source;

(*c*) electrically-energized apparatus for moving said further light source vertically and in a selected direction; and

(*d*) a switch, operable by said aircraft observer, for controlling the energization of said apparatus and hence the movement of said further light source to a selected vertical position to thereby convey to the pilot of said aircraft information concerning the position of his craft with respect to the correct approach path to said landing area.

3,158,835
SAFETY DEVICE SIGNAL PICK-UP FOR MOTOR VEHICLES
Otho F. Hipkins, 617 Shore Drive, Oldsmar, Fla.
Filed July 14, 1961, Ser. No. 124,136
1 Claim. (Cl. 340—34)

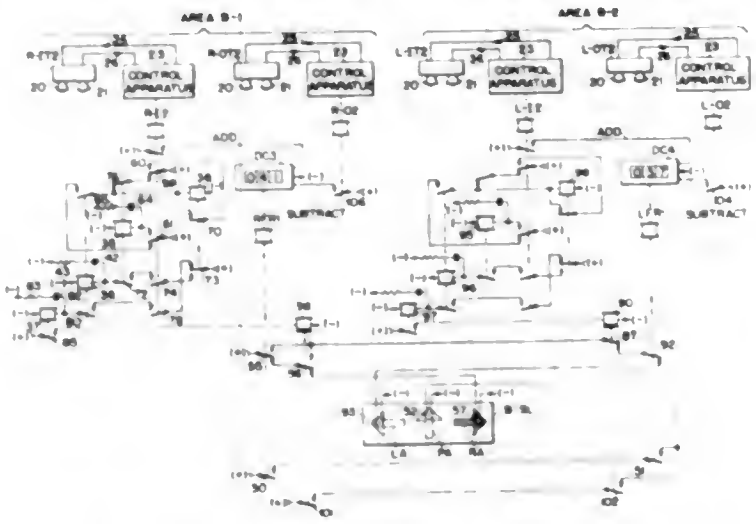


The method of informing a driver of a substantially closed vehicle of the existence and direction of external noise sources comprising the steps of: disposing externally of the vehicle, in positions out of its slip stream, a pair of microphones respectively at left and right hand spaced-apart positions relative to the longitudinal axis of the vehicle; disposing a pair of speakers internally of the vehicle in uniform spaced-apart relation to the ears of the driver when situated in normal driving position; the positions of said speakers being, respectively, left and right hand relative to the driver; conveying energy in accordance with external moving sound sources and stationary sound sources from the right hand external microphone to the right hand internal speaker; and conveying energy in accordance with said external moving and stationary sound sources from the left external microphone to the left internal speaker whereby the driver receives impressions of directions from the external sounds emanating regardless of whether the vehicle is moving or stationary.

3,158,836
AUTOMATIC TRAFFIC DIRECTING SYSTEM FOR GARAGES

Donald R. McCauley, Rochester, N.Y., assignor to General Signal Corporation

Filed Jan. 23, 1961, Ser. No. 83,969
6 Claims. (Cl. 340—51)

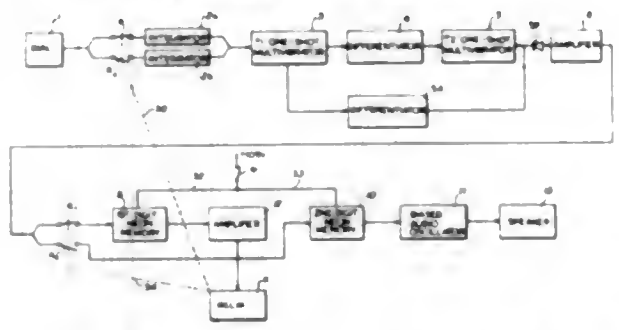


6. A traffic routing system for a parking garage having a plurality of independently accessible parking areas each having at least one entranceway and one exitway, vehicle registering means at each entranceway and each exitway and responsive to each vehicle passing therethrough, differential counting means for each area operatively connected to all the vehicle registering means associated with said area so as to advance a count in one direction for each vehicle entering said area and to advance a count in the opposite direction for each vehicle leaving said area, traffic directing means governed by said differential counting means for directing vehicles into said area only if the number of vehicles already in said area is less than the parking capacity of said area, and auxiliary counting means operatively connected to said vehicle registering means for said entranceways for controlling said traffic directing means to route traffic away from said area even though there are available parking spaces therein when a predetermined plurality of closely following vehicles have within a predetermined short time interval been registered as entering said area.

3,158,837
PULSE TIME DECODER

Milton Bodin, 176 Copley Ave., Teaneck, N.J., and Leon Zinn, 8 Circle Drive, Hicksville, N.Y.

Filed Feb. 9, 1961, Ser. No. 88,200
8 Claims. (Cl. 340—167)

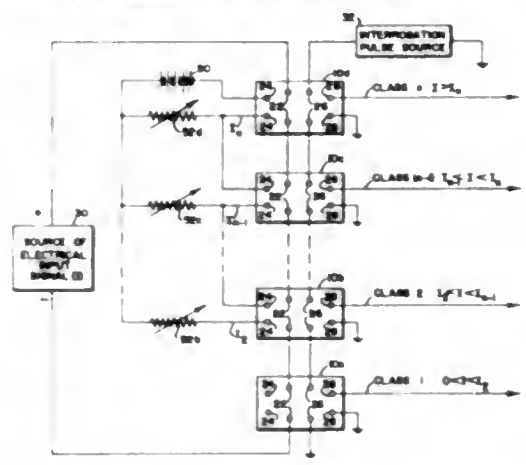


1. In an intercommunication system having a plurality of stations, an electric signaling system comprising operator-controlled means at each station for transmitting simultaneously to all other stations an operator-selected number of electric signal pulses of relatively uniform duration and frequency, and means at each station receiving all signal pulses of the system and automatically responsive to a pre-selected number, distinctive for each station, of said pulses, whereby an operator at one station can call another station by transmitting the number of pulses distinctive for such other station, said pulse-receiving and responsive means comprising first circuit means receiving said pulses and responsive to said pulses to produce a first circuit output corresponding to the conclusion of the time interval required for reception of the preselected number of pulses, second circuit means receiving said pulses and responsive to said pulses to produce a second circuit output at the conclusion of the actual pulses received, and output signal means coupled to said first and second circuit means for reception of the outputs thereof and responsive thereto to produce an output signal when said first and second circuit outputs are in time coincidence.

3,158,838
ELECTRICAL SIGNAL CLASSIFIER UTILIZING MAGNETIC ELEMENTS

Roswell W. Gilbert, East Orange, N.J., assignor to Weston Instruments, Inc., a corporation of Texas

Filed June 12, 1962, Ser. No. 201,998
10 Claims. (Cl. 340—172)



1. Apparatus for classifying an input electrical signal according to its amplitude into one of a plurality of amplitude defining classes comprising, in combination,

a plurality of saturable magnetic comparators each having first, second, and third input windings and an output winding,

a source of interrogation pulses,

means connecting said first input windings in series across said source for generating an output signal in said output windings,

a plurality of reference current sources each providing a different amplitude of reference current,

means connecting each of said reference current sources to a different one of the second input windings in such polarity as to reduce the amplitude of said output signal, and

means applying said input signal to the third input winding of each of said comparators in such polarity as to increase the amplitude of said output signal, whereby said output signal exists substantially only on the output winding of that one comparator whose reference current amplitude is less than the amplitude of said input signal by the least amount, thereby to provide an indication of the amplitude class of said input signal.

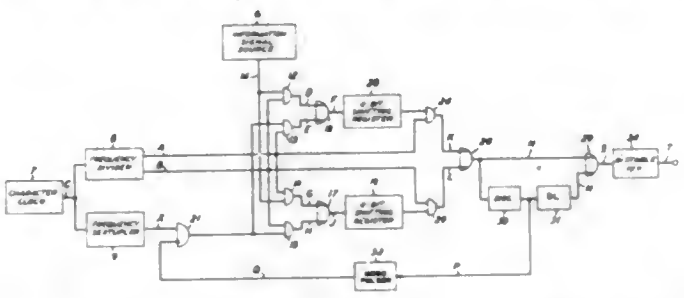
3,158,839
DATA TRANSLATING SYSTEM

Richard R. Anderson, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 15, 1958, Ser. No. 780,579
13 Claims. (Cl. 340—172.5)

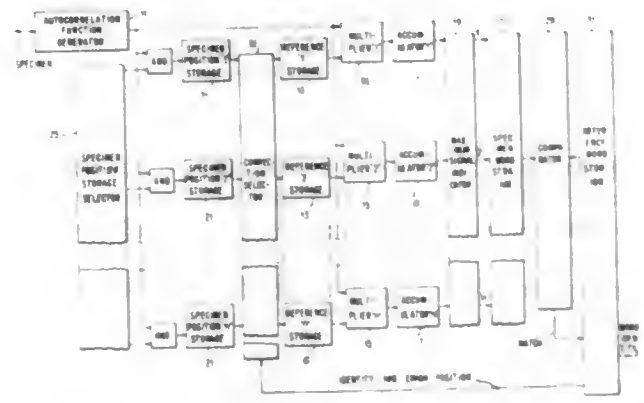
12. A cole conversion apparatus comprising a source of f-bit binary coded character signals, each of said binary bits being of two types, a source of s-element replacement

signals, the duration of *s*-elements of said replacement signals corresponding to that of *f*-bits of said character signals; where *s* is a number larger than *f*, and variable length binary self-clocking encoding means coupled to said *f*-bit and to said *s*-element sources for storing both



types and transmitting one type of said binary signals during corresponding signal intervals of said *f*-bit and said *s*-element signals, respectively, and means for controlling said storing and transmitting means to transmit the other type of said binary signal during more than one element interval of said *s*-element signals.

3,158,840
SPECIMEN IDENTIFICATION APPARATUS AND METHOD
Herbert B. Baskin, Mohegan Lake, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1962, Ser. No. 166,211
10 Claims. (Cl. 340—172.5)



1. A specimen identification apparatus for identifying a specimen word based on its similarity to reference words containing reference patterns comprising, in combination:

input means including a surface light scanning device, and a light-sensitive device having an output signal $f(x, y)$ indicative of each specimen in the word;

means responsive to the output signal $f(x, y)$ for generating an autocorrelation function $D_S(x', y')$ of each specimen indication $f(x, y)$;

means for storing autocorrelation functions $D_R(x', y')$ of each of a plurality of reference patterns R;

means responsive to the functions $D_S(x', y')$ and $D_R(x', y')$ for developing the normalized sum of the point-by-point products of the autocorrelation function of each specimen in the word and the autocorrelation function of each reference pattern according to

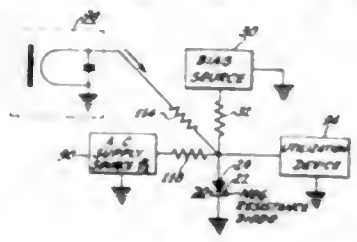
$$\frac{\sum_{x', y'} D_S(x', y') \cdot D_R(x', y')}{\left[\sum_{x', y'} D_R^2(x', y')\right]^{1/2}}$$

means responsive to the generated normalized sums for providing an indication of the reference pattern which corresponds to the largest of the sums, which is indicative of the identity of a specimen, for each specimen;

means responsive to the indications of the corresponding reference patterns for generating an indication of the identity of the specimen word and, when the identified word contains an incorrectly-identified specimen, for generating an indication of the correct identity of the specimen;

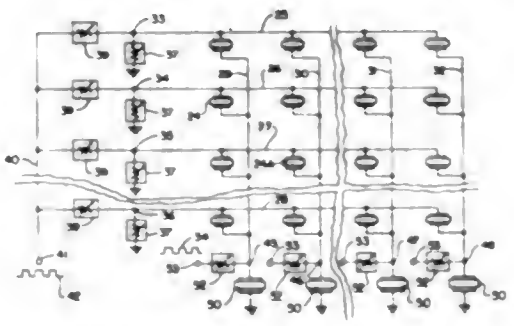
and means responsive to the indication of the correct identity of the incorrectly-identified specimen for altering the stored reference pattern functions that correspond to the correct identity of specimen to cause the reference pattern to be more closely related to the specimen.

3,158,841
DATA SCRIPT CONVERSION SYSTEM
Kam Li, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 26, 1959, Ser. No. 848,732
12 Claims. (Cl. 340—173)



2. In a circuit, the combination comprising a negative resistance diode having two stable operating states, means for applying a first signal of frequency $f/2$ to said diode, a parametric oscillator circuit oscillating at a frequency f and in either of two opposite phases, means for deriving an output signal from said parametric oscillator and means for applying said output signal to said diode to control the operating state thereof.

3,158,842
MEMORY DEVICES USING FERROELECTRIC CAPACITORS AND PHOTOCONDUCTORS
John R. Anderson, Los Altos, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Original application Mar. 27, 1959, Ser. No. 802,371, now Patent No. 3,079,591, dated Feb. 26, 1963. Divided and this application July 9, 1962, Ser. No. 208,476
3 Claims. (Cl. 340—173.2)



2. An information storage device comprising, in combination, a plurality of ferroelectric elements arranged in rows and columns; a first plurality of commons, each of said commons of said first plurality being connected to all of said ferroelectric elements in a row; a second plurality of commons, each of the commons of said second plurality being connected to all of said ferroelectric elements in a column, said commons being effective to apply electrical fields across the ferroelectric elements to polarize said elements in a given direction for the storage of information therein; a first group of photoconductive elements, each being connected at one side to one of the first plurality of commons; first terminal means connected to the other side of each of the first group of photoconductive elements; a second group of

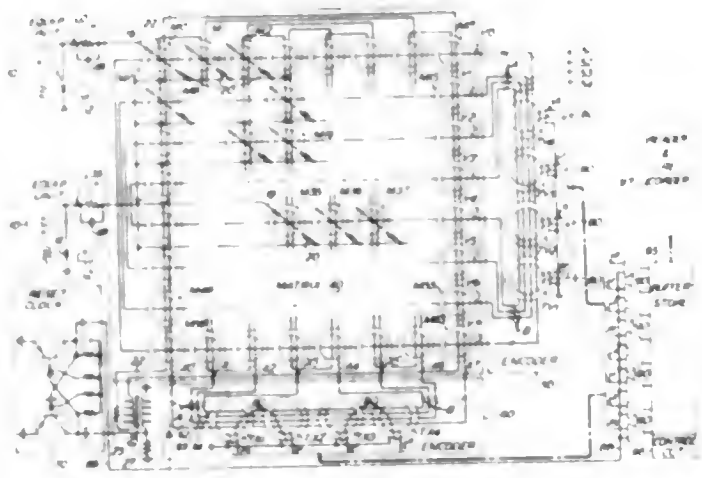
photoconductive elements, each connected at one side to the first plurality of commons; second terminal means connected to the other side of each of the second group of photoconductive elements; a third group of photoconductive elements, each connected at one side to one of the second plurality of commons; third terminal means connected to the other side of each of the third group of photoconductive elements; and output means connected to each of the commons of said second plurality, whereby a circuit path for reading out of information from said storage device may be completed by illumination of a selected photoconductive element of said first group, and whereby a circuit path for storage of information in a selected ferroelectric element of said storage device may be completed by selective illumination of certain of the photoconductive elements of said second group and said third group.

3,158,843

TRAFFIC DATA MONITORING APPARATUS

Roy A. Shapiro, Far Rockaway, N.Y., and William Shaw, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 11, 1962, Ser. No. 194,065
13 Claims. (Cl. 340—174)



1. Traffic monitoring apparatus comprising a plurality of traffic responsive circuits providing a succession of discrete relay energizing signals to individual relays, each said relay controlling electromechanical contacts which develop an indeterminate number of damped contact closures in response to each said discrete energizing signal. means in circuit with said contacts for developing a pulse for each said contact closure, a bistable state magnetic core in circuit with said contacts, said pulse being of sufficient magnitude to set said core to a first state of magnetic remanence, and pulse means operative independently of said relay energizing signals for providing a plurality of consecutive reset pulses individually insufficient to reset said core to its second state of magnetic remanence, said core being resettable by a predetermined number of said reset pulses occurring over a period of time longer than the duration of said damped contact closures.

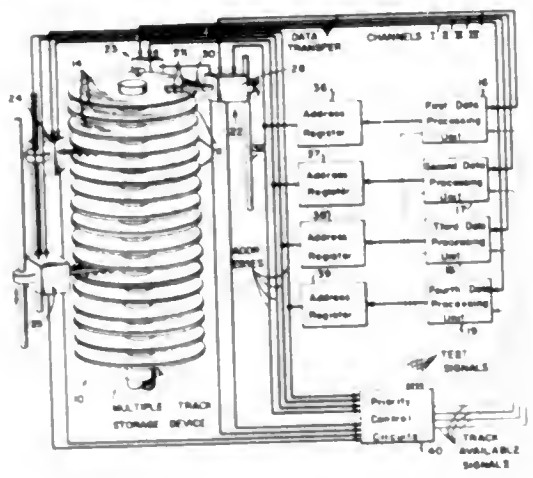
3,158,844

DATA PROCESSING SYSTEM

Raymond R. Bowdle, Los Altos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 14, 1959, Ser. No. 839,964
15 Claims. (Cl. 340—174.1)

1. Apparatus for synchronizing the flow of data between data processors and separate transducer units which operate individually with the data processors at selected addresses in a single multiple address information storage, the apparatus including in combination circuits responsive to the selected addresses and including switching elements, the switching elements being operable to provide closed circuit conditions for each pairing of unlike addresses, a gating network responsive to the closed circuit conditions for providing outputs indicating the availability of any transducer unit when all possible pairings of the address selected for that transducer unit with



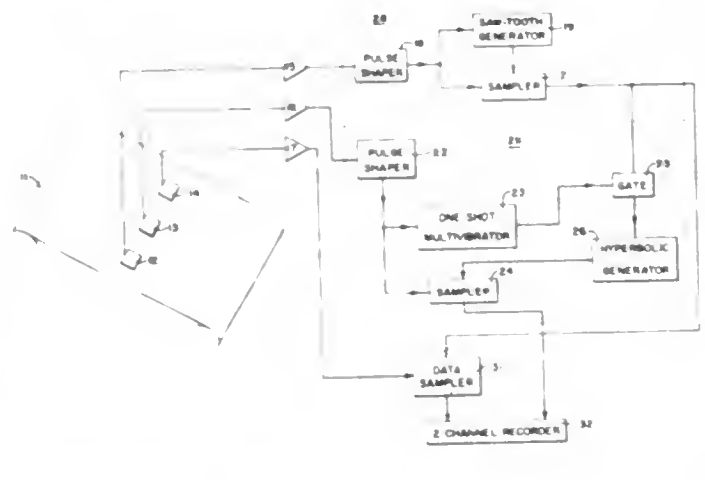
the other addresses cause closed circuit conditions indicating unlike addresses, and interlock control circuits responsive to the closed circuit conditions and coupled to operate the switching elements in accordance with a selected priority relationship when like addresses are provided simultaneously to cause an interlocking of the switching elements in the open circuit condition.

3,158,845

FREQUENCY COMPENSATING SYSTEM

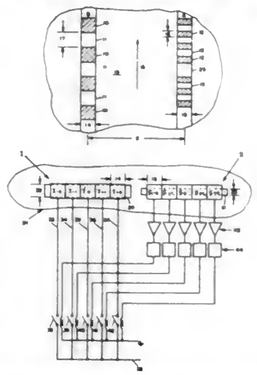
Phillip S. Bengston, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 4, 1960, Ser. No. 12,876
16 Claims. (Cl. 340—174.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



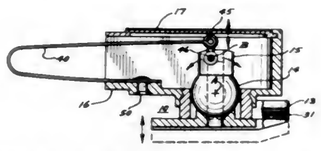
1. A frequency compensating system comprising first means adapted to produce a first output signal varying in amplitude in accordance with the frequency of a first input signal, second means to produce pulses indicative of the frequency of a second input signal, third means coupled to said first and second means to combine the first output signal with the pulses to form a combined signal, and fourth means coupled to said third means to average the combined signal over a single cycle, whereby the output of said fourth means is a signal wherein like frequency components appearing in the first and second input signals are compensated.

3,158,846
INFORMATION RETRIEVAL SYSTEMS
Daniel Silverman, 5969 S. Birmingham Ave., Tulsa, Okla.
Filed Jan. 23,1961, Ser. No. 84,026
17 Claims. (Cl. 340—174.1)



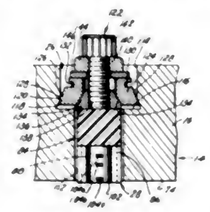
1. In an information scanner adapted to scan and retrieve information from a storage record, said record capable of being traversed longitudinally past said scanner and also capable of wide movement transversely with respect to said scanner, said record comprising a medium having impressed thereon a pattern of spots arranged in at least one column, each of said spots having at least one distinguishable physico-chemical property and representing by said pattern the information recorded on said record, the improvement comprising control means including detector means responsive to the properties of said spots in said column of spots, signal means including detector means responsive to the properties of said spots, switch means connected to said signal means, and selector means connected between said control means and said switch means, said detector means comprising more detectors than there are columns of spots, said detectors arranged transverse to said column, whereby as said record moves transversely over a wide range with respect to said scanner there is always at least one signal detector in scanning relation to each of said at least one column of spots.

3,158,847
TRANSDUCER
Ralph J. Pulkrabek, Minneapolis, Minn., assignor, by mesne assignments, to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed Mar. 14, 1962, Ser. No. 179,716
6 Claims. (Cl. 340—174.1)



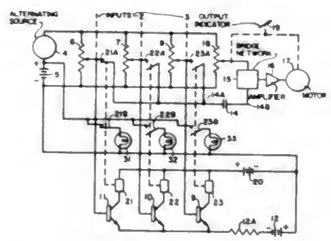
1. Apparatus for use in positioning transducers in information transferring relationship with a moving storage medium comprising; a housing member including an aperture and a means for supplying the interior of said housing with a compressible fluid under pressure; a transducer carrying member having a surface to be positioned in proximity to a moving storage medium and a further member extending normal to said surface, having an enlarged intermediate spherical portion substantially the size of said aperture for coacting with said aperture to provide a compressible fluid lubricated piston and pivot and having an end portion positioned within said housing; biasing means positioned within said housing for retracting said transducer carrying member in the absence of fluid under pressure, said biasing means including mounting means for rotatably engaging a connecting means along an axis normal to the axis of said further member; and connecting means interconnecting said biasing means and the end of said further member, said biasing means and said connecting means cooperating to allow reciprocating movement of said further means along its longitudinal axis and rotational motion about said spherical enlarged portion.

3,158,848
PRECISE MAGNETIC HEAD POSITIONING DEVICE FOR A MEMORY DRUM ASSEMBLY
Alex J. Bielski, Woodland Hills, Calif., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Aug. 14, 1962, Ser. No. 216,804
7 Claims. (Cl. 340—174.1)



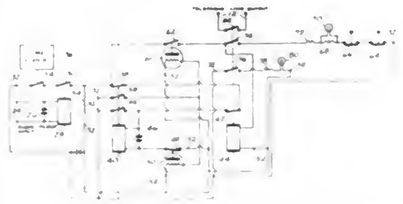
1. A transducing assembly comprising a support, a wall mounted thereon and having an aperture therethrough, a recording member movably mounted adjacent said wall and opposite said aperture, said aperture having a support surface and an inclined auxiliary surface associated therewith, a transducing head having a surface engageable with said support surface for supporting said head in said aperture, and wedge means mounted on and carried by said head, movable relative to said heads into wedging engagement with said inclined auxiliary surface, and effective to urge said support surface and said head surface into clamped engagement with one another.

3,158,849
ELECTRONIC SELECTION CIRCUIT
Sherwood Thaler, Stamford, Conn., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Mar. 2, 1961, Ser. No. 92,825
3 Claims. (Cl. 340—182)



1. An electronic selection circuit comprising a series of at least two potentiometer means for individually receiving at least two input signals mechanically coupled to the adjustable tap of said potentiometer means, means connected to all of said potentiometer means for producing at a node a signal equal to the maximum signal of said individually received input signals, means for supplying both direct currents and alternating currents to said potentiometer means, means connected to said producing means for identifying the source of said input signal and means connected to said node for indicating the magnitude of said maximum input signal.

3,158,850
BURGLAR ALARM SYSTEM
Robert L. Poznanski, 918 NW. 19th Ave., Portland, Oreg.
Filed Sept. 28, 1959, Ser. No. 842,917
4 Claims. (Cl. 340—258)



1. A burglar alarm system comprising an alarm, an electrical alarm actuator having an electric circuit, first and second switches connected in series in the electric circuit of the alarm actuator, an electrical time delay first switch actuator operable by a control circuit actuated by the second switch, a noise responsive actuator operating the second switch, the noise responsive actuator being operable by a first noise signal to actuate the second switch which activates the control circuit of the time delay actuator whereupon the latter operates the first switch after a predetermined time delay following the first noise signal, a subsequent noise signal after said predetermined time delay again operating the noise responsive actuator to actuate the second switch whereby to activate the electric circuit of the alarm actuator, a third switch connected in said control circuit of the time delay actuator, and a second electrical time delay actuator operating the third switch, the second time delay actuator also being operable by said control circuit of the first named time delay actuator and being operable after a predetermined time delay longer than the time delay of the first named time delay actuator to operate the third switch and deactivate the first and second time delay actuators.

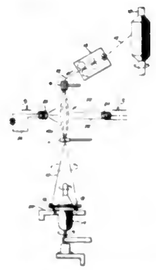
3,158,851
DIRECTIONAL OBSTACLE DETECTING CANE FOR THE BLIND
William A. Ruthven, 3 Fanok Road, Morristown, N.J.
Filed Apr. 22, 1963, Ser. No. 274,457
10 Claims. (Cl. 340—258)

1. A directional obstacle detecting cane for blind persons comprising:
an elongated cane body having head and foot ends;
a handle section provided on the head end of the cane body;
a tactile indicator in the form of an electric vibrator mounted on said handle section;
an electric circuit in which said vibrator is connected;
normally open switch means connected in said electric circuit and including stationary and movable contacts; and
walking hazard exploratory means supported by said cane body and including a rearwardly yieldable obstacle contacting member constructed and arranged



in relation to said switch means in a manner to close said electric circuit when caused to yield by obstacle contact and thereby energize the vibrator.

3,158,852
APPARATUS AND PROCEDURE FOR SENSING PASSAGE OF MOVING THREAD OR THE LIKE
Gordon E. Schacher, New Brunswick, N.J.
(7 Via Ventura, Monterey, Calif.)
Filed Aug. 23, 1960, Ser. No. 51,374
8 Claims. (Cl. 340—259)

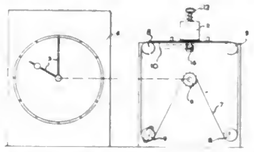


1. In apparatus which comprises thread-handling mechanism, the combination, with means for continuously advancing the thread from one locality through an intervening region to another locality, and cyclically moving means engaging said thread at one of said localities and imparting thereto a motion producing continuous vibration of the traveling thread in the aforesaid region, of signal-producing means including photoelectric means disposed to inspect an area occupied by the vibrating thread in said region, for delivering an alternating electrical signal in correspondence with the vibration of the thread, and means controlled by said signal-producing means and selectively responsive to the presence and absence of said alternating signal, to provide a working signal upon cessation of vibration of the thread.

3,158,853
TIMER DRIVEN PUNCHED TAPE FOR OPERATION OF SIGNAL CONTROLLING SWITCH
Charles Albert Coben, 25 Carlton Green, Redhill, England
Filed Nov. 14, 1960, Ser. No. 68,753
6 Claims. (Cl. 340—309.1)

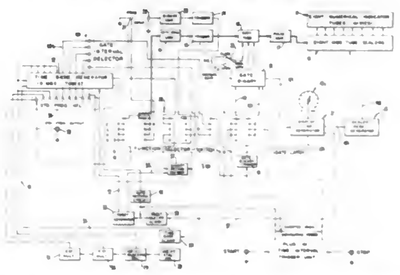
1. A device for causing the emission of signals at predetermined times comprising a clock mechanism, a chart

element of plastic sheet material an edge of which is notched in at least one predetermined position, a sensing device mounted for movement in the plane of the sheet material, drive means for moving said chart element synchronously with said clock mechanism with the said edge of the chart element in contact with the sensing de-



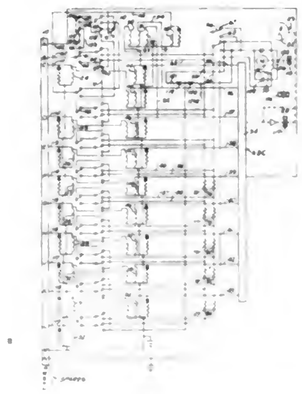
vice, a signal generating means incorporating an electrical circuit, and a switch in said circuit actuated by movement of the sensing device in the plane of the sheet material when the sensing device encounters a notched position in said edge of said chart element whereby a signal is generated.

3,158,854
ELECTRONIC COUNTER
Harry J. Keen, Middletown, Thomas C. Laugesen, Eatontown, and Irving Forman, Lodi, N.J., assignors to Lavoie Laboratories, Inc., Morganville, N.J., a corporation of New Jersey
Filed Jan. 13, 1960, Ser. No. 2,182
10 Claims. (Cl. 340—347)



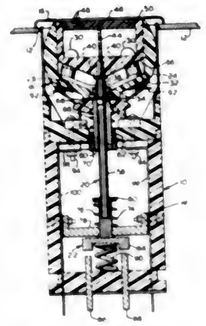
1. In a high speed electronic counter, the combination of a scaler comprising a series of magnetic beam switching tubes connected in cascade, a scaler input circuit controlling the stepping of said magnetic beam switching tubes, a gate connected to said scaler input circuit, and having a signal input, a gate control circuit for controlling the opening and closing of said gate, a signal input circuit for receiving unknown signal pulses, a time base generator comprising a stable frequency source and a series of magnetic beam switching tubes connected in cascade with the input of the first tube of the series connected to said frequency source and the output of each tube connected to the input of the next tube of the series, each of the tubes of said time base generator thus functioning as a frequency divider, an interval selector switch for selectively connecting the output of a selected tube of said time base generator to an output, and function control switch means for selectively connecting said unknown signal input to said scaler through said gate and for simultaneously connecting said gate control circuit to the output of said interval selector of the time base generator thereby to count the pulses of an unknown signal for an interval of time determined by said time base generator and interval selector, said function switch means having means for connecting said time base generator through said gate to said scaler and means for simultaneously connecting the gate control circuit to said unknown signal input thereby to measure the period of duration of an unknown signal.

3,158,855
DIGITAL TO ANALOG CONVERTER AND INDICATOR
Edgar J. Smith, Verona, and Casimir J. Domaszewicz, Paterson, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Aug. 15, 1960, Ser. No. 56,081
5 Claims. (Cl. 340—347)



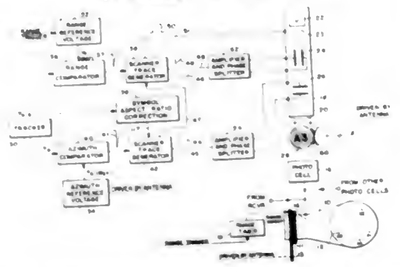
1. In a digital-to-analog converted, an analog integrating device, a plurality of input lines adapted to receive a digitally coded signal, with each line corresponding to a different order of the digital signal input number, a like plurality of feedback lines adapted to receive a digitally coded feedback signal corresponding to the analog signal determined by the integrating device, with each line thereof corresponding to a different order of the feedback signal number, an analog-to-digital converter responsive to said integrating device to produce digital feedback signals over said feedback lines, and means for comparing the digital signal over each input line with the digital signal over the corresponding feedback line, and in the event such signals are not equalized producing a signal to reversibly add to and subtract from the indicating position of the integrating device until the digital signals on all input and feedback lines are the same, whereby said integrating device contains the equivalent of said input signal number in analog form, said analog integrating device comprising a motor having a rotating shaft supported thereby, the input number in analog form being represented by the angular position of the shaft of said motor relative to the nominal position thereof, said comparing means comprising a relay matrix having a plurality of relays responsive to signals over said input lines and a plurality of relays responsive to signals received from said feedback lines, each of said relays having a plurality of contacts the contacts of each of the input signal relays being connected in cascade with the corresponding contacts of the mating feedback relay, whereby when corresponding input and feedback relays are both simultaneously and equally energized, a signal is not directed to said integrating means, whereas when corresponding input and feedback relays are not simultaneously and equally energized, a signal is selectively added to or subtracted from the integrating means depending upon which of said relays is energized and which is de-energized, and means responsive to the angular position of the shaft of the motor and to the angular position of said shaft, called for by the digital input signal, to reversibly energize the motor whereby it rotates the shaft thereof, through the smallest arc to reach the position called for by the digital input signal.

3,158,856
WARNING LIGHT DEVICE HAVING A SWITCH OPERATOR
Billy D. McMains, Anaheim, Calif., assignor, by mesne assignments, to Master Specialties Company, Gardena, Calif., a corporation of California
Filed Nov. 15, 1960, Ser. No. 69,405
1 Claim. (Cl. 340—378)



A warning light device comprising an outer housing, a lamp-carrying capsule, means rotatably mounting said capsule within said housing, a hollow member slidably mounted in said capsule, said member carrying a pin movable therewith, a switch in said housing spaced from said capsule, means in said housing forming a tubular guide between said capsule and said switch, a switch rod effective to operate said switch and slidably mounted in said guide, said hollow member having a normal position In which said pin extends into said guide and is in contact with said switch rod, said hollow member having an outer position farther away from said switch in which said pin is out of said guide and spaced from said rod, and said hollow member having an inner position closest to said switch in which said pin displaces said rod toward said switch to engage and operate said switch and resilient means fixed to said housing with said tubular guide for urging an end of said guide toward said capsule to resist rotation of said capsule.

3,158,857
ALPHA-NUMERIC DISPLAY SYSTEM
Philip M. Crosno and Frank L. Wedig, Jr., Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 28, 1960, Ser. No. 72,066
19 Claims. (Cl. 343—5)



9. A sawtooth generator comprising: first and second triodes each having a plate, a grid, and a cathode, said cathodes being connected to a point of reference potential and each of said plates being connected to a source of direct voltage through a plate resistor; a connection from the plate of said first triode to the grid of said second triode through a first condenser; a connection from the plate of said second triode to the grid of said first triode through a second condenser; a leakage path for said first condenser connected from a point of positive potential to the junction of said first condenser and the grid of said second triode; a diode connecting the grid of said second triode to said point of reference potential, said diode being poled for conduction from the grid of said second triode to said point of reference potential, and a source of negative cut-off potential applied to the grid of said first triode through a resistor, whereby said second triode is at maximum conduction and said first triode is cut off; means applying a voltage pulse to the plate of said first triode to render said first triode conductive at a maximum level and to cut off said second triode; and means for deriving a sawtooth output voltage from said junction, the magnitude of said sawtooth voltage output being constant between limits determined by the grid voltage of said second triode at maximum conduction and at cut-off.

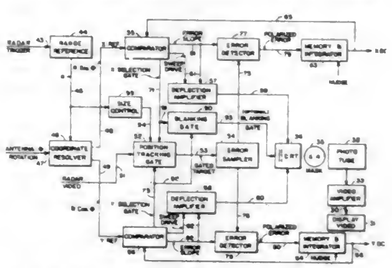
15. In a system for displaying the plan position of a moving target in radial and angular coordinates, said system including a cathode-ray display tube, the beam of which is deflected radially at a relatively high rate as a function of range and angularly at a relatively slow rate as a function of azimuth, and modulating means for modulating said beam to produce a moving indication of the position of said target in said coordinates on the screen of said display tube, the combination including means for superimposing a symbol on said screen continuously adjacent said moving indication, said means for superimposing a symbol comprising: a beam of radiant energy; a radiant energy sensitive device for developing an output voltage in response to radiant energy intercepted thereby, said output voltage being coupled to said modulating means for further modulating said beam of said display tube; a medium having a radiation transmission characteristic pattern, said pattern representing a symbol, said medium being interposed between said beam of radiant energy and said radiant energy sensitive device; means for scanning said medium with said beam of radiant energy to sensitize said device in accordance with the scanned pattern of said medium, said scanning means including first and second generators for generating first and second deflection voltages for deflecting said beam of radiant energy in first and second coordinates, said first generator being synchronized with the radial deflection of said display tube; means responsive to coincidence of the beam of said display tube with the angular positioned coordinate of said target indication for rendering said second generator operative for generating said second deflection voltage for deflecting said beam of radiant energy in said second coordinate; and means responsive to the coincidence of the beam of said display tube with the radial position coordinate of said target indication and to the generation of said second deflection voltage for successively rendering said first generator operative to successively generate said first deflection voltage for deflecting said beam of radiant energy in said one coordinate, said first generator being inoperative in the absence of said second deflection voltage output from said second generator, whereby the beam of said display tube is modulated in accordance with said pattern and said symbol is superimposed on said display tube at a position continuously adjacent said target indication.

3,158,858
TRACKING SYMBOL FOLLOWER
Jack R. Ragen and Philip M. Crosno, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 240,070
18 Claims. (Cl. 343—5)

13. The combination of:
a PPI target display device having a radial sweep and beam intensity control means and adapted to display

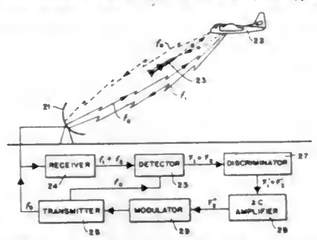
as a pip a target having vertical and horizontal positional coordinates,

a flying spot scanner having horizontal and vertical deflecting elements providing a controlled sweep and a scanned medium having a radiation transmission characteristic pattern and a video output circuit coupled to said beam intensity control means,



and electronic means, including means for supplying to said scanner device vertical control components and horizontal control components separately indicative of the vertical and horizontal positional coordinates of the pip to control its sweep, for angularly synchronizing the flying spot scan and those portions of the PPI sweep covering the pip.

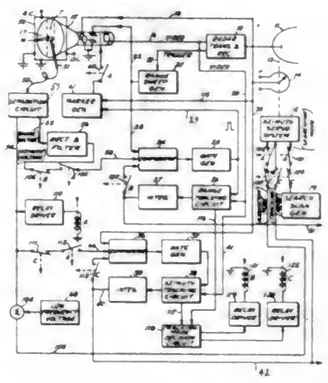
3,158,859
DOPPLER RADAR SYSTEM
Arnold E. Resnik, Ontario, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 5, 1955, Ser. No. 538,814
12 Claims. (Cl. 343—7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



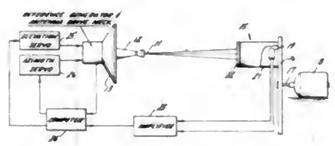
1. A system for detecting the closest approach between a moving object and another object comprising a radar transmitter adapted to transmit radio frequency energy at a certain frequency whereby said energy is reflected from said moving object at a frequency which is modified by the doppler effect, said other object being adapted to direct said energy toward the moving object for reflection therefrom at a second frequency modified by the doppler effect of the relative velocity between said moving object and said other object, and means adapted to receive said energy and responsive to said secondary doppler frequency to indicate the variation of said frequency.

3,158,860
TARGET ACQUISITION TIME REDUCTION CIRCUIT FOR TRACKING RADAR
Francis T. Thompson, Verona, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 29, 1960, Ser. No. 79,474
5 Claims. (Cl. 343—7.3)

1. A target acquisition time reduction means for range tracking radar comprising: a radar range tracking system having tracking circuits therein for automatic target lock-on and tracking and having a cathode ray tube for target display in which said tracking circuits are for horizontal and vertical driving circuits of said cathode ray tube; an electrically conductive surface over the fluorescent screen of said cathode ray tube, said conductive surface having an alternating current and a direct current applied to opposite portions thereof to produce two electric fields, one of alternating current and one of direct current in right angle relation; and an electrically conductive pickup pencil adapted to be placed in contact with said conductive surface to conduct said electric potentials, said pickup pencil being coupled through a separation network for separating the direct current potential and the alternating current potential for application, respectively, to the horizontal and vertical tracking circuits in a manner to cause said tracking circuits to lock-on to the position of contact of said pickup pencil on said conductive surface whereby target tracking may be acquired by contacting said pencil over the target.



3,158,861
METHOD AND APPARATUS FOR TESTING A RADAR TRACKING SERVO
Paul Iribe, Highland, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 4, 1963, Ser. No. 270,771
4 Claims. (Cl. 343—17.7)



1. A test apparatus for testing the elevation and azimuth servos of a radar antenna having a nutating feedhorn comprising,

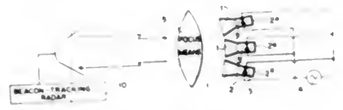
means attached to said feedhorn for generating a beam of light,

means for modulating said beam of light comprising a plate having deposited thereon an emulsion of variable density,

means for receiving a modulated beam of light and providing an output voltage proportional to the amount of light received, and

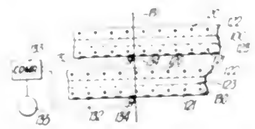
means for resolving said output voltage into an elevation error signal and an azimuth error signal, said signals being applied to said elevation servo and said azimuth servo, respectively, to drive said antenna.

3,158,862
WIDE-ANGLE ELECTRICALLY-MODULATED REFLECTOR
John P. Chisholm, Buffalo, N.Y., assignor to Sierra Research Corporation, Buffalo, N.Y., a corporation of New York
Filed Aug. 24, 1961, Ser. No. 133,721
4 Claims. (Cl. 343—18)



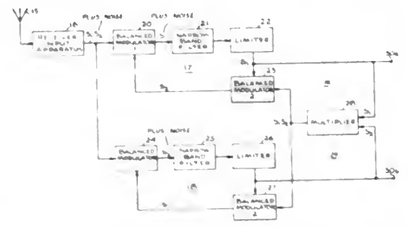
1. A frequency-shift reflector assembly for receiving and reflecting incident high-frequency electromagnetic radiation, comprising the combination of a plurality of waveguides comprising reflectors and each having an open end, and the waveguides being disposed with their open ends in mutually contiguous relation and with their axes meeting at a common point; electrical switching means connected across each waveguide and spaced from its ends for selectively short-circuiting the waveguide to change its reflectivity; a source of radio-frequency connected with and actuating said switching means in unison at said radio frequency rate; and radiation focusing means disposed opposite said open ends of the waveguides near said common point and focusing said incident radiation into a focal area located substantially at one of said open ends depending upon the angle of incidence of the radiation on the focusing means.

3,158,863
HYPERBOLIC RADIO NAVIGATION SYSTEM
Wilfred St. John White, London, England, assignor to Decca Limited, a British company
Filed May 19, 1961, Ser. No. 111,393
Claims priority, application Great Britain May 20, 1960
3 Claims. (Cl. 343—105)



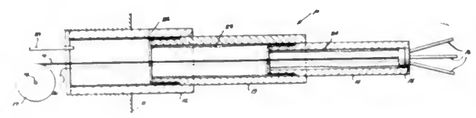
1. In a phase comparison radio navigation system, the combination of two spaced transmitting stations radiating signals in fixed phase relationship, signals of two frequencies being radiated by each station to enable two independent phase comparisons to be made between radiated signals, a mobile receiver arranged to receive said signals and to provide outputs representative of the phase relationships between the signals at each of the two frequencies, two tapes each having a scale, means housing said tapes side by side for parallel movement, said means including a common index mark and said scales being calibrated in accordance with the respective effective comparison frequencies to have markings in the same units of difference of distance of the receiver from the two stations, and two servo means each arranged independently to drive said tapes in accordance with the said outputs from the mobile receiver.

3,158,864
SELF-SYNCHRONIZING COMMUNICATION SYSTEM
Frank W. Lehan, Glendale, Calif., assignor to Space-General Corporation, Glendale, Calif.
Filed Dec. 27, 1960, Ser. No. 78,479
15 Claims. (Cl. 343—200)



3. A communication system comprising: a transmitter for radiating a complex pseudo-random waveform constituting the product of n signal components respectively at n different frequencies; first receiver means for intercepting and reproducing said complex waveform; n circuits coupled to said first receiver means and operable in response to said complex waveform and n reference signals respectively applied thereto to respectively reproduce said n signal components; and second receiver means coupled in a feedback arrangement with each of said n circuits, said second receiver means being receptive of said n signal components and operable in response thereto to produce n reference signals for application to said n circuits, respectively, each of said reference signals having $n-1$ of the n signal components with the missing signal component being different from those missing from the other reference signals.

3,158,865
SUBMARINE MOUNTED TELESCOPING ANTENNA
Max McCorkle, Kirtland, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 28, 1961, Ser. No. 98,913
4 Claims. (Cl. 343—709)



1. A retractable antenna structure adapted to be installed on submergible vehicles comprising at least outer and inner telescoping segments, an antenna carriage mounted within said inner segment, means for mounting said outer segment on the vehicle, at least one antenna probe mounted on said carriage and retractable therein, a first bellows seal coupling said outer segment to the vehicle, a second bellows seal coupling said outer and inner telescoping segments, and a third bellows seal

coupling said carriage to said inner segment, a retracting cable connected to said carriage and adapted to be connected to a drive motor for retracting said antenna structure, means for coupling a source of gas under pressure to the interior of said outer and inner segments, and electrical cable means connected to said antenna probe which is adapted to be connected to an electrical circuit means.

3,158,866
UNIVERSALLY ADJUSTABLE ANTENNA SUPPORT
Joseph C. Powers, 10 Victoria St., Dorchester, Mass.
Filed Mar. 28, 1962, Ser. No. 183,073
3 Claims. (Cl. 343—882)

1. An antenna comprising a base, means adapted to pick-up television and radio type signals, universal joint means movably connecting said base and pick-up means whereby said pick-up means may be moved in any direction relative to said base, said base having a coplanar horizontal bottom supporting surface, said universal joint means including a vertically extending member at least a portion of which is pivotally connected on a vertical axis to said base, a yoke pivotally connected on a first horizontal axis to a portion of said member, a support for said pick-up means pivotally connected to said yoke on a second horizontal axis normal to said first horizontal axis, said vertical member comprising a pair of elongated telescoping tubes rotatable and axially slidable relative to one another, the lower tube fixed to said base and the upper tube connected to said yoke, said upper tube being pro-

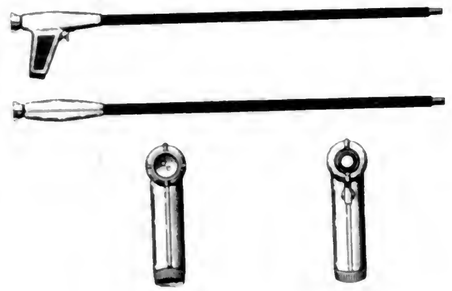


vided with a series of vertically spaced pairs of diametrical bores, a removable axle in one of said pairs slidably engaged with the upper end of the lower tube.

DESIGNS

NOVEMBER 24, 1964

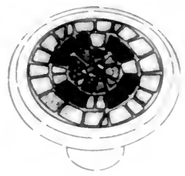
199,611
SOAP DISPENSING HANDLE FOR FOUNTAIN BRUSH
Leonard Dale Ashley and Charles C. Cooner, Overland Park, and Arthur B. Riordan, Prairie Village, Kans., assignors to Vita Craft Corporation, Kansas City, Mo., a corporation of Missouri
Filed June 8, 1964, Ser. No. 80,330
Term of patent 14 years
(Cl. D9—2)



199,612
DOOR HANDLE
John R. Foster, 402 W. Maryland St., Indianapolis, Ind.
Filed Apr. 18, 1963, Ser. No. 74,499
Term of patent 14 years
(Cl. D10—8)



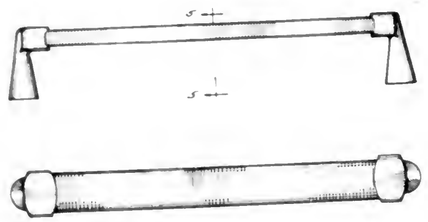
199,613
KNOB FOR DOORS, DRAWERS, AND THE LIKE
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed Sept. 10, 1963, Ser. No. 76,534
Term of patent 14 years
(Cl. D10—8)



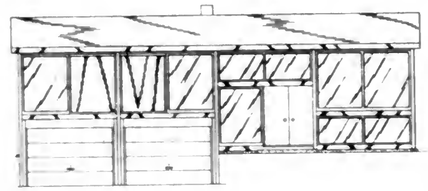
199,614
PULL FOR DOORS, DRAWERS, AND THE LIKE
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg., Co., Anaheim, Calif., a corporation of California
Filed Sept. 10, 1963, Ser. No. 76,535
Term of patent 14 years
(Cl. D10—8)



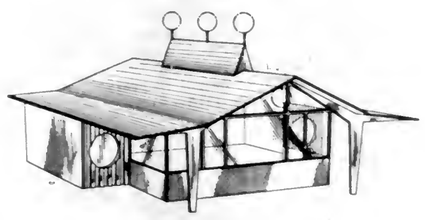
199,615
HANDLE OR THE LIKE
Vytant P. Aleks, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 79,240
Term of patent 14 years
(Cl. D10—8)



199,616
MODULAR HOUSE
Emil A. Tessin II, Cuyahoga Falls, Ohio, assignor to Alside Homes Corporation, a corporation of Ohio
Filed Oct. 22, 1962, Ser. No. 72,207
Term of patent 14 years
(Cl. D13—1)



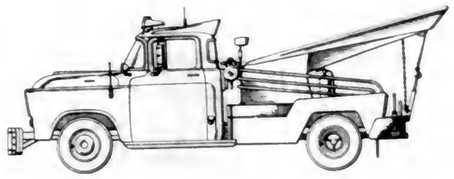
199,617
BUILDING
Clarence S. Shank, 145 N. Market St., Wooster, Ohio, assignor of one-half to Robert Critchfield, Wooster, Ohio
Filed June 21, 1963, Ser. No. 75,466
Term of patent 14 years
(Cl. D13—1)



199,618
BUILDING
George R. Woest, 675 E. San Ysidro Blvd., San Ysidro, Calif.
Filed Jan. 20, 1964, Ser. No. 78,282
Term of patent 3½ years
(Cl. D13—1)



199.619
RESCUE VEHICLE
Milton L. Ruehle, 191 N. Gratiot, Mount Clemens, Mich., assignor of one-third to Frank J. Starkey, Mount Clemens, Mich.
Filed Jan. 13, 1964, Ser. No. 78,186
Term of patent 14 years
(Cl. D14—3)



199,620
BRAKE SHOE ANCHOR
Lloyd D. Kay, San Marino, Calif., assignor to Kay-Brunner Steel Products, Inc., Alhambra, Calif., a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 73,732
Term of patent 14 years
(Cl. D14—30)



199,621
ARMCHAIR
Jerry Johnson, Malibu, Calif.
(% Charlton Company Inc., Fitchburg, Mass.)
Filed Jan. 27, 1964, Ser. No. 78,364
Term of patent 7 years
(Cl. D15—1)



199,622
PORTABLE MUSICAL INSTRUMENT AMPLIFIER
John E. Demaree, South Pasadena, Calif., assignor to Estey Electronics Company Incorporated, Torrance, Calif., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 78,563
Term of patent 14 years
(Cl. D26—14)



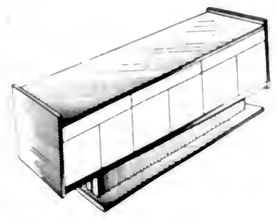
199,623
FISH LURE
Marjorie J. Lowrey, 1235 81st Ave., St. Petersburg, Fla.
Filed Jan. 15, 1964, Ser. No. 78,210
Term of patent 14 years
(Cl. D31—4)



199,624
WOBBLE TAIL FOR FISH LURES
George A. Small, 36 N. Hazelwood, Youngstown, Ohio
Filed May 1, 1964, Ser. No. 79,770
Term of patent 14 years
(Cl. D31—4)



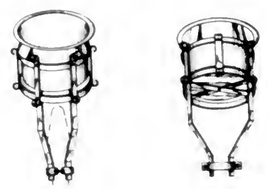
199,625
SIDEBOARD
Warren Platner, 100 Mansfield Road, North Haven, Conn.
Filed Feb. 20, 1963, Ser. No. 73,653
Term of patent 14 years
(Cl. D33—13)



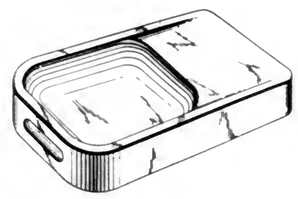
199,626
DOLL SWING
Emma Metrick, 6850 S. Pulaski Road, Chicago, Ill.
Filed Nov. 14, 1963, Ser. No. 77,435
Term of patent 14 years
(Cl. D34—15)



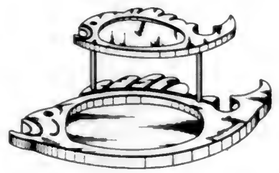
199,627
COMBINED FLOWER POT SUPPORT AND FLOWER POT
Howard E. Zerbe, P.O. Box 343, Kiwanis Trail, Du Bois, Pa.
Filed Sept. 10, 1962, Ser. No. 71,629
Term of patent 14 years
(Cl. D35—3)



199,628
COMBINED CHOPPING BLOCK AND BOWL
Robert R. Todd, 1743 SE. Locust, Portland, Oreg.
Filed Mar. 4, 1963, Ser. No. 73,796
Term of patent 14 years
(Cl. D44—1)



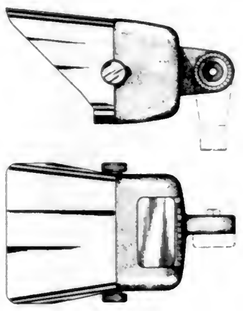
199,629
FOOD SERVING TRAY OR SIMILAR ARTICLE
Louis N. Castrinos, 5800 Gulf Blvd., St. Petersburg Beach, Fla.
Filed Apr. 9, 1964, Ser. No. 79,434
Term of patent 14 years
(Cl. D44—10)



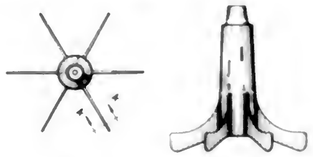
199,630
COMBINED FORK AND SPOON
Anthony M. Dedic, Sr., 4142 Sweet Gum Drive, St. Louis, Mo.
Filed Feb. 17, 1964, Ser. No. 78,654
Term of patent 14 years
(Cl. D44—29)



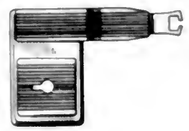
199,631
FLOODLIGHT OR SIMILAR ARTICLE
Ruth E. Petersen, Brookline, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 72,831
Term of patent 14 years
(Cl. D48—20)



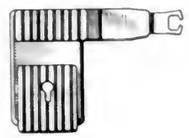
199,632
AGITATOR FOR A LAUNDRY MACHINE
William Ohmann, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 73,114
Term of patent 14 years
(Cl. D49—1)



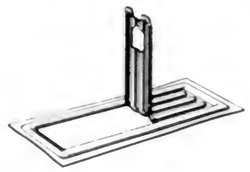
199,633
LOCK FOR ZIPPER LUGGAGE AND THE LIKE
Julius Shelman, North Woodmere, N.Y., assignor to Crest Lock Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 12, 1964, Ser. No. 78,983
Term of patent 14 years
(Cl. D50—7)



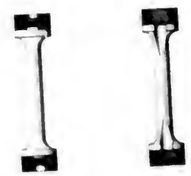
199,634
LOCK FOR ZIPPER LUGGAGE AND THE LIKE
Julius Sheiman, North Woodmere, N.Y. (% Crest Lock Co., Inc., 247 Centre St., New York, N.Y.)
Filed Mar. 12, 1964, Ser. No. 78,984
Term of patent 14 years
(Cl. D50—7)



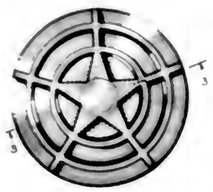
199,635
CONCRETE REINFORCING BAR SUPPORT
Clarence H. Scarborough, Jr., Grand Prairie, Tex., assignor to Frank Holister Co., Inc., a corporation of California
Filed Feb. 27, 1964, Ser. No. 78,802
Term of patent 14 years
(Cl. D51—1)



199,636
CLAMP FOR TAKING UP SLACK IN ROPES OR THE LIKE
John F. Grayson, 2968 Redwood St., San Diego, Calif.
Filed June 17, 1963, Ser. No. 75,355
Term of patent 7 years
(Cl. D54—11)



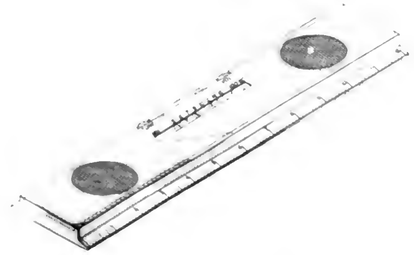
199,637
PIPE PILE POINT
John J. Dougherty, 262 Rutherford Blvd., Cedar Grove, N.J.
Filed Oct. 2, 1963, Ser. No. 76,833
Term of patent 14 years
(Cl. D54—9)



199,638
FORK OR SIMILAR ARTICLE
Robert Applebaum, Rockville Centre, N.Y., assignor to Rudolph Erenhouse, Baldwin, N.Y.
Filed Dec. 9, 1963, Ser. No. 77,722
Term of patent 7 years
(Cl. D54—12)



199,639
RADIO
Sidney K. Halpern, 74 Arleigh Road, Great Neck, N.Y.
Filed Mar. 16, 1964, Ser. No. 79,024
Term of patent 14 years
(Cl. D56—4)



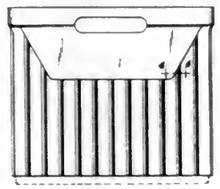
199,640
PAIR OF SPECTACLES
Joseph M. Parriott, Westport, Conn., and Joseph A. Rinaldi, Palisades Park, N.J., assignors to Titmus Optical Company, Inc., Petersburg, Va., a corporation of Virginia
Filed Nov. 23, 1962, Ser. No. 72,580
Term of patent 14 years
(Cl. D57—1)



199,641
JUG
Stewart H. Birrell, Sylvania, and Doyle J. Morgan, Toledo, Ohio, assignors to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 80,030
Term of patent 14 years
(Cl. D58—5)



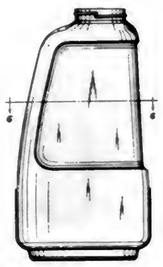
199,642
CASE FOR MILK CONTAINERS OR THE LIKE
Robert L. Beesley and Rudolph H. Matthias, Saginaw, and Edgar F. Trombly, Grosse Pointe Farms, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 11, 1964, Ser. No. 80,356
Term of patent 14 years
(Cl. D58—5)



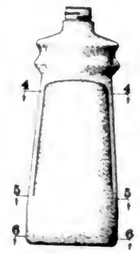
199,643
BOTTLE
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 15, 1964, Ser. No. 80,400
Term of patent 14 years
(Cl. D58—8)



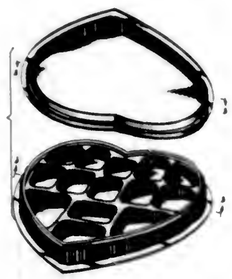
199,644
JUG
Bertrand N. Trombley, Bloomfield Hills, and Edgar F. Trombly, Grosse Pointe Farms, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 5, 1964, Ser. No. 79,817
Term of patent 14 years
(Cl. D58—6)



199,645
BOTTLE
John Brady Campbell, Paramus, N.J., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 15, 1964, Ser. No. 79,989
Term of patent 14 years
(Cl. D58—6)



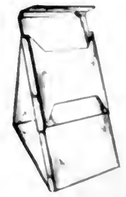
199,646
CORRUGATED HEART-SHAPED CONFECTION BOX
Lowell E. Elver, Janesville, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Apr. 20, 1964, Ser. No. 79,598
Term of patent 14 years
(Cl. D58—11)



199,647
BOX
Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed May 17, 1963, Ser. No. 74,929
Term of patent 14 years
(Cl. D58—12)



199,648
PENCIL BOX
George Reiner, New York, N.Y., assignor to Venus Pen & Pencil Corporation, New York, N.Y., a corporation of New York
Filed Feb. 5, 1964, Ser. No. 78,623
Term of patent 14 years
(Cl. D58—12)



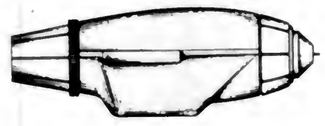
199,649
TAPE REEL LATCH
Frederick B. Froehlich, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 3, 1964, Ser. No. 78,480
Term of patent 14 years
(Cl. D61—1)



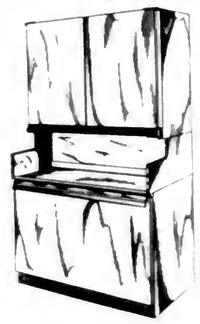
199,650
TAPE REEL
William S. Sheppley, Jr., Rhinebeck, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 19, 1964, Ser. No. 80,049
Term of patent 14 years
(Cl. D61—1)



199,651
SPRAY GUN FOR LIQUID COATING MATERIALS
Carl A. Sundberg, Bloomfield Hills, Mich., assignor to The DeVilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 13, 1964, Ser. No. 78,987
Term of patent 14 years
(Cl. D62—2)



199,652
REFRIGERATOR CABINET OR SIMILAR ARTICLE
Edward W. Harrison, Jefferson County, Ky., assignor to General Electric Company, a corporation of New York
Filed July 22, 1963, Ser. No. 75,911
Term of patent 14 years
(Cl. D67—3)



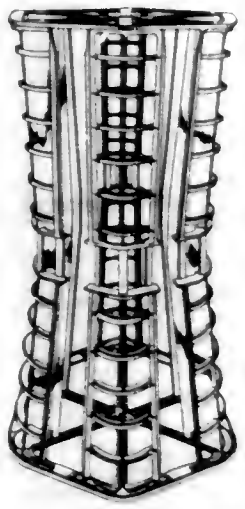
199,653
PEN
Oscar E. Weissenborn, 60 Mountain Road, Verona, N.J.
Filed June 4, 1963, Ser. No. 75,216
Term of patent 14 years
(Cl. D74—17)



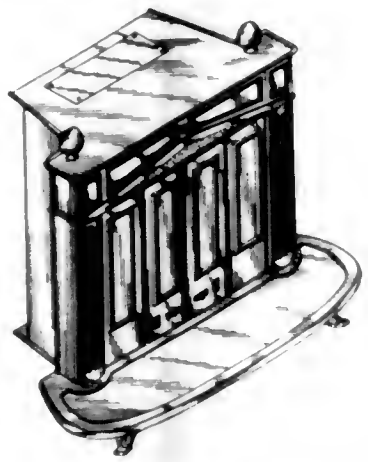
199,654
COMBINED PENCIL POINTER AND STAND
Walter B. Lincoln, Statesville, N.C., assignor to Hunt Manufacturing Co., Camden, N.J., a corporation of Pennsylvania
Filed July 1, 1963, Ser. No. 75,593
Term of patent 14 years
(Cl. D74—21)



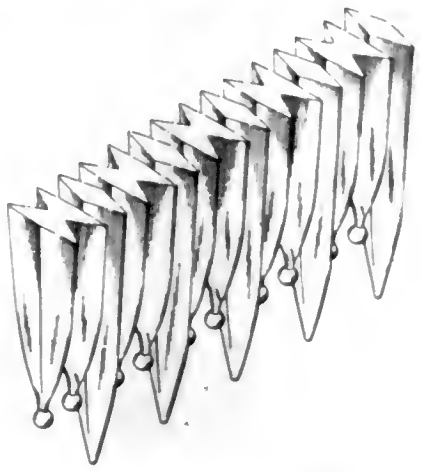
199,655
STAND FOR DISPLAYING AND MERCHANDISING SUNGLASSES OR THE LIKE
William G. Pacelli, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Oct. 3, 1963, Ser. No. 77,009
Term of patent 14 years
(Cl. D80—9)



199,656
STOVE
Stephen L. Rogers, Jr., 400 Magnolia Ave., and James Leonard Raulston, 800 Holly Ave., both of South Pittsburg, Tenn.
Filed June 20, 1963, Ser. No. 75,452
Term of patent 14 years
(Cl. D81—19)



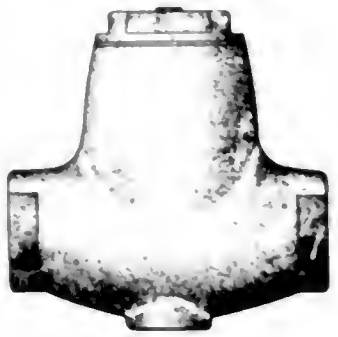
199,657
COMB
Joseph Vallis, Toronto, Ontario, Canada, assignor to Valden Company, Toronto, Ontario, Canada
Filed July 29, 1963, Ser. No. 76,022
Term of patent 14 years
(Cl. D86—8)



199,658
TIRE
Robert F. Busch, St. Clair Shores, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1963, Ser. No. 77,380
Term of patent 14 years
(Cl. D90—20)



199,659
AIR ELIMINATOR VALVE
William B. Drury, Providence, and Raymond P. Monahan, Johnston, R.I., assignors to Taco, Inc., a corporation of New York
Filed Dec. 24, 1962, Ser. No. 72,935
Term of patent 14 years
(Cl. D91—3)



199,660
TABLECLOTH
Richard A. Fees, Ardsley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 80,144
Term of patent 7 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF NOVEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

General Electric Co.: *See*—
Polloack, Herbert C. Re. 25,689.

Paulsen, Harold A. Combination hallway and disappearing dressing room. Re. 25,690, 11–24–64, Cl. 20—2.

Polloack, Herbert C., to General Electric Co. Radioactive borehole logging apparatus. Re. 25,689, 11–24–64, Cl. 250—83.3.

LIST OF PLANT PATENTEES

Silva, William E. Black locust tree. 2,454, 11–24–64, Cl. 51.

LIST OF DESIGN PATENTEES

Aleks, Vytant P., to National Lock Co. Handle or the like. 199,615, 11–24–64, Cl. D10—8.

Alside Homes Corp.: *See*—
Tessin, Emil A., II. 199,616.

Applebaum, Robert, to R. Erenhouse. Fork or similar article. 199,638, 11–24–64, Cl. D54—12.

Aquariums Inc.: *See*—
Willinger, Allan H. 199,647.

Ashley, Leonard D., C. C. Cooner, and A. B. Riordan, to Vita Craft Corp. Soap dispensing handle for fountain brush. 199,611, 11–24–64, Cl. D9—2.

Beesley, Robert L., R. H. Mathias, and E. F. Trombly, to The Dow Chemical Co. Case for milk containers or the like. 199,642, 11–24–64, Cl. D58—5.

Birrell, Stewart H., and D. J. Morgan, to Owens-Illinois Glass Co. Jug. 199,641, 11–24–64, Cl. D58—5.

Busch, Robert F., to United States Rubber Co. Tire. 199,658, 11–24–64, Cl. D90—20.

Campbell, John B., to The Procter & Gamble Co. Bottle. 199,645, 11–24–64, Cl. D58—6.

Castrinos, Louis N. Food serving tray or similar article. 199,629, 11–24–64, Cl. D44—10.

Cooner, Charles C.: *See*—
Ashley, Leonard D., Cooner, and Riordan. 199,611.

Crest Lock Co., Inc.: *See*—
Sheiman, Julius. 199,633.

Critchfield, Robert: *See*—
Shank, Clarence S. 199,617.

Dedic, Anthony M., Sr. Combined fork and spoon. 199,630, 11–24–64, Cl. D44—29.

Demaree, John E., to Estey Electronics Co. Inc. Portable musical instrument amplifier. 199,622, 11–24–64, Cl. D26—14.

DeVilbiss Co., The: *See*—
Sundberg, Carl A. 199,651.

Dougherty, John J. Pipe pile point. 199,637, 11–24–64, Cl. D54—9.

Dow Chemical Co., The: *See*—
Beesley, Robert L., Mathias, and Trombly. 199,642.
Trombley, Bertrand N., and Trombly. 199,644.

Drury, William B., and R. P. Monahan, to Taco, Inc. Air eliminator valve. 199,659, 11–24–64, Cl. D91—3.

Elver, Lowell E., to The Parker Pen Co. Corrugated heart-shaped confection box. 199,646, 11–24–64, Cl. D58—11.

Erenhouse, Rudolph: *See*—
Applebaum, Robert. 199,638.

Estey Electronics Co, Inc.: *See*—
Demaree, John E. 199,622.

Fees, Richard A., to Quaker Lace Co. Tablecloth. 199,660, 11–24–64, Cl. D92—26.

Foster Grant Co., Inc.: *See*—
Pacelli, William G. 199,655.

Foster, John R. Door handle. 199,612, 11–24–64, Cl. D10—8.

Froehlich, Frederick B., to International Business Machines Corp. Tape reel latch. 199,649, 11–24–64, Cl. D61—1.

General Electric Co.: *See*—
Harrison, Edward W. 199,652.

Grayson, John F. Clamp for taking up slack in ropes or the like. 199,636, 11–24–64, Cl. D54—1.

Halpern, Sidney K. Radio. 199,639, 11–24–64, Cl. D56—4.

Harrison, Edward W., to General Electric Co. Refrigerator cabinet or similar article. 199,652, 11–24–64, Cl. D67—3.

Heyer, Don, to Hyer Hardware Mfg., Co. Knob for doors, drawers, and the like. 199,613, 11–24–64, Cl. D10—8.

Heyer, Don, to Hyer Hardware Mfg., Co. Pull for doors, drawers, and the like. 199,614, 11–24–64, Cl. D10—8.

Hollster, Frank Co., Inc.: *See*—
Scarborough, Clarence H., Jr. 199,635.

Hunt Mfg. Co.: *See*—
Lincoln, Walter B. 199,654.

Hyer Hardware Mfg., Co.: *See*—
Heyer, Don. 199,613.
Heyer, Don. 199,614.

International Business Machines Corp.: *See*—
Froehlich, Frederick B. 199,649.
Sheppley, William S., Jr. 199,650.

Johnson, Jerry. Armchair. 199,621, 11–24–64, Cl. D15—1.

Kay-Brunner Steel Products, Inc.: *See*—
Kay, Lloyd D. 199,620.

Kay, Lloyd D., to Kay-Brunner Steel Products, Inc. Brake shoe anchor. 199,620, 11–24–64, Cl. D14—30.

Lincoln, Walter B., to Hunt Mfg. Co. Combined pencil pointer and stand. 199,654, 11–24–64, Cl. D74—21.

Lowrey, Marjorie J. Fish lure. 199,623, 11–24–64, Cl. D31—4.

Mathias, Rudolph H.: *See*—
Beesley, Robert L., Mathias, and Trombly. 199,642.

Metrick, Emma. Doll swing. 199,626, 11–24–64, Cl. D34—15.

Monahan, Raymond P.: *See*—
Drury, William B., and Monahan. 199,659.

Morgan, Doyle J.: *See*—
Birrell, Stewart H., and Morgan. 199,641.

National Lock Co.: *See*—
Aleks, Vytant P. 199,615.

Owens-Illinois Glass Co.: *See*—
Birrell, Stewart H., and Morgan. 199,641.
Roberts, Bruce L. 199,643.

Pacelli, William G., to Foster Grant Co., Inc. Stand for displaying and merchandising sunglasses or the like. 199,655, 11–24–64, Cl. D80—9.

Parker Pen Co., The: *See*—
Elver, Lowell E. 199,646.

Parriott, Joseph M., and J. A. Rinaldi, to Titmus Optical Co., Inc. Pair of spectacles. 199,640, 11–24–64, Cl. D57—1.

Petersen, Ruth E., to Sylvania Electric Products, Inc. Flood-light or similar article. 199,631, 11–24–64, Cl. D48—20.

Platner, Warren. Sideboard. 199,625, 11–25–64, Cl. D33—13.

Procter & Gamble Co., The: *See*—
Campbell, John B. 199,645.

Quaker Lace Co.: *See*—
Fees, Richard A. 199,660.

Raulston, James L.: *See*—
Rogers, Stephen L., Jr., and Raulston. 199,656.

Reiner, George, to Venus Pen & Pencil Corp. Pencil box. 199,648, 11–24–64, Cl. D58—12.

Rinaldi, Joseph A.: *See*—
Parriott, Joseph M., and Rinaldi. 199,640.

Riordan, Arthur B.: *See*—
Ashley, Leonard D., Cooner, and Riordan. 199,611.

Roberts, Bruce L., to Owens-Illinois Glass Co. Bottle. 199,643, 11–24–64, Cl. D58—8.

Rogers, Stephen L., Jr., and J. L. Raulston. Stove. 199,656, 11–24–64, Cl. D81—19.

Ruehle, Milton L., ½ to F. J. Starkey. Rescue vehicle. 199,619, 11–24–64, Cl. D14—3.

Scarborough, Clarence H., Jr., to Frank Hollster Co., Inc. Concrete reinforcing bar support. 199,635, 11–24–64, Cl. D51—1.

Shank, Clarence S., ½ to R. Critchfield. Building. 199,617, 11–24–64, Cl. D13—1.

Sheiman, Julius, to Crest Lock Co., Inc. Lock for zipper luggage and the like. 199,633, 11–24–64, Cl. D50—7.

Sheiman, Julius. Lock for zipper luggage and the like. 199,634, 11–24–64, Cl. D50—7.

Sheppley, William S., Jr., to International Business Machines Corp. Tape reel. 199,650, 11–24–64, Cl. D61—1.

Small, George A. Wobble tail for fish lures. 199,624, 11–24–64, Cl. D31—4.

Starkey, Frank J.: *See*—
Ruehle, Milton L. 199,619.

Sundberg, Carl A., to The DeVilbiss Co. Spray gun for liquid coating materials. 199,651, 11–24–64, Cl. D62—2.

Sylvania Electric Products, Inc.: *See*—
Petersen, Ruth E. 199,631.

Taco, Inc.: *See*—
Drury, William B., and Monahan. 199,659.
Tessin, Emil A., II, to Alside Homes Corp. Modular house. 199,616, 11–24–64, Cl. D12—1.
Titmus Optical Co., Inc.: *See*—
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Todd, Robert R. Combined chopping block and bowl. 199,628, 11–24–64, Cl. D44—1.
Trombley, Bertrand N., and E. F. Trombly, to The Dow Chemical Co. Jug. 199,644, 11–24–64, Cl. D58—6.
Trombly, Edgar F.: *See*—
Beesley, Robert L., Mathias, and Trombly. 199,642.
Trombly, Edgar F.: *See*—
Trombley, Bertrand N., and Trombly. 199,644.
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United States Rubber Co.: *See*—
Busch, Robert F. 199,658.
Valden Co.: *See*—
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Vallis, Joseph, to Valden Co. Comb. 199,657, 11–24–64, Cl. D86—8.
Venus Pen & Pencil Corp.: *See*—
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Vita Craft Corp.: *See*—
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Weissenborn, Oscar E. Pen. 199,653, 11–24–64, Cl. D74—17.
Whirlpool Corp.: *See*—
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Willinger, Allan H., to Aquariums Inc. Box. 199,647, 11–24–64, Cl. D58—12.
Woest, George R. Building. 199,618, 11–24–64, Cl. D13—1.
Zerbe, Howard E. Combined flower pot support and flower pot. 199,627, 11–24–64, Cl. D35—8.

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TO WHOM

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AMP Inc.: *See*—
Prituisky, James. 3,158,425.
Abbott Laboratories: *See*—
Von Esch, Anne M., and Sherman. 3,158,623.
Abegg, Karl, to Oerlikon Engineering Co. Field spider and pole piece for electrical machines. 3,158,771, 11–24–64, Cl. 310—218.
Absolon, Eric W., to Avery-Hardoll Ltd. Rotary liquid meter with temperature responsive means. 3,158,024, 11–24–64, Cl. 73—233.
Ace Electronics Associates, Inc.: *See*—
Dole, Fred E. 3,158,829.
Aceti, Giovanni: *See*—
Sciretti, Benito, and Aceti. 3,158,604.
Acheson Industries, Inc.: *See*—
Seifarth, John H. 3,158,362.
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Harper, Willard J., Ackerman, and Feldman. 3,158,249.
Ackley, John W.: *See*—
Oehler, William P., and Ackley. 3,158,324.
Adams, George L., and C. T. Govin, to The Salem Tool Co. Selectively prepositioned bit holder. 3,158,403, 11–24–64, Cl. 299—90.
Adams, James E., to The Bishop and Babcock Corp. Glass setting assembly. 3,157,918, 11–24–64, Cl. 20—56.4.
Adams, John H., and T. S. James, to Pittsburgh-Des Moines Steel Co. Seal for vacuum vessel having removable head. 3,158,281, 11–24–64, Cl. 220—46.
Adickes, Franz, and K. Zelle, to Boehringer Ingelheim G.m.b.H. N-substituted 4-aryl-4-alkanoyloxypiperidines. 3,158,616, 11–24–64, Cl. 260—293.4.
Adkisson, John L., P. Betts, and C. L. Donelson, to International Business Machines Corp. Spark development of photosensitive vesicular print material. 3,158,480, 11–24–64, Cl. 96—48.
Aerojet-General Corp.: *See*—
Schultz Robert D. 3,157,988.
Aerpat Aktien Gesellschaft: *See*—
Myers, Paul D. 3,158,059.
Ager, John W., Jr., to Olin Mathieson Chemical Corp. Preparation of liquid reaction products of decarborane and monoolefin hydrocarbons. 3,158,654, 11–24–64, Cl. 260—606.5.
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Aldinger, Paul A., to Honeywell Inc. Meter. 3,158,000, 11–24–64, Cl. 60—54.5.
Alexander, Claude C.: *See*—
Knapp, Ralph P., Alexander, and Andersen. 3,158,278.
Alexander, Irene: *See*—
Alexander, Paul. 3,158,507.
Alexander, Irving H., to The Bunker-Ramo Corp. Control device. 3,158,317, 11–24–64, Cl. 235—145.
Alexander, Paul, deceased (I. Alexander, executrix), to Continental Can Co., Inc. Floating roller seal. 3,158,507, 11–24–64, Cl. 116—49.
Alexander, Roy P., and T. L. Heying, to Olin Mathieson Chemical Corp. Organoboron alcohols and method for their preparation. 3,158,655, 11–24–64, Cl. 260—606.5.
Alexander, Roy P., and T. L. Heying, to Olin Mathieson Chemical Corp. Organoboron alcohols and their preparation. 3,158,656, 11–24–64, Cl. 260—606.5.
Alexander, Warren A., D. J. Robinson, and D. L. Lighthizer, to Jersey Production Research Co. Seismic system. 3,158,433, 11–24–64, Cl. 346—110.
Alexandre, Albert M. C. Process for manufacturing crepe fabrics with multifilament textile yarns of synthetic origin. 3,157,982, 11–24–64, Cl. 57—157.
All American Engineering Co.: *See*—
Cotton, Robert B. 3 158,343.
Green, Howard S. 3.158,341.
Allan, Earl E., to Westinghouse Air Brake Co. Manually operable slack adjuster for vehicle brakes. 3,158,235, 11–24–64, Cl. 188—197.
Allen, Clifford R. Swinging frame contour wire saw. 3,158,146 11–24–64, Cl. 125—21.
Allen-Bradley Co.: *See*—
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Allied Chemical Corp.: *See*—
Fleysher, Maurice H. 3,158,434.
Almgren, Carl W. Scaffold bracket. 3,158,225, 11–24–64, Cl. 182—87.
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Morrow, Thurlow M. 3,158,523.
Altman, Frank, Jr., to Eagle-Picher Co. Sealing apparatus. 3,157,975, 11–24–64, Cl. 53—379.
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Thimons, Joseph J. 3,158,265.
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Anderson, Carl C., Sr.: *See*—
Luce, Vincent D. S. 3,158,485.
Anderson, David F., R. Butterworth, and R. E. Taylor, to United States of America, Navy. Sear and trigger mechanism. 3,158,063, 11–24–64, Cl. 89—137.
Anderson, George L.: *See*—
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Anderson, Glenn R., to McCulloch Corp. Fuel supply system. 3,158,193, 11–24–64, Cl. 158—36.3.
Anderson, Harold C., to Litton Systems, Inc. Optical device. 3,158,678, 11–24–64, Cl. 88—61.
Anderson, John R., to The National Cash Register Co. Memory devices using ferroelectric capacitors and photoconductors. 3,158,842, 11–24–64, Cl. 340—173.2.
Anderson, Maxie L.: *See*—
Luce, Vincent D. S. 3,158,485.
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Anderson, Richard R., to Bell Telephone Laboratories, Inc. Data translating system. 3,158,839, 11–24–64, Cl. 340—172.5.
Anderson, Robert E., to Texas Instruments Inc. Method of alloying an ohmic contact to a semiconductor. 3,158,504, 11–24–64, Cl. 117—213.
Anderson, Thomas F., and J. H. Lux, to Haveg Industries, Inc. Chassisless tank truck. 3,158,383, 11–24–64, Cl. 280—5.
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Ohlund, John A. I. Andersson, and Wallgard. 3,158,372.
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Fiala, Ernst J. H., and Andres. 3.158.178.
Andress, Harry J., Jr., to Socony Mobil Oil Co., Inc. High barium content complex salts of sulfonic acids and method for preparing same. 3,158,572, 11–24–64, Cl. 252—33.
Andrews, Lewis D., to Stackpole Carbon Co. Device for magnetizing circular magnets. 3,158,797, 11–24–64, Cl. 317—203.
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Arnold. Arnold F., to Parker Brothers, Inc. Stamp assembly. 3 158,096. 11–24–64. Cl. 101—368.
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Atlantic Products Corp.: *See*—
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Chouings, Leslie C. 3,158,230.
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Ayaki, Kazuo, to Nippon Electric Co. Ltd. Traveling-wave electronic microwave interaction guide devices. 3,158,779, 11–24–64, Cl. 315—39.3.
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Balke, Roy L., to General Electric Co. Method of insulating and retaining conductors in slots. 3,157,939, 11–24–64, Cl. 29—155.5.
Balsam, Davis M., I. Sheroff, and A. Shatz. Crimping machine. 3,158,189, 11–24–64, Cl. 153—1.
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Bargen, David W., to Motorola, Inc. Thermistor. 3,158,828, 11–24–64, Cl. 338—28.
Baron, Guy, and A. Veronneau, to Institut Francais du Petrole des Carburants et Lubrifiants. High speed drill bit. 3,158,216, 11–24–64, Cl. 175—402.
Barthel, Karl, to Schnellpressenfabrik Aktiengesellschaft. Rotary letterpress having a mirror image cylinder arrangement. 3,158,092, 11–24–64, Cl. 101—177.
Bartlett, William F., to General Dynamics Corp. Time division multiplex telephone circuitry for providing rapid transfer of a call from one called party to another. 3,158,688 11–24–64, Cl. 179—15.
Bartlett, William F., to General Dynamics Corp. Impulse analyzer for time division multiplex switching systems. 3,158,812, 11–24–64, Cl. 328—42.
Barton, Bruce G., to Westinghouse Air Brake Co. Multiple block fluid distribution panel for mounting fluid control devices and method of directing fluid flow through the blocks. 3,158,164, 11–24–64, Cl. 137—15.
Baskin, Herbert B., to International Business Machines Corp. Specimen identification apparatus and method. 3,158,840, 11–24–64, Cl. 340—172.5.
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Hillenbrand, George C. 3,157,936.
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Bauer, William E., W. F. Newbold, and R. B. Watrous, to Honeywell Inc. Meter. 3,158,001, 11–24–64, Cl. 60—54.5.
Bauhof, Herbert: *See*—
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Baur, Fredric J., to The Procter & Gamble Co. Salad oils and method of making them. 3,158,489, 11–24–64, Cl. 99—118.
Baur, Fredric J., and E. S. Uutton, to The Procter & Gamble Co. Salad oils and method of making them. 3,158,490, 11–24–64, Cl. 99—118.
Beason, George C., and C. E. Stichweh, to The National Cash Register Co. Detent controlling mechanism. 3,158,318, 11–24–64, Cl. 235—146.
Beck, Rudolf, to Hans J. Zimmer Verfahrenstechnik. Angular position signal generator. 3,158,826, 11–24–64, Cl. 336—30.
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Beerbower, Alan, H. W. Rudel, and F. A. Baumle, to Esso Research and Engineering Co. Pyrethrin-elastomer insecticidal composition and method. 3,158,535, 11–24–64, Cl. 167—24.
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Blesard, Leonard, to Hawker Siddeley Aviation Ltd. Cooling by heat exchange with liquid fuel in aircraft. 3,158,197, 11–24–64, Cl. 165—40.
Bliss, Robert W., to United States of America, Army. Combination graze and impact switch. 3,158,705, 11–24–64, Cl. 200—61.08.
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Bloom, Richard A., to Lipe-Rollway Corp. Self-energizing friction clutch. 3,158,241, 11–24–64, Cl. 192—82.
Blunden, Donald J., to Whitehead & Kales Co. Carrier rack assembly for use on transportation vehicles. 3,158,107, 11–24–64, Cl. 105—368.
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Bokelman, Marinus C., to Conair, Inc. Hydraulic actuator and control unit. 3,158,068, 11–24–64, Cl. 91—216.
Bollar, Leo C., to The Warner & Swasey Co. Impact machine. 3,158,048, 11–24–64, Cl. 78—42.
Bollman, Geo. W., & Co., Inc.: *See*—
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Bowden, Charles J., and E. C. Frisvold. Multiple conductor cable connection. 3,158,422, 11–24–64, Cl. 339—183.
Bowdle, Raymond R., to International Business Machines Corp. Data processing system. 3,158,844, 11–24–64, Cl. 340—174.1.
Bowen, Roger, to International Telephone and Telegraph Corp. Contact mounting. 3,158,424, 11–24–64, Cl. 339—217.
Bowers, Albert, and P. Crabbe, to Syntex Corp. 20-(lower aliphatic hydrocarbon)-$\Delta^{17(20)}$-pregnen-21-oic acids. 3,158,625, 11–24–64, Cl. 260—397.1.
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Boyer, George L., to United States of America, Navy. Underwater acoustic intensity meter. 3,158,831, 11–24–64, Cl. 340—5.
Bradshaw, George W. Crankcase ventilation. 3,158,142, 11–24–64, Cl. 123—119.
Brand, Warren H., to Conoflow Corp. Control system. 3,157,904, 11–24–64, Cl. 60—52.
Bray, Lane A., and E. C. Martin, to United States of America, Atomic Energy Commission. Method of treating radioactive waste. 3,158,577, 11–24–64, Cl. 252—301.1.
Brechling, George E., to Electro-Mechanical Research, Inc. Saw-tooth wave form generator having feedback means to compensate for leakage current of the charging capacitor. 3,158,822, 11–24–64, Cl. 331—111.
Breckenridge, Davis T., to Catalyst Research Corp. Clip-on heater. 3,158,363, 11–24–64, Cl. 263—4.
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Brewin, Donald A., to General Dynamics Corp. Pulse repeater employing alternately conducting devices responsive to control means alternately priming and cutting-off said devices. 3,158,814, 11–24–64, Cl. 328—210.
Briechle, Joseph, to Scovill Mfg. Co. Aerosol valve-fast pressure fill type. 3,158,298, 11–24–64, Cl. 222—394.
Brier, Hyman. Picket spacing mechanism. 3,157,953, 11–24–64, Cl. 33—192.
Brigham, Roger S., to Continental Can Co., Inc. Method and apparatus for manufacturing spirally wound containers without trim loss. 3,158,074, 11–24–64, Cl. 93—80.
Brightman, Barrie, to General Dynamics Corp. Ramp pulse position multiplex system. 3,158,691, 11–24–64, Cl. 179—15.
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Brown, Alfred W., to Owens-Corning Fiberglas Corp. Siliceous reinforced resins. 3,158,528, 11–24–64, Cl. 161—140.
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Brown, Ronald. Scaffold support. 3,158,223, 11–24–64, Cl. 182—36.
Brown, Thomas L., to Southern Equipment & Supply Co. Side shift loader. 3,158,273, 11–24–64, Cl. 214—140.
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Lewis, Karl R. 3,157,958.
Brunner, Julius, F. Kuhrt, and E. Rainer, to Siemens-Schuckertwerke Aktiengesellschaft. Magnetic-field responsive electric switching device. 3,158,756, 11–24–64, Cl. 307—88.5.
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Budjinski, Aloysius N., and J. D. Georgia. Gravity conveyors. 3,158,245, 11–24–64, Cl. 193—32.
Budzich, Tadeusz. Hydrostatic transmission. 3,157,996, 11–24–64, Cl. 60—53.
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Bullock, Earl R., to General Electric Co. Logic circuit utilizing a latch type switching device as a permanent memory element. 3,158,761, 11–24–64, Cl. 307—88.5.
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Burgsmueller, Karl. Deep hole boring. 3,158,043, 11–24–64, Cl. 77—5.
Burling, Elmer R., and L. A. Carlsmith. Continuous pulping extraction apparatus. 3,158,533, 11–24–64, Cl. 162—237.
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Renwick, Frederick W., Sr., and Bush. 3,158,015.
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Nelson, Andrew J., and Butka. 3,158,708.
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Caffrey, James M., Jr., to Texaco Inc. Process for isomerization of olefinic hydrocarbons. 3,158,560, 11–24–64, Cl. 204—162.
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Campbell, Harris S., to Eastern Rotorcraft Corp. Cargo pick-up helicopter type aircraft. 3,158,357, 11–24–64, Cl. 258—1.2.

Campbell, Hobart T., J. J. Monahan, and J. A. Roeder, to Western Electric Co. Inc. Apparatus for removing articles from cavities of molds. 3,157,911, 11–24–64, Cl. 18—5.

Camras, Marvin, to IIT Research Institute. Method and means for producing magnetic record members. 3,158,670, 11–24–64, Cl. 264—293.

Camras, Marvin, to IIT Research Institute. Stereophonic system. 3,158,895, 11–24–64, Cl. 179—100.1.

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Carlson, Melvin G., and H. Linkowski, to Goodman Mfg. Co. Automatic regulator for cable reel. 3,158,356, 11–24–64, Cl. 254—173.

Carlson, Raymond H., to Textron Industries, Inc. Machine for forming metal articles. 3,157,892, 11–24–64, Cl. 10—12.

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Carpenter, Russell T., to Kimberly-Clark Corp. Method of blade-coating utilizing high angles of flexible blades. 3,158,498, 11–24–64, Cl. 117—102.

Carr, William F., to United States of America, Air Force. Magnetic switch overload device. 3,158,795, 11–24–64, Cl. 317—172.

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Cassiers, Paul M., J. M. Nys, and J. F. Willems, to Gevaert Photo-Producten N.V. Electrophotographic material. 3,158,475, 11–24–64, Cl. 96—1.

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Cohen, Robert J., to General Precision Inc. Spin motor monitor including a variable reluctance type pickup. 3,158,033, 11–24–64, Cl. 74—5.6.

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Cole, Edward L., and E. C. Knowles, to Texaco Inc. Hydrogenation process. 3,158,567, 11–24–64, Cl. 208—143.

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Cornelius, Richard T., to The Cornelius Co. Fluid storage and discharge apparatus. 3,158,296, 11–24–64, Cl. 222—386.5.

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Cover, Ralph. Corn husking machine. 3,158,156, 11–24–64, Cl. 130—5.

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Cross, Alexander D., to Syntex Corp. 2,19-cyclo-derivatives of cortical hormones. 3,158,605, 11–24–64, Cl. 260—239.55.

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Cushman, Walton W. Sustaining airfoils having variable configurations to vary lift characteristics. 3,158 338, 11–24–64 Cl. 244—44.

Cymara, Hermann K. Silage distributor. 3,158,407, 11–24–64. Cl. 302—60.

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Linkowski Herman: *See*—
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Liszawka, Dorothy. Finger and toe nail moulds for creating artificial finger and toe nails. 3,157,912, 11–24–64, Cl. 18—5.1.

List, Hans: *See*—
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Froehlich, Harold E. 3,158,123.

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Frank, Egon. 3,158,690.

Long, Everett, G. Packman, H. C. Knights, and E. E. Jerkins, to United Kingdom Atomic Energy Authority. Fuel charging/discharging system for gas cooled nuclear reactor. 3,158,544, 11–24–64, Cl. 176—32.

Long, Glen F., to Universal Controls Corp. Recording traffic analyzer. 3,158,687, 11–24–64, Cl. 179—8.

Long, Louis, Jr., and E. Vis, to United States of America, Army. Adhesive composition and method. 3,158,493, 11–24–64, Cl. 106—162.

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Luertzing, Paul R. 3,158,277.

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M. L. Aviation Co. Ltd.: *See*—
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Maartman, Sten, and S. Gustafsson, to Svenska Flaktfabriken, Aktiebolaget. Emission electrode system. 3,158,453, 11–24–64, Cl. 55—112.

Macey, Alan, and K. C. Stowell, to Associated Bristol Maltsters Ltd. Malting processes involving treatment with a gibberelic acid product. 3,158,551, 11–24–64, Cl. 195—70.

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MacLean, John A., Jr., to MacLean-Fogg Lock Nut Co. Method of applying securing means. 3,157,942, 11–24–64, Cl. 29—432.

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Malmberg, Nils J. Hull shape and a method of drawing a hull of said shape. 3,158,125, 11–24–64, Cl. 114—56.

Malone, Billy C., to Lynes, Inc. Pumping apparatus for anchoring in a well bore. 3,158,200, 11–24–64, Cl. 166—106.

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Manes, Milton: *See*—
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Marshall, Don J., to Dixon Valve & Coupling Co. Hose coupling connection. 3,158,388, 11–24–64, Cl. 285—90.

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Mauer, Helmut H. Aquatic vehicle. 3,158,129, 11–24–64, Cl. 115—70.

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McCarrick, Henry J., to Texas Instruments Inc. Motion amplification switch means. 3,158,718, 11–24–64, Cl. 200—137.

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McCorkle, Max, to Thompson Ramo Wooldridge Inc. Submarine mounted telescoping antenna. 3,158,865, 11–24–64, Cl. 343—709.

McCue, Alfred W., P. S. Diamond, D. L. Kintigh, J. V. O'Neill, and J. R. Moser, to Leyman Corp. Well drilling apparatus. 3,158,211, 11–24–64, Cl. 175—85.

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Lemens, Donald J. 3,158,784.
Minder, Peter M. 3,158,783.
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McIntyre, James L., to Westinghouse Electric Corp. Heating of getter material with thoriated tungsten filament. 3,158,776, 11–24–64, Cl. 313—179.

McKeown, Cornelius J., to United States of America, Army. Backing plate hanger. 3,157,931, 11–24–64, Cl. 24—263.

McMains, Billy D., to Master Specialties Co. Warning light device having a switch operator. 3,158,856, 11–24–64, Cl. 340—378.

McMullen, Frederick L. Locking hub for a rotary disc lawn mower blade. 3,157,978, 11–24–64, Cl. 56—295.

McNaney, Joseph T., to General Dynamics Corp. Transducing apparatus. 3,158,430, 11–24–64, Cl. 346—77.

McPherson, John W., to The General Electric Co. Ltd. Variable-impedance electric circuits. 3,158,800, 11–24–64, Cl. 323—22.

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Melchior International Corp.: *See*—
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Mellgren, Richard A.: *See*—
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Mellon, John J., Jr., J. Harding, and W. J. Zarkowski, Jr., to United States of America, Navy. Election device for aircraft crash dye marker. 3,157,890, 11–24–64, Cl. 9—9.

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Menke, Adolf H. Soldering iron and torch unit. 3,158,191, 11–24–64, Cl. 158—26.

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Michael, Harold J., to North American Aviation, Inc. Metal treatment in molten alkali-barium-boro-silicate glass and composition. 3,158,515, 11–24–64, Cl. 148—20.

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Micro-Poise Engineering and Sales Co.: *See*—
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Miller, David W.: *See*—
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Miller, Edgar S.: *See*—
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Miller, Henry L., and T. R. Ramsden, to West Penn Screen Service, Inc. Method and apparatus for reproducing designs. 3,158,077, 11–24–64, Cl. 95—73.

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Moore, Robert B., to Phillips Petroleum Co. Method and apparatus for starting up the distillation of a liquid which tends to boil-up as a liquid. 3,158,554, 11–24–64, Cl. 202—40.

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Morel, Charles, to Gelgy Chemical Corp. N-arylcarbamylglucosamines. 3,158,598, 11–24–64, Cl. 260—211.5.

Morel, Charles, to Gelgy Chemical Corp. N-(arylcarbamoyl)- and N-(arylthiocarbamoyl)-glucosamines. 3,158,599, 11–24–64, Cl. 260—211.

Morel, Frans A. M., and J. J. Vlach, to Laboratory for Electronics, Inc. X-ray table movable in two mutually perpendicular directions with a retractable radiation shield. 3,158,742, 11–24–64, Cl. 250—54.

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Morrill, John D., to United Shoe Machinery Corp. Lasting machines. 3,157,897, 11–24–64, Cl. 12—10.5.

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Muller, Alois, to Opal Mfg. Co., Ltd. Coin operable release mechanism. 3,158,288, 11–24–64, Cl. 221—67.

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Murray, Thomas P., and G. T. Hanyo, to Jones & Laughlin Steel Corp. Apparatus for measuring the thickness of thin transparent films. 3,158,675, 11–24–64, Cl. 88—14.

Musgrave, Daniel D. Electromechanical actuators. 3,158,796, 11–24–64, Cl. 317—187.

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Naraghi, Hashem. Apparatus for bulk handling of produce and the like. 3,158,401, 11–24–64, Cl. 298—8.

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Neill, Raymond R., and H. B. Peterson, to United States of America, Navy. Recovery of dry chemical fire extinguishing powders used for test purposes. 3,158,031, 11–24–64, Cl. 73—432.

Nelson, Alan H., to North American Aviation, Inc. Blocking oscillator with delay means in feedback loop. 3,158,751, 11–24–64, Cl. 307—88.5.

Nelson, Andrew J., and J. Butka, to Butkin Tool and Mfg. Corp. Icing detection apparatus and system. 3,158,708, 11–24–64, Cl. 200—83

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Ney-Land, Inc.: *See*—
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O'Donnell, William R., to Valve Corp. of America. Actuator for aerosol dispensers. 3,158,292, 11–24–64, Cl. 222—153.

Oehler, William P., and J. W. Ackley, to Deere & Co. Sprayer boom. 3,158,324, 11–24–64, Cl. 239—159.

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Ohara, Naoyuki. Single-lens reflex camera. 3,158,075, 11–24–64, Cl. 95—42.

Ohlund, John A. I., K. R. Andersson, and G. A. Wallgard, to Svenska Aeroplan Aktiebolaget. Signaling device for scoring gunnery target practice. 3,158,372, 11–24–64, Cl. 273—102.2.

O'Hollaren, Paul F. Method for alleviating the withdrawal symptoms of drug addicts. 3,158,540, 11–24–64, Cl. 167—67.

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Oikawa, Mitsuru, to Kabushiki Kaisha Hitachi Seisakusho. Solid state light amplifying device with sintered photoconductor. 3,158,747, 11–24–64, Cl. 250—213.

Oisbel, John R., to Trico Products Corp. Windshield washer. 3,158,293, 11–24–64, Cl. 222—180.

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Alexander, Roy P., and Heying. 3,158,656.
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Olson, LeRoy O., and S. R. Murphy, to United States of America, Navy. Underwater electrical connector. 3,158,420, 11–24–64, Cl. 339—96.

Olson, Paul E., to Westinghouse Air Brake Co. Multi-position fluid motor mechanism. 3,158,070, 11–24–64, Cl. 92—52.

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O'Neill, James W. Chuck facing plate adapter. 3,158,382, 11–24–64, Cl. 279—123.

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O'Neill, Joseph V., and G. Homanick, to Leyman Corp. Drill string suspension arrangement. 3,158,213, 11–24–64, Cl. 175—85.

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Opila, Robert L., to Corn Products Co. Apparatus for treating finely divided material with a gas. 3,158,449, 11–24–64, Cl. 34—164.

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Bowers, Albert, and Orr. 3,158,631.

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Shannon, Richard F., and McCombs. 3,158,519.

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Page, Richard I., and R. D. Walther, to Foley Mfg. Co. Broiler unit. 3,158,085, 11–24–64, Cl. 99—402.

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Pearlman, Harry, and L. A. Hanson, to United States of America, Atomic Energy Commission. Separation of an actinide metal from an alloy. 3,158,468, 11–24–64, Cl. 75—84.1.

Pearson, Charles, Jr. Skill game comprising a displaceable bowl from which objects are to be withdrawn. 3,158,370, 11–24–64, Cl. 273—1.

Pearson, Paul E., Jr., to Sperry Rand Corp. Switch apparatus. 3 158.758, 11–24–64, Cl. 307—88.5.

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Péras, Lucien, to Regie Nationale des Usines Renault. Devices for ensuring the fluid-tightness of hydraulic cooling systems of engines. 3,158,140, 11–24–64, Cl. 123—41.51.

Péras, Lucien, to Regie Nationale des Usines Renault. Devices for collecting and discharging cuttings from machine tools. 3,158,257, 11–24–64, Cl. 198—221.

Péras, Lucien, to Regie Nationale des Usines Renault. Mounting of wheel suspension arms of vehicles. 3,158,365, 11–24–64, Cl. 267—22.

Péras, Lucien, to Regie Nationale des Usines Renault. Rear doors and lids of automobile vehicles. 3,158,397, 11–24–64, Cl. 296—106.

Peters, Lowell E Balance spring mechanism. 3,157,917. 11–24–64, Cl. 20—42.

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Peterson, Marshall B.: *See*—
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Petitto, Albert C., to Foster Grant Co., Inc. Tape dispenser. 3,158,303, 11–24–64, Cl. 225—66.

Petkovich, Frank, and P. E. Carroll, to Falconbridge Nickel Mines Ltd. Agglomeration of ores. 3,158,463, 11–24–64, Cl. 75—5.

Pfeiffer, Harry F., to Varian Associates. Teaching machine. 3,157,955, 11–24–64, Cl. 35—9.

Pfeiffer, Sigmund B., to Bell Telephone Laboratories, Inc. Digital-to-analog combinational converters. 3,158,738, 11–24–64, Cl. 235—187.

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Picking, Rueben P. Chain type pipe cutter. 3,157,945, 11–24–64, Cl. 30—101.

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Plaster, William E., and R. E. Dixon, to Phillips Petroleum Co. Alkylation process and apparatus. 3,158,661, 11–24–64, Cl. 260—683.48.

Pless, Ernst, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Container for microphones or the like. 3,158,260, 11–24–64, Cl. 206—46.

Pluess, Paul. Method of producing halftones. 3,158,479, 11–24–64, Cl. 96—45.

Plumpe, David J., to United States of America, Navy. Automatic gain control signal translating system. 3,158,818, 11–24–64, Cl. 330—29.

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Polgreen, Geoffrey R., to The General Electric Co. Ltd. Magnetic system of transportation. 3,158,765, 11–24–64, Cl. 310—12.

Polinko, George, Jr., and D. J. Veras, to General Electric Co. Contact structure for an electric circuit interrupter. 3,158,719, 11–24–64, Cl. 200—144.

Politzer, Ernest L. and B. Kvetinskas, to Universal Oil Products Co. Molecular sieve sorbents bonded with ion-exchanged clay. 3,158,579, 11–24–64, Cl. 252—455.

Pons, Walter A., Jr., J. C. Kuck, and V. L. Frampton, to United States of America, Agriculture. Process for producing sulfurous acid treated alumina. 3,158,578, 11–24–64, Cl. 252—436.

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Porter, Carroll B., to American Smelting and Refining Co. Cooling molds for casting metal. 3,157,921, 11–24–64, Cl. 22—57.2.

Porter, Joseph W., to General Electric Co. Coil structure for producing a magnetic field in an electric circuit interrupter. 3,158.722, 11–24–64, Cl. 200—147.

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Poult, Robert. Internal combustion engines supercharged by means of a turbo-blower. 3,157 987, 11–24–64, Cl. 60—13.

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Powers, Joseph C. Universally adjustable antenna support. 3,158 866, 11–24–64, Cl. 343—882.

Poznanski, Robert L. Burglar alarm system. 3,158,850, 11–24–64, Cl. 340—258.

Pragnell, John J. M., to Irving Air Chute Co., Inc. Safety harness. 3,158,399, 11–24–64. Cl. 297—389.

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Price, Thomas L., to Radiation, Inc. Subminiature electronic connector. 3,158,423, 11–24–64, Cl. 339—213.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 24, 1964 Volume 808 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

(A) **Reg. No. 337,404 (POLAROID)**, Sheet Polarizer Company, Inc., Composite material comprising suspensions of crystalline particles in a light-transmitting medium adapted to be used in connection with optical devices such as microscope eye-pieces, glare eliminators, variable density diaphragms, gem testers, and the like; **Reg. No. 388,047**, Polaroid Corporation, same, Small cases adapted to contain filters, eyeglasses, and similar articles; **Reg. No. 388,251**, same, Glass sheets and laminations of glass sheets; **Reg. No. 388,721**, same, Stereoscopic viewers and the like; **Reg. No. 388,722**, same, Electric lamps; **Reg. No. 391,449**, same, Hand tools in the nature of pliers; **Reg. No. 394,036**, same, Transparent organic plastic material in the form of sheets or blocks; **Reg. No. 398,917**, same, Printing inks; **Reg. No. 399,122**, same, Lacquers and lacquer thinners; **Reg. No. 399,329**, same, Viewing devices—namely, filters, lenses, eyeglasses, and goggles; **Reg. No. 404,054**, same, Optical bench elements; **Reg. No. 422,100**, same, Photographic processing tanks, squeegees, and printing rolls for photographic use; **Reg. No. 423,776**, same, Sodium chloride, photographic fixing baths and fixing bath replenishers, photographic wash-off baths, etc.; **Reg. No. 426,802**, same, Publications relating to the polarization of light and instruction manuals relating to the various fields of application thereof, said publications and manuals being issued from time to time; **Reg. No. 540,179**, same, Light-polarizing organic plastic in sheet form for further manufacture, photographic cameras, photographic camera shutters, etc.; **Reg. No. 579,986**, same, Intermittent photographic instruction manuals and publications, and photographic prints and enlargements; **Reg. No. 588,350**, same, X-ray film cassettes and X-ray film processing apparatus; **Reg. No. 604,829**, same, Interocular calculators, i.e., printed charts with movable parts for calculating interocular distances in connection with the projection of stereoscopic film; **Reg. No. 605,134**, same, Three-dimensional projection accessories—namely, projection filters, focusing filters, brightness match filters, etc.; **Reg. No. 607,263**, same, Camera cases, exposure meter cases, master compartment cases, apparatus for treating photographic materials, etc.; **Reg. No. 608,297**, same, Electronic flash adapter cards; **Reg. No. 621,256**, same, Photographic lens shades; **Reg. No. 670,594**, same, Sheets of optically anisotropic plastics, resins or gums, and more specifically fractional wave retardation sheets of the said materials; **Reg. No. 689,866**, same, Photographic apparatus, accessories and supplies, and more specifically, adhesively coated backings for photographic prints, bounce-flash adapters, etc., **filed** Feb. 23, 1960, D.C., N.D. Ill. (Chicago), Doc. 60c279, *Polaroid Corporation* v. *Polaroid, Inc.* Com-

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ---------- 15,640
Date of oldest new application ---------- Mar. 2, 1964
Date of oldest amended application ---------- Feb. 21, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	3-2-64	3-2-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-2-64	2-21-64
Renewals (All Classes)	9-8-64	9-29-64
Sec. 12 (c) Publications (All Classes)	9-14-64	---

Applications filed during the month of September 1964—2175

Registrations Issued---------- 300—No. 780,481 to No. 780,780
Renewals Issued---------- 50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

plaint and each claim for relief therein dismissed; judgment in favor of defendant June 12, 1962. Judgment pursuant to mandate of the U.S. Court of Appeals reversing above judgment entered Oct. 7, 1963.

(B) **Reg. No. 337,404; Reg. No. 388,047; Reg. No. 388,251; Reg. No. 388,721; Reg. No. 388,722; Reg. No. 391,449; Reg. No. 394,030; Reg. No. 398,917; Reg. No. 399,122; Reg. No. 399,329; Reg. No. 404,054; Reg. No. 422,100; Reg. No. 423,776; Reg.. No. 426,802; Reg. No. 540,179; Reg. No. 579,986; Reg. No. 588,350; Reg. No. 604,829; Reg. No. 605,134; Reg. No. 607,263; Reg. No. 608,297; Reg. No. 621,256; Reg. No. 670,594; Reg. No. 689,866; Reg. No. 730,072** (POLAROID), Polaroid Corporation, Photographic apparatus, products, and accessories and supplies and more specifically, apparatus for providing a light pulse (wink-lights), batteries, bulbs, etc.; **Reg. No. 737,706**, same, Photographic reagents—namely, dyes and developing agents, fixing agents, development accelerating agents, etc.; **Reg. No. 738,699**, same, Safety helmets; **Reg. No. 741,953**, same, Timepieces and, more particularly, clocks, filed June 26, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C-675, *Polaroid Corporation* v. *Polaro Corp.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 171,114. Electrofilm, Inc., North Hollywood, Calif. Filed June 17, 1963.



Class 15—Oils and Greases

For Solid Film Lubricants.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrically Conductive Organic Bonded Coatings Adapted as by Spraying To Be Applied to Surfaces To Be Heated.

First use Jan. 28, 1963.

SN 174,630. Wey Aktiengesellschaft, Vaduz, Liechtenstein. Filed Aug. 7, 1963.



Owner of Liechtenstein Reg. No. 1,392, dated Oct. 25, 1962.

Class 6—Chemicals and Chemical Compositions

For Chemical Products Used in the Building Trade—Namely, Preservatives for Cements, Preparations for Hardening and Water-Proofing Cement and Concrete, Impermeabilizers and Agents for Accelerating or Retarding the Setting of Cements, Other Chemical Addition Agents for Cements, Concrete, Asphalt and Bitumen, Influencing the Character of These Materials.

Class 12—Construction Materials

For Jointing Strips Made of Rubber, Synthetic Rubber, Plastics or Compounds of These Materials for Use in Sealing-Off Building Joints.

SN 179,890. Fragrance Incorporated, d.b.a. Maison Zarpé, Oklahoma City, Okla. Filed Oct. 28, 1963.

ZARPÉ

Class 6—Chemicals and Chemical Compositions

For Perfume Oil.

Class 51—Cosmetics and Toilet Preparations

For Bath Oil, Bath Powder, and Cologne.

First use Feb. 1, 1963.

SN 182,544. Professional Beauty Products, Inc., Amarillo, Tex. Filed Dec. 4, 1963.

LE CIRQUE

Class 51—Cosmetics and Toilet Preparations

For Permanent Waving Lotion and Hair Spray.

First use Sept. 10, 1963.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Nov. 3, 1963.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 158,067. Lejeune W. Griffith, d.b.a. Lejeune, Sunnyvale, Calif. Filed Nov. 28, 1962.

SWISTRAW

For Artificial Raffia for Weaving, Braiding, and the Like.
First use Aug. 22, 1962.

SN 158,350. Konrad Hornschuh Aktiengesellschaft Werk Weissbach, Weissbach, Wurttemberg, Germany. Filed Sept. 26, 1963.



The drawing is lined for pink. Owner of German Reg. No. 764,625, dated Aug. 20, 1962; and U.S. Reg. No. 719,452.

For Foils and Plates of Synthetic Plastic Materials Sold in That Form and Also in the Form of Laminates in Combination With Paper, Fabric, Plastic Foam Materials, Felt, etc.

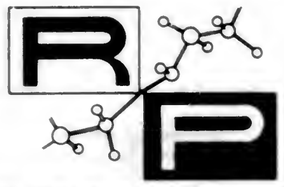
SN 158,528. Earl W. Garrison Inc., Bridgeton, N.J. Filed Dec. 5, 1962.



No claim is made to the words "Sired by Cornish Champions" and to the representation of a chicken apart from the mark as shown.

For Baby Chicks Produced From Cornish Stock and Cross Strains Thereof, and Hatching Eggs for Same.
First use Sept. 27, 1962.

SN 161,560. Rafco Plastics, Inc., Clifton, N.J. Filed Jan. 28, 1963.



For Extruded Tubes and Sheets of Polyethylene and Other Synthetic Resin Materials for Use in the Industrial Arts.
First use Sept. 21, 1961.

SN 168,530. Pennsylvania Farm Bureau Cooperative Association, Harrisburg, Pa. Filed May 9, 1963.

Duchess-60

For Laying Hens and Chicks.
First use approximately Feb. 27, 1963.

SN 168,531. Pennsylvania Farm Bureau Cooperative Association, Harrisburg, Pa. Filed May 9, 1963.

Princess-55

For Laying Hens and Chicks.
First use approximately Feb. 27, 1963.

SN 170,548. Nebraska Hybrid Seed Growers Association, Lincoln, Nebr. Filed June 7, 1963.



For Grass and Agricultural Seed.
First use July 1, 1958.

SN 172,773. The Pantasote Company, Passaic, N.J. Filed July 10, 1963.

KOHINOR

Owner of Reg. No. 648,469.

For Synthetic Resins and Partly Prepared Packaged Compositions in Particulate Form Containing a Large Proportion of Synthetic Resins Suitable for Use in Making Plastic Articles.
First use Sept. 14, 1956.

SN 177,467. Topco Associates, Inc., Skokie, Ill. Filed Sept. 20, 1963.

TOPCO

For Grass Seed.
First use Feb. 26, 1963.

SN 183,076. The Lackawanna Leather Company, Hackettstown, N.J. Filed Dec. 16, 1963.

MASTERPIECE

For Leather.
First use Mar. 1, 1962.

SN 187,650. CRO Engineering Co., Inc., Greendale, Wis. Filed Feb. 28, 1964.

TEMPLAPLAST

For Plastic Materials Used for Making Machine Templates.
First use Oct. 5, 1960.

SN 188,229. General Latex and Chemical Corporation (of Ga.), Dalton, Ga. Filed Mar. 9, 1964.

GEN-GRIP

For Liquid Latex Compound Used in Coating the Underside of Rugs and Carpets To Form a Backing Therefor.
First use Dec. 4, 1963.

SN 190,685. Farmer Seed & Nursery Company, Faribault, Minn. Filed Apr. 3, 1964.

MASTER

For Seed Corn.
First use Jan. 12, 1938.

SN 192,099. L. Teweles Seed Co., Milwaukee, Wis. Filed Apr. 27, 1964.

ROVER

For Alfalfa Seed.
First use Apr. 16, 1964.

SN 192,614. Peterson Seed Company, Inc., Waterloo, Iowa. Filed May 4, 1964.



For Farm Seeds.
First use Feb. 29, 1964.

Class 2 — Receptacles

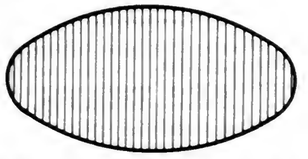
SN 176,637. Diamond National Corporation, New York, N.Y. Filed Sept. 10, 1963.



Owner of Reg. Nos. 271,456, 708,237, and others.

For Boxes, Cartons, Containers, Dishes, Trays, Cake Circles and Plates Made of Paper, Pulp or Paperboard.
First use May 5, 1960 on dishes.

SN 179,146. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Oct. 16, 1963.



The drawing is lined for the color maroon, but color is not claimed. Owner of Reg. Nos. 636,047 and 667,115.

For Drinking Cups Constructed of Paper.
First use on or about June 23, 1960.

SN 182,210. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 2, 1963.

SEE-SAFE

Owner of Reg. No. 547,419.

For Plastic Ware—Namely, Bags, Cups, Trays, Cartons, Boxes, Bowls, Dishes, and Garment Bags.
First use Mar. 13, 1948.

SN 184,868. Aladdin Industries, Incorporated, Chicago, Ill. Filed Jan. 20, 1964.

ECONOMY

For Heat Insulated Receptacles—Namely, Vacuum Bottles Including an Inner Frangible Container and an Outer Protective Jacket.
First use on or about Jan. 1, 1949.

SN 186,729. Lake Erie Plastics, Inc., Elyria, Ohio. Filed Feb. 14, 1964.



For Plastic Bags for Foods and the Like.
First use May 1963.

SN 189,209. Rexall Drug and Chemical Company, Los Angeles, Calif. Filed Mar. 20, 1964.

REXALL

For Plastic Bottles.
First use Apr. 12, 1960.

SN 189,636. Top Value Enterprises, Inc., Dayton, Ohio. Filed Mar. 25, 1964.

"HANDISPENSER"

For Dispensing Container for Perforated Strip Material in Rolls.
First use Feb. 4, 1964.

SN 190,085. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Apr. 1, 1964.

WATER MASTER

For Stock Watering Tanks.
First use Sept. 23, 1963.

SN 195,446. Premier Peat Moss Corporation, New York, N.Y. Filed June 11, 1964.

PEP TRAYS

The exclusive use of the term "Trays" as shown in applicant's mark is disclaimed apart from the mark as a whole.
For Plant Trays Having Fertilizer Properties.
First use May 15, 1963.

SN 195,447. Premier Peat Moss Corporation, New York, N.Y. Filed June 11, 1964.

PEP POTS

The exclusive use of the term "Pots" as shown in applicant's mark is disclaimed apart from the mark as a whole.
For Plant Pots Having Fertilizer Properties.
First use May 15, 1963.

SN 200,025. Patio Paper Products Company, Chicago, Ill. Filed Aug. 17, 1964.

THERMO-FOAM

For Disposable Drinking Cups.
First use July 28, 1964.

SN 200,150. Bruce Carton Company, Memphis, Tenn. Filed Aug. 19, 1964.

FOTOVURE

For Folding Paper Cartons and Folding Paper Boxes.
First use Apr. 15, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 143,226. Philip Florin, Inc., New York, N.Y. Filed Apr. 27, 1962.

JEWEL MESH

Exclusive right to the word "Mesh" apart from the mark as shown is hereby disclaimed.
For Purses, Wallets, and Handbags.
First use Feb. 1, 1962.

SN 197,646. Aetna Leather Novelty Co., Inc., West New York, N.J. Filed July 13, 1964.

Jaclyn U.S.A.

The abbreviation "U.S.A." is disclaimed apart from the mark as shown.
For Ladies' Handbags.
First use Feb. 3, 1964.

Class 4 — Abrasives and Polishing Materials

SN 181,116. The Carborundum Company, Niagara Falls, N.Y. Filed Nov. 14, 1963.

DRI-LUBE

For Abrasive Coated Material, Such as Paper and Cloth in the Form of Sheets, Rolls, Pads, Discs, Strips, Coils, and Special Shapes.
First use Jan. 4, 1960.

SN 181,117. The Carborundum Company, Niagara Falls, N.Y. Filed Nov. 14, 1963.

SABER

For Abrasive Cutting Wheels, Including High Speed Diamond Wheels or Discs.
First use Nov. 27, 1962.

Class 5 — Adhesives

SN 185,371. Eastern Corrugated Container Corporation, Clifton, N.J. Filed Jan. 27, 1964.

CORR-A-PEL

For Moisture Resistant Adhesive for Sealing Corrugated Paper Containers.
First use October 1955.

SN 194,553. Impact Container Corporation, Alden, N.Y. Filed May 29, 1964.

DAPPER DAN

For Tire Inflator and Sealant in a Pressurized Container.
First use May 7, 1964.

Class 6 — Chemicals and Chemical Compositions

SN 142,295. Eureka Specialty Printing Company, Scranton, Pa. Filed Apr. 16, 1962.

HUMPTY DUMPTY

For Vegetable Dyes Sold as a Component of an Easter Egg Coloring, Fun and Game Kit.
First use on or about Feb. 8, 1962.

SN 153,731. British Titan Products Company Limited, Billingham, England. Filed Sept. 24, 1962.

BTP

Priority claimed under Sec. 44(d) on British Reg. No. 838,193, dated Aug. 16, 1962. Owner of U.S. Reg. Nos. 741,480 and 741,483.
For Titanium Pigments.

SN 157,453. The Brush Beryllium Company, Cleveland, Ohio. Filed Nov. 19, 1962.

BB

The drawing is lined for gray, but color is not claimed as a feature of the mark.
For Beryllium Oxide and Compositions Comprising Predominantly Beryllium Oxide—Namely, Powder in Porous, Compacted, Sintered, and Compressed Forms.
First use Aug. 15, 1962.

SN 177,086. Pilot Chemical Company, Santa Fe Springs, Calif. Filed Sept. 16, 1963.

PILOT

For Chemicals for Use in the Manufacture of Detergents, Specifically Dodecyl Benzene Sulfonic, Sulfonic Acid, and Sodium Toluene Sulfonate.
First use March 1953.

SN 177,229. Chipman Chemical Company, Inc., Burlingame, Calif. Filed Sept. 18, 1963.

BUTOXONE SB

For Weed Killer.
First use Mar. 30, 1962.

SN 178,717. New England Chemical Supply Corp., Merrimack, N.H. Filed Oct. 10, 1963.

HANDY GAL

For Household Ammonia and Bleach.
First use Sept. 3, 1963.

SN 178,718. New England Chemical Supply Corp., Merrimack, N.H. Filed Oct. 10, 1963.

HAPPY GAL

For Household Ammonia and Bleach.
First use Sept. 3, 1963.

SN 180,726. Fritzsche Brothers, Inc., New York, N.Y. Filed Nov. 8, 1963.

HAY AND HEATHER

For Fragrance Compound for Cologne, for Manufacturing and Professional Use Only.
First use Oct. 17, 1963.

SN 191,320. Selectrons, Ltd., New York, N.Y. Filed Apr. 16, 1964.

SELECTRON

For Electroplating and Electrochemical Etching Solutions.
First use September 1960.

SN 191,483. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Apr. 20, 1964.

BASAZOL

Owner of Reg. Nos. 648,058 and 725,218.
For Chemical Compositions, Preparations or Compounds for Industrial Purposes—Namely, Auxiliaries for the Textile Industry, Coloring Matters, and Dyestuffs.
First use February 1964; in commerce Mar. 15, 1964.

SN 191,746. Burkart-Schier Chemical Company, Chattanooga, Tenn. Filed Apr. 22, 1964.

BURKOTE

For Latex Compounds Used on the Back of Rugs and Carpets.
First use January 1953.

SN 191,898. American Home Products Corporation, New York, N.Y. Filed Apr. 24, 1964.

WOOLITE

Owner of Reg. No. 603,714.
For Preparation for Killing Moths and Mothproofing Fibers.
First use Mar. 21, 1964.

SN 193,087. Ames Company, Inc., Elkhart, Ind. Filed May 11, 1964.

COMBITEST

Owner of Reg. Nos. 542,318 and 668,186.
For Preparation, Not for Internal Use, for the Analysis of Body Fluids.
First use on or before May 6, 1964.

SN 193,088. Ames Company, Inc., Elkhart, Ind. Filed May 11, 1964.

COMBI-TEST

Owner of Reg. Nos. 542,318 and 668,186.
For Preparation, Not for Internal Use, for the Analysis of Body Fluids.
First use on or before May 6, 1964.

SN 193,238. Unibasic, Incorporated, Arnold, Md. Filed May 11, 1964.

QUOLAC

For Chemicals and Chemical Compositions—Namely, Surface Active Agents, Both Ionic and Nonionic, Such as Wetting Agents, Dispersing Agents, Penetrating Agents, and Emulsifying Agents; Chemical Agents Possessing Germicidal Properties: Organic Amino Compounds; Reactive Organic Monomers; Alkylphenol Condensates; Ethoxylated Aliphatic Alcohols; Fatty Alcohols; Fatty Alcohol Condensates; Fatty Acid Condensates; Quaternary Ammonium Compounds; Aliphatic Sulfates, Particularly Sulfates of Fatty Alcohols, and Ammonium and Metal Salts Thereof; Ethoxylated Amines, and Alkylaryl Sulfonates.
First use Apr. 24, 1964.

SN 194,201. Miles Laboratories, Inc., Elkhart, Ind. Filed May 25, 1964.

AC-CURATE

For Anti-Oxidant for Use in Food Processing.
First use on or before May 4, 1964.

SN 194,245. Selectrons, Ltd., New York, N.Y. Filed May 25, 1964.

LHE

For Electrochemical Plating Solutions for Limiting Hydrogen Embrittlement on Ultra-High Strength Steels and Other Highly Stressed Materials.
First use Sept. 17, 1963.

SN 194,261. Valmor Products Company, Chicago, Ill. Filed May 25, 1964.

DOUBLE LUCKY

Owner of Reg. Nos. 298,129, 634,509, and others.
For Incense.
First use Dec. 1, 1936.

SN 194,266. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed May 25, 1964.

TX-15

For Glycol Mixture.
First use June 12, 1963.

SN 194,296. Grand Island Biological Company, Grand Island, N.Y. Filed May 26, 1964.

GIBCO

For Biologicals and Biochemicals for Research Purposes—Namely, Tissue Culture Media, Serums and Reagents.
First use Oct. 1, 1963.

SN 194,297. Grand Island Biological Company, Grand Island, N.Y. Filed May 26, 1964.

GIBCO

For Biologicals and Biochemicals for Research Purposes—Namely, Tissue Culture Media, Serums and Reagents.
First use Oct. 1, 1963.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 190,068. Delcron Products, Inc., New York, N.Y. Filed Apr. 1, 1964.

COUNT·DOWN

For Cigarette Holder and Tip.
First use Mar. 1, 1964.

SN 197,424. Peterson's Ltd., Inc., New York, N.Y. Filed July 8, 1964.

SCANDIA

For Smoking Pipes.
First use Mar. 25, 1960.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 180,712. Click Bookmatch Incorporated, Owings Mills, Md. Filed Nov. 8, 1963.

CLICK

For Book Matches.
First use Mar. 4, 1953.

SN 185,830. Utah Research and Development Company, Salt Lake City, Utah. Filed Jan. 31, 1964.

dri·x

Applicant hereby disclaims "Dri" apart from the mark as shown.
For Explosives.
First use on or before Oct. 31, 1963.

SN 186,637. Transamerican Match Corporation, Englewood Cliffs, N.J., assignee of Pacific Match Co., Tacoma, Wash. Filed Feb. 13, 1964.

LITE KING

The word "Lite" is disclaimed apart from the mark as shown.
For Matches.
First use Dec. 28, 1933.

Class 10 — Fertilizers

SN 174,803. Smith-Douglas Company, Inc., Norfolk, Va. Filed Aug. 9, 1963.

NUTRO GOLF GREEN

Owner of Reg. No. 631,567.
For Fertilizer.
First use Apr. 9, 1963.

SN 197,198. Tennessee Corporation, New York, N.Y. Filed July 6, 1964.

ZINIRATE

Owner of Reg. No. 768,085.
For Fertilizer.
First use on or about Mar. 15, 1964.

Class 12 — Construction Materials

SN 159,138. Young Door Company, Inc., Plymouth, Ind. Filed Dec. 13, 1962.

SYN-CLAD

For Doors With Exterior Finishes, Such as Solid Wood Doors and Hollow Wood Built-Up Flush Type Doors With Internal Filler and Reinforcement.
First use July 2, 1962.

SN 162,126. John F. Kain, d.b.a. Sun Boss Company, Riverside, Calif. Filed Feb. 4, 1963.



The drawing is lined for yellow or gold, but no claim is made to a particular color as a part of the mark.
For Aluminum Patio Covers and Awnings.
First use Nov. 6, 1954.

SN 164,855. The Lawrence Paper Company, d.b.a. Jayhawk Fibre Form Co., Lawrence, Kans. Filed Mar. 18, 1963.

JAY-VOID

Owner of Reg. Nos. 88,836, 636,183, and others.
For Cardboard Forms and Parts and Components Thereof for Use in Concrete Construction.
First use February 1961.

SN 171,592. Vida Mosaic Co., San Francisco, Calif. Filed June 21, 1963.

MOSERA

For Decorative Building Facing and Flooring Materials, Having a Multi-Block Mosaic Pattern.
First use Mar. 2, 1963.

SN 172,512. Frank Paxton Lumber Company, Kansas City, Mo. Filed July 5, 1963.

PAX-PANEL

Owner of Reg. Nos. 672,380, 695,881, and 697,987.
For Insulated Building Panels.
First use June 4, 1963.

SN 173,062. Tex-Tube, Inc., Houston, Tex. Filed July 15, 1963.

TRU-FORM

For Structural Steel Members, Including Columns and Beams.
First use July 8, 1963.

SN 174,053. S.A.D.I. S.p.A., Vicenza, Italy. Filed July 30, 1963.

DEKORA

Owner of Italian Reg. No. 137,464, dated June 9, 1958.
For Chalk Plaster Panels With Decorative and/or Perforated Surfaces To Provide a Decorative and/or Sound Absorbing Effect When Said Panels Are Applied to Walls and Ceilings.

SN 174,115. National Gypsum Company, Buffalo, N.Y. Filed July 31, 1963.

ACOUSTICRYLIC

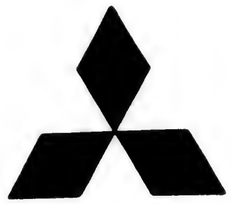
For Acoustical Ceiling Tile With a Plastic Surface Coating.
First use Apr. 22, 1963.

SN 174,686. Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Aug. 12, 1963.

MITSUBISHI

Owner of Japanese Reg. Nos. 98,021, dated Nov. 13, 1918; 100,368, dated Feb. 14, 1919; and 453,915, dated Oct. 21, 1954.
For Portland Cement, Silica Cement, Blast Furnace Slag Portland Cement, Timber and Lumber for Construction; Wall-Sheet, Limpid Sheet for Greenhouse, Roofing Plate, Ceiling Plate, Panel, Wallboard, Covering Plate for Household Lighting Fixtures, Plate for Signboard, Door Plate, Door, Adiabatic Board, Sound Absorbing Board, Heat Reserving Board, Cool Reserving Board, Damp-Proofing Board, Shock-Absorbing Board, Gutter, Water Pipe, Gas Pipe, Drainpipe, and Floor Tile Made of Polyvinyl Chloride, Melamine Resins, Phenolic Resins, Polyester Resins, Styrene Resins, Polyurethane Resins, Acrylic Resins, and Epoxy Resins, and Wooden Plate Coated With Melamine Resins, All of Which To Be Used for Building.

SN 174,895. Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Aug. 8, 1963.



The English translation of "Mitsubishi" is "three rhom boids." Owner of Japanese Reg. Nos. 572,580, dated May

15, 1961; 572,880, dated May 15, 1961; and 579,588, dated Sept. 1, 1961.

For Portland Cement, Silica Cement, Blast Furnace Slag Portland Cement, Timber and Lumber for Construction; Wall-Sheet, Limpid Sheet for Greenhouse, Roofing Plate, Ceiling Plate, Panel, Wallboard, Covering Plate for Household Lighting Fixtures, Plate for Signboard, Door Plate, Door, Adiabatic Board, Sound Absorbing Board, Heat Reserving Board, Cool Reserving Board, Damp-Proofing Board, Shock-Absorbing Board, Gutter, Water Pipe, Gas Pipe, Drainpipe, and Floor Tile Made of Polyvinyl Chloride, Melamine Resins, Phenolic Resins, Polyester Resins, Styrene Resins, Polyurethane Resins, Acrylic Resins, and Epoxy Resins, and Wooden Plate Coated With Melamine Resins, All of Which To Be Used for Building.

SN 174,994. Terraz Epoxy Inc., Louiseville, Quebec, Canada. Filed Aug. 13, 1963.

TERRAZ

Priority claimed under Sec. 44(d) on Canadian application filed May 22, 1963; Reg. No. 135,352, dated Apr. 17, 1964. No claim is made to the representation of the tile surfaces apart from the mark as shown.

For Tiles for Covering Floors, Walls, Panels, or Any Flat Surface.

SN 176,010. Miami Window Corporation, Miami, Fla. Filed Aug. 29, 1963.

THE SYMBOL OF EXCELLENCE

MIAMI WINDOW

The drawing is lined for the color orange, but no claim is made to such color. Owner of Reg. Nos. 536,842 and 648,486.

For Aluminum Windows and Aluminum Doors.

First use Feb. 1, 1960; on or about Oct. 15, 1947, as to "Miami Window" in another form.

SN 176,639. Diamond National Corporation, New York, N.Y. Filed Sept. 10, 1963.

DN

Owner of Reg. No. 665,602.
For Lumber and Millwork.
First use Mar. 1, 1962.

SN 177,739. Poreen Corporation, Freeport, N.Y. Filed Sept. 5, 1963.

POREEN

The representation of the goods (the brick) is disclaimed apart from the mark as shown.

For Cementitious Products—Namely, Brick, Tile, and Slabs.
First use on or about July 17, 1962.

SN 177,792. Johns-Manville Corporation, New York, N.Y. Filed Sept. 26, 1963.

ASBESTOCEL

Owner of Reg. No. 264,644.

For High Surface Area Cellular Material, Particularly Honeycomb Material Comprising Asbestos, for Use in Liquid-Gas Contact Systems Such as Cooling Towers, Trickling Filters, and Aerators.

First use at least on or about July 15, 1963.

SN 177,796. Johns-Manville Corporation, New York, N.Y. Filed Sept. 26, 1963.

RANCHBORD

For Asbestos-Cement Siding Sheets.
First use Nov. 16, 1961.

SN 177,941. Al-Fab Aluminum Fabricators, Inc., Chicago, Ill. Filed Sept. 30, 1963.

NYLACHRON

For Custom-Fabricated Closures for Windows and Doors Constructed of Plastic and Aluminum Components.
First use July 17, 1963.

SN 180,151. The Dayton Sure Grip and Shore Company, Miamisburg, Ohio. Filed Oct. 10, 1963.

RAPI-TIES

For Tie Bar Components for Concrete Forms.
First use Oct. 30, 1961.

SN 180,282. The D. S. Brown Company, North Baltimore, Ohio. Filed Nov. 1, 1963.

NORWIN

For Formed Compression-Type Weather Seals for Windows.
First use Mar. 29, 1963.

SN 183,539. Formulate Development Research Corp., New York, N.Y. Filed Dec. 23, 1963.

FDR

For Butyl, Polysulfide Rubber, and Epoxy Compositions Having Caulking, Glazing, Adhesive, Sealant, and Bedding Properties, and as Epoxy Cement and Surface Coating Compositions.

First use July 11, 1861.

SN 183,596. Interbuild, Inc., Cambridge, Mass. Filed Dec. 26, 1963.

INTERBUILD

For Prefabricated Components for Building Structures.
First use Dec. 3, 1963.

SN 183,899. Electro Refractories & Abrasives Corporation, Buffalo, N.Y. Filed Jan. 2, 1964.

DIMUL

For Refractories, Specifically Fire Brick, Slabs, Tiles, Blocks, Furnace Linings, Hearths, Muffles, Tubes, Posts, and Cements.

First use June 14, 1938.

SN 187,066. Artcraft Awning Company, St. Louis, Mo. Filed Feb. 20, 1964.

SUBURB·A·PORT

For Lineal Parts and Cut Parts for Marquees.
First use May 1963.

SN 187,067. Artcraft Awning Company, St. Louis, Mo. Filed Feb. 20, 1964.

SUBURB·A·ROLL

For Lineal Parts and Cut Parts for Awnings.
First use Feb. 13, 1964.

SN 187,251. Component Engineering Co., Lake Oswego, Oreg. Filed Feb. 24, 1964.

TOOTH-N-NAIL

For Truss Connector Plates.
First use May 20, 1963.

SN 187,388. Benjamin Foster Company, Philadelphia, Pa. Filed Feb. 25, 1964.

MONOLAR

For Mastic Coating for Thermal Insulation.
First use Nov. 27, 1963.

SN 192,658. American Plywood Association, Tacoma, Wash. Filed May 5, 1964. COLLECTIVE MARK.

TESTED DFPA QUALITY

Owner of Reg. No. 579,860 and others.
For Plywood.
First use Apr. 24, 1964.

SN 192,785. The Bostwick Steel Lath Company, Niles, Ohio. Filed May 6, 1964.

GALVABEAD

For Wall Board Corner Bead.
First use Mar. 17, 1964.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 160,290. Impact Extrusions, Incorporated, Valparaiso, Ind. Filed Jan. 7, 1963.

TANDEM GRIP

Applicant hereby disclaims the word "Grip" apart from the mark as shown.

For Sleeves Employed in the Formation of Rope Slings.
First use on or about Oct. 1, 1960.

SN 166,054. Arthur W. Swenson, Jr., d.b.a. Stern-Williams Co., Shawnee Mission, Kans. Filed Apr. 3, 1963.

Serviceptor

For Terrazzo Sinks for Industrial and Institutional Buildings for Disposal of Cleaning Water and Wet Mop Storage.
First use Oct. 16, 1962.

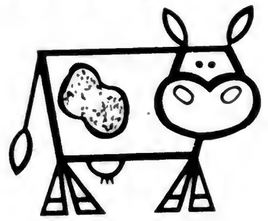
SN 183,248. Cotter & Company, Chicago, Ill. Filed Dec. 19, 1963.

TRU-TEST

Applicant disclaims the words "Standard of Quality" and "Tested for Your Protection" apart from the mark as shown.

Owner of Reg. Nos. 366,735, 371,643, and others.
For Furniture Casters and Glides.
First use June 3, 1963.

SN 191,208. Progressive Metal Equipment, Inc., d.b.a. Progressive Metal Equip't Inc., and Progressive Metal Equipment Incorporated, Philadelphia, Pa. Filed Apr. 15, 1964.



therm-a-creamer

For Cream Dispensers for Commercial Establishments.
First use Feb. 26, 1964.

SN 191,719. Rockwell Manufacturing Corporation, Pittsburgh, Pa. Filed Apr. 21, 1964.

SUPER MUDWONDER

Owner of Reg. No. 593,522.
For Gate Valves and Parts Thereof.
First use October 1962.

SN 192,725. Jet Electronics Corporation, Albuquerque, N. Mex. Filed May 5, 1964.

SAFETBLOW

For Dusting and Cleaning Nozzles.
First use on or about May 9, 1961.

SN 195,480. Woodward Iron Company, Woodward, Ala. Filed June 11, 1964.

UNI-JOIN

For Pipe Joints and Gaskets Therefor.
First use May 20, 1964.

SN 196,508. Creative Sales, Inc., Miami, Fla. Filed June 26, 1964.

PIGGY-BACK DUSTPAN

Without relinquishing any common law rights, applicant disclaims the exclusive right to the word "Dustpan" apart from the mark as shown.
For Dustpan.
First use Feb. 10, 1964.

SN 196,706. Nylok-Detroit Corporation, Troy, Mich. Filed June 29, 1964.

DOVE-LOK

For Self-Locking Threaded Fasteners.
First use May 18, 1964.

SN 197,073. Calumet & Hecla, Inc., Allen Park, Mich. Filed July 6, 1964.

TRUEFIN

Owner of Reg. No. 418,091.
For Finned Tube.
First use June 3, 1964; Aug. 1, 1944, as to "Trufin."

SN 197,131. Jaybee Manufacturing Corporation, Los Angeles, Calif. Filed July 6, 1964.

JB

Owner of Reg. Nos. 757,160 and 757,161.
For Builders' Finish Hardware—Namely, Catches, Hinges, Pulls, Knobs, Back Plates, Push Plates, Towel Bars, Towel Rings, Door Stops, Latch Sets, Door Knobs, Rosettes, Sash Locks, Sash Lifts, Strikes, Screen Hangers, Coat and Hat Hooks, Brackets for Shelves and Rails, House Numbers, Door Grills and Knockers, Chain Latches, Thresholds, Pole Sockets, Hooks, Closet Rod and Shelf Supports, Slotted Shelf Brackets, and Bumpers.
First use June 1961.

SN 197,789. Spotnails, Inc., Rolling Meadows, Ill. Filed July 13, 1964.

SPOTBRADS

Owner of Reg. Nos. 431,611, 508,350, and 513,306.
For Metallic Fastening Elements in Adhered "Stick" Form for Use in a Driving Mechanism.
First use Apr. 2, 1962.

SN 198,246. T. D. Williamson, Inc., Tulsa, Okla. Filed July 20, 1964.

WEDGE-LOCK

Owner of Reg. No. 672,644.
For Pipe Plugs, and the Like.
First use at least as early as Aug. 23, 1956.

SN 198,403. Calumet & Hecla, Inc., Allen Park, Mich. Filed July 23, 1964.

TUBEMANSHIP

Owner of Reg. No. 747,120.
For Metal Tubing.
First use Mar. 22, 1954.

Class 14—Metals and Metal Castings and Forgings

SN 181,949. Armco Steel Corporation, Middletown, Ohio. Filed Nov. 27, 1963.

CMC

For Stainless Steel Strip, Sheets, Bars, and Wire.
First use Oct. 21, 1963.

Class 15—Oils and Greases

SN 197,623. Sun Oil Company, Philadelphia, Pa. Filed July 10, 1964.

SUNDERCOAT

Owner of Reg. Nos. 548,922, 754,908, and others.
For Semi-Solid Petroleum Base Composition Used as a Protective Undercoating for Automobiles.
First use Sept. 30, 1963.

SN 197,651. American Petrofina Company of Texas, Dallas, Tex. Filed July 13, 1964.

PINK AIR

For Lubricating Oil.
First use June 22, 1964.

Class 16—Protective and Decorative Coatings

SN 142,296. Eureka Specialty Printing Company, Scranton, Pa. Filed Apr. 16, 1962.

HUMPTY DUMPTY

For Paints and Dyes Sold as a Component of an Easter Egg Coloring, Fun and Game Kit.
First use on or about Feb. 8, 1962.

SN 146,736. Magnolia Paper Co., Houston, Tex. Filed June 12, 1962.

C|C

RELY

The drawing is lined for red.
For Preparation for Coating and Sealing Floors Used as a Base Coat for Application of Wax Polish.
First use Apr. 10, 1962.

SN 169,013. California Texas Oil Corporation, New York, N.Y. Filed May 16, 1963.

CALTEX

The drawing is lined for red, but color is not claimed as a feature of the mark. Owner of Reg. No. 389,865.
For Rust Proofing Compounds for Application to the Under Bodies of Automobiles and Other Metal Surfaces.
First use at least as early as 1947.

SN 170,544. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1963.

SCOTCHKOTE

Owner of Reg. No. 706,885.
For Two-Part, Room Temperature Curing Epoxy Resin Protective Coating Designed for Application to Welded Pipe Joints and Fittings and Other Metal, Wood, Concrete, and Similar Materials To Protect Them From Rust, Corrosion and Deterioration, Both Above and Below Ground.
First use Apr. 9, 1963.

SN 183,249. Cotter & Company, Chicago, Ill. Filed Dec. 19, 1963.

TRU-TEST

Applicant disclaims the words "Standard of Quality" and "Tested for Your Protection" apart from the mark as shown. Owner of Reg. Nos. 366,735, 371,643, and others.
For Quick Dry Enamel.
First use June 3, 1963.

SN 189,879. The Debevoise Company, Brooklyn, N.Y. Filed Mar. 30, 1964.

Palette-tone

For Ready-Mixed Interior and Exterior Paints, Varnishes, and Enamels.
First use Sept. 17, 1962.

SN 191,954. Rockcote Paint Co., Rockford, Ill. Filed Apr. 24, 1964.

WEATHER-LIFE

For Outdoor Paints and Varnishes.
First use Dec. 4, 1962.

Class 17—Tobacco Products

SN 173,608. "21" Club Selected Items, Inc., New York, N.Y. Filed July 23, 1963.

AMS



For Cigars.
First use July 3, 1963.
Subj. to Intf. with SN 173,749.

SN 173,749. Faber, Coe & Gregg, Inc., New York, N.Y. Filed July 25, 1963.

AMS



Owner of Reg. No. 685,013.
For Cigars.
First use Apr. 22, 1963.
Subj. to Intf. with SN 173,608.

SN 174,716. Suerdieck S/A. Charutos e Cigarrilhos, Salvador, Bahia, Brazil. Filed Aug. 8, 1963.

SUERDIECK

Owner of Brazilian Reg. No. 282,385, dated May 8, 1963.
For Tobacco Products—Namely, Cigars, Cigarillos, Snuff, Bunched Tobacco, Leaf Tobacco, Shredded Tobacco, and Twist Tobacco.
First use on or about Dec. 30, 1899, on leaf tobacco; in commerce on or about Aug. 30, 1942.
Subj. to Intf. with SN 158,828.

SN 194,069. Peterson's Ltd., New York, N.Y. Filed May 22, 1964.

BEWLAY

For Cigars and Tobacco.
First use May 19, 1964.

SN 198,881. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

BEACON

For Cigarettes.
First use July 9, 1964.

SN 198,883. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

BISCAYNE

For Cigarettes.
First use July 9, 1964.

SN 198,885. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

VANTAGE

For Cigarettes.
First use July 9, 1964.

SN 198,886. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

PILOT

For Cigarettes.
First use July 9, 1964.

SN 198,887. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

SYLVAN

For Cigarettes.
First use July 9, 1964.

SN 198,888. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

MONITOR

For Cigarettes.
First use July 9, 1964.

SN 198,889. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

GLENDALE

For Cigarettes.
First use July 9, 1964.

SN 198,890. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

ARBOR

For Cigarettes.
First use July 9, 1964.

SN 198,891. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

FORTI-FILTER

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

SN 198,892. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

ACTI-FILTER

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

SN 198,893. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

CHARBOND

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

SN 198,895. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

VAPOPHASE

For Cigarette Filter Sold Incorporated as a Part of the Cigarette.
First use July 9, 1964.

SN 198,917. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 30, 1964.

DALE

For Cigarettes.
First use July 9, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

SN 157,377. International Latex Corporation, Dover, Del. Filed Nov. 16, 1962.

ISODRUFF

For Medicated Preparation for the Treatment and Prevention of Dandruff in Shampoo Form.
First use Mar. 29, 1958.

SN 171,095. Cooper, Tinsley Laboratories, Inc., Harrison, N.J. Filed June 17, 1963.

PHANTOSINE

Owner of Reg. No. 638,972.
For Medicinal Preparation for Weight Control.
First use Apr. 17, 1963.

SN 171,819. The Upjohn Company, Kalamazoo, Mich. Filed June 25, 1963.

CEREDEX

For Antidepressant Compound.
First use Apr. 17, 1963.

SN 182,348. Marion Laboratories, Inc. (Delaware corporation), Kansas City, Mo., assignee of Marion Laboratories, Inc. (Missouri corporation), Kansas City, Mo. Filed Dec. 4, 1963.

PRO-DI

For Medicinal Preparation—Namely, an Injectable Protein Iodide.
First use Feb. 1, 1961

SN 183,382. Cutter Laboratories, Inc., Berkeley, Calif. Filed Dec. 23, 1963.

TEMRIN

For Pharmaceutical Preparation in Aerosol Form Useful in the Treatment of Vaginal Moniliasis Infections.
First use on or before Jan. 1, 1963.

SN 183,886. Cutter Laboratories, Inc., Berkeley, Calif. Filed Jan. 2, 1964.

GAMASTAN

For Human Gamma Globulin Product for Parenteral Administration.
First use on or before Sept. 1, 1963.

SN 184,932. Key Pharmaceuticals, Inc., Miami, Fla. Filed Jan. 20, 1964.

KEOXINE

For Gardiotonic Agent—Namely, Digoxi Tablets.
First use Dec. 18, 1963.

SN 185,143. Laboratoires Toraude, Paris, France. Filed Jan. 22, 1964.

SYNEPTINE

Owner of French Reg. No. 432,130, dated Aug. 18, 1953 (Seine); Natl. Inst. No. 16,758.
For Antibiotic Pharmaceutical Preparation Available Only on Prescription for the Treatment of Infection.

SN 186,354. Madison C. Gray, d.b.a. West Anaheim Pharmacy, and West Anaheim Pharmaceuticals, Anaheim, Calif. Filed Feb. 10, 1964.

CMP FORMULAE

The word "Formulae" is disclaimed.
For Desensitising Agent for Use in Dentistry.
First use Feb. 15, 1963.

SN 188,547. Keystone Laboratories, Inc., Memphis, Tenn. Filed Mar. 12, 1964.

NERV-AID

Owner of Reg. No. 626,399.
For Preparation in Tablet Form To Relieve Simple Nervousness, Sleeplessness, Restlessness, Nervous Irritability, Excitability, and Nervous Headache.
First use Jan. 13, 1955.

SN 190,807. International Pharmaceutical Corporation, Norristown, Pa. Filed Apr. 10, 1964.

RHINEPHRINE

For Nasal Decongestant.
First use Apr. 2, 1964.

SN 191,336. Thomas E. Watson, d.b.a. T. E. Watson Co., Briarcliff Manor, N.Y. Filed Apr. 16, 1964.

CHEMESTROGEN

For Synthetic Estrogen, Benzestrol, for Use in Such Indications as Menopause, Senile Vaginitis and Kraurosis Vulvae, Suppression of Lactation, Prostatic Carcinoma, Mammary Carcinoma, Amenorrhea, Dysmenorrhea and Post-Menopausal Osteoporosis.
First use Mar. 17, 1964.

SN 192,422. Nysco Laboratories, Inc., Long Island City, N.Y. Filed Apr. 30, 1964.

NITRO-SPAN

For Nitroglycerin in Timed Release Form for Pharmaceutical Purposes.
First use Apr. 10, 1964.

SN 193,525. American Home Products Corporation, New York, N.Y. Filed May 15, 1964.

RIOPLUS

For Antacid Antiflatulent Preparation.
First use Apr. 8, 1964.

SN 194,625. Eli Lilly and Company, Indianapolis, Ind. Filed June 1, 1964.

MATROL

For Antiestrus Feed Additive for Cattle and Sheep.
First use May 27, 1964.

SN 194,990. Lambert-Kay, Incorporated, Los Angeles, Calif. Filed June 5, 1964.

EAR-RITE

For Medication for Animal's Ears.
First use Feb. 7, 1964.

SN 194,991. Lambert-Kay, Incorporated, Los Angeles, Calif. Filed June 5, 1964.

EYE-BRITE

For Medication for Animal's Eyes.
First use May 7, 1964.

SN 195,545. Olin Mathieson Chemical Corporation, New York, N.Y. Filed June 12, 1964.

SCOURBIOTIC

For Veterinary Antimicrobial Preparations.
First use Apr. 13, 1964.

SN 195,831. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed June 16, 1964.

MAGNAPRIN

For Analgesic, Antipyretic Compound.
First use on or about June 5, 1964.

SN 195,908. American Cyanamid Company, Wayne, N.J. Filed June 18, 1964.

NEOLOID

For Laxative.
First use June 18, 1943.

SN 195,909. American Cyanamid Company, Wayne, N.J. Filed June 18, 1964.

ANCYLOL

For Anti-Hookworm Preparation for Veterinary Use.
First use June 5, 1964.

SN 196,139. Charles E. Frosst & Co., Westmount, Quebec, Canada. Filed June 22, 1964.

Φ

Owner of Canadian Reg. No. 60/N.S. 15,788, dated Oct. 5, 1940; and U.S. Reg. No. 642,000.
For Pharmaceutical Preparations.
First use Sept. 26, 1940; in commerce May 19, 1964.

SN 196,621. Chesebrough-Pond's Inc., New York, N.Y. Filed June 29, 1964.

BRIGHT STEP

For Antiseptic Foot Spray.
First use June 5, 1964.

SN 196,692. Melville Shoe Corporation, New York, N.Y. Filed June 29, 1964.

Healthy Stepper

Owner of Reg. No. 298,842.
For Spray Foot Powder for Cooling and Refreshing Hot Aching Feet; for the Relief of Athlete's Foot; for Absorbing Perspiration, and Helping To Prevent Fungus Growth.
First use May 15, 1964.

SN 197,065. Bristol-Myers Company, New York, N.Y. Filed July 6, 1964.

GRAVISTAT

For Medicinal and Pharmaceutical Preparation—Namely, a Contraceptive.
First use Mar. 2, 1964.

SN 197,547. Dr. Peter Fahrney & Sons, Inc., Chicago, Ill. Filed July 10, 1964.

GERE-DYNE

For Vitamin and Mineral Formula Preparation.
First use Apr. 16, 1964.

SN 197,843. Parke, Davis & Company, Detroit, Mich. Filed July 14, 1964.

CLORELASE

For Pharmaceutical Preparation—Namely, Ointment.
First use on or before June 12, 1964.

SN 197,858. Trigga Corporation, Limited, Montreal, Quebec, Canada. Filed July 14, 1964.

ACRISTAN

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 30, 1964; Reg. No. 136,815, dated July 31, 1964.
For Pharmaceutical Preparations—Namely, Preparation for the Treatment of Dry Sockets in the Practice of Dentistry.

SN 198,115. American Cyanamid Company, Wayne, N.J. Filed July 20, 1964.

EXTENDUR

For Analgesic Preparation.
First use June 25, 1964.

SN 198,116. American Cyanamid Company, Wayne, N.J. Filed July 20, 1964.

MISTA GRIN

For Antiseptic Preparation.
First use June 25, 1964.

SN 199,261. Boyle & Company, d.b.a. American Laboratories, Bell Gardens, Calif. Filed Aug. 5, 1964.

PROCON

For Decongestant Capsule, for Fast Symptomatic Relief From Colds, Hay Fever, Sinus, Nasal and Head Congestion.
First use Sept. 27, 1962.
Subj. to Intf. with SN 187,146.

Class 19—Vehicles

SN 158,116. Westward Coach Manufacturing Company, Inc., Lafayette, Ind. Filed Nov. 28, 1962.

Mustang

For Utility Van Bodies Mountable on Pick-Up Trucks and Small Trucks for Providing Trailer-Type Housing and Storage Accommodations for Travellers and Sportsmen, Coach Bodies Known as Campers for Providing Such Accommodation and Mountable on an Associated Vehicle or Carrying Unit Such as a Truck or Boat Unit Such as a Pontoon Frame, and Trailers.
First use September 1960.

SN 180,181. Champion Home Builders Co., Dryden, Mich. Filed Oct. 31, 1963.

HUNTINGTON

For Mobile Homes and House Trailers.
First use Aug. 21, 1963.

SN 188,402. John M. Watson, d.b.a. Watson Manufacturing Company, Hobbs, N. Mex. Filed Mar. 10, 1964.

GOPHER

For Self-Propelled Mine Car.
First use May 10, 1963.

SN 188,677. Textar G.m.b.H., Leverkusen, Germany. Filed Mar. 13, 1964.

TEXTAR

Owner of German Reg. No. 633,639, dated Feb. 5, 1953.
For Brake Shoes and Brake Bands for Use on Vehicles.
First use April 1957.

SN 191,094. Zanella Hnos. y Cia, S.A. Com. Ind. Finan. e Inmob., Caseros, Argentina. Filed Apr. 14, 1964.

ZANELLA

For Motorcycles and Bicycles.
First use January 1963; in commerce January 1963.

SN 194,474. The Fairbanks Company, New York, N.Y. Filed May 28, 1964.

HI-CAP

For Vulcanized Rubber Tired Wheels for Materials Handling Equipment.
First use May 12, 1964.

SN 194,476. The Firestone Tire & Rubber Company, Akron, Ohio. Filed May 28, 1964.

"500"

Owner of Reg. Nos. 587,721 and 695,675.
For Bicycles and Parts Thereof.
First use July 1, 1962.

SN 194,538. Union Carbide Corporation, New York, N.Y. Filed May 28, 1964.

UNION CARBIDE

For Truck and Trailer Bodies and Parts Thereof.
First use on or about Jan. 28, 1963.

SN 194,620. Kelson Engineering Company, El Monte, Calif. Filed June 1, 1964.

CONDOR

For Motor Coaches or Motor Homes.
First use June 22, 1962.

SN 194,724. General Motors Corporation, Detroit, Mich. Filed June 2, 1964.

FLO-RATED

For Shock Absorbers.
First use Apr. 28, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 168,791. Yardney Electric Corp., New York, N.Y. Filed May 13, 1963.

Yardney PRIMER

Owner of Reg. Nos. 551,583, 677,980, and others.
For Electrochemical Cells and Batteries.
First use May 6, 1963.

SN 169,303. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed May 20, 1963.

LITTLE-THEATRE

For Television Receivers.
First use Apr. 16, 1963.

SN 175,749. General Telephone & Electronics International S.A., Geneva, Switzerland. Filed Aug. 26, 1963.

GENTELEX

Owner of Swiss Reg. No. 192,526, dated June 16, 1962.
For Telephone and Telecommunication Equipment—Namely, Telephones, Telephone Exchanges, Electronic Apparatus for Receiving, Recording and Reproducing Telephone Messages, Phone Speakers, and Intercommunication Sets.

SN 180,495. Flexiflor Electrical Systems, Inc., Dayton, Ohio Filed Nov. 5, 1963.

FLEXIFLOR

For Electrical Outlets, Telephone Outlets, Vertical Cell to Conduit Connectors, Cell to Panel Connectors, Horizontal Cell to Conduit Connectors, and Grommets.
First use Aug. 12, 1963.

SN 180,884. Holophane Company, Inc., New York, N.Y. Filed Nov. 12, 1963.

Conformall

For Illumination Equipment—Namely, Lamp Panels, Screens, Globes, Reflectors, Refractors, and Fixtures.
First use Oct. 25, 1963.

SN 182,258. Electro-King Corp., Chicago, Ill. Filed Dec. 3, 1963.

STRIP-A-WALL

For Electrically Powered Stripping Device.
First use Oct. 10, 1963.

SN 182,611. Foster Electric Co., Ltd., Mitaka-shi, Tokyo, Japan. Filed Dec. 9, 1963.

FOSTER

For Electrical Acoustic Components—viz, Speakers, Microphones, Pick-Ups, Wireless Microphones, Amplifiers, Headphones, and Earphones.
First use May 1, 1959; in commerce May 1, 1959.

SN 183,250. Cotter & Company, Chicago, Ill. Filed Dec. 19, 1963.

TRU-TEST

Applicant disclaims the words "Standard of Quality" and "Tested for Your Protection" apart from the mark as shown.
Owner of Reg. Nos. 366,735, 371,643, and others.
For Portable Electric Mixer; Electric Corn Popper; Electric Toaster; Electric Fry Pan; Electric Heaters; Electric Can Openers; Electric Percolators; Portable Electric Saws; Portable Electric Drills; Electric Sander; and Electric Garden Tools—Namely, Soil Tillers, and Hedge Trimmers.
First use July 10, 1962.

SN 183,900. Compagnie Francaise Thomson-Houston, Paris, France. Filed Jan. 3, 1964.

CAVITRON

Priority claimed under Sec. 44(d) on French Reg. No. 514,704, dated July 11, 1963 (Seine); Natl. Inst. No. 208,822.
For Electronic Tubes.

SN 185,867. Claude Paz & Visseaux, Paris, France. Filed Feb. 3, 1964.

CLAUDE

The drawing is lined for the color blue. Owner of French Reg. No. 487,422, dated Apr. 8, 1960 (Paris); Natl. Inst. No 142,570; and U.S. Reg. No. 771,811.
For Electric Bulbs and Fluorescent Lamps.

SN 194,477. The First Electronics Corporation, Boston, Mass. Filed May 28, 1964.

For Electrical Cables and Cable Assemblies, Including Electrical Connectors and Other Components of Cables and Cable Assemblies.
First use Mar. 23, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 166,233. William R. McInturff, Hickory Hills, Ill. Filed Apr. 5, 1963.

ADACA

For Equipment Sold as a Unit for Playing a Word Game.
First use Oct. 19, 1961.

SN 166,705. Gladen Enterprises, Inc., Bay City, Mich. Filed Apr. 15, 1963.

BUMP A PEG

For Indoor Parlor Game Board With Dice and Movable Pegs.
First use Mar. 15, 1963.

SN 167,183. Milton Bradley Company, Springfield, Mass Filed Apr. 19, 1963.

Whirligig

For Equipment Sold as a Unit for Playing a Musical Chairs Game.
First use Feb. 13, 1963.

SN 185,930. Philip P. Phillips, Chicago, Ill. Filed Feb. 3, 1964.

NEST EGG

For Coin Savings Banks.
First use Jan. 2, 1964.

SN 187,738. Eli Bridge Company, Inc., Jacksonville, Ill. Filed Mar. 2, 1964.

BIG ELI

Owner of Reg. No. 107,149.
For Carnival-Type Amusement Rides.
First use June 6, 1963.

SN 187,752. Holland Hall Products, Inc., Stamford, Conn. Filed Mar. 2, 1964.

PLAYBABY

For Pliable Infants' Squeeze Toys, Exclusive of Baby Dolls.
First use Mar. 21, 1963.

SN 188,516. Chips Surf-N-Ski, Inc., Gurnee, Ill. Filed Mar. 12, 1964.

SURF-N-SKI BY CHIPS

For Water Surface Devices Such as Surf Board-Water Ski Combinations and the Like.
First use Jan. 31, 1964.

SN 188,852. Eagle Rubber Co., Inc., Ashland, Ohio. Filed Mar. 17, 1964.

EAGLE

For Toy Balloons and Play Balls.
First use February 1913.

SN 190,725. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Apr. 9, 1964.

CHALLENGE THE YANKEES

For Equipment for Playing a Toy Baseball Game Comprising Dice and Cards.
First use on or about Feb. 28, 1964.

SN 194,487. Hawk Model Company, Inc., Chicago, Ill. Filed May 28, 1964.

We*rd-ohs

For Board and Parlor Games—Namely, Jigsaw Puzzles, and Chess and Checker Sets; and Toys—Namely, Novelty Plastic Helmets, Stuffed Toys, Tile, Pearl, and Coral Sets, and Pencil, Coloring, and Water Paint Craft Sets.
First use January 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 162,211. Walker Manufacturing Company, Racine, Wis. Filed Feb. 6, 1963.

SMOG-MASTER

For Automotive Crankcase Emission Control Systems for Reducing Smog Forming Air Pollutants.
First use Jan. 23, 1963.
Subj. to Intf. with SN 166,469.

SN 166,469. William B. Lavey, San Francisco, Calif. Filed Apr. 10, 1963.

SMOG MASTER EQUIPPED

The word "Smog" is disclaimed apart from the mark.
For Antismog Devices for Automobiles.
First use Aug. 5, 1962.
Subj. to Intf. with SN 162,211.

SN 174,124. Ralph A. Sloan, d.b.a. National Stick Picker Company, Des Moines, Iowa. Filed July 31, 1963.

STICK-PICKER

For Hand Implement for Picking Up Elongated Objects.
First use on or about July 17, 1963.

SN 180,402. Italcrem, S.A., Barcelona, Spain. Filed Nov. 4, 1963.

ITALCREM

Owner of Spanish Reg. No. 319,785, dated Aug. 28, 1957.
For Coffee Mills, Non-Electrical Mixers and Beaters, Meat Slicing Machines, Cheese Graters, Bread Slicers, Ice Cream Beaters, and Fruit Juicers.

SN 183,251. Cotter & Company, Chicago, Ill. Filed Dec. 19, 1963.

TRU-TEST

Applicant disclaims the words "Standard of Quality" and "Tested for Your Protection" apart from the mark as shown. Owner of Reg. Nos. 366,735, 371,643, and others.
For Garden Tools—Namely, Hedge, Rose and Grass Shears, Hand Pruners, Lawn Edgers, Weeders, Cultivators, Spades, Forks, Shovels, Rakes, Hoes, Dandelion Diggers, Scythes, Pruning Saws, Trowels, Bulb Planters; Hand and Power Lawn Mowers and Grass Catchers Therefor; Hand and Power Lawn Sweepers; Hand Tools—Namely, Hammers, Saws and Blades Therefor; Planes, Hatchets, Axes, Wood and Metal Chisels, Screw Drivers, Braces and Bits, Wood and Metal Bits and Drills, Wood and Metal Files, Pliers, Snips, Adjustable Wrenches, Pipe Wrenches, Open End Wrenches, Box Wrenches, Vises, Mitre Boxes, Squares, Levels, Socket Sets, Tool Boxes, Staple Guns, Combination Wrenches; Hair Cutting Set Comprising Electric Clippers and Attachments Therefor, Scissors and Comb; Water Systems Comprising Deep or Shallow Well Pumps, Sump Pumps, Submersible Pumps, and Ejector Assemblies.
First use Oct. 18, 1962.

SN 187,288. International Machinery Corporation N.V., St. Niklaas-Waas, East Flandern, Belgium. Filed Feb. 24, 1964.

HYDROLUX

Owner of Belgian Reg. No. 1,189, dated June 4, 1963.
For Hydrostatic Sterilizers, Cookers, and Coolers for Manufacturing Canned Food Products.

SN 188,678. Textar G.m.b.H., Leverkusen, Germany. Filed Mar. 13, 1964.

TEXTAR

No claim is made to the representation of the goods, separate and apart from the mark as shown. Owner of German Reg. No. 633,639, dated Feb. 5, 1953.
For Brake Shoes and Brake Bands for Use on Machinery.
First use April 1957; in commerce April 1957.

SN 188,845. Charles D. Briddell, Incorporated, d.b.a. Chas. D. Briddell, Inc., Crisfield, Md. Filed Mar. 17, 1964.

AMERICAN PROVINCIAL

For Stainless Steel Flatware.
First use Feb. 11, 1964.

SN 190,013. Kernel Kutter, Inc., Libertyville, Ill. Filed Mar. 31, 1964.

KERNEL KUTTER

For Device for Stripping Kernels From Ears of Corn.
First use Mar. 19, 1955.

SN 191,621. Space Implements Co., Burbank, Calif. Filed Apr. 20, 1964.

SPACEDRILL

For Drills.
First use Jan. 27, 1964.

SN 192,376. E & M Tool Co., North Bergen, N.J. Filed Apr. 30, 1964.

TILEX

For Scoring and Breaking Device for Tiles.
First use May 29, 1939.

SN 192,958. Transland Aircraft, Inc., Redondo Beach, Calif. Filed May 7, 1964.

Swath-King

For Pumps and Valves.
First use Jan. 10, 1964.

SN 196,524. Huntingdon Industries Incorporated, Bethayres, Pa. Filed June 26, 1964.

XPEDITER

For Machines for Making Paperboard Boxes.
First use June 9, 1964.

SN 196,611. The Bullard Company, Bridgeport, Conn. Filed June 29, 1964.

TEMPLATURN

For Single and Multiple Spindle Turning Machines.
First use June 23, 1964.

SN 196,737. Stonehill & Tree, Inc., Chicago, Ill. Filed June 29, 1964.

TAM-O-SHANTER

Owner of Reg. No. 758,016.
For Garden Tools, Hand and Electrically Operated.
First use June 22, 1964.

SN 197,683. The Dow Chemical Company, Midland, Mich. Filed July 13, 1964.

ABRASIJET

Owner of Reg. No. 714,829.
For Apparatus Used for Hydraulically Perforating Well Casings, Cement, and Well Formations.
First use June 5, 1964.

SN 197,958. Ideal Industries, Inc., Sycamore, Ill. Filed July 16, 1964.

SWING GRIP

For Wire Strippers.
First use June 5, 1964.

SN 198,014. Wheel Trueing Tool Company, Detroit, Mich. Filed July 16, 1964.

TRU-GRIT ROTARY

Owner of Reg. No. 628,202.
For Diamond Set or Impregnated Dressing and Form Dressing Tools for Dressing Grinding Wheels.
First use in or about October 1963.

SN 198,037. Future Plastics, Incorporated, Gastonia, N.C. Filed July 17, 1964.

RUBBERTHANE

For Textile Machinery—Namely, Pickers, Stop Bolts, Bearings, Impact Blocks, Spinning Cots, Bushings, Bumper Straps, and Belting.
First use on or about Jan. 20, 1964, on pickers.

SN 198,078. Ram Enterprises, d.b.a. Boar Equipment Company, Shreveport, La. Filed July 17, 1964.

BOAR

For Digger Tooth for Excavating Apparatus.
First use Feb. 25, 1964.

SN 198,251. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed July 21, 1964.

GLEANER

Owner of Reg. Nos. 222,924 and 250,631.
For Agricultural Harvesting Machines.
First use Oct. 1, 1923.

SN 198,267. Ralph M. Fritts, d.b.a. Ralph M. Fritts Co., Overland Park, Kans. Filed July 21, 1964.

CAPFIL

For Filling Machines for Rapid and Accurate Premeasured Filling of Vials and Similar Small Containers.
First use May 18, 1964.

SN 198,499. Schwartz Brothers, Inc., Philadelphia, Pa. Filed July 24, 1964.

S.O.S. DEFENDER

Owner of Reg. Nos. 202,645 and 345,006.
For Fire Extinguishers.
First use Dec. 1, 1951.

SN 198,507. United Silver and Cutlery Company, Los Angeles, Calif. Filed July 24, 1964.

WELLINGTON

For Kitchen Knives—Namely, Paring Knives, Utility Knives, Sandwich Knives, Carving Knives, Butcher Knives, Slicers, French Cook Knives, Knife Racks, and Knife Sets, and Forks.
First use Feb. 21, 1964.

SN 198,663. Porter Precision Products Co., Cincinnati, Ohio. Filed July 28, 1964.

RETRAKTO

For Pin Ejector Punches.
First use June 16, 1964.

SN 198,665. Rapidac Machine Corporation, Rochester, N.Y. Filed July 28, 1964.

RAPIDAC

For Rolls for Making Photographic Film and Rolls for Making Pliable Plastic Sheet Material.
First use Dec. 15, 1949.

SN 198,858. William I. Miller, d.b.a. Wimco Distribution, Downers Grove, Ill. Filed July 30, 1964.

BIG SPIKE

For Scriber.
First use July 18, 1964.

SN 199,286. The Knickerbocker Company, Jackson, Mich. Filed Aug. 5, 1964.

TRI-FREE-LIFT

For Lift Truck Masts.
First use Jan. 10, 1958.

SN 199,287. The Knickerbocker Company, Jackson, Mich. Filed Aug. 5, 1964.

TRILO

For Lift Truck Masts.
First use Jan. 17, 1961.

SN 199,288. Koebel Diamond Tool Co., Detroit, Mich. Filed Aug. 5, 1964.

there's a diamond K in your life

Owner of Reg. No. 522,350.
For Diamond Dressing Tools, Diamond Bits, Diamond Drills, Diamond Cutters and Shaped Diamond Tools.
First use June 19, 1964.

Class 24 — Laundry Appliances and Machines

SN 180,403. Italcrem, S.A., Barcelona, Spain. Filed Nov. 4, 1963.

ITALCREM

Owner of Spanish Reg. No. 319,785, dated Aug. 28, 1957.
For Washing Machines of All Types.

SN 190,029. Sjöström Automations, Inc., Boca Raton, Fla. Filed Mar. 31, 1964.

SJÖSTRÖM

For Laundry and Linen Supply Folding, Conveying, and Stacking Machines.
First use about 1932.

SN 192,983. Blackstone Corporation, Jamestown, N.Y. Filed May 8, 1964.

Selector 300

For Washing Machines, Wringers for Washing Machines, and Components for Washing Machines and Wringers.
First use Aug. 2, 1963.

SN 195,225. Hamilton Manufacturing Company, Two Rivers, Wis. Filed June 9, 1964.

HAMILTON

Owner of Reg. Nos. 401,589 and 590,803.
For Household Laundry Appliances—Namely, Laundry Washing Machines and Laundry Dryers.
First use on or about June 1, 1941.

Class 26 — Measuring and Scientific Appliances

SN 171,719. The Bunker-Ramo Corporation, Stamford, Conn, by change of name from The Teleregister Corporation, Stamford, Conn. Filed June 24, 1963.

VOQUOTE

For Data Storage and Processing Equipment for Use in Digital-To-Voice Information Systems—Namely, Digital Storage and Read-Out Equipment for Converting Voice-Recorded Words Into Audio Information Signals, and Components, Parts and Supplies for Such Equipment.
First use August 1961.

SN 171,720. The Bunker-Ramo Corporation, Stamford, Conn., by change of name from The Teleregister Corporation, Stamford, Conn. Filed June 24, 1963.

TELEVOX

For Digital-To-Voice Information Systems With Dial Interrogation Embracing Magnetic Data Storage Central Data Processing, and Audio and Multiplexing Equipment for Digital-To-Audio Conversion, and Components, Parts and Supplies for Such Systems.
First use August 1961.

SN 178,600. The Ealing Corporation, Cambridge, Mass. Filed Oct. 9, 1963.

EALING

For Scientific and Educational Materials and Equipment—Namely, Experimental Kits Containing Mechanical, Electrical, Magnetic, and Optical Components for Scientific Instruments and Instrumental Apparatus for Chemistry.
First use in or about December 1962.

SN 186,143. The Bendix Corporation, Detroit, Mich. Filed Feb. 6, 1964.

MICROVISION

For Electronic Vehicle Approach Landing and Warning System.
First use May 10, 1962.

SN 194,784. Dresser Industries, Inc., Dallas, Tex. Filed June 3, 1964.

ROOTSMETER

Owner of Reg. Nos. 153,840, 724,195, and others.
For Gas Meters.
First use March 1960.

SN 195,212. Electronic Associates, Inc., Long Branch, N.J. Filed June 9, 1964.

EAI

Owner of Reg. No. 751,666.
For General Purpose Analog Computing Equipment, Special Purpose Computers, Process Control Computers, Digital Computers, Hybrid Computing Equipment, Parts Therefor and Accessories; Problem Checking Equipment; Shielded Pre-Patch Panels With Shielded Patch Cords; Amplifiers; Electronic Multipliers; Function Generators; High-Speed Servo Systems; Cathode Ray Tube Data Display Systems; X-Y, Digital, Strip, and Drum Recorders, Parts Therefor and Accessories; Symbol Printers; Digital Recording Coordinatographs, Parts Therefor and Accessories; Digital-To-Analog and Analog-To-Digital Converters; Digital Voltmeters, Electronic Counters, Parts Therefor and Accessories; and Capacitors.
First use March 1960.

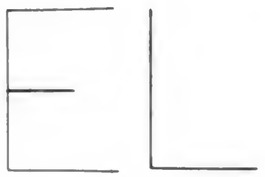
Class 28 — Jewelry and Precious-Metal Ware

SN 189,386. Shields, Inc., Attleboro, Mass. Filed Mar. 23, 1964.

Shields Ltd.

Owner of Reg. No. 619,047.
For Men's Jewelry.
First use on or about Mar. 1, 1964.

SN 191,057. Eugene Lanter, Los Angeles, Calif. Filed Apr. 14, 1964.



For 14K Gold Charms and Bracelets.
First use August 1963.

SN 196,252. Coro Incorporated of Rhode Island, Providence, R.I. Filed June 23, 1964.

MYSTERY PEARL

The term "Pearl" is disclaimed apart from the mark as shown.
For Jewelry.
First use May 25, 1964.

SN 200,169. Walter A. Dunn, d.b.a. Dunn Brothers, Providence, R.I. Filed Aug. 19, 1964.

LOOP-YEAR

For Necktie Setting Loops.
First use on or about July 1, 1964.

SN 200,726. The International Silver Company, Meriden, Conn. Filed Aug. 27, 1964.

INTERNATIONAL Gourmet COLLECTION

Applicant, reserving unto itself all of its common law rights in the mark on the accompanying drawing, hereby disclaims, for the purpose of registration, the word "Collection" apart from the mark as shown. Owner of Reg. No. 299,410.
For Silverplated Holloware, Such as Candlesticks, Bowls, Mugs, Compotes, Vases, Sugar and Cream Sets.
First use Oct. 9, 1963.

Class 29 — Brooms, Brushes, and Dusters

SN 190,088. Johnson & Johnson, d.b.a. Tek-Hughes, New Brunswick, N.J. Filed Apr. 1, 1964.

TEK

Owner of Reg. Nos. 258,849, 689,894, and others.
For Electric Toothbrushes, Replacement Brushes, Parts, and Recharging Units Therefor.
First use Feb. 24, 1964.

SN 196,470. Osrow Products Company, Inc., Glen Cove, N.Y. Filed June 25, 1964.

HANDS OFF

For Barbeque Cleaning Brushes.
First use Apr. 6, 1964.

Class 31 — Filters and Refrigerators

SN 163,755. Packers' Development Corporation, Milwaukee, Wis. Filed Mar. 1, 1963.

SNAP-"E"-CHILLER

For Control Refrigeration Systems, Units and Parts Therefor.
First use October 1962.

SN 167,567. North American Philips Company, Inc., New York, N.Y. Filed Apr. 25, 1963.

CRYOGEM

For Refrigerating Machines.
First use Mar. 29, 1963.

SN 183,252. Cotter & Company, Chicago, Ill. Filed Dec. 19, 1963.

TRU-TEST

The words "Standard of Quality" and "Tested for Your Protection" are disclaimed apart from the mark as shown.
Owner of Reg. Nos. 366,735, 371,643, and others.
For Oil Filters; Water Conditioners Comprising Water Softeners, Iron Filters, and Sulphur Filters.
First use Apr. 1, 1963.

Class 32 — Furniture and Upholstery

SN 170,308. Globe Feather & Down Co., Chicago, Ill. Filed June 4, 1963.

HEART OF DOWN

No claim is made to the word "Down" apart from the mark as shown.
For Pillows.
First use Aug. 31, 1960.

SN 181,933. United Cabinet Corporation, Jasper, Ind. Filed Nov. 26, 1963.

AristOKraft

For Wood Kitchen Cabinets.
First use Nov. 17, 1958.

SN 182,387. The Valtronic Corporation, New York, N.Y. Filed Dec. 4, 1963.

VALTRONIC

For Furniture—Namely, Cabinets, Cases, Wall and Floor Storage Units, Tables, Desks, Chairs, Examining Tables, Treatment Tables, Pediatrics Tables and the Like for Use in Dental and Medical Offices, Laboratories, Hospitals, Institutions, Churches, Schools, Commercial Offices, Governmental Departments, Private Homes, and the Like.
First use May 1955.

SN 190,302. The Valtronic Corporation, New York, N.Y. Filed Apr. 3, 1964.

MODULAB

For Furniture—Namely, Cabinets, Cases, Wall and Floor Storage Units, Tables, Desks, Chairs, Examining Tables, Treatment Tables, Pediatrics Tables and the Like for Use in Dental and Medical Offices, Laboratories, Hospitals, Institutions, Churches, Schools, Commercial Offices, Governmental Departments, Private Homes, and the Like.
First use Mar. 24, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 183,821. Whirlpool Corporation, Benton Harbor, Mich. Filed Dec. 30, 1963.

COMFORT GUARD

For Heating, Lighting, and Ventilating Apparatus—Namely, Controls for Air Conditioners.
First use Oct. 16, 1962.

SN 184,982. Southern Industries, Inc., Richmond, Va. Filed Jan. 20, 1964.

SINCE 1857

For Wood, Coal, Oil, Gas and Gas Fired Heaters and Gas and Oil Fired Boilers.
First use October 1961.

SN 185,592. T. S. Fleming, d.b.a. Task-Lite Co., Jenkintown, Pa. Filed Jan. 29, 1964.

TASK-LITE

For Directional Lighting Fixtures, Particularly For Use on Truck Loading Platforms.
First use Mar. 5, 1963.

SN 198,111. Admiral Corporation, Chicago, Ill. Filed July 20, 1964.

FLEX-O-MOUNT

For Air Conditioner Mounting Kits.
First use in or before January 1960.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 181,601. Air Reduction Company, Incorporated, New York, N.Y. Filed Nov. 21, 1963.

POOL KING

For Flexible Vacuum Hoses.
First use in or about July 1958.

SN 193,756. Cordovan Associates, Incorporated, Dayton, Ohio. Filed May 19, 1964.

CORDOVAN BONNEVILLE JET

Owner of Reg. Nos. 431,993, 730,712, and 755,493.
For Pneumatic Tires.
First use Apr. 1, 1964; Mar. 3, 1945, as to "Cordovan."

SN 193,788. Hoffman Tire Co., Inc., Philadelphia, Pa. Filed May 19, 1964.

JETZON

For Tires for Vehicles.
First use Apr. 9, 1964.

Class 36 — Musical Instruments and Supplies

SN 178,456. Joh. Mustad Aktiebolac, Goteborg, Sweden. Filed Oct. 7, 1963.

KLAVITRON

Owner of Swedish Reg. No. 106,047, dated May 3, 1963.
For Musical Instruments—Namely, Electronic Organs.

SN 179,424. Jennings Musical Industries Limited, d.b.a. Jennings Organ Company, Dartford, Kent, England. Filed Oct. 21, 1963.

UNIVOX

Owner of British Reg. No. 705,032, dated Feb. 19, 1952.
For Portable Organ Having an Electronic Keyboard.

SN 185,560. Channel Master Corporation, Ellenville, N.Y. Filed Jan. 29, 1964.

SMALL TALK

For Tape Recorders, Parts Thereof and Accessories Therefor.
First use Dec. 16, 1963.

Class 37 — Paper and Stationery

SN 142,298. Eureka Specialty Printing Company, Scranton, Pa. Filed Apr. 16, 1962.

HUMPTY DUMPTY

For Gummed Sheets of Paper or Cardboard With Die-Cut Outlines Therein, Gummed Sheets of Paper or Cardboard With Minor Printed Outlines, Sheets of Paper or Cardboard With Die-Cut Outlines for Forming and Assembly Into Composite Articles, Sheets of Paper, Cardboard, Metallized Paper or Metal Foil With Water Solvent or Pressure Sensitive Adhesive and Having Decorative Parts Outlined by Die-Cuts Therein, Sold as a Component of an Easter Egg Coloring, Fun and Game Kit.
First use on or about Feb. 8, 1962.

SN 159,469. The Carpenter Steel Company, Reading, Pa. Filed Dec. 20, 1962.

CARPENTER DATA-MATIC

For Kit Containing Cards Describing a Method of Selecting Stainless Steels.
First use Nov. 19, 1962.
Subj. to Intf. with SN 191,783.

SN 162,832. Fibre Leather Mfg. Corp., New Bedford, Mass. Filed Feb. 15, 1963.

FIBAR

For Coated Papers.
First use Jan. 22, 1963.

SN 172,581. General Company Limited, Higashi-ku, Osaka, Japan. Filed July 8, 1963.

CHEMI SHEET

Priority claimed under Sec. 44(d) on Japanese application filed Feb. 15, 1963; Reg. No. 643,790, dated May 25, 1964.
For Copying Paper, Particularly Coated Self-Copying Paper.
First use March 1963; in commerce March 1963.

SN 178,780. Weyerhaeuser Company, Tacoma, Wash., assignee of Crocker Hamilton Papers, Inc., New York, N.Y. Filed Oct. 11, 1963.

HUSKY

For Paper Products—Namely, Vellum Bristol, Coated Cover, Tag, and Index.
First use Sept. 10, 1961.

SN 185,989. Eversharp, Inc., d.b.a. Schick Safety Razor Company, Culver City, Calif. Filed Feb. 4, 1964.

SCHICK

Owner of Reg. Nos. 241,430, 527,931, 734,871, and others.
For Ball Point Pens.
First use Dec. 27, 1962.

SN 188,751. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Mar. 16, 1964.

EARLY AMERICAN

Owner of Reg. No. 309,484.
For Paper Towels, Facial Napkins, and Toilet Tissue.
First use Jan. 30, 1964.

SN 190,036. Systomatic Business Forms, Inc., Paramus, N.J. Filed Mar. 31, 1964.

THRIFT FORM

Without waiving any of its common law rights and for the purpose of this registration only the applicant makes no exclusive claim herein to the word "Form" apart from the mark as shown.
For Business Forms and Checks.
First use Oct. 1, 1963.

SN 190,896. Crown Zellerbach Corporation, San Francisco, Calif. Filed Apr. 13, 1964.

CZ

Owner of Reg. Nos. 593,901, 711,427, and others.
For Printing Paper.
First use Feb. 11, 1964.

SN 190,897. Crown Zellerbach Corporation, San Francisco, Calif. Filed Apr. 13, 1964.

Tender-Z

For Paper for Wrapping Meat.
First use Nov. 7, 1963.

SN 191,084. Joseph Shenker, Great Neck, N.Y. Filed Apr. 14, 1964.

'NORMOUS

For Drawing and Sketching Papers, Slate Pencils, Chalks and Crayons.
First use Apr. 1, 1964.

SN 191,180. David Kahn, Inc., North Bergen, N.J. Filed Apr. 15, 1964.

TRI-COLOR

For Writing Pens and Ink Cartridges Therefor.
First use Feb. 25, 1949.

SN 191,182. David Kahn, Inc., North Bergen, N.J. Filed Apr. 15, 1964.

PRESIT

Owner of Reg. No. 646,930.
For Writing Pens.
First use Feb. 21, 1956.

SN 191,282. Graham Paper Company, St. Louis, Mo. Filed Apr. 16, 1964.

FLAVORSEALD

For Wrapping Paper.
First use 1921.

SN 191,299. David Kahn, Inc., North Bergen, N.J. Filed Apr. 16, 1964.

PUSH-O-PUSH

Owner of Reg. No. 647,262.
For Writing Pens.
First use Feb. 21, 1956.

SN 191,646. AM Barber & Beauty Supply Co., Newark, N.J. Filed Apr. 21, 1964.

MISTER STRONG

For Paper Towels.
First use Sept. 25, 1963.

SN 192,118. Zellerbach Paper Company, San Francisco, Calif. Filed Apr. 27, 1964.

Datamate

For Stationery and School Supplies—Namely, Writing Paper, Desk Pads, Index Cards, Wirebound Notebooks, Pads, Tablets, Blue Books, Ring Binders, Index Dividers, Brief Covers, Portfolios, and Envelopes.
First use July 10, 1961.
Subj. to Intf. with SN 159,469 and SN 191,783.

SN 194,066. Natser Corporation, d.b.a. Acco Products, Ogdensburg, N.Y. Filed May 22, 1964.

TECHBOARD

For File Folders.
First use May 11, 1964.

SN 194,067. Park Industries, Inc., Murfreesboro, Tenn. Filed May 22, 1964.

FINDEX

For Telephone Index Pads and Holders.
First use Apr. 13, 1964.

SN 194,192. Lew Mfg. Co., Coventry, R.I. Filed May 25, 1964.

Garland

For Pens and Pencils.
First use on or about May 7, 1964.

SN 194,812. Marcal Paper Mills, Inc., East Paterson, N.J. Filed June 3, 1964.

DUO-TONE

For Paper Towels.
First use at least as early as April 1954.

Class 38 — Prints and Publications

SN 142,299. Eureka Specialty Printing Company, Scranton, Pa. Filed Apr. 16, 1962.

HUMPTY DUMPTY

For Printed Sheets Having Decorative Parts Outlined by Die Cuts Therein, Gummed Sheets Having Printed Decorative Parts Outlined by Die Cuts Therein, and Printed Sheets of Decorations, Sold as a Component of an Easter Egg Coloring Fun and Game Kit.
First use on or about Feb. 8, 1962.

SN 147,926. Her Majesty the Queen in the Right of Canada as Represented by the Minister of National Defence, Ottawa, Ontario, Canada. Filed June 28, 1962.

XBX

Priority claimed under Sec. 44(d) on Canadian application filed on Mar. 6, 1962; Reg. No. 128,947, dated Nov. 30, 1962.
For Printed Publications.

SN 147,927. Her Majesty the Queen in the Right of Canada as Represented by the Minister of National Defence, Ottawa, Ontario, Canada. Filed June 28, 1962.

5BX

Priority claimed under Sec. 44(d) on Canadian application filed Mar. 6, 1962; Reg. No. 128,946, dated Nov. 30, 1962
For Printed Publications.

SN 175,388. Chicago Aerial Industries, Inc., Barrington, Ill. Filed Aug. 20, 1963.

AIRMARK

For Aerial Photographs, Maps, Mosaics, Photographic Indexes, and Reproductions and Enlargements of the Aforegoing.
First use June 18, 1962.

SN 183,940. West Coast Airlines, Inc., Seattle, Wash. Filed Jan. 2, 1964.

AIR WEST

For Employee Magazine Issued by the Company Pertaining to Air Transportation of Persons, Property, and Mail.
First use Nov. 1, 1963.

SN 185,124. Galaxy Publishing Corp., New York, N.Y. Filed Jan. 22, 1964.

WORLDS OF TOMORROW

For Magazine.
First use Apr. 2, 1963.

SN 189,210. Rollchart Inc., Portland, Oreg. Filed Mar. 20, 1964.

ROLLCHART SYSTEMS

The word "Systems" is disclaimed apart from the mark as shown.
For Maps and Mapcases.
First use March 1962.

SN 189,498. P. & D. Manufacturing Company, Inc., Long Island City, N.Y. Filed Mar. 24, 1964.

CHART-A-LOG

For Booklet Devoted to Automotive Parts Information.
First use on or about Feb. 4, 1964.

SN 192,395. Hit Parade Program Service, Inc., Newark, N.J. Filed Apr. 30, 1964.

HIT

Owner of Reg. No. 663,167.
For Song Title Strips for Use in Coin-Operated Record Players.
First use in or about May 1962.

SN 192,571. Cornell College, Mount Vernon, Iowa. Filed May 4, 1964.

NORTH AMERICAN REVIEW

For Periodical.
First use Mar. 4, 1964.

Class 39 — Clothing

SN 130,293. Walter W. Moyer Company, Inc., Ephrata, Pa. Filed Oct. 19, 1961

SEALECT

For Men's, Women's Children's and Infants' Undergarments—Namely, Men's and Boys' Undershirts and Shorts, Women's and Girls' Panties, and Infants' Shirts.
First use Sept. 1, 1961.

SN 137,484. A. E. Alexander, Ltd., New York, N.Y. Filed Feb. 8, 1962.



"FOR YOUNG FIRST LADIES"

Without waiving its common law rights herein, applicant makes no claim to the fanciful slogan "For Young First Ladies," apart from the mark as shown.
For Girls' Coats, Jackets, and Suits.
First use November 1961.

SN 160,617. Duracraft Corporation, Salt Lake City, Utah. Filed Jan. 14, 1963.

SNO MITS

Applicant disclaims the word "Mits" apart from the mark as shown.
For Children's Mittens.
First use September 1960.

SN 163,733. Kayser Bondor Limited, Baldock, England. Filed Mar. 1, 1963.

BONDOR

Owner of British Reg. No. 749,783, dated Jan. 10, 1956.
For Articles of Clothing—Namely, Boys', Girls', Infants' and Toddlers' Shirts, Trousers, Jackets, Nightwear, Swimwear, Tights, and Underwear; Boys' and Girls' Shorts, Pullovers, Jumpers, Sweaters, Cardigans, Blazers, Coats, Anoraks, Socks, Dressing Gowns, and Waistcoats; Girls' Tops, Blouses, Jerkins, Skirts, Dresses, Tights, Stockings, and Bed Jackets; Infants' and Toddlers' Play Suits, Matinee Coats, Leggings, Skirts, Dresses, and Tights.

SN 171,531. Camptown Togs, Inc., Clanton, Ala. Filed June 21, 1963.

CAMPTOWN

For Infants' and Children's Knit Shirts and Pants.
First use June 11, 1963.

SN 174,657. Figure Builder Foundations, Inc., New York, N.Y. Filed Aug. 8, 1963.

FIGURE BUILDER

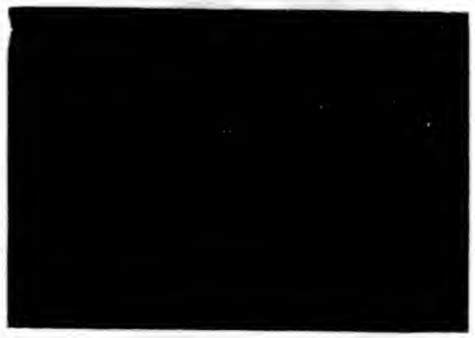
For Foundation Garments, Girdles, and Panty Girdles.
First use at least as early as Jan. 2, 1942.

SN 176,252. Texas Hat Company, Laredo, Tex. Filed Sept. 3, 1963.

The Bryant Line

Applicant disclaims the word "Line" apart from the mark as shown.
For Men's Hats.
First use July 1, 1962.

SN 180,485. Virginia Pucetta Antonioli and Cristina Greppi (joint owners), Milan, Italy. Filed Nov. 5, 1963.



The word "Milano" is disclaimed apart from the mark as shown. Owner of Italian Reg. No. 161,650, dated Feb. 2, 1963.

For Clothing—Namely, Scarves, Slippers, Sandals, Shoes, Gloves, Hats, and Belts.

SN 184,626. P. H. Hanes Knitting Company, Winston-Salem, N.C. Filed Jan. 15, 1964.

HANESPORT

For Jackets, Shorts, Shirts, and Sox for Men, Women, and Children.
First use Dec. 11, 1963.

SN 187,459. Air Reduction Company, Incorporated, New York, N.Y. Filed Feb. 26, 1964.

ALUMITOP

Owner of Reg. Nos. 647,644 and 693,543.
For Safety Hats and Caps.
First use on or about Nov. 13, 1963.

SN 189,061. El. & El. Novelty Co., New York, N.Y. Filed Mar. 19, 1964.

TURBOLON

For Women's and Children's Sweaters.
First use Feb. 28, 1964.

SN 189,344. Miss Pam Inc., New York, N.Y. Filed Mar. 23, 1964.

SHIRT-ELLE

For Ladies' and Girls' Shirts and Blouses.
First use July 1963.

SN 190,771. West Products Corp., Newark, N.J. Filed Apr. 9, 1964.

SEA/LINE

For Weather Resistant Storm Suits.
First use Mar. 1, 1964.

SN 192,569. College-Town of Boston, Boston, Mass. Filed May 4, 1964.

WHISPUN

For Sweaters.
First use Mar. 25, 1964.

SN 192,786. Boyertown Shoe Corp., Allentown, Pa. Filed May 6, 1964.

DYNA PRO

For Sneakers and Shoes.
First use Feb. 25, 1964.

SN 192,895. The Colvis Company, d.b.a. Collins Department Stores, Charlotte, N.C. Filed May 7, 1964.

WALK MATES

For Women's and Children's Hosiery.
First use Feb. 21, 1964.

SN 193,881. The Londontown Manufacturing Company, Baltimore, Md. Filed May 20, 1964.

BACHELOR'S BUTTONS

For Outerwear Apparel—Namely, Golf Jackets, Coats, and Jackets.
First use Jan. 17, 1964.

Class 44—Dental, Medical, and Surgical Appliances

SN 157,329. Rodana Research Corporation, Bethesda, Md. Filed Nov. 15, 1962.

RR

For Automatic-Hypodermic Injection Devices.
First use May 11, 1959.

SN 162,074. Gene Burnett, d.b.a. Burnett Instrument Company, Lawrence, Kans. Filed Feb. 5, 1963.

SANI-SPEC

For Adjustable, Disposable Plastic Vaginal for Diagnostic Examinations.
First use Mar. 1, 1961.

SN 181,843. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Nov. 26, 1963.

NUTRI-FLO

For Disposable Gavage Container Consisting of a Plastic Bag With an Attached Administration Set.
First use Oct. 25, 1963.

SN 182,810. Mead Johnson Company, Evansville, Ind. Filed Dec. 11, 1963.

NURSETTE

For Disposable Glass Bottle for Dispensing Infant Formula and Parts Thereof.
First use on or prior to Nov. 15, 1963.

SN 185,710. Pedi-Sage, Inc., North Massapequa, N.Y. Filed Jan. 30, 1964.

PEDI-SAGE

For Electrical Massaging Machine.
First use January 1963.

SN 187,146. Procon Pump & Engineering Company, Oak Park, Mich. Filed Feb. 20, 1964.

PROCON MEDICAL PRODUCTS

The words "Medical Products" are disclaimed apart from the mark as shown. Owner of Reg. No. 710,224.
For Medical and Surgical Appliances—Namely, Prep Razors, Cast Anchor Loops, Multi-Purpose Tongue Blades, and Pediatric Urine Collectors.
First use on or about Nov. 15, 1963.
Subj. to Intf. with SN 199,261.

SN 188,966. Credo-Stahlwarenfabrik Gustav Kracht, Solingen, Germany. Filed Mar. 18, 1964.

CREDO

Owner of German Reg. No. 308,556, dated Dec. 1, 1923.
For Cutlery and Instruments for Taking Care of Skin and Nails.
First use July 28, 1923; in commere Jan. 5, 1949.

SN 193,667. Hankscraft Company, Reedsburg, Wis. Filed May 18, 1964.

DAY-DIAL

For Nipples, Caps, and Parts of Caps, for Nursing Bottles.
First use on or about Dec. 22, 1963.

SN 194,973. Electronic Development Company, Minneapolis, Minn. Filed June 5, 1964.

COMPUTER

For Hearing Aids.
First use July 6, 1961.

SN 195,271. Baxter Laboratories, Inc., Morton Grove, Ill. Filed June 10, 1964.

CHRON-A-COIL

For Medical Apparatus for the Control of Renal Function.
First use Mar. 26, 1964.

SN 195,300. IPCO Hospital Supply Corporation, New York, N.Y. Filed June 10, 1964.

ETERNA

For Clinical Thermometers.
First use Apr. 10, 1964.

SN 195,722. Scott Aviation Corporation, Lancaster, N.Y. Filed June 15, 1964.

AIR-PAK

Owner of Reg. Nos. 731,610 and 735,726.
For Breathing Equipment.
First use June 15, 1944.

SN 195,819. Othel M. Sink, Santa Barbara, Calif. Filed June 16, 1964.

MS MICRO-SINK

For Denture Stabilizer.
First use Apr. 10, 1964.

SN 196,443. Fuller Pharmaceutical Company, Minneapolis, Minn. Filed June 25, 1964.

SOFT-GARD

For Absorbent Pads, Including Absorbent Nursing Pads.
First use June 11, 1964.

SN 196,472. Pamplin-Cocherell Research & Development, West Covina, Calif. Filed June 25, 1964.

CPC

For Dental Syringe.
First use Mar. 7, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 174,175. Dehydrated Food Corporation, Chicago, Ill., assignee of Dehydrated Juices, Inc., Chicago, Ill. Filed Aug. 1, 1963.

COOLO-COOLO

For Beverage Base To Be Mixed With Tap Water for Making Non-Carbonated Soft Drinks.
First use June 15, 1963.

SN 186,963. National Chemsearch Corporation of Texas, Irving, Tex. Filed Feb. 18, 1964.

MONTCLAIR FOODS

No registration rights are claimed for the word "Foods" apart from the mark as shown. Applicant waives none of its common law rights to said mark or any feature thereof.

For Bases for Making Soft Drinks.

First use Sept. 26, 1963.

Class 46 — Foods and Ingredients of Foods

SN 127,879. Select Foods, Inc., Charlotte, N.C. Filed Sept. 14, 1961.

SELECT FOODS

Applicant disclaims the exclusive use of the word "Foods" apart from the mark as shown.

For Frozen and Canned Vegetables; Frozen and Canned Fruit; Frozen and Canned Fruit and Vegetable Juice; Frozen Meats and Seafood; Frozen Coconut; Flour; Gelatin for Food Purposes; Margarine; Macaroni; Egg Noodles; Spaghetti; Pickles; Condiments—Namely, Salt, Tomato Catsup, French Dressing, Salad Dressing, Mayonnaise, Chili Sauce; and Mixes for Biscuits, Muffins, Rolls, Pancakes, Waffles, Breading and Cake.

First use on or about June 30, 1946, on mixes.

SN 156,919. Weis Markets, Inc., Sunbury, Pa. Filed Nov. 8, 1962.

TAHITI PUNCH

Applicant disclaims any exclusive rights in the word "Punch" apart from the mark as shown.

For Fruit Punch in the Nature of a Food Drink.

First use May 8, 1962.

Subj. to Intf. with SN 144,571.

SN 172,817. General Foods Corporation, White Plains, N.Y. Filed July 11, 1963.

RICE KRINKLES

No claim of exclusive right is made to the word "Rice."

Owner of Reg. Nos. 82,436, 607,393, and 664,134.

For Cereal Breakfast Foods.

First use on or about July 16, 1949.

SN 178,741. Rod's Food Products, Inc., Los Angeles, Calif. Filed Oct. 10, 1963.

IMO

For Vegetable Base Food Dressing in the Nature of a Sour Cream Substitute.

First use July 10, 1963.

SN 179,415. Gordon Baking Company, Detroit, Mich. Filed Oct. 21, 1963.

ROUND

Applicant disclaims the word "Round" apart from the mark as shown. Owner of Reg. Nos. 179,870, 519,854, and 758,172.

For Bread.

First use Sept. 9, 1963.

SN 179,435. Mark III Enterprises, Inc., San Francisco, Calif. Filed Oct. 21, 1963.



For Candy.

First use Oct. 9, 1963.

SN 179,994. Chas. F. Cates & Sons, Inc., Faison, N.C. Filed Oct. 29, 1963.

CATES

For Pickles and Pickle Relish.

First use June 15, 1935.

SN 183,048. Farmers' Rice Cooperative, San Francisco, Calif., by change of name from Farmers' Rice Growers Cooperative, San Francisco, Calif. Filed Dec. 16, 1963.



The word "Kintoki" means "most healthy boy," and the Japanese symbol which appears in the mark means "gold."

For Rice.

First use June 1957.

SN 189,609. P.M.C. Company, Inc., Swedesboro, N.J. Filed Mar. 25, 1964.

PACAMA

For Canned Tomatoes, Tomato Paste, and Tomato Puree.

First use Jan. 2, 1947.

SN 189,935. The Peoplenip Co., Inc., Oakland, Calif. Filed Mar. 30, 1964.

PEOPLE NIP

For Barbecue Seasoning.

First use Dec. 20, 1963.

SN 190,806. Hulman & Company, Terre Haute, Ind. Filed Apr. 10, 1964.

CLABBER GIRL



The figures shown in the drawing do not represent any particular living individuals. Owner of Reg. No. 181,239.

For Baking Powder.

First use May 1, 1940; Jan. 1, 1899, as to the mark "Clabber Girl"; July 13, 1923, as to the mark in a different form.

SN 192,174. Gravymaster Company, Inc., Long Island City, N.Y. Filed Apr. 28, 1964.

SAUCE-MASTER

Owner of Reg. Nos. 330,747, 776,725, and others.

For Vegetable Seasoning in Liquid and Powder Form for Seasoning Meats, Gravies, Sauces, Soups, and Stews, and White Sauce Mixes in Liquid and Powder Form.

First use Apr. 7, 1964.

SN 193,183. Leeben Color & Chemical Co., Inc., New York, N.Y. Filed May 11, 1964.

LIQUI-COL

For Liquid Food Color.

First use Nov. 14, 1963.

SN 194,023. Davis Beauchamp, Calipatria, Calif. Filed May 22, 1964.

HI-MARK

For Fresh Onions.

First use May 14, 1964.

SN 197,497. S. S. Kresge Company, Detroit, Mich. Filed July 9, 1964.

K MART

Owner of Reg. No. 743,912.

For Cole Slaw Dressing.

First use May 18, 1964.

SN 197,543. Bruce Church, Inc., Salinas, Calif. Filed July 10, 1964.

LUCKY

Owner of Reg. No. 732,793.

For Fresh Vegetables, Fresh Grapes, and Fresh Melons.

First use at least as early as 1935.

SN 197,585. Jack's Cookie Corporation, Charlotte, N.C. Filed July 10, 1964.

BOLO-BAR

For Bakery Products—Namely, Waffle-Like Cakes and Cookies Having Peanut Butter Filler.

First use June 15, 1964.

SN 197,697. The James G. Gill Company, Inc., Norfolk, Va. Filed July 13, 1964.

BIG RED

For Coffee.

First use June 22, 1964.

SN 197,881. Foodplast Products, Inc., New York, N.Y. Filed July 15, 1964.

FOODPLAST

For Liquid Coating for Food Products Which Hardens and Forms a Preservative Wrapper.

First use January 1964.

Class 47 — Wines

SN 153,186. Paul Masson, Inc., d.b.a. Paul Masson Vineyards, San Francisco, Calif. Filed Sept. 14, 1962.

EMERALD DRY

Owner of Reg. No. 729,897.

For Wines.

First use Oct. 5, 1959.

Class 48 — Malt Beverages and Liquors

SN 189,391. Sterling Brewers, Inc., Evansville, Ind., by assignment and change of name from Sterling Brewers, Inc., Evansville, Ind. Filed Mar. 23, 1964.

MICKEYS

For Malt Liquor.

First use Feb. 21, 1964.

Class 49 — Distilled Alcoholic Liquors

SN 189,537. Barton Distilling Company, Chicago, Ill. Filed Mar. 25, 1964.

WINNER'S CUP

For Bourbon Whiskey.

First use Dec. 16, 1963.

Class 50—Merchandise Not Otherwise Classified

SN 182,122. Donald K. Skoro, d.b.a. Warnaway Equipment Company, Minneapolis, Minn. Filed Nov. 29, 1963.

WARNAWAY

For Motorist Warning Devices Comprised of a Plurality of Reflectorized Plates Connected by Individual Chain Segments.
First use Nov. 22, 1963.

SN 187,004. Frank E. Bird, Jr., Coatesville, Pa. Filed Feb. 19, 1964.

SAF-T-GUIDER

For Materials Handling Pole Comprising an Implement Having a Handle and a Serrated Shoe or Base Portion Which Is Manually Operative To Move or Reposition Large Plates or Sheet Material.
First use June 2, 1963.

SN 197,188. Matthew Vincent Smith, d.b.a. 7–11 Sign Spot, Harrison, N.J. Filed July 6, 1964.

7 11

For Signs Made of General Materials—Namely, Metal, Paper, Wood, Leather, Fiber, Resin, Glass, Masonry, Plastics, Oil Cloth, Canvas, Cardboard, Masonite, etc.
First use Oct. 5, 1962.

Class 51—Cosmetics and Toilet Preparations

SN 173,571. Edward Grossman, d.b.a. Treslure, Leonia, N.J. Filed July 23, 1963.

Pynnarle
Hair Styling Creme



The words "Hair Styling Creme" are disclaimed apart from the mark as shown.
For Hair Styling Creme.
First use May 1, 1963.

SN 178,653. Swank, Inc., Attleboro, Mass. Filed Oct. 9, 1963.

JADE EAST

For Cologne, After-Shave Lotion and Deodorant.
First use July 19, 1963.

SN 183,519. Sophie Dolega Dziakiewicz, Buenos Aires, Argentina. Filed Nov. 22, 1963.

ARTEZ WESTERLEY

The expression "Artes Westerley" is fictitious. Owner of Argentine Reg. No. 407,449, dated May 18, 1959; and U.S. Reg. No. 437,036.
For Skin Creams for Cosmetic Use.

SN 184,331. Mrs. Rica Juliette Sebbah Baudecroux, for herself and as legal guardian of her minor children, Jean-Paul Baudecroux and Micheline-Rosemonde Baudecroux (co-owners), Paris, France. Filed Dec. 27, 1963.

le noir baiser

The French words "Le Noir Baiser" mean "the eye-make-up kiss." Owner of U.S. Reg. No. 577,834.
For Eye-Make-Up.
First use 1933; in commerce July 3, 1963.

SN 184,332. Mrs. Rica Juliette Sebbah Baudecroux, for herself and as legal guardian of her minor children, Jean-Paul Baudecroux and Micheline-Rosemonde Baudecroux (co-owners), Paris, France. Filed Dec. 27, 1963.

Le baiser

The French words "Le Baiser" mean "the kiss." Owner of French Reg. No. 404,269, dated June 30, 1950 (Paris); Natl. Inst. No. 587,628; and U.S. Reg. No. 577,834.
For Lipsticks, Nail Varnishes, and Eye Make-Up.
First use 1935; in commerce July 3, 1963.

SN 185,218. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics, Bloomfield, N.J. Filed Jan. 23, 1964.

GOLDEN WONDER

For Lipstick.
First use Jan. 7, 1964.

SN 185,568. Clairol Incorporated, New York, N.Y. Filed Jan. 29, 1964.

LE MANS

For Hair Tinting, Dyeing and Coloring Preparation.
First use Sept. 12, 1963.

SN 185,843. Aerosol Specialties, Inc., Bridgeport, Conn. Filed Feb. 3, 1964.

LA PETITE

For Hair Spray.
First use September 1963.

SN 186,867. L'Oreal, Paris, France. Filed Feb. 17, 1964.

suffrage

Owner of French Reg. No. 490,614, dated Sept. 16, 1960 (Seine); Natl. Inst. No. 150,831.
For Perfumes and Hair Setting Lotions.

SN 187,039. Parfums Corday, Inc., Hollywood, Calif. Filed Feb. 19, 1964.

ÉPRIS

The English translation of "Epris" is "in love with."
For Perfumes, Colognes, Toilet Waters, Powders, and Bath Oils.
First use Jan. 3, 1964.

SN 187,267. Paul B. Elder Company, Bryan, Ohio. Filed Feb. 24, 1964.

RED VET PET

For Ointment for Human Use Which Protects the Skin From the Sun's Rays.
First use Dec. 6, 1963.

SN 187,663. Anne Hathaway, Inc., Nashua, N.H. Filed Feb. 28, 1964.


Anne Hathaway

The name "Anne Hathaway" is fictitious.
For Anti-Perspirant Deodorant, and Cream Perfume.
First use Dec. 27, 1963.

SN 187,664. Anne Hathaway, Inc., Nashua, N.H. Filed Feb. 28, 1964.

Anne Hathaway



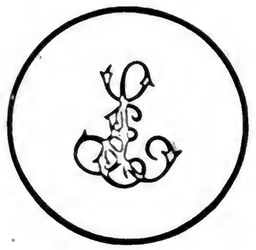
The name "Anne Hathaway" is fictitious.
For Perfume and Cologne.
First use Dec. 27, 1963.

SN 188,772. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Mar. 16, 1964.

IN THE CLEAR

For Medicated Cream for Healing and Concealment of Skin Blemishes.
First use Aug. 20, 1963.

SN 191,186. Estee Lauder, Incorporated, New York, N.Y. Filed Apr. 15, 1964.



For Cosmetic Skin Creams and Skin Lotions, Make-Up Cosmetics, Perfume, Toilet Water, and Bath Oil.
First use March 1958.

SN 191,187. Estee Lauder, Incorporated, New York, N.Y. Filed Apr. 15, 1964.

HYDRO-TONE

For Cosmetic Skin Creams and Makeup Creams.
First use March 1961.

SN 191,191. Maradel Products, Inc., New York, N.Y. Filed Apr. 15, 1964.

LOVE-SET

For Hair Setting Lotion.
First use Mar. 13, 1964.

SN 191,194. Maradel Products, Inc., New York, N.Y. Filed Apr. 15, 1964.

WEATHER-SET

For Hair Setting Lotion.
First use Feb. 25, 1964.

SN 191,246. Bourjois, Inc., New York, N.Y. Filed Apr. 16, 1964.

Prologue

For Cologne.
First use Sept. 10, 1962.

SN 192,453. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

EVOKE

For Perfume.
First use Apr. 2, 1963.

SN 192,454. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

EXULT

For Perfume.
First use Apr. 2, 1963.

SN 192,455. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

CAJOLE

For Perfume.
First use Apr. 2, 1963.

SN 192,456. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

SWEET ESCAPE

For Deodorization Lotion.
First use Apr. 12, 1964.

Class 52 — Detergents and Soaps

SN 183,253. The Dow Chemical Company, Midland, Mich. Filed Dec. 19, 1963.

STOUT

For Household Cleaners—Namely, Oven Cleaners.
First use June 10, 1963.

SN 183,255. The Dow Chemical Company, Midland, Mich. Filed Dec. 19, 1963.

DISPATCH

For Household Cleaners—Namely, Oven Cleaners.
First use June 10, 1963.

SN 183,603. H. Kohnstamm & Co., Inc., New York, N.Y. Filed Dec. 26, 1963.

DUSTOP

For Oil for Impregnating Dust Cloths and Oil Mops for Use as an Aid in Cleaning.
First use Nov. 12, 1963.

SN 188,333. Claiorol Incorporated, New York, N.Y. Filed Mar. 10, 1964.

BORN BEAUTIFUL

For Shampoo Tint.
First use Jan. 14, 1964.

SN 189,015. The Remus Sales Co., Blanchard, Mich. Filed Mar. 18, 1964.

MIST-MASTER

For Chemicals and Chemical Compositions—Namely, a Cleaner for Lenses in Either Cream or Liquid Form.
First use in or about September 1958.

SN 190,856. S. M. Arnold, Inc., St. Louis, Mo. Filed Apr. 13, 1964.

ORO

The Spanish word "Oro" means "gold" or "wealth."
For Liquid Cleaner for Oil-Tanned Chamois.
First use Jan. 30, 1964.

SN 191,024. B. & H. Co., Pekin, Ill. Filed Apr. 14, 1964.

CRAXEEN

For Powdered Detergent Preparation of General Cleaning Use.
First use Mar. 23, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 141,999. U.S. Department of the Interior, Washington, D.C. Filed Apr. 10, 1962.



For (1) Operation and Maintenance of Recreational and Educational Facilities in Connection With Parks, Monuments, Camp Sites, Trails, Museums and Similar Institutions, and (2) Making Available to the Public Publications and Other Informational Material in Connection With the Activities of (1).
First use April 1952.

SN 185,603. Jumbo Food Stores, Inc., Washington, D.C. Filed Jan. 29, 1964.



Applicant disclaims the generic wording "Food Stores" apart from the service mark "Jumbo Food Stores."
For Retail Grocery Store Services.
First use June 2, 1952.

Class 101 — Advertising and Business

SN 176,689. Systems Programming Corporation, State College, Pa. Filed Sept. 10, 1963.

MD CLUB

For Accounting Services—Namely, Providing Retail Customers of Member Drug Stores With Periodic Analyses of Their Expenditures.
First use on or about Sept. 2, 1963.

Class 102 — Insurance and Financial

SN 128,993. Federal Insurance Company, New York, N.Y. Filed Oct. 2, 1961.

PLAN IV

Applicant disclaims the word "Plan" apart from the mark as shown.
For Insurance Underwriting Services.
First use October 1959.

SN 183,782. Northern Life Insurance Company, d.b.a. Northern Life Insurance Co., Seattle, Wash. Filed Dec. 30, 1963.



The portion of the corporate name "Insurance Co." and the words "Your Future Secured" are disclaimed apart from the mark as shown.
For Underwriting of Life and Health Insurance.
First use Nov. 22, 1963.

SN 185,949. South Shore National Bank, Quincy, Mass. Filed Feb. 3, 1964.



For Banking Services—Namely, Checking and Savings Accounts, Making of Loans, Financing Purchases, Acting as Fiduciary, Trustee and Custodian; Furnishing Safe Deposit Boxes; Furnishing Letters of Credit, Drafts and Checks, Collecting Financial Obligations, and Foreign Exchange.
First use Feb. 1, 1963.

Class 103 — Construction and Repair

SN 186,816. Concut, Inc., El Monte, Calif. Filed Feb. 17, 1964.

CONCUT

Owner of Reg. No. 571,498.
For Concrete Sawing, Breaking and Bump Cutting Services for Others.
First use at least as early as August 1961.

Class 105 — Transportation and Storage

SN 169,663. Southern Railway Company, Richmond, Va. Filed May 24, 1963.

LOOK AHEAD—LOOK SOUTH

For Freight and Passenger Transportation Service by Railroad.
First use 1948.

SN 175,233. American Export Isbrandtsen Lines, Inc., New York, N.Y., by change of name from American Export Lines, Inc., New York, N.Y. Filed Aug. 19, 1963.

BEACHCOMBER

For Steamship Transportation of Persons and Property.
First use Sept. 17, 1961.

SN 175,234. American Export Isbrandtsen Lines, Inc., New York, N.Y., by change of name from American Export Lines, Inc., New York, N.Y. Filed Aug. 19, 1963.

SUNLANE

For Steamship Transportation of Persons and Property.
First use Oct. 15, 1950.

Class 106 — Material Treatment

SN 182,422. Graniteville Company, Graniteville, S.C. Filed Dec. 5, 1963.

LIFE-LINER

For Fusing Linings to Outer Fabrics Belonging to Others.
First use Oct. 17, 1963.

Class 107 — Education and Entertainment

SN 157,765. June Bedlington, d.b.a. Jean Glenn, Kansas City, Mo. Filed Nov. 23, 1962.

JEAN GLENN

The mark "Jean Glenn" is a fictitious name adopted and used as a character name by the applicant.
For Title of a Radio Program Pertaining to News and Matters of Topical Interest; Lectures and Conducting Panel Discussion Groups on Radio, Television and Before Audiences.
First use at least as early as November 1957.

SN 174,911. E. Edward Rockbold, d.b.a. The Del Aires, Chicago, Ill. Filed Aug. 12, 1963.

DEL AIRES

For Entertainment Services—Namely, Providing Dance and Background Music.
First use 1952.

SN 187,087. Claster Enterprises, Inc., Baltimore, Md. Filed Feb. 20, 1964.

CANDY CORNER

For Entertainment Services in the Form of a Television Program.
First use Dec. 28, 1949.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 186,191. Phi Delta Kappa, Bloomington, Ind. Filed Feb. 6, 1964.



The lines shown on the drawing are for the purpose of shading, to indicate the three-dimensional character of the mark as shown. The Greek characters shown on the mark spell the words "Phi Delta Kappa," the name of applicant's fraternity.

For Indicating Membership in Applicant Fraternity. First use 1911.

SN 186,192. Phi Delta Kappa, Bloomington, Ind. Filed Feb. 6, 1964.

PHI DELTA KAPPA

For Indicating Membership in Applicant Fraternity. First use 1906.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

780,481. ANASIL. Analytical Engineering Laboratories, Inc. SN 178,093. Pub. 9-8-64. Filed 10-1-63.

780,482. DIAMOND JUBILEE. Swift & Company, d.b.a. A. C. Lawrence Leather Co. SN 178,144. Pub. 9-8-64. Filed 10-1-63.

780,483. EZ-AWAY. Lancaster Valite, Inc. SN 182,693. Pub. 9-8-64. Filed 11-26-63.

780,484. DELAKINS. E. I. du Pont de Nemours and Company. SN 183,044. Pub. 9-8-64. Filed 12-16-63.

780,485. CASINO. Armour and Company. SN 183,656. Pub. 9-8-64. Filed 12-27-63.

780,486. KYBATIQUE. Armour and Company. SN 183,657. Pub. 9-8-64. Filed 12-27-63.

780,487. DYNAGEN. The General Tire & Rubber Company. SN 183,909. Pub. 9-8-64. Filed 1-2-64.

780,488. SPEC-TIER. George O. Jenkins Company. SN 183,982. Pub. 9-8-64. Filed 1-3-64.

Class 2 — Receptacles

780,489. WOOD CREST BY STYSON. Joseph B. Stier, d.b.a. Styson Art Products Co. SN 179,824. Pub. 9-8-64. Filed 10-25-63.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

780,490. THE HIDDEN TRAVELER. Herbert D. Franklin. SN 169,364. Pub. 9-8-64. Filed 5-21-63.

780,491. SEALPROOF AND DESIGN. A. G. Mayer, Inc. SN 176,209. Pub. 9-8-64. Filed 9-3-63.

780,492. DELTA AND DESIGN. Sierneo Industries, Inc. SN 185,631. Pub. 9-8-64. Filed 1-29-64.

Class 4 — Abrasives and Polishing Materials

780,493. KENT K AND DESIGN. Kent Industries, Inc. MULTIPLE CLASS (Classes 4, 5, 6, 12, 15, 16, and 52). SN 174,877. Pub. 9-8-64. Filed 8-12-63.

Class 5 — Adhesives

780,493. (See Class 4 for this trademark.)

780,494. UPS. Lectro-Stik Company. SN 172,204. Pub. 2-18-64. Filed 7-1-63.

Class 6 — Chemicals and Chemical Compositions

780,493. (See Class 4 for this trademark.)

780,495. RED PANTHER AND DESIGN. Coahoma Chemical Co., Inc. SN 615,010. Pub. 10-15-63. Filed 6-11-51.

780,496. BLACK PANTHER AND DESIGN. Coahoma Chemical Co., Inc., assignee, by mesne assignments, of Black Panther Company, Inc. SN 70,639. Pub. 10-15-63. Filed 4-1-59.

780,497. VARIQUAT. Varney Chemical Corporation. SN 148,441. Pub. 9-8-64. Filed 7-5-62.

780,498. GENERAL TIRE AND DESIGN. The General Tire & Rubber Company. SN 157,993. Pub. 9-8-64. Filed 11-27-62.

780,499. BLACK PANTHER. Coahoma Chemical Co., Inc., assignee, by mesne assignments, of Black Panther Company, Inc. SN 158,048. Pub. 10-1-63. Filed 11-28-62.

780,500. RED PANTHER. Coahoma Chemical Co., Inc. SN 158,055. Pub. 10-1-63. Filed 11-28-62.

780,501. CILLIGEN. Sigma Chemical Company. SN 158,863. Pub. 1-28-64. Filed 12-10-62.

780,502. CON-PAK. Albert-Acan X-Ray Solutions, Inc. SN 163,099. Pub. 3-10-64. Filed 2-20-63.

780,503. MARK. Argus Chemical Corporation. SN 164,302. Pub. 9-8-64. Filed 3-11-63.

780,504. FLUOROPHENE. Stecker Chemicals, Inc. SN 164,479. Pub. 9-8-64. Filed 3-12-63.

780,505. STA-NEAT. Wyandotte Chemicals Corporation. SN 170,442. Pub. 12-31-63. Filed 6-5-63.

780,506. RESACRON. Ciba Limited. SN 172,872. Pub. 9-8-64. Filed 7-12-63.

780,507. I-N-H. Georgia-Pacific Corporation. SN 173,450. Pub. 9-8-64. Filed 7-23-63.

780,508. ZINGRO. The Eagle-Picher Company. SN 173,746. Pub. 9-8-64. Filed 7-25-63.

780,509. MARS AND DESIGN. Mars Products Corp. SN 174,279. Pub. 9-8-64. Filed 8-2-63.

780,510. MAGICLOR AND DESIGN. Martens Chemical Corp. SN 174,521. Pub. 9-8-64. Filed 8-6-63.

780,511. GUARDIAN ANGEL. Spitzer and Gross. SN 174,618. Pub. 9-8-64. Filed 8-7-63.

780,512. SUPER SOL. West Penn Screen Service, Inc. SN 174,629. Pub. 9-8-64. Filed 8-7-63.

780,513. TRUE TONE AND DESIGN. Frank D. Davis Company. SN 175,475. Pub. 9-8-64. Filed 8-21-63.

780,514. TRUE TONE AND DESIGN. Frank D. Davis Company. SN 175,476. Pub. 9-8-64. Filed 8-21-63.

780,515. ODORASE. Flavor Corporation of America. SN 176,085. Pub. 9-8-64. Filed 8-30-63.

780,516. MYFIN. Masury-Young Company. SN 176,548. Pub. 9-8-64. Filed 9-9-63.

780,517. MOLYVAN. R. T. Vanderbilt Company, Inc. SN 176,849. Pub. 9-8-64. Filed 9-12-63.

780,518. GREEK MYTHOLOGICAL FIGURE (DESIGN). Hercules Powder Company. SN 177,172. Pub. 9-8-64. Filed 9-17-63.

780,519. HERCULES. Hercules Powder Company. SN 177,173. Pub. 9-8-64. Filed 9-17-63.

780,520. VITAL. Economics Laboratory, Inc. SN 178,685. Pub. 9-8-64. Filed 10-10-63.

780,521. GARDEN MINT. Fritzsche Brothers, Inc. SN 179,526. Pub. 9-8-64. Filed 10-22-63.

780,522. WOODTREAT. Wood Treating Chemicals Co. SN 181,090. Pub. 9-8-64. Filed 11-13-63.

780,523. PL AND DESIGN. Chas. Pfizer & Co., Inc. SN 181,494. Pub. 9-8-64. Filed 11-19-63.

780,524. CPDA. Copolymer Rubber & Chemical Corporation. SN 181,859. Pub. 9-8-64. Filed 11-26-63.

780,525. CPTA. Copolymer Rubber & Chemical Corporation. SN 181,860. Pub. 9-8-64. Filed 11-26-63.

780,526. ZEROFILM. The Diversey Corporation. SN 182,408. Pub. 9–8–64. Filed 12–5–63.

780,527. KONK. Syncro-Mist Controls, Inc. SN 182,843. Pub. 9–8–64. Filed 12–11–63.

780,528. BLUE AND WHITE BULL'S EYE (DESIGN). Chemagro Corporation. SN 183,313. Pub. 9–8–64. Filed 12–20–63.

780,529. CULL. Amchem Products, Inc. SN 183,825. Pub. 9–8–64. Filed 12–31–63.

780,530. DIBENZOGMF. United States Rubber Company. SN 185,254. Pub. 9–8–64. Filed 1–23–64.

780,531. TCDI. The Upjohn Company. SN 185,465. Pub. 9–8–64. Filed 1–27–64.

780,532. CHEM-SILATE. Chemical Products Corporation. SN 185,562. Pub. 9–8–64. Filed 1–29–64.

780,533. SODA-SIL. Chemical Products Corporation. SN 185,563. Pub. 9–8–64. Filed 1–29–64.

780,534. ORDESS. Kay-Fries Chemicals, Inc. SN 185,605. Pub. 9–8–64. Filed 1–29–64.

780,535. SANTOMEZ. Monsanto Company, by change of name from Monsanto Chemical Company. SN 185,701. Pub. 9–8–64. Filed 1–30–64.

780,536. F–500. Armour Pharmaceutical Company. SN 185,851. Pub. 9–8–64. Filed 2–3–64.

780,537. APOCHROMOUNT. Biological Research, Inc. SN 185,857. Pub. 9–8–64. Filed 2–3–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

780,538. PROFILE OF MAN HOLDING GUN ON SHOULDER (DESIGN). Ithaca Gun Company, Incorporated. SN 180,015. Pub. 9–8–64. Filed 10–29–63.

780,539. ALAMO. Alamo Fireworks, Inc. SN 181,293. Pub. 9–8–64. Filed 11–18–63.

Class 10 — Fertilizers

780,540. GRO-GREEN. Smith-Douglass Company, Incorporated. SN 171,279. Pub. 9–8–64. Filed 6–18–63.

780,541. MR. THRIFTY AND DESIGN. Gulf Oil Corporation, assignee of Spencer Chemical Company. SN 173,876. Pub. 9–8–64. Filed 7–26–63.

Class 12 — Construction Materials

780,493. (See Class 4 for this trademark.)

780,542. NORTH BROTHERS AND DESIGN. North Brothers, Inc. SN 140,720. Pub. 9–8–64. Filed 3–26–62.

780,543. GANG-NAIL. Automated Building Components, Inc. MULTIPLE CLASS (Classes 12, 13, and 23). SN 150,991. Pub. 9–8–64. Filed 8–13–62.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

780,543. (See Class 12 for this trademark.)

Class 15 — Oils and Greases

780,493. (See Class 4 for this trademark.)

Class 16 — Protective and Decorative Coatings

780,493. (See Class 4 for this trademark.)

Class 18 — Medicines and Pharmaceutical Preparations

780,544. PASTURE BALANCER. Vit-A-Way, Inc. SN 158,408. Pub. 9–8–64. Filed 12–3–62.

780,545. SIMO. Vittorio Molina. SN 159,355. Pub. 9–8–64. Filed 11–29–63.

780,546. ESTERGEL. Merck & Co., Inc. SN 159,513. Pub. 9–8–64. Filed 12–20–62.

780,547. PLETE. Kinney & Company, Inc. SN 160,426. Pub. 12–31–63. Filed 1–9–63.

780,548. E-LIXIN. Dartell Laboratories, Inc., d.b.a. Dartell Laboratories. SN 166,368. Pub. 9–8–64. Filed 4–9–63.

780,549. PANLAX. The Purdue Frederick Company. SN 170,105. Pub. 9–8–64. Filed 5–31–63.

780,550. DI-SOSUL. Drug Industries Company. SN 175,562. Pub. 9–8–64. Filed 8–22–63.

780,551. VIVA VIAL AND DESIGN. Viva Laboratories, Inc. SN 177,470. Pub. 9–8–64. Filed 9–20–63.

780,552. REPOSITOL. The Dow Chemical Company. SN 178,428. Pub. 9–8–64. Filed 10–7–63.

780,553. TINACTIN. Schering Corporation. SN 180,683 Pub. 9–8–64. Filed 11–7–63.

780,554. ESTRO-V. The William A. Webster Company. SN 181,724. Pub. 9–8–64. Filed 11–21–63.

780,555. CARSYNAL. Imperial Chemical Industries Limited. SN 182,085. Pub. 9–8–64. Filed 11–29–63.

780,556. DIFFUDENT. Diva Laboratories, Ltd. SN 182,547. Pub. 9–8–64. Filed 9–12–63.

780,557. GROTESQUE FIGURE. Olin Mathieson Chemical Corporation. SN 184,498. Pub. 9–8–64. Filed 1–13–64.

780,558. KAOPECTATE FORTE. The Upjohn Company SN 185,255. Pub. 9–8–64. Filed 1–23–64.

780,559. THYREST. David A. Brown and George Anton (joint owners), d.b.a. The Brown Pharmaceutical Company SN 188,075. Pub. 9–8–64. Filed 3–6–64.

Class 19 — Vehicles

780,560. UNIVERSAL. Frigikar Corporation. SN 126,587. Pub. 4–2–63. Filed 8–24–61.

780,561. OMC. Outboard Marine Corporation. MULTIPLE CLASS (Classes 19 and 23). SN 157,239. Pub. 12–10–63. Filed 11–13–62.

780,562. ANTI-RAX. Fruehauf Corporation. SN 182,790 Pub. 6–2–64. Filed 12–11–63.

Class 21 — Electrical Apparatus, Machines, and Supplies

780,563. SEALFLEX. Electric Machinery Mfg. Company. SN 144,156. Pub. 1–15–63. Filed 5–9–62.

780,564. ELECTROMATIC. W. M. Still & Sons, Limited. SN 155,110. Pub. 3–17–64. Filed 10–12–62.

780,565. YORKLITE. York Lighting, Inc. SN 162,218. Pub. 10–1–63. Filed 2–6–63.

780,566. D/N UNITROL AND DESIGN. Dunbar-Nunn Corporation. SN 165,756. Pub. 11–5–63. Filed 4–1–63.

780,567. CP AND DESIGN. Columbia Products Company. SN 169,353. Pub. 9–8–64. Filed 5–21–63.

780,568. DYNACORD. Bela Sternberg, d.b.a. Halifax Distributing Company. SN 171,714. Pub. 6–30–64. Filed 6–24–63.

780,569. COMPUTAPE. Computron Inc. SN 175,079. Pub. 6–30–64. Filed 8–13–63.

Class 22 — Games, Toys, and Sporting Goods

780,570. CHECKERS 4. J. C. Walk & Company SN 144,207. Pub. 9–8–64. Filed 5–7–62.

780,571. HELPING YOU KEEP AMERICA FIT ETC. AND DESIGN. The Program Aids Company, Inc. SN 144,413. Pub. 9–8–64. Filed 5–11–62.

780,572. H-I. Horrocks-Ibbotson Company. SN 153,286. Pub. 9–8–64. Filed 9–17–62.

780,573. TWIST. Stanton E. Fisher. SN 154,707. Pub. 9–8–64 Filed 10–8–62.

780,574. SMART BELL. Stanton E. Fisher. SN 154,708. Pub. 9–8–64. Filed 10–8–62.

780,575. MOOCHER-BOOSTER. William D. Minser, d.b.a. Minser Tackle Company SN 155,934. Pub. 9–8–64. Filed 10–25–62.

780,576. ADMIRATION. Admiration Toy Co., Inc. SN 158,304. Pub. 9–8–64. Filed 12–3–62.

780,577. FLIP HIT V BAT AND DESIGN. Gotham Industries, Inc., assignee of Batamatic, Inc. SN 171,421. Pub 9–8–64 Filed 6–20–63.

780,578. SCROUNGE. Jacob A. Glassman, d.b.a. Glassman Enterprises SN 171,979 Pub. 9–8–64. Filed 6–27–63.

780,579. LOOK NEVADA. Look. SN 173,848. Pub. 9–8–64 Filed 7–26–63.

780,580. BIG LOO. Louis Marx & Co. Inc. SN 174,409. Pub. 9–8–64 Filed 8–5–63.

780,581 THE INFORMER. Roy E. Wasley, d.b.a. Golf Informer SN 174,462. Pub. 9–8–64. Filed 8–5–63.

780,582. GAME OF 99 AND DESIGN. Washburne Research and Manufacturing, Incorporated. SN 174,920 Pub. 9–8–64. Filed 8–12–63.

780,583. TRACTION TANNED. Rawlings Sporting Goods Company. SN 176,231. Pub. 9–8–64. Filed 9–3–63.

780,584. JAR-O-DO AND DESIGN. Universal Manufacturing Company. SN 176,408. Pub. 9–8–64. Filed 9–5–63.

780,585. INSTANT-SWIM. Products Development Corporation. SN 176,568. Pub. 9–8–64. Filed 9–9–63.

780,586. EXEC-U-TOY. Dal Manufacturing Corporation. SN 176,633 Pub. 9–8–64 Filed 9–10–63.

780,587. LEGALITE. Kent and Thanet Casinos Limited SN 176,924. Pub. 9–8–64 Filed 9–13–63.

780,588. Q-BOWL. Joseph Nagl, Jr. SN 179,916. Pub. 9–8–64. Filed 10–28–63.

780,589 SNAP AND DESIGN. Atlas Tool Co., Inc. SN 180,821 Pub 9–8–64. Filed 11–12–63.

780,590. HIT-RITE. William F. Salisbury. SN 182,216. Pub. 9–8–64 Filed 12–2–63.

780,591. FIN-BORE. Nordic Enterprises, Inc. SN 182,232. Pub. 9–8–64. Filed 11–27–63.

780,592. "TEENA ROSSINI." Ross Products, Inc. SN 182,360. Pub. 9–8–64. Filed 12–4–63.

780,593. KEAHONI. DEB Manufacturing Company SN 182,473 Pub. 9–8–64. Filed 12–6–63.

780,594. THE OHIO ART CO. ETC. AND DESIGN. The Ohio Art Company. SN 182,527. Pub. 9–8–64. Filed 12–2–63.

780,595. BEARCAT. Bear Archery Company. SN 182,764. Pub. 9–8–64. Filed 12–11–63.

780,596. MATHMATAB. S. James Dorn. SN 182,788. Pub. 9–8–64. Filed 12–11–63.

780,597. SE-KUR. Wilson Sporting Goods Co. SN 182,852. Pub. 9–8–64. Filed 12–11–63.

780,598. KEN. Mattel, Inc. SN 183,081. Pub. 9–8–64. Filed 12–16–63.

780,599. KODIAK KING. The L. S. Brown Company, d.b.a. Dixie Trading Company. SN 183,369. Pub. 9–8–64. Filed 12–23–63.

780,600. CRASH-OUT. Walter C. Milewski. SN 183,437. Pub. 9–8–64. Filed 12–23–63.

780,601. BUCK'S DEERSCENT. Clinton Gail Johnson, d.b.a. Buck Johnson. SN 183,764. Pub. 9–8–64. Filed 12–30–63.

780,602. BILL TILDEN. Bancroft Racket Company. SN 184,684. Pub. 9–8–64. Filed 1–16–64.

780,603. FLAMMER. Beta Engineering Corporation. SN 184,686. Pub. 9–8–64. Filed 1–16–64.

780,604. ABCD. Collette Toy Novelty Co., Inc. SN 184,701. Pub. 9–8–64. Filed 1–16–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

780,543. (See Class 12 for this trademark.)

780,561. (See Class 19 for this trademark.)

780,605. U AND DESIGN. UTD Corporation, by change of name from Union Twist Drill Co. SN 129,310. Pub. 5–15–62. Filed 10–5–61.

780,606. UNION AND DESIGN. UTD Corporation, by change of name from Union Twist Drill Co. SN 129,311. Pub. 5–15–62. Filed 10–5–61.

780,607. UTD AND DESIGN. UTD Corporation, by change of name from Union Twist Drill Co. SN 129,312. Pub. 5–15–62. Filed 10–5–61.

780,608. SIMCO AND DESIGN. The Singer Company, assignee of Simon Attachment Co. SN 153,990. Pub. 6–11–63. Filed 9–26–62.

780,609. SHERWOOD. Regent-Sheffield, Ltd., assignee of Regent-Sheffield. SN 162,110. Pub. 11–26–63. Filed 2–5–63.

780,610. KC (MONOGRAM). Consolidated Thermoplastics Company, d.b.a. Kraloy/Chemtrol Co. SN 175,726. Pub. 9–8–64. Filed 8–26–63.

780,611. MF ETC. AND DESIGN. Millers Falls Company. SN 175,776. Pub. 7–21–64. Filed 8–26–63.

780,612. PED-O-FLO. Peck's Products Company. SN 179,921. Pub. 5–26–64. Filed 10–28–63.

780,613. DELTA. Sternco Industries, Inc. SN 185,251. Pub. 9–8–64. Filed 1–23–64.

Class 26 — Measuring and Scientific Appliances

780,614. F & M. F & M Scientific Corporation. SN 146,283. Pub. 8–27–63. Filed 6–6–62.

780,615. FEDERAL. Federal Products Corporation. SN 167,893. Pub. 12–3–63. Filed 5–1–63.

Class 28 — Jewelry and Precious-Metal Ware

780,616. AJ. A. Jaffe & Son, Inc. SN 151,920. Pub. 1–8–63. Filed 8–27–62.

Class 29 — Brooms, Brushes, and Dusters

780,617. GALAKERITE. Società Italiana Galakerite. SN 164,773. Pub. 9–8–64. Filed 3–14–63.

780,618. GOLD CAP. Conroy & Turse Co. MULTIPLE CLASS (Classes 29 and 40). SN 173,631. Pub. 9–8–64. Filed 7–24–63.

Class 34 — Heating, Lighting, and Ventilating Apparatus

780,619. UNITIP. Unitek Corporation. SN 171,589. Pub. 7–28–64. Filed 6–21–63.

780,620. MODULAIR. Rotron Manufacturing Company, Inc. SN 172,417. Pub. 12–31–63. Filed 7–3–63.

Class 36 — Musical Instruments and Supplies

780,621. DYNACORD. Bela Sternberg, d.b.a. Halifax Distributing Company. SN 171,713. Pub. 6–30–64. Filed 6–24–63.

Class 37 — Paper and Stationery

780,622. AMBI-DEX. S. E. & M. Vernon, Inc. SN 115,281. Pub. 1–1–63. Filed 3–9–61.

780,623. HAMILTON. Windsor Pen Corp. SN 183,644. Pub. 7–7–64. Filed 12–26–63.

Class 38 — Prints and Publications

780,624. CASUAL. Norcross, Inc. SN 135,289. Pub. 9–8–64. Filed 1–5–62.

780,625. PROGRESSIVE RAILROADING. John P. Murphy, Jr., d.b.a. Phil Murphy and Associates. SN 147,300. Pub. 9–8–64. Filed 6–20–62.

780,626. NEW TRENDS. Art Guild Greetings, Inc. SN 148,785. Pub. 9–8–64. Filed 7–11–62.

780,627. FINDING-OUT BOOKS AND DESIGN. Parents' Magazine Enterprises, Inc., assignee of Stravon Publishers, d.b.a. Home Library Press. SN 164,074. Pub. 6–23–64. Filed 3–6–63.

780,628. W AND DESIGN. Frank R. Walker Company. SN 164,078. Pub. 9–8–64. Filed 3–6–63.

780,629. HSS AND DESIGN. Howard W. Sams & Co., Inc. SN 164,894. Pub. 9–8–64. Filed 3–18–63.

780,630. ALDO SEZ AND DESIGN. Aldo Controls & Mfg., Inc. SN 168,378. Pub. 9–8–64. Filed 5–8–63.

780,631. IMAGE. Ernest G. Mantz, d.b.a. Ernest G. Mantz Associates. SN 168,620. Pub. 9–8–64. Filed 5–10–63.

780,632. SUPERVISORY MANAGEMENT. American Management Association, Inc. SN 170,511. Pub. 9–8–64. Filed 6–7–63.

780,633. SEAL OF MOC OF AMERICA APPROVAL AND DESIGN. The Premium Club of America, Inc., d.b.a. Mail Order Club of America. SN 170,555. Pub. 9–8–64. Filed 6–7–63.

780,634. CHEMISTRY. American Chemical Society. SN 172,038. Pub. 9–8–64. Filed 6–28–63.

780,635. FLIGHT TIMES. Western Airlines, Inc. SN 172,697. Pub. 9–8–64. Filed 7–9–63.

780,636. MARQUEE AND DESIGN. Decca Records Inc. SN 178,181. Pub. 9–8–64. Filed 10–2–63.

780,637. HARLEQUIN DESIGN. Harlequin Books Limited. SN 179,092. Pub. 9–8–64. Filed 10–8–63.

780,638. THE WANT ADVERTISER. Nancy C. Grellier and Arthur W. Grellier, d.b.a. The Want Advertiser. SN 179,337. Pub. 9–8–64. Filed 10–18–63.

780,639. GOOF-OFF KIT. The Idea Group. SN 179,537. Pub. 9–8–64. Filed 10–22–63.

780,640. PHOTOMATRIX. Donald W. Hodges, d.b.a. Hodges Industries. SN 179,901. Pub. 9–8–64. Filed 10–28–63.

780,641. HAN-D-WAY. Leonard E. Smestad. SN 180,780. Pub. 9–8–64. Filed 11–8–63.

780,642. FULL-VISION BOOKS AND DESIGN. Christian Record Braille Foundation, Inc. SN 181,211. Pub. 9–8–64. Filed 11–15–63.

780,643. MONARCH. Monarch Press, Inc. SN 182,811. Pub. 9–8–64. Filed 12–11–63.

780,644. WARD'S AUTOMOTIVE WEEK. Powers & Company, Inc. SN 182,895. Pub. 9–8–64. Filed 12–12–63.

780,645. CLUB EXECUTIVE. Army-Times Publishing Company. SN 183,010. Pub. 9–8–64. Filed 12–13–63.

780,646. HARLEQUIN. Harlequin Books Limited. SN 184,920. Pub. 9–8–64. Filed 1–20–64.

780,647. AUDEL GUIDES ETC. AND DESIGN. Howard W. Sams & Co., Inc. SN 185,322. Pub. 9–8–64. Filed 1–24–64.

Class 39 — Clothing

780,648. ROYALON. United States Rubber Company. SN 172,351. Pub. 9–8–64. Filed 7–2–63.

780,649. GOODYEAR DELUXE BY WEATHERITE. Weather-Rite Sportswear Co., Inc. SN 172,441. Pub. 5–12–64 Filed 7–3–63.

780,650. SOLVIT. Edmont Inc. SN 175,266. Pub. 6–30–64. Filed 8–19–63.

Class 40 — Fancy Goods, Furnishings, and Notions

780,618. (See Class 29 for this trademark.)

780,651. FASHION-MODE. Pentapco, Inc. SN 163,959 Pub. 9–8–64. Filed 3–5–63.

780,652. EASTHAMPTON RIBBON RUBBER THREAD AND DESIGN. United Elastic Corporation. SN 171,509. Pub. 9–8–64. Filed 6–20–63.

780,653. LA MAURICE AND DESIGN. J. Maurice Berube SN 185,017. Pub. 9–8–64. Filed 1–21–64.

780,654. LIVING WIG. Reid-Meredith, Inc. SN 187,150 Pub. 8–4–64. Filed 2–20–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

780,655. STEAM-SHIP BRAND AND DESIGN. Salim S. Dweck. SN 153,390. Pub. 9–8–64. Filed 9–18–62.

Class 44 — Dental, Medical, and Surgical Appliances

780,656. ADMI. Viktor Fuchs, d.b.a. Bruder Fuchs. SN 139,844. Pub. 4–30–63. Filed 3–14–62.

Class 46 — Foods and Ingredients of Foods

780,657. RANCH HOUSE AND DESIGN. The Colorado Milling & Elevator Company. SN 109,561. Pub. 9–8–64 Filed 12–5–60.

780,658. IDAHO KING. Idaho Potato Processors, Inc. SN 141,618. Pub. 9–8–64. Filed 4–5–62.

780,659. BEACON (DESIGN). Textron Inc. SN 152,647. Pub. 9–8–64. Filed 9–6–62.

780,660. RAINBOW. The Fleming Co., Incorporated. SN 156,591. Pub. 10–29–63. Filed 11–5–62.

780,661. DESIGN OF BALLOONS. Continental Baking Company. SN 159,210. Pub. 9–8–64. Filed 12–17–62.

780,662. LUCIOUS CHEESE. Lucious Cheese Company. SN 161,748. Pub. 9–8–64. Filed 1–30–63.

780,663. RECIPE. Seaboard Allied Milling Corporation, d.b.a. The Consolidated Flour Mills Company. SN 161,825. Pub. 9–8–64. Filed 1–31–63.

780,664. GRIELLES. Les Maitres Biscottiers Reunis. SN 166,016. Pub. 9–8–64. Filed 4–3–63.

780,665. MR. MURRY'S AND DESIGN. Murry's Steaks, Inc. SN 168,838. Pub. 9–8–64. Filed 5–14–63.

780,666. WOODACRE FARM. Met Provisions, Inc. SN 170,850. Pub. 9–8–64. Filed 6–12–63.

780,667. LYS. Dufour, S.p.A. SN 171,339. Pub. 9–8–64. Filed 6–19–63.

780,668. BARKERS AND DESIGN. Arthur F. Barker, d.b.a. F. C. Barker & Company. SN 171,743. Pub. 9–8–64. Filed 6–25–63.

780,669. SURF-RIDER. Indo-American Seafood Corporation. SN 174,188. Pub. 9–8–64. Filed 8–1–63.

780,670. CERT-I-LEAN. Wilson & Co., Inc. SN 176,056. Pub. 9–8–64. Filed 8–29–63.

780,671. MAISON DOBLE MD AND DESIGN. Henry P. Doble, Jr., d.b.a. Maison Doble. SN 176,357. Pub. 9–8–64. Filed 9–5–63.

780,672. VALLEY BEAUTY. Leo and Robert Meyer (partnership), d.b.a. Meyer Tomatoes. SN 176,925. Pub. 9–8–64. Filed 9–13–63.

780,673. FARMER'S BEST. Louis H. Klayman, d.b.a. Farmer's Best Foods. SN 177,261. Pub. 9–8–64. Filed 9–18–63.

780,674. FB. Louis H. Klayman, d.b.a. Farmer's Best Foods. SN 177,262. Pub. 9–8–64. Filed 9–18–63.

780,675. FAIRMONT AND F DESIGN. Fairmont Foods Company. SN 177,978. Pub. 9–8–64. Filed 9–30–63.

780,676. ROYAL DAIRY. Royal Dairy Products Inc. SN 179,662. Pub. 9–8–64. Filed 10–23–63.

780,677. OLD PLANTATION. General Baking Company SN 179,786. Pub. 9–8–64. Filed 10–25–63.

780,678. PL AND DESIGN. Chas. Pfizer & Co., Inc. SN 181,493. Pub. 9–8–64. Filed 11–19–63.

780,679. BIOGHURT. Internationale Bioghurt Gesellschaft J. Schwaiger & Co. SN 181,895. Pub. 9–8–64. Filed 11–26–63.

780,680. VERIADE. Koninklijke Verkade Fabrieken N.V. SN 182,188. Pub. 9–8–64. Filed 12–2–63.

780,681. SANO-CAF ETC. AND DESIGN. M. L. Ringoot, d.b.a. Select Foods Co. SN 182,355. Pub. 8–18–64. Filed 12–4–63.

780,682. CONTE THE ORIGINAL. Conte & Sons Packing Co. SN 182,599. Pub. 9–8–64. Filed 12–9–63.

780,683. SOOTHIES. W. F. Schrafft & Sons Corporation, by consolidation with Wallace & Co. SN 185,831. Pub. 7–28–64. Filed 1–31–64.

780,684. BELVEDERE. United States Baking Company, Inc., by change of name from Miller-Parrott Baking Company, Inc. SN 187,507. Pub. 9–8–64. Filed 2–26–64.

780,685. TENDER-IT. Meat Industry Suppliers, Inc. SN 187,774. Pub. 9–8–64. Filed 3–2–64.

780,686. REPRESENTATION OF LION'S HEAD. General Foods Corporation. SN 188,861. Pub. 9–8–64. Filed 3–17–64.

780,687. GLENDORA HOME. Corona-College Heights Orange & Lemon Association. SN 189,150. Pub. 9–8–64. Filed 3–20–64.

Class 47 — Wines

780,688. RISERVA MONTELERA. Martini & Rossi Corporation. SN 171,152. Pub. 9–8–64. Filed 6–17–63.

780,689. GRAND MAISON. Franzia Brothers Winery, d.b.a. Old Chateau Wine Co. SN 180,725. Pub. 9–8–64. Filed 11–8–63.

780,690. ORANGE ROCK. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 182,664. Pub. 9–8–64. Filed 12–9–63.

Class 48 — Malt Beverages and Liquors

780,691. COOL BREWED. G. Heileman Brewing Co. SN 147,003. Pub. 9–8–64. Filed 6–15–62.

780,692. PURE GENUINE AND DESIGN. G. Heileman Brewing Company. SN 147,114. Pub. 9–8–64. Filed 6–18–62.

780,693. HATUEY AND REPRESENTATION OF INDIAN HEAD. Bacardi & Company Limited. SN 175,008. Pub. 9–8–64. Filed 8–14–63.

780,694. CERES. Ceres Bryggerierne A/S (Ostjydske Bryggerier A/S), d.b.a. The Ceres Breweries. SN 175,386. Pub. 9–8–64. Filed 8–20–63.

780,695. HATUEY. Bacardi & Company Limited. SN 175,704. Pub. 9–8–64. Filed 6–10–63.

Class 49 — Distilled Alcoholic Liquors

780,696. DESIGN OF A MALE FIGURE WITHIN AN OVAL. Schenley Distillers, Inc., d.b.a. I. W. Harper Distillery Company. SN 166,346. Pub. 9–8–64. Filed 3–14–63.

780,697. KING CUDDY. David Sherman Corporation. SN 169,486. Pub. 9–8–64. Filed 5–22–63.

780,698. MAYAN. La Madrilena, S.A. SN 182,532. Pub. 9–8–64. Filed 12–5–63.

780,699. TOM TYBURN. Jas. Barclay & Co. Limited. SN 184,205. Pub. 9–8–64. Filed 1–8–64.

Class 50 — Merchandise Not Otherwise Classified

780,700. RAZORBACK METHOD ETC. AND DESIGN. Razorback Fabrics, Inc., by change of name from Planters, Inc. SN 148,528. Pub. 9–8–64. Filed 7–6–62.

780,701. T & O. Herman Miller, Inc. SN 161,357. Pub. 9–8–64. Filed 1–24–63.

780,702. SYMBOLIC M. Herman Miller, Inc. SN 162,473. Pub. 9–8–64. Filed 2–11–63.

780,703. SHOWER BABY BY JEANNE. Jean Anne Markham. SN 170,656. Pub. 9–8–64. Filed 6–10–63.

780,704. THRIFT-RITE. United States Plywood Corporation. SN 179,967. Pub. 9–8–64. Filed 10–28–63.

Class 51 — Cosmetics and Toilet Preparations

780,705. GPI TENDER. Gale Products, Incorporated. SN 117,775. Pub. 9–8–64. Filed 4–13–61.

780,706. CLASSICS IN FRAGRANCE. Helene Curtis Industries, Inc., d.b.a. Lentheric. SN 124,424. Pub. 9–8–64. Filed 7–21–61.

780,707. BIOLODERM. Societe Maurice Blanchet Parfums deLuxe, Societe Anonyme. SN 157,939. Pub. 9–8–64. Filed 5–28–63.

780,708. CUPID'S DANCE. Big D Chemical Company, d.b.a. Le Fevre Products Company. SN 158,132. Pub. 9–8–64. Filed 11–29–62.

780,709. ROYAL BEAUTY. Studio Girl-Hollywood, Inc. SN 158,419. Pub. 9–8–64. Filed 11–29–62.

780,710. MAGIC FORM. Parfumerie L. T. Piver S.A. SN 158,558. Pub. 9–8–64. Filed 12–5–62.

780,711. CERAMIC GLAZE. Faberge, Inc. (Delaware corporation), assignee of Faberge, Inc. (New York corporation). SN 173,643. Pub. 9–8–64. Filed 7–24–63.

780,712. KUVER 'N KOTE. Summit Laboratories, Inc., d.b.a. Aljean Products Co. SN 174,619. Pub. 9–8–64. Filed 8–7–63.

780,713. SPECIAL FORMULA AND DESIGN. The Andrew Jergens Company. SN 175,286. Pub. 9–8–64. Filed 8–19–63.

780,714. LEGZURIE. Larousse Inc. SN 178,207. Pub. 9–8–64. Filed 10–2–63.

780,715. INSTANT SUCCESS. "42" Products, Ltd., Inc. SN 181,769. Pub. 9–8–64. Filed 11–22–63.

780,716. COUNTESS. Beecham Products, Inc. SN 182,400. Pub. 9–8–64. Filed 12–5–63.

780,717. COOL CHARM. Beecham Products, Inc. SN 182,401. Pub. 9–8–64. Filed 12–5–63.

780,718. "MY MAN." La Velle Laboratories, Inc. SN 183,181. Pub. 9–8–64. Filed 12–17–63.

780,719. HYMOSA. New Era Laboratories, Limited. SN 183,217. Pub. 9–8–64. Filed 12–18–63.

780,720. JACK AND JILL. Johnson Publishing Company, Inc. SN 183,270. Pub. 9–8–64. Filed 12–19–63.

780,721. QUINTET. The Middletown Co. SN 185,612. Pub. 9–8–64. Filed 1–29–64.

780,722. HYSETTE. Hysan Products Company. SN 185,778. Pub. 9–8–64. Filed 1–31–64.

Class 52 — Detergents and Soaps

780,493. (See Class 4 for this trademark.)

780,723. LOGO AND TEST TUBE DESIGN. The Stamford Chemical Company. SN 130,312. Pub. 9–8–64. Filed 10–19–61.

780,724. PAX-ALL. G. H. Packwood Manufacturing Co. SN 169,966. Pub. 9–8–64. Filed 5–29–63.

780,725. HF AND DESIGN. Heinrich Fischer, d.b.a. Heinrich Fischer & Co. SN 170,056. Pub. 9–8–64. Filed 5–31–63.

780,726. JOHNSON'S. S. C. Johnson & Son, Inc. SN 173,257. Pub. 9–8–64. Filed 7–18–63.

780,727. WALL-WIPE. Carbona Products Company. SN 173,818. Pub. 9–8–64. Filed 7–26–63.

780,728. DREAMFLOWER. Chesebrough-Pond's Inc. SN 175,633. Pub. 9–8–64. Filed 8–23–63.

780,729. RD 50. The Procter & Gamble Company. SN 176,394. Pub. 9–8–64. Filed 9–5–63.

780,730. MYFIN. Masury-Young Company. SN 176,549. Pub. 9–8–64. Filed 9–9–63.

780,731. NO-TRIK. Harvey H. Bruss. SN 178,583. Pub. 9–8–64. Filed 10–9–63.

780,732. DRAW AND DESIGN. William R. Robertshaw, d.b.a. Robertshaw & Company. SN 182,214. Pub. 9–8–64. Filed 12–2–63.

Service Marks

Class 100 — Miscellaneous

780,733. EIKONAL ASSOC. AND DESIGN. Neil A. Hochgraf, d.b.a. Eikonal Associates. SN 157,104. Pub. 9–8–64. Filed 11–13–62.

780,734. EVER-GUARD AND DESIGN. Ever-Ready Automatic Burglar Alarm Co. Inc. SN 159,712. Pub. 9–8–64. Filed 12–26–62.

780,735. WIBC. Woman's International Bowling Congress, Inc. SN 166,508. Pub. 9–8–64. Filed 4–10–63.

Class 101 — Advertising and Business

780,736. S.A.G.E. S.A.G.E., Inc. SN 112,777. Pub. 9–8–64. Filed 1–30–61.

780,737. DESIGN OF SOLDIER. Sentry Corporation. SN 177,554. Pub. 9–8–64. Filed 9–23–63.

780,738. DESIGN OF A GLOBE WITH FACE AND HAT. Realy State, Inc., assignee of A. T. Beckwith. SN 178,328. Pub. 9–8–64. Filed 10–4–63.

Class 102 — Insurance and Financial

780,739. OIC ULTIMATE LOSS INSURANCE AND DESIGN. Ohio Indemnity Company. SN 148,072. Pub. 9–8–64. Filed 6–29–62.

780,740. STAR OF THE NORTH AND DESIGN. The Minnesota Mutual Life Insurance Company. SN 170,088. Pub. 9–8–64. Filed 5–31–63.

780,741. MISSOURI BUILDER! AND DESIGN. Missouri National Life Insurance Company. SN 180,940. Pub. 9–8–64. Filed 11–12–63.

Class 104 — Communication

780,742. TIME LIFE BROADCAST AND DESIGN. Time, Incorporated. SN 174,130. Pub. 9–8–64. Filed 7–31–63.

Class 105 — Transportation and Storage

780,743. CURVED ARROWS (DESIGN). The Short Line, Inc. SN 172,614. Pub. 9–8–64. Filed 7–8–63.

Class 106 — Material Treatment

780,744. KEN SATION. The Kenyon Piece Dyeworks, Inc. SN 172,391. Pub. 9–8–64. Filed 7–3–63.

Class 107 — Education and Entertainment

780,745. NATIONAL DOG DERBY AND DESIGN. Alexander Morton, d.b.a. National Dog Derby. SN 155,427. Pub. 9–8–64. Filed 10–18–62.

780,746. THE CRESCENDOES. James A. Gilbert. SN 163,138. Pub. 9–8–64. Filed 2–20–63.

780,747. FIDELCO ETC. AND DESIGN. The Fidelco Breeders Foundation, Inc. SN 170,183. Pub. 9–8–64. Filed 6–3–63.

780,748. SHOWTIME-D.C. Tel-Ads, Inc. SN 182,539. Pub. 9–8–64. Filed 12–6–63.

Collective Membership Marks

Class 200

780,749. ARW ETC. AND DESIGN. Air-Conditioning & Refrigeration Wholesalers. SN 177,940. Pub. 9–8–64. Filed 9–30–63.

780,750. TRI-GRA-Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 182,735. Pub. 9–8–64. Filed 12–10–63.

780,751. JR HI-Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,324. Pub. 9–8–64. Filed 12–10–63.

780,752. INDIAN GUIDES AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,325. Pub. 9–8–64. Filed 12–10–63.

780,753. HI-Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,326. Pub. 9–8–64. Filed 12–10–63.

780,754. JUNIOR TRI-HI-Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,327. Pub. 9–8–64. Filed 12–10–63.

780,755. TRI HI Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,328. Pub. 9–8–64. Filed 12–10–63.

780,756. GRA-Y AND DESIGN. National Board of the Young Men's Christian Associations. SN 184,329. Pub. 9–8–64. Filed 12–10–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

780,757. National Grinding Wheel Company, Inc., North Tonawanda, N.Y. SN 154,426. Filed P.R. 10–3–62; Am. S.R. 9–28–64.

KUPDISK

For Grinding Wheels.
First use Aug. 17, 1962.

780,758. The Drackett Company, Cincinnati, Ohio. SN 166,452. Filed P.R. 4–10–63; Am. S.R. 2–11–64.

NO WASTE WITH PASTE

For Metal Polish With Cleaning Properties.
First use March 1958.

Class 12 — Construction Materials

780,759. Sun Control Awnings, Inc., Southfield, Mich. SN 162,997. Filed P.R. 2–18–63. Am. S.R. 9–23–64.

Sun Control

For Metal Awnings.
First use November 1962.

780,760. Simpson Timber Company, Seattle, Wash. SN 171,390. Filed P.R. 6–19–63; Am. S.R. 9–25–64.

SANSTONE

For Mineral and Wood Fiber Ceiling Tiles.
First use May 17, 1963.

Class 21 — Electrical Apparatus, Machines, and Supplies

780,761. The Hobart Manufacturing Company, Troy, Ohio. SN 151,490. Filed P.R. 8–20–62; Am. S.R. 9–22–64.

TILT-CUP

For Racks for Dishwashing Machines.
First use Aug. 7, 1962.

780,762. Jefferson Electric Company, Bellwood, Ill. SN 171,993. Filed P.R. 6–27–63; Am. S.R. 3–31–64.

CONVERT-A-BALLAST

For Pre-Wired Lamp Socket and Ballast Combination for Use in Converting Fluorescent Lamp Fixtures To Accommodate Rapid Start Fluorescent Lamps.
First use Jan. 11, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

780,763. Hardy Salt Company, St. Louis, Mo. SN 130,454. Filed P.R. 10–23–61; Am. S.R. 9–28–64.

QUIK-BRINER

For Salt Dissolving Apparatus.
First use Mar. 30, 1961.

780,764. Welding Engineers, Inc., Norristown, Pa. SN 166,230. Filed P.R. 4–5–63; Am. S.R. 8–21–64.

KLEEN-SCREEN

For Screening Device for Extruders of Plastic Materials and the Like.
First use Mar. 21, 1963.

Class 26 — Measuring and Scientific Appliances

780,765. Aircraft Armaments, Inc., Cockeysville, Md. SN 132,507. Filed P.R. 11–22–61; Am. S.R. 3–23–64.

STUDENT RESPONSE MONITOR

For Classroom Teaching Aids of the Type Generally Known as Electrical Testing and Scoring Devices.
First use Feb. 3, 1961.

780,766. Radiant Manufacturing Corp., Morton Grove, Ill. SN 132,725. Filed P.R. 11–24–61; Am. S.R. 8–31–64.

COMPACT

For Picture Projection Screens.
First use Feb. 14, 1961.

780,767. Monroe International Corporation, Orange, N.J., by change of name from Monroe Calculating Machine Company, Orange, N.J. SN 135,694. Filed P.R. 1-12-62; Am. S.R. 8-10-64.

DATAREGISTER

For Cash Registers.
First use not later than Dec. 7, 1961.

780,768. Karl A. Neise, Inc., Woodside, N.Y. SN 184,950. Filed P.R. 1-20-64; Am. S.R. 8-25-64.

DE LUXE HANDI-DIAL CALIPER

For Precision Caliper.
First use Jan. 1, 1963.

Class 27 — Horological Instruments

780,769. Benrus Watch Company, Inc., New York, N.Y. SN 183,956. Filed P.R. 1-3-64; Am. S.R. 9-25-64.

MONACO

For Watches.
First use July 25, 1962.

Class 29 — Brooms, Brushes, and Dusters

780,770. The Drackett Company, Cincinnati, Ohio. SN 166,080. Filed P.R. 4-4-63; Am. S.R. 9-30-64.

IT DANCES DUST AWAY

For Mops and Refills Therefor.
First use September 1959.

Class 39 — Clothing

780,771. R. G. Barry Corporation, Columbus, Ohio. SN 129,720. Filed P.R. 10-12-61; Am. S.R. 8-4-64.

ALL THE COMFORTS OF FOAM

For Scuffs and Slippers.
First use Mar. 10, 1960.

780,772. Martha Maid Manufacturing Company, Chicago, Ill. SN 159,257. Filed P.R. 12-17-62; Am. S.R. 9-30-64.

KNIT-A-ROBE

For Women's Lounge Wear, Including Robes.
First use on or about Sept. 14, 1962.

780,773. Associated Dry Goods, Inc., New York, N.Y. SN 181,450. Filed P.R. 11-19-63; Am. S.R. 9-29-64.



For Men's Suits.
First use on or about May 1, 1963.

Class 46 — Foods and Ingredients of Foods

780,774. Marie's, Seattle, Wash. SN 167,284. Filed P.R. 4-22-63; Am. S.R. 7-15-64.

AVAILABLE EVERYWHERE AND SOON ON THE MOON

For Salad Dressing, Tartar Sauce, Blue Cheese Dressing, Sugarless Mayonnaise, 1000 Island Dressing.
First use on or about June 1, 1961.

780,775. Yonson Foods, Inc., Belmont, Calif. SN 170,581. Filed P.R. 6-7-63; Am. S.R. 7-14-64.

YONSON'S "Tater-Topping"

For Sour Cream.
First use Apr. 26, 1963.

780,776. Ralston Purina Company, St. Louis, Mo. SN 178,734. Filed P.R. 10-10-63; Am. S.R. 9-28-64.



For Fresh Dressed Turkeys.
First use Sept. 18, 1963.

Class 51 — Cosmetics and Toilet Preparations

780,777. Nethercutt Laboratories, d.b.a. Cosgenic Labs, Hollywood, Calif. SN 149,952. Filed P.R. 7-27-62; Am. S.R. 9-29-64.

COPPER CLOUD

For Cosmetics—Namely, Face Powder, Liquid Makeup.
First use July 16, 1962.

780,778. Nethercutt Laboratories, d.b.a. Cosgenic Labs, Hollywood, Calif. SN 151,983. Filed P.R. 8-27-62; Am. S.R. 9-29-64.

CHAMPAGNE WEDDING

For Cosmetics—Namely, Powder.
First use Aug. 15, 1962.

780,779. The Noxzema Chemical Company, Baltimore, Md. SN 166,031. Filed P.R. 4-3-63; Am. S.R. 9-30-64.

FLASHING AMBER

For Lipsticks.
First use Mar. 22, 1963.

Class 52 — Detergents and Soaps

780,780. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. SN 161,234. Filed P.R. 1-23-63; Am. S.R. 10-1-64.

CUT N' WASH

For Toilet Soap.
First use Dec. 15, 1962.

TRADEMARK REGISTRATIONS RENEWED

188,137. SUPREME. Cl. 52. 4-22-24.
189,043. CHARING CROSS. Cl. 17. 9-9-24.
190,743. TROJAN. Cl. 15. 10-21-24.
190,750. W. P. FULLER & CO. Cl. 16. 10-21-24.
190,751. FULLER. Cl. 16. 10-21-64.
191,513. REX. Cl. 5. 11-11-24.
191,553. INK OUT. Cl. 52. 11-11-24.
191,710. EJ AND DESIGN. Cl. 39. 11-18-24.
192,443. EAGLE BRAND. Cl. 14. 12-2-24.
192,606. CENTURY. Cl. 39. 12-9-24.
193,198. PURLCREPE. Cl. 42. 12-23-24.
193,199. PURLSUEDE. Cl. 42. 12-23-24.
193,501. POWCO BRAND INSECT POWDER. Cl. 6. 12-30-24.
194,764. PLEE-ZING AND DESIGN. Cl. 6. 2-10-25.
195,423. SEARCHLIGHT. Cl. 46. 2-24-25.
195,461. ICY-HOT. Cl. 33. 2-24-25.
195,722. ZONITE AND DESIGN. Cl. 6. 3-3-25.
405,270. ISEKREAM. Cl. 51. 1-18-44.
407,881. ARKON. Cl. 26. 7-4-44.
408,073. BIG JACK AND DESIGN. Cl. 39. 7-18-44.
409,017. BODY FLO. Cl. 21. 9-12-44.
409,074. POSIPRINT. Cl. 26. 9-12-44.
409,253. FORMULAC. Cl. 46. 9-26-44.
409,360. GRIT-LOK. Cl. 4. 10-3-44.
409,523. PRECIOUS AS TIME. Cl. 27. 10-10-44.
409,559. VACOL. Cl. 12. 10-10-44.
409,696. PARANESE. Cl. 42. 10-17-44.
409,723. SHANGRI-LA. Cl. 49. 10-17-44.
409,752. CALOBAR. Cl. 26. 10-17-44.
410,611. ROPP AND DESIGN. Cl. 8. 12-5-44.
410,747. JELOX. Cl. 12. 12-19-44.
410,780. IT'S ABOUT TIME DEPARTMENT. Cl. 38. 12-19-44.
410,781. O PIONEERS DEPARTMENT. Cl. 38. 12-19-44.
410,782. WE DON'T WANT TO HEAR ABOUT IT DEPARTMENT. Cl. 38. 12-19-44.
410,783. WIND ON CAPITOL HILL DEPT. Cl. 38. 12-19-44.
411,213. LETTERS WE NEVER FINISHED READING. Cl. 38. 1-9-45.
411,283. TCH TCHK DEPARTMENT. Cl. 38. 1-9-45.
411,413. HICKORY. Cl. 39. 1-16-45.
411,467. MOJUD. Cl. 39. 1-16-45.
411,587. LOVE IS A WONDERFUL THING DEPARTMENT. Cl. 38. 1-23-45.
411,754. HULA DANCER. Cl. 22. 1-30-45.
411,843. GORTON'S. Cl. 46. 2-6-45.
411,864. DOMAL. Cl. 14. 2-6-45.
412,012. ACETEST. Cl. 6. 2-13-45.
412,033. UBAPOL. Cl. 5. 2-13-45.
412,195. NON-SEQUITUR DEPARTMENT. Cl. 38. 2-20-45.
412,196. THIS IS WAR. Cl. 38. 2-20-45.
412,441. PACEMAKER AND DESIGN. Cl. 37. 3-6-45.
412,561. OUT OF TOWN. Cl. 38. 3-13-45.
412,683. ROZENE. Cl. 52. 3-20-45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

775,268. HV AND DESIGN. Cl. 21. 8-18-64.

Section 8

15,694. HUBBUCK'S ETC. AND DESIGN. Cl. 16. 7-17-1888.
120,210. N AND DESIGN. Cl. 2. 1-15-18.
202,886. WOODCREST. Cl. 46. 9-8-25.
210,036. EXCELSIOR BRAND ETC. AND DESIGN. Cl. 46. 3-9-26.
210,623. ACORN BRAND. Cl. 46. 3-16-26.
213,953. CHEESETT. Cl. 46. 6-8-26.
317,841. DIANA. Cl. 46. 10-9-34.
319,961. G-AN-EN. Cl. 46. 12-11-34.
322,616. "DIANA" AND DESIGN. Cl. 46. 3-12-35.
356,611. CROSSWORD ANAGRAMS. Cl. 22. 5-3-38.
357,198. SA-VON. Cl. 42. 5-24-38.
359,999. WELD-EDGE. Cl. 40. 9-6-38.
361,270. HI-HI. Cl. 17. 10-11-38.
361,404. IRIS. Cl. 13. 10-18-38.
361,480. SLEEKEES. Cl. 39. 10-18-38.
361,489. JEWEL. Cl. 12. 10-18-38.
651,040. HOMAR ETC. AND DESIGN. Cl. 6. 9-3-57.
651,582. SEX SCIENCE DIGEST. Cl. 38. 9-10-57.
651,627. HOMAR. Cl. 6. 9-17-57.
652,658. LYGIE. Cl. 19. 10-8-57.

The following registrations issued Oct. 7, 1958

667,900. COUNTRY SQUIRE. Cl. 1.
667,903. MIKRO-PERL. Cl. 1.
667,906. GOLDEN WEAVE. Cl. 2.
667,907. SPINC. Cl. 2.
667,911. UNITAINER AND DESIGN. Cl. 2.
667,912. "POSTIE'S DELITE" AND DESIGN. Cl. 2.
667,915. METAL MATE. Cl. 6.
667,918. PRINCESS HOUSE. Cl. 6.
667,923. RICH LAWN ETC. AND DESIGN. Cl. 10.
667,924. SHADE-TONE. Cl. 11.
667,928. MOLER-HIPOR. Cl. 12.
667,935. RIPPLETRIM. Cl. 13.
667,941. SUBURBANAIRE. Cl. 13.
667,942. ANKRETE. Cl. 13.
667,945. CHECK-MATE. Cl. 13.
667,949. DIAMOND-PORT AND DESIGN. Cl. 15.

667,951. FOAMGUARD. Cl. 16.
667,952. TRAVEL PAK. Cl. 18.
667,958. OCM. Cl. 19.
667,959. DORSETT AND DESIGN. Cl. 19.
667,960. VINYL-BRIGHT. Cl. 20.
667,964. WARMA-BED. Cl. 21.
667,970. TIGER-EYE. Cl. 21.
667,973. INSUL 8 ELECTRONICS AND DESIGN. Cl. 21.
667,979. TELE-TROL. Cl. 21.
667,981. AMERITE. Cl. 21.
667,982. ELECTRONIC SECRETARY AND DESIGN. Cl. 21.
667,984. CATALINA. Cl. 22.
667,992. HI-FI AND DESIGN. Cl. 23.
667,993. REFLECTO. Cl. 23.
667,998. KWIK-FLARE. Cl. 23.
668,001. LITE. Cl. 23.
668,004. IMAGINATION. Cl. 23.
668,005. PORTER-CABLE MARK XXVI. Cl. 23.
668,006. PINE CONE. Cl. 23.
668,009. HEB. Cl. 23.
668,011. UNIVUE. Cl. 26.
668,012. ISORAPID. Cl. 26.
668,013. ELECTRO-MASTER. Cl. 26.
668,015. SAF T RAP. Cl. 26.
668,016. MULTI METER. Cl. 26.
668,022. LECTROX. Cl. 26.
668,025. BLEND-MASTER. Cl. 26.
668,026. AUTONOMETER. Cl. 26.
668,027. RONPIERCE. Cl. 26.
668,028. SNIP/SNAP. Cl. 26.
668,037. STAREST. Cl. 32.
668,042. MEDIC. Cl. 33.
668,043. FOOD SERVICE EQUIPMENT CO. AND DESIGN. Cl. 34.
668,052. SAX-O-MATIC. Cl. 36.
668,067. PICTURE POLL. Cl. 38.
668,068. A THIS WEEK BOOKCERPT. Cl. 38.
668,072. MRS. FITZ'S FLATS. Cl. 38.
668,076. FUN FORUM. Cl. 38.
668,080. LIFE LIFT AND DESIGN. Cl. 39.
668,084. AIRIELLE. Cl. 39.
668,085. MANSTAY. Cl. 39.
668,086. RP CT & A AND DESIGN. Cl. 39.
668,087. GILDONA. Cl. 39.
668,090. ROYAL CADET. Cl. 39.
668,091. HUSTLERS. Cl. 39.
668,095. TARGET. Cl. 39.
668,105. POISON IVY. Cl. 39.
668,112. MESANGE. Cl. 42.
668,113. FAUVETTE. Cl. 42.
668,115. PIGTAIL PET PAKS. Cl. 43.
668,116. LINDAN. Cl. 43.
668,117. KREAMY SPRED. Cl. 46.
668,118. BECKER ETC. AND DESIGN. Cl. 46.
668,130. FLOWERAMA. Cl. 50.
668,135. E.S.I.-KLEEN KLEER. Cl. 52.
668,136. WA-SO. Cl. 52.
668,139. DURAFOAM. Cl. 52.
668,146. CART-ALL. Cl. 3.
668,149. "WALK-THRU." Cl. 19.
668,150. LIKE DAD'S. Cl. 22.
668,154. THE FIVE HUNDRED. Cl. 37.
668,155. THE TWO HUNDRED. Cl. 37.
668,159. JUCY-PAK. Cl. 46.
668,160. "THE FAVORITE OF EXPERTS." Cl. 46.
668,163. SPRAY-CURL. Cl. 51.
668,164. HI-GLOSS. Cl. 51.
668,165. WHITE FIRE. Cl. 51.
668,166. MENTAL HEALTH GROUPS. Cl. 100.

Section 18

204,547. "WILDCAT" AND DESIGN. Cl. 39. 10–20–25.
229,778. CLINICAL MEDICINE AND SURGERY. Cl. 38. 7–5–27.
410,959. HY-DRY. Cl. 46. 12–26–44.
413,836. AKO. Cl. 6. 5–15–45.
416,809. SOY-KRAX. Cl. 46. 10–2–45.
416,847. DIPLOMAT. Cl. 6. 10–2–45.
435,873. IMPERIAL BAKER AND DESIGN. Cl. 30. 1–13–48.
436,270. COOL AND REPRESENTATION OF LADIES' HEAD. Cl. 6. 1–27–48.
IMPERIAL. Cl. 30. 4–1–52.
559,914. FRY-O-MAT. Cl. 21. 6–10–52.
678,630. BONNIE. Cl. 52. 5–12–59.
687,676. TROPHY. Cl. 46. 11–3–59.
731,428. FLICK-R-FLAME. Cl. 21. 5–15–62.
734,433. SP8. Cl. 15. 7–17–62.
743,593. BEAUVIN. Cl. 47. 1–8–63.
746,381. UNITOTE SYSTEMS. Cl. 105. 3–5–63.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

237,826. GULF COAST. Cl. 46. Johnson Canning Company. 1–17–28. New Cert. Sec. 7(c) to Willa L. Johnson, Biloxi, Miss.

527,784. GENERALGAS. Cl. 6. General Gas Corporation. 7–18–50. New Cert. Sec. 7(c) to Tuloma, Inc., Baton Rouge, La.

573,482. PHONOVISUAL. Cl. 38. Phonovisual Products. 4–21–53. New Cert. Sec. 7(c) to Phonovisual Products, Inc., Washington, D.C.

660,707. BEAUTI-PANEL. Cl. 12. Getz Bros. & Co. 4–22–58. New Cert. Sec. 7(c) to Getz Bros. & Co. (U.S.), San Francisco, Calif.

667,858. ORLEANS AND DESIGN. Cl. 46. Orleans Seafood Company. 9–30–58. New Cert. Sec. 7(c) to Southland Canning & Packing Co., Inc., New Orleans, La.

686,427. GULF BELLE AND DESIGN. Cl. 46. Southland Canning & Packing Company. 10–6–59. New Cert. Sec. 7(c) to Southland Canning & Packing Co., Inc., New Orleans, La.

701,089. GULF PEARL AND DESIGN. Cl. 46. Orleans Seafood Company. 7–12–60. New Cert. Sec. 7(c) to Southland Canning & Packing Co., Inc., New Orleans, La.

726,570. SPECIAL OCCASION. Cl. 46. Sterling Industries Inc., by change of name from Sacramento Freezers Inc. 1–16–62. New Cert. Sec. 7(c) to Green Giant Company, Le Sueur, Minn.

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Admiral Photo Products Co., Chicago, Ill. 668,028, canc. Cl. 26.
Admiration Toy Co., Inc., New York, N.Y. 780,576, pub. 9–8–64. Cl. 22.
Agfa Aktiengesellschaft, from Agfa Aktiengesellschaft fur Photofabrikation, Leverkusen-Bayerwerk, Germany. 668,012, canc. Cl. 26.
Agfa Aktiengesellschaft fur Photofabrikation: *See*— Agfa Aktiengesellschaft.
Air-Conditioning & Refrigeration Wholesalers, Cleveland, Ohio. 780,749, pub. 9–8–64. Cl. 200.
Aircraft Armaments, Inc., Cockeysville, Md. 780,765. Cl. 26.
Aktieselskabet Skarrebage Molervaerk, Nykobing, Mors, Denmark. 667,928, canc. Cl. 12.
Alamo Fireworks, Inc., San Antonio, Tex. 780,539, pub. 9–8–64. Cl. 9.
Albert-Acan X-Ray Solutions, Inc., Woodside, N.Y. 780,502, pub. 3–10–64. Cl. 6.
Aldo Controls & Mfg., Inc., Crystal Lake, Ill. 780,630, pub. 9–8–64. Cl. 38.
Aljean Products Co.: *See*— Summit Laboratories, Inc.
Aluminum Goods Mfg. Co., Manitowoc, Wis. 668,150, canc. Cl. 22.
Amchem Products, Inc., Ambler, Pa. 780,529, pub. 9–8–64. Cl. 6.
American Chemical Society, Washington, D.C. 780,634, pub. 9–8–64. Cl. 38.
American Journal of Clinical Medicine, Inc., The, North Chicago, Ill. 229,778, canc. Cl. 38.
American Management Association, Inc., New York, N.Y. 780,632, pub. 9–8–64. Cl. 38.
American Optical Co., Southbridge, Mass. 409,752, ren. 11–24–64. Cl. 26.
Ames Co., Inc., Elkhart, Ind. 412,012, ren. 11–24–64. Cl. 6.
Analytical Engineering Laboratories, Inc., Hamden, Conn. 780,481, pub. 9–8–64. Cl. 1.
Anchor Post Products, Inc., Baltimore, Md. 667,941, canc. Cl. 13.
Anderson & Brown Co., to Magnetic Holding Devices, Inc., Cleveland, Ohio, to E. H. Brandenburg, d.b.a. Magnetic Holding Devices, Inc., Cleveland, Ohio. 409,017, ren. 11–24–64. Cl. 21.
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Anderson, William J., New York, N.Y. 668,130, canc. Cl. 50.
Andrew Jergens Co., The, Cincinnati, Ohio. 780,713, pub. 9–8–64. Cl. 51.
Anti-Rust Corp., New York, N.Y., to Anti-Rust Corp., Brooklyn, N.Y. 412,683, ren. 11–24–64. Cl. 52.
Anton, George: *See*— Brown, David A., and George Anton.
Arbogast, Fred, to Fred Arbogast Co., Inc., Akron, Ohio. 411,754, ren. 11–24–64. Cl. 22.
Arbogast, Fred, Co., Inc.: *See*— Arbogast, Fred.
Argus Chemical Corp., Brooklyn, N.Y. 780,503, pub. 9–8–64. Cl. 6.
Armour and Co., Chicago, Ill. 780,485–6, pub. 9–8–64. Cl. 1.
Armour Pharmaceutical Co., Chicago, Ill. 780,536, pub. 9–8–64. Cl. 6.
Army-Times Publishing Co., Washington, D.C. 780,645, pub. 9–8–64. Cl. 38.
Arrow Liqueurs Corp., Detroit, Mich. 409,723, ren. 11–24–64. Cl. 49.
Art Guild Greetings, Inc., New York, N.Y. 780,626, pub. 9–8–64. Cl. 38.
Associated Dry Goods, Inc., New York, N.Y. 780,773. Cl. 39.
Atlantic Perlite Co., Washington, D.C. 667,903, canc. Cl. 1.
Atlas Tool Co., Inc., Hillside, N.J. 780,589, pub. 9–8–64. Cl. 22.
Automated Building Components, Inc., Miami, Fla. 780,543, pub. 9–8–64. Multiple Class (Classes 12, 13, and 23).
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Bacardi & Co. Ltd., Nassau, Bahamas. 780,695, pub. 9–8–64. Cl. 48.
Backster Associates, Inc., New York, N.Y. 668,026, canc. Cl. 26.
Baker Imperial Co., Inc., New York, N.Y. 556,876, canc. Cl. 30.
Bancroft Racket Co., Pawtucket, R.I. 780,602, pub. 9–8–64. Cl. 22.
Barclay, Jas., & Co. Ltd., Peoria, Ill. 780,699, pub. 9–8–64. Cl. 49.
Barker, Arthur F., d.b.a. F. C. Barker & Co., Mesilla Park, N. Mex. 780,668, pub. 9–8–64. Cl. 46.
Barker, F. C., & Co.: *See*— Barker, Arthur F.
Barry, R. G., Corp., Columbus, Ohio. 780,771. Cl. 39.
Batamatic, Inc.: *See*— Gotham Industries, Inc.
Beal, Silas P., Jr., d.b.a. Food Service Equipment Co., Oakland, Calif. 668,043, canc. Cl. 34.
Bear Archery Co., Grayling, Mich. 780,595, pub. 9–8–64. Cl. 22.
Becker, Henry, & Son, Inc., Roseland, N.J. 668,118, canc. Cl. 46.
Beckwith, A. T.: *See*— Realy State, Inc.
Beecham Products, Inc., Clifton, N.J. 780,716–7, pub. 9–8–64. Cl. 51.
Bendix Aviation Corp., Detroit, Mich. 667,958, canc. Cl. 19.
Benrus Watch Co., to Benrus Watch Co., Inc., New York, N.Y. 409,523, ren. 11–24–64. Cl. 27.
Benrus Watch Co., Inc.: *See*— Benrus Watch Co.
Benrus Watch Co., Inc., New York, N.Y. 780,769. Cl. 27.
Bernat, Emile, & Sons Co., Jamaica Plain, Mass. 668,115, canc. Cl. 43.
Berton's, Inc., Chicago, Ill. 668,042, canc. Cl. 33.
Berube, J. Maurice, San Francisco, Calif. 780,653, pub. 9–8–64. Cl. 40.
Beta Engineering Corp., Los Angeles, Calif. 780,603, pub. 9–8–64. Cl. 22.
Big D Chemical Co., d.b.a. Le Fevre Products Co., Oklahoma City, Okla. 780,708, pub. 9–8–64. Cl. 51.
Big Jack Mfg. Co., Inc., Bristol, Va., to Blue Ridge Manufacturers, Inc., New York, N.Y. 408,073, ren. 11–24–64. Cl. 39.
Biological Research, Inc., Bridgeton, Mo. 780,537, pub. 9–8–64. Cl. 6.
Black Panther Co., Inc.: *See*— Coahoma Chemical Co., Inc.
Blanchet, Maurice, Parfums de Luxe, Societe, Societe Anonyme, Suresnes (Seine), France. 780,707, pub. 9–8–64. Cl. 51.
Bloch Bros. Tobacco Co., The, Wheeling, W. Va., to Philip Morris Inc., New York, N.Y. 361,270, canc. Cl. 17.
Blue Ridge Manufacturers, Inc.: *See*— Big Jack Mfg. Co., Inc.
Bluhill Foods, Inc., Denver, Colo. 668,117, canc. Cl. 46.
Brandenburg, Edwin H.: *See*— Anderson & Brown Co.
Brown, David A., and George Anton, d.b.a. The Brown Pharmaceutical Co., Los Angeles, Calif. 780,559, pub. 9–8–64. Cl. 18.
Brown, L. S., Co., The, d.b.a. Dixie Trading Co., Atlanta, Ga. 780,599, pub. 9–8–64. Cl. 22.
Brown Pharmaceutical Co., The: *See*— Brown, David A., and George Anton.
Bruss, Harvey H., Milwaukee, Wis. 780,731, pub. 9–8–64. Cl. 52.
Burry, George W., Elizabeth, N.J. 413,836, canc. Cl. 6.
Carbona Products Co., Long Island City, N.Y. 780,727, pub. 9–8–64. Cl. 52.
Cardinell Corp.: *See*— Cardinell, John D.
Cardinell, John D., d.b.a. Cardinell-Sales Co., to Ink-Out Mfg. Co., Inc., to Cardinell Corp., Montclair, N.J. 191,553, ren. 11–24–64. Cl. 52.
Cardinell-Sales Co.: *See*— Cardinell, John D.
Carolina Co., Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. 780,780. Cl. 52.
Carolina Soap & Candle Makers, The: *See*— Carolina Co., Inc.
Carthage Mills Inc., Carthage, Cincinnati, Ohio. 667,960, canc. Cl. 20.
Cash, Madeline E., d.b.a. "Madeline's," Canton, Ohio. 436,270, canc. Cl. 6.
Celanese Corp. of America, New York, N.Y. 409,696, ren. 11–24–64. Cl. 42.
Ceres Breweries, The: *See*— Ceres Bryggerierne A/S (Ostiydske Bryggerier A/S).
Ceres Bryggerierne A/S (Ostjydske Bryggerier A/S), d.b.a. The Ceres Breweries, Aarhus, Denmark. 780,694, pub. 9–8–64. Cl. 48.
Chamberlin Metal Products Co., Chicago, Ill. 667,984, canc. Cl. 22.
Chemagro Corp., Kansas City, Mo. 780,528, pub. 9–8–64. Cl. 6.
Chemical Products Corp., Cartersville, Ga. 780,532–3, pub. 9–8–64. Cl. 6.
Chemway Corp.: *See*— Zonite Products Co.
Chesebrough-Pond's Inc., New York, N.Y. 780,728, pub. 9–8–64. Cl. 52.
Christian Record Braille Foundation, Inc., Lincoln, Nebr. 780,642, pub. 9–8–64. Cl. 38.
Ciba Ltd., Basel, Switzerland. 780,506, pub. 9–8–64. Cl. 6.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 667,992, canc. Cl. 23.
Cities Service Oil Co.: *See*— Western Reserve Oil Co., The.
Cluett, Peabody & Co., Inc., New York, N.Y. 668,095, canc. Cl. 39.

Coahoma Chemical Co., Inc., Clarksdale, Miss. 780,495–6, pub. 10–15–63. Cl. 6.
Coahoma Chemical Co., Inc., Clarksdale, Miss., from Black Panther Co., Inc., Sanford, N.C. 780,499–500, pub. 10–1–63. Cl. 6.
Collette Toy Novelty Co., Inc., Brooklyn, N.Y. 780,604, pub. 9–8–64. Cl. 22.
Colorado Milling & Elevator Co., The, Denver, Colo 780,657, pub. 9–8–64. Cl. 46.
Columbia Products Co., Columbia, S.C. 780,567, pub. 9–8–64. Cl. 21.
Computron Inc., Waltham, Mass. 780,569, pub. 6–30–64. Cl. 21.
Conroy & Turse Co., Fort Lauderdale, Fla. 780,618, pub. 9–8–64. Cl. 29.
Consolidated Flour Mills Co., The: *See*—
Seaboard Allied Milling Corp.
Consolidated Thermoplastics Co., d.b.a. Kraloy-Chemtrol Co., Los Angeles, Calif. 780,610, pub. 9–8–64. Cl. 23.
Conte & Sons Packing Co., Palmi, Pa. 780,682, pub. 9–8–64. Cl. 46.
Continental Baking Co., Rye, N.Y. 780,661, pub. 9–8–64. Cl. 46.
Copolymer Rubber & Chemical Corp., Baton Rouge, La. 780,524–5, pub. 9–8–64. Cl. 6.
Corona-College Heights Orange & Lemon Association, Claremont, Calif. 780,687, pub. 9–8–64. Cl. 46.
Cosgenic Labs: *See*—
Nethercutt Laboratories.
Cresco Industries, Inc., Cresco, Iowa. 667,964, canc. Cl. 21.
Crown Fastener Corp., Warren, R.I. 361,404, canc. Cl. 13.
Curtis, Helene, Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 780,706, pub. 9–8–64. Cl. 51.
D & P Mfg., Inc., Clearfield, Utah. 668,001, canc. Cl. 23.
Dal Mfg. Corp., Providence, R.I. 780,586, pub. 9–8–64. Cl. 22.
Dallas Management, Inc., d.b.a. Vita-Time Corp. of America, Long Beach, Calif. 667,952, canc. Cl. 18.
Dartell Laboratories: *See*—
Dartell Laboratories, Inc.
Dartell Laboratories, Inc., d.b.a. Dartell Laboratories, Los Angeles, Calif. 780,548, pub. 9–8–64. Cl. 18.
Davis, Frank D., Co., Los Angeles, Calif. 780,513–4, pub. 9–8–64. Cl. 6.
Deacon, William T., d.b.a. Solvents and Plastics Co., St. Louis, Mo. 667,951, canc. Cl. 16.
DEB Mfg. Co., Farmington, N. Mex. 780,593, pub. 9–8–64. Cl. 22.
Decca Records Inc., New York, N.Y. 780,636, pub. 9–8–64. Cl. 38.
Denyon Piece Dyeworks, Inc., The, Kenyon, R.I. 780,744, pub. 9–8–64. Cl. 106.
De Sanno, Albert P., Jr., Phoenixville, Pa. 416,809, canc. Cl. 46.
De Schill, Stefan, New York, N.Y. 668,166, canc. Cl. 100.
Diva Laboratories, Ltd., Zurich, Switzerland. 780,556, pub. 9–8–64. Cl. 18.
Diversey Corp., The, Chicago, Ill. 780,526, pub. 9–8–64. Cl. 6.
Dixie Trading Co.: *See*—
Brown, L. S., Co., The.
Doble, Henry P., Jr., d.b.a. Maison Doble, Silver Spring, Md. 780,671, pub. 9–8–64. Cl. 46.
Doble, Maison: *See*—
Doble, Henry P., Jr.
Dominion Magnesium Ltd., Toronto, Ontario, Canada. 411,864, ren. 11–24–64. Cl. 14.
Dorn, S. James, Aliquippa, Pa. 780,596, pub. 9–8–64. Cl. 22.
Dorsett Plastics Corp., Santa Clara, Calif. 667,959, canc. Cl. 19.
Dow Chemical Co., The, Midland, Mich. 780,552, pub. 9–8–64. Cl. 18.
Drackett Co., The, Cincinnati, Ohio. 780,758. Cl. 4.
Drackett Co., The, Cincinnati, Ohio. 780,770. Cl. 29.
Drug Industries Co., Detroit, Mich. 780,550, pub. 9–8–64. Cl. 18.
Dufour, S.p.A., Genoa-Cornigliano, Italy. 780,667, pub. 9–8–64. Cl. 46.
Dunbar-Nunn Corp., Anaheim, Calif. 780,566, pub. 11–5–63. Cl. 21.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 780,484, pub. 9–8–64. Cl. 1.
Duraclean Co., Deerfield, Ill. 668,139, canc. Cl. 52.
Dweck, Salim S., New York, N.Y. 780,655, pub. 9–8–64. Cl. 42.
Eagle-Picher Co., The, Cincinnati, Ohio. 780,508, pub. 9–8–64. Cl. 6.
Economics Laboratory, Inc., St. Paul, Minn. 780,520, pub. 9–8–64. Cl. 6.
Edmont Inc., Coshocton, Ohio. 780,650, pub. 6–30–64. Cl. 39.
Eikonal Associates: *See*—
Hochgraf, Neil A.
Electric Machinery Mfg. Co., Minneapolis, Minn. 780,563, pub. 1–15–63. Cl. 21.
Electronic Secretary Industries, Inc., Waukesha, Wis. 667,982, canc. Cl. 21.
Electronic Solvents, Inc., East Orange, N.J. 668,135, canc. Cl. 52.
El-Tronics, Inc., West Warren, Pa. 731,428, canc. Cl. 21.
Endicott Johnson Corp., Endicott, N.Y. 191,710, ren. 11–24–64. Cl. 39.
Ernault-Batignolles, H., S.A., Paris, France. 668,009, canc. Cl. 23.
Eugen Bauer Gesellschaft mit Beschraenkter Haftung, Stuttgart-Unterturkheim, Germany. 668,013, canc. Cl. 26.
Ever-Ready Automatic Burglar Alarm Co. Inc., New York, N.Y. 780,734, pub. 9–8–64. Cl. 100.
FMC Corp.: *See*—
Powell, John, & Co., Inc.
F & M Scientific Corp., near Avondale, Pa. 780,614, pub. 8–27–63. Cl. 26.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 410,780–3, ren. 11–24–64. Cl. 38.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., N.Y. 411,213, ren. 11–24–64. Cl. 38.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 411,283, ren. 11–24–64. Cl. 38.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 411,587, ren. 11–24–64. Cl. 38.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 412,195–6, ren. 11–24–64. Cl. 38.
F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 412,561, ren. 11–24–64. Cl. 38.
Faberge, Inc., from Faberge, Inc., New York, N.Y. 780,711, pub. 9–8–64. Cl. 51.
Fairmont Foods Co., Omaha, Nebr. 780,675, pub. 9–8–64. Cl. 46.
Fairy Silk Mills, Shillington, Pa., and New York, N.Y. 361,480, canc. Cl. 39.
Farmer's Best Foods: *See*—
Klayman, Louis H.
Federal Products Corp., Providence, R.I. 780,615, pub. 12–3–64. Cl. 26.
Fidelco Breeders Foundation, Inc., The, Bloomfield, Conn. 780,747, pub. 9–8–64. Cl. 107.
Fischer, Heinrich, d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. 780,725, pub. 9–8–64. Cl. 52.
Fischer, Heinrich, & Co.: *See*—
Fischer, Heinrich.
Fisher, Stanton E., St. Louis, Mo. 780,573–4, pub. 9–8–64. Cl. 22.
Flavaroma Laboratories, Inc., Chicago, Ill. 668,160, canc. Cl. 46.
Flavor Corp. of America, Chicago, Ill. 780,515, pub. 9–8–64. Cl. 6.
Fleming Co., Inc., The, Topeka, Kans. 780,660, pub. 10–29–63. Cl. 46.
Food Service Equipment Co.: *See*—
Beal, Silas P., Jr.
Forstmann & Huffman Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 193,198–9, ren. 11–24–64. Cl. 42.
"42" Products, Ltd., Inc., Santa Monica, Calif. 780,715, pub. 9–8–64. Cl. 51.
Frank, A. B., Co., San Antonio, Tex. 204,547, canc. Cl. 39.
Franklin, Herbert D., Chicago, Ill. 780,490, pub. 9–8–64. Cl. 3.
Franzia Bros. Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. 780,689, pub. 9–8–64. Cl. 47.
Freedman, David, and Co., Inc., El Centro, Calif. 687,676, canc. Cl. 46.
Frigikar Corp., Dallas, Tex. 780,560, pub. 4–2–63. Cl. 19
Fritzsche Bros., Inc., New York, N.Y. 780,521, pub. 9–8–64. Cl. 6.
Fruehauf Corp., Detroit, Mich. 780,562, pub. 6–2–64. Cl. 19.
Fuchs, Bruder: *See*—
Fuchs, Viktor.
Fuchs, Victor, d.b.a. Bruder Fuchs, Berlin, Germany. 780,656, pub. 4–30–64. Cl. 44.
Fuller, D. B., & Co. Inc., New York, N.Y. 668,112–13, canc. Cl. 42.
Fuller, W. P., & Co., San Francisco, to Hunt Foods and Industries, Inc., Fullerton, Calif. 190,750–1, ren. 11–24–64. Cl. 16.
Gale Products, Inc., Baltimore, Md. 780,705, pub. 9–8–64. Cl. 51.
General Aniline & Film Corp.: *See*
Grant Photo Products, Inc.
General Baking Co., New York, N.Y. 780,677, pub. 9–8–64. Cl. 46.
General Foods Corp., White Plains, N.Y. 780,686, pub. 9–8–64. Cl. 46.
General Gas Corp., to Tuloma, Inc., Baton Rouge, La. 527,784, new cert. Cl. 6.
General Tire & Rubber Co., The, Akron, Ohio 780,487, pub. 9–8–64. Cl. 1.
General Tire & Rubber Co., The, Akron, Ohio. 780,498, pub. 9–8–64. Cl. 6.
Georgia-Pacific Corp., Portland, Oreg. 780,507, pub. 9–8–64. Cl. 6.
Getz Bros. & Co., to Getz Bros. & Co. (U.S.), San Francisco, Calif. 660,707, new cert. Cl. 12.
Getz Bros & Co. (U.S.): *See*—
Getz Bros. & Co.
Gilbert, James A., St. Louis, Mo. 780,746, pub. 9–8–64. Cl. 107.
Gildesgame Corp., New York, N.Y. 668,087, canc. Cl. 39.
Glassman Enterprises: *See*—
Glassman, Jacob A.
Glassman, Jacob A., d.b.a. Glassman Enterprises, Miami Beach, Fla. 780,578, pub. 9–8–64. Cl. 22.
Globe Roofing Products Co. Inc., Chicago, Ill. 361,489, canc. Cl. 12.
Globe-Union Inc., Milwaukee, Wis. 775,268, canc. Cl. 21.
Golf Informer: *See*—
Wasley, Roy E.
Gorton-Pew Fisheries Co., Ltd., to Gorton's of Gloucester, Inc., Gloucester, Mass. 411,843, ren. 11–24–64. Cl. 46.
Gorton's of Gloucester, Inc.: *See*—
Gorton-Pew Fisheries Co., Ltd.
Gotham Industries, Inc., Norwalk, from Batamatic, Inc., Los Angeles, Calif. 780,577, pub. 9–8–64. Cl. 22.
Grant Photo Products, Inc., to General Aniline & Film Corp., New York, N.Y. 409,074, ren. 11–24–64. Cl. 26.
Green Giant Co.: *See*—
Sterling Industries Inc.
Grellier, Nancy C., and Arthur W. Grellier, d.b.a. The Want Advertiser, Sudbury, Mass. 780,638, pub. 9–8–64. Cl. 38.

Gulf Oil Corp., Pittsburgh, Pa., from Spencer Chemical Co., Kansas City, Mo. 780,541, pub. 9–8–64. Cl. 10.
Hagerstown Leather Goods Co., Hagerstown, Md. 668,146, canc. Cl. 3.
Halifax Distributing Co.: *See*—
Sternberg, Bela.
Haloid Co., The: *See*—
Xerox Inc.
Hardman Tool & Engineering Co., Los Angeles, Calif. 668,037, canc. Cl. 32.
Hardy Salt Co., St. Louis, Mo. 780,763. Cl. 23.
Harlequin Books Ltd., Winnipeg, Manitoba, Canada. 780,637, pub. 9–8–64. Cl. 38.
Harlequin Books Ltd., Winnipeg, Manitoba, Canada. 780,646, pub. 9–8–64. Cl. 38.
Harper, I. W., Distilling Co.: *See*—
Schenley Distillers, Inc.
Hearst Corp., The, New York, N.Y. 668,072, canc. Cl. 38.
Helleman, G., Brewing Co., La Crosse, Wis. 780,691–2, pub. 9–8–64. Cl. 48.
Hercules Powder Co., Wilmington, Del. 780,518–19, pub. 9–8–64. Cl. 6.
Hertz Music-All Instrument Co., Newark, N.J. 668,052, canc. Cl. 36.
Hobart Mfg. Co., The, Troy, Ohio. 780,761. Cl. 21.
Hochgraf, Neil A., d.b.a. Eikonal Associates, Rochester, N.Y. 780,733, pub. 9–8–64. Cl. 100.
Hodges, Donald W., d.b.a. Hodges Industries, Des Moines, Iowa. 780,640, pub. 9–8–64. Cl. 38.
Hodges Industries: *See*
Hodges, Donald W.
Hoffman, F. W., & Co., Inc., Philadelphia, Pa. 668,136, canc. Cl. 52.
Holst Knudsen, S., New York, N.Y. 317,841, canc. Cl. 46.
Holst Knudsen, S., New York, N.Y. 322,616, canc. Cl. 46.
Homar Agricultural Chemicals, Wichita, Kans. 651,040, canc. Cl. 6.
Homar Agricultural Chemicals, Wichita, Kans. 651,627, canc. Cl. 6.
Home Library Press: *See*—
Parents' Magazine Enterprises, Inc.
Horder's, Inc., Chicago, Ill. 667,924, canc. Cl. 11.
Horrocks Ibbotson Co., Utica, N.Y. 780,572, pub. 9–8–64. Cl. 22.
Household Inventions Syndicate, Calgary, Alberta, Canada 667,912, canc. Cl. 2.
Hubbuck, Thomas, & Son, London, England. 15,694, canc. Cl. 16.
Hunt, Charles M., Jr., d.b.a. Smallcraft, Lake Wales, Fla. 668,149 canc. Cl. 19.
Hunt Foods and Industries, Inc.: *See*—
Fuller, W. P., & Co.
Hy-Dry Food Products, Inc., Centuria, Wis., and Chicago, Ill. 410,959, canc. Cl. 46.
Hysan Products Co., Chicago, Ill. 780,722, pub. 9–8–64. Cl. 51.
Icy-Hot Bottle Co. of Cincinnati, Ohio: *See*—
Icy-Hot Bottle Co., The.
Icy-Hot Bottle Co., The, to The Icy-Hot Bottle Co. of Cincinnati, Ohio, Cincinnati, Ohio, to King-Seeley Thermos Co., Ann Arbor, Mich. 195,461, ren. 11–24–64. Cl. 33.
Idea Group, The, Larchmont, N.Y. 780,639, pub. 9–8–64. Cl. 38.
Idaho Potato Processors, Inc., Burley, Idaho. 780,658, pub. 9–8–64. Cl. 46.
Imperial Baker Co., Brooklyn, N.Y. 435,873, canc. Cl. 30.
Imperial Chemical Industries Ltd., London, England. 780,555, pub. 9–8–64. Cl. 18.
Indo-American Seafood Corp., New York, N.Y. 780,669, pub. 9–8–64. Cl. 46.
Insul-8-Corp., San Carlos, Calif. 667,973, canc. Cl. 21.
Internationale Bloghurt Gesellschaft J. Schwaiger & Co., Darmstadt-Erzhausen, Germany. 780,679, pub. 9–8–64. Cl. 46.
Ithaca Gun Co., Inc., Ithaca, N.Y. 780,538, pub. 9–8–64. Cl. 9.
J & J Mfg. & Sales Corp., San Marino, Calif. 667,998, canc. Cl. 23.
Jaffe, A., & Son, Inc., New York, N.Y. 780,616, pub. 1–8–63. Cl. 28.
Jefferson Electric Co., Bellwood, Ill. 780,762. Cl. 21.
Jenkins, George O., Co., Bridgewater, Mass. 780,488, pub. 9–8–64. Cl. 1.
Jerrold Electronics Corp., Philadelphia, Pa. 667,979, canc. Cl. 21.
Johnson, Buck: *See*—
Johnson, Clinton G.
Johnson Canning Co., to Willa L. Johnson, Biloxi, Miss. 237,826, new cert. Cl. 46.
Johnson, Clinton G., d.b.a. Buck Johnson, St. Cloud, Minn. 780,601, pub. 9–8–64. Cl. 22.
Johnson, J. Oliver, Seed Co., Chicago, Ill. 667,900, canc. Cl. 1.
Johnson Publishing Co., Inc., Chicago, Ill. 780,720, pub. 9–8–64. Cl. 51.
Johnson, S. C., & Son, Inc., Racine, Wis. 780,726, pub. 9–8–64. Cl. 52.
Johnson, Willa L.: *See*—
Johnson Canning Co.
Kahn, David, Inc., North Bergen, N.J. 412,441, ren. 11–24–64. Cl. 37.
Kan Foods, Inc., from Victory Packing Co., Los Angeles, Calif. 668,159, canc. Cl. 46.
Kay-Fries Chemicals, Inc., West Haverstraw, N.Y. 780,534, pub. 9–8–64. Cl. 6.
Kaynee Co., The, Cleveland, Ohio. 668,105, canc. Cl. 39.
Kayser-Roth Corp.: *See*—
Mojud Hosiery Co., Inc.
Kent Industries, Inc., Detroit, Mich. 780,493, pub. 9–8–64. Multiple Class (Classes 4, 5, 6, 12, 15, 16, and 52).
Kent and Thanet Casinos Ltd., Broadstairs, Kent, England. 780,587, pub. 9–8–64. Cl. 22.
King-Seeley Thermos Co.: *See*—
Icy-Hot Bottle Co., The.
Kinney & Co., Inc., Columbus, Ind. 780,547, pub. 12–31–63. Cl. 18.
Klayman, Louis H., d.b.a. Farmer's Best Foods, Tyler, Tex. 780,673–4, pub. 9–8–64. Cl. 46.
Koninklijke Verkade Fabrieken N.V., Zaandam, Netherlands. 780,680, pub. 9–8–64. Cl. 46.
Kraft-Phenix Cheese Corp., Chicago, Ill. 319,961, canc. Cl. 46.
Kraloy-Chemtrol Co.: *See*—
Consolidated Thermoplastics Co.
Laganas, Chris, Shoe Co., Lowell, Mass. 668,090, canc. Cl. 39.
La Madrilena, S.A., Mexico City, Mex. 780,698, pub. 9–8–64. Cl. 49.
Lancaster Valite, Inc., Lancaster, Pa. 780,483, pub. 9–8–64. Cl. 1.
Larousse Inc., New York, N.Y. 780,714, pub. 9–8–64. Cl. 51.
La Velle Laboratories, Inc., Oklahoma City, Okla. 780,718, pub. 9–8–64. Cl. 51.
Lawrence, A. C., Leather Co.: *See*—
Swift & Co.
Lectro-Stik Co., Chicago, Ill. 780,494, pub. 2–18–64. Cl. 5.
Le Fevre Products Co.: *See*—
Big D Chemical Co.
Lentheric: *See*—
Curtis, Helene, Industries, Inc.
Les Maitres Biscottiers Reunis, Paris, France. 780,664, pub. 9–8–64. Cl. 46.
Level, Donald E., d.b.a. Metal Mate Chemical Co., from Metal Mate Chemical Co., St. Louis, Mo. 667,915, canc. Cl. 6.
Life Lift Corp., Marion, Ohio. 668,080, canc. Cl. 39.
Lonergan, J. E., Co., Philadelphia, Pa. 668,015, canc. Cl. 26.
Look, Nevers, Nievre, France. 780,579, pub. 9–8–64. Cl. 22.
Luclous Cheese Co., Allegan, Mich. 780,662, pub. 9–8–64. Cl. 46.
Ludlow Mfg. & Sales Co., Needham, Mass. 668,116, canc. Cl. 43.
M.F.A. Oil Co., Columbia, Mo. 734,433, canc. Cl. 15.
"Madeline's": *See*—
Cash, Madeline E.
Magnetic Holding Devices, Inc.: *See*—
Anderson & Brown Co.
Mail Order Club of Amercia: *See*—
Premium Club of America, Inc., The.
Mallory Hat Co., The, Danbury, Conn., to John B. Stetson Co., Philadelphia, Pa. 192,606, ren. 11–24–64. Cl. 39.
Manhattan Shirt Co., The, New York, N.Y. 668,085, canc. Cl. 39.
Mantz, Ernest G., d.b.a. Ernest G. Mantz Associates, Dallas, Tex. 780,631, pub. 9–8–64. Cl. 38.
Mantz, Ernest G., Associates: *See*—
Mantz, Ernest G.
Marie's, Seattle, Wash. 780,774. Cl. 46.
Markham, Jean A., Canoga Park, Calif. 780,703, pub. 9–8–64. Cl. 50.
Mars Products Corp., Tampa, Fla. 780,509, pub. 9–8–64. Cl. 6.
Martens Chemical Corp., College Point, N.Y. 780,510, pub. 9–8–64. Cl. 6.
Martha Maid Mfg. Co., Chicago, Ill. 780,772. Cl. 39.
Martini & Rossi Corp., New York, N.Y. 780,688, pub. 9–8–64. Cl. 47.
Marx, Louis, & Co. Inc., New York, N.Y. 780,580, pub. 9–8–64. Cl. 22.
Masury-Young Co., Boston, Mass. 780,516, pub. 9–8–64. Cl. 6.
Masury-Young Co., Boston, Mass. 780,730, pub. 9–8–64. Cl. 52.
Mattel, Inc., Hawthorne, Calif. 780,598, pub. 9–8–64. Cl. 22.
May Dept. Stores Co., The, New York, N.Y., Akron, Ohio, Baltimore, Md., Cleveland Ohio, Denver, Colo., Los Angeles, Calif., and St. Louis, Mo. 357,198, canc. Cl. 42.
Mayer, A. G., Inc., Brooklyn, N.Y. 780,491, pub. 9–8–64. Cl. 3.
Meat Industry Suppliers, Inc., Northfield, Ill. 780,685, pub. 9–8–64. Cl. 46.
Merck & Co., Inc., Rahway, N.J. 780,546, pub. 9–8–64. Cl. 18.
Met Provisions, Inc., Jamaica, N.Y. 780,666, pub. 9–8–64. Cl. 46.
Metal Mate Chemical Co.: *See*—
Level, Donald E.
Meyer, Leo and Robert, King City, Calif. 780,672, pub. 9–8–64. Cl. 46.
Middlebrooke Lancaster, Inc., Brooklyn, N.Y. 405,270, ren. 11–24–64. Cl. 51.
Middletown Co., The, Chicago, Ill. 780,721, pub. 9–8–64. Cl. 51.
Milewski, Walter C., Camp Hill, Pa. 780,600, pub. 9–8–64. Cl. 22.
Miller, Herman, Inc., Zeeland, Mich. 780,701–2, pub. 9–8–64. Cl. 50.
Miller-Parrott Baking Co., Inc.: *See*—
United States Baking Co., Inc.
Millers Falls Co., Greenfield, Mass. 780,611, pub. 7–21–64. Cl. 23.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 409,360, ren. 11–24–64. Cl. 4.
Minnesota Mutual Life Insurance Co., The, St. Paul, Minn. 780,740, pub. 9–8–64. Cl. 102.
Minser Tackle Co.: *See*—
Minser, William D.
Minser, William D., d.b.a. Minser Tackle Co., Port Angeles, Wash. 780,575, pub. 9–8–64. Cl. 22.

Missouri National Life Insurance Co., Kansas City, Mo. 780,741, pub. 9–8–64. Cl. 102.
Mojud Hosiery Co., Inc., Long Island City, to Kayser-Roth Corp., New York, N.Y. 411,467, ren. 11–24–64. Cl. 39.
Molina, Vittorio, Novara, Italy. 780,545, pub. 9–8–64. Cl. 18.
Monarch Press, Inc., New York, N.Y. 780,643, pub. 9–8–64. Cl. 38.
Monroe Calculating Machine Co.: *See*—
Monroe International Corp.
Monroe International Corp., from Monroe Calculating Machine Co., Orange, N.J. 780,767. Cl. 26.
Monsanto Chemical Co.: *See*—
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Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 780,535, pub. 9–8–64. Cl. 6.
Morton, Alexander, d.b.a. National Dog Derby, Hollywood, Fla. 780,745, pub. 9–8–64. Cl. 107.
Moss & Lowenhaupt Cigar Co., St. Louis, Mo., to Universal Cigar Corp., New York, N.Y. 189,043, ren. 11–24–64. Cl. 17.
Murphy, John P., Jr., d.b.a. Phil Murphy and Associates, Chicago, Ill. 780,625, pub. 9–8–64. Cl. 38.
Murphy, Phil, and Associates: *See*—
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Murry's Steaks, Inc., Alexandria, Va. 780,665, pub. 9–8–64. Cl. 46.
N & W Industries, Inc., Lynchburg, Va. 668,091, canc. Cl. 39.
Nagl, Joseph, Jr., Scarsdale, N.Y. 780,588, pub. 9–8–64. Cl. 22.
National Board of The Young Men's Christian Associations, New York, N.Y. 780,750–6, pub. 9–8–64. Cl. 200.
National Casket Co., New York, N.Y. 120,210, canc. Cl. 2.
National Dairy Products Co., Inc., to National Dairy Products Corp., New York, N.Y. 409,253, ren. 11–24–64. Cl. 46.
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National Dairy Products Co., Inc.
National Dog Derby: *See*—
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National Grinding Wheel Co., Inc., North Tonawanda, N.Y. 780,757. Cl. 4.
National Lead Co., New York, N.Y. 410,747, ren. 11–24–64. Cl. 12.
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N'Land Industries, Inc., Lewiston, Idaho. 668,016, canc Cl. 26.
Norcross, Inc., New York, N.Y. 780,624, pub. 9–8–64. Cl. 38.
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Ohio Art Co., The, Bryan, Ohio. 780,594, pub. 9–8–64. Cl. 22.
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Outboard Marine Corp., Waukegan, Ill. 780,561, pub. 12–10–63. Multiple Class (Classes 19 and 23).
Oxford International Corp., Highland Park, Ill. 667,970, canc. Cl. 21.
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Parents' Magazine Enterprises, Inc., from Stravon Publishers, d.b.a. Home Library Press, New York, N.Y. 780,627, pub. 6–23–64. Cl. 38.
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Sterneo Industries, Inc., Allendale, N.J. 780,492, pub. 9–8–64. Cl. 3.
Sterneo Industries, Inc., Allendale, N.J. 780,613, pub. 9–8–64. Cl. 23.
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Stravon Publishers: *See*—
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Sun Control Awnings, Inc., Southfield, Mich. 780,759. Cl. 12.
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Symington-Wayne Corp., from The Wayne Pump Co., Salisbury, Md. 668,025, canc. Cl. 26.
Syncro-Mist Controls, Inc., New York, N.Y. 780,527, pub. 9–8–64. Cl. 6.
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United Newspapers Magazine Corp., New York, N.Y. 668,067–8, canc. Cl. 38.
United States Baking Co., Inc., from Miller-Parrott Baking Co., Inc., Terre Haute, Ind. 780,684, 9–8–64. Cl. 46.
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Unitek Corp., Monrovia, Calif. 780,619, pub. 7–28–64. Cl. 34.
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Universal Screen Co., Inc., Clinton, Mass. 668,011, canc. Cl. 26.
Upjohn Co., The, Kalamazoo, Mich. 780,531, pub. 9–8–64. Cl. 6.
Upjohn Co., The, Kalamazoo, Mich. 780,558, pub. 9–8–64. Cl. 18.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 780,517, pub. 9–8–64. Cl. 6.
Varney Chemical Corp., Janesville, Wis. 780,497, pub. 9–8–64. Cl. 6.
Vernon, S. E. & M., Inc., New York, N.Y. 780,622, pub. 1–1–63. Cl. 37.
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Vita-Time Corp. of America: *See*—
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Viva Laboratories, Inc., Horsham, Pa. 780,551, pub. 9–8–64. Cl. 18.
Walk, J. C., & Co., St. Louis, Mo. 780,570, pub. 9–8–64. Cl. 22.
Walker, Crosweller & Co. Ltd., Cheltenham, England. 407,881, ren. 11–24–64. Cl. 26.
Walker, Frank R., Co., Chicago, Ill. 780,628, pub. 9–8–64. Cl. 38.
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Wallace Silversmiths, Inc., Wallingford, Conn. 668,006, canc. Cl. 23.
Want Advertiser, The: *See*—
Grellier, Nancy C. and Arthur W. Grellier.
Washburne Research and Mfg. Inc., Bath, Ohio. 780,582, pub. 9–8–64. Cl. 22.
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West Penn Screen Service, Inc., Pittsburgh, Pa. 780,512, pub. 9–8–64. Cl. 6.
Western Airlines, Inc., Los Angeles, Calif. 780,635, pub. 9–8–64. Cl. 38.
Western Reserve Oil Co., The, Cleveland, Ohio, to Cities Service Oil Co., Tulsa, Okla. 190,743, ren. 11–24–64. Cl. 15.
Western Velo & Cement Specialties Co., Los Angeles, Calif. 746,381, canc. Cl. 105.
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Windsor Pen Corp., Brooklyn, N.Y. 780,623, pub. 7–7–64. Cl. 37.
Woman's International Bowling Congress, Inc., Columbus, Ohio. 780,735, pub. 9–8–64. Cl. 100.
Wood Treating Chemicals Co., St. Louis, Mo. 780,522, pub. 9–8–64. Cl. 6.
Wyandotte Chemicals Corp., Wyandotte, Mich. 780,505, pub. 12–31–63. Cl. 6.
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Yonson Foods, Inc., Belmont, Calif. 780,775. Cl. 46.
York Lighting, Inc., York, Pa. 780,565, pub. 10–1–63. Cl. 21.
Zonite Products Co., New York, N.Y., to Chemway Corp., Wayne, N.J. 195,722, ren. 11–24–64. Cl. 6.

U.S. GOVERNMENT PRINTING OFFICE 0—1964

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 1, 1964 Volume 809 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1964

Examiner affirmed	271
Examiner affirmed in part	57
Examiner reversed	105
Total	433

Failure To Perfect Appeal to CCPA

If appeal is taken to the United States Court of Customs and Patent Appeals following an adverse decision of the Board of Appeals and no claims stand allowed, failure to file the record on time (CCPA Rule 25) results in termination of proceedings as of the expiration date for appeal to the court. Rule 197(c).

This is called to the attention of the Examiners because continuity under 35 U.S.C. 120 between such an application and another may be lost.

RICHARD A. WAHL,
Acting Superintendent
Patent Examining Corps

Nov. 4, 1964.

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

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C. A. KALK,
November 9, 1964. *Director of Administration.*

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C. A. KALK,
November 9, 1964. *Director of Administration.*

New Applications Received During October 1964

Patents	7,287
Designs	453
Plant Patents	15
Reissues	16
Total	7,771

Issue—December 1, 1964

Patents	976—No.	3,158,867 to No.	3,159,842, incl.
Designs	64—No.	199,661 to No.	199,724, incl.
Plant Patents	7—No.	2,455 to No.	2,461, incl.
Reissues	4—No.	25,691 to No.	25,694, incl.
Total	1051		

Foreign Patents Received in the Scientific Library as of Oct. 31, 1964

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Oct. 21, 1964	46,929
(*Patents*)	Sept. 11, 1964	249,652
Austria	Oct. 16, 1964	236,050
Belgium	Oct. 16, 1962	573,100
Canada	Oct. 30, 1964	696,910
Czechoslovakia	Oct. 16, 1964	111,400
Denmark	Sept. 10, 1964	98,550
East Germany	Oct. 23, 1964	32,338
Egypt	Jan. 30, 1964	4,326
Finland	June 18, 1964	33,502
France:		
(*Patents*)	Oct. 19, 1964	1,363,650
(*Additions*)	Oct. 8, 1964	83,100
(*Medicaments*)	Oct. 19, 1964	2,000 M
(*Additions*)	May 4, 1964	23 CAM
Germany:		
(*Auslegeschriften*)	Oct. 9, 1964	1,175,620
(*Patents*)	Oct. 9, 1964	1,163,218
Great Britain	Oct. 28, 1964	972,080
India	Oct. 15, 1964	86,939
Ireland	Mar. 5, 1964	23,892
Italy	Apr. 25, 1963	616,900
Japan	Oct. 20, 1964	20,380/64
Netherlands	Oct. 27, 1964	109,524
Norway	Oct. 19, 1964	104,487
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Oct. 26, 1964	48,460
Rumania	Oct. 6, 1964	42,611
Sweden	Oct. 7, 1964	190,879
Switzerland	Oct. 21, 1964	381,175
U.S.S.R.	Oct. 13, 1964	163,546

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: Missing 1–10,000
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate: antacid
Ambuphylline: Diuretic—myocardial stimulant
Aminacrine hydrochloride: bacteriostatic agent
Ampyzine sulfate: euphoriant
Anisacril: hypocholesteremic and anoretic agent
Anthelmycin: anthelmintic antibiotic
Benorterone: antiandrogen
Butacetin: analgesic agent
Calcium trisodium pentetate: heavy metal antagonist
Cetalkonium chloride: antibacterial agent
Clometherone: anti-estrogen
Clorethate: sedative and hypnotic
Clothixamide: tranquilizer
Codoxime: antitussive
Dactinomycin: antitumor agent
Diohippuric acid I 131: radiopharmaceutical
Doxepin hydrochloride: antipruritic
Fenclorethate: analgesic and sedative
Furosemide: diuretic
Hydroxyhexamide: hypoglycemic agent
Iprindole: antidepressant
Mequinolate: poultry coccidiostat
Metaproterenol sulfate: bronchodilator
Metoclopramide hydrochloride: antiemetic
Metrogestone: oral progestin
Modaline sulfate: antidepressant
Norbolethone: anabolic agent
Oxamarin hydrochloride: systemic hemostat
Oxolinic acid: antiproteus agent
Perhexiline maleate: coronary vasodilator
Phenyl aminosalicylate: tuberculostatic agent
Piperamide maleate: antiparasitic
Polyoxyl 8 stearate: surface active agent
Polyoxyl 40 stearate: surface active agent
Polysorbate 20: surface active agent
Polysorbate 40: surface active agent
Polysorbate 60: surface active agent
Polysorbate 65: surface active agent
Polysorbate 80: surface active agent
Polysorbate 85: surface active agent
Rolodine: muscle relaxant
Septiphene: disinfectant
Silodrate: antacid
Sodium amylosulfate: peptic ulcer therapy
Sodium etoquinol: treatment of flash burns (ophthalmic)
Sorbitan monolaurate: surface active agent
Sorbitan monooleate: surface active agent
Sorbitan monopalmitate: surface active agent
Sorbitan monostearate: surface active agent
Sorbitan sesquioleate: surface active agent
Sorbitan trioleate: surface active agent
Sorbitan tristearate: surface active agent
Sulfanitran: antibacterial agent
Testolactone: antineoplastic agent
Thiamiprine: anti-leukemic
Thydromedan: lipid mobilizer and thyromimetic
Triampyzine sulfate: anti-secretory agent

Adjudicated Patents

(C.A. Tex.) Woodyard Patent No. 2,530,110 (317—230), for nonlinear circuit device utilizing germanium. Claim 10 *Held* invalid and not infringed. *Sperry Rand Corp.* v. *Texas Instruments Inc.*, 335 F.2d 922; 142 USPQ 411.

(C.A. Ga.) Merry Patent No. 2,614,474 (172—43), for walking cultivator. Claims 1, 2, and 7 to 9 *Held* invalid. *Merry Manufacturing Co.* v. *Burns Tool Co.*, 335 F.2d 239; 142 USPQ 342.

(C.A. Tex.) Morlan, Scott and Woods Patent No. 2,687,875 (175—374), for well drill, *Held* valid but not infringed. *Hughes Tool Co.* v. *Varel Mfg. Co.*, 336 F.2d 61; 142 USPQ 407.

(C.A. Minn.) Miller Patent No. 2,740,896 (250—65), for method for using heat sensitive copying paper, *Held* valid but not infringed. *Ditto Inc.* v. *Minnesota Min. & Mfg. Co.*, 336 F.2d 67; 142 USPQ 416.

(C.A. Tex.) Reese Patent No. 2,762,393 (92—11), for differential pressure responsive device. Claim 6 *Held* invalid. *Industrial Instrument Corp.* v. *Foxboro Co.* 335 F.2d 123; 142 USPQ 341.

(C.A. Tex.) Morlon Patent No. 2,774,570 (175—374), for oil well drilling bits, *Held* invalid. *Hughes Tool Co.* v. *Varel Mfg. Co.*, 336 F.2d 61; — USPQ —.

(C.A. Tex.) Cunningham Patent No. 2,774,571 (175—341), for cone type well drill, *Held* invalid. *Hughes Tool Co.* v. *Varel Mfg. Co.*, 336 F.2d 61; 142 USPQ 407.

(C.A. Mo.) Scoggin Patent No. 2,870,943 (222—182), for pump type liquid sprayer having hold cap. Claims 1 and 2 *Held* valid and infringed. *Calmar Inc.* v. *Cook Chemical Co.*, 336 F.2d 110; 142 USPQ 412.

(C.A. Mass.) Gilbride and Rockwell Patent No. 2,926,367 (12—12.4), for machines for shaping uppers over lasts. Claims 3, 4, 9 to 12, 17 to 20, 25 to 27, 29 to 31, 33 and 34 *Held* valid. *United Shoe Machinery Corp.* v. *Industrial Shoe Machinery Corp.*, 335 F.2d 577; 142 USPQ 181.

(C.A. Mass.) Gilbride Patent No. 2,986,753 (12—8.2), for toe lasting machine. Claims 1 to 6 *Held* invalid. *Id.*

(C.A. Mass.) Gray and Johnson Patent No. 3,061,852 (12—7.1), for combined wiper and knife for operating on shoes. Claims 1, 2, 5 and 6 *Held* invalid. *Id.*

Patents Available for Licensing or Sale

2,551,149. Reel. Mrs. Clarence McCampbell, 19301 Parkmount Ave., Cleveland, Ohio, 44135.

3,152,812. Roller Skate. Roger M. Cummings, 410 E. 4th St., York, Nebr.

3,137,523. Air Conditioned Seat. Frank Karner, East Riverdale, Md. Correspondence to: Burns, Doane, Benedict, Swecker & Mathis, 850 Munsey Bldg., Washington, D.C.

General Electric Company is prepared to grant non-exclusive licenses under the following 19 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

2,468,544. Stabilized Halogenated Compositions and Electrical Devices.

3,099,828. Protective Circuitry and Indicating Means for Rectifier Systems.

Applications for license under the following 2 patents may be addressed to: General Electric Company, Patent Counsel, Chemical and Metallurgical Division, 1 River Road, Schenectady, N.Y., 12305.

3,116,182. Magnets.

3,116,254. Method of Making Magnets.

Applications for license under the following 15 patents may be addressed to: Patent Counsel, Major Appliance Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

2,991,018. Noise Reduction of Food Waste Disposers.

3,126,616. Method of Manufacturing a Thermoelectric Assembly.

3,131,981. Door Mechanism for Convertible Oven.

3,137,226. Air Conditioning Unit.

3,141,622. Appearance Cover for Food Waste Disposer.

3,141,713. Combination Latch and Interlock System.

3,142,295. Installation Means for Built-In Range.

3,142,448. Combined Stopper and Control Means for Waste Disposal Apparatus.

3,143,272. Top Lifting Carton.

3,143,638. Convertible Drawer Oven.

3,145,881. Constant Temperature-Constant Volume Measuring Tank.

3,146,045. Front Opening Dishwasher With Improved Rack Arrangement.

3,150,904. Anti-Tip Device.

3,150,905. Anti-Tip Device.

3,151,612. Oven Viewing Window for Domestic Range.

Disclaimers

2,893,261.—*George E. Flinn*, Muncie, Ind. TRANSMISSION. Patent dated July 7, 1959. Disclaimer filed Aug. 26, 1959. Disclaimer filed Aug. 26, 1964, by the assignee, *Borg-Warner Corporation*.

Hereby enters this disclaimer to claims 1, 2, 3 and 9 of said patent.

2,926,543.—*John W. Holdeman* and *Sam Dabich*, Detroit, Mich. TRANSMISSION CONTROLS. Patent dated Mar. 1, 1960. Disclaimer filed Aug. 26, 1964, by the assignee, *Borg-Warner Corporation*.

Hereby enters this disclaimer to claims 3, 14, 18, 19 and 25 of said patent.

2,939,557.—*Sam Dabich* and *John B. Polomski*, Detroit, Mich. TRANSMISSION MECHANISM. Patent dated June 7, 1960. Disclaimer filed Aug. 26, 1964, by the assignee, *Borg-Warner Corporation*.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

2,961,556.—*Henry E. Vance*, Fort Wayne, Ind. STATOR CORE MEMBERS FOR DYNAMOELECTRIC MACHINES. Patent dated Nov. 22, 1960. Disclaimer filed Aug. 17, 1964, by the assignee, *General Electric Company*.

Hereby enters this disclaimer to claims 1 and 3 of said patent.

3,014,591.—*Aidan M. Stone* and *Joseph C. Worst*, Louisville, Ky. LAUNDRY MACHINE. Patent dated Dec. 26, 1961. Disclaimer filed Sept. 2, 1964, by the assignee, *General Electric Company*.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

3,123,587.—*Milton J. Hogsed*, Kinston, N.C. POLYESTER WASH-WEAR FABRIC. Patent dated Mar. 3, 1964. Disclaimer filed Aug. 20, 1964, by the assignee, *E. I. du Pont de Nemours and Company*.

Hereby enters this disclaimer to claims 1 and 5 of said patent.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

The List Below Reflects the Oldest Actual Filing Dates for Cases Awaiting Action; In Column 1 (New) and Column 2 (Amended)

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	5- 4-56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11-30-62	6- 1-54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	12- 5-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	2-26-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	3-11-57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-16-62	4- 9-56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	9-24-57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	8- 1-60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	1-28-54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	7-17-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	6-13-58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4- 5-56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	1- 2-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	12- 6-62	11-22-57

Total number of pending applications (excluding Designs)	210,072
Total number of Design applications pending	5,779
Total number of applications awaiting action (excluding Designs)	136,426
Total number of Design applications awaiting action	2,506
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to abortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents	Numbers 2,431,670 to 2,433,823, inclusive
Plant Patents	Numbers 768 to 773, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	(1) New	(2) Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner. Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner. Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner. Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner. Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner. Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner. Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner. Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner. Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-25-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner. Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ROY F. LO PRESTI AND JEROME C. SALMONS

No. 7159. Decided July 13, 1964

[51 CCPA —; 333 F.2d 932; 142 USPQ 176]

1. PATENTABILITY—REFERENCES—COPENDING PATENT—EARLIER FILED COPENDING PATENT IS PRIOR ART—35 U.S.C. 102(e).

"The Craggs and McCann patent issued on their application whose effective filing date is two days prior to the filing date of appellants' parent application. It is, therefore, 'an application for patent by another' and as such is prior art as expressly provided in 35 U.S.C. 102(e)."

2. SAME—SAME—SAME—SAME—SAME—AFFIDAVIT UNDER RULE 131.

"The situation may be summarized thus: The Craggs and McCann patent is 'prior art' under 102(e). However, it is shown to contain a disclosure of appellants' invention as well as the invention of Craggs and McCann. While the Rule 131 affidavits may overcome that part of the disclosure of the reference relating to appellants' invention, they cannot affect the admissions of appellants that the disclosures in the reference of what Craggs and McCann invented is 'prior art' and the case must be decided on the assumption it is prior art notwithstanding the affidavits."

3. SAME—PARTICULAR SUBJECT MATTER—"ROPE FRAME CONVEYOR WITH CONTROLLED BELT DEFLECTION."

The refusal of certain claims in an application entitled "Rope Frame Conveyor With Controlled Belt Deflection," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 785,109.

AFFIRMED.

Parker & Carter (*James G. Staples, Murray A. Gleeson, Spencer B. Michael*, of counsel) for appellants.

Clarence W. Moore (*George C. Roeming* of counsel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

Stripped of verbiage, the issue which emerges from the Examiner's answer and the opinions of the Board is the propriety of the rejection of the appealed claims[1] as unpatentable in view of the Craggs and McCann U.S. Patent No. 2,773,257.[2] We agree with the basic proposition that the appealed claims are unpatentable over the reference. The reasons assigned by the Examiner for this rejection become confused in the five pages of the record devoted to the Examiner's answer. The reasons assigned by the Board for its affirmance of the Examiner also become confused in the 24 pages of the record devoted to the Board's opinions. We shall, therefore, in affirming the rejection endeavor so to state what we understand to be the basic reasons for the rejection as to eliminate such confusion.

The essential fact which underlies the present issue is that the appealed claims are directed to what appellants assert to be an improvement in the rope frame conveyors disclosed in the Craggs and McCann

[1] Claims 22–26 of appellants' application Serial No. 785,109 entitled "Rope Frame Conveyor With Controlled Belt Deflection," filed January 2, 1959 as a continuation of appellants' copending application Serial No. 521,772, filed July 13, 1955.

[2] Entitled "Conveyor Having Flexible Strand Side Frames and Troughing Roller Assembly Therefor." The patent issued December 4, 1956 on application Serial No. 600,418, filed July 27, 1956 as a continuation of application Serial No. 521,355, filed July 11, 1955.

patent as the invention of Craggs and McCann. While the appealed application and the Craggs and McCann patent are owned by a common assignee, this fact, in view of the grounds on which we decide this case, has no significance.

Belt conveyors of the type here in issue are used for transporting discrete solid bulk materials such as coal. They consist of an endless belt supported on rollers which are carried by the sideframe structure of the conveyor. As distinguished from the rigid sideframe conveyors of the prior art, the conveyors here in issue are of the rope frame type in which flexible strands or ropes are suspended between support posts located on each side of the belt. The rollers which engage the underside of the belt and support the belt and the load carried thereon are connected with and supported by the flexible strand or rope sideframes.

Specifically, appealed claims 22–26 relate to the strand or rope sideframe conveyor shown in the Craggs and McCann patent, except that the number and spacing of the belt-supporting rollers in the appealed claims are particularly defined while the Craggs and McCann patent is not so limited. The claimed roller arrangement serves as a means by which the deflection of the conveyor belt is said to be controlled and limited to a predetermined amount, while retaining the elasticity and impact-absorbing characteristics of ordinary strand or rope sideframe conveyors.

[1] The Craggs and McCann patent issued on their application whose effective filing date is two days prior to the filing date of appellants' parent application. It is, therefore, "an application for patent by another" and as such is prior art as expressly provided in 35 U.S.C. 102(e).

At this point, however, the Examiner and the Board disagree as to what portion of the Craggs and McCann patent may be relied upon to support the rejection of the claims. The Examiner's position, characterized by the Board as being "in error," was that only the claims of the patent may be relied upon to support the rejection. The Board, substituting a view for which no authority is cited, would predicate the rejection upon what Craggs and McCann "in fact" did.

Another fact which must be considered is that appellants have attempted to antedate the reference by affidavits under Rule 131 showing completion of their improvement before the filing date of the reference which contains a disclosure of their improvement.

As above indicated, there is no question but that the Craggs and McCann *patent* must be considered, initially, to be prior art under section 102(e). Appellants have also recognized in their specification that the Craggs and McCann *invention* is prior art. In appellants' brief there is the specific admission that:

> The present appellants therefore improved on the basic Craggs and McCann concept by (1) using two and *only* two troughing roller assemblies between adjacent support means and (2) using equi-distant displacements of each troughing roller assembly from the nearest flexible sideframe support point. • • •
>
> As a further concept (3), the distance between each flexible sideframe support structure 13 and its two flanking support structures is equal.

[2] The situation may be summarized thus: The Craggs and McCann patent is "prior art" under 102(e). However, it is shown to contain a disclosure of appellants' invention[3] as well as the inven-

[3] The practice of referring to inventions of others disclosed in a later filed application is not uncommon and is specifically condoned in Rule 79.

tion of Craggs and McCann. While the Rule 131 affidavits may overcome that part of the disclosure of the reference relating to appellants' invention, they cannot affect the admissions of appellants that the disclosures in the reference of what Craggs and McCann invented is "prior art" and the case must be decided on the assumption it is prior art notwithstanding the affidavits.

The opinion of the Board suggests that the rejection is based on 35 U.S.C. 103. We agree that this is the proper statutory ground of rejection. Such a rejection requires a determination of whether the differences between the appealed claims and the prior Craggs and McCann *invention* are such that appellants' invention as a whole would have been obvious to a person of ordinary skill in this art at the time their invention was made.

The only difference between what appellants claim and what Craggs and McCann admittedly invented lies in the numerical and spatial relationship of the rollers with respect to the support posts. We agree with the statement in the Examiner's answer:

• • • that it would be obvious to one skilled in the art that a symmetrical set-up should be employed. In all conveyor installations a symmetrical set-up is generally contemplated. If the instant conveyor were installed in a level mine floor unsymmetrically, it would be obvious from just visual inspection that the belt would not be in contact with all of the troughing idler assemblies (especially under no-load conditions). Thus, it appears obvious that a skilled worker in the art would adjust the conveyor set-up until all of the troughing idler assemblies come into contact with the belt, and such an adjustment would necessarily result in placing the rollers and stands in a symmetrical set-up, especially if the floor is level and the load on the belt is uniform. Otherwise, what would be the need of the troughing idler asemblies if they don't come into contact with the conveyor belt?

We think, therefore, that appellants' invention as a whole as claimed in the appealed claims, would have been obvious to one of ordinary skill in this art at the time they made their invention since it involves nothing more than a standardization of the number of rollers and perhaps their uniform spacing in the Craggs and McCann conveyor.

We say "perhaps" in connection with the asserted uniform spacing of the rollers and question the patentable significance of the allegedly uniform spacing of the rollers because appellants themselves in their specification suggest varying the equi-distant arrangement of the rollers when necessary to control and prevent harmonic motion in the conveyor.

[3] Solely for the foregoing reasons, we affirm the decision of the Board.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT J. HARRY

No. 7168. Decided July 9, 1964

[51 CCPA —; 333 F.2d 920; 142 USPQ 164]

1. PATENTABILITY—AFFIDAVIT UNDER RULE 131—REQUIREMENTS OF RULE 131.

"What the rule [Rule 131] requires is not a statement that facts exist but that applicant 'shall make oath *to facts showing* a completion of the invention' etc. • • • and further requires in (b) that 'The showing of facts shall be such, in character and weight, as to establish reduction to practice' etc. Applicant has not even approached such a showing. Of reduction to practice, the first affidavit merely says the subject matter of a drawing annexed 'was diligently reduced to practice.' The second affidavit says 'steps were taken to reduce the invention to practice in a commercial size unit by engineering preparation of drawings, cost estimates and both construction and installation of apparatus embodying the invention was done as promptly as possible in all the circumstances.' This is not proof or 'showing of facts' but mere pleading. It asserts that facts exist but does not tell what they are or when they occurred. The Patent Office must have such facts as will enable it and its reviewing courts to judge whether there was construction and when it occurred, or whether there was diligence. The affidavits were properly rejected for non-compliance with the rule and all of the references are available."

2. SAME—OBVIOUSNESS—ADDING AND SHORTENING TELESCOPING SECTIONS.

"On the merits of the rejection on the references, we can find no error in the ruling of the Patent Office that it would be obvious, in view of the secondary references, singly or together, to modify the structure of Shutt, the primary reference, by adding more telescoping sections and shortening all of the sections as necessary to reduce headroom requirements. We cannot see here a case of 'hindsight reasoning' as alleged by appellant. It is clear to us that one familiar with the art, all of which relates to rigid, vertically moving, overhead crane structures of one kind or another, faced with the problem of reducing headroom requirement would, if possessed of any mechanical skill whatsoever, increase the number and reduce the length of the telescoping sections. The rest is routine engineering design to produce the proper movements and desired relative speeds of travel."

3. SAME—REFERENCES—COPENDING PATENT—REJECTION UNDER 35 U.S.C. 103.

"Appellant argues, with respect to the Ernestus patent, that it was improperly used in support of a rejection under 35 U.S.C. 103, because it did not *issue* prior to Harry's filing date. This court has often answered that argument before. The Ernestus patent's filing date antedates any date on which appellant can rely and that is enough."

4. SAME—SAME—SAME—SAME.

"• • • it had become settled, at least in this court, prior to the 1952 Patent Act 'that a patent issued on an application which was copending with that of another applicant could properly be used as a reference against the claims of the other applicant *even though it did not disclose everything claimed*, and it was necessary to combine it with other references.' • • • When a reference is so used, the rejection, of necessity, is based on section 103."

5. SAME—SAME—SAME—COPENDING PATENT EFFECTIVE REFERENCE AS OF FILING DATE UNDER 35 U.S.C. 102(e) OR 103.

"We are not unaware that such use of so-called 'copending patents' as references, where they are not complete anticipations under section 102, has long been a subject of debate, which debate has continued under section 102(e) of the 1952 Act. In view of the fact that the practice is as old as this court (see *In re Smith*, 17 CCPA 752, 36 F.2d 522, 4 USPQ 235, decided in 1929 and cied in the *Seid* case), our latest application of it in the *Kander* case should not have come as a surprise to anyone. We there rested squarely on the proposition that section 102(e) settles the question, making United States patents effective references as of the U.S. filing dates for all purposes, whether applied under section 102 as full technical 'anticipations' or combined with other references to show obviousness under section 103."

6. SAME—SAME—SAME—SAME.

"If it be appellant's thought that 102(e) is limited to complete anticipation situations by the words '*the invention* was described,' • • • so that 102(e) is inapplicable unless the claimed invention is *fully* described, we call attention to the fact that 102(a) and (b) use the identical words and that section 103 uses the expression 'though the invention is not identically disclosed or described as set forth in section 102,' making no distinction between the various paragraphs of 102. While the revision note to 102(e) states that it 'enacts the rule of *Milburn* v. *Davis-Bournonville*, 270 U.S. 390, by reason of which a United States patent disclosing an invention dates from the date of filing the application for the purpose of anticipating a subsequent inventor,' and while that is perfectly true, it does not follow that 102(e) was intended to be limited to fact situations like that in the *Milburn* case. There is no such limitation expressed in the statute. In our opinion the 'prior art' referred to in section 103 includes, along with the patents, printed publications, public

uses and sales of paragraphs (a) and (b) of section 102, *prior invention* as established by a copending application, *if* it becomes a patent, as contemplated in paragraph (e) and as held in the *Milburn* case. Such prior invention, as prior art, may be combined with other references to sustain a rejection for obviousness under section 103."

7. SAME—PARTICULAR SUBJECT MATTER—"CRANES."

The decision of the Board of Appeals refusing the claims in an application entitled "Cranes," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 703,056.

AFFIRMED.

William A. Smith, Jr., *Smith, Michael & Gardiner*, *Eugene F. Buell*, *Hoopes, Leonard & Buell*, for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of all claims of application Serial No. 703,056, filed December 16, 1957, for "Cranes."

The invention is a soaking pit crane for use in placing steel ingots in and removing them from a soaking pit. The problem alleged to have been met with and solved by appellant was that the soaking pit cranes in use required a lot of headroom and consequently a building with a high roof. He modified existing soaking pit cranes to require less headroom.

Cranes of this type, typified by the principal reference relied on by the Patent Office in rejecting the application, were constructed with a main frame depending vertically from a carriage running on a movable crane bridge. Sliding up and down in the main frame, which served as a rigid guideway somewhat resembling an elevator shaft, was a lower section or column carrying rotatable and actuatable tongs at its lower end for grasping an ingot. The problem, as appellant's specification poses it, was that "This construction requires that there be sufficient headroom above the main frame of the crane so that the column when fully raised will clear the roof structure and the bottom of the crane will clear objects on the working floor."

It will be appreciated from what has been said that a soaking pit crane is a telescoping structure, the lower section or column moving in and out of the main frame. The latter serves as a guide for the column, the whole structure being rigid so that the tongs are positively guided. Now, to reduce headroom requirements and to get the desired rise and fall at the same time, appellant designed his crane with three telescoping sections instead of the two formerly used. If we may be permitted our own illustrative analogy, the problem is not unlike having to get a telescoping radio or TV antenna of given extended length into a given space. If the whole is divided into three telescoping sections instead of two, obviously the collapsed length will be shorter.

Elevator mechanism or lift means are, of course, incorporated for lifting the various sections in the proper relationship and includes cables, sheaves, cable drums, motors, etc. The different sections are run at different rates of speed, produced by the proper reeving, so that all sections reach the top of their travel simultaneously.

Claim 5, which is the most detailed, indicates the mechanism sought to be patented and reads:

5. In a soaking pit crane, a main frame adapted to be traversed over a work area, a guide frame vertically movable in and surrounded by said main frame, a vertically movable column slidable within and surrounded by the guide frame, said column carrying tongs for engaging a workpiece, cables and sheaves on the guide frame and the column, drum means on the main frame acting on said cables to change their length, said cables and sheaves being proportioned to relatively move the column and tong means as a unit and the guide frame with respect to the main frame at relative rates which are in the same proportion as the maximum distance of travel of the column and tongs is to the maximum distance of travel of the guide frame, cam means in the column acting on the tongs to open and close them and means on the main frame adapted to raise and lower the tongs relative to the cam means and column whereby to change the relative position of the cam and tongs to open and close them.

The references relied on are as follows:

Shutt, 1,487,032, March 18, 1924.
Haupt, 2,737,596, March 6, 1956.
Ernestus, 2,869,734, January 20, 1959 (filed Sept. 12, 1955).
Swedish patent, 158,621, April 16, 1957.

Shutt is the principal reference and admittedly shows a soaking pit crane essentially like appellant's except that it has two telescoping sections instead of three and for the same travel would require a higher roof. Haupt shows apparatus, suspended from the ceiling, for raising and lowering the head of an X-ray machine, one embodiment having three relatively slidable, connected, offset sections controlled from above by cables wound on drums. This reference specifically recognizes the problem of getting maximum movement in limited headroom. Ernestus shows hoisting mechanism for raising and lowering tote-boxes and moving them around a factory and employs three vertically telescoping sections, cable-operated. The Swedish patent discloses very similar mechanism denominated "Material-Stacking Crab."

The Board affirmed two separate rejections of the Examiner, first, on Shutt in view of Haupt, second, on Shutt in view of Haupt, Ernestus, and the Swedish patent.

In an attempt to get rid of the Swedish patent and Ernestus as references, appellant filed two affidavits purporting to comply with Rule 131. The affidavits were held insufficient, in the Examiner's words, "because they are devoid of adequate facts to establish a showing of actual reduction to practice of the crane prior to the effective date of the references, or in lieu thereof that applicant had exercised diligence from the date of conception of the invention to the filing date of this application."

Appellant insists the affidavits are sufficient and invites us to read them. We have done so and agree with the Patent Office. It is argued that "it [is] perfectly clear that they do state a showing of facts * * *." This confusion of terms is perhaps at the root of appellant's difficulty [1] What the rule requires is not a statement that facts exist but that applicant "shall make oath *to facts showing* a completion of the invention" etc. (our emphasis) and further requires in (b) that "The showing of facts shall be such, in character and weight, as to establish reduction to practice" etc. Applicant has not even approached such a showing. Of reduction to practice, the first affidavit merely says the subject matter of a drawing annexed

"was diligently reduced to practice." The second affidavit says "steps were taken to reduce the invention to practice in a commercial size unit by engineering preparation of drawings, cost estimates and both construction and installation of apparatus embodying the invention was done as promptly as possible in all the circumstances." This is not proof or "showing of facts" but mere pleading. It asserts that facts exist but does not tell what they are or when they occurred. The Patent Office must have such facts as will enable it and its reviewing courts to judge whether there was construction and when it ocurred, or whether there was diligence. The affidavits were properly rejected for non-compliance with the rule and all of the references are available.

[2] On the merits of the rejection on the references, we can find no error in the ruling of the Patent Office that it would be obvious, in view of the secondary references, singly or together, to modify the structure of Shutt, the primary reference, by adding more telescoping sections and shortening all of the sections as necessary to reduce headroom requirements. We cannot see here a case of "hindsight reasoning" as alleged by appellant. It is clear to us that one familiar with the art, all of which relates to rigid, vertically moving, overhead crane structures of one kind or another, faced with the problem of reducing headroom requirement would, if possessed of any mechanical skill whatsoever, increase the number and reduce the length of the telescoping sections. The rest is routine engineering design to produce the proper movements and desired relative speeds of travel.

[3] Appellant argues, with respect to the Ernestus patent, that it was improperly used in support of a rejection under 35 U.S.C. 103, because it did not *issue* prior to Harry's filing date. This court has often answered that argument before. The Ernestus patent's filing date antedates any date on which appellant can rely and that is enough. *In re Seid*, 34 CCPA 1039, 161 F.2d 229, 73 USPQ 431, and cases there cited; *In re Gregg*, 44 CCPA 904, 244 F.2d 316, 113 USPQ 526, and *In re Kander*, 50 CCPA 928, 312 F.2d 834, 136 USPQ 477.

[4] As was pointed out in the *Gregg* case, it had become settled, at least in this court, prior to the 1952 Patent Act "that a patent issued on an application which was copending with that of another applicant could properly be used as a reference against the claims of the other applicant *even though it did not disclose everything claimed*, and it was necessary to combine it with other references." [Emphasis added.] When a reference is so used, the rejection, of necessity, is based on section 103.

[5] We are not unware that such use of so-called "copending patents" as references, where they are not complete anticipations under section 102, has long been a subject of debate, which debate has continued under section 102(e) of the 1952 Act. In view of the fact that the practice is as old as this court (see *In re Smith*, 17 CCPA 752, 36 F.2d 522, 4 USPQ 235, decided in 1929 and cited in the *Seid* case), our latest application of it in the *Kander* case should not have come as a surprise to anyone. We there rested squarely on the proposition that section 102(e) settles the question, making United States patents effective references as of the U.S. filing dates for all purposes, whether applied under section 102 as full technical "anticipations"

or combined with other references to show obviousness under section 103.[1]

[6] If it be appellant's thought that 102(e) is limited to complete anticipation situations by the words "*the invention* was described" (our emphasis), so that 102(e) is inapplicable unless the claimed invention is *fully* described, we call attention to the fact that 102(a) and (b) use the identical words and that section 103 uses the expression "though the invention is not identically disclosed or described as set forth in section 102," making no distinction between the various paragraphs of 102. While the revision note to 102(e) states that it "enacts the rule of *Milburn* v. *Davis-Bournonville*, 270 U.S. 390, by reason of which a United States patent disclosing an invention dates from the date of filing the application for the purpose of anticipating a subsequent inventor," and while that is perfectly true, it does not follow that 102(e) was intended to be limited to fact situations like that in the *Milburn* case.[2] There is no such limitation expressed in the statute. In our opinion the "prior art" referred to in section 103 includes, along with the patents, printed publications, public uses and sales of paragraphs (a) and (b) of section 102, *prior invention* as established by a copending application, *if* it becomes a patent, as contemplated in paragraph (e) and as held in the *Milburn* case. Such prior invention, as prior art, may be combined with other references to sustain a rejection for obviousness under section 103.

[7] The decision of the Board is affirmed.

AFFIRMED.

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[1] Under section 103, the question is whether "copending patents" can be considered "prior art." The statute does not define "prior art."

However, the legislative history of the 1952 Act makes it clear that "copending patents" were intended to be part of the "prior art." See fn. 2 infra.

In *Detroit Radio & Television Corp.* v. *Hazeltine Corp.*, 313 U.S. 259 (1941), the United States Supreme Court said (all emphasis ours):

> The defendant insisted that the [Wheeler] patent involved no invention in view of the prior art and cited patents issued before Wheeler's date of conception and others ***issued before the patent in suit on applications antedating his date of invention and pending when his application was filed.*** [Footnotes omitted.]
>
> Some of these [patents] were for transmission systems and some for receiving systems. Several disclosed automatic amplification control. ***All constituted prior art.*** [Fn. citing *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390.]

Thus, in this case decided subsequent to *Milburn* and prior to the 1952 Act, no distinction was made between "copending patents" and other references, and both were considered to be "prior art." Nothing the Supreme Court has said since the 1952 Act modifies this view.

[2] In fact it is clear from the legislative history that Congress did *not* intend to do so. H.R. 3760, 82nd Cong., 1st Sess. (1951), the progenitor of H.R. 7794, 82nd Cong., 2nd Sess. (1952) which was enacted as the 1952 Patent Act, set out section 103 as follows:

> Sec. 103. Conditions for patentability: nonobvious subject matter
>
> A patent may not be obtained though the invention is not identically disclosed or described ***in the prior art set forth in section 102 of this title***, if the differences between the subject matter sought to be patented and ***that prior art*** are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. [Emphasis ours.]

The Bar Association of the City of New York, on May 18, 1951, proposed the following substitute:

> A patent may not be obtained though the invention is not identically disclosed or described ***as set forth in section 102 of this title***, if the differences between the subject matter sought to be patented and ***the prior art*** are such • • •.

Their proposal said, "The purpose of this [amendment] is to make it clear that *all prior art* is here meant and not merely the prior art referred to in section 102 which is limited to anticipatory art." [Emphasis ours.] Thus "prior art" means *at least* those things named in section 102. See Hearings on H.R. 3760 Before the Subcommittee No. 3 of the House Committee on the Judiciary, 82nd Cong., 1st Sess. 221–2 (1951).

Section 103 of H.R. 7794 incorporates the above amendment to H.R. 3760. See Senate Subcom. on Patents, Trademarks and Copyrights, Efforts to Establish a Statutory Standard of Invention, Study No. 7, 85th Cong., 1st Sess. 15 (1958).

Also pertinent are the comments of P. J. Federico in his "Commentary on the New Patent Act," 35 U.S.C.A. §§ 1–110 at 20–1 (all emphasis ours):

> The antecedent of the words "the prior art," which here appear in a statute for the first time, lies in the phrase "disclosed or described as set forth in section 102" and hence ***these words refer to material specified in section 102 as the basis for comparison.***
>
> • • • • • • •
>
> It [section 103] refers to the subject matter sought to be patented and the prior art, ***meaning what was known before as described in section 102.***
>
> • • • • • • • •
>
> The comparison [required by section 103] is between the subject matter claimed to be patentable and what is disclosed in the available ***statutory prior art*** material, and it is irrelevant whether the claimant knew or did not know this prior art material. • • • This requirement for invention with which we are here concerned is more of a legal concept than a psychological one. [See *In re Kander*, supra.]

U.S. Court of Customs and Patent Appeals

IN RE MINNESOTA MINING AND MANUFACTURING COMPANY

No. 7174. Decided August 27, 1964

[51 CCPA —; 335 F.2d 836; 142 USPQ 366]

1. TRADEMARK—REGISTRABILITY—SUPPLEMENTAL REGISTER—SECTION 23 OF LANHAM ACT—CONFIGURATION OF GOODS.

"The Board appears to have sustained the Examiner's refusal to register for the same reason stated by the Examiner in his answer, namely, that the term 'configuration of goods' as used in section 23 must be so interpreted as to restrict it to 'the configuration of a particular part or feature of the article and must not extend to the shape or design of the entire device.' The Board said the same thing in substance. But section 23 contains no such limitation."

2. SAME—SAME—PRINCIPAL REGISTER—CONFIGURATION OF GOODS—*In re Mogen David Wine Corp.* CONSTRUED.

"We have recently decided *In re Mogen David Wine Corp.*, 51 CCPA —, 328 F.2d 925, 140 USPQ 575, in which we reversed a refusal to register, as a trademark on the Principal Register, the *overall configuration* of an ornamental *container* for a beverage. There the Board, for reasons it is not necessary to go into here, had refused to consider evidence that the bottle configuration functioned as an indication of origin so as to be a trademark. We remanded the case for a decision on that issue because we deemed the overall configuration of the bottle to be *capable* of indicating origin, doing so without passing on the issue of whether it did so in fact."

3. SAME—SAME—SUPPLEMENTAL REGISTER—SECTION 23 OF LANHAM ACT—CONFIGURATION OF GOODS.

"The present application is to register on the Supplemental Register and, • • • section 23, which establishes that register, provides for the registration of 'configuration of goods,' without qualifications as to kind, if '*capable* of distinguishing applicant's goods.' Whether they do or not in fact, it is unnecessary to consider."

4. SAME—SAME—SAME—SECTION 23 OF LANHAM ACT—SUBJECT MATTER OF SUPPLEMENTAL REGISTER NEED NOT BE A "TRADEMARK."

"Section 23 • • • does not require that the subject matter to be registered thereunder be a 'trademark,' as is required for registration on the Principal Register."

5. SAME—SAME—SAME—SAME—SAME.

"To sum up the statutory law applicable to this case, since this application is to register on the Supplemental Register, the overall configuration of appellant's goods need not be a trademark but only a 'mark capable of distinguishing applicant's goods' from the goods of others, in other words a mark which *might* be a trademark registrable on the Principal Register, upon proof of *established* secondary meaning. Applicable in addition to the statutory considerations are those policy considerations, which could prevent registration on the Principal Register, considered in our opinion in *In re Deister Concentrator Co.*, 48 CCPA 952, 289 F.2d 496, 129 USPQ 314, which apply equally to registration on both registers."

6. SAME—SAME—SAME—SAME—CONFIGURATION MUST BE CLEARLY SHOWN IN REGISTRATION.

"• • • we see no obstacle to the registration of the overall configuration of appellant's promoter-chemical on the Supplemental Register. However, that configuration must be clearly shown in the registration. We therefore *reverse* and *remand* the case so that the illustration of the mark may be amplified • • •."

APPEAL from the Patent Office. Serial No. 72,342.

REVERSED and REMANDED.

Mark W. Gehan, Charles H. Lauder (*Carpenter, Abbott, Coulter & Kinney* of counsel) for appellant.

Clarence W. Moore for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board (136 USPQ 676, abstract) refusing to register, on the Supplemental Register, appellant's mark on the sole ground that it constitutes the *overall configuration* of the goods and as such "does not constitute proper subject matter for registration" on the Supplemental Register. No reference is relied on.

The Board so held after expressly admitting that section 23 of the Lanham Act (15 U.S.C. 1091) "specifically provides for the registration of a mark which consists of a 'configuration of goods.'" To this we would add the proviso in the statement in section 23 of what the term "mark" includes, that "such mark must be *capable* of distinguishing the applicant's goods [from the goods of others]" (our emphasis), which limitation the Board unquestionably assumed.

[1] The Board appears to have sustained the Examiner's refusal to register for the same reason stated by the Examiner in his answer, namely, that the term "configuration of goods" as used in section 23 must be so interpreted as to restrict it to "the configuration of a particular part or feature of the article and must not extend to the shape or design of the entire device." The Board said the same thing in substance. But section 23 contains no such limitation.[1]

We had this precise contention before us in *In re Bourns*, 45 CCPA 821, 252 F.2d 582, 117 USPQ 38, wherein we said:

> It is contended in the brief on behalf of the Commissioner that "configuration of goods," as used in section 23, "must be restricted to the configuration of a particular part or feature of the article and may not extend to the shape or design of the entire device." We find it unnecessary to rule on that contention, however, since we are of the opinion the • • • configuration of appellant's potentiometer *is not capable* of distinguishing it from the goods of others within the meaning of section 23. [Emphasis added.]

In that case we also pointed out that the provision for the registration of "configuration of goods" had not previously been adjudicated by this court, adding,

> However, a somewhat similar question has been passed on with respect to packages, and it would seem the same principles would be fairly applicable in both cases. In fact, in some instances, such as perfumes or beverages sold in ornamental bottles designed to be used after the contents have been disposed of, the line of distinction between the package and configuration of the goods is quite vague.

[2] We have recently decided *In re Mogen David Wine Corp.*, 51 CCPA —, 328 F.2d 925, 140 USPQ 575, in which we reversed a refusal to register, as a trademark on the Principal Register, the *overall configuration* of an ornamental *container* for a beverage. There the Board, for reasons it is not necessary to go into here, had refused to consider evidence that the bottle configuration functioned as an indication of origin so as to be a trademark. We remanded the case for a decision on that issue because we deemed the overall

[1] The Patent Office, in saying "configuration of goods" means only configuration of a *part* or *feature*, relies on the opinion of the District Court for the District of Columbia in *Alan Wood Steel Co. v. Watson*, 113 USPQ 311, wherein the court did come to that conclusion and gave it as one of three reasons for affirming a refusal to register the overall surface configuration of certain non-skid steel plate flooring. The other two reasons were that the shape was *functional* and that it *could not* indicate origin because others than the plaintiff used the shape under license.

On the issue of restricting the meaning of the statutory language, the District Court relied on what it considered to be "continuous construction placed on a statute by an administrative agency," namely, the Patent Office. The only indication of what that practice was appears in the cited case of *Ex parte Mars Signal-Light Co.*, 85 USPQ 173, wherein an Assistant Commissioner, in dicta, while stating that "so far as I am aware there is no apt precedent," that "none of • • • [the cases decided before the 1946 Trademark Act] can have any precise bearing on what might be registrable under the new Act," and stating that "While configuration may mean over-all shape it may also mean the form of a particular part or characteristic," came to the conclusion that "on the basis of general principles [not stated] the latter construction *may* be the proper one." [Emphasis added.]

configuration of the bottle to be *capable* of indicating origin, doing so without passing on the issue of whether it did so in fact.

[3] The present application is to register on the Supplemental Register and, as we stated in *Bourns*, section 23, which establishes that register, provides for the registration of "configuration of goods," without qualification as to kind, if "*capable* of distinguishing applicant's goods." Whether they do or not in fact, it is unnecessary to consider.

Two conditions to registration on the Supplemental Register, stated in *Bourns*, were relied on by the Examiner in refusing appellant a registration. They are: (1) that the configuration must be "intended primarily to indicate origin of the goods" and (2) "that the ordinary purchaser would be likely to consider that it indicated such origin." Initially, the Examiner refused registration because of the "absence of evidence" on either of these points, saying that in the absence of such evidence an overall configuration will be "presumed" not to be a "mark." We assume that he had reference, in that reference to "mark," to the statement in section 23 of what marks are intended to be included in the section as subject to registration thereunder. [4] Section 23, of course, does not require that the subject matter to be registered thereunder be a "trademark," as is required for registration on the Principal Register.[2]

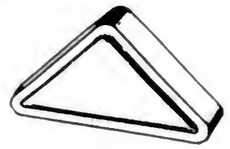
[5] To sum up the statutory law applicable to this case, since this application is to register on the Supplemental Register, the overall configuration of appellant's goods need not be a trademark but only a "mark capable of distinguishing applicant's goods" from the goods of others, in other words a mark which *might* be a trademark registrable on the Principal Register, upon proof of *established* secondary meaning. Applicable in addition to the statutory considerations are those policy considerations, which could prevent registration on the Principal Register, considered in our opinion in *In re Deister Concentrator Co.*, 48 CCPA 952, 289 F.2d 496, 129 USPQ 314, which apply equally to registration on both registers.

We turn now to the specific facts and issues before us. The goods here involved consist of a promoter-chemical in solid form used in a process of non-electrolytic metal plating. The metal articles to be plated are tumbled in a rubber-lined barrel with plating metal in the form of powder or dust, glass particles, and the promoter-chemical which causes the plating metal to "migrate" to the surfaces to be plated and welded thereto.

The application [3] now contains the following amended description of goods:

> Chemical composition in solid form for use in a mechanical, non-electrolytic system adapted to plate metal parts, said system being to tumble said parts in a tumbling barrel with powdered metal, small spherical particles (e.g., glass beads) and said chemical composition, the tumbling action causing the powdered metal to form into a dense, continuous, adherent coating on said metal parts.

The mark sought to be registered is the overall configuration of the promoter-chemical of undisclosed size having a shape only partially disclosed in the application. The application as filed contained a drawing (objected to as not showing the shape in three dimensions) and a photograph of a cake of chemical showing one face only, head on. Subsequently a photograph in perspective was filed but while it shows one edge and the thickness, it still shows only one face, the other side being as much an unknown to us as the other side of the moon in pre-sputnik days. During prosecution of the application, the Patent Office draftsman was requested to make a new drawing from the photograph and did so but it is not a very accurate representation of what the photograph shows. We reproduce it here to give a general idea of the configuration.



Request to cancel the original figure and enter the new figure in its place was deferred by the Examiner "until the mark is found to be registrable."

Since the mark is the *overall* configuration of the goods,[4] we deem the proposed drawing and photographs on file inadequate in that they do not disclose the *overall* configuration, but we have enough knowledge to decide the case. As shown, the goods are formed into triangular cakes which, so far as the record discloses, could be the size of a pill, a bar of soap, or a cement block. The visible face has a flat narrow border contiguous to the peripheral edges which are flat and smooth. Within the border is a raised portion with an ogee or reversed curve margin which blends with the border, not well illustrated in the drawing. What the shape of the other side of this object is we have no idea. It might be a duplicate of the visible face or it might be any other form imaginable which would not show up in the illustration. For the purpose of decision, we will make the assumption it is either a duplicate of the visible face or flat.

After being rejected because of lack of evidence to meet the *Bourns* case conditions, appellant submitted an affidavit of an employee familiar with the adoption of the configuration saying,

> • • • the reason for choosing the triangular three-dimensional shape for these goods was that this particular shape would be distinctive of the origin of those goods from Minnesota Mining and Manufacturing Company; that said triangular shape of said goods was, at the time at which it was adopted, and is, at the present time, intended primarily to indicate the origin of the goods described in the above-captioned application to register this configuration of goods as a trade-mark; deponent further states, as a matter of information and belief, that the ordinary purchasers of these goods would be likely to consider that the configuration of these goods does indicate their origin, and that, in fact, the purchasers of those goods do consider the triangular shape of those goods as an indication of the origin of those goods.

We deem that evidence sufficient to establish, prima facie, what the intent of the appellant was and the Patent Office has produced nothing at all to rebut it. The assertion is entirely consistent with the record. We therefore consider that the first condition stated in *Bourns*, that the *configuration* was intended *primarily* to indicate

[2] Section 2, pertaining to the Principal Register, opens with the words, "No trademark by which the goods of the applicant may be distinguished from the goods of others • • •" whereas section 23 relates to "All marks capable of distinguishing applicant's goods • • •" and then contains a paragraph enumerating certain things comprised within the term "mark." (15 U.S.C. 1052 and 1091 respectively.) See Vandenberg, Trademark Law and Procedure, § 121(b) at p. 10.

[3] Serial No. 72,342, filed April 27, 1959.

[4] There is an amendment of March 30, 1961, which adds to the application the following statement: "The mark comprises the triangular three-dimensional configuration of the goods." This makes it clear that it is the overall configuration appellant regards as its mark. The word "comprises," however, seems inappropriate. As we see it, the mark *consists* of the shape, all of it and nothing more.

origin, is established. Bearing on the value of the affidavit as evidence is a further fact stated therein, and not questioned, that

> * * * though it is functionally advantageous to form the ingredients of that bar into a *solid* shape, the ingredients are such that *they could be formed into almost any shape.* [Emphasis added.]

In other words, so far as the record shows, the *shape* adopted is entirely arbitrary and, except for its solidity (*all* shapes being solid), has no functional significance whatever.

We come then to the second *Bourns* condition, supra, whether an ordinary purchaser of *these goods* would be *likely* to deduce origin from their shape. We think that what was said in *Bourns* on this point requires a little further thought in view of the language of section 23, which refers not to what a mark *does* or would be likely to do to a purchaser but what it is *capable* of doing. When we talk about what a purchaser "would be likely to consider" we must take into account what conditioning the owner of the mark might bring to bear on that purchaser through promotion of its mark as an indication of origin. Section 23 does not speak in terms of a fait accompli but only in terms of capability. We think the capacity to indicate origin is clearly there. Besides, there is some supporting evidence in the affidavit, no matter how far we may discount it, not only in the opinion of the affiant that the shape indicates origin but in his statement that in fact purchasers do consider it an indication of origin. As heretofore indicated, section 23 does not require even this much evidence since it requires only a capability.

There is no indication of record, nor do we think of any, that this is a shape found in nature, or used by any other for any purpose, or dictated by any consideration whatsoever other than a desire to devise an arbitrary shape to indicate origin and distinguish appellant's goods. Nor is there any indication that it was adopted primarily to be ornamental, or to make the goods easier to pack or to use or to make, or even more saleable. We deem it to be entirely arbitrary until the contrary be shown. As we said in concluding our opinion in *In re Deister Concentrator Co.*, 48 CCPA 952, 968, 289 F.2d 496, 129 USPQ 314,

> Where a shape or feature of construction is in its concept arbitrary, it may be or become a legally recognizable trademark because there is no public interest to be protected.

[6] For the reasons stated, we see no obstacle to the registration of the overall configuration of appellant's promoter-chemical on the Supplemental Register. However, that configuration must be clearly shown in the registration. We therefore reverse and remand the case so that the illustration of the mark may be amplified in accordance with this opinion.

REVERSED AND REMANDED.

WORLEY, *Chief Judge*, did not participate in the decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE ELKAN R. BLOUT AND HOWARD G. ROGERS

No. 7196. Decided July 9, 1964

[51 CCPA —; 333 F.2d 928; 142 USPQ 173]

1. PATENTABILITY—REFERENCE—PATENT TO ONE JOINT APPLICANT—RULE 131.

"To apply the requirements of Rule 131 here would result in the anomalous situation of compelling Blout and Rogers to prove that they made their 'im-

provement' before Rogers made the basic invention. Since Blout and Rogers are claiming the improvement they made, as distinguished from the generic invention claimed by Rogers, and since Rogers is not 'another' to Blout and Rogers, we conclude that the Rogers patent is not properly a reference against Blout and Rogers."

2. SAME—SAME—SAME—SAME—APPLICANT ADMITS REFERENCE INVENTION EXISTED BEFORE HIS IMPROVEMENT THEREON.

"Rule 131 affidavits are filed to establish a date earlier than the effective date of a reference and are not applicable to a situation in which the applicant clearly admits that the inveniton existed before he made his invention, which is described as an improvement thereon."

3. SAME—SAME—DOUBLE PATENTING—COMMONLY ASSIGNED APPLICATION AND PATENT.

"Blout and Rogers' affidavits, while unsatisfactory to establish an earlier reduction to practice under Rule 131, nonetheless convince us that there is no need to overcome Corley as a prior art reference. The facts established by the affidavits show that Blout, Rogers, and Corley worked together for the Polaroid Corp.; that their work was contiguous and sometimes overlapping; that Blout and Rogers are claiming what they invented; and that Corley claims what he invented. It seems apparent that the real issue here is not whether Blout and Rogers' application is patentable over Corley but whether the invention claimed is *patentably distinct* from the invention *claimed* by Corley."

4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REMAND.

"The Board • • • having specifically declined to rule on the issue of double patenting, we do not believe that we can appropriately decide that question. Therefore, we are obliged to reverse and remand this case for further proceedings in the Patent Office not inconsistent herewith."

APPEAL from the Patent Office. Serial No. 485,840.

REVERSED and REMANDED.

Brown and Mikukla, *Donald L. Brown* (*Stanley H. Mervis* of counsel) for appellants.

Clarence W. Moore (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Blout and Rogers appeal from the Board's affirmance of the rejection of claims 40 through 52 of their patent application.[1]

The invention relates to the formation of color transfer images, primarily in Polaroid Land camera film, by diffusion transfer processes. The point of novelty is said to reside in the use of compounds having a silver halide developing moiety separated from a dye moiety by an organic radical which serves to both link and insulate the two. The significance of the insulating group is that it prevents conjugation or resonance betwene the dye function and the developing function so that the resulting color of the transferred image is determined essentially by the dye moiety. Claim 40 reads:

40. A photographic product comprising a support carrying on one side thereof a plurality of layers, at least one of said layers containing a silver halide emulsion, and at least one of said layers containing a dye developer, said dye developer being a compound of the formula D—D′ wherein D is the dye radical of a dye D—H containing a conjugated ring system capable of resonance and including at least one ring of 5 to 6 members, inclusive, selected from the group consisting of heterocyclic and aromatic rings, and also including chromophoric groups, whereby said dye D—H exhibits appreciable light absorption in the range of the visible spectrum, said dye D—H being selected from the group consisting of azo and anthraquinone dyes; D′— is a monovalent de-

[1] Serial No. 485,840, filed February 3, 1955.

veloper radical containing an aromatic nucleus so substituted by at least two members of the group consisting of hydroxy, amino and alkylamino groups as to be capable of developing exposed silver halide, the valence of said radical D'— being directly attached to said aromatic nucleus of D'—; said D'— being attached through a divalent organic insulating group including an intralinear acyclic atom of D to a ring of D selected from the group consisting of an aromatic ring and a heterocyclic ring, so that the conjugated bond system of said developer radical D'— is unconjugated with respect to any conjugated bond system of said dye radical D whereby the color characteristics of said dye developer are determined substantially entirely by the chromophoric-resonance system of said dye radical D.

The references are:

Corley, 2,983,605, May 9, 1961 (filed January 31, 1955).

Rogers, 2,983,606, May 9, 1961 (parent application filed March 9, 1954).

The rejections will be treated separately and the references will be discussed in connection with each ground of rejection.

The rejection on Rogers

Rogers discloses, but does not claim, the invention of Blout and Rogers, appealed herein.

The ground of rejection on Rogers is anticipation under 35 U.S.C. 102.

The brief on behalf of Blout and Rogers states:

Appellants concede that if the Rogers sole patent is available as a reference, said patent is a bar to the instant claims, unless appellants' affidavits discussed below are found sufficient under Patent Office Rule 131 to remove that patent.

The Board held that Rogers is a reference since it was filed earlier than the Blout and Rogers application. As to the affidavits under Rule 131, the Board found them ineffective, regarding the first as conclusory and the second as failing to establish reduction to practice or even conception of "insulation of the developing function from the dye molecule."

Blout and Rogers contend that Rule 79 applies here and obviates the need for an affidavit under Rule 131. Rule 79 states:

79. *Reservation clauses not permitted.* A reservation for a future application of subject matter disclosed but not claimed in a pending application will not be permitted in the pending application, but *an application disclosing unclaimed subject matter may contain a reference to a later filed application of the same applicant or owned by a common assignee disclosing and claiming that subject matter.* [Italics supplied.]

Blout and Rogers state in their brief:

It is a recognized fact of modern research that worthwhile inventions spawn a family of related inventions. Research is commonly conducted by a "team" of workers brought together to develop an idea. The members of such a team communicate their ideas and results to each other. Progress is accelerated, and improvement inventions frequently are made before the basic invention is embodied in a patent application. Quite commonly, such improvements then are disclosed in the patent application claiming the basic invention, the improvement being specifically claimed in a later filed application. To delay the filing of the basic application until the application claiming the improvement was ready for filing would usually have the effect of postponing the earliest date on which the disclosure became public. Such a delay is inconsistent with the public policy of encouraging early disclosure and early entry of the invention into the public domain.

We do not think it necessary to consider whether the two joint Blout and Rogers' affidavits comply with Rule 131.[2] The affidavits

[2] See *In re Harry*, 51 CCPA —, — F.2d —, — USPQ — with respect to the requirements of a Rule 131 affidavit.

constitute sworn statements of the facts, clearly attributing the invention of dye developers to Rogers and the invention of insulated dye developers to Blout and Rogers. *In re Middleton and Reynolds*, 50 CCPA 1479, 319 F.2d 552, 138 USPQ 253, involved a rejection of a joint application of Middleton and Reynolds on a patent to Middleton. There the court said:

> • • • Appellants thus do not need to establish a date of invention against some other person or a reference of some other person in order to prevail. They need only establish that the Middleton patent is not a proper reference against them.[3]
>
> We think appellants have demonstrated by their affidavits that they, rather than Middleton alone, are the inventors of zinc titanate disclosed in the Middleton patent. • • •

[1] To apply the requirements of Rule 131 here would result in the anomalous situation of compelling Blout and Rogers to prove that they made their "improvement" before Rogers made the basic invention.[4] Since Blout and Rogers are claiming the improvement they made, as distinguished from the generic invention claimed by Rogers, and since Rogers is not "another" to Blout and Rogers, we conclude that the Rogers patent is not properly a reference against Blout and Rogers.

The rejection on Corley

Corley discloses the dye developer *compounds* whose moieties are separated by an organic radical, which are used in Blout and Rogers' claimed photographic products and processes. Blout and Rogers argue that Corley is not an anticipation because it contains no "recognition or suggestion" of their use of the compounds or that the linking group functions as an insulator. Nonetheless, Corley discloses the compounds and their preparation, he discloses and claims their use in a photographic product, and the insulating effect of the linking function would be obvious to one of ordinary skill in the art.[5] We therefore agree with the Board that the appealed claims are "unpatentable over Corley."

[3] Blout and Rogers' affidavits, while unsatisfactory to establish an earlier reduction to practice under Rule 131, nonetheless convince us that there is no need to overcome Corley as a prior art reference. The facts established by the affidavits show that Blout, Rogers, and Corley worked together for the Polaroid Corp.; that their work was contiguous and sometimes overlapping; that Blout and Rogers are claiming what they invented; and that Corley claims what he invented. It seems apparent that the real issue here is not whether Blout and Rogers' application is patentable over Corley but whether the invention claimed is *patentably distinct* from the invention *claimed* by Corley. That the Examiner recognized that issue is evident from the final rejection wherein he stated:

> Claims 23, 25–29 and 31–39 are *finally* rejected as being not patentably distinct from the allowed claims (all of them) of commonly assigned application Serial No. 485,342. No patentable distinction can be seen in the present claims over

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[3] Middleton was not regarding as "another" with respect to Middleton and Reynolds. Hence 35 U.S.C. 102(a) and (e) were not applicable.

[2] [4] Rule 131 affidavits are filed to establish a date earlier than the effective date of a reference and are not applicable to a situation in which the applicant clearly admits that the invention existed before he made his invention, which is described as an improvement thereon.

[5] The Chemistry of Synthetic Dyes, vol. 1, K. Venkataraman, 1952, Academic Press Inc., New York, page 358, under the heading "Insulating Groups":

> When two or more chromophoric systems are present in a molecule, the effect is roughly additive if the systems are separated by two or more single bonds, i.e., by saturated groups such as —CH_2— and —CH_2CH_2—, which break the conjugation and act as insulators between the two electronic oscillators. This important principle is illustrated in FIG. 10.

the allowed claims of said application. A mere difference in scope is not, per se, a patentable distinction.

A comparison of appealed claim 40 with claim 17 of Corley shows the closeness of what is now being claimed with Corley's claims. Claim 17 of Corley reads:

17. In a photographic product comprising a plurality of layers including a layer containing a silver halide emulsion and having a silver halide developer disposed in at least one layer, the feature of having said silver halide developer be a compound selected from the group consisting of:

$$Y_{(5-m)}-A-\left(\begin{matrix}R\\|\\N-Z-X\end{matrix}\right)_m$$

and

$$Y_{(5-m)}-A-\left(\begin{matrix}R\\|\\N-X\end{matrix}\right)_m$$

wherein A is an anthraquinone nucleus, X is an aryl radical selected from the group consisting of ortho- and para-dihydroxyphenyl and ortho- and para-dihydroxy-naphthyl radicals, R is an acyl group of an organic carboxylic acid, Z is a bivalent hydrocarbon radical containing at least one methylene group, *m* is a positive integer less than 5, each Y is selected from the group consisting of hydrogen, amino, alkyl, aryl, nitro, halogen, alkylamino, arylamino, aryloxy, alkoxy, hydroxyl, sulfonamido, carboxamido, carboxy, sulfo,

$$\begin{matrix}Q\\|\\-N-Z-X\end{matrix} \text{ and } \begin{matrix}Q\\|\\-N-X\end{matrix}$$

radicals, and Q is selected from the group consisting of hydrogen and alkyl radicals.

Hence the issue to be determined is one of double patenting. On appeal from the Examiner's decision, the Board stated:

The Examiner also rejects the claims as "lacking invention in light of the fact that appellants seek to claim a generic invention solely supported by the identical species disclosed and claimed by others." This rejection appears to be cumulative to the rejection based on the art and we do not consider it necessary separately to pass on its merits. • • •

[4] The Board thus having specifically declined to rule on the issue of double patenting, we do not believe that we can appropriately decide that question. Therefore, we are obliged to reverse and remand this case for further proceedings in the Patent Office not inconsistent herewith.

REVERSED AND REMANDED.

U.S. Court of Customs and Patent Appeals

ALFRED ELECTRONICS *v.* ALFORD MANUFACTURING COMPANY

No. 7192. Decided July 9, 1964

[51 CCPA —; 333 F.2d 912; 142 USPQ 168]

1. TRADEMARKS—TRADEMARK USE.

Upon review of the finding of the Trademark Trial and Appeal Board that trademark use of "ALFORD" resulted in July 1955 from Alford Manufacturing starting, at that time, to display "ALFORD" on the nameplates for its goods in a style of lettering larger than the other portion of its trade name and in such a way as to create a separate and independent impression, *Held* that the "larger lettering and clear emphasis on 'ALFORD' in Alford Manufacturing's use since about July of 1955 appears to us to substantiate the Board's conclusion that trademark use of the term commenced at about that time."

2. SAME—CONFUSING SIMILARITY—"ALFRED" AND "ALFORD" FOR ELECTRONIC EQUIPMENT.

"• • • we think that, in view of the similarity in 'ALFRED' and 'ALFORD' and the obviously close relationship of Alfred's goods to both lines of Alford

Manufacturing's product, the Board's conclusion as to likelihood of confusion is correct."

3. SAME—SAME—SECTION 2(d) OF TRADEMARK ACT—TRADE NAME AS A BAR TO REGISTRATION.

"Under section 2(d), a trademark is not entitled to registration where it so resembles a mark or *trade name* previously used by another as to be likely to cause confusion, or to cause mistake, or to deceive. That section does not specify that a trade name must be inherently distinctive or that it must have acquired a secondary meaning to be effective as a bar to registration and we find no basis for adopting an interpretation imposing such a requirement. We therefore find no error in the Board's ruling that Alford Manufacturing's prior use of 'ALFORD' in its trade name bars valid registration of 'ALFRED.'"

4. SAME—INTERFERENCE—RULE 2.96—SECONDARY MEANING AS ISSUE IN INTERFERENCE PROCEEDING.

"It seems to us that the language of Rule 2.96 as it read when applicable to the present proceedings does not require that the matter of secondary meaning of 'ALFORD' be considered in the absence of it being raised under * * * other rules. Neither do we regard such consideration to be required by the Lanham Act. We thus conclude there is no reversible error in the Board's action declining to consider the question of secondary meaning for Alford under the present circumstances."

APPEAL from the Patent Office. Trademark Interference No. 5,905.

AFFIRMED.

Harvey G. Lowhurst, *William G. MacKay* (*Charles R. Allen, Jr.*, of counsel) for appellant.

Charles Hieken, *Ezekiel Wolf*, *Wolf & Greenfield*, for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Alfred Electronics, owner of two registrations of "ALFRED" for certain electronics equipment, appeals from the adverse decision of the Trademark Trial and Appeal Board in an interference between it and Alford Manufacturing Company, applicant for registration of "ALFORD" for "antennas, high frequency components, such as hybrid junctions, side band filters, baluns, diplexers, slotted lines, R-F switching systems, and high frequency phase shifters."

Alfred's involved registrations, No. 677,965 for "traveling wave tube amplifiers, traveling wave tube power supply, sweeping power supply, and vacuum power controls," and No. 684,034 for "sweeping oscillators, backward wave oscillator panels, levelers, thermocouple gauge controls, and ionization gauge controls" issued on May 5, 1959 and August 25, 1959, respectively, on applications filed on October 22, 1957 and December 22, 1958, respectively. Those applications alleged first use on December 15, 1949. Alford Manufacturing's application, which alleges first use by December 1946, was filed on July 5, 1960, making Alfred the senior party.

The Board held that Alford Manufacturing is entitled to the registration for which it has made application and stated that Alfred's registrations will be canceled in due course.

Both parties filed testimony and documentary exhibits. The evidence of Alford Manufacturing is dealt with in the Board's opinion, from which, in view of its thoroughness and accuracy on that point, we quote at length:

According to testimony adduced in behalf of the junior party, "ALFORD" is the surname of Andrew Alford, the president of Alford Manufacturing Company and the owner of a majority of the stock of said company. Andrew Alford is a well known, nationally recognized authority and inventor in the television and FM–AM broadcasting antenna field and is the sole or joint owner

of some one hundred patents primarily related to antennas and related wave guide devices, including a hyperbolic navigation system and antennas used to transmit signals in station broadcasts to aircraft, a number of which have been known and referred to as "Alford Loops." In September 1945, while working part-time at the Radio Research Laboratory at Harvard University, Alford started his own business, a sole proprietorship, under the name, Andrew Alford Consulting Engineers, to engage in rendering consulting engineering services in the broadcasting antenna field. Alford terminated all connections with the Radio Research Laboratory on December 31, 1945 and from January 1946 on, he devoted all his time to his business. Andrew Alford Consulting Engineers first conducted business from Alford's apartment and shortly afterwards from a place in Somerville, Massachusetts. In September 1947, Alford moved to Boston, Massachusetts from which address he has continued to conduct his business. During the years from 1946 through 1948, Andrew Alford Consulting Engineers designed and developed transmitting and receiving antennas and associated equipment for use on aircraft, buses, and the like as well as antennas for color television tests, directional antenna, and similar devices to which were attached nameplates bearing the legend "Contractor, Andrew Alford Consulting Engineers" or "Contractor, Andrew Alford."

On October 15, 1948, Alford organized the junior party, Alford Manufacturing Company, as a Massachusetts corporation doing business in Boston, Massachusetts at the same address as Andrew Alford Consulting Engineers. The junior party, shortly after its creation, adopted and began using a trademark including the letters "AMC" or "AMCI" on the background of what is referred to as a "Smith Chart." This mark was prominently displayed on every name plate and catalog employed by the junior party. Beginning at least as early as November or December 1948, when it shipped a television diplexing filter from Boston to the Columbia Broadcasting System in New York City, the name plates affixed by the junior party to its goods have also displayed its corporate name "Alford Manufacturing Co." in block lettering above the address "Boston, Mass."; and since about July 1955, "Alford" has been prominently displayed on the nameplates and in advertising catalogs above the words "Manufacturing Co." and in a size much more readily discernible than the remaining portion of its corporate name. The junior party, with the exception of two years during the Korean War when its activities which were primarily concerned with commercial needs were curtailed, has been a going concern since its incorporation in the latter part of 1948. It has, since about 1953 or 1954 distributed catalogs describing its equipment to customers and prospective customers, it has advertised its equipment in various trade publications, and it has displayed its products at various conventions and shows, including, the IRE National Convention, the Wescon Show, the National Electronics Conference, and the convention of the National Association of Broadcasters. "Alford" has been prominently and distinctively featured on all of this material and displays. In addition, its equipment is referred to in invoices by the designation "Alford" and sales contracts refer to "Alford Equipment" and the like. The junior party expends about forty-eight thousand dollars a year in advertising its products, which includes the cost of attending and displaying such goods at conventions and shows. Sales of products by the junior party, which have been made for the most part through Manufacturers' representatives in the United States and abroad, amounted to sixty-three and one-half thousand dollars in 1949 and over six hundred thousand dollars in 1960.

Andrew Alford Consulating Engineers and Alford Manufacturing Company have over the years existed as two distinctly different legal entities, the former, a sole proprietorship and the latter, a corporation. Andrew Alford owns the controlling interest in the junior party, and Andrew Alford Consulting Engineers or, in fact, Andrew Alford, owns most of the facilities used by the junior party and does the actual manufacturing both for his own customers, and also as a subcontractor for the junior party. Andrew Alford Consulting Engineers is engaged primarily in electronic engineering consultation and development work for the government. The junior party manufactures and sells two principal lines of goods intended primarily for commercial as distinguished from governmental users, one line comprising television transmitting antennas and diplexers vestigial side brand filters, hybrid diplexers, and miscellaneous hardware that goes with the radiating system of television or FM–AM broadcasting systems, and the other line comprising instruments, components, and allied items for radio frequency measurements and systems. The junior party has also from

time to time made and sold special equipment in the same field or fields engaged in by Andrew Alford Consulting Engineers.

The Board rejected the claim of Alford Manufacturing that use of "ALFORD" by Andrew Alford or Andrew Alford Consulting Engineers inures to its benefit to give it use since December 1946. On the basis that Alford Manufacturing can rely on such use of "ALFORD" as it has made in its own behalf, the Board found use of "ALFORD" "as the distinguishing feature of its trade name since about November or December 1948 and in the manner of a trademark since about July 1955." [1]

The Board also dealt in detail with the evidence for Alfred, stating:

The senior party's record discloses that in about 1937 or 1938 two high school friends, Albert Y. Jew and Frederick W. Kruse, formed a partnership under the name of Palo Alto Sound Service, to engage in servicing, building, and selling electronic equipment such as modulators, amplifiers, oscillators, disc recorders, and public address systems. The operations of the partnership were conducted first in their respective parent's garages and later, when they built their own homes, in their adjacent garages. In about 1948, the partnership began to branch more and more into engineering and manufacturing electronic products with less emphasis on the servicing end of the business. At this time, another company was founded by a friend under the name, Palo Alto Radio Service, which was devoted entirely to servicing radio and television sets. In order to better reflect the changed character of its business and to avoid any possible confusion with Palo Alto Radio Service, the partners decided to rename their partnership, Alfred Electronics, the prefix "Al" being taken from the first name of Albert Y. Jew and the latter portion "Fred" from the first name of the other partner, Frederick W. Kruse. The change of partnership name was effected after a gradual changeover sometime in 1949. The earliest date exhibit of record reflecting the completed change-over to Alfred Electronics is a copy of a seller's permit issued to Alfred Electronics under the California Sales and Use Tax Laws on December 5, 1949. Subsequently, the parties changed the name on the bank account, ordered new stationery forms and stamps, and otherwise conducted business as Alfred Electronics. The business of the new partnership continued along substantially the same lines as the old partnership including television servicing until 1952 when the servicing was discontinued. From 1952 to 1954, the partnership manufactured a large number of medical devices called "defibrillators" and various microwave devices. In or about 1954 or 1955, the partnership decided to change its activities from special product manufacturing to manufacturing catalog or standard items. Subsequently, it developed and manufactured ionization gauge controls or amplifiers, vacuum power control panels, and other electronic equipment. Starting in late 1949, all products manufactured and sold by the partnership were stamped with the designation:

"Alfred Electronics
Palo Alto, Calif. U.S.A."

In late 1955, the partnership began to use the notation "Alfred," per se, in association with its products on data or catalog sheets distributed to customers and prospective customers; and in or before the middle of 1956 it applied "Alfred," per se, as a trademark on the product nameplates in such a manner as "Alfred Regulated Power Supply," "Alfred Microwave Amplifier" and the like. Such use has since been continuous.

In June 1957, the partnership being conducted under the name, Alfred Electronics, was incorporated as the senior party, Alfred Electronics, a California corporation, and the assets of the partnership including "its name and goodwill" were transferred to the corporation, the outstanding stock thereof being owned by the former members of the partnership. The corporation is predominately involved in manufacturing and selling broad band microwave instruments and power supplies including sweeping oscillators, sweeping signal generators, microwave levelers, microwave amplifiers and high voltage power supplies (99% of the amplifiers and oscillators sold by the senior party assert-

[1] The Board recommended that, should Alford Manufacturing ultimately prevail in the present interference, the Examiner of Trademarks require an amendment to the application of said party correcting the date of first use alleged and eliminating reference in the application to the use by Andrew Alford.

edly operate above 1000 megacycles). The business of the corporation has steadily increased. From 1950 through 1955, the senior party's sales totaled seventy thousand dollars and since 1956, such sales have approximated five million dollars. The senior party's products are sold throughout the United States and abroad by manufacturers' representatives who are permitted to carry complementary but not competitive lines of electronic equipment. The senior party has also exhibited its products at the Wescon Show annually since 1956 and at the IRE Show since 1959; and, in addition, it has promoted such goods by distributing catalogs and data sheets and by advertising in trade journals, including, "Electronics Design," "Proceedings of the IRE," and "Microwave Journal." The senior party's suppliers and customers have also referred to or pictured its products in their advertisements. The senior party's total advertising expenditures from 1957 through 1961 approximated one hundred and fifty thousand dollars.

From that evidence, the Board concluded that the earliest date supported by the record for use of "ALFRED" is December 5, 1949, which use was only as a trade name. The earliest trademark use of "ALFRED" was found to be no earlier than the latter part of 1955.

[1] More specifically, the Board found that trademark use of "ALFORD" resulted in July 1955 from Alford Manufacturing starting, at that time, to display "ALFORD" on the nameplates for its goods in a style of lettering larger than the other portion of its trade name and in such a way as to create a separate and independent impression. In connection with that point, the Board cited its previous decision in *Lytle Engineering & Mfg. Co.*, 125 USPQ 308.

Appellant questions that ruling, relying particularly on *Minn. Mining & Mfg. Co.* v. *Minn. Linseed Oil Paint Co., etc.*, 43 CCPA 746, 229 F.2d 448, 108 USPQ 314, and *In re Hillerich & Bradsby Co.*, 40 CCPA 990, 204 F.2d 287, 97 USPQ 451. However, the former case is readily distinguished from the present since it does not appear that "Minnesota" was accentuated in the corporate name therein. The *Hillerich* case is an ex parte one where the appellant sought registration of an oval in which the trademark "Louisville Slugger" was used and the registration was refused in the absence of proof that the public attached trademark meaning to the mere oval. The larger lettering and clear emphasis on "ALFORD" in Alford Manufacturing's use since about July of 1955 appears to us to substantiate the Board's conclusion that trademark use of the term commenced at about that time.

The Board further noted the close similarity between "ALFRED" and "ALFORD" and the goods of the two parties and concluded that purchasers are likely to attribute "ALFRED" and "ALFORD" equipment to a common producer.

Alfred classifies the goods of Alford Manufacturing as constituting two different lines, designated as an "Antenna Line (television broadcasting equipment)" and a "Coaxial Component Line (instruments and components)."

It urges in particular that the antenna line, which was involved in Alford Manufacturing's earliest sales, so differs from Alfred's products as to make confusion unlikely. It also points to evidence that Alford Manufacturing selected certain sales representatives already handling Alfred's goods to carry what Alfred terms the coaxial component line and takes the position such evidence is entitled to great weight as an indication that confusion is improbable. Alfred further points to the record as showing that the average prices of products from Alford Manufacturing's antenna and coaxial component lines are $50,000 and $200, respectively, and its own products range from $1,000 to $9,000 with an average of about $2,000. It urges that those facts, along with the considerations that the goods are not competing and are purchased by discriminating engineers, demonstrate there is no likelihood of confusion.

[2] However, we think that, in view of the similarity in "ALFRED" and "ALFORD" and the obviously close relationship of Alfred's goods to both lines of Alford Manufacturing's product, the Board's conclusion as to likelihood of confusion is correct.

The Board specifically concluded that, "since the junior party [Alford] was the first to adopt its notation and has since continuously used it as the distinguishing feature of its trade name and/or as a trademark, the junior party possesses rights in 'ALFORD' superior to those which the senior party may assert in 'ALFRED.'" It further considered it "well established that the use of a notation as the salient feature of a trade name creates rights in the user sufficient to preclude the registration by a subsequent user of the same or a similar designation, whether or not the later party's use is that of a trademark," citing section 2(d)[2] of the Trademark Act and certain decisions[3] of tribunals of the Patent Office.

Alfred takes the position that use of a trade name which is inherently non-distinctive creates no rights in the user until it becomes distinctive. It further urges that Alford Manufacturing is not entitled to an award of priority here because "ALFORD," which is a surname is inherently nondistinctive, has not been shown to have acquired a secondary meaning prior to Alfred's entry into the field and because Alfred's entry in the field before such meaning was acquired precludes the term from subsequently acquiring such secondary meaning.

[3] Under section 2(d), a trademark is not entitled to registration where it so resembles a mark or *trade name* previously used by another as to be likely to cause confusion, or to cause mistake, or to deceive. That section does not specify that a trade name must be inherently distinctive or that it must have acquired a secondary meaning to be effective as a bar to registration and we find no basis for adopting an interpretation imposing such a requirement. We therefore find no error in the Board's ruling that Alford Manufacturing's prior use of "ALFORD" in its trade name bars valid registration of "ALFRED."

Alfred's argument regarding absence of proof of secondary meaning of "ALFORD" as a trademark raises the further question whether Alfred is entitled to an adjudication in this interference whether Alford Manufacturing has shown the secondary meaning necessary to entitle it to registration. The Board pointed out that Trademark Rule 2.96 in effect during the proceeding and at the time of final hearing therein read:

• • • The issue in an interference between applications shall be the respective rights of the parties to registration of the applications, on the basis of *priority of adoption and use*. The issue in an interference between an application and

[2] Section 2 sets forth as a reason for refusing a mark that it

(d) consists of or comprises a mark which so resembles a mark registered in the Patent Office or a mark or trade name previously used in the United States by another and not abandoned, as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive: • • •

[3] *Midwest Homes, Inc.* v. *Midwest Houses, Inc.*, 120 USPQ 406 (Comr., 1959); *Universal Overall Company* v. *Stonecutter Mills Corporation*, 121 USPQ 605 (Comr., 1959); and *The Zell Products Corporation* v. *Zell Electric Manufacturing Co., Inc.*, 126 USPQ 520, (TT & A Bd., 1960).

a registration shall be the same, including, in the case of the registrant, the right to maintain the registration on the same basis, and if the final judgment is adverse to the registrant, the registration will be canceled unless good and sufficient reasons are presented for other action. [Emphasis provided by the Board.]

It ruled that in the absence of a pleading to enlarge the scope of the interference as permitted by Trademark Rule 2.97,[4] the primary issue is which of the parties was the first to adopt and use its mark and that whether or not a particular designation, including a surname such as "ALFORD," has acquired a secondary meaning "is of no moment herein."

Not only did Alfred not act under Rule 2.97 to raise the issue whether Alford Manufacturing is barred from obtaining registration for failure to show secondary meaning, but he additionally failed to move to dissolve the interference under Rule 2.94 [5] on the ground that Alford Manufacturing's mark is not registrable.

[4] It seems to us that the language of Rule 2.96 as it read when applicable to the present proceedings does not require that the matter of secondary meaning of "ALFORD" be considered in the absence of it being raised under the other rules. Neither do we regard such consideration to be required by the Lanham Act.[6] We thus conclude there is no reversible error in the Board's action declining to consider the question of secondary meaning for Alford under the present circumstances.

Our conclusion, however, is not to be construed as ruling that "ALFORD" has been shown to have acquired a secondary meaning entitling Alford Manufacturing to the registration sought here. Neither is it to be construed as barring the Examiner from giving ex parte consideration to the question of secondary meaning or as barring Alfred from raising the question in any proceeding in which it might otherwise have the right to do so.

Since we find no reversible error in the Board's decision, that decision is affirmed.

AFFIRMED.

RICH, *J.*, dissenting, with whom SMITH, *J.*, joins:

On the basis of the essential facts stated in the court's opinion bearing on the issue of likelihood of confusion, I respectfully dissent.

For reasons very similar to those which I stated in my opinion for the court in *In re General Electric Co.*, 49 CCPA 1186, 304 F.2d 691, 134 USPQ 190 (1962), I cannot see any real likelihood that those who would purchase Alford's antenna and coaxial line components at prices from $300 to $50,000 and Alfred's highly technical microwave and other electronic equipment selling from $1,000 to $9,000 would be confused as to source or anything else by the obvious similarities be-

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[4] Rule 2.97 provides for the filing, within fifty days after the notice of interference is mailed, of a pleading setting forth affirmatively other matters which might show the opposing party was not entitled to obtain or maintain a registration.

[5] Rule 2.94 reads in part: (a) Motions to dissolve an interference may be brought on the ground * * * (3) that an applicant's mark is not registrable.

* * * * * * *

(c) Motions under paragraph (a) or (b) of this section shall be made not later than forty days after the notice of interference is mailed and shall contain a full statement of the grounds relied upon. * * *

[6] Sec. 16. Interference, reads:

> Whenever application is made for the registration of a mark which so resembles a mark previously registered by another, or for the registration of which another has previously made application as to be likely when applied to the goods or when used in connection with the services of the applicant to cause confusion or mistake or to deceive, the Commissioner may declare that an interference exists. No interference shall be declared between an application and the registration of a mark the right to use of which has become incontestable (15 U.S.C. 1066, as amended by Public Law 772, 76 Stat. 769).

tween ALFORD and ALFRED. There are also obvious differences. Like the marks VULCAN and VULKENE in the *General Electric* case, one mark, Alfred, is very common as a given name but Alford is relatively uncommon. It immediately strikes the consciousness as distinctly different for that very reason. Compare LUX and SHUX in *Lever Brothers Co.* v. *Producers Chemical Service*, 48 CCPA 744, 283 F.2d 879, 128 USPQ 7, wherein we found no likelihood of confusion even on cheap consumer products sold off the supermarket shelf.

Since I see no likelihood of confusion, I see no basis for an interference. I would vacate the Board's decision and remand for dissolution of the interference.

United States Court of Appeals
District of Columbia Circuit

JOSEPH WINKLER, APPELLANT

v.

DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

No. 18,298. Decided October 23, 1964

[— U.S.App.D.C. —; — F.2d —; — USPQ —]

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Carroll Palmer for appellant.

Clarence W. Moore (*George C. Roeming*, of counsel) for appellee.

Before WILBUR K. MILLER, *Senior Circuit Judge*, and FAHY and BASTIAN, *Circuit Judges*

Judgment

This case came on to be heard on the record on appeal from the United States District Court for the District of Columbia, and was argued by counsel.

ON CONSIDERATION WHEREOF, it is ordered and adjudged by this court that the judgment of the District Court appealed from in this case is affirmed.

PER CURIAM.

FAHY, *Circuit Judge*:

I concur in affirmance. Even were 35 U.S.C. § 133 interpreted so that the period of unavoidable delay therein referred to is the six months after Patent Office action to which a response is required, the delay which must be shown to be unavoidable within the meaning of Patent Office Rule 137 was, in this case, so extended and occurred in such circumstances as not to require the Commissioner to permit revival of the applications.

REISSUES

DECEMBER 1, 1964

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,691
HAND TRUCK

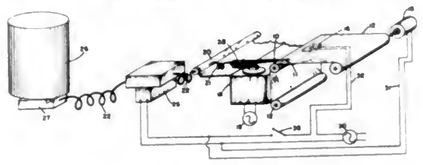
Frank Pelto, Spencer, N.Y., assignor, by mesne assignments, to Dominick L. Pezzuti, Endicott, N.Y.
Original No. 3,003,654, dated Oct. 10, 1961, Ser. No. 821,030, June 17, 1959. Application for reissue Oct. 8, 1963, Ser. No. 320,248
2 Claims. (Cl. 214—370)



1. A hand truck comprising,
(*a*) a frame,
(*b*) a load-supporting lift plate slidably mounted on said frame,
(*c*) means for lifting said lift plate,
(*d*) a first pair of casters secured to said frame with the caster axes parallel to the frame, and
(*e*) a second pair of casters secured to said frame, said second pair of casters being positioned with the caster axes perpendicular to the caster axes of said first pair of casters whereby said first and said second casters may be pivoted into a position more remote from each other to support the entire weight of the load, said lift means being adapted to shift the load-supporting lift plate to a position such that the center of gravity of the load lies in a plane passing between said first and said second pair of casters.

25,692
BALANCED HYDROSTATIC INKING SYSTEM

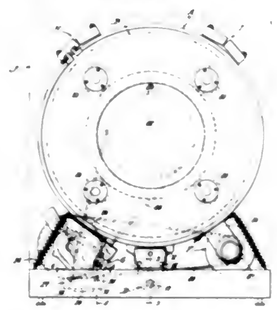
Arling Dix Brown, Jr., Cleveland Heights, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Original No. 3,054,109, dated Sept. 11, 1962, Ser. No. 96,814, Mar. 20, 1961. Application for reissue Sept. 3, 1963, Ser. No. 306,400
8 Claims. (Cl. 346—117)



10. A balanced hydrostatic writing system comprising: a record medium whose surface at least is effectively absorbent, a pen having a tubular tip section whose entire writing periphery is against the surface of said record medium forming a closure therewith during writing operations, viscous ink within said pen, substantially constant pressure means connected to said pen for applying pressure to said viscous ink during a writing operation to force said ink through the tip of said pen and against the surface of said record medium to cause said ink to be absorbed in the surface of said record medium, and means biasing said tubular pen against said record medium with sufficient force so that the pressure established in said ink by said pressure means acting against said record medium is insufficient to break the effective closure between the record medium and the pen tip; the ink, upon relative motion between the record medium and the pen tip, shearing to leave portions thereof absorbed in the surface of the record medium and to lubricate the periphery of the pen tip against the abrasive action of the record medium.

25,693
SUSPENSION SYSTEM FOR AN AUTOMATIC WASHER

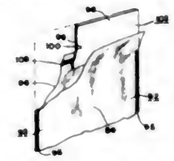
Curtis E. Behrens, Effingham, Ill., and Robert D. Shapter, North Muskegon, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original No. 2,978,892, dated Apr. 11, 1961, Ser. No. 728,321, Apr. 14, 1958. Application for reissue May 7, 1962, Ser. No. 196,841
1 Claim. (Cl. 68—24)



3. In a clothes washing machine, adapted to have a washing period and an extraction period, a tub, a basket journalled in said tub for rotation about a horizontal axis, a base structure, means for rotating said basket at a low speed during the washing period and at a high speed during the extraction period, means for solely supporting said tub and basket on said base structure, said means comprising pivot means on the bottom of said tub beneath the center of said tub for attaching said tub to the base structure, and means on opposite sides of said pivot and attached to said tub and said base structure to resist deflections of said tub in a horizontal direction *and to adjust the natural pivot frequency of the tub about said pivot means to a value substantially equal to said low wash speed*, said last named means including springs attached to the bottom of said tub at opposite sides of said pivot to said base structure and a vibration dampener operatively positioned between the tub and base structure.

25,694
REENFORCED BAGS

Robert G. Nichols, 211 Skyline Drive, Barrington, Ill.
Original No. 3,097,788, dated July 16, 1963, Ser. No. 176,486, Feb. 23, 1962, which is a continuation of Ser. No. 801,426, Feb. 25, 1959. Application for reissue Nov. 6, 1963, Ser. No. 321,985
4 Claims. (Cl. 229—55)



4. A bag, including a sheet of thermoplastic film material folded on itself to provide front and back panels and having an open end spaced from the panel-providing fold line, said front and back panels each having first and second edge portions extending transversely of the panel-providing fold line, means sealing said first and second edge portions of said front and back panels together to form an envelope open at the fourth side, the envelope-defining bonds adjacent said fourth side terminating short of said fourth side to provide end flaps on said front and back panels, a paper strip having first and second sides and of which at least one such side is coated with thermoplastic film material heat bondable to the first-named film material and positioned in said open end of said envelope, said strip having a dimension parallel to said fold line substantially equal to the distance between the first and second edges of each of said panels and a dimension perpendicular to said fold line greater than the flap dimension perpendicular to said fold line, said strip extending but part way into the envelope, said paper strip being heat bonded to only one of said end flaps and at said one side thereof, and said other flap at the opposed unbonded ends thereof defining slits facilitating the unfolding of said other flap to provide access to the envelope with the bonds adjacent said fourth side opposing the tendency of the slits to enlarge.

PLANT PATENTS

GRANTED DECEMBER 1, 1964

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,455
ROSE PLANT

Jean Gaujard, Feyzin, France, assignor to Ilgenfritz Nurseries, Inc., Monroe, Mich., a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,501
1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous habit of growth, large flowers, a distinctive and attractive Bishop's Violet general color tonality of the flowers, and an exceptionally strong and penetrating flower fragrance.

2,456
ROSE PLANT

Jean Gaujard, Feyzin, France, assignor to Ilgenfritz Nurseries, Inc., Monroe, Mich., a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,502
1 Claim. (Cl. Plt.—18)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of very strong foliage which is substantially completely disease resistant and particularly resistant to mildew and blackspot, a distinctive and attractive Flesh Pink general color tonality of the flowers, said color having a pearl-like sheen, and excellent suitability for greenhouse forcing.

2,457
HYDRANGEA PLANT

Louis Fernand Cayeux, Le Havre (Seine-Maritime), France, assignor to Roger Talbot, Saint-Symphorien, Indre-et-Loire, France
Filed Aug. 26, 1963, Ser. No. 304,707
Claims priority, application France, Sept. 29, 1962, 42,912
1 Claim. (Cl. Plt.—54)

A new and distinct variety of hydrangea plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a strong and stocky plant habit, a medium tall habit of growth, dense, thick and wide foliage of bright green color, thick and rigid wood, large and well-shaped flowerheads composed of from 4 to 6 groups of florets, with the florets being rhombus shape in their early stages but becoming substantially round as they fully mature, and having petaloid sepals of deep pink general color tonality, late vegetative and blooming habits, with the blooming period ranging over the months of June, July and August, good formation of the flower buds, good keeping qualities of the buds and flowers, an ability of the flowers to take up a blue coloration when full blown and even in bad weather, good disease resistance and good tolerance to heat and solar rays under summer conditions, as well as good resistance to cold temperatures.

2,458
PEACH TREE

Tom Huston, Miami, Fla., assignor to Peaches of Florida, Inc., Balm, Fla., a corporation of Florida
Filed Aug. 29, 1963, Ser. No. 305,568
1 Claim. (Cl. Plt.—43)

A new and distinct variety of peach tree of the yellow-fleshed, freestone, fruit-bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of good production of firm fruit of good color, shape and size and good flavor and shipping qualities, an early ripening habit of the fruit, averaging about eighty days from bloom, with a picking date at shipping stage occurring during the last week or ten days in the month of April in central Florida, and a low winter chilling requirement, requiring only about 325 hours of winter chilling below 45° F., with consequent suitability for commercial use in southern latitudes of the United States as far south as central Florida.

2,459
PEACH TREE

Herman J. Heidrich, Orlando, Fla., and Charles F. Windham, Davisboro, Ga., assignors to Herman J. Heidrich & Sons, Inc., Orlando, Fla., a corporation of Florida
Filed Aug. 29, 1963, Ser. No. 305,569
1 Claim. (Cl. Plt.—43)

A new and distinct variety of peach tree of the yellow-fleshed clingstone fruit-bearing class, substantially as

shown and described herein, characterized as to novelty by the unique combination of a general resemblance of the tree to trees of the variety known as "Hiley" peach (unpatented), an unusually very early fruit ripening habit, with the picking dates ranging from the last week of April to the first week of May in the State of Georgia, and the production of attractive fruit of good quality and high color resembling the variety known as "Early Rose" peach (unpatented).

2,460
APPLE TREE

Charles L. Roberts, Napier, New Zealand, assignor to Stark Bro's Nurseries & Orchards Company, Louisiana, Mo., a corporation of Missouri

Filed Sept. 19, 1963, Ser. No. 310,180
1 Claim. (Cl. Plt.—34)

A new and distinct variety of apple tree, substantially as herein shown and described, characterized particularly as to novelty by the general similarity of its fruit in shape, size, texture and flavor to the fruit of the Mullins apple variety (unpatented), but being distinguished therefrom by the bright red color of the fruit, long keeping qualities. and absence of any tendency of the fruit to shrivel in storage.

2,461
SUGAR CANE

Leslie M. Weetman and Benjamin A. Bourne, Clewiston, Fla., assignors to United States Sugar Corporation, Clewiston, Fla., a corporation of Delaware

Filed June 28, 1962, Ser. No. 206,111
1 Claim. (Cl. Plt.—89)

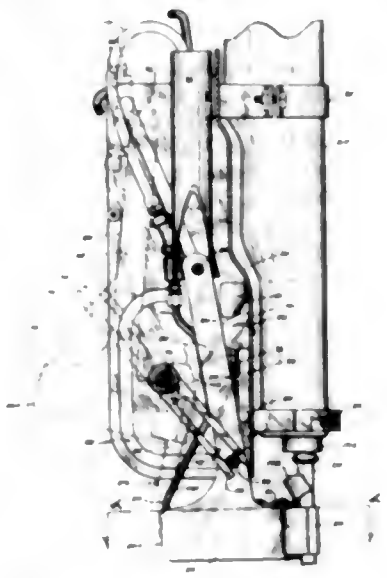
The variety of sugar cane herein shown and described, characterized particularly by its very early maturity, very high sucrose content, high yield of sugar per acre, resistance to ratoon stunting and mosaic diseases, medium-small diameter stalks, semi-recumbent habit of growth, distinctive shape of stem buds, distinctive pattern of stem epidermal cells, distinctive shape, and pubescence of dewlaps.

PATENTS

GRANTED DECEMBER 1, 1964

GENERAL AND MECHANICAL

3,158,867
SPIKE SETTING DEVICE
Lloyd E. Moss, 1912 Otley St., Perry, Iowa
Filed May 17, 1961, Ser. No. 110,672
11 Claims. (Cl. 1—1)



11. In combination, a hammer device having a driving element, and a spike setting device, comprising,

a carriage supporting means secured to said hammer device and comprised of an elongated base plate having parallel spaced apart side plates secured to the longitudinal edges of said base plate and extending at right angles thereto,

a vertical spike feeding tube secured to said base plate between said side plates and extending from the top of said base plate downwardly to approximately the center thereof,

a spike guide means on said carriage supporting means below said spike feeding tube,

a carriage movably secured to said carriage supporting means,

said side plates each having a slot formed therein aligned with each other,

said carriage including a pair of arms each movably mounted in said slots,

two fingers having gripping portions pivotally secured to said carriage,

means normally pivoting said gripping portions of said fingers away from each other,

said spike guide means on said carriage supporting means capable of receiving a spike and holding it between the normally separated gripping portions of said fingers,

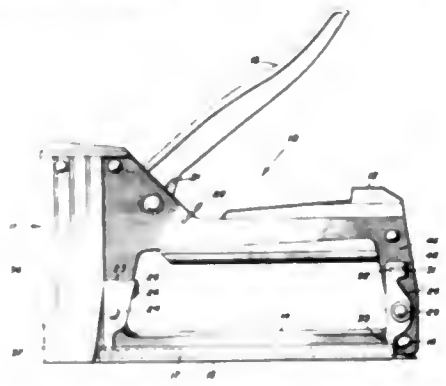
a first power means on said carriage operatively secured to said fingers to pivot said gripping portions toward each other at times,

a second power means on said carriage supporting means operatively secured to said carriage to move said carriage and said fingers from a position adjacent said guide means to a spike driving position below said driving element,

a control means operatively connecting said first and second power means, and adapted to actuate said first power means on said carriage when said carriage is being moved toward said spike driving position, and to render said first power means on said carriage inoperative when said carriage is moving away from said spike driving position, said control means including means for actuating said second power means and intermittently interrupting the actuation of said first power means,

and means for vertically moving said driving element at times.

3,158,868
STAPLER
Oscar H. Johnson, Holden, Mass., assignor to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 16, 1962, Ser. No. 180,224
5 Claims. (Cl. 1—49)



1. A stapler capable of operating alternatively with two staples of two different gauges, comprising

(*a*) a frame including a magazine for a series of staples,

(*b*) a base member cooperating with the magazine, the base member having an edge which cooperates with the housing to define a narrow slot through which the staples are driven one at a time,

(*c*) hinge means connecting the base member to the frame while permitting linear movement therebetween,

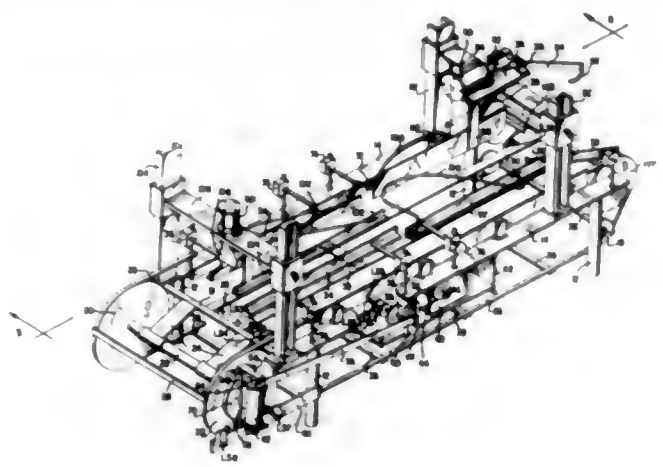
(*d*) lever means for selectively positioning the base member in one of two positions relative to the frame whereby the said edge is also located in one of two positions in which the said slot is relatively narrow or wide commensurate with the two gauges of the staples, and

(*e*) a spring-pressed latch to urge the base member rearwardly against the said lever means.

3,158,869
CARTON SEALING APPARATUS
Byron L. Jackson and Charles E. McCurry, Knoxville, Tenn., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Mar. 14, 1962, Ser. No. 179,539
7 Claims. (Cl. 1—104)

1. An apparatus for sealing cartons of the type having a pair of rectangular top side flaps and a pair of rectangular bottom side flaps each foldably joined along one longitudinal edge to the respective upper and lower edges of the longitudinal side walls of the carton, front and rear end flaps foldably joined along one edge to the respective upper edges of a front and rear end wall of the carton,

each side flap having a transverse width of substantially one half of the total transverse width of said carton; said apparatus comprising conveying means for conveying a carton to be sealed lengthwise in intermittent step-by-step movement along a fixed path from the inlet end to a discharge end, said conveying means including a continuous rotating drive member, a driven member mounted for rotary oscillation, means for transmitting continuous rotation of said drive member to said driven member to drive said driven member in rotary oscillation, carton advancing means operatively associated with said driven member, and clutch means engageable with said carton advancing means during rotary movement of said driven member in one direction to drive said carton advancing means in a step of carton advancing movement, and means for disengaging said clutch means during rotary movement of said driven member in said opposite direction, means operatively associated with said conveying means for folding the front and rear top end flaps inwardly of said



carton to their closed position as said carton is advanced from the inlet end of said fixed path, means for simultaneously folding said top side flaps inwardly of said carton into overlaying relationship with the closed front and rear end flaps as said carton is advanced from the inlet end of said fixed path, means for thereafter maintaining said top side flaps in their closed positions throughout movement of said carton along said fixed path, a pair of stapling means mounted adjacent said discharge end of said fixed path in spaced opposed relationship respectively above and below said path in vertical alignment with the longitudinal center line of a carton conveyed between said stapling means by said conveying means, and means operable by said carton and said conveying means when said carton is located between said stapling means for simultaneously actuating both of said stapling means to apply flap securing staples to secure all of the aforementioned flaps in their respective closed positions between each successive step of movement of said carton.

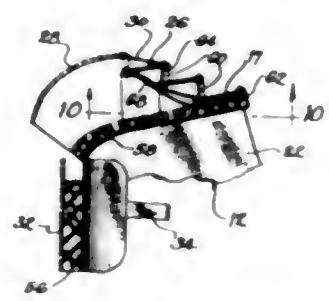
3,158,870
STAPLING GUN
Edward D. Priest, Southboro, Mass., assignor to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 12, 1962, Ser. No. 230,103
1 Claim. (Cl. 1—260)

A safety member for use in a stapling gun having an elongated staple guide formed with a flat horizontal web and a vertically-extending flange at each side of the web, having a staple blade adapted to pass adjacent one end of the guide, and having a follower movable along the guide and spring-biased to press a plurality of staples toward the said one end, said safety member comprising a flat main body which lies against the surface of the web and downwardly depending arms which embrace the flanges, the safety member being adapted to slide along the guide and occupy the end portion of the guide ad-



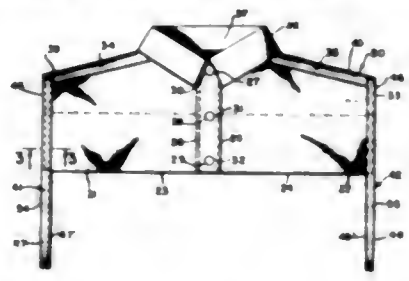
jacent the blade to prevent the follower from pressing the staples into that portion.

3,158,871
SHOULDER PAD CONSTRUCTION
Gerard E. Morgan, Glenview, Ill., assignor to John T. Riddell, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1963, Ser. No. 255,495
12 Claims. (Cl. 2—2)



1. In a shoulder pad construction which includes opposed body portions formed in the shape of inverted U's and having chest parts, back parts and interconnecting shoulder parts, said body portions defining a central opening for the neck of the wearer and including means for securing said portions together, the improvement wherein said body portion is divided into at least outer and inner sections with the edges of said sections overlapping, said overlapping relationship occurring at least in the respective shoulder parts of said body portions, and elastic means interposed between and interconnecting adjacent sections, said elastic means extending at least between the inner edge of each outer section and the outer edge of an adjacent inner section, said outer sections being adapted to move inwardly relative to the inner sections in a generally telescoping manner, said elastic means opposing any such inward movement, and said elastic means tending to restore said sections to a normal position.

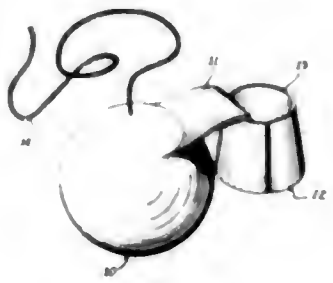
3,158,872
COLLAR AND FRONT GARMENT ATTACHMENT
Roletta Janice Pantzke, 731 19th St., Bismarck, N. Dak.
Filed Nov. 8, 1962, Ser. No. 236,336
2 Claims. (Cl. 2—115)



1. A dickey type garment for attachment on the shoulders and around the neck of a wearer, said garment comprising a rear panel of greater width than length, a pair of front panels detachably secured along their

inner edge and together forming a front of greater width than length, said front and rear panels being secured together along their top portions, a collar secured to said front and rear panels, said front and rear panels having their outer side edges adapted to terminate adjacent the arm and shoulder joint of the wearer and having their lower edges adapted to terminate above the arm pits of the wearer, a pair of elastic strips each having their upper portions secured along substantially the entire side edge of said panels, said strips having their lower portions depending below said front and rear panels and adapted to encircle under the arm pits to snugly secure the garment to the wearer.

3,158,873
FLUSH VALVE COMBINATION
Auguste Louis de Lisle, 6913 E. Cherry Lynn, Scottsdale, Ariz., assignor of one-half to William R. Robertshaw, Scottsdale, Ariz.
Filed July 10, 1962, Ser. No. 208,839
3 Claims. (Cl. 4—57)



1. A flush valve combination of the character described, comprising:

(*a*) a generally tubular but frusto-conical member adapted for attachment to the usual overflow pipe with the smaller diameter end facing upwardly, the smaller diameter end of said frusto-conical portion gripping exterior walls of the said overflow pipe but the larger diameter end thereof spaced from said pipe, whereby the said generally tubular portion is easily applied to but difficultly removed from said overflow pipe;

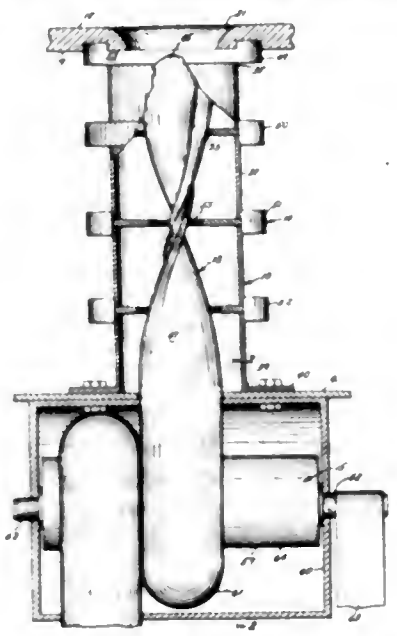
(*b*) a ball shaped flush valve having such specific gravity as to be floatable in the tank water, said ball valve of a size to engage the usual seat at the tank drain opening to close said opening;

(*c*) an integral tongue interconnecting said ball valve and generally tubular member, said tongue being of such dimension as to substantially center the ball valve on its said seat when the generally tubular member is in engagement with the said overflow pipe, and

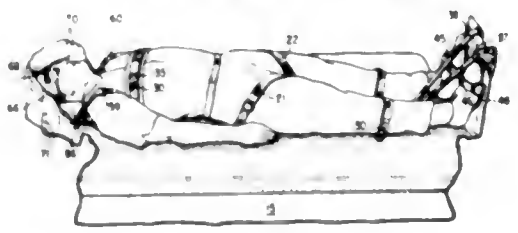
(*d*) a cord having one end secured to said ball valve at the top thereof when the ball is in engagement with said seat, said cord adapted for attachment to an actuating lever for lifting said ball from its seat.

3,158,874
SPACE WASTE COLLECTING VALVE AND PUMP
Floyd M. Bennett, Brooklyn, N.Y., assignor to Lundy Electronics and Systems, Inc., Glen Head, N.Y., a corporation of New York
Filed Mar. 15, 1963, Ser. No. 265,422
7 Claims. (Cl. 4—142)

1. Waste valve construction comprising: a hollow tubular column element, a flexible tube element generally coaxially arranged within said column element, and a plurality of sequentially operable contractible elements mounted upon said column element for inducing a peristaltic contraction along the length of said tube element; said contractile elements including a component for imparting a twisting motion upon said tube element when in fully contracted position.



3,158,875
INVALID STRETCHER
Darrell D. Fletcher, Lubbock, Tex., assignor to Citizens National Bank of Lubbock, Lubbock, Tex.
Filed Sept. 5, 1962, Ser. No. 221,480
15 Claims. (Cl. 5—82)



1. An invalid stretcher comprising

a fabric body portion for supporting the back of the invalid,

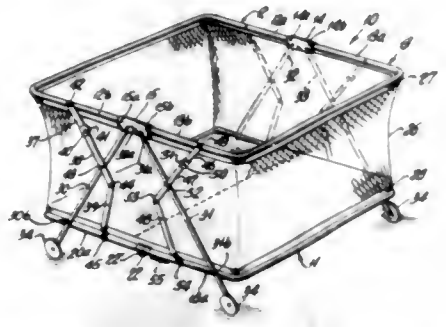
a foot-support fabric portion positionable substantially at right angles to the body portion and attached thereto to support the invalid's feet, said fabric foot-support portion having at least one pocket extending longitudinally thereof and a rigid slat movable in said pocket to adjust the position of the foot support for invalids of different height,

and means for maintaining the invalid's feet immobile on said foot-support portion.

3,158,876
PLAY PEN
Robert Gottlieb, 30—20 78th St., Jackson Heights, Long Island, N.Y.
Filed Jan. 22, 1964, Ser. No. 339,415
9 Claims. (Cl. 5—99)

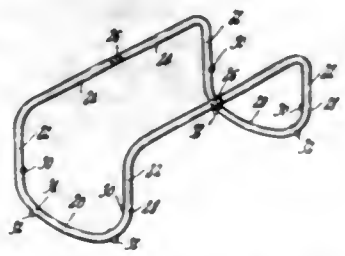
1. A play pen for children and other purposes comprising an upper frame having two generally U-shaped sections positioned to form a loop with the ends of each side of one section in spaced axial alignment with the ends of each side of the other section, a saddle bracket pivotally connected to each pair of adjoining leg ends to join said sections in foldable relationship, a pair of legs pivoted to each saddle bracket and extending downwardly therefrom and in diverging relationship, a bottom frame member having two sections pivoted one to the other and foldable along an axis generally parallel to the axis of fold of said upper frame, means pivoting said legs to said

bottom frame sections, a plurality of linkages with each linkage interconnecting one side of one upper frame section with the adjoining leg and the corresponding side of the lower frame section, said linkages locking said play



pen in an open position with the upper and lower frames substantially horizontal and unlocking the play pen for movement to a closed position when the axis of fold of the lower frame sections is raised.

3,158,877
SUPPORTING ROCKER FRAME
Gary D. Cooper, Randolph, Mass.
(508 Fountain St., New Haven, Conn.)
Filed Jan. 29, 1963, Ser. No. 254,697
4 Claims. (Cl. 5—105)



1. A supporting rocker frame for receiving and removably holding therein a basket-like bed unit of the type having a horizontal bottom and upwardly extending ends and sides, said frame consisting of a single closed-loop structure open at its top and ends and including only

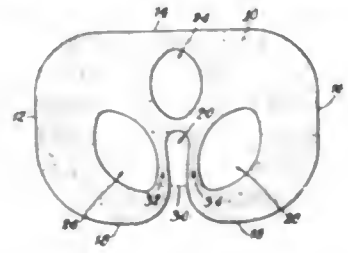
a pair of identical symmetrical spaced upright U-shaped end portions each having a curved bottom and vertical straight sides and

a pair of identical horizontal parallel side bar portions extending between and joining the upper ends of the vertical sides of said U-shaped portions to hold said end portions in spaced apart relation, facing and parallel to each other,

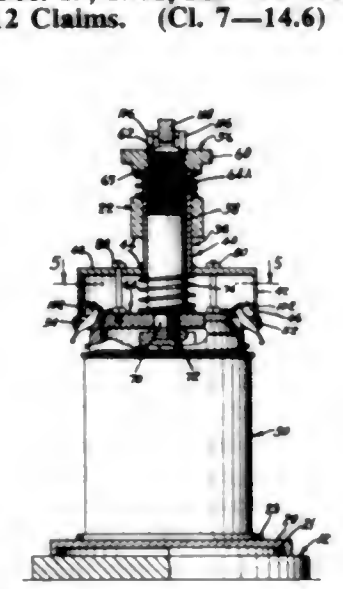
the curved bottoms of said U-shaped end portions serving as rocker surfaces for supporting the closed-loop frame structure, the horizontal bottom of a basket-like bed being received and removably held between the vertical sides of said U-shaped portions above said rocker surfaces and the sides of the bed being held between said horizontal side bar portions.

3,158,878
CUSHION FOR INVALIDS
Robert E. Pernell, High Point, N.C., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 27, 1963, Ser. No. 304,848
5 Claims. (Cl. 5—338)

1. A cushion for relief of pressure areas when in use by a human body, comprising a bifurcated cushioning thickness of open cell elastomeric foam with pressure-relieving recesses within the area thereof, one edge of said cushion having an elongated bifurcating recess inwardly from the edge for effecting two branches, each resulting branch having a portion of a pressure-relieving elongated recess of which the remaining portion extends beyond the bifurcation, said two elongated pressure-relieving recesses being divergent inwardly from said edge, and the cushion inwardly from said edge and from said bifurcating recess having a third elongated pressure-relieving recess alined with said bifurcating recess, one end of said third pressure-relieving recess being located between and inwardly of divergent ends of the said pressure-relieving recesses in said branches.

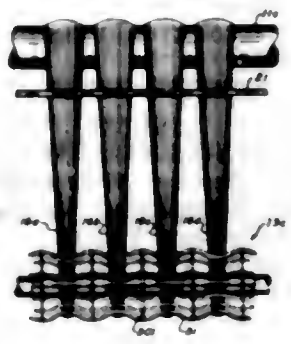


3,158,879
LID REMOVER AND REPLACER
Herbert I. Barrett, 525 Burlington, Missoula, Mont.
Filed Dec. 19, 1961, Ser. No. 160,611
12 Claims. (Cl. 7—14.6)



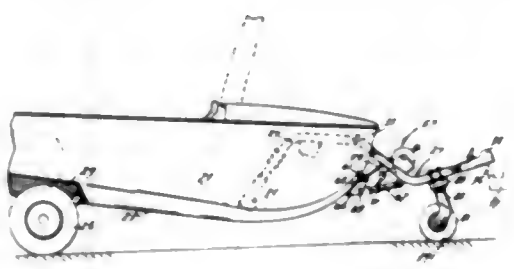
1. A lid remover and replacer assembly for containers of the type having an outer annular partial top wall defining an opening, the inner peripheral edge portion of said top wall defining an upwardly opening annular groove, a removable lid for said opening, said lid including an outer annular portion depending from the outer edges of said lid, defining an upwardly opening annular channel snugly receivable in said groove and including an outer outwardly projecting lip portion; said assembly comprising a stand having a base including a standard secured at its lower end to said base and including a laterally offset upper portion disposed above said base, a head assembly mounted on said offset portion and movable toward and away from said base between the latter and said offset portion, first and second downwardly facing abutment means carried by said head and including means for engagement respectively with the outer portions of said top wall and receivable in said groove respectively at points disposed therearound, said second abutment means being movable relative to said first abutment means towards and away from said base and including means for engagement under said lip portion at points spaced thereabout, and operating means to raise said second abutment means relative to said first abutment means thereby removing the lid from the container, said same operating means operable to lower said second abutment means relative to said first abutment means thereby positioning said second abutment means for replacing the lid on the container.

3,158,880
TOW TREATMENT
William R. Osban, 5912 Brainard St., Sylvania, Ohio
Original application June 18, 1962, Ser. No. 203,077. Divided and this application Dec. 6, 1962, Ser. No. 242,742
4 Claims. (Cl. 8—151)



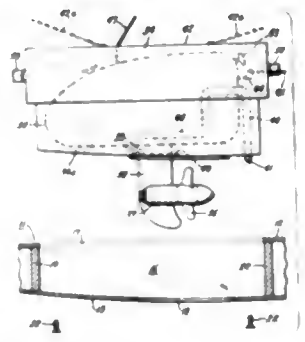
1. In a method of treating with liquid an endless tow continuously moving in a serpentine path, the improvement comprising modifying the cross-sectional shape of said tow from relatively wide and thin to relatively narrow and thick and vice versa causing movement of the individual filaments of such tow relative to each other while applying said treatment liquid thereto thereby causing substantially uniform treatment of all filaments of said tow by said treatment liquid.

3,158,881
FRONT TRAILER WHEEL ARRANGEMENT
Kenneth E. Clausen, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Apr. 17, 1962, Ser. No. 188,102
14 Claims. (Cl. 9—1)



1. The combination in a vehicle of a frame, means including a pair of wheels for supporting said frame for pivotal movement relative to a supporting surface about an axis extending transversely of said frame, a hitch bar including at one end thereof means facilitating support of said one end of said hitch bar at selected predetermined levels above the supporting surface, means on an end of said frame spaced from said transverse axis mounting the other end of said hitch bar for vertical displacement of said one end of said hitch bar relative to said end of said frame, and means on said vehicle for connecting a selected point on said hitch bar spaced from said hitch bar mounting means and a selected point on said frame spaced from and below said hitch bar mounting means and for adjustably varying the distance between said connected points to vertically displace said one end of said hitch bar relative to said end of said frame, whereby, when said one end of said hitch bar is supported at a predetermined level, vertical displacement between said one end of said hitch bar and said end of said frame results in tilting of said vehicle about said pair of wheels.

3,158,882
SURFBOARD WITH REMOVABLE OUTBOARD MOTOR
David R. Kibby, Oakmont, Pa.
(7 Decatur Road, Havertown, Pa.)
Filed July 22, 1963, Ser. No. 296,617
9 Claims. (Cl. 9—1)

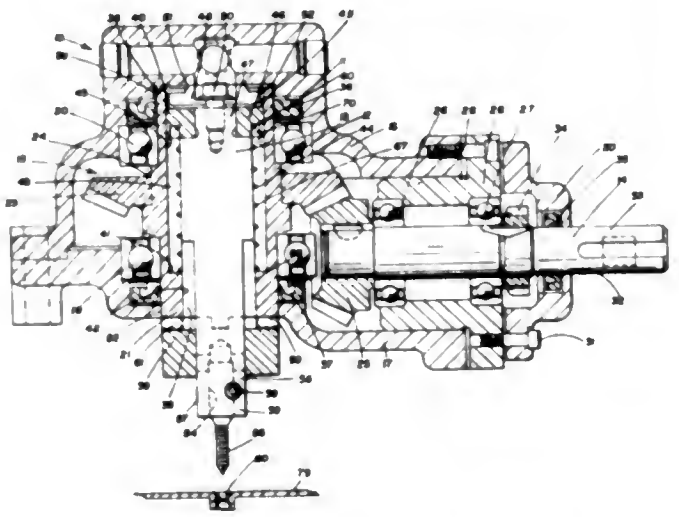


6. In combination: an outboard motor; a container within which said motor is fixedly mounted; means projecting from one side of said container for exteriorly mounting the motor propeller; a surfboard having an opening in its bottom; and means for removably recessing said container in said surfboard, with said one side closing said opening and said propeller mounting means projecting therebelow.

ERRATUM

For Class 10—10 see:
Patent No. 3,159,842

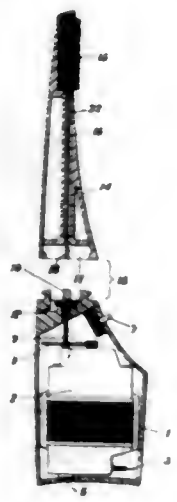
3,158,883
TAPPING UNIT WITH MEANS TO ADVANCE SPINDLE TO WORK
Ellis V. Barr, Dayton, Ohio, assignor to Laughter Corp., Dayton, Ohio, a corporation of Ohio
Filed Aug. 8, 1960, Ser. No. 48,266
3 Claims. (Cl. 10—139)



1. A tapping unit comprising a housing, a quill rotatably carried by said housing, said quill having a pair of interconnecting bores formed therein, one of said bores defining a first internal peripheral surface of said quill and the other of said bores defining a second internal peripheral surface of said quill, said bores defining an annular shoulder therebetween, a spindle having a portion thereof disposed in said bores of said quill and having a pair of opposed ends, a tap carried by one of said ends of said spindle, a piston carried by the other end of said spindle, said piston being disposed in engagement with said second internal peripheral surface of said quill, a spring disposed between said piston and said shoulder to tend to maintain said spindle in a first axial position relative to said quill, means to rotate said quill, means to operatively

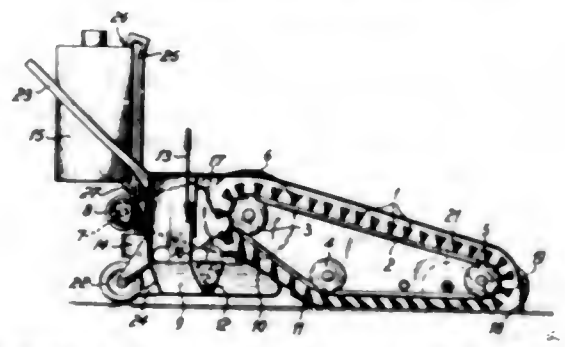
interconnect said quill with said spindle to cause said spindle to rotate in unison with said quill, and means to move said spindle axially relative to said quill in opposition to said spring to move said tap away from said housing.

3,158,884
ELECTRICALLY OPERATED ROTARY TOOTH BRUSH
Oscar Monti-Buzzetti, 109 Via Flaminia, Rome, Italy
Filed Dec. 10, 1962, Ser. No. 243,241
Claims priority, application Italy, Dec. 18, 1961, 22,661/61
1 Claim. (Cl. 15—23)



An electrically driven tooth-brush comprising in combination a casing comprising a brush portion and a control portion detachably connected, said brush portion having a hollow semi-cylindrical head, a brush spindle rotatably mounted in said semi-cylindrical head and extending in a longitudinal channel provided in said brush portion, a cylindrical brush in said semi-cylindrical head mounted at one end of said spindle, a terminal quadrate male coupling element provided at the other end of said brush spindle, said brush portion having a hollow bottom portion having a rectangular bottom with a central circular opening having two opposite arcuated recesses, said control portion of said casing having an upper tubular projection with two outwardly directed arcuated rims, said recesses of the brush portion and said rims of the control portion of the casing forming a bayonet connection for assembling said casing portions with one another, a duct opening at the upper end of said control portion in the center of the space enclosed by said tubular projection, the bottom of the space enclosed by the tubular projection of the control portion being closed except for the duct opening, an annular recess provided around the upper end of said duct, a downwardly inclined exhaust port for exhausting the water entered through said channel into the space formed by said hollow bottom portion and said annular recess in the assembled condition of said casing, said exhaust port extending from the annular recess to the outer surface of the control portion, an electric motor arranged within said control portion, a voltage regulator connected with said motor and placed in a bottom opening of said control portion for adapting the motor to the voltage used, an electrical plug accessible through a lateral opening of said control portion, a switch for stopping and starting the motor having a push-button projecting outwardly through a port provided in an oblique arcuated upper wall of said control portion, a motor shaft, a first gear wheel rigidly mounted on said motor shaft, a transmission shaft projecting through said duct and rotatably supported at its lower end on said motor, a disc rigidly secured to the upper end of said transmission shaft and having a downwardly directed rim entering into said annular recess, a terminal female coupling element rigidly secured to said disc and having a quadrate bore for coupling with said quadrate male element of said brush spindle, a second gear wheel rigidly mounted on said transmission shaft and engaging said first gear wheel for gearing down the revolutions of said motor, whereby the rotating motion of said motor shaft will be transmitted through said first and second gear wheels to said disk which will throw water by centrifugal force onto the wall of said annular recess for preventing water from pentrating into said control portion of said casing and for exhausting the water through said exhaust bore.

3,158,885
FLOOR SCRUBBING MACHINE
Werner Kammann, Bunde, Westphalia, and Reinhold Möller, Herford, Westphalia, Germany, assignors to Machinery Establishment, Vaduz, Liechtenstein
Filed July 21, 1960, Ser. No. 44,310
3 Claims. (Cl. 15—51)

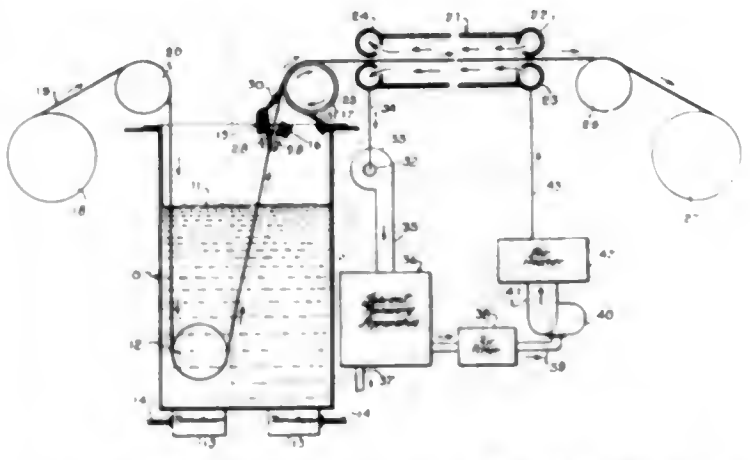


1. A washing machine for cleaning substantially plane pre-sprinkled surfaces comprising a support movable back and forth over a surface to be cleaned, an endless flexible belt having its outer surface fitted with a multiplicity of projecting brush elements substantially evenly distributed thereover, power drive and guide means mounted upon said support, to maintain said belt in continuous translatory movement in a predetermined direction relative to support and substantially in line with and independently of the movement of said support, to cause a continuously changing operative fractional portion of said belt to be in effective scrubbing engagement with the surface being cleaned, a collecting tank upon said support, a feeding trough in operative relation to said belt having one end disposed adjacent to the leading end of said operative belt portion and having its opposite end located adjacent to said tank, whereby to provide a drag conveyer by said trough and said brush elements, to remove scrub water from said area and to discharge it into said tank during the operation of said machine, and a straining receptacle removably mounted within said tank, to accumulate coarse dirt from the scrub water collected by said elements.

3,158,886
FILM CLEANING APPARATUS
David D. Grimes, Silver Spring, Md., assignor to The Richards Corporation, Arlington, Va., a corporation of Virginia
Filed Apr. 17, 1962, Ser. No. 188,211
6 Claims. (Cl. 15—100)

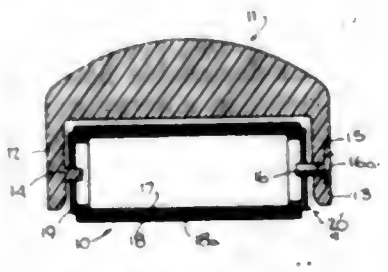
3. Film cleaning apparatus comprising a film supply reel, a cleaning solvent receiving tank, a film guide roll disposed above said tank, a second film guide roll disposed in said tank adjacent the lower end, a drain roll disposed above said tank, ultrasonic means for agitating solvent in said tank, a film take-up reel, said film passing from said supply reel over said first guide roll, downwardly into said tank and under said second guide roll, upwardly out of said tank and over said drain roll to said take-up reel, a liquid knife means for stripping contaminated solvent from said film and for rinsing foreign material therefrom, said knife means comprising a nozzle disposed on

each side of said film between said drain roll and said tank, each nozzle having means for directing a thin solid sheet of solvent liquid downwardly and into engagement with each side of said film, the angle between each sheet of liquid and said film being not greater than fifteen degrees and means for removing solvent from said drain



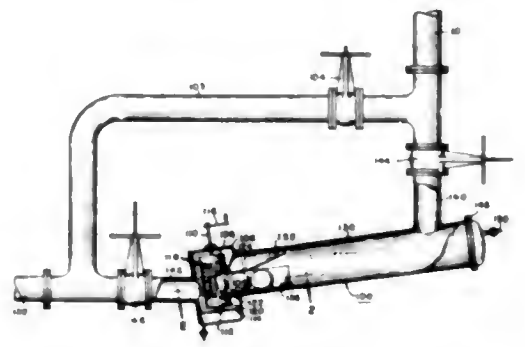
roll, whereby upon movement of film through said apparatus foreign material will be removed in said tank, contaminated solvent and additional foreign material will be removed by said liquid knife and additional solvent will be removed from said film by said drain roll, said additional solvent being returned to said tank.

3,158,887
CLEANER ROLLER-TYPE ASSEMBLY FOR PICKING UP DUST, LINT AND THE LIKE
Maurice S. Kanbar, 105 E. 15th St., and Malcolm Foster, 440 E. 57th St., both of New York, N.Y.
Filed Sept. 3, 1963, Ser. No. 305,975
1 Claim. (Cl. 15—104)



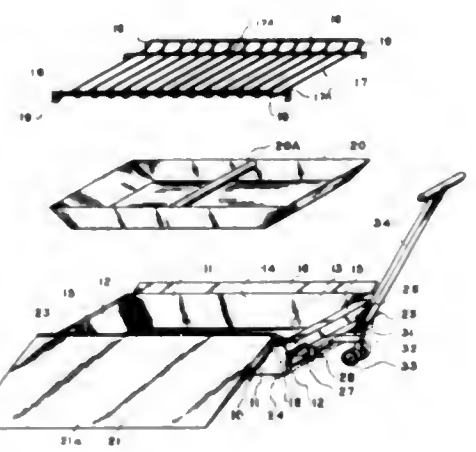
A cleaner roller-type assembly for picking up dust, lint and the like by passing the roller over the surface to be cleaned, said assembly comprising a yoke-shaped plastic handle having a pair of resilient arms extending in spaced parallel relation, one arm having an inwardly extending bearing pin formed thereon, the other arm having a bore in registration with said pin, a retractable pin insertable in said bore, and a replaceable roller mounted on said bearing pins, said roller being constituted by an open-ended tube having a pressure-sensitive tape reverse-wound thereon with its adhesive coating exposed to form a dirt pick-up layer which is renewable by peeling off the soiled portion of the tape, and removable caps enclosing the ends of said tube, said caps having central journal openings to receive said pins, said caps being formed by a sleeve telescoping in the end of the tube and attached to an apertured disc lying against the edge of the tube, said roller being in refill form with a protective sheet wound about the tape which may be stripped off to expose the tape, said sheet being formed of a laminated metallic foil and plastic material having a dimpled surface to reduce the surface area in contact with the tape thereby facilitating removal of the sheet, the plastic inner ply engaging the surface of the tape, the metallic ply being exposed.

3,158,888
SCRAPER LAUNCHING MECHANISM
Ernest A. Ericson, Channelview, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,558
17 Claims. (Cl. 15—104.06)



1. Apparatus for launching at least one pig into a pipeline while maintaining uninterrupted flow therethrough which comprises a casing; a foraminous basket rotatably mounted within and substantially spaced from said casing, said basket means having a passage in one side thereof; magazine means communicating with said casing, said magazine means being substantially larger in cross section than said pig and generally aligned with said passage at one point of rotation of said basket; inlet means in said magazine remote from said casing; outlet means in said casing communicating with said pipeline, said outlet means being generally aligned with said passage at a second point of rotation of said basket; and means for rotating said basket.

3,158,889
PORTABLE LITTER RECEPTACLES
Rudolph J. Lukezich, 1121 N. Maple St., Royal Oak, Mich.
Filed June 21, 1963, Ser. No. 290,882
15 Claims. (Cl. 15—142)



9. A device for the reception of litter and the like comprising,

(*a*) a housing having a floor portion and defining an open top reception chamber,

(*b*) a grate removably carried by said housing in a position substantially parallel to and overlying said floor portion,

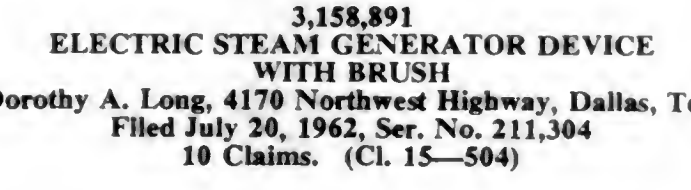
(*c*) wheel members carried by and supporting said housing,

(*d*) a ramp member having an edge hingedly connected to said housing,

(*e*) means for selectively pivoting said wheel members upwardly in planes substantially normal to the plane of said floor portion to a pivotal position, and

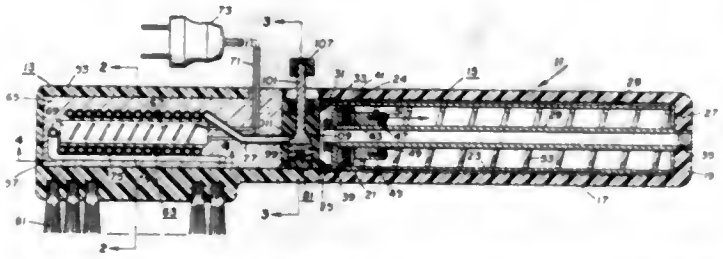
(*f*) means swivelingly mounting a pair of said wheel members to said pivoting means whereby said pair of wheel members may be swiveled in a plane substantially parallel to the plane of said floor portion.

3,158,890
WINDSHIELD WIPER BLADE ASSEMBLY
John W. Anderson, 405 S. Huntington St., Gary, Ind.
Filed Nov. 6, 1959, Ser. No. 851,382
3 Claims. (Cl. 15—250.42)



1. A wiper for cleaning a nonplanar surface comprising a wiper blade having a resilient wiping element and a flexible backing means, pressure-transmitting means operatively connected with said wiper blade and comprising a bridge member having an inboard end portion and an outboard end portion, a secondary yoke member pivotally attached on the inboard end portion of said bridge member, another secondary yoke member considerably shorter than said first-named secondary yoke member and being pivotally attached on the outboard end portion of said bridge member, each of said secondary yoke members having pairs of spaced-apart claws slidably engaging with the backing means of said wiper blade at a plurality of longitudinally spaced points, pressurefree unimpeded stabilizing means operatively connected with said bridge member and with said wiper blade, said stabilizing means having one end pivotally connected with said bridge member adjacent the pivotal connection of the shorter secondary yoke and having its other end directed toward and slidably engaging with an intermediate portion of said backing means, said stabilizing means being free to move in a plane common to the longitudinal axes of said pressure-transmitting means and said wiper blade whereby said intermediate portion of the backing means and wiper blade is stabilized against lateral vibration and chatter and against torsional deformation and distortion.

3,158,891
ELECTRIC STEAM GENERATOR DEVICE WITH BRUSH
Dorothy A. Long, 4170 Northwest Highway, Dallas, Tex.
Filed July 20, 1962, Ser. No. 211,304
10 Claims. (Cl. 15—504)



1. A manipulatable vapor generating appliance which comprises:

(*a*) an electric heater for vaporizing fluid,

(*b*) a coil of tubing surrounding said electric heater having a perforated terminal section,

(*c*) a handle, including vaporizable fluid storage means, said means comprising a closed hollow tube for receiving a supply of vaporizable fluid,

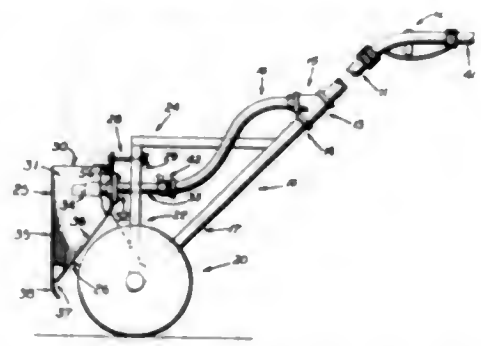
(*d*) a flow channel including a valve means disposed therein having a fluid inlet passage connected to said tube and a fluid outlet passage connected to said coil of tubing, and

(*e*) force feed means in said tube for continuously maintaining said fluid under pressure against said valve means, said force feed means being operative regardless of the position of the manipulatable vapor generating appliance, said force feed means comprising:

(1) an elongated rod with an end fixedly anchored to said handle and extending lengthwise in said hollow tube, and

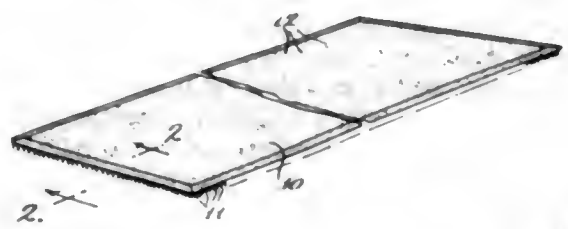
(2) a biased annular fluid pressure imparting piston slidably mounted on said rod and with its outer surfaces slidably engaging adjacent inner surfaces of said tube.

3,158,892
APPARATUS FOR APPLYING LIQUID TO TURF
Grover L. Bridger, Austin A. Zimmer, and Henry P. Zerhusen, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed May 8, 1963, Ser. No. 278,940
2 Claims. (Cl. 15—575)



1. A device for applying slurries and solutions of fertilizers, weed killers and the like to turf, comprising, in combination, a wheeled frame having a tubular handle equipped with a shut-off valve, said handle communicating with the run of an inverted Y, said run being plugged at its exit, the branch of said Y communicating through a hose having a quick-detachable hose connection, with a pipe which terminates in a spray nozzle, arranged to spray fluid under pressure and detachably fastened to the rear wall of a detachable hood for confining and preventing the drift of spray; said hood comprising forward, rear, detachable top, bottom, and side walls, the forward wall having an inturned lower marginal portion terminating in a saw-tooth edge, the bottom being inclined at a sharp downward angle and having its forward margin lying in close proximity to the forward wall, the inturned margin of the forward wall projecting inwardly beyond and below the margin of the bottom wall, whereby spray from the nozzle will emerge from the hood in a multiplicity of streamlets falling from the saw-toothed margin of the hood directly onto the turf.

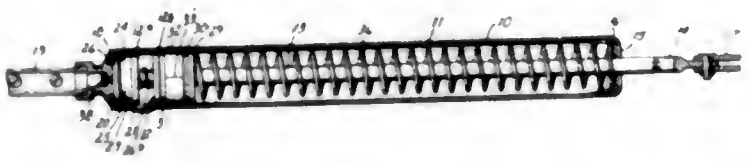
3,158,893
PROTECTIVE CARPET RUNNER
Sara M. Smith, 6127 N. Kirkwood, Chicago, Ill.
Filed July 15, 1963, Ser. No. 294,849
1 Claim. (Cl. 16—4)



A protective carpet runner comprising a thin elongate perforate flexible sheet of a width affording walking space

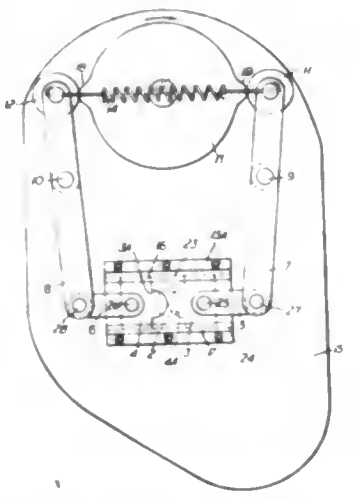
for human beings and adapted to overlie an area of a carpet subject to substantial wear so as to afford a protective walking surface over such area and thereby mitigate wear, and a plurality of closely spaced substantially rigid needle-like projections integral with and depending from said sheet and engageable with the floor surface beneath the carpet for supporting said sheet above the floor adjacent the top level of the carpet to prevent crushing of the area of the carpet beneath said sheet, said projections being arrayed in parallel rows transversely of said sheet and said sheet being flexible to facilitate rolling of the runner for convenient handling upon removal from the carpet and when not in use.

3,158,894
DOOR CLOSER BRAKE
Bert A. Quinn, St. Paul, Minn., assignor to Ideal Brass Works, Incorporated, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 9, 1963, Ser. No. 314,930
2 Claims. (Cl. 16—66)



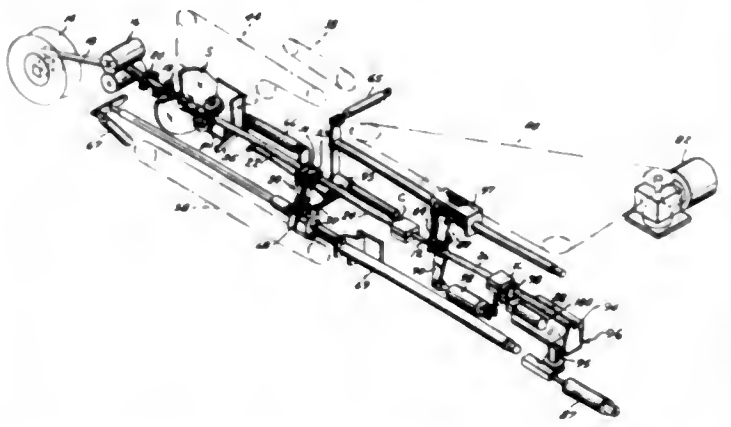
1. In a pneumatic door closer:
(*a*) an elongated cylindrical casing,
(*b*) a piston slidably received within said casing and having an axially extended plunger rod projecting through one end thereof,
(*c*) said piston and the opposite end of said casing cooperating to define check valve means for regulating the rate of movement of said piston toward said opposite end of said casing, and
(*d*) means for progressively applying braking action to said piston as same moves from said other end of said casing to said one end thereof, said means comprising:
(1) a collar slidably received on said plunger rod within said casing and defining a cam acting surface which tapers toward said opposite end of said casing,
(2) a coil compression spring encompassing said plunger and interposed between said piston and said collar and yieldingly biasing same apart,
(3) a second coil compression spring encompassing said plunger rod within said casing and interposed between said collar and said one end thereof and having a greater compression value than that of said first mentioned compression spring, and
(4) an axially split annular brake shoe interposed between said piston and said collar and having a tapered cam acting surface on one side which cooperates with the reversely tapered cam acting surface on said collar, whereby to cause said brake shoe to engage the inner wall of said casing with progressively increasing braking pressure as said second mentioned spring progressively overcomes the force exerted by said first mentioned spring during movements of said piston from said opposite end of said casing toward said one end thereof,
(5) the relative length and compression values of said compression springs coupled with the dimensions of said brake shoe being such as to delay the expanding braking pressure exerted by said collar upon said brake shoe during initial movements of said piston from said opposite end to said one end of said casing.

3,158,895
SAUSAGE CUT-OFF DEVICES
Paul Helmut Hilgeland, 2 Townsend Ave., London N.14, England
Filed July 18, 1962, Ser. No. 210,694
Claims priority, application Great Britain, July 21, 1961, 26,622/61
1 Claim. (Cl. 17—32)



A cut-off device comprising a plate defining a meat extrusion orifice and two parallel guide grooves on either side of said orifice, two cutting members having concave cutting edges and slidably guided in the said grooves, two ties pivotally attached to the said cutting members, one and only one tie being attached to each cutting member, two lever arms pivotally attached at one end to the said ties, one and only one lever arm being attached to each tie, two cam followers attached to the said lever arms at opposite ends to the said ties, one and only one cam follower being attached to each lever arm, a rotating cam the surface of which engages both cam followers, and a spring attached to the said lever arms so as to urge both cutting members away from the said orifice and both cam followers against the said cam, the surface of the cam being such that at least once every revolution each cutting edge is forced across the orifice against the action of the spring.

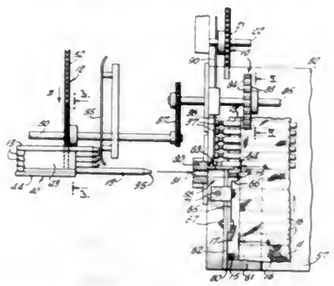
3,158,896
MANUFACTURE OF SHIRRED CASINGS
Walter V. Marbach, Palos Heights, Ill., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 15, 1962, Ser. No. 166,023
8 Claims. (Cl. 17—45)



1. In the manufacture of shirred casings, shirring a measured length of flattened cellulosic tubing in a shirring zone on a mandrel as a first stage of compression, applying axial force to the trailing end of said shirred length to advance it away from said shirring zone fur-

ther along the same mandrel as a second stage of compression, and applying axial force to the trailing end of said advanced second stage length to advance said second stage length still further away from said shirring zone along the same mandrel as a third stage of compression.

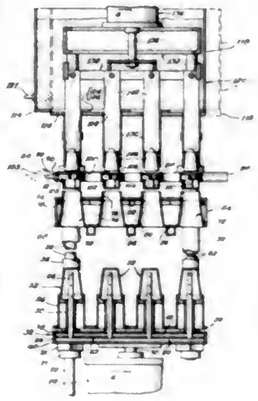
3,158,897
MACHINE FOR SHAPING A FABRIC SHEET UNIT TO FORM A SHEATH FOR STORAGE BATTERY PLATES
Harry Ball, 26 Kate Terrace, New Brunswick, N.J.
Filed Jan. 9, 1964, Ser. No. 336,738
10 Claims. (Cl. 18—4)



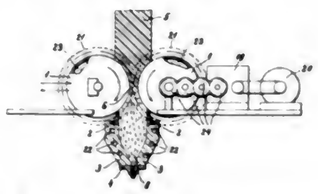
1. A machine for manufacturing an electric storage battery sheath, comprising means for advancing a continuous fabric sheet unit of heat-shrinkable thermoplastic material in the direction of its length, said sheet unit comprising a pair of opposed sheets connected face to face at intervals to form a succession of parallel pockets extending therethrough transverse to the direction of advancement of the sheet unit, means for inserting into said pocket die rods respectively and successively automatically as the empty pockets pass a rod inserting station, means for heating the sheet unit with the die rods inserted in the pockets therein during advancement of the sheet unit, to cause said pockets to be shaped and shrunk around said rods into set form, and means beyond said heating means for withdrawing the die rods from the shaped pockets automatically, as said shaped pockets pass a rod withdrawing station.

3,158,898
APPARATUS FOR MOLDING PLASTIC CONTAINERS
William Z. Northrup and Jose d'Rugama, Mexico City, Mexico, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,052
10 Claims. (Cl. 18—5)

1. A machine for molding cups from partially preexpanded thermoplastic beads comprising a plurality of column members positioned in parallel arrangement, a first platen assemblage including a plurality of male molds and being supported by the column members, a second platen assemblage including a plurality of open-ended female molds and being supported by the column members, a third platen assemblage including a plurality of molding heads and being supported by the column members, said third platen assemblage being formed to provide a plurality of loading tube openings, a material bin supported upon the column members and being provided with a plurality of loading tubes each of which has a movable loading cone at the lower end, means to move said first platen assemblage so that the male molds are inserted in the female molds, and means to cause relative movement between the second platen assemblage and the third platen assemblage so that the loading tubes and molding heads may alternately enter the female molds.

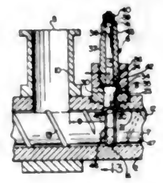


3,158,899
APPARATUS FOR CONTINUOUSLY PRODUCING SHEETS OF THERMOSETTING ARTIFICIAL RESINS
József Demeter, Budapest, Hungary, assignor to Technoimpex Magyar Gepipari Kulkereskedelmi Vallalat, Budapest, Hungary
Filed Dec. 22, 1960, Ser. No. 77,638
1 Claim. (Cl. 18—12)



Apparatus for continuously producing sheets of thermosetting artificial resins comprising two heatable rotatably mounted rollers having smooth surfaces and at least a length equal to the width of the sheet to be formed, said rollers being disposed opposite each other in spaced relationship to define an opening therebetween, driving means operatively connected to said rollers for rotating said rollers and for varying the speed thereof, said rollers engaging solid thermosetting material therebetween as it is being fed into said opening so that said rollers fuse the thermosetting material, heatable channel means disposed beneath said rollers to receive the fused thermosetting material fused by said rollers and to maintain the thermosetting material in a fused state, scraper blades mounted on said channel means and engaging said rollers to scrape fused thermosetting material therefrom into said channel means, and die means disposed at the bottom of said channel means, said die means having a slot of variable width therein equal to said length through which the fused thermosetting material passes from said channel means to form a sheet of thermosetting material having a thickness and a length determined by said slot.

3,158,900
EXTRUDER
Eugene E. Heston, Akron, Ohio, assignor to NRM Corporation, a corporation of Ohio
Filed June 12, 1962, Ser. No. 201,927
6 Claims. (Cl. 18—12)



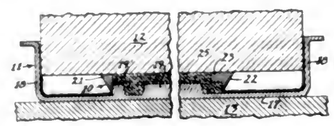
1. An extruder comprising a cylinder having feed and discharge openings; a feed screw rotatable in said cylinder and having a helical flight, and a rib axially spaced from the end of said flight blocking the advance of material by said flight from said feed opening toward said discharge opening; and a valve member in said cylinder defining with a minor portion of the circumference of said rib a radial gap through which all of the material is advanced by said flight.

3,158,901
CONTINUOUS EXTRUDER
Robert F. Westover, Princeton, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 8, 1963, Ser. No. 257,240
2 Claims. (Cl. 18—12)



1. A continuous flow extruder comprising
at least two feed containers, each communicating with a single extrusion die through a valve assembly,
said valve assembly comprising
a valve slideable between a first position and a second position and having flow channels formed therethrough, such that the first position permits communication between a first feed container and said single extrusion die and the second position permits communication between a second feed container and the single extrusion die,
valve actuating means comprising
first and second feed channels each extending through said valve with each having an inlet communicating with a feed port, the first feed channel terminating in a blind exit when the said valve is in said first position such that pressure generated in the extrudate in said adjacent feed port urges said valve into said second position, the second feed channel operating vice-versa,
first and second container feed conduits communicating respectively with said first and second feed channels such that when said valve is in said second position, said first container feed conduit connects the first feed channel with the first feed container and such that operation is vice-versa with respect to the second container feed conduit,
first and second feeding means for introducing feed material alternately into said first and second feed ports, respectively, said first feeding means thereby urging said valve into said second position permitting the flow of feed material through said first feed channel and into said first feed container, said second feeding means operating vice-versa,
first and second means operative concurrently with said second and first feeding means, respectively, said first means discharging the contents of said first feed container, under pressure, through said extrusion die, said second means discharging the contents of said second feed container, under pressure through said extrusion die,
wherein said flow channels are disposed at a position relative to the feed containers such that the valve permits communication between the single extrusion die and the first and second feed containers simultaneously so that both feed containers are discharged simultaneously during the displacement of the valve from the first position to the second position.

3,158,902
APPARATUS FOR MOLDING DESIGNS IN PRESSED-WOOD
Roman H. McPherson, Nashville, Tenn., assignor to Deco Engineering, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Dec. 15, 1961, Ser. No. 159,551
2 Claims. (Cl. 18—16)



1. An apparatus for molding wood composition to form a design in a pressed-wood product comprising, upper and lower platens having opposing flat surfaces, a lower caul having a bottom wall supported on said lower platen, the upper face of said bottom wall having selectively raised and depressed surfaces, an upper caul comprising side walls having outside surfaces and inside surfaces, the outside surfaces tapering downwardly to intersect the inside surfaces to form a bottom edge for engaging said bottom wall, said inside surfaces being adapted to form the side edges of said pressed-wood product, and means for moving said upper platen toward said lower platen to compress said composition between said cauls.

3,158,903
MOLDING PRESS
Paul E. Fischer, Cedar Grove, Frank H. Lambert, Pompton Lake, and Wolfram P. P. Spika, Lake Hiawatha, N.J., assignors to Champlain-Zapata Plastics Machinery, Inc., Caldwell, N.J., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,437
12 Claims. (Cl. 18—17)

1. A molding press for use in the molding of foam plastic articles of expanded plastic beads, said press comprising
(*a*) a stationary upright frame platen adapted to receive at least one first mold section thereon,
(*b*) a movable upright platen assembly mounted for movement toward and away from said stationary platen and including a movable frame platen adapted to receive at least one second mold section thereon for mating relation with the first mold section,

(*c*) hydraulically operable means operatively connected to said movable platen assembly for moving the same toward and away from said stationary platen,

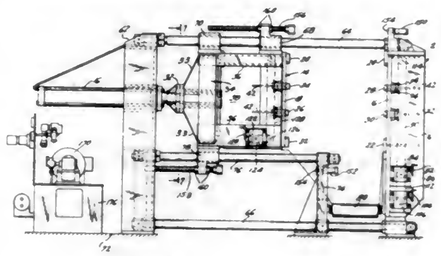
(*d*) each of said platens comprising

(1) a plurality of spaced apart vertical ways,

(2) a pair of top and bottom horizontal bars fixed to said ways, and

(3) at least one intermediate horizontal bar mounted on said ways for movement along said vertical ways for vertical adjustment relative to said top and bottom horizontal bars for accommodating mold sections of varying size, and

(*e*) means operatively connected to each of said intermediate horizontal bars for vertically moving and adjusting opposite ends thereof simultaneously and in equal amounts for maintaining said intermediate bars horizontal during vertical adjustment thereof.



8. A molding press for use in the molding of foam plastic articles of expanded plastic beads, said press comprising

(*a*) a stationary frame including

(1) a first upright frame section,

(2) a second upright frame section spaced from said first upright frame section,

(3) a pair of laterally spaced horizontal upper tie members connecting said upright frame sections at the upper portions thereof,

(4) a pair of laterally spaced horizontal lower tie members connecting said spaced apart upright frame sections at the lower portions thereof,

(5) a pair of laterally spaced horizontal intermediate tie members disposed between and in spaced relation to said upper and lower tie members and being connected at one end thereof to said second upright frame section and extending toward but terminating at the other ends thereof in spaced relation to said first frame section, and

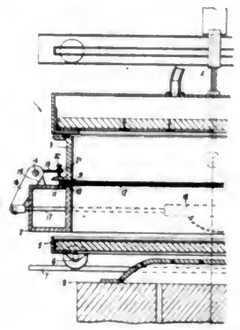
(6) an upright intermediate frame member supporting said other ends of said intermediate tie members and being spaced from said first frame section and said lower tie members, the area between said intermediate frame member and said first frame section being unobstructed for free access thereto,

(*b*) a stationary upright platen mounted on said first upright frame section and being adapted to receive at least one first mold section thereon,

(*c*) a movable upright platen assembly mounted on said upper and intermediate tie members for movement toward and away from said stationary platen and including a movable platen adapted to receive at least one second mold section thereon for mating relation with the first mold section, and

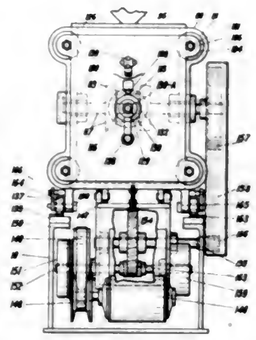
(*d*) hydraulically operable means mounted on said second upright frame section and operatively connected to said movable platen assembly for moving the same toward and away from said stationary platen.

3,158,904
VACUUM-FORMING MACHINES
Thomas Edward Horace Gray, Sutton Coldfield, and James Jones-Hinton, Solihull, England, assignors to Dunlop Rubber Company Limited, county of London, England, a British company
Filed Jan. 29, 1963, Ser. No. 254,806
Claims priority, application Great Britain, Feb. 16, 1962, 5,975/62
3 Claims. (Cl. 18—19)



1. A vacuum forming machine for forming sheets of thermoplastic material comprising a machine member having a sheet clamping surface, a clamping frame movable towards and away from the clamping surface during a clamping operation, a clamp bar engageable with the clamping frame, a plurality of bolts attached to and spaced along the length of the clamp bar, a plurality of locknuts attached one to each bolt, and means operably connected to the clamp bar to move the clamp bar into and out of engagement with the clamping frame and to apply clamping pressure, through the bolts, to the clamping frame.

3,158,905
MECHANICAL INJECTION MOLDING MACHINE
Jaroslav J. Havlik, 952 Hamilton St., Preston, Ontario, Canada
Filed Jan. 19, 1962, Ser. No. 167,358
3 Claims. (Cl. 18—30)



1. In a high speed injection moulding machine of the type having a main frame, a movable platen section, a substantially fixed platen section mounted on horizontally extending bars, the bars being supported at one end by a platen operating mechanism housing fixed on the main frame and secured at the other end to a fixed pressure plate supported by the main frame, plastic injection mechanism comprising, in combination:

(*a*) a plasticizing magazine supported in a substantially fixed operative position on said bars and having a portion extending through said fixed platen section for operative registration with a die member mounted on the fixed platen section and having a nozzle valve automatically opened when the platens close,

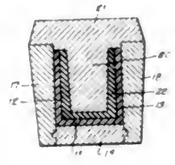
(*b*) a reciprocable crankcase mounted on the bars between the magazine and the pressure plate;

(*c*) a pressurizing and injection piston operatively positioned in said magazine;

(*d*) a piston reciprocating member carried by the crankcase and operatively connected to the pressurizing and injection piston;

(*e*) and power spring means between the reciprocable crankcase and the pressure plate storing piston reaction forces produced by filling and pressurizing the magazine with plasticized material, said power spring means automatically actuating the crankcase and the piston to effect an injection stroke upon opening the nozzle valve.

3,158,906
APPARATUS FOR MOLDING PLASTIC ARTICLES
Edwin Leslie Boyer, Plainfield, N.J., assignor to Amerace Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,020
4 Claims. (Cl. 18—42)



1. Apparatus for forming molded plastic articles each having at least one cavity therein of a predetermined shape and dimensions, comprising rigid mold means for defining the outside of the articles to be molded, and a core assembly for forming said cavity in each of said articles, said core assembly having an outside configuration including at least one portion which will mechanically prevent said core assembly from being withdrawn from the cavity in one of said articles without variation in the outside shape or size of said core assembly or damage to or modification of the shape of the articles being molded;

said core assembly comprising a substantially rigid core portion which is tapered to relatively smaller lateral dimensions toward its outer end,

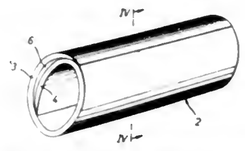
and a one-piece liner portion of a predetermined material and having an inwardly tapering inside cavity conforming to the outside configuration of said core portion,

said liner portion being disposed in a position surrounding said core portion to form said core assembly during the molding of an article in said mold means, and the space between said liner portion when assembled with said core portion as said core assembly on the one hand and said mold means on the other defining the space which plastic material may occupy during the molding of an article;

the inwardly tapering inside cavity of said liner portion permitting withdrawal of said core portion therefrom following the molding of a plastic article,

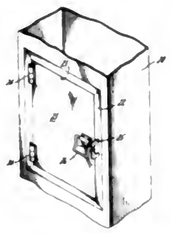
and the material of said liner portion being such as to be substantially rigid under the temperature and pressure conditions used during the molding of a plastic article, but to permit the subsequent removal of said liner portion from said cavity in an article without damage to the molded article, notwithstanding the shape and dimensional relationships of such cavity as aforesaid after said core portion has been separated from said liner portion.

3,158,907
RESILIENT SPLIT CORE AND SHELL FOR MOULDING APPARATUS
Strahinja S. Pavicevic, Putzbrunnerstrasse 11, Ottobrunn, near Munich, Germany
Filed Nov. 14, 1962, Ser. No. 237,591
Claims priority, application Austria, Nov. 14, 1961, A 8,576/61
4 Claims. (Cl. 18—45)



1. A mould for producing reinforced plastic tubes and the like comprising a shell and a core within the shell, and means for closing the ends of both the shell and the core in fluid-tight manner, wherein the core is formed by a single longitudinally split resilient expansible tube whose longitudinal edges overlap to an extent sufficient to allow the tube to expand at least to its normal working limit of diameter without reduction of the extent of overlap below a safe minimum at which the tube continues to present an effectively continuous cylindrical outer surface under working conditions, means for introducing a fluid under pressure into the interior of the core tube, and a low friction fluid pressure seal inserted between the overlapping portions of the resilient core tube.

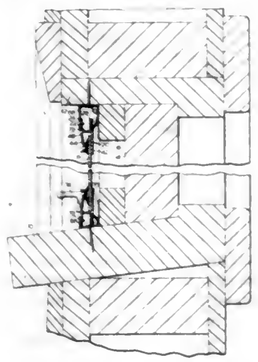
3,158,908
CLAMPING LATCH
William E. Springer, Springfield, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed July 25, 1962, Ser. No. 212,277
4 Claims. (Cl. 20—16)



1. In combination with a wall having a port therein and a panel adapted to close said port, securing means comprising a catch fixed with respect to said wall and providing a face rigidly spaced from and presented toward said wall, a latch element comprising a loop formed to provide a leg portion, a bight portion and a bolt portion, the axis of said bolt portion being located in offset parallelism with the axis of said leg portion, means securing said latch element leg portion to said panel for oscillation about its own axis whereby said bolt portion

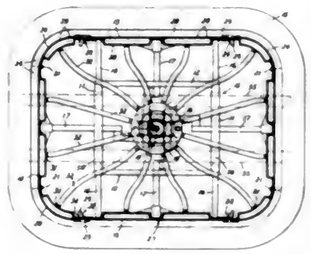
will be bodily moved through an arc variably spaced from said panel about said leg portion axis, that surface of said bolt portion most remote from said panel, measured on a line perpendicular to said wall when said panel is in closing relation to said port, being engageable with said catch face and the point of maximum distance of said surface from said wall, as said bolt portion so moves, being at least equal to the maximum spacing of said face from said wall, the equilibrium distance between said axes exceeding the distance between said wall and said catch face reduced by the sum of the diameters of said leg portion and said bolt portion.

3,158,909
SASH FRAME
George Alfred Downs, 680 Breys Ave., Salem, Oreg.
Filed Dec. 12, 1961, Ser. No. 158,750
2 Claims. (Cl. 20—56.1)



1. A sash frame assembly comprising upper and lower mounting channel members having opposed inner surfaces and adapted for fastening to a window opening frame with their channel openings in opposed relation, a pane holding element of less thickness than the interior width of said channel members for insertion therein, said pane holding element being formed of a substantially rigid material and in cross section having a body portion, a rigid first wall extending from said body portion at right angles thereto and having a straight pane engaging surface adapted for flush abutment by a pane to be mounted in said element, a second wall extending from said body portion in the same general direction as said first wall but inclined inwardly toward said first wall, said second wall forming a pane receiving channel with said first wall and terminating in an enlargement provided with a flat end edge angularly disposed relative to said second wall for directing a pane into the pane receiving channel, said second wall having an outer surface and said enlargement projecting outwardly beyond said outer surface, means defining a cutout portion in said second wall adjacent its juncture with said body member whereby said wall is yieldable for varying the width of the pane receiving channel adjacent the end of the second wall to engage panes of varying thicknesses, a third wall extending at right angles from said body portion in a direction opposite from said first and second walls and having an outer surface, said third wall having a groove opening through its outer surface and being disposed normal to the pane receiving channel, a resilient sealing member mounted in the groove in said third wall having a flexible tongue projecting outwardly into engagement with one of said inner surfaces of said mounting channel members, and a fourth wall extending from said body portion in parallel spaced relation to said third wall, said fourth wall having an outer surface engageable with the other inner surface of said mounting channel members.

3,158,910
PERMANENT MOULDS
Alexandre Vayda, Paris, France, assignor to Fonderite Societe à Responsabilite Limitee, Paris, France
Original application July 6, 1960, Ser. No. 41,102, now Patent No. 3,100,919, dated Aug. 20, 1963. Divided and this application June 17, 1963, Ser. No. 288,158
Claims priority, application France, July 7, 1959, 799,495
2 Claims. (Cl. 22—9)

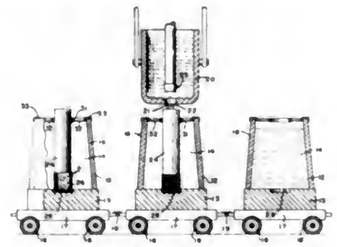


1. A form for providing the interior of a permanent steel casting mould with an exothermic lining, comprising a central frame, a plurality of wall elements which together form a continuous wall inside the permanent mould supported by said central frame, sealing means at the lower edge of the wall elements of the form, bearing arms supported by the mould and supporting said central frame thereby suspending the form in the permanent mould, an admission system for supplying a hardening medium through the wall elements of the form to the exothermic lining, supporting bars movably connected to said frame and carrying the wall elements and being operable to position said wall elements for the lining operation and, respectively, to retract them for withdrawing the form when the lining has set, and control means connected to said frame and being operable for moving said supporting bars to position and to retract the wall elements, said wall elements including members facing the lateral walls of the permanent mould and arcuate wing members forming the corners, one vertical edge of the wing members being hingeably connected to one adjacent wall member, the other adjacent wall member including guide means, the other vertical edge slidably passing through said guide means of the other adjacent wall member in such manner that the wall members in conjunction with the wing members constitute a form with a continuous unbroken wall surface.

3,158,911
APPARATUS FOR POURING INGOTS
Elmer G. Thompson, 280 S. Parkview Ave., Columbus 9, Ohio
Filed Sept. 7, 1960, Ser. No. 54,531
6 Claims. (Cl. 22—139)

1. The combination of an ingot mold with a tube of inorganic fibrous material substantially insoluble in the metal poured and of a substantially different specific gravity from the metal poured, there being a well in the stool supporting the mold, the lower end of the tube being received in the well and being held in position by walls of the well, the tube being upright and extending from the well to adjacent a pouring opening of a ladle of molten metal, a round plate of such material in said well and spanning the lower end of the tube, the tube stopping

splashing droplets of metal as the metal is poured, the tube decomposing and disintegrating as the level of metal



rises thereabout, the material of the tube gravitationally separating from the poured metal.

3,158,912
CONTROLLED GRAIN SIZE CASTING METHOD
Wilbur H. Schweikert, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 9, 1962, Ser. No. 215,775
3 Claims. (Cl. 22—196)

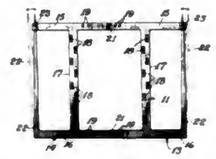
1. In a method of casting an article in an investment casting mold, the steps of: producing a lining portion of an investment casting mold having a lining surface to confine molten metal from a slurry consisting essentially of about 1–5% by volume of a metal compound reducible to a free metal at a temperature no higher than the pouring temperature of the casting metal, the metal element of the reducible metal compound being selected from the group consisting of iron, cobalt, nickel, and manganese, the balance of the slurry being mold material; and then, at the time of pouring, reducing the metal compound on the lining surface of the mold to free metal in a finely divided, discrete state whereby the free metal is available as metallic nuclei for the formation of fine metal grains on contact with the molten metal subsequently cast into the mold.

3,158,913
METHOD OF TREATING STEEL
Wilbur T. Bolkcom and William E. Knapp, Allison Park, Pa. (both % American Metallurgical Products Co., P.O. Box 11068, Pittsburgh 37, Pa.)
No Drawing. Filed July 17, 1961, Ser. No. 124,316
5 Claims. (Cl. 22—215)

1. The method of eliminating cold checking and improving hot workability in alloy steels comprising the steps of adding about two ounces to four ounces of polytetrafluroethylene per ton of steel to the alloy steel to be treated in the ladle, adding to the same steel about two to six ounces of polytetrafluroethylene per ton of steel in the mold, solidifying the molten mass and working the steel.

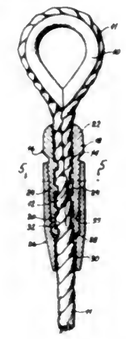
3,158,914
DRAPERY HEADING SUPPORT
Michael Angelo Guarini, 9 Watchung Ave., West Orange, N.J.
Filed Mar. 15, 1962, Ser. No. 179,965
6 Claims. (Cl. 24—86)

1. A drapery heading support comprising:
(*a*) a top bar,
(*b*) a bottom bar generally parallel to the top bar and spaced apart therefrom,
(*c*) a pair of spaced apart connecting bars rigidly joining the top and bottom bars together intermediate the ends of the top and bottom bars, and defining a pair of free ends on the top bar,



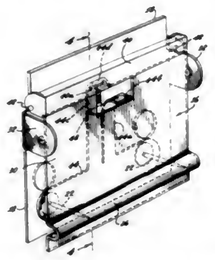
(*d*) a resilient spike on each end of the bottom bar extending upwardly to and engageable with the opposed end of the top bar, and
(*e*) hanger means attached to the connecting bars.

3,158,915
WIRE ROPE CLAMPS
Immanuel Johannes Olesen, Allerod, near Copenhagen, Denmark; Hermina Olesen, executor of the estate of said Immanuel J. Olesen, deceased, assignor to Malodan A/S, Copenhagen, Denmark
Filed June 2, 1960, Ser. No. 33,518
Claims priority, application Great Britain June 8, 1959
10 Claims. (Cl. 24—124)



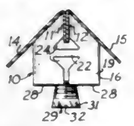
1. A wire rope clamp for connecting two steel wire rope parts, comprising in combination; a hollow outer casing having a longitudinal axis; at least two co-operating clamping jaws having opposed concavely curved inner faces; said jaws being adapted to be arranged in assembled embracing relation with respect to the rope parts, said concavely curved inner faces defining a passage for said rope parts and being adapted tightly to engage said rope parts, the rope parts and said jaws assembled with respect thereto being adapted to be introduced into said outer casing; each said jaw having an outer cam follower surface portion forming an angle to said longitudinal axis, said outer casing being provided with inner cam surface portions forming the same angle to said longitudinal axis as said outer surface portions and adapted to engage said outer cam follower surface portions; means for forcing said jaws in said assembled state into said outer casing, so that said jaws are owing to the said engagement of said outer cam follower surface portions with said inner cam surface portions forced into tight gripping contact with the wire rope parts; each concavely curved inner face of each jaw including transverse arcuate ribs adapted to engage the rope parts; the ribs of two cooperating jaws being staggered relative to each other; each rib defining together with the said concavely curved inner face of the opposite jaw a sectional reduction of said passage; said ribs being made from a material essentially softer than steel and adapted to flow at the contacting pressures between the rope parts and the ribs arising during said forcing of said jaws into tight gripping contact with the wire rope parts.

3,158,916
GARMENT SUPPORTING ASSEMBLY
Benjamin R. Percin, North Hollywood, Calif., assignor to Henry S. Hendler
Filed Mar. 9, 1962, Ser. No. 178,602
1 Claim. (Cl. 24—160)



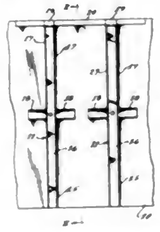
A garment supporting assembly, comprising:
a broad, generally planar base plate lying in a plane, said base plate having a top edge and a bottom edge, two laterally spaced tabs carried by said base plate;
a clamp plate having a top and bottom edge, pivot means mounting said clamp plate on said tabs, said pivot means establishing a pivot axis across said clamp plate adjacent said top edge thereof, said clamp plate thereby having a swing movement between a clamp position substantially parallel to said base plate and a release position at an angle thereto, said clamp plate top edge being positioned beyond said pivot axis and swingable toward said base plate in a swing path;
a lock bar having opposed end walls, pivot means mounting said walls on said base plate in a position generally normal to said base and clamp plates, said walls having a first position as a lock member in said swing path to prevent said swing movement of said clamp plate top edge, and pivotable away from said clamp plate toward said top edge of the base plate to a position out of the path of swing of said clamp plate; and
said base and clamp plates having coacting garment engaging means cooperating to grip a garment when in said clamp position.

3,158,917
FLANGE CLAMP
Ernest Schlueter, 74 Edwards Road, Troy, N.Y.
Filed Mar. 16, 1962, Ser. No. 180,243
9 Claims. (Cl. 24—243)



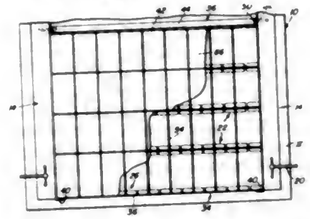
1. A clamp comprising a generally U-shaped body of slightly yieldable material and having legs and a yoke, the end portions of the legs being provided with open-end slots respectively dividing the legs into pairs of engagement jaws the yoke being provided with a generally longitudinal slot throughout its entire length, the slot of the yoke extending into the legs close to, but without meeting, said open-ended slots to leave tie portions in the respective legs to maintain integrity of the body but yieldable in pivot-like manner under force, and means in the slot of the yoke to spread the resulting halves of the yoke and contiguous portions of the legs and cause the pairs of jaws to close.

3,158,918
CONCRETE FORM STRUCTURE
Carl W. Almgren, Chicago, Ill., assignor to Marsh & Truman Lumber Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 14, 1962, Ser. No. 173,242
2 Claims. (Cl. 25—131)



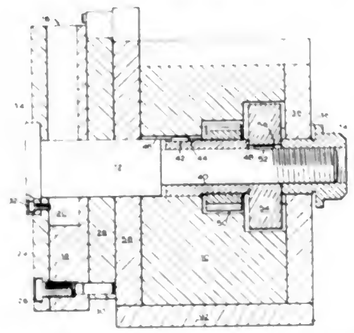
1. The combination with a concrete form structure having upright wall panels,
means for rigidifying said wall panels comprising a series of cross like metal rigidifying members including channel-like vertical strips and axially aligned channel-like horizontal strips extending from opposite sides of said vertical strips intermediate the ends thereof,
and tie rod means extending through said channel-like vertical strips and connected between said wall panels and spacing said panels apart and holding said rigidifying strips in direct engagement with said panels,
said vertical strips having upper end portions bent outwardly of the panel and extending upwardly therefrom in spaced relation with respect thereto, and forming waler timber brackets supporting waler timbers in direct engagement with said panels and thereby rigidifying the upper end portions of the panels.

3,158,919
BRICK FORMS
John A. Audia, % Edward Malley, 221 N. Ray St., New Castle, Pa.
Filed Mar. 8, 1963, Ser. No. 263,779
2 Claims. (Cl. 25—121)



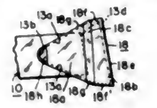
1. An adjustable brick molding device including a unitary substantially planar support surface, a pair of elongated side rails, means adjustably fixing said rails in parallel transversely spaced relation to each other on said support surface, a plurality of spaced parallel vertically orientated cross members, said cross members extending transversely between the side rails and being adjustable therealong for varying the space between the cross members, said cross members being maintained in position by a frictional clamping thereof between the side rails, said cross members including vertical slots on both of the vertical faces thereof directed toward other of said cross members, the corresponding slots in each member being in alignment with each other, and division plates extending between adjoining cross members, the ends of each division plate being removably positioned in a selected pair of opposed slots, said cross members each consisting of a vertical flat plate having a plurality of spaced projections on both faces thereof, the space between said projections constituting said vertical slots, the projections on said flat faces consisting of angle members, each of these angle members having substantially equal length legs, the free edges of these legs being rigidly secured to a face of the flat plate with the angle formed by the integral edges of the angle member projecting therefrom so as to form an angled recess in the end of a brick molded thereby.

3,158,920
AUTOMATICALLY INDEXED TOOL TURRET
Ralph R. Bollman, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 16, 1963, Ser. No. 251,880
7 Claims. (Cl. 29—35.5)



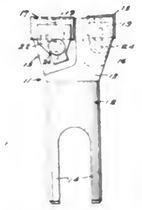
1. An automatically indexable tool turret comprising:
(*a*) a housing,
(*b*) an axle journalled through said housing for rotation therein and for limited axial movement therethrough,
(*c*) a tool holder fixed on one end of said axle and defining the limit of axial movement of said axle in one direction when said tool holder is received firmly against said housing, said axle thereby restrained from movement,
(*d*) means releasably to apply a force to shift said axle in said one direction to engage said tool holder firmly against said housing,
(*e*) a power mechanism operable through a reciprocal stroke to operate said clamp means to release and apply said axle shifting force, and
(*f*) a ratchet mechanism responsive to stroking of said power mechanism to rotate said axle a predetermined amount during the period of operation thereof when said tool holder is not firmly engaged against said housing.

3,158,921
CUTTING-OFF TOOL
Victor G. Yost, Irwin, Pa., assignor to Firth Sterling, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1963, Ser. No. 274,141
18 Claims. (Cl. 29—96)



1. In a cutting-off tool assembly for limited clearance spacing cutting-off operations on a work piece, such as for cutting-off or grooving a metal shape and the like, and which utilizes in combination a substantially elongated tool holder having shank and head portions, a cutting element and a clamping element for removably-securing said cutting element in an operating position on the head portion of said holder; a construction wherein the head portion has a downwardly-offset shelf open to a top face thereof to receive said cutting element thereon, said shelf has a planar ledge face that declines downwardly-backwardly from a front face of the head portion, said ledge face has a front portion that is open to the front face of and to adjacent corners and opposite lateral side faces of the head portion, said shelf is enclosed on its lateral sides from its open front portion by extending lateral side walls that extend longitudinally-backwardly in a converging relation along the head portion to define a substantially V-shaped slot with said ledge face, said cutting element has a front face defining at least one front cutting edge with its top face for engagement with the work piece and has adjacent opposed minor lateral side faces connected to the front face by corner edges; said cutting element has a substantially planar under face that declines downwardly-backwardly therealong in a complementary manner with respect to the ledge face of said shelf, and has major lateral side faces that extend longitudinally-backwardly from said minor lateral side faces in a converging relation and in a complementary manner with respect to the lateral side walls of said shelf, so that said cutting element when placed on said shelf will be restrained against lateral side movement by cooperation with the lateral side walls of said shelf; said head portion has a threaded bore therein backwardly of said shelf and open to its top face, said clamping element has a bore therethrough behind its front end portion, a threaded cap screw is adapted to extend through the bore of said clamping element into the bore of the head portion to secure a front end portion of said clamping element in clamping engagement upon a top face of said cutting element for removably-securing said cutting element in position on said shelf, and a top face of said head portion and an under face of said clamping element have cooperating portions for retaining said clamping element in alignment with the head portion.

3,158,922
INDEXABLE BLADE POCKET MILL
Ray H. Reese, 409 Ridgewood Ave., Dayton 9, Ohio
Filed Apr. 16, 1962, Ser. No. 187,868
1 Claim. (Cl. 29—105)



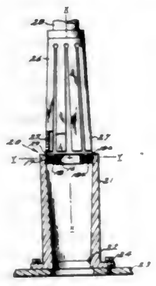
A removable blade milling tool comprising a shank portion, a head portion. said head portion having a pair of recesses therein provided with seat-forming surfaces, one of said recesses being deeper than the other, reversible blades having opposed cutting edges and removably clamped to said seat-forming surfaces, the blade in said deeper recess having a greater width than the blade in the other recess whereby the cutting action of one blade overlaps the cutting action of the other, said blades having their inner cutting edges in abutting relation to adjacent seating surfaces in said recesses, said blades and surfaces having aligned indexing grooves in their mating faces, said grooves extending in parallel relation to the

longitudinal axis of said tool, a clamp mounted outwardly of each blade in its associated recess, a screw extending through each clamp and its associated blade and threadably connected to said head, and dowel pins coaxially embraced by said grooves to accurately index said blades, whereby said opposed cutting edges can be sequentially used to double the lives thereof and whereby said blades can be quickly and easily replaced without removing said tool from a machine mounting the same.

3,158,923
METHOD FOR MAKING A SEAL AND COUPLING ASSEMBLY

Harold L. Reinsma, Pekin, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Apr. 2, 1962, Ser. No. 184,434
6 Claims. (Cl. 29—149.5)

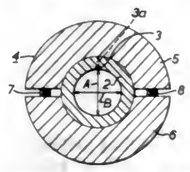


1. A method for forming a seal assembly having an elastic ring disposed between inner and outer sleeves of metal comprising the steps of positioning the elastic ring comprising at least one concave surface formed thereon between the inner and outer sleeves so that the concave surface extends between said sleeves, reducing the size of the outer sleeve toward said inner sleeve to place the elastic ring under compression and changing said concave surface to a substantially flat surface.

3,158,924
METHODS OF MANUFACTURING JOURNAL AND JOURNAL BEARING MEMBERS

Arthur John Bowhill, Neston, Wirral, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed May 17, 1962, Ser. No. 195,639
Claims priority, application Great Britain May 17, 1961
2 Claims. (Cl. 29—149.5)

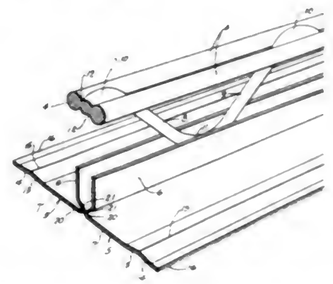


1. Method of manufacturing a journal and journal bearing assembly designed for operation with gas lubrication between the journal member and journal bearing member, the journal member being in the form of a solid shaft and the journal bearing member being in the form of a sleeve, comprising machining the shaft to form thereon an external bearing surface of true circular cross-section, machining the sleeve to form a longitudinally extending groove in its inner surface, machining the inner surface of the sleeve to shape the ungrooved portion to true circular cross-section, radially stressing the sleeve by applying to it a controlled external diametral clamping force to deform its inner surface cross-section, the groove lying at one end of the diameter of the applied clamping force, machining the inner surface of the stressed sleeve to shape the ungrooved portion to true circular cross-section, and releasing the clamping force whereby said inner surface forms a bearing surface of elliptical cross-section having said groove lying at one end of the major axis.

3,158,925
METHOD OF MAKING A PURLIN OR ROOF TRUSS

Walter S. Edge, deceased, late of Kansas City, Mo., by Helen M. Edge, heir, Kansas City, Mo., assignor to Keystone Steel & Wire Company, Peoria, Ill., a corporation of Delaware

Original Application Apr. 16, 1956, Ser. No. 578,242. Divided and this application July 8, 1963, Ser. No. 293,562
4 Claims. (Cl. 29—155)



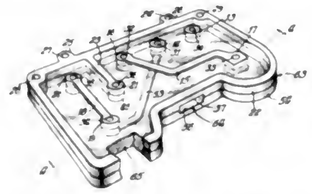
1. In the process of making a structural member having an upper chord comprising a pair of rods, a lower chord comprising a pair of angular members and a web portion comprising a rod having oppositely inclined obliquely extending portions extending between said upper and lower chords, continuously progressively straightening a pair of rods of indefinite length, continuously progressively forming alternately oppositely directed, spaced bends in a rod of indefinite length, leading said three rods into a guide with said pair of rods in engagement with opposite sides of said bent rod at one set of said bends, progressively transversely bending each of a pair of sheet metal strips of indefinite length to form an angular member having an upstanding flange and a horizontal flange connected by a bend, said bends being offset to form a bead on each of said angular members projecting laterally from said upstanding flange in an opposite direction to said horizontal flange, feeding said pair of resulting continuous angular members with the upstanding flanges thereof in engagement with the opposite sides of said bent rods at the other set of bends therein and the crests of said beads in engagement with each other, progressively welding said straight rods and said upstanding flanges to said bent rods and said beads to each other as said rods and angular members are advanced, and shearing the resulting continuous welded member into desired lengths.

3,158,926
METHOD OF MAKING AN ELECTRICAL TERMINAL BOARD

Temple Nieter, Evanston, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed June 6, 1960, Ser. No. 33,974
5 Claims. (Cl. 29—155.5)

1. In a method of making an electrical terminal board having mechanically formed connecting parts encompassed by an electrically conductive rim, the steps which comprise; forming a first part having a first metal sheet carrying electrically conductive connecting parts on one of its faces, including a first rim and first terminals; forming a second metal sheet carrying electrical conductive connecting parts on one of its faces, including a second rim and second terminals, the said first rim and first terminals complementing and matching the said second rim and said second terminals, respectively; assembling the said first and second parts in matching alignment with respect to the said rims and the said re-

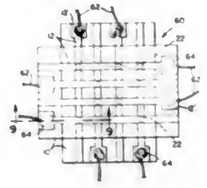


spective terminals of the said first and second parts; joining the said rims and the said terminals by suitable means such as tinning the surfaces of the parts to be joined and then applying pressure and heat to a degree to effect a union, the joining of the said rims providing a cavity between the said first and second metal sheets; providing an opening into said cavity; introducing hardenable fluid insulation through said opening into said cavity until said cavity is filled with said fluid insulation; allowing said fluid insulation to solidify; and removing said metal sheets which thereby completes said electrical terminal board.

3,158,927
METHOD OF FABRICATING SUB-MINIATURE SEMICONDUCTOR MATRIX APPARATUS

Ralph Saunders, Havertown, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 5, 1961, Ser. No. 124,258
12 Claims. (Cl. 29—155.5)

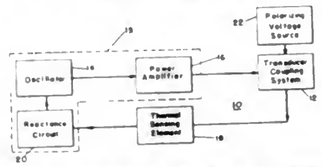


1. A method of forming a miniature semi-conductor matrix comprising the steps of, providing a dielectric supporting structure with a pattern of conductive busses printed thereon, providing a dielectric supporting structure with a plurality of semi-conductors bonded thereon by means of a soluble adhesive permitting subsequent removal of said supporting structure therefrom, applying a viscous flux to said busses, applying a flux to said semi-conductors, registering said semi-conductors and said busses, soldering said semi-conductors to said busses while so registered and thereafter, removing the dielectric supporting structure from said semi-conductors leaving the latter firmly bonded to said busses.

3,158,928
METHOD AND MEANS FOR OPERATING A GENERATING MEANS COUPLED THROUGH A TRANSDUCER TO A VIBRATORY ENERGY WORK PERFORMING DEVICE

Carmine F. De Prisco, Glen Mills, Pa., and William M. Barfield, Wilmington, Del., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1962, Ser. No. 183,811
21 Claims. (Cl. 29—470.1)



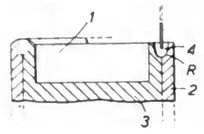
9. Apparatus comprising a transducer, a coupler whose temperature increases when transmitting energy to perform useful work, said coupler being fixedly secured to said transducer, a generating means coupled to said transducer, means for sensing temperature changes in said coupler, and means coupled to said sensing means for maintaining the frequency of said generating means substantially at the operating frequency of said transducer in response to temperature changes in said coupler.

14. In a method of operating a generating means coupled to a transducer so that the transducer is excited by said means and said transducer being connected to a coupler member adapted to perform useful work, the steps of performing useful work by delivering vibratory energy from said coupler member for a sufficient period of time so that the temperature of said coupler member changes, sensing temperature changes in said coupler member, and controlling the frequency of said generating means in response to the sensed temperature changes so as to maintain the frequency of said generating means within a predetermined range closely centered around the operating frequency of said coupler member at its changed temperature.

3,158,929
NUCLEAR REACTOR FUEL ELEMENTS

Alan Frederick Taylor, Preston, and James Thomas Stockdale, Lea Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Aug. 3, 1961, Ser. No. 129,014
Claims priority, application Great Britain Aug. 4, 1960
2 Claims. (Cl. 29—474.4)



1. A process of effecting an annular edge weld between a thin-walled cylindrical nuclear fuel element sheath and a thin-walled cylindrical end cap of the sheath, the sheath and end cap having adjacent butting side edges and substantially flush end edges, comprising: machining a U-shaped annular weld groove in adjacent butting edges of the sheath and end cap extending inwardly from the flush end edges, the walls of the U-groove being inclined outwardly from the longitudinal axis of the U-groove in passing outwardly from the curved base of the U-groove, and making an annular edge weld between the butting edges under a blanket of inert gas by relatively moving a non-consumable electrode around the annular U-groove with the tip of the electrode below the top of the U-groove.

3,158,930
METHOD OF MANUFACTURING ASSEMBLY FLUID PRESSURE MOTORS

Alfred Westrom, Wilbur E. Sanders, Jr., and Russell C. Mollis, all of South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed May 1, 1961, Ser. No. 112,741
5 Claims. (Cl. 29—510)

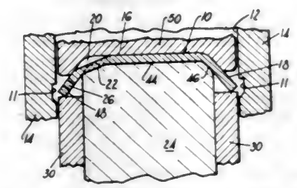


1. A method of manufacture of fluid pressure motors comprising: providing a stamped generally cup-shaped shell with an internal generally outwardly facing abutment surface positioned adjacent the open end of said shell, providing a cover member with a radially outwardly extending flange portion with spaced cutout portions, said flange portion being sized to have a sliding fit with the portion of said shell outwardly of said abutment surface, inserting a flexible diaphragm and said cover plate into said shell with the periphery of said diaphragm positioned between said abutment surface and said cover plate, forcing said cover plate into said shell to compress said periphery of said diaphragm between said cover and abutment surface by a desired amount, and limitatively deforming said shell inwardly equal to a depth of said cutout portions of said flange portion against the outside surface of said cover plate at points spaced between said cutout portions about the periphery of said shell to hold said shell and cover plate in controlled assembled relationship whereby the spaced deformed portions of the shell are alignable with said cutout portions on the cover to permit disassembly of said shell and cover member.

3,158,931
PROCESS FOR FIXEDLY LOCATING A MEMBER IN A BORE

Paul B. Shutt and Daniel Tuitman, St. Joseph, Mich., assignors to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Jan. 22, 1962, Ser. No. 167,646
7 Claims. (Cl. 29—522)

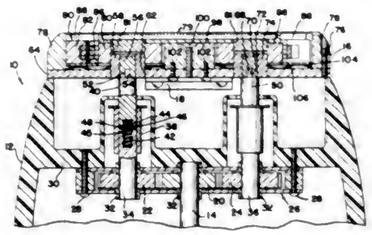


1. A process for securing two members together comprising the steps of: providing a body member having a bore therein whose longitudinal dimensions extend from one surface to another and providing a deformable member whose central portion is axially offset from its outer periphery; the portion of said deformable member located between said central portion and said outer periphery being inclined to the axis of said deformable member in a direction, extending from said central portion to said periphery, which is away from said axis; locating said deformable member in said bore with the outer periphery thereof continguous the wall of said bore; applying pressure to said deformable member at the outer face thereof while yieldably supporting said central portion at the inner face and rigidly supporting the outer periphery of the inner face of said deformable member contiguous said wall by support means distinct from the body member thereby expanding the outer periphery of said deformable member into frictional fit with said bore.

3,158,932
MULTIPLE CUTTER SHAVER HAVING CONTINUOUS SHAVING SURFACE

Ivo H. Brewer, 500 Maple Ridge Ave., Ann Arbor, Mich.

Filed Aug. 1, 1962, Ser. No. 214,009
2 Claims. (Cl. 30—43.6)



1. In an electric shaver, a comb having outer and inner surfaces and a plurality of apertures arranged in a generally oval path for receiving through the outer surface of the comb the hair to be cut, a plurality of cutter elements operatively linked together to provide a chain-like endless cutter element assembly for continuous travel in said oval path with said cutter elements in engagement with the lower surface of the comb, a bearing surface in engagement with said cutter element assembly on the opposite surface from that which is in engagement with said comb, spring means mounted to urge said bearing surface against said cutter element assembly and said cutter element assembly against said comb, and drive means including rotary elements centered within opposite ends of said oval path and operatively connected to said cutter element assembly for driving the same continuously in one direction in said oval path.

3,158,933
TREE PRUNING DEVICE

Ray Francis Davis, Los Angeles, and Austin Gudmundsen, Inglewood, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin

Filed Apr. 4, 1960, Ser. No. 19,729
8 Claims. (Cl. 30—276)



5. In a cutting device: a support; an elongated cutter operably supported by said support; a gauge secured to said support and extending longitudinally forwardly thereof at one side of said cutter; and a second gauge attached to said support and extending in a forwardly and diverging direction from the opposite side of said cutter, said gauges providing means engageable with the adjacent part of a tree from which extends the branch being cut to thereby position said cutter laterally relative to the tree part.

3,158,934
ORTHODONTIC APPLIANCES

David Waldman, 176—17 69th Ave., Flushing, N.Y.

Filed Feb. 21, 1961, Ser. No. 90,767
2 Claims. (Cl. 32—14)

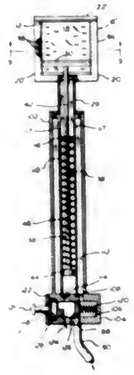


2. An orthodontic appliance for use with an arch wire, the appliance comprising a metal block having a vertical slot extending into it adapted to receive an arch wire, said slot subdividing said block into a rear portion, a front portion, and a bight portion connecting said rear portion and said front portion, the front portion having a tapped hole therethrough; a set screw in said hole for clamping an arch wire against said rear portion; and a loop spring secured to said block, said spring extending outwardly from said block substantially in a plane normal to the axis of said tapped hole.

3,158,935
DENTAL MIRROR

Sol Roy Rosenthal, 230 E. Delaware Place, Chicago, Ill.

Filed Sept. 11, 1961, Ser. No. 137,255
13 Claims. (Cl. 32—69)

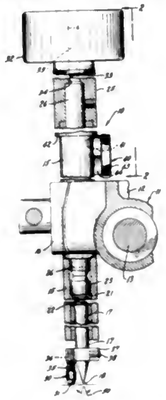


1. A dental mirror instrument comprising, in combination, a rectangular mirror insertable in the mouth of a patient, a frame for said mirror, an elongated wiper mounted for movement in said frame on the face of said mirror, said wiper extending across said face between the sides of said frame and being reciprocally movable between the ends of the frame, a handle connected to said frame, and means carried by said handle for moving said wiper on said mirror.

3,158,936
LAYOUT MACHINE SCRIBE

Arthur W. Virta, Mount Prospect, Ill., assignor to Ancraft Products Co., Chicago, Ill., a corporation of Illinois

Filed Nov. 13, 1961, Ser. No. 151,884
1 Claim. (Cl. 33—18)

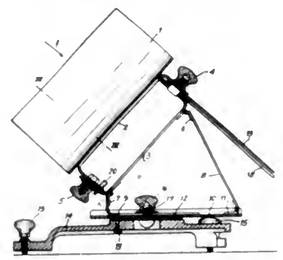


A scribe for a layout machine comprising, in combination, a sleeve adapted to be mounted in a layout machine for movement in a substantially vertical position over a horizontal work surface, a pointed tip slidably mounted in said sleeve so that the point projects from the lower end of the sleeve, a weight slidably mounted in the upper end of the sleeve for biasing said tip downwardly, means for holding said tip and said weight together for sliding movement in said sleeve, a stop mounted eccentrically on the outside of said sleeve so as to underlie a surface on said weight, said stop having a flat surface for abutting and holding said weight in raised position and being rotatable so as to lower the weight in the sleeve, a collar anchored to said tip, and a thimble threadably mounted on said collar for adjustment axially of said sleeve, said threadable mounting being resiliently loaded so as to hold said thimble in adjusted position, said thimble having a wide, smooth head disposed closely adjacent said point so that the adjusted positions of said head control the penetration of the pointed tip into soft material.

3,158,937
SUN DIAL

Pierre Laurent Jean-Baptiste Flinois, 38 Rue Sibuet, Paris, France

Filed Mar. 2, 1962, Ser. No. 177,025
Claims priority, application France, Mar. 13, 1961, 855,407
10 Claims. (Cl. 33—62)



2. A sundial apparatus, comprising, in combination, opaque dial plate means having a concave indicating

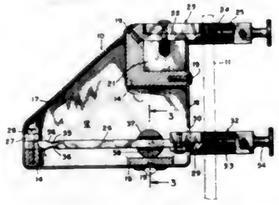
surface adapted to be exposed to incident sunlight and to unobstructed view, and defined geometrically as a portion of a cylindrical surface extending between two parallel edges each coinciding with a generatrix of said cylindrical surface and being spaced from the other generatrix a predetermined distance substantially diametrically across said cylindrical surface, said indicating surface being provided with a plurality of index lines respectively associated with different hours of the day; and means for orienting said dial plate means at least depending upon latitude and longitude of the location of the apparatus, so that the time indication is effected on said indicating surface of the dial plate means in relation to said index lines by the edge of the shadow of a portion of said opaque dial plate means, said edge of the shadow being a projection by sunlight of one of said edges of said dial plate means.

3,158,938
SELF-INDICATING FILAMENTARY SUPPLY
Thomas E. Philipps, Cumberland, William W. Thompson, Greenville, and Harry V. Northrop, Cumberland, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed July 25, 1960, Ser. No. 45,146
11 Claims. (Cl. 33—128)



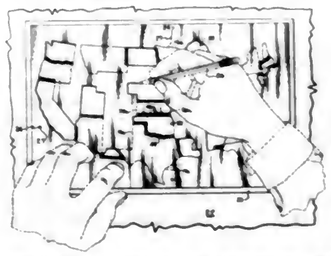
1. A wound supply of continuous filamentary material comprising a plurality of layers of filamentary material, each layer formed of a plurality of coils of the material, a plurality of said layers having edges associated to form an exposed surface adapted to be progressively depleted in proportion to the diminution in the quantity of material in the supply in the process of unwinding the filamentary material from the supply, and visible indicia on said surface arranged to represent increments of the quantity of the material in the supply.

3,158,939
EXTENSOMETER
Harry E. Brooks, Jr., Phoenixville, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1963, Ser. No. 305,689
5 Claims. (Cl. 33—148)



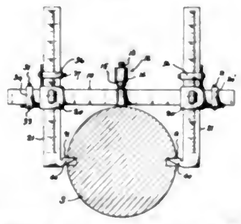
1. An extensometer for measuring tensile and compressive deformations in a test piece, comprising: a rigid frame adapted to be placed adjacent to the test piece; first means connected to said frame and adapted to connect said frame to the test piece at a first gage point; a cantilever beam having one end fixed to said frame and a free end movable relative to said frame, said beam being adapted to extend substantially perpendicular to the test piece whereby said free end is located adjacent to the test piece; strain gage means bonded to said beam adjacent said one end thereof; and second means mounted on said free end and adapted to connect said free end to the test piece at a second gage point spaced a predetermined distance from the first gage point whereby tensile and compressive deformations of the test piece between said gage points moves said free end relative to said frame in opposite directions from an unstressed position.

3,158,940
STENCIL SET FOR PRODUCING GRAPHIC REPRESENTATIONS
Gene S. Corpening, 27 N. Main St., Granite Falls, N.C.
Filed July 14, 1959, Ser. No. 827,054
3 Claims. (Cl. 33—174)



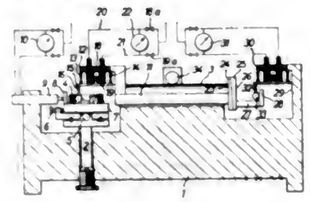
1. A plurality of stencils for producing mating and complementary portions of a graphic representation, each stencil having at least one cutout therein with the edges thereof defining portions of the graphic representation, at least one edge portion of the cutout in one stencil coinciding with at least one edge portion of the cutout in the other stencil, and indicia associated with said coinciding edge portion of the cutout on at least one of the stencils for indicating a change of character in the line to be drawn along the corresponding edge of the cutout in said stencil bearing the indicia to provide accurate interconnection and reproduction free from overlapping and duplication of lines in the graphic representation when the stencils are used.

3,158,941
KEYWAY MEASURING INSTRUMENT
Carl A. Komstadius, 8337 Jones NW., Seattle, Wash.
Filed June 1, 1961, Ser. No. 114,074
3 Claims. (Cl. 33—174)



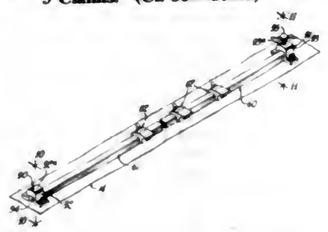
1. An instrument for determination of the accuracy of location of longitudinal keyways in the opposite sides of a shaft, said instrument comprising a cross-bar adapted to be disposed on edge transversely of said shaft to extend to opposite sides thereof, a micrometer caliper mounted on said cross-bar at the medial point thereto and at right angles thereto, a pair of leg mounting blocks slidably mounted on and for adjustment along said cross-bar, a pair of legs slidably and adjustably mounted by said blocks at right angles to said cross-bar, each of said legs including an inturned foot at its inner end to be holdingly in the keyway at the corresponding side of said shaft, said cross-bar including a graduated scale extending in opposite directions from its medial point to indicate the distance of each of said legs from the center point of the cross-bar and said legs including a graduated scale upwardly from said foot for indicating the distance of each said foot below said cross-bar.

3,158,942
LENGTH MEASURING DEVICE, PARTICULARLY FOR INTERNAL DIAMETERS
Willi Kirchner, Schwebheim, and Gerhard Braune, Schweinfurt, Germany, assignors to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany
Filed Aug. 16, 1962, Ser. No. 217,400
Claims priority, application Germany Aug. 29, 1961
10 Claims. (Cl. 33—174)



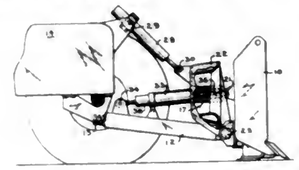
1. A length measuring device, particularly for internal diameters and operating on Abbe's principle, comprising gauge blocks utilized as a standard of comparison, a base, a measuring table for receiving a workpiece to be measured, a measuring rod having a rearward and a forward end, said gauge blocks being attached to the rearward end of the measuring rod, two feeler systems of identical construction for engaging the gauge blocks and the workpiece, respectively, said feeler system engaging the gauge blocks being mounted on said base, said feeler system engaging the workpiece being disposed on the forward end of the measuring rod, and a precision feeler gauge mounted on the base and adapted to indicate the deviation of the workpiece from the standard of comparison.

3,158,943
LINE-UP TABLE
Harold R. Benson, Lombard, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1962, Ser. No. 170,185
3 Claims. (Cl. 33—184.5)



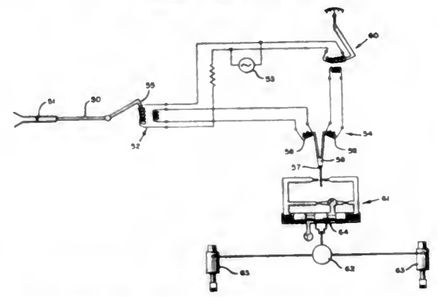
1. A line-up table comprising a substantially rectangular table top frame, a table top panel having marginal portions overlying portions of said frame and spaced from the outer edges of said frame, spaced tracks arranged longitudinally and transversely of said frame and fixed thereto defining a first pair of parallel trackways on opposite sides of said panel and extending longitudinally of said table adjacent the edges of said frame and a second pair of parallel trackways perpendicular to said first pair adjacent the other edges of said frame and extending transversely of said table, straight edge members extending transversely and longitudinally respectively of said table top panel, straight edge carriages riding in said trackways and supporting a respective one of said straight edge members, a longitudinal and transverse stop bar each removably secured parallel to a respective one of said trackways, means for accurately positioning each of said bars to said table top frame, a plurality of stops adjustably secured along each of said stop bars and removable from said table as a unit with said stop bars, and dog mechanism operatively associated with said straight edge carriages for engaging said stops to position said straight edge members.

3,158,944
BULLDOZER WITH RESILIENT MEANS FOR PUSHING OPERATIONS
Thomas R. Rehberg, Chicago Heights, Kenneth R. Robinson, Kankakee, and Francis X. Hufeld, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 20, 1963, Ser. No. 259,876
7 Claims. (Cl. 37—144)



1. In combination with a tractor and a bulldozer blade connected thereto by push arms, pivotal connections between the lower portion of the blade and the push arms, a housing behind the blade pivotally connected thereto coaxially with the push arm pivots, shock cushioning means between the back of the blade and said housing, and adjustable means between the housing and the push arms to vary the pitch attitude of the blade with respect to the ground.

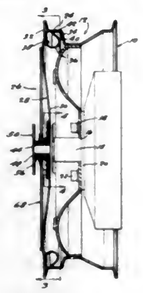
3,158,945
AUTOMATIC LEVEL CONTROL SYSTEM FOR CONSTRUCTION MACHINES
John Curlett, Los Gatos, and Raymond A. Gurries, San Jose, Calif., assignors to Gurries Manufacturing Co., San Jose, Calif., a corporation of California
Filed Mar. 15, 1962, Ser. No. 180,046
3 Claims. (Cl. 37—180)



3. An automatic level control system for construction machines of the type having a working tool carried upon traction means by vertically adjustable support means, said control system comprising; a power means for ac-

tuating said support means, said power means being responsive to a power means input quantity and being operative to provide a support means input quantity proportional in sense and magnitude to said power means input quantity; a sensor means movable with said working tool and cooperatively engageable with an external reference disposed along and outside the path of travel of said construction machine, said sensor means being responsive to the difference between the actual height of said working tool and a selected height in accordance with said external reference level and operative to provide a sensor means output quantity proportional in sense and magnitude to said difference in height; and a transducer means responsive to said sensor means output quantity and operative to provide said power means with an input quantity which is proportional to said sensor means output quantity, said vertically adjustable support means being mechanically movable, said sensor means including a member mechanically displaceable in response to a variation in height of said working tool relative to said external reference, and said transducer means being operative to convert the displacement of said displaceable member to a proportional electrical signal determinative of said power means input quantity for controlling the movement of said adjustable support means.

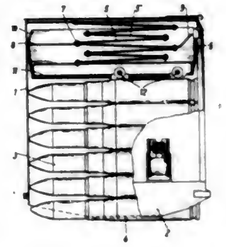
3,158,946
SPINNING HUB CAP
Charles W. Upchurch, 3500 Edgebrook, Mesquite, Tex.
Filed May 25, 1962, Ser. No. 197,670
4 Claims. (Cl. 40—129)



2. A spinning hub cap comprising a disc having means for its securement to the outboard side of a vehicle wheel, an axial cylindrical boss fixed to and extending outwardly from the disc, a spinner having a tubular portion secured over the outer end of the boss, said tubular portion being larger in diameter than the boss and having an inner end spaced from the disc and defining an annular channel around the boss between said inner end of the tubular portion and the disc, an annular bearing comprising inner and outer races, said inner race being non-rotatably seated in said channel, a rotor surrounding and fixed to said outer race and spaced outwardly from the disc.

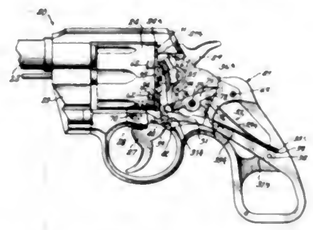
3,158,947
MAGAZINE FOR FIREARMS
Hartmut Menneking and Hermann Henning, Dusseldorf, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Mar. 28, 1963, Ser. No. 268,808
Claims priority, application Germany, Mar 31, 1962, R 32,400
3 Claims. (Cl. 42—50)

1. A magazine for automatic firearms comprising a casing adapted to receive cartridges, a box-like platform frame slidably mounted in the casing and having a base at one end and open at the other end, and a spring in the form of interconnected leaf spring members bearing at one end in the base of the frame and at the other end against the casing and when the magazine is filled the spring is taken up in the platform frame, the platform frame having a guide slot in one end wall thereof and in



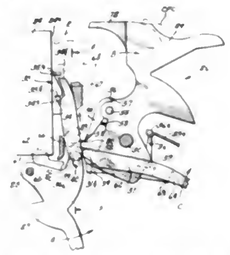
which at least two guide arms are provided secured to said leaf spring members with one of said guide arms extending through said guide slot to support said spring on a wall of said magazine and another of said guide arms supporting said spring on one of said end walls of said platform frame.

3,158,948
REVOLVER FIRING ACTION MEANS
George H. Freed, Bloomfield Ave., Pine Brook, N.J.
Filed Feb. 28, 1962, Ser. No. 176,224
15 Claims. (Cl. 42—65)



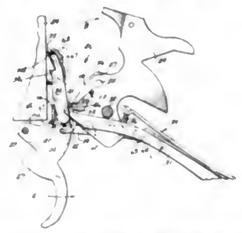
5. In a cartridge firing device having a barrel element and a cartridge receiving cylinder mounted for rotatable movement to a position thereof aligning a contained cartridge with the barrel element: a firing action mechanism comprising a trigger mounted for pivotal movement in direction towards a position thereof triggering the firing action mechanism to fire such cartridge, a hammer mounted for pivotal movement from a released position thereof in firing engagement with such cartridge when so aligned to a cocked position thereof spaced away from said released position, means on said trigger and said hammer providing said pivotal movement of the trigger and said pivotal movement of the hammer responsive to such pivotal movement of one of the same, a hand element mounted for movement in engagement with said cylinder to rotate the cylinder to its said position, slide connection means between said hand element and said trigger permitting rectilinear movement of the hand element relative to the trigger during, and in the direction of, said cylinder engagement movement of the hand element, and a follower lever mounted for pivotal movement, said follower lever engaging said hand element and said hammer during such pivotal movement of said hammer and said trigger to so move said hand element and thereby rotate said cylinder to its said position prior to such triggering of the firing action mechanism.

3,158,949
REVOLVER FIRING ACTION MEANS
George H. Freed, Bloomfield Ave., Pine Brook, N.J.
Filed Feb. 28, 1962, Ser. No. 176,235
22 Claims. (Cl. 42—65)



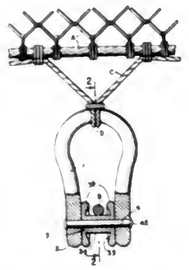
4. In a cartridge firing device having a barrel element and a cartridge receiving cylinder mounted for rotation to a position thereof aligning a contained cartridge with said barrel element: a firing action mechanism comprising a trigger mounted for pivotal movement from a released position to a position thereof triggering the firing action mechanism to fire such cartridge, a hand element mounted for upward movement in engagement with said cylinder to move the latter to its said position, said trigger having an upwardly facing surface portion extending generally towards that end of said trigger which moves upwardly during its said pivotal movement, said upwardly facing surface of the trigger including an upwardly protruding cam portion, and said hand element having a downwardly facing sear portion engaging said cam portion of the trigger during said pivotal movement of the latter, said hand element being mounted for rectilinear movement with respect to said trigger, whereby said cam portion of the trigger urges said hand element in its said cylinder engagement movement in response to said pivotal movement of the trigger.

3,158,950
FIRING MECHANISM FOR REVOLVERS
George H. Freed, Bloomfield Ave., Pine Brook, N.J.
Filed Oct. 16, 1961, Ser. No. 145,258
30 Claims. (Cl. 42—65)



19. In a revolver type pistol having a barrel element, and a rotatable cylinder having a plurality of annularly spaced cartridge receiving chambers therein whereby rotation of the cylinder sequentially aligns each of said chambers with said barrel element: a firing action mechanism comprising a trigger mounted for pivotal movement from a released position thereof towards a position thereof triggering the firing action mechanism to fire a cartridge contained in one of said chambers when so aligned with the barrel element, a hammer element mounted for pivotal movement and adapted for engaging said trigger during said pivotal movement of the trigger, a hand element mounted for movement in engagement with said cylinder to rotate the cylinder responsive to said pivotal movement of the trigger for indexing said one of the chambers into alignment with said barrel element, slide connection means between said hand element and said trigger permitting rectilinear movement of the hand element relative to the trigger during said cylinder engagement movement of said hand element, a rebound lever mounted for pivotal movement and having a free end slidably engaging said hand element, a mainspring biasing said rebound lever for pivotal movement in direction towards the location of its said slidable engagement with the hand element whereby the rebound lever urges said trigger towards its said released position, a follower lever mounted for pivotal movement about the axis of said pivotal movement of the hammer element and having a free end slidably engaging said hand element, and a projecting portion on said trigger for engaging said rebound lever to pivot the rebound lever in a direction opposite to its said direction of mainspring biased pivotal movement to thereby relieve bias pressure of the rebound lever on said hand element during said pivotal movement of the trigger, said follower lever also slidably engaging said rebound lever during said pivoting of the rebound lever in response to its said engagement by the trigger projecting portion so that the rebound lever pivots said follower lever to urge said hand element in its said cylinder engagement movement, whereby during said pivotal movement of the trigger the said one chamber is fully indexed into alignment with said barrel element prior to said trigger attaining its said position triggering the firing action mechanism.

3,158,951
PULLEY RINGS FOR PURSE SEINES
Wallace E. Lewis, Beaufort, N.C., and Hanna R. Humphreys, Jr., White Stone, Va. (both % Standard Products Co., White Stone, Va.)
Filed Feb. 19, 1962, Ser. No. 173,911
6 Claims. (Cl. 43—8)



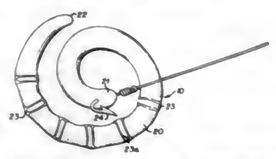
6. The combination with a purse seine, of a series of pulley rings carried at the lower edge thereof, each pulley ring comprising a clevis having a pair of arms, a loop of rope securing each pulley ring to said seine, and a roller mounted between the ends of said arms, said roller having an approximately cylindrical body with radial end flanges disposed at substantial right angles thereto.

3,158,952
PRECOILED ARTIFICIAL LURE
Michael M. Creme, 1219 Big Falls Drive, Akron, Ohio
Filed Oct. 21, 1963, Ser. No. 317,651
2 Claims. (Cl. 43—42.24)

1. An artificial lure of the character described, comprising:

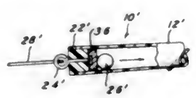
(A) a solid, flexible, elongate body of rubbery material

(1) having a modicum of rigidity and normally assuming the position of a segmented crawling animal that is positioned in coiled position on a flat surface,
(2) having an innermost coiled end and an outermost coiled end that overlaps said innermost end to define a complete coil,
(3) one said coiled end portion being adapted to be secured to a fishing line,



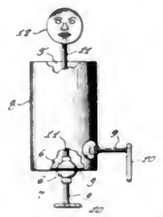
(4) said lure rotating, in spiral-like fashion, around an axis that is generally coextensive with the axis of the connecting end of said fishing line during movement of said lure and said line through the water, and with the coiled configuration of said lure being extended along said axis during movement of said lure and said line through the water,
(5) said body having at least one pair of spaced transverse wall portions extending inwardly from the outer surface thereof; said wall portions defining a slot of material depth relative to the thickness of the lure body and providing a resistance zone and weakened area that are responsive to pressures exerted on said walls during normal movement of said lure through the water to impart additional movement to said lure;
(6) said body being slotted on one side only with the opposing side thereof being relatively smooth to permit ready jerking or snapping.

3,158,953
FISHING AID
Edward Z. Filler, 16 Westwood Circle, Roslyn Heights, N.Y.
Filed Feb. 26, 1962, Ser. No. 176,185
2 Claims. (Cl. 43—43.14)



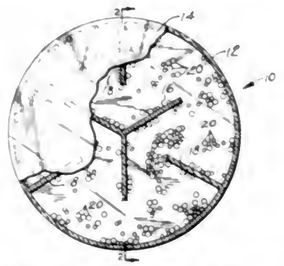
1. A fishing aid for casting a fishing lure connected to a flexible line comprising a hollow elongated housing which is lighter than water and closed at one end by an imperforate wall adapted to be connected to said flexible line, a member closing the other end of said housing and movably supported by said housing so that access into the interior of said housing may be attained by removing said closing member, said closing member having a first portion abutting an end face of said other end of said housing and a second portion in sealing contact with a peripheral surface of said other end of said housing, at least one weight member reciprocally disposed within said housing, a hook portion on said closing member and movable therewith, said closing member including a magnet, said weight member being charged with the same magnetic polarity as said magnet so that said magnet repels said weight member toward said one end of said housing, and said housing being made from non-magnetic plastic resin, said hook portion on said closing member being adapted to cooperate with said flexible line for mounting said housing on said flexible line.

3,158,954
TOY FIGURE WITH BODY MEMBERS SECURED BY VACUUM CUPS
Joseph Green, New York, N.Y.
(54 Prospect Ave., Hewlett, Long Island, N.Y.)
Filed Apr. 9, 1962, Ser. No. 185,946
1 Claim. (Cl. 46—22)



A toy comprising a hollow round body with one end open, legs for said body, vacuum cups attached to the ends of said legs and engaging the outer surface of the body to hold the legs in position, a neck having one end within the body, and projecting therefrom, another vacuum cup attached to the inner end of said neck and engaging the inside of said body, and a member resembling a head on the outer end of said neck, one end of the body being closed, the neck being connected inside the body to said closed end of the body, one leg being connected to the closed end outside the body and another leg being joined to the outside of the body at one side thereof.

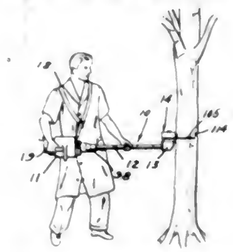
3,158,955
ROTATABLE TOY COMPRISING A CONTAINER FILLED WITH PARTICLES CREATING A SNOW-FALL EFFECT
Gerald P. Sturgis, Rte. 1, Box 208, Orchards, Wash., assignor of one-twentieth to Ledford-Todd Corporation, Portland, Oreg.
Filed July 13, 1962, Ser. No. 209,613
7 Claims. (Cl. 46—201)



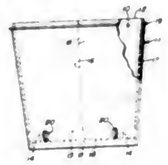
7. A rollable toy comprising a transparent container having side walls and a circular periphery, a multitude of particles in said container, and spaced central and peripheral baffles integral with the container arranged to cascade said particles back and forth in said container between the central and peripheral baffles when the toy is rolled on its periphery.

3,158,956
TREE GIRDLER
Austin Gudmundsen, Inglewood, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Feb. 20, 1961, Ser. No. 90,251
13 Claims. (Cl. 47—1)

1. A tree girdler comprising: a handle; cutting means pivotally mounted on said handle; and means biasing said cutting means to a position with respect to said handle from which said last means can be started to girdle a tree, said cutting means being pivotable through 360 degrees with respect to said handle against the force of said biasing means.

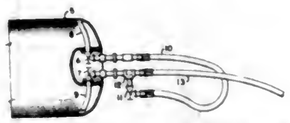


3,158,957
INSULATED PLANT CONTAINER
William T. Sierke, Mobile, Ala., assignor to Harris C. Lockwood, Silver Spring, Md.
Filed Aug. 1, 1962, Ser. No. 214,027
4 Claims. (Cl. 47—34)



1. A plant container assembly comprising, in combination, a metallic open top end container having at least one drain aperture therethrough closely adjacent the bottom thereof and a thermal insulating member abuttingly lining the interior wall surface of said container to provide a thermal insulating between the wall of the metallic container and soil and plant roots adapted to be carried in the container, said insulating member having elongated drain opening means therein extending generally transverse to the vertical height of the insulating member and in communication with said drain aperture in the container, said elongated drain opening means being larger in its elongated direction than said drain aperture whereby said liner will permit the drainage from the drain aperture in a number of positions, and said insulating member having an upwardly extending collar portion thereof extending up beyond the upper edge of the container to fully isolate the soil from the metal wall and any fertilizer applied to the soil thereby preventing corrosion of said container wall.

3,158,958
SOIL TREATING METHOD
Lincoln E. Gould, Belvedere, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Original application June 29, 1962, Ser. No. 206,417. Divided and this application Dec. 23, 1963, Ser. No. 332,832
2 Claims. (Cl. 47—58)



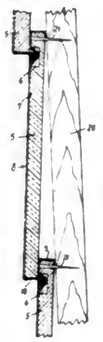
1. In the introduction into the ground of a volatile liquid containing dissolved therein a material subject to deposition upon evaporation of said liquid, the method of flushing for preventing clogging of the distribution system which comprises:
(*a*) confining said liquid and material within a pressure-tight vessel of sufficient volume to contain said liquid in both condensed and vaporized form;
(*b*) introducing the condensed form of said liquid with the material dissolved therein from said vessel into distribution means leading to the ground;
(*c*) terminating the introduction of said liquid with the material dissolved therein; and,
(*d*) introducing the vaporized form of the liquid from said vessel into the distribution means and thereby purging said material therefrom.
2. A method according to claim 1 wherein the volatile liquid is anhydrous ammonia and the material is sulfur.

3,158,959
PRESTRESSED CONCRETE
George D. Ratliff, Jr., 1365 Hialeah Place, Florissant, Mo.
Filed Sept. 6, 1961, Ser. No. 136,311
17 Claims. (Cl. 50—131)



14. Prestressed concrete span comprising: a concrete beam having sidewalls; spaced apart first and second pier means for operatively supporting said beam; hinge means carried by said beam intermediate the ends thereof between said pier means in laterally extending relationship beyond the walls of said beam; first tension elements joined to one end of said beam and extending adjacent the outside of the sidewalls thereof and in engagement with said hinge means; second tension elements joined to said beam at the opposite end thereof extending along the outside walls of said beam and joined to said first tension elements, said first pier means supporting the respective end of said beam wholly by supportive engagement of said first tension elements therewith.

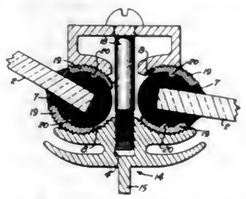
3,158,960
SIDING PANELS
Leslie J. Newton, Baie d'Urfe, Quebec, and Cornelis De Jong, Acton, Ontario, Canada, assignors to Building Products Limited, Montreal, Quebec, Canada
Filed Sept. 22, 1961, Ser. No. 140,001
11 Claims. (Cl. 50—200)



1. A building siding in combination, a wall structure, a series of laterally extending insulating siding panels se-

cured to said wall structure in lapped engagement with each other in courses one above the other, each of said siding panels having a longitudinal recess on the face thereof opposite to said wall structure, the said longitudinal recesses being located a short distance downwards from the top horizontal edge of the panels, and a cover for each of said siding panels, each of said covers having a panel engaging channel disposed longitudinally along the top horizontal edge thereof and engaging with the top horizontal edge of the panel being covered, a longitudinal locking recess in the face of each cover opposite from the said wall structure and fitting into the recess of the siding panel being covered, a lip in the lower portion of the said locking recess, the said lip projecting upwards from the lower portion of the locking recess in the vertical plane of the cover, the said lip defining the lower horizontal edge of a restricted entrance to the said locking recess, the bottom horizontal edge of the covers being bent rearwardly and extending beyond the thickness of the said siding panels and being bent downwardly and forwardly to form a locking member in spring tension engagement with the lip in the longitudinal recess of the cover of the siding panel in the course immediately below.

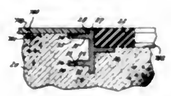
3,158,961
ADJUSTABLE GLAZING SYSTEM
Ronald G. Hawkins, Cedarburg, Wis., assignor to Super Sky Products, Inc., Thiensville, Wis., a corporation of Wisconsin
Filed May 19, 1961, Ser. No. 111,255
1 Claim. (Cl. 50—211)



In a glazing system for skylights having a bar with a shallow upwardly facing recess for supporting the edge of a glass pane, a cap for said bar having a shallow downwardly facing recess opposite said first named recess for confining the edge of the glass therebetween, and means removably securing said cap to said bar; said bar and cap providing a wide mouth therebetween for reception of the glass at various angles and said recesses being curved transversely on a radius generally providing a circular space therebetween; an extruded neoprene glazing strip of approximately 70 durometer and of generally circular section with a longitudinal groove therein receiving the edge of the glass pane, said strip being compressed in the space provided between said bar and cap by said recesses; and a shoe adjustably positioned in at least one of said recesses and adapted to reduce the open mouth between said bar and cap and confine said glazing strip therein, said shoe and the corresponding recess having interlocking longitudinally extending serrations for the retention of the shoe in any of several selected positions, and said shoe and glazing strip being in interlocking engagement.

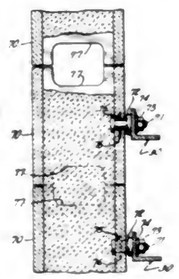
3,158,962
RECESSED FRAME FOR A FLOOR MAT
Frank J. Faase, Rte. 1, Theresa, Wis.
Filed Mar. 5, 1959, Ser. No. 797,447
13 Claims. (Cl. 50—321)

1. A floor mat recess frame, comprising frame elements forming the sides of said frame, each said frame element comprising a base web having opposite faces and opposite edge portions, first flange means extending longitudinally of one face of said web intermediate the said edge portions thereof, and second flange means extending longitudinally of the other face of said web, each said flange means having opposed surfaces, an upper outer horizontal surface of the angle between one of said flange means and the corresponding face of the web defining an outer supporting surface adapted to support



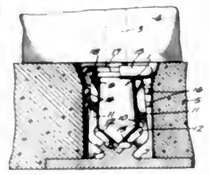
a finished floor, an upper inner horizontal surface of the angle between one of said flange means and the corresponding web face defining an inner supporting surface adapted to support a mat, the opposed surfaces of said first flange means being spaced unequally from the respective adjacent edge portions of the web, to selectively support finished flooring of different thickness when said frame member is in floor supporting position.

3,158,963
BLOCK WALL STRUCTURE FOR FURNACES
Raymond J. Demaison, Bronx, N.Y., assignor to Quigley Company, Inc., a corporation of New York
Filed Sept. 8, 1959, Ser. No. 838,729
3 Claims. (Cl. 50—373)



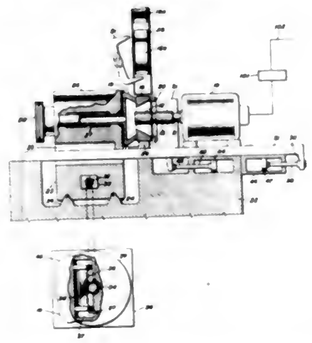
1. A heat-resisting multiple hollow light weight block wall for furnaces, kilns or other heat chambers including, in combination, an outer metal supporting frame, a series of preformed hollow light weight blocks constructed of light weight refractory material and filled with a different lighter weight refractory material, each of said blocks comprising spaced apart parallel inner and outer walls with at least one intermediate connecting wall and formed with a vertically disposed void open at both the top and bottom and bounded by the inner and outer block walls and the intermediate connecting wall, said blocks being arranged in adjacent vertical rows and each equipped in its outer wall with a single centrally located attaching and supporting means by which the block is individually attached to and independently supported on the outer metal supporting frame with freedom for individual expansion and contraction, the vertically disposed voids in each vertical row of blocks being arranged in direct and in full vertical communication with one another to form continuous vertical passageways of the same cross-sectional area, which passageways permit the filling of the blocks with the lighter weight refractory material after the blocks have been attached to the metal supporting frame.

3,158,964
STRUCTURAL CONNECTOR
Wilson E. Haas, Santa Barbara, Calif. (644 High Road, Palm Springs, Calif.)
Filed June 29, 1962, Ser. No. 210,607
11 Claims. (Cl. 50—442)



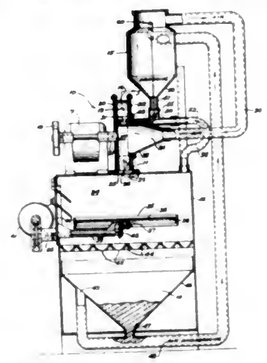
1. A structural connector comprising: a pin member having an outwardly diverging tapered external surface; a socket member comprising a plurality of flexible fingers resiliently engageable along said tapered external surface of said pin member; a sleeve fixedly mounted in radially spaced relation outwardly of said socket member; and locking means carried by said pin member, said locking means being adapted to be interposed between said socket member and said sleeve to hold said fingers in locking engagement with said outer surface, whereupon insertion of said pin member into said socket, said locking means is disposed between said sleeve and the exterior of said socket member and locks said fingers to said pin member.

3,158,965
APPARATUS FOR GRINDING
George H. Lockwood, Worcester, Clifford G. Menard, Shrewsbury, and Almon F. Townsend, Worcester, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Continuation of application Ser. No. 855,361, Nov. 25, 1959. This application Oct. 8, 1962, Ser. No. 230,787
3 Claims. (Cl. 51—5)



1. A grinding machine for finishing the surface of a tapered bore of a workpiece, comprising a workhead for supporting the workpiece and rotating it about the axis of the bore, a wheelhead having a rotatable spindle, a first and a second abrasive wheel mounted on the spindle in spaced relation, each wheel being longer than the bore, means for feeding the spindle transversely to bring the first wheel into contact with the surface of the bore for a plunge grind, means for terminating the feeding but continuing grinding by the first wheel to relieve spindle deflection, means for advancing the spindle longitudinally to bring the second wheel into contact with the surface of the bore, means for feeding the second wheel transversely for a finish grind, means for continuously gaging the bore during the finish grind, means responsive to the gaging for removing the wheels from the workpiece, a loading mechanism operative to replace the workpiece with another workpiece, a dresser, and a control apparatus for rendering the dresser operative to dress the wheels only while the loading mechanism is operative.

3,158,966
CENTRIFUGAL WHEEL BLASTING MACHINE
William H. Mead, 202 Camino Al Lago, Atherton, Calif.
Filed Apr. 25, 1963, Ser. No. 275,578
12 Claims. (Cl. 51—9)

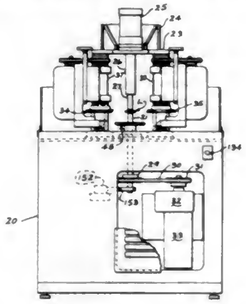


11. An abrasive blasting machine comprising:
a wheel having vanes extending radially outwardly from an open space around the axis of said wheel, said vanes being adapted to fling abrasive particles centrifugually from its tips and to cause a reduced pressure in said open space when said wheel is rotated;
a main conveying duct having one end in communication with said open space of said wheel with its other end connected to an air supply and means for supplying abrasive material into said conduit thereby to convey it to a location above said wheel;
means situated above said wheel and connected in said main conveying duct for separating the abrasive material from the air stream being drawn into said wheel;
feed means for conveying the separated abrasive into said open space of said wheel near the outer edge of said open space and for directing the abrasive radially outwardly into the wheel vanes.

3,158,967
MACHINE AND METHOD FOR EDGE GRINDING LENS BLANKS
Warren E. Reaser, Toledo, Ohio, assignor to The Sun Tool and Machine Company, Toledo, Ohio, a corporation of Ohio
Filed Feb. 1, 1963, Ser. No. 255,488
12 Claims. (Cl. 51—89)

1. A machine for cutting a bevel of constant angularity on one peripheral edge of a work piece that has a non-circular periphery that extends around an axis of the work piece and the vertical displacement of which periphery measured from a base plane normal to said axis varies at different locations of the periphery around the axis, said machine comprising: a generally disc-shaped control cam having an axis generally normal to said generally disc-shaped cam and about which axis

the periphery of said cam extends; an axially extending work support shaft; means for supporting a work piece and said cam coaxially on said work shaft at axially spaced positions; a machine spindle positioned to one side of the axis of said work support shaft; a spindle support mounting said machine spindle for translation toward and away from said work shaft, a cam follower carried by said spindle support for engaging said cam, a circular cutter mounted on said spindle for engaging a work piece, said circular cutter having a periphery defined by revolving a straight line about the axis of said spindle and which periphery of said cutter engages said work piece on a line which extended intersects the axis of said work support shaft at the desired predetermined angle of bevel for the work piece, said periphery of said cutter having an axial dimension relative to said work support which is greater than the total vertical displacement of the periphery of said work piece so that points on said periphery of said work piece at various



vertical displacements above said base plane contact points on the periphery of said cutter at various vertical displacements above a cutter base plane normal to the axis of said spindle, means for urging said spindle support toward said work support shaft to bring said cam follower into engagement with said cam, means for rotating said spindle, and means for producing relative rotation of said work support shaft and spindle support about the axis of said work support shaft, the inner plan edge contour of said cam being described by a line connecting points each of which is spaced along a radius from the axis of said work support shaft a distance which is the sum of an increment which is a function of the distance from said axis of said work support shaft along a corresponding radius of the work piece to the periphery thereof, and an increment which is proportional to the vertical displacement of the periphery of the work piece at such radius relative to said base plane of the work piece.

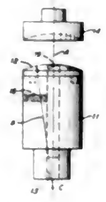
3,158,968
GRINDING APPARATUS AND METHOD
Peder M. Ness, North Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 23, 1962, Ser. No. 218,882
8 Claims. (Cl. 51—125)

3. Apparatus for grinding and polishing on an end of an elongated member of small cross-section a convex spherical surface having a center of curvature lying near the axis of the member comprising

a work holder having an end surface of greater area than the cross-sectional area of the member to be shaped and having a hardness substantially equal to that of said member,

said end surface having a convex spherical shape of the desired radius of curvature and said work holder having means for receiving the member to be shaped with its axis extending substantially along a radius of said surface,

and means for grinding said member with spherical laps of the desired radius of curvature in contact with the end surface of said work holder.



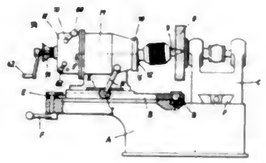
5. Apparatus for grinding and polishing on an end of an elongated member of small cross-section a convex spherical surface having a center of curvature lying near the axis of the member comprising

a work holder having an end surface of greater area than the cross-sectional area of the member to be shaped and having a hardness substantially equal to that of said member,

said end surface having a convex spherical shape of the desired radius of curvature and said work holder having means for receiving seriatum a guide pin and the member to be shaped with its axis extending substantially along a radius of said surface,

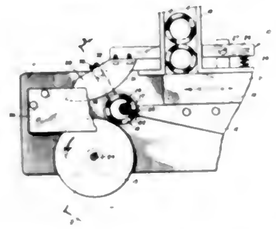
and means for grinding said member with spherical laps of the desired radius of curvature in contact with the end surface of said work holder.

3,158,969
GRINDING MACHINE
Wilhelm Cawi, Berlin-Lichterfelde, Germany, assignor to Cawi & Co., G.m.b.H., Berlin-Steglitz, Germany, a firm
Filed Jan. 15, 1962, Ser. No. 166,210
Claims priority, application Germany, Jan. 24, 1958, C 16,173
10 Claims. (Cl. 51—219)



10. In a tool sharpening and grinding machine for sharpening the conical cutting edges and for grinding end cutting edges of a tool comprising in combination, a rotating driving shaft, a rotatable supporting head fixed to said shaft, a tool carrier eccentrically mounted in said head to rotate therewith and also rotatable about its own axis, the rotational axis of said tool carrier and the rotational axis of said head crossing each other in space, namely neither being parallel nor intersecting each other, an epicyclic gearing consisting of sun and planet wheels to rotate said head and said tool carrier, and means for axially displacing said tool carrier relative to said head, and wherein the sun wheel includes two gears and the planet wheel includes two gears meshing with the two gears of the sun wheel with different ratios, the gears of one of the epicyclic gearing being freely rotatable relative thereto, and means for selectively coupling one of the freely rotatable gears to drive said epicyclic gearing.

3,158,970
GRINDING WORKHEAD
George H. Lockwood, Worcester, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,989
9 Claims. (Cl. 51—236)



1. A grinding workhead for use in finishing a surface of revolution of an annular workpiece, comprising

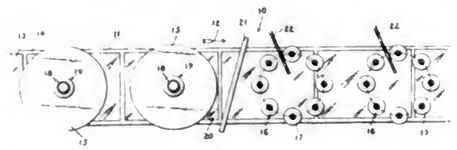
(*a*) a workhead base,

(*b*) a shoe fastened to the workbead and having a fixed surface adapted to contact a first portion of the outer surface of the workpiece,

(*c*) a disc mounted on the workhead base for rotation about a fixed axis and driven to present a moving peripheral surface adapted to contact the outer surface of the workpiece at a position substantially spaced from the said first portion, the periphery of the disc at the position where it contacts the workpiece traveling in the direction away from the shoe, and

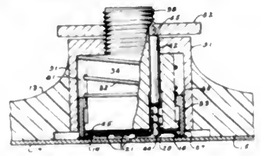
(*d*) a pressure member having a friction portion which, during grinding, is fixed relative to the workhead base and mounted on the workhead base for movement toward and away from the shoe and the disc, the pressure member being adapted to contact a second portion of the outer surface of the workpiece located in such a position relative to the said first portion and the said position that the workpiece is firmly held in place, the said friction portion resisting rotation of the workpiece to produce a differential speed between the workpiece and the wheel.

3,158,971
SURFACING PLATE GLASS
Edison F. Best, Maumee, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Jan. 2, 1963, Ser. No. 249,560
13 Claims. (Cl. 51—283)



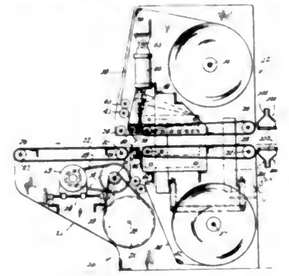
11. A polishing composition for use in the finishing of rough ground plate surfaces which comprises, in 100 parts by weight of water, from 1 to 60 parts cerium oxide, and from 0.15 to 7.5 parts cerous nitrate.

3,158,972
FINISHING ARTICLE HOLDER AND SUPPORT PAD
Joseph H. MacKay, Jr., 23011 Mosby, Woodland Hills, Calif., and Melvin J. McKellar, 5451 Round Meadow Road, Hidden Hills, Calabasas, Calif.
Continuation of application Ser. No. 166,746, Jan. 17, 1962. This application Jan. 15, 1964, Ser. No. 340,583
21 Claims. (Cl. 51—377)



20. A holder for a finishing article having a drive member consisting of a raised portion on one surface thereof and defining an opening therein, said holder comprising: a rigid member adapted for receiving a support pad and forming the central portion thereof, said rigid member defining an opening therein; locking means movably disposed within said opening; means for moving said locking means into engagement with the opening in said drive member when said article is in operative engagement with said holder; and means for retracting said locking means from said opening in said drive member when said article is to be removed from said holder.

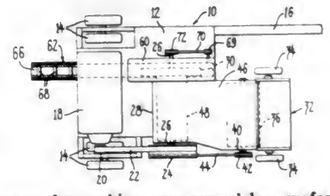
3,158,973
PACKAGING MACHINE
Alfred C. Monaghan, Greenville, S.C., assignor to Serv-All Machinery Corporation, Brooklyn, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 50,532, Aug. 18, 1960. This application June 3, 1963, Ser. No. 287,462
6 Claims. (Cl. 53—66)



1. A packaging machine for automatically wrapping articles in a film of material of the type which is fusible under pressure in the presence of heat comprising: a first conveyor for conveying said articles along a predetermined path, said conveyor having an entrance end and an exit end in that order along said path, a second conveyor having an entrance end adjacent to but spaced from said exit end of said first conveyor to transport said articles along an extension of said path, said conveyors adapted to be driven at equal speeds, a wrapping unit including a plurality of rolls of thermoplastic film, said rolls being arranged above and below said conveyors, said films being fused together between said spaced conveyors to form a sheet extending transverse to said path through the space between said exit end of said first conveyor and said entrance end of said second conveyor whereby the article to be wrapped strikes said sheet at said exit end of said first conveyor and pulls off the necessary length of material required to wrap it, a control means activated by the conveyance of the article for

stopping the movement of the conveyors when the article is placed in wrapping position, a wrapper fastener means actuated by said control means when the article is placed in wrapping position, said wrapper fastener means comprising a platen and a pressure bar each having a cross bar, said pressure bar being movable vertically into and out of pressure applying contact with the platen, said cross bars being bifurcated, a knife blade retained between the bifurcated portions of the pressure bar cross bar, said control means being actuated by the conveyance of the article to bring the pressure bar and platen together at intermittent periods for fusing the thermoplastic webs from the plurality of rolls together at spaced regions, said knife being adapted to extend outwardly from the surface of the pressure bar and between the bifurcated portions of the platen to cut the web between said spaced regions.

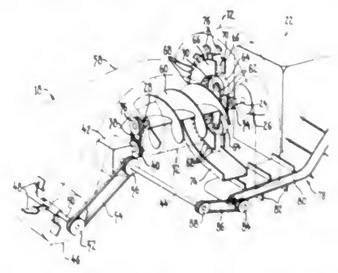
3,158,974
APPARATUS FOR WAFERING HAY
Merle H. Peterson and Stanley L. Lawrence, Livonia, Mich., assignors to Massey-Ferguson, Inc., Detroit, Mich., a corporation of Maryland
Filed May 14, 1962, Ser. No. 194,354
3 Claims. (Cl. 56—1)



1. Apparatus for making compressed hay wafers from forage crops and comprising, in combination, a mobile frame having a longitudinal axis extending in the direction of travel of said frame, a series of die cells mounted on said frame, rotary hay compression means mounted on said frame and including a rotary drive shaft extending transversely of said axis thereof, said compression means being cooperable with said die cells to compress hay into and therethrough to form wafers, a power plant mounted on said frame to the rear of said compression means and extending substantially coextensively with the latter and including a rotary power output shaft extending parallel to said drive shaft of said compression means, crop pick-up means mounted on and projecting from the forward end of said frame in the forward path of travel thereof and including a rotary drive shaft extending parallel to said shafts of said compression means and power plant, and belt and pulley means transmitting power from said output shaft of said power plant to said drive shaft of said compression means and from the latter to said drive shaft of said pick-up means.

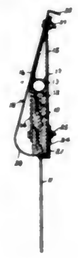
3,158,975
APPARATUS FOR WAFERING HAY
Merle H. Peterson and Stanley L. Lawrence, Livonia, Mich., assignors to Massey-Ferguson, Inc., Detroit, Mich., a corporation of Maryland
Filed May 14, 1962, Ser. No. 194,355
2 Claims. (Cl. 56—1)

1. Apparatus for making compressed hay wafers from forage crops comprising, in combination a mobile frame adapted to be towed through a field, a series of die cells communicating with a wafering chamber, rotary hay compressing means mounted within said chamber and including a rotatable drive shaft, said compressing means being cooperable with said die cells to compress hay into and therethrough to form wafers, a power plant mounted on said frame and including a power output shaft disposed coaxially relative to said drive shaft, coupling means drivingly connecting said output shaft to said drive shaft, a hopper for receiving hay to be wafered, said hopper surrounding said drive shaft and communicating with said chamber on the side thereof opposite from said power plant, means mounted upon said drive shaft within said hopper for conveying hay



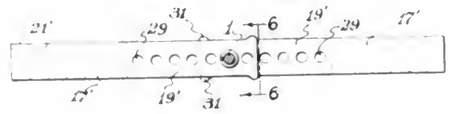
therefrom into said chamber, said drive shaft extending entirely through said hopper and terminating in a power output end axially opposite from said coupling means, rotatable pick-up means mounted on said frame for picking up and delivering hay to be wafered to said hopper, and means drivingly connecting said power output end of said drive shaft to said rotatable pick-up means to drive the latter.

3,158,976
BAT SHIELD FOR HARVESTER REEL
Earl L. Scheidenhelm, Mendota, Ill., assignor to Horace D. Hume, Mendota, Ill.
Filed Apr. 29, 1963, Ser. No. 276,345
3 Claims. (Cl. 56—220)



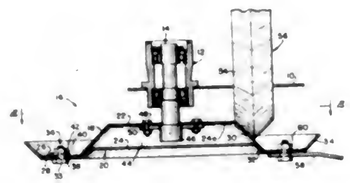
1. In combination with a harvesting reel bat having a row of crop engaging tines extending downwardly therefrom:
- a supporting bat shaft extending longitudinally along the bat adjacent the upper edge thereof;
- a plurality of longitudinally spaced bat clips secured to said bat shaft and to the bat;
- and a shield extending along the length of the bat and covering the front surface of the bat in the direction of travel of the bat, said shield being provided with a continuous outer smooth surface having a tear drop configuration extending downwardly and forwardly from the upper front edge of the bat and being bent rearwardly over the lower front edge of the bat;
- and means on said bat and shield removably fixing the position of said shield relative to said bat.

3,158,977
MOWER BLADE ASSEMBLY
Fred E. Williams, 1411 N. Sheridan Road, Tulsa, Okla.
Filed Oct. 19, 1962, Ser. No. 231,669
1 Claim. (Cl. 56—295)



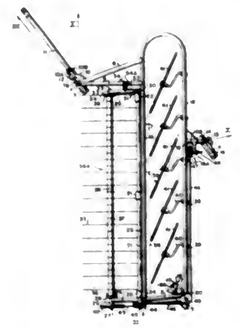
A mower blade assembly comprising a drive shaft, a plurality of mower blades mounted on the drive shaft for rotation relative to the drive shaft and relative to each other with their inner ends overlapping each other and the drive shaft passing through the region of overlap of the blades, the blades being axially movable relative to each other, the blades extending radially of the drive shaft outwardly beyond the region of overlap, the blades having detents thereon in contact with the side edges of an adjacent blade to impede relative movement between the blades, said detents extending from their associated blade to the opposite side of the plane of the interface of the overlapping inner ends of the blades, and means acting on the blades axially of the drive shaft in the region of overlap continuously yieldably to urge the blades together and into frictionally driven relationship with the drive shaft, said means being yieldable an axial distance at least as great as the distance the detents extend beyond said plane so as to permit the blades to move axially apart the latter distance to allow relative movement of the blades when one of the blades strikes an obstacle.

3,158,978
BLADE HOLDER FOR DISC TYPE MOWERS
Willie F. Brewer, Minden, La., assignor to Dealer Associates, Inc., Minden, La., a corporation of Louisiana
Filed June 3, 1963, Ser. No. 284,887
4 Claims. (Cl. 56—295)



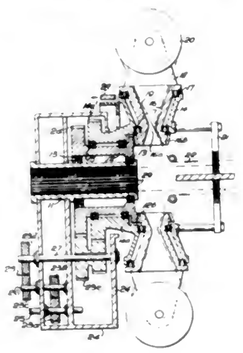
1. A blade holder for a disc type mower comprising a pair of inverted upper and lower, complementarily shaped, nested unitary dished members each having a radial planar flange, a circular central portion disposed in a plane parallel to but spaced above said flange, and a straight inwardly and upwardly sloping sidewall integrally connecting the inner edge of each flange to the outer edge of its corresponding central portion, the confronting surfaces of said flanges and the confronting overlapping parts of said side walls being in engagement with each other, each of said flanges having a plurality of circumferentially spaced registering apertures therethrough, and fastening elements extending through the registering apertures and rigidly clamping said members together.

3,158,979
AGRICULTURAL IMPLEMENTS FOR WORKING MATERIAL LYING ON THE GROUND
Cornelis van der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles
Filed July 26, 1960, Ser. No. 45,334
Claims priority, application Netherlands Aug. 6, 1959
12 Claims. (Cl. 56—370)



1. A tedding device comprising a frame, a plurality of rotatable laterally spaced raking members supported by said frame in the forward part thereof, said rotatable raking members arranged to rake material obliquely with respect to the line of travel of said device, a plurality of laterally spaced crop working elements rotatably mounted in the after part of said device behind and substantially aligned in the intended direction of travel of said device said plurality of raking members whereby said raking members and said crop working elements operate substantially upon the same strip of ground and serve to ted the crop lying thereon.

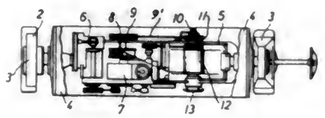
3,158,980
STRANDING MACHINES
Eric Carter, Lytham St. Annes, Lancashire, England, assignor to B. & F. Carter & Company Limited, a company of Great Britain, Northern Ireland and the Isle of Man
Filed July 24, 1962, Ser. No. 211,988
Claims priority, application Great Britain Aug. 9, 1961
3 Claims. (Cl. 57—13)



1. A stranding machine of the character described comprising, a support, a tube fixedly supported thereby and through which wires are guided, a rotatable sleeve mount-

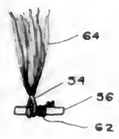
ed around the tube and supported by bearings interposed between the tube and sleeve, a wheel-like member having a hub portion disposed around the sleeve and supported on bearings interposed between the sleeve and said hub portion, the sleeve including a gear and the hub portion including a gear, gearing engaging with both of said gears and acting to rotate both the sleeve and the wheel-like member co-axially, the wheel-like member carrying a plurality of bobbin carriers, each of said bobbin carriers being rotatable about an axis transverse to the axis of the fixed tube, each bobbin carrier including lugs for receiving a bobbin with the axis of such bobbin disposed transverse to the axis of the bobbin carrier on which it is mounted, each bobbin carrier including a passage extending through it and through which wire drawn from its bobbin is passed, each bobbin carrier having a gear, and the sleeve having a bevel gear engaging the gears on the bobbin carriers to thereby rotate said bobbin carriers around their axes.

3,158,981
HIGH SPEED STRANDING MACHINES
Carl Christian Heuser, Ritzerfeldstrasse 42, Stolberg, Rhineland, Germany
Filed July 27, 1962, Ser. No. 212,819
5 Claims. (Cl. 57—58.7)



1. A high speed stranding machine comprising a rotatable casing, a stationary carrier located within said casing, draw-off means on said carrier, an adjustable steplessly variable speed gear assembly adapted to be driven from said casing, means for coupling said draw-off means to said steplessly variable speed gear assembly, reeling means on said carrier, a drive connection between said draw-off means and said reeling means, and an auxiliary motor operably associated with said steplessly variable speed gear assembly for adjusting said assembly.

3,158,982
NAPPED TEXTILE FABRICS
Preston F. Marshall, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Nov. 29, 1962, Ser. No. 240,942
7 Claims. (Cl. 57—140)



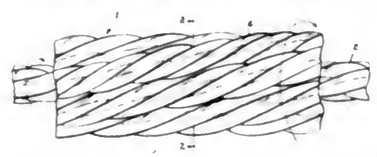
1. A napped fabric with at least one surface of projecting individual filamentary ends, said filamentary ends stemming from the paired ends of a plurality of broken loops of wrapping strand disposed about a core strand in doubled configuration, both ends of each individual broken loop passing around said core strand in the same direction at the base of said broken loop.

3,158,983
DELUSTERED PLASTIC THREAD OR TEXTILE
Adolf Jaroslav Tlamicha, deceased, late of Goeppingen, Germany, by Libuse Antonie Tlamicha, sole heir and executrix, Goeppingen, Germany
Original application Mar. 17, 1961, Ser. No. 96,418, now Patent No. 3,140,526, dated July 14, 1964. Divided and this application Mar. 18, 1964, Ser. No. 353,322
Claims priority, application Switzerland, Mar. 25, 1960, 3,239/60
3 Claims. (Cl. 57—140)



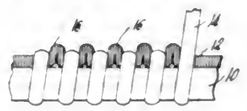
1. A delustered filament made of highly molecular plastics, characterized in that the surfaces thereof are provided substantially uniformly on all sides and over the entire length thereof with microscopic grooves produced by mechanically abrading the filament by engagement with abrading surfaces while simultaneously twisting said filament about its own longitudinal axis.

3,158,984
POROUS FABRIC OR STRUCTURE AND THE METHOD OF MAKING THE SAME
Clarence A. Butler, Cleveland, Ohio, assignor to The Lindsay Wire Weaving Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1962, Ser. No. 216,111
29 Claims. (Cl. 57—144)



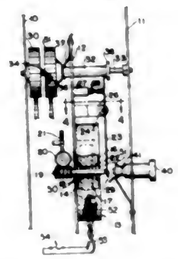
1. A porous cable for use as a filter media having improved strength and hydraulic characteristics comprising, a plurality of mono-filaments, said mono-filaments being substantially non-circular in cross-sectional configuration and being independently twisted relative to one another to provide a predetermined porosity therethrough, and all of the said mono-filaments being twisted together into a bundle to provide a unitary structure having a predetermined permeability therethrough.

3,158,985
TEXTILE YARNS AND METHOD OF MAKING THE SAME
Ronald F. Spicer, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed June 4, 1963, Ser. No. 285,498
21 Claims. (Cl. 57—152)



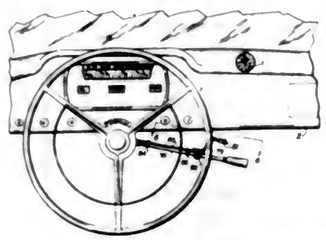
1. A process for making a transiently-stabilized, potentially elastic composite yarn which comprises
combining in essentially parallel arrangement an elastic core strand and an inelastic potentially retractable core strand,
wrapping said core strands with at least one wrapping strand,
causing one of said core strands to decrease in length, and stabilizing said composite yarn against extension.

3,158,986
ALARM BUZZER FOR CLOCK
Arthur W. Haydon, Milford, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed June 22, 1962, Ser. No. 204,484
8 Claims. (Cl. 58—21.1)



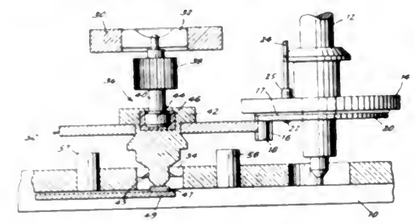
1. An alarm clock mechanism comprising
(*a*) a synchronous electric motor having a rotor of the type which rotates and also vibrates axially in response to energization of its stator coil by a source of alternating current, said motor including a rotor shaft mounting said rotor and bearing means journaling said shaft for rotation and axial movement relative to said stator coil,
(*b*) means for receiving vibratory axial impact caused by said vibratory motion of said rotor, and
(*c*) controllable damping means for engaging at least one of said rotor and shaft members and blocking vibratory axial movement thereof.

3,158,987
TIMING DEVICE
James L. Hamilton, Greeley, Colo., assignor, by mesne assignments, to Phillip H. Kaufmann
Filed Feb. 6, 1961, Ser. No. 87,328
6 Claims. (Cl. 58—22.9)



1. In a timing device, driving and driven shafts independently rotatable about a common axis, a time indicating pointer secured to the driven shaft for rotation therewith, clutch means including a pair of clutching parts each carried by a separate one of said shafts, means mounting said driven shaft for displacement along its axis relative to the driving shaft to move the clutching part carried thereby into and out of clutching engagement with the clutching part carried by the driving shaft, clutch actuating means including a member movable in a plane substantially transverse to said common axis to effect displacement of said driven shaft along its axis of rotation, and cam means secured to said driven shaft, said member being movable into and out of engagement with said cam means after effecting displacement of said driven shaft, said cam means having a single stable position of engagement with said member corresponding to a preselected position of the pointer, and a solenoid effective when energized to move said member into engagement with said cam means subsequent to movement of the driven shaft clutching part out of clutching engagement with the driving shaft clutching part, and effective when de-energized to allow said member to move out of engagement with said cam means.

3,158,988
ELECTRICAL CONTACT-MAGNET INDEX SYSTEM
Marlin S. Walmer, Elizabethtown, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1962, Ser. No. 170,025
6 Claims. (Cl. 58—28)



1. A contact-indexing device for an electric watch comprising an oscillating balance staff, a unitary toothed contact-index wheel adapted to be driven by said balance staff, contact and indexing means carried by said balance staff, said means engaging said contact-index wheel as said balance staff oscillates to advance said contact-index wheel in one direction and to establish periodic electric contact between said contact-index wheel and said contact means, and a pair of indexing means mounted on either side of the rotational axis of said contact-index wheel for cooperating therewith so that said wheel is properly indexed when advanced in said one direction, said toothed contact-index wheel being made of a magnetically hard material and magnetized through its face plane.

3,158,989
EXPANSIBLE LINKAGE
Kurt Albert Rieth, Warwick, R.I., assignor, by mesne assignments to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Sept. 21, 1961, Ser. No. 139,735
12 Claims. (Cl. 59—79)



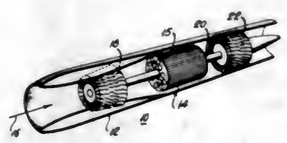
1. In an expansible linkage having two rows of overlapping, staggered links, each link being disposed generally transversely to the longitudinal center line of the linkage when in contracted position and viewed from the top and means interconnecting the links of each row with the links of the other row to provide displacement of the links relative to each other longitudinally of the linkage when the linkage is stretched longitudinally from contracted to expanded position, said interconnecting

means including an interconnecting member having a leg extending within at least one of said links in at least one of said rows of links in a direction generally transverse to the longitudinal center line of the linkage and having means spaced from said leg for rotatably connecting the interconnecting member to an adjacent link in the other row of links, whereby when said linkage is stretched, said one link and said adjacent link are displaced relative to each other longitudinally of the linkage and said leg is rotated relative to the walls of said one link, and resilient means associated with said one link for resisting said rotation and hence said displacement of said links, the improvement comprising an insert member within said one link, said resilient means comprising part of said one link and resiliently contacting and urging said insert member against said leg to urge said leg against a wall of said one link in a direction generally transverse to the axis of the leg, a portion of said leg located between said insert member and said wall of said one link including means for occupying an increasingly greater distance between said insert member and said wall of said one link against the force of said resilient means as said leg is rotated during movement of said one link and said adjacent link from their contracted toward their expanded positions, whereby said resilient means, insert member and means for occupying an increasingly greater distance cooperate to urge the linkage from an expanded toward a contracted position.

3,158,990
RAM-JET ENGINE

Antonio Ferri, Rockville Centre, N.Y., assignor to General Applied Science Laboratories, Inc., Hempstead, N.Y., a corporation of New York

Filed Apr. 21, 1959, Ser. No. 807,887
2 Claims. (Cl. 60—35.3)



1. A method of operating a ram-jet type of engine to obtain improved thrust at supersonic speeds where air stagnation temperature approaches the operating temperature of the engine, said method comprising the steps of taking an engine having a tubular bore surrounding a heat chamber, supplying a large amount of energy to said chamber to produce a high temperature R., moving said engine through the air at a supersonic speed having an air stagnation temperature too high for normal ram-jet engine operation at said temperature R., extracting part of the energy from the air entering the engine in accordance with engine flight speed to give improved operating efficiency and to facilitate transfer of heat energy from the heat chamber to the air, and thereafter discharging said heated air from said chamber to produce net forward thrust sufficient to maintain said engine in flight at said speed.

3,158,991
IRRADIATED POLYMERIC PROPELLANTS AND PROCESS OF ROCKET PROPULSION

Gaetano F. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

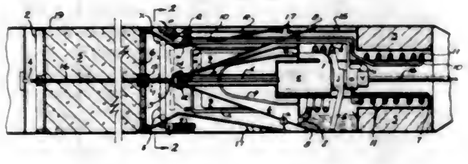
No Drawing. Filed Apr. 24, 1958, Ser. No. 730,533
23 Claims. (Cl. 60—35.4)

20. A process of propelling rockets comprising the step of combusting an irradiated crosslinked mass consisting essentially of a rubber selected from the class consisting of natural rubber, and synthetic rubber polymers and copolymers of 1,3-diene compounds, and 1–95 percent by weight of an oxidizing agent selected from the class consisting of potassium perchlorate, potassium nitrate, potassium permanganate, potassium iodate, potassium dichromate, ammonium perchlorate, ammonium nitrate, ammonium persulfate, manganese dioxide, perchloric acid, chloric acid and aryl perchloryl compounds, said mass being contained in the fuel chamber of a rocket and having a tubular shape having substantially uniform cross-section throughout its length, said tubular shape being adapted to permit escape of combustion products from only one end of the linear opening therein, and said mass having been exposed to at least two megareps and no more than about 100 megareps of high energy, ionizing radiation derived from an energy source equivalent to at least 100,000 electron volts.

3,158,992
PROPULSION PROCESS USING PHOSPHORUS AND METALLIC FUEL

James E. Hodgson, Cleveland, Ohio, assignor to Solid Fuels Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 18, 1959, Ser. No. 835,809
4 Claims. (Cl. 60—35.4)



1. A method of providing energy for propulsion suitable for use in a combustion chamber of a rocket, ram-jet and torpedo engine comprising the steps of introducing propellant ingredients comprising hydrogen peride and a fuel into said chamber in which the fuel is a solid slug of high energy fuel particles comprising aluminum particles and lithium hydride particles dispersed in a phosphorus binder, igniting said hydrogen peroxide and said fuel, and reacting the same to provide energy for propulsion.

3,158,993
SOLID FUELS AND FORMULATIONS

James E. Hodgson, Cleveland, Ohio, assignor to Solid Fuels Corporation, Cleveland, Ohio, a corporation of Ohio

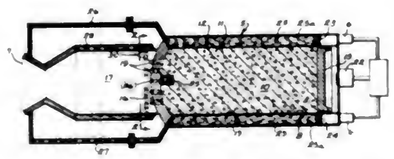
No Drawing. Filed Feb. 18, 1959, Ser. No. 849,130
19 Claims. (Cl. 60—35.4)

3. A method of burning a solid fuel slug in a combustion chamber of an engine adapted for use in underwater propulsion, said method comprising (1) heating a fuel slug comprising (*a*) a plurality of fuel particles consisting of a member of the group consisting of a metal carbide and a metal hydride in which the metal is a member of the group consisting of lithium, aluminum, magnesium, boron, beryllium and mixtures thereof and (*b*) a lithium binder for said fuel particles, to a temperature above the melting point of lithium and below the melting point of said fuel particles, (2) feeding said fuel slug into said combustion chamber and (3) burning said slug with a liquid oxidizer.

3,158,994
SOLID FUELS AND METHODS OF PROPULSION

James E. Hodgson, Cleveland, Ohio, assignor to Solid Fuels Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 29, 1959, Ser. No. 862,692
10 Claims. (Cl. 60—35.4)



1. A solid fuel capable of delivering a high thrust for propulsion in torpedo, rocket and ram-jet engine systems comprising about 50 to 90 parts by weight of finely divided high energy particles of a metal-containing fuel dispersed and encased within about 10 to 50 parts by weight of a metallic matrix which also burns to provide energy for propulsion said fuel particles being selected from a member of the group consisting of a metal, a metal hydride and a metal carbide in which the metal is selected from a member of the group consisting of aluminum, magnesium, titanium, lithium, silicon, boron and beryllium and said metallic matrix is selected from a member of the group consisting of lithium, magnesium, aluminum, boron, a magnesium-aluminum alloy, a magnesium-lithium alloy, a magnesium-lithium-aluminum alloy and an aluminum-lithium alloy, the metallic matrix fused around and surrounding each fuel particle to disperse the fuel particles substantially uniformly throughout the solid fuel.

4. A method of using a fuel composition comprising metal-containing fuel particles and a metallic binder therefor in which each of the fuel particles is encased and surrounded by the metallic binder in an underwater vehicle powered by inertial propulsion, the method comprising the steps of oxidizing said fuel composition to obtain hydrogen gas in which the fuel particles are selected from a member of the group consisting of a metal, a metal hydride and a metal carbide in which the metal is selected from a member of the group consisting of aluminum, magnesium, titanium, lithium, silicon, boron and beryllium and said metallic binder is selected from a member of the group consisting of lithium, magnesium, aluminum, boron, a magnesium-aluminum alloy, a magnesium-lithium alloy, a magnesium-lithium-aluminum alloy and an aluminum-lithium alloy, and filling a container with said hydrogen gas to provide a buoyant upward force for said vehicle and removing said gas from said container to provide a downward force for said vehicle.

3,158,995
STORABLE PROPELLANT COMPOSITIONS

Robert W. Sprague, Santa Ana, and Renee C. Evans, Pasadena, Calif., assignors to North American Aviation, Inc.

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,880
6 Claims. (Cl. 60—35.4)

1. A composition of matter comprising:
an organic hydrazine,
from 3 to 18 percent by weight of the total composition of hydrogen chloride and
from 3 to 30 percent by weight of the total composition of a polyhydric alcohol having the general formula:



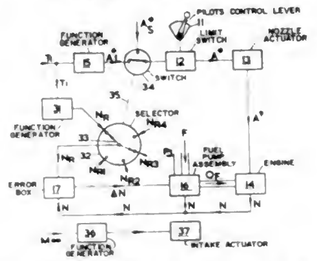
wherein x is an integer from 0 to 4.

6. In a conventional method of operating a liquid propellant rocket motor, the improvement comprising igniting as the fuel the composition of claim 1.

3,158,996
CONTROL SYSTEMS FOR GAS TURBINE ENGINES

Michael Vaughan Herbert, Fleet, William Gerald Eric Lewis, Pyestock, Cove, and Dennis Hainsworth Mallinson, Fleet, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company

Filed Jan. 8, 1960, Ser. No. 2,323
Claims priority, application Great Britain Jan. 8, 1959
2 Claims. (Cl. 60—35.6)

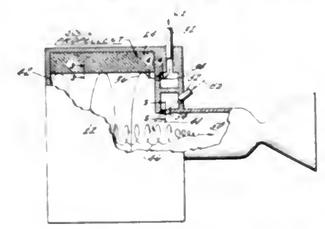


1. A gas turbine jet propulsion engine of the non-reheat single spool type comprising an air intake designed to receive an air flow at supersonic velocities, a compressor, a combustion system, a turbine and a jet nozzle designed for operation under supersonic flight conditions arranged sequentially in the direction of flow; means for varying the jet nozzle area; a fuel supply to said combustion system; an open loop control system comprising a nozzle control connected to vary the area of said jet nozzle so as to vary the propulsive thrust; a closed loop control system separate from said open loop control system and comprising a fuel control for varying said fuel supply and governing means independent of said nozzle control and operable in response to engine rotational speed to automatically adjust said fuel control so as to vary the fuel supply in a sense to maintain engine rotational speed substantially constant over at least part of the engine operating range; and means operable in response to compressor inlet temperature T_1 to impose a minimum limit on the jet nozzle area, said limit increasing with T_1 over said part of the engine operating range.

3,158,997
TRIBRID ROCKET COMBUSTION CHAMBER

Arthur W. Blackman, Manchester, and Joseph R. Keilbach, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

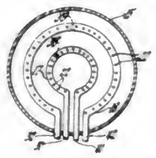
Filed May 15, 1962, Ser. No. 194,919
7 Claims. (Cl. 60—35.6)



1. A tribrid rocket including a reaction chamber, a solid propellant in said chamber, said propellant comprising a plurality of solid grain particles imbedded in

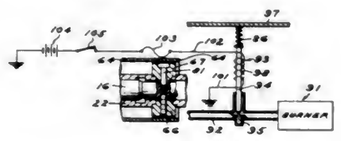
a binder, means for introducing a reaction fluid into said chamber in a tangential vortex path whereby a double reversing vortex flow is formed, the reaction process in said chamber causing a liberation of said particles from the binder, the liberated particles being entrained in said path, a second reaction chamber receiving said fluid from said chamber and means for introducing a second reaction fluid into said second chamber.

3,158,998
AUTOMATIC CONTROL FOR AFTERBURNER MANIFOLD UTILIZING TWO FLUIDS
Lester L. Robinson and Bernard E. Erickson, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,266
13 Claims. (Cl. 60—35.6)



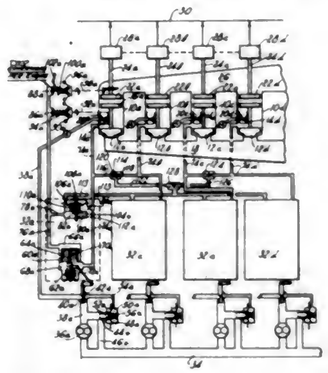
1. An afterburning gas turbine engine including a compressor, combustion apparatus, and a turbine, an exhaust duct, an afterburner fuel manifold in the duct, the manifold being double-ended and having fuel discharge ports distributed along the manifold, means for supplying fuel at a variable rate to one end of the manifold, means for supplying a gas at controlled pressure to the other end of the manifold, and a plug slidable within the manifold effective to provide a barrier between the fuel and the gas.

3,158,999
OVERSPEED CONTROL MEANS FOR A GAS TURBINE ENGINE
Donald L. Carriere, Highland Park, James T. Laskey, Livonia, and Ivan M. Swatman, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,603
5 Claims. (Cl. 60—39.09)



1. In a gas turbine engine, a housing, a turbine including a shaft rotatably supported in said housing, a centrifugal brake mechanism comprising a brake drum supported by said housing in spaced relationship about the periphery of said shaft, a pair of opposed brake shoes supported on said shaft for movement therewith, a fastening means engaging each of said brake shoes and passing through said shaft, said fastening means fixing said brake shoes on said shaft in spaced relationship from said brake drum, said fastening means including means adapted to rupture and permit the brake shoes to engage the brake drum when the speed of the turbine reaches a selected level above normal operating speeds.

3,159,000
GAS TURBINE LOAD SHARING SYSTEM
Howard L. McCombs, Jr., South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,775
7 Claims. (Cl. 60—39.15)

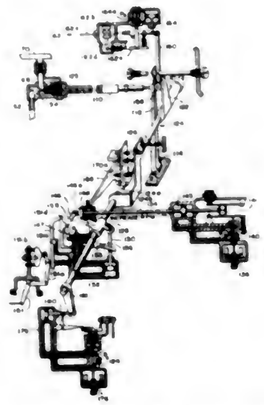


1. A load sharing system for a bank of two or more turbo-shaft engines driving a common load comprising: a governor device for each engine; each of said governor devices being responsive to the shaft speed of its associated engine and operative to control fuel delivery in response thereto; adjusting means for each engine; each of said adjusting means connected to its associated governor device and operative to adjust the governor controlled relationship between shaft speed and fuel flow; power sensing means for each engine; each of said power sensing means operative to produce an individual power signal representative of the power developed by its associated engine; selecting means connected to each of said power sensing means for selecting the maximum individual power signal; comparison means for each engine; each of said comparison means being connected to said power sensing means of its associated engine and to said selecting means to compare its associated engine individual power signal with said maximum individual power signal; each of said comparison means being connected to said adjusting means of its associated engine to adjust said governor device in response to deviation between said individual power signal and said maximum individual power signal.

3,159,001
FUEL CONTROL AIR PRESSURE MULTIPLIER AND MAIN METERING VALVE
Heinz F. Moellmann, Fairfield, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Continuation of application Ser. No. 814,519, May 20, 1959. This application Dec. 21, 1962, Ser. No. 246,876
6 Claims. (Cl. 60—39.28)

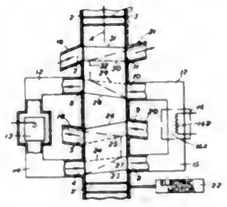
1. In a fuel control for a gas turbine engine having a turbine rotating an air compressor, the combination comprising: a fuel metering valve, means to control the opening of said metering valve including a rotatable rockshaft, means to rotatively position said rockshaft responsive to several parameters of engine operation including speed of rotation of said air compressor, a first lever carried by and projecting from said rockshaft with the angular position thereof reflecting positioning by said parameters of engine operation, a second lever substantially longer in length than said first-mentioned lever, said second lever extending in a direction in near parallelism to said first-mentioned lever and extending past the axis of rotation

of said rockshaft, an independent pivot for said second lever positioned at a distance substantially displaced in a direction longitudinally relative to said second lever from the axis of rotation of said rockshaft, the surfaces on said first lever and said second lever providing spaced longitudinally extending opposed faces, a contacting roller element positioned between said levers for contact with said opposed faces, and a linkage responsive to variations in an engine operating pressure for positioning said roller between said opposed faces in proportion to variation in said engine operating pressure, thus to position said



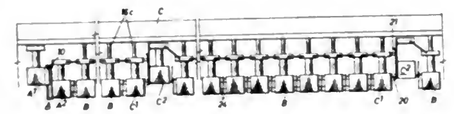
second lever relative to said first lever with compensation for said pressure variation, and a connection from said second lever to said metering valve to control the opening of said metering valve in proportion to the movement of said second lever the lengths of said first and said second levers being in the range wherein the multiplication ratio effective to position said metering valve, resulting from the positioning of said engine pressure responsive roller element along the length of said levers, varies substantially as the square root of said operating pressure within the normal operating range of said linkage.

3,159,002
PRESSURE EXCHANGERS
Dudley Brian Spalding, 2 Vineyard Hill Road, London SW. 19, England
Filed Jan. 4, 1962, Ser. No. 163,998
Claims priority, application Great Britain Jan. 23, 1961
5 Claims. (Cl. 60—39.45)



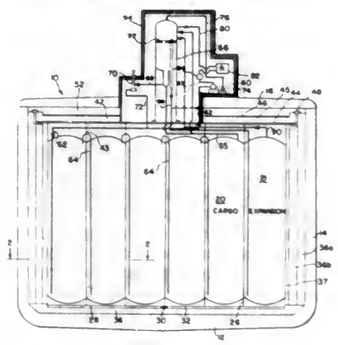
1. Pressure exchanger plant operable to produce an output of high-temperature fluid and an output of low-temperature fluid, the plant including cell ring means comprising at least one cell ring including a plurality of cells, end-plate structure at each end of the cell ring effective to close off the ends of the cells but having ports therein for the admission of fluid to and the extraction of fluid from the cells, means to effect rotation of the cell ring relative to the end-plate structure, the cell ring means having a high-temperature high-pressure compression stage, a high-temperature low-pressure scavenging stage, a low-temperature high-pressure compression stage and a low-temperature low-pressure scavenging stage, each one of said compression and scavenging stages including a port for the admission of fluid to the cells and a port for the extraction of fluid from the cells, ducting to connect the outlet port of the high-temperature high-pressure compression stage to the inlet port of the low-temperature high-pressure compression stage, cooling means interposed in said ducting, further ducting to connect the outlet port of the low-temperature high-pressure compression stage to the inlet port of the high-temperature high-pressure compression stage, heating means interposed in said further ducting, the high-temperature high-pressure compression stage being sequential to and preceding the high-temperature low-pressure scavenging stage and the low-temperature high-pressure compression stage being sequential to and preceding the low-temperature low-pressure scavenging stage in the direction of rotation of the cell ring means relative to the end-plate structure.

3,159,003
ROOF SUPPORTS FOR MINES
Thomas Kearsley, Billinge, Wigan, England, assignor to Gullick Limited, Wigan, England, a British company
Filed July 31, 1961, Ser. No. 127,978
Claims priority, application Great Britain, Aug. 31, 1960, 29,964/60
7 Claims. (Cl. 61—45)



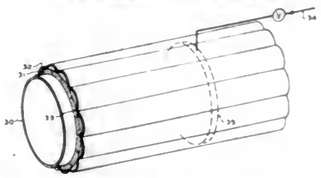
1. Self-advancing mine roof support means for cooperation with an anchorage extending along a coal face, comprising first and second roof supports, each of said supports including a forward element having at least one hydraulically extensible roof supporting leg, a rear element affixed to the forward element and also having at least one hydraulically extensible roof supporting leg, and a double acting hydraulic ram means, each said ram means including a cylinder secured to its respective support and a ram having means for attachment to the anchorage, whereby the ram can be advanced to push forward the anchorage toward the coal face and then retracted to pull the support towards the repositioned anchorage and coal face, laterally arranged wedge-like devices on the rear elements of said first and second supports, said wedge-like devices having abutting, oppositely inclined faces with respect to the axes of their respective rams to determine the spacing apart of said rear elements when the supports are secured in roof supporting condition, and telescopic link means pivotally connecting the forward element of the first support to the forward element of the second support and the length of which, in the fully collapsed condition, determines the spacing apart laterally of the forward elements of the supports, the arrangement being such that, when the first support is released from roof supporting condition and advanced, said wedge-like devices part immediately one from the other to avoid interference with such advancement, said wedge-like devices and link means being operative as the second support is advanced to position the second support correctly in relation to the first support and the coal face.

3,159,004
TRANSPORTATION OF LIQUEFIED NATURAL GAS
Percival C. Keith, Peapack, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Aug. 22, 1961, Ser. No. 133,197
3 Claims. (Cl. 62—45)



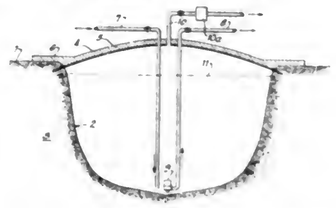
1. In the method for the safe storage of a highly volatile, low boiling, liquified, combustible gas in large volumes at temperatures below the boiling point wherein the gas is liquefied under substantially atmospheric conditions, the further steps of sub-cooling the liquid to a temperature substantially below the boiling point wherein the vapor pressure condition is less than one atmosphere absolute, confining the liquid in an insulated storage container, interconnecting the storage container with a tank of relatively small horizontal surface, applying an inert and relatively low solubility gas to the small horizontal surface whereby the inert gas goes into partial solution in the liquid to thereby maintain a partial pressure substantially atmospheric and thereby prevent inflow of air from the surrounding atmosphere and avoid the formation of a combustible mixture with the liquefied gas.

3,159,005
INSULATION SYSTEM FOR LOW TEMPERATURE SERVICE
Edwin E. Reed and Frederick A. Prange, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,443
2 Claims. (Cl. 62—45)



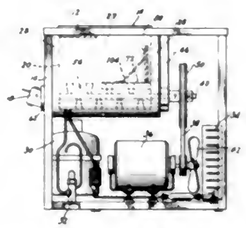
1. In a barge containing an insulated tank having a covering of solid porous insulation secured to its exterior surface for transporting volatile liquids at substantially atmospheric pressure and at a temperature below the boiling point of the liquid, the combination therewith of a substantially gas impervious flexible membrane enclosing said insulated tank and secured to said insulation at a plurality of points to provide a plurality of communicating passageways in the insulated space between the membrane and the tank; a supply of substantially anhydrous, inert gas; conduit means connecting said supply of gas and said insulated space; and regulator means connected to said space and said supply of gas to maintain gas pressure in said space above atmospheric pressure.

3,159,006
GROUND RESERVOIR FOR THE STORAGE OF LIQUEFIED GASES
Cedomir M. Sliepcevich, Norman, Okla., assignor to Conch International Methane Limited, Nassau, Bahamas, a corporation of Bahamas
Continuation of abandoned application Ser. No. 23,439, Apr. 20, 1960. This application Oct. 4, 1963, Ser. No. 314,040
6 Claims. (Cl. 62—45)



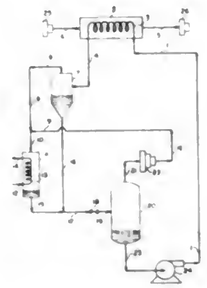
1. A reservoir for storing liquefied gas at substantially atmospheric pressure and at a temperature below minus 40° F., which comprises a large compact, basin-like hole in the surface of the earth, the diameter of said hole at said surface being in the order of at least 75 feet; the earth formation surrounding said hole containing a frozen liquid which seals said formation at the temperature of said liquefied gas; a roof including an impervious structural roof panel which is solid at all normal ambient temperatures above 32° F. spanning the top of said hole, said roof including a layer of insulation; supporting means at the perimeter of the hole taking the full weight of the roof in the empty condition of the reservoir; said roof being in sealed relationship with the frozen earth surrounding the rim of said hole; said roof being both gas-and-liquid tight except for a controllable gas vent therein; the interior of said hole being substantially clear of any solid obstructions for retaining a maximum volume of liquefied gas, and being substantially clear of internal supporting structure for said roof, and means for conducting liquefied gas into and out of said hole and means for maintaining the vapor pressure of boiling liquefied gas in said reservoir at slightly above atmospheric pressure.

3,159,007
MACHINE AND PROCESS FOR MAKING FROZEN CONFECTION PRODUCT AND THE LIKE
Clarence E. Rahauser, 35 N. Lehman St., and Robert E. Rahauser, 1131 Locust Grove Road, both of York, Pa.
Filed June 1, 1962, Ser. No. 199,432
14 Claims. (Cl. 62—69)



14. The process of producing a frozen confection having overrun therein comprising the steps of circulating a liquid mix along a substantially predetermined closed path in a freezing container from one end toward the other through an agitating zone and reversely past the same for reintroduction thereinto, adjustably constricting the flow of said mix at the inlet to said agitating zone while permitting relatively free discharge passage from said agitating zone to produce a desired degree of suction at said inlet to said zone, and introducing air at atmospheric pressure and by suction to said inlet end of said zone for incorporation into said mix in quantities regulated by said adjusted degree of suction as it is progressively agitated and frozen.

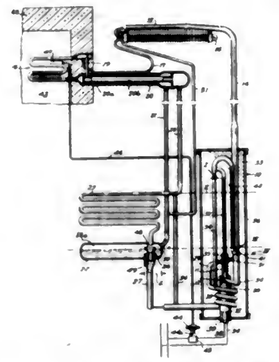
3,159,008
COOLING SYSTEM
William H. Nebgen, Woodside, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,319
11 Claims. (Cl. 62—98)



1. In a cooling system, the combination of a cooler for heat exchange between a fluid being cooled and a subcooled volatile liquid refrigerant at elevated pressure, wherein said liquid refrigerant is heated and partly vaporized at said elevated pressure, a separator for division of heated refrigerant into vapor and residual liquid phases, means to pass said heated refrigerant from said cooler to said separator, a condenser for conversion of the refrigerant vapor phase combined with a vaporized refrigerant portion to liquid without compression, means to pass said refrigerant vapor phase and said vaporized refrigerant portion to said condenser, means to combine liquefied refrigerant from said condenser with said residual liquid phase derived from said separator, an expansion valve for cooling of said combined liquid refrigerant by expansion to reduced pressure, whereby a portion of said liquid refrigerant is vaporized, means to pass said combined liquid refrigerant through said expansion valve, a flash cooler for cooling of liquid refrigerant by said expansion to reduced pressure and separation of cooled vapor and liquid phases, means to pass refrigerant vapor-liquid mixture to said flash cooler from said expansion valve, a vapor compressor for compression of the cooled vapor portion from said flash cooler, whereby said vaporized refrigerant portion is produced, a pump for pressurizing and return of sub-cooled liquid refrigerant to said cooler, and means to pass the cooled liquid portion from said flash cooler to said pump.

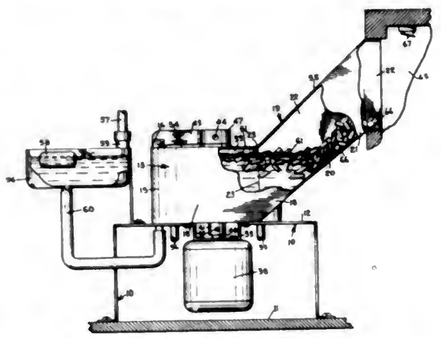
3,159,009
ABSORPTION REFRIGERATION SYSTEM OF THE INERT GAS TYPE
Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 28, 1963, Ser. No. 268,673
Claims priority, application Sweden Apr. 2, 1962
5 Claims. (Cl. 62—110)

1. In the art of refrigeration in which refrigerant vapor is expelled from absorption liquid in a generator, refrigerant vapor is condensed to liquid in a condenser cooled by ambient air, liquid refrigerant evaporates in an evaporator in the presence of an inert gas, refrigerant vapor is absorbed from inert gas by absorption liquid in an absorber cooled by ambient air, inert gas is circulated in a circuit between the evaporator and absorber, absorption liquid is circulated between the generator and the absorber which has an inlet at one level and an outlet at a lower level, and a body of absorption liquid is held in an elongated horizontally extending first place, the body of absorption liquid at the first place having a region below its surface in communication with a region below the surface of a liquid body in a second place which receive absorption liquid discharged from the absorber outlet, the improvement which comprises the steps of



flowing unevaporated liquid refrigerant from the evaporator to an end zone of the elongated first place in a path of flow which terminates in a vapor space above the liquid surface therein, introducing inert gas from the evaporator into the vapor space at the end zone and with drawing inert gas from the vapor space at the end zone for upward flow through the absorber, and flowing uncondensed refrigerant vapor from the outlet end of the condenser to the vapor space at the end zone with increase in ambient air temperature.

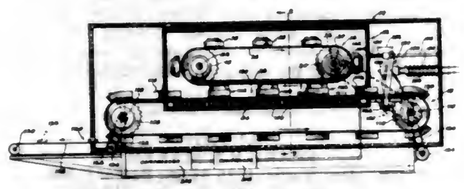
3,159,010
FLAKE ICE MAKER
Theodore Kattis, 1220 M St., Bedford, Ind.
Filed July 27, 1962, Ser. No. 212,810
6 Claims. (Cl. 62—354)



1. The combination with
an annular water chamber having cylindrical inner and outer side walls;
means maintaining a predetermined water level between said walls;
means refrigerating said inner wall to a temperature below freezing and causing water to freeze as a film on and around said inner wall;
a bar extending substantially vertically within said chamber, having a length at least equal to the height of ice formed on said inner wall;

means moving said bar to travel around said chamber;
said bar having a leading face approximately equal to the radial width of said chamber without rubbing on either wall thereof;
said bar having at least a portion thereof adjacent said inner wall presenting a face radially of said chamber for chipping ice from said inner wall; chipped off ice being free to float to a top zone of said chamber;
an ice discharge chute; comprising
an inclined floor and side walls leading diagonally upwardly in said chamber from below the water level to an upper zone of the chamber;
one of said chute side walls being approximately tangential to said chamber outer wall;
the other chute side wall leaving said chamber outer wall a distance from said tangential wall defining therebetween an ice entering opening below said water level to the top of said level, to said floor and between said chute walls; and
said bar travel in said chamber moving the chipped-off ice toward said opening to float over said floor with succeeding ice pushing the initial ice up the chute.

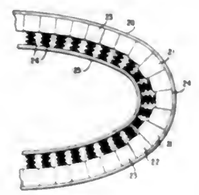
3,159,011
APPARATUS FOR MANUFACTURE OF FLYING TARGETS
John C. Kaluzny, 78 N. Freeman Road, Orchard Park, N.Y.; David Meyer, 55 Meadow Lane, Kenmore, N.Y.; and Richard E. McPherson, 34 Walkowiak St., Buffalo 25, N.Y.
Filed July 6, 1962, Ser. No. 208,006
11 Claims. (Cl. 62—345)



1. Apparatus for making projectile targets, comprising an insulated cabinet,
an insulated compartment disposed within said cabinet,
endless conveyor means disposed within said cabinet and having a flight portion running through said compartment,
second endless conveyor means disposed within said compartment and having a flight portion spaced from and opposed to the stated flight portion of the first endless conveyor means,
a series of female die members carried by the first endless conveyor means,
means for introducing a quantity of water into said female die members prior to their introduction into said compartment,
a series of male die members carried by said second endless conveyor means for projection into said female die members as the same are carried through said compartment, and
refrigerating means in said compartment.

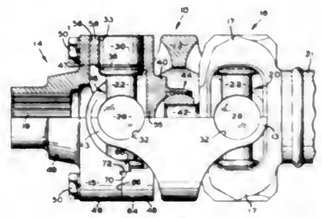
3,159,012
PASSIVE TRANSPIRATION COOLING SYSTEM
Mathias John Brunner, Broomall, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 25, 1960, Ser. No. 71,617
13 Claims. (Cl. 62—467)

1. A heat-resistant structure comprising a porous sheet having an outer surface adapted to be exposed to the effects of heat and an inner surface, and a solid coolant which will evolve hydrogen by pyrolysis in contact with said inner surface of said porous sheet, said solid coolant being comprised of a material capable of changing in form



to pass through the pores of said sheet upon the heating of said porous sheet to a temperature lower than the temperature of deformation of said porous sheet.

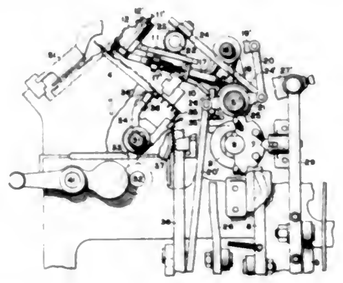
3,159,013
DOUBLE CARDAN YOKE ASSEMBLY
Philip J. Mazziotti, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Dec. 1, 1961, Ser. No. 156,355
3 Claims. (Cl. 64—17)



1. A yoke adapted for use in a double Cardan universal joint assembly comprising means adapted for attachment to a torque transferring member, a first web connected to said means and extending radially therefrom, a first and a second pair of lug portions, said first pair of lug portions being integral with and extending axially from said first web in radial spaced relationship and said second pair of lug portions being secured to and extending axially from said first pair of lug portions, a second web integral with and interconnecting said second lug portions and having pilot means extending axially therefrom, one pair of said lug portions each having an axial projection thereon extending toward the other pair of lug portions, said one pair of lug portions each defining a radially extending opening therein and each defining an inner engaging surface, said radially extending opening being located substantially equally divided between said projection and the remainder of said one lug portion whereby the base of said projection lies substantially on a line extending through the transverse axis of said opening, each of said other pair of lug portions having an axially extending concave opening therein receiving said projection and engaging the base thereof, the extremities of said concave opening and the base of said projection being drivingly engaged whereby torque is transferred between said portions at approximately the centerline of said openings, a cup-shaped bearing race having a closed end and an open end and having a peripheral snap ring groove adjacent the open end thereof and being disposed in each of said radial openings with the open end thereof facing radially

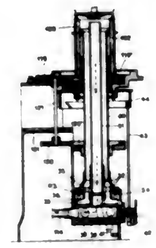
inwardly and the snap ring groove positioned radially inwardly of said lug portion receiving the same, a journal cross having at least a pair of opposed trunnions with one trunnion being rotatably disposed in each of said bearing races, a snap ring positioned in each of said snap ring grooves and abuttingly and positioningly engaging the inner surface of said one pair of lug portions, the other of said pair of lug portions having laterally aligning abutment means thereon abuttingly and positioningly engaging said inner surface of said one pair of lug portions whereby said inner surface of said one pair of lug portions laterally aligns said portions and positions said bearing races.

3,159,014
AUTOMATIC NARROWING MECHANISM IN A FLAT KNITTING MACHINE
Sadami Imon, 13 Futatsubashi-machi, 1-chome, Nakamura-ku, Nagoya, Japan
Filed Jan. 28, 1963, Ser. No. 254,273
Claims priority, application Japan, Jan. 30, 1962, 37/3,472
1 Claim. (Cl. 66—70)



In a flat bed knitting machine, an automatic decreasing or narrowing mechanism comprising a guide shaft arranged in parallel to the needle bed, a supporting frame having arms pivotally mounted on said guide shaft, a cam having cam follower means coupled to said supporting frame for swinging said supporting frame at predetermined times, a screw shaft beneath said guide shaft, a second cam having cam follower means coupled to said screw shaft for rotating said screw shaft at predetermined times, supporting arms each having a block engaging with said screw shaft and supported by said supporting frame and slidable along said guide shaft, a rack on said block and having a head, a slide block engaged by said rack head and slidable along said head, a transfer needle fixed to said slide block, a pinion engaging with said rack, third cam having cam follower means coupled to said pinion for rotating said pinion at predetermined times, a latch opener, a leaf spring fixed to the supporting arm on which said latch opener is mounted on and disposed horizontally at right angle relative to the transfer needle, a slidable presser rod abutting against the mid point of said leaf spring, a fourth cam having cam follower means coupled to said presser rod for actuating said presser rod at predetermined times, a second guide shaft and second screw shaft parallel to each other beneath the needle bed, a gearing operatively connecting said first screw shaft and the second screw shaft, a slider holder associated with said second screw shaft and slidable along said second guide shaft, a fifth cam having a cam follower coupled to said second guide shaft for rotating said second guide shaft to swing said slider holder at predetermined times, and needle raising and lowering sliders mounted on said holder.

3,159,015
PNEUMATIC TENSIONING DEVICE FOR CIRCULAR KNITTING MACHINES, PARTICULARLY FOR CIRCULAR MACHINES FOR MAKING STOCKINGS
Giuseppe Moretta, Via Sleme 5, Varese, Italy
Filed June 26, 1957, Ser. No. 668,187
Claims priority, application Italy, July 2, 1956, 556,014
4 Claims. (Cl. 66—149)

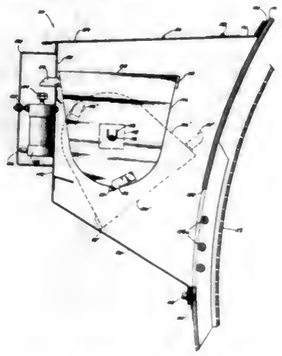


1. In a knitting machine having a needle cylinder; a pneumatic device for applying tension to each article as the latter is formed and for everting each article pressed off the needle cylinder, said device comprising a first tube coaxial with said needle cylinder and having an open end adjacent the latter; a second tube extending coaxially within said first tube and space radially inward from the latter to define an annular space therebetween, said second tube having an open end adjacent said open end of the first tube; means interconnecting said first and second tubes with the needle cylinder to rotate and oscillate with the latter; and means selectively operative, during the forming of each article, to cause air to flow in said annular space in a direction away from said needle cylinder and said open end of the first tube so that the article is formed over said second tube and has tension applied to it in said annular space, and, during the press-off cycle of the machine, to cause air to flow in said second tube in the direction away from said needle cylinder and said one end of the second tube so that the finished article is everted and ejected through said second tube.

3,159,016
COMBINATION WASHER AND EXTRACTOR ADDITIVE BINS
Max Hertig and Howard J. Werner, Onondaga, N.Y., assignors to G. A. Braun, Inc., Syracuse, N.Y., a corporation of New York
Original application Nov. 6, 1962, Ser. No. 235,680. Divided and this application July 10, 1963, Ser. No. 294,082
8 Claims. (Cl. 68—17)

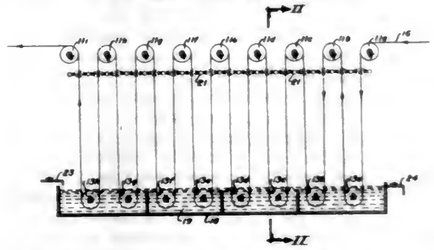
4. In a laundry apparatus,
a casing forming a treatment zone,
a drum rotatable in said casing on a horizontal axis for washing and extracting materials,
an additive storage reservoir on the outside of said casing,
said casing having an opening formed therein at the bottom of said reservoir communicating the interior of the reservoir with said treatment zone,
and plural bins in said reservoir,
each comprising a pivotally mounted open-top hopper having an upright storage position and an inverted discharge position,

said open-top hopper at said discharge position being in register with said opening,



whereby laundry liquid displaced by said drum will flush the inverted bin.

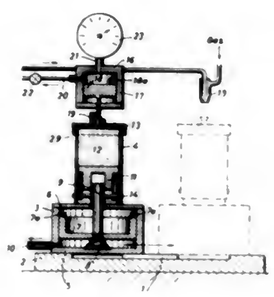
3,159,017
APPARATUS FOR TOW TREATMENT
William R. Osban, Gulf Breeze, Fla., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed June 18, 1962, Ser. No. 203,077
5 Claims. (Cl. 68—43)



1. Apparatus for treating with liquid a continuously moving endless tow comprising a plurality of rolls about which said endless tow is directed in a serpentine path, some of said rolls being non-cylindrical rolls comprising a plurality of substantially identical wavy bars, a central shaft, and means supported by said central shaft for supporting said wavy bars in a cage-like configuration about said central shaft with said bars undulating radially toward and away from said central shaft to form at least one valley of minimum diameter between crests of maximum diameter along the length of said cage-like configuration, said cake-like configuration being everywhere substantially circular in cross-section and some of said rolls being cylindrical, said non-cylindrical rolls being interspersed among said cylindrical rolls along said serpentine path and means for applying liquid to said tow while moving along said serpentine path.

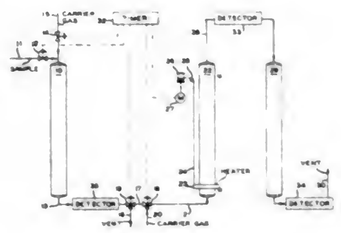
3,159,018
DEVICE FOR ASCERTAINING THE OPERATIONAL BEHAVIOR OF MOLDING SUBSTANCES
Wilhelm Patterson and Dietmar Boenisch, Aachen, Germany, assignors to Verein zur Forderung der Giesserei-Industrie, Dusseldorf, Germany, a company of Germany
Filed Apr. 20, 1960, Ser. No. 23,533
Claims priority, application Germany, May 15, 1959, V 16,539
6 Claims. (Cl. 73—15.6)

1. In a testing apparatus for ascertaining the working behavior of moist-bound molding material by measuring the tensile strength of a specimen consisting of such material, which comprises: a tubular member for receiving a specimen of moist-bound molding material to be tested, a draw plate adapted to be placed detachably on said tubular member for engagement with the specimen to be received by said tubular member, heating means for heating said draw plate and thereby the test piece therebelow,



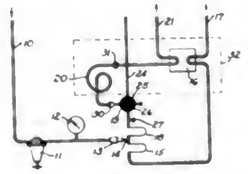
and power operated means for separating said tubular member and said draw plate from each other and thereby tearing a specimen in said tubular member apart whereby the respective force required for said separation can be measured, said draw plate being undercut for facilitating the connection thereto of molding material from said test piece when said tubular member and said draw plate are pulled apart.

3,159,019
CHROMATOGRAPHIC ANALYSIS METHOD
Donald D. De Ford, Glenview, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 17, 1959, Ser. No. 827,856
3 Claims. (Cl. 73—23)



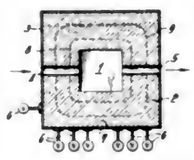
1. The method of analyzing fluid mixtures which comprises introducing a fluid mixture containing a constituent of small concentration into the inlet of a first zone which contains a material that selectively retards passage therethrough of the constituents of said mixture, introducing a carrier gas into the inlet of said first zone, passing a part of the effluent from said first zone containing said constituent of small concentration to the inlet of a second zone which contains a material that selectively retards passage therethrough of the constituents of said mixture, progressively heating sections of said second zone from the inlet thereof to the outlet thereof, passing the effluent from said second zone to the inlet of a third zone which contains a material that selectively retards passage therethrough of the constituents of said mixture, and measuring a property of the effluent from said third zone which is representative of the composition thereof.

3,159,020
GAS CHROMATOGRAPH
Walter Donner, 627 S. Cedar St., Brea, Calif., and Don Wayne Carle, 9281 Gordon Ave., Whittier, Calif.
Original application Apr. 22, 1957, Ser. No. 654,158, now Patent No. 3,062,037, dated Nov. 6, 1962. Divided and this application Oct. 1, 1962, Ser. No. 227,612
3 Claims. (Cl. 73—23.1)



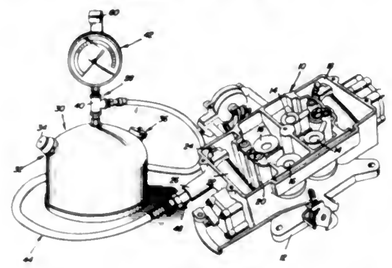
1. In a chromatograph, the combination of:
an inlet;
a chromatographic column having an impedance to fluid flow;
a detector unit having sample and reference chambers;
a first flow restrictor having an impedance to fluid flow;
a second flow restrictor having an impedance to fluid flow;
conduit means providing at least two separate flow paths for conducting a fluid from said inlet, through said first restrictor and said column to said sample chamber of said detector, and from said inlet through said second restrictor to said reference chamber, of said detector, the flow impedance of said second restrictor being substantially equal to the combination of the flow impedances of said first restrictor and said column; and
means for introducing a sample into said conduit means between said first restrictor and said column.

3,159,021
PROCESS FOR DETECTION OF LEAKS IN INDUSTRIAL VACUUM PLANTS
Otto Bretschneider, Bonn-Venusberg, and Gerhart Jaekel and Herbert Diskowski, Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Oct. 13, 1961, Ser. No. 144,878
Claims priority, application Germany Oct. 14, 1960
3 Claims. (Cl. 73—40.7)



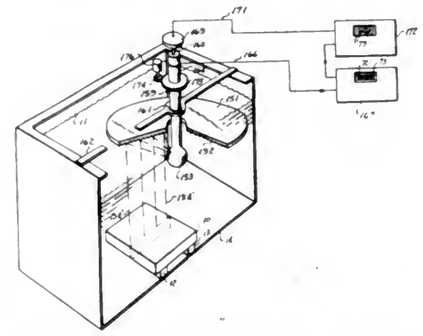
1. A process for detecting leaks in industrial vacuum plants for the thermal production of magnesium comprising taking samples of the inner gaseous atmosphere of said plant from a plurality of interior points of said plant by application of a vacuum at these points which is greater than that maintained within said plant, the atmosphere at the points within the plant being sampled prior to any contact thereof with a substance charged to the plant, and analyzing the sample gas composition for contaminants introduced through said leaks.

3,159,022
PNEUMATIC FLOAT VALVE TESTER
Lawrence K. O'Neill, P.O. Box 1296, Page, Ariz.
Filed Mar. 31, 1961, Ser. No. 99,736
5 Claims. (Cl. 73—49.7)



5. The method of testing the seating engagement of a float valve with a float valve seat of a carburetor of the type including a portion defining a fuel inlet passage with means at its inlet end adapted for communication with the outlet end of a fuel line and a downwardly facing float valve seat at its outlet end, said carburetor portion also having a float valve supported therefrom below said seat for upward movement into seated engagement with said float valve seat and operatively connected to a float arm disposed beneath said valve having a float on one end and being pivotally secured to said carburetor portion at the other end for urging said float valve upwardly into seated engagement with said seat upon upward movement of a portion of said arm disposed between the opposite ends thereof and engaged with said float valve toward said seat upon upward movement of said one end of said arm to a predetermined level by the buoyant force of liquid fuel on said float, said method comprising the following steps: inverting said carburetor portion in order that the weight of said valve, said float and said arm will urge said valve into seated engagement with said seat, applying fluid under pressure to said inlet end of said passage, and determining any loss in pressure of said applied fluid.

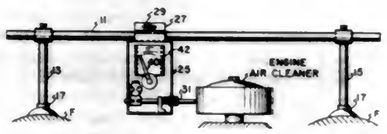
3,159,023
ULTRASONIC TESTING APPARATUS
Ernst E. Steinbrecher, Montclair, N.J., assignor, by mesne assignments, to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1957, Ser. No. 692,643
2 Claims. (Cl. 73—67.8)



1. Apparatus for nondestructively testing a preselected portion of an object by means of an ultrasonic beam comprising reflector means supported above said object and having a plurality of spaced coaxially circular reflect-

ing surfaces, the profile of each surface in a given radial section being an arc of a parabola, adjacent ones of such parabolas being coaxial with each other and with the circle axis of said reflecting surfaces, having a common focal point on said circle axis, and being coplanar, but having non-coincident vertices; transducer means for generating an ultrasonic beam having a focus at said focal point and flaring out in a plane that passes through said circle axis; means for supporting said transducer means at said common focal point of said reflecting surfaces such that successive portions of said ultrasonic beam are reflected from said spaced reflecting surfaces in the plane of incidence thereon and at right angles to said object when said transducer means is maintained in a fixed position whereby said preselected portion of said object is scanned by said ultrasonic beam.

3,159,024
APPARATUS FOR ANALYZING IRREGULAR MOTIONS OF MACHINERY
Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,509
3 Claims. (Cl. 73—71.3)



1. Apparatus for analyzing the operation of an internal combustion engine of the piston-driven crankshaft type wherein said engine is subjected to periodic normal and abnormal vibratory impulses generally about the crankshaft axis and wherein means are provided for mounting said engine to permit limited oscillatory freedom thereof about said axis to reflect said periodic impulses; in combination, sensing means including a spring-loaded plunger having one end thereof in contact with a portion of said engine radially displaced from said axis, means for mounting said sensing means to a relatively fixed structure adjacent to said engine with said plunger positioned generally tangentially with respect to said axis of rotation, the other end of said plunger being connected to a shutter means, a light source and a device capable of sensing variations in light from said source, said shutter means being positioned to at least partially interrupt light passing from said source to said device upon movement of said plunger, and normally balanced circuit means connected to said device and subject to imbalance by said light interruption, a recording galvanometer and circuit means connecting said galvanometer to said normally balanced circuit means, imbalance of said circuit means effecting correlative movement of said galvanometer, a stylus connected to said galvanometer, and graphical recording means including a drive motor for traversing said recording means adjacent to and in contact with said stylus for recording the frequency and amplitude of the oscillatory motion of said stylus in response to oscillations of said engine.

3,159,025
EXPLOSIVE ACTUATED HARDNESS TESTER
Bram Pais, Grosse Pointe Park, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 17, 1962, Ser. No. 210,390
8 Claims. (Cl. 73—82)

1. In an explosive charge actuated apparatus for testing the hardness of a test specimen by exerting a predetermined impact force on a Brinell ball in contact with said test specimen, the combination comprising:

(A) a barrel assembly having a center bore, a muzzle end, and a breech end;

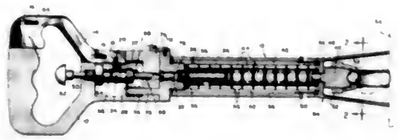
(B) an end guard connected to the muzzle end of said barrel assembly, said end guard having a guide bore aligned with said center bore;

(C) a firing chamber assembly connected to the breech end of said barrel assembly, said firing chamber assembly having a recessed firing chamber therein adapted to receive an explosive cartridge;

(D) a breech assembly mounted on said firing assembly and adapted to close the breech end of said explosive cartridge in said firing chamber;

(E) a firing pin mechanism slidably mounted in said breech mechanism and adapted to explode said explosive cartridge in said firing chamber;

(F) a driving piston slidably disposed in said barrel assembly to form a seal between said driving piston and said firing chamber, said driving piston being



adapted to be accelerated by the exploding cartridge over an adjustable acceleration stroke so as to develop a desired velocity indicative of a predetermined impact force;

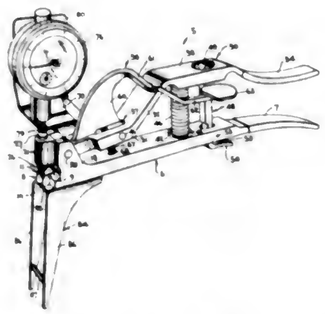
(G) a driven piston slidably mounted in said guide bore and having a driven end adapted to be driven by said driving piston and a test end extending beyond said muzzle end;

(H) a Brinell hardness ball mounted on said test end of said driven piston and adapted to receive a predetermined impact force therefrom; said impact force being defined as the kinetic energy transferred from said driven piston to said Brinell hardness ball at the end of said adjustable acceleration stroke of said driving piston;

(I) and means for adjusting the length of said acceleration stroke of said driving piston so as to achieve a predetermined calibrated velocity indicative of a predetermined calibrated impact force imparted by said Brinell hardness ball to the surface of said specimen to be tested.

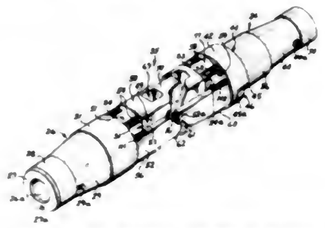
3,159,026
DOUBLE SEAM TIGHTNESS TESTER
Warren F. Schreiber, Darien, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 2, 1960, Ser. No. 47,056
20 Claims. (Cl. 73—83)

1. A seam tightness tester comprising an elongated support, a fixed jaw carried by said support at one end thereof, a movable jaw carried by said support in opposed aligned operational relation to said fixed jaw, first jaw actuating means connected to said movable jaw for effecting a relatively light clamping of a seam between said fixed jaw and said movable jaw, second jaw actuating means connected to said movable jaw for effecting a relatively heavy clamping of the seam between said fixed jaw and said movable jaw and forcing layers of the seam together, and common pivot means connecting said first and second jaw actuating means to said elongated support for



movement of said movable jaw away from said fixed jaw when one of said first and second jaw actuating means is moved toward said elongated support.

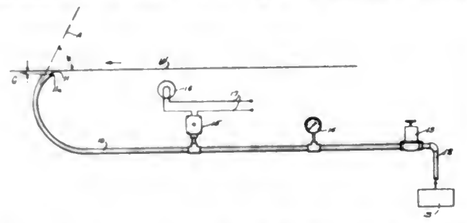
3,159,027
MULTI-COMPONENT INTERNAL STRAIN GAUGE BALANCE
Truman M. Curry, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,706
22 Claims. (Cl. 73—147)



1. A strain gauge balance for aerodynamic model testing comprising an elongated cantilever having a base, an opposite model-supporting tip, and an intermediate instrument portion, said instrument portion including two longitudinally extending side beam structures disposed in transversely spaced, substantially parallel relationship interconnecting said base and tip, and a central beam structure also interconnecting said base and tip and disposed intermediate said side beam structures, each of said beam structures comprising opposite end portions and at least one transversely extending measuring flexure interconnecting said end portions, and strain gauge means mounted on selected flexure surfaces of said beam structures and electrically connected to measure components of force and moment acting on said balance.

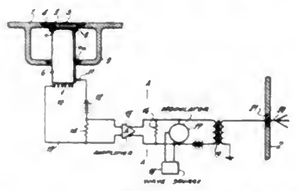
3,159,028
SHEET BREAK DETECTOR
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Filed Feb. 15, 1961, Ser. No. 89,452
8 Claims. (Cl. 73—159)

1. A mechanism for detecting a break in a web comprising a flow conduit having an orifice for directing a stream of air against the surface of a web moving in a normal running plane with said stream forming an angle with said running plane and directed toward the oncoming web with the web surface providing a resistance to the escaping air, an air supply source connected to said conduit, a pressure regulator in said conduit to maintain the air supply at a substantially uniform pressure, and a pressure responsive device connected to the conduit downstream of the pressure regulator indicating change



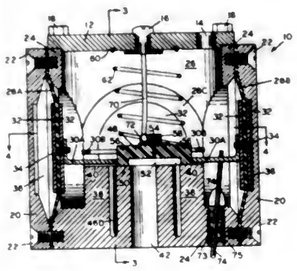
in pressure due to movement of the web out of said running plane so that a break in the web will be detected.

3,159,029
DETECTION OF MICROMETEORITES AND SIMILAR BODIES
Irving Warren Ruderman, Demarest, N.J., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey
Filed May 23, 1960, Ser. No. 31,174
6 Claims. (Cl. 73—170)



1. In combination with an outer wall of a space craft, a triboluminescent body mounted on said wall, a metal layer in contact with the surface of said body on the exterior of said wall, said layer transmitting the kinetic energy of micro-bodies striking said layer to said triboluminescent body.

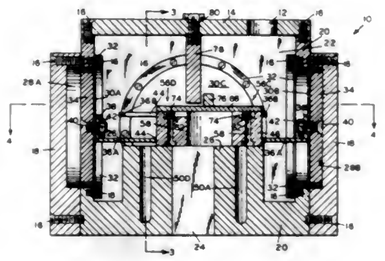
3,159,030
FLUID METERS
Francis Maginnis, Norman, Okla., assignor to A. O. Smith Corporation
Filed Mar. 14, 1961, Ser. No. 95,548
5 Claims. (Cl. 73—247)



1. A fluid meter, comprising, in combination: a body member having a fluid cavity adapted to receive fluid; the body member having a first and a second pair of radially disposed expansionable chambers; expansionable chamber members actuatable within said expansionable chambers whereby the volume of each of said expansionable chambers may be varied; a first yoke member extending from one of said expansionable chamber members of said first pair to the other of said expansionable chamber

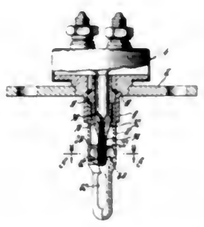
members of said first pair; a second yoke member extending from one of said expansionable chamber members of said second pair to the other of said expansionable chamber members of said second pair and being aligned in a plane parallel to the plane of the first yoke member and in close proximity thereto; the axes of the yoke members being disposed for reciprocation at substantially right angles with respect thereto, and each of said yoke members having an opening therein, the opening in said first yoke member overlapping said opening in said second yoke member; a port plate positioned in a plane parallel to said yokes and in near proximity thereto, said port plate having a discharge opening therein communicating with the exterior of said body member and four fluid control openings therein each having passage continuity with one of said expansionable chambers; an inverted cup slide member disposed in sliding engagement with the surface of the port plate, said inverted cup slide member extending through said overlapipng openings in said yoke members and adaptable thereby to be movably positioned on said port plate by movement of said yoke members, said inverted cup slide having a fluid cavity formed in the bottom surface thereof adaptable to permit fluid to flow from said fluid control openings into said discharge opening according to the position of said inverted cup slide member; means for insuring full reciprocal stroking movement of said yoke members, said means being adapted to extract energy from the flow of fluid through said meter on the first portion of the reciprocal movement of each of said yoke members and to return said energy to the flow of fluid through said meter on the last portion of the reciprocal movement of each of said yoke members whereby each reciprocal movement of each of said yoke members increases one of said expansionable chambers to the maximum volume thereof and decreases the other of said expansionable chambers to the minimum volume thereof; and means for detecting the number of reciprocal movements of one of said yoke members, said number of reciprocal movements being indicative of the volume of fluid flow through said meter.

3,159,031
HYDRAULIC FULL STROKING METER
Francis Maginnis, Norman, Okla., assignor to A. O. Smith Corporation
Filed June 15, 1961, Ser. No. 117,209
6 Claims. (Cl. 73—247)



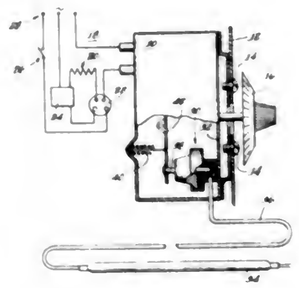
1. A fluid meter, comprising, in combination; a body member having a fluid cavity therein adaptable to receive fluid into said meter; a first and a second pair of radially disposed expansionable chambers supported in said body member; expansionable chamber members actuatable within said expansionable chambers whereby the volume of each said expansionable chambers may be varied; a first yoke member extending from one of said expansionable chamber members of said first pair to the other of said expansionable chamber members of said first pair; a second yoke member extending from one of said expansionable chamber members of said second pair to the other of said expansionable chamber members of said second pair, said yoke members disposed to reciprocate by action of said pairs of expansionable chamber members perpendicularly to each other in parallel planes and in proximity to each other, and each of said yoke members having a rectangular opening therein, the opening in said first yoke member overlapping said opening in said second yoke member; a port plate positioned in a plane parallel to said yokes and in proximity thereto, said port plate having a discharge opening therein communicating with the exterior of said body member and four valving ports therein, said body member having a fluid passage from each of said expansionable chambers to one of said valving ports in said port plate; an inverted cup-slide member adaptable to slideably engage on the bottom surface thereof said port plate, said inverted cup-slide member extending through said overlapping openings in said yoke members and adaptable thereby to be movably positioned on said port plate by movement of said yoke members, said inverted cup-slide having four ports formed in the bottom surface thereof and said inverted cup-slide having a main port opening in the bottom surface thereof and fluid passages providing communication between each of said inverted cup-slide ports and said main port, said inverted cup-slide ports and said main port openings in said inverted cup-slide adaptable to permit fluid to flow from said valving ports into said discharge opening in said port plate according to the position of said inverting cup-slide member; means of full reciprocal stroking said yoke members, said means comprising flow restriction means interposed in each of said fluid passages between each of said inverted cup-slide ports and said main port whereby fluid flow through said meter on the first portion of the reciprocal movement of each of said yoke members extracts more energy from the fluid stream than is required on the last portion of the reciprocal movement of each of said yoke members.

3,159,032
THERMOCOUPLE
Gustav F. Rademacher and Alfred Candelise, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 18, 1960, Ser. No. 16,053
12 Claims. (Cl. 73—359)



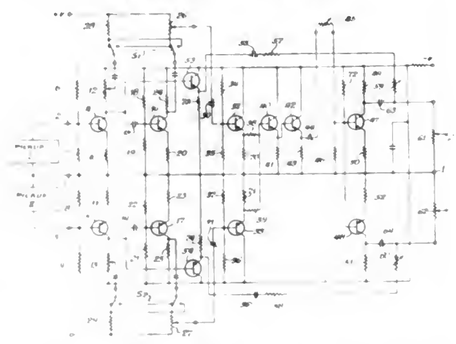
11. A thermocouple for measuring the temperature of a stream of gas comprising a metal shell, an elongated generally tubular shaped ceramic sheath in said shell, said ceramic sheath having a thin closed lower end in spaced relationship to said shell and a thick shoulder portion spaced from said lower end in contact with said metal shell, and a pair of thermocouple wires extending into said sheath and joined together so as to form a heat-sensitive junction at the closed end of said sheath, the thickness of the wall of said sheath at the closed end thereof adjacent said heat-sensitive junction not exceeding about $\frac{1}{20}$ the distance from the closed end of said sheath to said portion in contact with said shell, the lower end of said shell being formed as a housing surrounding the lower end of said ceramic sheath, said housing having a lower portion of relatively small cross sectional area with at least one inlet opening therein and having an upper portion of relatively large cross sectional area with at least one outlet opening therein, the lower end of said ceramic sheath being positioned at the junction of said lower and upper housing portions, said inlet opening being arranged to face into said gas stream with its plane approximately perpendicular to the axis of the gas stream and said outlet opening being arranged to face generally laterally and rearwardly of said inlet opening with its leading edge at that point on the wall of the upper portion of said housing which is of maximum lateral displacement from the longitudinal axis of the housing.

3,159,033
MECHANICAL MOTION TRANSMITTER
Clarence P. Salmon, Elgin, Ill., assignor to Flexonics Corporation, Maywood, Ill., a corporation of Illinois
Filed Mar. 24, 1959, Ser. No. 801,534
1 Claim. (Cl. 73—368.3)



A mechanical motion transmitter comprising: a bush having a mounting flange extending an appreciable lateral distance from the bottom surface thereof in coplanar relationship therewith, said bush having a central bore concentric with said flange; a cup-like housing having a shoulder-defining flange extending laterally outwardly from the edges of the open end thereof coextensive with said mounting flange, said housing having a central aperture in said open end through said shoulder-defining flange and aligned with said bore, said housing defining a cavity communicating with said aperture and comprising at least a portion of a closed system, said housing having a formed lip portion extending over the edges of said mounting flange in gripping engagement therewith; a resiliently deformable, elastomeric element having a gasket portion radially coextensive with and compressed between said mounting flange and said shoulder-defining flange and further having a central sleeve portion depending through said aperture into said cavity and defining a recess aligned with said bore and closed off to said cavity; a piston of lesser transverse area than said cavity slidably journaled in said bore and received in said recess; and expansible liquid in said closed system, said shoulder-defining flange extending radially inwardly from the edges of said open end whereby to restrict contact between said fluid and said elastomeric element to the sleeve portion thereof and whereby to define a ring-like guide opening for said sleeve portion.

3,159,034
BALANCING MACHINE
Karl Hilgers, Dusseldorf, Germany, assignor to Losenhausenwerk, Dusseldorfer Maschinenbau A.G., Dusseldorf-Grafenberg, Germany
Filed Nov. 24, 1961, Ser. No. 154,517
Claims priority, application Germany, Nov. 25, 1960, L 37,627
10 Claims. (Cl. 73—462)

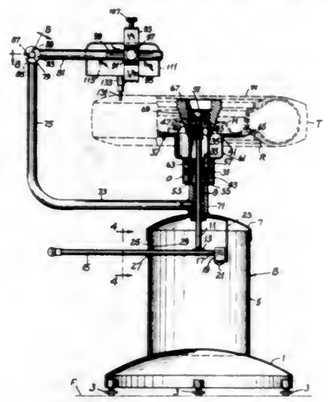


2. In an apparatus for measuring the unbalance of a revolving body wherein a pickup at one bearing produces an electrical signal representing the force at said bearing proportional to the unbalance forces at the bearing and a second pickup at a second bearing produces a second electrical signal representing the force at the second bearing proportional to the unbalance forces at the second bearing, and wherein *a* represents the distance from the one bearing to the first balancing plane of the body, c represents the distance from the second bearing to the second balancing plane of the body and *b* represents the distance between the balancing planes, the improvement comprising: electrical means connected to said pickups to produce a third signal approximately proportional to the algebraic sum of the first signal multiplied by the distance *a* and the second signal multiplied by the distance *c*, using said third signal to produce a fourth signal approximately proportional to the quotient of said third signal divided by the distance *b*, using said fourth signal and one of the first two signals to produce a fifth signal consisting of the algebraic sum of said one of the first two signals and said fourth signal, and using said fourth signal and the other of said first two signals to produce a sixth signal consisting of the algebraic sum of said other of the first two signals and said fourth signal.

3,159,035
WHEEL BALANCER
Carl H. Mueller, Pasadena Hills, and Rudy F. Schneller, O'Fallon, Mo., assignors to The McNeil Machine & Engineering Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 30, 1961, Ser. No. 156,026
14 Claims. (Cl. 73—483)

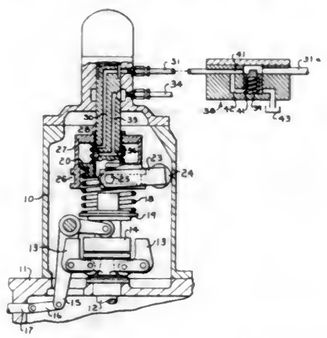
1. A wheel balancer comprising a base, a rod extending upward from the base, a wheel carrier mounted for universal tilting movement with respect to the vertical axis of the rod on the upper end of the rod and adapted to have a wheel centered thereon, said carrier being adapted to occupy a balanced level position and being tiltable therefrom in response to unbalance of a wheel thereon, a spirit level on the carrier for indicating tilting in any direction of the carrier, a first arm mounted on the base for rotation around the axis of the rod, a second arm carried by the first arm for movement between a retracted position for application of a wheel to the carrier and an operative position extending generally horizontally

over a wheel on the carrier, a bracket on the second arm, a force-measuring gage carried by the bracket for generally vertical movement relative to the bracket when the second arm is in its operative position, said gage comprising a pusher having an end engageable with a wheel on the carrier, spring means biasing the pusher to an extended position, and means for indicating the amount



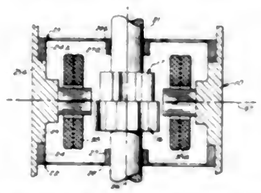
of force applied to the pusher against the bias of said spring means, said gage being movable relative to the bracket for application of force to the wheel by the pusher at such a point and in such amount as to bring the carrier and wheel thereon to level position and for measuring the amount of said force, thereby to indicate the amount of weight and the position thereof required to balance the wheel.

3,159,036
ENGINE SPEED LIMITING MEANS RESPONSIVE TO LUBRICATING OIL PRESSURE
Robert H. Miller and John H. Parks, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 11, 1963, Ser. No. 272,312
4 Claims. (Cl. 73—509)



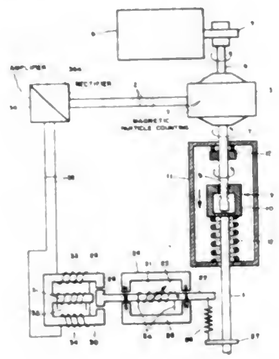
1. Apparatus to reduce the speed setting of a spring loaded flyweight type engine governor upon failure of engine lubricating oil pressure which comprises means to confine oil in a position to exert compressive force on the governor spring, conduit means communicating between said confining means and a source of lubricating oil under pressure, a normally closed valve in said conduit means, and means operable while oil is under pressure in the conduit means to open said valve to admit oil to said confining means and operable when the pressure falls below a predetermined minimum to close said valve and vent said confining means.

3,159,037
COMBINATION PICK-OFF AND SELF-CHECK MECHANISM FOR TRANSDUCERS
Stanford D. Blitzer, Newton Lower Falls, Mass., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 27, 1961, Ser. No. 120,011
6 Claims. (Cl. 73—517)



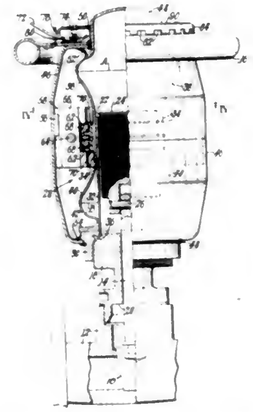
1. In combination with a linear accelerometer supported within a tubular housing;
a pick-off stator fixedly attached to the tubular housing, co-axially therewith, said pick-off stator having a plurality of radially positioned poles incorporated therewith;
a proof mass fitted to the tubular housing, co-axially with the poles of the stator;
a tubular armature fixedly attached to the proof mass, co-axially therewith, said tubular armature being formed in two sections, each section of the armature having a plurality of radially positioned poles integral therewith, the number of poles in each tubular section of the armature being equal to one-half the number of poles in the stator, the poles of one tubular section of the armature being rotationally angularly offset relative to the poles of the second tubular section thereof, the poles in said armature being radially aligned with the poles of the stator in the neutral position;
multiple flexure spring means fixedly attached to the tubular housing supporting the proof mass, to permit longitudinal displacement of the proof mass;
a plurality of primary windings fitted to the poles of the stator, each primary winding being wound around a pair of poles of the stator;
a plurality of secondary windings fitted to pairs of poles of the stator angularly displaced from the poles having primary windings fitted thereto;
an intermediate tap co-ordinated with and connected to portions of the secondary wnidings;
means adapted to supply a voltage to the primary windings to energize a variable reluctance pick-off circuit, the direction of the current through each primary winding being opposite that through the adjoining primary winding, the second windings being wound around pairs of poles of the stator, alternating with those around which the primary windings are wound, the winding direction of each secondary winding being alternated relative to that of the adjoining secondary winding, said pick-off circuit being adapted to indicate the extent of the longitudinal displacement of the poles of the armature relative to the corresponding poles of the stator, the differential flux from the secondary windings when the proof mass is displaced from its neutral position producing a voltage signal;
means connected to the secondary windings adapted to transmit as an output signal voltage the pick-off circuit signal representing the longitudinal displacement of the poles of the armature relative to the corresponding poles of the stator;
means connected to the intermediate tap connected to the second windings, adapted to generate a forcer voltage, said generated forcer voltage providing a force required to displace the proof mass and the armature attached thereto from their neutral position relative to the poles of the stator over a specific distance, as a self-check feature of the apparatus, including a pair of leads to which are fed the output signal voltage, said output signal voltage being directly proportional to the axial displacement of the poles of the armature relative to the corresponding poles of the stator, as an indication of the axial displacement of the proof mass, relative to the central position thereof; and,
an auxiliary line from the intermediate tap of the secondary windings connecting the forcer voltage generating means to said leads, said forcer voltage signal being introduced into the output signal voltage symmetrically in order to provide a zero direct effect on the output signal voltage.

3,159,038
ACTUATORS FOR POSITIONING A CONTROL VALVE OR OTHER MEMBER IN ACCORDANCE WITH AN ELECTRICAL SIGNAL
Kenneth John Brown, Oxted, England, assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Nov. 20, 1961, Ser. No. 153,566
1 Claim. (Cl. 74—1)



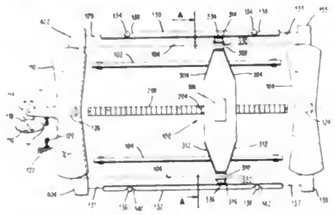
A device for controlling the position of a positionable member, comprising, in combination, a one direction constant speed, constant torque driven member, a magnetic particle coupling to which said driven member is applied as input, electrical signal input means to said coupling for controlling the operation thereof, an output member from said coupling driven from said input driven member according to the coupling effect due to said electrical signal, a positionable member positionable by said output member in predetermined relation to said input signal, means biasing the positionable member against the output member, and mechanical-electrical transducing means connected mechanically from said positionable member and electrically into said electrical signal input means as a controlling factor in the electrical signal input to said magnetic particle coupling, whereby the actual position of said positionable member is a factor in the control input.

3,159,039
HERMETICALLY SEALED ACTUATORS FOR VALVES AND THE LIKE
Bernard G. E. Stiff, Lynnfield Center, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Feb. 19, 1962, Ser. No. 174,099
6 Claims. (Cl. 74—17.8)



1. A sealed actuator for valves and the like having a toothed, internal member to be moved and precisely positioned thereby, comprising radially spaced inner and outer body shells coaxial with the member, the inner shell having two radially flexible portions spaced axially which, along at least a part of their length, are elliptoidal in cross sections which have progressively changing major diameters, one of these portions enclosing an end of the member, a third portion of the inner shell intermediate the two portions being supported thereby in parallel relation to the teeth of the member for cooperation therewith, an elliptoidal wave generator operatively connected to the outer shell to impose a rotary wave of radial deflection upon the intermediate portion of the inner shell to transfer localities of tooth engagement peripherally about the member, and means for rotating the outer shell in sealed relation on the inner shell whereby the member is actuated with respect to the latter.

3,159,040
LINEAR STEPPING AND POSITIONING MECHANISM
Walter S. Thomas, Jr., and Donald L. Kirkpatrick, Drexel Hill, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,714
12 Claims. (Cl. 74—37)



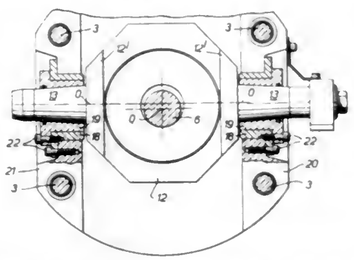
1. A positioning device for accurately moving one assembly with relation to another assembly, comprising:
(*a*) an oscillating drive means capable of moving in a forward and rearward direction alternately;

(*b*) means coupled to said oscillating drive means for moving said oscillating drive means in a forward and rearward direction alternately;
(*c*) a movable assembly comprising the object to be positioned and a selectively operable gripping means;
(*d*) actuator means coupled to said selectively operable gripping means to cause said gripping means to grip said oscillating drive means;
(*e*) and selection means coupled to said actuator means to selectively operate said actuator means to grip said oscillating drive means to cause forward or rearward movement of said movable assembly.

3,159,041
SWASH PLATE TYPE HYDRAULIC MACHINES

Donald Firth and Roger Harvey Yorke Hancock, Glasgow, Scotland, assignors to Council for Scientific and Industrial Research, London, England, a corporation of England

Filed Jan. 4, 1962, Ser. No. 164,423
Claims priority, application Great Britain, Jan. 6, 1961, 610/61
1 Claim. (Cl. 74—60)



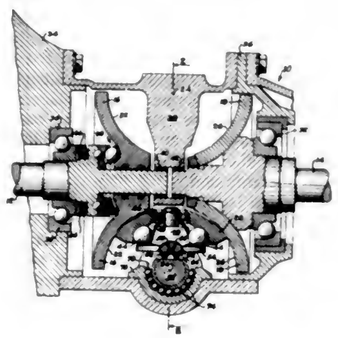
A swash plate machine comprising a casing; a shaft mounted in bearings in said casing; a cylinder block secured on said shaft and having a plurality of cylinders disposed equiangularly around the axis of said shaft on a common pitch circle; a swash plate embracing said shaft; a piston working in each cylinder; and a slipper pivotally connected to each piston and slidably engaged with the working surface of the swash plate; coaxial trunnions projecting laterally from the swash plate; a first eccentric bearing bush surrounding each trunnion; a second eccentric bearing bush snugly embracing the first eccentric bush and rotatably received in the casing; and means for locking the eccentric bushes in a desired angular position relative to each other whereby the common axis of the trunnions can be so located as to reduce to zero the reaction torque in the swash plate about the trunnion axis in any selected position of adjustment of the swash plate.

3,159,042
ROLLER SUPPORT MECHANISM FOR TOROIDAL DRIVE

Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic, Inc., a corporation of New York

Filed Mar. 19, 1963, Ser. No. 266,363
10 Claims. (Cl. 74—200)

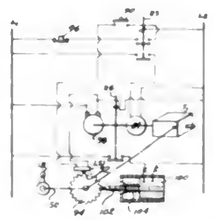
1. A variable speed-ratio transmission having co-axial input and output members with facing toric surfaces having a substantially common toric center circle; a plurality of circumferentially-spaced rollers disposed between and having contact pressure engagement with said surfaces for transmitting torque from the input member to the output member; a plurality of circumferentially-spaced pivot shafts each disposed substantially tangent to said toric center circle, there being one pivot shaft for each roller with each roller being disposed radially inwardly of its pivot shaft relative to the transmission axis and operatively connected thereto for support thereby so that pressure of said toric surfaces against the rollers is effective to urge each roller radially outwardly toward its pivot shaft; each roller pivot shaft being rotatabie about its axis to provide for speed-ratio changing movement of its roller across said toric surfaces; and a substantially semi-cylindrical bearing for supporting each pivot shaft and disposed on the outward side of the pivot shaft directly opposite the associated roller.



3,159,043
CONTROL ARRANGEMENT FOR A SHIFTABLE TRANSMISSION

Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Company, Cincinnati, Ohio, a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,373
10 Claims. (Cl. 74—336.5)

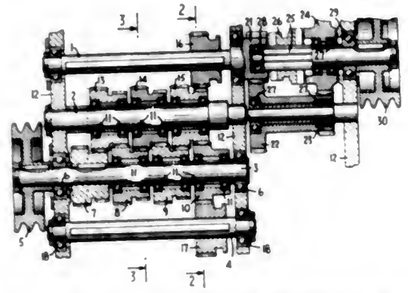


1. In combination: a shiftable transmission having rotatable input and output shaft means and also having drive means drivingly interconnecting said shafts and including a part shiftable to change the drive ratio of the transmission, a movable member operatively connected to said shiftable part and movable for accomplishing the shifting thereof, lock means operable for locking said movable member against movement, control means operatively connected to said lock means for actuating said lock means to release said movable member, said control means including an actuating element sensitive to rotation, said actuating element being drivingly connected to one of said shaft means of the transmission so as to be influenced by rotation of the said one shaft means, said actuating element being operable only when said one shaft means is halted to permit said control means to actuate said lock means to release said movable member for shifting of the said shiftable part of said transmission.

3,159,044
GEOMETRICALLY PROGRESSIVE GEAR BOX

Auguste André Alexandre Feuillastre, 159 Rue Nationale, Paris, France

Filed Jan. 4, 1961, Ser. No. 80,622
Claims priority, application France, Feb. 3, 1960, 817,471, Patent 1,248,245
4 Claims. (Cl. 74—342)



1. In a multi-spaced gear box, in combination, an input shaft, a plurality of similar pairs of gears on said input shaft and having a number n^1 of teeth and a different number n^2 of teeth, a first pair of said gears being keyed on the input shaft, the others being mounted rotatably and disposed after said first pair on said input shaft, a countershaft parallel with the input shaft, a plurality of pairs of gears on said countershaft similar to the pairs on the input shaft and freely rotatably mounted axially disposed on said countershaft, each gear having n^2 teeth of any one of the pairs of one of said shafts meshing in operation with a driven gear having n^1 teeth of one of the pairs mounted on the other shaft so that each pair on the input shaft and on the countershaft rotates with a speed different than the speed of the driving pair with a ratio

$$\frac{n^2}{n^1}$$

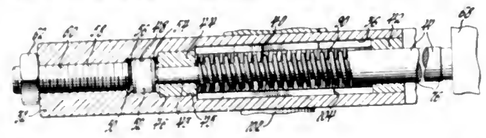
equal to and corresponding to a ratio of a geometrical progression, all of the pairs of gears mounted on the countershaft rotating in operation in an opposite direction than the direction of rotation of the pairs mounted on the input shaft, an output shaft parallel with the countershaft, an output gear mounted for sliding axially on said output shaft and for rotation therewith and slidably positionable in operation in positions for meshing selectively with any given one of the driven gears having n^1 teeth of the pairs of gears mounted on the countershaft and rotating in the same direction as the input shaft, an auxiliary shaft parallel with the other shafts, a gear mounted freely rotating on said auxiliary shaft permanently meshing with the output gear and movable axially on said auxiliary shaft for meshing selectively with any one of the driven gears having n^1 teeth of the pairs of pinions mounted on the input shaft, the output shaft rotating in operation in the same direction as the input shaft, whereby in operation the output shaft has imparted thereto selectively and alternatively as many speeds as there are of said driven gears.

3,159,045
DRIVE MECHANISM

Thomas E. Lohr, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Apr. 19, 1957, Ser. No. 653,800, now Patent No. 3,023,854, dated Mar. 6, 1962. Divided and this application Oct. 11, 1961, Ser. No. 144,447
3 Claims. (Cl. 74—411)

1. In a drive mechanism, the combination comprising, a housing having a bore therein, a shaft rotatably mounted in said bore and axially shiftable therein, means in said bore providing an abutment located in axially spaced relationship to one end of said shaft, a thrust takeup member positioned within said bore between said abutment and said one end of said shaft and normally spacing said one end of said shaft with respect to said abutment, said takeup member including a member of deformable plastic material, said deformable member being deformed by axial

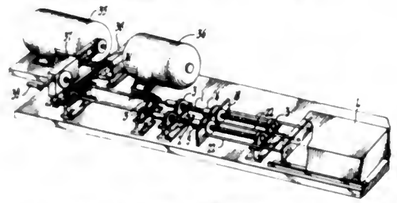


thrust loads of a predetermined magnitude applied in one direction by said one end of said shaft to said thrust takeup member to take up such loads, power operating means, and a resilient member coupling said power operating means and the other end of said shaft, said resilient member locating said other end of said shaft and taking up axial thrust loads applied thereto by said shaft in an opposite direction.

3,159,046
BALL NUT SCREW DIFFERENTIAL

John L. Harned, Detroit, and Keith M. Miller, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 15, 1962, Ser. No. 230,603
16 Claims. (Cl. 74—424.8)



4. In a rotary to linear differential device; a pair of parallel elongated shafts; support means rotatably supporting said shafts and preventing axial movement thereof; input means for rotating each of the shafts; and output means supported by the shafts for movement axially of the shafts including; first and second transfer devices rotatably mounted on said shafts, said first transfer device movable by one of said shafts in a direction axially of said one shaft whenever there is a relative speed difference between said first transfer device and said one shaft, said second transfer device movable by the other of said shafts in a direction axially of said other shaft whenever there is a relative speed difference between said second transfer device and said other shaft, and gear means carried by each of said transfer devices and in mesh with each other so that any rotative speed difference between the shafts causes a relative speed difference between each of said transfer devices and said shafts to move the output means.

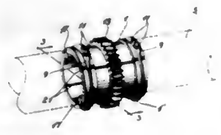
3,159,047
SEGMENTED GEAR

George F. Dable, 174 Des Erables, Drummondville-West, Quebec, Canada

Filed Sept. 21, 1962, Ser. No. 225,210
2 Claims. (Cl. 74—450)

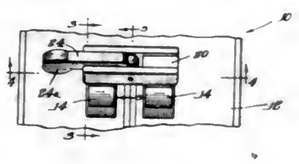
1. A segmented gear-to-shaft assembly comprising:
(*a*) a shaft;
(*b*) two complementary sleeve-like semi-cylindrical sections resulting from the sawing off of a cylindrical member along an axial plane thereof;

(*c*) said sections adapted to be mounted on said shaft;
(*d*) a gear segment on the outer surface of each section;
(*e*) said segments being in circumferential alignment with each other;
(*f*) each section being formed with a peripheral circumferential groove; said grooves being in alignment with one another to define a circular channel extending fully around the outer surface of said sections;



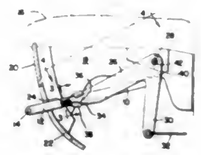
(*g*) said shaft being formed with a key recess opening through the outer surface thereof;
(*h*) at least one of said sections being formed with a key slot through the wall thereof and extending axially from one end of the section and cutting across said channel;
(*i*) a key in said key slot and key recess, and
(*j*) a split ring removably mounted in said channel over said key to retain said sections in non-rotational engagement on said shaft during driving thereof.

3,159,048
TIE MEANS FOR OPERATING HANDLES OF ELECTRICAL CONTROL DEVICES
Joseph Clifford, Cedar Rapids, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed May 21, 1962, Ser. No. 196,371
4 Claims. (Cl. 74—491)



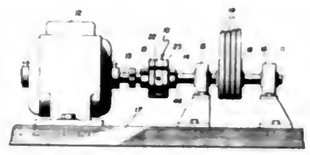
1. An assembly comprising a sectional multi-pole electrical control device having an adjacent pair of operating handles mounted for pivotal movement about a common axis, an elongated generally channel-shaped handle tie member mounted on the outer ends of said handles and mechanically joining said handles for operation as a unit, the outer ends of said handles and the inner end of the channel of said handle tie member being enlarged and generally complementary to prevent application and removal of said handle tie member axially of said handles perpendicularly of said pivotal axis, said outer ends of said handles respectively being slidably received in said handle tie member from the opposite ends thereof during assembly of said sectional multi-pole electrical control device and said handle tie member having interference means disposed centrally in the channel thereof between said handles to prevent removal of said handle tie member transversely of said handles, and lever means pivotally mounted on said handle tie member, said lever means furnishing additional leverage in the operation of said handles when extended generally perpendicularly to said handle tie member.

3,159,049
CONTROL LEVER REPLACEMENT ARM
Rudolph J. Lahti, 50 E. Main St., Gloucester, Mass.
Filed June 4, 1962, Ser. No. 199,958
3 Claims. (Cl. 74—519)



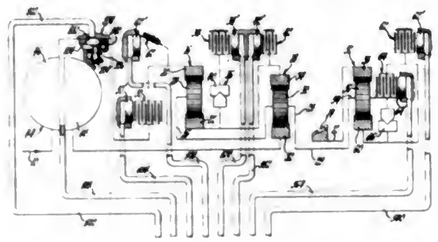
1. A replacement arm for a lever which is journaled on a pivot axis and has a tapered portion leading to a reduced size section subject to breakage,
said arm adapted to be secured as an extension to a said lever broken at said reduced size section and comprising
an elongated body extending alongside the lever with a first end projecting beyond the reduced size section of the lever,
a tapered socket on said body slidably engaged with the tapered portion of the lever,
a resilient hook at the other end of said body, the inside of said hook facing said tapered socket,
said hook being located and positioned to be sprung and engaged over the pivot axis of the lever when said socket is engaged with the tapered portion of the lever,
whereby said hook holds said socket resiliently engaged with the tapered portion and locks said replacement arm body and the lever against transverse and longitudinal movement with respect to each other.

3,159,050
DYNAMIC BALANCING APPARATUS
William H. Wilson, 20 Harrington Terrace, Burlington, Vt.
Filed Dec. 11, 1963, Ser. No. 329,650
7 Claims. (Cl. 74—573)



1. A dynamic balancing apparatus for use on a rotatable shaft, comprising
(*a*) a first body member of disc-like configuration adapted to be fastened to the rotatable shaft coaxial thereof,
(*b*) a second body member also of disc-like configuration, the body members having flat faces adapted to lie in contact with one another,
(*c*) means including radial grooves on the flat face of one of the body members and a single radial spline on the other for locking the body members against rotation relative to one another while permitting relative radical movement between the body members, and
(*d*) means for adjusting the radial position of one body member relative to the other.

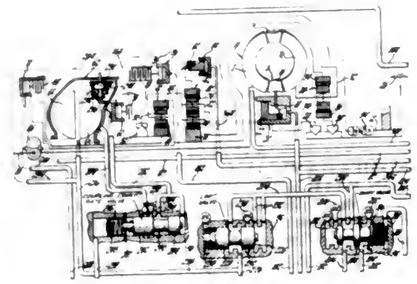
3,159,051
TRANSMISSION
Walter B. Herndon, Ann Arbor, and August H. Borman, Jr., Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 8, 1958, Ser. No. 754,089
38 Claims. (Cl. 74—645)



15. In an engine driven transmission, means providing plural drive trains for establishing drive ratios through the transmission, a fluid operated drive establishing device for rendering one of the drive trains effective, a fluid coupling for assisting in rendering another of the drive trains effective, a source of pressure fluid, shift valve means operative to cause the fluid operated device to become inoperative and the fluid coupling operative so as to produce a drive ratio change through the transmission, the shift valve means when operative interrupting the pressure fluid supply from the source to the fluid operated device while initiating pressure fluid supply from the source to the fluid coupling, relief valve means effective during the drive ratio change to regulate the pressure in the fluid operated device so as to control the exhaust thereof in accordance with both the engine torque load and the pressure in the fluid coupling, supply valve means including a first supply valve for furnishing pressure fluid from the source to the fluid coupling at one rate and a second supply valve exposed to the pressure in the fluid operated device, the second supply valve being arranged to establish communication between the fluid coupling and the source when the pressure in the fluid operated device decreases to a predetermined value so as to supplement the first supply valve and furnish pressure fluid to the fluid coupling at a faster rate, and an accumulator for supplying pressure fluid to the relief valve means so as to enable the relief valve means to regulate the accumulator capacity and accordingly the volume of pressure fluid available for enabling the relief valve means to regulate varying with the engine torque load.

3,159,052
TRANSMISSION
John J. O'Malley and Carl E. Shellman, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 26, 1959, Ser. No. 795,774
59 Claims. (Cl. 74—645)

27. In combination, power and load members, forward drive and coast drive trains interposed between the members, selector means for determining the drive train to be effective, a hydrodynamic device common to both trains and including a first rotor revolvable at a speed proportional to the speed of one of the members and a second rotor, a source of fluid pressure, a supply valve responsive to both the speed and the torque demand on the load member for causing fluid pressure from the source to be delivered to the hydrodynamic device when a predetermined relationship between the speed of the load member and the torque demand thereon is attained, a limit valve responsive to the speed of the load member and arranged between the supply valve and the hydrodynamic device so as to prevent fluid pressure between the limit valve and the supply valve from falling below a predetermined minimum, brake means rendered operative when the coast drive train is effective to oppose rotation of the second rotor so as to cause the hydrodynamic device to function as a brake and resist rotation of said one of the members by the other of the members, connecting means rendered operative when the forward drive train is effective to drive connect the second rotor to said other of the members so as to cause the hydrodynamic device to function as a clutch for transferring drive between the members and when the coast drive train is effective to drive connect the members so that with the brake means operative the hydrodynamic device functions as a fluid brake for resisting rotation of said one of the members, a lock-up clutch interposed between the first and second

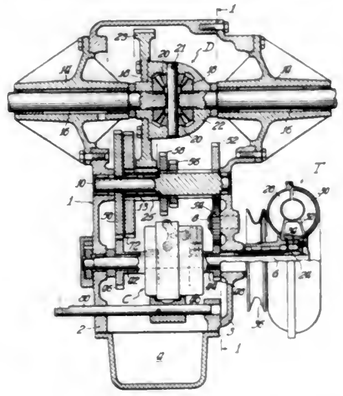


rotors operative when the hydrodynamic device is functioning as a clutch to join together the first and second rotors so as to eliminate fluid slippage therebetween, an exhaust valve responsive to the speed of the load member and effective to control the rate of discharge of fluid pressure from the hydrodynamic device in accordance therewith, a lock-up clutch valve responsive to both the speed of the load member and the torque demand thereon so as to be effective in accordance therewith to cause fluid pressure to be supplied to the lock-up clutch after the pressure in the hydrodynamic device has attained a predetermined value, and a relay valve responsive to the speed of the load member and the torque demand thereon, the relay valve being effective when the forward drive train is effective to cause the lock-up clutch valve to be placed in communication with the supply valve and when the coast drive train is effective to establish communication between the exhaust valve and the supply valve so as to cause the exhaust valve to discharge fluid pressure from the hydrodynamic device at a different rate.

3,159,053
POWER TRANSMISSION SYSTEMS
Jack F. Engle, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 20, 1962, Ser. No. 203,797
2 Claims. (Cl. 74—701)

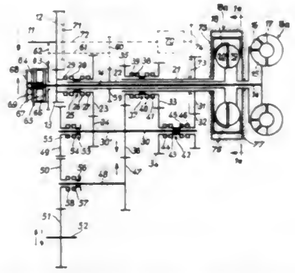
1. A transmission comprising an input shaft; a countershaft; a shifting gear shaft; a semi-final drive gear rotatably journalled on said countershaft; a plurality of selectively engageable gears on said countershaft and said shifting gear shaft to establish a plurality of speed ratios therebetween; a differential mechanism driven by said semi-final drive gear; additional gear means fixed to said shifting gear shaft driving said semi-final drive

gear; a forward drive gear train between said input shaft and said countershaft; a reverse drive gear train be-



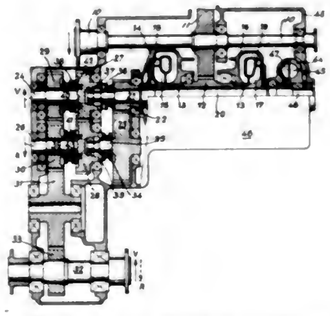
tween said input shaft and said countershaft; and selectively actuated clutch means for coupling said input shaft to either of said gear trains.

3,159,054
HYDROMECHANICAL COMPOUND TRANSMISSION WITH REVERSING GEAR MEANS
Hermann Gros, Friedrichshafen, Germany, assignor to Maybach-Motorenbau G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed Aug. 6, 1962, Ser. No. 214,910
Claims priority, application Germany, Sept. 2, 1961, M 50,205
17 Claims. (Cl. 74—732)



1. A hydromechanical change speed transmission particularly for diesel engine powered rail vehicles comprising, in combination:
a drive gear at one side of the transmission,
a hydraulic torque converter and a hydraulic clutch operatively connected to said torque converter and forming a unit therewith placed on the opposite side of the transmission,
said torque converter and said hydraulic clutch being capable of being filled with and relieved from an operating fluid,
said torque converter including a pump wheel and a turbine wheel,
said hydraulic clutch including a rotatable housing forming a first blade wheel and being connected for rotation with said turbine wheel, and a second blade wheel,
a primary shaft extending through the transmission and operatively connecting said drive gear to said pump wheel for driving said pump wheel,
a first hollow shaft coaxial of said primary shaft and connected to said first blade wheel for rotation therewith,
speed change gear means having a plurality of gear trains,
said gear trains each having first and second gear wheels,
said first gear wheels of said gear trains being carried on said first hollow shaft,
said speed change gear means including a plurality of mechanical clutches so constructed and arranged that only one of said gear trains is capable of transmitting torque at a time, depending on the position of said mechanical clutches,
torque bypass means having a first gear wheel, and a second gear wheel engaged by said first gear wheel,
a second hollow shaft coaxial of said primary shaft and having a portion interposed between said primary shaft and said first hollow shaft,
said second hollow shaft being connected to said second blade wheel of said hydraulic clutch for rotation therewith,
said first gear wheel of said torque bypass means being carried on said second hollow shaft,
means constructed and arranged to connect said first gear wheel of said bypass means to said second hollow shaft for rotation therewith,
and a secondary shaft placed parallel to said primary shaft and carrying the second gear wheels of said plurality of gear trains,
said second gear wheel of said bypass means being connected to said secondary shaft for rotation therewith,
said torque bypass means being placed next to said drive gear, said speed change gear means being placed next to said bypass means, and said hydraulic clutch being placed between said speed change gear means and said torque converter.

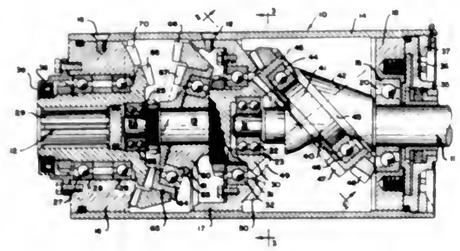
3,159,055
HYDROMECHANICAL CHANGE-SPEED AND REVERSING TRANSMISSION
Walter Schweizer, Friedrichshafen-Manzell, Germany, assignor to Maybach-Motorenbau G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed July 3, 1963, Ser. No. 292,563
Claims priority, application Germany, Aug. 23, 1962, M 54,005
12 Claims. (Cl. 74—732)



1. A change-speed and reversing transmission comprising:
a driving member,
a group of individually operable Föttinger circuits including a first hydrodynamic device forming a fluid torque converter capable of substantially increasing torque, and at least one second hydrodynamic device,
each of said hydrorynamic devices having input means and output means,

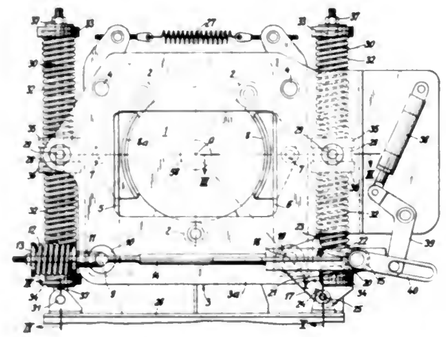
said input means being interconnected and operatively connected to said driving member for drive thereby.
a speed-changing gear having an input gear and an output gear.
said input gear being connected to said output means of said hydrodynamic devices for drive thereby,
said hydrorynamic devices being individually operable for selectively driving said input gear of said speed-changing gear either by the first hydrodynamic device at a relatively low speed range or by the second hydrodynamic device at a relatively high speed range.
a reversing gear having two input gears and an output gear.
means for selectively operatively connecting said input gear or said output gear of said speed-changing gear to a selected one of said input gears of said reversing gear for driving either one or the other of said input gears of said reversing gear by either the input or the output gear of said speed-changing gear for driving said output gear of said reversing gear at a selected direction of rotation and at a selected speed within the speed range defined by the hydrodynamic device which is in operation.

3,159,056
TRANSMISSION
Walter Blazo, Harper Woods, Mich. (780 N. Fairoaks Ave., Lot 44, Sunnyvale, Calif.)
Filed Aug. 2, 1961, Ser. No. 128,873
10 Claims. (Cl. 74—751)



1. A transmission comprising:
(*a*) a housing.
(*b*) an input shaft rotatably mounted in the housing,
(*c*) a hub fixed to the input shaft for rotation therewith.
(*d*) the axis of the hub being tilted relative to, and intersecting, the input shaft axis at an acute angle, so that the hub axis swings about the input shaft axis as the latter shaft rotates and thereby generates a cone having the input shaft axis as its altitude.
(*e*) a gear ring journaled co-axially upon the hub.
(*f*) two complete gears on the gear ring.
(*g*) a first housing gear secured to the housing co-axially of the input shaft and
(*h*) meshing with one of the gears on the gear ring.
(*i*) a second shaft rotatably mounted in end-to-end co-axial relationship with the input shaft.
(*j*) a gear formed co-axially on one end of the second shaft
(*k*) and meshing with the other gear on the gear ring.
(*l*) a hub fixed in axially inclined relation to the second shaft with the axis of the latter hub in intersecting, acute angle relation with the axis of the second shaft similarly to that of the hub fixed to the input shaft.
(*m*) a gear journaled co-axially on the hub of the second shaft,
(*n*) and a second housing gear fixed to the housing co-axially of the shafts and
(*o*) meshing with the gear journaled on the hub of the second shaft.
whereby torque applied to the input shaft will be transmitted through said gears to the second shaft.

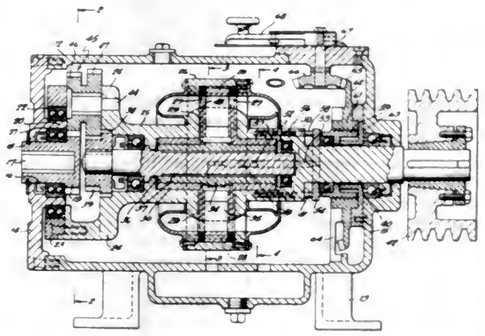
3,159,057
DEVICE FOR PROTECTING DRIVES, ESPECIALLY BUCKET WHEEL DRIVES AGAINST OVERLOADING
Georg Fischer, Rheinhausen, Lower Rhine, Germany, assignor to Beteiligungs-und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Aug. 1, 1961, Ser. No. 128,569
Claims priority, application Germany, Aug. 4, 1960, B 58,866
5 Claims. (Cl. 74—785)



1. An overload release mechanism, which includes: an input shaft, power conveying means for driving connection with a drive to be protected against undue overload, a planetary gear transmission interposed between said input shaft and said power conveying means for normally establishing driving connection therebetween, said planetary gear transmission including a rotatable but normally stationary reaction member, and brake drum means, operatively connected thereto, turnable frame means, two lever means spaced from each other in longitudinal direction of said frame means and being pivotally supported thereby, first spring means connecting one end portion of one of said two lever means with the adjacent end portion of the other one of said two lever means and urging said two end portions toward each other, connecting means interconnecting the other two end portions of said two lever means and operable to move into an effective position for holding said other two end portions of said lever means at a minimum spacing from each other against the thrust of said first spring means, said connecting means also being operable to move into an ineffective position to permit said other two end portions of said two lever means to move apart in excess of said minimum spacing by the action of said first spring means, brake shoe means carried by said lever means and operable to engage and disengage said drum means to thereby respectively connect said frame means to and disconnect the same from said reaction member for holding the latter stationary or allowing rotation thereof, said brake shoe means engaging said drum means in response to said connecting means occupying its effective position for braking said reaction member and disengaging said drum means in response to said connecting means occupying its ineffective position for releasing said reaction member, a plurality of second spring means arranged at spaced diametrically oppositely located portions of said frame means and normally counteracting a predetermined permissible maximum

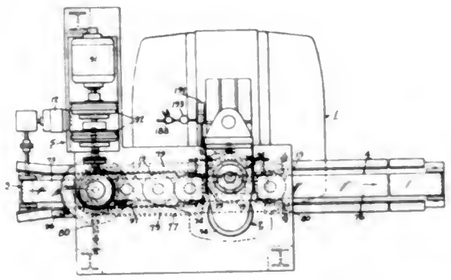
torque exerted upon said reaction member through said planetary gear transmission, said connecting means including locking cam means having a locking surface and being pivotally connected to the adjacent one of said other end portions of said lever means and also being pivotally and slidably connected to said stationary supporting means, said connecting means furthermore including bar means with locking means normally engaging said locking area and also including yieldable third spring means normally pressing said locking means against said locking area to thereby hold said cam means in locked condition and the adjacent ends of said lever means at said minimum spacing from each other, said cam means being operable in response to a turning movement of said frame means by a torque exerted upon said frame means in excess of the thrust of said second spring means to move out of said locked condition whereby said third spring means ceases to pull the adjacent end portions of said lever means together and permits said first spring means further to pull the respective adjacent lever means together and to withdraw said brake shoe means from said brake drum means to thereby permit said reaction member freely to rotate relative to said differential transmission.

3,159,058
STATIONARY HYDRAULIC TRANSMISSION
Ambrose E. Zierick, New York, N.Y.
(5700 Arlington Ave., Riverdale, N.Y.)
Filed Dec. 14, 1962, Ser. No. 244,725
11 Claims. (Cl. 74—794)



1. A stationary hydraulic transmission comprising, in combination, a stationary, liquid-tight housing, a driving shaft extending into said housing, the inwardly-projecting shaft of said driving shaft having a pinion connected thereon; a fluid clutch pump within said housing, said pump including a cylinder having a driven shaft connected thereto at one end thereof, said cylinder and said driven shaft in axial alinement with said driving shaft, said driven shaft rotatably supported on said housing; a pump-rotor housing including a cam ring axially mounted on said cylinder for rotation therewith; a rotor including radially-displaceable vanes within said rotor housing, said rotor including a shaft rotatably disposed within said cylinder and extending towards said driving shaft, said rotor shaft having a pinion connected to its end adjacent said driving shaft; planetary gears mounted on said cylinder adjacent said driving shaft, rotatable means concentric with said driving shaft supporting said cylinder end, each of said planetary gears having a section thereof meshing with said driving shaft pinion and a section meshing with said rotor shaft pinion, said fluid clutch pump having a fluid passage provided therein from said rotor housing to said stationary housing, said passage extending through the wall of said cylinder and having an inlet port into said cylinder and an outlet port from said cylinder, means rotatable with said cylinder for adjustably opening and closing one of said passage ports, and means extending through said stationary housing for adjustably moving said port-closing and opening means.

3,159,059
FULLY AUTOMATIC SINGLE STATION BALANCING MACHINE
Robert J. Fibikar and Werner I. Senger, Madison, Wis., assignors to Gisholt Machine Company, Madison, Wis., a corporation of Wisconsin
Filed June 13, 1955, Ser. No. 514,985
18 Claims. (Cl. 77—5)

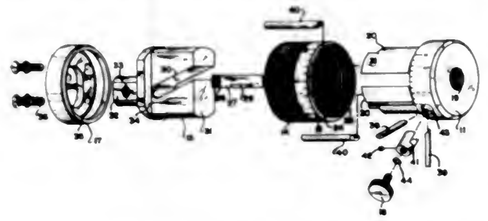


1. An automatic balancing machine adapted to measure the unbalance in successive like rotary workpieces and to correct therefor, comprising workpiece handling apparatus adapted to load successive workpieces into the unbalance measuring and correcting apparatus and to remove successive workpieces therefrom, unbalance measuring apparatus adapted to measure the unbalance in each successive workpiece and to determine the angle of maximum unbalance therein, unbalance correcting apparatus, means directly responsive to and controlled by said measuring apparatus to adjust said correcting apparatus and determine the correction to be made in each given workpiece at the angle of maximum unbalance in accordance with the amount of unbalance therein as determined by said measuring apparatus, means directly responsive to said angle determining apparatus to angularly index the workpiece relative to said correction apparatus in accordance with the unbalance angle determination by said unbalance measuring and determining apparatus, individual electrical power means for driving said apparatuses and means, and interlocking means in the circuits of said individual power means to effect actuation of the same in automatic correlation in successive cycles for corresponding successive workpieces without stopping between workpieces.

3,159,060
OFFSET BORING HEAD
Wilbur N. Miles, Chagrin Falls, Ohio, assignor to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Feb. 8, 1963, Ser. 257,238
9 Claims. (Cl. 77—58)

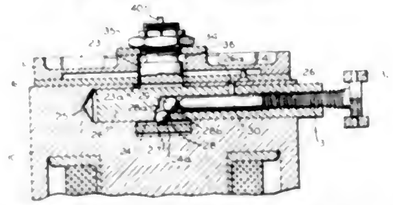
1. An adjustable boring head comprising a main body portion, tool holding means, pin actuating means disposed in an opening in said tool holding means for moving said tool holding means in a direction transverse to the longitudinal axis of said main body, indicia-bearing dial means threadedly connected to said pin actuating means, rotation of said dial means effecting movement of said pin actuating means in a direction parallel to the axes of said dial

means and said main body portion, said pin actuating means thereby moving said tool holding means in a direction transverse to said longitudinal axis of said main body



to vary the radial distance from said longitudinal axis to the axis of said tool holding means, and means for locking said tool holding means in an adjusted position.

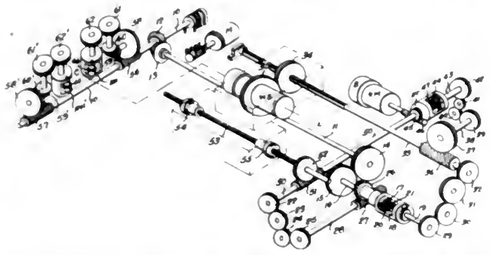
3,159,061
ADJUSTABLE DRILL MOUNT
Nelson A. Walker, San Jose, and Richard F. Carey, Saratoga, Calif., assignors to Buck Manufacturing Co., San Jose, Calif., a corporation of Delaware
Filed Mar. 15, 1962, Ser. No. 179,861
8 Claims. (Cl. 77—59)



1. In a drill mount or the like, a frame structure having a bottom surface, a base structure for said frame structure, said base structure having an upper surface engaged with said bottom surface, a clamping member extending from said base structure into said frame structure through openings formed in said surfaces, said clamping member permitting relative shifting movement between said surfaces, said clamping member having a transverse hole formed therethrough in the portion of said clamping member located in said base structure, another hole formed in said base structure substantially in alignment with said hole in said clamping member, a rod positioned in said holes, means for fixing said rod in said holes to prevent turning thereof with respect thereto, said rod having a bore extending therethrough from one end thereof to the hole in said clamping member and means movable into said bore for actuating said clamping member to clamp said surfaces together against shifting movement.

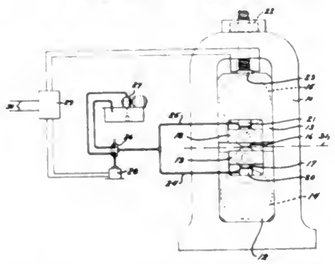
3,159,062
APPARATUS AND METHOD FOR FORMING HELICAL GEARS OR SPLINES
Donald Goodwill, Cleveland, Ohio, assignor to The Lees-Bradner Company, Cleveland, Ohio, a corporation of Ohio
Filed June 4, 1962, Ser. No. 199,927
6 Claims. (Cl. 80—16)

1. An apparatus for forming helical gears or splines in a workpiece including, a prime mover, a main drive shaft actuated by the prime mover, a shaft driven from the drive shaft, workpiece forming means driven by the main drive shaft in timed relation with said driven shaft, a lead differential, a lead differential input shaft driven from said driven shaft, a lead differential output shaft geared to and driven by said input shaft, a rotatable lead differential housing geared to said input and output shafts, an index pick-off train driven by said lead differential output shaft and including at least one selective gear component in said train, a work spindle, means driven by said index pick-off train for driving the work spindle at a rate responsive to the selected output rate of the index gear train, a rapid traverse differential, said last named differential including an input shaft, an output shaft, and a rotatable rapid traverse differential housing member geared to said input and said output shafts, a feed pick-off train driven by said work spindle driving means and having a driving connection with the said input shaft of the rapid traverse differential whereby to transmit the selected output rate of the index gear train to the rapid



traverse input shaft, independent means for rotating said rotatable rapid differential housing member, a lead pick-off train interposed between and driven by the lead differential and the output shaft of the rapid differential, a lead screw for imparting longitudinal feed and rapid traverse to the work spindle in response to the driven rate of and geared to the output shaft of said rapid differential, and means driven by said lead train to transmit through said lead differential a plus or minus increment of rotation to the output shaft of said lead differential whereby to selectively increase or decrease the rate of rotation of the work spindle independently of the selected rate of both the index and feed gear trains and to thereby produce the desired helix with respect to the rate of rotation of the work spindle.

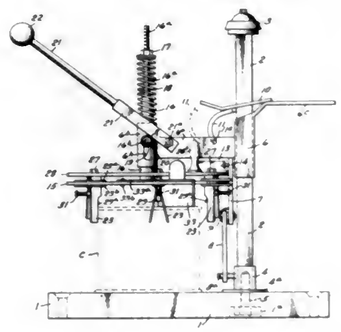
3,159,063
ROLLING MILL STRUCTURES
Thomas A. Fox, Youngstown, Ohio
Filed Sept. 29, 1961, Ser. No. 141,683
4 Claims. (Cl. 80—38)



1. A rolling mill comprising a housing, a pair of work rolls in the housing on opposite sides of a pass line, said work rolls being adapted to receive strip therebetween and exert a working force transversely to the path thereof, journals for each end of the work rolls, a backup roll journaled in the housing adjacent each work roll and bearing on said adjacent work roll, pressure means at the ends of each of said work rolls acting on and moving the journals of said work rolls substantially perpendicular to the path of the strip to cause the ends of said work rolls to move toward each other so as to cause a portion inter-

mediate the ends thereof to engage a strip being rolled as a fulcrum and to bend said work rolls about said fulcrum to provide a desired strip contour, and pressure sensitive means in the vertical system made up of the journals of the work rolls and backup rolls sensitive to the overall pressure on the roll journals and acting on the pressure means at the ends of each of said work rolls to maintain a constant pressure at said journals.

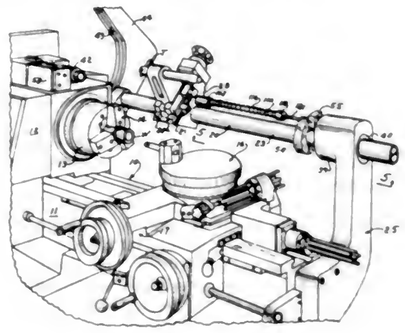
3,159,064
MACHINES FOR REMOVING AND REPLACING LIDS ON CONTAINERS
Julian J. Woloszyn, 195 N. Broad St., Johnson City, N.Y.
Filed Mar. 28, 1962, Ser. No. 183,177
17 Claims. (Cl. 81—3.32)



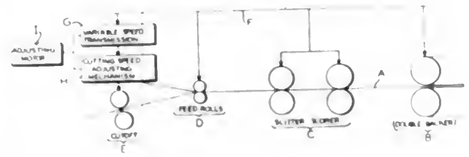
1. A machine for removing and replacing lids on containers or the like, comprising a base upon which a container may be placed; an upright thereon; a vertically movable operating head adjustably mounted on said upright and including a plate having a series of radial slots therein; means for raising and lowering said head; movable finger frames supported by the plate and having reduced heads passing through the slots; means for simultaneously adjusting the finger frames radially of the plate to engage the sides of a container centered upon the base; and lift fingers pivoted with respect to the inner side faces of the finger frames and having thinned inwardly curved outer tips adapted when the operating head is lowered onto a container placed on the base to initially enter between the side of the container lid and the top of the container, and upon further lowering of the head the lift fingers will pivot inwardly, thereby prying the lid off the container.

3,159,065
MACHINE HAVING RELATIVELY MOVABLE TOOL AND WORK SUPPORTS
Robert E. Diener, Shaker Heights, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 20, 1961, Ser. No. 90,431
13 Claims. (Cl. 82—5.5)

4. In a machine having a movable member, a support member therefor, means mounting said movable member on said support member for reciprocatory movement parallel to a first path and for reciprocatory movement transversely of said path to and from a working position, a tool block mounted on said movable member, a tool slide supported on said tool block for movement transversely of said movable member, a lead screw having an axis parallel to said first path and a cooperating follower for effecting movement of said movable member along said first path when in its working position, said lead screw and follower being separable by relative movement transversely of the axis of said screw, means connected to said screw for rotating the screw, and means connecting one of said screw and follower to said movable member to effect movement of said movable member along said first path upon rotation of said screw and for movement therewith transversely of said path to effect engagement and disengagement of said follower and screw upon movement of said movable member to and from its working position, said movable member being biased to its said working position when in its working position, a knock-off member movably supported on one of said movable and support members and engageable with the other of said movable and support members and movable from a first position to a second position to move said movable member from its working position and to disengage said follower and lead screw, means biasing said knock-off member to its said second position, latching means cooperating with said knock-off member for releasably holding said knock-off member in its said first position, said knock-off member including a part engageable by said movable member on movement to its said working position to move said knock-off member to its said first position and said latching means including a spring-biased latching element engageable with said knock-off member when the latter is in its said first position to hold the latter against the action of said biasing means urging the knock-off member to its second position, biasing motor means opposing movement of said movable member by said screw and effective upon separation of said follower and screw to actuate said movable member in a return direction along said first path opposite to the direction of movement by said screw, and a stationary abutment means limiting the movement of said movable member by said biasing motor means to a predetermined position, a rack bar movably supported by said tool block and engageable with said stationary abutment means in advance of said tool block and displaced thereby relative to said tool block as said tool block thereafter is carried by the movable member in a return direction to said predetermined position, biasing means operatively connected between said tool block and said rack bar and urging said rack bar toward engagement with said abutment means, means on said tool block and said rack bar limiting the movement of said bar by the biasing means acting thereon, and means responsive to the movement of said rack bar relative to said tool block to advance said tool slide transversely relative to the movable member toward said path comprising a one-way clutch actuated in its driving direction by movement of said rack bar in one direction and idling when operated in its opposite direction.

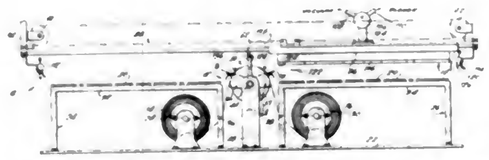


3,159,066
CONTROL APPARATUS FOR CUT-OFFS
Russell W. McDaniels, Chesterfield, N.J., assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed July 16, 1959, Ser. No. 827,487
8 Claims. (Cl. 83—76)



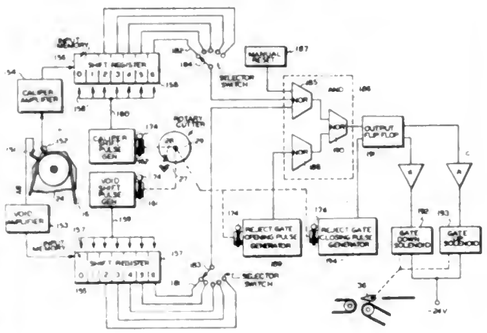
1. A cutoff or like machine of the character described having a cyclically driven and periodically operating tool member, means for progressively feeding material past said tool member to be operated upon thereby, reversible means for adjusting the periodicity of operation of said tool member, a cam member, means coupling said cam member to said periodicity adjusting means to alter the position of said cam member according to the setting of said periodicity adjusting means, a second cam member juxtaposed and adjustable with respect to said first mentioned cam member, a control member mounted for movement in two directions, means mounting said control member in engagement at substantially all times with both said cam members to automatically move said control member to different positions and in either of said directions responsive to movement of one of said cam members relative to the other, and means controlled by the position of said control member for activating said periodicity adjustment means toward either of its directions of reversible movement to alter the periodicity of operation of said tool member.

3,159,067
CUTTING DEVICE HAVING WORK FEED MEANS OSCILLATED BY RECIPROCATING DIE
Ernest Heuman, 10 Deal Road, West Deal, N.J.
Filed July 18, 1961, Ser. No. 124,832
13 Claims. (Cl. 83—87)



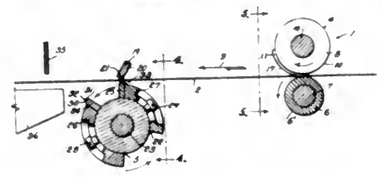
10. Apparatus for cutting pieces from sheet materials comprising, reciprocably movable carriage means operable through cutting strokes thereof and provided with a cutting die, a counter-cutting surface disposed relative to the path of movement of said cutting die and cooperating therewith to provide a cutting action, and means for presenting the leading ends of a pair of sheet material webs for engagement of one of said webs by said carriage means during a cutting stroke in a first direction of movement of said carriage means and for engagement of the other of said webs by said carriage means during a cutting stroke in the opposite direction of movement of said carriage means, said presenting means including means operable in response to each of said cutting strokes of said carriage for feeding the associated web from a supply thereof to said cutting surface.

3,159,068
SHIFT REGISTER CONTROL FOR A PAPER FINISHING MACHINE
Clyde Percy Grant, Gorham, and Merton Arthur Look, Portland, Maine, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Filed Mar. 13, 1961, Ser. No. 95,385
2 Claims. (Cl. 83—106)



1. A reject gate control system for a paper cutting machine comprising means for sensing defects in a moving paper web, a multiple stage shift register having a serial input storage stage responsive to said defects for registering defect signals in said storage stage, a shift pulse generator synchronized with the knife for cutting said web into sheets, means for adjusting the phase of said shift pulse generator relative to the cutting position of said knife, said generator connected and phased to shift said defect signals out of said storage stage into the first stage of said shift register at the time said web has moved to position the tail of the sheet containing said defect at the defect detecting means and thereafter successively through the stages of said register synchronized with the passage of integral sheet lengths through said machine, selective means for connecting to the output of a selected stage of said register, a second pulse generator for generating a timing pulse adjustably phased relative to said cutting position of said knife, gating means enabled by a defect signal output of said selected stage of said register and operable when enabled to pass said timing pulse from said second pulse generator, and means for operating said reject gate into reject position in response to timing pulses passed by said gating means.

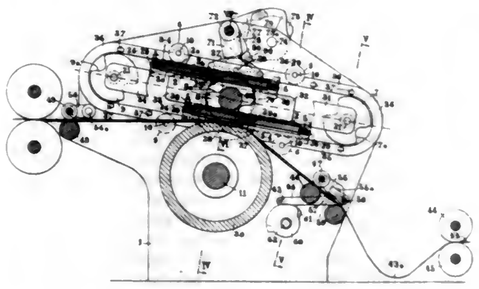
3,159,069
APPARATUS FOR PRODUCING OPENINGS IN SHEET MATERIAL FOR THE MANUFACTURE OF WINDOW ENVELOPES
Richard Winkler, Rengsdorf, near Neuwied, Rhineland, and Kurt Dünnebier, Wollendorf, near Neuwied, Rhineland, Germany, assignors to Berkley Machine Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 26, 1960, Ser. No. 4,764
Claims priority, application Germany Feb. 2, 1959
1 Claim. (Cl. 83—302)



An apparatus for producing a window opening in moving a sheet from which a window envelope is formed,

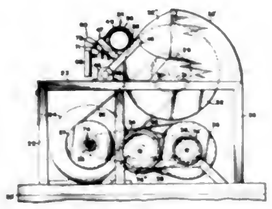
said apparatus including means for cutting incisions first parallel to the direction of movement of the sheet and subsequently in a direction at right angles to movement of the sheet, said means comprising a rotatable shaft, laterally spaced apart knife holders on said shaft, arcuate knives in parallel relation on the respective holders, a counter roller having a hard cylindrical surface backing the blanks against action of the arcuate knives for producing the first incisions, a stationary knife spaced from the arcuate knives and extending transversely of the path of the sheet at one face side thereof, a rotor on the opposite face side of the sheet with respect to the stationary knife, arcuate knife holders on opposite diametrical sides of the rotor, and knives on said knife holders, means for fixing the knife holders on said rotor for adjusting the knives to and from each other in accordance with the length of the arcuate knives for cooperating with the stationary knife to produce consecutive transverse incisions in said blanks connecting ends of the parallel cuts.

3,159,070
THREAD CUTTING DEVICE
Louis Jean Chambon, Paris, France, assignor to Societe d'Etudes de Machines Speciales, Paris, France
Filed July 13, 1962, Ser. No. 209,567
Claims priority, application France, July 25, 1961, 868,949, Patent 1,303,073
1 Claim. (Cl. 83—321)



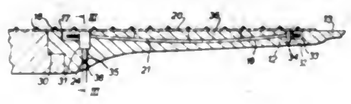
A device for cutting a continuous web by means of threads, which comprises in combination a power shaft, a presser cylinder and a counter-pressure cylinder disposed parallel to each other so as to leave a constant gap therebetween, means for continuously rotatably driving said presser and counter-pressure cylinders from said power shaft, at least one flat thread-carrying cutting block, means driven from said power shaft for moving said flat cutting block unidirectionally along a closed curved path and through said gap while keeping said block parallel to itself during its travel through said gap, means for feeding said web into said gap between said cylinders a stationary bed plate over which said web is caused to slide in advance of said gap, a pin extending transversely to the direction of feed of said web, a clip arm pivoted on said pin and adapted to engage said bed plate, and means controlled cyclically from said power shaft for lowering said clip arm toward said bed plate until said cutting block begins to travel through said gap between said presser cylinder and said counter-pressure cylinder for the purpose of gripping said web between said clip arm and stationary bed plate and thereby holding said web against motion and subsequently raising said clip arm when said block engages said gap.

3,159,071
PIPEWORKING MACHINE
Joseph L. Bateman, 3412 University Blvd. E., Hyattsville, Md.
Filed Nov. 25, 1960, Ser. No. 71,708
6 Claims. (Cl. 83—411)



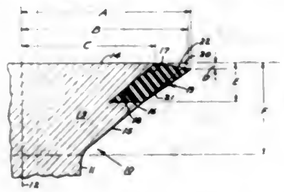
1. A pipeworking machine including a frame, a cutting tool rotatably mounted on the frame, power means for rotating said cutting tool, a pipe support pivotally mounted on said frame proximate said cutting tool, means for effecting cutting engagement of the cutting tool and the pipe on the pipe support, and a flexible locking member carried by the pipe support and engageable with the pipe periphery for preventing longitudinal movement of the pipe relative to the pipe support, said flexible member including rollers engageable with the pipe periphery to facilitate rotation of the pipe on the pipe support.

3,159,072
NECK FOR STRINGED INSTRUMENTS
James Ormston Burns and Stanley Lionel Lloyd-Hughes, Buckhurst Hill, England, assignors to Ormston Burns Limited, London, England, a British company
Filed Oct. 3, 1962, Ser. No. 228,142
Claims priority, application Great Britain, Oct. 5, 1961, 35,877/61
7 Claims. (Cl. 84—293)



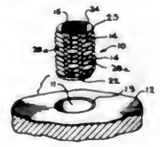
1. A stringed musical instrument, such as a guitar, having an instrument body, a reinforced neck structure having one end thereof connected to said instrument body and the other end thereof formed as a machine head, said reinforced neck structure comprising a neck, a reinforcing rod, said rod being slightly bowed and disposed in a channel arranged longitudinally and centrally of said neck, anchoring means mounted at one end of said rod and arranged in a recess in said neck at said machine head end thereof to be held against longitudinal movement with respect to said neck, and means comprising a toothed wheel and worm gear screw mechanism secured in said neck at said instrument body end of said neck and held against longitudinal movement with respect to said neck, said toothed wheel being threadedly mounted on the other end of said rod and being adapted upon rotation of said worm gear screw to establish relative movement between said rod and said neck in at least one direction to stress said rod whereby to exert an influencing force on said neck to restore it to its desired condition, said worm gear screw having a drive shaft accessible from externally of said neck by which said worm gear screw can be rotated.

3,159,073
FASTENER PROTECTIVE SEALING MEANS
William R. Dickie, Manhattan Beach, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed Mar. 23, 1961, Ser. No. 97,938
8 Claims. (Cl. 85—9)



1. A fastener comprising an elongated shank having a central axis, an integral enlarged head adapted to bear against an object to exert an axial force against it, thereby to hold the object assembled to another object, the head having a top surface on the opposite side thereof from the shank, and a periphery coaxial with the shank, at least a portion of which is a surface of revolution spaced from the head end of the fastener, said head having a peripheral groove contiguous to the head end and to the surface of revolution, and open at the head end, and a peripheral sealing ring of deformable material bonded in said groove having an end surface at said head end and a side surface, said side surface standing outwardly of the said surface of revolution at the head end, the end surface of the ring being open at the top surface of the enlarged head, and the end surface at the head end and the side surface of the sealing ring both being unconfined, whereby when the shank is passed through a hole in a body and the head enters an enlarged body opening concentric with said hole, which enlarged body opening is of generally the same shape as said surface of revolution, the standing outwardly portion of the sealing ring makes contact with the wall of the enlarged body opening to form a seal between the head and the body at the head end of the fastener, thereby protecting the surface of revolution and the shank from fluid seepage from the head end.

3,159,074
POLYGONAL THREADED INSERTS
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed Apr. 4, 1961, Ser. No. 100,697
5 Claims. (Cl. 85—47)



1. A threaded insert comprising an insert body adapted to the screwed into an opening in a carrier member, said body having external threads centered about a predetermined axis for engaging said member and continuing along substantially the entire axial extent of the insert, said body having internal threads for engaging a coacting stud or the like centered about said axis and extending along the major portion of the length of said insert and open for access from both ends of the insert, said external threads defining essentially a regular polygon to form a series of similar circularly successive outer surfaces on said external threads merging to define sharp radially outwardly projecting peaks at the junctures of said surfaces, individual ones of said outer surfaces each lying in a predetermined plane throughout substantially the entire extent of a particular surface from one peak to the next peak, the external threads being of maximum radial thickness at said peaks and being truncated progressively between said peaks by said outer planar surfaces so that as a particular thread extends circularly from one peak to the next the thread first reduces and then increases in radial thickness, said internal and external threads and said outer surfaces being so related that:

R = between 67% and 80% of H
H = between 86% and 92% of C, and
W = between 15% and 26% of C,

where:

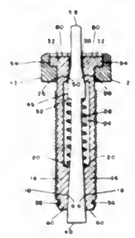
R is one-half of the major diameter of the internal threads,

H is the minimum radial distance from said axis to the planes of said outer planar surfaces,

C is the radial distance from said axis to the outermost portions of said peaks, and

W is the radial wall thickness dimension between the major diameter of said internal threads and the minor diameter of said external threads, said external threads having minor diameter surfaces between successive turns of said threads which extend substantially directly axially at a predetermined substantially uniform diameter which is inwardly of said planes of said outer surfaces of the threads, said body having tapering chamfer surfaces of circular cross section centered about said axis at both ends of the insert with said chamfer surfaces progressively truncating said peaked external threads at both ends of the insert to an extent greater than that to which the external threads are truncated by said outer surfaces intermediate said ends, said body having a generally transverse annular end surface at one end thereof.

3,159,075
COLLAPSIBLE BOLT HAVING SPRING ACTUATED EXPANDING PLUNGER
Albin W. Bjork, 34 Farquhar Road, Newtonville, Mass.
Filed Oct. 16, 1961, Ser. No. 146,079
1 Claim. (Cl. 85—87)



A collapsible bolt for mating with an interior screw thread, comprising:

a plurality of shank segments, each having a bead portion, complementary external threads on its outer side, and tapered surfaces on its inner side near the head portion and near the end remote therefrom, and each segment also having a recess intermediate said tapered surfaces;

a bolt head disposed exteriorly of said head portions and adapted to limit the radial outward movement of said heads to a predetermined distance greater than the depth of said threads;

a slidable plunger disposed interiorly of said segments and having tapered surfaces disposed in contact with the tapered surfaces of the shank segments to produce parallel lateral motion of said segments through

said predetermined distance in response to sliding motion of said plunger, said plunger having a shoulder disposed intermediate its tapered surfaces;

resilient means disposed exteriorly of said segments to exert a collapsing force upon said segments; and

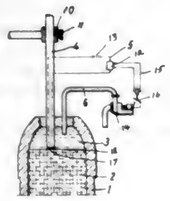
a compression spring internally mounted within said recess of said segments and about said plunger, one end of said spring being disposed against the said shoulder of the plunger and the other end of the spring against the end of the recess remote from the head portion.

3,159,076

PROCESS AND DEVICE FOR THE FILLING OF SHELLS WITH AN EXPLOSIVE AGENT CONTAINING PHOSPHORUS

Heribert Meissner, Burbach, Kreis Siegen, Germany, assignor to J. Meissner, Cologne-Bayenthal, Germany, a German firm

Filed Dec. 17, 1959, Ser. No. 860,271
Claims priority, application Austria Dec. 20, 1958
9 Claims. (Cl. 86—20)



9. Process for filling shells with an explosive agent containing phosphorus which comprises maintaining a body of water within the shell to at least a predetermined level, maintaining an electrode within the shell in the water at the level to which the shell is to be filled with the explosive, passing an electric current from the electrode through the water, passing an explosive agent containing phosphorus having an electrical conductivity differing from that of water into the shell so as to fill the shell and displace the water, interrupting the supply of the explosive when the electric current passing from the electrode changes as caused by the explosive contacting the electrode, inserting a second shell-like body into the upper central portion of the explosive and applying heat to the explosive through said second shell-like body to thereby allow the explosive to solidify gradually from the outer and lower portions to the inner and upper portions.

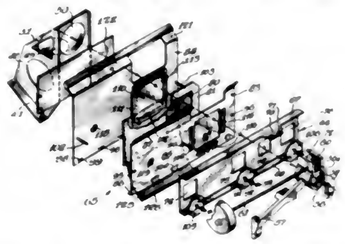
3,159,077

FILM FRAME VIEWER WITH ADJUSTABLE GATE ASSEMBLY

John F. Hoag and Robert H. Larson, Batavia, Ill., assignors to Dukane Corporation, St. Charles, Ill., a corporation of Delaware

Filed Apr. 2, 1962, Ser. No. 184,203
4 Claims. (Cl. 88—24)

1. In a film frame viewer having a light source providing a beam of light going to a viewing screen, a gate assembly for holding a film frame in an adjustable position for disposing any desired part of said film frame in the light path for viewing, said gate assembly including a plate for fixed mounting on said viewer, said plate having a window in the light path for defining a film frame area to be viewed, at least one movable plate, means carried by said movable plate for supporting said film frame thereon, said movable plate having a window, said second named window being larger than said first named window and being in the light path to accommodate the entire film frame, and means for mounting said movable plate on said stationary plate to permit said movable plate to move perpendicular to the light path over a range great enough to dispose any desired part of the film frame in the light path, said mounting means including at least one pin carried by one plate and extending through an enlarged clearance window in the other plate and a spring pressed washer carried by said



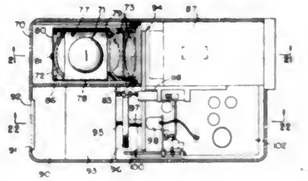
pin and being larger than said clearance window, said washer and said one plate being on opposite sides of said other plate, with the clearance window being large enough to permit said pin to be moved laterally so that the entire film frame is subject to viewing, the means for mounting said movable plate being laterally clear of the film frame viewing windows.

3,159,078

DEVICE FOR VIEWING A PHOTOGRAPHIC SLIDE AND REPRODUCING INTELLIGENCE ASSOCIATED THEREWITH

Morris Schwartz and Edward K. Kaprelian, Plainville, Conn., assignors to The Kalart Company, Inc., Plainville, Conn.

Original application July 9, 1954, Ser. No. 442,362, now Patent No. 2,961,922, dated Nov. 29, 1960. Divided and this application Sept. 14, 1960, Ser. No. 59,136
10 Claims. (Cl. 88—28)



1. A slide projecting and sound reproducing device for use in connection with a common holder for supporting one photographic slide and one sound track carrier in a spatially fixed relationship, said device comprising a housing, projection unit mounted within the housing for projecting the slide, a sound reproducing unit for playback of intelligence recorded on the sound track carrier, and a frame structure stationarily mounted within the housing for receiving the holder and supporting the same stationarily in an operational position for coaction of the slide and the sound track carrier with the projection unit and sound reproducing unit respectively during operation of said units.

3,159,079

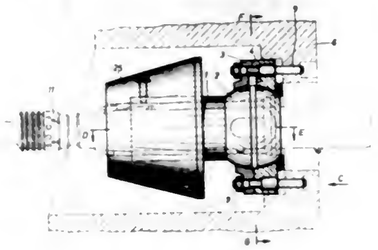
BALL-AND-SOCKET JOINT TYPE MOUNTING FOR AUTOMATIC FIREARMS

Walter Hildebrand, Neuss (Rhine), Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany

Filed Jan. 19, 1961, Ser. No. 83,608
Claims priority, application Germany, Jan. 20, 1960, R 27,140
2 Claims. (Cl. 89—37)

1. A ball-and-socket joint type mounting for automatic firearms comprising a ball and socket joint in which

a casing of a firearm is mounted, a support for the joint, a holder in the joint mounted removably in the ball end and yieldingly spring mounted with respect to the support of the mounting parallel to its longitudinal axis, said holder comprising two shells detachably connected to one another and having radially projecting lugs at one end for insertion in an annular groove in the ball end behind an end face, the end face of the ball having



recesses in the ball end for receiving the lugs to secure the holder against axial displacement and withdrawal from the ball end by rotation of the holder through 90° about its longitudinal axis, and the entire mounting being secured yieldingly to the support by means of the ball-and-socket joint and the spring mounting and including a plurality of bolts provided with springs mounted within the socket of the joint and the support.

3,159,080

GUN SAFETY CATCH ACTUATING MEANS

George H. Freed, Bloomfield Ave., Pine Brook, N.J.

Filed Apr. 4, 1961, Ser. No. 100,633
5 Claims. (Cl. 89—148)



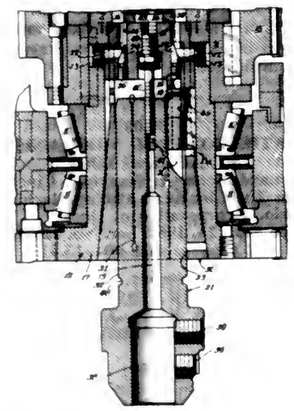
1. In an automatic pistol having a handle grip portion including a grip plate and a grip plate attachment screw at one side of the pistol, said grip plate having an upper end facing towards the pistol barrel and said attachment screw passing through the grip plate at a location towards said upper end thereof, said pistol further having a protruding hammer safety catch mounted on said side of the pistol for pivotal movement between "safety-on" and "safety-off" positions of safety catch actuation, the improvement comprising means for actuating said safety catch between said positions thereof, said actuating means comprising a lever portion attached at one of its ends to said handle grip portion of the pistol for pivotal movement about the axis of said grip plate attachment screw, the opposite end of said lever portion engaging said safety catch to actuate the same in response to pivotal movement of said lever portion, and finger engagement means disposed for pivoting said lever portion about its said one end.

3,159,081

TOOL ADAPTER

Carl F. Erikson, Belvidere, Ill., assignor to Sundstrand Corporation, a corporation of Illinois

Filed Feb. 6, 1962, Ser. No. 171,490
5 Claims. (Cl. 90—11)



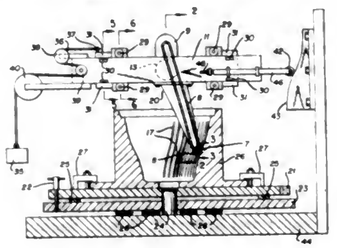
1. In a mounting for a rotating tool which exerts an axial pull on the mounting during operation, the combination comprising: a spindle rotatable about an axis and having an open ended axial bore and a detachable driver, said driver having a key extending in an axial direction into said bore, means for rotating said spindle about its axis in one direction during operation of the tool, an adapter telescopically and removably received in said bore, coacting means on said spindle and adapter providing an adjustable positive stop for movement of the adapter inwardly of the spindle, said adapter having an axially extending keyway receiving said key, said keyway being defined by a side, and cooperating abutting surfaces on said key and keyway side for releasably interlocking said adapter and spindle against relative axial displacement outwardly of the spindle bore, said surfaces being transverse to the direction of rotation of said spindle and inclined with respect to the direction of telescopic movement of the adapter into the spindle.

3,159,082

MOLDS FOR AIR BAGS AND BLADDERS

George Muth, Northampton Township, Summit County, Ohio, assignor to Kohler Mold and Machine, Akron, Ohio, a corporation of Ohio

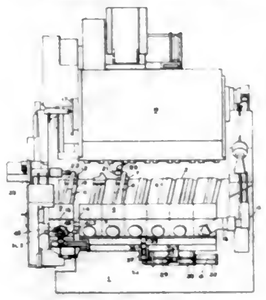
Filed Apr. 2, 1962, Ser. No. 184,311
2 Claims. (Cl. 90—13.4)



1. Apparatus for cutting the surface of a cavity in a mold for an air bag or bladder, which includes a table for the support of the mold, a grooved cutter on a cutter arm with means for moving the same vertically and radially with respect to a central position on the table,

means for producing a rotary movement between the cutter arm and the table and means at evenly spaced intervals about the table for preventing such rotation with each such interval corresponding substantially to the width of the cutter, a guide fixed on the cutter arm, a cam with a surface representing a vertical section through the intended outline of the wall of the mold cavity which cam is supported in a fixed vertical position with respect to the table, and means pressing the guide against the cam surface.

3,159,083
AUTOMATIC CONTROL MECHANISM FOR A MACHINE TOOL
Peter F. Olton and Merrill E. Berchtold, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 26, 1962, Ser. No. 226,412
12 Claims. (Cl. 90—13.4)



6. In a milling machine adapted to produce a twisted turbine blade shape having a leading and a trailing edge, the machine having a rotable fixture, an unfinished blade in said fixture, a reciprocally movable table supporting said fixture, and a cutting tool movable along the axis of rotation of said fixture as said fixture is rotated and said table is reciprocated to move said cutting tool over the surface of said blade in a machining operation, a mechanism for controlling the rate of rotation of said fixture comprising in combination:

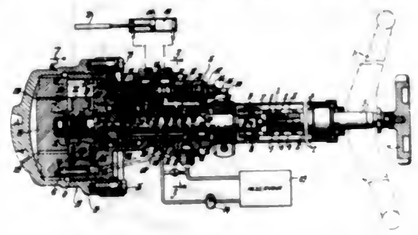
(*a*) means including a pair of movable members each shiftable in response to selected movement of said table to a position corresponding to the position of said table when said cutting tool is at the leading and the trailing edge of said blade during each revolution of said fixture, said recording means being automatically resettable during each succeeding revolution of said fixture,

(*b*) means actuated by said recording means to produce rate control signals each time said table is moved to a position that is a preset distance away from one of the recorded positions, and

(*c*) means to alter the rate of rotation of said fixture in response to said rate control signals whereby the rate of movement of said cutting tool relative to said blade can be increased and decreased in accordance with the shape being produced thereon.

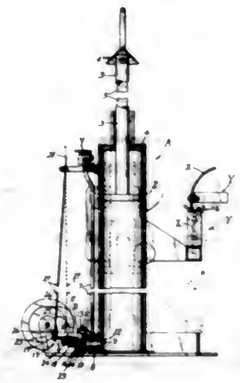
3,159,084
HYDRAULIC STEERING SYSTEM
Philip B. Zeigler and Robert P. Rohde, Saginaw, Marwood M. Frank, Bridgeport, and William B. Thompson, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,556
12 Claims. (Cl. 91—368)

1. Power steering apparatus comprising a fluid circuit including a source of pressure fluid, a power cylinder actuatable by said fluid, a device for metering flow of said fluid to the cylinder, and a valve for controlling fluid flow between said source and device, and means for



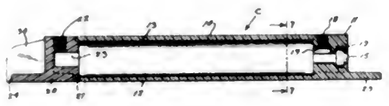
operating said valve, said device including a positive fluid displacement member movable by said valve operating means.

3,159,085
QUICK RELEASE BUMPER JACK
Charles E. Branick, P.O. Box 1937, Fargo, N. Dak.
Continuation of application Ser. No. 148,434, Oct. 30, 1961. This application Apr. 17, 1963, Ser. No. 274,385
3 Claims. (Cl. 91—451)



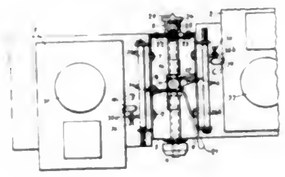
1. In a combined bumper jack and shock absorber testing device, a vertically disposed cylinder, a piston within said cylinder and having a lifting plunger working through the top of said cylinder, valve means for introducing fluid under pressure into only the lower end of said cylinder to raise said piston, means operable for gradually releasing the fluid under pressure within said cylinder, and independent means for selectively quickly releasing the fluid under pressure from said cylinder to permit said piston and load carried thereby to drop freely, said last-mentioned means comprising a tubular neck extending laterally outwardly from the lower end of said cylinder and which defines at its outer end a discharge mouth, a closure plate mounted for pivotal swinging movements toward and away from sealing engagement with said mouth and gravity biased toward said sealing engagement, and lever means for imparting closing movements to said closure plate, said lever means comprising a lever pivotally secured in closely spaced relation to its inner end on a horizontal axis disposed laterally outwardly from said closure plate, said lever at its inner end having a blunt tip which has camming engagement with said closure plate when the outer end of said lever is lowered and which drops away from engagement with said closure plate upon raising movements of the outer end of said lever.

3,159,086
PLASTIC CYLINDER ASSEMBLY
Roy C. Schwartz, Milwaukee, Wis., assignor to Galland-Henning Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 18, 1963, Ser. No. 266,099
2 Claims. (Cl. 92—161)



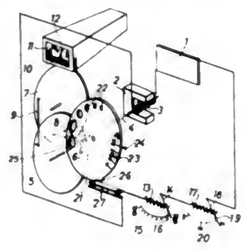
2. A cylinder assembly molded from a thermoplastic material comprising a premolded barrel and cylinder head, said head having a piston rod receiving bore molded therein, said barrel being of a square shape in cross-section, and having a piston receiving bore molded therein, a second premolded cylinder head formed of a plastic compatible with the barrel and sealed and fused to said barrel to seal said bore and to form an integral one-piece unit, each of said heads having, an outwardly projecting horizontally positioned mounting flange, a pair of laterally projecting horizontally positioned mounting flanges and a pair of vertically positioned laterally extending mounting flanges, and said second head having a vertically positioned longitudinally extending mounting flange, whereby said cylinder assembly can be suited to different mounting situations and whereby certain flanges may be cut and trimmed off.

3,159,087
DEVICE FOR PIVOTALLY COUPLING TWO CAMERAS
Bertil Wanner, N. Fogelbergsgatan 4, Gothenburg, Sweden
Filed Oct. 23, 1961, Ser. No. 146,937
Claims priority, application Norway, Nov. 1, 1960, 137,829
3 Claims. (Cl. 95—18)



1. A device for pivotally coupling two cameras and providing for simultaneous operation of the shutter releases on said cameras, said device including a hinge mechanism having a single hinge axle disposed in a mid-vertical plane between the cameras when the lens axes of the cameras are disposed in a horizontal plane and having a pair of pivotally connected wings with one wing secured to one camera and the other wing secured to the other camera, a support member fixed to said axle, a manually actuated arm pivotally mounted on said support member for movement about a horizontal axis, said arm projecting on opposite sides of said support members towards said cameras, holding means for maintaining said support member stationarily directed independent of different angular positions of the cameras relative to each other, said holding means comprising a rod slidably mounted on the hinge mechanism for horizontal movement in the midvertical plane between the two cameras dividing the angle between the cameras in two halves and having one end passing through a portion connected with said support member, a fulcrum pin on the other end of said rod, a link having one end pivotally connected to said pin and the other end pivotally connected to one wing, a second link having one end pivotally connected to said pin and the other end pivotally connected to the other wing, a first slide mounted on one wing, a second slide mounted on the other wing, a tongue projecting from said first slide and engaging one end of said arm, a second tongue projecting from said first slide and engaging the shutter release on one camera, a first tongue projecting from said second slide and engaging the opposite end of said arm, a second tongue projecting from said second slide and engaging the shutter release on the other camera and a manually operable actuating lever fixed to said arm for simultaneously operating the shutter releases within their range of movement in all relative angular positions of the cameras for stereo and panorama views.

3,159,088
MOTION-PICTURE CAMERA
Walter Bauer, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany
Filed Jan. 27, 1959, Ser. No. 789,388
Claims priority, application Germany, Feb. 15, 1958, A 28,883
9 Claims. (Cl. 95—64)



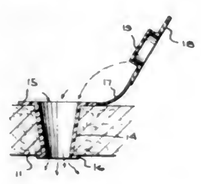
9. A control device for manually and automatically regulating the effective aperture of a photographic camera comprising an exposure measuring device, an automatic exposure regulating element disposed in line with said aperture and connected to said exposure measuring device for regulating said effective aperture in accordance with the ambient illumination, a manually-operable exposure regulating element also disposed in line with said aperture, said automatic control device including an electrical circuit, a switch being incorporated within said circuit, actuating means connecting said manually-operable exposure regulating element with said switch for governing the operative condition of said automatic exposure regulating element in accordance with the position of said manually-operable regulating element, said manually-operable exposure regulating element being adjustable to a number of settings one of which provides a maximum effective aperture opening for automatic operation and the others providing standard manually set aperture openings which are less than the maximum aperture of said camera, said actuating means including means responsive to adjustment of said manually-operable exposure regulating element for activating said circuit when said manually-operable exposure regulating element is adjusted to a setting that provides a maximum effective aperture opening, and said actuating means rendering said circuit inoperative when said manually-operable exposure regulating element is adjusted to said other settings that provide said manually set aperture openings disposed in line with said aperture opening of said camera.

3,159,089
VEHICLE ROOF STRUCTURE
Walter S. Eggert, Jr., Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 20, 1961, Ser. No. 146,508
4 Claims. (Cl. 98—10)



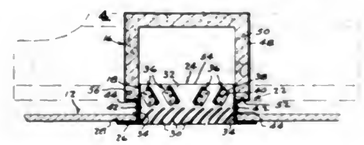
1. In a roof structure for a railway car, the combination of: a primary roof covering said car and including a plurality of longitudinally-spaced first openings located substantially along the longitudinal centerline of said primary roof; means defining a first plenum space which extends along the car above said primary roof and communicates with said first openings and the exterior of the car, said means including a secondary roof spaced above said primary roof and support means supporting said secondary roof on said primary roof; said support means including a plurality of transverse partitions extending across said upper plenum space between said first openings and dividing said upper plenum space into a plurality of separate compartments each communicating with a different one of said first openings; a ceiling supported beneath said primary roof means and forming therewith a second plenum space below said first plenum space, said ceiling having a plurality of longitudinally-spaced second openings communicating with said lower plenum space and the interior of the car; a plurality of dampers operatively connected for controlling the flow of air through said first openings; and a plurality of fans mounted in certain ones of said second openings for pumping air therethrough, said fans being arranged so that when said dampers are open, fresh air and recirculated air are pumped into the interior of the car and some air is exhausted, and, when said dampers are closed, air is merely recirculated within the car.

3,159,090
VENTED ACOUSTIC PANEL
Jerome W. Schutt, 3124 Sunview, Sacramento, Calif.
Filed Jan. 12, 1962, Ser. No. 165,751
6 Claims. (Cl. 98—40)



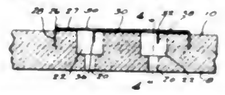
1. A vented panel of the character described comprising a flat substantially rigid body composed of fibrous material, said body being formed with venting apertures distributed thereover, respective annular protective sleeves of smooth sheet material disposed in said apertures, said sleeves being provided with outwardly projecting top and bottom annular flanges engaging respective opposite surfaces of the body, and respective closure elements removably disposed in said sleeves and sealingly engaging the inside wall surfaces of said sleeves below the plane of the top annular flanges.

3,159,091
NOISE AND AIR FLOW CONTROLLING PLENUM RETURN ASSEMBLY
Jerome W. Schutt, 3124 Sunview, Sacramento, Calif.
Filed Jan. 12, 1962, Ser. No. 165,801
2 Claims. (Cl. 98—40)



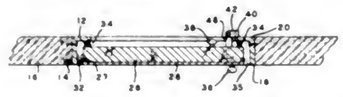
1. A noise and air flow controlling assembly comprising, in combination with a false ceiling having a plurality of panels, one of said panels having an opening extending transversely therethrough, and spaced elongated panel support means for supporting said panels, said assembly including a tubular housing having a pair of opposed open upper and lower ends and a pair of walls, said housing having said lower end thereof fitted within said opening with its upper end projecting above said one panel, said housing having a plurality of elongated fixed louvers disposed in said lower end of said housing and extending between said walls thereof with their respective ends secured to said walls, said louvers being substantially arcuate in transverse cross-section and disposed in laterally-spaced overlapping relationship relative to one another, a plurality of elongated substantially rectangular baffle vanes disposed within said housing and extending between said walls, means pivotally connecting the ends of said vanes on said walls, an elongated air-conducting conduit having an opening formed therein, a sound-absorbing liner disposed within said conduit and secured thereto, said upper end of said housing being fitted within said opening formed in said conduit, and elongated means disposed between said conduit and said one panel supporting said conduit in vertically-spaced relation relative to said one panel, said means comprising an elongated member secured to the opposite pair of walls of said housing and extending above said panels between and to a pair of adjacent panel support means and being supported thereon.

3,159,092
CEILING PANEL WITH PREFABRICATED VALVED PORTS FOR CONTROLLED AIR CIRCULATION
Walter M. Ericson, Milwaukee, Wis., assignor, by mesne assignments, to United States Gypsum Company, a corporation of Illinois
Filed Feb. 1, 1962, Ser. No. 170,327
9 Claims. (Cl. 98—40)



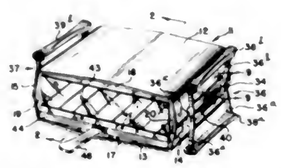
1. A valve assembly for use with a member having an apertured surface, said assembly comprising a housing provided with a ported base and a marginal flange extending upwardly from one surface of said base, said housing adapted to be mounted on a member apertured surface whereby a base port is adapted to register with a member surface aperture and said marginal flange is adapted to penetrate a member apertured surface, portions of said flange having inwardly extending projections, said projections forming guideways; a valve slide carried by said housing against the surface of said base from which said flange extends, portions of said slide being disposed within said guideways whereby said slide is selectively movable independently of said housing in the plane of said base ported surface in contact with said slide to effect opening and closing of said base port; and means provided on said housing and projecting into the path of movement of said slide and defining the limits of independent movement of said slide within said guideways.

3,159,093
DOOR STRUCTURE
Morton M. Rosenfeld, Mount Vernon, N.Y.
(271 Madison Ave., New York, N.Y.)
Filed Oct. 9, 1961, Ser. No. 143,967
5 Claims. (Cl. 98—87)



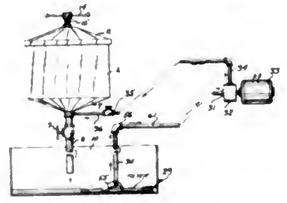
1. Apparatus comprising a wall having a door opening, a door frame in said opening, said door frame defining an opening through which persons may pass, hinge means pivotally mounting a door to said door frame for selectively blocking the opening in said door frame, resilient means maintaining a space between said door and an inner portion of said door frame for passage of air between said door and said door frame by a path which does not permit air to pass directly through in a direction perpendicular to the plane of said door in its closed disposition.

3,159,094
COOKING DEVICE
Pierre L. Crease, Akron, and Earl E. Sutton, Mansfield, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Continuation of application Ser. No. 174,766, Feb. 21, 1962. This application July 2, 1963, Ser. No. 293,569
9 Claims. (Cl. 99—340)



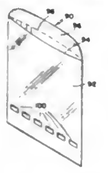
1. A cooking device comprising the combination of a cooking compartment having opposite first and second oppositely disposed and spaced walls adapted to be horizontally disposed in the operating positions of the cooking device, opposite third and fourth oppositely disposed and spaced walls connecting the ends of said first and second sides providing end walls for said cabinet, a fifth side connecting ends of said first, second, third and fourth walls to form five walls defining an open-ended compartment, an electric heating element mounted to said compartment and disposed within the compartment, said heating element being disposed closer to the first of said walls than to the second of said walls, a first pair and a second pair of oppositely disposed parallel supporting sideways carried by said compartment for supporting a rack member therein, said first pair of slideways being disposed closer to the first of said walls than to the second of said walls, and said second pair of slideways being disposed closer to the second of said walls than to the first of said walls, a rack member adapted to support food to be cooked and movable through the open end of said compartment along a said pair of slideways to be supported thereon, said rack member including a door member carried at an end thereof and disposed substantially at right angles thereto for substantially closing said open end of the compartment upon moving the rack member into the said compartment, said pairs of slideways being disposed in said compartment to support the said rack member on the pair of slideways positioned nearest the bottom-most wall of said first and second walls disposed horizontally, and supporting members connected to the cabinet adjacent its opposite ends for supporting the compartment above a surface, each of said supporting members comprising a pair of oppositely extending U-shaped brackets joined at their adjacent ends to the opposite ends, respectively, of the compartment and having the respective bases of the U-shaped brackets formed of heat-insulating material, each said pair of U-shaped brackets at their said adjacent ends having bent-over ear portions extended alongside of, and secured to, an end wall of the compartment, and including a channel member embracing the said bent-over ear portions of the U-shaped brackets at each end of the cabinet, said bases of the brackets at each end of the compartment being disposed in substantially the same plane, said supporting members extending in opposite directions from the respective planes of said first and second walls to alternately support the compartment on said surface with the first of said walls disposed bottom-most and with the second of said walls disposed bottom-most, the arrangement providing that the cooking device may be readily inverted to dispose either of the first and second walls bottom-most and to dispose the said heating element alternately adjacent the uppermost and adjacent the bottom-most of said first and second walls to be correspondingly above or below the rack member supported on the pair of slideways adjacent the then bottom-most of said first and second walls.

3,159,095
DEEP FAT PRESSURE FRYER
Chester Wagner, 217 N. Barron St., Eaton, Ohio
Filed July 10, 1961, Ser. No. 123,033
1 Claim. (Cl. 99—408)



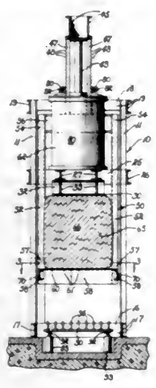
A filtering system for a deep fat pressure fryer having a pot in which oil is heated to a frying temperature range, said pot having a bottom that slopes to a lowermost portion thereof, there being a drain opening at said lowermost portion, said system comprising a drain pipe extending vertically downwardly from said lowermost portion, the upper end of said pipe being connected to said pot and communicating with the interior thereof, a main valve in said drain pipe in spaced relation to the bottom of said pot, an open-top compartment below the lower end of said drain pipe that is adapted to receive the heated oil from said pot through said drain pipe upon the opening of said main valve, a filter in the bottom of said compartment, a motor driven pump, a first pipe extending upwardly out of said filter to said pump, a second pipe connecting said pump to said drain line at a place between said main valve and the bottom of said pot, and a secondary valve in said second pipe between said pump and said drain, whereby with the heated oil in said compartment, the main valve closed, and the secondary valve open the heated oil is adapted to be pulled through the filter and returned to the pot through said first pipe, said pump and said second pipe, rising up through the drain opening and up into said pot to build up the oil level therein without splashing.

3,159,096
COMBINED CONTAINER AND JUICER
Alfred M. Tocker, 401 College Hill Medical Tower, 3333 E. Central, Wichita, Kans.
Filed Sept. 24, 1962, Ser. No. 225,683
5 Claims. (Cl. 100—211)



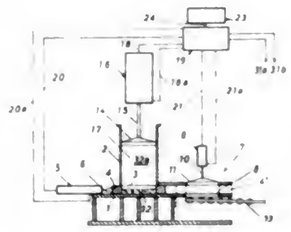
1. A combined container and juicer device for manually expressing and dispensing juice from a piece of citrus fruit contained therein, said device comprising a flexible envelope having an interior bounded by superposed imperforate first and second sheets of a flexible material substantially impervious and inert to fruit juice, said envelope having first and second openings bounded throughout their extents by marginal portions of the first and second sheets with said openings communicating with each other through the interior of the envelope whereby, respectively, a piece of fruit can be placed within and the juice thereof can be dispensed from the envelope, means restricting communication between the openings through the interior of the envelope, said means comprising the first and second sheets being secured together in superposed relation at a plurality of positions that are spaced along a line, said line traversing the interior of the envelope and isolating the openings from each other through the interior of the envelope, said line and the positions at which thhe sheets are secured together therealong being disposed between and spaced from both of said openings and the marginal portions of the sheets bounding said openings, and said sheets being movable from each other intermediate their plurality of secured positions whereby juice can pass from the interior of the envelope to be dispensed through the second opening.

3,159,097
BALE PRESS
Cecil F. White, 5674 N. Delano, Fresno, Calif.
Filed Dec. 30, 1963, Ser. No. 334,465
5 Claims. (Cl. 100—214)



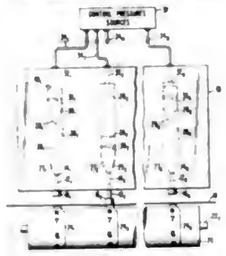
1. A press for cotton bales having a plurality of spaced constraining bands disposed tightly therearound comprising a stationary reaction platen; a movable pressing platen downwardly spaced from the stationary platen providing a plurality of spaced rows of openings therethrough and a substantially unobstructed bale support surface, the platens defining a bale compressing chamber therebetween and with said rows of openings being aligned with interstices between said bands on such a bale disposed within the chamber; controlled powered means connected to said pressing platen for reciprocating the same between a position compressing the bale within the chamber so as to cause loosening and to permit detachment of the bands thereon and a position permitting the removal of the bale from the chamber; and lift means extendable through said openings in the pressing platen engageable with said interstices of the bale between the bands when the pressing platen is disposed in said bale removing position for raising the bale from said pressing platen for ready removal of the bands from the bale and retractable from the openings to permit unrestricted removal of the bale from said chamber.

3,159,098
BALE PRESS
Anders Dedekam and Erling Finne-Larsen, Oslo, Norway, assignors to Anth. B. Nilsen & Co., Limited A/S, Oslo, Norway, a corporation of Norway
Filed Apr. 8, 1963, Ser. No. 271,117
1 Claim. (Cl. 100—215)



A bale press for pressing voluminous material, such as fluffed groundwood, cellulose or the like, into sheets or mats of relatively high density, comprising in combination a horizontal press base, vertical walls above the press base, defining a pre-compressing chamber, the lower edges of said walls extending in a horizontal plane at a distance above said base, a laterally moveable press frame supported on said base, said press frame having vertical walls defining an opening of the same shape and dimensions as said pre-compressing chamber, the height of the walls being equal to the distance between the base and the lower edges of the walls of said pre-compressing chamber, said press frame being moveable between a first position in which the inner surfaces of its walls are flush with the inner surfaces of the walls of said pre-compressing chamber thus forming the press chamber proper, and a second position outside said pre-compressing chamber, a press ram adapted to be moved up and down in said pre-compressing chamber and said press frame, driving means for said press ram, means for supplying material to be pressed into said pre-compressing chamber, driving means for said press frame and means for ejecting the pressed mat of material from said press frame when in its second position, said driving means for said press ram and said driving means for said press frame being synchronized so that said press frame is in position below said pre-compressing chamber when said ram exerts its downward stroke and is moved to its outside position when said ram moves upwardly, said press frame being a rigid and integral unit for withstanding large pressures in lateral directions during the pressing operation and having such a height that all the material after the pressing is completely housed in said press frame, whereby the final phase of the pressing operation takes place in said press frame.

3,159,099
FLUID PULSING MEANS FOR PRINT HAMMERS
Walter Geoffrey Wadey, Wynnewood, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,911
2 Claims. (Cl. 101—1)



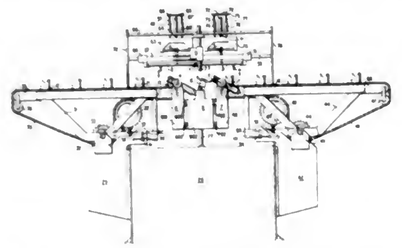
1. Apparatus for converting fluid energy of relatively long duration into impulse energy of relatively short duration, which comprises in combination: an elongated fluid impervious chamber having a wall at at least one end thereof for preventing the escape of fluid therefrom; a piston member of predetermined mass and having first and second opposed end surfaces which is slidably disposed within said chamber with its said first end surface facing said chamber one end wall so that there is substantially no fluid leakage between said chamber and said piston member, said piston member being movable between predetermined maximum and minimum distances with respect to said chamber one end wall so as to vary the chamber volume between it and said chamber one end wall between predetermined maximum and minimum volume values; a pressurized body of compressible fluid occupying said chamber volume; a movable mechanical force transmitting member extending through said chamber at said one end so as to be in fluid communication with said chamber volume without permitting any substantial escape of fluid therefrom, and which is normally biased to a rest position but movable therefrom in response to compressible fluid pressure only when below a first chamber volume value greater than said minimum volume value but less than one-fourth of said maximum volume value; and fluid source means for selectively applying for a predetermined time period motive fluid of predetermined pressure against said piston member second end surface so as to impart momentum thereto in the direction of said chamber one end wall, where said motive fluid pressure, said piston member mass, said predetermined distances, and said predetermined time period are such, relative to one another, that application of said motive fluid to said piston member when at said maximum distance from said chamber one end wall causes said piston member to have momentum in the direction toward said chamber one end wall sufficient to create a second chamber volume value less than said first chamber volume value.

3,159,100
METHOD AND APPARATUS FOR FORMING INDICIA ON ARTICLES
Robert W. Marquiss, Agawam, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,228
11 Claims. (Cl. 101—40)

1. An apparatus for moving articles in substantially tangential, indicia forming contact with indicia forming means so as to form indicia on a first surface of each article which is curved in substantially uniform cylindrical curvature about a first surface axis and so as to form indicia on a second surface of such article which is curved in substantially uniform cylindrical curvature about a second surface axis, said apparatus comprising:

first article carrying means adapted to move an article through a first arc about a first arc axis and adapted to support said article while moving through said first arc with its first surface facing generally away from said first arc axis so as to be disposed for substantially tangential, indicia forming contact with a portion of said indicia forming means, with said article being supported while moving through said first arc so that said first surface axis and said first arc axis substantially coincide;

second article carrying means adapted to move said article through a second arc about a second arc axis and adapted to support said article while moving through said second arc with its second surface facing generally away from said second arc axis so as to be disposed for substantially tangential, indicia forming contact with a portion of said indicia forming means, with said article being supported while moving through said second arc so that said second surface axis and said second arc axis substantially coincide; and



transfer means adapted to receive an article from said first article carrying means after the first surface thereof has received indicia and to move said article to said second article carrying means so that said article, when positioned on said second article carrying means, may be moved through said second arc with its second surface facing generally away from said second arc axis and with its second surface axis substantially coinciding with said second arc axis.

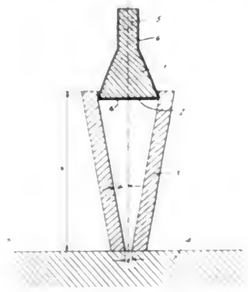
3,159,101
HAND STAMPER WITH REMOVABLE BELT STAMP UNITS
Ted S. Dziekan, 11238 S. Troy St., Chicago 55, Ill.
Filed Oct. 8, 1962, Ser. No. 229,055
1 Claim. (Cl. 101—111)



A hand stamper unit, comprising a thin, elongated, supporting body, having a round, partially cylindrical upper end having the axis of said cylindrical end, transverse to the length of said body, and said body having opposite tapered edges, extending from said round end to a lower rectangular end surface forming a backing surface and being of minimum width and breadth to provide a back-

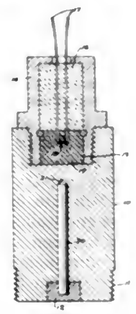
ing for a single printed character, said round upper end serving as a handle and having one side closed and the opposite side provided with a partially cylindrical recess, said cylindrical recess supporting a centrally located stub shaft and said stub shaft rotatably supporting a narrow cylindrical drive roller in said recess, said drive roller supporting an integral radially extending drive flange, having a knurled outer edge, said flange being located on said drive roller at the outer end of said drive roller and overlapping and projecting beyond said cylindrical wall and closing said cylindrical recess, and a spring washer frictionally mounted on said shaft to retain said drive roller on said shaft, an endless resilient rubber band of substantially uniform cross section and of sufficiently large width to cover said drive roller and said rectangular backing surface on said body, said rubber band being tensioned about said backing surface and said drive roller sufficiently to be driven by said drive roller, and said band supporting a plurality of longitudinally spaced, integral rubber blocks on its outer side and formed with characters on the outer surface of said blocks, the spacing of said blocks facilitating the bending of said rubber band tightly about said backing surface, said supporting body carrying a pair of thin, downwardly projecting guide flanges, beside the rubber band on the backing surface, said supporting body having a pair of longitudinally spaced, through bores, and said body having in each of its plane wall portions, a screw driver slot extending inward from the tapered edge of said body, between said bores for insertion of a screw driver to pry units apart, and a pair of resilient studs, each having a cylindrical body mounted in an enlarged bore over one of said through bores, and each resilient stud having a spring head, pressed into the back of one of said through bores in the opposite side of another unit, said spring head in each case being split to be received in said through bores, to secure one unit to another, side by side, to apply a plurality of characters simultaneously to a chassis.

3,159,102
EXPLOSIVE DEMOLITION ARRANGEMENT
Hans-Joachim Riedl, Recklinghausen, and Heinz Schlüter, Dulmen, Germany, assignors to Wasag-Chemie Aktiengesellschaft, Essen, Germany
Filed Jan. 22, 1962, Ser. No. 167,550
Claims priority, application Germany, Jan. 21, 1961, W 29,310
13 Claims. (Cl. 102—22)



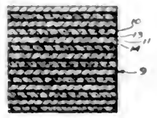
1. A stationary demolition arrangement, comprising, in combination, an object to be subjected to explosive force; an explosive device including an explosive charge having a substantially flat front face spaced from and directed toward the surface of said object so that upon detonation the exploding charge will emanate from said front face toward said object; and a guide sleeve interposed at least between said explosive device and said object, said guide sleeve substantially surrounding said front face of said explosive charge and having an axis substantially perpendicular to said flat front face of said explosive charge, said guide sleeve converging in the direction towards said object at an angle of between about 6 and 11° between said axis and the generatrix of said guide sleeve so as to limit the lateral expansion of the exploding charge and concentrate the same toward the surface of said object.

3,159,103
DETONATOR TO IGNITER ADAPTER FOR INITIATING PROPELLANT MIXES
Charles H. Bagley, Sunnyvale, Calif., assignor to Beckman & Whitley, Inc., San Carlos, Calif., a corporation of California
Filed Apr. 5, 1962, Ser. No. 185,394
4 Claims. (Cl. 102—28)



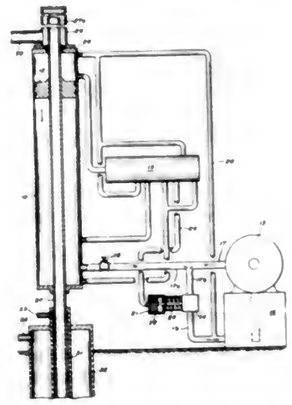
1. A detonator to igniter adapter comprising a substantially cylindrical solid metal body having a cavity in one end, an igniter mix in said cavity, means for sealing said end to a container for propellant mix with the igniter mix in intimate proximity to the propellant mix, the opposite end of said body having a second cavity, a secondary explosive in said second cavity, a fuse bore in the body containing a fuse extending from the igniter mix toward the secondary explosive, said bore terminating in a cone-shaped end spaced from the explosive mix cavity by solid metal of the body a distance which will enable detonation of the secondary explosive to collapse the cone and ignite the fuse, and said body being of a length and having sufficient metal surrounding the second cavity to effect attenuation of shock waves to prevent detonation of the propellant mix, to prevent detonation of the igniter mix and to prevent fracture of the body.

3,159,104
LAMINATED TAPE PROPELLANTS
James E. Hodgson, Cleveland, Ohio, assignor to Solid Fuels Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 2, 1959, Ser. No. 850,387
7 Claims. (Cl. 102—98)



1. A cylindrical propellant comprising a plurality of fuel layers and a plurality of oxidizer layers arranged alternately to form the propellant whereby one of said oxidizer layers is dispersed between two of said fuel layers, said propellant having a generally circular cross sectional outline which comprises a series of concentric generally circular layers of the fuel and the oxidizer about the center of the cross sectional area, each fuel and oxidizer layer having a thickness of about one thousandth to 300 thousandths of an inch, each fuel layer comprising about 35 to 95 parts by weight of metal and metal hydride particles including lithium hydride and 5 to 65 parts by weight of a binder comprising lithium, and each oxidizer layer containing about 35 to 95 parts by weight of a plurality of oxidizer particles and about 5 to 65 parts by weight of a binder for said particles.

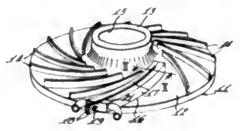
3,159,105
HYDRAULIC PUMPING UNIT
Roy L. Chenault, Dallas, Tex., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Oct. 12, 1962, Ser. No. 230,187
5 Claims. (Cl. 103—45)



1. In a pumping installation which includes in combination a hydraulically operated surface pumping unit, a subsurface pump below said unit, and means operatively connecting said pumping unit and said subsurface pump, said pumping unit comprising a lifting cylinder, a power piston reciprocable up and down in said cylinder, a motivating pump, and valve means for alternately directing fluid from said motivating pump to the lower end of said cylinder to lift said piston during an upstroke and relieving the lower end of said cylinder to allow said piston to descend gravitationally during a downstroke, said pump comprising a barrel, a standing valve at the lower end of said barrel, a reciprocable plunger mounted in said barrel, and a traveling valve carried by said plunger, said standing valve opening and said traveling valve closing as said plunger makes an upstroke to enable the plunger to draw fluid into the barrel, said standing valve closing and said traveling valve opening as said plunger makes a downstroke to enable the plunger to displace fluid from the barrel, said connecting means comprising a tubular rod string attached to said piston and to said plunger for moving the plunger with the piston and delivering to the surface during a downstroke fluid displaced from said barrel, the weight of said rod string furnishing the force which lifts the fluid to the surface, whereby the load during an upstroke is restricted substantially to the weight of the rod string.

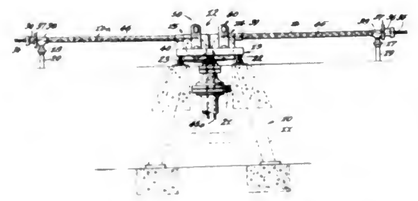
3,159,106
IMPELLER AND METHOD OF MAKING SAME
Willerd A. Schumbacker, West Allis, and Edward Soref, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 21, 1962, Ser. No. 181,420
3 Claims. (Cl. 103—115)

1. An impeller comprising: a first disk; a second disk; and a plurality of spaced vanes composed entirely of



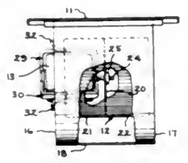
weld material fused to said disks to rigidly hold same in spaced apart relation.

3,159,107
MULTIPLE COMPLETION PUMPING UNIT
Levon Z. Hallmark, P.O. Box 484, Andrews, Tex.
Filed Dec. 14, 1962, Ser. No. 244,674
4 Claims. (Cl. 103—212)



1. A multiple completion unit of the class described for oil wells comprising in combination a pair of reciprocating arms, a reciprocating shaft mounted to said arms, oil well rods, a well platform, a sheave pulley, a pulley shaft, a wire rope of substantial length having one end thereof adapted to be connected to said reciprocating shaft with its other end being connected to said oil well rods, a sheave housing assembly mounted on said well platform and comprisnig a housing frame, said sheave pulley being mounted to turn on said shaft inside said frame, said wire rope passing over said pulley, said shaft in said frame while resting on said platform supporting the entire weight of said rods, means for securing said sheave housing assembly to said oil well platform, said sheave housing assembly having a threaded coupling connecting said assembly to a joint leading to a main oil well flow line, a tubing connected to said coupling and said wire rope passing through said tubing to enter the interior of the sheave housing assembly.

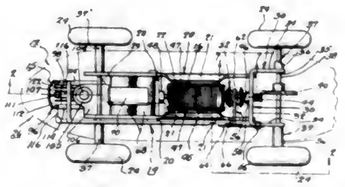
3,159,108
MOUNTING BRACKET FOR BLOWER ASSEMBLY
Donald M. Mullings, Yardley, Pa., assignor to General Electric Company, a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,040
4 Claims. (Cl. 130—235)



1. A blower assembly comprising a blower wheel, a housing for said wheel having at least one inlet opening at an end thereof for said wheel, a motor located in the inlet opening and of smaller diameter than said inlet to provide an annular air inlet passage that surrounds the

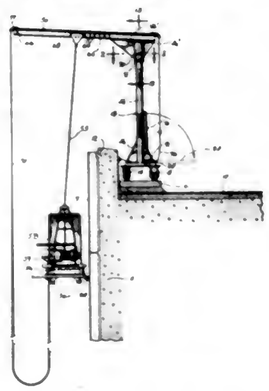
motor, said motor having a drive shaft extending within said housing and directly connected to the wheel to form the support thereof, a mounting bracket for said motor including a pair of spaced end cups and a series of radially spaced supporting arms joining the end cups together, where each arm comprises a pair of L-shaped channel members which have overlapping portions that telescope one within the other in order to obtain axial adjustability, where both channel members of each arm are fastened to one of the end cups respectively, and fastening means for attaching the mating channel members of each arm to each other, each end of the motor having a boss portion, an annular sleeve of resilient material seated in each end cup and encircling the adjacent boss portion of the motor, each end cup having a roughened inner surface, the channel members being fastened together in a manner to place the resilient sleeves in compression and thereby prevent the motor from turning with respect to the mounting bracket, and each supporting arm including an angular mounting ear that is tangential to the mouth of the blower inlet opening at a point of attachment thereto, and fastening means cooperating with the mounting ears for holding the mounting bracket to the blower housing.

3,159,109
TOY
Robert P. Braverman, Chicago, Ill., assignor to Marvin I. Glass, Chicago, Ill.
Filed Mar. 30, 1960, Ser. No. 18,727
2 Claims. (Cl. 104—148)



1. A miniature racing vehicle for use on a racing track which supplies the necessary driving current thereto during the travel of the vehicle along the track, which vehicle comprises an elongated frame structure including a pair of spaced apart longitudinally extending frame members formed of a magnetizable material, a first pair of electrically nonconductive wheels rotatably secured to said frame structure adjacent one longitudinal extremity thereof, a second pair of electrically nonconductive wheels rotatably secured to said frame structure adjacent the other longitudinal extremity thereof, a rotor having an armature winding wound thereabout, means mounting said rotor within said frame structure between said frame members so that said rotor is free to rotate about an axis generally parallel to said frame members and the longitudinal axis of said frame structure, means connecting said rotor to said first pair of wheels so that rotation of said rotor effects a corresponding rotation of said wheels, a plurality of permanent magnets, means mounting said permanent magnets within said frame structure in engagement with said frame members and longitudinally spaced from said rotor so that a magnetic field is provided for said rotor through said frame members, means connected to said armature winding for supplying current thereto, and a track connecting member secured to said frame structure adjacent the second pair of wheels for pivotal movement relative thereto, said connecting member being engageable with the track wherealong the vehicle is driven so that said vehicle is guided along the track and current is supplied therefrom through said current supplying means to said armature winding.

3,159,110
MOTORIZED STAGING SUSPENDING AND ADJUSTING CARRIER
Howard W. Wylie, deceased, late of Seattle, Wash., by Hannah T. Wylie, executrix, 2615 Western Ave., Seattle, Wash.
Filed Nov. 27, 1962, Ser. No. 240,480
9 Claims. (Cl. 104—246)

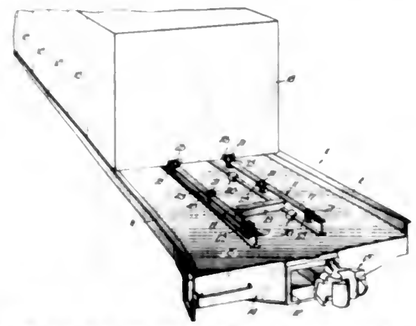


1. The combination of a two-rail railway track having at least one curved run and two straight runs joined by said curved run, said rails being of I-beam formation, and a wheeled truck mounted for travel on said track, said truck having a deck plate spanning the track, the wheels of the truck being in sets with each set suspended from the deck plate and including, in each set, a pair of wheels lying one wheel of the pair at one side and the other wheel of the pair at the other side of the web of a concerned rail and each mounted to rotate about a respective horizontal axis transverse to the track placing the wheel in rolling contact with a flange of the rail, two of said sets of wheels being provided for the outside rail one located adjacent one end and the other located adjacent the other end of the deck plate and with each of such two sets being carried by the deck plate for bodily swivel movement about a vertical axis fixed in relation to the deck plate, one of said sets of wheels being provided for the inner rail placed to occupy a transverse vertical plane lying between said two wheel sets provided for the outside-rail and projected normal to the longitudinal vertical plane occupied by the latter two sets.

3,159,111
CONTAINER ATTACHMENT DEVICE FOR RAILWAY CARS
Jack E. Gutridge, Dyer, and Kenneth J. Austgen, Griffith, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,221
4 Claims. (Cl. 105—366)

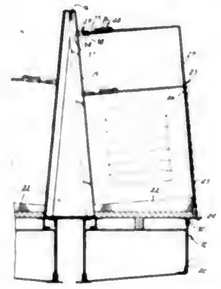
1. In combination, a vehicle provided with a container supporting deck portion, a plurality of box-like containers mounted on said deck portion in load supported relation therewith, said containers being spaced from one another along said deck portion, and a plurality of spaced container attachment means projecting upwardly from said deck portion between said containers and positioned closely thereto, said containers along vertical marginal surface portions thereof in areas aligned with adjacent attachment means including locking recesses having horizontal ledge-like lock member engagement portions which are horizontally exposed, each of said attachment means comprising a rotatable locking head portion having a pair of oppositely positioned and horizontally projecting lock

members received in adjacent locking recesses of adjacent containers and fixing said containers to said vehicle, means mounting said locking head portion for rotational and simultaneous vertical movement about its vertical axis to move said lock members into and out of overlying engagement with ledge-like portions of locking recesses of adjacent containers, said mounting means elevating said head portion during rotational movement into container unlocking position wherein said lock members parallel



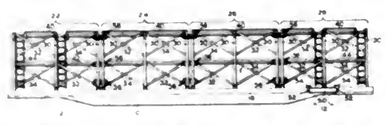
marginal surface portions of adjacent containers and are positioned above said ledge-like portions, said mounting means lowering said head portion during rotational movement into container locking position wherein said lock members move into said locking recesses over said ledge-like portions and downwardly into locking engagement with said ledge-like portions, and operating means interconnecting a series of container attachment means for simultaneous operation thereof.

3,159,112
FREIGHT CAR CONSTRUCTION
Kenneth D. Tomlinson, 5353 London Road, Duluth 4, Minn.
Filed Jan. 24, 1963, Ser. No. 253,559
2 Claims. (Cl. 105—367)



1. A railway flat car for the transportation of lumber and the like comprising:
(*a*) a wheeled frame structure;
(*b*) a pair of bulkheads extending vertically upwardly adjacent end portions of said frame structure,
(*c*) a longitudinally extending beam which is T-shaped in cross section secured at its ends to upper end portions of said bulkheads,
(*d*) a plurality of vertically extending relatively spaced leg members which are T-shaped in cross section and each said leg member having a load bearing side flange disposed in a common plane with respect to the longitudinal side of said frame structure each of said leg members being connected at its upper end to said beam and at its lower end to said frame structure inwardly of the side edge,
(*e*) an anchor member slidably mounted on the load bearing side flange of each leg member for vertical adjustment therealong,
(*f*) a flexible tie element connected at one end to each anchor member and at its opposite end to the longitudinal side edge portion of said frame structure outwardly spaced from said anchor and its connected leg member, and
(*g*) means for adjusting and securing the effective length of said tie member over a load on said frame structure, whereby loads differing in height and width may be supported in end to end relation along said frame structure and securely bound to the load bearing side flanges of said legs.

3,159,113
TRANSPORT STRUCTURE
Harry G. Schultz, Wyandotte, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Sept. 16, 1960, Ser. No. 56,417
6 Claims. (Cl. 105—368)

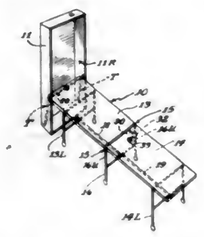


1. The combination with a railway car having a longitudinally elongated and laterally extending horizontal bed portion of
(*a*) a superstructure portion disposed vertically above said bed portion and supported thereby,
(*b*) said superstructure portion comprising a plurality of longitudinally aligned sections each of which include
(1) a first and second pair of longitudinally spaced vertically extending side posts with said first pair of side posts being laterally spaced from said second pair of side posts, and
(2) a plurality of longitudinally and laterally extending brace means rigidly interconnecting said side posts and maintaining the same in a vertical position with at least some of said brace means including load supporting horizontally disposed deck means,
(*c*) means carried by one of said portions and engaging the other of said portions and mounting said superstructure portion on said bed portion for relative longitudinal movement,
(*d*) shock absorbing means carried by said deck portion and connected to said superstructure portion and being operative to resist relative longitudinal movement between said portions, and
(*e*) resilient means resiliently connecting adjacent ends of said aligned section for relative movement in all directions whereby said sections are adapted for limited resilient relative movement while longitudinal movement of the superstructure portion relative to said bed portion is resisted by said shock absorbing means.

3,159,114
MECHANISM FOR CONTROLLING MOVEMENTS OF MULTIPLE SECTION TABLES
Daniel A. Haunost, Chicago, Ill., assignor to Midwest Folding Products Mfg. Corp., a corporation of Illinois
Filed Feb. 15, 1963, Ser. No. 258,859
6 Claims. (Cl. 108—38)

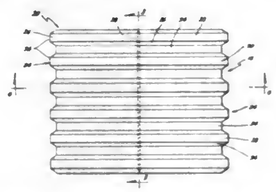
1. In a folding table that includes a pair of top sections; pivot means connecting said sections for folding movement from coplanar extended relation to side-by-

side overlapping relation, a first leg structure pivoted to one of said sections in lengthwise spaced relation to said pivot means, a second leg structure pivoted to the other section in lengthwise spaced relation to said pivot means, a center leg structure connected to said pivot means, a first brace pivotally connected between said first leg structure and said center leg structure, and a second brace pivotally connected between said second leg structure and said center leg structure, the improvement wherein said pivot means comprises plate structure rigid with said center leg structure and having lengthwise spaced portions underlying adjacent edges of said table sections, a first segment anchored to one of said



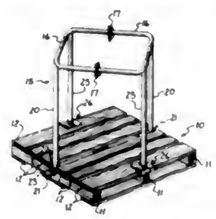
sections and mounted to rotate about a transverse axis through the said portion adjacent thereto, said first segment having gear teeth along a circular periphery curving about said axis as a center and adjacent to and facing the other table section, a second segment anchored to the other table section and mounted to rotate about a transverse axis through the said portion adjacent thereto, said second segment having gear teeth along a circular periphery curving about the last-named axis as a center and adjacent to and meshing with the first-named gear teeth to maintain said table sections at equal relative angles to said center leg structure during folding movement thereof.

3,159,115
MONOLITHIC PALLET STRUCTURE
Parker S. Nolan, Mound, Minn., assignor to Pal-O-Fab Co., Inc., Minneapolis, Minn., a corporation of Minnesota
Filed June 5, 1963, Ser. No. 285,767
9 Claims. (Cl. 108—51)



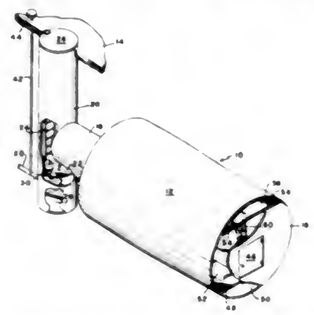
1. A monolithic pallet structure comprising:
(*a*) upper and lower corrugated panels of glass fibers and epoxy resin having their corrugations arranged generally parallel to each other,
(*b*) the upper panel having downwardly directed side portions at the opposite ends of its said corrugations and the lower panel having upwardly directed side portions at the opposite ends of its said corrugations, and
(*c*) the adjacent side portions of said panels overlapping each other and being bonded together to maintain the corrugations of the upper panel in a generally spaced relation with the corrugations of the lower panel.

3,159,116
PALLET TIERING FRAME
Leroy F. Skubic, Long Beach, Ind., assignor to The Paltier Corporation, Michigan City, Ind., a corporation of Illinois
Filed Oct. 16, 1963, Ser. No. 317,402
10 Claims. (Cl. 108—53)



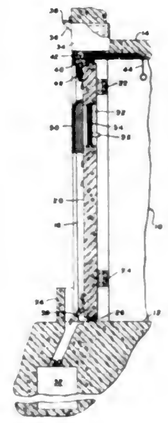
1. For use with a pallet having one or more deck boards transversely mounted on a plurality of stringer members, and a load-supporting framework on said pallet, said framework including posts extending vertically from said pallet where each is releasably mounted to a deck board, a mounting bracket comprising, in combination, a web attachable to a vertical post and disposable in face-to-face vertical load-supporting relation with a deck board, gripping flanges depending from said web, said flanges being so constructed and arranged as to embrace an edge of said deck board outwardly of said posts for supporting the same in position against nonvertical forces encountered thereby, means defining an aperture in said web, and a locking pin disposed for projection through said aperture into engagement with the deck board.

3,159,117
CYLINDRICAL BOMBSHELTER
Morton M. Rosenfeld, Mount Vernon, N.Y.
(271 Madison Ave., New York, N.Y.)
Filed Sept. 5, 1961, Ser. No. 135,901
4 Claims. (Cl. 109—1)



1. A bombshelter comprising a first cylindrical shell, a second cylindrical shell, said second cylindrical shell being smaller in diameter than said first cylindrical shell, the longitudinal axis of said second shell being substantially perpendicular to the longitudinal axis of said first shell, means providing communication between said shells, a floor in one of said shells, a waste disposal chamber below and partially defined by said floor in said one shell, an inlet means supported by said floor and selectively providing communication between said chamber and the space within the shell thereabove, said inlet means comprising a pipe, and threads on one end of said pipe above the plane of said floor for alternatively receiving an imperforate cap and a funnel-shaped member.

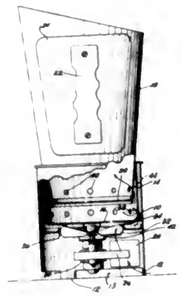
3,159,118
DOOR CLEANING APPARATUS
Morton M. Rosenfeld, Mount Vernon, N.Y.
(271 Madison Ave., New York, N.Y.)
Filed Nov. 24, 1961, Ser. No. 154,545
2 Claims. (Cl. 109—1)



1. A bombshelter comprising an enclosure, said enclosure including a wall having a doorway therein and a floor below said doorway, a door, means pivotally mounting said door in said doorway for movement between an open and a closed disposition, a dispersion member, a liquid supply tank mounted in a plane above the uppermost surface of said door so that liquid in said tank may flow from said tank to said dispersion member, means mounting said dispersion member so that liquid is dispersed on one major face of said door outside of said enclosure, a waste receptacle including a waste receiving chamber located in a plane below the surface of said floor, said floor having a flow passage from the surface of said floor adjacent said one major face of said door to said chamber, a selectively operable valve for selectively controlling flow of liquid from said supply tank, an actuator for said selectively operable valve mounted within said enclosure, said door having an opening therein, a filter removably disposed within said opening, a filter guard mounted on said one major face of said door, said filter guard being juxtaposed to said opening so that said guard may direct replaced filters in the direction toward said flow passage, said flow passage having a cross sectional area greater than said filter so as to allow said filter to pass therethrough into said waste receiving chamber.

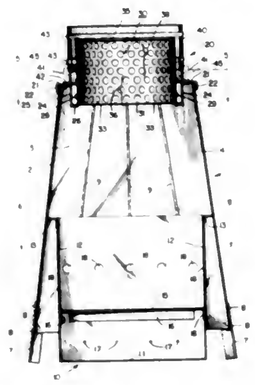
3,159,119
CHARCOAL STARTER AND COOKER
Frederick W. Hottenroth, Palos Verdes Peninsula, and Harry D. Jacoby, Palos Verdes Estates, Calif., assignors to Z.Z. Corp., Compton, Calif., a corporation of California
Filed June 24, 1963, Ser. No. 290,041
6 Claims. (Cl. 110—1)

1. In a charcoal starter and cooker, an open top support, a cup-shaped charcoal container removably positioned in the open top thereof, air circulating means within said support for forcing air upwardly therethrough, a horizontal separator spaced between said air circulating means and said charcoal container, said separator having means adjacent the periphery of said support for admitting air from said air circulating means to the space between said separator and said charcoal container, and



said charcoal container having air admission openings adjacent the bottom thereof communicating with said space.

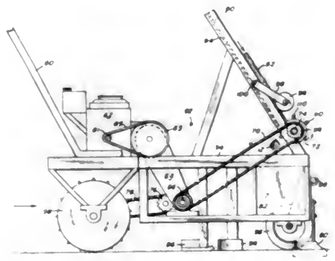
3,159,120
PORTABLE INCINERATOR
Ralston M. Sherman, Glastonbury, Conn., assignor to The Silent Glow Oil Burner Corporation, Hartford, Conn., a corporation of Connecticut
Filed Apr. 2, 1962, Ser. No. 184,064
3 Claims. (Cl. 110—18)



1. A portable knockdown incinerator comprising sheet metal wall means defining an erect casing presenting a primary combustion chamber having vertically upwardly and inwardly inclined side walls and being open at the top and bottom with feet depending from the side walls for supporting the casing in spaced relation above a positioning horizontal surface, said casing having disposed within the lower portion a lower inner chamber element with vertical side walls laterally spaced from the casing at their lower portions and a bottom wall at a level below the casing, angle brackets on the inner side walls within the lower portion of said inner chamber element for removably supporting a grate to receive thereon a charge of material to be burned, the side walls of said inner chamber element approaching the casing side walls at a mid-height region thereof and there having lateral outward flanges contacting the casing wall intermediate the vertical side edges of the walls of the latter and terminating short of said casing side edges there to form vertical flow passages at the corner junctions of adjoined casing side walls, and a burner head removably seated on the upper periphery of said casing, said head comprising a horizontal cover plate removably seated upon the upper edges of the casing side walls and having a large central

aperture receiving a vertical drum-shaped second chamber element including a vertical circumferential wall and top and bottom walls and having multiple perforations for upward passage of burning gases and combustion products, said second chamber element having a lower passage-defining portion extending below said cover plate and into the casing and an upper chamber portion projecting above said plate, bracket means on the plate supporting said second chamber element, some of said perforations being in the bottom wall of said second chamber element and providing for the jet flow of ignited streams of combustion gases distilled from burning material in the casing, a horizontal series of apertures in the upper wall portions of the casing in lateral opposition to some of said perforations which are in the lower passage portion of the second chamber element and cooperating therewith for inward jet flow of additional combustion air for contacting the jet-flowing ignited streams of such gases transversely of the flow direction thereof and progressively along their flow direction for continuing in said second chamber by hydroxylative combustion the burning of such gases, an annular element surrounding and laterally spaced from the upper portion of said second chamber element, means on the cover plate holding said annular element in vertically spaced relation above the plate, and a horizontal multitudinous series of lateral apertures in the lateral wall of said upper portion of the second chamber element for escape of gaseous combustion products into and through the annular space between said chamber element and said annular element.

3,159,121
GRASS PLANTER
Martin L. Beck, Jr., Box 752, Auburn, Ala.
Filed May 12, 1964, Ser. No. 367,286
3 Claims. (Cl. 111—1)



1. A plug planter comprising

(*a*) a frame movable along the ground having furrow opening means and furrow closing means thereon,

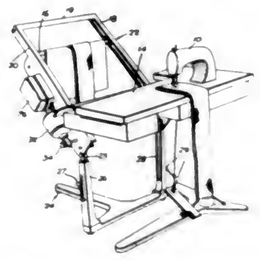
(*b*) a vertically inclined gravity slide member having a lower edge and adapted to receive a web of sod,

(*c*) a series of stationary blades projecting generally downwardly from the lower edge of said slide,

(*d*) a rotating cutter lying in the same plane as said slide, said cutter having a continuous and generally cylindrical surface with a plurality of blades projecting radially therefrom, said blades having outermost edges passing proximate to said lower edge of said slide and side edges passing proximate to said stationary blades to shear a piece of sod, said outer surface serving to arrest downward movement of a web of sod, and

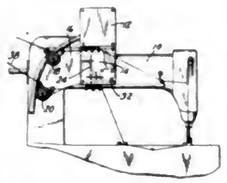
(*e*) means below said cutter for guiding a severed plug of sod into a furrow formed by said furrow opening means.

3,159,122
APPARATUS FOR STACKING ARTICLES PRODUCED ON A SEWING MACHINE
Arne Hedegaard, Copenhagen, Denmark, assignor to Rothenborg Specialmaskiner for Sy-Industrien A/S, a corporation of Denmark
Filed Apr. 3, 1961, Ser. No. 100,352
Claims priority, application Great Britain, Apr. 8, 1960, 12,498/60
5 Claims. (Cl. 112—2)



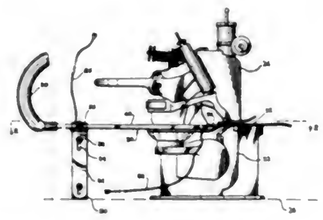
4. Apparatus for stacking articles produced on a sewing machine comprising a frame structure having a pair of spaced guideways, an elongated member movable through a stacking stroke slidably supported in said guideways adjacent its ends, driving means for moving said stacking member through its stacking stroke comprising a dynamo electrical motor and an energizing circuit therefor including a first switch and a second switch, a reduction gear and an endless driving member mounted in said frame structure, a driving connection between said endless driving member and said stacking member for moving said stacking member through its stacking stroke, means operable at will for actuating said first switch to energize said driving motor to initiate the movement of said stacking member through its stacking stroke, means operable to actuate said second switch to de-energize said driving motor in response to the arrival of said stacking member at the end of said stacking stroke, means associated with said frame structure for adjustably supporting said guideway adjacent a sewing machine table at an inclined angle up to approximately 45° to said table with said stacking member in its normal rest position adjacent the delivery edge of said sewing machine table and below the same to enable said articles to pass over said stacking member whereby said articles are folded over said stacking member by lifting during the movement of said stacking member through its stacking stroke.

3,159,123
THREAD BREAK DETECTION DEVICE
Homer A. Godwin, Wellsburg, Frank G. Brockardt, Wheeling, and Joseph H. Koch, Elm Grove, W. Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1961, Ser. No. 146,539
4 Claims. (Cl. 112—219)



1. A thread break detection device for a sewing machine comprising a housing, said housing suitable for mounting on a sewing machine, stationary thread guide means attached to the bottom of said housing, a vertically movable elongated thread guide member extending through the bottom of said housing, a lower stop attached to the vertically movable thread guide member, an electrical switch attached within said housing, a lever arm pivotally attached to said electrical switch and coacting with the lower stop to close the electrical switch when the vertically movable member has moved downward a predetermined distance.

3,159,124
ELECTRICAL THREAD-TRIMMING DEVICE
Julius Rubin, Roslyn, N.Y., assignor to Tek-Matic Corp., Albertson, N.Y.
Filed Apr. 27, 1964, Ser. No. 362,915
10 Claims. (Cl. 112—252)



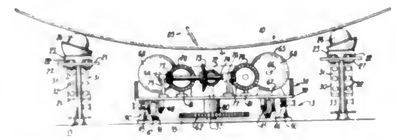
1. In a sewing machine having a needle plate and stitch-forming instrumentalities, an electrical thread trimming device comprising a suction tube having inlet and outlet ends, suction producing means connected to said outlet end, a resistance wire disposed within and across said inlet end, means securing said suction tube adjacent said needle plate with the top portion of said inlet end being substantially flush with said needle plate, and a voltage power source connected across said resistance wire to heat it to thread severing temperature.

3,159,125
LUBRICATED FEED PLATE
Rene J. H. Vandewouwer, 1818 N. Nolden, Los Angeles 42, Calif.
Filed July 20, 1962, Ser. No. 211,308
7 Claims. (Cl. 112—260)



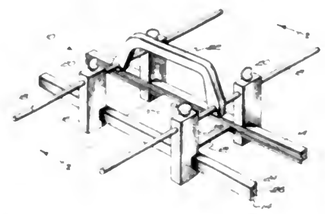
1. In combination, a sewing machine having a table, a throat plate substantially on a level with the upper surface of the table, a vertically reciprocable needle supported over the throat plate and normally spaced thereabove, and a lubricated feed plate secured upon the table at the approach side of the throat plate and having a lubricated upper surface across which material is adapted to be fed onto the throat plate to the needle, said feed plate having an apertured upper sheet, and a lubricant-containing pad supported beneath said upper sheet.

3,159,126
WELDING SUPPORTING APPARATUS
Stanley B. Beecher, Chicago, Ill., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed May 31, 1961, Ser. No. 113,796
7 Claims. (Cl. 113—99)



1. A device for facilitating the treating of the surface of a sphere comprising means for rotatably supporting the sphere prior to, during, and after treatment of the sphere, means independent of said supporting means for rotating the sphere, means drivingly connected to said rotating means to actuate said rotating means, rotatable frame means from which said rotating means are supported for orienting said rotating means relative to said sphere in one of a plurality of positions, and means supported from said frame means and operable to move said rotating means into and out of engagement with said sphere to cause selected movement of said sphere when supported by said supporting means.

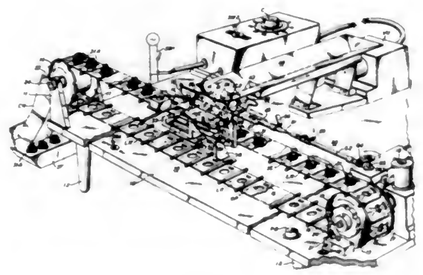
3,159,127
FIXTURE FOR PRINTED CIRCUIT BOARDS
James C. Wheeler, Topsfield, Mass., assignor to Defiance Printed Circuit Corp., Malden, Mass., a corporation of Massachusetts
Filed Aug. 22, 1961, Ser. No. 134,045
7 Claims. (Cl. 113—99)



1. A portable hand fixture for supporting substantially flat and generally rectangular printed circuit boards of various lengths, widths and thicknesses during dip soldering operations, comprising a pair of elongated rods, a thermal insulating handle mounted to both of said rods and supporting them in spaced parallel relation to one another, a pair of blocks slidably mounted on each of said rods, means for locking each of said blocks in a selected position along said rods, a pair of elongated members arranged parallel to one another and disposed in spaced perpendicular relation to said rods, each of said members being rigidly mounted to one of each pair of said blocks and movable therewith to accommodate circuit boards of various widths, each of said members being formed with an elongated channel with both channels being in registered opposition to one another, a pair of matching elongated resilient insert members removably mounted in said channels and coextensive therewith, each of said insert members being formed with a longitudinal groove along each long side thereof for receiving opposing marginal edges of a circuit board inserted therebetween, said insert members being mountable in various lengthwise positions within said channels

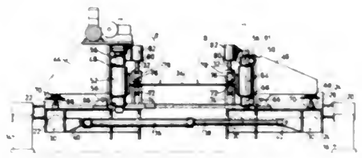
to expose any selected groove, each of said grooves being of substantially constant depth but of different widths whereby said insert members may be assembled in said channels with oppositely facing matched grooves to accommodate circuit boards of various thicknesses.

3,159,128
DEVICE FOR ASSEMBLING NEEDLE POINTS IN CUPS
Cyrill F. Kodey, Jr., South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 26, 1961, Ser. No. 127,004
8 Claims. (Cl. 113—129)



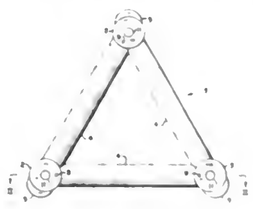
1. A device for the placement and securing of a plurality of needle-shaped elements in cup-like containers, the centers of gravity of said elements being displaced from the geometric center toward the blunt ends of said elements because of said needle shape, in combination: a trough-shaped member adapted to hold a plurality of said elements, said trough having an aperture aligned and communicating with the upper end of a vertically extending bore of a support, the dimension of said aperture in the direction of said elements being smaller than the distance from said element's center of gravity to its farthest end but greater than the distance from said element's center of gravity to its nearest end, means in juxtaposition with respect to the lower end of said bore for supporting said containers, a slideably mounted apertured plate having a plurality of slots therein positioned across said bore between said trough and said means, and means for oscillating said plate in a position wherein said slots are in said bore, the width dimensions of said slots being smaller than the diameters of said elements and adapted to catch the blunt ends of said elements to align and stand them upright in said bore but not to allow them to drop therethrough, means for imparting vibration to said trough to advance said elements toward said trough aperture, the latter adapted dimensionally to cooperate with said elements, so that if said elements approach said aperture blunt end first, the center of gravity of said element will advance over said aperture before said blunt end bridges said aperture thereby causing said element to fall through said aperture and into said bore blunt end down, and if said elements approach said aperture sharp end first, the latter will bridge said aperture before said element's center of gravity advances over said aperture forcing said element to continue to advance until said center of gravity and blunt end advance over said aperture thereby causing said element to fall through said aperture and into said bore blunt end down, said plate located to intercept said elements in said bore above said containers and adapted to orient them in an upright aligned position, and means for moving said plate laterally to align said plate aperture with said bore and drop said elements into said containers sharp ends up.

3,159,129
BEAM-WELDING MACHINE
Bo Mauritz Lindmark, Trollbacken, Sweden, assignor to A.B. Broderna Hedlund, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 19, 1963, Ser. No. 259,523
Claims priority, application Sweden, Feb. 27, 1962, 2,170/62; Dec. 13, 1962, 13,462/62
11 Claims. (Cl. 113—131)



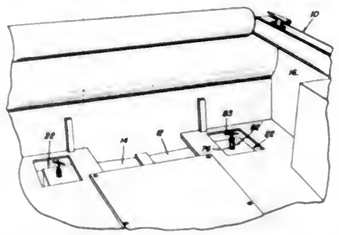
1. A machine for welding beam components such as a flange to a web plate in the manufacture of beams comprising supports for the web plate, supports for the flange, backing means for maintaining the flange at a suitable angle with respect to the web plate in contact with a longitudinal edge thereof and for feeding the flange and the web longitudinally through the machine and means to adjust said backing means for varying said angle prior to the welding operation to obtain the desired angle, usually a right angle, between the flange and the web plate after the welding operation.

3,159,130
FLOATING STORAGE TANK
Cornelis Vos, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1963, Ser. No. 252,151
Claims priority, application Netherlands, Feb. 26, 1962, 275,268
12 Claims. (Cl. 114—.5)



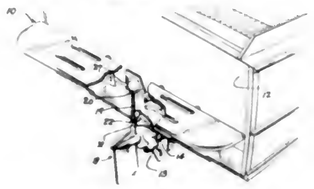
1. A floating tank of the displacement type for the storage of a first liquid having a specific gravity lower than that of the supporting liquid comprising:
- a storage reservoir for storing said first liquid, said storage reservoir having at its lowest level at least one opening for direct communication between the interior of said storage reservoir and the supporting liquid; said storage reservoir consisting of at least three upwardly extending tubular elements arranged on different sides of the vertical center line of said tank, and laterally-extending tubular conduit means interconnecting the lower submerged portions of said upwardly extending elements and in open communication therewith, each of said upwardly extending elements having an opening at its upper end which permits pressure communication between the atmosphere and the contents of the reservoir;
- a separate trimming chamber integral with each of said upwardly extending elements; and
- means for supplying and discharging liquid from said reservoir via said upwardly extending elements.

3,159,131
BOAT TRIM FLAPS
Percy R. Frederick, P.O. Box 50, Knight's Ferry, Calif.
Filed June 4, 1963, Ser. No. 285,285
10 Claims. (Cl. 114—66.5)



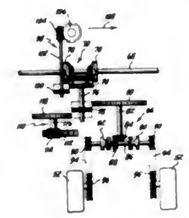
1. In combination with a motor boat hull including aft bottom portions disposed on opposite sides of the longitudinal centerline of said hull, a pair of boat trim flap assemblies each mounted in one of said aft bottom portions, said aft bottom portions each having an opening therein spaced forwardly of the rear end of the corresponding bottom portion and spaced laterally of said centerline, said assemblies including a pair of open bottom housings secured in said openings in fluid-tight sealing engagement with the adjacent portions of the corresponding bottom portions, a trim flap pivotally secured in each housing for rotation about an axis disposed in a plane generally paralleling the corresponding bottom portion and extending transeversely of the forward end of said housing with the free swinging portion of said flap extending rearwardly in said housing and swingable from a raised position substantially flush with the bottom of said housing to a rearwardly and downwardly inclined lowered position projecting below the corresponding bottom portion, and actuator means operatively connected to each of said trim flaps and including movable portions mounted for movement relative to and through walls of said housings in fluid-tight sealed engagement therewith and having portions disposed within said hull for actuation thereof and operable to selectively simultaneously and individually raise and lower said flaps as desired and vary the upward thrust effected thereby either simultaneously or individually whereby the inclination of said hull may be adjusted about both transvers and longitudinal generally horizontally disposed axes in order to position the hull in its optimum attitude relative to the water over which it is traveling when compensating for uneven loading of said hull.

3,159,132
BOAT PROPULSION AND STEERING APPARATUS
Allen B. Petrich, 2809 Garfield Road, Tacoma, Wash.
Filed June 15, 1962, Ser. No. 202,779
2 Claims. (Cl. 114—162)



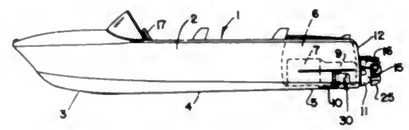
1. In a boat having a bottom with transverse rear edge, a transom joined with said rear edge and directed upwardly therefrom, a plurality of vertically aligned supporting bearings fixed to the rear surface of said transom, a vertically disposed rudder post mounted by said bearings, the upper supporting bearing being secured to the transom substantially above the normal water line of the boat, steering means connected to said rudder post above said upper supporting bearing, a rudder plate mounted at the lower end of said rudder post rearwardly of the plane of said transom and extending below the level of the rear edge of the boat bottom, a propeller mounting drive shaft supported from the boat bottom and a propeller mounted on said drive shaft immediately forward of the rudder plate and substantially in vertical alignment with the transom at its juncture with the bottom.

3,159,133
VESSEL
Robert Dunham West, Manitowoc, Wis., assignor to Manitowoc Shipbuilding Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed Mar. 6, 1963, Ser. No. 263,268
19 Claims. (Cl. 115—.5)



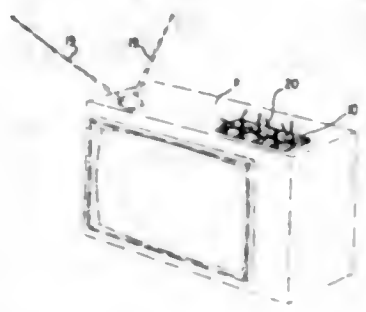
1. A vessel comprising, in combination,
equipment mounted on the vessel for performing at least one desirable function,
a mobile type crane unit having a travel drive assembly provided with a driving member,
mounting means for mounting the crane unit on the vessel,
mechanism for powering said equipment,
a drive shaft rotatably journaled on said vessel,
said drive shaft having a driven member secured thereto for rotation therewith,
said drive shaft also being in driving engagement with the mechanism for powering the equipment, and
apparatus for enabling the travel drive assembly of said crane unit to drive the drive shaft and actuate said mechanism,
said apparatus comprising an endless drive element,
said endless drive element being in driving engagement with the driven member on the drive shaft and in driven engagement with the driving member of the travel drive assembly.

3,159,134
SLOW SPEED STEERING CONTROL FOR JET PROPELLED BOATS
Franklyn E. Winnen, Cleveland, Ohio, assignor to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Mar. 15, 1963, Ser. No. 265,520
9 Claims. (Cl. 115—12)



1. A steering control mechanism for a jet propelled boat of the type having a substantially flat, unobstructed

bottom at its stern for navigation in shallow waters, and a jet nozzle and associated steering means operative to discharge a stream of water rearwardly; said mechanism comprising a rudder on each side of said boat near its stern; first means mounting each rudder for outward swinging movement from a position substantially flush with the side of said boat; and second means for selectively swinging said rudders as aforesaid, said second means including spring and linkage means disposed within said boat permitting yieldable inward swinging movement of the respective rudders toward their flush positions upon engagement with a rigid member.

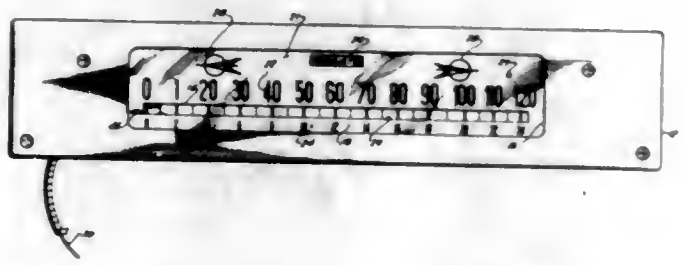


3,159,135

AUTOMOBILE SAFETY INSTRUMENT

Marshall Miles, Wilmette, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Dec. 14, 1962, Ser. No. 244,779
2 Claims. (Cl. 116—57)



1. A combined vehicle speed and safe stopping distance indicator comprising opaque means defining a substantially horizontally disposed slit, an elongated drum rotatably mounted on a substantially horizontal axis adjacent to and substantially parallel with said slit, means defining a substantially linear spiral about the circumference of said drum, means defining an at rest position of said drum, means responsive to the speed of the vehicle for angularly displacing said drum to an angular position linearly related to said speed, at which position said spiral is visible through the slit at a distance from one end of said slit linearly related to said speed, a linear calibrated scale along said split cooperative with the visible portion of said spiral to indicate said vehicle speed, a plurality of bodies defining a non-linear spiral about the circumference of said drum, one of said bodies being visible through the slit in proximity to said one end when said drum is in its at rest position, each of the other of said bodies being visible through the slit at a distance from the one end of said slit linearly related to the safe stopping distance of said vehicle at a respective indicated vehicle speed, and a second linear scale calibrated in lengths of said bodies and cooperative with said bodies to indicate the safe stopping distance in terms of vehicle length.

3,159,136

ANTENNA POSITION INDICATOR

Margaret V. Finken, 6928 Braddock Road, Springfield, Va.

Filed Feb. 4, 1963, Ser. No. 256,042
7 Claims. (Cl. 116—114)

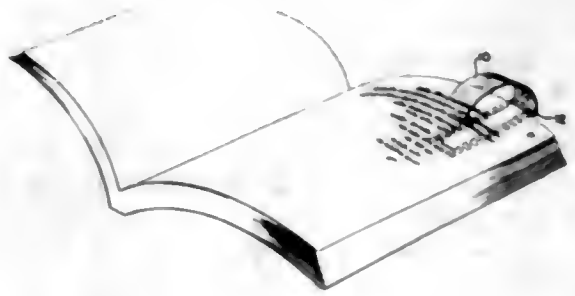
1. An antenna position indicator comprising a base, a plurality of antenna-simulating pole units mounted on said base, frequency indicia display means carried by said base for each of said antenna-simulating units, and means for adjusting and fixing the direction and angular position of each pole with respect to said base.

3,159,137

BOOKMARK

Furman S. Baldwin, 90 Euclid Ave., Kenmore 17, N.Y.

Filed Feb. 11, 1963, Ser. No. 257,496
1 Claim. (Cl. 116—119)



A bookmark device comprising an elongate clip consisting of an outside frame and a central tongue formed integrally therewith and joined with said outside frame adjacent one end of the clip, a resilient tongue portion of transparent material, said resilient tongue portion being of arcuate shape and joined with said clip at said one end thereof, said resilient tongue initially extending laterally away from said one end of the clip and being of a length and curvature to extend from said one end of the clip in arcuate overlying relation thereto to terminate at its free end in closely spaced relation to said clip adjacent the opposite end thereof, said resilient tongue being of uniform width throughout its length and of a width substantially equal to that of said clip, said resilient tongue being of substantially less thickness than said clip so as to be readily movable both sideways and away from said clip such as to provide no substantial impedence to intentional turning of a page upon which the resilient tongue may rest, to be unobtrusive to the user, while at the same time being of sufficient resiliency to permit said resilient tongue to return toward the stated closely spaced relation to said opposite end of the clip after each deflection which may be incidental to turning of a page.

3,159,138

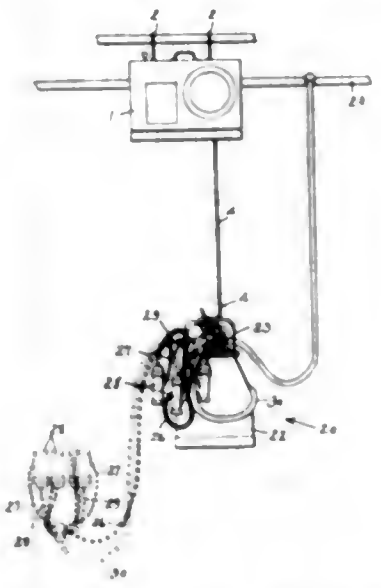
METHOD OF USING A RECORDING DEVICE WITH MECHANICAL MILKERS

Per Börje Olsson, Hallsta Gard, Hallsta, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden

Filed Mar. 10, 1961, Ser. No. 94,747
Claims priority, application Sweden Mar. 12, 1960
2 Claims. (Cl. 119—14.17)

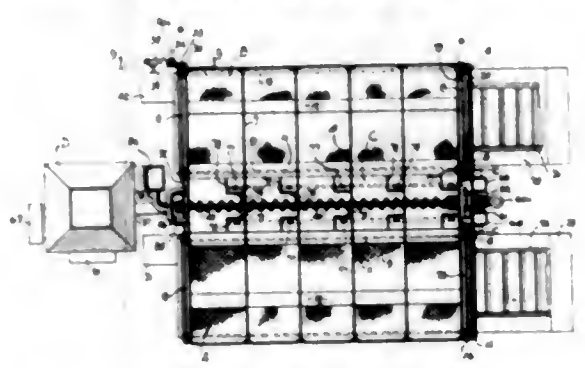
1. A method of recording on a record sheet the yield of milk from a cow to a mechanical milking unit of the

type having a milk vessel, a pulsator, teat cups and hoses connecting said cups to the pulsator and vessel, the method comprising the steps of suspending said milking unit, including the teat cups and hoses, while weighing the suspended unit together with any milk contained therein from a previous milking, to derive a total starting weight, marking on the sheet a first reference point at a first horizontal distance from a vertical reference edge of the sheet, said first point corresponding to said starting weight, removing the teat cups from said suspension and applying the cups to the cow while continuing to suspend the vessel and pulsator independently of the cow, thereby reducing the weight thus suspended independently of the cow, starting the milking unit in operation and effecting



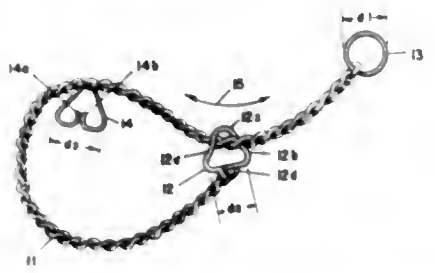
thereby a substantially complete milking of the cow into the teat cups, hoses and vessel, thereby adding milk to said reduced suspended weight, removing the teat cups from the cow and resuspending them with the vessel and pulsator while weighing the suspended unit, including the teat cups and hoses, and its contained milk and any milk in said hoses to derive a total final weight, and marking on the sheet a second reference point at a second horizontal distance from said reference edge which exceeds said first distance by an amount proportional to the difference between said total final and total starting weights, whereby the total weight of the milk yielded by the cow is represented by the horizontal distance between said first and second points.

3,159,139
LIVESTOCK APPARATUS
John M. Haggard and Paul H. McMurray, Delphi, Ind.
Filed Oct. 30, 1961, Ser. No. 167,989
(Filed under Rule 47(a) and 35 U.S.C. 116)
8 Claims. (Cl. 119—17)



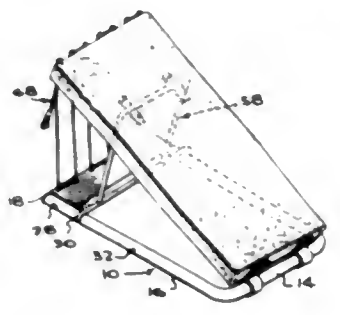
1. An animal enclosure comprising, animal confining means, conditioned air containing means disposed in proximate relation to the confining means, means defining an opening in the containing means opening into the interior of the confining means and adapted to receive the snout of an animal confined by the confining means, and animal body actuated pressure responsive means covering the opening provided by the opening defining means whereby a confined animal may force his snout into contact with and open the pressure responsive means to gain access to the conditioned air of the containing means and may thereby respire conditioned air directly from the containing means.

3,159,140
METHOD OF TRAINING DOGS AND COLLAR THEREFOR
Gene Dare Miller, 2445½ S. Corinth, Los Angeles 64, Calif.
Filed Aug. 12, 1963, Ser. No. 301,410
3 Claims. (Cl. 119—29)



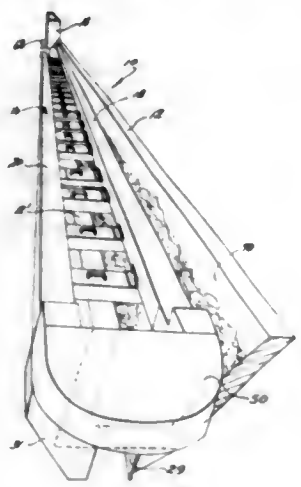
3. A method of training a dog comprising the steps of: causing a high frequency sound to be emitted simultaneously with a spoken word; subsequently speaking said word without emitting any high frequency sound; then speaking said word a third time and simultaneously emitting said high frequency sound; and repeating alternate emitting of said high frequency sound with said spoken word until said dog responds without the benefit of said high frequency sound.

3,159,141
PET EXERCISER
Concetta M. Paterek, 170 Union Ave., Somerville, N.J.
Filed Nov. 8, 1963, Ser. No. 322,329
5 Claims. (Cl. 119—29)



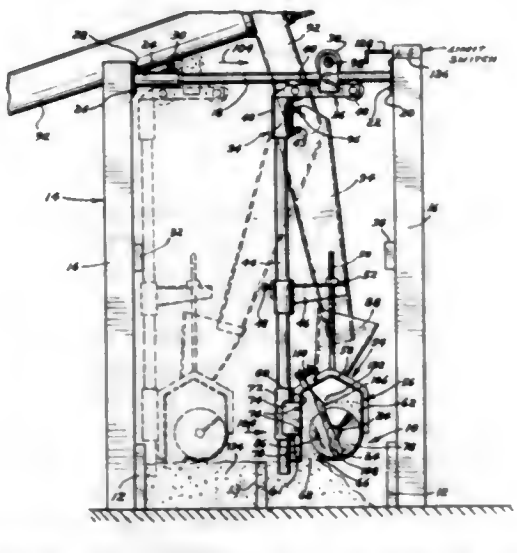
4. A pet exerciser comprising a horizontal base having laterally-spaced legs having forward and rear ends, a cross member extending between and fixed to the rear ends of the legs, a cross plate extending between and secured to the legs at their forward ends, a flat ramp overlying the base and having forward and rear ends, means connecting the rear end of said ramp to the base cross member for movement of said ramp from the overlying position to an upwardly-sloping direction position with respect to said base, a prop having one end pivotally connected to the underside of the ramp intermediate the ends thereof, the other end of said prop being provided with means adapted to engage the base legs, and spaced pairs of pins on the base legs and adapted to be engaged by the engaging means on the other end of said prop at different times.

3,159,142
ANIMAL FEEDER SYSTEM
Edward F. Bares, Grand Haven, Mich., and Richard A. Haggard, Nacogdoches, Tex., assignors to Automatic Poultry Feeder Company, Zeeland, Mich., a corporation of Michigan
Filed Apr. 22, 1963, Ser. No. 274,484
7 Claims. (Cl. 119—52)



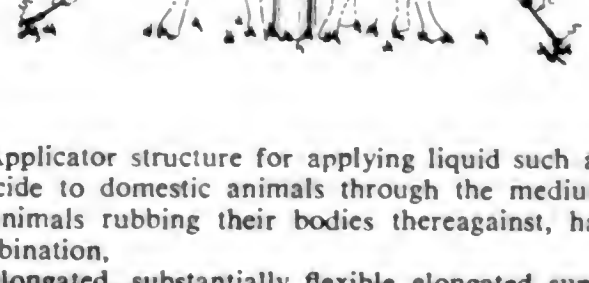
1. An automatic cattle feeding apparatus comprising: an elongated manger; an elongated conveyor trough means having a delivery trough adjacent and generally above one edge of said manger, having a U-shaped return and a return trough adjacent and parallel to said delivery trough; a plurality of spaced transverse beam supports underlying and supporting both said delivery trough and said return trough; a plurality of pairs of spaced bracket legs, each pair spaced on a respective beam support and projecting downwardly and straddling said edge of said manger and mounted to said beam supports under said conveyor trough means to support said conveyor trough means on said manger while allowing cattle to feed from said manger; an endless conveyor in said trough means to deliver feed therethrough; a feed hopper operably associated with said trough means and conveyor; and feed outlet orifice means along said delivery trough above said manger to allow feed delivery to said manger along the length thereof.

3,159,143
PROGRESSIVE ROW TROUGH FEEDER
Walter W. Wolfe and Haldor J. Hofteig, Mound, Minn., assignors to Van Dusen & Co., Inc., Wayzata, Minn., a corporation of Minnesota
Filed July 1, 1963, Ser. No. 291,974
5 Claims. (Cl. 119—52)



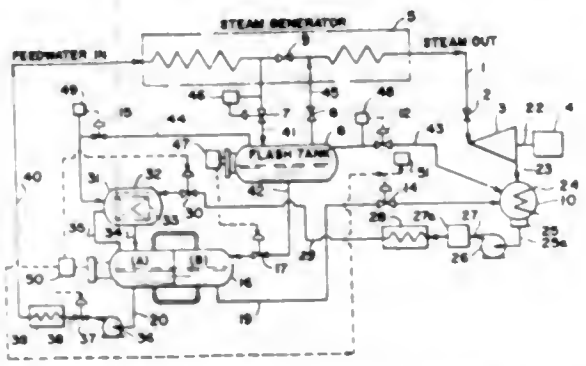
5. Apparatus for delivering and distributing feed to a trough comprising:
(*a*) conveyor means extending longitudinally of the trough and adapted to discharge feed substantially throughout its entire length;
(*b*) means for introducing feed to said conveyor means at one end thereof,
(*c*) said conveyor means including a casing having a downwardly directed longitudinal slot and an auger screw mounted for rotation within said casing for advancing feed therealong so as to be progressively discharged through said slot into said trough to form a first row of feed;
(*d*) electric motor means for moving said conveyor means laterally, and
(*e*) means at the other end of said conveyor means for initiating lateral movement of said conveyor means when a sufficient amount of feed has been conveyed to said other end,
(*f*) said means for initiating lateral movement including a blade member pressurally acted upon by feed in said conveyor reaching said other end and a normally open switch in circuit with said electric motor means actuatable into closed position to start said electric motor means when feed pressurally acts on said blade member and to stop said electric motor means when the pressure against said blade member has decreased sufficiently whereby said conveyor means is caused to move laterally from a first position to a second position spaced from said first position.

3,159,144
INSECTICIDE APPLICATOR STRUCTURE
Ronald S. Duncan, 323 W. Sorenson, and Benjamin W. Arnold, 149 E. Schlieman, both of Appleton, Minn.
Filed Apr. 2, 1963, Ser. No. 270,050
4 Claims. (Cl. 119—157)



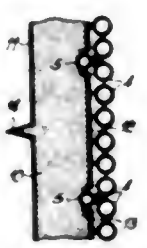
1. Applicator structure for applying liquid such as an insecticide to domestic animals through the medium of such animals rubbing their bodies thereagainst, having in combination,
an elongated, substantially flexible elongated supporting element anchored at the ends thereof and disposed in at least a somewhat inclined relation with respect to the ground and effective to cause liquid to trickle downwardly thereon from a source,
a multiplicity of somewhat flexible and elastic disc elements having irregular peripheral edges and centrally apertured and axially and snugly disposed upon said supporting element in end to end relation and rotatable upon said element, said disc elements being constructed for the most part of rubber-like material and having limited porosity and slightly roughened face surfaces,
said disc elements cooperating with said elongated supporting element to disperse liquid from said supporting element outwardly and radially and to shift planar positions relative to each other and to said supporting element when rubbed against by the rounded contour of the body of a domestic animal, and serving to stop or dam the downward flow of liquid on said supporting element upon cessation of said rubbing action.

3,159,145
STEAM GENERATOR BY-PASS SYSTEMS FOR A STEAM-ELECTRIC GENERATING PLANT
Charles Strohmeyer, Jr., Wyomissing, Pa., assignor to Gilbert Associates, Inc., Reading, Pa.
Filed Feb. 26, 1963, Ser. No. 261,178
3 Claims. (Cl. 122—1)



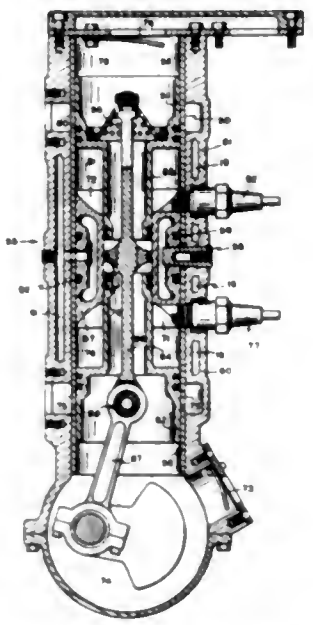
1. A startup bypass fluid flow control system for a steam generator having fluid heat absorption conduits, a flash tank, a flow controlled fluid bypass conduit from an intermediate point between said heat absorption conduits and discharging to said flash tank, the invention comprising a two compartmented lower pressure vessel system, each compartment having a vapor and water side, conduit means for equalizing the vapor and water sides of both compartments by gravity for maintaining a common vapor pressure and water level, means therein connected to one of said compartments and adapted to conduct drains from said flash tank to said one compartment, a heat sump, means for flowing water from said one compartment to said heat sump, means for returning water from said heat sump to the other compartment to maintain a set level in said lower pressure vessel system, a steam generator regenerative feedwater cycle, and a flow conduit discharging water from the said other compartment to the regenerative feedwater cycle.

3,159,146
WATER-COOLED SUSPENSION OF STEAM PRODUCERS
Franz Rudolph, Gummersbach, Rhineland, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Rhineland, Germany
Filed Aug. 11, 1961, Ser. No. 130,823
Claims priority, application Germany, Aug. 19, 1960, St 16,825
2 Claims. (Cl. 122—510)



1. In a boiler assembly, a steam producing boiler including vertical walls enclosing a fire box, steam producing pipes substantially lining the vertical walls of said fire box, stationary supporting means above said boiler, a plurality of suspension tubes suspended from said supporting means and extending vertically between said walls and said steam producing pipes and having supporting means to support said walls and pipes on said suspension tubes, said vertical walls having recesses in their inner surfaces receiving said suspension tubes so that said pipes and said walls substantially shield said suspension tubes from heat radiation within the fire box, and connection means providing passage of fluid through said suspension tubes so that said tubes may be maintained at a temperature substantially below that of said steam producing pipes and said pipes are exposed to higher temperatures of said fire box radiation to raise fluid therein to steam producing temperature.

3,159,147
TWO STROKE CYCLE INTERNAL COMBUSTION ENGINES
Arthur E. Brown, Nahant, Mass. (118 W. 6th St., Corning, N.Y.)
Filed July 13, 1962, Ser. No. 209,619
18 Claims. (Cl. 123—41.76)



1. In a double acting two stroke cycle internal combustion engine, the combination of a crankcase, a crankshaft rotatably mounted in said crankcase, a front cylinder mounted on said crankcase, a front piston reciprocable in said front cylinder, a connecting rod for converting the reciprocating motion of said front piston to the rotary motion of said crankshaft, a back cylinder mounted behind said front cylinder, a back piston reciprocable in said back cylinder, a cylinder head located between said front cylinder and said back cylinder, said cylinder head having a cylindrical bore smaller in diameter than either of said cylinders, a reciprocable rod passing through said bore in the cylinder head, said reciprocable rod being fastened to each of said pistons so as to reciprocate with the pistons, both of said pistons having a tubular section extending into said cylindrical bore in the cylinder head and adapted to reciprocate therein, each tubular section being fitted with at least one expanding type seal ring, said tubular sections ending within said cylindrical bore, said tubular sections serving to conduct air, said reciprocable rod serving to transmit the force of combustion from said back piston to said connecting rod, a disk attached to said reciprocable rod and located between the ends of said tubular sections, said disk conforming at its outer diameter to said cylindrical bore in the cylinder head so as to form a sliding seal, and the purpose of said disk being to prevent loss of air pressure from theinterior of each tubular section into the other as each piston alternately pumps air for scavenging.

3,159,148
CYLINDER HEAD
Friedrich K. H. Nallinger, Stuttgart, Ludwig Kraus, Stuttgart-Sillenbuch, and Helmut Dobler, Stuttgart-Mohringen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 27, 1962, Ser. No. 240,285
6 Claims. (Cl. 123—41.82)

1. A cylinder head for a multi-cylinder multi-cycle inline combustion engine operating at a compression ratio

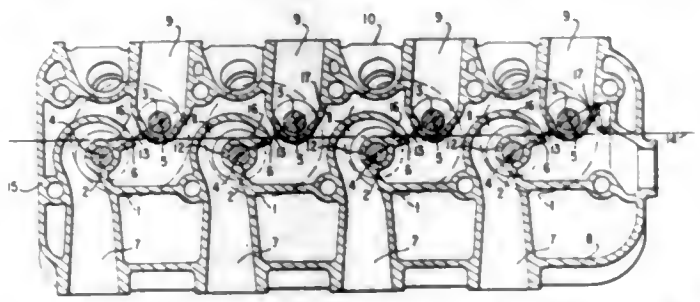
of about 1:8 to 1:14 and provided with water cooling and externally applied ignition, comprising:

inlet and outlet channel means for each cylinder means,

inlet and outlet valve means having valve guide means for controlling respective inlet and outlet channel means and suspended substantially parallelly to the cylinder longitudinal axis,

the inlet channel means leading in the direction toward one longitudinal side of the cylinder head and the outlet channel means leading in the direction toward the other longitudinal side of the cylinder head,

the inlet channel means for each cylinder means being constructed substantially spirally-shaped about



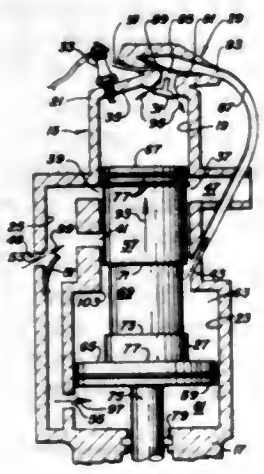
the respective valve guide means in proximity to the corresponding inlet valve means, and the inlet and outlet valve means for each cylinder means being arranged offset in such a manner that a plane containing the longitudinal axes of both valve means and the longitudinal axis of the cylinder means is disposed at an angle to the plane containing the longitudinal axes of all cylinder means,

and the inlet channel means extending in proximity to the corresponding inlet valve means approximately tangentially to the respective valve guide means in such a manner that the spirally-shaped portions of the inlet channel means of adjacent ones of said cylinders spiral in opposite directions.

3,159,149
AIR SUPPLY AND CONTROL SYSTEM FOR FREE-PISTON ENGINE

Robert W. King, Robert K. Mitchell, and William W. Vogelhuber, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Aug. 16, 1962, Ser. No. 217,455
7 Claims. (Cl. 123—46)



1. In a free-piston internal-combustion engine:

(*a*) a frame;

(*b*) an air chamber on said frame communicating with the power cylinder of said engine;

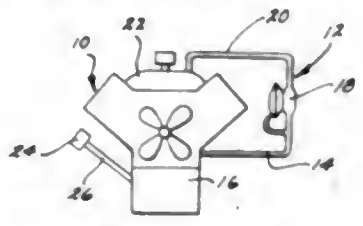
(*c*) a fuel injector communicating with the power cylinder of said engine; and

(*d*) unitary means, connected to said air chamber and fuel injector and actuated by piston reciprocation, providing, in combination, air at superatmospheric pressure for controlling length of piston stroke, for actuating said fuel injector and for said air chamber.

3,159,150
CRANKCASE BLOW-BY EXHAUSTER

John W. Humphreys, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan

Filed May 10, 1962, Ser. No. 193,797
6 Claims. (Cl. 123—119)

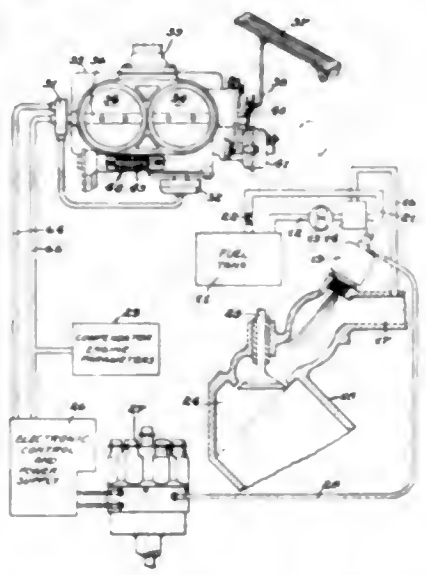


1. An engine assembly comprising: an internal combustion engine including a sealed crankcase and an intake manifold means; conduit means extending between said crankcase and manifold means; flow regulator means for said conduit means including a flow valve in said conduit means and a pressure responsive member having one side exposed to crankcase pressure and the other side exposed to atmospheric pressure; said pressure responsive member being adapted to shift said valve generally in proportion to crankcase pressure; and said valve including a small, vacuum-assist, opening action by having a slightly greater area responsive to the pressure differential between the crankcase and the intake manifold tending to open said valve than the area responsive to said differential tending to close said valve.

3,159,151
FUEL SUPPLY SYSTEM

Stephen G. Woodward, Horseheads, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware

Filed Aug. 24, 1962, Ser. No. 219,205
6 Claims. (Cl. 123—119)



1. A fuel supply system for an internal combustion engine having an induction passage, comprising:

a source of fuel;

a nozzle including an energizable valve member adapted to discharge fuel into the induction passage of the engine;

common rail fuel conduit means including fuel pressurizing means for connecting the fuel source to the nozzle;

a control device adapted to energize the nozzle valve member for actuating the nozzle valve;

means operatively connected to the control device for periodically activating the control device to provide a pulsating flow of fuel to the engine;

a closed chamber;

a sealed elastic capsule mounted in said chamber with freedom for expansion and contraction responsive to changes of gaseous pressure within the chamber;

a conduit passage connecting said chamber to said induction passage of the engine; and

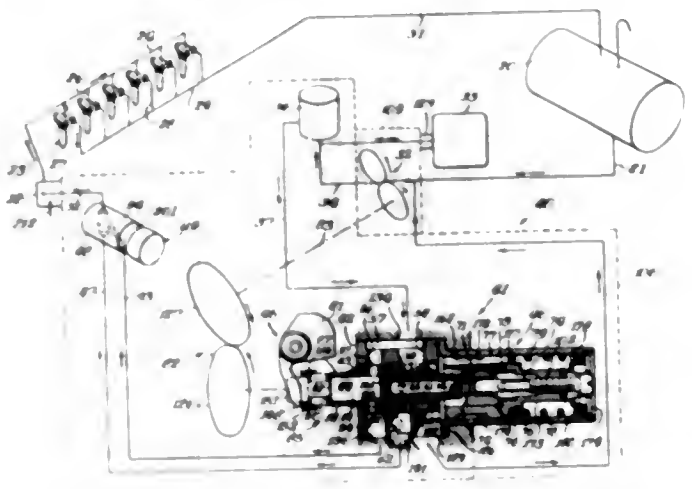
means responsive to expansion and contraction of said capsule for causing the duration of the pulses of fuel flow to vary in accordance with variations of gaseous pressure in said chamber.

3,159,152

FUEL SUPPLY APPARATUS FOR AN INTERNAL COMBUSTION ENGINE

Neville M. Reiners, Columbus, Ind., assignor to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana

Filed Nov. 29, 1960, Ser. No. 72,440
29 Claims. (Cl. 123—140)



1. A fuel supply apparatus for a multi-cylinder internal combustion engine, comprising a source of fuel under pressure, delivery means for supplying fuel to the respective cylinders of the engine, conduit means connecting said source and said delivery means for supplying fuel to the latter, means for discharging fuel from said conduit means upstream of said delivery means including a body and a plunger mounted therein and having an axial duct open at one end and communicating with said conduit means at its other end, and a device responsive to engine speed for controlling said fuel discharging means, said device including a movable closure coacting with the open end of said plunger to control the flow through said duct and the pressure of the fuel in said conduit at said delivery means throughout the operating range of the engine.

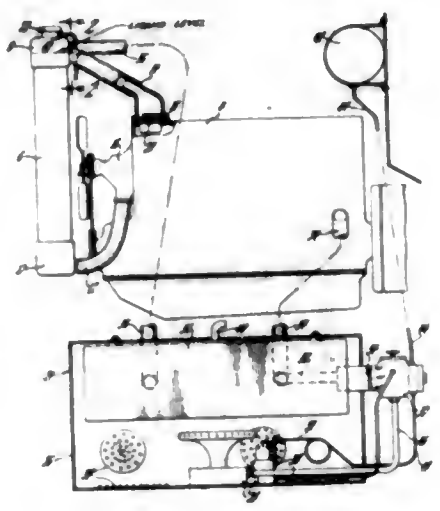
3,159,153

HEATER SYSTEM FOR LIQUID COOLED INTERNAL COMBUSTION ENGINES

Ralph E. Thomas, 44 Hickory, Troy, Mich.

Filed Jan. 23, 1963, Ser. No. 253,382
12 Claims. (Cl. 123—142.5)

1. A liquid coolant heater for an internal combustion engine having a liquid coolant circulation system comprising a coolant heating chamber having two conduits communicating with the engine coolant circulation system to allow circulation of the coolant through the heating chamber, heating means for the coolant in said chamber, and control means for actuating said heating means when the coolant temperature drops below a predetermined temperature, one of said conduits from the heating chamber communicating with the engine coolant system below the upper level of the coolant in said system for flow of coolant therethrough and the other said conduits communicating with the engine coolant system at a level



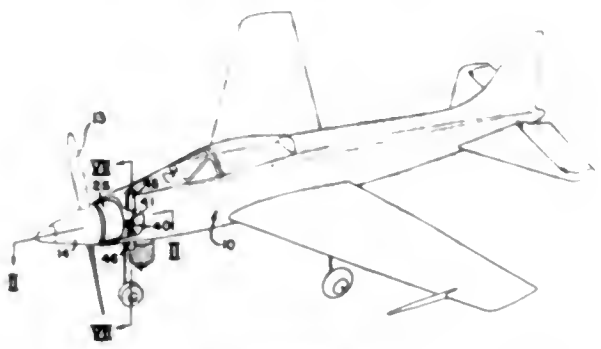
which is above that of the coolant in said system when the engine is inoperative and the coolant is below said predetermined temperature for flow of coolant therethrough.

3,159,154

SPRING STARTING DEVICES FOR MINIATURE ENGINES AND THE LIKE

Vito M. Garofalo, Chicago, Ill., assignor to Louis Cohen, Chicago, Ill.

Filed Mar. 20, 1961, Ser. No. 96,825
16 Claims. (Cl. 123—179)

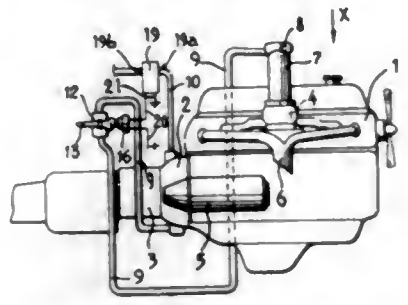


1. A starting device of the character mentioned comprising in combination with a motor and casing, of a rotatable member operatively connected for reversible rotation within said motor casing, spring means disposed between said rotatable member and said motor casing for selective operative connection between said motor casing and said rotatable member, unidirectional means operatively interposed between said motor casing and said rotatable member for connecting and disconnecting said spring means relative to said motor casing and said rotatable member depending upon the latter's direction of rotation, said spring means being disposed concentrically of the axis of said rotatable member for operative and inoperative shifting axially thereof responsive to the direction of rotation of said rotatable member, and externally accessible means for connecting and disconnecting said motor casing and said rotatable member to respectively enable the manual loading and unloading of said spring means to start motor operation, whereby said spring means becomes inactive and said rotatable member revolves independently thereof.

3,159,155
SEAL FOR THE FRICTION CLUTCH AND STARTER CASINGS FOR AMPHIBIOUS VEHICLES

Secondo Pogliano, Turin, Italy, assignor to
Fiat Societa per Azioni, Turin, Italy

Filed Feb. 11, 1963, Ser. No. 257,462
Claims priority, application Italy, Feb. 16, 1962, 3,471/62
3 Claims. (Cl. 123—198)

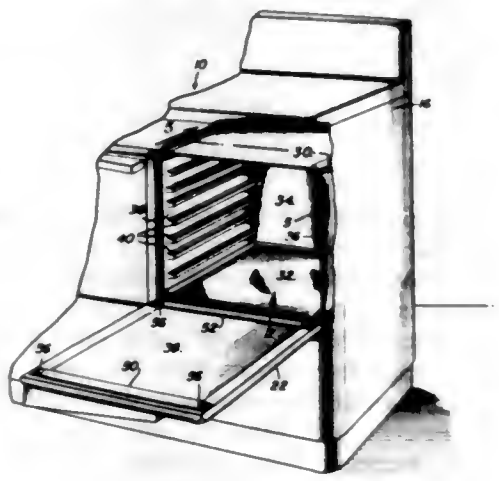


1. Device for amphibious motor vehicles propelled by an engine having an induction manifold, a friction clutch casing and a starter casing for preventing water access to the friction clutch and starter casings during driving in water comprising a piping interconnecting the inside of the suction manifold of the engine with the inside of the friction clutch casing, a valve interposed in said piping, the valve member of which has two extreme positions for opening and closing the valve, respectively, a control member for the valve for moving manually the valve member of the valve to either extreme position, an electrically driven compressor having the delivery opening connected with the inside of the friction clutch casing, and having the suction opening connected with the outside atmosphere, and an electric switch in the supply circuit for the compressor, governed by the control member of the valve, to close the compressor circuit simultaneously with the closure of the valve. and to open said circuit simultaneously with the opening of said valve.

3,159,156
DISPOSABLE OVEN LINER

Arthur E. Incledon, 5651 Cape Leyte Drive,
Siesta Key, Sarasota, Fla.

Filed Dec. 28, 1961, Ser. No. 162,653
1 Claim. (Cl. 126—19)



In combination, a disposable liner and an oven, said oven including top, bottom, side, back and door elements whose combined inner surfaces form the entire oven interior surface, said side elements having inwardly projecting tray supports for slidably supporting oven trays, said liner comprising a plurality of individual self-supporting sheets of fireproof material, there being one sheet for each oven element, each sheet being of a size and shape conforming to the inner surface of one of said elements and substantially covering the latter, the sheets associated with said side walls having deformed portions complementary to the inwardly projecting tray supports for the snug embracing thereof, the edges of the sheets conforming to the top, bottom, side and back elements being of a readily deformable and non-resilient material, adjacent ones of said edges being deformable into sealed interlocking engagement with each other whereby the top, bottom, side and back sheets are secured together into a unitary self-sustaining liner covering the entire top, bottom, side and back surfaces of the oven, the sheet associated with the door element including reinforcing strips of non-deformable material each embracing and rigidifying one of a pair of opposite edges, said reinforcing strips having openings therethrough and releasable fastening means extending through said openings and into said door element.

3,159,157
COMBINATION FIREPLACE AND FLUID FUEL HEATER DEVICE

Merlyn W. Ponto, 3650 Newton Ave. N.,
Minneapolis 12, Minn.

Filed June 11, 1963, Ser. No. 287,082
5 Claims. (Cl. 126—121)



1. A prefabricated combination fireplace and heater device readily installable as a unit into a building structure such as a house, said device comprising

a housing of generally rectangular configuration including front, rear top, bottom and side wall portions, said device when installed in a building having the front wall portion thereof positioned interiorly of the building and having the rear wall portion thereof disposed exteriorly of the building,

said front wall portion having a centrally located recess therein and defining with said rear, bottom, top and side wall portions a forwardly opening open hearth combustion chamber in which solid fuel, such as wood and the like, may be burned,

means defining a fluid fuel heater combustion chamber positioned below and sealed from said open hearth combustion chamber,

a fluid fuel heater mechanism positioned within said heater combustion chamber and being connected to a source of fluid fuel under pressure,

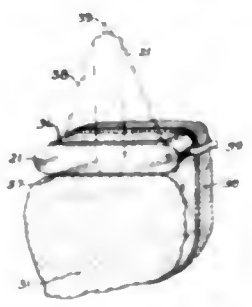
combustion air passage means connected in communicating relation with said heater combustion chamber for supplying combustion air thereto,

means defining warm air delivery passages positioned in juxtaposed relation to but sealed from said combustion chambers whereby air in said warm air delivery passages may be selectively heated by the combustion fuel in said chambers,

a pair of flue gas exhaust conduits, one disposed interiorly of and sealed from the other and each being connected in communicating relation with one of said combustion chambers to permit the exhausting of flue gases therefrom.

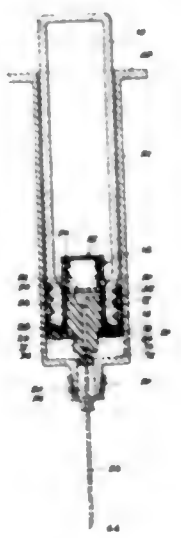
and a hollow flow-control structure defining a chamber therewithin and being interposed immediate the ends of and in communicating relation with the exhaust conduit for the heater combustion chamber, said structure having an air inlet interconnecting the chamber defined by said structure with the exterior to permit air to flow into said chamber-defining structure and to thereby retard the flow of flue gases from said heater chamber whereby to permit greater degree of combustion of the fluid fuel in said heater combustion chamber.

3,159,158
BODY TEMPERATURE TEMPERING DEVICE
David S. Baker, 475 5th Ave., New York, N.Y.
Filed June 20, 1958, Ser. No. 743,233
7 Claims. (Cl. 126—208)



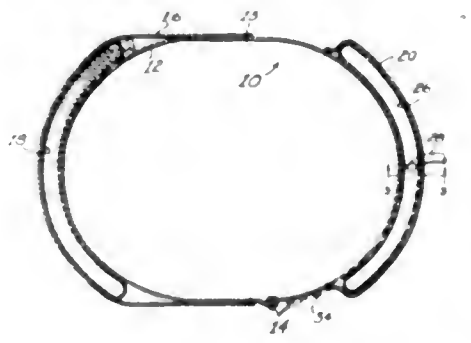
1. A warmer adapted to cooperate with the human body comprising a casing having a burner therewithin and means for supplying fuel and air to said burner, said casing having a plurality of surfaces adapted to be disposed in juxtaposed relation to a part of the human body to be warmed, means for selectively holding each of said surfaces in juxtaposition with the part of the human body to be warmed, and means for varying the conductivity of heat from said casing to said part of the human body according to selection of which of said surfaces is in juxtaposition with respect to said part of the human body.

3,159,159
FLUID WITHDRAWAL DEVICE AND CONTAINER
Milton J. Cohen, 7325 16th St. NW., Washington 12, D.C.
Filed Feb. 2, 1962, Ser. No. 170,748
12 Claims. (Cl. 128—2)



1. A device of the type described comprising the combination of an elongate holder open at the opposite ends, an elongate container closed at one end and open at the other end and dimensioned slidably to be received within said holder and having a length approximately corresponding to the length of said container, a valve in communication with the open end of the container for maintaining a sealed relationship in the interior thereof and means within said valve for opening and closing the valve responsive to endwise displacement of the container relative to the holder said means comprising a cup-shaped member having ports in the side walls spaced inwardly from the other end thereof, a piston received in sealing relationship within said cup-shaped member and slidable endwise therein between a sealed position and an inner open position, stop means on the other end of the holder in position to be engaged by said piston when the container is displaced towards the other end relative to the holder whereby the piston is displaced in the opposite direction from normal to open position responsive to said endwise movement of the container relative to the holder, communicating passages in said piston including one passage which extends lengthwise from the other end portion thereof to a portion short of the opposite end thereof and a crosswise passage communicating with said lengthwise passage and which extends laterally in endwise alignment with the ports but offset towards the other end thereof when the piston is in normal position and in crosswise alignment for communication therewith when the piston is in operated position for communicating the interior of the container with the opening through the piston, means for stopping the piston within said cup-shaped member when in normal position, resilient means comprising feet formed integrally with said piston and engaging the end of said cup-shaped member for constantly urging said piston towards normal position.

3,159,160
THERAPEUTIC APPLIANCE FOR HEADACHE
Robert R. Ullom, Norfolk, Va.
(4604 Bunker Hill Lane, Virginia Beach, Va.)
Filed Oct. 29, 1962, Ser. No. 233,536
4 Claims. (Cl. 128—97)



1. A therapeutic appliance for relieving body member discomforts comprising,

an elongated strip of substantially inelastic material provided with means for adjustably and detachably securing the ends of the strip to form a loop for loosely encircling the body member,

a second strip of like material loosely overlying a minor external portion of said loop and secured thereto at its ends and partially along the lower edge thereof to define a pocket,

means removably disposed within said pocket for exerting outward pressure on said second strip to thereby uniformly tension the portion of said elongated strip when encircled about said body member, and for exerting inward pressure on the portion of said elongated strip underlying said second strip to thereby constrict and press said loop about said body member,

and a third strip of material overlying a separate external portion of said loop and secured thereto to define an elongated pocket for receiving a thermal applicator therein, whereby thermal treatment may be applied to said body member simultaneously with constriction of said loop thereabout.

3,159,161
FISTULIZING CANALICULUS

Richard Alton Ness, Rte. 1, Fergus Falls, Minn.

Filed Nov. 14, 1962, Ser. No. 237,513
7 Claims. (Cl. 128—350)



1. A canaliculus for insertion beneath the conjunctiva of a human eye comprising an elongated tube having longitudinal and transverse curvatures substantially the same as the curvature of the portion of a human eye below the iris thereof and being thin relative to longitudinal and transverse dimensions thereof, a hollow projection on one end of said tube having the interior thereof connected in communication with the interior of said tube, said projection being adapted for insertion into a hole bored in a human eye with the tube lying against the eye and having the other end of the tube disposed so as to drain into the retro-bulbar space fluid received in said projection interior.

3,159,162
HAIR CURLER

Jack Sloane, 90—02 Atlantic Ave., Ozone Park, N.Y.

Filed Sept. 26, 1960, Ser. No. 58,389
5 Claims. (Cl. 132—40)

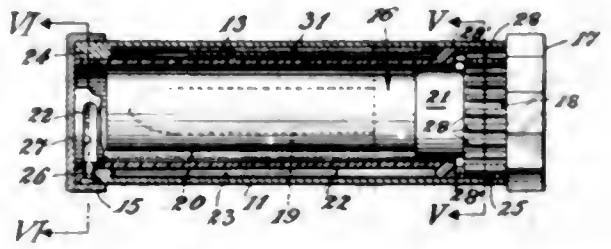


1. A hair curler device comprising an outer stiff cylindrical shell composed of separate inside and outside layers of spirally wound spaced thermoplastic rods, said rods in each layer being closely spaced and parallel to each other and the rods of the outside layer being obliquely disposed with respect to the rods of the inside layer and the rods in each layer being integrally joined at their crossing contact points, a central axially extending centrally positioned elongated support and a plurality of radial bristles held by said centrally positioned elongated support having their outer ends extending through and wedged between the obliquely crossed inside and outside rods.

3,159,163
COSMETIC APPLICATOR WITH MIRROR

Paul Curti, Sankt Gallen, Switzerland, assignor to Louvre S.A., Sankt Gallen, Switzerland

Filed Apr. 7, 1960, Ser. No. 20,771
Claims priority, application Switzerland, July 13, 1959, 75,690
14 Claims. (Cl. 132—79)

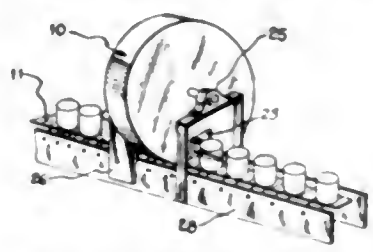


1. A cosmetic applicator comprising, in combination, a tubular outer casing having an open end and an elongated axially parallel slot; an elongated cosmetic applicator arranged in said tubular outer casing spaced from the inner face thereof so as to form an annular space between itself and the inner face of said tubular outer casing; a supporting member rotatably mounted in the outer casing within said annular space between said cosmetic applicator and the inner face of said tubular outer casing; an elastic plate mirror; connecting means for securing one end of said elastic plate mirror to said supporting member, a portion of said elastic plate mirror being movable through said slot with respect to the outer casing upon turning of said supporting member; and gripping means in the open end of said outer casing for engaging with the supporting member to rotate the same and wind said elastic plate mirror at least partly thereon, whereby the mirror is retractable into and may be expelled from the outer casing.

3,159,164
CONTAINER CLEANING DEVICE

Joseph K. McBrady, 10537 S. Campbell, Chicago 55, Ill.

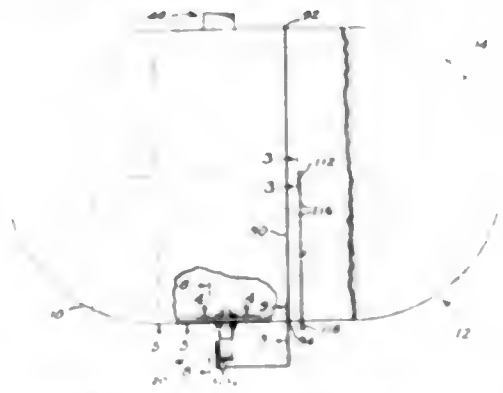
Filed Jan. 2, 1963, Ser. No. 248,971
7 Claims. (Cl. 134—69)



1. An improved apparatus for cleaning containers, said apparatus comprising: a drum having front, back and peripheral walls and a central axis, the front and back walls of said drum having oppositely disposed openings for the entrance and exit, respectively, of upright containers in a direction parallel to said axis; a plurality of rotary carrier means positioned in successive zones within said drum to carry containers around said drum; an internal wall between each adjacent pair of said carrier means within said drum, said internal wall being parallel to said front and back walls of said drum and containing a transfer opening through which containers are moved between said pair of carrier means; fluid jet means extending through said front wall into said drum, said fluid jet means being directed outwardly toward the peripheral wall of said drum adjacent the first carrier means to inject fluid into said containers; a container shaking means positioned with said drum adjacent said first carrier means to shake the container thereon from side to side while exposed to said jet means; fluid exhaust means positioned below said fluid jet means to catch and remove fluid and debris from said containers; transfer means adjacent said transfer opening to move containers there-

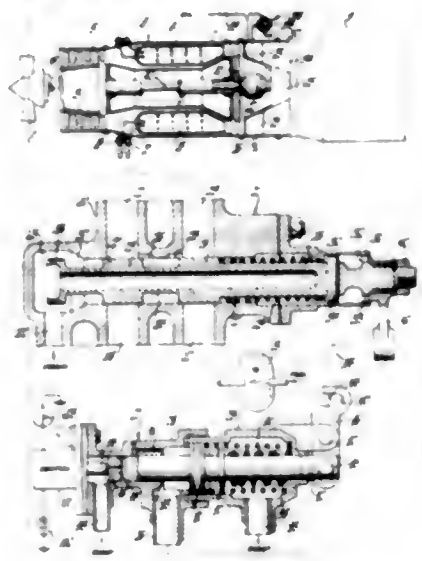
through; and discharge means positioned adjacent the exit opening to discharge containers therethrough from the last of said carrier means.

3,159,165
AIR-SUPPORTED STRUCTURE
Kenneth Paul Cohen and Charles A. R. Corbett, Portland, Oreg., assignors to Plastimayd Corporation, Portland, Oreg., a corporation of Oregon
Filed Apr. 21, 1961, Ser. No. 104,720
4 Claims. (Cl. 135—1)



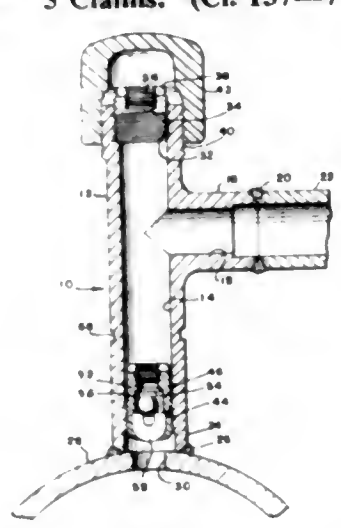
1. An air-supported structure comprising an expansive flexible sheet forming the sides and roof of an enclosure, an elongated girth band extending over the top and down the sides of the enclosure, intermittently operated blower means for inflating the enclosure, means operatively connecting the girth band and blower means whereby the operating periods of the blower means are regulated by said girth band, a power-operated signaling device, slope-responsive means mounted on a portion of said enclosure sensitive to a change in the slope therein, and means connecting said slope-receiving means and power-operated signaling device whereby upon a change in the slope of said portion of said enclosure occurring said signaling device is actuated.

3,159,166
ENGINE SAFETY CONTROL
Clarence F. Luedemann and Charles H. Smale, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1961, Ser. No. 145,268
8 Claims. (Cl. 137—31)



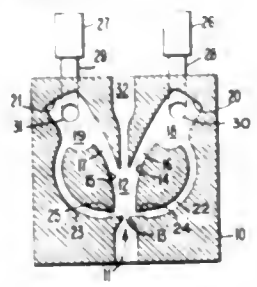
1. A safety control system for an engine having a part displaced in response to a malfunction of the engine, the safety control comprising a pump actuated by said part having a chamber contracted by said displacement, a source of liquid under pressure, a first orifice connecting the source to the pump chamber, a hydraulic motor supplied from the pump including resilient biasing means, a second orifice opened by movement of the said motor against said biasing means providing an outlet orifice from the motor so that normal supply of liquid from the source to the pump operates the motor to a first extent to open the motor orifice and provide circulation of oil through the pump and motor and increased liquid flow due to actuation of the pump operates the motor to a greater extent; and engine shutdown means made effective by operation of the motor to the said greater extent.

3,159,167
SERVICE T INSTALLATION INCLUDING EXCESSIVE-FLOW SAFETY VALVE
Frank H. Mueller, Wilbur R. Leopold, Jr., and Lawrence F. Luckenbill, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Nov. 15, 1961, Ser. No. 152,508
5 Claims. (Cl. 137—71)



1. A service T comprising: a T body having a through bore and a lateral outlet, one end of said bore constituting an inlet; a tubular valve housing carried by said bore between said inlet and said lateral outlet and defining a valve seat facing said inlet; a valve element carried by said bore seatable on said seat to shut off flow between said inlet and said outlet; yieldable means in said housing inwardly of said seat normally retaining said element unseated and responsive to excessive flow past said element to release the latter for movement by the flow of fluid into seating engagement with said seat; and means defining a circumferentially weakened portion in said body between said seat and said outlet, whereby a fracturing blow to said T will fracture the same at said weakened portion and the resulting excessive flow will effect the seating of said valve element to shut off flow from said inlet to any location beyond said seat.

3,159,168
PNEUMATIC CLOCK
Trevor D. Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,694
15 Claims. (Cl. 137—81.5)



1. In a pure fluid device of the type wherein a fluid power jet stream under pressure maintains its flow in an

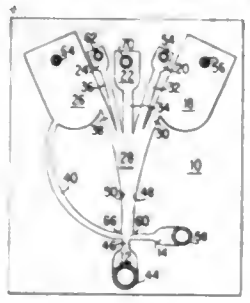
output channel to which it is diverted, the combination comprising:

(*a*) first means for selectively maintaining the quiescent pressure in said output channel, which exists during the absence of said power stream therein, within a range of values below a certain threshold;

(*b*) second means temporarily acting to divert said power stream into said output channel where it thereafter remains to increase the pressure therein up to said threshold value within a finite time depending upon the values of said channel quiescent pressure and said power stream pressure; and

(*c*) third means responsive to said threshold value of pressure is said output channel for diverting said power stream away from entering said output channel so that the pressure therein subsequently returns to its quiescent value.

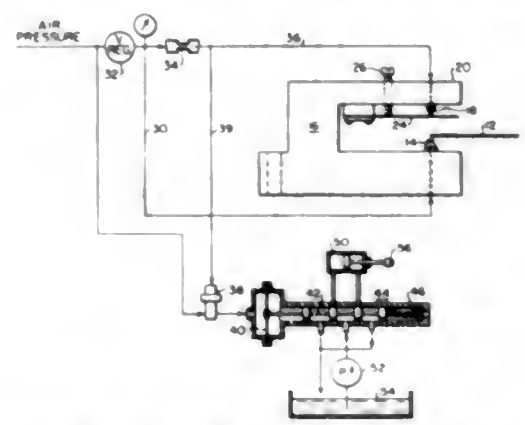
3,159,169
PULSE GENERATOR
Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,044
19 Claims. (Cl. 137—81.5)



1. A monostable pulse generator comprising a substantially solid body, said body having formed therein a plurality of channels and chambers including an interaction chamber, a power stream input channel terminating at an orifice in said interaction chamber, a first output channel connected to said interaction chamber for normally receiving a power stream emerging from said power stream orifice, input terminal means for receiving external control signals, a control signal input channel connected at one end to said input terminal means and terminating at the other end at an orifice in said interaction chamber, said orifices being positioned such that fluid flow through said control signal orifice deflects a power stream away from said first output channel, a second output channel for receiving a power stream deflected by fluid flow through said control signal orifice, a control chamber connected to said second output channel, and a feedback channel connected to said control chamber and terminating at an orifice opposite said control signal orifice whereby a predetermined fluid flow through said feedback orifice deflects said power stream back to its normal path of flow, and means for selectively adding or removing fluid from said control chamber to thereby control the length of time a power stream flows into said second output channel.

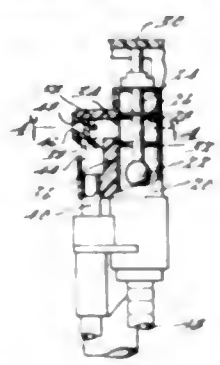
3,159,170
WEB EDGE CONTROL DEVICE
John G. Callan, Sharon, Mass., assignor to Applied Engineering Corporation, East Walpole, Mass., a corporation of Massachusetts
Filed July 6, 1961, Ser. No. 122,225
6 Claims. (Cl. 137—82)

1. A pneumatic edge-sensing device for detecting the position of the margin of a web or sheet, comprising a jet nozzle having a discharge passage disposed in a direction generally perpendicular to the plane of the web in the vicinity of the margin thereof, a sensor nozzle disposed in spaced opposed relation to the jet nozzle, a resilient flapper disposed between the nozzles in close proximity to the sensor nozzle and responsive to the impinge-



ment of the air discharge from the jet nozzle as affected by the position of the margin of the web material to vary the clearance between flapper and sensor nozzle, the jet nozzle having a pair of spaced discharge passages.

3,159,171
VACUUM BREAKER
Ira A. Bullock, 211 Spring St., Yale, Mich.
Filed Nov. 10, 1960, Ser. No. 68,420
1 Claim. (Cl. 137—218)

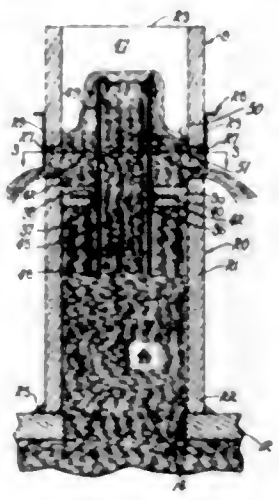


A vacuum breaker for preventing reverse siphoning in a fluid supply conduit having a submerged discharge opening, comprising: conduit means forming part of a supply conduit having a discharge opening disposed below the normal fluid level in the reservoir supplied thereby, said conduit means being disposed above said normal fluid level; means defining a vent opening in the side wall of said conduit means, said conduit being of substantially circular cross section immediately below said vent opening; and baffle means consisting of a single flat baffle secured to said conduit means, said baffle extending inwardly from immediately upstream of said vent opening more than halfway across said conduit means and being inclined with respect to the axis of said conduit means in the direction of fluid flow therethrough, the free edge of said baffle being provided with a centrally disposed groove in the upper edge thereof and terminating at a point upstream of the downstream edge of said vent opening, whereby supply fluid flowing through said conduit means will be prevented from escaping through said vent opening by said baffle and yet air will be free to pass through said vent opening into said conduit means to prevent reverse siphoning.

3,159,172
FLUID DISPENSING DEVICE
Benjamin Baxter, P.O. Box 488, Fowler, Calif.
Filed May 14, 1962, Ser. No. 194,317
13 Claims. (Cl. 137—236)

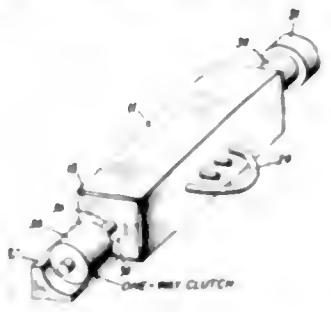
1. A fluid dispensing device comprising an upright tubular body member having opposite inlet and open ends, a laterally disposed discharge orifice intermediate said

ends sufficiently large to accommodate substantially the entire flow of fluid passing through the device with a minimum of accumulation therein, and means mounted within said body member providing an orifice supply passage communicating with the orifice and having an elevationally manually adjustable fluid discharge end open to



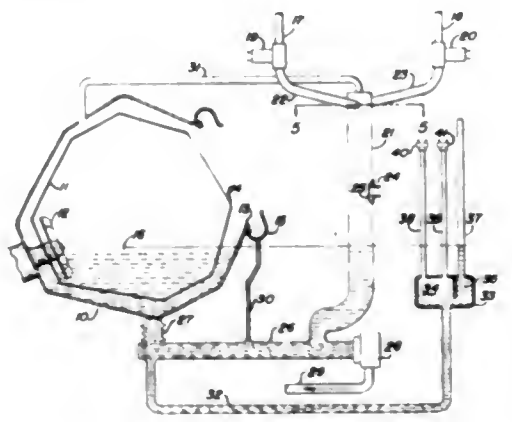
atmospheric pressure selectively positionable intermediate the orifice and positions disposed outwardly of the open end of the body member whereby the elevation of the discharge end of said means determines the minimum fluid-supply head necessary for fluid discharge through the device and controls the fluid flow passing therethrough.

3,159,173
ASSEMBLY FOR INCREMENTAL ROTATION OF A LINEAR MOTION VALVE PISTON
George H. Fremon, Princeton, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed June 2, 1961, Ser. No. 114,492
3 Claims. (Cl. 137—331)



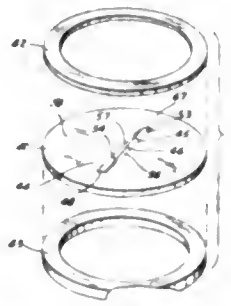
1. In combination with a linear motion valve comprising a piston member, fitted with rings, reciprocating within a valve body for controlling flow through a fluid passage formed in said body having at least one port, apparatus to reduce ring wear which comprises, in combination, a coupling shaft affixed to and coaxial with said reciprocating piston member, a one-way clutch having an inner driven member attached to said coupling shaft and a cylindrical outer driving member rotating said inner member in one direction of rotary movement and having a non-drive relationship in the opposite direction, a pin mounted on said outer member, a bracket rigidly affixed to said valve body, said bracket having a cylindrical face and containing a curved keyway cut into said cylindrical face, said pin being guided by said curved keyway upon valve actuation and axial movement of said clutch to impart a rotary movement to said driving member upon axial movement of said clutch in one direction, said rotary movement being transmitted to the piston member via said coupling shaft, axial movement of said clutch in the opposite direction imparting no rotary movement to the driven member or piston member, whereby reciprocal valve actuation results in incremental rotation of said piston member.

3,159,174
FILLING AND EMPTYING SYSTEM FOR WASHING MACHINE
Walter William Ralph Searle, Ickenham, and Edward Frank Mann, Hillingdon, England, assignors to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Apr. 20, 1961, Ser. No. 104,415
Claims priority, application Great Britain May 5, 1960
4 Claims. (Cl. 137—374)



1. A washing machine comprising a tub, a centrifugal pump for emptying said tub, said pump being mounted independently of and positioned laterally of said tub, said pump having its inlet at a level near the level of the outlet of said tub, a flexible laterally extending combined inlet and outlet pipe extending between the outlet of said tub to the inlet of said pump, a combined inlet and vent stand pipe of comparatively large diameter extending upwardly from said laterally extending pipe and connected thereto at a point adjacent to the inlet of said pump, liquid supply means for introducing liquid into said stand pipe so as to enter said tub from the bottom thereof through said laterally extending pipe, automatic means for maintaining a proper liquid level in said tub, a vent opening in said stand pipe above said liquid level, and a shroud over said vent opening to prevent leakage of water through said opening as the water flows downwardly through said stand pipe.

3,159,175
FLUID CHECK VALVE UNIT
Robert E. MacMillan, Detroit, Mich., assignor to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed Dec. 12, 1961, Ser. No. 158,679
3 Claims. (Cl. 137—493)

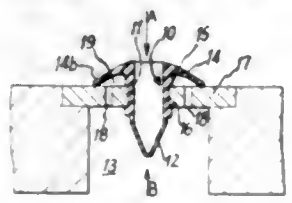


1. A check valve unit comprising a substantially flat element of resilient material having a normally closed Z-shaped slit formed therein, and means securing the edges of said element against movement, said element distortable to open said slit for the passage of fluid therethrough in response to the application of a fluid under pressure against either side of said element.

3,159,176
CHECK-RELIEF VALVE

Norton A. Russell and Robert T. Gifford, Yellow Springs, Ohio, assignors to Vernay Laboratories, Inc., Yellow Springs, Ohio, a corporation of Ohio

Filed Dec. 7, 1962, Ser. No. 242,971
6 Claims. (Cl. 137—493.1)

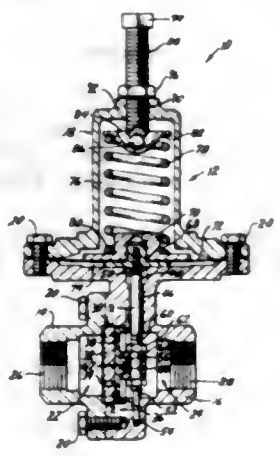


1. A resilient unitary check-relief valve element comprising a tubular body portion having means for engaging it in an aperture in a plate or the like, a duck bill portion extending from one end of said tubular body portion, said duck bill portion comprising a pair of resilient lips, and a resilient umbrella portion extending annularly from the other end of said tubular body portion, the said resilient lips of said duck bill portion separating to permit fluid flow in one direction and closing to check fluid flow in the opposite direction, said resilient umbrella portion being adapted to bear against one side of the plate or the like in which said resilient unitary check-relief valve element is engaged, and by-pass means extending from the other side of the plate or the like to said resilient umbrella portion, said resilient umbrella portion normally checking fluid flow both in said one direction and in said opposite direction, and said resilient umbrella portion flexing so as to permit fluid to flow around the periphery thereof in said opposite direction when the pressure in said by-pass means reaches a predetermined amount.

3,159,177
PRESSURE REGULATOR VALVE CONSTRUCTION

Melville W. Hott, Jr., Cincinnati, Ohio, assignor to Richards Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed June 27, 1962, Ser. No. 207,149
15 Claims. (Cl. 137—494)

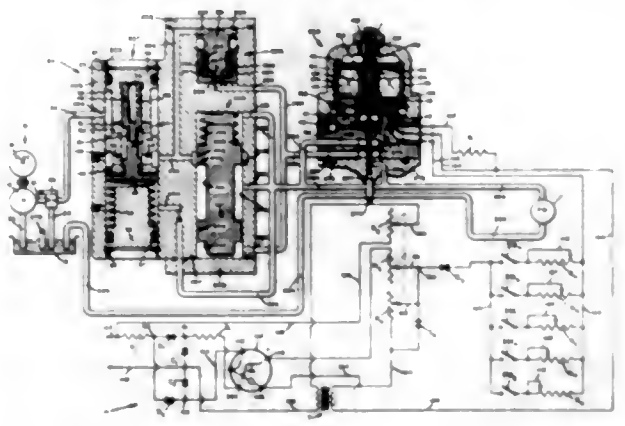


13. In combination, a housing having a first port interconnected to a second port, said second port being interconnected to a source of pressure, a fixed valve member disposed in said housing between said ports and having an opening passing therethrough to interconnect said ports together, a separate guide member disposed in said housing and abutting one side of said fixed valve member, said guide member having an aperture passing therethrough and interconnected to said opening, a movable valve member disposed in said aperture of said guide member and abutting said one side of said fixed valve member, and means operatively interconnected to said movable valve member to move said movable valve member between positions of covering said opening in said fixed valve member and uncovering said opening, said means being responsive to the pressure in said second port.

3,159,178
ELECTROHYDRAULIC FLOW CONTROL APPARATUS

Cecil E. Adams, Columbus, Ohio, assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Apr. 4, 1961, Ser. No. 100,753
17 Claims. (Cl. 137—501)

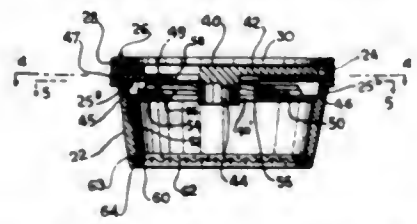


1. Flow control apparatus comprising the combination of, (*a*) orifice means, said means comprising a body having an inlet, an outlet, and structure forming an orifice between said inlet and outlet the area of which can be varied, said structure including a movable member, a separate pressure chamber associated with each of two oppositely facing equal areas of said movable member, said member being movable in response to unequal pressures on said areas in said chambers to vary the area of said orifice; (*b*) pressure regulator means for maintaining a constant differential between the pressures of fluid at the inlet and at the outlet of said orifice means, whereby for a given area of said orifice the flow of fluid through said orifice to said outlet is maintained constant; (*c*) a pilot valve including an inlet, an outlet, and a movable valve member cooperable with a port and an electric transducer for actuating said valve member in accordance with an electric signal applied thereto; and (*d*) passage means including a flow restrictor interconnecting the inlet of said pilot valve with the inlet of said orifice means, passage means interconnecting the inlet of said pilot valve with one of said chambers, and passage means interconnecting the outlet of said pilot valve with the outlet of said orifice means and the other of said chambers.

3,159,179
PLUGS WITH DIAPHRAGM FLOW CONTROL DEVICE

Robert L. De Lain, 169—10 107th Ave., Jamaica, N.Y.

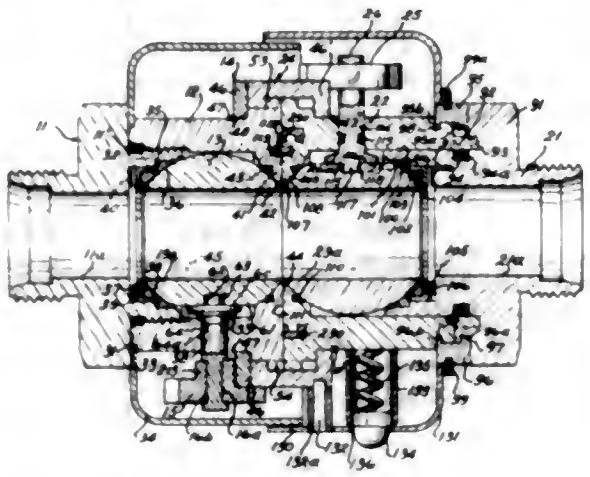
Filed Sept. 20, 1962, Ser. No. 225,057
3 Claims. (Cl. 137—545)



1. A valve structure for controlling flow of liquids or gases therethrough, comprising a cylindrical casing, open at opposite ends to define a passage therethrough, first and second flat annular rings disposed in said casing in axial alignment therewith, a plurality of arcuate leaves disposed between the rings in overlapping fashion to form

an annular partition, said leaves each having one end thereof pivotally engaged with the first ring, each of the leaves having a slotted other end, said second ring having a plurality of pins slidably engaged in the slots in the leaves, said first ring being held stationary in the casing while the other ring is rotatable, a spider ring mounted in the casing, said spider ring having a flat annular portion engaged with the casing, said leaves serving as a coarse strainer, a plurality of arms extending radially inward of said flat annular portion, and a central plug at the inner ends of the arms, said plug extending axially inward of the casing past the leaves whereby inner edges of the leaves engage the plug when the leaves are pivoted inwardly to close the passage through the casing, another ring on the exterior of the casing connected to the second ring for rotating the same to pivot the leaves for opening and closing the same, said casing and other ring having cooperating scale markings thereon for indicating the size of the passage through the casing defined by the leaves in each position thereof, and a filter screen at the other end of the casing extending thereacross to filter liquids or gases passing through the casing.

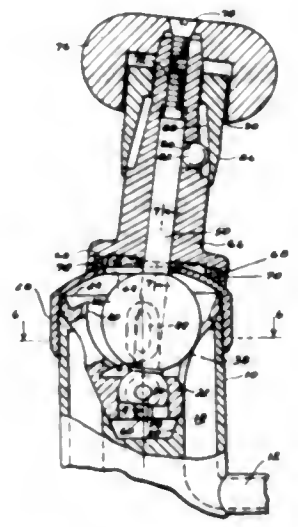
3,159,180
QUICK DISCONNECT VALVED COUPLING
Louis B. Courtot, Euclid, and James Frederick Norton, Cleveland, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed May 1, 1961, Ser. No. 106,905
8 Claims. (Cl. 137—614.06)



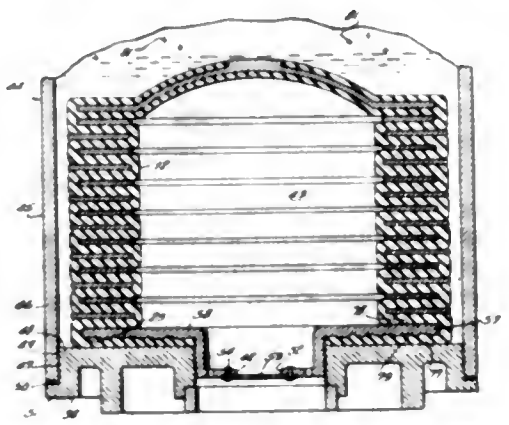
1. A valved coupling comprising a pair of coupling units detachably connected to each other, each coupling unit including a valve movable between open and closed positions, said valves extending contiguous to each other when said coupling units are connected to each other, and an individual valve actuating means on each coupling unit for opening and closing the respective valve therein, the respective individual valve actuating means being coupled to each other for unitary operation to open and close the respective valves individually and sequentially one after the other.

3,159,181
MIXING VALVE FOR SPHERICAL VALVE ELEMENT AND WITH INSTANT REPEAT SETTING
Otto Harke, 50—28 64th St., Woodside, N.Y.
Filed Aug. 21, 1961, Ser. No. 132,850
25 Claims. (Cl. 137—625.4)

1. A mixing valve including a housing enclosing a valve chamber, separate passages for hot and cold water opening through the housing and into the valve chamber, a conduit leading from the valve chamber and from the housing and serving as an outlet for liquid from said chamber, a valve element substantially smaller than the chamber and movable in the chamber toward and from the passages that open through the housing, the valve element having a spherical zone surface, a valve seat at the chamber end of each passage and extending into the chamber beyond the adjacent inside surface of the chamber for contact with the spherical surface of the valve element to seal the passage, a stem operably connected with the valve element, each valve seat being elongated in a direction extending generally parallel to the stem and having an arc of curvature in the direction of elongation, the valve seats being spaced from one another by a distance substantially less than 180° of extent of the chamber and the valve element being of a size and shape to contact with and seal both seats simultaneously, a bearing at one end of the stem and on which the stem oscillates toward and from both of said seats, the bearing being in position to space the center of oscillation at a distance from the center of curvature of the spherical zone surface of the valve element, and a handle on the other end of the stem.

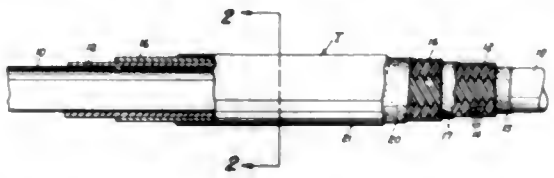


3,159,182
BELLOWS SEALING AND SECURING DEVICE
Melville F. Peters, 29 N. Ridge Road, Livingston, N.J.
Filed Sept. 11, 1963, Ser. No. 308,219
8 Claims. (Cl. 138—30)



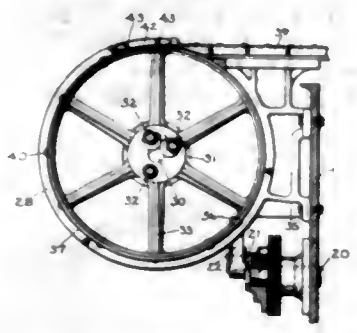
7. A fluid surge supressor structure comprising a hollow fluid tight housing open at the bottom thereof, a sealing plug disposed across the housing opening and peripherally secured to the housing, an internally threaded bore in the plug communicating with the interior of the surge suppressor, an adapter, an externally threaded cylindrical portion on the adapter receivable within the threaded plug bore, an outwardly extending flange on the adapter, a flexible bellows member within the housing closed at one end and engaged by the flanged portion of the adapter at its other end and a resilient ring between the flanged portion of the adapter and the plug to form a fluid tight assembly.

3,159,183
COMPOSITE TUBING PRODUCT, AND APPARATUS AND METHOD FOR MANUFACTURING SAME
Robert E. Brumbach, Mantua, Ohio, assignor to Samuel Moore & Company, Mantua, Ohio, a corporation of Ohio
Filed July 17, 1961, Ser. No. 124,448
6 Claims. (Cl. 138—125)



1. A high strength composite tubing having improved flexibility, durability and crimp resistant characteristics under a wide range of temperature and pressure conditions comprising, a thin nylon inner tube having a wall thickness within the range of 0.010" to 0.025" with a tolerance of plus or minus 0.003", at least one layer of fibrous material disposed in braided relation about said inner tube and forming a reinforcing member therefor, adhesive means bonding said reinforcing member to said inner tube, an outer sheath of elastomeric polyurethane material having a wall thickness within the range of 0.010" to 0.040" with a tolerance of plus or minus 0.003" substantially covering said reinforcing member, and adhesive means intermediate said reinforcing member, and adhesive means intermediate said reinforcing member and said outer sheath bonding the latter together to form a unitary composite structure.

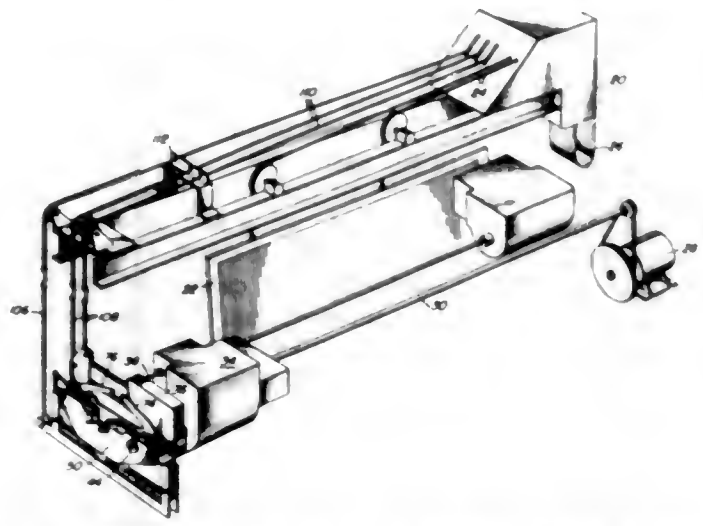
3,159,184
TAPE MOTION FOR SHUTTLELESS LOOMS
Ralph H. Brown, Jr., Ashland, and Randell F. Sample, Hopedale, Mass., assignors to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Nov. 13, 1962, Ser. No. 237,260
8 Claims. (Cl. 139—122)



1. In a shuttleless loom of the type having a stationary filling supply, means for inserting and extending said filling through a warp shed which includes filling carriers attached to the free ends of flexible tapes, oscillating tape wheels to which said tapes are attached and upon which they are wrapped and from which they are extended into the said shed by oscillation of said wheel, means for maintaining each said tape in contact with each said wheel which comprises projecting means on the rim of said wheel, and perforations in said tape adapted to encompass said projecting means.

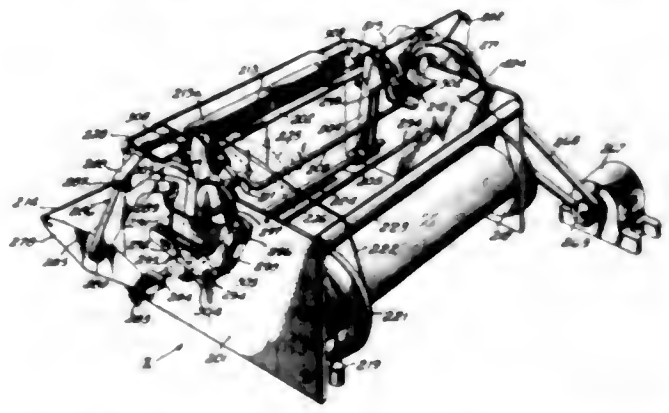
3,159,185
TWO COLOR PICK SELECTOR MECHANISM
O'Neal Smith, Sylvan Lane, Rte. 3 (Box 3), Ellicott City, Md.
Filed Feb. 21, 1962, Ser. No. 174,789
5 Claims. (Cl. 139—126)

1. In an automatic gripper type loom, gripper shuttle means having a yarn receiving position, a plurality of yarn packages, means arranged to oscillate with respect to the yarn receiving position of said gripper shuttle means and having a plurality of yarn positioners, each corresponding to a yarn from said yarn packages, to position said yarn in the yarn receiving position of said gripper shuttle means, means including a rotating shaft member, yarn tensioner means selectively operable by said last mentioned means, sleeve means rotatably mounted on said rotating shaft member, means to translate the rotary motion of said ro-



tatably mounted sleeve means to oscillating motion of said means arranged to oscillate, means for rotating said rotatably mounted sleeve means independent of the rotation of said rotating shaft member, and means operating said yarn tensioner means according to the operation of said means for rotating, whereby said yarn is delivered to the yarn receiving position of said gripper shuttle means in any desired sequence.

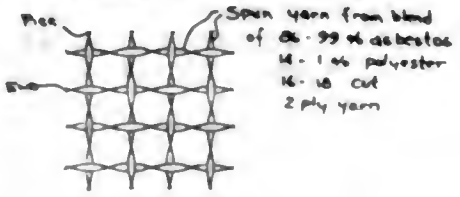
3,159,186
WEAVING FRAME
Yves Juillard, Mulhouse, Haut-Rhin, France, assignor to Societe Alsacienne de Constructions Mecaniques, Mulhouse, Haut-Rhin, France, a company of France
Filed May 22, 1961, Ser. No. 111,771
Claims priority, application France Feb. 14, 1961
16 Claims. (Cl. 139—127)



1. In a shuttleless loom having means for shedding warp threads and means for cyclically interchanging the positions of the upper and lower sheet of the shed formed by the said warp threads, batten and reed means reciprocable longitudinally of the shed, said batten having an upper surface supporting said lower sheet of the shed and forming an angle with the front surface of said reed, a pair of weft carrying needles disposed on said batten surface so as to extend substantially in parallelism with said reed surface; a pair of members on opposite sides of the frame reciprocable longitudinally of the warp bodily with the batten and oppositely reciprocable transversely of the warp relatively to the batten; means pivotally connecting an outer end of each needle to a related one of said members; weft-holding and transferring means at the

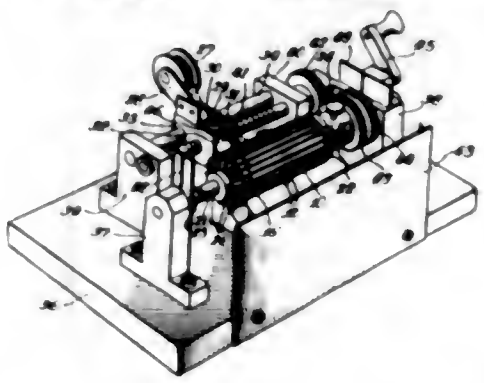
inner ends of said needles, said inner needle ends resting freely by gravity upon said lower sheet of warp supported on the upper batten surface and being applied into engagement with said reed surface by inertia during a substantial part of the batten and reed reciprocating cycle.

3,159,187
FILTER BAG FABRIC
Irvin Barnett, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Sept. 4, 1962, Ser. No. 221,327
4 Claims. (Cl. 139—420)



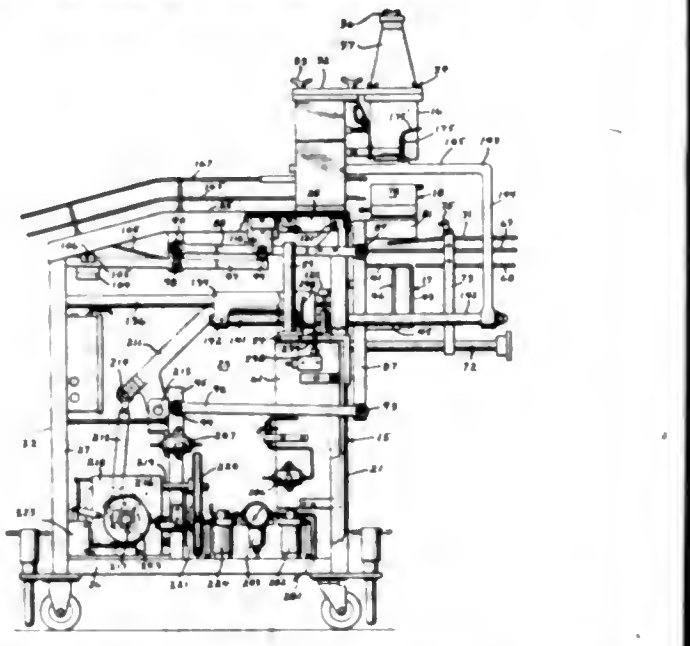
1. A filter fabric adapted to withstand elevated temperatures and mechanical shaking characterized in that said fabric is woven in a single layer from yarn consisting essentially of 86–99 percent asbestos fibers of spinning length and 14–1 percent polyester fibers and has a weight of 1 to 2 pounds per square yard, the weave of said fabric having 13–16 ends per inch and 16–19 picks per inch.

3,159,188
METHOD OF SUPPLYING WIRE FOR MOUNTING IN ELECTRONIC UNITS
Harry da Costa, Scottsdale, and Donald W. Williams, Mesa, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 833,056, Aug. 11, 1959. This application Mar. 1, 1962, Ser. No. 178,219
2 Claims. (Cl. 140—92.2)



1. A method of applying wires to a holder and supplying the same to an assembly area at which portions of individual ones of such wires are mounted in electronic units and removed from the holder, said method including the steps of mounting a plurality of elongated rigid holders in longitudinal recesses on a cylindrical mandrel so that a wire-receiving surface of each holder extends axially of the mandrel and is substantially flush with the circumference of the mandrel, winding a length of wire about the mandrel in a helical path such that the wire contacts each holder at several places spaced along its length and also contacts circumferential surfaces of the mandrel between the holders, securing the wire to the holders at said places of contact therewith, rolling a sharp, curved cutting edge axially of the mandrel on and along the circumferential surfaces of the mandrel between each two adjacent holders so that the cutting edge rolls over the wire and cuts through the same without bending the wire due to the anvil-like backing provided by said mandrel, thereby providing each of said holders with a plurality of wires extending transversely therefrom in spaced parallel relation with each other and having free end portions available to be removed from said holder while assembling the same into electronic units, removing the holders from the mandrel, subsequently feeding individual ones of said holders to an assembly area and positioning such holder at said area to make wires successively available for assembly in electronic units, individually mounting said end portions of said wires in electronic units at said assembly area and removing said end portions from said holder in accomplishing said mounting.

3,159,189
CARTON FILLING MACHINE
Ralph F. Anderson, 332 Calvin Park Blvd., Rockford, Ill., and Fred W. Villemure, Rockford, Ill.; said Villemure assignor to said Anderson
Filed May 7, 1963, Ser. No. 278,538
20 Claims. (Cl. 141—172)

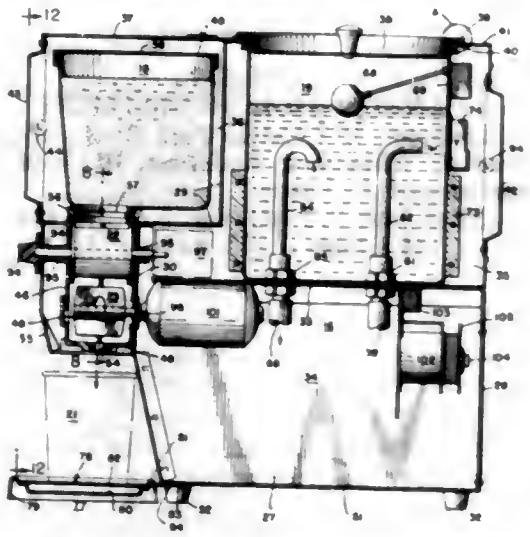


1. A container filling apparatus comprising a nozzle having a downwardly facing discharge opening for discharging a fluent material, a container lifting member positioned below said nozzle, means for moving said lifting member from a lower position to a raised position to elevate a container into registry with the nozzle and for thereafter lowering said lifting member back to said lower position, container support means separate from said elevating means and engageable with said container when the latter is elevated for supporting the container when the lifting member is lowered, means mounting said container support means for limited vertical movement to permit the container to move downwardly as it is filled by the nozzle, and counterbalance means operatively connected to said mounting means for substantially counterbalancing the weight of said vertically movable container support means and the mounting means therefor.

3,159,190
BLENDED-BEVERAGE DISPENSING MACHINE
Richard J. Skiera, Chicago, and Paul K. Phillips, Lombard, Ill., assignors to Karma Corp., Elmwood Park, Ill., a corporation of Illinois
Filed Sept. 27, 1961, Ser. No. 141,040
10 Claims. (Cl. 141—369)

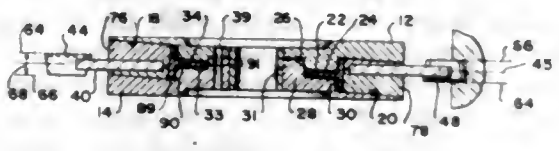
1. A beverage-dispensing machine comprising, a supporting housing, a blending receptacle fixed on the housing, a motor-driven agitator journaled in the receptacle, juxtaposed beverage-concentrate and diluting-fluid reservoirs positioned adjacent the blending receptacle, a beverage-concentrate measuring element interposed between the blending receptacle and the concentrate reservoir and manually-operable for a flow of a predetermined quantity of concentrate to the blending receptacle,

a conduit connecting the blending receptacle with the liquid reservoir, electrically-regulated means interposed in the conduit intermediate the reservoir and the blending receptacle for a controlled flow of a measured quantity of liquid to the blending receptacle independently of the rotation of the agitator in the blending receptacle, electrical circuitry connecting the agitator motor and the liquid-measuring means with a source of electrical current, a timer-holding-relay mechanism interposed in the



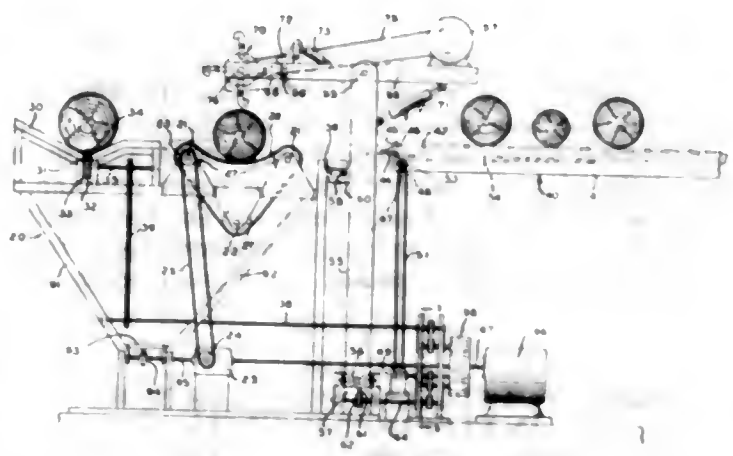
circuitry and connected to the motor and the liquid-measuring means, a circuitry-controlling switch actuated by the manual operation of the concentrate-measuring element for initiating the operation of the timer-holding-relay mechanism to effect the timed operation of the agitator antecedent to the discharge of the beverage from the blending receptacle, and means for positioning a container to receive the beverage from the blending-receptacle.

3,159,191
ADJUSTABLE WOBBLE DADO ASSEMBLY
Samuel Sam, 911 Beckwith Road, Richmond, British Columbia, Canada
Filed Jan. 2, 1962, Ser. No. 163,933
5 Claims. (Cl. 144—238)



1. A wobble dado assembly comprising a cutter blade assembly, said cutter blade assembly including a blade having flat opposite faces and a large aperture formed centrally thereof, a pair of clamping plates formed with an aperture centrally thereof and having parallel outer surfaces and complementary inner surfaces inclined relative to said outer surfaces, said plates being positioned on opposite sides of the blade with their inner surfaces against said blade faces, and means engaging the blade and the clamping plates to prevent relative movement therebetween; a spool assembly including end plates having parallel outer surfaces and complementary inner surfaces inclined relative to said end plate outer surfaces and bearing against the parallel outer surfaces of the clamping plates, hub portions on said end plates and extending towards each other within the apertures of the clamping plates and radially spaced from said clamping plates and having complementary inclined inner ends parallel with the inclined inner surfaces of said end plates, the inclined inner ends of the hub portions being spaced from each other, means maintaining the hub portions radially from the clamping plates, a bore extending through the hub portions adapted to receive a shaft, and means engaging the end plates to prevent relative rotation thereof; said cutter blade assembly being mounted on said hub portions between the inclined inner surfaces of said spool end plates for rotation relative to said spool, whereby the cutter blade may be adjusted to a predetermined angularity relative to a plane extending perpendicular to the axis of said bore, said end plates of the spool being adapted to be clamped against the cutter blade assembly to hold the latter in a desired position relative to said spool.

3,159,192
LOG DEBARKING APPARATUS
Liudas Normantas, East Hiram, Maine
Filed Nov. 27, 1959, Ser. No. 855,937
1 Claim. (Cl. 144—242)

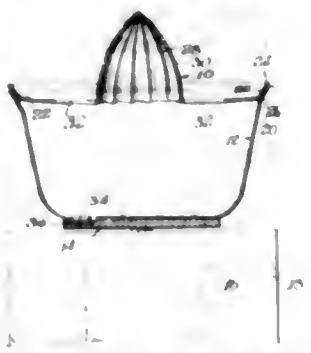


In a log loader, supporting structure including a pair of parallel log receiving and supporting members, a log loader frame slidably supported by said members for movement along a pathway parallel to but below the plane defined by the supporting surfaces of said members between retracted and extended positions, the front end of said frame including log engaging wedge points and, in said extended position, extending beyond the corresponding ends of said members and said frame also including at its forward end at least one pivoted and counterweighted lug having a normal upright position in which it extends upwardly through said plane to engage and advance a log supported by said members as said frame is moved towards an extended position, said lug pivoting forwardly thus to enable said frame to be retracted to position in which said lug is behind the next log to be advanced, and said supporting structure including a transverse shaft, and a cable drive connected to said shaft and to said frame for moving said frame between said retracted and extended positions.

3,159,193
JUICE-EXTRACTING DEVICE
Douglas N. Cabell, Birmingham, Mich., assignor to Ronson Corporation, a corporation of New Jersey
Filed Dec. 19, 1961, Ser. No. 160,505
9 Claims. (Cl. 146—3)

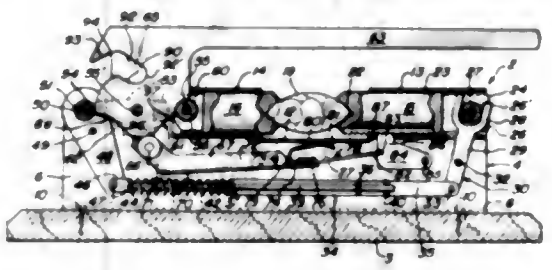
1. A device for extracting juice from citrus fruit in conjunction with a kitchen applicance incorporating a power-drive turntable, said device comprising a bowl for disposition upon said turntable, interlocking means upon the bottom of said bowl and said turntable for transmitting rotational forces from said turntable to said bowl, a concavely-dished cover for the top of said bowl, a peripheral surface of said cover engaging a peripheral surface at the top of said bowl to lock said cover upon said bowl against relative rotation, and a vertically-disposed auger

means upon said cover mounted upon the axis of rotation of said cover and bowl for extracting juice from inverted



halves of citrus fruit impaled upon it while said bowl and engaged cover are rotated together by said turntable.

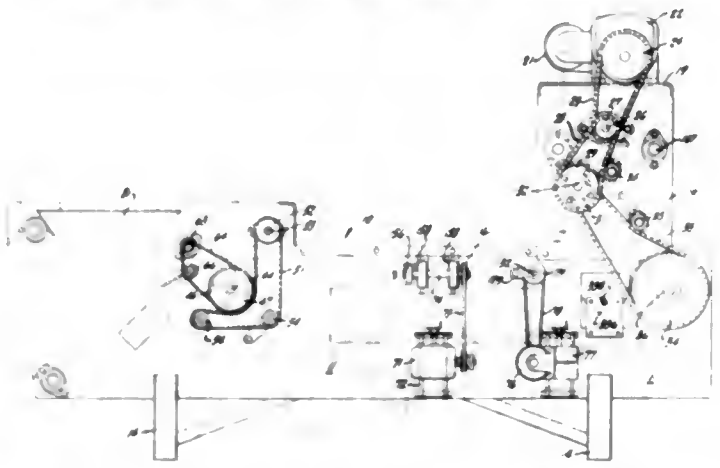
3,159,194
NUT CRACKING DEVICE
Walter A. Anderson, 683 Stage Ave., Memphis 7, Tenn.
Filed Aug. 13, 1962, Ser. No. 216,377
6 Claims. (Cl. 146—16)



1. In a nut cracker, a housing having a pair of opposed jaw holders, jaws in respective holders movable relative to each other and defining a nut-receiving bite therebetween, an output lever mounted on the housing and connected to one jaw, handle-actuated cam means rotatably mounted on the housing and having first, second and third cam segments, an input lever mounted on the housing in actuatable relation with said first cam segment, a yieldable telescopic linkage operatively interconnecting said levers for conjunctive movement, a locking dog mounted on the housing and movable to engaged and disengaged positions with respect to said one jaw, an actuator for the dog mounted on the housing and having an input end engaging said second cam segment and having a reaction end connected with said dog, and abutment means on the other jaw engageable with said third cam segment.

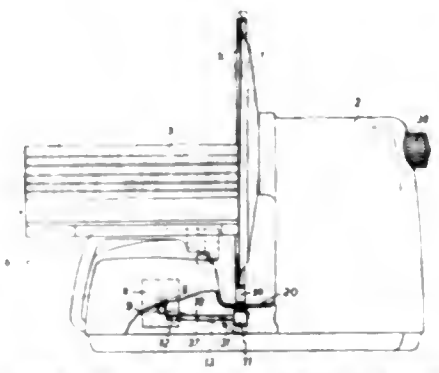
3,159,195
FRUIT PITTING MACHINE
Malcolm W. Loveland, Orinda, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California
Filed July 1, 1963, Ser. No. 292,800
4 Claims. (Cl. 146—27)

1. In a fruit pitting machine:
(*a*) means for holding fruit with opposed ends exposed;
(*b*) means for advancing said holding means to a fruit-pitting station;
(*c*) an opposed punch and coring knife mounted coaxially at said pitting station for reciprocating action toward and away from one another;
(*d*) means for moving said punch toward said coring knife to contact and penetrate fruit held at said pitting station and for stopping movement of said punch after said fruit is contacted and before the pit thereof is contacted;
(*e*) means operatively associated with the means of paragraph (*d*) for moving said coring knife toward said punch a sufficient distance to contact and penetrate fruit held at said pitting station after said means of paragraph (*d*) has moved said punch to contact said fruit and has stopped movement of said punch;
(*f*) means for releasing said coring knife to permit free axial movement of said coring knife so as to permit said knife to move away from said punch on



application of pressure to the end of the said coring knife opposed to the said punch;
(*g*) and means operatively associated with the releasing means of paragraph (*f*) for again moving said punch in the same direction as in paragraph (*d*) after the releasing means of paragraph (*f*) has released said coring knife.

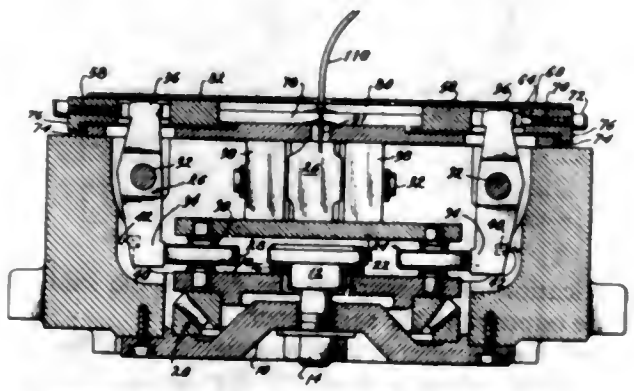
3,159,196
PROTECTIVE DEVICE FOR CUTTING MACHINES WITH CUTTING DISC
Walter Engi, Zurich, Switzerland, assignor to Adolf Ditting, Zurich, Switzerland
Filed Apr. 27, 1962, Ser. No. 190,703
Claims priority, application Switzerland, May 2, 1961, 5,118/61
7 Claims. (Cl. 146—102)



1. A cutting machine, especially for meat and cold cuts, which comprises: a housing, a rotatable cutting member in the housing having a peripheral cutting edge, an electric motor in the housing drivingly connected to said cutting member for rotating the same, a protective detachable hood normally mounted on the housing of said cutting machine and partially surrounding the cutting edge of said cutting member, said hood comprising magnetizable material, control means in the housing including magnetizable material for cooperation with the magnetizable material of said hood, said housing including an imperforate wall of nonmagnetic material between said hood and said control means, said control means being movable into a first position in which said magnetizable material of said hood and the magnetizable material of said control means magnetically interact so as to exert an attractive force upon each other, said control means also being movable into a second position in which said magnetic interaction is interrupted, said hood when mounted on the housing of the cutter positioning said magnetizable means for interaction to cause said control means to occupy said

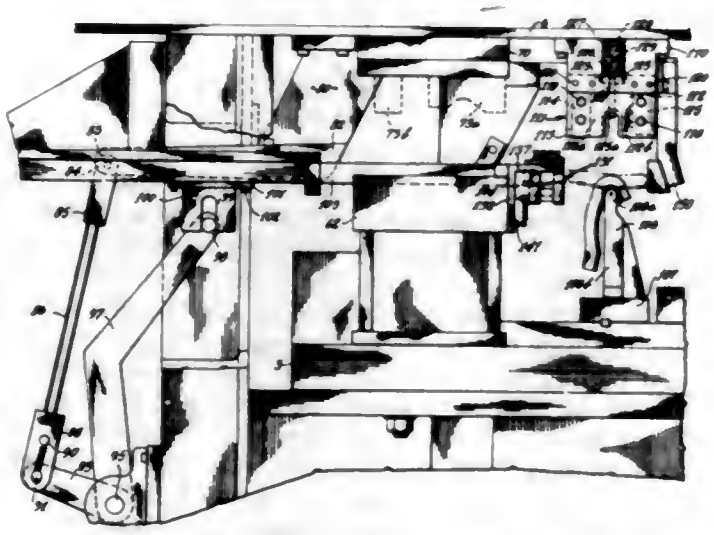
first position when said hood is mounted on said machine and to occupy said second position when said hood is detached from said machine, and means responsive to the movement of said control means into said second position for preventing operation of said motor.

3,159,197
SWAGING MACHINE
James D. Anderson and Ernest L. Cheh, Norwalk, Conn., assignors to Burndy Corporation, Norwalk, Conn., a corporation of New York
Filed Mar. 20, 1961, Ser. No. 97,053
4 Claims. (Cl. 153—1)



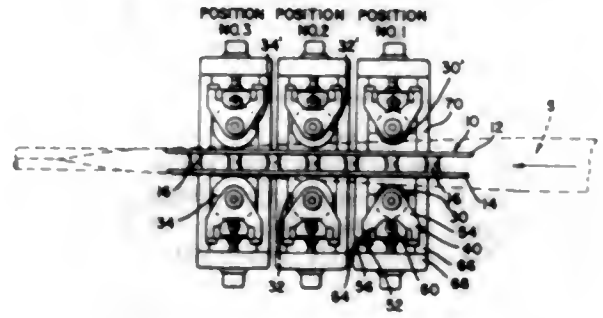
1. A swaging tool for indenting a connector comprising; a central, oscillatory drive means rotatably oscillating about a central axis in a common plane normal to said central axis, and spaced from said drive means; a plurality of indentors, radially disposed about said central axis, each indentor angularly spaced from its neighbors by less than 180 degrees; means connecting said drive means to said indentors; whereby said drive means is adapted to advance said indentor towards and away from said central axis; a contact carrier guided for movement along a path lying in said common plane and passing through said central axis; and means connected to said drive means to advance said carrier.

3,159,198
METHOD OF AND APPARATUS FOR THE MANUFACTURE OF RAIL ANCHORS
Harold E. Sutch, Girard, Pa., assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1961, Ser. No. 136,381
21 Claims. (Cl. 153—21)



12. Apparatus for automatically forming one piece rail anchors from metal blanks comprising, in combination, first, second, and third forming stations, transfer means for transferring said blanks to said stations, said second and said third forming stations including a second and a third forming horn, respectively, said transfer means including a transfer member positioned between said second and said third forming horns, said transfer member having a contour substantially similar to each of said horns, wherefor each substantially J-shaped anchor piece formed at the second horn is advanced over the transfer member to the third form horn by said transfer means.

3,159,199
CLUSTER ROLL ASSEMBLY FOR TUBE MILLS
Lewis H. Ruple, Perrysburg, Ohio, assignor to Abbey Etna Machine Company, Perrysburg, Ohio, a corporation of Ohio
Filed July 30, 1962, Ser. No. 213,314
5 Claims. (Cl. 153—54)



2. In a universal apparatus for forming from a continuous flat strip of metal a tube of a predetermined selected diameter, wherein the flat strip is caused to be moved along a predetermined path and initially formed into a generally U-shaped cross section; roll means rotatable on a horizontal axis for supporting said strip along the longitudinal axis thereof; a plurality of pairs of opposed laterally spaced forming rolls disposed above and in spaced relation to said supporting roll means, said forming rolls having a tube forming surface, each of the forming surfaces being contoured to contact substantially only a small portion of the under surface of said strip adjacent to and including the marginal edges thereof, said pairs of forming rolls being respectively spaced horizontally from each other and the rolls of advancing pairs being progressively disposed closer to each other thereby gradually to cause the marginal edges of the strip to approach each other to effect an annular cross section; and mounting means for said forming rolls to enable same to rotate about axes normal to the path of travel of said strip and disposed on opposite sides of said supporting roll means, said mounting means being adjustable for selective horizontal and vertical movement within a plane normal to the path of travel of said strip wherein said forming rolls may be selectively adjusted relative to said supporting roll means to accommodate strips of metal of various widths and thicknesses for use in the forming of tubes of different diameters.

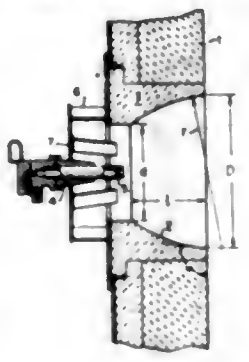
3,159,200
LIQUID FUEL BURNER
Wilhelmus C. Schuling and Henri Verkoren, Amsterdam, and Hendrik J. Koster, Rotterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1962, Ser. No. 169,787
Claims priority, application Belgium, Feb. 13, 1961, 477,481, Patent 600,137
1 Claim. (Cl. 158—1)

A combustion device for liquid and/or gaseous fuels, comprising a burner placed centrally and rearwardly in a recess in the wall of a combustion space, an annular opening for the combustion air being provided in the wall of the combustion space coaxially between the burner and the edge of the recess, characterized in that the recess is bowl-shaped and that the largest diameter thereof opens into the combustion space and the smallest diameter thereof

is remote from said space, the following conditions being satisfied:

(*a*) the ratio between the smallest diameter and the largest diameter of the recess (*d*/*D*) is between 0.58 and 0.72;

(*b*) the ratio of the length between the two said diameters to the largest diameter of the recess (*l*/*D*) is between 0.45 and 0.55;



(*c*) the angle (alpha) formed by the wall of the bowl-shaped recess and the surrounding wall of the combustion space at the entrance to the combustion space is between 95° and 100°; and

(*d*) the generating line of the bowl-shaped recess is the arc of a circle, the ratio of the radius of this arc to the largest diameter of the recess (*r*/*D*) being between 0.70 and 1.50.

3,159,201

COMBUSTION APPARATUS AND COMPONENTS

Fred W. Hottenroth, Santa Monica, Calif., and Richard C. Spooner, Fairview Park, Ohio, assignors to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Oct. 30, 1961, Ser. No. 148,509
3 Claims. (Cl. 158—28)



3. In a liquid fuel burner having a combustion chamber provided with an imperforate end wall, means to vaporize and ignite the fuel, comprising: a flat non-combustible wick assembly comprising two sheets of felted ceramic fibers mounted within the burner on said imperforate end wall and subjected to the heat of the burner flame; a flat coil of sheathed resistance wire positioned between and in contact with said sheets; a fuel supply conduit having its discharge end located to discharge fuel between said sheets; means providing a spark gap adjacent to said wick; means to produce a high voltage discharge across said spark gap; means to deliver fuel to said wick; means to connect said resistance wire to a source of electrical current; and means to supply combustion air to the burner in the vicinity of the wick.

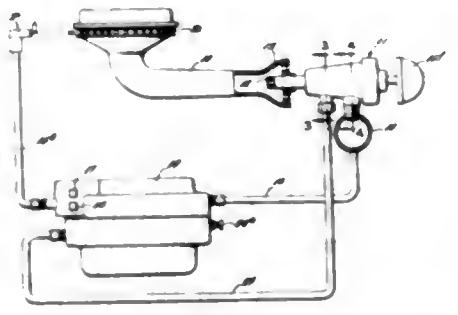
3,159,202

BURNER PILOT CONTROL MEANS

Earl J. Weber, Bay Village, Ohio, assignor to American Gas Association, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 29, 1962, Ser. No. 169,402
7 Claims. (Cl. 158—115)

1. Burner pilot control means, comprising in combination: a main burner, a main gas supply source, a main gas line from said source to said main burner, a main burner valve included in said main gas line for controlling the flow of gas through said main gas line to said main burner, a flash type pilot burner operatively associated with said main burner to light it when the main valve is moved to supply gas thereto, a pilot gas supply line from said source to said pilot burner, means for supplying a constant restricted low-pilot supply of gas through said pilot gas supply line to said pilot burner, and supplemental means for supplying a temporary increased high-pilot supply of gas to said pilot burner when said main valve is operated, said supplemental gas supply means including a high-pilot gas supply line, a fluid pressure differential valve operated by an element responsive to opposing bodies of pressure fluid for controlling the flow of gas in said high-pilot gas supply line, and control means for controlling the action of said differential valve by the action of said main burner valve, said control means including a pressure control line between one of the bodies of fluid and said main burner valve for operating the differential valve to supply gas to said high-pilot gas supply line when said main burner valve is operated.

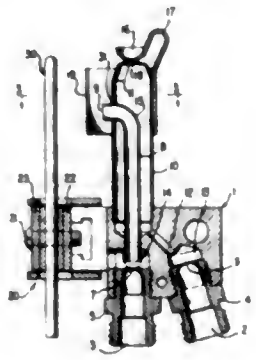


3,159,203

PILOT BURNER

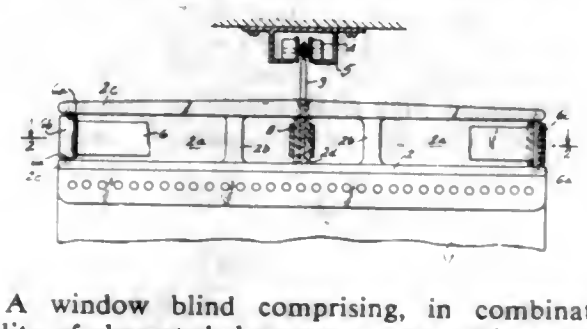
Aldo Zulian, Yukon, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Aug. 11, 1961, Ser. No. 130,979
11 Claims. (Cl. 158—123)



1. In a safety-control for a gaseous fuel pilot burner, means defining a constant flame orifice connected by a first conduit to a constant fuel supply, a cupped flame spreading element having substantially vertical outer peripheral portions and arranged across and proximate to said orifice as a flame holding device, an air injector jet member connected to an intermittent fuel supply, a second conduit arranged coaxially adjacent said jet member to receive aerated fuel therefrom, said first and second conduits being concentrically arranged one within the other, a lateral extension of the second conduit opening at one side of said burner proximate to said constant flame orifice, flame-spreading hood means adjustably attached to said first conduit for directing the flame from said aerated fuel when ignited by the constant flame, and thermally responsive means disposed in the path of said directed flame as said intermittent supply is actuated.

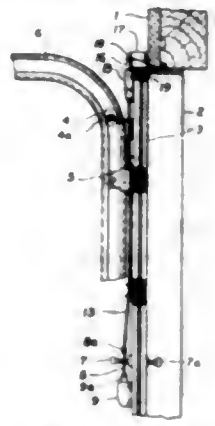
3,159,204
WINDOW BLIND WITH VERTICAL SLATS
Andreas Kruell, Am Oberton 6, Neuss (Rhine), Germany
Filed Aug. 6, 1962, Ser. No. 214,967
Claims priority, application Germany Aug. 4, 1961
6 Claims. (Cl. 160—168)



1. A window blind comprising, in combination, a plurality of elongated slat means arranged in a row movable toward and away from each other between a gathered position and an extended position and respectively turnable in said extended position about spaced substantially vertical pivot axes between an open position in which adjacent slat means extend in substantially parallel planes substantially normal to a plane passing through their pivot axes and a closed position in which the longitudinal edges of adjacent slat means are closely adjacent each other, each of said slat means having an upper and lower support member extending transverse to the elongation of the respective slat means and being each formed with a pair of elongated cut-outs extending respectively from opposite ends of said elongated support member towards each other so as to form at each end of each support member a pair of substantially parallel arms; support means connected at least to said upper support member of each slat means for supporting said slat means turnable about its pivot axis and movable transverse to said axis toward and away from the slat means adjacent thereto, said support means including roller means connected at least to the upper support member of each slat means, and guide rail means extending transverse to said pivot axes for guiding the roller means of all slat means; connecting means operatively connecting said slat means for simultaneous transverse and turning movement, said connecting means comprising a plurality of substantially vertical pivot means respectively extending between the free ends of each pair of arms of said support members and turnably mounted therein, and a pair of flexible bands having each a substantially vertically extending cross section and being respectively fixed at spaced portions thereof to said pivot means at opposite ends of said support members and said bands folding between the fixed portions thereof toward one side of said pivot means when said slat means are in said gathered position thereof; operating means fixed to the upper and lower support member of the slat means at one end of the row for moving said one slat means toward and away from the slat means adjacent thereto and therewith all of said slat means between said gathered and extended positions and for turning said slat means about their pivot axes; and flexible means connecting the slat means at the other end of the row to the side wall of a window opening so that the slat means at the other end of the row may abut against said side wall when all of said slat means are in said gathered position.

3,159,205
GARAGE DOOR SEALING DEVICE
James Varacalli, 621 Pittsburgh St.,
East McKeesport, Pa.
Filed Oct. 10, 1961, Ser. No. 144,101
2 Claims. (Cl. 160—209)

1. In combination with a vertically sliding door, a spring-biased bolt projecting upwardly beyond the top, inside surface of the door, said bolt having an inclined top end forming an angle within the range of 30° to 45° with the vertical, a keeper having an inclination corresponding to said top end and spaced inwardly from the inside surface of said frame to effect a camming action with said spring-biased bolt so as to push the top, outside edge surface of the door toward said frame to reduce the normal air gap therebetween, a flexible



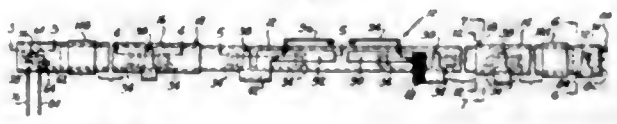
string-like element depending from the bottom of said bolt, and means connected to said string-like element for locking said door without preventing partial retraction of said spring-biased bolt from said keeper and whereby unlocking of said door will effect tension on said string-like element and complete retraction of said spring-biased bolt from said keeper.

3,159,206
FESTOON DRAPERY
Saul H. Susnow, 116 S. Sycamore,
Los Angeles 36, Calif.
Filed Feb. 11, 1963, Ser. No. 257,532
6 Claims. (Cl. 160—330)



1. A festoon draper, which comprises:
a generally rectangular piece of flat drapery material having a grid reference system imprinted thereon at the ends thereof forming a plurality of spaced fastening points;
and a truncated generally triangular piece of flat drapery material integrally affixed to, and between the ends of said rectangular piece, the sides of said triangular piece of material having fastening points thereon.

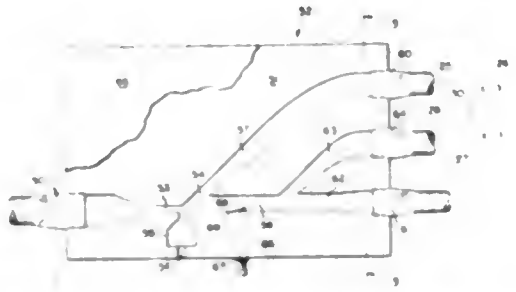
3,159,207
DRAPE HANGING AND PLEATING DEVICE
F. McD. Etheridge, 465 Robinson Ave. SE.,
Atlanta, Ga.
Filed Aug. 26, 1963, Ser. No. 304,356
5 Claims. (Cl. 160—348)



1. A drape assembly comprising an elongated hollow horizontal rod made up of a plurality of adjustable sections, track means in said rod, a plurality of slides

movable on said track means within said rod, a carrier connected to each of said slides, said carriers being arranged forwardly of said rod, the two central carriers being master carriers and having opposed elongated arms extending toward each other substantially parallel to said rod, an elongated pin adjustably mounted on each arm and extending towards each other and substantially parallel with and spaced above the rod, a similar elongated arm and adjustably mounted pin at each end of said rod, said last mentioned arms and pins extending substantially at right angles to and rearwardly of said rod, said last mentioned pins being spaced above said rod, a pleat former releasably supported on each carrier, said drape assembly being for use with a pair of drapes, each drape having a hem at its upper edge, each drape extending along each half of said rod, one drape having one end attached to the elongated pin of one master carrier and its other end extending laterally and attached to the rearwardly extending pin at the corresponding end, the other drape having one end attached to the elongated pin of the other master carrier and its other end attached to the rearwardly extending pin at its corresponding end, the end portions of the drape hems receiving said pins therein in attaching the drapes thereto, said elongated pins each having a free end which is pointed, and intermediate portions of the drapes being wrapped around and clamped between each pleat former and a face plate on its corresponding carrier, and a pulley and cord system for moving the pair of drapes into open or closed position, said pulley and cord system including a cord having oppositely running flights with one flight being connected to the slides on one side of the rod and the other flight being connected to the slides on the opposite side of the rod.

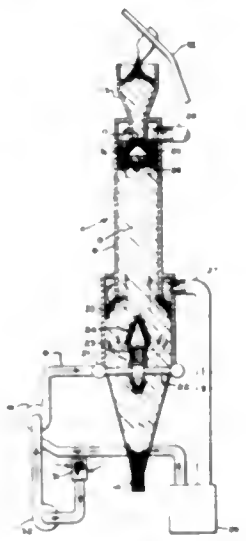
3,159,208
FLUID FLOW CONTROL DEVICE
Frederick D. Joesting, Park Ridge, Ill., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 23, 1961, Ser. No. 97,872
10 Claims. (Cl. 165—1)



1. A method of operating a fluid filled fluid amplifier to control the fluid through or around a fluid filled load, including; supplying a fluid under pressure to a fluid amplifier inlet; controlling the inlet flow to direct the flow through a fluid amplifier outlet to the load, or a bypass outlet to bypass the load; and adjusting the fluid impedance of the bypass outlet to create a zero pressure drop across the load when the fluid flows through the bypass outlet to thereby prevent any fluid flow through the load.

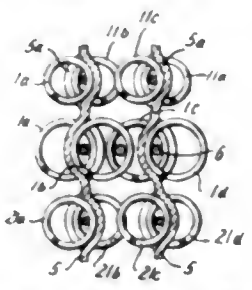
3,159,209
ALTERING THE HEAT CONTENT OF SOLID MATERIALS
William H. Dailey, Jr., Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Mar. 28, 1961, Ser. No. 98,560
6 Claims. (Cl. 165—1)

1. The method of altering the heat content of a stream of solid material capable of forming a fluent gas-pervious mass and removing small particles associated with said material which comprises, in combination, the steps of: adding a stream of said material to the top of a vertical hollow shaft to form a fluent gas-pervious bed therein having a stockline; permitting a stream of said material to pass from the bottom of said shaft by means of gravity whereby to cause the flow of material through the shaft from the top to bottom thereof; adding a stream of compressed gaseous heat transfer medium to said shaft at a point substantially remote from the top thereof; withdrawing a stream of substantially decompressed gaseous heat transfer medium from said shaft at a point adjacent the



top thereof to cause the flow of gaseous heat transfer medium from the point of addition thereof to the point of withdrawal thereof in counter-flow heat transfer relationship to said flow of material; and restricting the flow of gaseous heat transfer medium in a region slightly subjacent the stockline of said bed to increase the velocity of the flow of gaseous heat transfer medium in the region of the restriction to such an extent that the medium will exert an upwardly-directed aerodynamic force on the small particles greater than the force of gravity, whereby said small particles will be removed from said material.

3,159,210
HEAT-EXCHANGING BAND
Günter Schöll, Mulbergerstrasse 21/A, Esslingen (Neckar), Germany
Filed Mar. 10, 1961, Ser. No. 94,890
Claims priority, application Germany, Apr. 16, 1960, Sch 27,756
15 Claims. (Cl. 165—10)



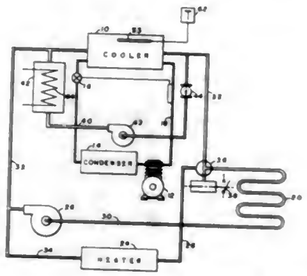
6. For use in a heat exchanger, a flexible heat exchanger band comprising, in combination, a series of elongated coil springs arranged crosswise of said band and located adjacent to each other so as to form between each pair of adjacent coil springs a connecting region; rigid connecting means located at some of said connecting regions for connecting the coil springs adjacent thereto rigidly to each other and each of said rigid connecting means including an elongated partition which extends in the respective connecting region across and throughout the width of said band; and tiltable connecting means arranged at all other connecting regions located between said aforementioned connecting regions at which said

rigid connecting means are arranged, said tiltable connecting means tiltably attaching at said other connecting regions the respective adjacent coil springs to each other so as to permit flexing of said heat exchanger band despite presence of said rigid connecting means including said elongated partitions.

3,159,211
FREEZE-UP CONTROL FOR AIR HEATING AND COOLING SYSTEM

Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed Oct. 16, 1961, Ser. No. 145,376
14 Claims. (Cl. 165—17)



9. An air conditioning system comprising: a heat exchanger in the area to be conditioned, a refrigeration system including a compressor, condenser, and an evaporator in operative relationship to cool a freezable heat exchange medium, a first conduit means to supply cool heat exchange medium from said evaporator to said heat exchanger, a second conduit means to return heat exchange medium from said heat exchanger to said evaporator, a third conduit means interconnecting said first and second conduit means, a source of heat to heat a heat exchange medium, a fourth conduit means to supply hot heat exchange medium to said heat exchanger from said heat source, a fifth conduit means to return heat exchange medium from said heat exchanger to said heating means, valve means operably associated with said heat exchanger to selectively provide hot or cold heat exchange medium from said first and fourth conduit means to said heat exchanger, a heater in said third conduit means, and thermostatic control means operably associated with said heater to actuate said heater in response to a certain predetermined low temperature to circulate warm heat exchange medium in said third conduit means, during periods of nonuse of said evaporator.

3,159,212
TEMPERATURE CONTROL SYSTEM WITH PORTABLE THERMOSTAT

Malcolm W. Patrick, Bedford, Ohio, assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed July 10, 1962, Ser. No. 208,790
8 Claims. (Cl. 165—26)

1. In a thermostat unit for a temperature control system:

(*a*) an electronic oscillator circuit adapted to generate a carrier radio frequency signal;

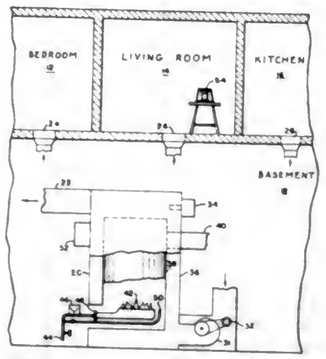
(*b*) a thermostat for control of heating and cooling and having contacts that open and close in accordance with air temperature;

(*c*) circuit means to connect said contacts to selectively control operation of said oscillator circuit;

(*d*) a manually operable selector means on said thermostat to set said thermostat to be operative to effect heating in one position and to effect cooling in another position of a heating and cooling apparatus, respectively;

(*e*) first means to modulate said carrier radio frequency signal at a first frequency;

(*f*) second means to modulate said carrier radio frequency signal at a second frequency; and

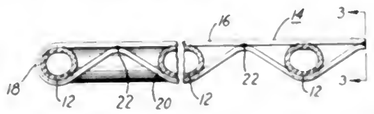


(*g*) means connecting said manually operable selector means to select a predetermined one of said modulation means to thereby produce a unique signal to identify the setting of the manually operable selector means.

3,159,213
REFRIGERATING APPARATUS

Clifford H. Wurtz, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 30, 1962, Ser. No. 169,894
1 Claim. (Cl. 165—171)



In a heat exchanger, a plurality of conduits of readily deformable metal extending in the same general direction, a plurality of wire fins arranged on opposite portions of said conduits, each of said plurality of said fins bridging across a plurality of said conduits in engagement therewith, said wire fins on one of said opposite portions of said conduits having deformed portions in bonded engagement with wire fins on the other of said opposite portions of said conduits whereby said fins are depressed in the outer surface of said conduits for increasing heat exchange contact between conduits and fins.

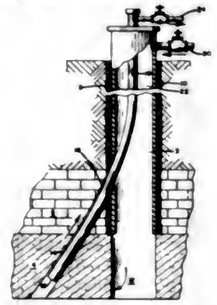
3,159,214
METHOD FOR INJECTING AND RECOVERING FLUIDS FROM A FORMATION

Robert D. Carter, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed June 5, 1961, Ser. No. 114,986
12 Claims. (Cl. 166—4)

1. A method for recovering fluids from a petroleum reservoir which comprises drilling a first well and extending the latter into said reservoir, thereafter drilling a directional well from an intermediate level in said first well into said reservoir and to a depth approximately equal to that of said first well, injecting a test fluid into said

reservoir via one of said wells, permitting said fluid to be produced into the other of said wells, and recovering

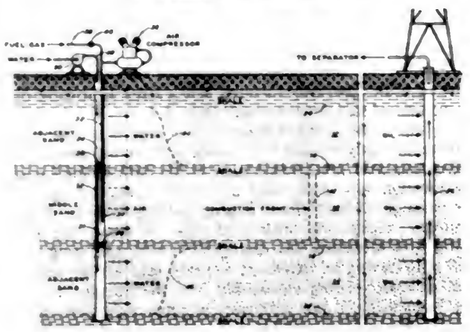


the fluids thus produced including said test fluid from said other of said wells.

3,159,215
ASSISTED PETROLEUM RECOVERY BY SELECTIVE COMBUSTION IN MULTI-BEDDED RESERVOIRS

Robert F. Meldau, Whittier, and John C. McKinnell, Taft, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed Sept. 23, 1958, Ser. No. 762,818
5 Claims. (Cl. 166—10)

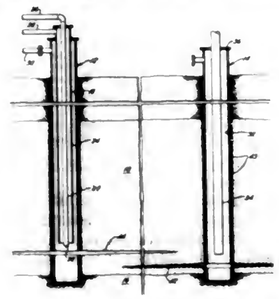


1. The method of assisting recovery of oil from an underground reservoir that includes at least a pair of substantially parallel, permeable hydrocarbon fluid producing zones separated by a relatively thin fluid-impermeable zone and said reservoir having at least an injection well and a production well penetrating all of said zones which comprises the steps of initiating combustion of said hydrocarbon fluid in one of said fluid producing zones adjacent said injection well, said one zone having greater permeability to fluid flow therethrough than the other of said pair of producing zones, injecting air through said injection well into said one zone to establish combustion of said hydrocarbon fluid and to extend the burning area vertically across the thickness of said one zone to form a burning front, continuing said air injection to maintain said combustion burning front and to advance it progressively a distance toward said production well greater than the thickness of said one oil producing zone whereby the adjacent thinner oil-impermeable zone is progressively heated by conduction from said burning front to form a heat reservoir for said other adjacent fluid producing zone, then injecting water through said injection well into said other producing zone to permit heat from said oil-impermeable zone to be absorbed progressively therein as said water flows concurrently with said combustion burning front, and continuing to inject said air and water, respectively, to simultaneously and progressively move through said producing zones and assist recovery of oil from both of said producing zones into said production well.

3,159,216
PROCESS FOR THE PRODUCTION OF OIL OF LOW MOBILITY

Ronald L. Reed, Allison Park, Paul L. Terwilliger, Oakmont, and Lawrence A. Wilson, Jr., Unity, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 21, 1962, Ser. No. 196,293
6 Claims. (Cl. 166—11)



4. A method of recovering an oil of low mobility from an oil-bearing formation containing said oil penetrated by a production well and an injection well comprising creating a substantially horizontal fracture extending from the production well into the oil-bearing formation near the lower boundary thereof, depositing a heat-resistant propping agent in the fracture, displacing via the production well a hot gas at a temperature of 400° F. to 1200° F. into the fracture at a high rate to heat the formation within one foot of the fracture to a temperature of at least 200° F., discontinuing the displacement of hot gas via the production well into the fracture, creating a second fracture extending from the injection well substantially horizontally into the oil-bearing formation near the lower boundary thereof, displacing via the injection well a mixture of a fuel and oxygen-containing gas into the second fracture, igniting the mixture of fuel and oxygen-containing gas and burning the fuel in the second fracture to heat the oil-burning formation within three feet of the second fracture to a temperature at least 200° F., discontinuing the displacement of fuel into the second fracture, continuing the injection of oxygen-containing gas via the injection well into the second fracture to cause combustion of oil in the formation to heat oil to a temperature at which it flows through the first fracture into the production well, and lifting oil from the production well.

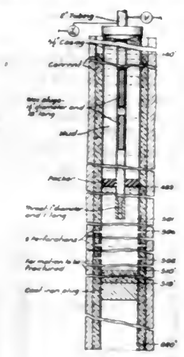
3,159,217
PLASTICALLY DEFORMABLE SOLIDS IN TREATING SUBTERRANEAN FORMATIONS

Alden W. Hanson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 10, 1959, Ser. No. 805,445
16 Claims. (Cl. 166—36)

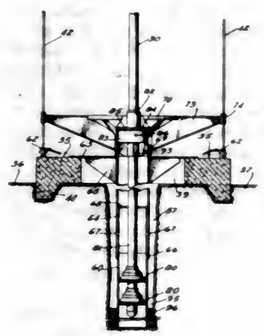
4. The method of treating a subterranean formation traversed by a well consisting of inserting down the well a tubing, to a less depth than that of the well, having a constricted outlet at the lower end thereof which is of less diameter than the tubing; intermixing a plastically deformable substance and forming the resulting intermix-

ture into charges of less cross-section than that of the tubing but of greater cross-section than that of said constricted outlet; injecting the charges thus made down the tubing so that a charge lodges in, and substantially inhibits the passage of fluids through said constricted out-



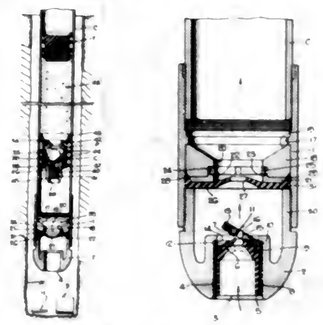
let; introducing a pressure-transmitting fluid into the tubing in sufficient amount to maintain the tubing full; applying sufficient pressure on said fluid, and continuing to inject additional charges down the tubing to force charges successively out through said constricted outlet, and thence into said formation.

3,159,218
UNDERWATER DRILLING METHOD
Arthur E. Wilde, Santa Ana, Calif., assignor to Shaffer Tool Works, Brea, Calif., a corporation of California
Filed Apr. 22, 1958, Ser. No. 730,172
4 Claims. (Cl. 166—46)



1. A method for drilling into an underwater formation, including the steps of: depositing an anchor on the surface of the formation, said anchor having an opening therethrough and having guide means attached to the anchor and extending to a surface support; assembling a pipe string on the support; securing the lower end of the pipe string to the guide means; lowering the pipe string along the guide means through the hole in the anchor to the surface of the formation; drilling a hole in the formation under the anchor; removing from said hole the pipe string; assembling a conductor casing; attaching a breakable link between the lower end of the casing and the guide means; lowering the casing to the surface of the formation; breaking the link; lowering the casing into the hole and cementing the casing in the hole.

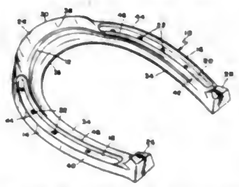
3,159,219
CEMENTING PLUGS AND FLOAT EQUIPMENT
Lyle B. Scott, South Gate, Calif., assignor to Byron Jackson Inc.
Filed May 13, 1958, Ser. No. 734,958
26 Claims. (Cl. 166—156)



11. Apparatus for use in running in and cementing well casing in a well, comprising: a member to be secured in the casing, said member having a socket therein providing a fluid passageway through said member, a flow controlling device having means for restricting the flow of fluid upwardly through said passageway, said flow controlling device being displaceably disposed in said socket, said flow controlling device also including valve means closeable upon the flow of fluid downwardly through the casing for causing the flow controlling device to be displaced from said socket, and back-pressure valve means carried by said member including a back-pressure valve seat above said flow controlling device for preventing the flow of fluid upwardly through said casing following displacement of said flow controlling device.

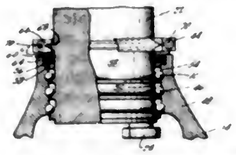
23. Apparatus for use in cementing pipe in a well, comprising the combination of: a plug seat having means for connecting said seat in said pipe in the path of fluid passing through said pipe, said plug seat havng an opening for passage of said fluid, a plug having thereon means sealingly engageable with said pipe to move the plug along with said fluid into engagement with said plug seat, said plug having an extension beneath said sealing means, said extension being extendible into the opening in said seat, said seat and said extension having cooperable means for latching said plug in said seat upon engagement thereof, and said extension and said seat having means including cooperable sealing portions to prevent the flow of fluid upwardly therebetween.

3,159,220
SELF-CLEANING RACING PLATE
Newman H. Gist, 9170 Harness Drive, Spring Valley, Calif., and Smith G. Fowler, Rancho Jamacha, El Cajon, Calif.
Filed Oct. 16, 1961, Ser. No. 145,247
2 Claims. (Cl. 168—24)



1. A self-cleaning racing horseshoe comprising: an arcuate toe portion, a right-side runner and a left-side runner, the forward end of said runners being continuous with respective ends of said toe portion, said runners having a nailing groove positioned adjacent the outside edge of each said runner, said nailing grooves being adapted to fill with packed dirt during the early stage of use, and to remain packed thereafter, whereby all the four horseshoes tend to have the same additional weight in the form of packed dirt, an arcuate toe calk integral with said toe portion of said horseshoe, said toe calk having a cross section that tapers to a relatively sharp edge to cause said toe calk to penetrate the surface of a race track, the bottoms of said runners and the bottom of said toe portion being continuous, the inner walls of said runners and the inner wall of said toe calk being continuous, said inner walls and said bottoms defining a smooth continuous curved surface in a cross-sectional direction relative to said runners and toe portion and adapted to prevent dirt from adhering thereto, whereby when said toe calk penetrates the surface of said track, the pressure of said surface dislodges any dirt that may be on said smooth continuous surface of said horseshoe, the chordal distance of said toe calk being slightly larger than half the width of said horseshoe.

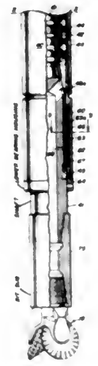
3,159,221
CLAMP RING
Leonard L. Gaubis, Granby, and Frederick A. Young, Simsbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,489
8 Claims. (Cl. 170—160.58)



1. In combination, a propeller blade having a shank portion, an integral flange on said shank portion for supporting a thrust bearing, a projecting ridge having an inclined side on said shank portion outboard of said flange, a removable ring having an internal groove having an inclined side mating with the inclined side of said ridge and means for securing said ring to said shank over said ridge.

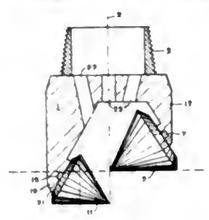
3,159,222
TURBODRILL
Otto Hammer and Joseph A. Mitchell, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 30, 1958, Ser. No. 764,213
8 Claims. (Cl. 175—107)

1. A turbine drilling unit for attachment to the end of a drill string comprising a stator of annular form, first housing means containing said stator and connectible fixedly to said drill string to support said stator fixedly with respect thereto, a turbine rotor within said stator, said stator and rotor providing means engageable by a flowing drilling fluid and cooperating upon such engagement for effecting rotation of said rotor, a lower housing connected on and in fluid flow communication with said first housing means, a driven shaft in said lower housing and in substantial axial alignment with the turbine rotor, said driven shaft having annular bearing surfaces perpendicular to and extending about its axis, said lower housing having bearing surfaces extending perpendicularly of said axis and disposed in bearing relation to said annular bearing surfaces of said driven shaft to resist axial thrust thereon, and a detachable coupling means to couple said rotor to said driven shaft, said coupling means having a longitudinal compression transmitting element and interengaging torque transmitting elements whereby torque is transmitted from the



rotor to said driven shaft and said driven shaft will resist the downward thrust of the rotor, said lower housing on engaging the first housing causing the torque transmitting elements and the compression transmitting element to become operative.

3,159,223
UNDERDRILLING ROLLER BIT
James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1960, Ser. No. 79,738
9 Claims. (Cl. 175—335)

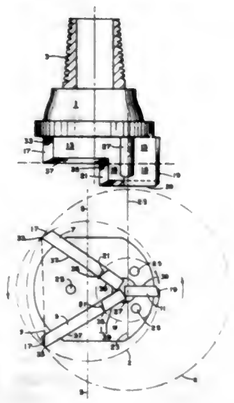


1. An improved bit for drilling a borehole in the earth comprising a main bit body, rotary pilot drilling means on said bit body whose axis of revolution is offset from the central axis of said bit body, a sloping noncutting surface on the outer edge of said pilot drilling means most remote from said axis of said bit body and adapted to force said pilot drilling means inwardly as drilling progresses, rotary cutting means on said pilot drilling means adapted to drill a pilot hole whose circumference includes the outermost extremity of said noncutting surface when said axis of said pilot drilling means coincides with the central axis of said borehole and at least one first roller cone cutting means mounted on said bit body above said rotary cutting means on said pilot drilling means with respect to the direction of penetration of said bit, said first roller cone cutting means adapted to drill an annular section of the earth immediately surrounding said pilot hole and trailing said pilot hole with respect to the direction of penetration of said bit and the outermost tip of the cutting edges of said pilot drilling means at the bottom of said pilot hole leading the lowermost cutting edges of said at least one first roller cone cutting means by a distance sufficient to stabilize said bit in said borehole when said axis of said pilot drilling means coincides with the central axis of said borehole.

3,159,224
UNDERDRILLING ROTARY BIT

James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1960, Ser. No. 79,687
8 Claims. (Cl. 175—391)

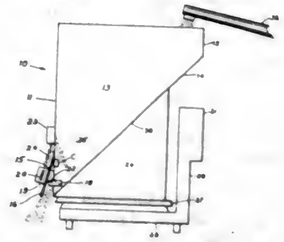


1. An improved rotary drag bit for drilling boreholes in the earth comprising a main bit body, rotary pilot drilling means extending from the bottom of said bit body whose cross section is smaller than said bit body and whose vertical axis of revolution is offset from the vertical axis of revolution of said bit body, a sloping noncutting surface formed on the side of said rotary pilot drilling means furthest from said axis of said bit body and adapted to force said rotary pilot drilling means inwardly toward said axis of said bit body, at least one first rotary drag-type cutter on said rotary pilot drilling means whose bottom end terminates in a cutting edge formed by a surface sloping upwardly and rearwardly with relation to the direction of rotation of said bit and whose side edge nearest said axis of revolution of said bit body terminates in a cutting edge formed by a surface sloping inwardly and rearwardly with relation to said direction of rotation of said bit, said first rotary drag-type cutter being adapted to drill a cylindrical pilot hole whose circumference includes the outermost extremity of said sloping noncutting surface when said axis of said rotary pilot drilling means coincides with the central axis of said borehole, and at least one second rotary drag-type cutter formed on said bit body above said first rotary drag-type cutter on said rotary pilot drilling means with respect to the direction of penetration of said bit, said at least one second rotary drag-type cutter having a bottom end terminating in a cutting edge formed by a surface sloping upwardly and rearwardly with relation to said direction of rotation of said bit and a side edge most remote from said axis of said bit body terminating in a cutting edge formed by a surface sloping inwardly and rearwardly with relation to said direction of rotation of said bit, said at least one second rotary drag-type cutter being adapted to cut an annular section of the earth immediately surrounding the hole drilled by said rotary pilot drilling means, and the ratio of the length of the rotary pilot drilling means to the over-all width of said bit being sufficient to stabilize the position of said bit in said borehole when said axis of said pilot drilling means coincides with the central axis of said borehole.

3,159,225
APPARATUS FOR WEIGHING AND DISPENSING MATERIAL

Charles L. Zimmerman, R.F.D. 1, Northfield Township, Rice County, Minn.

Filed Mar. 28, 1963, Ser. No. 268,710
3 Claims. (Cl. 177—107)

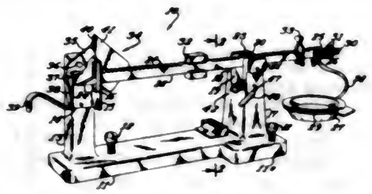


1. Apparatus for weighing and dispensing fluent material comprising a scale having a platform and a vertically movable weigh beam, a hopper supported on the platform, said hopper having a discharge opening at its lower portion, a door hinged at its upper portion for closing the opening, latch means for holding the door in closed position, electro-magnetic means for selectively releasing the latch means and opening and holding the door in open position, said door being constructed and arranged to close by gravity upon de-energizing of the electro-magnetic means, electrically operated feeding means for feeding fluent material into the hopper, first and second switches having their control elements mounted in the path of the weigh beam, said first switch being operative to close the circuit to operate the feeding means when the weigh beam is in "down" position, said second switch being operative to energize the electro-magnetic means to open the door when the weigh beam is in "up" position, timing means to keep the electro-magnetic means energized for a predetermined time independently of the position of the weigh beam, and a third switch in the path of and actuated by said door to permit operation of said feeding means only when said door is closed.

3,159,226
BEAM SHIFTING MECHANISM

Glen L. Mittelsteadt, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota

Filed Mar. 12, 1963, Ser. No. 264,548
3 Claims. (Cl. 177—157)

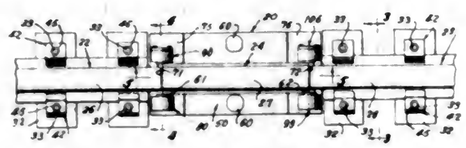


1. In a scale device comprising a base,
a pair of spaced apart beam supporting elements rigidly connected with said base and projecting upwardly therefrom,
an elongated generally horizontally oriented balance beam positioned between said supporting elements and being vertically shiftable relative thereto between an elevated inoperative position and a lowered operative position, said balance beam having a fulcrum element carried thereby engageable with said supporting elements when said balance beam is in the lowered operative position, and being disengageable from said supporting elements when said balance beam is shifted to the inoperative position,
and a beam elevating lever positioned between and pivotally mounted on said supporting elements for vertical swinging movement relative thereto about a substantially horizontal axis, said lever including a beam engaging portion for engaging the balance beam during upward swinging movement of the lever to shift the beam into said elevated inoperative position,
and a handle portion connected to said beam engaging portion for facilitating swinging movement thereof.

3,159,227
WEIGHING APPARATUS

Seymour H. Raskin, Dallas, and Frank G. Vitiello, San Antonio, Tex., assignors to Sands Measurement Corporation, Dallas, Tex., a corporation of Texas

Filed Sept. 28, 1962, Ser. No. 226,957
12 Claims. (Cl. 177—163)

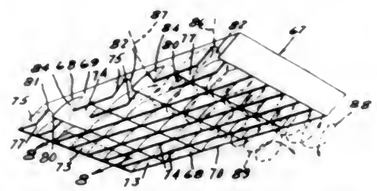


1. A weighing apparatus including: a beam; support means supporting said beam at locations spaced longitudinally of the beam, said support means permitting vertical downward deflection of the beam as a load moves over said beam and between said support means, said support means permitting pivotal movement of said beam at said locations as said beam between said locations deflects vertically downwardly, said support means including a horizontal support surface below said beam and means rigid with said beam rotatably and slidably resting on said support surface at said locations, said support means also including resilient means engageable with said means rigid with said beam for permitting limited longitudinal movement of said beam at said locations; and means operably associated with said beam for measuring the vertical deflection of the beam.

3,159,228
DYNAMIC SEAL FOR AIR SUSPENSION VEHICLE

Joe L. Byrne, Gardena, and James L. Dooley, Santa Monica, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin

Filed Feb. 27, 1961, Ser. No. 91,673
8 Claims. (Cl. 180—7)

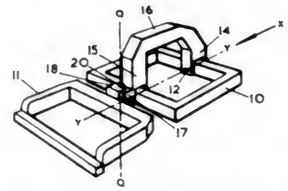


1. In an air suspension vehicle having means to provide a flow of air from an upper portion thereof through the vehicle to its lower side above the surface over which it is to be suspended, a dynamic seal to reduce the leakage rate of air from between said surface and the underside of said vehicle to the periphery thereof, said seal comprising: means substantially coextensive with the underside periphery of said vehicle for forming alternate, oppositely rotating vortexes in air moving outwardly from the underside of said vehicle, said means having downwardly facing concave surfaces.

3,159,229
ARTICULATED CHASSIS FOR A VEHICLE

Leslie Basil Thwaites, % The Thwaites Engr. Co. Ltd., Welch Road Works, Cubbington, near Leamington Spa, England

Filed Jan. 31, 1962, Ser. No. 170,217
Claims priority, application Great Britain, Apr. 13, 1961, 13,269/61
5 Claims. (Cl. 180—51)



1. A vehicle chassis comprising a front portion, a rear portion, and a bridge member interconnecting said front and rear portions, said front portion and said rear portion provided respectively with a pair of coaxial ground wheels, said bridge member comprising a rigid central portion with a respective rigid downwardly-extending arm at each of its ends, one of said arms pivoted on a vertical axis from one of said chassis portions whereby said portions can be articulated about the said vertical axis for steering purposes, the vertical axis being equi-distant from the axes of said pairs of ground wheels, the other chassis portion pivoted between said arms of said bridge member on a longitudinal axis whereby said other chassis portion can tilt laterally with respect to said bridge member and to said one chassis portion to cater for irregularities in the surface of the ground, a respective differential drive transmission gearing interconnecting the ground wheels of each said pair, said differential drive transmission gearings having respective input shafts, a torque transmitting shaft, universal joints respectively interconnecting the ends of said torque transmitting shaft to said input shafts, said torque transmitting shaft comprising telescopable portions, a power plant mounted on said other chassis portion, said power plant having a power output shaft, means connecting said output shaft to drive the input shaft of the adjacent differential drive transmission gearing and thereby to drive the input shaft of the other differential drive transmission gearing through said torque transmitting shaft and universal joints, and means reacting between said bridge member and said one chassis portion for relatively articulating them about said steering axis.

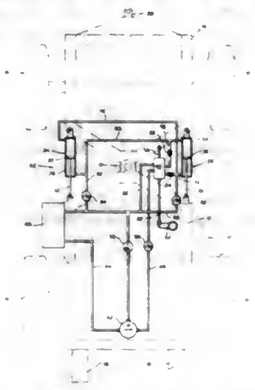
3,159,230
POWER STEERING SYSTEM FOR TOWABLE VEHICLES

Richard O. Gordon, New Buffalo, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Feb. 14, 1962, Ser. No. 173,245
9 Claims. (Cl. 180—79.2)

1. In a power steering system having a double-acting piston and cylinder fluid actuator, a fluid reservoir, a pump connected to the reservoir for drawing fluid therefrom, and a steering control valve connected to the pump for receiving pressurized fluid therefrom and to the reser-

voir for returning fluid thereto, opposite ends of the cylinder being connected to the valve, means for restricting fluid flow from the cylinder and means for permitting fluid flow directly from the reservoir to opposite ends of the cylinder only.

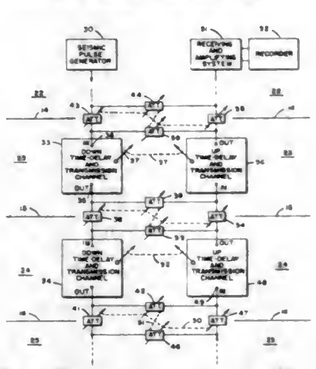


3,159,231

SEISMIC SURVEYING UTILIZING MODELS

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Nov. 9, 1959, Ser. No. 851,604
19 Claims. (Cl. 181—.5)



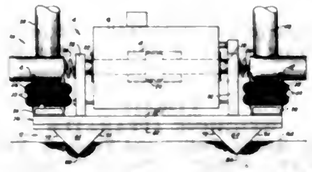
1. A seismic model for one subsurface earth layer having upper and lower boundaries where incident seismic-wave energy is partially transmitted and partially reflected, said model comprising two adjustable time-delay and transmission channels each having time-delay characteristics representative of seismic wave propagation of energy so as to transmit signals simulating a seismic impulse traveling in said layer with a time delay proportional to the one-way travel time of seismic waves through said layer, said two channels corresponding to said layer when transmitting seismic particle motion respectively downwardly and upwardly, adjustable electrical network means coupled to the output of each of said channels for dividing said output into two portions which correspond to the earth particle motions respectively reflected by and transmitted across one of said boundaries, and connecting means between said output-dividing means of each of said channels and the input of the other of said channels for applying to said input the signals representative of said reflected earth-particle motions.

3,159,232

SHEAR WAVE TRANSDUCER

Delbert W. Fair, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Nov. 14, 1962, Ser. No. 237,524
8 Claims. (Cl. 181—.5)



2. A device for transmitting a horizontally directed, periodically reversing force to the earth comprising, in combination:

a coupling member having a horizontal cross sectional area which continually increases from the bottom toward the top for engaging the earth;

means connected to the member for applying a force first in one direction and then in the opposite direction, the forces being applied in a horizontal plane; and,

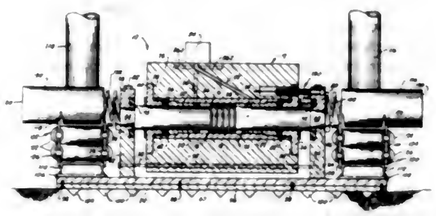
means for applying a vertical load to the member while permitting free horizontal movement of the member.

3,159,233

SEISMIC TRANSDUCER CONSTRUCTION

Frank Clynch and Delbert W. Fair, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Nov. 14, 1962, Ser. No. 237,540
14 Claims. (Cl. 181—.5)



1. A transducer for inducing waves in an elastic medium such as the earth comprising:

a mass member having a cylinder bore extending therethrough;

a piston member having a piston and oppositely extending piston rods reciprocally disposed in the cylinder bore with the rods extending from each end of the cylinder bore;

means for introducing fluid under pressure into the cylinder bore alternately on opposite sides of the piston for reciprocating the piston member relative to the mass member; and,

a frame interconnecting the ends of the oppositely extending piston rods, the frame having a surface thereon for engaging a surface of the elastc medium,

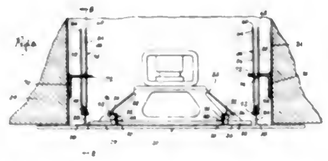
whereby upon reciprocation of the piston member relative to the mass member, the frame will be reciprocated by a reaction force and the surface of the elastic medium which the frame engages will also be reciprocated to produce particle velocities which will propagate through the elastic medium as waves.

3,159,234

SECURING DEVICE FOR LOUD SPEAKER BAFFLES

Heinrich J. Junk, Maplewood, Mo., assignor to Lowell Manufacturing Company, Maplewood, Mo., a corporation of Missouri

Filed Nov. 15, 1962, Ser. No. 237,928
5 Claims. (Cl. 181—31)



1. A loud speaker baffle having a sound outlet comprising a central perforate section, means for supporting a loud speaker over the sound outlet on an imperforate section of the baffle surrounding said sound outlet, and means for connecting said baffle to a supporting surface, said loud speaker supporting means comprising a vertical member connected to the baffle and receiving in frictional relationship a removable fastening element, said removable fastening element having a U-shaped cross-section and being comprised of a pair of spring-like legs spaced from one another and tapering towards an open mouth, said fastening element being receivable over the vertical member with said legs being biased against the sides of said member and a flange connected to said fastening element adapted to overlie and bear against a flanged portion of the loud speaker and maintain it against the baffle.

3,159,235

ACOUSTICAL PARTITIONS

James J. Young, Roger P. Johnson, and Donald N. Huggins, all of Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed May 1, 1961, Ser. No. 106,588
8 Claims. (Cl. 181—33)



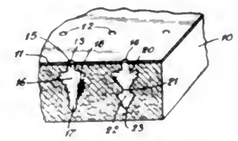
1. A room partition resistant to the transmission of sound comprising: a plurality of supporting studs; facings attached thereto to form the walls of said partition; sound control blankets freely suspended between said facings extending substantially the entire length thereof and having their edges in nonsecured co-linear relationship with said supporting studs; said sound control blankets comprising a layer of interbonded fibers adhered to a sound blocking septum that is substantially co-extensive therewith.

3,159,236

MANUFACTURE OF PERFORATED ACOUSTIC BOARDS

David W. Akerson, St. Paul, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware

Original application Oct. 6, 1958, Ser. No. 765,546. Divided and this application Sept. 11, 1962, Ser. No. 222,877
6 Claims. (Cl. 181—33)



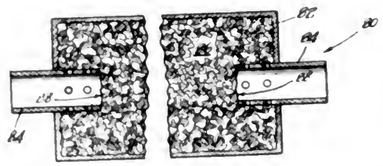
1. The method of forming acoustic openings in a rigid panel of sound-absorbing material having a coat thereon which is non-absorptive of sound, which comprises forming a multiplicity of sound-receiving openings of relatively smaller cross-section in said coat, extending a multiplicity of said openings as parallel-sided tubular channels through an adjacent layer of said panel, and further extending and enlarging each of said channels laterally each to a cavity of relatively greater cross-section within the interior of the panel, the extensions of said openings being such that said tubular channels provide bottle-neck openings for the cavities.

3,159,237

EXHAUST MUFFLER

Dean G. Thomas, Stoughton, Wis., assignor to Nelson Muffler Corporation, Stoughton, Wis., a corporation of Wisconsin

Filed Oct. 28, 1959, Ser. No. 849,316
2 Claims. (Cl. 181—42)



1. An exhaust muffler for internal combustion engines comprising a unitary metal body having an exhaust gas inlet, an exhaust gas outlet and a mass of foamed metal including a network of substantially interconnected cells disposed between said inlet and said outlet in flowpathwise obstructing relationship therewith whereby gases passing from said inlet to said outlet are caused to follow labyrinthine paths through the interconnected cells of said mass of foamed metal for attenuating sound waves carried by said gases.

3,159,238

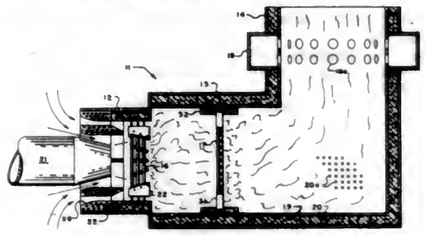
DIFFUSER SCREEN WITH HEAT-INSULATING RUNGS FOR EXHAUST NOISE SUPPRESSOR FOR REACTION ENGINES

Wayne B. Shearer, State College, Pa., assignor to Curtiss-Wright Corporation, a corporation of Delaware

Filed Dec. 1, 1960, Ser. No. 72,891
7 Claims. (Cl. 181—33)

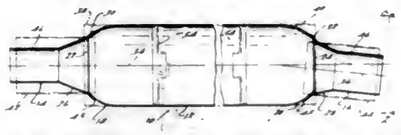
5. A three-dimensional labyrinthine cribwork diffusing screen for an exhaust noise suppressor, comprising in combination a plurality of ranks of rungs; each of said ranks comprising a plurality of parallel rungs spaced apart from each other in a plane; said ranks being stacked in laminar fashion; each of said rungs comprising a straight metal rod, a plurality of cylindrical ceramic sleeves having a fusing temperature above 3200° F. dis-

posed in end-to-end relationship and surrounding said rod and defining with said rod a space between said rod and



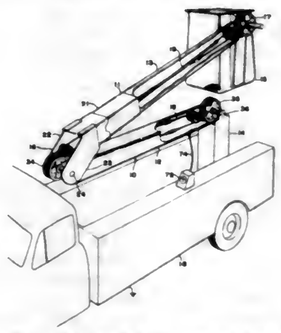
said sleeves, and a powdered ceramic heat-insulating material having a fusing temperature above 3200° F. disposed in said space.

3,159,239
MUFFLER
Peter G. Andrews, Kitchener, Ontario, Canada, assignor to Walker Manufacturing Company, a corporation of Delaware
Filed May 11, 1962, Ser. No. 193,927
2 Claims. (Cl. 181—61)



2. A muffler comprising a tubular shell having a hemispherical surface formed on one end, an end fitting at said one end and having an arcuate surface of substantially identical radius of curvature as said hemispherical surface and sealingly mating therewith, said end fitting having a bushing formed therein for attachment to a conduit to connect the muffler in an exhaust gas system, an annular weld at the joint between said surfaces and rigidly holding them together, an end fitting at the other end of the shell, and silencing means inside the shell.

3,159,240
AERIAL LIFTS FOR ENERGIZED LINE WORKING
Charles J. Miller, Jr., Wadsworth, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Aug. 22, 1961, Ser. No. 133,200
16 Claims. (Cl. 182—2)



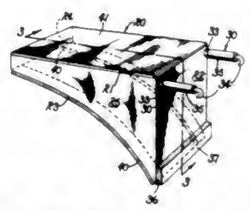
7. A boom for an aerial lift comprising an insulating beam constituted by an elongate member of structural insulating material, means for carrying the said insulating beam in movable relation to a support means including a metal part at one end of the insulating beam, means carried by the said insulating beam at the remaining end thereof including a metal part, and stress control means spaced apart along the insulating beam between the ends thereof for distributing and controlling an electric field along the beam due to voltage differences impressed between the said metal parts.

3,159,241
HARNESS FOR AIRMEN
James Martin, South Lands Manor, South Lands Road, Denham, near Uxbridge, England
Filed July 12, 1963, Ser. No. 294,686
Claims priority, application Great Britain, July 19, 1962, 27,738/62
8 Claims. (Cl. 182—6)



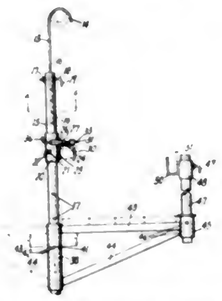
1. An airman's harness comprising:
(*a*) a hip strap dimensioned to encircle the hips of an airman;
(*b*) a loop at each end of said hip strap;
(*c*) a pair of crutch strap means secured to said hip strap and extending through the respective loops of said hip strap;
(*d*) a pair of shoulder strap means secured to said hip strap and adapted to extend over the shoulders of said airman;
(*e*) a first buckle part carried by said crutch strap means at the ends thereof;
(*f*) a second buckle part carried by said shoulder strap means at the ends thereof, said first and second buckle parts being formed for releasable interengagement;
(*g*) a friction device on one said buckle part; and
(*h*) a lowering line adapted for attachment to a parachute harness and co-operating with said friction device.

3,159,242
DETACHABLE BUMPER STEP
Ralph E. James, 2734, N. Grantland, Fresno 5, Calif.
Filed Sept. 20, 1963, Ser. No. 310,255
3 Claims. (Cl. 182—92)



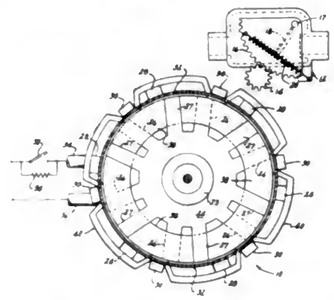
1. A bumper step adapted for selective storage on and detachable connection to a vehicle affording an anchorage and a reaction surface elevationally spaced therebelow, as well as affording a storage space between spaced elements, one of which is provided with a rounded external surface adjacent to said storage space, the step comprising a rigid platform providing opposite ends; a reaction plate secured to one of said ends and affording a lower depending edge; an arcuately inwardly curved web member joined at one end to the lower edge of said plate and at the opposite end to the other end of said plaform; anchor means adjustably rigidly mounted on said reaction plate elevationally superior to said lower edge and being adapted to engage said anchorage when the step is a position of connection to the vehicle; means carried by said reaction plate spaced elevationally below said anchor means and adapted to engage said reaction surface; said platform affording a frictional surface upwardly disposed when the step is detachably connected to the vehicle; and compressible retaining means carried by said web in spaced, cooperating relation to said frictional surface and adapted to be compressed between said elements dependably to retain the step in a position of storage.

3,159,243
SCAFFOLD HANGER FOR OVERHEAD HIGHWAY SIGN TRUSSES
Henderson G. Leonard, P.O. Box 128, Covert, Mich.
Filed Sept. 20, 1963, Ser. No. 310,329
7 Claims. (Cl. 182—150)



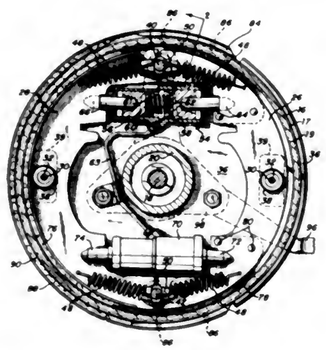
5. A truss engaging scaffold hanger comprising,
a cylindrical suspension member, a hanger member telescopically engageable at its lower end with said suspension member and having a truss engaging hook on its upper end,
a first connecting and supporting pin passed through the telescoped ends of said members and threadedly engaged with the outer-most of the members,
one of said members having a plurality of spaced holes therethrough selectively receiving said first pin,
a retainer sleeve slidably and rotatably engaged around said suspension member and having means adapted to selectively clamp the sleeve to the suspension member,
an arm projecting from the side of said retainer sleeve and forming a laterally directed slideway,
a truss chord hook member having one end slidably guided in said slideway with a chord engaging arm projecting vertically therefrom,
tubular elements secured in alined relation on said hook member and said arm,
a second pin passed through said tubular elements and threadedly engaged with one of them to reciprocate said hook member on said arm and the slideway thereon,
a platform supporting sleeve member slidably and rotatably received on said suspension member,
a third pin passed through said supporting sleeve member and said suspension member and threadedly engaged with one of the members having a plurality of vertically spaced holes formed therein selectively receiving said third pin,
and a scaffold supporting bracket carried by and projecting laterally from said supporting sleeve member, said pins having manually operable handles thereon.

3,159,244
ELECTRIC MOTOR CONTROL
Maynard E. Anderson, Birmingham, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,790
4 Claims. (Cl. 185—11)



2. In an operator which comprises a reciprocable driven member, an A.C. synchronous motor having a field and a magnetizable rotor for driving said member in one direction, and a spring for driving said member in the other direction; the improvement comprising a control circuit for the motor which includes means operable at one time for applying a relatively high A.C. voltage to the motor field sufficient to operate the rotor and driven member in said one direction against the opposition of the spring, and operable at a second time for applying a relatively low A.C. voltage to the motor field to exert a demagnetizing action on the rotor such as to enable the spring to drive the aforementioned member in its other direction.

3,159,245
BRAKE APPARATUS
Gianni A. Dotto, 3005 Claar Ave., Dayton 29, Ohio
Filed Sept. 27, 1962, Ser. No. 226,588
6 Claims. (Cl. 188—76)



1. Brake apparatus comprising:
support structure,
a drum rotatably carried by the support structure, the drum having a pair of opposed surfaces,

support means within the drum and freely carried by the support structure, the support means being movable toward and away from the drum, the support means also being movable in the direction of rotation of the drum, the support means being pivotally movable with respect to the drum,

abutment means engageable by the support means for pivotal action of the support means thereabout,

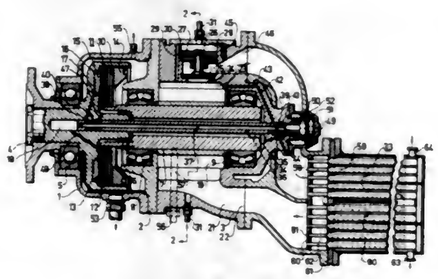
engagement means carried by the support means and disposed adjacent the opposed surfaces of the drum,

actuator means within the drum for movement of the support means, such movement of the support means causing the engagement means to move into engagement with the drum at opposed surfaces thereof, engagement of the engagement means with the drum causing movement of the engagement means in the direction of rotation of the drum, thus causing the support means to move in the direction of rotation of the drum so that there is engagement of the support means with the abutment means causing pivotal action of the support means thereabout and causing pivotal action of the engagement means toward the opposed surfaces of the drum so that increased pressure is applied by the engagement means upon opposed surfaces of the drum by pivotal action of the engagement means with pivotal action of the support means as rotative movement of the drum urges the support means into engagement with the abutment means and as the actuator means urges movement of the support means.

3,159,246
HYDROSTATIC BRAKE

Karl Gustav Åhlen, Stockholm, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Stockholm, Sweden, a company

Filed May 25, 1962, Ser. No. 197,698
Claims priority, application Sweden May 26, 1961
22 Claims. (Cl. 188—92)

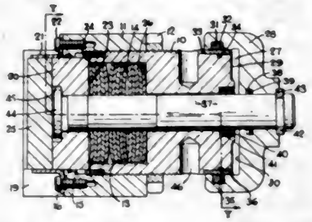


1. A hydrostatic brake for braking a load shaft connected to the load to be braked comprising a positive displacement pump having an input shaft, a throttle valve for throttling the discharge from the pump to create and maintain back pressure on the pump to resist operation thereof and thereby produce a braking effect on said load shaft, a servo motor responsive to the discharge pressure of the pump for actuating said throttle valve, a releasable clutch comprising a first element for driving said input shaft and a second element for connection with said load shaft, means responsive to the discharge pressure of the pump for engaging said clutch, selectively operable control means for controlling said pressure responsive means, and starting means for effecting sufficient initial engagement of said cltuch to start said pump and create a discharge pressure for effecting normal load carrying engagement of said clutch.

3,159,247
SPRING APPLIED FLUID PRESSURE RELEASE BRAKE

Roy Charlton, Sutton Coldfield, England, assignor to Hordern Mason & Edwards Limited, Birmingham, England, a British company

Filed Jan. 29, 1963, Ser. No. 254,682
4 Claims. (Cl. 188—170)



1. A friction brake device for arresting relative motion between relatively movable members comprising:

(*a*) a sleeve-like outer body member including attachment means for mounting on one of said relatively movable members and having at its forward end a portion defining a guideway extending longitudinally internally of said outer body member,

(*b*) a substantially solid or block like inner body member having an axially extending bore and disposed in said outer body member with its forward end spaced rearwardly of said guideway,

(*c*) a pad carrier disposed in said guideway and movable therealong,

(*d*) a brake pad disposed on said pad carrier,

(*e*) spring means interposed between said forward end of said inner body member and said pad carrier for urging the latter forwardly along said guideway into an operative position in which said brake pad engages the other of said relatively movable member,

(*f*) a pressure fluid chamber at the rearward end of said inner body member having a movable end member,

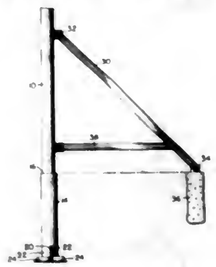
(*g*) connecting means extending through said bore in said inner body member between said movable end member and said pad carrier to enable the latter to be moved rearwardly along said guideway into a retracted position in which a clearance exists between said brake pad and said other relatively movable member in response to establishment of fluid pressure in said pressure fluid chamber and resultant longitudinal sliding of said movable end member.

3,159,248
POST OR POLE ANCHORAGE

Harold B. Biehn, Greenfield, Ohio
(Box 110, Washington Court House, Ohio)

Filed Apr. 3, 1961, Ser. No. 100,235
3 Claims. (Cl. 189—31)

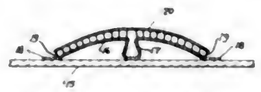
1. A combined post and ground anchoring means therefor, comprising an elongate tubular receptacle forming said anchoring means and adapted to be fixed in the ground and having an open upper end and an open lower end, the receptacle having a wall in which a portion of the lower end thereof is longitudinally slotted to form a plurality of segments, the receptacle being initially of constant inside and outside diameter throughout its length and of substantially unvarying wall thickness at least in the slotted portion thereof, a tubular post having a lower end portion extensible into the open upper end of the receptacle and through the length of the receptacle, said segments being bent inwardly and constricting the said open lower end of the receptacle to a size smaller than the said lower end portion of the post, said post being of an overall cross-sectional dimension throughout said lower end portion to fit snugly in the receptacle whereby the segments are forced outwardly as the lower end portion of the post is driven downwardly through and to the lower end of the receptacle, and an elongate anchor member disposed transversely of the lower end of each segment and rigidly fixed midway of its ends to the segment for movement outwardly with the segment into surrounding earth as the post is driven to the lower end of the receptacle, each anchor member being of a form to facilitate its penetration of the surrounding earth.



3,159,249
DAMPING MEANS

Benjamin J. Lazan, St. Paul, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 27, 1960, Ser. No. 5,051
8 Claims. (Cl. 189—34)

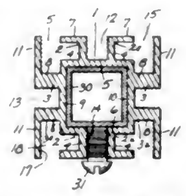


1. A corrugation configuration damping structure for attachment to structural members subjected to bending to increase the damping and stiffness thereof, which structure comprises a corrugated element, the ridge of said corrugated element being adapted to be spaced away from the surface of said structural member, means for attaching said corrugated element to at least one surface of said structural member, rigid supporting means positioned between said ridge and structural member surface, said supporting means being a lightweight rigid cellular material disposed between said corrugation ridge and structural member surface, a layer of viscoelastic material overlying the ridge of said corrugated element and a restraining cover layer of flexible sheet material overlying said viscoelastic layer.

3,159,250
STRUCTURAL MEMBER

Bertram Arnold Wilson, 2001 Peninsula Drive, Erie, Pa.

Filed Feb. 5, 1962, Ser. No. 171,134
3 Claims. (Cl. 189—41)

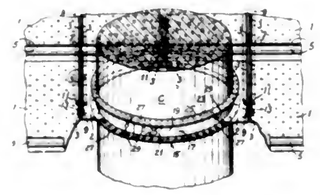


1. A structural member having a square tubular center section and a pair of longitudinally extending integral angles on each side of the center section, the individual pairs of angles having longitudinal flanges integral with and extending outward from the associated side of the center section and spaced from each other substantially the pitch diameter of a screw and further having other longitudinal flanges extending away from each other and spaced from said associated side substantially the pitch diameter of a screw, said other flanges on two opposite sides of the center section overlapping the edges of the other flanges on the adjacent sides of the center section and spaced from said edges substantially the pitch diameter of a screw, said angles providing eight longitudinally extending slots each having on the opposed surfaces thereof longitudinal ribs of screw thread formation and spacing whereby a screw may be screwed into each slot at any point along the length of the slot to form a screw threaded attachment.

3,159,251
FLEXIBLE CORNER MOLDING FOR CURVED SURFACES

Kenneth F. Becker, Hanley Hills, Mo.
(7701 Underhill Drive, St. Louis 14, Mo.)

Filed Apr. 24, 1961, Ser. No. 105,037
4 Claims. (Cl. 189—85)



1. In a building having an interior floor-to-ceiling concrete column, said column being generally circular in horizontal cross section, an elongate flexible metal strip having a thin manually bendable back and a thin flat flange extending generally perpendicularly from a margin of said back to form a supporting shelf generally at a right angle to the back, said flange having notches therein spaced along its length, and a thin layer of stretchable plastic material adhered to and completely covering the outside of said flange including the notches, said metal strip having its back applied to the perimeter of the column and bent around the column in a horizontal plane adjacent the upper end of the column and secured to the column in bent condition by fasteners driven into the column through said back, said flange projecting outward from the column at the lower margin of the back of the strip when so secured, said notches having been spread by said bending and said plastic material being stretched across the spread notches to cover and conceal the notches and to provide a substantially smooth unbroken and unobtrusive flat appearance to the underside of said flange, and a plurality of ceiling members having edge portions curved in substantial correspondence with the curvature of the perimeter of the column, the margins of said ceiling panels at said curved edge portions of said panels being entered over said flange and bearing upon the top face of said flange.

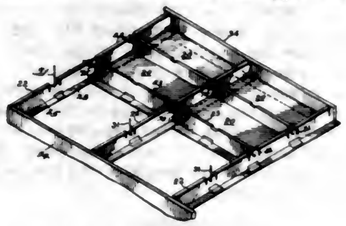
3,159,252
FIRE RETARDANT CEILING SUSPENSION SYSTEM

Ronald F. Cotts, Evanston, Ill., assignor, by mesne assignments, to The Celotex Company, Chicago, Ill., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,585
4 Claims. (Cl. 189—85)

1. A suspension member for a ceiling suspension system comprising an elongated central web portion having a slot in its lower edge intermediate its ends, a

discontinuous reinforcing bead extending integrally with said web portion along the top edge thereof, said discontinuity being in registration with said slot in said web portion, and a pair of flanges extending transversely to said web portion, one of said flanges being formed of two sheets folded one over the other, the upper one of said

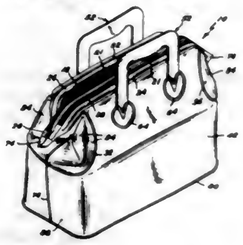


sheets having a slot therein in registration with said slot in said web portion, the remaining length of said upper one of said sheets being integrally connected to and along the lower edge of said web portion, and the other of said flanges being a planar extension of said lower one of said two sheets.

3,159,253
TOY BAG AND METHOD OF MANUFACTURE THEREOF

Alphonse J. Breault, Woonsocket, R.I., assignor to Hassenfeld Bros., Inc., Central Falls, R.I., a corporation of Rhode Island

Filed June 25, 1962, Ser. No. 204,824
10 Claims. (Cl. 190—48)

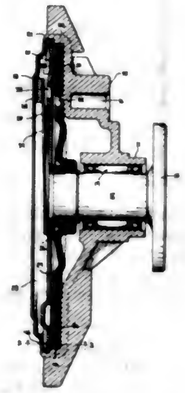


1. In a toy bag simulating a doctor's bag, a first wall, a second wall sealed to said first wall at the ends thereof, both said walls being formed of two sheets of flexible material between which a stiffener panel is disposed, said stiffener panels being cut out at the ends thereof so that gussets are formed in the walls in the ends thereof when said panels are sealed along their ends, a bottom wall sealed to said first and second walls at the lowermost ends thereof and defining the bottom of said bag, a zipper fastener joined to said first and second walls at the upper ends thereof and sealed between the sheets that define said walls, said zipper fastener thereby defining the mouth of said bag and being operable to provide access to the interior of said bag, both said first and second walls having spaced seals formed therein adjacent said mouth and extending substantially the width of said walls in parallel relation to said mouth, said spaced seals cooperating with the sheets of material from which said walls are formed to define channels on opposite sides of said mouth, a rod located in each channel and being bent substantially at right angles adjacent the ends thereof, the portion of said mouth adjacent the bent portions of said rods being deformed to define tabs that fold into said gussets, said gussets being deformable when said zipper fastener is closed and the tabs are folded thereover, said rods defining stiffening elements to provide for the folding action of said tabs and to retain said mouth in an open position when said zipper fastener is opened.

3,159,254
SPEED RESPONSIVE COUPLING DEVICE

Thomas J. Weir, Indianapolis, Ind., assignor to Schwitzer Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Jan. 11, 1962, Ser. No. 165,527
4 Claims. (Cl. 192—58)



1. A fluid coupling device comprising a driven shaft, an outer casing rotatably mounted on said shaft, said casing having a divider plate therein separating the space within said casing into a fluid reservoir and a drive chamber, a drive disc mounted on said shaft within said drive chamber, and including surfaces disposed in close face-to-face and spaced relation with surfaces of said plate and outer casing, a relatively large fill port in said plate opening into said reservoir and into said drive chamber for filling the spaces between said disc, plate and casing surfaces with fluid from said reservoir to create fluid drive coupling of said casing and said disc, a valve plate having a portion normally spaced from said port and pivotally mounted on said divider plate within said reservoir, the pivotal axis of said valve plate lying in a plane transverse to said shaft axis for movement of said valve plate into and out of seating relation with said port, spring means acting between said valve plate and said divider plate for biasing said valve plate out of said seating relation, and a weight mounted on said valve plate portion and responsive to centrifugal forces created by rotation of said casing for moving said valve plate to closed position over said fill port in response to increase of rotational speed, and permitting said spring means to move said valve plate to open said port in response to decrease of rotational speed to allow flow of fluid from said reservoir to said chamber, said divider plate having formed therein a relatively small drain port adjacent its periphery for draining fluid from said drive chamber to said reservoir.

3,159,255
TIMER SHAFT CONSTRUCTION

Lee A. Woolley, Kokomo, Ind., assignor to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana

Filed Sept. 27, 1961, Ser. No. 141,137
12 Claims. (Cl. 192—67)

1. A manual drive mechanism for a sequence timer, comprising in combination:

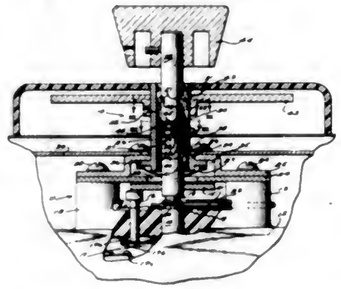
(*a*) an axially reciprocable timer shaft supported by the timer for rotation about its axis;

(*b*) a tubular sleeve slidably receiving an end of the reciprocable timer shaft, which shaft terminates

therein, said sleeve having means providing a slidable rotational driving connection therewith;

(*c*) an extension shaft having an end slidably received in and terminating within said sleeve in axial alignment with the timer shaft;

(*d*) coupling means disposed within said sleeve and connecting said extension shaft to the timer shaft in a manner providing joint axial movability and free relative rotation of said shaft; and

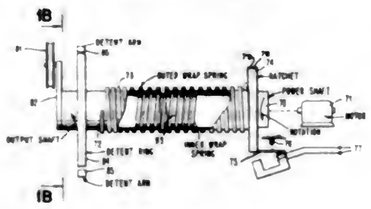


(*e*) engaging means on said extension shaft providing a rotational driving connection with said sleeve in one axial position of said shafts, and enabling free rotation of said extension shaft within said sleeve in another axial position of said shafts.

3,159,256
WRAP SPRING CLUTCH

Herbert Frazer Welsh and Norman J. Appleton, Philadelphia, and Morton Silverberg, Elkins Park, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Original application Apr. 27, 1956, Ser. No. 581,235, now Patent No. 3,021,512, dated Feb. 12, 1962. Divided and this application June 20, 1961, Ser. No. 124,268
2 Claims. (Cl. 192—81)

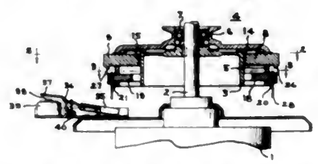


1. A wrap spring clutch comprising a hollow cylindrical input shaft, a hollow cylindrical output shaft substantially coaxial with said input shaft and spaced axially therefrom, a ratchet rotatably mounted relative to one of said shafts, a first spring disposed adjacent the exterior surfaces of both said input and output shafts and connected at one of its ends to said ratchet, a second spring disposed to engage the interior surface of both said input and output shafts when said output shaft overruns said input shaft, said second spring being attached at one of its ends to one of said shafts, drive means coupled to said input shaft for rotating said input shaft and signal responsive means coupled to said ratchet for selectively causing said first spring to engage the exterior surfaces of said input and output shafts thereby to transfer the rotation of said input shaft to said output shaft.

3,159,257
SPEED RESPONSIVE CLUTCH WITH VARIABLE MEANS

John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Dec. 13, 1962, Ser. No. 244,491
6 Claims. (Cl. 192—104)

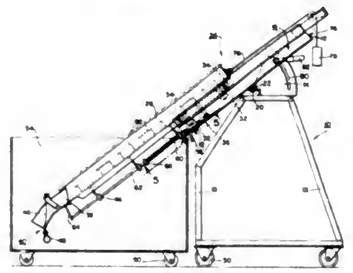


2. For use in order to vary the response to centrifugal force of a member rotatable about a central axis and biased inwardly toward that axis by springs; a weight rotatable about said axis and selectively connectable to said member; and a latch for connecting said weight to said member, said weight having a pair of pins extending therefrom substantilly in a plane perpendicular to the axis of rotation of said members, said latch having an opening formed therein with said pins extending therethrough so that said latch is loosely secured on said pins; means biasing said latch away from said member to a position limited by said pins, the center of gravity of said latch being adjacent a line drawn between said pins when said latch is in said position limited by both said pins, and means for striking said latch to move said latch about said pins away from said position to a second position, said weight being positioned so that said latch in its second position is in interfering relationship with said member so that said member and said weight respond together to centrifugal force as said member and said weight are rotated.

3,159,258
MECHANICAL LOADING DEVICE

Peter F. Magyar, Warren, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

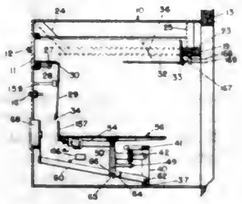
Filed Dec. 28, 1962, Ser. No. 248,003
9 Claims. (Cl. 193—32)



1. A gravity actuated mechanical loading device for parts comprising, an inclined conveyor tray for transferring parts by gravity, guide means on said conveyor tray, a guide frame for cooperation with said guide means, stop means on said guide frame providing a plurality of positions thereon, a stop lever attached to said conveyor tray to prevent relative movement of said conveyor tray to said guide frame when engaging with said stop means, a dispenser device mounted at the lower end of said conveyor tray, conveyor retraction means urging said inclined conveyor tray upward in said guide frame, and an actuation device cooperating between said dispenser device and said stop lever to disengage said stop lever from said stop means to permit said conveyor tray to

be moved by said conveyor retraction means to a new position determined by re-engagement of said stop lever with said stop means.

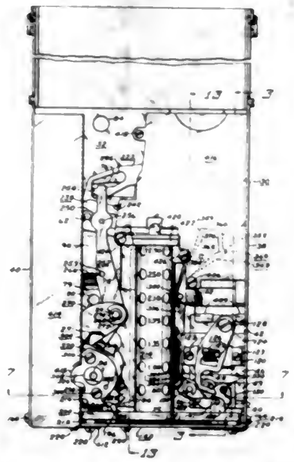
3,159,259
AUTOMATIC DEVICE FOR PURCHASING WASTE PAPER
Joseph T. Reece, 302 10th St., Holloway Terrace, New Castle, Del.
Filed Jan. 21, 1964, Ser. No. 339,288
11 Claims. (Cl. 194—4)



1. A purchasing machine of the class described, comprising: a housing, a receiving drawer means in said housing movable between open and closed positions, said drawer means being dimensioned to receive material to be purchased therein when said drawer is in said open position; weighing means within said housing, said weighing means comprising platform means located below said drawer when said drawer is in said closed position; coin dispensing means controlled by said weighing means; means for discharging the contents of said drawer means upon said platform means; and means responsive to the presence of a weight on said platform means for causing actuation of said coin dispensing means.

3,159,260
COIN CHANGERS
Fred J. Melvin, Bellefontaine Neighbors, and Merral P. Haverstick, Normandy, Mo., assignors, by mesne assignments, to National Rejectors, Inc., a corporation of Missouri
Filed Oct. 15, 1958, Ser. No. 767,381
20 Claims. (Cl. 194—10)

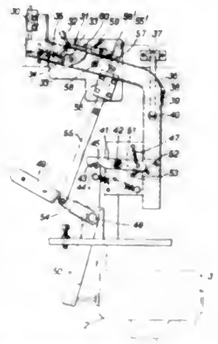
1. A coin-operated device that has a coin passageway, a second coin passageway, a coin-responsive element movable relative to the first said coin passageway, a second coin-responsive element movable relative to said second coin passageway, each of said coin-responsive elements having a coin-holding portion that is movable to coin-holding position to hold a coin and that is movable to coin-freeing position to free said coin, an element to move said coin-responsive elements toward coin-freeing position, a cam, an output shaft on which said cam is mounted, a motor that rotates said output shaft through one complete revolution during each cycle of said coin-operated device, an electric switch with contacts that are selectively movable to motor-energizing position or to motor de-energizing position, an actuator for said switch that is biased to motor de-energizing position to enable said contacts of said switch to be in motor de-energizing position but is movable to motor-energizing position to enable said contacts to be in motor-energizing position, said switch actuator being engageable by coins in said coin passageways and being movable by said coins toward motor-energizing position, a movable element, a linkage intermediate said movable element and said cam on said output shaft that normally holds said movable element in motor de-energizing position but that responds to rotation of said cam and said output shaft to free said movable element for movement to motor-energizing position, said movable element having portions thereof that are spaced apart to permit said switch actuator, when said movable element is in motor de-energizing position, to move from motor de-energizing position to motor-energizing position, one of said portions holding, when said movable element is in motor de-energizing position, said switch actuator in motor-energizing position after said switch actuator has been moved to motor-energizing position by a coin in one of said passageways, said movable element responding to rotation of said cam and said output shaft to move to motor-energizing position, the other of said portions holding said switch actuator in motor-energizing position when said movable element is in motor-energizing



position, said linkage, at the end of the cycle of said coin-operated device, causing said movable element to move to motor de-energizing position, thereby permitting said switch actuator to return to motor de-energizing position, a plurality of abutments on said cam, a latch mounted adjacent said cam and in register with said abutments on said cam, said latch coacting with said abutments to limit reverse rotation of said cam and said output shaft, a gauging element that is movable to provide two individually different predetermined limits to the movement of said coin-responsive elements, and a second linkage that is intermediate said gauging element and said cam on said output shaft and that responds to rotation of said cam and said output shaft to move said gauging element.

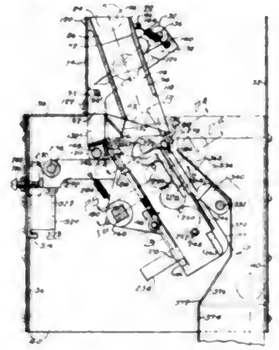
3,159,261
LIQUID DISPENSING APPARATUS
Frank Ernest Prior, 47 Cecil Road, Hounslow East, Middlesex, England
Filed Mar. 26, 1962, Ser. No. 182,261
9 Claims. (Cl. 194—13)

1. Apparatus for dispensing a predetermined quantity of liquid, comprising a cylindrical container for the liquid to be dispensed, a supporting closure member at the one end of said container and including an outlet valve for draining said container, a second closure member at the other end of said container and including an inlet valve having a port opening through the inner side of said second closure member, and nozzle forming means including the inner side of said second closure member, said nozzle forming means being of fixed dimensions and forming an annular nozzle of constant size communicating with said port for directing liquid flowing out said port on to the internal surface of the container wall to



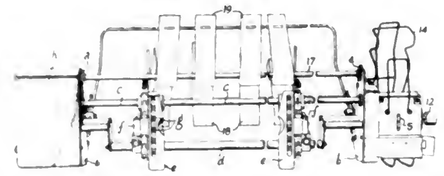
form a continually flowing curtain of liquid along said wall.

3,159,262
MONEY-HANDLING DEVICES
Francis T. Vaccaro, Pagedale, and Jules N. J. Boisvert, Ferguson, Mo., assignors to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 8, 1961, Ser. No. 94,274
18 Claims. (Cl. 194—61)



4. A money-handling device that comprises a plurality of coin carriers that are normally in a generally vertical coin-receiving position but are movable to a generally horizontally coin-releasing position, each of said coin carriers having a plurality of relatively movable members that normally coact to define a coin-receiving recess but that can be moved relative to each other to effect opening of said coin-receiving recess, locking levers that are normally disposed in register with concave recesses on said coin carriers but are movable out of registry with said concave recesses by coins that are partially within said coin-receiving recesses but have the upper portions thereof extending outwardly beyond said coin-receiving recesses and overlying said concave recesses and serving as convex camming surfaces, and cams that are adjacent said coin-releasing position of said coin carriers, said cams responding to movement of said coin carriers toward said coin-releasing position to cause said relatively movable members to move relative to each other and thereby effect opening of said coin-receiving recesses, said coin carriers releasing, in broadside fashion, the coins held in said coin-receiving recesses as said relatively movable members move relative to each other and effect opening of said coin-receiving recesses when said coin carriers reach said coin-releasing position.

3,159,263
APPARATUS FOR FEEDING CONTINUOUS WEBS OF STATIONERY
Peter E. Goreham, Herne Bay, Kent, England, assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 8, 1961, Ser. No. 94,292
Claims priority, application Great Britain, Mar. 16, 1960, 9,274/60
2 Claims. (Cl. 197—133)

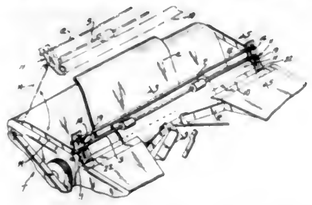


1. Apparatus for feeding continuous stationery around the platen of a printing mechanism, comprising: pin feed mechanism for feeding the continuous stationery, an endless belt, means for feeding said endless belt in synchronism with the continuous stationery and through one complete circuit each time a predetermined length of the continuous stationery is fed, the said endless belt having indicia to correspond to predetermined positions on the continuous stationery, electric rotary solenoid means movable through an accurately predetermined range of actuating movement during each energization and spring retracted to a predetermined starting point upon de-energization, manually controllable switch means for effecting energization of said electric rotary solenoid means, in said range of actuating movement corresponding to a single increment of feeding movement of the stationery, said feeding means comprising a unidirectional driving coupling between said electric rotary solenoid means and the pin feed mechanism for operating said pin feed mechanism to feed the continuous stationery one increment each time the electric rotary solenoid means is energized, said coupling being inoperative on retraction movement of said electric rotary solenoid means, a switch in circuit with said electric rotary solenoid means, means carried by the electric rotary solenoid means for engaging and opening said switch at the conclusion of each actuating movement of said electric rotary solenoid means for de-energizing said electric rotary solenoid means, carriage control contacts in circuit with said electric rotary solenoid means for controlling the energizing of said electric rotary solenoid means, said manually controllable switch means being in circuit with the electric solenoid means independently of the said carriage control contacts and operable when closed to nullify the controlling action of said carriage control contacts, sensing means cooperating with said endless belt and actuated by the indicia thereon, and relay means controlled by said sensing means and operative in response to actuation of said sensing means for disrupting the circuit between said electric rotary solenoid means and said manually controllable switch means.

3,159,264
SUPPLEMENTAL RIBBON ATTACHMENT FOR TYPEWRITERS AND THE LIKE
Beulah Louise Henry, Hotel Seville, Madison Ave. and 29th St., New York, N.Y.
Filed Nov. 30, 1962, Ser. No. 241,277
2 Claims. (Cl. 197—153)

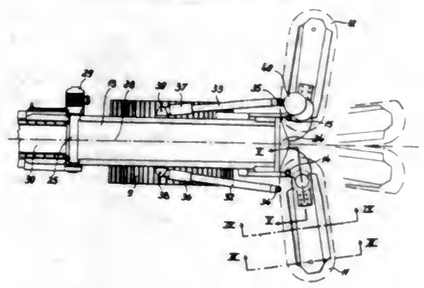
1. In a device of the character described having a reciprocatory carriage and a bail rod swingably connected

with the carriage, the combination therewith of a supplemental ribbon mounting means including side arms, a cross rod, each of said arms having loops at its upper end disposed in engagement about said cross rod at the ends thereof and said arms having tongues biased against said cross rod releasably retaining said arms on said rod, a supplemental ribbon, a stud formed at the lower end of each arm, a ribbon holder secured to each end of said



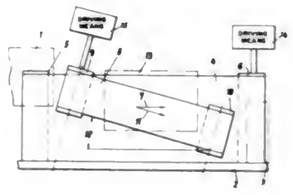
supplemental ribbon and having a socket receiving said stud for releasably mounting said supplemental ribbon on said arms, and said arms having loops intermediate the ends thereof disposed in engagement about said bail rod, and said arms having spring tongues biased against said bail rod releasably retaining said arms on said bail rod and disposing the supplemental ribbon rearwardly of the typewriter ribbon when the bail rod is in operative position.

3,159,265
LOADER, PARTICULARLY FOR FOREWINNING AND ROOM MINING
István Kovács, Budapest, Hungary, assignor to Banyaszati Kutato Intezet, Budapest, Hungary
Filed Oct. 9, 1961, Ser. No. 143,979
Claims priority, application Hungary, Oct. 27, 1960, KO 1,541
3 Claims. (Cl. 198—8)



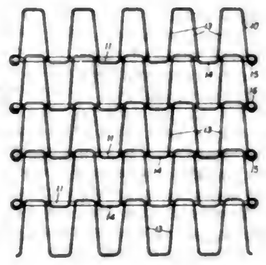
1. A loader, preferably for forewinning and room mining in low and medium-sized layers, comprising, in combination: a mobile support; loading means mounted upon said mobile support, said loading means including a conveyor having a feed station and a delivery station, a plurality of upright axles disposed in front of said feed station, and a plurality of overhanging chain conveyor jibs mounted for mutual angular displacement around said upright axles, each of said conveyor jibs comprising an endless chain reeved about said jib, a plurality of pusher members supported in spaced relation to one another about said endless chains for engaging the material to be loaded, said pusher members being secured on said endless chains and having a construction to maintain the shape and size of said material during the loading operation while moving the material inwardly and rearwardly of said jibs, said conveyor jibs being free of any means tending to segment the material being loaded on said conveyor; and drive means for operating said loading means so as to advance bulk material to be loaded from said feed station to said delivery station.

3,159,266
CONVEYOR
Hans Rapparlie, Konstanz (Bodensee), Germany, assignor to Telefunken Patentverwertungs - G.m.b.H., Ulm (Danube), Germany
Filed Aug. 21, 1961, Ser. No. 132,948
Claims priority, application Germany Aug. 19, 1960
9 Claims. (Cl. 198—29)



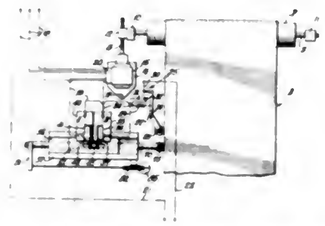
1. Conveying means for aligning flat objects, especially mail shipments and the like, comprising, in combination: a conveyor belt having a conveying surface; means forming an abutment surface extending in a plane parallel to the direction of movement of said conveyor belt and at right angles to said conveying surface thereof, against which abutment surface objects on said conveyor belt may be brought into engagement; an aligning belt; and means for driving said belts, said aligning belt facing said conveyor belt and having an aligning surface engaging objects being conveyed by said conveyor belt, said aligning belt being arranged so that its direction of movement is toward said abutment surface at an acute angle to the direction of conveying of said conveyor belt, whereby objects being conveyed by said conveyor belt will be engaged by said aligning belt and be moved into alignment along said abutment surface.

3,159,267
CONVEYOR BELTS
Ernest Harold Kennett Jeffrey, Manchester, England, assignor to The British Wedge Wire Company Limited, Warrington, England, a British company
Filed Nov. 7, 1961, Ser. No. 150,698
Claims priority, application Great Britain, Sept. 2, 1961, 31,613/61
2 Claims. (Cl. 198—193)



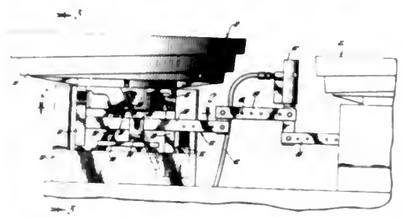
1. A conveyor belt comprising a number of transverse links of strip material bent in zig-zag form so as to have transversely spaced limb portions extending generally in the longitudinal direction of the belt and transversely extending portions connecting adjacent limb portions of each link alternately at the leading and trailing margins of the link with the top edges of said limb portions and connecting portions being coplanar and constituting the load carrying surface of the belt, each link further having openings in the limb portions adjacent the leading and trailing margins of the link, said links being arranged successively with the limb portions of adjacent links overlapping slightly in said longitudinal direction of the belt so that said openings adjacent the leading margin of each link are aligned transversely with said openings adjacent the trailing margin of the adjacent link, straight rods extending through said aligned openings of adjacent links for pivotally connecting the latter, said rods having end portions projecting transversely beyond the limb portions at the opposite ends of the links connected thereby, and a cylindrical spring clip for each of said end portions of the rods, said clip being longitudinally split to define longitudinal edges and a gap therebetween receiving the related end portion of a rod, said clip being disposed with its longitudinal axis perpendicular to said load carrying surface of the belt and with said longitudinal edges of the clip in clamping engagement with diametrically opposed points on the surface of the related end portion of the rod at the outside and inside, respectively, of the end limb portion through which said rod extends.

3,159,268
TRAINING CONTROL FOR CONVEYOR BELTS
Robert G. Dyke, Taunton, Mass., assignor, by mesne assignments, to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,674
6 Claims. (Cl. 198—202)



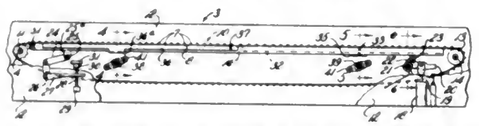
1. A device for maintaining a belt trained over the central portion of the bend pulley in a belt conveyor installation having means at one end of the bend pulley shaft for swinging the shaft axis of the pulley in a plane generally parallel to the supporting surface of the belt, said device comprising reversible drive means coupled to swing the bend pulley axis and thereby promote lateral shifting of said belt on said bend pulley, first sensing means operable between two actuated conditions by lateral shifting of the belt on the bend pulley, second sensing means operable between two actuated conditions when the direction of lateral shifting of the belt reverses, said first sensing means being connected to operate said drive means in one direction when in one actuated condition and operate said drive means in the opposite direction when in the other actuated condition, and second sensing means being interconnected with said first sensing means to change the condition of operation of said drive means upon each reversal in direction of lateral shifting of the belt as sensed by said second sensing means, said condition change being between a condition of operation in the direction determined by the particular actuated condition of said first sensing means and a stopped condition.

3,159,269
CONSTANT FEED-RATE MATERIAL-HANDLING DEVICE
Antonio Pirrello, Lincoln Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,601
7 Claims. (Cl. 198—220)



1. A vibratory material-handling device comprising a base, a feeder receptacle, a plurality of inclined flexible members mounted on the base and connected to the feeder receptacle for supporting and guiding the latter for reciprocation in a confined inclined path of movement, a force-transmitting bar fulcrumed at a point on the base and having a portion thereof contacting the center of the feeder receptacle, means including a spring for supporting the bar on the base for movement about the fulcrum point, and a vibrator mounted on the force-transmitting bar a distance from the receptacle center substantially greater than the distance between the fulcrum point and the contact point of said bar portion so that the force impulses created by the vibrator are increased in magnitude at said contact portion.

3,159,270
CONVEYOR AGITATOR MEANS AND CONTROLS THEREFOR
Clair R. Johnston, 1397 Firestone Parkway, Akron, Ohio
Filed Jan. 7, 1963, Ser. No. 249,720
8 Claims. (Cl. 198—230)

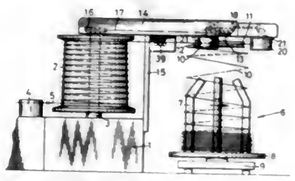


1. In an apparatus including a frame, an endless apertured conveyor, and means positioning said conveyor on said frame for movement through a fixed path including an upper horizontal reach, the improvement comprising
- a pair of first-named bars extending longitudinally of said conveyor immediately below said reach thereof,
- adjustable support means engaging each end of said bars and securing them to said frame to vary the position of said bars in relation to said conveyor in said reach thereof,
- a front rapper bar secured to each of said first-named bars by lost-motion means and movable thereabove for the length of said front rapper bar to strike said conveyor,
- a rear rapper bar pivotally secured to each of said first-named bars and movable thereabove in only the downstream portion of said rear rapper bar to strike said conveyor, and
- driven cam means positioned to strike said rapper bars and knock them against said conveyor to elevate it with a force dependent upon the relative positioning of said bars in relation to said cam means where more severe impacts can be given to said conveyor in said reach portion thereof at one portion of said reach than at another portion thereof.

3,159,271
WIRE FEEDING APPLIANCE FOR WIRE SWIFTS

Hans Pfeiffer, Herborn, Dillkreis, Germany, assignor to Maschinenfabrik Herborn, Zweigniederlassung der Berkenhoff & Drebes Aktiengesellschaft, Herborn, Germany

Filed Dec. 18, 1962, Ser. No. 245,514
Claims priority, application Germany, Dec. 19, 1961, M 51,230
3 Claims. (Cl. 205—16)

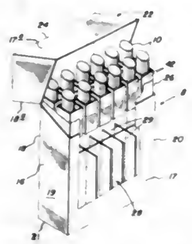


1. A wire feeding apparatus for use in a wire drawing machine to feed the drawn wire from the final drawing die to a skip, comprising a frame, a bobbin rotatably mounted in the frame to receive wire from said die, a rotatably driven disk to receive the wire from the bobbin, at least two bending rolls cooperating with the disk to bend the wire into coils, a rotatable skip to receive the wire in coils from said disk and bending rolls, the disk being of smaller diameter than the coils thereon and the bending rolls lying outside said coils, a housing supported on the bobbin shaft and supporting a disk journal pin and the shafts of the bending rolls, and a drive mechanism including an endless belt type drive between said bobbin and said disk and bending rolls and carried by said housing, one of said bending rolls being adjustable relative to the disk and said bending rolls and disk being driven by said drive mechanism.

3,159,272
CIGARETTE PACKAGING

Betty K. Swift, 625 SE. 41st Ave., Portland, Oreg.

Filed Feb. 21, 1962, Ser. No. 174,858
5 Claims. (Cl. 206—41)

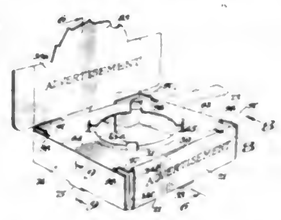


1. A package of cigarettes comprising an elongated outer package openable at one end, plural elongated and parallelly disposed cigarettes within said package and having one set of ends adjacent said openable end and an opposite set of ends adjacent the end of said package opposite said openable end, and a non-flammable flexible envelope about each cigarette, said envelopes having closed ends about said opposite set of ends of said cigarettes, said envelopes enveloping at least a major portion of the length of each cigarette, said envelopes having open ends opposite their said closed ends and a length somewhat less than the length of the cigarettes whereby said one set of ends of the cigarettes project beyond said open ends of the envelopes, said envelopes providing a depository for returning a burning cigarette thereinto with such not igniting the envelopes because of their nonflammability.

3,159,273
COMBINED PACKAGING BOX AND DISPLAY CONTAINER

Jack Schecterson, 251—18 60th Ave., Little Neck, N.Y., and Mel Holzsager, 1919 Radburn Road, Fairlawn, N.J.

Filed June 22, 1962, Ser. No. 204,440
2 Claims. (Cl. 206—45.19)

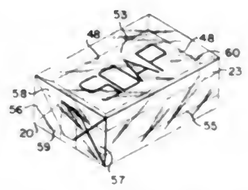


2. An item-display container of the character described comprising the combination of an integral panel-board box member, and an integral pasteboard platform member, said box member having a bottom, sides including front, rear and end sides of a given height, said platform member having a platform portion and flap portions coextensive at right angles to said platform portion and of height slightly smaller than the said height of said box sides, notches in the top edges of said end sides of the box sides providing projections along said edges at the ends thereof and projecting upwardly, slots in said platform member substantially at the juncture of its platform and its flap portions, said projections being disposed in said slots, and means comprising a tab on said platform member and a slot engaged by said tab in said box member for holding said projections and slots in engagement, said platform member at the platform portion having a central aperture and spacing tabs for maintaining an item of merchandise against shifting.

3,159,274
RIGID PACKAGE STRUCTURE

Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 6, 1962, Ser. No. 242,730
1 Claim. (Cl. 206—45.33)

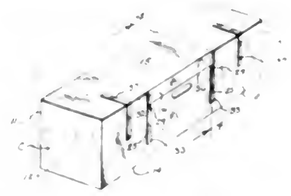


A package comprising a frame, said frame being formed from a frame blank generally configured in the form of an elongated strip of paperboard material, said frame blank having two spaced parallel scores running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank and being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels including two side panels and two end panels, said side and end panels being alternately spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the longitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs outwardly of each of said transverse scores, each of said extending portions being folded into a tubular support, said tubular supports being adhered to their adjoining panels so that each of said side and end panels has a pair of spaced, substantially rigid tubular supports in parallel relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, said side and end panels being folded into a substantially rectangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly, a bar of soap embraced within said frame by means of said tubular supports bearing on the convex surfaces of said bar of soap holding the said bar in place after said frame blank is formed into the said rectangular frame, said flap at one end of said frame blank being secured to the panel at the opposite end of said frame blank to complete the frame structure around said bar of soap, said frame structure being overwrapped with a flexible and heat shrinkable plastic film, said film being heated and shunk on said frame structure to impart greater rigidity to said frame structure and to retain said secured flap in the completed package.

3,159,275
SHIPPING CARTON

Lloyd D. Van Antwerpen, George W. Wiedenmeier, and Herbert A. Broecker, Milwaukee, Wis., assignors to Vanant Company, Inc., Milwaukee, Wis.

Filed June 18, 1963, Ser. No. 288,771
7 Claims. (Cl. 206—62)



2. A shipping carton for fragile articles comprising side, end and bottom walls, a cover integral with one side wall, a depending longitudinally extending wing on said cover of a size and configuration to be received between said end walls, said side walls having aligned vertical slots formed therein, the slot in said side wall opposite said cover opening out through the upper edge of said wall, means associated with said slot and extending therethrough to secure the article in place, said cover wing having a portion extending through said slot when said cover is closed so that part of said wing lies on the outer side of said side wall and part lies adjacent the inner side of said side wall.

3,159,276
ETHANOLAMINES

William P. Moore, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

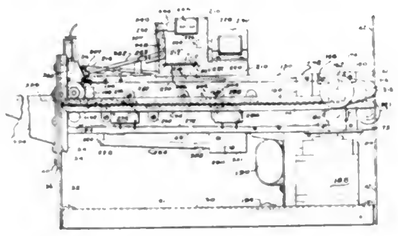
No Drawing. Filed May 3, 1963, Ser. No. 277,719
10 Claims. (Cl. 206—84)

1. A package comprising a ferrous metal container enclosing an ethanolamine having incorporated therein an alkali metal borohydride to prevent color formation resulting from contact of the metal container with the ethanolamine.

3,159,277
CURRENCY DETECTORS

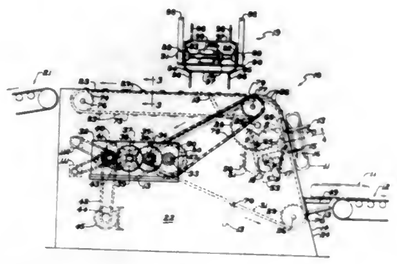
Lloyd J. Carlson and Clifford B. Adams, Bellefontain Neighbors, Mo., assignors to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri

Filed Dec. 1, 1960, Ser. No. 73,062
1 Claim. (Cl. 209—73)



In a bill-transporting device which has bill-gripping and transport members, which has a motor that actuates said bill-gripping and transport members to move a bill, which has means defining an entrance through which a bill may be inserted to be placed in a position where it can be gripped by said bill-gripping and transport members, and which has an energizing and control circuit for said motor to actuate said bill-gripping and transport members to move said bill forwardly toward a testing element and to move said bill rearwardly away from said testing element if said testing element finds said bill to be unacceptable; a lamp disposed between said entrance and said testing element in a position to direct light toward the position where a bill may be gripped by said bill-gripping members, a light-sensitive element in said energizing and control circuit, said lamp and said light-sensitive element being so mounted that light from said lamp normally does not reach said light-sensitive element but so that light from said lamp will be reflected onto said light-sensitive element when a bill occupies the position where it will be gripped by said bill-gripping members, said energizing and control circuit in response to the reflection of light from said bill onto said light-sensitive element energizing said motor to actuate said bill-gripping and transport members to move said bill towards said testing element, said energizing and control circuit including means responsive to the rejection of a bill by said testing element to reverse movement of said bill-gripping and transport members to move said bill away from said testing element and to keep said motor energized and operating until light is no longer reflected from said bill onto said light-sensitive element, said lamp being so positioned with respect to the position where said bill is gripped by said bill-gripping members and with respect to the position of said light-sensitive element to require at least the leading edge of a bill to reach said bill-gripping position before any light from said lamp can be reflected onto said light-sensitive element, the position of said lamp and the position of said light-sensitive element being such that normally no light from said lamp reaches said light-sensitive element and that no reflected light reaches said light-sensitive element until the leading edge of a bill disposed in bill-gripping position within said device interrupts light from said lamp when the latter is illuminated, thus enabling said bill-gripping and transport device to "fail safe" if said lamp burns out, said circuit including a voltage-regulating element that is connected in parallel with said light-sensitive element and that thereby limits the voltage across said light-sensitive element despite variations in the conductivity of said light-sensitive element.

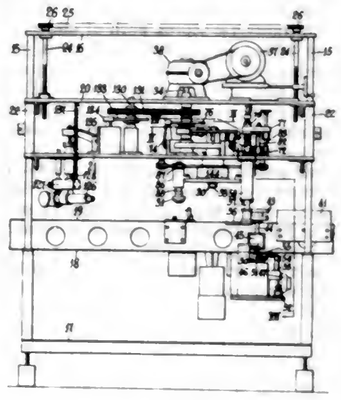
3,159,278
SORTING APPARATUS
Dale D. Groves, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 14, 1962, Ser. No. 179,594
5 Claims. (Cl. 209—90)



1. Apparatus for sorting elastomeric vehicle tires in accordance with the inside diameter of the annular bead surface of each of said tires, comprising at least one reference pin movably mounted on said apparatus for engagement with the said bead surface of a tire and for movement to and from a reference position on said apparatus, means to intermittently move said reference pin to and from said reference position whereby said reference pin is held stationary at said reference position for a period of time, a pair of links of equal length each pivotally mounted on said apparatus by an end thereof, a movable support member, means pivotally mounting the other end of each of said links to said support member whereby the said links remain parallel to one another as said support member is moved, means limiting the movement of said support member under the force of gravity in one direction, a register pin axially movably mounted on said support member, means to move said register pin axially to and from a position for engagement with said bead surface at a location diametrically opposite that of the said engagement by the reference pin, at least one tire discharge means operable to discharge tires having a given diameter of said bead surface, means to discharge tires not discharged by said tire discharge means, means movable in response to pivotal movement of one sensing means to operate said tire discharge means, and of said links to energize said sensing means.

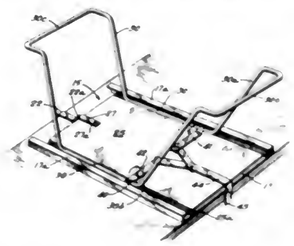
3,159,279
INSPECTION APPARATUS
Theodore H. Sloan, Charleroi, and Miller Paruolo and John McMackin, Brockway, Pa., assignors to Brockway Glass Company, Inc., Brockway, Pa.
Filed May 12, 1961, Ser. No. 109,629
4 Claims. (Cl. 209—111.7)

1. Apparatus for automatic optical inspection of glass containers comprising a plurality of horizontally spaced photo-sensitive elements, means for engaging the upper ends of glass containers, means for rotating said engaging means to rotate the containers on their vertical axes, means for moving said engaging means intermittently horizontally to dispose each of said containers successively above and in registry with each of said photo-sensitive elements, and means at each position of registry for directing a beam of light against containers disposed in registry with said photo-sensitive elements for transmission through the bodies thereof whereby light radiates downwardly from the bottom walls of said containers to said photo-sensitive elements, said several light directing means being directed at different portions of said containers for



successively inspecting different portions of the bodies thereof.

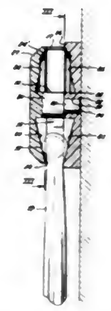
3,159,280
FILE-STORING UNITS FOR SHELVES
John C. Condon, De Kalb, Ill.
(542 S. Dearborn St., Chicago, Ill.)
Filed Dec. 5, 1961, Ser. No. 157,141
11 Claims. (Cl. 211—10)



1. A file-material storing unit for shelves comprising a base attachable on a shelf, a slide operable over the base from a position in the shelf space to extend forwardly from the shelf, and a file-material carrier mounted on the slide and movable to extend forwardly from the same to a position completely outside of the shelf for full access to said file-material from the top and sides, wherein the shelf has a downbend from the rear edge, and hook means extend from the base and straddling said downbend from below.

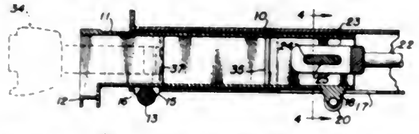
3,159,281
HOLDING MEANS FOR SHEET MATERIAL
Frank A. Hutter, 6615 Franklin Ave., Hollywood 28, Calif., and Edward J. Mallek, 2833½ Huron St., Los Angeles, Calif., assignors of one-third to Charles G. Hutter, Beverly Hills, Calif.
Filed July 11, 1963, Ser. No. 294,346
12 Claims. (Cl. 211—45)

8. A device for holding sheet-like material such as a towel or the like comprising: axially spaced front and back members defining therebetween a chamber having a peripheral opening; means connecting said members; a ball element within said chamber; means on said members below said connecting means cooperable with said ball for holding such material; means on said members above said connecting means cooperable with said material for releasing said ball; said peripheral opening pro-



viding means for receiving a portion of the material through approximately 360° and providing means for withdrawing said material through approximately 180°.

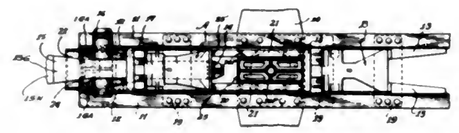
3,159,282
RAILROAD CAR COUPLER CARRIER
James L. Gibson, P.O. Box 761, Fort Worth, Tex.
Filed Oct. 5, 1959, Ser. No. 844,293
5 Claims. (Cl. 213—21)



5. In combination with a railroad car sill having spaced side walls, a longitudinally movable coupler carrier mounted in each end of said railroad car sill between said spaced side walls, each said carrier being of box-like construction and in sliding contact with opposing vertical surfaces of said side walls, a hydraulic-pneumatic shock absorber carried by said car sill inwardly of each said coupler carrier and in parallel longitudinal alignment therewith, each said shock absorbing mechanism including a piston rod extending to and connected with said coupler carrier, means limiting the longitudinal movement of said piston rod in either direction, the ends of each said carrier extending outwardly of said railroad car sill and having a striker plate therearound, and a transverse key extending through said coupler carrier and the extending end of said piston rod, the extending end of said key being slidably received in horizontal elongate slots in the said side walls of said railroad car sill, the length of said slots being greater than the width of said key received therein.

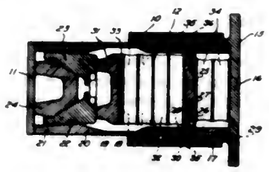
3,159,283
MOVABLE COUPLER SUPPORT FOR DRAFT RIGGING ARRANGEMENTS
Bertil E. Peterson, Chicago, Ill., assignor to Cardwell Westinghouse Company, a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,459
10 Claims. (Cl. 213—21)

10. In a railway car underframe having substantially conventional center sills having front lugs fixedly mounted thereon and bordering and defining the front extremity of a draft pocket that is provided by said sills, said underframe being equipped with draft rigging including a draft gear in said pocket a coupler projecting endwise outwardly from between corresponding ends of said sills, and means for applying buff forces from said coupler to said gear and for applying buff recoil forces from said gear to said coupler, a coupler support pan mounted between said center sills in a region at the bottom outer ends thereof and having clearance relation to said front stops for undergoing lengthwise sliding movement, said pan having a forward portion extending endwise out-



wardly of said center sills to support the coupler and having a rearward portion extending inwardly into said pocket, said pan having cooperating oppositely facing abutment faces in two way endwise engagement with and jointly movable with portions of said draft rigging that move inwardly during buff closure travel and correspondingly outwardly during buff recoil travel.

3,159,284
CONVERTIBLE BUFFER AND DRAFT GEAR
Donald R. Holm, Markham, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,516
6 Claims. (Cl. 213—22)

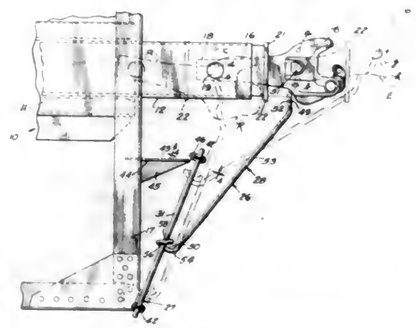


1. A cushioning device for railway cars or the like and adapted for selective use as a buffer or a draft gear, comprising a mounting base, a tubular bracket supported on said base in spaced relation thereto, a buffer cap including a sleeve telescopically received in the end of said bracket remote from the base, a tubular draft gear housing telescopically engaged within said sleeve having an open end adjacent the cap and a frictional bore projection adjacent the base, first abutment means at the open end, second abutment means spaced inwardly of the housing from said first abutment means, wall means adapted to close said open housing end selectively engageable with said first or second abutment means for positioning thereby against movement in the direction of the open end, a plurality of friction shoes in engagement with said frictional bore of said projection, a wedge member engaged between the base and the outer portions of said shoes, a follower engaged with the inner ends of the shoes, a plurality of cushioning pads disposed in said draft gear housing between said follower and the wall means, said housing upon positioning of the wall means by the first abutment means being adapted to receive a predetermined number of said cushioning pads between said follower and the wall means and upon positioning of the wall means by the second abutment means being adapted to receive a predetermined lesser number of said cushioning pads between the wall means and follower, resilient means having less cushioning capacity than said lesser number of pads disposed between the cap and wall means upon positioning of the wall means by said second abutment means, and means limiting relative outward telescoping movement of the bracket and sleeve.

3,159,285
UNCOUPLING MECHANISM

Franklin P. Adler, Arthur M. Boone, and Robert M. Holloway, Michigan City, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Nov. 13, 1962, Ser. No. 237,000
4 Claims. (Cl. 213—168)



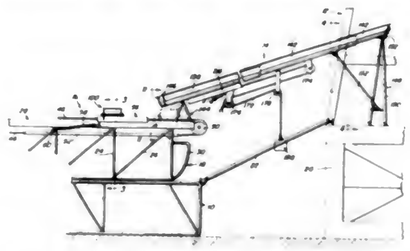
1. In a railway car of the cushion underframe type in which a coupler is mounted on a sliding sill movable lengthwise of the car between retracted and extended positions relative to the end sill of said car in response to buff and draft forces and wherein said coupler is pivotally mounted on said sliding sill for limited angular movement in a horizontal plane, an uncoupling device comprising a manual actuating means including a closed loop having an upper horizontal rung and a lower horizontal rung, means turnably supporting said manual actuating means along said end sill so that said rungs are at an acute angle relative to said end sill, an unlocking rod including a coupler unlocking end engaging said coupler and an upwardly and inwardly inclined intermediate section having at its other end an inverted U-loop slidably embracing said upper rung with the one leg thereof contiguous with said intermediate section lying inwardly of said upper rung and the other leg thereof lying forwardly of said upper rung and depending downwardly so as to engage said lower rung on the forward side thereof, and handle means extending from said closed loop of said actuating means operative upon turning of said closed loop to lift said closed loop upwardly and thereby lift said other leg and pivot said inverted U-loop of said locking rod about said upper rung and move said coupler unlocking end to a coupler unlocking position.

3,159,286
DRILL PIPE HANDLING APPARATUS

Richard B. Freeman, Sr., 1230 W. Main St., Houma, La.

Filed Oct. 17, 1963, Ser. No. 316,937
14 Claims. (Cl. 214—2.5)

1. In combination with a delivery chute from which elongated members are gravity fed, an article handling and unloading device comprising; a track frame, a pair of carriages slidably mounted on said track frame, biasing means mounted on said track frame and operatively connected to one of said carriages for controlling acceleration and deceleration thereof upon displacement of the other of said carriages from a loading to an unloading position, selectively controlled stop means mounted on said track frame for limiting movement of the other of the carriages to said unloading position and holding said other carriage in said unloading position, shock absorbing means mounted on said other carriage for absorbing impact of an elongated member accelerated by said one carriage, releasable support means mounted on said carriages for supporting the elongated member therebetween, unloading means operatively connected to said releasable support means for discharging the elongated member from the carriages when the other carriage is held in the

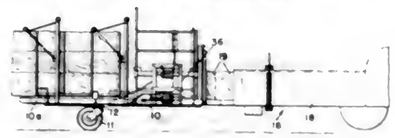


unloading position, and carriage displacing means operatively connected to said other carriage for alternatively displacing said one carriage to the loading position and said other carriage to the unloading position.

3,159,287
BALED HAY STACKER, CARRIER AND DELIVERY APPARATUS

Howard R. Stroup, Rte. 1, Box 71, Artesia, N. Mex.

Filed Dec. 3, 1962, Ser. No. 241,929
8 Claims. (Cl. 214—6)



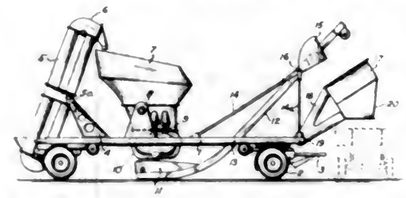
1. An apparatus of the character described comprising a horizontal wheeled platform, a tilt-bed pivotally connected to the rear end portion of said platform, means for delivering bales singly to said platform, means forming a stacking chamber on said platform, automatic means for moving said bales singly to said chamber, automatic means for vertically stacking a given number of said bales as received in said chamber, automatic means for moving said stacks rearwardly to said tilt-bed to form a row of said stacks thereon, and automatic means for moving said completed rows laterally upon said tilt-bed to fill the same, said automatic means for moving said bales singly to said chamber including a laterally movable pusher member, hydraulic means for moving said pusher member toward said chamber, a valve controlling said hydraulic means, a lever on said platform in the path of delivery of said bales to said platform for actuating said valve, automatic means for releasing said valve upon delivery of said bale to said chamber, and a spring for returning said pusher member to its original position.

3,159,288
APPARATUS FOR THE PREPARATION AND LOADING OF BITUMINOUS ROAD-BUILDING MATERIAL

Carl-Hermann Heise, 12 Kalandstrasse, Alfeld (Leine), Germany

Filed Feb. 12, 1962, Ser. No. 172,608
Claims priority, application Germany Nov. 27, 1961
2 Claims. (Cl. 214—17)

1. An apparatus for the preparation and loading of bituminous road building material comprising an elongated frame mounted on front and rear wheels, an upright bucket conveyor pivotally mounted substantially midway its length on the rear end of said frame on a transverse axis and tiltable about said axis into an approximately horizontal position, an upright mixing tower pivotally mounted on a transverse axis on the middle of said frame and normally in position to receive material from the upper end of said conveyor but tiltable about its axis into an approximately horizontal position with the normally upper end of the conveyor overlying and resting upon the normally lower portion of the mixing tower, a hopper pivotally mounted on the front end of

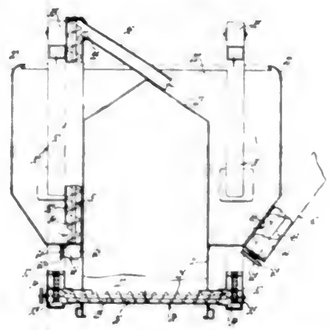


said frame on a transverse axis, a second bucket conveyor pivoted on said frame and having one end extending beneath said mixing tower and the other end thereof extending about said hopper, and said hopper being normally in position to receive material from said second bucket conveyor but tiltable rearwardly about its transverse axis into an approximately horizontal position to rest on said frame adjacent said tilted mixing tower.

3,159,289
GRAIN TANK AND CONVEYOR MECHANISM FOR COMBINES

Ralph L. Tweedale, Southfield, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

Filed Nov. 30, 1962, Ser. No. 241,198
1 Claim. (Cl. 214—17)

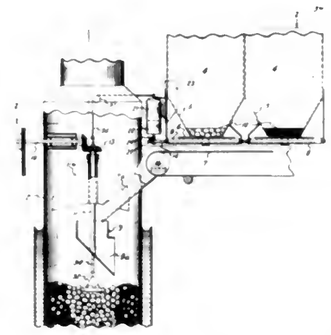


An agricultural harvesting machine including a body portion enclosing grain cleaning and separating mechanisms with a pair of side tanks extending down along opposite sides of the machine body for temporarily storing harvested grain received from the cleaning and separating mechanisms, characterized by a dually directed crop conveyor disposed beneath the cleaning and separating mechanisms to divide the harvested grain into substantially equal portions, said crop conveyor including an auger shaft with a first auger wound on one end portion and extending laterally from beneath said cleaning and separating machanisms for directing grain in one direction and a second auger flight wound on the other end portion and extending laterally from beneath said cleaning and separating mechanisms for directing grain in the opposite direction, a first grain elevator situated adjacent the outer end of said first auger flight for lifting one portion of the harvested grain to one of said side tanks, a second grain elevator situated adjacent the outer end of said second auger flight for lifting the other portion of said grain to the other side tank. and drive means interconnecting said first and second grain elevators with said auger shaft for simultaneously powering said elevators incident to rotation of said conveyor.

3,159,290
CONTINUOUS FEED CUPOLA

Walter K. Hesse, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed May 31, 1961, Ser. No. 113,696
3 Claims. (Cl. 214—18.2)



1. Apparatus for continuously introducing a charge of material to be melted and combustion agent into a cupola above the burden in said cupola comprising a plurality of bins containing either the material to be melted or the combustion agent, means responsive to a control device for removing varying amounts of said material to be melted and said combustion agent from said bins, means for commingling said removed material to be melted and said combustion agent, charging said cupola by introducing the commingled material to be melted and combustion agent into said cupola, a distributor in said cupola for receiving said commingled material to be melted and said combustion agent, means mounting said distributor for rotation about an axis substantially parallel to the longitudinal axis of said cupola, means rotating said distributor to distribute said commingled material to be melted and said combustion agent in said cupola in a circular pattern spaced outwardly from the center of said cupola, said control device comprising a constant level contact member in said cupola, and means for periodically moving said contact member generally in a direction parallel to the longitudinal axis of said cupola from a position beneath the exposed surface of the burden of charged materials in said cupola to a position in contact with the free exposed surface of said burden.

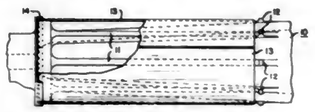
3,159,291
FURNACE CHARGING MACHINE PEELS

Robert B. Cottrell, Jr., Oakmont, Augustus C. Buzby, Franklin Township, Allegheny County, and Hugh E. Beggs, Upper St. Clair Township, Allegheny County, Pa., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 28, 1961, Ser. No. 141,533
4 Claims. (Cl. 214—26)

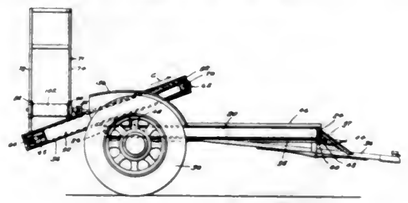
1. In a charging machine, an elongated peel, a metal shell member having an inner diameter greater than the outer diameter of the peel substantially surrounding said peel, and spacer means between the peel and the shell

spacing the shell from the peel and forming air passages between the shell and the peel, said passages communi-



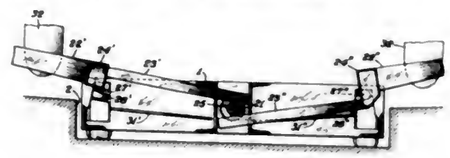
cating with the atmosphere to permit movement of air within the space between the sheel and the peel.

3,159,292
HARVESTER
Wellington W. Porter, R.D. 2, Waterloo, N.Y.
Continuation of application Ser. No. 609,207, Sept. 11, 1956. This application Feb. 14, 1962, Ser. No. 174,354
1 Claim. (Cl. 214—83.1)



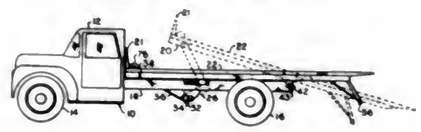
A harvester comprising a frame, a single pair of spaced wheels mounted on aligned axles disposed beneath said frame, and adjacent the rear end thereof, said frame terminating short of the rear of said wheels, a rigid drawbar for attachment to a tractor extending from the forward end of the frame, a wide platform on said frame forward of said wheels, an inclined endless belt conveyor having inclined side members mounted on said frame between said wheels and having its lower end disposed rearwardly of and below said frame, and extending rearwardly of said wheels a substantial distance, and its forward upper end disposed above said platform and immediately forward of said wheels, a rectangular tower having corner posts mounted on and extending upwardly from the rear portion of said inclined conveyor side members, and being disposed entirely to the rear of said wheels and frame, laterally extending inclined braces extending from the upper portion of the respective opposite sides of said tower, and having forwardly horizontally extending pivotal mountings laterally spaced a substantial distance from the respective tower sides and disposed above the lower end of the inclined conveyor, two lateral conveyors each having endless belts, and side members pivotally mounted on the respective brace pivotal mountings on horizontal axes extending substantially parallel with the plane of said wheels, and above the lower end of said inclined conveyor, said axes being disposed outwardly of the inner ends of said lateral conveyors by a substantial distance, abutments affixed to the tower and connected with the braces on opposite sides of the tower for engaging the respective upper inner ends of the lateral conveyors to limit pivotal movement of said conveyors when swung from a vertical position along side said tower to horizontal positions, tension springs connected between the tower braces adjacent their upper ends and the respective lateral conveyors outward of the pivotal mountings to assist in pivotally moving said lateral conveyors from a horizontal position to a vertical position, each of said lateral conveyors having inner belt drive rolls disposed adjacent to and above said inclined conveyor when said lateral conveyors are in horizontal extended position, a drive spindle carried by said frame rearwardly of said axles for each of said lateral conveyor drive rollers and having a flexible universal joint connection therewith, and common means for driving said spindles in reverse direction and said inclined conveyor belt, said last named means including a drive shaft extending forwardly of the harvester and beneath the platform, and adapted to be coupled to a drive shaft of a towing tractor.

3,159,293
TRUCK FOR PARKING VEHICLES
Edoardo Giuseppe Bianca, Rosenweg 11, Zollikon, Zurich, Switzerland
Filed Aug. 15, 1962, Ser. No. 217,113
Claims priority, application Austria Aug. 18, 1961
12 Claims. (Cl. 214—333)



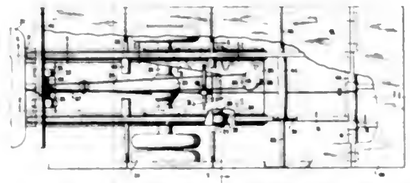
1. A truck arrangement comprising, in combination:
(*a*) a frame;
(*b*) a drive shaft rotatable on said frame about a normally horizontal axis;
(*c*) a pinion mounted on said drive shaft for rotation therewith;
(*d*) two elongated rack members simultaneously meshing with said pinion for simultaneous longitudinal movement in opposite directions when said pinion rotates;
(*e*) a wheel gripping element mounted on each rack member for movement therewith between a retracted and a projecting position; and
(*f*) lifting means on said frame for pivoting each of said rack members about the axis of said drive shaft.

3,159,294
SLIDING AND TILTABLE LOAD CARRYING BED FOR VEHICLES
Henry E. Forsythe, Jr., Greencastle, Pa., assignor to Greencastle Equipment Manufacturing Company
Filed July 12, 1962, Ser. No. 209,470
5 Claims. (Cl. 214—505)



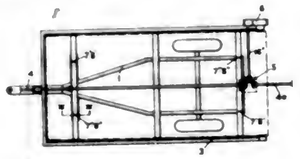
1. A tiltable movable load carrying device for vehicles having a wheel supported frame comprising, in combination, a subframe pivotally mounted on the rear of the vehicle frame, a load carrying bed slidably mounted on said subframe for forward and rearward movement with respect thereto, a lever pivotally connecting said bed and the vehicle frame to lift and support the front of said bed and tilt it and said subframe when not in its forwardmost position with respect to said subframe, and power means supported by said subframe and connected with said bed to move it with respect to said subframe and effect the lifting and supporting of the front of said bed by said lever and tilt the rear end of said bed toward the ground to form a loading ramp.

3,159,295
ROLL-BACK TRUCK BED
Richard R. Love, Box 468, Buhl, Idaho
Filed Nov. 14, 1961, Ser. No. 152,236
10 Claims. (Cl. 214—517)



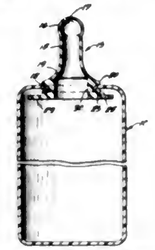
1. A load-conveying vehicle comprising a pair of elongated frame members having a rear end mounted upon ground engaging wheels, a plate pivotally connected to rear end of the frame members with one portion of the plate projecting beyond the rear end of said frame members and another portion arranged to overlie part of said frame members, said plate being movable from a horizontal position on said frame members to a substantially vertically position at the end of said frame members; a platform slidably mounted on said plate and frame members for movement from a position upon said plate and frame members to a position upon the ground rearwardly of said vehicle, means carried by said frame members and engageable with said platform for securing the platform upon said plate and frame members, a plurality of pulleys carried by said plate, a winch mounted upon said frame members, said winch being formed with spool segments with a cable mounted upon each segment, one of said cables being entrained about one of the pulleys on said plate and fastened to the forward end of said platform, the other of said cables being entrained over another of the pulleys and fastened to the rear end of the platform, and means to actuate said winch to reel in the cable entrained about said pulley and fastened to the forward end of said platform and pay out the cable entrained over said pulley and fastened to the rear end of the platform to move said platform along said frame members and over said plate to cause said plate and platform to pivot about the rear end of said frame members and deposit the rear end of said platform upon the ground, and continued actuation of said winch will cause said plate to move into a substantially vertical position and the forward end of said platform to slide over said plate and be deposited upon the ground rearwardly of said vehicle.

3,159,296
TRAILER PROVIDED WITH A CONVEYOR
Johannes Schultemaker, Wierden, Netherlands, assignor to Schultemaker Patenten N.V., Wierden, Netherlands, a corporation of the Netherlands
Filed Sept. 6, 1961, Ser. No. 136,274
Claims priority, application Netherlands Sept. 19, 1960
9 Claims. (Cl. 214—519)



1. A wheeled trailer for use with a tractor having a power take-off shaft, said trailer comprising, in combination, a chassis, a draw bar connected to said chassis, a platform mounted on said chassis, a conveyor mounted on said platform, at least one auxiliary conveying device mounted on said platform at one end thereof, a gear mechanism mounted on said platform, said gear mechanism being provided with output shaft means and input shaft means respectively extending transversely and longitudinally of said platform, said output shaft means being drivingly connected to said conveyor and to said auxiliary device, said input shaft means having coupling means for detachable connection of said input shaft means to said power-take-off shaft from either end of the trailer, said coupling means at one end of the trailer rotating reversely to the rotation of said coupling means at the other end of the trailer, with rotation of said output shaft means always in the same direction.

3,159,297
NURSING UNIT FOR INFANT FEEDING
Harold J. Searer, 712 Palisades Drive, Akron, Ohio
Filed June 13, 1962, Ser. No. 202,130
3 Claims. (Cl. 215—11)



1. A nursing unit comprising; a disposable unitary container having an interior compartment adapted to contain edible fluids, an opening in the top of said container communicating with said interior compartment, an anchor bead at the periphery of said opening and integral with said container, said anchor bead being curved downwardly and inwardly into said interior compartment of said container, a nipple inserted in said container opening in fluid-tight sealing relation, a closed upper end in said nipple forming a mouthpiece portion and having at least one fluid delivery aperture therein, a tubular body portion extending downwardly from said mouthpiece portion, a downwardly and outwardly rounded breast portion adjoining said tubular body portion, a thickened annular rib portion terminating said rounded breast portion and having a diameter substantially greater than the greatest width of said container opening, a downwardly extending resilient circular nipple throat portion adjoining said thickened annular rib portion radially inwardly thereof and having an interior fluid passage communicating with said nipple mouthpiece portion and said container compartment, said throat portion having a concavely downwardly and inwardly curved radially outer surface resiliently biased radially outwardly into sealing engagement with said container anchor bead at said container opening, and a circular nipple retaining surface terminating said concavely curved surface and abutting the lowermost surface of said container anchor bead to resist axial withdrawal of said nipple from said container.

3,159,298
COMBINED SEALING CAP AND DRINKING VESSEL
Harold Saw, Vaucluse, near Sydney, New South Wales, Australia ("Bibaringa," 349 New South Head Road, Double Bay, Sydney, New South Wales, Australia)
Filed Aug. 8, 1963, Ser. No. 300,893
Claims priority, application Australia, Aug. 8, 1962, 20,813/62
3 Claims. (Cl. 215—43)

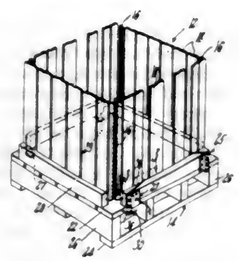
1. A closure cap for a container having a neck and body portions comprising

a frusto-conical body having an open end and a closed end,
an interiorly threaded annular boss member attached to said closed end for engaging said neck portion, and
an annular flexible lip positioned within said boss and also attached to said closed end, said frusto-conical



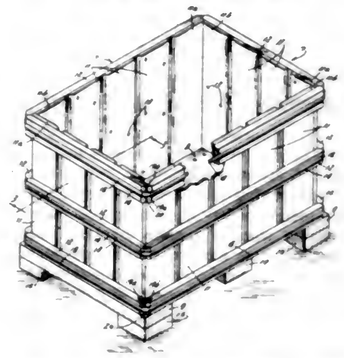
body being positioned outward from said boss and having such a taper upon its frusto-conical surface that the open end thereof is able to clear the outer surface of the container; and said lip, closed end, and threaded boss being so dimensioned that they form a seal with the neck of said container when said cap is attached thereto.

3,159,299
PALLET BINS
David Rawle, Berwyn, Pa., assignor to Clinch-Tite Corporation, Berwyn, Pa., a corporation of Delaware
Filed Oct. 29, 1963, Ser. No. 319,872
7 Claims. (Cl. 217—43)



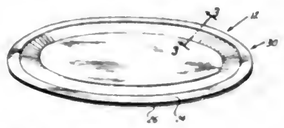
1. A pallet box enclosure having a pallet base and a plurality of side panels collapsibly secured together for support upon said pallet base and at least one quick release locking device to lock an edge of one of said panels against the upper part of said pallet base, said locking device comprising a member having an elongated pivot portion rotatably secured to said panel in a journal means, the axis of which lies in a plane substantially parallel to said panel, the locking device including at least said pivot portion protruding beyond the edge of said panel against which device said pallet base can bear laterally, a locking portion at said protruding end of said pivot portion extending at a right angle thereto, and an elongated actuating lever portion at the other end of said pivot portion extending at a right angle thereto, the lever portion being displaced outwardly about the axis of said pivot portion a substantial angle relative to said locking portion so when said lever portion is moved inwardly to lie substantially in the plane of said panel said locking portion extends at a substantial angle to the plane of said panel toward said pallet base and is opposed to the corresponding panel edge, the upper surface of said locking portion engaging a downwardly directed surface of said pallet base to secure said pallet base and the edge of said panel together, and releasable securing means opposing the rotation of said locking device about the axis of said pivot portion while said locking device is in its locking position.

3,159,300
BULK BIN
Daniel F. Coffey, Jr., Marinette, Wis., assignor to Marinette and Menominee Box Company, a corporation of Wisconsin
Filed Sept. 19, 1961, Ser. No. 139,198
4 Claims. (Cl. 217—65)



1. A rigid polygonal bulk bin having side panels which intersect at a plurality of corners, said side panels each including laterally spaced externally grooved cleats which align perimetrically about the bin and are in end abutment at said corners to constitute laterally spaced sets of cleats with communicating grooves, the respective ends of abutting cleats at each corner having inner and outer miters, means for holding each said corner in rigid assembly and for distributing the pressure of bin contents substantially uniformly about the bin and comprising tensioned bands which are free of any positive connection with the cleats and are recessed in the communicating grooves of each set of cleats and which hold the cleat ends together by reason of their tension, said bands encircling the bin and spanning across the joint formed by said abutting ends in contact with said outer miters and pressing said inner miters in face contact, said bands being free to transmit pressure at any point thereon completely around the bin.

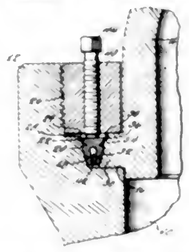
3,159,301
FLOATING DIAPHRAGM FOR PRESSURE TANKS
Noel M. Anderson, P.O. Box 392, Storm Lake, Iowa
Filed Sept. 7, 1962, Ser. No. 222,033
10 Claims. (Cl. 220—26)



6. A floating diaphragm for a fluid distribution pressure tank comprising:
a flat flexible hollow diaphragm,
means defining an endless annular air and fluid tight chamber within said diaphragm,
a float ring within said chamber comprising two like flexible hollow tubular members,
each tubular member being semicircular in shape and disposed relative to the other tubular member so as to be complementary in forming a complete ring,
respective ends of one tubular member being spaced in relatively close axial alignment to respective ends of other tubular member, and
respective resilient hinge means foldable up to one hundred and eighty degrees and connected directly

to respective opposed ends of said tubular members so as to serve as a closure for said ends and also as means for normally maintaining said tubular members in a flat planar position.

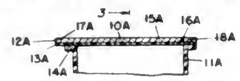
3,159,302
SEALING CONNECTION INCLUDING A RIGID SEALING RING HAVING OPPOSED, ELASTICALLY DEFLECTABLE LIPS
Raymond E. Latham and John D. Watts, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Feb. 19, 1962, Ser. No. 173,896
1 Claim. (Cl. 220—46)



Structure of the character described comprising: a pressure vessel having an outwardly tapering sealing surface; closure means for said pressure vessel having a tapered sealing surface oppositely adjacent said pressure vessel sealing surface; a unitary continuous sealing ring of hard metal or the like having a generally U-shaped cross-sectional area defining a base portion and flexible inner and outer legs extending longitudinally therefrom, said legs having generally conical sealing surfaces normally tapering from said base portion at a smaller angle relative to the axis of said ring than said pressure vessel and closure sealing surfaces, said pressure vessel and closure sealing surfaces being substantially equi-angular with respect to the sealing ring axis, said inner and outer leg sealing surfaces being disposed on the interior and exterior circumferential surfaces thereof and tapering toward one another from the base portion to the opposite free ends thereof substantially equi-angularly with respect to the sealing ring axis, including laterally extending lip means carried by said base portion, said closure means and said vessel providing a recess for slidably receiving said lip means, said recess being of a depth relative to the longitudinal thickness of said lip means to limit the movement of said sealing ring within the elastic limit of said inner and outer legs; and means carried by said closure member for independently moving said ring longitudinally to a sealing position wherein said legs are flexed in coextensive, stressed sealing engagement along their sealing surfaces with said pressure vessel and closure sealing surfaces, the ring moving means including circumferentially spaced set screws operative to engage said sealing ring base portion, said sealing ring being received between said pressure vessel and closure sealing surfaces with said base portion outermost.

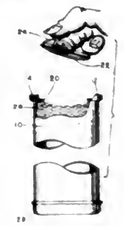
3,159,303
TEAR-OPEN SEALED CONTAINERS
Thomas E. Betner, Bryn Mawr, Pa., assignor to Acme Plate & Mat Company, Malvern, Pa., a corporation of Pennsylvania
Filed Aug. 4, 1961, Ser. No. 129,363
6 Claims. (Cl. 220—54)

1. A sealed container which can be opened without recourse to a knife or other tool comprising
a container having an open end bounded by a lip, and
a lid extending over and peripherally sealed to said lip of the container body,
said lid consisting of two coextensive layers of substantially different strength and having their adjacent faces bonded together throughout the areas thereof,
the inner and weaker of said layers being imperforate and sealed throughout its marginal area to said lip to provide hermetic sealing of the container by said lid,
the outer and stronger of said layers having a tab extending from a tear-out section defined by a tear-line,
the bond between said layers
(*a*) maintaining the stronger outer layer in posi-



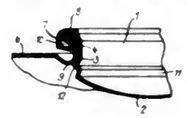
tion to protect the inner weaker layer from accidental rupture,
(*b*) insuring that lifting of said tab for removal of said tear-out section of the stronger outer layer of the lid is effective to cause concurrent tear-out of the corresponding bonded area of the previously imperforate inner weaker layer of the lid, and
(*c*) insuring that during tear-out the remainder of the lid remains attached to the container body.

3,159,304
CONTAINER
Robert F. Kolde and Perry H. Pelley, Wichita, Kans., assignors, by mesne assignments, to Southwest Grease & Oil Co., Inc., Wichita, Kans., a corporation of Kansas
Filed May 28, 1962, Ser. No. 198,024
13 Claims. (Cl. 220—54)



1. A container having a closure securely engaged therewith at one end; said closure comprising an outer member, and further comprising a liner between said container and said member so as to provide an effective intervening seal; said outer member generally reinforcing said liner and presenting an opening in which a portion of the liner is unsupported; said liner having overall integrity but being relatively weak immediately adjacent said opening, and presenting a pull tab for removal of said unsupported portion as outlined by the opening in the outer member.

3,159,305
PLASTIC CONTAINERS
Alfred Fischbach, Runderoth, Rhineland, Germany
Filed Feb. 28, 1963, Ser. No. 261,763
Claims priority, application Germany Sept. 22, 1962
3 Claims. (Cl. 220—60)



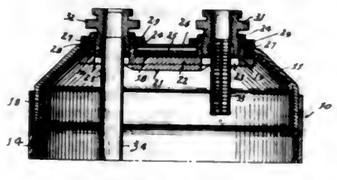
1. A container of synthetic material, particularly a container for oil, including a body portion having a top

wall, means defining a filler opening in said top wall of lesser perimetric dimension than that of the body portion and a closure member for said filler opening, said closure member comprising a domed bottom wall, a vertical side wall extending upwardly therefrom and an enlarged upper margin having a conical surface, said filler opening defining means including a bead-like formation on the top wall extending into the interior of the body portion, a vertical wall adjoining said bead-like portion and projecting upwardly therefrom, and an inwardly directed horizontal flange at the free end of the vertical wall whereby due to the inherent elasticity of the closure member, when the closure member is inserted into the filler opening, the vertical side wall of such member lies tightly against said bead-like formation and said enlarged upper margin fits tightly in the groove defined adjacent the juncture between the bead-like formation and said vertical wall and said flange overlaps said upper margin thus holding the closure member in its sealing position.

3,159,306
WATER CONDITIONING TANK AND LINER

Charles E. Lyall, Deerfield, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,686
4 Claims. (Cl. 220—63)



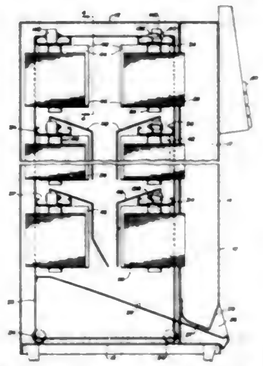
1. A hollow tank and liner combination, comprising a cylindrical tank having a top and bottom closure with a bottom supporting member and a slotted opening centrally located in the top closure of the tank, a flexible removable plastic liner conformably fitting within the tank and having spaced openings at one end thereof, a yoke positioned within the liner in the tank, said yoke including a generally flat plate and a pair of spaced threaded projections extending through the openings in the liner and through the slotted opening of the top closure, said projections defining a pair of spaced openings adapted to receive suitable fittings for the tank, a sealing gasket mounted between the liner and the top closure to seal the liner in the tank and seal said opening, a cover plate fitting over said projections at the exterior of the tank and extending beyond the slotted opening, and a pair of nuts threadingly engaging the projections to seal and secure the yoke and liner in the tank.

3,159,307
PHONOGRAPH RECORD DISPENSING APPARATUS

Carl G. Stephenson, Vancouver, British Columbia, Claude L. Crocker, South Burnaby, British Columbia, and Earl Bismeyer, Vancouver, British Columbia, Canada, assignors to Record King Sales Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Filed Mar. 11, 1963, Ser. No. 264,346
14 Claims. (Cl. 221—129)

1. Apparatus for dispensing flat articles having holes through the centres thereof, comprising a vertical core upon which a plurality of said articles can be stacked with the core extending through the holes thereof, a support at the lower end of the core offset relative to said core to form a laterally-projecting shoulder on said support, a core extension below the support and aligned with the core, and first and second aligned shifting elements respectively between the support and the core and the support and the extension and movable between positions coinciding with the core and extension and coinciding with the support, the offset of the support forming a shoulder on the extension spaced from the support shoulder; said core, support, core extension and first and second shifting elements being of a diameter and shape slidably to fit in the article holes; and means connected to the first and second elements for shifting said elements together back and forth between said coinciding positions, the lowermost article of the stack normally resting on



the first shifting element when the elements coincide with the support and at the same time a second article on the support rests on the extension shoulder, and when the first and second elements are successively and simultaneously moved to coincide with the core and extension and then back to coincide with the support said lowermost article drops on to the support shoulder over the first element and said second article is shifted off the extension shoulder by the second element to drop down the extension and then said lowermost article is shifted off the support shoulder by the first element to drop down the support towards the extension shoulder.

3,159,308
ARTICLE DISPENSING DEVICE COMPRISING A PAIR OF TUBULAR MEMBERS

Lawrence Passavanti, 308 Glen Ave., Palisades Park, N.J.

Filed May 14, 1963, Ser. No. 280,210
9 Claims. (Cl. 221—289)

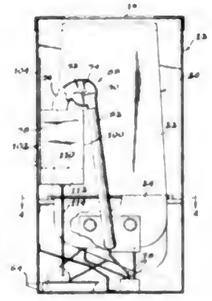


1. An article dispensing device comprising a pair of coaxial, slidably related tubular members, closure means for one end of the outer member, spring means between said closure means and the end of the inner member adjacent said one end of the outer member for restoring the inner member to a normal rest position after said inner member has been depressed within said outer member, said inner and outer members having dispensing openings in wall portions thereof, said openings being in offset relation when said inner member is at its rest position and in registering relation when said inner member is in a depressed position, said inner member being adapted to carry a stack of articles to be dispensed, abutment means at the lower end of the dispensing opening of the inner member for supporting said stack of articles, and coilable strip spring means having one end anchored to said outer tubular member, and means on said abutment member and said inner tubular member for confining said coilable strip spring means in an uncoiled, flat condition and varying the extent of the radial deflection of the free end thereof in accordance with the position of said inner member relative to said outer member, whereby in the depressed position of said inner member, the free end of said coilable spring means is positioned to engage the next most lowermost article in said stack of articles to support said stack of articles while the lowermost article is being dispensed through the registering dispensing openings of said tubular members.

3,159,309
FLAKED ICE DISPENSING MACHINE

Howard O. Kempton, Columbus, Ohio, assignor to Flake Ice Machines, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 15, 1962, Ser. No. 230,566
2 Claims. (Cl. 222—56)

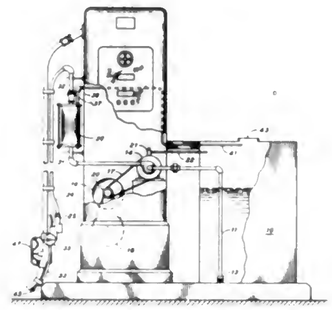


1. In a machine for dispensing flaked ice, the combination comprising a receptacle for receiving and holding a supply of the flaked ice, a conveyor having its input end connected to said receptacle for carrying the flaked ice therefrom, an electric conveyor motor having a driving connection to said conveyor for operating said conveyor, a reflaker housing connected to the opposite end of said conveyor for receiving the flaked ice therefrom, said reflaker housing having a discharge opening therefrom, a rotary cutter mounted in said reflaker housing for cutting, loosening and discharging flaked ice therefrom through said discharge opening, an electric reflaker motor having a driving connection to said rotary cutter for rotating said cutter, means for electrically energizing said reflaker motor, an energizing circuit connected to said conveyor motor and including a control switch for closing and opening said circuit to start and stop said conveyor motor, and a speed responsive governor connected to and driven by said reflaker motor and having an operative connection to said switch for closing said switch in response to the attaining of a predetermined minimum speed by said reflaker motor while opening said switch in response to the reduction of the speed of said reflaker motor substantially below said minimum speed so as to protect said reflaker motor against overloading due to the feeding of excessive ice to said reflaker housing by said conveyor.

3,159,310
AUTOMATICALLY CONTROLLED FLUID DISPENSER

Arthur W. Rafferty, 933 3rd Ave., Sacramento 18, Calif.

Filed Mar. 5, 1964, Ser. No. 350,144
12 Claims. (Cl. 222—63)



11. Control apparatus for air eliminators in liquid dispensing apparatus, including

(*a*) a pump for pumping dispensable liquids from a reservoir supply,

(*b*) a discharge conduit connected to the outlet of said pump and having a valve-controlled outlet for pumped liquids,

(*c*) an air eliminator device in said conduit intermediate said pump and said discharge outlet,

(*d*) a one-way check valve in the liquid flow conduit outlet between the air eliminator and discharge conduit biased to close against a predetermined liquid pressure flow from the air eliminator less than about the full pressure of liquid flow from said pump,

(*e*) a first control means operative to respectively start and stop said pump and responsive to predetermined variations of liquid pressures in said discharge conduit between said check valve and said valve controlled discharge outlet,

(*f*) and a second control means operative in response to liquid pressure in said discharge conduit between said check valve and said discharge outlet to stop said pump when the liquid pressure beyond said check valve is a predeterminable low value relative to the liquid pressure required for said first control means to start said pump.

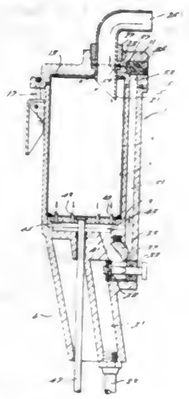
3,159,311
GUN FOR DISCHARGING GRANULAR MATERIAL BY AIR UNDER PRESSURE

Charles P. Fowler, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware

Filed Dec. 6, 1960, Ser. No. 74,089
2 Claims. (Cl. 222—82)

1. A catalyst gun comprising a housing having a chamber for a catalyst catridge opening out of one end, means in the chamber forming a seat for one end of the cartridge, said seat being located so that when a cartridge is seated thereon a portion of the cartridge projects out of the housing, a cover for the housing having a recess to receive the projecting end of the cartridge, means for clamping the cover to the housing to hold the casing tightly on said seat means, a catalyst outlet means carried by said cover and including a means for penetrating an end of the cartridge in said chamber when the cover is attached to the housing, a member containing a pattern of hollow piercing elements located in said chamber in a position to engage multiple points on one end of the cartridge with the hollow members piercing and penetrating

to the interior of the cartridge, and means for furnishing air under pressure to said hollow piercing members to



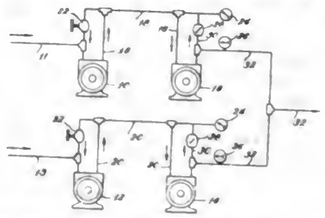
entrain and carry catalyst pellets in the cartridge out of the outlet conduit.

3,159,312
DISPENSING DEVICE FOR MIXING TWO VISCOUS FLUIDS
Herbert D. Van Sciver II, Merion, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1962, Ser. No. 226,928
5 Claims. (Cl. 222—137)

3. A longitudinal mixing tube for intermixing fluids comprising, an inlet portion having a plurality of individual passageways, a first mixing plenum connected to and spaced longitudinally adjacent said inlet section, a first mixing section connected to and spaced longitudinally adjacent said mixing plenum, an intermediate mixing plenum connected to and spaced longitudinally adjacent said first mixing section, a last mixing section connected to and spaced longitudinally adjacent said intermediate mixing plenum, diversionary baffles in said mixing sections dividing said sections into two separate passageways, and an outlet portion connected to and spaced longitudinally adjacent said last mixing station, whereby fluids entering said inlet portion are intermixed in said mixing tube before reaching said outlet.

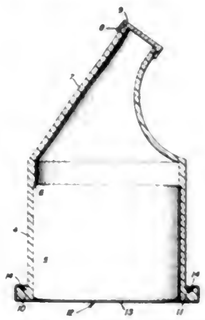
3,159,313
MULTI-COMPONENT PROPORTIONING METER SYSTEM
Earl Eugene Guilford, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 16, 1961, Ser. No. 110,533
3 Claims. (Cl. 222—142)

1. A multi-component proportioning system comprising, a pair of continuous delivery positive displacement pumps, a pair of meters, one of said meters being arranged to receive liquid under pressure from one of the pumps while the other of said meters is arranged to receive liquid under pressure from the other of said pumps, a common discharge pipe for said meters, and a common drive means having gear means for said pumps and said meters, said meters being driven independently of one another and in accordance with the ratio of said gear



means connected between said common drive means and each of said meters so that a predetermined ratio of liquid will be discharged by the meters.

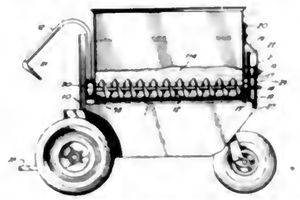
3,159,314
DISPENSER
Philip R. De Lucca, 10210 N. Miami Ave., Miami Shores, Fla.
Filed Mar. 28, 1962, Ser. No. 183,076
2 Claims. (Cl. 222—183)



1. For use with a conventional one pound tin or can of coffee which has been opened with a view toward using the coffee in the can, a can enclosing cover and pourer comprising an annular shell defining a cylindrical receiver for reception and temporary storage of the opened can, said receiver being wholly open at its bottom and permitting the open top can having a lip to be inserted by way of said bottom and fitted telescopingly into the holder portion of the receiver, the bottom portion of said shell having an integral outstanding flange flush with the bottom edge of the shell, the upper portion of said shell having an integral funnel-like extension providing a coffee pouring spout to assist the user in pouring the coffee into a coffee pot or the like, said spout having a readily applicable and removable closing cap to keep the coffee fresh, a portion of the wall of said receiver having shoulder means and said shoulder means providing an abutment as well as a limit stop whereby when the coffee can is inserted through the bottom and the lip is engaged with said stop the bottom of the can is then flush with the bottom edge of the shell, and a readily applicable and removable U-shaped clip, the bight portion of said clip spanning the otherwise open bottom of said receiver and being adapted to engage and retain the coffee can in place, and end portions of said clip having turned-in hooks and said hooks being releasably engageable with a cooperating edge portion of said flange, said spout being offset so that the discharge end thereof is positioned to one side of the axial center of the cylindrical receiver, said shoulder being a prescribed distance from and parallel with the bottom edge of said receiver in keeping with the depth dimension of the can,

the end portions of said U-shaped clip hugging the outer peripheral surface of said flange, the top of said flange having an annular channel receiving bill portions on said hooks.

3,159,315
APPARATUS FOR PUMPING MEAT OR POULTRY OFFAL
Albert W. Friesen, P.O. Box 889, Detroit Lakes, Minn.
Filed Apr. 30, 1962, Ser. No. 190,928
4 Claims. (Cl. 222—252)



3. Power driven apparatus for pumping semi-liquid mink feed material or the like which contains solid pieces similar to meat and poultry offal from a storage tank, comprising:

(*a*) a tank for containing a semi-liquid material, said tank having a pair of sides and a bottom with a first and second end joined thereto;

(*b*) a gear type pump having a housing containing inlet and discharge orifices communicating with a chamber including diametrically disposed semi-circular shaped ends in which are disposed a pair of communicating gears having imperforate hubs and non-compressible teeth, said gears being journalled in said housing chamber on a pair of shafts so that spaces between the ends of the teeth and the root circles of said gears are sufficient to admit the solid pieces of the semi-liquid material, at least one of said gears being fixedly coupled through one of said pair of shafts, the addendum circles of said gear defining a diameter less than the diameter defined by said semi-circular shaped ends;

(*c*) means fastening the inlet orifice of said pump in communicating relationship with said tank;

(*d*) an auger rotatably supported within said tank and in material delivering relationship with said pump inlet orifice;

(*e*) a motor operatively connected to said auger and said shaft fixedly coupled to one of said gears for rotation thereof;

(*f*) and, flexible tubing connected to the discharge orifice of said pump to control the direction of flow of the semi-liquid material therefrom.

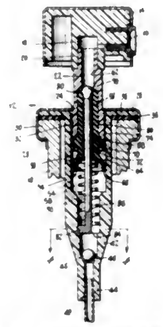
3,159,316
ATOMIZER PUMP
William R. O'Donnell, Trumbull, and Wolf Steiman, Fairfield, Conn., assignors to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,962
13 Claims. (Cl. 222—321)

1. An atomizer pump construction comprising, in combination:

(*a*) a pump cylinder adapted to be mounted on a container and having an inlet to enable it to receive liquid from the container,

(*b*) a piston device including two axially spaced operable piston portions slidable on and along the inside wall of the cylinder and reciprocable in the cylinder between first and second positions to effect a pumping of liquid, said piston device also including an actuator stem carrying said piston portions and passing out of the cylinder,

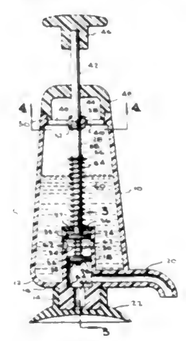
(*c*) positive-acting, venting valve means opened and closed by the piston device, said valve means comprising one of said piston portions and being opened by said piston device to enable exterior air to pass through the cylinder for introduction into the con-



tainer when the piston portions are in the second position, said valve means being closed by the piston device to prevent said passage of air when the piston portions are in the first position, and

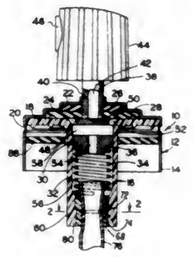
(*d*) means providing a discharge passage from the cylinder.

3,159,317
LIQUID SOAP DISPENSER
Joseph L. Mini, 2107 Wynnewood Lane, Peru, Ill.
Filed Sept. 28, 1962, Ser. No. 226,791
7 Claims. (Cl. 222—341)



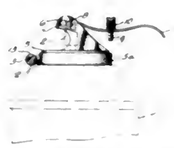
7. A metering, dispensing device for fluids, comprising a container having a bottom with an upright tube and a central well communicating with the interior of said tube, and defining a marginal shoulder at the bottom thereof, a lateral discharge conduit, communicating with the interior of said tube near the bottom thereof, said tube having lateral ports near its upper end, a piston system comprising a push rod having a lower end adapted to be received in said well, and a pair of discs slidable in said tube, and comprising a first coaxial disc fixed in spaced relation to said lower end, and a second, coaxial disc slidably carried between said first disc and said lower end, stop means defining an outer limit of movement of said second disc on said rod, spring means surrounding said rod between said discs, and urging said second disc against said stop means, spring means urging said pistons upwardly in said tube, and stop means between said rod and said container adapted to limit upward movement of said rod at a position with said first disc above said ports, and said second disc below said ports.

3,159,318
AEROSOL VALVE HOUSING CONSTRUCTION AND METHOD OF MAKING SAME
Edward H. Green, 11 Army Trail, Addison, Ill.
Filed Mar. 20, 1962, Ser. No. 180,957
8 Claims. (Cl. 222—394)



1. An aerosol dispenser valve construction which comprises, a hollow valve housing having an entrance formed at one end thereof, a dip tube adapted to have its end secured within said entrance, a clamping sleeve encircling said end frictionally constrictively to engage the same, and the said clamping sleeve being in turn frictionally secured telescopically within said entrance.

3,159,319
ACTUATOR-ADAPTER FOR SPRAY CAN
Roy Parish, 2859 Thornhill Drive, Mobile, Ala.
Filed July 30, 1962, Ser. No. 214,451
1 Claim. (Cl. 222—394)



A combined adapter for a spray can and actuator for the push button on the stem of reciprocating valve in the top wall of the spray can, said top wall having a surrounding rim, said combined adapter-actuator comprising:

(*a*) a downwardly facing cup-shaped member, including a base wall, centrally apertured to accomodate said stem and a downwardly extending cylindrical flange, dimensioned to surroundingly engage said rim, a radial slot extending from the central aperture in the base wall to its outer extremity on one side of said aperture, and continuing downward to the lower edge of the flange,

(*b*) a pair of lugs extending radially outward from the outer end of the slot, spaced apart so as to provide between them a continuation of the slot in the base wall, the lugs being transversely apertured and threaded to receive a clamping bolt, by which the flange is adapted to be clamped on said rim,

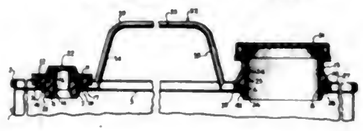
(*c*) two brackets, extending upwardly from said based walls, spaced symmetrically on both sides of the slot, a distance sufficient to accommodate, with clearance, the diameter of the button, said brackets terminating, at their upper ends, in apertured portions located forwardly of the forward wall of the button,

(*d*) a shaft fixed in said apertured portions and extending between said brackets,

(*e*) a button engaging, C-shaped cam member, upwardly curved and inwardly curved at the forward end to embrace said shaft and at its rear end to provide a cam surface, the intermediate portion being slanted to contact the top of the button,

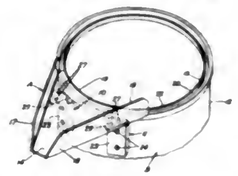
(*f*) an actuating lever, forked at its forward end to form two branches flanking the sides of the pivoted end of the cam member, said branches being also pivoted on said shaft, the under surface of said lever being downwardly concaved to provide a cam surface complementary to, but of lesser curvature than, the curvature of said cam surface on the upper face of said C-shaped member, and an adjustable stop, located on said lever so as to engage the end of the base wall opposite to the end with the radial slot, when the lever arm is pivoted downward to reciprocate the valve, so as to limit the extent of said reciprocation.

3,159,320
CONTAINER WITH OPENINGS AND HANDLE ATTACHED AT OPENINGS
Arthur P. Scholtz, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,527
8 Claims. (Cl. 222—468)



1. A container comprising a container wall having two spaced openings, a handle having two spaced parts thereof respectively surrounding the openings, and means for securing the handle to the wall comprising a hollow resilient plug at each opening overlying the two spaced parts and pressing said parts towards said wall for securing said parts between said plugs and the wall, said plugs being each secured to the wall by snap fitting through the wall with parts of each thereof on both sides of the wall and in fluid tight relationship therewith and forming respectively a pour-out spout and a vent.

3,159,321
MAGNETIC POUR SPOUT FOR CANS
Joseph A. Severino, 1788 Topeka Ave., San Jose, Calif.
Filed May 1, 1961, Ser. No. 106,682
1 Claim. (Cl. 222—570)



A pour spout for a press-top can having a lid receiving channel around the upper end thereof, said pour spout comprising a bottom portion, a downturned flange on the radially inward edge of the bottom portion, said flange being shaped to fit freely into, and to conform to, the radially inward side of such channel, a magnet holder comprising a channel member secured to the under side of the pour spout with its open side directed inwardly, the channel member extending downwardly from the pour spout, a flange on the upper end of the channel member fitted against the under side of the pour spout bottom portion, and a magnet mounted in the channel member and exposed through the open, radially inward side thereof to magnetically attract a side wall of such can with the pour spout flange inserted in the can channel, the magnet being so positioned relative to the side of the can when so mounted as to urge the downturned flange into close, conforming relation with the radially inward side of such can channel, and in pouring relation with an upper portion of such can, thereby to retain the pour spout in such relation during a pouring of the contents of the can through the pour spout.

3,159,322
TAPE CUTTER
David E. Martin, P.O. Box 12, Richfield, Calif.
Filed Jan. 16, 1964, Ser. No. 338,198
9 Claims. (Cl. 225—56)



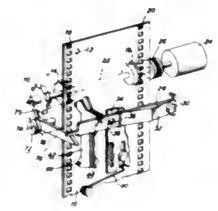
1. A tape cutter for severing a predetermined length of tape from a roll mounted upon a tape spool, said cutter including an elongated base member, a cutter head on the forward end of said base member, said cutter head including two spaced forwardly projecting portions, each portion including forwardly converging sides terminating in a pointed forward end, said portions being of a width so as to sever all but the central portion of the tape along a transverse line across the width of the tape, a forwardly projecting tape-retaining means located below the cutter head portions and in alignment with the space therebetween, the forward end of the retaining means being located rearward of the forward ends of the cutter head portions for receiving a portion of the tape below the transverse line of severance, and a sharp edged cutting portion rearward of the space between the cutter head portions and in alignment therewith, this cutting portion being of a width so as to sever the previously unsevered width of the tape.

3,159,323
DISPENSING CARTON FOR SHEET PAPER
Gary D. Hawk, Overland Park, Kans., assignor to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri
Filed Jan. 7, 1964, Ser. No. 336,177
6 Claims. (Cl. 225—49)



1. A carton for dispensing sheet paper from rolls made from a relatively stiff blank sheet of material and having spaced longitudinal score lines, said blank when folded on said score lines forming a bottom, sides and side extension flaps and an open top, said sides being at right angles to said bottom and the flaps extending inwardly and downwardly, said extension flaps being hingedly connected to said sides and forming side edges for said open top, said blank having portions extending outwardly of said bottom and said portions having transverse score lines at the juncture of said bottom so that when said portions are turned upwardly they form cardboard ends of single thickness for said carton, a hollow core, sheet paper on said core forming a roll, said roll being adapted to engage in said carton with its sides resting on the inwardly and downwardly extending flaps, means on said ends engaging in the ends of the hollow core for retaining the roll in the carton, the exterior of said blank having a hard surface and one of the folds opposite the score line on said side edges forming one of said extension flaps being cut longitudinally through said hard surface and partially through said sheet forming sharp edges and folding of said extension flaps separates said sharp edges and extends at least one of said edges exteriorly of the folded carton along one side edge thereof against which said sheet paper is pulled to sever the same.

3,159,324
CONTROL MECHANISM
James H. Ham, Jr., Indianapolis, James F. Ritchey, Carmel, and Charles Springman, Beech Grove, Ind.; said Ham and said Ritchey assignors to Bell Telephone Laboratories, Incorporated, and said Springman assignor to Western Electric Company, Incorporated, both of New York, N.Y., and both corporations of New York
Filed July 1, 1963, Ser. No. 291,867
8 Claims. (Cl. 226—58)



1. A mechanism for controlling the longitudinal movement of a web, the web including an unperforated longitudinal portion and a perforatable longitudinal portion, the perforatable portion being perforated to arrest the movement of the web, the mechanism comprising:

a deflecting member for riding on the unperforated longitudinal portion, the deflecting member including a deflecting surface spaced a constant distance from the surface of the web;

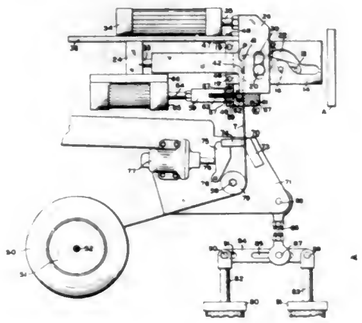
an arresting member for riding on the perforatable longitudinal portion, the arresting member being movable between a first position wherein it rests on the web and a second position wherein it extends into a perforation in the web, the arresting member having an arresting surface intersecting and extending beyond the deflecting surface of the deflecting member when the arresting member is in its first position and extending short of the deflecting surface when the arresting member is in its second position;

a control member movable along a generally planar path between a first and a second position, the control member being biased toward its first position and toward the deflecting surface of the deflecting member, the control member biasing the deflecting member against the web, the path of travel of the control member as it moves from its second to its first position being intersectable by the arresting surface of the arresting member, and the control member when in engagement with the arresting surface, biasing the arresting member into engagement with the web, whereby when the arresting member is in its first position, the control member in moving from its second to its first position is arrested by the arresting surface of the arresting member, and when the arresting member is moved to its second position responsive to a perforation in the web the control member is permitted to move to its first position;

means for moving the web; and

means responsive to the position of the control member for enabling and disabling the moving means, the enabling-disabling means enabling the moving means when the control member is arrested by the arresting surface and disabling the moving means when the control member is in its first position.

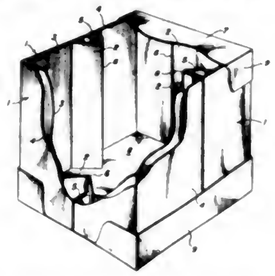
3,159,325
TAPING APPARATUS
James W. Toensing, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Jan. 21, 1960, Ser. No. 3,941, now Patent No. 3,081,815, dated Mar. 19, 1963. Divided and this application Aug. 8, 1962, Ser. No. 215,583
2 Claims. (Cl. 226—150)



1. In a taping machine, means for advancing a length of adhesive tape from a supply thereof, said advancing means comprising a clamp attached to said machine, means for alternately closing said clamp to grip said length of tape and opening said clamp to release the grip on said length of tape, movable holding means positioned intermediate said clamp and said supply of tape for holding said length of tape and feeding said length of tape toward said clamp; said holding means including means for preventing movement of said length of tape toward said supply of tape while permitting movement of said length of tape toward said clamp; means for moving said holding means away from said clamp when said clamp is open, to pull said length of tape away from any adhesive engagement with said clamp, means for moving said holding means toward said clamp when said clamp is open and after said length of tape has been pulled from adhesive engagement with said clamp, to push said length of tape through said clamp, and means for moving said holding means away from said clamp when said clamp is closed.

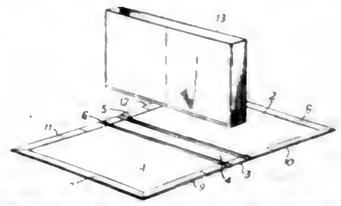
3,159,326
MULTIPLY FIBRE BOARD CONTAINERS
David Arthur Stonebanks, London, England, assignor to Continental Can Company, New York, N.Y., a corporation of New York
Filed Aug. 21, 1959, Ser. No. 835,313
Claims priority, application Great Britain Aug. 27, 1958
4 Claims. (Cl. 229—14)

1. In a container, a body comprising a plurality of upstanding walls, certain of said walls being formed of inner and outer layers, said inner layer having an intermediate vertically extending hollow rib projecting inwardly from the general plane of said inner layer, said outer layer having an inwardly directed vertically extending reinforcing rib engaging and reinforcing said hollow rib of said inner layer, said hollow rib and said reinforcing rib combining to form a vertical reinforcing portion for the



wall of which said layers are parts to resist outward bowing and vertical collapsing of the wall.

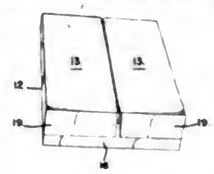
3,159,327
PROTECTIVE CASE FOR BOOKS
Francis Gordon Feather, 7 Drake Road, Westcliff-on-Sea, Essex, England
Filed Nov. 8, 1961, Ser. No. 150,991
Claims priority, application Great Britain Nov. 11, 1960
4 Claims. (Cl. 229—23)



1. A protective case for a book comprising:
(*a*) two rectangular side panels of stiff material spaced from and parallel to one another adjacent edges of said panels being parallel to one another;
(*b*) a strip of less rigid material connecting said two panels together along a pair of adjacent edges of said panels;
(*c*) two further strips of less rigid material connecting said two panels together along their two pairs of edges at right angles to said first-mentioned pair of edges, the case thus being in the form of a box-like structure open along one of its edges;
(*d*) the case further having at least one aperture provided in it in the region of said connected first-mentioned edges of said panels, to allow passage of air between the interior and the exterior of the case.

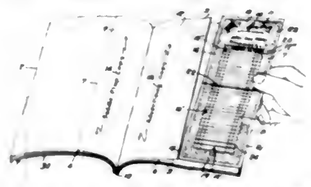
3,159,328
CASE FOR CONTAINERS SEVERABLE TO FORM TRAYS
Cameron D. Keim, Jr., Fremont, Mich., assignor to Gerber Products Company, Fremont, Mich.
Filed Feb. 6, 1963, Ser. No. 256,674
11 Claims. (Cl. 229—51)

1. A rectangular blank for a shipping case formed of a unitary piece of material divided into a plurality of rectangular panels each having end flaps at either side thereof comprising a central bottom panel, and, proceeding outwardly at either end of said bottom panel, a side panel, a half-top panel approximately half the length of said bottom panel, and a tuck-in panel, said panels being separated from each other by transverse fold lines and being separated from their adjacent end flaps by longitudinal fold lines, said end flaps being of substantially uniform width, the lengths of the bottom, half-top and tuck-in end flaps being of the same length as their respective associated panels, each side panel at each end thereof having a first and a second side end flap, said first end flap being adjacent one end bottom end flap and being



substantially longer than said second end flaps, said end flaps being separated from each other by cuts extending from the longitudinal margin of the blank inward to the adjacent longitudinal fold line.

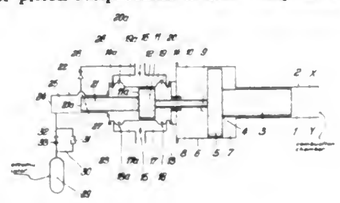
3,159,329
NOVELTY PAGE HAVING MAILER PORTION
Walter L. Hiersteiner, Mission, Kans., assignor to Tension Envelope Corporation, a corporation of Delaware
Filed July 5, 1963, Ser. No. 293,102
5 Claims. (Cl. 229—68)



1. In combination, novelty pages complying with Postal Department Regulations for second class mailing privileges for insertion in a magazine, said novelty pages comprising
(*a*) a generally rectangular sheet having front and back faces adjacent to pages of the magazine,
(*b*) means securing said sheet to said magazine,
(*c*) a line of detachment on said sheet and dividing same into an advertising copy portion and a returnable single use mailer portion with the mailer portion detachable along said line of detachment for subsequent use only as a container when formed by a user,
(*d*) said mailer portion including front and back panels having aligned edge portions and foldable along a single medial line of fold in overlying relationship, after the mailer portion has been detached from the said sheet by the user, and
(*e*) adhesive utilized adjacent edge portions of one face of said mailer portion so that when said mailer portion is detached and the edge portions of said panels are secured together by said adhesive they cooperate to provide a substantially sealed container.

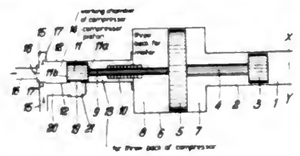
3,159,330
FREE PISTON COMPRESSOR SYSTEM WITH DOUBLE ACTING COMPRESSOR PISTON
Heinz Boldt, Berlin-Charlottenburg, Germany, assignor to Borsig Aktiengesellschaft, Berlin-Tegel, Germany
Filed July 2, 1963, Ser. No. 292,501
Claims priority, application Germany July 6, 1962
16 Claims. (Cl. 230—56)

1. A free piston compressor system having two axially aligned cylinder piston systems arranged as an image to each other on opposite sides of a plane of symmetry transverse to the axes of said cylinder piston systems, each of said cylinder piston systems when viewing from said plane of symmetry in axial direction of the respective cylinder piston system including: a prime mover cylinder, a prime mover piston reciprocable in said prime mover cylinder, a return cylinder, a return piston reciprocable in said return cylinder and connected to said prime mover piston so as to be movable thereby in one direction and to move said prime mover piston in the opposite direction, a compressor cylinder, a double-acting compressor piston reciprocable in said compressor cylin-



der, connecting rod means connecting said return piston to one side of said compressor piston, an auxiliary cylinder, and a plunger reciprocable in said auxiliary cylinder and connected to the other side of said compressor piston, said auxiliary cylinder being provided with means for admitting pressure fluid to that side of said plunger which is remote from said compressor piston.

3,159,331
MULTI-STAGE FREE PISTON TYPE COMPRESSOR
Heinz Boldt, Berlin-Charlottenburg, Arno Krause, Berlin, and Heinz Nink, Berlin-Reinickendorf, Germany, assignors to Borsig Aktiengesellschaft, Berlin-Tegel, Germany
Filed July 18, 1963, Ser. No. 297,178
Claims priority, application Germany July 20, 1962
23 Claims. (Cl. 230—56)

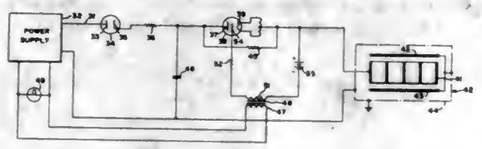


1. A free piston type compressor structure having two axially aligned cylinder piston units arranged as an image to each other at opposite sides of a plane of symmetry transverse to the axis of said units, in which each of said cylinder piston units comprises: prime mover cylinder piston means, return cylinder piston means for storing the work for the return stroke of the piston means of said prime mover cylinder piston means, compressor cylinder piston means for compressing a medium to be compressed, said compressor cylinder piston means including first inlet and discharge means for conveying the medium to be compressed into and discharging the compressed medium from the cylinder means of said compressor cylinder piston means, additional cylinder piston means for storing the work for the return stroke of the compressor piston of said compression cylinder piston means, and piston rod means rigidly interconnecting all of the pistons of the respective one and the same cylinder unit.

3,159,332
METHODS AND APPARATUS FOR ENHANCED SPUTTER-ION PUMP OPERATION
Sherman L. Rutherford, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 14, 1961, Ser. No. 131,225
13 Claims. (Cl. 230—69)

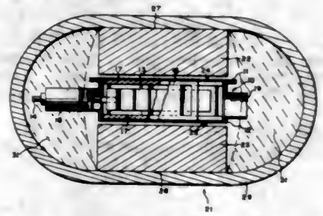
1. The method of treating a sputter-ion pump having anode and cathode electrodes adapted to maintain a gas

discharge within a vacuum envelope, said method comprising the steps of initiating a gas discharge between said anode and cathode electrodes, introducing into said envelope a gas which is chemically inert with respect to said cathode electrode and whose molecules are of a



greater mass than those of hydrogen, and bombarding said cathode electrode with ions of said gas so as to cause sputering of said cathode electrode thereby providing a pump exhibiting a greatly increased pumping speed for hydrogen and its isotopes.

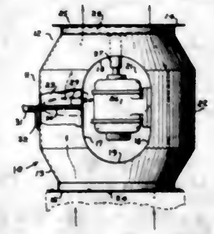
3,159,333
PERMANENT MAGNETS
John C. Helmer, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 21, 1961, Ser. No. 132,889
6 Claims. (Cl. 230—69)



1. A magnetically confined glow discharge sputter-ion vacuum pump apparatus including: a vacuum tight envelope adapted to be connected to a structure it is desired to evacuate; an apertured anode electrode defining a glow discharge passageway and contained within said envelope; a pair of cathode members disposed on opposite sides of said anode electrode and contained within said envelope; means for applying operating potentials to said anode electrode and cathode members for initiating and maintaining the glow discharge; means for producing and directing a magnetic field through said anode electrode and cathode members normal to said cathode members including an armature forming an arched low magnetic reluctance path around said envelope and having a uniform magnetic potential therein, a ceramic magnetic material block mounted on said armature and having a pole face disposed adjacent a portion of said armature defining therebetween an air gap, said pole face and said portion of said armature positioned adjacent and parallel to a respective one of said cathode members, said block being normal to said pole face, the ratio of the length of said block normal to said pole face to the length of said air gap normal to said pole face being less than 2.5 to 1.

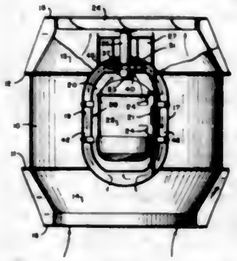
3,159,334
FAN
Richard L. Hull, Davenport, Iowa, assignor to Ametek, Inc., a corporation of Delaware
Continuation of application Ser. No. 38,979, June 27, 1960. This application Mar. 13, 1963, Ser. No. 267,072
2 Claims. (Cl. 230—114)

1. In a fan unit, a housing including a hollow cylindrical portion and hollow truncated conical inlet and outlet portions attached to said cylindrical portion; a transverse passage extending through said cylindrical portion; a wall defining said transverse passage, and forming longitudinally extending dual passages through said cylindrical portion, said wall having spaced flat parallel portions joined by curvilinear portions; motor means mounted on one of said flat parallel portions and having an output shaft extending through said wall and lying on the longitudinal axis of said housing; a fan connected to said shaft and adjacent said wall portion; vane means within at least one of said plural passages through said housing, said vane means having a straight edge extending in substantial parallelism to a flat portion of said wall and an arcuate edge which in the closed position of said vane means is disposed adjacent the inner cylindrical sur-



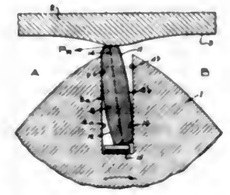
face of said one passage, said vane means having an area substantially the same as the cross sectional area of said passage and the straight edge portion being longer than said cylindrical wall so as to be adjacent said fan when the vane means is in open position; pivot means in said one passage, said pivot means being fixed to said vane means and journalled in bearings in said housing and wall, said pivot means extending in a direction transverse to said vane straight edge, said vane means being located in said passage so that when said vane means is fully open it will direct air to said fan; and means for rotating said vane means.

3,159,335
FAN
Frederick R. Gruner, Moline, and Roy F. Schwegler, Rock Island, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1963, Ser. No. 263,143
17 Claims. (Cl. 230—117)



1. A fan comprising in combination, a main housing member; an auxiliary housing member extending transversely through said main housing member and separating the main housing member into two parallel passageways, one on each side of said auxiliary housing member, and forming a transverse passage through said main housing member, said passage being open at both ends to the atmosphere; a motor mounted in said transverse passage having output shaft means extending through the wall of said auxiliary housing member into said main housing member; main fan means connected to said output shaft means within said main housing member for sucking air through said spaced parallel passageways within said main housing member; a radiation shield within said transverse passage between said motor and said auxiliary housing member; and means for causing outside air to circulate over said motor and through the space between said radiation shield and said auxiliary housing member.

3,159,336
NON-JAMMING APEX SEAL
Hanns-Dieter Paschke, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Apr. 26, 1962, Ser. No. 190,441
Claims priority, application Germany May 13, 1961
7 Claims. (Cl. 230—145)

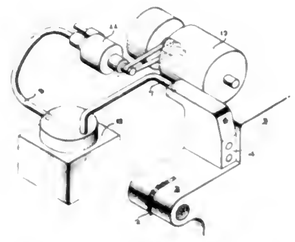


1. A sealing arrangement for the working chambers of a rotary mechanism having an outer body with axially-spaced end walls interconnected with a peripheral wall forming a cavity with said cavity having a multi-lobed profile; an inner rotor having axially-spaced end faces mounted within said cavity, said rotor having a plurality of circumferentially spaced portions for engagement with the inner surface of said peripheral wall whereupon, during relative rotation of said outer body and inner rotor, working chambers of variable volume are formed; said sealing arrangement comprising a seal member mounted in a groove in at least one of said circumferentially spaced portions for radial movement with respect to said groove and having a single apex portion for sealing engagement with the inner surface of said outer body peripheral wall and the width of said groove inwardly of its outer edge being at least as great as that at the groove outer edge, said seal member having diagonally opposed portions at its radially inward and outward regions for engagement with the side walls of said groove when said seal member is in a maximum tilted position relative to said groove side walls and the configuration of said seal member and said groove being related to one another for permitting sliding engagement of said seal member with said groove side walls and for preventing the corners of said seal member from digging into said groove side walls and the corners of said groove from digging into the seal member side walls when said seal member is in a maximum tilted position such that said seal member can slide radially inwardly into the groove without accompanying substantial tilting movement of said seal member toward a positon parallel to said groove side walls.

3,159,337
PUNCH AND TAPE FEED VERIFYING APPARATUS
John H. MacNeill, Indialantic, James E. Bellinger, Jr., Eau Gallie, and Stanley D. Bloemendaal, Melbourne, Fla., assignors to Soroban Engineering, Inc., Melbourne, Fla., a corporation of Florida
Filed Sept. 11, 1961, Ser. No. 137,085
11 Claims. (Cl. 234—33)

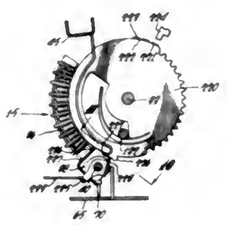
1. A verification system for detecting movement of the punching member of a punching mechanism between its actuated and its unactuated position comprising at least one recess in said punching member, magnetic means for establishing a magnetic flux through said punching member, said magnetic path including an air gap defined at least in part by at least said one recess in said punching member when said punching member is in one of its said positions, and means for detecting variations in the magnetic flux in said magnetic means.

10. In a punching mechanism having means for alternately punching and advancing a work member, a verification apparatus comprising first means for producing a



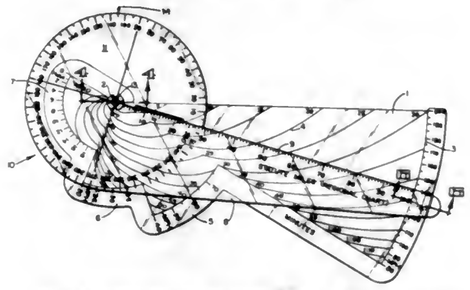
different signal in response to movement of each of said punching means, means for producing a further signal when the combination of said different signals indicates operation of a predetermined array of said punching means, means for producing a still further signal upon each advance of the work member, and means responsive to both said further signals for producing an indication of operation of both said punching and advancing means.

3,159,338
SYMBOL MEMBER POSITIONING MEANS FOR CALCULATING MACHINE
Kenneth F. Oldenburg, Monterey Park, Milton V. Scozzafava and Richard S. Mark, Arcadia, and Bryan F. Kuhne, Monrovia, Calif., assignors, by mesne assignments, to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Original application Sept. 25, 1961, Ser. No. 140,547. Divided and this application Apr. 18, 1963, Ser. No. 279,693
4 Claims. (Cl. 235—60.18)



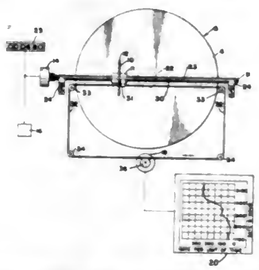
1. In a calculating machine, a pin carriage having settable pins; means for setting said pins, means for advancing said pin carriage out of home position as an incident to setting a said pin, a differentially movable symbol member, yieldable means for advancing said symbol member from an initial symbol position to a final symbol position, a first stop element for normally maintaining said symbol member in said initial symbol position, a second stop element for differentially limiting advancement of said symbol member to a third symbol position located intermediate said initial and final symbol positions, a depressible function control key, means responsive to depression of said key for rendering said first stop element ineffective, and means responsive to movement of said pin carriage out of said home position for rendering both said stop elements ineffective.

3,159,339
VISUAL FLIGHT REGULATIONS NAVIGATOR
Frank S. Peddle, Jr., Eagle Springs Road, Oxford, Miss.
Filed Mar. 6, 1962, Ser. No. 177,812
4 Claims. (Cl. 235—61)



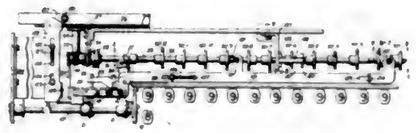
1. In a navigational instrument, a pair of superimposed flat transparent members secured together for relative angular movement about a center point, one of said members being a time-speed indicator and the other a course-distance indicator, the time-speed indicator comprising a segment having a time scale consisting of a set of curves plotted on polar coordinates to give uniform increments of time along any of a number of selected lines extending radially from said center point, said time scale beginning with zero time at the center point and increasing in a radially outward direction and further having a speed scale along a circumferential line, and the course-distance indicator comprising an arm portion having a distance scale coordinated with the time and speed scales, said distance scale extending radially from said center point beginning with zero at the center point and increasing in a radially outward direction, the time-speed indicator includes at least one additional segment having a time scale consisting of a set of curves plotted in the manner of the first-named set of curves and further having a wind speed scale along a circumferential line.

3,159,340
APPARATUS FOR DETERMINING AND EXPRESSING RATE
Charles E. Rogers, 612 Cliffside Drive, Akron, Ohio, assignor of one-half to John E. Ake, Akron, Ohio
Continuation of application Serial No. 638,399, Feb. 5, 1957. This application July 17, 1962, Ser. No. 211,945
2 Claims. (Cl. 235—61)



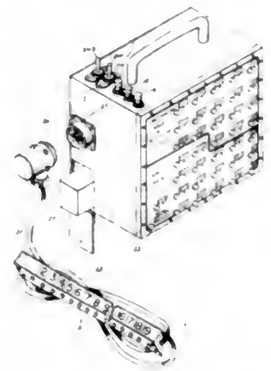
1. A combination electro-mechanical computing apparatus for producing a continuous electrical analog output signal comprising,
a first axially mounted rotatable disc,
means for rotating said first disc at a preselected number of revolutions per reference quantity,
stanchions on opposite sides of said first disc,
a threaded shaft journaled in said stanchions so that the longitudinal axis of said threaded shaft intersects the rotational axis of said first disc at substantially a right angle,
the axis of said threaded shaft being disposed in a plane spaced apart from and parallel to a plane defined by said first disc,
a bar connected to said stanchions above said shaft,
means for detecting digital quantities and intermittent phenomena and converting said quantities and phenomena into electrical signals,
signal responsive means for rotating said threaded shaft through a preselected degree of angular displacement for each phenomenon occurrence,
a second disc having an axial portion continuously engaging the threads of said shaft and a peripheral portion continuously engaging a surface of said first disc, the relative position of said peripheral portion of said second disc continuously changing with respect to said rotational axis of said first disc in response to said angular displacement of said threaded shaft whereby said digital quantities and intermittent phenomena are continuously electro-mechanically differentiated with respect to said reference quantity,
a bracket slidably supported on said cross bar and attached to the hub of said second disc,
and potentiometer means operatively associated with said bracket to continuously transmit an electrical analog output signal which is an analog of said changing position of said second disc, whereby said electrical output signal is a continuous analog of the variable rate of digital quantities and intermittent phenomena per reference quantity.

3,159,341
EXTENDED SQUARE ROOT MECHANISM FOR A SQUARE ROOT CALCULATING MACHINE
Grant C. Ellerbeck, San Leandro, Calif., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,429
7 Claims. (Cl. 235—63)



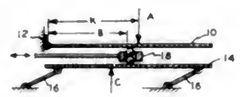
1. In a calculating machine for the extraction of square root having:
an ordinally arranged selection mechanism,
adjusting means operable to progressively adjust each order of the selection mechanism in increments corresponding to a "1,"
setting means for inserting a value of "5" in each order of said selection mechanism,
means for operating said setting means in one order and operating the said adjusting means in the next higher order,
a cam shaft,
means for rotating said cam shaft, and
ordinally arranged cams mounted spirally on said cam shaft for operating said operating means in an ordinally diminishing sequence,
a mechanism for extending the number of orders in which square root can be extracted without changing the timing of the machine comprising:
additional cams slidably mounted spirally on said cam shaft for effecting the extraction of the root, and control means for slidably moving said additional cams relative to said cam shaft in timed relationship with the rotation of the shaft.

3,159,342
MEASURING APPARATUS AND METHOD OF USING
William H. Martin, Rosemere, Quebec, and Henri G. Simard, Montreal, Quebec, Canada, assignors to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed June 22, 1961, Ser. No. 118,984
1 Claim. (Cl. 235—92)



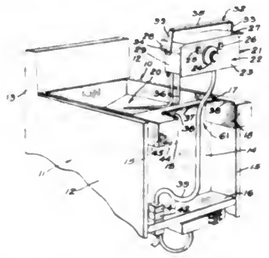
An electrical apparatus for the volumetric measurement of pulpwood comprising a portable instrument box and a portable staff adapted for manual disposition across log and cull diameters and connected to the instrument box solely by electrical means, said means extending to link electrical circuit elements in the instrument box and on the staff and to permit the registration of volumetric measurements of pulpwood in the instrument box when the staff is manually disposed across log and cull diameters and the electrical circuit elements thereon are manually operated,
the instrument box having disposed therein a log tabulating circuit including a dry cell, circuit closing means, a total piece registering sub-circuit including an electromagnetic counting means, and a plurality of diameter class recording sub-circuits each including diode means, electrical counting means, and sub-circuit closing means and a cull tabulating circuit which is substantially identical in components to the log tabulating circuit,
and the staff having disposed thereon log and cull diameter measuring indicia disposed at intervals along the staff and manually operable diameter class recording sub-circuit closing means disposed between pairs of the measuring indicia along the staff.

3,159,343
ANALOG COMPUTER
Ray E. Hudson, Odessa, Tex., assignor to The Bell Corporation, Odessa, Tex., a corporation of Texas
Filed Jan. 22, 1962, Ser. No. 167,618
1 Claim. (Cl. 235—200)



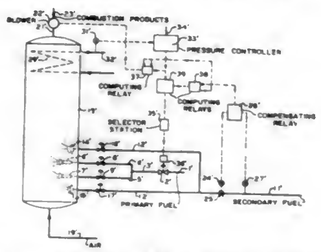
An analog computer comprising:
(*a*) a frame
(*b*) at least three parallel plates,
(*c*) all said plate pivoted to said frame,
(*d*) a force transmitting element within each space between each pair of plates,
(*e*) the axis about which each plate is pivoted being at an angle to the axis about which at least one adjacent plate is pivoted,
(*f*) at least one plate hinged about an axis coincident with one edge to the frame,
(*g*) means for moving at least one element toward and away from said coincident axis,
(*h*) means for moving at least one element parallel to the said coincident axis,
(*i*) means for extering a varying input force against one end plate, and,
(*j*) means for determining and exterting a force necessary to maintain the plates in static position against the other end plate..

3,159,344
FRYING APPARATUS
James L. Wilson, Chicago, Ill., assignor to Wilson Metal Products, Inc., Chicago, Ill., a corporation of Illinois
Filed May 6, 1963, Ser. No. 278,029
7 Claims. (Cl. 236—20)



1. Frying apparatus of the type which is adapted to be heated by a gas burner unit under control of an electrically-actuated gas fuel line control valve, comprising a housing including side walls, a rear wall, a front wall and having a deep fat cooking oil well therein, an electrical operating circuit including electrically actuated means for controlling the operation of said electrically-actuated gas fuel line control valve, a thermostatic control unit comprising a housing including a top wall, side walls, end walls and a bottom wall, said electrical operating circuit including stationary electrical contact means mounted on a wall of the said fryer housing, flange means on a wall of the said fryer housing, complementary flange means on the said thermostatic control unit housing adapted to coact with the said flange means on a wall of the said fryer housing for positioning and retaining the said thermostatic control unit and its housing in position of use on the said wall of the fryer housing, a flexible electrical power conductor cable having an inner end portion attached to the said thermostatic control unit housing and including an outer end portion having electrical contact means attached thereto detachably attachable to the said stationary contact means for supplying electric power to the said electrical operating circuit, a control switch for the said electrical operating circuit including a switch-actuating member movably mounted in a wall of the said thermostatic control unit housing and means carried by a wall of the said fryer housing and engageable by the said switch-actuating member when the said thermostatic control unit is moved into operating position on the said wall of said fryer housing to close the said electrical operating circuit to the said electrically actuated means for controlling the operation of the said gas fuel line control valve.

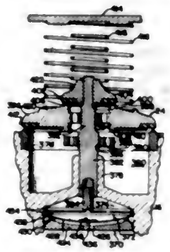
3,159,345
CONTROL SYSTEM FOR UTILIZATION OF VARIABLE FLOW FUEL
Carl L. Osburn, Jr., and Richard E. Hayward, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 5, 1962, Ser. No. 164,447
10 Claims. (Cl. 236—26)



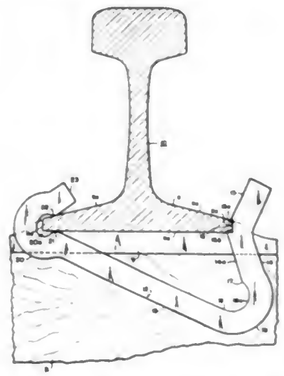
5. Apparatus comprising a burner system having at least one primary burner and at least one auxiliary burner, a first conduit for passing a primary fuel to said at least one primary burner, a second conduit for passing a variable rate of flow of secondary fuel to said at least one auxiliary burner, a first computing means, an orifice located in said second conduit, means for producing a first signal responsive to the pressure drop across said orifice and transmitting said first signal to said first computing means, means for producing a second signal responsive to the pressure in said second conduit and transmitting said second signal to said first computing means, said first computing means being adapted to produce a third signal which is representative of the rate of flow in said second conduit compensated for variations in pressure in said second conduit, a second computing means, means for transmitting said third signal to said second computing means, said second computing means being adapted to produce a fourth signal which is representative of the change in the compensated rate of flow of fuel in said second conduit, means for producing a fifth signal responsive to a demand requirement of said burner system, a third computing means, means for transmitting said fifth signal to said third computing means, means for transmitting said fourth signal to said third computing means, said third computing means being adapted to compare said fourth and fifth signals and to produce a sixth signal representative of the changes in the flow rate of primary fuel required to meet said demand requirements of said burner system, a valve in said first conduit, and means for controlling said valve responsive to said sixth signal.

3,159,346
CONTROL VALVES FOR A DOMESTIC WATER HEATER
Michael J. Caparone, Arcadia, and Theodore J. Dykzeul, Rolling Hills, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Continuation of abandoned application Ser. No. 862,694, Dec. 29, 1959. This application Nov. 29, 1962, Ser. No. 243,968
17 Claims. (Cl. 236—33)

12. In combination, a housing having a passage means leading from an inlet to an outlet, a supplemental valve seat disposed in said passage means and interconnecting said inlet with said outlet, a supplemental valve member cooperable with said supplemental valve seat, said supplemental valve member carrying a main valve seat interconnecting said inlet with said outlet, a main valve member cooperable with said main valve seat, a snap-action member for controlling opening movement of said valve members, said snap-action member when flexed and snapped over center in one direction only opening said main valve member, said snap-action member when further flexed in said one direction opening said supplemental valve member, and amplifying means to amplify said further flexure of said supplemental valve member in said one direction.

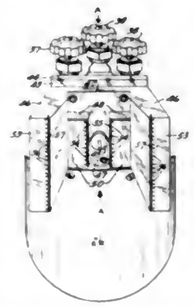


3,159,347
RAIL ANCHOR DEVICE
John H. Neely, 4740 Lawnview Drive, Pittsburgh, Pa.
Filed Feb. 8, 1961, Ser. No. 87,925
7 Claims. (Cl. 238—327)



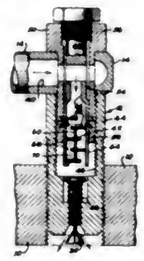
1. An improved rail anchor device for secure clamping engagement across a base flange of a rail wherein the base flange has an under face and opposed upper faces connected to the under face by side edge portions, said device having a body of substantially uniform section along its length and having a pair of horizontally spaced-apart and vertically-positioned opposed clamping parts and a bottom length portion to extend across underneath the rail base flange, said clamping parts comprising a pair of oppositely-positioned inwardly-open loop portions, one of said loop portions being connected to one end of said bottom length portion and the other loop portion being connected to the opposed end of said bottom length portion to define opposite flexing axes for said body at opposite ends of said bottom length portion, one of said clamping parts having a relatively short length clamping foot portion extending inwardly from an upper end of its loop portion to cooperate with one side of the rail base flange, the loop portion of said one clamping part intersecting said clamping foot portion and said bottom portion to form at the intersections a pair of upper and lower rounded contact shoulders lying on a common plane that is substantially perpendicular to a horizontal plane of the rail base flange to clamp-engage the rail base flange and position its adjacent side edge portion in a spaced relation within the loop portion of said one clamping part; the other of said clamping parts having an upwardly-extending inwardly-inclined guide-wedging portion connected at its lower end to the loop portion of said other clamping part for guiding an adjacent side edge portion of the rail base flange therealong to flexibly spread said body outwardly, and a latching notch portion in an upper end portion of said other clamping part to clamp-engage the adjacent side edge portion of the rail base flange adjacent the upper end of said guide-wedging portion and securely clamp the rail base flange between said pair of clamping parts.

3,159,348
APPARATUS FOR SPRAYING HEAT FUSIBLE PULVERULENT MATERIAL
Donald R. Wedan, Golden Valley, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 178,934
7 Claims. (Cl. 239—85)



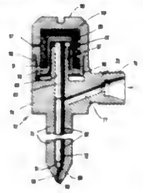
6. Apparatus for spraying heat-fusible pulverulent material upon a surface to be coated, comprising a spray head having a base region and at least one wing extending forwardly of said base region, said base region containing nozzle means for spraying heat-fusible pulverulent material and flame-producing means for heating sprayed heat-fusible pulverulent material, and said wing containing in its tip region flame-producing means for heating a surface to be coated.

3,159,349
LIQUID INJECTION SYSTEM WITH DAMPER MEANS
Richard A. Crocco and Colwell Carey, Glen Rock, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,489
10 Claims. (Cl. 239—453)



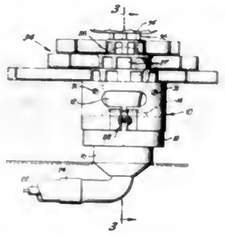
2. A high-pressure liquid-injection nozzle having an inlet at one end for receiving liquid fuel at high pressure in intermittent pulses from which air is excluded, valve means at the other end responding in an opening direction to high pressure of predetermined level and having passage means communicating with said inlet and said valve and pressure-wave damping means disposed in said passage upstream from said valve means and comprising a plurality of baffle plates disposed transversely to said passage and spaced therealong and fixed to a central spacing bar to form an integral spool-like element immovable within said passage, each of said plates occluding said passage except for an open area of small cross-section relative to the cross-section of said passage, with adjacent open areas being misaligned to provide a tortuous flow path therethrough to damp reflected pressure waves in said passage.

3,159,350
FUEL INJECTION VALVE DEVICE
Rudolf Mangold, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,613
5 Claims. (Cl. 239—533)



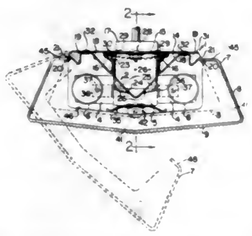
1. A fluid fuel injection device comprising an elongated main body having forward and rear ends, said body having an elongated passage extending longitudinally therewithin, a forwardly converging frustro-conical valve seat positioned coaxially of the passage near the forward end thereof, an elongated cylindrical needle within the passage coaxial thereof, said needle having a conical forward end matingly cooperating with the valve seat to form a pressure-openable valve, the needle throughout an extended part of its length rearwardly from and including the forward end thereof having a diameter somewhat less than that of the passage so as to provide a substantially continuous annular fuel passage between the wall of the passage and the needle throughout such extended part of the length of the needle, resilient means urging the needle forwardly to seat the valve on said seat, means to support the needle for reciprocation including means to guide the rear end thereof and to provide a substantial seal against the rearward escape of fuel from the passage, means for introducing fuel under pressure to the annular fuel passage, the needle and the means for supporting and guiding the needle for reciprocation being so constructed and arranged as to give the conical forward end of the needle a small freedom of lateral motion whereby it matingly interfits with the valve seat, abutment means cooperating with the rear end of the needle to limit the travel of the needle in a rearward, valve-opening direction, supporting structure affixed to the rear end of the body, said structure supporting the abutment means in alignment with the rear end of the needle, said supporting structure and abutment means consisting of a unitary cup-shaped member, the transverse bottom of which forms the abutment means, an inverted cup-like member having its side wall telescoped over the rear end of the needle, the transverse bottom of the cup-like member being interposed between the rear end of the needle and the abutment means, the cup-like member having a spring seat in the form of an outwardly directed annular flange around the side wall thereof, the resilient means urging the needle forwardly to seat the valve being a coil compression spring disposed coaxially of the needle and having its forward end in engagement with the flange on the cup-like member, and a second spring seat on the abutment means retaining the rear end of the spring.

3,159,351
LIGHTING FIXTURE
Anthony A. Dwyer, 3320 Wonderview Drive, Los Angeles, Calif.; Lloyd L. Garnell, 8029 Coldwater Canyon, North Hollywood, Calif.; Norman C. McClay, 1430 Elm Ave., Glendale 1, Calif.; and Ray Sealock, 2313-C Burbank Blvd., Burbank, Calif.
Filed Nov. 3, 1961, Ser. No. 150,083
3 Claims. (Cl. 240—10)



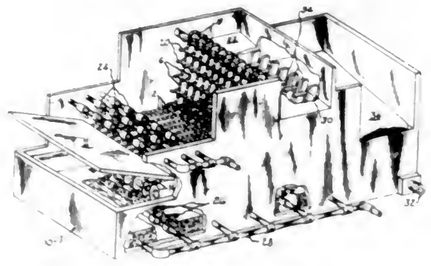
1. A lighting fixture comprising an electrical socket having a light source, a stationary translucent inner member surrounding the light source and made up of a plurality of concentric cylindrical tubes having horizontal flanges connecting the ends of adjacent tubes, a stationary outer member superimposed on said inner member and made up of a plurality of concentric cylindrical tubes having horizontal flanges connecting the ends of adjacent tubes and having a plurality of openings in the sides of the smaller tubes and an opening at the top of its narrower end, both of said inner and outer members having their wider ends closer to said socket and their narrower ends closer to the light source to concentrate the light from the light source.

3,159,352
LUMINAIRE
George P. Wakefield and Harvey H. Vick, Vermilion, Ohio, assignors, by mesne assignments, to Wakefield Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 16, 1960, Ser. No. 69,661
7 Claims. (Cl. 240—51.11)



7. A luminaire comprising an elongated body member having downturned and outturned flanges along its opposite edges and downturned plates at its ends; pairs of lampholders secured to said luminaire between said plates for receiving a pair of parallel tubular lamps therebetween; said body member being formed with a central downwardly open longitudinal channel inwardly of said downturned and outturned flanges; a cover member having detachable engagement with said channel to form a ballast chamber and a wireway; said body member and cover member defining a longitudinal V-shaped reflector between such lamps; a light transmitting refractor having inturned flanges straddling said downturned flanges and resting on the respective outturned flanges and opposite sides and a bottom enclosing such lamps, said refractor having light transmitting ends disposed between said plates and extending inwardly from the sides and upwardly from the bottom to the sides and bottoms of the perimeters of the respective plates; and spring means on said plates yieldably bearing down on such upwardly extending end portions to yieldably hold said inturned flanges against said outturned flanges.

3,159,353
WASTE DISPOSAL
Julian G. Atwater, Chicago Heights, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1961, Ser. No. 132,091
10 Claims. (Cl. 241—39)

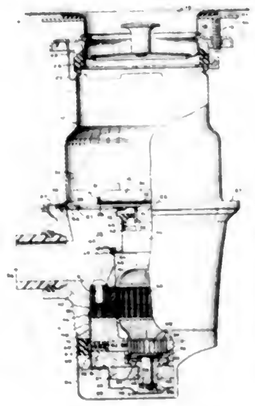


3. An apparatus for the continuous classification and disposal of heterogeneous mixtures of rubbish in the form of landfill, screenables, and sewage comprising: means for maintaining a flowing stream of liquid in a tank; means for supporting rubbish slightly above said flowing stream; means for continuously projecting liquid jets downwardly into said liquid stream and against said rubbish, whereby the less substantial pieces of said rubbish are broken up, and the smaller and broken pieces of said rubbish are forced into said stream, thereby separating said smaller and broken pieces from the major portion of the land fill component, made up of the more substantial pieces of rubbish, which will continue to be supported above said stream; means for removing said major portion of the land fill component from above said stream; means for separating pieces of rubbish in said stream larger than a predetermined size from the suspended sewage materials in said stream; and means for removing the separated pieces from said stream.

3,159,354
SERIES MOTOR CONSTRUCTION FOR A FOOD WASTE DISPOSAL UNIT
Johnny W. Yartz, Anchorage, Ky., and Marcus P. Hogue, Hendersonville, N.C., assignors to General Electric Company, a corporation of New York
Filed May 16, 1962, Ser. No. 195,210
7 Claims. (Cl. 241—46)

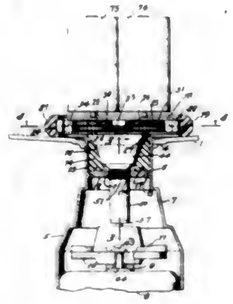
1. A series motor adapted for use in a vertical position, said motor comprising an armature and an encapsulated stator, the stator being formed into a non-magnetic motor housing, the lower end of the housing including a lower bearing, the upper end of the housing including an upper bearing member that is joined to the housing and serves to support and guide the upper end of the shaft of the rotor, the lower end of the armature including a commutator, and opposed openings formed in the motor housing, there being a carbon brush member supported in each said opening for engaging the commutator, the armature having a lower shaft portion extending beneath the commutator and into the lower bearing, and a cup-like shield fastened to the lower shaft portion of the armature to overlie the lower bearing and provide a labyrinth

so that carbon dust released from the brushes by attrition will be unable to form a conductive path between the



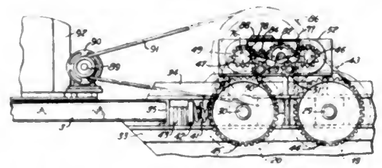
brushes and bearing, said shield having a down-turned portion radially spaced from said lower bearing.

3,159,355
WASHING DEVICE OPERATED BY GARBAGE DISPOSAL UNIT
William Bruce Delamater, Downey, Calif., assignor to Robert G. Smith
Original application Apr. 6, 1959, Ser. No. 804,179, now Patent No. 3,011,192, dated Dec. 5, 1961. Divided and this application Sept. 12, 1961, Ser. No. 138,233
8 Claims. (Cl. 241—101)



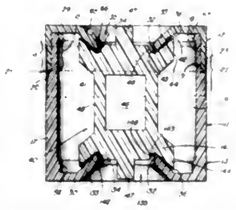
1. A device for placement in the drain opening of a sink of the type that is provided with a strainer flange and provided beneath the strainer flange with a power driven garbage disposal unit, including: a bridging plate spanning the strainer flange, the bridging plate being formed with a screw threaded central opening, a gasket seal with a conical bore resting on the bridging plate, a plug having a conical surface for snug reception in said conical bore and having a depending sleeve externally threaded in part and extending through said threaded central opening of the bridging plate for engagement therewith so that upon rotation of the conical plug the conical surfaces of the plug and the gasket seal are brought into firm engagement to prevent fluid leakage therebetween, a telescopic shaft for frictional engagement with the power driven garbage disposal unit to rotate the shaft, a tool connected to the shaft and adapted to be positioned within the sink to be moved about a vertical axis by rotation of said telescopic shaft.

3,159,356
DRIVE FOR ROLL CRUSHER
Wilbur W. Deppe, 515 4th Ave., Baraboo, Wis.
Filed Jan. 25, 1962, Ser. No. 168,709
8 Claims. (Cl. 241—230)



8. In a roll crusher, a frame, a first roll journalled for rotation on said frame, a second roll journalled for rotation on said frame and mounted for translating movement with respect to the first roll, said rolls being disposed to cooperate with each other for crushing material therebetween, a first roll shaft secured to said first roll, a second roll shaft connected to said second roll, a first driving shaft, first chain drive means operably connecting said first driving shaft and said first roll shaft, a second driving shaft, second chain drive means operably connecting said second driving shaft and said second roll shaft, said second chain drive means being separate from said first chain drive means, a first gear secured to said first driving shaft, a second gear secured to said second driving shaft, and a drive gear engaged with both said first gear and second gear to simultaneously drive both of said driving shafts to thereby rotate the rolls.

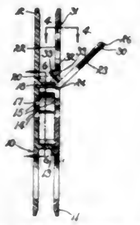
3,159,357
PHOTOGRAPHIC FILM CASSETTES
Orests B. Berlings, 7501 Ridge Blvd., Brooklyn 9, N.Y.
Filed Sept. 14, 1962, Ser. No. 223,615
15 Claims. (Cl. 242—71.1)



1. A photographic film cassette comprising, in combination, a pair of cup-shaped shells having opposed arcuate side marginal zones telescoped together in lapping relation with each provided with a centrally-apertured transverse end wall and cooperatively serving as a film roll housing having a substantially cylindrical chamber, means on said housing defining a film passage extending tangentially to the chamber, each of said end walls having one of a pair of opposed axially inwardly-extending annular flanges arranged about the central aperture therein and terminating in an inner end provided with an axially inwardly-extending circular edge contoured to provide only a circular line of contact against an opposed annular transverse bearing surface, a film storage spool rotatably mounted in the chamber having transverse ends each provided with an inwardly extending coaxial recess into which one of said annular flanges loosely telescopes without side wall jamming and drag with said recess having therein the annular substantially transverse bearing surface with which the inwardly-extending line contact edge of this annular flange makes virtual line contact with minimum frictional engagement, said annular transverse bearing surface of said spool end being flanked on one radial side thereof by a circular recess side wall extending outward in a generally

axial direction to limit a lateral movement of said spool end relative to said line contact edge, with contact between said inwardly-extending annular shell flange and the cooperating spool end being limited to said annular transverse surface by appreciable annular spacing between said shell flange and recess side wall except at the juncture of the latter with said annular transverse bearing surface, said spool being rotatably confined between the opposed line contact end edges of said opposed annular shell flanges coaxially within the chamber and spaced inwardly on all lateral sides from said housing to define therebetween an annular film storage space, and spool-driving means located in one of said spool end recesses engageable through the adjacent housing end wall aperture by camera-supported rotary drive means.

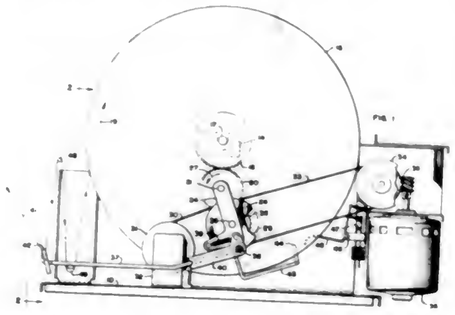
3,159,358
MAGNETIC TAPE AND FILM REEL
James H. Joiner, 1603 Success, Bossier City, La.
Filed Sept. 7, 1961, Ser. No. 136,619
6 Claims. (Cl. 242—74.1)



4. A reel comprising: a first flange with a shaft hole therethrough and a first annular hub thereon, said shaft hole being coaxial with said first hub, and said first hub having an axially directed indentation at one point thereof; a second flange similar to said first flange, said second flange having a second annular hub thereon with a recess substantially similar to said first hub indentation and an outside diameter substantially the same as the inside diameter of said first hub, whereby said flanges are assembled into a reel by telescopic assembly of said hubs and said hubs are locked against relative rotation by engagement of said indentations; a pin disposed in spaced relationship with said first hub section indentation and having a surface juxtaposed the surface of said first hub section indentation, said surfaces defining a gap therebetween of substantially greater width than the thickness of the film handled by said reel; and mounting means mounting said pin in one of said flanges, said mounting means being movable relative to said one flange to remove and replace said pin in said spaced relationship with said first hub section indentation.

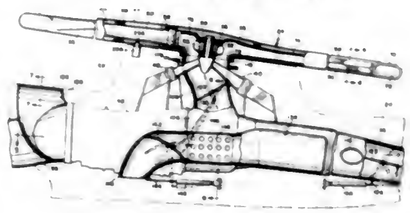
3,159,359
WEB WINDING APPARATUS
Alfred Z. Purzycki, Mount Prospect, and Kiyoshi Suzuki, Chicago, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,374
8 Claims. (Cl. 242—75.43)

1. In a web winding apparatus including a take-up reel for receiving a web of material,
(*a*) a driving gear attached to said take-up reel,
(*b*) an idler gear mounted on a shaft in a fixed position relative to said driving gear for transferring rotational energy to and from said driving gear,
(*c*) a movable gear assemblage suspended from the shaft of said idler gear, having a driven gear engaging said idler gear and having first and second operating means associated therewith for controlling the rotation of said driven gear,
(*d*) means for connecting a source of power to said first operating means,
(*e*) a brake,
(*f*) means for connecting said brake to said second operating means, said brake and the source of power being located on diametrically opposite sides of said movable gear assemblage, and



(*g*) means connected to said movable gear assemblage responsive to variations in the tension of said web for causing said movable gear assemblage to travel about the periphery of said idler gear in one direction when said tension decreases to thereby increase the amount of power supplied from the source to said first operating means while at the same time decreasing the braking action applied to said second operating means from said brake, and to cause said movable gear assemblage to travel about the periphery of said idler gear in the other direction when said tension increases to thereby increase the braking action on said second operating means from said brake while decreasing the amount of power supplied to said first operating means from the source of power.

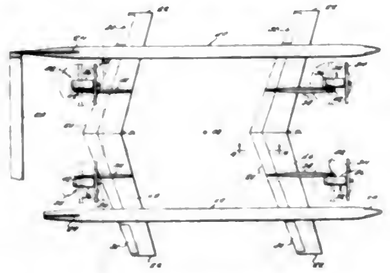
3,159,360
JET POWERED VTOL AIRCRAFT
Tubal Claude Ryan, San Diego, and Peter F. Girard, La Mesa, Calif., assignors to The Ryan Aeronautical Co., San Diego, Calif.
Filed Jan. 20, 1964, Ser. No. 338,947
7 Claims. (Cl. 244—7)



1. An aircraft comprising:
an airframe;
a wing having a center section and three radially extending arms;
said wing being mounted on said airframe for rotation about an axis perpendicular to the plane of the wing at the center of symmetry thereof;
said arms having tip portions comprising rotor elements pivotally mounted on substantially radial axes for inclination relative to the chord plane of the wing;
control means operatively connected to said tip portions to vary the inclination thereof cyclically and collectively as the wing rotates;

a wing rotating tip jet unit mounted on one of said tip portions;
a further wing rotating jet unit mounted on said wing in diametrical opposition to said first jet unit;
a source of compressed gases coupled to said jet units;
and locking means to hold said wing in a fixed position with said jet units disposed along the longitudinal axis of the aircraft.

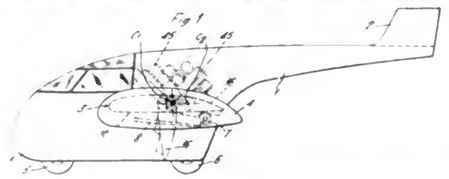
3,159,361
AIRCRAFT
Carl W. Weiland, 1816 Knollwood Road, Louisville, Ky.
Filed Feb. 14, 1962, Ser. No. 173,155
19 Claims. (Cl. 244—12)



16. A vehicle of the type described comprising: a pair of buoyant hulls disposed in spaced parallel side-by-side relation; a pair of substantially identical wings connecting said hulls adjacent the lower portions of the latter, the centers of lift of said wings being spaced at substantially equal distances respectively forwardly and aft of the center of gravity of said vehicle; aerodynamic rudder means carried by said vehicle; at least two forward thrust producers mounted on and above each wing at equal distances from and on opposite sides of the longitudinal centerline of said vehicle, said thrust producers being capable of developing a combined thrust greater than the weight of said vehicle; and means mounting said thrust producers for controllable tilting of their axes between substantially horizontal and substantially vertical positions, said thrust producers mounted on the forward wing being substantially forward of the leading edge thereof in both of said positions and said thrust producers mounted on the aft wing being substantially aft of the trailing edge thereof in both of said positions, said vehicle having no non-retractable portions extending below said wings a distance sufficient to prevent flight operation of said vehicle at an altitude within which the ground effect phenomenon is effective.

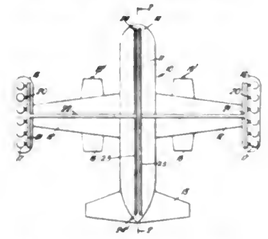
3,159,362
LIFTING AND PROPULSION MEANS FOR AIRCRAFT
Nikolaus Laing, Hofener Weg 35, Aldingen, near Stuttgart, Germany
Filed May 7, 1963, Ser. No. 278,582
Claims priority, application Germany, Apr. 15, 1959, L 32,978; Apr. 16, 1959, L 32,996
14 Claims. (Cl. 244—12)

12. An aircraft comprising a fuselage and a pair of wings extending transversely of the fuselage; each said wing including a fixed portion and a flap angularly movable about a pivot axis running longitudinally of the wing at the trailing edge of the fixed portion; each flap comprising a casing and at least one cylindrical bladed rotor therewithin extending substantially the length of the casing and mounted for rotation about an axis parallel to said flap axis, the casing providing guide walls to guide air twice through the path of the rotating blades of the rotor and an air inlet and an air outlet, both inlet and outlet extending substantially the length of the flap; power source means driving the rotors; and means mutually adjusting the center of gravity of the aircraft and the center of



pressure on angular movement of the flaps; said power source means being pivotally mounted within the fuselage for pivoting movement in synchronism with the flaps to provide said center of gravity adjusting means.

3,159,363
PITCH AND ROLL ATTITUDE CONTROL SYSTEM FOR AIRCRAFT HAVING VERTICAL LIFT JET ENGINES
Alexander Stewart, Spondon, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Sept. 3, 1963, Ser. No. 306,016
Claims priority, application Great Britain, Sept. 5, 1962, 34,107/62
4 Claims. (Cl. 244—52)

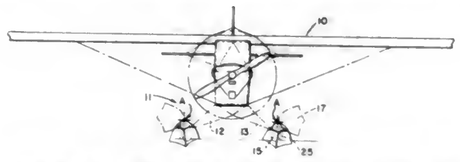


1. An aircraft provided with at least two vertical lift jet engines disposed on opposite sides of an axis of the aircraft, a bleed duct for each engine, each bleed duct being adapted for the flow therethrough of a portion only of the gases passing through the engine and each bleed duct having a pair of variable area outlet nozzles disposed adjacent to said axis, the outlet nozzles of each bleed duct being disposed on opposite sides of and spaced from another axis of the aircraft, and flight attitude control means arranged to independently vary simultaneously the effective areas of the pair of outlet nozzles in each bleed duct to thereby control the flight attitude of the aircraft.

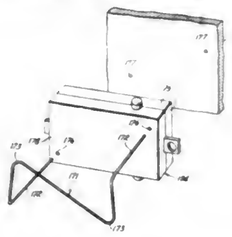
3,159,364
AMPHIBIOUS FLOATS WITH RETRACTION MEANS THEREFOR
Bruce R. Sheaffer, 4 Kemble Court, Hyde Park, Wilmington, Del., and Daniel R. Zack, 14273 Beaver St., San Fernando, Calif.
Filed July 9, 1962, Ser. No. 208,320
14 Claims. (Cl. 244—101)

1. An undercarriage for aircraft providing for land and water takeoff and landing comprising two landing struts, a landing wheel connected to each strut, and a float secured to the end of each axle with means for relative motion of the float in three perpendicular planes for lateral pivoted movement about a first axis into a retracted land operating position and into a non-retracted water operating position with respect to said wheels, said float being formed with an open sided wheel well

centered with respect to the end of each strut, an elongated support bracket in the well spanning the outboard side of an adjacent wheel and joining the float on a horizontal axis, said support bracket being horizontally pivoted to the floats and having two axial pivots at substantially right angles to each other secured in and projecting outwardly from said wheel axle, whereby said float is provided with a trim axis, a toe-in and a toe-out axis and a retractable pivot axis from water to land operation.



3,159,365
SPRING FASTENING
James P. Watson, Inglewood, Calif. (59 Waterway Road, Waterway Village, Jupiter, Fla.)
Original application Mar. 10, 1958, Ser. No. 720,303, now Patent No. 3,094,594, dated June 18, 1963. Divided and this application June 1, 1961, Ser. No. 120,854
1 Claim. (Cl. 248—27)



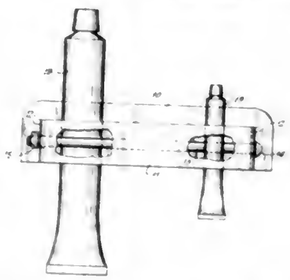
Mounting means for securing together a plurality of objects having spaced aligned openings therethrough, said mounting means comprising; a single length of spring wire formed to define substantially straight parallel free end portions spaced apart a predetermined distance; intermediate portions extending from corresponding inner ends of said end portions and extending obliquely toward the free ends of said end portions and on respectively opposite sides of a plane containing said end portions; and a central portion joining the outer ends of said intermediate portions whereby the junctures of said intermediate and central portions may resiliently bear on one of said objects to thereby provide four pressure points when said end portions are secured in said aligned openings.

3,159,366
HOLDER FOR A FISHING ROD
Everett F. Knight, 144 Maple Ave., Westville, N.J.
Filed Aug. 2, 1962, Ser. No. 214,383
2 Claims. (Cl. 248—42)

1. A fishing rod and holder therefor comprising a generally flat base providing a seat for a user, an arm having one end hinged to the outer end of said base for swinging movement between a collapsed inward position overlying said base and an operative position inclined outwardly from said base, limit means limiting arm movement to said collapsed and operative positions, a strut having one end pivoted to said base intermediate the ends thereof for swinging movement between a collapsed position closely overlying said base and a forwardly inclined position for supporting engagement with said arm in an intermediate rest position with the arm inclined inwardly and upwardly from said base, a receiver arranged longitudinally of and carried by said arm, a rod insertable in said receiver, and interengaging means in said receiver and on said rod for nonrotative interengagement, whereby said arm is swingable between said operative and rest positions to move a received fishing rod between an operative outwardly inclined position and an inwardly inclined rest position, and whereby a reel carried by a received fishing rod is adapted to be operated by one hand of the user without rotation of the fishing rod.



3,159,367
SUPPORT BRACKET FOR COLLAPSIBLE TUBES
Andrew F. Kendle, 1707 N. Alexander Road, Tampa, Fla.
Filed May 9, 1962, Ser. No. 193,393
1 Claim. (Cl. 248—108)

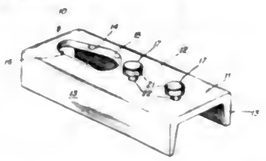


A collapsible tube holder including a vertical back plate adapted to be secured to a wall, vertical side legs disposed in parallel spaced planes adjacent the ends of said back plate and extending outwardly therefrom, a vertical front plate secured between the outer ends of said side legs spaced from and parallel to said back plate, and an intermediate member between said back plate and said front plate, longitudinally dividing the space therebetween into longitudinal spaces of different width, said intermediate member being a bolt rotatably mounted between said side legs.

3,159,368
QUICKLY DETACHABLE POWERED WINCH MOUNTING MEANS
Fred E. Ahlbin, 3663 Congress St., Fairfield, Conn., and William G. Hembling, Milford, Conn.; said Hembling assignor to said Ahlbin
Filed Mar. 14, 1962, Ser. No. 179,715
4 Claims. (Cl. 248—225)

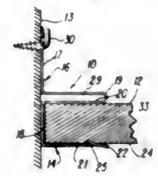
1. A powered winch quickly detachable mounting means comprising, in combination,
(*a*) winch base plate means upon which mechanism of the winch is supported and
(*b*) having a mounting face,
(*c*) hitch plate means having front and back ends and
(*d*) a mounting face to be abutted to said base plate mounting face,

(*e*) the front end of said plate means being provided with a hitch keyhole slot therein having an enlarged slot section adapted removably to receive therethrough the ball head of a ball hitch pin conventionally mountable upon car draft means and a merging narrower slot section extending forward from said enlarged slot section with this narrower slot section being adapted slidably and pivotally to receive therein the shank of such hitch pin when said hitch plate means is moved relatively rearward with said ball head demountably locking it in position,
(*f*) a plurality of detachable spaced winch anchoring means each comprising a pair of complementary and interfitting structures,



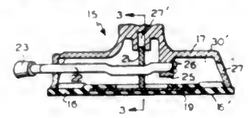
(*g*) one of each of said pair of complementary structures consisting of an anchoring stud having a shank extending normally from the mounting face of one of said base and hitch plate means terminating in an enlarged head spaced from this mounting face, and
(*h*) the other of each of said pair of complementary structures consisting of means defining an anchoring keyhole slot in the other of said plate means having an enlarged section adapted to receive therethrough the enlarged head of the complementary anchoring stud and a narrower slot section merged with the enlarged section of this keyhole slot slidably to receive therein the shank of said complementary stud,
(*i*) said complementary structures on said hitch plate means being located on the back end of the latter with said anchoring keyhole slots being so oriented with respect to the longitudinal dimension of said hitch plate means as to cause the shanks of said anchoring studs to slide into and be demountably locked simultaneously in the narrower sections of said anchoring keyhole slots by their heads upon relative rearward movement of said base plate means.

3,159,369
CLIP FOR WALL MOUNTING
Max Wiczer, 4245 Suffield Court, Skokie, Ill.
Filed Mar. 11, 1963, Ser. No. 264,428
3 Claims. (Cl. 248—305)



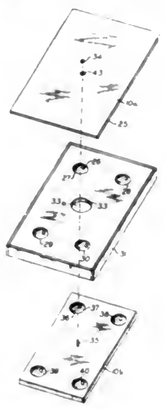
1. A mounting clip for a loud-speaker cabinet or the like wherein said cabinet has an upper wall, said clip defining a U-shaped channel portion with a bight and spaced legs adapted to grip said upper wall of the cabinet between said spaced legs; an L-shaped portion adapted for mounting said clip on an upright support, said L-shaped portion having an upwardly extending arm which is aligned substantially in the same plane with the bight of said channel member, said upwardly extending arm being apertured to afford means for mounting both said arm and the bight of the clip flush against an upright support wall, and a resilient bight portion connecting the extended end of one leg of said channel portion with said L-shaped portion whereby to provide a resilient mounting.

3,159,370
VACUUM BASES
Joseph Rubinstein, Newburgh, N.Y., assignor to General Slicing Machine Co., Inc., Walden, N.Y., a corporation of New York
Filed Jan. 31, 1962, Ser. No. 170,279
4 Claims. (Cl. 248—346)



1. In a vacuum base of the character described, a dished member, a rubber pad; the entire mouth rim of said member contacting one surface of said pad; said rim being within the confines of said pad; the perimetrical wall of said dished member having two opposite sides; the interior surface of each of said sides being convex whereby the inner edges of the mouth rim are convex along said sides respectively; the other surface of said pad being normally flat and adapted to be set onto a flat surface, means stiffening a comparatively large central portion of said pad; the remainder of said pad being resilient and means movably mounted on said member, engaging said central pad portion and adapted when moved in a predetermined direction, to bring said stiffened central portion of the pad into said member whereby said pad will assume dished form and further adapted when moved in a certain direction, to have the pad assume its normal condition.

3,159,371
SUPPORT WITH DISPLACEABLE ELEMENTS
Eugene Henry Weissenberg, 206 Flamboyanes Ave., Hyde Park, Rio Piedras, San Juan, Puerto Rico
Filed Oct. 8, 1962, Ser. No. 229,093
12 Claims. (Cl. 248—346)



1. A support device comprising a first element having a planar surface, a second element having a planar surface, said first element being arranged for displacement in predetermined directions relative to said second element, said planar surfaces of said elements being disposed to each other in superposed position, rollable means each having an axis of rotation and a continuous, substantially circular circumference, said rollable

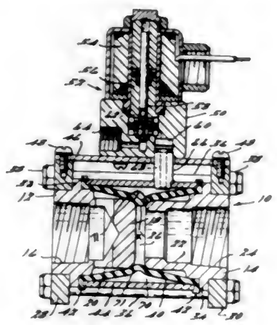
means being substantially freely displaceable with their axes of rotation and about their circumferences over predetermined corresponding areas of said planar surfaces, and stop means located centrally of said predetermined areas of said planar surfaces and confining planar displacement of said first element relative to said second element and confining said rollable means over respective areas amounting to a fraction of the extent of planar displacement of said first element relative to said second element.

3,159,372
MAGNETIC HOLDER FOR PENCILS OR THE LIKE
Joseph J. McIntosh, 30 S. Court House Ave., Carlisle, Pa.
Filed Jan. 5, 1961, Ser. No. 80,943
2 Claims. (Cl. 248—359)



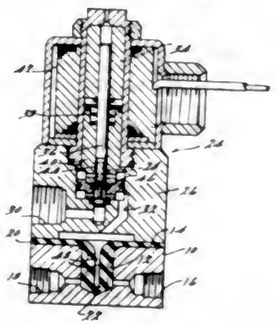
1. A magnetic holder for a slender elongated article comprising a body of magnetized rubber-like material having a substantially flat side for engagement with a ferrous metal surface and having spaced wings projecting away from the flat side with their free ends inwardly turned towards each other to form between the wings a generally cylindrical opening of a size and shape to engage the article frictionally and resiliently, the longitudinal axis of the opening extending substantially parallel to the plane of the flat side, the free ends of the wings being spaced apart to provide a slot therebetween.

3,159,373
FLUID PRESSURE ACTUATED FLEXIBLE SLEEVE VALVE
Kenneth K. Kroffke, Parma, Ohio, assignor to Airmatic Valve, Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 42,397, July 12, 1960. This application Nov. 26, 1963, Ser. No. 325,919
2 Claims. (Cl. 251—5)



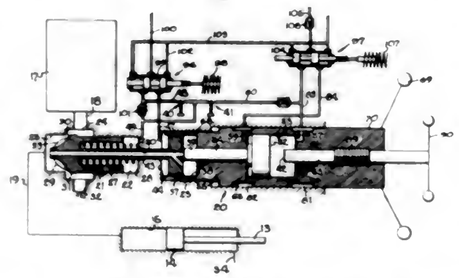
1. A flow control valve comprising a pair of axially aligned, spaced, oppositely oriented end plugs, a tubular body secured in fixed surrounding spaced relation to one end of each of said plugs, said ends being of the same diameter, an annual imperforate rubber sleeve surrounding said ends of said plugs and disposed within said body so that the intermediate portion of said sleeve is expansible and contractible relative to said ends of said plugs, one of said end plugs having an axial bore therethrough forming an outlet for the valve and the other of said end plugs having an axial bore forming an inlet for the valve and being closed at its inner end, and a radial passage communicating with said bore and with the interior of said rubber sleeve so as to provide fluid flow communication between said bores, the inner ends of said end plugs being axially spaced apart to define a narrow axially extending gap therebetween and so that the exterior surfaces of said plugs form spaced annular parallel valve seats around said gap withsaid gap between and bounded by said valve seats, said axial bore in said one end plug opening into said gap whereby said gap forms a part of the fluid flow path through said valve, the intermediate portion of said sleeve being of reduced diameter relative to the end portions thereof and normally constricted into said gap so as to sealingly engage said valve seats to close communication between said bores in said end plugs, said valve seats cooperating with the intermediate reduced diameter portion of said rubber sleeve so as to limit the inward and axial flexure thereof under the fluid pressure to which said sleeve is subjected, said intermediate portion of said sleeve being radially expansible out of contact with said one plug and the valve seat provided thereon in response to a predetermined pressure differential on the interior and exterior of said sleeve so as to permit fluid flow from the inlet to the outlet, the space between said sleeve and tubular body forming an expansible pressure chamber to which fluid under pressure is supplied for controlling the expansion and contraction of said sleeve.

3,159,374
FLEXIBLE DIAPHRAGM CONTROL VALVE
Kenneth K. Kroffke, Parma, Ohio, assignor to Airmatic Valve, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 5, 1962, Ser. No. 185,345
2 Claims. (Cl. 251—30)



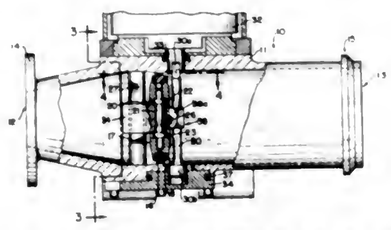
1. A flow control valve comprising a valve body having a cavity opening from one surface thereof and inlet and outlet ports opening into the wall of said cavity and communicating with each other through said cavity, a solenoid operated valve mounted on said one surface of said valve body and having a work port therein opposite said cavity, a flexible diaphragm clamped at its periphery between said solenoid valve and said valve body, said diaphragm having a distended central portion extending into said cavity and engaging the wall thereof so as to be confined against radial expansion, said engagement of said diaphragm and said cavity wall normally terminating short of the openings of said ports into said wall so as to provide said communication between said ports, said solenoid valve being operable to supply fluid under pressure through said work port to inflate said central portion of said diaphragm to cause the latter to be axially extended to sealingly engage the wall of said cavity around said inlet and outlet ports to close the communication therebetween.

3,159,375
FLOW CONTROL VALVE
Richard K. Schrecongost and Joel A. Jannenga, Rockford, Ill., assignors to Greenlee Bros. & Co., Rockford, Ill., a corporation of Illinois
Filed May 31, 1962, Ser. No. 198,939
2 Claims. (Cl. 251—31)



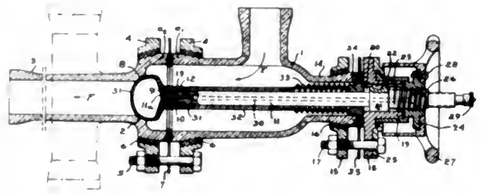
1. A valve assembly including, in combination, a valve body, a hollow cylindrical sleeve threaded into a recess in said body, a partition dividing said sleeve intermediate its ends into first and second cylinders disposed in end-to-end relation, first and second pistons slidable respectively in said cylinders, a valve movable back and forth in a passage between an open position and a closed position, said valve being connected to said first piston whereby movement of the latter in one direction shifts said valve toward said open position, a member supported on one of said pistons and journaled in said partition to terminate adjacent the other of said pistons thereby forming a stop for blocking sliding of said first piston when said valve is in a partially open position, means for turning said sleeve into and out of said body to adjust the position of said stop relative to said piston thereby to vary said partially open position, a second member extending through and threaded in one end of said sleeve to terminate adjacent and in the path of said second piston and form a second stop limiting sliding of the second piston away from said first piston and thereby determining said open position, means for turning said second member into and out of said sleeve to vary the position of said second stop relative to said second piston, and means for delivering pressure fluid to said first cylinder to move said first piston against said first stop and thereafter to said second cylinder to move said second piston against said second stop whereby said valve is shifted into said open position.

3,159,376
SELF-CENTERING BUTTERFLY VALVE
Nicholas M. Ray, 61 E. 86th St., New York 28, N.Y.
Filed Aug. 31, 1961, Ser. No. 135,302
8 Claims. (Cl. 251—86)



1. A butterfly valve comprising a disc-like butterfly member, a sealing member attached adjacent to the periphery of said member, a valve body surrounding said member having a longitudinal axis, means for pivotally mounting said butterfly member within said valve body including a pivot pin attached to said butterfly member extending generally perpendicular to said axis, a mounting arm extending generally perpendicular to said pin having one end receiving said pin for rotation of said pin therein, a mounting stud attached to the opposite end of said arm, said stud being rigidly affixed to said valve body, a valve seat formed in said body adapted to engage the sealing member when said butterfly valve is in a position transverse to the longitudinal axis of the valve body, the connection of the pivot pin and mounting arm being such to permit the butterfly member to be moved by the pressure of a fluid passing through the valve body between said body and peripheral edge portions of the butterfly member to reduce clearance between the periphery of the sealing member and the valve seat, and actuating means for contacting and rotating said butterfly member to open or closed positions respective of fluid flow through the valve body.

3,159,377
INFLATABLE VALVE STOPPER
Fernand Samour, Paris, France, assignor to Societe des Verreries Industrielles Reunies du Loing, Paris, France
Filed May 16, 1961, Ser. No. 139,817
Claims priority, application France May 17, 1960
3 Claims. (Cl. 251—175)

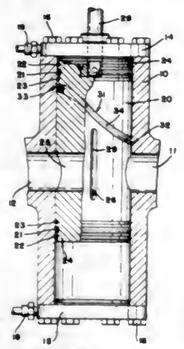


1. In a valve, a casing having a longitudinal axis, a valve seat within said casing coaxial about said axis, inlet and outlet connections fixed with said casing on opposite sides of said seat, a tubular stem extending in and along said axis within the inlet side of said casing and having its inner end adjacent said seat, said stem passing through an aperture in said casing to the exterior thereof, a hollow, expansible, ball-like closure member of resilient material secured over said inner end of said stem in pressure-tight communication with the axial passage therein, a gland member of chemically-inert material secured to said casing in pressure-tight sealing relation with said aperture and having a central bore through which said stem slidably fits, said gland including an integral imperforate sheath extending along and fitting about said stem and closure member in fluid-tight enclosure thereof, and means mounted on said casing, exteriorly thereof, and engaging said stem to translate said stem and closure member along said axis, from a first innermost position wherein inflation through said stem of said closure member expands the latter into sealing contact with said seat, to a second outermost position wherein said closure member is free and clear of said seat, to leave substantially unobstructed the flow of fluid through said casing.

3,159,378
SEALING CONSTRUCTION FOR PISTON VALVE
Robert T. Haag, Mansfield, Ohio, assignor to Shafer Valve Company, Mansfield, Ohio, a corporation of Ohio
Filed Aug. 31, 1961, Ser. No. 135,271
1 Claim. (Cl. 251—325)

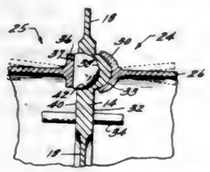
In a piston valve having a body provided with aligned inlet and outlet ports and a reciprocable piston having a through port registrable with said inlet and outlet ports when the piston is moved from closed to open position, a groove in said piston, said groove peripherally encircling

said piston in inclined relation to the longitudinal axis of said piston, said groove being so oriented with respect to the longitudinal dimension of said piston that when said piston is in closed position a first longitudinal extremity of said groove is positioned between said body inlet port and said piston through port and a second longitudinal



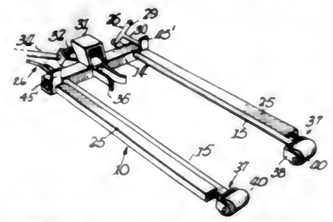
extremity of said groove is positioned on the other side of said body outlet port, undercut surfaces on the side of the longitudinal extremities of said groove closest to the longitudinal axis of said body ports when the piston is in closed position, and a stretched O-ring seated in said groove.

3,159,379
ROTOR CONSTRUCTION
Claude H. Auger, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed July 17, 1961, Ser. No. 124,495
1 Claim. (Cl. 253—39)



In a multistage rotary machine having a plurality of juxtaposed, thin-walled, lightweight blade-carrying disk members, each of said members including a rim portion, a central aperture, an enlarged rib portion having radially-extending faces on opposite sides thereof, coupling means between said disk members comprising a plurality of generally hemispherical projections on one of said radially-extending faces, a corresponding plurality of generally hemispherical indentations in the other of said radially-extending rib faces, each projection being axially-aligned with a corresponding indentation wherein the material displaced to form the indentation in said other face of the rib simultaneously forms the projection on said one of said rib faces, a plurality of generally cylindrical, thin-walled coupling members, each having a pair of oppositely directed end faces, one of said end faces having means supporting a first ring including a plurality of indentations which receive said disk member projections, the other of said end faces having like means supporting a second ring having a plurality of projections which are received in said disk member indentations so that when in interengagement said coupling means transmit torque between said disk members and said coupling members, said projections and said indentations being movable relative to each other during operation of said machine to compensate for the effect of centrifugal force on said thin-walled coupling members which tends to cause undesirable misalignment between the coupling members and the disk members, and means for maintaining said disk and coupling member projections and indentations in interengagement including at least one tie-bolt extending through the disk members.

3,159,380
HAND PALLET TRUCK
Warren Du Broff, 550 Carol Court, Highland Park, Ill.
Filed June 12, 1963, Ser. No. 287,321
12 Claims. (Cl. 254—8)



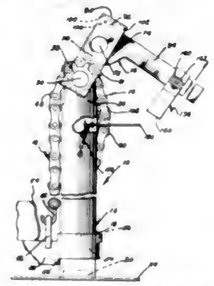
1. A pallet truck for skid-type pallets comprising an elongated transverse bar equipped with wheel means centrally thereof, a pair of longitudinally extending pallet-supporting legs rotatably secured at one end of each leg to said bar adjacent the bar ends to define a generally C-shaped frame, a wheel carrier rotatably secured to the other end of each leg, a wheel carried by each of said carriers, each leg being equipped along the major portion of its length with a laterally extending portion adapted to elevate a pallet when said leg is rotated relative to said bar, handle means coupled to said bar, and means for selectively rotating said legs.

3,159,381
LIFTING JACK
Richard S. Graafsma, Benton Harbor, and Claude R. Myers, Galien, Mich., assignors to Auto Specialties Manufacturing Company, St. Joseph, Mich., a corporation of Michigan
Filed Feb. 4, 1963, Ser. No. 255,857
4 Claims. (Cl. 254—100)



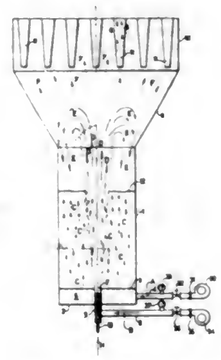
1. A lifting jack comprising an upstanding elongated member, a load lifting element mounted for movement along said upstanding member and presenting an outwardly facing clamping surface, a clamping member assembled with said element, means pivotally connecting said clamping member to said element for movement about a predetermined axis, said clamping member presenting a second surface in opposing relationship with respect to said first mentioned clamping surface, said clamping member including a section located above said axis, and means for engaging and retaining a workpiece including an elongated flexible fabric strap extending over said section of said clamping member, said strap having a first end portion extending downwardly from said section for engagement with a workpiece and a second end portion extending downwardly from said section between said clamping surfaces, said second end portion being secured between said clamping surfaces.

3,159,382
AUTOMOBILE JACK
Arthur J. Belanger, 3216 Sanford St., Muskegon, Mich.
Filed May 31, 1963, Ser. No. 286,106
9 Claims. (Cl. 254—105)



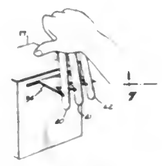
2. A hoist mechanism comprising: a support; a sprocket rotatably mounted on said support; a hoisting roller chain around said sprocket; an eccentric mounted adjacent said sprocket and chain and adapted to be shifted into engagement with said chain between adjacent rollers thereof to shift said chain around said sprocket; a handle on said eccentric; catch means on said support adapted to secure said chain when shifted; and release means mounted on said support, and operably associated with said handle and shiftable therewith to release a section of said chain from said catch means with each oscillation of said handle to allow reverse movement of said chain on said sprocket.

3,159,383
METHOD OF MIXING MATERIALS AND A PNEUMATIC MIXING DEVICE ADAPTED TO SAID METHOD
Lourens B. van Munster, Voorthuizen, Netherlands, assignor to Vometec N.V., Voorthuizen, Netherlands, a Dutch limited-liability company
Filed June 7, 1961, Ser. No. 115,455
Claims priority, application Netherlands, June 10, 1960, 252,521
7 Claims. (Cl. 259—4)



1. A method of intermittently contacting and mixing materials comprising the steps of introducing at least one of the materials into a mixing chamber so as to only partly fill the latter, directing at least one gas stream upwardly through said mixing chamber from the bottom thereof with said gas stream having a nucleus in which the upward velocity is substantially greater than the minimum conveying velocity of the heaviest of said materials and also greater than the upward velocity in the portions of said gas stream surrounding said nucleus, the upward velocity in said surrounding portions being sufficient to form a dense-phase fluidized bed of the materials introduced into said chamber and through which the conveying nucleus passes, inducing the flow into said nucleus of the gas stream at the bottom of said chamber of another material included in said materials to be intermittently contacted and mixed so that said other material is atomized in said gas stream, and laterally expanding said nucleus of the gas stream immediately above the top of the mixing chamber to quickly reduce the velocity in said nucleus to a value less than the terminal velocity of the lightest of said materials so that the first mentioned material is continuously carried upward from said dense-phase fluidized bed by said nucleus of the gas stream and intermittently contacted with the atomized material in the latter prior to being circulated outwardly upon lateral expansion of the gas stream above the top of the mixing chamber for return through the latter to said dense-phase fluidized bed.

3,159,384
AGITATOR FOR LABORATORY TUBES AND FLASKS
John E. Davis, Garden Grove, Calif., assignor to Bio-Science Laboratories, Los Angeles, Calif., a corporation of California
Filed July 2, 1962, Ser. No. 206,933
4 Claims. (Cl. 259—72)

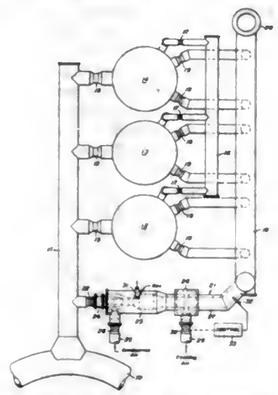


4. In a laboratory mixer: a support having foot means defining a contact plane; a flat agitating plate suspended from the support and having a part projecting laterally beyond said support and extending in spaced parallel relationship to said contact plane; said part having an edge remote from said support, there being a recess extending inwardly from said edge and having tapered operative sides converging inwardly for receiving a tube or flask; and motive means carried by said support for cyclically shifting said agitating member through a small distance in its plane to move the location of said recess for imparting agitating motion to a tube or flask pressed against the tapered sides of said recess.

3,159,385
COMBUSTION BY-PASS FOR BACK-DRAFTING BLAST FURNACES
Robert J. Flanagan, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed June 3, 1963, Ser. No. 285,061
4 Claims. (Cl. 263—19)

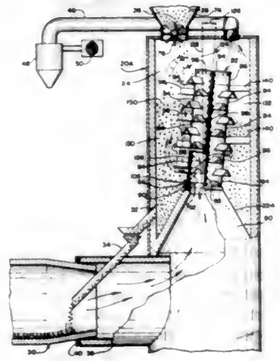
1. The combination with a blast furnace bustle pipe, a plurality of stoves thereadjacent and cold-blast, hot-blast and chimney mains connected to said stoves, of a combustion by-pass comprising an inlet pipe connected to said

hot-blast main at a point adjacent the bustle pipe, an exit pipe connected to said chimney main, an elongated



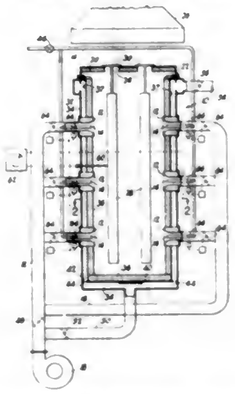
combustion chamber connected between said inlet and exit pipes, and a combustion-air supply pipe connected to said chamber.

3,159,386
PREHEATER FOR ROTARY KILN
Warford A. Reaney, 264 W. Lincoln Ave., Delaware, Ohio, and David W. Reaney, 89 Shore Drive, North Madison, Ohio
Filed Dec. 26, 1961, Ser. No. 163,383
2 Claims. (Cl. 263—32)



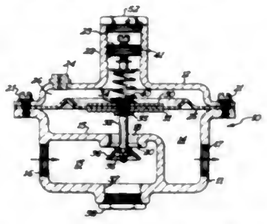
1. A kiln preheater apparatus comprising in combination a kiln including an open end for receiving raw materials and for releasing hot gaseous products of combustion; a preheater including an outer vertically extending column forming a chamber for receiving and containing raw materials; a raw material inlet opening in the upper portion of said outer column; means forming a gas outlet opening for the upper portion of said outer column; an inner column including an open lower end, a closed upper end, and an upper chimney portion formed of corrosion resistant metal, said chimney portion including a plurality of spaced gas outlet openings; means connecting said chimney portion to said outer vertical column to support said chimney portion of said inner column in an upwardly and rearwardly inclined direction with respect to a vertically extending axis through the center line of said preheater; a plurality of inverted trough shaped members mounted on said chimney portion at said openings and extending radially outwardly therefrom; a gas inlet conduit extending through a wall of said outer column and connecting said open end of said kiln with said open lower end of said inner column; and suction means for drawing hot gases from said open end of said kiln, through said inner column, outwardly through said inverted trough shaped members and in rapid flow heat exchange relationship with said raw materials.

3,159,387
RAPID CYCLING HEAT TREATING FURNACE AND METHOD OF OPERATION
Josiah C. Campbell, Jr., Signal Mountain, and Harry N. Morgan, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 9, 1962, Ser. No. 215,823
3 Claims. (Cl. 263—40)



2. A furnace in which elements can be heat treated, said furnace comprising an inner, porous, upright enclosing wall means with a plurality of evenly spaced levels of burners mounted therein, each level of burners containing a plurality of burners evenly spaced around the periphery of the furnace, means for supplying fuel and air to the burner, an outer non-porous wall means spaced from and surrounding the inner wall means, duct means forming an air inlet and outlet for the space between the inner and outer wall means, air supply means connected to said inlet, and a damper positioned in the linlet and outlet, to thereby allow control of the amount of air which flows through and by the porous inner wall means.

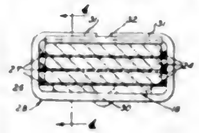
3,159,388
DIAPHRAGM OPERATED VALVES
Lamar J. Wall, Norwalk, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 11, 1961, Ser. No. 158,212
2 Claims. (Cl. 267—1)



1. Apparatus for adjustably loading the biasing spring of a fluid pressure regulator comprising: a housing member for the biasing spring, said housing member having a threaded aperture formed therein; a first externally

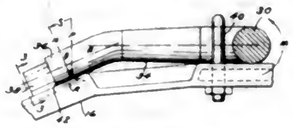
threaded adjustment member threaded into said aperture and movable through a substantial axial distance with respect thereto to facilitate an initial coarse adjustment of the loading on the spring, said first adjustment member having an aperture extending therethrough; means operable to deform a portion of the threads intermediate said housing member and said first adjustment member to permanently lock said first adjustment member with respect to said housing after an initial adjustment is made; a second adjustment member extending through the aperture in said first adjustment member and being axially movable with respect thereto; abutment means on said second adjustment member, on each side of said first adjustment member, for limiting relative axial movement with respect thereto to facilitate limited adjustment of the loading on the spring after said first adjustment member is locked; and means carried by said second adjustment member and engaging one end of the spring to compress the spring according to the positions of said first and second adjustment members with respect to said housing.

3,159,389
LAMINATED LEAF SPRING
Philip E. Clary, Hornchurch, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,310
1 Claim. (Cl. 267—50)



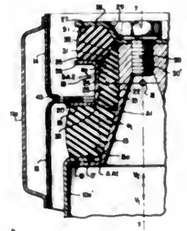
A motor vehicle suspension system having a frame, a wheel support structure, a leaf spring interconnecting said frame and said wheel support structure, said leaf spring comprising a plurality of overlapping spring leaves, interliners interposed between said spring leaves, said interliners each comprising a strip of lubricant impregnated porous polyethylene, said strips having enlarged edges, said spring leaves being situated between said edges, a sheet metal band having a generally C-shape encircling said plurality of leaves, said band being secured to one of said leaves, the ends of said band being spaced from another of said leaves by a lubricant impregnated porous polyethylene piece, said piece having a generally channel shape so that it is retained by said band.

3,159,390
TORSION BAR CONSTRUCTION
Martin J. Stiglich, Plymouth, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,299
1 Claim. (Cl. 267—57)



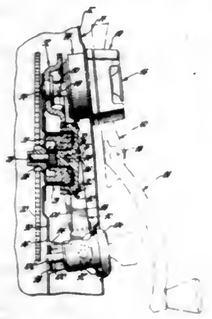
A suspension device including a pair of pivotally connected members, a torsion bar operatively interposed between said members, and having one of its ends secured to one of said members and the other of its ends secured to the other of said members, said bar having a torsional segment and an end portion, said torsional segment having an axis extending in the same general direction as the axis of the pivotal connection between said members, said end portion having an axis extending generally normal to the axis of said torsional segment and the axis of the pivotal connection between said members, said end portion having a tip portion and said tip portion having an axis said tip portion axis forming a set angle with a radius extending from the axis of said torsional segment and forming an angle with the axis of said end portion, a tip receiving surface formed on said one member at an angle complementing the said set angle, said tip portion having a flat face lying in flush engagement with said tip receiving surface and parallel to said tip portion axis, said set angle of said tip portion axis being greater than the friction angle between said receiving surface and said flat face, and a reaction member affixed to said one member and located against the extremity of said tip portion.

3,159,391
ELASTIC BEARING CONSTRUCTION
Karl Wilfert, Stuttgart-Degerloch, and Béla Barényi, Stuttgart-Vaihingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed June 8, 1962, Ser. No. 201,000
Claims priority, application Germany, June 10, 1961, D 36,303
4 Claims. (Cl. 267—63)



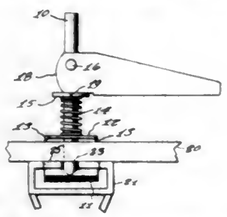
3. A substantially annularly-shaped rubber bearing for connecting with each other two vehicle parts, especially an axle bearer with the superstructure of a motor vehicle, by the interposition of elastic cushion disposed between said two vehicle parts and operable to absorb axially directed forces as well as radially directed forces, comprising said cushion and support means therefor, said elastic cushion comprising main cushion means including a substantially sleeve-like elastic cushion part having abutment surface means disposed radially mutually opposite each other and substantially parallelly to the axis of the annulus for absorbing the radially effective forces and an annularly-shaped elastic cushion part having abutment surface means disposed axially mutually opposite each other and substantially perpendicularly to said axis for absorbing axially effective forces, said sleeve-like cushion part being disposed above said annularly-shaped cushion part and said sleeve-like cushion part being provided with a substantially conically-shaped upper extension to facilitate insertion into the respective support means, auxiliary cushion means including an auxiliary elastic cushion part for absorbing axially effective forces which are at least oppositely directed to the forces absorbed by said annularly-shaped elastic cushion part, said auxiliary elastic cushion part being disposed approximately at the height of said extension of said sleeve-like cushion part and including a substantially conical-shaped inner surface abutting said conically-shaped upper extension of said sleeve-like cushion part when said bearing is assembled, said support means including a single axial threaded member for holding together said elastic bearing.

3,159,392
WINDOW REGULATOR MECHANISM
Walter Pollak, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 11, 1963, Ser. No. 250,917
7 Claims. (Cl. 268—126)



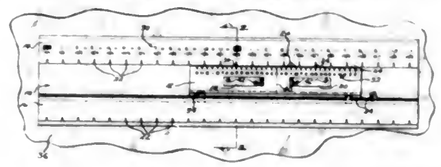
1. In a vehicle body having a window mounted thereon for movement between open and closed positions and a window regulator mechanism for so moving said window, operating means for said mechanism comprising, in combination, an operating member, drive gear means, means operatively connecting said drive gear means to said member to be driven by said member, driven gear means, means slidably and nonrotatably coupling said driven gear means to said mechanism, and means for selectively sliding said driven gear means relative to said mechanism into and out of engagement with said drive gear means to couple and uncouple said operating member and said mechanism.

3,159,393
ASSEMBLY INSERT HOLDER
Joseph Villano, 240 9th St., Brooklyn 15, N.Y.
Filed Feb. 11, 1963, Ser. No. 257,488
3 Claims. (Cl. 269—49)



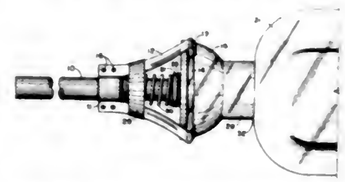
1. A releasable and detachable fastener device for connecting two members together, comprising a lock rod, a cross-piece integral with one end of said rod arranged at right angles thereto and extending substantially equally on each side thereof, a lever, a pivot pin pivotally securing one end of said lever to said lock rod intermediate the ends thereof, a cam at said lever end having a curved cam surface eccentric with relation to said pivot pin and a flat seat surface intersecting said curved cam surface, the line of juncture of said surfaces being at the greatest distance from the axis of the pivot pin, a compression coil spring surrounding said lock rod between said cross-piece and said cam, a washer movable on said lock rod between one end of said spring and said cam, and a gripping plate of polygonal form having a claw at each corner thereof movable on said lock rod between the other end of said spring and said cross-piece.

3,159,394
POSITIONING AND HOLDING DEVICE
Robert W. Burns, 918 59th St., Des Moines, Iowa
Filed Feb. 9, 1962, Ser. No. 172,290
6 Claims. (Cl. 269—74)



1. A positioning and holding device comprising, in combination:
(*a*) a stationary portion including guide means,
(*b*) a movable portion adapted to coact with said guide means,
(*c*) first means for releasably holding said movable portion in slidable engagement with said guide means,
(*d*) second means for releasably fixing said movable portion and said guide means in a predetermined position relative to each other, and
(*e*) third means mounted on said movable portion and defining a space adapted to receive an object to be positioned and held thereby.

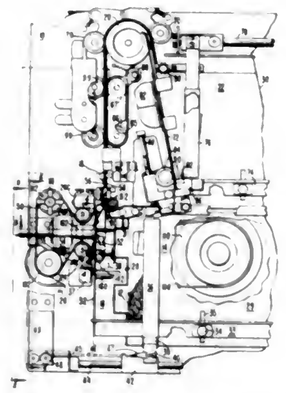
3,159,395
HOLDER FOR GLASS BALL JOINTS
Harry L. Mussett and Fred C. Rustenbach, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,477
8 Claims. (Cl. 269—254)



1. A glass ball joint holder comprising: a first cylindrical elongated tube, a second tube axially aligned with said first tube, having a uniform external diameter less than that of said first tube to form a step therebetween; a collar slidably mounted on a portion of the tube having the larger diameter; a plurality of resilient finger means each having one end secured to the periphery of said collar and the other end having a hook formed toward the axis of said cylindrical tubes; an annular ring slidably mounted on a portion of the tube having the smaller diameter whereby motion of said ring toward said collar is arrested by said step: and, biasing means urging said collar away from said annular ring; whereby, a glass ball joint pressed against said annular ring with said smaller diameter tube protruding therein may be retained against said annular ring by expanding the hook end of said resilient fingers around the lip of said glass ball joint thereby securely holding said joint to said holder.

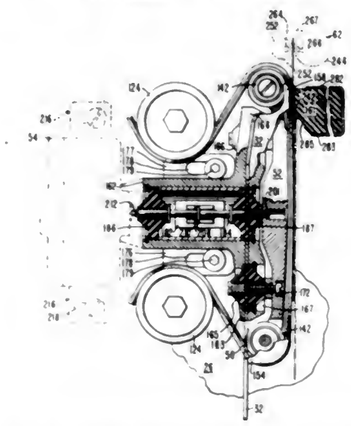
3,159,396
DOCUMENT HANDLING APPARATUS
Robert J. Barber, Northville, Mich., assignor to Burroughs Corporation, Detroit, Mich. a corporation of Michigan
Filed Dec. 12, 1962, Ser. No. 244,030
14 Claims. (Cl. 271—34)

1. A document feeding apparatus for edgewise feeding of successive documents stacked in a feed hopper including an elongated stripper plate extending in the direction of feeding and defining a side wall of the hopper, means urging a stack of documents in the hopper against one side of the stripper plate, power driven endless belt means on the other side of the stripper plate, means moveable transversely of the stripper plate and supporting the belt for travel in a path in the direction of the longitudinal



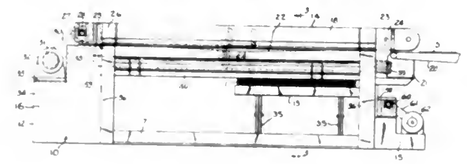
extent of the stripper plate, power operated actuator means coupled to the belt supporting means and operable to move it and the belt in a direction transversely of the stripper plate, and stop means located in the path of movement of said actuator means limiting the travel of the peripheral face of the belt a predetermined distance beyond the said one side of the stripper plate for frictional engagement with the face of the stack.

3,159,397
DOCUMENT SEPARATING APPARATUS
Kenneth F. Zyber, Novi, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 12, 1962, Ser. No. 244,108
13 Claims. (Cl. 271—34)



10. In a document feeding apparatus for demand feeding of documents stacked in a hopper out of the feed exit of the hopper and including demand operated friction feeding means in the hopper, means urging a stack of documents in the hopper toward said friction feeding means, power driven drive rollers receiving a document fed by said friction feeding means for continuing the feeding of a document fed thereto to another destination, a narrow gap friction separator located in the feed exit of the hopper providing a frictional separating action on a document fed on demand from the stack by the friction feeding means, a wide gap throat separator in the same location of the feed exit of the hopper as said friction separator, and means disabling the frictional separating action provided by said friction separator on the document fed to the power driven rollers when that document is being fed by the drive rollers.

3,159,398
SHEET PILER WITH AIR FLOW SIDE GUIDES
Dario Buccicone, Gary, Ind., assignor to Buccicone Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Jan. 22, 1962, Ser. No. 167,663
6 Claims. (Cl. 271—68)

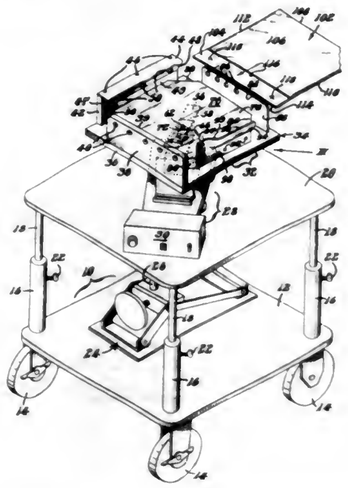


1. A sheet piler comprising box forming members for receiving sheets in superimposed pile forming relation, a conveyor mounted above said box forming members and having a bottom sheet carrying surface, means to operate said conveyor for advancing sheets to a predetermined position above said box forming members and said conveyor having means for releasing the sheets for deposit on a pile between said box forming members, said box forming members including a pair of parallel oppositely disposed internal surfaces for guiding the downward movement of the sheets as they are released by the conveyor, means forming tubular air chambers adjacent said guide surfaces and outside the piling area, means forming downwardly and inwardly directed passageways connecting the air chambers with the piling area beneath the bottom of said conveyor, and valve means extending the length of said tubular air chambers for controlling the passage of air through said passageways whereby to control the air trapped beneath successive sheets as they fall onto the pile.

3,159,399
STACKING DEVICE
Francis A. Davis, Jr., Lansdale, and Joseph F. Flannery, Mayfair, Pa., assignors to Paramount Packaging Corporation, Chalfont, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1961, Ser. No. 157,684
7 Claims. (Cl. 271—89)

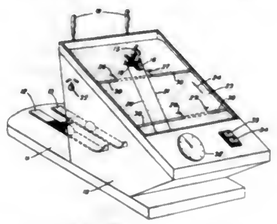
1. In a stacking device for sheet material, a tray including a bottom for supporting sheets of material fed horizontally over the head end of said tray and stacked sheet by sheet upon said bottom, means carried by said bottom and affording a pair of abutment surfaces normal thereto, said abutment surfaces being disposed respectively at the foot end and on one side of said tray for engaging respectively with two adjacent sides of said stack, and means carried by said bottom and affording an upright guide surface opposite said abutment surface on the side of the tray, said upright guide surface including laterally offset sections respectively at opposite ends of said guide means joined by an intermediate section disposed for guiding said sheets of material as they move onto said

stack, said offset sections lying in substantially parallel planes, said bottom being tilted slightly upwardly from the corner thereof at the foot end and on said one side



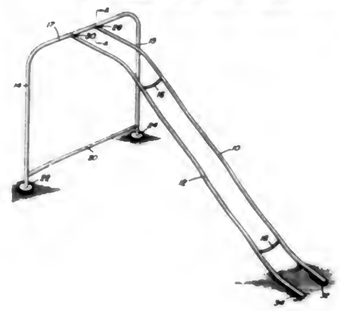
of the tray, and means for vibrating said tray thereby to urge said sheets of material toward said corner for being stacked there against said abutment surfaces.

3,159,400
GAME APPARATUS FOR SIMULATING SKIING
Robert L. Brass, Morristown, and Alexander Feiner, Morris Plains, N.J., assignors to Orbicon, Ltd., New York, N.Y., a corporation of New York
Filed Dec. 6, 1961, Ser. No. 157,354
15 Claims. (Cl. 273—1)



1. A game for simulating skiing comprising an endless moving surface, an elongated member positioned on said surface, means including at least one of said surface and said elongated member for causing said member to be subjected to less frictional resistance as it moves on said surface in the direction of the elongated axis of said member than across said axis, a control member, and control means coupling said control member to said elongated member for providing said elongated member more than one degree of motion in response to said control member and the movement of said surface, said control means comprising indirect mechanical linkage means including two distinct linkage components and a rigid coupling means therebetween, said rigid coupling means itself being free to move both in and against the direction of motion of said moving surface and in the direction transverse to the direction of motion of said moving surface.

3,159,401
GRAVITY BOWLING BALL PROJECTOR
Robert V. Ikenberry, 728 15th NE., Mason City, Iowa
Filed Apr. 13, 1962, Ser. No. 187,382
2 Claims. (Cl. 273—54)



2. A device for assisting disabled persons in projecting a bowling ball down a bowling alley toward bowling pins, comprising in combination:

(*a*) an elevated inclined trackway,

(*b*) the midportion of said trackway sloping at an angle between about 15° and 75° with respect to the horizontal,

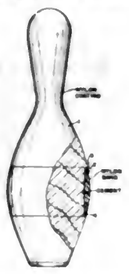
(*c*) the upper end portion of said trackway being substantially horizontal,

(*d*) the lower portion of said trackway having a slope which gradually changes from between 15° and 75° to being substantially horizontal,

(*e*) the bottom end of said lower portion of said trackway forming a base section which is adapted to support the lower end of the inclined trackway upon the surface of a bowling alley,

(*f*) the upper end portion of said elevated inclined trackway being joined to and supported in an elevated position by a supporting framework disposed in a substantially vertical plane and adapted to receive the front end of a wheel chair, said supporting framework having spaced apart feet members which are adapted to rest upon the surface of a bowling alley.

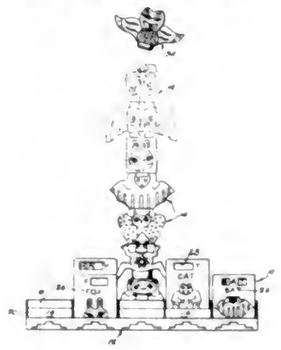
3,159,402
BOWLING PIN AND METHOD OF MAKING SAME
Edgar B. Nichols, 325 W. Main St., Moorestown, N.J.
Filed Sept. 5, 1956, Ser. No. 608,036
5 Claims. (Cl. 273—82)



1. The method of making a bowling pin which consists in shaping a wooden bowling pin to provide a midportion of conventional convex shape, compressing the midportion where it will be hit by a bowling ball throughout the circumference of the pin to a smooth, substantially cylindrical shape of reduced diameter, thereby densifying the wood of said midportion substantially throughout the circumference and the length of the cylindrical portion, the reduction being greater at the place of greatest diameter of the pin, and thereafter applying a reinforcing band of nylon to said compressed cylindrical midportion of the pin.

3. A wooden bowling pin having a groove completely around its midportion, shoulders having radial surfaces at the upper and lower edges of said groove, the bottom of said groove being a smooth, unbroken surface substantially parallel with the axis of said pin, a band of molded nylon seated in and completely filling said groove, the outer surfaces of said band being convex and forming with the surfaces of the pin adjacent the edges of the band a continuous smooth surface and a film of nylon covering the curved surface of the pin including the head and neck.

3,159,403
GAME USING OBJECT SPELLING CARDS AND OBJECT REPRESENTING PLAYING PIECES
Marvin I. Glass and Dalia E. Verbickas, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 13, 1962, Ser. No. 173,032
4 Claims. (Cl. 273—135)



1. A game comprising a plurality of playing cards and a plurality of markers, said cards being arranged in sets with the cards of each set having a pictorial representation of an object thereon with a different object being shown on each of said sets, each of said cards of a set having one letter of the name of the object represented thereon and one or more openings in the card adjacent said one letter, said one letter being located in its proper position relative to the word identifying the object and said openings being also properly oriented, so that by superimposing all cards of the set the full word identifying the object is visibly spelled out, and said markers each comprising a three dimensional representation of one of the objects shown on the cards with each of said markers being formed to provide for vertical stacking of a plurality of the markers.

3,159,404
PLAYING CARD HOLDER FOR THE BLIND
Kenneth E. Midgley, Kansas City, Mo. (8020 Manor Road, Shawnee Mission, Kans.), and Wallace F. Magers, Leawood, Kans.; said Magers assignor to said Midgley
Filed Jan. 8, 1962, Ser. No. 164,693
7 Claims. (Cl. 273—150)

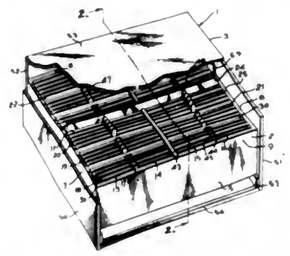
1. A holder for playing cards comprising,

(*a*) a box-like member having bottom, front, rear and side walls,

(*b*) a plurality of dividers extending between the side walls and having portions defining upwardly opening card-receiving slots,

(*c*) said slots being formed in a line of slots for cards of the same numerical value between the side walls with one slot for a card of said value for each suit of a deck of cards.

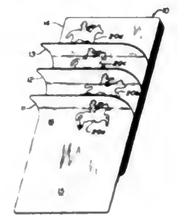
(*d*) said slots being formed in spaced rows with one row for each suit and the slots for the cards of the respective suits extending away from the front wall whereby each suit and each card thereof have distinct locations,



(*e*) spaced separators extending between the side walls and separating the dividers in groups to group the card slots of each row, and

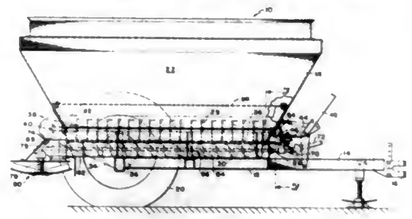
(*f*) indicia elements upstanding from the dividers at an end of each slot, said indicia elements for the slots having upper end portions of distinctive shape whereby a card positioned in a slot will be alongside of the respective indicia element and the distinctive shape of the indicia and location thereof in the row provides an identifying characteristic that permits identification by touch alone.

3,159,405
CARDS SELECTIVELY USABLE FOR PLAYING A GAME OR FOR PRODUCING A MOTION PICTURE EFFECT
Irving Brambier, 841 Duncan Drive, Westbury, N.Y.
Filed Sept. 9, 1960, Ser. No. 54,998
4 Claims. (Cl. 273—152.2)



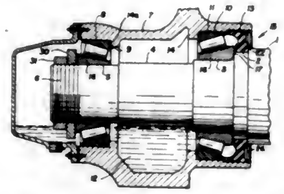
1. A deck of playing cards comprising: a plurality of separate cards, each of said plurality of separate cards having its face marked with suitable indicia adapting the cards for use in the playing of a card game; a back on said cards, the back of each card containing a manually grippable area; an indicia area spaced from the grippable area on the back of each card, said grippable area and said indicia area relatively positioned so that while the deck is gripped with one hand the cards may be flipped with the other, each indicia area containing a marking, the marking on the indicia area of each card showing a subject at a different one of various points in its movement through a given action such that the viewing of the different markings on the cards in a seriatim sequence gives the effect of a moving picture.

3,159,406
SPINNER TYPE FERTILIZER SPREADER
Ralph V. Morr and Richard E. Crown, Celina, and William F. Wint, Coldwater, Ohio, assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 271,963
3 Claims. (Cl. 275—8)



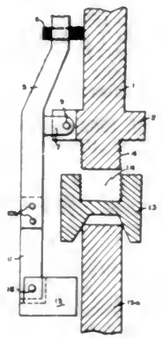
1. In a material spreader of the type adapted for movement over the ground for metered spreading of material comprising:
a vehicle adapted for movement over the ground;
a hopper carried on said vehicle;
ground wheels supporting said hopper for containing material to be spread;
a bottom for said hopper providing spaced metering openings therein extending substantially parallel to the direction of forward movement of said vehicle and forming the bottom outlet means from said hopper;
an agitator having its axis of rotation also extending substantially parallel to the direction of forward movement of said vehicle and having portions spaced and positioned to cooperate with the spaced metering openings in said hopper bottom;
an auger positioned below said hopper bottom and having its axis of rotation extending substantially parallel to said agitator axis;
a spinner connected to rotate with said auger and positioned at the end of said auger at the rearward end of said vehicle;
a drive connection between at least one of the wheels of said vehicle and said agitator constructed and arranged to rotate said agitator in definite relation to ground movement of said wheel;
means independent of said wheel drive connection for rotating said auger and spinner whereby material metered by said agitator and hopper bottom by ground drive is delivered to said auger and spinner for spreading over the ground.

3,159,407
FLUID LUBRICANT SEAL FOR WHEEL HUBS
Oscar William Strohm, 706 Linwood Drive, Pittsburgh, Pa., assignor of one-half to Arthur Deyo, Glenshaw, Pa.
Filed June 29, 1961, Ser. No. 120,653
6 Claims. (Cl. 277—82)



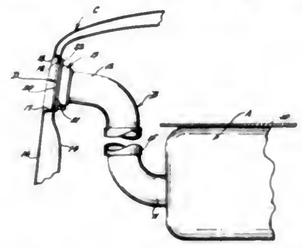
1. A seal for retaining fluid bearing lubricant within a wheel hub rotating relative to an axle, comprising a seal hub portion enclosing a collar of the axle, a seal web portion integral with said hub portion and extending radially therefrom towards the wheel hub, an annular extension on said web portion extending inwardly therefrom within the wheel hub in spaced relation thereto, means on the inner end of said annular extension engaging the adjacent cup of a wheel bearing, a second and oppositely extending annular extension on said web portion disposed within the wheel hub and means on said latter annular extension resiliently pressing a portion thereof into engagement with the overlying wheel hub.

3,159,408
CHUCK
Moises G. Sanchez, Glen Burnie, and Vernon R. Hoover, Pasadena, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Oct. 5, 1961, Ser. No. 143,171
2 Claims. (Cl. 279—35)



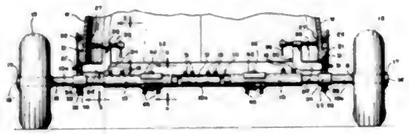
1. In chuck for aligning and securely holding the body of a semiconductor material during the floating-zone refining of said semiconductor material said chuck comprising a shaft having at one end a widened base portion, a cup below said base portion adapted to receive the end of said semiconductor material to be held in the chuck assembly, a plurality of arms pivotally connected to said base portion and extending above said base portion and at least below said cup; adjusting means at upper extension of said arms for varying the distance between the ends of the arms and the centerline of said shaft, and gripping means pivotally connected to the lower extension of said arms below the cup, the improvement in which said cup and said gripping means consists of tantalum.

3,159,409
FUEL TANK FILLER TUBE AND DRAIN
Raymond V. Koehler, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Nov. 14, 1962, Ser. No. 237,485
6 Claims. (Cl. 280—5)



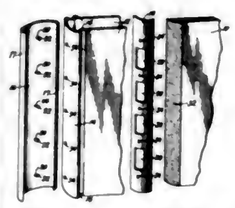
1. A fuel filler apparatus for an automotive vehicle comprising: a vehicle body wall inclined from a horizontal plane and having interior and exterior sides and having an opening therein defining about its perimeter a mounting flange; a fuel storage tank and a filler tube extending from the body wall opening to the storage tank; a generally rigid mounting cap anchored at the end of the filler tube adjacent the wall opening, said cap having a central portion with an opening therein through which a fuel supply nozzle can be inserted; said cap having a flange projecting radially outwardly from the central portion and being secured to the mounting flange of the vehicle body wall; said cap having a pocket formed at its lower end below the lowermost level of the body wall opening and a drain opening establishing communication between the pocket and the vehicle body wall on the interior side, whereby any fuel spillage from the nozzle will drain into the cap pocket and through the drain opening on the interior side of the vehicle body wall.

3,159,410
WHEELING ATTACHMENT FOR BOATS
Jerry W. Raymond, 1102 Crescent St., Wenatchee, Wash.
Filed June 12, 1963, Ser. No. 287,336
5 Claims. (Cl. 280—35)



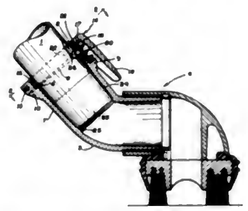
1. A wheeling attachment for a boat of the character described; said attachment comprising a cross-axle having a tubular medial portion of lesser length than the width of the boat, axle extensions applied telescopically within the opposite ends of said medial portion of the cross-axle to extend beyond the corresponding opposite side walls of the boat when the axle is applied thereto, boat supporting wheels rotatably applied to the outer end portions of the axle extensions, and clamps mounted on said axle extensions, said clamps each comprising a pair of jaws for gripping the corresponding side wall of the boat between them to functionally secure the cross-axle in position for the wheeling travel of the boat on a surface.

3,159,411
PLASTIC SPINE CONSTRUCTION FOR BOOKS
William McKowen, Des Moines, Iowa, assignor to Meredith Publishing Company, a corporation of Iowa
Filed Jan. 15, 1962, Ser. No. 166,231
2 Claims. (Cl. 281—25)



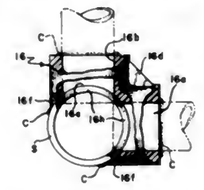
2. In a spine construction for books, an outer spine member having integral headed connecting posts, an inner spine member having perforations to receive said posts, said perforations being slightly smaller than the heads of said posts to require forcing therethrough whereby a permanent connection of said spine members to each other is effected during assembly, book pages adhesively secured to said inner spine member, page covers having flexible covers thereon and connecting the page covers together, the connecting portion forming a back member interposed between said spine members and adhesively secured to said inner spine member, said outer spine member having flanges along its side edges to overlap the side edges of said inner spine member and confine said back between said edges and said flanges.

3,159,412
WAND ASSEMBLY FOR SUCTION CLEANER
Raymond Descarries, Montreal, Quebec, Canada, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed June 15, 1960, Ser. No. 36,237
2 Claims. (Cl. 285—7)



1. In a coupling for detachably connecting thin-walled hollow tubular members forming part of a movable cleaning assembly adapted to be connected to a suction cleaner to produce air flow therethrough, a hollow thin-walled tubular member of cylindrical form having an air passage terminating at an end opening, a thin-walled hollow air tube insertable within said tubular member, said air tube having a wall of cylindrical form, a lock ring having an opening substantially equal in size to the air passage, means for pivoting said lock ring about an axis intersecting the air passage adjacent to the end opening, means including a coil spring for biasing said lock ring to a first position at an acute angle to the longitudinal axis of the air passage, said lock ring being manually movable about said pivoting means against the biasing action of said coil spring toward the end opening to a second position where the opening in said lock ring is in alignment with the air passage to permit the insertion of said air tube in said hollow tubular member, the release of said lock ring effecting the locking of the air tube in said hollow tubular member, and the inner surface of said lock ring and the wall of said air tube having coacting parts forming an axially extending tongue and groove fit whereby, when said lock ring is moved about its pivoting means to the second position where the opening therein is in alignment with said air passage, said hollow tubular member will axially receive said air tube when said coacting parts are in axial alignment, said air tube being angularly immovable about its longitudinal axis when inserted in said tubular member with said coacting parts in axial alignment.

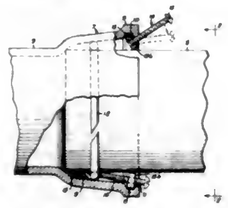
3,159,413
BRANCH FITTING FOR PIPES
Benjamin B. Silverman, 219 Buena Vista Drive, Dunedin, Fla.
Filed Jan. 24, 1961, Ser. No. 84,590
1 Claim. (Cl. 285—189)



A branch pipe connector attachable to a cylindrical main pipe and comprising a first cylindrical branch pipe

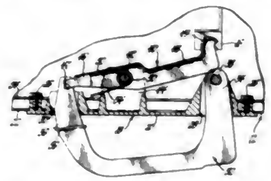
receiving section disposed normal to said main pipe section and having one end surface curved for following and engaging the cylindrical surface of said main pipe section, a second cylindrical branch pipe receiving section disposed normal to said main pipe section and extending 90° with respect to said first branch pipe receiving section and having one end surface curved for following and engaging a cylindrical surface of said main pipe section adjacent to the first mentioned cylindrical surface thereof, said first and second branch pipe receiving sections being formed of synthetic plastic material which readily returns to its original form following deformation thereof and having adjacent side portions merging to form a yieldable hinge portion between said branch pipe receiving sections, said curved end surfaces of said branch pipe receiving sections lying in a continuous arc extending slightly greater than 180° to thereby encompas more than 180° of said main pipe section and such that said outer ends of said curved ends may be yieldingly separated by flexing of said hinge portion to receive said main pipe section within said curved ends with said branch pipe receiving sections normal to said main pipe section, the resiliency of said material forming said branch pipe receiving sections causing said curved end surfaces to embrace said main pipe section.

3,159,414
INSERTED NUT PIPE JOINT
Michael U. Widman, Columbus, Ohio, assignor, by mesne assignments, to Cast Iron Soil Pipe Institute, Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1961, Ser. No. 146,735
2 Claims. (Cl. 285—348)



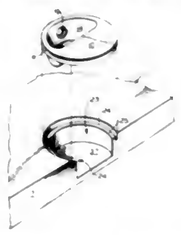
1. In a pipe joint for bell and spigot pipe sections including a bell and spigot inserted into the bell, a packing element therebetween and a backup ring for said packing element, means coacting with said backup ring for selectively compressing said packing element at indeterminate points around said joint, said means comprising an internal radial groove in said bell, bounded at the open end of the latter by a continuous, axially directed, annular lip, a plurality of compression assemblies, each comprising a threaded bolt carrying a threadedly engaged nut of a transverse dimension to fit substantially radially between the base of said groove and the periphery of said spigot, the inner annular edge of said lip being radially spaced from the periphery of said spigot a distance to define therewith an uninterrupted annular clearance of a radial width less than said transverse dimension of respective nuts, to thereby prevent displacement of said nuts from said groove in the direction of the axes of the respective bolts engaged thereby, the axial thickness of said lip and said nut being substantially equal, the radial width of said annular clearance being greater than the distance from the inner radial extremities of the respective nuts to the opposite diametric extremities of the bolts engaged thereby, to permit the edgewise insertion of the nuts of said assemblies through said clearance and their angular manipulation into said groove at indeterminate points around the latter, said bolts being of a length to engage the periphery of said spigot at their inner ends as they are progressively advanced through said nuts to stabilize the assemblies and prevent the angular movement of respective nuts out of said groove, said inner ends of respective bolts being engageable with said backup ring to compress the packing element upon the inward screwing of said bolts in respective nuts, and the forward edge of said annular lip being inwardly beveled to accommodate the angular shifting of said bolts in said clearance during the insertion of said compression assemblies.

3,159,415
OUTSIDE DOOR HANDLE ASSEMBLY
Bela Sandor, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,764
3 Claims. (Cl. 292—336.3)



1. In a vehicle body having a latch and a movable latch operating member, a latch actuating handle assembly comprising, an elongated handle member mounted on said body for movement between inoperative and latch actuating positions, an elongated lever member, pivot means located intermediate the ends and spaced from said handle member for pivotally mounting said lever member on said body for movement between inoperative and latch actuating positions, means coupling said lever member adjacent one end thereof to said handle member for movement of said members in unison between said positions thereof, actuating means on the other end of said lever member adapted to operate said latch operating member, said actuating means being located adjacent said handle member in the inoperative position of said members and being located remote from said handle member in the latch actuating position of said members, movement of said handle member in a direction from said inoperative position to said latch actuating position swinging said lever member about said pivot means to move said actuating means from said adjacent to said remote location thereof to move said latch operating member away from said handle member.

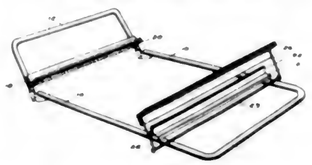
3,159,416
CIRCULAR STRIKE
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed Sept. 26, 1963, Ser. No. 311,815
17 Claims. (Cl. 292—340)



6. A strike assembly for a door comprising:
a door jamb,
a circular strike plate including a strike box integral therewith received on said jamb,

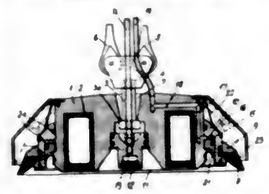
said plate being provided with a peripherally extending flange substantially at right angles to the plane of said plate,
said jamb being formed with a counterbore for receiving said flange therein and being formed with a central clearance hole concentric with said counterbore and inwardly thereof for receiving said box therein.

3,159,417
LITTER
Louis A. Courtox, 8 Purdy Ave., Warsaw, N.Y.
Filed Oct. 18, 1961, Ser. No. 146,045
5 Claims. (Cl. 294—16)



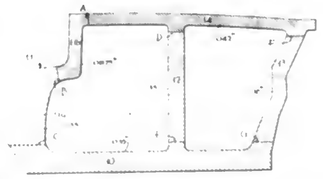
1. A litter comprising a first pair of substantially parallel longitudinally extending frame members spaced apart laterally a distance sufficient to embrace a beehive therebetween, said members being connected integrally at one end to form a handle, the other end of each of said members being attached through a pivot to a second pair of longitudinally extending members integrally connected together at their ends which are opposite the pivot to form a second handle, said second handle being movable about the pivot through at least a 180° arc, and one lateral member rigidly connected to and extending between each pair of said longitudinally extending members and spaced a distance apart sufficient to grip and hold a beehive.

3,159,418
ELECTROMAGNETIC AND VACUUM LIFTER
Jørgen Jensen Hansen, Fredensvej 39, Charlottenlund, Denmark
Filed Feb. 20, 1963, Ser. No. 259,908
Claims priority, application Denmark, Mar. 1, 1962, 963/62
3 Claims. (Cl. 294—64)



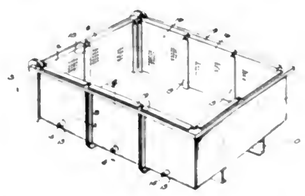
1. In a lifting unit for lifting either magnetizable material or non-magnetizable material, the combination of an upright electromagnet having a bottom face to engage magnetizable material, an annular suction cup having a rigid body surrounding said electromagnet, said body of the cup having a resilient lower end to engage non-magnetizable material, means mounting the body of said suction cup on said electromagnet for axial sliding movement to dispose said lower end of the suction cup either above or below the plane of the bottom face of the electromagnet, and means for the intermittent displacement of the suction cup on the electromagnet for alternately using the electromagnet or the suction cup, said means for the displacement of said suction cup being fluid pressure-operated and includes an annular chamber between opposed portions of said suction cup body and said electromagnet body, a fluid passage in said electromagnet and in communication with said chamber, and means to supply a positive or a negative fluid pressure to said passage to cause the intermittent displacement of the suction cup on the electromagnet.

3,159,419
DIE-FORMED SHEET METAL STRUCTURES AND METHOD OF MAKING THE SAME
Floyd G. Kerby, Grosse Pointe Woods, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1961, Ser. No. 148,502
13 Claims. (Cl. 296—28)



7. The method of making an automobile side panel unit having at least one large door opening which comprises, providing a plurality of flat strip elements of different size and thickness, at least one for each of the sides arranged to form overlapping side strips of a frame-shaped blank, mash welding and simultaneously reducing the weld joint to about single element thickness of the strip elements to form a flat frame-shaped composite blank, and die-forming the blank as a unit in mating dies to form the side panel unit.

3,159,420
SCREEN-LINED TRUCK BODY
William G. McCrossen, 6550 W. Forest Home Ave., Milwaukee 20, Wis.
Filed Nov. 19, 1963, Ser. No. 324,715
1 Claim. (Cl. 296—28)



In a screen lined truck body, a truck box having a plurality of drain apertures adjacent the bottom thereof, spouts exteriorly of said drain apertures, a plurality of vertical guides spaced on the interior vertical walls of said truck box, and a plurality of perforated elements received in said guides to form a screen lining spaced from the vertical walls of said truck box.

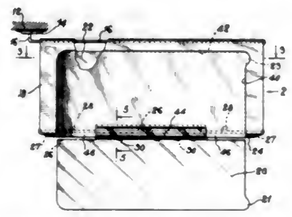
3,159,421
AUTOMOBILE SUN VISOR WITH AUXILIARY TRANSPARENT PANEL
Cyrus D. Samuelson, River Edge, N.J. (100 Prospect Ave., Hackensack, N.J.)
Filed Jan. 23, 1963, Ser. No. 253,447
2 Claims. (Cl. 296—97)

1. A sun visor assembly for a vehicle comprising:
a flat housing of opaque material having a cavity formed in at least one surface thereof;
a rod adapted to be affixed to the housing along one edge thereof such that the housing may be pivoted about the rod;

one end of the rod being affixed to the vehicle so as to be movable with respect thereto;

a bar having a plurality of flat faces mounted at the edge of the housing opposite the edge affixed to the rod;

a transparent panel mounted on the bar by means of at least one combination comprising a ball in contact with the bar, a spring in contact with the ball and means for holding the spring in place;



the spring being sufficiently compressed so as to cause the ball to maintain contact with the bar and so that the transparent panel is held in position with respect to the flat housing when the ball is in contact with one of the flat faces of the bar;

the transparent panel being capable of assuming a plurality of fixed positions with respect to the flat housing;

the transparent panel being shaped to nest in the cavity.

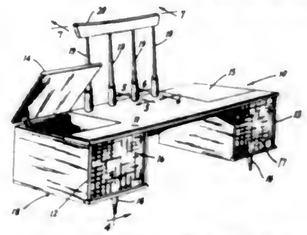
3,159,422
CONVERTIBLE TOP
Charles S. Lautenbach, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,399
7 Claims. (Cl. 296—117)



1. In combination with a vehicle body, a convertible top including front and rear rail sections pivotally interconnected for folding movement inboard of said body, means pivotally mounting said rear rail section on said body, and stabilizing means coupled between said front rail section and said body and controlling folding movement of said front rail section relative to said rear rail section and to said body, said stabilizing means including first means movably mounted on said body, second means movably mounted on said front rail section, said first and second means being movable in planes dissimilar with respect to each other, and means interconnecting said first and second means and permitting said first and second means to move in said dissimilar planes.

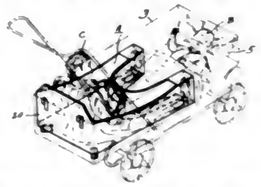
3,159,423
CONVERTIBLE FURNITURE UNIT
Alfred R. Gilbert, Paoli, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,885
7 Claims. (Cl. 297—119)

1. A convertible furniture unit, comprising: generally horizontally extending platform means; a first set of legs of uniform length detachably fixed to said platform means and extending downwardly therefrom to support the same horizontally at a first height; a second set of legs of uniform length different from the length of the legs of said first set, the legs of said second set being detachably fixed to said platform means and extending upwardly there-



from; and a cross-member extending generally horizontally between and detachably fixed to free end portions of the legs of said second set, said first and second sets of legs being interchangeable to provide either a higher or a lower horizontal position of the platform means and a lower or a higher position of said cross member with respect to said platform means.

3,159,424
REMOVABLE CHAIR FOR BABY CARRIAGE
Marie Pierrette Gaetane Theriault, 2320 Tupper Ave., Ottawa, Ontario, Canada
Filed Nov. 14, 1962, Ser. No. 237,466
5 Claims. (Cl. 297—217)



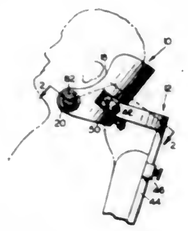
1. For use in a baby carriage including vertical side walls and a front wall, a chair for a second child adapted removably to be laid into the carriage adjacent the rear wall, comprising a bottom panel presenting in plan a portion forming a seat proper and two laterally-spaced leg portions adapted to extend from the seat proper in a direction toward the front wall of the carriage, walls rising from the edges of the seat proper and the leg portions and defining therewith a hollow body constituting the chair in which a second child may be seated, and means on the leg portions forming receptacles in which liquid dripping from the second child's shoes may collect.

3,159,425
STACKING AND GANGING FURNITURE CONSTRUCTION
Carl J. Engstrom, Michigan City, Ind., assignor to Royalmetal Corporation, New York, N.Y., a corporation of Illinois
Filed Sept. 18, 1962, Ser. No. 224,449
1 Claim. (Cl. 297—248)



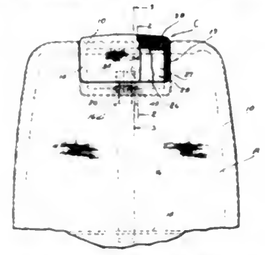
An improved ganging and stacking chair adapted to be stacked in a column one on the other or ganged in a row one next to the other in interlocking relationship comprising a seat portion, a back portion, a pair of substantially L-shaped brackets connecting said back portion to said seat portion, a pair of substantially identical U-shaped members, said members defining a pair of parallel front legs and corresponding rear legs with an interconnecting bight portion by which each of said pair of legs are secured beneath said seat portion, the bight portion of each of said members extending slightly beyond the width of said seat portion to define a knee portion with the legs connected thereto, and complementary side braces interconnecting a front leg with its corresponding rear leg, each of said side braces including a heavy gauge wire loop having an upper cross piece, a lower cross piece, and interconnecting end portion, said end portion of the respective side brace having a major part thereof connected to the inside portions of the front leg and its corresponding rear leg so that the said major part and upper cross piece therebetween lies substantially in a plane coincident with said corresponding front and rear legs, and said end portion of the respective loops adjacent the bottom thereof being bent outwardly of said plane so that the lower cross pieces therebetween are laterally spaced outwardly of said corresponding pair of legs, the lower cross piece of one side brace being bent to define an integral upright coplanar inverted U-shaped latch portion intermediate the ends thereof, the lower cross piece of said other side brace being bent to define an integral upright coplanar inverted U-shaped catch portion with the bight of the last-mentioned U-shaped portion being bent outwardly at substantially right angles to form a horizontal catch piece, the ends of the catch piece in horizontal position being concaved inwardly and dimensioned to engage between the vertical legs of said U-shaped latch piece, each said catch piece being adapted to receive the latch portion of said one side brace of another identical chair construction when two of said chair constructions are ganged one next to the other in a row to interlock two chairs, and whereby the upper cross pieces of each of said side braces of one chair are adapted to rest on the knee portions of another similarly constructed chair when two of said chairs are stacked in a column one on the other.

3,159,426
HEAD REST
Kenneth C. Kerr, 1222 S. Riverside, Medford, Oreg.
Filed Feb. 12, 1962, Ser. No. 172,389
6 Claims. (Cl. 297—408)



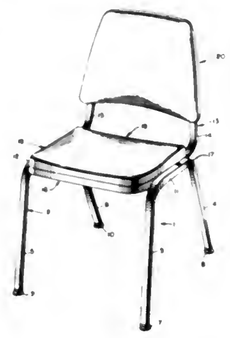
1. A head rest comprising a laterally arcuate portion for supporting the back of a person's head and having terminal forwardly directed edges, at least one of the terminal edges having a projecting portion leading forwardly at a point adjacent the lower end thereof to project in an area below and forwardly of the ear of a person whose head is supported in the head rest, thereby forming a lateral jaw support.

3,159,427
HEAD REST ASSEMBLY
George S. Lawson, Mount Clemens, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Nov. 19, 1962, Ser. No. 238,659
7 Claims. (Cl. 297—410)



1. A head rest assembly for use with a vehicle seat back rest comprising: a stem carried by and interiorly of the seat back rest and projecting exteriorly therefrom at the upper end thereof; a pillow assembly carried on the upper end of the stem and including a rigid skeleton in the form of a U-shaped stamping extending throughout a major portion of the length of the pillow assembly; said stamping having spaced forward and rearward walls interconnected at their upper ends by the web of the U; a human head accommodating pillow in the form of a resilient padding surrounding the stamping and secured thereto; a flexible covering surrounding the padding and encasing the pillow; the pillow covering having an opening at the underside communicating with the area between the stamping walls; the upper end of the stem projecting through the covering opening into the interior of the pillow assembly; a bracket situated interiorly of the pillow assembly between the walls of the stamping and being rigidly secured thereto, the bracket being pivotally mounted on the upper end of the stem, and means on the upper end of the stem and interengaging with the bracket for effecting selective positioning of the pillow assembly relative to the stem about the axis of the pivotal mounting.

3,159,428
ARTICLE OF SEATING
Robert W. Schier, Northbrook, Ill., assignor to Arlington Seating Company, Arlington Heights, Ill., a corporation of Illinois
Filed Feb. 18, 1963, Ser. No. 259,194
13 Claims. (Cl. 297—452)



1. A chair comprising:

(*a*) a pair of inverted, generally U-shaped side frame members forming legs,

(*b*) a back frame member including at least opposed upwardly extending side members,

(*c*) a generally rectangular seat frame connected to said back frame member and secured on its opposite outer sides to the transverse portions of said inverted generally U-shaped side frame members,

(*d*) a seating member comprising a molded hollow, sealed envelope of a synthetic resilient polymer having an upper contoured seating surface, the sides of said seating surface extending over the tops of the sides of said seat frame but stopping short of the tops of said inverted generally U-shaped side members, the front of said seating member extending over the top of the front of said seat frame, the back of said seating member extending over the top of the back of said seat frame, the bottom of said seating member being offset inwardly at its sides, front and back and the offset portion extending downwardly adjacent the inner sides, front and back, respectively, of said seat frame,

(*e*) a back member separate from the seating member and comprising a molded hollow, sealed envelope of a synthetic resilient polymer having a front contoured back supporting surface, the sides of said front surface extending over the front portions of at least the upper part of said back frame member and projecting laterally beyond the sides of said side members of said back frame member, and the top of said back member extending above the top of said back frame member,

(*f*) means retaining said seating member in said seat frame, and

(*g*) means securing said back member to said back frame.

3,159,429

WHEEL COVER

George N. Harden, Walled Lake, Mich., and James N. Neumann, Grafton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 19, 1963, Ser. No. 302,985

7 Claims. (Cl. 301—37)



1. A vehicle wheel cover comprising, a cover body including a generally axially extending retention flange structure, said flange structure including spaced groups of teeth having edge portions adapted to grippingly engage a portion of a vehicle wheel in order to mount said cover thereon, the edge portions of the teeth of each group being arranged in a predetermined pattern of gradually varying radial distances from the axis of rotation of the cover.

3,159,430

ACCUMULATING CONVEYOR UNIT

Lawrence W. Kinney, Lynnfield, Mass., assignor to J. W. Greer Company, Wilmington, Mass., a corporation of Massachusetts

Filed June 10, 1963, Ser. No. 286,529

7 Claims. (Cl. 302—2)



1. Article accumulating equipment comprising a frame, belt means for conveying articles placed thereon along a traverse thereof by virtue of frictional engagement therewith, means for driving said belt means with continuous motion, pneumatic means for periodically reduring the frictional engagement between the bottom surfaces of articles proceeding along said traverse and the top surface of said belt means including a duct forming a plenum underlying said traverse and means for discharging air periodically from said plenum forcibly against the bottom surfaces of said articles as they proceed along said traverse, a gate at the discharge end of said traverse movable into and out of the path of articles proceeding along said traverse, and means for moving and maintaining said gate in the path of said articles while said air is being forcibly discharged against the bottom surfaces of said articles, and means for moving said gate out of the path of said articles to permit said articles to move in frictional engagement with said belt means for ejection from said unit when the force of said air discharge is periodically reduced.

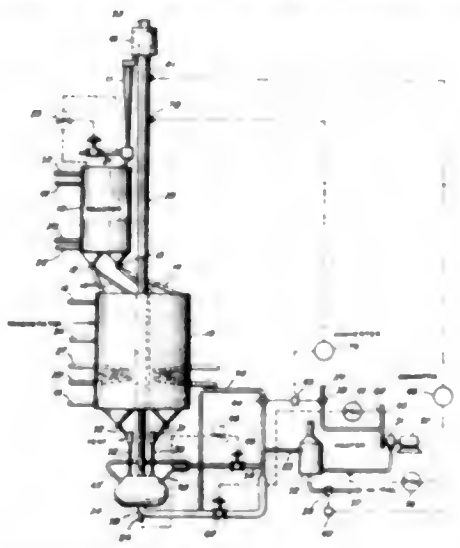
3,159,431

METHOD AND APPARATUS FOR AUTOMATIC PROCESS CONTROL

Robert D. Drew, Wenonah, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Apr. 20, 1962, Ser. No. 189,115

4 Claims. (Cl. 302—35)



1. In a pneumatic lift for elevating a granular contact material in a stream of lift gas the improved method of controlling the lift operation which comprises: flowing a major and minor stream of lift gas toward the bottom of the lift, measuring the flow rate of the major stream, converging the streams of lift gas, pressuring the converged streams of gas, heating the converged streams of gas, separating the streams of gas again into major and minor streams, controlling the flow rate of the separated major stream of gas in response to said flow rate measurement, so as to maintain the flow rate of the major stream of gas substantially constant, introducing the major and minor streams of lift gas into the lower end of the lift, to elevate granular contact material, measuring the pres-

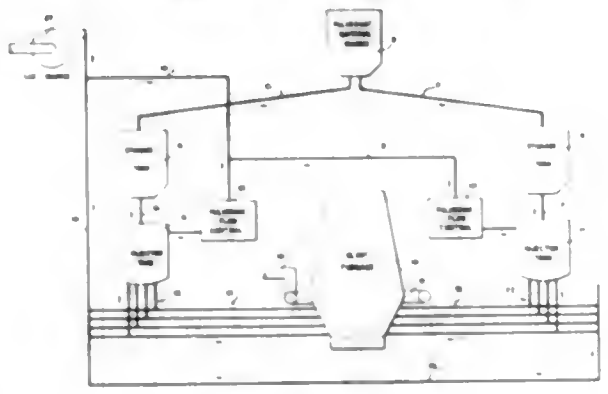
sure fluctuation in the upper portion of the lift, converting the pressure fluctuation to a steady signal proportional to the average amplitude of pressure fluctuation, and applying this steady signal to control the flow rate of the minor stream of lift gas as as to maintain the fluctuation of pressure in the upper portion of the lift at a substantially constant level whereby minimum attrition of the granular material passed through the lift is obtained.

3,159,432

FLOW CONTROL OF PULVERANT MATERIAL

Edward J. Ostrowski, Steubenville, Ohio, and Hiram C. Kozak, Lackawanna, and Harold A. Putnam, Buffalo, N.Y., assignors to National Steel Corporation, a corporation of Delaware

Filed May 22, 1962, Ser. No. 196,767
4 Claims. (Cl. 302—53)



1. Apparatus for pneumatically providing a uniform and constant flow rate of pulverant material into a variable pressure blast furnace system comprising

injector tank means for holding pulverant material under pressure,

pneumatic pressurizing means for maintaining the injector tank means under pressure including pneumatic flow control valve means,

distributor means for delivering pulverant material from the injector tank means including fluidizing means for the pulverant material contiguous with the distributor means,

conduit means for delivering fluidizing gas to the fluidizing means to continuously maintain pulverant material in a fluid state,

venting means for the injector tank means including vent control valve means,

control means for maintaining a substantially constant pressure differential between the injector tank means and the blast furnace system while maintaining pulverant material in a fluidized state, the control means including,

means for measuring the pressure differential between the injector tank means and the blast furnace system pressures,

means for comparing the measured pressure differential to a predetermined desired pressure differential and generating a signal in response thereto to control the flow control valve means and the vent control valve means to maintain a constant pressure differential between the injector tank means and the blast furnace system.

3,159,433

BRAKE PROPORTIONING VALVES

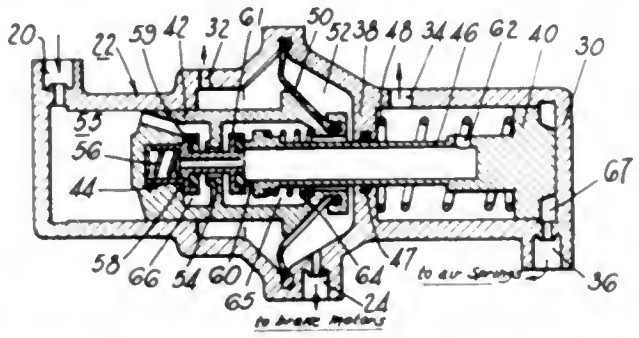
Gerard Chevreux, Colombes, and Roland Muterel, Saint Denis, France, assignors to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Filed July 24, 1961, Ser. No. 127,450
Claims priority, application France Dec. 30, 1960
3 Claims. (Cl. 303—22)

1. In combination with a vehicle having a fluid pressure suspension means, a braking system including a brake control valve, a brake motor and a brake proportioning valve between said brake control valve and said brake motor, said brake proportioning valve comprising:

a housing having an inlet port connected to said control valve, an outlet port connected to said brake motor and a control port connected to said fluid pressure suspension means;

a first pressure responsive means movable in the housing, which first pressure responsive means has an area responsive to inlet port pressure and another area responsive to outlet port pressure with the effective area responsive to inlet port pressure being substantially constant and the effective area responsive to outlet pressure being variable;



a valve means operatively mounted within said first pressure responsive means for connecting and disconnecting said inlet and outlet ports, said valve means including a second pressure responsive means for positioning said first pressure responsive means to vary the effective area subjected to outlet port pressure, which second pressure responsive means is responsive to a pressure developed by said fluid pressure suspension means; and

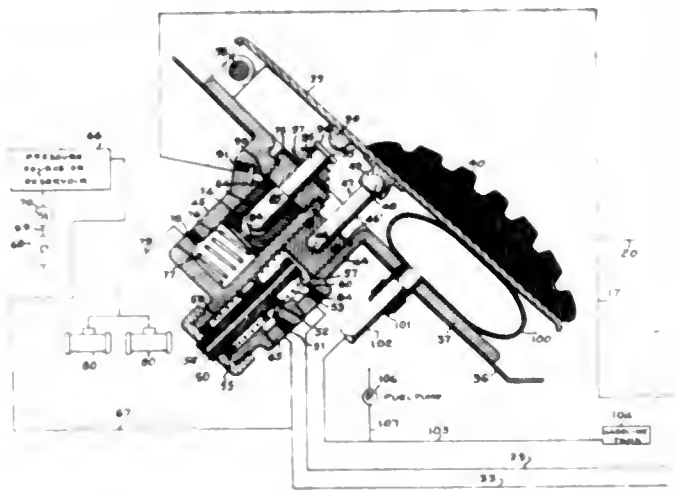
a resilient means including a first spring interposed between said first pressure responsive means and said second pressure responsive means for operatively connecting said pressure responsive means, and a second spring interposed between said second pressure responsive means and said housing to reference producing a force equivalent to the minimum pressure exerted by said fluid pressure suspension means when the vehicle is empty of any load.

3,159,434

POWER BRAKE SYSTEM

William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Detroit, Mich., a corporation of Delaware

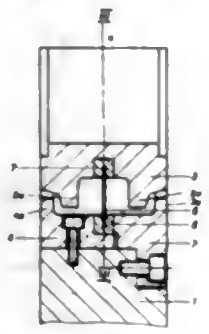
Filed Apr. 5, 1961, Ser. No. 100,957
14 Claims. (Cl. 303—24)



1. In a power operated braking system for a vehicle having valve means to control the power and means

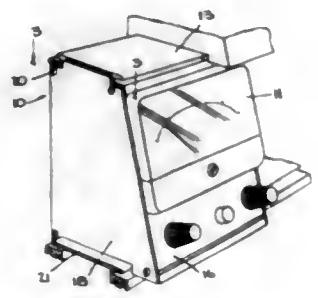
operated by manual force to control said valve means, in combination, a body of liquid longitudinally disposed in relation to the vehicle, means to contain said liquid, and means to transmit the pressure produced by said body of liquid due to deceleration of the vehicle to react on said means operated by manual force to oppose said manual force.

3,159,435
ROTOR SUPPORT FOR BALANCING MACHINES
Gerhard H. Schlick, Dusseldorf, Germany, assignor to Losenhausenwerk Düsseldorfer Maschinenbau A.G., Dusseldorf-Grafenberg, Germany
Filed May 14, 1962, Ser. No. 194,559
Claims priority, application Germany, May 16, 1961, L 38,988
3 Claims. (Cl. 308—26)



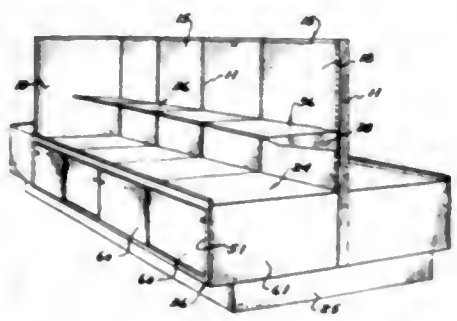
1. A rotor support for a balancing machine including: a bearing body member having an opening along an axis, a pair of spaced annular flanges about the outside and defining an annular groove therebetween, and a plurality of coplanar pockets about the base of said groove at spaced intervals about said axis; a bearing bridge member surrounding said body member and having spaced annular flanges smaller in diameter than the flanges on the body member and positioned spaced axial distances beyond the outside of the body member flanges thereby limiting the axial movement of the body member in the bridge member, said bridge member flanges defining an annular groove therebetween, and a plurality of pockets about the base of the bridge member groove and positioned in radial alignment with the body member pockets; a plurality of leaf springs connecting the members, each spring extending from a pocket in the body member to the corresponding radially aligned pocket in the bridge member; one of said members having a removable side, the inner wall of which is coplanar with the pockets of the one member; and means releasably holding said removable side in place and accessible from the outside of the one member, whereby access may be obtained to the springs for removal and replacement.

3,159,436
INTERLOCKING CASING
Ariel R. Davis, 3187 S. State, Salt Lake City 15, Utah
Filed May 22, 1962, Ser. No. 196,825
2 Claims. (Cl. 312—107)



1. A casing comprising a supporting member having a rear panel, top panel and bottom panel and formed in a generally U shape by the top and bottom panels extending from the connecting rear panel, a front panel forming a chamber with said supporting member, two side plates with fastening means, said supporting member having bosses extending along the front and back edges of said top and bottom panels and having longitudinal flanges extending on the outer edges of said top and bottom panels, said bosses having grooves longitudinally extending the length of the panels and opening generally toward the center of said chamber for receiving angled portions of a component supporting pedestal, and said flanges spaced from said front bosses to form slots, said front panel fitting in said slots and said fastening means extending longitudinally into said grooves to secure said side plates to said supporting member to enclose said chamber with said front panel.

3,159,437
DISPLAY SHELVING ASSEMBLY
Sydney W. Jentzen, Bloomfield Hills, Mich., assignor to Jentzen-Miller Company, Troy, Mich., a corporation of Michigan
Filed Dec. 11, 1962, Ser. No. 243,784
2 Claims. (Cl. 312—108)



1. A display cabinet assembly comprising a pair of spaced apart vertical support members, each having a vertical front face; a pair of vertically spaced apart brackets mounted upon each of said front faces and extending forwardly therefrom, to form two pairs of horizontally aligned upper and lower brackets, with each bracket having a horizontal upper support edge;

an upper shelf having its ends loosely rested upon the support edges of the upper brackets and a lower shelf having its ends loosely rested upon the support edges of the lower brackets;

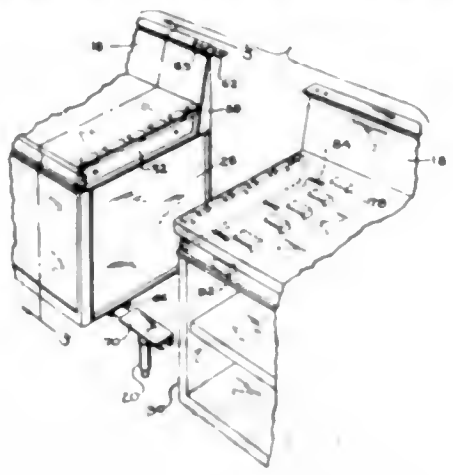
a vertically arranged, rigid, rectangular shaped, four-sided frame having its upper side abutted against and covering the full length of the forward edge of the upper shelf and being rigidly secured to said upper shelf by a releasable mechanical fastening means, and the frame lower side being abutted against and covering the full length of the forward edge of the lower shelf and being rigidly secured to said lower shelf by a releasible mechanical fastening means;

and means formed on said frame for mounting doors in the opening thereof and including doors mounted upon said mounting means for covering the opening in said frame, thereby forming a rigid cabinet construction.

3,159,438
CONNECTOR SPLINE FOR CABINET STRUCTURES
Clifford R. Carlson and Robert Swiftney, both of Grand Haven, Mich., assignors to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 2, 1962, Ser. No. 163,472
13 Claims. (Cl. 312—111)

1. An assembly of cabinets comprising a plurality of cabinets secured in side by side relationship, each of said cabinets having a front wall, a back wall, a bottom wall and parallel side walls, a pair of first channel members secured along the top of and parallel to the side walls having alignable pairs of opposing grooves disposed trans-

versely to the length of said first channel members; a cabinet top marginally secured to each of said first channel members intermediate the grooves and forming a top wall for said grooves with its edge extending outwardly past the edge of each of said first channel members, second channel members secured under each side edge of the bottom wall of each cabinet and extending in a direction transverse to the length of said first channel members in aligned pairs between cabinets when the cabinets are positioned side by side, an adjustable supporting foot slidably received within each aligned pair of the second channel members in interlocking interengaging relation-



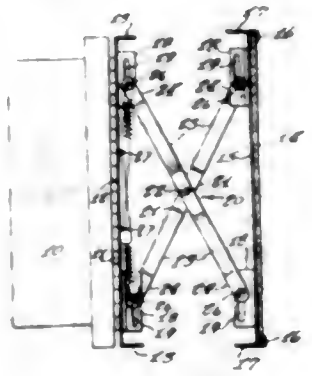
ship between the adjacent cabinets to support both cabinets at an identical elevation and align said grooves in the first channel member of one cabinet in register with the opposing grooves in the first channel member of the adjacent cabinet, a contoured spline disposed in each pair of opposing first channel member grooves of the adjacent cabinets for interlocking and aligning the cabinet top edges at an identical elevation, and means interconnecting the adjacent cabinets cooperating with said splines to draw together and secure in weight-supporting relationship the abutting peripheral edges of the cabinet tops to form a fine hairline seam therebetween.

3,159,439

RETRACTABLE MEDICINE CABINET MIRROR

George C. Miller, 161 N. Ocean Ave., Freeport, N.Y.

Filed Feb. 23, 1962, Ser. No. 175,062
3 Claims. (Cl. 312—227)



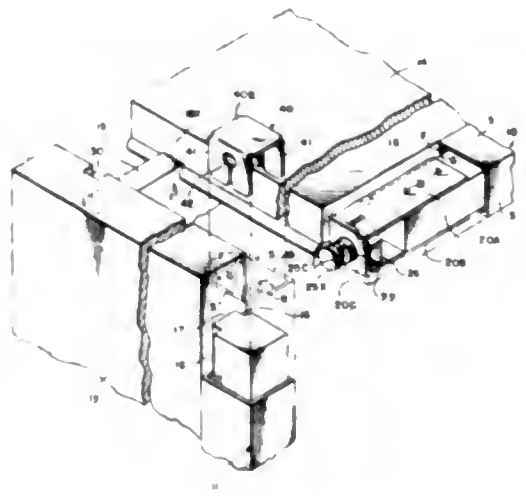
1. A medicine cabinet comprising a door hinged at one vertical side to a corresponding side of said cabinet, said door having a vertical wall and an outwardly directed peripheral flange normal to said wall, a frame defining a vertical backing plate provided with a rearwardly extending peripheral flange and a forwardly extending flange means, a mirror secured to the forward face of said backing plate by said forwardly extending flange means, said backing plate being movable towards and away from said vertical wall and in the fully retracted position of said backing plate, the peripheral flanges thereof will project exteriorly of the vertical wall flanges in overlapping sliding relation thereto and the outer edges of said vertical wall flanges will abut said backing plate such as to define an enclosure, a pair of upper and lower brackets secured to said vertical wall, a pair of upper and lower brackets secured to said backing plate, said brackets arranged such that corresponding brackets of each said pair of upper and lower brackets will be in opposed horizontal relationship, a toggle linkage disposed adjacent each vertical side of said door within said enclosure, means pivotally and slidably connecting each said toggle linkage at its upper and lower ends respectively, to the corresponding brackets of each said pair of upper and lower brackets, a pair of tension coil springs for each toggle linkage, a pair of anchor means fixedly secured to said vertical wall for each pair of springs, one end of each spring of a pair being connected to an anchor means and the other end thereof secured respectively to an upper and lower pivotal and slidable connection of said toggle linkage, whereby in the retracted position of said backing plate, said toggle linkages will close and tension said springs, and each spring will have a dead center relationship with respect to its associated toggle linkage, wherein in said retracted position of said backing plate and mirror, said corresponding brackets of each pair of upper and lower brackets of said vertical wall and backing plate are horizontally juxtaposed and in pairs lie adjacent a corner of said enclosure, a vertical slot in each bracket, each toggle linkage defined by a pair of links pivoted together at their center and diverging laterally towards their outer ends, said pivotal and slidably connecting means for said toggle linkage comprising pin means pivotally and slidably connecting an end of each link to a bracket and extending through the slot therein.

3,159,440

CABINET WALL PANELS AND CONNECTING MEANS THEREFOR

Robert M. Courtwright, Tacoma, Wash., assignor, by mesne assignments, to Educators Manufacturing Company, Tacoma, Wash., a corporation of California

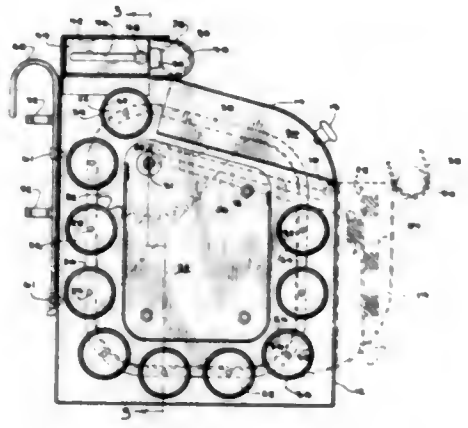
Filed Mar. 14, 1963, Ser. No. 265,255
5 Claims. (Cl. 312—263)



1. In a knock-down cabinet construction; two panels assembled in right angular relationship with their forward edges even and with a side surface portion of one panel disposed flatly against the end edge surface of the other panel, a frame rail of channel form applied in a holding connection over and along the forward edge portion of each panel and terminating at their ends flush with the end edges of the corresponding panel; one of said rails being

formed with a bolt hole in a side wall thereof, at a point in registration with the adjacent end edge surface of the other panel and rail, a bolt-holding clip secured to the end edge portion of said other panel and a bolt adjustably mounted by said clip and extended therefrom; said bolt having a head portion at its extended end applied through said bolt hole of the adjacent rail wall and means holdingly securing said bolt in the rail containing the bolt hole, thereby to join the panels in assembled relationship.

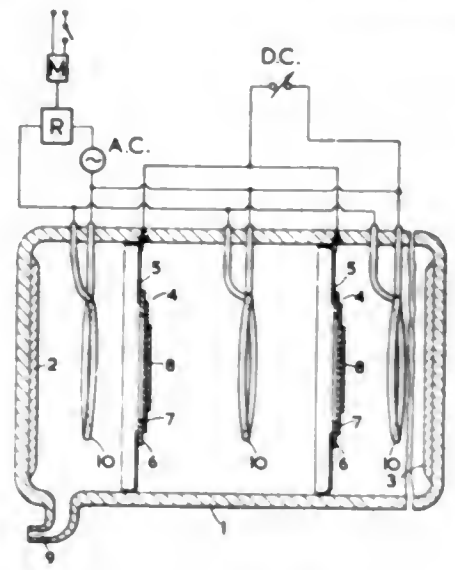
3,159,441
PORTABLE STORAGE MEANS
William J. Sikma, 10700 S. Wabash Ave., Chicago, Ill.
Filed Dec. 21, 1961, Ser. No. 161,215
3 Claims. (Cl. 312—268)



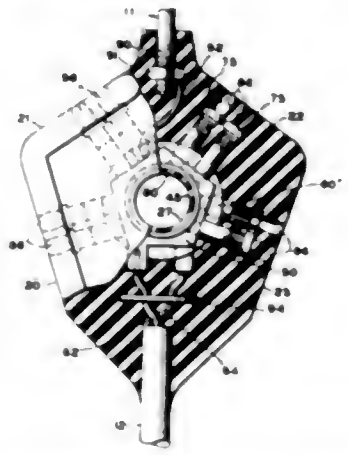
1. An apparatus of the type described comprising a housing, a slideable cover provided for access to said housing, a plurality of holding means including leading and trailing holding means and additional holding means disposed therebetween, said holding means being movably mounted within said housing, means for moving said holding means in a path adjacent the interior walls of said housing to thereby permit selective introduction of the holding means beneath said cover whereby articles contained in the holding means can be reached, said leading and trailing holding means being spaced-apart a distance sufficient to define an access opening, and a relatively large compartment defined inside the path of movement of said holding means, said compartment being accessible when said cover is opened and when the opening defined between said leading and trailing holding means is moved beneath said cover, and wherein said cover is permanently attached to said housing and is adapted to swing into abutment with the front face of said housing when in open position to provide a compact structure, said cover being provided with outer and inner walls and side walls forming a receiving space therein, and including a sheet, article retaining means comprising a flexible body disposed on said sheet and having slits formed therein for insertion of thin articles, said sheet and associated retaining means being fitted within said receiving space.

3,159,442
PRODUCTION OF THIN FILMS
William Leslie Wilcock, East Molesey, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Mar. 13, 1961, Ser. No. 95,189
Claims priority, application Great Britain Mar. 17, 1960
7 Claims. (Cl. 316—8)

1. A method of relieving stresses in a thin film supported on a fragile substrate caused by contraction of the film relative to the substrate comprising subjecting the said film to electron bombardment having sufficient energy to penetrate the film and sufficient density to relieve the stresses during the time in which the relative contraction is taking place.



3,159,443
ELECTRICAL DISTRIBUTION DEVICE
Oliver M. Hart, West Cornwall, Conn.
Filed July 19, 1961, Ser. No. 125,139
12 Claims. (Cl. 339—14)

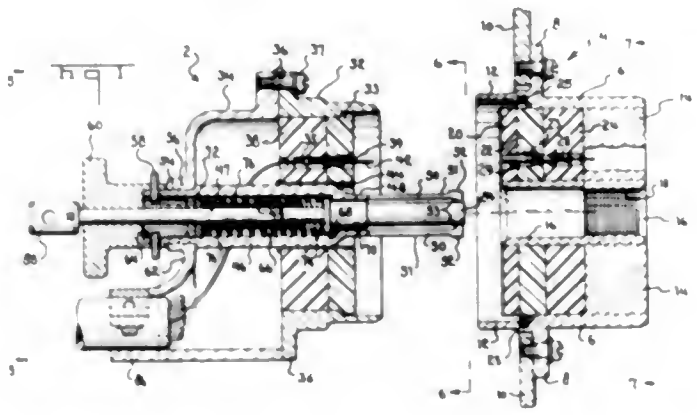


1. An electrical distribution device comprising a body of electrical insulating material, a current-carrying cable fixed to a portion of said body, said body having embedded and permanently molded therein a plurality of outlet means angularly spaced from one another, said cable including a plurality of wires, said wires being electrically connected to said outlet means, and the outer surface of said body tapering inwardly from an intermediate portion of the body to the junction of said body and said cable such that the body can be dragged along a supporting surface by pulling on the cable and said tapered configuration of the body prevents the body from snagging or catching on objects, said body including a centrally disposed opening formed completely therethrough for facilitating handling or hanging up of the body, said body also having affixed therto a hook-like member for hanging up the body, the hook-like member being metallic and being electrically connected to at least one of said outlet means.

3,159,444
BREAKAWAY CONNECTOR
Howard E. Stine, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 23, 1962, Ser. No. 189,519
5 Claims. (Cl. 339—45)

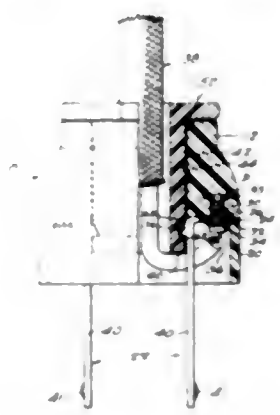
1. A breakaway type connector comprising a plug and a receptacle engageable with each other, an internally

threaded socket in said receptacle and a hollow shaft rotatably mounted in said plug, one end of said shaft comprising a plurality of axially extending externally threaded fingers, the normal outside diameter of said one end of said shaft being less than the internal diameter of said socket, a control rod in said shaft, said rod being axially movable with respect to said shaft, and resilient means normally biasing said control rod towards said one end to resiliently expand said fingers to an outside diam-



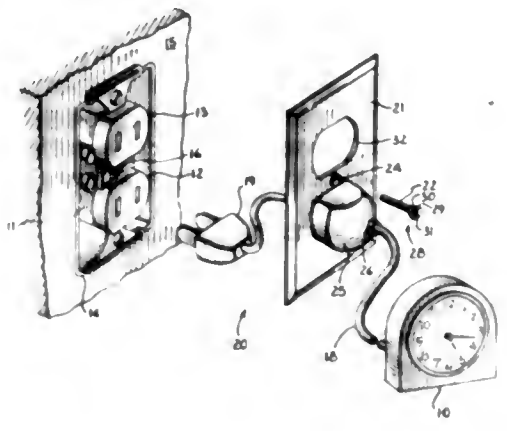
eter substantially equal to the inside diameter of said socket whereby, said plug and receptacle can be drawn into engagement with each other upon threading said end portion of said shaft into said socket, and said plug and receptacle can be disengaged from each other upon axial movement of said control rod against the force of said resilient means away from said one end with concomitant collapse of said fingers and disengagement of said shaft from said socket.

3,159,445
LOCKABLE MALE ELECTRICAL PLUG
Robert S. Wolk, 1801 SW. 83rd Ave., Miami, Fla.
Filed Sept. 6, 1963, Ser. No. 307,049
5 Claims. (Cl. 339—74)



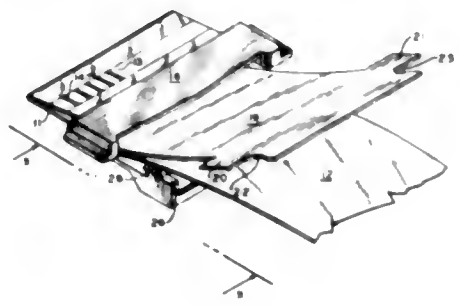
1. A lockable electric male plug comprising an annular cap having upper and lower ends and an axial vertical bore extending therethrough, a rotor engaged through said bore, rotor rotating means on the upper end of the rotor bearing upon the upper end of the cap, a pair of opposed pendant contact blades secured to the lower end of the cap, said blades being normally parallel and being resilient so as to be capable of being spread away from each other and return to parallel relationship, and cam lobes on the rotor below the lower end of the cap there being notches in said cam lobes receiving the main portions of said blades, for spreading the blades when the rotor is rotated to engage the cam lobes with the blades.

3,159,446
PILFERPROOF WALL PLATE
Donald E. Protzmann, Athens, Ga., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,691
1 Claim. (Cl. 339—82)



A securing assembly for an electrical cord having a plug at one end and an appliance at the other end, the plug being adapted for electrical engagement with an outlet socket of a receptacle having a tapped opening formed therein, said assembly comprising, in combination, an escutcheon plate provided with a first opening surrounding the receptacle outlet socket permitting the plug to be engaged with the socket, a second opening in said plate adapted to overlie the tapped opening in said receptacle, a screw received in said second plate opening and adapted for threading engagement with the tapped opening in said receptacle for anchoring said plate to said receptacle, said screw having a non-backout head, a cup formed integral with the escutcheon plate, said cup being displaced laterally from said screw and projecting outwardly in overlying relationship with the receptacle outlet socket and enclosing the plug, said cup having a single substantially central opening for receiving the cord, said cup substantially restricting the plug against movement in a direction tending to disengage or remove the plug from the socket to effect anti-pilfer electrical connection of the appliance.

3,159,447
PLUG CONNECTOR FOR FLAT CONDUCTOR CABLE
David J. Crimmins, Nutley, Joseph B. Marcsanyi, Passaic, and Rocco F. Basile, Roselle, N.J., said Marcsanyi now by change of name Joseph Marshall, assignors, by mesne assignments, to The Kent Manufacturing Co., Elizabeth, N.J., a corporation of New Jersey
Filed Sept. 21, 1962, Ser. No. 225,301
7 Claims. (Cl. 339—176)



1. A connector for holding a flat flexible conductor cable disposed for electrical connection to another con-

ductor, said connector comprising a plate having marginal edges and a relatively planar surface on which said conductor cable is adapted to be positioned, a bar secured to said plate in registry with one end thereof in spaced relation to said plate, to thereby define therewith an opening for passage of the cable when disposed on the plate therethrough for connection to said other conductor, said plate being further provided with a finger stud extending from one marginal edge overlying and spaced from said planar surface, and a blade member adapted to be positioned within a fold of said conductor cable and to be positioned on the plate underneath said bar, said blade having a marginally recessed portion for registration with said stud to snap thereover and then underlie the stud to thereby press the conductor cable against said planar surface.

3,159,448

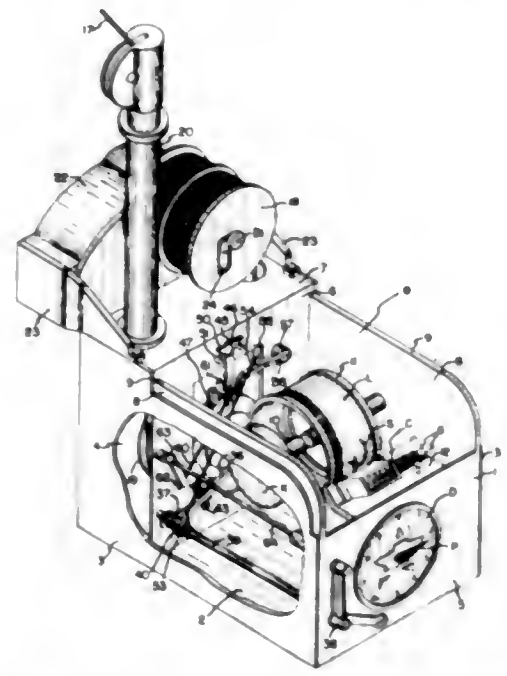
RECORDING APPARATUS FOR USE WITH WELL DRILLING EQUIPMENT

Oliver V. Phillips, Littleton, Colo., assignor to The Star Recorder Corporation of Denver, Denver, Colo., a corporation of Colorado

Filed Mar. 7, 1956, Ser. No. 570,116

8 Claims. (Cl. 346—33)

1. In a recorder for earth bore drilling apparatus, control means adapted for controlling the movement of a stylus relative to a constantly movable chart sheet in response to the rate of penetration and direction of vertical movement of a drill stem, a drive member connectable with the drill stem to reflect vertical movements of the drill stem, said control means comprising: mounting means including a bracket pivotally mounting said stylus relative thereto and carrying a stop to control the extent of pivotal movement of the stylus in one direction, said bracket being pivotal to positions corresponding to a first and second base position for said stylus; first means normally connected for movement by said drive member to selectively pivot the stylus at predetermined intervals corresponding to the distance of penetration of the drill stem when the stylus is disposed for recording along said first base position on the chart; shifting means connected to said mounting means and being operative through adjustment of said bracket and stop to shift the stylus to said second base position on the chart for recording the direction of vertical movement of the drill stem during operations other than drilling while simultaneously shifting said first means out of connection to said drive member; and second means connected to said drive member for limited pivotal movement therewith including a cam member con-



tacting said bracket to pivotally position it in said base positions, said second means being operative in response to actuation of said shifting means to move said cam member to position said bracket and stylus to the second base position and thereafter to translate the direction of movement of the drill stem through said cam member for pivotal movement of the stylus in a corresponding direction.

CHEMICAL

3,159,449

MODIFIED STEREO REGULATED POLYOLEFIN FILAMENTARY ARTICLES AND PROCESS FOR PRODUCING SUCH ARTICLES

Max Levine, Cleveland Heights, and Beryl M. Kuhn, Rocky River, Ohio, assignors, by mesne assignments, to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,455

6 Claims. (Cl. 8—130.1)

1. A process for modifying stereo regulated polyolefin filamentary articles comprising applying to stereo regulated polyolefin filamentary articles having a crystallinity index of more than 51, at least about 2%, by weight, of a surface active agent, drawing the coated filamentary articles more than 1.5 times their original length and at least to the point where surface cracking results, introducing a modifying substance into the surface cracks, and shrinking the modified filamentary articles in a substantially relaxed condition to contract the surface cracks and thereby lock the modifying substance into the filamentary articles.

3,159,450

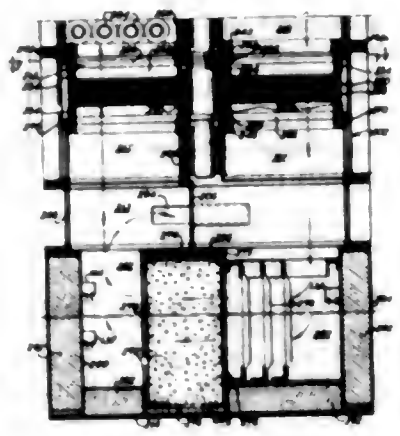
CATALYTIC REACTOR AND METHOD FOR CONTROLLING TEMPERATURE OF THE CATALYST BED THEREIN

Gunnar C. F. Asker, Princeton, N.J., and Gert K. A. Siggelin, Falls Church, Va., assignors, by mesne assignments, to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Continuation of application Ser. No. 714,588, Feb. 11, 1958. This application Nov. 29, 1962, Ser. No. 242,039

20 Claims. (Cl. 23—1)

15. The method of controlling the temperature of a catalyst bed comprising partially heating influent gaseous reagents passed to said bed in heat exchange with effluent gaseous reaction products withdrawn after reactive contact with said bed, further heating the influent gas to said bed by heat supplied only extraneously of heat exchange between said catalyst bed and gases in said system, controlling the temperature of said bed by by-passing a controlled quantity of effluent gases of said reaction from heat ex-



change with the influent gas and simultaneously terminating supply of extraneously supplied heat to the influent gas responsive to the approximate temperature of said bed.

3,159,451

PREPARATION OF SOLID BORON COMPOUND

Frank C. Gunderloy, Jr., Menlo Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1960, Ser. No. 63,216
1 Claim. (Cl. 23—14)

The process for preparing hydrazino-bis-borane polymer having the empirical formula of substantially $B_2N_2H_6$ which comprises rapidly heating solid hydrazine monoborane, said solid essentially consisting of boron, nitrogen and hydrogen having the composition

$$N_2H_4 \cdot BH_3$$

to a decomposition temperature in the range of 50° to 180° C. to melt the hydrazine monoborane solid with a minimum sublimation of the hydrazine monoborane, continuing the heating to decompose the molten hydrazine monoborane with evolution of 2 moles of hydrogen and 1 mole of hydrazine per 2 moles of the hydrazine monoborane decomposed to the hydrazino-bis-borane polymer until the hydrazine monoborane is converted to said polymer, and recovering said polymer substantially free of hydrogen gas, hydrazine, and unreacted hydrazine monoborane.

3,159,452

PROCESS FOR RECOVERING THORIUM AND RARE EARTH VALUES

Bernard J. Lerner, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 19, 1960, Ser. No. 9,882
3 Claims. (Cl. 23—14.5)

1. A process of recovering thorium and rare earth values from ores containing the same together with substantial amounts of calcium which comprises: treating the ore in finely divided condition with an aqueous solution containing sulfur dioxide to obtain an aqueous liquid reaction product having dissolved therein calcium, thorium and rare earth metal bisulfites, selectively precipitating calcium from said aqueous liquid reaction product by converting the said thorium, calcium and rare earth metal bisulfite compounds to the respective metal sulfate compounds, separating the precipitated calcium sulfate from the aqueous liquid reaction product, and thereafter treating the remaining liquid reaction product to separate the thorium and rare earth values therefrom.

3,159,453

BERYLLIUM OXIDE EXTRACTION PROCESS

Wendell J. Biermann, Winnipeg, Manitoba, Canada, assignor, by mesne assignments, to Beryloy Limited (No Personal Liability), Winnipeg, Manitoba, Canada

Filed Apr. 19, 1961, Ser. No. 104,176
7 Claims. (Cl. 23—18)

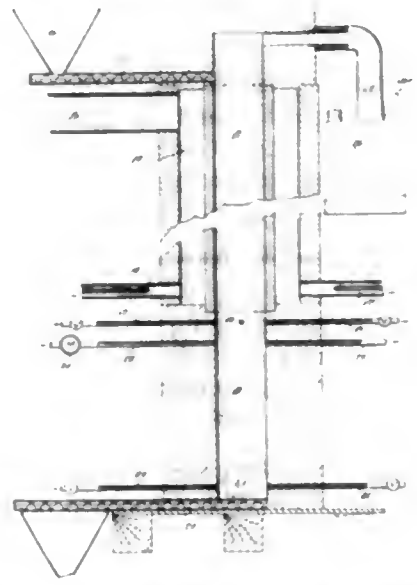
1. The process of separating beryllium oxide from a mixture of metallic oxides including at least beryllium oxide and aluminum oxide, comprising introducing such mixture into a solution of a soluble beryllium salt selected from the group consisting of beryllium sulphate, beryllium nitrate, beryllium perchlorate, beryllium chloride and beryllium acetate to dissolve out the beryllium oxide while leaving the aluminum oxide substantially undissolved and then recovering the beryllium oxide from the solution.

3,159,454

RECOVERING TiO_2 FROM ILMENITE

Barnard O. Wilcox, 10033 Des Moines Way, Seattle 88, Wash.

Filed Sept. 26, 1960, Ser. No. 58,575
4 Claims. (Cl. 23—202)



1. A method of treating the iron titanium oxide ores such as ilmenite to recover the titanium in the form of titanium oxide crystals which consists in passing the ore material in granular form and free of my added reducing agent gradually downwardly in an elongated column, heating the upper portion of said column to bring the material therein to a temperature of about 1090 degrees C., forcing chlorine gas into the column at the bottom of the heated area thereof and upwardly through the downwardly moving granular material and gradually increasing the concentration of chlorine in the granular material as the material moves down through the heated area by combining iron in the ore with chlorine as fast as the chlorine rising through the material replaces the air and attacks the iron, circulating a neutral gas upwardly through the lower unheated portion of the column and drawing off the neutral gas from the column below the level of chlorine admission to the column.

3,159,455

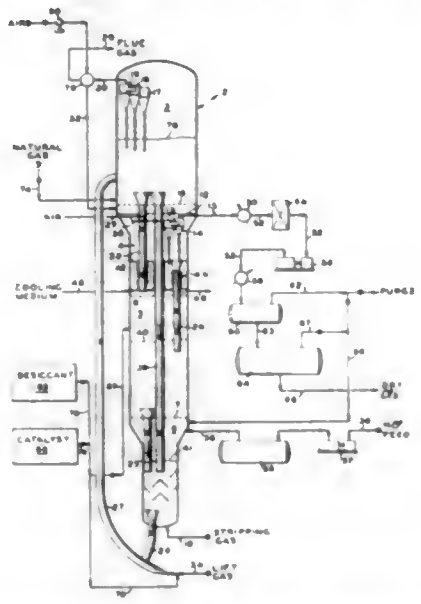
PROCESS FOR THE CATALYTIC PRODUCTION OF HALOGEN UNDER FLUIDIZED REACTION CONDITIONS

George T. Skaperdas, Fresh Meadows, and Warren C. Schreiner, East Norwich, N.Y., and Shelby C. Kurzius, Princeton, N.J., assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Filed Aug. 2, 1961, Ser. No. 128,861
12 Claims. (Cl. 23—216)

1. A process for the production of halogen which comprises the steps in combination: catalytically reacting an

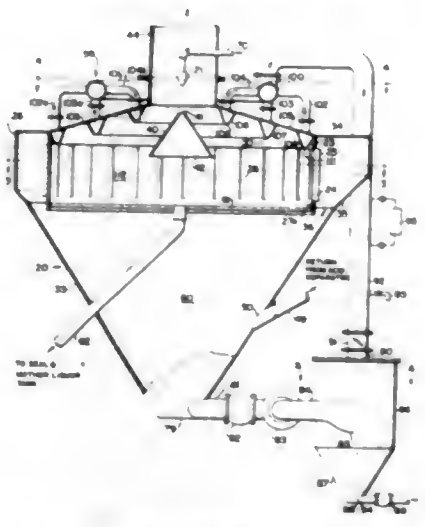
inorganic halide with a compound containing oxygen in a reaction zone at elevated temperature in the presence of a desiccant to effect the formation of halogen and water; fluidizing the desiccant during the reaction and absorbing the water in the desiccant as it is formed; passing the desiccant contacted product effluent to a cooling zone containing a separate bed of desiccant; separating the resulting reaction product effluent from the desiccant in the cooling zone and recovering the cooled, dry product containing halogen as the product of the process.



3,159,456
APPARATUS FOR PRODUCING AMMONIUM SALT CRYSTALS

William G. A. Schulze, Ontario, Calif.; Hertha M. Schulze, executrix of said William G. A. Schulze, deceased

Filed May 6, 1959, Ser. No. 811,326
5 Claims. (Cl. 23—260)

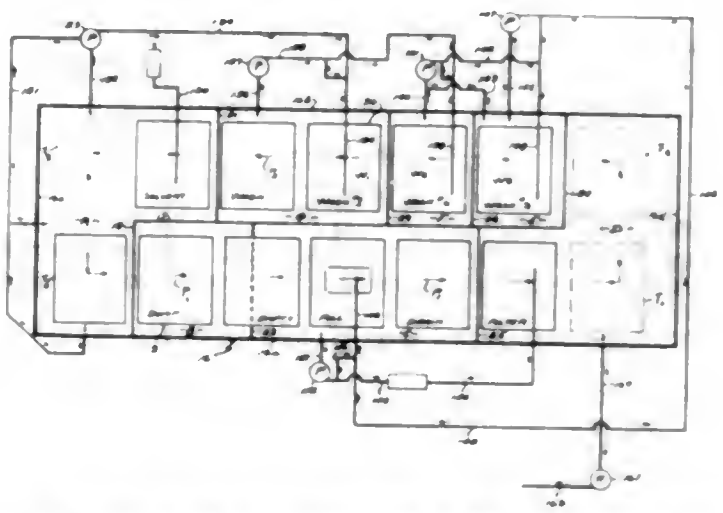


1. An apparatus for producing ammonium salt crystals by scrubbing an ammonia-containing gas with an acid-containing ammonium salt liquor, comprising a vertical vessel containing a conical lower portion, an annular gas duct in the upper portion of said vessel, a gas scrubbing chamber surrounded by said gas duct, the bottom portions of said duct and scrubbing chamber being in open communication with the lower conical portion of said vessel, the inner wall of said gas duct containing a plurality of slots at spaced intervals therealong and having guide and deflector vanes associated therewith, for the projection of gas in a substantially horizontal direction from said duct tangentially into the outer periphery of said scrubbing chamber to form a whirling cyclone of gas in said scrubbing chamber, adjustment means carried by said inner wall of said gas duct for regulation of the size of said slots, a liquor distributor disposed at the top of said vessel above said scrubbing chamber and arranged to discharge liquor throughout the cross-sectional area of said scrubbing chamber, a gas outlet at the top center of said vessel, a gas guide cone within said scrubbing chamber the apex of which is adjacent to said gas outlet, and outlet means in the lower portion of said vessel for withdrawing a slurry of salt crystals from said vessel.

3,159,457
SOLVENT EXTRACTOR AND SOLVENT EXTRACTION

Carl W. Zies, Lakewood, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York

Filed Oct. 13, 1960, Ser. No. 62,368
1 Claim. (Cl. 23—270)



A solvent extractor comprising. a fluid retaining housing. track members extending generally horizontally through said housing and having first, second, third and fourth linear path segments, the track members of each segment connecting with the track members of the next previous segment and extending outwardly at approximately a right angle thereto to define a closed extraction path generally rectangular in configuration, a plurality of separate material containers, means for advancing each of said containers separately and in tandem along the track members of each path segment and including means for transferring each of said containers between each path segment, means for directing a charge of extract bearing material and solvent material simultaneously into one of said containers and defining a fill position along said first path segment, a group of separate fluid retaining tanks formed in said housing underlying the containers in said extraction path, a fluid circulation system in communication with each of said tanks being operable to transmit solvent and extract bearing material therebetween, a first tank of said group in said first path segment defining a first drain position spaced from said fill position in the direction of container travel whereat as said one container is moved to said drain position, a solvent and extract bearing solution drains from said one container into said first tank, a second tank of said group in said first path segment spaced from said first drain position in the direction of container travel to define a filter position whereat solvent and extract bearing solution drains into said second tank as said one container is moved to said filter position, said circulation system including means operable to remove the solvent and extract bearing solution from said first tank and reinsert it into said one container as said container is moved to said filter position, and said circulation system including means operable to withdraw the solvent and extract bearing solution from said second tank for discharge from said housing, said second tank underlying additional portions of said first and second

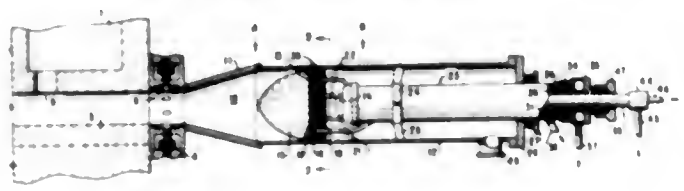
path segments to define an additional drain position thereat to permit solvent and extract bearing solution to drain into said second tank as said one container is moved to and along said second path segment, first, second, third and fourth tanks of said group disposed in tandem along said third path segment and defining corresponding separate first, second and third wash positions and a solvent position, said circulation system including means operable as said one container is moved successively to each of said wash positions to direct solvent and extract bearing solution in a counterflow direction relative to the container travel into said one container from the tank defining the next succeeding position along said third path segment whereby to wash said extract bearing material and provide additional solvent and extract bearing solution to drain into said underlying tanks at said wash positions, and said circulation system including means for directing solvent and extract bearing solutions from one of said tanks in said third path segment to the container then located at said fill position, means in said circulation system for directing fresh solvent into said one container as it is moved to said solvent position effective to remove any soluble material then remaining in said extract bearing material, said fourth tank underlying additional portions of said third and fourth path segments to define an additional drain position therealong to permit solvent and extract bearing solution to drain into said fourth tank as said one container is moved along said third and fourth path segments, and a third tank of said group in said first path segment spaced between said fill position and said fourth tank to define a dump position whereat the insoluble residue is removed from said one container preparatory to its being moved to said fill position.

3,159,458

QUENCH GUN FOR REACTOR PRODUCING ACETYLENE AND THE LIKE

Martinus Kolijn, Leonard W. Ter Haar, and Johannes A. Te Nuyl, all of The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 19, 1961, Ser. No. 118,010
Claims priority, application Great Britain, June 29, 1960, 22,774/60
8 Claims. (Cl. 23—277)



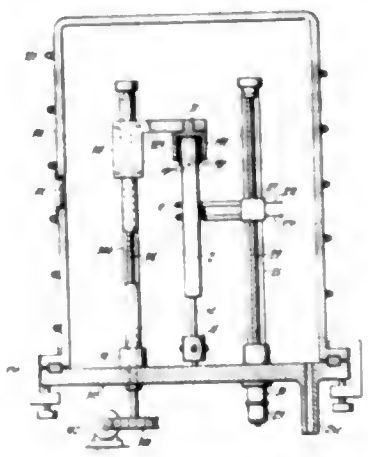
1. A reactor for effecting high-temperature, short-time pyrolytic reactions which comprises a closed vessel having a cylindrical wall of circular cross section, a partition wall within said vessel disposed at right angles to the axis of said spaces and compartmenting the vessel into a reaction space and a quenching space which are situated on opposite sides of the partition wall and are coaxially related, said partition wall having a circular periphery, being smaller than said cylindrical wall, and having a limited thickness to leave a short annular slot which is in direct and free communication with both said spaces for the rapid passage of reacting gas from the reaction space into the quenching space, said partition being imperforate within said periphery, means for continuously admitting reactants to said reaction space, an atomizing nozzle within said quenching space and directed toward said partition wall and positioned to emit a spray of coolant wholly within the quenching space toward said slot to engage said reacting gas immediately upon entering the quenching space, means for supplying a coolant to said nozzle, and an outlet for discharging quenched gas from the quenching space.

3,159,459

METHOD FOR PRODUCING SEMICONDUCTOR CRYSTALS

Wolfgang Keller, Pretzfeld, Upper Franconia, Schloss, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a German corporation

Filed Feb. 18, 1959, Ser. No. 794,075
Claims priority, application Germany, Feb. 19, 1958, S 57,004
3 Claims. (Cl. 23—301)



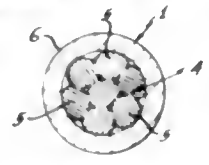
1. In a method of producing a semiconductor single crystal by processing an elongated piece of semiconductor meltable material by crucible-free floating zone melting, the method comprising seeding a location on said material with a monocrystal of said material, and comprising supporting the material in a vertical position, and heating a cross-sectional zone of said material to a temperature high enough to liquefy said material, the molten zone being sufficiently small so that the surface tension of the molten material retains it in said zone, and including displacing said zone-heating longitudinally with respect to said material to said location, the improvement in said method comprising employing as said monocrystal one whose area of contact with the piece of material is not greater than one tenth of the cross-sectional area of the latter.

3,159,460

COMPOSITE MATERIAL

James S. Hill, Cranford, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed June 28, 1962, Ser. No. 205,955
Claims priority, application Canada July 10, 1957
4 Claims. (Cl. 29—191.6)



2. A composite sheet material composed of identical metal layers having bonded therebetween a metal core consisting of a plurality of interfused wires in direct contact with the layers and of the same composition as the layers.

3,159,461

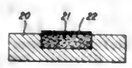
THERMIONIC CATHODE

Donald MacNair, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

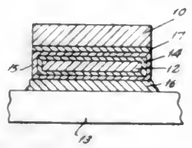
Filed Oct. 20, 1958, Ser. No. 768,154
5 Claims. (Cl. 29—195)

1. A cathode element comprising a metallic body member, a molded element consisting essentially of a sintered

mass of metallic powder, at least one alkaline earth oxide including barium oxide and an activator material therefor, and an emissive coating consisting essentially of at least one alkaline earth oxide including barium oxide, the arrangement being such that the said molded element is in intimate contact with the said body element, and such that the said coating substantially covers an entire exposed surface of the said molded element.

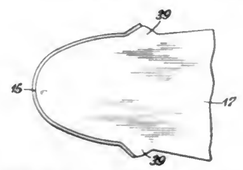


3,159,462
SEMICONDUCTOR AND SECURED METAL BASE AND METHOD OF MAKING THE SAME
Kurt Kadelburg, Los Angeles, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Sept. 24, 1962, Ser. No. 225,763
4 Claims. (Cl. 29—195)



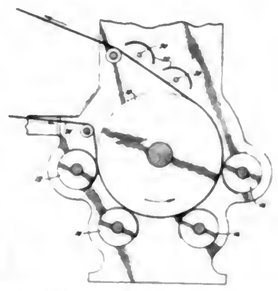
1. A semiconductor element which comprises:
(*a*) a silicon semiconductor wafer;
(*b*) a copper base for said wafer;
(*c*) a tungsten wafer for securing the silicon wafer to the copper base, said tungsten wafer being nickel-plated and bearing a coating constituted of a gold-boron alloy thereover; and
(*d*) a gold-germanium alloy solder bonding the silicon wafer to the gold-boron alloy coating on one side of the tungsten wafer, and bonding the gold-boron alloy coating on the opposite side of the tungsten wafer to the copper base.

3,159,463
WEAR-RESISTANT COMPOSITE ARTICLE
Neil J. Zachman, Willowdale, Ontario, Canada, assignor to Union Carbide Canada Limited, Ontario, Canada, a corporation of Toronto, Ontario, Canada
Filed Nov. 24, 1961, Ser. No. 154,600
1 Claim. (Cl. 29—196)



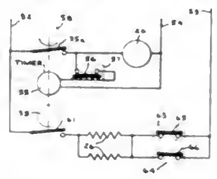
As a manufacture, a composite wear-resistant article of the class described which comprises a steel base member and a surface member of wrought cobalt-base alloy integrally joined thereto having a composition of between about 30 and 31 percent chromium, about 4.5 percent tungsten, between about 1.1 and about 1.6 percent carbon, up to 1.5 percent molybdenum, up to 3 percent nickel, up to 3 percent iron, up to 2 percent silicon, up to 2 percent manganese, the balance being substantially all cobalt, said base member and said surface member being joined by re-solidified fused metal consisting essentially of material derived from fusion of the adjoining portions of said base member and said surface member, the portion of said surface member remote from the base member being essentially in as-wrought form.

3,159,464
METHOD OF DRYING PRINTED WEBS
Harold C. Early and David B. Miller, Ann Arbor, Mich., assignors to Meredith Publishing Company, a corporation of Iowa
Filed Feb. 16, 1961, Ser. No. 89,756
4 Claims. (Cl. 34—4)



4. A method for drying a swiftly moving web printed with black, red, blue and yellow solvent-containing inks which comprises passing said web at a speed in excess of about 1000 feet per minute immediately adjacent a source of radiant energy in the range of 1 to 3 kilowatts per square inch of web and having a wave length predominantly in the range of 3000–5000 angstroms, thereby drying both the yellow and the darker colored inks simultaneously by instantaneous evaporation of the solvent.

3,159,465
CLOTHES DRYER CONTROL SYSTEM
Everett D. Morey, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 20, 1961, Ser. No. 97,078
8 Claims. (Cl. 34—45)



1. A clothes dryer comprising: means defining a drying chamber having first and second openings; inlet conduit means connected to said first opening; means for circulating a stream of air from said conduit means to said first opening, and through said chamber to said second opening; heating means in said conduit means for heating the air so as to dry damp fabrics in said chamber; first thermostatic means responsive to the temperature of the air entering said chamber, said first thermostatic means controlling said heating means so as to maintain substantially constant the temperature of air entering said chamber; second thermostatic means responsive to the temperature of the fabrics, said second thermostatic means also controlling said heating means and causing operation of said heating means to terminate after a predetermined fabric temperature is reached; bypassing means for causing substantially continual operation of said heating means independently of said first thermostatic means; and means for disabling said bypassing means prior to termination by said second thermostatic means of operation of said heating means after an initial period of continual operation of said heating means, whereby said first thermostatic means controls said heating means only during the latter portion of the drying operation.

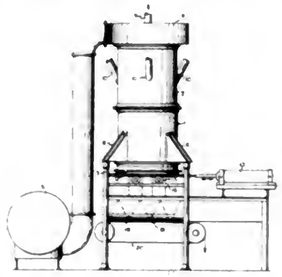
3,159,466
HAIR-DRYING HOOD
Marvin J. Nissman, Windemere, Wilmington, Del., assignor to Ronson Corporation, a corporation of New Jersey
Filed Jan. 26, 1962, Ser. No. 168,944
9 Claims. (Cl. 34—99)



1. A hair drying hood having an open bottom adapted for insertion of a user's head comprising securing means about the bottom edge of said open bottom for fitting said open bottom snugly about the head of the user, a head-receiving cover of substantially impervious flexible sheet material, a head-receiving lining of flexible sheet material attached peripherally to and disposed within said cover, said lining being substantially free of connection with said cover over substantially the entire crown area of said hood, whereby the inside of said cover and the outside of said lining form a static air space between them, the space enclosed within said lining being a head-receiving space, air outlet means in the front of said hood below the crown area of said lining in said head-receiving space, and a concentrated air inlet means in the lower rear portion of said hood communicating directly with said head-receiving space for introducing air into said hood below said crown area of said lining in said head-receiving space, said air inlet means being disposed to direct air generally upwardly along the rear of said hood and thence along and below said crown area of said lining toward said air outlet means in said front of said hood, and static pressure holes in said lining for connecting said static air space with said head-receiving space for creating a pressure within said static air space in response to the flow of air within said head-receiving space whereby parts of said lining adjacent said air outlet means are maintained closer to a head inserted within said hood than parts of said lining adjacent said air inlet means for evenly distributing the drying action of the air flowing through said hood.

3,159,467
APPARATUS FOR DRYING DISCRETE PARTICLES
Harry J. Pender, Parma, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 26, 1962, Ser. No. 212,653
2 Claims. (Cl. 34—174)

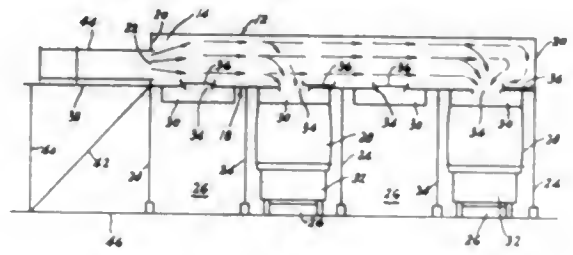
1. An apparatus for drying wet discrete particles of frit comprising a stationary enclosure having a passage extending therethrough, said passage having an entrance at one end thereof to receive a mass of discrete particles for movement therethrough along a path substantially parallel to the longitudinal axis of said passage, means including a blower connected to a source of hot, dry air, a manifold disposed about said passage entrance and communicating with said blower for conducting dry air to said passage entrance, a plurality of perforate air inlet ducts connected to said manifold and disposed in said passage, said ducts extending substantially the entire length of said passage and arranged generally parallel to the longitudinal axis of said passage for the introduction of said hot, dry air thereinto, at least one perforate exhaust duct which is disposed in said passage and communicating therewith through which moisture laden air is exhausted from said passage, a relatively stiff perforate member disposed within said passage and arranged circumferentially around the inner wall of said enclosure being spaced therefrom to provide a space for free circulation of air between said perforate member and said enclosure wall, said perforate exhaust duct communicating with said space and said passage for the discharge of said moisture laden air therefrom, said passage having an outlet opening through which dried discrete particles of said frit are discharged, means comprising a reciprocable flat plate disposed over and arranged to cover said outlet opening, said plate means having an aperture therein which is substantially of the same size of said outlet opening, a rotatable member mounted on said plate means, said rotatable member comprising a shaft having at least four vanes integral therewith and extending radially outwardly from the longitudinal axis of said shaft, said vanes being adapted to substantially close said aperture when opposed vanes are rotated to a position coincident with the surface of said plate means, a longitudinally reciprocable frame member, said rotatable member being journalled in said plate means and said plate means being fixed to said reciprocable frame member, a pinion gear secured on the shaft of said rotatable member, a gear toothed rack disposed on said reciprocable frame which is adapted to engage said pinion gear whereby upon reciprocation of said frame member, said shaft and vanes thereon are rotated in said outlet opening to cause the discharge of dried discrete particles of said frit outwardly from said passage.



3,159,468
OVERHEAD PLENUM CHAMBER FOR DRYING CROPS IN VEHICLES
Harry J. Hofmeister, Jr., New Holland, William T. Young, Fleetwood, and William Hobbs, Jr., Lancaster, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 4, 1961, Ser. No. 100,566
10 Claims. (Cl. 34—233)

7. A stationary drying structure for outdoor use comprising elongated sheet-like panel members having flanged interlocking means along the long sides thereof operable to connect said members together and also brace the connected panel members against sagging intermediately of the ends of said members, a pair of spaced eave means,

apex means positioned between said eave means and above the same, a plurality of said connected panel members extending transversely and angularly upward from said eave means to said apex means to form a gable-type roof, structural members extending transversely between said eave means in spaced relationship to define bays therebetween, supporting members depending substantially vertically from said eave means adjacent the ends of said structural members and of a length to dispose said structural members above a supporting surface sufficiently to permit a portable load of material to be disposed therebeneath for drying and the spaces between said supporting members being open to permit receiving such loads therethrough directly from the outside, an additional plurality of said connected panel members extending lengthwise between said structural members and transversely



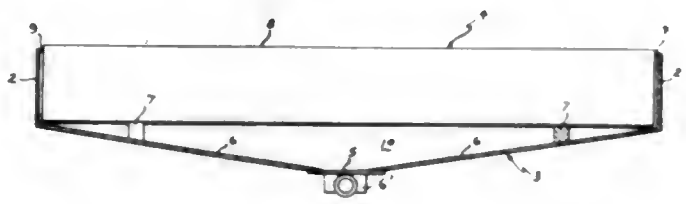
thereto for support at the ends thereof by said structural members to form a ceiling supported solely by said spaced structural members, end wall means extending substantially vertically between the edges of said panel members forming the roof and those forming the ceiling adjacent the ends of said structure to define a substantially air-tight plenum chamber, inlet means in one end of said chamber to receive drying air under pressure, outlet means in said ceiling operable to discharge heated air into loads of material positioned within said bays beneath said plenum chamber, and flexible shroud-like hoods surrounding said outlet means and extending downward therefrom for engagement with the sides of portable vehicles loaded with material to be dried and operable to prevent the escape of drying gases while passing between said outlet means and said loads of material.

3,159,469

GRADIENT TEMPERATURE NORMALIZER FOR SURFACE PLATES OR BLOCKS

Rudolph J. Rahn, Dayton, Ohio, assignor to Rahn Granite Surface Plate Company, Dayton, Ohio, a partnership

Filed Oct. 4, 1961, Ser. No. 142,965
3 Claims. (Cl. 34—243)



1. In combination, a surface plate at least one surface of which is formed as a reference plane for critical measurement of mechanical parts, a tray including sides and a bottom, means nesting said plate in said tray to expose said one surface of said plate in slightly elevated relation to said tray, said plate having the sides thereof in slightly spaced relation to the sides of said tray and its bottom spaced from the bottom of said tray, means connected at the bottom of said tray to apply a suction in said tray in a manner to draw air from an elevation substantially corresponding to that of said one surface of said plate and cause air from that elevation to flow directly about the plate sides and bottom whereby, in any one instant, to subject all surfaces of said plate to substantially the same temperature.

3,159,470

THERMALLY STABILIZED LIQUID HYDROCARBON FUELS

Phillip G. Abend, Chicago, Ill., and Elizabeth L. Fareri, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 21, 1961, Ser. No. 125,673
15 Claims. (Cl. 44—62)

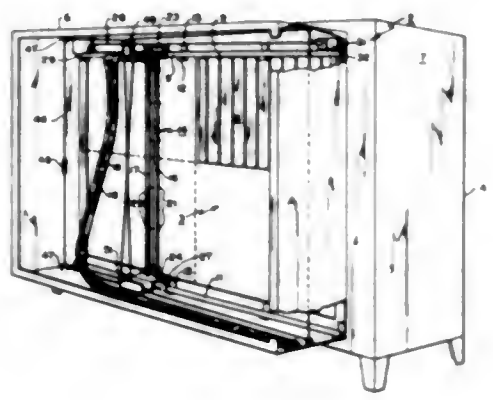
1. A fuel composition comprising a major amount of a normally thermally unstable liquid hydrocarbon mixture boiling in the aviation turbine fuel range and a small amount, sufficient to improve the thermal stability of said fuel composition, of an oil-soluble boron-containing copolymer of monomeric components each containing a copolymerizable ethylenic linkage, one of which monomeric components is a boron-free ester of an alpha-beta unsaturated carboxylic acid containing 3 to 5 carbon atoms whose ester substituent is an oleophilic saturated aliphatic hydrocarbon substituent containing 8 to 18 carbon atoms, where another of said monomeric components is a diester of a boronic acid whose boronyl substituent is a hydro carbon radical containing 2 to 18 carbon atoms, said diester having as at least one of its ester substituents an unsaturated aliphatic hydrocarbon radical containing 2 to 12 carbon atoms and an ethylenic linkage that is copolymerizable with the corresponding linkage of said boron-free monomeric component, and having as its other ester substituent a hydrocarbon radical containing 1 to 18 carbon atoms, and where another of said monomeric components contains an organic nitrogenous substituent that does not of itself form a part of the copolymer linkage, said nitrogenous substituent being associated with the group containing the copolymerizable ethylenic linkage through a linkage selected from the group consisting of ester, amine addition salt, amido and quaternary ammonium linkages, at least one of the N-substituents of said organic nitrogenous substituent being a hydrocarbon radical containing 1 to 18 carbon atoms, and the other of said N-substituents being selected from the group consisting of hydrogen and hydrocarbon radicals containing 1 to 18 carbon atoms, said boron-containing monomeric component and said nitrogenous monomeric component being present in the copolymer in a weight ratio of about 0.03 to 1:1 with respect to said boron-free monomeric component.

3,159,471

FLUID TREATING STRUCTURE FOR ELECTROSTATIC PRECIPITATORS

Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

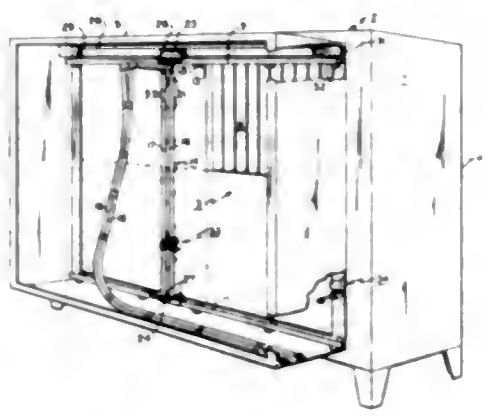
Filed Dec. 27, 1960, Ser. No. 78,357
3 Claims. (Cl. 55—118)



1. In an electrostatic precipitator including a housing having spaced opposed gas inlet and gas outlet openings and gas cleaning means disposed within said housing in-

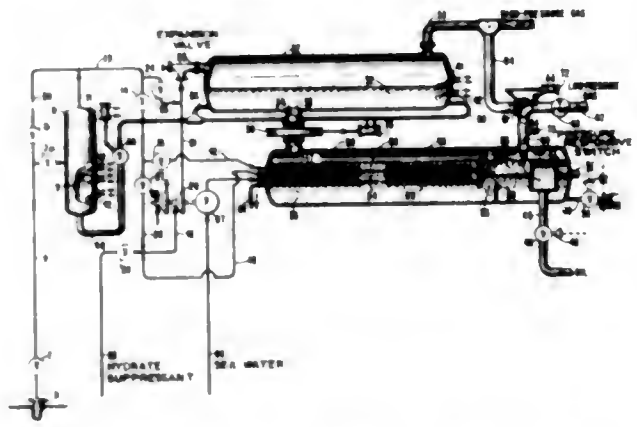
termediate said gas inlet and gas outlet openings and extending thereacross, a fluid treating structure for said gas cleaning means comprising spaced parallel upper and lower track members mounted in horizontally extending position adjacent to and on opposite sides of said gas inlet opening to extend beyond the extremities thereof, fluid header assembly means vertically extending between said spaced horizontally mounted track members and including fluid distributing nozzles positioned to distribute fluid to said gas cleaning means, spaced rollers rotatably mounted on said fluid header assembly means at the extremities thereof to engage with and ride on said track members, endless belt means including a pair of spaced sprockets rotatably mounted adjacent the opposite extremities of one of said track members and having an endless belt engaged thereon to provide upper and lower horizontal flights co-extensive with said track member, power means to drive one of said sprockets and said endless belt engaged thereon, a connecting arm including a body portion extending longitudinally of said endless belt between and connecting the adjacent extremity of said header assembly means with one of the flights of said endless belt, one end of said connecting arm being pivotally mounted to said fluid header assembly means with said body portion of said arm extending normal to the pivotal axis and along said endless belt, the other end of said arm being fixed to a portion of a flight of said endless belt, said body portion of said connecting arm being of a preselected length to insure fluid treatment along the over-all breadth of said gas cleaning means and yet sufficient to allow said end fastened to said endless belt to change from one flight thereof to the other, and stop means mounted on said header assembly in spaced relation from the pivotally mounted end of said connecting arm whereby said body portion of said connecting arm engages against said stop means at the moment said portion of said endless belt means to which said connecting arm is fastened enters one flight of the belt from the other.

3,159,472
ELECTROSTATIC GAS CLEANING APPARATUS
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Jan. 27, 1961, Ser. No. 85,237
7 Claims. (Cl. 55—118)



1. An electrostatic precipitator for treating a dirty gas stream comprising a housing having spaced opposed gas inlet and gas outlet openings, gas cleaning means disposed wtihin said housing intermediate said spaced openings, fluid header means including fluid distributing nozzles to distribute fluid to said gas cleaning means to provide fluid treatment for said gas cleaning means, power means connected to said fluid header means to reciprocate said fluid header means in a predetermined path of movement across a face of said gas cleaning means, actuating means on said header means, and control means including a squencing switch assembly to control the "on-off" flow of fluid to said header means, said sequencing switch assembly including a switch, a switch operating member and a movable programming member connected to said switch operating member, said programming member being positioned in the path of movement of said actuating means on said header to be moved a preselected increment with each pass of said header to thereby program said switch operating member to selectively operate said switch and control the "on-off" flow of fluid to said header means in accordance with a preselected number of passes of said fluid header means across the frame of said gas cleaning means.

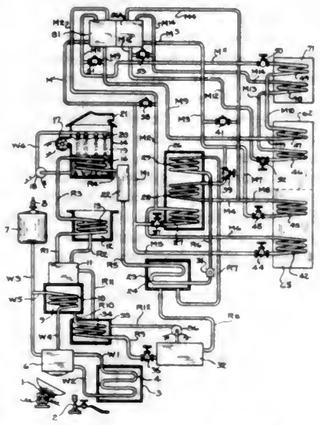
3,159,473
LOW-TEMPERATURE DEHYDRATION OF WELL FLUIDS
Douglas C. Meyers and Clifford L. Barr, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 19, 1960, Ser. No. 50,777
23 Claims. (Cl. 62—12)



1. The method of dehydrating a high-pressure, gas-containing well stream which comprises the steps of: expanding at least the predominantly gaseous portion of said well stream to a superatmospheric separating pressure below that of the well stream and introducing the said portion into a confined separating zone at a temperature below that at which hydrates are formed at the said separating pressure; precipitating non-gaseous constituents including hydrates from said admitted portion within said zone and thereby forming therein a stratum of slush; withdrawing residual gas substantially at said separating pressure from said zone; transferring said slush from said separating zone to a confined melting zone; melting the hydrates in said slush within said melting zone at a pressure lower than said separating pressure; and discharging liquid from said melting zone.

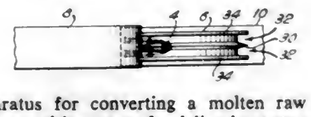
3,159,474
SALT WATER CONVERSION PLANTS
Herbert J. Moloney, 3020 Oak Knoll Drive, Redwood City, Calif.
Filed May 21, 1962, Ser. No. 196,137
18 Claims. (Cl. 62—58)

16. A method of converting salt water into fresh water which comprises the following steps; filling heat insulated tanks with salt water; compressing refrigerant by a force provided by reducing the temperature of a confined liquid to below its fusion temperature by causing heat transference from said confined liquid to a colder substance brought in direct contact with the confined liquid without causing chemical reaction or combination between the two while restraining the expansion of the confined liquid with such force to prevent its solidification; passing enclosed refrigerant vapor through sail salt water while agitating same to cause the freezing thereof; washing the



resultant ice with fresh water; draining the resultant saline solution from said tanks; melting the ice and draining the melted ice from said tanks.

3,159,475
APPARATUS FOR FORMING FIBERS
Alwin B. Chen, Somerville, and Paul J. Desnoyers, North Plainfield, N.J., and Adolph W. Strauss, Richmond, Ind., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed May 5, 1955, Ser. No. 506,288
4 Claims. (Cl. 65—15)



2. Apparatus for converting a molten raw material into fibers comprising means for delivering a stream of said material, fiberizing means including an annular fiberizing surface, and a distributor roll having a periphery positioned to receive said stream and discharge said material onto said fiberizing surface, said periphery including an outwardly projecting annular ridge located at an intermediate portion thereof to intercept and spread said stream, and an annular groove-like area at each side of said ridge.

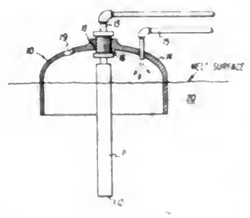
3,159,476
METHOD OF INHIBITING THE SPROUTING OF POTATOES
David W. Young, Homewood, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 5, 1962, Ser. No. 207,806
4 Claims. (Cl. 71—2.7)

1. The method of inhibiting the sprouting of potatoes which comprises applying to said potatoes in an amount sufficient to inhibit sprouting isooctenyl alcohol selected from the group consisting of 2-hydroxymethyl-4, 4 dimethyl pentene-1 and 2-hydroxymethyl-4, 4 dimethyl pentene-2.

3,159,477
PROCESS FOR PRODUCING ACIDIC SOIL CONDITIONER CONTAINING CHELATED PLANT NUTRIENTS
Harold W. Wilson, P.O. Box 1101, El Paso, Tex.
No Drawing. Filed Oct. 30, 1961, Ser. No. 148,707
1 Claim. (Cl. 71—62)

A process which comprises (1) intimately admixing while dry (*a*) finely divided reverberatory copper refining slag having a typical analysis comprising about 30 percent by weight of silicon dioxide, about 15 to 35 percent by weight of iron, a total of approximately 16 to 22 percent by weight of calcium, aluminum, magnesium and manganese (expressed as oxides), approximately 1 percent by weight of sulfur, approximately 7 percent by weight of combined oxygen and approximately 2 to 4 percent by weight of zinc, copper, lead, boron and molybdenum, at least 70 percent by weight of which slag passes a 200 mesh U.S. Standard Sieve, and (*b*), an amine selected from the group consisting of acetic acid amine, acetic acid alkanolamine, amine mineral acid addition salt and alkanolamine mineral acid addition salt and (2) stirring into the intimate slag/amine admixture an aqueous mineral acid solution having a temperature of from 240° to 300° F. and selected from the group consisting of (*a*) sulfuric acid having a concentration in water of from 55 to 66 percent by weight, (*b*) phosphoric acid having a concentration in water of from 60 to 65 percent by weight and (c) a mixture of said aqueous sulfuric acid solution and said phosphoric acid solution; the slag/water/(mineral acid) weight ratio being within the range of 10/(3 to 5)/(5 to 8); and the amount of the amine being from about 1 to about 20 percent by weight of the total of slag, mineral acid and water.

3,159,478
PROCESS AND APPARATUS FOR TREATING MOLTEN METALS
Roy F. Gottschalk, Homewood, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed July 28, 1960, Ser. No. 45,861
1 Claim. (Cl. 75—93)



In a process for degassifying and cleaning a molten metal containing gaseous hydrogen by injecting an inert gas below the surface of said molten metal, whereby the gaseous impurities and injected inert gas are diffused to a point above the surface of said molten metal, the improvement in combination therewith which comprises the simultaneous steps of

(*a*) injecting a stream of said inert gas below the surface of said molten metal

(*b*) collecting said injected inert gas and diffused gaseous impurities in a confined space above the surface of said molten metal, said confined space being directly above the locus of injection of said first inert gas,

(*c*) introducing a second stream of an inert gas different from said first stream into said confined space above the surface of said molten metal, said introduction being directly above the locus of injection of said first inert gas, and

(*d*) purging the resulting mixture of diffused gaseous impurities and inert gases into the external atmosphere.

3,159,479
AUSTENITIC CHROMIUM-NICKEL STAINLESS STEELS RESISTANT TO STRESS-CORROSION CRACKING
Harry R. Copson, Cranford, and Frances S. Lang, White House Station, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 28, 1962, Ser. No. 240,736
4 Claims. (Cl. 75—128)

1. An austenitic chromium-nickel stainless steel highly resistant to stress-corrosion cracking when subjected to stress and in contact with halide solutions, said steel consisting essentially of about 20% to 30% nickel, about 16% to about 25% chromium, at least 0.07% and up to 0.09% carbon, up to 1.5% silicon, phosphorus in an amount up to not more than 0.015%, nitrogen in an mount up to not more than 0.035%, the sum of the phosphorus plus nitrogen not exceeding 0.045%, up to 0.7% manganese and the balance essentially iron.

3,159,480
AUSTENITIC CHROMIUM-NICKEL STAINLESS STEELS RESISTANT TO STRESS-CORROSION CRACKING
Harry R. Copson, Cranford, and Frances S. Lang, White House Station, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 28, 1962, Ser. No. 240,737
6 Claims. (Cl. 75—128)

1. An austenitic chromium-nickel stainless steel highly resistant to stress-corrosion cracking when subjected to stress and in contact with halide solutions, said steel consisting essentially of about 20% to about 30% nickel, about 16% to about 25% chromium, about 1.9% to about 2.5% silicon, carbon in an amount up to 0.03%, phosphorus in an amount up to not more than 0.015%, nitrogen in an amount up to 0.035%, the sum of the phosphorus plus nitrogen not exceeding 0.045%, up to 0.7% manganese, and the balance essentially iron.

3,159,481
BRAZING ALLOY COMPOSITION AND METHOD FOR MAKING SAME
John R. Horrigan, Champaign, Ill., and William T. Kaarlela, Fort Worth, Tex., assignors to General Dynamics Corporation (Convair Division), San Diego, Calif., a corporation of Delaware
No Drawing. Filed Dec. 24, 1959, Ser. No. 861,770
3 Claims. (Cl. 75—173)

1. A brazing alloy composition consisting of 4% to 13% by weight of aluminum, .05% to .4% by weight of manganese, .2% to .75% by weight of lithium, and 86.6% to 95.9% by weight of silver.

3,159,482
METHOD OF MANUFACTURING A SINTERED METAL TUBE
Michel Eudier, 3 Rue Andrieux, Paris, France
Filed Feb. 24, 1961, Ser. No. 91,348
Claims priority, application France Mar. 11, 1960
10 Claims. (Cl. 75—200)

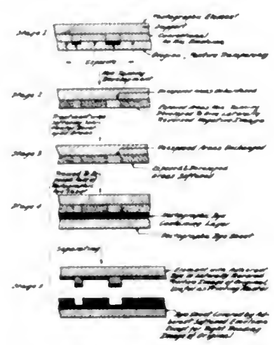


1. A method of manufacturing a sintered metal tube, which comprises forming a mixture of powdered metal and a binding agent into a tubular shape, locating the thus-formed metal powder tube with a clearance in an outer tube of refractory material disposed at an angle to the horizontal, the clearance between the metal powder tube and the outer tube being sufficient to prevent their coincidence during sintering, rotating the outer tube about its longitudinal axis at a speed of rotation corresponding to at least one revolution during the period of the sintering thereby rolling the powder metal tube inside the outer tube during rotation of the latter tube, and supplying heat to sinter the metal powder tube.

3,159,483
PROCESS FOR THE PREPARATION OF ELECTRO-PHOTOGRAPHIC REVERSED IMAGES
Hans Behmenburg, Martha Tomanek, Wilhelm Neugebauer, and Kurt-Walter Klüpfel, all of Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed June 17, 1960, Ser. No. 36,749
Claims priority, application Germany July 14, 1959
19 Claims. (Cl. 96—1)

1. A photographic reproduction process for the production of reversed images of improved coverage which comprises exposing an electrostatically charged supported homogeneous photoconductive insulating layer comprising an organic photoconductor and a wax to light under a master and developing the resulting electrostatic latent image by contact with a developer containing particles having an electric charge of the same polarity as that of the electrostatic latent image.

3,159,484
METHOD FOR PREPARING SPIRIT DUPLICATING MASTERS
Albert Emiel Van Hoof, Berchem-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Dec. 2, 1960, Ser. No. 73,209
Claims priority, application Great Britain, Dec. 2, 1959, 41,019/59
7 Claims. (Cl. 96—28)



1. A process of photographically preparing a spirit duplicating master, adapted to produce direct reading copies of a direct reading original to be copied in a spirit duplicating process, by the steps comprising:

(1) photographically exposing to the original to be copied a silver halide emulsion layer to produce in the exposed areas of said area a latent photographic image of said original, said image being negative to said original;

(2) developing said emulsion layer with a non-tanning developing solution to form in said exposed areas a developed silver image of said original;

(3) treating said emulsion layer with a peroxide-containing aqueous solution to soften said developed areas of said layer, the unexposed areas thereof being maintained unsoftened;

(4) pressing the emulsion layer with the softened and unsoftened areas intact thereon and in substantially coplanar relationship, into direct contact with a hectographic dyestuff-containing layer of a hectographic dye sheet, said layer being free of protective coating, to transfer a portion of the softened, developed portion of said layer to said dye-containing layer and a portion of the dye-containing layer to the unexposed, unsoftened areas of said emulsion layer; and

(5) separating the sheet and emulsion layer with the transferred portions respectively retained thereon

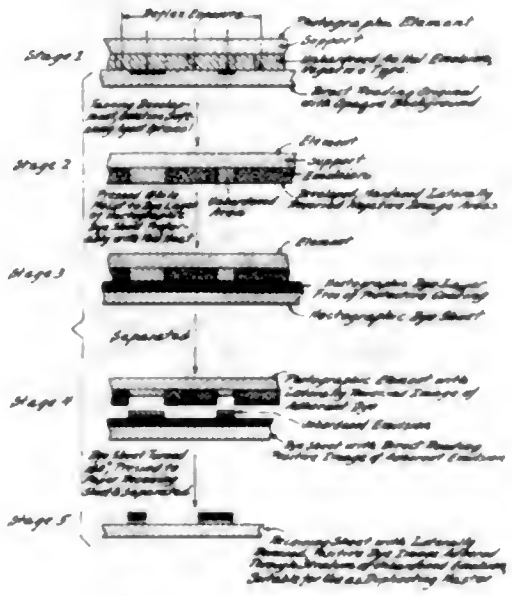
whereby said sheet and emulsion layer are selectively adapted to serve as said spirit duplicating master.

3,159,485

SPIRIT DUPLICATING PROCESS

Albert Emiel Van Hoof, Berchem-Antwerp, and George Arthur Holvoet, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

Filed Feb. 21, 1961, Ser. No. 101,614
Claims priority, application Great Britain Feb. 23, 1960
12 Claims. (Cl. 96—28)



1. A method of producing a printing master, adapted to produce direct-reading copies of a direct-reading original to be copied, for use in a spirit duplicating process, by the steps comprising:

(1) Exposing a silver halide emulsion layer to the original to be copied to produce on said layer a latent photographic image of said original;

(2) Developing said emulsion layer with a developing solution in the presence of a tanning development agent to produce a developed photographic image of said original having increased gelatin hardness in the areas where the silver halide has been reduced to silver;

(3) Pressing the developed emulsion layer while still moist with said developing solution and with the hardened and unhardened areas of said layer intact and in substantially coplanar relationship directly against a hectographic dye-sheet bearing a layer containing a hectographic free of protective coating;

(4) Separating said sheet and layer with simultaneous transfer to said dye-containing layer of a stratum of emulsion from those areas of the emulsion layer where the silver halide is unreduced;

(5) Pressing said dye-containing layer with the transferred stratum of emulsion thereon against a receptor sheet, and

(6) Seperating said dye-sheet and said receptor sheet with simultaneous transfer to said receptor sheet of the stratum of emulsion from said dye-containing layer together with adherent material from said dye-containing layer

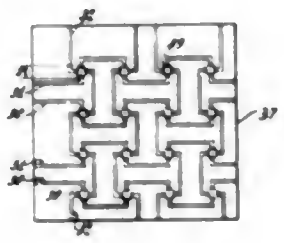
whereby said receptor sheet is provided with a relief image of the original comprising external dye-containing material adhered to said receptor sheet through a stratum of emulsion.

3,159,486

METHOD OF MAKING ELECTRICAL CONDUCTORS

Clifford W. Henderson, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 3, 1959, Ser. No. 804,018
9 Claims. (Cl. 96—36)





5. In a method of forming desired patterns of electrical conductors on the surfaces of a thin insulated sheet with the said patterns being interconnected with each other along desired parts of side portions of said sheet, the steps of coating said sheet surfaces and side portions with conductive metallic coating, applying a photoresist material over said coating, exposing by a diffused light source said photoresist through photographic negative masks of said desired patterns while said masks extend beyond said side portions, and the said masks are in register, opaque portions of said masks preventing exposure of said photoresist along at least part of said side side portions and transparent portions of said masks permitting exposure of said photoresist along said desired parts of said side portions, and removing the unexposed photoresist and the coating lying thereunder, whereby said desired interconnected winding patterns are provided by the remaining portions of said metallic coating.

6. In a method of forming desired patterns of electrical conductors on the surfaces of a thin insulated sheet, with the said patterns being interconnected with each other along desired part of side portions of said sheets, the steps as recited in claim 5, wherein said sheet is in the form of a thin, insulated strip of magnetic material, and wherein the said patterns of electrical conductors are interconnected along the side edges of said insulated strip.

3,159,487

PHOTOSENSITIVE DIAZOTYPE MATERIAL COMPRISING A STARCH, SILICA AND A BINDER

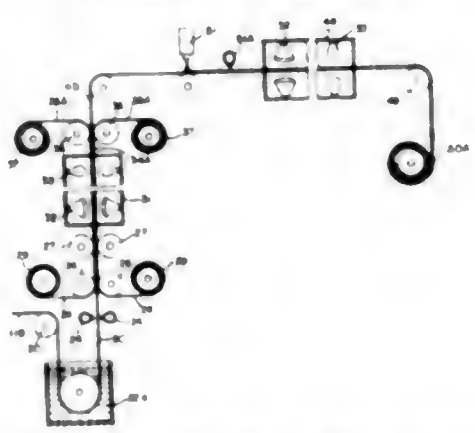
Wilhelm A. Krieger, Summit, and Leonard May, Union, N.J., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 21, 1961, Ser. No. 139,588
9 Claims. (Cl. 96—75)

5. A photosensitive diazotype material comprising a paper sheet and a photosensitive diazotype layer coated on said sheet, said layer comprising non-swollen starch

particles selected from the group consisting of corn starch particles, tapioca starch particles, potato starch particles, wheat starch particles, sago starch particles, arrowroot starch particles, barley starch particles, sorghum starch particles, sweet potato starch particles and waxy maize starch particles, an organic binder selected from the group consisting of polyvinyl actates, casein, caseinates, gelatin, gum arabic and hydroxyethyl cellulose, finely divided silica, and a photosensitive diazonium compound, said starch particles having a particle size range of 2 microns to 100 microns with an average particle size of at least 10 microns, said silica having a particle size range of 0.015 micron to 10 microns with an average particle size no greater than 1 micron.

3,159,488
STABLE PHOTOGRAPHIC MATERIAL AND METHOD OF MAKING SAME
John J. O'Connor, Fort Lee, and Samuel K. Held, Secaucus, N.J., assignors to Keuffel & Essen Company, Hoboken, N.J., a corporation of New Jersey
Filed Sept. 28, 1959, Ser. No. 842,894
16 Claims. (Cl. 96—85)



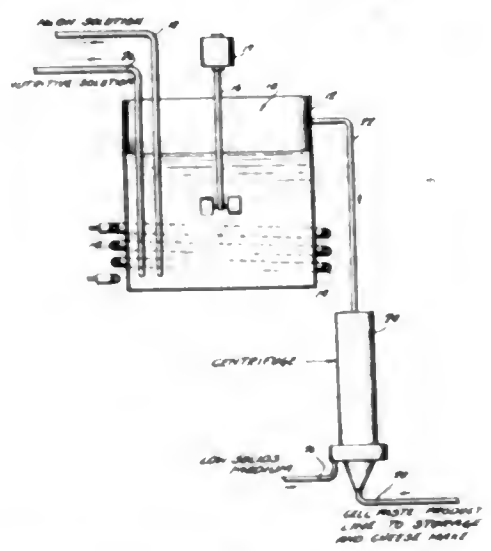
1. The method of making a resin impregnated cloth of uniform thickness comprising applying to a cloth base a solution of resin comprising a polyester resin which is the reaction product of a member selected from the group consisting of ethylenically unsaturated dicarboxylic acids and anhydrides with dihydric alcohols, and further comprising styrene, benzoylphenylcarbinol and a peroxide, treating the impregnated cloth base by applying a regenerated cellulose derivative to the surfaces thereof, applying ultraviolet radiation, and heat to the resin impregnated cloth thereby curing the resin resulting in a stable resin impregnated cloth.

6. A photographic material comprising a base fabric impregnated with a polybutene resin and a polyester resin, at least one sheet of a hydrophilic cellophane material bonded to one surface of said base fabric, and a photographic coating on said at least one sheet of hydrophilic cellophane material.

3,159,489
ANTEMORTEM INJECTION OF FLAVORING IN POULTRY
John F. Murphy, Chicago Heights, Ill., and Robert E. Murphy, Union, Mo., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 14, 1960, Ser. No. 75,684
8 Claims. (Cl. 99—107)

1. A method for enhancing the flavor of meat derived from live fowl comprising: subcutaneously depositing in live fowl the enzyme hyaluronidase and a seasoning agent; holding said fowl for a time sufficient to permit said enzyme to disperse said seasoning agent into the vascular system of said fowl to insure a substantially uniform distribution throughout the body thereof; and dispatching prior to the elimination of said seasoning agent from the body of said fowl.

3,159,490
MANUFACTURING SWISS CHEESE USING *PROPIONIBACTERIUM SHERMANII*
Ralph V. Hussong, Deerfield, and Myro Purko, Evanston, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 239,017
1 Claim. (Cl. 99—116)



An improved method for the manufacture of Swiss cheese, comprising, in combination, the steps of culturing *Propionibacterium shermanii* bacteria in a nutritive medium, concentrating and separating bacterial cells from the nutritive medium to provide *Propionibacterium shermanii* cell paste, inoculating milk which is to be made into cheese with the *Propionibacterium shermanii* cell paste, and making and curing cheese therefrom.

3,159,491
CHEWING GUM CONTAINING POLYOLEFINES
Marvin H. Mahan, 2250 Woodland Terrace, Scotch Plains Township, Union County, N.J.
No Drawing. Filed Mar. 7, 1962, Ser. No. 177,971
4 Claims. (Cl. 99—135)

1. A chewing gum composition consisting essentially of a

(1) sweetener,
(2) flavoring material, and
(3) a mixture of the amorphous and crystalline forms of a solid polymer of a 1-olefine selected from the group consisting of
polyethylene,
polypropylene, and
a copolymer of ethylene and propylene,

said polymer mixture having a density below about 0.95 gram per cubic centimeter,
and having the crystalline form of the polymer present in an amount less than 50% of the total weight.

3,159,492
DRY MILK POWDER MIXTURE AND METHOD AND APPARATUS FOR MAKING THE SAME
Irving Rubenstein, Staten Island, N.Y., assignor to Weissglass Gold Seal Dairy Corp., Staten Island, N.Y., a corporation of New York
Filed Feb. 28, 1963, Ser. No. 261,671
5 Claims. (Cl. 99—203)

1. In the method of making a dry milk powder mixture with additives, the step of forming a solution of concentrated skim milk and heating the concentrated skim milk to about 165° F., providing independently of the skim milk solution a solution of at least one additive from the group consisting of phosphate salts, and sulphate salts and vitamin C such that the dry weight of the additive will be not greater than 5% by weight of the final dry milk powder mixture, spray drying the hot concentrated

skim milk by subjecting it to a sub-atmospheric pressure to flash off a substantial portion of the moisture content of the skim milk and to form a dry milk powder mixture, and metering the additive solution into the hot concentrated skim milk solution substantially instantaneously with the time that the concentrated skim milk is subjected to the sub-atmospheric pressure with dispersion of the additive in the skim milk whereby a dry milk powder mixture is formed having additive uniformly distributed therein.

3,159,493

METHOD OF STERILIZING FLOUR WITH MINIMUM PHYSICOCHEMICAL CHANGE

Cornelis H. Japikse and Benjamin Lawrence, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 31, 1962, Ser. No. 248,619
8 Claims. (Cl. 99—216)

1. A method of essentially sterilizing pulverulent flour contaminated by microorganisms, said method comprising the steps of rapidly and substantially uniformly heating said material to a temperature within the range of about 260–310° F., maintaining said material at a temperature within said range in contact with an atmosphere containing steam in the proportion of about 10–80 mol percent under a pressure of about 5–40 p.s.i.g. for a total time of about 1–10 minutes and sufficient to essentially destroy the microorganisms therein, and rapidly cooling said material to a temperature below the degradation point of the starch.

3,159,494

TREATMENT OF FLOUR TO REDUCE MICROBIOLOGICAL CONTAMINATION

Benjamin Lawrence, Springfield Township, Hamilton County, and Alexander L. Liepa, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 31, 1962, Ser. No. 248,620
10 Claims. (Cl. 99—216)

1. A method of treating flour to substantially eliminate non-sporeforming microorganisms therefrom, said method comprising the steps of substantially uniformly heating said flour to a temperature within the range of about 200–250° F. and maintaining the flour at said temperature for a time of at least 0.1 second and sufficient to substantially destroy said non-sporeforming microorganisms while said flour is in intimate contact with an atmosphere containing at least 10 mol percent steam and maintained under a pressure providing an absolute partial pressure of steam of at least about 1.5 p.s.i. and then cooling said flour to a temperature below the degradation temperature of starch, the flour remaining at a temperature in excess of said starch degradation temperature for a time not greater than about 60 seconds.

3,159,495

PROCESS FOR THE STERILIZATION OF FLOUR

Cornelis H. Japikse, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 31, 1962. Ser. No. 248,621
10 Claims. (Cl. 99—232)

1. A method of treating flour which comprises the steps of forming in the presence of an effective amount of an emulsifying agent a substantially stable, generally uniform dispersion in a glyceridic material of water in the amount of about 8–12% by weight of the flour to be treated, admixing to said dispersion the flour to be treated in the ratio by weight of flour to said glyceridic material of about 3:1–1:2, heating the mixture thus produced at a temperature and for a time sufficient to destroy at least the non-sporeforming microorganisms present therein, and thereafer cooling the mixture to a temperature at least below the degradation point of starch.

3,159,496

PROCESS FOR THE PREPARATION OF AQUEOUS SOLUTIONS OF ORGANOSILICON COMPOUNDS

Gerd Rossmy, Altendorf (Ruhr), Germany, assignor to Th. Goldschmidt A.G., Chemische Fabriken, Essen, Germany, a German corporation

No Drawing. Filed Aug. 22, 1961, Ser. No. 133,041
Claims priority, application Germany, Aug. 29, 1960, G 30,387
15 Claims. (Cl. 106—28.7)

1. A process for the preparation of aqueous solutions of hydroxyalkyl-substituted silanols of the general formula

$$(OH)_{m+1}R_nSi(MOH)$$

wherein R is lower alkyl of 1 to 4 carbon atoms; M is alkylene of 2 to 4 carbon atoms, and n and m are numbers defined by

$$n=0\text{–}1$$
$$m=1\text{–}2$$

and

$$(n+m)=2$$

and of their water soluble condensation products formed by the condensation of silanol groups, which comprises reacting organosilicon compounds of the unit Formula A

$$(OR')_mR_nSi(MO)$$

wherein R' is lower alkyl of 1–4 carbon atoms and the other symbols have the above defined meaning, with a large excess of water.

3,159,497

METHOD OF IMPROVING THE GRADE OF BY-PRODUCT GYPSUM OBTAINED IN CARRYING OUT A WET PROCESS FOR PRODUCTION OF PHOSPHORIC ACID

Taro Yamaguchi, Onoda, Japan, assignor to Onoda Cement Company Limited, Onoda, Japan, a corporation of Japan

No Drawing. Filed Oct. 2, 1961, Ser. No. 142,003
Claims priority, application Japan, Oct. 25, 1960, 35/42,352, 35/42,353
10 Claims. (Cl. 106—89)

1. A method of improving the grade of by-product gypsum obtained by a wet process for manufacturing phosphoric acid and containing free phosphoric acid, which comprises the steps of forming a mixture of said by-product gypsum, at least one additive substance selected from the group consisting of calcium oxide, calcium hydroxide, calcium carbonate, magnesium hydroxide, magnesium carbonate, powder produced from Portland cement clinker, Portland cement, flue dust produced from cement kiln operation, pulverized slag produced from blast furnace operation, iron hydroxide, iron oxide, aluminum hydroxide and aluminum oxide in the amount of from 2 to 6 times the amount theoretically required to neutralize and convert the total phosphoric acid contained in the by-product gypsum into inert phosphates, and at least one basic substance selected from the group consisting of caustic alkali, ammonia and sodium carbonate, subjecting said mixture to heating with steam under pressure at a temperature of from 120 to 200° C., thereby to form one substance selected from the group consisting of half-hydrated gypsum, anhydrous gypsum and mixtures thereof, and subjecting said substance thus produced to hydration in the presence of water thereby to form dihydrated gypsum containing said at least one additive substance.

3,159,498
DISPERSIBLE PIGMENTS

Stanley Myron Davis, Somerville, and Robert Glenn Fessler, Martinsville, N.J., and George Leathwhite Roberts, Jr., Lynchburg, Va., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,816
15 Claims. (Cl. 106—308)

1. A method of preparing copper phthalocyanine, oil-dispersible, stir-in, red-shade form, pigment comprising: drowning a sulfuric acid solution of copper phthalocyanine in water, separating the particles of copper phthalocyanine in pigmentary form having an average particle size of less than about 0.5 micron, washing the pigment particles free from acid, and without drying, redispersing the still water-wet press cake in water, adding a solution of sodium abietate, then adding a soluble heavy metal salt, with agitation, thereby forming an insoluble heavy metal abietate on the surface of the individual pigment particles, freezing the pigment dispersion to solid form, and subliming the water from the pigment particles, whereby the pigment particles are held without aggregation, locked in the ice during the drying step, and are therefore readily dispersible.

3,159,499
TREATING WATER-WETTED SURFACES WITH CORROSION-RESISTANT COATING MATERIAL

Robert M. Jorda, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,605
14 Claims. (Cl. 117—2)



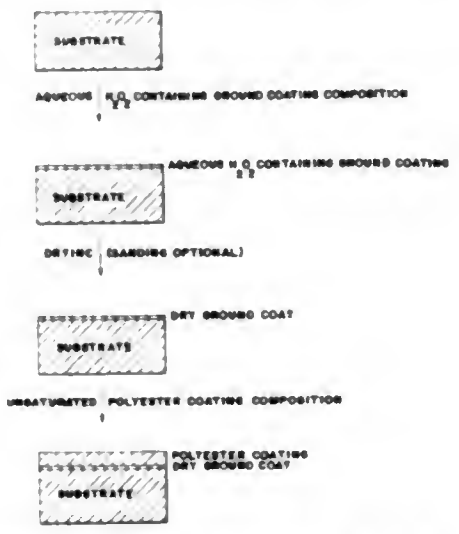
1. A process for treating water-wetted surfaces which comprises applying to the wet surface while immersed in water a mixture of a liquid polyepoxide having more than one vic-epoxy group and from 5% to 50% stoichiometric excess of a polyamide of a polycarboxylic acid containing at least 7 carbon atoms and an aliphatic polyamine, said polyamide having groups reactive with epoxy groups, and allowing the coating to set hard while the coated surface is immersed in water.

3,159,500
METHOD OF CONVERTING A POLYESTER COATING

Arthur P. Dowling, Chicago, Ill., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

Filed June 5, 1957, Ser. No. 663,600
7 Claims. (Cl. 117—72)

1. A method of applying a polymerized coating of an unsaturated polyester upon a substrate which comprises the steps of applying a ground coat essentially consisting of an aqueous solution of hydrogen peroxide to said substrate, drying said ground coat, and applying said unsaturated polyester over said dried ground coat to rapidly

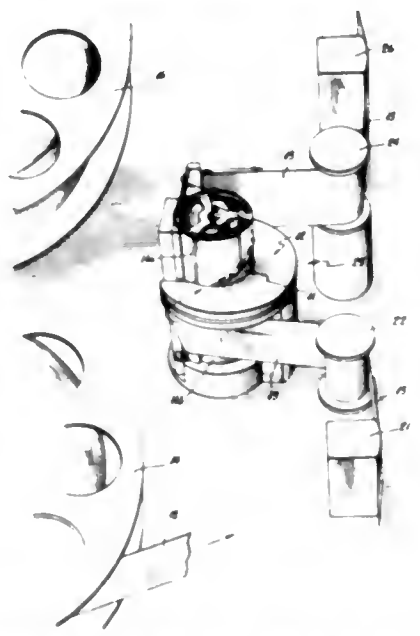


cure said unsaturated polyester and form a polymerized coating over said substrate.

3,159,501
MAGNETIC TAPE APPARATUS

Alexander Rainey Maxey, San Mateo, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed June 24, 1959, Ser. No. 822,628
4 Claims. (Cl. 179—100.2)



1. In apparatus of the type using a record tape for recording or play-back operations, the combination comprising: a base member; guide means mounted on said base member and defining a tape guiding surface conforming substantially to a section of a cylinder, said surface being interrupted by a generally circumferentially oriented axial gap; rotary transducer means including at least two diametrically opposed transducer heads operating in said gap; a pair of supply and take-up reels mounted on said base member in spaced parallel planes and with the rotational axes of said reels generally parallel to the axis of said cylinder section; a pair of guide posts mounted on said base member at opposite sides of said guide means and on opposite sides of said gap, with said guide posts being inclined at opposite angles to the axis of said cylinder; and means for guiding said tape from said supply reel to a first one of said guide posts in a path following the plane of said supply reel and reversely around said first guide post, thence in a helicoidal half-turn around said cylindrical guide means and across said gap to the second of

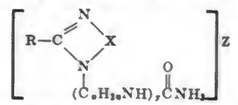
said guide posts, and thence reversely around said second guide post and to said take-up reel in a path following the plane of said take-up reel.

3,159,502
SOIL RESISTANT CARPET FIBERS

Bernard Menin, Philadelphia, Pa., assignor to E. F. Houghton & Co., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 16, 1962, Ser. No. 210,178
11 Claims. (Cl. 117—121)

1. An article of manufacture comprising a carpeting fiber having on the surface thereof a cationic surface active agent having the general formula:

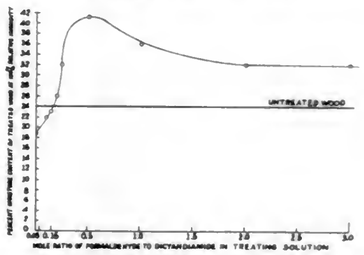


wherein R is an alkyl group having from 12 to 20 carbon atoms, X is selected from the class consisting of ethylene and propylene, n is a whole number from 2 to 3, y is a whole number from 1 to 2, and Z is an organic acid having from 2 to 6 carbon atoms selected from the group consisting of aliphatic carboxylic and hydroxy aliphatic carboxylic acids.

3,159,503
METHOD OF IMPARTING FIRE RETARDANCE TO WOOD AND THE RESULTING PRODUCT

Irving S. Goldstein, Pittsburgh, and William A. Dreher, Verona, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,115
3 Claims. (Cl. 117—137)



1. Method of treating wood to impart thereto fire rardance without increasing the hygroscopicity and ad-/ersely affecting the dimensional stability comprising impregnating wood with a solution consisting essentially of from 10 to 50% by combined weight of dicyandiamide, phosphoric acid and formaldehyde and 90 to 50% by weight water, said dicyandiamide and phosphoric acid being present in a mole ratio of about 1:1 to 2:1, respectively, and said formaldehyde being present in an amount of 0.05 mole to 0.15 mole based on the number of moles of said dicyandiamide, and heating the impregnated wood to a final temperature between about 70 and 100° C., thereby producing a flame-retardant, dimensionally stable wood of reduced hygroscopicity.

3,159,504
GLOVE FORM

Arshag Sarjanian, 18730 Wiltshire, Lathrup Village, Mich., and William Fritz, Lincoln Park, Mich.; said Fritz assignor to said Sarjanian

Filed Jan. 26, 1962, Ser. No. 169,003
4 Claims. (Cl. 118—500)

1. A glove form for supporting a glove to be dip-molded in a plastic-like material comprising an elongated member simulating the back, palm and wrist of a hand, finger elements extending from said elongated member and at least one of which finger elements are rigid therewith, said finger elements having a front portion adjacent said palm, said palm having an outer surface generally defining an elongated plane extending toward said finger elements and means defining a pivot axis disposed interiorly of said plane generally parallel to the transverse dimension thereof, a thumb element pivotally mounted



on said means adjacent the wrist of said elongated member for permitting movement of said thumb element on said pivot axis from a first position adjacent said one of said finger elements and in front thereof to a second position spaced from said one of said finger elements and resilient means for returning said thumb element to its second position after a glove is fitted on the glove form for holding the portion of the glove supported on said thumb element in a suitable position for dip-molding.

3,159,505
BINDER PRODUCT AND PROCESS

Hovey M. Burgess, Battle Creek, Mich., and James B. Johnson, Kankakee, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,204
13 Claims. (Cl. 127—32)

1. Binder having as a major constituent thereof a high-starch farinaceous solid material of a density of from about 550 to 650 gms. per dry qt., said material having a water-soluble solids content of from about 18 to 30%, the starch content of said material being substantially gelatinized to a point where it has lost its birefringence, all of said water-soluble solids being uniformly and homogeneously distributed throughout said high-starch material in adherence with the remainder of said material.

3,159,506
GASEOUS FUEL GENERATOR FOR FUEL CELLS

Robert Edward Salathe, Reading, Mass., assignor to General Electric Company, a corporation of New York

Filed Mar. 31, 1961, Ser. No. 99,859
6 Claims. (Cl. 136—86)

1. A gaseous fuel generator for supplying gas to a fuel cell comprising:

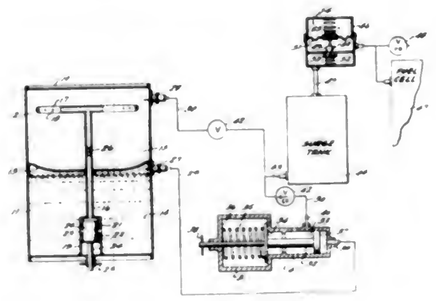
(1) a first chamber containing a liquid reactant,

(2) a second chamber containing a reactant capable of reacting with said liquid reactant to produce a gaseous fuel for the fuel cell,

(3) means connecting said first and second chambers to provide a conduit for the flow of said liquid reactant from said first chamber to said second chamber,

(4) means responsive to the fuel consumtion rate and pressure of said fuel cell for providing a self-pressurized periodic flow of said liquid reactant to said second chamber for producing said fuel, after initial pressure is established, said means being in fluid flow relationship with said second chamber, and

(5) external feedback means connected between said first chamber and said second chamber for preventing an excessive pressure differential between said chambers,



(a) means preventing fluid flow through said feedback means from said second chamber to said first chamber.

3,159,507
SEPARATOR FOR GALVANIC CELLS

Pierre Abbé, Paris, and Georges Génin, Nanterre, France, assignors to Compagnie Generale d'Electricite, Paris, France, a French corporation

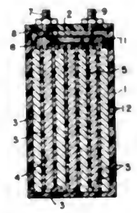
Filed Apr. 22, 1960, Ser. No. 24,083
Claims priority, application France May 20, 1957
16 Claims. (Cl. 136—145)

1. In a storage battery having therein an electrolyte, a pair of electrodes of opposite polarity and a separator between the electrodes, the improvement in which the separator consists entirely and solely of glass fibers agglomerated by partial fusion, said glass fibers having the same mineral composition and having insulating properties highly resistant to the battery electrolyte and being of different thermoplastic characteristics, some of said fibers having a lower softening temperature than others to insure the close agglomeration of fibers by fusion and superficial vitrification of the fibers having the lowest softening point.

3,159,508
GAS PERMEABLE CONTAINER

Augustus M. Chreitzberg, Raleigh, N.C., assignor to The Electric Storage Battery Company, a corporation of New Jersey

Filed Aug. 29, 1961, Ser. No. 134,721
7 Claims. (Cl. 136—166)



1. A plastic container for electric batteries characterized by an increased permeability to hydrogen, said container having finely divided metal particles dispersed throughout at least a limited area thereof in an amount insufficient to impart electrical conductivity to the area of dispersal, said metal particles being selected from the group consisting of metals of the platinum group, silver and Raney nickel.

3,159,509
CHROMATE PROCESS

Rihei Tomono, Ukyo-ku, Kyoto, Japan, assignor to Okuno Chemical Industry Company, Osaka, Japan

No Drawing. Filed Nov. 27, 1961, Ser. No. 155,179
1 Claim. (Cl. 148—6.16)

A method of producing a corrosion resistant coating upon a metal article having a surface selected from the group consisting of zinc and cadmium which comprises dipping such article in an aqueous chromating bath of pH below 1.5 consisting of an aqueous solution of 0.5 to 30 grams per liter of a titanium compound selected from the group consisting of titanous sulfate, titanic sulfate, titanyl sulfate and titanous phosphate and 80 to 400 grams per liter of chromic acid, suspending the dipped article in air, washing the article with water, and drying the article at a temperature between 50° and 80° C.

3,159,510
HIGH-SPEED QUENCHING COMPOSITION

Irving Rozalsky, East Alton, and Curtis L. Early, Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,339
10 Claims. (Cl. 148—29)

1. A quenching oil composition consisting essentially of a mineral oil blend containing from 0.1 to 2% each of (A) an oil-soluble N—C_{10-24} acyl sarcosine and (B) an oil-soluble metal petroleum sulfonate selected from the group consisting of alkali metal petroleum sulfonate and alkaline earth metal petroleum sulfonate, said blend consisting of a predominant amount of a high viscosity index oil having an aromatic content of from 20 to 60% and the balance of the blend being selected from the group consisting of a light oil having a viscosity range of from 40 to 100 SUS at 100° F., a heavy residue fraction having a viscosity of 150–210 and mixtures thereof.

3,159,511
PROCESS OF PRODUCING SINGLE-ORIENTED SILICON STEEL

Satoru Taguchi and Akira Sakakura, Yawata, Japan, assignors to Yawata Iron and Steel Co., Ltd., Tokyo, Japan

Filed May 16, 1962, Ser. No. 198,395
Claims priority, application Japan Nov. 8, 1956
2 Claims. (Cl. 148—111)

1. In a process for producing single-oriented silicon steel sheet, which comprises blooming a silicon steel ingot containing 2–4% by weight Si to produce a silicon steel stock, hot-rolling said stock, pickling said rolled material, subjecting said material to a single cold-rolling, reducing the stock thickness by 65 to 85%, thereby producing the sheet of the final thickness, continuously annealing the material in a decarburizing atmosphere at a temperature of between 750 to 950° C., and finally annealing at a temperature of 1,000 to 1,200° C., thereby producing a silicon steel sheet of secondary recrystallization and of good grain-orientation in the direction of cold-rolling, and of a magnetic induction, at 10 oersteds, of greater than 17,000 gausses, the improvement, in combination therewith, wherein

(a) said ingot is heated to a temperature of maximally 1260° C. and then bloomed to produce silicon steel stock which is reheated to a temperature of maximally 1260° C., and

(b) said stock consisting essentially of 0.01 to 0.03% by weight of Al, 2 to 4% by weight of Si, with the balance being essentially iron.

3,159,512
PROCESS FOR THE PRODUCTION OF PRIMER COMPOSITIONS FOR PERCUSSION CAPS INCLUDING RIMFIRE CARTRIDGES

Edmund von Herz, Cologne-Dellbruck, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a German corporation

No Drawing. Filed July 15, 1960, Ser. No. 43,012
Claims priority, application Germany, July 24, 1959, H 37,013
5 Claims. (Cl. 149—22)

3. A primer composition for percussion caps and rimfire cartridges comprising a mixture of at least one oxygen carrier, at least one thermally acting material, at least one additional member selected from the group consisting of finely distributed silicon, elementary boron, and gritty inert material, and from 10–80% by weight of the total composition of a lead salt of trinitrophloroglucinol containing water of crystallization.

3,159,513
COATING FOR LINEAR MATERIAL AND METHOD OF APPLICATION

Frederick L. Baier, Williamsport, Pa., assignor to Bethlehem Steel Company, a corporation of Pennsylvania

Filed Sept. 20, 1961, Ser. No. 139,524
4 Claims. (Cl. 156—49)



4. A method of reapplying a smooth even diameter flashing free plastic coating to a spliced area of a plastic coated wire cable from which area the original plastic coating has been removed to effect the splicing operation comprising:

(*a*) placing a tube of oriented thermoshrinkable plastic having a slightly larger inside diameter than the desired plastic coating and somewhat longer than the length of the final splice area to be recoated over one end of the cable to be spliced,
(*b*) splicing the cable,
(*c*) applying a thermoplastic similar to the original plastic coating of the cable to the area of the splice,
(*d*) sliding the thermoshrinkable tube over the spliced area,
(*e*) passing the spliced area with the thermoplastic coating and superimposed thermoshrinkable tube through a heating zone progressively from one end to the other to progressively contract the tube around the splice and fuse the thermoplastic whereby the thermoplastic is intimately and uniformly molded around the spliced area,
(*f*) cooling the spliced area,
(*g*) slitting the contracted tube,
(*h*) and stripping the contracted tube from the splice area to expose a smooth surfaced uniform diameter plastic coating molded around the spliced area of the cable.

3,159,514
METHOD AND APPARATUS FOR FABRICATING FOAM CORE WALLS

Harold S. McKnight, Jr., and Richard G. Schemehorn, Fort Wayne, and Neil V. Constantine, New Haven, Ind., assignors to General Industries, Inc., Fort Wayne, Ind.

Filed Aug. 1, 1962, Ser. No. 213,975
14 Claims. (Cl. 156—79)

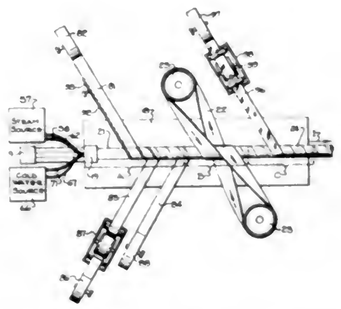
1. The method of fabricating foam core walls in a continuous length comprising the steps of feeding a plurality of sheet-like panels along two parallel spaced-apart planar paths, said panels being edge-to-edge and defining the planes of the aforesaid paths, securing adjacent edges of said panels together in the respective planes thereof to provide two elongated integrated panels which are spaced apart and parallel, advancing said integrated panels along the respective paths thereof in successive steps for predetermined distances, sequentially forming successive, contiguous, individual, closed cavities at a common location between successive, discrete, contiguous length portions of said two integrated panels during the period of time between said successive steps, and introducing and expanding plastic material in said cavities at the aforesaid location following the formation thereof, thereby producing an elongated uninterrupted length of expanded foam plastic between the elongated integrated panels.



3,159,515
METHOD AND APPARATUS FOR MAKING COMPOSITE OIL CONTAINERS OF SPIRALLY WOUND STRIPS

Charles K. Dunlap, Jr., David C. Alexander, and Philip G. Hart, Hartsville, and James P. Hall, Darlington, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina

Filed Mar. 19, 1962, Ser. No. 180,606
3 Claims. (Cl. 156—190)



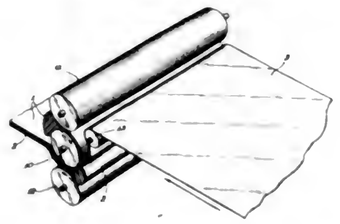
1. A method of making a composite oil container body comprising the steps of, spirally winding a plurality of strips adhesively secured together on an elongated mandrel to form a container body, said strips including an inner strip of leakproof material wound with the edges of adjacent convolutions in abutting relationship to form a spiral seam, simultaneously spirally winding a relatively narrow strip of leakproof material, coated on its outwardly facing side with a thermoplastic adhesive, across said seam and adjacent to said mandrel, heating a portion of said mandrel beneath said wound narrow strip and said inner strip to activate the thermoplastic adhesive on said narrow strip and adhesively secure said narrow strip to said inner strip and cooling said heated narrow strip to set said thermoplastic adhesive and form a leakproof inner ply for said container body.

3. In a spiral tube winding apparatus, the combination of an elongated mandrel for winding a plurality of spirally wound overlapping strips adhesively secured together into a spiral tube, said strips including an inner strip wound with the edges of adjacent convolutions in abutting relationship to form a spiral seam and a narrow strip, having an outwardly facing thermoplastic adhesive coating wound across said spiral seam and adjacent said mandrel, means in said mandrel for heating a longitudinally extending portion of said mandrel to heat said thermoplastic adhesive coating and adhesively bond said narrow strip to said inner strip, and means in said mandrel for cooling a longitudinally extending portion of said mandrel adjacent said heated portion to cool and set said thermoplastic adhesive to thereby maintain said strips in a bonded relationship.

3,159,516
CALENDERING METHOD AND PRODUCTS MADE THEREBY

George M. Harris, Chicago, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Dec. 17, 1958, Ser. No. 781,120
10 Claims. (Cl. 156—243)

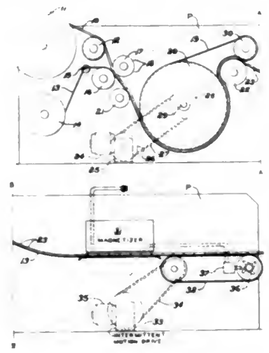


1. A process for calendering hollow tubing comprising, in a process wherein a molten bulk of nonthermosetting thermoplastic material is deposited at each of at least two separate successively spaced apart converging surfaces adjacent to a common moving carrier surface to form successive nips therewith through which a film emerges from each bulk of thermoplastic material, the film emerging from the first of said successive nips releasably adhering to the moving carrier surface and the films emerging from subsequent successive nips each superposing the film emerging from the previous nip, the steps in combination therewith of: (*a*) introducing and passing a preformed separatory releasable foil between the bulk of the thermoplastic material at at least one nip and the film emerging from the nip immediately preceding said one nip by applying said separatory releasable foil onto exposed thermally softened tacky surface of said film at a point intermediate the preceding nip and said one nip prior to contact with the molten bulk of thermoplastic material at said one nip, said foil being carried thereon into and through said one nip, the foil being narrower than the superposed films emerging from said one nip; (*b*) positioning the narrow separatory releasable foil as it is applied on said film so that it is between the longitudinal edges of the superposed films emerging from said one nip; (*c*) fusing to the film from said preceding nip the film formed from the bulk of thermoplastic material at said one nip as it is formed at said one nip only in the areas along the longitudinal edges thereof beyond the edges of the narrow separatory foil; and (*d*) stripping the tubing in collapsed form from the moving carrier surface after emerging from the last of such successive converging surfaces.

3,159,517
METHOD OF MAKING MAGNETIC GASKETS

Robert E. Schornsheimer, Marietta, and Thomas R. Rohrer, Coshocton, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Original application Feb. 20, 1958, Ser. No. 716,482, now Patent No. 3,119,158, dated Jan. 28, 1964. Divided and this application July 16, 1962, Ser. No. 209,908
10 Claims. (Cl. 156—250)

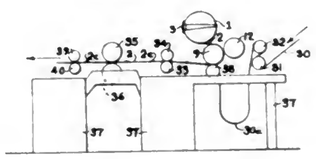


1. In the method of making a magnet-containing gasket the steps of providing an elongated strip of frangible magnet-forming material having cross-sectional dimensions suitable for insertion in the hollow interior of the gasket, supporting said strip on and adhering it to an elongated strip of flexible material, breaking said supported strip of magnet-forming material at longitudinally spaced locations without injury to the supporting strip to provide closely adjacent discrete blocks and subjecting said supported discrete blocks to a magnetic field of force such that the blocks become magnets.

3,159,518
SELF-SEALING SHINGLES

Louis A. Benton, Middlesex, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1959, Ser. No. 862,849
7 Claims. (Cl. 156—268)

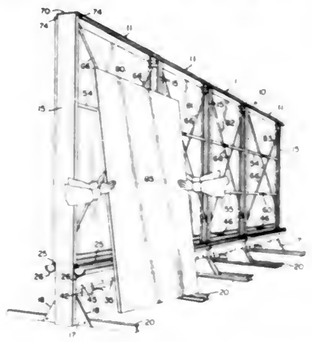


1. A method of manufacturing asphalt roofing shingles, comprising the steps of feeding a web of fabricated shingle material having a lane of adhesive thereon extending substantially lengthwise of the web, covering the adhesive lane with a strip of release material having a plurality of longitudinally separated portions extending transversely of the strip, said portions being spaced from the adhesive lane and the web, and transversely severing the web and the strip at said spaced portions of the strip, whereby each shingle is provided with a strip of release material having a tab portion extending beyond an edge of the shingle.

3,159,519
METHOD OF MAKING SIGNS AND SUPPORTING AND DRYING FRAME THEREFOR

Vardry D. Ramseur, Jr., Greenville, S.C., assignor to Porta-Panel Products, Inc., Greenville, S.C., a corporation of South Carolina

Original application May 11, 1959, Ser. No. 812,506, now Patent No. 3,071,871, dated Jan. 8, 1963. Divided and this application Oct. 13, 1960, Ser. No. 62,451
1 Claim. (Cl. 156—270)

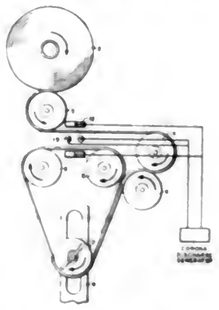


The method of making a completed sign including a plurality of individual lightweight panels disposed in edge-to-edge relationship with one another to provide an over-all finished sign and which permits in-shop posting and assembly line techniques comprising, providing a supporting and drying frame, placing a plurality of substantially rigid lightweight, portable individual sign panels on the supporting and drying frame with the panels in edge-to-edge contacting relationship with one another with the side edges of the panels extending substantially vertically and with the upper edges of the panels aligned with one another and the lower edges of the panels aligned with one another and outer surfaces of panels lying substantially in a plane so that the panels are in the same relaitonship to one another as they occupy in a finished sign, providing sign poster means in the form of a flexible sheet material printed on one side thereof, posting the sign poster means by adhesively securing said sign poster means to the outer surfaces of all of said panels with the sign poster means disposed in spanning relationship to the various panels and with the outer edges of the sign poster means substantially co-extensive with the outer edges of the over-all sign structure as defined by said panels and with the printed side of the sign poster means facing outwardly away from said panels, applying heat to said panels throughout the entire area thereof for drying the adhesive securing said sign poster means to said panels such that the panels can be readily handled, completely cutting the sheet material of the sign poster means from the top edge to the bottom edge thereof along each of the seams defined by the side edges of the abutting side panels such that the sheet material of the poster means is separated into a plurality of areas each of which is co-extensive with the area of the outer surface of only one of the associated panels, and removing the individual panels with the attached poster means from the frame, whereby the panels may be moved with the attached poster means to a sign location to be mounted upon a signboard framework in the same relationship to one another as the panels occupied during the posting operation with the panels in edge-to-edge abutting relationship with one another with the outer surface thereof lying substantially in a plane and with the printed poster portions defining a substantially planar outwardly facing sign surface presented to view as a finished sign.

3,159,520
SHRINKABLE BANDS

John W. Harrison and Robert D. Lowry, Winchester, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Dec. 27, 1960, Ser. No. 78,649
3 Claims. (Cl. 156—272)

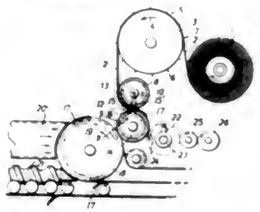


1. A process for preparing a laminated band comprising orienting polyethylene film, irradiating said oriented film to an extent of 2 to 100 megarads, subjecting both film surfaces to corona discharge sufficient to effect adherence of the surfaces to each other in the absence of significant heat and pressure, and forming a continuous band from said treated film by wrapping a plurality of layers of film about a form.

3,159,521
APPARATUS TO SEVER, PRINT AND APPLY LABELS TO CONTAINERS

Wilhelm Pechmann, Burscheid, near Cologne, Germany, assignor to H. Strunck & Co., Cologne-Ehrenfeld, Germany

Filed Dec. 12, 1960, Ser. No. 75,451
5 Claims. (Cl. 156—499)

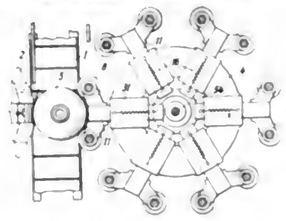


3. In an apparatus for applying labels to containers, in combination, moving means for moving a band, from which the labels are derived, continuously from a supply roll at a predetermined speed along a predetermined path; a pair of oppositely rotating suction roll means located along said path and defining between themselves a gap through which the band passes from said moving means, said oppositely rotating suction roll means each rotating at a peripheral speed which is greater than said predetermined speed; cutting means carried by one of said suction roll means and cooperating with the other of said suction roll means for cutting a free end of the band as it passes between said pair of suction roll means so as to cut from said band during revolution of said suction roll means a label which is transported beyond said band at a speed greater than the speed of movement thereof by the other of said suction roll means; printing means cooperating with said other of said suction roll means for printing each label as it is transported by said other suction roll means on the surface thereof facing away from said other suction roll means; an additional suction roll means closely adjacent to the periphery of said other suction roll means and rotating in a direction opposite to the direction of rotation of the latter engaging each label on the printed surface thereof for transporting each label to a label applying station; and means cooperating with said additional suction roll means for rendering the surface of each label opposite to said printed surface adhesive.

3,159,522
APPARATUS FOR LABELING BODIES, PARTICULARLY BOTTLES IN UPRIGHT POSITION

Hermann Schmidt, Berlin-Reinickendorf, Germany, assignor to Johann Weiss Maschinenfabrik und Apparatebau G.m.b.H.

Filed Feb. 23, 1961, Ser. No. 91,157
Claims priority, application Germany Mar. 3, 1960
14 Claims. (Cl. 156—444)



1. In an apparatus for affixing labels to upright bodies, in combination:

conveyor means for displacing a succession of said bodies along a transport path, said bodies each having a substantially vertical axis and an outer periphery disposed around said axis; said surfaces having generatrices extending generally in the direction of their respective axes;

label-applying means disposed along said transport path, said label-applying means including a first support, a drum mounted on said first support for rotation about a substantially vertical axis along one side of said path, said drum being provided with a plurality of label-receiving peripheral surfaces angularly spaced about its axis and successively engageable with bodies displaced along said path, each of said surfaces being formed with at least one edge extending along a generatrix of body engaged thereby and bearing thereon for clamping a label against its periphery, and holding means at each of said label-receiving surfaces for temporarily holding a label thereon;

pressure means disposed opposite said label-applying means along said path for urging each of said bodies into engagement with a respective label-receiving surface, said pressure means including a second support, a carrier journaled on said second support for rotation about a substantially vertical axis, a plurality of angularly spaced pressure members on said carrier bearing on the bodies engaged by the respective label-receiving surfaces for clamping said bodies against the respective edges thereof in a position of each of said bodies intermediate said label-applying and pressure means;

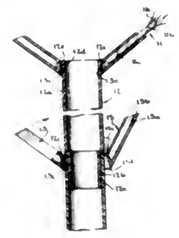
and drive means for rotating said drum and said carrier in opposite senses.

3,159,523
KNOCK-DOWN SIMULATED CHRISTMAS TREE CONSTRUCTIONS HAVING ADJUSTABLE AND COLLAPSIBLE BRANCHES

Abraham Abramson, New York, N.Y., assignor to Raylite Electric Corp., Bronx, N.Y., a corporation of New York

Filed Feb. 20, 1961, Ser. No. 90,455
9 Claims. (Cl. 161—24)

1. In an artificial Christmas tree construction, an elongated trunk formed of separable segments, a plurality of branches, some of said segments each having a branch holder including means for supporting one of the branches in a radially extending predetermined angular relation to the axis of the trunk, said segment and branch holder being molded of plastic resinous material as an integral structure with an interconnecting relatively thin and flexible

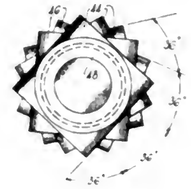


strip extending therebetween, said strip forming a hinge member located to position an end portion of said branch holder in abutment with a surface of said segment to support the branch holder and branch in said predetermined angular relation and to swing the branch holder and branch out of said abutment to a collapsed position substantially parallel to said axis against said trunk.

3,159,524
LAMINATED BAFFLE RING AND METHOD OF MAKING SAME

Andrew J. Cantabene and Robert C. Pocock, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Aug. 25, 1961, Ser. No. 133,976
4 Claims. (Cl. 161—58)



1. A laminated baffle for obstructing the flow of an incandescent gas comprising a plurality of layers of graphite cloth and silica cloth alternately arranged and bonded together to form a laminated structure, said plurality of layers of graphite and silica cloth being arranged in parallel order and rotated about a common central axis to thereby establish equal angular spacing between the warp threads of adjacent layers of graphite and silica cloth.

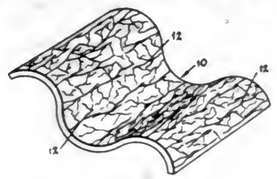
3,159,525
DECORATING SYNTHETIC RESIN PANEL

Joseph S. Finger, Bellaire, Tex., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Original application Jan. 21, 1955, Ser. No. 483,381, now Patent No. 2,959,511, dated Nov. 8, 1960. Divided and this application Dec. 29, 1959, Ser. No. 862,669
2 Claims. (Cl. 161—128)

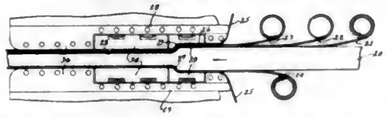
1. A synthetic resin panel, comprising a substantially rigid sheet of cured thermoset resin, a plurality of randomly located accumulations of resin on a major surface

of the sheet, the resin accumulations extending above the major surface and being integral therewith, and glass



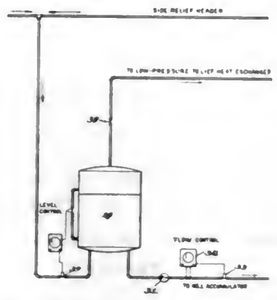
fibers within the sheet to reinforce the same, the resin accumulations being substantially free of fibers.

3,159,526
LAMINATED BOARD AND METHOD OF MAKING THE SAME
Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors, by direct and mesne assignments, to Hoover Ball and Bearing Company
Filed Nov. 21, 1960, Ser. No. 70,498
11 Claims. (Cl. 161—261)



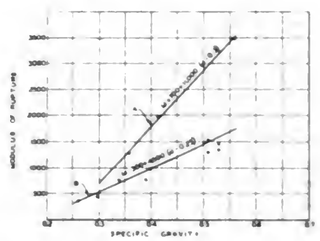
1. A flat laminated surface board comprising a single sheet of wood having an intermediate zone and an outer zone integral with said intermediate zone and forming one surface of said sheet of wood, said outer zone being compressed to a greater density than said intermediate zone and being of uniform thickness throughout said sheet of wood, and an outer layer of thermoset plastic supported on the one surface of said sheet of wood.

3,159,527
DEVICE FOR METERING DIGESTER SIDE RELIEF LIQUOR
Aage Helland, Kapuskasing, Ontario, Canada, assignor to Spruce Falls Power and Paper Company, Limited, Ontario, Ontario, Canada, a corporation of Canada
Filed Oct. 16, 1961, Ser. No. 145,260
1 Claim. (Cl. 162—29)



A device for metering the amount of digester side relief liquor drawn from a high pressure pulp digester during the pulping process which comprises, a low pressure separator tank, supply means for continuously supplying high pressure digester relief liquor to said separator tank, pressure control means for controlling the pressure in said tank at a predetermined value substantially below the initial pressure of said relief liquor whereby said liquor is separated into gaseous and liquid components, said pressure control means being reactive to said gaseous component, level control means for maintaining constant the level of said liquid component in said tank by controlling the supply of high pressure relief liquor admitted thereto, and metering means for withdrawing said separated liquid component at a constant rate from said tank while said liquor is continuously fed thereto whereby a metered amount of relief liquor may be withdrawn from said digester.

3,159,528
FIBERBOARD CONTAINING A THERMOSETTING RESIN DERIVED FROM WASTE SULPHITE LIQUOR AND PROCESS OF MAKING SAME
Worth C. Goss, Kirkland, Wash., assignor to The Sheetwood Products Company, San Francisco, Calif., a corporation of Washington
Filed May 13, 1957, Ser. No. 658,676
3 Claims. (Cl. 162—163)



1. An artificial board formed of felted vegetable fibers unbonded by pressure, having a specific gravity not exceeding that of the original woody material, having high resistance to water and weathering compared to insulation and pulp boards, having a modulus of rupture related to specific gravity by the linear equation

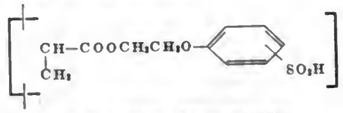
$$M=700+11000(d-0.3)$$

wherein M is the modulus of rupture as determined by ASTM D1037–52T and d is the specific gravity of the board; said board having, as the bonding agent, a thermosetting resin produced from dehydrated waste sulfite liquor by extraction of solubles with liquid anhydrous ammonia, and reaction of the undissolved residue in aqueous solution with formaldehyde and acetone.

3. A method of producing a low specific gravity, high mechanical strength, water- and weather-resistant artificial board which comprises providing a pulp of wood fibers, incorporating in the pulp an acid-soluble, thermosetting resin produced from dehydrated waste sulfite liquor by extraction of solubles with liquid anhydrous ammonia and reaction of the undissolved residue in aqueous solution with formaldehyde and acetone; carrying out a closed circuit operation with such pulp containing said resin, said operation comprising forming a wet pad from said pulp containing said resin by a felting operation and application of pressure to squeeze water from the pad, said wet pad having a water-to-fiber ratio calculated, when the water is evaporated, to deposit an amount of resin on the fibers sufficient for bonding the fibers together, and recycling substantially all water separated from the pad by drainage and pressure; said method further comprising the further steps of drying the wet pad by thermal evaporation and causing the resin to set and cure, said further steps being carried out without the application of a pressure so high as to increase the specific gravity of the board substantially beyond the specific gravity of a thermally dried pad.

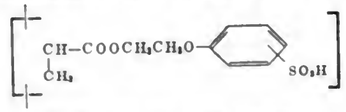
3,159,529
PAPER PRODUCTS CONTAINING A SULFONATED 2-PHENOXYETHYL ACRYLATE POLYMER
George W. Buttrick, Charleston, and Nelson R. Eldred, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 6, 1962, Ser. No. 208,114
14 Claims. (Cl. 162—168)

1. A paper product comprised of cellulosic papermaking fibers and including from about 0.5 to about 10 percent based upon said fibers of a normally solid water soluble polymer consisting essentially of polymerized 2-phenoxyethyl acrylate units and units of a copolymerizable monomer selected from the group consisting of acrylamide units and alkyl acrylate units, and alkyl moiety thereof containing from 1 to 8 carbon atoms, wherein a sufficient number of polymerized 2-phenoxyethyl acrylate units of said polymer are present as the ring-substituted sulfo derivative of the formula



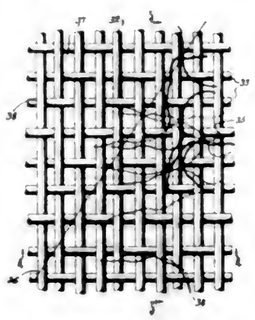
so as to render said polymer water soluble.

6. In the manufacture of paper products from cellulosic papermaking fibers, the improvement which comprises applying to said fibers in aqueous solution from about 0.5 to about 10 percent based upon said fibers of a normally solid, water soluble polymer consisting essentially of polymerized 2-phenoxyethyl acrylate units and units of a copolymerizable monomer selected from the group consisting of acrylamide units and alkyl acrylate units, the alkyl moiety thereof containing from 1 to 8 carbon atoms, wherein a sufficient number of polymerized 2-phenoxyethyl acrylate units of said polymer are present as the ring-substituted sulfo derivative of the formula



so as to render said polymer water soluble.

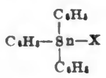
3,159,530
PAPERMAKING MACHINE
Harold H. Heller, Appleton, and John B. Graham, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 23, 1960, Ser. No. 38,291
4 Claims. (Cl. 162—348)



1. An endless foraminous belt for a Fourdrinier type papermaking machine having an outer surface on which paper stock may be deposited for drainage to form a paper web, said belt comprising spaced longitudinal filaments extending lengthwise of the belt and spaced transverse filaments extending crosswise of the belt which are interwoven together, each transverse filament passing alternately over a plurality of longitudinal filaments on said outer belt surface and then under a less number of longitudinal filaments, said filaments being so crimped that said transverse filaments have crests on said outer belt surface that are higher than crests of the longitudinal filaments on said outer belt surface.

3,159,531
FUNGICIDAL AGENTS
Hans Bruckner, Burgkirchen, Upper Bavaria, and Maximilian Czech and Kurt Hartel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Aug. 22, 1961, Ser. No. 133,059
Claims priority, application Germany, June 22, 1961, F 34,238
7 Claims. (Cl. 167—22)

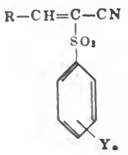
1. A fungicidal agent comprising as the active ingredient a combination of from 12 to 1 parts by weight of a triphenyltin compound of the formula



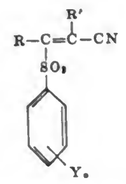
wherein X is a member selected from the group consisting of acetate, citrate, toluene sulfamide, acrylate, chloride, hydroxide, and oxide, and 1 to 30 parts by weight of a member selected from the group consisting of the zinc salt and the manganese salt of ethylene-bis-dithiocarbamic acid.

3,159,532
TOXIC ARYLSULFONYL ALKENENITRILES
Samuel Allen Heininger, Warson Woods, Mo., and Gail H. Birum, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Aug. 27, 1959, Ser. No. 836,331
17 Claims. (Cl. 167—30)

1. The method of inhibiting the growth of bacteria and fungi which comprises applying to said bacteria and fungi a growth-inhibiting amount of an arylsulfonyl alkenenitrile selected from the class consisting of compounds of the formula



and the formula



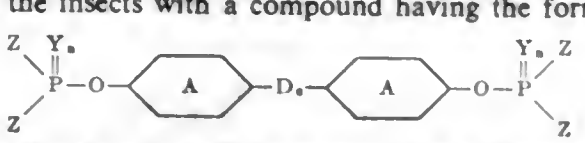
wherein R and R′ are selected from the class consisting of hydrogen and hydrocarbon free of aliphatic unsaturation and containing from 1 to 6 carbon atoms, Y is selected from the class consisting of chlorine, bromine, iodine, fluorine, hydrogen and alkyl having from 1 to 6 carbon atoms, and n is an integer from 1 to 5.

3,159,533
PHOSPHORUS-CONTAINING INSECTICIDES AND METHOD

John W. Nelson, Lansing, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

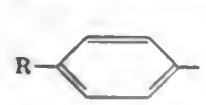
No Drawing. Filed May 29, 1962, Ser. No. 198,470
11 Claims. (Cl. 167—30)

1. A method of killing insects which comprises contacting the insects with a compound having the formula:



wherein P=phosphorus; O=oxygen; D is a divalent saturated hydrocarbon radical of 1 to 5 carbon atoms and *c.* is 0 to 1; Z is a radical selected from the group consisting of:

(*a*)



(*b*)



(*c*)



in which R is selected from the group consisting of hydrogen and an alkyl radical of 1 to 20 carbon atoms;



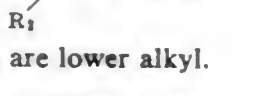
is a cyclic radical selected from the group consisting of phenyl and cyclohexyl; Y is a Group VIA atom of up to 52 atomic number and *n* is 0 to 1.

3,159,534
DIALKYLPHOSPHINOTHIOATE PESTICIDAL COMPOSITIONS AND METHODS OF USE

Peter E. Newallis, Crestwood, and John P. Chupp and Joseph W. Baker, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Jan. 8, 1960, Ser. No. 1,168, now Patent No. 3,061,613, dated Oct. 30, 1962. Divided and this application Jan. 29, 1962, Ser. No. 172,837
8 Claims. (Cl. 167—33)

4. An insecticidal composition comprising a dialkyl phosphinothioate dispersed in an adsorbent clay, the said composition containing 0.1 to 25 percent by weight of said dialkyl phosphinothioate, the said dialkyl phosphinothioate having the structure



wherein R_1 and R_2 are lower alkyl.

3,159,535
AEROSOL COMPOSITIONS

Louis M. Sesso and Norman G. Mailander, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

No Drawing. Filed Jan. 31, 1962, Ser. No. 170,241
3 Claims. (Cl. 167—39)

1. A pressurized, self-propellant composition consisting essentially of:

a stable oil-out emulsion,

liquid propellant having a specific gravity less than said emulsion and,

gaseous propellant provided by volatilization of said liquid propellant;

wherein a portion of said liquid propellant comprises the continuous phase of said stable oil-out emulsion, said stable oil-out emulsion consists essentially of water, active ingredients, emulsifier and said liquid propellant, the aqueous phase of said stable oil-out emulsion is readily dispersible throughout said self-propellant composition, and said liquid propellant is a normally gaseous propellant selected from the group consisting of hydrocarbons and halogenated hydrocarbon propellants and mixtures thereof.

3,159,536
HYDROPHOBIC SILICEOUS INSECTICIDAL COMPOSITIONS

Ralph Marotta, Olivette, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 22, 1960, Ser. No. 23,895
18 Claims. (Cl. 167—42)

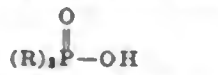
1. The method which comprises contacting insects with a partially to completely hydrophobic particulate amorphous siliceous material having a specific electrical conductivity of not more than 10^{-7} mho per centimeter at a bulk density of 0.2 gram per cubic centimeter.

3,159,537
POTENTIATION OF TETRACYCLINE BY PHOSPHINIC ACID

Edward Takesue, Pearl River, and Joseph John Hlavka, New City, N.Y., and James Howard Boothe, Montvale, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 20, 1960, Ser. No. 77,006
10 Claims. (Cl. 167—55)

1. A composition of matter comprising a tetracycline antibiotic and as a potentiating agent therefor from 0.1 to 10 parts by weight of a phosphinic acid of the formula:



(I)

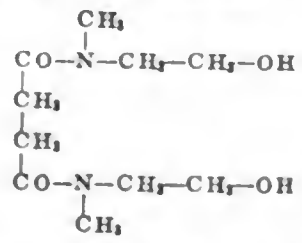
wherein R is a member of the group consisting of lower alkyl, hydroxylower alkyl, carboxylower alkyl, carboalkoxylower alkyl, cyanolower alkyl, cyanohydroxylower alkyl, carboxyhydroxylower alkyl, carbalkoxyhydroxylower alkyl and hydroxyphenyllower alkyl.

3,159,538
ANTI-INFLAMMATORY THERAPEUTIC AGENT AND PROCESS

Joseph Nordmann, Paris, France, assignor, by mesne assignments, to Etablissements Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed May 8, 1962, Ser. No. 193,331
3 Claims. (Cl. 167—55)

2. Process for the treatment of rheumatism and arthritis which comprises administering orally to a human being a compound of the formula:



at effective doses up to 600 mg. daily.

3,159,539
WATER-SOLUBLE ANTISEPTIC AGENT

Meyer Mendelsohn, New York, and Carl Horowitz, Brooklyn, N.Y., assignors, by mesne assignments, to Yardney International Corp., New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 16, 1958, Ser. No. 728,772
4 Claims. (Cl. 167—58)

1. A composition of matter adapted to be applied to a living surface to obtain release of Ag^+ ions on said surface, comprising a water-soluble silver salt of partially depolymerized alginic acid having an average molecular

weight in the range of substantially 1,000 to 5,000 and a melting point in the range of 240° to 265° C., and a base material selected from the group which consists of soaps, cosmetics and pharmaceutical vehicles.

3,159,540

ANTIBIOTIC CIRRAMYCIN AND ITS PRODUCTION

Hiroshi Kawaguchi, Hideo Koshiyama, and Masanori Okanishi, Tokyo, Japan, assignors to Bristol-Banyu Research Institute, Ltd., Tokyo, Japan, a Japanese corporation

Filed July 3, 1962, Ser. No. 207,315
10 Claims. (Cl. 167—65)

1. An antibiotic substance effective in inhibiting the growth of Gram-positive bacteria which is selected from the group consisting of a basic substance, cirramycin A, which is soluble in methanol, ethanol, butanol, ethyl acetate, butyl acetate, chloroform, acetone, diethyl ether and benzene and slightly soluble in water and insoluble in petroleum ether and capable of forming salts with acids, which gives positive Fehling, Tollens and Molisch reactions, a positive orcinol reaction and negative biuret, ninhydrin and ferric chloride reactions, and which in purified form melts at 123–124° C., exhibits $[\alpha]_D^{30}$ of −20° (c.=1.0, $CHCl_3$), exhibits in ethanol an ultraviolet absorption spectra having a maximum at 240 mμ,

$E_{1cm}^{1\%}$ at 240 millimicrons=268

has the following average elemental analysis: C, 64.04%; H, 9.02%; N, 2.75% and O (by difference) 24.19%; and when pelleted in potassium bromide exhibits characteristic absorption in the infra-red region of the spectrum as shown in FIGURE 1; and acid addition salts of said basic substance, and a basic substance, cirramycin B, which is soluble in methanol, ethanol, butanol, ethyl acetate, butyl acetate, chloroform, acetone, diethyl ether and benzene and slightly soluble in water and insoluble in petroleum ether and capable of forming salts with acids, which gives positive Fehling, Tollens and Molisch reactions, a negative orcinol reaction and negative biuret, ninhydrin and ferric chloride reactions, and which in purified form melts at 228–229° C., exhibits $[\alpha]_D^{30}$ of −61° (c.=1.0, $CHCl_3$), exhibits in ethanol an ultraviolet absorption spectra having a maximum at 240 mμ,

$E_{1cm}^{1\%}$ at 240 millimicrons=365

has the following average elemental analysis: C, 61.49%; H, 8.50%; N, 2.01%; and O (by difference) 28.00%; and when pelleted in potassium bromide exhibits characteristic absorption in the infra-red region of the spectrum as shown in FIGURE 2; and acid addition salts of said basic substance.

3,159,541

GEROBRIECIN

Maria S. Cataldi, Vicente Lopez, Jose Pahn, San Martin, and Oscar Luis Galmarini, San Isidro, Argentina, assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed July 17, 1962, Ser. No. 211,948
7 Claims. (Cl. 167—65)

1. An antifungal antibiotic selected from the group consisting of gerobriecin and salts thereof, said gerobriecin being an amphoteric substance having the following elemental analysis: C=60%; H=8%; N=2%; and O=30%, having a molecular formula $C_{35}H_{55}NO_{13}$, that possesses a specific optical rotation as measured by the D line of sodium at 24° C. of +30.2° in 5% dimethylformamide; is soluble in pyridine, glacial acetic acid and in water when adjusted to pH 11 by the addition of sodium hydroxide; slightly soluble in methanol and ethanol; insoluble in acetone, benzene, chloroform, carbon tetrachloride, and petroleum ether; decomposes at 250° C.; shows an intense violet color when treated with concentrated sulfuric acid; gives a faintly positive Molisch reaction; has an ultraviolet absorption spectrum measured in methanol with bands at the following wave lengths: 346, 359, 378 and 402 millimicrons; has an ultraviolet absorption spectrum measured in dimethylformamide with bands at the following wave lengths: 347, 365, 389 and 408 millimicrons; and has an infrared absorption spectrum when suspended in hydrocarbon oil in solid form as shown in the drawing.

3,159,542

STABLE AQUEOUS GLYCOL SOLUTION OF TETRACYCLINE ALUMINUM CALCIUM GLUCONATE COMPLEX HAVING A pH OF ABOUT 7.5 TO 9

Edward Grant Remmers, Ridgewood, N.J., William Charles Barringer, Pearl River, N.Y., and George Madison Sieger, Park Ridge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,231
5 Claims. (Cl. 167—65)

1. A stable liquid composition of tetracycline, suitable for parenteral administration, comprising as a vehicle an aqueous solution containing from 30 to 80 percent of a physiologically acceptable glycol, said vehicle having dissolved therein from 10 to 125 mg./ml. of a tetracycline aluminum calcium gluconate complex, and said composition having a pH of about 7.5 to 9.

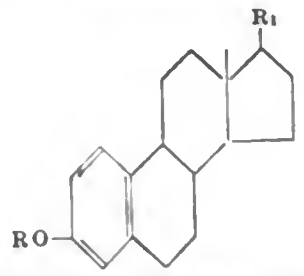
3,159,543

3-CYCLOPENTYL AND CYCLOPENTENYL ETHERS OF ESTRONE AND DERIVATIVES THEREOF

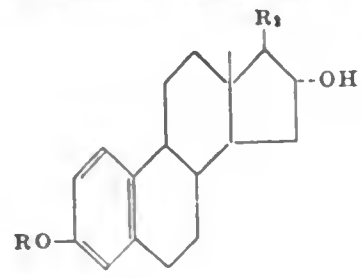
Alberto Ercoli, Milan, Italy, assignor to Francesco Vismara S.p.A., Casatenovo, Como, Italy, a corporation of Italy

No Drawing. Continuation of application Ser. No. 111,178, May 19, 1961. This application July 30, 1963, Ser. No. 298,541
Claims priority, application Italy, Apr. 7, 1961, 6,449/61
16 Claims. (Cl. 167—74)

15. A process of carrying out estrogenic therapy for a human patient comprising administering daily to said patient from 0.001 mg. to 30 mg. of a steroid compound selected from the group consisting of a compound having the formula



where R_1 is selected from the group consisting of a keto group, a β-hydroxy group, a β-acyloxy group derived from a lower alkanoic acid, a β-hydroxy α-alkyl grouping in which the alkyl group contains from one to three carbon atoms, a β-acyloxy α-alkyl grouping in which the acyloxy group is derived from a lower alkanoic acid and the alkyl group contains from one to three carbon atoms, a β-hydroxy α-ethynyl grouping, a β-acyloxy α-ethynyl grouping in which the acyloxy group is derived from a lower alkanoic acid and R is a member selected from the group consisting of cyclopentyl and cyclopentenyl radicals, and a compound having the formula



where R has the same meaning as above, and R_3 is selected from the group consisting of α- and β-hydroxy groups.

3,159,544

METHOD OF PRINTING PHARMACEUTICAL FORMS AND PRODUCT THEREOF

Edward M. Heffernan, Levittown, N.J., and Allan M. Raff, Elkins Park, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,792
5 Claims. (Cl. 167—82)

1. A method of preparing printed pharmaceutical forms which comprises:

(*a*) Applying a standard coating composition to pharmaceutical forms rotating in a coating pan to give coated forms,

(*b*) Drying said coated forms,

(*c*) Covering said coated forms rotating in a coating pan with a cellulosic preprinting coating solution to give cellulose coated pharmaceutical forms, and

(*d*) Ink printing said cellulose coated pharmaceutical forms.

3,159,545

RADIOACTIVE CAPSULES

Ralph Edward Kidwell and Edward Robert Dalton, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 4, 1960, Ser. No. 60,312
7 Claims. (Cl. 167—83)

1. An article of manufacture comprising a pharmaceutical capsule formed of a non-toxic, water-soluble, thermoplastic material and a radioactive composition compounded from pharmaceutical oils and waxes within said capsule, said radioactive composition being a liquid at about 37° C. and remaining a solid at lower temperatures.

3,159,546

CAPSULE SEALING COMPOSITION

John R. Kane, Jenkintown, Pa., assignor to F. G. Okie, Inc., Fort Washington, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1962, Ser. No. 230,269
6 Claims. (Cl. 167—83)

1. A liquid sealant for gelatin capsules, said sealant consisting by weight of about 1 to 4½ parts of acetone, 1 to 2 parts of water, ¾ to 2¼ parts of ethyl acetate, from zero to about 1.45 parts of propylene glycol, U.S.P., and zero to about ¼ of a part of isopropyl alcohol.

3,159,547

METHOD OF LOWERING BLOOD PRESSURE WITH 4-(2-AMINO - 4 - PYRIMIDYLAMINO)-BENZENESULFONAMIDE

Hollis George Schoepke, Waukegan, and James Harold Short, Lake Forest, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 28, 1963, Ser. No. 291,288
6 Claims. (Cl. 167—51.5)

1. A method of lowering blood pressure in a warm-blooded animal which comprises administering a composition containing a compound selected from the group consisting of 4-(2 - amino-4-pyrimidylamino)-benzenesulfonamide and pharmaceutically acceptable, acid-addition salts thereof.

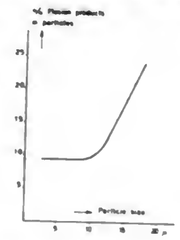
3,159,548

PROCESS OF NUCLEAR FISSION

Jan J. Went, Arnhem, Netherlands, assignor to Stichting voor Fundamenteel Onderzoek der Materie, Utrecht, Netherlands

Filed Sept. 26, 1955, Ser. No. 536,638
2 Claims. (Cl. 176—37)

1. In a process for the establishment of a self-sustaining neutron chain fission reaction in a system comprising



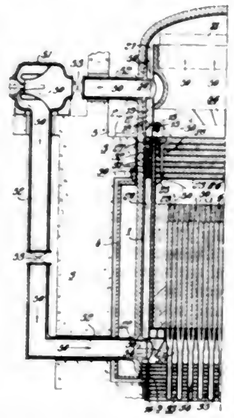
a nuclear fuel suspension of solid fissile material particles in a carrier liquid of low neutron capture cross section, which nuclear fuel suspension continuously circulates through a nuclear reactor wherein critical conditions prevail and through an external piping system including a heat exchanger, in which system non-critical conditions prevail, the improvement of applying a stable non-agglomerating nuclear fuel suspension in which suspension substantially all the suspended particles have a minimum diameter that is greater than 0.01 and have a maximum diameter that is smaller than 15μ and continuously removing fission products from the nuclear fuel suspension by separating at least part of the carrier liquid from the suspension circulating through the external piping system, purifying the carrier liquid thus separated and resupplying the purified liquid to the circulating suspension.

3,159,549

NUCLEAR REACTORS

Richard Valentine Moore, Appleton, and Stanley Hackney, Fearnhead, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 10, 1959, Ser. No. 798,519
5 Claims. (Cl. 176—58)



1. In a nuclear reactor, the combination comprising: (A) a reactor containment vessel having an access opening normally closed for recirculation of a pressurized fluid in the vessel;

(B) a reactor core unit of solid form disposed within the vessel during operation of the reactor and removable as a whole and in one piece through the access opening of the vessel, said reactor core including

(1) a pair of solid radiation shielding means disposed opposite one another in a spaced relationship along an extended axis of the access opening, said shielding means being disposed transverse to said axis,

(2) a reactive core disposed in the space between the shielding means, and

(3) means joining the core with the shielding means to form the unit;

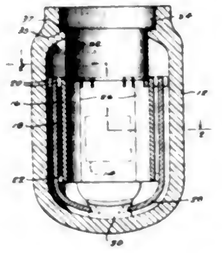
(C) and means frangibly securing the unit to the vessel on the side of one of the shielding means remote from the core, the said one shielding means providing protection during removal of the unit from the vessel.

3,159,550

REMOVABLE THERMAL SHIELD

Lindon C. Laming, Redhill, Surrey, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Aug. 17, 1962, Ser. No. 217,664
7 Claims. (Cl. 176—87)



1. In a reactor vessel having an access opening in the upper end thereof, a vertically oriented annular shield ring arranged in said vessel approximately coaxial with said access opening but spaced from the vessel wall, shield support means at the bottom of said vessel, said shield ring comprising a plurality of adjacent elongated segments having parallel longitudinal edge connections so that adjoining edges of the segments mesh to provide a continuous annular barrier against rectilinear radiation paths, at least two of said connections having scarf joints such that at least one of said segments may be withdrawn lengthwise through said access opening, said shield segments further having lower end portions which converge inwardly towards each other, said support means being adapted to engage said shield lower end portions, said shield ring further including spacing means to space said segments from the vessel wall, and sleeve means adapted to be withdrawn through said access opening and further cooperating with said spacing means to engage the upper end portions of said shield ring segments.

3,159,551

METHOD OF MALTING WITH THE AID OF GIBBERELLIC ACID

Evald Sandegren, Sara Moreas Väg 134, Enskede, Sweden, and Horst Beling, Stamgatan 32, Alvsjo, Sweden

No Drawing. Continuation of abandoned application Ser. No. 763,189, Sept. 25, 1958. This application July 19, 1962, Ser. No. 211,085
7 Claims. (Cl. 195—70)

1. A method of producing malt and malt enzyme preparations comprising the steps of steeping a grain under steeping temperature conditions in water to a subnormal water content of less than the normal water content of at least 40% but sufficient for said grain to be malted under malting conditions; and subjecting the thus sub-normally steeped grain to malting under malting temperature conditions while adding water to said normal water content and also adding successive small amounts of gibberellic acid until the total amount of said added gibberellic acid is sufficient to promote the growth of said grain but does not exceed 4 mg. per each kg. of said grain, said malting being continued until said grain is adequately malted so as to decrease the total time required to obtain a malt while obtaining a malt of balanced composition in high yield.

3,159,552

PROCESS OF PRODUCING 4-DEDIMETHYLAMINO-4-METHYLETHYLAMINO - 5 - HYDROXYTETRACYCLINE

Philip Andrew Miller, West Nyack, and Howard Seebree Corey, Jr., New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 24, 1963, Ser. No. 282,853
4 Claims. (Cl. 195—80)

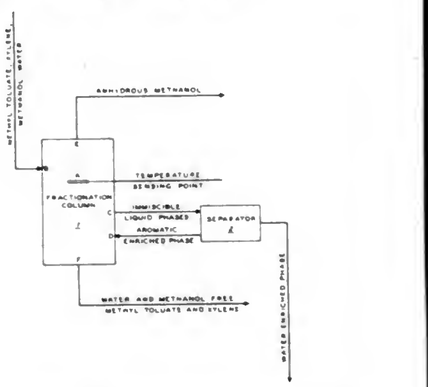
1. A process for producing 4-dedimethylamino-4-methylethylamino-5-hydroxytetracycline which comprises cultivating a 5-hydroxytetracycline producing strain of a species of the genus Streptomyces selected from the group consisting of *S. rimosus*, *S. platensis* and *S. hygroscopicus* in an aqueous nutrient medium containing assimilable sources of carbohydrate, nitrogen and inorganic salts and containing at least 0.08 mg./ml. of l-ethionine under submerged aerobic conditions until substantial quantities of 4-dedimethylamino-4-methylethylamino - 5-hydroxytetracycline are produced in said medium, and recovering the 4-dedimethylamino - 4 - methylethylamino - 5 - hydroxytetracycline so produced.

3,159,553

METHOD OF SEPARATING METHANOL FROM A MIXTURE THEREOF WITH WATER, XYLENE, AND ESTERS

Harry J. Aroyan, San Rafael, Wilton H. Lind, Walnut Creek, and Roger T. Johnson, San Rafael, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

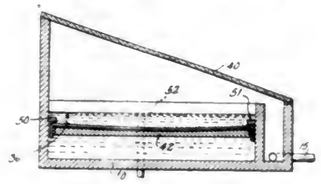
Filed Apr. 27, 1961, Ser. No. 106,023
2 Claims. (Cl. 202—40)



1. A method of separating a fraction comprising substantially anhydrous methanol from a mixture comprising methanol, water, xylene, and methyl toluate, the weight ratio of said xylene to said methanol being at least 1:50, which comprises passing said mixture into a distillation zone; maintaining the temperature between about 155°

and 210° F. at a point in said zone below the point where said mixture is passed into said zone and above a point where two immiscible liquid phases are withdrawn, thereby forming a methanol-enriched homogeneous liquid phase in an upper portion of said zone and two immiscible liquid phases in a lower portion of said zone, one of said phases being a water-enriched phase and the other being an aromatic-enriched phase; withdrawing said two immiscible liquid phases from said lower portion; removing said water-enriched phase from said two immiscible liquid phases; returning said aromatic-enriched phase to said zone; removing a substantially water- and methanol-free fraction comprising methyl toluate and xylene from the lower portion of said zone, while recovering a fraction comprising substantially anhydrous methanol from said upper portion.

3,159,554
SOLAR STILL WITH FLOATING WICK
Wadsworth W. Mount, Warren Township, Somerset County, N.J., assignor of eight and thirty-three one-hundredths percent each to James L. Buckley, Aloise Buckley Heath, John W. Buckley, Priscilla L. Buckley, Jane Buckley Smith, William F. Buckley, Jr., Patricia Buckley Bozell, Fergus Reid Buckley, Maureen Buckley, and Carol Buckley Charlton; one and seven-tenths percent to Dean Reasoner; and fifteen percent to George M. Tisdale
Filed Apr. 12, 1961, Ser. No. 102,551
4 Claims. (Cl. 202—234)

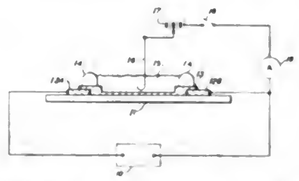


1. A solar still which comprises a substantially horizontal primary trough closed at the bottom and at its respective ends, said still having a tall side wall on one side and a short side wall on the opposite side and a partition near the short side wall forming a secondary trough or channel for distilled water, a sheet of rigid translucent material mounted on said tall and short side walls in an inclined position whereby the still is closed by said rigid sheet, a source of salt or other contaminated water to be distilled, connected to supply salt water to the primary trough of the still, means for automatically maintaining the salt water at a predetermined low level, a float largely covering the bottom of the still and floating on the salt water therein, a mat of water absorbent material mounted on the float and extending over its edges and dipping into the water in the bottom of the still to keep the mat moistened with salt water by wicking action, an overflow to permit the salt water to reach a high level in the still for the purpose of washing the mat without overflowing into the secondary distilled water trough, means for limiting the upward movement of the float arranged to permit large quantities of water to flow over the mat on the float during the washing period, and means for withdrawing distilled water from the secondary trough into which flows condensate from the underside of the translucent top sheet.

3,159,555
METHOD OF MAKING BUS BARS
Robert B. Goody, Tenafly, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,797
8 Claims. (Cl. 204—15)

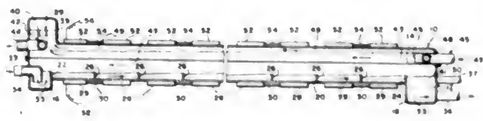
1. The process of manufacturing bus bars including the steps of masking selected areas of said bus bar by application of discrete masks to said bar, applying an insulating coating to said bus bar, removing said coating and said masks from said selected areas, and applying a layer of high electrical conductivity metal to said selected areas.

3,159,556
STABILIZED TANTALUM FILM RESISTORS
David A. McLean, Chatham, and Warren J. Pendergast, Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1960, Ser. No. 74,691
2 Claims. (Cl. 204—37)



1. The method of preparing a stabilized metal film resistor comprising the steps of depositing on a substrate a layer of a film forming metal consisting essentially of tantalum in a configuration such that an electrical path through said layer in a direction transverse to the thickness thereof has an electrical resistance lower than that ultimately desired, decreasing the thickness of said layer by electrolytic anodization until the resistance of said electrical path substantially equals the desired value whereby said tantalum layer is partially converted to the oxide form, thermally aging said resistor in air at a temperature within the range of 200–400° C. for a time period within the range of 2 to 10 hours, thereby stabilizing the unoxidized portion of said tantalum layer and attaching two spaced electrical leads to said layer.

3,159,557
ELECTROLYTIC METHOD FOR PRODUCING TETRAETHYL LEAD
Donald K. Wunderlich, Chicago, Ill., and Larry N. Fussell, Highland, Ind., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed June 1, 1961, Ser. No. 114,210
6 Claims. (Cl. 204—59)



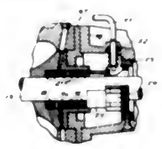
1. A continuous process for the production of tetraethyl lead by electrolysis which includes introducing into and flowing through an electrolytic cell a liquid phase electrolyte consisting essentially of a tetraethyl complex of aluminum and an alkali metal having an atomic number of 11 to 19, tetraethyl lead and a scavenger compound of the formula $MAl(C_2H_5)_3OR$ wherein M is selected from the group consisting of sodium and potassium and R is an alkyl group having from 2 to 8 carbon atoms, continuously flowing liquid lead amalgam through said cell as the anode of said cell, electrolyzing said electrolyte whereby said alkali metal is deposited as a liquid phase at the cathode which is positioned above the anode and tetraethyl lead is produced at the anode where the lead of said amalgam is in the liquid phase, said tetraethyl lead being initially present in the electrolyte in a concentration sufficient to maintain the density of said electrolyte

greater than that of said alkali metal, removing the spent amalgam from the cell, removing spent electrolyte, said alkali metal deposited in liquid phase at the cathode and tetraethyl lead produced at the anode, separating tetraethyl lead from the spent electrolyte and said alkali metal in liquid phase, adding fresh electrolyte to the cell and recovering tetraethyl lead as product.

3,159,558
PROCESS FOR ELECTRO-DEPOSITION OF BITUMINOUS MATERIALS
Paul E. McCoy, Oakland, Calif., assignor to American Bitumuls & Asphalt Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Aug. 26, 1960, Ser. No. 52,064
8 Claims. (Cl. 204—181)

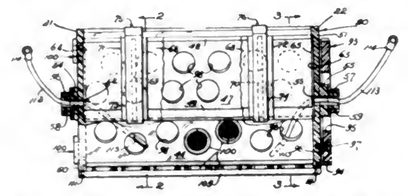
1. A process for electro-depositing on a metal surface an asphalt from a cationic emulsion thereof in water, containing a cation-active emulsifying halide salt of a quaternary nitrogen-containing base selected from the group consisting of quaternary ammonium bases and organo-substituted heterocyclic nitrogen bases and characterized by the presence of a long C_{12}–C_{24} aliphatic hydrocarbon chain in its cation-active portion, said emulsion having a pH from about 2.0 to about 6.0 and consisting essentially of from about 10 to about 30% by weight of an asphalt, sufficient amount of said cation-active quaternary nitrogen-containing salt for emulsifying the asphalt in water and to form a pumpable, mechanically stable emulsion, and water in an amount to make up 100% by weight; the process comprising thoroughly contacting a metal surface with said emulsion and passing a direct electric current therethrough at an average density of at least about 2.5 milliamperes per square inch and in such a direction that the metal surface to be treated constitutes the cathode, whereby a uniform film of asphalt is deposited thereon.

3,159,559
PUMP APPARATUS
Harry Alfred Eberhardt III, 636 School Line Drive, King of Prussia, Pa.
Filed May 13, 1960, Ser. No. 29,095
5 Claims. (Cl. 204—197)



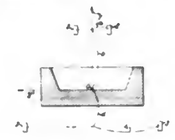
1. Pump apparatus comprising a pump housing, a drive-unit housing, a pump shaft positioned in said housings and extending therebetween, an impeller mounted on said pump shaft within said pump housing, a drive unit housing and operatively connected to said pump shaft to rotate it and said impeller, a stuffing-box housing positioned around said pump shaft between said pump and drive-unit housings, a plurality of packing rings positioned in said stuffing-box housing around and in conductive contact with said pump shaft, said packing rings being made of a material more cathodic than the material of which said shaft is made, packing gland means positioned around the shaft and operative upon said packing rings for exerting pressure against them to form a seal with said shaft, and a plurality of corrosion-protection rings abutting and in conductive contact with said packing rings, centered by said stuffing-box housing, and spaced away from said shaft, said corrosion-protection rings being made of a material more anodic than the material of which said shaft is made, whereby said corrosion-protection rings create a galvanic couple with said packing rings, inhibit destructive galvanic action between said shaft and said packing rings, and inhibit leakage of pumping liquid between said packing rings.

3,159,560
ELECTROPLATING BARRELS
Ralph E. Belke, Oak Park, Ill., assignor to Belke Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1962, Ser. No. 170,054
12 Claims. (Cl. 204—213)



1. An electroplating barrel comprising a pair of end wall plates of chemically inert plastic material, said plates being of polygonal shape, a side wall member of similar material comprising a rectangular plastic sheet having a plurality of parallel bends at obtuse angles forming a barrel wall corresponding in sides to the number of sides of each end plate with one side of the barrel open, and a rectangular cover plate receivable between the end plates and engaging the opposite edges of the open side of the barrel, the said barrel being provided with a plurality of enlarged openings for passing electroplating fluid, and a woven plastic fabric of chemically inert material covering said enlarged openings and adapted to pass the electroplating fluid, but adapted to retain small articles to be electroplated with a minimum penetration of said articles in the fabric.

3,159,561
METHOD AND MEANS FOR REDUCING OR ELIMINATING LEVEL VARIATIONS OF MOLTEN METAL IN HIGH AMPERAGE ELECTROLYSIS CELLS
Jacques Bocquentin, Saint-Cloud, and Jean Givry, Saint-Jean-de-Maurienne, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrométallurgiques, Paris, France, a corporation of France
Filed July 5, 1961, Ser. No. 122,002
Claims priority, application France, Feb. 28, 1956, 709,429, Patent 1,143,879
2 Claims. (Cl. 204—243)



1. An improved system for the igneous electrolysis of a molten bath of metallic compounds to produce molten metal, and wherein detrimental deformation of the level of the molten metal is substantially inhibited, comprising in combination: a plurality of successively lengthwise disposed cells each including a crucible for containing the molten metal, an anode vertically supported above said crucible, a cathode; a system of feeders for supplying current to each said anode, said feeders being spaced laterally from the center of the crucible by a distance *a* and vertically above said crucible by a distance *b*, the distance *a* always being smaller than *b*, said distances *a* and *b* being determined arbitrarily; current outlet means associated with each said cathode; conductor means con-

necting the current outlet means of each cell to the feeders of the succeeding adjacent cell; said conductor means being spaced laterally from the center of the crucible by the distance c and vertically below and relative to the center of the crucible by the distance d, said conductor means being located at the point of intersection of a cubic curve passing through the center of the crucible and satisfying the equation

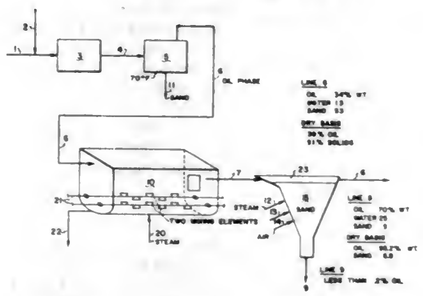
$$d(b^2-a^2)(d^2+c^2)+b(d^2-c^2)(a^2+b^2)=0$$

and a circle, likewise passing through said center and satisfying the equation

$$(\alpha-\tfrac{1}{2})b(c^2+d^2)+(\alpha-\tfrac{3}{2})d(a^2+b^2)=0$$

in which α designates the proportion of the intensity of the current supplied to the feeders at the end nearest the preceding cell, α being 1 when all of the current is supplied to the end of the cell nearest the preceding cell.

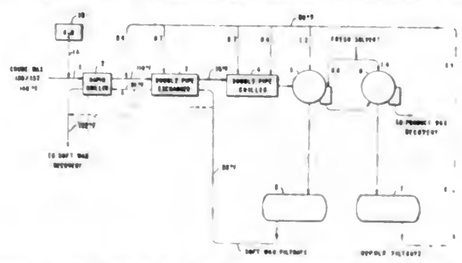
3,159,562
INTEGRATED PROCESS FOR EFFECTIVELY RECOVERING OIL FROM TAR SANDS
John A. Bichard, Point Edward, Ontario, and James W. Wunder, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 136,521
6 Claims. (Cl. 208—11)



1. Improved process for producing bitumen oil from natural tar sands which comprises adding a fluid consisting essentially of water to natural sands and in an initial stage subjecting the mixture to a mixing-shearing action at a temperature in the range from about 50° to 110° F., whereby relatively oil-free sands and oil-rich sands are produced, removing the enriched sands from the relatively oil-free sands and subjecting the enriched sands in a second stage to a temperature in the range from about 140° to 210° F. in the presence of steam, thereafter passing the heated mixture to a separation zone and separating an oil-rich phase and a sand phase.

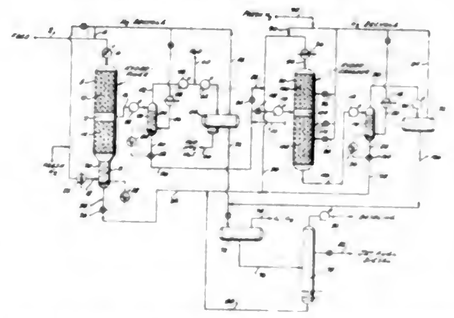
3,159,563
WAX-OIL SEPARATION PROCESS
Vladimir Anastasoff and Louis J. Landry, Houston, and Victor E. McDaniel, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 25, 1960, Ser. No. 45,077
2 Claims. (Cl. 208—30)

1. A process for the deoiling of a crude petroleum wax containing 7.5–30 percent by weight of oil which comprises warming the mixture to form a homogeneous phase of wax with the oil, adding thereto 0.05–0.25 volume of water per volume of mixture, rapidly chilling the water-containing mixture at a rate in excess of 1° F. per minute in the substantial absence of an oil solvent to a temperature at least about 30° F. below the average melting point of the wax, said cooling being carried out in an enclosed heat exchange unit wherein the water-containing mixture is pumped through the unit in a film ¼–¾ inch thick, the film being agitated by scraper blades rotating at 300–600 r.p.m., the cooling being sufficient to crystallize a



major portion of the wax, and thereafter injecting incremental amounts of a cooled oil solvent while the water-containing mixture is being cooled to a filtration temperature and filtering the crystallized wax from the oil solution.

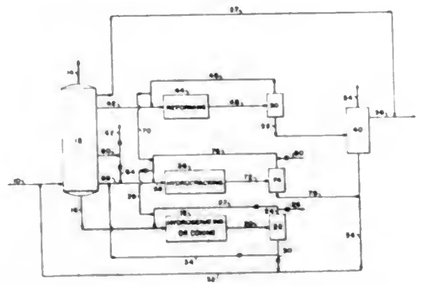
3,159,564
INTEGRAL HYDROFINING-HYDROCRACKING PROCESS
Arnold E. Kelley, Orange, Raoul P. Vaell, Los Angeles, and Texas V. Inwood, La Habra, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Oct. 20, 1961, Ser. No. 146,644
12 Claims. (Cl. 208—59)



11. In a hydrocracking process wherein a wide-boiling-range hydrocarbon feedstock is subjected to catalytic hydrocracking in a hydrocracking zone in which relatively high temperatures prevail in a downstream section and relatively low temperatures prevail in an upstream section, the improvement which comprises dividing said feedstock into a relatively low-boiling fraction and a relatively high-boiling fraction, passing said high-boiling fraction plus hydrogen serially through said low-temperature section then through said high-temperature section, and passing said low-boiling fraction only through said high-temperature section in admixture with effluent from said low-temperature section.

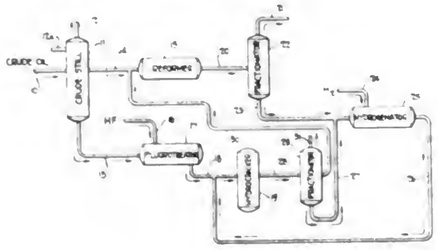
3,159,565
HYDROCARBON CONVERSION PROCESS TO OBTAIN GASOLINE WITH THE USE OF A SINGLE DISTILLATION ZONE
Charles Newton Kimberlin, Jr., and William Floyd Arey, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 26, 1961, Ser. No. 140,923
10 Claims. (Cl. 208—79)

1. A process for converting whole petroleum crude oil mostly to gasoline which comprises distilling whole petroleum crude oil in a single distillation zone into a bottoms fraction boiling above about 1000° F., a heavy naphtha fraction and a middle distillate fraction higher boiling than said heavy naphtha fraction, hydroforming said heavy naphtha fraction and separating a gasoline fraction from higher boiling hydroformed liquid hydrocarbons, catalytically hydrocracking said middle distillate fraction, thermally converting said bottoms fraction to lower boiling



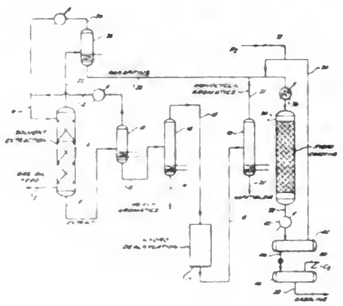
hydrocarbons, returning all of said separated higher boiling hydroformed liquid hydrocarbons and all of said liquid hydrocracked products and all of said converted liquid bottoms fraction to said single distillation zone for fractionation so that converted products are fractionated along with virgin hydrocarbons to provide an improved feed for said hydroforming step for producing additional hydroformed gasoline.

3,159,566
INTEGRATED PETROLEUM REFINING PROCESS
James W. Sprague, Streetsboro, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 4, 1962, Ser. No. 242,179
2 Claims. (Cl. 208—79)



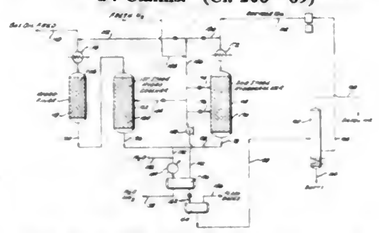
1. An integrated petroleum refining process comprising the steps of
(*a*) fractionating a crude oil into an overhead fraction, a light naphtha fraction, a heavy naphtha fraction, and a bottoms fraction,
(*b*) subjecting said heavy naphtha fraction obtained in step (*a*) to a catalytic reforming operation,
(*c*) fractionating the catalytic reformate obtained in step (*b*) into at least two fractions,
(*d*) treating the bottoms fraction obtained in step (*a*) with hydrofluoric acid whereby nitrogeneous and metallic compounds are removed therefrom,
(*e*) subjecting said treated bottoms fraction obtained in step (*d*) to a catalytic hydrocracking operation,
(*f*) fractionating the hydrocracked effluent from step (*e*) into a light fraction, an intermediate distillate fraction and a bottoms fraction,
(*g*) combining the intermediate fraction obtained in step (*f*) with the feed to step (*b*) and subjecting same to a catalytic reforming operation,
(*h*) combining the bottoms fraction obtained in step (*c*) with the bottoms fraction obtained in step (*f*) and subjecting this stream to a catalytic hydrogenation operation,
(*i*) combining the hydrogenated effluent from step (*h*) with the feed to step (*e*) and catalytically hydrocracking same.

3,159,567
SELECTIVE HYDROCRACKING PROCESS
Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Mar. 26, 1962, Ser. No. 182,263
5 Claims. (Cl. 208—87)



5. A process for obtaining a high-octane gasoline from a predominantly paraffinic gas-oil feedstock boiling above the gasoline range and containing at least about 2% by volume of polycyclic aromatic hydrocarbons, which comprises:
(A) subjecting said feedstock to a separatory treatment to effect at least a partial removal of said polycyclic aromatic hydrocarbons and produce a raffinate oil containing less than about 2% by volume of polycyclic aromatic hydrocarbons;
(B) blending said raffinate oil with at least about 0.5% by volume of added monocyclic aromatic hydrocarbon; and
(C) subjecting the resulting blend of paraffinic and monocyclic aromatic hydrocarbons to hydrocracking with added hydrogen in the presence of a hydrocracking catalyst comprising a Group VIII metal hydrogenating component deposited upon a refractory cracking base, the conditions of hydrocracking including a temperature between about 400–850° F., a pressure between about 400 and 3,000 p.s.i.g., and a liquid hourly space velocity between about 0.5 and 15, said conditions being further correlated with each other so as to effect a substantial hydrocracking of paraffinic hydrocarbons without substantial hydrogenation of said monocyclic aromatic hydrocarbons, and recovering from said hydrocracking a gasoline fraction comprising monocyclic aromatic hydrocarbons and a paraffinic portion relatively richer in isoparaffins than would be obtained under the same hydrocracking conditions in the absence of said added monocyclic aromatic hydrocarbons.

3,159,568
LOW PRESSURE HYDROCRACKING PROCESS WITH HYDROFINING OF FEED
Frank C. Price, Anaheim, Anthony J. Tulleners, Fullerton, and Cloyd P. Reeg, Long Beach, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Oct. 2, 1961, Ser. No. 142,182
24 Claims. (Cl. 208—89)



12. An improved, low-pressure process for hydrocracking a mineral oil feedstock boiling above the gasoline range and containing organic nitrogen compounds, which comprises first subjecting said feedstock to catalytic hydrofining under substantially non-cracking conditions in the presence of added hydrogen and a hydrofining catalyst comprising a hydrogenting component from the class consisting of the oxides and sulfides of molybdenum, tungsten and the Group VIII metals supported on a substantially non-cracking inorganic oxide carrier, and under hydrofining conditions adjusted to give a substantial decomposition of said organic nitrogen compounds with resultant formation of ammonia, subjecting effluent from said hydrofining step, without intervening purification to remove ammonia, to a first stage of hydrocracking at a space velocity between about 0.5 and 10 in the presence of a hydrocracking catalyst comprising a solid refractory cracking base and a Group VIII metal sulfide hydrogenating component, treating mixed effluent from said first stage of hydrocracking and the effluent from the hereinafter defined second stage of hydrocracking to separate ammonia and low-boiling hydrocarbons therefrom, subjecting remaining oil boiling above the gasoline range to a second stage of hydrocracking in the presence of hydrogen and a fixed bed of hydrocracking catalyst comprising a solid refractory cracking base and a Group VIII metal hydrogenating component, and combining the effluent from said second stage of hydrocracking with said first-stage hydrocracking effluent to form said mixed effluent, each of said hydrofining and hydrocracking steps being carried out at pressures between about 400–2,000 p.s.i.g., and temperatures between about 450° and 875° F.

3,159,569
HYDROCRACKING PROCESS AND CATALYSTS
Rowland C. Hansford, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 30, 1961, Ser. No. 99,357
57 Claims. (Cl. 208—110)

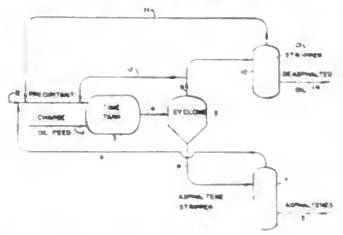
3. A process for hydrocracking a high-boiling hydrocarbon to produce lower boiling hydrocarbons which comprises contacting said high-boiling hydrocarbon in the presence of hydrogen and under hydrocracking conditions, with a composite catalyst comprising as the essential active ingredients (1) a major proportion of a hydrocracking base consisting essentially of between about 5% and 75% of titania xerogel, between about 5% and 75% of zirconia xerogel, between about 5% and 85% of silica xerogel; and (2) between about 0.1% and 35%, based on free metal, of an added promoter selected from the class consisting of chromium, molybdenum, tungsten, uranium, the Group VIII metals, and the oxides and sulfides thereof, all of said ingredients being intimately composited together.

3,159,570
HYDRAZINE SWEETENING
Charles O. Petty, P.O. Box 840, Tyler, Tex.
Filed Dec. 19, 1962, Ser. No. 246,281
6 Claims. (Cl. 208—206)



1. The method of sweetening a sour hydrocarbon naphtha containing a small quantity of sour components comprising scrubbing the said sour naphtha with a catalyst solution containing strong aqueous caustic, from 0.01 to 3 weight percent of aromatic mercaptans, at least 10 volume percent of acid oils, and a small quantity of hydrazine in the presence of an oxygen-containing gas.

3,159,571
RESIDUAL OIL REFINING PROCESS
Gerrit H. Reman and Hendrik Groothuis, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 22, 1961, Ser. No. 154,277
Claims priority, application Netherlands Nov. 28, 1960
8 Claims. (Cl. 208—251)

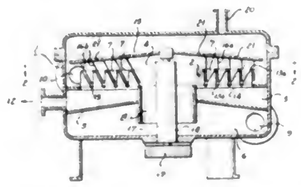


The process for the fractionation of an ash-containing asphaltenic residual petroleum oil feed which comprises diluting said oil with 3–6 volumes of a precipitant consisting essentially of at least one C_{5-7} alkane per volume of said oil, holding the diluted oil mixture for a period of 0.5–10 minutes at a temperature of 30–70° C., whereby asphaltenes are precipitated, and passing the mixture through at least one hydrocyclone at a pressure of 3–10 atmospheres whereby an alkane solution of oil having a reduced ash content and containing less than about 2% by weight of asphaltenes is separated from an alkane slurry of asphaltenes, said asphaltenes having a substantially greater ash content than that of the feed.

3,159,572
MEANS FOR THE STRAINING, FRACTIONATION AND CONCENTRATION OF SOLIDS, E.G., CELLULOSE FIBRES, SUSPENDED IN A LIQUID
Ernst Gustaf Rane Ranhagen, Vasterviksvagen 3, Danderyd, Sweden
Filed May 23, 1962, Ser. No. 197,019
Claims priority, application Sweden May 24, 1961
1 Claim. (Cl. 209—273)

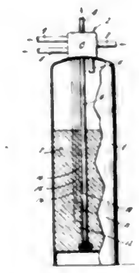
Means for the straining fractionation and concentration of solids suspended in a liquid, said means comprising in combination a substantially horizontal straining bottom provided with a concentric fold formation, said formation forming on its top side a multiplicity of

concentric annular straining grooves, the side walls of said grooves in a cross section thereof diverging upwards from the bottom of the grooves, the radially outer side wall of each straining groove extending in a radially outward direction; a suspension inlet to a straining chamber above said straining bottom, said inlet being positioned centrally in relation to said straining grooves; a discharge



opening from said chamber, positioned radially outside the straining grooves; and a stirrer or agitator arranged centrally to said grooves and mounted for rotation around a substantially vertical axis and positioned in said chamber, said stirrer having pins or fingers extending into said straining grooves in positions to sweep each side surface of said grooves.

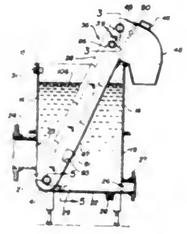
3,159,573
RESISTANCE SENSING PROBE SYSTEM
Harold D. Ritchie, Kankakee, Ill., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Mar. 30, 1961, Ser. No. 99,570
5 Claims. (Cl. 210—96)



1. In combination with a water softener tank having a softening resin and having a control valve and a regeneration control circuit, the improvement comprising a water conduit connected to the valve and extending inwardly through an opening in the tank into the resin, electrode means including at least three separate electrodes disposed within the resin and secured to the outer surface of the water conduit, and electrical leads secured to the electrode means and extending outwardly through the opening and operatively connected in the regeneration control circuit.

3,159,574
CATCH BOX
Clark K. Benson, Millbrae, Calif., assignor to Heat and Control, Inc., San Francisco, Calif., a corporation of California
Filed Jan. 23, 1961, Ser. No. 84,226
3 Claims. (Cl. 210—237)

1. In a catch box for removing fines from a liquid, a rectangular container open at the top to form a rim there around and having inflow and outflow passages disposed near its lower end, a conveyor assembly removably resting unattached on the bottom of said container and said rim, the conveyor assembly comprising a pair of side frame members, a drive roller and a driven roller rotatably mounted in the side frame members, an endless belt of relatively fine woven material mounted on said drive and driven rollers, said belt carrying lifting flights disposed transversely thereof, the flights projecting outwardly from the belt and having perforations therein, the conveyor assembly being arranged so that the belt is disposed between the inflow and outflow passages and substantially at right angles to the path of flow of liquid through the container, the conveyor assembly having a width equal to the width of the container and being positioned on the bottom of the container, the lower end of the conveyor being spaced from the bottom wall a distance substantially equal to the outward projection of said flights whereby substantially all of the liquid passing from the inflow to the outflow passages must pass through the belt or the flights, the lower



end of the conveyor being disposed in the lower end of the container at the corner thereof and being inclined upwardly and having its upper end extending above the upper end of the container, said belt serving to remove the fines from the liquid as the liquid passes through the belt, a pipe mounted in the side frame members of the conveyor between the conveyor belt, the pipe having openings therein facing towards the return run of the conveyor belt, and means for applying air under pressure to said pipe so that jets of air are introduced through the return run of the belt to remove fines collected by the belt, and a hopper mounted on the upper end of the conveyor assembly, said hopper having an opening through which the fines discharged from the conveyor assembly may pass.

3,159,575
PROCESS OF IMPROVING GREASE YIELDS
Dean W. Criddle, Pleasant Hill, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Aug. 3, 1962, Ser. No. 214,473
2 Claims. (Cl. 252—18)

1. A grease composition having extreme pressure characteristics consisting essentially of a mineral oil of lubricating viscosity, from about 7.0% to about 12.0% by weight of calcium 12-hydroxy stearate, from 6.0% to about 12.0% by weight of calcium acetate, from 2.0% to about 6.0% by weight of calcium carbonate, from 1.0% to 8.0% by weight of calcium hydroxide, wherein the mole ratio of said calcium acetate to said calcium 12-hydroxy stearate has a value from 2 to 5, and said calcium carbonate is derived from the reaction of urea with calcium hydroxide, and from 0.1% to 10% by weight of an alkyl methacrylate-vinyl pyrrolidone copolymer having a molecular weight in the range of 100,000 to 500,000.

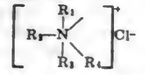
3,159,576

GREASE YIELDS

Dean W. Criddle, Pleasant Hill, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,535
2 Claims. (Cl. 252—18)

1. A grease composition comprising a major proportion of a mineral oil of lubricating viscosity, from 7% to 12% by weight of calcium 12-hydroxy stearate, from 6% to 12% by weight of calcium acetate, from about 1.0% to about 8% by weight of calcium hydroxide, from 1.7% to about 10.0% by weight of calcium carbonate, wherein said calcium acetate is present in an amount of from 2 moles to 5 moles per mole of calcium 12-hydroxy stearate, and from 0.1% to 1.0% by weight of a quaternary ammonium compound of the formula:



wherein R_1 and R_2 are alkyl radicals each containing from 1 to 4 carbon atoms, and R_3 and R_4 are alkyl radicals each containing from 10 to 30 carbon atoms.

3,159,577

GREASE CONTAINING POLYTETRAFLUOROETHYLENE

Henry A. Ambrose, Penn Hills, and Paul R. McCarthy, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 23, 1959, Ser. No. 861,449
1 Claim. (Cl. 252—28)

A lubricating composition capable of functioning at temperatures up to about 300° F. consisting essentially of a major amount of a mineral lubricating oil thickened to the consistency of a grease with dimethyldicetyl ammonium bentonite and having incorporated therein about 0.5 to about 45 percent by weight of an aqueous colloidal dispersion of polytetrafluoroethylene, said aqueous colloidal dispersion consisting of about 25 to about 75 percent by weight of polytetrafluoroethylene and about 75 to about 25 percent by weight of water, the weight ratio of the bentonite compound to the tetrafluoroethylene polymer being about 2:1 to about 3:1.

3,159,578

ORGANIC FUNCTIONAL FLUIDS AND POLYMERIC AMINE SALT ADDITIVES THEREFOR

Ralph Lutwack, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 26, 1960, Ser. No. 11,146
4 Claims. (Cl. 252—32.7)

1. A liquid hydrocarbon containing from about 0.1% to about 5% of an oil-soluble salt the cationic portion of which is selected from the group consisting of a copolymer of vinyl pyridine and an acrylate ester and of a copolymer of vinyl pyrrolidone and an acrylate ester each cation having a molecular weight of from about 75,000 to about 1,000,000 and the anionic portion of the salt is a monoester of a thiomethyl phosphonic acid.

3,159,579

THERMOELECTRIC MATERIALS

John B. Conn, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 25, 1962, Ser. No. 205,102
3 Claims. (Cl. 252—62.3)

1. p-Type thermoelectric materials having useful thermoelectric properties with the general formula

$$x\mathrm{CuSbSe_2}.(1-x)\mathrm{Cu_3SbSe_4}$$

where x is greater than zero, but less than one.

3,159,580

FIRE-RESISTANT HYDRAULIC FLUIDS

Irving P. Hammer, Nutley, Rudolph J. Holzinger, Haddonfield, and Clarence Liddy, Camden, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed June 12, 1961, Ser. No. 116,284
4 Claims. (Cl. 252—75)

1. A composition for use as hydraulic fluid consisting essentially of a water-in-oil emulsion, the water content of said emulsion, being about 10–50 percent by weight, the oil having a viscosity of about 100–400 Saybolt Universal seconds at 100° F. and a viscosity index of at least 80, about .25–6.00 percent by weight of oil-soluble calcium petroleum sulphonate having a molecular weight of at least 975, the calcium petroleum sulphonate having a minimum alkalinity equivalent to about 20–25 mg. of potassium hydroxide per gram of sulphonate as supplied, and about 0.01 to 1.0 percent by weight of a potassium salt of a saturated straight-chain fatty acid having a carbon chain length of C_2–C_4, whereby a stable emulson is provided which effects minimum wear.

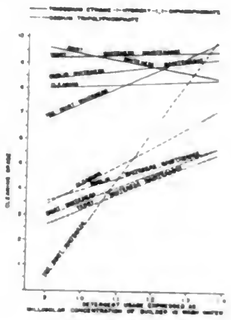
3. A composition for use as hydraulic fluid consisting essentially of a water-in-oil emulsion, the water content of said emulsion being about 10–50 percent by weight, the oil having a viscosity of about 100–400 Saybolt Universal seconds at 100° F. and a viscosity index of at least 80, about 0.25–6.00 percent by weight of oil-soluble calcium petroleum sulphonate having a molecular weight of at least 975, the calcium petroleum sulphonate having a minimum alkalinity equivalent to about 20–25 mg. of potassium hydroxide per gram of sulphonate as supplied, about 0.01 to 1.0 percent by weight of a potassium salt of a saturated straight-chain fatty acid having a carbon chain length of C_2–C_4, and about 0.02–1.49 by weight of potassium stearate, the ratio of the potassium salt of the C_2–C_4 saturated straight-chain fatty acid to potassium stearate being from 5:95 to 95:5, whereby a stable emulsion is provided which effects minimum wear.

3,159,581

DETERGENCY COMPOSITION

Francis L. Diehl, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 13, 1962, Ser. No. 187,327
6 Claims. (Cl. 252—152)



1. An improved cleansing and laundering composition consisting essentially of a water-soluble trisodium salt of ethane-1-hydroxy-1,1-diphosphonate as a builder and an organic water-soluble non-soap synthetic detergent surfactant having pronounced detergent power selected from the group consisting of anionic, nonionic, zwitterionic, ampholytic detergent surfactants, and mixtures thereof, the ratio, by weight, of said disphosphonate builder to said detergent surfactant being in the range of about 1:2 to about 10:1, said composition providing in aqueous solution a pH between about 9 and about 12.

3,159,582

STABLE SOLVENT COMPOSITIONS

Leslie L. Sims, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 23, 1960, Ser. No. 10,091
7 Claims. (Cl. 252—153)

1. A stable solvent composition for the degreasing of metals consisting essentially of 1,1,1-trichloroethane containing from about 0.5 to about 10 weight percent of a stabilizing mixture sufficient to inhibit the 1,1,1-trichloroethane against metal induced decompositions; said stabilizing mixture consisting essentially of nitromethane, a hydrocarbyl tertiary amine containing only alkyl groups, each alkyl group having from about 2 to about 6 carbon atoms, and a monohydric acetylenic alcohol containing from 3 to about 6 carbon atoms; and wherein the component of the stabilizing mixture present in least quantity is present in at least 10 percent by weight based on the sum total weight of the stabilizing mixture.

3,159,583

PREPARATION OF THORIUM SILICATE HYDROSOLS

Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 12, 1960, Ser. No. 28,511
4 Claims. (Cl. 252—301.1)

1. The method of preparing a thorium silicate sol by concurrent hydrolysis of a solution of a thorium salt and an organic silicate comprising the steps of preparing a solution of a tetravalent thorium salt selected from the group consisting of thorium nitrate, thorium chloride and thorium perchlorate in water, adding alkoxy silanes selected from those having alkoxy groups smaller than butoxy in an amount about equal to the number of moles of thorium salt present to the solution, withdrawing a portion of said solution, dialyzing said portion to remove anions, returning said portion to a larger body of solution maintained at about 70 to 150° C. and continuing said withdrawal, dialysis and addition back until said body of solution is essentially electrolyte free and recovering the product thorite sol.

3,159,584

COPPER ACTIVATED ALKALINE EARTH METAL-ALKALI METAL ORTHOPHOSPHATE LUMINESCENT MATERIAL

Willem Lambertus Wanmaker and Cornelis Bakker, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 28, 1961, Ser. No. 127,713
Claims priority, application Netherlands Sept. 22, 1960
3 Claims. (Cl. 252—301.4)

1. A copper activated alkaline earth metal orthophosphate luminescent material, said luminescent material containing at least one alkali metal of the group consisting of lithium, sodium and potassium and having a structure satisfying the formula:

$$x\mathrm{AO}.y\mathrm{B_2O}.z\mathrm{P_2O_5}.p\mathrm{Cu_2O}.q\mathrm{MnO}.m\mathrm{Al_2O_3}$$

wherein A represents at least one alkaline earth metal selected from the group consisting of calcium, strontium and barium, B represents at least one alkali metal selected from the group consisting of lithium, sodium and potassium and the following conditions are met:

$$(a)\quad 2.50 \leqq \frac{x+y+p+q+3m}{z} \leqq 3.10;$$

$$(b)\quad 1.60 \leqq \frac{x}{y} \leqq 3.54;$$

$$(c)\quad 0.0025 \leqq \frac{p}{z} \leqq 0.04;$$

$$(d)\quad 0.00 \leqq \frac{q}{z} \leqq 0.25;\ \text{and}$$

$$(e)\quad 0.00 \leqq \frac{m}{z} \leqq 0.075;$$

said luminescent material when excited by ultra-violet radiation of a wavelength of less than 300 mμ exhibiting a single emission peak between about 350 mμ and 520 mμ.

3,159,585

METHOD OF ENCAPSULATING WATER INSOLUBLE OILS AND PRODUCT THEREOF

Raymond B. Evans, Catonsville, Md., and William Herbst, Watchung, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1961, Ser. No. 102,392
3 Claims. (Cl. 252—316)

1. A method of encapsulating water insoluble oils which comprises making an aqueous dispersion of an encapsulating agent consisting essentially of a carboxylated dextrin having a total carboxyl group content of from 0.15% to 1.25%, by weight, emulsifying in said dispersion the oil to be encapsulated, and then drying the emulsion by spraying the same directly into a column of heated gas, said carboxylated dextrin being derived from a starch selected from the class consisting of cereal starches.

3. A dry, free flowing particle consisting essentially of an encapsulating agent for insoluble oils consisting solely of a carboxylated dextrin, said dextrin having a total carboxyl group content of from 0.15% to 1.25%, by weight, and a water insoluble oil entrapped therein, said carboxylated dextrin being derived from a starch selected from the class consisting of cereal starches.

3,159,586

STABILIZED SOLUTIONS OF METAL-SPECIFIC INDICATOR DYES

Reginald Wildenhayn, Hannover-Kleefeld, Germany, assignor to Gebruder Heyl Chemische Fabrik K.G., Hildesheim, Germany

No Drawing. Filed May 24, 1961, Ser. No. 112, 214
Claims priority, application Germany, May 28, 1960, H 39,553
3 Claims. (Cl. 252—408)

1. An aqueous indicator solution of a metal specific indicator dye of the o,o'-dihydroxydiarylazo type containing as a stabilizing agent a polyhydric alcohol selected from the group consisting of polyethylene glycols and polypropylene glycols, having a molecular weight up to 1000, in an amount of at least 30 percent by weight of the solution.

3,159,587

ORGANOPOLYLITHIUM POLYMERIZATION INITIATORS AND THEIR PREPARATION

Carl A. Uraneck and Gerald R. Kahle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,594
8 Claims. (Cl. 252—431)

1. A process for forming an organopolylithium polymerization initiator composition which comprises contacting lithium with a polyaryl-substituted ethylene com-

pound containing from 2 to 4 aryl groups selected from the group consisting of phenyl and naphthyl in a reaction medium comprising an olefinic hydrocarbon material having from 2 to 20, inclusive, carbon atoms selected from the group consisting of monoolefins and nonconjugated polyenes having from 2 to 3 double bonds per molecule at a temperature in the range —20 to 100° C.

3,159,588
SILICA-ZIRCONIA-TITANIA HYDROCRACKING CATALYST

Rowland C. Hansford, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 15, 1960, Ser. No. 36,125
6 Claims. (Cl. 252—452)

1. A hydrogenating-cracking catalyst consisting essentially of coprecipitated titanium oxide, zirconium oxide and silicon oxide in intimate admixture, the silica content of said catalyst making up a minor proportion greater than 10% thereof, the zirconia content being between about 15% and 65%, and the titania content being between about 15% and 65%, said catalyst having been prepared by coprecipitation of the hydrous gels of titania, zirconia and silica, followed by washing and calcining of the mixed hydrous oxides, said coprecipitation step being carried out by admixing an aqueous alkaline solution with an aqueous acidic solution containing dissolved titanium and zirconium salts selected from the class consisting of halides, sulfates, acetates and oxalates, a soluble silicon compound selected from the class consisting of alkali metal silicates, fluosilicic acid, and silica hydrosols being dissolved in one of said solutions, and controlling said admixing so as to provide an aqueous environment of pH between about 6 and 12 in the immediate zone of coprecipitation.

3,159,589
METHOD FOR THE PREPARATION OF POLYAROMATIC RESINS

Peter Richard Bloomfield and Kenneth Parvin, London, England, assignors to Artrite Resins Limited, London England, a British company

No Drawing. Filed Oct. 17, 1960, Ser. No. 62,849
Claims priority, application Great Britain Oct. 21, 1959
1 Claim. (Cl. 260—2)

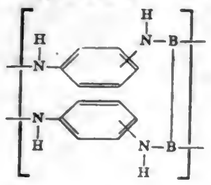
A method of preparing polyaromatic resins, which method comprises condensing at least one organic compound having at least two reactive halogen atoms selected from the group consisting of polyhalides of benzene, dihalophenyl-triazine, dihalo pyridine, dihalodiphenyl-silicon, dihalodiphenyl ether, dihalophenyl phosphine and mixtures thereof in a substantially anhydrous tetrahydrofuran medium and in the presence of a finely divided metal selected from the group consisting of lithium and sodium.

3,159,590
POLYMERIC ORGANOBORON COMPOUNDS

Robert J. Brotherton, Fullerton, and Lowell L. Petterson, Whittier, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,159
6 Claims. (Cl. 260—2)

1. Solid, thermally stable organoboron polymers consisting of the recurring structural unit



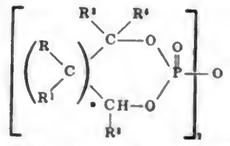
where the boryl-amino substituents can only be in the meta and para positions.

3,159,591
FLAME-RESISTANT URETHANE FOAMS

William M. Lanham, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 28, 1961, Ser. No. 120,181
23 Claims. (Cl. 260—2.5)

1. A method for the preparation of flame-resistant polyurethane foams in which a mixture consisting essentially of a polyether having at least two active hydrogens, a catalyst, an organic polyisocyanate, a blowing agent and a minor amount of a phosphorus compound corresponding to the formula:



wherein R, R^1, R^2, R^3 and R^4, respectively, designates a radical of the class consisting of hydrogen and the lower alkyl groups; and *n* is a number of the class consisting of 0 and 1, is reacted to produce said foams.

3,159,592
PRESSURE SENSITIVE TRANSFER MEMBER AND PRESSURE TRANSFERABLE INKS THEREFOR

John F. McHugh, Brooklyn, N.Y., and Harlan H. Nickell, California, Ky., assignors to Interchemical Corporation, New York, N.Y., a corporation

No Drawing. Filed Nov. 29, 1960, Ser. No. 72,308
7 Claims. (Cl. 260—23.7)

2. A pressure transferable ink for a pressure sensitive transfer member comprising (A) 8 to 14 parts by weight of a resin comprising at least one member selected from the group consisting of (1) a blend including 94% of styrene homopolymer and 6% of a copolymer of styrene and butadiene and (2) the polymerization product of a mixture comprising by weight 20% to 35% of acrylonitrile, and 65% to 80% of styrene, (B) 8.0 to 17 parts by weight of a non-volatile composition comprising at least one member selected from the group consisting of oleic acid mineral oil, triethylene glycol and castor oil, (C) a volatile organic solvent for the resin and (D) coloring material.

3,159,593
PROCESS FOR THE PRODUCTION OF A LONG-LASTING STABLE SOLUTION OF FORMALDEHYDE-MELAMINE CONDENSATION PRODUCTS, AND THE NEW STABLE PRODUCT THEREOF

Marcello Morini, Legnano, and Tito Sabatini, Castellanza, Varese, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed May 17, 1960, Ser. No. 29,557
Claims priority, application Italy, May 19, 1959, 8,435/59
7 Claims. (Cl. 260—29.4)

1. A process for the preparation of a stable solution of a product of condensation of melamine with formaldehyde obtained by reacting melamine and formaldehyde in molecular ratios ranging between 1:2 and 1:4 to give a partial condensation product, consisting essentially of adding, as a stabilizing agent, an aromatic sulphamide to the partial condensation product in aqueous alcoholic medium in a proportion of 0.05 to 0.15 mol of sulphamide per mol of melamine, the melamine-formaldehyde partial condensation product being obtained by reacting melamine and formaldehyde at 70 to 140° C. at a pH from 7.5 to 10.0 and in the presence of an aliphatic alcohol

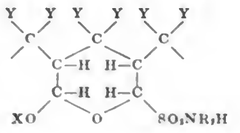
having less than 4 carbon atoms and continuing the condensation at least until the sulfonamide is substantially completely dissolved.

3,159,594
WATER-SOLUBLE SULFUR AND NITROGEN CONTAINING DERIVATIVES OF UNSATURATED ALDEHYDE POLYMERS, THEIR PREPARATION AND USE

Elliot Bergman, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 23, 1960, Ser. No. 30,768
17 Claims. (Cl. 260—29.6)

1. A water-soluble nitrogen and sulfur-containing high molecular weight polymeric product having a plurality of structural units



wherein Y is a member of the group consisting of hydrogen and lower alkyl groups, X is a member of the group consisting of hydrogen and R_2NH radicals and R is a member of the group consisting of hydrogen and hydrocarbon radicals, which polymeric product has an intrinsic viscosity of at least 0.9 dl./g.

14. A composition for treating paper to improve properties thereof comprising an aqueous solution of the polymeric product defined in claim 1.

3,159,595
BLENDING CRYSTALLINE 2,2-BIS(2,3-EPOXYPROPOXYPHENYL)PROPANE WITH CURING AGENT

Harvey L. Parry, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,856
2 Claims. (Cl. 260—37)

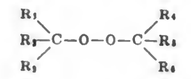
1. A process for producing a free-flowing resinifiable composition which comprises admixing dry ingredients including free-flowing crystals of 2,2-bis(2,3-epoxypropoxyphenyl)propane and trimellitic anhydride in amounts such that the ratio of anhydride groups to epoxy groups is from 0.85:1 to 1.15:1 with a sufficient amount of a paraffin having from 5 to 9 carbon atoms to convert the total mixture into a pasty suspension, thoroughly blending said pasty suspension by mechanical agitation, subsequently evaporating the paraffin at a temperature below 100° F. and storing the resulting solid blend at a temperature below about 100° F.

3,159,596
PROCESS FOR VULCANIZING ACID FILLER CONTAINING SATURATED OLEFIN COPOLYMERS WITH ORGANIC PEROXIDES AND SULFUR

Luigi Falcone and Romano Matteucci, both of Ferrara, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed July 27, 1960, Ser. No. 45,546
Claims priority, application Italy July 30, 1959
11 Claims. (Cl. 260—41)

1. A process for vulcanizing a mix consisting essentially of (1) an amorphous saturated copolymer of an ethylene with a higher alpha-olefin, and (2) an acid filler selected from the group consisting of channel carbon black, clay and silica, this process comprising adding to said mix (3) from about 0.3 to about 1.5 g.-atoms of sulfur per mole of the following peroxide and (4) from about 0.5 to about 10% based on the weight of the copolymer of said peroxide selected from the group consisting of peroxides represented by the formula:



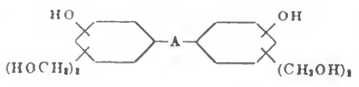
wherein R_1, R_2, R_3, R_4, R_5, and R_6 are each selected from the group consisting of alkyl radicals and halogen-substituted alkyl radicals, and heating the resulting mixture to a temperature of from about 110° C. to 220° C. to effect vulcanization thereof.

3,159,597
CROSS-LINKED ADHESIVE OF A VINYL POLYMER AND A POLYMETHYLOL BIS-PHENOL

Alan K. Forsythe, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,626
5 Claims. (Cl. 260—847)

1. A heat-setting adhesive comprising 5–50% by weight of a monomeric tetramethylol bis-phenol having the formula



wherein A is an alkylidene radical having 1–5 carbon atoms, and 50–5% by weight of a thermoplastic vinyl resin which is a terpolymer of vinyl chloride, vinyl acetate, and 0.5–5% by weight based on the weight of the resin of maleic anhydride.

3,159,598
STABILIZATION OF POLYOLEFINS

Robert Bruce MacFarlane, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate

No Drawing. Filed Sept. 6, 1960, Ser. No. 53,882
Claims priority, application Canada, Sept. 16, 1959, 782,568
3 Claims. (Cl. 260—45.9)

1. The method of stabilizing residues of heavy metal catalyst compounds contained in polyisoprene produced with a catalyst formed by admixing an aluminum trialkyl and titanium halide which comprises treating the polymer containing said catalyst residues with an amount of a hydrazine selected from the group consisting of hydrazine, methyl hydrazine and ethyl hydrazine, the amount of the hydrazine being at least three moles per mole of the catalyst residues present in the polymer, and removing the unreacted excess of the hydrazine from the polymer.

3,159,599
ANTI-OXIDANT STABILIZER

William H. Meek, Jr., Euclid, Ohio, assignor, by mesne assignments, to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 14, 1960, Ser. No. 14,943
2 Claims. (Cl. 260—45.75)

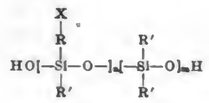
1. A composition comprising polypropylene and between about 0.05% to 0.5% by weight of said polypropylene of a two-component mixture consisting of cadmium dilauryl dimercaptide and bis(3,5-diisopropyl-4-hydroxy phenyl) phenyl methane, said mercaptide being present in the mixture at a weight ratio to said phenolic compound of about 0.2/1 to 45/1.

3,159,600
REACTION PRODUCT OF HYDROXY SILOXANES AND POLYALKYLENIMINES

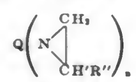
Nathaniel L. Watkins, Jr., Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Oct. 13, 1960, Ser. No. 62,338
7 Claims. (Cl. 260—46.5)

1. A resinous reaction product of a polysiloxane having the formula



in which R is selected from the group consisting of an alkylene radical having from 1 to 8 carbon atoms and the phenylene radical, X is selected from the group consisting of carboxyl group, amine group, mercaptyl group and hydroxyl group, R′ is selected from the group consisting of monovalent hydrocarbon radical and monovalent hydrocarbonoxy radical, *n* is 2 to 1000 and *m* is 0 to 1000 and a polyalkylenimine of the formula



in which Q is n-valent radical selected from the group consisting of an organic radical linked to N through carbonyl groups and having at most oxygen other than carbon and hydrogen,



n is 2 to 4, and R′ and R″ are selected from the group consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms.

3,159,601
PLATINUM-OLEFIN COMPLEX CATALYZED ADDITION OF HYDROGEN- AND ALKENYL-SUBSTITUTED SILOXANES

Bruce A. Ashby, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed July 2, 1962, Ser. No. 207,060
6 Claims. (Cl. 260—46.5)

1. A process for the addition of the silicon-bonded hydrogen of a first organopolysiloxane having the formula:

$$(R)_a(H)_bSiO_{\frac{4-a-b}{2}}$$

across the silicon-bonded aliphatically unsaturated groups of a second organopolysiloxane having the formula:

$$(R)_a(R')_bSiO_{\frac{4-a-b}{2}}$$

which process comprises forming a mixture of said first organopolysiloxane and said second organopolysiloxane with a platinum-olefin complex selected from the class consisting of:

$$[PtCl_2 \cdot Olefin]_2$$

and

$$H[PtCl_3 \cdot Olefin]$$

and maintaining said mixture at a temperature of from room temperature to about 150° C. for a sufficient time to effect said addition, where R is a member selected from the class consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation, halogenated monovalent hydrocarbon radicals free of aliphatic unsaturation and cyanoalkyl radicals; R′ is a member selected from the class consisting of vinyl and allyl radicals, *a* has a value of from 1.0 to 2.5, inclusive, *b* has a value of from 0.005 to 2.0, inclusive, the sum of *a* plus *b* is equal to from 1.05 to 3.0, inclusive, the olefin in said platinum-olefin complex being a member selected from the class consisting of alkenes having from 2 to 8 carbon atoms, inclusive, cycloalkenes having from 5 to 7 carbon atoms, inclusive, and styrene.

3,159,602
PREPARATION OF POLYMERIC PHOSPHATES

Chester E. Hamilton, Cheshire, and Rudi F. W. Rätz, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed June 7, 1962, Ser. No. 200,957
3 Claims. (Cl. 260—61)

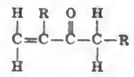
1. The method of preparing a solid polymeric phosphate which comprises reacting 3,9-dichloro-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane-3,9-dioxide at a temperature of about 140° C. to about 230° C. with at least an equimolar quantity of a compound having the structure $R(OH)_2$, R being an arylene group, removing the formed hydrochloric acid and cooling the reaction product.

3,159,603
CATALYTIC CONDENSATION OF POLYMERS OF ALPHA-ALKENYL KETONES

Alfred H. Sporer and Charles E. Allman, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 17, 1960, Ser. No. 15,545
12 Claims. (Cl. 260—63)

1. A process for the preparation of conjugate ethylenically unsaturated homopolymers consisting essentially of contacting a poly(α-lower alkenyl)ketone of an α-lower alkenyl ketone having the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl, with a catalyst selected from the group consisting of zinc chloride, aluminum chloride, stannic chloride, ferric chloride, boron fluoride, boron chloride, aluminum bromide, hydrogen halide, and sulphuric acid, in an amount and at a temperature sufficient to cause intra-aldol condensation and dehydration of said polyketone to form a substantially conjugated ethylenically unsaturated homopolymer.

3,159,604
POLYURETHANE COATING COMPOSITIONS

George O. Rudkin, Jr., Wilmington, and Joseph E. Wilson, Newark, Del., and Michael A. Dunn, Philadelphia, Pa., assignors to Atlas Chemical Industries, Inc., a corporation of Delaware

No Drawing. Filed Feb. 12, 1960, Ser. No. 8,219
4 Claims. (Cl. 260—75)

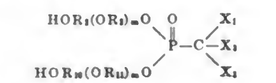
1. A coating composition comprising from 0.5 to 1.0 hydroxyl equivalent of a polyoxypropylene sorbitol ether containing from 10 to 80 oxypropylene groups per mol and one isocyanate equivalent of the reaction product of a hydroxyl terminated ethylene glycol adipate polyester having a molecular weight of about 3000 with a 60% to 70% stoichiometric excess of an arylene diisocyanate.

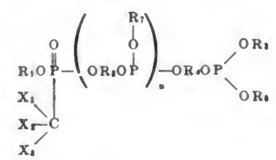
3,159,605
URETHANE POLYMERS FROM POLYHALOMETHANEPHOSPHONATES AND ORGANIC POLYISOCYANATES

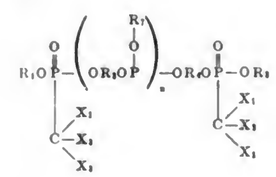
Lester Friedman, Beachwood, Ohio, assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Dec. 8, 1961, Ser. No. 158,168. Divided and this application May 18, 1964, Ser. No. 368,331
10 Claims. (Cl. 260—77.5)

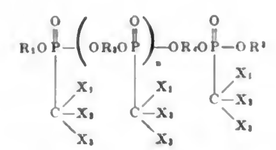
1. A polyurethane comprising the reaction product of an organic polyisocyanate with a member of the group consisting of (1) phosphonates having the formulae







and



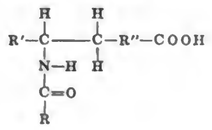
wherein R_1, R_2, R_5, R_6 and R_7 are the residues of a polyalkylene glycol from which one of the hydroxyl hydrogens has been removed, R_3 and R_4 are the residues of a polyalkylene glycol from which the two hydroxyl groups have been removed, R_8, R_9, R_{10} and R_{11} are alkylene groups, *m* is an integer of at least one, *n* is selected from the group consisting of zero and an integer, X_1 and X_2 are halogen of atomic weight 35 to 80 and X_3 is selected from the group consisting of hydrogen and halogen of atomic weight 35 to 80.

3,159,606
FATTY ACID POLYAMIDE RESINS

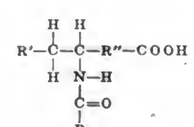
Rex J. Sims and Thomas W. Findley, La Grange, and Berry O. Powell, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 16, 1959, Ser. No. 840,256
7 Claims. (Cl. 260—78)

1. A method of forming polyamide condensation polymers, which comprises: heating an isomeric mixture of an N-acylamino fatty acid having the structures



and



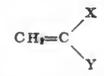
wherein R is an organic radical free of chain unsaturation, R′ is the same in both formulas and is selected from the group consisting of hydrogen and alkyl radicals having 1–18 carbons, and R″ is the same in both formulas and is an alkylene radical having 1–19 carbons, to a temperature of up to about 300° C.

3,159,607
POLYMERIZATION PROCESS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed May 20, 1958, Ser. No. 736,472
18 Claims. (Cl. 260—82.1)

1. The process of polymerizing a mixture containing at least one monomer of the structure



with a preformed catalyst composition consisting of the reaction product of an aluminum halide and an organoaluminum compound of the formula, AlR_3, wherein X represents a member of the class consisting of hydrogen, halogen, CN and a saturated aliphatic hydrocarbon radical of at least one and not more than six carbon atoms, Y represents a member of the class consisting of a halogen, —CN, —OR′, —COOR′ and R′, said R being selected from the class consisting of aliphatic, cycloaliphatic and aromatic hydrocarbon radicals, said hydrocarbon radicals each having no more than 12 carbon atoms therein, said R′ being selected from the class consisting of aliphatic, cycloaliphatic and aromatic hydrocarbon radicals, said hydrocarbon radicals each having no more than 12 carbon atoms therein, said preformed catalyst composition being prepared by the reaction of 0.01–100 parts by weight of AlR_3 per part by weight of aluminum halide, and said monomer being polymerized in the presence of 0.001 to 0.1 mole of said catalyst per mole of said monomer.

3,159,608
COPOLYMERIZATION OF ETHYLENE AND VINYL ACETATE

Stephan Ilnyckyj, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 8, 1963, Ser. No. 249,989
3 Claims. (Cl. 260—87.3)

1. Process for the manufacture of a pour depressant comprising a copolymer of ethylene and vinyl acetate which comprises introducing ethylene into a reaction zone containing a peroxy compound and a benzene solvent to which has been added from about 1–30% by volume of toluene, thereafter raising the temperature of said reaction zone to a temperature in the range from 280° to 340° F. and to a pressure in the range from 1000 to 5000 pounds per sq. in., thereafter adding to said reaction zone vinyl acetate and sufficient ethylene to maintain the pressure in said range, carrying out said reaction at a temperature in the range from 280° to 340° F. for a period of from 2 to 16 hours under conditions wherein the concentration of the vinyl acetate in the benzene solution varies from about 0.2 to 10.0%, whereby a polymer having a molecular weight in the range from about 1000 to

3000 is secured, wherein the concentration of the vinyl acetate in the product will vary from about 15 to 28% by weight.

3,159,609
COPOLYMERS OF PERFLUOROVINYL ETHERS

John Ferguson Harris, Jr., Wilmington, and Donald Irwin McCane, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 26, 1956, Ser. No. 618,435
3 Claims. (Cl. 260—87.5)

1. A normally solid copolymer of tetrafluoroethylene and an alkyl perfluorovinyl ether having the general formula

$$CF_2=CFOR$$

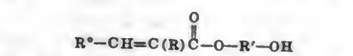
wherein R is a member of the class consisting of alkyl radicals having from 1 to 5 carbon atoms, said copolymer having an inherent viscosity, as measured in dimethyl formamide at 35° C., of at least 0.11.

3,159,610
POLYMERIZATION OF VINYL HYDROXY COMPOUNDS WITH VINYL COMPOUNDS IN THE PRESENCE OF INHIBITING AMINES

Robert J. Slocombe and John D. Calfee, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 27, 1961, Ser. No. 127,122
13 Claims. (Cl. 260—87.5)

1. In a polymerization process for the preparation of hydroxyl-containing copolymers wherein a hydroxyl-containing copolymerizable monomer selected from the group consisting of (1) partially etherified polyols containing monoolefinically unsaturated ether groups and having the structure, R—O—R′—OH, wherein R is a monoolefinically unsaturated group selected from the group consisting of vinyl, allyl, isopropenyl, methallyl, and 2-butenyl and R′ is a radical selected from the group consisting of saturated divalent hydrocarbon and oxahydrocarbon radicals and (2) partially esterified lower alkyl polyols of the structure,

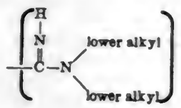


wherein R° is selected from the group consisting of hydrogen, methyl, carboxyl and carboxyalkyl, R is selected from the group consisting of hydrogen and methyl, and R′ is a radical selected from the group consisting of saturated divalent hydrocarbon and oxahydrocarbon radicals, is copolymerized with at least one other copolymerizable monomer selected from the group consisting of vinyl halides, hydrocarbon olefins of 2 to 6 carbon atoms, alkylfumarates, vinyl esters of lower alkanoic acids and lower alkyl ester of acrylic and methacrylic acids under the influence of a free radical generating polymerization catalyst, the improvement which comprises performing the polymerization of the monomers in contact with a compound having the structure selected from the group consisting of:

(A)

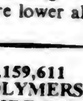


wherein the substituents, R_1, R_2, and R_3 are selected from the group consisting of: hydrogen, lower alkyl, and N,N-di-lower alkyl carbimide radicals of the structure



with the proviso that when one of the substituents R_1, R_2, and R_3 is an N,N-di-lower alkyl carbimide, the other substituents are selected from the group consisting of hydrogen and lower alkyl;

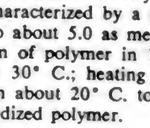
(B)



wherein Z is a residue selected from the group consisting of: (1) saturated heterocyclic residues having the structure



wherein X is an element selected from the group consisting off: carbon, oxygen and sulfur, and (2) unsaturated hydrocarbon residues having the structure



wherein Y is selected from the group consisting of hydrogen and lower alkyl; and (C) organic quaternary ammonium bases having a cation of the structure



wherein the R substituents are selected from the group consisting of: lower alkyl and aralkyl, and an anion of the structure

$$^-[O—R']$$

wherein R′ is a substituent selected from the group consisting of: hydrogen and lower alkyl.

12. The process of copolymerizing vinyl chloride with vinyloxyethanol by interacting a mixture of the said monomers containing at least 50% by weight vinyl chloride at temperatures of −15 to 100° C. under the influence of a free radical catalyst and in contact with a side reaction inhibiting compound consisting of a trialkyl amine in which the alkyl groups are lower alkyl groups.

3,159,611
PREPARATION OF POLYMERS WHICH CONTAIN THE N-OXIDE FUNCTION

Jesse T. Dunn and David T. Manning, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,017
13 Claims. (Cl. 260—88.3)

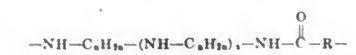
1. A process for the preparation of a polymer containing a plurality of pyridine N-oxide groups which comprises forming a mixture, in an inert, normally-liquid, organic medium, of a polymer containing a plurality of pyridine groups and an organic peracid oxidizing agent; said polymer containing the pyridine groups obtained by the polymerization of at least one vinyl monomer; and said polymer being characterized by a reduced viscosity of from about 0.10 to about 5.0 as measured at a concentration of 0.2 gram of polymer in 100 milliliters of dimethylformamide at 30° C.; heating said mixture to a temperature of from about 20° C. to about 100° C., and recovering the oxidized polymer.

3,159,612
EPOXIDIZED POLYAMIDES

Kwan C. Tsou, Huntingdon Valley, and Elizabeth A. Blommers, Abington, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 10, 1961, Ser. No. 88,257
7 Claims. (Cl. 260—89.7)

1. A water soluble thermosetting resin comprising the product of epoxidation, in an aqueous medium at a pH of approximately 8–13, of (*a*) a polyamide of an originally unsaturated monocarboxylic aliphatic acid containing 3–7 carbon atoms, the polyamide containing at least one amine group in the recurring structural unit



in which *n* and *x* are integers, *n* is within the range 2–10, *x* is 0–6, and R is a C_3–C_8 alkylene group by (*b*) a water soluble epoxidizing agent selected from the group consisting of chlorohydrins and diglycidyl ethers of polyhydric organic compounds having 2–6 carbon atoms to the molecule of the said organic compounds and used in the proportion of about 0.5–1.8 moles of the said agent for each amine group in the polyamide.

3,159,613
PREPARATION OF CRYSTALLINE POLY(VINYL ALKYL ETHERS)

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,328
6 Claims. (Cl. 260—91.1)

1. The process of polymerizing vinyl alkyl ethers which comprises contacting at least one of said ethers with a catalyst formed by contacting hydrogen fluoride with a metal compound having the formula

$$R_xMR'_y$$

where M is a metal selected from the group consisting of titanium, aluminum, magnesium, zinc, gallium, indium, tin, vanadium, iron, and zirconium, R is an alkyl hydrocarbon radical, R′ is a radical selected from the group consisting of hydrogen and alkoxide radicals, the sum of *x* and *y* is equal to *n*, the valence of said metal, *x* is zero to *n*, and *y* is zero to *n* when R′ is an alkoxide and zero to *n*−1 when R′ is hydrogen.

3,159,614
PROCESS AND THREE-COMPONENT CATALYST FOR PROPYLENE POLYMERIZATION CONTAINING AN ORGANO ALUMINUM COMPOUND AND TITANIUM TETRACHLORIDE - HYDROGEN SULFIDE OR HYDROGEN SELENIDE REACTION PRODUCT

Félix Bloyaert, Watermael-Boitsfort, Brussels, Belgium, assignor to Solvay & Cie, Brussels, Belgium, a Belgian company

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,690
Claims priority, application Netherlands, Nov. 30, 1960, 258,547
6 Claims. (Cl. 260—93.7)

1. A process for the polymerization of propylene to give crystalline high polymers which comprises contacting propylene under conditions of polymerization with a catalyst prepared by the reaction of a hydrocarbon aluminium compound with the hydrocarbon insoluble portion only of a complex compound obtained by the reaction of titanium tetrachloride with a member of the group consisting of hydrogen sulphide and hydrogen selenide.

3,159,615
POLYMERIZATION OF OLEFINS IN THE PRESENCE OF A ZIEGLER TYPE CATALYST PLUS A SURFACTANT

Lloyd E. Weeks, Creve Coeur, and Robert J. McManimie, Glendale, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Dec. 19, 1957, Ser. No. 703,766, now Patent No. 3,060,132, dated Oct. 23, 1962. Divided and this application Mar. 26, 1962, Ser. No. 182,662
6 Claims. (Cl. 260—94.9)

1. A method which comprises polymerizing α-olefins containing 2 to 8 carbon atoms in the presence of a polymerization catalyst adapted for the low pressure polymerization of ethylenically unsaturated monomers comprising the reaction product of (*a*) a metal compound of the general formula R_nMeX wherein Me is a first to third group metal, R is selected from the group consisting of alkyl, cycloalkyl and aryl radicals and X is selected from the group consisting of hydrogen, halogen, alkyl, cycloalkyl, and aryl radicals and *n* is a number which is lower by one than the valence of the metal Me with (*b*) a salt of a Group IV–B to VI–B metal, and a nonionic surfactant having an HLB value within the range of 2 to 20.

3,159,616
NOVEL SALT OF HYDROXOCOBALAMINE

Gérard Nomine, Noisy-le-Sec, Lucien Penasse, Paris, and Pierre Barthelemy, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of Francé

No Drawing. Filed July 9, 1963, Ser. No. 293,877
Claims priority, application France, July 11, 1962, 903,666; Oct. 11, 1962, 911,956
1 Claim. (Cl. 260—211.5)

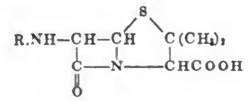
The hydro-iodide of hydroxocobalamine.

3,159,617
PRODUCTION OF PENICILLINS

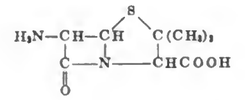
John C. Sheehan, Arlington, Mass., assignor, by mesne assignments, to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed May 1, 1959, Ser. No. 810,231
6 Claims. (Cl. 260—239.1)

1. A method of making acylaminopenicillanic acids of the formula



wherein R is an organic acid radical which comprises subjecting aminopenicillanic acid of the formula



to the action of an organic acid acylating agent.

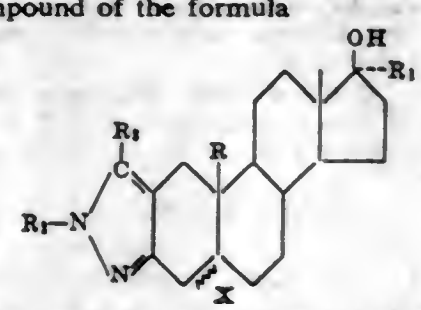
3,159,618

[3,2-c]-PYRAZOLES OF STEROIDS OF THE ANDROSTANE AND ESTRANE SERIES

Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 10, 1963, Ser. No. 279,625
Claims priority, application Italy, May 12, 1962, 23,377/62
22 Claims. (Cl. 260—239.5)

1. A compound of the formula



wherein R, R_1 and R_2 are members selected from the group consisting of hydrogen and methyl, R_3 is a member selected from the group consisting of amino, hydroxy, chloro, bromo and iodo, and X is a member selected from the group consisting of a single and a double bond.

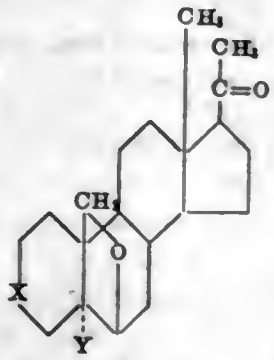
3,159,619

PROCESS AND INTERMEDIATES FOR MANUFACTURE OF 19-HYDROXY-PREGN-4-ENE-3,20-DIONE

Raphael Pappo, Skokie, and Robert T. Nicholson, Glenview, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 21, 1963, Ser. No. 289,719
11 Claims. (Cl. 260—239.55)

5. A compound of the formula



wherein X is selected from the group of radicals consisting of carbonyl, β-hydroxymethylene, and β-(lower alkanoyl)-oxymethylene, and Y is a member of the class of radicals consisting of hydroxy, methoxy, and acetoxy.

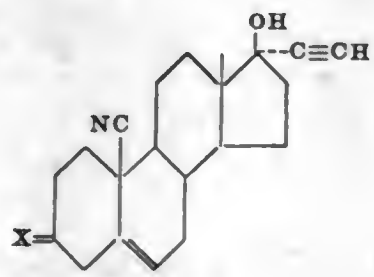
3,159,620

PROCESS FOR THE PREPARATION OF 17α-ETHYNYL-19-NORANDROSTENE COMPOUNDS

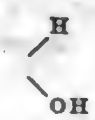
Alberto Ercoli, Milan, and Rinaldo Gardi, Carate Brianza, Milan, Italy, assignors to Francesco Vismara S.p.A., Casatenovo, Como, Italy, a corporation of Italy

No Drawing. Filed July 12, 1963, Ser. No. 294,732
Claims priority, application Italy May 22, 1963
14 Claims. (Cl. 260—239.55)

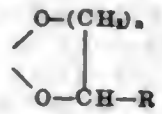
11. 10-cyano-17α-ethynyl-19-nor-Δ^5-androstenes of the formula:



wherein X is a member selected from the group consisting of a group



and a grouping



in which R is selected from the group consisting of hydrogen and a lower alkyl radical of from 1 to 3 carbon atoms and *n* is selected from the integers one and two.

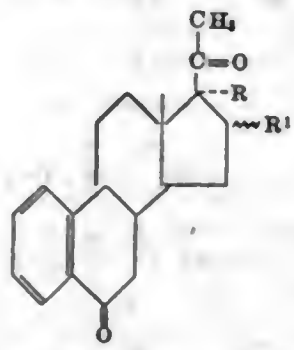
3,159,621

6-KETO PREGNENES

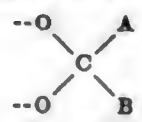
Albert Bowers and Otto Halpern, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,955
Claims priority, application Mexico, May 7, 1963, 72,282
17 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen, hydroxy and an acyloxy radical of less than 12 carbon atoms; R^1 is selected from the group consisting of hydrogen, α-methyl, β-methyl, α-hydroxy and α-acyloxy; R and R^1 together represent the grouping



wherein A is selected from the group consisting of hydrogen and a lower alkyl radical and B is selected from the group consisting of lower alkyl, aryl and aralkyl containing up to eight carbon atoms.

7. 16α,17α-isopropylidenedioxy-$\Delta^{1,3,5(10)}$-19-nor-pregnatriene-6,20-dione.

3,159,622

17α-(2-CARBOXYETHYL)-17β-HYDROXY-6-NITRO-ANDROST-4-EN-3-ONE γ-LACTONES

Robert B. Garland, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,353
2 Claims. (Cl. 260—239.57)

1. 17α-(2-carboxyethyl)-17β-hydroxy-6β-nitroandrost-4-en-3-one γ-lactone.

3,159,623

18-HYDROXYMETHYLENE DERIVATIVES OF YOHIMBONE

John Shavel, Jr., Mendham, and Maximilian von Strandtmann, Rockaway Township, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,171
2 Claims. (Cl. 260—240)

2. 18-benzoyloxymethyleneyohimbone.

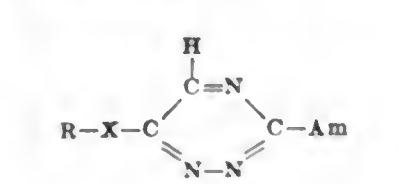
3,159,624

SUBSTITUTED PYRUVIC ACID ESTERS AND 3-AMINO-5-HYDROXY-6-(SUBSTITUTED ETHENYL)-1,2,4-TRIAZINES PREPARED THEREFROM

Yutaka Kodama, Isamu Saikawa, and Toyoo Maeda, all of Toyama-shi, Japan, assignors to Toyama Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

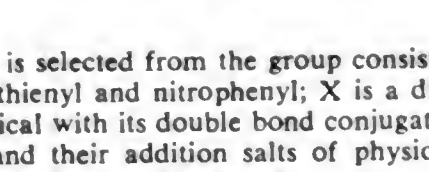
No Drawing. Filed Nov. 15, 1961, Ser. No. 152,637
Claims priority, application Japan July 17, 1961
5 Claims. (Cl. 260—240)

1. A compound selected from the group consisting of compounds of the formula:



in which R is selected from the group consisting of nitrofuryl, nitrothienyl and nitrophenyl and their acid addition salts of physiologically acceptable acids.

4. A compound of the following formula:



in which R is selected from the group consisting of nitrofuryl, nitrothienyl and nitrophenyl; R^1 is selected from the group consisting of alkyl, phenyl, benzyl and tetrahydrofurfuryl and X is the anion of a physiologically acceptable acid.

3,159,625

3-AMINO-6-SUBSTITUTED-1,2,4-TRIAZINE COMPOUNDS

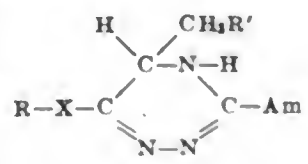
Yutaka Kodama, Isamu Saikawa, Toyoo Maeda, Akira Takai, and Ikuko Takamichi, all of Toyama-shi, Japan, assignors to Toyama Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,632
Claims priority, application Japan Nov. 17, 1960
10 Claims. (Cl. 260—240)

1. A compound selected from the group consisting of compounds of the formula

in which R is selected from the group consisting of nitrofuryl, nitrothienyl and nitrophenyl; X is a divalent lower alkenyl radical with its double bond conjugated to R; Am is amino, and their addition salts of physiologically acceptable acids, and their hydrates.

2. A compound selected from the group consisting of compounds of the formula



in which R is selected from the group consisting of nitrofuryl, nitrothienyl and nitrophenyl; R' is selected from the group consisting of hydrogen and RCH_2; X is a divalent lower alkenyl radical with the double bond conjugated to R; Am is amino and their addition salts of physiologically acceptable acids and their hydrates.

3,159,626

TRIETHYLENE-DIAMINE ALANE AND A PROCESS FOR ITS PREPARATION

Eugene C. Ashby, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,515
3 Claims. (Cl. 260—242)

1. As a new composition, triethylene diamine alane.

2. The process of forming triethylene diamine alane comprising reacting subdivided aluminum metal and triethylene diamine, dissolved in an inert liquid medium in proportions of about 10 to 50 weight percent of the liquid medium, with hydrogen at a pressure of about 1,000 to 15,000 pounds per square inch and at a temperature of about 25 to 200° C.

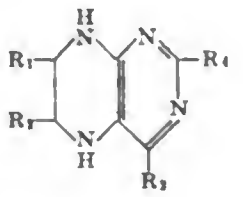
3,159,627

5,6,7,8-TETRAHYDROPTERIDINE DERIVATIVES

Irwin J. Pachter, Erdenheim, and Joseph Weinstock, Phoenixville, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,289
6 Claims. (Cl. 260—251.5)

1. A compound selected from the group consisting of a base and its nontoxic, pharmaceutically acceptable, acid addition salts, said base being of the formula:



in which:

R_1 and R_2 are members selected from the group consisting of hydrogen, phenyl, thienyl and loweralkyl;

R_3 is a member selected from the group consisting of diloweralkylamino, loweralkylamino and amino; and

R_4 is a member selected from the group consisting of phenyl and thienyl.

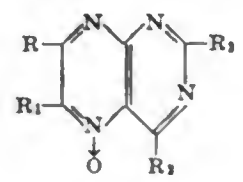
3,159,628

PTERIDINE-5-OXIDE DERIVATIVES

Irwin J. Pachter, Erdenheim, and Joseph Weinstock, Phoenixville, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 28, 1962, Ser. No. 197,909
13 Claims. (Cl. 260—251.5)

1. A compound of the structure:



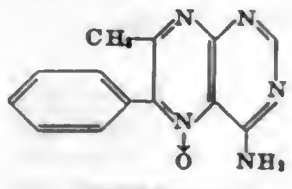
in which:

R is a member selected from the group consisting of lower alkyl, phenyl, thienyl, hydroxyl and amino;

R_1 is a member selected from the group consisting of hydrogen, lower alkyl, phenyl and thienyl; and

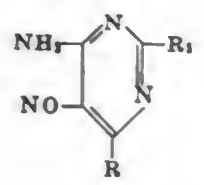
R_2 and R_3 are, respectively, members selected from the group consisting of hydrogen, amino, hydroxy, lower alkylthio, lower alkoxy, lower alkyl, phenyl, thienyl, lower alkylamino, dilower alkylamino, N-morpholinyl, N-piperidinyl, N-pyrrolidinyl and N,N'-lower alkylpiperazinyl.

2. A compound of the structure:

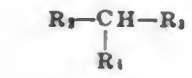


3,159,629
SYNTHESIS OF PTERIDINES
Irwin J. Pachter, Erdenheim, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 7, 1962, Ser. No. 215,293
5 Claims. (Cl. 260—251.5)

1. The process of preparing pteridine derivatives comprising reacting in the presence of a basic condensing agent a polyacetylated pyrimidine of the structure:



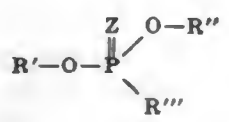
in which R and R_1 are members selected from the group consisting of hydrogen, amino, thienyl, hydroxyl, methyl, methylthio, phenyl, N-pyrrolidinyl, N-piperidinyl, N-morpholinyl and dimethylamino, a minimum of one of which is a member selected from the group consisting of amino and hydroxyl with a chemically stable, isolable active methylene reactant of the structural formula:



in which R_2, R_3 and R_4 are different and are respectively members selected from the group consisting of hydrogen, methyl, benzyl, cyclohexyl, cyclohexylmethyl, phenyl, thienyl, acetyl, benzoyl, formyl, cyano, pyridinium and carboxamido, a minimum of two of which are members respectively selected from the group consisting of phenyl, thienyl, acetyl, benzoyl, formyl, cyano, pyridinium and carboxamido.

3,159,630
PYRIMIDINYL O-ALKYL PHOSPHORAMIDATES AND PHOSPHORAMIDOTHIOATES
Raymond H. Rigterink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 14, 1961, Ser. No. 116,956
6 Claims. (Cl. 260—256.4)

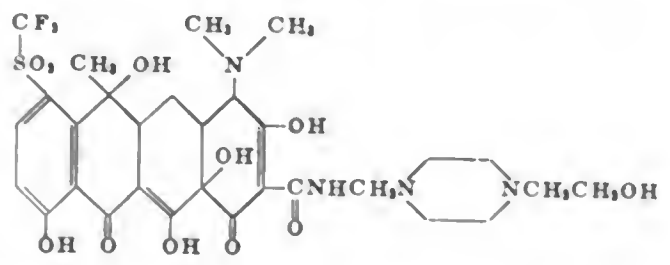
1. A compound corresponding to the formula



wherein R′ represents a member of the group consisting of pyrimidinyl, lower alkyl-pyrimidinyl and phenyl-pyrimdinyl, R″ represents lower alkyl, R‴ represents a member of the group consisting of amino and lower alkylamino, and Z represents a member of the group consisting of oxygen and sulfur.

3,159,631
N-AMINOMETHYLTETRACYCLINE DERIVATIVES
Maxwell Gordon, Elkins Park, and Blaine M. Sutton, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 30, 1960, Ser. No. 52,758
1 Claim. (Cl. 260—268)

A chemical compound having the structural formula:

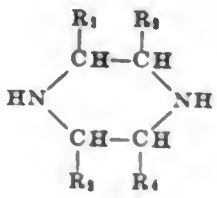


3,159,632
REPETITIVE PROCESS FOR THE REMOVAL AND/OR RECOVERY OF AMINES FROM AQUEOUS SOLUTIONS
Roger N. Sargent, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 25, 1960, Ser. No. 71,515
9 Claims. (Cl. 260—268)

1. A method for removing an organic amine as free base from an aqueous solution thereof having a pH at least 9 by contacting said solution with a water-wet anion exchange resin having an ion exchange capacity of at least 0.5 milliequivalent per gram of dry resin and an ion exchange capacity of 5 to 80 percent that of a conventional full capacity resin whereby said amine is molecularly sorbed on said resin and removing said sorbed amine from said resin as a salt by reaction on the resin with an excess of mineral acid up to about 10% over that required to form the amine salt, and eluting said amine salt with water.

3,159,633
METHYLATION OF PIPERAZINES
William K. Langdon, Grosse Ile, Mich., and Harry Rubinstein, Bethlehem, Pa., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed June 21, 1961, Ser. No. 118,539
6 Claims. (Cl. 260—268)

1. A process for preparing N,N′-dimethylpiperazines which comprises contacting a piperazine compound corresponding to the formula:



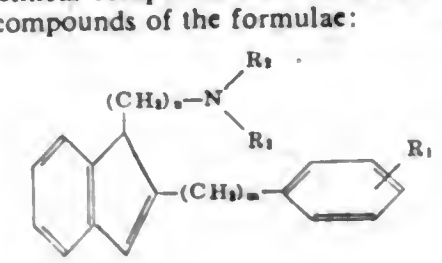
wherein R_1, R_2, R_3 and R_4 are members selected from the group consisting of hydrogen, methyl and ethyl radicals with about 2 to 2.4 mols of formaldehyde and about 2 to 2.4 mols of formic acid per mol of said piperazine compound in the presence of about ⅗ to 1.5 mols of phosphoric acid per mol of said piperazine compound at a temperature of about 40 to 100° C. and at about atmospheric pressure.

3,159,634
NEW AMINOALKYLINDENES AND AMINOALKYL INDANYL ETHERS

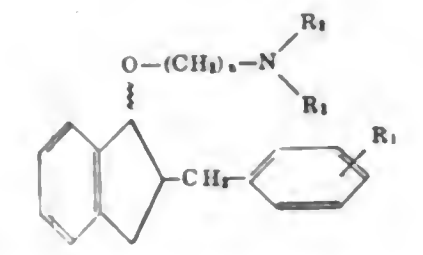
David Jack and Robert Geoffrey William Spickett, Harpenden, and Charon Robin Ganellin, Welwyn Garden City, England, assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 31, 1961, Ser. No. 148,804
Claims priority, application Great Britain Nov. 8, 1960
5 Claims. (Cl. 260—268)

1. A chemical compound selected from the group consisting of compounds of the formulae:



and



in which:

R_1 is a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, trifluoromethyl and di-lower alkylamino;

R_2 and R_3 are members selected from the group consisting of lower alkyl and, when taken together, pyrrolidino, piperidino, piperazino, N-lower alkylpiperazino and morpholino;

n has a value of two to three and

m has a value of zero to one

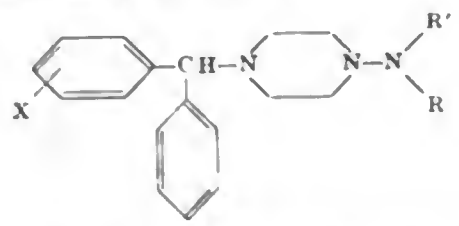
and nontoxic, pharmaceutically acceptable acid addition salts thereof.

3,159,635
1-BENZHYDRYL-4-(ALKYL AND ARALKYL) AMINOPIPERAZINES

John W. Cusic, Skokie, and Ernest F. Levon, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,237
11 Claims. (Cl. 260—268)

1. A compound of the formula



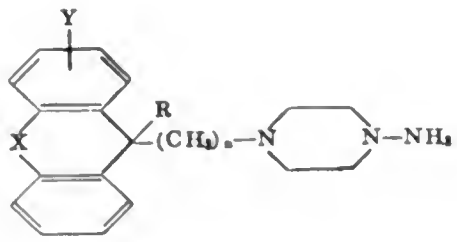
wherein X is selected from the group consisting of hydrogen and halogen; R is selected from the group consisting of lower alkyl and Ar(lower alkyl)— wherein Ar is selected from the group consisting of phenyl, halophenyl, methylenedioxyphenyl, and hydroxyphenyl; R′ is selected from the group consisting of hydrogen and methyl.

3,159,636
1-AMINO-4-(XANTHENYL AND THIOXANTHENYL) PIPERAZINES

Peter Yonan, Chicago, and John W. Cusic, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 5, 1963, Ser. No. 293,141
4 Claims. (Cl. 260—268)

1. A compound of the formula



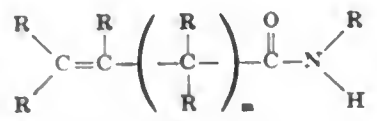
wherein X is an element of group VI of the periodic table of an atomic weight less than 40; Y is selected from the group consisting of hydrogen, chlorine, and methyl; R is selected from the group consisting of hydrogen and lower alkyl; and *n* is a whole number between zero and two inclusive.

3,159,637
PROCESS FOR THE PREPARATION OF CYCLIC IMIDES

Jurgen Friedrich Falbe, Bonn, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,246
Claims priority, application Germany, Oct. 9, 1961, S 76,194
4 Claims. (Cl. 260—281)

1. A process for preparing cyclic imides comprising reacting a carboxylic acid amide selected from the group consisting of α,β- and β,γ-mono-ethylenically unsaturated aliphatic carboxylic acid amides of from 3 to 20 carbon atoms and of the formula



wherein *m* is a whole number from 0 to 1, inclusive, and the R's are selected from the group consisting of hydrogen, hydrocarbon of 1 to 12 carbon atoms and chloro hydrocarbon of 1 to 12 carbon atoms, the number of non-hydrogen R's being from 0 to 3, with carbon monoxide at an elevated temperature and pressure in the presence of a cobalt carbonyl compound as catalyst.

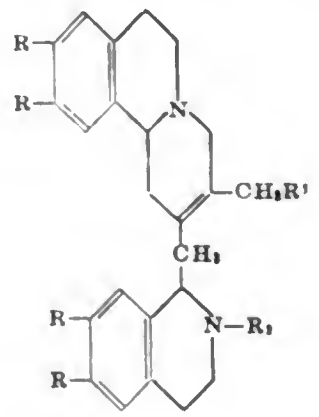
4. A process according to claim 1 wherein the unsaturated carboxylic acid amide is croton amide.

3,159,638
NOVEL 2-DEHYDROEMETINE INTERMEDIATES AND PROCESS FOR PREPARATION THEREOF

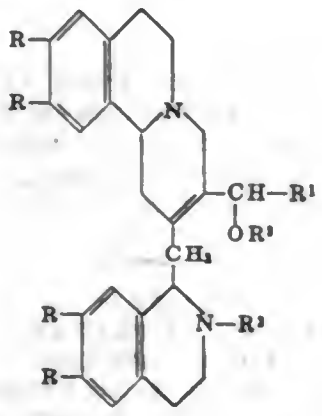
Alexander Crawford Ritchie, Ware, and Dennis Edward Clark, Chalfont St. Peter, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed Aug. 20, 1962, Ser. No. 218,137
Claims priority, application Great Britain, Sept. 1, 1961, 31,571/61
16 Claims. (Cl. 260—287)

1. The process for preparing a compound of the formula



where R is selected from the group consisting of hydrogen, lower alkoxy and methylene dioxy; R^1 is lower alkyl and R^2 is selected from the group consisting of lower alkyl, 3-hydroxy lower alkyl, 3-acyloxy lower alkyl, and benzyl in which an ester of the formula



where R, R^1 and R^3 have the above meanings and R^3 is lower aliphatic acyl is reduced with a mixture of (1) a metal selected from the group consisting of alkali and alkaline earth metals and (2) a member selected from the group consisting of ammonia and lower alkyl primary amines.

2. A process as claimed in claim 1 where R is lower alkoxy, R^1 is lower alkyl, R^2 is 3-acyloxy-alkyl, R^3 is acetyl and the reducing agent is lithium and ammonia.

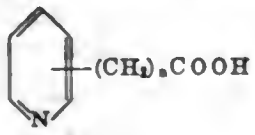
3,159,639

CATALYTIC HYDROGENATION OF PYRIDYL-CARBOXYLIC ACIDS AND PYRIDYLALKYL-CARBOXYLIC ACIDS

Morris Freifelder, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 17, 1962, Ser. No. 224,201
7 Claims. (Cl. 260—293.2)

1. The process of hydrogenating a heteroaromatic acid of the formula



wherein *n* is an integer from 0 to 5 inclusive, to the corresponding ring-saturated acid, consisting essentially in

hydrogenating an aqueous solution of said heteroaromatic acid in the presence of from 0.5% to 5.0% of metallic rhodium and in the presence of at least an equimolar amount of ammonia

at a temperature between 0° and 100° C. and at a hydrogen pressure between atmospheric pressure and 1000 atmospheres until 3 moles of hydrogen are absorbed per mole of said heteroaromatic acid.

3,159,640

PROCESS FOR PREPARING 2-MERCAPTO-PYRIDINE-N OXIDE

Robert E. McClure, Hamden, and David A. Shermer, Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,927
7 Claims. (Cl. 260—294.8)

1. A process for the production of 2-mercaptopyridine-N-oxide comprising reacting a 2-halopyridine-N-oxide with a mixture of an alkali metal sulfide and an alkali metal hydrosulfide, the alkali metal sulfide being in a molar ratio with the alkali metal hydrosulfide of from about 0.3:1 to 5.0:1.

3,159,641

PROCESS FOR SEPARATING 4:4' BIPYRIDYL FROM MIXTURES

Ralph Santorre Fanshawe, Widnes, and Charles Shepherd, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,882
Claims priority, application Great Britain Feb. 27, 1962
17 Claims. (Cl. 260—296)

1. Process for the separation of 4:4'-bipyridyl from a mixture containing said 4:4'-bipyridyl and isomeric bipyridyls, which comprises treating the said mixture with water under conditions which result in the formation of 4:4'-bipyridyl hydrate and thereafter separating the hydrate.

3,159,642

PROCESS FOR PURIFICATION OF BIPYRIDYL

Ralph Santorre Fanshawe, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,883
Claims priority, application Great Britain Feb. 27, 1962
17 Claims. (Cl. 260—296)

1. A process for the purification of a bipyridyl which comprises the steps of contacting an impure bipyridyl with an aqueous phase having a pH in the range of about 4.0 to about 8.0, and with a substantially water-immiscible organic solvent phase, and thereafter separating the organic solvent phase, which contains the bipyridyl.

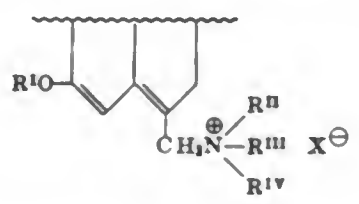
3,159,643

6-METHYLENE-3-OXO-Δ^4 STEROIDS AND PROCESS FOR PREPARATION OF SAME

David Neville Kirk and Vladimir Petrow, both of London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,423
Claims priority, application Great Britain, May 8, 1961, 16,703/61
13 Claims. (Cl. 260—397.3)

1. A process for the preparation of a compound selected from the group consisting of 6-methylene-3-oxo-Δ^4 steroids of the androstane, 19-norandrostane, pregnane, 19-norpregnane and spirostane series, comprising: contacting with an aqueous medium a corresponding steroid compound of said series having in rings A and B of the steroid nucleus the following structure:



in which X is an anion, R^I is selected from the group consisting of alkyl, hydroxyalkyl, cycloalkyl and aralkyl, and R^{II}, R^{III} and R^{IV} are selected from the combinations consisting of:

(A) R^{II} is selected from the group consisting of alkyl, cycloalkyl, aryl and aralkyl and R^{III} and R^{IV} are H;

(B) R^{II} is alkyl, R^{III} is selected from the group consisting of aryl, aralkyl and alkyl and R^{IV} is selected from the group consisting of H and oxygen;

(C) R^{II}, R^{III} and R^{IV} are alkyl; and

(D) R^{II} and R^{III} together with the nitrogen atom form a ring structure selected from the group consisting of pyrrolidine, piperidine and morpholine and R^{IV} is selected from the group consisting of alkyl and oxygen.

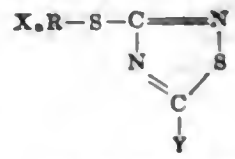
11. 6-methylene-androstenedione.

3,159,644
3 - HALO(OR NITRO) - PHENYLALKYLMERCAPTO-5 - HALO(OR NITRO) - 1,2,4 - THIADIAZOLE

John A. Stephens, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 11, 1960, Ser. No. 21,145
3 Claims. (Cl. 260—302)

1. A compound of the formula:



wherein Y is from the group consisting of halo and nitro radicals, R is phenylalkyl, the alkyl portion thereof having from one to four alkyl carbon atoms, wherein X is a radical from the group consisting of halo and nitro radicals, and *n* is an integer of from one to five when X is a halogen and *n* is from one to two where X is nitro.

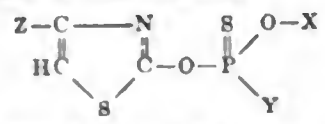
3,159,645
O-THIAZOLYL O-ALKYL PHOSPHORAMIDOTHIOATES

Raymond H. Rigterink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,140
8 Claims. (Cl. 260—302)

What is claimed is:

1. A compound of the formula



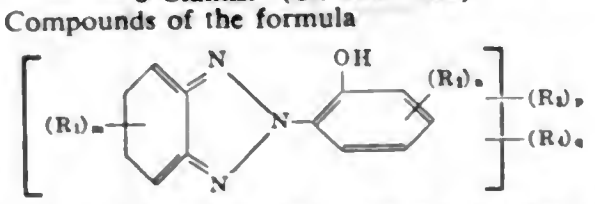
wherein X is lower alkyl, Y is a member of the group consisting of amino and lower alkyl amino and Z is a member of the group consisting of lower alkyl, phenyl, lower alkoxyphenyl, lower alkylphenyl and halophenyl.

3,159,646
ALKENOYLAMIDO AND OXY PHENYLBENZOTRIAZOLES

Jerry P. Millionis and William B. Hardy, South Bound Brook, and William F. Baitinger, Jr., Princeton, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Jan. 13, 1960, Ser. No. 2,129
8 Claims. (Cl. 260—308)

1. Compounds of the formula



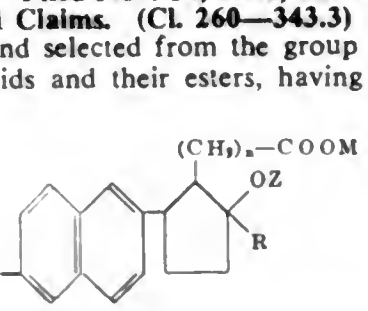
in which R_1 and R_2 are selected from the group consisting of lower alkyl, lower alkoxy, halogen, nitro, carboxy, sulfonic acid and sulfonamido, R_3 is a member selected from the group consisting of acrylylamino and methacrylylamino, R_4 is a member selected from the group consisting of acrylyloxy and methacrylyloxy, *m* and *n* are integers less than three, *p* and *q* are integers greater than minus one and less than four, at least one of *p* and *q* being greater than zero, R_3 and R_4 being bonded directly to carbocyclic aromatic rings in the said phenylbenzotriazole nucleus.

3,159,647
1,5-DIAZABICYCLO[3.2.1]OCTANES

Fedor Poppelsdorf, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,585
13 Claims. (Cl. 260—309.7)

1. 1,5-diazabicyclo[3.2.1]octane represented by the formula:



wherein R is a monovalent radical containing up to 18 carbon atoms selected from the group consisting of hydrogen, alkyl, alkenyl, cycloalkyl, cycloalkenyl, hydrocarbon aryl, furyl, tetrahydrofuryl, and pyridyl.

3,159,648
PROCESS TO PREPARE 1,2-DIPHENYL-4-CARBAMOYL-3,5-PYRAZOLIDINEDIONE

Homer C. Scarborough, Evansville, Ind., assignor to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Sept. 2, 1960, Ser. No. 53,630
3 Claims. (Cl. 260—310)

1. A method of preparing 1,2-diphenyl-4-carbamoyl-3,5 - pyrazolidinedione which comprises contacting and heating urea and 1,2-diphenyl-3,5-pyrazolidinedione.

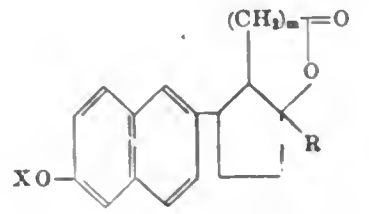
3,159,649
2-OXY-5-(6-OXY - 2-NAPHTHYL)CYCLOPENTANEALKANOIC ACIDS, THEIR ESTERS, AND CORRESPONDING LACTONES

Edward A. Brown, Wilmette, and Leland J. Chinn, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 14, 1960, Ser. No. 68,630
11 Claims. (Cl. 260—343.3)

1. A compound selected from the group consisting of (*a*) hydroxy acids and their esters, having the formula

wherein X represents a member of the group consisting of hydrogen and lower alkyl radicals; M represents a member of the group consisting of hydrogen and lower alkyl and di(lower alkyl)amino(lower alkyl) radicals; *n* represents a member of the group consisting of 0 and positive integers less than 3; Z represents a member of the group consisting of hydrogen and lower alkanoyl radicals; and R represents a member of the group consisting of hydrogen and lower alkyl, methoxycarbonylmethyl, and ethynyl radicals; and (*b*) corresponding lactones of the formula



wherein *m* represents a positive integer less than 3 and X and R are defined as hereinabove.

2. 2-hydroxy - 5 - (6-methoxy - 2 - naphthyl)cyclopentane acetic acid lactone.

3,159,650
TRIETHYLENETETRAMINE TETRASCORBATE AND ITS PREPARATION

Julius Diamond, Decatur, Ill., assignor to Lincoln Laboratories, Inc., Decatur, Ill., a corporation of Indiana

No Drawing. Filed May 23, 1962, Ser. No. 196,911
2 Claims. (Cl. 260—343.7)

1. Lyophilized triethylenetetramine tetrascorbate.

3,159,651
ACROLEIN DIMER PRODUCTION

George F. Johnson, Baytown, and Lawrence C. Teague, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 20, 1962, Ser. No. 211,427
3 Claims. (Cl. 260—345.9)

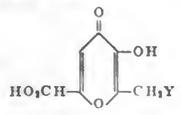
1. In a process for producing 3,4-dihydro-1,2-pyran-2-carboxaldehyde by the thermal dimerization of an acrolein feed containing appreciable amounts of alcohol and water at a temperature of from about 100° C.–300° C., the improvement of effecting the dimerization and inhibiting the production of heavy polymers by conducting the thermal dimerization in the presence of an added amount of from 0.001% to 0.1% by weight of the reaction mixture of a polycarboxylic organic acid having an ionization constant of from 10^{-4} to 10^{-2} inclusive.

3,159,652
PREPARATION OF GAMMA-PYRONES

Bryce E. Tate, Niantic, and Robert P. Allingham, Groton, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

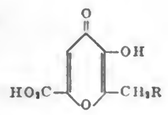
No Drawing. Filed June 13, 1962, Ser. No. 202,101
11 Claims. (Cl. 260—345.9)

1. A process for the preparation of maltol which comprises treating kojic acid wth formaldehyde and a reagent selected from the group consisting of alkali metal hydroxides, di-lower alkylamines, said alkyl radicals each containing up to about four carbon atoms, piperidine and morpholine at a pH of at least about 5 to form a compound of the formula



wherein Y is selected from the group consisting of hydroxyl, di-lower alkylamino, piperidino and morpholino; treating said compound under reducing conditions with a metal-acid reducing agent combination to form 6-methylkojic acid; oxidizing said compound to 6-methylcomenic acid and decarboxylating 6-methylcomenic acid to form maltol.

8. A compound of the formula



wherein R is selected from the group consisting of hydrogen, hydroxyl, chloro, bromo, iodo, di-lower alkylamino, piperidino and morpholino.

3,159,653
HYDROFORMYLATION OF DIHYDROPYRANS

Jürgen F. Falbe, Bonn, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1962, Ser. No. 229,468
7 Claims. (Cl. 260—345.9)

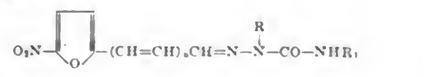
1. A method of preparing 6-methanol tetrahydropyrans by hydroformylation 3,4-dihydro-2H-pyrans having from 5 to 24 carbon atoms in the molecule by contacting such a dihydropyran with carbon monoxide and hydrogen at a pressure between 150 atmospheres and 300 atmospheres at a temperature between 100° C. and 300° C. in the presence of a hydroformylation catalyst.

3,159,654
NEW SERIES OF CARBOXYLIC ACID ESTERS OF 5-NITRO-2-FURYL ALKYLIDENE HYDROXYALKYL SEMICARBAZONES

William C. Ward, Norwich, N.Y., assignor to The Norwich Pharmacal Company, Norwich, N.Y., a corporation of New York

No Drawing. Filed Sept. 25, 1958, Ser. No. 763,176
6 Claims. (Cl. 260—347.4)

1. A carboxylic acid ester of a 5-nitro-2-furyl alkylidene hydroxyalkyl semicarbazone represented by the formula:



wherein

n represents an integer from 0–1, and

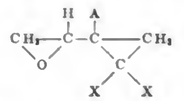
R and R_1 represent dissimilar groups selected from the class consisting of hydrogen and (lower)alkonoyloxy(lower)alkyl.

3,159,655
1,1-DIHALO-2-OXIRANE DERIVATIVES OF CYCLOPROPANE

William F. Tousignant, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 30, 1961, Ser. No. 120,952
4 Claims. (Cl. 260—348)

1. A compound of the formula



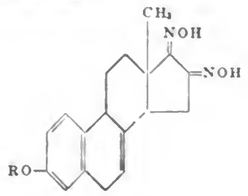
wherein the A symbol represents a member of the group consisting of hydrogen and lower alkyl and X represents a member of the group consisting of chlorine and bromine.

3,159,656
16,17-BIS-OXIMINOESTRAEN-3-OLS AND ETHERS THEREOF

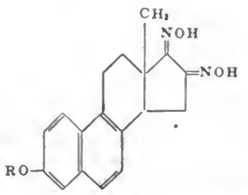
Max N. Huffman, Colorado Springs, Colo., assignor to Lasdon Foundation, Inc., Yonkers, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,830
11 Claims. (Cl. 260—397.5)

1. A steroid selected from the group consisting of steroids of the formulas



and



wherein R is a member of the group consisting of hydrogen, lower alkyl and lower alkenyl.

3,159,657
PREPARATION OF LIGHT-COLORED SULFONATED FATTY ACIDS AND FATTY ACID DERIVATIVES

Carl Wulff, Dusseldorf-Benrath, Werner Stein, Dusseldorf-Holthausen, Otto Koch, Hilden, Rhineland, and Herbert Weiss, Cologne-Deutz, Germany, assignors to Henkel & Cie. GmbH., Dusseldorf-Holthausen, Germany, a German corporation

No Drawing. Filed May 15, 1962, Ser. No. 194,998
Claims priority, application Germany May 19, 1961
10 Claims. (Cl. 260—400)

1. Process for lightening the color of dark-colored α-sulfonation products obtained by sulfonating a member selected from the group consisting of substantially saturated fatty acids containing from 6 to 28 carbon atoms, their esters which are free from alcoholic hydroxyl groups, their nitriles, and mixtures thereof with an excess of gaseous sulfur trioxide which comprises contacting the dark-colored sulfonation product with about 0.2–6% by weight of hydrogen peroxide at a temperature between about 20–100° C. in the presence of an added amount of water sufficient to maintain the concentration of free SO_3 calculated with respect thereto between 90% by weight and that of a 20% sulfuric acid solution.

3,159,658
ORGANO-METALLIC COMPOUNDS AND PROCESS THEREFOR

Ernst Otto Fischer, Munich-Solln, and Helmut Werner, Munich, Germany, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 18, 1961, Ser. No. 128,608
Claims priority, application Germany, May 19, 1960, F 31,266
7 Claims. (Cl. 260—429)

1. Organo-metallic compounds having the formula:

$$(RMX)_2$$

wherein R is a cyclic 1.3 enyl selected from the group consisting of cyclopentenyl, cyclohexenyl and cycloheptenyl; M is a member selected from the group consisting of platinum and palladium; and X is a halogen selected from the group consisting of chlorine, bromine and iodine.

5. Organo-metallic compounds having the formula:

$$RMR'$$

wherein R is a member selected from the group consisting of cyclopentenyl, cyclohexenyl and cycloheptenyl groups; M is a member selected from the group consisting of platinum and palladium, and R′ is a member selected from the group consisting of cyclopentadienyl and indenyl groups.

3,159,659
CYCLOPENTADIENYL METAL DIENE COMPLEXES

Roy L. Pruett, Charleston, and William R. Myers, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,892
9 Claims. (Cl. 260—429)

1. A class of compounds of the general formula:

$$RMY$$

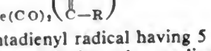
wherein R is selected from the group consisting of cyclopentadienyl, alkylcyclopentadienyl, and arylcyclopentadienyl; wherein M is a metal selected from the group consisting of cobalt, rhodium, and iridium; and wherein Y is an acyclic conjugated diene ligand.

3,159,660
CYCLOPENTADIENYL IRON DICARBONYL ACYLS

Rex D. Closson, Northville, and Thomas H. Coffield, Farmington, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,821
6 Claims. (Cl. 260—439)

1. Compounds having the formula



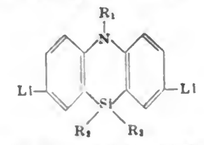
wherein Q is a cyclopentadienyl radical having 5 to about 13 carbon atoms and R is a hydrocarbon radical having one to about 10 carbon atoms.

3,159,661
PHENAZASILINE COMPOUNDS

Robert E. Jones, North Muskegon, Mich., and David Wasserman, Springfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

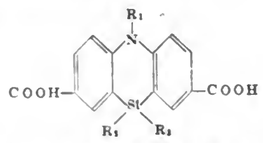
No Drawing. Filed Aug. 1, 1961, Ser. No. 128,397
24 Claims. (Cl. 260—448.2)

18. A compound having the formula



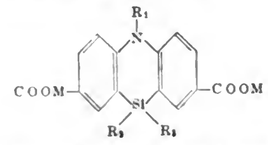
where R_1 is a lower alkyl radical and R_2 and R_3 are radicals selected from the group consisting of lower alkyl and phenyl.

20. A compound having the formula



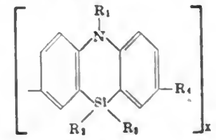
where R_1 is a lower alkyl radical and R_2 and R_3 are radicals selected from the group consisting of lower alkyl and phenyl.

22. A compound having the formula



where R_1 is a lower alkyl radical and R_2 and R_3 are radicals selected from the group consisting of lower alkyl and phenyl and M is a metallic element selected from the group consisting of cadmium, zinc, calcium, magnesium, barium and sodium.

23. A compound having the formula



where R_1 is a lower alkyl radical and R_2 and R_3 are radicals selected from the group consisting of lower alkyl and phenyl, R_4 is a lower alkylene radical and *x* ranges from 2–50.

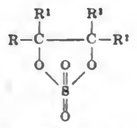
3,159,662
ADDITION REACTION
Bruce A. Ashby, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed July 2, 1962, Ser. No. 207,059
5 Claims. (Cl. 260—448.2)

1. A process for the production of organosilicon compositions containing silicon-carbon bonds which comprises contacting a silicon compound containing at least one hydrogen atom attached to silicon per molecule, there being not more than two hydrogen atoms attached to any one silicon atom, with a compound containing aliphatic carbon atoms linked by multiple bonds in the presence of a platinum-cyclopropane complex having the formula:

$$(PtCl_2 \cdot C_3H_6)_2$$

3,159,663
PROCESS FOR PREPARING AMINO-SUBSTITUTED SULFATE ESTERS
Donald L. Klass, Barrington, and John E. King, Evanston, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed May 4, 1961, Ser. No. 129,488
14 Claims. (Cl. 260—457)

1. A method of preparing amine-substituted sulfate esters which comprises reacting a sulfate ester of the formula



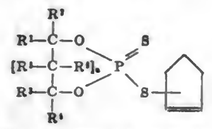
wherein R, R^1, R^2 and R^3 are substituents of the group consisting of hydrogen, methyl, ethyl, propyl, butyl, hexyl, decyl, octadecyl, phenyl, naphthyl, anthracyl, and cyclohexyl formed by the bridging of R^1 and R^2, with an aromatic amine of the formula



wherein R^4 is a substituent of the group consisting of phenyl, tolyl, xylyl, ethylphenyl, dodecylphenyl, naphthyl, anthracyl and phenanthryl and R^5 is a substituent of the group consisting of hydrogen, phenyl, tolyl, xylyl, ethylphenyl, dodecylphenyl, naphthyl, anthracyl and phenanthryl, at a temperature of −10° to +50° C. in an inert mutual solvent characterized by low hydrogen-bonding power and a solubility parameter of about 9.3–10.5, in which the amine-substituted sulfate ester product is insoluble.

3,159,664
CYCLOPENTENYL ESTERS OF 2-MERCAPTO-2-THIONO 1,3,2-DIOXAPHOSPHORINANE AND 1,3,2-DIOXAPHOSPHOLANE ACIDS
Jeffrey H. Bartlett, New Providence, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Original application Aug. 12, 1955, Ser. No. 528,112. Divided and this application Mar. 30, 1960, Ser. No. 18,474
2 Claims. (Cl. 260—461)

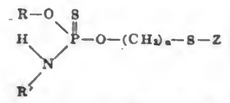
1. A compound of the formula



where R^1, R^2, R^3, R^4, R^5, and R^6 are each mmebers selected from the group consisting of hydrogen atoms and alkyl radicals containing 1 to 10 carbon atoms, and *a* is a whole number of value 0 to 1.

3,159,665
O-ALKYLMERCAPTOALKYL AND O-ARYLMERCAPTOALKYL O-ALKYL PHOSPHORAMIDOTHIOATES
Etcyl H. Blair, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 5, 1960, Ser. No. 73,510
6 Claims. (Cl. 260—461)

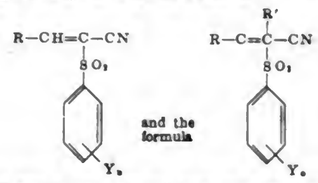
1. Phosphorus compound corresponding to the formula



wherein R represents lower alkyl, R′ is selected from R and hydrogen, *n* represents an integer from 2 to 4, inclusive, Z represents a member of the group consisting of alkyl, and hydrocarbon aryl containing up to and including 8 carbon atoms.

3,159,666
TOXIC ARYLSULFONYL ALKENENITRILES
Samuel Allen Heininger and Gail H. Birum, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 1, 1957, Ser. No. 656,200
7 Claims. (Cl. 260—465)

1. An arylsulfonyl alkenenitrile selected from the class consisting of compounds of the formula



and the formula

wherein R and R′ are selected from the class consisting of hydrogen and hydrocarbon radicals free of aliphatic unsaturation and containing from 1 to 6 carbon atoms, Y is selected from the class consisting of chlorine, bromine, iodine, fluorine, hydrogen and alkyl radicals having from 1 to 6 carbon atoms, and *n* is an integer from 1 to 5.

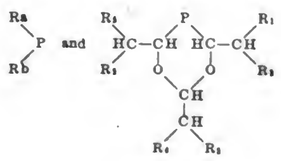
3,159,667
SECONDARY ORGANOPHOSPHINE SULFIDES AND THE PREPARATION THEREOF
Grace A. Peters, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Dec. 2, 1959, Ser. No. 856,665
7 Claims. (Cl. 260—481)

3. Bis(2-carbethoxyethyl)phosphine sulfide.

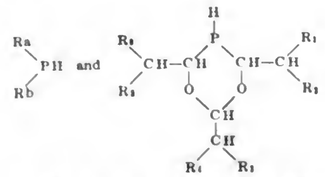
6. A method of preparing a secondary phosphine sulfide corresponding to the general formula



wherein X is a member selected from the group consisting of



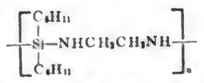
wherein Ra and Rb, respectively, represent a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl having from 2 to 18 carbon atoms, substituted and unsubstituted phenyl, substituted and unsubstituted cyclohexyl, substituted and unsubstituted cyclopentyl, said substituents for alkyl, phenyl, cyclohexyl and cyclopentyl being selected from the group consisting of lower alkoxy, halogen, phenoxy, amino, cyano, nitro, ureido, sulfo, hydroxy, carbamyl, carb(lower)-alkoxy, carboxy, and phenyl; and Ra and Rb, respectively, are attached directly to the phosphorus atom through a carbon atom; Ra and Rb can be the same and they can be different; R_1 to R_6 each represent alkyl having from 1 to 10 carbon atoms, and R_1, R_2, R_3, R_4, R_5 and R_6 need not be the same radicals; which comprises reacting equimolar amounts of sulfur and a secondary phosphine of the formula selected from the group consisting of



wherein Ra, Rb, and R_1 to R_6 have the meanings given hereinabove; said reaction being made to take place at a temperature in the range of 0° C. to 100° C. in an inert organic solvent and in an inert atmosphere; and recovering the resulting corresponding secondary phosphine sulfide.

3,159,668
POLYMERIC ORGANIC SILICON COMPOUND
Eugene G. Rochow, Winchester, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Apr. 14, 1961, Ser. No. 102,925
1 Claim. (Cl. 260—448.2)

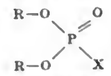
A linear polymeric material having the formula:



where *n* has a value of from about 5 to 150, inclusive.

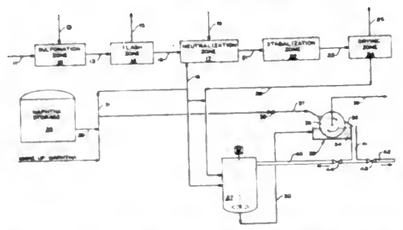
3,159,669
PROCESS FOR PHOSPHORAMIDIC ACID DERIVATIVES
Francis L. Scott, Lynnewood Gardens, Elkins Park, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 14, 1960, Ser. No. 22,097
10 Claims. (Cl. 260—500)

1. A process for the preparation of N-aryl phosphoramidic acids and their mono-aryl esters which comprises reacting at a temperature between about 130° and 250° C. a mono-aryl amine selected from the class of primary and secondary mono-aryl amine containing 6 to 10 carbon atoms and having a pK_a value between about 4 and about 6 selected from the class consisting of primary amines, N-lower alkyl secondary amines, and ring-substituted halo derivatives of said primary and secondary amines, with a phosphorous compound of the structure



where R is a radical containing between one and six carbon atoms and selected from the group of saturated aliphatic hydrocarbon and aromatic hydrocarbon radicals with the proviso that at least one R radical be bonded to an oxygen atom through a non-aromatic carbon atom, and where X is a radical selected from the group consisting of azide, halogen having an atomic weight below 80 and secondary amino radicals.

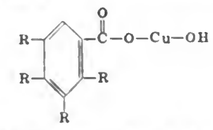
3,159,670
FILTRATION OF PETROLEUM SULFONATE SLIMES
Richard S. Logan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 27, 1960, Ser. No. 38,901
4 Claims. (Cl. 260—504)



1. The method of restoring normal filtration separation of solids from a metal petroleum sulfonate contained in the product of sulfonation of a viscous refined petroleum fraction having a viscosity of about 200 to 230 SUS at 210° F. and having a viscosity index of at least about 85 wherein the filter medium of the filter being utilized becomes clogged as a result of a malfunction in the process which method comprises returning all of the filter cake removed from the filter to the sole feed to the filter until normal filtration is obtained.

3,159,671
PROCESS FOR MAKING o-HYDROXY-BENZOIC ACIDS
Warren W. Kaeding, Concord, and Alexander T. Shulgin, Berkeley, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 15, 1961, Ser. No. 109,846
6 Claims. (Cl. 260—521)

1. A process for preparing o-hydroxybenzoic acids which comprises thermally decomposing a compound of the general formula:



wherein each R is taken from the group consisting of hydrogen and lower alkyl radicals containing 1–4 carbon atoms, inclusive, by heating said compound at between about 200° C. and 250° C. for from about 1 to 100 minutes.

3,159,672
PREPARATION OF PARA-TOLUIC ACID
Deryck Harry Derbyshire and Arthur Dudley Craven, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 25, 1962, Ser. No. 205,095
Claims priority, application Great Britain, July 3, 1961, 23,915/61
2 Claims. (Cl. 260—524)

1. A process for the preparation of para-toluic acid comprising reacting a mixture consisting essentially of liquid para-xylene and nitric oxide at a temperature of about 140° C. and at a pressure sufficient to maintain the para-xylene in a liquid state.

3,159,673

SEPARATION OF 2,3,6-TRICHLOROBENZOIC ACID FROM A MIXTURE OF TRICHLOROBENZOIC ACIDS

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 3, 1959, Ser. No. 856,950
2 Claims. (Cl. 260—525)

1. A method for the separation of substantially pure 2,3,6-trichlorobenzoic acid from a mixture of trichlorobenzoic acid isomers in which the isomers of trichlorobenzoic acid in said mixture in addition to the 2,3,6-isomer are selected from the group consisting of the 2,4,5-, 2,3,4-, 2,3,5-, and 3,4,5-isomers, which comprises treating the said mixture with an aqueous solution of a base in amount approximately stoichiometrically equivalent to the amount of 2,3,6-trichlorobenzoic acid present in the said mixture, said base being selected from the group consisting of alkali metal and ammonium salts, and lower-alkyl amines and hydroxy lower-alkyl amines, and, separating the undissolved trichlorobenzoic acids, thereby obtaining the substantially pure 2,3,6-trichlorobenzoic acid as an aqueous solution of its water soluble salt.

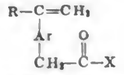
3,159,674

ALKYLENE-AROMATIC-ACETYL HALIDES

John G. Abramo, Wilmington, Del., and Earl C. Chapin, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,917
2 Claims. (Cl. 260—544)

1. Alkylene-aromatic-acetyl halides having the structure



wherein Ar is the 1,4-naphthylene radical, R is selected from the group consisting of hydrogen and methyl, and X is a halogen.

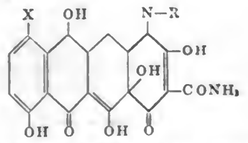
3,159,675

NOVEL 4-DEDIMETHYLAMINO-4-OXO - 6 - DEMETHYLTETRACYCLINE - 4 - OXIMES AND 4-HYDRAZONES

Robert Carlyle Esse, Pearl River, N.Y., and George Madison Sieger, Park Ridge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

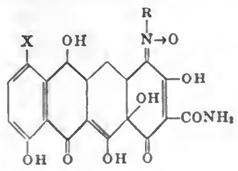
No Drawing. Filed Dec. 10, 1963, Ser. No. 329,369
14 Claims. (Cl. 260—559)

1. A compound selected from the group consisting of those of the formula:



wherein X is selected from the group consisting of hydrogen and halogen, and R is selected from the group consisting of hydroxy and amino; the acid-addition salts of the 4-hydrazones; and the alkali metal salts of the 4-oximes.

10. A compound of the formula:



wherein R is lower alkyl and X is selected from the group consisting of hydrogen and halogen.

3,159,676

NAPHTHYL CONTAINING GUANIDINES

Robert Geoffrey William Spickett, Harpenden, Graham John Durant, Welwyn Garden City, and Patrick Michael Guy Bavin, Letchworth, England, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,593
5 Claims. (Cl. 260—564)

1. A chemical compound of the class consisting of a free base and its addition salts with pharmaceutically acceptable acids, said free base having the formula:



in which:

Y is a member selected from the group consisting of O, S and NR;

A is an alkylene chain of 2 to 4 carbon atoms having at least 2 carbon atoms separating the hetero atoms to which it is attached; and

R is a member of the group consisting of hydrogen and lower alkyl.

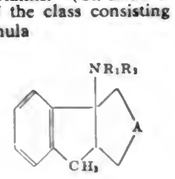
3,159,677

FLUORENAMINES AND PROCESS FOR PREPARATION THEREOF

Erik F. Godefroi, Detroit, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 12, 1960, Ser. No. 21,578
14 Claims. (Cl. 260—576)

1. A member of the class consisting of free bases of the structural formula



and non-toxic acid-addition salts thereof with pharmaceutically-acceptable acid; where R_1 is a member of the class consisting of hydrogen, lower alkyl radicals, lower alkoxyalkyl radicals, and the benzyl radical; R_2 is a member of the class consisting of hydrogen and lower alkyl radicals; and A is a member of the class consisting of the ethylene radical and the vinylene radical.

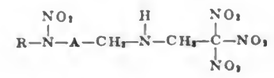
3,159,678

NITRAMINES

Milton B. Frankel, Pasadena, and Karl Klager, Monrovia, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed June 13, 1957, Ser. No. 666,276
9 Claims. (Cl. 260—583)

1. As a composition of matter, a nitramine having the general formula:



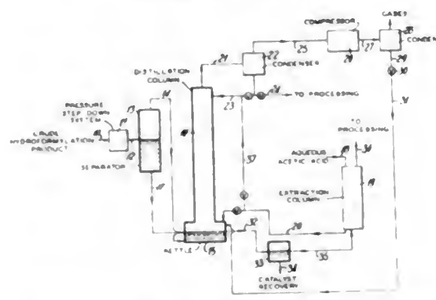
wherein R is an alkyl radical and A is an alkylene radical.

3,159,679

OXO RECOVERY PROCESS

Harold E. Kyle, St. Albans, and James E. Knap and Eugene C. Lindblad, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 28, 1960, Ser. No. 78,968
7 Claims. (Cl. 260—604)



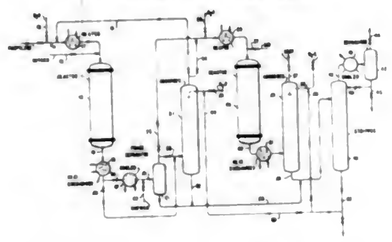
1. In a hydroformylation process wherein olefinic hydrocarbons containing from 2 to 15 carbon atoms and at least one double bond per molecule are contacted in an initial reaction zone with carbon monoxide and hydrogen in the presence of a cobalt hydroformylation catalyst under hydroformylation conditions to produce a crude hydroformylation product comprising aldehydes and alcohols containing one more carbon atom than the starting olefin, which is subsequently decobalted and distilled, the improvement in said process of: separating said crude product into a gaseous and liquid product; passing said liquid product into a decobalting zone, said zone being maintained at a temperature to cause said aldehydes and alcohols to steam distill; forming a mixture in said decobalting zone of a solution of a lower organic acid which is a member selected from the group consisting of formic, acetic, propionic, and oxalic acids, and said liquid product, said acid being added in an amount sufficient to combine with all the cobalt present in both the gaseous and liquid phase; simultaneously sparging said gaseous product into said mixture whereby vigorous agitation of said mixture is obtained; and removing overhead a gaseous and liquid product substantially free of cobalt.

3,159,680

PRODUCTION OF ALPHA, BETA-UNSATURATED ALIPHATIC ALDEHYDES

Albert T. Kister, Albany, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,233
12 Claims. (Cl. 260—604)



1. The process for the production of unsaturated carbonylic reaction products comprising lower alpha, beta-unsaturated aliphatic aldehydes, which comprises contacting an olefin having from three to ten carbon atoms to the molecule and an oxygen-containing gas, in a mol ratio of oxygen to said olefin below about 1, with a copper-containing catalyst, at a temperature of from about 275 to about 400° C., in a first reaction zone, adding oxygen-containing gas to unconverted olefin-containing effluence from said first reaction zone in the controlled amount resulting in the formation of an admixture containing a mol ratio of oxygen to olefinic hydrocarbons above about 1, and contacting the resulting admixture with a combination catalyst consisting essentially of the combination of (*a*) a metal selected from the group consisting of bismuth, cobalt and nickel with (*b*) a metal from the left hand column of Group VI of the Periodic Table of the Elements and with (*c*) oxygen in a second reaction zone, at a temperature which is above that maintained in said first reaction zone and which is in the range of from about 375 to about 500° C., thereby reacting olefins with oxygen with the formation of carbonylic reaction products comprising lower alpha, beta-unsaturated aliphatic aldehydes in said reaction zones.

3,159,681

PREPARATION OF LIQUID REACTION PRODUCTS OF DIBORANE AND ACETYLENE

Hugo Stange, Niagara Falls, Earl A. Weilmuenster, Kenmore, and Joel A. Zaslowsky, Niagara Falls, N.Y., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed June 8, 1955, Ser. No. 514,122
2 Claims. (Cl. 260—606.5)

1. A method of preparing a liquid high energy fuel which comprises reacting diborane and acetylene in the vapor phase at a temperature in excess of 100° C., at atmospheric pressure and in the presence of an inert gas diluent.

3,159,682

PROCESS FOR PREPARING β-HYDROXYALKYL SULPHONIUM SALTS

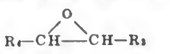
William Baird and John Woolley Batty, both of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,989
Claims priority, application Great Britain, May 5, 1961, 16,355
13 Claims. (Cl. 260—607)

1. A process for the manufacture of β-hydroxyalkyl sulphonium salts which comprises reacting a sulfide of the formula:

$$R_2SR_3$$

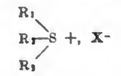
with an alkylene oxide of the formula:



and an acid of the formula:

$$HX$$

in the presence of water and at a temperature within the range of from about −20° C. to about 120° C., to form the sulphonium salt of the formula:



wherein

R_1 stands for a hydroxyalkyl radical of the formula $-CHR_4CHR_5OH$, and

R_4 and R_5 are selected from the class consisting of hydrogen and the lower alkyl radicals containing from 1 to 3 carbon atoms; and,

R_2 and R_3 stand for radicals selected from the class consisting of straight and branched chain lower alkyl radicals and hydroxy lower alkyl radicals, alkenyl radicals containing from 2 to 3 carbon atoms, benzene

and naphthalene aryl radicals, benzyl radicals, and cyclohexyl radicals, and

X stands for the anion of an acid.

3,159,683
PREPARATION OF 3-NITRO-4-BROMO-THIOANISOLE

Jany Renz, Jean-Pierre Bourquin, and Hans Winkler, Basel, and Pierre Gagnaux, Allschwil, Basel-Land, Switzerland, assignors, by mesne assignments, to Fidelity Union Trust Company, executive trustee

No Drawing. Filed May 22, 1962, Ser. No. 196,597
Claims priority, application Switzerland May 24, 1961
1 Claim. (Cl. 260—609)

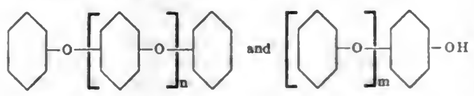
A method for the preparation of 3-nitro-4-bromo thioanisole comprising alkylating 4-bromo-thioanisole by reacting with dimethyl sulphate to form dimethyl-(bromophenyl)-sulphonium-methosulphate which protects the alkyl mercapto radical of said 4-bromo-thioanisole against undesired degradation by concentrated nitric acid nitrating said dimethyl-(bromo-phenyl)-sulphonium-methosulphate with concentrated nitric acid while cooling to form dimethyl-(3-nitro-4-bromo-phenyl)-sulphonium methosulphate, diluting the nitric acid reaction mixture with ice, converting said dimethyl-(3-nitro-4-bromo-phenyl)-sulphonium methosulphate to the insoluble perchlorate by adding perchloric acid, isolating said perchlorate and hydrolyzing said perchlorate by heating with sodium chloride solution to liberate 3-nitro-4-bromo-thioanisole.

3,159,684
PROCESS FOR PREPARING POLYPHENYL ETHERS

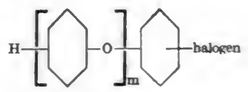
Edward P. Merica, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 5, 1959, Ser. No. 844,156
1 Claim. (Cl. 260—613)

A process for simultaneously preparing an isomeric mixture of polyphenyl ethers having at least 50 percent of the phenylene radicals meta-phenylene radicals and hydroxydiphenyl ethers having at least 50 percent meta substitution having the formulae



wherein *n* represents an even integer from 2 to 4, inclusive, *m* represents an integer from 1 to 3, inclusive, which comprises reacting a halogenated phenyl compound having the formula



wherein halogen represents a halogen having an atomic number from 17 to 35, inclusive with aqueous alkali in the presence of a condensation catalyst at a temperature of from about 250° to about 350° C. and under autogenous pressure.

3,159,685
SEPARATION OF PHENOLS

Kenneth B. Bradley, Midland, and Howard J. Klopf, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 29, 1961, Ser. No. 113,148
5 Claims. (Cl. 260—619)

1. A process for separating phenols of the general formula



wherein R is selected from the group consisting of hydrogen, halogen, alkyl of 1–12 carbon atoms, aralkyl, and aryl from mixtures thereof with the ortho monohalogenated derivatives of these phenols, which process comprises contacting said mixtures in the liquid phase at a temperature up to about the normal boiling point of the phenol mixture with a quantity of sulfonating agent sufficient to sulfonate essentially all of the phenol not having an ortho halogen substituent, thereby preferentially sulfonating substantially all of the phenol not having an ortho halogen substituent, and separating ortho monohalogenated phenol from the sulfonated mixture.

3,159,686
PREPARATION OF BROMOCHLOROPICRINS

George A. Burk, Bay City, and Ralph A. Davis, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,398
3 Claims. (Cl. 260—644)

1. In a process for making a halopicrin by reacting nitromethane with a halogen and an alkali base in an aqueous reaction mixture, the improvement wherein the halogen consists of chlorine and bromine in a molar ratio of about 2 to about 7 moles of chlorine per mole of bromine.

3,159,687
ISOMERIZATION OF ALKYL BENZENES

Leon M. Lehman, Brooklyn, N.Y., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 6, 1961, Ser. No. 136,161
6 Claims. (Cl. 260—668)

1. A method which comprises hydrogenating a feedstock consisting essentially of a mixture selected from the group consisting of xylene and durene isomer mixtures containing less than an equilibrium amount of a selected isomer, by contact of the feedstock with a gaseous mixture consisting essentially of light, normally gaseous hydrocarbons and about 25–75% hydrogen in the presence of a hydrogenation catalyst to obtain a mixture of alkyl-cyclohexanes and said light hydrocarbons, subjecting said alkylcyclohexanes to dehydrogenation-isomerization conditions in the presence of free hydrogen and a platinum-containing dehydrogenation-isomerization catalyst, recovering from the dehydrogenation-isomerization reaction a mixture of alkylbenzene isomers richer in said selected isomer than said feedstock and a gas containing hydrogen in a proportion greater than in said gaseous mixture and recovering said selected isomer from the recovered isomer mixture.

3,159,688
CATALYTIC OXIDATIVE DEHYDROGENATION OF MONOOLEFINS

Thomas J. Jennings, Lafayette, and Hervey H. Voge, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1961, Ser. No. 97,467
7 Claims. (Cl. 260—680)

1. Process for the oxidative dehydrogenation of a monoolefin to its corresponding diolefin which comprises passing a hydrocarbon feed containing a substantial amount of said monoolefin in the vapor phase together

with from about 0.3 to about 2 moles of oxygen per mole of monoolefin reactant through a reaction zone in contact with a catalyst comprising an oxygen-containing compound of a Group V*b* element of the Periodic Chart of the Elements having an atomic number of from 42 through 74 promoted with an element from Group V*a* of the Periodic Chart of the Elements having an atomic number from 33 through 51, the amount of promoter, calculated as the oxide, being from 0.1% to about 20% by weight based on oxide catalyst mass under conditions including a temperature of between about 300 and 600° C. to oxidatively dehydrogenate said monoolefin to its corresponding diolefin.

3,159,689
CYCLIC PROCESS FOR THE PRODUCTION OF ALPHA OLEFINS BY REACTING HALOGENOUS ORGANIC ALUMINIUM COMPOUNDS WITH OLEFINS

Karl Ziegler, 1 Kaiser Wilhelm Platz, Mulheim (Ruhr), Germany, and Roland Köster and Wolf Rainer Kroll, both of Mulheim (Ruhr), Germany; said Köster and said Kroll assignors to said Ziegler, Mulheim (Ruhr), Germany

No Drawing. Filed Mar. 15, 1960, Ser. No. 15,044
Claims priority, application Germany Mar. 17, 1959
21 Claims. (Cl. 260—683.15)

1. A cyclic process for the production of an alpha olefin by reacting an organic aluminum halide compound of the general formula R_2AlX wherein R represents an alkyl radical having at least two carbon atoms and containing no unsaturated bond and no branching on the carbon atoms bonded to aluminum and X is a member selected from the group consisting of chlorine and bromine, with an olefin in the present of an aluminum compound of the general formula



wherein R′ is a straight chain aliphatic radical, which comprises the steps of (1) thermally cleaving a complex compound of a potassium halide selected from the group consisting of potassium chloride and potassium bromide with a compound R_2AlX having the formula $K[AlR_2X_2]$ wherein R is as above defined to form a reaction product consisting of a distillate consisting of the compounds R_2AlX and AlR_3 and a distillation residue consisting of a potassium halide as above defined and its complex compound, with at least one of the compounds selected from the group consisting of R_2AlX and $RAlX_2$; (2) contacting the said distillate with ethylene at a temperature between 90° and 150° C. and under an elevated pressure to form by addition a higher aluminum hydrocarbon; (3) treating the resulting addition product with a member selected from the group consisting of ethylene and alpha olefins in the presence of nickel to thereby split off as olefin the hydrocarbon radicals bonded to the aluminum, the split olefin produced on the aluminum by addition being simultaneously displaced by the olefin employed in the contacting; (4) admixing the reaction product thereby formed with the distillation residue formed in step 1; (5) separating the nickel-containing split-off olefin from said complex compound $K[AlR_2X_2]$, and re-cycling said complex compound to the first step.

ERRATUM

For Class 260—847 see:
Patent No. 3,159,597

3,159,690
MIXTURES OF UNSATURATED POLYESTERS AND A COPOLYMERIZABLE MONOMER

Earl E. Parker, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,932
9 Claims. (Cl. 260—864)

3. A method of accelerating the polymerization of a preformed mixture of (A) a polyester of propylene glycol and a mixture of maleic acid and phthalic acid, and (B) styrene, said mixture containing as a gelation inhibitor about 0.01 to about 0.1 percent by weight of a member of a class consisting of quinones and dihydric phenols, which comprises adding to said mixture at the time of polymerization about 0.001 to about 2 percent by weight based upon the total mixture of the polyester of a salt of a class consisting of a hydrogen halide of phenyl hydrazine, a hydrogen halide of a secondary amine and a hydrogen halide of a tertiary amine, the addition being in the presence of an organic hydroperoxide polymerization catalyst.

3,159,691
CIS-POLYBUTADIENE COMPOSITIONS

Gerard Kraus, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

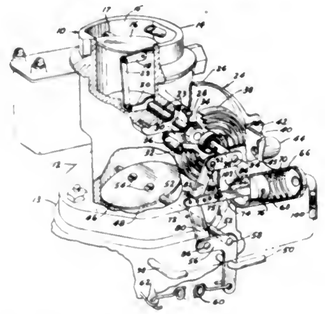
No Drawing. Filed Dec. 5, 1960, Ser. No. 73,506
3 Claims. (Cl. 260—894)

2. As a new composition of matter, a blend of rubbers comprising 60 to 99 parts by weight of a first polybutadiene containing in the range of 85 to 96 percent cis 1,4-addition and 1 to 40 parts by weight of a second polybutadiene containing in the range of 96 to 99 percent cis 1,4-addition, said second polybutadiene having a cis-content at least 2 percent greater than that of said first polybutadiene, the aforesaid parts by weight ranges being based on 100 parts by weight of total rubbers contained in the blend.

3,159,692
CHOKE MECHANISM

Milton J. Kittler, Bloomfield Hills, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

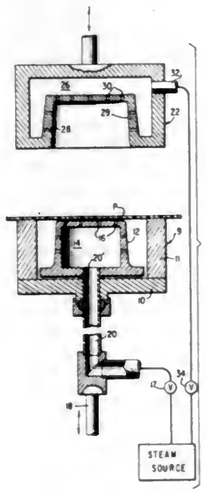
Filed Apr. 2, 1962, Ser. No. 184,385
5 Claims. (Cl. 261—39)



1. In a carburetor comprising an induction passage, a choke valve pivotally mounted in said induction passage, a thermostatic coil spring variably resisting the opening of said choke valve in accordance with temperature, a throttle valve pivotally mounted in said induction passage downstream of said choke valve, means comprising linkage connected between said throttle valve and said thermostatic coil spring for varying the tension of said spring in accordance with throttle position, said linkage including a broken link, engine vacuum means for vary-

ing the length of said broken link so as to vary the effect of throttle position on tension of said spring, a connection between said vacuum means and said broken link, and means for changing the length of said connection between said vacuum means and said broken link so as to enable variations in the effect of said vacuum means on said broken link.

3,159,693
METHOD OF FORMING PLASTIC ARTICLES
Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 1, 1961, Ser. No. 156,295
5 Claims. (Cl. 264—53)



1. A method of forming a plastic article from a sheet of expandable plastic containing a foaming agent which comprises:

(1) engaging the two major surfaces of the sheet at the periphery of a portion of the sheet by cavity-containing mold members so that each major surface within that periphery faces a cavity;

(2) introducing a fluid into each cavity to provide equal pressures against both surfaces within that periphery greater than the pressure to be imparted by the foaming agent at a subsequent forming temperature;

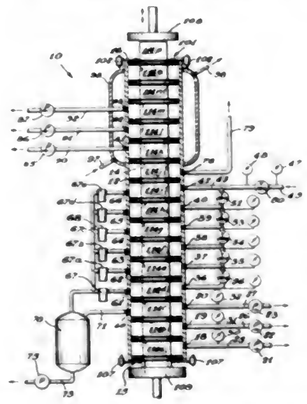
(3) heating the sheet within the periphery of that portion to a forming temperature while maintaining fluid pressures against both surfaces greater than that of the foaming agent;

(4) forming the heated sheet within said periphery while maintaining different superatmospheric fluid pressures against both surfaces above that of the foaming agent until one major surface abuts a concave mold surface of one of the mold members to form a shaped article;

(5) reducing the fluid pressures on the major surfaces to a pressure less than that provided by the foaming agent at the forming temperature while maintaining the one major surface of the shaped article in contact with the mold surface; and

(6) reducing the fluid pressure on the major surfaces to that of the atmosphere with the shaped article in contact with the mold surface.

3,159,694
CONTINUOUS MOLDING PROCESS
Charles R. Wiles and David L. Russell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,940
5 Claims. (Cl. 264—53)



1. A method for the fabrication of particulate expandable thermoplastic resinous material into shaped articles comprising confining in each of a plurality of sequential cavities a mass of expandable thermoplastic resinous material,

providing between generally adjacent and sequentially arranged cavities a one way communication path subjecting each of said cavities in order to the following sequential operations:

(*a*) exhausting at least a portion of the gases contained therein;

(*b*) passing a fluid heat exchange medium through said material contained in said cavities and at least a portion of the fluid heat exchange medium passed to the adjacent cavity by means of the one way communication path;

(*c*) heating said masses to a temperature sufficient to cause said masses to expand and knit together to form a unitary cellular body;

(*d*) withdrawing said heating medium;

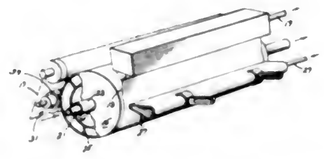
(*e*) cooling said masses to a temperature below the heat distortion temperature of said expanded masses with the further limitation that at least a portion of the heat exchange fluid is passed sequentially through at least two of said masses.

3,159,695
PROCESS FOR PNEUMATIC FORMATION OF THERMOPLASTIC FOILS
Hans Behringer, Munich, Germany, assignor to Werner Bahlsen, Hannover, Germany
Filed Oct. 17, 1960, Ser. No. 63,207
9 Claims. (Cl. 264—93)



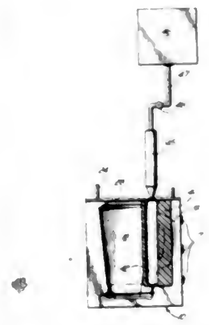
1. A method of producing containers which comprises providing an open-ended container, placing the same on an internal mold so that said open end extends beyond the end of said internal mold, providing a foil of thermoplastic material contacting said foil with a heated plate pressing said foil onto said heated plate to cause it to bear flush against said heated plate and to eliminate air bubbles therebetween, thereby to first soften said foil, placing said foil over said open end, and then applying pneumatic pressure on said foil to cause it to enter said open end and adhere to the inner wall and end of said container and form a self-sustaining end wall closure for the container.

3,159,696
METHOD AND APPARATUS FOR CASTING OF SHAPED ARTICLES
William J. Hodgson, Jr., Boothwyn, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,683
9 Claims. (Cl. 264—93)



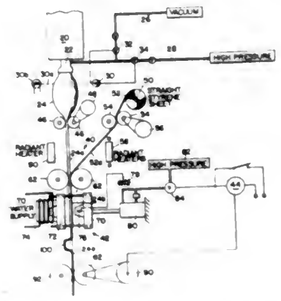
1. A method of forming transparent films including the steps of providing a shaped stream of molten thermoplastic polymer containing at least one additive material, contacting one surface of the shaped stream of molten polymer with a moving chill surface to rapidly cool the stream and provide a solid film, directing a stream of gas against the exposed surface of the shaped stream of molten polymer substantially along its entire width, forcibly engaging a non-continuous resilient surface against and transversely across the exposed surface of the solid film to thereby urge the film against the chill surface under pressure, releasing the pressure from the film and removing the film from the chill surface.

3,159,697
BLOW AND COMPRESSION MOLDING ECCENTRICALLY THICK PARISON
Louis G. Tocci, Leominster, Mass., assignor to Tucker Manufacturing Corp., a Massachusetts corporation
Filed July 17, 1962, Ser. No. 210,387
5 Claims. (Cl. 264—94)



1. A method for molding plastic articles from a parison, which method comprises generally concurrently blow molding a thin wall portion of the parison and compression molding a thick wall portion of the parison beyond the largest diameter of the thin wall portion being blow molded.

3,159,698
METHOD FOR MAKING AND FORMING PLASTIC MATERIAL
Nam P. Suh, Cambridge, David F. Stewart, Framingham, and Ralph M. Lamade, Concord, Mass., assignors to Sweetheart Plastics Inc., a corporation of Maryland
Filed Dec. 1, 1960, Ser. No. 73,081
4 Claims. (Cl. 264—210)



1. A method of making a container comprising the steps of extruding a tube of polystyrene foam at a temperature between 300° and 320° F., passing the tube between pressure rollers before the foam sets to collapse the tube and form a thin foam sheet, providing a sheet of polystyrene film, heating the film to condition it for bonding to the foam and heating the surface of the foam sheet to maintain its temperature between 300° and 320° F., thereafter mechanically bonding the film and the sheet together to form a laminate, and match molding the laminate into a container before the foam cools.

3,159,699
SKIRTED DIE
Richard A. Sutphin, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 6, 1961, Ser. No. 81,037
8 Claims. (Cl. 264—320)



7. A die for stamping a blank of plastic material into a pin-die shaped article, said die having in combination:

(A) a pair of mating die halves each having a cavity bounded by a peripheral land, said lands being adapted to substantially contact one another in use, each of said die halves having co-planar of the land thereof a longitudinal dimension and a lateral dimension which is normal to said longitudinal dimension,

(B) said lands each having a pair of side portions substantially parallel to the said longitudinal dimension and a pair of end portions substantially parallel to the said lateral dimension, said side portions of each land being oppositely disposed to one another and separated by the lateral dimension of said cavity, each of the said end portions intervening corresponding ends of said side portions whereby said side and end portions alternate on said land, and

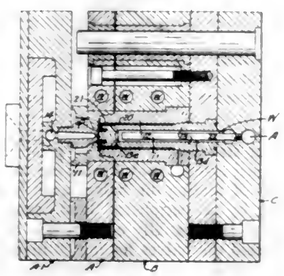
(C) means to block extrusion of surplus plastic material outwardly over the side portions of said lands and to simultaneously direct the extrusion of substantially all of said surplus material in directions generally aligned with said longitudinal dimension during stamping, said means comprising a pair of opposed skirts each of which has a length which is approximately the same as that of a said side portion, each skirt being maintained in engagement with substantially the entirety of the outer edge of a side portion of the land of one of the die halves, said opposed skirts extending beyond the land of one die half in the direction of the other die half and being adapted to telescope over the outer edges of the side portions of the land of the other die half in close sliding contact therewith, said skirts being separated from each other at their ends by the full length of each of said end portions of said one die half whereby oppositely disposed unblocked areas intervene the mating end portions of said die halves during the period of final deformation of said plastic material.

3,159,700
FLEXIBILIZING RIGID FOAMS
Masao Nakamura, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 31, 1962, Ser. No. 198,824
7 Claims. (Cl. 264—321)



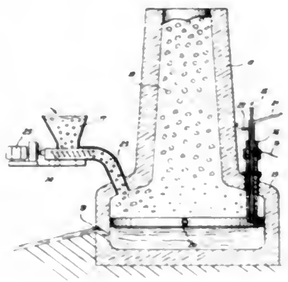
1. A method of flexibilizing a rigid cellular resinous sheet comprising partially crushing said sheet by applying a force to said sheet in a direction lying in the plane of the sheet.

3,159,701
INJECTION MOLDING OF PLASTIC AMMUNITION CASE
George L. Herter, 929 3rd Ave. NE., Waseca, Minn.
Filed Dec. 12, 1960, Ser. No. 75,305
5 Claims. (Cl. 264—328)



1. The process of manufacturing integral ammunition cases by plastic injection molding, which consists in axially gating plastic material uniformly in fluid state through a thin tubular mold cavity outwardly from the injection source to form the elongated case of a shell, and prior to said tubular flow, gating said plastic material radially outward through a transverse mold cavity communicating with said tubular mold cavity said material flowing axially into said cavity from an open circular sprue to form an integrally connected shell-base-plate, provided with a rim edge, and while gating said plastic material through said transverse mold cavity, simultaneously applying axial pressure toward said injection source in said transverse mold cavity to substantially assist in the flow of said plastic material radially outward from said injection source, stopping the flow of said plastic material when said mold cavities are filled and producing the hardening of the material in the filled mold cavities.

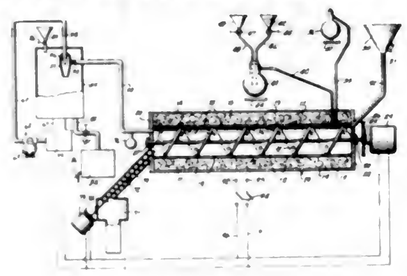
3,159,702
SMELTING DEVICE
Jean Cordier, Saint-Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie, Saint-Germain-en-Laye, France
Original application Feb. 12, 1960, Ser. No. 8,458. Divided and this application Oct. 11, 1960, Ser. No. 62,046
Claims priority, application France, Feb. 14, 1959, 786,759, Patent 1,226,532; Aug. 1, 1959, 801,789, Patent 1,242,894; Aug. 3, 1959, 801,848, Patent 1,241,196; Nov. 17, 1959, 810,351, Patent 1,249,437
3 Claims. (Cl. 266—10)



1. An electric arc furnace, comprising, in combination, a hearth section; means for maintaining molten material in said hearth section at a predetermined level; means for producing an electric arc in said hearth section above said predetermined level, said electric arc producing means including a plurality of electrodes, at least one of said electrodes being formed with an interior conduit opening in the area of the tip of said one electrode and adapted for the injection therethrough of fluid hydrocarbons into said hearth section in the vicinty of said electric arc; and a downwardly flaring elongated shaft section having upper and lower end portions, said lower end portion being located above and communicating with said hearth section, whereby the charge introduced into said furnace at the upper end portion of said shaft section will pass downwardly into said hearth section in countercurrent flow to reducing gases issuing from said hearth section and will be separated by the electric arc in said hearth section into a molten metal portion and a slag portion.

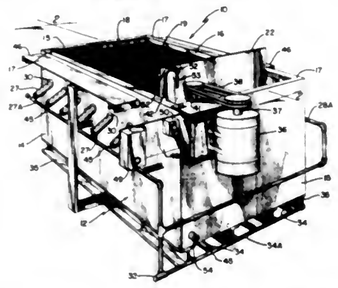
3,159,703
APPARATUS FOR THE SEPARATION OF PLATINUM AND GOLD BY VOLATILIZATION
Edson R. Wolcott, 917 Crenshaw Blvd., Los Angeles 19, Calif.
Filed Oct. 26, 1961, Ser. No. 147,800
1 Claim. (Cl. 266—19)

Apparatus for the separation of platinum from finely divided ores or sands containing the same that comprises a horizontal ceramic tube constituting a retort, means for supplying heat at moderate temperature to said ceramic tube, an outer metal tube of larger diameter, insulating material around the ceramic tube within the outer metal tube, a helical auger centered within the ceramic tube, means for continuously supplying finely divided ore or sand to the inlet end of the ceramic tube, means for slowly rotating the helical auger to feed the ore or sand through the tube and agitate it therein, means for passing a mixture of nitrosyl chloride and chlorine vapors through the ceramic tube concurrently with and in contact with the ore, a vapor off-take near the top of the outer end of the ceramic tube, a solid off-take near the bottom of the



outer end of the ceramic tube, a precipitation tank connected to the vapor offtake, a KOH tank connected to the precipitation tank at the bottom, a return pipe connected from the KOH tank to the precipitation tank and extending into said tank at the top, means for circulating the KOH through the return pipe, and a jet pump connected to receive vapor from the vapor offtake and actuated by the KOH circulated through the return pipe.

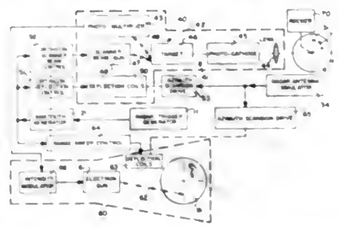
3,159,704
METHOD AND MEANS FOR MELTING AND CONVEYING METAL
James H. Marsteller, Denver, Colo., assignor to Universal Natural Resources, Inc., Denver, Colo., a corporation of Colorado
Filed Mar. 20, 1961, Ser. No. 97,031
7 Claims. (Cl. 266—33)



1. In a portable melting and holding furnace for low melting point metals and alloys, a shell having a grate positioned across the upper open end thereof for supporting the material to be melted, a series of flame-producing burners arranged peripherally around the shell beneath said grate and being directed inwardly toward a concentrated area of said grate to establish a melting zone for direct flame-melting of the material, delivery means connected to said burners for supplying fuel thereto and withdrawing means communicating with the bottom of said reservoir for withdrawal of the metal from the furnace upon melting.

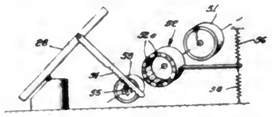
ELECTRICAL

3,159,705
COORDINATE CONVERSION AND RADAR GATING SIMULATOR APPARATUS
William H. Rhodes and James David Bryan, Baltimore, Md., assignors to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland
Filed Nov. 22, 1960, Ser. No. 70,953
9 Claims. (Cl. 35—10.4)



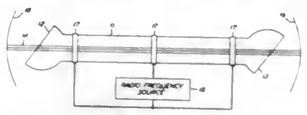
1. Simulator apparatus comprising electromagnetic substantially point spot indicium display means including electromagnetic-beam-forming means, a display surface responsive to impingement of said beam thereon to form a spot indicia thereon, and means for positioning said beam as a function of the transient spatial coordinates of a target to be simulated, to thereby permit formation of a movable electromagnetic display of at least one target indicium on said display surface as a non-sweep substantially continuously displayed point spot indicative of target transient location, electromagnetic-beam scanning means for scanning said display in a desired sweep motion, visual display means including a visual display screen having a decaying-after-display characteristic, said visual display means being responsive to said beam scanning means for forming a sweep-type recurring visual display of said target indicium on said visual display screen as modified by said sweep, signal modifying means for effecting formation of said visual display of said target indicium in a modified shaped form with respect to the form of said point spot indicium, the beam sweep of said beam scanning means and the sweep display of said visual display being of type P and being synchronized in a one-to-one relation, said signal modifying means effecting formation of said visual display of said target indicium as an arcuately widened spot as compared to said point spot target indicator display indicium.

3,159,706
APPARATUS FOR PRODUCING PHASE SHIFT IN ELECTRONIC ORGANS
Donald J. Leslie, % Electric Music, 56 W. Del Mar Blvd., Pasadena, Calif.
Filed Aug. 28, 1961, Ser. No. 134,529
10 Claims. (Cl. 84—1.24)



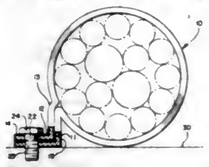
1. In an electronic organ: an organ signal circuit; a phase shifting device interposed in said circuit, and including an element operative to adjust the phase shift produced by said device; a swell pedal; and coupling means between the swell pedal and said element.

3,159,707
GAS OPTICAL MASER
William R. Bennett, Jr., Berkeley Heights, N.J., and Ali Javan, Cambridge, Mass., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 15, 1962, Ser. No. 202,872
14 Claims. (Cl. 88—1)



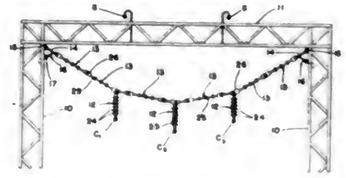
1. An optical maser comprising
means forming an enclosed space,
a gaseous mixture in said space,
said mixture including a first gas and a second gas,
said first gas having an energy system characterized by a metastable energy state above the ground state,
said second gas having a polyatomic molecule characterized by at least one repulsive neutral excited molecular energy state,
the metastable state of said first gas being substantially matched to the repulsive state of the molecule of said second gas,
the molecule of said second gas including at least one atom having a plurality of energy states above the ground state,
said repulsive molecular energy state terminating in an upper energy state of said atom,
means for exciting said first gas to its metastable state for transferring energy by resonant collision processes to said repulsive molecular state of said second gas and by dissociative transfer to said upper energy state of said atom whereby a population inversion is produced between two optically connected energy states thereof,
and means defining a light beam path through the gaseous mixture in said enclosed space.

3,159,708
INSULATED CLAMP
Robert S. Deal, Los Altos, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed July 25, 1960, Ser. No. 45,061
3 Claims. (Cl. 174—40)



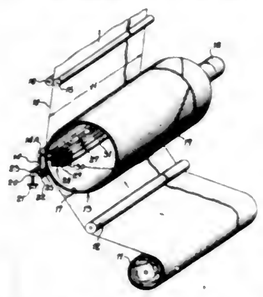
1. An insulated clamp comprising a strip of metal having tightly applied thereto a heat-shrunk sleeve of a heat-unstable plastic material, said clamp having a body portion and extremities, each of said extremities being generally L-shaped with an outer leg and a connecting leg joining said outer leg to said body portion, said extremities being relatively oriented for nesting thereof in clamping relationship, said connecting legs extending in a direction outwardly and away from the periphery of said body portion, a first one of said connecting legs being generally tangent to the periphery of said body portion, said connecting legs being substantially parallel and said outer legs being substantially parallel when said extremities are in clamping relationship, said first connecting leg being connected to said body portion at a first point and the second of said connecting legs being connected to said body portion at a second point, said first point and said second point being adjacent to each other when said extremities are in clamping relationship, said body portion forming a substantially circular shape when said first point is brought adjacent to said second point by placing said extremities in clamping relationship and said extremities being adapted to be secured to each other while in clamping relationship.

3,159,709
CROSS CATENARY GUY STRAIN INSULATOR CONSTRUCTION
Arthur O. Austin and William Robert Gormley, Barberton, Ohio, assignors to A. O. Austin, Inc., Barberton, Ohio, a corporation of Ohio
Filed Apr. 19, 1960, Ser. No. 23,251
4 Claims. (Cl. 174—45)



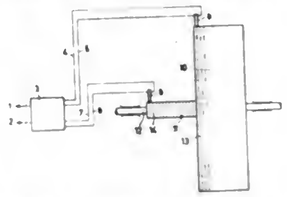
2. A cross catenary support suspending three primary insulators carrying at their lower ends three power lines in a three phase arrangement between the sides of a tower structure, said support comprising flanged guy strain insulators connected at one end directly to the upper ends of the outer primary insulators and at their other ends to the sides of the tower structure, and damping means engaging links connecting the guy strain insulators to the sides of the tower to restrain movement of said power lines.

3,159,710
PRESSURE-RESPONSIVE RECORDING HAVING MAGNETICALLY BIASED MARKING MECHANISM
Leonard K. Sorgi, Scarsdale, N.Y., assignor, by mesne assignments, to Litton Systems, Inc., a corporation of Maryland
Filed Dec. 23, 1959, Ser. No. 861,528
9 Claims. (Cl. 178—6.6)



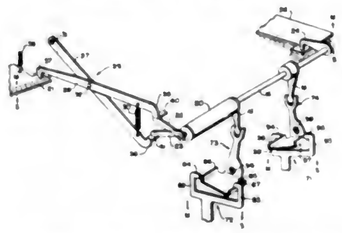
1. A signal-controlled marking mechanism for electric signal recorders and the like, comprising a pair of members defining pressure jaws of elemental pressure area and between which a recording blank is arranged to be moved, one of said jaws being a backing anvil and the other being a recording bar, a signal energized electromagnet whose movable armature is constituted of said bar, pivotal means supporting said bar for adjustable tilting pressure against one face of the blank, and means supporting said electromagnet adjacent the opposite face of the blank, the said bar being supported for substantially unrestrained tilting motion towards said blank under control of the energization of said electromagnet.

3,159,711
DEVICE FOR THE MAGNETIC RECORDING OF TELEVISION PICTURES
Theodoor Geert Schut, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,626
Claims priority, application Netherlands Apr. 12, 1960
4 Claims. (Cl. 178—6.6)



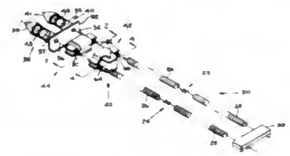
1. Apparatus for the magnetic recording of signals having frequencies ranging from low-frequency audio to high-frequency video, comprising means for separating said signals into a high-frequency portion and a low-frequency portion, a magnetic recording medium, means for moving parts of said medium at different linear speeds, means for recording said high frequency portion on a first part of said medium, and means for recording said low-frequency portion on a second part of said medium, said first part having a linear speed substantially greater than said second part.

3,159,712
MECHANICAL SIGNAL COMBINER
Robert E. Arko, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 135,049
7 Claims. (Cl. 178—22)



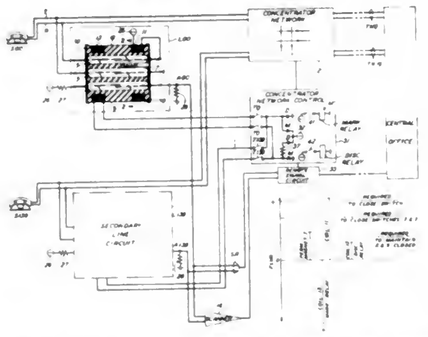
1. In a signal encoding apparatus having a first signal generator for the message to be encoded and a second signal generator for providing control signals to be combined with the message to form an encoded message the combination comprising a first means movable in one direction in response to a signal of one condition from a message signal generator and movable in a second direction in response to a second condition from said message signal generator, a second means movable in one direction in response to a signal of a first condition from the control signal generator and movable in a second direction in response to a signal of a second condition from said control signal generator, a first pivotally mounted lever having an end actuated by said first and second means, and a second lever pivoted on said first lever and having one end actuated by said first and second means and having its opposite end indicating a marking or spacing condition by its position.

3,159,713
ARTIFICIAL REVERBERATION DEVICE
William C. Laube, Jr., Maywood, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 10, 1961, Ser. No. 94,816
5 Claims. (Cl. 179—1)



5. An apparatus for providing reverberation of an electrical signal comprising at least two coil springs having appreciably different effective signal transmission lengths, means suspending said springs at their ends to permit vibrations comprising signals in said springs to travel the lengths of said springs and be reflected from the respective ends of said springs, said suspending means including compliant support means and damping means connected to one end of each spring for controlling the rate of vibration decay, electromechanical driver means supported at a position adjacent said one end of each spring for controlling both of said springs to vibrate both of said springs simultaneously with a certain relative vibrational relationship when an audio frequency signal is applied to said driver means, and mechanico-electric pickup means supported at a position adjacent said one end of each spring for translating vibrations transmitted over said springs into electrical signals, said pickup means being substantially insensitive to simultaneous vibrational components in said springs which have said certain relative relationship.

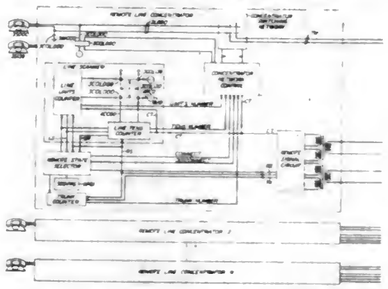
3,159,714
REMOTE CONCENTRATOR LINE CIRCUIT
George F. Abbott, Jr., Berkeley Heights, N.J., and Wiley Whitney, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 22, 1961, Ser. No. 111,569
17 Claims. (Cl. 179—18)



3. An automatic telephone line concentrator system including a telephone central office, a plurality of trunks extending from said office, a remote substation line, a remote switching network for connecting said line to said trunks under control of said central office, a combined remote line and cut-off circuit connected to said line and responsive to supervisory conditions on said line, said line and cut-off circuit including first, second and third magnetic reed switches, a first and second winding surrounding said reed switches, means responsive to a service request condition on said line including said

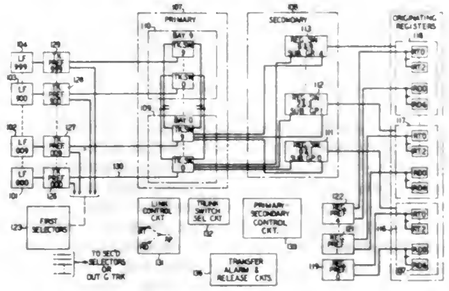
first and second reed switches for energizing said first winding, said third switch being operative to close in response to the energization of said first winding, means responsive to the closure of said third switch for delivering a supervisory indication indicative of a service request condition to said central office, and means effective on the connection of a selected idle trunk to said line by said switching network for energizing said second winding to open said first, second and third switches.

3,159,715
UNIVERSAL LINE CONCENTRATOR
George F. Abbott, Jr., Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 22, 1961, Ser. No. 111,571
17 Claims. (Cl. 179—18)



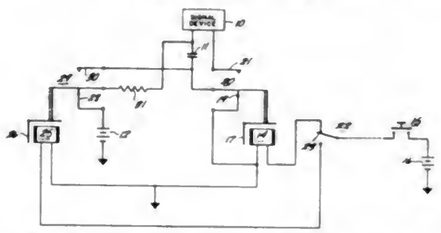
1. A semiactive universal line concentrator comprising a remote switching stage associated with a number of customer line circuits including means for detecting a service request at any of said line circuits, means responsive to the detection of a service request for originating the generation of requesting line identification signals, and means for registering trunk identification signals; an expander switching stage associated with the terminations of said customer line circuits at a central office; a plurality of voice trunks connected between said remote and said expander switching stages; a control circuit including means for generating idle trunk identification signals, and means for registering line and trunk identification signals; and means for relaying signals between said remote switching stage and said control circuit.

3,159,716
LINK CIRCUIT
George Riddell, Lincroft, and Charles A. Throckmorton, Shrewsbury, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1962, Ser. No. 226,616
15 Claims. (Cl. 179—18)



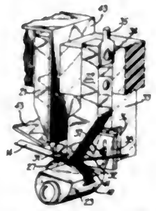
1. In a communication system, a plurality of originating units of a first class, a plurality of originating units of a second class, a plurality of receiving units of a first class, a plurality of receiving units of a second class, a link for selectively providing access from said originating units of the first class to said receiving units of the first class and from said originating units of the second class to said receiving units of the second class, means effective when all receiving units of the first class are engaged for effecting a connection between an originating unit of the first class and a receiving unit of the second class, said link including a first group of relays associated respectively with said receiving units of the first class and a second group of relays associated respectively with said receiving units of the second class, a first common operating path for said first group of relays, a second common operating path for said second group of relays, an auxiliary path connecting said first and said second common operating paths, and means effective for calls originated by units of said second class for rendering ineffective both said first common operating path and said auxiliary path.

3,159,717
CHIME SIGNAL REGULATOR
Philip N. Lehr, Huntington, and Richard Lupia, New Hyde Park, N.Y., assignors to Dictograph Products, Inc., Jamaica, N.Y., a corporation of Delaware
Filed July 7, 1960, Ser. No. 41,327
6 Claims. (Cl. 179—84)



1. A signal control system for controlling a signal control device for indicating a call to a called party, comprising selectively operable electrical discharge means, a signal device adapted to be selectively coupled to said electrical discharge means for indicating a call in response to the discharge of said electrical discharge means, and call registering means under the control of the calling party for coupling said electrical discharge means to said signal device for effecting a single discharge during the pendency of said coupling.

3,159,718
METHOD AND APPARATUS FOR ELECTROSTATIC RECORDING AND REPRODUCING
Donald E. Richardson, Chicago, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed Oct. 5, 1959, Ser. No. 844,472
63 Claims. (Cl. 179—100.1)

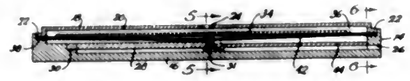


39. Apparatus for injecting charges into a record medium including a pre-bias electrode arranged at one side of the medium to first inject a direct current pre-bias charge into opposed subsurface regions of the medium, a record electrode arranged to thereafter alter the injected pre-bias charge in accordance with a signal to be recorded, a common backing electrode arranged to cooperate with both of said pre-bias and record electrodes on the opposite side of the medium, and means for adjusting said common backing electrode with respect to the other electrodes to differentially alter the cooperation therewith.

ERRATUM

For Class 179—100.2 see:
Patent No. 3,159,501

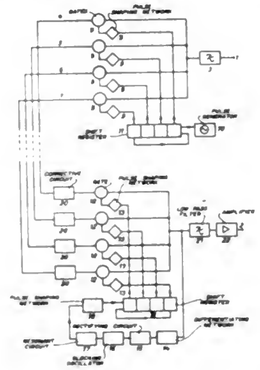
3,159,719
ELECTROACOUSTIC TRANSDUCERS
Erwin M. Weiss, Chicago, Ill., assignor to Beltone Electronics Corporation, a corporation of Illinois
Filed Nov. 13, 1961, Ser. No. 151,672
7 Claims. (Cl. 179—110)



5. The improvement of an electroacoustic transducer characterized by its relatively thin form factor comprising the combination of an elongated casing of a width substantially greater than its depth, said casing having bottom and side walls defining a cavity therewithin, a beam of barium titanate material positioned within said cavity, said beam being fastened at one end thereof to said casing such that its remote end is free to vibrate at the center of said cavity, a vibratable diaphragm coupled to said remote end of the beam and positioned in spaced relation to said beam adjacent the cavity opening of the casing, said vibratable diaphragm comprising a thin sheet of flexible, resilient material forming a wall-to-wall partition between said cover and said beam, and a thin sheet of metallic material positioned on said sheet of flexible, resilient material, said sheet of metallic material being of lesser dimensions than said sheet of flexible, resilient material so as to be supported by the latter, and a cover for the cavity opening supported by the side walls of said casing in spaced relation to said vibratable diaphragm, said cover defining a sound receiving opening for permitting said diaphragm and said beam to vibrate in response to sound received by said transducer to produce corresponding electrical signals.

3,159,720
TELECOMMUNICATION SYSTEM
Anders Karlby Bergmann, Galion, Ohio, and Anton Christian Jacobaeus, Stockholm, and Henry Scheftelowitz, Hagersten, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 10, 1961, Ser. No. 102,037
Claims priority, application Sweden Jan. 24, 1961
1 Claim. (Cl. 179—15.55)

A telecommunication system comprising an input and an output for transmitting signals within a predetermined highest frequency value over a number of narrow band channels from a transmitting station to a receiving station, each of said channels including wires inherently equivalent in function to a low pass filter having a cut-off frequency lower than said predetermined frequency value, said equivalent filter corresponding to a filter the attenuation curve of which substantially coincides with the attenuation curve of an ideal filter, said transmitting station comprising a first low pass filter connected to said input for limiting the upper frequency value of the signal to be transmitted to said predetermined value, sampling means connected between said first low pass filter and said channels for time division of said signal into sampling pulses, said sampling means including a first group of gate circuits connected to each of said channels, means controlling said sampling means, said controlling means including a first group of pulse-shaping networks connected to each of said first gate circuits, a first shift register connected to the pulse-shaping networks in said first group, and a pulse generator connected to said first shift register, said generator feeding said register with a predetermined pulse frequency and said first shift register feeding each of the gate circuits in the first group with a pulse frequency equal to said generator pulse frequency divided by the number of said channels; and said receiving



station comprising scanning means connected to said channels for scanning said sampling pulses, said scanning means including a second group of gate circuits connected to each of said channels, controlling means controlling said scanning means, said controlling means including a second group of pulse-shaping networks connected to each of the gate circuits in said second group, a second shift register connected to each of said pulse-shaping networks in the second group, means connected to said second shift register for regenerating said pulse frequency of said pulse generator, a second low pass filter connected to said scanning means for limiting the upper frequency of the received signal to said predetermined value, and an amplifier connected between said second filter and said output, whereby in said telecommunication system

$$f_s/k = 4f_g/n$$
$$f_s \leqq 2f_{max}$$

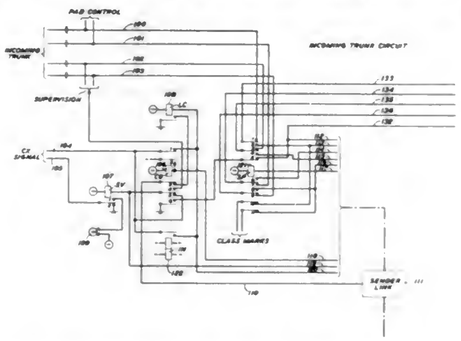
in which equations

f_s is said frequency of said pulse generator
k is the number of said narrow band channels
f_g is said cut-off frequency of said equivalent low pass filter
f_{max} is said highest frequency of said signal to be transmitted
n is a factor for determining said pulse frequency fed to said gate circuits, said factor being equal to 2, 4, 6, 8.

3,159,721
OUTGOING TRUNK IDENTIFICATION CIRCUIT
Royce D. Deming, Hollis, N.Y., and Donald A. James, Dover, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 13, 1960, Ser. No. 42,684
13 Claims. (Cl. 179—175.2)

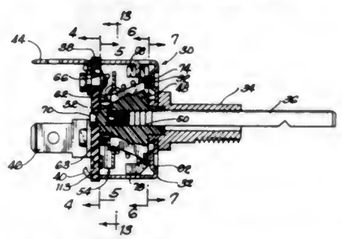
1. In a telephone switching office, trunks incoming thereto, outgoing trunks extending therefrom to other offices, switches for connecting said incoming trunks to said outgoing trunks, common control equipment units,

means for connecting any calling one of said incoming trunks with one of said equipment units, means in each of said equipment units for registering called office information transmitted over a calling trunk currently connected thereto, means responsive to said called office registration in any equipment unit for connecting said last-named equipment unit and the calling trunk cur-



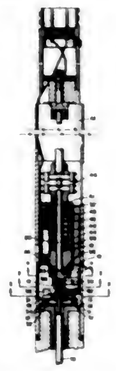
rently connected thereto via said switches with an outgoing trunk leading to the called office signified by said registration, and means common to all of said outgoing trunks and automatically responsive to a trouble condition associated with any of said outgoing trunks currently serving a call for determining the identity of said outgoing trunk.

3,159,722
ROTARY SWITCH
Jesse M. Cobb, Glenview, and Harry J. Krol, Arlington Heights, Ill., assignors to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Mar. 20, 1961, Ser. No. 96,790
3 Claims. (Cl. 200—11)



3. In an electric switch, the combination comprising a casing, a rotor rotatably mounted in said casing, a contactor rotatable with said rotor and having a plurality of imperforate arcuate contact segments, an insulating member mounted on said casing to the rear of said rotor, a spring biasing said contactor toward said insulating member, a plurality of conductive contact points on said insulating member and engageable by said contact segments of said contactor, said contact points projecting forwardly from said insulating member, a plurality of insulating points projecting forwardly from said insulating member and disposed thereon between said contact points and engageable by said contact segments, and detent means for detaining said rotor in a plurality of operative positions, said detent means being separate from said contact segments and said contact points and insulating points, certain of said contact segments being engageable with certain of said insulating points while other of said contact segments are simultaneously engageable with certain of said contact points in at least one of said operative positions of said rotor, the engagement of said insulating points with said contact segments being effective to maintain three-point contact with said contactor to prevent excessive and uncontrolled rocking of said contactor in its various operative positions.

3,159,723
CONTACTS FOR TELEMETERING SYSTEMS
Robert H. Kolb, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 12, 1961, Ser. No. 144,792
6 Claims. (Cl. 200—19)



1. In a contact assembly having a reference contact and a movable contact disposed in a path traversed by a sweep contact, said assembly comprising:

a shaft disposed to rotate about a central axis;

first and second contact plates disposed in a spaced relation along said central axis and surrounding said shaft, said first contact plate being fixed and said second contact plate being disposed to rotate about said central axis;

a rod shaped reference contact slidably mounted on said first contact plate, the axis of said reference contact being spaced from and in a plane at right angles to said central axis;

a rod shaped movable contact slidably mounted on said second contact plate, the axis of said movable contact being spaced from and in a plane at right angles to said central axis;

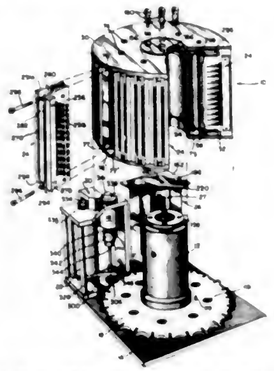
separate biasing means for said reference and movable contacts, said biasing means urging said reference and movable contacts to fixed positions in which at least a portion of one end of each contact is exposed;

a sweep contact mounted on said shaft, said sweep contact having a cylindrical member disposed with its axis parallel to and radially spaced from said central axis to contact the exposed ends of the referenced and movable contacts when said shaft rotates.

3,159,724
SWITCH APPARATUS WITH MOVABLE CONTACT BRUSH ASSEMBLY
John Parstorfer, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 17, 1960, Ser. No. 29,643
8 Claims. (Cl. 200—33)

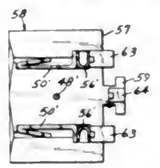
1. An electrical brush contact supporting assembly for a movable program switch comprising, a base member, a demountable, rotatable program switch disposed on said base, an open rectangular frame, means pivotally mounting said frame on said base member in a manner permitting said frame to move in an arcuate path between advanced and retracted terminal positions relative to said

program switch, a plurality of resilient electrical conductors, dielectric means mounting said conductors on said frame with one end portion of each of said conductors



extending angularly away therefrom, in parallel spaced apart rows and through the opening in said frame, and means to lock said frame relative to said base in either of said terminal positions.

3,159,725
MAGNETIC ELECTRICAL CORD CONNECTOR
Richard E. Dennis, 60178 Dial Way, San Jose, Calif.
Filed Oct. 9, 1962, Ser. No. 229,342
4 Claims. (Cl. 200—51.09)



1. A detachable electric fixture comprising:

(*a*) a magnetically permeable electrically non-conductive housing,

(*b*) male prongs projecting from one face of said housing for engaging a conventional socket,

(*c*) female sockets mounted in another face of said housing to receive male prongs of a conventional plug,

(*d*) permanent magnet means in said housing,

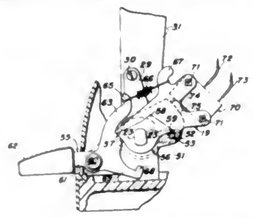
(*e*) paramagnetically responsive elements mounted in said housing to make electrical connection between said prongs and said female sockets,

(*f*) a pivotally mounted switch means associated with at least one of said paramagnetically responsive elements and a male plug, and

(*g*) said paramagnetically responsive elements conducting electricity only when said magnet means is placed in close proximity to said elements to actuate said switch means.

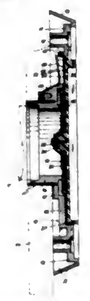
3,159,726
SWITCH AND HANDLE CONTROL SUPPORT
Mark W. Helm, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 15, 1960, Ser. No. 43,039
2 Claims. (Cl. 200—52)

1. In an electrical appliance, a body, bracket means mounted on said body, shaft means, means rotatably attaching said shaft means on said bracket means, a handle, means attaching said handle to said shaft means for movement of said handle about the axis of said shaft means to operative and inoperative positions, an electric switch supported on said bracket means and having force receiving surface means positioned normal to the axis of said shaft means, switch actuating means supported on said shaft means for movement with said handle into operative engagement with said force receiving surface means to respectively close and open said switch upon



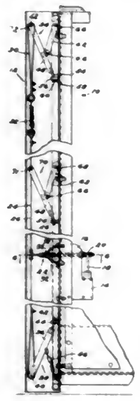
movement of said handle to its said operative and inoperative positions, said switch and actuating means arranged relative to the axis of said shaft means whereby manufacturing tolerances therefor are common to the axis of said shaft means, and handle control means including sector means and pawl means one of which is supported on said shaft means and the other on said bracket means and removably engageable to permit movement of said handle to its said different positions.

3,159,727
VACUUM MACHINE WALL PLUG SWITCH
Steve Borysewycz, Chicago, Ill., assignor to John E. Mitchell Company, Inc., Dallas, Tex., a corporation of Missouri
Filed Sept. 14, 1962, Ser. No. 223,638
5 Claims. (Cl. 200—61.6)



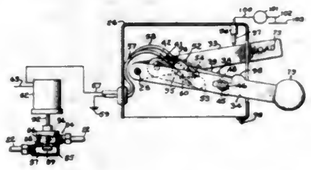
1. In an outlet device and switch mechanism: a base, first and second contact means, the first contact means being movably mounted on the base for movement toward and from the second; means yieldably urging the first contact means toward the second; the second contact means including a member pivotally mounted on the base, with a contact end projecting from the pivot alongside the first contact means and in the line of its movement, a cam on the second contact means extending toward the first and engageable with it to hold the contacts apart; the pivot of the second contact means being located so as to displace the cam from the first contact means and to bring the end of the second contact member against the first, and to cause the second to wipe across the first contact means as the pivotal movement of the second occurs; the base having an opening therein, and a cover on the pivotal member of the second contact means on the opposite end thereof from the contact end thereof, the cover being removed from the opening as the second contact member is pivoted into engagement with the first contact means.

3,159,728
SAFETY EDGE FOR POWER-OPERATED DOOR
Thornton L. Urquhart, Farmington, Mich., assignor to Byrne Doors, Inc., Ferndale, Mich., a corporation of Michigan
Filed Sept. 19, 1960, Ser. No. 56,760
10 Claims. (Cl. 200—61.43)



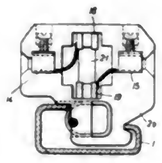
1. In a power-operated door which is movable in its own plane in a forward direction towards closed position, safety means for operating a control on said power-operated door to interrupt the forward closing movement thereof, comprising an elongated, flexible, linear element extending lengthwise along the forward edge of said door, means connecting the ends of said linear element to said door, an operator comprising an elongated operating member extending in a rearward direction from said linear element at right angles thereto, the forward end of said operating member being connected to said linear element at a point intermediate the ends of said linear element, said operating member being longitudinally movable rearwardly relative to said door in response to a rearward deflection of said linear element, said operating member having means adjacent its rear end for operating said control in response to a rearward longitudinal movement of said operating member relative to said door, and means causing a rearward longitudinal movement of said operating member relative to said door in response to a lateral deflection of said linear element and said forward end of said operating member.

3,159,729
MOTOR VEHICLE BRAKE SYSTEM
William Stelzer, Bloomfield Hills, and Edward Govan Hill, Birmingham, Mich., assignors to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 12, 1961, Ser. No. 123,551
10 Claims. (Cl. 200—61.47)



1. In a switch mechanism, an inertia operated switch, a pair of manually operable levers respectively independently movable according to different conditions, and means connected between said levers and supporting said switch whereby, upon movement of either of said levers, the angle of inclination of said switch to the horizontal will be varied to change the inertia necessary to close said switch.

3,159,730
CONNECTOR FOR ELECTRICAL CONDUCTORS
Wilhelm Staffel, Konigswinter (Rhine), Germany, assignor to C. A. Weidmuller K.G., Berlebeck, near Detmold, Germany
Filed Jan. 24, 1961, Ser. No. 84,536
6 Claims. (Cl. 200—133)

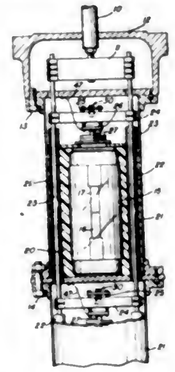


2. A stackable connector comprising, in combination, a flat housing having two opposite side faces, two lateral edge faces, a top edge face and a bottom edge face, said housing having in one of said side faces two terminal-seating cavities each adjacent to one of said lateral edge faces thereof, a central fuse-receiving chamber arranged between said terminal-seating cavities and spaced therefrom, two conductor slots each extending from one of said terminal-seating cavities to said fuse-receiving chamber at spaced points thereof, respectively, and two conductor cavities each extending from one of said lateral edge faces into one of said terminal-seating cavities, respectively, all of said cavities and slots being open in one of said side faces and closed along said opposite other side face of said housing so as to be accessible through said one of said side faces; two electrically conductive terminals each inserted in one of said terminal-seating cavities and accessible through said one side face of said housing, each of said terminals adapted to be connected to a wire projecting into said housing through the respective conductor cavity thereof; two conductor members each extending from one of said terminals in the respective terminal-seating cavity through the respective conductor slot into said fuse-receiving chamber in such a manner that their portions located in said fuse-receiving chamber are spaced from each other; a fuse inserted in said fuse-receiving chamber in contact with said spaced portions of said conductor members; and attaching means on said bottom edge face of said housing for securing the same to a common support with identical connectors arranged side by side with their side faces abutting each other.

3,159,731
SWITCH WITH PLURAL ACTUATOR DEVICES HAVING IMPROVED OVERTRAVEL TAKEUP FOR PLURAL ELECTRICAL INTERRUPTERS
Elmer L. Luehring, Cleveland, Ohio, assignor to Joslyn Manufacturing and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 7, 1961, Ser. No. 87,719
15 Claims. (Cl. 200—144)

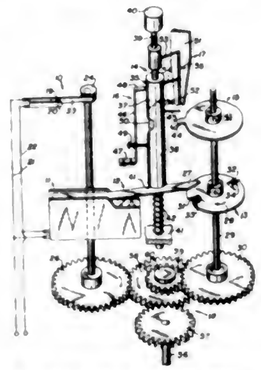
1. In a high voltage switch of the type having mechanically substantially permanently tandem connected electric circuit interrupters, the combination of rod means for operating the interrupters substantially in unison, a plurality of cross bars at least one for each interrupter and

arranged to be operated by said rod means, and for each interrupter at least one hydraulic means for operating as



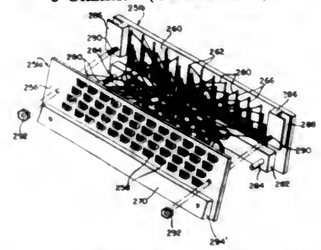
a one way spring while interposed between cross bar and associate interrupter.

3,159,732
ELECTRICAL PULSE PRODUCING APPARATUS
Robert Allen, Pointe Claire, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 12, 1962, Ser. No. 230,106
13 Claims. (Cl. 200—153)



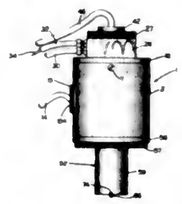
1. An apparatus for producing isolated trains of whole electrical pulses from a continuous supply of pulses comprising interrupting means normally operative to prevent transmission of the pulses, control means having a normal inoperative position and an operative position, the interrupting means being connected with the control means such that it is inoperative when the control means is in the operative position, selecting means movable constantly at a rate proportional to the rate of supply of pulses, engaging means on the selecting means for engaging the control means when the latter is suitably conditioned and move the control means to the operative position, and releasing means on the selecting means for releasing the control means from the selecting means, the engaging and releasing means being in predetermined positions on the selecting means such that the control means is engaged between two successive pulses and, after a predetermined number of whole pulses are transmitted during engagement of the control means by the selecting means, the control means is released between two successive pulses.

3,159,733
DEMOUNTABLE PLUGGABLE SWITCH APPARATUS
John Parstorfer, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 13, 1960, Ser. No. 29,049
6 Claims. (Cl. 200—166)



1. An electrical switch segment for a rotary program switch comprising, a pair of rectangular, substantially flat, dielectric panel members, one edge portion of each of said panel members including a plurality of notches and projections therealong, a plurality of conductive areas forming connector pads disposed on one surface portion of each panel member in rows and columns, the conductive areas in one row and column being offset slightly from the conductive areas in the next adjacent row and column, each panel member also including rows and columns of apertures each aperture being disposed adjacent a corner portion of one of said conductive areas, electrical conductors disposed in each of said notches with one end of each conductor passing from one side of said panel through a respective one of said apertures and secured to a respective one of said conductive areas, and the other end of said conductor terminating on said one surface portion of the dielectric panel member spaced from said areas, and an elongated dielectric member disposed between said panels in a manner securing said panels together in spaced apart parallel relation.

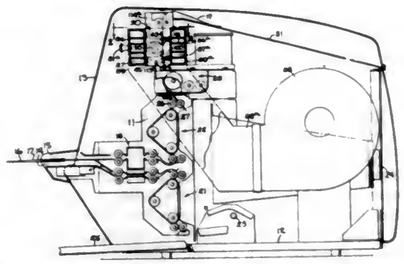
3,159,734
AUTOMATIC WELDING TOOL FOR FORMING ANNULAR WELDS
John C. Cooksey, Millersburg, and Edward W. Rowlands, Jr., and Raymond Gardner, Jr., Massillon, Ohio, assignors, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1957, Ser. No. 699,691
6 Claims. (Cl. 219—125)



1. Rotatable arc welding tool construction including a housing, a rotatable spindle journalled in the housing, means for rotating the spindle, electrode holder means, mounting means selectively detachably mounting the electrode holder means on the spindle, said holder means extending coaxially from one end of the spindle and rotatable with the spindle, said mounting means selectively detachably mounting the electrode holder means on the spindle with the holder means being completely detachable from the spindle for selective removal and replacement by other electrode holder means with similar mount-

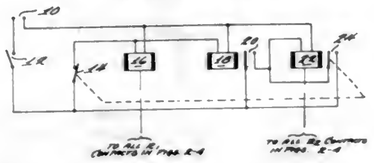
ing means, a welding electrode mounted on said holder means having a welding tip, means for varying the distance between the electrode tip and the axis of rotation of the spindle, means for supplying arc shielding gas to the electrode tip, fluid cooling means operably connected to the spindle and extending to at least adjacent the holder means for circulating fluid to cool the spindle at least adjacent the mounting of said holder means thereon, and means for electrically connecting the electrode in an arc power circuit.

3,159,735
FIXING UNIT FOR PHOTOCOPY MACHINES
Burton D. Eisner and George C. Kent, Highland Park, Edwin A. Larson, Chicago, and Meyer L. Sugarman, Jr., Glencoe, Ill., assignors to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed July 11, 1962, Ser. No. 209,122
10 Claims. (Cl. 219—347)



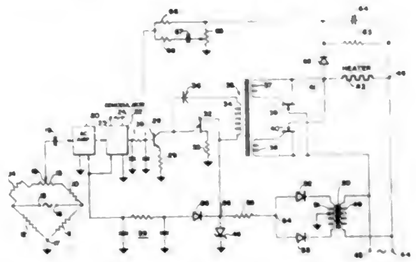
8. In a fixing unit for a copy sheet in a photocopy machine having a powder image thereon including a binding agent capable of fixing the powder in place by heat, the combination comprising a frame means including a pair of expeller rollers on the frame for conducting the sheet along a fixing plane, a lamp and reflector assembly adjacent said fixing plane and extending transversely with respect to the direction of movement of the sheet, said lamp and reflector assembly having a reflector recess and a heat lamp mounted therein, a heat confining member opposite the reflector, longitudinally extending air ducts having means providing thermal coupling to the air therein, a blower for supplying air to the air ducts, at least one of said ducts having a longitudinally extending vent along its upper edge for discharging air toward said expeller rollers.

3,159,736
CONTROL CIRCUIT FOR ELECTRIC FURNACE
Louie O. Wicks, South Windham, Maine, assignor to Portland Copper & Tank Works, Inc., South Portland, Maine, a corporation of Maine
Filed July 20, 1962, Ser. No. 211,172
5 Claims. (Cl. 219—492)



2. A control circuit for an electric furnace comprising a source of control voltage, a first relay means energized by said source, a first contact means conditioned in response to the energization of said first relay means, a plurality of interconnected heater elements, said heater elements being interconnected in a first configuration on conditioning of said first contact means to apply a first voltage value to said elements; a timing relay energized simultaneously with said first relay means, a second relay means operatively related to said timing relay for connection to said source at a time after the energization of said timing relay dependent on the cycle of the timing relay, means for de-energizing said first relay means on energization of said second relay means; a second contact means conditioned in response to the energization of said second relay means, said heater elements being interconnected in a second configuration on conditioning of said second contact means to apply a second voltage of greater magnitude than said first voltage to each of said heater elements.

3,159,737
TEMPERATURE CONTROLLER
Ralph A. Dora, Anaheim, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed May 17, 1962, Ser. No. 195,636
7 Claims. (Cl. 219—501)

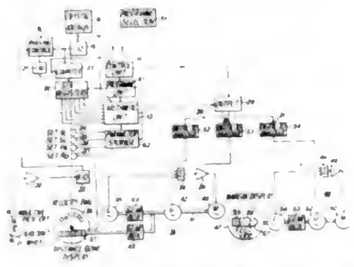


1. A chromatographic analyzer including a container in which certain of the components thereof are situated, a heating device located in said container to control the temperature thereof, a temperature sensing means located in said container to sense the temperature thereof, an electronic controller connected with said temperature sensing means and said heating device to control the output of the heating device in response to signals from said temperature sensing device, the improvment comprising
an amplifier,
first means connecting the temperature sensing means with said amplifier,
a pulse circuit,
means connecting the amplifier to control the pulse rate of said pulse circuit,
means coupled with a source of voltage for applying synchronizing pulses to said pulse circuit,
rectifier means,
means connecting said rectifier means to said pulse circuit and to said source of voltage whereby said pulse circuit controls the operation of said rectifier means to provide a variable output voltage,
means connecting said rectifier means with said heating device to apply said variable voltage to said heating device,
a negative feedback circuit including an impedance connected with said heating device and said amplifier, and
said feedback circuit further including a differentiating circuit having a reactive component coupled with said impedance, said differentiating circuit operating to differentiate the voltage fed back to said amplifier by said feedback circuit thereby producing low gain during controller transients and high gain when the controller operation is stable.

ERRATUM

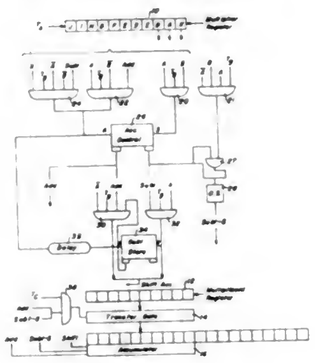
For Class 235—92 see:
Patent No. 3,159,342

3,159,738
AIRCRAFT GROUND RUN PREDICTORS
Frederick David James and Derek Anthony Rush, London, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed May 12, 1961, Ser. No. 109,639
Claims priority, application Great Britain May 20, 1960
13 Claims. (Cl. 235—152)



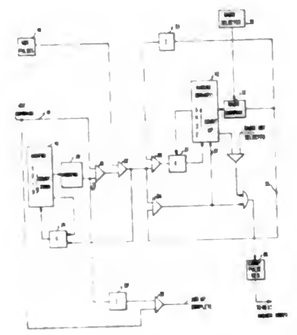
1. A ground run predictor for an aircraft, comprising means for generating signals defining successive intervals of time during which the aircraft travels the same predetermined distance along the ground, means controlled by said signals for generating further signals representative of the durations of the said intervals and means for storing the said further signals pertaining to the last n intervals of time (where n is at least three), a digital computer, an indicator coupled to said computer and means for setting into said computer a predetermined critical distance S_c, said computer being responsive to the stored n further signals and to signals representing the distance travelled by the aircraft to compute the velocity and acceleration of the aircraft and to derive therefrom and apply to the indicator a signal representing the margin between the critical distance and the distance at which take-off is calculated to occur.

3,159,739
FAST MULTIPLY APPARATUS
Alan J. Deerfield, Franklin, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 24, 1961, Ser. No. 84,609
2 Claims. (Cl. 235—164)



2. Apparatus for multiplying binary numbers comprising a multiplier storage register, a multiplicand storage register, an accumulator having an add and subtract network and product storage means, means connected to said accumulator to shift in increments of one of the products stored therein, means for sequentially sensing the low order bit positions of said multiplier storage register, first logic means operatively connected to said multiplier sensing means and actuated upon the detection of a first pair of bits of like type, second logic means operatively connected to said multiplier sensing means and actuated upon the detection of a pair of bits of unlike type, accumulator control means connected to said accumulator and being adapted to initiate an add or subtract operation in said accumulator, said accumulator control means further comprising a register operatively connected to said first and second logic means, means connecting said accumulator control means to said multiplicand storage register to transfer the contents of the multiplicand register to said accumulator, means connected to said accumulator to shift said accumulator after each add or subtract operation in said accumulator, and means to shift said accumulator without adding or subtracting said multiplicand for each bit of said like type following the sensing of the first of a series of bits of like type.

3,159,740
UNIVERSAL RADIX ADDER
Thomas C. Broce, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 3, 1962, Ser. No. 164,017
3 Claims. (Cl. 235—169)

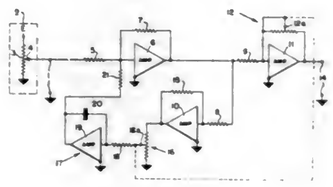


1. A circuit for adding two mixed numbers having a plurality of orders, comprising:
two registers;
means for loading a first order of said numbers into said registers;
a source of pulses;
control means;
means for gating said pulses from said source under control of said control means to step one of said registers down to zero and the other register upward the same number of steps so that the first order of one of said numbers is added to the first order of the other of said numbers;
temporary storage means;
logic means operable to select a radix within the capacity of said second register so that the second register will be reset and a carry pulse sent out to said temporary storage means when the second register reaches the selected radix;
means for loading the next order of said number into said registers;
gating means for entering a carry directly into one of said registers; and
means to repeat the operation for all orders of the numbers sequentially whereby the sum of the two mixed numbers is obtained directly.

3,159,741
LOW NOISE ELECTRONIC DIFFERENTIATOR

Erik B. Dahlin, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Mar. 27, 1959, Ser. No. 802,324
5 Claims. (Cl. 235—183)

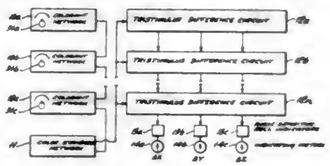


1. A differentiating device comprising, in combination, a first operational amplifier, a second operational amplifier, an electronic integrator, a negative feedback circuit connected around said first amplifier, said feedback circuit including a serial connection of said second amplifier and said integrator, a pair of input terminals for connecting to a source of input signals, means for connecting an ouput signal from said integrator in opposition to said input signals to form a difference signal as an input signal to said first amplifier, a third operational amplifier, means for connecting an output from said first amplifier as an input signal to said third amplifier, a pair of output terminals, means for connecting an output signal from said third amplifier to said output terminals, and means for simultaneously varying said output signal from said third amplifier and an output signal from said second amplifier.

3,159,742
TRISTIMULUS DIFFERENCE COMPUTER

Hugh R. Davidson, Easton, Pa., assignor to Davidson and Hemmendinger, Easton, Pa., a partnership

Filed June 1, 1961, Ser. No. 114,253
15 Claims. (Cl. 235—184)

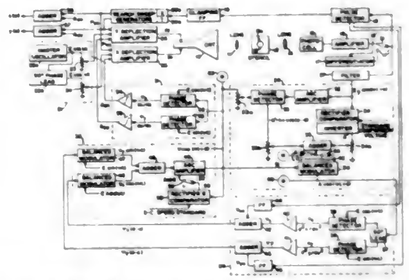


1. A system for establishing the amounts of colorants required in a mixture to produce a color corresponding to a given color under specified conditions of illumination which comprises means for producing a voltage representing a difference between the spectrophotometric curves of a given color and a color produced by a mixture containing a number of colorants, means for converting said voltage into voltages representing differences in tristimulus values between the given color and the color produced by the mixture of colorants under specified conditions of illumination, and means for indicating the differences in tristimulus values between the color and the color produced by the mixture of colorants for each tristimulus function.

3,159,743
ELECTRONIC CURVE FOLLOWER AND ANALOG COMPUTER

Joseph W. Brouillette, Jr., Jamesville, and Charles W. Johnson, Fayetteville, N.Y., assignors to General Electric Company, a corporation of New York

Original application Oct. 26, 1956, Ser. No. 618,504, now Patent No. 2,980,332, dated Apr. 18, 1961. Divided and this application Oct. 26, 1960, Ser. No. 65,220
20 Claims. (Cl. 235—198)

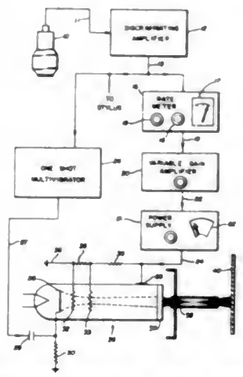


1. Apparatus comprising means for displaying a curve, means for generating an electron beam and focusing it to a scanning spot upon an electron responsive member, means for deflecting the beam to cause the spot to define a search circle upon the electron responsive member, means for positioning the displayed curve and the electron responsive member in reciprocally imaged relationship, means for deriving at least one signal voltage containing information determined by the relationship between the displayed curve and the center of the search circle, and means for further deflecting the beam and the search circle in accordance with the information contained in the signal voltage to move the center of the search circle in a path determined by the curve.

3,159,744
SCINTILLATION SCANNER PHOTO-CIRCUIT

Joseph B. Stickney, Rocky River, Ohio, Carl E. Herring, Ann Arbor, Mich., and Walter E. Splain, Fairview Park, Ohio, assignors to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 820,508, June 15, 1959. This application Feb. 6, 1963, Ser. No. 257,373
29 Claims. (Cl. 250—71.5)



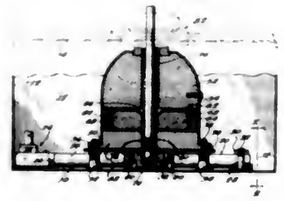
3. In a scintillation recording mechanism the improvement comprises, a scintillation probe, a cathode ray tube having an electron emitting cathode and electron acceleration means, adjustable pulse emitting means for emitting

one pulse of a predetermined and selected time duration for each signal pulse received, conductor means connecting the probe to the pulse emitting means to transmit signals from the probe to the pulse emitting means and connecting the pulse emitting means to said cathode to transmit emitted pulses from the pulse emitting means to the cathode, a power supply connected to the acceleration means, and power supply control means connected to the probe and to the power supply to vary the power supplied to the acceleration means in proportion to the frequency of impulses emitted by the probe.

3,159,745
RADIOACTIVITY SOURCE-AND-DETECTORS DEVICE FOR MEASUREMENT OF PROPERTIES OF MATERIALS

Ariel G. Schrodt, Wilmette, and Philip Shevick, Skokie, Ill., assignors to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware

Filed June 17, 1960, Ser. No. 36,852
11 Claims. (Cl. 250—83.1)



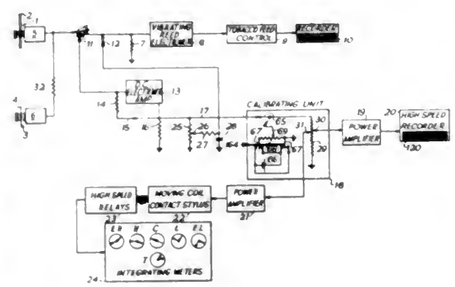
8. A radioactivity measuring device having a radioactivity source and a set of parallel radioactivity detectors mutually spaced in at least one direction transverse to their common direction of extension, and at differing distances from the source, the distance of the innermost from the outermost detector being substantially greater than the distance from the source to the innermost detector, each detector containing an identical gaseous filling consumed at a rate substantially proportional to its counting rate, and gas passage means interconnecting all of the detectors, corresponding electrodes of all of the detectors being mutually conductively interconnected.

3,159,746
APPARATUS FOR MEASURING A CHARACTERISTIC OF A MOVING FILLER IN A CONTINUOUS ROD MACHINE AND RECORDING VARIATIONS THEREIN

Gordon Francis Wellington Powell, Frederick Pocock, and Richard Graham Crosland, London, England, assignors to Molins Machine Company Limited, a British company

Filed July 6, 1959, Ser. No. 825,633
Claims priority, application Great Britain, July 4, 1958, 21,486/58
11 Claims. (Cl. 250—83.3)

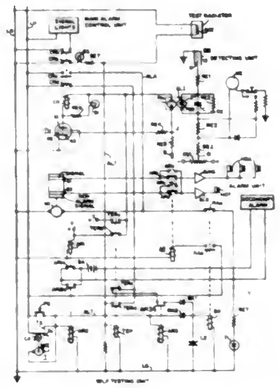
11. In a cigarette-maker for producing cigarettes from a continuous cigarette rod, means for automatically registering for each of a plurality of different predetermined weight categories a cumulative total of production time occupied by the manufacture of cigarettes in that category, said means including a measuring head positioned adjacent said rod and circuit means connected with said measuring head for generating a measuring voltage related in magnitude to the weight of tobacco in said rod and hence in the cigarettes issuing from the maker, an electrically operated elapsed-time indicator for each weight category, and switch means coupled to said circuit means for operation under control of said measuring voltage for separately and selectively controlling the energization of the respective indicators in accordance with the magnitude of said voltage.



3,159,747
FAIL PROOF RADIATION MONITOR AND ALARM CIRCUIT

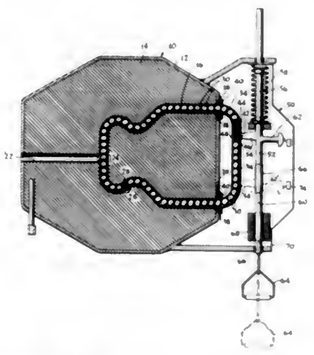
Wallace Jones, Saltsburg, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania

Filed Jan. 12, 1960, Ser. No. 2,021
14 Claims. (Cl. 250—83.3)



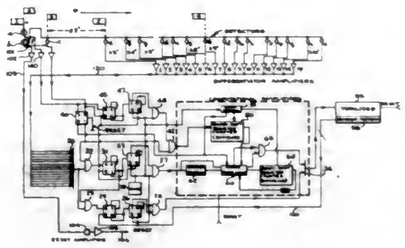
1. Fail-proof radiation detection apparatus including means responsive to radiation to be detected for producing current on the incidence of radiation thereon, a capacitor, means connecting said current-producing means and said capacitor in an electrical integrating circuit to integrate said current, a gaseous discharge device in which a luminescent discharge is produced when a potential exceeding a predetermined firing potential is impressed thereon, means connecting said capacitor to said device to impress the potential of said capacitor on said device, light sensitive means only in light receiving relationship with said device but electrically insulated therefrom, and signalling means connected to said sensitive means in a relatively low impedance circuit in which the impedances are of the order of thousands of ohms rather than millions of ohms to produce a signal when said device becomes luminescent.

3,159,748
RADIOACTIVE SOURCE MOVEMENT APPARATUS
Alexander E. Aikens, Jr., Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1961, Ser. No. 155,936
9 Claims. (Cl. 250—106)



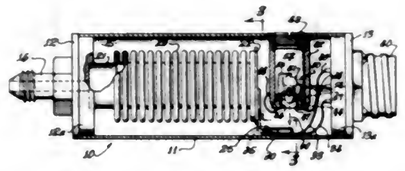
1. Linkage means for bidirectionally translating a generally spherical radioactive source through a channel of circular cross section extending through a shielding material geometry, said linkage means comprising a series extending in both directions from the source to the exterior of the geometry of generally spherical contacting elements of shielding material having radii substantially equal to the radii of the channel and of the source, said elements contacting the source at opposite sides of the source in the channel, and means selectively pushing the source forward and backward through the channel solely by the transfer of compressive forces.

3,159,749
PHOTOSENSITIVE LINEAR MEASUREMENT SYSTEM
Lewis R. Dalrymple, Conneaut, and George H. Lister, Cleveland, Ohio, assignors to The Euclid Electric & Manufacturing Co., Madison, Ohio, a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,322
18 Claims. (Cl. 250—223)



1. Apparatus for measuring the dimension of an article in the direction of its conveyance while it is moving along a conveyance path, comprising separate sensing means located sequentially at first, second and third stations disposed along said path in predetermined spaced relationship to each other, the sensing means at said third station being actuated by the leading end of said article to provide a first signal representative of the length of the portion of the article extending at this instant between said third station and said second station, the sensing means at said first station being actuated by the trailing end of said article and means connected to and responsive to the actuation of said sensing means at said first station to initiate a divisor signal, the sensing means at said third station being actuated by the leading end of said article and means connected to and responsive to the actuation of said sensing means at said third station to initiate a dividend signal, and means connected to the means for initiating the dividend and divisor signals for dividing said dividend signal by said divisor signal to provide a quotient signal which is representative of the length of the portion of the article extending between said first and second sensing means at the instant the sensing means at said third station is actuated to initiate said dividend signal.

3,159,750
PHOTOELECTRIC PRESSURE TRANSDUCER
Eugene I. Kazan, 7718 Alcove Ave., North Hollywood, Calif.
Filed Oct. 1, 1962, Ser. No. 227,378
3 Claims. (Cl. 250—231)



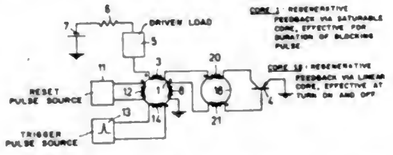
3. A transducer comprising, in combination:
(*a*) a housing defining a light-tight chamber therein;
(*b*) force-summing means mounted within said chamber and in communication with the exterior of said housing for the application thereto of forces to be measured, said force-summing means including an element movable in response to applied forces;
(*c*) a selectively actuable light source mounted within said chamber for radiating a constant collimated beam of light in a predetermined direction;
(*d*) a photoelectric device mounted to the movable element of said force-summing means within said chamber and having a light-sensitive surface aligned substantially normal to said predetermined direction, said photoelectric device being disposed for movement of said light-sensitive surface along a predetermined path at least partially across said light beam upon movement of said movable element in response to applied forces;
(*e*) a light-impervious mask fixedly secured to said light-sensitive surface, said mask defining a substantially triangular opening therethrough to expose a portion of said light-sensitive surface with an apex of the triangle positioned on said predetermined path whereby upon movement of said photoelectric device along said predetermined path in response to forces applied to said force-summing means the amount of light from said light beam impinging upon said light-sensitive surface will vary to thereby cause a predetermined variation in the electrical characteristics of said photoelectric device; and,
(*f*) means for measuring changes in the electrical characteristics of said photoelectric device, said measuring means comprising electrical contacts mounted to said photoelectric device and communicating with the exterior of said housing.

3,159,751
CLAMP CIRCUIT WITH A SHUNT UNILATERAL DISCHARGE PATH
Charles A. Bogdan, Jr., Vestal, Fredric C. Fitzgerald, Endicott, and Richard W. Jones, Apalachin, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 25, 1960, Ser. No. 71,742
10 Claims. (Cl. 307—88.5)



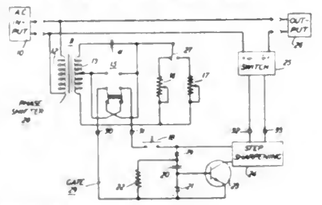
1. An electronic clamp for use in combination with a first transistor stage, means to supply input signals to said first transistor stage, a second transistor stage, and a conductor and coupling capacitor interconnecting said first and second stages comprising: a source of reference potential, switch means interconnecting said source of reference potential with said conductor at a point between said capacitor and said second transistor stage, said switch means appearing as a high impedance element when open and as a low impedance element when closed, means to periodically actuate said switch means, a unidirectional low impedance discharge path connected in generally parallel relation with respect to said switch means, said discharge path being connected to said conductor between said capacitor and said second transistor stage, and said discharge path dissipating any residual voltage on said capacitor when said switch means is opened.

3,159,752
PULSE REGENERATOR COMPRISING A TRANSISTOR REGENERATIVELY FED BACK BY A SATURABLE CORE AND A LINEAR CORE
Jacobus Domburg, Eindhoven, and Jacob Mulder, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 159,714
Claims priority, application Netherlands Dec. 22, 1960
4 Claims. (Cl. 307—88.5)



1. A pulse regenerator comprising: a first magnetic core consisting of a magnetic material having a substantially rectangular hysteresis curve, a trigger winding inductively coupled to said first core, means for applying a trigger pulse to said trigger winding, an output winding inductively coupled to said first core, a load connected to said output winding, a third winding inductively coupled to said first core, a second core consisting of magnetic material having a substantially linear hysteresis curve, a transistor having an output electrode, an input electrode, and a common electrode, first and second windings inductively coupled to said second core, said output winding and the first winding of the second core being connected in series with the output electrode of the transistor, the load, and the common electrode, said third winding and the second winding of the second core being connected in series with the input electrode and the common electrode of the transistor, said output winding and said third winding of the first core and said first and second windings of of the second core providing regenerative feedback between said output and input electrodes upon the application of a trigger pulse and producing an output pulse across said load having a short rise time and a short decay time

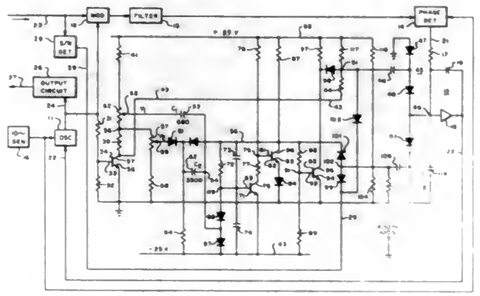
3,159,753
GATE CIRCUIT HAVING PHASE SHIFT AND STORAGE MEANS EFFECTING ENERGIZATION DURING A RANGE OF VALUES
Robert E. D. Anderson, Florham Park, and Joseph La Duca, Stirling, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 5, 1962, Ser. No. 200,228
8 Claims. (Cl. 307—88.5)



2. In combination,
a source of an input electrical wave,
an output,
switching means for connecting said source to said output,
and means for actuating said switching means comprising
means for producing a wave shifted in phase with respect to the phase of said input wave
and gating means for producing a switching signal commencing at the instant said shifted wave is passing from a first range of values through an intermediate value to a second range of values, said gating means including
semiconductive switching apparatus having a controlling signal path and a dependent signal path that is enabled by an enabling signal in said controlling signal path,
an energy storage device,
first means for connecting said dependent current path in series relationship with the switching means across the phase-shifting means, said first connecting means and said dependent path together having a first unilaterally conductive portion connected in a first polarity across said phase-shifting means to block said phase-shifted wave from said switching means when said phase-shifted wave has a value within said first range of values and to pass said phase-shifted wave whenever said dependent path is enabled when said phase-shifted wave has a value within said second range of values, and
second means for connecting said controlling signal path and said storage device across said phase-shifting means, said second connecting means and said controlling path together having a second unilaterally conductive portion connected in the opposite polarity across said phase-shifting means to block said phase-shifted wave from said controlling path throughout said second range of values, said second connecting means being arranged to pass energy to said storage device to be stored in response to said wave when said phase-shifted wave has a value within said first range of values, said second connecting means being arranged to pass said stored energy from said storage device through said controlling

signal path as said enabling signal when said phase-shifted wave has a value within said second range of values.

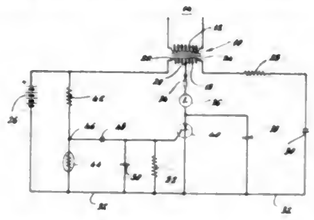
3,159,754
SWEEP AND FLYBACK CIRCUIT
John W. Gray, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,693
6 Claims. (Cl. 307—88.5)



1. A sweep and flyback circuit comprising,
frequency tracker means including an integrator, voltage-controlled oscillator and detector, the output of the detector being permanently connected to the input of the integrator and the output of the integrator being permanently connected to a voltage-controlled input of the oscillator,
a sweep frequency-to-current converter having its output permanently connected to said integrator input and its input connected through a switch to said oscillator output,
a flyback frequency-to-current converter permanently connected to said integrator input and to an alternating current source on actuation of said switch to a preselected state,
and frequency-measuring means connected to said oscillator output for operation of said switch whereby at a low frequency limit said sweep frequency-to-current converter is disabled and said flyback frequency-to-current converter is connected to said alternating current source and whereby at a high frequency limit said flyback frequency-to-current converter is disabled and said sweep frequency-to-current converter is connected to said oscillator output producing a sweep which exponentially approaches a selected frequency as asymptote.

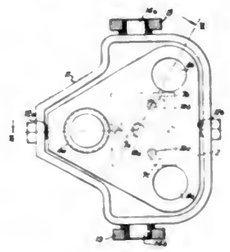
3,159,755
EMERGENCY LIGHTING UNIT
Edward T. Duncan, Westport, Conn., assignor to The Maintenance Company, Incorporated, Long Island City, N.Y., a corporation of New York
Filed Sept. 10, 1962, Ser. No. 222,574
9 Claims. (Cl. 307—88.5)

1. An emergency lighting unit which comprises: transformer means having a primary winding connectable to an alternating current power source and a secondary winding including first and second terminals and a tap therebetween; rechargeable battery means having a first pole electrically connected to said first terminal and a second pole; voltage divider means electrically connected between said first and second poles, comprising a fixed resistor in electrical series relationship with a light sensitive resistor exposed to ambient light and having a voltage divider tap therebetween; solid state switching means having at least an anode, a cathode, and a gate, said gate being adapted to be energized from said voltage divider tap and said cathode being electrically connected to said second pole; light producing means electrically connected



between said anode and the tap of said transformer means; and current rectifier means electrically connected between said second terminal and said second pole.

3,159,756
ULTRASONIC INSPECTION
Louis Beaujard, Jacques Mondot, and Marian Kapluszak, all of Saint-Germain-en-Laye, France, assignors to Institut de Recherches de la Siderurgie Française, Saint-Germain-en-Laye, France, a professional institution of France
Filed Feb. 19, 1963, Ser. No. 259,660
Claims priority, application France, Feb. 21, 1962, 888,713, Patent 1,322,950
9 Claims. (Cl. 310—8.7)

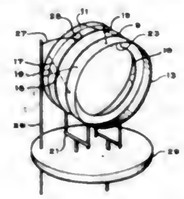


1. In an ultrasonic testing arrangement, in combination;
(*a*) a searching unit including means for emitting an ultrasonic beam from said unit in a predetermined direction toward an object to be tested;
(*b*) hydraulic means for establishing at least three spaced columns of hydraulic liquid flowing from said unit in said direction for engagement with said test piece, said columns defining a polygon, said columns exerting hydraulic pressure on said searching unit in a direction opposite to said predetermined direction;
(*c*) pressure means for urging said searching unit in said predetermined direction against said hydraulic pressure; and
(*d*) control means for controlling the rate of liquid flow in said columns.

3,159,757
CRYSTAL MOUNT
Leonard S. Cutler and Donald L. Hammond, both of Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed July 6, 1961, Ser. No. 122,265
8 Claims. (Cl. 310—9.1)

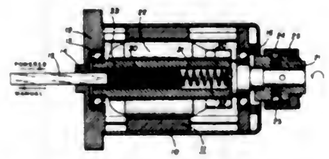
1. A crystal resonator and mount therefor comprising masks mounted in plane-parallel relationship, a crystal resonator positioned between the masks, the crystal resonator having a plurality of peripherally located apertures, mounting elements passing through each of the apertures and extending between the masks, the mounting elements

being rigidly affixed to the masks and to the resonator, an electrode on each of the surfaces of the resonator having a shape that is substantially similar to the shape of the



aperture in the corresponding mask, and connecting means to provide electrical connections for the electrodes on the surfaces of the resonator.

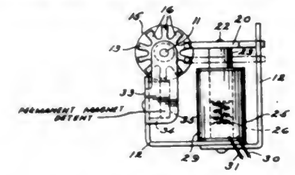
3,159,758
ROTARY MOTOR DRIVEN NONJAMMING LINEAR ACTUATOR
Lyle D. Hemperly, Jr., Canoga Park, and Robert G. Hoof, Glendale, Calif., assignors to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 182,757
9 Claims. (Cl. 310—83)



5. A nonjamming linear actuator comprising:
a rotary electric motor having an armature shaft,
the shaft of said armature comprising a hollow or tubular member having an internal threaded length and an unthreaded cavity aligned therewith,
said cavity being longer and of greater transverse dimension than said threaded portion whereby the output shaft at one extreme direction of travel is completely disengaged from the internal threads of the armature whereupon the armature may turn freely without further movement of the output shaft,
an output shaft including threads engaging the threads of said tubular shaft member and having a length extending out of the motor and constituting the actuator operating member, and
means restraining said output shaft from rotation whereby the output shaft is translated upon the rotation of said armature until the threads of the output shaft enter the cavity of the armature shaft.

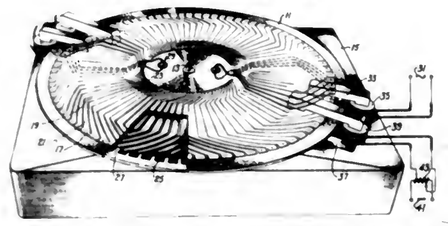
3,159,759
ELECTROMAGNETIC STEPPING DEVICE OR THE LIKE
Albert R. Conrad, Anaheim, and Eric A. Rosenau, Orange, Calif., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,560
7 Claims. (Cl. 310—103)

2. In a counter the combination comprising a housing, a detent wheel made of a low reluctance material and having a plurality of teeth, the number of said teeth determined by the number system of the counter, said detent wheel rotatably mounted in said housing, a pawl made of a low reluctance material located adjacent to one surface of said detent wheel, said pawl mounted to slide along a straight line in said housing when subjected to a magnetic field, a detent magnet located adjacent said teeth, and an electromagnetic circuit means for periodically causing a magnetic field and for completing a magnetic circuit, said electromagnetic circuit means including said pawl and said detent wheel as an



integral part of said circuit, whereby the periodic energization of said electromagnetic circuit causes said pawl to move said detent wheel.

3,159,760
INDUCTION MOTOR WITH MAGNETIC CONTROL
Erik Herbert Olofsson, Johanneshov, Sweden, assignor to Regulator A.G., Glarus, Switzerland, a company of Switzerland
Filed Nov. 14, 1961, Ser. No. 152,266
Claims priority, application Sweden, Nov. 15, 1960, 10,959/60
4 Claims. (Cl. 310—166)



2. Electric motor comprising an insulating disc mounted for rotation in its own plane, an electric circuit applied to the flat face of said disc, a rectifier attached to said disc and connected into said circuit so as to allow current in one direction only therethrough, a first electromagnet adapted for creating an alternating magnetic field through a peripheral part of said disc, a second electromagnet for creating an unidirectional magnetic field through another peripheral part of the disc, and a means for reversing the direction of current through said second electromagnet.

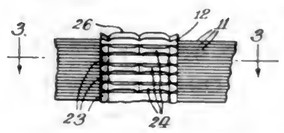
3,159,761
ELECTRIC ROTARY MACHINES OF THE AXIAL AIR GAP TYPE WITH COMPENSATED REACTION OF ARMATURE
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Jan. 21, 1960, Ser. No. 3,770
Claims priority, application France, Feb. 18, 1959, 787,239, Patent 1,225,827
5 Claims. (Cl. 310—186)



1. A dynamoelectric machine comprising: a pair of disc-shaped stator members positioned parallel to each

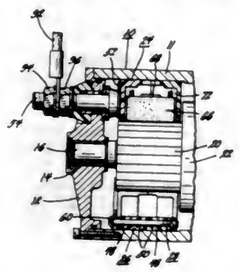
other to define an axial air gap therebetween; a disc-shaped rotor member comprising an insulating body having windings including thin, flat conductors carried on opposite faces thereof, said rotor being positioned in said air gap; means carried by said stator members for producing a magnetic flux in said air gap; brush means carried by one of said stator members and contacting the conductors on said rotor; and an armature reaction compensating winding identical to said rotor windings carried by one of said stator members and connected to said brushes.

3,159,762
CORE CONSTRUCTION
William E. Haifley, Edward J. Schaefer, and Lee J. Lakes, Bluffton, Ind., assignors to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Original application Dec. 30, 1958, Ser. No. 783,987. Divided and this application May 5, 1960, Ser. No. 27,172
9 Claims. (Cl. 310—217)



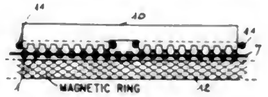
1. In combination, a stack of laminations superimposed in face-to-face relation, said stack having a groove across the edges of the respective laminations, said groove being generally rectangular in cross section, and an elongated strip of banding material positioned in said groove and having alternating transversely extending depressed areas and ribs on the top surface thereof, the bottom surface of said strip in said areas conforming to and in tight frictional engagement with said bottom wall; and the opposite side edges of said strip in said areas being compressed against said side walls.

3,159,763
BRUSH RIGGING
Donald E. Colvill and Robert P. Reddy, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 7, 1960, Ser. No. 13,134
7 Claims. (Cl. 310—238)



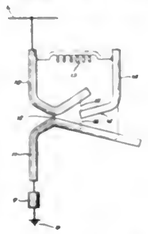
1. A brush holding assembly comprising, a pair of annular insulating members secured together in face-to-face relationship, said insulator members having axially extending wall portions which abut each other to form radially extending brush holding chambers, brushes slidable in said brush holding chambers, a plurality of pins having ends supported by said insulator members, a coil spring encircling each of said pins having one end thereof engaging a projecting portion of one of said insulator members and having another end engaging a brush for urging said brush in one direction, each coil spring being positioned between said insulator members, and fastener means for holding said insulator members together.

3,159,764
A.C. SYNCHRONIZED ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Aug. 6, 1962, Ser. No. 215,067
Claims priority, application France, Sept. 8, 1961, 872,808, Patent 1,318,612
11 Claims. (Cl. 310—268)



1. An axial airgap electric rotary machine comprising the combination of a disc-type armature, and a field pole ring mounted concentric with said armature and on one side thereof, said armature carrying an annular winding formed of two sets of thin and flat conductors carried on opposite faces of said armature, the winding conductors on the side of the armature facing said pole ring having straight portions arranged radially of said armature and being spaced apart by intervals substantially equal to their width, said conductor portions and intervals defining alternate substantially radially extending areas of distinct magnetic properties, said pole ring having at least a pair of adjacent sectors thereof magnetized in opposite polarities by permanent magnet means, and at least one pair of magnetic pole members embodied in adjacent sectors of said ring and having their pole faces slotted to present spaced radially extending teeth facing said armature, and a magnetizing coil surrounding each slotted pole member, said coils being connected to a source of alternating current for magnetization in opposite polarities.

3,159,765
LIGHTNING ARRESTER SPARK GAP
Fred J. Schultz, Milwaukee, and Edward L. Sankey, Oak Creek, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 10, 1961, Ser. No. 94,812
7 Claims. (Cl. 315—35)



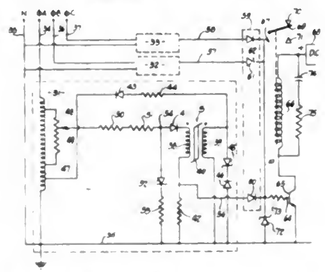
1. A lightning arrester spark gap assembly comprising in combination, a pair of spaced apart divergent electrodes, said electrodes defining therebetween at their point of greatest confluence a spark gap, one of said pair of electrodes being connected to a source of higher potential than the other of said electrodes, arc moving means connected to said source of higher potential, an auxiliary electrode in series with said arc moving means and having a portion thereof spacedly juxtaposed between portions of said pair of electrodes, said one of said pair of electrodes and said auxiliary electrode and said other of said pair of electrodes and said auxiliary electrode defining respectively therebetween spark gaps; said arc moving means, said auxiliary electrode, the spark gap between said auxiliary electrode and said other of said pair of electrodes and said other of said pair of electrodes conjointly defining a follow current path in parallel with said spark gap defined by said pair of electrodes, and means in the vicinity of said pair of electrodes for facilitating extinction of the follow current arc, whereby said arc moving means is inserted into the power follow current circuit subsequent to the surge to thereby protect said arc moving means against the effects of the surge and to allow said arc moving means to force the follow current arc into contact with said arc extinction facilitating means.

3,159,766
BALLAST APPARATUS AND SYSTEM FOR DIMMING ARC DISCHARGE LAMPS
Theodore R. Harpley, Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,167
2 Claims. (Cl. 315—195)



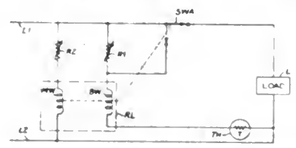
1. A system for dimming and operating a plurality of gaseous discharge lamps from an alternating current supply, said system comprising a plurality of fluorescent lamps, a plurality of ballast circuits, each of said ballast circuits having a pair of output leads connected in circuit with at least one of said plurality of lamps, each of said ballast circuits including a ballast transformer having a primary winding for connection across said alternating current supply and a high leakage reactance secondary winding, a first resistor connected in shunt across said high leakage reactance secondary winding, a pair of switching terminal leads, one of said switching terminal leads being connected in circuit with one end of the primary winding and the other of said switching terminal leads being connected in circuit with one end of said secondary winding, the other end of said secondary winding being connected in circuit with one of said output leads and the other end of said primary winding being connected in circuit with the other of said output leads, a second resistor connected across said primary winding and said high leakage reactance secondary winding, a switching network including at least a pair of electronic switches connected across said switching terminal leads so as to control the interval of current conduction between the primary and secondary winding during each half cycle of the alternating current supply; and a phase control means connected in circuit with said switching network and adapted to vary the phase angle at which said electronic switches are fired during each half cycle of the alternating current supply and thereby regulate the interval during each half cycle when said electronic switches are opened and closed to control the interval of current conduction and thereby vary the luminous intensity of said lamps.

3,159,767
VOLTAGE SENSING AND OVERVOLTAGE INDICATING CIRCUIT
Richard R. Secunde, Cleveland, and Charles H. Grace, Brecksville, Ohio, assignors, by mesne assignments, to Lear Siegler, Inc.
Filed May 4, 1960, Ser. No. 26,756
7 Claims. (Cl. 317—31)



1. A static voltage sensing and overvoltage indicating circuit for an alternating current system comprising a saturable core, sensing means responsive to the voltage of succeeding half cycles of the same polarity of a phase of said system for changing the flux level of said core in one direction a first amount proportional to the average voltage of said phase, resetting means for changing the flux level of said core in an opposite direction a second predetermined amount substantially independent of the average voltage of said phase and having a predetermined relationship to said first amount that is substantially independent of the frequency of system voltage, said sensing means acting on said core once during each cycle of system voltage, and output means for providing a characteristic output signal when the flux level of said core is driven to saturation by said sensing means.

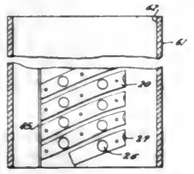
3,159,768
THERMAL RESPONSIVE CIRCUIT BREAKING RELAY
Charles D. Flanagan, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 16, 1959, Ser. No. 860,004
4 Claims. (Cl. 317—41)



1. In circuit-breaking apparatus for an electrical load adapted to be energized from a source of electrical power, a differential relay having a relay armature associated in a magnetic circuit with a main relay coil and a bucking relay winding, said coil and winding being parallel-connected across said power source and adapted to produce opposing magnetic fields in said magnetic circuit, connected across said power source whereby the respective currents traversing said relay coil and relay winding are independent of said load current, said armature adapted to be actuated when the composite flux produced by said coil and winding in said magnetic circuit exceeds a preselected value, a resistance comprising a thermistor serially connected between said bucking relay winding and said source of electrical power, switch means operable by said armature between a first position when said relay armature is deactuated and a second position when said armature is actuated, said switch means adapted when in said second position to deenergize said electrical load, and

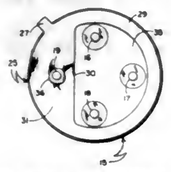
said thermistor being in heat-exchange relationship with said electrical load whereby upon a predetermined change in said resistance in series with said bucking winding the composite flux in said magnetic circuit is increased above said preselected value thereby moving said switch means to its second position to deenergize said electrical load.

3,159,769
HIGH VOLTAGE RECTIFIER CONSTRUCTION
Frank Wilbert Parrish, Lakewood, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Nov. 9, 1960, Ser. No. 68,173
5 Claims. (Cl. 317—99)



1. A tubular insulating support for a plurality of electrical devices electrically interconnected with respect to one another; said tubular insulating support comprising an elongated strip of insulating material wound in the form of a helix; said elongated strip of insulating material having a plurality of receiving means along the length thereof; each of said receiving means mechanically receiving respective electrical devices of said plurality of electrical devices.

3,159,770
MULTIPLE COMPONENT ELECTRICAL ENCLOSURE HAVING IDENTIFYING RING PLATE SHORT-CIRCUITING ONE COMPONENT
Thomas A. Longo, Winchester, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,193
6 Claims. (Cl. 317—101)



3. An electrical device comprising a plurality of functionally independent electrical components, an enclosure for the components, a plurality of electrical leads connected to said components, said leads extending through a surface of the enclosure in a pattern displaying circular symmetry, an orienting member of conductive material in contact with a conductive portion of said surface of the enclosure, a portion of said member making electrical connection to one of the leads, and an orienting tab on said member spaced at a predetermined distance from said portion of the member whereby all of said leads are positively identifiable by their position with respect to the orienting tab.

3,159,771
ELECTRICAL PANELBOARD
Harold A. Duvall, Pasadena, Calif., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Nov. 15, 1961, Ser. No. 152,417
10 Claims. (Cl. 317—119)

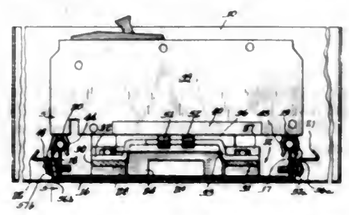
1. An electrical panelboard comprising:

(*a*) a box including a back portion,

(*b*) a mounting panel assembly for plug-in type electrical circuit breakers, said mounting panel assembly being removably secured within said box to said back portion thereof,

(*c*) said mounting panel assembly including a pan having a pair of upturned opposite side edges provided with rolled-over upper ends forming beads,

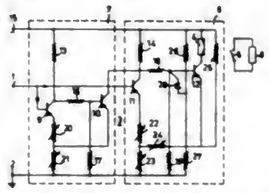
(*d*) an electrical circuit breaker of the plug-in type removably mounted on said mounting panel assembly for use as a main circuit breaker,



(*e*) said circuit breaker having a pair of opposite ends each having an adjacent spring clip provided with inner and outer jaws resiliently clamped on one of said beads, and

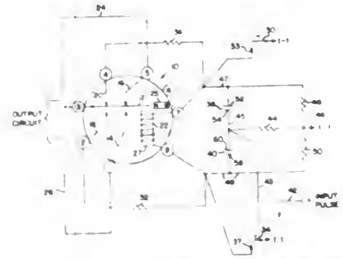
(*f*) a pair of bracket means respectively removably secured to said side edges of said pan in engagement with said outer jaws of said spring clips to secure said clips to said beads and thereby secure said circuit breaker to said mounting panel assembly, said pair of bracket means being accessible to release said removably mounted circuit breaker only after first removing said mounting panel assembly from said box.

3,159,772
MARGINAL MONITORING DEVICE
Willem van Doorn, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1961, Ser. No. 97,520
Claims priority, application Netherlands Apr. 14, 1960
9 Claims. (Cl. 317—148.5)



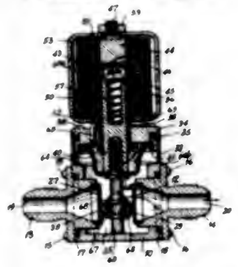
1. A circuit responsive to the level of a direct voltage within the range between a predetermined first level and a predetermined second level of greater absolute magnitude than said first level, said circuit comprising a source of said direct voltage, first and second bistable trigger circuits, each of said trigger circuits having an input circuit, an output circuit, and having first and second stable conduction states in the respective output circuits dependent upon the voltage applied to the respective input circuit, each of said bistable trigger circuits having a feedback circuit whereby only said first and second stable conduction states can occur in the respective output circuits, said first and second trigger circuits being responsive to change conduction states at said first and second levels respectively, means applying said direct voltage to the input circuits of said first and second trigger circuits, means connecting the output circuit of said first trigger circuit to the feedback circuit of said second trigger circuit whereby a change of conduction state of said first trigger circuit produces a change in the conduction state of said second trigger circuit, and output circuit means connected to the output circuit of said second trigger circuit.

3,159,773
BI-STABLE RELAY CIRCUIT
George Elliott, Brighton, N.Y.
(135 Sunset Drive, Rochester 18, N.Y.)
Filed Feb. 24, 1960, Ser. No. 10,621
6 Claims. (Cl. 317—154)



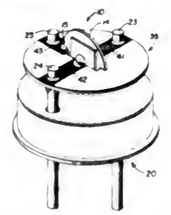
1. A bi-stable relay circuit comprising a relay having a single coil, a single movable contact arm and at least two front and at least two back contacts, first circuit means including a source of electrical energy, the contact arm, one front contact, a resistor, and the coil to cause current to flow through the coil in a direction to hold the contact arm in contact with said front contacts when the contact arm is in contact with said front contacts, second circuit means inluding the source of energy, the contact arm, one back contact, a resistor, and the coil, when the contact arm is in contact with said back contacts, to cause current to flow in the opposite direction through said coil to hold the contact arm in contact with said back contacts, polarizing means tending to hold said contact arm in engagement with the contact with which it is engaged, and a third circuit means connectable to said first and second circuit means to cause a surge of current to flow in a direction opposite to the current then flowing through said coil upon the momentary connection to said third circuit means to one pole of a direct current source to drive the contact from the contacts, with which it is then engaged, to the opposed contacts.

3,159,774
OIL DAMPED SOLENOID VALVE
John E. Dube, Chesterfield, and George F. Kincaid, Kirkwood, Mo., assignors to Alco Valve Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 15, 1960, Ser. No. 56,301
2 Claims. (Cl. 317—165)



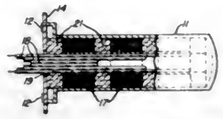
1. In a solenoid device, a solenoid chamber comprising a closed-top plunger-receptacle; a plunger movable along the receptacle toward and from the top thereof, a generally cup-shaped boot having freely flexible walls that converge downwardly and inwardly from the rim at the upper end to the bottom, means connecting the upper rim end of the flexible boot to the receptacle, and the plunger engaging the middle of the boot at a point located a substantial distance downwardly from the rim; the boot, the receptacle and the plunger being sealed and fixed together and providing a chamber, the chamber being divided into an upper chamber portion above the plunger and a lower chamber portion between the receptacle and the boot, the lower chamber having its under parts formed by the boot with a downwardly and inwardly converging shape so that the lowest part has a cross section that gradually increases upwardly to an enlarged top; a liquid that, with the plunger, completely fills the entire chamber; means providing a restricted liquid flow path between the upper and lower chamber portions; the walls of the boot being flexed outwardly when the plunger is moved upwardly, the shape of the boot being such that when the plunger is down the walls are out of contact with the plunger, and when it is up the boot raises the lowest part of the boot upwardly in the smallest sectional area of the boot displacing liquid therefrom to the upper part of the boot where the section is larger, and liquid from the upper chamber portion is displaced to cause liquid to enter the large upper portion of the boot, the arrangement being such that the boot can receive this added liquid without substantial stretching.

3,159,775
SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURE
Robert C. Ingraham, Topsfield, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 30, 1960, Ser. No. 72,630
1 Claim. (Cl. 317—234)



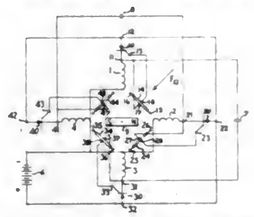
A semiconductor device including a thin, flat body of semiconductor material having electrodes of conductivity type imparting material alloyed to opposite major surfaces thereof and projecting therefrom and a metal tab bonded to said body, a base member having three leads lying parallel to and insulated from each other, a thin, flat, plate of insulating material lying perpendicular to said leads and having three openings with said leads extending therethrough, means on each of said leads for holding said plate out of contact with the remainder of the base member, an aperture in said plate having dimensions in width greater than the thickness of the body of semiconductor material and the metal tab and less than the thickness of the body and projecting electrodes, said body extending through said aperture with said electrodes bearing against one surface of said plate, a first metallized area on the surface of the plate extending from the region of one of said electrodes to a first one of said openings in the plate, a second metallized area on the surface of the plate extending from the region of the other of said electrodes to a second one of said openings in the plate, and a third metallized area on the surface of the plate extending from the edge of said aperture adjacent said metal tab to the third one of said openings, said electrodes being fused to their respective metallized areas, and solder connections between each of said leads and their respective metallized areas and between the metal tab and the third metallized area.

3,159,776
MODULAR CAPACITOR ASSEMBLIES
William F. Metcalf, Las Vegas, Nev., assignor to Elizabeth R. Metcalf
Filed Jan. 2, 1959, Ser. No. 784,718
1 Claim. (Cl. 317—242)



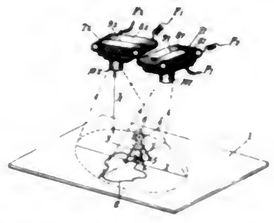
A modular multi-section capacitor assembly comprising, in combination, a cylindrical container open at one end, a closure member for covering said open end, said member having a substantially centrally located aperture, means for removably securing said closure member to the container, a plurality of substantially cylindrically shaped capacitors each having a longitudinal central aperture, all of said capacitors being coaxially disposed relative to each other with the central apertures aligned, all of said capacitors fitting snugly within said container, each of said capacitors including an anode foil and a cathode foil, a soft centrally apertured resilient shock-absorbing spacer interposed between each of said capacitors, said spacers serving to immobilize said capacitors within said container, and a plurality of flexible insulated conductors, each individual conductor having one end extending through said aperture and another end electrically connected to a respective one of said foils on a respective single one of said capacitors at the end thereof away from said aperture, the conductors extending between the associated capacitor and the cap aperture by passing through the central aperture of each capacitor and spacer more closely positioned relative to the open end of the container than the capacitor to which it is connected and electrical connection between said individual capacitors being adapted to be established external to said container, said capacitors and spacers being capable of disassembly into the component parts thereof without significant damage to any of said component parts.

3,159,777
DIRECT CURRENT MOTOR
Erich W. Manteuffel, Ithaca, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 15, 1961, Ser. No. 159,539
12 Claims. (Cl. 318—138)



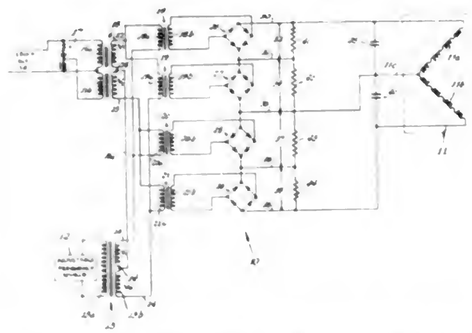
1. An electric motor energizable from a source of unidirectional potential which comprises:
(*a*) a rotor having magnetic poles of opposite polarity thereon;
(*b*) a stator member, a plurality of flux-producing windings positioned in said stator member in torque-producing relation with said rotor;
(*c*) a plurality of switching devices each having control means for rendering its associated switching device conductive, each of said switching devices controlling the connection of a respective one of said windings to a source of unidirectional potential so that unidirectional current will flow in each of said windings when its respective switching device is conducting;
(*d*) a plurality of Hall effect generators positioned in flux-sensing relationship to said magnetic poles;
(*e*) means for applying pulsed electric energy to said Hall effect generators; and
(*f*) means connecting each of said Hall effect generators to the control means of a respective one of said switching devices whereby each of said Hall effect generators supplies a gating signal to the control means of said respective switching device to render said respective switching device conductive upon coincident interaction of a predetermined level of magnetic flux from said magnetic poles and applied electric energy within said Hall effect generator to sequentially energize said windings and produce a driving torque on said rotor.

3,159,778
SYSTEM FOR PRODUCING VARIABLE FREQUENCY SIGNALS REPRESENTING A PATTERN TRACING
Vladimir Gavreau, Albert Calaora, and Marcel Miane, all of Marseille, France, assignors to Centre National de la Recherche Scientifique, Paris, France, a state administration
Filed Nov. 1, 1960, Ser. No. 66,477
Claims priority, application France Nov. 3, 1959
6 Claims. (Cl. 318—162)



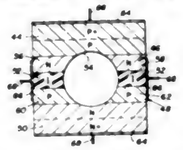
1. A device for automatically obtaining, for all the points, successively, of a given curve traced on the plane surface of a member, currents proportional respectively to the components of the tangent to said curve at said points, which device comprises, in combination, means adapted to be actuated by an operator for projecting a light spot onto said curve, two cameras fixed above said surface, each of said cameras comprising a lens forming an image of said spot in an image plane fixed with respect to said camera, said image plane being parallel to said plane surface, a flat photo-electric cell having its surface located in said image plane, electric means operative by said cell for producing an electric current in response to the illumination of a point of said cell by an image formed on said cell of the light spot on said plane surface, an endless band of a transparent material movable in said camera, a portion of said endless band being interposed between said lens and said photo-electric cell and being parallel thereto, and electric motor means for driving said endless band at a constant speed, said band being provided with a multiplicity of equidistant opaque lines, transverse to the direction of movement of said band, whereby, in response to the projection on said band portion of a light spot having no displacement transverse to said opaque lines, a current of fixed frequency is delivered by said electric means but the projection on said band portion of a light spot having displacements transverse to said opaque lines causes said electric means to deliver current of varying frequency, the respective directions of movement of said endless band portions of said two cameras being at right angles to each other, means operative respectively by the variable frequency currents produced by said electric means, respectively, for delivering currents proportional, at any time, to the frequencies at said time of said variable frequency currents.

3,159,779
MOTOR CONTROL CIRCUIT
Gustav O. Fredrickson, Southington, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed May 18, 1961, Ser. No. 111,022
9 Claims. (Cl. 318—171)



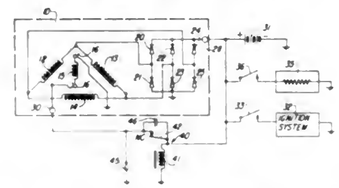
1. A motor control circuit for a motor having at least a first pole and a second pole with each pole having a winding means with changes in the energization of the winding means changing the magnetic polarity of its pole comprising a first voltage input means connectible to a two phase alternating current source, a second voltage input means connectible to a source of alternating current having a frequency different than the frequency of the two phase alternating current source, means connected to the first voltage input means and the second voltage input means for combining these voltages and means for impressing the beat frequency of the combined voltages on the winding means of the motor.

3,159,780
SEMICONDUCTOR BRIDGE RECTIFIER
Paul F. Parks, Hillsboro, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed June 19, 1961, Ser. No. 118,058
7 Claims. (Cl. 321—46)



1. A full wave rectifier having a plurality of matched semiconductor diodes comprising:
a body of semiconductor material having at least one region of P-type conductivity and at least one region of N-type conductivity with a resistivity gradient in at least one of said regions, said body being shaped with at least one notch therein to divide one of said regions into two separate portions in order to form a pair of PN junction diodes having similar rectifying characteristics for each region so divided, and
a plurality of ohmic contacts connected to each of the conductive portions of said body in a manner so that electrical current may flow through each PN junction in said body in order to convert A.C. voltage into substantially D.C. voltage.

3,159,781
ALTERNATOR REGULATOR CIRCUIT INCLUDING AN ELECTROMAGNETIC RELAY HAVING A SINGLE CONTACT
Charles L. Shano, Chicago, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed July 21, 1961, Ser. No. 125,745
3 Claims. (Cl. 322—28)

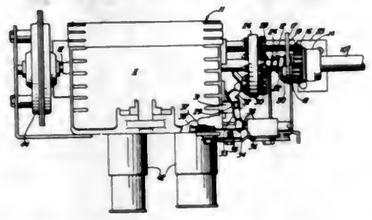


2. A regulator system for an alternator-rectifier direct current source providing an output voltage between an output terminal and a reference point, and which includes a field winding connected between an input terminal and the reference point for controlling the voltage at the output terminal, said regulator system including in combination, a conducting base member connected to the reference point, an electromechanical device supported on said base member and having a fixed contact and a movable contact, and means for supporting said movable contact including means tending to hold said movable contact in engagement with said fixed contact, and a magnetic structure having a coil producing a field for moving said movable contact away from said fixed contact, means connecting said coil to said base member and to the output terminal, whereby said movable contact is moved from said fixed contact when the voltage at the output terminal exceeds a predetermined value, means including said contacts for connecting the output terminal to the input terminal to apply current to the field winding, rectifier means having one terminal supported in conductive relation on said base member and having a second terminal connected to the input terminal, said rectifier means being connected with a polarity to be nonconducting when said contacts are closed and the potential from the output terminal is applied thereto, and to be conducting when the contacts are open and the potential across the field reverses, said rectifier means when conducting connecting the input terminal of the field winding to the reference potential and thereby reducing the alternator output, said rectifier means when conducting reducing the potential between said contacts, and capacitor means connected between said fixed contact and said movable contact and cooperating with said rectifier means to reduce arcing between said contacts.

3,159,782
MOTOR DRIVEN TELEVISION TUNER HAVING SAFETY SWITCH PREVENTING CHANNEL STEPPING WHILE FINE TUNING
Harold Tyzack, Schiller Park, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 28, 1961, Ser. No. 141,328
3 Claims. (Cl. 334—21)

1. In a motor driven tuner for a television receiver, the combination of a detent positioned channel selection wheel having spaced about its periphery a plurality of variable fine tuning means, a knob actuated arm carrying an adjusting member for said variable fine tuning means for adjusting said fine tuning means to an operative fine tuning position, a lever mounted on said tuner and having a cam follower surface, said lever being resiliently biased to engage said cam follower surface with an individual one of said variable fine tuning means when said one of said fine tuning means is adjusted to an operative fine tuning position, said lever further hav-

ing a switch operating portion thereon, a motor control switch positioned on said tuner to be opened by said switch operating portion upon adjustment of each of said variable fine tuning means to an operative fine tuning position, a safety switch and means for opening



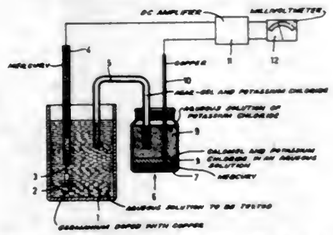
the same when said adjusting member is brought in contact with one of said variable fine tuning means for adjustment thereof by actuation of the knob, and a motor control circuit including a series connection of said control switch and said safety switch and said motor.

3,159,783

DEVICE FOR MEASURING ION CONCENTRATIONS WITH A COPPER DOPED GERMANIUM ELECTRODE

Marcus Johannes Sparnaay and Wilhelmina Hendrika Petronella Wensing, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 17, 1963, Ser. No. 309,498
Claims priority, application Netherlands Sept. 21, 1962
2 Claims. (Cl. 324—30)



1. A device for measuring H-ion concentrations, comprising a measuring electrode and a reference electrode, which two electrodes are connected through current conductors to a device for measuring the electromotive force set up between the electrodes, wherein the measuring electrode consists of germanium doped with about 0.001 to 1 mole percent of copper.

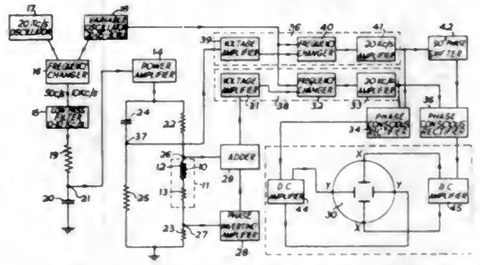
3,159,784

EDDY CURRENT TESTING APPARATUS HAVING MEANS TO RELATE ELECTRICAL CHARACTERISTICS OF A PICKUP UNIT TO PHYSICAL PROPERTIES OF A SPECIMEN

Roy William George Haslett and Eric Lionel Freeman, Hillington, Glasgow, Scotland, assignors to Kelvin & Hughes Limited, Hillington, Glasgow, Scotland, a British company

Filed Dec. 14, 1960, Ser. No. 75,864
Claims priority, application Great Britain Dec. 16, 1959
6 Claims. (Cl. 324—34)

1. Apparatus for the electromagnetic testing of materials including a test coil within which the specimen to be tested can be located, means for establishing in the test coil in response to a test signal applied to the coil an alternating current inversely proportional to the frequency of the test signal, and means for deriving from the coil and applying to deflect the electron beam of a cathode ray tube in mutually perpendicular directions a signal proportional to the inductive component of the impedance of the test coil and a signal proportional to the ratio of the change in the resistive component of the impedance of the test coil to the said frequency, in which the said means for establishing an alternating current in the test coil comprises a variable-frequency oscillation generator connected across the series combination of a resistor and a capacitor, the resistance of the resistor being much greater than the reactance of the capacitor



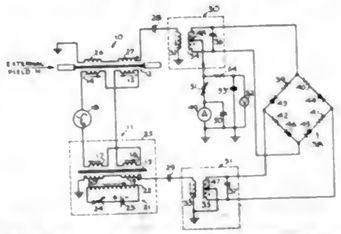
within the test frequency range whereby, in operation, the current through the resistor and capacitor is substantially independent of frequency and a voltage signal inversely proportional to the frequency is developed across the capacitor, and means for applying the said voltage signal to the series combination of the test coil with a resistor having a resistance large compared with the reactance of the test coil within the test frequency range whereby, in operation, the current through the test coil is substantially linearly dependent on the said voltage signal regardless of the frequency and is thus substantially inversely proportional to the frequency.

3,159,785

SECOND HARMONIC MAGNETOMETER HAVING A PLURALITY OF TRANSDUCERS IN COMBINATION WITH MEANS RESPONSIVE TO FLUX AMPLITUDE AND DIRECTION

John C. Beynon, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 30,157, May 19, 1960. This application Mar. 14, 1962, Ser. No. 182,151
17 Claims. (Cl. 324—43)



15. A flux-gate type magnetic field detector comprising: at least one sensing transducer and a reference transducer each having a magnetically permeable element, a pair of balanced driving windings, and a pair of output windings, said sensing transducer being exposable to external magnetic fields for sensing thereof, and said reference transducer having bias means for magnetically biasing its respective magnetically permeable element, said reference transducer being shielded against external magnetic fields; a driving source of alternating current of a first frequency coupled to said driving windings of said sensing and reference transducers; said output windings

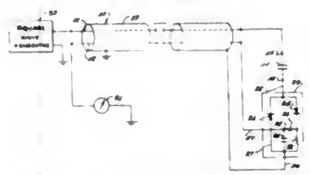
of said reference transducer exhibiting a reference output signal of a predetermined amplitude and of a second frequency which is substantially double said first frequency; said output windings of said sensing transducer exhibiting a sensed output signal upon the presence of an external magnetic field, said sensed output signal being of said second frequency, and having an amplitude which is a function of the intensity of said external magnetic field being present, and having a phase relationship with said reference output signal which is a function of the polarity of said external magnetic field relative to said bias means; and means coupled to said output windings of said sensing and reference transducers for indicating the presence of said external magnetic field as a function of the amplitudes and phase relationship of said reference output signal and said sensed output signal.

3,159,786

APPARATUS FOR THE REMOTE MEASUREMENT OF CAPACITANCE

Robert T. Bayne, Santa Barbara, Calif., assignor, by mesne assignments, to Varo Inc. Electrokinetics Div., Santa Barbara, Calif., a corporation of California

Filed Nov. 21, 1960, Ser. No. 70,490
3 Claims. (Cl. 324—60)



2. In an apparatus for testing capacitance of a device at a remote location, the combination of:

a length of cable having first, second and third conductors;

a charging voltage source connected across said first and third conductors at one end of said cable, said source generating a cyclical square wave voltage;

a high impedance D.-C. voltage measuring device connected across said second and third conductors at said one end;

a charge sensing unit connected in series with the device under test across said first and third conductors at the other end of said cable, said charge sensing unit including parallel circuits with oppositely poled rectifiers therein for charging the device through one circuit and discharging through the other circuit, with a resistor connected in series with one of said rectifiers at a junction point;

and a smoothing filter connected between said junction point and said third conductor, with the filter output connected to said second conductor at said other end of said cable.

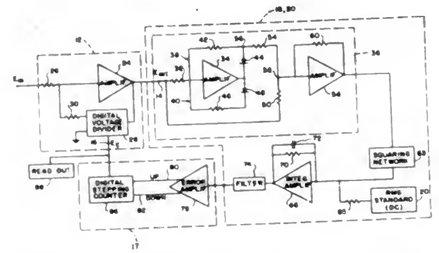
3,159,787

R.M.S. METER USING AMPLIFIER WITH CONTROLLED FEEDBACK

Don W. Sexton, San Diego, Newton E. Ball, La Mesa, and Jack T. Davis, San Diego, Calif., assignors to Electro Instruments, Incorporated, San Diego, Calif., a corporation of Delaware

Filed Mar. 21, 1960, Ser. No. 16,472
5 Claims. (Cl. 324—99)

3. An R.M.S. instrument, comprising: amplifier means having an input and an output; a variable feedback network connected between the input and output of said amplifier means for controlling the gain and output of said amplifier means by variation of the feedback factor; a squaring network for squaring the output of said amplifier means; an R.M.S. standard of constant magnitude; integration means for comparing the squared output of said squaring network with said R.M.S. standard and generating error signals corresponding to any difference



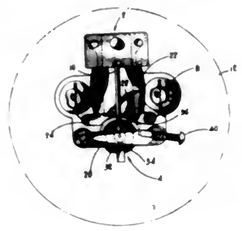
therebetween; means responsive to said error signals for controlling the amount of feedback provided by said feedback network; and means for indicating the feedback factor of said feedback network.

3,159,788

SUPPRESSED WIDE SCALE ELECTRO-MAGNETIC GAUGE

Harold A. Donko, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Continuation of application Ser. No. 19,543, Apr. 4, 1960. This application June 14, 1962, Ser. No. 205,166
6 Claims. (Cl. 324—146)

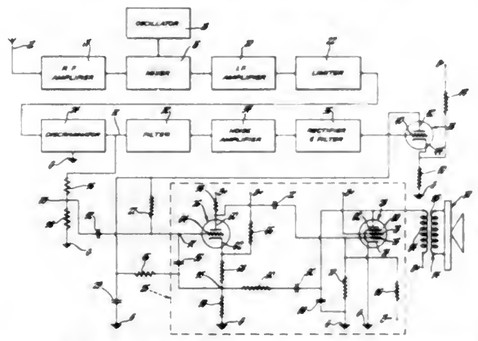


1. A wide scale milliammeter movement for measuring uni-directional electric current comprising a permanent magnet having diametrically opposed poles, means mounting said magnet for rotation about an axis between said poles from a starting position to a stopping position and biasing said magnet to its starting position, an electromagnetic structure including a coil and a substantially flat magnetic core generally coplanar with said magnet and having a pole piece with a generally curved pole face eccentrically aligned with the path of travel of one of the poles of said magnet to define a continuously increasing air gap therewith in a direction opposite to the direction of rotation from the starting position to the stopping position, said pole face having one end closest to said path of travel opposite one pole of the magnet and its other end furthest from the path of travel at a point intermediate the poles of the magnet when the magnet is in its starting position, said coil adapted to induce at said pole face a magnetic pole or like polarity to said one magnet pole responsive to said uni-directional current, and an element of nonpermanent magnetic material adjustably disposed adjacent to and adjustable away from and towards the path of travel of one of the magnet poles at a position substantially centered between the starting and stopping positions of one of the poles of said magnet.

3,159,789
SQUELCH CIRCUIT WITH DISCRIMINATOR LOADING SUCH THAT NOISE VOLTAGE IS NOT PASSED BY INTERELECTRODE CAPACITANCE OF AUDIO SECTION

Edward M. Arakellan, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 16, 1962, Ser. No. 230,860
5 Claims. (Cl. 325—402)



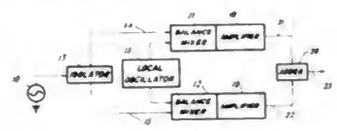
1. Means for loading the audio channel of the detector section of a radio receiver when the receiver is muted by a squelch control means so as to prevent noise signal voltage from being applied through the interelectrode capacitance between the input and output of the audio amplifier section to a load and comprising a detector having an input and an output, the output of the detector including an audio channel and a squelch channel, means for applying audio modulated input signals to the input of the detector which is operative to demodulate the input signals and to develop output signal voltage including noise signal voltage and audio signal voltage, an audio amplifier electronic control device having an input and an output with interelectrode capacitance present therebetween, the audio channel output of the detector connected with the input of the control device, squelch control means having an input and an output connected with the squelch channel output of the detector and the input of the control device, respectively, a load connected across the output of the control device, a controllable impedance path to the output signal voltage connected across the input of the control device whereby when the magnitude of the noise signal voltage exceeds a predetermined value the squelch control means is operative to apply sufficient cut-off potential to the input of the control device to mute the receiver so that the controllable impedance path loads the audio channel of the detector to prevent noise signal voltage from being applied through the interelectrode capacitance between the input and output of the control device to the load, and means connected with the controllable impedance path for deactivating the path when the magnitude of noise signal voltage decreases below a predetermined value.

3,159,790
LOW NOISE, MULTIPLE MIXER SYSTEM

Amasa Pratt, Towson, Md., assignor to Martin-Marietta Corporation, a corporation of Maryland

Filed July 18, 1960, Ser. No. 43,646
3 Claims. (Cl. 325—449)

1. An improved low-level signal handling portion of a receiving system comprising an antenna, isolator means connected to receive output signals from said antenna and to divide the power thereof between at least one pair of output connections, said isolator means being designed to prevent feedback signals between said output connections, at least one pair of balanced mixers each including a hybrid waveguide section having a pair of unidirectional conducting devices connected in opposed phase relation in the output section thereof, means for coupling signals present at said output connections to a respective one of said balanced mixers, a local oscillator coupled for introducing signals into said balanced mixers for producing intermediate-frequency signals, a plurality of connecting

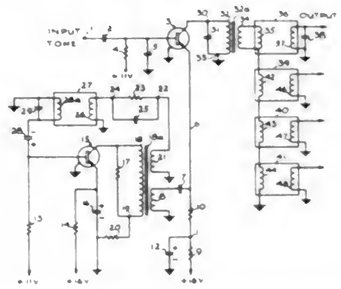


means each coupled to receive intermediate-frequency signals from the output section of a respective one of said balanced mixers, and at least one adding network coupled to receive the intermediate-frequency signals from said connecting means so as to employ correlation to produce output signals containing intermediate-frequency signals of a larger amplitude than signals resulting from random noise introduced internally into said system.

3,159,791
NARROW BAND AUDIO FREQUENCY FILTERING SYSTEM

Joseph L. Czubiak, Canoga Park, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed June 14, 1961, Ser. No. 117,085
7 Claims. (Cl. 325—489)

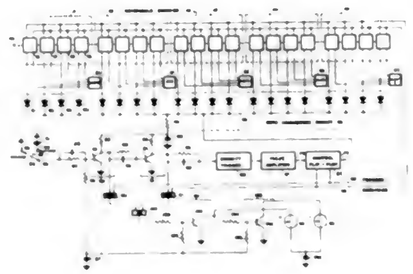


1. A temperature stable extremely narrow band-pass filtering system for use at the audio frequencies comprising: an electronic mixer, a local oscillator coupled to said mixer, first and second temperature sensitive frequency control means in the feedback circuit of said local oscillator, said first temperature sensitive control means comprising a magnetostriction resonance filter the center frequency of which varies a predetermined amount with a given change in temperature, said second temperature sensitive frequency control means comprising an inductance in series with a capacitor and temperature sensitive resistance connected in parallel, and a magnetostriction resonance output filter for each tone to be identified, the center frequency of each magnetostriction resonance filter varying with a given change in temperature substantially the same amount as said first temperature sensitive frequency control means, each of said magnetostriction resonance output filters being coupled to said electronic mixer.

3,159,792
REVERSIBLE COUNTER CIRCUIT WITH MEANS FOR DETECTING A PREDETERMINED TOTAL COUNT FOR CONTROLLING COUNTER REVERSAL

George F. Metz, Richmond, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Sept. 5, 1961, Ser. No. 135,962
10 Claims. (Cl. 328—44)

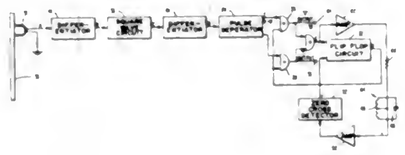


9. A reversible counter for counting input signals which displays the output as an algebraic value comprising first means for counting input signals appearing at an input terminal thereof in both forward and backward directions and indicating the absolute value of said output algebraic value, second means coupled with said first means for detecting a total count of zero in said first means, forward and backward selection means for preselecting whether the input signals are to be added or subtracted, and control means connected with said first means, said second means and said selection means for responding to said second means and said selection mean for controlling in which direction an input signal is to be counted by said first means.

3,159,793
PHASE MODULATION READING SYSTEM EMPLOYING CONTROLLED GATING FOR INHIBITING SPURIOUS OUTPUTS OCCURRING BETWEEN INFORMATION PULSES

Herbert F. Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 23, 1963, Ser. No. 253,381
10 Claims. (Cl. 328—99)

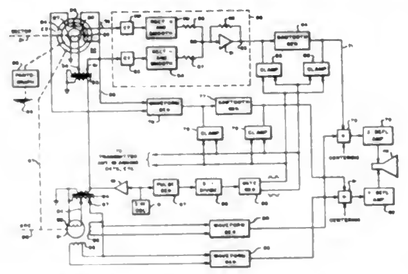


1. A read out circuit comprising a source of pulse signals, a control signal source, means for applying said pulse signals to said control signal source to generate control signals, a tuned circuit, means for applying said pulse signals to said tuned circuit to produce substantial sine wave signals, means for utilizing said sine wave signals to produce second pulse signals, and means for applying said second pulse signals to said control source to terminate said control signals.

3,159,794
DEFLECTION VOLTAGE WAVEFORM GENERATOR EMPLOYING TRANSFORMER WITH ROTATABLE PRIMARY AND SECONDARY WINDINGS

Henry W. Appel, Eastchester, George W. King, Pleasantville, and Clayton A. Washburn, Thornwood, N.Y., assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 21, 1962, Ser. No. 246,621
5 Claims. (Cl. 328—185)



1. Apparatus for generating a undirectional voltage the polarity and amplitude of which are indicative of the sine of the angle by which a shaft is displaced from a reference position, comprising,

a transformer having relatively rotatable primary and secondary windings mechanically connected to be rotated by said shaft,

a source of alternating current connected to said primary winding,

whereby the amplitude of the alternating voltage induced in said secondary winding is a sinusoidal function of the angular position of said shaft,

means for adding a voltage derived from said source to the voltage of said secondary winding to obtain a combined voltage,

means for rectifying and smoothing said combined voltage,

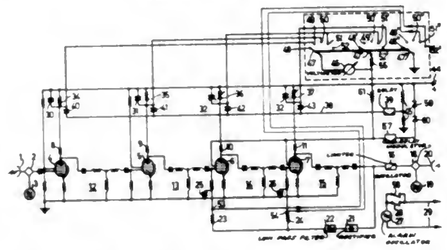
means for rectifying and smoothing said voltage derived from said source, and

means for subtracting the rectified voltage from said source from the rectified combined voltage.

3,159,795
TRANSMISSION APPARATUS HAVING A CHECKING DEVICE

Erwin Tautner and Dorus Gerardus Kerker, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

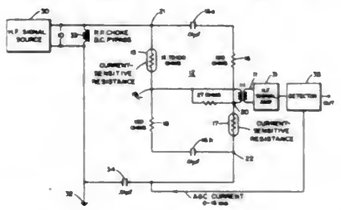
Filed Sept. 29, 1960, Ser. No. 59,216
Claims priority, application Netherlands Oct. 8, 1959
5 Claims. (Cl. 330—2)



1. An amplifier system comprising a plurality of interconnected electron discharge devices having cathode, grid, and anode electrodes, a source of operating voltage, means applying said operating voltage between the anode

electrodes and cathode electrodes of said devices, a resistor and load impedance means connected in the anode current circuit of each of said devices whereby anode current flows in the respective load impedance means and resistor, a source of a volume control voltage, means applying said volume control voltage between the grid electrode and cathode electrode of at least one device, separate diode means each having one electrode connected to one end of a separate said resistor, means interconnecting the other electrodes of said diode means to form a common junction, means for applying a bias voltage to said common junction, whereby the voltage across said diode means is dependent upon the anode current of the respective device, said diode means being poled to pass current only when the voltage drop across the respective resistor is below a predetermined amplitude, indicating means and means connecting said indicating means between said junction and said means applying said bias voltage whereby an indication is provided of current flow below a predetermined magnitude in any of said resistors, said resistor in the anode circuit of said device controlled by said control voltage being a current-dependent resistor having a resistance that decreases with increases in anode current.

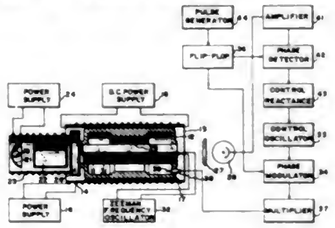
3,159,796
DIRECT CURRENT CONTROLLED BRIDGE TYPE ATTENUATOR
Johannes Van Sandwyk, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed July 10, 1961, Ser. No. 122,879
4 Claims. (Cl. 330—138)



1. A high frequency signal attenuator comprising a four-sided balanced bridge with four resistive branches, a high frequency source coupled across one diagonal of said bridge, a high frequency load coupled across the other diagonal of said bridge, the resistances of two complementary branches of said bridge being current-sensitive, the time constant of said current-sensitive resistance being greater than the period of said high frequency, a direct current blocking condenser in each of the remaining two branches, a direct current blocking condenser in series with the high frequency circuit across one of said diagonals, and a source of automatic gain control current connected across the last-mentioned blocking condenser for finely regulating the signal current through the current-sensitive resistances and for controlling the degree of unbalance of the bridge, without distortion of a signal.

3,159,797
ATOMIC FREQUENCY STANDARD
Richard M. Whitehorn, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 12, 1961, Ser. No. 116,600
21 Claims. (Cl. 331—3)

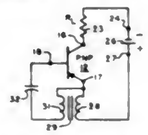
1. A frequency stabilization apparatus including a light source, a light absorption cell enclosed within a cavity resonator, a light intensity means for detecting the intensity of light after passing through said cell, an oscillator for generating a radio frequency, which induces atomic resonance in said cell, a modulator means for phase modulating said radio frequency as a square wave function, and a phase detector means responsive to said light intensity means and to said modulator means for tuning said oscillator relative to the light intensity detected by said light intensity means.



5. A frequency stabilization apparatus including a light source for directing light into an absorption cell disposed within a cavity resonator, said cavity resonator comprising a cylindrical chamber having axially aligned apertures, and means for flattening the peak of the half sinusoidal wave shape of the magnetic field when said resonator is oscillating in the TE_{011} mode.

7. A frequency stabilization apparatus including a light source directing light through an absorption cell which is axially disposed within a cylindrical cavity resonator, means for generating an external steady magnetic field directed axially through said absorption cell, and means for forming and varying the frequency of an alternating magnetic field directed transversely to said external magnetic field for including Zeeman transitions in said absorption cell, said means comprising an elongated magnetic coil disposed around the exterior surface of said cell with the long wires of said coil disposed parallel to the axis of said cavity resonator.

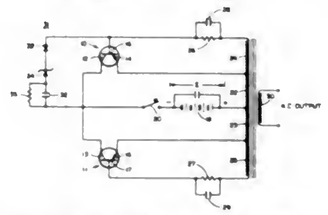
3,159,798
MICROWAVE MODULATOR
Arthur G. Burns, Yorktown Heights, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Dec. 4, 1958, Ser. No. 778,200
2 Claims. (Cl. 331—42)



1. A microwave modulator comprising, a transistor of the diffused alloyed type comprising a base of metal selected from the class consisting of silicon and germanium, said base being in the form of a sheet, a first wafer of elemental metal selected from the class consisting of valence 3 acceptor metals and valence 5 donor metals pressed onto one side of said base forming a collector, a second wafer of said selected elemental metal pressed onto the opposite side of said base forming an emitter, a length of rectangular waveguide, means positioning and supporting said transistor substantially at the center of the cross section of said length or rectangular waveguide, an oscillator circuit positioned externally of said waveguide and connected to said base, emitter and collector through conductors extending into but insulated from said waveguide, said oscillator circuit including a resonant capacitor-inductor circuit connected between said base and emitter terminals, and a coupler and direct-current source connected between said emitter and collector terminals whereby spontaneous oscillations occur by interaction among said oscillator components at a

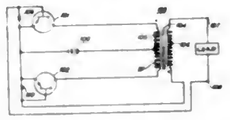
selected submicrowave frequency, a microwave generator having a frequency different from said selected frequency, waveguide means applying the output of said generator to one end of said length of rectangular waveguide whereby microwave field energy is set up therein, a short-circuiting plug in the other end of said length of rectangular waveguide, the distance between said transistor and said plug being an odd integral multiple of one-quarter of said microwave generator output wavelength in the waveguide, whereby said microwave generator output field energy is more strongly modulated at said selected frequency, and means isolating and receiving said modulated field energy.

3,159,799
STARTER PROTECTOR FOR D.C.–A.C. INVERTER
Kenneth W. Cooper, Jr., Williamson, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed July 17, 1961, Ser. No. 124,701
3 Claims. (Cl. 331—112)



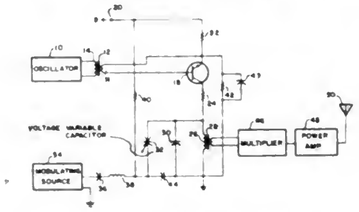
3. A transistor oscillator having an output circuit and an input circuit coupled to generate self-sustained oscillations, a direct current source connected in said output circuit, starter circuit means to momentarily bias the control electrode of the transistor to cause conduction and initiation of oscillation when the direct current power of said source is applied to the transistor, said means including a Zener diode and a storage condenser connected in series across the input circuit of said transistor, the Zener breakdown voltage of said Zener diode being less than said direct current voltage of said source to discharge the charge of said condenser into said input circuit when the Zener breakdown voltage is exceeded, means for decoupling said starter circuit means after oscillation starts when the control electrode bias voltage drops, said means for decoupling comprising a second diode in series with said Zener diode, said second diode being reversely polarized with respect to said Zener diode to prevent forward current through said Zener diode, and a leakage resistance of high ohmic value connected across said storage condenser to discharge said condenser when oscillations cease.

3,159,800
CONVERTER WITH SERIES LOAD IN FEEDBACK
Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 29, 1960, Ser. No. 39,560
5 Claims. (Cl. 331—113)



1. An oscillator comprising a transistor having base, collector and emitter electrodes, a source of input potential, a load, a transformer having primary and secondary windings, means serially connecting said source of input potential, the emitter and collector electrodes of said transistor and said primary winding, a diode poled in the direction of forward emitter current flow in said transistor, a serially connected direct load current feedback path comprising said diode, said load, said secondary winding and the emitter and base electrodes of said transistor whereby a direct load current feedback is provided to said transistor.

3,159,801
PHASE MODULATOR
Warren C. Wiedemann, Tonawanda, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 15, 1961, Ser. No. 89,467
1 Claim. (Cl. 332—30)

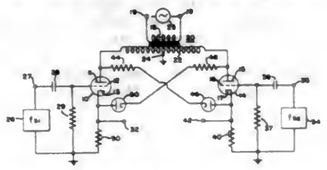


A reactance modulator for producing a variation in the phase of an applied carrier wave in accordance with the amplitude of and at the frequency of a modulating signal comprising, in combination, a transistor having base, emitter and collector electrodes, a source of positive potential, a voltage divider connected between said source of positive potential and ground, a point on said divider constituting a source of forward bias voltage to which said emitter electrode is connected, a source of carrier waves, means including a transformer coupling said source of carrier waves across said base and emitter electrodes, a circuit including a first resistor serially connected with a single parallel tuned inductance-capacitance circuit between said collector electrode and ground, said inductance-capacitance circuit being resonant at the frequency of said carrier waves and including an inductor and a voltage variable capacitor, a second resistor connected between said source of positive potential and one terminal of said voltage variable capacitor for applying a reverse bias voltage to said voltage variable capacitor, and means for superimposing said modulating signal upon said reverse bias voltage to vary the capacitance of said voltage variable capacitor in accordance with the frequency of said modulating signal, the magnitude of said forward bias voltage being less than said reverse bias voltage by an amount greater than the maximum amplitude of said modulating signal, whereby the voltage swing on the collector electrode of said transistor is maintained within a reasonably linear portion of the back bias region of the voltage-capacitance characteristic of said voltage variable capacitor and the resonant frequency of said tuned circuit and attendant phase shift of said carrier wave vary as a function of the amplitude of said modulating signal.

3,159,802
CANCELLATION OF LOW FREQUENCY COMPONENTS IN MODULATOR OUTPUT
Robert B. Dome, Geddes Township, Onondaga County, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,579
7 Claims. (Cl. 332—37)

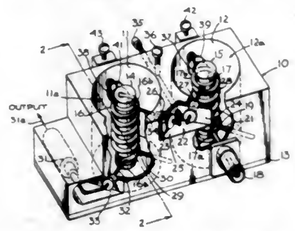
1. A modulator circuit for providing cancellation of modulating frequency components in the output thereof comprising, a first and a second electron discharge device each having a cathode, control grid and anode electrode,

a transformer having a primary winding and a secondary winding which has a center tap connected to a common reference potential, a modulation signal applied to said primary winding, means connecting said anode electrodes to opposite ends of said secondary winding, a first load circuit connected to the cathode of said first electron discharge device, a second load circuit connected to the cathode of said second electron discharge device, means for applying a first signal to be modulated by said modulation signal to the control grid of said first electron discharge



device, means for applying a second signal to be modulated by said modulation signal to the control grid of said second electron discharge device, first means coupled between the anode of said second electron discharge device and the cathode of said first electron discharge device for cancelling components of said modulating signal in said first load circuit, and second means coupled between the anode of said first electron discharge device and the cathode of said second electron discharge device for cancelling components of said modulating signal in said second load circuit.

3,159,803
DUAL COAXIAL CAVITY RESONATORS WITH VARIABLE COUPLING THEREBETWEEN
Joseph L. Czubiak, Canoga Park, Calif., Willis A. Finchum, Logan, Utah, and Thomas S. Inston, Jr., Canoga Park, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 30, 1960, Ser. No. 72,769
13 Claims. (Cl. 333—83)



7. In a coaxial cavity resonator suitable for use in environments wherein said resonator is subject to substantial mechanical vibration and temperature changes, said resonator being of the type having a body of electrically conductive material with a pair of cylindrical cavities therein, there being a pair of helical coils, one of said coils being disposed axially in each of said cavities and means for connecting one of said coils to an input and the other of said coils to an output means, the combination with said cavity resonator of a coupling means between said coils comprising:

a chamber in said body, said chamber being positioned adjacent each of said cavities;

a pair of elongated electrical conductors each having a free end and each having another end connected respectively to a predetermined point on each of said coils;

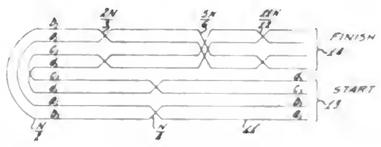
passageways in said body communicating between each of said cavities and said chamber and having electrical insulation means disposed therein, said conductors extending through said insulation means and into said chamber, said free ends of said conductors being disposed in spaced relationship;

and an element adjustably carried by and electrically connected to said body and extending into said chamber, an end of said element being positioned adjacent said spaced ends of said conductors whereby movement thereof relative to said ends of said conductors will alter capacitive coupling between the coils.

ERRATUM

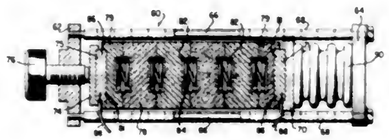
For Class 334—21 see:
Patent No. 3,159,782

3,159,804
WINDING TRANSPOSITION
Herbert F. Vogel, Terre Haute, Ind., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 25, 1961, Ser. No. 105,415
4 Claims. (Cl. 336—187)



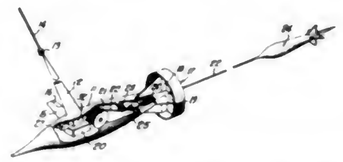
1. A cylindrically wound electrical winding for an induction apparatus, said winding having N number of turns and comprising an inside layer and an outside layer, each layer having first and second pairs of conductors, said winding having 180° pair transpositions at N/2 turns and also in said outside layer.

3,159,805
VARIABLE RESISTOR
Jean Bordeaux, Santa Ana, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,282
17 Claims. (Cl. 338—106)



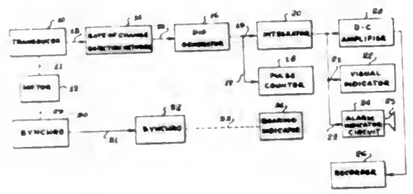
1. A variable resistor comprising in combination support means having a pair of members movable relative to each other in response to temperature variations, a series of solid resistance elements mounted between said members whereby said relative movement increases and decreases the pressure on said elements to vary the resistance of said series in response to temperature variations, insulating means mounted on each of said elements, resilient means between each adjacent pair of said elements engaging said insulating means and tending to separate said elements to maintain a uniform contact pressure between the adjacent elements throughout said series, means for connecting said series with an electrical circuit, and means for adjusting the initial relative positions of said movable members in accordance with the temperature range to be encountered.

3,159,806
HIGH SPEED TOW SONAR SYSTEM
Frank N. Piasecki, Tunbridge Road, Haverford, Pa.
Filed May 6, 1960, Ser. No. 27,454
6 Claims. (Cl. 340—3)



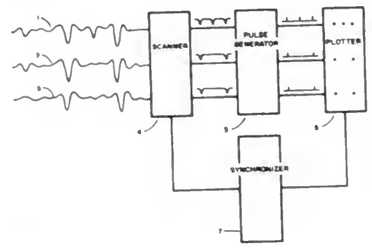
1. A system for detecting submerged submarines from an aircraft flying overhead along a selected search path at a search rate in excess of about 50 knots comprising a primary paravane adapted to be lowered into submerged position from the aircraft and drawn through the water by the aircraft at a selected, substantially uniform underwater velocity and submerged depth, said primary paravane having means automatically responsive to depth, course and attitude deviations of the primary paravane for maintaining the primary paravane at the selected subsurface depth, course and attitude, a satellite paravane adapted to be drawn through the water by said primary paravane in trailing relation to said primary paravane, said satellite paravane including sonar transmitting and receiving means for radiating sonar signals along preselected axes extending outwardly from said satellite paravane and receiving signals reflected from underwater objects in the path of said sonar signals, a tow line mechanically connecting said satellite paravane with said primary paravane, a reel in said primary paravane for winding and unwinding the tow line to alternately retrieve said satellite paravane toward said primary paravane and to cause said satellite paravane to retreat from said primary paravane, means to derive power from the waterstream in the course of travel of the primary paravane through the water to activate the reel in a direction to wind the tow line and propel the satellite paravane at a velocity exceeding that of the primary paravane, means for activating the reel to cause the satellite paravane to retreat from the primary paravane to ssume a water speed of less than about 20 knots, said sonar means being adapted to transmit and receive said signals only during said retreat period, and means for communicating signals indicative of the reflected sonar signals received by said receiving means to the towing aircraft.

3,159,807
SIGNAL ANALYSIS METHOD AND SYSTEM
George F. Asbury, Sr., Santa Barbara, Calif., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Mar. 24, 1958, Ser. No. 723,256
11 Claims. (Cl. 340—6)



4. A system for detecting signals propagated through an energy propagating medium from a localized sound signal source in the medium, comprising a transducer for producing an output responsive to properties of acoustic waves propagated through the medium which vary as a function of background noise and signals generated by the sound source, detector means responsive to occurrences of selected high rate-of-change waveform segments in the transducer output representing signals in a selected frequency band propagated through the medium and components of background noise for producing detector outputs denoting occurrence of said waveform segments, means for sensing the density of said detector outputs, and means responsive to densities of said detector outputs greater than densities attributable predominantly to non-Gaussian components of the background noise for producing distinctive output indications of the occurrence of the greater densities.

3,159,808
METHOD AND APPARATUS FOR PLOTTING SEISMIC DATA
Roy E. Garten, Jr., Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 15, 1958, Ser. No. 761,175
3 Claims. (Cl. 340—15.5)



1. A seismic data plotting means for a signal having distinguishing characteristics comprising:

(a) a seismic signal input means;

(b) a signal gating means;

(b_1) a signal biasing means;

(c) means connecting said seismic signal input means to said signal gating means;

(c_1) means connecting the input of said seismic input means to said signal biasing means;

(d) a pulse synchronizing means having an input connected to the output of said signal biasing means and forming pulses which are characteristic in time occurrence with a selected electrical characteristic of a seismic signal applied to said input means;

(e) means connecting the output of said pulse synchronizing means to said signal gating means in a manner adapted to unblock said signal gating means;

(f) indicator signal shaping means having a first input connected to the output of said signal gating means and a second input connected to said synchronizing circuit means and responsive to said pulses from said synchronizing means and said signal from said seismic signal input means wherein the signal will be formed at an output of said indicator signal shaping means which will be shaped in accordance with a selected characteristic of said input signal;

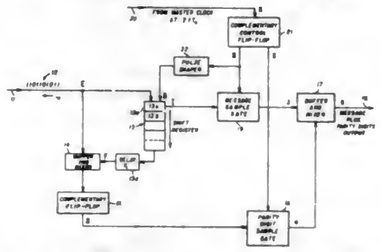
(g) a recording medium; and

(h) an indicating means having its input connected to an output of said indicator signal shaping means and for forming an image on the recording medium in opaqueness and length in correspondence with the variation in said selected electrical characteristic.

3,159,809
ERROR DETECTOR FOR DIGITAL COMMUNICATIONS

Stanley A. Fierston, Lynn, and Paul F. Marino, Burlington, Mass., assignors, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware

Filed Apr. 8, 1958, Ser. No. 727,103
13 Claims. (Cl. 340—146.1)

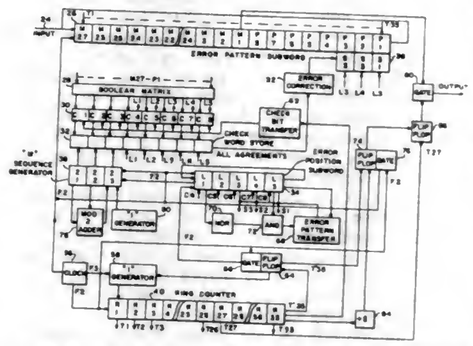


5. For a binary digital communication system utilizing a convolutional error detecting technique, means for producing parity digits from message digits, which comprises: a multi-stage shift register having an input connection and an output connection; means for applying said message digits sequentially to said input connection; means for shifting said digits through said register; means for performing a sum-modulo-two addition of the contents of said register each time said register shifts one of said digits including a single stage bi-stable element arranged for storing the sum-modulo-two addition of the contents of said register before each of said digit shifts; said bistable element having a single complementing input connected to said input and output connections; means for cancelling digits from the total of said addition; said means including connections from the input and output of register stages containing said digits to said complementing input of said bi-stable element; and means including signal delay means of different duration in said different connections to said complementing input for deriving said parity digits from the output of said bi-stable element.

3,159,810
DATA TRANSMISSION SYSTEMS WITH ERROR DETECTION AND CORRECTION CAPABILITIES

Philip Fire, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Mar. 21, 1960, Ser. No. 16,278
4 Claims. (Cl. 340—146.1)



1. For an electronic data processing system wherein information is processed in the format of digital sequences of binary coded electronic signals and said sequences include message digits and parity digits generated by convolutional processing of said message digits, error correcting apparatus including a decoder for said sequences, which decoder comprises: matrix means for processing said sequences in a cyclic parity-digit-generating operation wherein each message and each parity digit of said sequence is processed through each position of said matrix and is checked against other message and parity digits of said sequence in a separate operation for each position of said matrix to provide electronic signal indication of erroneous digits in said sequence; storage means, connected to said matrix means, for storing said indications of erroneous digits; first pulse shifting register means connected to said storage means for processing binary signal indication of the pattern of occurrence of said erroneous digits; second pulse shifting register means connected to said first shift register means for indicating, in combination with said first shift register means, the location of said erroneous digits within a given format; means for cycling said first and said second shift register means to achieve a desired relationship between the signal contents of said registers and said storage means; and, means responsive to said achievement of said relationship for implementing correction of erroneous digits in said sequences.

3,159,811
PARITY SYNCHRONIZATION OF PULSE CODE SYSTEMS

Dennis B. James, Bernardsville, and William T. Wintringham, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 29, 1961, Ser. No. 120,718
16 Claims. (Cl. 340—146.1)



1. In apparatus for reconstituting a message from incoming groups of two-valued pulses developed at a transmitter station, each group being composed of (*a*) a code word representing a parameter of said message and (*b*) at least one parity check pulse of a value such that the number of pulses in the entire group normally meets a specified constraint, whereby each occasional departure from said constraint is indicative of a corresponding occasional error, said apparatus requiring, for correct message reconstitution, a particular phase relation between its operations and operations conducted at the transmitter station, said apparatus including means for monitoring incoming pulse groups, means for deriving from said monitoring means an indication of each departure from said constraint, and means for recovering said particular phase relation, when once lost, which comprises means for also determining, from said monitoring operation, the frequency of incidence of said departures and, means, operative upon an abnormal incidence frequency of said departures, for altering the existing phase of said receiver operations.

3,159,812
FRAME SYNCHRONIZATION OF PULSE TRANSMISSION SYSTEMS

Joel S. Engel, Palisades Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 26, 1962, Ser. No. 182,559
5 Claims. (Cl. 340—146.1)

2. A data transmission system in which message data is generated in fixed length words on one line and a start pattern time interleaved with said words is generated on another line comprising

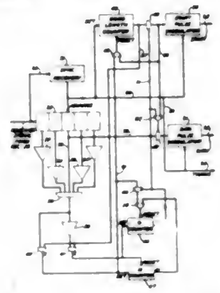
means for transmitting said message data and start pattern as a continuous binary signal to a remote point, and

means at said remote point for separating said message data and said start pattern from said continuous signal into two distinct channels, said last means comprising

start detector means uniquely responsive to said start pattern whether it is a true start pattern or a similar pattern occurring within the message data and producing a corresponding output,

first counting means producing an output at intervals equivalent to said fixed word length,

a start pulse modulator controlled by the output of said first counting means and having an output to a start channel,



first coincidence means responsive to concurrent outputs of said detector means and said first counting means for resetting said first counting means,

second coincidence means responsive to the concurrence of the complement of the output of said detector means and the direct output of said first counting means for producing an error output,

a data pulse modulator normally connected to said start detector for producing a data channel output,

second counting means responsive to the output of said second coincidence means for producing an output after a predetermined number of successive error signals are received, the output of said second counting means blocking the inputs to said start and data modulators, and

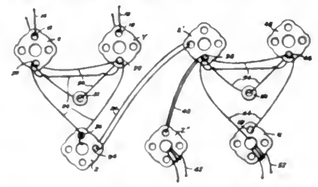
third counting means responsive to an output from said first coincidence means for producing an output after a preassigned number of successive resynchronizing start patterns are counted, the output of said third counting means resetting said second counting means thereby restoring said separating means to normal.

3,159,813
BINARY COMPARATOR

Edward C. Dowling, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey

Filed May 31, 1962, Ser. No. 198,949
5 Claims. (Cl. 340—146.2)

4. A magnetic core binary comparator comprising a first and a second MAD core having inputs adapted to receive separate input signals to be compared, a third MAD core, a first coupling winding threading in opposite senses an output minor aperture of said first core and an output minor aperture of said second core and threading in opposite senses a pair of input minor aperture portions of said third core, a fourth MAD core which continually transmits a binary one, a first output magnetic core, a second coupling winding which threads in opposite senses an output minor aperture of said third core, an output minor aperture of said fourth core and said first output core, advance O to E drive means threading the major apertures of said first and second cores and

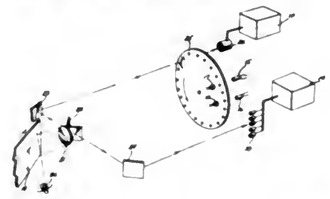


threading said fourth core to set a one therein, advance E to O drive means threading the major apertures of said third and fourth cores, and prime drive means threading said output minor apertures.

3,159,814
SCAN SYSTEMS

Jacob Rabinow, Takoma Park, Md., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed May 26, 1960, Ser. No. 32,004
16 Claims. (Cl. 340—146.3)

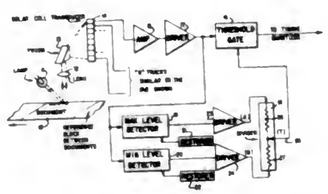


1. In a character reading machine having register means, a character sampling scan system for a randomly positioned character comprising means for scanning a character with a scanning element having successive positions relative to the character and producing a scan field larger than the character, the element-to-character motion forming contorted and interlaced lines across the character which are spaced widely in comparison to the size of the element, and means fed by the elemental differences detected by the scan system to generate a signal voltage for feeding said register means each time that a scan line crosses an element of the character.

3,159,815
DIGITALIZATION SYSTEM FOR MULTI-TRACK OPTICAL CHARACTER SENSING

Douglas C. Groce, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 29, 1961, Ser. No. 155,669
6 Claims. (Cl. 340—146.3)



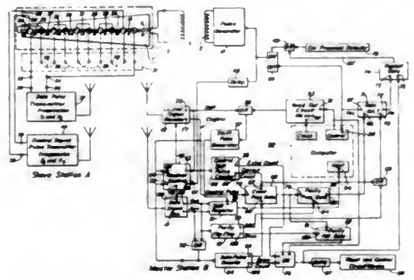
1. A character sensing system for identifying an unknown black character with white background wherein contiguous segments of said unknown character are scanned sequentially by a transducer means sensitive to radiant energy reflected from said segments and wherein

said transducer means includes a plurality of individual transducers associated with individual continuous discrete areas of said segments for converting the radiant energy impinging thereon to individual electrical signals that comprises a signal channel associated with each of said individual transducers, said signal channel including a maximum signal level detector, a minimum signal level detector, a threshold gate, means to feed in parallel separate paths the electrical signal output from said channel transducer to said detectors and to said gate, means to bias said maximum signal level detector to provide a maximum signal level output therefrom indicative of a maximum black discrete area seen by said channel transducer, means to bias said minimum signal level detector to provide a minimum signal level output therefrom indicative of a maximum white discrete area seen by said channel transducer, means to bias said gate at a predetermined percentage of the difference between said maximum and minimum signal levels whereby said gate passes only those signal levels above the bias thereof and the outputs of all of said gate serve to identify said unknown character.

3,159,816
CENTRAL TO REMOTE INTERROGATION SYSTEM

Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 31, 1961, Ser. No. 113,856
11 Claims. (Cl. 340—147)

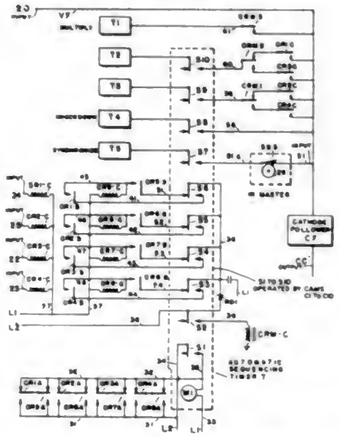


1. A communication system comprising: a plurality of individually coded slave stations each including passive circuit means for developing two groups of bi-polar time spaced pulses in response to a received interrogating signal, one group representing specific data associated with an individual slave station in binary form and the other group representing a control signal marking the spaces between said data pulses; means for transmitting said data and control signal pulses on first and second pairs of polarity-oriented frequencies respectively: and at least one master station including means for interrogating said slave station; means for alternately receiving said data and control signal pulses respectively; means for selectively routing and storing said received binary data; means responsive to respective received data and control signal pulses for determining the correspondence between the pulses developed and transmitted by the interrogated slave station and the pulses received by the master station; means responsive to error signals developed by said last mentioned means for causing the re-interrogation of said slave station; and means responsive to said error signals and to a signal signifying the completion of a successful data reception for returning the master station equipment to its initial operating condition.

3,159,817
TRAFFIC SIGNAL CONTROL TONER SEQUENCER AND RESPONDER

George Donald Hendricks, Campbells Island, Ill., Thomas B. Bartlett, Davenport, Iowa, and Garland E. Fieser, East Moline, Ill., assignors, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Sept. 14, 1959, Ser. No. 839,849
5 Claims. (Cl. 340—171)



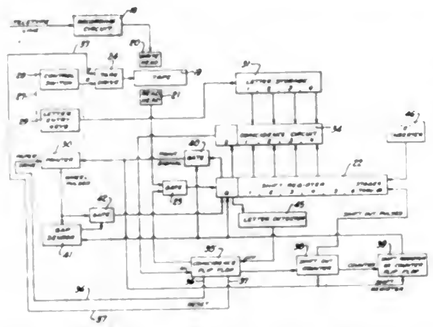
1. A tone sequence timing and switching circuit comprising a plurality of function control conductors energizable into a number of control combinations, a like plurality of function control relays connected to said function control conductors, a like plurality of slow break relays each having an electric latch circuit and an electric unlatch circuit, a sequence timer having a plurality of timed control channels and a drive motor, a motor starting circuit including contacts closed when one of said function control relays is energized and including other contacts interrupted when a corresponding one of said slow break relays is energized, each of said electric latch and unlatch circuits including one of said timed control channels, and an output circuit including an output terminal, a plurality of tone generators, a plurality of normally open parallel paths between said output terminal and said tone generators, each said path including one of said timed control channels and at least one other contact controlled by said function control relays.

3,159,818
DATA STORAGE SYSTEM WITH SELECTIVE READOUT

John R. Scantlin, Los Angeles, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Apr. 8, 1960, Ser. No. 20,965
12 Claims. (Cl. 340—172.5)

10. In a data storage system, with each piece of data including an identifying code and an information section, the combination of: an endless tape having a forward direction and a reverse direction and having a relatively large storage capacity; a write unit for writing the identification code and information section of data into said tape seriatim as received without a predetermined address; a read unit for reading data from said tape; first means for driving said tape past said write unit in the forward direction at a relatively low continuous rate; second drive means for driving said tape past said read unit in the forward and reverse directions on command and at a relatively high rate; a shift register operable in forward and reverse directions and having a relatively small storage capacity; first switch means having an on position for connecting said read unit to said shift register when said second drive means is operating in the reverse direction for continuously storing in said shift register in the reverse direction, the latest portion of the data read from said tape, and an off position for disconnecting said read unit from said shift register; an inquiry storage unit for storing the identifying code of a particular piece of data; a coincide circuit for comparing the input portion of said shift register contents with said storage unit contents to identify a particular piece of data; an output device; means for transmitting data from said shift register in the

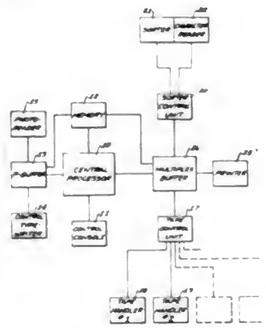


forward diretcion to said output device; second switch means having an on position for connecting said shift register to said transmitting means and an off position for disconnecting said shift register from said transmitting means; and control means for moving said first switch means to the off position and said second switch means to the on position when coincidence exists in said coincidence circuit, and moving said first switch means to the on position and said second switch means to the off position when a complete piece of data is transmitted to said output device and the identifying code of the next piece is shifted into the input portion of said shift register.

3,159,819
TAPE CONTROL SYSTEM

Robert B. Wright, Jr., Saratoga, Calif., assignor to General Electric Company, a corporation of New York

Filed July 29, 1960, Ser. No. 46,166
9 Claims. (Cl. 340—172.5)



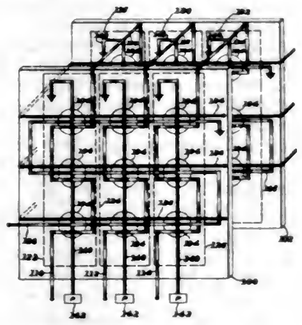
1. For use with a data storage means employing a longitudinal data storage member, wherein elements of data are stored on said member in a plurality of data rows oriented parallel to the length of said member, said elements being stored in a plurality of discrete regions spaced apart along the length of said member, wherein said data elements are further disposed in each of said regions in a plurality of data columns oriented transversely to the length of said member, a predetermined number of adjacent data columns storing all of the elements of a data word, and wherein said member is provided with an additional data row oriented parallel to the length of said member for storing first and second data markers denoting respectively the beginning and ending of each of said regions, the combination comprising: writing means responsive to input signals for recording said data markers in said additional data row, means for generating a first control signal when said markers are to be recorded in said additional data row and for generating a second control signal when markers for a predetermined one of said regions are to be erased; a signal source coupled to said writing means and responsive to said first control signal for supplying said input signals to said writing means; means coupled to said signal source and responsive to said first control signal for maintaining therefrom the continued supply of said input signals following the writing of said second data markers; first reading means for sensing the markers stored in said additional row and for delivering marker signals representing the markers sensed thereby when relative motion is provided between said member and said first reading means; erasing means for erasing said markers in response to an actuating signal received thereby; means responsive to said second control signal for providing relative motion between said member and said first reading means; erase initiating means coupled to receive said marker signals and responsive to the first one of said marker signals received corresponding to said predetermined region for generating a third control signal; an actuating signal generator responsive to a first signal received thereby for generating said actuating signal and responsive to a succeeding second signal received thereby for terminating said actuating signal; means coupling said third control signal to said actuating signal generator, whereby said actuating signal is generated; means coupling said actuating signal to said erasing means; erase terminating means coupled to receive said marker signals and responsive to one of said marker signals received following said first marker signal for generating a fourth control signal; means coupling said fourth control signal to said actuating signal generator, whereby said actuating signal is terminated; second reading means for reading said data columns in sequence and delivering successive signal sets, each signal set representing the data elements stored in a corresponding data column; a multiple state device for assuming cyclically and in sequence a plurality of different settings, said different settings including a group of hold settings equal in number to said predetermined number of columns storing all of the elements of a data word, said multiple state device remaining in each of said hold settings until after said second reading means delivers the next one of said signal sets; means responsive to said settings of said multiple state device for delivering corresponding output signals, means coupled to said multiple state device and responsive to each one of said signal sets for transferring said multiple state device from the one of said hold settings which it is assuming to the next sequential one of said settings; and means coupled to said multiple state device and responsive to each one of said output signals representing one of said next sequential settings for transferring said multiple state device in sequence through the ones of said settings following said one next sequential setting and into the next succeeding one of said hold settings.

3,159,820
INFORMATION STORAGE DEVICE
Hoeckley Oden, Korntal, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1960, Ser. No. 57,927
Claims priority, application Germany, Oct. 3, 1959, I 17,066
2 Claims. (Cl. 340—173)



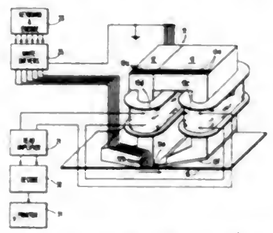
1. An information storage device for use in an automatic dialling system comprising a first plurality of conductors and a second plurality of conductors arranged to form a coordinate array of crosspoints, each crosspoint comprising a pair of closely spaced fixed electrodes mounted on the same side of a plate of insulating material, means connecting one of each of the fixed electrodes to one of the first plurality of conductors, means connecting the other fixed electrode of said pair to one of the second plurality of conductors, said fixed electrodes normally having a certain capacitive coupling therebetween, means for changing the said capacitive coupling comprising a strip of insulating material for each conductor of the first plurality, a plurality of auxiliary electrodes mounted on said strip, said strip movably inserted justaposed and parallel to the face of the said plate upon which the fixed electrodes are mounted so that said auxiliary electrodes overlap the fixed electrodes to change the capacity therebetween, a plurality of read-out means, there being at least one for each conductor of the first plurality, means responsive to the operation of any of said read-out means for applying a potential to the corresponding conductor of said first plurality, and means for translating the capacitive coupling characteristics between conductors of said first plurality and said second plurality of conductors into signals characteristic of the said read-out means operated.

3,159,821
MAGNETIC CORE MATRIX
Thomas D. Rossing, Northfield, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 25, 1957, Ser. No. 686,152
23 Claims. (Cl. 340—174)



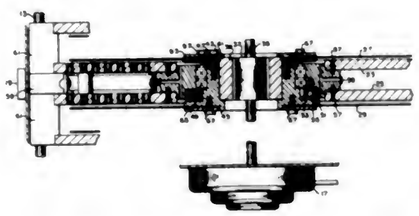
6. A memory matrix system comprising a plurality of physical memory planes each having a plurality of sets of bistable magnetic cores with each set including a different plurality of cores, each different set in each different plane being a different binary word register, writing means for changing the state of each of said cores selectively wherein said means includes first and second winding means for each core for carrying coincident currents respectively to cause a field along the remanent axis of magnetization in the cores, the first winding means for each core in a given plane being interconnected in series and the second winding means for the cores in a given register in each plane being serially interconnected, and a plurality of interrogating means separate from said writing means each linking a different one and only one of said sets for causing the state of the cores in the respective registers to be interrogated.

3,159,822
MULTI-ELEMENT MAGNETIC TRANSDUCER
Jacob J. Hagopian, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 22, 1962, Ser. No. 167,753
7 Claims. (Cl. 340—174.1)



1. Apparatus for magnetically recording a plurality of signals and for reading back said signals comprising
a magnetic core structure including a pair of leg portions and a narrow read gap defined thereby,
a plurality of electrically separate windings in one leg portion of said core structure, said plurality of windings forming separate magnetic recording elements extending parallel to the read gap,
means for simultaneously supplying a plurality of signals to be recorded to said windings to simultaneously record said signals on a cooperating magnetic record member,
and a single magnetic reading winding on a leg portion of said core structure for sequentially reproducing the signals recorded by said plurality of recording elements.

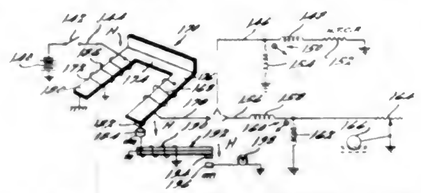
3,159,823
MAGNETIC DISC STORAGE DEVICE
Frederick J. T. Dow, North Billerica, Richard E. Morley, Bedford, and William J. Gorman, Billerica, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Feb. 28, 1964, Ser. No. 348,223
6 Claims. (Cl. 340—174.1)



1. A magnetic memory utilizing a plurality of flexible discs, each supporting a magnetic recording medium, comprising a plurality of modules, each module including:
(*a*) a pair of annular stabilizing plates fabricated from a non-magnetic material;

(*b*) a plurality of pairs of magnetic pole pieces embedded in and passing through each of the pair of stabilizing plates;
(*c*) means for holding the pair of stabilizing plates in a parallel relationship and permitting a fluid to flow therebetween;
(*d*) a magnetic transducer slidably mounted between the pair of stabilizing plates and adapted to coact, at any time, with but a single pair of the plurality of magnetic pole pieces in each of the stabilizing plates;
(*e*) a first and a second flexible disc supporting a magnetic recording medium rotatably mounted adjacent, respectively, to the free sides of the pair of stabilizing plates;
(*f*) means for rotating the first and the second flexible disc to establish a spacing between each such disc and the corresponding stabilizing plate; and,
(*g*) means for positioning and energizing the magnetic transducer to record, through a single pair of magnetic pole pieces, information on the first and the second flexible disc.

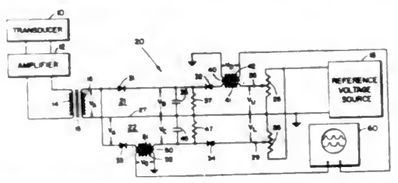
3,159,824
ELECTRICAL CONTROL SYSTEM
Leonard Boddy, Ann Arbor, Mich., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Original application Sept. 23, 1955, Ser. No. 536,160, now Patent No. 3,010,097, dated Nov. 21, 1961. Divided and this application Oct. 9, 1961, Ser. No. 143,699
17 Claims. (Cl. 340—213)



7. In a gauging system, a source of voltage, a current modulating sensing device for varying current as a continuous function of variations of a condition which it is sensing, a gauging element for gauging said variations of current and having a sensing winding and a voltage-variation compensating winding, a signal relay having a sensing winding and a voltage-variation compensating winding and a pair of contacts having open and closed states, means connecting said source, said device and said sensing windings in circuit with one another, and means connecting said voltage-variation compensating windings for continuous energization from the source to a degree independent of the state of said contacts.

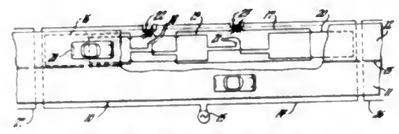
3,159,825
ELECTRONIC MONITORING MEANS
Eduardo A. Bianchi and Roger N. Blunt, Rochester, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,948
11 Claims. (Cl. 340—248)

1. A device for indicating whether or not a system parameter has exceeded prescribed operating limits comprising transducer means for converting said parameter into an alternating current signal voltage of magnitude proportional to the magnitude of said parameter, detector means having first and second branches each receptive of said signal voltage, said first branch including input means for receiving a first alternating current reference voltage whose magnitude is adjusted to a value representative of an upper limiting value for said parameter, said second branch including input means for receiving a second alternating current reference voltage of magnitude representative of a lower limiting value for said parameter, the phase of said reference voltages being opposite to that of said signal voltage, each of said branches further including unilateral conducting means and a capacitor coupled to said signal input voltage and to the corresponding reference voltage whereby a potential is established across said capacitor, each branch including an output means connected in series



with said unilateral conducting means, said unilateral conducting means in said first branch being reverse biased when the magnitude of the signal voltage is greater than that of said first reference voltage, said unilateral conducting means in said second branch being reverse biased when the magnitude of the signal voltage is less than that of said second reference voltage, said output means of each branch providing pulses only when the corresponding unilateral conducting means is forward biased, and an indicator coupled to both of said output means.

3,159,826
OBSTACLE DETECTION SYSTEM
Harold M. Morrison, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 17, 1960, Ser. No. 15,629
4 Claims. (Cl. 340—258)

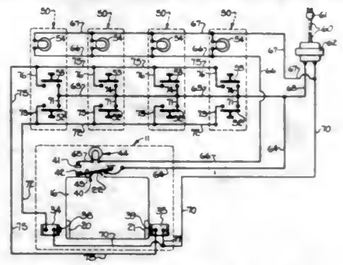


1. In a system for detecting the presence of obstacles in a given area, a primary loop surrounding said given area, an alternating current source exciting said primary loop, first and second pairs of secondary loops located in said given area, each of said pairs of secondary loops being connected in series opposition such that the voltages induced in the respective loops of each pair are of opposite polarity, the sum of which voltages is normally zero, adjacent second loops in said first and second pairs being positioned such that each of the secondary loops encompasses a portion of the area encompassed by the adjacent secondary loop whereby said system will be responsive to obstacles at any position within said given area.

3,159,827
ANNUNCIATOR FOR THE ENTRANCE OF A DWELLING OR THE LIKE
William G. Wellein, St. John Vianney Hall, Victoria Road, Asheville, N.C.
Filed Jan. 25, 1962, Ser. No. 168,685
5 Claims. (Cl. 340—330)

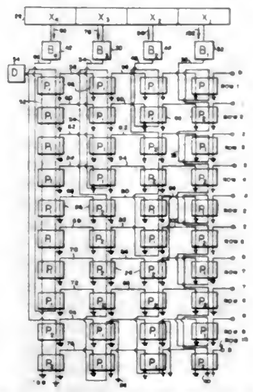
1. A signalling device for use at the entrance of a dwelling house or the like comprising a housing including a front wall at least a portion of which is transparent, a first plate member slidably mounted within said housing opposite said transparent portion so as to be visible therethrough and having indicia provided on the front face thereof and arranged thereon in a predetermined pattern,

a pair of magnetic members mounted on opposite ends of said first plate member, a second plate member mounted within said housing in juxtaposed relation to said first plate member between said first plate member and said front wall, said second plate member having openings formed therein in the same pattern as the pattern in which the indicia is arranged on said first plate member, magnetic means disposed within said housing adjacent the op-



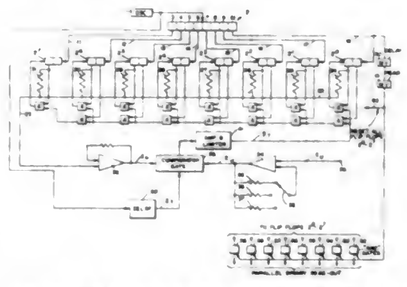
posite ends of said first plate member and said magnetic members and selectively operable to attract said magnetic members for moving said first plate member between a first position wherein the indicia thereon is out of alinement with the openings in said second plate member and a second position wherein the indicia thereon is in alinement with and visible through the openings in the second plate member.

3,159,828
BINARY TO DECIMAL MATRIX CONVERTER
William W. Davis, Minneapolis, Minn., and Arthur V. Pohm, Ames, Iowa, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 24, 1959, Ser. No. 855,206
16 Claims. (Cl. 340—347)



13. Apparatus for receiving signals on a plurality of input lines and generating a related signal upon at least one of a plurality of output lines comprising a matrix having a column for each input line and a row for each output line, a discrete saturable transformer device for each matrix intersection, the devices in each row being placed in states of saturation according to a binary code representation, the arrangement being such that each row stores a different binary word and each of all the contemplated binary words are stored in some row of the matrix, means intercoupling the transformer devices in each row to the next adjacent device for propagating a signal thereto, means coupling only the last device in each row to a different output line, and means coupled to the devices of the column representing the most significant digit for activating the intercoupling means associated with the transformer devices which have achieved correspondence with the input signal placed thereon, the arrangement being such that the signals caused by said intercoupling means activation propagates along each row to the next successive device, and continues so propagating in those rows where transformer device correspondence is achieved with the respective input signals thereon, said propagating signals being blocked where there is no correspondence, the end result being the activation of the output line associated with the row of devices in which complete correspondence is achieved.

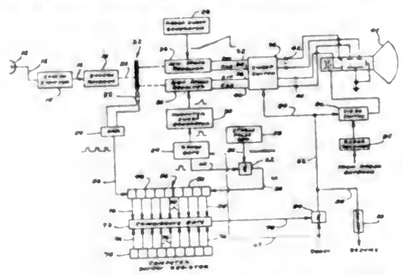
3,159,829
ANALOGUE-TO-DIGITAL CONVERTERS
Robert N. Straehl, Pittsford, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Continuation of application Ser. No. 623,359, Nov. 20, 1956. This application Apr. 14, 1961, Ser. No. 103,693
5 Claims. (Cl. 340—347)



5. In an analogue-to-digital converter, a series of flip-flops, a clock pulse source, means responsive to said source for successively triggering and setting the flip-flops, a bus, a digit-voltage source associated with each flip-flop, the voltage of each source having a distinctive weighted value and being adapted to be applied to said bus by each flip-flop as the associated flip-flop is set; a comparator-gate having a controlled circuit and a controlling circuit, the controlling circuit being responsive to the relative values of the sum of the digit-voltages on said bus and the value of the voltage to be converted, a delay circuit, said delay circuit and said controlled circuit being connected in series and to said clock pulse source, means responsive to clock pulses which are passed by the delay and controlled circuit for resetting each flip-flop after the flip-flop is set and before the next clock pulse and for leaving each flip-flop in set condition the trigger pulse of which is not passed by said comparator-gate, and means for identifying and reading out the flip-flops which remain set after the clock pulse source has triggered all of said flip-flops.

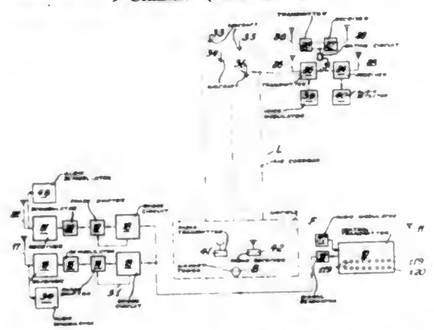
3,159,830
METHOD AND APPARATUS FOR VISUAL PRESENTATION OF DIGITAL AND ANALOG INFORMATION
Malcolm Macaulay, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1961, Ser. No. 96,274
9 Claims. (Cl. 343—5)

7. In a combination with digital computer apparatus, means for producing a visual display of both radar information and computer generated information comprising: cathode-ray tube display means adapted to receive radar information from a radar receiver; means for generating sweep signals; means for resolving said sweep signals into two sinusoidal components which are functions respectively of the sine and cosine of an angle which is related to the orientation angle of a rotating antenna; switch means adapted to connect said components produced by said resolving means to the deflection circuit of said display means to establish a rotating trace on the face of said display means; register means for holding digital information to be displayed; counting means; means for advancing said counting means by an amount which is a function of said orientation angle and of the period of said sweep signals; means connected to the



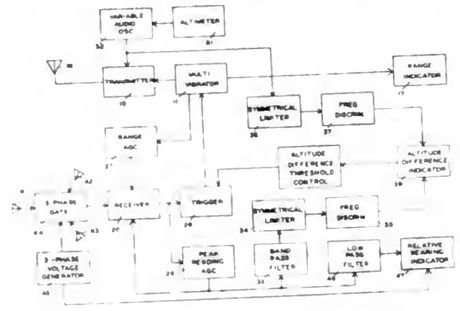
output of said register means and said counting means for producing an output pulse when the digital information in said register is equal to that in said counting means; and means responsive to said pulse for operating said switch means and for intensifying said trace to present a visual spot at the location defined by the information contained in said register whereby said cathode-ray tube display means is prevented from receiving radar information for a period sufficient for said cathode-ray tube means to display said information contained in said register.

3,159,831
AIR TRAFFIC CONTROL
Herbert Muth, Neu-Ulm (Danube), Germany, assignor to Telefunken Aktiengesellschaft, Berlin, Germany
Filed June 4, 1958, Ser. No. 739,913
Claims priority, application Germany June 5, 1957
9 Claims. (Cl. 343—6)



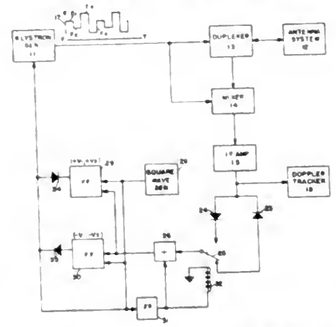
7. The method of indicating on a single board the distances of a plurality of aircraft in an air corridor from a central station, including the steps of transmitting to the aircraft in the corridor a signal modulated by a low frequency and further modulated by a selective aircraft call frequency for enabling the voice communication channel and the transmitter in the aircraft corresponding with the particular selective call frequency transmitted; automatically rebroadcasting the low-modulated frequency from the selected aircraft on a carrier; receiving the low-frequency modulated carrier at the central station; determining the phase-delay between the transmitted low frequency and the low frequency received at the station from the aircraft; and displaying markings on the board in adjacent columns each representing an aircraft and indicating the phase delays measured and hence the distance from the station to the selected aircraft.

3,159,832
ANTI-COLLISION DEVICE FOR AIRCRAFT
Jerome R. Cox, Jr., Kirkwood, Mo.
(415 Wickworth Lane, Sunset Hills, Mo.)
Filed Sept. 19, 1958, Ser. No. 761,984
12 Claims. (Cl. 343—7.5)



1. A pulse return radio system for the prevention of midair aircraft collisions comprising;
means for repetitively transmitting a series of radio pulses on a prescribed carrier frequency;
a radio receiver for receiving radio pulses at said prescribed carrier frequency and including a detector;
trigger means controlled by the receipt of radio pulses, on said prescribed carrier frequency, by said radio receiver, for increasing the rate of transmission of radio pulses by said transmitting means;
means for measuring the repetition rate of pulses received by the receiver and indicating the distance between the two aircraft; and
means comprising a peak reading automatic gain control for reading the peak voltage output of the detector and for compensating for slow fading and irregularity in atmospheric propagation.

3,159,833
HYBRID DOPPLER NAVIGATOR
Ivan A. Greenwood, Jr., Stamford, Conn., assignor to General Precision, Inc., a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 156,094
6 Claims. (Cl. 343—8)



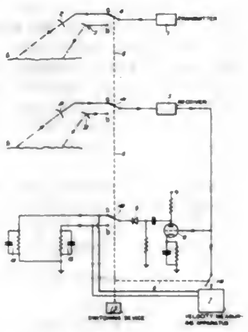
1. A Doppler radio navigator comprising, a microwave generator, control means for periodically varying the frequency of the generator output to provide more than two different frequencies which are cyclically repeated, duplexing means for connecting the microwave generator

output to an antenna system and for connecting the received back-scattered energy from said antenna to a mixing means, means for connecting the microwave generator output to said mixing means, an intermediate frequency amplifier having a predetermined center band transmission frequency responsive to said mixer output, a Doppler receiver responsive to the output from said intermediate frequency amplifier for providing the velocity of the antenna along its ground track and the drift angle thereof, and means responsive to the intermediate frequency amplifier output for comparing the relative amplitudes of two preselected intermediate frequencies from said amplifier to provide an error signal indicative of the magnitude and direction of deviation of said two preselected intermediate frequencies from a preset frequency and for applying said error signal to the control means which adjusts the frequency of the microwave generator to null the error signal.

3,159,834
DOPPLER RADAR SYSTEMS

Giorgio Domenico Flocco, Essex, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Aug. 10, 1959, Ser. No. 832,515
Claims priority, application Great Britain, Oct. 16, 1958, 33,094/58
5 Claims. (Cl. 343—9)



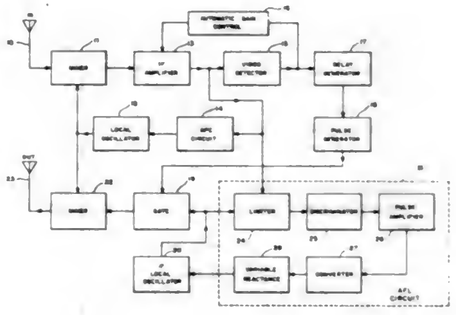
1. An airborne speed or drift indicating Dopplar radar system of the kind in which velocity measurement is effected by transmitting radio energy obliquely down to the earth's surface and in at least one direction with respect to the heading of the craft carrying said system, and observing the Doppler frequency shift produced in the reflected energy, said system including means for transmitting said radio energy downward at a number of different fixed angles of depression and means for comparing the strengths of the echo signals reflected back and corresponding to the radio energy transmitted at said different angles of depression to derive information for correcting the velocity measurements.

3,159,835
AUTOMATIC FREQUENCY LOCKING CIRCUIT

Willis Gore, Baltimore County, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland

Filed Aug. 22, 1958, Ser. No. 758,169
5 Claims. (Cl. 343—17.7)

4. In a test set for calibrating the range of a radar set:
(*a*) means to receive from the radar set a radar signal composed of a sequence of RF radar pulses;
(*b*) means including a first oscillator to convert said RF radar pulses to an IF radar signal composed of a sequence of IF radar pulses;
(*c*) means to convert said IF radar pulses to a sequence of video pulses;
(*d*) means to convert said video pulses to a sequence of trigger pulses delayed in time relative to said RF radar pulses;
(*e*) means including a second oscillator responsive to said trigger pulses for producing a sequence of IF echo pulses delayed with respect to said IF radar pulses; and
(*f*) an automatic frequency locking circuit responsive to said IF radar pulses and the output of said second oscillator for automatically tuning the latter to the same frequency as said IF radar pulses when the frequency of said second oscillator is removed from the frequency of the IF radar pulses by an amount greater than half the difference between the frequency of the IF radar pulses and one of the first sidebands of the IF radar signal,



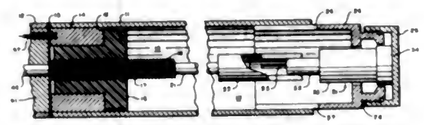
said second oscillar producing a CW signal whose amplitude is less than the amplitude of said IF radar signal, and said automatic frequency locking circuit comprising:
(f_1) limiter means responsive to a portion of said IF radar signal and a portion of the output of said second oscillator for producing a signal at the frequency of the latter during the interval between the pulses of the IF radar signal at the frequency of the last mentioned pulses during such pulses; and
(f_2) discriminator means responsive to the signal out of said limiter means for producing, when there is a frequency difference between the pulses of the IF radar signal and the signal of said second oscillator, a pulsed output whose repetition rate is equal to said frequency difference.

3,159,836
PASSIVE BEACON

John F. Zaleski, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware

Filed Dec. 23, 1960, Ser. No. 78,045
6 Claims. (Cl. 343—18)

1. A passive beacon for modulating and reradiating incident radio frequency energy of a predetermined frequency, comprising, an antenna resonant at said predetermined frequency, a circuit coupled to and resonant at the same frequency as said antenna, a varactor positioned and connected in said circuit to be subjected to potential variations induced in said circuit by radio frequency energy incident on said antenna whereby the impedance of said varactor is varied, and an inductance having a high

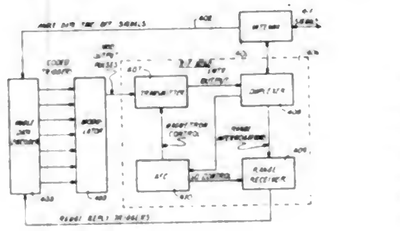


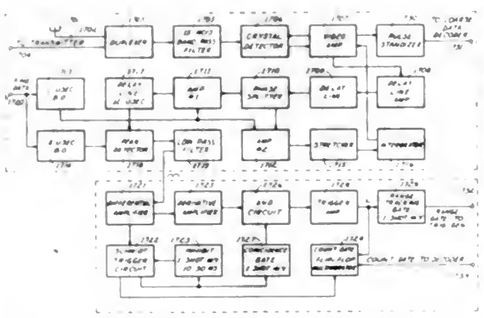
impedance at audio and radio frequencies connected across the terminals of said varactor.

3,159,837
AUTOMATIC LANDING CONTROL SYSTEM USING SCANNING INTERFEROMETER BEAMS

Alvin Guy Van Alstyne, Burton Cutler, and Donovan C. Davis, Los Angeles, Calif., assignors, by mesne assignments, to ITT Gilfillan Inc., Los Angeles, Calif., a corporation of Delaware

Filed Mar. 15, 1960, Ser. No. 15,233
11 Claims. (Cl. 343—107)



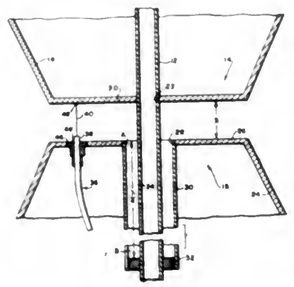


10. An electronic approach and landing system for aircraft comprising: at least one ground installed antenna adapted for angular scanning of a sector of space, said antenna having a null within the radiation pattern in the direction of scan; radio frequency generating means connected to energize said antenna; means operatively coupled to said antenna to cause said angular scanning; means responsive to the angular scanning position of said antenna to generate an angle data signal continuously representative of the scanning direction of said antenna; modulating means responsive to said angle data signal for modulating the emission of said radio frequency generating means in accordance with said angle data; airborne receiving means for detecting said null and to receive coded modulation from said modulated emission; and airborne means responsive to said coded modulation and said detected null for sampling the value of said coded modulation during the time of occurrence of said null and generating a corresponding angle representing signal.

3,159,838
VERTICALLY STACKED HOLLOW DIPOLES CONDUCTIVELY SUPPORTED ON A MAST

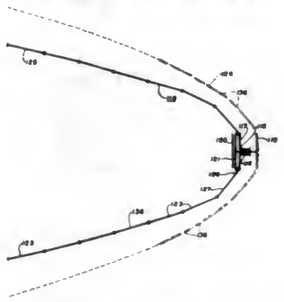
Felix B. Facchine, Springfield, Va., assignor to Aero Geo Astro Corporation, Alexandria, Va.

Filed Jan. 19, 1962, Ser. No. 167,256
3 Claims. (Cl. 343—792)



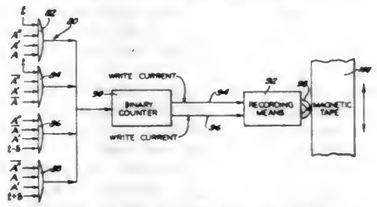
1. A microwave antenna for use over a predetermined band of frequencies comprising at least one plurality of first and second dipole paired elements, each of said elements of each dipole pair being a hollowed structure substantially defined by a selected surface of revolution, each hollowed structure having a uniform truncation in the vicinity of one end of the axis of revolution thereof with a substantially flat end plate section of selected surface area mechanically connected to said structure at said truncation thereof and adapted to cover said truncation thereof, each of said end plate sections having a central aperture therein of selected dimension and configuration; an antenna mast structure; said elements of each of said dipole pairs being disposed on said mast structure in axial alignment therewith and with respective end plate sections in parallel coadjacent relation with a predetermined spacing therebetween; first and second means electrically and mechanically connecting said end plate sections of said first and second dipole paired elements, respectively, to said mast structure, at least one of said first and second means being a metallic tubular section surrounding said mast structure such that said tubular section is coaxial with both said mast structure and its respective dipole element, said tubular section having a predetermined length substantially $n\lambda/4$ at the center frequency of said predetermnied band of frequencies where λ is the wavelength and n is an odd integer, said tubular section being electrically and mecahnically connected to said mast structure at one end and to its respective end plate section at the other end thereof; wave energy input means for energizing said first and second dipole elements at a location on their respective end plate section surfaces intermediate said central aperture and the outer edge of said end plate section surface, said location being in the vicinity of the outer edge thereof such that the antenna wave energy radiation pattern is substantially free of feed discontinuity interference.

3,159,839
DRIVEN DIPOLE COUPLED TO A COLINEAR ARRAY SPACED WITH RESPECT TO THE FIRST FRESNEL ZONE
Donald L. Hings, 281 N. Howard Ave., Vancouver, British Columbia, Canada
Original application July 7, 1955, Ser. No. 520,606, now abandoned. Divided and this application May 5, 1959, Ser. No. 811,035
19 Claims. (Cl. 343—819)



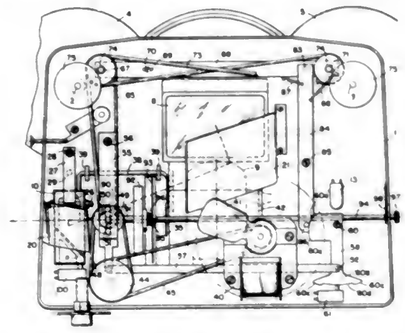
1. A directional antenna comprising, a driven element having a first Fresnel zone, and a plurality of parasitic elements each substantially resonant to the frequency of said antenna and spaced along a curved line lying generally parallel to and space-phased approximately ninety degrees on the inner side of said first Fresnel zone.

3,159,840
PATTERN SENSITIVITY COMPENSATION IN HIGH PULSE DENSITY RECORDING
Way Dong Woo, Newton Centre, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 14, 1960, Ser. No. 69,159
2 Claims. (Cl. 346—74)



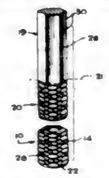
1. The improvement of pulse data processing apparatus for recording binary digit pulses comprising a record medium upon which binary digit pulses are to be recorded, a source of electrical signals representative of the binary digit pulses to be recorded, a source of timing pulses having an output of in-phase timing pulses, advanced timing pulses and delayed timing pulses, logic sensing means adapted to receive said binary digit pulses and said timing pulses, means for simultaneously applying a group of said binary digit pulses from said source to said logic sensing means, said group being comprised of a binary digit pulse, its immediately preceding binary digit pulse and its immediately succeeding binary digit pulse, means for simultaneously applying said in-phase timing pulses, said advanced timing pulses and said delayed timing pulses to said logic sensing means at the same time said group of binary digit pulses is applied to said logic sensing means, and recording control means connected to the output of said logic sensing means to record each of the sensed binary digit pulses upon said record medium in synchronism with said in-phase timing pulses, said advanced timing pulses, or said delayed timing pulses as determined by the output of said logic sensing means.

3,159,841
MOTION PICTURE FILM PROJECTOR AND EDITOR
William Castedello, and Werner K. Bender, Plainville, Conn., assignors to The Kalart Company Inc., Plainville, Conn.
Filed Dec. 19, 1960, Ser. No. 76,674
23 Claims. (Cl. 352—104)



1. An apparatus for selectively projecting motion picture film upon a surface separate from the apparatus and upon a viewing screen on the apparatus, said apparatus comprising a projection unit including a source of light producing a light beam for projecting a sequence of standing images of successive frames of motion picture film for viewing on the surface separate from the apparatus, a viewing screen on the apparatus, an optical assembly for deflecting the image projecting light beam of said projecting unit upon said viewing screen, said optical assembly including an optical linking element and mounting means supporting said linking element pivotal into and out of a position intercepting said beam, and light control means for operating said light source at full intensity or reduced intensity, said control means coacting with said linking element for control by the position thereof to operate the light source at reduced intensity when said linking element is in its beam intercepting position and at full intensity when said linking element is in its position withdrawn from the path of the beam.

3,159,842
METHOD OF FORMING A SELF-TAPPING THREADED ELEMENT
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Original application April 14, 1959, Ser. No. 806,371. Divided and this application Apr. 11, 1960, Serial No. 25,169
3 Claims. (Cl. 10—10)

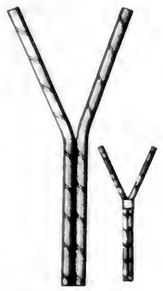


1. The method of forming a series of internally and externally threaded self tapping inserts which are adapted to tap threads in an unthreaded bore; said method comprising providing an elongated piece of stock having a predetermined non-circular external cross-section throughout an extended length thereof which is many times the length of said individual inserts to be formed, said cross-section being such that the non-circular stock presents a series of circularly successive sides extending along the length of the stock and forming radially outwardly projecting peaks at the junctures of said sides also extending along the length of the stock; forming external threads on said non-circular stock centered about a predetermined longitudinal axis of the stock, with the threads being of maximum radial thickness at said peaks and being truncated progressively by said sides so that, as a particular thread extends circularly from one peak to the next, the thread first decreases progressively in radial thickness and then increases in radial thickness; forming modified minor diameter surfaces between successive turns of said external threads which extend substantially directly axially at a predetermined substantially uniform diameter; and at some time during said method performing the additional steps of cutting off successive portions of said non-circular stock to form a series of said threaded inserts from said successive portions, with said external threads extending along substantially the entire length of each insert; forming tapering chamfer surfaces of circular cross-section centered about said axis at both ends of each insert with said chamfer surfaces progressively truncating said peaked external threads at both ends of the insert and to an extent greater than that to which the external threads are truncated by said sides intermediate said ends, and forming internal threads within each insert and within said peaked truncated external threads and centered about said axis, said internal threads extending along the major portion of the length of said insert and being open for access from both ends of the insert.

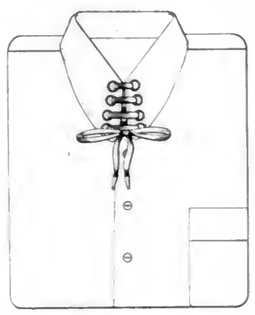
DESIGNS

DECEMBER 1, 1964

199,661
DRINKING STRAW
Leonard B. Rosen, R.D. 2, Jamestown, Pa.
Filed Feb. 17, 1964, Ser. No. 78,651
Term of patent 14 years
(Cl. D2—3)



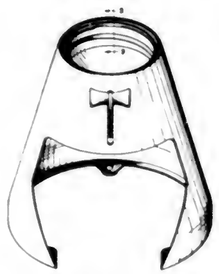
199,662
SHIRT
Herman J. Tillery, 1247 E. 105th St., Cleveland, Ohio
Filed July 23, 1962, Ser. No. 71,026
Term of patent 7 years
(Cl. D3—25)



199,663
WALL MOUNTED LIQUID DISPENSER
Arthur T. Kuehner, Santa Monica, Calif., assignor to Indco Lab. Corporation, a corporation of California
Filed Apr. 4, 1962, Ser. No. 69,574
Term of patent 3½ years
(Cl. D4—3)



199,664
HOUSING FOR A GRANULAR MATERIAL DISPENSER
Raymond H. Gutzmann, 11917 Gerald Ave., Granada Hills, Calif., and John M. McGavin, 7437 Sylmar Ave., Van Nuys, Calif.
Filed Sept. 20, 1963, Ser. No. 76,651
Term of patent 14 years
(Cl. D4—3)



199,665
OFFICE CHAIR CASTER
Irving Stollman, Evansville, Ind., assignor to Faultless Caster Corporation, Evansville, Ind., a corporation of Indiana
Filed Apr. 20, 1964, Ser. No. 79,604
Term of patent 14 years
(Cl. D10—6)



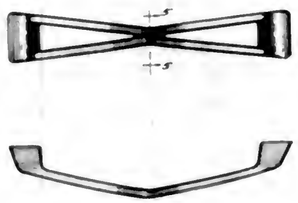
199,666
KNOB FOR DOORS, DRAWERS AND THE LIKE
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 75,699
Term of patent 14 years
(Cl. D10—8)



199,667
HANDLE FOR SLIDING DOOR
Albert M. Sanders, 2 Tudor City Place, New York, N.Y.
Filed Jan. 13, 1964, Ser. No. 78,175
Term of patent 14 years
(Cl. D10—8)



199,668
FURNITURE PULL OR THE LIKE
Vytant P. Aleks, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Illinois
Filed Mar. 30, 1964, Ser. No. 79,238
Term of patent 14 years
(Cl. D10—8)



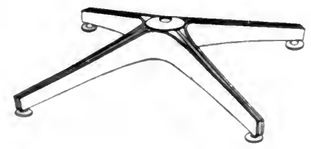
199,669
GRIP FOR RETRACTABLE DOG LEASH
Frank C. Simon, 741 E. Grandview, Sierra Madre, Calif.
Filed Sept. 26, 1963, Ser. No. 76,744
Term of patent 14 years
(Cl. D12—2)



199,670
CART
Leslie R. Inglis, Cincinnati, Ohio, assignor to Institutional Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed May 13, 1964, Ser. No. 79,969
Term of patent 14 years
(Cl. D14—3)



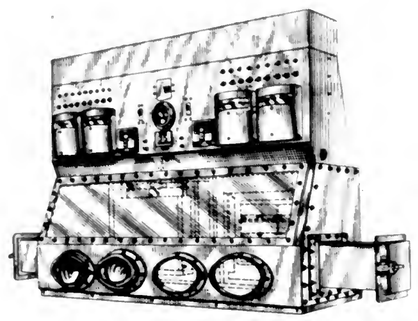
199,671
FURNITURE BASE
George C. Mulhauser, Jr., 545 Clinton Road, Paramus, N.J.
Filed May 15, 1962, Ser. No. 70,148
Term of patent 14 years
(Cl. D15—1)



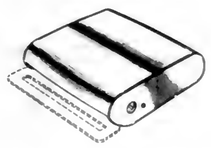
199,672
CARRYING CASE FOR A CUSHION
Florence Sheldon, 570 N. Kenmore Ave., Los Angeles, Calif.
Filed June 26, 1962, Ser. No. 70,694
Term of patent 14 years
(Cl. D15—8)



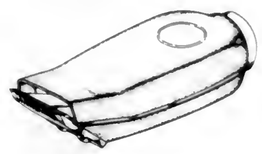
199,673
COMBINATION SPECIAL-ATMOSPHERE WORK STATION AND VACUUM OVEN
James A. Peay and Dorman Richards, Adrian, Mich., assignors to Kewaunee Manufacturing Company, Adrian, Mich., a corporation of Michigan
Filed Jan. 23, 1962, Ser. No. 68,483
Term of patent 14 years
(Cl. D16—2)



199,674
SEAT BELT BUCKLE MEMBER
Arthur F. Carlson, South Gate, and Joseph E. Dahms, Whittier, Calif., assignors to Products Research Company, Burbank, Calif., a corporation of California
Filed Jan. 13, 1964, Ser. No. 78,165
Term of patent 14 years
(Cl. D17—1)



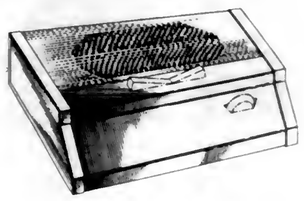
199,675
AIR POWERED HAIR CLIPPER
Henry Dreyfuss, South Pasadena, Calif., assignor to Preco Incorporated, Los Angeles, Calif., a corporation of California
Filed May 14, 1964, Ser. No. 79,981
Term of patent 14 years
(Cl. D22—3)



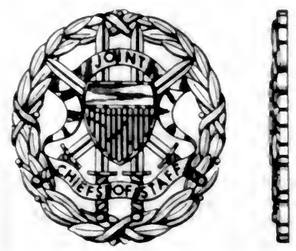
199,676
CAR SPEAKER FOR OUTDOOR THEATRES
Samuel M. Reed, Rte. 1, Box 561, Golden, Colo.
Filed Jan. 28, 1963, Ser. No. 73,337
Term of patent 14 years
(Cl. D26—14)



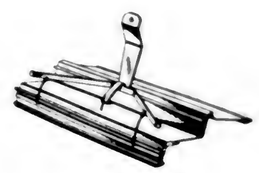
199,677
INTERCOM UNIT
Lawrence J. Mattingly, Dallas, Tex., assignor to Beta Instruments Corporation, Dallas, Tex., a corporation of Texas
Filed June 26, 1963, Ser. No. 75,532
Term of patent 14 years
(Cl. D26—14)



199,678
INSIGNIA
Stafford F. Potter, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 19, 1963, Ser. No. 77,870
Term of patent 14 years
(Cl. D29—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



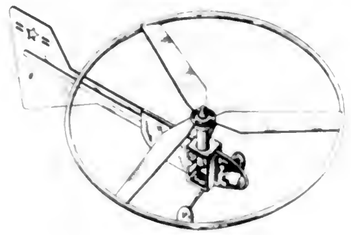
199,679
BOOK HOLDER
Virgil M. Sparkman, 1301 Marshalldale, Arlington, Tex.
Filed May 13, 1964, Ser. No. 79,973
Term of patent 14 years
(Cl. D33—3)



199,680
BALLOON
Thomas A. Tredway, P.O. Box 336, Denison, Tex.
Filed Nov. 14, 1962, Ser. No. 72,498
Term of patent 14 years
(Cl. D34—15)



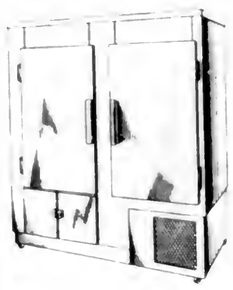
199,681
HELICOPTER TOY
Helmut Karl Bross, Weichselgartenstr. 40, Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.
Original design application June 25, 1963, Ser. No. 75,519. Divided and this application Sept. 11, 1963, Ser. No. 76,558
Claims priority, application Germany Feb. 14, 1963
Term of patent 14 years
(Cl. D34—15)



199,682
SCOOTER
John Jezowski, 12882 Woodbury Drive, Orange, Calif.
Filed May 25, 1964, Ser. No. 80,114
Term of patent 14 years
(Cl. D34—15)



199,683
CONTROLLED ENVIRONMENT PLANT GROWTH CABINET
Dan H. Walters, Marshall, Mich., assignor to Sherer-Gillett Company, a corporation of Illinois
Filed Mar. 16, 1964, Ser. No. 78,999
Term of patent 14 years
(Cl. D35—3)



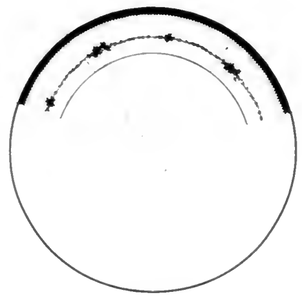
199,684
FOOD TRAY
Thelma L. Lombardo, 2616 56th St., Des Moines, Iowa
Filed Aug. 26, 1963, Ser. No. 76,352
Term of patent 14 years
(Cl. D44—10)



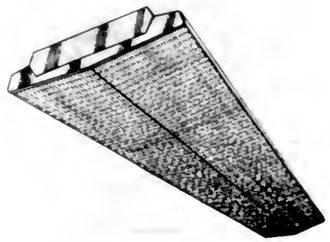
199,685
PLATE OR SIMILAR ARTICLE
Tsugitaka Sugiyama, 170 Nagaide, Inazawa, Japan
Filed Jan. 7, 1964, Ser. No. 78,112
Term of patent 3½ years
(Cl. D44—15)



199,686
PLATE OR SIMILAR ARTICLE
Mitsuo Gunshi, 1—47 Shiroyama-cho, Nagoya, Japan
Filed Jan. 31, 1964, Ser. No. 78,462
Term of patent 3½ years
(Cl. D44—15)



199,687
FLUORESCENT LIGHTING FIXTURE
Carl X. Meyer, St. Louis County, and Willard R. Garnett, Bellefontaine Neighbors, Mo., assignors, by mesne assignments, to Emerson Electric Co., a corporation of Missouri
Filed July 11, 1962, Ser. No. 70,881
Term of patent 14 years
(Cl. D48—23)



199,688
KEY FOR LOCKS
Samuel J. Holtzman, 8201 Symphony Drive, Baltimore, Md.
Filed Oct. 23, 1963, Ser. No. 77,117
Term of patent 14 years
(Cl. D50—4)



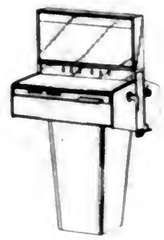
199,689
LUGGAGE LOCK OR SIMILAR ARTICLE
Samuel J. Holtzman, 8201 Symphony Drive, Baltimore, Md.
Filed Oct. 17, 1963, Ser. No. 77,023
Term of patent 14 years
(Cl. D50—7)



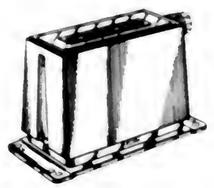
199,690
GASOLINE DISPENSER
Paul A. Mankin and Edward L. Copony, Salisbury, Md., and Raymond A. Smith, Bradford Woods, and Glenn W. Monigle, Wexford, Pa., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed July 3, 1963, Ser. No. 75,661
Term of patent 14 years
(Cl. D52—2)



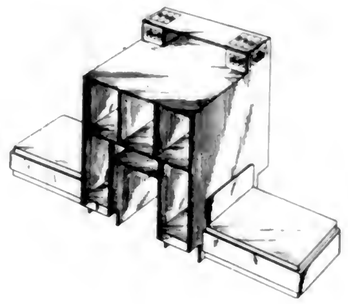
199,691
GASOLINE DISPENSER
Paul A. Mankin and Edward L. Copony, Salisbury, Md., and Raymond A. Smith, Bradford Woods, and Glenn W. Monigle, Wexford, Pa., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Original design application July 3, 1963, Ser. No. 75,661. Divided and this application Aug. 24, 1964, Ser. No. 81,773
Term of patent 14 years
(Cl. D52—2)



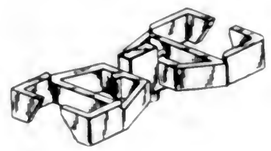
199,692
COUNTER
Edward M. Stolarz, 30 W. 60th St., New York, N.Y.
Filed June 17, 1963, Ser. No. 75,367
Term of patent 14 years
(Cl. D52—4)



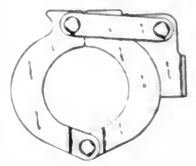
199,693
COMBINED WEIGHING SCALE AND TICKET COUNTER
Albert Hohmann, Brooklyn, N.Y., assignor to American Electronics, Inc., Fullerton, Calif., a corporation of California
Filed Dec. 12, 1961, Ser. No. 67,885
Term of patent 14 years
(Cl. D52—10)



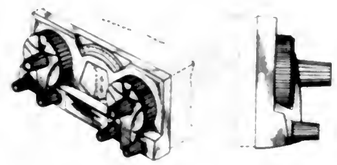
199,694
FIXTURE FOR SUPPORTING REMOVABLE FINGERS OF ELECTROPLATING RACKS
William E. Belke, Chicago, Ill., assignor to Belke Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed June 19, 1963, Ser. No. 75,425
Term of patent 14 years
(Cl. D54—13)



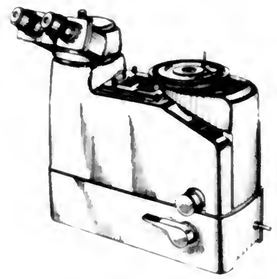
199,695
HINGED PIPE CLAMP
Milton C. Engman, 300 New York Ave., Des Moines, Iowa
Filed Aug. 1, 1963, Ser. No. 76,077
Term of patent 14 years
(Cl. D54—13)



199,696
CONTROL PANEL FOR RADIO OR SIMILAR ARTICLE
Robert D. Bessler, 4606 W. 78th Terrace, Prairie Village, Kans.
Filed June 5, 1963, Ser. No. 75,231
Term of patent 14 years
(Cl. D56—4)



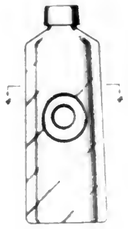
199,697
INVERTED MICROSCOPE
Kenneth D. Maier, Mendon, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 24, 1963, Ser. No. 75,038
Term of patent 14 years
(Cl. D57—1)



199,698
BOTTLE
Donald E. Dailey, Evansville, Ind., assignor to John H. Breck, Inc., Springfield, Mass.
Filed Oct. 11, 1962, Ser. No. 72,077
Term of patent 14 years
(Cl. D58—6)



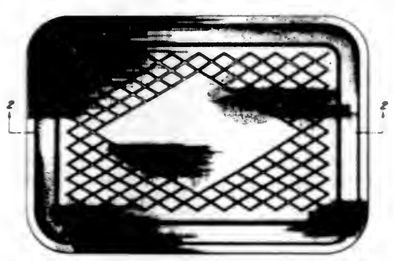
199,699
BOTTLE
Donald E. Dailey, Evansville, Ind., assignor to John H. Breck, Inc., Springfield, Mass.
Filed Dec. 26, 1962, Ser. No. 72,941
Term of patent 14 years
(Cl. D58—8)



199,700
BOTTLE
Alan B. Lowry, Canton, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed May 18, 1964, Ser. No. 80,021
Term of patent 14 years
(Cl. D58—8)



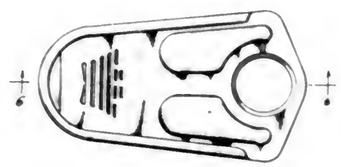
199,701
MOLDED PULP TRAY
Thomas B. Kennedy, Stamford, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 78,125
Term of patent 14 years
(Cl. D58—12.6)



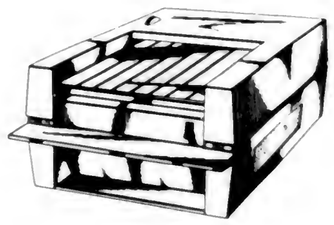
199,702
DISPENSING CAP FOR PRESSURIZED CONTAINERS
William M. Goldsmith, Highland Park, Ill., assignor to Simoniz Company, a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 77,294
Term of patent 14 years
(Cl. D58—26)



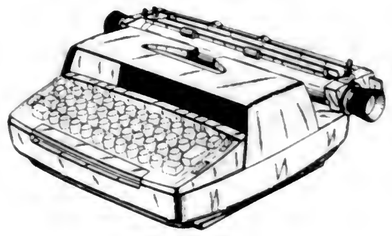
199,703
PULL TAB FOR A TEAR STRIP OPENER
Vinson S. Potts, Cherry Hill, N.J., assignor to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Filed Apr. 6, 1964, Ser. No. 79,357
Term of patent 14 years
(Cl. D58—26)



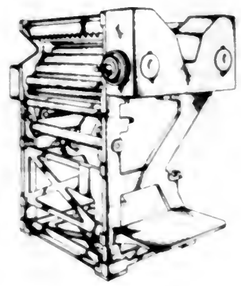
199,704
PHOTOCOPYING APPARATUS
Frederick H. Frantz, Vestal, N.Y., assignor to Frantz Industries, Inc., Vestal, N.Y., a corporation of New York
Filed May 4, 1964, Ser. No. 79,857
Term of patent 14 years
(Cl. D61—1)



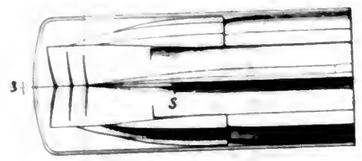
199,705
TYPEWRITER
Chester J. Abend, Camillus, and Thomas E. Hanson, Syracuse, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed June 4, 1963, Ser. No. 75,207
Term of patent 14 years
(Cl. D64—11)



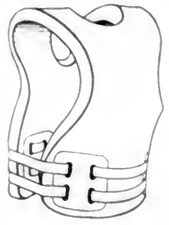
199,706
ROTARY PRINTING PRESS
Edward R. Harenza, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 79,479
Term of patent 14 years
(Cl. D64—11)



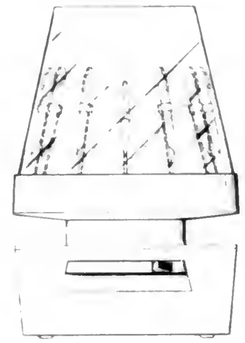
199,707
BOAT HULL
Henry Donald Canazzi, 178 Jewett Parkway, Buffalo, N.Y.
Filed Aug. 31, 1962, Ser. No. 71,508
Term of patent 14 years
(Cl. D71—1)



199,708
LIFE VEST
Gregory D. Shorey, Jr., 711 Crescent Ave., Greenville, S.C.
Filed Sept. 16, 1963, Ser. No. 76,602
Term of patent 14 years
(Cl. D71—1)



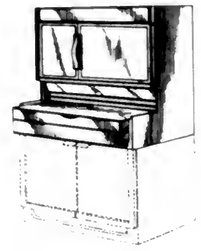
199,709
DISPLAY CASE OR SIMILAR ARTICLE
Raymond D. Harrison, Arlington Heights, Ill., assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware
Filed Nov. 6, 1963, Ser. No. 77,315
Term of patent 14 years
(Cl. D80—11)



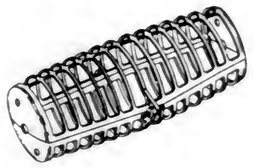
199,710
RUBBISH BURNER
Jesse C. Martin and John B. Nolin, both of R.R. 1, Box 174, Battle Creek, Mich.
Filed May 20, 1963, Ser. No. 74,956
Term of patent 14 years
(Cl. D81—1)



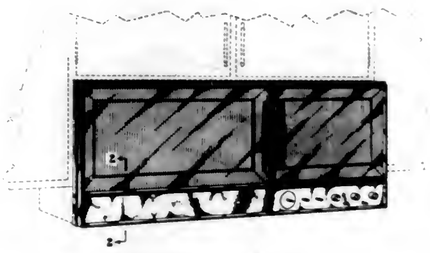
199,711
COOKING RANGE
Montgomery Ferar, Huntington Woods, and Henrik G. Langhjelm, Pontiac, Mich., assignors to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Massachusetts
Filed Sept. 26, 1962, Ser. No. 71,868
Term of patent 14 years
(Cl. D81—4)



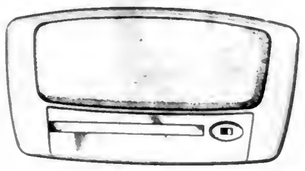
199,712
BARBECUE SPIT BASKET
Herbert A. Elliott, 604 Middle St., Webster City, Iowa
Filed Mar. 30, 1964, Ser. No. 79,247
Term of patent 14 years
(Cl. D81—10)



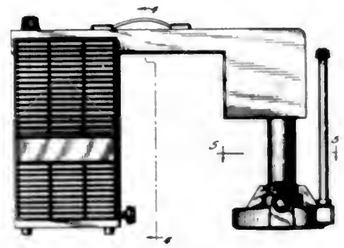
199,713
FRONT PANEL FOR A WALL MOUNTED OVEN
Thomas R. Field, Indianapolis, Ind., assignor to Jenn Air Products Company, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Aug. 21, 1963, Ser. No. 76,305
Term of patent 14 years
(Cl. D81—25)



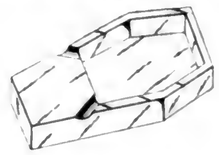
199,714
FOOT MASSAGER
Thomas Kellogg, Mamaroneck, N.Y., assignor, by mesne assignments, to The Songrand Corp., Kansas City, Mo., a corporation of Missouri
Filed Aug. 12, 1963, Ser. No. 76,185
Term of patent 14 years
(Cl. D83—1)



199,715
HYDROTHERAPY BATH UNIT
Frank C. Bascomb and Erna Mayer, Chicago, Ill., assignors to Boulevard Electronics, Inc., a corporation of Illinois
Filed Dec. 26, 1963, Ser. No. 77,933
Term of patent 14 years
(Cl. D83—1)



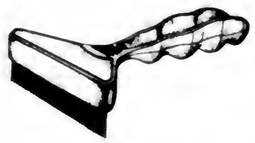
199,716
ASH TRAY
Seymour M. Gluck, 1320 Cornaga Ave., Far Rockaway 9, N.Y.
Filed Jan. 10, 1964, Ser. No. 78,157
Term of patent 14 years
(Cl. D85—2)



199,717
PIPE STAND
Richard McFadyen, Essex Fells, N.J., assignor to Park Sherman, Inc., Roseland, N.J., a corporation of New Jersey
Filed July 28, 1964, Ser. No. 81,041
Term of patent 14 years
(Cl. D85—8)



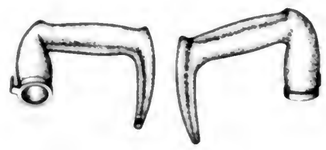
199,718
HAIR COMB
Daniel A. Adler, 1900 Bel Aire Drive, Glendale 1, Calif.
Filed Jan. 6, 1964, Ser. No. 78,093
Term of patent 14 years
(Cl. D86—8)



199,719
PURSE MIRROR
David B. Smith, Columbus, Ohio, assignor to Acme Specialty Manufacturing Co., Toledo, Ohio, a corporation of Ohio
Filed Mar. 25, 1963, Ser. No. 74,118
Term of patent 3½ years
(Cl. D86—10)



199,720
WALKING STICK HANDLE
Harold Raoul Wainerdi, New York, N.Y., assignor to The New York Society for the Relief of the Ruptured and Crippled, New York, N.Y., a corporation of New York
Filed May 20, 1963, Ser. No. 74,955
Term of patent 14 years
(Cl. D88—3)



199,721
ICE CRUSHER
William C. Callinan, Winsted, and Alfred W. Wakeman, Durham, Conn., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 76,612
Term of patent 14 years
(Cl. D89—1)



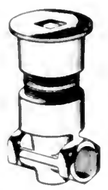
199,722
TIRE
Robert F. Busch, St. Clair Shores, and William L. Shesterkin, Roseville, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 9, 1964, Ser. No. 78,139
Term of patent 14 years
(Cl. D90—20)



199,723
TIRE
James F. Newman, St. Clair Shores, and John W. Taylor, Grosse Pointe Farms, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed May 7, 1964, Ser. No. 79,858
Term of patent 14 years
(Cl. D90—20)



199,724
COMBINED VALVE AND ACTUATING HEAD FOR A GAS LOG LIGHTER
Joseph T. Leighton, 5245 Topeka Drive, Tarzana, Calif.
Filed May 2, 1963, Ser. No. 74,720
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1ST DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Behrens, Curtis E., and R. D. Shapter, to Borg-Warner Corp. Suspension system for an automatic washer. Re. 25,693, 12–1–64, Cl. 68—24.

Borg-Warner Corp.: *See*—
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Brown, Arling D., Jr., to Clevite Corp. Balanced hydrostatic inking system. Re. 25,692, 12–1–64, Cl. 346—117.

Clevite Corp.: *See*—
Brown, Arling D., Jr. Re. 25,692.

Nichols, Robert G. Reenforced bags. Re. 25,694, 12–1–64, Cl. 229—55.

Pelto, Frank, to D. L. Pezzuti. Hand truck. Re. 25,691, 12–1–64, Cl. 214—370.

Pezzuti, Dominick L.: *See*—
Pelto, Frank. Re. 25,691.

Shapter, Robert D.: *See*—
Behrens, Curtis E., and Shapter. Re. 25,693.

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Bourne, Benjamin A.: *See*—
Weetman, Leslie M., and Bourne. 2,461.

Cayeux, Louis F., to R. Talbot. Hydrangea plant. 2,457, 12–1–64, Cl. 54.

Gaujard, Jean, to Ilgenfritz Nurseries, Inc. Rose plant. 2,455, 12–1–64, Cl. 11.

Gaujard, Jean, to Ilgenfritz Nurseries, Inc. Rose plant. 2,456, 12–1–64, Cl. 18.

Heidrich, Herman J., and C. F. Windham, to Herman J. Heidrich & Sons, Inc. Peach tree. 2,459, 12–1–64, Cl. 43.

Heidrich, Herman J., & Sons, Inc.: *See*—
Heidrich, Herman J., and Windham. 2,459.

Huston, Tom, to Peaches of Florida, Inc. Peach tree. 2,458, 12–1–64, Cl. 43.

Ilgenfritz Nurseries, Inc.: *See*—
Gaujard, Jean. 2,455.
Gaujard, Jean. 2,456.

Peaches of Florida, Inc.: *See*—
Huston, Tom. 2,458.

Roberts, Charles L., to Stark Bro's. Nurseries & Orchards Co. Apple tree. 2,460, 12–1–64. Cl. 34.

Stark Bro's. Nurseries & Orchards Co.: *See*—
Roberts, Charles L. 2,460.

Talbot, Roger: *See*—
Cayeux, Louis F. 2,457

United States Sugar Corp.: *See*—
Weetman, Leslie M., and Bourne. 2,461.

Weetman, Leslie M., and B. A. Bourne, to United States Sugar Corp. Sugar cane. 2,461, 12–1–64, Cl. 89.

Windham, Charles F.: *See*—
Heidrich, Herman J., and Windham. 2,459.

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Abend, Chester J., and T. E. Hanson, to SCM Corp. Typewriter. 199,705, 12–1–64, Cl. D64—11.

Acme Specialty Mfg. Co.: *See*—
Smith, David B. 199,719.

Adler, Daniel A. Hair comb. 199,718, 12–1–64, Cl. D86—8.

Aleks, Vytant P., to National Lock Co. Furniture pull or the like. 199,668, 12–1–64, Cl. D10—8.

American Electronics, Inc.: *See*—
Hohmann, Albert. 199,693.

Bascomb, Frank C., and E. Mayer, to Boulevard Electronics, Inc. Hydrotherapy bath unit. 199,715, 12–1–64, Cl. D38—1.

Bausch & Lomb Inc.: *See*—
Maier, Kenneth D. 199,697.

Belke Mfg. Co.: *See*—
Belke, William E. 199,694.

Belke, William E., to Belke Mfg. Co. Fixture for supporting removable fingers of electroplating racks. 199,694, 12–1–64, Cl. D54—13.

Bessler, Robert D. Control panel for radio or similar article. 199,696, 12–1–64, Cl. D56—4.

Beta Instruments Corp.: *See*—
Mattingly, Lawrence J. 199,677.

Boulevard Electronics, Inc.: *See*—
Bascomb, Frank C., and Mayer. 199,715.

Breck, John H., Inc.: *See*—
Dalley, Donald E. 199,698.
Dalley, Donald E. 199,699.

Bross, Helmut K., 50% to F. T. Johmann. Helicopter toy. 199,681, 12–1–64, Cl. D34—15.

Busch, Robert F., and W. L. Shesterkin, to United States Rubber Co. Tire. 199,722, 12–1–64, Cl. D90—20.

Callinan, William C., and A. W. Wakeman, to Dynamics Corp. of America. Ice crusher. 199,721, 12–1–64, Cl. D89—1.

Canazzi, Henry D. Boat hull. 199,707, 12–1–64, D71—1.

Carlson, Arthur F., and J. E. Dahms, to Products Research Co. Seat belt buckle member. 199,674, 12–1–64, Cl. D17—1.

Copony, Edward L.: *See*—
Mankin, Paul A., Copony, Smith, and Monigle. 199,691.

Crown Cork & Seal Co., Inc.: *See*—
Potts, Vinson S. 199,703.

Dahms, Joseph E.: *See*—
Carlson, Arthur F., and Dahms. 199,674.

Dalley, Donald E., to John H. Breck, Inc. Bottle. 199,698. 12–1–64, Cl. D58—6.

Dalley, Donald E., to John H. Breck, Inc. Bottle. 199,699, 12–1–64, Cl. D58—8.

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Dreyfuss, Henry, to Preco Inc. Air powered hair clipper. 199,675, 12–1–64, Cl. D22—3.

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Elliott, Herbert A. Barbecue spit basket. 199,712, 12–1–64, Cl. D81—10.

Emerson Electric: *See*—
Meyer, Carl X., and Garnett. 199,687.

Engman, Milton C. Hinged pipe clamp. 199,695, 12–1–64, Cl. D54—13.

Faultless Caster Corp.: *See*—
Stollman, Irving. 199,665.

Ferar, Montgomery, and H. G. Langhjelm, to Geo. D. Roper Corp. Cooking range. 199,711, 12–1–64, Cl. D81—4.

Field, Thomas R., to Jenn Air Products Co., Inc. Front panel for a wall mounted oven. 199,713, 12–1–64, Cl. D81—25.

Frantz, Frederick H., to Frantz Industries, Inc. Photocopying apparatus. 199,704, 12–1–64, Cl. D61—1.

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Frantz, Frederick H. 199,704.

Garnett, Willard R.: *See*—
Meyer, Carl X., and Garnett. 199,687.

Gillette Co., The: *See*—
Lowry, Alan B. 199,700.

Gluck, Seymour M. Ash tray. 199,716, 12–1–64, Cl. D85—2.

Goldsmith, William N., to Simoniz Co. Dispensing cap for pressurized containers. 199,702, 12–1–64, Cl. D58—26.

Gunshi, Mitsuo. Plate or similar article. 199,686, 12–1–64, Cl. D44—15.

Gutzmann, Raymond H., and J. M. McGavin. Housing for a granular material dispenser. 199,664, 12–1–64, Cl. D4—3.

Hanson, Thomas E.: *See*—
Abend, Chester J., and Hanson. 199,705.

Harenza, Edward R., to Miehle-Goss-Dexter, Inc. Rotary printing press. 199,706, 12–1–64, Cl. D64—11.

Harrison, Raymond D., to W. A. Sheaffer Pen Co. Display case or similar article. 199,709, 12–1–64, Cl. D80—11.

Heyer, Don, to Hyer Hardware Mfg. Co. Knob for doors, drawers and the like. 199,666, 12–1–64, Cl. D10—8.

Hohmann, Albert, to American Electronics, Inc. Combined weighing scale and ticket counter. 199,693, 12–1–64, Cl. D52—10.

Holtzman, Samuel J. Key for locks. 199,688, 12–1–64, Cl. D50—4.

Holtzman, Samuel J. Luggage lock or similar article. 199,689, 12–1–64, Cl. D50—7.

Hyer Hardware Mfg. Co.: *See*—
Heyer, Don. 199,666.

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Inglis, Leslie R., to Institutional Industries, Inc. Cart. 199,670, 12–1–64, Cl. D14—3.
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Jesowski, John. Scooter. 199,682, 12–1–64, Cl. D34—15.
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Kellogg, Thomas, to The Songrand Corp. Foot massager. 199,714, 12–1–64, Cl. D83—1.
Kennedy, Thomas B., to Diamond National Corp. Molded pulp tray. 199,701, 12–1–64, Cl. D58—12.6.
Kewaunee Mfg. Co.: *See*—
Peay, James A., and Richards. 199,673.
Kuehner, Arthur T., to Indco Lab. Corp. Wall mounted liquid dispenser. 199,663, 12–1–64, Cl. D4—3.
Langhjelm, Henrik G.: *See*—
Ferar, Montgomery, and Langhjelm. 199,711.
Leighton, Joseph T. Combined valve and actuating head for a gas log lighter. 199,724, 12–1–64, Cl. D91—3.
Lombardo, Thelma L. Food tray. 199,684, 12–1–64, Cl. D44—10.
Lowry, Alan B., to The Gillette Co. Bottle. 199,700, 12–1–64, Cl. D58—8.
Maier, Kenneth D., to Bausch & Lomb Inc. Inverted microscope. 199,697, 12–1–64, Cl. D57—1.
Mankin, Paul A., E. L. Copony, R. A. Smith, and G. W. Monigle, to Symington Wayne Corp. Gasoline dispenser. 199,690, 12–1–64, Cl. D52—2.
Mankin, Paul A., E. L. Copony, R. A. Smith, and G. W. Monigle, to Symington Wayne Corp. Gasoline dispenser. 199,691, 12–1–64, Cl. D52—2.
Martin, Jesse C., and J. B. Nolin. Rubbish burner. 199,710, 12–1–64, Cl. D81—1.
Mattingly, Lawrence J., to Beta Instruments Corp. Intercom unit. 199,677, 12–1–64, Cl. D26—14.
Mayer, Erna: *See*—
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McGavin, John M.: *See*—
Gutzmann, Raymond H., and McGavin. 199,664.
Meyer, Carl X., and W. R. Garnett, to Emerson Electric. Fluorescent lighting fixture. 199,687, 12–1–64, Cl. D48—23.
Mieble-Goss-Dexter, Inc.: *See*—
Harenza, Edward R. 199,706.
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Mankin, Paul A., Copony, Smith, and Monigle. 199,691.
Mulhauser, George C., Jr. Furniture base. 199,671, 12–1–64, Cl. D15—1.
National Lock Co.: *See*—
Aleks, Vytant P. 199,668.
New York Society for the Relief of the Ruptured and Crippled, The: *See*—
Wainerdi, Harold R. 199,720.
Newman, James F., and J. W. Taylor, to United States Rubber Co. Tire. 199,723, 12–1–64, Cl. D90—20.
Nolin, John B.: *See*—
Martin, Jesse C., and Nolin. 199,710.
Park Sherman, Inc.: *See*—
McFadyen, Richard. 199,717.
Peay, James A., and D. Richards, to Kewaunee Mfg. Co. Combination special-atmosphere work station and vacuum oven. 199,673, 12–1–64, Cl. D16—2.
Potter, Stafford F., to United States of America, Army. Insignia. 199,678, 12–1–64, Cl. D29—2.
Potts, Vinson S., to Crown Cork & Seal Co., Inc. Pull tab for a tear strip opener. 199,703, 12–1–64, Cl. D58—26.
Preco Inc.: *See*—
Dreyfuss, Henry. 199,675.
Products Research Co.: *See*—
Carlson, Arthur F., and Dahms. 199,674.
Reed, Samuel M. Car speaker for outdoor theaters. 199,676, 12–1–64, Cl. D26—14.
Richards, Dorman: *See*—
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SCM Corp.: *See*—
Abend, Chester J., and Hanson. 199,705.
Sanders, Albert M. Handle for sliding door. 199,667, 12–1–64, Cl. D10—8.
Sheaffer, W. A., Pen Co.: *See*—
Harrison, Raymond D. 199,709.
Sheldon, Florence. Carrying case for a cushion. 199,672, 12–1–64, Cl. D15—8.
Sherer-Gillett Co.: *See*—
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Shesterkin, William L.: *See*—
Busch, Robert F., and Shesterkin. 199,722.
Shorey, Gregory D., Jr. Life vest. 199,708, 12–1–64, Cl. D71—1.
Simon, Frank C. Grip for retractable dog leash. 199,669, 12–1–64, Cl. D12—2.
Simonis Co.: *See*—
Goldsmith, William N. 199,702.
Smith, David B., to Acme Specialty Mfg. Co. Purse mirror. 199,719, 12–1–64, Cl. D86—10.
Smith, Raymond A.: *See*—
Mankin, Paul A., Copony, Smith, and Monigle. 199,691.
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Kellogg, Thomas. 199,714.
Sparkman, Virgil M. Book holder. 199,679, 12–1–64, Cl. D83—3.
Stolars, Edward M. Counter. 199,692, 12–1–64, Cl. D52—4.
Stollman, Irving, to Faultless Caster Corp. Office chair caster. 199,665, 12–1–64, Cl. D10—6.
Sugiyama, Tsugitaka. Plate or similar article. 199,685, 12–1–64, Cl. D44—15.
Symington Wayne Corp.: *See*—
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Mankin, Paul A., Copony, Smith, and Monigle. 199,691.
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Tillery, Herman J. Shirt. 199,662, 12–1–64, Cl. D3—25.
Tredway, Thomas A. Balloon. 199,680, 12–1–64, Cl. D34—15.
United States of America, Army: *See*—
Potter, Stafford F. 199,678.
United States Rubber Co.: *See*—
Busch, Robert F., and Shesterkin. 199,722.
Newman, James F., and Taylor. 199,723.
Wainerdi, Harold R., to The New York Society for the Relief of the Ruptured and Crippled. Walking stick handle. 199,720, 12–1–64, Cl. D88—3.
Wakeman, Alfred W.: *See*—
Callinan, William C., and Wakeman. 199,721.
Walters, Dan H., to Sherer-Gillett Co. Controlled environment plant growth cabinet. 199,683, 12–1–64, Cl. D35—3.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1ST DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Dowling, Edward C. 3,159,213.
Stine, Howard E., Jr. 3,159,444.
Abbé, Pierre, and G. Genin, to Compagnie Generale d'Electricite. Separator for galvanic cells. 3,159,507, 12–1–64, Cl. 136—145.
Abbey Etna Machine Co.: *See*—
Ruple, Lewis H. 3,159,199.
Abbott, George F., Jr., to Bell Telephone Laboratories, Inc. Universal line concentrator. 3,159,715, 12–1–64, Cl. 179—18.
Abbott, George F., Jr., and W. Whitney, to Bell Telephone Laboratories, Inc. Remote concentrator line circuit. 3,159,714, 12–1–64, Cl. 179—18.
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Abend, Phillip G., and E. L. Fareri, to Gulf Research & Development Co. Thermally stabilised liquid hydrocarbon fuels. 3,159,470, 12–1–64, Cl. 44—62.
Abramo, John G., and E. C. Chapin, to Monsanto Co. Alkylene-aromatic-acetyl halides. 3,159,674, 12–1–64, Cl. 260—544.
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Kroffke, Kenneth K. 3,159,374.
Ake, John E.: *See*—
Rogers, Charles E. 3,159,340.
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Revell, Alan E. 3,159,472.
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Anderson, James D., and E. L. Cheh, to Burndy Corp. Swaging machine. 3,159,197, 12–1–64, Cl. 153—1.
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Anderson, Maynard E., to American Radiator & Standard Sanitary Corp. Electric motor control. 3,159,244, 12–1–64, Cl. 165—11.
Anderson, Noel M. Floating diaphragm for pressure tanks. 3,159,301, 12–1–64, Cl. 220—26.
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Bergmann, Anders K., A. C. Jacobaeus, and H. Scheftelowitz, to Telefonaktiebolaget L M Ericsson. Telecommunication system. 3,159,720, 12–1–64, Cl. 179—15.55.

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Blackman, Arthur W., and J. R. Kellbach, to United Aircraft Corp. Tribrid rocket combustion chamber. 3,158,997, 12–1–64, Cl. 60—35.6.

Blair, Etcyl H., to The Dow Chemical Co. O-alkylmercaptoalkyl and O-arylmercaptoalkyl O-alkyl phosphoramidothioates. 3,159,665, 12–1–64, Cl. 260—461.

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Bloomfield, Peter R., and K. Parvin, to Artrite Resins Ltd. Method for the preparation of polyaromatic resins. 3,159,589, 12–1–64, Cl. 260—2.

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Bocquentin, Jacques, and J. Givry, to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques. Method and means for reducing or eliminating level variations of molten metal in high amperage electrolysis cells. 3,159,561, 12–1–64, Cl. 204—243.

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Bogdan, Charles A., Jr., F. C. Fitzgerald, and R. W. Jones, to International Business Machines Corp. Clamp circuit with a shunt unilateral discharge path. 3,159,751, 12–1–64, Cl. 307—88.5.

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Boldt, Heinz, A. Krause, and H. Nink, to Borsig Aktiengesellschaft. Multi-stage free piston type compressor. 3,159,331, 12–1–64, Cl. 230—56.

Bolkcom, Wilbur T., and W. E. Knapp. Method of treating steel. 3,158,913, 12–1–64, Cl. 22—215.

Bollman, Ralph R., to The Cincinnati Milling Machine Co. Automatically indexed tool turret. 3,158,920, 12–1–64, Cl. 29—35.5.

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Bowhill, Arthur J., to United Kingdom Atomic Energy Authority. Methods of manufacturing journal and journal bearing members. 3,158,924, 12–1–64, Cl. 29—149.5.

Boyer, Edwin L., to Amerace Corp. Apparatus for molding plastic articles. 3,158,906, 12–1–64, Cl. 18—42.

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Bradley, Kenneth B., and H. J. Klopf, to The Dow Chemical Co. Separation of phenols. 3,159,685, 12–1–64, Cl. 260—619.

Brambier, Irving. Cards selectively usable for playing a game or for producing a motion picture effect. 3,159,405, 12–1–64, Cl. 273—152.2.

Branick, Charles E. Quick release bumper jack. 3,159,085, 12–1–64, Cl. 91—451.

Brass, Robert L., and A. Feiner, to Orbicon, Ltd. Game apparatus for simulating skiing. 3,159,400, 12–1–64, Cl. 273—1.

Braun, G. A., Inc.: *See*—
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Braune, Gerhard: *See*—
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Braverman, Robert P., to M. I. Glass. Toy. 3,159,109, 12–1–64, Cl. 104—148.

Breault, Alphonse J., to Hassenfeld Bros., Inc. Toy bag and method of manufacture thereof. 3,159,253, 12–1–64, Cl. 190—48.

Bretschneider, Otto, G. Jaekel, and H. Diskowski, to Knapsack-Griesheim Aktiengesellschaft. Process for detection of leaks in industrial vacuum plants. 3,159,021, 12–1–64, Cl. 73—40.7.

Brewer, Ivo H. Multiple cutter shaver having continuous shaving surface. 3,158,932, 12–1–64, Cl. 30—43.6.

Brewer, Willie F., to Dealer Associates, Inc. Blade holder for disc type mowers. 3,158,978, 12–1–64, Cl. 56—295.

Bridger, Grover L., A. A. Zimmer, and H. P. Zerhusen, to W. R. Grace & Co. Apparatus for applying liquid to turf. 3,158,892, 12–1–64, Cl. 15—575.

Bristol-Banyu Research Institute, Ltd.: *See*—
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Broce, Thomas C., to International Business Machines Corp. Universal radix adder. 3,159,740, 12–1–64, Cl. 235—169.

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Brooks, Harry E., Jr., to The Budd Co. Extensometer. 3,158,939, 12–1–64, Cl. 33—148.

Brotherton, Robert J., and L. L. Petterson, to United States Borax & Chemical Corp. Polymeric organoboron compounds. 3,159,590, 12–1–64, Cl. 260—2.

Brouillette, Joseph W., Jr., and C. W. Johnson, to General Electric Co. Electronic curve follower and analog computer. 3,159,743, 12–1–64, Cl. 235—198.

Brown, Arthur E. Two stroke cycle internal combustion engines. 3,159,147, 12–1–64, Cl. 123—41.76.

Brown, Edward A., and L. J. Chinn, to G. D. Searle & Co. 2-oxy-5-(6-oxy-2-naphthyl)cyclopentanealkanoic acids, their esters, and corresponding lactones. 3,159,649, 12–1–64, Cl. 260—343.3.

Brown, Kenneth J., to The Foxboro Co. Actuators for positioning a control valve or other member in accordance with an electrical signal. 3,159,038, 12–1–64, Cl. 74—1.

Brown, Ralph H., Jr., and R. F. Sample, to Draper Corp. Tape motion for shuttleless looms. 3,159,184, 12–1–64, Cl. 139—122.

Bruckner, Hans, M. Czech, and K. Hartel, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Fungicidal agents. 3,159,531, 12–1–64, Cl. 167—22.

Brumbach, Robert E., to Samuel Moore & Co. Composite tubing product, and apparatus and method for manufacturing same. 3,159,183, 12–1–64, Cl. 138—125.

Brünner, Mathias J., to General Electric Co. Passive transpiration cooling system. 3,159,012, 12–1–64, Cl. 62—467.

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Burgess, Hovey M., and J. B. Johnson, to General Foods Corp. Binder product and process. 3,159,505, 12–1–64, Cl. 127—32.

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Clausen, Kenneth E., to Outboard Marine Corp. Front trailer wheel arrangement. 3,158,881, 12–1–64, Cl. 9—1.

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Conn, John B., to Merck & Co., Inc. Thermoelectric materials. 3,159,579, 12–1–64, Cl. 252—62.3.

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Copson, Harry R., and F. S. Lang, to The International Nickel Co., Inc. Austenitic chromium-nickel stainless steels resistant to stress-corrosion cracking. 3,159,479, 12–1–64, Cl. 75—128.

Copson, Harry R., and F. S. Lang, to The International Nickel Co., Inc. Austenitic chromium-nickel stainless steels resistant to stress-corrosion cracking. 3,159,480, 12–1–64, Cl. 75—128.

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Cox, Jerome R., Jr. Anti-collision device for aircraft. 3,159,832, 12–1–64, Cl. 343—7.5.

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Curry, Truman M., to The Boeing Co. Multi-component internal strain gauge balance. 3,159,027, 12–1–64, Cl. 73—147.

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Czubiak, Joseph L., to The Bunker-Ramo Corp. Narrow band audio frequency filtering system. 3,159,791, 12–1–64, Cl. 325—489.

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Dable, George F. Segmented gear. 3,159,047, 12–1–64, Cl. 74—450.

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Dahlin, Erik B., to Honeywell Inc. Low noise electronic differentiator. 3,159,741, 12–1–64, Cl. 235—183.

Dailey, William H., Jr., to Midland-Ross Corp. Altering the heat content of solid materials. 3,159,209, 12–1–64, Cl. 165—1.

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D'Alello, Gaetano F., to Dal Mon Research Co. Irradiated polymeric propellants and process of rocket propulsion. 3,158,991, 12–1–64, Cl. 60—35.4.

D'Alello, Gaetano F., to Dal Mon Research Co. Polymerization process. 3,159,607, 12–1–64, Cl. 260—82.1.

Dal Mon Research Co.: *See*—
D'Alello, Gaetano F. 3,159,607.
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Davidson, Hugh R., to Davidson and Hemmemdinger. Tristimulus difference computer. 3,159,742, 12–1–64, Cl. 235—184.

Davis, Ariel R. Interlocking casing. 3,159,436, 12–1–64, Cl. 312—107.

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Davis, Ray F., and A. Gudmundsen, to McCulloch Corp. Tree pruning device. 3,158,933, 12–1–64, Cl. 30—276.

Davis, Stanley M., R. G. Fessler, and G. L. Roberts, Jr., to American Cyanamid Co. Dispersible pigments. 3,159,498, 12–1–64, Cl. 106—308.

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De Lain, Robert L. Plugs with diaphragm flow control device. 3,159,179, 12–1–64, Cl. 137—545.

Delamater, William B., to R. G. Smith. Washing device operated by garbage disposal unit. 3,159,355, 12–1–64, Cl. 241—101.

De Lisle, Auguste L., ¼ to W. R. Robertshaw. Flush valve combination. 3,158,873, 12–1–64, Cl. 4—57.

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De Lucca, Philip R. Dispenser. 3,159,314, 12–1–64, Cl. 222—183.

Demaison, Raymond J., to Quigley Co., Inc. Block wall structure for furnaces. 3,158,963, 12–1–64, Cl. 50—373.

Demeter, József, to Technimpex Magyar Gepipari Kulkereskedelmi Vallalat. Apparatus for continuously producing sheets of thermosetting artificial resins. 3,158,899, 12–1–64, Cl. 18—12.

Deming, Royce D., and D. A. James, to Bell Telephone Laboratories, Inc. Outgoing trunk identification circuit. 3,159,721, 12–1–64, Cl. 179—175.2.

Dennis, Richard E. Magnetic electrical cord connector. 3,159,725, 12–1–64, Cl. 200—51.09.

Deppe, Wilbur W. Drive for roll crusher. 3,159,356, 12–1–64, Cl. 241—230.

De Prisco, Carmine F., and W. M. Barfield, to Aeroprojects Inc. Method and means for operating a generating means coupled through a transducer to a vibratory energy work performing device. 3,158,928, 12–1–64, Cl. 29—470.1.

Derbyshire, Deryck H., and A. D. Craven, to Imperial Chemical Industries Ltd. Preparation of para-tolnic acid. 3,159,672, 12–1–64, Cl. 260—524.

De Ruggieri, Pietro, C. Gandolfi, and U. Guzzi, to Ormonoterapia Richter S.p.A. [3,2-c]-pyrazoles of steroids of the androstane and estrane series. 3,159,618, 12–1–64, Cl. 260—239.5.

Descarries, Raymond, to Aktiebolaget Electrolux. Wand assembly for suction cleaner. 3,159,412, 12–1–64, Cl. 285—7.

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Diehl, Francis L., to The Procter & Gamble Co. Detergency composition. 3,159,581, 12–1–64, Cl. 252—152.
Diener, Robert E., to The Warner & Swasey Co. Machine having relatively movable tool and work supports. 3,159,065, 12–1–64, Cl. 82—5.5.
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Donko, Harold A., to Stewart-Warner Corp. Suppressed wide scale electro-magnetic gauge. 3,159,788, 12–1–64, Cl. 324—146.
Donner, Walter, and D. W. Carle. Gas chromatograph. 3,159,020, 12–1–64, Cl. 73—23.1.
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Dora, Ralph A., to Beckman Instruments, Inc. Temperature controller. 3,159,737, 12–1–64, Cl. 219—501.
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Dowling, Arthur P., to The Glidden Co. Method of converting a polyester coating. 3,159,500, 12–1–64, Cl. 117—72.
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Ericson, Walter M., to United States Gypsum Co. Ceiling panel with prefabricated valved ports for controlled air circulation. 3,159,092, 12–1–64, Cl. 98—40.
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Bichard, John A., and Wunder. 3,159,562.
Ericson, Ernest A. 3,158,888.
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Falbe, Jürgen F., and F. W. A. G. K. Korte, to Shell Oil Co. Process for the preparation of cyclic imides. 3,159,637, 12–1–64, Cl. 260—281.
Falcone, Luigi, and R. Matteucci, to Montecatini, Societa Generale per l'Industria Mineraral e Chimica. Process for vulcanizing acid filler containing saturated olefin copolymers with organic peroxides and sulfur. 3,159,596, 12–1–64, Cl. 260—41.
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Fanshawe, Ralph S., and C. Shepherd, to Imperial Chemical Industries Ltd. Process for separating 4:4' bipyridyl from mixtures. 3,159,641, 12–1–64, Cl. 260—296.
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Freed, George H. Revolver firing action means. 3,158,949, 12–1–64, Cl. 42—65.
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Gordon, Maxwell, and B. M. Sutton, to Smith Kline & French Laboratories. N-aminomethyltetracycline derivatives. 3,159,631, 12–1–64, Cl. 260—268.

Gordon, Richard O., to Clark Equipment Co. Power steering system for towable vehicles. 3,159,230, 12–1–64, Cl. 180—79.2.

Gore, Willis, to Aircraft Armaments, Inc. Automatic frequency locking circuit. 3,159,835, 12–1–64, Cl. 343—17.7.

Goreham, Peter E., to Moore Business Forms, Inc. Apparatus for feeding continuous webs of stationery. 3,159,263, 12–1–64, Cl. 197—133.

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Gottlieb, Robert. Play pen. 3,158,876, 12–1–64, Cl. 5—99.

Gottschalk, Roy F., to Chemetron Corp. Process and apparatus for treating molten metals. 3,159,478, 12–1–64, Cl. 75—93.

Gould, Lincoln E., to Shell Oil Co. Soil treating method. 3,158,958, 12–1–64, Cl. 47—58.

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Sanchez, Moises G., and Hoover. 3,159,408.

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Gray, John W., to General Precision, Inc. Sweep and flyback circuit. 3,159,754, 12–1–64, Cl. 307—88.5.

Gray, Thomas E. H., and J. Jones-Hinton, to Dunlop Rubber Co. Ltd. Vacuum-forming machines. 3,158,904, 12–1–64, Cl. 18—19.

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Green, Edward H. Aerosol valve housing construction and method of making same. 3,159,318, 12–1–64, Cl. 222—394.

Green, Joseph. Toy figure with body members secured by vacuum cups. 3,158,954, 12–1–64, Cl. 46—22.

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Grimes, David D., to The Richards Corp. Film cleaning apparatus. 3,158,886, 12–1–64, Cl. 15—100.

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Groves, Dale D., to The B. F. Goodrich Co. Sorting apparatus. 3,159,278, 12–1–64, Cl. 209—90.

Gruner, Frederick R., and R. F. Schwegler, to Ametek, Inc. Fan. 3,159,335, 12–1–64, Cl. 230—117.

Guarini, Michael A. Drapery heading support. 3,158,914, 12–1–64, Cl. 24—86.

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Curlett, John, and Gurries. 3,158,945.

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Hagopian, Jacob J., to International Business Machines Corp. Multi-element magnetic transducer. 3,159,822, 12–1–64, Cl. 340—174.1.

Haifley, William E., E. J. Schaefer, and L. J. Lakes, to Franklin Electric Co., Inc. Core construction. 3,159,762, 12–1–64, Cl. 310—217.

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Hallmark, Levon Z. Multiple completion pumping unit. 3,159,107, 12–1–64, Cl. 103—212.

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Hamilton, Chester E., and R. F. W. Ritz, to Olin Mathieson Chemical Corp. Preparation of polymeric phosphates. 3,159,602, 12–1–64, Cl. 260—61.

Hamilton, James L., to Phillip H. Kaufmann. Timing device. 3,158,987, 12–1–64, Cl. 58—22.9.

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Hammer, Irving P., R. J. Holsinger, and C. Liddy, to Socony Mobil Oil Co., Inc. Fire-resistant hydraulic fluids. 3,159,580, 12–1–64, Cl. 252—75.

Hammer, Otto, and J. A. Mitchell, to Dresser Industries, Inc. Turbodrill. 3,159,222, 12–1–64, Cl. 175—107.

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Hancock, Roger H. Y.: *See*—
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Hansen, Jorgen J. Electromagnetic and vacuum lifter. 3,159,418, 12–1–64, Cl. 294—64.

Hansford, Rowland C., to Union Oil Co. of California. Hydrocracking process and catalysts. 3,159,569, 12–1–64, Cl. 208—110.

Hansford, Rowland C., to Union Oil Co. of California. Silica-zirconia-titania hydrocracking catalyst. 3,159,588, 12–1–64, Cl. 252—452.

Hanson, Alden W., to The Dow Chemical Co. Plastically deformable solids in treating subterranean formations. 3,159,217, 12–1–64, Cl. 166—36.

Harden, George N., and J. N. Neumann, to General Motors Corp. Wheel cover. 3,159,429, 12–1–64, Cl. 301—37.

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Harke, Otto. Mixing valve for spherical valve element and with instant repeat setting. 3,159,181, 12–1–64, Cl. 137—625.4.

Harned, John L., and K. M. Miller, to General Motors Corp. Ball nut screw differential. 3,159,046, 12–1–64, Cl. 74—424.8.

Harpley, Theodore R., to General Electric Co. Ballast apparatus and system for dimming arc discharge lamps. 3,159,766, 12–1–64, Cl. 315—195.

Harris, George M., to The Kendall Co. Calendering method and products made thereby. 3,159,516, 12–1–64, Cl. 156—243.

Harris, John F., Jr., and D. I. McCane, to E. I. du Pont de Nemours and Co. Copolymers of perfluorovinyl ethers. 3,159,609, 12–1–64, Cl. 260—87.5.

Harrison, John W., and R. D. Lowry, to W. R. Grace & Co. Shrinkable bands. 3,159,520, 12–1–64, Cl. 156—272.

Hart Oliver M. Electrical distribution device. 3,159,443, 12–1–64, Cl. 339—14.

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Lockwood, George H., Menard, and Townsend. 3,158,965.

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Hedegaard, Arne, to Rothenborg Specialmaskiner for Syindustrien A/S. Apparatus for stacking articles produced on a sewing machine. 3,159,122, 12–1–64, Cl. 112—2.

Heffernan, Edward M., and A. M. Raff, to Smith Kline & French Laboratories. Method of printing pharmaceutical forms and product thereof. 3,159,544, 12–1–64, Cl. 167—82.

Heininger, Samuel A., and G. H. Birum, to Monsanto Co. Toxic arylsulfonyl alkenenitriles. 3,159,532, 12–1–64, Cl. 167—3.

Heininger, Samuel A., and G. H. Birum, to Monsanto Co. Toxic arylsulfonyl alkanenitriles. 3,159,666, 12–1–64, Cl. 260—465.

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Henry-Baudot, Jacques, to Printed Motors, Inc. Electric rotary machines of the axial air gap type with compensated reaction of armature. 3,159,761, 12–1–64, Cl. 310—186.

Henry-Baudot, Jacques, to Printed Motors Inc. A. C. synchronized electric rotary machines. 3,159,764, 12–1–64, Cl. 310—268.

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Hesse, Walter K., to Johns-Manville Corp. Continuous feed cupola. 3,159,290, 12–1–64, Cl. 214—18.2.

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Incledon, Arthur E. Disposable oven liner. 3,159,156, 12–1–64, Cl. 126—19.

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Bergmann, Anders K., Jacobaeus, and Scheftelowitz. 3,159,720.

Jacoby, Harry D.: *See*—
Hottenroth, Frederick W., and Jacoby. 3,159,119.

Jaekel, Gerhart: *See*—
Bretschneider, Otto, Jaekel, and Diskowski. 3,159,021.

James, Dennis B., and W. T. Wintringham, to Bell Telephone Laboratories, Inc. Parity synchronization of pulse code systems. 3,159,811, 12–1–64, Cl. 340—146.1.

James, Donald A.: *See*—
Deming, Royce D., and James. 3,159,721.

James, Frederick D., and D. A. Rush, to S. Smith & Sons (England) Ltd. Aircraft ground run predictors. 3,159,738, 12–1–64, Cl. 235—152.

James, Ralph E. Detachable bumper step. 3,159,242, 12–1–64, Cl. 182—92.

Jannenga, Joel A.: *See*—
Schrecongost, Richard K., and Jannenga. 3,159,375.

Japikse, Cornelis H., to The Procter & Gamble Co. Process for the sterilization of flour. 3,159,495, 12–1–64, Cl. 99—232.

Japikse, Cornelis H., and B. Lawrence, to The Procter & Gamble Co. Method of sterilising flour with minimum physicochemical change. 3,159,493, 12–1–64, Cl. 99—216.

Jeffrey, Ernest H. K., to The British Wedge Wire Co. Ltd. Conveyor belts. 3,159,267, 12–1–64, Cl. 198—193.

Jennings, Thomas J., and H. H. Voge, to Shell Oil Co. Catalytic oxidative dehydrogenation of monoolefins. 3,159,688, 12–1–64, Cl. 260—680.

Jentzen, Sydney W., to Jentzsen-Miller Co. Display shelving assembly. 3,159,437, 12–1–64, Cl. 312—108.

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Jentzsen, Sydney W. 3,159,437.

Joesting, Frederick D., to Honeywell Inc. Fluid flow control device. 3,159,208, 12–1–64, Cl. 165—1.

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Barnett, Irvin. 3,159,187.
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Chen, Alwin B., Desnoyers, and Strauss. 3,159,475.
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Brouillette, Joseph W., Jr., and Johnson. 3,159,743.

Johnson, George F., and L. C. Teague, to Shell Oil Co. Acrolein dimer production. 3,159,651, 12–1–64, Cl. 260—345.9.

Johnson, James B.: *See*—
Burgess, Hovey M., and Johnson. 3,159,505.

Johnson, Oscar H., to Parker Mfg. Co. Stapler. 3,158,868, 12–1–64, Cl. 1—49.

Johnson Products, Inc.: *See*—
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Johnson, Roger P.: *See*—
Young, James J., Johnson, and Huggins. 3,159,235.

Johnson, Roger T.: *See*—
Aroyan, Harry J., Lind, and Johnson. 3,159,553.

Johnson, S. C., & Son, Inc.: *See*—
Sesso, Louis M., and Mallander. 3,159,585.

Johnston, Clair R. Conveyor agitator means and controls therefor. 3,159,270, 12–1–64, Cl. 198—230.

Joiner, James H. Magnetic tape and film reel. 3,159,358, 12–1–64, Cl. 242—74.1.

Jones, Richard W.: *See*—
Bogdan, Charles A., Jr., Fitzgerald, and Jones. 3,159,751.

Jones, Robert E., and D. Wasserman, to Merck & Co., Inc. Phenazasiline compounds. 3,159,661, 12–1–64, Cl. 260—448.2.

Jones, Wallace, to Nuclear Materials and Equipment Corp. Fail proof radiation monitor and alarm circuit. 3,159,747, 12–1–64, Cl. 250—83.3.

Jones-Hinton, James: *See*—
Gray, Thomas E. H., and Jones-Hinton. 3,158,904.

Jorda, Robert M., to Shell Oil Co. Treating water-wetted surfaces with corrosion-resistant coating material. 3,159,499, 12–1–64, Cl. 117—2.

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Luehring, Elmer L. 3,159,731.

Juillard, Yves, to Societe Alsacienne de Constructions Mecaniques. Weaving frame. 3,159,186, 12–1–64, Cl. 139—127.

Junk, Heinrich J., to Lowell Mfg. Co. Securing device for loud speaker baffles. 3,159,234, 12–1–64, Cl. 181—31.

Kaariela, William T.: *See*—
Horrigan, John R., and Kaariela. 3,159,481.

Kadelburg, Kurt, to International Rectifier Corp. Semiconductor and secured metal base and method of making the same. 3,159,462, 12–1–64, Cl. 29—195.

Kaeding, Warren W., and A. T. Shulgin, to The Dow Chemical Co. Process for making o-hydroxybensoic acids. 3,159,671, 12–1–64, Cl. 260—521.

Kahle, Gerald R.: *See*—
Uraneck, Carl A., and Kahle. 3,159,587.

Kalart Co. Inc., The: *See*—
Castedello, William, and Bender. 3,159,841.
Schwartz, Morris, and Kaprelian. 3,159,078.

Kalusny, John C., D. Meyer, and R. E. McPherson. Apparatus for manufacture of flying targets. 3,159,011, 12–1–64, Cl. 62—345.

Kammann, Werner, and R. Moller, to Machinery Establishment. Floor scrubbing machine. 3,158,885, 12–1–64, Cl. 15—51.

Kanbar, Maurice S., and M. Foster. Cleaner roller-type assembly for picking up dust, lint and the like. 3,158,887, 12–1–64, Cl. 15—104.

Kane, John R., to F. G. Okie, Inc. Capsule sealing composition. 3,159,546, 12–1–64, Cl. 167—83.

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Kaprelian, Edward K.: *See*—
Schwartz, Morris, and Kaprelian. 3,159,078.

Karma Corp.: *See*—
Skiera, Richard J., and Phillips. 3,159,190.

Kattis, Theodore. Flake ice maker. 3,159,010, 12–1–64, Cl. 62—354.

Kaufmann, Philip H.: *See*—
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Kawaguchi, Hiroshi, H. Koshiyama, and M. Okanishi, to Bristol-Banyu Research Institute, Ltd. Antibiotic cirramycin and its production. 3,159,540, 12–1–64, Cl. 167—65.

Kazan, Eugene I. Photoelectric pressure transducer. 3,159,750, 12–1–64, Cl. 250—231.

Kearsley, Thomas, to Gullick Ltd. Roof supports for mines. 3,159,003, 12–1–64, Cl. 61—45.

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Blackman, Arthur W., and Keilbach. 3,158,997.

Keim, Cameron D., Jr., to Gerber Products Co. Case for containers severable to form trays. 3,159,328, 12–1–64, Cl. 229—51.

Keith, Percival C., to Hydrocarbon Research, Inc. Transportation of liquefied natural gas. 3,159,004, 12–1–64, Cl. 62—45.

Keller, Wolfgang, to Siemens-Schuckertwerke Aktiengesellschaft. Method for producing semiconductor crystals. 3,159,459, 12–1–64, Cl. 23—301.

Kelley, Arnold E., R. P. Vaell, and T. V. Inwood, to Union Oil Co. of California. Integral hydrofining-hydrocracking process. 3,159,564, 12–1–64, Cl. 208—59.

Kelsey-Hayes Co.: *See*—
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Stelzer, William, and Hill. 3,159,729.

Kelvin & Hughes Ltd.: *See*—
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Marshall, Preston F. 3,158,982.
Spicer, Ronald F. 3,158,985.

Kendle, Andrew F. Support bracket for collapsible tubes. 3,159,367, 12–1–64, Cl. 248—108.

Kent, George C.: *See*—
Elsner, Burton D., Kent, Larson, and Sugarman. 3,159,735.

Kent Mfg. Co., The: *See*—
Crimmins, David J., Marcsanyi, and Basile. 3,159,447.

Kerby, Floyd G., to The Budd Co. Die-formed sheet metal structures and method of making the same. 3,159,419, 12–1–64, Cl. 296—28.

Kerker, Dorus G.: *See*—
Tautner, Erwin, and Kerker. 3,159,795.

Kerr, Kenneth C. Head rest. 3,159,426, 12–1–64, Cl. 297—408.

Keuffel & Esser Co.: *See*—
Krieger, Wilhelm A., and May. 3,159,487.
O'Connor, John J., and Held. 3,159,488.

Keystone Steel & Wire Co.: *See*—
Edge, Walter S. 3,158,925.

Kibby, David R. Surfboard with removable outboard motor. 3,158,882, 12–1–64, Cl. 9—1.

Kidwell, Ralph E., and E. R. Dalton, to Abbott Laboratories. Radioactive capsules. 3,159,545, 12–1–64, Cl. 167—83.

Kimberlin, Charles N., Jr., and W. F. Arey, Jr., to Esso Research and Engineering Co. Hydrocarbon conversion process to obtain gasoline with the use of a single distillation zone. 3,159,565, 12–1–64, Cl. 208—79.

Kimberly-Clark Corp.: *See*—
Heller, Harold H., and Graham. 3,159,530.

Kincaid, George F.: *See*—
Dube, John E., and Kincaid. 3,159,774.

King, George W.: *See*—
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King, John E.: *See*—
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King, Robert W., R. K. Mitchell, and W. W. Vogelhuber, to The Battelle Development Corp. Air supply and control system for free-piston engine. 3,159,149, 12–1–64, Cl. 123—46.

King-Seeley Thermos Co.: *See*—
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Kinney, Lawrence W., to J. W. Greer Co. Accumulating conveyor unit. 3,159,430, 12–1–64, Cl. 302—2.

Kirchner, Willi, and G. Braune, to Kugelfischer Georg Schafer & Co. Length measuring device, particularly for internal diameters. 3,158,942 12–1–64, Cl. 33—174.

Kirk, David N., and V. Petrow, to The British Drug Houses Ltd. 6-methylene-3-oxo-4⁴ steroids and process for preparation of same. 3,159,643, 12–1–64, Cl. 260—397.3.

Kirkpatrick, Donald L.: *See*—
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Kister, Albert T., to Shell Oil Co. Production of alpha, beta-unsaturated aliphatic aldehydes. 3,159,680, 12–1–64, Cl. 260—604.

Kittler, Milton J., to Holley Carburetor Co. Choke mechanism. 3,159,692, 12–1–64, Cl. 261—39.

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Bradley, Kenneth B., and Klopf. 3,159,685.

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Bolkcom, Wilbur T., and Knapp. 3,158,913.

Knapsack-Griesheim Aktiengesellschaft: *See*—
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Knight, Everett F. Holder for a fishing rod. 3,159,366, 12–1–64, Cl. 248—42.

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Godwin, Homer A., Brockardt, and Koch. 3,159,123.

Kodama, Yutaka, I. Saikawa, and T. Maeda, to Toyama Kagaku Kogyo Kabushiki Kaisha. Substituted pyruvic acid esters and 3-amino-5-hydroxy-6-(substituted ethenyl)-1,2,4-triasines prepared therefrom. 3,159,624, 12–1–64, Cl. 260—240.

Kodama, Yutaka, I. Saikawa, T. Maeda, A. Takai, and I. Takamichi, to Toyama Kagku Kogyo Kbushiki Kaisha. 3-amino-6-substituted 1,2,4-triazine compounds. 3,159,625, 12–1–64, Cl. 260—240.

Kodey, Cyrill F., Jr., to Bell Telephone Laboratories, Inc. Device for assembling needle points in cups. 3,159,128, 12–1–64, Cl. 113—129.

Koehler, Raymond V., to American Motors Corp. Fuel tank filler tube and drain. 3,159,400, 12–1–64, Cl. 280—5.

Kogel, Wilhelm G., to Electrolux, Aktiebolaget. Absorption refrigeration system of the inert gas type. 3,159,009, 12–1–64, Cl. 62—110.

Kohler Mold and Machine: *See*—
Muth, George. 3,159,082.

Kolb, Robert H., to Shell Oil Co. Contacts for telemetering systems. 3,159,723, 12–1–64, Cl. 200—19.

Kolde, Robert F., and P. H. Pelley, to Grease & Oil Co., Inc. Container. 3,159,304, 12–1–64, Cl. 220—54.

Kolijn, Martinus, L. W. Ter Haar, and J. A. Te Nuyl, to Shell Oil Co. Quench gun for reactor producing acetylene and the like. 3,159,458, 12–1–64, Cl. 23—277.

Komstadius, Carl A. Keyway measuring instrument. 3,158,941, 12–1–64, Cl. 33—174.

Koppers Co., The: *See*—
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Korte, Friedrich W. A. G. K.: *See*—
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Kraus, Charles E., to Excelermatic, Inc. Roller support mechanism for toroidal drive. 3,159,042, 12–1–64, Cl. 74—200.

Kraus, Gerard, to Phillips Petroleum Co. Cis-polybutadiene compositions. 3,159,691, 12–1–64, Cl. 260—894.

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Krieger, Wilhelm A., and L. May, to Keuffel & Esser Co. Photosensitive diazotype material comprising a starch, silica and a binder. 3,159,487, 12–1–64, Cl. 96—75.

Kroffke, Kenneth K., to Airmatic Valve, Inc. Fluid pressure actuated flexible sleeve valve. 3,159,373, 12–1–64, Cl. 251—5.

Kroffke, Kenneth K., to Airmatic Valve, Inc. Flexible diaphragm control valve. 3,159,374, 12–1–64, Cl. 251—30.

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Kruell, Andreas. Window blind with vertical slats. 3,159,204, 12–1–64, Cl. 160—168.

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Kyle, Harold E., J. E. Knap, and E. C. Lindblad, to Union Carbide Corp. Oxo recovery process. 3,159,679, 12–1–64, Cl. 260—604.

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Lahti, Rudolph J. Control lever replacement arm. 3,159,049, 12–1–64, Cl. 74—519.

Laing, Nikolaus. Lifting and propulsion means for aircraft. 3,159,362, 12–1–64, Cl. 244—12.

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Latham, Raymond E., and J. D. Watts, to Gray Tool Co. Sealing connection including a rigid sealing ring having opposed, elastically deflectable lips. 3,159,302, 12–1–64, Cl. 220—46.

Laube, William C., Jr., to Hammond Organ Co. Artificial reverberation device. 3,159,713, 12–1–64, Cl. 179—1.

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Lautenbach, Charles S., to General Motors Corp. Convertible top. 3,159,422, 12–1–64, Cl. 296—117.

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Peterson, Merle H., and Lawrence. 3,158,975.

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Lazan, Benjamin J., to The Regents of the University of Minnesota. Damping means. 3,159,249, 12–1–64, Cl. 189—34.

Lear Siegler, Inc.: *See*—
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Lehman, Leon M., to Sinclair Research, Inc. Isomerization of alkyl benzenes. 3,159,687, 12–1–64, Cl. 260—668.

Lehr, Philip N., and R. Lupia, to Dictograph Products, Inc. Chime signal regulator. 3,159,717, 12–1–64, Cl. 179—84.

Leonard, Henderson G. Scaffold hanger for overhead highway sign trusses. 3,159,243, 12–1–64, Cl. 182—150.

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Leslie, Donald J. Apparatus for producing phase shift in electronic organs. 3,159,706, 12–1–64, Cl. 84—1.24.

Levine, Max, and B. M. Kuhn, to Hercules Powder Co. Modified stereo regulated polyolefin filamentary articles and process for producing such articles. 3,159,449, 12–1–64, Cl. 8—130.1.

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Lockwood, George H., C. G. Menard, and A. F. Townsend, to The Heald Machine Co. Apparatus for grinding. 3,158,965, 12–1–64, Cl. 51—5.

Lockwood, Harris C.: *See*—
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Logan, Richard S., to Phillips Petroleum Co. Filtration of petroleum sulfonate slimes. 3,159,670, 12–1–64, Cl. 260—504.

Lohr, Thomas E., to General Motors Corp. Drive mechanism. 3,159,045, 12–1–64, Cl. 74—411.

Long, Dorothy A. Electric steam generator device with brush. 3,158,891, 12–1–64, Cl. 15—304.

Longo, Thomas A., to Sylvania Electric Products Inc. Multiple component electrical enclosure having identifying ring plate short-circuiting one component. 3,159,770, 12–1–64, Cl. 317—101.

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Lukezich, Rudolph J. Portable litter receptacles. 3,158,889, 12–1–64, Cl. 15—142.

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Lutwack, Ralph, to Shell Oil Co. Organic functional fluids and polymeric amine salt additives therefor. 3,159,578, 12–1–64, Cl. 252—32.7.

Lyall, Charles E., to Culligan, Inc. Water conditioning tank and liner. 3,159,306, 12–1–64, Cl. 220—63.

Macaulay, Malcolm, to Sperry Rand Corp. Method and apparatus for visual presentation of digital and analog information. 3,159,830, 12–1–64, Cl. 343—5.

MacFarlane, Robert B., to Polymer Corp. Ltd. Stabilization of polyolefins. 3,159,598, 12–1–64, Cl. 260—45.9.

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MacKay, Joseph H., Jr., and M. J. McKellar. Finishing article holder and support pad. 3,158,972, 12–1–64, Cl. 51 377.

MacMillan, Robert E., to The Delman Co. Fluid check valve unit. 3,159,175, 12–1–64, Cl. 137—493.

MacNair, Donald, to Bell Telephone Laboratories, Inc. Thermionic cathode. 3,159,461, 12–1–64, Cl. 29—195.

MacNeill, John H., J. E. Bellinger, Jr., and S. D. Bloemendaal, to Socoban Engineering, Inc. Punch and tape feed verifying apparatus. 3,159,337, 12–1–64, Cl. 234—33.

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Searle, Walter W. R., and E. F. Mann, to The Hoover Co. Filling and emptying system for washing machine. 3,159,174, 12–1–64, Cl. 137—374.

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 1, 1964 Volume 809 Number 1

TRADEMARKS

NOTICES

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

1. An authorization letter requesting this service must be filed for *each* application for which this service is desired. The authorization letter may be filed initially upon the filing of a new application or it may be filed for a pending application indicating the serial number of the application. Blanket authorizations for a number of applications in a single authorizing letter will not be accepted.

2. The authorizing letter should indicate the applicant's (or his representative's) deposit account number and the number of copies of cited references desired.

3. All references cited *after* the receipt of the authorizing letter will be mailed, in the quantity indicated, to the addressee of record in the application. References will not be mailed to any other address.

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C. A. KALK,
Director of Administration.

November 9, 1964.

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CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15,327
Date of oldest new application	Mar. 23, 1964
Date of oldest amended application	Mar. 10, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	4-1-64	4-6-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 16, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-23-64	3-10-64
Renewals (All Classes)	10-9-64	10-27-64
Sec. 12 (c) Publications (All Classes)	10-15-64	.....

Applications filed during the month of October 1964—2,218

Registrations Issued	381—No. 780,781 to No. 781,161
Renewals Issued	50

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C. A. KALK,
November 9, 1964. *Director of Administration.*

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate : antacid
Ambuphylline : Diuretic—myocardial stimulant
Aminacrine hydrochloride : bacteriostatic agent
Ampyzine sulfate : euphoriant
Anisacril : hypocholesteremic and anoretic agent
Anthelmycin : anthelmintic antibiotic
Benorterone : antiandrogen
Butacetin : analgesic agent
Calcium trisodium pentetate : heavy metal antagonist
Cetalkonium chloride : antibacterial agent
Clometherone : anti-estrogen
Clorethate : sedative and hypnotic
Clothixamide : tranquilizer
Codoxime : antitussive
Dactinomycin : antitumor agent
Diohippuric acid I 131 : radiopharmaceutical
Doxepin hydrochloride : antipruritic
Fenclorethate : analgesic and sedative
Furosemide : diuretic
Hydroxyhexamide : hypoglycemic agent
Iprindole : antidepressant
Mequinolate : poultry coccidiostat
Metaproterenol sulfate : bronchodilator
Metoclopramide hydrochloride : antiemetic
Metrogestone : oral progestin
Modaline sulfate : antidepressant
Norbolethone : anabolic agent
Oxamarin hydrochloride : systemic hemostat
Oxolinic acid : antiprotozoa agent
Perhexiline maleate : coronary vasodilator
Phenyl aminosalicylate : tuberculostatic agent
Piperamide maleate : antiparasitic
Polyoxyl 8 stearate : surface active agent
Polyoxyl 40 stearate : surface active agent
Polysorbate 20 : surface active agent
Polysorbate 40 : surface active agent
Polysorbate 60 : surface active agent
Polysorbate 65 : surface active agent
Polysorbate 80 : surface active agent
Polysorbate 85 : surface active agent
Rolodine : muscle relaxant
Septiphene : disinfectant
Silodrate : antacid
Sodium amylosulfate : peptic ulcer therapy
Sodium etoquinol : treatment of flash burns (ophthalmic)
Sorbitan monolaurate : surface active agent
Sorbitan monooleate : surface active agent
Sorbitan monopalmitate : surface active agent
Sorbitan monostearate : surface active agent
Sorbitan sesquioleate : surface active agent
Sorbitan trioleate : surface active agent
Sorbitan tristearate : surface active agent
Sulfanitran : antibacterial agent
Testolactone : antineoplastic agent
Thiamiprine : anti-leukemic
Thydromedan : lipid mobilizer and thyromimetic
Triampyzine sulfate : anti-secretory agent

MARKS PUBLISHED FOR OPPOSITION

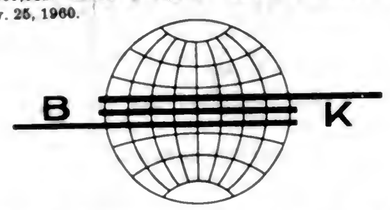
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 109,032. Bruel & Kjaer, Naerum, Denmark. Filed Nov. 25, 1960.



Class 21—Electrical Apparatus, Machines, and Supplies

For Filter Chassis, Filter Sets, Frequency Transformers, Level Recorders, Microphone Amplifiers, Standing Wave Apparatus, Microphones, Microphone Cartridges, Cables and Stands, Microphone Selectors, Microphone Selector Inverters, Acoustic Couplers, Cathode Followers, Automatic Reverberation Switches, VHF Converters, Vibration Pickup Preamplifiers.

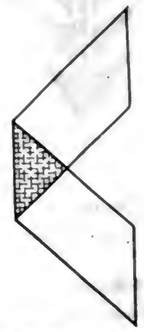
First use December 1948; in commerce December 1948.

Class 26—Measuring and Scientific Appliances

For Sonic, Audio and Low Frequency Signal Generators and Control Systems, Impedance, Deviation, and Frequency and Distortion Measuring Bridges and Accessories Therefor, Strain Gauge Apparatus, Balancing Units, Balancing Resistors and Condensers, Bridge Supplies and Bridge Switches, Accelerometers, Accelerometer Preamplifiers, Audio Frequency Spectrometers, Audio Frequency Responsive and Spectrum Recorders, Audio Frequency Transformers, R.M.S. Electronic Voltmeters, Audio Frequency Voltmeters, Wide Range Voltmeters, Heterodyne Voltmeters, Megohmmeters and High Voltage Accessories Therefor, Artificial Ears, Microphone Calibration Equipment, Artificial Noise Sources, Hearing Aid Test Chambers, Accelerometer Calibration Exciters, Voltmeters, Potentiometers, Beat Frequency Oscillators, Complex Modulus Apparatus for Determination of Complex Modulus of Elasticity and Loss Factor of Solid Materials, Complex Modulus Recorders, Constant Sound Pressure Sources, Pistonphones, Polar Recorders, Polar Turntables, Electrostatic Actuators, Frequency Response Tracers, Automatic Vibration Exciter Controls, Surface Roughness Measuring Meters, Control Panels, and Accessories for the Foregoing Instruments.

First use 1949; in commerce 1949.

SN 161,955. Chomerics, Inc., Plainville, Mass. Filed Feb. 4, 1963.



The drawing is lined for the color yellow.

Class 1—Raw or Partly Prepared Materials

For Encapsulating Materials Such as Epoxy Resin Compositions and Electrically Conductive Plastics Sold in the Form of Sheets, Molded Sections, and Pastes.

First use Sept. 1, 1961.

Class 14—Metals and Metal Castings and Forgings

For Electrically Conductive Metal Powders Such as Silver-Plated Copper Powder for Rendering Plastic Compositions Electrically Conductive.

First use Oct. 15, 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Metal Filled Electrically Conductive Plastic Gaskets and Klystron Tube Grids.

First use Mar. 1, 1962.

SN 170,188. Halliburton Company, Duncan, Okla. Filed June 3, 1963.

SANFIX

Class 1—Raw or Partly Prepared Materials

For Resins Used in Sand Control Service for Oil and Gas Well Drilling.

Class 6—Chemicals and Chemical Compositions

For Catalysts and Diluents Used in Oil and Gas Well Drilling.

First use May 31, 1963.

SN 170,974. Atracta Wax Corporation, Chicago, Ill. Filed June 14, 1963.

ATRACTA

Owner of Reg. No. 748,001.

Class 6—Chemicals and Chemical Compositions

For Germicidal and Deodorant Disinfectants, Multi-Purpose Insecticides.

Class 16—Protective and Decorative Coatings

For Self-Polishing Clear Floor Finish for All Types of Floors.

Class 52—Detergents and Soaps

For Multi-Purpose Cleaner for Cleaning All Types of Floors, for Laundering Clothes, and for Dish Washing.

First use Feb. 27, 1962.

SN 176,139. Abnak Music Enterprises, Inc., Dallas, Tex. Filed Sept. 3, 1963.

ABNAK

Class 36—Musical Instruments and Supplies

For Mechanically Grooved Phonograph Records and Needles, Albums, and Envelopes Therefor.

First use June 1, 1962.

Class 38—Prints and Publications

For Sheet Music.

First use Mar. 25, 1963.

SN 184,565. American Textile Arts, Inc., Wilmington, Del. Filed Jan. 14, 1964.

ATAQUA

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics Used in Making Clothing for Men, Women, and Children and in Making Carpets.

Class 43—Thread and Yarn

For Yarns.

First use Apr. 2, 1963.

SN 185,593. Florex-Werk Niemann & Harde K.G., Steinhagen, Westfalen, Germany. Filed Jan. 29, 1964.

FLOREX

Owner of German Reg. No. 684,324, dated Nov. 17, 1955.

Class 39—Clothing

For Terry-Diapers, Terry-Bibs, Terry-Bathing-Gowns, Terry-Dressing-Gowns, Terry-Dresses, Terry-Sportdresses.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Terry-Fabrics, Terry-Towels, Terry-Bathing Cloths for Adults and for Children, Terry-Face Cloths for Adults and for Children, Terry-Washing Gloves, Terry-Bathroom Rugs, Terry-Rinsing Towels.

SN 187,665. Anne Hathaway, Inc., Nashua, N.H. Filed Feb. 28, 1964.

Anne Hathaway



The name "Anne Hathaway" is taken from history, and such name and portrait are fictitious.

Class 51—Cosmetics and Toilet Preparations

For Sachet Powder, Talc, Creme Rinse and Conditioner, All-Purpose Lotion for Hands and Body, Bubble Bath, Roll-On Deodorant, and Hair Spray.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Dec. 27, 1963.

SN 188,177. American Pacific European Trading, Inc., d.b.a. Ampetco Inc., South Gate, Calif. Filed Mar. 9, 1964.



The wording "Trade Mark" is disclaimed.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Speakers, and Motor-Operated Fans.

Class 50—Merchandise Not Otherwise Classified

For Painting.

First use Jan. 6, 1964.

SN 193,689. Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany. Filed May 18, 1964.

MORANIT-WEBSTRICK

Priority claimed under Sec. 44(d) on German application filed Nov. 19, 1963; Reg. No. 783,132, dated Jan. 29, 1964. Owner of U.S. Reg. No. 713,912.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Wide-Cuff Circular Knitting Machines.

Class 39—Clothing

For Knitted Articles of Clothing for Men, Women, and Children—Namely, Dresses, Jackets, Pullovers, Sweaters, and Coats.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted Fabric in the Piece.

Service Marks

SN 186,075. The Grand Bahama Development Company, Limited, New York, N.Y. Filed Feb. 5, 1964.

LUCAYA G.B.

102—Insurance and Financial

For Sale of Land and Houses for Residential and Commercial Purposes.

103—Construction and Repair

For Construction of Houses, Apartments, Hotels, and Clubs.

First use on or about Oct. 12, 1962.

SN 187,414. The Grand Bahama Development Company, Limited, New York, N.Y. Filed Feb. 25, 1964.



102—Insurance and Financial

For Sale of Land and Houses for Residential and Commercial Purposes.

103—Construction and Repair

For Construction of Houses, Apartments, Hotels, and Clubs.

First use on or about Oct. 12, 1962.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 165,075. Ross H. Rasmussen, Hooper, Nebr. Filed Mar. 20, 1963.

Nu-Dwarf

For Kentucky Blue Grass Seed.
First use Sept. 1, 1962.

SN 187,952. Northrup, King & Co., Minneapolis, Minn. Filed Mar. 4, 1964.

MEXIKING

For Seed Corn.
First use Feb. 14, 1964.

SN 188,921. Shell Oil Company, New York, N.Y. Filed Mar. 17, 1964.

EPOCRYL

For Synthetic Resins.
First use Feb. 18, 1964.

SN 189,171. Hercules Powder Company, Wilmington, Del. Filed Mar. 20, 1964.

BRESIN

For Natural Resins.
First use Feb. 3, 1964.

SN 189,508. Select Nurseries, Inc., Brea, Calif. Filed Mar. 24, 1964.

ASTRONAUT

For Plants Called Camellias.
First use Feb. 1, 1964.

SN 189,509. Select Nurseries, Inc., Brea, Calif. Filed Mar. 24, 1964.

BREA

For Plants Named Eugenia.
First use Feb. 15, 1963.

SN 189,510. Select Nurseries, Inc., Brea, Calif. Filed Mar. 24, 1964.

RUBY POINT

For Plant Known as Carissa.
First use Feb. 15, 1964.

SN 190,930. J. M. Huber Corporation, Borger, Tex. Filed Apr. 13, 1964.

KAOFREE

For Clay.
First use Mar. 14, 1964.

Class 2—Receptacles

SN 165,049. Fox Crafts, Fredericksburg, Va. Filed Mar. 20, 1963.

KRIB KADDIE

For Compartmented Tray To Hold Powder, Pins, Food Jars, and the Like.
First use Mar. 4, 1962; Apr. 15, 1960, as to the words spelled "Crib Caddy."

SN 173,389. Lee Shipley, d.b.a. Country Cottons, Long Beach, Calif. Filed July 19, 1963.

"PETTI-TOTE"

For Plastic Bag for Bouffant Petticoats.
First use Feb. 1, 1962.

SN 178,604. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 9, 1963.

GENERAL TIRE

Owner of Reg. No. 752,967.

For Food Service and Related Equipment—Namely, Trays, Ice Tubs, Silver Boxes, Dish Boxes and Containers, Water Pitchers, Carafes, Coffee Pots, Tumblers, Salad Bowls, Utility Bowls, Bread Baskets, Bread Trays, Butter Chips, Iced Tea Spoons, Mustard Spoons, Wine Coolers, Supreme Rings, Supreme Bowls, Ash Trays and Food Containers, Primarily of a Plastic Construction.
First use Dec. 21, 1962.

SN 179,165. Sun Industries, Inc., Cleveland, Ohio. Filed Oct. 16, 1963.

TIDY-TRAY

For Set of Plastic Containers for Storage of Food in Household Refrigerators and a Plastic Tray for Holding the Containers.
First use July 9, 1963.

SN 182,845. Tra-Con, Inc., Medford, Mass. Filed Dec. 11, 1963.

BIPAX

For Packages for Storing, Handling, Mixing and Dispensing Two Chemical Reactants Such as Two-Component Epoxy, Silicone, Urethane and Polyester Resin Systems.
First use Nov. 1, 1961.

SN 190,573. American Can Company, New York, N.Y. Filed Apr. 8, 1964.

MARQUEE

For Paperboard Trays.
First use Mar. 20, 1964.

SN 190,574. American Can Company, New York, N.Y. Filed Apr. 8, 1964.

"WONDER-GLO"

For Paper Cartons.
First use Mar. 12, 1964.

SN 191,843. The Dow Chemical Company, Midland, Mich. Filed Apr. 23, 1964.

HANDI-WARE

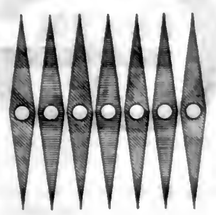
For Disposable Plastic Dinnerware.
First use Apr. 3, 1964.

SN 194,180. H & K Sales Co., Inc., Kansas City, Mo. Filed May 25, 1964.

MET'R-LOC

For Closure Liners for Containers, Which Closure Liners Have a Lip for Stripping Liquid From a Brush.
First use June 18, 1963.

SN 198,426. Maryland Cup Corporation, Owings Mills, Md. Filed July 28, 1964.



The mark consists of a line of diamond-shaped designs of indefinite length. The drawing is lined for green and blue.
For Drinking Cups and Paper Plates.
First use on or about December 1961.

SN 198,738. Jarco Metal Products Corp., Westbury, N.Y. Filed July 29, 1964.

canouflage

For Decorative Tubular Covers for Canned Products.
First use July 22, 1964.

SN 200,340. Foster Grant Co., Inc., Leominster, Mass. Filed Aug. 21, 1964.

DU-O-CUP

Owner of Reg. No. 729,918.
For Lids of Drinking Cups.
First use on or about Dec. 3, 1963.

SN 200,654. Mercury Packaging Company, Toledo, Ohio. Filed Aug. 26, 1964.



For Paperboard Cartons and Boxes, Primarily for Foods.
First use Mar. 17, 1964.

Class 6—Chemicals and Chemical Compositions

SN 149,091. S. C. Johnson & Son, Inc., Racine, Wis. Filed July 16, 1962.

KALEIDOSCOPE

For Chemical Intermediates for Use in the Manufacture of Ingredients for Paints, Inks, Metal Coatings, Corrosion Inhibitors, Plastics, Aminealdehyde Resins, Phenolics, Phenolic Aldehyde Resins, Epoxies, Textile Treatments, and Water Soluble Systems.
First use on or about May 31, 1962.

SN 185,636. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 29, 1964.

RO-PEL

Owner of Reg. No. 742,550.
For Grass Growth Inhibitor.
First use Jan. 8, 1964.

SN 189,317. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

TRACE

For Chemical Dye for Use in Embalming Fluids.
First use June 10, 1960.

SN 189,319. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

FORMAL-CREME

For External Embalming Cream.
First use June 10, 1960.

SN 190,109. Nott Manufacturing Co., Inc., Poughkeepsie, N.Y. Filed Apr. 1, 1964.

mildex

For Fungicide Spray for Control of Powdery Mildew on Roses, Flowers, and Shrubs.
First use on or about Feb. 18, 1964.

SN 190,805. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Apr. 10, 1964.

ONE-ELEVEN

For Chlorinated Hydrocarbons Used as Solvents.
First use Mar. 25, 1964.
Subj. to Intf. with SN 198,685.

SN 190,988. Sterwo Industries, Inc., Allendale, N.J. Filed Apr. 13, 1964.

AQUA-D-CHLOR

For Chemical Preparation for Removing Chlorine From Aquarium Tank Water.
First use Feb. 10, 1964.

SN 191,190. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 15, 1964.

AQUASORB

For Indicating Moisture Absorbents.
First use Mar. 25, 1964.

SN 192,399. Hukill Chemical Corporation, Cleveland, Ohio. Filed Apr. 30, 1964.

HUKILL

Owner of Reg. No. 666,441.
For Acids—Namely, Acetic, Formic, Hydrofluoric, Hydrochloric, Nitric, Phosphoric, Sufamic, Sulphuric, and Aqua Ammonia Alcohols—Namely, Methyl, Ethyl, Butyl, Isopropyl; Acetates—Namely, Ethyl, Propyl, Isopropyl, Butyl, Isobutyl, Methyl Amyl; Ketones—Namely, Acetone, Methyl Ethyl, Methyl Isobutyl; and Diacetone Alcohol, and Miscellaneous Chemicals—Namely, Isopropyl Ether, Trichloroethylene, and Chloroethene; Aromatics—Namely, Toluol, Xylol, Naphthas; Aliphatics—Namely, Lactol Spirits, Naphthas, Stoddard, and Mineral Spirits.
First use January 1960.

SN 194,708. Crown Zellerbach Corporation, San Francisco, Calif. Filed June 2, 1964.

CROWNEX

For Drilling Mud Thinner for Use in the Oil Well Drilling Industry.
First use Apr. 15, 1964.

SN 194,764. Will & Baumer Candle Co., Inc., Syracuse, N.Y. Filed May 27, 1964.

PONTIFICAL

For Incense.
First use Jan. 1, 1918.

SN 194,852. American Cyanamid Company, Wayne, N.J. Filed June 4, 1964.

AERO

Owner of Reg. Nos. 627,187, 748,051, and others.
For Stearate.
First use Dec. 2, 1963.

SN 194,894. Mallinckrodt Chemical Works, St. Louis, Mo. Filed June 4, 1964.

OR

Owner of Reg. No. 594,056.
For Organic Chemicals for Laboratory Use.
First use May 22, 1964.

SN 194,971. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 5, 1964.

FREON-214

Owner of Reg. Nos. 293,851, 742,552, and others.
For Tetrachlorotetrafluoropropane, Being Fluorinated Hydrocarbons Used as Dielectrics, Coolants, Solvents, Heat Transfer Medium and Additive for Improvement of Lubricity.
First use Apr. 13, 1964.

SN 194,972. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 5, 1964.

F-214

Owner of Reg. Nos. 331,643, 742,551, and others.
For Tetrachlorotetrafluoropropane, Being Fluorinated Hydrocarbons Used as Dielectrics, Coolants, Solvents, Heat Transfer Medium and Additive for Improvement of Lubricity.
First use Apr. 13, 1964.

SN 195,000. Lowe's, Inc., Cassopolis, Mich. Filed June 5, 1964.

B'HAVE

For Dog and Cat Repellent.
First use on or before Dec. 12, 1949.

SN 195,073. The Dow Chemical Company, Midland, Mich. Filed June 8, 1964.

SOS

Owner of Reg. No. 621,018.
For Chemical Additives for Cement Slurries Useful in Wells and Underground Earth Formations.
First use Apr. 9, 1954.

SN 195,569. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed June 12, 1964.

TIM-BOR

For Borates Used for Wood Preservative.
First use Mar. 21, 1963.

SN 195,705. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 15, 1964.

PRUV

For Surface Active Agent.
First use Apr. 29, 1964.

SN 195,907. American Cyanamid Company, Wayne, N.J. Filed June 18, 1964.

AERO

Owner of Reg. Nos. 627,187, 748,051, and others.
For Anhydrous Ammonia.
First use July 1, 1959.

SN 198,685. Vulcan Materials Company, d.b.a. Frontier Chemical Company, Wichita, Kans. Filed July 28, 1964.

SOLVENT 111

Applicant disclaims the word "Solvent" apart from the mark as shown.
For Chlorinated Hydrocarbons Used as Solvents.
First use Feb. 26, 1964.
Subj. to Intf. with SN 190,805.

SN 200,616. Atomic Basic Chemicals Corporation, Pittsburgh, Pa. Filed Aug. 26, 1964.



The words "Fly Free" are disclaimed separate and apart from the mark as shown.
For Larvicide for Face Flies and Horn Flies in Livestock.
First use May 6, 1964.

Class 8 — Smokers' Artides, Not Induding Tobacco Products

SN 172,488. Habitat, Inc., New York, N.Y. Filed July 5, 1963.

TREXILOY

For Ashtrays, Sandurns and Humidors and for Ashtrays, Sandurns and Humidors Integral With Decorative Stands.
First use on or about June 25, 1963.

SN 192,447. Zalma Corporation of America, New York, N.Y. Filed Apr. 30, 1964.

CUPID

For Cigar or Cigarette Lighters of the Butane Gas Fuel Type and Butane Gas Fuel Containers Therefor.
First use Apr. 10, 1963.

Class 10 — Fertilizers

SN 153,031. Spang and Company, Butler, Pa. Filed Sept. 12, 1962.

MINERALIME

For Soil Additive Consisting Mainly of Finely Divided Open Hearth Slag.
First use July 7, 1962.

Class 12 — Construction Materials

SN 148,369. Dimensional Plastics Corp., Hialeah, Fla. Filed July 5, 1962.



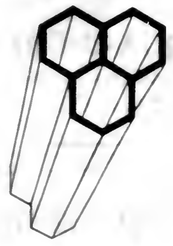
Owner of Reg. No. 762,318.
For Plastic Structural Cast-Laminated Panels, Sandwich Panels, Sheets and Structural Parts Thereof.
First use May 1, 1957.

SN 158,712. Insular Products Corporation, Houston, Tex. Filed Dec. 7, 1962.

PICON

For Flexible Tubing and Duct Insulation.
First use Dec. 30, 1961.

SN 159,891. Hexcel Products Inc., Berkeley, Calif. Filed Dec. 28, 1962.



Owner of Reg. Nos. 556,247, 686,285, and 688,155.
For Unexpanded and Expanded Honeycomb Core Material Made From Metal, Paper and Glass Fiber and Textile Fiber Reinforced Plastic and Honeycomb Sandwich Structures Utilizing the Aforementioned Types of Honeycomb Core Materials as a Structural Core Component Thereof.
First use about Nov. 1, 1962.

SN 169,615. Decatur Iron & Steel Company, Decatur, Ala. Filed May 24, 1963.

WEATHERTROL

For Glased, Aluminum Frame Windows for Buildings.
First use May 9, 1963; October 1954 as to "Weather-Trol."

SN 175,045. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Aug. 14, 1963.

TECTIG

For Glass Units Used as Sliding or Hinged Windows for Refrigerator Cases or Cabinets.
First use July 26, 1963.

SN 178,354. Kadex Corporation, Oakland, Calif. Filed Oct. 4, 1963.

KADEX

For Joint Cement and Texturing Compounds for Use With Gypsum Board, Plaster Board, and Dry Wall Construction.
First use on or about Jan. 13, 1959.

SN 189,850. American Metal Climax, Inc., New York, N.Y. Filed Mar. 30, 1964.

SUN VALLEY

Owner of Reg. Nos. 651,859 and 710,129.
For Sliding Doors.
First use June 4, 1954.

SN 193,223. F. E. Schumacher Company, Hartville, Ohio. Filed May 11, 1964.

WINSUM

For Storm Doors.
First use Mar. 30, 1964.

SN 193,344. The Eagle-Pitcher Company, Cincinnati, Ohio. Filed May 13, 1964.

ALUM-A-FELT

For Pipe Covering Insulation.
First use Apr. 28, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 179,856. Band-It Company, Denver, Colo. Filed Oct. 28, 1963.

VALSTRAP

For Cartons of Stainless Steel Straps Sold in Rolls for Light Duey Strapping and Metal Clips for Fastening the Strapping Used for Such Uses as Holding Light Weight Traffic Control Boxes to Poles, Small Signs to Poles and Other Objects, Street Decorations, Displays, Shopping Center Signs, Holding Insulation to Tanks, Pipes and the Like.
First use on or about Apr. 8, 1963.

SN 179,897. Granville-Phillips Company, Boulder, Colo. Filed Oct. 28, 1963.



For Ultra-High Vacuum Equipment—Namely, Several Types and Sizes of Valves and Metered Automatic Pressure Controllers.
First use Jan. 1, 1958.

SN 179,970. Utilities Safety Supply Co., Inc., Lee's Summit, Mo. Filed Oct. 28, 1963.



For Safety Equipment—Namely, Belts and Straps for Linemen, Tree Trimmers, Maintenance Workers and Steel Workers and Attachments for and Parts of Said Belts and Straps Such as Tool Pouches, Parts Bags, Pads and the Like.
First use during 1945.

SN 190,844. William Ross & Sons Limited, Hillington, Glasgow, Scotland. Filed Apr. 10, 1964.

BYROS

Owner of British Reg. No. 841,544, dated Nov. 10, 1962.
For Valves.

SN 194,533. Star Heel Plate Co., Inc., Newark, N.J. Filed May 28, 1964.



Owner of Reg. No. 652,602.
For Heel Plates.
First use Apr. 1, 1964.

SN 194,663. F. Dexter Sanborn, Jr., d.b.a. Dexter Sanborn & Company, Hinsdale, Ill. Filed June 1, 1964.

"IN-EN-OUT"

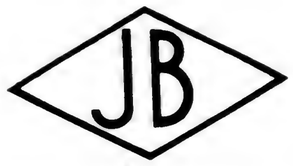
For Injectors and Junctions for Conditioning Fluid Circulation in Dies, Molds, and Platens.
First use Apr. 6, 1964.

SN 194,975. The Electric Storage Battery Company, Philadelphia, Pa. Filed June 5, 1964.

POLYHINGE

For Thermoplastic Hinges.
First use Apr. 7, 1964.

SN 198,052. Jaybee Manufacturing Corporation, Los Angeles, Calif. Filed July 17, 1964.



Owner of Reg. Nos. 757,160 and 757,161.
For Builders' Finish Hardware—Namely, Catches, Hinges, Pulls, Knobs, Back Plates, Push Plates, Towel Bars, Towel Rings, Door Stops, Latch Sets, Door Knobs, Rosettes, Sash Locks, Sash Lifts, Strikes, Screen Hangers, Coat and Hat Hooks, Brackets for Shelves and Rails, House Numbers, Door Grills and Knockers, Chain Latches, Threshholds, Pole Sockets, Hooks, Closet Rod and Shelf Supports, Slotted Shelf Brackets and Bumpers.
First use October 1961.

Class 14 — Metals and Metal Castings and Forgings

SN 165,018. American Smelting and Refining Company, New York, N.Y. Filed Mar. 20, 1963.

HI-AMP

For Zinc-Base Metal Anodes for Use in Cathodic Protection of Ferrous Structures Immersed in Sea Water.
First use Sept. 29, 1957.

SN 181,776. Hammond Sheet Metal Company, St. Louis, Mo. Filed Nov. 22, 1963.



For Sheet Metal.
First use on about Mar. 15, 1956.

SN 181,780. The International Nickel Company of Canada, Limited, Toronto, Ontario, Canada. Filed Nov. 22, 1963.

SD

Priority claimed under Sec. 44(d) on Canadian application filed May 27, 1963, Reg. No. 133,643, dated Nov. 29, 1963.
For Electrolytic Nickel.

SN 185,461. United States Steel Corporation, Pittsburgh, Pa. Filed Jan. 27, 1964.

REDI-KOTE

For Steel Sheets.
First use Dec. 30, 1963.

SN 196,459. Mideast Aluminum Corp., Dayton, N.J. Filed June 25, 1964.

INSTANT ALUMINUM

The lining on the drawing does not indicate a particular color but is a feature of the mark. No claim is made to the word "Aluminum" apart from the mark as shown.
For Aluminum Extrusions.
First use Oct. 29, 1963.

Class 15 — Oils and Greases

SN 185,146. The McGlaughlin Oil Co., Columbus, Ohio. Filed Jan. 22, 1964.

PETROL-GEL

For Technical White Grease.
First use during 1953.

SN 194,429. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

SOHIKOTE

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant With Rust Preventive Properties for Industrial Use.
First use January 1952.

SN 195,560. The Standard Oil Company, Cleveland, Ohio. Filed June 12, 1964.

SOHIFLO

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricating Oil for Refrigeration Equipment.
First use February 1960.

SN 195,563. The Standard Oil Company, Cleveland, Ohio. Filed June 12, 1964.

SOHITUN

Owner of Reg. Nos. 235,809, 667,648, and others.
For Lubricant for Industrial Use.
First use July 1958.

SN 196,650. Everlube Corporation of America, d.b.a. Everlube Corporation, North Hollywood, Calif. Filed June 29, 1964.

INLOX 44

For Dry Film Lubricant Composition.
First use Jan. 9, 1964.

SN 198,540. Dacom, Inc., Silverton, Ohio. Filed July 27, 1964.

LORELEI

For Candles.
First use Mar. 1, 1960.

SN 198,546. Fuels Research Corporation, Denver, Colo. Filed July 27, 1964.

RFS-1000

Owner of Reg. Nos. 732,061 and 744,642.
For Fuel Oil Supplement.
First use Apr. 1, 1964.

Class 16 — Protective and Decorative Coatings

SN 163,086. Thomson Porcelite Paint Company, Philadelphia, Pa. Filed Feb. 19, 1963.



Owner of Reg. Nos. 68,484 and 207,343.
For Paints, Enamels, Varnishes.
First use Jan. 15, 1922.

SN 167,723. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Apr. 29, 1963.

VITHANE

For Industrial Flexible Resin Coatings in the Nature of a Paint Having High Impact Abrasion and Oil Resistance and Impervious to Gases and Being Particularly Adaptable for Coating Use on Fabric for Tents, Ponchoes, etc., Fire Hose, Industrial Belting, Pneumatic Structures Such as Balloons and Isostatic Molds.
First use Apr. 3, 1963.

SN 175,151. Thompson and Company, Oakmont, Pa. Filed Aug. 15, 1963.

TECOTE

For Lacquers To Be Applied to Metal by Fabricators of Metal Products.
First use on or about Oct. 15, 1947.

Class 17 — Tobacco Products

SN 179,194. Casa Cuba Cigar Co., Inc., d.b.a. Z. Garcia y Cia, Tampa, Fla. Filed Oct. 17, 1963.

ORO de CUBA

No claim is made to the words "de Cuba" apart from the mark as shown. The English translation of the mark "Oro de Cuba" is "gold of Cuba."
For Cigars.
First use Apr. 1, 1946.

SN 184,705. John Cotton Limited, Edinburgh, Scotland. Filed Jan. 16, 1964.



Edinburgh

John Cotton

"John Cotton" is the name of the applicant's deceased founder. Owner of Reg. No. 726,650.
For Cigarettes.
First use 1962; in commerce 1962.

Class 18 — Medicines and Pharmaceutical Preparations

SN 170,003. Wallace & Tierman Inc., Belleville, N.J. Filed May 29, 1963.

TINEAX

For Antiseptic Anti-Fungal Preparation for Topical Application.
First use Mar. 5, 1963.

SN 176,324. Benjamin N. Silberg, d.b.a. Armsil Laboratory, Averill Park, N.Y. Filed Sept. 4, 1963.

4-I-V

For Medicinal Lotion for the Relief of Itching and Burning Due to Poison Ivy, Oak, Sumac, Sunburn, Diaper Rash, etc.
First use July 29, 1963.

SN 179,074. Soluble Nutrients, Inc., Chicago, Ill. Filed Oct. 15, 1963.

VIVO-ZYME

Owner of Reg. No. 658,221.
For Feed Supplement for Use by Processors of Animal and Poultry Feeds.
First use Nov. 11, 1960.

SN 182,558. American Home Products Corporation, New York, N.Y. Filed Dec. 9, 1963.

UDDER-EZE

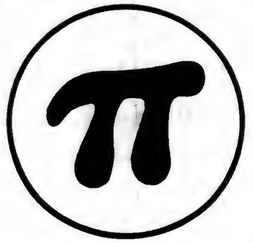
For Antiseptic Soothing Protective Ointment for Livestock.
First use in year 1933.

SN 186,447. Dr. Salsbury's Laboratories, Charles City, Iowa. Filed Feb. 11, 1964.

SCOUR-MED

For Veterinary Preparation for the Control of Bacterial Enteritis in Swine and Other Domesticated Animals.
First use Jan. 16, 1964.

SN 189,358. Pi-Lon Laboratories, Incorporated, Detroit, Mich. Filed Mar. 23, 1964.



The mark being the Greek letter Pi inscribed within a circle.
For Pharmaceutical and Medicinal Preparations.
First use Sept. 19, 1961.

SN 191,211. The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 15, 1964.

LYSINATAL

For Vitamin Preparation for Use as a Dietary Supplement.
First use Apr. 7, 1964.

SN 191,880. Gray Pharmaceutical Co., Yonkers, N.Y., assignee of The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 23, 1964.

B.E. PREP

Owner of Reg. No. 699,705.
For Enema Preparation.
First use Apr. 17, 1964.

SN 192,336. Trent Pharmaceuticals, Inc., New York, N.Y. Filed Apr. 29, 1964.

VOLITANE

For Pharmaceutical Preparation—Namely, a Medicated Topical Anesthetic.
First use Apr. 10, 1964.

SN 192,337. Trent Pharmaceuticals, Inc., New York, N.Y. Filed Apr. 29, 1964.

VYLAR

For Pharmaceutical Preparation—Namely, a Vitamin-Mineral Supplement.
First use Jan. 7, 1964.

SN 192,761. G. D. Searle & Co., Skokie, Ill. Filed May 5, 1964.



For Pharmaceutical Preparations for Control of Ovulation and Female Cyclic Function.
First use Apr. 9, 1962.

SN 193,033. Nopco Chemical Company, Newark, N.J. Filed May 8, 1964.

NOP-K-PLEX

For Complex of Menadione Sodium Bisulfite for Use in Animal and Poultry Feeds.
First use Nov. 8, 1963.

SN 193,818. Smith Kline & French Laboratories, Philadelphia, Pa. Filed May 19, 1964.

DYRENIUM

Owner of Reg. No. 770,246.
For Diuretic.
First use Apr. 29, 1964.

SN 196,194. Professional Pharmacal Co., Inc., San Antonio, Tex. Filed June 22, 1964.

HOMATROCEL

For Ophthalmic Preparation.
First use Jan. 4, 1964.

SN 196,271. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 23, 1964.

ACLERON

For Hematological Preparation.
First use May 25, 1964.

SN 196,273. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 23, 1964.

PARAZOLIDIN

Owner of Reg. Nos. 559,912 and 671,437.
For Antirheumatic, Analgesic Preparation.
First use May 25, 1964.

SN 196,343. David A. Brown and George Anton (joint owners), d.b.a. The Brown Pharmaceutical Company, Los Angeles, Calif. Filed June 24, 1964.

CEREBRO-NICIN

For Cerebral Stimulant and Vasodilator in Tablet Form.
First use July 1962.

SN 196,364. The Dow Chemical Company, Midland, Mich. Filed June 24, 1964.

MUCOVAX

For Bovine Virus Diarrhea Vaccines.
First use May 12, 1964.

SN 196,487. The Upjohn Company, Kalamazoo, Mich. Filed June 25, 1964.

MENOTABS

For Estrogenic Preparation To Eliminate the Menopause Process.
First use Apr. 24, 1964.

SN 196,620. Chesebrough-Pond's Inc., New York, N.Y. Filed June 29, 1964.

DR. SAM THE FIRST-AID MAN

For First-Aid Spray for Minor Cuts, Scrapes, and Burns.
First use June 5, 1964.

SN 196,622. Chesebrough-Pond's Inc., New York, N.Y. Filed June 29, 1964.

MR. SAM THE FIRST-AID MAN

For First-Aid Spray for Minor Cuts, Scrapes, and Burns.
First use June 5, 1964.

SN 196,767. Creighton Laboratories, Inc., Brooklyn, N.Y. Filed June 30, 1964.

ALIVE

For Pharmaceutical Preparation for the Relief of Heat Fatigue.
First use May 14, 1964.

SN 196,768. Creighton Laboratories, Inc., Brooklyn, N.Y. Filed June 30, 1964.

RENEW

For Pharmaceutical Preparation for the Relief of Heat Fatigue.
First use May 14, 1964.

SN 198,432. Organon Inc., West Orange, N.J. Filed July 23, 1964.

COVIBOLIN

For Pharmaceutical Preparation for Use in Promoting Tissue Growth by Enhanced Protein Utilization Supplemented by Dietary Additives.
First use June 9, 1964.

Class 19—Vehicles

SN 170,782. United Aircraft Corporation, East Hartford, Conn. Filed June 11, 1963.

UA

For Helicopters and Structural Parts Thereof, Aircraft Propellers, Parts and Attachments Therefor.
First use Aug. 16, 1962.

SN 180,307. Hustler Corporation, Denver, Colo. Filed Nov. 1, 1963.

HUSTLER

For Off-Highway, Light Utility Vehicles for Farm, Ranch, and Rough Terrain Use.
First use Sept. 7, 1963.

SN 186,193. Regie Nationale des Usines Renault, Billancourt (Seine), France. Filed Feb. 6, 1964.

MAJOR

Priority claimed under Sec. 44(d) on French Reg. No. 516,631, dated Oct. 22, 1963 (Seine); Natl. Inst. No. 213,461.
For Automobiles and Trucks, Including Bodies.

SN 187,666. Holiday Yachts, Inc., Centerport, N.Y. Filed Feb. 28, 1964.

COTTONTAIL

Owner of Reg. No. 691,574.
For Sail Boats.
First use on or about Feb. 1, 1964.

SN 191,171. Guerdon Industries, Inc., Southfield, Mich. Filed Apr. 15, 1964.

VICEROY BY VAGABOND

Owner of Reg. No. 710,484.
For Mobile Homes.
First use Mar. 23, 1964.

SN 194,761. Westinghouse Brake and Signal Company Limited, King's Cross, London, England. Filed June 2, 1964.

WESTCODE

Owner of British Reg. No. 818,663, dated Mar. 24, 1961.
For Railway Braking Apparatus and Parts and Fittings Thereof.

SN 195,059. Boyertown Auto Body Works Incorporated, Boyertown, Pa. Filed June 8, 1964.

MULTALLOY

For Metals of Multiple Alloys Made Into Vehicle Body Structures and Parts Thereof.
First use Nov. 14, 1963.

SN 195,247. Pullman Incorporated, Chicago, Ill. Filed June 9, 1964.

PS-2CD

Owner of Reg. Nos. 653,320, 724,152, and others.
For Railway Freight Vehicles.
First use Mar. 22, 1963.

SN 195,274. Berg Mfg. & Sales Co., Des Plaines, Ill. Filed June 10, 1964.

CAPSULE

For Valves, Primarily for Use in Vehicle Air Brake Systems.
First use Apr. 24, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 115,556. Henry Erwin Walker, d.b.a. Perfectaire Manufacturing Company, Van Nuys, Calif. Filed Mar. 13, 1961.

PERFECTAIRE

Owner of Reg. No. 682,885.
For Electric Space Heaters and Their Controls and Component Parts and Equipment Therefor.
First use in or about December 1936.

SN 162,684. Textron Electronics, Inc., Providence, R.I. Filed Mar. 22, 1963.

heliotek

The drawing is lined for gold, but the color is disclaimed as part of the mark.
For Electrical Apparatus and Supplies—Namely, Solar Cells.
First use Oct. 19, 1961.

SN 167,717. Far Eastern Commerce Corporation, New York, N.Y. Filed Apr. 29, 1963.

ALPHA

For Portable Flashlights, Lanterns, Warning and Signalling Apparatus of the Flasher Type, and Dry Cell Batteries.
First use Apr. 11, 1963.

SN 170,953. Shields, Inc. of Attleboro, Mass., New York, N.Y. Filed June 13, 1963.

Shields

For Battery Powered Electric Shoe Polishers and Battery Powered Hand Operated Vacuum Cleaners.
First use June 1959.

SN 180,496. Flexifior Electrical Systems, Inc., Dayton, Ohio. Filed Nov. 5, 1963.



For Hardware and Fittings for Electrified Floors.
First use Aug. 12, 1963.

SN 180,898. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1963.

ASBESTOS EBONY

Applicant makes no claim to the separate term "Asbestos" apart from the mark as shown. Owner of Reg. No. 286,079.
For Electrical Insulating Sheet Products.
First use Feb. 1, 1907.

SN 181,408. Prescolite Manufacturing Corporation, San Leandro, Calif. Filed Nov. 18, 1963.

LUMA-LITE

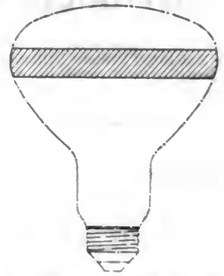
For Electric Lighting Fixtures.
First use Sept. 5, 1963.

SN 184,251. Purex Corporation, Ltd., d.b.a. Holt Manufacturing Company, Lakewood, Calif. Filed Jan. 8, 1964.

KLEEN KART

The term "Kart" is disclaimed apart from the mark as shown.
For Janitor's or Maid's Cart Used in the Transport of Materials and Including an Integral Vacuum Unit With Fittings and Accessories.
First use Oct. 31, 1963.

SN 185,490. Botany Industries, Inc., d.b.a. Sea and Ski Company, Reno, Nev. Filed Jan. 28, 1964.



The trademark consists of a band of tan color encircling the periphery of the lens as shown. The drawing is lined for the color tan.
For Ultraviolet Globes or Bulbs for Sun or Tanning Lamps.
First use Aug. 1, 1963.

SN 188,933. Varo, Inc., Garland, Tex. Filed Mar. 17, 1964.

SAR

For Various Electronic Equipment and Components—Namely, Silicon Avalanche Rectifiers.
First use Feb. 24, 1964.

SN 188,934. Varo, Inc., Garland, Tex. Filed Mar. 17, 1964.

IBR

For Various Electronic Equipment and Components—Namely, Integrated Bridge Rectifiers.
First use Feb. 24, 1964.

SN 191,812. Union Carbide Corporation, New York, N.Y. Filed Apr. 22, 1964.



Owner of Reg. No. 509,456.
For Dry Primary Cells.
First use on or about Feb. 25, 1964; on or about July 12, 1948, in a different form.

SN 192,008. The Cleveland Heater Co., Chattanooga, Tenn. Filed Apr. 27, 1964.

AQUA RANGE

For Combination Electric Ranges and Hot Water Heaters, Electric Hot Water Heaters, and Their Structural Parts.
First use May 19, 1955.

SN 199,806. Durant Manufacturing Company, Milwaukee, Wis. Filed Aug. 13, 1964.

UNISET

For Electrical Push-Button Switches.
First use May 22, 1964.

SN 199,819. Gremar Manufacturing Co., Inc., Wakefield, Mass. Filed Aug. 13, 1964.

REDI-LOK

For Co-Axial Transmission Line Connectors and Radio Frequency Fittings.
First use on or about July 28, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 160,565. John R. Tusson, New Orleans, La. Filed Jan. 11, 1963.



Owner of Reg. No. 772,741.
For Apparatus Sold as a Unit for Playing an Educational Stock Market Game.
First use Sept. 24, 1962.

SN 163,637. Lambert Lucietto and Ledo Lucietto (joint venture), d.b.a. Little Oscar, Brookfield, Ill. Filed Feb. 28, 1963.

LITTLE OSCAR

For Fishing Tackle.
First use Jan. 30, 1963.

SN 170,720. American Doll & Toy Corp., New York, N.Y. Filed June 11, 1963.

PENNY

For Dolls.
First use May 21, 1963.

SN 174,348. Daisy Manufacturing Company, Rogers, Ark. Filed Aug. 5, 1963.

SPITTIN' IMAGE

For Toy Guns.
First use Mar. 30, 1960.

SN 177,768. Coach's Sporting Goods Corporation, Marion, Ind. Filed Sept. 26, 1963.

CURV CARE

For Apparatus for Exercising and Developing the Body and Muscles Through Isometric Contraction.
First use Sept. 20, 1963.

SN 178,371. Realistic Games Inc., Pensacola, Fla. Filed Oct. 4, 1963.

FUN BOWL

For Equipment (or Apparatus) Sold as a Unit for Playing a Football-Type Board or Parlor Game.
First use on or about Aug. 1, 1962.

SN 181,019. Cortina Ski Company, New York, N.Y. Filed Nov. 18, 1963.

CORTINA

For Ski Equipment—Namely, Skis, Ski Poles, Bindings, Boots, and Accessories.
First use August 1955 on skis and ski poles.

SN 181,899. KBS, Inc., Ann Arbor, Mich. Filed Nov. 26, 1963.

HOC-STRAP

For Shin Pad Straps.
First use Sept. 10, 1963.

SN 182,433. Myojo Rubber Industry Co., Ltd., Hiroshima, Japan. Filed Dec. 5, 1963.

Mikasa

For Athletic Balls Including Balls for Volley Ball, Basketball, Football and Soccer.
First use 1947; in commerce 1948.

SN 183,171. The General Tire & Rubber Company, Akron, Ohio. Filed Dec. 17, 1963.

GENERAL TIRE

For Athletic Goods—Namely, Basketballs, Backboards, Goals and Accessories for Use Therewith; Footballs and Accessories for Use Therewith; Volleyballs and Accessories for Use Therewith; Soccerballs and Accessories for Use Therewith; Playground Balls, Tetherballs and Poles, and Accessories for Use Therewith; Tennis Balls, Golf Balls, Golf Bags and Accessories for Use Therewith; Softballs and Accessories for Use Therewith; Shuttlecocks, Water Skis and Accessories for Use Therewith; and Bowling Accessories.
First use Feb. 6, 1963.

SN 185,037. Hillcrest Sporting Goods, Inc., New York, N.Y. Filed Jan. 21, 1964.

COURT☆STAR

For Basketballs and Tennis Rackets.
First use May 6, 1963.

SN 186,426. Scott J. Yancey, d.b.a. 299 Products, San Carlos, Calif. Filed Feb. 10, 1964.



For Bowling Equipment—Namely, Bowling Ball Plug or Filler Composition, Ball Cleaners, Ball Polish, and Bowling Shoe Disinfectant Spray.
First use Sept. 4, 1963.

SN 186,960. Mattel, Inc., Hawthorne, Calif. Filed Feb. 18, 1964.

BARBIE'S KEYS TO FAME

Owner of Reg. No. 728,811.
For Board Type Parlor Game for Children.
First use Jan. 22, 1964.

SN 188,965. Cotton Goods Manufacturing Company, Chicago, Ill. Filed Mar. 18, 1964.

SEE SAW

For Napped Flannel Bowling Ball Polishing Device.
First use November 1961.

SN 189,146. Clokey Productions, Inc., Glendora, Calif. Filed Mar. 20, 1964.

GUMBY

For Plastic Doll.
First use Dec. 8, 1963.

SN 189,295. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Mar. 23, 1964.

ACTION MARINE

No claim of exclusive right is made to "Marine" for dolls.
For Toy Doll and Accessories Therefor.
First use on or about Jan. 24, 1964.

SN 189,296. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Mar. 23, 1964.

ACTION SAILOR

No claim of exclusive right is made to "Sailor" for dolls.
For Toy Doll and Accessories Therefor.
First use on or about Jan. 24, 1964.

SN 189,297. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Mar. 23, 1964.

ACTION SOLDIER

No claim of exclusive right is made to "Soldier" for dolls.
For Toy Doll and Accessories Therefor.
First use on or about Jan. 24, 1964.

SN 189,298. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Mar. 23, 1964.

ACTION PILOT

No claim of exclusive right is made to "Pilot" for dolls.
For Toy Doll and Accessories Therefor.
First use on or about Jan. 24, 1964.

SN 189,403. U.S. Divers Co., Inc., Santa Ana, Calif. Filed Mar. 23, 1964.

OTARIE

The word "Otarie" is a French word for a particular animal, namely, the "otter."
For Underwater Swimming Apparatus, Swim Fins, and the Like.
First use Jan. 6, 1964.

SN 190,319. American Russkit Company, Los Angeles, Calif. Filed Apr. 6, 1964.

SRS SPEED SECRET

For Scale Metal and Plastic Parts for Construction of Scale Racing Cars; Wheels, Tires, Axles, Bearings, and Electrical Controllers for Scale Racing Cars; Decals for Model Racing Cars; and Kits for Building Scale Racing Dragsters.
First use March 1964.

SN 190,612. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

TROUBLE MAKER

For Artificial Fish Lures.
First use Jan. 30, 1964.

SN 190,723. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Apr. 9, 1964.

TOOTY FROOTY

For Equipment Sold as a Unit for Playing a Parlor Game.
First use on or about Feb. 28, 1964.

SN 190,728. Henri Fournillier, Perpignan, Pyrenees-Orientales, France. Filed Apr. 9, 1964.

GONDOLYS

Owner of French Reg. No. 1,918, dated May 11, 1950 (Perpignan); Natl. Inst. No. 472,618.
For Surf Riding Boat.

SN 191,279. B. F. Gladding & Co., Inc., South Otselic, N.Y. Filed Apr. 16, 1964.

GLADYL

For Fishing Lines.
First use Mar. 25, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 170,952. Shields, Inc. of Attleboro, Mass., New York, N.Y. Filed June 13, 1963.

Shields

For Bar Equipment—Namely, Ice Crackers, Bottle Openers, and Corkscrews.
First use March 1950.

SN 180,662. Mikron Haesler S.A., Boudry/Neuchatel, Switzerland. Filed Nov. 7, 1963.

MIKRON HAESLER

Owner of Swiss Reg. No. 193,322, dated Aug. 10, 1962.
For Machine-Tools, Particularly Transfer Machine-Tools, Attendant Parts and Accessories for Machine-Tools, Set of Working Tools for Machine-Tools.

SN 180,820. American Machine & Foundry Company, New York, N.Y. Filed Nov. 12, 1963.

AMF

Owner of Reg. Nos. 168,740, 743,783, and others.
For Tobacco Machinery and Parts Thereof, Particularly Cigarette Making Machinery and Attachments Therefor, Cigarette Tippers, Printers, Sealers, Pasters, Cut-Offs, Collectors; Cigarette Tobacco Feeds; Bakery Machinery and Parts Thereof, Particularly Bread Wrappers and Attachments Thereto, Bread Package Sealers, Bread Slicers and Slicer Blades, Bread Conveyors, Dough Mixers, Dough Dividers and Rounders, Roll Machines, Pan Cleaning and Greasing Machines; Industrial Mixers and Bowl Handling Equipment for Said Mixers, Industrial Powdered Material Handling and Sifting Equipment; Dough Measuring, Lump Forming and Pretzel Tieing and Bending Machines, and Parts and Accessories Pertaining to Such Machines; Apparel Machinery, Particularly Necktie Sewing Machines, Running Stitch Sewing Machines, Machines for Sewing Gloves, Machines for Making Ornamental Stitching, Button Stitching or Attaching Machines and Parts, and Parts and Accessories Pertaining to Such Machines; Apparatus for Receiving, Storing and Dispensing Both Bulk Material and Material Capable of Being Stacked, Including Machine Parts, Commercial Parts, Trays, Dishes, Cups, Plates, Saucers, Glasses, and Other Material and for Automatically Lowering and Raising the Stored Material a Distance Correlated to the Weight of Each Increment and Decrement of Material Added to or Removed From the Material Stored in Said Apparatus in Order To Maintain the Top of the Material Stored in Said Apparatus at a Constant Predetermined Level, and Also Parts and Accessories Pertaining to Such Apparatus; Drilling and Tapping Machinery, Particularly Drill Chucks, Tapping Attachments and Tap Chucks, Wrapping Machinery and Packing Machinery, Including Machinery for Wrapping and/or Packaging Cigars, Cigarettes, Bread, and Other Articles of Suitable Size and Shape and Cartons Containing Edible and Other Materials, and Parts of All of the Foregoing Machinery and Mechanism; Cargo Handling Machinery and Apparatus and Parts Therefor; Garden Equipment Including Lawn Mowers, Sweepers, Tillers and Edgers, and Parts and Accessories Therefor; Snow Blowers or Removers and Parts and Accessories Therefor; Machinery for Preparing, Processing, and Dispensing Food Products; Apparatus and Devices for Purifying Exhaust Gases for Motor Cars, and Parts and Accessories for the Machines, Equipment and Apparatus Specified Above.
First use at least as early as July 1, 1922.

SN 182,063. Ex-Cell-O Corporation, Detroit, Mich. Filed Nov. 29, 1963.

WIL-DEX

For Cutting Tools—Namely, Tool Holders and Replaceable Cutting Inserts, and the Like.
First use on or about Mar. 24, 1957.

SN 182,248. Cooper Alloy Corporation, Hillside, N.J. Filed Dec. 3, 1963.

CHEM-GARD

For Power Driven Centrifugal Pumps.
First use Oct. 31, 1963.

SN 183,583. General Pneumatic Products Corporation, Overland, Mo. Filed Dec. 26, 1963.

BLUE DART
GENERAL PRODUCTS CORP.
OVERLAND, MO.

For Machine Tools.
First use Apr. 14, 1960.

SN 186,923. Aktiebolaget Kirstenson Och Grahs, Fabriksvagen, Handen, Sweden. Filed Feb. 18, 1964.

GRINDEX HYDROMASTER

Owner of U.S. Reg. No. 761,606.
For Submersible Drainage Pumps.
First use June 1, 1962; in commerce Sept. 1, 1962.

SN 192,229. Stowe-Woodward, Inc., Newton Upper Falls, Mass. Filed Apr. 28, 1964.

TUF-STUF

For Rolls and Roll Coverings for Machinery.
First use September 1963.

SN 192,436. Taccone Corporation, North East, Pa. Filed Apr. 30, 1964.

TACCONE
INDEXED-INLINE
SYSTEM

For Molding Machines and Accessories for Green Sand Foundries.
First use Apr. 3, 1958.

SN 193,262. Clover Chemical Company, Pittsburgh, Pa. Filed May 12, 1964.

FERTI-SPRAY

Owner of Reg. No. 759,883.
For Apparatus for Sprinkling, Spraying, and Diffusing Liquid, and Devices Appurtenant Thereto.
First use Oct. 23, 1962.

SN 193,376. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed May 18, 1964.

AMERICAN TREASURE

Owner of Reg. No. 759,166.
For Cutlery, Tableware, and Flatware.
First use Feb. 24, 1964.

SN 194,673. Specialty Engineering Corporation, Dallas, Tex. Filed June 1, 1964.

BOOTH

For Soft Drink Dispensers.
First use May 1, 1959.

SN 195,670. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 15, 1964.

SPRITE

For Stainless Steel Knives, Forks, and Spoons.
First use May 20, 1964.

SN 195,671. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 15, 1964.

NOB HILL

For Stainless Steel Knives, Forks, and Spoons.
First use May 20, 1964.

SN 195,672. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 15, 1964.

EXCELSIOR

For Stainless Steel Knives, Forks, and Spoons.
First use May 20, 1964.

SN 196,277. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 23, 1964.

THE VILLAGER

For Stainless Steel Knives, Forks, and Spoons.
First use May 27, 1964.

SN 196,278. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 23, 1964.

COSCOB

For Stainless Steel Knives, Forks, and Spoons.
First use May 27, 1964.

SN 196,959. Flick-Reedy Corporation, Bensenville, Ill. Filed July 2, 1964.

MILLER

Owner of Reg. No. 589,061.
For Air Cylinders, Air Hoists, Air and Air Hydraulic Cylinder Bench Presses, Low-To-Medium Pressure Hydraulic Cylinders, High Pressure Hydraulic Cylinders, Air-Oil Tanks, Boosters, Accumulators, Filters, Regulators, Lubricators, Speed Control Units, Air Valves and Subplates for Valves.
First use December 1944.

SN 197,144. M-H Standard Corporation, Hamilton, Ohio. Filed July 6, 1964.

SLIDERBELT

For Slide Bed Belt Conveyors.
First use June 21, 1962.

SN 197,611. Oneida Ltd., Oneida, N.Y. Filed July 10, 1964.

ROSE DUET

Applicant disclaims the word "Rose" apart from the mark as shown. Owner of Reg. No. 681,100.
For Stainless Steel Flat Tableware.
First use June 22, 1964.

SN 197,860. Compagnie Industrielle des Céramiques Electroniques (C.I.C.E.), Montreuil-sous-Bois, Seine, France. Filed June 18, 1964.

TITAL

Owner of French Reg. No. 439,875, dated Mar. 11, 1954 (Seine); Natl. Inst. No. 30,995.
For Ceramic Thread-Guides for Textile Machines.

SN 197,865. The Aldrich Pump Company, Allentown, Pa. Filed July 15, 1964.

IR-A-JET

Applicant's parent company owner of Reg. Nos. 585,816 and 675,961.
For Portable Pumps.
First use Aug. 17, 1962.

SN 197,885. Huck Co., Inc., Industrial Park, Paramus, N.J. Filed July 15, 1964.

REGI-TENSICON

Owner of Reg. No. 662,519.
For Register Control Equipment for Web Processing Machines.
First use Apr. 20, 1964.

SN 198,009. The Warner & Swasey Company, Cleveland, Ohio. Filed July 16, 1964.



For Cutoff Tools, Chamfering Tools, Squaring Fixtures, and Replacement Inserts and Other Components for the Same.
First use July 1, 1959.

SN 198,190. Mechanical Servants, Inc., Chicago, Ill. Filed July 20, 1964.

THE DIME STORE

For Vending Machines.
First use Jan. 29, 1964.

SN 198,291. The Pillsbury Company, Minneapolis, Minn. Filed July 21, 1964.

INSTAMAT

For Apparatus for the Agglomeration of Pulverulent Materials in the Food Industry and Other Areas.
First use May 18, 1964.

SN 198,721. Dependable Compressor & Machine Co., Inc., New York, N.Y. Filed July 29, 1964.

DCM CO., INC.

For Screen Printing Machinery.
First use July 6, 1960.

SN 199,643. United Drill Bushing Corporation, Downey, Calif. Filed Aug. 10, 1964.

United

For Drill Jig Bushings, and Tooling Jig and Fixture Accessories and Components.
First use Apr. 25, 1964.

SN 199,781. Air Rake Manufacturing Co., Inc., Westfield, Mass. Filed Aug. 13, 1964.

AIR RAKE

For Power Blowers for Collecting Leaves, Grass Clippings, Blossoms, Seeds, Sand, and Other Debris.
First use Jan. 14, 1964.

SN 199,979. Erinac Equipment Corp., Chicago, Ill. Filed Aug. 17, 1964.

VWF

For Boring and Milling Machines, Planing Machines, Die Casting Machines, Eccentric Presses, and Parts Thereof.
First use Aug. 31, 1961.

SN 199,992. Harington Manufacturing Co., Inc., Lewiston, N.C. Filed Aug. 17, 1964.

RO-TRAX

For Agricultural Harvesting Machine.
First use May 1964.

SN 200,018. Montrose Oil & Belting Co., Inc., Brooklyn, N.Y. Filed Aug. 17, 1964.

BLACK BEAR



For Sewing Machine Needles.
First use Feb. 1, 1964.

SN 200,125. Uniwave, Inc., Farmingdale, N.Y. Filed Aug. 18, 1964.

UNIWAVE

For Textile Machinery and in Particular Stitch Setting Devices, Lint Removers, and Parts and Accessories Therefor.
First use Nov. 3, 1959.

SN 200,213. Tangyes Limited, Birmingham, England. Filed Aug. 19, 1964.

HYDRA-PAK

Owner of British Reg. No. 764,709, dated Apr. 17, 1957.
For Hand Pumps for Use With Hydraulic Jacks.

SN 200,272. Miniature Precision Bearings, Inc., d.b.a. Split Ball Bearing, Keene, N.H. Filed Aug. 20, 1964.

NYLOY

For Rod Ends with Ball Bearings.
First use July 29, 1964.

Class 24 — Laundry Appliances and Machines

SN 182,300. The Steam-Puff Co., Levittown, Pa. Filed Dec. 3, 1963.

STEAM-PUFF

For Drapery Steamer.
First use Feb. 15, 1963.

Class 25 — Locks and Safes

SN 198,754. Master Lock Company, Milwaukee, Wis. Filed July 29, 1964.

Master

Owner of Reg. Nos. 230,311 and 751,235.
For Padlocks.
First use June 10, 1964.

SN 199,221. Preso-Matic Lock Co., Chicago, Ill. Filed Aug. 4, 1964.

PRESO-MATIC

For Combination Locks.
First use July 7, 1964.

Class 26 — Measuring and Scientific Appliances

SN 168,982. Rochar Electronique, Montrouge, France. Filed May 13, 1963.

Rochar

Owner of French Reg. No. 504,584, dated Apr. 27, 1962 (Seine); Natl. Inst. No. 183,752.

For Scientific Apparatus and Instruments—Namely, Microfriction Potentiometers, Digital Potentiometers, Photoelectric Readers, Electronic Counters, Printing Calculators, Frequency Meters, Magnetic Pickup Tachometers, Photoelectric Pickup Tachometers, Electronic Fluid Flow Meters, Flow-Meter Transmitters, Oscillographs, Analogue and Function-Multiplying Computers, Ultrasonic Material-Testing Apparatus, Ultrasonic Generators, Oscillograph-Probes, Ultrasonic Sounders and Echo Selectors, Ultrasonic Sounding Probes, Impedance Meters, and Level-Measuring Amplifiers.

SN 177,556. Edward G. Solecki, d.b.a. Advance Dial Co., Chicago, Ill. Filed Sept. 23, 1963.

THI|m

For Measuring Instruments for Indicating Natural Physical Weather Conditions Such as Thermometers, Hygrometers, and Temperature Humidity Index Barometers.
First use July 9, 1963.

SN 180,308. IDQ Inc., Evansville, Ind. Filed Nov. 1, 1963.

IDQ

For Apparatus for Identification Testing of Metal Alloys by Chemical Analysis and Parts Thereof.
First use on or about Jan. 12, 1963.

Class 27 — Horological Instruments

SN 155,584. Compagnie des Montres Jaquet-Girard S.A., Geneva, Switzerland. Filed Oct. 22, 1962.

JG

JAQUET + GIRARD

Owner of Swiss Reg. No. 191,936, dated Apr. 26, 1962.
For Timepieces and Separate Parts Thereof.

SN 198,439. Societe d'Horlogerie de Langendorf, Langendorf, Switzerland. Filed July 23, 1964.

LANCO

For Watches and Watch Movements.
First use Jan. 23, 1921; in commerce Jan. 23, 1921.

Class 28 — Jewelry and Precious-Metal Ware

SN 160,800. Raimond Silver Manufacturing Company, Inc., Cambridge, Mass. Filed Jan. 16, 1963.

RAIMOND

For Metal and Plated Metal Giftware—Namely, Precious Metal and Precious Metal Plated Decorative Personal Articles, Picture Frames, Comb and Brush Sets, and Cutlery.
First use Dec. 31, 1942.

SN 160,970. Raimond Silver Manufacturing Company, Inc., Cambridge, Mass. Filed Jan. 18, 1963.

R

For Metal and Plated Metal Giftware—Namely, Precious Metal and Precious Metal Plated Decorative Personal Articles, Picture Frames, Comb and Brush Sets, and Cutlery.
First use July 15, 1961.

SN 200,285. Public Service Company of Colorado, Denver, Colo. Filed Aug. 20, 1964.

Owner of Reg. Nos. 772,024, 772,845, and 773,364.
For Jewelry, Particularly Tie Bars, Service Pins, and Bracelets.
First use on or about July 28, 1964.

SN 200,783. Pyramid Jewelry Co., Providence, R.I. Filed Aug. 27, 1964.

P

Owner of Reg. Nos. 188,603 and 201,789.
For Jewelry for Personal Wear and Adornment.
First use at least as early as January 1954.

SN 200,942. The Kinney Company, Providence, R.I. Filed Aug. 31, 1964.

10+

For Jewelry.
First use on or about Aug. 17, 1964.

SN 200,943. The Kinney Company, Providence, R.I. Filed Aug. 31, 1964.

14+

For Jewelry.
First use on or about Aug. 17, 1964.

SN 200,989. Yuso Susagano, Los Angeles, Calif. Filed Aug. 31, 1964.

For Cultured Pearl Jewelry—Namely, Necklaces, Bracelets, Earrings, Brooches, Pins, Pendants, Rings, and Charms.
First use on or about Sept. 1, 1950, on necklaces, bracelets, and earrings.

SN 201,302. Pyramid Jewelry Co., Providence, R.I. Filed Sept. 4, 1964.

PYRAMID

Owner of Reg. Nos. 188,603 and 201,789.
For Jewelry for Personal Wear and Adornment.
First use March 1924.

SN 201,451. Medicated Products Co., d.b.a. Donald Bruce & Company, Chicago, Ill. Filed Sept. 8, 1964.

Dee Bee

For Costume Jewelry.
First use Nov. 10, 1958.

SN 201,667. Ralph Destino, Ltd., New York, N.Y. Filed Sept. 11, 1964.

D

For Jewelry.
First use June 29, 1964.

SN 201,859. Oneida Ltd., Oneida, N.Y. Filed Sept. 14, 1964.

FRANCESCA

For Silverplated Flat Tableware.
First use Aug. 27, 1964.

SN 201,993. Zale Jewelry Company, Inc., Dalas, Tex. Filed Sept. 15, 1964.

FJG

For Jewelry.
First use July 15, 1964.

SN 202,025. Gorham Corporation, Providence, R.I. Filed Sept. 16, 1964.

Twinkle

For Sterling Silver Holloware, Flatware and Cutlery, Sterling Silver Hair Brushes, Combs, Rattles, Teething Rings, Napkin Rings, and Picture Frames, All for Use by Infants and Children.
First use July 2, 1964.

Class 30 — Crockery, Earthenware, and Porcelain

SN 180,191. Empire Crafts Corporation, Newark, N.Y. Filed Oct. 31, 1963.

CAMEO ROSE

Applicant disclaims any exclusive right to the word "Rose" except as used in the composite mark. Owner of Reg. No. 397,949.
For China Dishes.
First use July 26, 1963.

Class 31 — Filters and Refrigerators

SN 163,754. Packers' Development Corporation, Milwaukee, Wis. Filed Mar. 1, 1963.

KLEAN-KOLD

For Control Refrigeration Systems, Units and Parts Therefor.
First use October 1962.

SN 178,510. Water-Gard Corporation, Beverly Hills, Calif. Filed Oct. 7, 1963.

WATER-GARD

For Filtering and Purifying Apparatus.
First use June 15, 1959.

SN 183,185. Ogden Filter Co., Inc., Los Angeles, Calif. Filed Dec. 17, 1963.

Aquapac

For Portable Drinking Water Purifier.
First use Feb. 5, 1963.

Class 32 — Furniture and Upholstery

SN 173,474. Maysteel Products Inc., Mayville, Wis. Filed July 22, 1963.

MAYSTEEL

For Cabinets Comprising Thos With Counters and Counter Bins, Compartments for Lavatory and Sink Units, Cabinets and Shelves To Be Attached to the Wall and Ceiling, and Wardrobes, for Hospital and General Use.
First use at least as early as Nov. 15, 1951.

SN 183,210. Kroehler Mfg. Co., Naperville, Ill. Filed Dec. 18, 1963.

PORTRAIT GRAIN

For Household Furniture—Namely, Beds, Dressers, Vanities, Buffets, China Cabinets, Breakfronts, Tables, Chests, and Desks.
First use on or about Nov. 22, 1963.

SN 185,996. The General Tire & Rubber Company, Akron, Ohio. Filed Feb. 4, 1964.

CASUAL COMFORT

For Floor Cushions.
First use Aug. 10, 1962.

SN 185,997. The General Tire & Rubber Company, Akron, Ohio. Filed Feb. 4, 1964.

CARRY-COMFORT

For Stadium Cushions.
First use Aug. 10, 1962.

SN 186,442. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 11, 1964.

Mersman Tables

No claim is made to the word "Tables" apart from the mark as shown.
For Tables.
First use as early as 1906.

SN 187,404. Clopay Corporation, Cincinnati, Ohio. Filed Feb. 25, 1964.

CHEVRON

For Plastic Window Shades.
First use March 1963.

SN 189,272. Conolite, Inc., Carpentersville, Ill. Filed Mar. 23, 1964.

CONOMATIC

For Laminated Plastics Which Can Be Applied by the User to Furniture To Form a Permanent Decorative and Protective Surface Cover Thereon.
First use Mar. 6, 1964.

SN 191,776. Knight of Rest Products, Newark, N.J. Filed Apr. 22, 1964.

SELECT-A-PEDIC

For Mattresses and Box Springs.
First use Jan. 13, 1964.

SN 193,338. Clarin Mfg. Co., Chicago, Ill. Filed May 13, 1964.

LECTURA

For Chairs.
First use Apr. 30, 1964.

SN 195,716. Royal Rubber & Manufacturing Company, South Gate, Calif. Filed June 15, 1964.

VELVETREAD

For Mats Made of Rubberized Cords Assembled on Steel Spring Wire for Doorsteps, Laundries, and Kitchens.
First use on or about Apr. 1, 1940.

SN 195,957. Mutschler Brothers Company, Nappanee, Ind. Filed June 18, 1964.

com sto

For Desks, Credenzas, Storage Cabinets, and Accessories for Use Therewith—Namely, Dividers, Racks, Trays, Drawers, and Shelves.
First use Feb. 9, 1964.

Class 33 — Glassware

SN 180,975. Verrerie Cristallerie d'Arques, G. Durand & Cie. Arques, Pas-de-Calais, France. Filed Nov. 12, 1963.

ARCOROC

Owner of French Reg. No. 631, dated May 10, 1963 (Saint-Omer); Natl. Inst. No. 205,836.
For Household and Table Glassware—Namely, Dishes, Casseroles, Pots and Pans, Salad Bowls, Sugar Bowls, Fruit Bowls, Preserve Jars, Pitchers, Ice Buckets, Plates, Vases, Cups, Goblets and Window Glass, Sheet Glass, Heat and Shock Resistant and Tempered Glasses and Plate Glass for Windows and Mirrors.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 125,172. Tec Torch Company, Inc., East Rutherford, N.J. Filed Aug. 1, 1961.



The mark is a device which consists of the coloration and relative arrangement of supply cables: A red cable, a black cable and a blue cable; the black and blue cables are disposed in contact with each other and each of the blue and black cables is in contact with the red cable; the three colored cables are enclosed in a transparent casing which casing is disposed in close conformity with the three color cables in their relative positions. The drawing is lined for the colors red, black and blue.
For Water Cooled Gas Blanketed Welding Torches.
First use Jan. 3, 1961.

SN 192,765. Star Metal Corporation, Philadelphia, Pa. Filed May 5, 1964.

STARBREW

For Coffee Makers.
First use on or about May 4, 1961.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 181,234. Hennessy Lubricator Company, Inc., Chambersburg, Pa. Filed Nov. 15, 1963.

OILWELL

For Preformed Pads of Resilient and Lubricant Feeding Material for Use in Railway Axle Boxes, and Parts Thereof.
First use on or about Sept. 16, 1963.

SN 193,951. E. F. Houghton & Co., Philadelphia, Pa. Filed May 21, 1964.

CORE-THANE

For Hydraulic and Pneumatic Packings and Seals.
First use May 7, 1964.

SN 194,088. United States Rubber Company, New York, N.Y. Filed May 22, 1964.

COACHMAN

For Pneumatic Tires.
First use Apr. 30, 1964.

SN 194,090. United States Rubber Company, New York, N.Y. Filed May 22, 1964.

REGENT

For Pneumatic Tires.
First use Apr. 30, 1964.

SN 194,381. Friesland Plastics Company, Friesland, Wis. Filed May 27, 1964.

PAKABAND

For Mechanical Packing and Gasket Material.
First use Nov. 26, 1963.

SN 194,444. United States Rubber Company, New York, N.Y. Filed May 27, 1964.

ROYAL SAFETY STRIPE

For Fire Hose.
First use Dec. 11, 1963.

SN 198,742. Kennametal Inc., Latrobe, Pa. Filed July 29, 1964.

KENGRIP

Owner of Reg. No. 593,864.
For Tungsten Carbide Studs in Metal Holders Adapted To Be Inserted in Non-Metallic Vehicle Tires for Improving the Grip on the Road Surface.
First use June 5, 1964.

Class 36 — Musical Instruments and Supplies

SN 113,030. Ricoh Company, Ltd., Ohta-ku, Tokyo, Japan, by change of name from Riken Optical Industries, Ltd., Ohta-ku, Tokyo, Japan. Filed Feb. 3, 1961.

RICOHSYNCHROFAX

Priority claimed under Sec. 44(d) on Japanese application filed Aug. 26, 1960; Reg. No. 653,658, dated Sept. 19, 1964.
For Magnetic Recording and Reproducing Machines and Their Parts.

SN 180,565. Chicago Musical Instrument Co., Chicago, Ill. Filed Nov. 6, 1963.

cordovox

For Electronically Augmented Accordions and Parts Thereof—Namely, Tone Signal Generators and Tone Signal Transducers.
First use Apr. 13, 1960.

Class 37 — Paper and Stationery

SN 112,693. Daubert Chemical Company, Chicago, Ill. Filed Jan. 30, 1961.

EASY MASK

For Masking Tape and Paper.
First use Oct. 20, 1960.

SN 168,012. Kores Manufacturing Corporation, New York, N.Y. Filed May 2, 1963.

e.t.c.

For Carbonless Copy Paper.
First use Apr. 22, 1963.

SN 172,540. Gebr. Fend, Pforzheim, Baden, Germany. Filed July 3, 1963.



The drawing is lined for red, blue, and green, but no claim to these specific colors is made. Priority claimed under Sec. 44(d) on German application filed Jan. 4, 1963 Reg. No. 774,928, dated June 28, 1963. Owner of U.S. Reg. Nos. 707,807 and 769,950.
For Multicolor Pens and Pencils.

SN 176,702. Arkell Safety Bag Company, New York, N.Y. Filed Sept. 11, 1963.

STEEL KRAFT

The word "Kraft" is disclaimed apart from the mark as shown.
For Wire-Reinforced Wrapping Paper.
First use Aug. 7, 1963.

SN 182,476. The Esterbrook Pen Company, Camden, N.J. Filed Dec. 6, 1963.

ESTERBROOK

For Felt Tipped Marking Pens.
First use January 1961.

SN 183,032. Cert-A Corporation, Denver, Colo. Filed Dec. 16, 1963.

Cert-a-card

For Credit Cards, Identification Cards, and Registration Cards.
First use on or about Nov. 26, 1962.

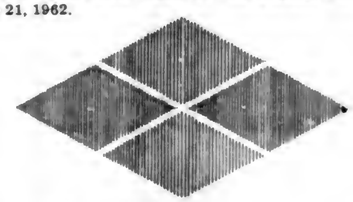
SN 185,767. V. W. Elmicke Associates, Inc., Bronxville, N.Y. Filed Jan. 31, 1964.

ENVELO-FILE

For Pocket-Type Folder Designed To Readily Show a Personnel History and To Hold Papers.
First use Nov. 1, 1963.

Class 38 — Prints and Publications

SN 147,345. Associated Label Co., Los Angeles, Calif. Filed June 21, 1962.



The drawing is not lined for color.
For Clothes Manufacturers' Labels for Clothes and the Like, and Fabric Labels Generally.
First use Oct. 10, 1960.

SN 149,450. The Learning Center, Inc., New York, N.Y., assignee of Creative Playthings, Inc., Cranbury, N.J. Filed July 20, 1962.



For Educational Booklets, Teaching Manuals for Teachers, and Catalogs of Teaching Material.
First use Feb. 15, 1962.

SN 155,897. Francis L. Duffy, Ottawa, Ill. Filed Oct. 25, 1962.

SNICKERSNOOPER'S CORNER

For Column of Humorous Content Appearing in Periodical Publications and for Releases of Humorous Material Supplied to Periodical Publications.
First use December 1954.

SN 162,564. Litton Precision Products, Inc., Mount Vernon, N.Y. Filed Feb. 12, 1963.

POTPOURRI

For Periodic House Newsletter, in Connection With Its Potentiometer and Electrical Component Business.
First use on or about Nov. 18, 1960.

SN 178,402. Applied Science Laboratories, Inc., State College, Pa. Filed Oct. 7, 1963.

GAS-CHROM NEWSLETTER

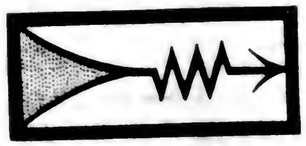
Applicant disclaims exclusive right to the word "Newsletter." Owner of Reg. No. 731,693.
For Company Newsletter.
First use Oct. 1, 1960.

SN 178,797. Fuel Cell Corporation, St. Louis, Mo. Filed Oct. 11, 1963.

FUEL CELL PROGRESS

For Newsletter of Current Analysis and Permanent Reference Data in the Field of Fuel Cells, Published From Time to Time.
First use Aug. 24, 1962.

SN 178,798. Fuel Cell Corporation, St. Louis, Mo. Filed Oct. 11, 1963.



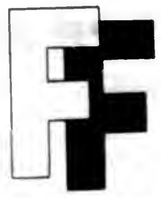
For Newsletter of Current Analysis and Permanent Reference Data in the Field of Fuel Cells, Published From Time to Time.
First use Aug. 24, 1962.

SN 179,533. Haire Publishing Company, New York, N.Y. Filed Oct. 22, 1963.

INCENTIVE

No claim is made to the language "Magazine of the Premium Industry" apart from the mark in its entirety.
For Trade Magazine Distributed to Members of the Premium Industry.
First use Oct. 3, 1962.

SN 179,859. Bell Intercontinental Corporation, New York, N.Y. Filed Oct. 28, 1963.



For Periodic Bulletin.
First use during November 1962.

SN 188,064. Allstate Insurance Company, Skokie, Ill. Filed Mar. 6, 1964.

AIM

For Company Magazine, Said Magazine Published for Distribution Bimonthly to Employees of Applicant.
First use on or about July 1, 1949.

SN 188,717. Frank C. Brown, d.b.a. La Porte Art Galleries, Racine, Wis. Filed Mar. 16, 1964.



Applicant disclaims the words "Art Galleries."
For Original Paintings and Prints Thereof.
First use June 18, 1962.

SN 190,560. Tim Finnegan Advertising Inc., Richmond, Va. Filed Apr. 7, 1964.



For Advertising Matter in the Form of a Cartoon Strip.
First use Nov. 6, 1963.

SN 192,713. Goodyear Aerospace Corporation, Akron, Ohio. Filed May 5, 1964.

GOODYEAR AEROSPACE **PROFILE**

For House Organ Publication.
First use May 1963.

SN 193,583. RHT Publications, Inc., New York, N.Y. Filed May 15, 1964.



For Magazine.
First use May 1, 1964.

SN 194,733. Master Photo Dealers' & Finishers' Association, Jackson, Mich. Filed June 2, 1964.

Photo Marketing

For Monthly Magazine.
First use May 1, 1964.

SN 195,369. Dana Chase Publications, Inc., Elmhurst, Ill. Filed June 11, 1964.

MPM

For Periodical Magazine.
First use on or about Feb. 1, 1957.

SN 196,163. The Junior League of Nashville, Inc., Nashville, Tenn. Filed June 22, 1964.

NASHVILLE SEASONS

For Cook Books.
First use Apr. 29, 1964.

SN 196,334. American Building Maintenance Co. of California, San Francisco, Calif. Filed June 24, 1964.

THE MAINTAINER

Owner of Reg. No. 663,828.
For Publication in the Nature of a House Organ Published From Time to Time.
First use about Jan. 1948.

SN 196,552. Paramount Paper Products Co., Omaha, Nebr. Filed June 26, 1964.

PARA-SEAL

For Printed Labels.
First use June 10, 1964.

Class 39 — Clothing

SN 144,648. Sheffield Hosiery Mills, Inc., Miami, Fla. Filed May 15, 1962.

ETERNA

For Hosiery.
First use Mar. 10, 1962.

SN 161,920. Jerrold Tucker, d.b.a. Happy Fella, New York, N.Y. Filed Feb. 1, 1963.

"HAPPY FELLA"

For Children's Wearing Apparel—Namely, Shirts, Shorts, Slacks, Short Sets Including a Shirt and Shorts, and Slack Sets Including a Shirt and Slacks.
First use Dec. 3, 1962.

SN 173,126. Palm Beach Company, Portland, Maine. Filed July 16, 1963.

"AUTUMN-WEAVE"

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Jan. 2, 1963.

SN 175,917. Harnosand Knitting Mills, Limited, Ozone Park, N.Y. Filed Aug. 28, 1963.



For Sweaters.
First use Jan. 15, 1963.

SN 178,254. Carmo Shoe Manufacturing Company, Union, Mo. Filed Oct. 3, 1963.



For Women's and Misses' Shoes.
First use April 1963.

SN 179,962. Thomas Textile Co., Inc., New York, N.Y. Filed Oct. 28, 1963.



The mark consists of a fanciful representation of the heads of two children (not portraits of any particular individuals).
For Infants' and Children's Clothing—Namely, Bibs, Diapers, Gowns, Kimonos, Bathrobes, Shirt and Pants Combinations, Diaper Shirts, Diaper Pants, Sacques, Sleeping Bags, Panties, Pantie Dresses, Creepers, Bootlets, Layette Sets (in Respect of the Diapers, Gowns, Kimonos, Shirts and Sacques Contained Therein), Overalls, Coveralls, Shirt and Pants Combinations, Shirt and Creeper or Overall Combinations, Butcher Sets, 3 Piece Sets (Including Hat, Jacket and Creeper or Overall), Jackets, Sunsuits and Sunsuit Sets.
First use July 1, 1963.

SN 180,881. Hat Council, Inc., New York, N.Y. Filed Nov. 12, 1963. COLLECTIVE MARK.

SHIKARI

For Hats and Caps.
First use Oct. 15, 1963.

SN 181,346. Fitts Cotton Goods Company, Atlanta, Ga. Filed Nov. 18, 1963.

COZY BABY

For Infants' Diapers.
First use Jan. 1, 1961.

SN 182,036. David A. Church Co. Inc., New York, N.Y. Filed Nov. 29, 1963.

DAVID CHURCH

"David Church" is the name of the president of applicant, whose consent is of record.
For Sweaters, Sport Shirts, Blouses, Jackets, and Coats.
First use on or about Jan. 2, 1958.

SN 182,966. Park Avenue Imports, Inc., Chicago, Ill., assignee of Park Avenue Imports, Chicago, Ill. Filed Dec. 13, 1963.

PARK AVENUE

For Men's and Boys' Jackets, Raincoats, and Sport Coats.
First use July 1956.

SN 184,182. A. Schreter & Sons, Inc., Baltimore, Md. Filed Jan. 7, 1964.

DEAUVILLE

For Neckties and Bow Ties.
First use Aug. 22, 1929.

SN 185,059. Toufick Mickel, d.b.a. Mid South Hosiery Co., Monroe, La. Filed Jan. 21, 1964.

TEE SOCKS

No claim is made to the word "Socks" apart from the mark as shown.
For Men's and Boys' Hosiery.
First use May 1, 1963.

SN 185,070. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division, Atlanta, Ga. Filed Jan. 21, 1964.

Silver Cup

For Boys' Shirts.
First use May 17, 1963.

SN 185,071. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division, Atlanta, Ga. Filed Jan. 21, 1964.

MULTI-PALS

For Coordinated Sets of Boys' Shirts and Slacks Sometimes Sold With Matching Belt and/or Other Accessory.
First use at least prior to Oct. 25, 1956.

SN 186,256. March & Mendl, Inc., New York, N.Y. Filed Feb. 7, 1964.

TAIL GATE

For Women's, Misses', Juniors' and Children's Outer Wearing Apparel—Namely, Rainwear, Coats, Pants, Slacks, Shorts, and Jackets.
First use Jan. 14, 1964.

SN 189,710. Knapp Brothers Shoe Manufacturing Corporation, Brockton, Mass. Filed Mar. 26, 1964.



Applicant disclaims the word "Shoes" apart from the mark as shown.
For Shoes.
First use Aug. 1, 1963.

SN 191,355. Sue Brett, Inc., New York, N.Y. Filed Apr. 17, 1964.

SUE BRETT

"Sue Brett" is not the name of a particular living individual, and is fanciful. Owner of Reg. No. 524,422.
For Women's and Misses' Dresses and Suits.
First use Aug. 18, 1947.

SN 192,899. Day's Tailor-d Clothing, Inc., Tacoma, Wash. Filed May 7, 1964.

LADY DAY

For Women's, Misses' and Girls' Sportswear—Namely, Slacks and Stretch Slacks.
First use Apr. 3, 1964.

SN 192,907. Eagle Sportswear, Inc., Philadelphia, Pa. Filed May 7, 1964.

KRAY-PO-ZET

For Women's Dresses, Sweaters, Suits, Blouses, and Jackets.
First use Feb. 11, 1964.

SN 192,966. Jacob Boltz Knitting Mill, Inc., Pottsville, Pa. Filed May 7, 1964.

Verna

For Women's Underwear.
First use March 1913.

SN 193,270. Exquisite Form Industries, Inc., New York, N.Y. Filed May 12, 1964.

BACK HAPPY

For Brassieres.
First use Apr. 27, 1964.

SN 193,288. Peter Pan Foundations, Inc., New York, N.Y. Filed May 12, 1964.

BACK TO NATURE

For Brassieres and Corsets.
First use May 1, 1961.

SN 193,524. Alix of Miami, Inc., Miami, Fla. Filed May 15, 1964.

PAN AM travelers

For Women's Outer Camisoles and Bras, Outer Shorts and Shirt Combinations, Swim Suits, Pedal Pushers, Slacks, Jackets, Blouses, Skirts, Beach Coats, and Dresses; and Men's Shirts, Shorts, Slacks, Swim Suits, Sport Jackets, and Beach Coats.
First use on or about Apr. 1, 1964.

SN 193,531. Joseph Bancroft & Sons Company, New York, N.Y. Filed May 15, 1964.

Da-Zee

For Hosiery.
First use on or about Dec. 15, 1947.

SN 193,684. Marlboro Shirt Company, Inc., New York, N.Y. Filed May 18, 1964.

MARLBOLENE

Owner of Reg. No. 442,590.
For Shirts.
First use Mar. 15, 1964.

SN 193,746. Burlington Industries, Inc., New York, N.Y. Filed May 19, 1964.

THE LITTLE NOTHING

For Women's Hosiery.
First use Aug. 3, 1963.

SN 193,947. Essex Products, Inc., Haverhill, Mass. Filed May 21, 1964.

KASTOPS

For Heels and Toplifts Used on Women's Shoes.
First use Mar. 26, 1964.

SN 193,948. Federated Department Stores, Inc., New York, N.Y. Filed May 21, 1964.

FEATHER FLIGHTS

For Women's, Men's, and Children's Lounge Wear—Namely, Gowns, Robes, and Jackets.
First use Apr. 14, 1964.

SN 194,063. Munsingwear, Inc., d.b.a. Hollywood Vassarette, Minneapolis, Minn. Filed May 22, 1964.

WIZARD WIRE

For Brassieres.
First use Sept. 28, 1956.

SN 194,092. Wellco Ro-Search Industries, Inc., Hazelwood, N.C. Filed May 22, 1964.

WELLFLEX

For Shoes.
First use not later than Feb. 10, 1964.

SN 194,751. Alfons Saum, d.b.a. Alfons Saum, Fabrik für Schuhbodenteile, Uersell, Kreis, Schluchtern, Germany. Filed June 2, 1964.

ALSA

Owner of German Reg. No. 676,362, dated May 20, 1954.
For Shoe Bottom Parts—Namely, Soles and Heels.
First use Sept. 20, 1954; in commerce Mar. 1, 1958.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 183,327. The Johnson Wire Works Limited, Montreal, Quebec, Canada. Filed Dec. 20, 1963.

SUPER DRYTEX

Applicant disclaims the word "Super" apart from the mark as a whole, without waiving any of its common law rights therein. Owner of Canadian Reg. No. 133,450, dated Nov. 8, 1963.
For Paper Machine Dryer Felts.

SN 187,215. Stein-Tex, Inc., New York, N.Y. Filed Feb. 21, 1964.

DABACOLOR

For Piece Goods of Cotton, of Synthetic Fibers and Blends Thereof.
First use Feb. 14, 1964.

SN 187,216. Stein-Tex, Inc., New York, N.Y. Filed Feb. 21, 1964.

FABRICOLOR

For Piece Goods of Cotton, of Synthetic Fibers and Blends Thereof.
First use Feb. 14, 1964.

SN 188,027. Morgan-Jones, Inc., New York, N.Y. Filed Mar. 5, 1964.

"SOUTH SEAS"

For Cotton Air-Insulated Blankets.
First use Jan. 20, 1964.

SN 189,756. Allen Industries, Inc., Detroit, Mich. Filed Mar. 27, 1964.

ALLEN

Owner of Reg. Nos. 633,811 and 730,417.
For Rug and Carpet Cushions.
First use Feb. 27, 1959.

SN 190,027. Registered Fabrics Corp., New York, N.Y. Filed Mar. 31, 1964.

MIRACLAIRE

For Fabrics of Natural and Synthetic Fibres Used in Making Lingerie or the Like.
First use Feb. 5, 1959.

SN 190,069. The Dow Chemical Company, Midland, Mich. Filed Apr. 1, 1964.

ANAVOR

For Fabrics Useful in Making Draperies, Wall Coverings, Bed Coverings, Cubicle Cloth, and the Like; Draperies; and Bed Coverings.
First use Mar. 10, 1964.

SN 190,076. Fleet Fabrics, Inc., New York, N.Y. Filed Apr. 1, 1964.

TWINAIRE

For Laminated Knit Fabric Used in Making Dresses, Jackets, Raincoats, and the Like.
First use July 1963.

SN 190,079. Greenwood Mills, Inc., New York, N.Y. Filed Apr. 1, 1964.

DURSTRETCH

For Piece Goods of Cotton or of Other Fibers and/or Blends Thereof Used in Making Men's Shirts, Ladies' Lingerie and the Like.
First use Sept. 23, 1963.

SN 193,773. Everfast Fabrics, Inc., New York, N.Y. Filed May 19, 1964.

LINOWEVE

Owner of Reg. No. 409,773.
For Textile Fabrics in the Piece of Cotton, Spun Rayon, or Other Man-Made Fibres.
First use Nov. 26, 1940.

SN 193,774. Everfast Fabrics, Inc., New York, N.Y. Filed May 19, 1964.

SANDRINGHAM

Owner of Reg. No. 407,861.
For Textile Fabrics in the Piece of Cotton, Spun Rayon or Other Man-Made Fibres.
First use Nov. 4, 1941.

Class 43—Thread and Yarn

SN 155,969. Carlton Yarn Mills, Incorporated, Cherryville, N.C. Filed Oct. 26, 1962.

CARLTON STRETCHSPUN

The term "Stretchspun" is disclaimed apart from the mark as shown.
For Yarns.
First use Oct. 10, 1962.

SN 181,530. Etablissements Louis Rochegude S.A., Valance, Drome, France. Filed Nov. 20, 1963.

KIPAJ

For Synthetic Yarn.
First use October 1962; in commerce October 1962.

SN 181,532. Etablissements Louis Rochegude S.A., Valance, Drome, France. Filed Nov. 20, 1963.

Pymlan

For Synthetic Yarn.
First use October 1962; in commerce October 1962.

SN 181,534. Etablissements Louis Rochegude S.A., Valance, Drome, France. Filed Nov. 20, 1963.

Fioraceta

For Synthetic Yarn.
First use August 1962; in commerce August 1962.

SN 188,003. Collins & Aikman Corporation, New York, N.Y. Filed Mar. 5, 1964.

HAF & HAF

For Yarn.
First use Feb. 12, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 165,575. S. H. Camp & Company, Jackson, Mich. Filed Mar. 28, 1963.

Cadenza

For Surgical Garments—Namely, Foundation Garments, Having Orthopedic Functions, Which Embrace the Torso and Are Worn Under Outer Garments.
First use on or about Feb. 15, 1963.

SN 178,324. The W. E. Bassett Company, Derby, Conn. Filed Oct. 4, 1963.

Preen

For Toilet Kit—Namely, Nail Clipper, Nail File, and Comb.
First use December 1962.

SN 179,231. Instrumentation Associates Inc., New York, N.Y. Filed Oct. 17, 1963.

For Lung Volume Measuring Apparatus, Lung Compliance Recorders, Respiratory Valves, Work Output Measurement Apparatus Cardiopulmonary Measuring Apparatus, and Anesthesiology Apparatus.
First use April 1960.

SN 183,368. The L. S. Brown Company, d.b.a. Dixie Trading Company, Atlanta, Ga. Filed Dec. 23, 1963.

DITRACO

For Life Saving Vests.
First use on or about Sept. 9, 1963.

SN 183,721. Jennie O. Van Gilder, d.b.a. Denta Products Company, Columbus, Ohio. Filed Dec. 27, 1963.

DENTALASTIC

Owner of Reg. No. 338,858.
For Elastic Tape or Floss for the Cleaning of Teeth.
First use July 1, 1931.

SN 183,878. Boulevard Electronics, Inc., Chicago, Ill. Filed Jan. 2, 1964.

HYDROJet

For Electric Whirlpool Bath Machine.
First use Sept. 1, 1963.

SN 186,921. Francis C. Yanni, Hollister, Calif. Filed Feb. 17, 1964.

FLUORITAPE

For Dental Floss.
First use Dec. 11, 1961.

SN 186,922. Francis C. Yanni, Hollister, Calif. Filed Feb. 17, 1964.

FLUORIFLOSS

For Dental Floss.
First use Dec. 11, 1961.

SN 189,835. Ethicon, Inc., Somerville, N.J. Filed Mar. 26, 1964.

C-Clip

For Skin Closures, Forcepts, and Appliers.
First use Feb. 17, 1964.

SN 193,081. Acme Cotton Products Co., Inc., Valley Stream, N.Y. Filed May 11, 1964.

PARAGON

For Plaster of Paris Bandages.
First use on or about Apr. 15, 1964.

SN 196,390. Meda-Plast Products Co., Palmyra, N.J. Filed June 24, 1964.

IVY★BOARD

For Polystyrene Armboards.
First use Mar. 4, 1964.

Class 45 — Soft Drinks and Carbonated Waters

SN 134,928. Apollinaris Brunnen A.G., Bad Neuenahr, Germany. Filed Jan. 2, 1962.

PRESTA-LEM

Owner of German Reg. No. 746,510, dated Mar. 8, 1961.
For Non-Alcoholic Fruit Drinks—Namely, Lemonade, Lemon-Flavored Mineral Water, and Soft Drinks.

SN 182,550. Racauchi E. Hijos, Buenos Aires, Argentina. Filed Oct. 21, 1963.

Racauchi

Applicant makes no claim to the representations of the fruits and bottle container for the goods. Owner of Argentine Reg. No. 464,470, dated Oct. 18, 1961.
For Mineral Water and Soft Drinks.

Class 46 — Foods and Ingredients of Foods

SN 144,571. Curtis A. Vanlaw, d.b.a. Vanlaw Food Products, Pacoima, Calif. Filed May 14, 1962.

ROYAL TAHITIAN

For Fruit Punch and Fruit Punch Base.
First use Mar. 15, 1962.
Subj. to intf. with SN 156,919.

SN 147,624. Harry M. Pett, d.b.a. Pett Spice Products, Atlanta, Ga. Filed June 25, 1962.

golden chick

For Flour—Namely, Wheat, Soya and Corn Flours; Spices, Flavorings and Other Condiments—Namely, Pepper, Mustard, Salt, Sugar; and Other Seasonings—Namely, Garlic, Onion, Monosodium Glutamate, Hydrolyzed Plant Protein, Dextrose, Food Flavoring Extracts, and Combinations of Same.
First use on or about May 28, 1962.

SN 157,734. Southern States Cooperative, Incorporated, Richmond, Va. Filed Nov. 21, 1962.

H. E. "12"

For Livestock Feed.
First use Oct. 13, 1962.

SN 164,629. Jobbers Service, Incorporated, Coldwater, Mich. Filed Mar. 14, 1963.

FAMILY FARE

For Canned Foods and Ingredients of Foods—Namely, Vegetables, Fruit, Juices, Coffee, Tea, Catsup, Chili Sauce, Jams, Jellies, Preserves, Canned Fish, Canned Meat, Peanut Butter, and Syrup.
First use Sept. 15, 1960.

SN 169,700. Maurice Ciana, Geneva, Switzerland. Filed May 27, 1963.

FLAN VAP

No claim of exclusive right is made to "Flan." The word "Flan" means "Custard" in French. Owner of Swiss Reg. No. 164,021, dated Jan. 7, 1957.
For Powder for Making Custard.

SN 171,646. General Foods Corporation, White Plains, N.Y. Filed June 24, 1963.

SODABURST

For Ice Cream Soda Mix To Be Added to Water To Make an Ice Cream Soda.
First use June 11, 1963.

SN 173,464. Jacobsen Orchards, Inc., Tehachapi, Calif. Filed July 22, 1963.

MOUNTAIN CREST

The word "Mountain" is disclaimed.
For Fresh Deciduous Fruits.
First use Aug. 18, 1962.

SN 174,886. The James S. Merritt Company, d.b.a. The Merritt Company, Kansas City, Mo. Filed Aug. 12, 1963.

TWO STAGE

For Frozen Confections on a Stick.
First use June 18, 1962.

SN 176,099. IBEC Packing Company of New York, Inc., New York, N.Y. Filed Aug. 30, 1963.

Mr TUNA

No claim is made to the word "Tuna" as the name of the goods.
For Canned Tuna.
First use Apr. 23, 1963.

SN 176,719. The Drumstick, Inc., Kansas City, Mo. Filed Sept. 11, 1963.

THE DRUMSTICK

For Freshly Prepared Chicken, Shrimp, Steak, Ground Steak, Fish, Salads, Sandwiches, Onion Rings, French Fries, Dessert Pies, and Coffee.
First use Aug. 2, 1963.

SN 178,779. The Creamette Company, Minneapolis, Minn. Filed Oct. 11, 1963.



Owner of Reg. No. 216,574.
For Alimentary Pastes.
First use Mar. 9, 1926.

SN 179,410. The Finsbury Distillery Co., Limited, d.b.a. Stone's, London, England. Filed Oct. 21, 1963.

STONE'S

Owner of Reg. Nos. 311,853 and 697,281.
For Bottled Lime Juice.
First use Nov. 11, 1904; in commerce Dec. 31, 1910.

SN 179,716. Jerry's Nut House, Inc., Denver, Colo. Filed Oct. 24, 1963.

BARREL HOUSE

For Shelled and Salted Peanuts.
First use on or about July 10, 1963.

SN 180,667. Mead Johnson & Company, Evansville, Ind. Filed Nov. 7, 1963.

GOOD MEASURE

For Nutritionally Complete Dietary Meals Whose Caloric Content Is Controlled and Is Composed Principally of One or More of the Following Natural Foods: Meats, Fish, Shellfish, Poultry, and Vegetables.
First use on or prior to Oct. 26, 1963.

SN 182,505. Rowntree and Company Limited, York, England. Filed Dec. 6, 1963.



Owner of British Reg. No. 816,816, dated Feb. 10, 1961.
For Cocoa, Chocolate, Chocolates, and Non-Medicated Confectionery.

SN 185,248. South Coast Rice Milling Co., Inc., Crowley, La. Filed Jan. 23, 1964.

ED'S

For Rice.
First use Oct. 2, 1963.

SN 190,329. Breddo Food Products Corporation, Kansas City, Kans. Filed Apr. 6, 1964.

ARCO "B"

For Yeast Food for Yeast-Raised Bakery Products.
First use at least as early as Oct. 28, 1963.

SN 193,146. Arthur Dryden Fleenor, d.b.a. Fleenor Poultry Farm, Bristol, Tenn. Filed May 11, 1964.

FLEENOR

"so fresh the hens haven't missed them"

For Fresh Poultry Eggs for Human Consumption.
First use 1957; 1912 as to the word "Fleenor."

SN 193,715. J. R. Simplot Company, d.b.a. Grandview Farms, Boise, Idaho. Filed May 18, 1964.

SUN CROP

Owner of Reg. No. 532,107.
For Processed Frozen Potatoes.
First use at least as early as Oct. 1, 1956.

SN 194,211. Pacific Olive Company, d.b.a. Pacific Olive Co., Visalia, Calif. Filed May 25, 1964.

CONSUMERS GUILD

Owner of Reg. No. 638,151.
For Canned Olives, and Canned Whole New Potatoes.
First use Dec. 22, 1955.

SN 194,426. Southern Fruit Distributors, Inc., Orlando, Fla. Filed May 27, 1964.

CARDINAL

Owner of Reg. Nos. 522,219, 677,069, and others.
For Tomato Juice in Containers.
First use Apr. 25, 1957.

SN 195,486. G. D. Geter, d.b.a. Alacasion Company, Salt Lake City, Utah. Filed June 11, 1964.

ALACASION

For Sauces for Meats, Fish, Fowl, Salads, and Tacos.
First use on or about May 28, 1964.

SN 197,935. American Home Products Corporation, New York, N.Y. Filed July 16, 1964.

CHOMPIES

For Corn Chips and Peanut Chips.
First use July 1, 1964.

SN 197,936. American Home Products Corporation, New York, N.Y. Filed July 16, 1964.

CHOMPS

For Corn Chips and Peanut Chips.
First use July 1, 1964.

SN 199,340. Allen Products Co., Inc., Allentown, Pa. Filed Aug. 7, 1964.

ALPO

Owner of Reg. Nos. 431,917, 577,153, and others.
For Animal Food for Domesticated Pets—Namely, Dogs and Cats.
First use Aug. 22, 1944.

Class 47 — Wines

SN 157,456. Canandaigua Industries Co., Inc., Canandaigua, N.Y. Filed Nov. 19, 1962.

WINE N' DINE

Without waiving its common law rights and for the purposes of this registration only, applicant makes no claim herein to the word "Wine" apart from the mark as shown.
For Wines.
First use at least as early as Dec. 11, 1960.

SN 160,336. Societe Anonyme des Anciens Etablissements C. Marey & Liger-Belair, Liger-Belair & Fils, Successeurs, d.b.a. C. Marey & Cie Liger-Belair, Liger-Belair & Fils, Sucrs., Nuits Saint Georges, Cote d'Or, France. Filed Jan. 7, 1963.



The lining on the drawing represents the lining on the specimens of record and does not represent color. Claims ownership of French Reg. No. 1,048, dated May 12, 1952 (Nuits-St. Georges), Natl. Inst. No. 515,548.
For Wines.
First use Dec. 28, 1937; in commerce on or about Oct. 17, 1952.

SN 169,424. Chateau La France, Beychac, near Bordeaux, France. Filed May 22, 1963.

Château Quinsac

Owner of French Reg. No. 51,720, dated June 13, 1962.
For White Bordeaux Wine.

SN 178,059. Miguel Torres, Villafranca del Panades, Spain. Filed Sept. 30, 1963.

Viña Sol

The wording "Vina Sol" is translated in English as "sun vineyard" or "vineyard of the sun." Owner of Spanish Reg. No. 400,056. dated Jan. 17, 1963.
For Wines, Excluding Rhine-Type.

SN 179,411. The Finsbury Distillery Co., Limited, d.b.a. Stone's, London, England. Filed Oct. 21, 1963.

STONE'S

Owner of U.S. Reg. Nos. 311,853 and 697,281.
For Ginger Wine.
First use Sept. 13, 1884; in commerce May 31, 1934.

SN 184,276. Bodegas Esmeralda Sociedad Anonima, Cordoba, Argentina. Filed Jan. 9, 1964.

VIEJA ESTIBA

The English translation of the words "Vieja Estiba" is "old stowage." Owner of Argentine Reg. No. 378,616, dated Apr. 17, 1957.
For Wines.

SN 184,277. Bodegas Esmeralda Sociedad Anonima, Cordoba, Argentina. Filed Jan. 9, 1964.

PERAGRAU

Owner of Argentine Reg. No. 431,885, dated Apr. 19, 1960.
For Wines.

Class 48 — Malt Beverages and Liquors

SN 186,909. The Tivoli Brewing Company, d.b.a. The Mountain Brewing Co., Denver, Colo. Filed Feb. 17, 1964.

Mile hi

For Beer.
First use on or about Jan. 11, 1956.

SN 187,923. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed Mar. 4, 1964.

WEBER

Owner of Reg. Nos. 657,544 and 676,101.
For Beer.
First use 1859.

Class 49 — Distilled Alcoholic Liquors

SN 171,287. R. H. Thomson & Co. (Distillers) Limited, Leith, Edinburg, Scotland. Filed June 18, 1963.

OLD ANGUS

For Whisky.
First use May 15, 1963; in commerce May 26, 1963.

SN 182,549. Racauchi e Hijos, Buenos Aires, Argentina. Filed Oct. 21, 1963.



No claim is made to the representations of the fruits or bottle container. Owner of Argentine Reg. No. 464,470, dated Oct. 18, 1961.
For Whiskey, Brandy, and Alcohol Bitters.

SN 186,489. Frederick P. Winner, Ltd., d.b.a. F. Pershing Winner Distilling Co., Baltimore, Md. Filed Feb. 11, 1964.



F. PERSHING
WINNER

The name and portrait appearing in the drawing are those of Frederick P. Winner, whose consent is of record.
For Whiskey.
First use Nov. 12, 1963.

SN 187,422. J. & G. Stewart Limited, d.b.a. The St. Leonard's Blending Co., Edinburg, Scotland.. Filed Feb. 25, 1964.

St LEONARD'S

For Scotch Whisky.
First use Nov. 7, 1963; in commerce Jan. 3, 1964.

SN 191,823. The American Distilling Company, d.b.a. Clarke's Distilling Company, and Prince Royal Distillers Co., New York, N.Y. Filed Apr. 23, 1964.

COUNTRY HOUSE

For Whiskey.
First use Oct. 22, 1963.

Class 50 — Merchandise Not Otherwise Classified

SN 134,024. J. H. Enterprises, Inc., Akron, Ohio. Filed Dec. 14, 1961.



GRAB-BAG

For Mechanical Device for Holding Litter Bags and the Like.
First use on or about Jan. 15, 1961.

SN 170,155. Anagraphic Corporation, Minneapolis, Minn. Filed June 3, 1963.

ANAGRAPHIC

For Animated Transparencies Such as Animated Billboards, Slides and Pictorial and Graphic Representations for Advertising and Educational Purposes.
First use Oct. 22, 1962.

SN 178,924. Jomac, Inc., Philadelphia, Pa. Filed Oct. 14, 1963.

WEB-MOL

For Seamless Dampening Cover Used in Offset Lithography.
First use Aug. 15, 1963.

SN 183,374. Bernard J. Cebelak, d.b.a. Kent Manufacturing Company, Grand Rapids, Mich. Filed Dec. 23, 1963.

STA-PAD

For Resilient Pads Provided With Adhesive for Attachment to Miscellaneous Articles as Cushioning or Bearing Members.
First use Oct. 18, 1963.

SN 187,292. K & S Manufacturing Company, Los Angeles, Calif. Filed Feb. 24, 1964.

SHOWBOAT

For Frangible Holders for Arranging Cut Flowers, Foliages, and Decorative Accessories.
First use Jan. 16, 1964.

SN 188,829. F. W. Woolworth Co., New York, N.Y. Filed Mar. 16, 1964.



The words "Your Symbol of Quality" are disclaimed apart from the mark as shown.
For Party Favors.
First use Oct. 31, 1963.

SN 195,290. Eternal Floral Rosary Company, Niantic, Conn. Filed June 10, 1964.

ETERNAL

For String of Flowers and Beads in the Form of a Rosary.
First use on or about May 20, 1964.

SN 195,882. The Monarch Company, Scranton, Pa. Filed June 17, 1964.

Ad-a-Tag

For Advertisement Tags Similar in Size and Shape to License Plate Tags But Made of Plastic.
First use Oct. 7, 1963.

Class 51 — Cosmetics and Toilet Preparations

SN 128,257. Diana Franzbranntwein-Produktion Dr. Hollander & Co., Vienna, Austria. Filed Sept. 20, 1961.

DIANA

Owner of Austrian Reg. No. 4,824, dated Feb. 4, 1948.
For Commercial Brandy (Spiritus Vini Gallici) Being a Diluted Alcohol Containing Aromatic Additives and Used for Various Cosmetic Purposes Such as an Astringent, Skin Freshener, After Shave Lotion or as a Cologne.

SN 166,735. Maradel Products, Inc., New York, N.Y. Filed Apr. 15, 1963.

COLOR CHROME

The word "Color" is disclaimed apart from the mark as shown.
For Hair Color Rinse.
First use June 20, 1960.

SN 167,266. Izod, Ltd., New York, N.Y. Filed Apr. 22, 1963.



The drawing is lined for shading and not to indicate color.
For Men's Cologne and After Shave Preparation.
First use Nov. 26, 1962.

SN 179,135. House of Westmore, Inc., New York, N.Y. Filed Oct. 16, 1963.

HOOTENANNY

For Lipsticks and Nail Polish.
First use Sept. 30, 1963.

SN 184,306. Parfumerie Lubin Societe Anonyme, Paris, France. Filed Jan. 9, 1964.

IDOLE

The English translation of the mark is "idol." Owner of French Reg. No. 509,927, dated Dec. 14, 1962 (Paris); Natl. Inst. No. 196,360.
For Perfume and Toilet Water.

SN 185,154. Parfumerie Fragonard G. Fuchs & Cie, Paris, France. Filed Jan. 22, 1964.

GALOPIN

Priority claimed under Sec. 44(d) on French Reg. No. 515,598, dated Aug. 30, 1963 (Seine); Natl. Inst. No. 211,048. The word "Galopin" means "rogue" or "young scamp."
For Perfumes.

SN 187,410. Germaine Monteil Cosmetiques Corp., New York, N.Y. Filed Feb. 25, 1964.

MUU MUU

For Face Powder, Lipstick, and Color Blend Cake Powder.
First use Feb. 11, 1964.

SN 187,412. Germaine Monteil Cosmetiques Corp., New York, N.Y. Filed Feb. 25, 1964.

COOL SANDS

For Face Powder, Lipstick, and Color Blend Cake Powder.
First use Feb. 11, 1964.

SN 188,236. Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. Filed Mar. 9, 1964.



For Men's Cologne, Men's After Shave Lotion, Men's Pre-Shave Lotion, and Men's Hair Lotion (or Tonic).
First use Apr. 27, 1961.

SN 188,654. Nutritional Science Corporation, El Monte, Calif. Filed Mar. 13, 1964.



Owner of Reg. Nos. 637,956 and 672,295.
For Cosmetics and Toilet Preparations—Namely, Lipstick; Eyebrow Pencil; Lipliner; Eyeshadow; Mascara; Eyeliner; Face Powder; Dusting Powder; Rouge; Preparation to Cover Discoloration and Minor Skin Blemishes; Skin Astringent and Freshener; Deep Pore Cleanser; Facial Pack; Skin Moisturizing Preparation; Vitaminized Skin Oil Preparation; Eye Oil; Make-Up Base; Facial Lotion; Hand and Body Lotion; Personal Deodorants; Hair Spray Mist for Holding Hair in Place; Perfumed Bath Oil; Tooth Cleaning Powder; Cologne; Skin Cleansing Lotion; and Medicated Skin Cleanser in Lotion Form.
First use Nov. 18, 1957, on facial pack.

SN 188,859. Firmatone, Inc., New York, N.Y. Filed Mar. 17, 1964.

Firmatone

For Cosmetic Cream for Use on the Face and Neck.
First use Dec. 18, 1963.

SN 188,886. Josephine K. Preston, d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. Filed Mar. 17, 1964.

ODEVE

For Perfume and Cologne.
First use on or about June 1, 1963.

SN 189,755. Alberto-Culver Company, Melrose Park, Ill. Filed Mar. 27, 1964.

MIRAL

For Hair Conditioning Wave Set.
First use Mar. 13, 1964.

SN 191,508. Shulton, Inc., Clifton, N.J., assignee of Jacqueline Cochran, Inc., Newark, N.J. Filed Apr. 20, 1964.

SATIN FOAM

For Facial Cleansing Lotion.
First use Nov. 8, 1960.

SN 192,522. Revlon, Inc., New York, N.Y. Filed May 1, 1964.

'WONDERLIFT'

For Beauty Cream.
First use Apr. 10, 1964.

SN 192,773. Wickman Pharmaceuticals, Los Angeles, Calif. Filed May 5, 1964.

RIGIDENT
DENTURE
CLEANER



No claim is made to the words "Denture Cleaner." Owner of Reg. Nos. 585,714 and 747,098.
For Denture Cleaning Compound.
First use Mar. 6, 1964.

Class 52 — Detergents and Soaps

SN 157,640. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Nov. 20, 1962.

TRIAC

For Hot Tank Immersion Cleaner Preparation for Aluminum.
First use May 1952.

SN 159,320. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Dec. 17, 1962.



Owner of Reg. No. 734,395.
For Cleaning, Cleansing, Detergent and Washing Compositions—Namely, Spray and Soak-Type Cleaners for Industrial Uses; Oil, Grease, Carbon, and Oxide Removers; Rust Removers; Emulsion Cleaners; Metal Cleaners for Household and Industrial Use; Fabric Cleaners; Floor and Wall Cleaners; Hand Cleaners; and Absorbent and Slip Prevention Compounds for Floors, Sidewalks, Streets and Driveways.
First use in or about June 1961.

SN 187,148. Quaker Chemical Corporation, Conshohocken, Pa. Filed Feb. 20, 1964.

SCOURITE

Owner of Reg. No. 408,228.
For Soaps and Synthetic Detergents for Washing Textile Fibers and Fabrics.
First use January 1942.

SN 188,655. Nutritional Science Corporation, El Monte, Calif. Filed Mar. 13, 1964.



Owner of Reg. Nos. 637,956 and 672,295.
For Hair Shampoo.
First use at least as early as October 1961.

SN 191,814. The Veritas Company, Inc., Medway, Mass. Filed Apr. 22, 1964.

SINGLE

For Powdered Laundry Detergent.
First use Apr. 10, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 173,293. Spaceburger, Inc., Portland, Oreg. Filed July 18, 1963.



For Advice and Consultation in the Establishment and Operation of Restaurants by Others.
First use June 1961.

SN 195,492. The A & W Root Beer Company, Santa Monica, Calif. Filed June 12, 1964.



The drawing is lined for brown and orange, but no claim is made to the color combination. Owner of Reg. Nos. 716,618 and 723,388.
For Restaurant Services.
First use 1925.

Class 101 — Advertising and Business

SN 164,032. Foodland, Inc., Cleveland, Ohio. Filed Mar. 6, 1963.

FOODLAND

Owner of Reg. Nos. 326,478, 654,557, and others.
For Supermarket and Food Store Services.
First use September 1934.

Class 102 — Insurance and Financial

SN 174,813. Wilson McBride & Company, Cleveland, Ohio. Filed Aug. 9, 1963.

THE AGENCY MAKES THE DIFFERENCE

For Insurance Counseling, Survey and Re-Evaluation of Property, Preparation and Evaluation of Insurance Requirements, Inspection of Engineering Services in Insured Properties, and Assistance in Settlement of Claims.
First use 1937.

Class 103 — Construction and Repair

SN 185,964. Waste Heat Engineering Corp., Houston, Tex. Filed Feb. 3, 1964.

WHECO

For Design and Installation of as Well as Consultation Regarding Heating Equipment and Systems.
First use Oct. 3, 1962.

Class 105 — Transportation and Storage

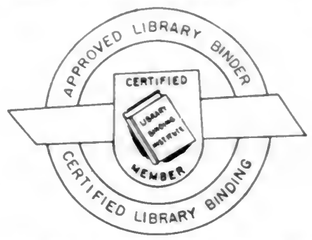
SN 181,907. Richard L. Mandl, Los Angeles, Calif. Filed Nov. 26, 1963.

GROUPETTE

For Arrangement of Travel Accommodations for Small Groups.
First use Nov. 1, 1963.

Class 106 — Material Treatment

SN 110,818. Library Binding Institute, Boston, Mass. Filed Dec. 27, 1960. COLLECTIVE MARK.



The applicant disclaims the words "Approved Library Binder" and "Certified Library Binding" apart from the mark.
For Binding Books.
First use November 1960.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 182,970. Desert Burros Four-Wheel Drive Club, Inc., Torrance, Calif. Filed Jan. 3, 1964.



For Indicating Membership in Applicant.
First use Jan. 13, 1961.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

780,781. SKAI. Konrad Hornschuch Aktiengesellschaft Werk Weissbach. SN 157,710. Pub. 9–15–64. Filed 9–26–63.

780,782. TRAXOL. Texas-U.S. Chemical Company. SN 171,722. Pub. 9–15–64. Filed 6–24–63.

780,783. GREEN MAGIC. G. C. Murphy Company. SN 183,330. Pub. 9–15–64. Filed 12–20–63.

780,784. DELATAMS. E. I. Du Pont de Nemours and Company. SN 183,388. Pub. 9–15–64. Filed 12–23–63.

780,785. STACTRO. George O. Jenkins Company. SN 183,604. Pub. 9–15–64. Filed 12–26–63.

780,786. CORAMID. Cooper Polymers, Inc. SN 184,606. Pub. 9–15–64. Filed 1–15–64.

780,787. REGAL. Southern Coal & Coke Company, Incorporated. SN 184,657. Pub. 9–15–64. Filed 1–15–64.

780,788. KITTY KIT. Excel-Mineral Company, Inc., d.b.a. Ex-M-Co. SN 184,711. Pub. 9–15–64. Filed 1–16–64.

780,789. FLAME. Guard All Chemical Company, Inc. SN 184,720. Pub. 9–15–64. Filed 1–16–64.

780,790. SMOKETTS. Abet Corporation. SN 184,776. Pub. 9–15–64. Filed 1–17–64.

780,791. DAYLAX. Dayco Corporation. SN 184,898. Pub. 9–15–64. Filed 1–20–64.

780,792. SILVA-FIBER. Weyerhaeuser Company. SN 185,175. Pub. 9–15–64. Filed 1–22–64.

780,793. WHIP-TAIL. Surpass Leather Company. SN 185,327. Pub. 9–15–64. Filed 1–24–64.

780,794. POLY-LASTICS. The Firestone Tire & Rubber Company. SN 185,378. Pub. 9–15–64. Filed 1–27–64.

780,795. DRAPELUX. Kay Line Inc. SN 185,420. Pub. 9–15–64. Filed 1–27–64.

780,796. KAL AND DESIGN. Kal Plastics, Inc. SN 185,681. Pub. 9–15–64. Filed 1–30–64.

Class 2 — Receptacles

780,797. ICE-PAK. International Paper Company. SN 175,410. Pub. 9–15–64. Filed 8–20–63.

780,798. SPICE-SAVOR. The Mort N. Marton Corporation. SN 176,206. Pub. 9–15–64. Filed 9–3–63.

780,799. MAC'S FLATS. McCoy Box Company. SN 186,373. Pub. 9–15–64. Filed 2–10–64.

780,800. ATLAS P/N. Geo. J. Ball, Inc. SN 186,683. Pub. 9–15–64. Filed 2–14–64.

780,801. IL-DI-LEK. Ivers-Lee Company. SN 190,620. Pub. 9–15–64. Filed 4–8–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

780,802. STUDIO THREE. B. Altman & Co. SN 188,325. Pub. 9–15–64. Filed 3–10–64.

780,803. MIRACLE TONE. Centra Leather Goods of Oklahoma, Inc. SN 188,955. Pub. 9–15–64. Filed 3–18–64.

Class 4 — Abrasives and Polishing Materials

780,804. FORMULA 29 AUTO WAX. Alfred B. Miner, d.b.a. Hit Distributing Co. SN 174,113. Pub. 9–15–64. Filed 7–31–63.

780,805. TRIPLE CHECK AND DESIGN. G. C. Murphy Company. SN 181,441. Pub. 9–15–64. Filed 11–18–63.

780,806. TEXACO. Texaco Inc. MULTIPLE CLASS (Classes 4 and 52). SN 182,679. Pub. 9–15–64. Filed 12–9–63.

780,807. DRESS-UP. The C. B. Dolge Company. SN 186,239. Pub. 9–15–64. Filed 2–7–64.

780,808. PERMALOOK. Hysan Products Company. SN 187,109. Pub. 9–15–64. Filed 2–20–64.

780,809. THOM McAN. Melville Shoe Corporation. MULTIPLE CLASS (Classes 4 and 52). SN 193,284. Pub. 9–15–64. Filed 5–12–64.

Class 5 — Adhesives

780,810. CONGOLEUM-NAIRN .FINE FLOORS AND DESIGN. Congoleum-Nairn Inc. SN 188,615. Pub. 9–15–64. Filed 3–13–64.

Class 6 — Chemicals and Chemical Compositions

780,811. STRIM. Foseco International Limited. SN 162,726. Pub. 9–15–64. Filed 2–14–63.

780,812. PLASTAMIC. W. R. Grace & Co. SN 174,767. Pub. 9–15–64. Filed 8–9–63.

780,813. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,893. Pub. 9–15–64. Filed 8–12–63.

780,814. TIMONOX. Associated Lead Manufacturers Limited. SN 180,636. Pub. 9–15–64. Filed 11–7–63.

780,815. BOUQAIRE. Malcolm S. Bru, d.b.a. Aldermaston Sales. SN 180,831. Pub. 9–15–64. Filed 11–12–63.

780,816. ELECTRO-CHEM. Electro-Chem Corporation. SN 181,621. Pub. 9–15–64. Filed 11–21–63.

780,817. LETHOGAS. Chandler R. Parsons, d.b.a. Parsons Chemical Works. SN 181,671. Pub. 9–15–64. Filed 11–21–63.

780,818. FALL OUT AND DESIGN. Agricultural Supplies of Batesville, Inc. SN 181,942. Pub. 9–15–64. Filed 11–27–63.

780,819. COLORBRITE. Special Products Lab. SN 183,468. Pub. 9–15–64. Filed 12–23–63.

780,820. NALKIL. Nalco Chemical Company. SN 184,493. Pub. 9–15–64. Filed 1–13–64.

780,821. KATHON. Rohm & Haas Company. SN 184,753. Pub. 9–15–64. Filed 1–16–64.

780,822. GESAPAX. Geigy Chemical Corporation. SN 185,991. Pub. 9–15–64. Filed 2–4–64.

780,823. GESAL. Geigy Chemical Corporation. SN 185,993. Pub. 9–15–64. Filed 2–4–64.

780,824. TEXATHERM. Texaco Inc. SN 186,127. Pub. 9–15–64. Filed 2–5–64.

780,825. LIQUI-LITH. The Teaneck Chemical Co., Inc. SN 186,204. Pub. 9–15–64. Filed 2–6–64.

780,826. WELDOPAX. National Lead Company. SN 186,264. Pub. 9–15–64. Filed 2–7–64.

780,827. UCANE. Union Carbide Corporation. SN 186,292. Pub. 9–15–64. Filed 2–7–64.

780,828. THANCAT. Jefferson Chemical Company, Inc. SN 186,360. Pub. 9–15–64. Filed 2–10–64.

780,829. LO-SHUN. Wyandotte Chemicals Corporation. SN 186,424. Pub. 9–15–64. Filed 2–10–64.

780,830. THERMALOX. The Brush Beryllium Company. SN 186,691. Pub. 9–15–64. Filed 2–14–64.

780,831. KING AND DESIGN. Mangels, Herold Company, Inc. SN 186,735. Pub. 9–15–64. Filed 2–14–64.

780,832. VANPLAST. R. T. Vanderbilt Company, Inc. SN 187,635. Pub. 9–15–64. Filed 2–27–64.

780,833. BROMELIQ. Miles Laboratories, Inc. SN 187,779. Pub. 9–15–64. Filed 3–2–64.

780,834. FIRMENICH ETC. AND DESIGN. Firmenich, Incorporated. SN 188,533. Pub. 9–15–64. Filed 3–12–64.

780,835. ALP. Collier Carbon and Chemical Corporation. SN 196,626. Pub. 9–15–64. Filed 6–29–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

780,836. SWING-JET. Jet Research Center, Inc. SN 184,076. Pub. 9–15–64. Filed 1–6–64.

Class 10 — Fertilizers

780,837. POWR-PRILS. Armour and Company, d.b.a. Armour Agricultural Chemical Co. SN 187,231. Pub. 9–15–64. Filed 2–24–64.

780,838. MITSUBISHI. Mitsubishi Chemical Industries Limited. SN 187,509. Pub. 9–15–64. Filed 2–26–64.

780,839. LAWN TIME. Hoosier Soil Service, Inc. SN 189,302. Pub. 9–15–64. Filed 3–23–64.

780,840. DESIGN IN HEXAGON. International Minerals & Chemical Corporation. SN 193,875. Pub. 9–15–64. Filed 5–20–64.

780,841. PRE-Q. International Minerals & Chemical Corporation. SN 195,105. Pub. 9–15–64. Filed 6–8–64.

780,842. VFT. The Hubbard-Hall Chemical Company. SN 196,160. Pub. 9–15–64. Filed 6–22–64.

780,843. ALP. Collier Carbon and Chemical Corporation. SN 196,627. Pub. 9–15–64. Filed 6–29–64.

Class 11 — Inks and Inking Materials

780,844. GLYCOTE. Bowers Printing Ink Company. SN 190,220. Pub. 9–15–64. Filed 3–18–64.

780,845. HYDROPLASTIC. Sun Chemical Corporation. SN 190,989. Pub. 9–15–64. Filed 4–13–64.

Class 12 — Construction Materials

780,846. POW-R-LITE. McGraw-Edison Company. SN 176,740. Pub. 9–15–64. Filed 9–11–63.

780,847. CAMIE. Camie Company, Inc. SN 177,225–A, filed 9–17–64, division of SN 177,225, filed 9–18–63. Pub. 6–9–64.

780,848. PLYGRIP. Canasco, Inc. SN 182,771. Pub. 9–15–64. Filed 12–11–63.

780,849. VILLARAMA. Villarama Corp. SN 190,130. Pub. 9–15–64. Filed 4–1–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

780,850. FABRI SELECT A FLOW MANIFOLD. Fabri-Valve Company of America. SN 174,852. Pub. 9–15–64. Filed 8–12–63.

780,851. SERVALVE. Airoyal Engineering Company. SN 179,684. Pub. 9–15–64. Filed 10–24–63.

780,852. TOPFIT. Handelmaatschappij G. A. Beenhakker. MULTIPLE CLASS (Classes 13 and 23). SN 182,726. Pub. 9–15–64. Filed 12–10–63.

780,853. METLPLAST. International Protected Metals, Inc. SN 184,292. Pub. 9–15–64. Filed 1–9–64.

780,854. HOLLAND AND DESIGN. The Holland Manufacturing Company, d.b.a. The Holland Tack Co. SN 185,599. Pub. 9–15–64. Filed 1–29–64.

780,855. KWIK-PIK. Rockford Screw Products Co. SN 187,800. Pub. 9–15–64. Filed 3–2–64.

780,856. PITTSBURGH P SEAMLESS AND DESIGN. Pittsburgh Steel Company. SN 188,661. Pub. 9–15–64. Filed 3–13–64.

Class 14 — Metals and Metal Castings and Forgings

780,857. GUARDIAN AND DESIGN. Guardian Steel Corporation. SN 166,188. Pub. 9–15–64. Filed 4–5–63.

780,858. NPM AND DESIGN. Norwalk Powdered Metals, Inc. SN 189,204. Pub. 9–15–64. Filed 3–20–64.

780,859. HANNA. The Hanna Furnace Corporation. SN 190,006. Pub. 9–15–64. Filed 3–31–64.

780,860. HANNALOY. The Hanna Furnace Corporation. SN 190,007. Pub. 9–15–64. Filed 3–31–64.

780,861. ACKERLIND ECONO GROUND. Ackerlind Steel Co. Inc. SN 190,047. Pub. 9–15–64. Filed 4–1–64.

780,862. CAMIE. Camie Company, Inc. SN 177,225–B, filed 9–17–64, division of SN 177,225, filed 9–18–63. Pub. 6–9–64.

Class 15 — Oils and Greases

780,863. PETROCHEM AND DESIGN. Pacific Petrochemicals, Inc. SN 177,540. Pub. 9–15–64. Filed 9–23–63.

Class 16 — Protective and Decorative Coatings

780,864. SURFA-KOTE. Creo-Dipt Company, Inc. SN 110,315. Pub. 9–26–61. Filed 12–16–60.

780,865. SPEREX AND DESIGN. Sperex Corporation. SN 170,433. Pub. 9–15–64. Filed 6–5–63.

780,866. LEXACOTE. Colorpave, Inc. SN 173,338. Pub. 9–15–64. Filed 7–19–63.

780,867. NEAT AND DESIGN. Seymour of Sycamore, Inc. SN 175,613. Pub. 9–15–64. Filed 8–22–63.

780,868. RUF-NEK. The Martin-Senour Company. SN 188,556. Pub. 9–15–64. Filed 3–12–64.

780,869. MARTIN-SENOUR PAINTS AND DESIGN. The Martin-Senour Company. SN 188,644. Pub. 9–15–64. Filed 3–13–64.

Class 17—Tobacco Products

780,870. VAN ROSSEM'S ROYAL. N.V. Koninklijke Tabakfabriek, Koffiebranderij en Theehandel J. & A. C. Van Rossem. SN 146,919. Pub. 1–15–63. Filed 6–14–62.

780,871. TIA MARTIA. Samuel B. Jacobs. SN 182,272. Pub. 9–15–64. Filed 12–3–63.

780,872. TOBACCO CON. Consolidated Cigar Corporation. SN 182,592. Pub. 9–15–64. Filed 12–9–63.

780,873. MISTER FILTER. Bayuk Cigars Incorporated. SN 186,684. Pub. 9–15–64. Filed 2–14–64.

780,874. RED DOT TIPETTE AND DESIGN. Federal Cigar Company, Inc. SN 187,920. Pub. 9–15–64. Filed 3–4–64.

780,875. HEINE'S CAVENDISH AND DESIGN. Sutliff Tobacco Company. SN 188,038. Pub. 9–15–64. Filed 3–5–64.

780,876. ST. BERNARD. Lane Limited. SN 188,771. Pub. 9–15–64. Filed 3–16–64.

780,877. CARPE DIEM. Garcia y Vega, Inc. SN 189,460. Pub. 9–15–64. Filed 3–24–64.

780,878. SABOT S AND DESIGN. Larus & Brother Company. SN 189,905. Pub. 9–15–64. Filed 3–30–64.

780,879. RECRUIT. Liggett & Myers Tobacco Company. SN 190,014. Pub. 9–15–64. Filed 3–31–64.

Class 18—Medicines and Pharmaceutical Preparations

780,880. BALANCED. Balanced Foods, Inc. SN 118,213. Pub. 3–31–64. Filed 4–20–61.

780,881. BRONCOVAC. Marquez Laboratories Corporation. SN 147,011. Pub. 1–1–63. Filed 6–15–62.

780,882. SL AND DESIGN. Summers Laboratories, Inc. SN 183,807. Pub. 9–15–64. Filed 12–30–63.

780,883. BEAT-NIC. Success Chemical Co., Inc. SN 183,931. Pub. 9–15–64. Filed 1–2–64.

780,884. BOOSTERVAC. Fromm Laboratories, Inc. (Iowa corporation), by change of name from and assignment of Fromm Laboratories, Inc. (Wisconsin corporation). SN 184,805. Pub. 9–15–64. Filed 1–17–64.

780,885. AQUA-AID. Sternco Industries, Inc. SN 185,536. Pub. 9–15–64. Filed 1–28–64.

780,886. C3. Menley & James Laboratories, Ltd. SN 186,961. Pub. 9–15–64. Filed 2–18–64.

780,887. KOCH SKIN SALVE. Sarah Koch. SN 187,198. Pub. 9–15–64. Filed 2–21–64.

780,888. VOLUB. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 187,733. Pub. 9–15–64. Filed 3–2–64.

780,889. GARAMYCIN. Schering Corporation. SN 189,019. Pub. 9–15–64. Filed 3–18–64.

780,890. TIBAH. Charles A. Crete, d.b.a. Pharmaceutical Associates. SN 191,138. Pub. 9–15–64. Filed 4–15–64.

780,891. BIOTAXIN. Sterling Drug Inc. SN 191,453. Pub. 9–15–64. Filed 4–17–64.

780,892. INNOVAR. McNeil Laboratories, Inc. SN 192,494. Pub. 9–15–64. Filed 5–1–64.

Class 19—Vehicles

780,893. RETRACT-EZE. The Greenfield Co. SN 188,440. Pub. 9–15–64. Filed 3–11–64.

780,894. JATO. Jato Manufacturing, Inc. SN 188,638. Pub. 9–15–64. Filed 3–13–64.

780,895. REEL EASY. All-O-Matic Manufacturing Corporation. SN 189,246. Pub. 9–15–64. Filed 3–23–64.

780,896. EL DORADO. Superior Industries. SN 189,392. Pub. 9–15–64. Filed 3–23–64.

Class 21—Electrical Apparatus, Machines, and Supplies

780,897. LITTLE GIANT AND DESIGN. Little Giant Corporation. SN 162,459. Pub. 9–15–64. Filed 2–11–63.

780,898. RECORD-O-FONE. Robosonics, Inc., assignee of Phone Recorder Corp. SN 162,781. Pub. 9–15–64. Filed 2–14–63.

780,899. SIERRATROL. Sierra Electric Corporation. SN 173,052. Pub. 9–15–64. Filed 7–15–63.

780,900. POZI-GRIP. O.Z. Electrical Manufacturing Co., Inc. SN 174,528. Pub. 9–15–64. Filed 8–6–63.

780,901. DURALEM. McGraw-Edison Company. SN 175,081. Pub. 9–15–64. Filed 8–13–63.

780,902. ZAGI LOG PERIODIC. JFD Electronics Corporation. SN 175,193. Pub. 9–15–64. Filed 8–16–63.

780,903. STEREO-VERB. Gibbs Manufacturing & Research Corporation. SN 176,651. Pub. 9–15–64. Filed 9–10–63.

780,904. KAT'S. William S. Kincade. SN 177,641. Pub. 9–15–64. Filed 9–24–63.

780,905. ROBOT AND DESIGN. Robot Salesman, Inc. SN 177,726. Pub. 9–15–64. Filed 9–25–63.

780,906. ADMIRAL. Admiral Corporation. MULTIPLE CLASS (Classes 21, 24, 31, 32, 34, and 36). SN 177,741. Pub. 9–15–64. Filed 9–26–63.

780,907. AUTOLEVEL. Industrionics Controls, Inc. SN 178,283. Pub. 9–15–64. Filed 10–3–63.

780,908. MWL. Fairchild Camera and Instrument Corporation. SN 178,337. Pub. 9–15–64. Filed 10–4–63.

780,909. CYCLOPULSER. Sigma Instruments, Inc. SN 179,274. Pub. 9–15–64. Filed 10–17–63.

780,910. THE SPORTSMASTER. The M. D. Brown Company. SN 180,361. Pub. 9–15–64. Filed 11–4–63.

780,911. GRIDMASTER. The M. D. Brown Company. SN 180,363. Pub. 9–15–64. Filed 11–4–63.

780,912. WEIGHT-MASTER. The M. D. Brown Company. SN 180,364. Pub. 9–15–64. Filed 11–4–63.

780,913. CRI AND DESIGN. George Risk Industries. SN 180,872. Pub. 9–15–64. Filed 11–12–63.

780,914. VCD. Anaconda Wire and Cable Company, by assignment and change of name from Anaconda Wire and Cable Company. SN 182,029. Pub. 9–15–64. Filed 11–29–63.

780,915. KONEL. Konigsberg Electronics, Inc. SN 182,186. Pub. 9–15–64. Filed 12–2–63.

780,916. AMRON. Eldre Components, Inc. SN 184,150. Pub. 9–15–64. Filed 1–7–64.

780,917. COUP DE VENT. Lampes et Entreprises Electriques. SN 184,826. Pub. 9–15–64. Filed 1–17–64.

780,918. CDR. Cornell-Dubilier Electric Corporation. SN 193,757. Pub. 9–15–64. Filed 5–19–64.

780,919. EXCEL XL AND DESIGN. Excel Wire and Cable Company. SN 193,775. Pub. 9–15–64. Filed 5–19–64.

780,920. LINEMASTER. Linemaster Switch Corporation. SN 193,798. Pub. 9–15–64. Filed 5–19–64.

780,921. VITRI-PORC. James M. Garroway, d.b.a. Industrial Power & Equipment Company. SN 194,294. Pub. 9–15–64. Filed 5–26–64.

Class 22—Games, Toys, and Sporting Goods

780,922. SKI 'N SKORE. Orbicon, Ltd. SN 183,447. Pub. 9–15–64. Filed 12–23–63.

780,923. SPACESWING. Peter P. Pacuk. SN 183,699. Pub. 9–15–64. Filed 12–27–63.

780,924. INTERNATIONAL. Wilson Sporting Goods Co. SN 183,716. Pub. 9–15–64. Filed 12–27–63.

780,925. ESCORE. Lakewood Manufacturing Company. SN 184,296. Pub. 9–15–64. Filed 1–9–64.

780,926. LUCKY IKE. Lazy Ike Corporation. SN 184,388. Pub. 9–15–64. Filed 1–10–64.

780,927. LIVELY IKE. Lazy Ike Corporation. SN 184,389. Pub. 9–15–64. Filed 1–10–64.

780,928. TREE-PEE. Peterson-Rockhill Corporation. SN 184,502. Pub. 9–15–64. Filed 1–13–64.

780,929. JOHNNY SEVEN. De Luxe Reading Corporation. SN 184,611. Pub. 9–15–64. Filed 1–15–64.

780,930. FASHION/COLOUR. Ben Hogan Company. SN 184,722. Pub. 9–15–64. Filed 1–16–64.

780,931. WILDCAT DIVISION. Payton Products, Inc. SN 184,832. Pub. 9–15–64. Filed 1–17–64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

780,852. (See Class 13 for this trademark.)

780,932. RAPIDRIL. Nashoba Engineering Corp. SN 169,472. Pub. 3–17–64. Filed 5–22–63.

780,933. PORTA-VAC. Seco, Inc. SN 173,968. Pub. 9–15–64. Filed 7–29–63.

780,934. ROUSTABOUT 500. Jaroda Company. SN 174,386. Pub. 9–15–64. Filed 8–5–63.

780,935. HIDE AND GEAR (DESIGN). The Aulson Tanning Machinery Company. SN 175,154. Pub. 9–15–64. Filed 8–16–63.

780,936. TAURODYNE. Dowty Hydraulic Units Limited, assignee of Dowty Technical Developments Limited. SN 176,718. Pub. 9–15–64. Filed 9–11–63.

780,937. VIBERMITE. Viber Company. SN 183,517. Pub. 9–15–64. Filed 12–24–63.

780,938. MIDAS. Midas, Inc. SN 188,560. Pub. 9–15–64. Filed 3–12–64.

780,939. THREE DIAMONDS. Mitsubishi Electric Corporation. SN 188,999. Pub. 9–15–64. Filed 3–18–64.

780,940. THREE DIAMONDS (DESIGN). Mitsubishi Electric Corporation. SN 189,003. Pub. 9–15–64. Filed 3–18–64.

780,941. VACUFIN. Fr. Hesser Maschinenfabrik Aktiengesellschaft. SN 189,066. Pub. 9–15–64. Filed 3–19–64.

780,942. DUALATOR. Bolton-Emerson, Inc. SN 189,541. Pub. 9–15–64. Filed 3–25–64.

780,943. PRODCO. Product Development Corporation. SN 190,113. Pub. 9–15–64. Filed 4–1–64.

780,944. WONDER AND DESIGN. Construction Machinery Company. SN 190,157. Pub. 9–15–64. Filed 4–2–64.

780,945. JACKSON FASPRAY. V & V Companies, Inc. SN 190,998. Pub. 9–15–64. Filed 4–13–64.

780,946. VISIPOSTER. Visirecord, Inc. SN 190,999. Pub. 9–15–64. Filed 4–13–64.

780,947. KWIK TIP. Esco Corporation. SN 191,531. Pub. 9–15–64. Filed 4–20–64.

780,948. SILMAX AND DESIGN. Mario Fumagalli S.p.A. SN 191,851. Pub. 9–15–64. Filed 4–23–64.

780,949. S-N AND DESIGN. The Snow-Nabstedt Gear Corporation. SN 191,958. Pub. 9–15–64. Filed 4–24–64.

780,950. JONNIE. Mardell Ellis, d.b.a. Ellis Manufacturing Company. SN 192,018. Pub. 9–15–64. Filed 4–27–64.

780,951. NUMERIDIAL. Giddings & Lewis Machine Tool Company. SN 192,172. Pub. 9–15–64. Filed 4–28–64.

780,952. SHARK. E. D. Jones Corporation. SN 192,402. Pub. 9–15–64. Filed 4–30–64.

780,953. MEYER. Meyer Products, Inc. SN 192,415. Pub. 9–15–64. Filed 4–30–64.

780,954. ELECTROLIFT. Meyer Products, Inc. SN 192,416. Pub. 9–15–64. Filed 4–30–64.

780,955. WHIRLYBIRD. California Chemical Company. SN 192,558. Pub. 9–15–64. Filed 5–4–64.

780,956. INCH-O-MATIC. Henry Manufacturing Company, Inc. SN 192,594. Pub. 9–15–64. Filed 5–4–64.

780,957. ADD A STAR. Star Metal Corporation. SN 192,766. Pub. 9–15–64. Filed 5–5–64.

780,958. DMC AND DESIGN. Dredge Manufacturing Corporation. SN 193,139. Pub. 9–15–64. Filed 5–11–64.

780,959. TP. Tapeprinter, Inc. SN 194,257. Pub. 9–15–64. Filed 5–25–64.

Class 24—Laundry Appliances and Machines

780,906. (See Class 21 for this trademark.)

Class 26—Measuring and Scientific Appliances

780,960. METEOR. Radiant Manufacturing Corporation. SN 131,612. Pub. 9–15–64. Filed 11–8–61.

780,961. VMS SAMPLER. Chadwick-Helmuth Company. SN 136,346. Pub. 9–15–64. Filed 1–23–62.

780,962. PACKARD. Packard Instrument Company, Inc. SN 140,582. Pub. 9–15–64. Filed 3–23–62.

780,963. ATTEN-U-MATIC. Esterline Angus Instrument Company, Inc., assignee of Daystrom, Incorporated. SN 157,474. Pub. 9–15–64. Filed 11–19–62.

780,964. CUB. Milsco Manufacturing Company. SN 162,274. Pub. 9–15–64. Filed 2–7–63.

780,965. UNIMATRONIC AND DESIGN. W. E. Ludwig K.G. SN 165,273. Pub. 9–15–64. Filed 3–22–63.

780,966. MATRIXAID. Andrew F. Schott. SN 167,943. Pub. 9–15–64. Filed 5–1–63.

780,967. HYMONITOR. Milton Roy Company. SN 173,510. Pub. 9–15–64. Filed 7–22–63.

780,968. KROMO-TOG. Burrell Corporation. SN 173,734. Pub. 9–15–64. Filed 7–25–63.

780,969. BE AND DESIGN. The Borg-Erickson Corporation. SN 174,008. Pub. 9–15–64. Filed 7–30–63.

780,970. "PHOTRAN." Curtiss-Wright Corporation. SN 176,500. Pub. 9–15–64. Filed 9–9–63.

780,971. LITE-MIKE. Edgerton, Germeshausen & Grier, Inc. SN 176,508. Pub. 9–15–64. Filed 9–9–63.

780,972. GOLD CREST. Leuco, Inc. SN 182,953. Pub. 9–15–64. Filed 12–13–63.

780,973. SPEC-KERCHIEF. Dumont Handkerchiefs, Inc. SN 185,585. Pub. 9–15–64. Filed 1–29–64.

780,974. LABSET. Owens-Illinois Glass Company. SN 186,388. Pub. 9–15–64. Filed 2–10–64.

780,975. T–12. The Harshaw Chemical Company. SN 186,849. Pub. 9–15–64. Filed 2–17–64.

780,976. TICOR. Minnesota Mining and Manufacturing Company. SN 187,125. Pub. 9–15–64. Filed 2–20–64.

780,977. THREE DIAMONDS. Mitsubishi Electric Corporation. SN 189,000. Pub. 9–15–64. Filed 3–18–64.

780,978. THREE DIAMONDS (DESIGN). Mitsubishi Electric Corporation. SN 189,004. Pub. 9–15–64. Filed 3–18–64.

Class 27—Horological Instruments

780,979. SEA LION. Kabushiki Kaisha Hattori Tokeiten. SN 182,801. Pub. 9–15–64. Filed 12–11–63.

780,980. MRG. Societe Anonyme de la Montre Royale. SN 187,349. Pub. 9–15–64. Filed 2–24–64.

780,981. TIMECRAFT AND DESIGN. Philip R. Cooper and Herbert Cooper (joint owners), d.b.a. Timecraft Watch Co. SN 188,961. Pub. 9–15–64. Filed 3–18–64.

Class 28 — Jewelry and Precious-Metal Ware

780,982. THB. Thalhimer Brothers, Incorporated. SN 152,355. Pub. 9–15–64. Filed 8–31–62.

Class 31 — Filters and Refrigerators

780,906. (See Class 21 for this trademark.)

Class 32 — Furniture and Upholstery

780,906. (See Class 21 for this trademark.)

780,983. CUSHION BOARD. Illinois Fibre Specialty Company. SN 176,372. Pub. 9–15–64. Filed 9–5–63.

780,984. VENDEX. Unarco Industries, Inc. SN 193,237. Pub. 9–15–64. Filed 5–11–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

780,906. (See Class 21 for this trademark.)

780,985. ACRICAP. Acry Plastic Co. SN 158,674. Pub. 9–15–64. Filed 12–7–62.

780,986. CHEMELECTRIC. Petrolite Corporation. SN 172,517. Pub. 9–15–64. Filed 7–5–63.

780,987. FLOWSOLDER. Fry's Metal Foundries Limited. SN 180,499. Pub. 9–15–64. Filed 11–5–63.

780,988. MITSUBISHI. Mitsubishi Electric Corporation. SN 188,997. Pub. 9–15–64. Filed 3–18–64.

780,989. THREE DIAMONDS. Mitsubishi Electric Corporation. SN 189,001. Pub. 9–15–64. Filed 3–18–64.

780,990. THREE DIAMONDS (DESIGN). Mitsubishi Electric Corporation. SN 189,005. Pub. 9–15–64. Filed 3–18–64.

780,991. TRAILBURNER. Asphalt Heating, Inc. SN 189,250. Pub. 9–15–64. Filed 3–23–64.

780,992. NY-VENT. Mine Ventilation Systems, Inc. SN 189,342. Pub. 9–15–64. Filed 3–23–64.

780,993. VENT-POST. Mine Ventilation Systems, Inc. SN 189,343. Pub. 9–15–64. Filed 3–23–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

780,994. WORLD JET ORBIT. World Rubber Co., assignee of World Tire Corporation of Detroit. SN 150,829. Pub. 3–5–63. Filed 8–8–62.

780,995. O.K. WINTERSTAR. O.K. Rubber Welders, Incorporated. SN 167,758. Pub. 9–15–64. Filed 4–29–63.

780,996. VICTOR VG AND DESIGN. Victor Manufacturing & Gasket Company. SN 179,751. Pub. 9–15–64. Filed 10–24–63.

780,997. FISK COMMERCIAL 15. United States Rubber Company. SN 184,529. Pub. 9–15–64. Filed 1–13–64.

780,998. O.K. STARGLIDE. O.K. Rubber Welders, Incorporated. SN 186,749. Pub. 9–15–64. Filed 2–14–64.

Class 36 — Musical Instruments and Supplies

780,906. (See Class 21 for this trademark.)

780,999. PHILIPS AND DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 104,040. Pub. 9–15–64. Filed 9–7–60.

781,000. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 104,041. Pub. 9–15–64. Filed 9–7–60.

781,001. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 145,112. Pub. 9–15–64. Filed 5–21–62.

781,002. PHILIPS AND DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 176,857. Pub. 9–15–64. Filed 9–12–63.

781,003. MENNONITE HOUR. Mennonite Broadcasts, Inc. SN 185,611. Pub. 9–15–64. Filed 1–29–64.

781,004. GRAND PRIX AND DESIGN. Takeshi Shindo, d.b.a. Grand Prix Records. SN 188,298. Pub. 9–15–64. Filed 3–9–64.

Class 37 — Paper and Stationery

781,005. GEM. Clearwater Tissue Mills, Inc., assignee of Swanee Paper Corporation. SN 151,789. Pub. 5–7–63. Filed 8–23–62.

781,006. CITATION. F. G. Olendorf Company. SN 163,859. Pub. 9–15–64. Filed 3–4–63.

781,007. E-Z FILE FOLDERS AND DESIGN. Gulf States Paper Corporation. SN 177,035. Pub. 9–15–64. Filed 9–16–63.

781,008. BUTLER. Butler Paper Company. SN 184,792. Pub. 9–15–64. Filed 1–17–64.

781,009. ADBEST AND DESIGN. Lakeside Central Company. SN 186,011. Pub. 9–15–64. Filed 2–4–64.

Class 38 — Prints and Publications

781,010. FLOWER AND GARDEN. Mid-America Publishing Corp. SN 173,025. Pub. 9–15–64. Filed 7–15–63.

781,011. BATTLE LINE. Official Films, Inc. SN 184,744. Pub. 9–15–64. Filed 1–16–64.

781,012. SPA A SUMMIT BOOK AND DESIGN. Southern Publishing Association of Seventh Day Adventists, Inc. SN 184,844. Pub. 9–15–64. Filed 1–17–64.

781,013. ROAD KING. The Pure Oil Company. SN 185,935. Pub. 9–15–64. Filed 2–3–64.

781,014. MEDICANA. Ciba Corporation. SN 186,601. Pub. 9–15–64. Filed 2–13–64.

781,015. LIVING WORD. Gospel Light Publications. SN 186,844. Pub. 9–15–64. Filed 2–17–64.

781,016. WHAT'S NEW IN PLANT ENGINEERING SERVICES ETC. AND DESIGN. Putman Publishing Company. SN 186,891. Pub. 9–15–64. Filed 2–17–64.

781,017. NAL AND DESIGN. The New American Library of World Literature, Inc. SN 188,562. Pub. 9–15–64. Filed 3–12–64.

781,018. LITTLE TIGREE. Norcross, Inc. SN 188,907. Pub. 9–15–64. Filed 3–17–64.

781,019. ARTISTIC AND DESIGN. Artistic Weaving Company. SN 189,249. Pub. 9–15–64. Filed 3–23–64.

781,020. RAGS TO RICHES. Men's Apparel Club of the Carolinas, Inc., d.b.a. The Carolinas Men's Apparel Club, and Carolina Men's and Boys' Apparel Club. SN 189,340. Pub. 9–15–64. Filed 3–23–64.

781,021. THE MIDWEST PURCHASING AGENT. The Purchasing Agents Association of Cleveland, Inc. SN 189,619. Pub. 9–15–64. Filed 3–25–64.

781,022. HOLIDAY INN. Holiday Inns of America, Inc. SN 189,900. Pub. 9–15–64. Filed 3–30–64.

781,023. CRIMSON TIDE-INGS. Charles Henry Land. SN 189,904. Pub. 9–15–64. Filed 3–30–64.

781,024. POLARIS. U.S. Submarine Veterans of World War II. SN 189,964. Pub. 9–15–64. Filed 3–30–64.

781,025. RAGS. Norcross, Inc. SN 190,420. Pub. 9–15–64. Filed 4–6–64.

781,026. KNOW. Encyclopaedia Britannica, Inc. SN 191,149. Pub. 9–15–64. Filed 4–15–64.

781,027. ELECTROMECHANICAL DESIGN. Benwill Publishing Corporation. SN 191,489. Pub. 9–15–64. Filed 4–20–64.

781,028. C AND E AND FANCIFUL V. Chittenden and Eastman Company. SN 191,673. Pub. 9–15–64. Filed 4–21–64.

781,029. COIN-WISE. Leon T. Lindheim. SN 192,603. Pub. 9–15–64. Filed 5–4–64.

781,030. THE MISSISSIPPI REGISTER. The Catholic Press Society, Inc. SN 192,678. Pub. 9–15–64. Filed 5–5–64.

Class 39 — Clothing

781,031. AQUAWOOL. Joseph H. Cohen & Sons, Inc., assignee of The Puritan Sportswear Corp. SN 145,601. Pub. 9–15–64. Filed 5–28–62.

781,032. DELFINO A-MARE, INC. AND DESIGN. Delfino A-Mare Inc. SN 154,335. Pub. 9–15–64. Filed 10–2–62.

781,033. BINKIE. Barad Lingerie Company. SN 161,464. Pub. 9–15–64. Filed 1–28–63.

781,034. NORTHBRIAR SHOP. The Dayton Company. SN 171,975. Pub. 9–15–64. Filed 6–27–63.

781,035. BURKE-LEEDS ETC. AND DESIGN. Greenewald's, Inc. SN 172,184. Pub. 9–15–64. Filed 6–28–63.

781,036. BRITAL AND DESIGN. Isaac M. Brandon Co., Inc. SN 172,722. Pub. 9–15–64. Filed 7–10–63.

781,037. THREE TRIANGLES IN A CIRCLE (DESIGN). Jacques R. Milberg. SN 173,585. Pub. 9–15–64. Filed 7–23–63.

781,038. REPRESENTATION OF A GLOBE RINGED BY ELEVEN FANCIFUL HUMAN BEINGS. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 173,839. Pub. 9–15–64. Filed 7–26–63.

781,039. ROBERT HALL'S WONDERFUL WORLD ETC. AND DESIGN. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 173,840. Pub. 9–15–64. Filed 7–26–63.

781,040. REPRESENTATION OF A GLOBE RINGED BY THREE FANCIFUL HUMAN BEINGS. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 174,184. Pub. 9–15–64. Filed 8–1–63.

781,041. ANTHONY SQUIRES. Anthony Squires Pty. Limited. SN 175,444. Pub. 9–15–64. Filed 8–20–63.

781,042. SLIPPER PALS. Davidson-Bigelow, Incorporated. SN 175,473. Pub. 9–15–64. Filed 8–21–63.

781,043. GIBI. Gibi Knits of Italy, d.b.a. Fata Imports, Inc. SN 176,791. Pub. 9–15–64. Filed 9–12–63.

781,044. DORCOLOR. Farbenfabriken Bayer Aktiengesellschaft. SN 178,908. Pub. 9–15–64. Filed 10–14–63.

781,045. AMCO OF NORVELT. Amco of Norvelt, Inc. SN 179,302. Pub. 9–15–64. Filed 10–10–63.

781,046. MAILLISETTE. Societe Rhovyl. SN 179,953. Pub. 9–15–64. Filed 10–28–63.

781,047. DESIGN IN MOTION. Sears, Roebuck and Co. SN 181,183. Pub. 9–15–64. Filed 11–14–63.

781,048. KNEE ACTION TOP. Parisian Hosiery Mills, Inc. SN 181,594. Pub. 9–15–64. Filed 11–20–63.

781,049. URETEX. Abraham Messinger. SN 182,733. Pub. 9–15–64. Filed 12–10–63.

781,050. "PACE-SETTERS" BY MR. JOHN. Mr. John, Inc. SN 183,439. Pub. 9–15–64. Filed 12–23–63.

781,051. DURA-SOL. Charleston Rubber Company. SN 183,566. Pub. 9–15–64. Filed 12–26–63.

781,052. DELLMONT. Dalkeith Agencies Ltd. SN 184,363. Pub. 9–15–64. Filed 1–10–64.

781,053. LTEX FASHIONS AND DESIGN. Lowell Textile Company. SN 184,482. Pub. 9–15–64. Filed 1–13–64.

781,054. JAVELIN TEENS. Anvil Brand, Incorporated. SN 184,600. Pub. 9–15–64. Filed 1–15–64.

781,055. CARICATURE OF MAN IN NIGHT SHIRT. Lewis Knitting Company. SN 185,793. Pub. 9–15–64. Filed 1–31–64.

781,056. SOLARVISION. Clearasite Headware, Inc. SN 185,868. Pub. 9–15–64. Filed 2–3–64.

781,057. COMPETITOR. Gulbenkian Swim Distributors, Inc. SN 187,749. Pub. 9–15–64. Filed 3–2–64.

781,058. CUDDLE BACK. Trimfoot Company. SN 187,824. Pub. 9–15–64. Filed 3–2–64.

781,059. ROY-TRIM. Rob Roy Company, Inc. SN 188,271. Pub. 9–15–64. Filed 3–9–64.

781,060. STUDIO THREE. B. Altman & Co. SN 188,326. Pub. 9–15–64. Filed 3–10–64.

781,061. SPUNRAY. Dan River Mills, Incorporated. SN 188,428. Pub. 9–15–64. Filed 3–11–64.

Class 40 — Fancy Goods, Furnishings, and Notions

781,062. THE SCHAEFFER LACE ETC. AND DESIGN. Schaeffer Lace Corporation. SN 173,866. Pub. 9–15–64. Filed 7–26–63.

781,063. CAMEO. Johnson & Johnson, d.b.a. Tek-Hughes. SN 185,781. Pub. 9–15–64. Filed 1–31–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

781,064. HENRY CALVIN FABRICS. Henry Calvin Fabrics. SN 172,366. Pub. 9–15–64. Filed 7–3–63.

781,065. FLOCOVYL. Societe Rhovyl. SN 175,441. Pub. 9–15–64. Filed 8–20–63.

781,066. ESSEX. The General Tire & Rubber Company. SN 187,104. Pub. 9–15–64. Filed 2–20–64.

781,067. WHITEFACE. Alamac Knitting Mills, Inc. SN 187,167. Pub. 9–15–64. Filed 2–21–64.

Class 44 — Dental, Medical, and Surgical Appliances

781,068. CLARE AND DESIGN. Harold G. Rosner, d.b.a. Clare, Inc. SN 168,228. Pub. 9–15–64. Filed 5–6–63.

781,069. CARDIOTAC. United Aircraft Corporation, assignee of Vector Manufacturing Company, Inc. SN 177,732. Pub. 9–15–64. Filed 9–25–63.

781,070. REGARD DURABLE AND DESIGN. Aktieselskabet Regard Aarhus Gummivarefabrik. SN 181,101. Pub. 9–15–64. Filed 11–14–63.

781,071. URI-METER. Davol Rubber Company. SN 181,218. Pub. 9–15–64. Filed 11–15–63.

781,072. UTERING. Ortho Pharmaceutical Corporation. SN 183,449. Pub. 9–15–64. Filed 12–23–63.

781,073. OXYTEX. Ortho Pharmaceutical Corporation. SN 183,450. Pub. 9–15–64. Filed 12–23–63.

781,074. NINE-NEZ. Frances S. Ratterman, d.b.a. Ratterman's Maternity Support. SN 185,718. Pub. 9–15–64. Filed 1–30–64.

781,075. TAPERCUT. Ethicon, Inc. SN 189,836. Pub. 9–15–64. Filed 3–26–64.

781,076. SOFRON. Johnson & Johnson. SN 189,838. Pub. 9–15–64. Filed 3–26–64.

781,077. "HOLIDAY." Davol Rubber Company. SN 189,877. Pub. 9–15–64. Filed 3–30–64.

781,078. PETAL. Davol Rubber Company. SN 189,878. Pub. 9–15–64. Filed 3–30–64.

Class 45 — Soft Drinks and Carbonated Waters

781,079. TROPICAL GAL. Merit House, Inc. SN 184,299. Pub. 9–15–64. Filed 1–9–64.

781,080. MAGIC ISLES. Merit House, Inc. SN 184,300. Pub. 9–15–64. Filed 1–9–64.

781,081. MAGIC ISLAND. Merit House, Inc. SN 184,301. Pub. 9–15–64. Filed 1–9–64.

Class 46 — Foods and Ingredients of Foods

781,082. ITALIAN CARTWHEELS. Golden Grain Macaroni Co., d.b.a. Mission Macaroni Company. SN 105,741. Pub. 9–15–64. Filed 10–4–60.

781,083. MUSHROOMS A LA BRANDYWINE. The Borden Company. SN 130,323. Pub. 9–15–64. Filed 10–20–61.

781,084. OLD SOUTHERN. Bruce Phipps, assignee of Phipps Products Co. SN 160,657. Pub. 9–15–64. Filed 1–14–63.

781,085. COLLINSWOOD. Mississippi Federated Cooperatives (AAL), d.b.a. Collinswood. SN 163,955. Pub. 9–15–64. Filed 3–5–63.

781,086. COWBOY (DESIGN). T. W. Garner Food Co. SN 168,405. Pub. 9–15–64. Filed 5–8–63.

781,087. TATER HOUSE AND DESIGN. Taterstate Frozen Foods. SN 173,395. Pub. 9–15–64. Filed 7–19–63.

781,088. FISHER'S BRIENZ AND DESIGN. The Fisher Cheese Co. SN 175,268. Pub. 9–15–64. Filed 8–19–63.

781,089. LITTLE-BROWNIE AND DESIGN. J. C. Herndon, d.b.a. Little Brownie. SN 179,793. Pub. 9–15–64. Filed 10–25–63.

781,090. BULL FROG SOMETHING TO CROAK ABOUT AND DESIGN. W. B. Camp & Sons, Inc. SN 182,158. Pub. 9–15–64. Filed 12–2–63.

781,091. GOOD HUMOR AND DESIGN. Good Humor Corporation. SN 183,262. Pub. 9–15–64. Filed 12–19–63.

781,092. TRI-ONI-7. Gioia Macaroni Company, Inc. SN 184,228. Pub. 9–15–64. Filed 1–8–64.

781,093. THRIFTY PAK. The Mar-Gold Corporation. SN 184,637. Pub. 9–15–64. Filed 1–15–64.

781,094. NEPCO. New England Provision Co., Inc. SN 184,831. Pub. 9–15–64. Filed 1–17–64.

781,095. LANDSHIRE AND DESIGN. Lakeshire Products, Inc., d.b.a. Lakeside Sandwiches. SN 184,935. Pub. 9–15–64. Filed 1–20–64.

781,096. "KING OF THEM ALL" AND DESIGN. George J. Leggio. SN 186,090. Pub. 9–15–64. Filed 2–5–64.

781,097. REDI-FRI. George J. Leggio. SN 186,091. Pub. 9–15–64. Filed 2–5–64.

781,098. S–26. American Home Products Corporation. SN 186,991. Pub. 9–15–64. Filed 2–19–64.

781,099. BEETLES. Leaf Brands, Inc. SN 187,295. Pub. 9–15–64. Filed 2–24–64.

781,100. DUGAN'S AND DESIGN. Noramco, Inc. SN 187,314. Pub. 9–15–64. Filed 2–24–64.

781,101. SPACE AGE. The John Mueller Licorice Company. SN 187,597. Pub. 9–15–64. Filed 2–27–64.

781,102. DIVIDE-A-TRAY. Wilson & Co., Inc. SN 188,062. Pub. 9–15–64. Filed 3–2–64.

781,103. FIRMENICH ETC. AND DESIGN. Firmenich, Incorporated. SN 188,534. Pub. 9–15–64. Filed 3–12–64.

781,104. KETTLE-RICH. John Sexton & Co. SN 188,669. Pub. 9–15–64. Filed 3–13–64.

781,105. LIBBY'S AND DESIGN (FACING LEFT). Libby, McNeill & Libby. SN 189,183. Pub. 9–15–64. Filed 3–20–64.

781,106. OLD JIM'S. James B. McFadden & Sons. SN 189,192. Pub. 9–15–64. Filed 3–20–64.

781,107. RUMMONDS BROS. Rummonds Bros. Ranch. SN 189,375. Pub. 9–15–64. Filed 3–23–64.

781,108. REPRESENTATION OF A JET PLANE. W. K. Kelly, d.b.a. The Kelly Mfg. Co. SN 190,217. Pub. 9–15–64. Filed 4–2–64.

781,109. DAILY SUN. Florida Citrus Canners Cooperative. SN 191,160. Pub. 9–15–64. Filed 4–15–64.

781,110. SCRAMBLE. Allen Products Company, Inc. SN 191,469. Pub. 9–15–64. Filed 4–17–64.

781,111. CARNATION. Carnation Company. SN 191,671. Pub. 9–15–64. Filed 4–21–64.

781,112. ROYAL TEENS. Salerno-Megowen Biscuit Company. SN 192,430. Pub. 9–15–64. Filed 4–30–64.

781,113. TROPICAL DELIGHTS. Salerno-Megowen Biscuit Company. SN 192,431. Pub. 9–15–64. Filed 4–30–64.

781,114. CLAUSSEN'S AND DESIGN. Claussen's, Inc. SN 193,077. Pub. 9–15–64. Filed 4–24–64.

Class 48 — Malt Beverages and Liquors

781,115. BLACK LABEL BEER AND DESIGN. Carling Brewing Company, Incorporated. SN 183,371. Pub. 9–8–64. Filed 12–23–63.

Class 49 — Distilled Alcoholic Liquors

781,116. CREAM OF BALTIMORE. Milton S. Kronheim & Co., Inc. SN 175,587. Pub. 9–15–64. Filed 8–22–63.

781,117. PEACH ORCHARD. Mr. Boston Distiller Inc. SN 186,878. Pub. 9–15–64. Filed 2–17–64.

Class 50 — Merchandise Not Otherwise Classified

781,118. TOFA AND DESIGN. Tofa, Narodni Podnik, d.b.a. Tofa, National Corporation. SN 174,721. Pub. 9–15–64. Filed 8–8–63.

781,119. FRONT LINE. Anthony's Manufacturing Company. SN 180,134. Pub. 9–15–64. Filed 10–30–63.

781,120. SLAMMER. Professional and College Sports Advertising Co. SN 184,748. Pub. 9–15–64. Filed 1–16–64.

781,121. CHEM-DIE. American Photoengraving Co., Inc. SN 186,139. Pub. 9–15–64. Filed 2–6–64.

781,122. BOTTS-DOTS. Botta-Line, Inc. SN 188,072. Pub. 9–15–64. Filed 3–6–64.

781,123. CONGOLEUM-NAIRN FINE FLOORS. Congoleum-Nairn Inc. SN 189,557. Pub. 9–15–64. Filed 3–25–64.

781,124. PHOR-LITE. Frances Whitney. SN 192,240. Pub. 9–15–64. Filed 4–28–64.

781,125. PROP-A-LITE. Johnson & Johnson, d.b.a. Chicopee Manufacturing Company. SN 193,382. Pub. 9–15–64. Filed 5–13–64.

781,126. HORSE (DESIGN). The Kendall Company. SN 195,683. Pub. 9–15–64. Filed 6–15–64.

781,127. PERMA-RITE. United States Plywood Corporation. SN 196,927. Pub. 9–15–64. Filed 7–1–64.

781,128. DIACAP. Fore Company, Inc. SN 197,276. Pub. 9–15–64. Filed 7–7–64.

Class 51 — Cosmetics and Toilet Preparations

781,129. LAN. Tripoli Company Inc., d.b.a. Tripoli Co. SN 173,534. Pub. 9–15–64. Filed 7–22–63.

781,130. RAYMAR. Raymond H. Lyon and Alberta M. Lyon (joint owners), d.b.a. The Raymar Company. SN 182,336. Pub. 9–15–64. Filed 12–4–63.

781,131. LE FLEUR AND DESIGN. Aerosol Specialties, Inc. SN 184,334. Pub. 9–15–64. Filed 1–10–64.

781,132. ACTIMIN. Richardson-Merrell Inc. SN 186,119. Pub. 9–15–64. Filed 2–5–64.

781,133. DERMA FRESH AND DESIGN. Alberto-Culver Company. SN 186,137. Pub. 9–15–64. Filed 2–6–64.

781,134. SHEER BEAUTY. Helene Curtis Industries, Inc., d.b.a. Lentheric. SN 186,157. Pub. 9–15–64. Filed 2–6–64.

781,135. MIMI. Ira Bandell, d.b.a. Bevee Cosmetics Company. SN 186,223. Pub. 9–15–64. Filed 2–7–64.

Class 52 — Detergents and Soaps

780,806. (See Class 4 for this trademark.)

780,809. (See Class 4 for this trademark.)

781,136. HILTON BOUQUET. Hilton Products, Inc., assignee of Hilton Hotels Corporation. SN 172,189. Pub. 9–15–64. Filed 7–1–63.

781,137. DOP. L'Oreal. SN 172,702. Pub. 9–15–64. Filed 6–24–63.

781,138. VITACOAT DOGGIE COAT AIDS AND DESIGN. Vitacoat Limited. SN 177,469. Pub. 9–15–64. Filed 9–20–63.

781,139. MAID OF GOLD. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics. SN 184,633. Pub. 9–15–64. Filed 1–15–64.

781,140. RUG-ED. Fantastic Products, Inc. SN 184,908. Pub. 9–15–64. Filed 1–20–64.

781,141. ZODYS AND DESIGN. Hartfield Stores, Incorporated. SN 185,597. Pub. 9–15–64. Filed 1–29–64.

781,142. PLUS-GAS. Plus Gas Company Ltd. SN 185,713. Pub. 9–15–64. Filed 1–30–64.

781,143. TOWER. The Diversey Corporation. SN 186,338. Pub. 9–15–64. Filed 2–10–64.

781,144. ATH-O-MED AND DESIGN. The Chattanooga Medicine Company, d.b.a. Ath-O-Med Co. SN 186,600. Pub. 9–15–64. Filed 2–13–64.

781,145. FIRMENICH ETC. AND DESIGN. Firmenich, Incorporated. SN 188,536. Pub. 9–15–64. Filed 3–12–64.

Service Marks

Class 101 — Advertising and Business

781,146. MIP. Northeastern Incorporated. SN 182,286. Pub. 9–15–64. Filed 12–3–63.

Class 105 — Transportation and Storage

781,147. REBEL. Rebel Towing Company. SN 183,627. Pub. 9–15–64. Filed 12–26–63.

781,148. TT THE DOUBLE "T" LINE AND DESIGN. Terminal Transport Company, Inc. SN 184,270. Pub. 9–15–64. Filed 1–8–64.

Class 106 — Material Treatment

781,149. KIST PROCESS. Rosfor Mills Corporation. SN 174,980. Pub. 9–15–64. Filed 8–13–63.

Class 107 — Education and Entertainment

781,150. CARICATURE OF A BABY NURSE AND TEDDY BEAR (DESIGN). The Children's Hospital. SN 166,786. Pub. 9–15–64. Filed 4–16–63.

Collective Membership Marks

Class 200

781,151. INDEPENDENT GARAGE OWNERS OF AMERICA INC. ETC. AND DESIGN. Independent Garage Owners of America, Incorporated. SN 173,917. Pub. 9–15–64. Filed 7–29–63.

781,152. U.S. SUBMARINE VETERANS WORLD WAR II AND DESIGN. U.S. Submarine Veterans of World War II. SN 184,530. Pub. 9–15–64. Filed 1–13–64.

781,153. ANCIENT AND HONORABLE ROYAL ORDER OF F.L.E. Ancient and Honorable Order of Fraternity, Loyalty & Economy. SN 193,834. Pub. 9–15–64. Filed 5–21–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 12 — Construction Materials

781,154. Wellsville Fire Brick Company, Wellsville, Mo. SN 173,207. Filed P.R. 7–17–63; Am. S.R. 8–31–64.

75-PLUS

For Fire Brick and Other Shaped Refractory Articles. First use July 10, 1961.

781,155. Wellsville Fire Brick Company, Wellsville, Mo. SN 173,208. Filed P.R. 7–17–63; Am. S.R. 8–31–64.

28-PLUS

For Fire Brick and Other Shaped Refractory Articles. First use June 26, 1963.

Class 19 — Vehicles

781,156. Industrial Marine, Inc., Warsaw, Ind. SN 130,214. Filed P.R. 10–18–61; Am. S.R. 12–27–64.

FISH-N-SHIP

For Pleasure Boats of Less Than Fifteen Feet in Length Constructed of Fiberglass or Aluminum. First use Oct. 3, 1961.

Class 21 — Electrical Apparatus, Machines, and Supplies

781,157. Squires-Sanders, Incorporated, Plainfield, N.J. SN 188,674. Filed P.R. 3-13-64; Am. S.R. 10-9-64.

CLEGG

For Communication Transmitters, Receivers, Transceivers, and for Component Parts Thereof, Such as Filters, Modulators, Noise Limiters, Tuning Dial Assemblies, Oscillators, etc.
First use in early 1960.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

781,158. Karl Rud. Dienes Fabrikationsgesellschaft fuer Maschinenersatzteile m.b.H., Vilkerath bei Koln, Germany. SN 162,591. Filed 2-12-63.

DIENES

For Drive Shaft Couplings, Engine Valves for Vehicles, Slitting Tools, Including Slitting Discs; Cutting Machines and Parts Thereof, Including Score Cutters With Holders, Circular Cutters, Cutter Shafts, Collars With Locking Devices, and Dished Cutters; Plate Valves for Piston Driven Engines, Including Compressors, Blowers and Scavenging Pumps; Valves for Refrigerating Units and Compressors, Concentric Plate Valves for High Speed Compressors, Scavenging Valves for Diesel Engines, and Knives for Machines.
First use 1945; in commerce 1945.

Class 32 — Furniture and Upholstery

781,159. Bedding Manufacturers Associates, Inc., Philadelphia, Pa. SN 167,363. Filed P.R. 4-23-63; Am. S.R. 6-22-64.

WORLD'S GREATEST SLEEPING PILL

For Mattresses, Upholstered Chairs, Sofa Beds.
First use February 1962.

Class 34 — Heating, Lighting, and Ventilating Apparatus

781,160. Swindell-Dressler Corporation, Pittsburgh, Pa. SN 127,434. Filed P.R. 9-7-61; Am. S.R. 10-7-64.

BRINEGLAZE

For Apparatus for Salt Glazing Ceramic Ware—Namely, a Combination Brine Atomiser and Burners.
First use on or about Jan. 1, 1961.

Class 44 — Dental, Medical, and Surgical Appliances

781,161. Chattanooga Pharmacal Co., Chattanooga, Tenn. SN 177,610. Filed P.R. 9-24-63; Am. S.R. 7-8-64.

COLPAC

For Bags Containing Water Absorbing and Anti-Freeze Materials for Application of Therapeutic Cold.
First use Mar. 15, 1963.

TRADEMARK REGISTRATIONS RENEWED

179,844. ASHTON AND DESIGN. Cl. 42. 2-19-24.
186,522. LIBBY'S AND DESIGN. Cl. 46. 7-22-24.
188,723. REPRESENTATION OF A WOMAN'S FACE (DESIGN). Cl. 51. 9-2-24.
189,351. ST. JOSEPH'S. Cl. 18. 9-16-24.
190,587. MURDOCK. Cl. 13. 10-14-24.
190,708. FACTO. Cl. 15. 10-21-24.
190,771. PETER PAN. Cl. 46. 10-21-24.
191,033. TUG-O-WAR. Cl. 39. 10-28-24.
191,046. WONDERFUL SHOES FOR WONDERFUL GIRLS. Cl. 39. 10-28-24.
191,695. RED BALL AND DESIGN. Cl. 1. 11-18-24.
192,448. STUFTOYS. Cl. 22. 12-2-24.
193,951. NIBBLE-NUTS EVERY BITE'S ALLRIGHT. Cl. 46. 1-13-25.
194,843. DUNDEE B. Cl. 5. 2-10-25.
194,844. DUNDEE A. Cl. 5. 2-10-25.
195,235. VITALIFE. Cl. 15. 2-17-25.
195,413. PRICELESS. Cl. 39. 2-24-25.
195,502. CAMP. Cl. 46. 2-24-25.
195,503. REPRESENTATION OF HUMAN MALES IN A CAMP SCENE (DESIGN). Cl. 46. 2-24-25.
195,714. CARTER AND DESIGN. Cl. 23. 3-3-25.
196,182. MILKY WAY. Cl. 46. 3-10-25.
407,897. A AND DESIGN. Cl. 51. 7-4-44.
407,910. DEBEAKER. Cl. 44. 7-4-44.
408,049. TEXSHEL. Cl. 1. 7-18-44.
408,796. PETADDOWN. Cl. 42. 8-29-44.
409,166. FORGET ME-NOT. Cl. 28. 9-19-44.
409,390. SPEEDEX. Cl. 26. 10-3-44.
409,548. GAB ROYAL. Cl. 39. 10-10-44.
409,549. HYDRO-SCOOP. Cl. 23. 10-10-44.
409,607. FLIRTATION. Cl. 52. 10-10-44.
409,608. LILANELLE. Cl. 52. 10-10-44.
409,668. MASCOTE. Cl. 12. 10-17-44.
409,728. ZEMLIAK. Cl. 49. 10-17-44.
409,734. POTENSORS. Cl. 18. 10-17-44.
409,783. TRISTAND. Cl. 23. 10-24-44.
409,834. TONATOR. Cl. 52. 10-24-44.
409,846. SYLPLAST. Cl. 1. 10-24-44.
409,950. FLIRTATION. Cl. 51. 10-31-44.
409,951. LILANELLE. Cl. 51. 10-31-44.
410,341. FLOTONE. Cl. 1. 11-21-44.
411,066. LADY PEPPERELL. Cl. 42. 1-2-45.
411,191. BULL DOG AND DESIGN. Cl. 23. 1-9-45.
411,330. LANAFIN. Cl. 6. 1-16-45.
411,667. THE SUMMER-NIGHTER. Cl. 39. 1-30-45.
411,821. CONESTOGA AND DESIGN. Cl. 49. 2-6-45.
411,859. GOSPEL TRUMPET. Cl. 38. 2-6-45.
412,029. REX M-2. Cl. 14. 2-13-45.
412,137. TRAILMOBILE. Cl. 19. 2-20-45.
412,696. PREMARIN. Cl. 18. 3-20-45.
412,807. P-Q. Cl. 15. 3-27-45.
412,857. SMOKE TREE. Cl. 46. 3-27-45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 14, 1958

668,170. SUPERIOR. Cl. 1.
668,171. NERESIN. Cl. 1.
668,172. OMNYLON. Cl. 1.
668,177. THE SCATTERBIRD AND DESIGN. Cl. 2.
668,178. QUADRA-POT. Cl. 2.
668,179. FLEX-ON. Cl. 2.
668,182. BLOX. Cl. 6.
668,191. NIEL-TEX. Cl. 6.
668,194. DESIGN OF TEST TUBE, STAR, ETC. Cl. 6.
668,196. UNOX. Cl. 6.
668,199. PAK-A-LITE. Cl. 8.
668,203. MAHARAJ. Cl. 12.
668,205. MINACOR. Cl. 12.
668,206. BAUSTA. Cl. 12.
668,215. GREEN HORNET. Cl. 13.
668,216. STERIFILTRE. Cl. 13.
668,219. GEM. Cl. 13.
668,222. PORTA-STOP. Cl. 14.
668,227. HI-SEAL. Cl. 15.
668,229. POLYTRON. Cl. 15.
668,232. FINGER LAKES. Cl. 15.
668,233. AURORA. Cl. 15.
668,241. VITABUSCH 12. Cl. 18.
668,243. CAPTAIN KIDD'S VITAMIN TREASURE CHEST. Cl. 18.
668,256. DI-PREDRIN. Cl. 18.
668,257. TRILAMIDE. Cl. 18.
668,267. SIGHTLINER. Cl. 19.
668,269. TRAVELETTE. Cl. 19.
668,270. CARAQUA. Cl. 19.
668,275. MINTEX. Cl. 21.
668,289. SPORTSTER. Cl. 22.
668,292. GL-33. Cl. 22.
668,295. SLO FLY. Cl. 22.
668,298. EVCO. Cl. 23.
668,299. POOCHIE PADDLE. Cl. 23.
668,304. MASTER. Cl. 23.
668,308. AJUSTO-LIFT. Cl. 23.
668,311. SENECA FALLS MACHINE AND DESIGN. Cl. 23.
668,313. JIM DANDY. Cl. 23.
668,315. NEIVERT WHITTLER. Cl. 23.
668,325. POWERMOTIVE. Cl. 23.
668,329. FIRE WATCH. Cl. 26.
668,334. MILE-O-GRAPH. Cl. 26.
668,335. RELIABLE. Cl. 26.
668,339. MINILATOR. Cl. 26.
668,340. FRYING SAUCER. Cl. 26.
668,342. SKI-POD. Cl. 26.
668,344. TRANSIPROBE. Cl. 26.
668,345. TRANSIPLY. Cl. 26.
668,346. TRANS SCAN LOG. Cl. 26.
668,351. LITHOFLO. Cl. 26.
668,354. BIG "B." Cl. 29.
668,355. SLUDGE TRAPPER. Cl. 31.
668,357. KREFFT. Cl. 31.
668,362. MAGI-TEMP. Cl. 34.
668,374. KRAFTEX. Cl. 37.
668,378. FOOD. Cl. 38.
668,380. USERSHIP. Cl. 38.
668,385. LAWRENCE DAILY EAGLE AND DESIGN. Cl. 38.
668,390. CHRISTIANA INDUSTRIES. Cl. 39.
668,395. CLYDE KASH-MORE. Cl. 39.
668,396. RAINBEAUTEES. Cl. 39.
668,397. "FOAM-TEX." Cl. 39.
668,400. PATIO. Cl. 39.
668,406. SOFLEX. Cl. 39.
668,411. GENIE. Cl. 39.
668,412. SCANTIES. Cl. 39.
668,413. SKIMPIES. Cl. 39.
668,415. CULAWRAP. Cl. 39.
668,419. FOLD-A-PLEAT. Cl. 42.
668,423. PEEREAU. Cl. 42.
668,424. STREGA. Cl. 42.
668,431. CERVITOME. Cl. 44.
668,433. SLIM-AID. Cl. 45.
668,436. KING OF NORWAY. Cl. 46.
668,438. THE WILLIAM PITT. Cl. 46.
668,444. VULCAN. Cl. 46.
668,445. DREAM DIET. Cl. 46.
668,446. DREAM DIET AND DESIGN. Cl. 46.
668,460. HERSHEY'S AND DESIGN. Cl. 46.
668,463. SUWANNEE AND DESIGN. Cl. 46.
668,465. SPEEDY BEEF. Cl. 46.
668,469. QUAL-A-FOODS AND DESIGN. Cl. 46.
668,472. TICK-TOCK. Cl. 46.
668,476. MILL AND DESIGN. Cl. 48.
668,480. DE RATTER MOUSER. Cl. 50.
668,483. PHANTOM-TRAK. Cl. 50.
668,484. POLK'S PORTA-MART. Cl. 50.
668,485. PEERLESS AND DESIGN. Cl. 50.
668,487. LANCOME D'ABORD AND DESIGN. Cl. 51.
668,489. LONG LIFE AND DESIGN. Cl. 52.
668,491. BISSELL SHAMPOO MASTER AND DESIGN. Cl. 52.
668,493. STEAM-MOR. Cl. 52.
668,495. OUTLINE OF MAN (CARICATURE). Cl. 101.
668,496. DOCTOR FIXIT AND DESIGN. Cl. 101.
668,498. UNION NATIONAL LIFE AND DESIGN. Cl. 102.
668,499. JET-TRED. Cl. 103.
668,502. HANDI-FOTOS. Cl. 106.
668,505. FAMOUS FOR STAINLESS AND DESIGN. Cl. 13.
668,508. DARCO BAIT-A-HOLE ETC. AND DESIGN. Cl. 22.
668,511. THE MATTRESS THAT "GROWS" ETC. Cl. 32.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

186,516. CELANESE. Cl. 39. 7-22-24. British Cellulose and Chemical Manufacturing Company Limited. Celanese Corporation of America, New York, N.Y. Amended: In the statement, column 1, line 10 is deleted.

399,622. MAGNAGLO. Cl. 6. 1-19-43. Magnaflux Corporation, Chicago, Ill. Amended: In the statement, column 1, line 8, ", in paste form, and" is deleted.

634,250. Q-BROXIN. Cl. 1. 9-11-56. Puget Sound Pulp & Timber Co. Georgia-Pacific Corporation, Augusta, Ga. Corrected: In the statement, column 1, line 1, "Washington" should be deleted and *Delaware* should be inserted.

667,187. TAAKA. Cl. 49. 9-16-58. Sazerac Company, Inc., New Orleans, La. Corrected: In the statement, column 1, line 1, "The" should be deleted.

683,136. BI-TEMP PROCTOR WIRE AND DESIGN. Cl. 14. Proctor & Schwartz, Inc., Philadelphia, Pa. Corrected: In the statement, column 2, line 1, "cord" should be deleted and *cord* should be inserted.

684,889. MILITARY GIN AND DESIGN. Cl. 49. 9–8–59. T. Foster & Co. (Wines & Spirits) Limited. National Distillers and Chemical Corporation, also doing business as National Distillers Products Co., New York, N.Y. Amended to appear:

MILITARY

GIN

687,985. LUCKY. Cl. 37. 11–10–59. Name-Maker Corporation, New York, N.Y. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted and *Corporation* should be inserted.

704,206. ROYAL AND DESIGN. Cl. 20. 9–13–60. United States Rubber Company, New York, N.Y. Amended to appear:

Royal

723,446. PHOTORAPID. Cl. 6. 11–7–61. Photorapid Corporation. The Photorapid Corporation, Chicago, Ill. Amended: In the statement, column 2, line 3 is deleted and *The trademark was first used by applicant's predecessor in interest in 1952; and was first used in interstate commerce by applicant's predecessor in interest in 1952; and is now in use in such commerce.* is inserted.

723,588. PHOTORAPID. Cl. 26. 11–7–61. Photorapid Corporation. The Photorapid Corporation, Chicago, Ill. Amended: In the statement, column 2, line 3 is deleted and *The trademark was first used by applicant's predecessor in interest in 1952; and was first used in interstate commerce by applicant's predecessor in interest in 1952; and is now in use in such commerce.* is inserted.

765,807. DIMATRAL. Cl. 21. 3–3–64. Eagle Electric Mfg. Co., Inc., Long Island City, N.Y. Corrected: In the statement, column 1, line 1, after "Co." , *Inc.* should be inserted.

771,589. R AND DESIGN. Cl. 51. 6–16–64. Botany Industries, Inc., d.b.a. Renauld of France and/or Sea and Ski Company, Reno, Nev. Amended to appear:

774,580. 701 EAST. Cl. 39. 8–4–64. Greentree's Incorporated, Richmond, Va. Corrected: In the statement, column 1, line 2, "Bond" should be deleted and *Broad* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1 — Raw or Partly Prepared Materials

408,696. Aug. 29, 1944. Georgia Kaolin Company, Elizabeth, N.J. Pub. by registrant.

HYDRITE

For Clay for Use in the Manufacture of Paper, Rubber, and Ceramics.

Class 4 — Abrasives and Polishing Materials

189,252. Sept. 16, 1924. O-Cedar Corp'n, Chicago, Ill. Pub. by The Drackett Company, Cincinnati, Ohio.

Use O-Cedar Polish
The O Cedar Polish Way

For Polish for Cleaning and Polishing Furniture, Floors, Linoleum, Pianos, Automobiles, etc.

Class 6 — Chemicals and Chemical Compositions

127,794. Dec. 2, 1919. The Toledo Rex Spray Co., Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

REX

For Fungicides and Horticultural Insecticides.

164,491. Feb. 20, 1923. The Toledo Rex Spray Company, Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

FLY-TOX

For Insecticide.

213,664. Jan. 1, 1926. The Toledo Rex Spray Company, assignor to Rex Research Corporation, Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

RAT-TOX

For Rodent Exterminator.

218,039. Sept. 21, 1964. The Toledo Rex Spray Company, assignor to Rex Research Corporation, Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

MOTH-TOX

For Insecticide.

249,043. Nov. 6, 1928. Rex Research Corporation, Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

STOCKAID

For Insecticide and Insect Repellent.

255,572. Apr. 23, 1929. Apothecaries Hall Company, Waterbury, Conn. Pub. by The Hubbard-Hall Chemical Company, Waterbury, Conn.

LIBERTY

For Insecticides, Disinfectants, Repellants for Destructive Birds, Chemical Weed Destroyers, Fungicides, Copper Sulphate, Bordeaux-Mixture Powder, Bordeaux Powder and Arsenate of Lead.

267,523. Feb. 25, 1930. Rex Research Corporation, Toledo, Ohio. Pub. by Geigy Chemical Corporation, Ardsley, N.Y.

FLY-TOX

(FLAI-TOX)

For Insecticide.

409,018. Sept. 12, 1944. Warwick Chemical Company, West Warwick, R.I. Pub. by The Western Petrochemical Corporation, Chanute, Kans.

WESTERN WAX

For Amorphous and Crystalline Hydrocarbon Compositions, as Refined Directly From Crude Petroleum and Sold for Industrial Use for Incorporation in Other Products.

410,364. Nov. 21, 1944. K. J. Quinn & Co., Inc., Malden, Mass. Pub. by registrant.

CERALINE

For Finish for Leather—Namely, Liquid Preparation Containing Waxes, Pigments, Aniline Dyes and Other Ingredients, To Be Applied to Leather at the Tannery.

410,365. Nov. 21, 1944. K. J. Quinn & Co., Inc., Malden, Mass. Pub. by registrant.

CERANIZE

For Finish for Leather—Namely, Liquid Preparation Containing Waxes, Pigments, Aniline Dyes and Other Ingredients, To Be Applied to Leather at the Tannery.

Class 10 — Fertilizers

123,314. Oct. 29, 1918. Apothecaries Hall Company, Waterbury, Conn. Pub. by The Hubbard-Hall Chemical Company, Waterbury, Conn.

LIBERTY

For Fertilizers.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

439,008. June 1, 1948. Harr Valve Co., Essex Fells, N.J. Pub. by registrant.

Magic-Flo

For Beverage Dispensing Apparatus, Consisting of a Faucet Designed To Regulate the Flow and Mixing of Two Liquids, Coming to the Faucet From Separate Containers, in Such Way That the Flow of One Liquid Is Regulated in Some Given Proportion to the Flow of the Other Liquid, and Beverage Dispensing Apparatus Consisting of Beer or Like Dispensing Faucets.

Class 14 — Metals and Metal Castings and Forgings

384,665. Jan. 28, 1941. Electro Metallurgical Company, New York, N.Y. Pub. by Union Carbide Corporation, New York, N.Y.

SMZ

For Ferrous Metal Alloys.

Class 17 — Tobacco Products

190,151. Oct. 7, 1924. Societe Anonyme Ed. Laurens-"Le Khedive"-Extension Suisse, Geneva, Switzerland. Pub. by registrant.

LAURENS

For Cigarettes.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

433,005. Sept. 23, 1947. Pitney-Bowes, Inc., Stamford, Conn. Pub. by registrant.

PB

For Postage Printing Machines, Postage Issuing Machines, Postage Registering Machines, Postage Dispensing Machines, Postmarking and Stamping Machines, Metered Mail Machines, and Mail Treating Machines.

Class 38 — Prints and Publications

180,874. Mar. 11, 1924. W. B. Rose, Chicago, Ill. Pub. by The Free Methodist Publishing House, Chicago, Ill.

LIGHT AND LIFE

For Sunday School Publications—Namely, Newspapers, Lesson Leaves, Lesson Quarterlies, and Picture Cards.

358,877. July 26, 1938. The Detroit Free Press, Detroit, Mich. Pub. by Knight Newspapers, Inc., Detroit, Mich.



Iffy.... the Dopester

For Daily Newspaper Column.

408,732. Aug. 29, 1944. Hercules Powder Company, Wilmington, Del. Pub. by registrant.

Mixer

For Magazine Issued Monthly for Readers Who Are Interested in the Chemical Industry, and Particularly the Work and Employees of the Hercules Powder Company.

Class 39 — Clothing

297,516. Sept. 20, 1932. Hamilton, Brown Shoe Company, St. Louis, Mo. Pub. by Divina Footwear, Inc., Miami, Fla.

"Ambassador" Genuine Calfskin Combination Last

For Men's Leather and Fabric Shoes.

409,451. Oct. 10, 1944. Riverside & Dan River Cotton Mills, Inc., Danville, Va., and New York, N.Y. Pub. by Dan River Mills, Incorporated, Danville, Va.

SKYTOP

For Men's and Women's Leisure Shirts for Outer Wear, Shorts and Trousers.

Class 45 — Soft Drinks and Carbonated Waters

301,256. Feb. 21, 1933. F. B. Chamberlain Company, East St. Louis, Ill., and St. Louis, Mo. Pub. by The Frostie Company, Camden, N.J.

FROSTY-ADE

For Powder Compound in Various Fruit Flavors, Particularly Orange, Grape, Strawberry, and Raspberry Used for Making Non-Alcoholic Maltless Beverages.

Class 51 — Cosmetics and Toilet Preparations

392,356. Dec. 23, 1941. Sutton Cosmetics, Inc., New York, N.Y. Pub. by registrant.

Liquisilk

For Lipsticks, Rouges, Face Powders, Skin Creams, Perfumes, Toilet Waters, Skin Lotions, and Hand Lotions.

INDEX OF REGISTRANTS

DECEMBER 1, 1964

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A & J Chemical Corp., Yonkers, N.Y. 668,493, canc. Cl. 52.
A/S Standard Ltd., Stavanger, Norway. 668,436, canc. Cl. 46.
Abet Corp., El Segundo, Calif. 780,790, pub. 9–15–64. Cl. 1.
Ackerlind Steel Co. Inc., Long Island City, N.Y. 780,861, pub. 9–15–64. Cl. 14.
Acme Equipment, Inc., Altoona, Pa. 668,304, canc. Cl. 23.
Acry Plastic Co., Los Angeles, Calif. 780,985, pub. 9–15–64. Cl. 34.
Admiral Corp., Chicago, Ill. 780,906, pub. 9–15–64. Cl. 21.
Aerosol Specialties, Inc., Bridgeport, Conn. 781,131, pub. 9–15–64. Cl. 51.
Agicide Laboratories, Inc., Milwaukee, Wis., to Agrashell, Inc., Los Angeles, Calif. 408,049, ren. 12–1–64. Cl. 1.
Agrashell, Inc. : *See*—
Agicide Laboratories, Inc.
Agricultural Supplies of Batesville, Inc., Batesville, Tex. 780,818, pub. 9–15–64. Cl. 6.
Aida, Inc., Palm Beach, Fla. 668,182, canc. Cl. 6.
Airoyal Engineering Co., Livingston, N.J. 780,851, pub. 9–15–64. Cl. 13.
Aktieselskabet Regard Aarhus Gummivarefabrik, Aarhus, Denmark. 781,070, pub. 9–15–64. Cl. 44.
Alamac Knitting Mills, Inc., New York, N.Y. 781,067, pub. 9–15–64. Cl. 42.
Alberto-Culver Co., Melrose Park, Ill. 781,133, pub. 9–15–64. Cl. 51.
Alberts', I., Sons, Inc., Newton, Mass. 409,166, ren. 12–1–64. Cl. 28.
Aldermaston Sales : *See*—
Bru, Malcolm S.
Allen Products Co., Inc., Allentown, Pa. 781,110, pub. 9–15–64. Cl. 46.
All-O-Matic Mfg. Corp., New Hyde Park, N.Y. 780,895, pub. 9–15–64. Cl. 19.
Alson Sportswear Inc., New York, N.Y. 668,415, canc. Cl. 39.
Altman, B., & Co., New York, N.Y. 780,802, pub. 9–15–64. Cl. 3.
Altman, B., & Co., New York, N.Y. 781,060, pub. 9–15–64. Cl. 39.
Amco of Norvelt, Inc., New York, N.Y. 781,045, pub. 9–15–64. Cl. 39.
American Home Products Corp., New York, N.Y. 781,098, pub. 9–15–64. Cl. 46.
American Home Products Corp. : *See*—
Ayerst, McKenna & Harrison Ltd.
American Oil & Supply Co., Newark, N.J. 412,807, ren. 12–1–64. Cl. 15.
American Photoengraving Co., Inc., Philadelphia, Pa. 781,121, pub. 9–15–64. Cl. 50.
Anaconda Wire and Cable Co., from Anaconda Wire and Cable Co., New York, N.Y. 780,914, pub. 9–15–64. Cl. 21.
Ancient and Honorable Order of Fraternity, Loyalty & Economy, Port Allen, La. 781,153, pub. 9–15–64. Cl. 200.
Anheuser-Busch, Inc., St. Louis, Mo. 668,241, canc. Cl. 18.
Anonyme de la Montre Royale, Societe, Geneva, Switzerland. 780,980, pub. 9–15–64. Cl. 27.
Anthony's Mfg. Co., Glendale, Calif. 781,119, pub. 9–15–64. Cl. 50.
Anthony Squires Pty. Ltd., St. Mary's, New South Wales, Australia. 781,041, pub. 9–15–64. Cl. 39.
Anvil Brand, Inc., High Point, N.C. 781,054, pub. 9–15–64. Cl. 39.
Apothecaries Hall Co., by The Hubbard-Hall Chemical Co., Waterbury, Conn. 255,572, 12(c) pub. 12–1–64. Cl. 6.
Apothecaries Hall Co., by The Hubbard-Hall Chemical Co., Waterbury, Conn. 123,314, 12(c) pub. 12–1–64. Cl. 10.
Architectural Porcelain Constructors, Oakland, Calif. 668,205, canc. Cl. 12.
Armour Agricultural Chemical Co. : *See*—
Armour and Co.
Armour and Co., d.b.a. Armour Agricultural Chemical Co., Chicago, Ill. 780,837, pub. 9–15–64. Cl. 10.
Artistic Weaving Co., Pompton Lakes, N.J. 781,019, pub. 9–15–64. Cl. 38.
Asphalt Heating, Inc., Caldwell, N.J. 780,991, pub. 9–15–64. Cl. 34.
Associated Lead Manufacturers Ltd., London, England. 780,814, pub. 9–15–64. Cl. 6.
Ath-O-Med Co. : *See*—
Chattanooga Medicine Co., The.
Aulson Tanning Machinery Co., The, Beverly, Mass. 780,935, pub. 9–15–64. Cl. 28.
Avon Products, Inc., New York, N.Y. 407,897, ren. 12–1–64. Cl. 51.
Ayerst, McKenna & Harrison Ltd., to American Home Products Corp., New York, N.Y. 412,696, ren. 12–1–64. Cl. 18.
Balanced Foods, Inc., New York, N.Y. 780,880, pub. 3–31–64. Cl. 18.
Ball, Geo. J., Inc., West Chicago, Ill. 780,800, pub. 9–15–64. Cl. 2.
Bandell, Ira, d.b.a. Bevee Cosmetics Co., Newark, N.J. 781,135, pub. 9–15–64. Cl. 51.
Barad Lingerie Co., St. Louis, Mo. 781,033, pub. 9–15–64. Cl. 39.
Bayuk Cigars Inc., Philadelphia, Pa. 780,873, pub. 9–15–64. Cl. 17.
Bedding Manufacturers Associates, Inc., Philadelphia, Pa. 781,159. Cl. 32.
Benwill Publishing Corp., Brookline, Mass. 781,027, pub. 9–15–64. Cl. 38.
Bevee Cosmetics Co. : *See*—
Bandell, Ira.
Biflex Foundations, Inc., New York, N.Y. 668,411, canc. Cl. 39.
Bissell Carpet Sweeper Co., Grand Rapids, Mich. 668,491, canc. Cl. 52.
Bolton-Emerson, Inc., Lawrence, Mass. 780,942, pub. 9–15–64. Cl. 23.
Borden Co., The, New York, N.Y. 781,083, pub. 9–15–64. Cl. 46.
Borg-Erickson Corp., The, Chicago, Ill. 780,969, pub. 9–15–64. Cl. 26.
Botany Industries, Inc., d.b.a. Renauld of France and/or Sea and Ski Co., Reno, Nev. 771,589. Am. 7(d). Cl. 51.
Botts-Line, Inc., Redwood City, Calif. 781,122, pub. 9–15–64. Cl. 50.
Bouchard, Mack, & Son, to Bouchard Potato Co., Inc., Caribou, Maine. 191,695, ren. 12–1–64. Cl. 1.
Bouchard Potato Co., Inc. : *See*—
Bouchard, Mack, & Son.
Bowers Printing Ink Co., Chicago, Ill. 780,844, pub. 9–15–64. Cl. 11.
Brandon, Isaac M., Co., Inc., New York, N.Y. 781,036, pub. 9–15–64. Cl. 39.
British Belting & Asbestos Ltd., Yorkshire, England. 668,275, canc. Cl. 21.
British Cellulose and Chemical Mfg. Co. Ltd. Celanese Corp. of America, New York, N.Y. 186,516. Am. 7(d). Cl. 39.
Broemmel Pharmaceuticals, San Francisco, Calif. 668,256–7, canc. Cl. 18.
Brown, M. D., Co., The, Niles, Mich. 780,910–12, pub. 9–15–64. Cl. 21.
Bru, Malcolm S., d.b.a. Aldermaston Sales, Glen Cove, N.Y. 780,815, pub. 9–15–64. Cl. 6.
Brush Beryllium Co., The, Cleveland, Ohio. 780,830, pub. 9–15–64. Cl. 6.
Burgess Cellulose Co., Freeport, Ill. 668,354, canc. Cl. 29.
Burrell Corp., Pittsburgh, Pa. 780,968, pub. 9–15–64. Cl. 26.
Butler Paper Co., Chicago, Ill. 781,008, pub. 9–15–64. Cl. 37.
California Chemical Co., San Francisco, Calif. 780,955, pub. 9–15–64. Cl. 23.
California Products Corp. : *See*—
Munn and Steele, Inc.
Calumet Steel Castings Corp., Hammond, Ind. 668,222, canc. Cl. 14.
Calvin, Henry, Fabrics, San Francisco, Calif. 781,064, pub. 9–15–64. Cl. 42.
Camie Co., Inc., St. Louis, Mo. 780,847, pub. 6–9–64. Cl. 12.
Camie Co., Inc., St. Louis, Mo. 780,862, pub. 6–9–64. Cl. 15.
Camp, W. B., & Sons, Inc., Bakersfield, Calif. 781,090, pub. 9–15–64. Cl. 46.
Canasco, Inc., New York, N.Y. 780,848, pub. 9–15–64. Cl. 12.
Carling Brewing Co., Inc., Cleveland, Ohio. 781,115, pub. 9–8–64. Cl. 48.
Carnation Co., Los Angeles, Calif. 781,111, pub. 9–15–64. Cl. 46.
Carolina Men's and Boys Apparel Club : *See*—
Men's Apparel Club of the Carolinas, Inc.
Carolinas Men's Apparel Club, The : *See*—
Men's Apparel Club of the Carolinas, Inc.
Carter, Ralph B., Co., Hackensack, N.J. 195,714, ren. 12–1–64. Cl. 23.
Catholic Press Society, Inc., The, Denver, Colo. 781,030, pub. 9–15–64. Cl. 38.
Celanese Corp. of America : *See*—
British Cellulose and Chemical Mfg. Co. Ltd.
Centra Leather Goods of Oklahoma, Inc., Frederick, Okla. 780,803, pub. 9–15–64. Cl. 3.
Central States Seed Service, Inc., Lima, Ohio. 668,170, canc. Cl. 1.
Chadwick-Helmuth Co., Monrovia, Calif. 780,961, pub. 9–15–64. Cl. 26.
Charleston Rubber Co., Charleston, S.C. 781,051, pub. 9–15–64. Cl. 39.
Chattanooga Medicine Co., The, d.b.a. Ath-O-Med Co., Chattanooga, Tenn. 781,144, pub. 9–15–64. Cl. 52.
Chattanooga Pharmacal Co., Chattanooga, Tenn. 781,161. Cl. 44.
Children's Hospital, The, Cincinnati, Ohio. 781,150, pub. 9–15–64. Cl. 107.
Chittenden and Eastman Co., Burlington, Iowa. 781,028, pub. 9–15–64. Cl. 38.
Chamberlain, F. B., Co., East St. Louis, Ill., and St. Louis, Mo., by The Frostie Co., Camden, N.J. 301,256, 12(c) pub. 12–1–64. Cl. 45.
Chemo Puro Mfg. Corp., Newark, N.J. 668,194, canc. Cl. 6.

Chicopee Mfg. Co.: *See*—
Johnson & Johnson.
Chipman's, Chas., Sons Co., Inc.: *See*—
Lawall, Frederick F.
Christiana Industries, Inc., Georgetown, Del. 668,390, canc. Cl. 39.
Ciba Corp., New York, N.Y. 781,014, pub. 9–15–64. Cl. 38.
City of Paris, San Francisco, Calif. 668,419, canc. Cl. 42.
Clare, Inc.: *See*—
Rosner, Harold G.
Claussen's, Inc., Augusta, Ga. 781,114, pub. 9–15–64. Cl. 46.
Clearasite Headwear, Inc., New York, N.Y. 781,056, pub. 9–15–64. Cl. 39.
Clearwater Tissue Mills, Inc., Lewiston, Idaho, from Swanee Paper Corp., New York, N.Y. 781,005, pub. 5–7–63. Cl. 37.
Clyde Fashions, Ltd., New York, N.Y. 668,395, canc. Cl. 39.
Cockerell, John, Inc., Chicago, Ill. 668,495, canc. Cl. 101.
Cohen, Joseph H., & Sons, Inc., New York, N.Y., from The Puritan Sportswear Corp., Altoona, Pa. 781,031, pub. 9–15–64. Cl. 39.
Collier Carbon and Chemical Corp., Los Angeles, Calif. 780,835, pub. 9–15–64. Cl. 6.
Collier Carbon and Chemical Corp., Los Angeles, Calif. 780,843, pub. 9–15–64. Cl. 10.
Collinswood: *See*—
Mississippi Federated Cooperatives (AAL).
Colorpave, Inc., Van Nuys, Calif. 780,866, pub. 9–15–64. Cl. 16.
Columbian Carbon Co.: *See*—
Peerless Carbon Black Co., The.
Congoleum-Nairn Inc., Kearny, N.J. 781,123, pub. 9–15–64. Cl. 50.
Congoleum-Nairn Inc., Kearny, N.J. 780,810, pub. 9–15–64. Cl. 5.
Consolidated Cigar Corp., New York, N.Y. 780,872, pub. 9–15–64. Cl. 17.
Construction Machinery Co., Waterloo, Iowa. 780,944, pub. 9–15–64. Cl. 23.
Continental Can Co., Inc., New York, N.Y. 668,179, canc. Cl. 2.
Continental Oil Co., Ponca City, Okla. 668,227, canc. Cl. 15.
Cooper, Herbert: *See*—
Cooper, Philip R. and Herbert Cooper.
Cooper, Philip R. and Herbert Cooper, d.b.a. Timecraft Watch Co., New York, N.Y. 780,981, pub. 9–15–64. Cl. 27.
Cooper Polymers, Inc., Wilmington, Mass. 780,786, pub. 9–15–64. Cl. 1.
Cornell-Dubilier Electric Corp., Newark, N.J. 780,918, pub. 9–15–64. Cl. 21.
Corn Products Refining Co., New York, N.Y. 668,340, canc. Cl. 26.
Creo-Dipt Co., Inc., North Tonawanda, N.Y. 780,864, pub. 9–26–61. Cl. 16.
Crete, Charles A., d.b.a. Pharmaceutical Associates, San Francisco, Calif. 780,890, pub. 9–15–64. Cl. 18.
Crucible Steel Co. of America, Pittsburgh, Pa. 412,029, ren. 12–1–64. Cl. 14.
Curtis, Helene, Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 781,134, pub. 9–15–64. Cl. 51.
Curtiss-Wright Corp., Wood-Ridge, N.J. 780,970, pub. 9–15–64. Cl. 26.
Dalkeith Agencies Ltd., Vancouver, British Columbia, Canada. 781,052, pub. 9–15–64. Cl. 39.
Dan River Mills, Inc., Danville, Va. 781,061, pub. 9–15–64. Cl. 39.
Dan River Mills, Inc.: *See*—
Riverside & Dan River Cotton Mills, Inc.
Darragh Co., Little Rock, Ark. 668,508, canc. Cl. 22.
Davidson-Bigelow, Inc., New York, N.Y. 781,042, pub. 9–15–64. Cl. 39.
Davol Rubber Co., Providence, R.I. 781,077–8, pub. 9–15–64. Cl. 44.
Davol Rubber Co., Providence, R.I. 781,071, pub. 9–15–64. Cl. 44.
Dayco Corp., Dayton, Ohio. 780,791, pub. 9–15–64. Cl. 1.
Dawson Mfg. Co.: *See*—
Stallings, Ernest E.
Dayton Co., The, Minneapolis, Minn. 781,034, pub. 9–15–64. Cl. 39.
Daystrom, Inc.: *See*—
Esterline Angus Instrument Co., Inc.
Deering Milliken, Inc.: *See*—
Lonsdale Co.
Dehydrated Juices, Inc., Chicago, Ill. 668,433, canc. Cl. 45.
Delfino A-Mare Inc., Brooklyn, N.Y. 781,032, pub. 9–15–64. Cl. 39.
De Luxe Reading Corp., Elizabeth, N.J. 780,929, pub. 9–15–64. Cl. 22.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 780,888, pub. 9–15–64. Cl. 18.
De Ratter Mouser Co.: *See*—
Mullen, Thomas W.
Detroit Free Press, The, by Knight Newspapers, Inc., Detroit, Mich. 358,877, 12(c) pub. 12–1–64. Cl. 38.
Diets of Rochester, Inc., Rochester, Minn. 668,445–6, canc. Cl. 46.
Diversey Corp., The, Chicago, Ill. 781,143, pub. 9–15–64. Cl. 52.
Divina Footwear, Inc.: *See*—
Hamilton, Brown Shoe Co.
Dixie Club Coffee Inc., Birmingham, Ala. 668,444, canc. Cl. 46.
Doctor Fixit Inc., College Station, Tex. 668,496, canc. Cl. 101.
Dogle, C. B., Co., The, Westport, Conn. 780,807, pub. 9–15–64. Cl. 4.
Dowty Hydraulic Units Ltd., Ashchurch, near Tewkesbury, England, from Dowty Technical Developments Ltd., Brockhampton Park, near Andoversford, England. 780,936, pub. 9–15–64. Cl. 23.
Dowty Technical Developments Ltd.: *See*—
Dowty Hydraulic Units Ltd.
Drackett Co., The: *See*—
O-Cedar Corp'n.
Dredge Mfg. Corp., Hallandale, Fla. 780,958, pub. 9–15–64. Cl. 23.
Dumont Handkerchiefs, Inc., New York, N.Y. 780,973, pub. 9–15–64. Cl. 26.
Dunleavy Co., The, Waltham, Mass. 668,374, canc. Cl. 37.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 780,784, pub. 9–15–64. Cl. 1.
EMC Recordings Corp., St. Paul, Minn. 668,489, canc. Cl. 52.
Eagle Electric Mfg. Co., Inc., Long Island City, N.Y. 765,807, cor. Cl. 21.
Eagle-Tribune Publishing Co., Lawrence, Mass. 668,385, canc. Cl. 38.
Edgerton, Germeshausen & Grier, Inc., Boston, Mass. 780,971, pub. 9–15–64. Cl. 26.
Eldre Components, Inc., Rochester, N.Y. 780,916, pub. 9–15–64. Cl. 21.
Electro-Chem Corp., Fort Worth, Tex. 780,816, pub. 9–15–64. Cl. 6.
Electro Metallurgical Co., by Union Carbide Corp., New York, N.Y. 384,665, 12(c) pub. 12–1–64. Cl. 14.
Ellis Mfg. Co.: *See*—
Ellis, Mardell.
Ellis, Mardell, d.b.a. Ellis Mfg. Co., Salem, Oreg. 780,950, pub. 9–15–64. Cl. 23.
Empire Plastic Corp., Pelham Manor, N.Y. 668,295, canc. Cl. 22.
Encyclopaedia Brittannica, Inc., Chicago, Ill. 781,026, pub. 9–15–64. Cl. 38.
Engineering Institute, Inc.: *See*—
Steigner, Hubert C.
Esco Corp., Portland, Oreg. 780,947, pub. 9–15–64. Cl. 23.
Esterline Angus Instrument Co., Inc., Indianapolis, Ind., from Daystrom, Inc., Murray Hill, N.J. 780,963, pub. 9–15–64. Cl. 26.
Ethicon, Inc., Somerville, N.J. 781,075, pub. 9–15–64. Cl. 44.
Evans, L. G., & Co., Chicago, Ill. 668,298, canc. Cl. 23.
Everfast Fabrics, Inc., New York, N.Y. 408,796, ren. 12–1–64. Cl. 42.
Excel-Mineral Co., Inc., d.b.a. Ex-M-Co., Los Angeles, Calif. 780,788, pub. 9–15–64. Cl. 1.
Excel Wire and Cable Co., Conshohocken, Pa. 780,919, pub. 9–15–64. Cl. 21.
Ex-M-Co.: *See*—
Excel-Mineral Co., Inc.
FMC Corp.: *See*—
Sylvan Plastics, Inc.
Fabri-Valve Co. of America, Portland, Oreg. 780,850, pub. 9–15–64. Cl. 13.
Factory Oil Co., The, Akron, to The Standard Oil Co., Cleveland, Ohio. 190,708, ren. 12–1–64. Cl. 15.
Fairchild Camera and Instrument Corp., Mountain View, Calif. 780,908, pub. 9–15–64. Cl. 21.
Fantastic Products, Inc., Tulsa, Okla. 781,140, pub. 9–15–64. Cl. 52.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 781,044, pub. 9–15–64. Cl. 39.
Fata Imports, Inc.: *See*—
Gibi Knits of Italy.
Federal Cigar Co., Inc., Red Lion, Pa. 780,874, pub. 9–15–64. Cl. 17.
Fieldcrest Mills, Inc., Spray, N.C. 668,423, canc. Cl. 42.
Finders Mfg. Co., The, Chicago, Ill. 668,219, canc. Cl. 13.
Firestone Tire & Rubber Co., The, Akron, Ohio. 780,794, pub. 9–15–64. Cl. 1.
Firmenich, Inc., New York, N.Y. 780,834, pub. 9–15–64. Cl. 6.
Firmenich, Inc., New York, N.Y. 781,145, pub. 9–15–64. Cl. 52.
Firmenich, Inc., New York, N.Y. 781,103, pub. 9–15–64. Cl. 46.
Fisher Cheese Co., The, Wapakoneta, Ohio. 781,088, pub. 9–15–64. Cl. 46.
Florida Citrus Canners Cooperative, Lake Wales, Fla. 781,109, pub. 9–15–64. Cl. 46.
Fore Co. Inc., Wayne N.J. 781,128, pub. 9–15–64. Cl. 50.
Foseco International Ltd., Birmingham, England. 780,811, pub. 9–15–64. Cl. 6.
Foster, T., & Co. (Wines & Spirits) Ltd. National Distillers and Chemical Corp., also d.b.a. National Distillers Products Co., New York, N.Y. 684,889. Am. 7(d). Cl. 49.
Free Methodist Publishing House, The: *See*—
Rose, W. B.
Fr. Hesser Maschinenfabrik Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany. 780,941, pub. 9–15–64. Cl. 23.
Fromm Laboratories, Inc., Charles City, Iowa, from Fromm Laboratories, Inc., Grafton, Wis. 780,884, pub. 9–15–64. Cl. 18.
Frostie Co., The: *See*—
Chamberlain, F. B., Co.
Fry's Metal Foundries Ltd., London, England. 780,987, pub. 9–15–64. Cl. 34.
Fuller, D. B., & Co. Inc., New York, N.Y. 668,424, canc. Cl. 42.
Fumagalli, Mario, S.p.A., Milan, Italy. 780,948, pub. 9–15–64. Cl. 23.
Garcia y Vega, Inc., New York, N.Y. 780,877, pub. 9–15–64. Cl. 17.
Garner, T. W., Food Co., Winston-Salem, N.C. 781,086, pub. 9–15–64. Cl. 46.
Garroway, James M., d.b.a. Industrial Power & Equipment Co., Pittsburgh, Pa. 780,921, pub. 9–15–64. Cl. 21.
Geigy Chemical Corp.: *See*—
Rex Research Corp.
Toledo Rex Spray Co., The.

Geigy Chemical Corp., Ardsley, N.Y. 780,822–3, pub. 9–15–64. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 409,390, ren. 12–1–64. Cl. 26.
General Tire & Rubber Co., The, Akron, Ohio. 781,066, pub. 9–15–64. Cl. 42.
Georgia-Pacific Corp.: *See*—
Puget Sound Pulp & Timber Co.
Gerstle Medicine Co.: *See*—
Plough Chemical Co.
Gibbs Mfg. & Research Corp., Janesville, Wis. 780,903, pub. 9–15–64. Cl. 21.
Gibi Knits of Italy, d.b.a. Fata Imports, Inc., Los Angeles, Calif. 781,043, pub. 9–15–64. Cl. 39.
Giddings & Lewis Machine Tool Co., Fond du Lac, Wis. 780,951, pub. 9–15–64. Cl. 23.
Gioia Macaroni Co., Inc., Buffalo, N.Y. 781,092, pub. 9–15–64. Cl. 46.
Golden Grain Macaroni Co., d.b.a. Mission Macaroni Co., San Leandro, Calif. 781,082, pub. 9–15–64. Cl. 46.
Gold Medal Candy Corp.: *See*—
Surbrug's Nut Products, Ltd.
Good Humor Corp., Englewood Cliffs, N.J. 781,091, pub. 9–15–64. Cl. 46.
Good Luck Glove Co., Carbondale, Ill. 668,397, canc. Cl. 39.
Gospel Light Publications, Glendale, Calif. 781,015, pub. 9–15–64. Cl. 38.
Gospel Trumpet Co., to Warner Press, Inc., Anderson, Ind. 411,859, ren. 12–1–64. Cl. 38.
Grace, W. R., & Co., New York, N.Y. 780,812, pub. 9–15–64. Cl. 6.
Grand Prix Records: *See*—
Takeshi Shindo.
Great Lakes Carbon Corp., New York, N.Y. 668,171, canc. Cl. 1.
Great Lakes Tractor Co., The, Rock Creek, Ohio. 668,313, canc. Cl. 23.
Greenewald's, Inc., Spartanburg, S.C. 781,035, pub. 9–15–64. Cl. 39.
Greenfield Co., The, Elk Grove Village, Ill. 780,893, pub. 9–15–64. Cl. 19.
Greentree's Inc., Richmond, Va. 774,580, cor. Cl. 39.
Guard All Chemical Co., Inc., South Norwalk, Conn. 780,789, pub. 9–15–64. Cl. 1.
Guardian Steel Corp., Detroit, Mich. 780,857, pub. 9–15–64. Cl. 14.
Gulbenkian Swim Distributors, Inc., Rye, N.Y. 781,057, pub. 9–15–64. Cl. 39.
Gulf States Paper Corp., Tuscaloosa, Ala. 781,007, pub. 9–15–64. Cl. 37.
Haller, W. A., Corp.: *See*—
Haller, W. A., Co., Inc.
Haller, W. A., Co., Inc., Pittsburgh, and Philadelphia, Pa., to W. A. Haller Corp., Philadelphia, Pa. 411,821, ren. 12–1–64. Cl. 49.
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 781,038–40, pub. 9–15–64. Cl. 39.
Haloid Co., The: *See*—
Haloid Xerox Inc.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 668,351, canc. Cl. 26.
Hamilton, Brown Shoe Co., St. Louis, Mo., by Divina Footwear, Inc., Miami, Fla. 297,516, 12(c) pub. 12–1–64. Cl. 39.
Handelmaatschappij G.A. Beenhakker, Amersfoort, The Netherlands. 780,852, pub. 9–15–64. Multiple Class (Classes 13 and 23).
Handi-Fotos, New York, N.Y. 668,502, canc. Cl. 106.
Hanna Furnace Corp., The, Buffalo, N.Y. 780,859–60, pub. 9–15–64. Cl. 14.
Harr Valve Co., Essex Fells, N.J. 439,008, 12(c) pub. 12–1–64. Cl. 13.
Harshaw Chemical Co., The, Cleveland, Ohio. 780,975, pub. 9–15–64. Cl. 26.
Hartfield Stores, Inc., Los Angeles, Calif. 781,141, pub. 9–15–64. Cl. 52.
Henry Mfg. Co., Inc., Topeka, Kans. 780,956, pub. 9–15–64. Cl. 23.
Hercules Powder Co., Wilmington, Del. 408,732, 12(c) pub. 12–1–64. Cl. 38.
Herndon, J. C., d.b.a. Little Brownie, Houston, Tex. 781,089, pub. 9–15–64. Cl. 46.
Hershey Creamery Co., Harrisburg, Pa. 668,460, canc. Cl. 46.
Hilton Hotels Corp.: *See*—
Hilton Products, Inc.
Hilton Products, Inc., Beverly Hills, Calif., from Hilton Hotels Corp., Chicago, Ill. 781,136, pub. 9–15–64. Cl. 52.
Hit Distributing Co.: *See*—
Miner, Alfred B.
Hogan, Ben, Co., Fort Worth, Tex. 780,930, pub. 9–15–64. Cl. 22.
Holiday Inns of America, Inc., Memphis, Tenn. 781,022, pub. 9–15–64. Cl. 38.
Holland Mfg. Co., The, d.b.a. The Holland Tack Co., Baltimore, Md. 780,854, pub. 9–15–64. Cl. 13.
Holland Tack Co., The: *See*—
Holland Mfg. Co., The.
Hoosier Soil Service, Inc., Bluffton, Ind. 780,839, pub. 9–15–64. Cl. 10.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 780,842, pub. 9–15–64. Cl. 10.
Hubbard-Hall Chemical Co., The: *See*—
Apothecaries Hall Co.
Hysan Products Co., Chicago, Ill. 780,808, pub. 9–15–64. Cl. 4.
Illinois Fibre Specialty Co., Chicago, Ill. 780,983, pub. 9–15–64. Cl. 32.
Independent Garage Owners of America, Tulsa, Okla. 781,151, pub. 9–15–64. Cl. 200.
Indian Head Mills, Inc.: *See*—
Ulmann, Bernhard, Co. Inc.
Industrial Marine, Inc., Warsaw, Ind. 781,156. Cl. 19.
Industrial Power & Equipment Co.: *See*—
Garroway, James M.
Industrionics Controls, Inc., New York, N.Y. 780,907, pub. 9–15–64. Cl. 21.
International Harvester Co., Chicago, Ill. 668,267, canc. Cl. 19.
International Harvester Co., Chicago, Ill. 668,269, canc. Cl. 19.
International Latex Corp.: *See*—
Tailby-Nason Co.
International Minerals & Chemical Corp., Skokie, Ill. 780,840–1, pub. 9–15–64. Cl. 10.
International Paper Co., New York, N.Y. 780,797, pub. 9–15–64. Cl. 2.
International Protected Metals, Inc., South Plainfield, N.J. 780,853, pub. 9–15–64. Cl. 13.
Ivers-Lee Co., Newark, N.J. 780,801, pub. 9–15–64. Cl. 2.
JFD Electronics Corp., Brooklyn, N.Y. 780,902, pub. 9–15–64. Cl. 21.
Jacobs, Samuel B., Hoboken, N.J. 780,871, pub. 9–15–64. Cl. 17.
Jambor Tool and Stamping Co., Milwaukee, Wis. 411,191, ren. 12–1–64. Cl. 23.
Jaroda Co., Boulder, Colo. 780,934, pub. 9–15–64. Cl. 23.
Jato Mfg., Inc., Salina, Kans. 780,894, pub. 9–15–64. Cl. 19.
Jefferson Chemical Co., Inc., Houston, Tex. 780,828, pub. 9–15–64. Cl. 6.
Jenkins, George O., Co., Bridgewater, Mass. 780,785, pub. 9–15–64. Cl. 1.
Jet Research Center, Inc., Arlington, Tex. 780,836, pub. 9–15–64. Cl. 9.
Johnson & Johnson, d.b.a. Tek-Hughes, New Brunswick, N.J. 781,063, pub. 9–15–64. Cl. 40.
Johnson & Johnson, New Brunswick, N.J. 781,076, pub. 9–15–64. Cl. 44.
Johnson & Johnson, d.b.a. Chicopee Mfg. Co., New Brunswick, N.J. 781,125, pub. 9–15–64. Cl. 50.
Johnson, Stephens and Shinkle Shoe Co., St. Louis, Mo. 191,046, ren. 12–1–64. Cl. 39.
Jones, E. D., Corp., Dalton, Mass. 780,952, pub. 9–15–64. Cl. 23.
Juday, Floyd D., Whittier, Calif. 668,177, canc. Cl. 2.
Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan. 780,979, pub. 9–15–64. Cl. 27.
Kal Plastics, Inc., Beaverton, Mich. 780,796, pub. 9–15–64. Cl. 1.
Karl Rud. Dignes Fabrikationsgesellschaft Fuer Maschinenersatzteile M.B.H., Vilkerath Bei Koln, Germany. 781,158. Cl. 23.
Kaolin, Georgia, Co., Elizabeth, N.J. 408,696, 12(c) pub. 12–1–64. Cl. 1.
Kay Electric Co., Pine Brook, N.J. 668,344–5, canc. Cl. 26.
Kay Electric Co., Pine Brook, N.J. 668,339, canc. Cl. 26.
Kay Line Inc., Trenton, N.J. 780,795, pub. 9–15–64. Cl. 1.
Kelly Mfg. Co., The: *See*—
Kelly, W. K.
Kelly, W. K., d.b.a. The Kelly Mfg. Co., Sanford, N.C. 781,108, pub. 9–15–64. Cl. 46.
Kendall Co., The, Walpole, Mass. 781,126, pub. 9–15–64. Cl. 50.
Kincade, William S., Clarksdale, Miss. 780,904, pub. 9–15–64. Cl. 21.
Klaver Brouwerij: *See*—
N.V. Phoenix Brouwerij.
Klaver Holland Beer Brewery: *See*—
N.V. Phoenix Brouwerij.
Knight Newspapers, Inc.: *See*—
Detroit Free Press, The.
Kobar Mfg. Co., Chicago, Ill. 668,215, canc. Cl. 13.
Koch, Sarah, Spring Valley, N.Y. 780,887, pub. 9–15–64. Cl. 18.
Konigsberg Electronics, Inc., South San Francisco, Calif. 780,915, pub. 9–15–64. Cl. 21.
Konrad Hornschuch Aktiengesellschaft Werk Weissbach, Weissbach, Wuerttemberg, Germany. 780,781, pub. 9–15–64. Cl. 1.
Kronheim, Milton S., & Co., Inc., Washington, D.C. 781,116, pub. 9–15–64. Cl. 49.
Lakeshire Products, Inc., d.b.a. Lakeside Sandwiches, St. Louis, Mo. 781,095, pub. 9–15–64. Cl. 46.
Lakeside Central Co., Chicago, Ill. 781,009, pub. 9–15–64. Cl. 37.
Lakeside Sandwiches: *See*—
Lakeshire Products, Inc.
Lakewood Mfg. Co., Westlake, Ohio. 780,925, pub. 9–15–64. Cl. 22.
Lampes et Entreprises Electriques, Ninove, Belgium. 780,917, pub. 9–15–64. Cl. 21.
Lancome, S.A., Paris, France. 668,487, canc. Cl. 51.
Land, Charles H., Tuscaloosa, Ala. 781,023, pub. 9–15–64. Cl. 38.
Lane Ltd., New York, N.Y. 780,876, pub. 9–15–64. Cl. 17.
Larus & Brother Co., Richmond, Va. 780,878, pub. 9–15–64. Cl. 17.
Laurens, Ed., Societe Anonyme, "Le Khedive" Extension Suisse, Geneva, Switzerland. 190,151, 12(c) pub. 12–1–64. Cl. 17.
Lawall, Frederick F., d.b.a. Walk-ezy Hosiery Co., Phillipsburg, N.J., to Chas. Chipman's Sons Co., Inc., New York, N.Y. 195,413, ren. 12–1–64. Cl. 39.
Lazy Ike Corp., Fort Dodge, Iowa. 780,926–7, pub. 9–15–64. Cl. 22.
Leaf Brands, Inc., Chicago, Ill. 781,099, pub. 9–15–64. Cl. 46.

Leggio, George J., Rockford, Ill. 781,096–7, pub. 9–15–64. Cl. 46.
Lehn & Fink Products Corp., d.b.a. Tussy Cosmetics, Bloomfield, N.J. 781,139, pub. 9–15–64. Cl. 52.
Lenco, Inc., Chicago, Ill. 780,972, pub. 9–15–64. Cl. 26.
Lentheric: *See*—
Curtis, Helene, Industries, Inc.
Lester, George, d.b.a. Lester Industries, Webster City, Iowa. 668,292, canc. Cl. 22.
Lester Industries: *See*—
Lester, George.
Leventhal, Leon C., d.b.a. The Pak-A-Lite Co., New York, N.Y. 668,199, canc. Cl. 8.
Lewis Knitting Co., Reno, Nev. 781,055, pub. 9–15–64. Cl. 39.
Libby, McNeill & Libby, Chicago, Ill. 186,522, ren. 12–1–64. Cl. 46.
Libby, McNeill & Libby, Chicago, Ill. 781,105, pub. 9–15–64. Cl. 46.
Liggett & Myers Tobacco Co., New York, N.Y. 780,879, pub. 9–15–64. Cl. 17.
Lindheim, Leon T., Cleveland, Ohio. 781,029, pub. 9–15–64. Cl. 38.
Linemaster Switch Corp., Woodstock, Conn. 780,920, pub. 9–15–64. Cl. 21.
Little Brownie: *See*—
Herndon, J. C.
Little Giant Corp., Oklahoma City, Okla. 780,897, pub. 9–15–64. Cl. 21.
London & Co., Inc., Elizabeth, N.J. 409,728, ren. 12–1–64. Cl. 49.
Lonsdale Co., Providence, R.I., to Deering Milliken, Inc., New York, N.Y. 179,844, ren. 12–1–64. Cl. 42.
L'Oreal, Paris, France. 781,137, pub. 9–15–64. Cl. 52.
Lowell Textile Co., Greenfield, Ohio. 781,053, pub. 9–15–64. Cl. 39.
Lozzi, L., Inc., Lawrence, Mass. 668,406, canc. Cl. 39.
Lubin-Weeker Co. Inc., to Weldon Pajamas, Inc., New York, N.Y. 411,667, ren. 12–1–64. Cl. 39.
Lodwig, W. E., K.G., Nurtingen, Württemberg, Germany. 780,965, pub. 9–15–64. Cl. 26.
Lyon, Raymond H., and Alberta M. Lyon, d.b.a. The Raymar Co., Downey, Calif. 781,130, pub. 9–15–64. Cl. 51.
Lyon Rural Electric Co., San Diego, Calif. 407,910, ren. 12–1–64. Cl. 44.
Magnaflux Corp., Chicago, Ill. 399,622. Am. 7(d). Cl. 6
Mangels, Herold Co., Inc., Baltimore, Md. 780,831, pub. 9–15–64. Cl. 6.
Mar-Gold Corp., The, Atlanta, Ga. 781,093, pub. 9–15–64 Cl. 46.
Marine Plastics, Inc., Fort Lauderdale, Fla. 668,270, canc. Cl. 19.
Mar-O-Bar Co.: *See*—
Mars, Frank C.
Marquez Laboratories Corp., Hialeah, Fla. 780,881, pub. 1–1–63. Cl. 18.
Mars, Frank C., d.b.a. Mar-O-Bar Co., Minneapolis, Minn., to Mars, Inc., Wilmington, Del. 196,182, ren. 12–1–64. Cl. 46.
Mars, Inc.: *See*—
Mars, Frank C.
Martin-Senour Co., The, Chicago, Ill. 780,868–9, pub. 9–15–64. Cl. 16.
Marton, Mort N., Corp., The, New York, N.Y. 780,798, pub. 9–15–64. Cl. 2.
Marvin Wire, Los Angeles, Calif. 668,229, canc. Cl. 15.
McCoy Box Co., South Sioux City, Nebr. 780,799, pub. 9–15–64. Cl. 2.
McFadden, James B., & Sons, Lockport, Ill. 781,106, pub. 9–15–64. Cl. 46.
McGraw-Edison Co., Elgin, Ill. 780,846, pub. 9–15–64. Cl. 12.
McGraw-Edison Co., Elgin, Ill. 780,901, pub. 9–15–64. Cl. 21.
McNeil Laboratories, Inc., Fort Washington, Pa. 780,892, pub. 9–15–64. Cl. 18.
Melville Shoe Corp., New York, N.Y. 780,809, pub. 9–15–64. Multiple Class (Classes 4 and 52).
Manley & James Laboratories, Ltd., Philadelphia, Pa. 780,886, pub. 9–15–64. Cl. 18.
Mennonite Broadcasts, Inc., Harrisonburg, Va. 781,003, pub. 9–15–64. Cl. 36.
Men's Apparel Club of the Carolinas, Inc., d.b.a. The Carolinas Men's Apparel Club, and Carolina Men's and Boys' Apparel Club, Charlotte, N.C. 781,020, pub. 9–15–64. Cl. 38.
Merit House, Inc., New York, N.Y. 781,079–81, pub. 9–15–64. Cl. 45.
Messinger, Abraham, New York, N.Y. 781,049, pub. 9–15–64. Cl. 39.
Meyer Products, Inc., Cleveland, Ohio. 780,953–4, pub. 9–15–64. Cl. 23.
Mid-America Publishing Corp., Kansas City, Mo. 781,010, pub. 9–15–64. Cl. 38.
Midas, Inc., Chicago, Ill. 780,938, pub. 9–15–64. Cl. 23.
Milberg, Jacques R., Riverdale, N.Y. 781,037, pub. 9–15–64. Cl. 39.
Mile-O-Graph, Inc., New York, N.Y. 668,334, canc. Cl. 26.
Miles Laboratories, Inc., Elkhart, Ind. 780,833, pub. 9–15–64. Cl. 6.
Mill Brewery: *See*—
N.V. Phoenix Brorwerij.
Milsco Mfg. Co., Milwaukee, Wis. 780,964, pub. 9–15–64. Cl. 26.
Milton Roy Co., Philadelphia, Pa. 780,967, pub. 9–15–64. Cl. 26.
Mine Ventilation Systems, Inc., Madison, W. Va. 780,992–3, pub. 9–15–64. Cl. 34.
Miner, Alfred B., d.b.a. Hit Distributing Co., Grover City, Calif. 780,804, pub. 9–15–64. Cl. 4.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 780,976, pub. 9–15–64. Cl. 26.
Mission Macaroni Co.: *See*—
Golden Grain Macaroni Co.
Mississippi Federated Cooperatives (AAL), d.b.a. Collinswood, Jackson, Miss. 781,085, pub. 9–15–64. Cl. 46.
Mitsubishi Chemical Industries Ltd., Marunouchi, Chiyoda-ku, Tokyo, Japan. 780,838, pub. 9–15–64. Cl. 10.
Mitsubishi Electric Corp., Chiyoda-ku, Tokyo, Japan. 780,939–40, pub. 9–15–64. Cl. 23.
Mitsubishi Electric Corp., Chiyoda-ku, Tokyo, Japan. 780,977–8, pub. 9–15–64. Cl. 26.
Mitsubishi Electric Corp., Chiyoda-ku, Tokyo, Japan. 780,988–90, pub. 9–15–64. Cl. 34.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 780,813, pub. 9–15–64. Cl. 6.
Model Brassiere Corp., Cortland, N.Y. 668,412–3, canc. Cl. 39.
Mohawk Heat Relief Co., Dayton, Ohio. 668,329, canc. Cl. 26.
Mr. Boston Distiller Inc., Boston, Mass. 781,117, pub. 9–15–64. Cl. 49.
Mr. John, Inc., New York, N.Y. 781,050, pub. 9–15–64. Cl. 39.
Mueller, John, Licorice Co., The, Cincinnati, Ohio. 781,101, pub. 9–15–64. Cl. 46.
Mullen, Thomas W., d.b.a. De Ratter Mouser Co., Evansville, Ind. 668,480, canc. Cl. 50.
Munn and Steele, Inc., Newark, N.J., to California Products Corp., Cambridge, Mass. 409,668, ren. 12–1–64. Cl. 12.
Murdock Mfg. & Supply Co., The, Cincinnati, Ohio. 190,587, ren. 12–1–64. Cl. 13.
Murphy, G. C., Co., McKeesport, Pa. 780,783, pub. 9–15–64. Cl. 1.
Murphy, G. C., Co., McKeesport, Pa. 780,805, pub. 9–15–64. Cl. 4.
N.V. Koninklijke Tabakfabriek, Koffiebranderij en Theehandel J. & A. C. Van Rossem, Rotterdam, Netherlands. 780,870, pub. 1–15–63. Cl. 17.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 781,000–2, pub. 9–15–64. Cl. 36.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 780,999, pub. 9–15–64. Cl. 36.
N.V. Phoenix Brouwerij, d.b.a. Klaver Brouwerij, Mill Brewery, and Klaver Holland Beer Brewery, Amersfoort, Netherlands. 668,476, canc. Cl. 48.
Nalco Chemical Co., Chicago, Ill. 780,820, pub. 9–15–64. Cl. 6.
Name-Maker Corp., New York, N.Y. 687,985, cor. Cl. 37.
Nash-De Camp Co.: *See*—
Sunrise Produce Co.
Nashoba Engineering Corp., West Concord, Mass. 780,932, pub. 3–17–64. Cl. 23.
National Cooperatives, Inc., Albert Lea, Minn. 668,355, canc. Cl. 31.
National Distillers and Chemical Corp.: *See*—
Foster, T., & Co. (Wines & Spirits) Ltd.
National Distillers Products Co.: *See*—
Foster, T., & Co. (Wines & Spirits) Ltd.
National Lead Co., New York, N.Y. 780,826, pub. 9–15–64. Cl. 6.
Neivert, Harry, New York, N.Y. 668,315, canc. Cl. 23.
New American Library of World Literature, Inc., The, New York, N.Y. 781,017, pub. 9–15–64. Cl. 38.
New England Provision Co., Inc., Boston, Mass. 781,094, pub. 9–15–64. Cl. 46.
Nielco Laboratories: *See*—
Nielsen, Claudius.
Nielsen, Claudius, d.b.a. Nielco Laboratories, Detroit, Mich. 668,191, canc. Cl. 6.
Nite Kraft Corp., The, New York, N.Y. 668,400, canc. Cl. 39.
Noramco, Inc., Queens Village, N.Y. 781,100, pub. 9–15–64 Cl. 46.
Norco, Inc., Los Angeles, Calif. 668,357, canc. Cl. 31.
Norcross, Inc., New York, N.Y. 781,018, pub. 9–15–64 Cl. 38.
Norcross, Inc., New York, N.Y. 781,025, pub. 9–15–64. Cl. 38.
North American Plywood Corp., New York, N.Y. 668,203, canc. Cl. 12.
Northeastern Inc., Canton, Ohio. 781,146, pub. 9–15–64. Cl. 101.
Norwalk Powdered Metals, Inc., Norwalk, Conn. 780,858, pub. 9–15–64. Cl. 14.
Nouvelle Plca, Societe, Paris, France. 668,216, canc. Cl. 13.
O.K. Rubber Welders, Inc., Littleton, Colo. 780,995, pub. 9–15–64. Cl. 35.
O.K. Rubber Welders, Inc., Littleton, Colo. 780,998, pub. 9–15–64. Cl. 35.
O.Z. Electrical Mfg. Co., Inc., Brooklyn, N.Y. 780,900, pub. 9–15–64. Cl. 21.
O-Cedar Corp'n, Chicago, Ill., by The Drackett Co., Cincinnati, Ohio. 189,252, 12(c) pub. 12–1–64. Cl. 4.
Odell Co., Inc., The, to The Odell Co., Inc., Newark, N.J. 409,834, ren. 12–1–64. Cl. 52.
Official Films, Inc., New York, N.Y. 781,011, pub. 9–15–64. Cl. 38.
Okonite Co., The, to The Okonite Co., Passaic, N.J. 194,843–4, ren. 12–1–64. Cl. 5.
Ojendorf, F. G., Co., North Kansas City, Mo. 781,006, pub. 9–15–64. Cl. 37.
Omni Products Corp., New York, N.Y. 668,172, canc. Cl. 1.
Orbicon, Ltd., Morris Plains, N.J. 780,922, pub. 9–15–64. Cl. 22.
Ortho Pharmaceutical Corp., Raritan, N.J. 781,072, pub. 9–15–64. Cl. 44.
Ortho Pharmaceutical Corp., Raritan, N.J. 781,073, pub. 9–15–64. Cl. 44.
Owens-Illinois Glass Co., Toledo, Ohio. 780,974, pub. 9–15–64. Cl. 26.

Pacific Petrochemicals, Inc., Santa Fe Springs, Calif. 780,863, pub. 9–15–64. Cl. 15.
Packard Instrument Co., Inc., Lyons, Ill. 780,962, pub. 9–15–64. Cl. 26.
Pacuk, Peter P., Jacksonville, Fla. 780,923, pub. 9–15–64. Cl. 22.
Pak-A-Lite Co., The: *See*—
Leventhal, Leon C.
Parisian Hosiery Mills, Inc., Baltimore, Md. 781,048, pub. 9–15–64. Cl. 39.
Parsons, Chandler R., d.b.a. Parsons Chemical Works, Grand Ledge, Mich. 780,817, pub. 9–15–64. Cl. 6.
Parsons Chemical Works: *See*—
Parsons, Chandler R.
Patterson, R., & Sons Ltd., Glasgow, Scotland. 195,502–3, ren. 12–1–64. Cl. 46.
Payton Products, Inc., Brooklyn, N.Y. 780,931, pub. 9–15–64 Cl. 22.
Peerless Accessories Co., Mount Holly, N.J. 668,485, canc. Cl. 50.
Peerless Carbon Black Co., The, Pittsburgh, Pa., to Columbian Carbon Co., New York, N.Y. 410,341, ren. 12–1–64. Cl. 1.
Penndale, Inc., Lansdale, Pa. 668,472, canc. Cl. 46.
Penton Publishing Co., Cleveland, Ohio. 668,380, canc Cl. 38.
Pepperell Mfg. Co., New York, N.Y. 411,066, ren. 12–1–64 Cl. 42.
Peter Pan Bakers, Inc.: *See*—
Petersen & Pegau Baking Co.
Petersen & Pegau Baking Co., to P. F. Petersen Baking Co., to Peter Pan Bakers, Inc., Omaha, Nebr. 190,771, ren. 12–1–64. Cl. 46.
Petersen, P. F., Baking Co.: *See*—
Petersen & Pegau Baking Co.
Petersen-Rockhill Corp., Seattle, Wash. 780,928, pub. 9–15–64 Cl. 22.
Petrolite Corp., St. Louis, Mo. 780,986, pub. 9–15–64. Cl. 34.
Pharmaceutical Associates: *See*—
Crete, Charles A.
Phipps, Bruce, Leawood, from Phipps Products Co., Kansas City, Kans. 781,084, pub. 9–15–64. Cl. 46.
Phipps Products Co.: *See*—
Phipps, Bruce.
Phone-Recorder Corp.: *See*—
Robosonics, Inc.
Photorapid Corp., The: *See*—
Photorapid Corp.
Photorapid Corp., The Photorapid Corp., Chicago, Ill. 723,446 Am. 7(d). Cl. 6.
Photorapid Corp., The Photorapid Corp., Chicago, Ill. 723,588 Am. 7(d). Cl. 26.
Pinaud, Ed., Inc.: *See*—
Pinaud Inc.
Pinaud Inc., to Ed Pinaud, Inc., New York, N.Y. 409,607 S. ren. 12–1–64. Cl. 52.
Pinaud Inc., to Ed Pinaud, Inc., New York, N.Y. 409,950–1, ren. 12–1–64. Cl. 51.
Pitney-Bowes, Inc., Stamford, Conn. 433,005, 12(c) pub. 12–1–64. Cl. 23.
Pitt, William, Tavern, Inc., d.b.a. The William Pitt, Chatham, N.J. 668,438, canc. Cl. 46.
Pitt, William, The: *See*—
Pitt, William, Tavern, Inc.
Pittsburgh Steel Co., Pittsburgh, Pa. 780,856, pub. 9–15–64 Cl. 13.
Plastic Products Corp., Seattle, Wash. 668,483, canc. Cl. 50.
Plough Chemical Co., d.b.a. Gerstle Medicine Co., to Plough, Inc., Memphis, Tenn. 189,351, ren. 12–1–64. Cl. 18.
Plough, Inc.: *See*—
Plough Chemical Co.
Plus Gas Co. Ltd., London, England. 781,142, pub. 9–15–64 Cl. 52.
Polk Bros., Inc., Chicago, Ill. 668,484 canc. Cl. 50.
Powermotive Parts Corp., Brooklyn, N.Y. 668,325, canc. Cl. 23.
Proctor & Schwartz, Inc., Philadelphia, Pa. 668,136, cor. Cl. 14.
Product Development Corp., Norristown, Pa. 780,943, pub 9–15–64. Cl. 23.
Professional and College Sports Advertising Co., East Cleveland, Ohio. 781,120, pub. 9–15–64. Cl. 50.
Puget Sound Pulp & Timber Co., Georgia-Pacific Corp., Augusta, Ga. 634,250, cor. Cl. 1.
Pullman Inc.: *See*—
Trailer Co. of America, The.
Purchasing Agents Association of Cleveland, Inc., The, Cleveland, Ohio. 781,021, pub. 9–15–64. Cl. 38.
Pure Oil Co., The, Palatine, Ill. 781,013, pub. 9–15–64. Cl. 38.
Puritan Sportswear Corp., The: *See*—
Cohen, Joseph H., & Sons, Inc.
Putman Publishing Co., Chicago, Ill. 781,016, pub. 9–15–64. Cl. 38.
Quinn, K. J., & Co., Inc., Malden, Mass. 410,364–5, 12(c) pub. 12–1–64. Cl. 6.
Radiant Mfg. Corp., Morton Grove, Ill. 780,960, pub. 9–15–64. Cl. 26.
Rainfashions Fifth Avenue Inc., New York, N.Y. 668,396, canc. Cl. 39.
Ratterman, Frances S., d.b.a. Ratterman's Maternity Support, Louisville, Ky. 781,074, pub. 9–15–64. Cl. 44.
Ratterman's Maternity Support: *See*—
Ratterman, Frances S.
Rebel Towing Co., Houston, Tex. 781,147, pub. 9–15–64. Cl. 105.
Renauld of France: *See*—
Botany Industries, Inc.
Rex Research Corp. of Toledo, Ohio: *See*—
Toledo Rex Spray Co., The.
Rex Research Corp., Toledo, Ohio, by Geigy Chemical Corp., Ardsley, N.Y. 249,043, 12(c) pub. 12–1–64. Cl. 6.
Rex Research Corp., Toledo, Ohio, to Geigy Chemical Corp., Ardsley, N.Y. 267,523, 12(c) pub. 12–1–64. Cl. 6.
Rheinbau G.m.b.H., Mainz, Germany. 668,206, canc. Cl. 12.
Rhonyl, Societe, Paris, France. 781,046, pub. 9–15–64. Cl. 39.
Rhovyl, Societe, Paris, France. 781,065, pub. 9–15–64. Cl. 42.
Richardson-Merrell Inc., New York, N.Y. 781,132, pub. 9–15–64. Cl. 51.
Ridge Tool Co., The, Elyria, Ohio. 409,783, ren. 12–1–64. Cl. 23.
Risk, George, Industries, Denver, Colo. 780,913, pub. 9–15–64. Cl. 21.
Riverside & Dan River Cotton Mills, Inc., Danville, Va., and New York, N.Y., by Dan River Mills, Inc., Danville, Va. 409,451. 12(c) pub. 12–1–64. Cl. 39.
Rob Roy Co., Inc., New York, N.Y. 781,059, pub. 9–15–64. Cl. 39.
Robertson Photo Mechanix, Inc., Chicago, Ill. 668,335, canc. Cl. 26.
Robosonics, Inc., Bronx, N.Y., from Phone Recorder Corp., New York, N.Y. 780,898, pub. 9–15–64. Cl. 21.
Robot Marine Products, Inc., St. Albans, Vt. 668,308, canc. Cl. 23.
Robot Salesman, Inc., Indianapolis, Ind. 780,905, pub. 9–15–64. Cl. 21.
Rockford Screw Products Co., Rockford, Ill. 780,855, pub. 9–15–64. Cl. 13.
Rohm & Haas Co., Philadelphia, Pa. 780,821, pub. 9–15–64. Cl. 6.
Rose, W. B., by The Free Methodist Publishing House, Chicago, Ill. 180,874, 12(c) pub. 12–1–64. Cl. 38.
Rosfor Mills Corp., New York, N.Y. 781,149, pub. 9–15–64. Cl. 106.
Rosner, Harold G., d.b.a. Clare, Inc., Minneapolis, Minn. 781,068, pub. 9–15–64. Cl. 44.
Rummonds Bros. Ranch, Thermal, Calif. 781,107, pub. 9–15–64. Cl. 46.
St. Clair Plastics, Inc., Watervliet, N.Y. 668,178, canc. Cl. 2.
St. John & Co., Chicago, Ill. 668,505, canc. Cl. 13.
Salerno-Megowen Biscuit Co., Chicago, Ill. 781,112, pub. 9–15–64. Cl. 46.
Salerno-Megowen Biscuit Co., Chicago, Ill. 781,113, pub. 9–15–64. Cl. 46.
Sazerac Co., Inc., New Orleans, La. 667,187, cor. Cl. 49.
Schaeffer Lace Corp., Reading, Pa. 781,062, pub. 9–15–64. Cl. 40.
Schering Corp., Bloomfield, N.J. 780,889, pub. 9–15–64. Cl. 18.
Schneider, William S., d.b.a. The William Steven Co., Los Angeles, Calif. 668,243, canc. Cl. 18.
Schott, Andrew F., Green Lake, Wis. 780,966, pub. 9–15–64. Cl. 26.
Sea and Ski Co.: *See*—
Botany Industries, Inc.
Sears, Roebuck and Co., Chicago, Ill. 781,047, pub. 9–15–64. Cl. 39.
Seco, Inc., Goodlettsville, Tenn. 780,933, pub. 9–15–64. Cl. 23.
Selger, Harry W., Santa Monica, Calif. 668,431, canc. Cl. 44.
Seindell-Dressler Corp., Pittsburgh, Pa. 781,160. Cl. 34.
Seinsheimer, H. A., Co., The, Cincinnati, Ohio. 409,543, ren. 12–1–64. Cl. 39.
Seneca Falls Machine Co., Seneca Falls, N.Y. 668,311, canc. Cl. 23.
Sexton, John, & Co., Chicago, Ill. 781,104, pub. 9–15–64. Cl. 46.
Seymour of Sycamore, Inc., Sycamore, Ill. 780,867, pub. 9–15–64. Cl. 16.
Sierra Electric Corp., Gardena, Calif. 780,899, pub. 9–15–64. Cl. 21.
Sigma Instruments, Inc., So. Braintree, Mass. 780,909, pub. 9–15–64. Cl. 21.
Snow-Nabstedt Gear Corp., The, Hamden, Conn. 780,949, pub. 9–15–64. Cl. 23.
Southern Coal & Coke Co., Inc., Tazewell, Va. 780,787, pub. 9–15–64. Cl. 1.
Southern Publishing Association of Seventh Day Adventists, Inc., Nashville, Tenn. 781,012, pub. 9–15–64. Cl. 38.
Span Instruments: *See*—
Upjohn, W. John.
Special Products Lab., Chicago, Ill. 780,819, pub. 9–15–64. Cl. 6.
Sperex Corp., Los Angeles, Calif. 780,865, pub. 9–15–64. Cl. 16.
Squires-Sanders, Inc., Plainfield, N.J. 781,157. Cl. 21.
Staley, A. E., Mfg. Co., Decatur, Ill. 668,465, canc. Cl. 46.
Stallings, A. Y.: *See*—
Stallings, Ernest E.
Stallings, Ernest E., and A. Y. Stallings, d.b.a. Dawson Mfg. Co., Enfield, N.C. 188,723, ren. 12–1–64. Cl. 51.
Standard Chemical Products, Inc., Hoboken, N.J. 411,330, ren. 12–1–64. Cl. 6.
Standard Oil Co., The: *See*—
Factory Oil Co., The.
Star Metal Corp., Philadelphia, Pa. 780,957, pub. 9–15–64. Cl. 23.
Stelgner, Hubert C., d.b.a. Engineering Institute, Inc., Philadelphia, Pa. 668,299, canc. Cl. 23.
Sterling Drug Inc., New York, N.Y. 780,891, pub. 9–15–64. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 780,885, pub. 9–15–64. Cl. 18.
Steven, William, Co., The: *See*—
Schneider, William S.
Stockland Road Machinery Co., Minneapolis, Minn., to Wikomi Mfg. Co., Litchfield, Ill. 409,549, ren. 12–1–64. Cl. 23.

Success Chemical Co., Inc., Brooklyn, N.Y. 780,883, pub. 9–15–64. Cl. 18.
Summers Laboratories, Inc., Ambler, Pa. 780,882, pub. 9–15–64. Cl. 18.
Sun Chemical Corp., New York, N.Y. 780,845, pub. 9–15–64. Cl. 11.
Sunrise Produce Co., San Francisco, to Nash-De Camp Co., Visalia, Calif. 412,857, ren. 12–1–64. Cl. 46.
Superior Industries, Van Nuys, Calif. 780,896, pub. 9–15–64. Cl. 19.
Surbrug's Nut Products, Ltd., New York, to Gold Medal Candy Corp., Brooklyn, N.Y. 193,951, ren. 12–1–64. Cl. 46.
Surpass Leather Co., Philadelphia, Pa. 780,793, pub. 9–15–64. Cl. 1.
Sutliff Tobacco Co., San Francisco, Calif. 780,875, pub. 9–15–64. Cl. 17.
Sutton Cosmetics, Inc., New York, N.Y. 392,356, 12(c) pub. 12–1–64. Cl. 51.
Suwannee Food & Baking Co., Jacksonville, Fla. 668,463, canc. Cl. 46.
Swanee Paper Corp.: *See*—
Clearwater Tissue Mills, Inc.
Sweet-Orr & Co. Inc., New York, N.Y. 191,033, ren. 12–1–64. Cl. 39.
Sylvan Plastics, Inc., New York, N.Y., to FMC Corp., Philadelphia, Pa. 409,846, ren. 12–1–64. Cl. 1.
Tallby-Nason Co., Cambridge, Mass., to International Latex Corp., Dover, Del. 409,734, ren. 12–1–64. Cl. 18.
Takeshi Shindo, d.b.a. Grand Prix Records, Los Angeles, Calif. 781,004, pub. 9–15–64. Cl. 36.
Taperprinter, Inc., Beverly Hills, Calif. 780,959, pub. 9–15–64. Cl. 23.
Taterstate Frozen Foods, Washburn, Maine. 781,087, pub. 9–15–64. Cl. 46.
Taylor Instrument Companies, Rochester, N.Y. 668,346, canc. Cl. 26.
Teaneck Chemical Co., Inc., The, Carlstadt, N.J. 780,825, pub. 9–15–64. Cl. 6.
Tek-Hughes: *See*—
Johnson & Johnson.
Terminal Transport Co., Inc., Atlanta, Ga. 781,148, pub. 9–15–64. Cl. 105.
Texaco Inc., New York, N.Y. 780,806, pub. 9–15–64. Multiple Class (Classes 4 and 52).
Texaco Inc., New York, N.Y. 780,824, pub. 9–15–64. Cl. 6.
Texas-U.S. Chemical Co., Port Neches, Tex. 780,782, pub. 9–15–64. Cl. 1.
Thalhimer Bros., Inc., Richmond, Va. 780,982, pub. 9–15–64 Cl. 23.
Thayer, Inc., Gardner, Mass. 668,511, canc. Cl. 32.
Thompson Aircraft Tire Corp., San Francisco, Calif. 668,499, canc. Cl. 103.
Timecraft Watch Co.: *See*—
Cooper, Philip R., and Herbert Cooper.
Tofa, Narodni Podnik, d.b.a. Tofa, National Corp., Semily, Czechoslovakia. 781,118, pub. 9–15–64. Cl. 50.
Tofa, National Corp.: *See*—
Tofa, Narodni Podnik.
Toledo Rex Spray Co., The, by Geigy Chemical Corp., Toledo, Ohio. 127,794, 12(c) pub. 12–1–64. Cl. 6.
Toledo Rex Spray Co., The, to Rex Research Corp. of Toledo, Ohio, by Geigy Chemical Corp., Ardsley, N.Y. 213,664. 12(c) pub. 12–1–64. Cl. 6.
Toledo Rex Spray Co., The, to Rex Research Corp. of Toledo, Ohio, Toledo, Ohio, by Geigy Chemical Corp., Ardsley, N.Y. 218,039. 12(c) pub. 12–1–64. Cl. 6.
Toledo Rex Spray Co., The, Toledo, Ohio, by Geigy Chemical Corp., Ardsley, N.Y. 164,491. 12(c) pub. 12–1–64. Cl. 6.
Trailer Co. of America, The, to Pullman Inc., Cincinnati, Ohio. 412,137, ren. 12–1–64. Cl. 19.
Trimfoot Co., Farmington, Mo. 781,058, pub. 9–15–64. Cl. 39.
Tripoli Co.: *See*—
Tripoli Co. Inc.
Tripoli Co. Inc., d.b.a. Tripoli Co., Philadelphia, Pa. 781,129, pub. 9–15–64. Cl. 51.
Tussy Cosmetics: *See*—
Lehn & Fink Products Corp.
Ulmann, Bernhard, Co. Inc., to Indian Head Mills, Inc., New York, N.Y. 192,448, ren. 12–1–64. Cl. 22.
Unarco Industries, Inc., Chicago, Ill. 780,984, pub. 9–15–64. Cl. 32.
Union Carbide Corp.: *See*—
Electro Metallurgical Co.
Union Carbide Corp., New York, N.Y. 668,196, canc. Cl. 6.
Union Carbide Corp., New York, N.Y. 780,827, pub. 9–15–64. Cl. 6.
Union National Life Insurance Co., Atlanta, Ga. 668,498, canc. Cl. 102.
United Aircraft Corp., from Vector Mfg. Co., Inc., Southampton, Pa. 781,069, pub. 9–15–64. Cl. 44.
United States Plywood Corp., New York, N.Y. 781,127, pub. 9–15–64. Cl. 50.
United States Rubber Co., New York, N.Y. 704,206. Am. 7(d). Cl. 20.
United States Rubber Co., New York, N.Y. 780,997, pub. 9–15–64. Cl. 35.
U.S. Submarine Veterans of World War II, Elmhurst, Ill. 781,024, pub. 9–15–64. Cl. 38.
U.S. Submarine Veterans of World War II, Elmhurst, Ill. 781,152, pub. 9–15–64. Cl. 200.
Universal Mfg. Co., Inc., Bossier City, La. 668,289, canc. Cl. 22.
Upjohn, W. John, d.b.a. Span Instruments, Kalamazoo, Mich. 668,342, canc. Cl. 26.
V & V Companies, Inc., Cleveland, Ohio. 780,945, pub. 9–15–64. Cl. 23.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 780,832, pub. 9–15–64. Cl. 6.
Vector Mfg. Co., Inc.: *See*—
United Aircraft Corp.
Viber Co., Burbank, Calif. 780,937, pub. 9–15–64. Cl. 23.
Victor Mfg. & Gasket Co., Chicago, Ill. 780,996, pub. 9–15–64. Cl. 35.
Villarama Corp., New York, N.Y. 780,849, pub. 9–15–64. Cl. 12.
Visirecord, Inc., Coplague, N.Y. 780,946, pub. 9–15–64. Cl. 23.
Vitacoat Ltd., South Croydon, Surrey, England. 781,138, pub. 9–15–64. Cl. 52.
Walk-Eay Hosiery Co.: *See*—
Lawall, Frederick F.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Warner Press, Inc.: *See*—
Gospel Trumpet Co.
Warwick Chemical Co., West Warwick, R.I., by The Western Petrochemical Corp., Chanute, Kans. 409,018, 12(c) pub. 12–1–64. Cl. 6.
Washington Frosted Foods, Inc., Washington, D.C. 668,469, canc. Cl. 46.
Wax Workers, Inc., Groton, N.Y. 668,232–3, canc. Cl. 15.
Weldon Pajamas, Inc.: *See*—
Lubin-Weeker Co. Inc.
Wellsville Fire Brick Co., Wellsville, Mo. 781,154–5. Cl. 12.
Western Petrochemical Corp., The: *See*—
Warwick Chemical Co.
Weyerhaeuser Co., Tacoma, Wash. 780,792, pub. 9–15–64. Cl. 1.
Whitney, Frances, New York, N.Y. 781,124, pub. 9–15–64. Cl. 50.
Wikomi Mfg. Co.: *See*—
Stockland Road Machinery Co.
Willy, John, Inc., Evanston, Ill. 668,378, canc. Cl. 38.
Wilson & Co., Inc., Chicago, Ill. 781,102, pub. 9–15–64. Cl. 46.
Wilson Sporting Goods Co., River Grove, Ill. 780,924, pub. 9–15–64. Cl. 22.
Wire Rope Lubricating Co., Newark, N.J. 195,235, ren. 12–1–64. Cl. 15.
World Rubber Co., from World Tire Corp. of Detroit, Mich., Dearborn, Mich. 780,994, pub. 3–5–63. Cl. 35.
Wyandotte Chemicals Corp., Wyandotte, Mich. 780,829, pub. 9–15–64. Cl. 6.
York-Shipley, Inc., York, Pa. 668,362, canc. Cl. 34.

U S GOVERNMENT PRINTING OFFICE O—1964

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 8, 1964 Volume 809 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1964

Examiner affirmed	271
Examiner affirmed in part	57
Examiner reversed	105
Total	433

Full Period for Response—a Reminder

Although, under the new examination program, most Office actions carry a shortened statutory period for response, applicants are reminded that the normal period provided in the Rules of Practice applies if no shortened period or time limit is specifically set in the Office action. See Rule 136 and 35 U.S.C. 133.

November 17, 1964. RICHARD A. WAHL,
Acting Superintendent, Patent Examining Corps.

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

1. An authorization letter requesting this service must be filed for *each* application for which this service is desired. The authorization letter may be filed initially upon the filing of a new application or it may be filed for a pending application indicating the serial number of the application. Blanket authorizations for a number of applications in a single authorizing letter will not be accepted.

2. The authorizing letter should indicate the applicant's (or his representative's) deposit account number and the number of copies of cited references desired.

3. All references cited *after* the receipt of the authorizing letter will be mailed, in the quantity indicated, to the addressee of record in the application. References will not be mailed to any other address.

4. All references cited in a single office action will be mailed together, generally within two weeks after the mailing of the action. This mailing will include a copy of the first page of the office action identifying the references and the application.

5. Monthly charges will appear on deposit account billings which will include an additional copy of the first page of the office action indicating the charges incurred. Such charges will be at the current published prices for patents, designs and the reproduction of document pages.

November 9, 1964. C. A. KALK,
Director of Administration.

Discontinuance of Deposit Account Services for Sale of Patent Copies

Effective February 1, 1965, the Patent Office will no longer accept Deposit Account orders for U.S. patent, design, or trademark copies except for the following services: (1) automatic dissemination of cited references announced in the November 24, 1964, issue of the OFFICIAL GAZETTE, (2) class orders, and (3) subscription orders.

Deposit Account holders are advised to use Patent Office coupons for ordering U.S. patent, design, and trademark copies. The Patent Office provides a special address to which patent copy orders in coupon form can be mailed. Only coupon orders for patent copies are accepted at this special address. Coupons for patent orders are designed to enable the address portion of the coupon to serve as the mailing label for the completed order. This advantage in ease of handling is passed on to you in the form of faster service. Customers need only write the number of the patent desired and their name and address (many customers use a rubber stamp) to order a patent copy. The coupons can then be mailed directly to the special patent coupon address without any cover letter.

Coupons are sold in denominations of 10¢ and 25¢ by the Patent Office. The 10¢ coupons are sold in pads of 20 for $2 and books of 100 with stubs for record for $10. The 25¢ coupons are sold in pads of 20 for $5 and in books of 100 with stubs for record for $25. Orders for coupon pads or books may be charged to Deposit Accounts and should be addressed to:

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ONLY COUPON ORDERS FOR U.S. PATENT, DESIGN, OR TRADEMARK COPIES WILL BE ACCEPTED AT THIS ADDRESS.

November 9, 1964. C. A. KALK,
Director of Administration.

New Applications Received During October 1964

Patents	7,287
Designs	453
Plant Patents	15
Reissues	16
Total	7,771

Issue—December 8, 1964

Patents	1047	No. 3,159,843 to No.	3,160,889, incl.
Designs	51	No. 199,725 to No.	199,775, incl.
Reissues	2	No. 25,695 to No.	25,696, incl.
Total	1100		

Classification Data Available in Magnetic Tape

Magnetic tape containing current classification data for a selected group of patents is offered for sale by the Patent Office. Nearly 570,000 patents which presently comprise the below listed classes are recorded in this file. Entries consisting of the patent number and the class and subclass in which these patents are classified "original" are arranged in patent number order. Parties having a possible interest in this tape file are invited to make inquiry concerning it. The terms and cost of obtaining a copy will be furnished on request. As the offering of this file is partially experimental to ascertain public interest, the response will be taken into consideration in determining whether to extend the scope of the file to patents in other fields and to include cross-reference information.

CLASSIFICATION DATA IN MAGNETIC TAPE

Class No.	Title	No. of Patents
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	7,321
18	Plastics	9,583
21	Preserving, Disinfecting and Sterilizing	2,030
23	Chemistry	23,246
29	Metal working	26,429
31	Dairy	1,736
34	Drying and Gas or Vapor Contact With Solids	8,920
44	Fuel and Igniting Devices	3,873
48	Gas, Heating and Illuminating	8,214
51	Abrading	23,733
55	Gas Separation	9,516
62	Refrigeration	20,022
65	Glass Manufacturing	9,089
71	Chemistry, Fertilizers	2,645
75	Metallurgy	14,590
94	Roads and Pavements	5,732
96	Photographic Chemistry, Processes and Materials	5,850
99	Foods and Beverages	22,696
106	Compositions, Coating or Plastics	19,736
117	Coating: Processes and Miscellaneous Products	16,231
118	Coating Apparatus	9,542
127	Sugar, Starch and Carbohydrates	2,420
131	Tobacco	9,108
134	Cleaning and Liquid Contact With Solids	5,204
136	Batteries	8,054
146	Vegetable and Meat Cutters and Comminutors	13,038
148	Metal Treatment	6,194
149	Explosive and Thermic Compositions or Charges	2,318
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	12,835
159	Concentrating Evaporators	2,483
161	Stock Material and Miscellaneous Articles	7,839
162	Paper Making and Fiber Liberation	7,832
167	Medicines, Poisons and Cosmetics	10,782
176	Nuclear Reactions and Systems	925
195	Chemistry, Fermentation	2,818
196	Mineral Oils: Apparatus	1,654
202	Distillation	7,468
204	Chemistry, Electrical and Wave Energy	12,628
208	Mineral Oils: Processes and Products	12,590
209	Classifying, Separating, and Assorting Solids	21,202
210	Liquid Purification or Separation	17,296
233	Centrifugal-Bowel Separators	2,039
252	Compositions	19,351
260	Chemistry, Carbon Compounds	95,832
261	Gas and Liquid Contact Apparatus	12,060
263	Heating	8,896
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	11,450
266	Metallurgical Apparatus	4,455

United States Court of Customs and Patent Appeals Rule 26 and Payment of Printing Costs

Attorneys taking appeals to the United States Court of Customs and Patent Appeals are reminded of the provisions of Rule 26 which relate to the payment of costs for printing the transcript of record.

The rule specifies that the clerk shall cause an estimate to be made of the costs of printing the transcript of record and shall notify the party filing the transcript of the amount of the estimate. It further provides that if he does not pay the amount within thirty (30) days from the date of the clerk's letter, exclusive of Sundays and legal holidays, or any extension thereof granted on motion before the time expires and showing good cause therefor, the appeal may be dismissed.

The court wishes to advise attorneys that due to the increasing number of appeals and the resulting congested calendar, failure to deposit the estimated cost within the time allotted by Rule 26, or such extension provided therein, will result in the appeal being promptly dismissed.

GEORGE E. HUTCHINSON,
Clerk.

November 10, 1964.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Petition to the Commissioner

The following amended rule is adopted. The text of the rule, except in one particular, was published in the Federal Register of July 28, 1964 (29 F.R. 10472) and all persons who desired to were invited to submit written data, views, arguments or suggestions in connection with the proposal. The rule is being adopted after full and careful consideration of all the material submitted. The rule departs from the published text only in changing the time within which a petition may be filed from "within 30 days" from the action complained of to "within 60 days."

This amendment shall take effect January 1, 1965, and shall apply only to Examiner's actions mailed after that date. In all other applications pending on the effective date, the rule prior to amendment shall apply.

Section 1.181 of 37 CFR (Patent Rule 181) is amended by deleting paragraph (f) thereof and replacing it with new paragraph (f) reading as follows:

§ 1.181 *Petition to the Commissioner.*

* * * * *

(f) Except as otherwise provided in these rules, any such petition not filed within sixty days from the action complained of, may be dismissed as untimely. The mere filing of a petition will not stay the period for reply to an Examiner's action which may be running against an application, nor act as a stay of other proceedings.

* * * * *

(Sec. 1, 66 Stat. 793; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

October 28, 1964.

Approved: October 30, 1964.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 64-11500; Filed, Nov. 10, 1964; 8:46 a.m.]

Published in 29 F.R. 15028, Nov. 11, 1964

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate: antacid
Ambuphylline: diuretic—myocardial stimulant
Aminacrine hydrochloride: bacteriostatic agent
Ampyzine sulfate: euphoriant
Anisacril: hypocholesteremic and anoretic agent
Anthelmycin: anthelmintic antibiotic
Benorterone: antiandrogen
Butacetin: analgesic agent
Calcium trisodium pentetate: heavy metal antagonist
Cetalkonium chloride: antibacterial agent
Clometherone: anti-estrogen
Clorethate: sedative and hypnotic
Clothixamide: tranquilizer
Codoxime: antitussive
Dactinomycin: antitumor agent
Diohippuric acid I 131: radiopharmaceutical
Doxepin hydrochloride: antipruritic
Fenclorethate: analgesic and sedative
Furosemide: diuretic
Hydroxyhexamide: hypoglycemic agent
Iprindole: antidepressant
Mequinolate: poultry coccidiostat
Metaproterenol sulfate: bronchodilator
Metoclopramide hydrochloride: antiemetic
Metrogestone: oral progestin
Modaline sulfate: antidepressant
Norboletbone: anabolic agent
Oxamarin hydrochloride: systemic hemostat
Oxolinic acid: antiproteus agent
Perhexiline maleate: coronary vasodilator
Phenyl aminosalicylate: tuberculostatic agent
Piperamide maleate: antiparasitic
Polyoxyl 8 stearate: surface active agent
Polyoxyl 40 stearate: surface active agent
Polysorbate 20: surface active agent
Polysorbate 40: surface active agent
Polysorbate 60: surface active agent
Polysorbate 65: surface active agent
Polysorbate 80: surface active agent
Polysorbate 85: surface active agent
Rolodine: muscle relaxant
Septiphene: disinfectant
Silodrate: antacid
Sodium amylosulfate: peptic ulcer therapy
Sodium etoquinol: treatment of flash burns (ophthalmic)
Sorbitan monolaurate: surface active agent
Sorbitan monooleate: surface active agent
Sorbitan monopalmitate: surface active agent
Sorbitan monostearate: surface active agent
Sorbitan sesquinleate: surface active agent
Sorbitan trioleate: surface active agent
Sorbitan tristearate: surface active agent
Sulfanitran: antibacterial agent
Testolactone: antineoplastic agent
Thiamiprine: anti-lenkemic
Thydromedan: lipid mobilizer and thyromimetic
Triampyzine sulfate: anti-secretory agent

Adjudicated Patents

(C.A. Idaho) Faltelowitz Patent No. 2,119,155 (99—207), for reducing potatoes and other starch containing vegetables to form of dry powder, *Held* not infringed. *Templeton Patents Limited* v. *J. R. Simplot Co.*, 336 F.2d 261; 142 USPQ 428.

(C.A. Idaho) Volpertas Patent No. 2,352,670 (99—207), for art of dried starch bearing food, *Held* not infringed. *Id.*

(C.A. Idaho) Rivoche Patent No. 2,520,891 (99—199), for drying of starchy foodstuffs, *Held* invalid. *Id.*

(C.A. Tex.) Webber Patent No. 2,633,808 (103—225), for well swab, *Held* valid and infringed. *Guiberson Corp.* v. *Webber et al.*, 336 F.2d 461; 142 USPQ 346.

(C.A. Tex.) Webber Patent No. 2,719,768 (92—242), for well tools and sealing means therefor, *Held* invalid. *Id.*

(D.C. Miss.) Duncan and Duncan Patent No. 2,873,722 (119—14.09), for bulk milk tank and washer therefor, *Held* invalid. *Zero Manufacturing Co.* v. *Mississippi Milk Producers Ass'n.*, 232 F. Supp. 720; 141 USPQ 725.

(D.C. Fla.) Jones Patent No. 3,030,671 (20—42), for awning-type windows and locking means therefor. Claims 1 to 3 *Held* invalid. *Jones et al.* v. *Tucker Aluminum Products, Inc.*, 233 F. Supp. 403; 142 USPQ 314.

(D.C. Miss.) Duncan Reissue Patent No. 24,162 (119—14.09), for vacuum container milking system and apparatus therefor, *Held* invalid. *Zero Mfg. Co.* v. *Mississippi Milk Producers Ass'n.*, 232 F. Supp. 720; 141 USPQ 725.

Patents Available for Licensing

In accordance with the provision of 10 C.F.R. §§ 81.10–81.12, the U.S. Atomic Energy Commission is prepared to grant nonexclusive, revocably, royalty-free licenses under the following patents.

Applications for licenses should be addressed to the Assistant General Counsel for Patents, U.S. Atomic Energy Commission, Washington, D.C. 20545, indicating the State of incorporation, if a business firm, or citizenship, if an individual.

3,143,478.	8–4–64.	High Flux Beam Reactor.
3,144,200.	8–11–64.	Process and Device for Cryogenic Adsorption Pumping.
3,144,393.	8–11–64.	Subcooled Liquid Inlet Fog Cooled Nuclear Reactor.
3,145,078.	8–18–64.	Method of Reprocessing Nuclear Fuel Elements.
3,145,151.	8–18–64.	Fuel Assembly for Low Power Reactors.
3,145,182.	8–18–64.	Method for Improving Hydrolysis Resistance of Uranium Carbide Containing Composition.
3,145,284.	8–18–64.	Superconductive Electric Switch.
3,145,333.	8–18–64.	Force Limiting Device for Motor Control.
3,145,956.	8–25–64.	Parachute Deployment Control Assembly.
3,146,064.	8–25–64.	Decontamination of Uranium.
3,146,173.	8–25–64.	Fuel Element.
3,146,281.	8–25–64.	Production of Round Particles of Ceramic Material.
3,146,349.	8–25–64.	Detecting Hidden Explosives Using Neutron Beams.
3,146,622.	9–1–64.	Atmospheric Eddy Disturbance Detector.
3,147,088.	9–1–64.	Uranium-Tin-Zirconium Corrosion Resistant Alloy.
3,147,109.	9–1–64.	Separation of Plutonium, Uranium, Americium and Fission Products From Each Other.
3,147,396.	9–1–64.	Method and Apparatus for Phasing a Linear Accelerator.
3,148,941.	9–15–64.	Dissolution of Uranium-Molybdenum Reactor Fuel Elements.
3,148,989.	9–15–64.	Decontamination of Milk From Radioactive Anionic Ingredients.
3,149,043.	9–15–64.	Nuclear Reactor.
3,149,044.	9–15–64.	Advanced Test Reactor.
3,149,047.	9–15–64.	Resilient Moderator Structure for Neutronic Reactors.
3,149,611.	9–22–64.	Animal Watering Nipple and Bottle Cap Combination.
3,149,908.	9–22–64.	Oxychlorides of Pentavalent Neptunium.
3,149,909.	9–22–64.	Fluidized Solids Process for Recovery of Uranium From Zirconium-Type Fuel Elements.
3,149,966.	9–22–64.	Oxidation Resistant Cerium Alloys.
3,149,968.	9–22–64.	Apparatus for Correcting Sensitivity Variations in Photomultiplier Tubes.
3,150,051.	9–22–64.	Packaged Nuclear Plant With Integral Superheater and Pressurizer.
3,150,053.	9–22–64.	Steam-Water Mixing Device for Steam-Cooled Reactor.

3,150,054.	9–22–64.	High Fluid Flow Rate Nuclear Reactor.
3,150,055.	9–22–64.	Reactor.
3,150,057.	9–22–64.	Fuel Subassembly for Nuclear Reactor.
3,150,101.	9–22–64.	Ion Exchange Resin With Scintillating Properties.
3,150,159.	9–22–64.	Removal of Hydrocarbon Degradation Products From Organic Solutions.
3,150,281.	9–22–64.	Class of High Ultraviolet Transmittance, Method, and Articles Manufactured Therefrom.
3,150,291.	9–22–64.	Incremental Electrical Method and Apparatus for Energizing High Current Superconducting Electromagnets.
3,150,924.	9–29–64.	Pretreatment of Uranium Dioxide To Promote Its Conversion to Uranium Tetrafluoride.
3,150,936.	9–29–64.	Tungsten Tubing Extrusion Billet.
3,150,964.	9–29–64.	Purification of Yttrium Metal.
3,151,029.	9–29–64.	Core Assembly for a Nuclear Reactor.
3,151,034.	9–29–64.	Consolidated Nuclear Steam Generator Arrangement.

Erratum

In the OFFICIAL GAZETTE, issue of Dec. 1, 1964, p. 3, under the heading "Disclaimers," lines 2 and 3 of disclaimer 2,893,261, strike out "Disclaimer filed Aug. 26, 1959."

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7–11–62	5– 4–56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11–30–62	6– 1–54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g., Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2– 5–63	12– 5–55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8– 1–62	2–26–60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation, Special Utility; Molding Processes.	9–18–62	3–11–57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation, Adhesive Bonding; Special Manufactures.	7–16–62	4– 9–56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus, Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9– 6–62	9–24–57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12– 6–62	8– 1–60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10– 5–62	1–28–54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordinance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12–18–62	7–17–58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	10–19–62	6–13–58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7– 5–62	4– 5–56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10– 1–62	5–18–55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9–12–62	1– 2–59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	12– 6–62	11–22–57

Total number of pending applications (excluding Designs)	210,072
Total number of Design applications pending	5,779
Total number of applications awaiting action (excluding Designs)	136,426
Total number of Design applications awaiting action	2,506
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,431,670 to 2,433,823, inclusive

Plant Patents ..... Numbers 768 to 773, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-25-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE BERNARD L. ZENITZ

No. 7142. Decided July 9, 1964.

[51 CCPA —; 333 F.2d 924; 142 USPQ 158]

1. PATENTABILITY—REFERENCES—COPENDING PATENT EFFECTIVE AS OF FILING DATE EVEN IN COMBINATION WITH OTHER REFERENCES.

In response to the contention of appellant, Zenitz, that three cited patents were not available as references for an obviousness rejection under 35 U.S.C. 103 because they issued on applications which, although filed earlier than his, were copending therewith, *Held*, again, that a United States patent speaks for all it discloses as of its filing date, even when used in combination with other references, and that the "question is not what prior art Zenitz was *aware of* at the time he made his invention, but whether his invention would be obvious in view of the *state of the art at the time it was made*."

2. SAME—COMPOUNDS—OBVIOUSNESS—UNDISCLOSED PROPERTIES.

"The present facts are to be distinguished from those in the several cases cited by the Solicitor to support the contention that appellant is not in a favorable position to urge undisclosed properties as a ground for establishing unobviousness. • • • Here, Zenitz disclosed a tranquilizer and subsequently established that if it is used as a tranquilizer it is a better one for it minimizes the side effects of hypotensive activity. Therefore we think the latter property must be considered in determining the patentability of the claimed compound."

3. SAME—PARTICULAR SUBJECT MATTER—DERIVATIVES OF TRIFLUOROMETHYL PHENOTHIAZINES.

The decision of the Board of Appeals refusing seven claims to derivatives of trifluoromethyl phenothiazines, as unpatentable over the prior art, is reversed as to four claims and affirmed as to the other three.

APPEAL from the Patent Office. Serial No. 746,615.

MODIFIED.

Laurence and Laurence (*Dean Laurence, Herbert I. Sherman*, of counsel) for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

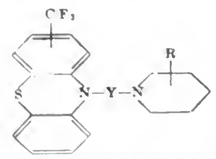
Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Zenitz appeals from the affirmance by the Board of Appeals of the rejection of claims 3, 5, 9 through 12 and 21 of his patent application.[1]

The appellant deals with chemical compounds described as 10-piperidinoalkylene derivatives of trifluoromethyl phenothiazines which are said to be useful as "hypotensive agents, antinauseants, antipyretics and sedatives." Claim 3 reads:

3. A pharmacologically acceptable acid-addition salt of a compound having the formula



wherein Y represents lower-alkylene containing at least two carbon atoms separating the nitrogen atoms and R represents hydroxy-lower-alkyl.

[1] Serial No. 746,615, filed July 7, 1958.

The references are:

Ullyot, 2,921,069, January 12, 1960 (filed April 9, 1956).
Cusic et al., 2,926,164, February 23, 1960 (filed August 1, 1956).
Gulesich et al., 2,928,767, March 15, 1960 (filed July 17, 1957).
Belgian Patent, 551,400, March 29, 1957.
Craig et al., J. Org. Chem., vol. 22, pages 709–11 (June 1957).

Cusic, the primary reference, discloses compounds identical to those claimed except for a chloro (Cl) substituent in place of the trifluoromethyl (CF_3) substituent in the claimed compounds. The secondary references establish that prior to the filing date of Zenitz's application the art was fully aware of the substitution of Cl and CF_3 potentiating groups in phenothiazines analogous to those now claimed by Zenitz.

The Examiner held, and the Board agreed, that the substitution of CF_3 for Cl in the phenothiazines disclosed by Cusic, would be obvious to one of ordinary skill in the art.

Zenitz contends that the Cusic, Gulesich and Ullyot patents are not available as references for an obviousness rejection under section 103 because they issued on applications which, although filed earlier than his, were copending therewith. Zenitz maintains that he could not have been aware of the Cusic or Gulesich disclosures at the time he filed his application.

[1] This court has held in a number of decisions that a United States patent speaks for all it discloses as of its filing date, even when used in combination with other references. *In re Kander*, 50 CCPA 928, 312 F.2d 834, 136 USPQ 477; *In re Gregg*, 44 CCPA 904, 244 F.2d 316, 113 USPQ 526; *In re Seid*, 34 CCPA 1039, 161 F.2d 229, 73 USPQ 431.

In re Harry, 51 CCPA —, — F.2d —, — USPQ —, decided concurrently herewith, holds that 35 U.S.C. 103 is in pari materia with 35 U.S.C. 102(e) and points out that the latter section was intended to enact the rule of *Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390, wherein the court said:

> • • • The delays of the Patent Office ought not to cut down the effect of what has been done. The description shows that Whitford was not the first inventor. Clifford had done all that he could do to make his description public. He had taken steps that would make it public as soon as the Patent Office did its work, although, of course, amendments might be required of him before the end could be reached. We see no reason in the words or policy of the law for allowing Whitford to profit by the delay and make himself out to be the first inventor when he was not so in fact, when Clifford had shown knowledge inconsistent with the allowance of Whitford's claim. • • •

Although in *Milburn*, Clifford disclosed the same invention claimed by Whitford, the criterion was that Clifford had shown knowledge inconsistent with the allowance of Whitford's claim. That such knowledge need not be limited to a disclosure of the *identical invention* is shown by a later decision of the Supreme Court, *Detrola Corp.* v. *Hazeltine Corp.*, 313 U.S. 259, 269 (1941) wherein the Court states:

> We conclude that Wheeler accomplished an old result by a combination of means which, singly or in similar combination, were disclosed by the prior art and that, notwithstading the fact he was ignorant of the pending applications which antedated his claimed date of invention and eventuated into patents, he was not in fact the first inventor, since his advance over the prior art, if any, required only the exercise of the skill of the art.

The question is not what prior art Zenitz was *aware of* at the time he made his invention, but whether his invention would be obvious in view of the *state of the art at the time it was made*.

We therefore proceed to the question whether the differences between Zenitz's invention and the state of the art at the time the invention was made, here assumed to be Zenitz's filing date, are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains.

Zenitz submitted affidavits by Wylie and by Luduena to show that his compounds have unexpected properties. The affidavits compare the tranquilizing activity and hypotensive effect of hydroxy and hydroxypropyl piperidyl propyl *trifluoromethyl* phenothiazine derivatives of Zenitz with the corresponding *chloro* compounds of Cusic. The Examiner allowed Zenitz's claims to the hydroxy but not to the hydroxy propyl derivatives. Claims 3, 9, 10 and 11 on appeal are drawn to those hydroxy propyl derivatives. Claims 5, 12 and 21, however, are drawn to compounds having an acyloxy-lower-alkyl substituent, e.g. an acetate. As to the latter compounds the Examiner said:

> • • • Note also that appellant has not compared the instant compounds against those of Cusic et al. shown to have *particularly good* tranquilizing activity, viz. the acetates • • •.

As to those compounds which have been compared, the Luduena affidavit confirms the following conclusion of Wylie:

> Moreover, I have noted that not only are the trifluoromethyl compounds considerably more active as tranquilizers and sedatives than the corresponding chloro and unsubstituted compounds as shown above but also show considerably less undesirable side effects, such as a hypotensive effect, making them superior with respect to decreased side effects than either the corresponding chloro compounds or the unsubstituted compounds. A hypotensive effect alone is useful in compounds that are to be used specifically to lower the blood pressure, but when this property is also possessed by compounds used as tranquilizers or sedatives, it is regarded as a serious side-effect which can cause other side-effects such as dizziness or blurring of vision. Its minimization or complete elimination in compounds to be used as sedatives and tranquilizers is, therefore, to be desired.

The Examiner considered the affidavits and said:

> • • • Patentability has been consistently urged during prosecution upon this newly introduced "surprising separation of hypotensive and tranquilizing properties" which was not disclosed in the specification as filed. The specification at page 21 merely indicates that results indicate their use as *hypotensive agents*, antinauseants, antipyretics and sedatives. • • •

Since the separation of hypotensive from tranquilizing effect was not originally disclosed, the Examiner, citing *In re Stewart*, 42 CCPA 937, 222 F.2d 747, 106 USPQ 115, held that Zenitz could not now rely on that effect as a ground for establishing unobviousness. The Board agreed.

A case much in point is *Westmoreland Specialty Co.* v. *Hogan*, 167 Fed. Rep. 327, CCA 3 (1909). The patent there involved a celluloid top for a dredge for holding salt. The patentee discovered subsequent to the issuance of his patent that the celluloid top had the advantage that it did not conduct moisture from the atmosphere to the salt in the cellar. The court said:

> • • • It is true that at the time this patent was applied for the particular process of moisture supply from a metal cap and the insulating capacity of celluloid to stop it were not stated, or, indeed, known to the patentee. He knew metal caps would oxidize, and substituted celluloid to stop oxidation, and such use

has shown that the stoppage of oxidation resulted in keeping the salt dry. But the mere failure of a patentee to realize all the benefits and possibilities of his invention is not fatal. The after-discovery of unsuspected usefulness in a disclosed apparatus, far from detracting from its value, may serve to enhance it. It is the benefits which test, use, and time unfold that really determine merit. * * *

In the case before us Zenitz disclosed his compounds to be useful as tranquilizers as well as hypotensives, sedatives, etc. It is true he made no mention of the separation of hypotensive and tranquilizing activity, but as with the celluloid top in *Westmoreland*, the advantage of minimized hypotensive activity would inherently flow from the indicated use of the compounds as tranquilizers.

[2] The present facts are to be distinguished from those in the several cases cited by the Solicitor [2] to support the contention that appellant is not in a favorable position to urge undisclosed properties as a ground for establishing unobviousness. One of those cases, *In re Herr*, 50 CCPA 705, 304 F.2d 907, 134 USPQ 176, involved certain testosterone derivatives. The affidavit presented evidence of oral anabolic and androgenic activity. The specification was devoid, however, of any mention of such activity for the compounds and the sole utility disclosed in Herr's specification was that the compounds were useful intermediates in the making of other compounds which had anabolic and androgenic activity. It is readily seen that if the disclosure of Herr was followed the compounds would be used as intermediates and no benefit from their anabolic and androgenic activity would flow from such use. Here, Zenitz disclosed a tranquilizer and subsequently established that if it is used as a tranquilizer it is a better one for it minimizes the side effects of hypotensive activity. Therefore we think the latter property must be considered in determining the patentability of the claimed compound.

We find the affidavits establish unobviousness as to the hydroxypropyl derivatives and the corresponding hydroxy-ethyl and hydroxy-lower-alkyl derivatives. Therefore, we are obliged to reverse as to claims 3, 9, 10 and 11.

As to compounds having acyloxy-lower-alkyl, none of which have been compared, we are unable to find support in the record for concluding that proof of unobviousness of the compounds having hydroxy alkyl substituents establishes that the corresponding compounds wherein the hydroxy alkyl substituents are esterified, are also unobvious.[3] We therefore affirm the rejection of claims 5, 12 and 21 as being obvious from the corresponding compounds of Cusic in view of the secondary references showing that Cl and CF_3 are commonly employed potentiating groups on compounds of the type here claimed.

[3] The rejection of claims 3, 9, 10 and 11 is reversed.

The rejection of claims 5, 12 and 21 is affirmed.

MODIFIED.

[2] *In re Milton E. Herr*, 50 CCPA 705, 304 F.2d 907, 134 USPQ 176; *In re Lundberg*, 45 CCPA 838, 253 F.2d 244, 117 USPQ 190; *In re Crawford*, 45 CCPA 750, 250 F.2d 370, 116 USPQ 149; *In re Rossi*, 44 CCPA 750, 241 F.2d 726, 112 USPQ 479; *In re Stewart*, 42 CCPA 937, 222 F.2d 747, 106 USPQ 115; *In re Dalzell et al.*, 35 CCPA 1024, 166 F.2d 834, 77 USPQ 164; *Abbott et al. v. Coe*, 711 App. D.C. 195, 109 F.2d 449.

[3] Unfortunately Zenitz's brief does not help any. The entire discussion of the actual facts before us is relegated to the following paragraph:

The Subject Matter Involved

The structure of the compounds on appeal can be seen from the claims on appeal * * *. Their relationship to the references is described in the Examiner's answer * * *. No further chemical details are here offered because they are unnecessary to decide any issue in this case.

U.S. Court of Customs and Patent Appeals

BENDIX AVIATION CORP. v. ARDOR MANUFACTURING CO., INC.

No. 7134. Decided May 21, 1964

[51 CCPA —; 331 F.2d 903; 141 USPQ 572]

1. TRADEMARK—CONFUSING SIMILARITY "BENDIT" FOR ALUMINUM WIRE BENDING HAND TOOLS AND "BENDIX" FOR ELECTRICAL AND IGNITION SYSTEM MAINTENANCE HAND TOOLS.

On the issue of confusing similarity between applicant's mark "BENDIT" for aluminum wire bending hand tools and opposer's registered mark "BENDIX" for electrical and ignition system maintenance hand tools including clinching and crimping tools suitable for bending metal, the court finding that the use of opposer-appellant's tools resulted from acquisition through distributors of specialized equipment manufactured by opposed for use by technically trained individuals as compared with appellee's tool which is a "simple gadget" for distribution through "normal retail outlets," *Held* that "* * * we agree with the Board that 'Considering * * * the nature of and the differences between the hand tools of the parties and the highly suggestive nature of the mark 'BENDIT,' it is unlikely that purchasers familiar with 'BENDIX' * * * tools will assume that applicant's product originates with or is in some way associated with opposer'" that "'BENDIX' is a very well known trademark, originally a proper name, and does not, we think, suggest bending"; and that 'BENDIT,' on the other hand, as used is highly suggestive of a bending tool and has an entirely different connotation, not suggestive of connection with Bendix products."

APPEAL from the Patent Office. Opposition No. 39,586.

AFFIRMED.

Emory C. Nalyor for appellant.

William T. Sevald for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Trademark Trial and Appeal Board dismissing an opposition to the registration of "BENDIT" for "hand tools for bending or shaping aluminum wire into hooks," application Serial No. 59,591, filed September 26, 1958.

Opposer is Bendix Aviation Corporation [1] which, under the trademark "Bendix," manufactures and sells, inter alia, hand tools for servicing and maintaining equipment such as electrical and ignition systems. The tools include clinching pliers, crimping tools, wrenches and the like all of which are suitable for use to bend and shape metal.

Appellee's "BENDIT" tool, characterized by the Board as "designed * * * for the ever-popular 'do-it-yourselfer,'" is simply a short metal rod the ends of which are groved and pronged to permit hand-shaping of aluminum wire pieces into hooks for pegboards.

The opposition is based on opposer's registration of "Bendix," Reg. No. 662,208, for various testing and indicating equipment including "tools and devices * * * for testing and analyzing electrical systems and components thereof * * *."

Appellee relies on its application as filed, taking no testimony below and filing no brief in this court. Opposer took testimony, introduced as evidence various exhibits illustrating its tools as advertised and sold, and submitted a dealer's promotional circular describing appellee's tool.

[1] Opposer's corporate name was changed to Bendix Corporation on May 25, 1960.

The Board considered the sole issue to be "determination * * * of likelihood of confusion" and said:

> There is no question but that as opposed alleges the goods of both parties may be considered as hand tools and may broadly be construed to perform a similar function. As the record shows, however, opposer's hand tools are designed for use in servicing, maintaining, and installing specialized equipment manufactured by opposed such as Diesel fuel injection pumps and nozzle holders, jet ignition systems testers, ignition systems used on reciprocating type engines, and other highly technical equipment which would ordinarily be sold through distributors of this type of equipment for use by technically trained individuals. Applicant's hand tool, however, is a simple gadget which is apparently designed like many other similar products for the ever-popular "do-it-yourselfer" and for distribution through the normal retail outlets for such type products.
>
> Considering therefore the *nature of and the difference between* the hand tools of the parties and the *highly suggestive nature* of the mark "BENDIT," it is unlikely that purchasers familiar with "BENDIX" technical equipment and tools will assume that applicant's product originates with or is in some way associated with opposer.

On reconsideration the Board added:

> Upon a review of the record in this proceeding, the Board remains of the opinion that the sale of the products of the parties under the *surname* "BENDIX" and the *suggestive term* "BENDIT," respectively, is not likely to cause purchasers to attribute to common origin thereto. [Emphasis ours.]

We find no clear error in the Board's unanimous decision and for reasons set out below appellant has not convinced us there is any.

Appellant's principal argument appears to be that in determining likelihood of confusion the Board erred in characterizing opposer's tools as "specialized" vis-a-vis the simple wire-bending tool of appellee; that in fact one of opposer's tools, a physical exhibit in evidence, "discloses more points of similarity than any points of dissimilarity." We note from the testimony and exhibits that opposer's tool in question is a "spring tension adjusting tool" and, although it is in some respects similar in appearance to appellee's tool, it does not appear to be intended for use as a wire or metal bending tool. With respect to appellant's other tools, we agree with the Board that their use results from acquisition "through distributors of this type of equipment for use by technically trained individuals" as compared with appellee's tool which is a "simple gadget" for distribution through "normal retail outlets."

Appellant further argues that the marks consist "of a six-lettered word, differing only in the last letters, in the one case ending in the letter (t) while in the other case, the letter is an (x)," and that not only are the marks similar in appearance but they are also "similar in sound in the spoken word." Appellant also points out that some of their tools are used to service "reciprocating type engines" in "lawn mowers, outboard motors and stationary engines" which service may be performed not only by technically trained personnel but by persons characterized by the Board as "do-it-yourselfers," who use the "BENDIT" tool.

[1] Notwithstanding appellant's arguments, we agree with the Board that "Considering * * * the nature of and the differences between the hand tools of the parties and the highly suggestive nature of the mark "BENDIT," it is unlikely that purchasers familiar with "BENDIX" * * * tools will assume that applicant's product originates with or is in some way associated with opposer."

"BENDIX" is a very well known trademark, originally a proper name, and does not, we think, suggest bending. "BENDIT," on the other hand, as used is highly suggestive of a bending tool and has an entirely different connotation, not suggestive of connection with Bendix products. See *In re General Electric Co.*, 49 CCPA 1186, 304 F.2d 688, 134 USPQ 190 ("*Vulcan*" v. "*Vulkene*"), and *Lever Bros. Co.* v. *Producers Chemical Service*, 48 CCPA 744, 283 F.2d 879, 128 USPQ 7 ("*Lux*" v. "*Shux*").

The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, sat but did not participate in decision.

U.S. Court of Customs and Patent Appeals

IN RE NOEL F. ALBERTSON

No. 7187. Decided May 21, 1964

[51 CCPA —; 332 F.2d 379; 141 USPQ 730]

1. PATENTABILITY—PROCESS—REDUCTION OF NOVEL SUBSTANCE HAVING CHARACTERISTIC REDUCIBLE GROUP WITH STANDARD REDUCING AGENT THEREFORE OBVIOUS—35 U.S.C. 103.

"We find no error in the holding below that it would be obvious to reduce the compounds in the manner claimed. It appears that appellant's characterization of the process as 'preparing X by reacting A with B' does not accurately portray the process claimed because it implies greater differences than actually exist. We must consider 'the differences between the subject matter sought to be patented and the prior art' under 35 U.S.C. 103. Using appellant's symbols, B is simply a well known reducing agent which will reduce any compound having the characteristic reducible group, and X is simply reduced A. The change that takes place by reduction has not been shown to be unexpectedly great. In both the prior art and here, the lithium aluminum halide reduces the keto group to hydrocarbon. Even though no one ever produced A before, we are not satisfied that it is unobvious to reduce A with a standard reducing agent to produce reduced A. No reaction conditions are recited in the claims. No manipulative steps are claimed other than what is embodied in the word 'reacting,' which is used in all of the claims. The results obtained by reacting with alkali metal aluminum hydride are entirely expected and obvious. Only the predicted reduction takes place."

2. SAME—CLAIMS—EACH STATUTORY CLASS OF CLAIMS CONSIDERED INDEPENDENTLY ON ITS OWN MERITS—PRODUCT AND PROCESS CLAIMS.

"We are of the opinion that each statutory class of claims should be considered independently on its own merits." * * * The fact that the starting materials and the final product are the subject matter of allowed claims does not necessarily indicate that the process employed is patentable."

3. SAME—PROCESS—PATENTABILITY OF A STARTING MATERIAL DOES NOT RENDER PROCESS UNOBVIOUS.

"We do not agree with appellant's proposition that the 'use of an unobvious starting material renders a process unobvious.' Were this true, every step, for example, dissolving or heating, when performed on a new compound would result in a patentable process. We reiterate that all of the evidence must be considered on the 'subject matter as a whole,' from the viewpoint of one skilled in the art, in the determination of obviousness, and not simply the patentability of one of the starting reactants in a process."

4. SAME—PARTICULAR SUBJECT MATTER—1-[(3-, 2-, AND 1-INDOLYL)-LOWER ALKYL]-TERTIARY AMINES AND INTERMEDIATES AND PROCESSES THEREFOR.

The decision of the Board of Appeals, refusing certain process claims in an application entitled 1-[(3-, 2-, and 1-Indolyl)-Lower Alkyl]-Tertiary Amines and Intermediates and Processes Therefor, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 21,106.

AFFIRMED.

Laurence and Laurence (*Dean Laurence*, *Herbert I. Sherman*, of counsel) for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals in which thirteen of the claims in appellant's patent application [1] were refused.

The specification states:

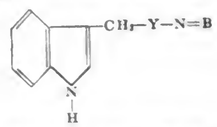
This invention relates to new 1-[(3-indolyl)-lower-alkyl] tertiary amines, 1-[(2-indolyl)-lower-alkyl] tertiary amines, 1-[(1-indolyl)-lower-alkyl] tertiary amines, their acid-addition salts and to intermediates and processes for the preparation thereof.

The present invention resides in the concept of attaching to the 1-, 2- or 3-positions of indole through an unsubstituted lower-alkylene bridge interposing from three to six carbon atoms certain 1-(azacycloalkanyl) groups or a 1-(4-phenyl-azacycloheptanyl), 3-(3-azabicyclo[3.2.] heptanyl) or 3-(1,8,8-trimethyl-3-azabicyclo[3.2.1] octanyl) group.

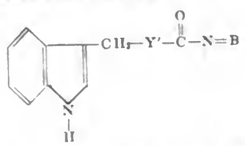
Compound claims were allowed by the Examiner, the issue on appeal being limited to whether the claims drawn to the process of preparing certain compounds are patentable.

Representative of the appealed claims is claim 24:

The process for preparing a compound of formula



where Y represents lower-alkylene of two to seven carbon atoms and interposing from two to five carbon atoms between the indolyl-methyl group and the nitrogen atom of the group N=B, and N=B represents a member of the group consisting of 1-(azacyclo-alkanyl) of seven to nine ring atoms, 1-(4-phenyl-azacyclo-heptanyl), 3-(3-azabicyclo[3.2.0] heptanyl) and 3-(1,8,8-trimethyl-3-azabicyclo [3.2.1] octanyl) which comprises reacting with an alkali metal aluminum hydride a compound of [sic] having the formula



where Y' represents lower-alkylene of two to six carbon atoms and N=B has the meaning given above.

In essence, the process involves reducing certain of the compounds of allowed claims with alkali metal aluminum hydride to produce other compounds, also claimed in the allowed claims.

The Board of Appeals affirmed the rejection predicated on the following references:

Speeter, 2,804,462, August 27, 1957.

Rice—Journal of Organic Chemistry, Volume 24, pages 1520 to 1523 (1959).

Rice et al.—Journal of American Chemical Society, Volume 75, pages 4911 to 4915 (1953).

[1] Serial No. 21,106, filed April 11, 1960 for 1-[(3-, 2-, and 1-Indolyl)-Lower Alkyl]-Tertiary Amines and Intermediates and Processes Therefor.

The Speeter reference discloses a process for producing (5-benzyloxy-3-indole) alkyl amines by reduction using, inter alia, lithium aluminum hydride.

The Rice article discusses the preparation of azabicycloalkane compounds from the corresponding dione compounds by reduction using lithium aluminum hydride.

The Rice et al. publication also shows the reduction of azobicyclodione compounds with lithium aluminum hydride.

The references need not be discussed in detail because they relate to considerably different compounds and are relied on only because each one shows the process step of reduction with lithium aluminum hydride as the reducing agent.

The Board said:

As both appellant and the Examiner explain, the processes of the references do not produce the same compounds or result immediately from the same starting materials involved in appellant's claimed process. The described relationship between appellant's reaction products and those of the references is such that on a purely process basis the processes claimed would be directly obvious from the references to a chemist of ordinary skill. Indeed, the reactions involved in the claimed process involve the activities of the same radicals as those of the prior art reactions, as appellant's counsel conceded at the hearing of this appeal.

The claimed and reference process involve analogous reactions of a conventional type.

The opinion of the Board discusses at some length the decision of this court in *In re Larsen*, 49 CCPA 711, 292 F.2d 531, 130 USPQ 209. The Board pointed out that the allowed claims were not considered, stating:

We have considered only the claims to the process and our consideration extended to a determination of their "obviousness," under 35 U.S.C. 103, on a purely process basis. The claims to the "intermediates" were allowed by the Examiner and are excluded from our consideration.

Appellant contends that all prior adverse cases, including *In re Larsen*, supra, can be distinguished on the ground that here an unobvious starting material is reacted to make an unobvious product.

Appellant's brief states:

The prior cases to be distinguished are *In re Larsen*, 49 CCPA 711, 130 USPQ 209; *In re Ross et al.*, 49 CCPA 1276, 134 USPQ 320; and *In re Surrey et al.*, 50 CCPA —, 138 USPQ 67. In each of those cases, as well as the instant case, the process claimed could be considered as "the process for preparing X by reacting A with B," and the prior art references show the "type" or general reaction applied to different materials.

In none of the prior cases, according to appellant, were both "A" and "X" in the quoted example shown to be unobvious. Here some of the allowed claims are drawn to "A" and others are drawn to "X."

Appellant urges us to follow *In re Cavallito et al.*, 49 CCPA 1335, 306 F.2d 505, 134 USPQ 370, where the Board was reversed. The analogy is drawn in the following manner by appellant:

Thus, as in *Cavallito*, we have a case where a reference, originally cited against both process and product claims, is held not to suggest the product and therefore could not lead one of ordinary skill in the art to utilize the starting materials disclosed in appellant's process to make appellant's novel final product. The other references cited in the instant case, Speeter and Rice et al. (I) are even less pertinent than the overcome Rice reference, as shown by the fact they were never even cited against any product claim * * *.

It is appellant's view that the specific reactants in a process "are a vital, significant part of any process," and therefore the "use of an unobvious starting material renders a process unobvious." The proc-

ess here claimed, appellant contends, is an unobvious species of the generic "type reaction" known to the art.

The Solicitor points out that the prior art patent to Speeter "discloses the same reductive step applied to indolyl alkyl tertiary amines which, as pointed out by the Examiner * * *, differ from the tertiary amines of the appealed claims with respect to two groups in a manner that does not affect or interfere with the reduction reaction. This, appellant has neither challenged nor denied."

It is the Solicitor's contention that "the reaction mechanism involved" is identical with that of the prior art, the materials reduced are "analogous materials to those reacted upon in the prior art" and, since a process is claimed, "it is entirely irrelevant as to whether the starting materials are or are not novel or patentable."

[1] We find no error in the holding below that it would be obvious to reduce the compounds in the manner claimed. It appears that appellant's characterization of the process as "preparing X by reacting A with B" does not accurately portray the process claimed because it implies greater differences than actually exist. We must consider "the differences between the subject matter sought to be patented and the prior art" under 35 U.S.C. 103. Using appellant's symbols, B is simply a well known reducing agent which will reduce any compound having the characteristic reducible group, and X is simply reduced A. The change that takes place by reduction has not been shown to be unexpectedly great. In both the prior art and here, the lithium aluminum halide reduces the keto group to hydrocarbon. Even though no one ever produced A before, we are not satisfied that it is unobvious to reduce A with a standard reducing agent to produce reduced A. No reaction conditions are recited in the claims. No manipulative steps are claimed other than what is embodied in the word "reacting," which is used in all of the claims. The results obtained by reacting with alkali metal aluminum hydride are entirely expected and obvious. Only the predicted reduction takes place.

[2] We are of the opinion that each statutory class of claims should be considered independently on its own merits. *In re Wilke et al.*, 50 CCPA 964, 314 F.2d 558, 136 USPQ 435; *In re Adams et al.*, 50 CCPA 1185, 316 F.2d 476, 137 USPQ 333. The fact that the starting materials and the final product are the subject matter of allowed claims does not necessarily indicate that the process employed is patentable. In the instant case, there is no disagreement with the finding below that it would be obvious to react a compound with alkali metal aluminum hydride to perform a reducing step resulting in the reduced starting material.

[3] We do not agree with appellant's proposition that the "use of an unobvious starting material renders a process unobvious." Were this true, every step, for example, dissolving or heating, when performed on a new compound would result in a patentable process. We reiterate that all of the evidence must be considered on the "subject matter as a whole," from the viewpoint of one skilled in the art, in the determination of obviousness, and not simply the patentability of one of the starting reactants in a process.

In view of the prior art, we see nothing unobvious in reacting the compounds of the allowed claims with a reducing agent to produce the reduced derivatives. See *In re Larsen*, 49 CCPA 711, 292 F.2d 531, 130 USPQ 209.

We do not consider this holding inconsistent with the decision of *In re Cavallito et al.*, supra, relied on by appellants because in that case the court found that the prior art reference relied upon failed to lead one of ordinary skill in the art to carry out the claimed step of "quaternizing."

[4] Accordingly, the decision of the Board of Appeals is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

It is with regret that I find it necessary to dissent from the majority opinion and to write what may well be called the third movement in the requiem for the "new use of a known process" provision of 35 U.S.C. 100(b).[2] The new use provision, as stated in the Patent Act of 1952, had a bright promise and might well have emancipated the patent law from the shackles with which traditional claim forms had enslaved it. With the present decision, I fear that bright promise is dead.

[2] The first movement will be found in my dissent in *In re Larsen*, 49 CCPA 711, 292 F.2d 531, 130 USPQ 209; the second in my dissent in *In re Horksema*, 51 CCPA — (PA 7050).

U.S. Court of Customs and Patent Appeals

IN RE RONALD DOUGLAS WILSDON AND LAURENCE KING RENDLE

No. 7144. Decided May 21, 1964

[51 CCPA —; 332 F.2d 182; 141 USPQ 574]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—METHOD FOR REDUCING CORROSION IN FURNACES.

The decision of the Board of Appeals, refusing certain claims to a method for reducing corrosion in furnaces as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 596,732.

REVERSED.

Hobart N. Durham, John D. Foley, Thomas R. MacDonald (*Eugene Sabol*, of counsel) for appellants.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

Appealed claims 1, 4 and 5 of appellants' patent application, Serial No. 596,732, filed July 9, 1956, relate generally to a method for controlling corrosion of the interior metallic surfaces of furnaces. These claims stand rejected as unpatentable over a combination of prior patents. The legal issue is one of obviousness under 35 U.S.C. 103.

The problem which appellants allege they have solved arises from the fact that many residual fuel oils such as are commonly used in steam boilers contain sulphur. When such oils are burned, sulphur dioxide is formed as one of the combustion products, which, under certain combustion conditions, forms sulphur trioxide which is extremely active in corroding the metallic furnace surfaces. Combustion gases containing amounts of sulphur trioxide so produced have a relatively high dew-point, and thus the sulphur trioxide deposits

out onto the metallic furnace surfaces at areas of relatively high temperature, fairly near to the combustion zone itself, with resulting corrosion damage to those surfaces.

Appellants assert that their claimed method alleviates this problem. In essence, appellants' invention involves injecting ammonia into the combustion gas stream at a particular point. The ammonia neutralizes the sulphur trioxide (forming ammonium sulphate) and thus eliminates its corrosive effect. Appellants teach that the introduction of the ammonia into the combustion gas stream must be at an area close enough to the flame zone that the temperature is above the dew-point, so that the sulphur trioxide will not deposit out prior to contacting the ammonia, and yet must be sufficiently remote from the flame zone that the temperature of the gas stream is below the temperature at which the ammonia dissociates to nitrogen and hydrogen and loses its neutralizing effect. Claim 1 is representative of the claims on appeal and reads as follows:

> A method for reducing corrosion in furnaces when using a sulphur-containing carbonaceous or hydrocarbon fuel which comprises continuously injecting ammonia into said furnace in an amount constituting from 0.5% wt. to 9.0% wt. based on the total weight of sulphur in elemental and combined form in the fuel fed to said furnace, said ammonia being injected into a part of the combustion zone of said furnace beyond the flame zone at which the temperature is above the dew-point of the untreated combustion gases and below 500° C.

Claim 4 adds to the method defined in claim 1 the limitation that the ammonia be injected in admixture with recycled combustion gases. Claim 5 is also dependent upon claim 1, and specifies that the fuel be "a residual fuel oil, derived from petroleum and containing less than 5% by weight of sulphur," and also defines the required amount of ammonia in terms of a by-weight percentage of the fuel oil rather than the sulphur, as in claim 1. Appellants do not contend that claims 4 and 5 are patentable independently of claim 1. We will therefore treat all the appealed claims as one for purposes of this opinion.

The Board of Appeals sustained the Examiner's rejection of the claims on the basis of the teachings of these references:

Harlow, 2,412,809, December 17, 1946.
Darrah, 2,136,166, November 8, 1938.
British Patent, 496,692, December 5, 1938.

The patentee in Harlow deals with a problem similar to that faced by appellants. The Harlow reference discloses that ferric oxide, present in deposits on the furnace surfaces, acts as the catalyst which promotes the oxidation of sulphur dioxide to sulphur trioxide. Harlow indicates that coating the furnace surfaces with certain powders or dusts or with a solution of sodium carbonate is effective in inhibiting the catalytic action of the ferric oxide and thus prevents the formation of sulphur trioxide.

Darrah discloses a drying apparatus in which objects are dried by passing hot combustion gases over them. These gases contain, among other things, sulphuric acid vapor which causes discoloration of the drying objects. Darrah discloses that the injection of ammonia into the circulating gases is an effective way to prevent such discoloration.

The British patent discloses a method of inhibiting the formation of adhering deposits on the surfaces of oil-fired boilers by introducing substances, such as ammonia, into the flame or into the combustion gases.

The essence of the Patent Office's position was stated by the Board as follows:

> • • • While the Darrah patent is concerned with the harmful effects of the sulphuric acid on the materials being treated in the furnace and not on the parts of the furnace itself which inherently is present, nevertheless there is a teaching in this patent of the elimination of the harmful effects of sulphuric acid by neutralizing the same with ammonia. We are of the opinion that it is obvious to one skilled in the art to utilize or substitute Darrah's solution for that of Harlow in the elimination of the harmful effects of sulphuric acid, namely by neutralizing the same, because it is merely the selection of one of two known solutions.

We do not agree. While it is true that the Harlow patent disclosed the *problem* faced by appellants, it purports to solve the problem in an entirely different way: namely, by *preventing* the formation of sulphur trioxide rather than by *neutralizing* it after it has been formed. The teaching of the British patent was of no help to appellants, since it is directed to the problem of preventing the formation of deposits of ash, not to neutralizing corrosive materials. Thus, if any of the cited patents suggested appellants' solution to the problem posed by Harlow, it must necessarily have been Darrah. However, we find in Darrah no teaching which would have rendered appellants' claimed method obvious to one of ordinary skill in the art at the time appellants made their invention.

The Darrah specification contains the following statement:

> According to tests which I have made, *the addition of the neutralizing material to the gases does not result in wholly neutralizing the sulphur in the gases.* It appears, however, that the materials added collect in part upon the sheets which are passing through the drier and in this manner serve to neutralize the acid fumes in the circulating gases at the time that the fumes approach the sheets. I have made tests of the gases taken from the system *when the neutralizing effect on the sheets was quite complete and have found that the gases still give ample evidence of a large acid content.* • • • [Emphasis added.]

We think this statement makes it very clear that Darrah does *not* suggest appellants' solution to Harlow's problem. First, it should be noted that Darrah is concerned with overcoming the discoloring effect of *sulphuric acid on drying objects* while appellants faced the problem of finding a way to neutralize *sulphur trioxide in the combustion gases.* Moreover, it is evident from the above statement that Darrah did not succeed in removing all of the sulphuric acid from the combustion gases; indeed, as stated above, he "found that the gases still give ample evidence of a large acid content." The Solicitor argues that this is so only because Darrah did not use a sufficient quantity of ammonia. We do not think the answer is necessarily so simple. At any rate, Darrah was concerned only with preventing discoloration of the drying objects and was not interested in the subsequent acid content of the combustion gases per se. We will not speculate as to *why* Darrah did not go further and disclose a method for removing all, or substantially all, the sulphuric acid from the combustion gases. The fact remains that he did not; rather, the above-quoted portion of his specification seems to suggest that adding ammonia is *not* a very effective way to remove sulphuric acid from the combustion gases, and the specification does not say anything at all about neutralizing *sulphur trioxide.*

In short, we think appellants have discovered a new and unobvious way to solve an old problem. [1] The appealed decision is accordingly reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE TRAVER J. SMITH

No. 7124. Decided May 21, 1964

[51 CCPA —; 331 F.2d 894; 141 USPQ 569]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS.
   With respect to affidavits purporting to show commercial success, *Held* that "We have considered the affidavits of record, but agree with the Solicitor that the 'showing * * * [is] not * * * persuasive of patentability in the absence of reasonable doubt concerning the merit of the Examiner's rejections.'"
2. SAME—PARTICULAR SUBJECT MATTER—"COLOR GRADING."
   The refusal of certain claims in an application entitled "Color Grading" as unpatentable over the prior art is affirmed.

APPEAL from the Patent Office. Serial No. 494,783.

AFFIRMED.

Ben J. Chromy, Allen and Chromy (*Donald M. Wight, Balder and Wight*, of counsel) for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 8, 9, and 19–28 of application Serial No. 494,783, filed March 16, 1955, entitled "Color Grading." No claims are allowed.

The invention relates to color grading of substances such as food products by measurement of light reflection and particularly to alleged improvements in the nature of the light source and the method for indicating the degree of light reflection. Broadly, such color grading is acknowledged by appellant to be old and is based on well-known principles.

Claim 28 is directed to apparatus, all other claims to method. Appellant's apparatus, in which his method is carried out, is housed in a cabinet with a hole in the top into which a transparent glass beaker containing the sample to be tested can be set. When in place, the beaker rests on a transparent plate underneath which is a tubular light shield spaced somewhat below the plate. Surrounding the shield is a tubular light source, such as a neon or mercury vapor lamp. In a chamber beneath the shield is a photoelectric cell, and a glass light filter can be positioned to determine what portion of the reflected light coming from the sample to be tested will reach the cell. The light from the source thus illuminates the sample which reflects light down through the shield and the filter and the light reaching the photoelectric cell causes a current which is proportional to the amount of light striking the photocell cathode. This relatively weak current is amplified by an amplifier and the meter which is included in the amplifier circuit shows its value.

Appellant claims his invention to reside in two improved features: (1) providing "substantially monochromatic light" and (2) calibrating the ammeter to provide the maximum range for readings between two extremes of sample color intensity.

As to feature (1), appellant discloses as one light source a mercury vapor tube which, when energized, emits light of discrete wave lengths, viz., 404.1, 435.8 and 546.1 millimicrons. All but one wave length he says is removed by his filter so that light of a single wave length strikes the photocell. Other gas discharge tubes may be used, e.g., neon tubes, the advantage of all such tubes being that they emit relatively small numbers of discrete wave lengths as compared with incandescent light bulbs which emit a broad spectrum of radiation.

As to appellant's calibration method (2), it consists of two steps: setting the meter to read zero when the darkest-color sample is tested by adjusting a first potentiometer suitably placed in the circuit; and setting the meter to read at or near maximum when the lightest-color sample is tested by adjusting a second potentiometer. Thus, regardless of the degree of difference in color between samples at two extremes, readings indicating that difference can be spread out over the full scale of the meter.

Claims 8 and 28 are representative:

8. The method of color grading a product by measuring the lightness of the product by employing a source of substantially monochromatic light, said monochromatic light being adapted to be reflected from the product that is to be graded and the intensity of said deflected monochromatic light being characteristic of a condition of the product being graded comprising the steps of determining color standards relative to the opposite ends of the color range of the product to be graded, providing an electrical system including, an amplifier, a light sensitive cell and a meter, calibrating the meter with reference to the darker of the two samples to determine a low reading limit on the meter, employing the lighter colored sample to fix an upper reading of the meter, and thereafter exposing a sample of the product to produce reflected light therefrom to produce an electric signal from this reflected light to provide a reading on the meter as a direct indication of the color grade of the article.

28. Apparatus for grading a product to determine a condition such as the completeness of processing or ripeness of the product in which such condition may be determined from the intensity of monochromatic light reflected from the product, said substantially monochromatic light being selected so that the intensity of its reflection from the product provides a measure of the condition of the product, the improvement comprising means for producing substantially monochromatic light, said substantially monochromatic light being in the portion of the light spectrum in which the condition of the product is to be determined, means for directing said substantially monochromatic light first to illuminate a sample of the product that is in the desired color condition and second to illuminate a sample of the product that is in the least desired acceptable color condition, indicating means having a scale for indicating the intensity of the reflected substantially monochromatic light from said product samples said indicating means including means to provide a first indication on said scale corresponding to the intensity of the light reflected from the desired product and a second indication corresponding to the intensity of the light reflected from the least desired acceptable product, means for adjusting said indicating means so that said first indication appears substantially on one end of said scale and for adjusting said indicating means so that said second indication appears substantially on the other end of said scale, thereby to provide a range between the ends of said scale between which various degrees of the color condition of the product being determined may be indicated so that random samples of the product may be illuminated by said substantially monochromatic light and a direct reading of the color condition thereof obtained from indications produced on said scale.

Claims 9 and 19–27, all method claims, differ essentially from claim 8 as follows: claim 9 states that only a "portion" of the sample be tested; claim 19, that light "include" monochromatic light; claims 20, 21 and 22, that the light be of a specific wave length. Claims 23–27 for purposes of this opinion are substantially the same as claim 19.

The sole issue is obviousness of the claimed improvements in view of the following prior art:

Lehde, 2,287,808, June 30, 1942.
Lukens et al., 2,701,502, February 8, 1955.
Powers et al., "Electronic Color Sorting of Fruits and Vegetables," *Agricultural Engineering*, vol. 34, No. 3; March 1953, pages 149–154, 158.

The Examiner rejected all method claims as "unpatentable over either Lukens et al. or Powers et al., either reference taken alone or either in view of the other," and as "unpatentable in view of the disclosure in Lehde * * *." Apparatus claim 28 was rejected "over Lukens et al. or Lehde each taken separately." The Board sustained the Examiner on all grounds of rejection. We find it unnecessary to discuss the Lehde reference.

Lukens et al. describe a photometric food-grading device wherein a light source is used in conjunction with red and blue light filters to grade corn on the cob, judging its maturity by color. The *difference* in its reflectance of red and blue light is measured by a photocell and amplifier circuit similar to appellant's, such difference in reflectance being taken as a measure of corn color. Lukens et al. set the zero meter reading with a first potentiometer, and use a second potentiometer "for adjustment of the range of readings to be obtained for a given range of [corn] maturity." Lukens et al. describe their light source simply as a "light bulb," appellant interpreting this to be a conventional incandescent light. With respect to using one color (monochromatic) light rather than red and blue light alternately, Lukens et al. state:

> Simplified devices have been proposed in which the object is irradiated with light of a distinct color and a measurement made, through a photoelectric tube and electronic components, of the amount of light reflected. Devices of this type are suitable in some applications but oftentimes the spread in reflectance between an immature and a mature product is simply not sufficient to yield reliable results.

The Powers et al. article relates to an experimental color sorter for lemons by which lemons are sorted into five commercial color classes. The reference describes, inter alia, three methods for making reflectance measurements, "Method I" being most pertinent. We quote the essence of "Method I":

> The simplest way to classify a lemon as to color is to characterize its reflectance curve by a single measurement of reflectance. It is evident that this measurement should be made in the region of the spectrum where the change in reflectance between consecutive color classes is greatest. The curves in FIG. 3 dip sharply in the vicinity of 6,780 A, where chlorophyl has an absorption peak. The variation of reflectance with lemon maturity is clearly a maximum at this wave length. *Hence the reflectance of the fruit at 6,780 A is chosen as a criterion of color.*
>
> To measure this reflectance, the fruit is illuminated with light *restricted to a narrow band of wave lengths in the vicinity of 6,780 A.* A portion of the reflected light is intercepted by a photocell. The resulting photoelectric current is proportional to the reflectance of the lemon. [Our emphasis.]

The Examiner's position is that the steps recited in the method claims "are substantially identical with the steps disclosed by Lukens et al., and that the test conditions set forth in the first few lines of the claim are also anticipated in the Lukens et al patent."

With respect to the use of "monochromatic light" the Examiner said, "applicant's light source is not actually monochromatic and his device requires a color filter 18 to get the proper results. * * * Also, Lukens et al. teaches * * * that a single color of light has been used in the art, and it is thought it would be obvious to use a single 'color' in Lukens et al."

As to Powers et al. the Examiner said that "Method I" considered with the rest of the reference "appears to anticipate" the method claims. As for calibrating the ammeter, the Examiner said "it appears that [the calibrating] steps * * * merely involve obvious steps in calibrating an indicating instrument and it seems that a person versed in the art of using instruments of the type described by Powers et al. would arrange the photoelectric circuit so that the lowest readings i.e. for green lemons would come near one end of the scale and the 'high' readings near the other end of the scale."

Apparatus claim 28 was rejected by the Examiner thus: "Since apparatus claim 28 defines essentially the same subject matter as claim 8, merely substituting 'means' for the 'steps' in claim 8, said claim 28 is thought to be unpatentable for the same reasons advanced against claim 8, supra."

The Board affirmed all the Examiner's grounds of rejection, relying specifically on Lukens et al. alone but saying, "The further rejections based on the Powers et al. and Lehde patents appear to be merely cumulative and will be sustained without additional discussion."

Appellant argues that the Board erred in holding that Lukens et al. teach the use of monochromatic light since the patentees state the use thereof does not "yield reliable results"; that Lukens et al. do not teach how to "modify their apparatus to use a distinct color"; that as to calibration of the instrument, the Board "committed error because of a misunderstanding of the facts"; that Lukens et al. teach calibration of the lower end of a meter but not the upper end; and that three affidavits of record purporting to show commercial success of the invention should weigh heavily in appellant's favor.

Notwithstanding appellant's arguments, we find no reversible error in the Board's decision. As for the use of "monochromatic light," "Method I" of Powers et al., quoted in part supra, is a clear teaching that light of a single wave length (6,780 A) or restricted to a narrow band of wave lengths (in the vicinity of 6,780 A) may be used in reflectance testing.

With respect to calibration of the ammeter, we agree with the Examiner that "a person versed in the art of using instruments of the type described by Powers et al. would arrange the photoelectric circuit so that the lowest readings * * * would come near one end of the scale and the 'high' readings near the other end * * * *" In any event, we think Lukens et al. recognized such desideratum in stating, "Potentiometer 56 is provided to allow *for adjustment of the range of readings* to be obtained for a given range of maturities." (Our emphasis.) When appellant sets his high reading near or at the top of his meter scale he is merely adjusting for the greatest range possible. We think doing this would be obvious to one of ordinary skill in this art.

[1] We have considered the affidavits of record, but agree with the Solicitor that the "showing * * * [is] not * * * persuasive of patentability in the absence of reasonable doubt concerning the merit of the Examiner's rejections."

[2] The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,991,491, D. P. Welles, Jr., FLUTELESS SWAGING TAP WITH SIZING AREA INCREASING AT A CONSTANT RATE; **3,050,755,** same, METHOD OF FORMING THREADS BY APPLYING SLIDING PRESSURE; **Re. 24,572** (of 2,807,813), same, FLUTLESS SWAGING TAP, **filed** June 17, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–170, *Besly-Welles Corporation* v. *Balax, Inc. et al.*

2,997,196, R. L. Emery, DE-NESTABLE MOLDED PULP TRAYS, **filed** Apr. 8, 1963, D.C. Del. (Wilmington), Doc. 2649, *Keyes-Fibre Co.* v. *Packaging Corp. of America.*

2,999,386, R. Wolfe, HIGH PRECISION DIAPHRAGM TYPE INSTRUMENTS, **filed** June 12, 1964, D.C. Mass. (Boston), Doc. 64–452–J, *Trans-Sonics, Inc.* v. *Datametrics, Incorporated.*

3,011,198, T. V. Moss, MOP SWAB; **3,115,658,** same, MOP CONSTRUCTION, **filed** Feb. 18, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–134, *Theron V. Moss.* v. *Res-Bar Supply Company, Inc.* Consent judgment; patents held valid and infringed; defendant enjoined June 18, 1964.

3,011,804, R. S. Burns, DUAL WELL COMPLETION APPARATUS; **3,007,695,** R. K. Le Rouax et al., MULTIPLE STRING TUBING HANGER, **filed** June 24, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–286, *Armco Steel Corporation* v. *Cameron Iron Works, Inc.*

3,015,969, O. J. Bratz, PUSH-PULL CABLE, **filed** June 23, 1964, D.C., S.D.N.Y., Doc. 64/1944, *Teleflex, Incorporated* v. *American Chain & Cable Co., Inc.* **Same filed** July 9, 1964, D.C., S.D.N.Y., Doc. 64/2139, *The Morse Instrument Co.* v. *American Chain & Cable Co., Inc.*

3,026,521, J. Panfili, MEANS FOR CLOSING FRAGILE STUFFED CASINGS, **filed** June 22, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–657, *Jack Panfili* v. *Howard Kelem & Global Industries Machinery Corp.*

3,032,234, W. E. Taylor, SNAPPING TYPE OVERCAP FOR DISPENSING CONTAINER, **filed** Jan. 6, 1964, D.C., S.D.N.Y., Doc. 64/41, *Sterling Seal Company* v. *Avon Products, Inc.* Stipulation and order of dismissal June 25, 1964.

3,034,610, H. C. Lynch, SHEET METAL STRUCTURES, **filed** June 19, 1964, D.C., N.D. Tenn. (Memphis), Doc. 5225, *Hugh C. Lynch* v. *Precision Metal Fabricators.*

3,037,413, J. Markowitz, ELECTRONIC ORGAN WITH TRANSIENT SPEECH EFFECTS, **filed** June 23, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 36036, *Allen Organ Company* v. *Strawbridge & Clothier, Inc.*

3,050,755. (See 2,991,491.)

3,054,215, A. E. Neumann, TOY, **filed** Mar. 29, 1963, D.C., S.D.N.Y., Doc. 63/881, *Marvin Glass & Assoc. et ano.* v. *Mangel Molding Corp.* Order of dismissal June 8, 1964.

3,058,534, J. D. Keithahn, DRILL PIPE FLOAT VALVES, **filed** June 10, 1964, D.C., W.D. Okla. (Oklahoma City), Doc. 64–263, *Baker Oil Tools, Inc.* v. *Taylor Oil Tools.*

3,061,269, D. Sinkler, LINED VALVE, **filed** June 26, 1964, D.C., S.D. Ohio (Dayton), Doc. 3065, *Continental Manufacturing Co. et al.* v. *Duriron Company, Inc.*

3,071,980, C. T. Brewer c/o Brewer Machine & Gear Company, DRIVE-TENSIONING APPARATUS, **filed** June 12, 1964, D.C., E.D. Ky. (Covington), Doc. 1146, *Carl T. Brewer* v. *Browning Manufacturing Co.*

3,074,766, J. C. Meyer, SHOCK RESISTING SUPPORT FOR SLIDE STRUCTURE FOR DRAWERS, SHELVES AND THE LIKE; **3,129,981,** same, QUICK DISCONNECT SLIDE FOR DRAWERS AND THE LIKE, **filed** June 3, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–740–CC, *Jonathan Manufacturing Company* v. *Grant Pulley & Hardware Corp.*

3,075,653, D. A. Wales et al., APPARATUS FOR AND METHOD OF IDENTIFYING MATERIAL UNITS, **filed** Feb. 24, 1964, D.C. Minn. (Minneapolis), Doc. 4–64/59, *Magnetics, Inc.* v. *Flo Tronics, Inc. et al.* Consent judgment for injunction June 29, 1964.

3,082,006, J. W. Ryan, PHONOGRAPH TONE ARM AND SPEAKER, **filed** Oct. 11, 1963, D.C., S.D.N.Y., Doc. 63/2984, *Mattel, Inc.* v. *Goldberger Doll Mfg. Co.* Consent judgment; defendants enjoined June 19, 1964.

3,082,031, R. H. Lindberg, TWO POINT LOG GRAPPLE, **filed** June 30, 1964, D.C. Oreg. (Portland), Doc. 64–321, *Young Corporation* v. *Doroy Grapple Company.*

3,085,312, J. R. Evans, METHOD OF MAKING BEARINGS, **filed** June 18, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–809, *Southwest Products Co.* v. *American Metal Products Corp. et al.*

3,097,695. (See 3,011,804.)

3,104,355, E. A. Holmes et al., CORROSION MEASURING PROBE WITH A TEMPERATURE COMPENSATING ELEMENT IN A WHEATSTONE BRIDGE AND METHOD OF USING SAME, **filed** June 4, 1964, D.C.N.J. (Newark), Doc. 526, *Magna Corporation* v. *Encoa Corporation.*

3,107,577, L. J. Adams, PANORAMIC MOTION PICTURE PROJECTION APPARATUS, **filed** June 2, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–733–S, *Walt Disney Productions* v. *William C. Ralke et al.*

3,114,497, E. Kugler, DRAWSTRING BAG, **filed** June 23, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–660, *Remis Bro. Bag Co.* v. *Emanuel Kugler et al.*

3,115,658. (See 3,011,198.)

3,117,332, Kelley and Dallman, ADJUSTABLE DOCKBOARD; **3,137,017,** Pfleger and Ramer, same; **Re. 25,249,** G. P. Kelley, same, **filed** June 16, 1964, D.C., M.D. Tenn. (Nashville), Doc. 3809, *Kelley Company* v. *Unarco Industries, Inc.*

3,118,151, H. Fredman, ONE-PIECE BELT-TYPE BEDDING CARRIER, **filed** June 5, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c978, *Harry Fredman* v. *Harris-Hub Company, Inc.*

3,119,622, F. R. Weigert, GOLD BALLS, **filed** June 23, 1964, D.C. Mass. (Boston), Doc. 64–473–S, *United Plastic Corporation* v. *United States Rubber Company.*

3,122,981, Ellis and Neeb, GASEOUS PHOTO-DEVELOPING APPARATUS, **filed** June 11, 1964, D.C.N.J. (Trenton), Doc. C–545–64, *Rotolite Corporation et al.* v. *Diazit Company.*

3,129,454, E. A. Johnson, HIDE PULLER, **filed** June 5, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c985, *Johnson Bros. Manufacturing Ltd.* v. *St. John & Co.* Patent held valid and infringed Sept. 29, 1964.

3,129,981. (See 3,074,766.)

3,135,241, F. W. Mann, AUTOMATIC INSECTICIDE APPLICATOR, **filed** June 25, 1964, D.C. Kans. (Wichita), Doc. W–3212, *Frederick W. Mann* v. *Tatge Chemical Co., Inc. et al.*

3,136,480, E. S. O'Neill, WHIP DEVICE, **filed** June 11, 1964, D.C., N.D. Iowa (Sioux City), Doc. 64–C–3015–W, *Eugene S. O'Neill* v. *Stockman's Inc. et al.*

3,137,017. (See 3,117,332.)

Re. 23,273, G. P. Kearse, ANTENNA SYSTEM, **filed** June 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c941, *Hi-Lo Manufacturing Company* v. *Clear Beam Antenna Corp.*

Re. 24,518, B. W. Nickerson, Jr., SIDE WALL FOR TIRES, **filed** June 3, 1964, D.C., Del. (Wilmington), Doc. 2856, *Bryan W. Nickerson, Jr.* v. *Pep Boys—Manny, Moe & Jack.*

Re. 24,572. (See 2,991,491.)

Re. 25,249. (See 3,117,332.)

Des. 175,628, M. P. Middlemark, TELEVISION ANTENNA, **filed** Apr. 3, 1963, D.C., S.D.N.Y., Doc. 63/934, *Rembrandt Electronics, Inc. et al.* v. *Gimbel Bros., Inc.* Order of dismissal June 8, 1964.

Des. 185,105, S. Ullman, COIN TRAY, **filed** Mar. 26, 1963, D.C., S.D.N.Y., Doc. 63/841, *Seymour Ullman* v. *Demar Products, Inc.* Order of dismissal June 8, 1964.

Des. 188,445, J. S. Sherman, PENN SET BASE, **filed** June 10, 1964, D.C., S.D.N.Y., Doc. 64/1787, *Ketcham & McDougall, Inc.* v. *Doringer Co., Inc. et al.* Consent judgment; defendants enjoined Sept. 3, 1964.

REISSUES

DECEMBER 8, 1964

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,695

EXPLOSIVE COMPOSITION COMPRISING AMMONIUM NITRATE AND HEAT-PRODUCING METAL

Melvin A. Cook, Salt Lake City, Utah, and Henry E. Farnam, Jr., Seven Islands, Saguenay, Quebec, Canada, assignors to Iron Ore Company of Canada, Wilmington, Del., a corporation of Delaware

No Drawing. Original No. 3,121,036, dated Feb. 11, 1964, Ser. No. 766,729, Oct. 13, 1958. Application for reissue Apr. 23, 1964, Ser. No. 372,443
Claims priority, application Canada Feb. 28, 1958
12 Claims. (Cl. 149—21)

1. An explosive composition in slurry form consisting essentially of an oxidizing substance selected from the group consisting of ammonium nitrate, and mixtures of ammonium nitrate and sodium nitrate, a metal selected from the group consisting of aluminum, magnesium, boron, mixtures thereof and mixtures of aluminum and ferrosilicon, and water the ratio of the oxidizing substance to said metal being in the range 9/1 to 1/1 and said water 6 to 14 percent of the composition, said metal being a mixture of finely divided metal, 90 percent passing through 100 mesh, and coarse metal of 4 to 10 mesh, and said oxidizing substance being a mixture of fine oxidizing substance of —35 mesh, and coarse oxidizing substance of 4 to 10 mesh.

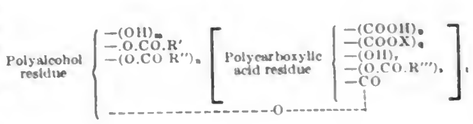
25,696

MARGARINE, ANTISPATTERING SUBSTANCES AND METHODS FOR THEIR MANUFACTURE

Gerardus Martinus Maria Houben and Everhardus Wilhelmus Jonker, Gouda, Netherlands, assignors to N.V. Koninklijke Stearine Kaarsenfabrieken "Gouda-Apollo," Gouda, Netherlands, a corporation of the Netherlands

No Drawing. Original No. 3,006,772, dated Oct. 31, 1961, Ser. No. 797,028, Mar. 4, 1959. Application for reissue Oct. 30, 1962, Ser. No. 234,267
Claims priority, application Netherlands Mar. 5, 1958
25 Claims. (Cl. 99—123)

1. A method for making margarine antispattering comprising adding to said margarine a mixed ester of an aliphatic polyalcohol, a fatty acid [residue] and an aliphatic polycarboxylic acid of the schematical formula:



wherein

X=one molecule of a polyalcohol less one OH.

R'.CO.=fatty acid residue with 8–24 C-atoms,

R''.CO. and R'''.CO.=fatty acid residue with 1–24 C-atoms,

The letters m, n, p, q, r, s and t represent the following integers: t=1 to 2; q=0 to 1; s=0 to 2; q+r+s=0 to 3; t+s≦3; p=1 to 2; r=0 to 2; p+q=1 to 2; p+r+s=2 to 3; m=0 to 2; n=0 to 1; m+n+t=2 to 3,

[by heating a mixture of said compounds to a temperature between about 110° and about 170° C. during a time between about 10 hours and about 15 minutes the shorter time corresponding to the higher temperature, until said mixed ester is formed, and thereafter discontinuing heating to prevent polymerization and condensation of said mixed ester] *wherein said mixed ester is formed by heating the reaction components, subsequent to the introduction of the polycarboxylic acid component, at a temperature from about 100° C. and not exceeding 170° C. and discontinuing heating when said mixed esters have been formed and before material condensation and polymerization.*

PATENTS

GRANTED DECEMBER 8, 1964

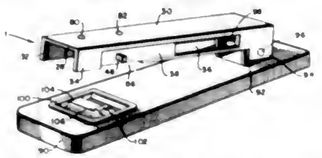
GENERAL AND MECHANICAL

3,159,843

HOOK AND EYE FASTENING DEVICE

Joseph B. Miceli, Gabriele Drive, East Norwich, N.Y.

Filed Sept. 4, 1962, Ser. No. 221,163
5 Claims. (Cl. 1—325)



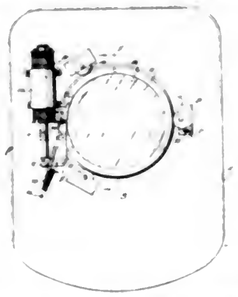
1. An applicator for fastening a pair of unitable members to sheet material comprised of an upper housing and a lower platform, said upper housing and lower platform being pivotally related, a pair of U-shaped anchor members depending from said upper housing, each U-shaped anchor member having two vertical sides and a flat base portion perpendicularly extending therebetween, said flat base portion having one end thereof protruding beyond the edges of said two vertical sides, said U-shaped anchor members being disposed in mutually superposed relation, said flat base portions thereof being disposed in spaced parallel relation, one of said unitable members being removably received within the space so provided between said flat base portions, a recessed region provided within said lower platform, said recess being adapted to removably receive the other of said unitable members.

3,159,844

ELECTROMAGNETICALLY CONTROLLED HOOD DEVICE FOR WELDING AND CUTTING

Robert C. Haboush, Miami, Fla., assignor to Samuel C. Halpert

Filed Nov. 9, 1962, Ser. No. 236,552
3 Claims. (Cl. 2—8)



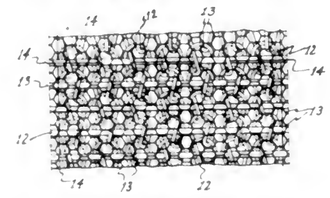
1. A welder's mask comprising an opaque main body having a viewing opening, a first plane polarized light-transmitting window member mounted in said viewing opening, a second plane polarized light-transmitting window member parallel and closely adjacent to said first light-transmitting member, a circular ring, a plurality of spaced rivets rigidly connecting the ring to said second window member, said rivets being provided with spacer sleeves between the ring and the second window member to maintain the ring in spaced parallel relationship to the second window member, a plurality of peripherally grooved rollers journaled to said main body around the viewing opening and receiving the periphery of the ring in the grooves thereof, whereby to rotatably support said second window member for rotation relative to said first window member, means biasing said second member toward a position wherein the axes of polarization of the light-transmitting members are crossed, electromagnetic means operatively connected to said ring to rotate said second member to a position wherein the axes of polarization of said first and second members are at a substantially smaller angle to each other than in said first-named position responsive to energization of said electromagnetic means, a welding power supply having a pair of output terminals, a welding electrode connected to one terminal, a ground conductor connected to the other terminal, and circuit means connecting said electromagnetic means across said welding electrode and ground conductor, whereby to energize said electromagnetic means unless the electrode and ground conductor are substantially shunted.

3,159,845

COMPOSITE FABRIC AND GARMENT MADE THEREFROM

Nancy Pinsky and Charles Pinsky, both of 2460 Ennals Ave., Wheaton, Md.

Filed Jan. 11, 1963, Ser. No. 250,869
2 Claims. (Cl. 2—211)



1. A composite fabric comprising a layer of knitted fabric and a layer of net-like material, said layers being secured together by skip stitches formed by a yarn having substantially the same characteristics as the yarn of the knitted fabric, whereby said knitted fabric is prevented from permanently stretching out of shape.

3,159,846

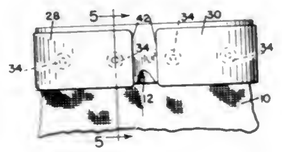
COLLAR AND NECKBAND CONSTRUCTION FOR CLERICAL GARMENTS

John A. Toomey and Lawrence T. Toomey, both % R. J. Toomey Co., 75 Webster St., Worcester, Mass.

Filed Jan. 22, 1963, Ser. No. 253,138
2 Claims. (Cl. 2—103)

1. A clerical vest of the type utilizing a military collar, comprising a narrow neckband formed of self-sustaining flexible material of such stiffness as to normally assume a curvature loosely conforming to the curvature of the neck of the wearer, said narrow neckband having an intermediate portion adapted to extend uninterruptedly around the front of the neck of the wearer and opposite end portions adapted to lie against the back portion of the wearer's neck, a garment portion attached to the intermediate portion of said narrow neckband and depending therefrom, said

garment portion being a discontinuous limp piece of cloth material defined by top, bottom and side edges covering the front chest portion of the wearer, a detachable single-ply collar having plain uninterrupted lower and upper edges, a pair of detachable military neckband portions, interengaging fasteners having separate male and female fastener elements respectively secured oppositely on the narrow neckband and the military neckband portions for separably securing the same together in a certain predetermined relationship, with the detachable military neckband portions outside the narrow neckband with respect to the neck of the wearer, the respective military neckband portions having one pair of corresponding ends spaced from each other and detachably secured by said inter-



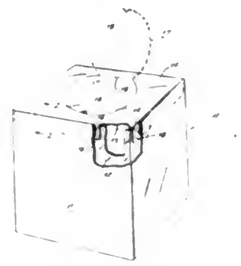
engaging fasteners to said intermediate portion of said narrow neckband forming a central gap at the front of the vest, and another pair of opposite ends adapted to overlap at the rear of the wearer's neck, the collar being positioned between the narrow neckband and the detachable military neckband portions, and holes in the collar between the upper and lower edges thereof, said holes being positioned for receiving the male fastener elements which extend through the holes and engage female fastener elements on the opposite side of the collar, thereby holding the collar in correct position between the military collar portions and the narrow neckband with the upper edge of said collar extending slightly above the military collar to a uniform extent.

3,159,847
PROSTHETIC WRIST UNIT
Wesley C. Prout, Los Gatos, Calif., assignor to A. J. Hosmer Corporation, Santa Clara, Calif., a corporation of California
Filed Mar. 7, 1963, Ser. No. 264,481
6 Claims. (Cl. 3—12.4)



3. In a prosthetic wrist unit, a tubular body adapted for molding in a prosthetic arm, said body comprising a collar for placement exterior of the prosthetic arm and a portion adapted to be molded into said prosthetic arm, said body having an axial bore, a tubular friction insert positioned in said axial bore, said tubular insert having a threaded interior bore, said insert having a pair of slots cut through the wall thereof, said insert being adapted to receive the threaded extension of a prosthetic hook in said threaded bore thereof, said slots defining a part of the wall structure of said tubular insert that is slightly movable with respect to the other part of the wall structure thereof, and a screw threaded into said collar of said body, said screw being accessible from the exterior of the prosthetic arm for engaging said part of said wall structure for clamping said part against the threaded extension of the prosthetic hook and provide friction for holding said hook against turning.

3,159,848
PORTABLE COMMODE
Joseph M. Arndt, Jr., Clayton, Mo., assignor to The Flo-Jo Corporation, St. Louis, Mo., a corporation of Missouri
Filed Jan. 7, 1963, Ser. No. 249,651
5 Claims. (Cl. 4—135)

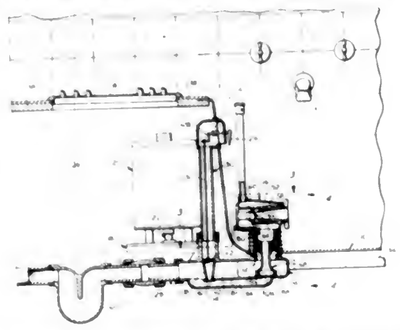


1. A three-piece portable commode comprising an outer closed wall structure formed by a plurality of connected side wall panels, an inner closed wall structure formed by a like number of connected side wall panels, said inner wall structure being positioned inside the outer wall structure with each side wall panel of the inner wall structure being adjacent to but spaced from a corresponding side wall panel of the outer structure, said panels being of substantially equal height and a seat member including a top closure wall with a toilet opening therethrough, said closure wall having a side edge corresponding with each side wall panel of the inner wall structure and a bendable flap attached to each of said side edges of said closure wall, said flaps extending into the spaces between corresponding adjacent spaced inner and outer wall panels on one side of the structure, said seat member resting on the top surface of the inner wall panels, said toilet opening being covered by an integral bendable flap hinged on one edge to the closure wall.

3,159,849
HYDROTHERAPY EQUIPMENT
Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Bros., Inc., Richmond, Calif.
Filed Mar. 15, 1963, Ser. No. 265,426
8 Claims. (Cl. 4—180)

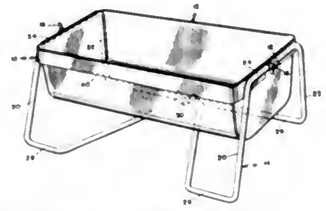
1. In combination, a bath tub having an outlet opening, a discharge nozzle, means mounting said nozzle within said bath tub in a horizontal position and for side to side swinging movement about a vertical axis, a pump and a motor for driving the same, means mounting said pump and motor outside of said bath tub, first conduit means interconnecting the space within said bath tub with the suction side of said pump, second conduit means interconnecting said nozzle with the pressure side of said pump, said second conduit means being disposed at least in part within said first conduit means and in spaced relation thereto to define at least in part said first conduit means, a drain line to waste, a valve normally closing said drain

line, and means responsive to a predetermined degree of swing of said nozzle about said vertical axis to operate



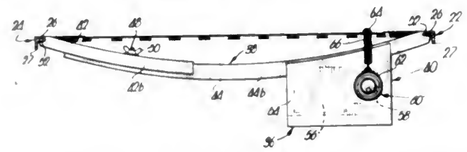
said valve and thereby connect said second conduit means to said drain line.

3,159,850
SAFETY CRADLE BED FOR VEHICLE AND GENERAL USE
Lewis R. Aldrich, San Diego, Calif., and John L. Howard, 2531 Haller St., San Diego, Calif.; said Aldrich assignor to said Howard
Filed Mar. 5, 1962, Ser. No. 177,564
4 Claims. (Cl. 5—94)



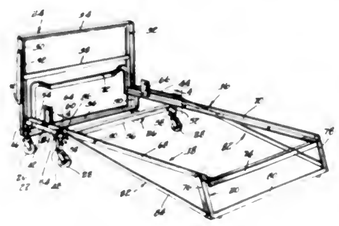
1. The combination comprising:
a vehicle seat having a seat cushion and a back cushion;
a supporting frame having upper portions, a first straight longitudinal rest, a second longitudinal rest having a V-shaped configuration, the apex of said configuration being adjacent to said first longitudinal rest, said frame being positioned on said seat cushion contiguous to said back cushion with said straight longitudinal rest contiguous to the meeting place of said seat cushion and said back cushion;
anchoring means affixed to said supporting frame adjacent the meeting place of said apex of said configuration and said straight longitudinal rest;
restraining means, having one end affixed to a portion of the vehicle and having a portion of said restraining means engaged to said anchoring means of said frame, for rigidly restraining said support frame from tipping over when the vehicle stops, said restraining means passing between said seat cushion and said back cushion;
a bathtub-like cradle having a substantially rectangular upper rim;
pivoting means, positioned at substantially the midpoint of each transverse portion of said rim, for permitting said cradle to pivot along a longitudinal axis thereof;
pivot receiving means on each upper portion of said supporting frame, for receiving said pivoting means of said cradle; and
means for producing frictional engagement between said upper portions of said frame and said rim of said cradle.

3,159,851
CRIB MOTIVATOR HAVING ADJUSTABLE MOUNTING BRACKET
Wiley G. Broers, Rte. 2, Ottawa, Kans.
Filed May 31, 1963, Ser. No. 284,454
3 Claims. (Cl. 5—109)



1. In apparatus for imparting reciprocatory movement to a mattress supporting grid of a bed and formed of yieldable wire connected to a pair of frame rails of the bed, the combination with said grid means and rails of:
drive structure having reciprocable means thereon operable to move in an up and down direction;
means mounting the drive structure on the rails in spanning relationship thereto below said grid means, said mounting means comprising a pair of elongated members in slidable interengagement, and means for releasably locking the members in any selected relative disposition to permit the effective length of the mounting means to be varied to accommodate beds of different widths, each of said members being of longitudinally arcuate configuration of a radius to clear the grid means during normal depression thereof under the weight of an individual on the mattress; and
means interconnecting said reciprocating means and said grid means for effecting up and down movement of the latter as said reciprocating means is driven by said drive structure.

3,159,852
MOBILE BED
John Erdos, Chicago, Ill., assignor to Inland Bed Company, Cook County, Mich., a corporation of Illinois
Filed Mar. 8, 1962, Ser. No. 178,304
3 Claims. (Cl. 5—136)



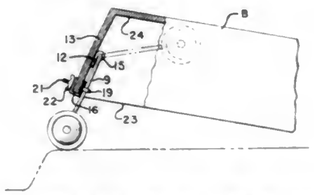
1. A mobile bed comprising, in combination:
(*a*) a caster-mounted carriage frame having a headboard secured to the rearward end thereof,
(*b*) a support frame pivotally mounted on the carriage frame,
(*c*) a box spring and a foam mattress on the support frame and forming a movable assembly therewith,
(*d*) said pivotal mounting comprising members extending upwardly from the carriage frame and the support frame and pivotally connected at approximately the weight-midpoint of the movable assembly and being forward of the headboard by approximately the vertical distance between the pivotal mounting and the top of the mattress,
(*e*) leg members pivotally mounted at the front end of the support frame,

(*f*) and unitary link members having rearward ends pivotally attached to the carriage frame and forward ends pivotally attached to the leg members,

(*g*) the front end of the carriage frame being horizontally forward of the horizontal position of the pivotal mounting by approximately the height of the pivotal mounting above the mattress frame,

(*h*) the link members and the leg members folding substantially against the support frame in the vertical position of the movable assembly.

3,159,853
SWING WHEELS FOR CAR TOP BOATS
John L. Ciesack, 1817 McKeon Road, Kenosha, Wis.
Filed Dec. 7, 1962, Ser. No. 242,993
5 Claims. (Cl. 9—1)



1. An invention of the character described, comprising, a boat hull having a transom with an inner surface and an outer surface, a pair of wheels spaced slightly less than the width of the inner suface of said transom, a stub axle for each wheel, each wheel rotatably secured to its axle, a support member rigidly secured to both stub axles, means swingably securing the support member to the inside surface of said transom whereby the support member can be swung to a position with the wheels within the boat or to a second position with the support member extending along the inner surface of the transom, the support member being dimensioned so that the wheels are beyond the transom when the support member is in the said second position, and means for temporarily securing the support member and wheels in said second position.

3,159,854
BACK SUPPORT AND LIFE PRESERVER
Nicolas Covacevich, Mexico City, Mexico
(Viena 56, Coyoacán 21, D.F., Mexico)
Filed July 2, 1962, Ser. No. 206,640
7 Claims. (Cl. 9—312)



7. A back support for attachment to a boat, comprising a pliable back member,

said back member possessing sufficient buoyancy characteristics to support a person in the water whereby the back member can serve as an emergency life preserver,

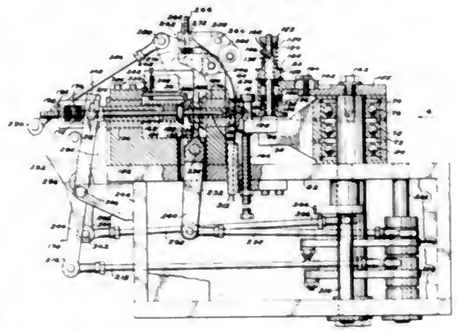
each end of the pliable back member being provided with at least one strap extending therefrom,

an attachment member carried at the end of each strap for removably securing the straps and back support to the boat,

securing means between the pliable back member and the straps,

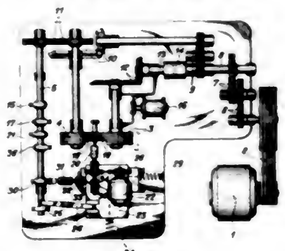
said securing means including means at each end of the pliable back member for securing the ends of the pliable back member about the wearer when detached from the straps and attached to each other.

3,159,855
PLUG INSERTING MECHANISM
Richard B. Wallace, Bloomfield Hills, and Robert J. Ebbert, Rochester, Mich., assignors to The Oakland Corporation, Birmingham, Mich., a corporation of Michigan
Filed Nov. 22, 1960, Ser. No. 71,013
31 Claims. (Cl. 10—2)



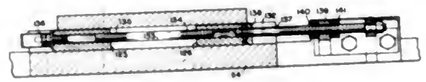
1. Plug inserting mechanism comprising means for locating an existing radially extending recess in an angularly randomly positioned cylindrical member, means for cutting a plug for insertion in the recess in the cylindrical member, and means operably associated with both the locating means and cutting means for inserting a plug cut by the cutting means into the recess located by the locating means.

3,159,856
APPARATUS FOR SIMULTANEOUSLY THREAD ROLLING THE SHANK AND CUTTING THREADS ON THE POINT OF A SCREW BLANK
Karl Dürholt, Gevelsberg, Westphalia, Germany, assignor to Fa. Altenloh, Brinck & Co., Ennepetal-Milspe, Germany
Filed Dec. 31, 1962, Ser. No. 248,623
Claims priority, application Germany, Dec. 30, 1961, A 39,139
2 Claims. (Cl. 10—2)



1. An apparatus for producing wood screws from preformed blanks with a reduced diameter of the threaded shank section comprising two thread rollers having a width at least equal to the length of the threaded shank portion of the screw, means to rotate the rollers in the same direction of rotation to roll threads into the threaded shank section, one of the thread rollers being stationary, means to move the other thread roller away from and toward the first-mentioned thread roller, each thread roller having an arcuate recess in the side thereof extending for a segmental circumferential distance in each roller to expose a short end portion of the screw to be contacted by a tool for cutting a screw point on the screw, and means for axially and radially controlling the tool.

3,159,857
TAPER CUTTING BAR ATTACHMENT
William Mynard McConnell, Pittsburgh, Pa., assignor to Taylor-Wilson Manufacturing Co., Pittsburgh, Pa., a corporation of Pennsylvania
Original application Mar. 30, 1960, Ser. No. 18,578, now Patent No. 3,128,482, dated Apr. 14, 1964. Divided and this application Feb. 6, 1964, Ser. No. 343,048
8 Claims. (Cl. 10—87)



1. In a machine for holding and supporting a workpiece upon which is performed a work operation by a tool advanced into engagement with said workpiece, said machine having a frame, the invention comprising a tool holder means carrying said tool and movably mounted upon said frame for travel along a path which brings said tool into engagement with said workpiece, guide means on said frame positioned for engagement by a part of said tool holder means as same travels along said path and for regulation of amount of engagement of said tool with said workpiece, said guide means comprising a bar pivotally mounted at a point intermediate its ends for movement of said bar about its pivot mounting, said bar having a guide surface for engagement by said part of said tool holder means, said guide surface controlling movement of said tool holder means towards and away from said workpiece, means for positioning said bar about its pivot mounting, said positioning means comprising a pair of movable blocks, one of said blocks being disposed for engagement with at least one point of a first portion of said bar, which first portion is located in a plane disposed substantially transversely of a plane of movement of said bar about said pivot mounting and is further located between said pivot mounting and to and including one end of said bar, the other of said blocks being disposed for engagement with at least one point of a second portion of said bar, which said second portion is located in a plane disposed substantially transversely of a plane of movement of said bar about said pivot mounting and is further located between said pivot mounting and to and including the other end of said bar, each of said blocks including an angularly inclined and extending surface which is that part of its block which engages said portion of said bar, means connected to said blocks for moving same along a path which brings successive segments of said inclined surfaces into engagement with said portions of said bar to place said bar in a given position about its pivot mounting.

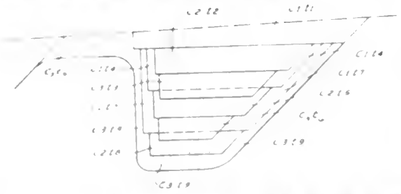
3,159,858
SET OF HIGH SPEED THREAD CUTTING CARBIDE CHASERS
Donald O. Appleby, Mentor, Ohio, assignor to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio
Filed Nov. 1, 1962, Ser. No. 234,753
1 Claim. (Cl. 10—111)

A set of thread cutting chasers, said set consisting of a plurality of carbide chasers, each having cutting teeth, said chasers being adapted for mounting in a rotary spindle head in radially and circumferentially spaced relation to each other about the axis of rotation of the head for co-rotation of the chasers by the spindle head about said axis and for retraction and advancement relative to said axis concurrently with each other during the co-rotation and thereby rendered operative for high speed cutting on a cylindrical member, coaxial with the spindle head, of a tapered external spiral thread having a wide root and wide crest, the teeth of the chasers being arranged so that the successive teeth in the order enumerated along the cut being made are as follows:

1st, 2nd, and 3rd teeth which are progressively shorter, in a direction endwise of the thread axis, with the flanks of each inset from the corresponding flanks, respectively, of its predecessor, and which the progressively greater in height, radially of the thread axis, for making 1st, 2nd, and 3rd root cuts, respectively, with the flank ends of each root cut being stepped inwardly of the thread groove from the flank ends of the root cut immediately preceding it;

a 4th tooth which, endwise of the thread axis, is longer than the 2nd tooth and shorter than the 1st tooth and having its flanks stepped inwardly from the corresponding flanks of the 1st tooth, respectively, and stepped outwardly from the corresponding flanks of the 2nd and 3rd tooth, respectively, and which is of a radial height greater than that of the 2nd tooth but less than that of the 3rd tooth, for forming flank cuts on both flanks concurrently, interrupted by the preceding 2nd and 3rd root cuts;

a 5th tooth which, endwise of the thread axis, is shorter than the 4th tooth and longer than the 3rd



tooth, with its flanks stepped inwardly from the corresponding flanks of the 4th tooth, and stepped outwardly from the corresponding flanks of the 3rd tooth, and which is of greater radial height than the 3rd tooth, for making a 4th root cut, with its flanks stepped inwardly from the corresponding flanks of the interrupted flank cut;

a 6th tooth which, endwise of the thread axis, is of less length than the 4th tooth and with its flanks steppe l inwardly from the corresponding flanks of the 5th tooth, and which is of greater radial height than the 5th tooth, for making a 5th root cut, with its flanks stepped inwardly from the corresponding flanks of the 4th root cut;

a 7th tooth which, endwise of the thread axis, is longer than each of the 2nd through the 6th teeth, and shorter than the 1st tooth, with its flanks stepped inwardly from the corresponding flanks of the 1st tooth and stepped outwardly from the corresponding flanks of the 2nd tooth, and which is of greater radial height than the 5th tooth and of less radial height than the 6th tooth, for making a second interrupted flank cut on each flank spaced inwardly at both flanks from the corresponding flank cuts of the first root cut made by the 1st tooth;

an 8th tooth which, endwise of the thread axis, is shorter than the 7th tooth and with its flanks stepped inwardly from the corresponding flanks of the 7th tooth, and stepped outwardly from the corresponding flanks of the 6th tooth, for making a 6th root cut with its flanks stepped inwardly from the corresponding flanks of the second interrupted flank

cut and which is of a radial height greater than the 6th tooth; and

a 9th tooth which, endwise of the thread axis, is of greater length than the 1st tooth and having its forward flank stepped forwardly from the forward flank of the 7th tooth, its radial height greater than that of the 8th tooth, and its rear flank stepped rearwardly from the rear flank of the 7th tooth, and having a portion with a cutting edge extending rearwardly from the rear flank near the base of the 9th tooth in a direction generally endwise of the tooth axis, the cutting edge of the 9th tooth being uninterrupted and having the final contour in a radial plane through the thread axis, of the section of a finished thread in said plane, including the entire forward flank, the entire root, the entire rear flank, and the crest of the next adjacent thread at said rear flank.

3,159,859
MECHANICAL TOOTHBRUSH
Frank H. Rasmussen, 744 S. Spring Ave., La Grange, Ill.
Filed Apr. 16, 1962, Ser. No. 187,531
4 Claims. (Cl. 15—22)



1. A mechanical toothbrush comprising

(*a*) a housing

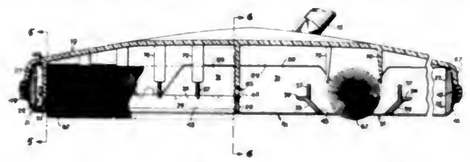
(*b*) a brush handle having inner and outer ends thereon and extending outwardly from said housing and having a brush on the outer end thereof,

(*c*) eccentric drive means within said housing connected to the inner end of said handle and operable to impart a reciprocating motion to said brush, and

(*d*) means intermediate the ends of said handle and including a pin and a substantially S-shaped slot connection between said housing and brush handle to modify the reciprocating motion imparted by said drive means, said slot extending generally longitudinally of said handle, thereby to generate a combination rotary and reciprocating path of movement for said brush, whereby, when the handle is positioned vertically with the work contacting portion of the brush against the user's teeth, the brush will move from the user's gum toward the biting edge of the teeth, then away therefrom out of contact therewith and back to the gum.

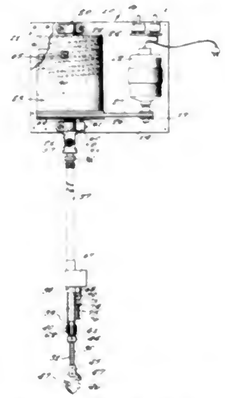
3,159,860
SWEEPING APPARATUS
Robert L. Colver, Sunnyvale, Calif., assignor to H. Goldschmidt & Associates, Inc., Menlo Park, Calif., a corporation of California
Filed Feb. 21, 1963, Ser. No. 260,202
6 Claims. (Cl. 15—41)

1. Sweeping apparatus comprising a dust collecting receptacle adapted to be passed over a surface to be swept, the bottom of said receptacle having a substantially square configuration, barrier means dividing the bottom of said receptacle into four substantially square and equally sized compartments, the bottom of each of said compartments including a centrally disposed rectangular shaped opening substantially parallel to two sides of the compartment, the rectangular openings in any two adjacent compartments



being perpendicularly disposed with respect to each other, resilient brush means disposed adjacent and extending through each of said rectangularly shaped openings, a handle for passing the receptacle over the surface to be swept, and pivot means for supporting said handle on the dust collecting receptacle, the axis of said pivot means being disposed substantially at an angle of 45° with each of said rectangular openings.

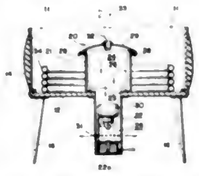
3,159,861
SEWER CLEANING MACHINE
Dominick C. Sarcone, 3239 Fenton Ave., Bronx, N.Y.
Filed Apr. 8, 1963, Ser. No. 271,108
7 Claims. (Cl. 15—104.3)



1. A sewer cleaning machine for cleaning out a clogged sewer pipe, comprising a housing, a reversible electric motor supported within said housing, a hollow drum mounted for rotational and axial movement within said housing, drive means connecting said motor and drum, a cable wound within said drum and having its inner end secured thereto, said cable provided with a threaded exterior surface, a screw feed member stationarily mounted on said housing coaxial with the drum axis and adjacent one end of said drum, said cable passing outwardly from said one end of said drum into and through said screw feed member, a flexible tubular handle member connected to said screw feed member, said cable extending through and outwardly of said tubular handle, and a cutting blade fixedly secured to the outer free end of said cable, whereby rotation of said drum in either direction will effect a crank action to said cable within said drum to impart torque thereto such as to cause the cable to advance or retract through the screw feed member and the tubular handle, an electric circuit connected to a source of electric supply, a double-throw-switch in

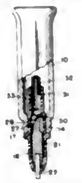
the circuit for controlling the electric motor to operate the same in a "forward" or "reverse" direction in order to respectively wind out and rewind the cable from and into said drum, means fixed to said cable adjacent its inner end engageable with said one end of said drum near the end of its advance therethrough for moving said drum axially, and limit switch means in said electric circuit engageable by said drum in its axial movement automatically operative to open said electric circuit whereby to stop said electric motor in its "forward" drive.

3,159,862
HASSOCK TYPE VACUUM CLEANER
Charles H. MacFarland, Rocky River, Ohio, assignor to The Scott & Fetzer Company, Cleveland, Ohio, a corporation of Ohio
Filed May 18, 1962, Ser. No. 195,863
3 Claims. (Cl. 15—323)



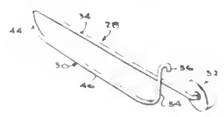
1. A hassock type vacuum cleaner comprising a hollow lidded container having side walls and a bottom wall with a centerward opening therein, legs supporting said container well above floor level, a vacuum cleaner assembly comprising a vertically extending air-tight down-pipe, said down-pipe being only partly located within said lidded container and extending through said opening in said bottom wall of said lidded container and being spaced from all of said side walls of said lidded container to provide a hose storing space within said lidded container, a filter chamber at the top end of said down-pipe and within said container, a removable cover for said filter chamber, a downwardly directed blower means in the down-pipe below the filter chamber, and exhaust openings in the down-pipe below the blower means, said exhaust openings being spaced a substantial distance below said bottom wall of said hollow container.

3,159,863
FOUNTAIN MARKER
Joseph L. La Mura, West Caldwell, N.J. (Dorsa Ave., Livingston, N.J.)
Filed Jan. 23, 1964, Ser. No. 339,783
2 Claims. (Cl. 15—537)



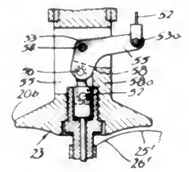
1. A fountain marker comprising, a cylindrical container closed at its lower end and defining an internal reservoir for the storage of marking fluid, a piston chamber secured to the upper end of the container and supporting a first movable piston therein, said chamber formed with an opening at its upper end which permits the passage of a marker wick connected to the upper end of said first piston but retains the piston, an annular constriction intermediate the ends of the chamber for limiting the motion of said piston and to aid in locking the piston in a marking position, a spherical ball also within said piston chamber for retaining the piston in a marking position when the container is in an inverted position by limiting against said annular constriction, and a movable auxiliary piston supported within a plug positioned within the lower opening of said piston chamber for pumping fluid from the reservoir into the chamber each time the marker is inverted, said ball also adapted to move into the space between the constriction and the plug to permit the first piston to move to its fully retracted position within the piston chamber when the container is in its upright position.

3,159,864
COMBINATION SPACERS AND SILENCERS FOR VENETIAN BLINDS
Albert J. Ferrera, 267 Apollo Way, Pleasant Hill, Calif.
Filed Feb. 5, 1963, Ser. No. 256,354
2 Claims. (Cl. 16—1)



1. A device of the character described comprising vertically-spaced upper and lower resilient rods having first and second ends, a vertical connecting rod extending between and connected to the first ends of said rods, the second end of said lower rod being spaced inwardly from the second end of the upper rod, a shock absorber mounted on the second end of the upper rod, said lower rod having an upstanding terminal on its second end, said terminal having a lateral down-turned hook spaced above the lower rod and adapted to be engaged over the upper rod for clamping the rods against opposed sides of a member, said upper rod having a lateral horizontal pintle adjacent to its second end, on which said shock absorber is mounted, said shock absorber being circular and axially mounted on the pintle.

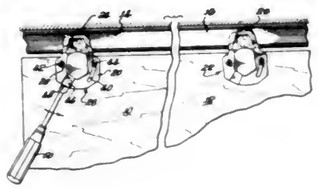
3,159,865
CASTER BRAKE ASSEMBLIES
George Frederick Shepherd, 11 Manor St., Brighton, Victoria, Australia
Filed Sept. 28, 1961, Ser. No. 141,360
Claims priority, application Australia, Oct. 5, 1960, 65,298/60
7 Claims. (Cl. 16—35)



5. A caster and brake assembly for a hospital bedstead comprising an inclined axle, a caster having a hollow body including a floor engaging roller mounted for rotation upon said inclined axle, a vertical socket bearing in said caster body, a hollow swivel pin slidable within and projecting from said bearing, a brake body coaxial with and secured to said pin, means for attaching the outer end of said brake body to a leg of a bedstead to be supported by said caster, said brake body having at its inner end a brake forming flange coaxial with said swivel pin and contactable with the tread of said floor engaging roller, said brake body having an opening in communication with the upper end of said hollow swivel pin, a bell crank

lever pivotally mounted within said opening with one limb projecting from the latter, means connected to said projecting limb to angularly move said lever, a toggle link pivotally connected at one end within said opening to the other internal limb of said lever, a coactive member disposed in slidable relation within said hollow swivel pin and pivotally connected to the other end of said toggle link in coaxial alignment with the pivot axis of said bell crank lever, said member having an extension projecting through said swivel pin to contact the bottom of said socket bearing, said body having a part of the wall defining said opening forming a stop to limit the extent of movement of said internal limb responsive to the operation of said means, in a direction to locate the brake flange in an "off" position relatively to the tread of said roller whereby upon release of said means by the operative, the brake body describes a gravitational movement to impart a weight imposed application of the brake forming flange to the tread of said roller.

3,159,866
VERTICALLY ADJUSTABLE SLIDING DOOR HANGER
Kenneth K. Kellems, Ontario, Calif., assignor to Acme Appliance Manufacturing Company, Monrovia, Calif., a corporation of California
Filed May 31, 1962, Ser. No. 198,902
2 Claims. (Cl. 16—105)



1. In a vertically adjustable hanger for a sliding door, the combination of:

(*a*) a bracket having a plane surface seatable against one side of the door;

(*b*) a wheel mounted on said bracket for rotation about an axis perpendicular to the plane of said surface of said bracket;

(*c*) said bracket being provided therein with two screw slots converging downwardly from upper ends of said slots to lower ends thereof;

(*d*) said screw slots respectively being adapted to receive screws extending therethrough and secured to the door;

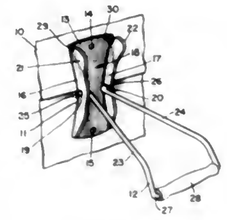
(*e*) one of said screw slots being a relatively short slot sloping downwardly toward the other of said screw slots;

(*f*) said other screw slot being a relatively long, arcuate slot which slopes downwardly toward a downward projection of said one screw slot and the concave side of which faces said one screw slot;

(*g*) the center of curvature of said other screw slot being within said one screw slot adjacent the upper end thereof; and

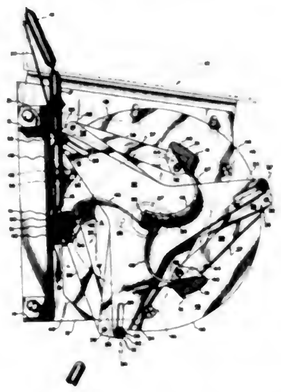
(*h*) the weight of the door causing a screw extending through said one screw slot to tend to move downwardly along the lower edge of said one screw slot to produce relative lateral movement between said hanger bracket and the door to force a screw extending through said other screw slot against the concave edge of said other screw slot and thereby cause the screws to wedge between the outer edges of said screw slots to hold the door in an adjusted position.

3,159,867
GARAGE DOOR HANDLE
Alfonso B. Aciego, 15227 Freeman Ave., Lawndale, Calif.
Filed Oct. 30, 1962, Ser. No. 234,017
7 Claims. (Cl. 16—126)



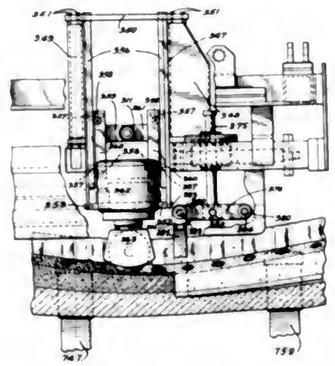
1. A garage door handle structure comprising, in combination: a bracket adapted to be secured to said garage door; and an elongated handle member pivoted at one end to said bracket for swinging movement from a first position adjacent to the surface portion of said garage door above said bracket when said door is closed to a second position adjacent to the surface portion of said garage door on the opposite side of said bracket when said garage door is open, said handle member when in said first position extending from its pivoted end towards its free end for a given distance in a straight line direction generally parallel to the surface portions of said door and then following a direction out of the plane of said surface portions so that its free end is spaced from said surface portions.

3,159,868
APPARATUS FOR PEELING SAUSAGES AND THE LIKE
William M. Allen, Charlie W. Fick, and Albert M. Rockwood, Columbus, and Robert E. Bell, Worthington, Ohio, assignors, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Sept. 8, 1960, Ser. No. 54,630
16 Claims. (Cl. 17—1)



7. For use with a length of tubular casing which is constricted at substantially equally spaced points along its length and encloses a plurality of frankfurters which are arranged end to end in a line and each of which is located between adjacent constricted portions of the casing; apparatus for removing said frankfurters one by one from said casing comprising means for cutting said constricted casing portions, and means for thereafter consecutively applying oppositely directed forces directed longitudinally of said casing and said frankfurters to said casing and to each of said frankfurters in order proceeding from one end of said line so as to remove said casing from said frankfurters.

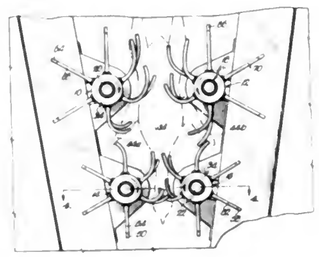
3,159,869
LOIN SEVERING APPARATUS
Norman H. Vogt, Clawson, Mich., Harry W. Weprin, Chicago, Ill., and Samuel P. Pasutin, Royal Oak, Mich., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,076
5 Claims. (Cl. 17—1)



2. In apparatus for severing a loin portion from an animal carcass half, a frame, an overhead carriage mounted on said frame, a scribe saw mounted on said carriage, a U-shaped loin-pulling knife also mounted on said carriage, means for raising and lowering said carriage and thereby said saw and said knife, control means for adjusting the vertical position of said raising and lowering means so as to adjust for the depth of cut of said saw and knife, and means for moving said carriage forwardly for severing said loin from said animal carcass half.

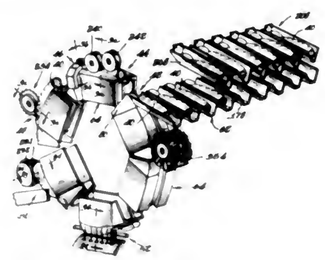
3,159,870
METHOD OF DEFEATHERING POULTRY
Ralph S. Zebarth, Kansas City, Richard L. Lewis, Independence, and John E. Franta, Kansas City, Mo., assignors to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 1, 1960, Ser. No. 19,344
3 Claims. (Cl. 17—45)

1. The method of removing feathers from poultry which comprises the steps of continuously advancing a bird to be defeathered along a predetermined path and at a preselected speed of travel while holding the bird suspended and against descent and, while held and advanced, slapping the body of the bird without interruption with opposed, downwardly and inwardly directed, frictional rubbing forces to pull the feathers from said body while simultaneously and uninterruptedly slapping each wing of the bird with outwardly and downwardly, and opposed, inwardly and upwardly directed, frictional rubbing forces separate from the forces applied to the body for pulling the feathers from the wings of the bird and, at the same time, uninterruptedly slapping other appendages of said body with opposed, downwardly and inwardly directed, frictional rubbing forces separate from the forces applied to the body and separate from the



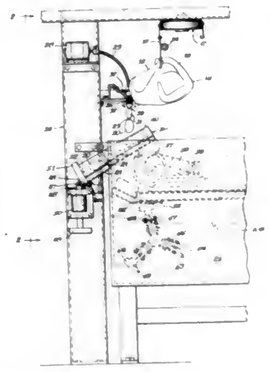
forces applied to the wings to pull the feathers from said other appendages.

3,159,871
METHOD FOR CLEANING SHRIMP
Gregor Jonsson, 950 E. Westleigh Road, Lake Forest, Ill.
Original application July 7, 1960, Ser. No. 41,304, now Patent No. 3,122,777, dated Mar. 3, 1964. Divided and this application Jan. 18, 1963, Ser. No. 258,095
4 Claims. (Cl. 17—45)



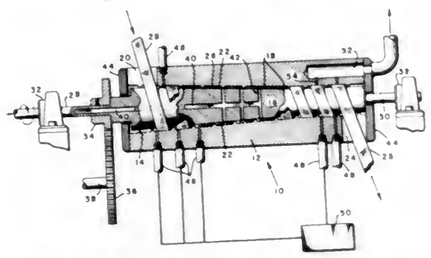
1. The method of cleaning shrimp comprising establishing on the shell of the shrimp a secure grip which is maintained until the main portion of the shrimp shell is removed from the flesh body of the shrimp, said grip on the shrimp shell extending forwardly along the ventral side of the shrimp to the head end of the shrimp body from a position near but forward of the shrimp tail, opening the shell of the shrimp longitudinally along the dorsal side of the shrimp from a position near but forward of the shrimp tail to the head end of the shrimp body; clutching both the tail of the shrimp and the flesh body of the shrimp, which is exposed through the longitudinally open shell, to hold the shrimp tail and flesh body against movement relative to each other in a longitudinal direction in relation to the shrimp; and moving the main portion of the shrimp shell, along which said grip is established, longitudinally in relation to the still clutched tail and flesh body which are held against longitudinal movement in relation to each other to effect separation of the main portion of the shrimp shell from the shrimp tail and body leaving the tail and body attached to each other.

3,159,872
POULTRY GIZZARD PROCESSING METHOD
Carl J. Hill, Box 409, Canton, Ga.
Filed July 22, 1963, Ser. No. 298,521
9 Claims. (Cl. 17—45)



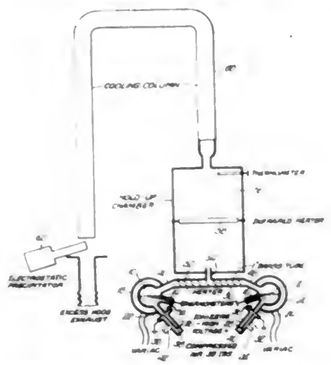
1. In the processing of gizzards from poultry using a gizzard processing apparatus, the improvement comprising the steps of: detaching the gizzards from the poultry with portions including the stomachs attached; and using said portions to orient the gizzards in the apparatus.

3,159,873
CONTINUOUS ANNEALER
John Mylo, Athens, and John C. Cole and James P. Richeson, Decatur, Ala., assignors to Monsanto Company, a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,246
4 Claims. (Cl. 18—1)



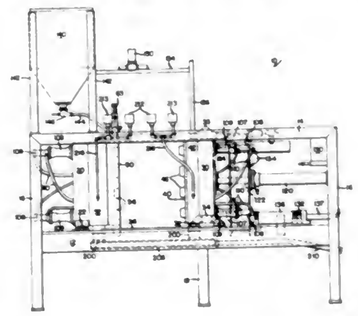
1. An apparatus for use in treating continuously moving filamentary material with a heated fluid, comprising an elongated, tapered rotor means, a housing having a tapered chamber shaped to receive said rotor means, the walls of said chamber being provided with a helically extending ridge; said rotor, bore and ridge defining a helical, filament conveying passageway, said rotor means having a longitudinal bore and radial passages formed in said rotor and interconnecting said helical passageway with said longitudinal bore, said bore communicating between said radial passages and the exterior of said housing, a source of heated fluid communicating with said longitudinal bore, drive means drivingly connected to said rotor means, a source of relatively dry, pressurized air communicating with said helical passageway at opposite ends thereof to thereby retard the escape of said heated fluid whereby, as a filamentary tow is fed through said apparatus along said helical passageway, said tow is subjected to a controlled shrinkage.

3,159,874
APPARATUS FOR ELECTROSTATIC ENCAPSULATION
Gerhard Langer, Downers Grove, and George Yamate, Chicago, Ill., assignors, by mesne assignments, to IIT Research Institute, Chicago, Ill., a non-profit corporation of Illinois
Filed Aug. 2, 1962, Ser. No. 214,377
14 Claims. (Cl. 18—1)



1. A system for encapsulating a material to be encapsulated by an encapsulating substance comprising: a first reservoir containing a liquid to be encapsulated; first means for delivering a unipolar ionized stream of gas into contact with said first reservoir of a liquid to be encapsulated whereby unipolar charged aerosol particles are released from said first reservoir; a second reservoir containing an encapsulating liquid; second means for delivering an oppositely charged ionized stream of gas into contact with said second reservoir of an encapsulating liquid whereby oppositely charged aerosol particles are released from said second reservoir; a common mixing chamber; third means for guiding said charged aerosol particles of said liquid to be encapsulated and said oppositely charged aerosol particles of said encapsulating liquid into said common mixing chamber wherein encapsulation takes place; and fourth means for collecting the encapsulated particles that are formed.

3,159,875
AUTOMATIC MOLDING PRESS
William Stutz and Charles N. Premo, Springfield, Mass., assignors to Springfield Cast Products, Inc., Springfield, Mass.
Filed June 30, 1961, Ser. No. 120,982
1 Claim. (Cl. 18—5)

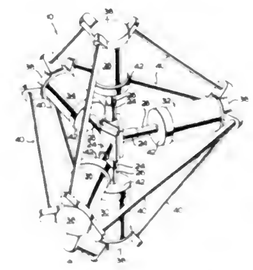


In a molding apparatus for expansion-forming and shaping an article of expanded resin bead construction,

the combination of, a supporting frame, a pair of separable head platens mounted relative to said frame and in alignment as to each other, a power means supported by said frame for reciprocating one of said head platens relative to said main frame and the other of said head platens between cavity-opened and cavity-closed positions in timed relation to the cyclical operation of the apparatus, a cooperating mold face associated with each said head platen, a cooperating steam chest associated with each said head platen and secured to and intermediate the respective said head platen and its respective said mold face, said mold faces being complementary and having confrontable and partible surfaces contacting each other in cavity-closed position and each being recessed to cooperatively define therebetween first an enclosed molding cavity and second an open-ended vertically-extending runner opening communicating with the molding cavity, each said mold face being provided with fluid apertures and ejection ports therethrough leading from the respective said steam chest to the molding cavity, an elongated vertically-reciprocable channel-shaped runner element embracing the recessed walls of the runner opening and being movable relative thereto between charging and non-charging positions, said runner element having a transversely-extending charging opening therethrough for registry with the molding cavity in the charging position of said runner element and non-registry with the molding cavity in the non-charging position of said runner element, a hopper on said frame for containing a supply of resin beads, valved pneumatic means for cyclically delivering a measured charge of resin beads from said hopper to the cavity via said runner element, cyclic means for selectively motivating said runner element vertically between charging and non-charging positions, supplemental pneumatic means for cyclically delivering excess beads from said runner element returnably to said hopper in response to the completion of the charging of the molding cavity, means operative in response to the completion of the charging of the molding cavity for charging steam to each said steam chest and therefrom to the molding cavity via the fluid apertures in the respective said mold face during the foam fusion portion of a forming cycle, a unitary valve-operated fluid spraying and spring loaded ejecting means being floatable within each said steam chest between a normal non-operational rearwardly-disposed position with the fluid spraying portion of said means being rendered non-operative and the ejecting portion of said means being retracted from extension into the molding cavity and an operational forwardly-disposed position with the fluid spraying portion of said means being rendered operative for the cyclic spraying of cooling fluid upon the rearward wall of the respective said mold face in response to the cyclic termination of the charging of steam into the molding cavity and the ejecting portion of said means being extended into the molding cavity unisonally through the ejection ports in the respective said mold face in response to the cyclic termination of the spraying of cooling fluid and the parting of the confronting surfaces of said mold faces, and means for guiding the floating movements of each said spraying and ejecting means within its respective said steam chest.

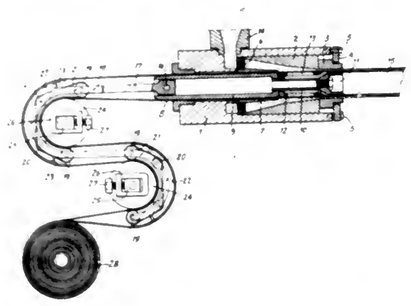
3,159,876
HIGH PRESSURE PRESS
Howard T. Hall, Provo, Utah, assignor to Research Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 851,855, Nov. 9, 1959. This application May 23, 1962, Ser. No. 199,558
5 Claims. (Cl. 18—16)

1. A high pressure press comprising a pair of anvil devices having similar opposed press faces, means for rectilinearly moving the pair of anvil devices along a common axis toward a common point, at least three anvil devices having similar equal press faces, further means for rectilinearly moving said at least three anvil devices along axes normal to the press faces thereof and positioned in a common plane normal to the common axis of said pair of anvil devices and converging to a common intersection located in said common axis, the press faces



of the anvil devices forming a closed polyhedral prism in their position of contact and rigid tie means interconnecting the means for urging each of said anvil devices into a closed prism to provide an integral press unit whereby the reaction of each of the anvil devices is transferred to the others.

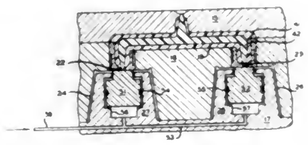
3,159,877
MACHINES FOR THE EXTRUSION OF CASINGS, CONDUITS OR SHAPED SECTIONAL MEMBERS OF REINFORCED MATERIAL
René Orsini, Geneva, Switzerland, assignor to Societe Anonyme Plastus S.A., Geneva, Switzerland, a corporation of Switzerland
Filed Nov. 5, 1962, Ser. No. 235,210
6 Claims. (Cl. 18—13)



5. A machine for the extrusion of shaped sectional members of plastic material having a reinforcing sleeve embedded in a thermoplastic material comprising an extrusion head having a longitudinal bore, a mandrel mounted within said bore with a clearance between said mandrel and said bore for the reception of said sleeve, a die in the front of said bore with a clearance between said die and said bore for the reception of said sleeve, means connecting said die to the front of said mandrel, a bar carried by the rear end of said mandrel, at least one hook shaped part in said bar, rolling means on the inside of each book shaped part, said bar, hook shaped part and rolling means being adapted to be enveloped by said reinforcing sleeve, and rolling means external to said reinforcing sleeve and

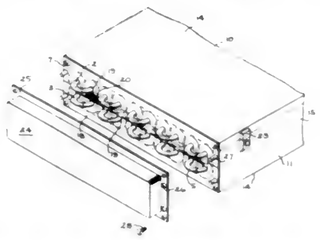
cooperating with the rolling means on the inside of each hook shaped part for supporting said bar.

3,159,878
INJECTION MOLDING OF PLASTIC MATERIALS
John N. Scott, Jr., and Donald L. Peters, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 14, 1961, Ser. No. 138,033
3 Claims. (Cl. 18—30)



1. In injection molding apparatus wherein a plastic material is heated and forced through a runner terminating in a gate opening into a mold comprising a cavity and a core, apparatus comprising a piston having an area greater than that of said gate positioned in an opening in the wall of said core directly opposite said gate; and means to apply a measure fluid pressure to said piston to tend to urge said piston into sealing contact with said gate.

3,159,879
FIXTURE FOR USE IN THE MANUFACTURE OF HEAT EXCHANGERS
Raymond C. Thornton, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,420
1 Claim. (Cl. 18—36)



A fixture for use in the manufacture of a heat exchanger comprising spaced parallel sections each including a plurality of parallel tubular passes having fin portions thereon and connected by U-shaped end turns embedded in a foamed plastic material,

said fixture comprising opposed confronting members each adapted to contain one of said sections,

said members being pivotally connected along adjacent side edges thereof,

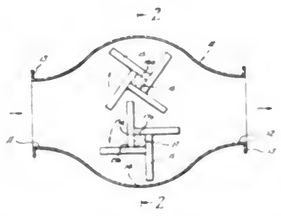
each of said members comprising end walls spaced from one another a distance approximately equal to the lengths of said fin portions thereby to receive the finned portions of said passes between said end walls,

the opposed edges of the end walls on each of said members being spaced from the opposed edges of said end walls on the other of said members,

each of said opposed edges having slots therein for receiving said passes adjacent said finned sections,

and a mold adapted to be removably secured to an end of said fixture for enclosing the end turns at said end of said fixture.

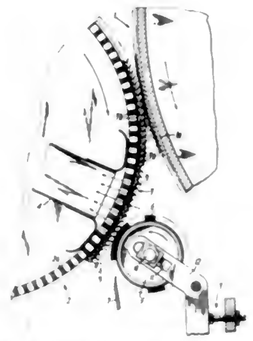
3,159,880
COTTON WAD BREAKER
Jack T. Carpenter, Box 192, Chapman Ranch, Tex.
Filed June 27, 1962, Ser. No. 205,780
2 Claims. (Cl. 19—82)



1. For use in cotton ginning equipment which includes a conduit through which wads of cotton are pulled from an intake to a vacuum separator, a breaker for the wads comprising a longitudinally extending housing having an aligned inlet and outlet at its opposite ends for connection in the conduit, a pair of shafts extending across the housing in substantially parallel, laterally spaced-apart relation with their axes lying in a plane substantially perpendicular to the aligned inlet and outlet, each shaft having fixed blades extending therefrom and spaced along the length thereof and arranged in rows along the length of the shaft, the ends of the blades of the rows of one shaft overlapping with and being laterally spaced from the ends of the blades of the rows of the other shaft during rotation of the shafts, and means for rotating the shafts in opposite directions to cause the ends of the blades to move toward the inlet as they overlap with one another, said housing being free of obstructions between the inlet and said blades, each of the inlet and outlet being spaced longitudinally of the ends of the blades of the shafts, and the interior of the housing intermediate the inlet and outlet comprising oppositely facing walls which include circular portions curved for disposal closely adjacent the ends of the blades and end portions which slope gradually outwardly in a longitudinal direction to connect said curved portions with said inlet and outlet.

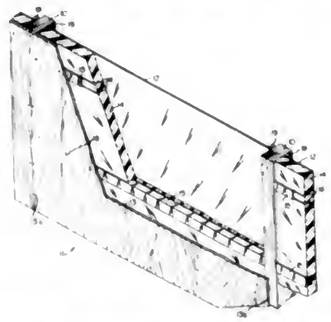
3,159,881
DOFFER FOR CARDING MACHINES
Ferdinand Reiterer, Ruell-Malmaison, France, assignor, by direct and mesne assignments, to Whitin Machine Works, Whitinsville, Mass., a corporation of Massachusetts
Filed Sept. 26, 1961, Ser. No. 140,722
Claims priority, application France Sept. 28, 1960
5 Claims. (Cl. 19—106)

1. In combination, a component for a fiber processing machine adapted to carry a lap of fibers having a maximum thickness which is generally no greater than a selected value comprising a rotatable hollow cylinder having a perforated outer wall, a toothed clothing mounted on the outer surface of the outer wall comprising a base provided with a plurality of openings to admit air into the cylinder and a plurality of teeth projecting outwardly therefrom and having a height above the base which is at least as great as the selected value, a suction duct mounted inside the cylinder for directing air inwardly through the clothing and the cylinder wall into the cylinder so that a lap of fibers carried by the clothing is drawn against the base of the clothing with the outer surface thereof no farther from the base than the points of the teeth, whereby coarse impurities tend to be retained at the points of the teeth and thereby separated from the fibers of the lap, and a rotatable brush mounted closely adjacent to the points of the teeth to remove impurities therefrom, the rotatable brush being located beyond the



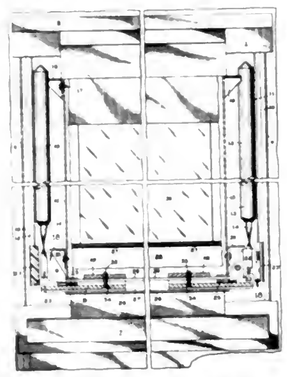
position of the suction duct in the direction of motion of the clothing.

3,159,882
BUILDING CONSTRUCTION
John H. Slayter, P.O. Box 431, Newark, Ohio
Filed June 12, 1962, Ser. No. 201,916
3 Claims. (Cl. 20—4)



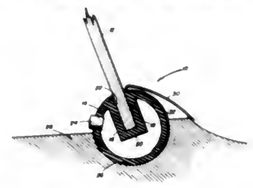
1. A building wall structure comprising a pair of elongated, relatively laterally-spaced, parallel frame members, said frame members being of selected depth between opposed inner and outer edges; an outer panel skin member mounted between and within the pair of adjacent frame members having inner and outer faces and having opposed longitudinal side edges disposed adjacent said frame members; stops extending longitudinally of said frame members and secured thereto outwardly of the outer face of said skin member with the skin member free of said stops to permit longitudinal movement of the edges of the skin member relative to the adjacent frame members but to retain the skin member inwardly of the outer edges and within the depth of said frame members; an insulating body having an inner face and having an outer face bonded to the inner face of said outer skin member with longitudinal edges disposed within the frame members and free thereof to permit longitudinal movement of said insulating body edges relative to the adjacent frame members, an inner panel skin member inwardly of said frame members having inner and outer faces with its outer face attached to the inner edges of the frame members; and means for connecting said inner skin member to said insulating body to permit relative longitudinal movement therebetween; said means comprising channel members extending transversely between said frame members which are secured to the outer face of said inner skin member at longitudinally spaced intervals and which have flanges which project outwardly into receiving transverse slots in the inner face of said insulating body which extend partly through said body.

3,159,883
WINDOW STRUCTURE
Morton Tucker, Hialeah, Fla.
Filed May 18, 1962, Ser. No. 195,737
4 Claims. (Cl. 20—52.2)



2. A window construction comprising a frame, a sash slidable up and down in the frame and said sash having top and bottom horizontal rails and vertical stiles, a pair of spring balances in the frame disposed between the sides of the sash and the side members of the frame, the sash having guide elements engaging and guided by said balances, each of the balances including a spring-biased extensible strip, a bracket at the lower end of the strip, said bracket including a lip extending under the lower end of the sash, and means carried by the sash and adjustable in the bottom rail of the sash for engaging over the lip portion to thereby couple the bracket to the sash, said means being shiftable on the sash to free it from the bracket and permit movement of the bracket relatively to the sash.

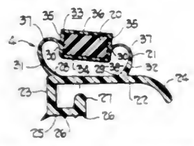
3,159,884
INFLATABLE WEATHERSTRIPPING
John H. Hankey, 701 Crain Highway NE., Glen Burnie, Md.
Filed July 25, 1962, Ser. No. 212,325
2 Claims. (Cl. 20—56.4)



2. An inflated weatherstripping construction for a panel, comprising, frame structure defining an opening and having an inner peripheral groove of substantially semi-circular cross-section, a panel mountable in said opening in said frame structure, an endless inflatable tube positioned in said inner peripheral groove and having a rectangularly shaped well re-entrantly formed in said tube and extending throughout the length thereof, the edge periphery of said panel being seated in said re-entrant well, and reveal molding having a curved tail forming a continuation above said groove of the

surface of said groove along one side thereof and extending into said groove between the surface thereof and said tube, said tube being inflatable with a pressurized medium so that said well in said tube firmly grips the edge periphery of said panel and so that said tube tightly fills the cavity formed by said groove and said continuation thereabove along one side of said groove to form a seal between said panel and said opening in said frame structure, said reveal molding being held solely in position by the pressure exerted by the inflated tube on the portion of the tail thereof extending into said groove against said groove to form a trim for said opening.

3,159,885
SEALING GASKET WITH MAGNET INSERT
Raymond H. Cowles, Seymour, Ind., assignor to The H. O. Canfield Company, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 12, 1961, Ser. No. 144,794
12 Claims. (Cl. 20—69)



1. In a gasket of the type comprising a resilient deformable strip of plastic material for sealing the joint between the frame and door members of a refrigerator cabinet or the like, said strip being of uniform section and comprising in a normal unstressed condition longitudinally extending base and holding portions, said holding portion being spaced above the base portion for relative lateral bodily motion and for bodily motion to and from the base portion and having means for carrying magnetic means to coact with one of the cabinet members,

a pair of spaced side walls each extending between the holding and base portions,

the side walls being connected to the base portion along a first pair and to the holding portion along a second pair of spaced parallel juncture lines,

the holding portion having side walls with oppositely directed outside surfaces and

the second pair of juncture lines being located along said outside surfaces,

the side walls being bowed outwardly away from one another with internal concave surfaces facing one another,

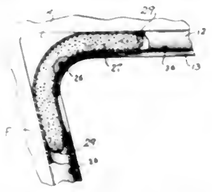
each side wall extending from one of the first juncture lines to one of the second juncture lines in a continuous bulging curve externally convex throughout the extent of the side wall,

said first pair of juncture lines being more widely spaced apart than said second pair and portions of the side walls intermediate their respective juncture lines being spaced further apart than said first pair of juncture lines,

whereby under compression between such cabinet members and distention upon separation of such cabinet members the gasket is adapted to yield and distend by easy movements of the holding portion toward and away from the base portion with the bulging curvature of the side walls increasing and decreasing, respectively, and

whereby upon lateral movement of one such cabinet member relative to the other with the gasket engaged between, the holding portion is adapted to shift laterally by easy movement relative to the base portion with accompanying rolling motions of the bulging side walls.

3,159,886
SEALING STRIP WITH FOAMED-IN-PLACE FILLER
William R. Lynch, Birmingham, Mich., assignor to Republic Industrial Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,157
4 Claims. (Cl. 20—69)



2. In a flange-gripping, flexible, sealing strip for trim, marginal seals, weather seals, and the like including:

(*a*) an elongated, thin, spring metal, channel having a succession of longitudinally spaced, parallel, U-shaped, transversely extending, gripping elements and thin, narrow, bridging connections between successive gripping elements,

(*b*) a closed, flexible, tubular sealing member substantially coextensive with said integral channel, and

(*c*) means connecting said tubular sealing member and said channel together in closely spaced, parallel relationship over the lengths thereof;

the improvement which comprises:

(*d*) a plurality of longitudinally spaced air vents in the wall of said tubular member, and

(*e*) a plurality of discontinuous portions of foamed-in-place, elastomeric, resinous material, said portions of resinous material—

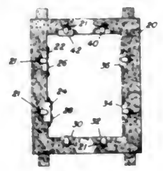
(i) having hardened, skin-encased, plug portions united therewith at each extremity thereof and formed from the same resinous material,

(ii) filling the interior cross-section of the tubular member in each direction from preselected air vents through which said resinous material has been injected, and

(iii) extending along predetermined regions of bending of said tubular member with a curvature sufficient to cause crimping thereof;

whereby said portions of resinous material coact with said tubular member to maintain its normal, cross-sectional contour by internal resistance to such crimping thereof when bent with such a curvature.

3,159,887
EXOTHERMIC INSERTS FOR HOT TOPS
Charles Robert Funk, Westchester, and Donald K. Matthews, Coatesville, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1963, Ser. No. 255,335
6 Claims. (Cl. 22—147)



1. A hot top of clay, cement, or the like, in combination with an ingot mold having molten metal therein, said hot top including a vertical longitudinal groove of uniform cross-section in the inner face thereof, and an insert of exothermic material of uniform cross-section corresponding to the aforesaid cross-section of said longitudinal groove keyed within and interlocked with said groove, one side of said insert substantially immersed in said molten metal.

3,159,888
SPRING CLAMP FOR MOLD PARTS AND THE LIKE
Francis J. Garvey, Blue Anchor, N.J., assignor to Garvey Products Corporation, Blue Anchor, N.J., a corporation of New Jersey
Filed Mar. 26, 1962, Ser. No. 182,427
2 Claims. (Cl. 24—23)



1. In a clamp for such purposes as holding together the separate parts of a split neck ring or mold, an elongated buckle member comprising a single thickness of spring strap metal formed in generally U-shape having two opposite terminal bearing portions and an intermediate upwardly bowed portion,

a fully enclosed opening in one terminal bearing portion,

a transverse slot open to one edge of the member out beyond the other terminal bearing portion,

a hole in the member inwardly of said other terminal bearing portion and adjacent to said slot,

and a tongue struck up from the member defining the outer side of said hole and bent back toward said slot,

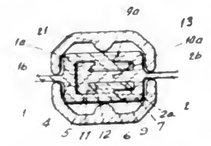
and a pliable metallic band having an intermediate portion adapted to encircle the parts to be clamped and having one end portion looped through said opening and being thereby permanently connected to the buckle member and having its other end portion underlying said other terminal bearing portion of the member, extending up through said hole and reversely bent back over said tongue and extending through the open ended slot,

whereby, when the parts to be clamped are enclosed by the buckle member and the intermediate portion of the band, flattening pressure applied to the bowed portion will press the terminal bearing portions against the parts, spread them farther apart and increase the distance between the opening and hole and thereby loosen the clamp and permit more of the band to be pulled through the hole.

thereby increasing the tension in the band and the clamping effect on the enclosed parts upon release of said flattening pressure.

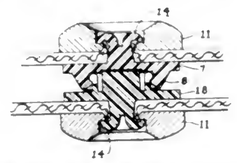
3,159,889
SLIDING FASTENER
Willi Brandl, Zurich, Switzerland, assignor to Amplector Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Mar. 9, 1964, Ser. No. 350,178
Claims priority, application Switzerland, Mar. 11, 1963, 3,035/63
11 Claims. (Cl. 24—201)

1. Sliding fastener comprising, in combination: a pair of coupling strips adapted to be selectively coupled and uncoupled with respect to one another and constructed symmetrical with regard to their respective longitudinal plane, at least one of said coupling strips being formed of flexible elastic materials, another means and a substantially U-shaped securing portion provided for a given one of said pair of coupling strips. clamp means including free ends provided at the other coupling strip engaging about said anchor means and which in the coupled condition of said coupling strips engage by means of said free ends with said securing portion, said securing portion including leg means constructed as ledges extending parallel to the plane of symmetry of said coupling strips, said leg means of said securing portion having free ends tapered rearwardly towards the outside, said clamp means further including free end portions terminating at said free ends thereof and exhibiting a substantially Z-shaped configuration, said securing portion being provided with groove means, said free ends of said clamp means engaging with said groove means in the coupled condition of said



coupling strips and being tapered parallel to the associated tapered free end of said leg means of said securing portion, said free end portions of said clamp means including a respective clamping portion bearing against said tapered free ends of said leg means of said securing portion, a slide member cooperating with said coupling strips for coupling and uncoupling thereof, said slide member being internally provided with guide means which during uncoupling of said coupling strips raise said clamp means at the root of its respective Z-shaped free end portion from said anchor means and pull such out of its anchoring and out of the associated groove means of said securing portion without deforming said securing portion to any great extent, said guide means being further constructed such as to bring said coupling strips into a terminal- and open position such that said free end portions of said clamp means at least partially surround in overlapping fashion said anchor means at both sides thereof.

3,159,890
SNAP FASTENER
Philip B. Jensen, Naugatuck, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 31, 1963, Ser. No. 320,370
4 Claims. (Cl. 24—214)



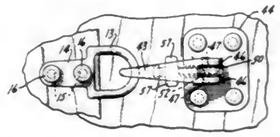
1. A snap fastener resilient stud consisting of plastic material which is rigid in thicker sections and flexible in thinner sections, said stud having in combination:

(*a*) a base adapted to bear against a piece of supporting material;

(*b*) an upstanding, inwardly yieldable circular flange projecting from said base; and

(*c*) an upstanding solid projection integral with said base and surrounded by said flange, an upward extent of said projection from said base being at least as much as that of said circular flange.

3,159,891
FIREMAN'S COAT CLASP
Jess A. Brewer, 700 Garfield Blvd., Danville, Ill.
Filed July 26, 1962, Ser. No. 212,618
2 Claims. (Cl. 24—225)



1. A safety clasp, for attachment to one closure panel of a garment and for cooperation with a closed ring mounted on the other closure panel of the garment, comprising:

a relatively wide flat base having inner and outer faces, said inner face having a flat unobstructed surface disposed in a plane;

a flexible panel attached to said inner face of said base;

a hook;

a tongue;

means for mounting said hook and said tongue on said outer face of said base for limited movement with respect to one another;

said flexible panel covering said inner face and normally extending beyond said base, hook, and tongue;

said hook including a mounting portion attached to said outer face and extending outwardly from said outer face for a substantial distance, a shank portion integral with said mounting portion of said hook and extending substantially parallel to said base, and an end portion of said hook integral with said shank portion thereof and extending initially towards and substantially to the plane of said inner face of said base and finally extending towards but terminating short of said mounting portion of said hook, whereby said hook is in the form of a loop having an open space between said end portion and said mounting portion of said hook;

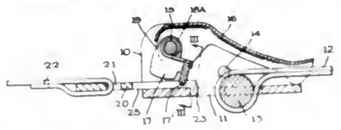
said tongue extending from said outer face of said base to a point within said open loop formed by said hook and substantially beyond the terminal end of said hook, said tongue having a portion thereof normally in contact with the end portion of said hook to close the open space of said loop;

means to bias the end portion of said hook and said tongue against one another to keep said clasp normally closed; and

said tongue and said hook end portion diverging away from said portion of normal contact to form cam means within said loop, said cam means adapted to cooperate with the closed ring to force said tongue and said hook out of normal contact against said bias means to open said clasp when the closed ring is moved from within said loop to and beyond said portion of normal contact.

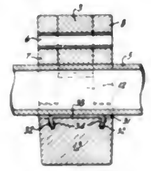
3,159,892
BUCKLE FOR SAFETY BELTS
Göte Eskil Yngve Holmberg, Tokarp, Anderstorp, Sweden
Filed Aug. 7, 1962, Ser. No. 215,413
3 Claims. (Cl. 24—230)

1. A buckle for a safety belt comprising a lock housing having a web portion and a slot therein, means for attaching a belt to said lock housing, a locking tongue insertable in said housing to a locking position therein and having means for attaching a belt thereto, said locking tongue having an opening therein and an angularly bent end portion, a boundary surface of the slot in said lock housing and said angularly bent end portion of said locking tongue forming abutment surfaces to prevent by mutual engagement the withdrawal of said locking tongue from the locking position in said lock housing, a latch having a pivotal mounting in said lock housing for movement to and from a latching position and having a lower surface adapted in the latching position in cooperation with said web portion of said lock housing to prevent the abutment surfaces from being moved out of mutual engagement, a projection formed on said latch and accommodated in said opening in said



locking tongue inserted in said locking position, spring means biasing said latch into the latching position, said projection having a portion which is farthest from said pivotal mounting located a distance from said mounting greater than the shortest distance between said web and said mounting so as to keep said latch in an angular position suitable for moving said latch out of the way against the action of said spring means when said locking tongue is inserted into said lock housing, and an operating member for moving said latch out of latching position against the action of the spring bias.

3,159,893
CLAMP
Robert J. Langren, Alameda, Calif., assignor to Gilbert Hyde Chick Company, Oakland, Calif., a corporation of California
Filed May 7, 1962, Ser. No. 192,784
2 Claims. (Cl. 24—249)

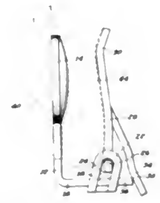


1. A clamp for clamping a tube having a hard, finished surface against axial rotation without marring the finish thereof, comprising a pair of clamping jaws each having a cylindrical clamping face of a material substantially softer than said tube surface, there being an axial groove formed on at least one of said clamping faces, and a retaining element substantially harder than said clamping faces disposed on said groove, said retaining element including a section of piano wire of a diameter slightly in excess of the depth of said groove.

3,159,894
SPRING CLIP ASSEMBLY
Richard Haug, 303 Peninsula Blvd., Lynbrook, Long Island, N.Y.
Filed Mar. 25, 1964, Ser. No. 354,523
4 Claims. (Cl. 24—252)

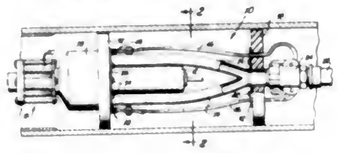
1. A spring clip comprising, in combination, a base member and a pressure member, said base member having mounting means at one end hingedly supporting said pressure member for limited rotational movement thereupon, said pressure member having a portion confronting the opposite end of said base member defining a jaw therewith for receiving a support member therebetween, said base and pressure members including spring means exerting a yieldable pressure upon said jaw, said

mounting means including adjustment means for increasing said yieldable pressure upon said jaw to increase the holding strength of said clip upon the support member, said mounting means comprising a pair of laterally spaced apart ears each defining an aperture, said pressure member including a pair of pintles pivotally received within each aperture of said ears, said spring means comprising a leaf spring integral at one



end with said pressure member intermediate said pintles, and said base member including an abutment intermediate said ears abutting said leaf spring, each said aperture comprising a slot of greater length than the corresponding dimension of said respective pintle received therewithin, each said slot slidably and rotatably receiving said respective pintle of said pressure member, whereby angular displacement of said pressure member relative to said base member effects displacement of said pintles within said apertures.

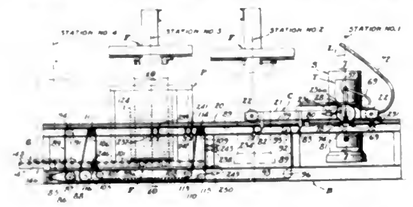
3,159,895
PIPE LINING MACHINE
Batris W. Perovich, 1660 S. Oak Knoll, San Marino, Calif.
Filed Feb. 5, 1962, Ser. No. 170,951
9 Claims. (Cl. 25—38)



1. In a pipe lining machine of the type having a rotating dispensing head and a central housing containing a motor, the improvement for providing means for simultaneous centering of the machine and cleaning of the pipe immediately before being lined, said improvement comprising a pair of spaced flexible discs of variable flexibility mounted to flanges secured around the axis of the housing, the amount of flexibility of said discs varying inversely as the diameter of the flanges, and each of the said discs having a diameter ranging from a minimum diameter larger than the inside diameter of the pipe being lined and a maximum diameter about 20% larger than the pipe being lined.

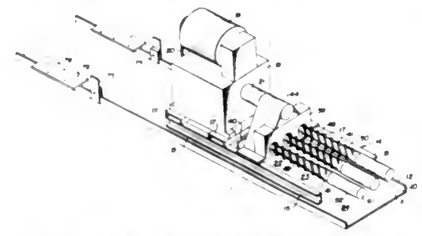
3,159,896
MACHINE FOR HANDLING CLAY PIPE
Frank S. Pearne and Florentin J. Pearne, Los Angeles, Calif., assignors to Pearne & Lacy Machine Company, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 7, 1958, Ser. No. 726,926
17 Claims. (Cl. 25—39)

7. A machine for extruding belled clay pipe and handling it during finishing operations, comprising in combination: a clay press for extruding the pipe vertically downwardly and belled end foremost, including means for axially lowering the pipe clear of the press to a removal location, a base defining an elongated horizontal path, a carriage mounted on said base for travel along said path between said removal location and a remote pipe discharging location, a plurality of grips having opposed generally cylindrical surfaces normally oriented for embracing an axially vertical length of pipe to support the same, said grips being mounted on opposite sides of a frame for horizontal movement inwardly and outwardly toward and away from each other for coaxially gripping and releasing a length of pipe, and said frame being mounted on said carriage and connected to the grips for corresponding rotation with said grips about a horizontal axis transverse to said path for inverting said grips and a pipe carried thereby, means operative for actuating said



grips toward and away from each other, power means independently operative for rotating said frame and grips 180° between their normal oriented position and an inverted position, and means independently operative to move said carriage back and forth from one predetermined location to another along said path between said receiving and discharging locations, a platform elevator normally in a retracted condition below said discharging location, and means for raising and lowering said elevator between its normal retracted condition and a raised condition for supporting pipe carried by said grips to said discharging location.

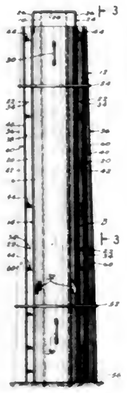
3,159,897
MACHINE FOR EXTRUDING HOLLOW CORED CONCRETE SECTIONS
Fredrick G. Ellis, 248 Egerton Road, and Marvin A. Thorsteinson, 67 Kingston Row, both of Winnipeg, Manitoba, Canada
Filed July 10, 1961, Ser. No. 122,698
11 Claims. (Cl. 25—41)



1. A machine for forming hollow cored concrete sections on a longitudinally extending supporting surface, comprising in combination a main frame, said main frame including a pair of spaced and parallel longitudinal members, means to support and guide said main frame along said supporting surface, a source of power mounted on said main frame, a product forming assembly mounted between said longitudinal members, said product forming assembly including a feeding secton, a moulding section, and a trowelling section in line with one another, a feed hopper mounted on said main frame and leading into said feeding section, at least one auger supported for rotation at one end thereof adjacent said feeding section and extending through said feeding section and said moulding section substantially parallel to said supporting surface and spaced therefrom and lying substan-

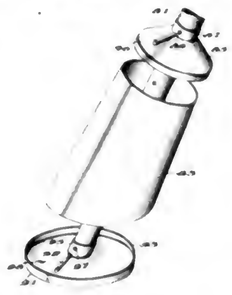
tially parallel with the longitudinal axis of said machine, said auger being connected for rotation to said source of power, and a trowelling mandrel on the other end of said auger within said trowelling section, said auger adapted to convey product forming material from the base of said hopper, through said moulding section and into said trowelling section, and means on said auger, which, in conjunction with said moulding section, are adapted to compress said material radially whereby the reaction of said compression with the inertial of the finished product therebehind, self propels said machine along said supporting surface and away from the product formed by said moulding section thereby drawing said trowelling section over said formed product, said auger including an auger shaft and an auger flight formed thereon, the outer diameter of said auger flight being substantially constant, the portion of said shaft in said feeding section having a substantially constant diameter, said last mentioned means on said shaft including the portion of said shaft in said moulding section, said last mentioned portion gradually increasing in diameter to the diameter of said trowelling mandrel whereby the depth of said auger flight decreases to zero adjacent the area joining said trowelling mandrel and the end of said auger shaft, and a vibrator above said moulding section, a source of power for said vibrator, said vibrator adapted to vibrate said moulding section.

3,159,898
REMOVABLE FORM FOR CONCRETE JACKET
Horace Austin Van Name, West Brighton, Staten Island 10, N.Y., assignor of one-half to John J. Dougherty, Cedar Grove, N.J.
Filed July 25, 1962, Ser. No. 212,339
3 Claims. (Cl. 25—118)



1. A form for a concrete jacket of a composite pile comprising an elongated hollow cylindrical body with flanges extending the length of the long edges thereof, elongated clamping bar members extending the length of the flanges and in engagement therewith, said clamping bar members having tapering outer edges, a plurality of bifurcated lugs carried in longitudinally spaced relationship by said clamping bar members, the bifurcations of said lugs having tapered inner edges continuing into straight inner edges, said straight inner edges adapted to interlock with the outer edges of the flanges, and clamping rings removably and slidably mounted on the tapering edges of the bar members to clamp the bar members onto the flanges.

3,159,899
MOLDS FOR SWING LEG ANCHORS
John Dale Pafenberg, 5714 Birch Ave., McLean, Va.
Filed Nov. 28, 1962, Ser. No. 240,672
1 Claim. (Cl. 25—118)



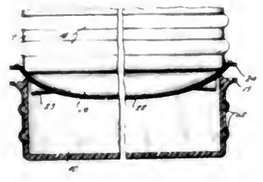
A mold form for attaching anchoring weights to the leg members of children's yard swing sets comprising a unitary hollow body member of frusto-conical shape for surrounding a swing leg, a frusto-conical cap member with upper and lower flange portions, the upper end of said body member fitting securely within the lower flange portion of said cap member and the upper flange portion of said cap member being shaped for surrounding the swing leg and being provided with a hole for securing said cap member to the swing leg by the insertion of a pin through the hole in the cap member and a correspondnig hole in the swing leg, and a base member having a pair of upturned inner and outer concentric flanges, said outer flange being shaped to receive the lower end of said body member and said inner flange having a hole therein and being shaped for surrounding the swing leg to permit the insertion of a pin through the hole in said inner flange and a corresponding hole in the swing leg, whereby said structure forms a container for a suitable weight material used as an anchoring weight for the swing leg and providing an enlarged base portion to permit the swing leg to rest upon the surface of a lawn without digging in and marring the surface.

3,159,900
SWING LEG ANCHOR MOLDS
John Dale Pafenberg, 5714 Birch Ave., McLean, Va.
Filed Sept. 17, 1963, Ser. No. 309,559
1 Claim. (Cl. 25—118)



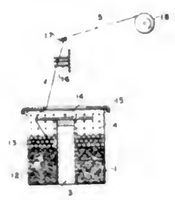
A mold form for attaching anchoring weights to the leg members of swings comprising a hollow frusto-conical body member of molded paper pulp having a coloring material incorporated therein and a roughly textured surface to produce a decorative effect, top and bottom openings in said body member, said top opening being elongated so that the leg member of a swing may be inserted and still leave room to pour a concrete mixture into said body members, and a base member attached to said body member to serve as a closure for said bottom opening, said base member being disposed at an obtuse angle to the axis of said hollow body member to provide an enlarged support surface and said body member being impregnated with a composition containing by weight 70 to 95 parts of paraffin and 5 to 30 parts of petroleum polymer resin to produce a durable waterproof mold form of inexpensive construction.

3,159,901
FIBER GLASS BURIAL VAULT
Arthur C. Harrington, Whiteford, Md. (P.O. Box 338, Aberdeen, Md.), and Ray Hall, R.D. 2, Box 171, Street, Md.
Filed Mar. 27, 1961, Ser. No. 98,401
4 Claims. (Cl. 27—7)



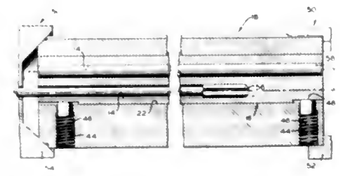
1. A burial vault comprising a receptacle of layers of fiber glass bonded together with interposed spaced reinforcing ribs along and in the sides of the receptacle which also resist the upward movement of the vault in the earth, a cover, said receptacle and cover having enlarged contacting edge portions and an upstanding flange fitting within the cover and an interfitting groove on the receptacle and a tongue on the cover, said receptacle being relatively small and light without excessive bulk and weight, of maximum strength, the upper portion of the receptacle being adapted to receive a portion of the cover when inverted, and the cover being adapted to receive a portion of the exterior of the bottom of the receptacle whereby a group of receptacles and covers may be stacked, the cover having a handle located inwardly from the edge to permit the cover when inverted to nest in the body of the receptacle, and the receptacles and covers being of a size and configuration to be compactly stacked with others of like character and size.

3,159,902
METHOD FOR THE MANIPULATION OF CRIMPED YARNS
Johan J. Mertens, Arnhem, Netherlands, assignor to N.V. Onderzoekingsinstituut Research, Arnhem, Netherlands, a corporation of the Netherlands
Filed Mar. 16, 1962, Ser. No. 180,111
Claims priority, application Netherlands, Apr. 6, 1961, 263,278
3 Claims. (Cl. 28—76)



3. A method for the manufacture of crimped yarn from thermoplastic yarn that comprises, imparting crimp to the yarn, forming the yarn so treated into an annular body by laying up the yarn in a radially reciprocating path on a rotating annular support, compressing the annular body, passing steam through the same to stabilize the crimp, loosely depositing a group of aluminum oxide balls measuring 16–18 millimeters in diameter over the top of said body of yarn, thereafter withdrawing the yarn from the annular body in the reverse order in which it was laid up through said group and collecting the same in package form.

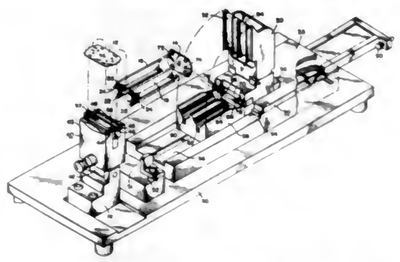
3,159,903
METHOD OF MANUFACTURING A MULTIBORE BARREL
Joseph R. Eves, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 8, 1963, Ser. No. 257,824
2 Claims. (Cl. 29—1.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. The method of manufacturing a gun barrel with a plurality of bores including the steps of mounting a barrel blank in a cylindrical fixture so that the design center lines for each of the bores is rotatable into coincidental relationship with the longitudinal axis of the fixture, mounting the fixture in a drill machine so as to be rotatable thereby about the longitudinal axis of the fixture and the design center line for one of the bores, rotating the fixture by the drilling machine, forming a first bore in the barrel blank by advancing a drill thereinto along the longitudinal axis of the fixture, manually rotating the barrel blank about its longitudinal axis in the fixture to where the design center line for another one of the bores is coincidental with the longitudinal axis of the fixture, similarly drilling the remaining bores in the barrel blank, and inserting a drill rod into each of the bores before the next one thereof is drilled to maintain the harmonic balance of the fixture with the blank fixed therein when rotated in the drill machine.

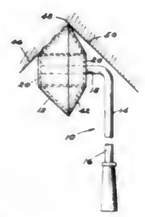
2. The method of manufacturing a gun barrel with a plurality of bores from a cylindrical blank having a finish-machined outside surface including the steps of forming on opposite ends of the blank a plurality of flats equal to the number of the bores with the flats on each end being respectively normal to the plane extending from the design center line for a respective one of the bores through the longitudinal axis of the blank, forming a conical center in each end of the blank at the design center line for one of the bores, inserting the blank through a cylindrical bar with a concentric hole having the same diameter as the blank, fixing the blank to the bar within the hole, turning down the outside surface of the bar on a lathe so as to be concentric to the longitudinal axis formed by the centers on opposite ends of the blank, freeing the blank from the bar, installing on opposite ends of said bar means actuatable against corresponding ones of the flats on the blank to index the design center line for the bores related to the engaged ones at the flats coincidental with the longitudinal axis of the bar and to fix the blank to the bar, mounting the bar with the blank fixed therein in a drill machine for rotation thereby around the longitudinal axis of the bar, rotating the bar by the drill machine, advancing a drill into the blank along the longitudinal axis of the bar while being rotated to form one of the bores therein, and similarly drilling the remaining bores.

3,159,904
APPARATUS FOR ASSEMBLY OF ELECTRON DEVICES
Ernest F. Smart, Bath, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1962, Ser. No. 216,651
6 Claims. (Cl. 29—25.19)



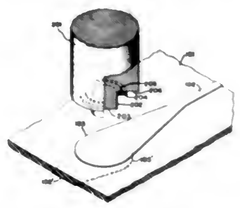
1. Apparatus for assembling an electrode cage of an electron discharge device comprising a jig member comprising a first surface adapted for holding a first spacer in a vertical position, a loading assembly including a slide member means slidably supported within said loading assembly and movable in a horizontal plane toward and away from said first spacer, said slide means including a horizontal surface in which an electrode may be top loaded and horizontally positioned, said slide means including a second surface adapted to receive and position a second spacer in a vertical position, means provided for holding said electrode upon said horizontal surface in a position whereby outer end portions of said electrode are aligned with apertures provided in said first spacer and said second spacer.

3,159,905
PAINT ROLLER
Roy Baggett, Jr., 18610 Matthews, Riverview, Mich.
Filed Apr. 23, 1962, Ser. No. 189,422
5 Claims. (Cl. 29—110)



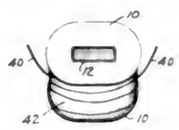
1. A rotatable paint roller head, the peripheral surface of which comprises first and second frusto-conical sections each of which is uninterrupted and continuous, the large ends of said sections being of the same diameter and joined to one another intermediate the ends of said head, said sections tapering toward opposite ends of said rotatable head from the joined large ends thereof, the angle between the conical sections being less than 90°, and said first section being inclined with respect to the axis of rotation of said head more than said second section, the small end of said first section being disposed at one end of said head and the small end of said second section being of the same diameter as that of the first section and disposed at the opposite end of said head, the large ends of said sections being joined in a plane normal to the axis of rotation of said head located nearer the said one end of said head than the opposite end thereof.

3,159,906
ELECTRIC CIRCUIT ASSEMBLY METHOD
Thomas A. Telfer, Rensselaer, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 27, 1957, Ser. No. 661,717
5 Claims. (Cl. 29—155.5)



1. In the method of assembling an electrical circuit comprising a dielectric panel, circuit components for said panel having elongated terminals, and conductive headed eyelets adapted to receive said elongated terminals and pierce said panel; the steps of forming a solder adherent pattern including a conductive pattern on one side of said panel, placing a solder ring under said eyelet head in frictional engagement with the eyelet wall, piercing said eyelet through said panel at predetermined points on said conductive pattern to protrude from said unpatterned side, inserting the terminals of said circuit components through said eyelets from the patterned side of said panel to protrude from said unpatterned side, and immersing the unpatterned side of said panel in a solder bath whereby said terminal is electrically and mechanically joined to said eyelet and said eyelet is electrically and mechanically joined to said pattern.

3,159,907
METHOD OF MAKING SMALL TO SUB-MINIATURE SIZES OF ELECTRIC COILS
Otto N. Bloom, San Gabriel, Calif. (5025 Earle St., Rosemead, Calif.)
Filed Jan. 9, 1962, Ser. No. 166,736
3 Claims. (Cl. 29—155.57)



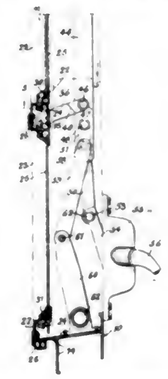
3. A method of making small, miniature and subminiature self-supporting relay coils comprising providing a bobbin of dielectric material having a thickness not in excess of 0.006 inch, said bobbin including a tubular cylinder and separate end flanges each flange including a sleeve fitted onto said cylinder, mounting said bobbin on a mandrel having buttress elements for the flanges of said bobbin, random winding fine wire provisionally insulated with polytetrafluoroethylene onto said bobbin while on said mandrel, with the winding running onto said sleeves for gripping same against said cylinder in forming the coil, then subjecting said coil while retained on said mandrel to a dry heat treatment in an oven at a temperature on the order of 375° F. for a period of not less than one hour to remove any out-gassing substances from the coil, as well as to relieve the coil of all internal stresses, thereafter and while still on the mandrel cooling said coil to room temperature, the heating and cooling effecting adherence of the turns of said coil to one another without fusion thereof or use of bonding materials.

3,159,908
DISPERSION HARDENED METAL PRODUCT AND PROCESS
Frederic J. Anders, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 261,184
15 Claims. (Cl. 29—182.5)

1. In a process for increasing the ultimate tensile, yield, and stress-rupture strengths of a metal, as measured at 73% of its absolute melting point, the step comprising effecting a 40 to 95% reduction in cross-sectional area of a body of said metal, having a density substantially 100% of theoretical, by mechanically working it at a temperature not higher than ½ of the absolute melting point of the metal, the metal in said body having an atomic number of 22 to 74, a melting point above 1100° C., and an oxide with a free energy of formation at 27° C. of from 30 to 105 kcal. per gram atom of oxygen in the oxide, said metal having uniformly dispersed therein from 0.1 to 10 volume percent of particles, 5 to 1000 millimicrons in average size, of a refractory metal oxide insoluble in the metal, the oxide having a free energy of formation, measured at 1000° C., greater than 60 kilocalories per gram atom of oxygen.

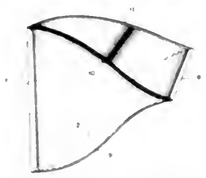
6. A wrought metal composition characterized by having a density substantially 100% of theoretical and having high ultimate tensile, yield, and stress-rupture strengths as measured at 73% of its absolute melting point, the composition comprising (1) a metal having an atomic number of 22 to 74, a melting point above 1100° C., and an oxide with a free energy of formation at 27° C. of from 30 to 105 kcal. per gram atom of oxygen in the oxide, said metal also having an oriented crystal structure, the orientation being irreversible at temperatures below 85% of the absolute melting point of the metal, and (2) uniformly dispersed in said metal, from 0.1 to 10 volume percent of particles, 5 to 1000 millimicrons in average size, of a refractory metal oxide insoluble in the metal, the oxide having a free energy of formation, measured at 1000° C., greater than 60 kilocalories per gram atom of oxygen.

3,159,909
CONVERSION OF INSTALLED JALOUSIE WINDOWS TO AWNING TYPE WINDOWS
Charles A. Pappas, Fort Lauderdale, Fla., assignor, by direct and mesne assignments, of one-half to Victor E. Beaver, Lauderdale, Fla., and one-half to Robert B. Hamilton, Lauderdale-by-the-Sea, Fla.
Filed July 7, 1961, Ser. No. 122,503
6 Claims. (Cl. 29—401)



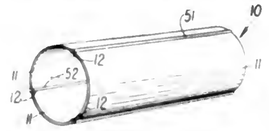
1. A method of converting installed jalousie windows to the awning type comprising removing the glass jalousie strips and operating mechanism to leave the empty jalousie frame, placing a template along the two vertical jambs of the frame and making marks at predetermined locations dependent upon the number of awning sashes to be installed, drilling holes at said marks, installing projecting hinge studs in the holes, said hinges being angularly offset and attached to opposite upper sides of the awning sashes, and installing operating mechanism in the frame to move the hinges and the awning sashes to open and closed positions.

3,159,910
PACKING UNITS FOR HEAT EXCHANGERS OPERATING AT EXTREMELY LOW TEMPERATURES
Wilhelm Lehmer, Munich, Albert Rein, Augsburg-Westheim, and Josef Weishaupt, Pullach, Germany, assignors to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Munich, Germany, a company of Germany
Filed Dec. 10, 1958, Ser. No. 779,484
Claims priority, application Germany Dec. 12, 1957
1 Claim. (Cl. 29—417)



Process for the production of packing units having substantially convex limiting surfaces and tetrahedral form for regenerators operating at temperatures between the liquefaction temperatures of nitrogen and hydrogen, which comprises squeezing off said packing units as sections from a cylindrical bar of lead as starting material by successive compression cuts the second being taken 90° with respect to the first but spaced along the bar axially, thereby forming said sections of tetrabedral form with substantially convex limiting surfaces being turned toward each other alternately by 90°.

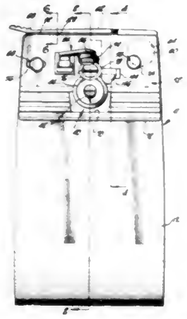
3,159,911
METHOD OF MAKING CYLINDERS
Frank P. Albert, Lansing, Ill., Lawrence W. Bieker, Munster, Ind., and Alvin A. Bowcutt, Park Forest, Ill., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 4, 1962, Ser. No. 184,982
4 Claims. (Cl. 29—471.1)



1. A method of manufacturing a cylinder from a plurality of substantially flat plates comprising the steps of placing the plates on a substantially flat surface in adjoining relationship so as to define a plurality of seams between the longitudinally extending edges of the plates, welding said plates together along said seams from the top of said plate so as to assemble a composite plate having relatively large weld beads on the top of said composite plate and relatively small weld beads on the bottom of said composite plate, turning said composite plate over so that the side of said composite plate having said smaller weld beads on it faces upwardly, crimping each longitudinally extending free edge of the composite plate upwardly into an arc having a radius corresponding to the prescribed radius of the finished cylinder, rolling

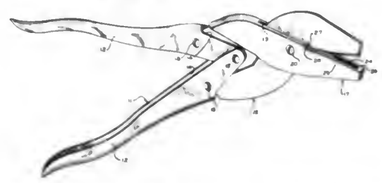
said composite plate about a longitudinally extending axis until said free edges come into immediately adjacent relationship and an open seam is defined between said free edges, and welding said open seam from the outside of said rolled composite plate to form a cylinder having said relatively large weld beads on the outside of said cylinder.

3,159,912
AUTOMATIC ELECTRICAL POWER CAN OPENER
Armand L. A. Posener, La Habra, Calif., assignor to Udico Electric Co., Los Angeles, Calif., a corporation of California
Filed Mar. 5, 1962, Ser. No. 177,620
4 Claims. (Cl. 30—4)



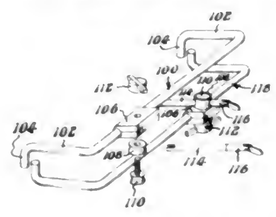
1. In a can opener, the combination of:
a housing;
a driving wheel rotatably coupled to the housing, said driving wheel including an annular toothed portion for engaging the under side of a bead of a can and an annular shoulder immediately adjacent and extending radially beyond the toothed portion between the toothed portion and the housing for engaging the side of the bead to prevent the toothed portion from contacting the side of the can below the bead; a can guide projecting outwardly from the wall of said housing to bear against the side of said can thereby holding the can away from contact with the flat side of said drive wheel;
a cutter movably mounted on the housing for shifting movement into cutting position with the driving wheel by engaging the top of the can adjacent the bead, and means to steady a can during a can-opening operation and to detect the severing of the top from the can.

3,159,913
CUTTER
Sidney V. Winton, New York, N.Y., assignor to Randall Manufacturing Company, Inc., a corporation of New Jersey
Filed July 25, 1962, Ser. No. 212,774
6 Claims. (Cl. 30—252)



1. A cutter comprising,
(*a*) a pair of handles pivotally secured together at their ends,
(*b*) a unitary blade pivotally mounted intermediate the ends of one handle,
(*c*) a channeled blade pivotally mounted intermediate the ends of the other handle,
(*d*) the unitary blade passing through the channel in the channeled blade and pivotally secured thereto,
(*e*) a first longitudinal cutting edge on the unitary blade,
(*f*) a second longitudinal cutting edge on the unitary blade,
(*g*) a cross-cutting edge on the unitary blade joining the first and second longitudinal cutting edges, the cross-cutting edge disposed at an angle to the plane of the unitary blade,
(*h*) the first and second longitudinal cutting edges and the cross-cutting edge collectively defining a generally U-shaped cutting edge on the unitary blade,
(*i*) a generally U-shaped cutting edge on the channeled blade defined by the edges of the channel, and
(*j*) the U-shaped cutting edge on the unitary cutting blade adapted to progressively closely pass-by the U-shaped cutting edge on the channeled blade as the unitary blade pivots on the channeled blade and seats within the channel therein.

3,159,914
METHOD AND APPARATUS FOR ASCERTAINING PARAMETERS FOR USE IN DETERMINING THE CURVATURE OF CONDYLE PATHS
Anthony J. De Pietro, Springfield, Pa., assignor to Medical Electronics and Research Corporation, Camden, N.J., a corporation of New Jersey
Filed Dec. 8, 1961, Ser. No. 157,993
7 Claims. (Cl. 32—20)

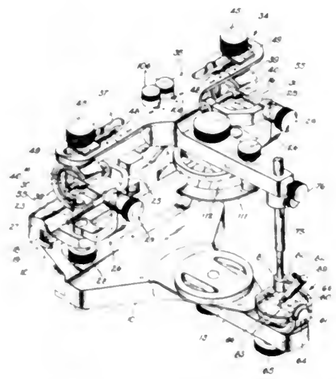


1. In apparatus for use in dental prosthesis, the combination comprising a pair of clutch bars for being detachably connected respectively to a pair of clutch trays and for extending from the patient's mouth outwardly between the patient's lips, a pair of rods mounted respectively upon said clutch bars for extending across the patient's face externally thereof, means extending laterally respectively from said rods, and a mass of material having corresponding ones of said laterally extending means embedded therein for locking each of said rods and its associated clutch bar to the other of said rods and its associated clutch bar.

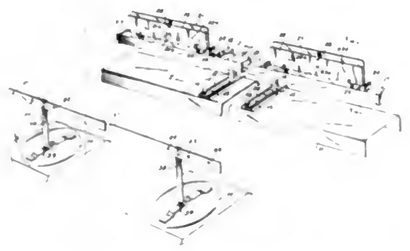
3,159,915
DENTAL ARTICULATOR
Richard A. Beu, Eggertsville, and James H. Janik, Buffalo, N.Y., assignors to Hanau Engineering Company, Inc., Buffalo, N.Y.
Filed Nov. 23, 1962, Ser. No. 239,704
9 Claims. (Cl. 32—32)

1. In a dental articulator, a base member and an upper member movably supported thereby to simulate the relative maxillary-mandibular movements of the human jaw, a pair of bearing members supported by said base member for lineal adjustment toward and away from the central plane of the articulator, a pair of first quadrant arms pivoted at their lower ends to said bearing members on

vertical axes and extending generally forwardly and upwardly therefrom, a pair of second quadrant arms pivoted at an end of each to the upper end of each first quadrant arm on generally horizontal fore and aft axes and extending laterally and rearwardly therefrom, and a pair of condyle ball shafts normally fixed to the opposite ends of said second pair of quadrant arms and extending horizontally therefrom to intersect the axis of the lower quadrant arm vertical pivot, the axial extent of said condyle ball shafts being rendered universally adjustable by adjustment of said vertical and horizontal quadrant arm pivots, condyle balls having central bores bearing on said shaft, and slotted condylar guidance discs carried by said upper member with the condyle balls slidably guided in said slots.

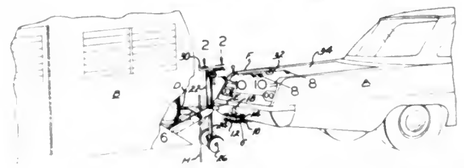


3,159,916
VEHICLE WHEEL ALIGNMENT APPARATUS
Lee Hunter, Rte. 1, Box 136, Creve Coeur, Mo.
Filed Jan. 8, 1959, Ser. No. 785,705
9 Claims. (Cl. 33—46)



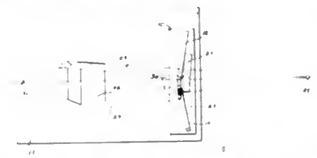
1. In wheel alignment apparatus the improvement comprising a set of mirrors, a mirror supporting means, devices connecting each mirror of said set to said supporting means for adjustment of the mirrors in the set relative to each other, one of said devices including a pivot connecting element and an adjusting element spaced from said pivot connecting element, said adjusting element being operable to move said device about said pivot connecting element for moving said associated mirror, a set of adjustable standards connected to said supporting means in spaced relation, a rocking bearing in each standard, and independent means operable to adjust each of said standards about its said rocking bearing.

3,159,917
VISUAL AID FOR TRAILER HITCH
Stewart E. Whitehead, Garden Grove, Calif. (1844 Haster 151, Anaheim, Calif.)
Filed Nov. 30, 1962, Ser. No. 241,301
5 Claims. (Cl. 33—46)



1. A visual aid to assist a driver in maneuvering a vehicle having a first engageable portion of a trailer hitch on the rear part thereof to a position relative to a trailer having a second engaging portion of said trailer hitch on the forward part thereof to so align said engageable and engaging portions that they can be removably engaged, comprising:
(*a*) a resilient member capable of being deformed;
(*b*) first means for supporting said member rearwardly of said vehicle and at a sufficient elevation as to be visible to said driver of said vehicle;
(*c*) a rigid member having two transversely spaced forwardly extending portions which define a space therebetween, with at least the forward portion of said space being sufficiently wide as to permit said resilient member to enter the same without deformation; and
(*d*) second means for adjustably supporting said rigid member from said trailer at such a position relative thereto that after said resilient member enters said space and deforms to a predetermined degree due to contact with a portion of said rigid member, said engaging and engageable portions of said hitch are so disposed that they can be removably engaged.

3,159,918
T-SQUARE GUIDE FOR USE IN PRODUCING PERSPECTIVE DRAWINGS
Oscar A. Olson, 712 10th St., and Dean M. Huston, 1422 Curtiss Ave., both of Ames, Iowa
Filed June 11, 1962, Ser. No. 201,364
12 Claims. (Cl. 33—77)

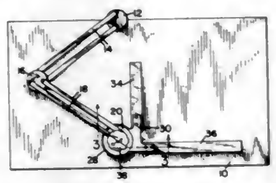


1. In a device for use in producing perspective drawings, comprising in combination,
a drafting board,
a base member having upper and lower ends secured to the top of said drafting board,
a first arm having its upper end pivoted to the upper end of said base member,
a second arm having its lower end pivoted to the lower end of said base member,
said two arms being so positioned on said base member to permit their free ends to extend toward each other,
said pivoted ends of said first and second arms being vertically thickened,
said first and second arms having a substantial portion of their bottom side in a parallel spaced relationship to the upper surface of said drafting board,

a T-square having a longitudinal portion and a cross portion, with its longitudinal portion slidably movable under said first and second arms inwardly from said vertically thickened pivoted ends, and its cross portion capable of slidably engaging the side edges of said first and second arms,

and a means for detachably locking said first and second arms in various positions of their swinging movement.

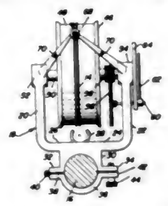
3,159,919
DRAFTING MACHINE
David R. Brunell, 483 Pleasant St., Worcester, Mass.
Filed Oct. 17, 1963, Ser. No. 317,001
2 Claims. (Cl. 33—79)



1. A drafting machine comprising in combination a pair of pivotally interconnected parallelogram structures each comprising a pair of parallel links, means pivotally connecting the links in pairs, an anchoring device pivotally connected to the free end of one of said pairs of links, a protractor pivotally connected to the free ends of the other pair of links, a base plate under the protractor and pivotally arranged with respect thereto, a pair of rules fixed to said base plate, said protractor being provided with a series of peripheral notches, said notches opening in a downward direction and facing the baseplate, a leaf spring fixedly mounted at one end thereof on said base plate and extending under the protractor in a radial direction with respect thereto and past the peripheral edge thereof, said leaf spring having a width substantially equal to the width of each of said notches, said leaf spring normally being held by its inherent resilience in a notch, locking the base member relative to the protractor, a manually operable axially movable button mounted on said base plate, adjacent the periphery of the protractor, said button including an end in position to rest on the extending end of said leaf spring and being adapted to move the same out of its notch upon depression of the button, whereby the base plate may be rotated to a desired degree with respect to said protractor, and upon release of the button the spring is free to enter a selected notch, returning the manually operated button, each notch being provided with converging side walls which act to center the spring with reference to the notch, the width of the spring being substantially equal to the narrowest portion of each notch.

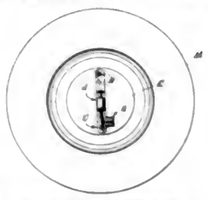
3,159,920
DEPTH INDICATOR FOR FISHING LINE
Clarence L. Garrett, 12 S. Addinsell, Phillips, Tex.
Filed June 2, 1961, Ser. No. 114,542
4 Claims. (Cl. 33—129)

1. A depth measuring attachment for a reel-equipped rod comprising a one-piece U-shaped bracket embodying opposed spaced parallel arms rigidly connected at like ends by a solid intervening bight portion, said arms having terminal bearings aligned with each other, said bight portion having a mount provided with clamping means adapted to be removably clamped on said rod, a shaft spanning the space between the arms and having end portions journaled for rotation in their respective bearings, a spool fixed on the median portion of said shaft, said spool serving to permit a depth measuring line to be wound thereon, a graduated dial fixedly mounted on an exterior side of one of said bearings and spaced from and parallel to the adjacent bracket arm, an indicator finger parallel to and cooperating with said dial, an operating connection between the finger and shaft, and rigid line guide means comprising a single line guide eye and a pair of upwardly and rearwardly angled legs, said legs having



upper converging end portions connected to and joining the eye therewith and having their outwardly and downwardly directed end portions joined integrally with their respectively cooperating bearings, said legs bridging the space between the bearings and positioning the guide eye in a plane above the upper ends of the respective bearings, whereby to orient the position of said eye relative to the intended peripheral portion of said spool.

3,159,921
DISTANCE MEASURING DEVICE
Arvid J. Detrixhe, Rte. 2, Ames, Kans.
Filed Apr. 16, 1962, Ser. No. 187,735
5 Claims. (Cl. 33—141)



1. Measuring apparatus comprising:

a vehicle provided with a ground wheel at least partially supporting the same;

an elongated bar releasably secured to the wheel across its axis of rotation with its longitudinal axis coincident with the diameter of the wheel, said bar having a pair of longitudinally spaced stops thereon;

a counter mounted on the bar;

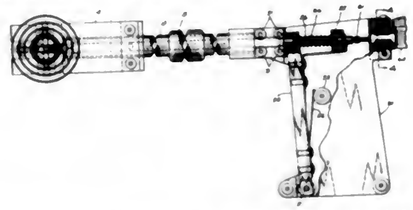
a reciprocable actuator for said counter carried by the bar for movement longitudinally thereof and along a path having extremities defined by said stops, said actuator being movable to one end of its path of travel and return to the opposite end of its path of travel during each revolution of the wheel over the ground to be measured; and

means pivotally coupled with the actuator and with the counter for operating the latter to register the revolutions of the wheel, whereby the distance travelled may be calculated as the product of the total of said revolutions and the circumference of the wheel.

3,159,922
ABRASIVE DISC SETTING GAGE
Elman R. Dunn, Beloit, Wis., assignor, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed June 28, 1961, Ser. No. 120,265
4 Claims. (Cl. 33—147)

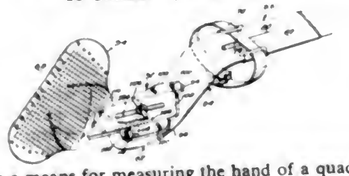
1. A disc setting gage for a double spindle disc grinder having abrasive discs with annularly opposed operative

faces comprising a pair of oppositely disposed area contact disc engaging anvils, a housing, a U-shaped flat spring supporting said anvils on said housing, for frictionless movement toward and from said abrasive discs, gage actuating means for urging said anvils into contact with said



abrasive discs, manually operable means for operating said gage actuating means, resilient means between said manually operable means and said gage actuating means to provide a uniform maximum force for holding said anvils in engagement with the faces of said abrasive discs.

3,159,923
HAND MEASURING MEANS FOR FITTING MECHANICAL HANDS TO PATIENTS
Charles J. Daniels and Thomas A. Smith, Wilmington, Del., and Frederick A. Harbin, Glenolden, Pa., assignors to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 27, 1961, Ser. No. 85,252
18 Claims. (Cl. 33—174)



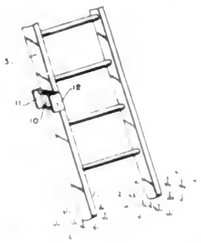
1. In a means for measuring the hand of a quadriplegic patient or the like for the purpose of fitting a mechanical hand thereto, a measuring device comprising a splint having portions thereof in juxtaposition with the hand, wrist and forearm of said patient, said hand engaging portion including means for measuring the grip of a patient comprising adjustable calibrated means for measuring the diagonal extending from the base of the index finger across the palm to the heel of the hand of said patient and second means on said adjustable means adjacent said index finger for measuring the location relative the end of said diagonal adjacent said index finger of the pressure point intermediate the ends of the thumb and index finger of the patient when said fingers are in gripping juxtaposition.

ERRATUM

For Class 33—178 see:
Patent No. 3,160,004

3,159,924
LADDER INCLINOMETER
George Lieblein, P.O. Box 297, Amityville, N.Y.
Filed Nov. 20, 1961, Ser. No. 153,392
4 Claims. (Cl. 33—207)

1. An inclinometer for angularly positioning a ladder, comprising a supporting plate of generally parallelogram shape having upper and lower generally horizontal edges and a pair of angularly inclined interconnecting side edges, said side edges being disposed in parallel relation to one another and at an angle to said upper and lower edges corresponding generally to a predetermined angle at which it is desired to position said ladder relative to horizontal, means defining an elongated cavity adjacent to and extending along one of said horizontal edges of said supporting plate, bubble level means carried by said supporting plate within said cavity adjacent and generally parallel to said one of said generally horizontal edges and adapted to indicate a desired level position when said upper and lower edges are horizontal and when said interconnecting side edges are thereby at said predetermined angle to horizontal, said cavity defining means including both vertically and horizontally extending structural members for holding said bubble level means in predetermined fixed position relative to said upper, lower, and side edges of said supporting plate, and a pair of resiliently movable side



plates affixed to said supporting plate along said pair of interconnecting side edges thereof respectively, the planes of the side plates being angularly disposed to said upper and lower supporting plate edges at the angle of said side edges, said side plates extending in generally parallel relation to one another and extending outwardly from said supporting plate adjacent both of the opposite faces of said supporting plate, said supporting plate and said side plates being joined to one another in a substantially H-shaped configuration, said pair of side plates thereby being adapted to resiliently grasp and to removably engage the elongated opposed edges of a ladder side rail on either side of said ladder.

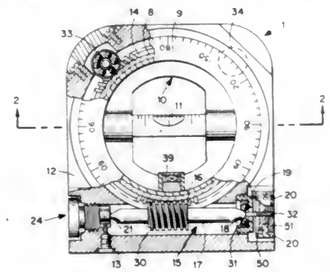
3,159,925
HYDROSTATIC LEVELING DEVICE
James H. Lott, Rte. 4, Henderson, Tenn.
Filed Jan. 11, 1962, Ser. No. 167,213
2 Claims. (Cl. 33—209)



1. Hydrostatic leveling means comprising a pair of vertically disposed transparent columns, each said column having hollow interiors for the reception of indicating fluid therein, means at the lower end of each said column connecting said hollow interiors with a common supply of said fluid, each said column being axially recessed at its upper end, providing an upwardly open recess haivng a lower-most annular horizontal shoulder and communicating with the hollow interior of its related column, a gasket seated on each said shoulder, said recesses each being internaly threaded above said shoulders, cap means threadedly engaging within said recesses for vertical advancement and retraction relative to said shoulders and gaskets, each said cap means adjacent to its periphery including a plurality of vents extending vertically from top to bottom of said cap means, said vents being respectively in alinement with said gasket and shoulder and disposed in circumferentially spaced rela-

tion, said cap means when advanced into engagement with said gasket sealing the lower ends of said vents to prevent communication of the column hollow interior with atmosphere and blocking shift of indicating fluid in said column, retraction of said cap freeing said vents and establishing communication of column interior with atmosphere for relative shift of indicating fluid in said columns, each said column including a snugly contained, vertically shiftable extension member, shiftable from a selected said column to establish a visual relative measurement of the amount of difference in level between said columns.

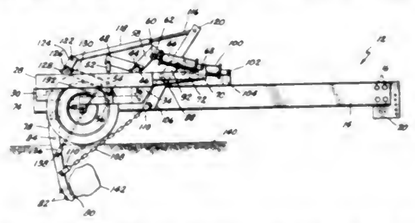
3,159,926
CLINOMETER ASSEMBLY
Oscar C. Holderer, 2304 Oakwood Ave. NW., Huntsville, Ala.
Filed Nov. 28, 1962, Ser. No. 240,761
5 Claims. (Cl. 33—214)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A clinometer assembly comprising a datum frame; an annular calibrated level indicator mounted on said frame for rotation about a horizontal axis; a drive mechanism engaging said indicator to provide controlled rotation thereof; a disengaging mechanism to provide disengagement of said drive mechanism from said indicator for free rotation thereof comprising a thumb screw in threaded connection with said frame, said thumb screw having a hollow base portion and a sleeve affixed thereto, a cylinder loosely mounted within the sleeve portion of said thumb screw, a peripheral flange on said cylinder within the base portion of said thumb screw, a headed stop pin eccentrically mounted in the base portion of said thumb screw for engagement with the outer face of said peripheral flange; support means carried in said sleeve for support of one end of said disengaging mechanism and for biased relation thereof with said indicator, said thumb screw disposed for rotation of said stop pin for pivotal movement of said disengaging mechanism for free rotation of said indicator, a crescent shaped flange formed integral with the sleeve portion of said thumb screw and extending inwardly therefrom, and a stop screw fixed to said frame and interposed into the path of movement of said crescent shaped flange to limit rotation of said thumb screw to substantially 180 degrees.

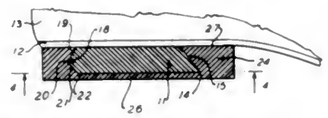
3,159,927
ROCK PULLER WITH MEANS TO ROTATE THE DIGGING TEETH UNDER THE FRAME
Clifton A. Carlson, Gilby, N. Dak.
Filed Aug. 3, 1962, Ser. No. 214,647
1 Claim. (Cl. 37—2)

A rock puller comprising:
(*a*) frame means;
(*b*) downwardly extending arm means;
(*c*) means pivotally connecting the upper end of said arm means to said frame means;
(*d*) a pair of wheels rotatably attached to the lower end of said arm means;
(*e*) a first transverse shaft mounted for rotation on said frame means;
(*f*) first arm means affixed to said first shaft for rotation therewith;
(*g*) link means pivotally connected between said first arm means and said downwardly extending arm means;
(*h*) second arm means affixed to said first shaft;
(*i*) hydraulic operating means carried by said frame means for actuating said second arm means through various angles to in turn actuate said downwardly extending arm means through various angles to raise and lower said frame means;
(*j*) a plurality of earth-engaging teeth;
(*k*) means pivotally mounting the upper ends of said teeth to said frame means;
(*l*) a second transverse shaft mounted for rotation on said frame means;
(*m*) first arm means affixed to said second shaft for rotation therewith;
(*n*) means connected between said first arm means of said second shaft and said teeth for positioning



said teeth in different angular positions relative said frame means;
(*o*) second arm means affixed to said second shaft;
(*p*) second hydraulic operating means carried by said frame means for actuating the second arm means of said second shaft through various angles to effect the positioning of said teeth in different angular positions;
(*q*) third arm means affixed to said second shaft;
(*r*) a third transverse shaft mounted for rotation on said frame means;
(*s*) first arm means on said third shaft;
(*t*) telescopically received members pivotally connected between said third arm means and the first arm means of said third shaft;
(*u*) second arm means on said third shaft; and
(*v*) spring means connected between the second arm means on said third shaft and said teeth for swinging said teeth upwardly into a subjacent relationship with said frame means when said first shaft has been rotated into a position to raise said frame means.

3,159,928
INTERCHANGEABLE HEEL FOR A SHOE
Charles Clark, 325 Union St., Jersey City, N.J.
Filed Dec. 10, 1963, Ser. No. 329,425
5 Claims. (Cl. 36—36)



1. A heel for a shoe comprising:
(*a*) a central support secured to a shoe,
(*b*) a front face on the central support extending obliquely outwardly and downwardly from the shoe,
(*c*) a rear undercut surface on the central support extending obliquely outwardly and downwardly from the shoe,
(*d*) a cam surface on the support intersecting the rear undercut surface extending therefrom obliquely inwardly and downwardly,
(*e*) the rear undercut surface and the cam surface defining a generally V-shaped external, horizontal rib on the central support opposite the front face,
(*f*) an outer member having a generally central opening shaped and dimensioned to closely conform to and adapted to receive the central support,
(*g*) the outer member being detachably secured to the central support.

ERRATUM

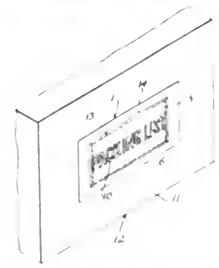
For Class 37—2 see:
Patent No. 3,159,927

3,159,929
LAND LEVELER
Arthur P. Waterson, Box 415, Dighton, Kans.
Filed Apr. 23, 1963, Ser. No. 275,138
2 Claims. (Cl. 37—180)



1. In combination with a tractor including a frame and front and rear wheels, a land leveler comprising a transverse scraper pivotally mounted at the rear of the tractor and having a cutting edge for cutting earth over which the tractor travels, a shaft carried by said scraper, a lifting roll rotatably carried by said shaft, downwardly inclined supports carried by said lifting roll, guide wheels carried by said supports, an upwardly extending arm carried by said lifting roll, a rearwardly and upwardly extending bracket carried by said shaft, a hydraulic cylinder including a piston and a piston rod connected between said said arm and said bracket, a rear upright pivotally carried by said shaft, a front upright aligned with said rear upright and pivotally carried by said shaft, a hydraulic valve carried by one of said front and rear uprights, a pair of fluid conduit means operatively connecting said hydraulic valve to opposite ends of said hydraulic cylinder, a valve control level selectively directing fluid from said hydraulic valve through one of said fluid conduit means to extend and retract the piston rod of said hydraulic cylinder and thereby vary the relative position of said scraper with respect to said guide wheels, stop means carried by the other of said front and rear uprights and operatively engaging said valve control lever, a rearwardly extending feeler element, including a rear wheel in contact with the ground, fixed to said rear upright, a forwardly extending feeler element, including a front wheel in contact with the ground, fixed to said front upright, movement of either of said feeler elements upwardly or downwardly pivoting its associated upright to move said valve control lever and selectively direct fluid from said hydraulic valve to one of said fluid conduit means to actuate said hydraulic cylinder and thereby rotate said lifting roll to vary the relationship of said scraper with respect to said guide wheels, said forwardly extending feeler element including a forwardly extending control member fixed to said front upright, a bell crank lever pivoted to the tractor frame and having a normally horizontal arm and a normally upright arm, a depending link pivotally interconnected between the forward end of the control member and said normally horizontal arm, a link pivotally connected at one end to said normally upright arm, an upwardly inclined arm pivotally connected at one end to the other end of said last-mentioned link, and a front feeler element carrying said front wheel, said front feeler element being fixed to the other end of said inclined arm and pivotally carried by the frame to the tractor for vertical articulation only.

3,159,930
SHIPPING MEANS
Dewar L. Allen, 7501 Spring Lake Drive, Bethesda, Md., and Jay W. O'Malley, 4501 Filter St., Philadelphia, Pa.
Filed June 4, 1963, Ser. No. 285,347
3 Claims. (Cl. 40—2)

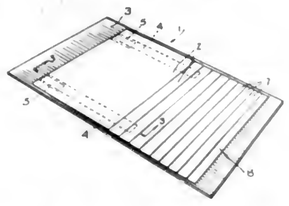


1. A device for attaching shipping documents to a shipping container comprising:
a flexible, transparent strip to cover and retain shipping documents on a shipping container, one surface of the strip having an adhesive coating thereon, an opaque non-adhesive coating on the central area of the strip and partially covering said adhesive coating so as to form an annular adhesive band adjacent the periphery of the strip and also to form in the central area a plurality of adhesive coatings constituting a plurality of locking areas and arranged as reverse printed letters constituting intelligence concerning the shipping documents, the opaque coating and the locking areas providing a contrast for the intelligence to be read by viewing the device through the non-adhesive side of the strip when the same is on the shipping container, said band providing a means to engage and to adhere to the container to secure the strip to the same and when so secured, the adhesive band and the central area forming a pocket containing the shipping documents and the central area providing a means for engaging and maintaining the shipping documents against the container and said transparency providing for the shipping documents to be viewable through the locking areas, together with means for supporting the strip in a storage condition, last said means having a supporting surface and said central area, said locking areas and said adhesive band being engaged with the supporting surface, the supporting surface having means providing for the strip to be peeled off of the supporting surface without the adhesive preventing the peeling action, said locking areas providing means for engaging and holding the shipping documents when the strip is removed from the supporting means and disengaged from the container.

3,159,931
SHEET-HOLDING MECHANISM
Harold M. Hopen, Far Rockaway, N.Y., assignor to International Innovations, Incorporated, New York, N.Y., a corporation of New York
Filed July 28, 1961, Ser. No. 127,613
3 Claims. (Cl. 40—102)

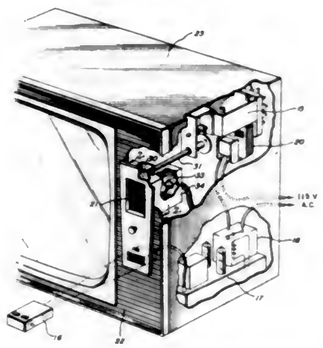
1. A filing device comprising a backing member a plurality of sheets, each sheet having a front surface,

a rear surface,
an upper and a lower edge,
a plurality of sheet supporting means to detachably hold a plurality of said sheets at the upper section thereof to allow each sheet to be rotated about its upper edge,
each of said sheet supporting means having an upper edge,
said upper edge of each of said sheets being parallel to and substantially adjacent the upper edge of each of said sheet supporting means respectively,
each of said sheet supporting means being coupled to adjacent sheet supporting means and being positioned in respective underlapping arrangement,



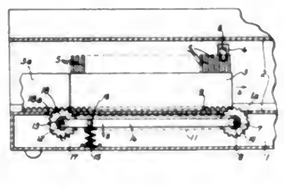
each of said sheet supporting means further being foldable and folding into back-to-back contact with an adjacent sheet supporting means when said sheets are rotated,
the upper sheet supporting means being rotatably coupled at the upper edge thereof to said backing member,
each of said other sheet supporting means being coupled at its upper edge to a part of the adjacent overlapping sheet supporting means at a position below the upper edge thereof, whereby upon application of a force in a direction substantially along the plane of said sheets, the sheets flip in seriatim beginning with the uppermost sheet.

3,159,932
CHANNEL INDICATOR
Eugene J. Polley, Lombard, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Jan. 19, 1961, Ser. No. 83,673
1 Claim. (Cl. 40—28)



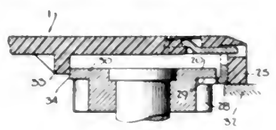
A channel indicator for indicating the selected one of a plurality of communication channels to which a tuner of a wave-signal receiver is adjusted, comprising: a first plate having a pattern of apertures; a cam mechanically coupled to said tuner and having a plurality of sectors each corresponding to one of said communication channels and each having a constant but different radius which is an integral multiple of a predetermined unit radius, at least two adjacent sectors having radii which differ by two units; a second plate also having a pattern of apertures; means for supporting said plates for relative movement; and cam follower means included in said second plate and responsive to engagement by a sector of said cam to move such plate to a predetermined one of a group of positions corresponding in number to said plurality of communication channels, the aperture patterns of said plates being related to one another to outline by means of a group of aligned apertures therein a numeric designating the channel selected by the instantaneous adjustment of said tuner.

3,159,933
SLIDE PROJECTOR
Hans Mulch, Wetzlar (Lahn), Germany, assignor to Ernst Leitz Gesellschaft mit beschrankter Haftung, Wetzlar (Lahn), Germany
Filed May 15, 1961, Ser. No. 110,217
Claims priority, application Germany, May 18, 1960, L 36,180
3 Claims. (Cl. 40—79)



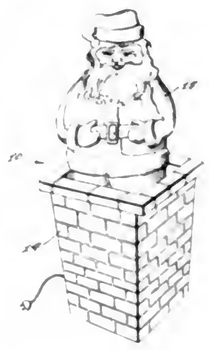
1. In a slide projector having a casing with a guideway for receiving slide magazines of the type having a rack gear on a surface thereof, the combination comprising: a first gear mounted on said casing and projecting into said guideway for drivingly engaging a rack gear of a magazine when in said guideway, a second gear identical to said first gear mounted on said casing forwardly of said first gear and projecting into said guideway for engaging a rack gear of a magazine when in said guideway, means for operatively connecting said second gear to said first gear so that a magazine engaged by said second gear is advanced in a like manner as a magazine engaged by said first gear, and means for selectively engaging and disengaging said first gear with a rack gear of a magazine when in said guideway.

3,159,934
SLIDE MAGAZINE
Carl H. Wiklund, New Rochelle, N.Y., assignor, by mesne assignments, to Airequipt Inc., New Rochelle, N.Y., a corporation of New York
Filed Oct. 17, 1961, Ser. No. 145,616
8 Claims. (Cl. 40—79)



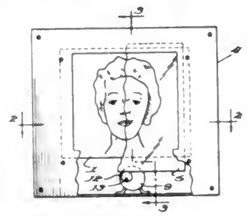
1. An elongated slide magazine comprising the combination of a body member having a top and a bottom and a plurality of parallel transverse partitions forming spaced slide compartments, a rack on the bottom extending longitudinally of the magazine and having its teeth projecting inwardly from one edge of the magazine and spaced from the bottom of the magazine, and an elongated guide rail on said rack adapted for sliding engagement with a smooth circumferential surface of a toothed magazine indexing wheel and spaced less than the wheel diameter from said rack.

3,159,935
DISAPPEARING SANTA IN CHIMNEY
Arnold Rubens, % Display Arts, Inc., 600 W. 57th St., New York, N.Y.
Filed Aug. 16, 1960, Ser. No. 49,963
1 Claim. (Cl. 40—106.31)



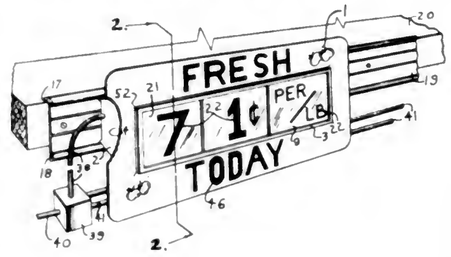
An animated display device comprising,
(*a*) a housing open at its top,
(*b*) a hollow base horizontally supported in the housing,
(*c*) an inflatable bag secured in air-tight engagement to the upper surface of said base,
(*d*) a flexible cover simulating a person surrounding said inflatable bag and secured to said base,
(*e*) a multi-sectional telescoping tubular guide and support rod rigidly secured at the lower end of its lowermost section to the center of said base, and at the upper end of its uppermost section to the top of said inflatable bag, said telescoping guide and support rod positioned axially within said inflatable bag,
(*f*) a blower within said base having its discharge outlet fitted within an opening in the upper surface of said base,
(*g*) an electric motor within said base for driving said blower, including a control circuit,
(*h*) a cam within said base driven by said electric motor coacting with a switch means providing a timed sequence in the operation of said control circuit to provide for the intermittent inflation of said inflatable bag and to permit deflation thereof,
(*i*) an air inlet passage in a side wall of said hollow base for supplying air to said blower, and
(*j*) a safety switch connected in said control circuit to render the same operative to energize or de-energize said electric motor, whereby, when said electric motor is energized, the blower will inflate said inflatable bag to cause the same with its flexible cover, to rise upwardly through the open top of said housing, and when de-energized, said inflatable bag will deflate and collapse under the effect of gravity with its flexible cover within said housing, the rising and collapse of the inflatable bag being guided and supported by the telescoping action of the telescoping guide and support rod.

3,159,936
ANIMATED DISPLAYS
Georges Musaphia, 24 Belmont St., Newton, Mass.
Filed Sept. 23, 1959, Ser. No. 843,612
1 Claim. (Cl. 40—106.53)



In a display device, a two dimensional illustrated image having a portion to be animated in the plane of the image, a transparent plate having generally parallel surfaces mounted parallel and in close proximity to said image, said plate having a translucent coating on its outer surface, said coating being light colored in its portion overlying the central portion of the image and darker colored in its portion overyling the periphery of the image, said plate in the area defined by the projected area of said portion of the image thereon having front and rear surfaces which depart from parallelism, and means for moving said plate through a cycle of positions for varying the angles of incidence and refraction of light rays passing through said area in the plate from the portion of the image to be animated.

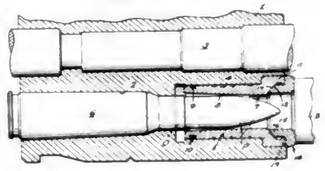
3,159,937
ADVERTISING DEVICE
Chester L. Barnes, Kansas City, Mo., assignor to L.P.T. Systems, Inc., Kansas City, Mo., a corporation of Missouri
Filed Sept. 27, 1962, Ser. No. 226,530
4 Claims. (Cl. 40—130)



1. A device for displaying price indicia related to goods for sale comprising in combination:
(*a*) a housing having a front wall, and an upper and a lower wall defining a space therein,
(*b*) a window in said housing front wall,
(*c*) means on said housing upper and lower walls for supporting said device,
(*d*) an elongated tape in said space, said tape being at least partially translucent and having a plurality of price indicia thereon, and
(*e*) a removable cage member in said housing, said cage member having a front wall normally adjacent said housing front wall, and an upper and lower wall extending rearwardly thereof,
(*f*) said cake member upper and lower walls respectively cooperating with said housing upper and lower walls for supporting said cage member in said housing,

(*g*) said cage member front wall forming a passageway with the rear face of said housing front wall for guiding said tape,
(*h*) said tape being sandwiched and frictionally, slidably held at upper and lower portions therealong respectively between said housing upper and cage upper walls and said housing lower and cage lower walls,
(*i*) the ends of said tape being positioned between said housing upper and lower walls.

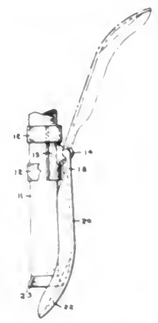
3,159,938
GAS SEAL FOR ROTATABLE CARTRIDGE DRUM
John W. Treat, Jr., East Hampton, Conn., Robert L. Hall, Marblehead, Mass., and Robert F. Robinson, Monroe, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed July 27, 1962, Ser. No. 213,064
7 Claims. (Cl. 42—59)



1. In combination with a rotatable cartridge drum for feeding cartridges into a gun barrel, there being at least one axially spaced bore through said drum for chambering a cartridge, said bore having a forwardly disposed counterbore, a gas seal for preventing leakage of combustion gases between said drum and said barrel comprising, a cylindrical member having an axial bore therethrough, said cylindrical member being slidably mounted in said counterbore in said drum, said axial bore having an annular recess in its forward portion thereof, said recess having a concave rearward wall, seal means between the outside surface of said cylindrical member and the inside surface of said counterbore carried by said cylindrical member, a ringlike obturating member between said couunterbore and said barrel movably mounted in said recess, said ringlike member having a rearward convex surface to engage said concave rearward wall and a forward face to engage said barrel and means sealing between the outside surface of said ringlike obturating member and the inside surface of said recess in said cylindrical member said first mentioned seal means comprising an annular groove disposed in the outer peripheral surface of said cylindrical member and a pair of split circular rings in side-by-side relation in said groove and adapted to expand and engage the inside surface of said counterbore, said split rings being angularly positioned with respect to each other.

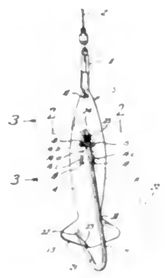
3,159,939
FISHING ROD PROTECTIVE ATTACHMENT
Sherman T. Transeau, Riverside, N.J.
Filed May 9, 1963, Ser. No. 279,100
7 Claims. (Cl. 43—21.2)

1. An attachment device for securement to the handle of a fishing rod comprising in combination, a broad convex-surfaced relatively stiff pad disposable with its convex surface against the fisherman's body for reducing the pressure exerted on the body by the handle butt of the fishing rod, and means for securing said pad to the fishing rod handle, said pad being disposed when in use so that its lengthwise extent in the top to bottom direction is substantially parallel to the lengthwise extent of the fishing rod handle and being substantially wider than the diameter of the fishing rod with which it is to be used and of sufficient length and longitudinal curvature to extend endwise downward beyond the butt of the fishing rod handle and curve underlyingly there-



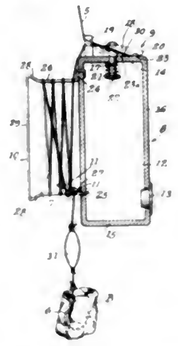
beneath when secured to the handle by said securing means, said pad being so positionally secured by said securing means relatively to the longitudinal axis of the fishing rod handle that the pad extends symmetrically in laterally opposite directions from the handle axis.

3,159,940
FISHING LURES
George J. Bokun, 2105 10th St., Lake Charles, La.
Filed Sept. 5, 1963, Ser. No. 306,922
5 Claims. (Cl. 43—35)



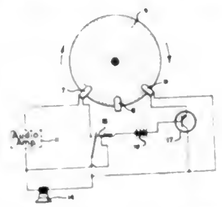
3. A fishing lure and associated hook having a latched position and a catching position, comprising:
(*a*) a fishing lure having a face extending from the upper end thereof to the lower end thereof;
(*b*) a fish hook having a shaft with the lower end and upper end, and a point carried by the lower end of the shaft, the hook being positioned to contact the lower end against the face of the lure and to contact the upper end of the shaft against the face of the lure near the upper end thereof;
(*c*) there being means on the face of the fishing lure for engaging the upper end of the shaft of the hook;
(*d*) guide means rigidly attached to the face of the lure and positioned a fixed distance thereabove, said guide means being adapted to contact the shaft of the hook; and
(*e*) a spring disposed on the shaft of the hook between the guide and said means on the face of the fishing lure for imparting longitudinal motion to said shaft on release from the latched position.

3,159,941
FISHING FLOAT
George L. Seymour, P.O. Box 384, Big Bear Lake, Calif.
Filed Mar. 11, 1963, Ser. No. 264,178
4 Claims. (Cl. 43—43.11)



1. A fishing float comprising:
(*a*) a hollow elongated and cylindrical, buoyant body constituting a bobber, said body having an end wall,
(*b*) a clip connected to said end wall and resiliently biased thereagainst to clamp a fish line against said end wall and thereby connect said bobber to the line,
(*c*) means providing a notch in one end of the clip into which the fish line is adapted to be slipped to enable free movement of the bobber along the line to vary the length of the line beyond the clip, as desired, upon clamping of the line to the bobber, the line contained within and extending beyond the clip constituting a leader and having a fish hook on its end,
(*d*) an eye formed in the opposite end of the clip and through which a doubled portion of the leader is reeved, a part of said doubled portion engaging the aforesaid notch.
(*e*) a flat frame extending radially from the bobber and around which the leader is adapted to be wound, and
(*f*) a hook adjacent the end of the bobber opposite to the end mounting the clip and constituting a member around which the leader, adjacent its hook end, is adapted to be trained and off which the leader is adapted to slip upon the bobber assuming a horizontal water-borne position after a cast of the float.

3,159,942
TALKBACK OR ECHO DOLL AND APPARATUS
Irving Fiske, Quarry Hill, Rochester, Vt.
Filed July 31, 1961, Ser. No. 128,937
6 Claims. (Cl. 46—232)



1. An audio device in combination with a figurine comprising:
(*a*) a body portion configured to represent said figurine;
(*b*) sound detecting means positioned within said body portion for detecting an audible signal;
(*c*) sound recording means operably associated with said sound detecting means for recording the audible signal detected by said sound detecting means;
(*d*) first circuit means operably associated with and between said sound detecting means and said sound recording means for translating said audible signal therebetween;
(*e*) sound reproducing means operably associated with said sound recording means for reproducing the signal from said sound recording means following a predetermined interval subsequent to the recording of said audible signal by said sound recording means;
(*f*) second circuit means operably associated with and between said detecting means and said reproducing means for translating said recorded signal from said reproducing means;
(*g*) means for erasing said audible signal from said sound recording means subsequent to the reproduction of said audible signal therefrom;
(*h*) sound amplifying means operably associated with said sound reproducing means for amplifying the audible signal recorded by said sound recording means;
(*i*) energizing means for actuating said detecting, recording, reproducing, erasing and amplifying means; and
(*j*) circuit selection means for receiving said recorded signal and for precluding the simultaneous operation of said sound detecting means and said sound reproducing means; said circuit selection means being operably associated with said first and second circuit means, and being so constituted and arranged as to enable the alternate de-energization thereof, and further enabling the energization of said sound reproducing means by the audible signal received by said sound detecting means.

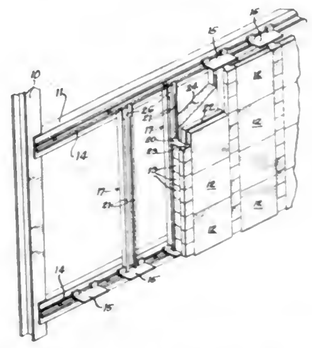
3,159,943
COMPOSITE BUILDING SIDING
Ben L. Sugar and Marvin R. Collins, Akron, Ohio, assignors to Alsco, Inc., Akron, Ohio, a corporation of Ohio
Filed Mar. 30, 1960, Ser. No. 18,554
9 Claims. (Cl. 50—200)



1. A laminated lap siding panel for the exterior wall sheathing of buildings, said panel including an outer metal layer, an insulation layer of foamed rigid plastic material adhered to the inner surface of said metal layer, said plastic material being impermeable to penetration and absorption of moisture, and an inner moisture barrier layer of metallic insulation foil on the inner surface of said insulation layer, said metal layer having partial interlock means at the top and bottom edges thereof adapted for interengagement of said panel with identical panels above and below it, the bottom edge of said insulation layer being spaced above the bottom edge of said metal layer, said foil terminating short of the lower edge of said insulation layer a distance sufficient to prevent contact between said foil and the metal layer of a lower interengaged panel thereby forming a thermal break between interengaged panels, the lower edge of said metal layer being turned inwardly at the bottom and then upwardly at its inner edge forming a channel and coacting with the spaced bottom edge of said insulation layer to form a lower ventilating channel below and spaced from

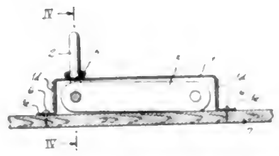
the bottom of the insulation layer, said channel having spaced vent openings therethrough opening into said channel from the exterior thereof, and a plurality of notches in the lower edge of said insulation layer extending upwardly therethrough and providing for controlled air circulation between said lower ventilating channel and the rear of said panel, said panel being adapted when applied as an external building wall sheathing component to prevent moisture condensate from forming on the inner side thereof by permitting flow of moisture vapors through said notches into said ventilating channel and dissipation thereof from the channel into the outer atmosphere through said vent openings.

3,159,944
FIRE BRICK WALL STRUCTURE
George A. Deming, Chicago, Ill., assignor to Chicago Fire Brick Company, Chicago, Ill., a corporation of Illinois
Filed July 25, 1957, Ser. No. 674,070
3 Claims. (Cl. 50—399)



1. The combination with a metallic framework having vertically spaced horizontally extending members thereon each provided with a longitudinally extending marginal flange, of shelves mounted on each of said horizontally extending members in spaced relation longitudinally of said metallic members, said shelves having hook portions closely embracing said marginal flanges to removably support said shelves in a position to extend horizontally from said metallic members, said shelves on vertically spaced metallic members being in vertical alignment, channel retaining bars U-shaped in cross section, each supported vertically between a pair of vertically spaced shelves, said channel retaining bars being spaced longitudinally of said horizontally extending members, the side flanges of said channel bars having inwardly directed longitudinal marginal flanges thereon defining a slot between them and terminating short of said side flanges at one end thereof to provide an opening between said side flanges of the full width of the channel of said bars and said shelves projecting laterally and inwardly beyond the side flanges of said channel retaining bars to provide supporting ledges protruding laterally and inwardly from said channel retaining bars, a vertical row of retaining bricks mounted on each of said shelves and having heads thereon at one end thereof seated in said channels of said channel retaining bars, reduced mid-portions extending through said slots and heads at the other ends thereof spaced from said inwardly directed flanges on said channel retaining bars, and vertical rows of bricks wider, longer and thinner than said retaining bricks alternating with said rows of retaining bricks and mounted on said supporting ledges of said shelves and having shoulders thereon engaging behind said heads on the other ends of said retaining bricks.

3,159,945
SUPPORTING DEVICE TO BE EMBEDDED IN CONCRETE STRUCTURE
William F. La Morte, Yonkers, N.Y., assignor to The Fireproof Products Co., Inc., Bronx, N.Y., a corporation of New York
Continuation of application Ser. No. 743,154, June 19, 1958. This application Apr. 23, 1962, Ser. No. 191,667
2 Claims. (Cl. 50—473)



1. A supporting device adapted to be embedded in a horizontal reinforced concrete slab to support an external load on the slab, comprising:

(*a*) an elongated casing having walls of relatively thin sheet material and open at one of its elongated faces, said casing being relatively shallow as compared to its length and being relatively narrow between its two elongated side walls as compared to the height of said side walls, said casing being adapted for placement with its open face against and closed by a form to receive poured concrete;

(*b*) a stress distributing member having:

(1) a middle portion spanning the narrow dimension of the casing adjacent one end thereof and and inwardly of the open face thereof, said middle portion extending through apertures in the walls of the casing; and

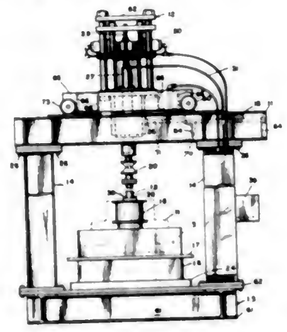
(2) integral end portions outside the casing and extending upwardly from said middle portion and adapted to serve as anchors in the poured concrete;

(*c*) weld means at said apertures fastening the member to the walls to prevent rotation of the member in the apertures;

(*d*) a yoke attached to and connecting the end portions and spaced slightly above the housing so as to be unstressed by forces applied to said end portions as long as said weld means is intact, and effective to limit rotation of the member with respect to the housing upon rupture of the weld means;

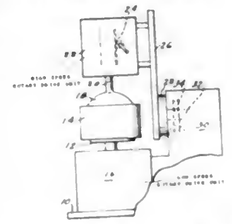
(*e*) an elongated flat support member, slightly shorter than said casing, and positioned with its smallest dimension extending in the same direction as the relatively narrow dimension of the casing and its width extending in the same general direction as the side walls of the casing, said support member being apertured adjacent one end to receive the middle portion of said stress distributing member, said support member having a retracted position when the open face of the casing is against a form, in which position it is closely confined within the casing and its other end is adjacent the other end of the casing, said support member being pivotally movable edgewise when said form is removed from the set concrete to an active position wherein its other end projects from the casing, said support member being adapted when in its active position to transfer a stress due to an external load directly to said stress distributing member at the middle portion thereof.

3,159,946
LAPPING MACHINE
Robert H. Shenk and George Shea, Erie, Pa., assignors to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Apr. 26, 1962, Ser. No. 190,277
6 Claims. (Cl. 51—26)



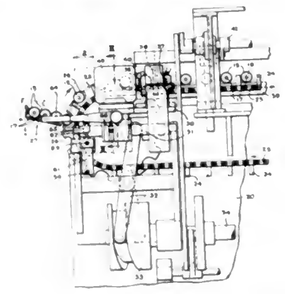
1. A lapping machine for lapping crowned tooth couplings comprising a base, a frame extending upwardly from said base, means to support and rotate a first part of a crowned tooth coupling on said base, said frame having a horizontally disposed track spaced above said base, a trolley on said track above said base, means to reciprocate said trolley in a horizontal direction on said track, a quill shaft extending down from said trolley, means to attach a second part of said coupling to said quill shaft, a brake on said trolley, shoe means on said brake, means on said quill shaft to resist rotation of said quill shaft, and means on said trolley to reciprocate said quill shaft up and down.

3,159,947
SPHERICAL CUTTING APPARATUS
Morton S. Lipkins, 3 Nemeth St., Malverne, N.Y.
Original application Feb. 24, 1959, Ser. No. 795,212, now Patent No. 3,088,253, dated May 7, 1963. Divided and this application June 25, 1962, Ser. No. 205,830
4 Claims. (Cl. 51—33)



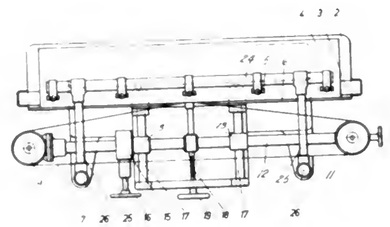
1. Apparatus for making spherical cuts in fracturable materials, including a spherical cutter having a diamond edge and spherical support means carried by an outwardly projecting shaft, the thickness of said support means being less than that of said diamond edge outside the portion thereof occupied by said shaft, said shaft occupying only a small fraction of the solid angle of the cutter, rotary drive means coupled to said shaft, a rotary support for a body of fracturable material to be cut, the axes of rotation of said support and said cutter lying in a common plane, and means supporting and driving said cutter shaft and said body support for relative swinging of the axes thereof about a third axis perpendicular to said plane from one position of alignment with each other to another position approaching right-angular relationship.

3,159,948
GRINDING MACHINE
William Pechy, Wall Township, Monmouth County, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1963, Ser. No. 263,872
6 Claims. (Cl. 51—34)



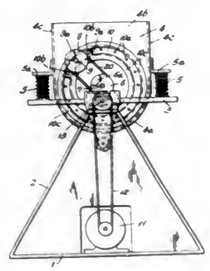
1. A grinding machine comprising, means for successively advancing lamps in axial parallelism with lamp terminals projecting from the ends of said lamps, a grinding element engageable with the end of a terminal of a first lamp for forming a plateau on the end of said terminal, and means gauging the depth of grind of said formed plateau for determining depth of grind of plateau for the next successive lamp terminal.

3,159,949
PROFILE EDGE AND RABBET GRINDING MACHINE
Karl Heesemann, 54 Friedenstrasse, Rehme uber Bad Oeynhausen, Germany
Filed July 30, 1962, Ser. No. 213,386
Claims priority, application Germany, Oct. 28, 1961, H 43,993
15 Claims. (Cl. 51—138)



1. A band grinding machine for profile, edge and rabbet grinding; said machine comprising a frame, a stationary work-supporting table mounted on said frame for supporting the piece to be worked, and at least one grinding unit which is vertically and horizontally adjustable; said grinding unit comprising an endless abrasive band mounted for longitudinal movement, driving means for driving said band in longitudinal movement, means for guiding said band so that it is effective where needed, and a pressure device for forcing said band at least at one point along its length against the piece being worked; a conveyor on said table for conveying pieces to be worked along said table past said points on said band; an axle disposed parallel to the path of movement of the pieces to be worked, said grinding unit being rotatably mounted as a whole on said axle; and means for vertically and horizontally adjusting the position of said axle with respect to said table.

3,159,950
VIBRATING MACHINE
Albert Madwed, 261 River St., Bridgeport, Conn.
Filed May 7, 1962, Ser. No. 192,818
8 Claims. (Cl. 51—163)



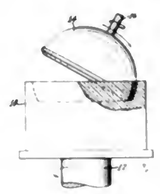
1. A vibrating machine comprising two sections, one of said sections being a receptacle adapted for receiving particulate material and workpieces and the other of said sections being a support for the receptacle, said receptacle being resiliently mounted; rotary vibration-imparting means; means for mounting said vibration-imparting means for rotation on one of said sections; means for rotating said vibration-imparting means on its axis whereby vibrations are imparted to the receptacle to cause the receptacle to vibrate along a determinate path; and means for adjusting the relative positions of the axis of rotation of the vibration-imparting means and the receptacle to change the path of vibration of the receptacle.

3,159,951
SKI SHARPENING TOOL
Alois P. Winbauer, 343 Hetcheltown Road, Scotia 2, N.Y.
Filed Apr. 14, 1961, Ser. No. 103,055
2 Claims. (Cl. 51—170)



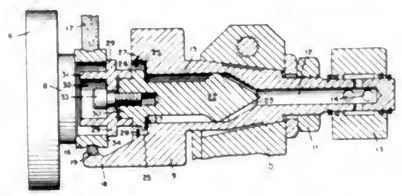
1. In a tool for sharpening the edges of skis, the combination of a frame, a bearing block, a pair of tracks associated with said frame and adapted to engage said bearing block for movably supporting the bearing block on said frame, means for adjusting the position of the bearing block on said frame, a grinding wheel journalled in said bearing block, motor means connected to said grinding wheel, a pair of rollers having flanges being operatively connected to said frame, said flanges being adapted to engage the edge of the ski being machined, said tracks associated with said frame being oriented for movement of the grinding wheel with respect to the rollers adapted to engage the edge of the ski, a third roller movably mounted with respect to said frame and adapted to engage the opposite edge of the ski and spring means for biasing the third roller into engagement with the opposite edge of the ski.

3,159,952
SPHERICAL CUTTING APPARATUS
Morton S. Lipkins, 3 Nemeth St., Malverne, N.Y.
Original application Feb. 26, 1960, Ser. No. 11,256, now Patent No. 3,088,254, dated May 7, 1963. Divided and this application Sept. 17, 1962, Ser. No. 224,191
7 Claims. (Cl. 51—206)



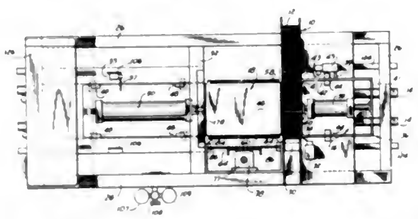
4. A cutter for hard and frangible materials, including a cutting rim and a spherical supporting portion for said rim at least as thin as said cutting rim, said cutting rim having a pair of diamond-bearing lateral surfaces and a diamond-bearing cutting face, said cutting face extending from one of said lateral faces to the other and projecting substantially farther in the direction of cutter penetration at one of said lateral surfaces than at the other of said lateral surfaces, the amounts of projection of said cutting face being measured transverse to an imaginary conical surface formed by a radius of the spherical supporting portion moving through a circle at the cutting face.

3,159,953
FLUID-ACTUATED HOLDING DEVICE FOR GRINDING MACHINES
Harold E. Balsiger, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1962, Ser. No. 176,682
8 Claims. (Cl. 51—237)



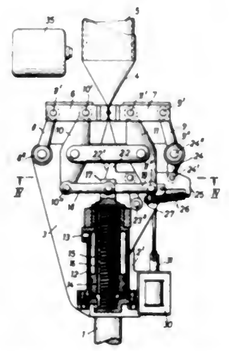
2. A holding device for holding an annular workpiece for external grinding in a grinding machine comprising a rotatable face plate, means mounted independently of said face plate including a housing, means for moving said housing toward and from operative relation with said face plate, means for supporting said workpiece at peripherally spaced points on the external surface being ground so that the workpiece moves radially as it is ground to a smaller diameter, a holding member loosely mounted in said housing and rotatable with said workpiece, the clearance between said holding member and said housing being equal to or greater than said radial movement of said workpiece, a supply of fluid under pressure, means for directing said fluid under pressure against said holding member to hold said holding member and said workpiece against said face plate, the front portion of said holding member and said workpiece moving radially as a unit relative to said housing as said workpiece moves radially during a grinding operation.

3,159,954
CASING MACHINE
Edward T. Holland, Jr., Cedar Rapids, Iowa, and George R. Schultz, Anoka, Minn., assignors to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed Mar. 5, 1962, Ser. No. 177,485
12 Claims. (Cl. 53—61)



7. A casing machine for placing containers fed to the machine into empty open-top cases supplied to the machine at a level below the container feed line, said machine comprising case handling means for positioning and holding the case in a proper location to receive a group of containers, container support means movable to and retractable from a position over the open-top of the positioned case to support a group of containers when in position over the case, grouping means for forming a group of containers on said container support means, holding means for holding the formed group when the container supporting means is retracted from supporting position over the open-top of the positioned case, elevator means for lowering the group of containers into the positioned case, and means to guide the group of containers into the case, said case handling means including a first depending member connected to said container support means and retractable therewith to engage the inside edge of said case and thereby position said case when said support means is retracted.

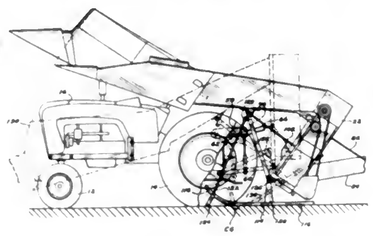
3,159,955
PACKAGING MACHINE FOR PRODUCTION OF BAGS OF TUBULAR MATERIAL
Hermann Thürlings, Viersen, Rhineland, Germany, assignor to Hamac-Hansella Aktiengesellschaft, Viersen, Germany, a corporation of Germany
Filed Jan. 9, 1963, Ser. No. 250,426
Claims priority, application Germany, Jan. 12, 1962, H 44,596
9 Claims. (Cl. 53—180)



1. In a packaging machine of the type in which a series of filled and sealed merchandise packages are formed from a tube of heat-sealable material drawn over a filling pipe through which the merchandise is introduced into the tube:

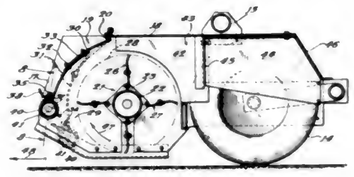
a pair of heated jaws on opposite sides of the tube and movable toward and away from each other in a direction transverse to the longitudinal axis of the tube between a closed and open position, said jaws when closed forming a transverse seal on said tube, a pneumatic piston-cylinder arrangement for effecting said transverse movement of said jaws, and means for moving said jaws back and forth in a longitudinal direction when said jaws are in closed condition for advancing the tube through the machine, said means including a vertically movable post, a platform mounted on the upper end of said post, a pair of spaced-apart vertical wings carried by said platform, said wings being arranged on opposite sides of the tubular material and each of said wings carrying a pneumatic piston-cylinder device, a pair of levers pivotally mounted intermediate their ends on each of said wings, one end of one of said levers being pivotally connected to one of said jaws and the corresponding end of the other lever being pivotally connected to the other jaw, and a link pivotally connected between the opposite end of each of said levers and said piston-cylinder device, said levers and links being so arranged that upon movement of the piston-cylinder device in one direction said links tend to become aligned and close said jaws and upon movement of said device in the opposite direction said links move out of alignment and open said jaws.

3,159,956
TRACTOR MOUNTED HARVESTERS
Homer H. Green and Robert R. Radke, Minneapolis, Minn., and Richard R. Steingas, Naperville, Ill., assignors, by mesne assignments, to Minneapolis-Moline, Inc., Hopkins, Minn., a corporation of Delaware
Original application Apr. 15, 1959, Ser. No. 806,651, now Patent No. 3,043,376, dated July 10, 1962. Divided and this application Dec. 1, 1961, Ser. No. 156,371
2 Claims. (Cl. 56—15)



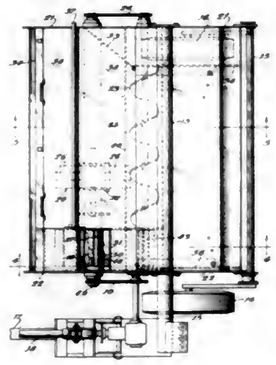
1. An implement adapted for mounting on a tractor having rear traction wheels and a rearwardly extending power lift hitch, a crop processing unit adapted to be mounted on the hitch for raising and lowering movement therewith, a pair of crop harvesting units integrally connected to the processing unit to extend forwardly therefrom one along each side of the tractor and forwardly of said rear wheels, the mounting of the processing unit on the hitch including a pivotal connection having a transverse pivot axis located rearwardly of said rear wheels, a rocker member integrally mounted on the implement and having a forward convex lower surface adapted to engage the ground forward of said axis as the processing unit is lowered whereby with continued lowering movement the processing unit and the harvesting units will rock rearwardly on the rocker member and about said axis until the processing units have been raised higher than the traction wheels.

3,159,957
ROTARY SCYTHE
Bernard C. Mathews, Box 202, Crystal Lake, Ill.
Filed July 5, 1962, Ser. No. 207,594
11 Claims. (Cl. 56—24)



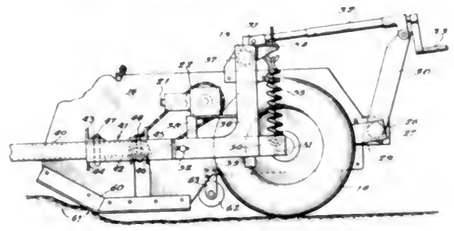
1. A rotary scythe comprising a rotor assembly mounted on a horizontal axis and including crop cutting blades, a housing for said rotor assembly having side walls, a top wall, and a curved front wall hingedly connected to said top wall, the clearance between said front wall and the path of said blades providing a throat, a plant deflector having a portion located forwardly of the lower end of said front wall, means for adjusting the lower end of said hinged front wall to regulate the width of said throat, and means for adjusting the elevation of said plant deflector above the ground.

3,159,958
ROTARY CHOPPER FOR HAY AND LIKE CROPS
Bernard C. Mathews, P.O. Box 202, Crystal Lake, Ill.
Filed Aug. 16, 1962, Ser. No. 217,459
10 Claims. (Cl. 56—24)



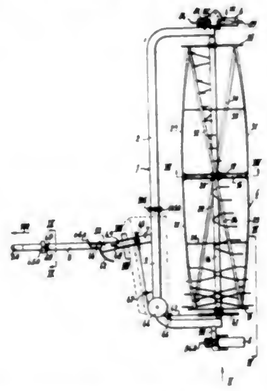
1. A rotary chopper comprising a rotor assembly including a rotor shaft and pivotally mounted blades, first housing means surrounding the upper front portion of said blades to define a chopping zone, a blower mounted at one end of said rotor assembly and including a blower housing, conveyor means located rearwardly of said rotor assembly for transferring chopped material from said chopping zone to said blower housing, said blower housing having a side wall separating said blower from said chopping zone, said rotor shaft extending through said side wall, said side wall having an inlet opening surrounding said rotor shaft and concentric therewith and communicating directly with said chopping zone whereby the operation of said blower will create a draft within said chopping zone for blowing fines from said chopping zone through said inlet opening and directly into said blower housing, and outlet means for said blower housing.

3,159,959
ANTISCALPING SUSPENSION FOR ROTARY HAY CUTTER
Bernard C. Mathews, Box 202, Crystal Lake, Ill.
Filed May 28, 1963, Ser. No. 283,873
10 Claims. (Cl. 56—24)



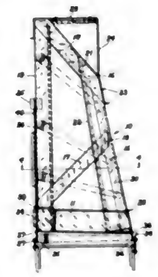
2. In a rotary hay cutter having a mobile main frame, a cutting rotor rotatably journaled in said main frame, a draw bar assembled arranged at one side of said main frame, and skids mounted on said main frame at either side of said rotor for maintaining a minimum clearance between said rotor and the ground, an antiscalping suspension for said main frame which comprises a subframe rigidly connected to said main frame at one side thereof, horizontal pivot means connecting said draw bar assembly to said subframe, stop means interposed between said draw bar assembly and said subframe to limit pivotal movement of said main frame with respect to said draw bar assembly in order to maintain a normal operating clearance between said skids and the ground, and spring means extending between said draw bar assembly and said subframe for urging said draw bar assembly in a direction away from said stop means.

3,159,960
IMPLEMENTS FOR WORKING CROP OR LIKE MATERIAL LYING ON THE GROUND
Jan Winkel, Nieuw-Vennep, Netherlands, and Cornelis van der Lely, 7 Bruschrain, Zug, Switzerland; said Winkel assignor to C. van der Lely N.V., Maasland, Netherlands, a company of the Netherlands
Filed Nov. 25, 1960, Ser. No. 71,498
Claims priority, application Netherlands Nov. 28, 1959
15 Claims. (Cl. 56—372)



1. A tedder comprising a frame supported by ground wheels and a crop-working member rotatably mounted on said frame, said crop-working member being rotatable about a substantially transverse axis, said wheels having their axes of rotation located lower than and in substantially the same vertical plane as said axis, said member being provided with at least one row of resilient tines supported on a strip, said strip being helically disposed and retained in spaced relationship around said axis by a plurality of intervening spokes, said tines being spaced from one another in a direction parallel to said axis, and having their crop-working portions inclined to the rear with respect to the intended direction of rotation.

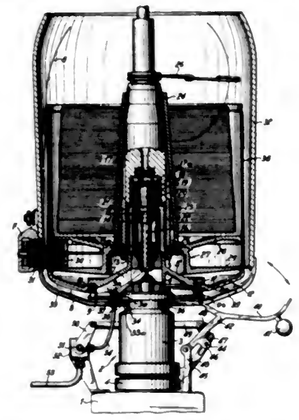
3,159,961
BOBBIN MAGAZINE
Waldo H. Banks, Hopedale, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Jan. 11, 1962, Ser. No. 165,578
7 Claims. (Cl. 57—1)



7. A bobbin magazine which comprises a base portion, a first outer side member extending in a substantially perpendicular direction from the said base, a second outer side member extending from the said base in opposed relationship to and inclined about eleven degrees toward said first side, spaced interconnecting strip members extending between said first and second side members for maintaining the inclined relationship thereof, a top portion extending from said second side and inclined toward said first side, a plurality of aligned, inwardly directed, opposed bobbin guiding and retaining channels extending longitudinally of said first and second side members, a centrally disposed handle extending from said first side and in overlying relationship with said top portion, a plate member removably inserted into said base portion for retaining a plurality of bobbins within said magazine, means on one of said side members for retaining said plate member when removed from said base portion, track members outwardly directed from said second side member, and indexing lugs outwardly extending from said first side member, said track members and said indexing lugs cooperating in guiding and positioning said magazine during the loading of bobbins therein.

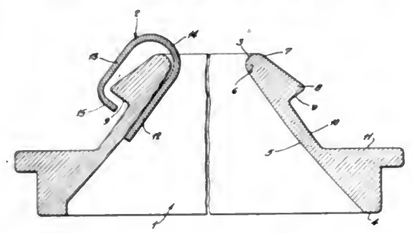
3,159,962
DOUBLE TWISTING SPINDLE SYSTEM
Gustav Franzen, Neersen, near Krefeld, Germany, assignor to Klaus Nimtz, Krefeld, Germany
Filed Aug. 1, 1963, Ser. No. 299,238
Claims priority, application Germany Aug. 14, 1962
8 Claims. (Cl. 57—58.49)

6. In a double twisting spindle system having a substantially vertical tubular member for passing a thread or yarn to be twisted therethrough: thread accumulator disc means coaxially arranged with regard to said tubular member and rotatable about the lower end thereof, whorl means drivingly connected to said disc means for rotating the same, nozzle means adapted to be connected to a source of thread and yarn treating fluid and arranged below said disc means and eccentrically with regard to the axis of rotation of said disc means, the mouth of said nozzle means being directed toward said disc means for humidifying a thread or yarn passing between said nozzle means and said disc means, an annular upwardly flaring dish-shaped member connected to the peripheral portion of said disc means and having its upper marginal portion curved upwardly, a balloon restrainer can surrounding said disc means and having a bottom portion confining with said annular dish-shaped member a passage gradually decreasing in cross-section in the direction toward the outer marginal portion of said dish-shaped member for passing therethrough a thread or yarn humidified



by said nozzle means, brake means operatively connected to said whorl means, said restrainer can bottom having an access opening therein for permitting access to the interior of said can, closure means operable selectively for closing and opening said access opening, and means operatively interconnecting said closure means with said brake means for automatically actuating the latter for braking action in response to the opening of said closure means.

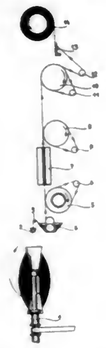
3,159,963
RING FOR SPINNING AND TWISTING FRAMES AND TRAVELLER FOR THE SAME
Grigory Nickolajevich Zakharov, Sirotsky Pereulok 17, Apt. 76, Moscow, U.S.S.R.
Filed Nov. 26, 1962, Ser. No. 244,537
4 Claims. (Cl. 57—119)



4. A ring for spinning and twisting machines comprising a body having top and bottom ends and an internal hyperbolic surface located between said ends, said top end being defined by an arc of a circle joining said hyperbolic surface, an external rim for said top end of said body including a first tapered surface and a second tapered surface arranged perpendicular to said first tapered surface, a traveller of substantially U-shape mounted on said ring body, the legs of said traveller being parallel and of different lengths, the leg of greater length uniformly contacting said hyperbolic surface along its generatrix for increasing the area of contact between the

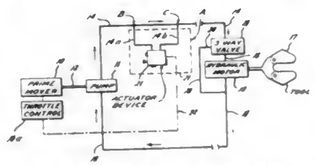
traveller and the hyperbolic surface, and the free end of the leg of lesser length having an inturned portion arranged perpendicular to the leg of lesser length for cooperation with said second tapered surface of said external rim for retaining the traveller on said ring body.

3,159,964
PROCESS FOR WORKING UP STRETCHED FILAMENTS OF AROMATIC POLYESTERS OF HIGH MOLECULAR WEIGHT
Rosl Kretsch, Bobingen, near Augsburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
Filed Jan. 30, 1962, Ser. No. 169,782
Claims priority, application Germany, Feb. 11, 1961, F 33,189; Mar. 17, 1961, F 33,434
11 Claims. (Cl. 57—157)



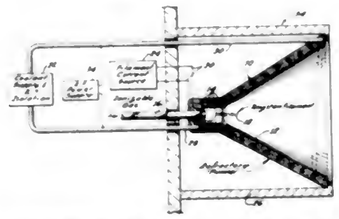
1. A process for processing stretched filaments of aromatic polyesters of high molecular weight, which comprises twisting the stretched filaments, passing the twisted filament through a bath consisting of a member selected from the group consisting of a solution, dispersion and an emulsion of at least one substance boiling in the range of 120° C. to 350° C., feeding the filament to two rollers which serve as fixed points and rotate at different speeds, the first one of which is heated, wrapping the filament several times around the rollers and heating it between the rollers uniformly on all sides to a temperature within the range of 220° C. to 350° C. for 0.1 to 5 seconds, simultaneously allowing the filament to undergo an adjustable shrinkage of 5 to 35%, again stretching the filament and winding it up, said steps being carried out in one continuous operation.

3,159,965
CONTROL SYSTEM FOR HYDRAULIC CIRCUITS
Brown J. Woolley and James D. Woolley, both of P.O. Box 1249, Kilgore, Tex.
Filed June 12, 1961, Ser. No. 116,598
11 Claims. (Cl. 60—19)



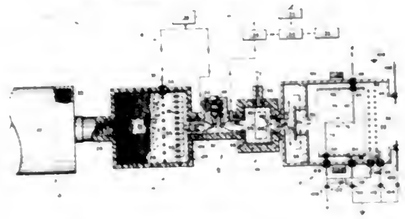
1. A control system for controlling the output of a pressure supply means for a hydraulic circuit in accordance with the load imposed on said circuit including, an actuator for controlling the operation of said pressure supply means, a conduit communicating between said hydraulic pressure supply means and a load-imposing means, means for sensing the pressure at two spaced apart points in said conduit, and means operatively associated with said sensing means actuated only by a change in the pressure differential between said spaced points resulting from the back pressure created when a load is applied to the hydraulic circuit by the load-imposing means, said last-mentioned means when actuated operating said actuator whereby the output of said pressure supply means of the hydraulic circuit is varied in accordance with the load imposed on the circuit by the load-imposing means.

3,159,966
IONIZATION AND PLASMA ACCELERATION APPARATUS
Daniel L. Curtis, Manhattan Beach, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Nov. 7, 1960, Ser. No. 67,579
7 Claims. (Cl. 60—35.5)



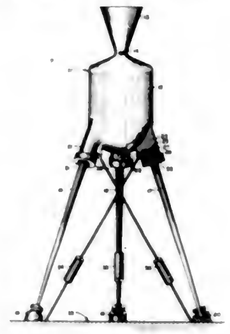
7. In combination, a space vehicle, a propulsion system mounted in said vehicle, said propulsion system including:
an electrical coil of hollow conductive tubing and having a series of turns of continuously increasing diameter;
a matrix of refractory material supporting said coil;
means for injecting ionized plasma through said coil near its center;
means for passing coolant through said conductive tubing; and
means for energizing said coil at high frequencies.

3,159,967
VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Ernest N. Petrick
Filed Mar. 12, 1963, Ser. No. 264,736
24 Claims. (Cl. 60—35.5)



11. An ion engine, comprising:
(A) an enclosure,
(1) said enclosure having an orifice formed therein;
(B) a source of solid particles;
(C) means for continuously supplying said solid particles from said source into said enclosure;
(D) heat producing means adapted to heat said solid particles located within said enclosure thereby decomposing said solid particles into a gaseous vapor:
(E) control means connected to said heat producing means,
(1) said control means being adapted to control said heat producing means for varying the rate at which said solid particles are decomposed thereby regulating the amount of gaseous vapor being produced;
(F) ionization means connected to said orifice for receiving said gaseous vapor formed within said enclosure,
(1) said ionization means being adapted for converting said gaseous vapor into a source of ions; and
(G) acceleration means connected to said ionization means for receiving and accelerating said ions.

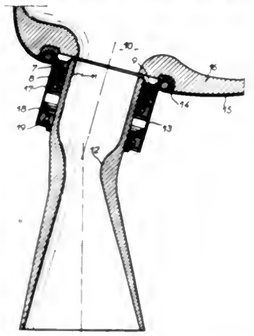
3,159,968
MOUNTING STRUCTURE FOR THRUST DEVICES
Owen W. Welles, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed May 1, 1961, Ser. No. 106,728
8 Claims. (Cl. 60—35.55)



1. Link mounting structure for thrust devices such as rocket motors rockable on the mounting structure to adjust the direction of the thrust comprising: a plurality of spaced links rockably connected between fixed structure and said device, cam means through which said links are connected between said fixed structure and said device, said cam means being effective to prevent movement of said device toward the fixed structure caused by rocking said device on said links for changing the direction of thrust of the device, and means for effecting rocking movement of said device on said links.

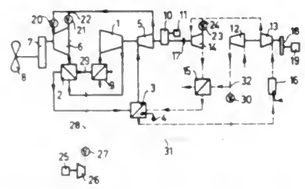
3,159,969
SEALING AND ROTATABLE MOUNTING ARRANGEMENT FOR ROCKET NOZZLES
Adolphe Otton Gontier Ernst, Bois-le-Roi, and Francis Jean-Marie Guy Tremoulilles, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a French company
Filed Mar. 18, 1963, Ser. No. 265,925
Claims priority, application France, Mar. 20, 1962, 891,688
14 Claims. (Cl. 60—35.55)

1. In a rocket equipped with at least one discharge nozzle having an upstream portion which is rotatable about its axis with respect to the said rocket and a downstream portion forming an elbow with the said upstream portion, a sealing and rotatable mounting arrangement disposed about the said upstream portion and comprising an axial-displacement annular piston, at least one labyrinth packing situated downstream of the said piston, and an annular chamber formed between the said piston, the



upstream portion of the discharge nozzle, the labyrinth packing and a fixed part of the rocket, the said annular chamber being filled with a lubricating paste.

3,159,970
THERMAL POWER PLANT WITH CLOSED CIRCUIT OF A GASEOUS WORKING MEDIUM AND AN OPEN GAS-TURBINE PLANT
Werner Spillmann, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 3, 1962, Ser. No. 184,725
Claims priority, application Switzerland, Apr. 24, 1961, 4,767/61
6 Claims. (Cl. 60—39.18)

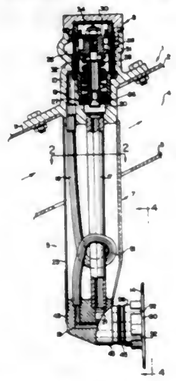


1. In combination a thermal power plant operating with a closed circuit of a gaseous working medium comprising compressing means in which said working medium is brought to a high pressure; a heater including heat exchange walls through which the high-pressure medium is heated by combustion of fuel; first turbine means in which the so-heated working medium is allowed to expand while doing work; cooling means for the so-expanded working medium; and flow connections connecting said compressing means, said heater, said first turbine means and said cooling means to define the said closed circuit for the working medium; said first turbine means comprising a first turbine connected to drive said compressing means and a useful power turbine running at a speed independent of said turbine which drives the compressing means; and an open gas turbine plant comprising a compressor connected with said heater so as to supply combustion air to the fuel to be burnt and to supercharge said heater; second turbine means connected with said heater so as to allow the combustion gases to expand while doing work; said second turbine means comprising a turbine connected to drive said combustion air compressor and a further turbine mechanically independent of said useful power turbine and of said turbine which drives the combustion air compressor, but drivingly connected with the compressing means of the closed circuit.

3,159,971
RESILIENT NOZZLE MOUNT

Charles M. Moebius, Cincinnati, and Charles H. Barricklow, Jr., Willoughby, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 24, 1961, Ser. No. 91,520
2 Claims. (Cl. 60—39.74)

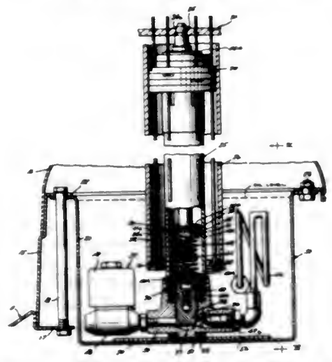


1. A resilient mounting for a fuel injection nozzle comprising a body adapted to be fixedly mounted on the housing section of a gas turbine; a pair of conduits each having one end secured to said body for flow of fuel through said body and conduits; and a nozzle to which the other ends of said conduits are secured; one of said conduits being substantially more flexible laterally and longitudinally with respect to itself than the other whereby vibration of said nozzle induces flexing of said other conduit in the manner of a cantilever beam effectively constrained only at said one end thereof; said one conduit having a loop between its ends to impart said greater flexibility thereto; said other conduit being tapered so as to constitute, in effect, a uniform strength beam when thus flexed by vibration of said nozzle.

3,159,972
HYDRAULIC PUMP AND MOTOR MECHANISM FOR BARBER AND BEAUTY CHAIRS

Howard F. Newman, Evanston, John A. Dlouhy, Oak Park, and Thomas R. Rench, Deerfield, Ill., assignors, by direct and mesne assignments, to Emil J. Paidar Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 30, 1961, Ser. No. 135,060
4 Claims. (Cl. 60—52)

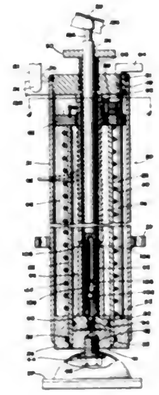


1. A power mechanism for silently elevating and lowering a support for a load comprising a supporting base, an upright piston and cylinder assembly for elevating and lowering the support with said cylinder mounted on the base and said piston having a piston rod connected to the support, a fluid pump connected to a pressure chamber at one end of the cylinder for elevating the support, a controlled fluid release passage communicating with the chamber for the release of fluid to lower the support, a guide for the lower end of the piston rod spaced above the piston and engaging the inner wall of the cylinder, a force dampening spring providing the sole interconnection between said piston rod and said piston below said guide, said spring being a coiled compression spring coaxial wtih said piston rod and a resilient plug held by said coils within the coils at a mid-portion of the spring.

3,159,973
JACK MECHANISM HAVING AN INTERNAL LOCKING MEANS

Frank S. Pearne, San Gabriel, Calif., assignor to Regent Jack Mfg. Co., Inc., Downey, Calif., a corporation of California

Original application Dec. 29, 1959, Ser. No. 862,648, now Patent No. 3,094,841, dated June 25, 1963. Divided and this application May 7, 1963, Ser. No. 278,535
3 Claims. (Cl. 60—52)

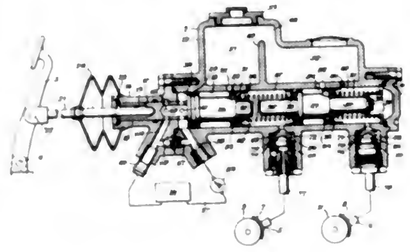


2. A hydraulic jack mechanism comprising an outer shell, an extensible hollow ram reciprocally telescoped in one end of said shell, said ram being closed at one end by a ram base, a hollow shaft mounted in said ram, an annular shaft head fastened to the shaft and to the shell at the other end of the shell, a shaft base on said shaft, said outer shell, shaft head and shaft base defining a fluid reservoir, said shaft base being slidably received against the inner wall surface of said ram, a fluid passageway through said shaft base, a cylinder within said main shaft, a piston reciprocally mounted in said cylinder, the top of said piston extending through the center of said shaft head, a pump handle on the top of the piston, a fluid feeding chamber in the bottom of said piston, an open fluid path between said feeding chamber and reservoir, an outlet from said feeding chamber, a first one-way check valve in said outlet, said first check valve permitting fluid to flow through said feeding chamber and flood said cylinder during the upstroke of the piston, a fluid outlet from said cylinder communicating with said fluid passageway of the shaft base, a second one-way check valve in said fluid outlet from said cylinder, said second check valve permitting fluid to be expressed from said cylinder during the downstroke of said piston to force said ram base away from said shaft base and thereby extend said ram, a fluid bypass around said check valves whereby fluid can be expressed from between said shaft base and ram base into said reservoir so that said ram can be retracted, internal locking means for locking said ram in an extended position, said internal locking means including teeth formed on the peripheral surface of said main shaft, a pair of arms pivotally mounted in a scissors-type arrangement on said ram, said arms having their free ends surrounding said main shaft, spring means connected to the free end of each arm, said spring means serving to bias said arms into locking engagement with said teeth, a rearwardly extending ear formed on the pivoted end of each arm, a release rod positioned between said ears and extending longitudinally of said shell, said release rod having a radial dimension in one direction greater than a radial dimension in another direction whereby rotation of said rod will cause said ears and arms to separate, thereby releasing said ram for retraction, and a spring positioned between said main shaft and ram for automatically retracting said ram when the arms are out of engagement with said teeth.

3,159,974
MASTER CYLINDER

Loyal J. Rodgers, Chicago, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Mar. 25, 1963, Ser. No. 267,708
2 Claims. (Cl. 60—54.6)

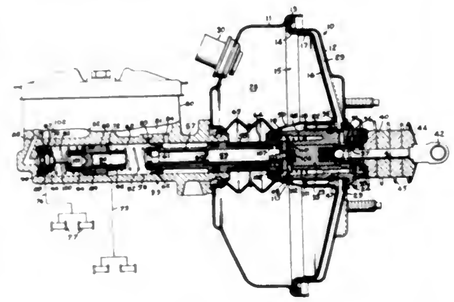


1. In a hydraulic brake system for a vehicle, a housing having a cylindrical bore, primary and secondary pistons in said bore to define primary and secondary fluid chambers and a valve chamber, front and rear wheel brakes operable responsive to fluid pressure in said primary and secondary fluid chambers respectively, compression springs in said fluid chambers to yieldably resist movement of said pistons responsive to an increase of fluid pressure in said valve chamber, a sleeve valve slidably mounted in one end of the housing and having its inner end extending through the valve chamber into abutting engagement against said primary piston, said valve having an axial passage and an inlet port leading from the valve chamber to said axial passage, said valve having an outlet port leading from said axial passage to an outlet passage in the housing when said valve is in its retracted brake release position, said housing having a fluid inlet passage leading to said valve chamber, means for supplying fluid under pressure through said fluid inlet passage into said valve chamber, and means to move said sleeve valve and primary piston inwardly to gradually move the outlet port out of registry with said outlet passage to thereby increase the fluid pressure within the valve chamber.

3,159,975
BRAKE OPERATING MECHANISM

David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 342,125
9 Claims. (Cl. 60—54.6)



1. A pressure generating mechanism for motor vehicle brakes comprising a master cylinder, a primary plunger projecting into one end of said master cylinder, a secondary plunger in said master cylinder between said primary plunger and the other end of said master cylinder, said plungers forming therebetween a primary chamber connected to one set of wheel cylinders, said secondary plunger forming with said other end of said master cylinder a secondary chamber connected to the other vehicle wheel cylinders, a fluid pressure motor for actuating said primary plunger and having a valve mechanism for controlling the connection of said motor to a pressure source to operate it, said valve mechanism including a manually operable member, reaction means for transmitting pressures from said primary chamber to said manually operable member, said primary plunger being movable to engage and operate said secondary plunger upon a failure in pressure in said primary chamber, and means operative upon a failure of pressure in said primary chamber for transmitting pressure from said secondary chamber to said reaction means to oppose movement of said manually operable member.

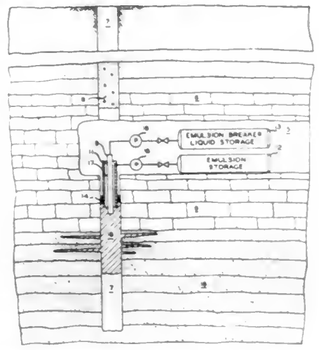
3,159,976
SEALING OF POROUS AND FISSURED FORMATIONS WITH CATIONIC ASPHALT EMULSIONS

Carl T. Brandt and William R. Bowles, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 27, 1960, Ser. No. 78,695
6 Claims. (Cl. 61—36)

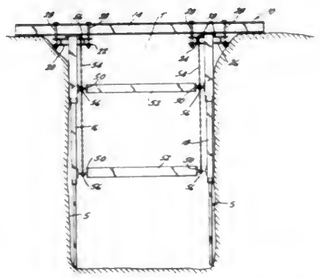
1. A method for decreasing the permeability of a porous formation penetrated by a bore hole comprising: injecting a cationic asphalt emulsion which comprises about 60–70 parts by weight of particulate asphalt, about 29–39 parts by weight of water, about 0.3–1.5 parts by weight of acid addition product of a cation surface-active agent employed as an emulsifier, and about 0.1 to 0.25 part by weight of calcium chloride into one area of said formation through a first conduit depending within said bore hole; concurrently injecting an aqueous solution of a metal hydroxide into said formation through a second conduit depending within said bore hole in an amount sufficient to break said emulsion upon contact; and continuing said concurrent injection into said formation until the back pressure on said first conduit achieves a preselected level,

said level is such as to produce a formation pressure at the level of grouting which ranges from 0.5 to 1.5 pounds



per square inch gauge for each foot of depth of said grouting level below the surface.

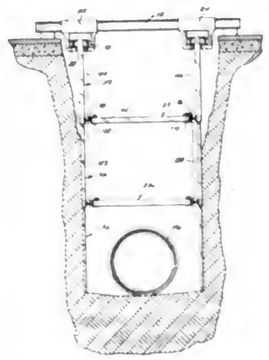
3,159,977
SUSPENDED EARTH-SHORING DEVICE
Joseph De Lillo, 3 Fulton Place, Jericho, Long Island, N.Y.
Filed May 27, 1960, Ser. No. 32,290
3 Claims. (Cl. 61—41)



1. A device for shoring the side surfaces of an excavation comprising a pair of cross beams adapted to extend across the mouth of an excavation with the opposite ends of said beams extending substantially beyond the opposite sides of the excavation to provide support for the suspension of shoring elements, a pair of bridging members extending between said cross beams and being supported thereby within the mouth of an excavation, a plurality of vertically telescoping sections adapted for gravitational elongation into the excavation as the same becomes deeper, said sections being tubular in form and rectangular in cross-section and jointly comprising a shoring wall adapted for suspension from said bridging members in confronting relationship to the side surfaces of the excavation, and means at one end of said telescoping sections releasably engaging said bridging members comprising means for suspending said sections in contiguous order along the wall of the excavation.

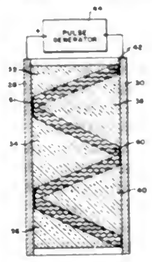
3,159,978
SHEATHING SYSTEM
Joseph De Lillo, 3 Fulton Place, Jericho, Long Island, N.Y.
Filed June 22, 1962, Ser. No. 204,481
5 Claims. (Cl. 61—41)

1. A device for shoring the side walls of a trench comprising a pair of cross beams adapted to extend across the mouth of a trench at spaced points therealong with the opposite ends of said beams extending substantially beyond the opposite sides of the trench to provide support for the suspension of shoring elements within the trench, a pair of bridging member supports mounted on each of said cross beams for selective adjustment along the length thereof into a position adjacent the walls of a trench, each said bridging member support having a tubular portion embracing its respective cross beam in sliding relation and a depending support surface adapted to receive and support an end of a bridging member, a



bridging member supported at its ends on said depending supporting surface of a pair of bridging member supports along each wall of a trench, a plurality of vertically telescoping sheathing sections adapted for gravitational elongation into the trench as the same becomes deeper, said sections comprising shoring walls adapted for suspension from said bridging members in confronting relationship to the side walls of the trench, and means at one end of said telescoping sections releasably engaging their respective bridging members for suspending said sections in contiguous order along the side walls of the trench.

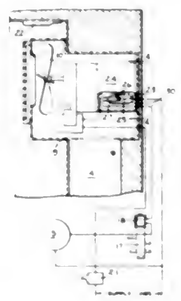
3,159,979
THERMOELECTRIC SYSTEM
Frank W. Anders, 6104 River Road, Bethesda, Md.
Filed June 27, 1963, Ser. No. 291,225
13 Claims. (Cl. 62—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A cooling element comprising:
generator means for generating D.C. pulses with a pulse width of less than one millisecond having a positive terminal and a negative terminal;
a first conductor electrically connected to said positive terminal of said generator means;
a body of N-type material, electrically connected to said first conductor;
a second conductor electrically connected to said negative terminal of said generator means;

a body of P-type material, electrically connected to said second conductor;
a third conductor, electrically connecting said body of N-type material and said body of P-type material; and
a container enclosing said third conductor and separating said third conductor from said first and second conductors, whereby heat is removed from said container by the cooling of said third conductor and heat is dissipated by said first and second conductor.

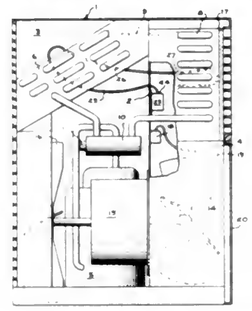
3,159,980
REFRIGERATOR INCLUDING COMBINATION EVAPORATOR FAN MOTOR AND DEFROST CONTROL
Douglas A. Solley, Jr., Fern Creek, Ky., assignor to General Electric Company, a corporation of New York
Filed July 17, 1963, Ser. No. 295,661
3 Claims. (Cl. 62—155)



1. A refrigerator comprising a storage compartment, an evaporator disposed outside of said compartment, condensing means including a compressor for normally supplying condensed refrigerant to said evaporator, defrost means for periodically defrosting said evaporator, a fan for circulating air from said compartment over said evaporator, a motor for driving said fan, a motor circuit for energizing said motor only when said compressor is energized to supply condensed refrigerant to said evaporator, and defrost control means including timing means driven by said motor for initiating operation of said defrost means.

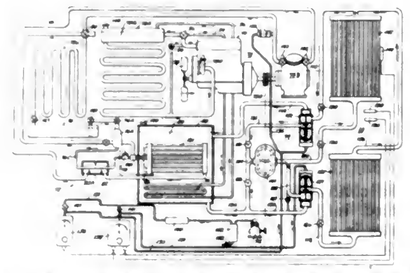
3,159,981
HEAT PUMP INCLUDING FROST CONTROL MEANS
Ben Huskey, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,212
3 Claims. (Cl. 62—156)

1. In a self-contained air conditioning unit for heating and cooling an enclosure, an outdoor heat exchanger and indoor heat exchanger, a compressor, means for selectively connecting said compressor to said heat exchangers whereby said outdoor heat exchanger functions as an evaporator during operation of said unit on the heating cycle and said indoor heat exchanger functions as an evaporator during operation of said unit on the cooling cycle, and compressor control means comprising a thermostat including a vapor filled bellows and a capillary tube sensing element connected to said bellows, said element including a first portion in contact with said indoor heat exchanger and a second portion in contact with said outdoor heat exchanger whereby the compressor is



stopped when either of said heat exchangers attains a frosting temperature.

3,159,982
REFRIGERATED CONTAINER HAVING PRIMARY AND SECONDARY COOLING CIRCUITS
Max H. Schachner, 10134 Kentucky St., Whittier, Calif.
Filed Mar. 28, 1962, Ser. No. 183,189
9 Claims. (Cl. 62—175)

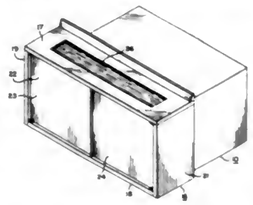


8. In a refrigerated container, a wall structure defining a chamber, said structure comprising an outer shell, an inner shell spaced inwardly from said outer shell by a layer of insulation with integrated longitudinal reinforced plastic beams, said inner shell formed with a plurality of liquid refrigerant conducting channels for perimeter cooling of said chamber, a primary refrigerating system, a secondary refrigerating system including a liquid refrigerant cooled by said primary refrigerating system and conducted through said channels in dual circuits for providing variable temperature with variable humidity control in said chamber, a first variable control means for regulating temperature conditions within said chamber, and a second variable control means for regulating humidity conditions within said chamber.

3,159,983
AIR CONDITIONING APPARATUS
Frederick S. Metcalfe, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1964, Ser. No. 341,705
10 Claims. (Cl. 62—262)

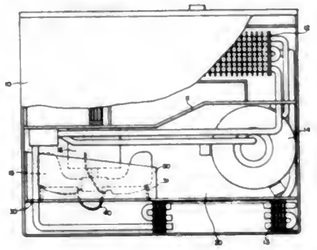
1. An auxiliary cabinet for modifying a room air conditioner or the like having a lower front inlet for air to be conditioned and an upper front outlet for conditioned air; said cabinet comprising wall structure cooperable with the front of the air conditioner to define an air inlet chamber having a bottom air inlet and communicating

with the air conditioner lower front inlet, and an air outlet chamber having a top air outlet and communicating with the air conditioner upper front outlet, whereby air



to be conditioned enters the modified air conditioner in an upward direction and conditioned air discharges from the modified air conditioner in an upward direction.

3,159,984
AIR CONDITIONER
Arthur H. Eberhart, Hilliard, and Michael D. Ulich, Arlington, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1963, Ser. No. 261,258
10 Claims. (Cl. 62—279)



1. Air conditioning apparatus comprising a cabinet partitioned into at least two compartments with an evaporator in a first one of said compartments and a condenser in a second one of said compartments, means to convey moisture from said first compartment to said second compartment, a fan, a shroud surrounding said fan in a wall opening of said compartment, said condenser being also mounted in a wall of said second compartment, means to rotate said fan in a direction to draw air into said second compartment for discharge through at least a portion of said condenser, aspirator means positioned on said shroud on the suction side thereof adjacent the periphery of said fan to draw condensate from said second compartment into the air flow through the fan when the fan is rotating, and dispersal means positioned to surround a peripheral portion of said fan within said second compartment to disperse the moisture flung by said fan into said condenser.

3,159,985
ICE TRAY HARVESTING APPARATUS
Lloyd M. Keighley, Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,833
2 Claims. (Cl. 62—344)

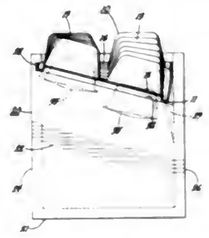
2. An ice harvesting combination for use within and/or outside a refrigerator cabinet comprising:

(*a*) a five-walled open top box-like structure having support means thereon adjacent the open top thereof immovable relative thereto forming a portable ice storage receptacle,

(*b*) a flexible resilient four-cornered tray including a plurality of walls for forming compartments therein and adapted to be received by said support means on the portable receptacle,

(*c*) said support means including portions at one upstanding side wall and at the upstanding adjoining back wall of said box-like receptacle spaced from one corner of an upstanding front wall thereof for supporting a side and a rear end of said tray in an inverted position on the receptacle and holding said supported side and rear end of the tray stationary thereon in a single plane with a front end of said tray in overlapping relationship to said upstanding front wall of said receptacle,

(*d*) the top edge of said front wall of the box-like receptacle structure being inclined downwardly from said support means at said one side wall thereof to its other side wall for relieving that overlapping front corner of the tray disposed above said one corner of the front wall of said receptacle and the side of the tray opposite its supported side from support thereby,



(*e*) said inclined top edge of the upstanding front wall of said receptacle structure providing a stop means thereon at said one front corner of the receptacle,

(*f*) said relieved front end and opposite side of said tray being movable beyond said single plane while said supported side and rear end thereof are held on said support means by a downward force applied directly to the inverted tray in the vicinity of its said unsupported front corner to twist portions of said tray and shift opposed walls of each of said compartments therein with respect to one another for loosening ice blocks therefrom and ejecting them out of the compartments into said box-like receptacle structure, and

(*g*) said unsupported front corner of said twisted tray engaging said stop means for limiting twisting of the tray to within its normal range of resiliency and for preventing abnormal distortion thereof whereby when the force is released from said tray it possesses sufficient resilience to return twisted portions thereof back into said single plane on the portable receptacle.

3,159,986
FLAKE ICE MAKING MACHINE
Arthur Shelley King, 6836 Fontana, Prairie Village, Kans.
Filed Oct. 17, 1962, Ser. No. 231,069
7 Claims. (Cl. 62—354)

2. Apparatus for making flake ice comprising,

(*a*) a support member,

(*b*) an annular disc-like refrigerating element secured to said support member and having a refrigerated horizontal upper freezing surface with an inner and outer periphery, said element forming an upwardly extending lip portion at said inner and outer periphery,

(*c*) means communicating with said upper freezing surface for delivering water thereto to be frozen into ice thereon,

(*d*) a central shaft extending coaxially upwardly of said element and rotatably mounted relative thereto,

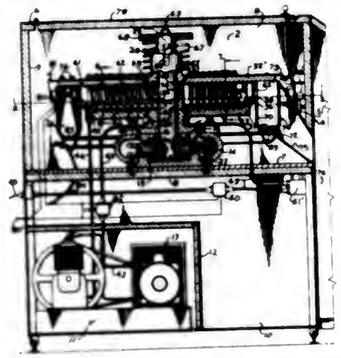
(*e*) a sleeve member mounted on said shaft above said freezing surface, said sleeve member being rotatable with said shaft and axially slidable thereon,

(*f*) an upwardly facing cam ring having a plurality of lobes spaced around said shaft and fixed with respect to said support member,

(*g*) means on said sleeve engaging said cam ring lobes in response to rotation of said shaft for effecting upward movement of said sleeve relative to said freezing surface,

(*h*) means biasing said sleeve downwardly on said shaft,

(*i*) a blade carrier fixed to said sleeve and extending outwardly therefrom in upwardly spaced relation to said freezing surface,



(*j*) blades fixed to said blade carrier and depending therefrom to substantially penetrate water frozen on said freezing surface when the sleeve is in its lowermost position,

(*k*) means extending outwardly generally tangentially of said sleeve with an outer end portion adjacent the lip portion at the outer periphery of the freezing surface and in trailing relation to an inner portion thereof to scrape ice and urge same outwardly toward the outer periphery of the freezing surface for discharge therefrom,

(*l*) and driving means for rotating said shaft and blades whereby the sleeve and blade carrier are periodically lifted and dropped and the blades impart impacts on said ice to break same.

3,159,987
TORSIONALLY RESILIENT DRIVE CONNECTION
Lionel D. Thompson, Wyckoff, and Ernest A. Tsakiris, Hackensack, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 10, 1962, Ser. No. 208,889
1 Claim. (Cl. 64—27)

A drive mechanism, comprising: a drive member having a bore provided therein, a spring drive assembly engaged to said drive member and including a driven plate member having an elongated hub on one side thereof with a bore therethrough, spaced journal bearing support means provided in the bore of said drive member and having said elongated hub received therein, a torsionally flexible shaft having one end received within the bore of said elongated hub and engaged with the extended end thereof, a driven member including a hub and having a bore provided therethrough, means engaging opposite ends of the hub of the driven member for rotational support of said driven member, said torsionally flexible shaft having the other end thereof received in said last mentioned bore and engaged with said driven member, limit stop pins provided in the terminal end of the hub of said driven member and axially disposed towards the driven plate of said spring drive assembly, stop pin receptive accesses provided in said driven plate and sized to permit limited relative movement of said stop pins therein, said spring drive assembly and torsionally flexible shaft providing damped drive force transmission between said drive and driven members within the clearance fit limits between said stop pins and receptive accesses, means closing the outer end of the bore in the elongated hub of the driven

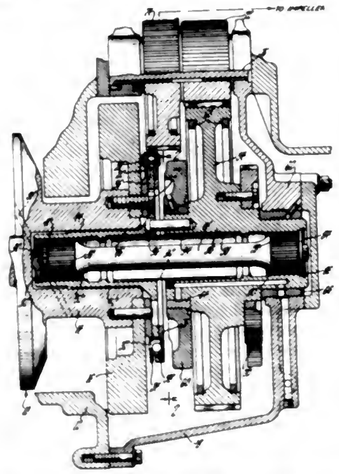
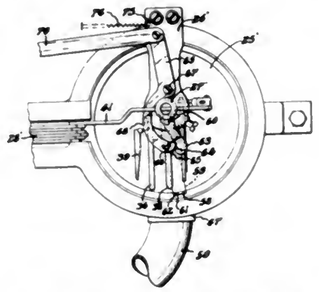


plate member and the bore in said driven member, lubricant providing means afforded through one of said bore end closing means, and a sleeve member received in spaced concentric relation about said torsionally flexible shaft and having opposite ends received within the elongated hub of the spring driving assembly and the hub of said driven member to provide a closed chamber space for lubrication of both ends of said shaft from only one end thereof.

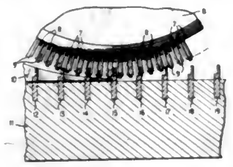
3,159,988
HOSIERY FOOTWEAR AND METHOD OF MAKING
Bernard Thornton Reymes Reymes-Cole, 29 Station Road, Desford, Leicestershire, England
Filed Apr. 24, 1962, Ser. No. 189,856
5 Claims. (Cl. 66—49)



1. In a method for knitting of the heel of an article of hosiery footwear on a circular knitting machine having a complement of needles and main yarn feed station and auxiliary station, the steps comprising knitting at the main station full courses of yarn at the heel position by rotational knitting, knitting at the main station part courses of yarn at the heel position by rotational knitting and forming floats between the ends of the part courses, pre-

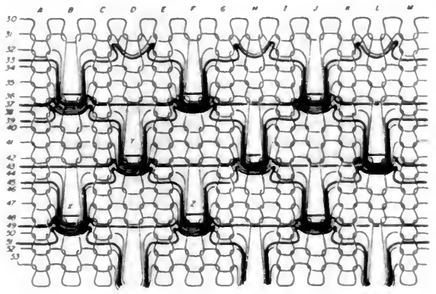
senting each float resulting from the formation of a part course to the needles at the auxiliary station subsequent to knitting of the next part course and preliminarily to incorporating each of said floats into the fabric being formed at the main station commencing at the end of the float proximate the beginning of said part course.

3,159,989
THIN BUTT NEEDLE FOR KNITTING MACHINES
Morris Philip, 26 Bruckner Blvd., Bronx, N.Y.
Filed Apr. 17, 1962, Ser. No. 188,057
1 Claim. (Cl. 66—123)



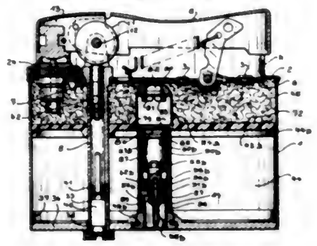
In a needle for use in a circular knitting machine which has both knitting cams and needle raising pattern wheels the improvement comprising a needle butt whose base is substantially the same thickness as the needle shaft and is designed to engage said knitting cams and an extremity of said needle butt which is selectively thinned to be engaged by said needle raising pattern wheels.

3,159,990
ELASTIC BOBBY SOCK TOP
Zephyr Monday, Mount Airy, N.C., assignor to U-Stretch Corporation, Mount Airy, N.C., a corporation of North Carolina
Filed Oct. 18, 1961, Ser. No. 145,853
7 Claims. (Cl. 66—172)



1. In a knit stocking top comprising a repeated continuous sequence of uniform groups of a plural number, not less than three, of courses knit of inelastic yarn, each group having interspersed with knit stitch wales a plurality of uniformly spaced wales in each of which spaced wales one tuck stitch extends throughout the courses of such group, said spaced wales being uniformly laterally offset at least one wale from group to group, the improvement comprising elastic yarn alternately laid into a tuck stitch wale of a first one of said groups, then into an offset tuck stitch wale of a second one of said groups adjacent to the first, then back into a further offset tuck stitch wale of the first group, and then back into a further offset tuck stitch wale of the second group and continuing in the alternating manner around the top, the knit-off loop of each of said tuck stitches being composed solely of said inelastic yarn.

3,159,991
LIGHTER OPERATED BY LIQUEFIED GAS
Hermann Maltner, 22 Bockenheimer Landstrasse, Frankfurt am Main, Germany, and Wolfgang Maltner, 8 Bussardweg, Oberstetten, Taunus, Germany
Filed June 7, 1963, Ser. No. 286,424
Claims priority, application Germany, June 7, 1962, M 53,140
6 Claims. (Cl. 67—7.1)

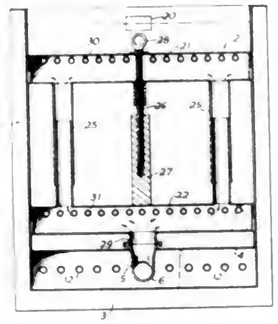


1. A lighter operable with liquefied gas comprising a fuel storage container, means dividing the container into a lower chamber for liquefied fuel under pressure and an upper chamber for fuel in a vapor state, the lighter having a burner in communication with the vaporized fuel in the upper chamber, and valve means in said lower chamber movable between an open and a closed position, said valve means in the open position providing external communication with the lower chamber to permit filling the same with liquefied fuel, while throttling communication between the upper and lower chambers to leave vapor in the upper chamber after the lower chamber has been filled, said valve means in the closed position closing external communication with the lower chamber while providing communication between the upper and lower chambers to permit liquefied fuel in the lower chamber to vaporize and flow to the upper chamber, said lighter further comprising a tubular cap surrounding said valve means and having a lower opening constituting an outflow aperture, said valve means including a valve body supported in the lower chamber and a spring loaded valve member displaceably supported in the body for movement between first and second positions corresponding respectively to open and closed positions for the lower chamber, said valve body having a bore which is in communication with the outflow aperture with the valve member in the first position, said bore being closed from communication with the outflow aperture in the second position of the valve member, said means which divides the container comprising a partition having an opening in which projects said tubular cap to provide a throttled passageway for the flow of vaporized fuel from the lower chamber to the upper chamber, and a second cap supported in the opening in the partition and extending into the upper chamber, said second cap having a preadjusted throttled passageway for the flow of vaporized gas into the upper chamber after having passed through the first of said throttled passageways.

3,159,992
HANK DYEING MACHINES
Guy Storr Helliwell, Kirby Muxloe, England, assignor to Samuel Pegg & Son Limited, Leicester, England, a British company
Filed Aug. 5, 1960, Ser. No. 47,675
Claims priority, application Great Britain, Dec. 28, 1959, 44,028/59; July 5, 1960, 23,442/60
2 Claims. (Cl. 68—206)

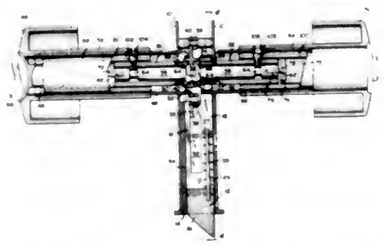
1. A hank dyeing machine comprising: a casing defining a dyeing chamber; a hank supporting structure removably accommodated in said chamber, said hank supporting structure comprising superimposed hollow headers, tubular conduits between said headers, a liquor inlet union

for the lower of said headers, stationary hank supporting arms extending laterally from the upper header, said arms being hollow and having radially directed openings in the upper circumferential portions thereof for substantially the entire length thereof; means in said hollow arms for directing pressurized fluid therein out through said openings in a substantially radial direction; means for impelling dyeing liquor into said arms under pressure for maintaining the hanks in a floating state in the liquid in said chamber away from the outer surface of said arms by virtue of the radial emission of said liquor from said



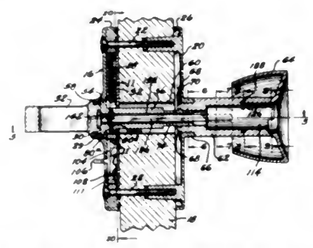
openings; each of said arms being double-walled and comprising a perforated inner tube surrounded by an apertured outer sleeve, the outer sleeve containing said radially directed openings and the inner tube constituting said means for directing pressurized fluid through said openings in a substantially radial direction, means closing said outer sleeve from direct communication with said upper header, said apertures in said inner tube being angularly displaced from said openings in said outer tube, and the outer surface of said inner tube being radially spaced from the inner surface of said outer sleeve.

3,159,993
MORTISE LOCK WITH LATCH BOLT AND LOCKING BOLT
Alois Crepinsek, Santa Barbara, Calif. (% Patentanwalt Adolf Berglein, Widenmayerstr. 49, Munich, Germany)
Filed Oct. 18, 1961, Ser. No. 145,943
Claims priority, application Germany, Oct. 19, 1960, C 22,559
14 Claims. (Cl. 70—107)



1. A mortise lock comprising:
(*a*) an elongated thin-walled lock casing having a front face with an opening therein;
(*b*) a lock and latch bolt assembly disposed within said casing in telescoping engagement with the casing wall so that it may protrude through said opening when in locked position, the latch bolt and locking bolt of said assembly being in freely sliding reciprocable engagement with each other;
(*c*) the latch bolt of said assembly being spring-biased so that it normally protrudes out through said opening in said front face;
(*d*) the said locking bolt being held in withdrawn position behind said opening of said front face, and being forwardly movable to extended locked position through said opening in said front face;
(*e*) two rotatable drive sleeve members, one disposed on each side of said casing, and each having a portion thereof which extends through the casing wall, the rotation of said portion acting to move said latch bolt for effecting retraction thereof;
(*f*) an elongated rotatable shaft member which extends transversely through said casing behind said locking bolt and into each of said sleeve members where each end thereof is connected to a turning means; and
(*g*) a rotatable link member connected to said elongated rotatable shaft member and rotatable therewith, said link being mechanically connected to said locking bolt whereby turning of said elongated rotatable shaft member in one direction will rotate said link away from said locking bolt to thereby move said locking bolt to withdrawn position, and reverse movement of said elongated rotatable shaft member will extend said locking bolt to locked position.

3,159,994
DOOR LATCH AND LOCK
Alfred J. Schulz, Wauwatosa, Wis., assignor to S-B Manufacturing Company, Wauwatosa, Wis., a partnership of Wisconsin
Filed Mar. 1, 1962, Ser. No. 176,650
11 Claims. (Cl. 70—146)

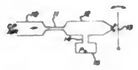


10. In a door lock, the combination with latch mechanism and latch releasing means including a handle and spindle assembly rotatable for latch release, of means for locking the said assembly against rotation, a key releasable rotor rotatable for unlocking the locking means, a first camming means connected with the spindle assembly, a second camming means connected with the rotor, and a single spring biased cam follower engageable with the first and second camming means for returning to a predetermined starting position whichever of said camming means is displaced from such position.

3,159,995
PNEUMATICALLY GENERATED HYDROSTATIC PRESSURE SIMULATION
Myron A. Elliott, Lynn Haven, Fla., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1955, Ser. No. 519,298
7 Claims. (Cl. 73—4)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In the art of testing devices selectively sensitive to certain hydrostatic pressure signatures the method of producing a liquid pressure variable in accordance with a pressure-signature-bearing electric signal which comprises confining a body of liquid to provide a relatively small

free surface, exposing the free surface to the pressure of a substantially constant volume air stream, feeding air to the air stream through a high resistance path, removing air from the stream through a low resistance path, and



varying the resistance of the low resistance path as a linear function of the significant dimension of said electric signal, whereby the pressure to which the liquid surface is subjected varies with time as a direct function of said signal.

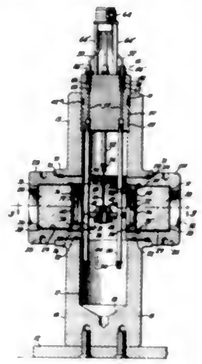
3,159,996
HEATING APPARATUS FOR CHROMATOGRAPHIC COLUMN
Stanley D. Norem, Bayside, N.Y., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 30, 1961, Ser. No. 123,083
4 Claims. (Cl. 73—23.1)



1. Vapor fractometer apparatus comprising a source of carrier gas; a glass tube having a plurality of bores, a first of said bores comprising a fractometer separating column having an unobstructed passage, the internal surface of which is of a material for which the different components of a sample have different affinities and at least a second of said bores containing a heating element; fluid passage means in fluid flow conducting relationship between said source of carrier gas and the inlet of said separating column; sample injection means for injecting a sample into said carrier gas; detector means at the outlet of said separating column for detecting the presence of sample components eluted from said column; and temperature control means connected to activate said heating element.

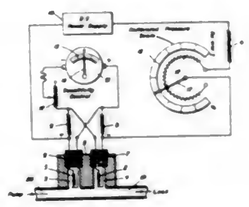
3,159,997
TEST BURNER
Roland T. Talton, Jr., Falls Church, and Kenneth D. Johnson, Vienna, Va., assignors to Atlantic Research Corporation, county of Fairfax, Va., a corporation of Virginia
Filed July 10, 1961, Ser. No. 122,994
7 Claims. (Cl. 73—35)

1. A high pressure test cell for observing and recording phenomena during combustion of solid propellant specimens and the like comprising a vertically elongated, thick walled pressure vessel body of generally cylindrical configuration having an upwardly opening well extending axially through the major portion of the height of said body, said well having an open upper end, a bottom and a combustion zone intermediate said bottom and open upper end, said body having aligned openings therein along a transverse axis intercepting said combustion zone, a sight glass assembly at each of said openings permitting continuous optical monitoring of phenomena in the combustion zone including a sight glass holder removably secured in said openings and a thick cylindrical sight glass removably mounted in said holder in axial alignment with its associated opening having an inner surface disposed immediately adjacent said combustion zone, a thin corrosion-resistant transparent spatter glass removably supported in said holder adjacent the inner surface of said sight glass, a specimen supporting assembly removably supported in said well including a head portion forming a closure for the upper end of said well having means for removably coupling the head portion with said body and sealing means for sealing the upper end of said well, a plurality of transversely spaced parallel elongated supports depending from said



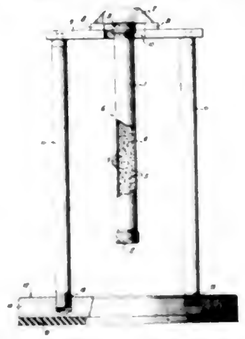
head portion at least through said combustion zone, a specimen holder adjustably mounted on said supports for adjustment axially of said well having means for releasably supporting a propellant test specimen in the field of view of said sight glass, means depending from said head portion for supporting igniting means at a position relative to the test specimen to effect ignition thereof, and externally accessible electrical connector means extending from said igniting means through said head portion.

3,159,998
VACUUM GAGE AND LEAK DETECTOR
Clarke C. Minter, 1517 30th St. NW., Washington, D.C.
Filed Mar. 16, 1962, Ser. No. 180,193
2 Claims. (Cl. 73—40.7)



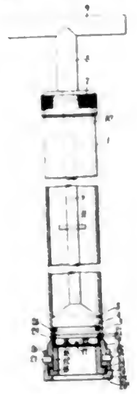
1. Vacuum gage and leak detector comprising in combination a conduit of suitable dimensions for conducting gases flowing from a vessel being evacuated to a vacuum pump, two similar current-heated temperature-sensitive filaments mounted as close as possible to but not in the stream of gases flowing through said conduit and forming one diagonal of a Wheatstone bridge, two similar inert resistances on the other diagonal, means for simultaneously balancing the bridge and measuring the absolute pressure in the conduit, and means for plugging a leak in the vessel being evacuated while introducing therethrough instead of air the low pressure vapor of a liquid having a high latent heat of vaporization.

3,159,999
METHOD FOR DETERMINING SETTLING IN DISPERSIONS
Egon A. De Zubay, Falls Church, Va., and Emil S. Schmitt, Jr., Washington, D.C., assignors to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed July 18, 1961, Ser. No. 124,885
5 Claims. (Cl. 73—53)



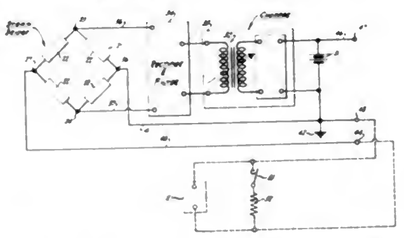
1. A method for testing the settling in a dispersion, said dispersion being part of a pendulum, comprising oscillating said pendulum in one plane, counting the number of cycles of oscillation occurring within at least two intervals of time, determining the rate of oscillation of said pendulum for each time interval, and comparing the rates, whereby any occurrence of settling in said dispersion is determined by the comparison.

3,160,000
SEDIMENT TESTING DEVICE
Gerald W. Mosher, Markham Drive, Gowanda, N.Y.
Filed Oct. 19, 1961, Ser. No. 146,189
5 Claims. (Cl. 73—61)



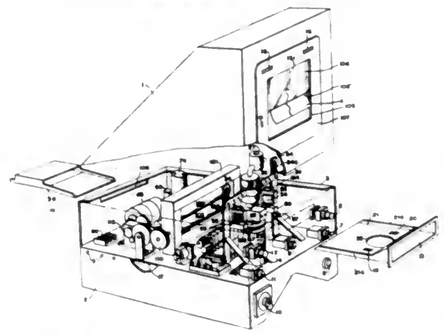
1. A sediment testing device comprising, a generally cylindrical barrel, a piston slidable in said barrel, a piston rod connected to said piston and extending through one end of said barrel, a filter unit carried by said barrel at the opposite end thereof, the bore of said barrel being of substantially constant diameter from said filter unit to said piston at all operative positions of the latter and being of larger diameter adjacent said opposite end of said barrel to provide a shoulder at the inner end of said filter unit, said filter unit comprising a tubular body part extending into said opposite end of said barrel in closely fitting relation thereto, a filter pad supporting member carried by said body part, said body part surrounding said supporting member and extending therebeyond a distance sufficient to hold a supported filter pad against lateral shifting thereon, and a filter pad retaining member slidable into and out of said barrel in closely fitting relation thereto through said opposite end of said barrel, said retaining member being separate and readily separable from said body part and comprising an annular body held against said barrel shoulder by said body part, and a cross piece carried by said annular body.

3,160,001
STRAIN GAUGE ISOLATION CIRCUITRY
John E. Ames, Jr., Altadena, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,978
8 Claims. (Cl. 73—88.5)



1. An improved measuring circuit comprising a Wheatstone bridge circuit having output terminals at opposite ends of one bridge diagonal and input terminals at opposite ends of the alternate bridge diagonal, a direct current power supply, electrical isolation circuitry between said power supply and the input terminals of said bridge providing a conversion of the output of said direct current power supply to an alternating current and reconverting this alternating current to a direct current excitation voltage for said bridge, and three output leads extending one from an output terminal of said bridge, one from one side of said power supply, and one from a common connection of the other side of said power supply and the other output terminal of said bridge.

3,160,002
AUTOMATIC MULLEN TESTER OR BURST TESTER
Jeremiah R. Lovette, Flemington, Pa. (339 S. Fairview St., Lock Haven, Pa.)
Filed Dec. 29, 1961, Ser. No. 163,128
3 Claims. (Cl. 73—102)



1. For use with an elongated test sample and a Mullen testing machine including a tester body, a distensible dia-

phragm over a fluid pressure diaphragm space in the body, a clamping head movable toward and from the body for clamping the sample to the body over the diaphragm, and a fluid pressure clamp motor for driving the clamping head against the tester body,

a control apparatus comprising

electrically-actuated valve means for governing the admission and evacuation of fluid pressure to and from the space beneath the diaphragm and the fluid pressure clamp motor,

a sample feeding means for moving the sample through the machine,

an electric motor coupled to drive the sample feeding means,

a primary sequence timer comprising a plurality of adjustable cams, a cam drive motor for continuously rotating the cams, switches opposite the cams having cam followers controlled by the cams to cause the switches in one position to energize the sample feeding electric motor and in another position to cause the energizing of the electrically-controlled valve means to deliver burst pressure to the diaphragm space and motive pressure to the fluid pressure motor,

an air-on-timer in circuit with the electrically-actuated valve means,

an air circuit relay having a holding coil, a mechanical latch therefor and a release coil and having normally open contacts,

a circuit from the air-on timer to the holding coil of the air circuit relay for closing its contacts and energizing the electrically-actuated valve means,

a sample-rest time delay relay in circuit with the air-on timer having normally open contacts,

a no-burst relay having normally closed contacts in circuit with the sample-rest time delay relay,

a motor circuit relay having a holding coil, a mechanical latch therefor, and a release coil and having normally open contacts which when closed energize

(I) a circuit to the cam drive motor in the primary sequence timer,

(II) a circuit to the sample drive electric motor causing the motor to run in forward direction and to advance the sample through the machine,

(III) a circuit to the no-burst relay for opening the contacts thereof to prevent energizing of the air-on timer while the sample is in motion,

a freeing sample time delay relay having normally closed contacts initially in circuit with the release coil of the motor circuit relay to shut off all power to the apparatus,

a motor final run switch and an air safety automatic switch positioned to be held closed by contact with the test sample and to open automatically when the sample runs out,

means to open and close the motor final run and air safety automatic switches and to move the same out of the path of a fresh test sample,

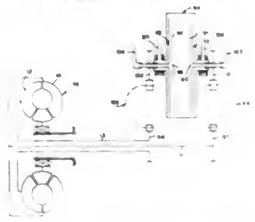
a circuit from the closed motor final run switch to the freeing sample time delay relay to open its normally closed contacts and de-energize the release coil of the motor circuit relay,

means for thereupon energizing the holding coil of the motor circuit relay,

a circuit from the closed air safety automatic switch through the closed contacts of the no-burst relay to the heater coil of the sample-rest time delay relay causing its normally open contacts to close and energizing a circuit to the air-on timer to establish clamping, bursting and exhaust sequence on the signal from the primary sequence timer, and

a normally open switch positioned to be contacted and closed by the diaphragm in burst position for energizing the release coil of the air circuit relay.

3,160,003
TORQUE MEASUREMENT IN HYDROKINETIC TRANSMISSION DEVICES
Pierre André Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed June 20, 1962, Ser. No. 203,913
Claims priority, application France July 7, 1961
18 Claims. (Cl. 73—136)



1. A device for measuring the load applied to the output of a hydro-kinetic transmission apparatus, which comprises a pump coupled to a driving shaft and a turbine coupled to a driven shaft, said device comprising a chamber provided in its central portion with an orifice for the introduction of a hydraulic fluid under pressure together with an evacuation orifice for said fluid, and which comprises two centrifugal members having speeds respectively equal or proportional, with the same ratio of proportionality, to the speeds of the driving shaft and the driven shaft, at least one passage coupled to the first centrifugal member and at least one passage coupled to the second centrifugal member, each of said passages extending between the central portion and the periphery of said chamber, together with means for measuring the difference between the pressures collected respectively at the inner extremities of said passages coupled to the centrifugal members.

3,160,004
INSIDE DIAMETER GAUGE FOR RECESSED APERTURES
Edward J. Roth, 271 Fair Ave., Elmhurst, Ill.
Filed Jan. 16, 1961, Ser. No. 83,028
5 Claims. (Cl. 33—178)



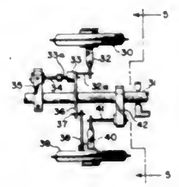
1. A gauge for measuring an aperture in a recessed surface, comprising: a unitary base having an elongated body which is of uniform cross section and an outwardly tapered gauging rod at an end of the body; unitary slide means including a sleeve slidably embracing the body, a pair of opposed relatively thin resilient fingers extending from the sleeve along the body and the rod in relatively close spaced relationship thereto, said fingers having inturned free end portions slidably gripping the tapered rod, whereby the rod may be firmly seated in an aperture in a recessed surface and the sleeve slid along the body to abut the tips of the fingers against the recessed surface; and cooperating means on the body and on the sleeve for indicating the position of the finger tips on the rod, said means being calibrated to show the diameter of the rod at the tips of the fingers.

3,160,005
MULTI-STING MACH NUMBER SENSOR
Bob C. Miller, West Palm Beach, Fla., Edward L. Graham, Jr., Camden, S.C., and Jerry D. Walter, North Palm Beach, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 24, 1961, Ser. No. 133,749
4 Claims. (Cl. 73—181)



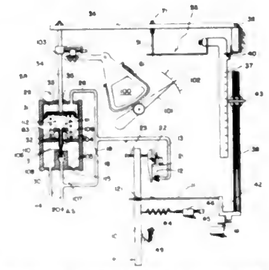
1. A device for determining the half-angle of a shock wave created by perturbation in a supersonic compressible fluid flow comprising a first conically shaped probe having a small semi-vertex angle positioned in the supersonic stream for creating a shock wave, a second conically shaped probe positioned in fixed spatial relation to said first probe, said second probe having its vertex extending beyond the vertex of said first probe and having its axis parallel to the axis of said first probe, a plurality of closely spaced pressure sensing elements along said second probe on the side adjacent said first probe, the position of each element being accurately known with respect to the vertex of said first probe, and means connected to said pressure sensing elements for indicating the position of the intersection of the shock wave with said second probe whereby the half-angle of the shock wave may be determined.

3,160,006
SENSORS
Carl E. Johanson, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Mar. 24, 1961, Ser. No. 98,117
5 Claims. (Cl. 73—182)



1. In combination, a rotatable shaft, a pair of drive arms fixed to said shaft and extending laterally therefrom in opposite directions, a pair of elements each displaceable from a reference fixed relative to the axis of said shaft in response to pressure variations, a pair of drive links each connected intermediate an associated one of said elements and arms, a rotatable member interposed to complete the connection between one arm and link and being rotatable to alter the effective distance between the axis of said shaft and the point of connection between said one arm and link, and means for opposing shaft rotating displacement of said elements as a function of their combined degree of displacement including a cam and associated follower, one being fixed to said rotatable member and the other being fixed to the element associated with the other arm and link.

3,160,007
FORCE BALANCE MEASURING INSTRUMENT
Kenneth L. Tate and Howard R. Jaquith, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed May 3, 1962, Ser. No. 192,164
28 Claims. (Cl. 73—205)



5. An instrument comprising, in combination,

(*a*) a primary element mounted for movement in response to a force;

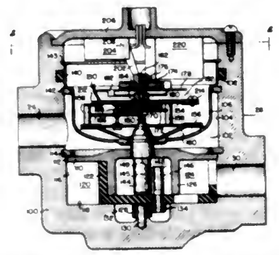
(*b*) a motion element mounted for movement in response to a motion;

(*c*) a spring unit including a plurality of springs, each located in the path of movement of said motion element, said springs being spaced along the said path at such distances that deflection of said motion element along said path brings said motion element into contact with one of said springs before another of said springs, each of said springs being positioned to contact said motion element solely via its own contact means, there being provided a plurality of such contact means, each being spaced, one from the other, in a direction transverse to the said path of movement;

(*d*) a force transmitting member connected between said springs and said primary element and furnishing a reaction member supporting said springs for elastic deformation thereof in opposition to said force and in response to deflection of said motion element in said path;

(*e*) servo means responsive to the said first said movement to create said motion, whereby to move said motion element and create a second force opposing the first said force.

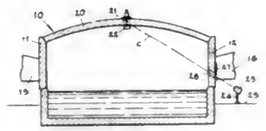
3,160,008
FLOW RESPONSIVE SIGNAL GENERATOR
David J. Gestler, Pittsburgh, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 7, 1961, Ser. No. 93,971
16 Claims. (Cl. 73—232)



1. A fluid flow responsive signal generator comprising: a fluid flow measuring device having an output element cyclically movable at a frequency substantially propor-

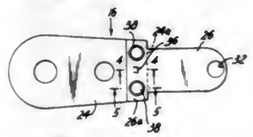
tional to the rate of fluid flow therethrough, whereby a given number of cycles is indicative of the flow of a predetermined quantity of fluid through said measuring device; means automatically and periodically actuated solely by said measuring device after each uniformly numbered series of cycles for producing output signals, each indicative of the passage through said measuring device of a given quantity of fluid subsequent to the next preceding output signal; and predetermining register means operatively interposed between said measuring device and said output signal producing means for actuating the latter, said predetermining register means comprising rotatable means for actuating the signal producing means, clutch means for drive connecting said rotatable means to said output element, and means for disengaging said clutch means at the completion of each series of cycles, and said signal producing means comprises means for reengaging said clutch means to reestablish the drive connection between said rotatable means and said output element.

3,160,009
METHOD OF AND APPARATUS FOR DETERMINING FURNACE TEMPERATURES
Delmar E. Carney, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 19, 1961, Ser. No. 111,261
4 Claims. (Cl. 73—355)



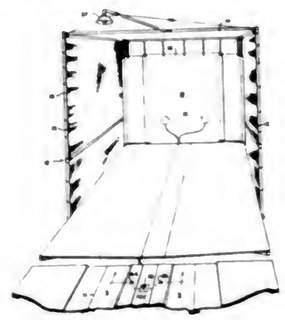
1. In a method of measuring and recording temperatures in an enclosed chamber heated by flames intermittently directed into said chamber from burners operated in alternating, timed off-on cycles, the steps of intermittently exposing a temperature sensing device disposed outside of the heating chamber to the interior of the chamber, intermittently actuating the temperature sensing device whereby the latter senses the temperatures within the chamber and produces a signal in accordance therewith, synchronizing the exposure of the temperature sensing device and the actuation of the device with the operation of the burners whereby the device is exposed and actuated only when the burners are in the off cycle and recording the temperature sensed by the sensing device in response to the signals produced by the device.

3,160,010
THERMOSTAT WITH COMPOUND BIMETALLIC STRIP
Robert N. Levinn, Catskill, and Joseph Reingruber, Cairo, N.Y., assignors to American Thermostat Corporation, South Cairo, N.Y., a corporation of New York
Filed Aug. 3, 1961, Ser. No. 129,129
13 Claims. (Cl. 73—363.5)



10. In a thermostat including a compound bimetallic strip comprising first and second bimetallic sections bendable in opposite directions upon a change of temperature and having portions overlapping one another and other portions extending beyond one another longitudinally of said composite strip in opposite directions, and parts operatively connected to said strip for actuation thereby; the improvement which comprises said overlapping portions having two laterally spaced pairs of registering apertures therethrough, rivet-like members passing snugly through said pairs of registering apertures, engaging the exposed surfaces of said overlapping portions, and pressing the opposed surfaces of said overlapping portions toward one another, registering areas of said overlapping portions spaced from said rivet-like members and substantially on a line which passes through said members being welded to one another.

3,160,011
PRACTICE MEANS
Wilbur L. Ogden, Aurora, Ill., assignor, by mesne assignments, to J. Myer Schine, New York, N.Y.
Filed July 31, 1962, Ser. No. 213,707
10 Claims. (Cl. 73—379)

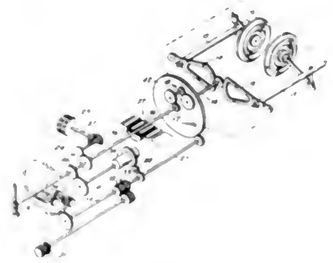


1. In a game system of the type wherein a ball is propelled from a normal Rest position toward a target area, the combination of a support upon which the ball will normally rest, a photo-sensitive element in said support, said ball normally preventing access of light to said photo-sensitive element, said element being exposed to light falling on the top of said support in the absence of said ball, circuit control means at said target area, electronic time measuring means, connections between said photo-sensitive element and time measuring means for initiating a time measuring cycle and connections between said circuit control means, at the target wall for terminating a time measuring cycle.

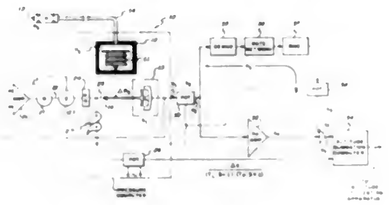
3,160,012
FAIL SAFE AIRCRAFT INSTRUMENT
John H. Andresen, Jr., Forest Knolls, Greenwood Lake, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Nov. 17, 1960, Ser. No. 70,041
5 Claims. (Cl. 73—384)

1. An indicating device for indicating a measured variable parameter; said indicating device including a movable indicator connected to a shaft; a mechanical driving means operatively connected to said shaft and an electrical driving system operatively connected to said shaft; said mechanical driving means including mechanical measuring means for determining the value of said variable parameter and positioning said shaft in accordance with its said measurement; said electrical driving system including electrical means for determining the value of said variable parameter and a servo system; said servo system including a motor rotor carried by said shaft; said electrical driving system imparting a torque to said motor rotor on said shaft whereby said indicator assumes a position determined by the measurment of said electrical means; said indicator assuming a position determined by

the measurement of said mechanical measuring means when said electrical driving means is rendered inoperative; said motor rotor being a drag cup rotor having a substantially negligible mass.

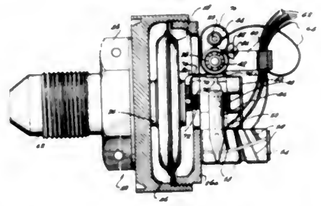


3,160,013
PRESSURE RESPONSIVE APPARATUS WITH LINE LAG AND VELOCITY ERROR CORRECTION
Harry Miller, Scottsdale, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,194
3 Claims. (Cl. 73—386)



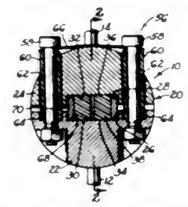
1. Pressure responsive apparatus for aircraft comprising pressure sensing means for sensing an actual pressure condition experienced by said aircraft, relatively long pressure conduit means, pressure computing means connected by said conduit means to said pressure sensing means for providing a first signal substantially representative of said sensed pressure condition, said conduit means introducing an undesirable lag in the transmission of the pressure sensed by said sensing means with respect to that received by said pressure computing means, said pressure computing means including follow-up servo means which introduces a velocity error whereby said first signal includes undesirable characteristics due to said transmission lag and said velocity error, said pressure computing means including a bellows and pick-off means directly responsive to the movement of said bellows for providing a second signal, means responsive to said second signal for providing a signal representative of the rate of change of said second signal for compensating said transmission lag, amplifying means responsive to said second signal for varying the gain to provide an amplified signal having a voltage gradient for compensating said velocity error, means for combining said rate and amplified signals for providing a third signal having characteristics which compensate for said undesirable characteristics of the first signal, and means for combining said first and third signals to provide an output signal representative of said sensed condition.

3,160,014
PRESSURE TRANSDUCER
James A. De Julio, Pontiac, Mich., and Robert R. Mawson, Cambridge, Mass., assignors to Servonic Instruments, Inc., Costa Mesa, Calif., a corporation of California
Filed Aug. 7, 1961, Ser. No. 129,733
4 Claims. (Cl. 73—398)



4. In an instrument of the type described, the combination of:
responsive means having at least one portion reciprocally and rectilinearly movable in accordance with variations to be indicated by the instrument;
a shaft-like member rotatably mounted in the instrument; a drive band coupled to said portion of said responsive means and extending with a looped configuration around said shaft-like member for coupling said portion to said shaft-like member so as to translate reciprocal rectilinear movements of said portion of said responsive means into corresponding rotational movements of said shaft-like member; and
clamping means mounted on said shaft-like member and overlying said band to clamp said band against the surface of said shaft-like member.

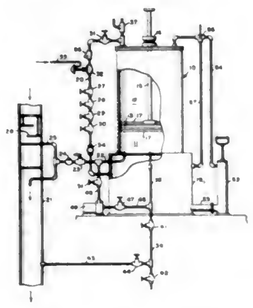
3,160,015
GAS CHROMATOGRAPH SAMPLING VALVE
Kyle W. Charlton, La Mirada, Charles T. Maxwell, Anaheim, and Stanford B. Spracklen, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 22, 1961, Ser. No. 120,886
4 Claims. (Cl. 73—422)



1. In a sampling valve, the combination of: a housing having two passages therein and including two spaced track surfaces separately disposed on two members of the housing; a valve element disposed between and having surfaces in sealing engagement with said track surfaces and provided with a passage therein, said valve element being movable along said track surfaces between a position wherein said passage in said valve element is out of communication with said passages in said housing and a position wherein said passage in said valve element is in communication with and interconnects said passages in said housing, said two housing members being loosely joined together to permit limited movement of one of the track surfaces relative to the other in the direction of movement of said valve element between said positions; and means maintaining said track surfaces in sealing engagement with said surfaces of said valve element,

said means including means for applying a compression loading to said surfaces of the valve element disposed between the track surfaces of the two members.

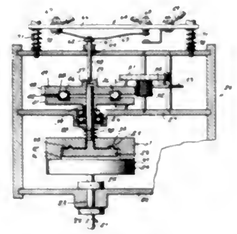
3,160,016
EMULSION SAMPLING DEVICE
Willis A. Middleton, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,457
16 Claims. (Cl. 73—422)



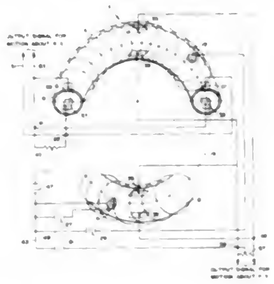
1. An apparatus for obtaining a sample of fluid flowing through a pipeline, comprising, a vessel having a chamber therein sealingly divided into two sections by a moveable partition, one of said sections containing clean fluid and the other of said sections providing a receiving chamber for fluid from the pipeline; a clean fluid receiving reservoir; a first conduit connecting said one section with the reservoir whereby clean fluid is conveyed to the reservoir upon displacement of the moveable partition in one direction; flow restricting means in said first conduit; a second conduit connecting said other section with the pipeline whereby pipeline fluid is conveyed to said other section; a third conduit connecting the reservoir with said one section; a return pump disposed in said third conduit whereby clean fluid may be pumped from the reservoir into said one section; a fourth conduit connecting the reservoir with a portion of the third conduit disposed between the return pump and said one section; valve means in said third conduit to selectively open said third or fourth conduits to said one section or close both of said conduits to said one section; a fifth conduit connecting the second conduit with said other section; and a recirculating pump disposed in said fifth conduit.

3,160,017
SWITCH CONTROLLING GOVERNOR
Joseph Weiss, 134 W. 93rd St., New York 25, N.Y.
Filed Jan. 16, 1962, Ser. No. 166,638
9 Claims. (Cl. 73—507)

1. A governor for controlling a movable element of a device comprising, in combination, a first rotatable member, a second rotatable member variably responsive to said first member and adapted for axial movement to and from said first member, a third rotatable member in engagement with said second member, complementary means on said second and third members for controlling transmission of torque from said first member to said second member, whereby said second member is axially movable with respect to said first member to cause slip therebetween when the torque transmitted exceeds a predetermined amount, means associated with said third member for limiting the speed of rotation of said third member, and variable means interposed between said third member and said speed limiting means for actuating said movable element upon said variable means reaching a predetermined speed of rotation.



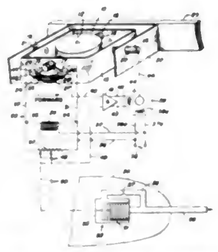
3,160,018
ELECTRON GYROSCOPE
James V. Johnston, 7801 Whitesburg Drive, Huntsville, Ala.
Filed Jan. 11, 1963, Ser. No. 250,968
8 Claims. (Cl. 74—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



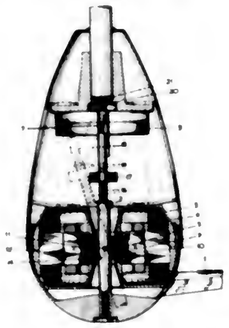
1. An electron gyroscope comprising:
(*a*) a hollow non-conductive toroid;
(*b*) said toroid being hermetically sealed;
(*c*) means disposed within said hermetically sealed toroid generating a cloud of electrons;
(*d*) an accelerating anode disposed to said means generating electrons for giving said electrons a velocity;
(*e*) means rotating said electrons in a circular path along the mean circumferential axis of said toroid; and
(*f*) means disposed within said toroid determining when said electrons deviate from the mean circumferential axis.

3,160,019
COMPENSATION FOR GYRO PITCH SIGNAL VELOCITY CHANGE ERRORS
Ilmar Luik and Charles A. Oppedahl, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 19, 1960, Ser. No. 76,970
7 Claims. (Cl. 74—5.47)

1. In a gyro control system for aircraft having pitch sensing means of the gravity controlled type with signal output means, means for compensating erroneous gyro pitch error signals from said pitch sensing means arising during aircraft velocity change, comprising velocity change sensing leaking bellows having signal output means, gyro pitch erection means, power means for controlling said erection means, said power means being connected to both said signal output means for control of said gyro erection means.

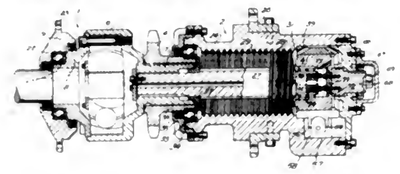


3,160,020
CEILING VENTILATOR
Willem Hendrik Braskamp, Voorburg, Netherlands, assignor to N.V. Industriele Onderneming W. H. Braskamp, Rijswijk, Netherlands, a Netherlands corporation
Filed Jan. 23, 1961, Ser. No. 84,010
Claims priority, application Netherlands, Nov. 25, 1960, 258,369
2 Claims. (Cl. 74—86)



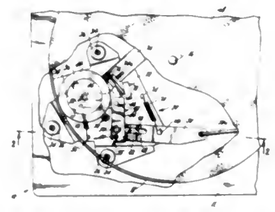
1. A ventilator comprising a stator element, a rotor element operatively associated with respect to said stator element to rotate with respect thereto about a determinable axis, a shaft, means connecting said shaft and rotor element together in driving relation for relative universal movement at a location on said axis, said shaft having an end projecting from said rotor, a stationary annular surface of frictional material surrounding said shaft at said end, means for retaining said shaft in an angular position relative to said axis to contact said annular surface, and a fan unit supported on said shaft at an end thereof opposite the first said end for movement with said shaft, said means for retaining said shaft in an angular position being effective to cause the first said end of the shaft to contact and move along the annular surface as said shaft rotates with said rotor whereby oscillatory and rotary movement of said fan unit is concurrently obtained, said means for retaining said shaft including a second shaft having one end supported for universal movement at a fixed location on said axis, a ball bearing body slidably supported on one of said shafts, a pin on said ball bearing body, the other of said shafts being pivotably supported on said pin and elastic means on said said one shaft and engaging said ball bearing body and urging the same towards said other of the shafts.

3,160,021
ROTARY DRIVE CONTROL MECHANISM
Ralph F. Hereth, Port Orchard, Wash., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 28, 1962, Ser. No. 176,883
3 Claims. (Cl. 74—89)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Rotary drive apparatus for stroking a reciprocably driven member comprising a drive shaft, means for rotatably driving said shaft, stroke control means provided with a jaw flange and keyed to and reciprocably advancable along said shaft, means responsive to said shaft rotations for advancing said control means, a driven-member sprocket carried by the shaft between said control means and said drive means, and stroke limit means for engaging said control means jaw flange and restricting said shaft and sprocket rotation, said limit means including a stop means having a jaw flange disposed in said path of advance of said control means flange, a piston, fluid pressure means for controllably reciprocating said piston, and means coupling said piston to said stop means, said coupling means rotating said stop means in response to piston reciprocation for orienting its jaw flange relative to said control means flange for stopping said control means at varying degrees of advance, whereby the stroke of said sprocket is selectively controllable.

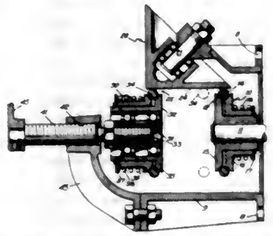
3,160,022
MULTIPLE SPEED DRIVE UNIT
Martin Dvorin, Rochester, N.Y., assignor, by mesne assignments, to General Electric Company, a corporation of New York
Filed Aug. 3, 1961, Ser. No. 129,010
3 Claims. (Cl. 74—190)



1. In a variable speed phonograph drive including a motor, a drive shaft having a plurality of stepped driving surfaces, an idler wheel, knee-action mounting means for mounting said idler wheel for movement toward and away from said drive shaft, and a vertical slide shaft on which said mounting means are secured for vertical movement of said idler wheel between said various driving surfaces, a biasing spring for maintaining engagement between said idler wheel and said drive shaft, a horizontally movable cam member having a plurality of stepped cam surfaces of like number to the number of said stepped driving surfaces, means guiding the movement of said cam through a substantially linear travel, said guide means including positioning means to retain said cam at selected locations along its path of linear travel, follower means mounted on said mounting means, said cam engaged with said follower means on said mounting means to raise

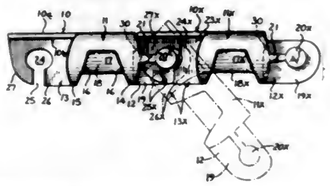
and lower said idler wheel in response to said linear movement of the cam to change speeds, said biasing spring normally being effective to maintain said idler wheel in engagement with said drive shaft during said speed change operations, and means for placing said phonograph drive in a neutral position including a neutral shift lever engageable with said mounting means and movable independently of any other element of said phonograph drive to oppose said biasing spring and move said idler wheel out of interengagement with said drive shaft.

3,160,023
VARIABLE SPEED DRIVE
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,328
4 Claims. (Cl. 74—192)



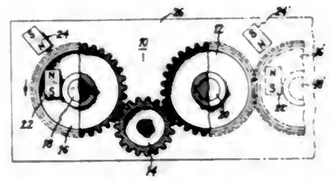
1. A variable speed transmission comprising, a plurality of cone members defining cylindrical space between the inner conical surfaces thereof, means for driving said cone members in the same direction and at the same rotational speed, an endless belt connected to an external driven device and about a generally annular driven member rotatably mounted in the cylindrical space defined by said cone members, said endless belt positioned in frictional driven engagement with said cone members, and means for adjusting said driven member to place said endless belt at selected positions along its axis against the conical surfaces of said cone members.

3,160,024
LINK MEMBER
Oliver W. Mojonnier, 522 Monroe Ave., River Forest, Ill.
Filed May 5, 1964, Ser. No. 365,039
3 Claims. (Cl. 74—249)



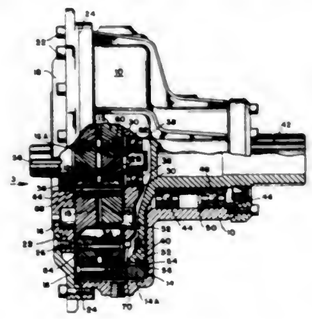
1. A link member and the like adapted for coupling with like members in end to end uniform alignment and defined by a body having a plurality of integral components, said components comprising a medial portion bounded by a front wall and a rear wall spaced apart from each other and defining therebetween a cavity, said cavity adapted to have removably engaged therein successive sprocket teeth, a side support disposed at a side of said body and extending forward from said front wall, a male element extending laterally from said side support, a web disposed at a side of said body opposite said side support and connecting said male element and front wall, a clevis extending rearwardly from the rear wall and disposed medially of the sides of said body, said clevis having an opening, said opening having an enlarged portion and a restricted portion, wider than said web and smaller than said male element, whereby a clevis of one link member is adapted to be mounted about the male element of an adjacent member and rotated to lock the clevis of said one member between the web and side support of the adjacent member.

3,160,025
CONTROL MECHANISM FOR CONTROLLING GEAR TRAIN BACKLASH
Kenneth J. Dresser, South Berwick, Maine, assignor to General Electric Company, a corporation of New York
Filed Nov. 28, 1962, Ser. No. 240,506
4 Claims. (Cl. 74—409)



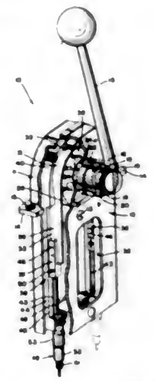
1. In a gear train comprising a plurality of meshing gears mounted within a casing, a control mechanism for controlling backlash between said meshing gears comprising; a magnetic means mounted on one gear of said plurality of meshing gears, a second magnetic means fixedly positioned to said casing in proximity to said one gear, said magnetic means and said second magnetic means coacting to produce a directional torque on said one gear to maintain said one gear in operative contact with another gear of said gear train.

3,160,026
GEAR TRANSMISSION
Moe William Rosen, 3440 Loma View Drive, Altadena, Calif.
Filed July 6, 1961, Ser. No. 124,300
2 Claims. (Cl. 74—410)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. A herringbone gear transmission comprising:
(*a*) a central herringbone drive pinion,
(*b*) an internal herringbone driven gear mounted for rotation about the axis of the pinion,
(*c*) said internal gear having unhardened, generatively shaped, and polished teeth,
(*d*) a plurality of equi-angularly spaced herringbone idler gears, each meshing with the pinion and internal gear,
(*e*) the pinion and each idler gear comprising adjacent separate right and left hand helical gear portions, each having teeth of ferrous material which are provided with ductile impact resisting cores and meshing surfaces which are hardened and ground to finished shape prior to assembly thereof, with a helix angle of about 45° or more,
(*f*) each of said right hand helical gear portions being of the same width as and axially spaced from its adjacent left hand helical gear portions to form an annular gap therebetween, each of said adjacent helical gear portions having the angular alignment of their teeth such that their helices intersect within said gap at one side of its central plane,
(*g*) said idler gears being free to float in an axial direction, whereby transmitted load is distributed equally between adjacent pairs of meshing helical gears irrespective of their rotational errors of assembly,
(*h*) said transmission, as compared to a like transmission having 0° tooth helix angle, generating 1/200 to 1/500 of the sound energy of said like transmission.

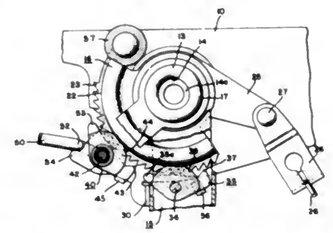
3,160,027
BELT AND DRUM REMOTE CONTROL UNIT
Donald W. Waner, Munroe Falls, Ohio, assignor to The Morse Instrument Co., Hudson, Ohio, a corporation of Ohio
Filed Aug. 27, 1962, Ser. No. 219,428
4 Claims. (Cl. 74—501)



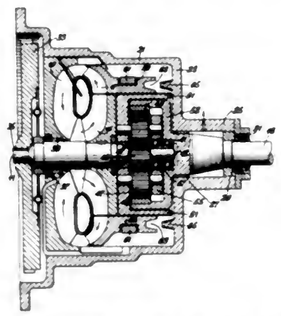
1. A remote control unit for operating an engine control by a push-pull cable comprising, a drum drive member rotatable by a control lever, a U-shaped, flat, flexible band, the curved portion of said band engaging one half the periphery of said drum drive member, the leg portions of said U-shaped band extending tangentially outwardly from said drum drive member, a curved confining surface to restrain the curved portion of said band against one half the periphery of said drum drive member, opposed continuous guide slots slidably receiving the edges of the leg portions of said band to prevent buckling of said leg portions, engaging means interconnecting said band and said drum drive member to prevent said band from slipping on said drum drive member, and at least one end of said band adapted to be connected to the core of said push-pull cable.

3,160,028
BRAKE LEVER MECHANISM
Thomas B. Frame, Syracuse, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,577
12 Claims. (Cl. 74—539)

1. A brake lever mechanism, comprising in combination, a stationary mounting member, a ratchet member having a peripheral generally semicircular surface and a toothed generally semicircular segment, an actuating lever, pivot means rotatably supporting said ratchet member and said lever on said mounting member, a first pawl on said lever including pivot support means for same, said first pawl having a tooth engageable with said toothed segment and a friction surface engaging said semi-circular surface for rotation of said first pawl on movement of said lever, a second pawl on said mounting member including pivot support means for the same, said second pawl having a tooth engageable with said toothed segment and a friction surface engaging said semicircular surface for rotation of said second pawl on movement of said lever, and means engageable with said second pawl to effect disengagement thereof with said toothed segment independently of movement of said lever.

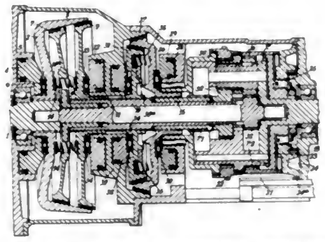


3,160,029
HYDRODYNAMIC CONVERTER
Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic Inc., a corporation of New York
Filed Oct. 17, 1962, Ser. No. 231,087
5 Claims. (Cl. 74—688)



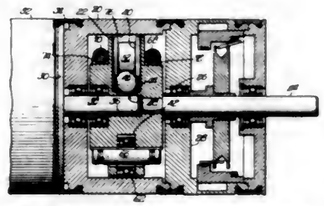
1. In a hydrodynamic torque converter which includes a housing adapted to contain a hydraulic fluid, an input shaft extending into said housing and an output shaft extending from said housing, the combination comprising a sun gear arranged concentrically on said input shaft and affixed thereto; a ring gear concentrically disposed in subtending relationship to said sun gear and fixedly attached to said output shaft; planet gears meshed with said sun gear and said ring gear; a planet gear carrier disposed to support said planet gears in meshed relationship with said sun gear and said ring gear and arranged to rotate concentrically about a longitudinal axis of the input shaft; a hydraulic impeller arranged concentrically on said input shaft and affixed thereto; a hydraulic stator arranged in said housing and disposed in hydraulic flow circuit relationship with said impeller; a hydraulic turbine mounted concentrically on said planet carrier, fixed rotatably and longitudinally slideably engaged thereto and disposed for selectable introduction into and removal from hydraulic flow circuit relationship with said impeller and said stator.

3,160,030
CONTROL MEANS FOR EPICYCLIC POWER TRANSMISSION MECHANISMS
Axel C. Wickman, 14 Hibiscus Drive, Hibiscus Island, Miami Beach, Fla.
Filed Oct. 18, 1960, Ser. No. 63,322
Claims priority, application Great Britain Nov. 30, 1959
15 Claims. (Cl. 74—761)



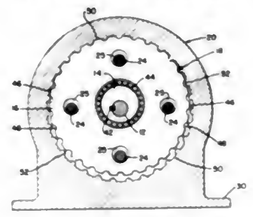
9. An epicyclic power transmission mechanism comprising an input shaft, two alternative driving elements, control means for connecting said input shaft alternatively to either of said driving elements, an output shaft, and two epicyclic gear trains respectively coupling said driving elements to said output shaft, said control means comprising an axially movable driving clutch member having an inner peripheral clutch surface of generally conical form mounted on said input shaft, two axially spaced driven clutch members each with an outer peripheral clutch surface of generally conical form for clutching engagement with said inner clutch surface and respectively connected in the drive sense with said driving elements, said driven clutch members being of different effective outer diameter and one thereof being axially movable and the other located in the axial sense, and means to produce axial movements of said axially movable clutch members in opposite directions so that said driving clutch member can be moved into clutching engagement with the axially located driven clutch member to connect the drive to one of said driving elements, and the axially movable driven clutch member can then be moved into clutching engagement with the driving clutch member to connect the drive to the other of said driving members in such manner that the driving clutch member is simultaneously displaced out of clutch engagement with the axially located driven clutch member.

3,160,031
PLANETARY FRICTIONAL DRIVE MECHANISM
Kenly C. Bugg, Fort Wayne, Ind., assignor to Kendick Manufacturing Company, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed May 1, 1961, Ser. No. 106,862
24 Claims. (Cl. 74—798)



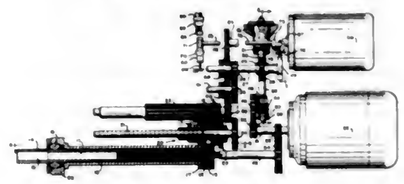
1. A planetary friction gear drive comprising: a rotatable cage member; a housing having a cylindrical interior surface encompassing said cage member; a power output means operatively connected to said cage member; and a train of three planetary members in rolling frictional contact, disposed so that at least one of said planetary members is resiliently urged outwardly into rolling frictional contact with said interior surface of said housing by resilient means carried by said cage member exerting a force in a plane substantially normal to the axis of rotation of said planetary members; and at least one of the others of said planetary members is resiliently urged inwardly by said resilient means so as to be in rolling engagement with and frictionally driven by a drive shaft disposed on the axis of rotation of said rotatable cage member, two of said planetary members being rotatably mounted on said rotatable cage member so that rotation of said drive shaft member causes said cage member to rotate relative to said housing.

3,160,032
EPICYCLIC SPEED CHANGING DEVICE AND GEAR FORM THEREFOR
John R. Black, Englewood, Colo., assignor to Black Tool, Inc., Denver, Colo., a corporation of Colorado
Filed May 25, 1961, Ser. No. 112,660
7 Claims. (Cl. 74—804)



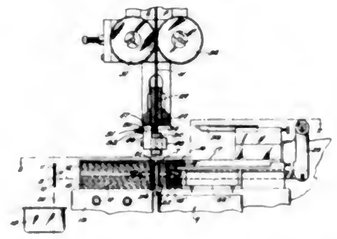
1. In a speed changing device, a gear form for establishing non-slipping epicyclic motion between circular internal and external gear portions, the external gear being eccentrically mounted for rotation about the internal gear and having a pitch diameter no greater than that of the internal gear less twice the eccentricity of the external gear, said tooth gear form being constituted of a circumferential surface portion at the pitch diameter of one gear portion having a plurality of equally spaced tooth elements of convex semi-circular configuration radially obtruding therefrom, and a circumferential surface portion at the pitch diameter of the other gear portion having a plurality of equally spaced cavity elements of semi-circular configuration directed inwardly therefrom, said tooth and cavity elements corresponding in spacing and radius of curvature to provide for intermeshing centered engagement between said elements.

3,160,033
DRILL HEAD
Maynard M. Moyer, 5625 Rochester Road, Rochester, Mich.
Filed Sept. 19, 1962, Ser. No. 224,653
10 Claims. (Cl. 77—34.7)



1. In a drill head, a frame; a quill mounted in said frame for reciprocative motion; a spindle rotatably mounted in said quill for reciprocative movement therewith; a rotatable, axially fixed screw mounted in said frame; nut means threaded onto said screw; a housing connecting said nut means to said quill so that said quill and nut means reciprocate together; motor means; change gears between said motor means and said spindle; a gear train including other change gears between said motor means and said axially fixed screw, whereby said spindle can be rotated and said quill moved at selected rates independent of each other; a clutch within the gear train between said motor means and said axially fixed screw; and means responsive to the stopping of the reciprocative movement of said quill and the continued rotation of said motor means for disengaging said clutch.

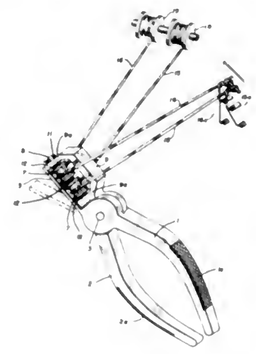
3,160,034
BOLT THREADING MACHINE
Ralph L. Kendrick, Rockford, Ill., assignor to Imperial Wire Products, Inc., Rockford, Ill., a corporation of Maryland
Filed Jan. 12, 1961, Ser. No. 82,318
7 Claims. (Cl. 80—3)



1. A headless blank cutter and feeder for a thread rolling machine comprising a first stationary flat vertical threading die having an infeed end, a second relatively reciprocable flat vertical threading die in spaced parallel relationship thereto, and a finger reciprocable relative to and between said dies at the infeed end of said first die in a predetermined timed relationship to the reciprocation of said second die, said blank cutter and feeder comprising a cut-off die and a guide tube together adapted to receive a length of wire of the diameter of the blanks to be threaded on a vertical line which when extended downwardly ends behind the infeed end of the first die and in front of said finger, means for intermittently feeding such round wire vertically downwardly through said cut-off die once per reciprocation of said second die to provide a predetermined length of wire for a blank below the cut-off die and guided in the guide tube, a cut-off knife reciprocable horizontally relative to the guide tube past and in shearing relationship to the lower end of said cut-off die, a stop for abutment by the lower end of the blank disposed on the aforesaid vertical line below the level of the finger, means for retaining each blank after it is cut but releasing it to drop by gravity against the stop in timed relation to the rearward movement of the cut-off knife, means for operating said wire feeding means in timed relation to said second die, and means for operating said knife in timed relation to said wire feeding means, finger, and second die, whereby a single blank of the predetermined length is dropped by gravity on the aforesaid vertical line in proper timed relationship to forward movement of the finger and second die in each cycle of operation of the machine.

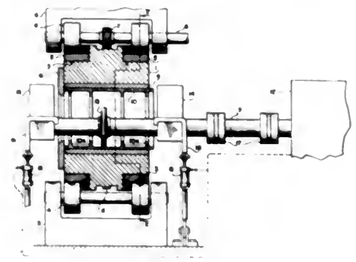
3,160,035
WIRE HANDLING HAND TOOL
Joseph A. Tramontana, 1736 Central Ave., Alameda, Calif.
Filed Nov. 6, 1961, Ser. No. 150,223
7 Claims. (Cl. 81—5.1)

1. A wire handling hand tool comprising a pair of jaw members pivoted to close upon each other to an abutting face to face relation, an axle carried in that face of one of said jaw members which opposes the face of the other jaw member, a grooved sheave mounted for rotation on said axle, said other jaw member overlying said sheave, said sheave being spaced from said other



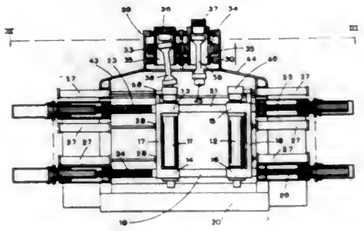
jaw member and free to rotate when said jaw members are closed to said relation, whereby a flexible wire can be fed over the groove of said sheave while retained therein by closure of the other said jaw member thereacross.

3,160,036
ROLL-FORMING MILL
Adolph W. Ernestus, Encino, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 29, 1958, Ser. No. 758,022
7 Claims. (Cl. 80—11)



1. A metal forming apparatus comprising a rotatably mounted annular die ring, a shaft extending axially through the opening of said die ring having integrant roller means thereon, motive power means for rotatively driving the die ring and said shaft with integrant roller means, and control means for varying and controlling the axial and radial position of the integrant roller means relative to the die ring thereby exerting radial pressure on the areas between initial integral ribbing formations on an annular workpiece radially expanded to fit the die ring and such that continuation of radial pressure thereafter forms the workpiece in an axial direction forming a thin-walled structural member with integral ribbing of high-strength-to-weight ratio, said control means including an actuator coupled to said shaft to selectively exert the radial pressure on the workpiece.

3,160,037
ROLLING MILLS
Robert Gordon Russell, "Polvarth," Park Lane, Pennyfordd, near Chester, West Vale, Weston, England, and Harry Laurence Fred Bond, Coggers Lane, Hathersage, Sheffield, England
Filed Nov. 13, 1962, Ser. No. 237,196
7 Claims. (Cl. 80—31.1)

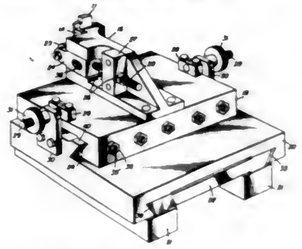


1. A rolling mill comprising a fixed, functionally closed, mill frame, two vertical work rolls, chocks for each of said work rolls, said chocks for both said rolls being supported in said mill frame and, while so supported, being movable independently along a traversal path in the common vertical plane of said rolls, and common driving means for said rolls carried by said frame above said rolls, said frame having an opening which is vertically above said path and which is unobstructed vertically by said driving means.

ERRATUM

For Class 81—5.1 see:
Patent No. 3,160,035

3,160,038
GROOVE CUTTING ASSEMBLY FOR LARGE ROLLS
John L. Wood, Summerville, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,255
4 Claims. (Cl. 82—5)



4. A groove-cutting assembly adapted to cut very small, closely-spaced, substantially uniform helical grooves of a desired groove form and depth into the surface of a cylindrical roll of large and non-uniform diameter when said roll is mounted on an ordinary large lathe and the groove-cutting assembly is mounted on the lathe lead screw, comprising:

(1) a tangentially-aligned groove-cutting tool, having cutting teeth and tracking teeth milled to the desired groove form, which is mounted upon a tool holder containing:

(*a*) means to sense the roll surface,

(*b*) means adjustably to regulate cutting depth, and

(*c*) an elevation adjusting screw whereby the tangentially-aligned groove-cutting tool may be raised or lowered;

(2) an axial sliding base, rigidly attached to and supporting said holder, which selectively slides freely in a direction parallel to the longitudinal axis of the roll;

(3) a radial sliding base, slideably attached to and supporting said axial base, which slides in a direction perpendicular to said longitudinal axis;

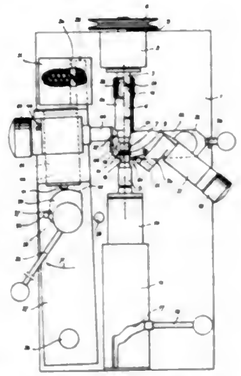
(4) a radial sliding base pin which is rigidly attached to, and protrudes beneath, said radial sliding base;

(5) a fixed base which is rigidly attached to the lathe lead screw and is slideably attached to and supports said radial sliding base;

(6) a compressed spring, beneath the radial sliding base in a slot in said fixed base, which is aligned parallel with said radial sliding base and compressibly contacts said radial sliding base pin, whereby pressure is maintained on said radial sliding base to bias said groove-cutting tool toward the roll surface; and

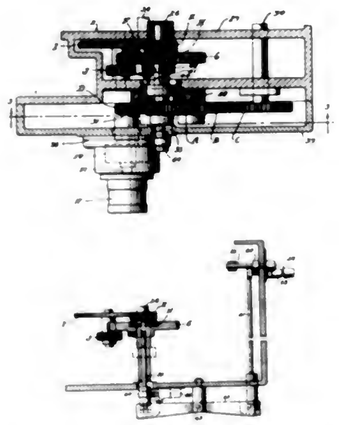
(7) locking units and screws on opposite sides of the axial sliding base to restrict sliding movements of the axial sliding base during initial groove-cutting and to permit sliding movements of the axial sliding base during subsequent groove-cutting, whereby may be equalized any differential movement between the linear propulsion imparted to said fixed base and said radial sliding base by the lathe lead screw and the linear propulsion imparted to said tool holder by engagement of the tracking teeth with the previously-formed grooves.

3,160,039
MANUFACTURING OF CORNEAL LENSES
Pierre Michel Rocher and Claude Gabriel Thomas, Saint-Maur, France, assignors to Lentilles Ophtalmiques Rationnelles, Seine, France, a corporation of France
Filed Jan. 12, 1962, Ser. No. 165,875
Claims priority, application France, Mar. 20, 1961, 856,114
6 Claims. (Cl. 82—13)



1. A machine for finishing the rim of a corneal lens, comprising in combination on a common bed plate, a lens carrying spindle mounted on said bed plate, means for rotating said spindle, a movable carriage mounted on one side of the spindle, a roughing tool carried on said movable carriage and arranged to be displaced parallel to the axis of the spindle at a regulated distance therefrom, a tool support mounted on the other side of the spindle, an edge cutting tool carried by said support, said edge cutting tool having a cutting profile which reproduces the desired profile to be given to the rim of the lens, and means mounting the tool support for swinging movement relative to the spindle axis and for rectilinear movement toward and away from the spindle axis.

3,160,040
MODULATED FEED FOR ENGINE LATHES
Holland R. Hudson, 8844 Long Lane, Cincinnati, Ohio; Arthur C. Nolte, 10430 Twinkle Lane, Cincinnati, Ohio; and James N. Colebrook, Cincinnati, Ohio; said Colebrook assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 31, 1961, Ser. No. 128,006
11 Claims. (Cl. 82—21)



1. In a lathe:

a frame, spindle drive mechanism including an output shaft and carriage feed mechanism to be operated by the spindle drive mechanism, the carriage feed mechanism having translating gears including input and output translating gears and a quick-change gear box connected to the output translating gear;

means on said frame connected between said output shaft and the input translating gear and constituting clutch means which when engaged connects the spindle drive and carriage feed mechanisms, and when disengaged disconnects the same, the clutch means including a drive shaft connected to the input translating gear;

first control means connected with said clutch means to cause operation of the same;

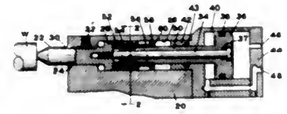
gear means engaged with one of said translating gears by being in mesh therewith;

motor means on said frame connected for rotating said gear means;

second control means connected with said motor and operative to condition the motor to rotate said gear means and to stop rotating said gear means; and

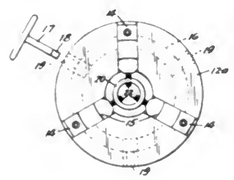
interlock means operatively connected between said first and second control means and providing that when the first control means operates said clutch to cause engagement of the spindle drive and carriage feed mechanisms, said second control means conditions said motor to stop rotating said gear means and further providing that when the first control means operates said clutch to cause disengagement of the spindle drive and carriage feed mechanisms, said second control means conditions said motor for rotating said gear means.

3,160,041
TAILSTOCK
Edward C. Hanna, Waynesboro, Pa., assignor to Landis Machine Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Mar. 21, 1961, Ser. No. 97,222
1 Claim. (Cl. 82—31)



A tailstock for supporting one end of a workpiece which is elongated as it is worked upon comprising a tubular support assembly, a center assembly engageable with said one end of said workpiece and mounted in said tubular support assembly for movement axially of said workpiece, a power member mounted in said tubular support assembly for movement axially of said workpiece, said power member having a wedging surface, a brake assembly positioned between said wedging surface and the interior of said tubular assembly, said brake assembly having one end in engagement with said center assembly, a spring positioned between the opposite end of said brake assembly and said power member to normally maintain said brake assembly out of wedging contact with said power member and said tubular support assembly and operable to transmit force from said power member to said center assembly, said spring being compressed when the movement of said center assembly is opposed by a predetermined force to permit said brake assembly to become wedged on said wedging surface to prevent further movement of said power member.

3,160,042
JAW HOLDING DEVICE
Curtis L. Grand, Minneapolis, Minn., assignor to Nu-Line Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 18, 1962, Ser. No. 188,404
6 Claims. (Cl. 82—34)



1. Apparatus for use while turning soft jaws to a desired size,

comprising means mounting a multiplicity of soft jaws at arcuately spaced positions around a rotation axis and adapted to be rotated about said axis,

means selectively restraining said soft jaws for radially outward movement,

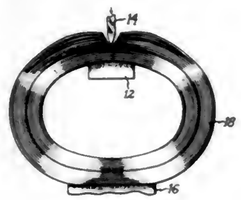
and a rigid ring between the soft jaws and substantially concentric of the rotation axis and having a multiplicity of radially extending and radially adjustable projections secured on the ring and bearing radially outwardly against said soft jaws and preventing inward movement thereof, whereby to restrain radial movement of the jaws during rotation and turning thereof to size.

3,160,043
SELF-ALIGNING PILLAR POSTS FOR GLASS CUTTING WHEELS
Chester K. Judd, Jr., Bristol, Conn., assignor to The Fletcher-Terry Company, Forestville, Conn., a corporation of Connecticut
Filed Nov. 2, 1962, Ser. No. 235,035
7 Claims. (Cl. 83—12)



1. A glass cutting wheel pillar post having a cylindrical stem and a wheel-receiving head on one end thereof and including an elongated sleeve adapted to receive said stem for rotative and axial movement therein, a spring member cooperative with said sleeve normally biasing said stem outwardly of the sleeve in the direction of said wheel receiving head and cooperative means on said stem and sleeve restricting such outward movement and coactive with said spring member to align said wheel-receiving head in a predetermined position with respect to said sleeve.

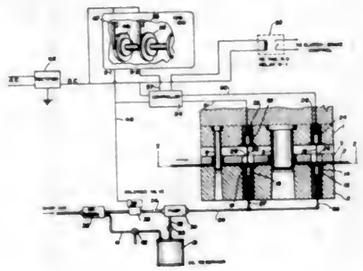
3,160,044
METHOD OF CUTTING WOUND MAGNETIC CORES
Gareth G. Somerville, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed July 25, 1961, Ser. No. 126,543
3 Claims. (Cl. 83—19)



1. A method of cutting a spirally wound magnetic core which comprises a plurality of spirally wound radially nested superposed laminations of magnetic core strip material, with each lamination being in direct physical contact with adjacent laminations comprising the steps of mounting the core on a central mounting member, contacting the outside portion of the core over the central mounting member by a movable wedge-shaped blade, contacting the opposite outside portion of the core by a movable surface, compressing the core between said movable blade and said movable surface to place the laminations of the core under stress and then forcing said wedge-shaped blade through the stressed laminations of the core to thereby separate each lamination of the core.

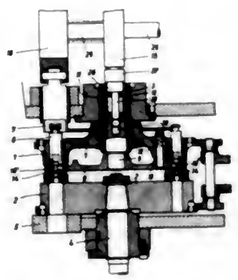
3,160,045
SENSING DEVICE AND METHOD
Peter M. Newgard, Redwood City, Calif., assignor to Schlage Lock Company, a corporation
Filed Nov. 23, 1960, Ser. No. 71,321
3 Claims. (Cl. 83—63)

2. Apparatus for determining whether an article is in a predetermined position relative to an established line of action, comprising: means for forming a pair of shoulders on said article to define a pair of openings forwardly and rearwardly relative to said line of action, means on one side of such article for establishing a pair of positively pressurized parallel streams of particles having measurable momentum and moving at right angles to and across said line of action, said streams being positioned to just clear said shoulders and to extend through said openings, means on the opposite side of said article



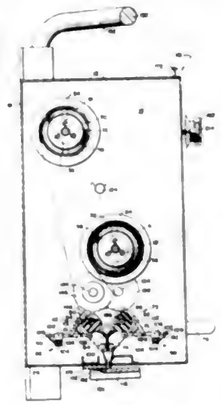
responsive to the pressure of said streams, and means for emitting a signal if both of said pressure responsive means do not respond to pressure.

3,160,046
MULTIPLE DIE PUNCHES WITH STRIPPER MEANS
Walter Bredow, Vormasch 2, Alfeld, Germany
Filed Aug. 20, 1962, Ser. No. 217,905
Claims priority, application Germany, Aug. 30, 1961, B 63,844
10 Claims. (Cl. 83—130)



1. Rotary punch press including a frame having upper and lower parts, a spindle supported in the upper frame part, an upper revolving turret plate on the spindle, a lower revolving turret plate coaxially journalled in the lower frame part, a plurality of aligned pairs of tools carried by the plates, the plates being rotatable together to bring a desired pair of tools to a working position, a stripper and hold-down plate below the upper turret plate, a guide column supporting the stripper and hold-down plate and axially slidable in the spindle, means for preventing rotation of the stripper and hold-down plate relative to the upper turret plate, drive means for lowering and raising a tool carried by the upper turret plate at the working position, and means for concurrently lowering and raising the stripper and hold-down plate, the downward motion of the latter plate preceding that of the upper turret plate and the upward motion of the said latter plate succeeding that of the upper turret plate.

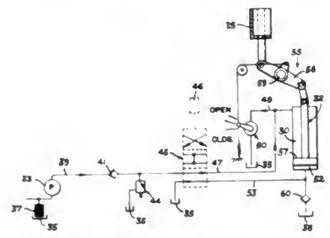
3,160,047
ROLL FILM DISPENSER
John R. Malloy, Delaware County, and Theodore Hommel, Chester County, Pa., assignors to Lanston Industries, Incorporated, Philadelphia, Pa., a corporation of Virginia
Filed Nov. 21, 1960, Ser. No. 89,592
(Filed under Rule 47(a) and 35 U.S.C. 116)
17 Claims. (Cl. 83—208)



1. Apparatus for cutting lengths of film from a roll of film comprising: a substantially light excluding housing having a film dispensing slot therein; means in said housing for rotatably supporting a roll of film; a driven roller in said housing movingly engaging the film from said roll for advancing a length of such film through said slot; a fixed elongated rail mounted in said housing in parallel relation to the axis of said driven roller; a mounting bracket longitudinally slidable on said rail; a first arm pivoted to said bracket for movement about an axis parallel to the axis of said driven roller; a first idler roller journalled on said first arm for rotation about an axis parallel to the axis of said driven roller and engageable with the marginal edges of the film which is in contact with the periphery of said driven roller; a second arm pivoted to said first arm; a second idler roller journalled on said second arm and engageable with the marginal edges of the film which is in contact with the periphery of said driven roller; first spring means between said first arm and said bracket; second spring means between said first and second arms, said first and second spring means resiliently biasing said idler rollers toward said driven roller; a cutting blade movable from a normal position covering said slot to a dispensing position permitting a length of film to be advanced through said slot and from said dispensing position back into said normal position to cut off the length of film advanced through said slot; and means for moving said film advancing means when said blade is disposed in said dispensing position.

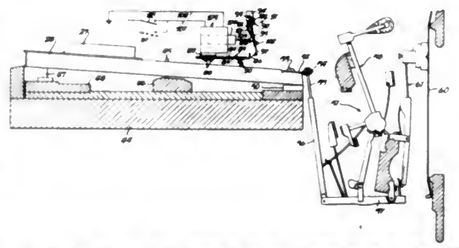
4. Apparatus for advancing lengths of film from a roll comprising a housing, a driven roller rotatably mounted in said housing for engaging film from a roll, an elongated rail mounted in said housing in substantially coextensive parallel relation to said roller, a pair of mounting brackets slidably mounted on said rail, an arm pivoted to each mounting bracket, an idler roller rotatably mounted on each arm, and spring means between each mounting bracket and associated arm for resiliently urging the associated idler roller toward the periphery of said driven roller; a second arm pivotally mounted on each of said first mentioned arms; a second idler roller on each second arm; and second spring means between each pair of pivotally interconnected arms resiliently biasing the rollers carried thereby toward each other.

3,160,048
SERVO CONTROLLED CLAMP
Leo D. Barley, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,250
5 Claims. (Cl. 83—390)



1. In a cutting machine adapted to cut a pile of material of given length into piles of the same height and smaller length comprising a work table adapted to receive said pile of material, clamp means movable from a first position to a second position in engagement with said pile, pressure fluid operated drive means having an output member movable in opposite directions, means interconnecting said output member and said clamp for causing a movement of said clamp proportional to the movement of said output member, means connected to supply pressure fluid to said drive means causing movement of said output member, valve means operatively associated with said pressure supply means for flowing fluid to said drive means for moving said output member in said first and second directions effecting a movement of said clamp to said first and second positions respectively, a clamp control assembly including means to sense the position of said clamp, valve means controlling the pressure in said drive means as said output member moves to said first position, and said valve means connected to said sensing means to establish a fluid pressure condition in said drive means halting the movement of said output member in said first direction and maintaining said clamp in said first position.

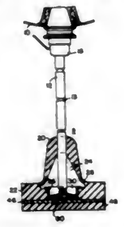
3,160,049
ELECTRIC MEMORY LATCH DEVICE FOR PIANO HAVING ELECTRIC CHORD AND RUN PLAYING MECHANISM
Lee L. Von Gunten, Kenmore, N.Y., assignor to Aurora Corporation of Illinois, Buffalo, N.Y., a corporation of Illinois
Filed Feb. 3, 1961, Ser. No. 87,026
16 Claims. (Cl. 84—245)



1. In a piano, the combination comprising a plurality of individual note playing means, a plurality of solenoids severally operatively associated with said note playing

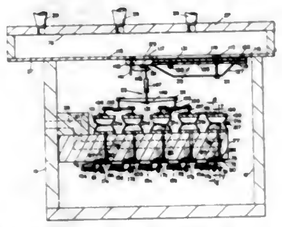
means for an octave and each of said solenoids when energized being arranged to actuate its companion note playing means, a source of electrical energy, individual circuit means connected to said source and solenoids and including first and second normally open switch means, said first switch means being closed upon actuation of the corresponding note playing means of said octave, said second switch means being selectively closeable manually, and memory latch means selectively operable for maintaining said first switch means closed following actuation and de-actuation of said corresponding note playing means.

3,160,050
END-REST ASSEMBLY
Markus Klein, 1030 King Ave., Pittsburgh 6, Pa.
Filed Nov. 6, 1962, Ser. No. 235,719
4 Claims. (Cl. 84—327)



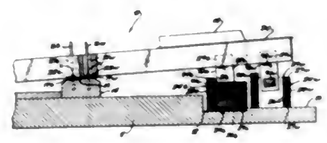
1. An end-rest assembly for a musical instrument, such as a violoncello or a bass viol or the like, of the type which is held on the floor adjacent the player and from the lower end of which a rod for supporting said instrument extends, said assembly comprising a block of a flexible material such as rubber or the like having a generally longitudinal opening therein for guiding said rod, a cup of a hard material, an opening therein for supporting the lower end of said rod, said guiding opening having a terminus formed to receive said cup in resilient locking relationship to hold said cup with its base flush with the bottom of said block, a plate of relatively hard material and of extended area secured to said block in pressure receiving and distributing engagement with said base of said cup, and a base of relatively soft material having a high coefficient of friction and having an area generally coextensive with said plate secured to said plate, said base being in frictional engagement with said floor when said instrument is being played resting in said assembly.

3,160,051
PIPE ORGAN ACTION
Roman Guenther, 7260 SW. Bridgeport, Tigard, Oreg.
Filed Apr. 10, 1961, Ser. No. 101,991
7 Claims. (Cl. 84—337)



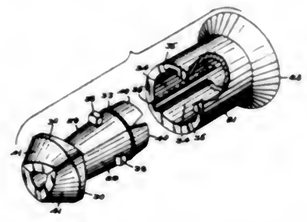
1. In a pipe organ, a wind chest, a key channel, means defining a port for conveying air from said wind chest to said key channel, a pallet mounted in said wind chest for closing said port, means biasing said pallet to closed position, a plurality of individually operable motor means connected to said pallet for effecting movement of said pallet to various open positions, a depressible key, means responsive to the depression of said key for actuating a progressively larger number of said motor means as said key is progressively depressed whereby said pallet will be moved from closed toward fully open position by an amount proportional to the amount of depression of said key.

3,160,052
SOLENOID MEANS FOR ACTUATING AND GUIDING PIANO PLAYING MEANS
Lee L. Von Gunten, Kenmore, N.Y., assignor to Aurora Corporation of Illinois, Buffalo, N.Y., a corporation of Illinois
Filed Apr. 18, 1961, Ser. No. 103,780
12 Claims. (Cl. 84—433)



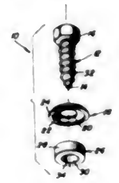
1. Solenoid means for actuating and guiding piano playing means, said solenoid means comprising, coil means having a transversely elongated inner periphery, and armature means freely oscillatable longitudinally in said coil means about a remote axis extending generally transversely of the transversely elongated portions of said inner periphery, said armature means having outstanding guide means slidable along the transversely elongated portions of said inner periphery.

3,160,053
RATCHET-LIKE FASTENER WITH MULTI-PART NUT AND CENTERING SLEEVE
James Henry Devine, Brookline, Mass., and Evelyn Yurcessen Devine, 380 Washington St., Brookline, Mass.; said James Henry Devine assignor to D-Y Trust, Boston, Mass., a trust of Massachusetts
Filed Aug. 4, 1961, Ser. No. 129,403
1 Claim. (Cl. 85—1)



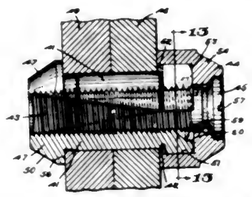
A fastener for clamping together structural panels having concentric openings therethrough, irrespective of the accessibility of the opening in the innermost panel, the fastener being insertable through said openings and comprising an expandable nut component having a plurality of similar and complemental segments movable angularly relative to each other in a radial direction with respect to the axis of the assembly, from inoperative to operative clamping position, and having a resilient member embracing the segments and holding them in assembled relation, each nut segment having a radially projecting head portion engageable with said innermost panel when the fastener is in clamping position; said resilient member engaging the inner ends of the nut segments and acting to urge the head portions of said segments toward expanded position; a sleeve component encircling the nut component and insertable in said panel openings, the sleeve having a head portion engaging the outermost panel when so inserted; cooperating means on the respective components for retaining the nut assembly within the sleeve and limiting relative longitudinal movement therebetween; and means for expanding the nut segments and tensioning them to clamping position, said means comprising shoulder members each having successive flat and inclined surfaces, and complemental lug members engageable respectively with said shoulder members, one of said respective members being rotatable relative to the other, and one of said respective members being carried by the nut segments, whereby the fastener may be clamped by rotation of the rotatable member through an arc less than 360°; the respective shoulder members being spaced relative to each other circumferentially of the fastener to provide intervening longitudinal channels, and the respective lug members being correspondingly spaced relative to each other and adapted to slide longitudinally in the respective channels; the respective lug members being carried by the respective nut segments and projecting radially outward therefrom, and the respective shoulder members being carried by said sleeve and projecting radially inwardly therefrom.

3,160,054
SURFACE SEALING FASTENER ASSEMBLY
Irvin Cohen, Reading, and Bernard D. Levy, Pittsburgh, Pa., assignors to Construction Fasteners, Inc., Reading, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1962, Ser. No. 181,120
1 Claim. (Cl. 85—1)



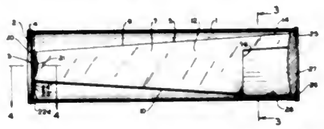
In combination with a fastener having a head and a shank threadedly received in a member, a sealing assembly comprising; a rigid retainer having a centering recess portion and a peripheral rim portion, said recess portion having a flat bearing surface engageable by the head and a flat seating surface through which an opening extends of a diameter larger than that of the shank, said rim portion being axially spaced from the seating surface, a separate cylindrical sealing member made of resilient material having an external surface with a constant outside diameter substantially equal to that of the seating surface and an internal surface with an inside diameter larger than the diameter of the shank, said sealing member when seated on the seating surface extending axially beyond the rim portion before deformation by an amount sufficient to expand radially outward beyond the rim portion and radially inward into engagement with the shank, and a single projection formed on the sealing member and extending axially along the internal surface, said projection being formed along a restricted circumferential portion of the internal surface and extending radially inward into frictional contact with the shank at one location for holding the sealing member coaxially assembled on the shank when seated on the seating surface of the rigid retainer to also axially align the bearing surface with the head before torque is applied thereto.

3,160,055
TRIPLE LOCKING BLIND BOLT
James Henry Devine, Brookline, Mass., and Evelyn Yurcessen Devine, 380 Washington St., Brookline, Mass.; said James Henry Devine assignor to Triple-Lok Trust, Brookline, Mass., a trust of Massachusetts
Filed May 9, 1960, Ser. No. 27,857
10 Claims. (Cl. 85—87)



1. A blind bolt for clamping together structural plates having concentric openings therethrough, when the blind surface of the innermost plates is inaccessible, the bolt being insertable through said openings and comprising an expandable and contractable bolt assembly having at least three similar and complemental segments pivotally movable angularly relative to each other and in a radial direction with respect to the axis of the assembly, from locking to unlocking positions, and having a resilient member embracing the segments adjacent a transverse pivotal plane; the respective segments having tapered shank portions of arcuate cross section, extending inwardly of said transverse plane, and terminating in outwardly flanged head portions adapted to engage said blind plate surfaces when the shank portions of the inserted assembly are expanded to locking position, said segments having opposite end portions extending outwardly of said transverse plane, said outer end portions being contracted together when the shank portions are expanded; the respective segments having relatively narrow edge surfaces engageable with complemental surfaces of adjacent segments in radial planes, in the region of said transverse pivotal plane, and the inner arcuate surfaces of their shank portions having complemental threads; a nut member adapted to fit over and engage complemental surfaces of the contracted outer end of the bolt assembly for holding the head portions in locking position, and having an inner end adapted to bear against a surface of the outermost plate; and a center component having a head engageable with said nut member and a threaded stem insertable into said bolt assembly and engageable with the threads of said segments when screwed therein, thereby to expand the shank portions and draw the head portions of the segments into tight locking engagement with the blind surface of the innermost plate.

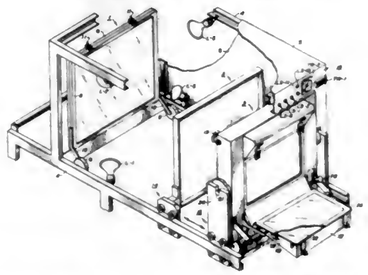
3,160,056
KALEIDOSCOPES
Beverly W. Taylor, 1820 St. Catherine, Florissant, Mo.
Filed Apr. 10, 1961, Ser. No. 101,864
9 Claims. (Cl. 88—15)



1. A kaleidoscope comprising an elongated hollow shell, a viewing lens rigidly mounted at the rear end of the shell, an objective lens rigidly mounted at the forward end of the shell, a mirror extending lengthwise between said viewing lens and said objective lens, said mirror having a V-shaped rear portion terminating in rearwardly presented margins that abut said viewing lens, and forwardly

presented margins that lie in the focal plane of said objective lens, and a pair of forwardly extending reflector elements integrally formed on the forwardly presented margins, said reflector elements being narrower than said rear portion.

3,160,057
XEROGRAPHIC PROCESSING APPARATUS
Thomas C. Murray and Robert H. Liva, Rochester, and Norbett H. Kaupp, Newark, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,340
1 Claim. (Cl. 88—24)



In a xerographic copying apparatus including a copyboard for holding original copy to be reproduced, lighting means to illuminate original copy mounted on the copyboard, a lens to convey a light image of the copy on the copyboard to a xerographic plate, and a processing unit for charging, exposing and developing a xerographic plate, the combination of:

a support frame,

a housing rotatably supported by the frame and having an opening in the front to accommodate a xerographic plate and an opening in the back to expose a xerographic plate to a light image of copy to be reproduced,

means to secure a xerographic plate in stationary position over the opening in the front of the housing to form a powder tight seal between a plate and the housing,

charging apparatus located in the housing adjacent to the stationary position of a xerographic plate and movable across a plate surface to place an electrostatic charge thereon,

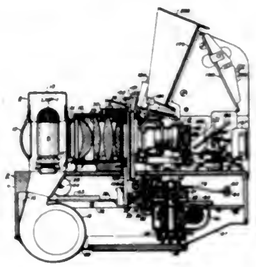
a pair of developer pods positioned in the housing, one on each side of the opening in the front of the housing and adapted to contain developer material for developing powder images on a xerographic plate, each pod having an opening adjacent to and extending across the opening in the front of the housing so that developer material may flow from one pod across a xerographic plate covering the opening in the housing to the other pod,

an electrode plate operatively associated with the housing to be movable between a first position wherein a xerographic plate may be exposed to a light image of copy to be reproduced and a second position wherein its surface is positioned adjacent to a xerographic plate secured over the opening in the front of the housing,

means to vary the position of the electrode plate relative to a xerographic plate for the production of tone and line copy,

and drive means to rotate the housing between an exposure position wherein a xerographic plate may be electrostatically charged by the charging apparatus and exposed to a light image of copy being reproduced, a first cascade position wherein developer material cascades from one developer pod, between the electrode plate and a xerographic plate, to the other developer pod thereby developing an image on a xerographic plate and a second cascade position wherein the developer material cascades from the developer pod back between the electrode plate and a xerographic plate to the other pod.

3,160,058
MICROFILM VIEWING APPARATUS
John Rutkus, Jr., Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 4, 1963, Ser. No. 249,445
3 Claims. (Cl. 88—24)



1. A microfilm viewer for use in an optical projector of a microfilm reproducing apparatus including

microfilm support means for holding microfilm in a light path of an optical projector,

a viewing screen for displaying a microfilm image,

a shaft mounted substantially perpendicular to the light path but not intersecting the light path,

a carriage slideably mounted on the shaft to be movable along the length thereof,

a mirror and lens supported on said carriage and intersecting the light path of the projector when the carriage is at a first end of the shaft,

said shaft being of sufficient length that the mirror and lens do not intersect the light path of the projector when the carriage is at a second end of the shaft,

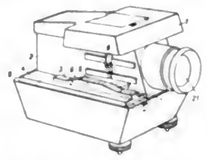
said mirror being positioned on the carriage to reflect a light image of the microfilm into an optical path terminating on said screen,

and a lever attached to said carriage to produce movement of the carriage along the shaft,

said lever engaging the microfilm support means so that movement of the carriage by the lever from said second end to the first end will produce movement of the microfilm support means to a position wherein microfilm in said support means will be centered in the light path of the optical projector.

3,160,059
MAGAZINE SLIDE PROJECTOR WITH LONGITUDINALLY MOVABLE GUIDE RAIL
Richard Weiss, Braunschweig, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany, a firm of Germany
Filed Mar. 13, 1962, Ser. No. 179,452
Claims priority, application Germany, Mar. 17, 1961, F 33,441
8 Claims. (Cl. 88—28)

1. A magazine slide projector of the type having a projector body with a slide receiving channel for holding a slide in projection position, and a guiding rail mounted on said body for guiding a magazine for longitudinal movement past said channel to bring successive slides in the magazine to positions opposite the channel, said guide rail remaining stationary relative to the projector body during movement of the magazine along the guide rail, characterized by the fact that said guide rail is mounted



for longitudinal movement along said body, so that it may be projected beyond said body at one end, to provide extra support for a magazine.

3,160,060
MISSILE TRANSPORTING AND LAUNCHING SYSTEM
Lorant Zsoka, Los Altos, and Walton E. Clauson, Sunnyvale, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 21, 1961, Ser. No. 161,056
7 Claims. (Cl. 89—1.7)



5. A container system for transporting and launching a missile comprising a flexible tight mesh fabric sleeve open at both ends adapted to contain such missile, said sleeve being constructed so that the warp and woof fibers thereof form angles of approximately 90 degrees to each other and approximately 45 degrees to the longitudinal axis of said sleeve when said sleeve is in a "relaxed" condition, and means operably connected to the portions of said sleeve surrounding the open ends thereof for longitudinally stretching said sleeve, thereby selectively causing it to tighten about said missile.

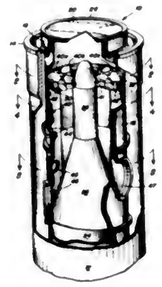
3,160,061
RE-ENTRY BODY SUPPORT
Tsoy K. Moy, Santa Clara, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 13, 1962, Ser. No. 237,411
1 Claim. (Cl. 89—1.7)

In a missile launching tube assembly having a missile contained therein for launching therefrom

substantially rigid missile positioning and shock isolating and absorbing members between the missile nose and the launching tube to position said missile and shield nose cone from excessive shock and vibration, said members being constructed of a crushable material of the character displaying high resistance to applied loads up to the point of permanent deformation thereof;

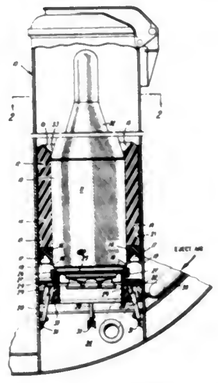
said members being formed with outer and inner arcuate surfaces, said outer arcuate surface being adjacent to and corresponding in configuration to said tube, said inner arcuate surface being adjacent to and corresponding in configuration to said nose cone, said members being formed with opposed central recesses separated by a narrow web; and

wedges insertable into said recesses, whereby in the event of misalignment said members may be bent



at said web by the insertion of said wedges into the recesses thereby causing said inner and outer arcuate surfaces to change their relative curvature and to fully mate with said nose cone and said tube, respectively.

3,160,062
FLEXIBLE FOAM SUPPORT
Tsoy K. Moy, Santa Clara, and George F. Mechlin, Saratoga, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 27, 1963, Ser. No. 268,507
3 Claims. (Cl. 89—1.7)



1. A system for isolating a missile from externally imposed environmental conditions including shock and vibration during handling and transportation comprising a cylindrical launching tube,

a missile centrally disposed and maintained in said launching tube,

said missile having a body portion terminating in a nose portion,

an annular resilient support disposed to fit about said missile in contact with said tube and extending substantially the full length of the body portion for providing transverse support for the missile against shock and vibrations,

said annular resilient support including a plurality of substantially elastically deformable segmental elements and a substantially frangible sleeve composed of a material having low friction characteristics dis-

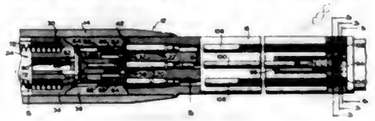
posed about the segmental elements and in freely slidable engagement with said launching tube,

a resilient ring carried by the tube, movable means on said resilient ring and releasably connected to said missile at the lower end thereof,

means connected to said movable means and to the tube and cooperating with said resilient ring for providing axial support for the missile against shocks and vibrations, and

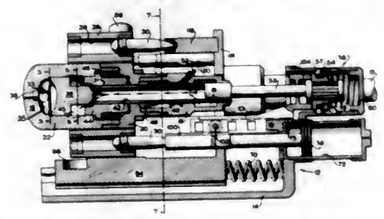
an elastic member carried at one end of said annular resilient member to provide a sealing connecting between the tube and the missile.

3,160,063
OPERATING MECHANISM FOR SALVO-TYPE GUNS
Robert F. Magardo, Springfield, and Donald C. Dadmun, Northampton, Mass., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 27, 1962, Ser. No. 247,772
9 Claims. (Cl. 89—127)
(Granted under Title 35, U.S. Code (1952), sec. 266)



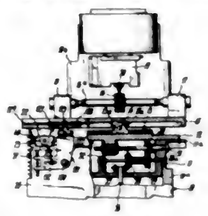
1. In a firearm, the combination including a barrel with a plurality of bores respectively chambered for receiving a cartridge for discharge, a receiver, a cartridge magazine mounted on said receiver, a bolt slidingly mounted in said receiver and adapted for transferring cartridges from said magazine into said bores during displacement to a battery position, means for releasably locking said bolt when in the battery position to said receiver, means for firing said cartridges serially in a salvo, and means for automatically unlocking said bolt from said receiver when the last one of the cartridges in said bores is discharged.

3,160,064
LIQUID PROPELLANT GUN
Charles R. Bell, Canoga Park, Calif., and Kenneth G. Johnson, Aurora, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 27, 1957, Ser. No. 661,983
2 Claims. (Cl. 89—155)



1. In combination with a pressurized supply of liquid propellant, an automatic gun including a receiver, a pair of barrels, a drum rotatably mounted in the receiver for simultaneously conveying projectiles to firing stations in alignment with said barrels, an actuator disposed in said receiver for longitudinal reciprocation during cyclic operation of said gun and cam means for converting the longitudinal reciprocation of said actuator to rotation of the drum, a firing device including a housing provided with an aperture including a cylindrical portion terminated by an end portion, a piston slidingly mounted in said cylindrical portion for reciprocation between a battery and a recoil position, a spring for biasing said piston to the battery position, a combustion chamber formed in said cylindrical portion between said end portion and said piston for the discharge of a metered quantity of said liquid propellant therein, said piston being disposed for actuation to the recoil position by the discharge, duct means for directing the gases from the discharge against the projectiles in the firing stations for the simultaneous propulsion thereof through said barrels, a stem portion extending from said piston along said aperture, a cylindrical seat mounted in said aperture and provided with an axial hole for slidingly receiving said stem portion, said seat being spaced from said piston when in the battery position to form a reservoir therebetween for metering a predetermined quantity of said propellant sufficient for the simultaneous propulsion of the projectiles through the barrels, said seat being engageable by said piston when in the recoil position to completely reduce said reservoir, a cylindrical compartment axially disposed in said stem portion, means for conducting propellant from the pressurized supply to said compartment, ducts extending through said stem portion from said compartment, grooves, channels and nozzles corresponding to said ducts provided respectively in said sleeve, housing and piston, a follower mounted to said stem portion for limited longitudinal movement relative thereto and rotational movement therewith, cam portions provided in the receiver for engaged cooperation with said follower for rotating said piston to align said ducts with said grooves during movement of said piston to the battery position by said spring for passage of said propellant from said compartment to fill said reservoir and to align said nozzles with said channels when said piston is in the battery position and for passing the metered quantity of said propellant from said reservoir to said combustion chamber during movement thereof to the recoil position, and means for discharging the propellant in said combustion chamber.

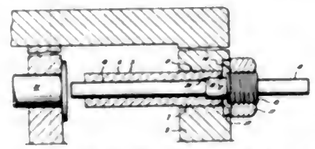
3,160,065
APPARATUS FOR CROWN SHAVING GEAR
Otto Rogg, Munich, Germany, assignor to Carl Hurth Maschinen- und Zahnradfabrik, Munich, Germany
Filed Apr. 12, 1963, Ser. No. 272,779
Claims priority, application Germany, Apr. 13, 1962, H 45,470
26 Claims. (Cl. 90—1.6)



23. In a gear finishing machine, a work table arranged to be tilted about a horizontal axis and to reciprocate between two end positions along an elongated path whose plane is parallel with said axis; and adjusting means for normally maintaining said work table in an untilted neutral position, said adjusting means including tilting means for tilting said work table in response to reciprocation of the work table along a predetermined portion of said path and only while said work table approaches said end positions.

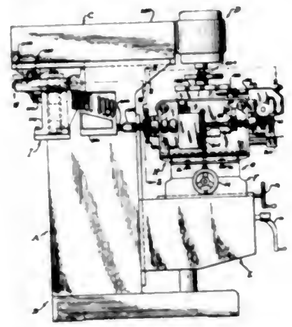
25. A process of crown shaving gears and similar workpieces, comprising the steps of bringing a rotary workpiece into mesh with rotary shaving tool so that the axis of the workpiece crosses in space the axis of the tool; reciprocating the workpiece along a path which is parallel with the axis thereof so that the workpiece moves between a pair of spaced end positions and is normally maintained in a neutral position at a constant distance from the shaving tool; tilting the workpiece in one direction about an axis which is perpendicular to the axis thereof in response to movement of the workpiece toward one of said end positions so that the distance between the workpiece and the tool changes; and tilting the workpiece in the opposite direction in response to movement of the workpiece toward the other end position to thereby change the distance between the workpiece and the tool whereby the tooth flanks of the workpiece are crown shaved only when the workpiece is tilted and the remainder of each tooth flank on the workpiece is substantially plano.

3,160,066
FACING TOOL
Clivy R. Phillips, Houston, Tex., assignor to Hudson Engineering Corporation, Houston, Tex.
Filed Aug. 3, 1961, Ser. No. 129,051
3 Claims. (Cl. 90—12)



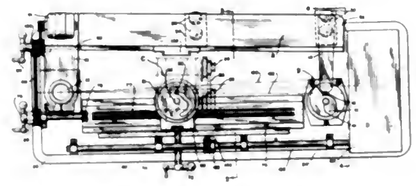
1. A tool for facing an annular surface around an aperture in a work piece comprising in combination a rigid tubular bearing, including a first section adjacent to one end of the bearing having external dimensions such as to fit tightly into an aperture in a work piece and a second elongate section having external dimensions such as to be freely insertable into the aperture; a shaft longitudinally movable in and rotatable in the bearing, said shaft having a driving shank outside said one end of the bearing; a surface facing member carried by the shaft between the bearing and shank adjacent to and facing said one end of the bearing; and opposing surfaces on the shaft and bearing limiting movement of the shaft into the bearing.

3,160,067
AUTOMATIC CAM CUTTING MACHINE
Earl F. Beezer, Paramus, N.J.
Continuation of application Ser. No. 771,775, Nov. 4, 1958. This application Aug. 3, 1961, Ser. No. 131,458
15 Claims. (Cl. 90—13.4)



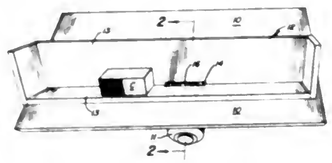
1. A machine for automatically cutting a cam without first making a master of said cam comprising, a cutting tool, a work table carriage, a rotary work table on said carriage, a control cam, pantograph means connected to at least one of said carriage and said cutting tool and having a portion maintained in engagement with said control cam and movable thereby, means for rotating said work table and for moving said control cam, and variable timing means connected to said control cam moving means and said table rotating means for variably controlling the rotation of said table in relation to movement of said control cam to effect cutting of rises and falls on said cam.

3,160,068
PROPORTIONING ON CAM CUTTING MACHINE
Earl F. Beezer, E 75 Hemlock Drive, Paramus, N.J.
Filed Nov. 21, 1962, Ser. No. 239,257
16 Claims. (Cl. 90—13.6)



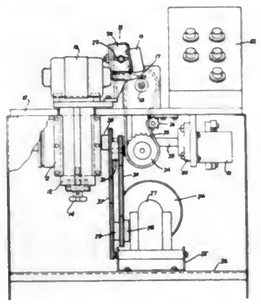
1. A cutting machine comprising a proportioning beam pivotally mounted at one end and having a follower at its opposite end, a master control cam member rotatably mounted adjacent said follower, a work piece blank supporting table including a rotatable portion, said table being shiftable in axial directions in respect to the proportioning beam, a cutter mounted on said supporting beam and shiftable along the length therewith to overlie said work piece supporting table, and means to rotate said control cam and said work table in definite and predetermined variable time sequence whereby said cutter and said beam move relatively to said work piece by an amount in proportion to the movement of said follower over said control cam.

3,160,069
DEVICE FOR ROUNDING THE CORNERS OF VARIOUS TYPES OF PAPER OR CARD STOCK
James E. Rogers, 4777 Amesbury Way, Columbus, Ohio
Filed Sept. 13, 1963, Ser. No. 308,770
4 Claims. (Cl. 90—15)



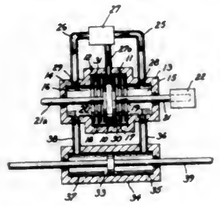
1. A device for rounding the corners of sheets of stock disposed in face-to-face contact comprising a holder for receiving and holding the stock, said holder having guide portions at an angle corresponding to the angle of the adjacent edges of the sheets of stock at the corner to be rounded for receiving said stock, a cutting member at the angle between the guide portions and extending into the holder within the angularly related guide portions, said cutter being movable in a plane intersecting the angle at its vertex and having a cutting edge which is curved transversely of said plane, said plane being perpendicular to the plane of the sheets of stock, and means for traversing the holder and cutter relatively.

3,160,070
MICA UNDERCUTTER
Floyd Lobash, Minneapolis, Melvin J. Straub, Hopkins, and Leonard J. Knutson, Minneapolis, Minn., assignors to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 25, 1962, Ser. No. 233,015
8 Claims. (Cl. 90—15.1)



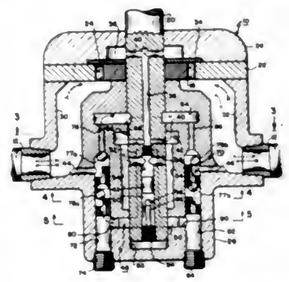
1. A commutator mica undercutting machine comprising: a frame, a commutator holding means rotatably supported on said frame, means for rotating said commutator holding means a releasable brake associated with said commutator holding means for stopping rotation, a clutch alternately operable with said brake for engaging said rotating means and said commutator holding means when said brake is released, a photoelectric unit responsive to changes in rate of light reflection secured to said frame above said commutator holding means, said photoelectric unit being canted with its top farther from a vertical projection of said commutator holding means than its bottom and its center line forming an angle of 10° with a vertical line, a relay controlled by said photoelectric unit, said relay controlling the application of said brake and release of said clutch, a cutting mechanism movably secured to said frame adjacent to said armature holding means, means secured to said cutting mechanism and said frame for moving said cutting means axially with respect to a supported commutator when said brake means is applied, switch means connected electrically into the photoelectric unit search signal circuit and a cam mechanically linked to said cutter moving means and operating said switch to render said photoelectric unit search signal circuit inoperative during a portion of each period of rotation of said commutator holding device.

3,160,071
COMBINATION SERVO VALVE AND CONTROL MEANS
Allen Kandelman, Sepulveda, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Sept. 11, 1961, Ser. No. 137,218
4 Claims. (Cl. 91—51)



1. A servo valve comprising a partition member located within a casing, separate means extending in opposite directions from said member to engage separate portions of said casing, each separate means having a flow area therethrough variable with the position of said member to provide a variable restriction to fluid flow, means for providing a constant fluid pressure, means for connecting each flow area to said pressure through orifice means, and means for applying the pressures upstream of said separate means to control means in order to position the control means.

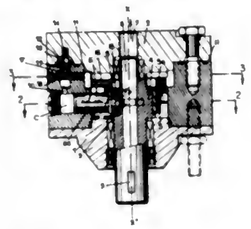
3,160,072
MOTOR WITH DELAYED PRESSURE LOADING
Robert J. Martin, Hutchinson, Kans., assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas
Filed Feb. 23, 1962, Ser. No. 175,205
12 Claims. (Cl. 91—87)



1. In a hydraulic system having a main fluid line which is adapted to be supplied with motive fluid under pressure and which includes a pressure loaded fluid motor, said motor comprising a housing, a rotor chamber therein through which the line fluid passes, and angularly turning shaft means comprising a motor output shaft, fluid driven rotor means rotatably supported by said shaft means in said chamber and effective to drive the motor output shaft, the improved construction comprising: a speed responsive, loading pressure control branch line having an end connection to said main fluid line, a sealing member connected with the main fluid line and disposed in said motor housing in a confronting position to said rotor means for urging by said loading pressure into forced sealing engagement with said rotor means, and motor speed responsive mechanism in said branch line effective to maintain a sub-sealing pressure against said sealing member during starting and slow speed rotation of said rotor means, and responsive to an increase in rotor speed to increase the loading pressure against said sealing member for effecting said sealing engagement.

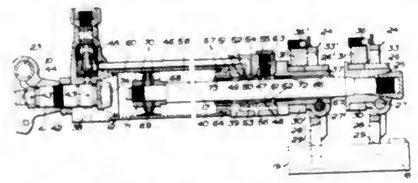
3,160,073
HYDRAULIC MOTOR
René Lucien, 56 Boulevard Maillot, Neuilly sur Seine, France, and Emile Tetart, Louvie Juzon, Basses Pyrenees, France
Filed Jan. 24, 1962, Ser. No. 168,384
Claims priority, application France, Feb. 3, 1961, 851,665, Patent 1,287,601; Nov. 20, 1961, 879,507
9 Claims. (Cl. 91—183)

1. A hydraulic motor comprising a rotatable shaft, a plurality of cylinders disposed radially around said shaft in a common plane, said shaft being provided with an axial bore, individual pistons supported in respective cylinders for reciprocating movement, each piston being provided with an axial bore therein in intermittent communication with the axial bore of said shaft, an eccentric supported on said shaft for rotation therewith, a polygonal member mounted on said eccentric and having separate faces in engagement with respective of said pistons to correlate reciprocal movement of the pistons with rotation of the shaft and eccentric, each cylinder having an admission orifice for the introduction of liquid under pressure, said orifices opening in a common plane, an admission valve for each orifice, said polygonal member having a cavity in each face, and means supported in



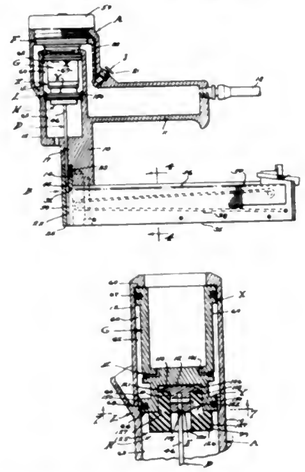
each of said cavities of said polygonal member and operatively associated with the admission valve corresponding to the particular face in which the cavity is provided, for undergoing displacement in the respective cavity in a direction approximately normal to the plane of the cylinders as the shaft rotates to open the corresponding admission valve in synchronization with the rotation of the shaft.

3,160,074
ROCK DRILL FEEDING DEVICES
Frans Gunnar Leander, Skelleftea, and Gunnar Herman Rosenblad, Stalon, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Apr. 11, 1961, Ser. No. 126,359
Claims priority, application Sweden Apr. 12, 1960
17 Claims. (Cl. 91—217)



1. In a rock drill feeding device for progressively feeding and retracting a rock drill slidably supported on an elongated support along which said rock drill is fed and retracted, the combination which comprises a fluid pressure cylinder having a piston reciprocally movable therein under the action of fluid pressure, means for connecting said cylinder to said rock drill for movement thereof along said support upon movement of said cylinder, a piston rod engaging said piston and extending through an end of said cylinder for axial movement with respect thereto upon movement of said piston therein, means for alternately supplying and exhausting pressure fluid at alternate sides of said piston in said cylinder effecting said reciprocal movement, locking means interconnecting the end of said piston rod outside said cylinder with said support and including a tiltable locking plate pivotally mounted at said end of said piston rod and slidably engaging said support, means on said tiltable locking plate and said support forming a frictional locking engagement therebetween when said locking plate is tilted, and control means at said end of said piston rod for selectively permitting and preventing tilting of said locking plate in either axial direction, said frictional locking engagement effecting a stationary abutment against which said fluid pressure moves said cylinder and said rock drill along said support.

3,160,075
CYLINDER AND SELF RETURN PISTON WITH LUBRICATION MEANS
Richard E. Powers, Monterey Park, Calif., assignor to Powers Wire Products Company, Inc., Monterey Park, Calif., a corporation of California
Filed June 22, 1962, Ser. No. 204,487
10 Claims. (Cl. 91—402)

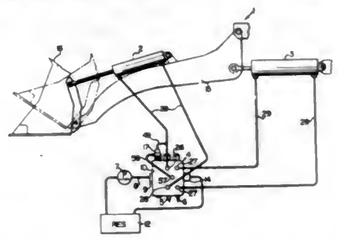


1. In a cylinder and piston motor of the character described:
(*a*) differentially sized bores and one continuing from the other,
(*b*) a piston having a head portion operable in each bore respectively and forming a chamber therebetween and with a cylinder chamber at the larger sized bore,
(*c*) said piston being movable in said bores and with its smaller head portion retractable from the smaller of said bores,
(*d*) means to charge and exhaust said cylinder chamber,
(*e*) exhaust means in the smaller bore,
(*f*) and valve means admitting fluid to flow from the cylinder chamber and into the chamber between said head portions of the piston, whereby the chamber between said portions is exhausted of fluid under pressure when the smaller head portion is retracted from the smaller bore and is rechargeable when the smaller head portion is re-entered into the smaller bore.

3,160,076
FLUID SYSTEM AND RELIEF VALVE ASSEMBLY THEREFOR
George J. Martin, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 14, 1961, Ser. No. 159,413
16 Claims. (Cl. 91—414)

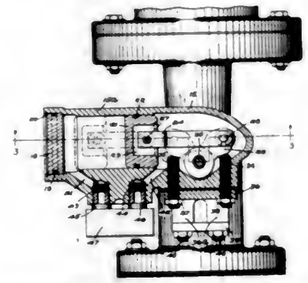
1. In combination, at least two directional control valves for controlling the actuation of corresponding fluid motors, each valve having an inlet port for fluid under pressure, a motor port for connection with the corresponding motor, and a movable valve member selectively operable to block and to open fluid communication between said inlet port and motor port; a relief valve having a relief port in fluid communication with one inlet port, and a pair of control ports respectively having fluid communication with one motor port and with the other inlet port; said relief valve comprising a movable relief

valve member, spring means biasing said relief valve member to a position closing said relief port, and a fluid pressure actuated member bearing on said spring means and exposed to fluid under pressure in said control ports



and movable thereby to change the spring bias on said relief valve member or to substantially cancel such change according to which one of said control ports is exposed to fluid under pressure.

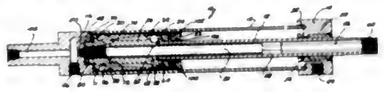
3,160,077
VALVE OPERATOR
Joaquim Ribeiro and Robert E. Tellier, Worcester, Mass., assignors to Jamesbury Corp., Worcester, Mass., a corporation of Massachusetts
Filed Jan. 3, 1963, Ser. No. 249,198
2 Claims. (Cl. 92—13)



1. An operator for a valve of the type having a rotatable stem by which the valve is controlled, comprising a housing enclosing a chamber, a piston reciprocably mounted in said chamber in substantially fluid-tight sealing engagement with said housing and dividing said chamber into two portions, means for selectively admitting fluid to either portion to reciprocate said piston, a shaft rotatably mounted in said housing and extending through one of said portions, said shaft having an end disposed outside said housing and adapted for connection to a valve stem, an arm secured to said shaft within said chamber and extending in a plane perpendicular to said shaft, a link connecting said arm to said piston, and a pair of studs adjustably threaded into said casing substantially parallel to each other, said studs extending into said chamber in the same direction, one on either side of said shaft in the plane of said arm and being engageable with said arm to limit its travel in either direction.

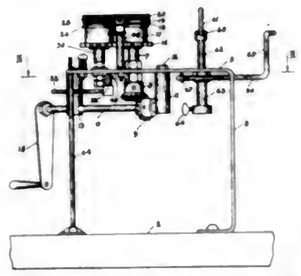
3,160,078
POWER CYLINDER
Marvin J. Hiemstra and Albert J. Vander Sloot, Grand Rapids, and Harry J. Johnson, Kalamazoo, Mich., assignors to Mechanical Power Corporation, Grandville, Mich., a corporation of Michigan
Filed Apr. 1, 1963, Ser. No. 269,664
12 Claims. (Cl. 92—14)

1. In a fluid cylinder having a housing, a shiftable piston and shaft assembly, and a central rod fixed in the housing, a locking nut having first surface portions responsive to fluid pressure in one end of said housing to shift over said rod under fluid pressure with the piston in one direction, and second surface portions responsive to reversing fluid pressure in the opposite end of said housing to shift in reverse direction; said nut having a fulcrum



point on said assembly on one side of said rod to cause said nut to tilt when said assembly stops, and having a grasping surface to engage said rod upon tilting; said nut, when tilted and engaged, preventing reverse movement of the shaft by mechanical force, whereby the piston and shaft assembly are reversed only when reverse fluid pressure is applied.

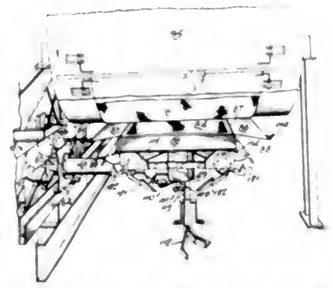
3,160,079
LAMP SHADE FORMING MACHINE
Samuel Z. Trachtenberg, 555 9th Ave., Munhall, Pa., and John L. Fox, McKeesport, Pa.; said Fox assignor to said Trachtenberg
Filed Oct. 21, 1963, Ser. No. 317,758
6 Claims. (Cl. 93—1)



1. A machine for taping a parchment shade to a lamp shade frame comprising a base, a deck elevated above the base and supported thereon, a shaft mounted on the deck passing vertically therethrough having a pinion at its lower end below the deck, a roll fixed to the upper end of the shaft elevated above the deck, a second shaft parallel with the first, a movable support for the second shaft, a roll on the second shaft parallel with the the first and also elevated above the deck, means for resiliently urging the said second shaft toward the first to maintain the rolls of the two shafts in contact, gears on the two shafts below the rolls which mesh with each other when the two rolls are in close working relation with each other, a cam and lever arrangement on the deck for moving said support to separate the rolls, the cam having an over-center position which engages the support for holding the rolls separated a predetermined distance, a horizontal shaft supported under the deck for rotation, said shaft having a gear that meshes with the pinion and having a hand crank at its other end rotatable in a plane clear of the deck and accessible at the side of the machine, one of said rolls having a knurled peripheral bank at the top, a peripheral groove immediately below the knurled band and a flange at the bottom of the groove projecting beyond the periphery of the knurled band, the other of said rolls having a knurled peripheral band confronting the corresponding band and the groove of the other and being undercut below its knurled band to provide clearance for the flange of the first roll, a frame-supporting bar over the deck forwardly of the two rolls, vertically adjustable means for selectively adjusting the bar from a level above the groove

in the first roll to a level below said groove whereby the vertical axis of a lamp frame resting thereon and engaged in the groove may be reversely inclined toward or away from the vertical axes of the rolls, a tape guide carried on the deck comprising a post with a transverse groove in the top at approximately the level of the groove in the first roller, said post being spaced to one side of the rolls toward which the frame and tape are moved by the rolls during operation of the machine and being rotatable about its own axis and movable in an arc substantially radial to the vertical line of contact between the two rolls when they are together, and means for releasably holding the post in an adjusted position relative to the rolls.

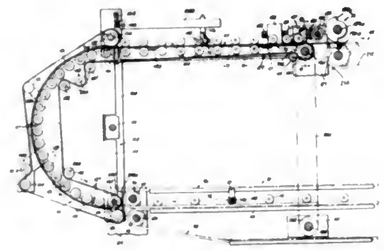
3,160,080
APPARATUS FOR MAKING BOX-TYPE PRODUCT
John Thomas Frydryk, Springfield, Mass., assignor, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed June 27, 1962, Ser. No. 205,684
11 Claims. (Cl. 93—44)



6. Apparatus suitable for making a product such as a crib sheet having a base panel of sheet material with marginal side and end panels folded up from the base panel and joined together into a box corner where the folded up side and end panels meet, said apparatus comprising a frame presenting a flat top, flaps hinged at one edge to the peripheral edge of the frame at said top to facilitate movement of the flaps between a raised and a lowered position with respect to said top, a conveyor for the frame including a post fixed perpendicular to the flat top of the frame and about whose longitudinal axis the frame is rotatable and an arm supporting said post, means for moving said arm in a closed path to transport the frame from one location to another, devices operable as said frame is conveyed from one location to another to rotate said frame about the longitudinal axis of the post on which it is fixed, sheet material holding arms carried by the frame having an active position holding the sheet material against the flaps when the flaps are in lowered position and an inactive position permitting movement of the flaps to raised position, and mechanisms operable as the frame is conveyed from one position to another to raise and lower said flaps, and, as the frame is rotated, to render the sheet material holding arms active and inactive.

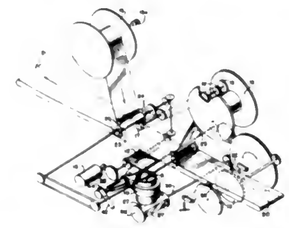
3,160,081
HIGH SPEED ROTARY MACHINES
Abraham Novick, Flushing, N.Y., assignor to F. L. Smithe Machine Company, Inc., New York, N.Y., a corporation of New York
Original application Feb. 17, 1959, Ser. No. 795,889, now Patent No. 3,122,233, dated Feb. 25, 1964. Divided and this application Jan. 25, 1963, Ser. No. 257,356
13 Claims. (Cl. 93—62)

1. In an envelope making machine, the combination of rotary individualizing means for delivering envelope blanks to a subsequent flap folding apparatus, means for continuously feeding a band of lapped envelope blanks along an extended path in timed positional relation to said rotary individualizing means, and means to adjust the



position of the delivery end of said feeding means and the envelope blanks traveling thereon relative to said individualizing means for compensating for deviations of the blanks from their desired timed positional relationship relative to said individualizing means.

3,160,082
PANORAMIC AERIAL CAMERA
Gordon Lysle, Greenlawn, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,693
5 Claims. (Cl. 95—12.5)

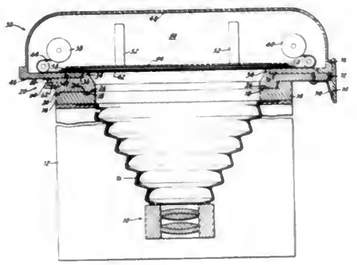


1. A panoramic aerial camera comprising:
(*a*) a lens holder including a lens;
(*b*) a film transport for intermittently moving film in the focal plane of the lens and including a friction roller having an active perimeter substantially equal to the length of a frame of film;
(*c*) a continuously rotatable optical scanner adapted to be disposed ahead of said lens for scanning the scene to be photographed;
(*d*) and an image-motion compensating mechanism including means for sinusoidally oscillating said lens holder substantially parallel to the axis of rotation of said scanner.

3,160,083
ADAPTER KIT FOR CAMERAS
Ewald W. Neumeister, 206 Foxhurst Road, Oceanside, Long Island, N.Y.
Filed Sept. 12, 1962, Ser. No. 223,158
2 Claims. (Cl. 95—34)

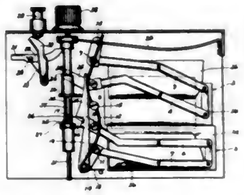
1. An adapter kit to be fitted between the back of a camera and a roll film magazine, comprising a member having an image area which is narrower than the image area of the camera, the image area of said member being

laterally enlarged rearwardly of the member whereby it is wider than the image area of the camera, and means



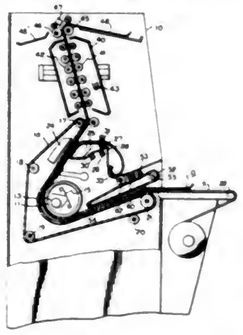
for detachably connecting said kit to the rear of the camera and to the front of a roll film magazine.

3,160,084
SHUTTER MECHANISM
Kunju Chatani, 136 Midorigaoka-cho, Uchide, Ashiya, Japan
Filed Apr. 17, 1962, Ser. No. 188,029
2 Claims. (Cl. 95—57)



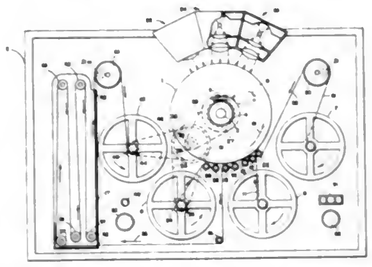
1. In a photographic camera, focal plane shutter mechanism for effecting an exposure through a picture window formed in the frame of said camera, comprising: first and second blade groups each consisting of a main and a subsidiary blade, each of said main and subsidiary blades carried by respective driving levers pivoted on said frame at one side of said picture window, whereby upon movement of said levers for an exposure said blade groups travel linearly across said picture window in the transverse direction to the length thereof; first spring means of substantially S-shape secured at its center to said frame at said one side thereof and having its opposite free ends bearing against said main blade driving levers respectively; a guide shaft mounted on said frame at said one side thereof and extending in the direction of movement of said blade groups; a shaft co-axially surrounding said guide shaft and movable axially thereof; second spring means biasing said movable shaft to a released position; said movable shaft also having a pair of shoulders positioned thereon in spaced relationship, said shoulders simultaneously engaging said subsidiary blade driving levers respectively to set said blade groups in a charged-up position against the force of said wire springs; an arresting lever engageable with said subsidiary blade driving lever of said second blade group when said blade group is in the charged-up position; holding means for holding said axially movable shaft in the charged-up position against the force of said second wire spring; and means for releasing said holding means thereby releasing said movable shaft from said charged-up position whereby said shoulders disengage from said subisidiary blade driving levers causing said subsidiary blade driving lever of said first blade group to drive said first blade group across said picture window and thereafter said movable shaft engages said arresting lever to disengage said arresting lever from said subsidiary blade driving lever of the second blade group causing said subsidiary blade driving lever to drive said second blade group across said picture window following said first blade group.

3,160,085
DIAZOTYPE PRINTING AND DEVELOPING APPARATUS INCLUDING AUTOMATIC PAPER REROLL
Emilio G. Mastroianni, Endicott, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 11, 1961, Ser. No. 158,282
2 Claims. (Cl. 95—75)



1. In a photoprinting apparatus utilizing infeed conveyor belts for transporting an original sheet material in contact with a sensitized sheet material for exposure, and having means for separating said original from said sensitized material after exposure, the improvement which comprises; an original receiving tray having a curved endwall, outfeed roller means for transporting said original sheet into said tray, said wall imparting an initial curvature to said sheet, and reroll roller means engaging said original in said tray, said reroll means being driven in the direction for constraining said original to follow the curvature of said wall and thereby roll up in said tray.

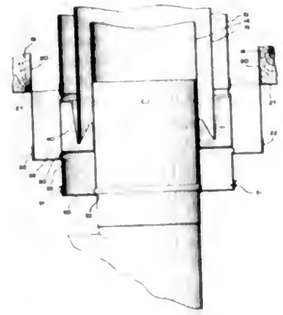
3,160,086
APPARATUS FOR DUPLICATING REELABLE FILM
Ronald N. Davis, 18182 Bigelow Park Drive, Tustin, Calif.
Filed Nov. 27, 1961, Ser. No. 155,085
10 Claims. (Cl. 95—77.5)



1. In a machine for the duplication of film that may be reeled, a combination including: a panel; a rotatable printing drum secured to a first shaft passing through said panel; means for rotating said first shaft, said means located on the opposite side of said panel from said drum; a first rotation-resisting reel for supplying duplicating film to the periphery of said drum; a first idler guide roller

operatively interposed between said printing drum and a developing chamber, said roller so positioned that said film, after having traversed a portion of said printing drum, will extend partially around said roller and change its direction of travel en route to said chamber; a second rotation-resisting reel for supplying original film; means for so guiding said original film as it approaches said drum that it will be superimposed over the duplicating film thereon; a wind-up reel for receiving said original film from said printing drum, said wind-up reel secured to a second shaft passing through said panel; and instrumentalities for yieldingly rotating said second shaft at such speed that it will place constant tension on the film being wound up, said instrumentalities located on the opposite side of said panel from said wind-up reel.

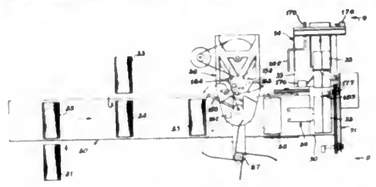
3,160,087
PREFABRICATED CHIMNEY
John H. C. Davidson, St. George, Ontario, Canada, assignor to Selkirk Metal Products (1964) Ltd., Ontario, Canada
Filed May 11, 1962, Ser. No. 194,099
2 Claims. (Cl. 98—46)



1. A chimney comprising an external casing having a tubular wall, a fire tube having a tubular wall of smaller diameter than said external casing, an interliner having a tubular wall of a diameter greater than said fire tube and smaller than said tubular wall of said external casing, first support means adapted to grip said external casing and connect with a mounting structure to mount said chimney in an operative position in use, second support means adapted to be carried by said external casing for releasably supporting said fire tube from falling due to gravity within said external casing, third support means for supporting said interliner in said casing in spaced relation to said external casing and said fire tube, and spacing means for maintaining the external casing, fire tube and interliner in spaced relation with their tubular walls in substantially concentric spaced relation to form air paths when said chimney is in an operative position.

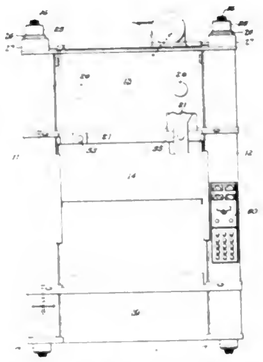
3,160,088
APPARATUS FOR TYING MOVING BUNDLES
Benjamin H. Bunn, Chicago, Ill., assignor to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Filed May 6, 1963, Ser. No. 278,031
5 Claims. (Cl. 100—7)

1. Apparatus for tying envelopes or the like into bundles, said apparatus comprising a continuously moving substantially horizontal conveyor, means on the conveyor and movable therewith for supporting a bundle independently of other bundles on the conveyor in such manner that the planes of the envelopes are at right angles to the direction of movement of the conveyor, said envelopes having an upper portion which projects above said supporting means, and means adjacent said conveyor for



tying and knotting a reach of twine around said bundle in a horizontal plane while said bundle is supported on the moving conveyor.

3,160,089
OVERLOAD RELIEF SYSTEM FOR POWER PRESSES
Leiv S. Platou, Snyder, N.Y., assignor to Niagara Machine & Tool Works, Buffalo, N.Y.
Filed Apr. 9, 1964, Ser. No. 358,474
12 Claims. (Cl. 100—214)

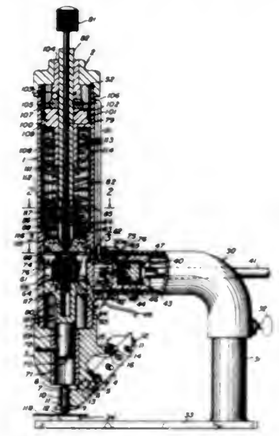


1. In a power press subject to varying stress incident to working strokes thereof, frame means, a hydraulic piston and cylinder each engaging a portion of said frame means whereby said stress produces a force tending to move said piston relative to said cylinder, means for maintaining a hydraulic pressure in said cylinder normally preventing such movement, an electrical strain gage applied to a stress member of said press and adapted to put forth an electrical signal proportionate to stress in said member, a fluid discharge passage from said cylinder and a valve therein normally closed against fluid egress from said cylinder, and solenoid means operable to open said valve when said strain gage signal exceeds a predetermined magnitude.

3,160,090
STAMPING DEVICE
Arthur Diegel, 10909 University Ave., Edmonton, Alberta, Canada
Filed Mar. 1, 1962, Ser. No. 176,671
5 Claims. (Cl. 101—18)

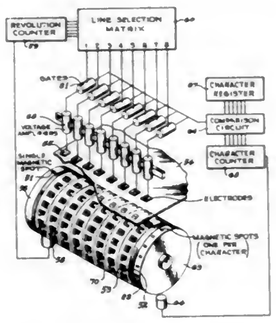
1. A character-imprinting device comprising a frame, a cylindrical casing mounted on the frame and closed at one end, a percussive member reciprocally suspended within the casing at the end thereof remote from said closed end, pivotal members mounted on the percussive member and adapted to releasably engage the wall of the casing, a first shaft concentrically mounted within the casing and adapted to coact with said pivotal members, a second shaft concentrically mounted on said first shaft and se-

cured to said percussive member, said first and second shaft being slidable in said closed end of the casing, a piston cooperating with the walls of the casing adjacent said closed end to define a pressure member, said piston being slidable on said second shaft, means on said first shaft adapted to cooperate with said piston whereby when said piston is moved in the direction of the percussive member said means will be engaged and thereby effect the



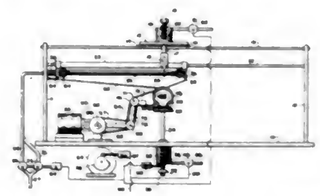
release of said pivotal members from engagement with the wall of the casing, spring means adapted to tension said percussive member prior to release of said pivotal members from said wall, means to supply air under compression to said pressure chamber, and a character carrying magazine associated with the casing, the characters in the magazine being selective and alignable with the percussion mechanism.

3,160,091
HIGH SPEED XEROPRINTER AND METHOD THEREFOR
Frederick A. Schwertz, Pittsford, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 14, 1959, Ser. No. 813,196
3 Claims. (Cl. 101—92)



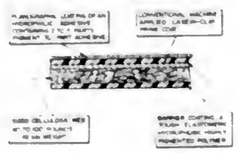
1. Apparatus for converting an information bearing input electric signal into a visible recorded image comprising a rotary character drum having a bank of like character rings thereon, each ring containing a series of electrically insulating character-shaped elements in a circumferential arrangement, the respective characters in the series being representative of different values of incoming information, means for depositing a layer of electrostatically charged marking particles on said character-shaped elements by electrostatic attraction, means to rotate said drum at a constant angular velocity, a web of insulating material having an image-receiving surface in close proximity to said drum, means to advance said web tangentially relative to said drum by a distance equivalent to the dimension of said characters while said drum makes at least one complete rotation, an array of fixed electrodes, one of each disposed adjacent said web at positions corresponding to one of said rings, means sensing the relative position of said image-receiving surface and the position of said character-shaped elements, comparison means for comparing the input electrical signal with the relative position of said image-receiving surface and the character-shaped elements, means responsive to said comparison means to produce a high voltage pulse at a time coincident with the angular alignment of a preselected one of said character elements and its corresponding electrode, and means to feed said high voltage pulse to the one of said fixed electrodes corresponding to said preselected character to momentarily overcome said electrostatic attraction and thereby transfer marking particles from said selected characters to said web forming thereon a visible image in accordance with said input information.

3,160,092
APPARATUS FOR PRINTING ON CYLINDRICAL CONTAINERS
Carl Eisen, 157 W. 21st St., New York, N.Y.
Continuation of application Ser. No. 273,759, Apr. 17, 1963. This application Jan. 20, 1964, Ser. No. 340,592
2 Claims. (Cl. 101—124)



1. In a silk screening apparatus for printing on the outer surface of a cylindrical container having a bottom portion containing a locating indentation; a slide member mounted to move laterally; a silk screen fixed to said slide member; means moving said slide member and said silk screen laterally; a silk screen squeegee mounted over said silk screen, means urging said silk screen squeegee against said silk screen when said silk screen moves laterally; an elevating table disposed below said silk screen; a container holding and locating chuck mounted on said elevating table, said container holding and locating chuck comprising a horizontal shaft rotatably mounted above said elevating table, hook means fixed to the forward end of said shaft, spring means urging said hook means forward, and an outer portion rotatably mounted about the forward end of said shaft, said outer portion having a rim and containing a central cavity within said rim within which said hook means fixed to the forward end of said shaft is disposed; means rotating said outer portion comprising a motor mounted beside said elevating table, a second shaft driven by said motor, said second shaft being parallel to said shaft of said container holding and locating chuck, a first sprocket mounted on said second shaft, a first link pivotally mounted about said second shaft, a third shaft rotatably mounted at the end of said first link, a second sprocket mounted on said third shaft, a first chain extending about said first and second sprockets so that said second shaft drives said third shaft, a second link piovtally mounted about said third shaft, a lateral projection from said elevating table, a fourth shaft rotatably mounted in said projection, the end of said second link being pivotally secured about said fourth shaft, a third sprocket mounted on said third shaft, a fourth sprocket mounted on said fourth shaft, a second chain disposed about said third and fourth sprockets so that said third shaft drives said fourth shaft, a fifth sprocket mounted on said fourth shaft, a drive sprocket fixed to said outer portion, and a third chain extending about said fifth sprocket and said drive sprocket rotating said drive sprocket, said first and second links pivoting as said elevating table moves upward and downward and said motor drives said outer portion; a drum fixed to the rearmost end of said shaft; a wire extending from said slide member about said drum, said drum being of substantially the same diameter as the container being silk screened; means mounted in front of said container holding and locating chuck urging a container against said outer portion to be rotated by contact with said outer portion until said hook means engages the positioning indentation in the bottom portion of the container preventing rotation of the container; and means raising said elevating table to hold a container against said silk screen beneath said silk screen squeegee before said means moving said slide member laterally moves said slide member, lateral motion of said slide member drawing said wire from about said drum rotating said drum, said shaft of said container holding and locating chuck, and thereby said hook means to rotate a container with the same surface speed as the linear velocity of said silk screen.

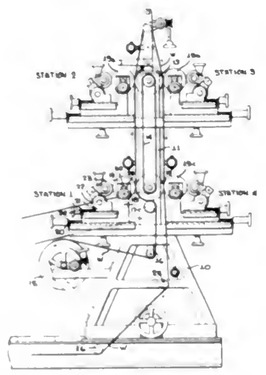
3,160,093
PLANOGRAPHIC PRINTING PLATE RECEPTIVE TO CARBON RIBBON IMAGING
Russell T. McCrum, South Portland, Alfred E. Belisle, Westbrook, and Raymond L. Oransky, Portland, Maine, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Filed Nov. 5, 1962, Ser. No. 235,480
4 Claims. (Cl. 101—149.2)



1. A process for preparing a flexible lithographic printing plate for encoding checks with magnetic inks for MICR processing, comprising: forming a sized cellulosic paper web machine-coated on one side and having a ream weight in the range of 40 to 100 pounds and a Cobb water absorption value on the coated side in the range of 0.22 to 0.45 (100 square centimeters, 30 seconds); applying a barrier coating to both sides thereof in an amount in the range of 5 to 10 pounds (dry weight) per side per ream of a heat-curable pigmented latex comprising a hydrophobic acrylic elastomer, a minor amount thereon of a reactive amine-formaldehyde resin and a paper-coating grade mineral pigment, the weight ratio of pigment to elastomer plus resin in said latex being in the range of 0.5 to 5 and the Cobb water absorption (100 square centimeters, 120 seconds) after drying and before curing being greater than 0.25 and after curing being less than 0.15; drying and calendering said coating; applying a top planographic coating directly on said barrier coating on the machine-coated side in an amount in the range of 5 to 8 pounds (dry weight) per ream, said top planographic coating comprising a slurry of an oil absorptive paper-coating-grade mineral pigment and a hydrophilic colloidal polyvinyl alcohol adhesive that dries to a water insoluble coating having a tensile strength of at least 7500 p.s.i. and an elongation of at least 260% measured as an 8 mil film, the weight ratio of pigment of adhesive being in the range 2/1 to 5/1; rapidly drying said top planographic coating in less than 1 minute at a drying gas temperature greater than 300° F.; curing the coated sheet at a temperature of at least 400° F., and thereafter calendering the same, said lithographic printing plate having an Indenture Test value in the range of 0.2 to 0.8 of a mil.

2. A lithographic printing plate produced by the process of claim 1.

3,160,094
METHOD OF ROUGH REGISTRATION FOR REPRINTING ON A FLEXOGRAPHIC PRINTING PRESS
Lawrence H. Bean, 225 Mount Hope St., North Attleboro, Mass.
Filed Apr. 19, 1963, Ser. No. 274,101
2 Claims. (Cl. 101—181)



1. A method of rough registration of a set of printing cylinders for repeated runs on a multicolor, multistation, continuous web printing press having separate plate cylinders for each station which are capable of being released for free rotation in their bearings, comprising

(*a*) marking a longitudinal prime line on each of said plate cylinders,

(*b*) making an initial mounting of the plates on successive plate cylinders in a fixed, standard position relative to said prime line,

(*c*) establishing a reference line on an end surface of each of said plate cylinders,

(*d*) bringing said plates by a trial and error method into an initial peripheral registration at each station by free rotation of each plate cylinder about its longitudinal axis,

(*e*) measuring the angle of said reference line of each of said plate cylinders relative to a gravitational horizontal and recording said angle for each station,

(*f*) remounting said plates on said plate cylinders at the time of a reprinting in the same fixed position relative to said prime line as in the initial mounting, and

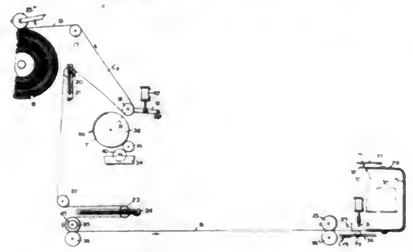
(*g*) rotating freely each of said plate cylinders until the reference line on said cylinder is at the angular position relative to said gravitational horizontal previously recorded for the particular station thereby achieving immediate total rough registration of the set of printing plates.

3,160,095

WEB PRINTING AND CUTTING APPARATUS DELIVERING A SUCCESSION OF IDENTICAL SHEETS

William J. Luby, New York, N.Y., assignor to Dale Marking Equipment Co., Inc., New York, N.Y., a corporation of New York

Filed Aug. 30, 1963, Ser. No. 305,675
8 Claims. (Cl. 101—227)



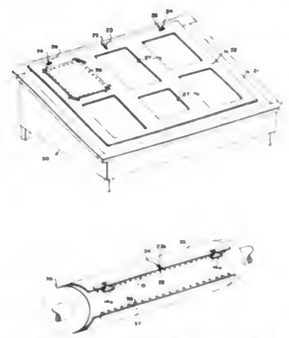
5. In an apparatus for successively printing equi-spaced areas along a continuous web and for successively cutting off equal lengths from the leading edge of the web so that identical sheets are successively supplied on each of which a printed area is at a predetermined distance from the leading edge of the sheet cut off, the combination of a frame, a plurality of rollers to guide the web journalled on the frame, a printing roller rotatably mounted on the frame, a rotatably mounted pressing roller positioned normally spaced from and opposite to the printing roller, said pressing roller being movable on the frame from a normal rest position towards the printing roller to have the web in contact with both said printing and pressing rollers for effecting an impression by the printing roller on the web and then after such impression is made, is adapted to be moved back to its normal rest position, web cutting means fixed on the frame, including a movably mounted cutting blade normally in a rest position away from the path of the web, a normally open switch fixed on the frame, having an operating element to be met by the leading edge of the web, which element when shifted will cause said switch to assume closed condition, means for holding a continuous web which is to be threaded on said guide rollers and to extend between said printing and pressing rollers and thence to extend past the cutting blade and directed towards said operating element so that upon movement of the blade towards the web, said web will be cut across its entire width, means to feed the web so that its leading edge shall intercept and move said operating element to bring said switch into closed condition, a powered shaft adapted to drive said web feeding means, an electrically-operable normally-closed clutch interposed in said shaft whereby when actuated, said clutch will assume open condition whereby said web feeding means will be halted, electrically-operable means adapted to control the movement of the blade, electrically-operable means adapted to control the movement of said pressing roller and a circuit including electrically actuated timing means arranged to operate said clutch and said plurality of electrically-operable means in a predetermined timed relation so that said clutch is operated to open while the cutting blade crosses the path of the web and so that the pressing roller presses the web against the printing roller while the web feeding means is operated for them to engage the web and be driven by said web to make an impression thereon; said switch being interposed in said circuit so that upon the closing of said switch, said circuit is made operative; the distance along the path of the web from the plane of the blade when said blade touches the path of the web, to said operating element of the switch, being the length of said sheet; the distance along the path of the web between said plane of the blade to where on the web the leading edge of the area to be printed next will be, being the length of said sheet multiplied by a whole number, plus said predetermined distance.

3,160,096

PLATE PRE-REGISTER METHOD

Robert K. Norton, Twinsburg, Ohio, assignor to Harris-Intertype Corporation, a corporation of Delaware

Continuation of application Ser. No. 660,688, May 21, 1957. This application Dec. 19, 1962, Ser. No. 245,834
2 Claims. (Cl. 101—401.1)



1. A method of preparing a plurality of thin, flexible, rectangular light-sensitive printing plates of substantially uniform thickness for use in printing multiple impressions on a printing machine, which comprises the steps of:

(*a*) punching a plurality of spaced registering holes in each plate in corresponding predetermined positions relative to one edge of each plate,

(*b*) punching registering holes corresponding to the plate registering holes in and along an edge of each of a plurality of thin, flexible film carrier sheets,

(*c*) providing cut-outs in a first one of said sheets in areas selected according to one color of a final desired print, said cut-outs being in predetermined positions relative to the registering holes in said first sheet,

(*d*) providing cut-outs in each of said other sheets corresponding to those in the first sheet,

(*e*) mounting film pieces with images thereon for said one color over the cut-outs of said first sheet,

(*f*) registering each of said other sheets with said first sheet by means of pins accurately fitting the registering holes of the carrier sheets and visually registering and mounting film pieces for other colors over the cut-outs of each other sheet while so registered over the first sheet,

(*g*) superimposing each carrier sheet with its film pieces on a light sensitive side of one of said printing plates and registering said plate and carrier sheet by means of portable registering pins having a length slightly greater than the combined thickness of a carrier sheet and plate and closely and accurately fitting the holes of each mating carrier sheet and plate in order to form a combined portable assembly,

(*h*) compressing each entire combined assembly of pins, carrier sheet and plate one assembly at a time between two substantially flat surfaces at least that one which is adjacent the carrier sheet being rigid and transparent, whereby said film carrier sheet and plate are snugly pressed together and said carrier sheet is snugly pressed against said transparent surface,

(*i*) exposing the film images onto the sensitive side of each plate in turn by means of light passing through the transparent surface,

(*j*) removing and disassembling said assembly,

(*k*) treating each exposed plate to render it capable of producing printing on imprint-receiving material,

(*l*) positioning each treated plate on a cylinder of a printing machine by aligning said one edge thereof against abutments having predetermined locations on said cylinder, and

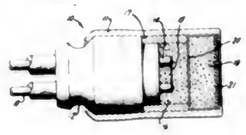
(*m*) fastening each plate to its cylinder while so aligned.

3,160,097

MOLYBDENUM TRIOXIDE - ALUMINUM EXPLOSIVE AND EXPLODING BRIDGEWIRE DETONATOR THEREFOR

William H. Colburn, Jr., Irvington, Michael A. Picciano, Menlo Park, and Theodore C. Parker, Sunnyvale, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed July 17, 1961, Ser. No. 124,568
2 Claims. (Cl. 102—28)



1. A composition of matter consisting essentially of (1) molybdenum trioxide and (2) aluminum, said molybdenum trioxide and aluminum being in finely divided form and in intimate admixture, and being present in proportions of about one quarter to about three quarters of a mol of molybdenum trioxide per mol of aluminum.

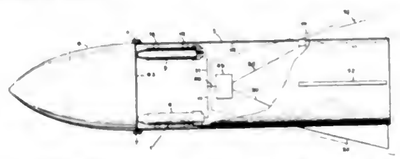
2. An explosive device of the character described comprising a housing; a pair of terminals therein; a bridge of the exploding bridgewire type connecting said terminals; a first body of explosive in contact with said bridge and adapted to be initiated by a pulse of electrical energy delivered to said bridge as a short pulse at a high voltage and with a short rise time whereby the bridge is vaporized and exploded and releases thermal and kinetic energy sufficient to initiate a charge of PETN; and a second body of explosive in sufficiently close proximity to said first body of explosive to be initiated by said first body but not in contact with said bridge, said second body of explosive consisting essentially of (1) molybdenum trioxide and (2) aluminum, said molybdenum trioxide and aluminum being in finely divided form and in intimate admixture and being present in proportions of about one quarter to three quarters of a mol of molybdenum trioxide per mol of aluminum.

3,160,098

MISSILE SEPARATION SYSTEM

William A. Schulze and Gustav A. Kroll, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 5, 1962, Ser. No. 235,584
3 Claims. (Cl. 102—49)
(Granted under Title 35, U.S. Code (1952), sec. 266)



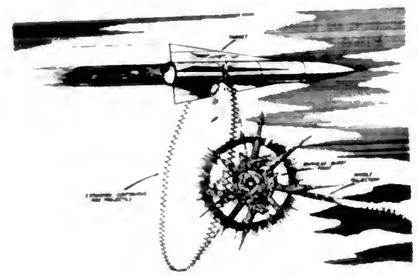
1. A separation system for a missile having first and second sections connected by explosive bolts, said missile also having a source of fluid pressure for an attitude control system, said separation system comprising: fluid actuated means including a plurality of expulsion units disposed in spaced relationship on the periphery of one of said sections for biased relationship of said sections; and means coupling said fluid actuated means to the pressure source for said attitude control system for continuous biased relationship of the sections.

3,160,099

WARHEAD PROJECTILE

Eugene L. Nooker, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 28, 1961, Ser. No. 106,424
6 Claims. (Cl. 102—67)



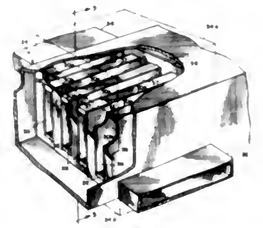
1. In a warhead projectile including a plurality of rods, said rods being arranged in layers, corresponding end portions of the rods of one layer being juxtaposed with respect to corresponding end portions of the rods of another layer, a hinge weld for rigidly connecting said juxtaposed end portions, including a primary weld region at the end portions of the rods wherein substantially complete fusion exists between the material of the juxtaposed rod portions, and a secondary weld region of relatively less strength than said primary weld region, said secondary weld region being positioned longitudinally inwardly of said primary weld region and away from the outer ends of the rods, said hinge weld being confined entirely between the end portions of the rods.

3,160,100

ELECTROMAGNETIC ELECTROLYTE PUMP

Heinz F. Poppendiek, 8686 Dunaway Drive, La Jolla, Calif.

Filed Nov. 20, 1961, Ser. No. 153,316
3 Claims. (Cl. 103—1)



1. In combination with means for producing a magnetic field, a plurality of fluid-conducting channels of substantially rectangular cross section, each of said channels comprising a pair of electrically conductive side walls and a pair of insulative top and bottom walls, said side walls having a greater dimension than said other walls and being positioned parallel to said magnetic field;

means for applying a voltage between said pairs of side walls, whereby an electric current flows through the fluid in each said channel across the smaller

dimension of said channel and transverse to said magnetic field;

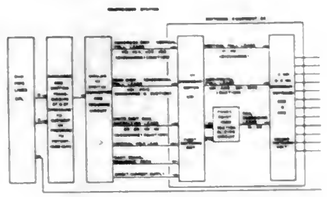
a plurality of coolant passageways, certain of said passageways being positioned between adjacent said channels, said sidewalls of said channels defining the sidewalls of said passageways; and

means, comprising inlet and outlet ducts, for causing said coolant to flow through said passageways.

3,160,101
AUTOMATIC SELECTIVE CONTROL OF PUMPING ENGINES

Carl J. Bartoseski and Robert E. Pickett, Galion, Ohio, assignors to North Electric Company, Galion, Ohio, a corporation of Ohio

Filed Feb. 15, 1962, Ser. No. 174,363
3 Claims. (Cl. 103—11)



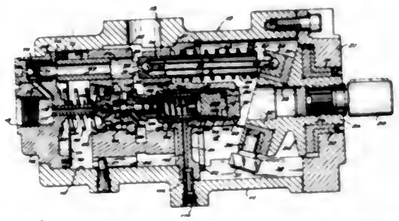
1. In a pump control arrangement for controlling the operating condition of a plurality of engines which operate pump means for a system in accordance with the value of the suction and discharge pressures in the system, variable predetermined engine operating conditions being provided for various values of suction and discharge pressure, the improvement comprising input means having transducer means operative to provide analog signals representative of suction and discharge pressures in the system, analog to digital converter means connected to said input means operative to provide digital signals representative of the suction and discharge pressures in the system, means responsive to said digital signals to provide a suction range signal representing a predetermined range including the suction pressure represented by said digital signals, and a discharge range signal representing a predetermined range including the discharge pressure represented by said digital signals, and means responsive to said suction range signal and said discharge range signal to operate said engines in the preassigned conditions for said suction and discharge pressures.

3,160,102
VARIABLE VOLUME PUMP

Tadeusz Budzich, Shaker Heights, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 28, 1962, Ser. No. 226,888
15 Claims. (Cl. 103—37)

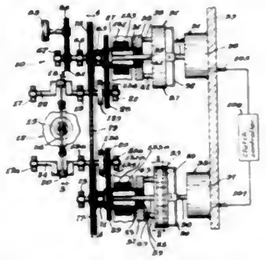
1. In a variable displacement pump having an inlet connected to a reservoir, an outlet and displacement control means operable by a fluid motor to vary the effective output displacement of the pump, a flow responsive control comprising an orifice connected to said outlet, an upstream line connected to said outlet at the upstream side of said orifice, a downstream line connected to said outlet at the downstream side of said orifice, and a control valve connected to said upstream and said downstream lines, to said reservoir and to said fluid motor, said control valve including a movable valve member adapted to selectively connect said fluid motor to said pump outlet and to said reservoir, first piston means biasing said valve member in one direction responsive to the pressure differential across said orifice, and second piston means biasing said valve member in opposition to said first piston means responsive to fluid pressure in said fluid motor, said first piston means having a greater effective area than that of said second piston means.



3,160,103
VARIABLE OUTPUT PUMPING MEANS

Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 29, 1963, Ser. No. 298,010
6 Claims. (Cl. 103—38)

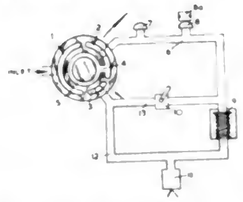


1. A portable pumping unit comprising in combination a prime mover and a variable displacement pump, said pump comprising a frame, a cylinder and piston reciprocal therein, a crosshead, means for mechanically coupling the piston to the crosshead to reciprocate the piston with reciprocation of the crosshead, a walking beam having a central part and two end parts, said walking beam being pivotally coupled to said central part of said crosshead, a pair of crankshafts, each of said crankshafts having at least one throw, a pair of connecting rods, one of said connecting rods being pivotally coupled to one end part of said walking beam and to a throw on one of said pair of crankshafts, the other connecting rod being pivotally coupled to the other end of the walking beam and to a throw on said other crankshaft, a pair of planetary gear assemblies each comprising a sun gear, at least one planetary gear and a ring gear, said planetary gear being coupled to a rotatable planet carrier element, one of said crankshafts being operatively coupled to the planet carrier element of one of said planetary gear assemblies, the other of said pair of crankshafts being operatively coupled to the planet carrier element gear of the other of the planetary assemblies, a pair of drive shafts, means for coupling said prime mover to said drive shafts and for rotating each of said drive shafts at least approximately at the same rate, one of said drive shafts being operatively coupled to one of said sun gears, the other of said drive shafts being operatively coupled to the other of said sun gears, a pair of multiple disc clutch assemblies each having a fixed segment and a rotatable segment, the rotatable segment of each clutch assembly being fixedly coupled to the ring gear of one of said planetary gear assemblies and the fixed segment of each clutch assembly being rigidly coupled to said frame, and means for actuating said clutch assemblies independently of one another.

3,160,104
ROTARY FUEL PUMP OF THE KIND INCLUDING CAM-OPERATED PISTONS

Mark Cary Sedgwick Barnard, Solihull, England, assignor to The Rover Company Limited, Solihull, England

Filed Nov. 2, 1961, Ser. No. 149,746
Claims priority, application Great Britain, Nov. 8, 1960, 38,263/60
6 Claims. (Cl. 103—41)



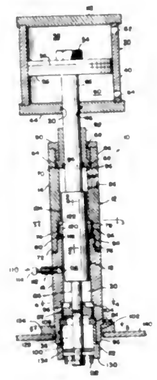
1. A fuel pump comprising a generally cylindrical casing having closed ends, a rotor mounted co-axially within said casing with an annular space between said casing and said rotor, the rotor having a plurality of axially-extending bores therein, a piston in each said bore, one end of each said piston extending from the bore in which it is positioned, the bores having open ports at the ends thereof remote from the pistons and being circumferentially-spaced around the axis of the rotor, a cam-plate inclined to the axis of rotation of the rotor, a spring in each said bore positioned to bias the associated piston into abutment with said cam-plate, stationary structure forming one end of said casing and having a thrust face co-acting with the end face of the rotor, containing the open ports of the bores, said thrust face containing a fuel inlet and a fuel outlet means, in the form of circumferentially-spaced arcuate apertures co-axial with the rotor, said fuel inlet communicating with the interior of said casing, said outlet means being divided into at least two circumferentially-spaced, concentric, arcuate portions of the same radius, separated from each other and from said fuel inlet by lands each of arcuate length not greater than the diameter of the ports, at least one centrifugally-operable by-pass valve, carried by said rotor and communicating with one of said arcuate portions of said outlet means and operable to by-pass at least part of the delivery from said arcuate portion to the interior of said casing at a predetermined rotational speed of said rotor, a fuel supply pipe connection in said casing, whereby fuel is supplied from outside said casing to the interior thereof, and at least two separate delivery ducts in said stationary structure, one of said delivery ducts leading to the outside of said casing from said outlet apertures respectively.

3,160,105
PUMP FOR HIGH VISCOSITY FLUIDS

Kenneth S. Sherman, Livonia, and Clifford R. Alexander, Taylor Center, Mich., assignors to Johnstone Pump Co., Inc., Detroit, Mich., a corporation of Michigan

Filed Feb. 18, 1963, Ser. No. 259,070
11 Claims. (Cl. 103—48)

1. A double acting pump for high viscosity fluids having two chambers of equal size therein, a piston having a large diameter central portion, a relatively smaller diameter portion extending into one of said chambers and a still smaller diameter portion extending into the other of said chambers, motor means operably associated with said piston and cylinder for providing relative reciprocal motion between said piston and cylinder, means positioned between and operable in conjunction with said piston and cylinder for transferring the high viscosity fluid from the other of the chambers of said cylinder to the one chamber on movement of said piston relative to said cylinder in one direction, means positioned between

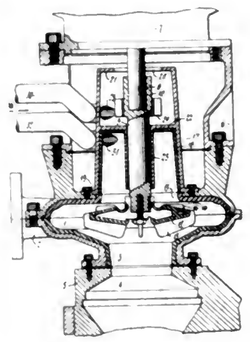


and operable in conjunction with said piston and cylinder for permitting entry of high viscosity fluid into said other chamber only during movement of the piston in an opposite direction relative to said cylinder and means for discharging high viscosity fluid from the one chamber on movement of the piston in either of said directions.

3,160,106
CENTRIFUGAL PUMPS

Stewart I. Ashworth, Studley, England, assignor to Abrasive Developments Limited, Henley-in-Arden, Solihull, England, a company of Great Britain

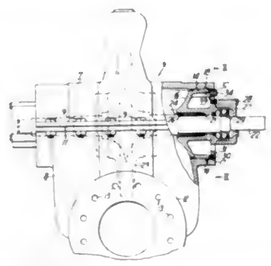
Filed Mar. 5, 1963, Ser. No. 262,980
Claims priority, application Great Britain, Mar. 8, 1962, 8,923/62
3 Claims. (Cl. 103—103)



1. A centrifugal pump comprising a vertical driving shaft, an impeller mounted on the lower end of the driving shaft, a pump housing including a lower impeller housing and an upper housing through which said shaft extends, an upper annular closing wall for said upper housing and a cylindrical sleeve extending downwardly from the radially inner annular boundary of said closing wall, said sleeve having an internal diameter greater than the external diameter of said shaft to define an annular open-ended pas-

sage between said shaft and said sleeve, a lower entry to said annular passage being provided by the lower end of said sleeve, an annular entry to said upper housing from said impeller housing being defined between said impeller and the lower end of said upper housing, an outlet from said upper housing above the level of said lower entry, means for generating whirling motion of liquid entering said upper housing from said impeller housing, an outlet chamber above said upper housing, at least one radial impeller blade on said shaft within said outlet chamber, said upper annular closing wall for said housing being also the lower annular wall of said outlet chamber, said sleeve opening at its upper end into said outlet chamber, and a side outlet being provided in said outlet chamber for escape of liquid therefrom.

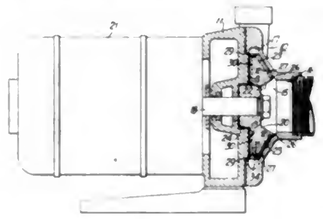
3,160,107
SPLIT CASING PUMP
Hugh L. Ross, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 2, 1962, Ser. No. 227,851
8 Claims. (Cl. 103—111)



1. In a pump the combination comprising: a pump casing having axially spaced aligned end bores, said casing constructed of two sections releasably connected along a longitudinal joint; a cylindrical end closure carried in and closing each of said end bores, the inner surfaces of said bores and said end closures having cooperating securing means on the complementary engaging surfaces thereof to prohibit relative axial movement therebetween; an annular shoulder on the outer end of at least one of said end closures, said shoulder and the inner peripheral surface of said bore defining an annular groove with an axially outwardly directed annular opening; a resilient sealing ring in said annular groove; and a pressure ring releasably attached to said pump and closing said annular opening, said pressure ring forcing said sealing ring into fluid sealing engagement with the inner peripheral surface of said bore and said annular shoulder.

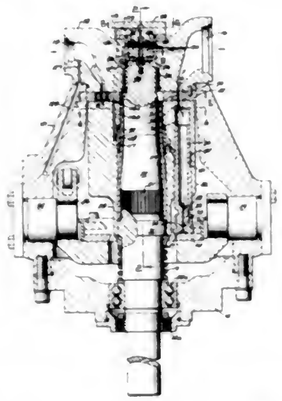
3,160,108
THRUST CARRYING ARRANGEMENT FOR FLUID HANDLING MACHINES
Leonard H. Sence, Milford, Ohio, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 27, 1962, Ser. No. 219,580
3 Claims. (Cl. 103—112)

1. A fluid handling device comprising: a casing having spaced wall members defining an impeller chamber therebetween, an impeller rotatably mounted in said chamber, said impeller having radially extending arcuately spaced vanes having axially spaced opposed end surfaces positioned to rotate between said wall members, said opposed surfaces of said vanes having recessed areas defined therein to form balancing pads, said recessed areas being positioned adjacent said wall members and



conduits in said vanes for connecting said recessed areas to high pressure fluid.

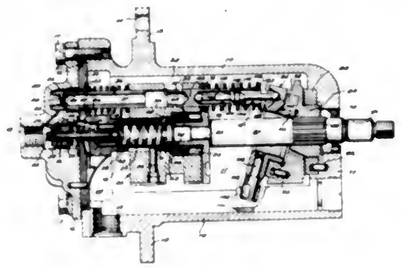
3,160,109
HYDRAULIC UNIT
William L. Kline, Galena, Ohio
Filed May 18, 1961, Ser. No. 111,075
The portion of the term of the patent subsequent to Mar. 31, 1981, has been disclaimed
2 Claims. (Cl. 103—162)



1. In a fluid pressure energy translating device of the type described, a housing, a rotatable barrel disposed within the housing in concentric relationship thereto, a plurality of pistons slidably received in cylinders in the barrel and circularly arranged concentrically of the barrel for reciprocation parallel to the barrel axis, one end of each of the pistons projecting from the adjacent end of the barrel, a cam plate disposed adjacent one end of the barrel, spherical ball and socket joints between the projecting ends of the pistons and said cam plate to provide for reciprocation of the pistons in said cylinders relative to the barrel in response to relative rotation of the barrel and cam plate, said joints including shoes engaging said cam plate, a valve plate engaging the opposite end of the barrel for controlling the flow of fluid into and out of said cylinders, means providing lateral support for the barrel, said lateral support means including a shaft which supports said barrel and which in turn is supported by axially spaced bearings carried by the housing and an annular intermediate bearing surrounding said shaft, said annular bearing having a lateral center line spaced axially outwardly from the point of intersection of the shaft axis and general plane of the locus of the centers of the spherical balls at said projecting ends of the pistons and located in a plane between said plane of said centers and said cam plate, said annular bearing being curved in the direction of the axis of the shaft to provide a crowned surface, and

a torque tube disposed axially over the shaft and within the barrel, said tube being splined at axially spaced positions axially inwardly of said shaft bearings to the shaft and barrel respectively and being splined at one end to the shaft adjacent said annular bearing and axially inwardly of said bearing and being splined at its opposite end to said barrel at the end of the barrel remote from the cam plate.

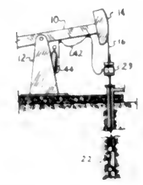
3,160,110
PUMP
Tadeusz Budzich, Shaker Heights, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 11, 1962, Ser. No. 222,884
10 Claims. (Cl. 103—173)



1. A pump comprising a pump housing, a cylinder block mounted in said pump housing, said cylinder block having at least one cylinder bore therein, a piston reciprocable in said cylinder bore, wobble plate in said pump housing, a rotatable drive cam having an inclined face adapted to oscillate said wobble plate, means to prevent said wobble plate from rotating with respect to said cylinder block, spring means biasing said piston toward said wobble plate, a push rod having opposed ends engageable with said wobble plate and said piston to shift said piston against said spring means, said piston having a head portion spaced axially from said wobble plate, a push rod seat on said head portion facing said wobble plate, a push rod seat on said wobble plate facing said piston, said piston having a tubular skirt portion extending from said head portion toward said wobble plate, said push rod extending for more than half its length within said skirt portion with one end engageable with said head portion seat and the other end engageable with said wobble plate seat, said push rod having an enlarged portion intermediate the ends axially within said skirt portion and engageable with the interior wall thereof when one of said push rods is disengaged from its adjacent seat to limit the amount of tilting misalignment of said push rod, said push rod having reduced diameter portions on each side of said enlarged portion extending from said enlarged portion to the push rod ends.

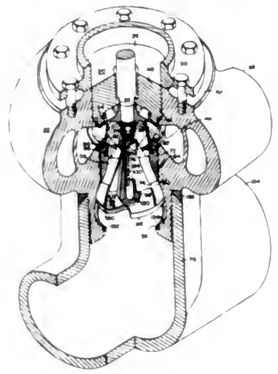
3,160,111
PUMPING SHOCK ABSORBER
Joe R. Berry, 1418 W. 23rd St., Odessa, Tex., assignor of one-half to Lowell Davis, Odessa, Tex.
Filed Aug. 17, 1962, Ser. No. 217,696
4 Claims. (Cl. 103—202)

1. In a deep well pump unit having
(*a*) a pump deep within the ground,
(*b*) a rod extending from the pump to above the ground, and
(*c*) means above the ground for vertically reciprocating the rod,
(*d*) said means for reciprocating including a horizontal crossbar,
(*e*) a shock absorber mounted between and interconnecting the crossbar and rod so that there is relative movement therebetween,
the improvement comprising:



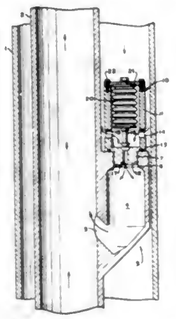
(*f*) the shock absorber containing both liquid and gas, and
(*g*) means for changing the quantity of gas in the shock absorber mounted thereon.

3,160,112
CHECK VALVE AND APPLICATION THEREOF
Howard C. Flaton and John P. Thorel, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application July 31, 1958, Ser. No. 752,342. Divided and this application May 23, 1962, Ser. No. 197,147
4 Claims. (Cl. 103—228)



1. In combination, pumping means including a casing, an impeller mounted for rotation within said casing, said casing having an outlet port and a suction port, a center-guided check valve mounted within said suction port and spaced therefrom, said valve including a flared housing open at one end, a valve disc engageable with said open end at the open position of said valve and with a reduced portion of said suction port at the closed position of said valve, means for mounting said valve disc for coaxial movement relative to said housing and said suction port, said suction port communicating with the eye of said impeller, the inner surface of said port and the outer surface of said valve housing and valve disc being shaped to provide a smooth annular passage for liquid flowing through said suction port to said impeller eye, a driving shaft disposed in said casing and having one end thereof terminating adjacent said eye of said impeller, said impeller being mounted for rotation upon said driving shaft adjacent said one end, means coupled to said one end of said driving shaft for securing said impeller upon said driving shaft, said valve housing being disposed in proximity to but spaced from said one end of said driving shaft to prevent disengagement of said securing means during operation of said pumping means.

3,160,113
MANDREL FOR GAS LIFT VALVES
Douglas C. Meyers, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,660
3 Claims. (Cl. 103—232)



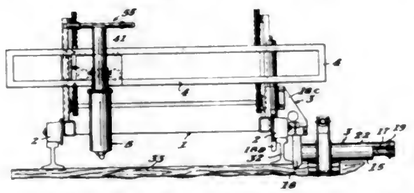
1. A gas lift valve assembly for use in injecting gas into the upper end of the interior of a well production string from a volume of gas under pressure at the exterior of the production string, said assembly comprising:

a mandrel fixed to the production string and having an expansion chamber formed therein, said mandrel having an injection port extending therethrough directly between the lower end of said chamber and the interior of the production string,

a valve housing carried by said mandrel and having an outlet orifice extending directly into the interior of said chamber, said chamber being dimensioned so as to permit substantially complete expansion of the gas therein under well pressure conditions existing, said valve housing having further an inlet port communicating the volume of gas at the exterior of the production string with said outlet orifice;

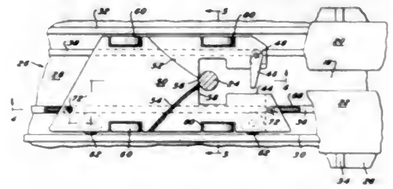
control means carried by said valve housing to control fluid flow through said outlet orifice and wherein the areas of the injection port and the outlet orifice are so proportioned relative to each other that gas flowing through said port enters the production string at less than critical velocity.

3,160,114
TIE REMOVER
John Kenneth Stewart, Dorval, Quebec, Canada, assignor to Canada Iron Foundries, Limited, Montreal, Quebec, Canada
Original application Mar. 12, 1959, Ser. No. 798,893, now Patent No. 3,105,674, dated Oct. 1, 1963. Divided and this application June 30, 1961, Ser. No. 121,176
3 Claims. (Cl. 104—9)



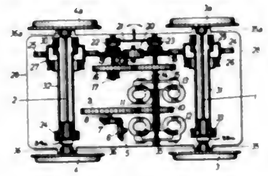
1. In a machine for removing and inserting railway ties, a pair of tie clamping jaws, a first piston and cylinder arrangement adapted to effect clamping of said jaws on the sides of a tie, a second piston and cylinder arrangement adapted to effect movement of said jaws to remove or insert the clamped tie, a source of hydraulic fluid under pressure for actuating said piston and cylinder arrangements, and a single valve controlling the flow of fluid to both of said piston and cylinder arrangements, whereby any increase in pressure required for moving the tie will automatically ensure increased pressure for clamping said jaws to avoid slipping of said jaws along the tie, the working area of the piston of said first piston and cylinder arrangement utilized in clamping said jaws being substantially greater than the working area of the piston of said second piston and cylinder arrangement whereby the fluid flowing through said valve effects clamping of the jaws prior to movement of said jaws and the tie.

3,160,115
TOW TRUCK SYSTEM
Lynn Bradt, Easton, Pa., and John G. Dorrance, Phillipsburg, N.J. (both % SI Handling Systems, Inc., Belview Road, Phillipsburg, N.J.)
Filed Feb. 25, 1963, Ser. No. 260,700
16 Claims. (Cl. 104—172)



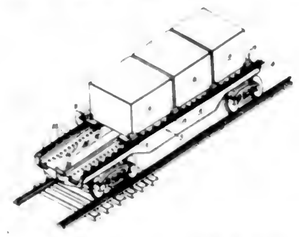
1. In a tow truck system comprising means defining a reference surface having a slot therein through which a tow pin on a truck is adapted to extend, means defining a track in line with said slot, a plurality of pusher trolleys riding on said track, passage means extending from one edge of said pusher trolleys substantially along its center line for receiving a tow pin, a tow pin pushing surface at one end of said passage means, means extending between and interconnected with adjacent trolleys, said last-mentioned means being in a plane approximately midway between a top and a bottom surface of said pusher trolleys and offset with respect to the center line of said track, said plane being substantially parallel to said reference surface, and means for cooperating directly with said trolleys for causing said trolleys to move along said track.

3,160,116
SELF-PROPELLED VEHICLE, ESPECIALLY RAIL VEHICLE
Fritz Kugel, Heidenheim (Brenz), Germany, assignor to J. M. Voith G.m.b.H., Heidenheim (Brenz), Germany
Filed Jan. 11, 1961, Ser. No. 81,987
Claims priority, application Germany Jan. 16, 1960
7 Claims. (Cl. 105—96.2)



1. In a self-propelled vehicle which comprises two spaced parallel driving axles with two driving wheels each: a transmission frame, means resiliently supporting said frame on said axles, an input shaft adapted for connection to a prime mover and extending into the frame, an output shaft in the frame in parallel spaced relation to said axles, at least one fluid flow power transmitting element in the frame connected between said input shaft and said output shaft, an auxiliary shaft in the frame in parallel spaced relation to said output shaft and said axles, a first gear train in the frame comprising continuously meshing gears and extending from one axle to the other and drivingly interconnecting said axles for rotation in the same direction, said first gear train including a gear respectively rotatably mounted on each of said output and auxiliary shafts; coupling means on said output and auxiliary shafts operable for selectively coupling one only of said gears to their respective shafts, and a second gear train in the frame comprising continuously meshing gears and extending from said output shaft to said auxiliary shaft and drivingly interconnecting said output and auxiliary shafts, said second gear train including a gear fixed to each of said output and auxiliary shafts, one of said gear trains including an intermediate gear between and meshing with the said gears of said one of said trains on said output and auxiliary shafts whereby when either of said couplings is operated to couple the gear pertaining thereto to its respective shaft, the gear pertaining to the other coupling will rotate in a direction opposite to the direction of rotation of its respective shaft thereby to provide for two directions of rotation of said first gear train.

3,160,117
CONTAINER CAR
Donald Willison, Lyndhurst, and Ewald C. Windt, Sagamore Hills, Ohio, assignors to National Castings Company
Filed Sept. 8, 1961, Ser. No. 136,825
8 Claims. (Cl. 105—366)



1. A cargo container carrying vehicle including a platform and mechanism for horizontally positioning cargo containers at a level above the platform comprising:

(A) guide means extending lengthwise of the vehicle along opposite sides of the platform and having a longitudinal pivot axis disposed above the platform adjacent said level;

(B) a container-supporting device comprising a plate portion connected in hinged longitudinally-slidable relation with the guide means, and a leg joining the plate portion in pivotal relation therewith along an axis generally parallel to the guide means and in spaced relation with the guide means;

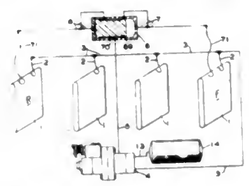
said guide means and the device comprising bearing-and-journal means concentric to said pivotal axis along which a component of the bearing-and-journal means on the devices is slidable relative to a bearing-and-journal means component on the guide means,

the device, in load-supporting position, having an upwardly-facing load-receiving surface of the plate portion disposed in a plane extending in generally parallel, spaced relation to the platform, an abutment projecting upwardly from said surface, and the leg extending downwardly from the plate portion to engage the platform and thereby support the plate portion;

(C) first detent means fixed to the platform in coextending parallel relation with the guide means;

(D) second detent means on the device; both detent means being substantially equally spaced from the rod axis and complementally shaped for passage of one into the other as the devices are rotated from an upward position to said load-supporting position, both of said detent means being disengageable at said upward position of the device relative to the guide means and freeing the device for movement lengthwise of the guide means.

3,160,118
APPARATUS FOR CONTROLLING PRESSURIZATION OF INFLATABLE DUNNAGE MEMBERS ON FREIGHT CARS
George K. Newell, Penn Township, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Original application Apr. 28, 1959, Ser. No. 809,541, now Patent No. 3,076,472, dated Feb. 5, 1963. Divided and this application Aug. 2, 1962, Ser. No. 214,290
8 Claims. (Cl. 105—369)

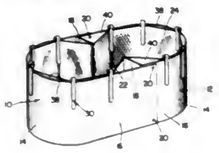


6. In combination, a plurality of inflatable dunnage members of large volume arranged to resiliently shore cargo units in a freight-carrying conveyance, a conduit having branches via which gas under pressure is conveyed to and from the respective members, a control pipe connected to one of the members at a point remote from the point at which the respective conduit branch is connected thereto to read the true gas pressure within said one member, a source of gas under pressure, and a self-lapping control valve device comprising means providing a restricted communication between the source and a chamber, supply valve means controlling connection of the source with the conduit, bleed-off valve means controlling connection of the chamber with the conduit, release valve means controlling connection of the conduit with a release communication, means urging each of said valve means to a closed position, motor means for opening said supply valve means when source pressure exceeds chamber pressure by a chosen degree, and means including other motor means subject opposingly to control pipe pressure and a bias pressure operative to open said bleed-off valve means or release valve means selectively or to have no effect upon either bleed-off valve means or release valve means according to whether control pipe pressure is respectively less than or exceeds or is substantially equal to the value of said bias pressure, thereby to maintain pressure in all of said members substantially at a desired value corresponding to the value of said bias pressure.

3,160,119
RECEPTACLE FOR COTTON CANDY
John Bowe and David Frohlich, both of 29 Maple St., Salisbury, Mass.
Filed Jan. 14, 1963, Ser. No. 251,306
4 Claims. (Cl. 107—8)

1. A receptacle for cotton candy comprising a continuous wall including two outwardly bowed semi-cylinders, and a lining of synthetic resin net of coarse mesh remov-

ably secured to said wall at spaced points along the semi-cylindrical portions thereof, the net between successive

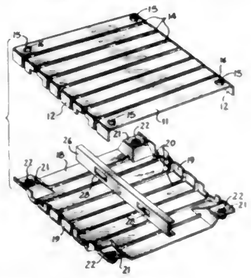


points being substantially planar whereby to leave vertical passages between the lining and the wall.

3,160,120
STACKABLE PALLET OF PRESSED SHEET MATERIAL

Leroy F. Skubic, Beverly Shores, Ind., assignor to The Paltier Corporation, Michigan City, Ind., a corporation of Illinois

Filed May 6, 1963, Ser. No. 278,010
7 Claims. (Cl. 108—53)



1. A stackable pallet of pressed sheet material comprising, in combination, an upper deck panel, a pair of opposed depending flanges on said upper deck panel, means defining a plurality of post receiving apertures in said upper deck panel, a lower deck panel, a pair of opposed upstanding flanges on said lower deck panel, means defining a plurality of post receiving sockets in said lower deck panel, said panels being secured together in spaced relation with said respective depending and upstanding flanges overlapping and with said respective post receiving apertures and sockets in alignment, and an internal reinforcing member interposed between said panels and secured thereto.

3,160,121
TRAY-TABLE

Alan Bedol, Shaker Heights, Ohio, assignor to Marshallan Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 22, 1963, Ser. No. 267,173
1 Claim. (Cl. 108—157)

A tray-table, comprising in combination, a circular tray having a peripheral convexo-concave channeled rim defining a continuous, downwardly faced, mounting groove therearound; a triangular thermo-plastic collar having three straight sides joined at their ends through arcuate sections; and, three tubular legs, having feet at both ends thereof, pivotally mounted at their mid-points within the collar, on the side walls thereof; the legs having radii substantially equal to that of the arcuate collar sections; the legs being pivotable on the collar side walls between a first, or folded position wherein they are parallel to each other, and a second, or open, position wherein they rest against the arcuate sections of the collar, at acute angles to each other, to form a supporting tripod whose legs have their upper and lower feet positioned 120° apart in circular planes having the same diameter as that of the tray mounting groove, with the lower feet on the floor and the upper feet adapted to be seated in the

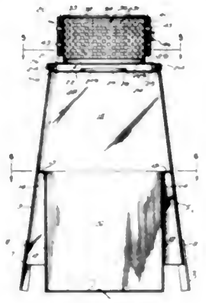


tray mounting groove to support the tray in a horizontal plane, spaced upwardly from and parallel to the floor, in the manner of a table top.

3,160,122
PORTABLE INCINERATOR

Ralston M. Sherman, Glastonbury, Conn., assignor to The Silent Glow Oil Burner Corporation, Hartford, Conn., a corporation of Connecticut

Filed Sept. 26, 1963, Ser. No. 311,885
4 Claims. (Cl. 110—18)



1. A portable knockdown incinerator comprising sheet metal wall means defining an erect casing having vertically upwardly and inwardly inclined side walls and being open at the top and bottom with feet depending from the side walls for supporting the casing in spaced relation above a positioning horizontal surface,

said casing having disposed within the lower portion a receiver for a charge of material to be burned and including a floor-defining bottom wall and vertical side walls laterally spaced from the casing at their lower portions, said receiver together with the interior of the casing above it defining a primary combustion chamber,

the side walls of said receiver approaching the casing side walls at a mid-height region thereof and there having lateral outward flanges horizontally spacing it from the casing side walls to form vertical air flow passages upwardly along them to said combustion chamber,

and a carburetting burner head at the top of the casing and there defining a second combustion chamber, said burner head comprising

a cover-like supporting plate fitting and removably seating on the casing top and having a large central aperture,

an upstanding perforate wall surrounding and vertically open to said aperture and having a horizontal top wall defining with said perforate wall a top-closed second combustion chamber,

a horizontal bottom plate of similar circumferential extent as and spaced below said supporting plate and having a vertical marginal wall connecting it to said supporting plate to form therewith an intermediary chamber between the primary combustion chamber of the casing and said second combustion chamber,

said bottom plate having a main central aperture concentric with but of smaller diameter than the central aperture of said supporting plate and also having a series of relatively small apertures distributed about said main central aperture and said supporting plate also having a circumferentially distributed aperture series radially outward of said bottom plate apertures,

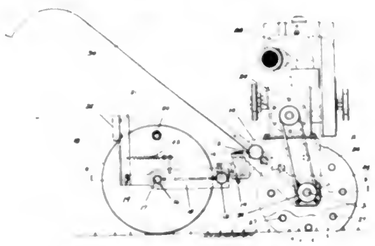
said burner head further comprising a vertical stack ring surrounding and annularly spaced from said upstanding perforate wall of the head and carried on and above said supporting plate,

said stack ring, said perforate-walled second combustion chamber and said intermediary chamber and all said apertures thereof together being constructed and arranged to provide passages for jet flow of external supplemental air laterally and inwardly via said intermediary chamber to said second combustion chamber so as to contact transversely and progressively along the flow direction ignited streams of combustion gases flowing up from the primary combustion chamber of the casing and thereby continuing in said second chamber by hydroxylative combustion the burning of such gases.

3,160,123
GRASS PLANTERS

William A. Roquemore, 211 Carrol Lane, Lakeland, Ga.

Continuation of application Ser. No. 99,488, Mar. 30, 1961. This application June 2, 1964, Ser. No. 374,875
2 Claims. (Cl. 111—1)

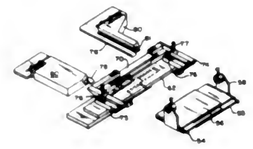


1. A self-propelled trackless grass planter, comprising a pair of frames disposed in tandem relation and having an articulated connection therebetween, said articulated connection comprising a first pivotal joint having a central vertical pivotal axis allowing steering of said frames and a second pivotal joint having a horizontal pivotal axis lying fore-and-aft between the frames in the central plane thereof and allowing independent lateral rocking movements of the frames relative to each other, the leading frame of the tandem pair having a substantially horizontal supporting platform and a pair of laterally spaced end plates depending therefrom, a transversely extended axle journaled in said end plates, said axle having a plurality of disk-like combined incising and embedding elements fixed thereto in transversely spaced relation to each other and rotatable with said axle in vertical planes, a prime mover mounted on said supporting platform and operatively connected to said axle for rotating the latter and for imparting traction to the tandem frames through the rotary disk-like elements aforesaid, the trailing frame having a pair of laterally spaced rearwardly extended arms, a soil compacting and smoothing roller disposed between said arms and having an axle freely journaled therein on an axis lying transversely of the trailing frame, and a pair of handles rigidly connected to the leading frame and respectively extending from the opposite ends thereof beyond the rear of the trailing frame, said handles being controllable by an operator while walking behind said roller to steer said planter and to control the depth of embedment of prebroadcast grass sprigs responsive to variation of pressure on the handles.

3,160,124
MEANS FOR MAKING MATTRESS BORDER PANELS WITH WELTED EDGES

James A. Cash, Jr., La Grange, Ky., assignor to American Bedding Machine Co., Louisville, Ky., a corporation of Kentucky

Filed June 30, 1961, Ser. No. 126,466
5 Claims. (Cl. 112—2)



1. A machine for welting the marginal edges of an elongate mattress border panel as that panel flows through the machine along a path having a horizontally-wide vertically-thin web portion flanked by marginal portions, comprising:

(A) means for simultaneously feeding a panel and a pair of beading cords forwardly through the machine with the beading cords laterally spaced to underlie opposite margins of said path as the cords approach a folding zone;

(B) a pair of oppositely disposed folders in said folding zone, one along each margin of said path, each folder having a pair of bottom and top plates,

(1) each plate having a flat web section and a curved marginal section,

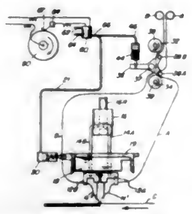
(*a*) the flat web sections of the bottom and top plates forming walls respectively underlying and overlying the adjacent web portion of said path,

(*b*) the curved marginal section of said bottom plate extending outwardly from the web section thereof and being curved downwardly, inwardly and upwardly to form a longitudinally-extending open-ended cord-receiving tube through which the corresponding cord is adapted to pass, and

(*c*) the curved marginal section of said top plate extending outwardly from the web section thereof and being curved downwardly, inwardly and upwardly around, and in outwardly spaced relationship to, said cord-receiving tube, to form about said tube a longitudinally-extending open-ended marginal space of scroll shape in cross section in which the corresponding margin of a panel is adapted to extend scrollwise about said tube and through which it is adapted to pass; and

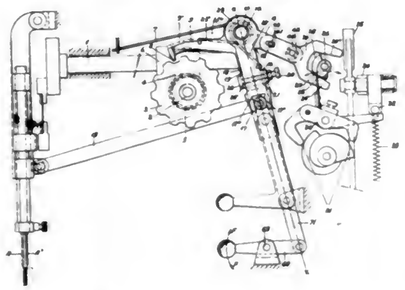
(C) panel sewing means arranged between the feeding means and said folders.

3,160,125
TUFTING MACHINE WITH NEEDLE SELECTOR
Clifford Aldine Bryant, Robert F. Hackney, and Otis C. Payne, Dalton, Ga., assignors to Cabin Crafts, Inc., Dalton, Ga., a corporation of Georgia
Filed June 10, 1959, Ser. No. 819,416
16 Claims. (Cl. 112—79)



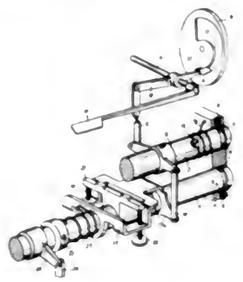
1. A tufting machine comprising a pluraliy of yarn-carrying needles adapted to penetrate a cloth moving in a certain direction to form yarn loops, said needles being spaced from one another in the direction of cloth movement, means for reciprocating said needles to penetrate the cloth, guideways slidably supporting said needles for said reciprocatory movement, connecting means movable to and fro in the direction of cloth movement for connecting a needle to said reciprocating means and to select which of said needles shall be reciprocated thereby, separate yarn-feeding means for each needle independent of needle-reciprocating to feed predetermined lengths of yarn for each reciprocation of the needle, and means to cause operation and to interrupt operation of the yarn-feed to each needle in timed relation to the choice and rejection respectively of each needle for reciprocation.

3,160,126
ZIG-ZAG SEWING MACHINE
Antonio Moro, Milan, Italy, assignor to Soc. per Azioni Fratelli Borletti, Milan, Italy
Filed Nov. 26, 1962, Ser. No. 240,054
Claims priority, application Italy, Dec. 2, 1961, 21,830/61, Patent 18,452
11 Claims. (Cl. 112—158)



1. A zigzag-stitch sewing machine for making buttonholes comprising:
(*a*) a frame,
(*b*) a drive shaft rotatably mounted in said frame,
(*c*) a needle bar guide pivoted on said frame,
(*d*) a needle bar slidably mounted on said needle bar guide,
(*e*) a cam actuated by said drive shaft. said cam having an outer periphery comprised of alternate raised and lowered surfaces,
(*f*) a fixed spindle mounted on said frame,
(*g*) a first two-armed lever swingingly mounted on said fixed spindle,
(*h*) a cam follower supported by one arm of said first two-armed lever engaging said cam,
(*i*) a second two-armed lever swingingly mounted on said fixed spindle coaxial to said first two-armed lever,
(*j*) a fork supported by one arm of said second two-armed lever engaging a tie rod, said tie rod being connected to said needle bar guide,
(*k*) stopping members provided on said levers,
(*l*) spring means cooperating with said stopping members to engage said first and second two-armed levers so that the reciprocal angular position of said first and second two-armed levers can be modified in one direction, and by said spring means and said stopping members a swing imparted by said cam to said first lever is transmitted to said second lever, and
(*m*) manual control means for limiting the oscillation of said second lever in a direction of rotation so as to allow preselected widths of a zigzag stitch to be used for making bars and cords of a buttonhole.

3,160,127
ADJUSTING MEANS FOR A DIFFERENTIAL FEED
Hans Orth, Alsenborn, and Herbert Wenz, Kaiserslautern, Pfalz, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany
Filed Mar. 14, 1962, Ser. No. 179,613
Claims priority, application Germany, July 20, 1961, P 27,563
5 Claims. (Cl. 112—209)



1. Mechanism for controlling the cooperation of a main feed dog and of an auxiliary feed dog to adjust the differential feed of a sewing machine, said mechanism comprising a main setting shaft for a main feed dog and an auxiliary setting shaft for an auxiliary feed dog, linkage means including a linkage connecting member for each said shaft, each disposed in fixed position on its respective shaft, and a linkage arm for each shaft, linkage connecting said linkage arms for transmitting movement from one said shaft to the other, an abutment member having at least one arm operatively associated with said linkage means, a stitch setting shaft including an operating bar and a stitch setting lever arm mounted on said stitch setting shaft and having an arm linked to said main setting shaft, a biasing spring imparting bias to said main setting shaft in one direction, a coupling spring arranged in said linkage means between said connecting members of said shafts and biasing said auxiliary dog setting shaft in a direction opposite to the bias of said main shaft, said coupling spring having at least one end in engagement with one said connecting member, and abutment means including said at least one arm of said abutment member and adjustable abutment means biased by said coupling spring by way of said linkage means into force transmitting engagement with said one arm and compelling said auxiliary shaft to follow the movements of said main setting shaft.

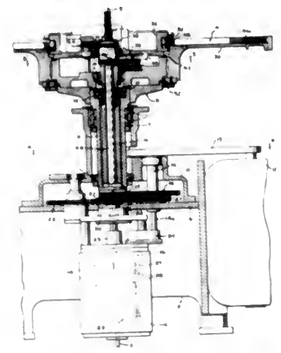
3,160,128
ELECTRICAL DRIVE MEANS FOR SEWING MACHINES OR THE LIKE AND MEANS FOR STOPPING SAID DRIVE MEANS IN PREDETERMINED POSITIONS
Alfred Heidt, Zaehringerstrasse 59, Schwetzingen, Baden, Germany
Filed Sept. 14, 1962, Ser. No. 223,795
Claims priority, application Germany, Oct. 14, 1961, F 35,141
7 Claims. (Cl. 112—219)



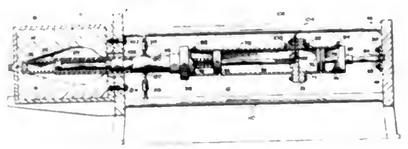
1. Electric drive control means for sewing machines of the type employing a continuously running driving motor, motor driven means and braking means for stopping said driven means in a predetermined position, said driven means comprising an electrically operated clutch having a clutch winding and said braking means including a brake winding, said drive control means comprising a circuit including said clutch winding, said brake winding, a first transistor having an operating circuit connected in circuit with said clutch winding, a second transistor having an operating circuit connected in circuit with said brake winding and having a control circuit, a synchronizer connected in said control circuit of said second transistor and having a circuit operative to actuate said control circuit, and switch means including a variable resistance device operative to interrupt current supply to said first transistor and to said clutch winding and to close the current supply circuit of said synchronizer to thereby energize said second transistor and said brake winding.

3,160,129
MANUFACTURE OF HEAT EXCHANGE TUBING
Herbert J. Venables III, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Original application Aug. 26, 1960, Ser. No. 52,252, now Patent No. 3,134,166, dated May 26, 1964. Divided and this application Jan. 16, 1963, Ser. No. 258,093
5 Claims. (Cl. 113—1)

1. A machine for forming and helically wrapping a strip of fin material onto a tubular member comprising a base, a rotatable head supported by said base for rotation about a substantially vertical axis, said rotatable head having an axially disposed passage therein, means for rotating said head, an annular coil supporting table mounted around the periphery of said head for supporting a coil of strip stock around said head, said annular table being rotatably mounted on said head, a hollow spindle extending into said axial passage in said head and supported by said base and said head for rotation independently of said head, means for rotating said spindle in timed relation with the rotation of said head in the same direction as the rotation of said head and at a rotational velocity differing from that of said rotatable head, a gear train on said head adapted to engage with and drive said annular coil supporting table a predetermined distance around said rotatable head for each revolution of said head so that strip stock is uniformly fed from the inner diameter of said coil during rotation of said coil around said head, gear means on said spindle engaging said gear train on said head for driving said gear train as said head advances around said spindle, forming means on said head for receiving strip stock from the inner diameter of said coil and forming said strip stock into fin material having a base section and at least one angularly disposed fin section, means on said head also engaging said gear means on said spindle for driving said fin forming means in timed relation with the rotation of said head around said spindle, and means on said head for directing said fin material onto said tubing being advanced through said head with the base section of said material disposed in flatwise engagement on said tubing and with said fin section extending outwardly therefrom thereby wrapping said fin material onto said tubing as said head is rotated around said tubing.



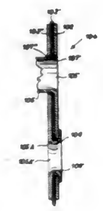
3,160,130
FORMING METHOD AND MEANS
Frank J. Pesak, Encino, Calif., assignor to North American Aviation, Inc.
Filed Jan. 31, 1961, Ser. No. 86,188
12 Claims. (Cl. 113—44)



1. In apparatus for forming a hollow article by expansion forming of a generally elongate hollow rigid blank of deformable material; die means including a die cavity of generally elongate shape, at one extremity of which said blank is adapted to be supported by said die means while the remainder of said blank is unsupported by said die means within said cavity, the length of said die cavity being substantially in excess of the critical length for said material with respect to the amount of said expansion, fluid pressure means for filling the interior of said blank with fluid under pressure whereby outwardly direct force is applied within said blank to expand the same, restricting means circumferentially contacting a portion of the outer surface of said blank whereby expansion of said portion is initially prevented during application of said outward force, moving means for moving said restricting means relative to said blank during application of said force whereby the material in said portion is gradually exposed and thereby permitted to expand, said expansion

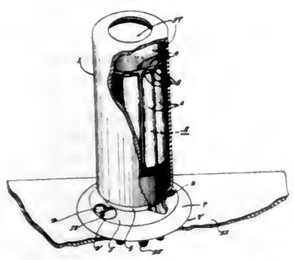
occurring progressively by successive deformation of said material in a plurality of increments as each increment of said surface is exposed by movement of said restricting means by said moving means, and force means for applying force axially to displace said portion simultaneously with movement of said restricting means and in a direction opposite to said movement.

3,160,131
METHOD OF PRODUCING HONEYCOMB STRUCTURES
Wilhelm George and Martin Weinhold, Dresden, Germany, assignors to VEB Flugzeugwerke Dresden, Dresden, Germany
Filed Mar. 1, 1961, Ser. No. 92,600
1 Claim. (Cl. 113—116)



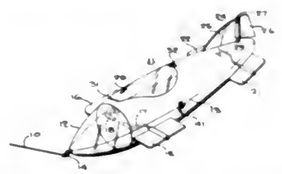
A method of producing honeycomb and like structures of preformed sheets which comprises the steps of forming openings in selected portions of at least two sheets and placing said selected portions into abutment with each other so that the openings of one sheet are aligned with the openings of the second sheet, placing selected portions of a third sheet into abutment with the selected portions of said first mentioned sheets whereby said selected portions form multi-layer packages, piercing holes into the exposed sides of the selected portions of said third sheet to form hollow annular rivets which project through and beyond the aligned openings of said first mentioned sheets, and flanging the rivets about the respective openings to thereby rigidly connect the sheet portions of each package to each other by transforming each rivet into an annular bead around each hole.

3,160,132
METHOD OF AND APPARATUS FOR MANUFACTURING HEAT-DISSIPATING INSERTS AND THE LIKE
Allan Q. Mowatt, Lexington, Mass., assignor to Atlee Corporation, a corporation of Massachusetts
Original application Nov. 21, 1957, Ser. No. 697,865, now Patent No. 3,005,036, dated Oct. 17, 1961. Divided and this application Sept. 19, 1960, Ser. No. 56,743
5 Claims. (Cl. 113—118)



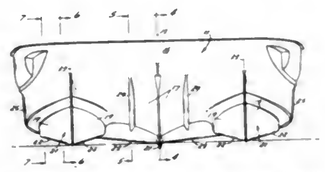
1. A method of the character described that comprises, corrugating a thin sheet into a plurality of successive substantially U-shaped folds with adjacent folds inverted with respect to one another, the neck of each U being substantially flattened, rolling the necks of successive folds toward each other, and pressing in the direction of the rolling successively against the adjacent side walls of each successive U-shaped fold along directions making successive acute and obtuse angles with respect to the flattened neck to form the fold into substantially triangular shape.

3,160,133
SUBMARINE VEHICLE
Harold H. Walker, 4801 Topping Road, Randolph Hills, Rockville, Md.
Filed Dec. 28, 1961, Ser. No. 162,754
10 Claims. (Cl. 114—16)



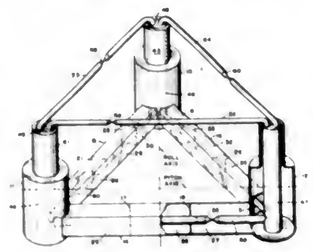
1. A towed vehicle adapted for locomotion under, on or above the water surface comprising a water-tight streamlined vessel adapted to carry at least one person interiorly thereof, course controlling means extending from the exterior of said vessel, said course controlling means including a pair of diving planes extending from opposite sides of said vessel in the forward section thereof, means for manually activating said diving planes, said last-named means consisting of a lever arm for each of said diving planes, each of said lever arms extending in generally horizontal planes interiorly of said vessel from the surface of said vessel, each of said lever arms being positioned to be directly activated by the hands of said person, and a tow hook for a towing rope, said hook being mounted on the bow of said vessel below the horizontal axis thereof, said vessel being streamlined in the direction of tow from said hook.

3,160,134
BOAT HULL
Harry F. Hillman, Lake Forest, and Ralph E. Lambrecht and Warren C. Conover, Waukegan, Ill., assignors to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 182,710
20 Claims. (Cl. 114—66.5)



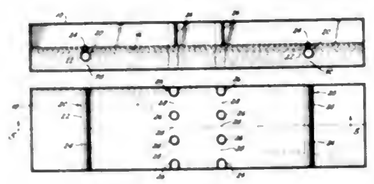
1. In an integral multiple-entry planing hull including a bow having a sponson spaced laterally on each side of the center line of said hull and an after plane extending aft of said sponsons, the improvement comprising
sponsons which are symmetrical with respect to said center line and which are individually symmetrical at every station at least within the area normally subject to wetting during planing.

3,160,135
STABILIZING SYSTEM FOR FLOATING PLATFORM
Douwe de Vries, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 22, 1961, Ser. No. 118,988
4 Claims. (Cl. 114—125)



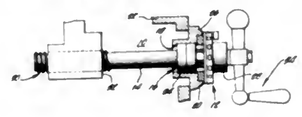
1. A floating vessel comprising a buoyant hull, three upwardly-extending fluid tanks fixedly secured to the hull of said vessel and arranged in a substantially equilateral triangular configuration about a vertical line through the centroid of said vessel, said tanks being partially filled with a liquid, normally liquid-filled laterally-extending conduit means interconnecting the lower portions of said upwardly-extending fluid tanks to permit continual flow of liquid between said tanks, at least a portion of said laterally-extending conduit means having a cross-section sufficient to delay the flow of water through the conduit means so that the velocity of the fluid lags 90° behind the rotational velocity of the vessel, and air intake and discharge means in the upper end of each of said tanks.

3,160,136
SHIP STABILIZATION
Kenneth C. Ripley, Washington, D.C., assignor to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed June 11, 1962, Ser. No. 201,476
10 Claims. (Cl. 114—125)



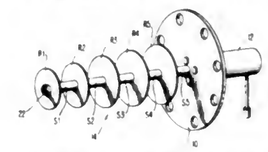
1. In combination with a water going vessel, a passive stabilization system therefor comprising a tank having a longitudinal axis mounted transversely in said vessel, a pair of members extending transversely across said tank near opposite ends thereof and spaced from the top and bottom thereof to define therewith horizontally elongated restrictions, a body of liquid partially filling said tank, said body having the same static level throughout the substantially entire tank, said tank adapted to enable air to be freely transferred from one side of said tank to the other in response to the movement of fluid therein, whereby the energy of fluid transfer within said tank is hydrodynamically damped only, and wherein at least one of said restrictions is disposed below said static liquid level.

3,160,137
REVERSIBLE POSITION INDICATING DIAL
Frank C. Simon, 741 E. Grandview, Sierra Madre, Calif.
Filed Mar. 15, 1963, Ser. No. 265,498
8 Claims. (Cl. 116—115)



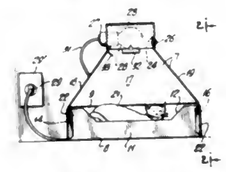
1. In a position indicating assembly, the combination of:
first means having a surface with a series of markings arranged to form a scale;
second means disposed adjacent the scale having a surface with first and second like sets of numbers disposed thereon and arranged along a common line, the first set of numbers being arranged to increase in value between predetermined numbers and the second set of numbers being arranged to decrease in value between the same predetermined numbers;
third means for supporting the second means for selectively controllable and limited movement relative to the first means such that the sets of numbers provide a number value for particular markings;
and fourth means coupled to the first means for masking one of the sets of numbers and for simultaneously exposing all of the numbers of the other set in accordance with the position of the second means relative to the first means.

3,160,138
HIGH INTENSITY SOUND GENERATOR
Paul M. Platzman, Brookville, N.Y., assignor to Ultrasonic Industries, Inc., Plainview, N.Y., a corporation of New York
Filed Sept. 26, 1961, Ser. No. 140,879
11 Claims. (Cl. 116—137)



1. A sound generator comprising acoustically resonant antenna means and automatic hammer means adapted to periodically strike said antenna means to produce vibrations therein at the resonant frequency thereof.

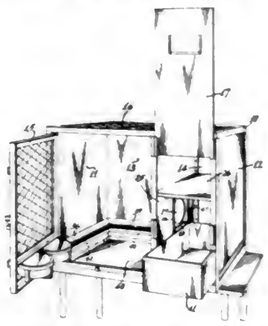
3,160,139
PET ANIMAL SHELTER
Nathaniel B. Wales, Jr., Litchfield, Conn. (66 E. 80th St., New York 21, N.Y.)
Filed Mar. 13, 1963, Ser. No. 264,868
1 Claim. (Cl. 119—1)



A pet shelter comprising a base, four relatively shallow intgeral vertical walls hinged thereto, means connecting the ends of said vertical walls, one of said vertical walls having a cut away top portion, three pyramidal

walls, one integrally hinged to each of the other of said vertical walls, the tops of said pyramidal walls being truncated to form a top opening, and one of said pyramidal walls having a hinged integral vertical extension having openings therein at its top, and the others of said pyramidal walls having transverse slots adjacent their tops, an arcuate metal reflector having integral end portions, one of said end portions having openings therein aligned with the openings in said vertical extension, rivets extended through said aligned openings securing said reflector over said top opening, tabs on the other of said integral end portions and on one side of said reflector engaging in said transverse slots holding said pyramidal side walls in related assembly, said other of said integral end portions having a central opening therein, a socket in said opening, a cord adapted to connect said socket to a source of electricity, and an incandescent bulb in said socket.

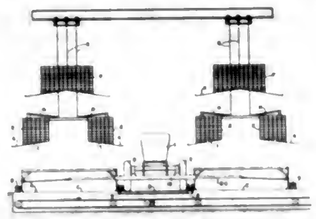
3,160,140
ANIMAL CAGE
Ann L. Porter, Princeton, N.J., assignor to Porter-Mathews Company, Inc., a corporation of New Jersey
Continuation of application Ser. No. 131,586, Aug. 15, 1961. This application July 12, 1963, Ser. No. 295,599
13 Claims. (Cl. 119—18)



1. A cage including a rectangular shaped box-like cage divided into two compartments providing a living quarters and a service quarters, said service quarters including a compartment having an opening on one side communicating with said living quarters, said service compartment having a top providing a shelf, the area above said shelf being in open communication with said living quarters and providing an elevated resting place, a slidable drawer slidably mounted in said service compartment, a slidable door slidably mounted on one side of said cage for closing the service compartment and the space above the service compartment, means on said cage frictionally engaging said slidable door, to permit eslective positioning of said slidable door, a door for closing the rest of the front of said cage, a feeding bowl mounted on said last door, said living quarters having a slidable shelf mounted at the bottom thereof and removable without opening said last door.

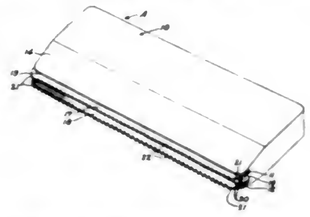
3,160,141
EQUIPMENT FOR CLEANING POULTRY HOUSES
Alpheus S. Crutchfield, 108 Robin Hood Road, South Boston, Va.
Filed Feb. 15, 1963, Ser. No. 258,747
8 Claims. (Cl. 119—22)

8. In a poultry house having rows of elevated cages, with a pit extending beneath each row of cages, and an aisle between said pits, apparatus for cleaning the dropping from the floors of said pits comprising a conventional, farm type tractor adapted to travel along said aisle, and a separately fabricated, self-contained scraper positioned in each pit on either side of said aisle, and means for



detachably connecting each of said scrapers with said tractor so that it may be propelled thereby.

3,160,142
CURRY COMB TYPE IMPLEMENT OR SHEDDER
Dorothy L. Torow, 18500 Hicks Road, Los Gatos, Calif.
Filed Oct. 17, 1963, Ser. No. 316,837
1 Claim. (Cl. 119—92)



A curry comb type of implement known as a shedder for grooming livestock such as horses, said implement comprising

(*a*) a handle member of substantially greater width than thickness and having a narrow, elongated edge, said narrow edge having a pair of parallel, blade receiving grooves lengthwise therein, the side walls of the grooves being substantially parallel to the major mid-plane of the handle member,

(*b*) a pair of toothed blades, each blade comprising a length of hack saw blade material of substantially the same length as the narrow, elongated edge of the handle member, and of a width greater than the depth of such grooves, each blade being inserted against a selected side of one of such grooves, the blades being inserted in their respective grooves in relatively endwise reversed relation with their toothed edges exposed, so that the teeth of the two blades face in opposite directions,

(*c*) and a jam strip fitted into each groove alongside a blade inserted therein, each jam strip being of a thickness to frictionally retain its associated blade in its groove.

3,160,143
QUICK RELEASE ADJUSTABLE X-RAY PATIENT SUPPORT BELT
Floyd L. Gray, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Apr. 15, 1963, Ser. No. 273,091
1 Claim. (Cl. 119—96)

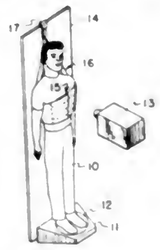
A new article of manufacture for supporting a patient against falling from an essentially upright position out of the path of an X-ray beam in the course of an X-ray diagnostic procedure, comprising:

(*a*) a single pliable band that is adapted to wrap around a patient's chest with the end areas of the band overlapping to a variable extent depending on the circumference of the patient,

(*b*) said band having an upper edge of a certain length and a lower edge of a lesser length, whereby the band may be formed in a funnel-shape for adaptation to the upward divergence of the patient's body when the opposite ends of the band are caused to overlap each other,

(*c*) the said band being of sufficient width to extend downwardly from the armpits of a patient uninterruptedly over a region of varying body contour,

(*d*) one of the end areas of said band in the region of

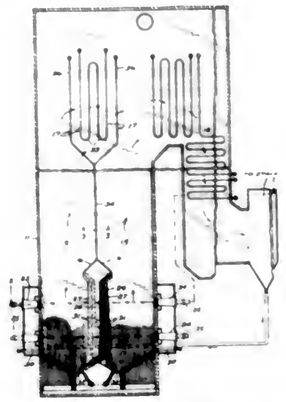


overlap having a multiplicity of non-metallic hooks projecting therefrom,

(*e*) the other end areas in the region of overlap having a surface of pile material that is presented face-to-face to and is engageable by the hooked area when the overlapped ends are pressed together to form a highly X-ray transmissive connection between ends of the band, and

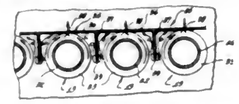
(*f*) strap means that are connected with the band and extend away from its upper edge to a common point of attachment, whereby the patient is restrained from tilting significantly but is relatively free to twist.

3,160,144
FLY ASH ENTRAPMENT WALL
Ernest L. Daman, Westfield, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed July 19, 1961, Ser. No. 125,245
4 Claims. (Cl. 122—235)



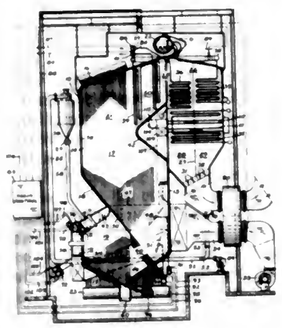
1. In a furnace including a housing which defines a combustion chamber, means for exhausting combustion gases from the chamber; the combination comprising a burner having a longitudinal axis; sources of slag forming coal and oxygen communicating with the burner, the burner disposed to direct a burning slag forming coal stream into the chamber; a means for fly ash entrapment comprising a target wall in the chamber; means for cooling the target wall below the freezing temperature of non-combustible material in said coal stream; the target wall describing an upright trough having converging side walls joined along the narrow portion of the trough and an area in the wide portion of the trough substantially greater than the cross-sectional area of said stream; the trough diverging towards the burner and being disposed in spaced relationship with the burner approximately perpendicular to the burner axis, in the path of the stream of flame and coal from the burner, causing the stream to approximately horizontally course the upright walls of the trough in sweeping relationship therewith coating the trough with molten slag, the molten slag migrating down the trough and trapping coal particles from the stream of flame and coal for brushing engagement with oxygen in the stream; and means for exhausting molten slag from the trough.

3,160,145
FLUID HEATER
Avy L. Miller, 13246 Saticoy St., North Hollywood, Calif.
Filed July 20, 1962, Ser. No. 214,156
14 Claims. (Cl. 122—367)



8. A fluid heater comprising: a substantially horizontal row of heat exchange tubes providing for passage of a fluid to be heated therethrough; a heat source directing a heating fluid upwardly about said tubes to effect heat transfer to the fluid passing therethrough; and baffles above said tubes and extending along the length thereof, said baffles having a substantially T-shaped cross section and being disposed with the top plates of the T's substantially horizontal and above said tubes and with the vertical legs of the T's disposed between adjacent tubes, the edges of the top plates of adjacent baffles being spaced apart at the vertical planes through the axes of the tubes the minimum distance consistent with effective flow of said heating fluid.

3,160,146
FURNACE
Max H. Kuhner, Oakham, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 19, 1962, Ser. No. 180,503
5 Claims. (Cl. 122—478)

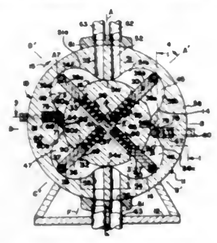


3. A furnace, comprising

(*a*) a front wall, a rear wall, a bottom wall, a roof wall, and two opposed side walls defining a vertically-elongated combustion chamber,

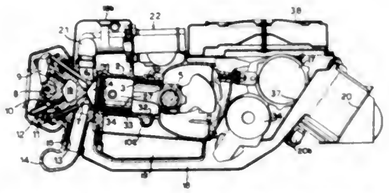
(*b*) an abutment formed on the front wall having a downwardly-directed surface defining with the bottom wall a high-temperature cell, there being a substantial portion of the front wall extending from the abutment to the bottom wall,
(*c*) a first set of directional-flame burners mounted on the downwardly-directed surface of the abutment,
(*d*) and a second set of burners mounted on the said vertical portion of the front wall to produce a fixed flame,
(*e*) a convection pass receiving products of combustion from the upper part of the combustion chamber,
(*f*) a convection superheater located in the said pass,
(*g*) control means to regulate the burners to maintain the temperature of superheated steam at a predetermined value, the said control means operating on one of the sets of burners to affect the amount of impingement of the flame from the first set of burners on the flame from the second set of burners to cause them to operate with a spread flame at one end of the load range and with a narrow flame at the other end of the load range.

3,160,147
ROTARY HEAT APPARATUS
Daniel T. Hanson, St. Paul, Minn., assignor to Clayton R. Johnson, Minneapolis, Minn.
Filed Mar. 23, 1961, Ser. No. 97,898
17 Claims. (Cl. 123—14)



1. In rotary apparatus for carrying out a thermodynamic cycle on a system of working substance comprising a housing, a power member, means for rotatably supporting said power member within the housing to rotate about a rotary axis, the aforementioned means including end walls forming fluid seals with opposite ends of the housing, said power member and housing having cooperating means for forming within the housing at least a first chamber and a second chamber separate from and angularly spaced from the first chamber to sequentially retain a system of working substance spatially isolated in the respective chamber from the other chamber, said cooperating means including a separator, a vane, an abutment, and second means mounting said vane, and separator and abutment for relative radial motion, said vane and abutment each having a leading surface portion and a lagging surface portion, the abutment lagging surface portion in part forming the first chamber and the abutment leading surface portion in part forming the second chamber, said vane being a part of the power member and at least most of a cycle of rotation of the power member forming a fluid seal with the housing chamber walls including when said vane is angularly moved through said chambers, said power member in rotating angularly moving the vane through the first chamber compressing a first system between the leading surface portion of the vane and the lagging surface of the abutment, said housing having an opening adjacent the abutment lagging surface portion into which said compressed system is forced to be spatially isolated from said first and second chambers just prior to the vane being angularly moved to have the lagging surface portion thereof extend into said second chamber, said cooperating means including radially movable means angularly in advance of said opening for permitting the system in said opening expanding into said second chamber between the leading surface portion of said abutment and the lagging surface portion of said vane only after the vane lagging surface portion has angularly moved into said second chamber and retaining the compressed system in said opening until the vane leading surface portion has moved angularly in advance of said opening, and means for changing the energy level of the working substance prior to any substantially expansion into said second chamber.

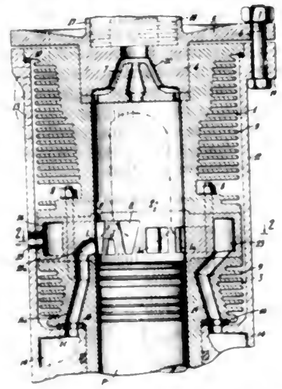
3,160,148
INTERNAL COMBUSTION ENGINE
Dante Giacosa and Giovanni Torazza, Turin, Italy, assignors to Fiat Societa per Azioni, Turin, Italy
Filed Feb. 5, 1963, Ser. No. 256,355
Claims priority, application Italy Feb. 10, 1962
3 Claims. (Cl. 123—41.57)



1. Internal combustion engine with cylinders disposed laterally of the engine shaft in a substantially horizontal plane, more particularly for motor vehicles, comprising:
(*a*) a force draft air cooled cylinder head having walls provided with slots and cavities for air passage and an externally arranged air conveying shroud;
(*b*) semispherical combustion chambers in said head having intake and exhaust valves, valve stems and related conduits situated in planes transversely of the engine shaft;
(*c*) a cam shaft arranged on the head, between the valve stems and having a single cam for controlling intake and exhaust valves of each cylinder;
(*d*) two similar rocker arms for each cylinder mounted on semi-spherical fucra supported by the engine head for controlling said intake and exhaust valves of each cylinder;
(*e*) an endless chain transmission between the engine shaft and the cam shaft;
(*f*) pressure oil cooled cylinder liners in each cylinder said cylinder liners comprising an external recess extending intermediately the end portion of the liner and having a lesser diameter than said end portions;
(*g*) an oil pump incorporated by a tensioning roller of the chain transmission.

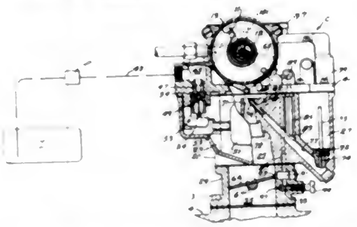
3,160,149
CYLINDER FOR A HIGH PERFORMANCE INTERNAL COMBUSTION ENGINE
Wunibald I. E. Kamm, Stuttgart, Wurttemberg, Germany, and Theodore R. Gondert, Lyndhurst, N.J., assignors to Stevens Institute of Technology, Hoboken, N.J., a corporation of New Jersey
Filed Apr. 20, 1961, Ser. No. 104,321
2 Claims. (Cl. 123—65)

1. A hollow cylinder for an internal combustion engine of the loop-scavenged type, the cylinder having a plurality of exhaust gas ports disposed in a plane about the hollow interior of the cylinder and also having a plurality of air intake ports disposed in a different plane about said interior, each of said exhaust ports being closely spaced from an intake port at each side of the exhaust port, the cylinder having an exhaust manifold chamber and a duct leading from each exhaust port to said chamber, the cylinder also having an air intake manifold chamber and a duct leading from each intake port to said intake chamber, said air intake ports and



ducts being disposed to direct the bulk of the incoming air predominantly to one side of said hollow interior, the gas exhaust ports and ducts being disposed at the opposite side of said hollow interior, whereby an air flow loop is created in said hollow interior.

3,160,150
CARBURETOR
Harold A. Carlson, Brentwood, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Aug. 29, 1963, Ser. No. 305,378
14 Claims. (Cl. 123—119)



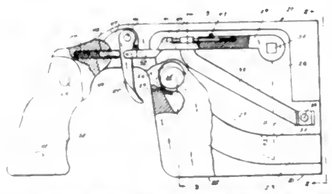
1. A fuel and air mixture device for an internal combustion engine, said device comprising a body structure having an air and fuel mixture conduit therethrough, a throttle shaft journaled in said body structure and extending across said mixture conduit, a throttle valve fixed to said throttle shaft and positioned within said mixture conduit for movement from an open position to a position closing said mixture conduit, a throttle lever fixed to said throttle shaft for operating said throttle valve, a choke shaft journaled in said body structure and extending across said mixture conduit anteriorly of said throttle shaft, a choke valve fixed to said choke shaft within said mixture conduit for movement from an open position to a position closing said mixture conduit, means for operating said choke valve, thermally responsive means positioned on said body structure and adapted when the engine is cold to bias said choke valve to said closed position, said thermally responsive means, upon heating thereof, adapted to move to a position where it no longer applies said bias to said choke valve thus allowing said choke valve to be moved by air pressure toward said open position, means on said throttle lever for moving said choke valve to a predetermined intermediate position against the bias of said thermally responsive means, under cold engine conditions, after said engine has started.

3,160,151
IGNITION POINTS
Marlyn E. Mackey, 10819 Norway St., Coon Rapids, Minneapolis, Minn., assignor of one-half to Guy States, Anoka, Minn.
Filed May 6, 1963, Ser. No. 278,344
5 Claims. (Cl. 123—146.5)



1. An internal combustion engine the improvement in ignition points comprising in combination, a standard set of primary ignition points adjusted according to specification, said standard set of primary ignition points being mounted respectively on a fixed arm and a movable cam actuated contact arm, a secondary ignition point mounted on the said fixed arm and actuated simultaneously with said primary ignition points, switch means connected to the said secondary ignition point whereby the same may be selectively energized said secondary point being adjusted to retard the standard spark adjustment when said means is closed, and means associated with the standard automatic spark advance mechanism whereby the same is rendered inoperable when the secondary point is energized.

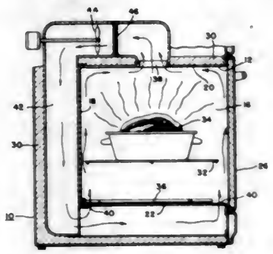
3,160,152
MARBLE SHOOTER
John E. Watkins, Council Bluffs, Iowa (10402 Helendale Ave., Tujunga, Calif.)
Filed Mar. 29, 1962, Ser. No. 183,445
6 Claims. (Cl. 124—21)



1. A toy marble shooter comprising a vertical body portion, said body portion consisting of two vertical substantially companion body sections joined together, said body portion having a flat bottom horizontally arranged and adapted to rest upon the ground when in use, said body portion embodying a vertical magazine chamber and a tubular barrel joined together, an opening in the side wall of one of said vertical body sections for permitting insertion of a marble into the magazine chamber, a resilient pin member secured to the rear wall of one of said body sections and with its free end extending inwardly and downwardly into said vertical magazine chamber for retaining a marble temporarily in said magazine chamber, a transversely arranged shaft located in the upper forward portion of said body portion, a vertically swingable hammer-arm pivotally mounted on said shaft, said hammer-arm having a rear free end which swings downwardly

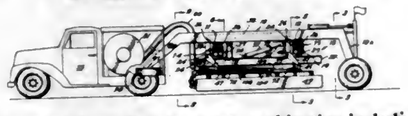
and forwardly in a counter-clockwise direction to expel the marble from the said tubular barrel, a hand grip extending from the upper rear end portion of said body portion, trigger mechaism arranged in the upper rear end portion of said body portion for controlling the hammer-arm pivotally mounted at the forward end of said body portion, a finger of said trigger mechanism extending downwardly between said hand grip and said body portion, and a rubber band secured to the inner forward lower portion of said body portion and to the rear free end portion of said hammer-arm for urging said hammer-arm in said counterclockwise direction.

3,160,153
DOMESTIC OVEN
William L. Drayer, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,388
3 Claims. (Cl. 126—21)



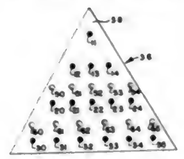
1. A boundary control arrangement for trapping grease spatter in an oven having wall means defining a cooking chamber, support means in said chamber for supporting food to be cooked and means for cooking said food in a manner causing grease to spatter from said food toward said wall means, said boundary control arrangement comprising air passage means including said cooking chamber, said air passage means having air curtain forming means oriented with respect to said wall means and said support means to create a thin, substantially uninterrupted tubular curtain of air solely around the outer portion of said cooking chamber and completely surrounding said support means when air is being circulated in said air passage means, said air curtain forming means defining open slots extending substantially without interruption completely continuously around the outer portion of said cooking chamber generally equidistant from the closest ones of said wall means, and blower means for circulating substantially all of the air in said air passage means at a high volume rate of flow through only said air curtain forming means with a sufficient velocity at least between said support means and said wall means to entrain substantially all of the grease spatter originating at said food before it impinges on said wall means.

3,160,154
VEHICULAR-TYPE ASPHALT ROADBED HEATER
Clarence W. Sowell, 16248 Itasca, Sepulveda, Calif.
Continuation of application Ser. No. 172,213, Feb. 9, 1962. This application Aug. 6, 1964, Ser. No. 388,019
12 Claims. (Cl. 126—271.2)



7. In a mobile surface heater, a combination including: a generally horizontal suspension frame; means for attaching one end of said frame to a towing vehicle; means for movably supporting the other end of said frame; a firebox at least indirectly supported by said frame, said firebox having an open bottom and comprising a top member, a front wall, a back wall and at least one elongated angularly movable side extension structure having a top cover, a front element, a back element and a side panel depending from one side edge of the top cover, said structure being so hinged to the top member of the firebox that the structure's top cover becomes effectively an extension of said top member when said structure is in an operative angular position; means at least indirectly supported by said frame for raising and lowering said firebox; and a removable plate for closing the otherwise open side of the firebox when said extension structure is rotated to an inoperative position.

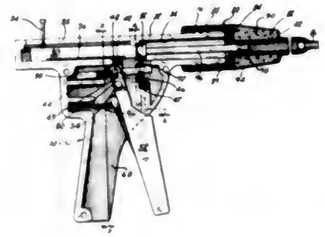
3,160,155
MEDICAL CODING DEVICE
Sherman M. Bragg, Stockton, Ida M. Leonardini, Linden, and Jack L. Warren, Sacramento, Calif., assignors to Medi-Code, Inc., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,331
2 Claims. (Cl. 128—1)



1. A medical coding template comprising an equilateral triangular plate having a base and a pair of sides converging in an apex opposite said base, said plate having a plurality of openings adapted to receive a marking stylus, said openings including a single opening adjacent said apex, a first row of three aligned equally spaced openings parallel to said base and removed from said single opening toward said base a predetermined distance such that said three openings form with said single opening an equilateral triangular outline similar to the shape of said equilateral triangular plate, said openings also including a second row of aligned, spaced openings parallel to said base and removed from said first row a distance equal to said predetermined distance, and a third row of aligned, spaced openings parallel to said base and removed from said second row a distance equal to said predetermined distance, said openings in said second and said third rows being located so that each of the end openings in said second row form with the respective adjacent end openings and next to end openings in said third row a substantially right triangular outline dissimilar in configuration to said equilateral triangular outline formed by said single opening and said three openings in said first row, each of said openings in said plate corresponding to a predetermined unit of medical information.

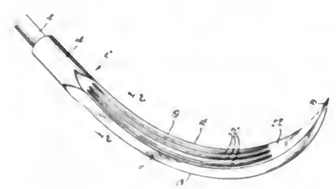
3,160,156
ARTIFICIAL INSEMINATION DEVICE
Robert R. Tyler, Strathroy, Ontario, Canada, assignor to Mattox and Moore, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Jan. 16, 1961, Ser. No. 82,754
8 Claims. (Cl. 128—236)

1. A multiple-shot syringe adapted to administer a plurality of successive uniform doses of liquid material, comprising a syringe barrel defining a fluid-receiving cylinder and having a restricted discharge conduit at its forward end, a displacement rod movable axially in said cylinder, supporting means including a body to which said syringe barrel is secured, operating means for said rod, comprising a driven ratchet element movable axially of said cylinder for driving said rod, driving means including a driving ratchet element operatively engaged with said driven ratchet element to advance the same in successive forward steps, a manually operable handle supported from said body and operatively connected to reciprocate said driving ratchet element in successive driving and reverse movements, holding means including a holding ratchet element supported from said body and operatively engaged with said driven ratchet element to limit retraction movement thereof, said holding means including a limited lost-motion connection permitting limited retraction of said driven ratchet element from its foremost position on each forward step, said driving means including means



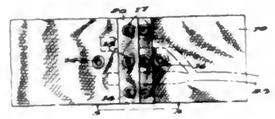
for retracting said driven ratchet element during retraction of the driving ratchet element, a limited lost-motion coupling between said driven ratchet element and said syringe displacement rod, whereby said driven ratchet is retracted a limited amount after each rod-operating advance and is thereby withdrawn from driving thrust relation with said rod, means for effecting disengagement between said driven ratchet element and said driving and holding ratchet elements, and manually operable means, operable while said syringe barrel is secured on said supporting means, for retracting said driven ratchet element and said rod relative to said syringe barrel to load the syringe barrel with a multiple-dose supply of liquid material.

3,160,157
SURGICAL NEEDLE
Gladys J. Chisman, New Brunswick, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
Filed Mar. 29, 1962, Ser. No. 183,510
6 Claims. (Cl. 128—339)



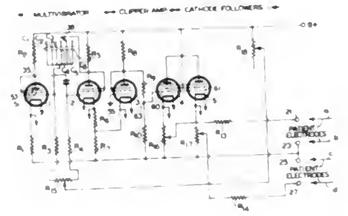
1. A curved surgical needle having convex and concave surfaces pointed at one end, the other end of which is adapted to receive a suture; said needle being round in cross-section and having flattened areas on the convex and concave surfaces thereof extending substantially the entire distance between the needle point and the needle end to which the suture is attached with at least one longitudinal rib positioned on each of said flattened areas and extending the length thereof; the size of said longitudinal ribs being such as to engage the serrations on a needle holder whereby rocking and turning of the needle in the holder is minimized.

3,160,158
SUPPORT FOR CATHETER AND THE LIKE
Peter J. Rayhart, 2636 Quinton St., Shreveport, La.
Filed Oct. 4, 1963, Ser. No. 313,967
2 Claims. (Cl. 128—349)



1. A device for securing a tubular member having a surgical instrument such as a cannula, catheter and the like connected thereto adjacent a portion of an animal in fixed relation comprising a strap of flexible material adapted to surround a portion of the body of the animal and having means thereon adjacent the ends thereof detachably securing the ends of the strap together, and a strip of flexible material detachably connected thereto, said strip and strap each having a plurality of cooperating parts secured thereto forming a plurality of spaced snap fasteners thereon, said cooperating parts of snap fasteners on said strip being aligned in a row, the cooperating parts of snap fasteners secured to said strap including five in number and being aligned in a pair of rows, said rows of cooperating parts of snap fasteners on said strap crossing each other and one cooperating part being in each row with the other cooperating parts extending above, below and on each side of said one cooperating part, whereby said strip may be secured to said strap in either of said rows so that a tubular member may be secured between the strip and strap and positioned between said one cooperating part on said strap and any of the other four cooperating parts on said strap.

3,160,159
DEVICE FOR INDUCING SLEEP
Jusha Borisovich Hoody, Ul. Kalinina 5, Apt. 18; Vlacheslav Porfirievich Kootinov, Lookov per. 10, Apt. 22; and Vasily Sergeevich Bulba-Popkov, Potapovsky per. 5, Apt. 14, all of Moscow, U.S.S.R.
Filed Jan. 4, 1960, Ser. No. 7,965
3 Claims. (Cl. 128—420)

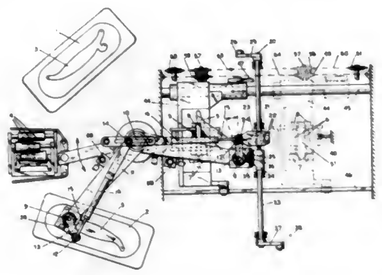


1. A portable apparatus for artificially inducing sleep by the action on the brain of electric current pulses, comprising electrodes adapted to be secured on the patient's head; an electronic pulse generator for producing square pulses; and means connected to receive the output of the generator for developing a direct-current component and superimposing said square pulses onto said direct-current component for application to said electrodes, said last-mentioned means including a cathode-follower connected electron tube having a cathode resistor across which the electrodes are connected for transmitting the pulses to the patient's head.

3,160,160
APPARATUS FOR APPLYING A WRAPPER LEAF ON A CIGAR BUNCH

Henricus J. Maas, Eindhoven, and Marten G. Aalpoel, Nuenen, Netherlands, assignors to Koninklijke Vereenigde Tabaksindustrieën Mignot & De Block N.V., Eindhoven, Netherlands, a company of the Netherlands

Filed Feb. 25, 1963, Ser. No. 260,548
Claims priority, application Netherlands, Mar. 1, 1962, 275,405
4 Claims. (Cl. 131—29)



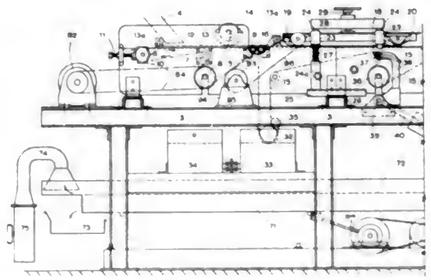
1. An apparatus for applying in one cycle of operation a wrapper leaf of predetermined shape and having a leading in flap on a cigar bunch having at least one spherical or conical end portion from the transition zone between said end portion and the body of the bunch both towards the end of said end portion and towards the other end of the bunch, comprising a rolling mechanism, a set of rotatable upper and lower rollers enclosing a rolling space and constituting together the rolling mechanism, a movable support for carrying said rolling mechanism, means to move said support in a direction transverse to the axis of its rolling space, a die for cutting wrapper leaves of the required shape, a movable leaf holder, a conveyor carrying said leaf holder and constructed to move the leaf holder between said die and a position above the path of the rolling mechanism, a movable guide plate, a movable guide roller, said guide plate and said guide roller forming an aligned composite guide member carried by the support of the rolling mechanism, said guide roller being mounted in the axial direction of the rolling space just beyond the part of said space meant to receive the said spherical end portion of the bunch, said guide plate extending parallel to the axis of the rolling space and being mounted just above one of the upper rollers of the rolling mechanism, and delivering means on said leaf holder constructed and arranged to successively deliver the wrapper leaf leading in flap, the portion to cover the said spherical end portion of the bunch and the portion to cover the body and the other end portion of the bunch into the rolling mechanism, and onto said guide roller and guide plate respectively when the leaf holder has brought the leaf into a position above and in a plane parallel to the path of the rolling mechanism.

3,160,161
APPARATUS AND METHOD FOR RECOVERING TOBACCO FROM CIGARETTES

Thomas Charles Sandman, London, England, assignor to The Imperial Tobacco Company (of Great Britain & Ireland) Limited, Bedminster, England

Filed July 18, 1960, Ser. No. 43,530
Claims priority, application Great Britain July 27, 1959
24 Claims. (Cl. 131—96)

2. A method of recovering tobacco from imperfect cigarettes, comprising applying to the cigarettes a movement of translation longitudinally of their axes while exposing them to moisture to weaken their seams and then

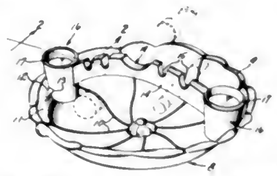


opening the weakened seams progressively from one end to the other end of each cigarette to loosen the tobacco.

3,160,162
COMBINATION ASHTRAY AND EXTINGUISHER

Marguerite Nunez, 194 Waterman St., Providence 6, R.I.

Filed Apr. 10, 1963, Ser. No. 272,021
1 Claim. (Cl. 131—236)

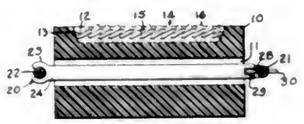


A device of the type described, comprising two spaced cups having flat bottoms and upwardly diverging sides and which are circular when viewed from the top, an arched bridge connecting the sides of said cups, the bridge having a plurality of spaced, concave recesses which are adapted to receive cigars and/or cigarettes, a receptacle which is circular when viewed from the top, the sides of the receptacle upwardly diverging at the same angle as the sides of the cups, the cups and bridge extending across the receptacle with the walls of the cups engaging the wall of the receptacle, diametrically spaced horizontal ribs extending inwardly from the walls of the receptacle and the cups having concave recesses in the sides thereof to receive the ribs, whereby the cups and bridge can be placed within the receptacle and rotated to bring the ribs into the recesses to lock the receptacle, cups and bridge together.

3,160,163
HAIR CURLER WITH EMBEDDED BRUSH MEANS

George Noel Bolinger, Shelbyville, Ill., assignor to Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,820
9 Claims. (Cl. 132—41)

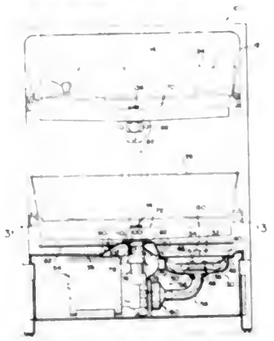


1. A hair curling device comprising a roller formed of soft resilient material and provided in an outer surface portion thereof with a longitudinal groove having its ends terminating in spaced relation to the ends of the roller, and a brush permanently fixed in said groove and having bristles extending beyond the surface of said roller to engage a strand of hair when the roller is to be applied thereto.

3,160,164
WASHER WITH REVERSING SPRAY ASSEMBLY

Frederick G. Constance and Richard L. Perl, Mansfield, Ohio, assignors to The Tappan Company, Mansfield, Ohio, a corporation of Ohio

Filed Oct. 3, 1963, Ser. No. 313,534
22 Claims. (Cl. 134—176)

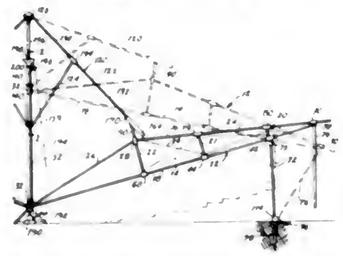


1. A reversing spray arm assembly comprising a reaction type spray arm adapted to receive liquid under pressure, means for mounting said arm freely for rotation, said arm having orifices for discharging said liquid therefrom, means for supplying liquid under pressure to said spray arm, and means for reversing the direction of rotation of said spray arm in response to a drop in liquid pressure within said spray arm.

3,160,165
COLLAPSIBLE BUILDING STRUCTURE WITH CENTER POST ERECTING STRUCTURE

Barrie B. Greenbie, Tuckahoe, N.Y., assignor to Portapavilion Structures, Ltd., New York, N.Y., a corporation of New York

Original application Sept. 2, 1958, Ser. No. 758,502, now Patent No. 3,017,893, dated Jan. 23, 1962. Divided and this application Aug. 15, 1961, Ser. No. 131,593
7 Claims. (Cl. 135—4)

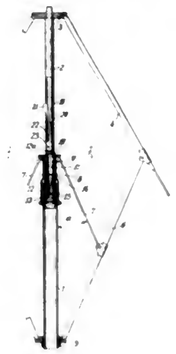


1. A collapsible building structure comprising a plurality of framework trusses, a slide hingedly secured to the inner extremities of each of said trusses, a center post extending only partially downward from the upper part of the building structure and terminating at a place vertically spaced upward from the bottom of the building structure, said slide adapted to move upwardly on said center post to thereby elevate each truss simultaneously, posts near the outer extremities of said trusses and hingedly connected to said trusses to form a fulcrum for the motion of said trusses as they are being elevated, and braces connected to said trusses outwardly of said posts for stabilizing said trusses, anchors at the lower ends of said posts to which said posts and said braces are secured, said slide being in an elevated position on said center post and located above said posts.

3,160,166
CONTRACTIBLE UMBRELLA

Heinrich Wüster, Imst, Tyrol, Austria

Filed Aug. 6, 1962, Ser. No. 215,013
5 Claims. (Cl. 135—26)



1. In a contractible umbrella frame the improvement comprising in combination

(*a*) a telescopic stick including a lower handle part and an upper crown part slidable into the former;

(*b*) a crown attached to said crown part at its outer end;

(*c*) a plurality of extendable ribs including an inner section and an outer section, each inner section articulated to said crown;

(*d*) a main runner slidable on said handle part;

(*e*) an auxiliary runner slidable on said crown part;

(*f*) a plurality of spreaders, each spreader articulated at one end to the main runner and at its other end hinged to the inner section of one of the ribs;

(*g*) a plurality of braces, each articulated at one end to the auxiliary runner and at its other end hinged to one spreader intermediate its ends;

(*h*) arresting means temporarily locking the auxiliary runner to the crown part of the stick during the initial opening of the frame, said arresting means comprising a first locking component associated with the auxiliary runner, and a therewith cooperating second locking component mounted in the crown part of the stick, said first locking component consisting of a nose integral with the articulated end of one brace, and the second locking component consisting of a pawl member mounted in the crown part of the stick for engagement with said nose during the initial opening of the frame and for subsequent disengagement from said nose to permit the auxiliary runner to continue to slide unobstructively towards the crown during completion of the opening of the frame.

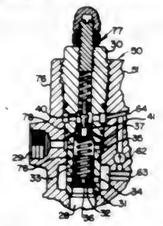
3,160,167
VALVE ASSEMBLY

George J. Martin, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 16, 1962, Ser. No. 173,790
5 Claims. (Cl. 137—101)

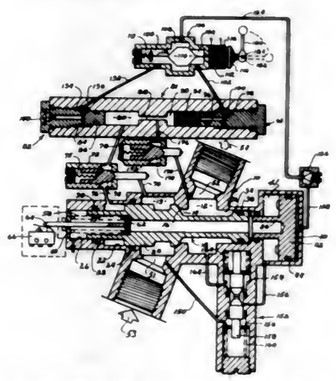
1. In combination with a directional control valve, a flow divider and priority valve for installation in the pressure inlet circuit of said directional control valve, said flow divider and priority valve comprising a self-

contained cartridge unit detachably mounted in a bore in said directional control valve, said cartridge unit including a tubular body closed at one end to form a fluid tight seal with one end of said bore and open at the other end to the pressure inlet of said directional control valve and having radial openings adjacent to said other end leading to said directional control valve, a valve member axially movable in said tubular body between closed and open



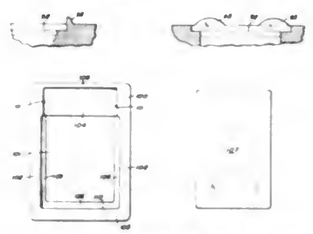
positions respectively blocking and opening fluid communication between said other end and said openings, said tubular body having an outlet port which is in constant restricted communication with its open end for flow of fluid to a fluid pressure operated unit at all times, and means biasing said valve member to closed position except when the flow rate to said outlet port via said restricted communication exceeds a predetermined value.

3,160,168
VALVE WITH FEED BACK OPERATION CONTROL
Slawomir Kowalski, Rockaway, and Donald A. Worden, Pompton Plains, N.J., assignors to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey
Filed Oct. 18, 1961, Ser. No. 145,871
11 Claims. (Cl. 137—112)



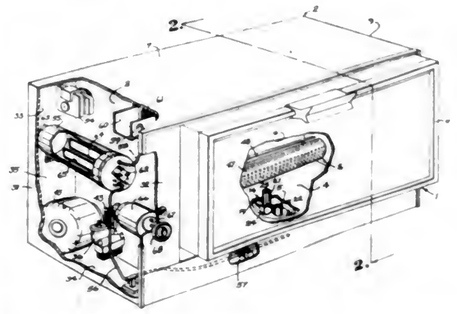
1. A valve assembly including a first valve chamber and a second valve chamber separated from one another by a valve seat surrounding an opening through which the valve chambers communicate with one another, a valve element movable toward and from the seat, piston elements operatively connected with opposite ends of the valve element, separate pressure chambers in which the different piston elements operate as pistons, the first and second valve chambers each having a main fluid port for intake and outlet of fluid, a pilot valve, passages through which each of the first and second valve chambers communicate with the pilot valve, valve means for selectively making one or the other of said passages effective as a fluid supply passage for the pilot valve, a pilot flow passage between the pilot valve and one of the pressure chambers, a feed-back passage through which at least one of the valve chambers communicates with the pressure chamber connected with the pilot flow passage, the feed-back passage communicating with the pressure chamber on the side of the piston element of that pressure chamber opposite to the side subject to the fluid pressure supplied through the pilot flow passage.

3,160,169
CHECK VALVE UNIT FOR A DIAPHRAGM TYPE PRESSURE REGULATOR
Charles D. Peterson, Dallas, Tex., assignor to Universal Controls Corporation, Dallas, Tex., a corporation of Texas
Filed July 17, 1961, Ser. No. 124,703
4 Claims. (Cl. 137—315)



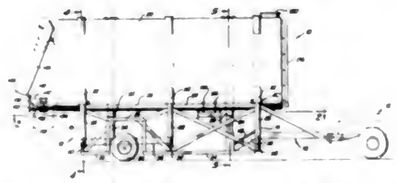
1. A check valve unit for use with an upper diaphragm and spring housing of a gas pressure regulator comprising a wall member formed of malleable cast metal and having a rectangular window therethrough, a rabbet surrounding said window on the inner side thereof, a valve unit adapted to be received in said rabbet to close the window, at least two opposite edges of said rabbet having lugs outstanding from the adjacent metal of the housing and adapted to be crimped over the valve unit to hold it in position, said valve unit including a frame of size and thickness to fill said window rabbet, the four frame sides being each of such width as to project substantially beyond the rabbet into the window area, a flat flapper sheet of less than window size adapted to engage all four frame sides where exposed to said window, means integral with frame and flapper to bias the flapper against said projections of the frame sides, and means securing one end of the flapper to one of said sides permanently.

3,160,170
DISHWASHING MACHINE AND OPERATIONAL CYCLE THEREFOR
Kenneth E. Sampsel, Garland, Tex., assignor, by mesne assignments, to L.T. Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 11, 1963, Ser. No. 257,508
9 Claims. (Cl. 137—341)



1. In an automatic dishwasher of the type described, a cycle control timing mechanism having a timer means, means for energizing a heating means in a receptacle to continuously heat water as it passes through said receptacle, and means responsive to said timer means periodically opening and closing a valve upstream from the receptacle and reducing the average rate of flow of water through the receptacle to a compartment below a normal flow and permitting the energized heating means to effect an increase of the temperature of water delivered to said compartment for a cycle above the temperature effected during normal flow.

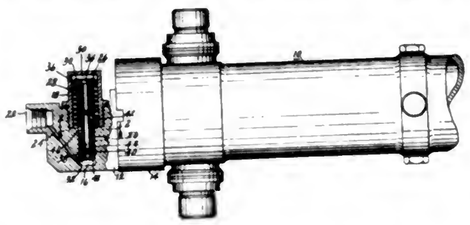
3,160,171
PORTABLE STORAGE TANK
Richard F. Klein, 238 Broadmore Ave., West Covina, Calif.
Filed Mar. 28, 1963, Ser. No. 268,651
6 Claims. (Cl. 137—344)



1. A portable storage tank for liquids which comprises a wheel assembly, a trailer frame, a generally cylindrical tank supported on said frame in a generally horizontal and longitudinally extending position and so as to be vertically movable between a down position and an elevated position with respect to said frame, elevating means engaged between said tank and frame for moving said tank between said down and elevated positions, vertically telescoping guide and support means comprising a plurality of telescoping units connecting said frame and tank for guiding said tank between its down and elevated positions and supporting said tank in its elevated position, said guide and support means being collapsed in the down position of the tank and extended in the elevated position of the tank, and releasable locking means for locking said guide and support means in its extended position for supporting the tank in its elevated position, said tank including liquid input means and liquid discharge means, each telescoping unit including a vertically arranged outer tubular member recessed inwardly from the side of the cylindrical wall of the tank and integrally connected to the tank, each of said telescoping units also including an elongated, vertically arranged support member integrally secured to and extending upwardly from the frame and telescopically received in a respective outer tubular member.

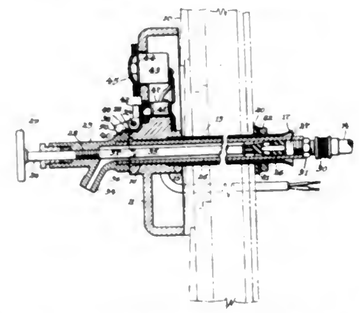
3,160,172
FLOW REGULATING VALVE FOR ACTUATORS
Rolf M. Smith, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,308
4 Claims. (Cl. 137—504)

1. A flow regulating valve assembly comprising, a valve body having a valve bore therein with a pressure inlet port and a drain port communicating with said valve bore, a valve cap attached to said valve body and providing a spring chamber, a piston reciprocably supported in said valve bore, and a spring biasing said piston in one direction, said piston having a surface exposed to the spring chamber which, when subjected to pressure moves said piston in a direction opposite to said spring, said piston having an undercut communicating at all times with said pressure inlet port, slot means interconnecting said undercut and said spring chamber and a piston through bore connecting said spring chamber with a metering orifice in said piston whereby fluid will flow at a rate determined by the pressure head in the spring chamber through the



pressure inlet port, said slot means, said spring chamber, said through bore and the metering orifice to the drain port.

3,160,173
POWER-DRIVEN HOSE REEL
Alfred J. Bowen, Evergreen Farm, The Ledges, R.R. 1, Roscoe, Ill.
Filed Apr. 25, 1960, Ser. No. 24,386
12 Claims. (Cl. 137—355.2)



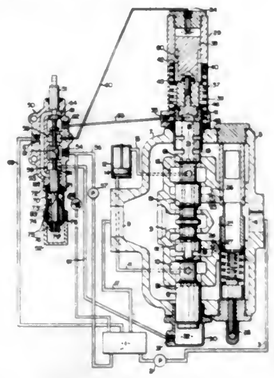
10. In a power-operated device of the character described, a rotatably mounted reel on which windable material is wound, an electric motor for driving said reel to pay out the material, a switch electrically connected with said motor which when closed operates the motor, and means responsive to an outward pull on the material for automatically closing said switch.

3,160,174
REMOTE POWER SHIFT CIRCUITS FOR SPOOL VALVES AND THE LIKE
Herbert H. Schmiel, Willoughby, and Hugh J. Stacey, Chesterland, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 28, 1961, Ser. No. 98,918
11 Claims. (Cl. 137—625.63)

2. In combination, a main flow control valve comprising a housing having a bore intersected axially therealong by an inlet port, by a return port, and by a pair of service ports; a main spool axially reciprocable in said bore from a spring-held neutral position whereat fluid communication between inlet port and both service ports is blocked to either of two operating positions whereat said inlet port is in fluid communication with one of said service ports, and said return port is in fluid communication with the other of said service ports or vice versa, whereby the movable component of a double acting fluid motor connected to said service ports may be actuated in opposite directions by fluid pressure supplied through said inlet port; said main spool further being axially shiftable in said bore to a third operating position whereat said service ports are in fluid communication with each

other; said main spool having its ends extending into chambers in said housing to constitute plungers for fluid pressure actuation of said main spool in opposite directions to two of the three operating positions; a third plunger adjacent one end of said main spool extending into a third chamber in said housing to determine the extent of axial shifting of said main spool to the remaining one of the three operating positions; and a pilot valve operative to selectively conduct fluid under pressure to said three chambers.

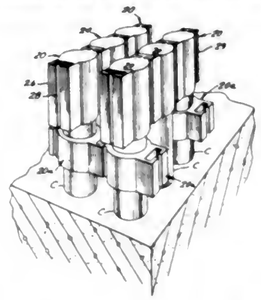
10. In combination, a main flow control valve comprising a housing having a main spool with plunger portions extending into chambers in said housing for fluid pressure actuation of said main spool to different axial



flow control positions; said housing having an inlet port, a return port, and at least one service port for connection with a fluid motor; a pilot valve comprising a body having an inlet port and a plurality of control ports and unrestricted passages leading into the respective chambers, a return port, and pilot valve means movable in said housing, said pilot valve means being operative when in a neutral position to communicate said body inlet port with said control ports through said unrestricted passages to conduct fluid under pressure to said chambers, and being operative when moved to an operative position selectively to vent said chambers through the same passages to said return port, whereby said main spool is actuated to selected operating positions by fluid pressure in unvented chambers.

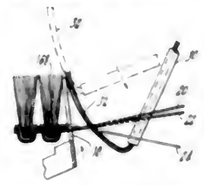
3,160,175
CONDUIT CAP AND SPACER
Richard F. Laemmle, Grove City, Ohio, assignor to Rob-Ric Co., Worthington, Ohio, a corporation of Ohio
Filed Oct. 2, 1961, Ser. No. 142,355
2 Claims. (Cl. 138—96)

1. A spacer for use on a conduit comprising a body having a conduit-receiving socket which is of a cross section complemental to and of a size to receive the conduit, said socket having a peripheral wall which will surround the conduit and the inner surface of which will engage the outer peripheral surface of the conduit, said peripheral wall having a longitudinally extending rib at one side thereof comprising a heavy portion joined to the wall by a thinner web, and a longitudinally extending rib-receiving spacer and socket portion on the peripheral wall at the opposite side of said body, said rib-receiving spacer and socket portion having a large socket extending longitudinally thereof open at its end and being complemental to said rib heavy portion so that its end can be slipped into the end of the large socket, said socket being spaced laterally outwardly of the surface of the peripheral wall of the body by a spacer section, said rib-receiving spacer and socket portion having an outer slot opposite the spacer section communicating with said socket and extending



longitudinally thereof and having an open end for receiving the end of said web.

3,160,176
PROCESS FOR MAKING AXMINSTER TYPE CARPET
Wayne T. Harrison, Granby, and Raymond J. Carrigan, Thompsonville, Conn., assignors to Bigelow-Sanford, Inc., Thompsonville, Conn., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,887
6 Claims. (Cl. 139—7)

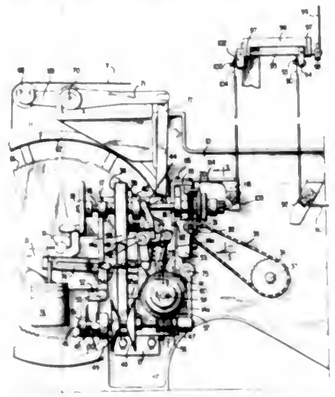


1. The method of weaving an Axminster type carpet characterized by pile in the form of exceptionally high V-tufts, comprising the operations of forming a first shed of binder and stuffer warp threads, raising a comb through said warp threads adjacent the fell of the fabric and moving the comb against the free side of the last previously formed and beaten up row of pile tufts to support the same, introducing a plurality of pile yarns between the warp threads of the first shed with their free ends disposed at the fell while the last previously formed pile tufts are so supported, inserting a holding weft shot into said first shed above said pile yarns, withdrawing the comb from the warp threads, looping the pile yarns about said holding weft shot, beating up said holding weft shot, again raising the comb into said first shed of warp threads and moving the comb into engagement wtih said pile yarns looped about said holding weft shot, severing said pile yarns to form a weftwise row of pile tufts, forming a second shed of said warp threads, inserting a second weft shot into said second shed, withdrawing the comb from the warp threads, beating up said second weft shot, and repeating said operations to form succeeding weftwise rows of pile tufts.

3,160,177
IRREGULAR WARP FEED MECHANISM
Edward J. Williams, Spartanburg, Robert A. Teague, Greenville, and Lester W. Caldwell, Taylors, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed May 10, 1963, Ser. No. 279,442
3 Claims. (Cl. 139—24)

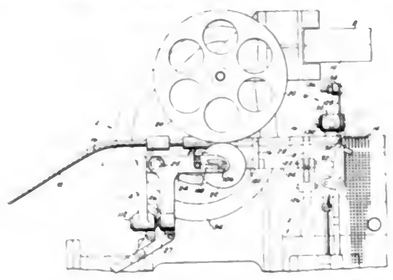
3. In a loom, a let-off motion having an input rotary shaft and a let-off rotary shaft, a gear loosely mounted on

said input shaft and having a clutch part, gearing connected with said gear to turn the same continuously during normal loom operation, a shiftable clutch element on said input shaft adapted for coupling engagement with said clutch part of said gear, resilient means normally maintaining said coupling engagement of said clutch element and clutch part, a clutch element shifter on said let-off motion operable to uncouple the clutch element and clutch part of the



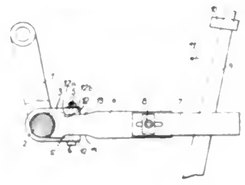
gear, whereby rotation of said input shaft may be interrupted, a cloth take-up motion on the loom including a take-up pawl and a ratchet wheel engaged by the pawl, a loom dobby head having a jack, and control means interconnecting said jack, shifter and take-up pawl and operable in response to movements of the jack to move the shifter and pawl simultaneously for simultaneously deactivating said let-off and take-up motions.

3,160,178
FILL WIRE INSERTING MEANS
George E. Meckley, Abbottstown, Pa., assignor to Hanover Tool Company, Inc., Hanover, Pa., a corporation of Pennsylvania
Filed June 26, 1962, Ser. No. 205,329
3 Claims. (Cl. 139—127)



1. In a strand feeding device including a support, a feed wheel having an annular strand-driving surface, means rotatably mounting said feed wheel on said support, infeed guide means on said support for guiding a strand from a source of supply substantially tangentially of and towards said surface, outfeed guide means on said support for guiding said strand substantially tangentially of and away from said surface, back-up means on said support for pressing said strand against said surface, and drive means for said feed wheel comprising: a lever, means mounting said lever on said support for oscillation about a first axis, a rotating driving member, means mounting said driving member on said support for rotation about a second axis, said driving member having a crank pin engaging said lever for oscillating said lever about said first axis, means for adjusting the radial position of said crank pin with respect to the second axis, whereby the length of stroke of the lever for each rotation of the driving member may be adjusted, a quadrant gear on said lever, a pinion rotatably mounted on said support and meshing with said quadrant gear whereby said pinion rotates in one direction by a forward stroke of the lever and in an opposite direction by a return stroke of the lever, a drive train including a one-way clutch having an input member connected to the pinion and an output member connected to the feed wheel for driving the feed wheel with the forward stroke of the lever, a brake connected between the support and the drive train between the clutch and the feed wheel, and means actuated by the drive member for setting the brake during a final portion of the drive stroke and the return stroke of the lever.

3,160,179
ROCKER ARM JOINT FOR LOOMS
Erhard Kenk, Vaihingen (Enz), Nord, Germany
Filed Jan. 22, 1962, Ser. No. 167,635
Claims priority, application Germany, Jan. 25, 1961, K 42,724; Nov. 22, 1961, K 45,259
16 Claims. (Cl. 139—151)

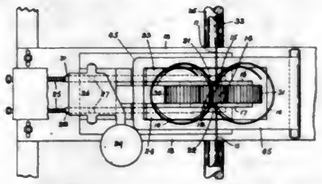


1. A rocker arm joint for a loom comprising, in combination, a rocker arm having a hinge pin; a yoke means having legs; longitudinally extending lug stick means partly located between the legs of said yoke means and forming with the same a bearing for said hinge pin, said yoke means and lug stick means having contacting surfaces extending substantially in the longitudinal direction of said lug stick means, said yoke means and lug stick means having faces transverse to said longitudinal direction and abutting each other, said abutting faces having parallel edges and being shaped so that a plane passing through said edges defines with the respective contacting surfaces an angle not exceeding 90° so that relative displacement of said yoke means and lug stick means along said contacting surfaces by forces exerted by said hinge pin during rocking movement of said rocker arm is prevented; and a connecting member for pressing said legs of said yoke means against said lug stick means so that said contacting surfaces abut each other.

3,160,180
MACHINE FOR SECURING TOGETHER THE END TURNS OF UPHOLSTERY SPRINGS
David Keeble, 39 Bridle Road, Bramcote, England
Filed Apr. 21, 1959, Ser. No. 807,847
7 Claims. (Cl. 140—3)

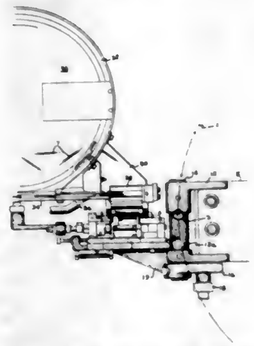
1. In a machine for securing together the end turns of upholstery springs, a rotatable member carried on bearings in side plates, a base to support the side plates, grooves in the base to receive the end turns of two upholstery springs and position them in the radial slot, clamping slides on the base to hold the end turns of the springs and a transverse tie wire placed in the radial slot, a releasable catch to hold the clamping slides in an inoperative position, springs to advance the clamping slides into operative position when the catch is released, teeth

on the rotatable member, gears to drive the rotatable member from a shaft, a motor, a clutch to couple the



motor to the shaft, and means to operate the clutch to turn the rotatable member and wrap an off-set loop in the tie wire round the end turns of the springs.

3,160,181
METHOD OF AND APPARATUS FOR FEEDING, COMPRESSING, STRETCHING AND TRANSFERRING FILAMENTS
Donald K. Voyce, Somerville, and Samuel E. Swasey, Marblehead, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 27, 1961, Ser. No. 98,388
7 Claims. (Cl. 140—71.6)



1. The method of preparing coiled filaments of various over-all lengths for assembly with support wires therefor in the manufacture of electric lamps and the like, said method comprising: positioning one of said coiled filaments in a nest; constraining said coiled filament while disposed in said nest; compressing said constrained coiled filament to a uniform, pre-determined, over-all length; stretching said constrained, compressed coiled filament to a uniform, pre-determined, over-all length; and presenting said stretched coiled filament to said support wires while maintaining said filament in said stretched state.

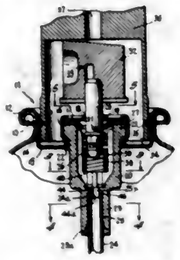
3,160,182
AEROSOL DISPENSER SIPHON CONSTRUCTION
William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,703
1 Claim. (Cl. 141—20)

In an aerosol dispenser having a container adapted to be held in the hand, in combination:

(*a*) a tubular valve housing having a central passage for aerosol substance and a hollow depending boss at its lower end for supporting a dip tube, said boss having an elongate bore communicating with the said central passage and adapted for engagement with the tube,

(*b*) a dip tube press-fitted in the bore of the depending boss and having an upper end portion which is of uniform outside diameter and is disposed an appreciable distance above the bottom end of the boss, said tube having uniform outside diameter throughout and extending downward from the boss for immersion in the liquid of the container, and

(*c*) a tubular shield carried by the valve housing at its interior and encircling the said central passage thereof, said shield having an internal diameter which is smaller than the normal internal diameter of the dip tube measured below the top edge portion thereof, and having a lower portion of thin cross section disposed within the said upper end of the dip tube whereby the shield covers the upper edge and interior of the upper edge of the tube and



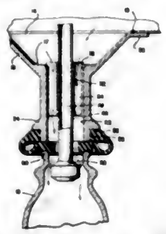
shields it from the flow of pressurized aerosol substance during pressure filling of the container,

(*d*) said valve housing having an annular recess defined by said shield, in which the upper end of the dip tube is received, said recess having its greatest diameter substantially equal to the outside diameter of the dip tube,

(*e*) said tubular shield having a conical outer wall meeting the wall of the bore of the boss and forming therewith an annular wedging recess, said upper end of the dip tube being wedged in said recess,

(*f*) the upper end of the dip tube having a tapered cross section substantially fitting the wedging recess of the valve housing.

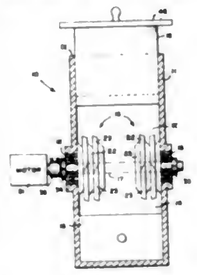
3,160,183
RECEPTACLE FILLING DEVICE
Henry H. Franz, 3201 Falls Cliff Road, Baltimore, Md.
Filed Aug. 16, 1962, Ser. No. 217,413
3 Claims. (Cl. 141—291)



3. Apparatus for filling a container having an opening therein defined by an annular lip comprising a tank having an opening therein, a hollow tubular depending spout overlying said opening and being secured to said tank, a vent tube supported within said spout and projecting into said tank and below the bottom of said spout, said vent tube having an enlarged plug formed on the lower end thereof, a hollow open ended tubular valve sleeve member, said valve member having one end thereof frictionally gripping the lower end of said spout, the other end of said valve member having an annular recess formed

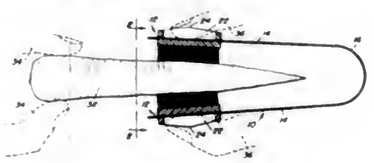
in the bottom surface thereof defining an inner annular bead normally engaging said plug for sealing said spout and tank, said recess having a diameter commensurate with that of the opening in the container as defined by said annular lip, said last mentioned end flexing towards said spout upon engagement of said recess by the annular lip of the container during a filling operation, the engagement of said recess by the lip of the container during the flexing of said end retains the cross sectional area of the opening in said end substantially equal to the cross sectional area of the opening when said bead is in engagement with said plug.

3,160,184
ROTARY COMMINUTOR
Anthony Frate, 3831 N. Marshall St., and Nicholl Thompson, 2213 N. Broad St., both of Philadelphia, Pa.
Filed Aug. 8, 1963, Ser. No. 300,792
9 Claims. (Cl. 146—123)



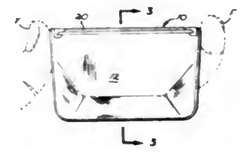
1. A foodstuffs comminutor of the kind described comprising a housing, a rotating comminuting mechanism within said housing having an axis positioned transversely thereof, a plurality of cutter plates mounted on said axis transversely thereof and in contact face to face, said cutter plates being generally congruent and having peripheries generally of regular polygonal shape with equal number of sides, diagonal cutting termini on the trailing ends of the sides of each said cutter plate, said ends being trailing relative to the direction of rotation of said comminuting mechanism, adjacent diagonal cutting termini on each said cutter plate having axial components of direction opposite to each other, said housing on opposite sides of said diagonal cutting termini being curved and positioned closely to the path of rotation of said termini, means for feeding foodstuffs into said housing and into contact with said comminuting mechanism, and means for collecting and removing comminuted foodstuffs from said housing.

3,160,185
CARROT PEELER
Horace G. Retherford, Rte. 1, Box 309, Corona, Calif.
Filed Jan. 2, 1963, Ser. No. 248,991
2 Claims. (Cl. 146—203)



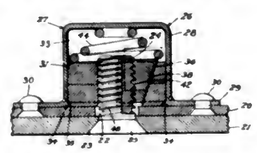
1. A carrot peeler comprising a pair of carrot peeler brushes, and a substantially U-shaped leaf spring member providing a handle, said brushes being mounted on the legs of said U-shaped leaf spring member in spaced apart relationship with the bristles of each brush extending toward the bristles of the other brush, each said brush comprising a brush head and a plurality of rows of individually spaced apart tapered bristles of molded plastic material extending integrally from said brush head, the legs of said U-shaped leaf spring extending transversely of each said brush head, the rows of bristles extending at an acute angle to said leaf spring legs, the planes of the bristle points of the two brushes converging toward the bight of the U-shaped handle, said acute angle being the optimum angle of 22½ degrees.

3,160,186
COIN AND KEY CASE
Howard W. Conley, West Shore Drive, Detroit Lakes, Minn.
Filed Sept. 17, 1962, Ser. No. 224,175
2 Claims. (Cl. 150—37)



1. A pocket case for coins, keys and the like,
comprising an integral one-piece receptacle constructed of resiliently flexible and easily pliable material, said receptacle defining a key and coin-confining compartment and having a pair of broad and generally flat upright sidewalls confronting each other, said sidewalls having upwardly extending upper edge portions and opposite ends,
a pair of substantially flat upright endwalls of said material and said endwalls being formed integrally of and extending transversely between the ends of said sidewalls,
a pair of closure flaps each connected to and formed integrally with the upper edge of a respective sidewall and extending transversely therefrom in overlapping relation with the other flap, said flaps having ends disposed in spaced relation with the ends of the sidewalls to expose unobstructed end portions of the upper edge portions of the sidewalls, thereby permitting the sidewalls to readily flex outwardly adjacent the endwalls in response to inwardly directed pressure applied against the endwalls to commence the outward bowing of the sidewalls and thereby cause opening of the compartment and upward flexing of the flaps to allow ready and easy access into the compartment, said sidewalls and flaps resiliently returning to substantially flat condition upon release of the pressure on the endwalls.

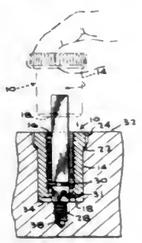
3,160,187
QUICK LOCKING FASTENER WITH SINGLE MOVABLE JAW
Victor F. Zahodiakin, P.O. Box 689, Summit, N.J.
Filed Dec. 4, 1961, Ser. No. 156,660
2 Claims. (Cl. 151—19)



1. A fastening device of the quick-locking type, comprising a receptacle including a socket member having a

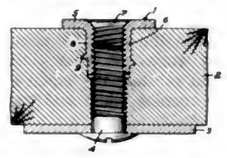
hollow therethrough and having parallel top and bottom end walls, and a threaded stud insertable into said hollow, said hollow being formed with two opposite partially cylindrical smooth walls generated about two axes of which one axis is perpendicular to said top and bottom end walls of said socket member and the other axis slopes downwardly toward and intersects the perpendicular axis, the one said partially cylindrical wall that has the axis perpendicular to the end walls having a radius equal to the radius of the major diameter of said stud threads, and the radius of the partially cylindrical wall generated about the inclined axis having a greater radius than the other, said hollow also having four planar walls that complete the periphery of the hollow from one partially cylindrical wall to the other, the part of said hollow defined by said partially cylindrical wall that has the perpendicular axis thereby comprising a cavity smaller than the part of the hollow that forms a larger cavity defined by the partially cylindrical inclined wall and said planar walls, a first two of said planar walls being in a common plane and projecting outwardly from edges intersecting the partially cylindrical wall of the smaller cavity, and the other two of said planar walls being parallel to each other and perpendicular to said plane and intersecting the outer edges of said first two planar walls and intersecting the side edges of the partially cylindrical wall of the larger cavity, and a single moving part entirely in the larger said cavity and having faces conforming to and slidable against said parallel walls and against said inclined partially cylindrical wall of the larger cavity, and having a longitudinally concave face with partial screw thread convolutions adapted to be engaged by said stud, said moving part having two planar faces in a common plane at the sides of said concave face, said planar faces of said moving part and the corresponding two planar walls of the socket member being in direct opposition and when in engagement permitting approach of the threaded concave face of the smaller cavity of the socket member to a less diameter than the diameter of said stud.

3,160,188
THREADED INSERT FOR BLIND HOLE
Charles Frank, 436 New Lots Ave., Brooklyn 7, N.Y.
Filed Mar. 9, 1962, Ser. No. 178,683
4 Claims. (Cl. 151—41.73)



1. An adaptor insert for receiving threaded fasteners, comprising, in combination, a cylindrical, tubular cup with a bottom wall having a square opening, said cup having internal threads, and an outwardly extending, annular flange at its top, said flange having external splines in a direction parallel to the axis of the cup and having an outer, annular, corner recess on its lower side, and a rod of square cross section adapted for a snug, sliding fit in said opening, and having a reduced, threaded end portion, and a reduced, circular neck portion spaced from said end portion a distance substantially the same as the length of said end portion.

3,160,189
SELF-TAPPING T NUT
Norman J. Hughes, Melrose, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed July 11, 1962, Ser. No. 209,002
1 Claim. (Cl. 151—41.73)



A fastener device comprising a radially enlarged annular base, an aperture formed through said base, a tubular shank extending from said base and having inner and outer surfaces, said inner surface being a continuation of the wall defining said aperture and having an external thread means, and an external thread formed integral with said outer surface and traversing a continuous helicoidal path continuously through at least one circumvolution of the axis of said shank, said shank having a wall thickness thinner at one side of said external thread than the other and said external thread being formed from material originally at the thin side between the thread and the spaced end of the shank, said thread means having a continuously increasing radial thickness from its commencement to its end.

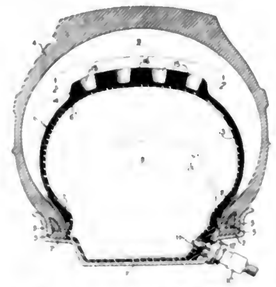
3,160,190
SNOW TREAD
Daniel N. Jedlny, 212 Washington Ave., Garfield, N.J.
Continuation of application Ser. No. 156,320, Dec. 1, 1961. This application Jan. 15, 1963, Ser. No. 251,698
15 Claims. (Cl. 152—209)



1. A snow tread for traction on snow or ice-covered ground as well as on bare ground surface, said tread being characterized by a recess open at its outer end along the tread surface to induct snow or ice material during travel of the tread on snow or ice-covered ground, said recess being internally structured to entrap the inducted snow or ice material as a congealed, icy slug for uniting at its exposed end with further encountered ground snow or ice material to develop into an icy traction-promoting cleat.

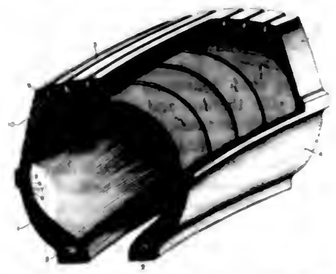
3,160,191
SAFETY TIRE HAVING AN INNER TIRE PROVIDED WITH A CHAFE AND PUNCTURE RESISTING TREAD
Malcolm G. Anderson, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 11, 1962, Ser. No. 222,850
4 Claims. (Cl. 152—341)

1. An inner safety tire for use within the space defined by an outer tire mounted on a rim, comprising a thin substantially inextensible and readily flexible circumferential outer dividing wall of substantially uniform thickness at the outer circumference thereof and having a circumference such that the dividing wall will be spaced a substantial distance from the inner circumference of said outer tire and said rim when said inner tire is mounted in said space to thus divide said space defined by said outer tire and rim into radially disposed inner and outer air chambers, said dividing wall having on its outer circumference a tread of substantial thickness at least adjacent the circumferential centerline thereof and having an outer circumference substantially less than that of the inner circumferential wall of the outer tire, said tread comprising a plurality of relatively narrow, generally radially extending interconnected partition walls defining closely spaced perforations of a cross-section substantially greater than the thickness of the partition walls between



the perforations and of a depth substantially the full thickness of the tread, said partition walls being flexible at least at their radial outermost portions to permit lateral and circumferential flexing thereof when engaging the inner circumferential wall of said outer tire after deflation of the outer chamber, to thus permit the partition walls, when in engagement with the inner wall of the outer tire, to move therewith and thus reduce the amount of relative movement therebetween and thus minimize the abrasion of the engaging surfaces of said partition walls and outer tire, said partition walls being adapted to hold the inner circumferential surface of the outer tire in substantial spaced relation to the dividing wall when the outer chamber is deflated.

3,160,192
PNEUMATIC TIRE
James W. Drew, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 13, 1961, Ser. No. 82,438
8 Claims. (Cl. 152—355)



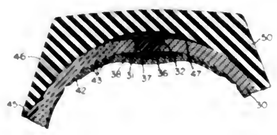
6. A pneumatic tire comprising tread and sidewall portions terminating in annular beads, and a carcass including four bead-to-bead strain-resisting cord fabric plies, the two innermost plies being nylon cord fabric and the two outermost plies being rayon cord fabric, and successive plies of the carcass having the cords of the same crossing at opposite angles to the median plane of the tire.

3,160,193
HOLLOW TIRE CORD
William M. Baggett, Pensacola, Joseph A. Hafford, Gulf Breeze, and George B. Hughey, Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 226,088
7 Claims. (Cl. 152—359)



6. An improved carcass for a rubber tire having tread and side-walls superimposed thereon, said carcass comprising a plurality of composite fabric layers each having a plurality of cords embedded therein, said cords being formed from a plurality of continuous plied and twisted filaments having continuous axially extending holes for improving the flex-life of the rubber tire.

3,160,194
TIRE PATCH
Donald L. Barrett, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 28, 1963, Ser. No. 268,630
5 Claims. (Cl. 152—367)

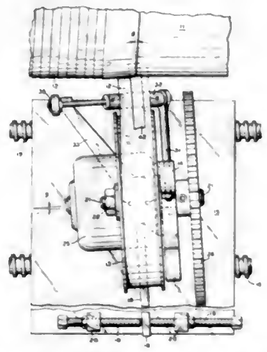


1. A retreaded cord tire with a carcass having an opening therethrough measuring at least ¼ inch across and not substantially more than one inch in any direction, a rubber plug in the opening, the inner and outer surfaces of the carcass being abraded around the opening close to the cord surfaces in the carcass, patches over the plug and adhered to said respective abraded surfaces, each patch comprising a ply of rubber adjacent the carcass in which there are short, discontinuous lengths of filamentary material generally orientated parallel to the tire cords adjacent the patch, with a new tread over the patch on the outer surface of the carcass.

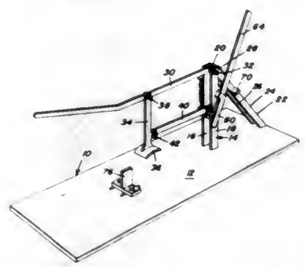
3,160,195
STRIP WRAPPING
Curzon Dobell, Nassau, Bahamas
Filed July 11, 1960, Ser. No. 41,876
19 Claims. (Cl. 153—64)

1. Apparatus for wrapping strip material which comprises a mandrel around which said strip material is to be wrapped; supply means for supplying said strip material under tension to said mandrel under a predetermined helix angle such that the strip windings have overlapping relationship with one another; and deflecting means engaging the portion of the strip material between said supply means and said mandrel, to effect redistribution of the tension in said strip material, said deflecting means being so constructed and arranged that the trailing edge portion of the strip material is deflected more than the leading edge portion, whereby correspondingly

greater tension is applied to the trailing edge portion than to the leading edge portion, producing a corresponding differential stretch between said edge portions, for accommodating said overlapping relationship.



3,160,196
TIRE BEAD BREAKER
Frederick L. Ohlsen and Verna J. Ohlsen, both of Rte. 1, Box 4A, Ruthven, Iowa
Filed Aug. 7, 1963, Ser. No. 300,424
8 Claims. (Cl. 157—1.17)



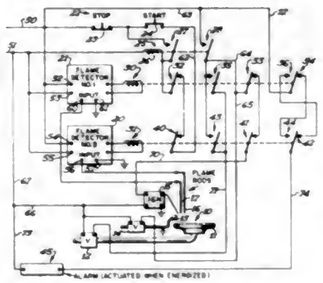
1. A tire bead breaker including a standard adapted at its lower end to be supported from a suitable supporting surface, a generally horizontal lever handle pivotally secured at one end to the upper end of said standard for rotation about a first generally horizontal axis extending transversely of said lever handle and having the upper end of a depending pressure leg pivotally secured thereto intermediate said first axis and the other end thereof for rotation about a second axis generally paralleling said first axis, a connecting link extending between said standard and leg below and generally paralleling said lever handle, means pivotally connecting the opposite ends of said link to said standard and said leg about third and fourth axes, respectively, generally paralleling said first axis, the means pivotally connecting said link to said standard including means for laterally shifting the third axis in a direction toward said leg.

3,160,197
BURNER SAFEGUARD CONTROL APPARATUS
Fred T. Deziel, Bloomington, and William B. Hamelink, Richfield, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 162,009
8 Claims. (Cl. 158—122)

1. Control apparatus for use with a fuel burning installation, comprising;

a plurality of flame detectors each having output means and input means, said flame detectors being individually responsive to the presence or absence of flame at the fuel burning installation,

first control means including the output means of said plurality of flame detectors adapted to maintain a supply of fuel to the burning installation so long as

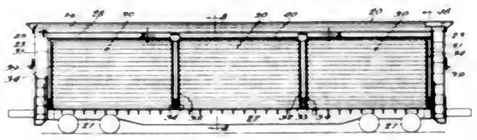


at least one of said plurality of flame detectors detects the presence of flame,

component failure indicating means,

and second control means including the output means of said plurality of flame detectors adapted to control said component failure indicating means to indicate a component failure in at least one of said flame detectors when said plurality of flame detectors fail to jointly indicate the presence of flame at the fuel burning installation.

3,160,198
DOOR OPERATING MECHANISM FOR RAILWAY CARS
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,045
5 Claims. (Cl. 160—113)



1. In a railway car having a plurality of vertically sliding doors along one side thereof, the combination of

a side plate extending substantially the full length of said car,

an operating shaft journaled on said side plate on the external side thereof and comprising a plurality of coupled shaft sections, one for each of said doors,

chain means connecting the top and bottom of each of said doors at each end of each door,

sprocket wheels secured to each end of each shaft section and engaging said chains,

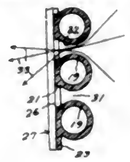
and separate mounting means for each shaft section, said mounting means including

end saddles mounted on said side plate for supporting each end of each shaft section at a point adjacent each sprocket wheel, and

a flanged bearing sleeve mounted on each end of each shaft and received within one of said end saddles, the flanges thereof straddling said end saddle to prevent longitudinal movement of said bearing sleeve with respect to said end saddle,

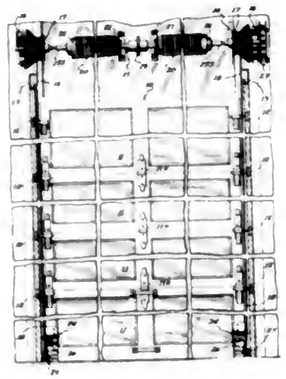
said end saddles being in the form of notched plates and said bearing sleeves fitting loosely therein so that said bearing sleeves can accommodate themselves to manufacturing tolerances and to shaft deflection.

3,160,199
VENTILATED CURTAIN
James L. Culpepper, Cicero, Ill. (4558 Arcady, Dallas 5, Tex.)
Filed May 27, 1963, Ser. No. 283,370
4 Claims. (Cl. 160—130)



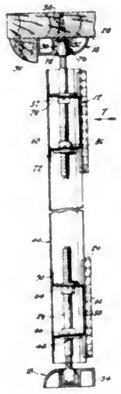
1. A ventilated curtain comprising a flexible rectangular sheet having a substantially flat outer side and an inner side, a plurality of long slender elements protruding from and forming a part of said inner side, said elements being disposed in spaced apart substantially parallel relation to one another, and said sheet having openings of a width greater than the spacing between said elements and disposed in alignment with the spaces between the elements.

3,160,200
DRIVE MECHANISM FOR OVERHEAD DOORS
John F. McKee and Reynold E. Schumacher, both of Aurora, Ill., assignors to McKee Door Company, a corporation of Illinois
Filed Sept. 28, 1961, Ser. No. 141,352
4 Claims. (Cl. 160—189)



1. A counter-balanced drive mechanism for an articulated overhead sliding door that is movable in guideways that extend upwardly alongside an opening for the door and then rearwardly, said door having guide means carried on opposite sides of the door and engageable with said guideways for guiding movement of the door from a vertical closed position across the opening to an overhead substantially horizontal open position immediately above the opening, said mechanism comprising means mounting a separate winding drum above and adjacent each side of the opening to rotate about a horizontal axis, a separate cable engaged upon each drum and having a lower end connected in fixed relation to a corresponding lower side of the door, drive means connected to rotate said drums in unison either in a door opening direction or in a door lowering direction, counterbalancing means connected to said drums and acting in unison thereon to assist rotation thereof in a door opening direction and to oppose rotation thereof in a door closing direction, first continuously active slack take-up means on the door adjacent one lower side thereof and connected to engage a portion of the corresponding cable adjacent but spaced from the lower end thereof to resiliently pull such cable to a taut condition, and second continuously active slack take-up means on the door adjacent the other lower side thereof and connected to engage a portion of the corresponding cable adjacent but spaced from the lower end thereof to resiliently pull such cable to a taut condition, each slack take-up means comprising a door mounted thimble having said cable portion trained reversely thereabout for free sliding movement relative thereto, a door mounted spring mount, and an elongated coil spring located on the spring mount and having one end anchored against rotation and an opposite end providing a swingable arm terminating in a hook engaged about the cable at a point between the thimble and the lower end of the cable.

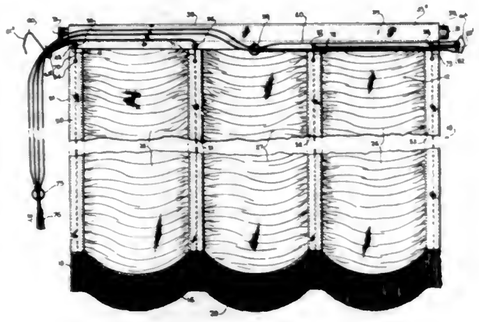
3,160,201
DOOR STRUCTURE
Robert O. Johnson, Erie, Pa., assignor to Fenestra, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Nov. 16, 1961, Ser. No. 152,819
8 Claims. (Cl. 160—206)



1. A folding door comprising a pair of door panels, threaded rod pivot means, combination reinforcing member, leaf hinge and pivot mounting means securing the panels together comprising an elongated U-shaped member including parallel leg portions having aligned openings therein through which the threaded rod pivot means extends and a connecting portion having parallel spaced apart slots therein extending transversely of the threaded rod pivot means, a guide secured adjacent one end of said panels in which the threaded rod pivot means is received and a spring clip nut securing the threaded rod pivot means to the reinforcing member, leaf hinge and pivot mounting means comprising a U-shaped member including substantially flat leg portions and a connecting portion, each of said leg portions of the spring clip nut having a recess therein extending from the free edge thereof toward the connecting portion, including a circular portion, converging sides terminating in the circular portion, and a slot extending from the circular portion toward the connecting portion, the leg portions of the spring clip nut extending through the slots in the reinforcing member, leaf hinge and pivot mounting means to engage the threaded rod pivot means within the circular portion of the recess.

3,160,202
SELF-CONTAINED LIFTING MEANS FOR CURTAINS

Jacob Rosen, 2090 Barnes Ave., Bronx 62, N.Y.
Filed Nov. 21, 1962, Ser. No. 239,263
1 Claim. (Cl. 160—344)



A draw curtain comprising a generally rectangular body of fabric, said body having on one side thereof a plurality of lines of shirring spaced from from each other transversely of the body between lateral edges thereof, said shirring being formed by lines of stitching extending from end to end of the body parallel to said edges, said shirring dividing the body into a plurality of panels with transverse folds therein from end to end of the body, a plurality of tapes secured to the other side of the body by said stitching engaging lateral edges of the tapes so that a plurality of longitudinally extending tubes are defined between the tapes and the body, a band secured to one end of the fabric at the other side thereof and formed to define a passage thereat for receiving a curtain rod, a cord in each tube secured at one end to the lower end of the body, said cords passing through upper ends of the tubes at the other side of the body, guide means for said cords, said cords passing through the guide means to one lateral edge of the body so that all the cords are retracted simultaneously when pulled together at said one lateral edge of the body, said guide means including a ring secured to said band near the center thereof, eyelets carried by the band at the top of each tube, eye hooks at opposite lateral edges of the body engageable on opposite ends of the curtain rod, each cord passing through its respective eyelet, the cords on one side of the body passing through the eye on one eye hook, being reverted, and passing through the ring and the eye of the other eye hook, and the cords on the other side of said body extending from their respective eyelets directly through the eye of said other eye hook, all of said cords depending from said other eye hook along said lateral edge, and connecting means secured to the free ends of the cords for pulling all the cords simultaneously.

3,160,203
VAPOR LOCK SUPPRESSOR

Ike W. Kusisto, Wickenburg, Ariz.
(P.O. Box 13237, Phoenix, Ariz.)
Filed June 4, 1962, Ser. No. 199,833
1 Claim. (Cl. 165—51)

A vapor lock suppressor comprising in combination:

A. an existing gasoline pipe line,

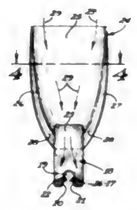
B. a mounting shank,

C. a keyhole-shaped slot formed in said shank including,

D. a cylindrical gasoline pipe line receiving bore surface adapted to fit the outside diameter surface of said gasoline pipe line,

E. and divergent side surfaces extending radially outwardly from said gasoline pipe line receiving bore to one end of said shank,

F. an air scoop fixed to the other end of said shank and extending radially outwardly from said gasoline pipe line receiving bore including,



G. a concave forwardly facing surface facing into the air stream flowing over said gasoline pipe line,

H. and integral forwardly extending side deflectors formed on said concave surface extending convergently radially inwardly toward said gasoline pipe line receiving bore of said shank to form a venturi-like passageway to concentrate a strong flow of air from the outer end of said air scoop toward said shank and over said gasoline pipe line.

3,160,204
HEAT EXCHANGE INCLUDING IMPROVED SUPPORTING BRACKET

Gary D. Jones, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 29, 1962, Ser. No. 220,276
1 Claim. (Cl. 165—67)



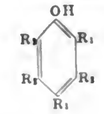
A bracket for engaging and supporting the sections of a heat exchanger comprising spaced outer sections and at least one intermediate section, each of said sections including a plurality of parallel passes connected by U-shaped end turns, said bracket comprising a substantially flat sheet metal member having therein spaced outer slots adjacent opposed ends of said member receiving an end turn of each of said outer sections, and an intermediate slot receiving an end turn of said intermediate section, each of the ends of said member being return bent so that the edge portion thereof partially overlies the outer slot adjacent thereto and resiliently engages an end turn disposed in said slot, said overlying edge portion having a notch therein in registry with said slot and of a width less than that of the corresponding U-shaped end turn, said sheet member having slits therein extending laterally from the ends of said intermediate slot forming a resilient tab engaging the end turn disposed in said intermediate slot, a side wall of said intermediate slot having a notch therein of a width less than that of the corresponding U-shaped end turn, whereby, during the mounting of said bracket upon said end turns, said notches in said edge portions of said sheet member and said side wall of said intermediate slot will allow a portion of each of said end turns to be inserted through said slots before becoming engaged by an edge portion or side wall.

3,160,205
SECONDARY RECOVERY WATER FLOODING PROCESS

Robert R. Harvey, Richard H. Langenheim, and Joseph C. Trantham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 26, 1963, Ser. No. 261,204
13 Claims. (Cl. 166—9)

1. The method of displacing oil from a subterranean formation which comprises injecting into the formation at a selected region thereof in succession (1) a first volume of water substantially free of other materials, (2) a second volume of water having a pH above 7, (3) a third volume of water having a pH above 7 and containing a material selected from the group consisting of:

(A)



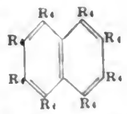
where

R_1 and R_2 are selected from the group consisting of H, OH, R', COOH, R_3COOH, R_3OH, at least one R_1 being OH,

R' is an alkyl group having 1 to 4 carbon atoms per molecule, and

R_3 is an alkylene group having 1 to 3 carbon atoms per molecule,

(B)



where R_4 is selected from the group consisting of H, OH, R', R_3OH, COOH, and R_3COH, at least two R_4's being OH and said structure being oxidizable to a quinone,

(C) flavotannins,

(D) gallotannins,

(E) mixed tannins,

(F) quinhydrone,

(G) p-benzoquinone,

(H) 1-naphthol,

(I) 1,3-naphthalenediol,

(J) phloroglucinol and 2-methylphloroglucinol,

(4) a fourth volume of water having a pH above 7, and (5) a fifth volume of water substantially free of other materials.

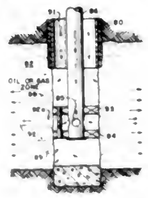
3,160,206
METHOD OF CLEANING PERMEABLE FORMATIONS

Robert M. Jorda, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 7, 1961, Ser. No. 115,299
8 Claims. (Cl. 166—30)

1. A method of treating an earth formation penetrated by a well and in communication therewith for increasing the permeability of said formation adjacent said well, said method comprising the steps of pumping a predetermined volume of a cleaning fluid down the well and into contact with said formation, injecting said cleaning fluid into a portion of said formation, pumping a predetermined volume of a formation-plugging material down the well behind the cleaning fluid and contacting the formation with it to seal the most permeable zone thereof, and subsequently repeating said steps of successively pumping alternate volumes of cleaning fluid and sealing material down the well and into contact with unsealed portions of said formation, each of said volumes being a minor amount of the volume used in a one-stage treatment, said plugging material being of a composition that breaks down to a free-flowing fluid after being exposed for a predetermined time to the well conditions at the level of the portion of formation being treated.

3,160,207
METHOD OF ACIDIZING WELLS

James W. McEver, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 12, 1962, Ser. No. 165,868
5 Claims. (Cl. 166—42)



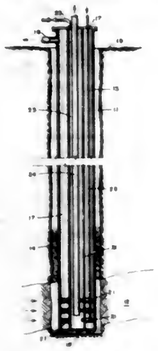
1. In the acidizing of wells, the method of providing a thin disc-shaped well-fluid collection zone and flow channel extending radially from a well borehole into an oil-producing formation by focusing a quantity of acid into an oil-producing formation, said method comprising packing off the section of a well above and below the portion of the oil-producing formation traversed by the well to be acidized, injecting a first quantity of a formation-treating acid through said well and radially into the portion of formation to at least one side axially of said packed-off section of well, injecting a second quantity of a formation-treating acid fluid under pressure through said well and radially into the portion of the oil-producing formation radially adjacent the packed-off section of the well to acidize said formation, simultaneously injecting with said second quantity of acid fluid an oleophilic fluid through said well and radially into the formation previously treated by said first quantity of formation-treating acid and into the formation to the other side of said portion of oil-producing formation being acidized, said injections being carried out at pressures sufficient to maintain the radial flows of said fluids into the formation at substantially equal velocities, and reopening the oil-bearing formation to production.

3,160,208
PRODUCTION WELL ASSEMBLY FOR IN SITU COMBUSTION

Robert M. Jorda, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1961, Ser. No. 143,459
5 Claims. (Cl. 166—57)

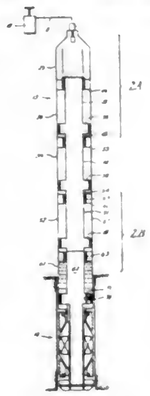
5. A production well head assembly for use in an underground combustion system for recovering petroleum products from earth formations, said assembly comprising a well casing extending into a well to a point adjacent an oil bearing formation to be produced, means fixedly positioning said casing in said well, a cooling water jacket formed around the inside of said well casing at least over that portion of the casing adjacent the formation to be produced whereby an annular space is formed around the inside of the casing which forms one wall of said cooling water jacket, said casing having port means in open communication between the interior and the exterior of the well casing at a point adjacent said formation to be produced, closure means closing the casing at the top thereof, conduit means in said well and extending out of

the top thereof for producing hydrocarbons therefrom, and cooling water conduit means extending from the



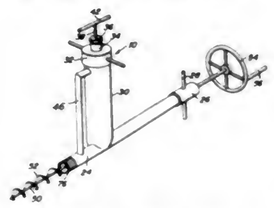
top of the well alongside said well casing to said water jacket for circulating water therein.

3,160,209
WELL APPARATUS SETTING TOOL
James W. Bonner, 900 Ave. B, Alice, Tex.
Continuation of abandoned application Ser. No. 617,112, Oct. 19, 1956. This application Dec. 20, 1961, Ser. No. 160,740
5 Claims. (Cl. 166—63)



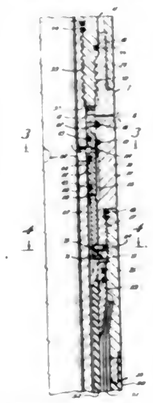
1. A well apparatus setting tool having an upper end and a lower end and comprising a plurality of coaxial serially connected cylinders disposed with their axes vertical with respect to said tool, a plurality of pistons disposed one in each of said cylinders, each piston having a passage therethrough from its upper part to its lower part, hollow piston rods serially connecting said pistons and said passages therethrough, the uppermost of said cylinders being adapted for connection to a source of pressure fluid, means sealing between each piston rod and the adjacent cylinder, said piston rods including passages connecting the interiors of the hollow piston rods to the spaces below the pistons inside the several cylinders, there being a vent to the space above each piston inside the several cylinders whereby any fluid in the cylinder above the piston can escape so that the piston is free to move upwardly so far as such fluid is concerned, said vents being disposed just below said sealing means, there being an additional vent to the space inside the lowermost cylinder, the last said vent being spaced below the first mentioned vent for the last said space a distance greater than the height of the lowermost piston, the last said vent providing a passage for the escape of fluid through the last said space from the lowermost piston rod when the lowermost piston is disposed above said additional vent, and means connected to the lowermost piston and cylinder for connection to a device to be actuated by relative movement between said lowermost piston and cylinder.

3,160,210
DRY CHEMICAL APPLICATOR FOR OIL WELLS
Clyde B. Brewer, 424 2nd St. W., Roundup, Mont.
Filed Apr. 5, 1962, Ser. No. 185,413
10 Claims. (Cl. 166—75)



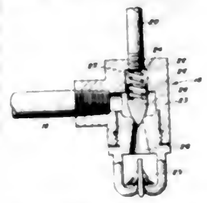
1. In combination, a well casing head, an oil well applicator comprising an injector housing connected to and communicating with said well casing head, an injector movably disposed in said housing and movable to discharge material from the latter into said well casing head, a hopper for containing a chemical agent having continuous communication with said housing, a spring loaded follower slidable in said hopper and for yieldably urging chemical agent from the hopper into said housing, means closing said hopper behind said follower to the atmosphere, a conduit connected to said housing and to said hopper and establishing communication with said well casing head through said housing and with said hopper behind said follower for equalizing fluid pressure on opposite sides of said follower, means for effecting controlled material discharging movement of said injector.

3,160,211
INFLATABLE PACKER WELL TOOL
Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Aug. 9, 1961, Ser. No. 130,305
11 Claims. (Cl. 166—187)



4. A well tool adapted to be lowered in a well comprising, a tubular member, expandable means supported on said member to be expanded in the well, there being an opening in said member communicating with said expandable means whereby fluid may be conducted to expand said expandable means, and movable sleeve valve means surrounding said member and normally open for communicating fluid through said opening to said expandable means, shear means to hold said valve in normally open position, said shear means shearing when the expanding fluid pressure reaches a predetermined amount whereby said valve means moves to close off communication to said expandable means and lock the expanding fluid therein.

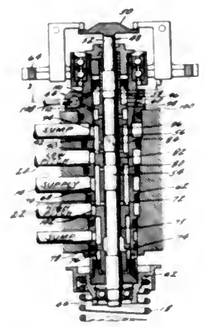
3,160,212
REMOTELY ACTUATED MAGAZINE SPRINKLER VALVE
Donald Lee Reid, Charlottesville, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 31, 1963, Ser. No. 299,123
5 Claims. (Cl. 169—20)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A wet fire extinguishing system, comprising;
a main fluid supply line containing fire extinguishing fluid under pressure;
a fluid control line containing a fluid under pressure equal to that of the main fluid line, said fluid control line being arranged substantially parallel to said main line;
a plurality of control chambers connected in both of the lines and arranged at intervals;
a valve seat located in each of the control chambers and leading to a discharge port;
a bullet shaped valve mounted for reciprocation in each of said control chambers so that the pressure in the supply line tends to keep the valve open and the pressure in the control line tends to keep the valve closed;
means engaging the valve to normally keep the valve closed when the pressure in the lines are equal, but yielding to a lessening of pressure in the control line to permit the pressure of the supply line to open the valve, and
means sensitive to changes of temperature and/or pressure located in the control line at various points throughout the system to bleed said control line upon changes of temperature or pressure to actuate said valve and permit a flow of fluid through the discharge port.

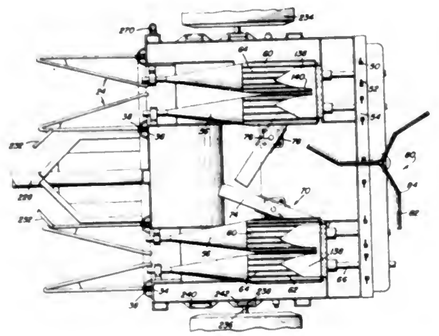
3,160,213
FEATHER CONTROL FOR AERONAUTICAL PROPELLERS
Richard L. Fischer, Suffield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 2, 1961, Ser. No. 128,782
5 Claims. (Cl. 170—160.2)

1. In combination, a variable pitch propeller having a servo motor, means responsive to the speed of the propeller for positioning said servo motor, said speed responsive means comprising a pilot valve including fluid regulating means, a ported servo device for controlling the application of fluid to said servo motor as a function of the position of the fluid regulating means of said pilot valve, a fluid receiving chamber formed on one end of said servo device receiving fluid from said fluid regulating means, a valve including a pressure responsive moveable element moveable to a first and second position located between



said pilot valve and said chamber and normally in the first position, said valve responsive to a source of fluid pressure for positioning said element to the second position so as to bypass the fluid regulating means whereby said servo device is positioned to one extreme position regardless of the position of said pilot valve.

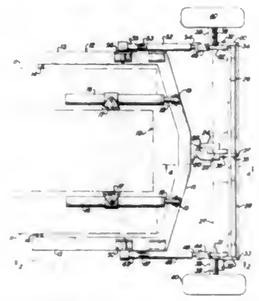
3,160,214
STALK AND ROOT LIFTING AND SHREDDING DEVICE
Aldo Ruozi, 120 S. Liggett St., Bakersfield, Calif.
Filed Nov. 7, 1962, Ser. No. 235,935
8 Claims. (Cl. 171—58)



1. A root and stalk shredder comprising a movable frame, a pair of longitudinally extending parallel power driven lifting rollers rotatably mounted on said frame, said rollers including cylindrical portions rearward of the forward ends thereof, guide means mounted on said frame forward of said rollers for guiding stalks therebetween, a blade assembly mounted on said frame over the rollers and operatively associated therewith for cutting roots and stalks lifted by the rollers, and a plow assembly mounted on said frame, said plow assembly including an earth engaging digging blade located vertically below and centrally between the rollers generally rearward of the forward ends of the cylindrical portions thereof along the

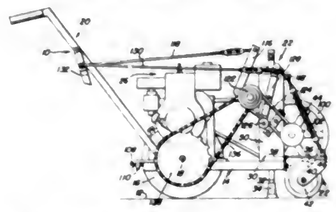
path of travel of the frame so as to effect a splitting of the earth and a freeing of the roots subsequent to an initial grasping of the stalks by the rollers.

3,160,215
BLADE MOUNTING MEANS FOR A MULTIPLE PURPOSE BLADE
Will R. Harrell, St. Brides, Va.
Filed Dec. 28, 1962, Ser. No. 247,911
6 Claims. (Cl. 172—277)



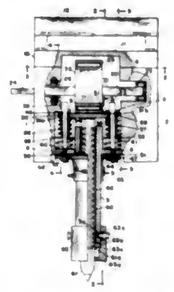
1. In combination a vehicle having a substantially U-shaped mounting frame pivotally supported on said vehicle about a horizontal axis, said U-shaped mounting frame comprising a pair of longitudinally extending members and a transverse cross member connecting the forward ends of said longitudinally extending members, hydraulic means connected at one end to said vehicle and at the other end thereof to said cross member for raising and lowering said U-shaped mounting frame about said horizontal axis, and a forwardly extending bracket on said cross member, the improvement comprising a blade structure, said blade structure having spaced vertical side members, a vertical intermediate member, vertically spaced rearwardly projecting lugs fixed to said intermediate member, a cross member connecting said vertical members adjacent the upper ends, a vertically disposed forwardly projecting cutting blade removably secured to each vertical member, each vertical blade being bevelled to provide a forward cutting edge, a generally rectangular horizontally disposed forwardly projecting cutting blade secured to the lower ends of said vertical members, said horizontal blade being bevelled to provide a forward cutting edge, a bracket adjustably secured for vertical movement on each side member, a stub axle projecting outwardly from each bracket, a ground-engaging wheel rotatably mounted on each axle with the ground-engaging surface of each wheel disposed above said horizontal blade at all times and above the ground when said mounting frame is in said raised position, means for pivotally connecting said lugs to said bracket on said mounting frame to provide for movement of said vertical blade and said horizontal blade about a first vertical axis, a plate pivotally mounted on the rear edge of each side member for movement about a second and third vertical axis respectively and a pair of upper and lower hydraulic cylinders each connected at their one ends, to the upper and lower ends of said plates and at their other ends to said longitudinally extending members of said mounting frame to move said blades about said first vertical axis, and to provide bracing means to prevent movement of said blades with respect to said pusher frame about a horizontal axis, said wheels being engageable with the ground when said U-shaped mounting frame is in said lowered position to maintain the depth of said horizontal blade below the ground substantially constant.

3,160,216
ROOF VIBRATING MACHINE
Ned C. Ormes, 2425 5th Ave. S., Nashville, Tenn.
Filed Apr. 18, 1963, Ser. No. 273,896
10 Claims. (Cl. 173—24)



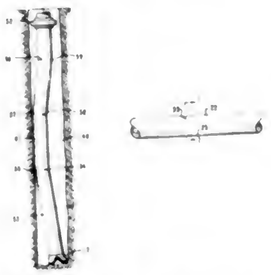
10. A vibrating machine for loosening material adhering to a surface comprising, a rigid frame assembly, traction wheels rotatably mounted by the frame assembly about an axis fixed thereto, caster wheel means pivotally mounted by the frame assembly in forward spaced relation to the traction wheels for adjustable support of the frame assembly, tamping means mounted by the frame assembly in rearward adjacency to the caster wheel means for support thereof in a loaded condition, stroke producing means mounted by the frame assembly for imparting movement to the tamping means relative to the frame assembly, means operatively connecting the caster wheel means to the frame assembly for adjusting the loading of the tamping means on the surface supporting the traction wheels and the caster wheel means, power means mounted on the frame assembly and operatively connected to the traction wheels and the stroke producing means, and selective control means for simultaneously interrupting drive of the tamping means and propulsion of the frame assembly by the power means.

3,160,217
MECHANICAL HAMMER
Richard R. Raible, Ewa, Oahu, Hawaii
(3654 Colonial Ave., Mar Vista, Calif.)
Filed Nov. 30, 1962, Ser. No. 241,420
6 Claims. (Cl. 173—94)



1. A mechanical hammer including a lower section comprising a casing and a tube; an upper section comprising a cover and handle; a drive assembly comprising a shaft, a cam eccentrically secured to the shaft, and a roller bearing positioned on said cam; a driven assembly comprising a plate, means to keep the plate in reciprocating relationship with the roller bearing, means to vary the distance between the top of the plate and the roller bearing; and a tool assembly comprising a tool, and an attaching cap; said upper section being secured to the lower section by means of bolts; the drive assembly being journaled in said lower section; the plate being situated in the vicinity of the roller bearing so that during one half of the rotation of the shaft, the roller bearing presses on the plate; the tool being reciprocally secured within the tube by the attaching cap with the upper end of the tube being located, relative to the plates, so as to receive an impact from the plate resulting from the pressing of the roller bearing on the plate, said means to keep the plate in reciprocating relationship with the roller bearing includes guide rods, tubular bearing surfaces, working springs, spacers, and positioning springs; the guide rod extending through the tubular bearing surfaces, working springs, spacers, positioning springs, and holes in the lower section; the tubular bearing surfaces, extending through holes in the plate, being encircled by working springs and resting on the spacers; said positioning springs being situated between the spacers and the portions of the lower section having the guide rod holes therein.

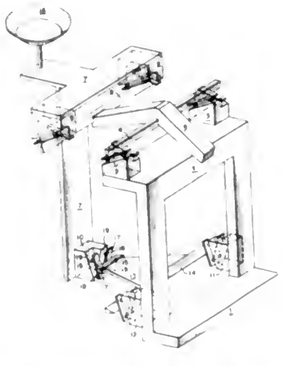
3,160,218
WELL DRILLING ASSEMBLY
Wilfred S. Crake, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,147
8 Claims. (Cl. 175—325)



1. Apparatus to minimize well deviation during drilling a well comprising a drill string adapted to be positioned in a well, at least one thick-wall drill collar secured to the lower end of said drill string, and a drill bit secured to the lower end of said drill collar and rotatable with said collar and said drill string, a portion of said drill collar being formed with reduced wall thickness only on one side thereof to reduce the section modulus of the collar directionally, whereby under load conditions the axis of the drill collar below the portion of reduced section modulus becomes locked in one direction at an angle to the axis of the well whereby the angle formed in the collar sweeps around the wall of the well.

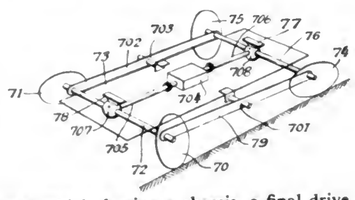
3,160,219
PRECISION BALANCES
Johann Meier, Stafa, Switzerland, assignor to Mepag, A.G., a corporation of Switzerland
Filed May 24, 1963, Ser. No. 283,077
Claims priority, application Switzerland, Nov. 9, 1962 13,181/62
4 Claims. (Cl. 177—198)

1. A precision balance, comprising
a frame member;
a first pair of horizontally-spaced self-adjusting bearing units mounted on the upper portion of said frame member;
balance beam means including a balance beam, a horizontal central knife connected with said balance beam and cooperating with said first pair of bearing units to support said balance beam for pivotal movement relative to said frame, and an outer knife connected with said balance beam parallel with and spaced from said central knife;
pan carrier means including a pan carrier member, and a second pair of horizontally-spaced self-adjusting bearing units connected with said pan carrier member and cooperating with said outer knife to pivotally support said pan carrier means, said pan carrier having a vertically extending portion parallel with said frame;
steering lever means vertically spaced from said balance beam means for guiding said pan carrier member to effect vertical movement thereof parallel with said frame, said steering lever means comprising a generally horizontal steering lever intermediate said frame and the vertically extending portion of said pan carrier member, and a pair of horizontal parallel knives connected with the ends of said steering lever, respectively;



a third pair of horizontally-spaced self-adjusting bearing units connected with one of said frame and pan carrier members for pivotal cooperation with one of said steering lever knives; and
an additional self-adjusting bearing unit connected with the other of said frame and pan members for pivotal cooperation with the other of said steering lever knives, each of said self-adjusting bearing units comprising a bearing element including a pair of flat bearing surfaces lying in intersecting planes, a pair of intermediate flat plates parallel with and spaced from said bearing surfaces, respectively, and ball means intermediate said plates and said bearing surfaces, the sides of said plates remote from said ball means being adapted for pivotal engagement with the edge of the corresponding knife.

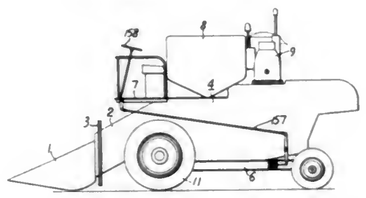
3,160,220
VEHICLE TRANSMISSION
Osmund Anthony Goulden, Woodend, Woodsland Drive, Sunbury-on-Thames, England
Filed Oct. 2, 1961, Ser. No. 142,283
Claims priority, application Great Britain, Oct. 7, 1960, 34,531/60
3 Claims. (Cl. 180—7)



1. In a vehicle having a chassis, a final drive comprising four driving wheels, said driving wheels each having

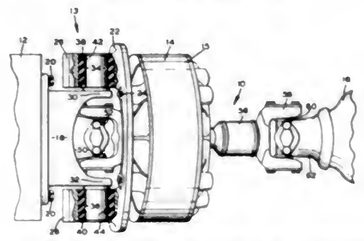
an elliptically shaped outer periphery, a first axle, first and second of said driving wheels mounted 90° out of phase with one another on opposite ends of said first axle, a second axle, third and fourth of said driving wheels mounted 90° out of phase with one another on opposite ends of said second axle, a first pivot member mounted intermediately on one side of said chassis, a first lever arm, the mid-point of said first lever arm being pivotally mounted on said first pivot and having its two ends pivotally connected to the ends of said first and second axles adjacent said first and third wheels respectively, a second pivot member mounted intermediately on the other side of said chassis, a second lever arm, the mid-point of said second lever arm being pivotally mounted on said second pivot and having its two ends pivotally connected to the ends of said first and second axles adjacent said second and fourth wheels respectively, said first and third wheels and second and fourth wheels being mounted 90° out of phase with one another, said first and second axles being pivotally mounted at their mid-points to said chassis, a power source, transmission means, said transmission means drivably connecting said power source to said first and second axles to rotate said wheels at a constant speed of rotation during each revolution.

3,160,221
HILLSIDE COMBINE WITH SPECIFIC AXLE STRUCTURE
Jerry C. Boone, Independence, Mo., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 12, 1961, Ser. No. 137,574
1 Claim. (Cl. 180—41)



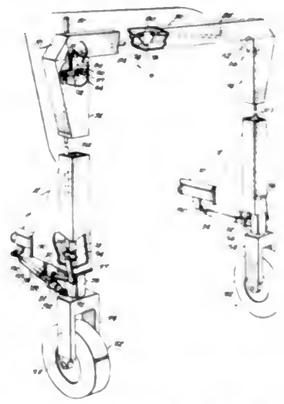
In a hillside combine of the type wherein a body structure mounting a header and threshing mechanism is pivotally supported for lateral tilting adjustment on a parallelogram type axle structure mounting a pair of pneumatically tired front driving wheels and on a rearward steering truck, said axle structure comprising a pair of transversely spaced upright wheel carriers rotatably mounting said driving wheels, respectively; an axle beam having opposite pivotal supporting connections with said wheel carriers in a transverse plane, pivot means connecting said axle beam midway between said pivotal connections with said body structure on a horizontal axis which extends lengthwise of said body structure and in downwardly spaced relation to said transverse plane; link means extending transversely between said wheel carriers and pivotally connected thereto and to said body structure so as to maintain said wheel carriers upright during rocking movement of said axle beam about said horizontal axis; and hydraulic cylinder means operatively interposed between said body structure and said axle beam for maintaining the later in selected positions of pivotal adjustment about said horizontal axis, whereby said driving wheels will carry substantially equal portions of the weight of said body structure during travel of said combine on level ground, and during hillside operation the portion of said weight carried by the driving wheel at the uphill side will be greater than the portion of said weight carried by the driving wheel at the donwhill side of said combine.

3,160,222
PROPELLER SHAFT MOUNTED RETARDER
Philip J. Mazziotti, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 23, 1961, Ser. No. 119,239
8 Claims. (Cl. 180—70)



1. A drive line brake comprising in combination a source of rotative power having a housing, brake means having a housing and being disposed in spaced relationship relative to said source of rotative power, power shaft means having an axis of rotation and being drivingly connected to said source of power and being universally movable relative thereto, said power shaft means being rotatably mounted in said brake means and adapted to be retarded thereby, lug means securedly disposed on each of said housings and positioned in cooperating relationship, and radially extending connecting means pivotally connecting said lug means and limiting rotation of the housing of said brake means about the axis of said power shaft means whereby said brake means pivots with said power shaft means relative to said source of rotative power.

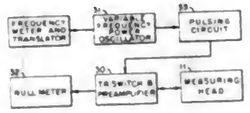
3,160,223
VEHICULAR STEERING
Robert P. Kumferman, Menomonee Falls, Wis., assignor to Renner Manufacturing Company, Milwaukee, Wis.
Filed Sept. 8, 1961, Ser. No. 136,940
14 Claims. (Cl. 180—79.2)



1. Vehicle steering apparatus for a self-propelling vehicle having motor means drivingly connected to a ground-engaging traction means, said apparatus comprising in combination a frame assembly having at one end an inverted U-shaped frame member supported in a vertical position, said frame member having first and second depending legs connected only at the top by a cross piece;
first and second guide wheels each respectively supported below said first and second legs to revolve in a generally horizontal arc;

steering linkage means, movably supported from said frame assembly and extending from said first guide wheel along said first leg, said cross piece, and along said second leg to said second guide wheel thereby leaving substantially unobstructed the space between said legs, said steering linkage means including a pivoted plate means having a cross piece connected to the linkage means in the first and second legs of said frame assembly for revolving both said guide wheels through respective horizontal arcs to respective positions tangential to circles having respective radii representative of the distances of said guide wheels from their common instant center, thereby turning said vehicle with a differential action between said guide wheels;
and positioning means for engaging said steering linkage means and for selectively moving said steering linkage means to a predetermined position thereby turning said vehicle.

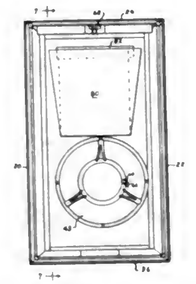
3,160,224
SOUND VELOCITY METER
Werner G. Neubauer, 4175 Abingdon St., Arlington, Va.
Filed Feb. 26, 1960, Ser. No. 11,388
7 Claims. (Cl. 181—.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



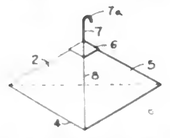
1. A sound velocity meter comprising: transducer means to radiate and detect sound in a frequency band including a given frequency in a specific fluid medium; target means shaped and dimensioned to produce a pattern of reflected sound having angularly spaced lobes and nulls in response to sound of said given frequency originating at said transducer, said target means being connected in fixed angular relationship to said transducer means with the detecting portion thereof asymmetrically disposed in said pattern, whereby said portion coincides with a null for said given frequency radiated by said transducer; frequency sensitive means calibrated in velocity connected to said transducer for measuring the frequency of driving signals applied thereto; and a null detecting means connected to said transducer for detecting a null produced by the frequency driving signals acting upon said target head.

3,160,225
SOUND REPRODUCTION SYSTEM
Edward L. Sechrist, Syracuse, Ind.
Filed Apr. 18, 1962, Ser. No. 188,338
6 Claims. (Cl. 181—31)

1. A sound reproduction system, comprising a wooden frame, a front panel in said frame adjacent the front edge thereof having a large circular opening in the lower portion thereof and offset to one side, a speaker of low silhouette mounted on the rear side of said panel and secured rigidly thereto over said opening, an elongated rectangular bass and low tone slot positioned horizontally adjacent the upper end of said front panel, a sound chamber construction positioned between said opening and slot adjacent said front panel and including a panel having upwardly and outwardly tapered sides and a small open end at the bottom and a large end at the top and being spaced from the parallel with said front panel and having its small end toward the speaker, walls along the two sides of said last mentioned panel, said chamber being open at the bottom adjacent to the speaker and communicating at its upper end with said slot, a panel forming a back secured to the rear edge of said frame, and sound insulating material on the internal walls of said frame and on said last mentioned panel.

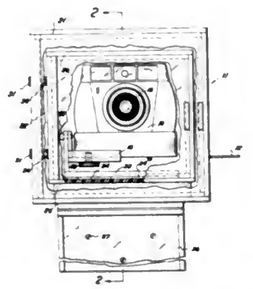


3,160,226
SOUND ABSORBER
William A. Jack, Hampton, and George W. Landgraf, South Plainfield, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Jan. 13, 1958, Ser. No. 708,505
4 Claims. (Cl. 181—33)



1. A blank for being readily bent and assembled into a space sound absorber of polyhedral shape, comprising a sheet of relatively lightweight fibrous material, the sheet being divided by indented fold lines into a plurality of geometrical shapes, each fold line forming a common edge of adjacent geometrical shapes, and binder material coating the sheet at the fold lines.

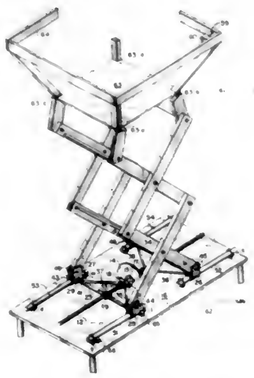
3,160,227
SOUNDPROOF CAMERA ENCLOSURES
Irving R. Hautala, 12750 Rosemary, Oak Park, Mich.
Filed June 25, 1962, Ser. No. 204,714
2 Claims. (Cl. 181—33)



1. In combination, a support;
an outer cubic box having a first bottom wall mounted on said support;

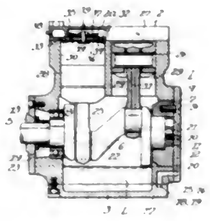
a shock proof resilient pad interposed between said bottom wall and support;
an inner cubic box nested within the outer box inwardly of its walls and including a second bottom wall spaced above said first bottom wall;
a shock proof resilient pad interposed between said bottom walls;
an electrically operated camera and motor therefor, whose operation is audible, enclosed within said inner box and adjustably mounted upon said second bottom wall;
a shock proof resilient pad interposed between said camera and motor and said second bottom wall;
an electrical supply cord for said motor passing through the walls of said boxes;
the walls of both boxes including thin panels of transparent rigid sheet material;
there being a sound deadening air space between the inner and outer boxes defining a sealed sound proof enclosure for the camera and motor.

3,160,228
LIFTING DEVICE
Iran De Witt Steed, Rte. 9, Springfield, Mo.
Filed Feb. 6, 1962, Ser. No. 171,506
2 Claims. (Cl. 182—148)



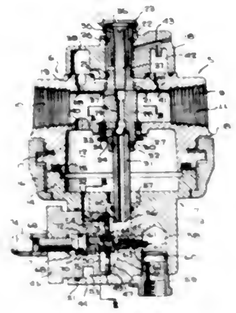
1. A lifting device of the character described comprising, in combination,
a generally rectangular table member,
said table member being adapted to be mounted on adjustable legs having locking rollers thereon whereby it may be maintained level and stationary on an uneven surface,
slide-supporting shaft members mounted on the upper surface of said table and adjacent each corner portion thereof, said slide-supporting shaft members being disposed in parallelism to each other and positioned in a common plane parallel to the upper surface of said table member,
a screw shaft having reversely threaded portions at each end thereof disposed intermediate of and parallel to said slide-supporting shaft members and extending substantially the length of said table member,
bearing pillow block means for rotatably mounting said screw shaft in the common plane of said slide-supporting shaft members,
a pair of nut members axially spaced from each other on each end of said screw shaft and threadedly engaging the reversely threaded portion at each respective end of said screw shaft,
a load-bearing sleeve comprising a slide member coaxially engaging each slide-supporting shaft member for sliding movement therealong and positioned abreast of one of each pair of said nut members,
a pantograph type vertically movable platform having leg members at its lower end pivotally secured to said load-bearing slide members,
linkage means connecting each pair of spaced nut members at each end of said screw shaft with the pair of load-bearing slide members positioned abreast of each pair of said spaced nut members and forming a truss-like connection therebetween,
drive means on said screw shaft positioned intermediate the pairs of said spaced nut members threadedly mounted thereon,
said bearing pillow block means for said screw shaft being located solely intermediate said drive means and said reversely threaded portions on said screw shaft,
motor means mounted beneath said table and having means engaging said screw shaft drive means through an opening in said table member,
and means for controlling said motor means for rotating said screw shaft in opposite directions for raising and lowering the platform.

3,160,229
COMPRESSORS
Takao Terasawa, Numazu-shi, Japan, assignor to Tokyo Shibaura Denki Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan
Filed Mar. 20, 1962, Ser. No. 181,077
4 Claims. (Cl. 184—6)



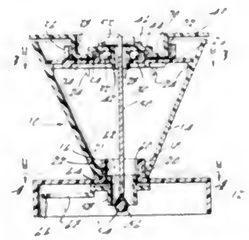
1. In a device including a casing having an interior defining a sump portion for a liquid such as a lubricant, a crankshaft having an oil passage defined thereon rotatably mounted in said casing, the disposition of the sump portion and the level of the liquid in said sump portion being variable in accordance with the orientation of the casing, the improvement comprising: wall means defining a casing capable of holding a liquid such as a lubricant, a plurality of liquid flow passages in said casing each terminating at its one end in a suction opening and at its opposite end at spaced locations within said casing, said suction openings being located at spaced locations for taking suction in the sump portion in accordance with the orientation of the casing, a pump for discharging liquid from said sump mounted on said casing including an inlet port and a discharge port connected to discharge into said crankshaft oil passage and a cover adapted to close one end of said sump including a connecting passage defined therein adapted to selectively interconnect said inlet port with one of said liquid flow passages for supplying liquid from said sump portion to said pump, and means for securing said cover to said pump permitting orientation of said cover for the purposes of selectively aligning said connecting passage alternatively with each said liquid flow passages.

3,160,230
LUBRICATOR
Gilbert Riske, Canoga Park, Calif., and John B. Ritzema, Des Plaines, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 21, 1962, Ser. No. 204,149
15 Claims. (Cl. 184—55)



1. An airline lubricator comprising a housing having a passageway for air therethrough, said passageway including an inlet and an outlet, means for creating a pressure differential between said inlet and said outlet, passage means for supplying a lubricant under pressure to said outlet, and control means having opposite sides thereof respectively exposed to pressure fluid in said inlet and said outlet and directly responsive to the pressure differential between inlet and outlet pressures for metering lubricant through said passage means to said outlet.

3,160,231
ROTARY TURNTABLE
Thomas J. Bacsanyi, Livonia, and George A. Toteff, Birmingham, Mich., assignors to Model Products Corporation, Mount Clemens, Mich., a corporation of Michigan
Filed Feb. 21, 1964, Ser. No. 346,449
6 Claims. (Cl. 185—40)



6. A rotary display device comprising a base, means defining an annular upwardly open channel on said base, a turntable rotatably mounted on said base, a rubber band motor having one end secured to said turntable and a winding member secured to the other end of said rubber band, means to prevent reverse rotation of said winding member thereby to effect rotation of said turntable as said rubber band unwinds, a viscous liquid in said channel, said turntable having a part thereof projecting downwardly into said channel and the liquid therein to impose a frictional drag on said turntable to substantially reduce its speed of rotation.

3,160,232
FLOOR SELECTOR FOR AN ELEVATOR CONTROL SYSTEM
Conwell Savage, New York, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 31, 1962, Ser. No. 213,788
19 Claims. (Cl. 187—29)



1. In a floor selector for controlling operation of an elevator car serving a plurality of floors of a building structure, a carriage, a supporting structure having only a single guide rail for guiding said carriage along a predetermined path, a plurality of floor units spaced in the direction of said path and secured to said rail, roller means mounting said carriage on said rail for movement relative to said supporting structure along said path, said roller means comprising a first and a second roller spaced in the direction of said path and engaging a first side of said rail, said roller means also including a third roller engaging a second side of said rail opposite said first side, means mounting said first, second and third rollers on said carriage for rotation relative to said carriage and to said rail about spaced parallel respective first, second and third axes, said third axis being disposed on a first line drawn from said third axis to a second line transverse to said first line and extending between and transverse to said first and second axes, means biasing said third roller toward said first and second rollers, and translating means having a first component on each of said floor units and a second component on said carriage, said translating means being responsive under predetermined conditions to a predetermined position of said carriage relative to each of said floor units.

3,160,233
DAMPING DEVICES INCLUDING SHOCK ABSORBERS
Ronald H. Norman, Shrewsbury, William G. Newell, Dawley, and Arthur R. Payne, Shrewsbury, England, assignors to Rubber and Plastics Research Association of Great Britain, Shrewsbury, England, a British company
Filed Aug. 29, 1962, Ser. No. 220,309
Claims priority, application Great Britain, Sept. 2, 1961, 31,618/61
16 Claims. (Cl. 188—1)

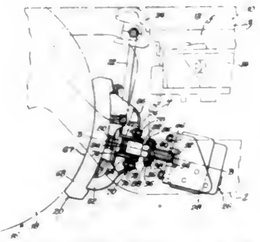
1. A damping device comprising two relatively displaceable parts, a separate damping element mounted on each of said parts to provide a facing for said part, roller members disposed between and held in rolling frictional contact with said elements so as to permit relative movement between the roller members and the parts, the roller members being of a hard substance and the damping ele-

ments being of a resilient deformable visco-elastic material and held under compression by said roller members, and



means connected to said roller members to guide the movement thereof.

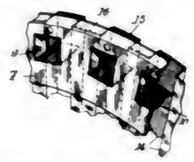
3,160,234
TREAD BRAKE ARRANGEMENT
Walter P. Polanin, Hammond, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed June 21, 1962, Ser. No. 204,127
5 Claims. (Cl. 188—33)



1. In a tread brake arrangement for a railway car truck having a side frame supported on spaced wheel and axle assemblies, an actuating lever pivotally connected to the inboard side of said frame, a brake head-shoe assembly pivotally supported from said frame for engagement by said lever, means to actuate said lever to move said brake head-shoe assembly into frictional engagement with a wheel, said brake head-shoe assembly comprising a slack adjuster screw engaged by said lever, said screw being threaded into a housing mounted on said brake head-shoe assembly, and a resilient retainer clip mounted on said lever and having legs engaging flat surfaces on said screw.

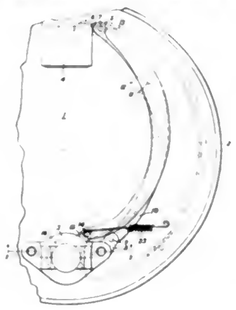
3,160,235
DISC BRAKE CONTROLLED BY A FRUSTO-CONICAL MEMBER
Paul Panhard, Paris, France, assignor to Societe Anonyme des Anciens Etablissements Panhard & Levassor, Paris, Seine, France, a society of France
Filed July 15, 1963, Ser. No. 294,924
Claims priority, application France, July 17, 1962, 904,223
4 Claims. (Cl. 188—72)

1. For use in connection with a fixed axle and a wheel journalled on said axle, a mechanism for braking said wheel which comprises, in combination, two annular friction elements carried by the wheel coaxially therewith and opposite each other, two annular friction discs carried by said axle between said friction elements coaxially therewith, said friction discs being movable axially with respect to said axle to cooperate with said friction elements for braking purposes, a frusto-conical member having two concentric circular edges, a smaller one and a larger one respectively, coaxial with said elements and said discs and fixed angularly with respect to said axle, said frusto-conical member having a substantially uniform thickness and being provided with alternate radial ridges and grooves so as to be deformable by relative displacement of said circular edges parallel to their common axis, teeth rigid with said annular friction discs



adapted to cooperate with said grooves of said frusto-conical member for preventing angular displacement of said friction discs with respect to said member, said teeth being located, for each of said friction discs, in a cylindrical surface coaxial with said discs, the respective diameters of said cylindrical surfaces being different from each other whereby two circular lines of said frusto-conical member of different respective radii are operatively connected with said friction discs respectively, and control means carried by said fixed axle for displacing one of said edges axially to bring said annular friction discs into or out of contact with said annular friction elements respectively.

3,160,236
SHOE DRUM BRAKES
Frederick Thomas Riddy, Erdington, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Sept. 24, 1962, Ser. No. 225,718
Claims priority, application Great Britain, Sept. 22, 1961, 33,954/61
6 Claims. (Cl. 188—79.5)



1. A brake comprising a back plate, a drum mounted for rotation about an axis perpendicular to the plane of said back plate, an arcuate friction-surfaced brake shoe, said brake shoe being mounted on said back plate within said drum and and adapted to frictionally engage the inner surface of said drum, an actuator body, shoe-actuating means housed within said body and engaging a first end of said shoe, abutment means engaging a second end of said shoe, said actuator body being capable of limited circumferential movement with respect to said back plate, an adjustable connection between said abutment means and said second end of the shoe, an arcuate link extending substantially alongside said shoe, and pivotally connected at its two ends respectively to said actuator body and said abutment means, an arcuate lever extending substantially alongside said link and shoe, one end of said lever being engaged by said shoe actuating means and the other end of said lever being operatively applied to said adjustable connection, and a pivotal connection between said link and said lever about an axis intermediate the length of each and perpendicular to the plane of said back plate.

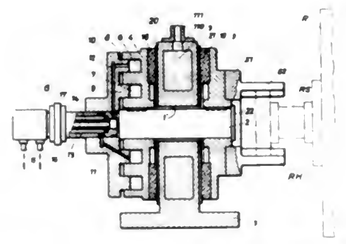
3,160,237
DAMPING DEVICE
Richard Edmund Reason, George Ormerod Rawstron, and Robert Claude Spragg, Leicester, England, assignors to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Aug. 11, 1961, Ser. No. 130,921
Claims priority, application Great Britain, Aug. 16, 1960, 28,380/60
8 Claims. (Cl. 188—87)



1. In precision apparatus having two members mounted to permit small translational movements by at least one of said members relative to the other, a damping device for resisting such relative translational movement comprising a drop of viscous liquid located between shaped portions of two adjacent surfaces respectively on the two members, said drop having a diameter greater than said permitted translational movement, one of the two surfaces comprising a portion having straight generators extending in the direction of relative movement and the other surface having a small projection convex toward said portion but spaced slightly therefrom, whereby the two surfaces are closer together at the position of the convex projection than at neighboring positions on either side thereof in the direction of relative movement, the drop of viscous liquid being anchored by surface tension in position relatively to the said convex projection and being distorted in shape when said small translational relative movement takes place and thereby subjected to shear stress which, by virtue of the viscosity of the liquid, resists the relative movement.

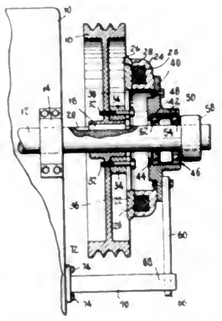
3,160,238
PRESSURE ACTUATED DISK BRAKE
Günther Meyer-Jagenberg, Dusseldorf-Grafenberg, Germany, assignor to Jagenberg-Werke A.G., Dusseldorf, Germany
Filed May 6, 1963, Ser. No. 278,100
Claims priority, application Germany, May 12, 1962, J 21,764
2 Claims. (Cl. 188—152)

1. A fluid pressure operated brake structure for braking a rotary member comprising a stationary housing having opposite faces, brake lining on said faces, said housing having a central aperture therethrough, shaft means journalled in said aperture, said shaft means projecting beyond both sides of said housing, a first disk member mounted on said shaft means on one side of said housing for axial movement along said shaft means, a second disk member mounted on said shaft means at the other side of said housing for axial movement relative to said shaft means and said housing, a third disk member coupled to said shaft means and mounted thereon adjacent one of said first two mentioned disk members, said first-mentioned disk member carrying a coupling member adapted for engagement with a rotary shaft to be braked, the other of said first-mentioned disk members having two independent annular grooves of different sizes concentrically arranged and surrounding the axis of rotation of such disk, said third-mentioned disk member having two annular ribs



complementary to and disposed within the respective grooves whereby said ribs and grooves cooperate to define two independent pressure chambers thereby resulting in the generation of braking forces of varied magnitude, and means for supplying pressure fluid selectively to either pressure chamber singly or to both chambers.

3,160,239
MACHINE BRAKE
Earl L. Sisson, Stratford, Conn., assignor to Clark Metal Products, Inc., Fairfield, Conn., a corporation of Connecticut
Filed Nov. 28, 1962, Ser. No. 240,545
8 Claims. (Cl. 188—161)



1. A machine brake mechanism comprising, in combination:

(*a*) an annular electric brake armature,

(*b*) means for attaching said armature to a rotating machine part which is to be halted, to turn therewith,

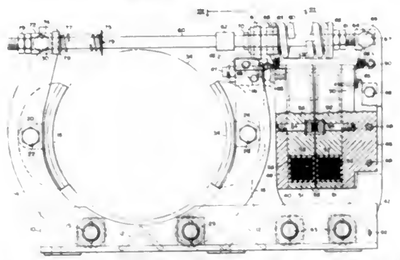
(*c*) an annular electric braking coil structure cooperable with the armature to impose braking forces thereon,

(*d*) multi-part bearing means for mounting the coil structure on said rotating machine part and in accurate operative aligned position with the armature, said bearing means being organized to enable the coil structure to remain stationary while the rotating part turns,

(*e*) a multi-part coupling means having parts capable of normally occupying different relative positions without being de-coupled, one of said parts being rigid with the coil structure and the other being arranged for engagement with a stationary machine part, to prevent turning of the coil structure at all times,

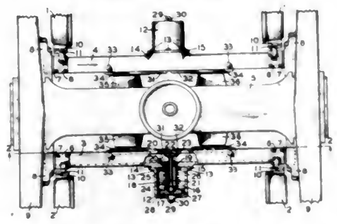
(*f*) all parts of said bearing means being independent of and non-rigid with the said other coupling part which is engageable with the said stationary machine part.

3,160,240
ELECTROMAGNETIC BRAKE
William R. Harding, Sr., Blacksburg, Va., and Gerald T. Benzinger, Orchard Park, and Edward J. Lewandowski, Depew, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1962, Ser. No. 197,973
9 Claims. (Cl. 188—171)



1. A brake assembly comprising a brake wheel, brake arms pivotally mounted on opposite sides of the brake wheel and carrying brake shoes for engagement with the brake wheel, first and second clapper arms pivotally mounted for movement toward and away from each other, the first clapper arm being mounted adjacent one of said brake arms for engagement therewith, a tie rod extending transversely of the brake wheel and engaging the other of said brake arms, spring means carried on the tie rod and engaging said first clapper arm, said spring means being compressed between the first clapper arm and abutment means on the tie rod to urge the tie rod and first clapper arm in opposite directions to effect movement of the brake arms toward the brake wheel to apply the brake shoes thereto, said second clapper arm engaging the tie rod, and magnet means for effecting movement of the clapper arms toward each other to effect movement of the tie rod and first clapper arm to move the brake arms away from the brake wheel.

3,160,241
VARIABLE LOAD BRAKE APPARATUS
George K. Newell, Level Green, Penn Township, Westmoreland County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1963, Ser. No. 261,111
14 Claims. (Cl. 188—195)



1. In a brake rigging for a railway vehicle truck having a pair of side frames and springs for supporting a bolster on the side frames, the combination of:

(*a*) a pair of brake beams extending transversely of the truck on the opposite sides respectively of the bolster and movably supported on the truck side frames, said beams carrying brake shoes for braking contact with wheels of the truck,

(*b*) a pair of levers for each of said brake beams, each lever of each pair of levers being pivoted on the corresponding brake beam and the levers of each pair having their adjacent ends disposed in substantial abutting relationship midway the length of the corresponding brake beam,

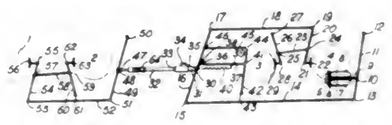
(*c*) a fulcrum rib for engagement by each of said levers, said fulcrum ribs being carried by the bolster,

(*d*) a pair of brake cylinders each open at one end and closed at the other, each cylinder being rigidly secured at its open end to one of said brake beams at a point midway the ends thereof,

(*e*) a piston slidably operable in each said brake cylinder for cooperation with the closed end thereof to form a pressure chamber to which fluid under pressure may be supplied and from which fluid under pressure may be released, and

(*f*) a piston rod disposed between each piston and the adjacent ends of the pair of levers carried by the corresponding brake beam for transmitting the fluid pressure force on the respective piston to the adjacent ends of said pair of levers to cause rocking of each one of said pair of levers about the corresponding lever fulcrum rib mounted on the bolster to transmit a corresponding force through the pivotal connection of the respective lever to said corresponding brake beam whereby each said corresponding brake beam is moved away from the bolster to effect braking of the wheels by joint action of said corresponding forces.

3,160,242
BRAKE ADJUSTMENT DEVICE FOR NON-RETURN LINKAGES
Jules Emile Joseph Feuilly, Paris, France, assignor to Societe Generale "Isothermos," Paris, France
Filed Sept. 7, 1962, Ser. No. 222,089
Claims priority, application France, Mar. 6, 1962, 890,198
7 Claims. (Cl. 188—202)



1. In a braking device for a vehicle having wheels, the provision of braking means for being applied against said wheels, brake actuation means for operating said braking means and having extended and retracted positions for respectively applying the braking means against the wheels and releasing the braking means, linkage means between said brake actuation means and said braking means and having a fully released relaxed position in which the braking means is spaced from the wheels, linkage adjuster means connected to the linkage means for adjusting the clearance between the braking means and the wheels during operation when the linkage means is in a relaxed position and the braking means is just in contact with the wheels and means connected to said adjuster means and the linkage means for providing lost motion between said adjuster means and the linkage means to enable the linkage means to remain in relaxed position as the linkage means moves to the fully released position in which the braking means is properly spaced from the wheels, said linkage adjuster means including an adjuster body connected to the linkage means and a reversible screw within said body, said means connected to said adjuster means and to the linkage means comprising means connecting said adjuster body to said linkage means and means slidably connecting said reversible screw and said linkage means with limited longitudinal movement.

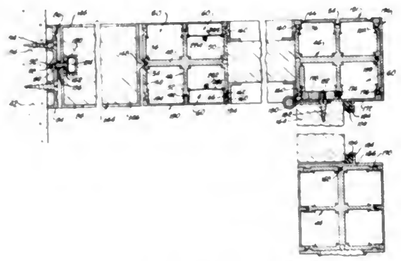
3,160,243
BUILDING STRUCTURE
Clyde W. Kelly, Detroit, Mich., John J. Tichy, Huntingdon Valley, Pa., and Albert L. Doering, Oakland, Calif., assignors to Fenestra, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Jan. 4, 1960, Ser. No. 373
8 Claims. (Cl. 189—34)



1. Building wall structure comprising a head member and a sill member secured to the top and bottom of an opening in a building wall respectively, a wall unit adapted to fit within the opening in the building wall and extending between said head and sill members, said sill member having a web and side walls, said side walls terminating in flanges extending toward each other and defining a channel opening, a clip having oppositely extending flanges positioned within said channel, the clip flanges overlapping the channel flanges, an angle bar secured to said wall unit, and means releasably drawing said clip tightly against said angle bar, the clip flanges being offset with respect to the rest of the clip to provide sliding clearance between the channel flanges and the clip flanges with the clip held tightly against said angle bar allowing movement of the wall unit along the head and sill members in the plane of the building opening for positioning the wall unit during installation thereof, the flanges of said clip being operable in conjunction with the flanges of said channel to prevent pivotal movement of the wall unit about said sill member in a direction inwardly or outwardly of the building wall in response to pressures due to wind and atmospheric conditions.

3,160,244
BUILDING PARTITION SYSTEMS
Leonard H. Kushner, 618 Cambridge Drive, Burbank, Calif., and Donald H. Peterson, 14861 Copper St., San Fernando, Calif.
Filed Apr. 11, 1960, Ser. No. 21,605
7 Claims. (Cl. 189—34)

7. A building partition construction wherein: two elongated frame members are disposed in spaced apart, substantially parallel relationship so that said frame members have opposed substantially parallel side walls, one of said frame members having first and second side walls spaced from and substantially parallel to each other, a center wall having sides, said center wall extending between the mid-points of said first and second walls, first and second dividing walls extending from opposite sides of said center wall at the midpoint of said center wall and parallel to said side walls, elongated groove-like holding means integrally formed on the ends of said first and second dividing walls remote from said center wall and on the outer face of said side walls remote from said center wall along the center portion of said sides of said side walls, elongated groove-like locking means integrally formed on the outer face of said side walls adjacent to the ends thereof, the other of said elongated frame members having a side wall with an elongated groove-like holding means integrally formed on the outer face thereof and disposed opposite the elongated holding means on the side of the said one elongated frame member,

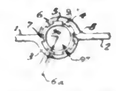


a panel means located between said frame members, said panel means having an edge facing each of said frame members,

a fixed elongated ridge on one of said edges of said panel means engaging and fitting within the groove-like holding means on the side wall of one of said frame members,

a resilient projecting member on the other of said edges of said panel means engaging and fitting within the groove-like holding means on the side wall of the other of said frame members, said resilient projecting member enabling said panel means to be removed from between said frame members.

3,160,245
INTERLOCKED PANEL STRUCTURE
John Pavlecka, 8797 Capital, Oak Park, Mich.
Filed May 26, 1960, Ser. No. 32,509
36 Claims. (Cl. 189—34)

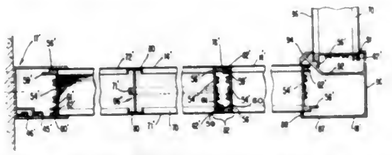


1. In a structure, a number of structural members coextensive with one another, a linear lengthwise grooved key extending in a spaced relationship to said members, web means extending on each of said members and therefrom reaching to said key, and segmental toothed sockets borne by said web means coaxially with one another, said sockets being in a slidable and in a transversely and angularly substantially immovable engagement with said key for constraining said members in said coextensive relationship to each other by said spaced key.

3,160,246
BUILDING WALL AND PARTITION STRUCTURE
John J. Donlon, 953 Hastings St., Baldwin, N.Y.
Filed Oct. 24, 1960, Ser. No. 64,604
6 Claims. (Cl. 189—34)

1. A wall structure comprising a plurality of aligned interlocked panels disposed in edge engagement, each

panel having a border frame including elongated channel shaped frame members disposed in opposed aligned relationship along abutting edges of the panels at the joints therebetween, the channel shaped frame members being open toward the respective outer edges of the panel, said frame members each forming generally one-half of a hollow rectangular beam and having a broad base extending normal to the broad extent of its respective panel and spaced parallel side flanges at the opposite side edges of the base and extending at right angles to the base, the said side flanges on the elongated frame members of contiguous panels having formations thereon which lie completely between the broad opposite surfaces of the panels, which extend longitudinally of the abutting panel edges, and which mutually interfit, the interfitting formations of contiguous panels being reversed mirror images of each other, the interfitting formations on the side flanges of each of the said interfitting frame members comprising a longitudinally extending tongue on one of said side flanges and a longitudinally extending groove in the other of said side flanges, the width of the groove being substantially equal to the thickness of the tongue, the tongue of one frame member at a joint between contiguous panels being snugly receivable within the groove on the other frame member upon relative movement of



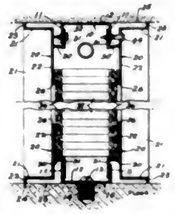
aligned panels thus to be joined toward each other in their common plane, there being longitudinally extending transverse end surfaces of substantial lateral extent on the side flanges of contiguous panels disposed, respectively, on the outer side of the tongue, on the said one side flange and on the outer side of the groove of the other side flange, said transverse end surfaces of the side flanges of contiguous panels lying laterally outwardly of the tongues and grooves of the interfitting frame members on both sides of the wall structure abutting each other when the panels are in joined operative position, said frame members having edge portions of appreciable width extending therealong on both sides of the panels and lying parallel to the broad extent of the panels, said edge portions meeting the transverse surfaces on the frame members at the ends of the panels at solid right angles, each panel having a separate covering layer of material lying on each side of the frame and having its edge portions overlying and affixed to the said edge portions on the respective sides of the frame member, the covering layers on each of the panels extending to the outer edges of the frame members of the respective panels, whereby the respective covering layers of contiguous panels abut each other along a line on each side of the panels in the wall structure.

3,160,247
SUPPORTING STRUCTURE FOR A WALL AND THE LIKE

Albert M. Masters, P.O. Box 155, Pen Argyl, Pa.

Filed Feb. 27, 1961, Ser. No. 91,835
13 Claims. (Cl. 189—34)

1. A supporting structure for a building wall and the like having thickness comprising supporting means including at least one supporting member and anchor means to retain said supporting member in position corresponding to the wall thickness, a ledge carried by said supporting member extending inwardly and being attached to the supporting member at a mid portion of the latter, said supporting member including a lateral portion of substantial width and a vertical portion extending from the ledge and generally vertically to the lateral portion and of substantial width, each portion having flexibility and an outer edge, a base lip carried by the outer edge of the lateral portion extending outwardly and having a base edge defining a base plane, a wall lip carried by the outer

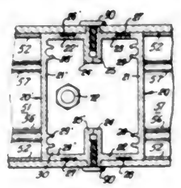


edge of the vertical portion and extending inwardly, at least one of the lips having a small dimension to retain its flexibility to conform to irregularities in the surface it engages, the ledge extending inwardly a distance greater than the wall lip, and the anchor means permitting inward pivotal movement of said supporting member from the base lip from pressure on the ledge and retaining the supporting means in place.

3,160,248
PREFABRICATED EXPANDABLE BUILDING CONSTRUCTION

Haig Galajikian, 4005 W. Jefferson Blvd., Los Angeles, Calif.

Filed May 29, 1961, Ser. No. 113,207
3 Claims. (Cl. 189—34)



1. A hollow metallic frame prefabricated building panel having no exposed metallic portions so as to prevent sweating or condensation therethrough, said panel comprising:

a pair of spaced metallic vertical studs, a horizontally extending panel base member supporting said studs and a horizontally extending top frame member;

side flanges on said studs, base member and top frame members all lying in the same plane to receive a non-metallic planar facing sheet thereon;

indirect keyway means in each of said flanges for receiving and mechanically bonding adhesive therein;

a non-metallic planar facing sheet overlying said flanges on said studs, base member and top frame members;

adhesive bonding means bonding said facing sheet to said flanges and keyway means;

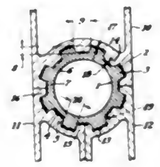
a lip at the outer edge of each of said flanges on said studs, each said lip extending outwardly of said stud side flange to be abutted by an edge of said facing sheet; and

vertical strip means of insulating material to overlie each of said lips and adjacent edges of said facing sheet.

3,160,249
LINEAR INTERLOCKING KEY OR SPLINE

John Pavlecka, 8797 Capital, Oak Park, Mich.

Filed Apr. 22, 1960, Ser. No. 23,994
13 Claims. (Cl. 189—36)

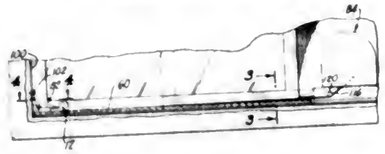


3. A linear key or spline, at least two parts or members spanning radially adjoining segments of said key, tenons and mortises and flanks common thereto extending lengthwise on said key, said flanks having directions imparting a reentrant shape to said tenons at and next to the key periphery, said mortises having a maximal depth substantially one half of their maximal width between said flanks, said key having a constant cross-section and said mortise depth-to-width relationship throughout the effective length thereof, each of said parts being in a lengthwise slidable contact with said flanks astride at least one tenon and being centered and angularly engaged thereat for subjecting said key to forces at and next to the periphery thereof, and being out of contact at said mortises.

3,160,250
FIRE-OPERATED SAFETY DEVICES

Gail L. Bridwell, Orange, Calif., assignor to Safety Engineering Co., Gardena, Calif., a co-partnership

Filed Nov. 15, 1962, Ser. No. 237,979
8 Claims. (Cl. 189—45)



1. A device responsive to temperatures encountered in fires for moving a sliding closure between an open position to a closed position along a slide path of operation of said device, said device comprising:

bumper means having a contact surface;

guide means supporting said bumper means for sliding movement along said slide path said guide means comprising a track having only said bumper in guiding engagement therewith;

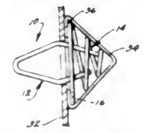
biasing means fixed in position relative to said slide path for moving said bumper means along said path in a direction coinciding with the direction extending between said open and said closed positions;

connector means fusible at said temperatures, said connector means having first and second ends, said first end of said connector means being fixed with respect to said biasing means and said second end being connected directly to said bumper means, said connector means holding said bumper means in a remote position relative to said first and second positions whereby fusion of said connector means by said temperatures causes said contact surface to engage said sliding closure to move said sliding closure in response to said biasing means from said open to said closed position.

3,160,251
MOLDING CLIP

Joseph La Penna, Grand Haven, and Lee R. Jones, Ferrysburg, Mich; said Jones assignor to James Church, Muskegon, Mich.; and said La Penna assignor to Michael M. Voyt, Muskegon, Mich.

Filed Aug. 4, 1961, Ser. No. 129,470
4 Claims. (Cl. 189—88)



1. In combination with a molding of generally V-shaped cross section having inwardly facing flanges at each end of the V, a clip attaching the same to a perforated panel, said clip comprising: a head formed of a continuous spiraling plurality of turns of resilient wire defining a cone having an apex angle generally similar to the apex angle of said V and having a radially outermost turn of a diameter sufficient to be held in said molding by said flanges when said head is screwed into said molding; and a shank having a resiliently expanding portion capable of being compressingly pushed through a perforation of said panel therebehind for holding said clip and molding in place on said panel.

3,160,252
AUTOMATIC CLUTCH WITH SPEED RESPONSIVE PILOT CLUTCH

Gustav Steinlein, Forsthaus, Mainberg, near Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany

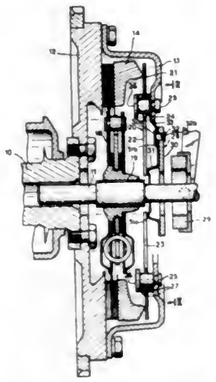
Filed Dec. 7, 1960, Ser. No. 74,251
Claims priority, application Germany, Dec. 30, 1959, F 30,204
6 Claims. (Cl. 192—35)



1. A clutch arrangement, comprising a shaft having an axis, a first clutch member freely rotatable about said shaft, a second clutch member axially slidable on said shaft and secured against rotation relative to said shaft, a pressure member freely rotatable about said shaft and axially movable thereon toward and away from a position in which said pressure member urges said second clutch member into a motion-receiving engagement with said first clutch member, complementary connecting means immediately on said first clutch member and said pressure member for selectively permitting said pressure member to idly rotate together with said first clutch member, and making said pressure member move in an axial screw-like motion toward said second clutch member and force the latter into said motion-receiving engagement, and centrifugal coupling means mounted on said pressure member to be responsive to the rotary speed of said first clutch member for selectively effecting said idle rotation

of said pressure member, while said clutch members are disengaged, and connecting said pressure member to said shaft, while making said pressure member carry out said axial screwlike movement for joint rotation of said clutch members, pressure member, and shaft.

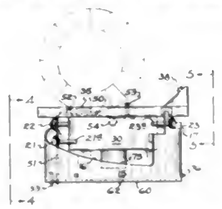
3,160,253
DIAPHRAGM CLUTCH WITH DE-CLUTCHING RING
Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed July 24, 1961, Ser. No. 126,062
Claims priority, application France Aug. 2, 1960
2 Claims. (Cl. 192—89)



1. A clutch comprising a friction disc, a pair of plates operable to grip said friction disc, an elastic diaphragm element operable to urge said plates to clamp said friction disc between said plates, a cover element on which said elastic diaphragm element is rockably mounted, a declutching ring for pushing said elastic diaphragm element to rock said elastic diaphragm element to release said friction disc, an elastic tongue device connecting said ring with one of said elements, reciprocable actuating thrust ring means cooperating with said declutching ring, said declutching ring comprising a rear piece of soft material and a front piece of harder material, said rear piece frictionally cooperating with said reciprocable actuating thrust ring means, said front piece having a front annular projection contacting said elastic diaphragm element and a radially outward flange directly contacting said elastic tongue device, and rivet means for securing said tongue device to said flange.

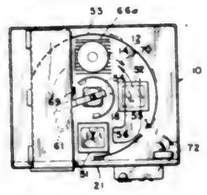
3,160,254
BARREL TURNER
John H. Holstein, Fresno, Calif., assignor to Schenley Distillers, Inc., New York, N.Y.
Filed June 12, 1963, Ser. No. 287,278
15 Claims. (Cl. 193—43)

1. A barrel turner, for receiving rolling barrels from one of two directions and for delivering said barrels in a third direction, comprising in combination: a circular track including inclined and horizontal portions of track; a carriage mounted to move on said track from a first receiving position to a second delivering position, said carriage incrementally tilted upon movement along said track; carriage holding means for holding said carriage at said first position until the weight of said barrel moves said carriage between said first and second positions, and for returning said carriage to said first position after said barrel is delivered, a pair of rails mounted on said carriage for receiving said barrels in said turner, said rails being tilted upon the tilting of said carriage to shift the weight of said barrel, and trigger means mounted on



said turner holding said carriage at said first position until said turner is loaded and actuating said carriage to said second position after said turner is loaded.

3,160,255
FOOD VENDING MACHINE
George G. Ferraro, 1321 W. 36th St., Erie, Pa., and Angelo J. Ferraro, 47 Huron St., Guelph, Ontario, Canada
Filed May 24, 1962, Ser. No. 197,510
2 Claims. (Cl. 194—1)



1. A dispensing machine comprising a case having an apertured partition therein dividing said case into a refrigerated lower compartment and a heated upper compartment, a circular track on the top of said partition, an elevator for supporting food products, means to index said elevator selectively to bring one of said food products through said aperture of said partition each time said machine is actuated, said aperture lying between said tracks, an arm, means between said partition to move said food product over said partition when said elevator is above said partition, spaced heat lamps, means to move said food product up onto said partition between said heat lamps, timer means for controlling said heat lamps to heat them for a predetermined time, and means to move said food product from between said heat lamps to a dispensing position after said food product has been between said heat lamps for a predetermined time.

3,160,256
ANTI-JAMMING MANUAL PARKING METER
Albert S. Wheelbarger, Statesboro, Ga., and George W. Ruck, Bethel Park, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 786,488, Jan. 13, 1959. This application June 14, 1961, Ser. No. 117,196
18 Claims. (Cl. 194—72)

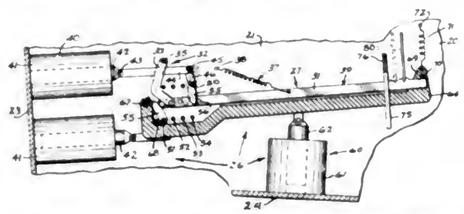
17. In a parking meter having a windable clock mechanism, a time indicator, means for winding said clock mechanism and setting said time indicator, a coin chute for guiding deposited coins therealong during a meter setting operation and: coin driving means mounted for movement relative to said chute and adapted upon engaging a coin in said chute during a meter setting operation to actuate said means: comprising a movable body member; a fixed ratchet mounted adjacent the path of movement of said body member; a ratchet pawl pivotally

mounted on said body member for movement between positions of engagement and disengagement with said ratchet; pivoted lever means mounted on said body member including a portion engageable with a coin deposited in said chute; means drivingly connecting said pivoted lever means to said ratchet pawl; means resiliently biasing



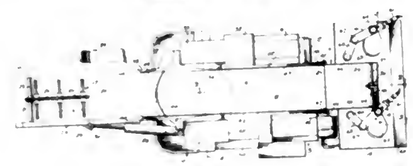
said pivoted lever means to a first position in which said ratchet pawl is held in its disengaged position, said lever means upon engagement of a coin in said chute being arrested in a second position effecting engagement of said ratchet pawl and said ratchet to prevent reverse movement of said body member so long as said pivoted lever means is in engagement with a coin in said chute.

3,160,257
ELECTRIC TYPEWRITER
Claude D'Evelynes, 26 Stanley St., Chatswood, New South Wales, Australia
Filed Mar. 27, 1962, Ser. No. 189,220
14 Claims. (Cl. 197—14)



1. In an electrically operated typewriter, in combination,
a keyboard having a plurality of keys;
a plurality of typelevers;
a plurality of actuating means each of which actuating means is operatively coupled to a corresponding one of each of said typelevers;
a group of at least two selecting-operating devices each having an operating member movable in a predetermined path, each of said selecting-operating devices being associated with a group of at least two of said actuating means, said selecting-operating devices including
a first group of electromagnets of which an electromagnet is coupled to each of said selecting-operating devices for moving the operating member thereof;
a group of at least two selecting devices, each of said selecting devices being associated with one actuating means in each group of said actuating means, said selecting devices including
a second group of electromagnets of which an electromagnet is coupled to each of said selecting devices for moving those actuating means with which the selecting device is associated from an inoperative position to an operative position in which a portion of each of those actuating means lies in the path of movement of the operating member of the said selecting operating device associated with the group of actuating means within which that actuating means is included; and
electrical circuit means including means for supplying electrical power to said electromagnets, switches interposed between said supply means and said electromagnets and operated by the keys of said keyboard to energize an electromagnet of the second group of electromagnets coupled to one of said selecting devices and an electromagnet of the first group of electromagnets coupled to one of said selecting-operating devices each time a key of said keyboard is depressed, and inertial means connected across the electromagnets of said first group of electromagnets whereby said one selecting-operating device is caused to function after said one selecting device.

3,160,258
LOADING MACHINE
Kenneth W. Stalker, Western Springs, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1962, Ser. No. 183,292
3 Claims. (Cl. 198—9)



1. In a loading machine of the class described,
a main frame,
traction devices for supporting said main frame for movement along the ground,
an elevating conveyor extending along said main frame and beyond the rear end thereof and having a generally horizontal rear section and a declined forward section extending from said rear section from a position intermediate the front and rear ends of said traction devices and having an angularly adjustable gathering section forming a forward continuation of said declined forward section and extending at the angle of said declined forward section when the machine is on level ground,
at least one transverse pivot shaft pivotally mounting said gathering section to said declined forward section and disposed a substantial distance beneath said horizontal rear section and a substantial distance forwardly of the connection between said horizontal rear section and the forwardly declined forward section,
an inclined apron extending across the forward end of said gathering section into position to engage the ground and rearwardly along opposite sides of said gathering section and having gathering devices on each side thereof for progressing the mined material onto said gathering section,
a single motor mounted at the forward end of said main frame on one side of said conveyor,

drive connections from said motor to said gathering devices including meshing spur gears journalled beneath said apron for rotation about axes perpendicular to the plane of said apron,

a power divider for driving said spur gears,

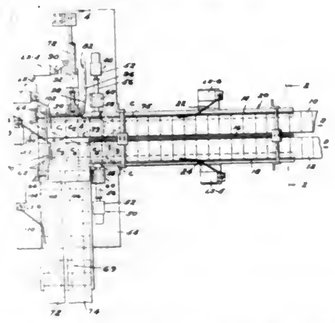
and a driving connection from said motor to said power divider including a shaft coaxial with said transverse pivot shaft and driven by said motor.

3,160,259

METHOD OF AND APPARATUS FOR TRANSFERRING ARTICLES BETWEEN CONVEYORS

Thomas E. Dalton, Northampton, Mass., assignor, by mesne assignments, to Cesco Container Mfg. Corp., Northampton, Mass., a corporation of Massachusetts

Filed June 24, 1959, Ser. No. 822,677
10 Claims. (Cl. 198—21)



1. A machine for transferring articles for the purpose described comprising, in combination: an article transfer area; article transfer means movable through the area to sweep articles therefrom; a plurality of article infeed conveyors disposed in article discharge relation with said area at spaced intervals along the direction of movement of the transfer means; article withholding means adjacent the discharge end of each infeed conveyor; control means coupled with said withholding means and having a part associated with each infeed conveyor and responsive to a predetermined accumulation of articles thereon awaiting discharge to the transfer area, said control means including another part responsive to the presence of the transfer means at a determined position, said control means operable when said parts sense the simultaneous presence of the transfer device at said determined position and the predetermined accumulation of articles on any of said infeed conveyors to actuate only the withholding means associated with such infeed conveyors as individually contain said predetermined accumulation to release the accumulated articles for discharge to the area and subsequent transfer from the area by the transfer means.

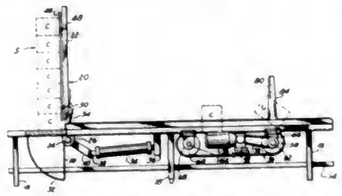
3,160,260

APPARATUS FOR HANDLING STACKED CONTAINERS

Edward T. Holland, Jr., Cedar Rapids, Iowa, assignor to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware

Filed Feb. 1, 1961, Ser. No. 86,445
6 Claims. (Cl. 198—35)

1. An apparatus for handling stacked containers comprising a first continuously moving conveyor, means for receiving a stack of containers from said first conveyor and laying said containers on their sides on said first conveyor, a second continuously moving conveyor adapted to receive said containers from said first conveyor after they have been laid on their sides by said means, said second conveyor operating at a linear speed higher than said first conveyor whereby the individual containers picked up by said second conveyor from said first conveyor are separated from each other, and means to turn the individual containers ninety degrees after they have been separated on said second conveyor.

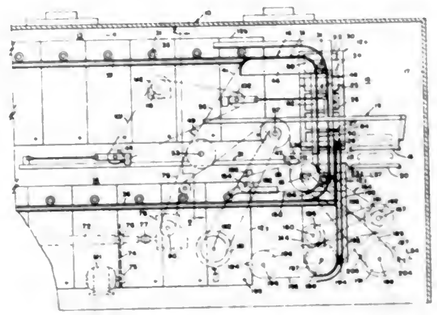


3,160,261

RACK TYPE BREAD COOLER

Anthony J. Ferro, York, Pa., assignor, by mesne assignments, to Baker Perkins, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 27,690, May 9, 1960. This application July 23, 1963, Ser. No. 297,997
10 Claims. (Cl. 198—85)



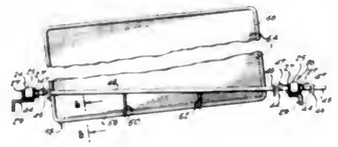
1. In an apparatus of the character described, means for conducting a succession of racks, having a plurality of superimposed equidistantly spaced shelves, in a closed loop, said means including upper and lower longitudinally extending track means for supporting on each row of contiguous racks and an elevating conveyor at one end of said track means having rack engaging elements for raising successive racks to said upper track means, means for intermittently operating said elevating conveyor to move a rack vertically a shelf space at a time, means adjacent said elevating conveyor for unloading articles from successive rack shelves and for loading articles on successive rack shelves, said last named means including a lower support for articles to be unloaded from said rack shelves disposed in a plane above the plane of the top shelf of a rack on said lower track means and an upper support for articles to be loaded onto said rack shelves disposed a shelf space above said lower support, and also including pusher means for slidably moving articles onto said lower support from an alined rack shelf and for slidably moving articles from said upper support onto an alined rack shelf, an endless rack advancing conveyor at the end portion of said lower track means adjacent said elevating conveyor having rack engaging means for advancing and raising a rack into position to be engaged by said elevating conveyor, and control means for operating said rack advancing conveyor to move a rack to a position aligning its top shelf with said lower support as a preceding rack is elevated by said elevating conveyor from a position in which its bottom shelf is aligned with said lower support to a position in which its bottom shelf is aligned with said upper support.

3,160,262

PAN WASHING MACHINE

Robert K. Nolte, Chatham, N.J., assignor to Metalwash Machinery Company, Elizabeth, N.J., a copartnership

Continuation of application Ser. No. 111,941, May 23, 1961. This application Apr. 6, 1962, Ser. No. 186,828
6 Claims. (Cl. 198—134)



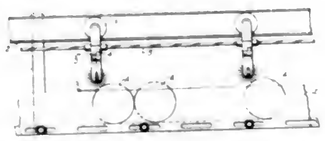
1. In combination, a bakery pan washer and an endless conveyor extending therethrough, said endless conveyor comprising at least a pair of horizontally extending endless chains having a plurality of links, drive means mounting said chains in substantially vertical spaced relation, a plurality of pan supporting means extending horizontally between corresponding opposed pairs of said chain links, each of said supporting means including a pair of substantially parallel rod members having their ends connected to said chain links, and depending V or U-shaped pan holding means secured to said rod members, said holding means being of graduated depth to support the lower edge of a baking pan between the rod members at an angle inclined to the horizontal.

3,160,263

PUSHER TYPE CONVEYOR

Billy Ernest Lewis, Warren, Mich., assignor to F. Jos. Lamb Company, Detroit, Mich., a corporation of Michigan

Filed Dec. 13, 1961, Ser. No. 158,959
3 Claims. (Cl. 198—174)



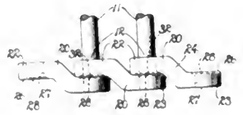
1. In combination, a fixed runway, a plurality of cylindrical workpieces arranged in the runway with their axes extending transversely of the runway so that the workpieces are adapted to roll along the runway and means for advancing the workpieces in the runway with a rolling movement comprising a monorail spaced uniformly above the runway, a plurality of carriers depending from the monorail in fixed position towards the runway, means for moving the carriers in said fixed position along the runway and a circular brush having radially extending bristles on each carrier mounted for free rotation about a generally horizontal axis parallel to and spaced above the top sides of the cylindrical workpieces in the runway, said brushes being adapted to contact the cylindrical surfaces of the workpieces at the top rear portion thereof to impart rolling movement thereto and being adapted to be rotated by said contact with the workpieces in a direction opposite to the direction of rotation of the rolling workpieces.

3,160,264

CONVEYOR CHAIN

Delmar H. Raybould, P.O. Box 657, Rexburg, Idaho

Filed Jan. 16, 1963, Ser. No. 251,887
4 Claims. (Cl. 198—195)



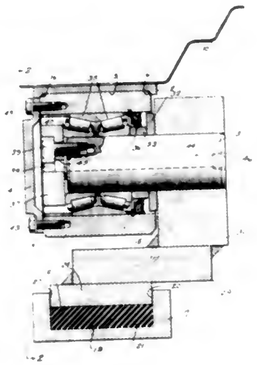
1. A conveyor chain comprising a plurality of substantially parallel flight rods having opposite end portions; a plurality of substantially identical elongated links interconnecting corresponding ends of the adjacent rods in an endless chain, each link having an outer end providing an inwardly disposed bearing surface, an inner end longitudinally spaced from said outer end providing an outwardly disposed bearing surface in a plane common to the inwardly disposed bearing surface of the outer end, a central portion integrally interconnecting the outer and inner ends and a pair of substantially parallel bores individually extended through the opposite ends of the links, the links having opposite ends journaled on corresponding ends of adjacent rods, the inner ends of the links being outwardly overlapped by the outer ends of adjacent links; and link restraining means mounted on the rods between the overlapped ends of the links.

3,160,265

ROLLER SUPPORT FOR SHAKER CONVEYOR TROUGH

Loy D. Hagenbook, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 12, 1962, Ser. No. 187,027
6 Claims. (Cl. 198—220)



1. In a trough support for shaker conveyor trough lines and in combination with a shaker conveyor trough,

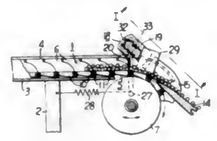
a base having an upwardly opening channel formed therein,

a resilient cushioning pad mounted in said channel,

an outboard support guided in said channel and mounted on said cushioning pad,

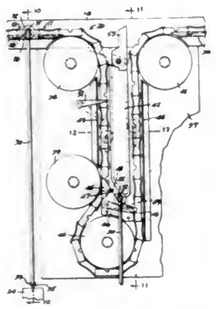
and including a cantilever shaft extending over the said cushioning pad and a support roller for said trough journaled on said shaft in centered relation with respect to said cushioning pad.

3,160,266
SCRAPING AND SEALING TRAVELING GRATE SIDE WALLS
Ray C. Edwards, Elm Grove, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 14, 1963, Ser. No. 258,399
5 Claims. (Cl. 198—230)



1. A side wall scraping device for traveling grates and the like, comprising: a flat plate having a tapered portion defining a scraper edge, a support shaft having a free end and an end connected to said plate, a first biasing means connected to the shaft and operable to yieldably urge the plate and shaft in the direction pointed by the free end of the shaft, second biasing means connected to the shaft and operable to yieldably urge the plate to pivot about the axis of the shaft in the direction pointed by the tapered portion, and a cam assembly connected to said shaft operable to move the plate and shaft against the bias of the first means in response to pivotal movement of the plate and shaft against the bias of the second means.

3,160,267
CONVEYOR APPARATUS AND CONVEYOR CHAIN THEREFOR
Alleyne C. Howell, Jr., 645 Mine Hill Road, Fairfield, Conn.
Filed Oct. 27, 1961, Ser. No. 148,156
8 Claims. (Cl. 198—189)



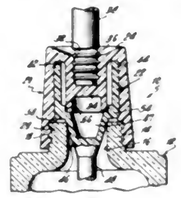
1. In a conveyor apparatus, an endless conveyor chain comprising a first series of links alternating with a second series of links and connected for articulation in two directions, one direction being at right angles to the other direction, rotary drive means about which said chain engages through articulation in said one direction, rotary roller means having its axis of rotation at right angles to the axis of rotation of said rotary drive means and about which said chain engages through articulation in said other direction, said links of said first series each being in the form of a four-sided loop having rectangular end walls and top and bottom walls, and said links of said second series each being in the form of a four-sided loop having rectangular end walls and side walls, the end walls of the links of said first series being engaged at their inner sides with the inner sides of the end walls of said links of said second series, said top and bottom walls of each of said links of said first series being indented to provide spaced land points equally spaced from its end walls for engagement with the periphery of said roller means at each side of a radius line thereof intersecting the center point of said link, and the side walls of each of said links of said second series having straight edges for engagement with the periphery of said roller tangentially of a radius line intersecting the center point of said link.

3,160,268
LUNCH BELTS
Fulton E. Baker, 6712 Navion Drive, Citrus Heights, Calif.
Filed Aug. 30, 1962, Ser. No. 220,416
2 Claims. (Cl. 206—4)



1. The combination comprising a "Thermos" bottle, a belt around said "Thermos" bottle, said belt having a buckle at one end receiving the other end of the belt; said belt having longitudinally extending spaced offset ribs projecting from its bottle engaging face to prevent slippage of the belt on the bottle; said buckle comprising a substantially rectangular frame having a center bar, a raised rib on the center bar to engage the ribs of the belt to prevent slippage of the belt in the buckle; and pockets on said belt intermediate its ends, whereby the "Thermos" bottle and pockets will form a compact lunch carrying unit.

3,160,269
CLOSURE FOR CONTAINERS
Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York
Filed Nov. 30, 1961, Ser. No. 156,043
10 Claims. (Cl. 206—15.2)



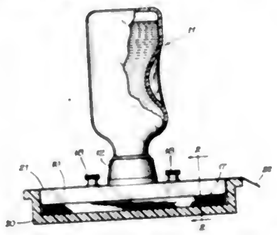
1. A multiple-part closure for a container including a neck having external threads comprising a relatively rigid cap including a top wall and a depending substantially cylindrical body wall terminating in an open end, means internally of said cap adjacent said open end providing a cap thread for threaded engagement with said external threads on said neck, an insert of a yieldable and flexible material force fitted into said cap intermediate said cap thread and said top wall and including thin-wall, frusto-conical sealing means disposed in spaced confronting relation to said cap thread for sealing engagement with said neck, an applicator, and means mounting said applicator on at least one of said cap and said insert such that said applicator projects from said cap for insertion into said container when said cap is engaged on said neck.

3,160,270
PACKAGE FOR MANUAL TOOL AND CONCRETE FASTENERS
Frank A. Werstein, Long Beach, Ind., assignor to Phillips Drill Co., Michigan City, Ind., a corporation of Illinois
Filed Oct. 31, 1962, Ser. No. 234,311
6 Claims. (Cl. 206—47)



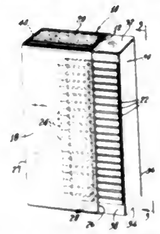
1. A package for a manual tool having an elongate handle and the package adapted to include a mounting for a flexible bag of fasteners to be installed by means of said tool, said package comprising a pair of spaced seating formations, a planar connecting portion between said seating formations, means provided in said seating formations for frictionally engaging and holding the elongate handle therein, said flexible bag of fasteners being disposed on said planar connecting portion with the handle engaging against the bag and collapsing same between a pair of said fasteners thereby locking the bag in position.

3,160,271
HAND STAMP CONTAINER
Charles E. Ritter, Des Plaines, Ill., assignor to Weber Marking Systems, Inc., a corporation of Illinois
Filed June 13, 1963, Ser. No. 287,629
7 Claims. (Cl. 206—47)



4. In a storing and shipping arrangement for a hand stamp, a hand stamp comprising a rectangular frame having depending side walls, said frame being formed of a material impervious to ink, pad means secured to said frame to depend therefrom, said pad means being pre-inked, a bottle adapter carried on the upper side of said frame and sealed thereto, a bottle handle carried in said bottle adapter with said bottle handle extending upwardly therefrom in an overturned position, said bottle handle being formed of a resilient material adapted to permit any fluid in said bottle handle to be ejected through said bottle adapter and said frame and into said pad means responsive to a manual compression of said bottle handle, a quantity of ink carried in said bottle handle, a container formed of a material impervious to ink, said container comprising a rectangular bottom wall of a length and width substantially equal to the length and width of said frame, side walls integrally formed on said bottom wall to extend upwardly therefrom, an outwardly extending shoulder formed on the upper end of said side walls, the height of said side walls of said container being such that when said frame and said pad means are disposed in said container, the upper surface of said frame is substantially in the plane defined by the upper surface of said side walls and said shoulder of said container, a rectangular open center tape member secured on the upper surface of said side walls and said shoulder of said container and extending over the marginal edge portions of the upper surface of said frame to seal all portions of said frame below the upper surface thereof within said container.

3,160,272
MATCH PACK AND COVER FOR A CIGARETTE PACKAGE
Henry C. Dankert, 98 Kings Parkway, Baldwin, N.Y.
Filed Nov. 18, 1963, Ser. No. 324,360
3 Claims. (Cl. 206—48)

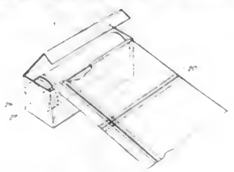


1. In combination, a match pack and cigarette package, said match pack comprising a hollow member having a top, a bottom and two sides each integrally connecting said top and bottom together, said top, bottom and sides each being of uniform length, a plurality of matches connected to the interior surface of one of said sides in adjacent array downward therealong substantially from said top to said bottom, each of said matches having an end thereof extending lengthwise beyond an edge of said one side to be manually disconnected from said interior surface, said member defining a sleeve slidably receiving a package of cigarettes therein having an opening in the top thereof through which cigarettes may be withdrawn whereby said top, bottom and sides of said member correspond to respective top, bottom and sides of the cigarette package, said uniform width of said member being less than that of the corresponding respective top, bottom and sides of the cigarette package to enable said member to be slid relative to the cigarette package to a position whereby said uniform width of said member including said extending match ends are positioned between the edges of said corresponding respective side of the cigarette package, each of said matches having a striking head, said striking heads of said matches being positioned adjacent said interior surface of said one side of said member, and adhesive means adjacent the striking head of each match connecting the same to said interior surface whereby, when said sleeve member is moved relative to the cigarette package to cover the opening, said one side and said connected extending match ends are positioned between the edges of the corresponding sides of the cigarette package.

3,160,273
CONTAINERS AND METHOD OF MAKING SAME
Richard H. Reuther, Media, Edward M. Kasinkas, Lansdowne, and Albert L. McConnell, Chester, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 29, 1962, Ser. No. 169,192
4 Claims. (Cl. 206—56)

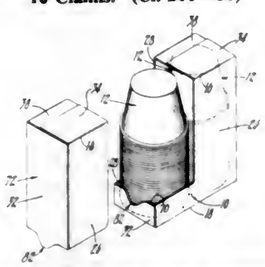
4. A household appliance comprising a container, a rolled-up strip of detachable, thermoplastic bags in said container, said rolled-up strip comprising a continuous thermoplastic sheet folded lengthwise upon itself with the front side of the bag shorter than the rear side, the top edge of the front side folded forward and outside of said bag in a shallow fold, the folded front side including the shallow fold held to the rear side of said thermoplastic sheet in heat-sealed relationship, each bag in the continuous thermoplastic sheet being heat-sealed across

the lengthwise folded sheet and weakened at selected points outside of the bag enclosure formed by said heat-sealed points, said relatively longer sheet providing a folding lip, part of said lip being coated on inner portion thereof with a thin persistent surface-coating agent comprised of mono- and diglycerides of fatty acids and a polyoxyethylene sorbitan monooleate, an aperture in said container to permit said strip to be drawn from said con-



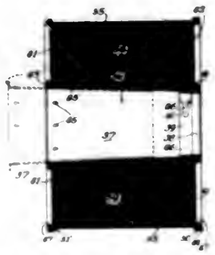
tainer and means adjacent to said aperture adapted to cooperate with the weakened portions of the strip to enable individual bags to be detached from the strip, said surface-coating agent imparting the ability of said lip to cling to said uncoated back portion of said lip, and allowing easy removal of said rolled-up bags from said roll, said thin persistent surface-coating agent thereafter giving a repeated closure with said uncoated front side of the bag.

3,160,274
MULTI-STACK DISPENSING CONTAINER
Lee Arthur Pritchard, Easton, Pa., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 6, 1964, Ser. No. 342,918
10 Claims. (Cl. 206—56)



1. A multi-stack dispensing carton comprising:
a tubular rectangular container having a top and a bottom and being adapted to house a row of juxtaposed stacks of nested articles;
said container having spaced opposed end panels having a transverse dimension substantially equivalent to the width of a stack of nested articles to be dispensed and having a longitudinal dimension substantially equivalent to the height of said stack;
said container also having spaced opposed side panels interconnecting said end panels and said container top and bottom;
said side panels having a longitudinal dimension equal to that of said end panels and a transverse dimension substantially equivalent to the length of said row of stacks;
said container also having a severable portion defined by a continuous score line which extends transversely across one of said end panels and transversely along said side panels to a distance approximately one stack width away from said end panel, then turns substantially perpendicularly upward to form a longitudinal score line section which extends upward along each side panel and across the top of said container to join with the opposite longitudinal score line section;
said severable portion having an end wall formed by the score line enclosed area of said container end panel, side walls formed by the score line enclosed area of said container side panels, and a top wall formed by the score line enclosed area of said container top, said severable portion thus having a generally U-shaped cross-section;
said severable portion being adapted to be manually separated from said remaining container portion to thus expose a single stack at one end of said container for dispensing purposes;
said severable portion also being adapted to be utilized as a cover by being telescoped over said remaining container portion with said severable portion end wall being interposed between said exposed stack and the next adjacent stack and said severable portion side walls being overlapped over said remaining container portion side panels.

3,160,275
COIL PACKAGE
Leonard G. Berquist, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 136,504
5 Claims. (Cl. 206—59)

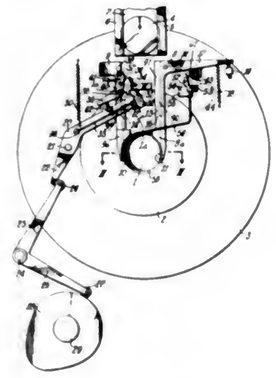


1. A package comprising a spool composed of a core of rigid sheet material, and a pair of side plates of rigid sheet material one each being joined fast at the opposite ends of said core, a coil of wire mounted under axial compression on said spool by winding the wire of said coil on said core with the ends of said coil engaging the inside surfaces of said side plates biasing said side plates in a direction axially away from the ends of said coil, a wrapper extending transversely between said side plates outwardly of said coil of wire, and the side edges of said wrapper being joined fast to said side plates, said core and said wrapper being maintained under axial tension by the axial compressive force of said coil on said side plates.

3,160,276
FEED DEVICE ON FLOW DEFORMATION PRESSES
Hans Wagner, Uhingen (Fils), Germany, assignor to L. Schuler A.G., Goppingen, Germany, a firm
Filed Dec. 29, 1961, Ser. No. 163,125
Claims priority, application Germany Jan. 11, 1961
8 Claims. (Cl. 207—6)

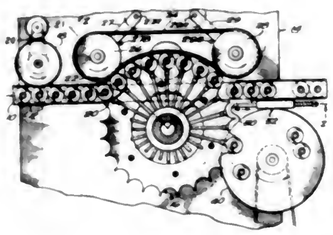
1. In a flow-deformation press including a stationary die member having a die opening, a reciprocable ram member and a chute arranged to feed a series of blanks to said die opening, the improvement comprising a pair of spaced rail members arranged to receive said blanks and being spaced to define a trackway of substantially the same width as that of said blanks, guide means having a guide surface thereon adapted to hold one of said blanks in an eccentric position with regard to said die member, said die opening being provided with a tapered centering surface for introducing said one blank from said eccentric

position on effect of movement of said ram member, pivotable support means arranged in the region of said die opening in spaced relationship opposite said guide means, spring means for urging said support means toward said die opening, said support means being adapted to hold



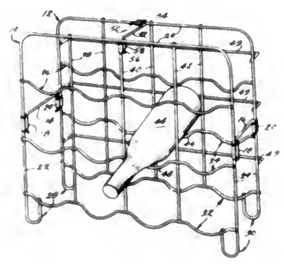
said one blank at said guide surface, rod means adjustably secured to said ram member, a tapered member supported by said rod means, and control means for swinging out said support means from said die-opening region, whereby the pressed material is free to flow against the pressing direction.

3,160,277
ANTIJAMMING-CONTAINER-HANDLING SYSTEM
James H. Wyman, San Pedro, Los Angeles, Calif., assignor, by mesne assignments, to Barry-Wehmiller Machinery Co.
Filed Sept. 11, 1961, Ser. No. 137,327
13 Claims. (Cl. 209—72)



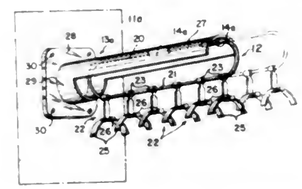
1. An apparatus for conveying containers from a conveyor belt through an inspection zone and back to said conveyor belt, the improvement comprising yieldable supporting guide means for engaging said containers prior to said inspection zone and carrying said containers in suspended positions through said inspection zone to a discharge position, said guide means being freely movable with said containers; means for urging said containers into engagement with said yieldable guide means, a rejected-container collection region adjacent said discharge region, guard means blocking said rejected-container collection region, and means responsive to an indication that a container is to be rejected for moving said blocking guard means to permit said respected container to be moved into said rejected-container collection zone.

3,160,278
LOCKABLE RACK FOR ELONGATE ARTICLES
Joseph C. Varkala, 131 Llewellyn Road, Montclair, N.J.
Filed Sept. 19, 1963, Ser. No. 309,953
5 Claims. (Cl. 211—74)



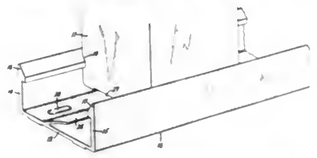
1. A rack for holding a plurality of elongate articles, comprising:
two generally parallel support panels each having a plurality of corresponding supports which, considering alignable ones from each panel, are pairs of supports for respectively holding different ones of said articles,
means hingedly connected to each of said panels for causing the panels to be movable between one position wherein they are spaced apart with the said support pairs generally aligned and a second flatter position wherein the panels are substantially contiguous with the support pairs transversely misaligned, and
a single locking means secured to one of said panels for locking the panels in either of said positions.

3,160,279
ARTICLE SUPPORTING HANGER
Alice T. Hovey, 3594 Tillbury Ave., Columbus, Ohio
Filed Nov. 6, 1962, Ser. No. 235,635
4 Claims. (Cl. 211—86)



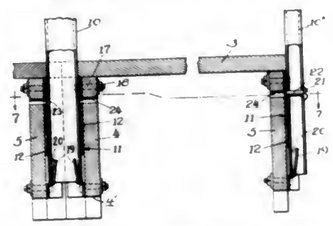
2. An article supporting hanger comprising an attaching means for engaging a supporting structure and including an elongated beam, a plate connected to one end of said beam and having means for engaging a substantially vertically disposed surface of a supporting structure to maintain said beam in a substantially horizontally disposed position, and a guide formed with an axially extending shaft receiving bore secured to said beam, a carriage having a first shaft slidably disposed in said bore and a second shaft supported in spaced relationship to said first shaft, said carriage being movable between a retracted position and an extended position relative to said guide, and at least one article-engaging hook mounted on said second shaft.

3,160,280
DEVICE FOR MOUNTING APPARATUS
James R. Burch, Normal, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 12, 1963, Ser. No. 301,364
3 Claims. (Cl. 211—89)



1. A device for mounting apparatus comprising, a channel-shaped strip having a base and a pair of spaced flexible side walls projecting from the base, said side walls having inwardly facing hooked portions adapted to enter slots formed in apparatus to be inserted into the channel, said side walls having cam surfaces engageable by the apparatus in response to insertion thereof to deflect the side walls outwardly so that the hooked portions enter the slots with a snap action, and a flap integrally formed on said base and extending throughout the length of the channel, said flap including an end portion spaced from the base to be deflected toward the base by the apparatus when the apparatus is fully inserted, said flap when so deflected extering a force on the apparatus tending to urge it away from the base.

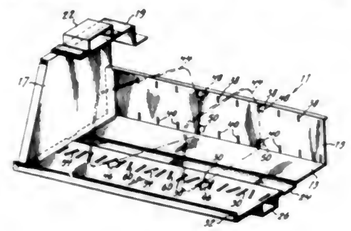
3,160,281
PARTITION STRUCTURE
Richard R. Ruhnke, Skokie, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed Sept. 11, 1962, Ser. No. 222,890
12 Claims. (Cl. 211—177)



4. A platform structure comprising a plurality of base members each having a horizontal panel and a pair of depending side walls, means holding said base members against relative lateral displacement with adjacent side walls of adjoining base members spaced apart, and an anchor plate mounted on the outer surface of each side wall, the anchor plates of adjacent side walls cooperating to receive and hold an upright therebetween.

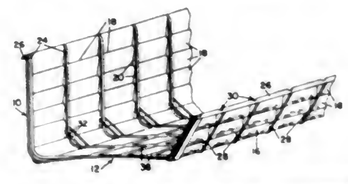
3,160,282
VERTICAL SHELF UNIT
Donald A. Gunn, Kenmore, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,414
15 Claims. (Cl. 211—184)

1. In a vertical shelf file unit of the class described, a shelf having a horizontally disposed panel, said shelf having a back panel extending substantially vertically and at right angles to the horizontal panel, a plurality of laterally spaced vertical divider sheet-like members on said shelf, each of said divider members arranged in planes which intersect one of said panels at right angles and intersect the other of said panels at an acute angle as measured between the divider member and an imaginary plane intersecting both said panels at right angles, and means for detachably securing the divider members in



said planes to both the horizontal and back panels of said shelf against movement of said divider members toward or away from said imaginary plane.

3,160,283
ENDLESS DUMP DISPLAY BIN
Armand A. Lachance, % American Metal Products Co., Southbridge St., Auburn, Mass.
Filed Feb. 19, 1963, Ser. No. 259,713
8 Claims. (Cl. 211—184)

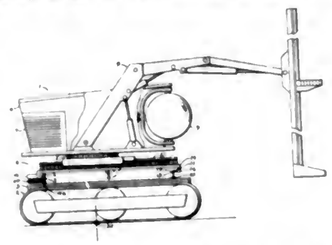


1. A plastic endless dump display bin comprising a rear wall, a front wall and a bottom, the walls and bottom being integrally connected, the rear wall having a series of spaced upright grooves in the front surface thereof adjacent the bottom, said grooves facing the front wall, the front wall having a like series of equally spaced upright grooves therein at the rear surface thereof facing the rear wall, and a divider having forward and rear edges selectively received in a groove in the front wall and a corresponding groove in the rear wall and held therein, said grooves being arranged in mutually spaced parallel condition at predetermined intervals along said front and rear walls for the reception of dividers in selected complementary front and rear wall grooves providing display areas of adjustable lengths, the bottom of the display bin being concave at its lower surface so that goods placed in the bin and resting on said bottom tend to straighten the same causing the front and rear walls to be urged toward each other gripping the divider at the opposite edges thereof.

3,160,284
WEIGHT STABILIZING LOAD HANDLING MACHINE
Lawrence A. Moore, Beloit, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Filed Feb. 1, 1963, Ser. No. 256,204
6 Claims. (Cl. 212—49)

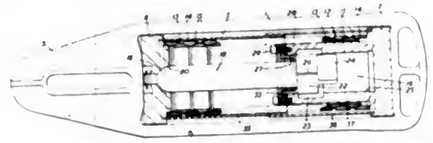
1. A mobile land vehicle comprising a base platform; a swing-house assembly mounted on said platform for rotation about an axis generally normal to said platform, said assembly including a cab, engine and a boom assembly; rotatable driving means for propelling said vehicle over the ground; and weight control means for causing movement of said swing-house assembly relative to said platform to maintain automatically the center of gravity of

said swing-house assembly substantially over the maximum load stability point of said vehicle on said ground on



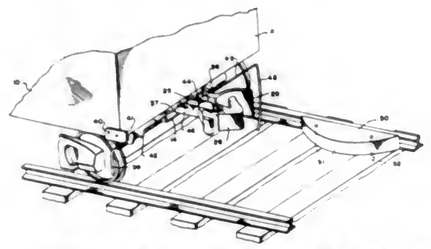
inclination of said vehicle relative to the grade of said ground.

3,160,285
DRAFT AND/OR BUFFING GEAR FOR RAILWAY VEHICLES
Frederick William Sinclair, Gloucester, and Max Hubert Prophet Alexander Le Vie, Finchfield, Wolverhampton, England, assignors to Gloucester Railway Carriage and Wagon Company Limited, and F. H. Lloyd and Company Limited
Filed Aug. 29, 1961, Ser. No. 134,692
Claims priority, application Great Britain, Aug. 30, 1960, 29,811/60
4 Claims. (Cl. 213—43)



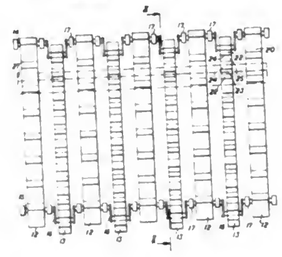
1. Draft gear for a railway vehicle comprising two follower members, a ring spring having a weakened section acting directly between the said follower members, and hydraulic energy-absorbing means directly between said two follower members and acting in parallel with said ring spring.

3,160,286
RAILWAY CAR COUPLER
Fraser Wilson, 3900 Pandora St., North Burnaby, British Columbia, Canada
Filed Apr. 17, 1963, Ser. No. 273,733
10 Claims. (Cl. 213—75)



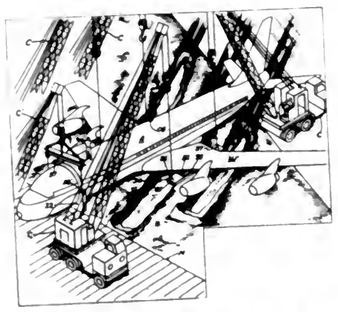
1. A coupler for a railway car comprising a draw bar formed of a first member and a second member, a pair of vertically disposed pivot pins connecting the inner ends of the members to the underside of the car, said first member having a longitudinally extending slot through which one of said pair of pivot pins extends, spring means normally retaining the members in contact with one another and means for swinging the first member away from the second member.

3,160,287
APPARATUS FOR INSPECTING OBJECTS
Oliver Gordon Hinchliffe, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England
Filed May 29, 1962, Ser. No. 198,611
Claims priority, application Great Britain May 31, 1961
3 Claims. (Cl. 214—1)



1. Bar-inspection apparatus comprising a first array of similar racks arranged side-by-side in the same plane and having similar upwardly projecting saw-teeth permitting rods to be supported transversely of the lengths of the racks in successive interdental spaces, each tooth of the racks having a slide surface, and a second array of toothed racks arranged side-by-side and movable together relative to the racks of the first array in a path substantially parallel with the slide surfaces, each tooth of the second array having a carrying surface transverse to the slide surface of a corresponding tooth of the first array, and, in advance of the carrying surface in the direction of movement, surfaces forming pockets for the reception of rods of different cross section; whereby, on the occurrence of relative movement, a rod supported in one interdental space is carried by the carrying surfaces of the second array up the slide surfaces of the first array, until the rod rolls over the apices of the teeth of the first array, and is then received in the pockets of the second array before being deposited in the next interdental spaces of the first array.

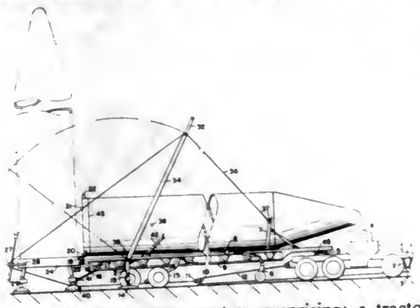
3,160,288
METHOD AND APPARATUS FOR RECOVERING AND SALVAGING CRASHED AIRCRAFT
Albert G. Kelly, 15812 Alta Vista Way, San Jose, Calif.
Filed Nov. 23, 1962, Ser. No. 239,448
10 Claims. (Cl. 214—1)



10. Apparatus for removing from an airstrip or the like a disabled aircraft of the type having jack points in each wing and the fuselage comprising a separate lifting beam adapted to be disposed below each wing in the region of the jack point therein and to extend parallel to the fuselage of such craft and beyond the fore and

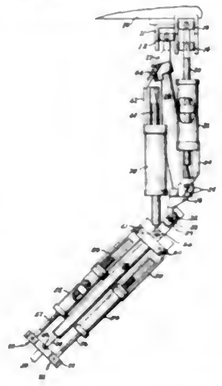
aft edges of said wings for suspension by separate crane operated cables connected to each end of said lifting beam, a pivot beam pivotally connected to said lifting beam for rocking movement above an axis transverse to the latter, said pivot beam having its upper surface contoured for spaced substantially parallel relation with respect to the contour of the underside of the wing to be engaged thereby, chock blocks supported adjacent each end of said pivot beam in substantial alignment with the fore and aft structural spars within the wing and surface contoured to fit snugly against the skin layer thereof to be engaged by such blocks, means for closing the space between each of said chock blocks and the upper surface of said pivot beam and the under surface of said wing above the latter to form a cushion receiving chamber, a polyurethane foam cushion injected into said chamber and adapted upon setting to frictionally engage the skin layer of the wing exposed to such chamber for stabilizing said pivot beam relative to the wing, a cushioned yoke adapted to receive and support the fuselage of such craft in the region of a jack point therein, means for suspending said yoke from a separate single cable of a derrick-crane whereby to lift the fuselage in unison with each wing of such craft upon operation of all of such crane cables, an A frame having platforms adapted to be disposed one below each of said lifting beams, a plurality of timbers supported on and extending between said platforms for receiving and supporting both of said lifting beams when the latter are lowered onto the same, means for securing said yoke to the apex end of said A frame, said yoke having a ball joint on its underside, a central mobile carrier having a socket for receiving the ball joint of said yoke, and a paid of wing carriers each having a turnable saddle thereon, a talking beam having each end thereof supported in the saddle of one of said wing carriers for spanning between said wing carriers in parallel relation to said cross beams and to receive and support the platform zones of said A frame.

3,160,289
MISSILE TRANSPORTER ERECTOR
Bernard I. Leefer, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 18, 1963, Ser. No. 259,465
6 Claims. (Cl. 214—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



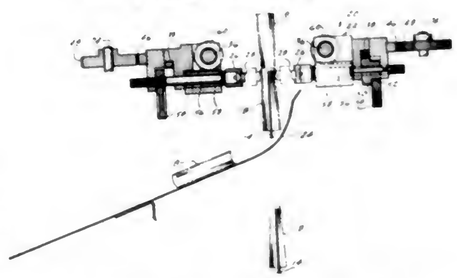
1. A missile transporter erector comprising: a tractor having a winch; a trailer attached thereto; a launching pad attached to the rear of said trailer; a pair of movable columns each having one end pivotally connected to said trailer at a rear portion thereof, the distal end of each of said columns being free to swing in a vertical plane; cable means extending from said winch beneath said tractor and trailer; sling means attached at one end to said cable means; said sling means extending to the rear of said launching pad over said columns and adapted to be attached to the forward portion of a missile.

3,160,290
SERVO MANIPULATOR ARM
Kentner B. Wilson, Orange, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 19, 1963, Ser. No. 266,462
9 Claims. (Cl. 214—1)



1. A servo manipulator arm comprising: a supporting base; an upper arm member having an extremity pivoted on said base to form a single shoulder joint; a first pair of actuator means pivotally connected between said base and upper arm member for linear extension and retraction therein providing three dimensional arm motion about said shoulder joint; a forearm member having an extremity pivoted on said upper arm member to form a single elbow joint; a second pair of actuator means pivotally connected between said upper arm and forearm members for linear extension and retraction therein providing two dimensional and rolling forearm motions about said elbow joint; an adaptor member pivoted on said forearm to form a wrist joint; and a third pair of actuator means pivotally connected between said forearm and adaptor members for linear extension and retraction therein providing three dimensional motion about said wrist joint.

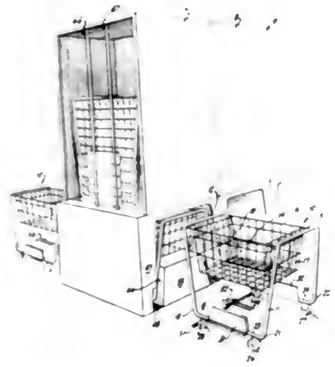
3,160,291
BOOK DISCHARGING MECHANISM
James H. Thorp, West Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed July 9, 1963, Ser. No. 293,648
8 Claims. (Cl. 214—1)



1. In a book casing-in machine or the like having a vertically movable book carrier adapted to intermittently deliver books in back-up attitude for discharge at an upper position; a book discharge mechanism comprising a carriage means movable longitudinally in a horizontal plane

between a first position above said carrier and a second position spaced from the carrier, transversely opposed book gripping jaws supported by and movable with said carriage means and having longitudinally extending book gripping surfaces adapted to engage a book supported by said carrier in its opposite creases, means supporting said jaws for transverse inward and outward movement relative to said carriage means respectively to grip and release a book supported by the carrier, said means serving also to accommodate rotation of said jaws so that a book gripped thereby can be lifted from said carrier and swung at least approximately to a back-down attitude, and operating means for said carriage means and jaws serving initially to cause said jaws to grip a book on said carrier at said first position of said carriage means and serving thereafter simultaneously to move said carriage means to its said second position and to cause said jaws to rotate and to lift and swing the book as aforesaid, said means serving also to cause said jaws to release the book in its back-down attitude.

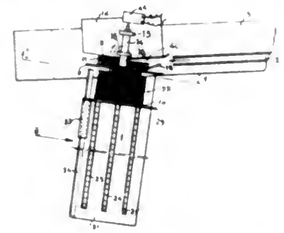
3,160,292
SHOPPING CART STACKER
Leonard N. Albrecht, 30 Excelsior Lane, Sausalito, Calif.
Filed Jan. 15, 1962, Ser. No. 166,097
10 Claims. (Cl. 214—6)



7. A shopping cart stacker for use with a shopping cart having an indexing member thereon and having a clear central section along the bottom thereof comprising a base, a frame upstanding from said base, a barrier upstanding from said base and adapted to be closely received in said central section, an elevator mounted beyond said barrier to move up and down said frame, means on said elevator movable into and out of position for interengagement with said indexing member, means for moving said interengagement means into and out of said position, means for moving said elevator, and means for operating said elevator moving means and said interengagement means in timed relationship.

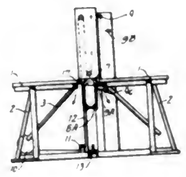
3,160,293
DEVICE FOR STACKING LETTERS AND THE LIKE
Maurice Hennequin, Asnieres, France, assignor to Societe d'Etudes et de Construction d'Appareils de Precision, Asnieres, France, a French company
Filed Nov. 22, 1960, Ser. No. 70,967
Claims priority, application France Apr. 8, 1960
7 Claims. (Cl. 214—7)

1. Apparatus for stacking flat articles comprising means supporting said articles in substantially single file and in a common generally vertical plane and for advancing the articles along a path in said plane, abutment means disposed generally transversely of the path of travel of the articles for arresting the articles at a predetermined position of said path, a rotatable disc member having a flange surface adjacent said position and at an angle to said plane whereby the arrested articles will be supported against said flange in elementary stacks, portions of said disc defining a generally radially inwardly extending cutout therein and one of said portions also defining a vane



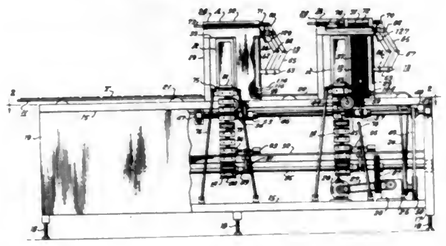
projecting from a side of said cutout towards said plane, and means for rotating said member in the direction of extension of said vane to move the same behind the arrested articles whereby at each revolution of the member an elementary stack of the articles will be drawn by said vane through said cutout and removed from said position and combined into a common pack, and further abutment means positioned to support said common pack.

3,160,294
SORTING DEVICES FOR LEATHER OR SIMILAR MATERIALS
Hermann Buhlinger, Zeughausstrasse 52, Tuttlingen, Wurttemberg, Germany
Filed July 18, 1961, Ser. No. 124,909
Claims priority, application Germany July 19, 1960
16 Claims. (Cl. 214—16)



1. A sorting device for leather and similar materials comprising sorting tables, portable transport racks, and storage means for storing the sorted leather, said storage means comprising at least one storage box, and one of said sorting tables comprising a pair of table tops, releasable supporting means for supporting said table tops so that they can be swung towards the ground, said table tops being so dimensioned that in their horizontal position they form in the center of the sorting table a slot-shaped space, said table also including lifting means provided on one end of the slot-shaped space, a pallet carrier adapted to carry a pallet and to be raised and lowered by said lifting means, said pallet carrier and lifting means being adapted to locate said pallet carrier in its initial position in said slot-shaped space and a guide located adjacent the floor below the sorting table, said guide being adapted to guide said portable transport racks.

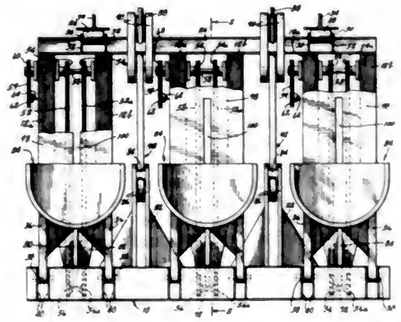
3,160,295
TILE LOADING MACHINES
Leon S. Roark, Shreveport, La., assignor to Claiborne Sales Company of Texas, Palestine, Tex., a corporation of Texas
Filed Dec. 1, 1961, Ser. No. 156,339
4 Claims. (Cl. 214—16.6)



1. A machine for loading articles in racks having means for supporting a plurality of articles in superimposed relationship including
an endless feed conveyor for continuously advancing articles in a single line,
first and second upright conveyor means in alinement with and spaced longitudinally of the feed conveyor for receiving and lifting the articles therefrom,
means overlying said feed conveyor and adjacent each of the upright conveyor means for supporting a rack,
first and second means for transferring the lifted articles from each upright conveyor means to the adjacent rack,
fixed means adjacent each one of said upright conveyor means responsive to each article fed thereto by said feed conveyor for intermittently actuating each one of said conveyor means,
and second means at the first upright conveyor means responsive to the feeding thereto of a predetermined number of articles by said feed conveyor for rendering the intermittent actuating means inoperable and thereby prevent actuation of said first upright conveyor means to enable the articles to pass said first upright conveyor means and feed to the second upright conveyor means without causing operation of said first upright conveyor means.

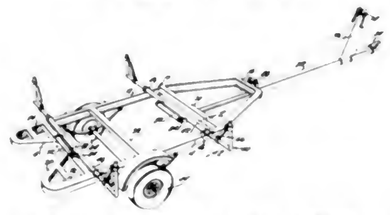
3,160,296
FURNACE-CHARGING DEVICE
Frank L. Tocher, Morris Plains, N.J., and Mitchel Kleinman, Brooklyn, N.Y., assignors to M. H. Treadwell Company, Inc., New York, N.Y., a corporation of New York
Filed June 14, 1962, Ser. No. 202,621
8 Claims. (Cl. 214—18)

1. A furnace-charging device comprising a liftable frame adapted to rest on a generally horizontal surface and having lifting-lug means adapted for engagement by independent lifting means to enable the frame to be lifted from said surface, plural boxes separately pivoted to said frame for pivotal movement in a vertical plane, and separate tilting means for each of said boxes, carried by said frame and coacting separately with said boxes to pivot and thereby tilt the latter, said tilting means comprising, for each of said boxes, an upright column constituting a part of said frame, a movable endless chain carried by said column, and plural wheels, mounted for rotation on said frame, coacting with said chain to guide the latter in a fixed course of linear movement, one of said wheels being located at an upper portion of said column and a lifting portion of said chain extending substantially vertically to said one wheel and having a lifting link; the tilting means further comprising a lifting tongue rigidly integral with a related box and extending rearwardly thereof



into lifting engagement with said link, and a motor operatively connected to said chain to linearly move the latter.

3,160,297
BOAT TRAILER
Anton Stumvoll, Coleharbor, N. Dak.
Filed Dec. 4, 1962, Ser. No. 242,222
3 Claims. (Cl. 214—84)

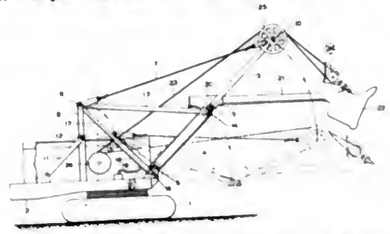


1. In a trailer including a tongue adapted to be removably attached to a towing vehicle, and a wheel supported frame extending rearwardly from said tongue the improvement wherein, said frame includes spaced side pieces, a pair of open ended tubular members arranged in spaced relation transversely of said frame and each having each end above and contiguous to the adjacent frame side piece, an L-shaped support disposed adjacent each end of each of said members and having the portion of the long leg adjacent the free end thereof slidably and rotatably mounted in the portion of the adjacent tubular member adjacent the open end thereof, the short leg of each support being vertical and above the long leg, means for releasably locking said long legs in the respective tubular member end portion against sliding and rotary movement, a first collar slidably mounted on the short leg of each of said supports, a second collar slidably mounted on the remainder portion of the long leg of said support, and a roller extending between said first and second collars and rotatably supported thereon.

3,160,298
LOWERABLE A FRAME
Robert E. Talley, Racine, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,934
13 Claims. (Cl. 214—135)

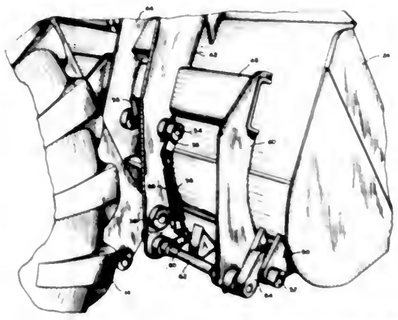
1. In a machine having a main frame; a boom pivotally mounted thereon; a dipper handle assembly carrying a dipper at its outer end, said dipper handle being operatively related to the boom; a hoisting cable operatively attached to the dipper and extending to hoisting

machinery on the main frame; the combination of: a gravity lowerable mast having its foot pivotally connected to the main frame; a first fixed-length means connecting the outer end of the mast to the boom; power means for pivoting said mast to raised positions and for



supporting the mast in a raised position; a boom strut pivotally connected to the outer end of the boom carrying a sheave over which passes said hoisting cable; and a second fixed-length means connecting the outer end of said boom strut to said mast.

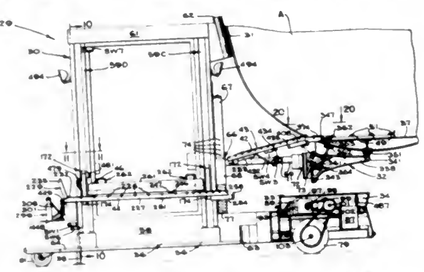
3,160,299
MULTI-DIRECTIONAL VEHICLE BUCKET
Herman W. Hartke, Jr., Benton Harbor, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Nov. 24, 1961, Ser. No. 154,491
7 Claims. (Cl. 214—140)



1. A bucket mechanism for a vehicle comprising a bucket carrier carried by the vehicle for raising and lowering and lowering movement, a cradle structure pivotally mounted on the said bucket carrier for pivotal movement about an axis transverse to the vehicle, a bucket pivotally mounted on the said cradle for pivotal movement about a second axis transverse to the said first axis, means latching the said bucket to the said cradle, and mechanism responsive to the pivotal movement of the said cradle for unlatching the said bucket from the said cradle when the cradle is pivoted to a predetermined position.

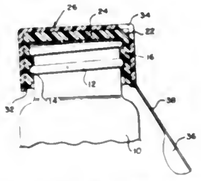
3,160,300
CARGO HANDLING APPARATUS
Donald M. Ingham, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application May 12, 1961, Ser. No. 109,731. Divided and this application May 1, 1963, Ser. No. 277,145
7 Claims. (Cl. 214—623)

1. In a baggage loader, a mobile carrier which comprises a U-shaped horizontally disposed body having two tubular legs, a pair of spaced vertically extending generally tubular columns on each tubular leg, an elevator in each tubular column, each elevator having a conveyor support projecting outwardly of said column, a roller conveyor supported on each pair of conveyor supports associated with one of said legs, and a pair of bridge con-



veyors supported by said elevators, each bridge conveyor having one end disposed in alignment with one of said roller conveyors and the other end adapted to be connected to an aircraft adjacent the cargo door thereof.

3,160,301
CONTAINER AND SAFETY CLOSURE THEREFOR
Benjamin K. Milbourne, Los Angeles, Calif., assignor to K.C.K. Holding Company, a partnership
Filed Oct. 11, 1963, Ser. No. 315,578
4 Claims. (Cl. 215—9)

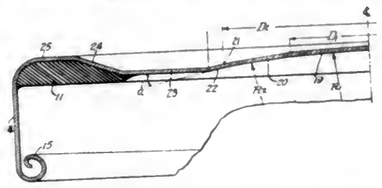


1. An assembly including a container and safety closure therefor including in combination:
(*a*) a container having a cylindrical neck at the top thereof and integral threads molded in the cylindrical neck;
(*b*) an interior cap element including a planar top and a cylindrical collar having internal threads mating with the threads on the neck of said container, the top of said interior cap element having at least a single notch therein;
(*c*) an exterior cap element having a planar top and a collar fitting loosely concentrically about the collar of the interior cap element for rotation relative thereto, said exterior cap element having a slot therethrough positioned for registry with said notch in the said interior cap element, said slot extending entirely through said exterior cap element whereby to permit access to said notch;
(*d*) and a key of a sufficiently narrow width to fit through said slot and into said notch, said key being attached to said assembly by means of a flexible strap to permit said key to be manipulated to register with said slot and notch, said strap being integral with said exterior cap element.

3,160,302
CONTAINER CLOSURE
George F. Chaplin, Elmwood Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 3, 1960, Ser. No. 67,102
5 Claims. (Cl. 215—38)

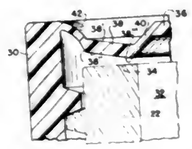
1. A closure cap for an hermetically sealed container which cap is adapted to provide audible and visual indi-

cation of pressure changes within said container, said cap having a top panel and an integral peripheral skirt with friction means on said skirt for engaging with cooperating means on the container to hold said cap in sealed relation over the mouth of the container, said top panel having a peripheral portion which is in the plane of the top of the cap, an adjacent flat portion which is in a plane approximately parallel with and downwardly offset relative to the plane of the top of the cap and which is connected to said peripheral portion by a relatively narrow, upwardly and outwardly tapered portion, and an upwardly bowed dome-



shaped center portion which is connected to the inner periphery of said flat portion by a relatively narrow portion which is tapered upwardly and inwardly of said flat portion, said upwardly bowed center portion having a section in its center area formed on a radius which is larger than the radius of the adjoining section which forms the outside margin of said upwardly bowed center portion and said upwardly bowed center portion being adapted to flex downwardly when predetermined pressure is applied to the top surface thereof and to snap back into its initial position when the pressure is removed.

3,160,303
CONTAINER CLOSURE
Thomas J. Healy, Baltimore, Md., assignor to The Poly-Seal Corporation, New York, N.Y., a corporation of New York
Filed Oct. 16, 1962, Ser. No. 230,824
3 Claims. (Cl. 215—41)



1. A unitary closure for sealing an opening in a container in which the container is provided with a substantially flat annular seat about the opening having means adjacent the opening capable of engaging corresponding means on the closure for holding the closure in position thereon, comprising:

(*a*) a cylindrical side portion having means carried thereon for engaging the holding means carried on the container for holding the closure in sealed engagement with the seat;

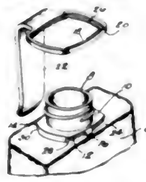
(*b*) a continuous top portion formed integral with the side portion and positioned in a plane above the holding means carried by the side portion of the closure;

(*c*) the top having a substantially rigid center portion, a substantially rigid continuous annular seat engaging portion including an inner seat contacting surface extending about the central top portion engaging the annular seat about the container opening, and connected to the rigid center portion by an elastic flexible portion, the inner surface of the annular seat engaging portion being angled downwardly from a horizontal plane passing through the lower outer edge thereof, the said inner surface of the seat engaging portion being provided with a plurality of raised circular rings of different heights of rings progressively increasing in height in the direction of the center of the closure;

(*d*) a continuous resilient flexible hinge portion of less rigidity than the annular seat engaging portion extending upwardly and outwardly at an angle from the outer edge of the rigid seat engaging portion and out of position to contact the annular seat about the container opening, the flexibility of the hinge portion being of such resistance as to prevent leakage between the container seat and the seat engaging portion of the closure, the upper outer edge of the flexible hinge portion being connected to the cylindrical portion along a line which is in a plane above the plane of the seat engaging portion, the flexible hinge being moved upwardly forms a resilient stress area between the seat engaging portion and the cylindrical portion when the top portion is moved upwardly relative to the cylindrical portion;

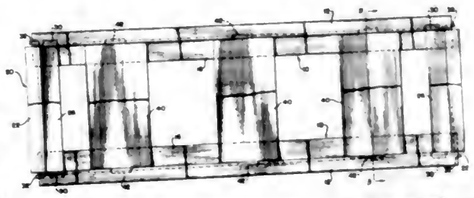
whereby the seat engaging portion is urged downwardly and in sealed engagement with the seat about the container opening when the seat engaging area is moved upwardly by the container seat to place the flexible hinge under stress.

3,160,304
HOOK RING ATTACHMENT
Finley C. Peacock, 318 Lazarre Ave., Green Bay, Wis.
Filed Apr. 1, 1963, Ser. No. 269,651
6 Claims. (Cl. 215—100)



1. A bottle having in combination a neck provided with a boss at its base and a shoulder underlying the boss and from which the boss extends, the boss having over-hanging flange means spaced from the shoulder for providing a channel, and a belt hook having a resilient mounting ring connected therewith and encircling the boss and detachably engaged in the channel whereby to be fixed to the bottle independently of the neck thereof.

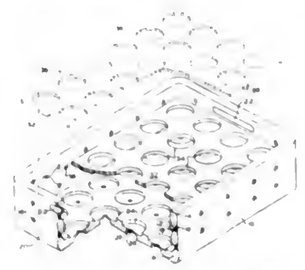
3,160,305
METAL CRATE
Tom Y. Smith, 76 Saratoga Road, Eggertsville, N.Y.
Filed Feb. 13, 1963, Ser. No. 258,351
2 Claims. (Cl. 220—4)



1. A sheet-load transport crate comprising a pair of parallel side sills interconnected at their opposite ends by end sills, said side sills and said end sills comprising metal pieces of Z-sectioned form, whereby said side sills and end sills each include outwardly directed top horizontal flange portions, vertical side wall portions, and inwardly directed horizontal bottom flange portions,

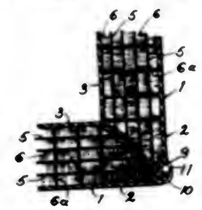
said side sill side wall portions being slotted adjacent their ends and said end sill side wall portions having tabs extending integrally therefrom through the adjacent slotted portions of said side sill members and bent therebeyond against the outer surfaces of said side sill members thereby firmly locking said sill members together in rectangular frame fashion, said side sill vertical wall portions being also slotted horizontally at positions intermediately of the ends thereof, and bottom plate members extending transversely of the device and resting at their opposite ends upon the bottom flange portions of said side sill members and having integral tab portions extending through the associated intermediately slotted portions of said side sill members and bent therebeyond against the outer surfaces of said side sill vertical wall portions thereby locking said members together and cooperating to provide an over-all stabilized structure.

3,160,306
STORAGE AND TRANSPORTATION CASE
Kenneth L. Smalley, Pontiac, Mich., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,925
12 Claims. (Cl. 220—9)



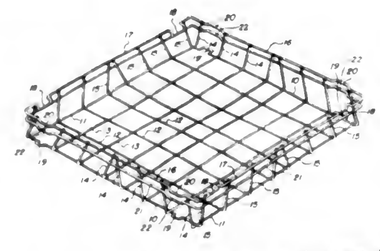
1. A double-walled molded unitary plastic case comprising spaced-apart inner and outer shells having upright walls and a bottom, the upper edge of said inner shell forming an outwardly extending flange, the outer edge of which is fused to the upper edge of said outer shell to form a seal therewith; thermoformed opposed indentures in the upright walls of said shells bonded to each other at spaced intervals to impart strength and rigidity to said case; rows of thermoformed recesses in the bottom of said inner shell for receiving the bottoms of bottles or the like standing in said case.

3,160,307
INSULATED SHIPPER CONTAINER
Willard L. Morrison, 470 King Muir Road, Lake Forest, Ill.
Filed July 13, 1962, Ser. No. 209,550
6 Claims. (Cl. 220—9)



1. An insulating shipper container comprising a plurality of separate inflated wall panels abutting edge to edge to define an insulating chamber, each panel including elastomeric inner and outer walls, peripheral walls joining them to define in each panel an air tight pressure chamber, tension members in each panel, some generally perpendicular to the inner and outer walls holding them in general parallelism, under inflation, others generally parallel to said walls, limiting the outer displacement of the peripheral walls under inflation, removable means associated with the outer walls only to hold the panels in edge to edge abutment with the peripheral wall of one panel forced by inflation against an adjacent panel to make a tight seal, the inflation of each wall panel exerting a pressure on the removable holding means to lock the wall panels in firm assembled position.

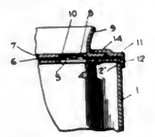
3,160,308
NESTING AND STACKING RECEPTACLE
Wilbert K. Hare, Chicago, and Morris Kaufman, Morton Grove, Ill., assignors to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed June 18, 1963, Ser. No. 288,673
1 Claim. (Cl. 220—19)



A receptacle having a bottom wall and means defining first and second pairs of side walls in bordering relation to said bottom, said walls being of equal dimension measured lengthwise of the distance said bottom wall is bordered by said side walls and forming four 90° corners along upper and lower limits of said side walls at adjoining portions of said side walls, and said lower limits being so dimensioned as to have entry to the area within side walls of a like subjacent receptacle via said upper limits of the latter to accommodate nesting of said receptacles when the first and second pairs of said side walls of said receptacles are in matching vertical relation, said bottom wall including a first pair of horizontally extending border wire members along the lower limits of said first pair of side walls, a second pair of horizontally extending border wire members along the lower limits of said second pair of side walls, intermediate bottom wire members connecting said first pair of border wire members along spaced parallel lines extending lengthwise of and between said second pair of wire members and intermediate bottom wire members connecting said second pair of border wire members along spaced parallel lines extending lengthwise of and between said first pair of border wire members, said side walls including an upper wire frame defining the upper limits of said side walls and upwardly extending side members having upper ends thereof secured to said wire frame, said side members comprising opposite end portions of said first and second pairs of border wire members and said intermediate bottom wire members, said upper wire frame member having downwardly offset areas along said first pair of side walls, stacking lugs defined by outwardly bent extensions of said border wire members along said second pair of side walls, said stacking lugs having downward engagement with the downwardly offset areas in the upper wire frame member along said first pair of side walls of a like subjacent receptacle to establish a stacked relationship of said receptacles when said side walls of one of said receptacles are in relative angular disposition

to the side walls of the other receptacle about a central upright axis at a variance of 90% from that of said side walls in the nesting position of said receptacles, a second wire frame member secured to the side walls of said receptacle along a line in downwardly spaced parallel relation to the upper wire frame member, said second wire frame member having downward engagement with the upper limits of the side walls of a like subjacent receptacle to establish the nesting level of said receptacles while in nested relation to said subjacent receptacle, and outwardly offset clearance areas provided in said upper wire frame member and said second upper frame member in upward alignment with said stacking lugs through which the stacking lugs of a like receptacle may be lowered and raised during movement of said latter receptacle toward and away from a nesting position relative to a subjacentlike receptacle.

3,160,309
FRANGIBLE CLOSURE FOR PRESSURIZED RECEPTACLE
Edmond T. Rivas, 3113 Cleary Ave., Metairie, La.
Filed July 2, 1962, Ser. No. 207,125
9 Claims. (Cl. 220—27)



1. A frangible closure for an open end of a pressurized receptacle, comprising

a closure member received by an open end of the receptacle,

said closure member being provided with one or more apertures,

a rupturable diaphragm in juxtaposition with the closure member,

a second closure member covering the diaphragm,

said second closure member being provided with one or more apertures adapted to register with the apertures in the first mentioned closure member,

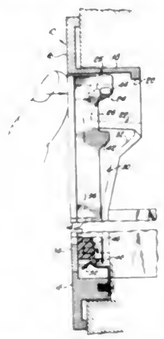
means for moving the second closure member to aperture registering and nonregistering position,

diaphragm rupturing means forming an integral part of one of said closure members and engageable with and adapted to rupture the diaphragm at the apertures when the apertures are in registration,

and locking means securing the closure members and diaphragm in juxtaposition and in sealing engagement with the receptacle.

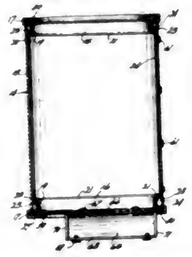
3,160,310
HINGE STRUCTURE FOR LIGHTING FIXTURE
Martin L. Lasker, Flushing, N.Y., assignor to McPhilben Lighting Inc., Brooklyn, N.Y., a corporation of New York
Filed May 12, 1960, Ser. No. 28,608
7 Claims. (Cl. 220—38)

4. A lighting fixture comprising a housing with an opening in a forward face thereof, vertically oriented walls facing inwardly toward one another and extending rearwardly from the forward face of the housing on either side of the opening, a frame member holding a light transmitting panel and complementarily shaped with respect to the opening and closing the same when in the closed position, a pair of axially aligned fixed trunnions extending outwardly from opposite ends of the upper edge of said frame member, free floating pivot receiving means for receiving said trunnions positioned entirely adjacent and rearwardly of the opening and extending inwardly toward one another from said vertical walls and receiving said trunnions, said free floating pivot receiving means defining with inwardly extending wall surfaces vertically and horizontally extending areas accommodating free movement of the trunnions, said free floating pivot receiving means further defining with their inwardly extending wall surfaces vertical surfaces facing rearwardly and contacting the forwardmost surfaces of said trunnions when said frame member is in the closed position



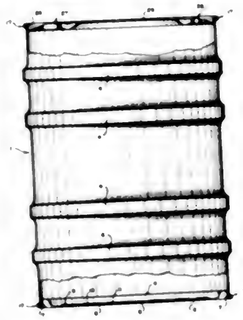
thereby restraining the upper portion of said frame member from opening outwardly, and horizontal surfaces vertically and horizontally spaced from said vertical surfaces and against which said trunnions contact when said frame member is in the open position extending outwardly from said opening substantially the total distance from the bottom thereof to the trunnions, and complementary means on said housing and on said frame member immediately adjacent and rearwardly of said opening for further restraining said frame member in the opened and closed position with said trunnions contacting said surfaces.

3,160,311
HAMPER, WASTEBASKET, AND HASSOCK-HAMPER CONSTRUCTIONS
Mike A. Provi, Rockford, Ill., assignor to The Brearley Company, Rockford, Ill., a corporation of Illinois
Original application June 27, 1960, Ser. No. 39,083. Divided and this application Aug. 25, 1961, Ser. No. 133,859
1 Claim. (Cl. 220—67)



In a receptacle of the character described, a tubular metallic body open at one end, a relatively rigid frame member of sheet metal construction and annular form applied to the open end of said tubular body by means of an annular flange provided thereon and entered in the open end of said body with a close fit, said flange being generally J-shaped in cross-section, with the tail of the J at the inner end of the flange C-shaped and curved outwardly toward the open end of said tubular body for abutment at its free edge with the inside of said tubular body, means positively and permanently anchoring said frame member comprising lug projections defined by perforated portions of the walls of said tubular body reversely bent inwardly and away from the open end of said tubular body to C-shape into interlocking engagement with the outwardly curved C-shaped portion of said flange to secure the frame member against outward displacement from the end of said tubular body, said frame member being split transversely at one point to provide abutting free ends so as to permit spreading of these ends to assemble said frame member on a closure panel before entering said annular flange of said frame member in the open end of said tubular body, and a closure panel assembled in said frame member.

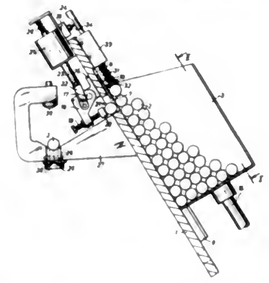
3,160,312
SHIPPING CONTAINER
Frederick Johnston, Pittsburgh, Pa., assignor, by mesne assignments, to American Light Gage Drum Corporation, New York, N.Y., a corporation of New York
Filed Apr. 23, 1962, Ser. No. 189,357
7 Claims. (Cl. 220—67)



1. A steel drum made up of a shell having a cylindrical wall with a head member at each end having a cylindrical wall portion telescoped within the end portion of the sheel, the head and shell members having flanges joined by curved sections to their respective wall portions, the shell and head member flanges being continuously welded together at a location which is away from the edges of the flanges and also away from the curved sections of the flanges, said head and shell flanges at each end of the drum being formed into a tubular chime of double-walled hollow cross-section having the welded portion near the middle of the outer portion of the chime, the flange on the head member being longer in cross-section than the shell flange, and the portion of said head flange beyond the weld being curled into contact with the surface of the shell with the edge portion of the flange extending outwardly toward the central portion of the tubular chime.

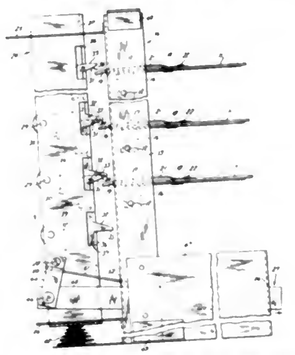
3,160,313
FEEDING DEVICE ON MACHINE TOOLS FOR PROCESSING BLANKS
Herbert Marohn, Kaiserslautern, Pfalz, Germany, assignor to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany
Filed May 28, 1963, Ser. No. 283,869
Claims priority, application Germany, June 6, 1962, P 29,564
2 Claims. (Cl. 221—9)

1. A feeding device for machine tools for feeding blanks to be processed from a supply container releasing a blank for each operation, said device comprising a plate disposed in inclined position relative to the vertical, a container slidable on said plate for varying the elevation of the container, said plate forming one longitudinal wall of said container and having proximate the upper end of the path of travel of said container an aperture defining a discharge opening for work blanks, and pressure piston means for moving said container on said plate relative to said aperture, and a lug pivotally mounted on the side



of said plate remote from said container having an abutment defining together with the walls defining said aperture in said plate a supply chamber for one work blank at a time, means for varying the volume accommodation of said chamber including means for adjusting the position of said abutment and means for adjusting the width of said aperture.

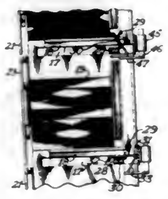
3,160,314
ARTICLE SUPPORTING AND DISPENSING DEVICE
Leo S. Bendl, 43 Grove St., South Hackensack, N.J.
Filed Aug. 28, 1963, Ser. No. 305,058
3 Claims. (Cl. 221—90)



1. In a device for supporting and successively discharging articles, the combination comprising a housing, a support arranged in fixed position in the housing, a plurality of platforms for supporting articles to be discharged from the casing, means pivotally mounting said platforms on said support in vertically spaced relation for movement from substantially horizontal relation to downwardly directed relation for discharging the articles therefrom, a platform release including a vertical recirpocatory pawl bar, means carried by said support mounting said pawl bar for reciprocatory movement, a pawl for each platform pivoted to said pawl bar in vertically spaced relation and having upper and lower fingers, a spring biased latch means swingably carried by each platform, said latch means protruding through openings in said support, interengageable means carried by said latch means and said support for each platform retaining said platforms in said substantially horizontal relation, biasing means retaining said pawl bar in normally disposed upward position with

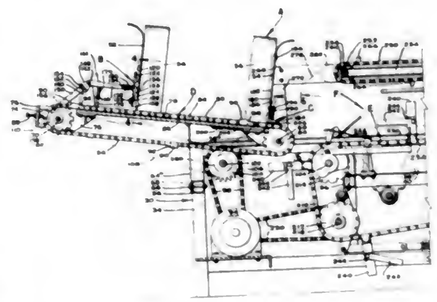
the protruding ends of the latch means located between the fingers of the pawls respectively, lever control means pivotally connected with said pawl bar and carried by said frame for reciprocatory movement thereof, said control means being adapted to be actuated in one direction for moving said pawl bar downwardly against the bias thereof whereby the upper finger of the lowermost pawl cams over the latch means into operative position therebelow and whereby upon actuation of the lever means in the opposite direction the pawl bar is moved upwardly and the upper finger of the lowermost pawl swings the latch means of the lowermost platform out of engagement with the support to thereby release the lowermost platform for the discharge of the article supported thereon and whereby each subsequent reciprocatory movement of said lever control means effects movement of the pawl bar to release the then lowermost substantially horizontal platform for the discharge of the article supported thereon.

3,160,315
BOOK VENDING MACHINE
Richard W. Stone, Minneapolis, Arnold W. Ackerman, St. Paul, and Charles L. Nyquist, Minneapolis, Minn., assignors to Publisher's Vending Services, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 30, 1961, Ser. No. 99,437
2 Claims. (Cl. 221—127)



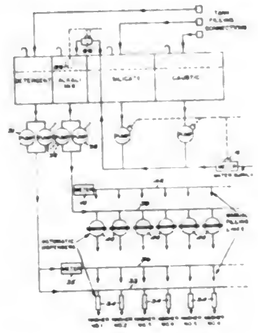
1. An article dispenser comprising a multi-cellular frame having a plurality of aligned cells each having means adapted to support a vertical stack of a plurality of articles to be dispensed and having a dispensing area, a second frame movable toward and away from said area transversely of said first mentioned frame and of such stacks when the latter are so supported, mechanism connected to said second frame for reciprocably moving the same transversely of said first mentioned frame and toward and away from said dispensing area, a plurality of article-engaging members each movably mounted on said second frame adjacent said means of one of said cells and being movable thereon between article-engaging and disengaging positions relative to the lowermost article of the stack within that cell and being movable with said second frame, and a plurality of electrical actuators each fixedly mounted on said first mentioned frame adjacent one of said article-engaging members in movement-inducing relation thereto, each of said electrical actuators upon energization thereof moving its associated article-engaging member into article-engaging position, and means connected with said actuator for selectively energizing one of said actuators as said second frame is moved toward said dispensing area and keeping said actuator energized until said second frame is moved away from said dispensing area and thereby causing the lowermost article of the stack within the cell associated with said actuator to be dispensed, said second frame including a pair of upright end plates one each of which is disposed at opposite sides of said first mentioned frame and carries a sleeve element extending parallel to the direction of movement of said second frame, said mechanism including a pair of slide bars one each of which is received within one of said sleeve elements and slidably mounts said second frame for its movement toward and away from said vend area.

3,160,316
FEEDING APPARATUS
Charles E. Kerr, St. Petersburg, Fla., assignor to FMC Corporation, a corporation of Delaware
Original application July 23, 1958, Ser. No. 750,420, now Patent No. 3,016,807, dated Jan. 16, 1962. Divided and this application Mar. 31, 1961, Ser. No. 99,774
11 Claims. (Cl. 221—225)



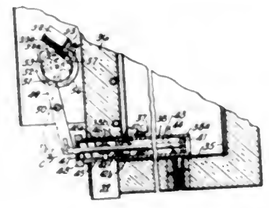
1. In a carton handling machine, feeding apparatus comprising a magazine adapted to contain a stack of collapsed cartons and including a longitudinally slotted bottom, a chain extending longitudinally of the slot in said magazine bottom, means for driving said chain, a pusher lug projecting upward from the chain beyond the plane of the upper surface of the magazine bottom to engage the lowermost carton in said stack, presser means vertically reciprocable within said magazine and engageable with one of the collapsed cartons therein to press the same downward and thereby retain said lowermost carton in position for engagement by said pusher lug, and drive means for reciprocating said presser means.

3,160,317
AUTOMATIC SYSTEM FOR SUPPLYING ALKALI AND DETERGENT TO COMMERCIAL LAUNDRY WASHING MACHINES
Herbert A. Hambro, Milton, Mass., assignor to The Veritas Company, Inc., Medway, Mass., a corporation of Massachusetts
Filed Nov. 6, 1962, Ser. No. 235,641
5 Claims. (Cl. 222—1)



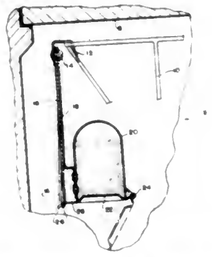
1. A method of automatically supplying cleansing ingredients to the wash wheels of an industrial laundry, which comprises the steps of storing a silicate, a caustic and a concentrated detergent, each in liquid form, in separate reservoirs, fillable from tank trucks; providing a fourth separate reservoir for a mixture of the silicate and caustic; pumping a mixture of a metered quantity of water, a proportioned quantity of the liquid caustic and a proportioned quantity of the liquid silicate to said fourth separate reservoir, to provide an alkali mix; pumping the alkali mix from its reservoir through a flow line to a wash wheel area; pumping the concentrated detergent from its reservoir through a separate flow line to said wash wheel area; dispensing a predetermined quantity of said alkali mix and said concentrated detergent from said respective flow lines into said wash wheel; and electrically controlling the operating of said pumping steps.

3,160,318
VARIABLE QUANTITY CREAM DISPENSER
Robert T. Steiner and George E. Woodis, Minneapolis, Minn., assignors to Northwest Automatic Products Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 6, 1961, Ser. No. 112,143
5 Claims. (Cl. 222—43)



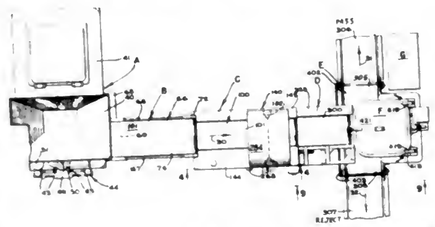
4. Apparatus for dispensing a desired quantity of liquid which is supplied from a source having a variable pressure head, comprising a frame, a liquid delivery conduit means on the frame and including a discharge port, a valve element means controlling liquid discharged through the port, a liquid supplying means adapted for connection with the source of liquid in liquid flow communicating relation and supplying a measured quantity of liquid into the conduit means to the valve element means, actuating means operating said valve element means to open and close the port, circuit means controlling said actuating means, and said circuit means including a switch on the frame and having first and second operable positions respectively retaining said port in open condition and producing operation of said actuating means to close the port, an adjustable stop movably mounted on the frame and spaced from the switch and being adjustable to vary the spacing therefrom to the switch, means connected with the stop for adjusting the same, a movable switch-operating element on the frame and disposed between the stop and switch for sequential engagement therewith, drive means connected with and moving the switch-operating element at a constant speed from the stop and toward the switch to operate the switch and effect operation of said actuating means and closing of the port after a predetermined period depending upon the spacing between the stop and the switch, and means responsive to movement of said valve element means into port-opening position and commencing operation of said drive means to move the switch operating element toward the switch, and said circuit means also stopping said driving means when the switch is operated to effect closing of the port, said driving means also returning the switch operating element against the stop.

3,160,319
DETERGENT DISPENSER FOR WASHING MACHINES
Klaudius Patzelt and Karl Lengsfeld, Welzheim, Wurttemberg, Germany, assignors to G. Bauknecht G.m.b.H., Stuttgart, Germany
Filed Mar. 6, 1963, Ser. No. 263,246
Claims priority, application Germany, Sept. 14, 1962, B 68,848
6 Claims. (Cl. 222—54)



6. A detergent dispenser for a washing machine, comprising a cup shaped detergent holder means, means for pivotally mounting said holder means for movement about a horizontal axis, and bimetal strip means engaging a portion of said holder means for maintaining it upright and for releasing said holder means to permit movement thereof about said horizontal pivot axis to discharge its contents into said washing machine when the washing liquid in said machine has reached a predetermined temperature.

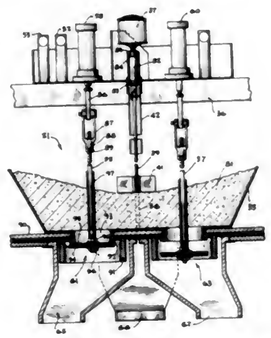
3,160,320
WEIGHT CHECKING AND CORRECTING APPARATUS CONTROL
Thomas E. Roberts, Jr., Saratoga, and William J. Fowler, San Jose, Calif., and Herbert B. Brooks, Scarborough, England, assignors to FMC Corporation, a corporation of Delaware
Original application Jan. 26, 1959, Ser. No. 789,124, now Patent No. 3,096,837, dated July 9, 1963. Divided and this application Oct. 30, 1962, Ser. No. 234,029
8 Claims. (Cl. 222—55)



7. A control circuit for adjusting a product discharging machine in response to successive signals that are respectively representative of the weight of increments of the product successively delivered from said machine, said control circuit comprising means responsive to said successive individual weight signals for producing a series of successive pulses respectively, the polarity of which represent the direction of weight variation from a desired weight, and the magnitude of which represent the differences between the weight of the successively delivered product increments and the desired weight; means responsive to said series of successive pulses for producing an average weight signal, the polarity of which relative to said first reference voltage determines the direction of the adjustment; means for establishing a second reference voltage of the same polarity as that of said first

reference voltage and which steadily increases in magnitude toward that of said average weight signal; means for comparing said average weight signal with said changing second reference voltage; and means responsive to said latter comparison for controlling the duration of the adjustment of said discharging machine. .

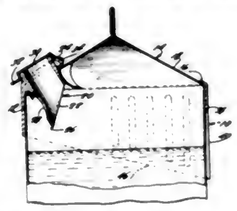
3,160,321
CONTROL SYSTEM
Clement B. Cochran, Des Moines, Iowa, assignor to Eagle Iron Works, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 23, 1963, Ser. No. 304,727
19 Claims. (Cl. 222—64)



1. A control system for a water scalping tank or like classifying apparatus for granular material having a series of outlet stations each including first, second and third outlets, said control system comprising: a first, a second, and a third series of outlet operating means, one of each for each outlet station, for opening and closing said first, second and third outlets, respectively; a first and a second series of timing means individually connected to the first and second outlet operating means, respectively, at the respective outlet stations, for measuring the discharge time of material through the respective ones of said first and second outlets, each of said timing means being actuatable from a first operating condition to a second operating condition, upon discharge of a predetermined amount of material through the associated one of said first outlets, actuation of each timing means being effective to close the corresponding outlet at each station and divert subsequent discharge to the other outlets at the same station; and means, connected to the third series of outlet operating means, for preventing discharge through any of said third outlets except when both the first and second outlets at the same station have been closed by the associated timing means.

3,160,322
COMBINATION OPENER AND SPOUT FOR A PAPER CARTON
George Eugene Burnett, 1020 Josephine St., Marinette, Wis.
Filed Sept. 11, 1962, Ser. No. 222,870
5 Claims. (Cl. 222—88)

1. A combination opener and spout for a paper carton having a pyramidal closed top comprising a multi-sided horizontally disposed frame having an opened top and bottom and being of a size to receivably engage therein the portion of the paper carton adjacent the top thereof, means rising from the upper end of said frame adapted to engage said top of the paper carton so as to support said frame on said paper carton, a tubular element disposed so as to have the portion adjacent one end thereof below the upper end of and within said frame and the portion adjacent the other end thereof extending above said frame, said element being supported on said frame, the lower end portion of said tubular element being pro-



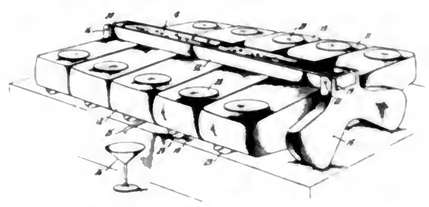
vided with a knife edge, and a closure member hingedly connected to the upper end of said tubular element and normally extending over the upper end of said tubular element.

3,160,323
CONTAINERS WITH INTERNAL, INTERLOCKING PROTRUSIONS
Leonard R. Weisberg, 949 Mercer Road, Princeton, N.J.
Filed Apr. 5, 1963, Ser. No. 270,895
5 Claims. (Cl. 222—107)



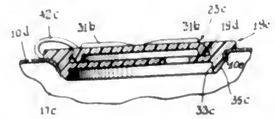
1. A container having flexible walls adapted to be squeezed together to expel the contents from the container and having a plurality of identical interlockable protrusions on each of two opposite inner sides of said walls to maintain said walls collapsed together after having been squeezed together, said interlockable protrusions being transversely-extending integral parallel spaced ribs, each having, in cross section, a supporting neck and an enlarged end having corners adapted to deformation, said enlarged end having a maximum width from corner to corner which is slightly greater than the space between the enlarged end corners of two adjacent ribs.

3,160,324
DRINK MIXING AND DISPENSING ASSEMBLY
Phillip Nixon, 600 Glendale Drive, Glenview, Ill.
Filed Aug. 27, 1962, Ser. No. 219,430
9 Claims. (Cl. 222—144.5)



1. A liquid mixing and dispensing assembly which includes, in combination, a plurality of adjoining liquid containers, a valve associated with each container, each of said valves having an actuating surface, all of said surfaces being in an aligned relationship, said valve adapted to open its associated container, a receiving chamber positioned to directly collect liquids from each of the containers, said receiving chamber having a conduit directly conveying liquid from each valve opening to a common egress in the receiving chamber, a selector board for the adjoining containers, said board straddling the aligned actuating surfaces and a selector means on the board to selectively actuate said valve and directly transfer liquid from the associated container into the receiving chamber.

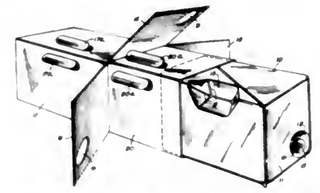
3,160,325
TURN-TO-OPEN TAMPER-PROOF CLOSURE FOR CONTAINERS
Morton B. Stull, Boonton, N.J. (% Stull Engraving Co., 221–223 Banta Ave., Garfield, N.J.)
Original application July 8, 1959, Ser. No. 825,793, now Patent No. 3,081,011, dated Mar. 12, 1963. Divided and this application June 21, 1962, Ser. No. 206,124
3 Claims. (Cl. 222—153)



1. A turn-to-open tamper-proof closure structure comprising a one-piece entirely integral molded piece including an anchorage portion provided with means by which it may be secured to a container having a dispensing opening and by which it may be held thereon against movement, including a flat closure portion disposed on top of the anchorage portion and having finger-grip means enabling it to be forcibly turned, said closure portion being provided with a dispensing orifice and also with means for turnably mounting it on the anchorage portion whereby it may cover a dispensing opening of said container and, upon being turned, uncover such opening for discharge of the contents of said container, said molded piece further including a tensile holding means which is readily broken by finger power, said holding means comprising a tie member in the form of a thin frangible raised restraining string-like loop which is integral with and which connects the anchorage and the closure portions while these are in superposed relation for tensionally holding the closure portion against turning and in a position covering such opening, said loop being in full view and readily seen, and being readily severable by finger power when forcibly pulled by turning of the closure portion with the fingers, thereby to release said closure portion for subsequent free turning movement to its opening position, said closure portion being in the form of a disc, and said anchorage portion being larger than the closure portion and having bearing means for turnably mounting the closure portion thereon in overlapping relation thereto and said loop being readily accessible for cutting by a scissors inserted in part through it.

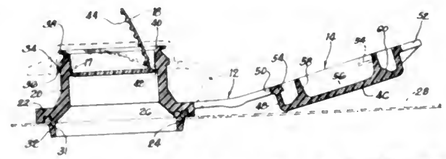
3,160,326
COMPOSITE PACKAGE
Albert G. Sturdevant, Paul E. Cope, and Ralph B. Vanderman, all of Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 4, 1961, Ser. No. 156,910
5 Claims. (Cl. 222—183)

1. A composite package comprising an outer carton and a separable inner container, a pouring spout at one end of said inner container, a pair of laterally spaced, parallel die-cut hand-hold flaps in a wall of said outer carton, each hingedly connected along one edge, and a cavity formed in the adjacent wall of said inner container, positioned to receive said hand-hold flaps when the latter are folded inwardly and contoured to accommodate the fingers of a user when grasping said folded hand-hold flaps, the width of said hand-hold flaps being greater than the distance spacing their hinged connections, whereby



when they are folded into said cavity, the abutment of their adjacent free edges maintains them edgewise in downwardly converging relation.

3,160,327
DISPENSING SPOUT WITH RUPTURABLE BREATHING DIAPHRAGM AND CLOSURE THEREFOR
John C. Porcelli, Lincolnwood, Ill., assignor to Polymold Plastics, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1961, Ser. No. 84,083
2 Claims. (Cl. 222—189)

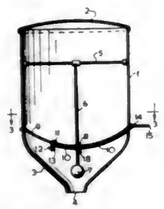


1. In a spout-type container closure, a generally tubular pouring spout of resiliently flexible material formed with a bore terminating in a mouth opening through the outer end of the spout, a closure diaphragm spaced inwardly of the spout from said mouth opening and extending in a radial plane across said bore, said diaphragm being integral with and constituting a homogenous portion of, the material forming the spout, said diaphragm being peripherally connected with the inner wall of said bore along a weakened tear line spaced inwardly of the spout from its mouth, said weakened tear line provided with a plurality of fine openings to permit the container to breathe while said closure diaphragm remains peripherally connected, a resiliently flexible pull tab having a root portion connected with said diaphragm closely adjacent said wall and said weakened tear line, said tab, except for its root portion, being disconnected from said wall and said diaphragm, and having a free end normally projecting outwardly through and beyond the mouth of the spout, and being normally disposed at an angle to said diaphragm and being disposed for resilient flexing toward said radial plane of said diaphragm into the mouth of the spout, the resiliency of the tab, upon being released, causing it to resume its normal position with its free end outward of and beyond the mouth of the spout.

3,160,328
SEED SOWER
Robert George Rutherford, Cheeseman's Creek, Nyrang, New South Wales, Australia
Filed Jan. 21, 1963, Ser. No. 252,958
Claims priority, application Australia, Jan. 23, 1962, 13,590/62
7 Claims. (Cl. 222—196)

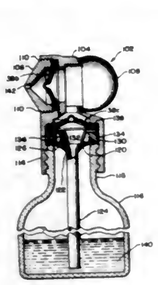
1. A seed sower comprising a seed box adapted to be mounted on a movable carrier, said seed box having a seed outlet in the bottom thereof, a partition wall dividing said seed box into an upper and a lower compartment, the lower compartment including said outlet, said parti-

tion wall having an opening therethrough for passage of seed from the upper compartment into the lower compartment, a swingable agitator suspended at one end in the upper compartment and protruding with play through said opening into the lower compartment to permit a limited movement of the agitator within said opening, the end of the agitator protruding into the lower chamber



being weighted and terminating spaced apart from said outlet, and regulating means for gradually varrying the size of the opening, said regulating means including a slide rotatably connected at one of its ends to the partition wall, said slide having an opening corresponding to the opening in said partition wall through which the agitator passes, whereby movement of said slide varies the passage for the seed.

3,160,329
DISPENSING DEVICE
Frank Radic, 1314 East Ave., Berwyn, Ill., and Martin Scire, 6011 W. Melrose St., Chicago, Ill.
Filed Feb. 26, 1963, Ser. No. 261,148
7 Claims. (Cl. 222—204)



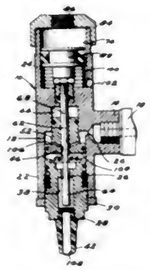
1. A dispensing device comprising, in combination, an elongated compressible hollow member, a connector attached at each end of said member, each connector containing a valve assembly, one connector being adapted for attachment to a source of viscous fluid and the other connector providing a pumping outlet, each valve assembly comprising a circular support member made of rigid material having a convex surface centrally terminating in a nipple, said member having at least one aperture disposed intermediate the nipple and the periphery, a resilient circular valve member having a central opening adapted to encompass said nipple and a flange portion overlapping the periphery of said support member, the diameter of said valve member being smaller than the diameter of said support member, said valve member stretchingly overlapping said convex surface to form a seal under tension over said aperture, whereby actuation of said compressible member pumps said viscous fluid through said pumping outlet.

3,160,330
DISPENSER
Harold E. Pollitt, 1414 Howell Road, Xenia, Ohio
Filed Mar. 26, 1963, Ser. No. 268,149
4 Claims. (Cl. 222—209)



1. A dispensing device for removing liquid from a large milk jug or the like having a neck which defines an opening in the top thereof, comprising a hollow resilient cap adapted to engage the periphery of the opening for sealing the opening, an elongated flexible tube having one end which extends adjustably through the neck of the jug to near the bottom surface of the jug, said tube having a section outside said cap with an outlet in the end thereof, releasable means for holding the portion of said tube between said cap and said releasable means against the outside surface of the jug near the bottom thereof so that liquids in this portion of said tube will not flow under the force of gravity into the jug, means defining an opening in said hollow cap, means for connecting said outlet in said tube to said opening in said hollow cap for fluid tight seal between the interior of said cap and the interior of said tube to force fluids from said cap into said tube and into said jug when said cap is collapsed and to draw the liquids in said jug into said tube when said cap resumes its normal configuration to thus fill at least said portion of said tube with liquid to initiate a syphoning action when said outlet is lowered below the level of liquid in the jug.

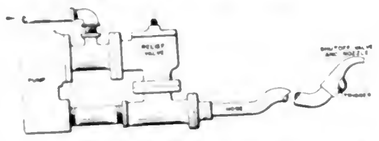
3,160,331
MATERIAL DISPENSING DEVICE INCLUDING A METERING CHAMBER
Donald E. Trumbull, Birmingham, and Ronald E. Standlick, Warren, Mich., assignors to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed Sept. 22, 1961, Ser. No. 139,940
8 Claims. (Cl. 222—309)



1. A material dispensing device to which material to be dispensed is supplied under pressure, comprising an enclosed metering chamber having an inlet and an outlet through which material is dispensed, a piston disposed in said chamber and shiftable therein to dispense

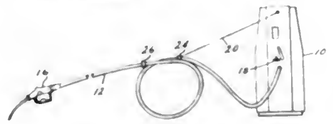
material through the outlet, valve means controlling the admission of material to the chamber and the discharge of material through said outlet, said valve means selectively operable to alternatively block the flow of material to the chamber while opening said outlet and admit material to the chamber while closing said outlet, said piston responsive to the pressure of incoming material thereagainst to be shifted toward the outlet thereby dispensing material from the chamber when the outlet is open, motive means coupled to said valve means to operate the same, and a material conducting passage communicating with said outlet and extending therebeyond, said valve means including a portion shiftable into said passage upon opening of said outlet and retractable from the passage upon closing of the outlet to increase the effective volume of the passage and prevent drooling of material therefrom when said outlet is closed.

3,160,332
AUTOMATIC PRESSURE RELIEF VALVE
Virgil A. Brunson, Grand Rapids, Mich., assignor to Blackmer Pump Company, Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 14, 1960, Ser. No. 75,878
8 Claims. (Cl. 222—318)



1. A relief valve for use in a variable pressure liquid delivery system that comprises a housing having intake and exit ports and a valve seat, a valve member that cooperates with the valve seat, said valve member having one side the effective area of which is exposed to the pressure of liquid in the intake port, which effective area increases with opening of the relief valve, said member having another side of lesser effective area than the first side also exposed to the pressure of liquid in the intake port, a spring in the housing engaging said other side for urging the valve member toward its closed position with a force the increase of which with opening of the valve is substantially less than the increase of force of the liquid pressure acting on the increase in said effective area, and means to regulate the speed of closure of the valve.

3,160,333
RETRIEVER MECHANISM FOR LIQUID DELIVERY HOSES
Roy R. Budrow, Springfield, Mass., assignor to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts
Filed June 7, 1962, Ser. No. 200,792
3 Claims. (Cl. 222—530)



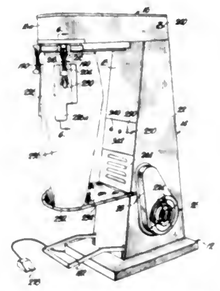
1. Hose retrieving mechanism in combination with a liquid dispensing device of the type employed in service stations, said dispensing device comprising a housing, a flexible hose for the delivery of liquid, the inner end of said hose being connected to a liquid delivery line within said housing, a dispensing nozzle attached to the free end of said hose, and a hanger for receiving and detachably supporting said nozzle when not in use, said retrieving mechanism comprising a cable extending from the housing at an elevated point, means for yieldingly retracting said cable within said housing, a pair of clamps secured to said hose in spaced relation from the inner end thereof and from each other along the length thereof, said cable being secured to one of said clamps and slidably received by the other of said clamps, whereby the two clamps will be drawn together and toward the housing for storage of the hose in two inverted loops when the nozzle is placed on said hanger.

3,160,334
SALT SPRAYER
August Wilhelm Howe, Am Fort Gonsenheim 93, Mainz (Rhine), Germany
Filed Sept. 12, 1962, Ser. No. 223,034
Claims priority, application Germany, Sept. 15, 1961, H 43,647
9 Claims. (Cl. 222—556)



8. A closure for a container open at its upper end and having a closed bottom and side walls, said closure containing a flat container lid arranged to close the opening of said container and being formed at its marginal portions with at least one series of teeth extending over the outer edge of the lid for frictional engagement in corresponding grooves provided in the top of the container side walls; said lid having a pair of pivot pins diametrically arranged with respect to said lid, the pivot axis of said pivot pins being at a right angle with respect to the middle axis of said teeth; and bearing notches being arranged diametrically with respect to said container opening and having a semi-circular vertical cross-section open above, the common middle axis of said two bearing grooves being in the plane of the top rim of the container side walls and being arranged at a right angle with respect to the middle axis of said teeth receiving grooves of said container side walls.

3,160,335
MACHINE FOR FINISHING TROUSERS AND THE LIKE
Nolan C. Jackson, Wichita, Kans., assignor to Wichita Precision Tool Company, Inc., Wichita, Kans., a corporation of Kansas
Filed May 15, 1961, Ser. No. 110,095
5 Claims. (Cl. 223—73)



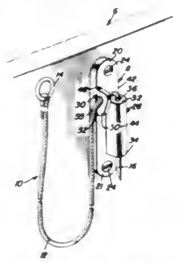
1. In a finisher for garments of the kind having a trunk provided with a waist, an upright support having an elevated, tubular extension extending laterally therefrom;

expansible structure carried by the extension therebeneath for receiving said waist to hold the latter taut and thereby also suspend the garment from the extension, said extension having an air discharge opening communicating with said trunk and a steam discharge manifold disposed within the trunk when the garment is suspended from the extension; steam supply conduit means coupled with said manifold; and apparatus for producing artificial currents of air and directing the same through said opening for flow into the garment, said apparatus being housed within the upright support, the latter having an air passage interconnecting the extension and said apparatus; means in said passage movable to and from a position blocking the flow of air to the extension; a first heater in said passage between said apparatus and said blocking means for raising the temperature of the air; a second heater in said passage between the blocking means and the extension for further raising the temperature of the air; and means in said passage for bypassing the airflow in said passage around the second heater when the blocking means is opened.

3,160,336
FISH STRINGER HOLDER

William R. Flatford, Jonesboro, Ark. (P.O. Box 14, Verona, Miss.), and James J. Ryan, 739 Locust, Jonesboro, Ark.

Filed Apr. 19, 1963, Ser. No. 274,133
4 Claims. (Cl. 224—7)



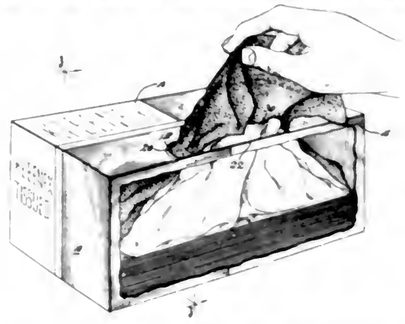
1. For use in conjunction with a conventional-type fish stringer embodying an elongated flexible string with a ring attached to one end and a needle attached to the other end; a one-piece three-part holder for said stringer comprising: a bracket embodying a plate having readily attachable fastening and retaining means, said plate having a flat front face provided with an integral elongated barrel having an open-ended axial bore and said bore in conjunction with the barrel providing a sheet for removable reception and retention of the aforementioned needle, and a catch also integrally mounted on said front face and projecting at right angles from the plane thereof and confined to a position proximal to but spaced slightly below one open end of said bore, said catch having a hooked bill portion and said bill portion being provided with a rounded peripheral edge defining a cam, limited surfaces of said cam being spaced from said front face and functioning to permit a portion of the string of said stringer to be passed between said front face and spaced cam and thus releasably engaged with said catch.

3,160,337
CELLULOSIC PRODUCT

Howard N. Nelson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Feb. 8, 1960, Ser. No. 7,167
1 Claim. (Cl. 225—32)

The combination with a tissue carton having top, bottom, side and end walls and a stack of interfolded and lightly interbonded tissues therein of a width slightly less than the carton length, the width of said carton being not greater than one-half its length, of a dispensing opening of corona shaped configuration, said opening defined within and extending marginally along about one-half the length of said top wall and centered between the end walls, said opening having spaced parallel linear side margins and smoothly arcuate end margins, said opening being formed by the removal of a marginally perforated corona shaped portion of the top wall to expose the top edge of the adjacent side wall which forms the outer side margin, the inner side margin comprising a linear edge extending longitudinally of the top wall and spaced inwardly of the exposed side wall edge approximately one quarter of the width of the top wall, said end margins

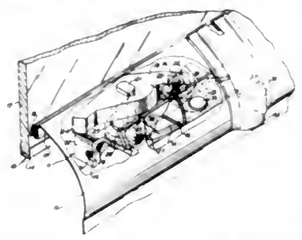


extending outwardly from said inner side margin to the exposed side wall edge in substantially semicircular configuration to complete said corona configuration, the removal of said perforated top wall portion resulting in serrated edges marginally of the opening, whereby individual interfolded and lightly interbonded tissues may be sequentially withdrawn through said opening from alternate sides of said carton-housed tissue stack and severed from successively trailing tissue by the force of withdrawal operating counter to constrictive frictional forces imposed marginally of said opening on successively withdrawn trailing tissues as they are partially withdrawn through said opening by the tissue being dispensed to provide a "pop-up" portion readily accessible for subsequent withdrawal from the carton.

3,160,338
GLASS PANEL IMPACT DEVICE

John C. Widman, Royal Oak, and Erwin J. Marynowski, Wyandotte, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 15, 1963, Ser. No. 280,614
14 Claims. (Cl. 225—93)

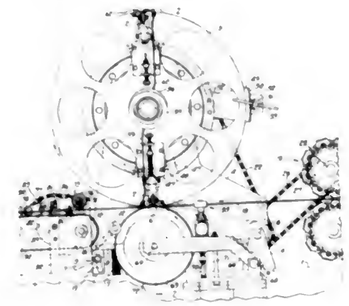


1. In combination, a panel formed of a glass material characterized by a tendency to shatter upon penetration by an impact member, a frame mounting said glass panel in a wall of an enclosure, and an impact device supported by said frame in juxtaposition to said glass panel, said impact device comprising an impact member, means supporting said impact member for movement from a normal rest position to a position of impact with said glass panel, and an impact energy imparting means operative to move said impact member from its normal rest position to said position of impact with a force sufficient to cause said impact member to penetrate said glass panel.

3,160,339
APPARATUS FOR SCORING AND BREAKING LENGTHS FROM AN ELONGATED VITREOUS BODY

Robert W. Love, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Nov. 24, 1961, Ser. No. 154,514
7 Claims. (Cl. 225—96.5)



1. An apparatus for severing lengths from an elongated vitreous body travelling longitudinally in a linear path, said apparatus comprising in combination:

(*a*) a disc mounted for rotation on an axis transverse to said path with its periphery engageable with one side of an elongated vitreous body travelling longitudinally along said path,

(*b*) a support for said disc,

(*c*) means for driving said disc at a peripheral speed corresponding to the linear speed of such body,

(*d*) cutter means for transversely scoring such body,

(*e*) said cutter means being mounted on the peripheral portion of said disc and including an arm swung at one end on said disc with its free end extending radially outward toward the periphery of the disc and its pivotal axis transverse to the axis of rotation of the disc and in a plane including the longitudinal axis of such body and

(*f*) a cutting wheel mounted for rotation on the free end of said arm with its axis of rotation parallel to the pivotal axis of said arm and its cutting edge extending beyond the periphery of said disc in the fully swung out position of said arm on said disc for scoring engagement with such body,

(*g*) the pivotal axis of said arm, the axis of rotation of said wheel and the longitudinal axis of the vitreous body being in a common plane normal to the axis of rotation of said disc in the fully swung out position of said arm on said disc,

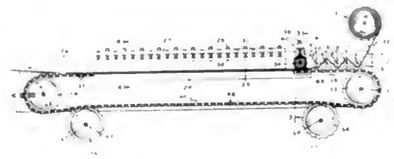
(*h*) said apparatus comprising also means for swinging the arm to move the cutting edge of the cutting wheel into transverse scoring engagement across such body, and

(*i*) means correlating the drive means for said disc and the means for swinging the pivoted arm to transversely score such body in the region of the point of tangency of such body with the periphery of the disc.

3,160,340
FEED MECHANISM

Gary G. Menkel, Jamaica, N.Y., assignor to Design Center, Inc., Long Island City, N.Y., a corporation of New York

Filed Dec. 18, 1962, Ser. No. 245,537
3 Claims. (Cl. 226—53)



2. In a machine for forming a thermoplastic sheet material, a feeding mechanism for advancing a web of said material in a predetermined path through said machine whereby desired operations may be performed thereon, said feeding mechanism comprising a source of a web of said sheet material, a pair of spaced endless roller chains each having a series of closely spaced, generally triangularly shaped sharp teeth projecting therefrom in a direction normal to the axis of said chain, said teeth being formed as projections on alternate ones of the side plates on one side of each of said roller chains, a pair of support strips each fixedly mounted adjacent a respective edge of said path and each having a roller chain supporting track arranged to guide a respective one of said roller chains along said path, said tracks each providing a roller supporting surface with which the rollers of a respective one of said chains are in rolling contact as said chains advance along said paths, a pair of plates projecting above each of said tracks on opposite sides thereof and arranged to contact opposite sides of said respective roller chains to prevent lateral motion and wobbling thereof, means to guide said web into contact with said teeth whereby said teeth of each roller chain perforate said web adjacent a respective marginal edge thereof, said last mentioned means including a pair of vertically adjustable rollers each arranged to contact a respective marginal edge of said web to force said web into pressure contact with said teeth, vertically adjustable guide means extending longitudinally of said predetermined path and arranged to contact said web to prevent disengagement of said web from said teeth while said web is passing along said predetermined path, and drive means including a plurality of spaced sprocket wheels for advancing said roller chains along said predetermined path.

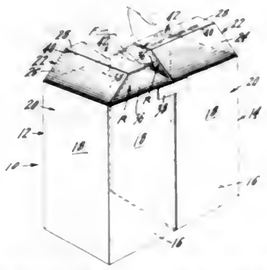
3,160,341
PACKAGE

Jerome Alfred Cherney, Fox River Grove, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 16, 1963, Ser. No. 330,925
5 Claims. (Cl. 229—6)

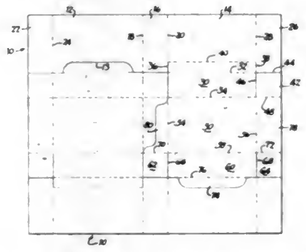
3. A twin-pack comprising a pair of fibreboard cartons each of which is formed with a gable top which extends completely across its upper end, said gable top comprising a pair of oppositely inclined walls and a horizontal connecting wall, said walls overlying an open-ended recess which is formed at each end of said gable top, said cartons being secured together in juxtaposition with their

gable tops disposed at right angles to each other and with one of the recesses of the gable top of one of the



cartons facing one of the inclined gable top walls of the other carton to provide a carrying handle for the twin-pack.

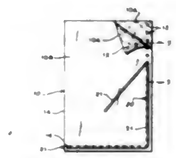
3,160,342
ARTICLE DISPENSING CONTAINER
Thomas G. Murdock, 22907 Wilson, and Charles D. Berger, 237 Nightingale, both of Dearborn, Mich.
Filed Feb. 20, 1963, Ser. No. 259,834
2 Claims. (Cl. 229—20)



1. A box for a plurality of slender elongated articles, said box being formed from a one-piece blank said box comprising a front wall, a back wall, a top wall, a bottom wall and a pair of end walls, one of said end walls comprising a pair of panels which are adhered together to rigidify the box structure, elongated articles being receivable in the box with the longitudinal axis of the articles extending between the end walls and substantially parallel to the top and bottom walls, an inner back wall positioned within the box and interconnecting the top and bottom walls along one longitudinal edge thereof, and a pair of inner end walls, each appended to one end of the inner back wall, each of the inner end walls having a tab which is adhered to the undersurface of the top wall, said top wall having a flap which is bent thereunder over said tabs and adhered to the undersurface of the top wall, said bottom wall being hingedly depressible inwardly of the box to move the structure defined by the inner back wall, the inner end walls and the top wall outwardly of the box structure to form a dispensing opening between the top wall and the front wall to permit removal of the elongated articles from the box.

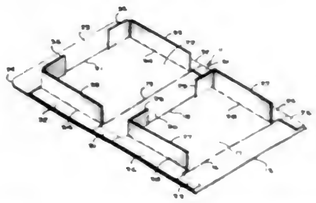
3,160,343
DUAL PURPOSE BAG
Bernard Z. Schantzer, 1121 Walnut St., Coatesville, Pa.
Filed June 17, 1963, Ser. No. 288,423
4 Claims. (Cl. 229—53)

1. A dual-purpose bag comprising:
(*a*) a bag-like structure made of a folded-over piece of thin, flexible web-like material, having alined touching edges and a single fold line, said folded-over material having its interior surface processed for decorative effect, said folded-over material also having along at least two adjacent sets of aligned touching edges but along less than all aligned touching edges thereof a plurality of super-imposed perforations, and
(*b*) a unitary, flexible elongated means having an end and passed through selected ones of said superimposed perforations to hold said sets of edges together, said elongated means being arranged to permit easy manual disassociation of said elongated



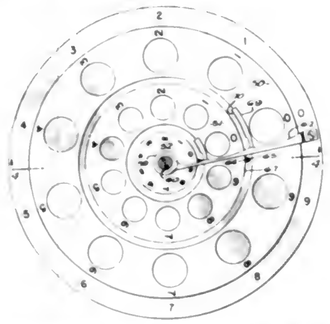
means from said perforations without tearing the material between said perforations, by pulling on said end, to enable said folded-over material to be unfolded to expose said interior surface, said arrangement comprising said elongated means passing through two superimposed perforations, forming a first loop, passing back through said two superimposed perforations, passing to an adjacent two superimposed perforations, passing through said adjacent two superimposed perforations and through said first loop, forming a second loop, and passing back through said first loop and said adjacent two superimposed perforations.

3,160,344
CORRUGATED CONTAINER FOR BOOKS
Alfred E. Bogren, New Milford, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 31, 1961, Ser. No. 113,797
9 Claims. (Cl. 229—40)



1. A one-piece shipping container for books comprising a wrap-around main portion defining top, bottom, rear and overlapping inner and outer front panels, said top, bottom, rear and the inner one of said front panels having reversely folded end portions overlying and secured thereto; overlapping pairs of end panels integrally connected to inner edges of the folded end portions which are secured to said top and bottom panels, the folded end portions secured to the top panel being different in width than the folded end portions secured to the bottom panel whereby said end panels are offset transversely of said container; the reversely folded end portions which are overlying and secured to the rear panel and inner front panel being outwardly offset from said end panels thereby forming stops to prevent outward movement of said end panels.

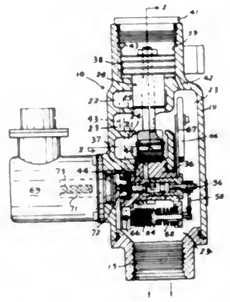
3,160,345
MANUAL CALCULATOR HAVING MULTIPLE ROTARY INPUTS
Edward C. Walsh, 431 W. 7th St., Los Angeles, Calif.
Original application Feb. 15, 1962, Ser. No. 173,561. Divided and this application Nov. 8, 1963, Ser. No. 323,543
4 Claims. (Cl. 235—78)



1. A calculating device having a set of circular elements, central shaft means having an axis, said elements having adjacent axially spaced parallel portions carried on the said shaft means, the elements being supported entirely by the shaft means, carry-over means operable in response to movement of the elements about said axis whereby a predetermined angular movement of one element imparts a step movement to an adjacent element, means for individually rotating each of a plurality of the elements comprising equally angularly spaced configurations on the said elements shaped to be individually, manually engaged for rotary movement through selected fractions of a complete revolution whereby to impart rotation to a circular element whereby numerical inputs may be directly fed into any one of a plurality of the elements with predetermined movements of elements carrying over to the next successive element, and numerical indicia positioned to facilitate readout of a calculated result, said circular elements being in the form of discs resembling telephone dials, each disc having 10 equally angularly spaced holes therein of a size to accommodate a person's finger, finger stop means adjacent said discs, the said discs being mounted to be freely continuously rotatable in either direction, said carry-over means between adjacent elements comprising pinion gears, and means providing external gear teeth and internal gear teeth cooperating with the pinion gears for performing the carry-over function between adjacent elements.

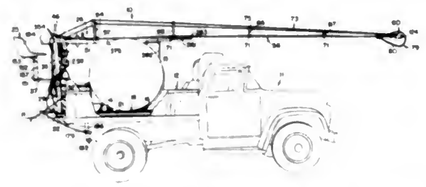
3,160,346
BY-PASS CONTROL VALVE
Ewald J. Kimm, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed Dec. 29, 1960, Ser. No. 79,292
4 Claims. (Cl. 236—12)

1. A by-pass fluid control valve, including a body having a pair of fluid inlets supplied with a pressure fluid under differential pressure and a common outlet, valve means occupying alternate extreme positions of adjustment connecting different ones of said inlets to said outlet and positions intermediate said extreme postions, spring means urging said valve means toward a position communicating the inlet of lower pressure to said outlet, said body providing a piston chamber directly communicating at its one end with said outlet, said body further providing a passage to the other end of said chamber in common communication with the inlet of higher pressure and with said outlet, means restricting the communication of said passage with said inlet of higher pressure, an adjustable pilot valve opening and closing communication of said passage with said outlet, means responsive to the temperature of the fluid for adjusting said pilot valve, and



a piston in said piston chamber connected to said valve means and arranged to move said valve means toward the other one of its alternate positions responsive to a rising pressure in the said other end of said piston chamber upon closing of said pilot valve.

3,160,347
HIGHWAY SPRAYER
John W. Ackley and Charles K. Stralow, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,366
16 Claims. (Cl. 239—159)

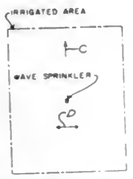


9. In a sprayer, frame means including an upwardly extending pedestal, a boom-supporting pivot member comprising a generally central pipe member adapted to be rotatably mounted on said pedestal and a pair of upwardly diverging members fixed at their lower ends to opposite sides of said pipe member below the upper end thereof, a spray boom pivoted to the upper ends of said upwardly diverging members, and generally vertically acting means connected between said pipe member between said upwardly diverging members and said boom for raising and lowering the latter.

3,160,348
WAVE SPRINKLER
Edwin J. Hunter, % Moist-o-Matic, Inc., P.O. Box 489, Riverside, Calif.
Filed Apr. 29, 1963, Ser. No. 276,482
6 Claims. (Cl. 239—201)

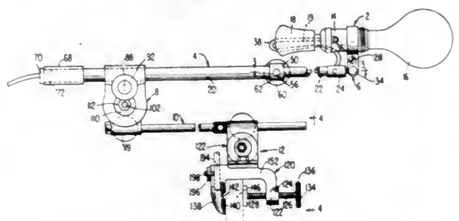
3. A wave sprinkler, comprising:
(*a*) an oscillatable water supply tube defining a horizontal axis;
(*b*) and a plurality of nozzles communicating with said supply tube and having axes intersecting a common axis region crossing said horizontal axis radially

thereof, said nozzle axes crossing said common axis at spaced points and the angular relations of said nozzle



axes with respect to said horizontal axis being progressively different.

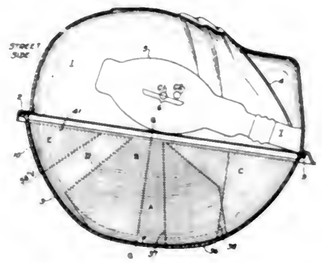
3,160,349
UNIVERSAL WORK AND DESK LAMP
Owen Kent, Chicago, Ill., assignor to Reliance Camera & Photo Supplies Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 4, 1962, Ser. No. 164,336
4 Claims. (Cl. 240—52)



1. In a universal work and desk lamp or the like, a swivel rod connector comprising a pair of die cast metal members, one of said members having a bore slidably receiving a rod and a clamping screw securing the rod in adjusted position therein, the other member having a bore slidably receiving a second rod and a clamping screw securing the second rod in adjusted position therein, a pivot stud secured to one of said members, the other of said members being pivotally mounted on said stud, a lubricated metal washer on said stud between said members and means for clamping said members in firm frictional engagement with said washer to permit rotary adjustment of said members and the frictional retention of the rods in any relative angular position to which said members may be manually adjusted.

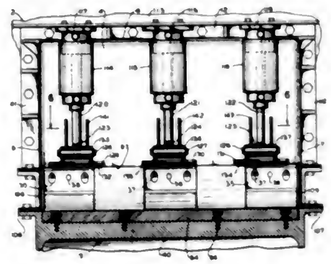
3,160,350
STREET LIGHTING LUMINAIRE
Charles H. Rex and David L. Wood, Hendersonville, N.C., assignors to General Electric Company, a corporation of New York
Filed June 1, 1960, Ser. No. 33,183
3 Claims. (Cl. 240—106)

2. In a street lighting luminaire adapted to be positioned at one side of a roadway, an ovate bowl-shaped refractor symmetrical about a vertical median plane and having prismatic areas defining reflected light beam areas on lower opposite sides thereof and light source beam areas above and contiguous to said reflected light beam areas, the prisms in the forward or street side portions of the aforesaid areas lying in planes parallel to the rim of the refractor and designed to lift light incident thereon, the prisms in the rearward or house side portions of the aforesaid areas lying in parallel planes and curving upward toward said rim to provide a steadily increasing forward bending aciton while decreasing the lifting action, a visor-shaped area at the street side of the refractor spaced from said reflected light beam and light source beam areas, said visor-shaped area having external depressing prisms and internal lateral bending prisms which lie in vertical planes and radial about the intersection of the median plane with a transverse plane perpendicular to the refractor rim and near the center of the refractor, and an intermediate area between said visor-shaped area and said reflected light beam and light source beam areas and including a center portion adjacent the longitudinal



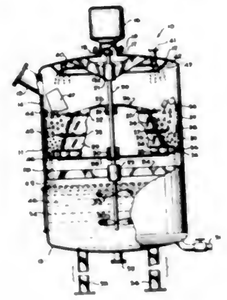
center line of the refractor and side portions extending upward to the refractor rim, said center portion having prisms lying in parallel vertical planes and said side portions having prisms lying in vertical planes which are radial about respective points substantially on said transverse plane opposite the edges of said center portions, the prisms in said intermediate area being arranged to bend light laterally to respective sides within the roadway pattern.

3,160,351
DISINTEGRATORS AND FEEDING MEANS THEREFOR
Harry J. Shelton, Jr., Ladue, Mo., assignor to Gruendler Crusher & Pulverizer Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 23, 1962, Ser. No. 189,412
16 Claims. (Cl. 241—34)



1. A feeding device for feeding slabs of relatively hard material such as plastic and synthetic resins to disintegrators having a feed-intake opening, said feeding device comprising first means located externally with respect to, and outwardly of the feed-intake opening for feeding a slab of feed material in a lengthwise direction into and through said feed-intake opening of the disintegrator, second means located externally of and proximate to the feed-intake opening for clamping the slab of feed material during the feeding operation to prevent the feed material from being forced out of the disintegrator, and control means for operating the second means in pre-timed relationship to the first means.

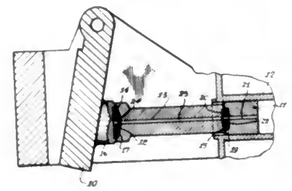
3,160,352
APPARATUS FOR PULVERIZING AND DISPERSING SOLID MATERIAL INTO LIQUID SUSPENSION
Gilman B. Mollring, 2590 S. Westgate Ave., Los Angeles 64, Calif.
Filed June 15, 1959, Ser. No. 820,273
2 Claims. (Cl. 241—98)



1. Apparatus for the processing of hydrocols, oleosols, and the like, wherein a solid material is pulverized and suspended in a liquid phase and is maintained in suspension or solution in a body of the liquid, said apparatus comprising: a mill housing; means supporting said housing in a fixed position on a vertical axis, said housing having an upper pulverization chamber and a lower dispersion chamber; an actuator shaft journalled in said housing upon the vertical axis thereof; means for rotating said shaft; a crusher rotor mounted on and driven by said shaft, said rotor comprising a plurality of groups of hammers rotating in respective paths of rotation which are vertically spaced from one another and are of progressively increasing diameter and peripheral speed of rotation from the upper toward the lower area of said rotor; means providing a plurality of fixed target areas on the inner wall of said housing in horizontally opposed relation to the respective groups of hammers and spaced therefrom by pulverizing gaps of respectively decreasing widths from the upper toward the lower area of said rotor; means at the top of said housing providing an annular spray of liquid descending through said gaps and mixing with the pulverizing material discharged from the lower gap into said dispersion chamber; and means for drawing off the suspension of liquid and solid particles from the lower area of said dispersion chamber in a controlled manner such as to maintain a body of liquid filling at least a portion of said dispersion chamber; said shaft projecting downwardly into said dispersion chamber and further including an agitator secured to said shaft in a position for operation in said body of liquid in the dispersion chamber for inhibiting the settling out of the solid particles from said body of liquid.

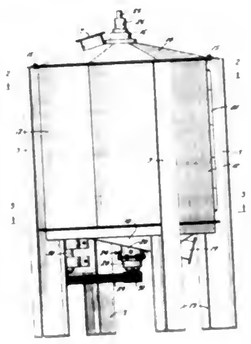
3,160,353
THRUST TRANSMITTING DEVICE
Kenneth Gauldie, Toronto, Ontario, Canada, assignor to Hydraulic Crushers Limited, New Liskeard, Ontario, Canada
Filed Sept. 7, 1962, Ser. No. 222,093
2 Claims. (Cl. 241—264)

1. In a hydraulically-operated jaw crusher having a jaw and a reciprocating ram for propelling said jaw, the combination of means for transmitting thrust from the ram to the jaw comprising a thrust link of non-porous material having a bearing surface at each end thereof, a bearing projection on said jaw having a recess therein, a body of porous bearing material seated in said recess and having a surface mating with and engaging the major portion of a first one of said thrust link bearing surfaces, said first thrust link bearing surface extending beyond the entire periphery of said porous body mating surface whereby said body is substantially completely enclosed, said ram having a recess therein, a second body of porous bearing material seated in said ram recess and having a surface mating with and engaging the major portion of a second



one of said thrust link bearing surfaces, said second thrust link bearing surface extending beyond the entire periphery of said second body mating surface whereby said second body is substantially completely enclosed, said thrust link having a duct extending therethrough and communicating with each of said bodies of porous bearing material, and means for delivering liquid under pressure to said duct.

3,160,354
COMMINUTION DEVICE
Albert LeRoy Burkett, 652 Corona St., Denver, Colo.
Filed Feb. 5, 1964, Ser. No. 342,638
3 Claims. (Cl. 241—275)

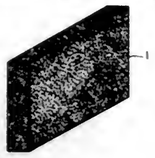


1. A comminutor comprising: a barrel having a plurality of vertical flat sides about a vertical axis; a cap member provided with a feed nipple and a hopper bottom provided with a discharge nipple closing the top and bottom, respectively, of said barrel; shaft bearings positioned at the axis of both said cap member and said hopper bottom; a vertical, tubular, power-driven shaft rotatably mounted in said bearings; a plurality of tubular spacing spools surrounding said shaft in superimposed relation; a top flange on each of said spools; a horizontal, circular rotor disc axially resting upon the top flange of each spool; means for preventing relative rotation between said discs and said flanges; and open-centered, axially-inclined, funnel plates supported from said barrel about said shaft and positioned between adjacent rotor plates.

3,160,355
FIBER PULP REFINING APPARATUS

Jean Chiaverina, Grenoble, France, assignor to Societe d'Electro Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France

Filed Mar. 28, 1961, Ser. No. 98,924
Claims priority, application France, Mar. 31, 1960, 822,993
1 Claim. (Cl. 241—291)

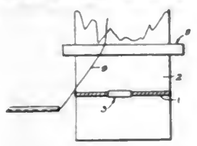


A pulp mill for refining cellulosic pulp which comprises stationary and rotatable pulp-cutter elements between and past which the pulp is passed in operation of the mill, characterized by the improvement that at least some of said cutter elements are formed from water-permeable open-pored sintered metal in at least the pulp-contacting portions of said elements, the pores in the porous area of said metal being intercommunicating and providing the volume percentage of cavities to the total apparent volume of the cutters in the porous area within the approximate range of from 20 to 60%.

3,160,356
WINDING APPARATUS

Anthony John Fisher and Eric Leslie Foster, Harrogate, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

Filed Dec. 26, 1962, Ser. No. 247,002
Claims priority, application Great Britain, Dec. 27, 1961, 46,338/61
6 Claims. (Cl. 242—18)



1. Winding apparatus for filamentary material comprising: a rotatable receiving bobbin; and an entrainment device for forming a transfer tail, said device being carried by said bobbin between the end of the traverse path of the filamentary material and the end of the bobbin and including a double-ended flexible lug, the ends of which are free of said bobbin and lie close to the surface of the bobbin when the same is stationary, said ends being thrown outwardly when the bobbin is rotated rapidly.

3,160,357
FILAMENT YARN WINDING APPARATUS

Robert C. Jackson, Raleigh, N.C., and Douglas J. Lamb, Gulf Breeze, Fla., assignors to Monsanto Company, a corporation of Delaware

Filed June 18, 1963, Ser. No. 288,746
5 Claims. (Cl. 242—18)

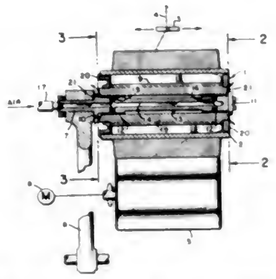
1. Filament winding apparatus comprising in combination:

(*a*) shaft means having a passage therein for receiving fluid under pressure from a source thereof and discharging the fluid under pressure peripherally of said shaft means,

(*b*) a member journaled about said shaft with a space formed therebetween to receive fluid under pressure discharge from said shaft establishing fluid-bearing means,

(*c*) fluid responsive means at each end of said member adapted to respond to fluid under pressure flowing from said space to impart rotation to said member,

(*d*) gripping means provided about the periphery of said member,



(*e*) a filament package holder mounted lockingly about said gripping means,

(*f*) traverse means located adjacent said filament package holder for displacingly guiding a filament to said filament package holder,

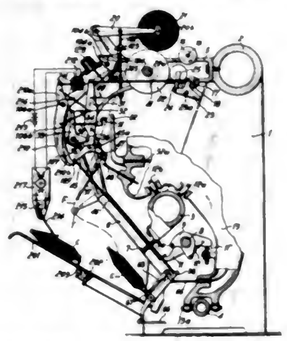
(*g*) drive means surfacely contacting and rotating said filament package holder in the direction of rotation of said member, and

(*h*) means for operatively driving said drive means.

3,160,358
AUTOMATIC YARN-COIL WINDING MACHINE

Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed Sept. 28, 1962, Ser. No. 227,687
Claims priority, application Germany Sept. 30, 1961
3 Claims. (Cl. 242—35.5)

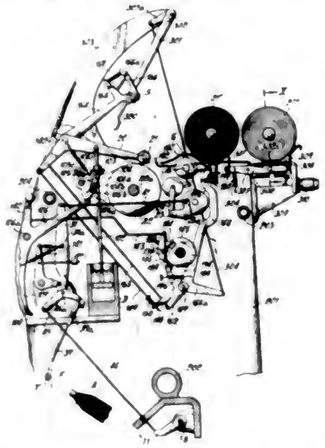


1. A yarn-package winding machine comprising a row of winding stations having respective take-up spools and drive means therefor and having respective coil holder means and feeder means for supplying yarn coils to said holder means; a servicing tender movable along said row of winding stations for tying yarn ends coming from a coil on said holder means and from said spool respectively, each of said winding stations having a tender control mechanism for normally controlling said tender to operate at said station in response to absence of yarn, and each of said stations having a control device responsive to coil depletion of said feeder means in said station and in controlling conenction with said drive means for individually stopping the winding operation of said station in dependence upon said depletion, said control device being connected with said mechanism for rendering said mechanism inactive relative to said tender, whereby said station is prevented from causing said tender to operate during persistence of said depletion.

3,160,359
YARN-SPOOL WINDING MACHINE

Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed May 1, 1963, Ser. No. 278,799
Claims priority, application Germany May 19, 1962
6 Claims. (Cl. 242—35.5)



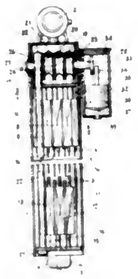
1. A yarn winding machine, comprising a winding mechanism having spool-core journalling means for accommodating a take-up spool being wound, a core-supplying exchange mechanism for substituting a new core for a full spool on said journalling means, a lay-off device adjacent to said journalling means for receiving therefrom the full spools, means for doffing full spools from said winding mechanism and supplying them along a predetermined path to said lay-off device, a spool sensing device mounted at said lay-off device within a predetermined range adjacent said winding mechanism and actuatable into a responded condition upon the presence of a full spool in said predetermined range, and stop means including fixed means for preventing a full spool located along said path from rolling back toward said journalling means and further including blocking means connected with said sensing device for arresting the full spools at a predetermined location along said path whenever said sensing device is in said responded condition.

3,160,360
LINE-STORING ASSEMBLY FOR TOWING APPARATUS OR THE LIKE

Robert Spieldiener and Kurt Lukas, Sitten, Switzerland, assignors to Willy Buehler A.G., Bern, Switzerland

Filed Oct. 10, 1963, Ser. No. 315,272
14 Claims. (Cl. 242—47.5)

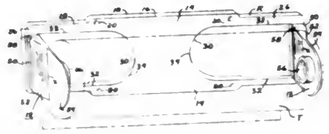
1. In a line-storing assembly for a towing apparatus or the like, in combination, support means; a row of sheaves supported for rotary movement by said support means; a row of sheave-carrying blocks; guide means carried by said support means and guiding each block for free movement toward and away from said row of sheaves independently of the other blocks; a line reeved over said sheaves and through said blocks, fixed at one end to said support means, and extending freely from the assembly; and a plurality of spring means connected to said support means and respectively connected to said blocks for individually opposing movement thereof toward said row of sheaves, whereby said spring means retard paying of the line out of said assembly during an increase in the tension of the line and retract the line into the assembly during a decrease in the tension of the line.



3,160,361
UNITARY PAPER TOWELLING RACK

William C. Monahan, 190 Seaton Road, Stamford, Conn.

Filed Aug. 21, 1962, Ser. No. 218,289
8 Claims. (Cl. 242—55.2)



1. An article supporting rack comprising: a plate-like member; means for securing said member to a planar support; a pair of spaced arms; means hingedly securing said arms to said member so as in normal use of said rack to be individually readily and repeatedly pivotal between positions wherein they are closely adjacent and substantially parallel to said member and positions wherein they are substantially perpendicular thereto; said last named means comprising a separate straight flexible web connecting each arm to said member that is thinner than the adjacent portions of said rack; and means on said arms for supporting an article between said arms; said rack being entirely a one-piece unitary structure made of a non-metallic plastic material.

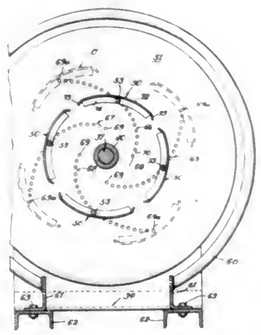
3,160,362
ADJUSTABLE DRUM FOR AUTOMATIC TAKE-UP REEL

Charles H. Weber, Mayville, Wis., assignor to Gleason Reel Corp., Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 8, 1962, Ser. No. 215,730
5 Claims. (Cl. 242—77.4)

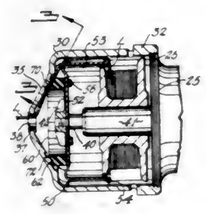
1. In a rotatable take-up reel, a pair of parallel spaced end plate members, and a diametrically adjustable core mounted between said plate members and presenting a substantially cylindrical surface for supporting cable stored

on the reel, said core comprising plural core segments, each having a body portion of arcuate cross-section and presenting a partial cylindrical outer support surface, each said core segment being attached at its opposite ends to both said plate members by pivotal connector means passing through selected pairs of opposed adjustment openings formed through said plate members and defining, with the connector means, spaced, longitudinal pivotal axes for the associated core segment; the said



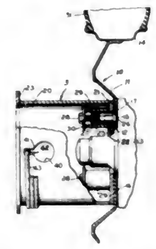
adjustment openings of said plate members being operationally aligned in registering opposed pairs and disposed in separated spiral rows emanating from adjacent the center of said plate members and progressing divergently toward the periphery thereof whereby said core segments are adjustably positionable at plural fixed positions radially of the central rotational axis for the reel and each along spiral lines of position as defined by the spiral row patterns of said openings.

3,160,363
LINE HOLDING MEANS FOR CLOSED FACE SPINNING REEL
Joseph M. Holahan, Geneva, Ohio, assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1962, Ser. No. 165,404
11 Claims. (Cl. 242—84.2)



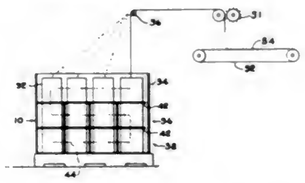
5. In a fishing reel of the character described adapted to have associated therewith a fishing line, a main housing, a shroud connected to said housing, said shroud including a conical shaped front portion, said front portion having a centrally located opening through which a fishing line may pass, the inside face of said conical portion of said shroud having a plurality of spaced line-holding pins to transmit force from said line to said shroud and said housing.

3,160,364
HAULING DEVICE FOR VEHICLES
Todd D. Bailey, 1260 Floral Ave., Oroville, Calif.
Filed Aug. 2, 1962, Ser. No. 214,341
6 Claims. (Cl. 242—95)



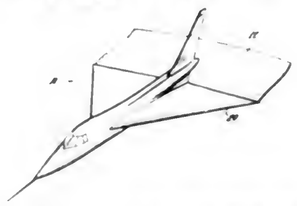
1. A power transmission drum adapted to be secured to the wheel of a vehicle which is provided with a circular row of holes and fastening elements received therethrough, said drum comprising:
- a generally cylindrical rope receiving peripheral wall,
- a generally transversely extending end member fixed to one end of said wall having an outer side adapted to abut said wheel,
- said end member being formed with a plurality of spaced openings in registration with said fastening elements for receiving said elements therethrough when said outer side is in abutment with said wheel,
- spacing means adjacent one of said openings and fixed to said end member and providing a surface spaced from said outer side and directed axially of said drum adapted to be engaged by a drum securing device,
- said drum securing device being adapted to be connected to the outer end of the fastening element in said one opening.

3,160,365
CONTINUOUS STRAND PACKAGE SUPPLY AND METHOD OF FORMING AND OF UNWINDING THE SAME
Joseph Barnett, Jr., Toledo, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Aug. 3, 1962, Ser. No. 214,709
10 Claims. (Cl. 242—128)



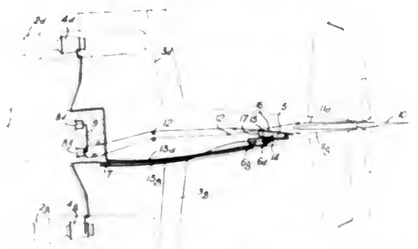
1. A packed carton comprising a plurality of strand packages arranged in horizontal rows and in superposed layers, a platform supporting each superposed layer, each of said packages being interconnected with the other packages in the respective row, each row of a superposed layer being interconnected with the corresponding row of a subjacent layer, and there being an opening at least one end of each row between the platform and the side wall of the carton through which opening the strand of a superposed layer extends to a subjacent layer.

3,160,366
OUTER SPACE VEHICLE WITH MEANS CONTROLLING ITS RATE OF ENTERING THE ATMOSPHERE OF A PLANET
Albert de Graffenried, Roslyn Harbor, N.Y., assignor to Avien, Inc., Woodside, N.Y.
Filed July 8, 1960, Ser. No. 41,581
4 Claims. (Cl. 244—1)



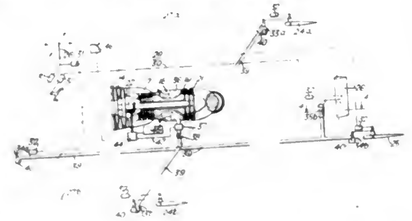
1. A vehicle for outer space travel employing a flexible variable area heat resistant uniformly surfaced sheet trailing behind said vehicle as a re-entry velocity control means.

3,160,367
AUTOMATIC AIRCRAFT RUDDER TRIMMER IN THE EVENT OF FAILURE OF ONE TURBINE ENGINE DRIVING SAID AIRCRAFT
Jacques André Marie Lecarme, Paris, France, assignor to Société Française d'Entretien et de Reparation de Materiel Aeronautique (S.F.E.R.M.A.), Suresnes, France
Filed Dec. 31, 1962, Ser. No. 248,636
Claims priority, application France, July 4, 1962, 902,882, Patent 1,344,276
9 Claims. (Cl. 244—76)



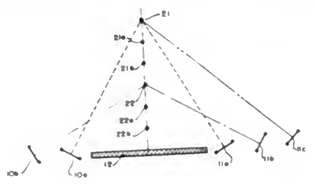
1. In an automatic trimming device of the type effecting automatic correction of turning tendencies of a multiple-engine aircraft under asymetric power conditions by applying compensating forces to the rudder of said aircraft, which aircraft is provided with a rudder-bar connected to said rudder through a control linkage and is driven by at least one pair of turbine engines mounted symmetrically with reference to the aircraft longitudinal plane of symmetry and each one of which has a compressor; the improvement which comprises at least one jack casing, at least one piston reciprocally movable in each jack casing, two rods projecting on either side of each jack casing and subjecting to said reciprocating motion, the chambers in each jack casing being arranged in opposite directions relative to the transverse symmetry plane of said jack casing, two pipes respectively tapped off the two compressor outlets of each pair of turbine engines and respectively connected to two opposite chambers of the same casing, means for connecting the two rods of each jack to the control linkage so as to deflect the rudder towards that side which is opposite that on which a failing turbine engine is mounted, a three-way cock having two of its ways connected into each pipe and the third vented, and, for all the pipes, interconnected actuating links for the three-way cocks, a transmission system connected to said links, and an operating lever placed within reach of the aircraft pilot and coupled to said transmission system.

3,160,368
AIRCRAFT CONTROL MEANS
Pierre Henry John Young, Ian Mackenzie Milne, and Ralph Murch Denning, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Apr. 23, 1963, Ser. No. 275,085
Claims priority, application Great Britain, Apr. 25, 1962, 15,803/62
7 Claims. (Cl. 244—76)



1. An air-breathing gas turbine power plant constructed to produce upthrust by downward discharge of working fluid comprising: compressor means for producing the said downward discharge; turbine means connected to drive the compressor means; a combustor upstream of the turbine means; means for supplying compressed gas including uncombusted atmospheric oxygen to the combustor; means for supplying fuel to the combustor; variable-datum speed governing means arranged to act on the fuel supply means to maintain the rotary speed of the turbine means constant; means for bleeding compressed gas from upstream of the turbine means substantially at combustor pressure; automatic means responsive to bleed flow arranged to act on the governing means in the sense to lower the datum speed with increase of bleed flow; and means independent of said automatic means to produce variation of the bleed flow.

3,160,369
FLIGHT PATH CONTROL SYSTEM
Thomas F. K. Edmison, P.O. Box 128, Dartmouth, Nova Scotia, Canada
Filed July 5, 1961, Ser. No. 121,988
17 Claims. (Cl. 244—77)

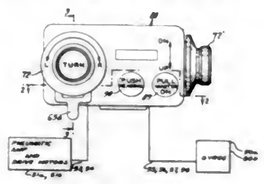


9. An aircraft approach control system comprising a pair of elongated radiators extending along the ground in spaced relation to one another, said radiators being located along, and extending outwardly from, opposite sides of an aircraft landing runway, said radiators comprising elongated loops at least one of which has successive loop sections positioned at varying inclinations to horizontal, means for energizing said radiators with different signals respectively to produce control fields in space between said radiators, horizontally and vertically positioned pick-up means on an aircraft located in said fields, means coupled to both said pick-up means for pro-

ducing a first control signal related to the sum of the signals produced by said ground radiators at the existing location, of said pick-up means, further means coupled to both said pick-up means for producing a second control signal related to the difference of the signals produced by said ground radiators at said existing location of said pick-up means, and means responsive to both said first and second control signals for locating said pick-up means and thereby said aircraft relative to said spaced ground radiators.

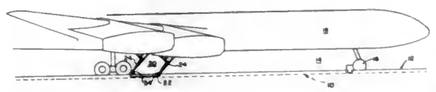
11. The system of claim 9 wherein said control signal responsive means comprises means for automatically maneuvering said aircraft.

3,160,370
AUTOMATIC PILOT
Walter M. Templin, Wayne, Pa., assignor to Tactair Aircraft Products Co., Bridgeport, Pa., a corporation of Pennsylvania
Original application Apr. 14, 1958, Ser. No. 728,151, now Patent No. 3,044,490, dated July 17, 1962. Divided and this application Mar. 14, 1962, Ser. No. 179,696
2 Claims. (Cl. 244—78)



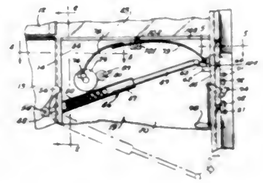
1. In an automatic pilot for dirigible craft, a pneumatic control system for steering the craft, a directional sensing instrument for affording pneumatic control signals representative of changing direction of the craft, pneumatic power means responsive to the control signals to direct the craft, manual control means including a first manual control member for introducing pneumatic control signals into said system to command a change of direction of the craft, valve means between the directional sensing instrument and the pneumatic control system, means to hold the valve means in either open or shut positions, a second manual control member connected to open the valve to introduce the control signals of the directional sensing instrument into the control system, and linkage means responsive to adjusting movement of said first manual control member to close the valve means.

3,160,371
ARRESTING GEAR FOR MOVING OBJECTS
Donald B. Doolittle, Hockessin, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,709
14 Claims. (Cl. 244—110)



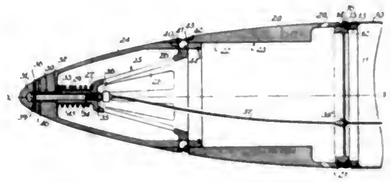
2. An arrest system for arresting the movement of an object moving in a path over a surface comprising an open arrest channel embedded in said surface and extending downward from said surface, guide means on said object for engaging said arrest channel whereby said object is constrained to track along said channel over said surface and brake means mounted on said object and selectively positionable within said channel subsequent to the engagement of said channel by said guide means, said brake means including means for frictionally engaging said arrest channel to arrest the motion of said moving object, said object comprising an aircraft, said aircraft including a fuselage and a nose wheel assembly suspended from said fuselage, and wherein said guide means comprises a vertically movable guide blade mounted on said nose wheel assembly adapted to ride along said surface and drop into said arrest channel upon engagement therewith, whereby said fuselage is constrained to track along said arrest channel.

3,160,372
AIRCRAFT SAFETY DOOR
Clifford O. Scott, 4015 Kittyhawk Drive, Dayton, Ohio
Filed July 12, 1963, Ser. No. 294,772
5 Claims. (Cl. 244—129)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an aircraft body:
(*a*) A door having mutually spaced inner and outer panels and slidable from a position normally closing an opening in the aircraft body to a position within a storage space in the aircraft body beneath said opening;
(*b*) A curved track on each side of said opening to guide the movement of said door, one of said guide tracks being attached to the aircraft body through severable fastening means which will release the door for jettison upon the impact of a collision;
(*c*) An over center spring loaded extensible arm pivotally mounted to one side of the opening in said aircraft and having its opposite end mounted on said door through a pivotal locking mechanism within said door; and
(*d*) A spring arm on the pivotal locking mechanism capable of lowering a window within said door upon opening said door.

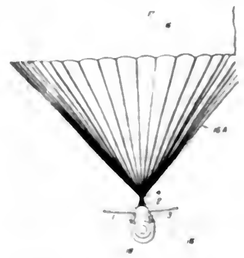
3,160,373
EXTERNAL STORE FOR AIRCRAFT
Florian N. Taddonio, Plainview, N.Y., assignor to Republic Aviation Corporation, near Farmingdale, N.Y., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,463
7 Claims. (Cl. 244—137)



1. An external store for aircraft comprising a main body, a hollow truncated structure concentrically secured to and projecting in an upstream direction from said main

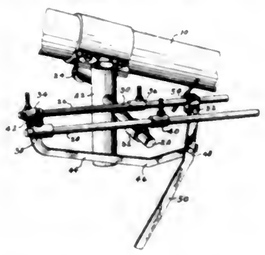
body, a hollow nose cone telescopically connected to said structure adjacent the forward end thereof, piston means mounted for reciprocation in said nose cone, means normally operative to secure said piston means against movement relative to said nose cone and in engagement with said structure whereby said nose cone is disposed in the extended position, and a release operative to disconnect the securing means aforesaid and actuate said piston means to disengage said structure for the retraction of said nose cone.

3,160,374
AIRCHUTE AND EJECTION MEANS
Dario Manfredi and Angelo Raiti, both of 110 Attorney St., New York 2, N.Y.
Filed Dec. 11, 1962, Ser. No. 243,758
5 Claims. (Cl. 244—138)



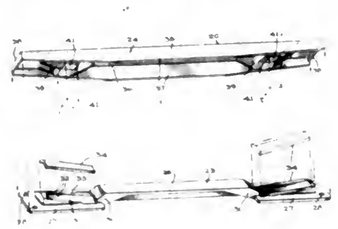
3. An airplane having wings and provided with a canopy inflation airchute, a stowage compartment for the airchute and closure means normally closing said compartment, means for ejecting the airchute therefrom when the closure means are opened, a cartridge ejector, mechanism connected with said cartridge ejector and with the wings and operable by said cartridge ejector for releasing the wings of the airplane, further means connected with said mechanism and with said closure means and operable by said mechanism to open said closure means for ejection of said airchute upon operation of said closure means by said means, for ejecting the airchute.

3,160,375
SNAP-OVER ENGINE CLUTCH FOR POWERED CONVEYORS
Martin Mayrath, 10707 Lennox Lane, Dallas, Tex.
Filed July 2, 1962, Ser. No. 206,796
2 Claims. (Cl. 248—16)



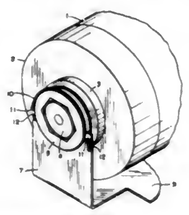
1. A self-locking belt drive motor mount for machines, comprising a pair of stationary guide rods, a pair of motor mounting elements slidable on each guide rod in a direction which will vary the distance between the motor pulley and a driven pulley, said motor mounting elements, when fixed to a motor, being simultaneously movable therewith, a clamp mounted on one of said guide rods, means for fixing said clamp in adjusted positions along said one guide rod independently of said motor mounting elements, a control lever pivotally connected at one end to said clamp, and a connecting link extending between, and pivotally connected to, an intermediate point on said control lever and one of said motor mounting elements mounted on said one guide rod, said connecting link having means for providing clearance so that its pivotal connection to said control lever can move over-center relative to the pivotal connection of said lever to said clamp between a belt-loosening position and a belt-tightening position, said connecting link having a portion aligned with a portion of said clamp whereby said connecting link is engageable with said clamp to limit movement of said control lever at said belt-tightening position.

3,160,376
LOOM ANTI-VIBRATION MOUNTING MEANS
Harry R. Kennedy and James W. Knox, Jr., Greer, S.C., and Walter Engels, Tryon, N.C., assignors, by mesne assignments, to H & S Co., Inc., Greenville County, S.C., a corporation of South Carolina
Filed May 21, 1962, Ser. No. 196,159
7 Claims. (Cl. 248—22)



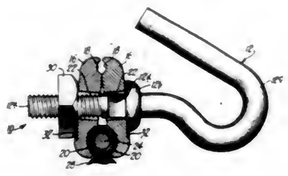
1. An anti-vibration support for looms and the like comprising a base member adapted for rigid attachment to a supporting surface and being low and transversely narrow and elongated, raised bearing pads on said base member near opposite ends thereof, said pads having oppositely longitudinally inclined top bearing faces which slope downwardly at substantially equal shallow angles to the horizontal toward the longitudinal center of the base member, whereby the outer ends of said bearing faces are elevated substantially equidistantly above the inner ends of such faces, the tops of said pads and said faces being transversely crowned symmetrically with respect to the longitudinal axis of the base member to provide upwardly converging face portions each arranged at a substantially equal shallow angle below the horizontal, an elongated transversely narrow vertically shallow runner member adapted for rigid attachment to a loom frame end in underlying relation thereto and being substantially coextensive lengthwise and transversely with said base member and overlying the latter in closely spaced relation thereto, and dependent bearing pads on said runner member near the opposite ends thereof and adjacent to and overlying said bearing pads of the base member and adapted to rest upon the latter floatingly, said dependent pads sloping oppositely longitudinally and being recessed upwardly to provide thereon bearing faces having the same angular configurations and slope longitudinally and transversely as said bearing faces of the bearing pads of the base member and resting upon and interfitting slidably with the latter to permit some relative longitudinal movement of the runner member on the base member responsive to vibrations of said loom or the like.

3,160,377
RESILIENT MOUNTING FOR DYNAMOELECTRIC MACHINES
George E. Herzog, Shawnee Township, Allen County, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1962, Ser. No. 191,115
2 Claims. (Cl. 248—26)



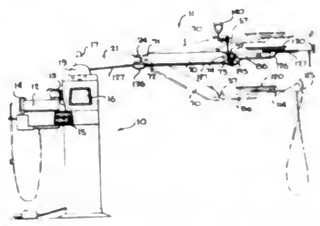
1. In combination, a dynamoelectric machine having resilient mounting rings at opposite ends thereof, mounting means for said machine comprising a base member having generally vertical portions at each end adapted to engage said mounting rings to resiliently support the machine, and a helical spring member tightly engaging each mounting ring around its entire circumference, the vertical portions of the base member having notches therein and the end portions of said spring members being formed to engage in said notches to clamp the mounting rings in place on the vertical portions of the base member.

3,160,378
SUPPORTING DEVICE
George E. Goewey, 542 S. Bristol, Arlington Heights, Ill.
Filed Nov. 17, 1961, Ser. No. 153,051
6 Claims. (Cl. 248—61)



1. A cable clamp comprising a pair of cable clamping plates, each of said plates having a pair of spaced and parallel cable receiving grooves, each of said plates having an opening passing therethrough disposed between said grooves, said plates being disposed adjacent each other with the grooves therein facing inwardly toward each other to define two parallel passageways for receiving a cable, a supporting element in said openings and including a detent portion bearing against the outer surface of one plate and a threaded portion disposed adjacent the outer surface of the other plate, fastening means engaging said threaded portion and bearing against said other plate to clamp a cable disposed in only one of said passageways, the cable clamping plates extending generally parallel to each other when the cable is disposed in one of the cable receiving openings and being tipped relative to each other when a cable is disposed in the other of the cable receiving openings, and an inclined surface on said other plate disposed adjacent said fastening means to provide a wide area bearing surface for the fastening means when the cable is disposed in said other cable receiving opening.

3,160,379
TRAY SUPPORT FOR A DENTAL UNIT
John M. Gardella, Staten Island, N.Y., assignor to The S. S. White Dental Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1963, Ser. No. 319,859
11 Claims. (Cl. 248—124)



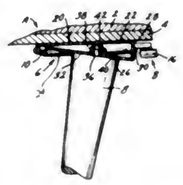
1. In combination; a dental unit having a vertical axis, and an adjustable tray support, said tray support comprising a radial sweep arm, means for mounting said sweep arm for horizontal rotation about the vertical axis of said dental unit, a first swing link, means for mounting said first swing link on said sweep arm for pivotal movement in a horizontal plane, a link lever having a first end and a second end, means connecting said first end of said link lever to said first swing link for pivotal movement in a vertical plane, a second swing link, means connecting said second swing link to said second end of said link lever for pivotal movement in a vertical plane, a tray arm, means connecting said tray arm to said second swing link for pivotal movement in a horizontal plane, and means for mounting a tray on said tray arm.

3,160,380
GARBAGE CAN HOLDER
Horace T. Blades, 3412 2nd St., East Moline, Ill.
Filed Aug. 16, 1963, Ser. No. 302,614
3 Claims. (Cl. 248—154)



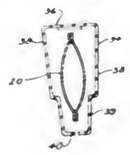
1. A garbage can holder comprising a pair of crossed legs forming a frame, ground engaging members fixed to the ends of said legs and spacing the legs above the ground, said members being apertured vertically, generally vertically disposed standards having lower portions extending downwardly through said apertures a distance sufficient to enter the ground for holding said holder against displacement, said standards being peripherally arranged to receive a garbage can therebetween, shoulders on the standards adapted to contact the upper parts of said ground engaging members whereby when said standards are driven into the ground said legs are held against displacement.

3,160,381
LEG SUPPORTING CORNER PLATE
Murray Langbaum, East Hills, N.Y., assignor to Nova Products Corp., Brooklyn, N.Y., a corporation of New York
Original application Mar. 22, 1962, Ser. No. 181,634, now Patent No. 3,143,375, dated Aug. 4, 1964. Divided and this application Dec. 13, 1963, Ser. No. 330,372
4 Claims. (Cl. 248—188)



1. A leg supporting corner plate adapted for use with a furniture frame to which said plate is to be attached comprising a body portion adapted to be secured to said furniture frame and a tongue integrally secured to said body portion and extending from an edge of said body portion downwardly and then reversely bent so that a part of said tongue overlies and is spaced downwardly from said body portion, an aperture being formed in said body-overlying tongue part which is adapted to receive a leg-attached securing element such as a bolt.

3,160,382
PEDESTAL FOR CHAIRS
Robert E. Lee, Minneapolis, Minn., assignor to Lee Brothers Company, Minneapolis, Minn., a partnership
Filed Nov. 23, 1962, Ser. No. 239,654
3 Claims. (Cl. 248—188.7)

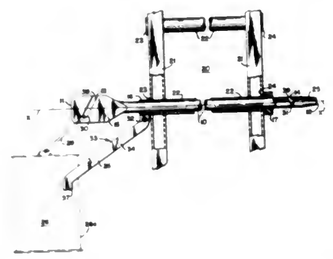


1. A base for swivel chairs comprising a central portion provided with a spindle socket, a plurality of legs extending radially from the central portion of the base, a cover having a central chamber provided with an upper and lower opening for receiving the central portion of the base, a plurality of hollow legs extending radially from the central portion of the cover, the legs of the cover provided with slot means communicating with the lower opening for the central chamber whereby the radiating legs of the base can be inserted into and withdrawn from the hollow legs of the cover.

3,160,383
HANGER DEVICE
Charles R. Lamm, 11 Arlington Ave., South River, N.J.
Filed June 21, 1962, Ser. No. 204,180
3 Claims. (Cl. 248—211)

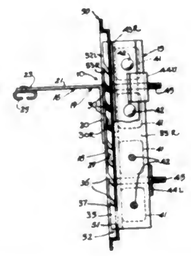
2. A hanger device for use in vertically hanging a pail upon a ladder, the pail having a body and a bail and the ladder having sidepieces interconnected by hollow, open-ended rungs, said hanger device comprising:

(A) a bar having opposite ends, said bar being adapted to cooperate with one of the rungs with the greater portion of the length of said bar lying within the rung and the ends of the bar extending beyond the ends of the rung and away from the sidepieces;
(B) a hook-like support adjacent at least one end of said bar for receiving said bail;
(C) a stop on said bar adjacent said support and lying between said support and the rung, when said length is within said rung, for locating said support in a given position relative to said ladder;
(D) a brace fixed to said bar and extending vertically below the horizontal level of said hook-like support



and horizontally away from the adjacent sidepiece and the rung a sufficient distance to provide support surfaces so located with respect to said hook-like support as to contact the body of the pail and force the pail away from said sidepiece and the bail out of a normally vertically hanging position; and
(E) a retainer on said bar for releasably maintaining said bar within the rung and said hook-like support and said brace in said given position relative to the ladder.

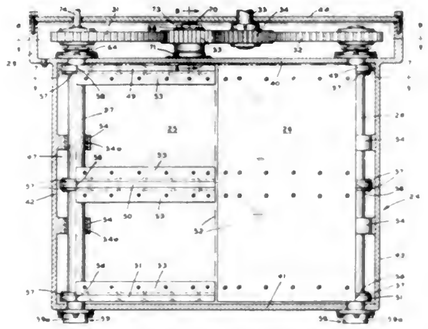
3,160,384
TORQUE RESISTING DETACHABLE BRACKET AND HANGER
Eugene L. Cirese, 5313 Fairway Drive, San Jose, Calif.
Filed Nov. 13, 1962, Ser. No. 236,991
4 Claims. (Cl. 248—265)



1. In combination a detachacble hanger and a bracket adapted to have periodic downward pull loads applied to their extreme ends, a stationary member including two or more bars having serrated leading edges, means for securing such bars to a wall with their leading edges protruding therefrom, and a removable member including a magnetically attractable plate having a bracket extending from its fore face, and a plurality of tongues protruding from its back face in alignment with the protruding serrated leading edges of said bars for interlocking rela-

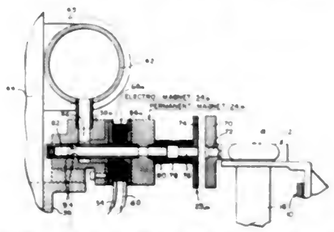
tion therewith, and magnetic separators between said bars for magnetically attracting said plate toward the leading edges of said bars.

3,160,385
SUCTION VALVE FOR SINTERING MACHINE
George E. Di Cesare, Springfield Gardens, N.Y., assignor to Greenawalt Sintering Co., Inc., New York, N.Y., a corporation of New York
Filed Sept. 21, 1961, Ser. No. 139,727
4 Claims. (Cl. 251—134)



1. A suction valve for a sintering plant having a pan, a suction-blower, a conduit connecting said pan with said valve through which hot gases from said pan are carried and a conduit connecting said valve with said suction-blower; said suction-valve comprising: a casing substantially rectangular in cross-section having a top wall, a bottom wall, and upstanding side walls providing a flow passage through said valve for said hot gases from said sintering pan, each of said side walls having a vertically extending recessed pocket, a vertically disposed shaft in the upstream side of each of said pockets with the upper end portion of each shaft extending upwardly through said top wall, bearings mounting the upper and lower end portions of said shafts for rotation of said shafts about their vertical axes, a swingable gate fixedly mounted on each of said shafts, said pockets being sufficiently large to receive said gates when said gates are swung on their respective shafts downstream toward said suction-blower to full open position so as to leave said flow passage through the valve unobstructed, said gates being sufficiently large to close said flow passage through said valve when said gates are swung on their respective shafts upstream toward said sintering pan to full closed position, a sector gear fixedly mounted on the upper end portion of each of said shafts, an idler gear mounted for rotation and meshing with one of said sector gears, a rotatable drive gear meshing with said other sector gear and with said idler gear, gear-box side walls extending upwardly from said top wall of said casing and surrounding said gears, said top wall of said casing with said gear-box side walls providing a gear-box for holding lubricant for lubricating said gears, a cover closing said gear-box and power driven means mounted above said cover including a reversible speed reducer having a driven rotatable shaft, the outer end of which extends vertically through said cover and having said drive gear secured thereto and a reversible electrically driven motor connected to drive said gear reducer adapted for rotating said drive gear selectively in a clockwise and counter-clockwise angular direction and causing said gates to swing selectively toward open and closed positions in response to rotation of said drive gear, a pair of spaced limit switches mounted on said cover and a cam connected to rotate in response to rotation of one of said gate shafts, said cam being mounted above said cover and being engageable with one of said limit switches when said gates are swung to full open position and engageable with the other of said limit switches when said gates are swung to full closed position for automatically stopping said electric motor when said gates reach full open and full closed position.

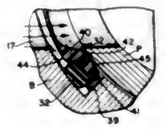
3,160,386
COUPLING DEVICE
Thomas H. Heine, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 15, 1961, Ser. No. 110,119
3 Claims. (Cl. 251—149.1)



1. Apparatus for substantially hermetically connecting the interior portion of a hollow basing chuck to a gas moving means to cause a flow of gas through the interior portion of such basing chuck, said apparatus comprising:
(*a*) first sealing means connecting to said basing chuck and provided with first conduit means communicating with the interior portion of said basing chuck;
(*b*) second sealing means normally disposed in spaced relation with respect to said first sealing means and provided with second conduit means;
(*c*) electromagnetic means mounted on said gas moving means and provided with third conduit means reciprocable therein and communicating with said gas moving means, and said third conduit means connected to and communicating with said second conduit means;
(*d*) magnetic means reciprocable with respect to said electromagnetic means and having said second and said third conduit means connected thereto, said magnetic means also resiliently connecting to said second sealing means;
(*e*) said magnetic means operable by means of magnetic attraction when asid electromagnetic means is deenergized to move said second sealing means into normal spaced relation with respect to said first sealing means; and
(*f*) said magnetic means operable by means of magnetic repulsion when said electromagnetic means is energized to move said second sealing means into substantially hermetic engagement with said first sealing means to join in communication said second conduit means and said first conduit means to permit gas flow from the interior of said basing chuck to said gas moving means.

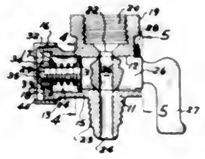
3,160,387
VALVE WITH SEATING STRUCTURE
Richard T. Windsor, Erie, Pa., assignor to Hays Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed May 12, 1961, Ser. No. 109,626
9 Claims. (Cl. 251—172)

9. A seal in combination with a first member and a second member comprising a hole through said first member, an internal groove in said first member around said hole, said second member being disposed in said hole of said first member, a washer cup shaped in cross section having spaced legs connected by an intermediate part disposed in said groove with the legs of said cup shaped washer extending from said second member, the



intermediate part of said cup washer engaging said second member, and an O-ring between the legs of said cup washer compressed between the inside surfaces thereof and the bottom of said groove.

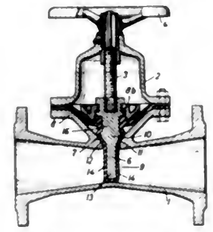
3,160,388
SHUTOFF COCK
Sylvain J. Marentette, Detroit, Mich., assignor to Brass Products Company, Detroit, Mich., a corporation of Michigan
Filed May 24, 1962, Ser. No. 197,465
2 Claims. (Cl. 251—183)



1. In a shutoff cock for controlling the flow of fluids, a body having a tapered bore, a shank on the body having an internal bore greater than and communicating with the reduced end of said tapered bore defining a shoulder stop, a tapered rotor nested in said tapered bore, and including a handle, a threaded shank of reduced diameter axially projecting from the rotor and into said shank bore, a stop washer mounter over said rotor shank bearing against said shoulder stop, said body shank terminating in a counterbore of increased diameter defining a second shoulder stop, a retainer washer within said counterbore mounted over and keyed to said rotor shank and bearing against said second shoulder stop, a coiled spring in said shank bore mounted over the rotor shank and interposed in compression between said washers, and a nut within the counterbore threaded on and secured to said rotor shank operatively engaging said retainer washer.

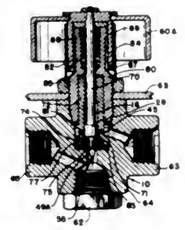
3,160,389
SLIDE VALVE WITH A VALVE ELEMENT COVERED BY A DIAPHRAGM
Friedrich Schmitz, Cologne-Sulz, Germany, assignor to Hochdruck-Dichtungs-Fabrik Schmitz & Schulte, Dusseldorf, Germany
Filed Sept. 6, 1961, Ser. No. 136,235
1 Claim. (Cl. 251—327)

A slide valve including a casing provided with a valve seat having a fluid passage therethrough and a valve element having a relatively wide side surface area transverse to the direction of fluid flow through the fluid passage, said valve element having a relatively narrow end surface area and an upper constricted neck portion, a valve spindle secured to said constricted neck portion for moving the valve element upwardly and downwardly in said casing perpendicular to the direction of flow through said passage, an upper valve element portion formed with a large cross-sectional shoulder below said constricted neck portion, the sides and ends of said shoulder tapering sharply downwardly and inwardly in the direction of closing movement of the valve element, a lower valve element portion below said shoulder having substantially parallel flat sides and downwardly and inwardly tapering ends, the ends of said lower portion and the bottom edge thereof being outwardly convexed to provide linear contact with corresponding areas of said valve seat, the convexed ends of said lower portion being spaced apart a distance corresponding to the distance between downwardly and inwardly tapering end surfaces of said casing complementing the downwardly and in-



wardly tapering ends of said valve element shoulder whereby a minimal gap is produced between said tapering casing end surfaces and said convex ends when said valve element is in the fully opened position thereof, and a flexible diaphragm completely covering said valve element including said constricted neck and having a radial flange extending from said constricted neck and secured at its peripheral edge to said valve casing above said valve seat.

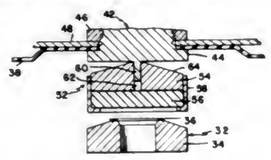
3,160,390
METAL CLAD SOFT SEAT VALVE CLOSURE ASSEMBLY
George W. Banks, 12424 14th Ave. S., Seattle 88, Wash.
Filed July 28, 1961, Ser. No. 127,596
3 Claims. (Cl. 251—334)



1. A high pressure metering valve for fluids comprising a valve body formed with a cylindrical spindle opening including a lower cylindrical end terminating in a bottom, a first passageway for fluid coaxial with said spindle opening and communicating with said bottom, a second passageway for fluid communicating with said lower end of said spindle opening above the bottom thereof, a valve disc having a circular bore defining an interior surface in said disc, said disc being composed of cold flowing plastic and said disc being positioned within said lower end of said spindle opening, metal enclosing means for said plastic valve disc engaging the entire exterior surface thereof, a primary spindle barrel secured within said spindle opening and having its lower end terminating above said second passageway, a secondary spindle barrel positioned within said primary spindle barrel and extending below the lower end thereof, said secondary spindle barrel having a lower cylindrical portion fitted within the lower end of said spindle opening, said lower cylindrical portion being formed with ports positioned above the lower end of said secondary spindle barrel, said ports communicating between the interior of said secondary spindle barrel and said second passageway for

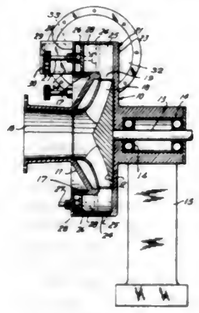
fluid, and a valve stem longitudinally movable within said spindle barrels and having a piston valve portion and a tapered metering point, said tapered metering point being adapted to sealingly engage the interior surface of said valve disc, said piston valve portion of said valve stem obstructing said ports to permit slow metered passage of fluid through said valve while said ports are obstructed and said ports being positioned sufficiently above the lower end of said secondary spindle barrel so that said metering point is well away from the cold flowing plastic of said valve disc before said piston valve portion is moved sufficiently to start opening said ports.

3,160,391
VALVE SEATS FOR HIGH TEMPERATURE AND HIGH VACUUM ENVIRONMENTS
Gustav K. Medicus, 7521 W. Hyland, and Werner F. Jehn, 438 Twinning Drive, both of Dayton, Ohio
Filed Jan. 24, 1962, Ser. No. 168,558
7 Claims. (Cl. 251—364)
(Granted under Title 35, U.S. Code (1952), sec. 266)



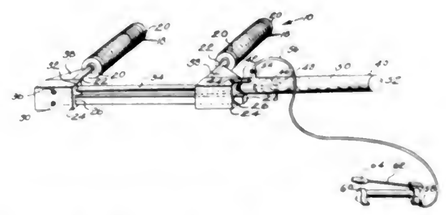
1. A valve seat for use in a valve having an axially moving valve plug actuated by means generating high thrust and comprising: a metallic ring having a hardness and modulus of elasticity on the order of tungsten carbide and a seat facing diffusion bonded thereto, said facing being a metallic foil material more ductile than tungsten carbide and having a high width to thickness ratio providing a ductile facing the outer face areas of which resist the flow of the interior area made plastic by the extreme unit pressure on the valve plug engaging said valve seat, said foil material being selected from the group consisting of platinum, gold, silver, copper, aluminum and iron.

3,160,392
TURBINE WITH VARIABLE NOZZLE
David U. Hunter, 12 Golf Lane, Huntington, N.Y.
Filed Jan. 5, 1962, Ser. No. 164,468
1 Claim. (Cl. 253—52)



In a turbine, a housing having a peripheral wall provided with a slot extending thereabout and forming a fluid inlet into said housing, a turbine wheel mounted for rotation within said housing with the blades of the wheel located in close proximity to said slot, a casing mounted on said housing in overlying relation with said slot providing a flow passageway for the fluid and having an admission inlet for the fluid which is discharged against said wheel through said slot, a forward section tapering toward and connected with said casing and constituting a nozzle for accelerating the velocity of flow of the fluid into the flow passageway, a partition wall arranged in said casing extending coextensive thereof and having an end portion extending into the inner end of said forward section, said partition wall slidably engaging against opposite wall portions of said casing and said forward section, and means extending into said casing into engagement with said partition wall for moving said partition wall to simultaneously vary the cross-sectional area of said flow passageway and the inner end of said forward section.

3,160,393
TRACK ROLLER LIFTER
Berton J. Councilman, Box 576, Ogden, Iowa
Filed Apr. 19, 1962, Ser. No. 188,746
1 Claim. (Cl. 254—93)



A track-roller lifter of the class described to raise and to lower a vehicle having flanged wheels, comprising, in combination, a longitudinal bar, a pair of brackets, one stationary bracket and one slidably movable bracket, said stationary bracket being secured to one end of said bar, the other bracket being slidably mounted upon said bar to slide toward and away from the stationary bracket, a pair of parallel roller supports, one of said supports being secured to the stationary bracket and the other to the slidably movable bracket, grooved rollers mounted on said supports, the flanges of the wheels being received on said grooved rollers for vertical lifting and lowering when the rollers are moved towards each other or away from each other, hydraulic means for lifting or lowering said vehicle by means of the sliding action of said movable bracket, said means including a hydraulic cylinder secured to the movable bracket, a shaft secured to said stationary bracket and extending into said cylinder, a piston mounted fixedly on said shaft, said piston being slidably mounted inside said cylinder, and means communicating with said cylinder to introduce and exhaust fluid under pressure in said cylinder to slide said cylinder in relation to said shaft.

3,160,394
ASSEMBLY FIXTURE OR JIG
William Hunter, Upland, and Gerard A. Naab, Morton, Pa., assignors to Brewer Pharmacal Engineering Corporation, Upper Darby, Pa., a corporation of Pennsylvania
Filed July 12, 1962, Ser. No. 209,386
2 Claims. (Cl. 254—134.3)

1. A fixture for assemblying components with a group of wires wherein one end of each of the wires is connected to one element of the component and a second element thereof is to be threaded over the loose other ends of the wires through an opening in said second element, comprising:

(*a*) a base;

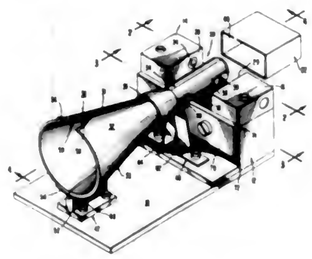
(*b*) an elongated funnel-like element comprising:

(1) a pair of elongated shell-like half-sections abutting along opposing longitudinal edges to form a hollow cone having a wide opening at one end and a narrow opening at the other,

(2) means secured to each of said half-sections at said narrow opening to form a tubular extension to said cone; and

(3) means at one pair of abutting edges securing said half-sections together for limited relative movement at the other pair of abutting edges, said means comprising,

(3*a*) a hinge carried by said base with its leaves secured to said half-sections,

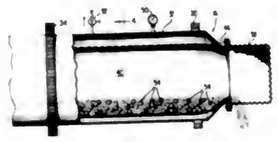


(3*b*) flexible elements each secured at one end to one of said half-sections and at its other end to said base, and

(3*c*) a flexible clip having ends secured to each of said half-sections; and

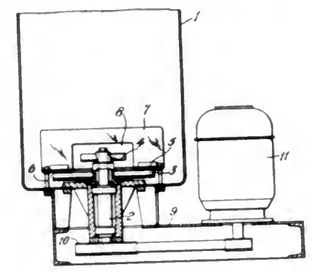
(*c*) means on said base for supporting said second element with its opening closely aligned with the outer end of said tubular extension, whereby said other ends of said wires may be fed into said wide opening of said cone and be guided thereby through said narrow opening, said tubular extension, and said opening in said element.

3,160,395
MATERIAL PROCESSING DEVICE
Joseph A. Reising, Sewickley, Pa., assignor to St. Joseph Lead Company, New York, N.Y., a corporation of New York
Filed Dec. 17, 1962, Ser. No. 245,310
7 Claims. (Cl. 259—3)



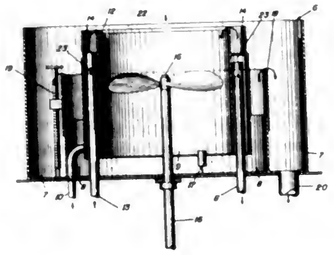
1. A dry powder mixing device comprising a rigid cylindrical shell having open ends, means mounting said shell for rotation with the longitudinal axis thereof generally horizontal, a resilient liner within said shell and extending from end to end thereof, said resilient liner mounted in spaced relation to the inner cylindrical wall of said shell and maintained out of contact with the cylindrical wall of the shell during normal operation of the device, a plurality of resilient elements maintained within said liner, and means for rotating said shell and its attached liner about the longitudinal axis thereof and causing relative movement between the powders, the resilient bodies, and the yieldable surface during the mixing.

3,160,396
MIXING MACHINES
William H. Tudor and Ian Sheppard, Hanley, Stoke-on-Trent, England, assignors to Baker Perkins, Incorporated, Saginaw, Mich.
Filed Apr. 9, 1963, Ser. No. 271,756
7 Claims. (Cl. 259—96)



1. In a mixing machine: vertical container means including a base and sides for holding liquid material to be mixed; drive shaft means extending upwardly through the base of the container and terminating a substantial distance below the top thereof; radially extending centrifugal impeller means on said drive shaft means terminating peripherally a spaced distance from the sides of the container to permit material to move upwardly at the said sides; and diametrically extending baffle means stationarily supported in the container means and extending across the axis of said shaft means above said impeller means to oppose the formation of a deep axial vortex depression in the material being mixed when the impeller is rotated at high speed.

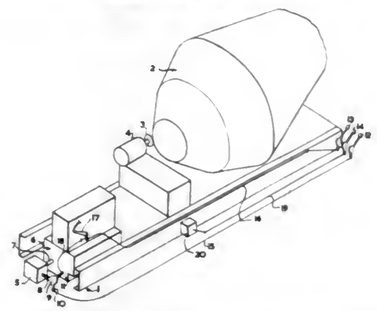
3,160,397
METHOD AND APPARATUS FOR THE CONTINUOUS DISSOLUTION OF CHEMICAL COMPOUNDS
André Kelecom, Uccle-Brussels, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven) S.A., a corporation of Belgium
Filed Mar. 21, 1962, Ser. No. 181,260
Claims priority, application Netherlands, Mar. 22, 1961, 262,675
2 Claims. (Cl. 259—97)



2. An apparatus for continuously dissolving solid chemical compounds, particularly compounds selected from the group consisting of artificial and synthetic polymers, in a solvent, comprising (*a*) an external, vertical, cylindrical tank for withdrawal of the final mixture, (*b*) a central tank having inlet means for receiving the ingredients, and (*c*) a level regulating intermediate tank communicating with the external tank by means of an overflow; means for regulating the height of the intermediate tank; a passage leading from the lower portion of the central tank to that of the intermediate tank; a thermo-regulating jacket surrounding the central tank; agitating means mounted in

the central tank and comprising a vertically adjustable central shaft carrying at its top end a horizontal propeller the height of which is varied so that said propeller is just immersed in the mixture contained in the central tank; means for feeding the solvent through said jacket and communicating with the upper portion of said central tank; means for introducing the solid compound into the central tank; and outlet means for discharging the final mixture at the base of the external tank.

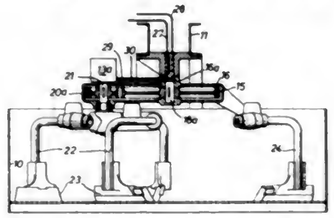
3,160,398
CONCRETE MIXING APPARATUS
Rowland Percy Green, Bath, Somerset, England, assignor to Stothert & Pitt, Limited, Bath, Somerset, England a corporation of the United Kingdom
Filed Jan. 24, 1963, Ser. No. 253,659
7 Claims. (Cl. 259—177)



1. Concrete mixing apparatus comprising in combination, a drum mixer mounted to revolve on a transporter vehicle for the delivery of ready-mixed concrete; a prime mover for said vehicle; means variably positionable according to the speed of said prime mover; a hydraulic drive for said drum mixer including a variable displacement pump operatively coupled to said prime mover and having a pump output control member which is settable to vary the pump output at a given pump speed, and a hydraulic motor in the ouput circuit from said variable displacement pump for imparting drive to said mixing drum; and means operable automatically in response to positioning of said variably positionable means for setting said pump output control member to maintain the pump output constant when the speeds of said prime mover and said pump vary.

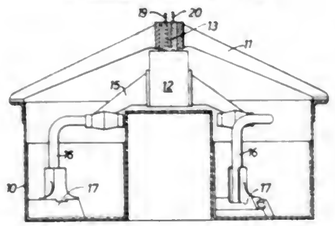
3,160,399
MIXING MACHINES
Kenneth James Harrison, Gosforth, Newcastle-upon-Tyne, England, assignor to The Liner Concrete Machinery Company Limited, Gateshead, England
Filed Sept. 25, 1961, Ser. No. 140,281
Claims priority, application Great Britain, Sept. 27, 1960, 33,099/60
1 Claim. (Cl. 259—178)

A concrete mixing machine comprising a stationary pan, a bridge extending over the upper part of said pan, a vertical shaft, means carried by said bridge and supporting said vertical shaft and holding it against rotation, a radially extending member mounted for rotation on said vertical shaft and extending over the pan towards the periphery thereof, a hydraulic driving motor mounted at the extremity of said radially extending member, a mixing unit secured on a driven shaft of said hydraulic motor for rotation thereby and depending into the pan, a pinion keyed to said driven shaft of the hydraulic motor, a gear wheel keyed to said vertical shaft and meshing with said pinion whereby a planetary motion is given to said rotary mixing unit about the axis of the pan, and a hydraulic fluid system for the hydraulic motor, a part of said system comprising annular groove means in said vertical



shaft, duct means extending longitudinally of said vertical shaft and communicating with said annular groove means and pipes extending between said annular groove means and the hydraulic motor.

3,160,400
MIXING MACHINES
Kenneth James Harrison, Gosforth, Newcastle-upon-Tyne, England, assignor to The Liner Concrete Machinery Company Limited, Gateshead, England
Filed Sept. 25, 1961, Ser. No. 140,285
Claims priority, application Great Britain, Sept. 26, 1960, 32,937/60
4 Claims. (Cl. 259—178)

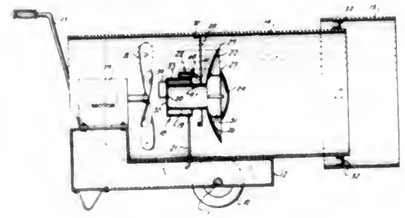


1. A mixing machine comprising a stationary pan, a motor supporting structure having a socket member positioned over the pan, a hydraulic driving motor having a casing and a shaft member drivingly associated with said casing so that rotation of the casing takes place when the motor shaft is held stationary and hydraulic pressure fluid is supplied to the motor, means fixedly positioning said motor shaft in said socket member whereby the motor is supported by said structure and said shaft is held against rotation, at least one arm secured to and extended outwardly from said casing of the hydraulic motor and having a part which depends into the mixing pan, a mixing device on the end of said part and positioned adjacent the base and side wall of the pan and conduit means passing through said fixed shaft of the motor for the supply of hydraulic pressure fluid to the motor whereby said casing is caused to rotate and to drive said mixing device around the pan.

3,160,401
SPACE HEATER WITH FLAME SPREADER
Paul Wollner, North Bergen, N.J., assignor to Aeroil Products Company, Inc., South Hackensack, N.J., a corporation of New Jersey
Filed May 23, 1962, Ser. No. 196,970
2 Claims. (Cl. 263—19)

1. In a space heater, a housing having an open forward end, a torch burner secured in fixed position within the housing to extend longitudinally thereof and including a casing having an open forward end located substantially medial of the length of the housing and having a burner nozzle adjacent the rear thereof, a shield secured in fixed

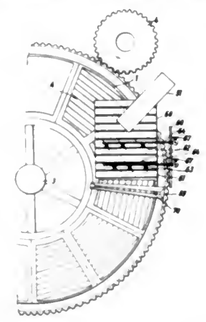
surrounding relation on the forward end of said casing and with the outer periphery of said shield arranged forwardly of the open end of said casing and in spaced relation from the inner periphery of the housing, a flame spreader secured in fixed position in confronting relation with the open forward end of said casing and with the outer periphery thereof disposed in spaced relation from said shield for receiving thereagainst the flame jet from the burner nozzle extending axially of the casing through the open forward end thereof and for deflecting and spreading the flame jet from said torch burner outwardly between said shield and spreader, said spreader being sectionally arcuate in formation and larger than the open end of said casing, so as to extend across the entire open end thereof, a motor driven fan mounted within said housing with the fan disposed rearwardly of the torch burner for directing a flow of air peripherally about said shield and forwardly thereof to thereby produce a suc-



tion between said shield and flame spreader for drawing the flame jet outwardly into the air stream to thereby heat the air stream propelled by the fan through the housing, said torch burner casing having a side opening adjacent the outer end thereof, a pilot burner including a casing secured in fixed position adjacent said torch burner and having a pilot nozzle at one end thereof, a baffle extending longitudinally within said casing and providing with said pilot burner casing a longitudinally extending air passageway on one side of said baffle and a flame passageway from said pilot burner on the other side thereof and a restricted space for the flow of air from said air passageway adjacent said nozzle, and said casing having one or more air inlets on one side of said baffle and a flame outlet on the opposite side thereof for directing the flame from the pilot nozzle toward said side opening in the torch burner casing for relighting the torch burner in the event that the same became extinguished.

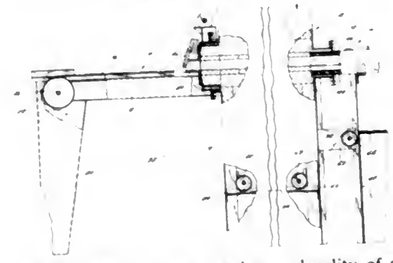
3,160,402
APPARATUS FOR THE ROASTING OF PELLETS
Kurt Meyer and Georg von Struve, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Mar. 29, 1963, Ser. No. 268,895
Claims priority, application Germany, Apr. 10, 1962, M 52,462; Aug. 3, 1962, M 53,782; Sept. 7, 1962, M 54,166
18 Claims. (Cl. 263—28)

1. In an apparatus for the heat hardening of pellets composed of fine grained ores, raw cement materials and the like, or the sintering of fine grained ores or the like, upon a circular rotating grate, the improvement comprising conveyor means mounted above said grate for charging material onto said grate, said conveyor means including movable conveying surface transporting means for carrying the material in the direction toward said grate and having a discharge edge formed by the reversal of the direction of motion of the surface transporting means by rotation about a horizontal axis and at a plurality of adjacent stationary dumping points spaced across the width of said grate to dump the material in quantities at a rate directly proportional to the distance between each dumping point and the center of rotation of said grate, respec-



tively directly proportional to the circle of said grate at a dumping point.

3,160,403
FURNACE CONSTRUCTION AND METHOD OF OPERATING THE CONSTRUCTION
William C. Diman, Warwick, and Martin J. Madden, Centredale, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed Sept. 25, 1961, Ser. No. 140,373
8 Claims. (Cl. 263—36)

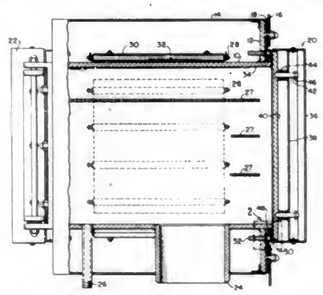


3. In a method of heat treating a plurality of articles in a heat treatment furnace that includes a first chamber, a second chamber located downstream of said first chamber and a cooling chamber located downstream of said second chamber, comprising the steps of moving said articles through said chambers in successive order while simultaneously circulating a reducing atmosphere in said first chamber and an oxidizing atmosphere in said second chamber, and cooling the heat treated articles in said cooling chamber while circulating said oxidizing atmosphere therein.

3,160,404
VACUUM OVEN MUFFLE SEAL
Frank A. Potenzo and Raymond L. Shearer, Kennebunk, Maine, assignors to The Baker Company, Inc., Biddeford, Maine, a corporation of Maine
Filed Feb. 17, 1961, Ser. No. 90,090
4 Claims. (Cl. 263—41)

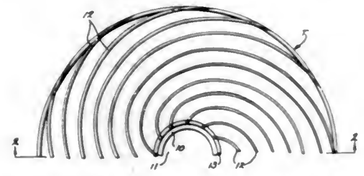
1. A vacuum oven having, in combination, a muffle having an open end, a resilient, non-metallic seal member extending entirely around the outside of said end with a relatively small portion thereof projecting from said end, the muffle having support means for the seal member in position to resist compression thereof toward said end, a liquid cooling ring surrounding the seal member in heat transfer contact therewith and separated from the muffle by the seal member, the seal member also extending beyond said open end and the cooling ring, and a door for the muffle having a pressure plate to en-

gage the seal member, a support to carry the pressure plate and to close about the end of the muffle, and spring suspension means engaged between said support and pressure plate, whereby the plate compresses the seal mem-



ber until the projection of the seal member beyond the end of the muffle is a very small value, said value depending upon a predetermined deflection of said spring suspension means produced by closure of said support about said end of the muffle.

3,160,405
CONVECTOR SPACE TRAYS
Augustus A. Straub, Cleveland, Ohio, assignor to A. A. Straub Co., Inc.
Filed Aug. 18, 1953, Ser. No. 374,924
2 Claims. (Cl. 263—47)



1. A fabricated convector space tray comprising a metal ring, a set of metal ribs attached to said ring and defining passages for gas flow therebetween, and lifting means comprising a metal annulus disposed within said ring, secured to said tray, and adapted to be engaged by lifting mechanism extending therethrough and to lift said tray and a load thereon.

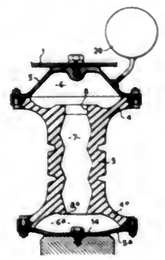
3,160,406
VEHICLE SUSPENSIONS
Ronald Sidney Dickinson, Osbaldwick, York, England, assignor to Armstrong Patents Co. Limited, London, England, a British company
Filed Jan. 8, 1963, Ser. No. 250,183
2 Claims. (Cl. 267—8)

1. In a vehicle suspension unit comprising a telescopic hydraulic shock absorber of generally cylindrical configuration and including a piston component telescopically engaged in and having one end projecting from a cylinder component, and a coil spring engaged on said shock absorber for compression and extension therewith, the improvement comprising a first spring abutment at the projecting end of the piston component, a second spring abutment intermediate the ends of the cylinder component, said coil spring being in compression and coaxially embracing the exterior of said shock absorber between said abutments, said spring comprising end turns each of a diameter closely conforming with the cylindrical periphery of said cylinder component and of a reduced diameter relative to the remaining spring turns, said spring having a maximum diameter at its central region and at regions on each side of said central region, and a plurality of further reduced diameter turns at least adjacent the end turn of said spring at said projecting end of said piston component, said further reduced diameter turns each



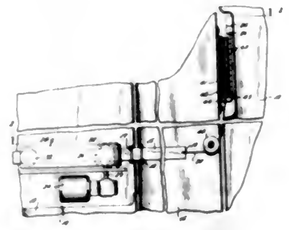
progressively increasing in diameter in a direction towards the maximum diameter turns and progressively decreasing in pitch in a direction from said maximum diameter to the spring end at which said further turns are situated.

3,160,407
RUBBER SPRING
Alexandre Vaugoyeau, Marseille, France, assignor to Etablissements Hutchinson (Compagnie Nationale du Caoutchouc), Paris, France, a French body corporate
Filed Feb. 27, 1962, Ser. No. 179,506
Claims priority, application France, June 1, 1961, 863,618
8 Claims. (Cl. 267—35)



1. A spring device for insertion between two elements for the purpose of providing an elastically yieldable connection between said elements, said spring device comprising a block having an axis and a first end and a second end, a first rigid member adapted to bear against one of said elements and located adjacent the first end of the block, a second rigid member adapted to bear against the other of said elements and located adjacent the second end of the block, the block having a first peripheral flange adjacent the first end and a second peripheral flange adjacent the second end, the first and second flanges having outer annular portions secured in a fluid-tight manner respectively to the first and second rigid members, the block and flanges being composed of an elastomer, the block being axially deformable and the flanges being capable of bending before compression of the block in operation of the spring device so that the first end and the first flange constitute a first deformable membrane and the second end and the second flange constitute a second deformable membrane, the first membrane and the first rigid member defining a first fluidtight cavity and the second membrane and the second rigid member defining a second fluidtight cavity, a large passageway extending through the block and putting the first cavity in communication with the second cavity, a source of gas located outside the block and rigid members, the passageway and the cavities constituting a fluidtight gas enclosure and a second passageway putting the source of gas in communication with the enclosure, the surface area of one of said membranes being smaller than that of the other membrane, whereby said one of the membranes is deformed before the other membrane in operation of the spring device.

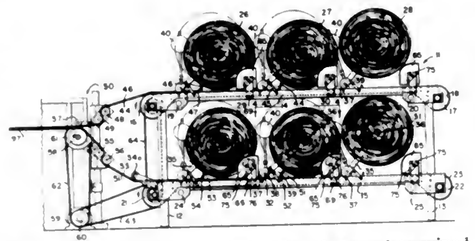
3,160,408
AUTOMATIC DOOR CLOSER
John W. Woods, Rte. 2, Gettysburg, Pa.
Filed Nov. 20, 1961, Ser. No. 153,279
5 Claims. (Cl. 268—3)



3. Apparatus for closing a door connectable with a jamb comprising a tape, means for driving said tape in one direction, a cable connected at one end to one end of said tape, a plate having a spindle mounted on said door, a sheave rotatably mounted on said spindle and having means for stopping rotation of said sheave in one direction, a detent pivotally mounted on said sheave, said detent having a foot extending substantially at right angles thereto, sprocket means rotatably mounted on said spindle, cam means on said sprocket means normally engageable with said detent foot, said cable being connected to said sprocket and extending over said detent foot, rack means mounted on said jamb whereby when said door is open and said means for driving said tape is energized the slack in said cable will be taken up and the door will be moved towards closed position until the sprocket engages said rack to rotate said sprocket and release said detent foot from said cam thereby permitting rotation of said sheave and permitting the detent foot to drive the sprocket against the rack to urge the door into fully closed position.

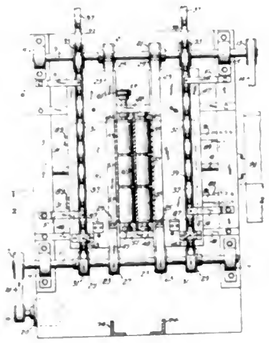
3,160,409
METHOD OF CORRECTING WEB MISALIGNMENT
Malcolm B. Lucas, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 8, 1962, Ser. No. 229,101
1 Claim. (Cl. 270—41)

A method for aligning at least one edge of a plurality of webs of soft, absorbent, tissue like sheet material having a relatively irregular surface, whereby adjacent webs, when misaligned, tend to remain so, which method comprises the steps of feeding a plurality of webs of said sheet material at substantially matched linear speed, guiding said webs of material into a pair of calendering rolls to form a multi-ply assembly with at least one edge of all of said webs normally in substantial edgewise alignment, infolding any protruding edge of any web which is misaligned before it passes through the calendering rolls



to produce said multi-ply assembly of a predetermined substantially uniform width.

3,160,410
APPARATUS FOR FOLDING SHEET MATERIAL
John Everson, 1920 Berkeley Way, Berkeley, Calif., assignor of one-third to George M. Oldenbourg, Oakland, Calif.
Filed June 26, 1962, Ser. No. 205,255
1 Claim. (Cl. 270—83)



In a tabloid or the like folding machine,
a pair of rolls adjacently disposed in substantially parallel relationship to each other,
a folding blade,
means mounting said blade for reciprocal movement in a plane lying intermediate said parallel disposed rolls,
means reciprocally driving said blade between a position removed from said rolls and a position bringing its approaching edge substantially into contact with the proximate surfaces of said rolls,
means for rotating said rolls with their proximate surfaces moving in a direction away from said blade,
means for positioning between said blade and said rollers, successive tabloids or the like to be folded, said means including
a pair of parallel endless tabloid carrying belts spaced within the width of such tabloid or the like with their tabloid carrying portions continuously movable in a plane between said rolls and said folding knife, and adapted to carry the same to said folding position,
each of said endless belts having longitudinally spaced stop lugs, with the lugs of the one belt oppositely located with respect to the lugs of the other belt,
means for timing the reciprocal movements of said blade to the arrival of each successive stop lug of said belts to a position placing the intended fold

line of such tabloid or the like in the plane of movement of said blade, said means including

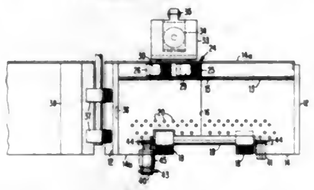
a drive connection to said belts such as to impart a linear velocity of movement to said belts necessary to effect such timing, and

means for assuring engagement of a tabloid or the like on said belts with the lugs ahead during travel with said belts, said means including

a pair of auxiliary endless belts paralleling said lug belts within the width of such tabloid or the like and adapted to cooperate in carrying the same,

and means for imparting to said auxiliary belts, a linear rate of travel exceeding that of said lug belts.

3,160,411
SHEET HANDLING APPARATUS
Michael Fiehl, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 29, 1962, Ser. No. 240,837
11 Claims. (Cl. 271—4)



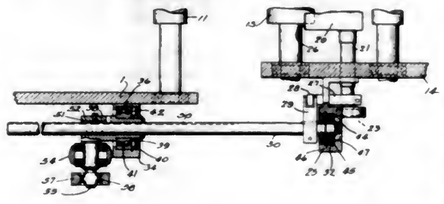
1. Apparatus for feeding sheets from a stack comprising:

means adjacent one end of said stack for receiving a portion of a sheet therein, said receiving means having a throat portion for receiving a single sheet edgewise therein and an enlarged portion for receiving a plurality of sheets edgewise therein;

separator means for offsetting in one direction the endmost sheet of said stack concurrently into both said portions of said receiving means; and

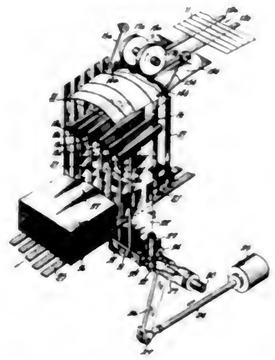
transport means for gripping said offset portion and moving the trailing edge of said sheet substantially transversely of the direction in which said sheet was offset through said throat portion and enlarged portion successively whereby said separator means is operable to move the margin of a succeeding sheet into said receiving means as the trailing edge of said transported sheet enters said enlarged portion.

3,160,412
ALTERNATOR PLATE DRIVE FOR CARTON BLANK MECHANISM
Peter Zernov, Wauwatosa, and Ralph A. Maas, Milwaukee, Wis., assignors to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin
Filed Mar. 20, 1963, Ser. No. 266,640
4 Claims. (Cl. 271—64)



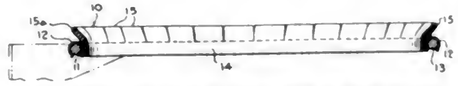
1. In-line carton blank forming apparatus comprising a blank stripper unit and a blank delivery unit longitudinally shiftable relative thereto, said delivery unit having an oscillatable alternator plate assembly mounted therein for deflecting blanks delivered thereto by said stripper unit, a longitudinally extending drive shaft extending between said units and having a connection with said plate plate for oscillating the latter, means carried by said stripper unit for oscillating said shaft and consequently said plate, a self-aligning bearing assembly means for mounting said shaft to said delivery and stripper units, and a sliding drive connection between said shaft and one of said assembly means.

3,160,413
METHOD AND APPARATUS FOR SUPPORTING STACKS OF SIGNATURES
Harry W. Faeber, Larchmont, N.Y., assignor to Time, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 31, 1961, Ser. No. 86,199
14 Claims. (Cl. 271—86)



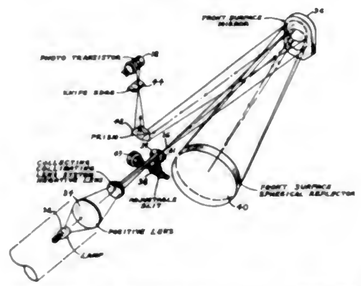
5. Apparatus for the support of a stack of folded sheets, the stack being of such a size normally resulting in a curling of the top surface of the stack, comprising a platform upon which said stack is positioned, the shape of said platform being such that it is inclined downwardly and arched downwardly substantially transversely to said inclination.

3,160,414
DEVICE FOR PRACTICING BASKETBALL SHOOTING ACCURACY
Wyndol W. Gray, 1000 Lane St., Akron, Ohio
Filed Mar. 14, 1962, Ser. No. 179,608
5 Claims. (Cl. 273—1.5)



1. A basketball shooting accuracy practice device, comprising: a member having means thereon for releasably attaching the same to a conventional basketball hoop; said member having thereon upstanding flexible means for gauging the arch of the ball over and through the hoop, without necessarily touching the same; said member being annular and including a rigid ring of smaller diameter than the hoop to fit within the same; said flexible means including a band of elastic material affixed to said ring and having integral peripherally spaced ears; and said ears being outwardly arched and terminating in peripheral edge portions adapted to overhang the hoop.

3,160,415
STRAFING TARGET USING SCHLIEREN EFFECT
Phillip M. Knapp, Timonium, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 20, 1961, Ser. No. 154,115
5 Claims. (Cl. 273—102.2)



1. An automatic hit detection system utilizing the Schlieren effect for detection of hits on a target, comprising the combination of:

wall means defining a parallelogram front opening forming the target front area, and extending rearwardly from said front opening thereby forming a tunnel;

detection means, mounted in a recess in the wall means, inside the tunnel, including a source of light mounted in front of a light collimating menas whereby a collimated beam of light is produced, slit means operatively mounted in front of said collimated light for controlling the amount of collimated light output, mirror means mounted in the path of said collimated light for reducing the length of the optical path of said light whereby the collimated light is reflected towards a circular reflector and then reflected back towards said mirror means and then re-reflected towards prism means mounted in the path of said collimated beam of light, the beam light output of said prism being partially obscured by a knife edge mounted in the light path and a photocell light detector mounted so as to receive the partially obscured collimated light beam from the knife edge;

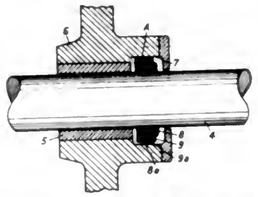
first amplifier means operatively connected to said detection means;

remote automatic scoring means, for scoring hits detected by said detection means, including a second amplifier means, said second amplifier means being operatively connected to said first amplifier means and to a gating circuit, said gating circuit being operatively connected to a counter and multi-vibrator means operatively connected between the input and output of said gate means for timing the on and off time of said gate means; and

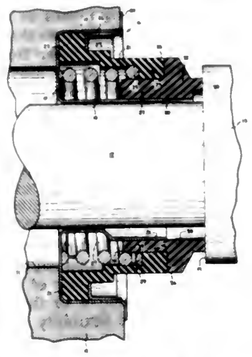
remote indicator display panel means, coupled to said scoring means, for displaying hits scored by said automatic scoring device.

3,160,416
CENTRIFUGALLY BIASED FLOATING SEAL RING OF HELICAL SPRING FORM
Hans Ryffel, Zurich, Switzerland, assignor to Dr. G. Dätwyler, Zurich, Switzerland, a citizen of Switzerland
Filed Mar. 29, 1963, Ser. No. 269,100
11 Claims. (Cl. 277—1)

1. A method of sealing a gap formed between a pair of relatively rotatable members by means of a helically wound spring-shaped sealing element, particularly against the axial passage of gaseous medium through said gap, comprising the steps of: mounting said sealing element for rotation in said gap on a rotatable member of said pair of relatively rotatable members, with the periphery of said sealing element spaced at a small clearance from said other relatively rotatable member, applying an axial initial tension to said sealing element to exert via said rotatable member a moment of friction on said sealing element which in the static condition of said relatively rotatable members is greater than the moment of friction exerted on said sealing element by said other relatively rotatable member, then imparting rotational movement to said rotatable member and therewith also to said sealing element in order to apply centrifugal force to said sealing element to expand such radially with increasing pressure in the direction of said other relatively rotatable member and to an extent sufficient to brake said sealing element relative to said rotatable member, whereby an equilibrium condition is reached between the moment of friction of said rotatable member on said sealing element and the moment of friction of said other relatively rotatable member on the periphery of said sealing element, said sealing element thereby assuming a rotational speed which is approximately equal to the mean of the rotational speeds of said relatively rotatable members, with said sealing element sealing said gap.



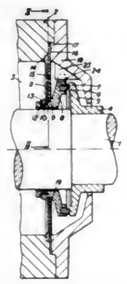
3,160,417
ABUTMENT-TYPE SEAL FOR ROTARY ELEMENTS
Peter A. Mueller, 815 S. Scoville Ave., Oak Park, Ill.
Filed June 6, 1962, Ser. No. 200,524
3 Claims. (Cl. 277—40)



1. An abutment-type seal for a rotational element comprising an annular shell formed to define an outer perimetral wall, an inner peripheral wall and a floor joining said walls, an annular, rubberoid boot having one end seated on said floor and closely fitting said outer wall but spaced outwardly from said inner wall, the other end of said boot having a radially-inwardly thickened flange, means disposed in said shell and engaging said boot to restrain the same against movement away from said floor, a coiled spring having one end seated on said floor and having its other end confined by engagement with the proximal surface of said flange, and a bearing ring separate from said boot and formed to provide, at

one end, a transaxial bearing surface directed away from said shell floor, the other end of said bearing ring being formed to provide a skirt snugly sleeved on the distal end of said inner wall and snugly telescoped within said flange, said skirt penetrating said flange to enter said other end of said spring and having an external diameter slightly exceeding the equilibrium internal diameter of said other spring end.

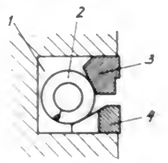
3,160,418
SPRING-LOADED SEAL WITH COAXIAL RELATIVELY ROTATING CONTACT FACES
Ulrich Max Willi Barske, An der Klinge, Altneudorf, near Heidelberg, Germany
Filed Apr. 4, 1961, Ser. No. 100,600
Claims priority, application Great Britain, Apr. 14, 1960, 13,471/60
11 Claims. (Cl. 277—90)



1. A rotary contact seal for sealing relatively rotatable members comprising co-operating relatively rotatable seal rings which make sliding contact with one another, one of the said rings being an axially movable seal ring, spring means comprising at least one circumfeerntial set of truncated sector-like leaf spring edgewise spaced from one another only by narrow gaps, said springs controlling said axially movable seal ring, rigid means rigidly clamping the outer region of said spring means as in a vice, said springs having their inner ends free so that they can act like beams fixed at one end, the inner free ends of the springs radially supporting the axially movable seal ring, means for axially locating said free inner ends of the springs in both directions in relation to the axially movable seal ring but so that they are free relatively to the said ring, the axially movable seal ring having a face responsive to axial fluid pressure to oppose fluid pressure transmitted thereto through the springs so that the contact pressure between the rings is controlled by the difference between the two opposing pressures, and diaphragm sealing means facially supported by the said springs and serving to bridge the said gaps for sealing the said axially movable seal ring to one of the said members and being so flexible relative to the springs as to leave the control of the elastic flexibility of the seal substantially to the said springs.

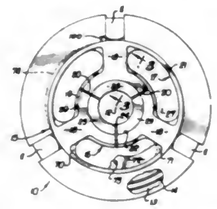
3,160,419
OIL REGULATING SEALING RING SYSTEM FOR INTERNAL COMBUSTION ENGINES
Rudolf Löhr, Burscheid, near Cologne, Germany, assignor to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, near Cologne, Germany, a corporation of Germany
Filed Aug. 4, 1960, Ser. No. 47,531
Claims priority, application Germany, Sept. 30, 1959, G 28,062
8 Claims. (Cl. 277—141)

1. A sealing ring system for disposition in an annular groove in an upright piston of an internal combustion engine for sealing oil from escape from the crankcase, comprising a pair of independently operable sealing rings of a size and configuration to be disposed in such a piston groove and respectively allocated to a flank thereof, said rings respectively having cylindrical glide surfaces for engagement with the cylinder wall surface of such an engine, each ring having a rear beveled side surface, said beveled side surfaces tapering toward one another and outwardly, forming an angular configuration, an expansion spring positioned in said angular configuration, said spring in cross-



section having a circular periphery, said spring having points of contact with said respective beveled tapering side surfaces to exert forces outwardly on the respective rings, the horizontal lines of force extending outwardly from the points of contact on each ring passing only through the lower portion of each respective ring and on the crankcase side of the center of gravity of each ring, whereby the edge of the glide surface portion of each ring facing in the direction of the crankcase exerts a greater pressure against the cylindrical wall than the remaining portion of the glide surface of each ring.

3,160,420
COLLET HOLDER
David M. Simpson, 2623 Beland Blvd., Redondo Beach, Calif.
Filed Feb. 4, 1963, Ser. No. 255,946
7 Claims. (Cl. 279—110)

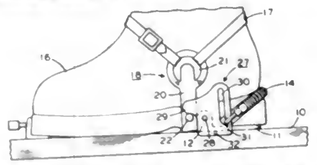


1. Improved collet holding apparatus, comprising a holder body having a central axis and including an outer ring extending continuously about said axis, circularly spaced work supports spaced from but closer to said axis than said ring and circularly spaced webs respectively connecting said supports to said ring, the ring being resiliently yieldable to deflect outwardly at locations spaced from said webs in response to inward deflection of said webs acting to displace said supports inwardly toward said axis.

3,160,421
SKI BINDING
Irving F. Bugg, Dalton, Mass.
(Washington Mountain Road, Becket, Mass.)
Filed May 2, 1963, Ser. No. 277,516
3 Claims. (Cl. 280—11.35)

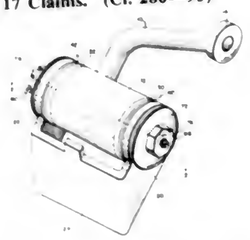
1. In a ski binding, a heel mounting means and a toe mounting means cooperating to permit release of a ski boot when subjected to predetermined forces, said heel mounting means comprising a heelplate mounted on a ski, said heelplate having a pair of upturned ears located thereon so as to be adjacent the sides of the ski boot heel, a rotatable member attached to the outside surface of each

ear, said member having a lobe portion pointing toward the front of the ski, a point of rotation located rearwardly of said lobe and a slotted section at right angles to said lobe located rearwardly of the point of rotation, said slotted section having a bottom termination which curves toward the rear of the ski; the ends of a tension-adjustable spring member being slidably tracked in said slotted sections, said spring being adapted to seat in an inclined groove in said heel when the ends of said spring are located at said bottom termination; said rotatable member having



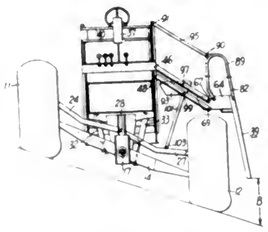
an appendage located on the lower portion and somewhat to the rear of the inside surface of the rotatable members, said appendage adapted to prevent the rotatable member from rotating in a direction which would cause said lobe portion to dip below a line parallel to the surface of said ski; said toe mounting means comprising a toe pivot means mounted on said ski and adapted to urge said ski boot rearwardly into engagement with said spring, said toe pivot means being further adapted to laterally pivot in response to predetermined torsional stress.

3,160,422
IDLER ARM BEARING ASSEMBLY
Paul L. Enegren, 4201 Irving St., Wichita, Kans.
Filed Aug. 20, 1962, Ser. No. 218,079
17 Claims. (Cl. 280—95)



1. In an idler arm construction of the type including an idler arm mounted for oscillation about a bolt, the improvement comprising said idler arm including a tubular hub having a bushing of synthetic resin fitted within one end thereof against rotation relative to the hub and the idler arm, said bushing of synthetic resin including as an integral part thereof a radially enlarged portion disposed outside the tubular hub and seated against said end of the latter, with the bolt being rotatably journaled through the bushing, means carried by the bolt that can be fixed against rotation about the latter disposed in spaced relation to the hub and defining an annular abutment facing toward the enlarged portion of the bushing, an annular bearing disposed about the bolt intermediate the abutment and the bushing and in sliding contact with the enlarged portion of the bushing along a contact surface generally symmetrical about the axis of the bolt, means for inhibiting rotation of the annular bearing relative to the bolt and also for accommodating axial alignment of the annular bearing and the bolt to any minor irregularity of the abutment as to symmetry of the side thereof facing the bushing about the axis of the bolt, said last means comprising a layer of deformable material of substantially greater frictional characteristics than the synthetic resin of the bushing and disposed between the abutment and the annular bearing, said layer of deformable material being securely bonded to at least one of the two last-mentioned elements and at least frictionally engaging the other, and means for retaining the hub on the bolt and for urging the hub toward the abutment, whereby the annular bearing and the layer of deformable material are subjected to axial compressive forces by the abutment and the bushing.

3,160,423
LADDER MOUNTING FOR HILLSIDE COMBINES
Jerry C. Boone, Independence, Mo., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 3, 1961, Ser. No. 142,705
13 Claims. (Cl. 280—165)



1. In a vehicle of the hillside combine type, the combination of a vehicle body including an operator's platform; an articulated parallelogram structure comprising an upper and a lower beam assembly having parallel, upper and lower pivot axes, respectively, in fixed, lengthwise extending relation to said vehicle body and adjacent to said operator's platform, and a connecting member having upper and lower pivot connections with said upper and lower beam assemblies on upper and lower axes, respectively, extending parallel to said fixed upper and lower pivot axes; a ladder rigidly connected with said connecting member; and actuating means operatively connected with said parallelogram structure for swinging the latter about said pivot axes on said vehicle body; said parallelogram structure, connecting member, ladder and actuating means being constructed, mounted and arranged so as to present the lower end of said ladder in upwardly spaced relation to level, uphill and downhill ground traversed by said vehicle.

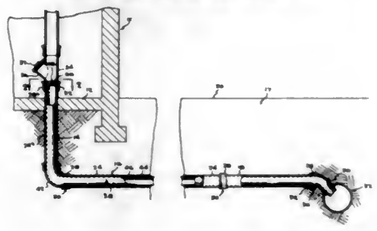
3,160,424
MANIFOLD FORMS
Robert N. Eichorn and Charles Holovka, Jr., Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 5, 1962, Ser. No. 235,443
5 Claims. (Cl. 282—11.5)



1. A manifold continuous form adapted to be fed by high-speed pin feeding means and which comprises,

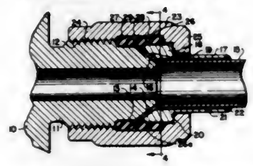
a plurality of strips in overlying relationship,
each of said strips being divided by a plurality of spaced transverse medial strip areas into a plurality of individual forms,
every other one of said medial strip areas being provided with a row of alternately disposed pin feed holes and chad fasteners arranged to provide a uniform distribution of pin feed holes across substantially the entire width of the form, and
the remaining ones of said medial strip areas being provided with a row of alternately disposed pin feed holes and splice holes arranged to provide a uniform distribution of pin feed holes across substantially the entire width of the form,
said chad fasteners serving to hold the individual strips together.

3,160,425
ANTI-ROOT SEWER PIPE LINER
Victor B. Sinnott, E. 32 Garland, Spokane 22, Wash.
Filed Dec. 22, 1960, Ser. No. 77,553
3 Claims. (Cl. 285—55)



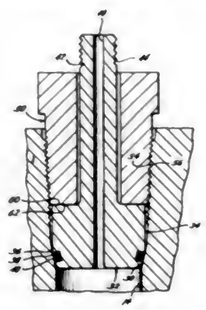
1. In combination, a pipe composed of a plurality of sections, joints connecting said sections, and an impervious non-metallic tubular liner extending through and conformed to the interior of the pipe and extending through the joints substantially to the ends of the pipe, and means securing the liner in place at one end of the liner, said liner being flexible and resilient, said securing means comprising an expanding ring engaged in the end of the liner and forcing the sidewall of the liner against the sidewall of the pipe, said expanding ring comprising first and second arcuate flat ring sections having first ends hinged together and having second free ends, and releasable interengaging means on the second ends of said first and second ring sections forcing the ring sections away from each other and against the sidewall of the liner.

3,160,426
PIPE COUPLING HAVING SECONDARY RESILIENT SEAL MEANS
Robert J. Faeser, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Mar. 13, 1961, Ser. No. 95,260
2 Claims. (Cl. 285—95)



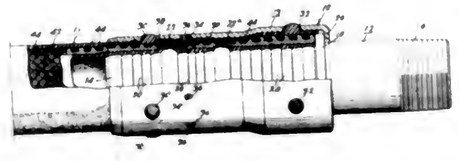
1. A pipe coupling comprising a first tubular member having a radially outwardly flared end, a second tubular member having a bevelled end complementary to the flared end of said first tubular member and opposed thereto, a sleeve mounted on said first tubular member and having a thickened end provided with a bearing face, said bearing face being seated against the flared end of said first tubular member in complementary relationship on the side thereof opposite from the side opposed to the bevelled end of said second tubular member, said sleeve including a skirt extending from the thickened end in surrounding relation to said first tubular member and fixedly secured thereto in leakproof relation therewith, the thickened end of said sleeve having a radial shoulder on the side thereof opposite from said bearing face, a coupling member encircling said first and second tubular members and being threadably secured at one end thereof to said second tubular member at a position thereon axially spaced from the bevelled end thereof, said coupling member having a radially inturned flange at its other end engaging said radial shoulder on the thickened end of said sleeve to hold the flared end of said first tubular member in sealing engagement with the bevelled end of said second tubular member, the internal surface of said coupling member cooperating with the peripheral surfaces of said second tubular member and the thickened end of said sleeve encircled by said coupling member to define an annular chamber, first and second resilient annular seals in said chamber, said first resilient annular seal engaging the internal surface of said coupling member and the peripheral surface of said second tubular member at one end of said chamber adjacent the threaded securement between said coupling member and said second tubular member, said second resilient annular seal engaging the internal surface of said coupling member and the peripheral surface of the thickened end of said sleeve at the other end of said chamber, and said first and second resilient annular seals being urged axially apart by fluid pressure leakage between the flared end of said first tubular member and the bevelled end of said second tubular member into said chamber to enhance the respective sealing effectiveness of said first and second resilient annular seals at the opposite ends of said chamber.

3,160,427
GAGE-PLUG CONNECTION FOR WELLHEAD ASSEMBLY
Paul J. Natho, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1961, Ser. No. 156,757
3 Claims. (Cl. 285—215)



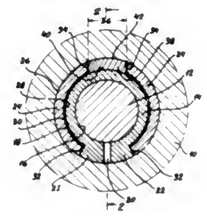
1. A non-rotating gage-plug connection for wellhead equipment comprising wellhead equipment defined in part by having a conduit extending therethrough, said conduit having a seal engaging surface located axially inward of its outer end, said seal engaging surface being a tapered surface flaring outwardly, the outer extremity of the conduit being flared outwardly and having pressure sealing type female threads formed therein, a gage-plug adapter having a cylindrical inner portion slightly smaller in diameter than the innermost female thread, the end of the cylindrical inner portion tapering inwardly to mate with the seal engaging surface of the conduit, an annular groove in the tapered end, an O-ring in said groove for sealing engagement with the seal engaging surface, the axial outer portion of the gage-plug adapter being of reduced diameter, an axial passage extending through the center of the gage-plug adapter, the outer end of the reduced outer portion provided with male threads to receive a gage valve, a retainer collar comprised of an annular member having a central passage of a slightly larger diameter than the outer portion of the gage-plug adapter telescoped over the outer portion, the peripheral outer surface being tapered and provided with male threads for engagement with the female threads in the conduit, the inner portion of the gage adapter being of such height that the inner end of the retainer collar is arrested by contact therewith prior to full thread engagement of the gage-plug retainer, the outer end of the gage plug retainer formed into wrenching faces.

3,160,428
HOSE COUPLING HAVING A DEFORMED FERRULE
Richard B. Goodall, Haverford, Pa., assignor to Mulconroy Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1960, Ser. No. 74,100
3 Claims. (Cl. 285—256)



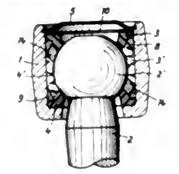
1. A coupling for a high-pressure hose having an inner and an outer covering layer of resilient flowable non-compressible material, such as rubber, and an intermediate reinforcing layer of a harder stronger material, the hose having all layers extending to the end in the coupling assembly, comprising in combination with the said hose, a tubular nipple having a hose supporting stem portion provided with a radial annular flange shoulder at its inner end engaged by the end of the hose, the stem portion extending into the end of the hose, said nipple stem portion having external grooves and ridges with material of the inside covering layer of the hose compressed into the grooves, said nipple stem portion also having at least one broad, high, rounded annular boss of considerably greater diameter than said ridges and being spaced inwardly from the outer end of the nozzle stem portion, a ferrule surrounding the outer covering layer of the hose and having an inwardly extending annular flange engaged behind the flange shoulder on the nipple, said ferrule having circumferential recesses spanning the zone above and at each side axially of annular boss with material of the outside covering layer of the hose compressed into the recesses, said ferrule being smooth on its outside surface from its outer end adjacent the end of the nipple stem back for a distance inward beyond said annular boss of the stem portion and having an annular series of tapped holes located axially inwardly beyond but near said annular boss, headless screws in said tapped holes with their outer ends clear of the outer smooth surface of the ferrule and their inner ends extending through the outside covering layer of the hose and engaging in depressions in said layer of reinforcing material, said ferrule from the outer end inward for a distance beyond the annular series of screws having an inner diameter smaller than the normal outside diameter of the hose over the outer covering layer.

3,160,429
DEVICE FOR FASTENING A HUB TO A SHAFT
Börge Martins, 65 Norre Farimagsgade, Copenhagen K, Denmark
Filed Mar. 15, 1960, Ser. No. 15,089
Claims priority, application Denmark May 26, 1959
22 Claims. (Cl. 287—52)



1. A device for fastening a hub to a shaft, comprising in combination; an inner annular part having an inner face for engagement with said shaft, and an outer face; said inner annular part being split by means of a slot; said inner annular part being provided at each side of said slot with an outwardly extending projection; at least one curved flap being arranged outside said inner annular part, said flap having an outer face for engagement with the wall of the hub bore, and an inner face spaced from said outer face of said inner annular part, said flap having its one end fitting the adjoining one of said two projections; the other end of said flap and the other of said two projections defining between them a gap; means being arranged bridging said gap and operable to engage and to exert adjustable pressure between said other flap end and other projection.

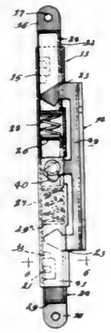
3,160,430
BALL AND SOCKET JOINTS
Rudolf Gottschald, Osterath, Germany, assignor to Viktor Langen, Dusseldorf-Oberkassel, Germany
Filed June 11, 1962, Ser. No. 201,655
Claims priority, application Germany, June 27, 1961, E 21,294
7 Claims. (Cl. 287—87)



1. A ball and socket joint comprising in combination
a stud having a ball head at one end,
a housing receiving said ball head and having an opening for said stud at one end,
a pair of bearing cups arranged between said housing and said ball head and disposed one on each side of the equator line of said ball head in the axial direction of said stud,
said bearing cups having axially extending and spaced recesses at the inner end defining tongues extending across said equator line,
said bearing cups being assembled to provide an intermeshing of said tongues of one of said bearing cups with said recesses of the other of said bearing cups,
the length of said recesses being greater than the length of said intermeshing portion of said tongues to provide a free space at the base of said recesses in said assembled position of said bearing cups,
a peripheral groove in each bearing cup on its outer surface above said recesses and communicating with

said free space to provide interconnection of lubricant means between said recesses and said grooves of said bearing cups.

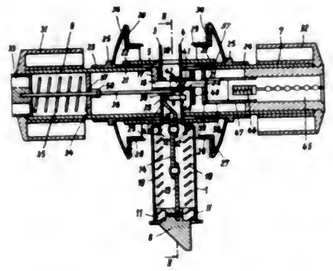
3,160,431
LATCH ASSEMBLY FOR MEDICINE CABINETS
Ralph F. Anderson and Charles G. Hallgren, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,413
20 Claims. (Cl. 292—42)



10. A safety latch mechanism for a medicine cabinet or the like including a cabinet member and a manually movable closure member, comprising a latch assembly mounted on one of said members and a strike member on the other, said latch assembly including a housing open at its opposite ends and having a least one opening along one side thereof, latch members longitudinally movable in said housing including opposed pusher members and an intermediate pusher between the opposed pushed members, latching means on said latch members cooperating with said opening in said housing, resilient means between each of said opposed pusher members and the intermediate pusher urging the latch members to their latched positions, and said strike member including complementary latching means cooperating with said latching means on the latch members, said latch members being manually actuated simultaneously to their unlatched position to release said strike member.

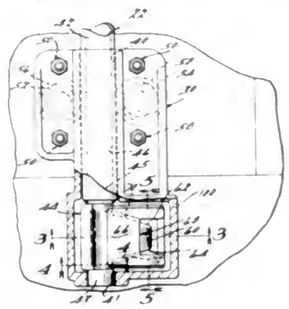
3,160,432
LATCH BOLT LOCK
Alois Crepinsek, 729 Woodland Drive, Santa Barbara, Calif.
Filed Sept. 1, 1961, Ser. No. 135,584
Claims priority, application Germany, Sept. 1, 1960, C 22,259
8 Claims. (Cl. 292—167)

1. A latch bolt lock assembly, comprising, a latch bolt casing, a latch bolt assembly within said casing, an open-ended cylindrical casing having a transverse opening in its side wall into which a rear section of said latch bolt casing is received, so that both casings are held rigidly with respect to each other, an inner cylindrical drive sleeve rotatably supported within one end of said cylindrical casing, and an outer cylindrical drive sleeve rotatably supported within the other end of said cylindrical casing, both of said drive sleeves having a door knob on the free end thereof, a pivoting arm and connecting linkage connected to said latch bolt, a rotatable shaft which extends through said inner section of said latch bolt casing walls and is rigidly connected to said pivoting arm, said rotatable shaft being connected with said inner drive sleeve by a transverse arm which is integral with said rotatable shaft, a spring-biased coupling and locking assembly rotatably and shiftably mounted on said rotatable shaft and a wall of said latch bolt casing, said coupling and locking assembly being in direct continual contact with said outer drive sleeve, said coupling and locking assembly including first means engageable with said latch bolt casing wall in one position thereof to lock said



outer drive sleeve, and in another position thereof having second means to couple both of said drive sleeves, and control means disposed within said inner drive sleeve which engages said coupling and locking assembly for axially shifting said coupling and locking assembly to the locked position.

3,160,433
DOOR LOCK
George Chieger, Birmingham, and Harold J. Borneman, Detroit, Mich., assignors to Fruehauf Corporation, a corporation of Michigan
Filed June 18, 1963, Ser. No. 288,785
3 Claims. (Cl. 292—241)



1. An anti-rack door lock for a vehicle having a door pivotally supported within a complementary door frame, said lock comprising

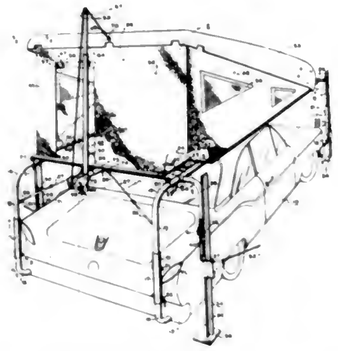
a lock frame rigidly attached to the vehicle door having a box-like shroud overlying the door frame, the shroud on said frame having an aperture facing the door frame and an outwardly divergent truncated conical internal recess therein,

a keeper fixture rigidly attached to the door frame having a truncated conical portion complementary to the shroud on said lock frame and acceptable therein to absorb racking forces having a vector generally parallel to the axis of rotation of the door relative to the door frame and a tongue keeper element spaced from said door frame, and

a locking tongue element rotatably supported by said lock frame at two axially spaced points and movable between a locked condition and an unlocked condition, said locking tongue element having a tongue

portion engageable with the tongue keeper element on said keeper fixture to retain the door in the locked condition.

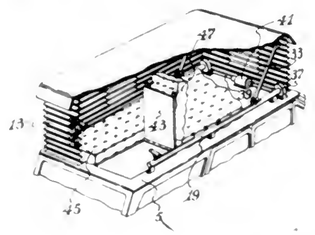
3,160,434
COLLAPSIBLE CABIN AND ACCOMMODATING SUPPORT STRUCTURE FOR AUTOMOBILES
Edward B. Hedgepeth, 2819 St. Marys Way, Salt Lake City, Utah
Filed Apr. 19, 1962, Ser. No. 188,742
6 Claims. (Cl. 296—23)



1. For mounting to and support by an automobile, in combination, a support frame having a rearwardly extending stub connection, a floor secured to and above said support frame, collapsible wall panels secured at their lower margins to said floor, a rigid roof member, said wall panels being secured at their upper margins to said roof member, means hinging said roof member at a forward extremity thereof to said floor for pivotal movement about a horizontal axis transverse to said automobile, said roof member being supported by said frame and encasing said collapsible wall panels when disposed in a horizontal position, and means releasably secured to said support frame rearwardly thereof and also to said roof member at a rear portion thereof for hoisting said roof member, pivoting the latter about said horizontal axis, to provide an open enclosure between said wall panels, floor and roof, said hoisting means comprising an extensible boom, stub connection means affixed to said boom for releasably securing said extensible boom to said rearwardly extending stub connection of said support frame in an upright position, a winch fixedly disposed at a lower extremity of said boom, an elongate connector guide disposed at the tip of said boom, and elongate connector means wound about said winch, passing through said guide, and releasably secured to said roof member at the rearward margin thereof.

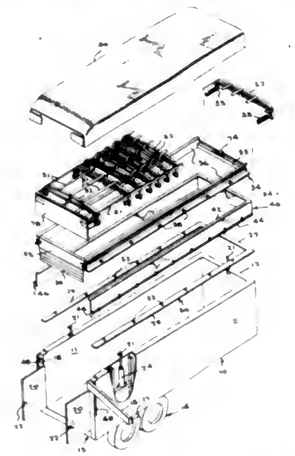
3,160,435
AUTOMOTIVE VEHICLE WITH SLEEPING COMPARTMENT
Albert C. Smith, 11410 E. Newton Place, Tulsa, Okla.
Filed Apr. 5, 1963, Ser. No. 271,023
1 Claim. (Cl. 296—23)

In combination with an automotive vehicle having a roof and sides, a sleeping compartment mounted on the roof of the vehicle and comprising a rigid top and a plurality of side walls which are flexible to permit raising and lowering the top, the rigid top including downwardly depending marginal flanges that extend below the roof of the vehicle and overlie and contact the sides of the vehicle on all sides of the vehicle and entirely about said rigid top in the lowered position of the top, means for raising and lowering the top, said means comprising a pair of rotatable shafts extending lengthwise of the vehicle, each shaft having oppositely screw-threaded end portions, screw-threaded collars mounted one on each screw-threaded end portion of each shaft, each collar having an upstanding ear, a stationary horizontal guide tube fixedly secured along each side of the vehicle and extending lengthwise of the vehicle, each tube having at least one slot therethrough extending lengthwise of the upper side of the tube, one of said shafts being disposed in each of said tubes with each said ear extending upwardly through a said slot, rigid links swingably interconnecting said ears and said rigid top, the links associated with each said



shaft extending upwardly away from each other, and drive means for simultaneously rotating both shafts selectively in either direction thereby simultaneously to move toward or away from each other both members of the pair of collars associated with each shaft so as to lower or raise said rigid top, respectively, said drive means comprising a motor mounted on said roof at one end of said roof and beneath said rigid top, drive shaft means extending in opposite directions from said motor, and means drivingly interconnecting the ends of the drive shaft means and one end of each of said screw-threaded shafts.

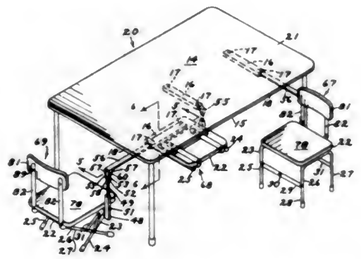
3,160,436
TARPAULIN SUPERSTRUCTURE FOR TRAILERS
Kenneth J. Duddleston, 3010 S. Quinn St., Chicago, Ill.
Filed July 6, 1962, Ser. No. 208,024
2 Claims. (Cl. 296—105)



1. In combination with a trailer body having spaced side walls and a front wall, elevating and lowering means supported on said walls, frame means overlying upper edges on said walls and secured to said elevating and lowering means for vertical movement relative to said

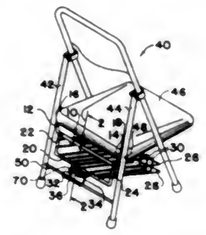
upper edges, longitudinally disposed track means on each side of said frame means over said side walls, track extension means slidable in each of said track means adjacent said front wall from a first position generally inwardly of said front wall to a second position cantilevered generally outwardly of said front wall, a plurality of bows extending transversely of said body between said track means and supported thereon for movement longitudinally of said side walls, collapsible cover means supported by said bows and forming a top over said body when said bows are in predetermined longitudinally spaced relationship, and means for moving said bows from said spaced relationship to a lesser spaced relationship wherein said cover is supported partially outwardly of said front wall with said track extension means in said second position and the top of said body is substantially uncovered.

3,160,437
SEATING DEVICE AND SUPPORTING STRUCTURE THEREFOR
Van B. Hill, Wiggins, Miss., assignor of one-fourth to Jack Parsons, Wiggins, Miss., and one-fourth to Leander S. Van Landingham, Jr., Washington, D.C.
Filed Nov. 12, 1963, Ser. No. 322,654
2 Claims. (Cl. 297—143)



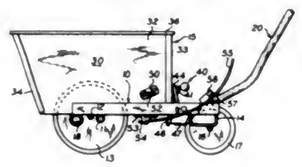
1. A seating device comprising a first support and a second support, the first support being above the second support, a seating means, the seating means including a seat and a seat supporting means, the seat supporting means normally resting upon the second support when the seating means is in use and supporting the seat in a position above the first support, a mounting means, the mounting means being attached to the second support, an elongated member, the elongated member being slidably carried by the mounting means and movable between first and second positions, connecting means, the connecting means being attached to a portion of the elongated member and to the seating means to thereby connect the same, the mounting means and elongated member including means responsive to movement of the elongated member between the said first position and the said second position for varying the height that the portion of the elongated member which is attached to the connecting means and the seating means connected thereto are held above the second support, the elongated member being tiltable and the said means for varying the height being effective to tilt the elongated member to thereby move the said portion attached to the connecting means downward upon movement of the elongated member from the said first position to the said second position, the seating means being held in a position whereby the seat supporting means is suspended above the second support when the elongated member is in the first position, and the seating means being held in a position whereby the seat supporting means rests on the second support when the elongated member is in the second position.

3,160,438
HOLDER FOR BOOKS AND THE LIKE
Paul G. Davis, 246 S. Delos, Haysville, Kans.
Filed Sept. 18, 1961, Ser. No. 138,698
3 Claims. (Cl. 297—192)



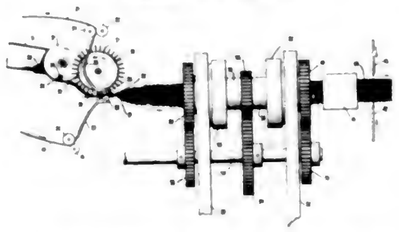
3. A holder for books and the like comprising, in combination, an elongated rod, said rod having a straight center portion and projecting end portions having hooks formed thereon in mirror image relation, a U-shaped rod secured in the end portions to said first-named rod to form an opening therewith, two rigid U-shaped side members secured in the end portions to the side portions of said last-named rod, and a plurality of other rigid wire members, each of said last-named wire members being rigidly secured in an intermediate portion to the intermediate portion of said side members and secured in the end portions to said rod members, and hook means formed from two of said last-named wire members and projecting from said last-named rod in a direction substantially opposite from said hooks on said first-named rod, said holder being constructed and adapted to be mountable on a folding chair or the like with said hooks and said hook means receiving portions of the chair to mount said holder thereon.

3,160,439
HAND DUMP TRUCK
Harry D. Kazakowitz, 1849 Albemarle Ave., East Meadow, N.Y.
Filed June 27, 1963, Ser. No. 291,076
3 Claims. (Cl. 298—2)



2. A hand dump cart comprising, in combination, a frame, a front wheeled transverse axle secured to said frame spaced longitudinally from the front end thereof, a rear wheeled transverse axle secured to said frame toward the rear end thereof, a handle rigidly secured to said frame and extending rearwardly therefrom, a dump body including a bottom wall and upstanding side walls, a transverse pivot member secured to said frame at the front end thereof, means spaced rearwardly of the forward bottom edge of said dump body pivotally connecting said body to said pivot member, and a stop member secured to said frame rearwardly of said pivot member and adapted to be engaged by the bottom wall of said body when said body pivots about said frame through an angle of substantially 180 degrees.

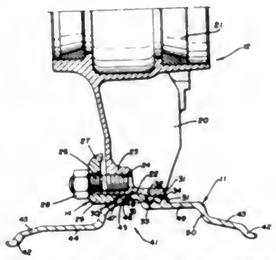
3,160,440
CONTINUOUS TWISTER AND FEEDER MECHANISM FOR BRUSH MACHINES OR THE LIKE
Joseph T. Gelardi, Yonkers, N.Y., assignor to American Brush Machinery Co., Inc., Mount Vernon, N.Y., a corporation of New York
Filed Mar. 1, 1961, Ser. No. 92,657
22 Claims. (Cl. 300—2)



1. A brush wire and bristle feeder mechanism comprising a plurality of spaced wire feed jaws each adapted to accommodate a strand of wire, wire feeder means for simultaneously drawing a strand of wire through each of said wire feed jaws, and bristle feeder means for depositing bristles between said strands of wire in the space separating said wire feed jaws.

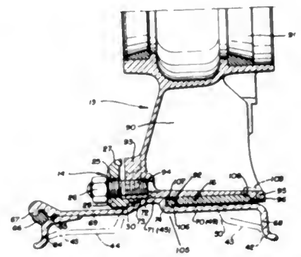
9. A progressive brush twisting device comprising first and second hollow, rotatable members each adapted to receive a twisted brush body and to permit passage of said brush body therethrough, means within each of said hollow members for mechanically engaging the bristles of said brush body, and means operable to rotate each of said hollow members.

3,160,441
WIDE BASE RIM AND WHEEL ASSEMBLIES
Daniel A. Walther and William D. Walther, Dayton, Ohio, assignors to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Filed July 19, 1961, Ser. No. 125,241
3 Claims. (Cl. 301—12)



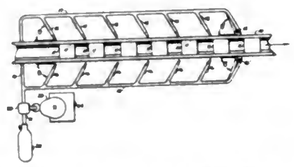
3. A rim and wheel assembly for wide bead tires, comprising, a wheel having a felly surface on the outward ends of radially extending spoke members and a radially outwardly directed flange portion at the axially inner end of each felly surface, the axially outer face of each flange portion having a surface oriented substantially perpendicularly to the rotational axis of the wheel, a plurality of bolt-supported clamp lugs having a lateral portion extending axially inwardly along said felly surfaces and terminating in a beveled rim engaging surface, and a rim having peripheral flanges for seating the tire beads, a relatively wide base portion connecting the bead flanges, and a relatively narrow radially inwardly directed rib member formed integrally with and located medially of said base portion, the radially inward face of said medial rib being flat and horizontal to provide an annularly continuous axially extending surface seating said rim against said felly surfaces, the axially inner side of said medial rib being oriented substantially perpendicularly to the rotational axis of the wheel to provide an annularly continuous surface positioning said rim in relation to said felly flange portions, the axially outer side of said medial rib being radially inclined to provide an annularly continuous surface in wedging engagement with the beveled surfaces of said clamp lugs.

3,160,442
RIM AND WHEEL ASSEMBLIES
William D. Walther and Daniel A. Walther, Dayton, Ohio, assignors to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Original application July 19, 1961, Ser. No. 125,241. Divided and this application Dec. 11, 1963, Ser. No. 331,082
8 Claims. (Cl. 301—12)



1. A rim and wheel assembly for wide bead tires, comprising, a wheel having a relatively wide felly surface on the outward ends of radially extending spoke members and a radially outwardly directed flange portion at the axially inner end of each felly surface, an annular spacer band having an axially inner face for seating against said wheel flange portions, and a rim having peripheral flanges for seating the tire beads, a relatively wide base portion connecting the bead flanges, and a relatively narrow radially inwardly directed rib member located medially of said base portion, the radially inward face of said medial rib having an axially extending surface for seating against said felly surfaces, the axially inner side of said medial rib being oriented to provide a surface for seating against the axially outer face of said spacer band.

3,160,443
APPARATUS FOR PNEUMATICALLY CONVEYING ARTICLES
Richard A. Harris, High Point, and William R. Walter, Jr., Greensboro, N.C., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1962, Ser. No. 232,925
7 Claims. (Cl. 302—2)



1. In a penumatic conveyor for advancing articles along a path,

oppositely disposed pairs of nozzles positioned along the path at acute angles with respect to said path, and

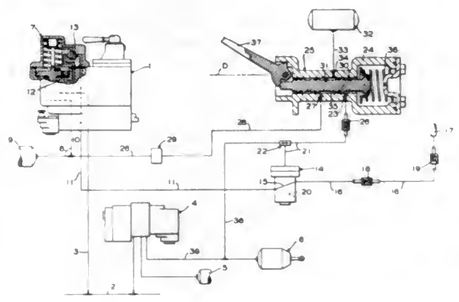
means for applying air pulses to said nozzles to advance articles positioned between the pairs of nozzles.

3,160,444

FLUID PRESSURE BRAKE APPARATUS WITH PERIODIC ACKNOWLEDGEMENT TYPE SAFETY CONTROL

Harry M. Linhart, East McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Dec. 20, 1962, Ser. No. 246,210
6 Claims. (Cl. 303—19)



1. A fluid pressure safety control system for use on a railway type vehicle, said safety control system comprising:

(*a*) a control pipe normally charged with fluid at a preselected pressure and in which a reduction in excess of a certain amount from said preselected pressure is effective to initiate a penalty control operation,

(*b*) an atmospheric vent pipe via which fluid under pressure may be released from said control pipe at a restricted rate,

(*c*) a relay valve device having a control chamber and being interposed between said control pipe and said vent pipe for controlling communication therebetween, said relay valve device comprising:

(i) valve means biased toward an open position, in which said control pipe is in communication with said vent pipe for effecting release of fluid under pressure from the control pipe, and being operable responsively to fluid in said control chamber at a pressure above a certain value to a closed position in which said communication is cut off and venting of said control pipe terminated,

(*d*) a delivery pipe via which pressurized fluid may be delivered to said control chamber of said relay valve device,

(*e*) a timing reservoir chargeable with pressurized fluid,

(*f*) a supply pipe via which fluid at a preselected pressure in excess of said certain pressure is supplied to said timing reservoir,

(*g*) a manually operable valve device operatively interposed between said supply pipe and said timing reservoir and between said timing reservoir and said delivery pipe, said manually operable valve device being selectively operable from one position in which a first communication is established between said supply pipe and said timing reservoir for charging said reservoir with fluid at said preselected pressure, to a different position in which said first communication is cut off and a second communication is established between said timing reservoir and said delivery pipe for causing fluid at a pressure in excess of said certain pressure to be delivered from said timing reservoir to said control chamber of said relay valve device, and

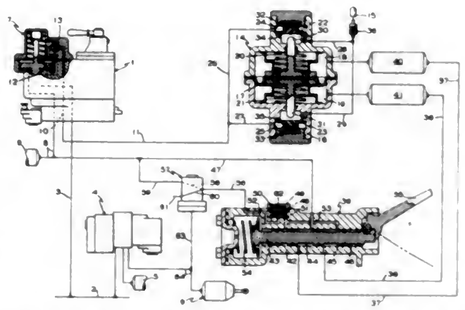
(*h*) an atmospheric vent choke interposed in said delivery pipe and via which pressurized fluid in said timing reservoir and said control chamber is reduced, when said manually operable valve means is in its said different position, to a value below said certain value after a prescribed interval of time for causing said valve means to be restored to its open position.

3,160,445

FLUID PRESSURE BRAKE APPARATUS WITH PERIODIC ACKNOWLEDGEMENT TYPE SAFETY CONTROL

Richard L. Wilson, Trafford, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed May 22, 1963, Ser. No. 282,413
6 Claims. (Cl. 303—19)



1. A fluid pressure safety control system for use on a railway type vehicle, said safety control system comprising:

(*a*) a control pipe normally charged with fluid at a preselected pressure and in which a reduction in excess of a certain amount from said preselected pressure is effective to initiate a penalty control operation,

(*b*) atmospheric vent means via which reduction of fluid pressure in said control pipe may be effected at a restricted rate,

(*c*) a double-acting valve device interposed between said control pipe and said atmospheric vent means for controlling communication therebetween, said double-acting valve device comprising:

(i) a first valve having a seated position in which communication between said control pipe and said atmospheric vent means is closed and being operable to an unseated position in which such communication is open,

(ii) a second valve disposed oppositely to said first valve and having a seated position in which communication between said control pipe and said atmospheric vent means is closed and being operable to an unseated position in which such communication is open,

(iii) a piston operably disposed between said first and second valves and having arranged adjacently to opposite sides thereof respective fluid pressure control chambers, said piston being biased toward a neutral position, in which both said first and said second valves are in their respective seated positions, and being operable out of its said neutral position, in response to a fluid pressure differential between respective pressures prevailing in said oppositely arranged control chambers, to either a first position in which operation of said first valve to its unseated position is effected, or to a second position, in which operation of said second valve to its unseated position is effected, depending upon the direction of the resultant differential force between the opposing pressures in said control chambers,

(*d*) pipe means via which pressurized fluid may be supplied to one and released from the other of said oppositely arranged control chambers concurrently, and

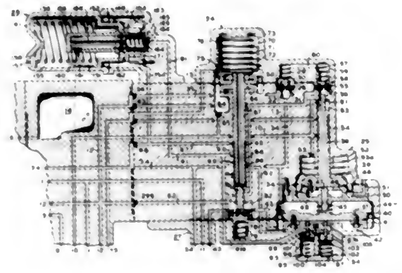
(*e*) control means interposed in said pipe means for alternately effecting said concurrent supply of pressurized fluid to one of said control chambers and release thereof from the other of said control chambers for reciprocably changing the direction of said resultant differential force to cause reciprocating movement of said piston between its said first and said second positions.

3,160,446

RAILWAY BRAKE CONTROL VALVE DEVICE

Glenn T. McClure, McKeesport, and Thomas F. Hursen, Monroeville, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Oct. 30, 1961, Ser. No. 148,425
7 Claims. (Cl. 303—36)



1. In a railway car fluid pressure brake apparatus, in combination, a normally charged brake pipe, a brake cylinder device, a normally charged supply reservoir, a service valve device of the graduated application and graduated release type responsive to varying degrees of reduction of brake pipe pressure relative to an opposing constant control pressure for effffecting operation of said service valve means to establish in the brake cylinder device corresponding degrees of pressure and responsive to varying degrees of increase of pressure in the brake pipe following a brake application to cause said service valve means to operate to effect corresponding reductions of the pressure in the brake cylinder device, and valve means responsively solely to an increase in brake pipe pressure of more than a certain amount above the existing brake pipe pressure during a brake application for effecting substantially instantaneous equalization of brake pipe pressure and the opposing control pressure to thereby cause operation of said service valve means to effect a complete release of pressure from the brake cylinder device.

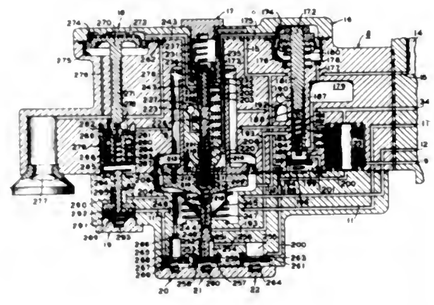
3,160,447

RAILWAY BRAKE CONTROL VALVE DEVICE WITH CONTINUAL QUICK SERVICE FEATURE

Glenn T. McClure, McKeesport, and Thomas F. Hursen, Pitcairn, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

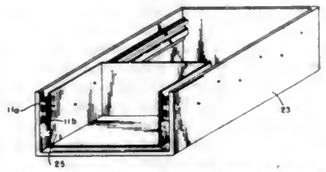
Original application Oct. 30, 1961, Ser. No. 148,425. Divided and this application Mar. 18, 1964, Ser. No. 352,750
4 Claims. (Cl. 303—83)

1. A railway car fluid pressure brake apparatus of the type comprising a normally charged brake pipe, quick service valve means including a movable abutment subject opposingly to brake pipe pressure acting in a brake pipe chamber at one side thereof and to the pressure in a quick action chamber on the opposite side thereof chargeable through a restricted communication from said brake pipe, a quick service volume, continual quick service valve means including a movable abutment subject opposingly to an operating fluid pressure in an operating chamber on one side thereof and to a biasing force and the pressure established in a balancing chamber on the opposite side thereof, means providing communication between said quick service volume and said balancing chamber to cause pressurization and venting of pressure in said balancing chamber in correspondence with that in the quick service volume, said quick service valve means being operative responsively to the reduction of brake pipe pressure in the brake pipe chamber relative to the pressure in the quick action chamber from a normal position to an operated position in which it supplies an operating pressure from the brake pipe chamber thereof to the operating chamber of said continual quick service valve means, thereby to cause operation of said continual quick service valve means from its normal position to an operated position in which there is established communication via which fluid under pressure is vented from the brake pipe to said quick service volume,



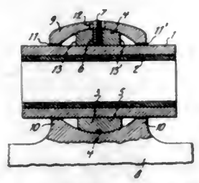
a reset volume, said continual quick service valve means also being effective in its operated positioin to establish communication through which said reset volume is vented to atmosphere, said continual quick service valve means being restored to its normal position responsively to build-up of pressure in the balancing chamber thereof in correspondence with the build-up of pressure in the said quick service volume substantially to the pressure existing in the operating chamber of said continual quick service valve means, said continual quick service valve means being effective in its normal position to establish communication through which the quick service volume is vented to atmosphere and also to establish communication between said quick action chamber and said reset volume to cause a reduction of pressure in the quick action chamber, thereby to cause operation of said quick service valve means to its normal position in which it establishes communication through which the operating pressure in the operating chamber of the continual quick service valve means is vented to atmosphere, thereby to condition said continual quick service valve means for subsequent operation upon a subsequent operation of the quick service valve means from its normal to its operated position responsively to a further reduction of brake pipe pressure.

3,160,448
SLIDING GUIDE
Miles H. Abernathy, 118 Hiawatha Ave., Oceanport, N.J., and Charles H. Dowen, 120 Maple Ave., Eatontown, N.J.
Filed Oct. 3, 1962, Ser. No. 228,204
2 Claims. (Cl. 308—3.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A supporting slide comprising a mating pair of identical elongated members, each of said members being of a cross section comprising a T slot and an adjacent T section of a size sufficiently smaller to fit within the T slot of the other member and wherein one surface of the T section is also the side of the adjacent slot.

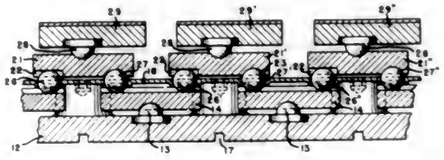
3,160,449
SELF-ALINING BEARINGS
Martin Scott, Valhalla, N.Y., assignor to Metallized Carbon Co., Inc., Ossining, N.Y., a corporation of New York
Filed Dec. 28, 1961, Ser. No. 162,666
4 Claims. (Cl. 308—72)



1. A self-alining bearing comprising, a support, an annular housing for a bearing on said support, the interior of the housing being largely spherical, a ring within the housing having an arcuate outer surface in direct bearing contact with said interior and having flattened ends, the axial thickness of the ring between said flattened ends being less than the diameter of the spherical interior part of the housing, the housing having central openings, at least one of said openings being enlarged so that when the ring is disposed in the housing with its axis at an angle to the axis of the housing, the ring can be removed from within the housing by way of the enlarged opening, a sleeve extending through the ring, a threaded opening on a side of said ring passing completely thru said ring, said opening being radial and transverse to the axis of said ring, a corresponding hole passing thru said spherical portion of said housing centrally thereof and of larger diameter than said opening and in alinement with said ring when in operative position, and a set screw of greater lengths than the thickness of said ring extending through the housing and through the ring and engaging against the sleeve, said set screw extending at least into said hole.

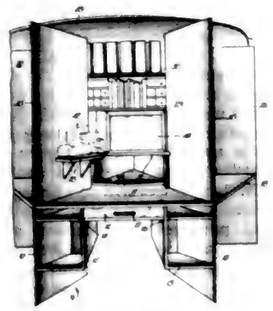
3,160,450
THRUST BEARING
Joseph A. Gentiluomo, Schenectady, N.Y., assignor to Mechanical Technology Incorporated, Latham, N.Y., a corporation of New York
Filed Nov. 16, 1962, Ser. No. 238,122
4 Claims. (Cl. 308—160)

1. In combination with a rotating shaft and thrust collar, a self-equalizing thrust bearing comprising a base ring, equalizing means located within said base ring, a plurality of thrust receiving members operatively connected to said equalizing means, said equalizing means including a plurality of pivot members attached to a surface of said base ring, first means engaging and supported by said pivot members, a depression formed in each element of said first means, a plurality of ball bearings located in each said depression, a second means



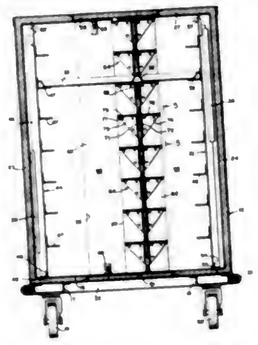
engaging and supported by said ball bearings, said second means having a plurality of depressions formed in each element thereof with certain of said plurality of depressions accommodating said ball bearings and another of said plurality of depressions accommodating a pivot member, each said pivot member engaging and supporting one of said thrust receiving members for movement in more than one plane.

3,160,451
INDEPENDENT STUDY CENTER CONSTRUCTION
Robert B. Lewis, P O. Box 262, Aspen, Colo.
Filed Feb. 6, 1962, Ser. No. 171,446
2 Claims. (Cl. 312—194)



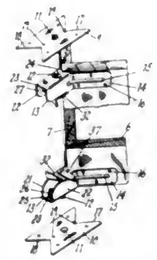
1. A device for facilitating study and work on the part of a plurality of students in independent study areas while utilizing a single source of study materials, comprising; a work table, a plurality of vertically disposed, radially extending panels dividing said work table into a plurality of individual working areas, said panels extending from substantially the perimeter of said table to a point short of the center of the table to leave an open area above said center of the table, each working area adapted to accommodate a worker positioned adjacent the perimeter of said table and facing the center of the table for independent study, a top mounted on said panels and serving as a roof for each of said working areas, a plurality of rotary shelves journalled between said table and said top in said open area for rotation relative to said working areas to make study and work materials available to each worker, at least one fixed shelf mounted between said panels in said open area and substantially closer to said table than to said top, whereby it is readily viewed by the worker, at least one rotary shelf below said fixed shelf, and at least one rotary shelf above it.

3,160,452
HOT AND COLD FOOD SERVICE CART
Henry H. Rothman, Jackson Heights, N.Y., assignor, by direct and mesne assignments, to United Service Equipment Co., Inc., Palmer, Mass., a corporation of Delaware
Filed Sept. 30, 1959, Ser. No. 843,489
20 Claims. (Cl. 312—236)



1. A hot and cold food service unit comprising a plurality of individual meal trays, insulated walls providing an enclosure with a door opening, rack means for removably supporting the meal trays in the interior of the enclosure in vertically-spaced relationship, heating means disposed in one side of the enclosure and cooling means disposed in the opposite side thereof, a vertically-extending normally-closed wall structure thermally dividing the enclosure into hot and cold compartments throughout the height of the enclosure and adapted to slidably receive from the door opening the individual meal trays intermediate their widths as the trays are slid through the door opening and over said rack means of the enclosure, and door means for closing the door opening of the enclosure.

3,160,453
ROTATING DOOR AND SHELF FOR CORNER CABINETS AND THE LIKE
Leslie E. Tassell, Grand Rapids, Mich., assignor to Tassell Hardware Company, Grand Rapids, Mich.
Filed Oct. 19, 1961, Ser. No. 146,168
13 Claims. (Cl. 312—238)



6. In combination with a corner cabinet having L-shaped top and bottom panels,
a door consisting of angularly disposed panels arranged to close the space between the inner arms of said L-shaped panels,
mounting plates having notches in their ends secured in flush relation to the inner sides of said L-shaped panels and projecting rearwardly therefrom,
bearing openings formed in said plates rearwardly from said notches and projecting into said top and bottom panels,
mounting brackets positioned at the upper and lower ends of said door panels and having channel shaped bodies facing inwardly of the cabinet with the webs of the channels opposed to the inner sides of said L-shaped panels,
connecting arms turned angularly outwardly from said channel shaped bodies and secured to the rear sides of said door panels,
bearing openings formed in the webs of said bodies,
pintle pins reciprocably mounted in said last bearing openings and having shoulders engageable therewith,
cover plates secured across the side flanges of said channel shaped body members,
the inner ends of said pintle pins being journaled in said cover plates,
and springs compressed between said shoulders on said pintle pins and said cover plates.

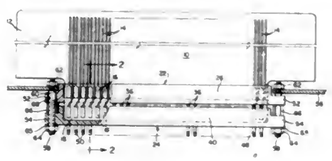
12. A mounting bracket for an angled corner door comprising,
a channel shaped body having a web wall and side flanges,
arms extending at an angle from one end of said side flanges and attachable to angularly disposed panels of a door,
a plate forming a cover wall bridging said side flanges in spaced relation to the inner ends of said arms,
said walls defining alined pintle pin holes,
a pintle pin reciprocably mounted in said pintle holes and projectable beyond said walls,
means on said pin to limit outward protection of said pin,
an operating lever projecting from said pin inwardly of the projectable end thereof,
and a stop on said body engageable with said operating lever to hold said pin in retracted position.

3,160,454
METHOD OF MANUFACTURE OF IODINE CYCLE INCANDESCENT LAMPS
Edward G. Zubler, Chagrin Falls, and Frederick A. Mosby, Cleveland, Ohio, assignors to General Electric Company, a corporation of New York
Filed Apr. 2, 1963, Ser. No. 270,505
10 Claims. (Cl. 316—21)



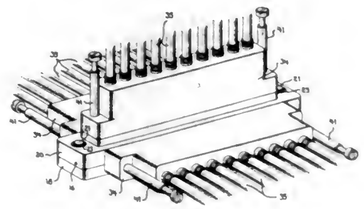
1. In the manufacture of an incandescent lamp of the iodine-cycle type comprising a sealed bulb of light-pervious material containing a tungsten filament, the steps which comprise evacuating the bulb and filling it with a gaseous hydrocarbon at a pressure of a few millimeters of mercury and a small quantity of iodine; energizing the filament to heat it to a temperature sufficient to decompose the hydrocarbon gas while heating the bulb wall to a temperature of at least 250° C.; evacuating the bulb; filling the bulb with a final gas filling of a mixture of inert gas, oxygen at a partial pressure in the approximate range of 0.3–0.5 mm. Hg and a small quantity of iodine; and sealing off the bulb.

3,160,455
PRINTED CIRCUIT BOARDS AND CONNECTORS THEREFOR
Leon Mayon, Philadelphia, and Joseph A. Zang, Jr., Newtown Square, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 16, 1961, Ser. No. 110,368
7 Claims. (Cl. 339—17)



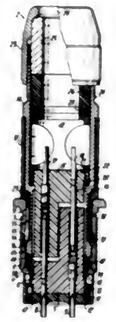
1. A multiple contact connection means for plug-in reception of a printed circuit board having rows of contact elements arranged in tandem along a margin of the board comprising, two separate relatively movable multiple contact connector blocks arranged in tandem, each said connector block having at least one row of contacts for contacting one of said rows of contact elements, the forward one of said connector block in the direction of insertion of said board being open at its rearward end to permit said margin of the board to the inserted through said forward connector block into the other connector block.

3,160,456
COAXIAL CABLE CONNECTING DEVICE
Michael F. O'Keefe and Robert S. Stull, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed July 14, 1961, Ser. No. 124,192
5 Claims. (Cl. 339—92)



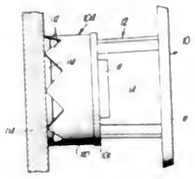
3. A connector assembly for mechanically and electrically joining groups of at least three coaxial cables, each of the type having a center conductive path surrounded by an insulating material and an outer conductive path, the said assembly including a plurality of T-shaped coaxial receptacles, each having outer and inner conductive paths spaced by an insulating material, an insulating base member having a substantially flat surface on one side thereof and an insulating block member having a series of T-shaped cavities aligned therein, each of a size to accommodate the volume of a receptacle and each dimensioned to hold a receptacle against said base member when said block member is clamped against said base member, a T-shaped insulating block member adapted to be fitted against said first mentioned block member including a series of apertures therein housing terminals secured to coaxial cables, the said T-shaped block member serving to terminate cables to said receptacles of said assembly.

3,160,457
ELECTRICAL CONNECTING DEVICE
Walter Fischer, 19 Rue des Charpentiers, Morges, Vaud, Switzerland
Filed Nov. 30, 1962, Ser. No. 241,248
Claims priority, application Switzerland, Dec. 2, 1961, 14,036/61
2 Claims. (Cl. 339—91)



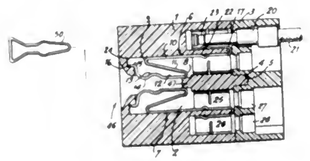
1. An electrical connector comprising in combination,
(A) a first element having a monolithic tubular member extending from one extreme end or bottom of the connector towards a midportion thereof, and terminating at its top in an outwardly directed shoulder, the inner surface of said first tubular element including a generally cylindrical portion with a medially positioned inwardly open throat or recess, said recess being formed with a steeply downwardly and outwardly conical roof, a contiguous underlying cylindrical side wall and a horizontal annular floor,
(B) a second element having a monolithic tubular member with a first and lower portion within a major portion of said first element and near said one extreme or bottom end of the connector and with an outside diameter at such location as to make a sliding fit with the adjacent inner diameter of said first element,
(C) said second element also having a second and medial portion longitudinally adjacent and above its said first portion, said second portion possessing a reduced constant diameter annular throat of such magnitude as to provide a constant annular clearance between its diameter and the adjacent generally cylindrical inner surface portion of said first tubular member, said annular throat extending above the outwardly directed shoulder of said first element and terminating at its upper end with an outwardly directed upwardly slanting shoulder, said throat terminating at its bottom with a steeply sloping conical ramp,
(D) said second element also having a third and upper portion extending from said slanting shoulder upwardly towards the opposite and upper end of the connector and possessing near its top an outwardly directed and shoulder containing abutment ring,
(E) each of said first and second elements having individual structures therein connectable to an end of at least one electrical conductor, said first element including in such structure at least one extended pin member, said second element including in such structure at least one deep female sleeve member for side engagement with the said pin member of said first element, when said first and second elements are in engaged position,
(F) and a third tubular element or bolting means radially between and contacting adjacent midportions of both said first and second elements for preventing premature axial disengagement of a pin member out of a female member when said first and second elements are in engaged position, said third element bolting means including a medially positioned combined inward and outward shouldered portion outwardly contacting from above the outwardly directed shoulder of said first member, and simultaneously inwardly contacting at an elevated position with respect to said outer shoulder the slanting shoulder of said second element,
(G) said third element below the combined shoulder portion having a downwardly extending cylindrical skirt extension slidably contacting the inner surface of said first element and radially spaced from the throat of said second tubular element, plural longitudinal slots in said skirt extension forming therebetween a plurality of elastic tongues the lower end of each tongue being thickened in an outward direction only, and including near its lower end on its outer side a downwardly and outwardly directed conical surface conforming exactly to the roof surface of the recess within the first element, at the extreme lower end of each tongue, there being an arcuate knife-like shape formed by the intersection of the surfaces of an inner upright cone and an outer inverted cone, the inner conical surface of each tongue being concentric with and spaced from the surface of said conical ramp of the second element, the extreme lower end of each tongue in the above position of parts being longitudinally spaced from the plane of said annular floor of the first element,
(H) the maximum thickness of the tongues being such that when said third element is drawn upward to disconnect said pin and sleeve, the tongue will be flexed inward from its above recited position and the thickened end of the tongue will slidably fill the annular space between the inside of the first element and the throat of the second element,
(I) and the degrees of inclination of the ramp of the second element and the roof of the recess of the first element together with the respectively adjacent surfaces of tongue ends being such that the tongue will remain in outward contacting position and in locked relationship with respect to the conical roof surface of the recess in the first element when the second element only is drawn upwardly.

3,160,458
WALL OUTLET
Arthur Laudel, Jr., Leawood, and Walter D. Hodge, Shawnee Mission, Kans., assignors to Hal Sandy, Inc., Westwood Hills, Kans., a corporation of Missouri
Filed Mar. 5, 1962, Ser. No. 177,476
4 Claims. (Cl. 339—147)



1. An electrical wall outlet kit comprising: an outlet housing having side walls, a faceplate and a backplate, said plates defining apertured front and back walls for said housing respectively; a protrusion on the normally outermost face of said back wall; and a cup-shaped cutter element having an opening in the bottom thereof for fitted reception of said protrusion, said element embracing the side walls of said housing with the protrusion extending through said opening when the kit is packaged for sale.

3,160,459
CONNECTOR FOR PRINTED CIRCUIT BOARDS
Peter F. Greco, Norwalk, and Rocco J. Noschese, Rowayton, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Feb. 17, 1961, Ser. No. 90,085
5 Claims. (Cl. 339—176)

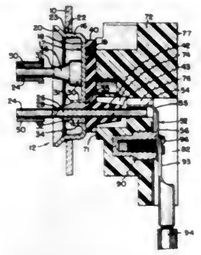


1. An electrical connector assembly for a printed circuit board comprising:
a receptacle member and
a plurality of plug members;
said receptacle member including a housing of dielectric material having a front and rear face,
a slot for receiving said printed circuit board in said front face,
a plurality of spaced-apart, parallel contact-receiving bores intersecting said printed circuit board-receiving slot,
a plurality of openings in said rear face, at least one associated with each of said contact-receiving bores and communicating therewith; and
a unitary contact of conductive material completely disposed in at least one of said contact-receiving bores;
said contact having a rear portion for mating with one of said plug members and aligned with one of said rear face openings,
a central body portion and,
a front contact portion for engaging said printed circuit board,
said front portion having two return bends to form a substantially Z shaped compression spring,
the portion of said Z shaped spring remote from said central body portion including a longitudinal slit forming two resilient sublegs,
whereby a plurality of independent contact areas are provided to engage a printed circuit board disposed through said slot, and
one of said plug members being disposed through said rear face opening and contacting the rear portion of said contact,
interlocking means on said plug member and said receptacle member to resist the withdrawal of said plug member from said receptacle member.

3,160,460
TERMINAL ASSEMBLY HAVING CONDUCTOR PINS AND CONNECTOR BLOCK
Andrew Wyzenbeek, Cincinnati, Ohio, assignor to Fusite Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 17, 1962, Ser. No. 166,747
16 Claims. (Cl. 339—176)

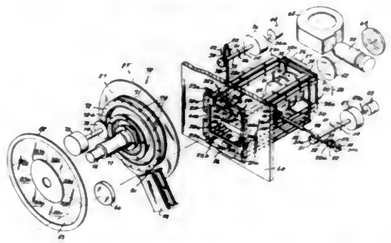
1. In an electric terminal, the combination of a metallic body portion having a conductor pin projecting through and extending beyond inner and outer sides thereof and insulated from and secured to the body portion by a glass-to-metal seal disposed on one side of the said outer side, and a resilient insulator bonded directly

to the aforesaid outer side of said body portion and to adjacent portions of said seal and pin and jacketing the



pin for a substantial portion of its length, and the jacketing terminating short of the outer end of the pin.

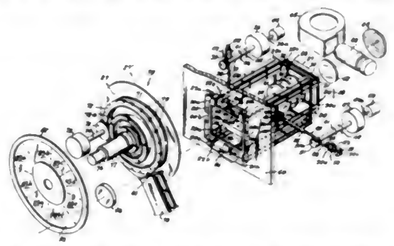
3,160,461
DATA PROJECTOR TURRET ASSEMBLY
Michael Wengryn, Bellerose, and Walter Angst, Douglaston, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed May 18, 1962, Ser. No. 195,810
24 Claims. (Cl. 346—29)



1. A data projector comprising slide means, a scribing stylus and a resiliently mounted frame assembly, said scribing stylus being secured to said frame assembly and positioned to make contact with said slide assembly for etching said slide means, said slide assembly comprising a rotatably mounted turret means, an annularly shaped slide secured to said turret means, said slide having an opaque coating on the surface adjacent said scribing stylus, turret positioning means operatively connected to said turret for advancing and angularly aligning said annular slide with respect to said scribing stylus.

3,160,462
DATA PROJECTOR INPUT DEVICE
Walter Angst, Douglaston, Michael Wengryn, Bellerose, John Goodlet, Jr., Elmhurst, and Ludwik I. Seifert, Port Washington, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed May 18, 1962, Ser. No. 195,870
18 Claims. (Cl. 346—29)

1. Plotting means for generating a trace comprising manually operable input means comprising first means for generating first and second magnetic field patterns, second means movable in a plane substantially parallel to the plane of said first means for generating first and second voltages proportional to said first and second magnetic field patterns respectively due to the inductive coupling therebetween, third means for producing first and second groups of binary signals proportionally related to said first and second voltage signals at its output, said first and second groups being representative of the position of said movable means with respect to said first



means, said first and second binary output signal groups being available for driving a movable member to describe the trace.

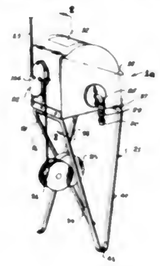
3,160,463
DEVICE FOR TAKING AND RECORDING THE PERFORMANCE DATA OF A RUNNING MOTOR VEHICLE
Flaviano Moscarini, Rome, Italy, assignor to Editoriale Domus S.p.A., Rome, Italy
Filed Apr. 25, 1962, Ser. No. 190,097
Claims priority, application Italy, July 25, 1961, 60,282, Patent 13,494
2 Claims. (Cl. 346—33)



1. A device for recording the performance data of a running motor vehicle having conventional brake, acceleration and clutch pedals, comprising in combination with a plurality of reflecting elements located at known distances transversally to the road to be travelled by the vehicle, a casing arranged on the front portion of the vehicle and including a light source emitting the light in direction of said reflecting elements and a photoelectric cell energized by the light rays reflected from said reflecting units, a recording unit within the vehicle connected with said photoelectric cell and at least one of said pedals, electronic chronometrical means for processing the signals furnished from said photoelectric cell and transmitting them to said recording unit, whereby said recording unit records the time succession of said reflecting elements and the effects of said pedals on the run of the vehicle.

3,160,464
RATE OF PENETRATION AND WEIGHT RECORDER
Oswald Suter and Joseph H. De Lacy, Los Angeles, Calif., assignors to Technical Oil Tool Corporation, Ltd., Los Angeles, Calif., a corporation of California
Original application Oct. 7, 1957, Ser. No. 688,643, now Patent No. 3,076,966, dated Feb. 5, 1963. Divided and this application May 1, 1962, Ser. No. 196,026
2 Claims. (Cl. 346—72)

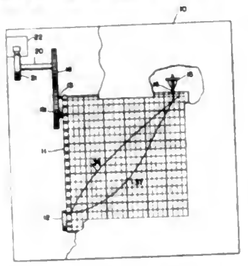
1. In a drilling weight recorder: chart means including a removable chart; time clock means connected to advance said chart at a uniform rate lengthwise of said chart; fluid pressure responsive means in said recorder adapted to be connected to a fluid pressure transmitting source interposed in the drill block support, said pressure responsive means including a cylinder having a cup-like pressure sensitive bellows therein, and a bellows follower confined to linear movement in said cylinder; a stylus arm pivotally mounted for movement laterally across and perpendicularly of said chart and having longtudinally spaced connecting linkage points thereon; and linkage means interconnecting a selected one of said linkage points of said stylus arm and said bellows follower, said linkage means including a universal joint which accom-



modates the linear motion of said bellows follower to the resultant pivotal and perpendicular movement of said stylus arm and permitting said connecting linkage to be moved for connection to any one of said linkage points.

3,160,465
RECORDING INSTRUMENT
Raymond D. Oppel, Waterbury, Conn., assignor to The Bristol Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 23, 1963, Ser. No. 253,501
13 Claims. (Cl. 346—112)

1. In a recording instrument of the class in which an inscribing means in response to variations in a measured magnitude is deflected transverse to the direction in which a chart is fed past said inscribing means, feed means for advancing said chart relative to said inscribing means so that a point on said chart initially at a starting position is advanced therefrom, means for providing a representation of the extent of the advance of said point on said chart from said starting position, means responsive to termination of the advance of said chart for actuating said feed means to feed said chart a distance corresponding to said representation and an additional amount to a back position in which said point is displaced by a predetermined amount behind said starting position, and means responsive to the arrival of said chart in said back position for automatically advancing said chart to displace said point said predetermined amount to said starting position.



3,160,466
RECORD-RETAINING MATERIAL OF HELICAL CONFIGURATION
Takashi Kumagai, 231 Kinuta-cho, Setagaya-ku, Tokyo-to, Japan
Filed Sept. 11, 1961, Ser. No. 137,351
Claims priority, application Japan, Nov. 2, 1960, 35/43,674
3 Claims. (Cl. 346—137)

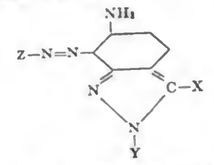


1. A record-retaining medium comprising a strip of material having substantially coaxial helical convolutions extendable longitudinally along the axis of the convolutions, and each of said convolutions of said strip material having a substantially frusto conical configuration, the recording surface thereof making an angle other than ninety degrees with said axis relative to which said convolutions are coaxially disposed.

CHEMICAL

3,160,467
NEW AZO DYESTUFFS AND A PROCESS FOR DYEING POLYACRYLIC FIBRES
Robert Frédéric Michel Sureau, Enghien-les-Bains, and Gilbert Krémer, Ermont, France, assignors to Compagnie Française des Matieres Colorantes, Paris, France, a French company
No Drawing. Filed May 5, 1961, Ser. No. 107,888
Claims priority, application France May 6, 1960
6 Claims. (Cl. 8—41)

1. A process for colouring polyacrylic fibres which comprises dyeing the fibres with a water-soluble salt of a dyestuff selected from the group consisting of the dyestuffs of the general formula:



in which X represents a member selected from the group consisting of the hydrogen and chlorine atoms, Y represents a member selected from the group consisting of the methyl and ethyl groups, and Z represents a member selected from the groups consisting of the unsubstituted phenyl group and phenyl groups substituted by members selected from the group consisting of the chlorine atom, the methyl group, the methoxy group, the ethoxy group, the nitro group, the trifluoromethyl group, the dimethylamino group, the dyeing taking place at the boil in the presence of a member selected from the group consisting of mineral and strong organic acids.

3,160,468
BALL POINT INK ERADICATOR AND METHOD
Gerald J. Burstein, 9 Cottage Terrace, Livingston, N.J.
No Drawing. Filed Jan. 22, 1960, Ser. No. 3,990
12 Claims. (Cl. 8—102)

1. Material for eradicating ball point ink from paper consisting of the following three ingredients; an acid which will not appreciably harm the paper, a grease sol-

vent and a bleach, all in liquid form, the bleach for the purpose being applicable subsequent to the acid.

3,160,469
BISCARBAMATE-FORMALDEHYDE ADDUCTS FOR WRINKLE RESISTANCE FINISHES

Sidney L. Vail, Clifford M. Moran, and John D. Reid, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. **Filed July 19, 1962, Ser. No. 211,141**
5 Claims. (Cl. 8—116.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A chemical finishing process for rendering a cellulosic textile material wrinkle resistant, the wrinkle resistance finish being characterized by resistance to acid hydrolysis and resistance to the damaging effects of hypochlorite bleaching agents, comprising impregnating a cellulosic textile material with an aqueous solution that contains from 5 to 20% by weight of the reaction product of formaldehyde and a biscarbamate represented by the formula:



wherein n is an integer of one to four, R is an alkyl group of from 1 to 4 carbon atoms, and R′ is a member of the group consisting of H and an alkyl group of from 1 to 4 carbon atoms, and from 0.5 to 5% by weight of an acid catalyst and heat curing the thus impregnated cellulosic textile material.

3,160,470
DISSOLUTION OF URANIUM OXIDE

Maurice C. Lambert, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. **Filed Feb. 27, 1962, Ser. No. 176,166**
7 Claims. (Cl. 23—14.5)

1. A process of dissolving uranium dioxide or U_3O_8 in a molten chloride mixture, comprising melting a chloride solvent selected from the group consisting of sodium-potassium chlorides, lead-potassium chlorides, potassium-magnesium chlorides, sodium-calcium chlorides, potassium-lithium chlorides, sodium-lithium chlorides, and zinc-potassium chlorides; adding said uranium oxide to said solvent; adding a catalyst selected from the group consisting of thallous chloride and ferrous chloride to the molten mass in a quantity to yield a concentration of from 0.5 to 3 mole percent in the salt; and introducing a chlorinating agent into the molten mass whereby uranium oxide is dissolved as uranyl chloride.

3,160,471
PREPARATION OF DENSE URANIUM DIOXIDE PARTICLES

Irving E. Knudsen, Downers Grove, Albert A. Jonke, Elmhurst, and Norman M. Levitz, Bellwood, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 21, 1963, Ser. No. 282,179
3 Claims. (Cl. 23—14.5)

1. A method of converting uranium hexafluoride to high-density uranium dioxide comprising establishing and maintaining a fluidized bed of uranium dioxide particles by passing between 0.75 and 1.40 times the stoichiometric requirement of steam and at least 5 times the stoichiometric requirement of hydrogen upwardly therethrough,



heating the bed to a temperature of at least 650° C., and feeding uranium hexafluoride to the bottom of the bed intermittently.

3,160,472
AGGLOMERATION OF POWDERED TRIPOLYPHOSPHATES

Joe S. Metcalf, Webster Groves, and Chung Yu Shen, Olivette, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. **Filed May 6, 1960, Ser. No. 27,262**
9 Claims. (Cl. 23—106)

1. A process for agglomerating alkali metal tripolyphosphate which comprises (*a*) heating a mixture of finely divided alkali metal tripolyphosphate with a blend of finely divided alkali metal orthophosphate salts, where the overall molar ratio of alkali metal oxide to P_2O_5 of said blend of finely divided alkali metal orthophosphate salts is greater than about 1.5 and less than 2.0, and said blend of finely divided alkali metal orthophosphate salts represents between about 10% and about 75% by weight, of the total weight of the combined orthophosphates and tripolyphosphate, said heating being conducted while said mixture is being agitated at a temperature which is sufficiently high to effect the conversion of alkali metal orthophosphates to alkali metal tripolyphosphate, but below the melting point of the alkali metal tripolyphosphate, to thereby produce a particulated agglomerated form of the alkali metal tripolyphosphate, and (*b*) separating the resulting calcined material into a plurality of fractions based on the particle size distribution of said calcined material, at least one of said fractions consisting of relatively small particles and at least one of said fractions consisting of relatively larger particles, as compared with said relatively small particles.

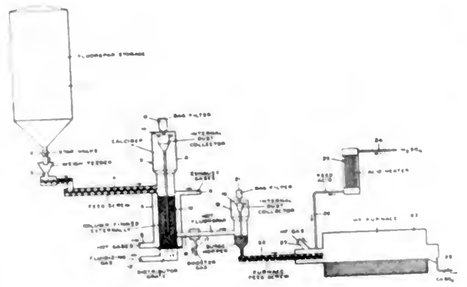
3,160,473
PROCESS FOR THE PRODUCTION OF HYDROGEN FLUORIDE AND CALCIUM SULPHATE

Curtis B. Hayworth, Morristown, N.J., Robert H. Hutzler, Wilmington, Del., Aubrey W. Michener, Jr., Rockaway Borough, N.J., and Richard Sobel, Claymont, Del., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 27, 1961, Ser. No. 105,992
4 Claims. (Cl. 23—153)

1. A process for the manufacture of hydrogen fluoride which comprises calcining fluorspar in a separate zone at a temperature within the range of about 800–1300° F. by passing an oxygen-containing gas through said separate zone in direct and intimate contact with a bed of fluorspar in said zone to maintain the bed in a fluidized state, passing the heated, calcined fluorspar into an externally heated separate reaction zone, concurrently introducing sulfuric acid in at least stoichiometric amount for reaction with the fluorspar into the externally heated reaction zone in admixture with the fluorspar, maintaining

the reaction mixture in the reaction zone at a temperature within the range of about 300–600° F. to effect reaction of the sulfuric acid and fluorspar to produce hy-



drogen fluoride and calcium sulfate, releasing evolved hydrogen fluoride from the reaction zone and discharging calcium sulfate from the reaction zone.

3,160,474
STABILIZATION OF LIQUID SULFUR TRIOXIDE

Walter G. Schnoor, Morristown, and Anthony W. Yodis, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

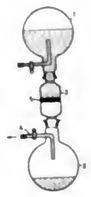
No Drawing. **Filed June 9, 1961, Ser. No. 115,926**
11 Claims. (Cl. 23—174)

1. A composition consisting of liquid sulfur trioxide and a stabilizer comprising (1) a boron compound which dissolves substantially completely in liquid SO_3 to form a solution of B_2O_3 therein, in amount equivalent to at least about 0.005% by weight of the sulfur trioxide as B_2O_3, and (2) dimethyl sulfate, the weight ratio of dimethyl sulfate to boron compound as B_2O_3 being at least about 7 to 1.

3,160,475
METHOD OF PRODUCING BORON IODIDE

Theodor Renner, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Apr. 13, 1964, Ser. No. 360,483
Claims priority, application Germany, May 14, 1957, S 53,483
12 Claims. (Cl. 23—205)

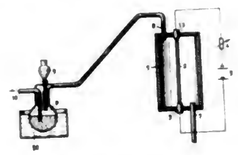


1. A process for making boron tri-iodide (BI_3), comprising treating an alkali metal boron hydride with iodine in suspension in liquid n-hexane to react the iodine with said hydride, the process being carried out in the exclusion of air, the alkali metal boron hydride being taken from the group consisting of lithium and sodium boron hydride.

3,160,476
PROCESS OF PRODUCING COMPACT BORON, PARTICULARLY IN MONOCRYSTALLINE FORM

Erhard Sirtl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Mar. 5, 1962, Ser. No. 177,496
Claims priority, application Germany, Mar. 6, 1961, S 72,846
15 Claims. (Cl. 23—209)

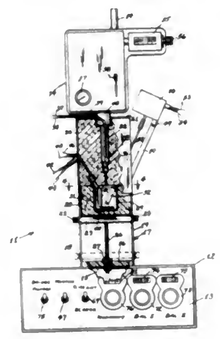


1. The process of producing crystalline hyperpure boron, which comprises pyrolytically prepiciptaing boron onto a heated boron carrier body at a selected precipitation temperature by contacting the carrier body with a flow of reaction gases containing a gaseous halogen compound of boron to be pyrolytically reduced and precipitated; and adding to the reaction gases, prior to contacting them with the carrier body, a hydrogen-halogen compound in a quantity at which the equilibrium temperature of commencing boron redissolution by the reaction gases is at most 200° C. below said precipitation temperature, the boron precipitation being completely stopped below said equilibrium temperature.

3,160,477
THERMOMETRIC TITRATING APPARATUS

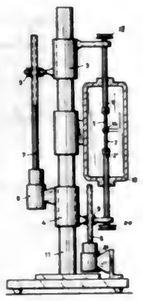
Joseph C. Wasilewski, Silver Spring, Md., assignor to American Instrument Company, Inc., Silver Spring, Md.

Filed Jan. 29, 1962, Ser. No. 169,580
14 Claims. (Cl. 23—253)



1. A thermometric titrator comprising a support, a titrant burette mounted in the upper portion of said support, vertically slidable support means in the lower portion of the support, a titrate beaker on said support means in a position vertically aligned with said burette and movable to a position subjacent the burette when said support means is elevated, means defining a substantially adiabatic chamber enclosing said beaker when said support means is elevated, and temperature-sensitive means depending from said support in a position to enter the beaker when said support means is elevated to measure the temperature in said chamber.

3,160,478
APPARATUS FOR FLOATING-ZONE MELTING
Theodor Rummel and Max Heim, Munich, Willibald Schauer, Dachau, near Munich, and Fritz Pfeifer, Ascholding, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed June 6, 1960, Ser. No. 34,009
Claims priority, application Germany, June 12, 1959, S 63,435
1 Claim. (Cl. 23—273)



An apparatus for carrying out a crucible-free floating-zone melting of a crystallizable semiconductor rod, comprising a vessel, a fixed annular induction heating coil in said vessel, the rod passing through said coil, two vertically coaxial rod holders supporting said rod in a vertical position in said vessel, said holders extending inside and outside of said vessel, means outside the vessel for rotating each of the holders about the axis of the rod, a single vertical standard, two guide means vertically reciprocable on said standard and each operatively attached to a respective one of said holders, a screw spindle means adjustably interconnecting said guide means, drive means for cojointly vertically displacing both of said guide means, whereby said holders vertically move said rod relative to said coil, and second drive means for moving said screw spindle means whereby the spacing between the holders is altered to control the diameter of the recrystallized rod.

3,160,479
FORGED STEERING KNUCKLE AND METHOD OF MANUFACTURE
Kenneth G. Davenport, Royal Oak, Mich., assignor to Rockwell-Standard Corporation, Coraopolis, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1959, Ser. No. 845,525
5 Claims. (Cl. 29—190)



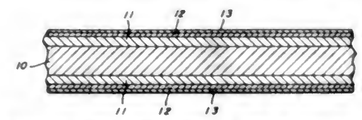
1. A method of making a forged steel steering knuckle from a square steel blank with lateral refined metal grain flow lines consisting of: "bust" forging the blank into a die pocket to form a laterally thick wishbone shaped workpiece with laterally disposed flow lines derived from elongated original grain flow lines; a further forging step consisting of vertical and horizontal extrusion of said rough blank by applying forging force laterally on said wishbone shaped workpiece and parallel to said laterally disposed flow lines, resulting in densification or packing of a group of metal grain flow lines into a yoke flange periphery and causing uniform and continuous disposition of said group of grain flow lines in a doubled back arrangement into the spindle and arms smoothly flowing from said grain flow lines in the yoke flange periphery which are substantially normal to the flow lines in the spindle and arms.

3,160,480
REFRACTORY ARTICLES BONDED TO A METAL BASE
Richard A. Alliegro, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed May 11, 1961, Ser. No. 109,432
3 Claims. (Cl. 29—195)



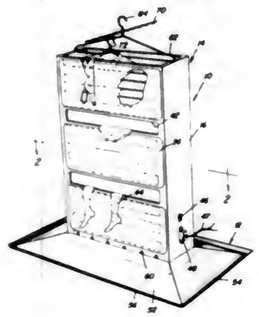
1. A composite bar suitable for use as an electrode in an electrolytic cell comprising:
(1) a first member having low solubility in molten alumina said member being formed entirely from a material selected from the group consisting of titanium boride, titanium carbide, and zirconium boride;
(2) a metallic member selected from the group consisting of iron and steel and having a coefficient of expansion greater than that of said first member;
(3) a ferrous alloy member having a coefficient of expansion substantially equal to that of said first member and less than that of said metallic member interposed between said first member and said metallic member;
said members being bonded by a silver-manganese solder capable of wetting said first member.

3,160,481
MATTE TIN PLATE
Tom L. Shoemaker, Edgewood, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Feb. 5, 1962, Ser. No. 170,922
1 Claim. (Cl. 29—195)



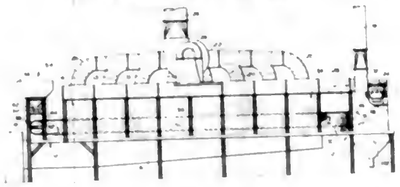
Matte tin plate comprising a low-carbon steel base having immediately adjacent each surface thereof a layer of electrolytic tin in the as-deposited form, each tin layer having on its surface remote from the base a first film of crystalline tin oxide and a second film superposed on said first film, of chromium oxides, said film of chromium oxides being produced by electrolysis of the plate as cathode in an aqueous solution of an alkali metal dichromate, the surface of said tin plate having a substantially white appearance.

3,160,482
COLLAPSIBLE SPACE HEATER AND DRYER FOR CLOTHING
Allen M. Foote, % Dampp-Chaser, Inc., P.O. Box 1641, Hendersonville, N.C.
Filed July 13, 1961, Ser. No. 123,745
5 Claims. (Cl. 34—163)



1. A combined space heater and dryer comprising a generally vertically disposed cabinet including vertical spaced parallel heating panel assemblies, end walls interconnecting said panel assemblies thus defining an open top enclosure, each of said heating panel assemblies having horizontally disposed slots formed therein for receiving articles of clothing hung therethrough, a removable base, said base including an upwardly opening peripheral groove telescopically and releasably receiving the lower end of the cabinet forming the enclosure, said base comprising a plurality of panels extending downwardly and outwardly from a centrally located peak, an upstanding peripheral edge on the base located outwardly from the heating panel assemblies and forming a trough thereon for collecting any drippage from articles of clothing and holding the water away from the enclosure with the least possible exposed surface area to prevent evaporation which would slow down the drying action.

3,160,483
GAS CONTACT OF CONVEYED PARTICULATE SOLIDS
George V. Bardet, Berkeley, Calif., assignor to M.J.B. Co., a corporation of Delaware
Filed Apr. 6, 1959, Ser. No. 804,189
1 Claim. (Cl. 34—236)



A machine of the class described comprising a first elongated chamber having a tapered duct located under said chamber; a second chamber having means for drawing cool air upwardly therethrough, said first and second chambers being adjacent to each other forming a long continuous chamber; a pair of parallel endless chains wholly within said long continuous chamber, each of said chains being supported by main sprockets at opposite ends of the long continuous chamber, one end of said long continuous chamber being designated the filling end and one end being designated the discharge end, said pair of parallel chains supporting therebetween a series of trays having perforated bottoms, said trays moving in one direction forming an upper path and moving in the opposite direction forming a lower path; means for filling trays on said upper path; means for propelling said endless chains through said long continuous chamber; suction means for drawing hot air through said duct and upwardly through said trays whereby the lower trays act as an air-diffusion means for the air before it is passed through the material on said upper trays; and auxiliary sprockets over which the chains pass at the discharge end of said long continuous chamber, said auxiliary sprockets being of small diameter whereby the trays are given a sudden turning movement as they pass over the auxiliary sprockets.

3,160,484
STABILIZING ADDITIVES FOR DISTILLATE FUELS
Joel R. Siegel, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation of application Ser. No. 673,156, July 22, 1957. This application July 25, 1961, Ser. No. 126,531
26 Claims. (Cl. 44—62)

12. A petroleum distillate fuel boiling in the range between about 300° F. and about 900° F. having incorporated therein a stabilizing amount of a copolymer of a long chain saturated aliphatic alcohol-chloropropyleneoxy mixed ester of an unsaturated conjugated dibasic acid, said acid having from 4 to 5 carbon atoms per molecule and a polymerizable organic monomer selected from the group consisting of (*a*) a vinyl ester of a short chain fatty acid and (*b*) a mixture of a vinyl ester of a short chain fatty acid and a long chain saturated aliphatic alcohol ester of a conjugated unsaturated dibasic acid, said acid containing from 4 to 5 carbon atoms per molecule, and wherein the mole ratio of said mixed ester to said monomer is between 2:1 and 1:20, and said copolymer has a molecular weight of from 3,000 to about 100,000.

3,160,485
HYDROCARBON FUELS HAVING IMPROVED ANTI-KNOCK PROPERTIES
Frank J. Hughes, Flossmoor, Ill., and Henry R. Menapace, Dyer, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Mar. 5, 1962, Ser. No. 177,153
4 Claims. (Cl. 44—69)

1. A leaded aromatic-rich gasoline having an aromatic hydrocarbon content of at least 20 volume percent and a minimum research octane number of 90 containing a synergistic additive combination of (A) from 0.05 to 1.0 volume percent of naphthenic acid and (B) an amount of lithium naphthenate sufficient to provide from 0.01 to 2.5 grams of lithium per gallon of gasoline whereby synergistic octane improvement of the research octane number of the gasoline is obtained.

3,160,486
FLUID OPERATED TIMING APPARATUS
Adolphus L. Busch, Jr., Hampton, Bethlehem Township, Hunterdon County, N.J., assignor, by mesne assignments, to Gilbert & Barker Manufacturing Company, a corporation of Massachusetts
Filed Apr. 24, 1962, Ser. No. 189,921
22 Claims. (Cl. 55—162)

1. A mechanical action timing apparatus comprising in combination
(1) an accumulator vessel;
(2) a timing body having a forward end and a rear end and having disposed therein for reciprocating motion a timing piston having a rear face and a forward face which piston divides the timing body into at least four fluid tight compartments as follows:

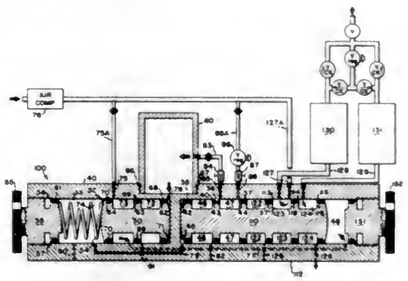
(*a*) a first timing compartment having the forward face of the piston as one side thereof and the forward end of the timing body as the opposite side thereof and being in fluid communication through a timing port with the accumulator vessel,

(*b*) a second timing compartment in fluid communication through a forward discharge vent with a region of relatively low pressure,

(*c*) a third timing compartment capable of being placed in fluid communication with a relatively high pressure source through a pressure port, and

(*d*) a fourth timing compartment having the rear end of the timing piston as one side thereof, and the rear end of the timing body as the opposite side thereof and having disposed therein a resilient means to return the timing piston to a forward position;

(3) an actuator body having a forward end and a rear end and having disposed therein for reciprocating motion an actuator piston having a rear face and a forward face and having an actuator piston rod integrally mounted with said piston for movement therewith, said rod projecting in a fluid tight manner externally of the timing body, which piston divides the actuator body into at least four fluid tight compartments as follows:



(*a*) a first actuator compartment having the rear face of the actuator piston as one side thereof and the rear end of the actuator body as the opposite side thereof,

(*b*) a second actuator compartment in fluid communication through an actuator discharge vent with a region of relatively low pressure,

(*c*) a third actuator compartment capable of being placed in fluid communication through a regulated pressure port with a source of relatively constant pressure, and

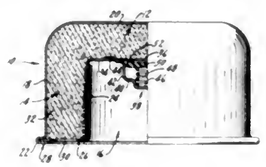
(*d*) a fourth actuator compartment having the forward face of the actuator piston as one side thereof and the forward end of the actuator body as the opposite side thereof;

(4) a decreasing pressure conduit in fluid communication at one end with the fourth actuator compartment and being so disposed that it is in alternate fluid communication at another end with the third and second timing compartments by the reciprocating motion of the timing piston;

(5) an increasing pressure conduit in fluid communication at one end with the first actuator compartment and being so disposed that it is in alternate fluid communication at another end with the fourth and third timing compartments by reciprocating motion of the timing piston, and

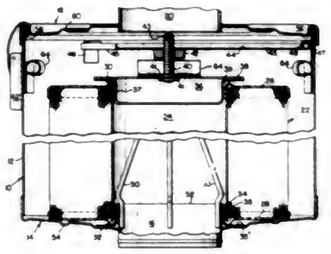
(6) an accumulator conduit in fluid communication at one end with the accumulator vessel and being so disposed to be in alternate fluid communication at another end with the third and second actuator compartments by the reciprocating motion of the actuator piston.

3,160,487
BREATHER CAP
Willis H. Risse, Flossmoor, Domenic P. Tortorici, Chicago, and Raymond G. Bennett, Olympia Fields, Ill., assignors to Novo Industrial Corporation, New York, N.Y., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,436
3 Claims. (Cl. 55—417)



1. In a breather cap adapted to be mounted on the fill tube of an internal combustion engine, a cap type housing having an exterior and interior closed at one end and open at the other and defining a generally annular filter space, inlet openings defined at the lower end of the filter space and an outlet opening defined generally in the center of the interior within the filter space, and a check valve mounted on the outlet within the filter space to provide for the free flow of air into the fill tube but preventing the reverse flow of crankcase vapors out of the fill tube.

3,160,488
FILTER
Paul F. Wilber, Richland, N.Y., assignor to Dollinger Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 26, 1962, Ser. No. 168,998
8 Claims. (Cl. 55—501)



1. A filter comprising

(*a*) a replaceable cartridge of the type having a cylindrical, foraminous core and filtering means extending radially outwardly from and surrounding said core, said cartridge having continuous annular sealing surfaces at both of its ends,

(*b*) a generally cylindrical housing enclosing said cartridge,

(*c*) an end plate closing one end of said housing,

(*d*) an outlet nipple sealed through said end plate and extending into said housing coaxially therewith, said nipple being smaller than said core and extending partly into said core and the bore of one of said annular sealing surfaces,

(*e*) a plug in sealing engagement with the other of said annular sealing surfaces,

(*f*) a spider fitting within and spanning the said housing adjacent its opposite end,

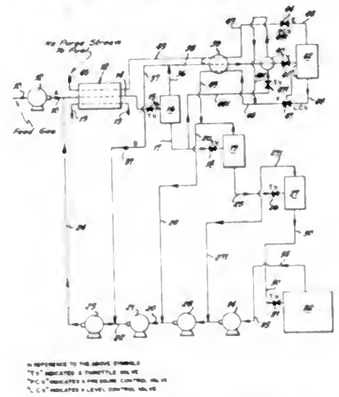
(*g*) retainers fixed to said housing and extending radially inwardly from the cylindrical wall thereof and releasably engaged by said spider,

(*h*) an adjustment means connected to and between said spider and said plug for driving said plug away from said spider thereby to urge said plug into said core when said spider is positioned in engagement with said retainers,

(*i*) a cover for closing said opposite end of said housing, and

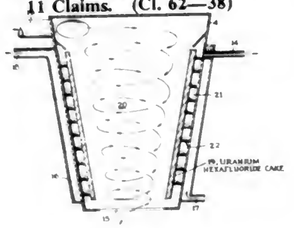
(*j*) means for retaining said cover in place upon said housing.

3,160,489
NITROGEN REMOVAL FROM NATURAL GAS
Jack Brocoff, Fullerton, and Ralph S. Swingholm, Anaheim, Calif., assignors to The Fluor Corporation, Ltd., Los Angeles, Calif., a corporation of California
Filed Feb. 6, 1961, Ser. No. 87,242
10 Claims. (Cl. 62—21)



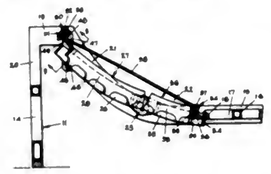
1. The process that includes cooling a feed stream of compressed natural or other gas containing methane and nitrogen in a refrigeration zone below the boiling temperature of methane, passing and expending the cooled effluent from said zone into a separating zone, withdrawing liquid methane from said separating zone and further cooling the withdrawn methane, withdrawing from the last mentioned zone a separated nitrogen and methane gas stream, compressing and returning a portion of said separated gas stream to the feed stream in said refrigeration zone through passage means leading from the separating zone to the refrigeration zone, passing the remainder of said gas stream at reduced pressure into a cooling and expansion zone wherein the components of said gas stream exist as nitrogen-methane gas and essentially methane condensate, cooling said separated gas stream going to said cooling and expansion zone by passage through an exchange zone, separately withdrawing methane condensate and nitrogen-methane gas from said cooling and expansion zone, removing a stream of the withdrawn nitrogen-methane gas as purge gas from the system, and variably restricting the last mentioned stream to impose back pressure in said cooling and expansion zone varying in accordance with variations in said restriction of the last mentioned stream to thereby vary methane vaporization in the cooling and expansion zone and therefore the methane content in the purge gas stream.

3,160,490
APPARATUS FOR THE CONTINUOUS PURIFICATION OF URANIUM HEXAFLUORIDE
Claude Fabre, L'Hay-les-Roses, and Jean-Claude Martin, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Aug. 1, 1960, Ser. No. 46,492
Claims priority, application France, Aug. 14, 1959, 802,815
11 Claims. (Cl. 62—38)



11. In apparatus for the purification of gaseous sublimable material, a turbine for adiabatic expansion and cooling of the gas with the production of work and for crystallising the component to be separated, an expansion chamber connected to said turbine, a conical cyclone separator connected to said expansion chamber, a helix in said separator of inverse direction to the rotation which said separator imparts to the gas passing through it, lateral walls for said separator supporting said helical coil, a tangential upper inlet in said separator for the gas and crystals, a lower central outlet in said separator for the gas, a peripheral upper outlet in said separator for the sublimated crystals, external means for heating said lateral walls comprising a truncated conical envelope surrounding the walls of said separator, inlet and outlet tubes for a heating fluid for said envelope, the crystals being sublimated on contact with said walls and forming an agglomerated crystal shield between the gas and crystals in said separator flowing down toward said lower outlet, the sublimated crystals flowing up to said peripheral outlet, a superheater connected to said peripheral outlet, a compressor connected to said lower outlet, driving means for said compressor, driving means for said turbine coupled to said driving means for said compressor and a heat exchanger connected to said compressor, said heat exchanger being connected to said turbine.

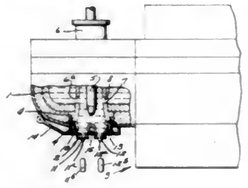
3,160,491
METHOD OF BENDING GLASS SHEETS OR PLATES
Carl F. Binkert, Toledo, and Leslie H. Laine, Perrysburg, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Original application Dec. 10, 1954, Ser. No. 474,545. Divided and this application Nov. 4, 1959, Ser. No. 850,893
4 Claims. (Cl. 65—107)



1. A method of bending a glass sheet into contact with the concavely curved shaping surfaces of a bending mold, comprising locating said sheet with one end thereof on and in substantially fixed relation to said shaping surfaces and the other end outwardly of and above said surfaces,

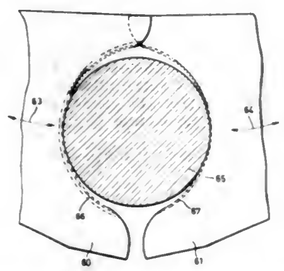
supporting said other end for sliding movement on a lower edge corner thereof toward said shaping surfaces, heating said sheet to a temperature at which it softens and sags downwardly intermediate its ends toward the shaping surfaces and said other end slides inwardly toward said surfaces, and rotating said other end upwardly and inwardly toward said first mentioned end to deposit said sheet on and into contact with said shaping surfaces without rubbing contact between said shaping surface and said sheet.

3,160,492
HEATED ORIFICE RING AND CONTROL THEREFOR
George C. Chapman and Lawrence V. Pfaender, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Mar. 23, 1960, Ser. No. 17,079
2 Claims. (Cl. 65—128)



1. The method of feeding glass in the form of double mold charges which comprises simultaneously flowing molten glass through a pair of discharge orifice members, insulating said orifice members against lateral heat flow, selectively applying heat to the outer walls of said orifice members, and selectively applying coolant to the adjacent walls of said orifice members, whereby the shape and size of the individual charges may be regulated.

3,160,493
METHOD FOR CUTTING A MOLTEN GLASS STREAM
Pierre Gerard Marie Hubert Kuppers, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 10, 1960, Ser. No. 28,045
Claims priority, application Netherlands May 13, 1959
2 Claims. (Cl. 65—133)



1. A method of producing a glass body substantially free of cutting marks from a stream of molten glass comprising the steps of breaking through the surface of the glass stream at a plurality of spaced positions by bringing the glass stream into contact with spaced peaks of a cutting blade, and cutting the portions of the surface of the glass stream intermediate initially cut portions by continuing to move the cutting blade relative to the glass stream.

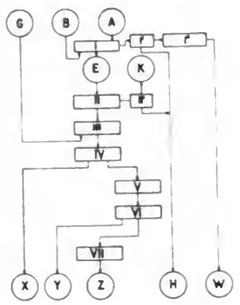
3,160,494
GRANULAR PESTICIDAL COMPOSITION EMPLOYING COFFEE GROUNDS AS CARRIER MEDIUM
Werner Duyfjes, Amsterdam, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 8, 1961, Ser. No. 150,906
Claims priority, application Netherlands, Nov. 21, 1960, 258,201
6 Claims. (Cl. 71—2.3)

1. A free flowing granular pesticidal composition comprising a pesticidal amount of a pesticidal agent distributed on coffee grounds, said pesticidal composition being prepared by mixing said pesticidal agent, a liquid carrier for said pesticidal agent and the coffee grounds, said liquid carrier being employed in an amount sufficient to obtain a substantially homogeneous distribution of the pesticidal agent over the coffee grounds.

3,160,495
WET PROCESS PHOSPHORIC ACID AND LIQUID FERTILIZER COMPOSITIONS CONTAINING THE SAME
Homer A. Smith, Berkeley Heights, and Edgar W. Sawyer, Jr., Metuchen, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed Mar. 28, 1961, Ser. No. 98,747
4 Claims. (Cl. 71—52)

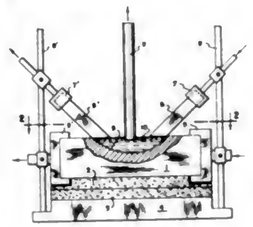
1. A plant food concentrate in the form of a flowable thickened liquid and consisting essentially of a concentrated aqueous solution of wet process phosphoric acid containing insoluble impurities normally associated with wet process phosphoric acid, and colloidal attapulgite clay dispersed in said solution in amount that is sufficient to maintain any insoluble impurities in said solution in stable homogeneous suspension therein and is insufficient to cause said solution to become unpourable.

3,160,496
PROCESS FOR TREATING IRON PYRITES
Italo Vaccari, Pierluigi Salle, and Angelo Morra, Milan, and Umberto Colombo, Novara, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy
Filed Mar. 27, 1962, Ser. No. 182,841
Claims priority, application Italy, Mar. 28, 1961, 5,549/61
11 Claims. (Cl. 75—1)



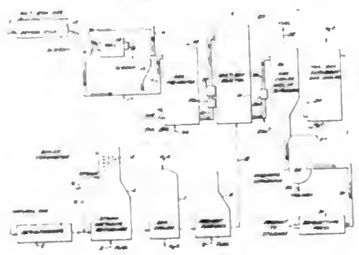
1. A process for obtaining SO_2, steam and cinders of high iron content, which comprises treating pyrite ore having a sulfur content above 18% by:
(*a*) crushing the crude unsorted ore to less than 12 mm.;
(*b*) roasting the crushed ore in a fluidized bed furnace thereby producing sulfur dioxide, hot hematite cinders, and steam;
(*c*) reducing the hematite cinders of step (*b*), while still hot, in a reduction furnace by means of a reducing gas containing hydrogen and carbon monoxide, to magnetite cinders;
(*d*) cooling the magnetite cinders produced in step (*c*); and
(*e*) magnetically enriching the magnetite cinders.

3,160,497
METHOD OF MELTING REFRACTORY METALS USING A DOUBLE HEATING PROCESS
Pai Yen Loung, 3119 David Ave., Palo Alto, Calif.
Filed Nov. 15, 1962, Ser. No. 237,987
10 Claims. (Cl. 75—10)



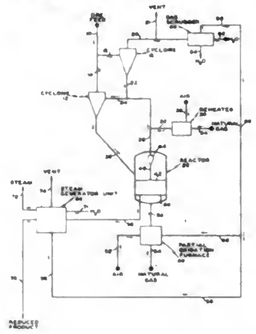
7. The method of forming an ingot of a refractory metal, said method comprising
(*a*) electrically heating a sintered block of said refractory metal,
(*b*) additionally electrically heating a limited portion within the bounds of said block to raise the temperature of said limited portion above the melting point, thereby creating a molten pool of said metal within said limited portion,
(*c*) contacting said molten pool with one end of a rod made of said refractory metal, and
(*d*) gradually withdrawing said rod from said pool to form an extension of said rod.

3,160,498
FLUIDIZED IRON ORE REDUCTION PROCESS AND APPARATUS
Theodore F. Olt, William E. Marshall, and Samuel A. Bell, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed June 29, 1960, Ser. No. 39,691
7 Claims. (Cl. 75—26)



1. A process for the fluidized-solids reduction of finely divided iron ores, the said process comprising the following steps:
(A) preheating finely divided iron ore in a preheating zone through the burning of a fuel with air to form products of combustion substantially devoid of reducing values,
(B) transferring the preheated finely divided iron ore to a reducing zone and fluidizing it in a reducing atmosphere while preventing the commingling of said products of combustion and said reducing atmosphere,
(C) transferring the said reducing atmosphere after use in the said reducing zone to a cooling zone, and there cooling and removing moisture from it,
(D) transferring the reduced ore product of step (B) to a cooling zone and there treating it with the cooled reducing atmosphere from step (C) so as to cool it to a temperature below the air oxidation temperature, while preventing the commingling of the atmospheres in steps (B), (C) and (D), and
(E) transferring at least a portion of the atmosphere from step (D) to the said preheating zone and burning it as the fuel in step (A), whereby to avoid the repeated passage of gases through the said process.

3,160,499
METHOD FOR REDUCING METAL OXIDES
Robert W. Pfeiffer, Bronxville, and Luther W. Garrett, Jr., Pleasantville, N.Y., assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware
Filed June 28, 1961, Ser. No. 120,285
12 Claims. (Cl. 75—26)



1. In a method for the reduction of non-magnetic iron-containing material to obtain Fe_3O_4 in which the reduction is carried out in a fluidized bed reduction zone, the improvement which comprises:
(*a*) maintaining a fluidized bed of said material in particulate form in said reduction zone at a temperature between about 800 and about 1400° F.;
(*b*) introducing into said reduction zone a reducing gas stream having reducing and oxidizing components and having a fixed composition within equilibrium values for the reducing and oxidizing components of the gas at the reduction temperature within the aforementioned range so that over-reduction beyond the Fe_3O_4 point cannot occur;
(*c*) withdrawing a gaseous effluent of low calorific value from said reduction zone at a temperature within the aforementioned range;
(*d*) combusting a suitable fuel and admixing the gaseous combustion products and said gaseous effluent of low calorific value in sufficient relative quantity to heat the said gaseous effluent to an elevated temperature between about 1000 and about 2000° F.;
(*e*) contacting a mass of relatively cool iron-containing particles and said thus-heated effluent to cause said mass to be heated to an elevated temperature, separating said heated particles from said gaseous effluent, transferring said particles to said reduction zone, and withdrawing particles reduced to Fe_3O_4 from said reduction zone.

3,160,500
MATRIX-STIFFENED ALLOY

Herbert Louis Eiselstein and John Gadbut, Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 24, 1962, Ser. No. 168,512
2 Claims. (Cl. 75—171)

1. A nickel-base alloy containing about 21.44% to 21.68% chromium, about 0.02% to 0.03% carbon, about 0.11% to 0.12% manganese, about 0.04% to 0.11% silicon, about 8.83% to 9.10% molybdenum, up to 5.32% tungsten, about 4.19% to 4.30% columbium, deoxidizing amounts of aluminum and titanium consisting of about 0.16% to 0.23% aluminum and about 0.13% to 0.20% titanium, with the total content of aluminum and titanium not exceeding 0.38%, about 1.92% to about 6.89% iron, about 0.02% magnesium and the balance essentially nickel, said alloy being characterized by the ability to withstand prolonged exposure to load at high temperatures without any appreciable loss in load-carrying ability and ductility, by a yield strength (0.2% offset) at room temperature of at least about 73,000 pounds per square inch in the annealed condition and by a life to rupture of at least about 200 hours at 1200° F. and 70,000 pounds per square inch in the annealed condition together with an elongation of at least about 14% under these stress-rupture test conditions, and being further characterized in that the yield strength of the annealed alloy does not increase more than about 20,000 p.s.i. when subjected to an aging heat treatment.

3,160,501
TUNGSTEN-RHENIUM-TANTALUM ALLOYS

Lee S. Richardson, Monroeville, Pa., Allen I. Lewis, deceased, late of Forest Hills, Pa., by Bernard J. Ambrose, administrator, Monroeville, and Leonard L. France, Mount Lebanon, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

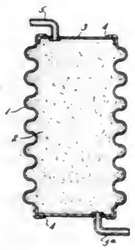
Filed Sept. 15, 1961, Ser. No. 138,531
3 Claims. (Cl. 75—176)

1. A tungsten base alloy consisting essentially of, by weight, 1 to 10% rhenium, 1 to 10% tantalum and the balance tungsten.

3,160,502
METHOD OF MAKING BERYLLIUM BILLETS

Orpheus F. Quartullo, Sarasota, Fla., assignor to American Beryllium Company, Inc., Sarasota, Fla., a corporation of Delaware

Filed Oct. 10, 1960, Ser. No. 61,769
7 Claims. (Cl. 75—200)

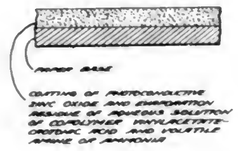


1. That method of making beryllium billets and the like which includes the steps of filling a collapsible bellows-shaped metal container with beryllium powder, subjecting the container to high pressure applied in a direction to compress the container and powder up to at least 20% of its initial volume, extracting the air from the container, replacing the air with an inert gas, again evacuating the container, heating the container and powder to a temperature of between about 1700° F. and about 2100° F., striking the container while at the indicated temperature with high velocity dies moving at a speed of above 500 feet a second to reduce with extreme rapidity the volume of the container and the powder therein to at least about 50% of its initial volume to thereby forge the powder into a billet, cooling the container and billet, and stripping the container from the billet.

3,160,503
ELECTROPHOTOGRAPHIC RECORDING PAPER AND METHOD OF MAKING

Joseph H. Cady, Cape Elizabeth, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed Feb. 19, 1960, Ser. No. 9,705
12 Claims. (Cl. 96—1)

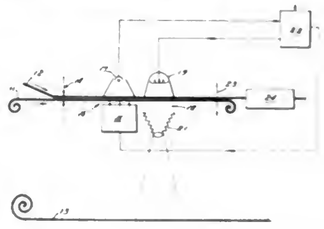


7. An electrophotographic printing receptor comprising: a base and a coating on said base comprising a major proportion of a pigment consisting essentially of finely divided photoconductive particles and a minor proportion compared to said pigment of a binder for said particles consisting essentially of a water-insoluble and electrically insulating evaporation residue of an aqueous solution of a water soluble salt of a copolymer of vinyl acetate and crotonic acid and a volatile base selected from the group consisting in ammonia and volatile amines, and said particles being held together by said binder in substantially electrically conducting relation.

3,160,504
AUTOMATIC DODGING OF PHOTOGRAPHS

Angelo Montani, Great Neck, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware

Filed Jan. 17, 1963, Ser. No. 252,075
10 Claims. (Cl. 96—27)



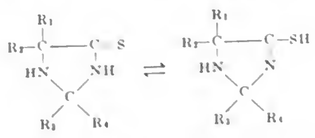
1. In a method of converting a photographic image having low, medium and high density areas into a reversal image possessing decreased density variations, involving exposing a photochromic layer through said photographic image to form a masking image thereof, exposing a photosensitive layer to actinic light through said photographic image and said masking image to produce a latent reversal image and processing the photosensitive layer to produce the desired reversal image, the improvement comprising exposing said photosensitive layer to a source of visible light having an intensity of from 10^3 to 10^{10} lumens for a period of from 5 to 2,000 microseconds to produce said latent reversal image without substantially decaying the masking image formed in said photochromic layer, in order to facilitate the production of a plurality of copies of said reversal image by exposing photosensitive layers to said source through said photographic image and said masking image, without necessitating bleaching and re-exposure of said photochromic layer to re-form said masking image.

3,160,505
PROCESS FOR OBTAINING A PHOTOGRAPHIC IMAGE WITH IMPROVED IMAGE-TONE ACCORDING TO THE SILVER HALIDE DIFFUSION TRANSFER PROCESS

Jozef Frans Willems and Gerard Michiel Sevens, Wilrijk-Antwerp, and Louis Maria De Haes, Edegem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,173
Claims priority, application Belgium Nov. 8, 1960
12 Claims. (Cl. 96—29)

1. A process for preparing a photographic image which comprises exposing a photographic silver halide emulsion layer to a subject, developing the emulsion layer, then transferring the silver halide by diffusion from the undeveloped areas of the emulsion layer to an image-receiving layer, the transfer being effected in contiguity with a silver halide solvent and at least one imidazolidine-4-thione compound having the following tautomeric formula:



wherein each of R_1, R_2, R_3, and R_4 is a member selected from the group consisting of a hydrogen atom, and alkyl radical, and an aryl radical.

3,160,506
PLANOGRAPHIC PRINTING PLATE AND METHOD FOR PREPARING SAME

Gerald F. O'Connor, Ossining, and Simon L. Chu, New York, N.Y., assignors to Polychrome Corporation, Yonkers, N.Y., a corporation of New York

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,826
11 Claims. (Cl. 96—33)

11. A method of making an aluminum base planographic printing plate comprising treating a degreased aluminum sheet with an aqueous solution of from 0.01% to 1% potassium zirconium hexafluoride at a temperature between 70° F. and 180° F. to form a hydrophilic surface thereon, subsequently sealing said hydrophilic surface by treating the plate with a chromic acid bath containing from 0.001% to 2.5% CrO_3 at a temperature between 70° F. and 180° F., applying a light-sensitive diazo resin coating over the resulting sealed hydrophilic layer, said diazo resin comprising the condensation product of paraformaldehyde and paradiazodiphenylamine, exposing the thus sensitized plate to actinic light and treating the exposed plate to produce an adhering oleophilic image thereon.

3,160,507
TWO-PACKAGE ANGEL FOOD CAKE MIX

Thomas P. Finucane, Hartsdale, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,075
18 Claims. (Cl. 99—94)

1. In a two-package angel food cake mix containing egg white as the principal whipping agent and sugar in one package and farinaceous ingredient in the other package, the improvement which comprises employing in addition to the principal whipping agent in the package containing said whipping agent, partially degraded soy protein as an auxiliary whipping agent, the package containing said farinaceous ingredient having present an aggregate level of a fatty anti-foaming agent in an amount insufficient to cause collapse of the foam batter and prevent sufficient expansion of the cells of the egg white foam batter upon baking but in an amount sufficient to prevent excessive swelling of the foam batter on baking and subsequent collapse of the cake on cooling, said anti-foaming agent being present at a level of 0.04–9.0% by weight of the egg white in the mix.

3,160,508
METHOD OF REMOVING FREE OXYGEN FROM AN AQUEOUS FOOD PRODUCT

Don Scott, Chicago, Ill., assignor to Fermco Laboratories, Inc., a corporation of Illinois

No Drawing. Filed Nov. 17, 1960, Ser. No. 69,826
8 Claims. (Cl. 99—182)

2. The method of removing free oxygen from aqueous food which is subjected to elevated temperatures during processing, comprising incorporating in said food prior to said processing an enzyme preparation containing oxidase enzyme dried under conditions avoiding enzyme deactivation by heat and insulated against the effect of heat and moisture with a coating of cold water soluble methyl cellulose which is non-permeable to aqueous media at temperatures above the inactivation temperature of said enzyme preparation whereby, upon cooling the food below the deactivation temperatures, the methyl cellulose liberates the enzyme under which conditions the active enzymes are free to consume the oxygen in said aqueous food in the presence of glucose.

3,160,509
HIGH TEMPERATURE COATING FOR SILICON STEEL

William H. Schaefer, Jr., and James K. Stanley, Pittsburgh, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

No Drawing. Filed May 18, 1960, Ser. No. 29,814
21 Claims. (Cl. 106—63)

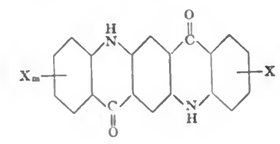
10. A slurry for use in coating silicon-bearing ferrous metal stock, comprising a dispersoid consisting essentially of 15 to 85 parts by weight chromic oxide, 85 to 15 parts by weight calcium oxide and up to about 5 parts by weight barium oxide, and a liquid vehicle in sufficient amount to enable the slurry to be applied as a coating to the surface of the metal stock.

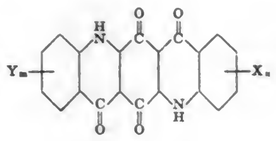
3,160,510
QUINACRIDONE PIGMENT COMPOSITIONS

Felix Frederick Ehrich, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

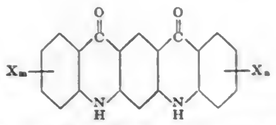
Filed Apr. 25, 1960, Ser. No. 24,483
18 Claims. (Cl. 106—288)

1. A composition of matter consisting essentially of a solid solution of components having formulae selected from the group consisting of:





and

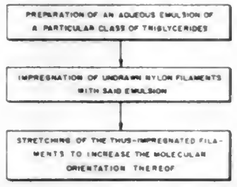


where X is selected from the group consisting of F, Cl, Br, lower alkyl, lower alkoxy, and combinations of these groups, and *m* and *n* are integers of from 0–2 both limits being included; said composition being characterized in that the X-ray diffraction pattern thereof is different from the sum of the X-ray diffraction pattern of its constituent quinacridones.

3,160,511
TREATMENT OF POLYAMIDE FILAMENTS

Virginia V. Skeen, Decatur, Ala., and Calvin J. Waitkus, Mountain Lake, N.J., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

Filed June 9, 1960, Ser. No. 34,863
9 Claims. (Cl. 117—7)



1. A method of treating nylon filaments comprising impregnating nylon filaments of low molecular orientation with an aqueous emulsion containing a triglyceride having the structural formula:

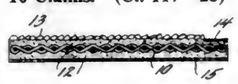
$$\begin{array}{l} RCOOCH_2 \\ | \\ RCOOCH \\ | \\ RCOOCH_2 \end{array}$$

wherein R designates aliphatic radicals, two of which having 1 to 5 carbon atoms and at most one double carbon to carbon bond and one of which having 12 to 22 carbon atoms and at most 5 double carbon to carbon bonds, and stretching the thus impregnated filaments to increase the molecular orientation thereof, the filaments during stretching having a triglyceride content of about 0.05 to about 3.0 percent by weight.

3,160,512
MATERIAL FOR LINING CANALS AND DITCHES

Carl G. Cash, Whippany, Arnold J. Hoiberg, Montville, and Walter L. Butterfield, Whippany, N.J., assignors, by mesne assignments, to The Flintkote Company, a corporation of Massachusetts

Filed Dec. 19, 1960, Ser. No. 76,911
10 Claims. (Cl. 117—25)



1. Flexible sheet material for lining canals and ditches, comprising a woven jute fiber base of from 5 x 8 to 11 x 12 thread count and weighing from 7 to 15 ounces per lineal yard of forty inches width, said base containing an effective amount of a rot-proofing compound and being saturated, in an amount of from 85% to 150% by weight thereof, with asphalt having a softening point (R. & B.) of 135 to 160° F., and a layer of asphaltic coating on each face of the thus saturated base, said coating consisting essentially of (1) an asphalt air-blown in the presence of a catalyst selected from the group consisting of phosphorous pentoxide, red phosphorous, stable phosphorous sulfides and phosphoric acid, and (2) from about 25 to 45% by weight of finely divided mineral particles at least 90% of which pass a 200 mesh sieve, said catalytically air-blown asphalt being characterized by a ductility of not less than 3.5 centimeters at 77° F. (5 centimeters per minute), a softening point (R. & B.) of 190 to 210° F., and a penetration of about 43 to 53 at 77° F. (100 g./5 sec., mm./10), said coating layers each having a layer of mineral surfacing material applied thereover.

3,160,513
HIGH-TEMPERATURE REFLECTIVE COATING AND METHOD OF MAKING THE SAME

Willem Westerveld, Johannes Flipse, and Rudolf Maurits Kruimink, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 2, 1961, Ser. No. 149,609
Claims priority, application Netherlands Nov. 10, 1960
2 Claims. (Cl. 117—35)



1. A method of providing on a support a reflective coating capable of withstanding temperatures of at least 350° C. without loss of reflectivity comprising the step of applying to the support a layer of an alloy consisting of about 99.0 to 99.9% by weight of aluminum and about 0.1 to 1% by weight of a metal selected from the group consisting of iron, cobalt and nickel.

3,160,514
PRINTING ON POLYMER SURFACES

Charles E. Wheelock, Minneapolis, Minn., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 8, 1962, Ser. No. 165,039
18 Claims. (Cl. 117—38)

15. A method for printing on the surface of a solid polymer selected from the group consisting of homopolymers of aliphatic 1-olefins having from 2 to 8, inclusive, carbon atoms per molecule and copolymers of at least two of said 1-olefins which comprises mixing with said polymer a sulfur-containing compound corresponding to the following formula:

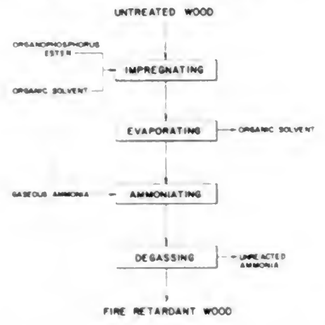
$$Y(SO_2X)_n$$

wherein Y is at least one radical selected from the group consisting of mono-, di-, and trivalent hydrocarbon radicals, said radicals containing from 4 to 30, inclusive, carbon atoms, wherein X is a member selected from the group consisting of OH, Cl, and NZ_2, where Z is a member selected from the group consisting of hydrogen and alkyl, aryl, alkaryl, aralkyl and cycloalkyl radicals, said latter radicals containing from 1 to 7, inclusive, carbon atoms, and wherein *n* is equal to the valence of Y; forming the resulting composition into an article having at least one surface and applying an ink to at least a portion of a selected surface of said article.

3,160,515
METHOD OF TREATING WOOD WITH AN IMPROVED FIRE RETARDANT COMPOSITION

Irving S. Goldstein, Pittsburgh, and William J. Oberley, Pitcairn, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 18, 1961, Ser. No. 160,321
7 Claims. (Cl. 117—62.1)



1. A method of treating wood with an organic solvent-soluble fire retardant in a solution of an organophosphorus solute in an organic solution without altering the dimensions of the wood, comprising the steps of:

(*a*) impregnating the wood, under wood impregnating pressure at a temperature below the boiling point of said solvent under said pressure, with said solution consisting essentially of said solute selected from the group consisting of trimethyl phosphite, and a compound having the formula:

$$\begin{array}{l} [O]_{n-1} \\ | \\ (RO)_2P{-}X \end{array}$$

wherein R is a member selected from the group consisting of lower alkyl radicals and chlorinated lower alkyls, X is a hydroxy radical, and *n* is an integer having a value of from one to two, and said solvent having a boiling point below about 80° C. and selected from the group consisting of methylene chloride, chloroform, carbon tetrachloride, ether, benzene and pentane, and mixtures thereof with low boiling alkanes,

(*b*) evaporating said solvent, whereby between 5 percent to 20 percent of the solute is retained by the wood,

(*c*) treating the impregnated wood containing at least four percent moisture with an excess of gaseous ammonia under wood impregnating pressure whereby the ammonium salts are produced in situ,

(*d*) removing the excess unreacted ammonia by diffusion from the wood at a pressure ranging between atmospheric and sub-atmospheric pressure.

3,160,516
PROCESS FOR RENDERING LINEAR POLYESTER FIBERS ADHERENT TO POLYMERS OF VINYL CHLORIDE

Nicole Beaufils, Paris, and Yvan Landler, Sceaux, France, assignors, by direct and mesne assignments, to Pneumatiques Caoutchouc Manufacture et Plastiques Kleber Colombes, also known as Kleber Colombes

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,468
Claims priority, application France, Nov. 3, 1960, 843,096, Patent 1,278,749; Nov. 3, 1960, 843,097, Patent 1,278,750
3 Claims. (Cl. 117—76)

1. In a process for coating linear polyester fibres with a polymeric substance selected from the group consisting of polyvinyl chloride and copolymers containing at least 80% by weight of vinyl chloride, the steps of:

(*a*) treating said linear polyester fibres with an aqueous dispersion comprising 40 to 95% by weight of total solids of a polymeric substance selected from the group consisting of polyvinyl chloride and copolymers containing at least 80% by weight of vinyl chloride, and 5 to 60% by weight of total solids of an interpolymer prepared by the polymerisation of a mixture of monomers comprising approximately 34–38% by weight of 1,3-butadiene, approximately 29–39% of a monomer selected from the group consisting of styrene, alkylstyrene and chlorostyrene, and approximately 27–33% acrylonitrile;

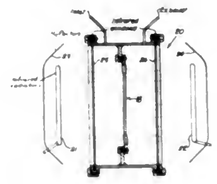
(*b*) drying said treated linear polyester fibres at a temperature in the range of 100 to 210° C. and

(*c*) coating said linear polyester fibres with a polymeric substance selected from the group consisting of polyvinyl chloride and copolymers containing at least 80% by weight of vinyl chloride.

3,160,517
METHOD OF DEPOSITING METALS AND METALLIC COMPOUNDS THROUGHOUT THE PORES OF A POROUS BODY

William C. Jenkin, Dayton, Ohio, assignor to Union Carbide Corporation, New York, N.Y.

Filed Nov. 13, 1961, Ser. No. 151,779
1 Claim. (Cl. 117—93.3)



A method of making metallized a porous abrasive body and wherein the porous body is metallized substantially uniformly throughout the body thereof, said method comprising positioning said abrasive body in an enclosure, radiantly heating the porous body to be treated while enclosed by directing infra-red heat rays onto one side only of said porous body, forcing gaseous plating within the body from 250° F. to 500° F., passing gaseous plating mixture comprising a heat-decomposable metal compound through said porous body from the other side thereof to the said one side while heated at said temperature gradient, said gaseous mixture including a minor percent amount of a carrier gas and where thermal decomposition of the metal compound takes place to plate metal on the porous body walls evenly throughout said body.

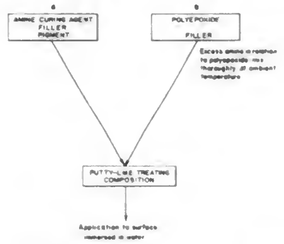
3,160,518
PROCESS FOR TREATING AND REPAIRING SURFACES IMMERSED IN WATER

Robert M. Jorda, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,604
20 Claims. (Cl. 117—94)

1. A process for applying a corrosion-resistant coating to a surface immersed in water which comprises applying to the surface while immersed in water a mixture of a liquid polyepoxide having more than one vic-epoxy group and containing only members of the group consisting of

carbon, hydrogen, oxygen and chlorine, and at least 5% stoichiometric excess of a polyamine, and then allowing

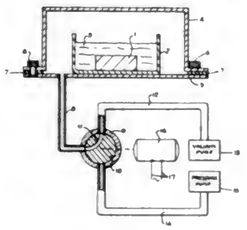


the coating to cure while the coated surface is immersed in water.

3,160,519
NOZZLE MATERIAL FOR JET-PROPELLED ROCKETS

Jean Parisot, Argenteuil, and Pierre Leduc, Paris, France, assignors to Societe Le Carbone-Lorraine, Paris, France, a French body corporate

Filed July 28, 1960, Ser. No. 45,993
Claims priority, application France July 29, 1959
3 Claims. (Cl. 117—114)

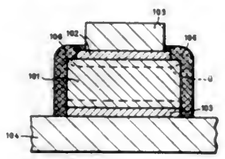


2. A method of manufacturing material for use in making nozzles for jet-propelled rockets which consists in immersing graphite in a bath of molten tin, and impregnating said molten tin into the pores of said graphite by subjecting the materials alternately to vacuum and positive pressure within a closed vessel.

3,160,520
METHOD FOR COATING P-N JUNCTION DEVICES WITH AN ELECTROPOSITIVE EXHIBITING MATERIAL AND ARTICLE

Ottomar Jäntsch and Barbara Matil, Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 25, 1961, Ser. No. 84,812
Claims priority, application Germany, Apr. 30, 1960, S 68,299
19 Claims. (Cl. 117—201)

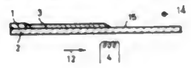


1. A method of producing semiconductor devices having at least one p-n junction, such devices including rectifiers, transistors and controlled rectifiers, in which the p-n junction boundary emerges at a surface locality, the emergent boundary region being coated with an electrically insulating protective coating; the improvement characterized as follows: employing as said coating one which comprises a substance that causes the insulating material to be electro-positive, after being placed upon the semiconductor device, said substance having a vapor pressure sufficiently low to remain stable and remain adsorbed at temperatures that occur during further manufacturing steps and during subsequent operation of the semiconductor device.

3,160,521
METHOD FOR PRODUCING MONOCRYSTALLINE LAYERS OF SEMICONDUCTOR MATERIAL

Günther Ziegler, Erlangen, and Erhard Sirtl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Nov. 29, 1961, Ser. No. 155,691
Claims priority, application Germany, Nov. 30, 1960, S 71,476
16 Claims. (Cl. 117—213)

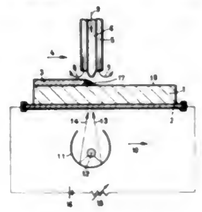


1. A method for producing monocrystalline, particularly thin, semiconducting layers by thermal decomposition of a gaseous compound of the semiconductor substance and precipitation of the semiconductor substance onto a plate-shaped carrier, which comprises orienting and placing a seed crystal on a plate-shaped carrier, the orientation of said seed crystal being such that the rate of growth in the direction of length is in the (112) plane and the growth in the direction of width is in the (111) plane, dissociating a gaseous semiconducting compound in a narrow zone on said carrier thereby precipitating a semiconducting layer on said carrier in said narrow zone, and passing said zone along said carrier starting from said seed.

3,160,522
METHOD FOR PRODUCING MONOCRYSTALLINE SEMICONDUCTOR LAYERS

Walter Heywang, Munich, and Günther Ziegler, Erlangen, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich and Berlin, Germany, a corporation of Germany

Filed Nov. 29, 1961, Ser. No. 155,649
Claims priority, application Germany, Nov. 30, 1960, S 71,475
7 Claims. (Cl. 117—229)



1. A method for producing monocrystalline, particularly thin, semiconducting layers by thermal decomposition of a gaseous compound of the semiconductor substance and precipitation of the semiconductor substance onto a plate-shaped carrier having a melting point above that of the semiconductor substance, which comprises using a carrier of a material having a constitution different from the lattice structure of the semiconductor substance being precipitated, heating a narrow zone of said carrier to a temperature above the melting point of said semiconductor to be precipitated, dissociating a gaseous semiconductor compound of said semiconductor substance in said narrow zone of said carrier thereby precipitating a liquid semiconductor layer on said carrier in said narrow zone, maintaining a temperature gradient during cooling of said liquid semiconductor layer whereby the horizontal semiconductor surface farthest from said carrier solidifies first, and passing said zone along said carrier.

3,160,523
BATHING APPLIANCE

William D. Hull, 1714 Courtland, Park Ridge, Ill.

Filed June 20, 1962, Ser. No. 203,909
2 Claims. (Cl. 118—76)

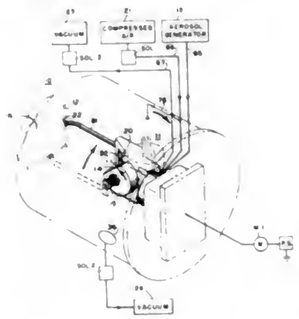


1. A bathing appliance comprising a bar of soap having a pair of parallel, transversely spaced, longtudinally extending openings, and a substantially endless, flexible, handle-forming member having portions passing through said openings to form a pair of substantially similar handle-forming loops extending from opposite ends of said bar of soap, said handle-forming member being formed of a stranded cord having its ends interwoven into a slightly enlarged joint to form a continuous member, said joint being embedded in said bar of soap in one of said openings and an intermediate portion of said handle-forming member being embedded in said bar of soap in the other of said openings.

3,160,524
APPARATUS FOR CHARGING POWDER PARTICLES AND APPLYING THE CHARGED PARTICLES TO A RECEIVING MEMBER

Carl B. Kaiser, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 13, 1962, Ser. No. 173,015
15 Claims. (Cl. 118—637)



8. Apparatus for applying electroscopic powder particles onto the surface of a receiving member, said apparatus comprising in combination:

(*a*) a housing;

(*b*) powder charging means in said housing, said charging means including:

(1) inlet means extending out of said housing to receive a pressurized aerosol of powder particles, and to directionally discharge the aerosol within said housing;

(2) a substantially planar surfaced charging member having a surface portion supported in the path of aerosol discharge arranged to deflect the aerosol from said surface portion in a controlled deflection path, said charging member being characterized by triboelectrically charging electroscopic powder particles impinging against its surface;

(3) scraping means operable to effectively clean the surface of said member impinged against by said particles; and

(4) means for effecting relative movement between the discharge direction of said aerosol and said charging member whereby to continuously change the surface area of impingement to a surface portion cleaned by said scraping means;

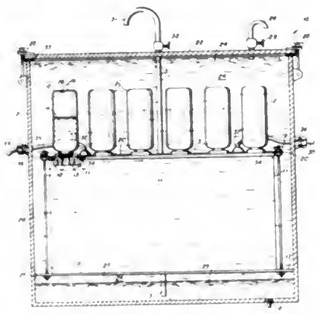
(*c*) an aperture in said housing at which to support a receiving member positioned in the deflection path of said aerosol whereby powder particles in the aerosol deposit against the surface of the receiving member; and,

(*d*) means to effect substantially uniform deposit of the powder particles on the surface of the receiving member defined by said aperture.

3,160,525
DEEP SUBMERGENCE POWER SUPPLY

Williston E. Hutchison, 7945 Michelle Drive, La Mesa, Calif., and Charles R. Hill, 4629 Green St., San Diego, Calif.

Filed July 11, 1961, Ser. No. 123,325
9 Claims. (Cl. 136—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A submersible power supply adapted to be immersed in a water medium in immediate contact therewith and to operate over a wide range of depths, up to and including great depths, in said water medium, comprising:

(*a*) a watertight housing;

(*b*) a liquid-electrolyte multi-cell battery, disposed in fixed position within said housing with the bottommost part of said battery being significantly spaced from the bottommost portion of said housing, the intervening space defining a surge tank area;

(*c*) said liquid-electrolyte battery comprising a plurality of individual cells and having a top, a bottom and a plurality of sides, the top of said battery being provided therein with a plurality of openings at least one of which is associated with each of said individual cells;

(*d*) a plurality of liquid-electrolyte reservoirs mounted atop said liquid-electrolyte battery, each of said reservoirs being in fluid communication with one of said battery cells by way of one of said openings in the top of said battery, each of said liquid-electrolyte reservoirs having an opening in its uppermost end;

(*e*) electrolyte liquid, respective parts of which completely fill the various cells of said battery and respective parts of which fill a substantial portion of each of the various electrolyte reservoirs, the elec-

trolyte liquid in each of said plurality of electrolyte reservoirs being in free fluid exchange with the electrolyte liquid in its associated battery cell;

(*f*) dielectric liquid, characterized by a specific gravity which is less than the specific gravity of said outside water medium and which is also less than the specific gravity of said electrolyte liquid, filling the balance of each of said reservoirs which is not filled by said electrolyte liquid and filling the otherwise-void spaces within said housing;

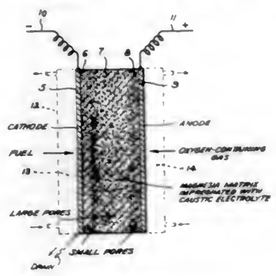
(*g*) pressure-equalizing means, passing into said housing in watertight connection therewith, for establishing dynamic pressure equalization between the external water medium in which said power supply is immersed and the liquid aggregate present within said housing; and

(*h*) a pair of electrical conduction means, one of which is connected to each of the respective poles of said battery, and which are adapted to interconnect to a pair of power leads which are external to said housing, for transporting electrical power to said power leads and any power consumer to which said power leads run.

3,160,526
ALKALINE STORAGE BATTERY AND ELECTROLYTE
Paul Ruetschi, Yardley, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey
No Drawing. Filed Sept. 26, 1961, Ser. No. 141,570
6 Claims. (Cl. 136—6)

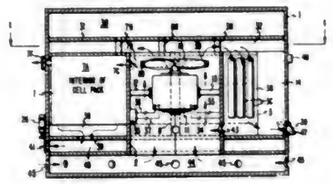
1. In an alkaline battery an electrolyte consisting essentially of an aqueous solution of a quaternary ammonium hydroxide having a concentration of at least 0.5 mol per liter.

3,160,527
FUEL CELL
Richard A. Hess, Claymont, Del., assignor, by direct and mesne assignments, of one-half to Air Products and Chemicals, Inc., a corporation of Delaware, and one-half to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware
Filed May 31, 1960, Ser. No. 32,696
11 Claims. (Cl. 136—86)



1. The method of forming a hard strong porous magnesium oxide body as a composite catalytic electrode/electrolyte matrix for an alkaline fuel cell, said body having a central matrix portion of relatively large pore size adapted to contain a liquid alkaline electrolyte and outer electrode portions of substantially smaller pore size, each electrode portion containing metallic catalyst effective to promote its respective electrode reaction and to provide a conductive path for generated electric current, which method comprises the steps of: forming a dry powder mix of reagent-grade raw magnesium oxide and pre-fired magnesium oxide powders finer than about 200 mesh, U.S. Standard; adding diluted reagent nitric acid to said mix to form a moldable, pasty electrode-forming mixture; forming at least one dry powder mix of raw and pre-fired magnesium oxide powders coarser than about 200 mesh; adding diluted reagent nitric acid to each coarser mix to form a moldable pasty matrix-forming mixture; molding a multilayer composite body of said pasty mixtures comprising a relatively-thin layer of said electrode-forming mixture, at least one layer of matrix-forming mixture and a final layer of said electrode-forming mixture; partially inserting individual electrical conductors between each electrode layer and its adjoining matrix surface during said molding operation; compressing the molded composite body to assure good interface bonding of the multiple electrode and matrix layers; drying said molded body at moderate temperature; firing said molded body in a reducing atmosphere at temperatures in the range of about 1800–2500° F.; and incorporating into said outer electrode layers, prior to utilization of said composite fuel cell element, minor amounts of metallic components effective to catalyze the respective intended electrode reactions.

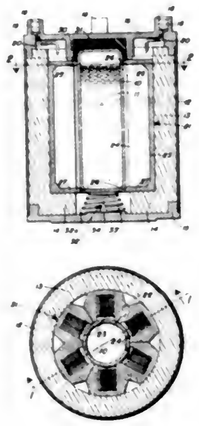
3,160,528
PORTABLE POWER PLANT
Herbert P. Dengler, Fair Haven, and Herbert H. Vickers, Union, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 155,933
1 Claim. (Cl. 136—86)



A self-contained primary power unit comprising in combination an outer housing, an inner housing centrally positioned within said outer housing and forming a central air conduit, a plurality of electrically connected fuel cells divided into a plurality of fuel cell packs which are positioned in spaced apart relationship between said outer housing and said inner housing so as to admit of the passage of air therebetween, said fuel cells each comprising an anode, a porous cathode and an electrolyte compartment for the retention of an aqueous electrolyte between and communicating with said anode and said cathode, conduction means between said fuel cell packs electrically connecting said packs in series and terminating in an electrical outlet means, unit air inlet means in said outer housing communicating with one end of said central air conduit, a fuel tank within said outer housing and spaced apart from the end of said central air conduit opposite said unit air inlet means, fuel conduits extending between said tank and the anode of each of said fuel cells, a gas exhaust conduit admitting of the release of product gases from each of said electrolyte compartments and from said unit, process air inlet conduits communicating with the cathode of each of said fuel cells and with said central air conduit, process air outlet means in said outer housing communicating with the cathode of each of said fuel cells and with said process air inlet conduits, a direct current electric motor adapted for variable speed operation positioned in said central air conduit and electrically connected with the cells of at least one of said fuel cell packs, a fan rotatably connected with and driven by said motor and adapted to draw atmospheric air through said unit air inlet means and into said central air conduit, force the passage of process air from said central air conduit into said process air inlet conduits and to circulate the remainder thereof as coolant air between said cell packs until the same is exhausted from said self-contained

primary power unit, an electrolyte sensor element positioned in one of said electrolyte compartments and associated with an electrical circuit, switching means associated with said electrical circuit whereby the speed of said electric motor is automatically decreased when the electrolyte level in said electrolyte compartment reaches a predetermined level and automatically increased when said electrolyte level falls below said predetermined level, dampering means associated with said process air outlet means for regulating the rate of process air exhaust through said process air outlet means, control means associated with said conduction means and connected with said damper means adapted to control said damper means so that the rate of air exhaust through said process air outlet means is in direct proportional relationship with the rate of electrical current flow through said conduction means, and a pressure actuated coolant air exhaust means in said outer housing adapted to admit of the escape of said coolant air through said outer housing when said speed of said fan is increased.

3,160,529
DEFERRED ACTION BATTERY
Herbert E. Lawson, Jr., Downers Grove, Ill., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 10, 1945, Ser. No. 634,118
6 Claims. (Cl. 136—90)

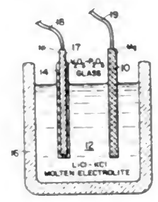


1. In a deferred action battery, a casing, a frangible, sealed ampoule containing electrolyte positioned on the longitudinal axis of said casing, a plurality of electrodes defining multi-cells disposed about said ampoule and in said casing, each of the cells of said multi-cells having longitudinal edges presented toward said ampoule and said multi-cells being directly contacted between the cells by said electrolyte upon breakage of the electrolyte containing ampoule.

3,160,530
FUEL CELL ELECTRODE CONDITIONING
Romeo R. Witherspoon, Anderson, Ind., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 19, 1960, Ser. No. 56,643
9 Claims. (Cl. 136—120)

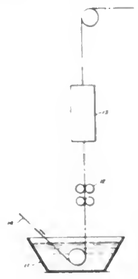
1. A process for rendering porous fuel cell electrodes electrolyte- and water-proof comprising the step of uniformly applying to said electrodes from about 0.5 to about 5 percent by weight thereof of a material selected from the group consisting of the aliphatic monohydroxy alcohols having between 8 and 18 carbon atoms in the chain, the polypropylene glycols and the polybutylene glycols having a molecular weight ranging from about 2000 to about 4000.

3,160,531
GALVANIC CELL ELECTRODE
William C. Spindler, Arlington, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 24, 1961, Ser. No. 91,551
4 Claims. (Cl. 136—120)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a voltaic cell a glass cathode consisting of 80–20 wt. percent V_2O_5—P_2S_5 melted together to form a homogeneous vitreous material.

3,160,532
METHOD OF FORMING A PROTECTIVE COATING
Richard A. Neish, Snowden Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed June 13, 1962, Ser. No. 202,099
1 Claim. (Cl. 148—6.16)



A method of forming a protective coating upon an article having a surface of a metal selected from the group consisting of steel, zinc and aluminum, which consists in applying to the surface a film of an aqueous solution containing hexavalent chromium ions corresponding to between 7 and 45 grams of chromic acid anhydride per liter of solution and from .5 to 3 times as much orthophosphoric acid, metering the solution over the surface to obtain a final coating weight within the range of 20 to 125 mg. per square foot of surface, then heating said surface to a temperature between 300 and 625° F. for from 3 to 8 seconds, thereby flash curing said film to provide a continuous amorphous coating.

3,160,533
HEAT TREATMENT FOR THE PRODUCTION OF A LOW CARBON STEEL SUITABLE FOR DEFORMATION WITHOUT CUTTING

Fritz Fischer, Irlich, Karlheinz Schmitt-Thomas, Mainz (Rhine), and Vincenz Seul, Andernach (Rhine), Germany, assignors to Rasselstein Aktiengesellschaft, Neuwied (Rhine), Germany, a corporation of Germany

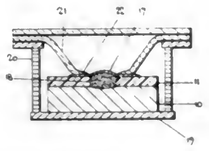
Filed Mar. 6, 1961, Ser. No. 93,636
Claims priority, application Germany, Mar. 8, 1960, St 16,207
5 Claims. (Cl. 148—154)

1. A process for treating a sheet of low carbon steel so as to make it suitable for deformation without cutting, particularly by deep drawing and pressing operations, which comprises: subjecting the sheet steel to high frequency, induction heating for a period of time not substantially in excess of 0.1 second so that the heating effect is confined substantially to the surface profile of the sheet steel whereby the hardness, strength and yield point of the surface profile are lowered and the remainder of the sheet steel is substantially unaffected.

3,160,534
METHOD OF MAKING TUNNEL DIODES

Jesse Oroshnik, Whitestone, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Oct. 3, 1960, Ser. No. 59,935
4 Claims. (Cl. 148—177)



1. The method of making a tunnel diode comprising the steps of depositing a quartz film on a highly doped germanium wafer, removing a selected portion of said film to expose the surface of said germanium wafer, plating a first coating of indium on the exposed portion of said germanium wafer, plating a coating of gallium on said first coating of indium, plating a second coating of indium on said coating of gallium, and alloying said first and second coatings of indium and said coating of gallium with said germanium wafer.

3,160,535
FREE FLOWING GRANULAR EXPLOSIVE COMPOSITION OF CONTROLLED PARTICLE SIZE

Franklin B. Wells, Emmaus, Pa., assignor to Trojan Powder Company, a corporation of New York

No Drawing. Filed Dec. 11, 1962, Ser. No. 243,733
17 Claims. (Cl. 149—7)

1. An explosive composition comprising a dry mixture of substantially water insoluble granules of a detonable high explosive having a rate of detonation of at least 1000 meters per second and, contained in interstitial spaces between said granules, particles of at least one water soluble salt selected from the group consisting of ammonium, alkali metal and alkaline earth metal salts of perchloric and nitric acids, said particles having an average diameter substantially not greater than about ⅕ the average diameter of said granules with not more than about 10% by weight of said particles exceeding said ⅕ average granule diameter.

3,160,536
BLASTING EXPLOSIVE

Robert B. Aitchison, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Jan. 13, 1958, Ser. No. 708,445, now Patent No. 3,064,572, dated Nov. 20, 1962. Divided and this application Jan. 30, 1962, Ser. No. 178,217
1 Claim. (Cl. 149—8)

An explosive mixture for charging blast holes which comprises a mixture of granular ammonium nitrate, a liquid hydrocarbon and a metallic soap, the metallic soap being present in amount from 3% to 7% by weight of the liquid hydrocarbon, and the hydrocarbon-metallic soap mixture forming at least about 10% by weight of the mixture so as to form a jelly-like consistency which coats the ammonium nitrate.

3,160,537
HEATING COMPOSITION

Thomas R. Trafton, Jr., Middle River, Md., assignor to Catalyst Research Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1961, Ser. No. 144,552
1 Claim. (Cl. 149—37)

An autogenous combustible composition consisting essentially of a compacted intimate mixture of the following finely divided ingredients: about 22 to 25% aluminum, about 62 to 73% ferric oxide, 0 to about 15% inert diluent, and about 0.1 to 5.0% combustion retardant selected from the group consisting of graphite, molybdenum disulfide and mixtures thereof.

3,160,538
AQUEOUS EXPLOSIVE GEL COMPOSITION AND PROCESS

Joel A. Zaslowsky and James S. Logan, Woodbridge, Conn., assignors, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland

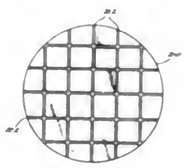
No Drawing. Filed July 1, 1963, Ser. No. 292,074
18 Claims. (Cl. 149—43)

1. An acidic explosive gel composition comprised of ammonium nitrate, water, hydrochloric acid, and a gel forming proportion of a mixture of guar gum and glutaraldehyde.

3,160,539
SURFACE TREATMENT OF SILICON

Thomas C. Hall, Palos Verdes Estates, Alan L. Harrington, Los Angeles, and Joan M. Crishal, Torrance, Calif., assignors to TRW Semiconductors, Inc., a corporation of Delaware

Filed July 18, 1961, Ser. No. 134,795
5 Claims. (Cl. 156—17)

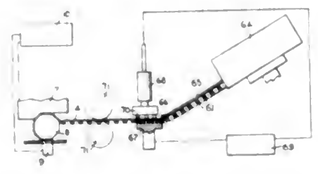


1. A method of etching elemental silicon including the steps of: dissolving an aromatic compound having at least two hydroxyl groups attached to the adjacent carbon atoms in a solvent selected from the group consisting essentially of anhydrous hydrazine, ethylamine, ammonium hydroxide, piperidine, and an organic aliphatic compound with two or more primary amino groups where the number of carbon atoms between the carbon directly attached to the amino groups is not greater than 1, to which has been added water in the range from 5–50% by volume of the combined solution; and maintaining said solution at a temperature in the range from 90° C. to 110° C.; and applying the resulting solution to elemental silicon, said etch being an oxidizer of elemental silicon and being a solvent for the non-gaseous oxidation product of the reaction by the silicon and the etch.

3,160,540
METHOD OF APPLYING SNAP FASTENERS TO ARTICLES OF MANUFACTURE

Norman M. Barlow, Natick, and Everett Melanson, Wakefield, Mass., assignors to United-Carr Incorporated, a corporation of Delaware

Original application Oct. 21, 1958, Ser. No. 768,760, now Patent No. 3,049,462, dated Aug. 14, 1962. Divided and this application Dec. 9, 1959, Ser. No. 858,486
1 Claim. (Cl. 156—66)

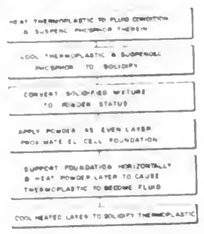


The method of making a continuous strip of plastic snap fastener components for use in automatic snap fastener component applying and sealing equipment comprising molding the plastic snap fastener components as separate, individual pieces, each of said snap fastener components having a thin, heat sealable, plastic flange portion having a substantially flat under surface and a plastic snap fastener portion extending from the opposite surface thereof, placing the individual snap fastener components in hopper means, continuously feeding said fastener components in a continuous line from the hopper means with the flange portion of each in edge to edge contact with the next succeeding component to a sealing zone, applying sealing means to the flange portions of the fastener components as they pass through the sealing zone to heat seal the flange portion of each fastener component to the flange portion of the next succeeding fastener component and to form a severable attaching portion of less width than the flange portion between said flange portions, and continuously withdrawing the formed continuous strip of snap fastener components from the sealing zone.

3,160,541
METHOD OF MAKING ELECTROLUMINESCENT DEVICE AND RESULTING PRODUCT

Robert W. Wollentin, Bloomfield, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 21, 1960, Ser. No. 57,561
16 Claims. (Cl. 156—67)

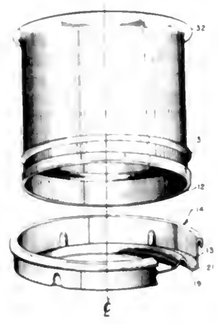


1. The method of forming and supporting on an electroluminescent device foundation, a solid light-transmitting thermoplastic dielectric material and embedded phosphor layer having a substantially uniform thickness, which method comprises, heating to a fluid condition selected light-transmitting thermoplastic dielectric material and suspending finely divided solid inorganic electroluminescent phosphor material throughout the fluid thermoplastic material, immediately cooling the heated thermoplastic material and phosphor suspended therein to cause the thermoplastic material to solidify and embed the suspended phosphor, converting to powdered status the solidified thermoplastic material and embedded phosphor to form a thermoplastic material-phosphor powder, applying the resulting powder as a substantially even layer proximate said device foundation, supporting said foundation in a substantially horizontal orientation with the applied powder layer in turn supported by and overlaying said foundation, heating the applied powder layer to cause the thermoplastic material portion thereof to become fluid and form a substantially uniformly thick fluid thermoplastic material and suspended phosphor layer, and immediately cooling the heated thermoplastic material-phosphor layer to cause the thermoplastic material portion thereof to solidify and adhere to its support.

3,160,542
METHOD OF MAKING A RESEALABLE CONTAINER

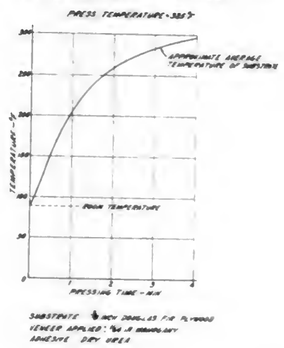
Allen B. Foye, West Bridgewater, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Original application June 2, 1959, Ser. No. 817,590. Divided and this application May 27, 1960, Ser. No. 37,544
3 Claims. (Cl. 156—69)



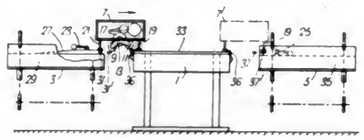
1. A method of making a resealable container which comprises providing a cylindrical can body having the terminal portion of one end folded over reversely upon itself to form an arcuate-shaped edge, providing a closure having a circular panel and a dependent skirt, said skirt having an inverted U-shaped channel in cross-section which is adapted to register with said arcuate-shaped edge when said closure is attached to said can body, depositing a fluid sealing composition in said channel while the closure is in inverted position, said sealing composition being convertible to a solid resilient sealing element, impressing said arcuate-shaped edge into said fluid composition to a depth sufficient to cause said composition to flow around and substantially envelop the edge, and converting said composition to a solid resilient sealing element while the arcuate-shaped edge is impressed therein to produce a sealing element-containing closure wherein the sealing element has a permanent annular recess of substantially the same dimensions as the outer surface of the arcuate-shaped edge, said sealing element-containing closure being removably secured to the can body.

3,160,543
HIGH SPEED VENEERING
Armin Elmendorf, 860 Charleston Road, Palo Alto, Calif.
Filed June 7, 1961, Ser. No. 115,384
4 Claims. (Cl. 156—306)



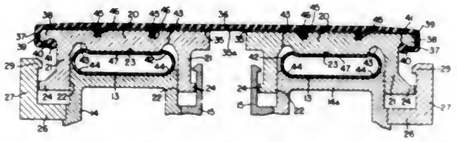
1. A method of facing a board product composed of ligno-cellulosic fibers with veneer which consists in forming a dry and uncured adhesive layer upon a surface of said board product, placing a veneer containing at least some of its equilibrium moisture and having a thickness of 1/48 inch to 1/85 inch on the adhesive, then subjecting the assembly to hot-plate pressure to drive the water vapor into the adhesive, maintaining pressure, in the range of about 200 p.s.i. to about 300 p.s.i., and heat upon the assembly for a period not less than three seconds nor more than 12 seconds and until the adhesive has been activated, but not long enough to raise the average temperature of the board product above about 200° F.

3,160,544
APPARATUS FOR PRODUCING A STACK OF UNEXPANDED HONEYCOMB MATERIAL
George May, 56 Bridgewater Road, Wembley, England, and Desmond Deverell White, 29 Goodyears Ave., Radlett, England
Filed Sept. 15, 1960, Ser. No. 157,287
9 Claims. (Cl. 156—387)



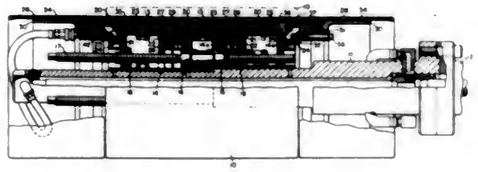
1. Apparatus for the production of a stack of unexpanded honeycomb material from sheet material which comprises a support for the stack to be formed, a printing head mounted for repeated forward and return motion over the support, a printing device on the printing head constructed and arranged to print a set of parallel bands of adhesive on the stack during the forward motion of the head and, during the return motion of the head, a set of parallel bands of adhesive which are staggered relative to the bands printed during the forward motion, and conveyor means mounted for reciprocation over the support in synchronism with the head for engaging sheet material carrying it over each set of printed bands and stacking it thereon for stacking it and printing it in its turn.

3,160,545
TIRE BUILDING DRUM
William T. Burton, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 1, 1962, Ser. No. 214,069
6 Claims. (Cl. 156—415)



1. A rotary tire building drum construction comprising a rotatably mounted spider, a plurality of elements mounted on said spider for movement from a radially inner to a radially outer position and which collectively define a substantially cylindrical work surface, an inextensible inflatable annular tube disposed between said spider and said elements, said tube having in cross section a central portion which extends axially, and end portions which extend radially of said drum, the portions of said elements and said spider which contact said uninflated tube forming in cross section a cavity which conforms to the cross-sectional contour of said uninflated tube, said cavity being formed by curved surfaces engaging said radially extending end portions of said tube when the tube is uninflated.

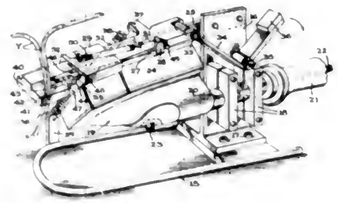
3,160,546
TIRE BUILDING DRUM
William T. Burton, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 21, 1962, Ser. No. 181,412
3 Claims. (Cl. 156—416)



1. A tire building drum comprising in combination a rigid support defining a cylindrical surface, a sleeve made of an elastomeric material surrounding said rigid support and a plurality of locking mechanisms, each mechanism comprising a plurality of pivotable links, one of said links engaging the ends of said sleeve when said mechanism is in closed position, said one link being disengaged from said sleeve when the mechanism is in open position, another of said links being secured to said support when the locking mechanism is in both open and closed position.

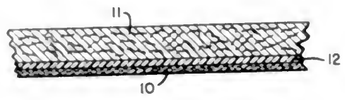
3,160,547
APPARATUS FOR SPLICING THERMOPLASTIC SYNTHETIC YARNS
Willie V. Williams, 701–717 S. Spencer St., Dalton, Ga.
Filed Feb. 12, 1963, Ser. No. 257,968
8 Claims. (Cl. 156—433)

1. Apparatus for use in splicing thermoplastic synthetic yarn comprising in combination a heating iron having an approximately square corner portion serving as a stationary heating anvil, a coacting movable anvil having a slot to receive yarn ends and a downwardly opening substantially V-shaped groove adjacent the slot, means to clamp said yarn ends within the slot of the movable anvil, means to move the movable anvil toward the stationary anvil with the clamped yarn ends so that the latter are fused and severed and permanently spliced by interfitting



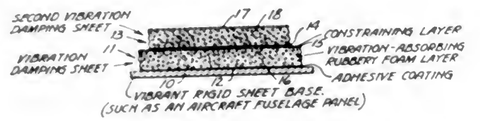
rubbing action of the stationary anvil within the groove of the movable anvil adjacent said yarn ends.

3,160,548
WALL COVERING
Thomas J. Gillick, Jr., Glenville, and Harold G. Hencken and Muriel S. Parker, Greenwich, Conn., assignors to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed Aug. 18, 1959, Ser. No. 834,571
1 Claim. (Cl. 161—151)



A dimensionally stabilized noise suppressive wall covering sheet suitable for decoration comprising a thin and flexible water resistant dimensionally stabilized backing paper bonded to a thin layer of preshrunk wool felt facing by a relatively impermeable fused thermoplastic layer.

3,160,549
VIBRATION DAMPING STRUCTURES
Donald B. Caldwell and James N. Brown, White Bear Lake, and Edward G. Lavigne, Mendota Heights, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 29, 1960, Ser. No. 79,330
3 Claims. (Cl. 161—161)



1. In combination with a vibrant rigid sheet base, a preformed ready-to-lay pressure-sensitive adhesive vibration damping sheet adhered thereto and comprises of a soft rubbery "lossy" vibration-absorbing polyurethane foam layer having a bulk density factor of about 0.05 to 0.5, thinly coated on its face side with an aggressively tacky pressure-sensitive polyacrylate in intimate bonding contact with said base, and a flexible but planar-rigid aluminum foil backing bonded to the back side of the foam layer as a constraining layer; said damping sheet being adapted to substantially attenuate vibrations induced in said base.

3,160,550
METALLIZED PAPER AND PROCESS FOR MAKING SAME
Leo J. Novak, Cedar Rapids, Iowa, and Wilbur M. Bolton, Piqua, Ohio, assignors to Union Carbide Corporation, New York, N.Y.
Filed Feb. 29, 1960, Ser. No. 11,608
3 Claims. (Cl. 161—184)

3. An article of manufacture composed of a flexible laminated metallized dielectric sheet material comprising two paper sheets each coated on one side only with a film of substantially pure metal, the metal surface of one of said sheets being secured to the paper surface of the other of each sheets by a film of epoxy resin, and the paper surface of said secured together sheet material being covered by a film of epoxy resin.

3,160,551
HIGH-TEMPERATURE, HIGH-SOLVENT RESISTANT ELASTOMER
Ralph W. Buetow, Madison, Wis., and Robert P. Cox, 606 University Ave., Madison, Wis., assignors, by mesne assignments, of eighty percent to said Cox and twenty percent to Johan Bjorksten, Houston, Tex.
No Drawing. Filed Oct. 3, 1960, Ser. No. 59,850
9 Claims. (Cl. 161—208)

6. A transparent shatter-resistant article comprising two transparent polyacrylic resin sheets, said sheets having an adhesive disposed thereinbetween said adhesive comprising the polymerization product of .1% to 5% by weight of a cyclic unsubstituted vinyl polysiloxane containing silicon and oxygen atoms and vinyl radicals wherein substantially each of the silicon atoms is bonded to substantially three oxygen atoms and substantially one vinyl radical, and 99.9 to 95% by weight of an organic compound containing a polymerizable ethylenic radical, said radical being capable of copolymerizing with said cyclic polysiloxane.

3,160,552
CELLULOSIC PULPS COMPRISING CROSSLINKED XANTHATE CEREAL PULPS AND PRODUCTS MADE THEREWITH
Charles R. Russell and Russell A. Buchanan, Peoria, and Carl E. Rist, Peoria Heights, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Mar. 14, 1962, Ser. No. 179,820
13 Claims. (Cl. 162—146)
(Granted under Title 35, U.S. Code (1952), sec. 266)

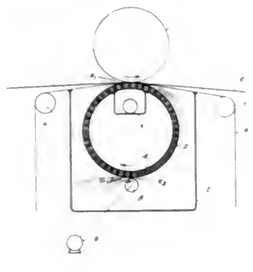
1. A pulp slurry for making a paper product comprising an aqueous dispersion of softwood fibers and about from 1% to 100%, based on the dry weight of the softwood fibers, of an oxidatively crosslinked xanthate of a member selected from the group consisting of cereal flour, starch, cellulose, guar gum, dextran, dextrin, sucrose, and polyvinyl alcohol, said crosslinked xanthate having been formed in situ in the presence of the softwood fibers from the corresponding non-crosslinked xanthate having a xanthate degree of substitution of about from 0.05 to 1.0 and being uniformly distributed among and intimately bonded to the softwood fibers.

6. A method of making a wood substitute comprising uniformly suspending in an aqueous medium substantially equal parts, on a dry weight basis, of a fibrous cellulosic material selected from the group consisting of ground wood, ground corncobs, ground kenaf, bleached sulfite pulp, hardwood sulfate pulp, and unbleached kraft pulp, and a potassium starch xanthate having a xanthate degree of substitution of about 0.5, subjecting the resulting aqueous pulp slurry to the crosslinking action of iodine to form a modified pulp wherein the xanthate has been oxidatively crosslinked in situ in the presence of the fibrous cellulosic material and the thus-crosslinked xanthate uniformly distributed among and intimately

bonded to the cellulose fibers of the cellulosic fibrous material, treating this modified pulp with sodium thiosulfate to destroy excess iodine, filtering the modified pulp to remove free water, washing the modified pulp, drying it to a moisture content of about 10%, and molding it at a temperature of about 130° C. under a pressure of about 4000 p.s.i.g. for about 5 minutes to obtain a molded product suitable as a wood substitute.

8. A process for making paper having high wet-rub resistance comprising coating paper with an aqueous dispersion containing per 100 ml. thereof about 5.83 percent, on a dry weight basis, of sodium amylose xanthate derived from amylose having a purity of 92% and a xanthate degree of substitution of about 0.4 and about 29.17% by weight of clay, exposing the coated paper to a chlorine gas atmosphere to oxidatively crosslink the sodium amylose xanthate in situ in the presence of the paper, and drying the thereby treated and coated paper.

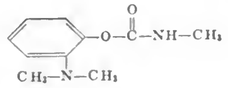
3,160,553
SUCTION ROLL SCAVENGING MEANS
Donald A. Ely, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed July 30, 1962, Ser. No. 213,312
4 Claims. (Cl. 162—274)



1. In a roll assembly including a rotatable roll having water receiving recesses in the surface receiving water during operation, a roll scavenging means comprising, a scavenging roll parallel to said rotatable roll and in close running relation thereto forming a scavenging nip therebetween, and drive means separate from the rotatable roll positively driving said scavenging roll in a rotational direction opposite to the rotatable roll at a positive peripheral speed independent of the speed of the rotatable roll so that the surfaces will travel in the same direction in the nip.

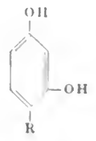
3,160,554
PROTECTING PLANTS FROM INSECTS WITH 2-DIMETHYL - AMINOPHENYL-N-METHYL-CARBAMATE
Rudolf Heiss and Ernst Böcker, Cologne-Stammbeim, and Gunter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 13, 1961, Ser. No. 123,624
Claims priority, application Germany July 23, 1960
3 Claims. (Cl. 167—30)

1. In a process for protecting a plant from insect damage, the improvement comprising contacting the plant with an effective amount of an active compound having the formula



3,160,555
AERIAL DISINFECTING COMPOSITION COMPRISING POLYHYDROXY COMPOUND AND ALPHA HYDROXYCARBOXYLIC ACID
John Hamill and Roy Smart, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company
No Drawing. Filed May 24, 1962, Ser. No. 197,253
Claims priority, application Great Britain, June 2, 1961, 20,007/61
8 Claims. (Cl. 167—39)

1. Aerial disinfectant compositions comprising as active ingredients at least one polyhydroxy compound selected from the group consisting of propylene glycol, dipropylene glycol, triethylene glycol, hexylene glycol and resorcinols of the formula:



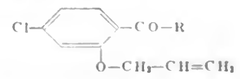
wherein R is selected from the group consisting of hydrogen and lower alkyl together with α-hydroxy-α-methylbutyric acid.

3,160,556
FLY BAIT COMPOSITIONS CONTAINING DIOCTYL PHTHALATES
Bernard F. Beaver, St. Louis, and Warren O. Haberman, Webster Groves, Mo., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed June 22, 1962, Ser. No. 204,591
4 Claims. (Cl. 167—48)

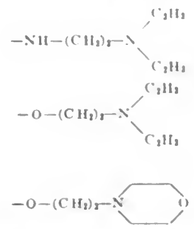
1. A fly bait comprising a solid base, an insecticide on said base and an unsubstituted octyl phthalate on said base.

3,160,557
METHOD OF PRODUCING ANTI-TUSSIVE ACTION WITH 2 - ALLYLOXY - BENZOIC ACID DERIVATIVES
Roland-Yves Mauvernay, Riom, France, assignor to Centre Europeen de Recherches Mauvernay, Chateau de Bardon, Riom, Puy-de-Dome, France
No Drawing. Filed Sept. 27, 1962, Ser. No. 227,656
Claims priority, application France, May 5, 1962, 896,591; June 25, 1962, 901,887
3 Claims. (Cl. 167—55)

1. The method of achieving an anti-tussive action which comprises administering to a patient requiring the same a compound selected from the group consisting of compounds of the formula:



wherein R is selected from the group consisting of

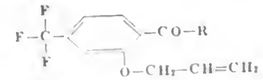


and

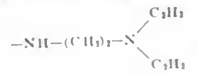
and non-toxic, physiologically compatible acid addition salts thereof.

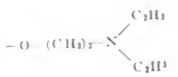
3,160,558
METHOD OF PRODUCING ANTI-TUSSIVE ACTION WITH 4 - TRIFLUOROMETHYL - BENZOIC ACID DERIVATIVES
Roland-Yves Mauvernay, Riom, France, assignor to Centre Europeen de Recherches Mauvernay, Riom, Puy-de-Dome, France
No Drawing. Filed Sept. 27, 1962, Ser. No. 227,657
Claims priority, application France, May 5, 1962, 896,591; June 25, 1962, 901,887
3 Claims. (Cl. 167—55)

1. The method of achieving an anti-tussive action which comprises administering to a patient requiring the same a compound selected from the group consisting of compounds of the formula:

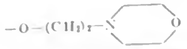


wherein R is selected from the group consisting of





and



and non-toxic, physiologically compatible acid addition salts thereof.

3,160,559
METHOD OF CONTROLLING FUNGUS INFECTIONS WITH 3-HALOGENO-4-NITRO-6-LOWER ALKYLPYRIDAZINE-1-OXIDE
Hideo Kano, Kumikyo-ku, Kyoto-shi, and Masaru Ogata, Higashinada-ku, Kobe-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Original application Sept. 6, 1962, Ser. No. 221,885. Divided and this application June 10, 1963, Ser. No. 299,132
Claims priority, application Japan Feb. 26, 1962
3 Claims. (Cl. 167—58)

1. A method of controlling the infections caused by pathogenic Trichophyton, which comprises the dosage administration externally of a pharmaceutical preparation comprising 3-halogeno-4-nitro-6-lower alkylpyridazine-1-oxide as an active ingredient.

3,160,560
STREPTOLYDIGIN AND PRODUCTION THEREOF
Clarence De Boer, Kalamazoo Township, Kalamazoo County, and Alma Dietz, Thomas E. Eble, and Charles M. Large, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan
Filed Aug. 23, 1957, Ser. No. 679,984
12 Claims. (Cl. 167—65)

5. An antibiotic substance characterized by being soluble in ethyl acetate, amyl acetate, diethyl ether, acetone, ethanol, dimethyl formamide, methylene chloride, chloroform, butanol, and ethylene dichloride; and substantially insoluble in water and hydrochloric acid; by a crystalline structure in the pure state; and in its essentially pure crystalline form by consisting of the elements carbon, hydrogen, nitrogen and oxygen in the following proportions: C, 63.68, H, 7.56, N, 4.68, O, 24.08; by having a molecular weight of 606–658; having a melting point between 147 and 148 degrees centigrade; by an optical rotation $[\alpha]_D^{25}$=minus 64 to minus 67 degrees (c., two percent in 0.005 N potassium hydroxide in 95 percent ethanol), minus 93 degrees (c., 1.6 percent in chloroform), minus 76 degrees (c., 1.78 percent in dioxane); by an ultraviolet absorption spectrum in 0.01 N ethanolic potassium hydroxide solution

Maxima	Inflection	Minima
261 Mμ, $E_{1\ cm.}^{1\%}$=223.6	302 Mμ, $E_{1\ cm.}^{1\%}$=248.4	230 Mμ, $E_{1\ cm.}^{1\%}$=77.1.
291 Mμ, $E_{1\ cm.}^{1\%}$=270.7		270 Mμ, $E_{1\ cm.}^{1\%}$=212.2.
336 Mμ, $E_{1\ cm.}^{1\%}$=331.0		311 Mμ, $E_{1\ cm.}^{1\%}$=231.9.

in 0.01 N ethanolic sulfuric acid

Maxima	Inflection	Minima
234 Mμ, $E_{1\ cm.}^{1\%}$=139.1	295 Mμ, $E_{1\ cm.}^{1\%}$=127.8	264 Mμ, $E_{1\ cm.}^{1\%}$=39.3.
357.5 Mμ, $E_{1\ cm.}^{1\%}$=590.5	309.5 Mμ, $E_{1\ cm.}^{1\%}$=17.4	366 Mμ, $E_{1\ cm.}^{1\%}$=557.8.
370 Mμ, $E_{1\ cm.}^{1\%}$=560 3	342 Mμ, $E_{1\ cm.}^{1\%}$=455.3	

and having an infra-red spectrum when suspended in mineral oil as shown in FIGURE 3 in the drawing.

3,160,561
GLUMAMYCIN AND PRODUCTION THEREOF
Motoo Shibata, Toyonaka, Koiti Nakazawa, Amagasaki, Michitaka Inoue, Osaka, Hiromu Hitomi, Ibaraki, Komei Mizuno, Osaka, Masahiko Fujino and Akira Miyake, Nishinomiya, and Toyoshige Araki, Toyonaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
Filed Dec. 8, 1961, Ser. No. 159,817
Claims priority, application Japan, July 21, 1959, 34/23,709; Oct. 11, 1961, 36/36,851
11 Claims. (Cl. 167—65)

1. An acidic peptide antibiotic having growth-inhibiting action against Gram-positive bacteria and being characterized by the following further properties:

(*a*) it is optically active;

(*b*) it is a colorless crystalline powder decomposing at 230° C.;

(*c*) its I.R. spectrum shows maximum absorptions at wave lengths of 3.0, 3.4, 5.7, 6.0, 6.5, 6.9, 7.2 and 8.2 microns;

(*d*) its specific rotation $[\alpha]_D^{20}=+8.0\pm0.5°$ (c.=2%, in ethanol);

(*e*) it gives by hydrolysis one mole of 3-isotridecenoic acid, four moles of the sum of L-aspartic acid and L-threo-β-methyl-aspartic acid, two moles each of glycine and D-erythro-α,β-diaminobutyric acid, and one mole each of L-valine, L-proline and D-pipecolic acid;

(*f*) its molecular formula is $C_{58}H_{99}O_{20}N_{13}$;

(*g*) it is not readily soluble in water, but is easily soluble in aqueous alkaline solution and in lower alkanoles, sparingly soluble in acetone, and is insoluble in alkyl acetates, chloroform, benzene, ethyl ether, petroleum ether;

(*h*) it is negative to the Sakaguchi reaction and to the Molisch reaction.

3,160,562

COMPOSITION CONTAINING ERGOTAMINE, CAFFEINE AND HYDANTOIN DERIVATIVES FOR CEPHALALGIA

Aurelio Cerletti, Bottmingen, Basel-Land, and Albert Fanchamps, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed June 25, 1963, Ser. No. 290,300

Claims priority, application France June 27, 1962

2 Claims. (Cl. 167—65)

1. A pharmaceutical composition consisting of (i) a member of the group consisting of dihydroergotamine and pharmaceutically acceptable acid addition salts thereof, (ii) caffeine, (iii) a member of the group consisting of 5,5-diphenylhydantoin and 3-methyl-5-ethyl-5-phenylhydantoin, and an inert, physiologically acceptable carrier wherein the quantities of (i), (ii) and (iii) are 0.0005–0.002 g., 0.02–0.1 g. and 0.05–0.2 g. respectively, per unit of dosage.

3,160,563

PURIFICATION OF HEPARIN

Toccaceli Nazzareno, Milan, Italy, assignor to Ormonoterapia Richter S.p.A., Milan, Italy

No Drawing. Filed July 15, 1960, Ser. No. 42,970

Claims priority, application Italy, May 13, 1960, 8,560/60

5 Claims. (Cl. 167—74)

1. A method for the purification of crude heparin which comprises providing an aqueous solution of crude heparin, adding thereto an agent taken from the class consisting of—



and



wherein R_1, R_2 and R_3 represent methyl, R_4 is cetyl, and X is halogen, whereby a mixture of a complex and some impurities are precipitated, said method being carried out in the absence of an organic solvent for said complex, filtering said complex onto filter earth capable of adsorbing said complexes, treating said earth with a salt of a metal taken from the class consisting of alkali and alkali earth in sufficiently high aqueous concentration to elute said complex, then diluting said eluate with water to precipitate purified heparin complex only.

3,160,564

MULTI-VITAMIN COMPOSITION CONTAINING PANTOTHENAMIDE

Edward J. Hanus, Palisade, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,655

1 Claim. (Cl. 167—81)

A stable aqueous multivitamin composition comprising vitamin A, vitamin D_2, thiamine, riboflavin, niacinamide, pyridoxine, ascorbic acid, cyanocobalamin and pantothenamide, said multivitamin composition having a pH adjusted between 4 and 5.

3,160,565

ENHANCING THE ABSORPTION OF ORALLY ADMINISTERED MEDICAMENT WITH DISACCHARIDE FATTY ACID ESTERS

Helen E. Duell, Levittown, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 757,125, Aug. 25, 1958. This application Aug. 9, 1962, Ser. No. 215,787

4 Claims. (Cl. 167—82)

1. The method of enhancing the absorption of an orally administered medicament selected from the group consisting of iron salts, cyanocobalamin, hydroxycobalamin, nitrocobalamin, chlorocobalamin, dicyanocobalamin, thiocyantocobalamin, sulfatocobalamin, sulfitocobalamin, tetracycline, chlorotetracycline, oxytetracycline, streptomycin, dihydrostreptomycin and kanamycin which comprises orally administering concurrently with said medicament a fatty acid ester of a disaccharide selected from the group consisting of sucrose, maltose, lactose, melibiose, trehalose, cellobiose and gentiobiose, said fatty acid being an aliphatic carboxylic acid having from 9 to 22 carbon atoms.

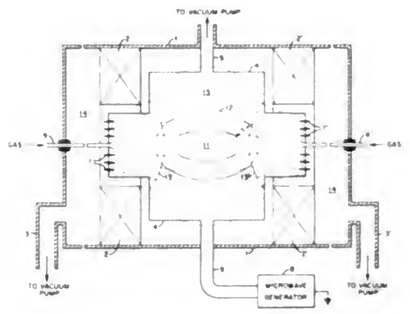
3,160,566

PLASMA GENERATOR

Raphael A. Dandl and William B. Ard, Jr., Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 9, 1962, Ser. No. 215,999

5 Claims. (Cl. 176—7)



1. A method of producing a stable, energetic, dense plasma within an evacuated reflecting cavity disposed within an evacuated enclosure permeated by axially symmetric magnetic mirror fields comprising the steps of evacuating said cavity and said enclosure to a first selected pressure, feeding high frequency microwave energy of a selected power and frequency into said evacuated reflecting cavity, establishing said magnetic fields at a strength such that the electron cyclotron frequency is made equal to the frequency of said microwave energy, the electrons within said cavity being heated by said microwave energy along lines of constant magnetic flux provided by said magnetic fields, said heated electrons ionizing the background gas within said cavity to form a primary plasma, feeding gas at a selected critical rate into said cavity and simultaneously raising the pressure within said enclosure and cavity to second and third pressures, respectively, said critical gas feed rate being proportional to the selected operating power of said microwave energy for any selected cavity size, whereby a stable plasma blanket is formed surrounding said primary plasma, said blanket shielding said primary plasma from neutral particles and rendering said primary plasma stable, energetic and dense.

3,160,567

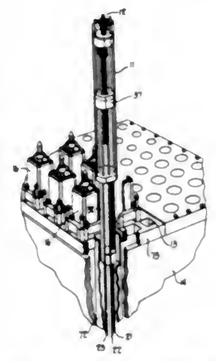
SOLID STATE POWER MAPPING INSTRUMENT

Robert Steinberg, Fairview Park, and William B. Schwab, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 28, 1961, Ser. No. 138,540

7 Claims. (Cl. 176—19)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A power survey instrument comprising in combination, a mounting tube, a plurality of fission probes, each of said probes including a detecting element comprising a plurality of silicon pn junction wafers connected in series, each of said wafers being coated with enriched uranium-235, a probe housing composed of aluminum enclosing each probe, signal leads therein and paraffin potting the leads and detector in each housing, a probe guide composed of red polymethyl methacrylate visible under water having a head containing a micro-switch, a supporting cable for the instrument, the probe guide head having a leading surface with a narrow groove therein running its length and a micro-switch actuator extending into the groove, a pair of aluminum guide pins located on a line perpendicular to the direction of said groove, within said mounting tube a water tight carriage composed of polymethyl methacrylate upon which the probes are mounted, an aluminum drive screw and a pair of stainless-steel guide rods carrying said carriage, coaxial signal cables for each probe, pulley mechanism for taking up slack in the signal cables as the probes are driven downward, a drive motor secured to the upper part of the instrument tube, a clutch interconnecting the motor with the drive screw, a potentiometer coupled to the drive screw, a digital voltmeter connected to the potentiometer for recording position of the fission-probe detecting elements, the motor having a water tight housing, the instrument-mounting tube being open to admission of water when the instrument is lowered into water shielding a nuclear reactor, limit switches at each end of travel of the carriage, and motor reversing switches responsive to the limit switches.

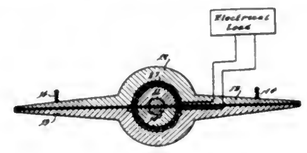
3,160,568

NUCLEAR REACTOR

Donald R. MacFarlane, Downers Grove, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 15, 1963, Ser. No. 302,488

2 Claims. (Cl. 176—29)



1. A nuclear reactor adapted for use in space, comprising a core consisting of two equal hemispherical bodies of U–233 which are individually noncritical but critical when adjacent, a beryllium reflector surrounding said core, which is thicker than the optimum from weight considerations, a large, circular, tapered beryllium fin attached to said reflector, said reflector and said fin being split into equal sections along the midplane of the fin, means for varying the distance between the two bodies of U–233 to control the reactor including facing arcuate slots on the inner faces of the beryllium fin sections, one of said slots having a slanting bottom, a ball situated in said slots, means for holding the fin sections against the ball, and means for rotating one half of the reactor with respect to the other half to vary the distance between halves of the reactor, and a plurality of thermoelectric elements for converting reactor heat into electricity intermediate of said reflector a uniform distance from the core.

3,160,569

METHOD OF REMOVING SEED COATS OF SOYBEANS WITH CELLULASE PRODUCED BY MICROORGANISMS

Nobuo Toyama, Miyazaki-ken, Japan, assignor to Kinki Yakult Seizo Kabushiki Kaisha, Takarazuka-shi, and Meiji Seika Kaisha, Ltd., Tokyo, Japan, both corporations of Japan

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,723

Claims priority, application Japan Feb. 23, 1961

5 Claims. (Cl. 195—2)

1. A method for removing seed coats from soybeans comprising, producing cellulase from cellulase-producing microorganisms, digesting soybean seed coats by contacting said cellulase with soybeans having seed coats, removing the seed coats from the soybeans.

3,160,570

METHOD FOR PRODUCING 6-DEMETHYL-CHLORTETRACYCLINE

Eugene L. Dulaney, Metuchen, and David Hendlin, Springfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 20, 1961, Ser. No. 160,919

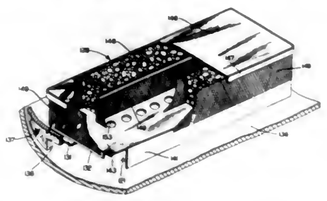
4 Claims. (Cl. 195—80)

1. The process for producing 6-dimethylchlortetracycline which comprises growing a methionine dependent strain of *Streptomyces viridifaciens* in an aqueous medium containing assimilable sources of carbon and nitrogen, said medium containing concentrations of methionine optimal for the production of maximum yields of 6-demythylchlortetracycline.

3,160,571
EVAPORATOR CONSTRUCTION

Stewart F. Mulford, San Diego, Calif., and Darrell G. Durst, Massillon, Ohio, assignors, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 20, 1961, Ser. No. 139,411
8 Claims. (Cl. 202—173)



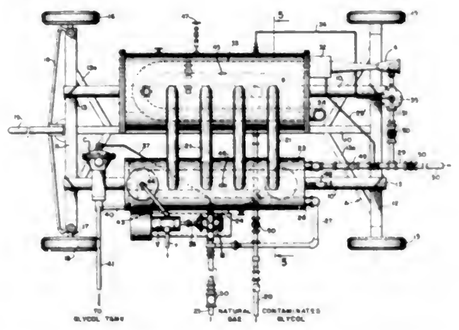
1. Flash evaporator chamber construction for distilling sea water and the like including a feedwater portion and a condensing portion, feedwater inlet means for introducing liquid to be distilled into the feedwater portion and feedwater discharge means for discharging said liquid from the feedwater portion, bed means of aggregate-like material supported in the feedwater portion spaced above the feedwater discharge means and having at least one open discharge side spaced above the feedwater discharge means and opening generally horizontally into discharge liquid directing means in the feedwater portion, said bed open discharge side extending downwardly to substantially the lowest level of said bed means whereby it is impossible to maintain a static liquid level in said bed means, inlet liquid directing means formed in the feedwater portion operably connected to the feedwater inlet means and operably connected to the bed means space horizontally from said bed open discharge side for receiving liquid from the feedwater inlet means and directing said liquid to and horizontally through the bed means and horizontally from said bed open discharge side whereby at least part of the vapors released from the liquid within the feedwater portion will be released within the bed means and will pass through and out of the bed means above said liquid, the discharge liquid directing means formed in the feedwater portion extending downwardly from the bed open discharge side and operably connected to the feedwater discharge means for directing liquid from said bed open discharge side above any static liquid level in the discharge liquid directing means of the feedwater portion, and directing said liquid downwardly to said feedwater discharge means, means in the condensing portion for condensing vapors released from the liquid in the bed means and outwardly of the bed open discharge side, and means in the condensing portion for collecting the distillate resulting from the condensed vapors.

3,160,572
VACUUM DISTILLATION APPARATUS UTILIZING NATURAL GAS AS A COOLANT, FUEL AND MOTIVE FORCE

Fred A. Rarden, P.O. Box 424, McCamey, Tex., assignor, by mesne assignments, of fifty percent to Triangle Painting Service, Hobbs, N. Mex., a co-partnership composed of Don H. Wilson and C. W. Owen

Filed July 29, 1960, Ser. No. 46,126
7 Claims. (Cl. 202—182)

1. Apparatus of the class described for reclaiming glycol comprising a boiler to receive contaminated glycol, heating means for said boiler, a condenser in communication with said boiler to receive glycol vapors therefrom, a pump connected directly to the condenser to pull a vacuum on said boiler through said condenser, means operable by natural gas under pressure to drive said pump, and piping to receive the natural gas after driving

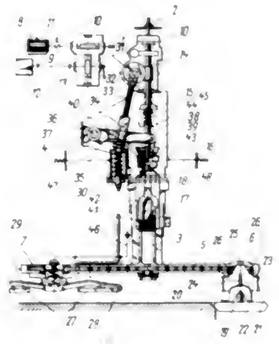


said pump to conduct it as a coolant about said condenser and thence to said heating means as the fuel for the latter.

3,160,573
MACHINE FOR REMOVAL AND MOUNTING OF COVERS OF THE COKE OVEN LOADING MANHOLES AND FOR SUBSEQUENT REMOVAL OF COAL CHARGE AROUND THESE MANHOLES

Igor Lazarevich Nepomniashtshy, Stalino, U.S.S.R., assignor to Konstruktorskoje Bureau Koksohimmash Giprokoksa

Filed July 31, 1961, Ser. No. 130,723
3 Claims. (Cl. 202—241)



1. A machine for removing and replacing manhole covers and for removal of excess coal from around the manhole cover opening of coke ovens, said machine comprising a frame suspended from a coal bar, a horizontal arm mounted on the lower end of said frame, a cover removing and rotating mechanism on one end of said arm and including means for gripping the cover, scraping and cleaning means including air blast nozzles on the opposite end of said arm, gear means on said arm for rotating said removing and rotating mechanism and for rotating said scraping and cleaning means, power driven means for raising and lowering said arm, for sequentially positioning said removing and rotating mechanism and said scraping and cleaning means in alignment with the manhole and for rotating said removing and rotating mechanism and said scraping and cleaning means and means for controlling the operation of said machine and the supply of air to said nozzles.

3,160,574
NICKEL PLATING ADDITIVES

Jack L. Towle, Cleveland, and Henry R. Tuchewicz, Parma Heights, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,532
12 Claims. (Cl. 204—49)

1. A nickel plating solution comprising an aqueous acid solution of nickel material supplying nickel ions and a leveling additive having the general formula:

$$R_1-C\equiv C-(CH_2)_n-\underset{\displaystyle R}{\overset{\displaystyle H}{\overset{|}{\underset{|}{C}}}}-R_1$$

wherein n is an integer from 0 to 1 inclusive, R_1 is a member selected from the group consisting of hydrogen and alkyl having from 1 to 11 carbon atoms, R_2 is a member selected from the group consisting of

$$(OCH_2CH_2)_y-\overset{\displaystyle O}{\overset{\|}{C}}-NHZ$$

and

$$(OCH_2CH_2)_w-OCH_2-\underset{\displaystyle O}{\overset{\displaystyle CH_2}{\overset{|}{\underset{\|}{CH}}}}-C-NHZ$$

wherein y is an integer from 1 to 20, w is an integer from 0 to 20, Z is a member selected from the group consisting of hydrogen, alkyl and hydroxymethyl, and R_3 is a member selected from the group consisting of hydrogen, hydroxymethyl, and alkyl group having from 1 to 11 carbon atoms,

$$-C\equiv C-\underset{\displaystyle R_1}{\overset{\displaystyle H}{\overset{|}{\underset{|}{C}}}}-R_1$$

and

$$-\underset{\displaystyle R_1}{\overset{\displaystyle H}{\overset{|}{\underset{|}{C}}}}-R_1$$

wherein R_1 and R_2 are the same as previously defined, said leveling additive being present in the range of from .005 gram per liter to 1.0 gram per liter.

3,160,575
PROCESS FOR THE PRODUCTION OF ELASTOMERS

Herbert Bartl, Cologne-Stammheim, and Hans Scheurlen, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 27, 1959, Ser. No. 808,873
Claims priority, application Germany Apr. 30, 1958
4 Claims. (Cl. 204—154)

1. A process for the production of elastomers, wherein high energy ionizing radiation of 1–200 megarep is caused to act on copolymers of ethylene and 5–60% by weight of organic vinyl esters to transform said copolymers from thermoplastic copolymers into rubbery copolymers.

3,160,576
METHOD OF PRODUCING THIN FERROMAGNETIC LAYERS OF UNIAXIAL ANISOTROPY

Oskar Eckert, Lauf (Pegnitz), Germany, assignor, by direct and mesne assignments, to Steatit-Magnesia Aktiengesellschaft, Lauf (Pegnitz), Germany, a corporation of Germany, and Indiana General Corporation, Valparaiso, Ind., a corporation of Indiana

No Drawing. Filed Nov. 8, 1960, Ser. No. 67,878
Claims priority, application Germany Nov. 16, 1959
8 Claims. (Cl. 204—192)

1. The method of producing thin ferromagnetic layers with uniaxial anisotropy comprising
providing a base plate
applying a layer of a thickness of several hundred to several thousand Angstrom units of a ferromagnetic ferrite material of the formula

$$(Me^{++}{}_{1-x-y}Co^{++}{}_xFe^{++}{}_y)O.Fe_2O_3$$

wherein $0.001<x<0.05$ and $0.05<y<0.15$, to said base plate, Me^{++} being a bivalent metal ion selected from the group consisting of Ni^{++}, Mn^{++}, Mg^{++}, Cu^{++}, mixtures thereof with each other, and mixtures thereof with Zn^{++} and with Cd^{++}.
and thermally treating the applied ferrite from a temperature of about 10° C. above the Curie temperature thereof down to about room temperature in a static magnetic field to produce a state of uniaxial anisotropy thereof.

3,160,577
SENSING UNIT

Roger W. Nolan, Jr., Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware

Filed Mar. 24, 1961, Ser. No. 98,046
1 Claim. (Cl. 204—195)



In a polarographic sensing unit a housing, a metallic cathode electrode within said housing and insulated therefrom, a metallic anode electrode formed of a mesh wire including cadmium surfaces forming an exterior wall of said housing, and an electrolytic medium contained within said housing surrounding said cathode and bridging said cathode and said anode, said anode being formed with openings of not more than 10 microns to contain said medium while permitting the passage of gas therethrough.

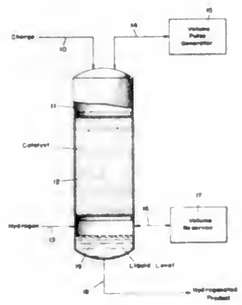
3,160,578
SUBMERGED COMBUSTION DISTILLATION

Arthur L. Saxton, Warren Township, Somerset County, Harold N. Weinberg, East Brunswick, and Edward J. Higgins, Chatham, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 12, 1960, Ser. No. 75,280
8 Claims. (Cl. 208—41)

1. In a process to recover an asphalt from a whole crude the steps comprising preheating said crude to a temperature in the range of about 450° to 650° F., passing said crude to a flash separation zone to form a gaseous overhead fraction containing those hydrocarbon constituents boiling below about 450° F. and a liquid reduced crude, withdrawing said overhead fraction from said flash separation zone and contacting said fraction in heat-exchange relationship with said crude to assist preheating thereof, withdrawing said reduced crude from said flash separation zone, passing said reduced crude to a heated separation zone wherein a second gaseous fraction containing hydrocarbons boiling below about 800° F. and a liquid asphalt fraction are formed, heating said separation zone by releasing flue gas from a submerged combustion burner directly into the liquid bottom fraction wherein water is injected into said separation zone below the liquid level of the asphalt fraction, withdrawing overhead from said separation zone a gaseous stream comprising flue gas and said second gaseous fraction and contacting in heat-exchange relationship said gaseous stream with said whole crude to preheat said whole crude and withdrawing from said separation zone said liquid bottom fraction.

3,160,579
HYDROGENATION PROCESS
James Van Dyck Fear, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 31, 1961, Ser. No. 135,232
4 Claims. (Cl. 208—143)

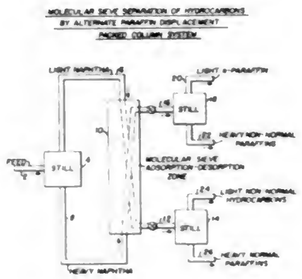


1. Process for hydrogenating a hydrocarbon oil which comprises:
(*a*) feeding said oil in liquid phase into the hydrogenating zone containing a fixed bed of granular hydrogenating catalyst in such manner that said oil forms thin flowing films around the catalyst granules without filling the voids in said bed to any substantial extent,
(*b*) feeding hydrogen-containing gas into said zone in an amount sufficient to maintain a static atmosphere of hydrogen within said zone,
(*c*) reacting said oil and hydrogen-containing gas in the presence of the catalyst and under such conditions of temperature and pressure whereby said oil is at least partially hydrogenated,
(*d*) imposing on said zone a volume pulse to alternately reverse the directional flow of the hydrogen-containing gas within the bed,
(*e*) retaining substantially all of the remaining hydrogen in said zone, and,
(*f*) removing from the zone hydrocarbon oil which has been at least partially hydrogenated as the sole product.

3,160,580
PROCESS FOR DESULFURIZING AND DEODORIZING HYDROCARBONS
Karl Achenbach, Frankfurt (Main), and Kurt Osterloh and Wilfried Rothe, Bochum, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany, and Dr. C. Otto & Company G.m.b.H., Bochum, Germany
No Drawing. Filed Oct. 25, 1962, Ser. No. 233,149
Claims priority, application Germany, Oct. 26, 1961, D 37,315
5 Claims. (Cl. 208—226)

1. A process for desulfurizing hydrocarbons contaminated with organic sulfur compounds which comprises passing such contaminated hydrocarbons in dry form and in vapor phase over a finely divided active material selected from the group consisting of sodium monoxide and a mixture of sodium hydride and sodium hydroxide formed by hydrogenation of sodium monoxide, said finely divided material being supported on an inert carrier, at a temperature sufficiently high to effect reaction between the active material and the contaminating sulfur compounds.

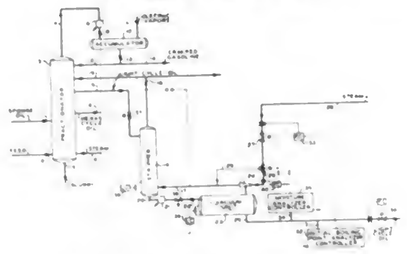
3,160,581
HYDROCARBON DESORPTION PROCESS
William Judson Mattox and Charles Newton Kimberlin, Jr., Baton Rouge, La., and Zigmond Walter Wilchinsky, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 13, 1956, Ser. No. 565,059
14 Claims. (Cl. 208—310)



6. An improved isothermal process for upgrading a naphtha which comprises passing the latter to a distillation zone, separately withdrawing a light fraction and a heavy fraction each comprising normal paraffins and non-normal hydrocarbons, said light and heavy normal paraffins comprising hydrocarbons differing by at least one and not more than two carbon atoms, passing said vaporized light fraction to a molecular sieve adsorption zone, adsorbing said light normal paraffins, withdrawing unadsorbed light non-normal hydrocarbons, thereafter passing said vaporized heavy fraction into said zone, adsorbing said heavy normal paraffins, withdrawing light normal paraffins and heavy non-normal hydrocarbons from said zone, passing said mixture to a separation zone, thereafter passing said light fraction into said adsorption zone, withdrawing a mixture of heavy normal paraffins and light non-normal hydrocarbons, passing said mixture to a separation zone, and recovering separate streams comprising light normal, heavy normal, light non-normal and heavy non-normal hydrocarbons respectively.

10. The process for treating two fluid hydrocarbon mixtures of differing boiling range, each of which comprises straight chain and non-straight chain components, to separate the straight chain components therefrom which comprises: (1) flowing the first of said mixtures in contact with a solid granular adsorbent consisting essentially of a partially dehydrated zeolitic metallo alumino silicate having substantially uniform intracrystalline pores of about 5 A. in diameter, said adsorbent having adsorbed thereon straight chain components of the second of said mixtures, whereby the adsorbed straight chain components of said second mixture are desorbed and the straight chain components of said first mixture are adsorbed, and there is obtained a first effluent comprising the non-straight chain components of said first mixture and the desorbed straight chain components of said second mixture; (2) separating the said first effluent from the adsorbent; (3) then flowing said second mixture in contact with said adsorbent, whereby the adsorbed straight chain components of said first mixture are desorbed and the straight chain components of said second mixture are adsorbed, and there is obtained a second effluent comprising the non-straight chain components of said second mixture and the desorbed straight chain components of said first mixture; (4) separating the said second effluent from the adsorbent; (5) during said steps (1) and (3) controlling the relative flow rates of said first and second mixtures so that substantially equivalent amounts of straight chain components are adsorbed in each of said steps; and (6) treating said first and second effluents separately to separate therefrom the straight chain components thereof.

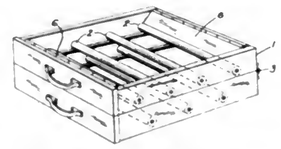
3,160,582
COMBINED STRIPPING AND FLASHING OPERATION
John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,914
6 Claims. (Cl. 208—361)



1. The steps in an operation for the stripping of a liquid which comprise:
(*a*) stripping in a stripping zone a liquid of strippable components with a stripping medium;
(*b*) passing stripped liquid into a reduced pressure zone to remove traces of stripping medium therefrom;
(*c*) maintaining said zone, which is maintained at reduced pressure, at such a pressure by operation of a sub-atmospheric pressure-producing zone employing said stripping medium as actuating fluid for said last-mentioned zone;
(*d*) removing from said reduced pressure zone, liquid which has been subjected to removal therefrom of stripping medium by virtue of said reduced pressure;
(*e*) passing said stripping medium fed to the operation first to said sub-atmospheric pressure-producing zone as actuating medium therefor and from said zone, together with traces of stripping medium leaving said reduced pressure zone by way of said sub-atmospheric pressure-producing zone, to said stripping zone;
(*f*) also passing at least a portion of stripping medium fed to the operation directly into said stripping zone;
(*g*) analyzing the liquid removed from said zone maintained at a sub-atmospheric or reduced pressure to make a determination of its residual content of said traces of stripping medium;
(*h*) controlling the amount of stripping medium used as under (*e*) hereof responsive to said determination;
(*i*) also analyzing the liquid removed from said zone maintained at a sub-atmospheric pressure to make a determination of its content of lighter ends; and
(*j*) controlling the amount of stripping medium used as under (*f*) hereof responsive to said last-mentioned determination.

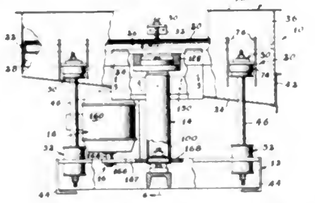
3,160,583
MAGNETIC GRATES
Donald E. Stem, 4025–37 Sebastopol Highway, Santa Rosa, Calif.
Filed May 31, 1961, Ser. No. 113,894
2 Claims. (Cl. 209—223)

1. A multiple tier magnetic grate comprising
(*a*) superimposed frames having walls defining the circumference of the area for the flow of material
(*b*) spaced magnetic bars secured in each frame
(*c*) the spaced bars being parallel with one another and the bars in each frame being in a plane spaced from the bars in the adjacent frame and being staggered relatively to the bars in the adjacent frame
(*d*) said frames resting on one another in stacked operative position
(*e*) means hingedly connecting adjacent walls of superimposed frames at one side of adjacent frames so that said frames are swingable about said means from



said superimposed position into extended side-by-side position for exposing said magnetic bars
(*f*) adjustable baffle members extending from the sides of said adjacent frames toward and along the first parallel bar on each side thereof to direct the flow of materials away from the respective sides of said frames and over said grate bar.

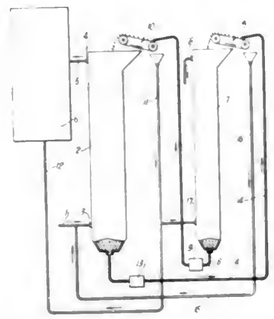
3,160,584
SCREENING APPARATUS WITH SELF-ADJUSTING ECCENTRIC WEIGHT
William A. Hunter, Morton Grove, Ill., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,905
3 Claims. (Cl. 209—366.5)



2. A screening apparatus comprising, in combination, a fixed base frame, a movable screen frame including a substantially horizontally disposed screen disposed over and in vertically spaced relation with respect to said base frame, means extending between the base frame and screen frame for supporting the latter from the former so that it is free to gyrate in a substantially horizontal plane at different amplitudes about a fixed center while normally and yieldingly biasing the same toward such fixed center, and means for effecting gyration of said movable screen frame in the horizontal plane thereof, said means comprising an upstanding elongated rigid rotary drive shaft extending between the base frame and the screen frame, means swivelly connecting the extreme lower end of said drive shaft to the base frame whereby the shaft is capable of limited tilting movements about its swivel point, means rotatably journalling the upper end of the drive shaft in said screen frame whereby lateral components of displacement of said upper end will be transmitted to the screen frame bodily, said journalling means comprising a roller bearing having inner and outer races, means securing the outer race to said screen frame, the upper end of said drive shaft projecting into the inner race, and an elastomeric spacing sleeve interposed between the upper end of the shaft and the inner race, said elastomeric sleeve allowing for limited relative angular and vertical lost motion displacements between the shaft and the screen frame, an eccentric weight fixedly secured to said shaft adjacent to the upper end

thereof and having its center of mass displaced outwardly of the shaft axis so that upon rotation of the shaft the upper end thereof will be constrained to gyrate under the influence of centrifugal forces acting upon said upper end, thereby transmitting gyrational effects to the screen frame through said elastomeric spacing sleeve, and means for applying torque to the extreme lower end of said drive shaft to effect rotation of the same.

3,160,585
METHOD OF REDUCING THE SCALE FORMING ELEMENT ON SURFACES OF AN EVAPORATOR
James Ratcliffe Emmett and James McGrath, Newcastle-upon-Tyne, and Kevin Connaughton, Northumberland, England, assignors, by mesne assignments, to Weir Water Treatment Limited, Purley, Surrey, England, a British company
Filed Aug. 31, 1961, Ser. No. 135,290
Claims priority, application Great Britain, Sept. 2, 1960, 30,395/60
2 Claims. (Cl. 210—26)



1. A continuous process for reducing the formation of scale on the heat-transfer surface or surfaces of an evaporator, which comprises the steps of passing raw water to be evaporated upwardly in counter-current contact with an ion-exchange material which is passed continuously and downwardly through a treatment vessel so that scale-forming constituents contained as bivalent ions in said raw water are absorbed from said water prior to its entry into said evaporator and are replaced by monovalent ions from said ion-exchange resins, withdrawing some of the thus treated water from the upper portion of the treatment vessel and distilling some of the thus-treated water in said evaporator, continuously withdrawing the bivalent ion enriched resins from the lower portion of the treatment vessel and conveying the same to a regenerator vessel, continuously passing said bivalent-ion-enriched resin through said regenerator vessel in counter-current contact with a regenerant solution which comprises undistilled concentrated solution enriched with monovalent ions discharged from said evaporator, and returning regenerated resin from said regenerator vessel to said treatment vessel.

3,160,586
WATER PURIFICATION PROCESS
James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,857
12 Claims. (Cl. 210—44)

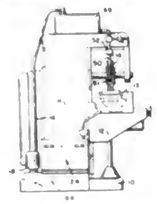
1. A method for concentrating rubber particles in latex wash water which comprises

mixing a hydrophobic amine with agitation into latex wash water containing dispersed particles of rubber, said particles having colloidal dimensions,

incorporating air bubbles into said wash water, thereby forming a froth product which is a concentrate of rubber particles originally dispersed in said wash water and a residue which is a wash water of improved clarity,

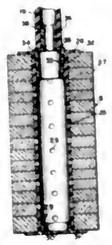
and separating said froth product from said residue.

3,160,587
FILTERING SYSTEM
Robert W. Waring, 197 Old Post Road, Fairfield, Conn.
Filed Dec. 4, 1958, Ser. No. 778,196
4 Claims. (Cl. 210—116)



3. In a filtering system for liquid employed with machine tools, a main relatively small sump having an open top; a pump located within said sump and having an inlet below the normal level at which liquid is to be confined therein; means for operating said pump; an auxiliary relatively large sump located remotely from said main sump and supplied by liquid from said main sump by the action of said pump; conduit means connecting the outlet of said auxiliary sump to a point of use on a machine tool; vertically disposed housing members having open tops and bottoms extending above and within the confines of the open top of said main sump for receiving disposable filter bags; filter bags within said housing members; conduit means for delivering liquid from said point of use on a machine tool selectively to said filter bags; and level responsive means within said main sump and connected to the means for operating said pump, whereby said pump is caused to deliver liquid from said small sump to said auxiliary sump when the level in the small sump reaches a predetermined value.

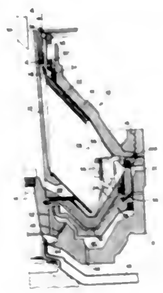
3,160,588
FILTER APPARATUS AND CONNECTING MEANS THEREFOR
Robert W. Alarie, 55 Victor Ave., Johnston, R.I.
Filed Apr. 14, 1961, Ser. No. 103,036
4 Claims. (Cl. 210—457)



1. A filter cartridge structure comprising a plurality of filter cartridges each comprising a permanent substantially rigid elongated liquid pervious tubular core having a chamber therein extending throughout the axial length of the core and provided with axially spaced apart and angularly disposed openings communicating with the chamber, said core having at one end thereof an annular flange extending outwardly beyond the core, a plurality

of filter bodies of disk-shape each having a substantially centrally disposed opening therein having a diameter substantially equal to the outside diameter of the core, said filter bodies being threaded on to the core with the wall of the opening of each body in direct contact with the outer surface of the core and with the initial body engaging the flange to prevent escape of the bodies from the core from the said one end thereof, a cap mounted on the other end of the core having a flange overlying and engaging the last filter body to prevent escape of the bodies from said other end of the core, hollow coupling means for connecting the core of at least one of said cartridges directly to an outlet conduit for communicating the core chamber with the outlet conduit so that the conduit will constitute the sole means for supporting said filter cartridge in the medium to be filtered, said hollow coupling means comprising a conically tapered portion wedgingly held in the core adjacent the annular flange thereon and a cylindrical portion coaxial with said conically tapered portion for connection to the outlet conduit.

3,160,589
CENTRIFUGE HAVING AUTOMATIC MEANS FOR CONTROLLING PERIPHERAL OPENINGS
Lawrence H. Stone, Paramus, N.J., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania
Filed Mar. 4, 1963, Ser. No. 262,489
6 Claims. (Cl. 233—20)



1. In combination,

(*a*) a centrifuge having a centrifuging zone having at least one peripheral opening for the discharge of solids from said centrifuging zone,

(*b*) an hydraulically operated valve element disposed in the centrifuge and controlling said peripheral opening, the valve element having an hydraulic power chamber,

(*c*) conduit means for supplying a control fluid to said power chamber to drive the valve element in one direction,

(*d*) electrically actuatable valve means in said conduit means to control the flow of control fluid to the power chamber,

(*e*) means in the centrifuge biasing the valve element in the opposite direction,

(*f*) fluid motor means in said centrifuging zone,

(*g*) a piston constituting part of the fluid motor means and having two sides, one side being exposed to the inside of the motor means, and the other side being exposed to the centrifuging zone,

(*h*) passage means in said centrifuge zone having an inlet and connected to the inside of the fluid motor,

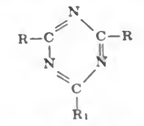
(*i*) outlet means from the inside of the fluid motor to the outside of the centrifuging zone, and

(*j*) electric switch means in said centrifuging zone adjacent said piston and adapted to be operated thereby, said switch means being electrically connected to said electrically actuatable valve means to control it,

whereby when solids accumulate in said zone to block said inlet a portion of the liquid contents of said fluid motor will drain through the outlet means to reduce pressure in the motor so that the piston moves to operate the switch means which in turn operates the electrically actuatable valve means controlling flow of control fluid to the power chamber to open the valve element controlling the peripheral opening to permit solids to discharge therethrough.

3,160,590
LUBRICATING OIL THICKENED TO A GREASE WITH A MIXTURE OF A 1,3,5-TRIAZINE COMPOUND, FINELY-DIVIDED SILICA AND AN ORGANOPHILIC SILICEOUS COMPOUND
Paul R. McCarthy, Allison Park, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Aug. 9, 1961, Ser. No. 130,242
9 Claims. (Cl. 252—28)

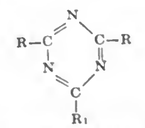
1. A lubricating composition capable of functioning at temperatures up to about 600° F. comprising a dispersion in a lubricating oil selected from the group consisting of polyorgano siloxanes, organic esters and polyaryl ethers of a sufficient amount to thicken the lubricating oil to a grease consistency of a mixture of a 1,3,5-triazine compound melting above about 205° C. having the following formula:



wherein R and R_1 are selected from the group consisting of hydrogen, alkyl, aryl, alkaryl, aralkyl, cyanoalkyl, pyridyl, amino, hydroxy and mercapto radicals, R and R_1 being unlike radicals when selected from the group consisting of amino, hydroxy and mercapto radicals, finely-divided silica and an organophilic siliceous oil thickening agent, wherein the weight ratio of the 1,3,5-triazine compound to the total weight of the finely-divided silica and the organophilic siliceous material is about 1:1 to about 10:1 and the weight ratio of the finely-divided silica to the organophilic siliceous material is about 1:1 to about 9:1.

3,160,591
LUBRICATING OIL THICKENED TO A GREASE WITH A 1,3,5-TRIAZINE COMPOUND
Robert E. Halter, Verona, Paul R. McCarthy, Allison Park, and Joseph J. McGrath, Monroeville, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Mar. 8, 1962, Ser. No. 178,285
12 Claims. (Cl. 252—47)

1. A lubricating composition capable of functioning at temperatures up to about 600° F. consisting of a dispersion in a lubricating oil selected from the group consisting of polyorgano siloxanes, organic esters and polyaryl ethers of a sufficient amount to thicken the lubricating oil to a grease consistency of a 1,3,5-triazine compound melting above about 205° C. having the following formula:



wherein R and R_1 are selected from the group consisting

of hydrogen, alkyl, aryl, alkaryl, aralkyl, cyanoalkyl, pyridyl, amino, hydroxy and mercapto radicals, R and R_1 being unlike radicals when selected from the group consisting of amino, hydroxy and mercapto radicals.

3,160,592

ENGINE OPERATION AND COMPOSITIONS THEREFOR

Jerome E. Brown, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Oct. 16, 1959, Ser. No. 847,018
11 Claims. (Cl. 252—49.7)

1. A liquid hydrocarbon crankcase lubricating oil containing from about 0.05 to about 10 weight percent manganese as a non-ionic manganese polycarbonyl compound having the formula

$$RMn(CO)_5$$

wherein R is an organic radical selected from the group consisting of hydrocarbon radicals and acyl radicals and contains from 1 to about 20 carbon atoms.

3,160,593

MINERAL OIL COMPOSITIONS

William W. Spooncer, Richmond, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 4, 1960, Ser. No. 60,305
15 Claims. (Cl. 252—49.8)

1. A mineral oil composition comprising a major amount of mineral oil and from about 0.001% to about 5% of an oil-soluble linear cyclic phosphorus-containing polymer obtained by reacting in the presence of an oxygen-yielding catalyst at between 50 and 175° C., a dialkenyl phosphorus-containing compound having a P-C linkage selected from the group consisting of dialkenyl esters of phosphonic acid, and phosphinic acid and phosphine oxide, in a chloro organic solvent selected from the group consisting of (*a*) chloroalkyl ether and (*b*) chlorohydrocarbon, the linear cyclic phosphorus-containing polymer having a molecular weight in the range of from 10,000 to 100,000.

3,160,594

POLYMERIZATION OF HYDROCYANIC ACID

Hans Herzog, Konstanz, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Mar. 2, 1962, Ser. No. 176,908
Claims priority, application Germany, Mar. 9, 1961, D 35,596
6 Claims. (Cl. 260—1)

1. In a process for the liquid phase polymerization of hydrocyanic acid in contact with water and an alkaline catalyst, the step which comprises carrying out such polymerization in contact with an alkali metal vanadate in which the vanadium is pentavalent under reflux, the molar ratio of vanadate to hydrocyanic acid employed being from 1:20 to 1:6.

3,160,595

CURING SYSTEM FOR DEPOLYMERIZED POLYISOPRENE RUBBER

Kenneth V. Hardman, Upper Montclair, and Arthur J. Lang, Cedar Grove, N.J., assignors to DPR, Incorporated, a corporation of New Jersey

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,820
10 Claims. (Cl. 260—2.3)

1. The method of curing depolymerized polyisoprene rubber which comprises depolymerizing solid polyisoprene rubber until the viscosity is no greater than about 1,500,000 cps. at 68° F. as measured in a standard Brookfield viscometer and thereafter adding p-quinonedioxime and lead dioxide to the depolymerized polyisoprene rubber to cure it to a soft rubber state having a Shore hardness on the A scale not greater than about 70.

3,160,596

WAX - CONTAINING MELAMINE - FORMALDEHYDE FOAM AND PROCESS OF MAKING SAME

Frank R. Spencer, Stamford, Conn., assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Oct. 2, 1961, Ser. No. 141,984
12 Claims. (Cl. 260—2.5)

1. A hardened foam structure having improved resistance to the passage of water vapor by diffusion which comprises a substantially insoluble and infusible resinous reaction product of formaldehyde and a member selected from the group consisting of melamine, urea, and mixtures thereof, and from about 1% to about 10% by weight, based on the total weight of said foam structure, of wax intimately dispersed throughout said foam structure.

3,160,597

POLYAMIDES STABILIZED WITH A HALIDE SALT, A PHOSPHORUS COMPOUND AND A MANGANESE OR COBALT SALT

Winston Costain, Manchester, and Harold John Palmer, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, England, and British Nylon Spinners Limited, Pontypool, Monmouthshire, England, both corporations of Great Britain

No Drawing. Filed Nov. 27, 1961, Ser. No. 155,183
Claims priority, application Great Britain, Nov. 25, 1960, 40,626/60
8 Claims. (Cl. 260—21)

1. A synthetic linear polyamide having recurring amide linkages in the main polymer chains stabilized against the destructive effects of exposure to heat and oxygen by the incorporation with the polyamide of

(1) a halide salt selected from the group consisting of water soluble inorganic chloride, bromide and iodide salts of monovalent cations and chloride, bromide and iodide salts of organic bases, said halide salt being incorporated with the polyamide in an amount such that the halogen ion is present to the extent of from 0.01% by weight to 3.0% by weight of the polyamide,

(2) 0.01%–1% by weight of the polyamide of a member of the group consisting of oxy acids of phosphorus and salts thereof and

(3) 0.005% to 1.0% by weight of said polyamide of a salt of a member of the group consisting of manganese and cobalt.

3,160,598

POLYETHYLENE RESIN FILLERS, PROCESS OF PREPARING THE SAME AND POLYETHYLENE COMPOSITIONS CONTAINING FILLERS

Pierre Delfosse, 31 Rue Cambaceres, Paris VIII, France

No Drawing. Filed July 28, 1958, Ser. No. 751,133
Claims priority, application France Dec. 27, 1957
1 Claim. (Cl. 260—23)

A process of preparing a filler for polyethylene resin, comprising the step of intimately mixing particles of a filler material selected from the group consisting of alkali earth metal salts and silica minerals with about 0.2 to 10%, by weight, of at least one organic peroxide polyethylene cross-linking agent of the general formula $R—O—O—R^1$, wherein R and R^1 are α-aryl substituted alkyl groups, and about 0.1 to 10%, by weight, of a saturated higher fatty acid, both weights being based on the weight of the filler material, at a temperature above the melting temperature of the organic acid but below the decomposition temperature of the cross-linking agent, whereby the melted organic acid constitutes a vehicle for the cross-linking agent and fixes it to the filler particles.

3,160,599

STAIN-RESISTANT VINYL CHLORIDE COMPOSITION CONTAINING A MONOISOBUTYRATE MONOBENZOATE ESTER OF 2,2,4-TRIMETHYLPENTANEDIOL-1,3 AS PLASTICIZER

James P. Scullin, Pompton Lakes, N.J., assignor, by mesne assignments, to Heyden Newport Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 5, 1961, Ser. No. 114,648
5 Claims. (Cl. 260—31.6)

1. A stain-resistant resinous composition comprising a vinyl chloride resin selected from the group consisting of polyvinyl chloride and copolymers prepared from vinyl chloride and up to 30% of another polymerizable monoolefin and containing as plasticizer from 5 to 100 parts per 100 parts of said vinyl chloride resin of a monoisobutyrate monobenzoate ester of 2,2,4-trimethylpentanediol-1,3.

5. A protective and decorative surface-covering material comprising a backing having a decorated surface covered with a substantially clear, stain-resistant film of polyvinyl chloride containing as plasticizer from 10 to 90 parts per 100 parts of said polyvinyl chloride of a monoisobutyrate monobenzoate ester of 2,2,4-trimethylpentanediol-1,3.

3,160,600

METHOD FOR INCORPORATING COLORANTS IN MOLTEN POLYAMIDES USING ADIPONITRILE AS DISPERSING AGENT

John R. Holsten and James S. Tapp, Raleigh, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 13, 1961, Ser. No. 94,976
2 Claims. (Cl. 260—37)

1. A method for incorporating finely divided pigment in molten synthetic linear polyamide of a molecular weight in the fiber-forming range which comprises mixing said molten synthetic linear polyamide of a molecular weight in the fiber-forming range with from about 1 to 5 percent by weight based on the polyamide of a composition comprising from about 20 to about 50 parts by weight of finely divided pigment having color stability at temperatures in the range of 225° C. to 297° C. dispersed in about 50 to about 80 parts by weight of adiponitrile.

3,160,601

AMINE SALTS OF PHOSPHORIC ACID AND AMINE SALTS OF CARBOXYLIC ACID AS SILANOL CONDENSATION CATALYSTS

James Franklin Hyde, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 13, 1959, Ser. No. 826,421
7 Claims. (Cl. 260—46.5)

1. The method for the condensation of silicon-bonded hydroxyl groups which comprises contacting (A) an organosilicon compound containing at least one silicon-bonded hydroxyl group per molecule, the remaining silicon valences in said organo-silicon compound being satisfied by radicals selected from the group consisting of silicon-bonded oxygen atoms attached to other silicon atoms to form siloxane linkage, hydrocarbon radicals and hydrocarbon radicals containing functions selected from the group consisting of ether linkages, aromatic halogen atoms, nitrile groups, hydroxyl groups and aliphatic fluorine atoms, the last being separated from any silicon atom by at least three carbon atoms, with from 0.01 to 10 percent by weight based on the weight of (A) of (B) a composition compatible with (A) and selected from the group consisting of (1) a salt of a phosphoric acid, the only active hydrogen atoms in said acid being attached to the phosphorus through an oxygen atom, and a compound selected from the group consisting of ammonia and amines, any active hydrogen in said compound being attached to nitrogen and any remaining nitrogen valences being satisfied by carbon atoms, the total number of carbon atoms in (1) being at least 18 and (2) a salt of a carboxylic acid, the only active hydrogen in said carboxylic acid being a part of carboxyl groups, and a compound selected from the group consisting of ammonia and amines, any active hydrogen in said compound being attached to nitrogen and any remaining nitrogen valences being satisfied by carbon atoms, the total number of carbon atoms in (2) being at least 6, whereby the silicon-bonded hydroxyl groups in (A) condense to form siloxane linkages producing water as a by-product.

3,160,602

PROCESS OF PRODUCING AROMATIC POLYESTERS

Simon W. Kantor, Schenectady, and Fred F. Holub, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed June 1, 1960, Ser. No. 33,124
16 Claims. (Cl. 260—47)

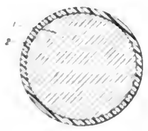
1. The process of producing a linear superpolyester of an aromatic dicarboxylic acid and a dihydric phenol which comprises reacting a mixture of reactants consisting essentially of an aromatic dicarbonyl halide and a dihydric phenol, while these reactants are dissolved in a solvent selected from the group consisting of benzophenone, m-terphenyl, chlorinated biphenyl, brominated biphenyl, chlorinated diphenyl oxide and brominated diphenyl oxide, at a temperature in the range of about 270° C. up to the reflux temperature of the solution until at least the evolution of the hydrogen halide substantially ceases, by which time the superpolyester formed has an intrinsic viscosity of at least 0.5 measured at 75° C., and isolating the solid polymer from the reaction mixture.

3,160,603

WHOLLY AROMATIC POLY-p-PHENYLENE CHLOROISOPHTHALATES

Fred F. Holub, Scotia, and Simon W. Kantor, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 1, 1960, Ser. No. 33,127
11 Claims. (Cl. 260—47)

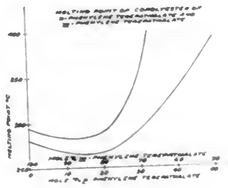


1. A superpolyester consisting essentially of chlorine containing p-phenylene isophthalate, having an intrinsic viscosity of at least 0.5 measured at 75° C., wherein at least 15 mol percent of the isophthalate radicals of the said p-phenylene isophthalate have from 1 to 2 chlorine substituents on the aryl nucleus of the isophthalate radical and the p-phenylene radicals of the said p-phenylene isophthalate are selected from the group consisting of p-phenylene, monochloro-p-phenylene, dichloro-p-phenylene radicals and mixtures of said radicals, said superpolyester being clear and free of any tendency to develop haziness which is indicative of a highly crystalline state.

3,160,604
WHOLLY AROMATIC POLY-m-PHENYLENE TEREPHTHALATES

Fred F. Holub, Scotia, and Simon W. Kantor, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 1, 1960, Ser. No. 33,130
10 Claims. (Cl. 260—47)

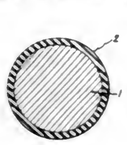


1. A soluble, fusible, linear superpolyester consisting essentially of m-phenylene terephthalate units interspersed with from 0 to 30 mol percent of p-phenylene terephthalate units based on the total m-phenylene terephthalate and p-phenylene terephthalate units, the intrinsic viscosity of said superpolyester being at least 0.5 measured at 75° C., said superpolyesters being capable of being formed under heat and pressure into tough transparent flexible articles.

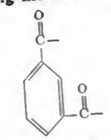
3,160,605
POLYMERIC ISOPHTHALATE ESTERS OF HYDROQUINONE AND METHOD OF MAKING THE SAME

Simon W. Kantor, Schenectady, and Fred F. Holub, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 1, 1960, Ser. No. 33,131
6 Claims. (Cl. 260—47)



1. The process of producing a p-phenylene isophthalate superpolyester which comprises reacting a mixture of reactants consisting essentially of a dihydric phenol selected from the group consisting of hydroquinone, monochlorohydroquinone and dichlorohydroquinone and an isophthaloyl halide, the isophthaloyl radical of said isophthaloyl halide having the formula



while the reactants are dissolved in a solvent selected from the group consisting of benzophenone, m-terphenyl, chlorinated biphenyl, brominated biphenyl, chlorinated diphenyl oxide and brominated diphenyl oxide at a temperature in the range of about 270° C. up to the reflux temperature of the solution until at least the evolution of the hydrogen halide substantially ceases, by which time the superpolyester has an intrinsic viscosity of 0.5 measured at 75° C., and isolating the solid polymer from the reaction mixture.

3,160,606
METHOD OF PREPARING POLYCARBONATES

Joseph J. Dietrich, Orange, Tex., and Henry C. Stevens, Akron, Ohio, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,931
15 Claims. (Cl. 260—47)

14. In the method of preparing polycarbonate by reaction of an organic dihydroxy compound having two phenolic hydroxyl groups and a carbonate precursor selected from the group consisting of phosgene, bischloroformates of a dihydroxy organic compound and mixtures thereof in the reaction medium provided therefrom along with water, inorganic alkali and essentially water insoluble organic solvent for the polycarbonate which medium contains sufficient organic solvent and water to provide upon emulsification for a continuous organic solvent phase having therein dispersed a discontinuous aqueous phase and in which the polycarbonate concentration is up to the polycarbonate solubility in the organic solvent, the improvement which comprises accelerating the rate at which high molecular weight polycarbonate is attained by forming the high molecular weight polycarbonate in a persistent emulsion of the medium which does not break upon standing for a period of one hour under quiescent conditions comprising a continuous phase of water insoluble organic solvent for the polycarbonate having dispersed therein at least 50 weight percent of the aqueous phase of the medium in the form of fine droplets as a discontinuous phase.

3,160,607
PROCESS FOR PRODUCING POLYMER BEADS FROM ACROLEINS USING PIPERIDINE AS SOLE CATALYST

Karl-Heinz Rink, Hanau am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,456
Claims priority, application Germany, Sept. 3, 1960, D 34,164
5 Claims. (Cl. 260—67)

1. The process for preparing a homopolymer of a monomer selected from the group consisting of acrolein, α-methyl acrolein and α-ethyl acrolein in the form of beads comprising homopolymerizing such monomer in contact with piperidine as sole polymerization catalyst and in contact with water and a dispersing agent, while thoroughly blending the reactants.

3,160,608
WATER-SOLUBLE MELAMINE RESIN TEXTILE FINISH

Raymond Polansky, Middlesex, and William F. Herbes and Wendell P. Munro, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 17, 1961, Ser. No. 110,623
4 Claims. (Cl. 260—67.6)

1. A process for preparing a substantially fully etherified, substantially fully methylolated melamine, characterized by ease and rapidity of solution in water and excellent stability, which comprises reacting a substantially monomeric, substantially fully methylolated melamine containing less than 20% by weight of water with from 5 to 10 moles of methanol and at least 0.1 mole and up to about 2.5 moles of a compound selected from the group consisting of monoalkyl ethers of diethylene glycol wherein the alkyl group contains from 1 to 4 carbon atoms and monoalkyl ethers of ethylene glycol wherein the alkyl group contains from 1 to 3 carbon atoms, per mole of methylolated melamine at a temperature of between 15 and 60° C. and at a pH of less than 4, until a substantially clear solution is obtained, thereafter adding an additional quantity of methanol in an amount so that the total charge of methanol is from between 12 and 24 moles, continuing the reaction until a completely clear solution is obtained and thereafter adjusting the pH to between 8 and 10.

3,160,609
PREPARATION OF POLYESTERAMIDES WITH TETRAPHENYL TIN CATALYST

Nicholas R. Congiundi and Lloyd T. Jenkins, Cary, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,181
8 Claims. (Cl. 260—75)

1. A process for preparing polyesteramides which comprises conducting a condensation reaction of a polymethylene glycol containing 2 to 10 carbon atoms with a compound selected from the group consisting of terephthalic acid diamide-N,N'-di-ε-caproic acid and the lower dialkyl esters thereof in the presence of a catalytic amount of tetraphenyl tin.

3,160,610
PREPARATION OF POLYESTERAMIDES WITH ANTIMONY GLYCOLOXIDE CATALYST

Nicholas R. Congiundi and Cilton W. Tate, Cary, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,182
8 Claims. (Cl. 260—75)

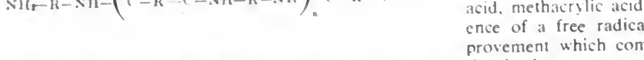
1. A process for preparing polyesteramides which comprises conducting a condensation reaction of a polymethylene glycol containing 2 to 10 carbon atoms with a compound selected from the group consisting of terephthalic acid diamide-N,N'-di-ε-caproic acid and the lower dialkyl esters thereof in the presence of a catalytic amount of antimony glycoloxide.

3,160,611
AMINO ALCOHOL MODIFIED POLYAMIDES

Wallace F. Runge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 10, 1960, Ser. No. 35,142
11 Claims. (Cl. 260—78)

1. A process for the preparation of modified nylon polymers which comprises interacting a polyamide selected from the group consisting of polyamides having the following general formula:



wherein R is a member selected from the group consisting of an alkylene radical having 6 carbon atoms and a phenylene radical, wherein R' is an alkylene radical containing from 4 to 9 carbon atoms inclusive and n is an integer ranging from 10 to 1,000 with an amino alcohol having the following general formula:



wherein R^2 is a member selected from the group consisting of hydroxyalkyl, alkyl and hydrogen in molar ratios of the polyamide to the amino alcohol of from about 200 to 1 to about 10 to 1 and at temperatures above 170° C. but below temperatures causing any substantial decomposition of the reaction product and the reactants.

3,160,612
DETERGENT COPOLYMER

William T. Stewart, El Cerrito, Frank A. Stuart, Orinda, and Warren Lowe, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Original application June 10, 1959, Ser. No. 819,223, now Patent No. 3,048,544, dated Aug. 7, 1962. Divided and this application Jan. 26, 1962, Ser. No. 169,128
2 Claims. (Cl. 260—78)

1. A polymer of (A) polymerizable oil-solubilizing compounds selected from the group consisting of alkyl methacrylates and alkyl acrylates having 8 to 18 carbon atoms in the alkyl group and vinyl and allyl esters of fatty acids having 8 to 18 carbon atoms in the fatty acid group, (B) the imide of maleic anhydride and a polyamine selected from the group consisting of 3-dimethyl amino propylamine, diethylene triamine and tetraethylene pentamine, and (C) polyethylene glycol methacrylate having a molecular weight of about 1800, said polymer having a molecular weight from about 100,000 to about 1,000,000 as determined by light scattering methods, and said monomers being present in the polymer in the ratio of from about 1 to 20 monomer units of the oil-solubilizing monomer (A) for each monomer unit of the imide monomer (B), said polymer having a solubility in lubricating oil of at least 0.5% by weight.

3,160,613
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING LINALOOL AS REGULATOR

Richard E. Delacretaz, Speros P. Nemphos, and Robert L. Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1961, Ser. No. 145,772
5 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, and alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.2–5% of linalool, based on the weight of the free radical-polymerizable material.

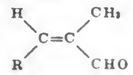
3,160,614
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING UNSATURATED ALDEHYDES AS REGULATORS

Speros P. Nemphos and Robert L. Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1961, Ser. No. 145,773
6 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl

maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the entire polymerization in the presence of 0.2–5%, based on the weight of the free radical-polymerizable material, of a molecular weight regulator which corresponds to the formula:



wherein R represents a hydrocarbon radical of the group consisting of a phenyl radical and an alkyl radical containing 1–6 carbon atoms.

3,160,615
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING 4,4'-ISOPROPYLIDENE DIPHENOL AS REGULATOR

Richard E. Delacretaz and Robert L. Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,862
4 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.2–5% of 4,4'-isopropylidene diphenol, based on the weight of the free radical-polymerizable material.

3,160,616
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING ISOPULEGOL AS REGULATOR

Richard E. Delacretaz, Speros P. Nemphos, and Robert L. Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,871
3 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of isopulegol, based on the weight of the free radical-polymerizable material.

3,160,617
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING 3-METHYL - 1 - PHENYLPYRAZOLONE-5 AS REGULATOR

Speros P. Nemphos, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,872
3 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.2–5% of 3-methyl-1-phenylpyrazolone-5, based on the weight of the free radical-polymerizable material.

3,160,618
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING ACID PHOSPHATES AS REGULATORS

Richard E. Delacretaz, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,873
5 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.05–5%, based on the weight of the free radical-polymerizable material, of a molecular weight regulator which corresponds to the formula:



wherein R represents a member of the group consisting of hydrogen, an alkyl radical, and an aryl radical and R' represents a member of the group consisting of an alkyl radical and an aryl radical.

3,160,619
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING EUGENOL AS REGULATOR

Richard E. Delacretaz and Robert L. Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1961, Ser. No. 149,875
4 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical-polymerizable material of the group consisting of (*a*) a polar vinylidene monomer of the group consisting of acrylonitrile, methacrylonitrile, vinyl chloride, an alkyl acrylate, an alkyl methacrylate, and mixtures thereof, (*b*) mixtures of said polar vinylidene monomer with a copolymerizable monomer of the group consisting of a dialkyl maleate, a dialkyl fumarate, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, a conjugated diene, a monovinylidene aromatic hydrocarbon, and mixtures thereof, and (*c*) mixtures of a non-polar vinylidene monomer with a copolymerizable polar monomer of the group consisting of a monoalkyl maleate, a monoalkyl fumarate, a dialkyl maleate, a dialkyl fumarate, maleic anhydride, acrylic acid, methacrylic acid, and mixtures thereof in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.2–5% of eugenol, based on the weight of the free radical-polymerizable material.

3,160,620
COAGULATION OF CHLOROPRENE POLYMER LATICES AND ISOLATION OF THE POLYMER THEREFROM

Robert E. A. Petersen, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 10, 1962, Ser. No. 208,932
5 Claims. (Cl. 260—92.3)

1. A process for coagulating a chloroprene polymer latex wherein the polymer of said latex is dispersed in an aqueous solution of an alkali metal salt of a water-insoluble carboxylic acid of the aliphatic and cycloaliphatic series, comprising contacting said polymer latex with an aqueous coagulating solution containing, with reference to the weight of water in said coagulating solution, 0.1 to 0.5% by weight of a water-soluble calcium salt, 0.05 to 0.15% by weight of hydroxyethyl cellulose, and sufficient acid to maintain said coagulating solution during coagulation at a pH of not greater than 6.5.

3,160,621
EMULSIFIABLE WAXES FROM POLYETHYLENE

Hugh J. Hagemeyer, Jr., Longview, Tex., Joseph L. Greene, Jr., Emory University, Ga., and Charles W. Hequembourg, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

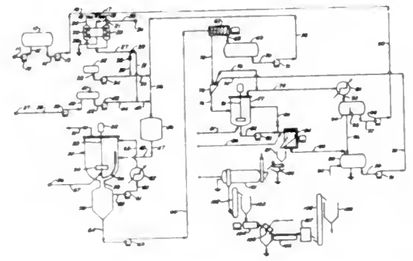
No Drawing. Filed Feb. 8, 1955, Ser. No. 486,974
6 Claims. (Cl. 260—94.9)

1. A process for the preparation of a substantially completely emulsifiable synthetic wax which comprises thermally degrading polyethylene having a molecular weight within the range of 10,000 to 30,000 to obtain a non-emulsifiable product having a molecular weight within the range of 1,000 to 6,000 and a softening point within the range of 90 to 110° C., melting thus-degraded polyethylene and oxidizing molten degraded polyethylene with an oxygen-containing gas at a temperature within the range of 100 to 250° C. to produce a substantially non-crosslinked completely emulsifiable wax having an acid number of from 4 to 25 and having a molecular weight and a softening point not substantially above said non-emulsifiable product.

3,160,622
PROCESS FOR POLYMERIZING OLEFINS UTILIZING A ZIEGLER CATALYST

William I. Gilbert, Oakmont, Bernard H. Gwynn, Fawn Township, Allegheny County, Russell G. Hay, Fox Chapel, and John G. McNulty, Glenshaw, Pa., assignors to Goodrich-Gulf Chemicals, Inc., Pittburgh, Pa., a corporation of Delaware

Filed Jan. 10, 1957, Ser. No. 633,481
5 Claims. (Cl. 260—94.9)



1. A process of polymerizing an olefin which comprises continuously flowing a catalytic reaction medium comprising an inert liquid reaction medium, a catalyst component consisting of an organo-aluminum compound containing at least one hydrocarbon radical linked through a carbon atom to the aluminum and another catalyst component consisting of a compound of a heavy metal selected from the metals occupying the fourth to the sixth positions of the long periods of the Periodic Table into a reaction zone while maintaining in said reaction zone polymerizing conditions of temperature and pressure, mechanically agitating said catalytic reaction medium in said reaction zone, continuously flowing at least one olefin containing not more than four carbon atoms into said reaction zone and into contact with said catalytic reaction medium to form solid polyolefin particles in said catalytic reaction medium, continuously withdrawing from the bottom of said reaction zone a slurry of said catalytic reaction medium and solid particles of polyolefin containing dissolved olefin into a quiescent receiving zone maintained under polymerizing conditions of temperature and pressure wherein polymerization of olefin introduced into said reaction zone is completed, removing the resulting slurry from said receiving zone and recovering solid polyolefin from said slurry.

3,160,623
MANUFACTURE OF ARYL DIAZONIUM FLUORIDES

Louis G. Anello and Cyril Woolf, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,804
11 Claims. (Cl. 260—141)

1. The process for preparing aryl diazonium fluorides which comprises dissolving in liquid substantially anhydrous hydrogen fluoride an aromatic primary mono-amine selected from the group consisting of those in which the aromatic nucleus is that of a mono-nuclear aromatic hydrocarbon, and derivatives of the same in which one to three nuclear hydrogen atoms are replaced by substituents selected from the group consisting of lower alkoxy, bromo, chloro, carboxy, m-hydroxy, o-hydroxy, nitro, and sulfo; introducing into the resulting solution a nitrosyl fluoride diazotizing agent selected from the group consisting of NOF.3HF, NOF.6HF and mixtures thereof, and subjecting said mono-amine to the action of said agent while maintaining temperatures substantially in the range of minus 30° C. to plus 10° C., to thereby form the corresponding aryl diazonium fluoride.

3,160,624
PROCESS FOR THE PREPARATION OF DL-RIBOSE AND DL-ARABINOSE

Issei Iwai and Tadahiro Iwashige, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan

No Drawing. Filed June 13, 1961, Ser. No. 116,677
Claims priority, application Japan June 18, 1960
1 Claim. (Cl. 260—209)

A process for the preparation of *dl*-ribose and *dl*-arabinose which comprises reacting a compound having the formula

$$R_2OCH_2C{\equiv}CH$$

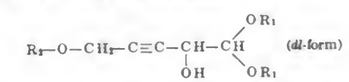
wherein R_2 is selected from the group consisting of 2-tetrahydropyranyl, 2-tetrahydrofuryl, unsubstituted benzyl and alkoxyethyl groups containing 1 to 5 carbon atoms in the alkyl moiety with alkyl halide and metallic magnesium in an inert solvent to produce a compound having the formula

$$R_2{-}O{-}CH_2{-}C{\equiv}C{-}M_gX$$

wherein R_2 has the same meaning as described above and X is halogen atom, reacting the latter compound with a compound having the formula

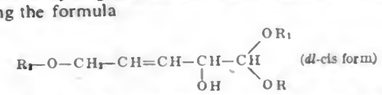
$$CHO{-}CH(OR_1)_2$$

wherein R_1 is selected from the group consisting of alkyl group containing 1 to 5 carbon atoms, unsubstituted phenyl group and unsubstituted benzyl group to produce a compound having the formula



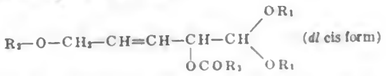
(*dl*-form)

wherein R_1 and R_2 have the same meaning as described above, hydrogenating the latter compound in the presence of a hydrogenation catalyst in an inert solvent until 1 mole of hydrogen is absorbed to produce a compound having the formula



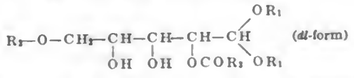
(*dl*-cis form)

wherein R_1 and R_2 have the same meaning as described above, reacting the latter compound with an acylating agent in an inert solvent under reflux to produce a compound having the formula



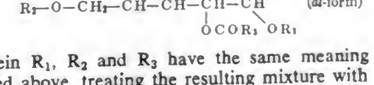
(*dl* cis form)

wherein R_3 is selected from the group consisting of lower alkyl and unsubstituted phenyl groups and R_1 and R_2 have the same meaning as described above, reacting the latter compound with an oxidizing agent to form a mixture of a compound having the formula



(*dl*-form)

wherein R_1, R_2 and R_3 have the same meaning as described above and a compound having the formula



(*dl*-form)

wherein R_1, R_2 and R_3 have the same meaning as described above, treating the resulting mixture with a mineral acid to produce a mixture of *dl*-ribose and *dl*-arabinose and subjecting the resulting mixture to chromatography to separate the mixture into *dl*-ribose and *dl*-arabinose.

3,160,625
PROCESS FOR THE PREPARATION OF 2',3'-ISOPROPYLIDENE RIBONUCLEOSIDES

Osamu Simamura, Tokyo, Yoshio Tsuchiya, Kanagawa-ken, Tadao Takenishi, Tokyo, Tetusya Kato, Kanagawa-ken, Hisao Mori, Tokyo, and Takashi Meguro, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,354
Claims priority, application Japan, Aug. 29, 1961, 36/30,709
15 Claims. (Cl. 260—211.5)

1. A process for the prepartion of 2',3'-O-isopropylidene purine ribonucleosides which comprises reacting a purine ribonucleoside with acetone in the presence of an alcohol and of a catalyst, said alcohol being a member of the group consisting of lower alkanol, lower alkoxy—(lower) alkanol, and phenyl—(lower) alkanol, and said catalyst being a strong acid.

3,160,626
PSEUDOMERIZATION OF STEROIDAL SAPOGENINS

Peter Oxley, Nottingham, England, assignor to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed May 7, 1962, Ser. No. 192,974
Claims priority, application Great Britain, May 18, 1961, 18,174/61
13 Claims. (Cl. 260—239.55)

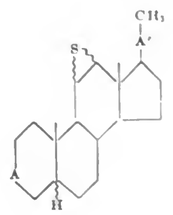
1. In a process for the preparation of a pseudosapogenin ester by heating a sapogenin compound selected from the group consisting of steroidal sapogenins and their esters together with a carboxylic acid anhydride, the step which comprises heating such sapogenin compound with an anhydride selected from the group consisting of isobutyric acid anhydride and pivalic acid anhydride as the carboxylic acid anhydride.

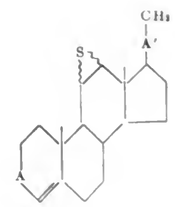
3,160,627
11,12-EPITHIOSTEROID OF PREGNANE SERIES

Taichiro Komeno, Osaka-shi, and Junichi Kawanami, Toyonaka-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

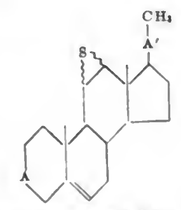
No Drawing. Filed May 13, 1963, Ser. No. 280,097
Claims priority, application Japan May 18, 1962
13 Claims. (Cl. 260—239.5)

1. A member selected from the group consisting of compounds of the formulae:





and



wherein A is a member selected from the group consisting of methylene, carbonyl, lower alkylenedioxymethylene, hydroxyxmethylene and lower alkanoyloxymethylene, and A' is a member selected from the group consisting of methylene, carbonyl, hydroxymethylene and lower alkanoyloxymethylene, A being carbonyl in the case of Δ^4-unsaturation and being lower alkylenedioxymethylene in the case of Δ^5-unsaturation.

3,160,628
6-METHYL-PREGNENES AND METHODS OF PREPARING THE SAME

John P. Dusza, Nanuet, N.Y., Joseph P. Joseph, Cliffside Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 15, 1961, Ser. No. 131,481
8 Claims. (Cl. 260—239.55)

1. The compound 3,20 - bisethylenedioxy-6-methyl-5-pregnen-17α-ol.

8. A method which comprises treating 17α-acetoxy-6-hydroxy-6-methyl-1,4-pregnadiene-3,20-dione with para-toluenesulfonic acid and acetic anhydride and recovering thereform 17α-acetoxy-6-methyl-1,4,6-pregnatriene-3,20-dione and 3,17α-diacetoxy-1,6-dimethyl-19-nor-1,3,5(10), 6-pregnatetraen-20-one.

3,160,629
PROCESS FOR THE PREPARATION OF 1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE DERIVATIVES

Frederick C. Novello, Berwyn, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 7, 1961, Ser. No. 101,331
4 Claims. (Cl. 260—243)

4. A process wherein 7-sulfamyl-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide compounds having at least one other substituent selected from the group consisting of halogen, lower alkyl, lower alkoxy and nitro attached to the benzenoid moiety is oxidized in the presence of a solvent and in the presence of an oxidizing agent selected from the group consisting of alkali metal permanganate, chromic acid, an alkali metal chromate and an alkali metal dichromate to give the corresponding dehydrogenated compound.

3,160,630
PROCESS FOR PREPARING PHENOTHIAZINE HAVING A SMALL PARTICLE SIZE AND COMPOUND RESULTING THEREFROM

Donald E. Vierling, 4594 Doverdell Drive, Pittsburgh, Pa.

Filed Apr. 26, 1961, Ser. No. 105,802
2 Claims. (Cl. 260—243)

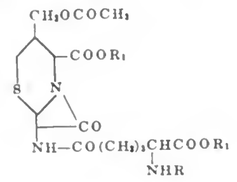
1. A process for consistently obtaining phenothiazine of substantially uniform particle size averaging materially less than 4 microns, said process comprising combining phenothiazine with a solvent therefor which is miscible with water; filtering any undissolved foreign materials from the solvent and dissolved phenothiazine; recovering the filtrate; introducing the filtrate into a body of water whose temperature is within the range of approximately 33° F. to approximately 150° F. and whose volume is at least twice as great; agitating the said body of water while said filtrate is being introduced thereto; and quickly recovering the resulting crystals from said body of water, thereby obtaining phenothiazine particles of an average size of not materially greater than approximately 3.5 microns.

3,160,631
DERIVATIVES OF CEPHALOSPORIN C

Louis H. Peterson, Woodbridge, and Arthur A. Patchett, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 16, 1961, Ser. No. 152,941
3 Claims. (Cl. 260—243)

1. An acylated cephalosporin C ester of the formula



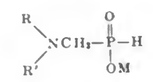
wherein R is selected from the group consisting of carbobenzoxy and benzoyl and R_1 is selected from the group consisting of lower alkyl and phenyl.

3,160,632
AMINOMETHYLENEPHOSPHINIC ACIDS, SALTS THEREOF, AND PROCESS FOR THEIR PRODUCTION

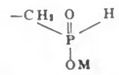
Arthur Dock Fon Toy, Park Forest, and Eugene H. Uhing, Chicago, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 30, 1961, Ser. No. 85,493
17 Claims. (Cl. 260—268)

1. An aminomethylenephosphinic acid compound of the formula:



wherein R is selected from the group consisting of hydrogen.



alkyl, phenyl, alkylphenyl, carboxyalkyl, and hydroxyalkyl radicals, and R' is selected from the group consisting of R, lower alkylene-N,R,R', phenylene-N,R,R' radicals and R and R' may be joined with N through a second N in the form of a piperazine residue, and M is selected from the group consisting of hydrogen and alkali and alkaline earth salt forming cations, and wherein each alkyl group contains from 1–18 carbon atoms.

3,160,633
SYNTHESIS OF PYRIDINE ALDEHYDES

Francis E. Cislak, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

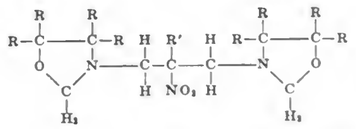
No Drawing. Filed Dec. 6, 1962, Ser. No. 242,647
11 Claims. (Cl. 260—297)

1. The process of preparing pyridine aldehydes which comprises vapor phase interaction of cyanopyridine with water and formic acid in the presence of a catalyst comprising a compound selected from the group consisting of a compound of an element of Groups II and III of the periodic table having an atomic number between 12 and 58 inclusive, a compound of a metallic element

of Group IV, a compound of an element of Series 4 of the periodic table having an atomic number between 23 and 28 inclusive, and mixtures thereof maintained at a temperature between about 250° C. and 650° C.

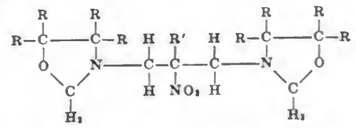
3,160,634
2-NITRO-1,3-BIS(3-OXAZOLIDINYL)-PROPANE COMPOUNDS AND THEIR PREPARATION
Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Dec. 5, 1961, Ser. No. 157,274
16 Claims. (Cl. 260—307)

1. A 1,3-bis[3-(oxazolidinyl)]propane having the following formula:

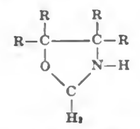


wherein R is selected from the group consisting of lower alkyl, lower hydroxyalkyl, and hydrogen and R' is lower alkyl.

8. A process for the preparation of compounds having the following formula:



wherein R is selected from the group consisting of lower alkyl, lower hydroxyalkyl, and hydrogen and R' is lower alkyl which comprises condensing a compound having the following formula:



wherein R is defined as above with a lower nitroalkane having two hydrogen atoms on the alpha carbon atom and formaldehyde.

3,160,635
DELTA COPPER PHTHALOCYANINE PIGMENT AND ITS PREPARATION
Børge Ingemann Knudsen and Hans Skouenborg Rolskov, Olby Lyng pr. Koge, Denmark, assignors to Kemisk Vaerk Koge A/S, Copenhagen, Denmark, a firm
Filed Aug. 9, 1960, Ser. No. 48,424
2 Claims. (Cl. 260—314.5)

1. The delta-modification of particulate copper phthalocyanine pigment consisting of particles of crystalline structure substantially within the size range of 0.04 to 0.1 micron and having an X-ray diffraction pattern in which the most intense lines correspond to interplanar spacings of 12.0; 9.55; 6.24; 5.18; 5.07 and 3.11 A.

2. The method of producing the delta-modification of copper phthalocyanine pigment comprising

(A) partly neutralizing sulphuric acid with urea in an amount providing a molecular ratio of urea to sulphuric acid of between 2.0 and 4.0; and

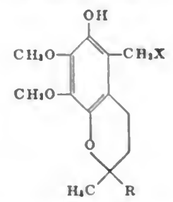
(B) milling raw copper phthalocyanine with the neutralized sulphuric acid and with sodium chloride in the proportions, by weight, of 1:0.5 to 2:2 to 6, respectively, for a period of 6 to 36 hours.

3,160,636
HALOCYCLOALKENIC DERIVATIVES OF HALOALKENYL DIOXANES
Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 12, 1961, Ser. No. 144,534
6 Claims. (Cl. 260—340.6)

1. A compound selected from the group consisting of halocyclohexenyl dioxane, halocyclohexenylmethyl dioxane, halonorbornen-2-yl dioxane and halonorbornen-2-ylmethyl dioxane in which the halogen is selected from the group consisting of chlorine, bromine and iodine and having halogen on the carbon atom adjacent to the carbon atom attached to the dioxane ring.

3,160,637
5-HALOMETHYL DERIVATIVES OF 6-CHROMANOLS AND METHODS FOR THEIR PREPARATION
Bruce O. Linn, Plainfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 19, 1963, Ser. No. 266,200
7 Claims. (Cl. 260—345.5)

1. A compound of the formula



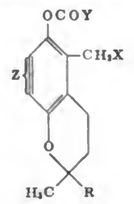
wherein X is a halogen and R is a member from the group consisting of methyl and



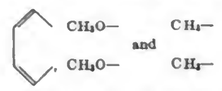
wherein *n* is an integer from one to nine.

3,160,638
5-PHOSPHOMETHYL DERIVATIVES OF 6-CHROMANOLS AND PROCESSES FOR PREPARING SAME
Karl Folkers, Menlo Park, Calif., and Arthur F. Wagner, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 19, 1963, Ser. No. 266,201
28 Claims. (Cl. 260—345.5)

5. A compound of the formula



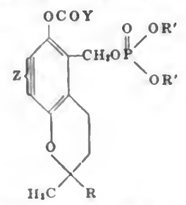
wherein Z is a member from the group consisting of



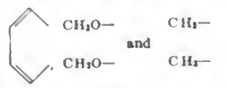
Y is lower alkyl, R is a member from the group consisting of methyl and

wherein *n* is an integer from one to nine, and X is a halogen from the group consisting of chlorine and bromine.

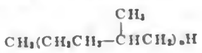
14. A compound of the formula



wherein Z is a member from the group consisting of

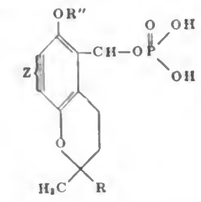


Y is lower alkyl, R' is a member from the group consisting of benzyl and lower alkyl and R is a member from the group consisting of methyl and

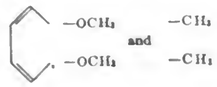


wherein *n* is an integer from 1 to 9.

22. A compound from the group consisting of compounds having the formula



wherein Z is a member from the group consisting of



R'' is a member from the group consisting of hydrogen and lower alkanoyl, and R is a member from the group consisting of methyl and



wherein *n* is an integer from one to nine, and salt thereof.

3,160,639
PREPARATION OF OXYGENATED COMPOUNDS BY OZONE INITIATED OXIDATION
Robert B. Long, Wanamassa, Carl E. Heath, Nixon, and Victor Kevorkian, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 19, 1960, Ser. No. 30,085
13 Claims. (Cl. 260—346.1)

1. In a non-catalytic process for partially oxidizing an organic compound selected from the group consisting of C_3 to C_{20} aliphatic hydrocarbons and C_8 to C_{20} alkyl substituted aromatic hydrocarbons having an alkyl substituent containing at least 2 carbon atoms with a gas containing molecular oxygen, the improvement which comprises contacting said compound in vapor phase with 0.05 to 2.0 moles of O_2 per mole of said compound at a temperature in the range of 300° to 750° F. for up to about 10 seconds in the presence of 0.05 to 8 volume percent ozone based on oxygen and recovering oxygen-containing organic compounds the major proportion of which are epoxy compounds from the reaction products.

3,160,640
METHOD OF EXTRACTING GRISEOFULVIN FROM MYCELIUM AND NATIVE SOLUTION
Valter Osvaldovich Coolbach, Valentina Iakovlevna Raygorodskaia, and Galina Vasilievna Efimova, all of Leningrad, U.S.S.R., assignors to Leningradsky Nauchno-Issledovatelsky Institute Antibiotikov
No Drawing. Filed Sept. 29, 1961, Ser. No. 143,014
7 Claims. (Cl. 260—346.2)

1. A method of extracting griseofulvin from mycelium and native solution which comprises extracting the griseofulvin with methylene chloride, concentrating the solution thereby obtained, and isolating substantially pure griseofulvin therefrom.

3,160,641
PURIFICATION OF ISOSORBIDE
Ludwig A. Hartmann, Swarthmore, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 7, 1961, Ser. No. 129,506
7 Claims. (Cl. 260—347.8)

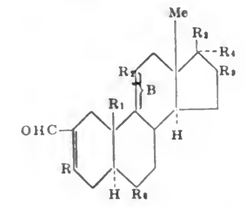
1. The process of purifying isosorbide from the acid catalyzed dehydration product of sorbitol which comprises treating the said product with a boron compound supplying borate ion and recovering purified iosorbide from the resulting boron treated mixture.

3,160,642
6α,16β-DIMETHYL-$\Delta^{1,4}$-PREGNADIENE-17α-OL-3,20-DIONE AND ESTERS THEREOF
Carl Djerassi, Mexico City, Mexico, assignor, by mesne assignments, to Syntex Corporation, a corporation of Panama
No Drawing. Filed Mar. 3, 1959, Ser. No. 796,764
Claims priority, application Mexico Oct. 3, 1958
3 Claims. (Cl. 260—397.4)

1. 6α,16β-dimethyl-$\Delta^{1,4}$-pregnadien-17α-ol-3,20-dione.

3,160,643
3-ENOL ETHERS OF 2-FORMYL-3-OXO-5α-STEROIDS AND PROCESS FOR PREPARING SAME
Derek Burn, Bernard Ellis, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited
No Drawing. Filed Jan. 24, 1963, Ser. No. 253,750
Claims priority, application Great Britain, Jan. 26, 1962, 3,001/62
21 Claims. (Cl. 260—397.4)

1. A 3-enol ether having the formula



wherein

R is selected from the group consisting of O-lower alkyl and O-formoxy lower alkyl;

R_1 is selected from the group consisting of hydrogen and methyl

R_2 is selected from the group consisting of hydrogen, oxo and hydroxy;

R_3 is selected from the group consisting of hydroxy, $—COCH_3$, $—COCH_2F$, $—COCH_2OH$ and $—COCH_2O$(acetyl);

R_4 is selected from the group consisting of hydrogen, lower alkyl, and lower alkynyl when R_3 is hydroxy and is selected from the group consisting of hydrogen, hydroxy and acetoxy when R_3 is selected from the group consisting of $—COCH_3$, $—COCH_2F$, $—COCH_3OH$ and $—COCH_3O$(acetyl);

R_3 and R_4 when taken together are selected from the group consisting of oxo and $—O.CO.CH_2.CH_2—$;

R_5 is selected from the group consisting of hydrogen, methyl, methylene and hydroxyl;

R_6 is selected from the group consisting of hydrogen and methyl, and

B is a single bond when R_2 is oxo and hydroxy and is selected from the group consisting of single and double bonds when R_2 is hydrogen.

3,160,644

1-DEHYDRO-11-KETO-9α-FLUORO-17α-METHYL TESTOSTERONES

Milton E. Herr, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Aug. 8, 1955, Ser. No. 527,118
2 Claims. (Cl. 260—397.45)

1. 1-dehydro-9α-fluoro-11-keto-17-methyltestosterone.

3,160,645

METHOD OF PREPARING DIALKYL ESTERS OF SULFOFATTY ACIDS

Eugene J. Miller, Jr., Carol Stream, Wheaton, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,519
11 Claims. (Cl. 260—400)

1. A method for preparing dialkyl esters of sulfofatty acids, comprising reacting a mono-sulfofatty acid having 8 to 22 carbon atoms with an olefin having from about 2 to 16 carbon atoms in the presence of a compound selected from the group consisting of boron trifluoride and boron trifluoride diethyletherate, and recovering the ester.

3,160,646

PRODUCTION OF MONOGLYCERIDES

Werner Stein, Dusseldorf-Holthausen, and Josef Kretschmann, Dusseldorf, Germany, assignors to Henkel & Cie G.m.b.H., Dusseldorf-Holthausen, Germany, a German corporation

No Drawing. Filed Oct. 4, 1961, Ser. No. 142,783
Claims priority, application Germany Oct. 11, 1960
9 Claims. (Cl. 260—410.7)

1. In the process for the production of glycerides in which a member selected from the group consisting of fatty acids, fatty acid esters and mixtures thereof is reacted with glycerol, the improvement for the production of a glyceride mixture with a high content of monoglycerides which comprises maintaining a reaction medium containing at least 50-mol percent of glycerol, 10–35 mol percent of monoglycerides, and not more than 15 mol percent of higher glycerides at a temperature between about 260–300° C. while adding said reactants thereto at a rate of not in excess of 0.5 part by weight per hour per part by weight of said reaction medium, said added reactants containing at least 2 mols of glycerol radicals per mol of fatty acid radicals, and recovering the glyceride mixture formed.

3,160,647

ALKYLATION OF DIALKOXY MONOHALO SILANES

Cecil C. Chappelow, Jr., Kansas City, Mo., and John T. Goodwin, Jr., Falls Church, Va., assignors, by mesne assignments, to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 19, 1961, Ser. No. 111,176
7 Claims. (Cl. 260—448.8)

1. A process of preparing alkyl trialkoxysilanes which comprises maintaining a mixture of an alkali metal, an alkyl halide and a tri-substituted silane at a temperature in the range of about 50 to about 200° C. sufficient to effect alkylation of said silane and recovering said alkyl trialkoxysilane from the reaction mixture; said silane reactant being characterized by having the formula

$$HSi(OR)_2X$$

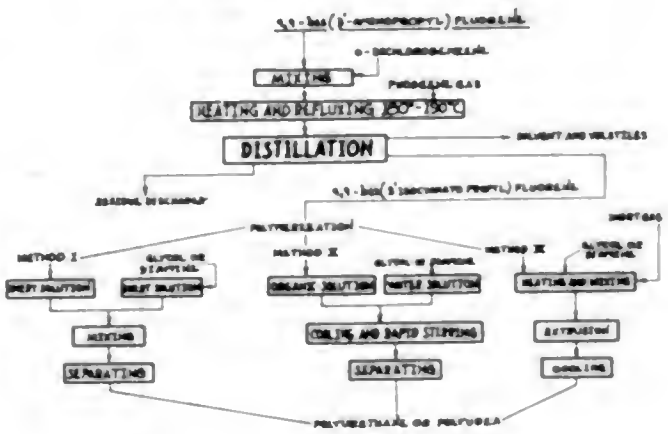
wherein R is an alkyl group of up to about 12 carbon atoms and X is a halide, said process being further characterized in that at least about one mole of said alkyl halide is used per mole of said silane.

3,160,648

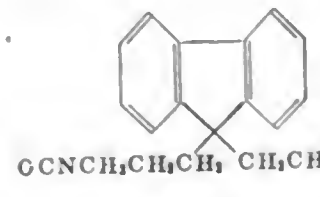
9,9-BIS(3'-ISOCYANATOPROPYL)FLUORENE

John O'Brochta and Samuel C. Temin, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Aug. 2, 1961, Ser. No. 128,823
1 Claim. (Cl. 260—453)



9,9-bis(3'-isocyanatopropyl)fluorene



3,160,649

SYNTHESIS OF METHYLTHIOMETHYL ISOTHIOCYANATE

Torsten Hasselstrom, Framingham, and Richard C. Clapp, Natick, Mass., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 2, 1961, Ser. No. 86,831
2 Claims. (Cl. 260—454)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Method of synthesizing methylthiomethyl isothiocyanate comprising warming a solution of chloromethyl methylsulfide and of a member of the group consisting of alkali metal thiocyanate and silver thiocyanate in a mutual inert organic solvent until said sulfide and said thiocyanate combine, cooling the solution until two layers form, and recovering liquid methylthiomethyl isothiocyanate from the lower layer.

3,160,650

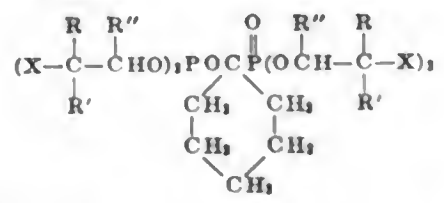
PROCESS FOR MAKING 1-CYCLOHEXENYL PHOSPHONIC ACID DIESTERS AND AN INTERMEDIATE COMPOUND FOR USE THEREIN

Gail H. Birum and George A. Richardson, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,512
13 Claims. (Cl. 260—461)

1. 1-[bis(2-cyanoethoxy)phosphinyl]cyclohexyl bis(2-chloroethyl) phosphite.

2. A process for preparing monophosphonates which comprises subjecting a compound of the formula



wherein X is an electronegative substituent selected from the group consisting of bromine, chlorine, fluorine, the cyano, and phenyl; R is selected from the group consisting of hydrogen, bromine, chlorine, fluorine, and hydrocarbyl having from 1 to 6 carbon atoms, hydrocarbyloxyalkyl radicals having from 1 to 6 carbon atoms, chlorine substituted hydrocarbyl having from 1 to 6 carbon atoms, bromine substituted hydrocarbyl having from 1 to 6 carbon atoms, chlorine substituted hydrocarbyloxyalkyl having from 1 to 6 carbon atoms, and bromine substituted hydrocarbyloxyalkyl having from 1 to 6 carbon atoms; R′ is selected from the group consisting of hydrogen, bromine, chlorine, provided that when X is cyano, R is selected from the group consisting of hydrogen and alkyl having from 1 to 6 carbon atoms (and R′ is hydrogen; R″ is selected from the group consisting of hydrogen and methyl, to a thermal action of sufficient intensity on the order of from about 20° C. to about 150° C. to cleave said compound into said monophosphonates.

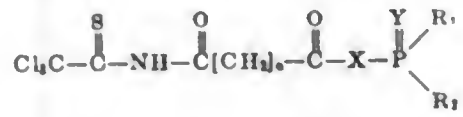
3,160,651

THIOACETAMINO-DICARBOXYLIC ACID ESTERS OF PHOSPHORUS ACIDS

Hans-Gerd Schicke, Wuppertal-Elberfeld, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 6, 1961, Ser. No. 122,088
Claims priority, application Germany July 13, 1960
8 Claims. (Cl. 260—461)

1. A compound of the formula



wherein R_1 and R_2 each stand for a member selected from the group consisting of alkyl having up to six carbon atoms, alkenyl having up to 6 carbon atoms, cyclohexyl, phenyl and alkoxy having up to 6 carbon atoms; *n* stands for a whole number from 0 to 4, and X and Y each stand for a chalcogen having an atomic number from 8 to 16.

3,160,652

PREPARATION OF MONOALKOXY DECABORANES

David J. Mann, Livingston, and Murray S. Cohen, Dover, N.J., assignors, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware

No Drawing. Filed Apr. 2, 1957, Ser. No. 650,280
2 Claims. (Cl. 260—462)

1. A method for the preparation of a monoalkoxy decaborane which comprises reacting one mole of decaborane and from 0.5 to 2 moles of a compound of the formula MOR at a temperature from 25° C. to 100° C. for a period of time of from 1 to 50 hours while the reaction mixture contains from 20 to 95 weight percent of a dialkyl ether containing a total of from 2 to 8 carbon atoms, admixing the reaction mixture thus formed with from 0.5 to 2 moles of a compound of the formula R_2SO_4 and reacting the resulting reaction mixture at a temperature of from 25° C. to 100° C. for a period of from 1 to 50 hours, M being an alkali metal and R being an alkyl radical containing from 1 to 4 carbon atoms.

3,160,653

METHOD OF PRODUCING BENZENE RING-HALOGENATED AROMATIC HYDROCARBONS

Anton Benning, Essen-Heisingen, and Kurt Handrick, Essen-Steele, Germany, assignors to Bergwerksverband G.m.b.H., Essen, Germany

No Drawing. Filed Aug. 18, 1960, Ser. No. 50,313
Claims priority, application Germany Aug. 22, 1959
6 Claims. (Cl. 260—465)

1. Method of chlorinating the benzene ring of an aromatic compound, which comprises reacting an aromatic compound selected from the group consisting of monoloweralkyl benzoic acid, di-loweralkyl benzoic acid, triloweralkyl phthalic acid, chloro-loweralkyl toluene, tetraloweralkyl benzene, naphthoic acid, loweralkyl naphthoic acid, loweralkyl naphthalene dicarboxylic acid, loweralkyl-acetophenone, mono-loweralkyl benzoic acid-loweralkyl ester, loweralkyl benzyl alcohol, tolunitrile, phenylbenzoic acid and chlorobenzoic acid with a reaction mixture consisting essentially of nitric acid of about 10–40% concentration in an amount of at least one mol of nitric acid per each mol of said aromatic compound and an inorganic compound selected from the group consisting of hydrochloric acid, alkali metal chloride, and alkaline earth chloride at a temperature of about 90–120° C., thereby introducing the chlorine of said inorganic compound into the benzene ring of said aromatic compound.

3,160,654

METHOD OF MAKING CARBOXYLIC ESTERS OF NITROALCOHOLS

James C. Conly, East Paterson, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 4, 1954, Ser. No. 402,185
13 Claims. (Cl. 260—471)

1. The method of making an ester of a carboxylic acid and an alcohol having the structure

$$A—C(NO_2)_2—CH_2OH$$

where A is selected from the group consisting of hydrogen, methyl and nitro, which comprises forming said ester at a temperature of from room temperature to 100° C. in a reaction mixture comprising (1) a carboxylic reagent selected from the group consisting of carboxylic acids, lower alkyl esters thereof, amides thereof having the grouping $—CONH_2$, and anhydrides thereof, said carboxylic acids being selected from the group consisting of alkanoic acids having at least two carbon atoms, alkanedioic acids containing at least four carbon atoms, arene mono- and di-carboxylic acids, halogenated alkanoic acids having at least two carbon atoms, nitroalkane carboxylic acids, nitroarene carboxylic acids, and alkene dioic acids, (2) an alcohol having the above structure and (3) a reaction medium comprising sulfuric acid having an initial concentration of from about 96% to 130% and being sufficient in amount to dissolve a major proportion of said reagents, and separating said product ester from the resulting reaction mixture.

3,160,655
NITRO SUBSTITUTED ALKYL OXO-LOWER-ALKYL-CARBOXYLATES

Paul J. Stoffel, St. Louis, and David J. Beaver, Richmond Heights, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 24, 1961, Ser. No. 112,234
7 Claims. (Cl. 260—483)

1. Ketocarboxylates of the formula



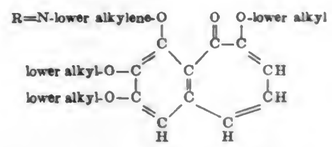
wherein Z is a nitro substituted alkyl radical containing 2 to 6 carbon atoms the nitro substituent of which being attached to a carbon atom at least one carbon atom removed from the carbonyloxy radical, and wherein R is an oxoalkyl radical terminating with a CH_3— group and containing 2 to 7 carbon atoms.

3,160,656
BENZOCYCLOHEPTENONES AND DERIVATIVES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 28, 1962, Ser. No. 197,918
8 Claims. (Cl. 260—501)

1. A compound selected from the group consisting of bases of the formula



wherein R=N is a basic nitrogen-containing radical of less than 12 carbon atoms selected from the group consisting of amino, lower alkylamino, di-lower alkylamino, hydroxy-lower alkylamino, di-(hydroxy-lower alkyl) amino, phenyl(lower alkyl)amino, N-(lower alkyl)-N-(phenyl[lower alkyl]) amino and 5- to 6-membered monocyclic nitrogen heterocyclics,

6,7,8,9-tetrahydro derivatives, acid addition salts of said bases with pharmaceutically acceptable acids and quaternary salts of said bases with pharmaceutically acceptable quaternizing agents.

3,160,657
ALKALI METAL-AMINE SALT OF HALOHYDROCARBYLPHOSPHONIC ACID

James R. Price, Alton, Ill., and Richard G. Cunningham, University Park, Pa., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application June 15, 1960, Ser. No. 36,154. Divided and this application Sept. 26, 1963, Ser. No. 311,618
2 Claims. (Cl. 260—501)

1. As a new compound Na-primary C_{8-24} alkylamine salt of chloromethylphosphonic acid.

3,160,658
SYNTHESES OF SPIRILLOXANTHIN

Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application May 31, 1962, Ser. No. 198,719. Divided and this application Mar. 4, 1963, Ser. No. 262,305
5 Claims. (Cl. 260—543)

1. A process for the preparation of spirilloxanthin comprising the steps of

(*a*) treating 6-methyl-5-hepten-2-one with methyl alcohol in an acidic medium to form 6-methoxy-6-methylheptan-2-one,

(*b*) treating the latter compound with sodium metal and acetylene to form 3-hydroxy-7-methoxy-3,7-dimethylocta-1-yne,

(*c*) hydrogenating the latter compound in the presence of a lead-palladium-calcium carbonate catalyst to form 3-hydroxy-7-methoxy-3,7-dimethylocta-1-ene,

(*d*) reacting the latter compound with triphenyl phosphorus hydrobromide to give 7-methoxy-3,7-dimethylocta-2-en-1-yl triphenyl phosphorus bromide,

(*e*) reacting the latter compound with crocetin dialdehyde to give 1,1'-dimethoxy-1,1',2,2'-tetrahydrolycopene, and

(*f*) treating the latter compound with N-bromosuccinimide to give spirilloxanthin.

2. 3-hydroxy-7-methoxy-3,7-dimethylocta-1-yne.

3. 3-hydroxy-7-methoxy-3,7-dimethylocta-1-ene.

4. 7-methoxy-3,7-dimethylocta-2-en - 1 - yl triphenyl phosphorus bromide.

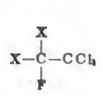
5. 1,1'-dimethoxy-1,1',2,2'-tetrahydrolycopene.

3,160,659
PREPARATION OF PERFLUORO- AND PERCHLOROFLUORO-ACETYL CHLORIDE

Albert L. Dittman, Hackensack, and Ronald I. Zager, Moonachie, N.J., assignors to Halocarbon Products Corporation, Hackensack, N.J., a corporation of New York

No Drawing. Filed May 20, 1960, Ser. No. 30,416
3 Claims. (Cl. 260—544)

1. A process for synthesizing perfluoro and perchlorofluoro-acetyl chlorides which comprises mixing a catalytic amount of a sulfate of mercury with a compound of the formula:



in which X is selected from the group consisting of Cl and F and heating to reflux, then adding a member selected from the group consisting of fuming sulfuric acid and SO_3 to the mixture slowly over a period of several hours, while maintaining the temperature at reflux, and recovering acetyl chloride by distillation as formed.

3,160,660
PROCESS FOR PREPARING NITROSYL POLYFLUOROACYLATES

Joseph D. Park and Robert W. Rosser, Boulder, Colo., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed June 5, 1961, Ser. No. 114,645
7 Claims. (Cl. 260—545)

1. A process for the production of a fluorinated nitrosyl acylate selected from the group consisting of:

$H(CF_2)_nCOONO$,
$Cl(CF_2)_nCOONO$,
$F(CF_2)_nCOONO$,
$R_fOCF_2CF_2COONO$,
$Z—CFCl(CF_2—CFCl)_mCF_2COONO$,
$Z—(CF_2—CFCl)_mCF_2COONO$ and
$CF_2ClCF_2(CFClCF_2)_mCFClCOONO$

wherein Z is a perhalomethyl radical having a total atomic weight not greater than 146.5, R_f is a perfluoroalkyl radical having from 1 to 8 carbon atoms, *n* is an integer from 1 to 12, and *m* is a number from 0 to 5; which

comprises the step of treating the anhydride of an acid selected from the group consisting of:

$H(CF_2)_nCOOH$,
$Cl(CF_2)_nCOOH$,
$F(CF_2)_nCOOH$,
$R_fOCF_2CF_2COOH$,
$Z—CFCl(CF_2—CFCl)_mCF_2COOH$,
$Z—(CF_2—CFCl)_mCF_2COOH$ and
$CF_2ClCF_2(CFClCF_2)_mCFClCOOH$

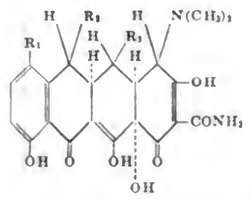
wherein Z, R_f, *n* and *m* have the same significance as before, with a nitrosyl halide of the group consisting of nitrosyl chloride and nitrosyl bromide, under anhydrous conditions at a temperature in the range of about −80° C. to about 100° C.

3,160,661
6-DEOXYTETRACYCLINES

Jerry Robert Daniel McCormick, New City, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 28, 1958, Ser. No. 751,180
8 Claims. (Cl. 260—559)

1. A compound selected from the group consisting of 6-deoxytetracyclines of the formula:



wherein R_1 is a member of the group consisting of hydrogen, bromine and chlorine, R_2 is a member of the group consisting of hydrogen and methyl, and R_3 is a member of the group consisting of hydrogen and hydroxy, the mineral acid salts thereof, the alkali metal salts thereof, and the alkaline earth metal salts thereof.

3,160,662
LOWER ALKYLAMINOACYL AMIDE ANESTHETICS

Nils Magnus Lofgren, Lidingo, and Claes Philip Tegner, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden

No Drawing. Filed June 24, 1958, Ser. No. 744,052
Claims priority, application Sweden June 26, 1957
9 Claims. (Cl. 260—562)

1. A substance of the class consisting of alpha-(lower)-monoalkylaminopropionyl - ortho - toluidide wherein the alkyl group has three carbon atoms and a pharmaceutically acceptable acid addition salt of said toluidide.

3,160,663
PROCESS FOR THE PRODUCTION OF CYCLOHEXANONE OXIME

Wallace F. Runge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,398
8 Claims. (Cl. 260—566)

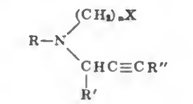
1. A process for the production of cyclohexanone oxime which consists essentially of hydrogenating nitrocyclohexane to form a hydrogenation mixture containing cyclohexanone oxime, nitrocyclohexane, cyclohexylamine, and cyclohexylhydroxylamine, subsequently blanketing the hydrogenation mixture with an inert gas, and heating the blanketed mixture in the presence of a catalyst capable of reducing nitrocyclohexane to from about 125 to about 175° C. for a period ranging from about one-half hour to about 24 hours whereby additional cyclohexanone oxime is produced and the amount of cyclohexylhydroxylamine in said hydrogenation mixture is reduced.

3,160,664
ACETYLENIC ω-HALOALKYLAMINES

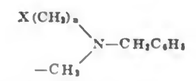
Norman D. Dawson, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Apr. 10, 1959, Ser. No. 805,369
14 Claims. (Cl. 260—570.5)

1. N-substituted-N-alkynyl-ω-haloalkylamines of the formula:



wherein R is a member of the class consisting of alkyl radicals containing not more than 8 carbon atoms, lower haloalkyl radicals, phenyl and benzyl radicals; R' is a member of the class consisting of hydrogen, phenyl, benzyl and lower alkyl radicals; *n* is an integer from 2 to 3 inclusive; X is a halogen atom; and R'' is a member of the class consisting of hydrogen, lower alkyl radicals, alkenyl radicals having not more than 3 carbon atoms and a radical represented by the formula:



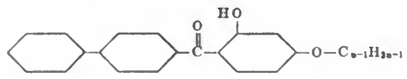
wherein *n* and X are defined above.

3,160,665
HYDROXY-BENZOPHENONES

Adolf Emil Siegrist, Basel, Erwin Maeder, Munchenstein, and Max Duennenberger, Birsfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Feb. 28, 1958, Ser. No. 718,144
Claims priority, application Switzerland, Mar. 6, 1957, 43,521; Jan. 30, 1958, 55,270
4 Claims. (Cl. 260—591)

1. A hydroxy ketone of the formula



in which *n* represents a whole number of at the most 3.

3,160,666
VINYLPHOSPHORUS COMPOUNDS AND METHOD OF PREPARATION

Hugh E. Ramsden, Scotch Plains, N.J., assignor to Metal & Thermit Corporation, Woodbridge Township, N.J., a corporation of New Jersey

No Drawing. Filed July 12, 1957, Ser. No. 671,371
14 Claims. (Cl. 260—606.5)

9. Trivalent phosphorus compounds of the general formula



wherein X is a halogen, and *a* is a number from 1 to 3.

3,160,667
METHODS FOR PRODUCING PEROXIDIC MATERIALS

Kazuo Higashiuchi, Chicago, Ill., and Edward J. Schwoegler, Munster, Ind., assignors to J. R. Short Milling Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 14, 1960, Ser. No. 75,692
5 Claims. (Cl. 260—610)

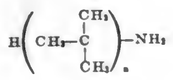
1. The method for obtaining from acetone and hydrogen peroxide a yield of organic acyclic peroxides consisting essentially of 2,2-dihydroperoxy propane and bis-(1,1'-hydroperoxy 1,1'-methyl) diethyl peroxide and amounting in hydrogen peroxide equivalents to at least 60% of the hydrogen peroxide employed as a starting material, with the weight ratio of 2,2-dihydroperoxy propane to bis-(1,1'-hydroperoxy 1,1'-methyl) diethyl peroxide being at least 3:1, comprising combining acetone, hydrogen peroxide, water and 0.15–15% by weight of phosphoric acid, and maintaining the resulting reaction mixture at a temperature of from −20° C. to 35° C. for a time period of from 6 hours to 10 minutes, said time period depending upon and being inversely related to the proportion of catalyst and the temperature employed, the molar ratio of hydrogen peroxide to acetone for the total acetone employed being from 1.5:1 to 6:1, and the water employed amounting to 5–95% of the reaction mixture.

3,160,668
HYDROPEROXIDE FORMATION

William R. Davie, Aliquippa, and Joachim C. E. Schult, Pittsburgh, Pa., assignors to Pittsburgh Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 19, 1961, Ser. No. 117,832
2 Claims. (Cl. 260—610)

1. In a process for the production of an alpha, alpha-dialkyl arylmethyl hydroperoxide-containing reaction mixture by the interaction of an alpha, alpha-dialkyl arylmethane selected from the group consisting of cumene, secondary butyl benzene, p-cymene, cyclohexyl benzene, and isopropyl naphthalene with an oxygen-containing gas, the improvement of effecting said reaction in the presence of a tertiary alkyl primary amine having the formula



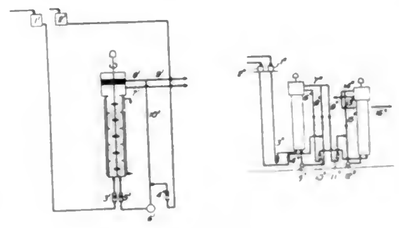
wherein n is an integer from 3 to 6 inclusive.

3,160,669
EMULSION PROCESS OF PRODUCING AROMATIC NITRO COMPOUNDS

Shinichiro Terao and Tadashi Hinago, both of Tsurusaki-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

Filed Apr. 13, 1962, Ser. No. 187,248
11 Claims. (Cl. 260—645)

1. A process for continuously producing aromatic nitro compounds which comprises: charging into the lower end of a reaction zone which is composed of a plurality of compartments arranged vertically a mixture of an aromatic compound, selected from the group consisting of aromatic hydrocarbons and chlorinated and nitrated compounds thereof, with a part of the nitrated product resulting from the hereinafter described nitration of said aromatic compound; charging a mixed acid comprising nitric acid and sulfuric acid into at least at one compartment of said reaction zone agitating the reaction mixture being transferred through the compartments so as to keep it in emulsion with agitation in each of the compartments; allowing the nitrated reaction mass to separate into two layers, a first layer consisting of organic phase composed of the nitrated product and a second layer consisting of a spent acid phase in a separating zone adjacent to the upper end of the reaction zone; recovering the nitrated product



and the spent acid separately; and returning and mixing a part of the nitrated product with said aromatic compound being charged into said reaction zone.

3,160,670
ALKYLATION PROCESS EMPLOYING A KC_8 CATALYST

Walter E. Foster, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,449
8 Claims. (Cl. 260—671)

1. In a process for alkylating an aromatic hydrocarbon with an acyclic monoolefin containing not more than 12 carbon atoms in the presence of a catalyst, the improvement in which said catalyst consists of the copper-colored potassium graphite inclusion compound KC_8 and the reaction is conducted at a temperature of from about 25° C. to about 300° C. and a pressure of from about 1 atmosphere to about 1000 atmospheres sufficient to effect said alkylation.

3,160,671
METHOD FOR INCREASING THE YIELD OF RECOVERABLE MONOCYCLIC AROMATIC HYDROCARBONS IN THERMAL HYDRODEALKYLATION PROCESSES

Stanford I. Feigelman, Haddonfield, N.J., and Eugene Aristoff, Newtown Square, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

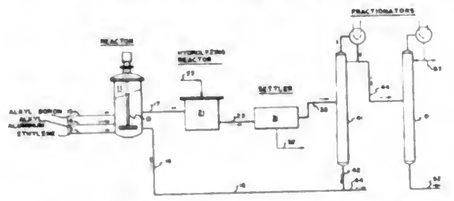
No Drawing. Filed Mar. 10, 1961, Ser. No. 94,675
1 Claim. (Cl. 260—672)

In a process for hydrodealkylating alkylated monocyclic aromatic hydrocarbons in an alkylated monocyclic aromatic-containing hydrocarbon fraction wherein such fraction is subjected to thermal conversion in a reaction zone devoid of catalytically active material in the presence of hydrogen at a temperature ranging from 950° F. to 1450° F. at a pressure ranging from 400 pounds per square inch to 10,000 pounds per square inch for a time ranging from 1 second to 600 seconds with the amount of hydrogen ranging from 1.0 to 20.0 moles of hydrogen per mole of the normally liquid hydrocarbon charge, the improvement which comprises increasing the yield of recoverable monocyclic aromatic hydrocarbons by introducing diphenyl into the reaction zone together with the alkylated monocyclic aromatic-containing hydrocarbon fraction, said diphenyl being in an amount ranging from 1 mole percent to 15 mole percent based on the total moles of normally liquid hydrocarbon charge to the reaction zone, and recovering the monocyclic aromatic hydrocarbons.

3,160,672
ETHYLENE POLYMERIZATION WITH A TRIALKYL BORON - TRIALKYL ALUMINUM CATALYST

Tillmon H. Pearson and John K. Presswood, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Nov. 29, 1960, Ser. No. 72,356
5 Claims. (Cl. 260—683.15)



1. The process of manufacture of an alpha olefin hydrocarbon product consisting essentially of olefins of from 4 up to about 30 carbon atoms and predominating in normal alpha olefins, comprising reacting ethylene in the presence of a reaction system including a catalyst consisting of a trialkyl boron component and a trialkyl aluminum component, the boron component being in the proportions of from about one-fourth to ten moles per mole of the aluminum, the reaction being conducted at a temperature of from about 140° C. and 225° C., and at a pressure below about 7,000 and above 700 pounds per square inch or the pressure given by the expression

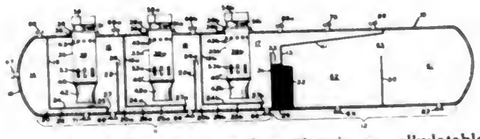
$$P=33.5T-5400$$

wherein P is pressure in pounds per square inch and T is temperature in ° C., whichever is higher.

3,160,673
HYDROCARBON ALKYLATION PROCESS

John M. Black, Plandome, N.Y., James Warburton, Alamo, Calif., and Samuel R. Stiles, Cresskill, N.J., assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Filed Feb. 19, 1960, Ser. No. 9,843
31 Claims. (Cl. 260—683.59)



1. In an alkylation reaction wherein an alkylatable hydrocarbon is reacted with an alkylating agent in the presence of an immiscible liquid catalyst in a series of confined mixing zones each contained in a confined reaction zone, and wherein the alkylatable hydrocarbon and the catalyst are progressively passed in series flow through each of the reaction zones and their respective mixing zones, the process which comprises: passing the alkylatable hydrocarbon and the liquid catalyst to the lower portion of a first reaction zone and to a confined space directly below an area of high upward vertical velocity; emulsifying the alkylatable hydrocarbon and the liquid catalyst; passing the emulsion upwardly at maximum velocity within a first confined mixing zone past a point where the alkylating agent is continuously being introduced, under conditions such that the condensation reaction between the alkylatable hydrocarbon and alkylating agent takes place in the liquid phase and spontaneous vaporization occurs; passing the resulting mixture upwardly through a semiquiescent zone to separate therefrom vaporous material; accumulating in and venting vapors from the upper portion of said first mixing zone; reversing the flow of the liquid mixture in a downwardly direction within said first mixing zone, and expelling the liquid mixture from a lower portion of the first confined mixing zone; recirculating a portion of the expelled liquid to said area of high upward vertical velocity in admixture with the incoming alkylatable hydrocarbon and catalyst; recirculating the expelled liquid through the first confined mixing zone for recontact with the alkylating agent; allowing the liquid level in said first reaction zone to rise to a predetermined level above the point where liquid is expelled from the confined mixing zone; transferring liquid above said liquid level in said first reaction zone through a confined passageway and thence to a second confined space directly below an area of high upward vertical velocity in a second confined reaction zone containing a second confined mixing zone; repeating the above flow and transfer of liquid in each of the succeeding zones and separately withdrawing a controlled amount of vapors from each of the confined reaction zones to regulate the pressure therein so that the pressure progressively decreases in the direction of liquid flow through the reaction zones to induce the flow of liquid through said zones.

3,160,674
ALKYLATION PROCESS

Lawrence G. Cannell, Lafayette, Calif., and George Holzman, Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,928
6 Claims. (Cl. 260—683.59)

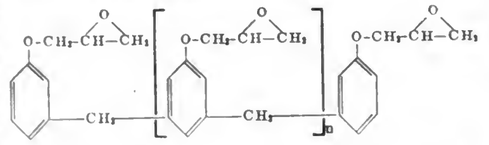
1. A continuous process for alkylating an isoparaffin having from 4 to 6 carbon atoms per molecule with a C_3 to C_7 unsaturated hydrocarbon consisting essentially of a major amount of monoolefin and a minor amount of at least 0.2% by volume diolefin which comprises contacting said isoparaffin with said unsaturated hydrocarbon at a temperature of about 0° to about 30° C. in the liquid phase with concentrated sulfuric acid and at a liquid hourly space velocity of diolefin of less than about 0.03 volume diolefin per volume sulfuric acid per hour, maintaining vigorous agitation of the contact mixture with the acid, and maintaining an amount of acid in the reaction mixture of from about 15% to about 25% by volume of the total volume of acid-hydrocarbon mixture.

3,160,675
HIGH TEMPERATURE ADHESIVE

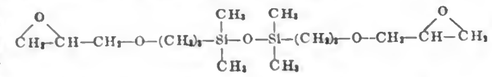
Clarence J. Kastrop, Brigham City, Utah, assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,520
5 Claims. (Cl. 260—826)

1. The product of the reaction of an epoxy novolac polymer of the formula

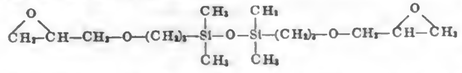


in which the average value of $n=3.5$, with p,p'-diaminodiphenyl sulfone, 1,3 - bis[3(2,3 epoxypropoxy)propyl]-tetramethyldisiloxane of the formula



and an adduct comprised of p,p'-diaminodiphenyl sulfone

and 1,3 - bis[3(2,3 epoxypropoxy)propyl]tetramethyldisiloxane of the formula



an excess of p,p'-diaminodiphenyl sulfone entering into the formulation of said adduct to provide amine groups as the terminal groups of the adduct molecule.

3,160,676

THERMOSET COMPOSITIONS BASED ON VINYL PYRROLIDONE CONTAINING CARBOXY POLYMERS-POLYEPOXIDE COMPOSITIONS

David W. Mabrey, Middletown, and William P. Altmiller, Lyndon, Ky., assignors, by mesne assignments, to Devoe & Raynolds Company, Inc., a corporation of Delaware

No Drawing. Filed May 7, 1959, Ser. No. 811,533
5 Claims. (Cl. 260—834)

1. A heat-convertible, solvent thinned, room temperature stable, resinous composition of matter comprising, in solution, a polyepoxide and a carboxy copolymer, combined in a ratio of 0.7 to 2 equivalents polyepoxide to 1 equivalent of a carboxy copolymer, said polyepoxide being selected from the group consisting of glycidyl polyethers of polyhydric alcohols, glycidyl polyethers of polyhydric phenols, dicyclopentadiene diepoxide, bis-epoxydicyclopentyl ether of ethylene glycol, and 3,4-epoxy-6-methylcyclohexylmethyl-3,4-epoxy - 6 - methylcyclohexanecarboxylate, said carboxy copolymer being a copolymer of 5 to 25 weight percent of a short chain alpha-beta monounsaturated monocarboxylic acid having not more than four carbon atoms, 1 to 5 weight percent N-vinyl pyrrolidone and a different monoethylenically unsaturated monomer copolymerizable therewith, the total being 100 percent, said solvent thinned composition being devoid of added catalyst because of the presence of N-vinyl pyrrolidone.

3,160,677

POLYAMIDE-POLYOXAMIDE BLENDS

Frederick Keith Duxbury, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 7, 1961, Ser. No. 115,311
Claims priority, application Great Britain, June 20, 1960, 21,531
9 Claims. (Cl. 260—857)

1. A fiber-forming polymer blend comprising about 60–95% of a polyamide selected from the group consisting of polyhexamethylene adipamide, polyhexamethylene sebacamide, poly-ε-caproamide and poly-11-undecanoamide and about 5–40% of a polyoxamide of at least one amine component selected from the group consisting of pentamethylene diamine, hexamethylene diamine, heptamethylene diamine, octamethylene diamine, nonamethylene diamine, decamethylene diamine, 2-methyl- and 3 - methylhexamethylene diamines, 3 - methoxy - hexamethylene diamine, 2:3-, 2:4-, and 2:5- and 3:4-dimethylhexamethylene diamines, 2:11-diamino dodecane, meta-xylylene diamines, and the reaction products of caprolactam and hexamethylene diamine.

3,160,678

FLEXIBLE FILMS FROM UNSATURATED POLYESTERS

Henry Y. Lew, El Cerrito, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 9, 1959, Ser. No. 851,515
18 Claims. (Cl. 260—861)

9. A flexible film of a copolymer consisting essentially, by weight, of (1) 30 to 60 percent copolymerizable compound containing the polymerizable group $CH_2{=}C<$; and (2) 40 to 70 percent unsaturated polyester having an acid number below about 30 and a calculated molecular weight between 1,000 and 4,000, which polyester is the condensation product of the following reactants as essentially the sole reactants:

(*a*) phthalic acid material selected from the group consisting of isophthalic acid, terephthalic acid, and lower monohydric alcohol esters thereof;

(*b*) an aliphatic acid-reacting material selected from the group consisting of α,β-ethylenically unsaturated aliphatic dibasic acids and their anhydrides; and

(*c*) a polyalkylene glycol material of the formula $HO(C_xH_{2x}O)_nC_{2x}OH$, wherein *x* is a numeral greater than 1 but less than 4, and *n* is a numeral such as to give a molecular weight within the range 200 to 600;

said phthalic acid material being employed in proportions within the range 1 to 5 mols per mol of aliphatic acid-reacting material, and said glycol material in an amount just sufficient to neutralize all carboxyl groups up to a 5 mol percent excess.

3,160,679

UNSATURATED POLYESTER FLEXIBLE FILMS

Henry Y. Lew, El Cerrito, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 9, 1959, Ser. No. 851,544
15 Claims. (Cl. 260—861)

7. A flexible film of a copolymer consisting essentially, by weight, of (1) 30 to 60 percent copolymerizable compound containing the polymerizable group $CH_2{=}C<$; and (2) 40 to 70 percent unsaturated polyester which is the condensation product of (*a*) a phthalic acid material selected from the group consisting of isophthalic acid, terephthalic acid, and esters of isophthalic acid and terephthalic acid and a lower monohydric alcohol; (*b*) an unsaturated dicarboxylic acid material selected from the group consisting of α,β-ethylenically unsaturated dicarboxylic acids, and their anhydrides; and (*c*) a blend of at least two glycols, at least one of which is a polyalkylene glycol, said glycols being selected from the group consisting of ethylene glycol, propylene glycol, butylene glycol, polyethylene glycol, polypropylene glycol, and polybutylene glycol, said blend of glycols having an average molecular weight in the range 120 to 300, any single glycol species of said blend not exceeding a molecular weight of 1,000; said phthalic acid material being employed in the range 1 to 5 mols per mol of unsaturated dicarboxylic acid material, and said glycols in an amount sufficient to neutralize the carboxyl groups up to a 5 mol percent stoichiometric excess; said ester having an acid number below about 30.

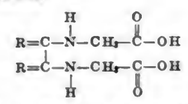
3,160,680

POLY-α-OLEFIN RESIN COMPOSITION FOR COATING COPPER WIRE AND THE LIKE

Clarence E. Tholstrup and James C. Ownby, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

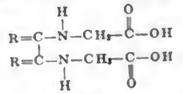
No Drawing. Filed May 9, 1962, Ser. No. 193,595
18 Claims. (Cl. 260—897)

1. A normally solid, poly-α-olefin resin composition containing an N,N'-bis(carboxymethyl)oxamide represented by the formula



tent, corresponds to the specific composition of Example the group consisting of O and S radicals, said oxamide being at a concentration sufficient to substantially inhibit copper effect.

14. A normally solid, thermoplastic, wire-coating composition consisting essentially of a normally solid, thermoplastic, blend of a normally solid, polypropylene resin and a normally solid polyisobutylene; 4,4'-butylidenebis-(6-tert.butyl-m-cresol) and a polyester of 3,3'-thiodipropionic acid, ethylene glycol and 2-ethylhexanol, the average molecular weight of said polyester being about 600, at concentrations in a range from about 0.01 to about 5% by weight of said resin; and an N,N'-bis-(carboxymethyl)oxamide represented by the formula



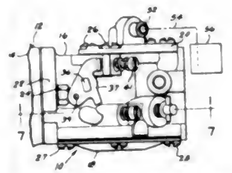
wherein each R is a radical independently selected from the group consisting of O and S radicals, said oxamide being at a concentration in a range from about 0.01 to about 5% by weight of said resin.

3,160,681

CARBURETOR

Eldon A. Johnson, Sunset Hills, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Nov. 15, 1961, Ser. No. 152,560
5 Claims. (Cl. 261—35)



1. A carburetor comprising a body, a fuel and air mixture conduit through said body, said body formed with a fuel pumping chamber and an inlet and an outlet connected thereto, a pump diaphragm fixed to said body across said pumping chamber to form a movable wall thereof to pump fuel through said pumping chamber, means forming a fuel chamber within said body, a fuel passage in said body extending from said pumping chamber outlet to said fuel chamber, an outlet valve in said passage adjacent to said pumping chamber, an inlet valve in said fuel passage between said outlet valve and said fuel chamber, said body having a fuel connection between said fuel chamber and said mixture conduit, said body formed with a substantially annular cavity encircling said fuel passage between said outlet and inlet valves, and a resilient pulse diaphragm portion extending across and separating said cavity from said fuel passage, and means sealing said resilient diaphragm portion to said carburetor body, said fuel passage extending through said diaphragm portion, whereby a closed pulse chamber is formed between said diaphragm portion and said cavity to dampen pump pulsations.

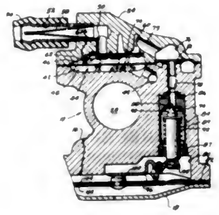
3,160,682

CARBURETOR

Harold A. Carlson, Brentwood, Eldon A. Johnson, Sunset Hills, and Edward R. Frey, Dellwood, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed May 3, 1962, Ser. No. 192,198
4 Claims. (Cl. 261—35)

2. A carburetor comprising a body formed with a fuel and air mixture conduit therethrough, a fuel chamber and a fuel passage connecting said fuel chamber with said mixture conduit, a cap forming a pumping chamber with said body, said cap including an inwardly facing recess, means removably securing said cap and said movable diaphragm fixed between said cap and said body and forming a portion of said pumping chamber, means forming a fuel inlet passage through said cap into said pumping chamber and a fuel outlet passage connecting said pumping chamber with said fuel chamber, a valve assembly mounted on said cap within said recess, said valve assembly including a resilient valve diaphragm fixed with one surface against said cap and having integral



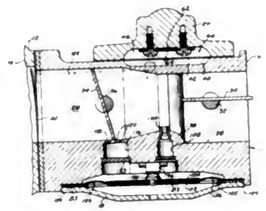
inlet and outlet valve flaps closing said inlet and outlet passages respectively and a retainer plate fixed against the other surface of said valve diaphragm and having a portion spaced from said inlet valve flap to provide a stop therefor and a portion in contact with said outlet valve flap and having a passage therethrough forming an outlet valve seat aligned with said outlet passage, whereby said valve flaps open by movement in opposite directions, and means removably securing said valve assembly to said cap within said recess.

3,160,683

CARBURETOR

Eldon A. Johnson, Sunset Hills, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

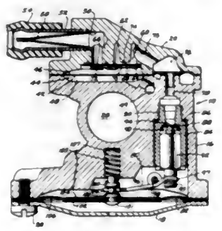
Filed Mar. 2, 1962, Ser. No. 176,968
1 Claim. (Cl. 261—69)



A carburetor comprising a body, a fuel and air mixture conduit through said body, said body formed with a fuel chamber enclosed at its outer margin by an annular surface portion, said annular surface portion having its inner edge formed by a cut-away wall portion merging into said chamber, a fuel inlet and a fuel passage extending from said fuel inlet to said fuel chamber, an inlet valve in said fuel passage between said fuel inlet and said fuel chamber, said body having a fuel connection between said fuel chamber and said mixture conduit, means for operating said inlet valve including a circular diaphragm portion connected at its periphery to said annular surface portion of said body and across said fuel chamber to form a wall thereof and means connecting said diaphragm portion to said inlet valve, a circular plate coaxially fixed

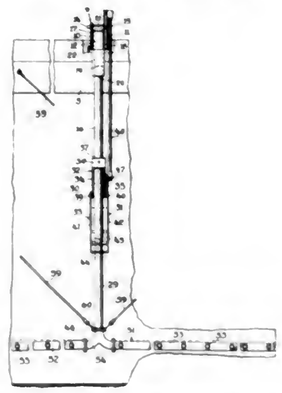
to one side of the center of said diaphragm portion, said plate extending across a major part of said diaphragm portion and having the periphery thereof spaced from said annular body surface portion, and means forming said diaphragm portion between said plate periphery and said circular body portion into a bight extending into said fuel chamber whereby said diaphragm portion can flex, said last means including a rigid annular flat washer fixed to the surface of the periphery of said circular diaphragm portion outside of said fuel chamber and forcing said diaphragm periphery against said annular body surface portion to form a seal therebetween, the flat inner edge of said washer extending inwardly beyond said cutaway wall portion and underlying said diaphragm bight portion between said plate and said body to direct said diaphragm material into said bight.

3,160,684
CARBURETOR
Harold A. Carlson, Brentwood, and Edward R. Frey, Ferguson, Mo., and Harry J. Hertling, Libertyville, Ill., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 28, 1962, Ser. No. 198,197
1 Claim. (Cl. 261—69)



A carburetor comprising a body, a fuel and air mixture conduit through said body, said body formed with a fuel chamber, a fuel inlet and a fuel passage extending from said fuel inlet to said fuel chamber, an inlet valve in said fuel passage between said fuel inlet and said fuel chamber, said inlet valve having a reduced diameter portion adjacent its outer end, means for operating said inlet valve including a diaphragm sealed at its periphery to a portion of said body across said fuel chamber to form a wall thereof and having a centrally located aperture, a pair of backing plates each having a centrally located aperture, a different one of said backing plates positioned on each side of said diaphragm, a stud member positioned within said fuel chamber and having first and second spaced annular flanges formed between the ends thereof, a portion of said stud member extending through the apertures in said plates and diaphragm, a head portion formed on one end of said stud and cooperating with said first annular flange to rigidly retain the plates and the diaphragm in a juxtaposed relationship, a spring retainer recess formed in said body within said fuel chamber axially of said stud, a pivot member fixed to said body within said fuel chamber, a coiled spring member positioned within the spring recess and having one end thereof positioned about an end portion of said stud member and in engagement with said second annular flange, a lever member having first and second bifurcated ends being journaled for rotation on said pivot member and having said first bifurcated end positioned about said stud member and between said annular flanges, said second bifurcated end of said lever being positioned about said reduced diameter portion of said valve member, said second bifurcated end being curved and presenting a convex surface toward said valve, whereby said lever is freely positioned for rotation within said fuel chamber and relatively free from frictional forces so that it may detect and transmit the slightest movements of said diaphragm to said valve.

3,160,685
SWING DIFFUSER
Corson W. Chase, Oak Park, Ill., assignor to FMC Corporation, a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,703
3 Claims. (Cl. 261—124)



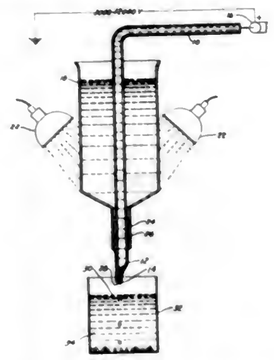
1. In combination, a sewage tank having a floor and a standard projecting upwardly from said floor, one vertical face of said standard having a notch therein, a swing diffuser comprising a rigid upper hanger pipe connected to a source of air under pressure, a rigid lower hanger pipe, a flexible tube connecting the upper end of said lower hanger pipe to the lower end of said upper hanger pipe, a diffuser header connected to said lower hanger pipe, said tube cooperating with said pipes to form a passageway for the flow of air from said source to said diffuser header, said notch being dimensioned and shaped to receive said diffuser header, and a roller on said standard to hold said diffuser header in said notch.

2. In combination, a sewage tank, a swing diffuser comprising a rigid upper hanger pipe connected to a source of air under pressure, a rigid lower hanger pipe, a flexible tube connecting the upper end of said lower hanger pipe to the lower end of said upper hanger pipe, means for providing movement of said hanger pipes, a diffuser header connected to said lower hanger pipe, said tube cooperating with said pipes to form a passageway for the flow of air from said source to said diffuser header, guide means cooperating with said upper and lower hanger pipes to restrict the movement of said hanger pipes to a single vertical plane, and cables secured to said lower hanger pipe and the upper edge of said tank to hold said diffuser header in fixed position above the floor of said tank.

3,160,686
PROCESS FOR MAKING CAPSULES
Arnold W. Doyle, Watertown, and Robert M. Jolkovski and Awbrey Charles Laws, Boston, Mass., assignors, by mesne assignments, of fifty percent to Delavan Manufacturing Company, West Des Moines, Iowa, a corporation of Iowa, and fifty percent to The Aro Corporation, Bryan, Ohio, a corporation of Ohio
Filed Aug. 1, 1962, Ser. No. 214,092
13 Claims. (Cl. 264—4)

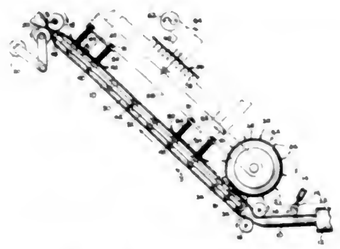
1. A method for encapsulating liquid drops which comprises introducing said liquid into a conduit having a restricted orifice at the discharge end thereof, applying an electrostatic charge to the liquid, discharging small

charged drops individually from said orifice, and as they are being discharged enclosing each of said drops within



a thin shell of molten thermoplastic material flowing to said orifice.

3,160,687
METHOD AND APPARATUS FOR PRODUCING PERFORATED SHEETING AND TUBES
Alvadore M. Andrews, 8410 SW. Milton Lane, Portland, Oreg.
Filed Nov. 19, 1962, Ser. No. 238,568
18 Claims. (Cl. 264—25)



3. The method of perforating a strip of dielectric material comprising

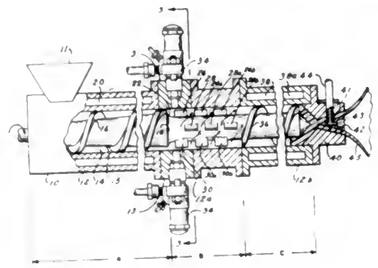
positioning a pair of electrodes in positions spaced from each other and overlying spaced, punctured portions of a strip of material with both electrodes on the same side of the strip,

positioning an electro-conductive member on the other side of the strip adjacent punctured portions thereof to bridge the space between the electrodes,

and applying a potential difference to the electrodes of sufficient magnitude as to draw arcs between the electrodes and the electro-conductive member.

3,160,688
EXTRUSION PROCESS
Ardashus A. Aykanian, Wilbraham, Edgar E. Hardy, Longmeadow, and George A. Latinen, Wilbraham, Mass., assignors to Monsanto Company, a corporation of Delaware
Filed June 2, 1961, Ser. No. 114,401
7 Claims. (Cl. 264—53)

1. In a process for preparing a low density, extruded foamed thermoplastic resin by feeding thermoplastic resin to a single screw extruder, melting and forwarding said thermoplastic resin through the extruder, injecting a liquid foaming agent into the melted resin and discharging the foaming agent containing melted resin from a die; the improvement which comprises (1) heating the resin in the first zone of the extruder to a temperature such that the melted resin has a viscosity of less than about 1.5×10^4 poises, (2) subjecting the melted resin to a pressure of at least about 1700 p.s.i. in the first zone of the extruder, (3) delivering the melted resin from the first zone of the extruder to the second zone of the extruder, (4) maintaining the melted resin at substantially the temperature specified in Step (1) throughout the second zone of the extruder, (5) injecting a liquid foaming agent into the melted resin in the second zone of the extruder, (6)

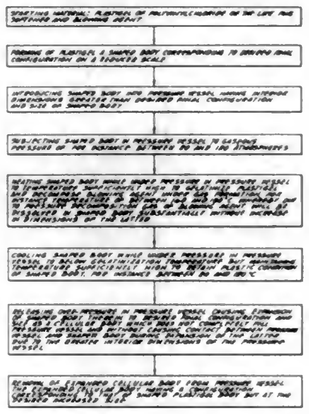


subjecting the melted resin to substantial mechanical forces transverse to the screw in the second zone of the extruder, (7) delivering the mixture of melted resin and liquid foaming agent from the second zone of the extruder to the third zone of the extruder, (8) increasing the pressure on the mixture of the melted resin and liquid foaming agent in the third zone of the extruder, (9) cooling the mixture of melted resin and liquid foaming agent in at least the aft section of the third zone of the extruder, and (10) delivering the mixture of melted resin and liquid foaming agent from the third zone of the extruder to the die.

3,160,689
METHOD OF FORMING SHAPED CELLULAR BODIES
Emil Brunner, Sins, Aargau, Switzerland, assignor to Lonza Electric and Chemical Works Ltd., Basel, Switzerland
Filed May 24, 1961, Ser. No. 112,228
Claims priority, application Switzerland, May 24, 1960, 6,037/60
7 Claims. (Cl. 264—54)

1. A method of producing a closed cell cellular body of predetermined configuration and size, comprising the steps of shaping a mass of plastigel consisting essentially of a mixture of a substance selected from the group consisting of polyvinylchloride and mixed polymerizates of vinylchloride with vinylacetate and vinylidenechloride and a softener therefor capable of maintaining the plastigel in a cold deformable condition, and containing a latent blowing agent substantially evenly distributed therein, so as to form thereof a shaped body having a configuration corresponding to said predetermined configuration but on a reduced scale, said latent blowing agent being present in such amount as to be adapted to cause upon activation expansion at atmospheric pressure of said shaped body to said closed cell cellular body of predetermined configuration and size; placing the thus-formed shaped body into a pressure vessel having larger interior dimensions exceeding those of said cellular body of predetermined configuration and size; subjecting said shaped body in said pressure vessel to superatmospheric gaseous pressure and to an elevated temperature sufficiently high to decompose

said blowing agent and to gelatinize said plastigel while due to said superatmospheric pressure expansion of said shaped body is substantially prevented and the gas formed by decomposition of said blowing agent will be substantially distributed throughout the thus-gelatinized shaped body; cooling said gelatinized shaped body to a lower elevated temperature being below the gelatinization temperature of said shaped body but sufficiently high to maintain said shaped body in plastic condition, while maintaining said superatmospheric pressure; and there-



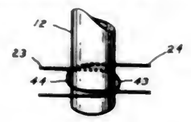
after reducing said superatmospheric pressure to atmospheric pressure in said pressure vessel so as to allow the gas formed upon decomposition of said blowing agent to expand so as to expand said shaped body to said predetermined configuration and size, whereby the thus-expanded cellular body will not press against the walls of said pressure vessel due to the larger interior dimensions thereof, and said gelatinized shaped body will be transformed into a closed cell cellular body of said predetermined configuration.

3,160,690
METHOD FOR MAKING PLASTIC ARTICLES

Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Aug. 14, 1961, Ser. No. 131,432
5 Claims. (Cl. 264—163)

1. The method of forming a blowable parison from a tubular formation of heated organic thermoplastic material comprising the step of radially constricting a medial portion of said tubular formation around the majority of its periphery to concurrently move all wall portions of the constricted region into contiguous relation,

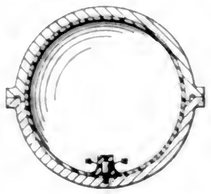


thereby producing a puckered seal and a parison suitable for immediate expansion in a blow mold.

3,160,691
METHOD OF MAKING AN INFLATABLE VALVED ARTICLE

John C. Chupa, Sandusky, Ohio, assignor to The Barr Rubber Products Company, Sandusky, Ohio, a corporation of Ohio

Original application May 12, 1954, Ser. No. 429,161, now Patent No. 2,935,320. Divided and this application May 4, 1959, Ser. No. 810,773
2 Claims. (Cl. 264—310)



1. The method of making an air-inflatable article containing a valve structure therewithin comprising the steps of providing a hollow sectional mold with a pin extending inwardly from an inner wall of said mold and with the projecting portion of the pin exposed to the mold interior, positioning a valve structure on said pin spaced a given distance from said mold wall, placing a substantially liquid mixture consisting essentially of a resin and a plasticizer therefor in said mold for subsequent distribution as a layer over the inner surface of the mold cavity, the measure of said mixture being sufficient to cause the thickness of said layer in the vicinity of said valve structure to exceed said given distance but being insufficient to allow said layer to entirely cover said valve structure, closing said mold, rotating said mold in a multiplicity of planes to distribute said mixture as said layer, heating said layer while the mold is rotating to gel it against the inner surfaces of the mold and against said valve structure, and applying additional heat to fuse the gelled layer, cooling the layer below its fusing temperature, opening the mold and removing the article therefrom.

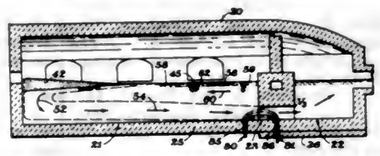
ELECTRICAL

3,160,692
APPARATUS FOR CONTROLLING THE FLOW OF MOLTEN SILICATES THROUGH THROAT TYPE CONTINUOUS MELTING FURNACES

Elisha W. Paxton, 200 Montrose Way, Columbus, Ohio, assignor of ten percent to Warren H. F. Schmieding, San Diego, Calif.

Filed Aug. 1, 1960, Ser. No. 46,839
10 Claims. (Cl. 13—6)

4. A furnace for producing molten silicates comprising means for containing molten silicates, said means being provided with a melting basin and a wall including a throat having a throat lintel for receiving a lower strata flow progressing substantially horizontally along the bottom of said basin and including a flow portion passing through said throat, and heating means below said lintel and in said flow portion before and within said throat for concentrating thermal energy on said flow portion to

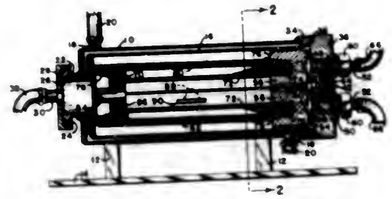


thereby accelerate the movement of said flow portion through said throat.

3,160,693
FURNACE FOR DETERMINING MELTING POINTS OF METALS

Howard R. Palmer, Richmond, Ohio, assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1962, Ser. No. 190,312
4 Claims. (Cl. 13—22)



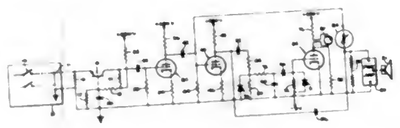
1. A furnace for use in determining the melting point of a material comprising:

(*a*) a tubular horizontal shell;
(*b*) a removable cap sealing one end of said shell;
(*c*) a plate sealing the other end of said shell;
(*d*) a tubular resistor element of graphite having open ends and a skirt split horizontally and centrally to form a top segment and a bottom segment thereof, said resistor element being mounted inside said shell coaxially therewith only by attachment of said skirt segments to said plate;
(*e*) means for connecting electric current to said resistor element skirt segments through said plate;
(*f*) means for connecting a vacuum pump to communicate with the interior of said shell;
(*g*) a window in said plate aligned with the interior of said resistor element; and,
(*h*) a container supported on the bottom segment of said resistor element so that a sample contained therein can be viewed through said window in said plate, said container being removable through the end of said shell sealed by said cap.

3,160,694
PERCUSSION CIRCUIT

Herbert E. Meinema, Lake Forest, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 7, 1961, Ser. No. 129,808
7 Claims. (Cl. 84—1.12)

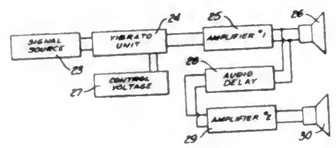


5. A percussion circuit for use in an electrical organ wherein any one of a plurality of playing keys is operated for transmitting respective tone signals, the improvement comprising an amplifier circuit to which all of said tone signals are applied, a photoresistive element connected between the output of said amplifier and the input of a second amplifier, a light control means operated responsive to one of said transmitted tone signals for varying the intensity of light intercepted by said element at a predetermined rate and only in response to the operation of one of said playing keys whereby the resistance value of said photoresistive element is caused to vary at a predetermined rate for varying the amplitude of the tone signals applied through said element to said second amplifier.

3,160,695
ELECTRICAL MUSIC SYSTEM

Don L. Bonham, Los Angeles, Calif. (19006 Wells Drive, Tarzana, Calif.)

Original application Mar. 2, 1959, Ser. No. 796,424, now Patent No. 3,083,606, dated Apr. 2, 1963. Divided and this application Dec. 10, 1962, Ser. No. 258,091
2 Claims. (Cl. 84—1.25)

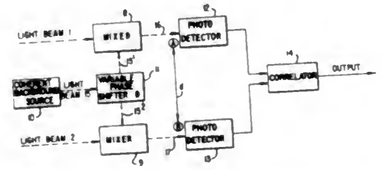


1. In an electrical music system for operation from a signal source, the combination of: a first audio channel including a sound reproducer and having an audio pass band; a second audio channel including a sound reproducer and having substantially the same audio pass band; a vibrato unit for coupling said source to said first channel; means for coupling an A.C. control voltage to said vibrato unit in controlling relationship with the frequency of said control voltage being low relative to the low ends of said pass bands; and a low reflection, audio delay unit for coupling said first channel to said second channel in driving relationship, said delay unit providing a delay in the signal coupled therethrough in the order of one-half the period of said frequency.

3,160,696
OPTICAL PHASE ANGLE MEASURING APPARATUS

Hideya Gamo, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

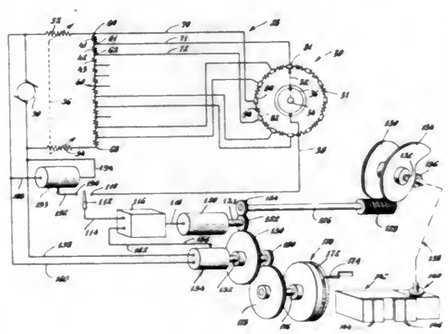
Filed Dec. 30, 1960, Ser. No. 79,870
19 Claims. (Cl. 88—14)



1. Apparatus for the measurement of the phase angle of the phase coherence factor of first and second beams of coherent light, comprising in combination: a first photodetector means responsive to said first light beam for generating a first output current, a second photodetector means responsive to said second light beam for generating a second output current, correlator means responsive to said first and second currents for producing an output indicative of the cross correlation function between said first and second light beams at said photo-

detectors, an indicator connected to the output of said correlator means, said indicator producing an indication of a maximum output of said correlator, a coherent background source of light, means for producing first and second equal intensity portions of coherent light from said source, means for respectively superposing said first and second portions of said coherent light background on said first and second beams at said first and second photodetectors, and means for selectively changing the phase relationship between said first and second coherent portions to the phase relationship which produces a maximum correlation output indication, said last-named phase relationship being indicative of the phase angle of said phase coherence factor.

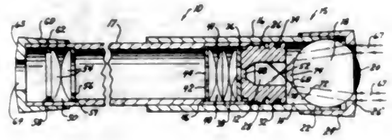
3,160,697
SLIT WIDTH ADJUSTMENT MEANS FOR OPTICAL INSTRUMENTS
Gerhard Jacobs, Friedhofstr. 37, Uberlingen (Bodensee), Germany, and Gerhard Siess, Uberlingerstrasse, Owingen, Kreis Uberlingen, Germany
Filed Apr. 11, 1961, Ser. No. 102,148
Claims priority, application Germany Apr. 14, 1960
12 Claims. (Cl. 88—14)



1. A device for regulating the slit width of spectrophotometers and similar instruments, comprising a logarithmic sender potentiometer connected to the wave length drive of said instrument and adjusted thereby, a source of voltage, said sender potentiometer being connected to said source of voltage and having an output tap for producing at said output tap a voltage equal to the logarithm of the slit width desired; a linear voltage responsive means electrically connected to said output tap so as to be driven thereby in linear relation to said voltage; logarithmic transmission means connected to and linearly driven by said voltage responsive means, said transmission means having an output equal to the antilogarithm of its input; and slit adjusting means connected to the output of said logarithmic transmission means, so that said slits are adjusted in antilogarithmic relation to said voltage responsive means.

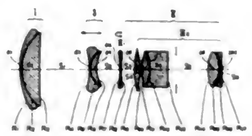
3,160,698
MICROSCOPE AND DARK FIELD ILLUMINATOR FOR VIEWING BROWNIAN MOVEMENTS
Edward J. Frey, 187 Marion Ave., Mansfield, Ohio
Filed July 31, 1961, Ser. No. 128,056
5 Claims. (Cl. 88—39)

1. In combination: a straight microscope tube having a viewing end and a plug holding end; a microscope ocular lens construction in said viewing end of said tube and an objective lens construction in said plug holding end with a line of vision substantially coaxial with said tube; a sample chamber forming plug removably secured in said plug holding end adjacent said objective lens construction and providing a relatively long and confined sample chamber in said plug with end openings at each end of said plug in said line of vision; a straight illuminating lens holding tube having one end longitudinally adjustably telescoping over said microscope tube and plug; a spherical



illuminating lens held adjacent the other end of said lens holding tube aligned with said line of vision with a spherical segment shaped central blacked out area producing member adhered on the outer and far surface of said spherical lens and having a light admitting area surrounding said blacked out area, said areas being focused by said spherical lens within said sample chamber to form a dark field in said line of vision with the light rays being trained at a large angle with respect to said line of vision to illuminate large portions of areas of floating particles which are directed toward said viewing end.

3,160,699
PHOTOGRAPHIC ZOOM OBJECTIVE
Keizo Yamaji, Tokyo, Japan, assignor to Canon Camera Co., Inc., a corporation of Japan
Filed Dec. 21, 1960, Ser. No. 77,393
Claims priority, application Japan June 27, 1960
1 Claim. (Cl. 88—57)



A zoom lens system comprising three components, a first positive component of a cemented doublet having a negative meniscus and a positive element with the cemented surface thereof convex to the object, a second negative component of a cemented doublet having a biconcave and a positive meniscus element with the cemented surface thereof convex to the object, and a third positive component comprising a front biconcave negative element and a rear positive main objective, the varifocal action of the lens system being accomplished by moving the second component while compensation for the displacement of the focal plane is obtained by moving the front element of the third component relative to the second component, a rear positive main objective comprising five elements, a first positive element being a single biconvex lens, a second positive element being a biconvex lens cemented to a third negative element, a fourth positive element being a single biconvex lens slightly air spaced with a fifth negative element, in which system substantially the following numerical values obtain:

Lens	Radius of Curvature	Lens Thickness or Air Spacing	Refractive Index	Abbe Number
I	$R_1 = 2.477$	$d_1 = 0.08$	$N_1 = 1.7618$	$V_1 = 26.5$
	$R_2 = 1.515$	$d_2 = 0.545$	$N_2 = 1.6237$	$V_2 = 47.0$
	$R_3 = 26.376$	S_1 = 0.1561 for f_{min}; 1.57561 for f_m; 2.26561 for f_{max}		
II	$R_4 = -4.014$	$d_3 = 0.05$	$N_3 = 1.6968$	$V_3 = 55.6$
	$R_5 = 0.644$	$d_4 = 0.218$	$N_4 = 1.8061$	$V_4 = 40.7$
	$R_6 = 1.2215$	S_2 = 2.49315 for f_{min}; 0.68022 for f_m; 0.24315 for f_{max}		
III$_1$	$R_7 = -6.422$	$d_5 = 0.08$	$N_5 = 1.6385$	$V_5 = 55.5$
	$R_8 = 6.422$	S_3 = 0.08 for f_{min}; 0.39293 for f_m; 0.08 for f_{max}		
III$_2$	$R_9 = 3.297$	$d_6 = 0.20$	$N_6 = 1.6433$	$V_6 = 47.8$
	$R_{10} = -2.83$	$S_4 = 0.01$		
	$R_{11} = 1.725$	$d_7 = 0.25$	$N_7 = 1.5725$	$V_7 = 57.5$
	$R_{12} = -1.1404$	$d_8 = 0.60$	$N_8 = 1.7174$	$V_8 = 29.5$
	$R_{13} = \infty$	$S_5 = 1.20$		
	$R_{14} = 1.368$	$d_9 = 0.37$	$N_9 = 1.6074$	$V_9 = 56.7$
	$R_{15} = -1.059$	$S_6 = 0.01$		
	$R_{16} = -0.988$	$d_{10} = 0.09$	$N_{10} = 1.5927$	$V_{10} = 35.4$
	$R_{17} = -50.840$			

where R-subscripts denote the radii of curvature of the respective surfaces from the front to the rear of the lens system in order; N-subscripts the refractive indices measured at the *d*-line of the spectrum of the glasses of the respective elements in said order; V-subscripts the Abbe numbers for the respective elements in said order; *d*-subscripts the axial thicknesses of the respective elements in said order; S-subscripts the air spacings between the elements in said order; and f_{min}, f_m and f_{max}, the minimum, mean, and maximum composite focal length of the zoom lens portion of the system.

3,160,700
INFRARED OPTICAL SYSTEM
John R. Snyder, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 18, 1961, Ser. No. 132,512
2 Claims. (Cl. 88—57)
(Granted under Title 35, U.S. Code (1952), sec. 266)



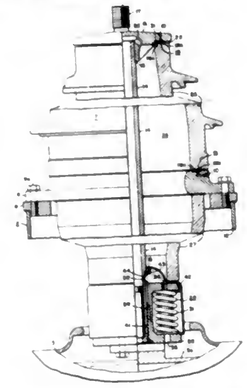
1. A lens system substantially as specified in the following table:

[f/2]

Lens	Radii (Inches)	Lens Thickness (Inches)	Air Space (Inches)
I	$R_1 = +2.498$	$T_1 = 0.267$	
	$R_2 = +3.653$		$S_1(R_2 \rightarrow R_3) = 0.820$
II	$R_3 = -2.732$	$T_2 = 0.140$	
	$R_4 = -16.566$		$S_2(R_4 \rightarrow R_5) = 0.427$ $S_3(R_4 \rightarrow \text{Stop}) = 0.352$
III	$R_5 = +5.412$	$T_3 = 0.160$	
	$R_6 = -9.518$		$S_4(\text{Stop} \rightarrow R_5) = 0.075$

where the first column gives the lens elements in Roman numerals in order from the front, of which element I is of silicon, element II is of arsenic trisulfide and element III is of silicon; R, T and S refer respectively to the radii of curvature of the refractive surfaces, the thickness of the elements, and the air space between the elements; the elements, radii and the spaces being numbered consecutively from the front, *f* is the focal length of the lens and the + signs correspond to surfaces which are convex to the front.

3,160,701
ELECTRICAL APPARATUS
Floyd J. King, Wilkinsburg, and Robert L. Hess, East McKeesport, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1960, Ser. No. 69,086
3 Claims. (Cl. 174—18)



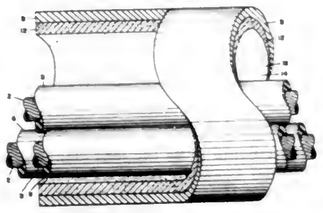
1. The combination with gas-filled electrical apparatus of a terminal bushing, said terminal bushing being mounted upon a tank structure containing the electrical apparatus, said terminal bushing including a conductor

stud and a pair of casing shells and an interposed ground-flange mounting plate, a spring cap assembly disposed at the interior end of the terminal bushing within the tank structure to maintain the several component parts of the terminal bushing under pressure, said spring assembly including a pair of spring plates having sliding collar portions surrounding the terminal stud and telescopically moving over each other, one spring plate substantially abutting the interior end of the enclosed casing shell, and the lowermost spring plate being fixedly secured to the interior end of the terminal stud, whereby cantilever stresses imposed upon the conductor stud are transmitted through the sliding collar portions of the spring plates to the enclosed casing shell.

3,160,702
ALTERNATING CURRENT PIPE CABLE SYSTEM WITH MAGNETIC FIELD TRAP

Rhea P. Lapsley, Ridgewood, N.J., assignor to The Okonite Company, Passaic, N.J., a corporation of New Jersey

Filed Sept. 22, 1961, Ser. No. 139,918
5 Claims. (Cl. 174—32)

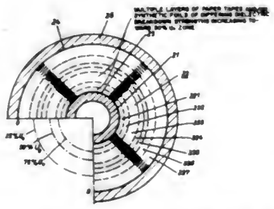


2. An alternating-current, electric power cable system comprising, in combination, a plurality of insulated conductors disposed within a ferrous magnetic pipe, said pipe being lined with a magnetic material dispersed in a resin matrix for compressing the magnetic field generated by current flowing in the conductors of different polarities when the system is in operation, thereby substantially to decrease the intensity of the magnetic field entering the pipe.

3,160,703
LAMINATED HIGH-VOLTAGE INSULATION OF COAXIAL ELECTRIC CONDUCTORS

Ulrich Müller, Berlin-Siemensstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany

Filed Aug. 14, 1962, Ser. No. 216,931
Claims priority, application Germany, Aug. 22, 1961, S 75,399; June 19, 1962, S 79,977
6 Claims. (Cl. 174—120)

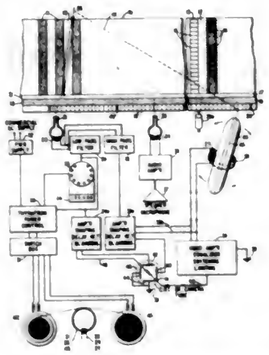


1. Laminated high-voltage insulation for coaxial electric conductors, including cables, lead-in bushings and insulated bus bars, comprisng a plurality of insulation layers, one of said layers being located in the range of the 50% equi-potential surface of the electric field of the conductor and comprising an insulating material which has higher dielectric breakdown than the insulating materials in said other layers of the insulation.

3,160,704
VIDEO TAPE RECORDING

R. Lee Hollingsworth, Massapequa, N.Y. (514 Hempstead Ave., West Hempstead, N.Y.)

Filed June 17, 1959, Ser. No. 820,990
3 Claims. (Cl. 178—6.6)

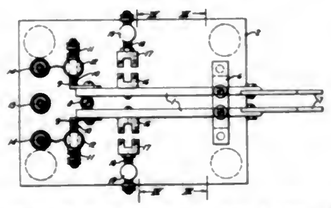


2. In a magnetic record-readout system, means comprising a non-magnetic tape with straight magnetic material lines mounted transversely thereon, electromagnetic transducer means having a razor sharp elongated edge forming one pole piece of a recording gap and placed below said tape, the other pole piece of said electromagnetic transducer means having a razor sharp elongated edge and placed above said tape, said pole piece edges positioned to angularly traverse one of said lines by longitudinal tape movement but before leaving same said edges of said gap have begun to traverse the next one of said lines to provide recording and readout continuity as the said tape moves longitudinally between said first and second elongated recording gap edges.

3,160,705
TELEGRAPH SENDING KEY

William H. Stout, P.O. Box 415, Imperial, Pa.

Filed July 17, 1962, Ser. No. 210,446
1 Claim. (Cl. 178—108)



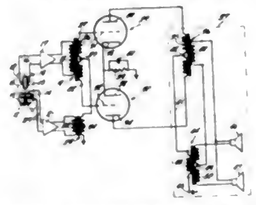
In a telegraph sending key, a base, a pair of laterally spaced parallel levers above the base, means pivotally mounting each lever on the base on a vertical axis, a stop mounted on the base between the levers and engageable by their inner sides, stationary electric contacts mounted on the base at the outer sides of the levers, an electric contact carried by each lever beside the adjacent stationary contact, manually operable means at one end of the levers for swinging their contact-carrying portions away from each other to move their contacts into engagement with the stationary contacts, a magnet mounted on

the outer side of each lever at the contact side of said pivoting means and having outwardly facing north and south poles, a second magnet spaced outwardly from each lever magnet and having inwardly facing north and south poles, each pair of adjacent magnets being disposed with their north poles opposite each other to normally force the levers against said stop, horizontal screws rigidly connected to said second magnets, and means on said base threadedly receiving said screws to support the second magnets and permit them to be adjusted toward and away from the adjacent first-mentioned magnets and simultaneously rotated relative thereto, whereby to vary the pressure of the levers against the stop.

3,160,706
STEREOPHONIC SOUND REPRODUCING SYSTEM

Benjamin B. Bauer, Stamford, and John M. Hollywood, Greenwich, Conn., and George P. Maerkle, Huntington, N.Y., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed June 2, 1958, Ser. No. 739,048
2 Claims. (Cl. 179—1)



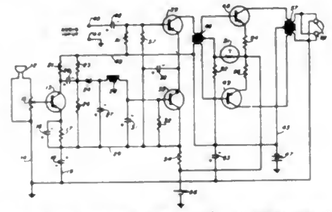
1. Apparatus for reproducing stereophonic sound signals comprising amplifier means including a pair of amplifiers connected in push-pull, each having cathode electrode means, grid electrode means, and plate electrode means, first transformer means including primary winding means connected between the two plate electrode means generating a signal representing the sum of two stereophonic signals applied between the grid electrode and cathode electrode means of the two amplifiers, respectively, second transformer means including primary winding means connected between the first transformer primary winding means and a reference voltage point responsive to changes in the average potential of the first transformer primary winding means to generate a signal representing the difference between the two stereophonic signals, secondary winding means in the first and second transformer means connected to add the sum and difference signals and connected to a first loud speaker thereby reproducing one of the stereophonic signals, further secondary winding means in the first and second transformer means connected to subtract the sum and difference and connected to a second loud speaker thereby reproducing the other stereophonic signal, circuit means connected across said secondary winding means including filter means adapted to pass a selected portion of the frequency range of the two signals from said circuit means, and third loud speaker means connected to the filter means and responsive to the signal passed by the filter means.

3,160,707
GAIN CONTROL IN RESPONSE TO AMBIENT NOISE LEVEL

Vernon J. Meyers, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 29, 1961, Ser. No. 120,802
4 Claims. (Cl. 179—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

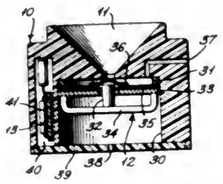
1. In a noise-acclimated audio reproducing system the combination comprising, a transducer for producing output voltages when subjected to ambient noise sound pressure, means connected to said transducer for amplifying said output voltages, means connected to said amplifying means for rectifying said amplified voltages, a bias-controlled variable D.-C. resistance having a control input, said control input being coupled to said means for rectifying, means for amplifying audío signals, said amplifying means having an input for said audio signals, a current-control terminal and an output, means for connecting said resistance to said terminal, means for audibly reproducing said amplified signals, and means for connecting said amplifying means output to said reproducing means.



3,160,708
ELECTRONIC STETHOSCOPE

Francis M. Andries, John L. Center, and Gordon J. Rabalais, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 13, 1961, Ser. No. 123,848
3 Claims. (Cl. 179—1)



1. Sound-detecting apparatus comprising a cone-shaped bell being open at the wide end, a hollow chamber positioned adjacent to and axially aligned with said bell, said chamber having an opening communicating with the small end of said bell, a thin flexible diaphragm having a diameter approximating that of said wide end of said bell and positioned within said chamber closely adjacent said opening, said diaphragm separaitng a small portion of said chamber from the remainder thereof, a first narrow air passage connecting said small portion to atmosphere, a second narrow air passage connecting said remaining portion of said chamber to atmosphere, a coil secured to said flexible diaphragm and positioned in a magnetic field, and amplifying means having an input connected to said coil.

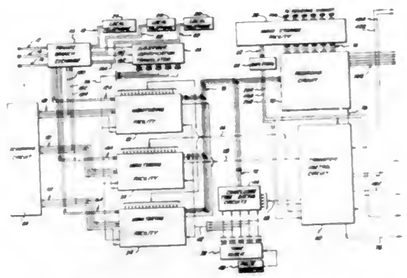
3,160,709
TELEPHONE CALL ACCOUNTING SYSTEM

Harry E. Burke, Sierra Madre, Calif., assignor to Consolidated Systems Corporation, Monrovia, Calif., a corporation of California

Filed Mar. 30, 1959, Ser. No. 803,018
17 Claims. (Cl. 179—7.1)

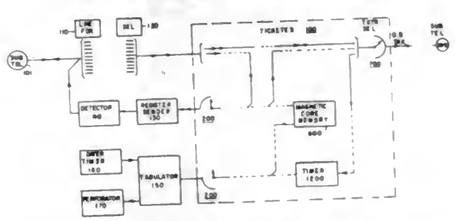
1. In a system for keeping account of telephone calls placed through a telephone exchange from any of a plurality of local telephone subscribers, the combination which comprises a main storage facility for storing a large plurality of digitally encoded words, a call monitoring system coupled between the main storage facility and the telephone exchange, said call monitoring system operating continually and without interruption and in-

cluding monitoring means for sensing, encoding and accumulating into a complete digital word during the progress of each call information identifying the calling subscriber, the called party and the time duration of the call, and also including means for transferring each complete word intact from the monitoring means to the main



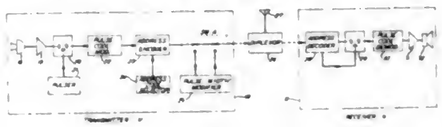
storage facility substantially immediately upon the conclusion of the call which it describes, and a concurrently operable readout system having full and independent access to the main storage facility for searching the contents thereof on demand and recovering words therefrom selectively according to a chosen calling subscriber identification.

3,160,710
TICKETER WITH MAGNETIC MEMORY
Edoardo Cotroneo and Giorgio Pellegrino, Milan, Italy, assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 221,956
4 Claims. (Cl. 179—7.1)



1. In an automatic toll ticketing telephone system, a calling station and a called station each having a directory number, means for establishing a circuit connection to permit a telephone conversation between said stations, for recording said directory numbers, and for recording the duration of said conversation, including first switching means, a trunk circuit, a register sender, a tabulator, and a ticketer including: individual circuit connections to said first switching means, to said trunk circuit, to said register sender and to said tabulator; a memory circuit comprising a plurality of magnetic cores, and connecting means including a plurality of individual circuit connections to each of said cores and a plurality of circuit connections to said register sender, operated in response to a marking signal received from said register sender, to complete a circuit path between said register sender and selected ones of said magnetic cores whereby marking potentials representative of said directory numbers are transmitted from said register sender to selected ones of said magnetic cores to reverse the magnetic flux of said selected cores to mark said selected cores; a timer circuit operated in response to an answer signal returned from said trunk circuit to start timing said call, and further operated in response to a disconnect signal returned from said trunk to stop timing of said call; and readout means comprising a reader circuit including circuit connections to said memory circuit and to said tabulator, second switching means connected to said reader circuit, to said connecting means, and to said tabulator, operated in response to said reader circuit to operate said connecting means to connect a readout potential to each of said magnetic cores, a readout wire extending through said cores connected to said reader circuit, extending in response to the connection of said readout potential to one of said marked cores, a readout signal to said reader circuit, said reader circuit rendered inoperative in response to said readout signal, said second switching means operated in response to said reader circuit being rendered inoperative to transmit a marking signal to said tabulator indicative of the directory number information stored in said marked memory cores; said reader circuit further including circuit connections to said timing means, said second switching means further operated in response to said reader circuit being operated in response to a signal transmitted from said tabulator after transmission of all said directory number information to said tabulator, to connect said connecting means to said timing means and to connect a readout potential to said timing means via said connecting means, said timing means extending said readout potential to said reader circuit in accordance with marked circuit paths representative of the duration of said call, said reader circuit rendered inoperative in response to extension of said readout potential, said switching means further operated in response to said reader circuit being rendered inoperative to transmit a marking signal to said tabulator indicative of the timing information recorded in said timer.

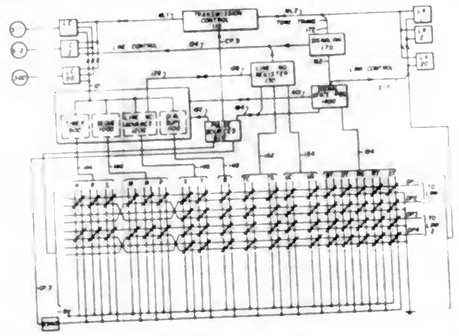
3,160,711
NONSYNCHRONOUS TIME-FREQUENCY MULTIPLEX TRANSMISSION SYSTEM
Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 4, 1960, Ser. No. 345
9 Claims. (Cl. 179—15)



1. A transmitter for a multichannel intelligence transmission system comprising means controlled by a message wave to be transmitted for generating for each time spaced sample of said wave, a pulse group, one characteristic of said pulse group indicating the amplitude of the corresponding signal sample and another characteristic of said pulse group indicating the intended receiver of said pulse group, means for effectively widening each pulse of said group, and means for transmitting said modified pulse groups.

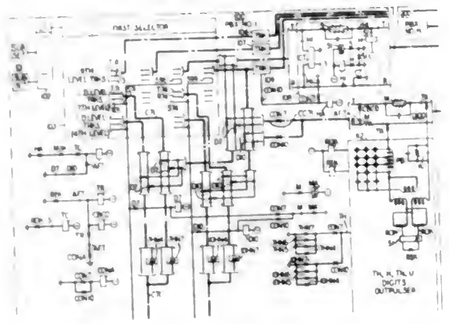
3,160,712
ELECTRONIC SWITCHING SYSTEM
Peter E. Osborn, Addison, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed May 2, 1961, Ser. No. 107,213
15 Claims. (Cl. 179—18)

13. In a time division multiplex communication system of the type wherein each of the subscriber substations are individually connected by a pair of line conductors to a source of direct-current in an associated line circuit and wherein common control equipment shared on a time division multiplex basis is controlled by supervisory signals extended from said subscriber substations for effectively establishing connections between individual ones of said subscriber substations in accordance with said supervisory signals, the combination therewith including a calling device at each of said subscriber substations for providing variable-width direct-current supervisory signals including a normally conductive switching transistor connected in series with said pair of line conductors, a mul-



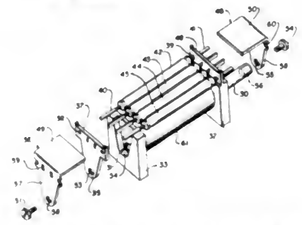
tivibrator normally in a first state of operation, activating means operated to cause said multivibrator to shift to a second state of operation to render said switching transistor nonconductive to interrupt the normal flow of direct-current from said source over said pair of line conductors, and means operated in response to the operation of said activating means for controlling the time interval said multivibrator remains in said second state of operation.

3,160,713
CONDENSED DIALING ARRANGEMENT
Oscar H. Williford, Bronxville, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,718
12 Claims. (Cl. 179—18)



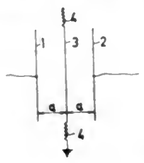
1. A telephone switching system including a central office and at least one private branch exchange served by said central office, a plurality of outgoing trunks connecting said private branch exchange to said central office, means for obtaining the directory numbers of telephones served by said central office, and means for transmitting the directory numbers of said telephones served by said central office over said trunks outgoing from said private branch exchange, said last-mentioned means comprising a data link interconnecting said private branch exchange with said central office, means for transmitting one of said telephone directory numbers from said central office over said data link to said private branch exchange, and means associated with said data link at said private branch exchange for forwarding said directory number to said central office over one of said outgoing trunks.

3,160,714
REED RELAY CIRCUIT
Robert K. Else, Oak Park, and Louis J. Meyer, Hinsdale, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,290
6 Claims. (Cl. 179—18)



1. In combination: a relay comprising at least one encapsulated reed switch having a pair of reeds with contacts in a normally opened position, a core structure made of magnetic iron material, and a first winding and a second winding wound differentially about said core structure; a circuit including said first winding; a coupling means in said circuit and connected to said second winding so that if said circuit is traversed by alternating current an alternating current potential is impressed on said second winding for setting up in said second winding an alternating field substantially balancing the alternating field in said first mentioned winding; and a conductive element inductively coupled to said first winding to delay the buildup of flux in said core structure sufficiently to prevent said contacts from closing due to any remaining unbalance of said alternating fields, whereby said reed will not close if said circuit is traversed by alternating current only but said contacts will close if it is traversed by direct current.

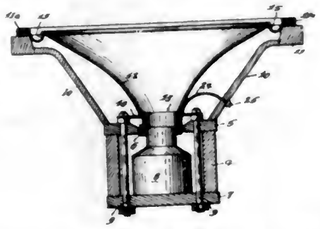
3,160,715
ELECTROSTATIC LOUDSPEAKERS
Nils Torsten Arson Gussing, Solstigen 13, Saltsjobaden, Sweden
Filed Nov. 14, 1961, Ser. No. 152,235
Claims priority, application Sweden, Nov. 15, 1960, 10,972/60
8 Claims. (Cl. 179—111)



1. An electrostatic loudspeaker system comprising: an electrically driven diaphragm member; two acoustically permeable fixed electrode members symmetrically disposed on opposite sides of said driven member; means supporting said driven member for substantially free displacement through a predetermined maximum excursion between said electrode members, said driven member having a normal position within said excursion wherein both electrostatic capacitances between said two fixed electrode members and said driven member are equal; an electrically insulative acoustic fluid medium surrounding all of said members and filling the spaces therebetween; two inductive circuit elements of equal inductances each in-

dividually connected to be tuned by one of said capacitances, one of said inductive elements being tuned for resonance at a predetermined frequency with said driven member displaced by a predetermined distance in one direction from said normal position and the other inductive element being tuned for resonance at said predetermined frequency with said driven member displaced by said predetermined distance in the opposite direction from said normal position, oppositely sloping rectilinear portions of the resonance curves of said tuned inductive elements intersecting symmetrically with said driven member in said normal position; and circuit means to energize said inductive elements to cause displacements of said driven member from said normal position, the rectilinearity of said oppositely sloping portions of said resonance curves causing the magnitudes of said displacements to be precisely proportional to the magnitudes of the energization potentials of said circuit elements.

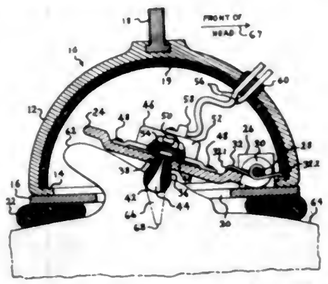
3,160,716
TRANSDUCER
Harold J. Luth, % Harsyd Chemicals, Inc., Holland, Mich.
Filed Aug. 1, 1960, Ser. No. 46,668
1 Claim. (Cl. 179—115.5)



A transducer comprising: a voice coil consisting of a cylindrical non-magnetic form with a current conductor wound about its outer surface and having a magnetic material and a thin layer of yieldable material interposed between said conductor and said outer surface; a cylindrical pole piece having lines of magnetic flux extending radially outward therefrom; means for mounting said voice coil concentric with and about said pole piece so that said coil is free to move in its axial direction from a neutral position; means for moving said voice coil in a direction at right angles to said lines of magnetic flux; and means for bending said flux lines in the direction of coil movement including a low reluctance path to said flux lines offered by said magnetic material and which serves as the principal force to return the coil to its neutral position.

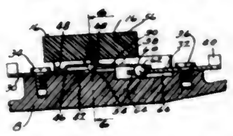
3,160,717
EAR PROTECTORS
Fred P. Beguin, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Mar. 21, 1962, Ser. No. 181,373
8 Claims. (Cl. 179—182)

1. A communications ear-protector comprising a noise-attenuating cup means having an aperture adapted to fit around an ear for enclosing the auricle of the ear within said cup means, cushion means attached to said cup means around said aperture for sealing said cup means in substantially airtight relation to the head when held against the head around an ear, transducer means having a vibratory diaphragm adapted for reproducing sound signals, conduit means defining an airtight passage which extends away from said transducer diaphragm and which opens at one end at a position spaced from said diaphragm, said conduit means having an extending portion at said open passage end adapted to fit into cooperative relation with an ear-canal for coupling said ear-canal and said passage in substantially airtight relation, means mounting said extending portion of said conduit means on said cup means for independent pivotal movement on said cup means toward and away from said ear, and



means adapted to bias said mounting means for movement toward said ear for holding said extending portion of said conduit means in said coupled relation with the ear-canal of an ear with a force which is substantially independent of the force with which said cup means is held against the head.

3,160,718
RECIPROCABLE SLIDE SWITCH FOR APPLIANCES
Matthew G. Andis, Racine, Wis., assignor to Andis Clipper Co., Racine, Wis., a corporation of Wisconsin
Filed Feb. 1, 1962, Ser. No. 170,325
7 Claims. (Cl. 200—16)

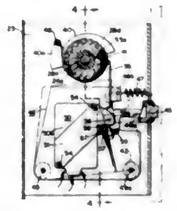


1. A reciprocable switch having detents defining a plurality of positions, said switch comprising, in combination,
first terminal means provided with a protuberance,
second terminal means having a bearing surface,
a movable contactor having contact portions for respectively cooperating with the protuberance and the bearing surface of said first and second terminal means, the contactor having spaced pockets selectively registerable with the protuberance in different positions of the contactor, and
dielectric means providing a platform onto which a contact portion of the contactor rides from one of said terminals in approaching one of said positions.

3,160,719
TIMING OR SIMILAR APPARATUS
Robert B. Seidel, Radnor, Pa., assignor to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1962, Ser. No. 234,345
10 Claims. (Cl. 200—38)

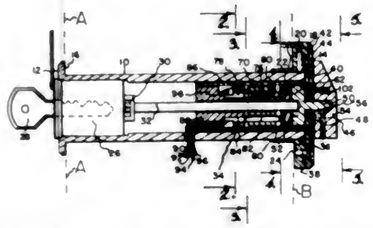
1. Timing apparatus comprising:
(*a*) manually operable means including first cam means settable to a predetermined time interval,
(*b*) a second cam means, said second cam means also including a first clutch portion,
(*c*) an assembly which comprises a pivotal substantially planar member having a projection which engages said first cam, said assembly being pivoted in

response to rotation of said first cam, said planar member carrying a selected number of switches thereupon, said assembly also including a member which engages said second cam and actuates said switches when said second cam is in a predetermined position corresponding to the end of said interval,



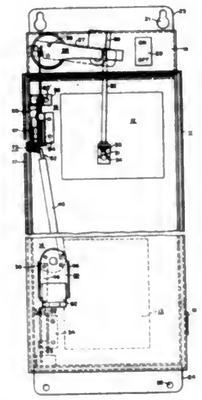
(*d*) a second clutch portion which passes through said second cam means, said clutch portions normally being disengaged from one another,
(*e*) a motor which is coupled to said second clutch portion and
(*f*) means for actuating said motor and causing said clutch members to be engaged substantially at the beginning of said predetermined interval.

3,160,720
ALARM SYSTEM AND SWITCH MEANS
Buck Faulkner, Phoenix, Ariz., assignor to Electro-Sound Corporation, Phoenix, Ariz., a corporation of Arizona
Filed July 14, 1961, Ser. No. 124,219
5 Claims. (Cl. 200—44)



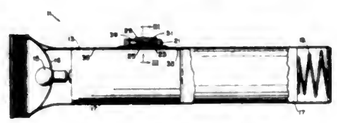
1. In an alarm system and switch means, the combination of: a frame; an outer end of said frame disposed to communicate with the outside of an enclosure; an inner end of said frame disposed to communicate with the inner side of an enclosure; a lock means supported by said frame at said outer end thereof; a first movable means of said lock means; a key disposed to fit said lock means and to actuate said first movable means; an electrical switch means operably connected to and movable by said first movable means; and manually operable means supported by said frame at said inner end thereof; said manually operable means movably mounted in said frames and disposed to operate said switch means independently of said first movable means; a tumbler of said lock means; said first movable means comprising a shaft coupled to said tumbler; a first rotatable member of said switch means connected to said shaft and having contacts; a stator of said switch means fixed to said frame and having contacts cooperable with the contacts of said first rotatable member to make or break an electrical circuit; and a second rotatable member of said manually operable means having contact means cooperable with the contacts of said first rotatable member of said switch means disposed to make or break an electrical circuit, said tumbler, said stator, and said first and second rotatable members all disposed on a common axis in said frame, said first and second rotatable members rotatable on said common axis.

3,160,721
ENCLOSURE FOR CIRCUIT INTERRUPTERS
John N. Groves, Monaca, and Donald G. Portman, Brighton Township, Beaver County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1960, Ser. No. 18,957
9 Claims. (Cl. 200—50)



4. In combination, a circuit interrupter having a movable operating member for opening and closing the interrupter, a cabinet in which the interrupter is mounted, said cabinet having a fixed front portion, an external operating handle extending from said fixed front portion for actuating said operating member, an openable cover supported at the front of the cabinet, a cover latching mechanism disposed inside of the cabinet at least when said cover is closed, manually operable means rotatably mounted on the outside of the cover for actuating the latching mechanism to force the cover to its fully closed position, a releasing member for releasing the latching mechanism, said releasing member being operable only by the use of a tool other than said manually operable means, an interlocking latch in latching position when said interrupter is closed to prevent release of said latching mechanism, manually operable interlock-defeating means operable to move said interlocking latch to an inoperative position, means biasing said interlocking latch into latching position when said interrupter is closed whereby an opening operation of said cabinet when said interrupter is closed requires an operation of said releasing member and a separate operation of said interlock-defeating means which operations must be effected simultaneously.

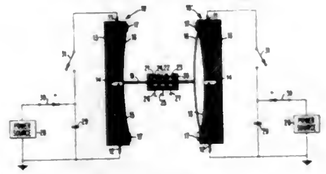
3,160,722
MERCURY SWITCH MECHANISM FOR FLASHLIGHTS
Woodrow W. Sellers, 203 N. Hollywood, Memphis, Tenn.
Filed May 7, 1962, Ser. No. 192,838
5 Claims. (Cl. 200—60)



1. A switching mechanism for use with a flashlight which includes a casing, a bulb associated with said casing, and a power source mounted in said casing, said switching mechanism comprising a housing mounted on and externally of said casing, a compressible flexible plas-

tic capsule in said housing adjacent said casing, an actuating slide above said capsule, said slide having longitudinally extending laterally protruding flanges, said housing including longitudinally extending grooves, said flanges slidably engaged in said grooves, whereby said slide is slidably shiftable fore and aft relative to said housing and said capsule, said slide including at its rear a downwardly projecting enlargement contacting said capsule and adapted to compress said capsule under forward slide shift to spread capsule contents, a supply of mercury contained in said capsule and comprising the contents of said capsule, electrical leads connected into the interior of said capsule and respectively connected to said bulb and said power source, said mercury in fore shifted position of said slide being spread into circuit making contact with said leads, said enlargement compressingly engaging said capsule to spread said mercury into said contact, retraction of said slide relieving said compression to allow reassembly of said mercury out of circuit making contact, said capsule having an internal grooved recess for collection of said mercury in retracted slide position, said slide enlargement disposed in said retracted slide position adjacent and rearward of said collected mercury blocking mercury flow toward one of said leads.

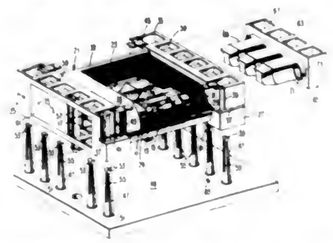
3,160,723
CONTROL APPARATUS USING SHOCKWAVE ENERGY
Joseph E. Wallace, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 27, 1962, Ser. No. 212,825
11 Claims. (Cl. 200—83)



2. Control apparatus comprising
a flexible member anchored at at least one end and selectively positionable in either of two stable positions for performing desired control operations,
a plurality of electrodes separated by a gap means disposed beside said element, and
means for applying an electrical potential across said electrodes sufficient to ionize said gap means and produce a shockwave for flexing said member from one of its positions to another of its positions.

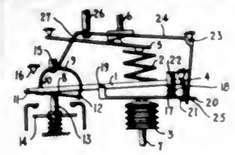
3,160,724
PLUGGABLE REED RELAY PACKAGE
Lyndon A. Depew, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,606
8 Claims. (Cl. 200—87)

1. A pluggable reed relay comprising
a plurality of pairs of bifurcated connectors upstanding from a support and
a pluggable assembly removably mounted on said bifurcated connectors, said pluggable assembly comprising
a dry reed switch having a coaxial leads exterior to a sealing envelope;
a bobbin having a continuous axial opening and including a hollow hub and transverse end blocks,
an end plug received in the opening of each of said end blocks,
said end blocks with said end plugs assembled therein having a plurality of pairs of aligned vertical bores therein, at least one of the pairs of vertical bores being in alignment with said hollow hub,
said end plugs also having aligned axial lead holes intersecting said one pair of vertical bores,
said reed switch being mounted within said bobbin between said end plugs with the leads thereof extending through said lead holes, each of said leads being supported by its respective end plug at either side of each of said one pair of vertical bores,



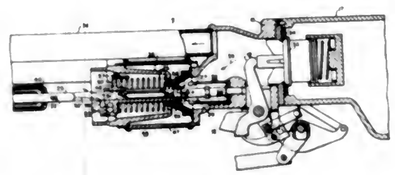
coil terminal means mounted in each of said end blocks and each including an axial contact extending across one of another pair of said vertical bores, and
said bifurcated connectors extending into said vertical bores in wedging engagement with said reed switch leads and coil terminal contacts to simultaneously establish electrical connection and mechanically lock said end plugs to said bobbin end blocks.

3,160,725
THERMOSTAT WITH ADJUSTABLE TEMPERATURE RANGE AND COMBINED SEMI-AUTOMATIC OPERATOR
Klaus Bille-Knudsen, Sonderborg, Denmark, assignor to Danfoss ved ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed May 7, 1962, Ser. No. 192,826
8 Claims. (Cl. 200—140)



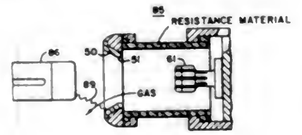
1. In a thermostatic apparatus comprising, a switch having a switch element movable to a first position for opening a switch and to a second position for closing the switch, means biasing said switch element to said second position, thermostat means for actuating said switch means comprising a first means for moving said switch element to said first position, an adjusting spring acting on said first means in a direction to move said switch element toward said first position, a temperature-responsive device acting on said first means for actuating said first means against the action of said adjusting spring to cause release of said switch element for movement to its second position to close the switch, means for adjusting said adjusting spring to variably set the temperature at which said temperature-responsive device causes said switch element to open the switch, an auxiliary spring acting on said first means, coupling means for alternatively controlling the temperature at which said switch is opened and closed from said adjusting spring and from said auxiliary spring independently of said adjusting spring, said coupling means having means for rendering the adjusting spring ineffective when said switch element is in its second position and for rendering said auxiliary spring responsive to said temperature-responsive device to control the temperature at which said adjusting spring closes the switch regardless of the setting of said adjusting spring means selectively operable to render said coupling means effective, said coupling means comprising means rendered effective under control of said temperature-responsive device and said auxiliary spring for rendering the auxaliary spring ineffective and simultaneously rendering the first means and adjusting spring effective for actuating said switch element to its first position.

3,160,726
DOUBLE-BREAK CIRCUIT INTERRUPTERS OF THE GAS-BLAST TYPE WITH VENTED INTERMEDIATE CONTACTS
Charles F. Cromer, Levelgreen, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 16, 1961, Ser. No. 82,847
8 Claims. (Cl. 200—148)



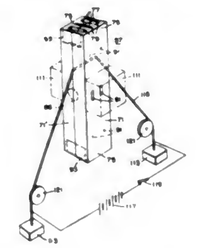
1. A gas-blast interrupting unit for a circuit interrupter including a relatively stationary contact, a movable tubular intermediate contact separable from said relatively stationary contact to establish a main-current arc, an impedance shunted across the stationary and intermediate contacts, means including a relatively tight-fitting insulating orifice member about the intermediate contact for defining a pressure chamber about the relatively stationary contact, a source of gas pressure, means for admitting at times compressed gas from said source into said pressure chamber whereby a blast of gas is substantially wholly forced through the tubular movable intermediate contact to extinguish said main-current arc, a movable isolating contact cooperable with the intermediate contact to establish a residual-current arc, and the blast of gas forced through the tubular movable intermediate contact being used not only to extinguish the main-current arc, but, additionally, the same gas being used, at least in part, to extinguish said residual-current arc.

3,160,727
GAS-BLAST ORIFICE-TYPE INTERRUPTING UNIT WITH RESISTANCE ORIFICE MEMBER
Robert G. Colclaser, Jr., Delmont, and Russell N. Yeckley, Franklin Township, Westmoreland County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1961, Ser. No. 147,237
3 Claims. (Cl. 200—148)



1. A gas-blast circuit interrupter including means defining a source of high-pressure gas, means defining a blast entrance chamber composed of conducting material, blast-valve means interposed between said high-pressure source and said conducting blast entrance chamber, a relatively stationary contact supported by a rear conducting wall portion of said conducting blast entrance chamber, a forwardly-projecting generally cylindrically-shaped gas-directing resistance orifice member wholly composed of resistance material and having a restricted orifice opening disposed adjacent its forward end, a conducting arcing ring lining the restricted orifice opening to which an arc may attach, a movable tubular vented contact movable with slight clearance through said restricted orifice opening and into the interior of the orifice member to make separable opening and closing engagement with the relatively stationary contact therein, the opening of the blast-valve means causing a blast of high-pressure gas to flow into said conducting blast entrance chamber to thereafter be guided by said resistance orifice member and into the interior of the vented movable tubular contact, said flow of gas causing the insertion into series circuit of the resistance of said orifice member and extinction of the main power arc extending between the separable contacts, a residual-current arc being established between said conducting arcing ring and the movable tubular vented contact, and the continuous exhausting of high-pressure gas out of said resistance orifice member causing a cross-blast extinguishing action to be exerted upon the residual-current arc extending between the arcing ring at the orifice restriction and the movable tubular vented contact.

3,160,728
SECTIONED MOLDED INSULATING EXTINGUISHING UNIT FOR CIRCUIT INTERRUPTER WITH SECTIONS SECURED TOGETHER BY HOT-WIRE TECHNIQUE
George B. Cushing, Penn Hills Township, Allegheny County, and Carl G. Lentjes, Churchill, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1960, Ser. No. 59,565
2 Claims. (Cl. 200—150)



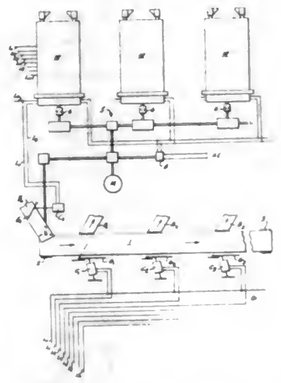
1. A fluid-type circuit interrupter comprising, in combination, an arc-extinguishing unit immersed in an arc-extinguishing fluid, contact means comprising relatively movable contact members separable to establish an arc within the arc-extinguishing unit, the arc-extinguishing unit comprising two sections, each of said sections comprising a molded insulating member, each of said sections comprising a wall and a plurality of barriers formed integral with and extending generally normal to the wall, said sections being bonded together as a unit with said barriers abutting to form a plurality of generally parallel elongated venting passages in the unit, the points of engagement between said abutting barriers being disposed generally in a single plane, one of said sections being disposed entirely on one side of said plane, the other of said sections being disposed entirely on the other side of said plane, and the bond between said sections being formed by

pressing the sections together and passing a heated wire-type member between the contacting surfaces of the pressed sections to thereby weld the sections together.

3,160,729
MECHANICAL MEMORY MACHINE AND APPARATUS

Sidney D. Lapham, Rte. 2, Box 319, Martinez, Calif.

Filed Mar. 1, 1963, Ser. No. 262,823
5 Claims. (Cl. 200—153)



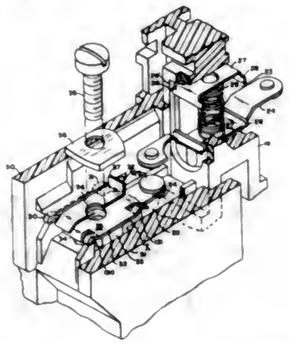
1. Apparatus of the kind described, comprising: means including a worm defining a plurality of retaining passageways for worm followers, each passageway extending axially of said worm and being defined by the surface of said worm and a concave surface; worm followers; means for selectively feeding a worm follower into one end of any passageway; means including a plurality of cams rotatable with said worm for actuating said feeding means, one cam being associated with one passageway for feeding a follower member into the one end of said passageway; a lock-out device for each passageway to prevent the feeding of a worm follower into its one end; manually operated means including a key release for each lock-out device to permit cam actuation of said feeding means; and a plurality of switches, each switch having an actuating member disposed along one of said passageways.

3,160,730
ELECTRIC CONTROL DEVICE WITH IMPROVED CONTACT STRUCTURE

Gustav Jäkel, Amberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Original application Oct. 26, 1959, Ser. No. 848,779, now Patent No. 3,088,058, dated Apr. 30, 1963. Divided and this application Apr. 11, 1961, Ser. No. 102,177
13 Claims. (Cl. 200—166)

1. In an electric control device, a contact assembly comprising, in combination, a housing having a pair of spaced side walls provided with parallel grooves, a first stationary contact assembly comprising a contact piece having an opening therein, said contact piece comprising frictional engaging means at each of two opposite sides thereof, said contact piece being positioned with said frictional engaging means being in frictional engagement in said parallel grooves, a bolt passing through said opening to provide an interconnection between the contact piece and a suitable circuit lead, said bolt projecting into an opening in the housing to thus prevent dislodgement of the contact piece, a second similar stationary contact assembly disposed in opposed spaced relation to the first, a resiliently mounted contact bridge disposed to bridge

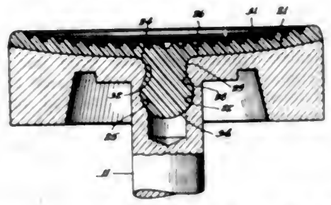


said contact pieces, and means for actuating the contact bridge.

3,160,731
ELECTRICAL SWITCH INDICIA

David Gemmell, Wiltshire, England, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Sept. 13, 1961, Ser. No. 137,797
4 Claims. (Cl. 200—167)



1. A push button switch operator having a body with a forward face and a recess therein disposed centrally of the peripheral edges of said face, said recess having a peripheral wall with portions thereof overhanging the recess in forwardly spaced relation thereto, a plate member proportioned to overlie said forward face, said plate member being formed of resilient compressible material and having an integral centrally disposed, rearwardly directed projection, said projection having peripheral fastening portions arranged to lie outwardly from the inner peripheal limits of said overhanging wall portions when said projection is received in said recess, and interengageable means on said projection and the inner peripheries of said overhanging wall portions operable as the plate member is pressed flatwise toward said forward face with said projection entering into said concavity to compress said projection thereby to displace said peripheral fastening portions of said projection inwardly of said overhanging wall portions toward the mid-portion of said projection.

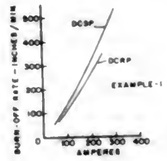
3,160,732
ELECTRODE FOR ARC WELDING AND METHOD OF USING SUCH ELECTRODE

Edward R. Gamberg, Clarence, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 27, 1962, Ser. No. 205,660
4 Claims. (Cl. 219—74)

1. The method of arc-welding ferrous work with a wash-coated ferrous consumable welding electrode energized from a direct-current power supply having reactance, the said method comprising impressing a potential

form said supply between said electrode and work to produce a welding arc between said electrode and work to melt said electrode and deposit the melted material from said electrode on said work, the regulation of said supply permitting said potential to vary over a substantial range, the current of said arc being maintained at a magnitude below the range in which the melted material flows to the work in the form of a spray, and shielding said arc in an atmosphere of a mixture of inert gas and carbon dioxide having a composition by volume of about between 0% inert gas and 100% carbon dioxide and 75%



inert gas and 25% carbon dioxide, said coating comprising essentially a mixture of the components manganese dioxide, titanium dioxide, and calcium oxide in which the quantities of said components are within the following ranges:

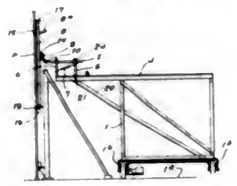
Manganese dioxide --	Between about 17.4% and 23.5%.
Titanium dioxide ----	Between about 56.6% and 76.5%.
Calcium oxide ------	Between about 0% and 26.1%.

sound welds being produced with the electrode-work potential varying over said substantial range by the cooperation of said coating in the welding operation.

3,160,733
AUTOMATIC WELDING APPARATUS

Karl Albert Hellander, Lerum, Sweden, assignor to Rodoverken Svenungsson & Co., Gothenburg, Sweden, a corporation of Sweden

Filed Dec. 28, 1961, Ser. No. 162,715
11 Claims. (Cl. 219—125)



1. An automatic welding apparatus for welding a joint between the top edge of a plate to the bottom edge of a welded construction located above it, said apparatus comprising:

(*a*) transport means;

(*b*) a welding carriage having a welding head and a guide member located a predetermined distance beneath said welding head and adapted to engage a support surface parallel with the bottom edge of said welded construction so that when said guide member is in engagement with said support surface said welding head is located opposite said joint.

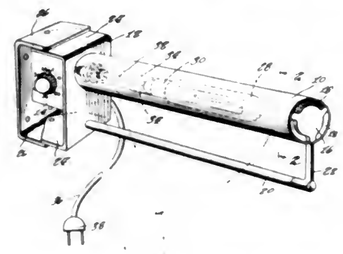
(*c*) a pivotal connection between said carriage and transport means such that said welding head is movable horizontally and vertically relatively to said transport means, said pivotal connection including biasing means adapted to force said carriage towards said plate;

(*d*) means responsive to the position of said transport means relative to said welded construction and operative to control the position of said transport means relative to said welded construction.

3,160,734
ELECTRICALLY HEATED TOWEL DRIER

Roy H. Rylander, 1372 B St., Arcata, Calif.

Filed Feb. 28, 1962, Ser. No. 176,259
1 Claim. (Cl. 219—201)

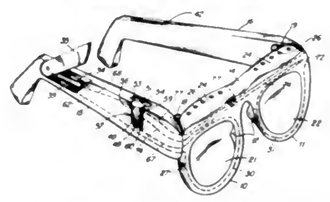


An electrically heated towel drier comprising a mounting bracket, a box pivotally connected to said bracket, a hollow metal tube connected at one end to said box, a plug secured to the other end of said tube and having air vents communicating between the inside and outside of said tube, a support member connected to the other side of said tube and depending therefrom, a bar disposed below said tube being connected to said box and said support member at its ends, a lamp positioned in said tube, and means connected to said lamp for supplying electric energy thereto, said means including a timer switch disposed in said box for controlling the duration of time in which electric energy is supplied to said lamp.

3,160,735
ANTI-FOGGING EYEGLASSES

Gustave Aufricht, 1001 Park Ave., New York 28, N.Y.

Filed Feb. 27, 1963, Ser. No. 261,437
7 Claims. (Cl. 219—201)



1. In a frame for eyeglasses, in combination, a lens-holding member defining a frame opening shaped to receive a lens, a resistance heating element for warming the surfaces of said lens to inhibit condensation of moisture thereon substantially surrounding said opening and carried by said lens-holding member, a temporal member extending rearwardly from one side of said lens-holding member and having a portion adapted to carry a battery, and contact means carried by said temporal member, positioned to engage the terminals of said battery in said last-mentioned portion and connected to said resistance heating element for energization of said element by said battery.

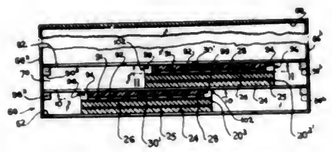
3,160,736
ANTI-FOGGING MIRROR

Thomas V. Catterson, 159—14 Cross Island Parkway, Whitestone, N.Y.

Filed Sept. 11, 1962, Ser. No. 222,865
5 Claims. (Cl. 219—219)

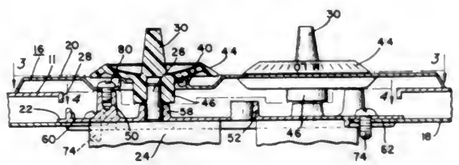
1. An anti-fogging mirror assembly, comprising a transparent plate, a light reflective coating on one side of said

plate, a thermally conductive sheet abutting said coating to conduct heat to the plate and to distribute heat thereover, an insulation film covering one side of said plate, a plurality of electrical resistance wire heating elements disposed in a flat sinuous array with one side thereof juxtaposed to said film, an insulation backing board abutting and supporting said heating element on the other side



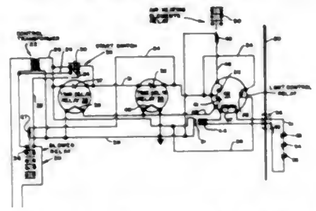
thereof, a first electric power supply member having two terminals connected to opposite ends of one of the elements, and another electrical supply member having two other terminals connected to one end of one element and to one end of the other element while the other ends of the elements are connected together, whereby power applied to the first member heats said one element and power supplied to the other member heats both elements together.

3,160,737
SWITCH MOUNTING ARRANGEMENT FOR A COOKING TOP
George C. Pearce, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1961, Ser. No. 154,209
4 Claims. (Cl. 219—451)



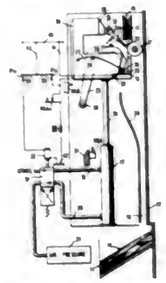
1. In combination, a cooking top having a heating element opening and a switch opening, a cooking unit pan beneath said cooking top, a heating element in said heating element opening and above said cooking unit pan, a switch for said heating element having a switch body below said cooking top and a switch shaft extending above said cooking top, a switch knob having a knob shank for receiving said switch shaft, a switch mounting arrangement cooperating with said switch opening to support said switch in a manner to prevent spillage from reaching said switch shaft and to eliminate stresses on said switch body surrounding said switch shaft, said mounting arrangement including an escutcheon supported on said cooking top and having a recessed annular channel, said channel having a perforated bottom and a generally cylindrical sidewall concentric with said switch shaft, a die cast switch mounting bracket having a baffled imperforate plate portion larger than said switch body carried by said cooking unit pan and having a collar upstanding from said plate portion and smaller than the knob shank in a plane parallel to said plate portion, and means for fastening said switch body to said mounting bracket below said plate portion with the switch shaft freely extending upwardly through said collar into engagement with said knob shank, whereby spillage through the perforations of said channel bottom in said escutcheon is diverted away from said switch shaft and said switch body.

3,160,738
CONTROL ARRANGEMENT
Harold L. Kirk, Bettendorf, Iowa, assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,806
7 Claims. (Cl. 219—492)



7. In a control arrangement for heating apparatus adapted to be used in potentially explosive atmospheres:
(*a*) a multivolt electrical power source;
(*b*) a power control circuit connected to said power source including means to effect energization of said heating apparatus upon closure of first switch means responsive to the condition of a safety control circuit, and further including means energizing a millivolt thermoelectric generator for powering said safety control circuit;
(*c*) said safety control circuit including, in series, a thermoelectric generator, second normally closed switch means operable to an open position to de-energize said safety control circuit in response to a sensed unsafe condition, and means for operating said first switch means to a closed position when said safety control circuit is energized and to an open position when said safety control circuit is de-energized;
(*d*) said power control circuit and said safety control circuit being isolated from said potentially explosive atmospheres except for said second normally closed switch means disposed to be subject to said potentially explosive atmospheres.

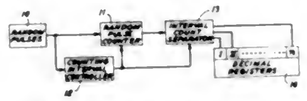
3,160,739
CARD READING DEVICE
John M. Anderegg, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 12, 1960, Ser. No. 75,317
6 Claims. (Cl. 235—61.11)



3. In a device of the class described having a card analyzing station and sensing means at said station for sensing perforations in record cards, a card feeding mechanism comprising, means for guiding an inserted record card to said analyzing station, a movable card platform normally positioned adjacent said sensing means for supporting said inserted record card in position to be

sensed, pneumatic driving means operable to reciprocate said platform, control means on said platform and responsive to said inserted record for initiating operation of said driving means to move said platform whereby said inserted record is moved past said sensing means for a sensing operation, card clamping means on said platform and effective upon movement of said platform to clamp said inserted card to said platform, release means on said platform, means effective after a predetermined travel of said platform for actuating said release means to release said clamping means and free said record card from said moving platform, and second control means operated by said platform after predetermined travel thereof to initiate operation of said driving means to move said platform in a reverse direction back to its original position.

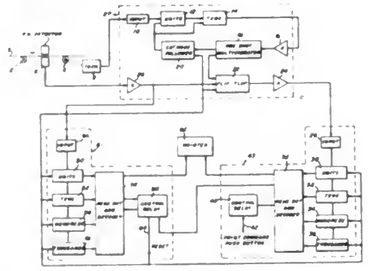
3,160,740
RANDOM PULSE DISTRIBUTION INDICATOR
Henry Mann, Berkeley Heights, N.J., and Alfred E. Ruppel, East Rockaway, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 11, 1958, Ser. No. 747,875
15 Claims. (Cl. 235—92)



1. A circuit for registering pulse occurrence patterns in a train of pulses during time intervals of predetermined duration, each of said time intervals comprising at least one period during which a pulse may or may not occur, said circuit comprising means for counting at least *n* pulses, said counting means generating a different electric signal for each pulse counted thereby during an interval, means for applying pulses to said counting means, *n* registers responsive to said different electric signals for totalling interval pulse counts, counting interval control means responsive to one of said pulses for generating an output voltage wave having a duration corresponding to said predetermined duration, means connected to the output of said control means for generating a readout pulse in response to the termination of said wave, coupling means responsive to said readout pulse for applying each of said electrical signals to one only of said *n* registers thereby separately totalling the numbers of said interval pulse counts of different magnitudes, means responsive to said readout pulse for resetting said counting means to zero, means connected to said counting means for initiating the generation of said readout pulse in response to the counting of a predetermined number of said pulses during one of said intervals, means for detecting consecutive pulses, and means for connecting the last-mentioned means to said control means for initiating the generation of said readout pulse in response to a pulse followed consecutively by a period in which a pulse does not occur.

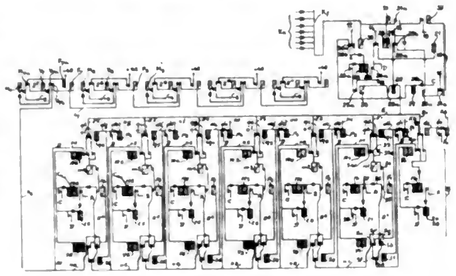
3,160,741
APPARATUS FOR EVALUATING STRIP MATERIAL
Paul P. Gottschall and Chauncey L. Grebe, Concord, Calif., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Sept. 19, 1960, Ser. No. 57,050
2 Claims. (Cl. 235—92)

1. Apparatus for evaluating a moving metal strip comprising a pin hole detector, means for moving the strip past said pin hole detector, means operable by said pin hole detector for generating an electric pulse for each pin hole detected, means for producing an electric pulse for each increment of length of said moving strip, a preset counter, means connecting the output of said last named means to said preset counter, said preset counter producing an output pulse each time a preselected number of pulses are counted by said preset counter, a one shot multivibrator, means for impressing said output pulse on said multivibrator, means operable by said multivibrator for resetting said preset counter, a flip-flop connected to said multivibrator, means connecting the output of said means operable by said pin hole detector to said flip-flop,



said flip-flop developing an output signal when a pin hole occurs in a predetermined length of strip, a second counter for counting the number of predetermined lengths of strip containing pin holes, means connecting the output of said flip-flop to said second counter, a read out connected to the output of said second counter, a third counter for counting the total number of pin holes in the strip, means connecting the output of said means operable by said pin hole detector to said third counter, and a read out connected to the output of said third counter.

3,160,742
COMPOSING COMPUTER AND INDICATOR
Pierre Jean-Baptiste Astier, 4 Rue Eugene Jumin, Paris 19, France
Filed Dec. 28, 1960, Ser. No. 79,032
Claims priority, application France Dec. 29, 1959
10 Claims. (Cl. 235—164)



1. A device for the justification of a line of print composed on a conventional type-setting keyboard of the type wherein any one key actuates a corresponding escapement device through a conventional mechanism during a period of time of between three milliseconds and one-thirtieth of a second and preferably of one one-hundredth of a second comprising
a plurality of keys on the keyboard including a character key and a space key,
an escapement device actuated by each of said keys,
an electric switch for each escapement device in an operative relationship with said escapement device,
a primary source of direct electric current connected to each of said electric switches,

an electric distribution network comprising at least six distribution lines,

a plurality of unique electric circuits each connected at one extremity to at least one said electric switch and bearing at its other extremity means for connection to at least one of said at least six distribution lines in accordance with a selected code wherein each said electric circuit is unique,

said means for connection including at least one electric rectifier,

each of said at least six distribution lines being adapted to feed into at least one electrical binary circuit including a plurality of relay means,

each said electrical binary circuit being adapted to receive data represented by an electrical signal originating from said primary source and being connected to at least one other said electrical binary circuit,

said electrical binary circuits constituting a binary computer of the type wherein input data is transformed into a modulus represented by a power of two and successive stages in said computer represent successive positive integer powers of two,

a first series of indicator means and a second series of indicator means selectively controlled by said computer,

said first series of indicator means indicating by progression in a given direction a function of the summation of a plurality of given parameters each corresponding to the operation of said character key operated on the keyboard,

said second series of indictor means indicating by progression in a direction opposite to said given direction of said first series of indicator means a function of the summation of a sequence of parameters each corresponding to differences between maximum and minimum of limits of spacing for each operation of said space key of the keyboard,

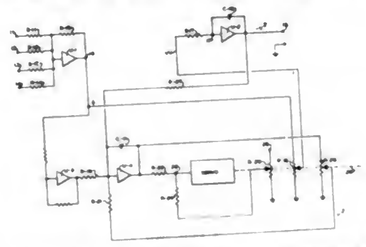
a means for detecting the cross-over through a plane transverse to the paths of progression of said first and said second series of indicator means,

and an actuator-timer adapted to prepare said binary computer for receiving data,

whereby actuation of any said key closes said electric switch operatively connected with said escapement device corresponding to said key, sends current from said primary source through said unique circuit connected to said electric switch into selected distribution lines, said selected distribution lines sending said current both to said actuator-timer and to said binary circuits corresponding to said selected distribution lines where it is delayed, said actuator-timer preparing said binary computer and said binary computer receiving data signals corresponding to said delayed current, which data signals are thereafter computed, the result of such computation being registered by said series of indicator means.

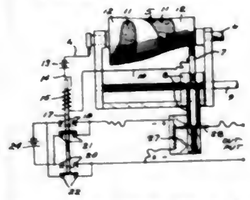
3,160,743
SERVO-OPERATED SQUARING APPARATUS
Robert M. Howe, Ann Arbor, Mich., assignor to General Precision, Inc., a corporation of Delaware
Filed Apr. 10, 1959, Ser. No. 805,509
6 Claims. (Cl. 235—194)

1. Electronic analog computer apparatus for providing a dynamically clean output signal which varies as the square of a variable from an input signal commensurate with the time rate of change of said variable, comprising in combination, a first potentiometer connected to be excited by said input signal, integrating servo means having an output shaft connected to adjust said potentiometer to modify said input signal to provide a second signal, an electronic integrator responsive to said second signal and operable to integrate said second signal with respect to time to provide said output signal, said servo means being responsive to said input signal and operative to provide an output shaft position commensurate with the time integral of said input signal and commensurate with said variable, voltage-deriving means op-



erated by said servo means for deriving a third potential commensurate with the square of said variable, circuit means for applying said third potential to the input circuit of said servo means, and circuit means for applying said output signal to the input circuit of said servo means.

3,160,744
THREE DIMENSIONAL CAM
Marvin Weiss, Pearl River, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Aug. 22, 1961, Ser. No. 133,129
2 Claims. (Cl. 235—197)

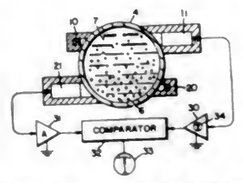


1. A computer circuit comprising a three-dimensional cam, an electrical device mechanically driven according to the output of said three-dimensional cam, said cam having a surface partially conductive and partially non-conductive, a voltage source connected to said electrical device, means connected to said three-dimensional cam and disposed between said voltage source and said electrical device for reversing the excitation of said device according to whether the conductive or the non-conductive portion of the cam surface is electrically connected to said source.

3,160,745
RADIATION GAUGING SYSTEM FOR MEASURING THE PROGRESS OF SETTLING IN SLURRIES AND SUSPENSIONS
George B. Foster, Worthington, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed May 19, 1961, Ser. No. 111,273
3 Claims. (Cl. 250—43.5)

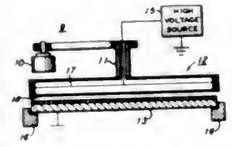
1. In a system for conveying a fluid containing suspended particles from one point to another, said fluid being subjected to a unidirectional accelerating force, apparatus for measuring the progress of the settling of said particles under the influence of said force, said apparatus comprising means for conveying said fluid without agitation thereof through a testing region so as to avoid any remixing or other alteration of the results of said settling process, means for passing first and second beams of penetrative radiation through said fluid in said region, each of said radiation beams being defined by a source

of said radiation and a detector receiving radiation from said source which has penetrated said fluid in a respective one of said beams, said beams being displaced from each other in the direction of said accelerating force, said radiation passing and detector means being arranged with respect to said conveying means so as to maintain a con-



stant volume of said fluid in each of said beams, means for generating first and second signals respectively indicative of the intensity of radiation received by said detectors defining said first and second radiation beams, and means responsive to both of said signals for manifesting the progress of said settling.

3,160,746
CORONA CHARGING APPARATUS FOR NON-UNIFORMLY CHARGING A XEROGRAPHIC PLATE IN A PREDETERMINED MANNER
Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 1, 1961, Ser. No. 106,657
13 Claims. (Cl. 250—49.5)

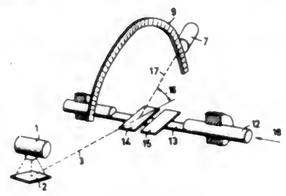


10. Apparatus for depositing electrostatic charge on a circular surface area of an insulating layer comprising a corona discharge electrode, a plate support means for positioning a plate member including said insulating layer adjacent to said corona discharge means, and a means for rotating said corona discharge means in a circular path adjacent to a plate on said support means to charge a circular area.

13. Corona charging apparatus comprising: a corona discharge device, a support arranged to position a plate comprising an insulating layer to receive charge from said device, means to apply an ion-moving field between said device and said support to cause ions discharged from said device to deposit on a plate positioned by said support and means to monotonically vary the quantity of ions deposited per unit area as a function of distance on said plate from a geometric reference to a peripheral edge.

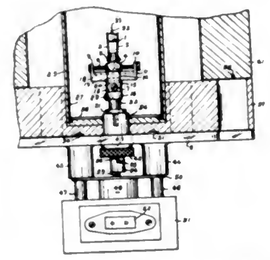
3,160,747
X-RAY ANALYSIS APPARATUS COMPRISING A FIXED DETECTOR MEANS AND PLURAL INTERCHANGEABLE ANALYZING CRYSTALS
Johan Louis de Vries, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 12, 1961, Ser. No. 109,618
Claims priority, application Netherlands June 1, 1960
4 Claims. (Cl. 250—51.5)

1. Apparatus for determining the elemental constitution of a sample of material comprising means to irradiate the sample with a beam of X-rays to produce characteristic secondary X-rays from elements in the sample, fixed detector means for detecting X-rays emitted by elements in the sample, and means to analyze and reflect X-rays having wave-lengths characteristic of each element in the sample independently to the detector means, said reflection means comprising a plurality of crystals, and means to interpose said crystals successively in reflecting position



between the sample and the detector, each of said crystals having lattice parameters at which wave-lengths corresponding to each of said elements in said sample are reflected at substantially the same angle to said fixed detector means.

3,160,748
SPHERICAL GONIOMETER HEAD AND ADAPTER
Frank L. Chan, 3228 Ravenwood Road, Fairborn, Ohio
Filed June 28, 1962, Ser. No. 206,103
3 Claims. (Cl. 250—51.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

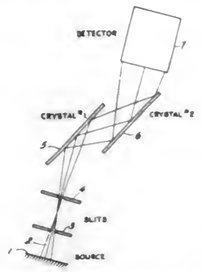


3. The goniometer head that comprises a universally rotatable sphere, a pair of spring metal strips yieldingly spring-loaded toward each other to grip the sphere therebetween and each spring metal strip indented to contact a sufficient area of the sphere for accomplishing its retention, and means for rotating the pair of strips and the sphere, a sample support that is inserted into a hole in the sphere and supported by the sphere to maintain the support extending above the surface of the sphere adequately for the sample to be in the path of the X-ray beam in the taking of X-ray photographs of the sample, and means for selectively adjusting the position of the sample in placing it coincident with the goniometer X-ray beam by physically moving the sample in three directions all mutually normal to each other.

3,160,749
SPECTROMETER WITH NOVEL PLURAL CRYSTAL ARRANGEMENT
Nathan Spielberg, Hartsdale, N.Y., assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 19, 1962, Ser. No. 231,741
3 Claims. (Cl. 250—51.5)

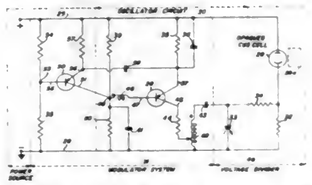
1. In a spectrometer for measuring penetrative radiation from a source thereof and including a detector for said radiation spaced from said source, an analyzing crystal assembly interposed between the source and the detector comprising a plurality of spaced crystals each

having identical *d*-spacings, said crystals being oriented with their reflecting planes parallel to one another, one of said crystals being positioned to intercept radiation from said source incident on its reflecting planes and reflect radiation corresponding to said incident radiation



to another of said crystals which is oriented to reflect the radiation reflected to it by the first mentioned crystal to the detector, and means to rotate the crystals while maintaining the reflecting planes of each of said crystals parallel to one another.

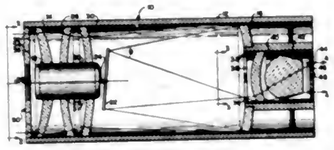
3,160,750
NUCLEAR RADIATION MEASURING SYSTEM UTILIZING A RADIO RECEIVER
Robert M. Klehn, Los Alamos, N. Mex.
(129 Palmo Drive, Luling, Tex.)
Filed Dec. 26, 1961, Ser. No. 161,926
11 Claims. (Cl. 250—71.5)



1. A radiation ratemeter device for use with and adjacent to a radio receiver adapted to be tuned to frequencies of about 550 to 1600 kc., which device comprises in combination: A low-voltage power source, a solid-state, radiation-sensing cell having a high resistance when not exposed to radiation and a lower resistance when exposed to radiation, the cell having a resistance which is a function of incident radiation to which it is exposed, a voltage divider which includes said cell, a solid-state, semiconductor, variable-capacitance, junction diode connected to said voltage divider, an oscillator circuit which includes a first transistor which generates an R-F carrier, and a modulator system which includes both said transistor and a second transistor and which tone-modulates the R-F carrier so that when the radio receiver is tuned to obtain a tell-tale tone, the frequency shown on the scale thereof will indicate the intensity of said radiation.

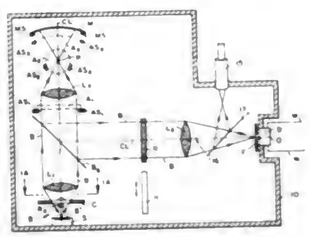
3,160,751
OPTICAL SYSTEM FOR IDENTIFYING AND TRACKING SOURCE OF INFRARED RADIATION EMISSION
Charles E. Dunning, Pasadena, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed June 5, 1961, Ser. No. 114,729
6 Claims. (Cl. 250—83.3)

1. In an infrared optical system, a filter element at least closely adjacent the entrance aperture of the optical system, said filter element having a plurality of separate portions, each portion capable of transmitting substantially a single narrow frequency band, said portions of the filter element separating the narrow frequency bands from each other in the optical system, a plurality of I.R. detectors, and a field lens for imaging the entrance aperture and the filter element on the detectors, said detectors positioned



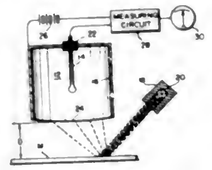
so each of the selected frequency bands entering the optical systems fall on only one detector whreby the differences in the intensities of the selected frequency bands can be compared with each other and with the known I.R. characteristics of various targets for purposes of identification.

3,160,752
REFLECTOMETER FOR MEASURING SURFACE FINISHES
Harold E. Bennett, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 19, 1963, Ser. No. 259,761
13 Claims. (Cl. 250—83.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



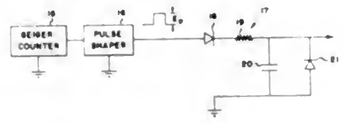
1. A reflectometer comprising in combination:
a point source image generating means for emitting continuous beams of light having wavelengths within the infrared region of the spectrum;
an object support;
means for converting said continuous light beams to pulsed beams;
means, including a beam splitter having a light reflecting portion for directing said pulsed beams to impinge upon a given light reflecting surface of an obvious positioned on said support so that the pulsed light beams will be reflected from said surface to impinge on, and in turn, be reflected from the reflecting portion of the beam splitter;
a light detector and electrical signal generating means displaced from said light reflecting portion of said beam splitter; and
means for focusing the pulsed light beams, as they are reflected from said beam splitter, to impinge on said detector so that the pulsed light beams reflected from the surface of the object may be converted to electrical signals indicative of the roughness thereof.

3,160,753
METHOD AND MEANS FOR MEASURING HARDNESS
Donald E. Varner, Columbus, Ohio, assignor to The Industrial Nucleonics Corporation, a corporation of Ohio
Filed Feb. 2, 1959, Ser. No. 790,726
3 Claims. (Cl. 250—83.6)



2. The method of utilizing a nuclear radiation-reflection gauge to obtain a useful indication of the unknown hardness characteristic of a traveling metallic workpiece having substantially constant, homogeneous composition, which comprises mounting in said gauge a source of nuclear radiation having an energy characteristic such that said workpiece presents an infinite thickness to said radiation, calibrating said gauge so that when specimens of material having said composition are measured thereby, the reading of said gauge is in substantial agreement with the hardness of said specimens as determined by other means, and thereafter measuring said traveling workpiece with said gauge whereby the hardness of said workpiece is continuously indicated.

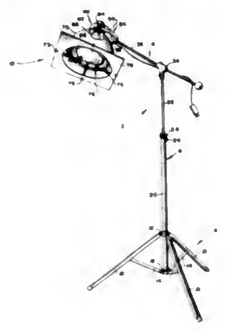
3,160,754
LOGARITHMIC PULSE-RATE CIRCUIT
David D. Elliott, Menlo Park, and Forrest S. Mozer, Brentwood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 23, 1961, Ser. No. 97,934
3 Claims. (Cl. 250—83.6)



1. The combination of a geiger counter the output of which is operatively connected to the input of a pulse shaper the output of which provides a pulse of constant amplitude and duration at a rate equal to the pulse-rate of said geiger counter, the output of said pulse shaper connected to one side of a capacitor, the other side of said capacitor connected to ground, a zener diode having a cathode to anode dynamic impedance that decreases exponentially with linear increase of cathode to anode voltage, the cathode of said zener diode connected to said one side of said capacitor, the anode of said zener diode connected to ground, whereby the voltage of said one side of said capacitor is proportional to the logarithm of the pulse-rate of said geiger counter.

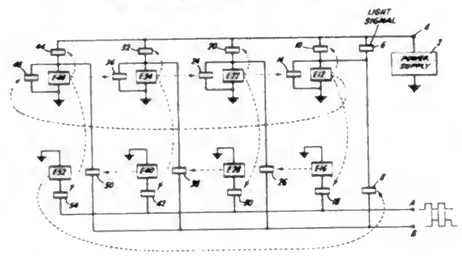
3,160,755
THERAPEUTIC RADIANT ENERGY LAMPS
Howard D. Wolfe, Richmond, Va., assignor to Safe-T-Sun Corporation, Williamsburg, Va., a corporation of Virginia
Filed May 16, 1960, Ser. No. 29,402
2 Claims. (Cl. 250—92)

2. A therapeutic lamp assembly comprising the combination of a collapsible tripod base; a hollow base shaft supported by and extending vertically upward from said base; a support shaft adjustably reciprocal within said base shaft and adapted to extend thereabove; a coupling member having a first bore therein receiving the top end of said support shaft, and having a second bore extending therethrough above said first bore and angularly disposed with respect to said first bore; a lamp shaft slidably extending through said second bore; means carried by said coupling member for locking said lamp shaft and said support shaft in given positions within said bores; a fork member carried at one end of said lamp shaft; a lamp hood pivotally secured between the arms of said fork member, said hood having a lamp socket disposed therein; an ultra-violet lamp disposed in said socket; a



clear transparent plastic filter impervious to ultra-violet radiation causing erythema; a frame for said filter, and a filter frame holder comprising a circular support ring and a plurality of bent rods disposed in spaced relation around said ring and having portions extending on either side of said ring, the portions extending on one side of said ring having configurations to engage said lamp whereby said holder can be clipped thereon, and the portions extending on the other side of said ring projecting laterally outward from said ring and having ends adapted to receive and support said frame.

3,160,756
ELECTRO-OPTICAL PULSE COUNTER
Albert J. Marko, Deer Park, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,319
8 Claims. (Cl. 250—209)

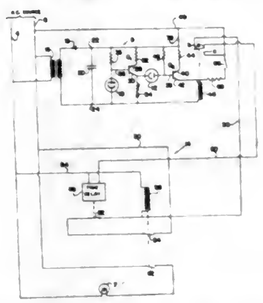


1. An electroluminescent device comprising first and second sets of photoconductor-electroluminescent units, each set containing a like plurality of said units arranged in a linear array, said plurality being equal to N where N is any integer greater than 1, each unit consisting of an electroluminescent cell and a photoconductive element electrically connected in series, all first set units being connected in parallel between first and second terminals, all second set units being connected in parallel between a third terminal and said second terminal, the cell and element of each first set unit being optically coupled to-

gether, the cell and element of each second set being optically isolated from each other, each second set element being optically coupled to a corresponding first set cell; and first and second groups of photoconductive elements, the number of elements in each group being equal to $(N-1)$, each first set cell other than the last cell in the first set shunting a corresponding first group element, each first set cell other than the first cell in the first set being connected through a corresponding second group element to a fourth terminal, each first group element being optically coupled to the first set cell immediately preceding the first set cell shunted by it, each second set cell other than the last cell in the second set being optically coupled to the second group element which is connected to the first set cell immediately preceding the first set cell corresponding to said each second set cell.

3,160,757
PHOTOELECTRIC CONTROL DEVICE RESPONSIVE TO TWO LIGHT SOURCES

Raymond J. McAllise, 17 Crest Road, Granby, Conn.
Filed Apr. 19, 1962, Ser. No. 188,667
15 Claims. (Cl. 250—209)

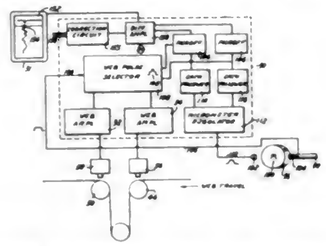


1. A photoelectric controller comprising a photosensitive device including an electron flow control element having an output terminal and also including means separate from said electron flow control element and responsive to illumination from a first light source for controlling said electron flow control element to produce a first output signal at said output terminal when said illumination exceeds a predetermined value and to produce a second output signal when said illumination is less than said predetermined value, and a photosensitive switch circuit having an input terminal connected to said output terminal of said electron flow control element which switch circuit includes a second output terminal, a second electron flow control device and means responsive to illumination from a second light source and also to said output signals appearing at said first mentioned output terminal for controlling said second electron flow control element to produce a given output signal at said second output terminal only when said second output signal is present and when at the same time said illumination from said second light source exceeds a predetermined value.

3,160,758
LENGTH MEASUREMENT AND CONTROL IN WEB PRINTING

Morris Sorkin, Bergenfield, and George J. Schowerer, West Englewood, N.J., assignors to Champlain Company, Inc., Roseland, N.J., a corporation of New York
Filed Jan. 19, 1961, Ser. No. 83,835
8 Claims. (Cl. 250—219)

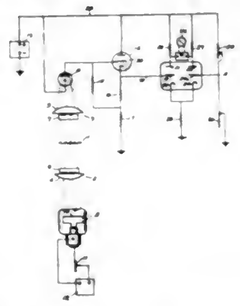
1. Apparatus for repeat length measurement in web printing by means of a print cylinder, said apparatus comprising a first optical photoelectric scanner for scanning a marker on a moving web to produce an electrical pulse, a second scanner for scanning the same marker at the correct distance of one or more repeat lengths from the first scanner to produce a second electrical pulse, means geared to said print cylinder for producing a micrometer



signal having a sloping portion at the location of the marker, electronic circuitry for combining the pulses with the micrometer signal, and means utilizing the relative displacement of the pulses along the sloping portion of the micrometer signal, as a measure of deviation from correct repeat length.

3,160,759
PHOTOSENSITIVE FABRIC INSPECTION SYSTEM

John W. Ward, Charlottesville, Va., assignor to Specialties Incorporated, Syosset, N.Y., a corporation of New York
Filed Aug. 14, 1961, Ser. No. 131,440
6 Claims. (Cl. 250—219)

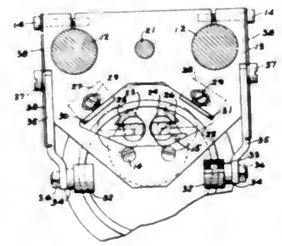


5. In a system for testing fabric, a lamp and means for collecting light therefrom into a narrow elongated pattern directed toward one surface of said fabric, said elongated pattern being substantially parallel with the weft threads of said fabric, means for collecting light passed through interstices of said fabric and for spreading said light, light sensitive means for receiving the spread light directed away from the opposite surface of said fabric, and electrical means connected with said light sensitive means for producing responses indicative of flaws in said fabric, said light collecting and light spreading means each comprising a combination spherically curved lens and cylindrical lens having its axis at right angles to the axis of said spherically curved lens.

3,160,760
INSPECTING CONTAINERS FOR OFFSET SEAMS

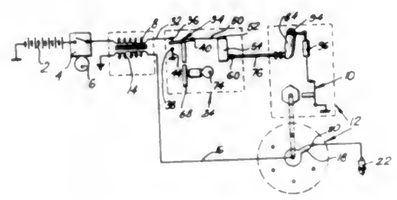
William L. Fry, Lafayette, and Albert F. Uhlig, Oakland, Calif., assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 25, 1960, Ser. No. 44,922
16 Claims. (Cl. 250—224)

1. The method of inspecting the external side sealing surface of a hollow open ended container to detect offset seams thereon which comprises directing a pair of light beams at spaced points on the external side surface of the container, focusing said light beams into generally vertical spots on said side surface, causing relative rotation between said light beams and said container about the axis of the container, causing an offset seam on said side surface to direct by refraction one of said light beams out of the normal path of said light beam at an obtuse angle to the light beam, detecting said changes in the normal path of the light beam caused by offset seams and creating a reject signal in response to said changes in the normal path of the light beam.



3,160,761
THEFT PREVENTION FOR AUTOMOBILES AND THE LIKE

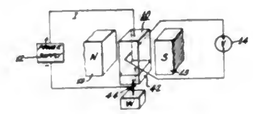
Clifford J. Fuller, 252 St. Nicholas Ave., Brooklyn, N.Y.
Filed Aug. 4, 1960, Ser. No. 46,624
8 Claims. (Cl. 307—10)



1. A lockout adapted to be connected in an automobile ignition circuit between first and second stations therein, said lockout comprising a housing, a switch therein adapted to be actuated between first and second conditions and locked in said second condition, said switch in its first condition closing the circuit between said stations and in its second condition opening the circuit between said stations, and an electrical connection in part external of said housing between said switch and one of said stations, said electrical connection comprising at least in part a tubular member of non-conductive material extending from said housing toward said one of said stations and containing a continuous strip of conductive fluid, the ends of said strip being electrically connected respectively to said switch and to said one of said stations, and a conductive filament extending along and inside said tublar member in contact with said conductive fluid, said filament being electrically connected to at least one of said switch and said one of said stations only via conductive fluid.

3,160,762
HALL EFFECT DEVICE EMPLOYING MECHANICAL STRESS APPLIED ACROSS CRYSTAL TO EFFECT CHANGE IN HALL VOLTAGE

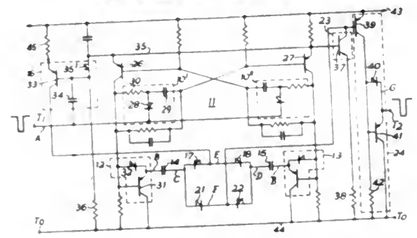
Martin C. Steele and Rubin Braunstein, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 21, 1960, Ser. No. 23,802
1 Claim. (Cl. 307—88.5)



In combination, a semiconductor crystal disposed in a magnetic field, circuit means connected to said semiconductor crystal to send current therethrough and to cause said crystal to exhibit a Hall voltage, said Hall voltage comprising a difference in potential across said semiconductor material in a direction that is perpendicular to the directions of said magnetic field and said current, and means physically connected to said crystal for applying a unilateral mechanical stress across said crystal, said stress causing said Hall voltage to change from one value to another value.

3,160,763
PULSE DELAY NETWORK INCORPORATING A PULSE GENERATOR

John Victor James Corney, London, England, assignor to Ferguson Radio Corporation Limited, London, England, a British company
Filed Apr. 24, 1961, Ser. No. 105,224
4 Claims. (Cl. 307—88.5)



1. A device for deriving from a first pulse train containing a plurality of pulses of variable duration and identical polarity, a second pulse train containing a like plurality of pulses of identical polarity, each second train pulse having the same duration as the corresponding first train pulse, the second train pulses being delayed with respect to the first train pulses whereby the leading edge of the first, second . . . (N–1)th pulse in the second train is in time coincidence with the leading edge of the second, third . . . Nth pulse in the first train where N identifies the last pulse in the first train, said device comprising

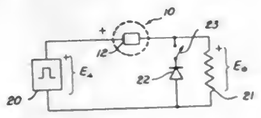
(*a*) first and second capacitors;
(*b*) first and second capacitor charging means, each charging means being coupled to the corresponding capacitor;
(*c*) first and second capacitor discharging means, each discharging means being coupled to the corresponding capacitor;
(*d*) first control means responsive to said first pulse train to actuate said first charging means in the presence of each odd numbered first train pulse and to actuate said second charging means in the presence of each even numbered first train pulse, said first control means deactuating each of the charging

means in the absence of the appropriate first train pulse;

(*e*) second control means responsive to said first pulse train to actuate said first discharging means during the presence of each even numbered first train pulse and to actuate said second discharging means during the presence of each odd numbered first train pulse, said second control means deactuating each of the discharging means in the absence of the appropriate first train pulse; and

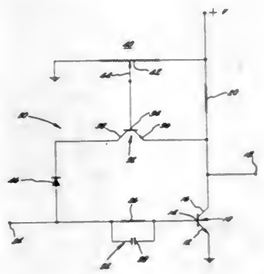
(*f*) output means coupled to said first and second discharge means to extract said second pulse train therefrom.

3,160,764
PULSE SHAPER EMPLOYING CHARGE-STORING SEMICONDUCTOR DEVICE
George G. Harman, Jr., Washington, D.C., and Richard L. Raybold, Alexandria, Va., assignors to the United States of America as represented by the Secretary of Commerce
Filed Sept. 5, 1962, Ser. No. 221,638
10 Claims. (Cl. 307—88.5)



1. In combination, means for storing charge comprising a body of p-type semiconductor material, a porous electrode disposed on said body, said body and said porous electrode being disposed in an ambient gas which induces surface states on said body, means for utilizing said charge, and means for releasing said charge into said utilizing means.

3,160,765
ADJUSTABLE CLAMP FOR TRANSISTOR SWITCHING CIRCUITS
Kenneth D. Krossa, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 22, 1962, Ser. No. 232,145
10 Claims. (Cl. 307—88.5)



1. A transistor switching circuit, comprising:

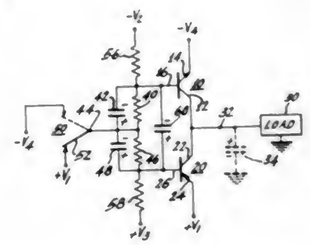
a first transistor having an emitter-base circuit, an emitter-collector circuit, and a collector terminal coupled to an output terminal for the switching circuit;

resistance means coupled in series with the emitter-base circuit and to an input terminal for receiving an input signal;

means for biasing the first transistor to a normally nonconductive state to become conductive in response to the input signal applied to the input terminal;

and a degenerative feedback circuit including a second transistor having an emitter-base circuit connected between a source of biasing voltage and the collector terminal of the first transistor for series current flow with the emitter-collector circuit of the first transistor, an emitter-collector circuit, and a collector terminal connected to the input terminal to pass a portion of the input signal through the emitter-collector circuit when the second transistor is conductive, the second transistor having a predetermined emitter-base potential when conductive, and means including a source of biasing voltage for biasing the second transistor to a normally nonconductive state to become conductive in response to the first transistor becoming conductive to clamp the voltage at the output terminal at a voltage determined by the emitter-base potential and the value of the voltage supplied by the source of biasing voltage.

3,160,766
SWITCHING CIRCUIT WITH A CAPACITOR DIRECTLY CONNECTED BETWEEN THE BASES OF OPPOSITE CONDUCTIVITY TRANSISTORS
Welles K. Reymond, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,498
4 Claims. (Cl. 307—88.5)



1. The combination comprising first and second transistors of opposite conductivity type having their collector-emitter paths connected in series between points of different operating potential;

an output connection between said transistors;

an input terminal;

first coupling means connected between said input terminal and the base electrode of the first transistor;

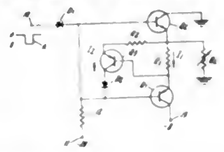
second, separate coupling means connected between said input terminal and the base electrode of the second transistor;

means for normally applying a first voltage at said input treminal having a value to bias said first transistor into saturation and to bias said second transistor in a nonconducting condition;

means for selectively changing the voltage at said input terminal to a value to bias said second transistor into saturation and to bias said first transistor in a nonconducting condition; and

a capacitor directly connected between the base electrodes of said first and second transistors and having a value to prevent the nonconducting transistor from turning on during the saturation delay time of the saturated transistor when the input voltage is changed.

3,160,767
SELF-PROTECTING COAXIAL LINE DRIVER
Virgil R. Tindall, Cranfills Gap, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 14, 1963, Ser. No. 258,972
9 Claims. (Cl. 307—88.5)



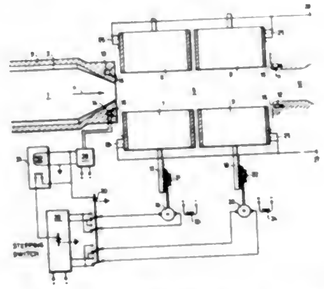
1. Self-protecting impedance conductor driver circuit comprising:

an impedance conductor for conducting intelligence signals from an input to a point of use;

a pair of current carrier emission means having a control electrode and two conduction electrodes with the control electrodes coupled in common to said input and with the conduction electrodes coupled in complement across a voltage source with an impedance in between said pair of current carrier emission means, one of the conduction electrodes of said pair of current carrier emission means being coupled to said impedance conductor;

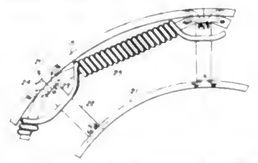
a protective circuit including a third current carrier emission means having a control electrode and two conduction electrodes with one conduction electrode and said control electrode coupled across said impedance and the other conduction electrode coupling the common control electrode coupling of said pair of current carrier emission means whereby high current drain in said impedance conductor activates said third current carrier emission means into conduction to prevent high current conduction in either of said pair of current carrier emission means.

3,160,768
MAGNETOHYDRODYNAMIC GENERATOR
Heinz Goeschel and Friedrich Burhorn, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed June 19, 1962, Ser. No. 203,626
Claims priority, application Germany June 20, 1961
7 Claims. (Cl. 310—11)



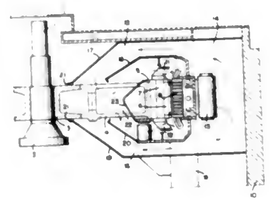
1. A magnetohydrodynamic generator comprising elongated plasma generating means, magnetic means for producing a magnetic field transverse to the length of the plasma-generating means, said plasma-generating means including opposite lateral elongated walls having opposing electrode pairs displaceable toward each other for compensating wear of said electrodes, a photoelectric system extending along the interior of said plasma-generating means and defining a datum position for the electrodes, electrode drive means for each electrode, and a regulating device responsive to the photoelectric system and connected to said respective drive means for periodically advancing the electrodes toward the datum position as said electrodes become worn.

3,160,769
MAGNETOSTRICTIVE TRANSDUCER
Frank R. Abbott, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 26, 1961, Ser. No. 140,960
14 Claims. (Cl. 310—26)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electroacoustical transducer comprising in combination, an inner ring, a plurality of permanent magnets effectively attached to said inner ring for magnetic interaction therewith, said magnets extending substantially the entire axial length of said inner ring and radially therefrom with the magnetic poles thereof alternately reversed, a plurality of cores respectively attached to said magnets and bridging the space between adjacent ones thereof, a plurality of electrical windings wound in reverse order about adjacent ones of said plurality of cores, and a plurality of magnetostrictive arcular shell segments effectively connected to each other and the outer extremities of said cores and said magnets at a common joint thereof for magnetic interaction therebetween.

3,160,770
VENTILATING ARRANGEMENTS FOR AN ALTERNATOR WITH A ROTOR OF LARGE DIAMETER
Paul Asantcheeff, Beauchamp, France, assignor to Le Materiel Electrique S.W., Paris, France, a company of France
Filed July 10, 1962, Ser. No. 208,755
Claims priority, application France, July 13, 1961, 867,969
3 Claims. (Cl. 310—57)



1. Ventilator arrangement for alternators having coupling arms extending between the rotor hub and the rotor rim with a centrifugal ventilator located on each side of and in the peripheral zone of the rotor and having a peripheral air collector, comprising at least one chamber on each side of the rotor, a fixed circular screen in each of said chambers directing air from the peripheral collector towards the rotor hub and so profiled that the air adjacent the rotor hub is led to the ventilators only through the space swept by the arms, the arms supplying additional pressure to the air in advance of the ventilators.

3,160,771
SEMICONDUCTOR RECTIFIER DEVICE FOR ELECTRIC MACHINES

Heinz Martin and Herbert Vogt, Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed May 8, 1963, Ser. No. 278,908
Claims priority, application Germany, May 22, 1962, S 79,550
17 Claims. (Cl. 310—68)

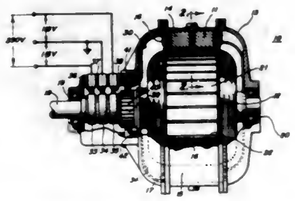


1. A rectifier device for use with an electric machine having a stator housing and stator windings therein, comprising ring-shaped insulating structure, fastening means engaging said structure for coaxially securing it to said housing, a plurality of semiconductor rectifier elements mounted and peripherally distributed in said insulating ring structure, each of said elements having at least two electrodes, bus conductor means disposed in said ring structure and in electric connection with one electrode of said respective elements, said other electrodes being connectable to said stator windings.

3,160,772
PLURAL VOLTAGE ELECTRIC GENERATOR

Vladimir C. Miron, deceased, late of Sioux City, Iowa, by The First National Bank in Sioux City, executor, Sioux City, Iowa, assignor to Wincharger Corporation, a corporation of Minnesota

Filed Feb. 2, 1960, Ser. No. 6,288
2 Claims. (Cl. 310—146)

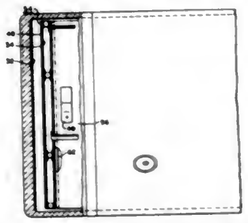


1. A plural voltage electric generator having a predetermined maximum rated power output comprising: a magnetic field structure for developing a magnetic flux field; a multiwinding armature structure mounted for movement relative to said field structure and comprising first and second series connected windings; first, second and third load output terminals connected, respectively, to the free end of said first winding, a free end of said second winding, and the junction between said windings, said first winding being of wire of a predetermined cross-sectional area to have a current handling capacity sufficient to deliver, together with said second winding, said maximum rated power at a first voltage to a load connected between said first and second terminals, and said second winding being of wire of a cross-sectional area larger than said predetermined area to have a current handling capacity sufficient to deliver said maximum rated power at a second voltage lower than said first voltage to a load connected between said second and third terminals.

3,160,773
DIRECT VIEWING STORAGE TUBES HAVING CERAMIC SPACERS BETWEEN COLLECTOR ELECTRODE AND STORAGE GRID

Eric Ziemer, Horseheads, and Frank F. Whittle, Elmira, N.Y., and Augustus Miele, Canoga Park, Calif., assignors, to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 15, 1962, Ser. No. 166,047
5 Claims. (Cl. 313—68)

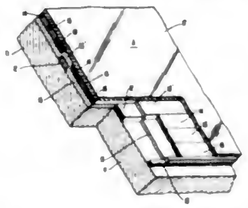


5. A direct viewing electronic storage tube comprising a collector electrode in the form of a mesh and having a supporting metal ring, a storage surface grid, said storage surface grid comprising a mesh and having a supporting metal ring, said collector electrode being spaced from said storage grid by a plurality of ceramic tab support members, each of said ceramic tab members comprising a ceramic block member, a pair of metal tabs brazed to said ceramic block members, one of said pair of tabs welded to the supporting ring for said collector electrode and the other of said pair of tabs welded to the supporting ring of said storage electrode.

3,160,774
POLYCHROME TELEVISION SCREEN AND PROCESS OF MANUFACTURE

Roger Guy, Clamart, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed May 10, 1961, Ser. No. 109,053
Claims priority, application France Apr. 30, 1959
20 Claims. (Cl. 313—92)



18. A color television receiver tube comprising a plurality of opaque parallel stripes disposed at predetermined intervals on the inner surface of the target face of said tube, a transparent conductive layer having a lower surface disposed over said opaque stripes and said intervals, a plurality of parallel predetermined colored stripes, said predetermined colored stripes being disposed on the upper surface of said conductive layer between and parallel to said opaque stripes in composite coloring groups, said conductive layer having portions disposed between said groups, and a luminescent layer having a lower surface adapted to cover said colored stripes and said portions at the upper surface of said conductive layer disposed between said groups.

20. A method of making a color television receiver tube which comprises disposing on the inner surface of the target face of said tube a plurality of parallel opaque stripes in a predetermined fixed relationship covering said opaque stripes and said intervals therebetween with the lower surface of a transparent conductive layer, disposing on the upper surface of said conductive layer parallel predetermined colored stripes, said colored stripes being arranged in composite coloring groups and parallel to and between said opaque stripes, portions of said conductive layer being disposed between said groups and disposing a luminescent layer over said groups and said portions of said conductive layer.

3,160,775
LOW-PRESSURE GASEOUS DISCHARGE LAMP WITH INTERNALLY MOUNTED RECOMBINATION STRUCTURE

Vernon L. Plagge, East Orange, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1962, Ser. No. 181,592
11 Claims. (Cl. 313—109)

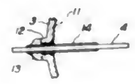


1. In an electric discharge device having an elongated envelope that contains a pair of spaced electrodes located proximate the ends of said envelope, the combination of a substantially rigid rod-like member located in and extending longitudinally of said envelope and the discharge space between said electrodes, and means suspending said member in a predetermined region of the discharge space remote from the envelope walls and remote from said pair of electrodes comprising at least one strut that extends transversely of the discharge space and is joined to and integral with said rod-like member and the inner surface of said envelope.

3,160,776
ELECTRIC INCANDESCENT PROJECTION LAMP

John G. Cardwell, Cleveland Heights, and Max E. Arnold, Euclid, Ohio, assignors to General Electric Company, a corporation of New York

Filed Dec. 1, 1960, Ser. No. 73,064
5 Claims. (Cl. 313—112)

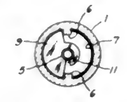


1. An electric incandescent projection lamp comprising a sealed gas-filled glass envelope, a glass base reflector member in said envelope having a reflecting coating on a front surface thereof, said reflector member substantially filling a cross section of said envelope and thereby impeding gas flow in the envelope around said reflector member, a pair of lead-in conductors extending into said envelope and through said reflector member to the front thereof, an incandescent filament connected across said lead-in wires at the front of said reflector member, said filament dissipating sufficient wattage to heat the glass base of said reflector member to a temperature at which it conducts an appreciable current flow, and insulating means interposed between said lead-in wires and said glass base reflector member, said insulating means having a resistance materially higher than that of said glass base and sufficient to prevent current flow through said glass base to said lead-in wires.

3,160,777
FILAMENT AND REFLECTOR SUPPORT FOR AN ELONGATED TUBE

Richard H. Holcomb, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Filed Oct. 22, 1962, Ser. No. 232,014
4 Claims. (Cl. 313—113)

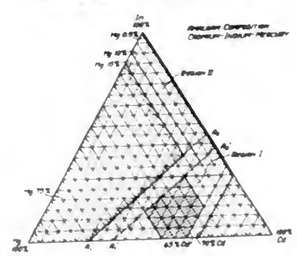


1. An electric incandescent lamp comprising an elongated tubular envelope, a filament extending longitudinally of the interior of said envelope, an elongated metallic reflector within said envelope at one side thereof, metallic filament support means supporting said filament and engageable with the side of said envelope opposite that occupied by said reflector, and means maintaining said reflector and said filaments support means at their respective sides of the envelope and out of electrical contact with each other.

3,160,778
HIGHLY LOADED LOW PRESSURE MERCURY VAPOR DISCHARGE LAMP

Herbert Dziergwa, Berlin-Nikolassee, and Lothar Busch, Berlin-Wilmersdorf, Germany, assignors to Patent-Treuhand - Gesellschaft für elektrische Gluhlampen m.b.H.

Filed Mar. 28, 1962, Ser. No. 183,294
Claims priority, application Germany, Apr. 7, 1961, P 26,925
4 Claims. (Cl. 313—179)



1. A highly loaded low pressure mercury vapor discharge lamp comprising an elongated vitreous envelope containing mercury vapor and an amalgam adherent to the envelope wall and consisting of a mercury-cadmium-indium alloy whereof the composition resides in one of two regions I and II defined as follows wherein the percentages relate the atom specified to total atoms:

Region I—

(1) Percentage (Cd) of cadmium not more than 70%,

(2) Percentage (Hg) of mercury between 0.5% and 75%,

(3) Percentage (Cd) of cadmium for the selected percentage of mercury not less than given by:

$$(Hg)+3(Cd)=150\%$$

and Region II—

(1) Percentage (Hg) of mercury between 0.5% and 15%,

(2) Percentage (Cd) of cadmium for the selected percentage of mercury less than given by:

$$(Hg)+3(Cd)=150\%$$

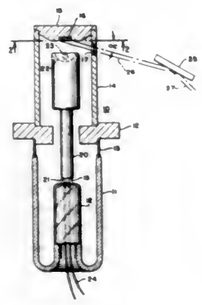
(3) Percentage (In) of indium given by:

$$(Hg)+(Cd)+(In)=100\%$$

3,160,779
SINGLE CRYSTAL X-RAY TUBE TARGET

Michael J. Zunick, Hubertus, Wis., assignor to General Electric Company, a corporation of New York

Filed Apr. 30, 1962, Ser. No. 191,688
1 Claim. (Cl. 313—330)

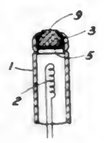


An X-ray tube comprising:
(*a*) a gas-tight envelope,
(*b*) a source of a focused electron beam sealed in the envelope,
(*c*) an anode structure,
(*d*) a target element that consists of a single crystal of metal which is fixed in the anode structure and which has one surface that is impinged by the electron beam to produce X-rays,
(*e*) an X-ray permeable window in the envelope for transmitting a beam of X-rays from the one surface to the outside of the envelope,
(*f*) the said single crystal target element having a body centered cubic atomic lattice structure, and
(*g*) the (110) lattice plane of said crystal being in substantial parallelism with the said one surface.

3,160,780
INDIRECTLY HEATED CATHODE

Patrick P. Coppola, Fayetteville, N.Y., assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continnation of application Ser. No. 527,952, Aug. 12, 1955. This application Jan. 17, 1961, Ser. No. 83,862
6 Claims. (Cl. 313—346)

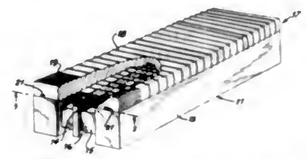


1. A thermionic cathode comprising a metal tube adapted to house a cathode heater, a block of compacted and sintered metallic material held in the said tube, a projection from the face of the said block formed of active material which is a compressed and sintered mass of refractory metal powder mixed with thermionically active material, and a metal shield enclosing the said block with the end of the said projection being spaced from said metal shield.

3,160,781
MICROWAVE TUBE WITH SHIELDED LADDER-TYPE DELAY STRUCTURE

Leonard D. Cohen, Brooklyn, and James A. Noland, Hicksville, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 105,066
7 Claims. (Cl. 315—3.5)

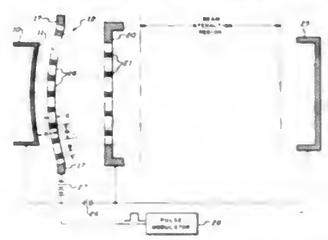


7. In a microwave tube, a conductive frame affixed to the upper surface of a ridged waveguide block, said conductive frame having a centrally located longitudinal slot in one surface thereof and a pair of longitudinal wire positioning slots near the edges of said surface; a plurality of turns of metallic tape wound on said frame, said tape traversing the slots in the surface of said frame, the tape at one end of said frame being closely wound to form a continuous conductive protective sheet having the interstices between the turns of said tapes filled with a conductive material, the turns on the remainder of said frame being spaced from each other.

3,160,782
HIGH-MU NEGATIVE CONTROL GRID VELOCITY MODULATION TUBE

Charles E. Rich, Gainesville, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Aug. 20, 1962, Ser. No. 217,823
4 Claims. (Cl. 315—5.37)

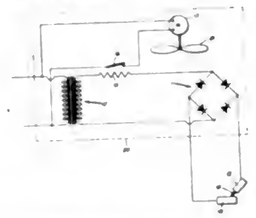


1. An electron beam gun for forming a longitudinally extending homogeneous and axially symmetric electron beam, said gun comprising
an electron emissive cathode for emitting electrons directed along an axial beam,
an apertured anode electrode axially positioned from said cathode for attracting said electrons and forming them into a shaped beam for passage through said anode,
an electrode permeable beam control grid positioned intermediate said cathode and anode in the path of said electron beam,
said control grid being electrically biased in the quiescent state at a potential below the potential of said cathode surface and at all times during operation having a potential thereon so as not to collect electrons from said beam,
said grid being comprised of intersecting grid elements extending in a uniform manner through said beam and the type of control exercised by a portion of said elements on a respective portion of said emitting surface being substantially the same type of control as exercised by other portions of said grid elements on other portions of said emitting surface,
said control grid being positioned sufficiently close to said cathode surface to maintain said beam substantially completely cut-off with said quiescent bias voltage applied thereto and to maintain only the emitting surfaces immediately under the grid elements cut-off with the full operating potential applied thereto,
said grid elements having a depth in the direction along said axis and having a spacing therebetween to accomplish 100% current modulation of said beam with a grid voltage swing of approximately 2% of the potential difference between said anode and said cathode surface.

3,160,783
ARC WELDER WITH A THERMAL CONTROL

Allen C. Mulder, Appleton, Wis., assignor to Miller Electric Mfg. Co., Appleton, Wis.

Filed Mar. 16, 1961, Ser. No. 96,166
6 Claims. (Cl. 315—117)

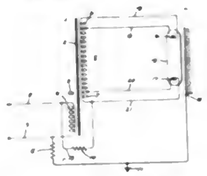


1. In an arc welding circuit for supplying welding current to an arc established between a welding electrode and a workpiece, a resistive element connected in said circuit to carry at least a portion of said current, said resistor generating heat as a function of said portion, a motor connected to drive a fan to generate an air stream directed across said circuit for cooling the same, thermal switch means controlling the application of power to said motor, said switch being thermally coupled to said resistive element.

3,160,784
SAFETY SYSTEMS IN APPARATUS FOR OPERATING ELECTRIC DISCHARGE DEVICES

Charles E. Strecker, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed June 10, 1954, Ser. No. 435,753
13 Claims. (Cl. 315—278)

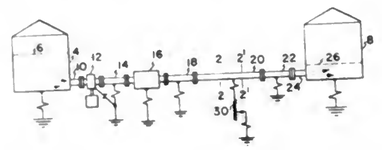


1. Ballast transformer apparatus for starting and operating a fluorescent lamp mounted in a conductive fixture and having two spaced electrodes at the respective ends of said lamp comprising, a high reactance transformer including a magnetic core having a primary winding and a high voltage secondary winding thereon and means providing leakage reactance between said windings, a pair of input lines on said primary winding for connection to a source of alternating current, a pair of output lines on said secondary winding for respective connection to the electrodes of said lamp, a high resistance connected between the high voltage end of said primary winding and the low voltage end of said secondary winding, said windings being wound and connected in voltage adding relation, and means for connecting the low voltage end of said primary winding in circuit with said conductive fixture whereby said transformer apparatus provides autotransformer type starting voltage and isolated transformer type running voltage for said lamp.

3,160,785
PROCESS OF REDUCING ELECTROSTATIC CHARGES IN FLUID FLOW LINES

John C. Munday, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 26, 1961, Ser. No. 85,059
2 Claims. (Cl. 317—2)

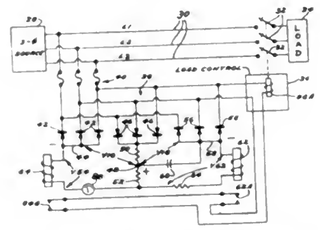


1. The method of handling flammable liquids of the type which form explosive mixtures with air while enclosed in storage vessels, flow lines and the like, and which tend to develop dangerously high electrostatic charges in flowing through zones of moving agitation such as pumps, filters and the like, said method comprising subjecting said statically charged liquids to contact with at least one pointed electrically conductive grounded electrode, said statically charged liquid being confined by electrically non-conductive material while in contact with said electrode.

3,160,786
POLYPHASE VOLTAGE BALANCE DETECTOR

Jack C. Faglie, San Antonio, Tex., assignor, by direct and mesne assignments, to Electric Products Engineering Corp.

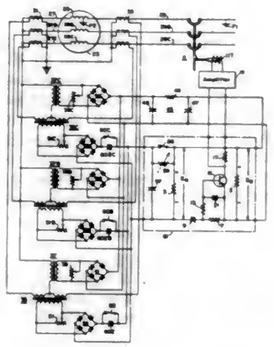
Filed Nov. 23, 1959, Ser. No. 854,756
6 Claims. (Cl. 317—27)



2. A self-checking electroresponsive circuit for detecting a predetermined voltage difference between any two conductors in a polyphase electrical system, comprising first and second voltage responsive means, first, second and third sets of rectifiers with the rectifiers in each set for conducting unidirectional currents in the same direction between one and the other rectifier ends, the one ends of all rectifiers in the first and third sets for being respectively connected to the electrical conductors in a polyphase system to be checked and the rectifier other ends in each set being respectively electrically connected to the first and second responsive means, the second set having its rectifier other ends being respectively connected

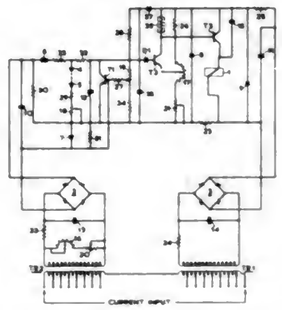
to the other rectifier sets said one ends and the second set one ends being joined, an interacting circuit component having one end connected to said second set joined one ends and with the other end connected to both the first and second responsive means at their respective ends opposite the said first and third rectifier connections, a capacitor connected between the second and third rectifier sets for providing an increase in voltage differential between the first and third rectifier sets with increasing phase voltage unbalance in the polyphase electrical system whereby the corresponding decrease in current through the first responsive means is amplified in degree, and the second responsive means being responsive to a predetermined decrease in the third rectifier set current to indicate circuit failure.

3,160,787
RESTRAINT OPERATION RELAY EMPLOYING ZENER DIODE
William K. Sonnemann, Roselle Park, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1959, Ser. No. 852,390
3 Claims. (Cl. 317—32)



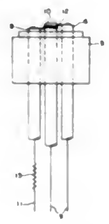
1. In a differential protective arrangement for an alternating current system having terminals through which alternating current normally enters and leaves the system, operating rectifying means having a direct operating output dependent on a function of the difference between alternating current entering and leaving the system through said terminals, restraint rectifying means having a direct restraint output dependent on a function of the sum of current entering and leaving the system through the terminals, non-linear means energized from the output of one of said rectifying means for providing a modified direct output which is non-linear relative to the output of the associated rectifying means, and protective translating means responsive to the difference between the modified direct output of the last-named rectifying means and the output of the other of the two rectifying means, said non-linear means requiring a minimum difference between the operating and restraint outputs to which the translating means responds which is greater for a large value than for a small value of one of said outputs, said non-linear device comprising a diode which is substantially non-conductive for voltages thereacross in a predetermined direction until the voltage reaches a predetermined value, said diode for values above said predetermined value having a non-destructive breakover which materially reduces the resistance of the diode to current flow.

3,160,788
ELECTRICAL PROTECTIVE RELAYS
Eugeniusz Antoszewski and John William Frederick Sherriff, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed May 22, 1961, Ser. No. 111,580
Claims priority, application Great Britain, June 9, 1960, 20,256/60
9 Claims. (Cl. 317—36)



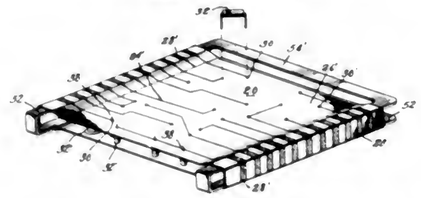
1. Timing means for an electrical protective relay of the kind having an operating time related to the magnitude of a unidirectional overcurrent or overvoltage operating signal, said timing means comprising a capacitor arranged to be charged by said signal, first resistor means, including first non-linear resistor means, connected in parallel with said capacitor and adapted to retard its charging when the operating signal becomes relatively high, and second resistor means, including second non-linear resistor means, connected in series with said capacitor and adapted to retard its charging when the operating signal is relatively low.

3,160,789
INSULATED EXPLODING BRIDGEWIRE HEADER
William C. Morgan, San Jose, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 161,893
4 Claims. (Cl. 317—80)



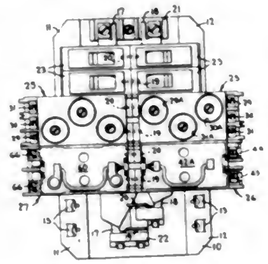
1. An insulated exploding bridgewire header comprising
(A) a pair of lead posts;
(B) an exploding bridgewire positively electrically connected to each of said lead posts;
(C) a third lead post positioned adjacent said pair of lead posts and mounting said bridgewire intermediate said pair of posts; and
(D) a solid dielectric insulation disposed between said bridgewire and said third lead post, whereby the continuity of said bridgewire can be tested between said first and second lead posts and fired between either of said pair of lead posts.

3,160,790
TUBULAR ELECTRIC CIRCUITS AND COMPONENT MOUNTED THEREON
Sheldon Mittler, 81 St. Marks Ave., Freeport, N.Y.
Filed Apr. 6, 1962, Ser. No. 185,758
1 Claim. (Cl. 317—101)



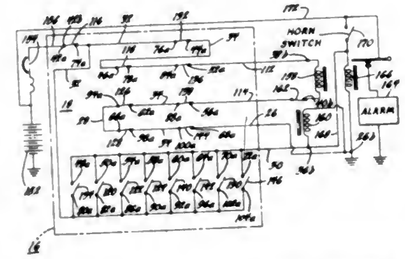
An electric circuit comprising a conductive fabric formed of electrically conductive and electrically insulative threads, said threads being interwoven into a collapsible, porous unit wherein conductive pathways are supported by insulation, said insulative threads being of a temperature resistant fiber, said conductive pathways including terminals, said unit being tubular, the conductive pathways being on the outside thereof, circuit components mounted on the inside of said tubular unit, said pathways being provided with connections for the terminals of said components.

3,160,791
PLUG-IN TYPE PANEL UNIT
Lewis W. Jacobs, West Hartford, and Robert J. Sabatella, Southington, Conn., assignors to General Electric Company, a corporation of New York
Filed May 9, 1962, Ser. No. 193,567
2 Claims. (Cl. 317—119)



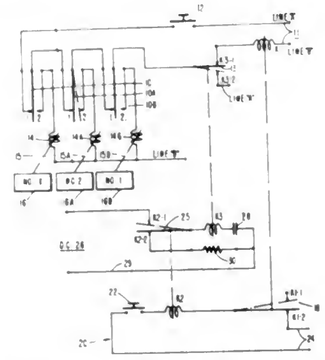
1. A plug-in type electrical control device comprising:
(*a*) a generally rectangular insulating body,
(*b*) at least two electrical sockets carried by said insulating body adjacent one end thereof, each of said electrical sockets comprising a pair of jaw members for use with blade type stationary contacts,
(*c*) at least one pivotal supporting means carried by said insulating body spaced away from a corresponding one of said electrical sockets, whereby to permit inter-engagement of said pivotal retaining means with a portion of an electrical panel and rotation of said control device about said pivotal engagement to move said socket into plug-in type engagement with said blade type contacts,
(*d*) a metallic interfering member carried by said insulating body and including a portion extending closely adjacent the entrance of said contact jaws at the side thereof adjacent said pivotal retaining means, whereby to prevent mounting of said control device on said stationary contact blades unless said pivotal retaining means is at least a predetermined distance away from said relatively stationary contact blades.

3,160,792
ELECTRIC LOCK
Roger C. Brendemuehl, Leslie H. Gerhardt, and Joseph B. Kripke, Milwaukee, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 24, 1960, Ser. No. 10,721
10 Claims. (Cl. 317—134)



7. An electric locking arrangement including, actuating means movable between lock open position when energized and lock closed position when deenergized, a source of power for energizing said lock actuating means, at least one switch connected in series between one side of said power source and one side of said lock actuating means, at least one switch connected in series between the other side of said power source and the other side of said lock actuating means, coded switch operating key means for closing said series switches to energize said lock actuating means, and thwart means connected in circuit with said lock actuating means, said thwart means, when actuated, precluding energization of said lock actuating means irrespective of the closure of said series switches.

3,160,793
ELECTRICAL INTERLOCK CIRCUIT
Walter E. Colburn and Richard E. Wiley, Havertown, Pa., assignors to Brewer Pharmacal Engineering Corporation, Upper Darby, Pa., a corporation of Pennsylvania
Filed May 24, 1962, Ser. No. 197,488
7 Claims. (Cl. 317—137)



1. Electrical circuit means for selectively effecting operation of only one of a plurality of devices, comprising:
(A) first and second component circuits each connectible to a source of voltage;
(B) said second circuit having a plurality of electrically responsive means, each for actuating only one of said devices when energized;

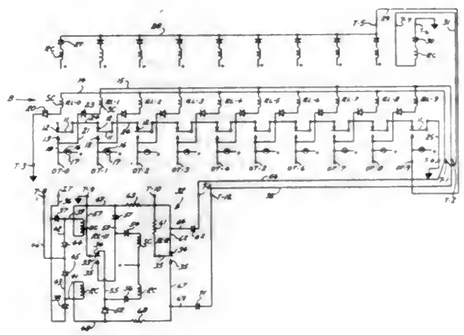
(C) said first and second circuits having series connected first and second switch means in common and in normally closed condition in said first circuit and normally open condition in said second circuit;

(D) said first switch means comprising a plurality of switches each operable to connect only one of said electrically responsive means in said second circuit;

(E) electrically operative means for actuating said second switch means from its normally closed condition in said first circuit to close its normally open condition in said second circuit thus cooperating with said first switch means to connect said second circuit to its voltage source to energize the selected one of said electrically responsive means thus to effect operation of the device selected by said first switch means;

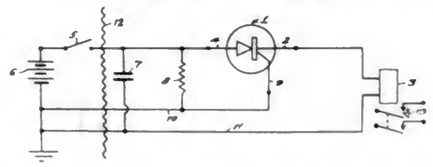
(F) and means in said first circuit rendering said electrically operative means inoperative while said first and second switch means are connected in series circuit in said first circuit but to render it operative upon the closure of one of said plurality of switches in said second circuit.

3,160,794
SEQUENCE COUNTER
Joseph Gill, Pittsburgh, Pa., assignor, by mesne assignments, to Hagan Controls Corporation, a corporation of Delaware
Filed Jan. 20, 1960, Ser. No. 3,622
5 Claims. (Cl. 317—139)



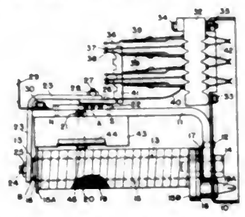
1. A sequential counting unit comprising a relay bank having a plurality of polarized relays adapted to be successively actuated for each counting cycle, each relay having a movable contact arm and a pair of fixed contacts, said contact arm normally engaging the first of said fixed contacts and being spaced from the second of said fixed contacts, each of said relays having a setting coil controlling said contact arm, means connecting one end of alternate setting coils of said relay bank to define two groups of connected coils, means connecting the contact arm of a preceding relay in said bank to the first fixed contact of the next succeeding relay, means to connect the contact arm of the last relay in said bank to one side of a source of potential, means to connect the other end of the setting coil of the first relay in said bank to said one side of a source of potential, an output terminal connected to the second fixed contact of each of said relays, means connecting the second fixed contact of a preceding relay in said bank to the other end of the setting coil of the next succeeding relay, whereby when the other side of said source of potential is alternately applied to said two groups of connected coils the relays in said bank will successively be actuated, and means to reset said relays.

3,160,795
MISSILE LAUNCH DETECTION CIRCUIT
Kenneth E. Aune, Burnsville, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Dec. 27, 1961, Ser. No. 164,429
1 Claim. (Cl. 317—148.5)



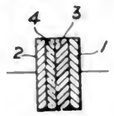
An electronic device including safing means for signaling missile launch detection and actuation circuits as described, comprising, in combination, a silicon-controlled rectifier having anode, cathode and gate elements, a potential source having a first and second terminal, a switch connected between said first terminal and said anode, a relay, a first ground circuit including said relay coupling said cathode element with said second terminal, a capacitor connected from said anode to said first ground circuit, said potential source providing means for charging said capacitor, a second ground circuit coupling said gate element to said second terminal, and a resistor connecting said anode element to said second ground circuit, an umbilical cord, the junction formed by said anode, capacitor and resistor releasably connected to said first terminal by the umbilical cord, the first and second ground circuits releasably connected to said second terminal by the umbilical cord whereby said gate is maintained at ground potential to prevent gating of the silicon-controlled rectifier until disconnected from said potential source by the umbilical cord, said switch opened upon a hold command after said capacitor is charged whereby said capacitor discharges through said resistor and said second ground circuit thereby preventing current flow through said gate element.

3,160,796
MAGNETIC STICK TYPE RELAY HAVING SATURABLE CORE MEMBER
Marcian A. Scheg, Rochester, N.Y., assignor to General Signal Corporation
Filed Mar. 30, 1960, Ser. No. 18,760
14 Claims. (Cl. 317—171)



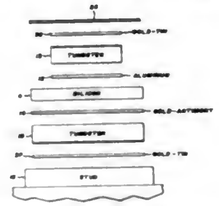
1. In an electromagnetic relay, a core structure and an armature pivotally mounted to have its opposite ends cooperate with said core structure, said core structure providing distinct magnetic flux paths for each of the two positions of said armature, a winding on said core structure energizable selectively to produce flux of each of two polarities in said core structure, and a permanent magnet mounted in shunting relationship with a portion of said core structure and causing the saturation of that portion of said core structure to cause said flux from said winding to pass selectively through said distinct flux paths to said armature dependent upon the polarity of such flux.

3,160,797
ELECTRIC CIRCUIT ELEMENT COMPRISING AN ASYMMETRIC COUPLE OF IONIC CONDUCTORS
Masakuni Kanai, 1050 Wadahoncho, Suginami-ku, Tokyo, Japan
Filed Dec. 10, 1959, Ser. No. 858,704
10 Claims. (Cl. 317—231)



1. An element of an electric circuit comprising two electrodes, a layer of porous material including a fluorine compound, and a layer of glue material including an electrolyte, each of said layers being situated side by side to define a boundary therebetween, both said layers being disposed between said electrodes, the boundary between the glue material and porous material occasioning greater ion mobility from one said electrode toward the other of the electrodes, and electrolyte having a greater ion concentration that said porous material and fluorine compound.

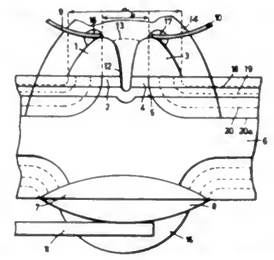
3,160,798
SEMICONDUCTOR DEVICES INCLUDING MEANS FOR SECURING THE ELEMENTS
William F. Lootens, Skaneateles, and Joseph K. Flowers, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 7, 1959, Ser. No. 857,593
6 Claims. (Cl. 317—234)



1. In combination in a semiconductor device, a contact member, a body of semiconductor material, solder means securing said semiconductor material to said contact member, a mounting member, said contact member fused to said mounting member with a solder of substantially eighty percent gold and twenty percent tin.

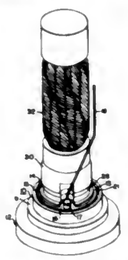
3,160,799
HIGH-FREQUENCY TRANSISTOR
Julian Robert Anthony Beale, Reigate, and Andrew Francis Beer, Downside, Epsom, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 8, 1960, Ser. No. 74,544
Claims priority, application Great Britain Dec. 14, 1959
4 Claims. (Cl. 317—235)

1. A high-frequency transistor comprising a semiconductive body having a collector region of one conductivity type and a thin diffused base region of the opposite conductivity type, and separate emitter and base electrodes alloyed adjacent to one another on the same surface of the body forming emitter and base recrystallized regions, respectively, contacting the base region, said base recrystallized region being of the same type conductivity as that of the base region, said emitter recrystallized region being of the opposite type conductivity to that of the base region, the semiconductive body portions underneath the emitter electrode and on the side thereof remote from the base electrode being cut away such that the cross-sectional area in a plane parallel to the body of at least the emitter recrystallized region is at most one-quarter the corresponding cross-sectional area of the overlying emitter electrode and the latter has at least three-quarters of



its area on the side remote from the other electrode extending over and free of direct contact with the semiconductive body, said emitter and base electrodes being spaced apart a distance less than 0.010 inch, the size of said emitter and base electrodes in the direction of their separation being no greater than 0.040 inch.

3,160,800
HIGH POWER SEMICONDUCTOR SWITCH
Lee W. Smart, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1961, Ser. No. 148,083
5 Claims. (Cl. 317—235)



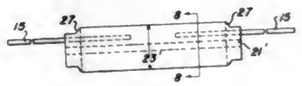
1. A semiconductor switch comprising: four successive regions of alternate semiconductivity type including a first outer region adjacent a second region with a rectifying junction therebetween; said first outer region being disposed on a surface of said second region and having an indentation in the periphery thereof leaving uncovered a peripheral portion of said surface of said second region; a first ohmic contact on said surface within said indentation and a second ohmic contact substantially over the entire surface of said first outer region.

3,160,801
WOUND CAPACITOR AND METHOD OF MAKING
John W. Haas, Gordon F. Connelly, and Harold R. Van Voorhis, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 2, 1958, Ser. No. 706,846
16 Claims. (Cl. 317—258)

2. A capacitor formed of wound metal foil electrodes and planar molecularly oriented linear thermoplastic polyester films interleaved therewith, said films having the recurrent formula:

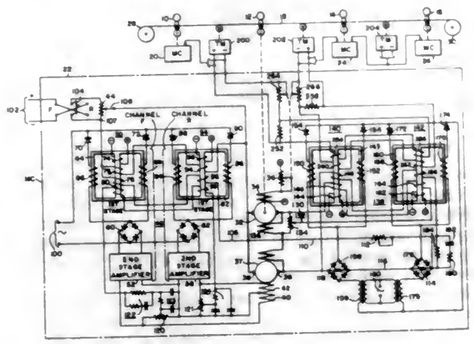
$$-\left(O-\overset{O}{\overset{\|}{C}}-R-\overset{O}{\overset{\|}{C}}-O-R'\right)-$$

where R stands for a bivalent radical containing the benzene nucleus, and R' stands for a bivalent aliphatic radical containing from 2 to 8 carbon atoms, a first lead terminal extending into said capacitor in electrical contact with one of said electrodes, a second lead terminal extending into said capacitor in electrical contact with another of said electrodes and spaced by at least one of said films from said one electrode, a fused thermoplastic adhesive which fuses at less than 227° C. on said lead



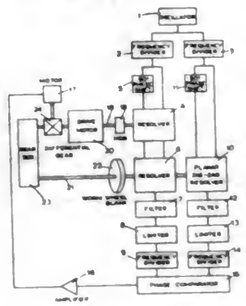
terminals bonding said terminals within said capacitor to said electrodes and films respectively adjacent said terminals and in electrical contact with such electrodes, said capacitor having been subjected to a heat treatment at a temperature of at least 227° C. to improve its electrical and physical characteristics, said films being shrunk about said electrodes and at the opposite ends of said capacitor being fused as a result of said heat treatment and said films within said capacitor being less than 50% disoriented as a result of said heat treatment.

3,160,802
GENERATOR-FED MOTOR CONTROL FOR PLURAL STAND TENSIONING SYSTEM WITH TENSIONLESS IR COMPENSATION
Donald E. Abell, Lancaster, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1961, Ser. No. 113,938
13 Claims. (Cl. 318—6)



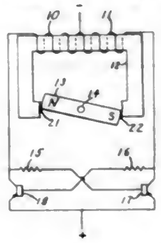
1. In a control system for an electric motor that drives apparatus for working on strip material which subjects the apparatus to a plurality of loads including tension on the material, and wherein the system includes a source for supplying electrical power to said motor, said source and motor forming a motor circuit, regulating means responsive to variations in a motor condition from a predetermined value for controlling the power supplied by said source to said motor, and means for compensating said regulating means in accordance with IR drop in the motor circuit, the combination therewith of modifying means responsive to tension load for opposing the effect on said regulating means of that component of the IR drop due to said tension load.

3,160,803
ELECTRICAL CIRCUITS FOR SENSING THE RELATIVE POSITION OF TWO PARTS
Eric Lawrence Casling White, Iver, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed Aug. 9, 1962, Ser. No. 215,974
Claims priority, application Great Britain, Aug. 15, 1961, 29,367/61
13 Claims. (Cl. 318—28)



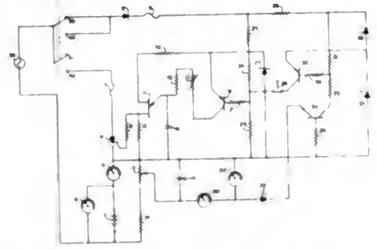
1. An electrical circuit comprising a first source of reference oscillations of a first frequency, a second source of reference oscillations of a second frequency different from said first frequency, a first channel including a first resolver for phase modulating oscillations from said first source in response to the setting of said first resolver, a second channel including a second resolver for phase modulating oscillation from said second source in response to the setting of said second resolver, frequency dividing means for at least one of said phase modulated oscillations such that the frequencies of the outputs of said channels are equal, and phase sensitive means for comparing the phases of the outputs of said frequency dividers, whereby an output signal of said phase sensitive means represents the relative settings of said first and second resolvers on different scales.

3,160,804
DIRECT CURRENT MOTORS
George Franklin Quittner, 1780 Cumberland Road, Cleveland Heights, Ohio
Filed May 16, 1960, Ser. No. 29,482
3 Claims. (Cl. 318—138)



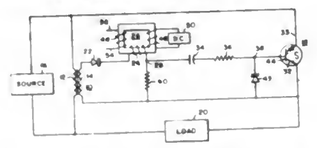
1. In combination, a motor having:
a stator provided with salient poles and with at least first and second pole energizing windings,
a rotor rotationally cooperable with said stator, said rotor being magnetically polarized whereby to react with the stator poles while at the same time permitting said energizing windings to sense position of said rotor,
a D.C. source of power,
first and second electronic amplifiers each having a load circuit and a control circuit,
first circuit connections leading through the first stator pole energizing winding and through the load circuit of the first amplifier and thus to the power source,
second circuit connections leading through the second stator pole energizing winding and the load circuit of the second amplifier and thus to the power source,
said first and second circuit connections thus being capable of both sensing the position of the rotor with respect to the associate stator pole energizing winding and sensing the output of the associate amplifier,
third circuit connections from the control circuit of the first amplifier to a portion of the first circuit connections, and
fourth circuit connections from the control circuit of the second amplifier to a portion of the first circuit connections,
whereby the flux generated in the stator may be sequentially reversed while the load circuits and control circuits are cross connected in bi-stable multivibrator fashion causing the flux reversals to be governed by signals generated in the stator windings by the rotation of the polarized rotor.

3,160,805
BATTERY CHARGER
Wilmer M. Lawson, Jr., College Park, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 28, 1960, Ser. No. 79,083
5 Claims. (Cl. 320—39)
(Granted under Title 35, U.S. Code (1952), sec. 266)



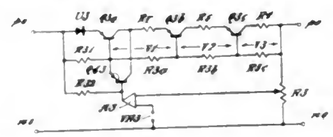
1. A battery charger comprising;
(a) a pair of input terminals for connection to an alternating current source;
(b) a pair of output charging terminals for connection to a battery;
(c) a silicon controlled rectifier serially connected between said input and output terminals;
(d) a first resistance voltage divider connected serially through a half-wave rectifier to said input terminals;
(e) a first unijunction transistor having its emitter and one base electrode connected at opposite ends of said first voltage divider and its remaining base electrode connected to the control electrode of said silicon controlled rectifier;
(f) a resistance-capacitor charging circuit connected across said first divider and to the emitter of said unijunction transistor to delay each firing of said silicon controlled rectifier, the resistance of said charging circuit including a second series transistor having first and second electrodes in the charging path and a third electrode connected to an intermediate tap in said first voltage divider;
(g) and a transistorized overvoltage trip circuit means with an input coupled to said output charging terminals and an output coupled to said intermediate tap on said first voltage divider to provide a cut-off potential to said series transistor when the voltage of said charging terminals exceeds a preselected safe value.

3,160,806
RECTIFIER CIRCUIT
Deryl G. McDaniel, Fort Shawnee, and Kent M. Blossom, Ohio City, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 19, 1961, Ser. No. 111,314
8 Claims. (Cl. 321—47)



1. A control circuit for controlling the conductivity of a rectifier of the type which is triggered into conduction when a pulse of proper polarity with respect to the polarity of the potential applied to its controlled electrodes is applied to the control electrode and remains conductive thereafter until the polarity of the potential applied to its controlled electrodes is reversed, said circuit comprising a source of alternating current potential synchronized in frequency with the potential applied to the controlled electrodes of the rectifier, a capacitor having first and second terminals, means for developing a pulse of the proper polarity to render said rectifier conductive at a predetermined point in each alternate half cycle of the potential developed by said source, means for coupling said pulses through said capacitor to the control electrode of said rectifier, and means for discharging said capacitor including impedance means connected to the first terminal of said capacitor and a semiconductor diode connected to the second terminal of said capacitor, the discharge current of said capacitor flowing through said semiconductor diode and biasing said rectifier for non-conduction each time said rectifier becomes non-conductive.

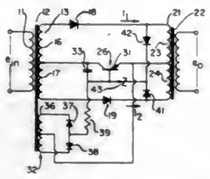
3,160,807
SERIES CASCADES OF TRANSISTORS
Robert H. Packard, Lexington, Mass., assignor to Technical Operations, Inc., a corporation of Delaware
Filed Sept. 22, 1958, Ser. No. 762,599
24 Claims. (Cl. 323—22)



11. A device of the series cascade transistor type for varying the voltage drop between two points of a line through variation of the base to collector or emitter voltage of the transistors dependent on conductivity variation of driver means connected to control a cascade transistor comprising: a plurality of transistor means each having base, collector and emitter electrodes and arranged in an emitter-to-collector connected series between said two points, with the emitter of each transistor means connected to the collector of an adjacent transistor means in a given direction from one of said points to the other; first plurality of limiting resistance means connected one between the respective base electrodes of each pair of adjacent ones of said transistor means, and a second plurality of equalizing resistance means connected one in the emitter-to-collector connection between each pair of adjacent ones of said transistor means, said resistance means of said second plurality increasing respectively in magnitude of resistance in the direction of current flow between said two points; whereby the voltage drop across

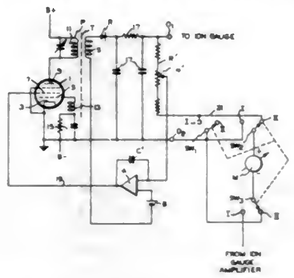
the entire cascade can be divided such that a predetermined voltage drop across each individual transistor means is kept below a predetermined safe value.

3,160,808
ALTERNATING CURRENT VOLTAGE REGULATOR
Fred W. Kruse, Jr., Palo Alto, Calif., assignor to Alfred Electronics, Palo Alto, Calif., a corporation of California
Filed June 2, 1960, Ser. No. 33,564
15 Claims. (Cl. 323—22)



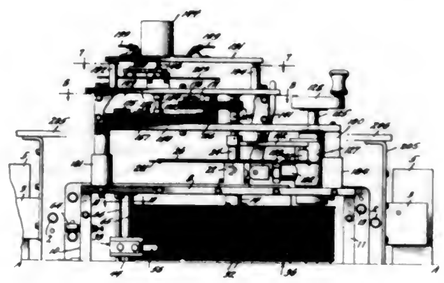
1. An alternating current peak voltage regulator for supplying peak regulated alternating current voltage from an alternating current source comprising at least one rectifier, a load and an active element all serially connected, said active element having a relatively low impedance at the frequency of the alternating current source and a continuously variable direct current impedance, means for deriving a regulating signal which is dependent upon the alternating current output voltage, and means for applying said signal to the active element to thereby continuously vary its impedance in accordance therewith to regulate the alternating current output voltage.

3,160,809
CURRENT-SOURCE TRANSDUCER HIGH-VOLTAGE LOW-CURRENT POWER SUPPLY SYSTEM
George Frederick Vanderschmidt, Boston, Mass., assignor to Lion Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 6, 1963, Ser. No. 300,386
10 Claims. (Cl. 324—33)



8. Apparatus of the character described comprising a high-voltage, low-current power supply having a voltage-divider output network, a regulating feedback circuit including high gain operational amplifier means connected between a point of the voltage-divider network and another point of the power supply, the network serving also as the β-network of the feedback circuit, current-measuring meter means, and multiple-position switching means disposed to connect the meter means between the voltage divider network and the operational amplifier means in one position, and to remove the meter means from the feedback circuit in another position while preventing the interruption of current in the feedback circuit.

3,160,810
POTENTIOMETER LINEARITY TESTING MACHINE WITH MEANS TO PREVENT GROOVING OF WIPER
Americo A. Vercesi, Scarsdale, and Sigmund Rappaport, Port Washington, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Wilmington, Del., a corporation of Delaware
Filed June 20, 1960, Ser. No. 37,421
15 Claims. (Cl. 324—63)

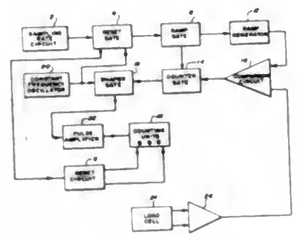


1. In a potentiometer testing mechanism of the character described comprising a master potentiometer having a rotatable drum on which a plurality of turns of resistance wire are helically wound and a voltage output wiper which is adapted to be maintained in continuous contact with said resistance wire as said drum is rotated; gearing means connected between said wiper and said drum for causing said wiper to move transversely of said resistance wire from one end of the potentiometer to the other, said transverse movement being greater than the axial length of the helically wound potentiometer from its lowermost turn to its uppermost turn whereby said wiper has at its point of contact a slight wiping movement transversely relative to said wire; a holder for a test potentiometer having a helically wound resistance wire, a voltage output wiper adapted to contact said test potentiometer resistance wire, and a rotatably mounted shaft which is adapted to move said test potentiometer wiper transversely of said test potentiometer wire as said shaft is rotated; means by which said master potentiometer drum and a test potentiometer shaft are rotated at a predetermined ratio with respect to each other; means by which a predetermined input voltage is applied to said master potentiometer and to a test potentiometer.

3,160,811
HIGH SPEED WEIGHING SYSTEM USING AN AUTOMATICALLY BALANCED ELECTRICAL CIRCUIT TO PROVIDE A DIGITAL INDICATION
Roberto Ortiz Muniz, Mayaguez, Puerto Rico, and Laurence R. Culver, Melbourne, Fla., assignors, by mesne assignments, to Fairbanks Morse Inc, New York, N.Y., a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 19,104
3 Claims. (Cl. 324—99)

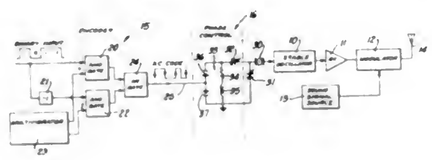
1. An electronic high speed weighing system comprising a first voltage source for establishing a voltage functionally related to the weight of an article to be weighed, voltage generating means for generating a linearly increasing reference voltage, means for providing constant frequency signals, a counting and indicating system including counting means connected to receive said constant frequency signals, counter gating means connected to control the flow of said constant frequency signals to said counting means, sampling means to provide a sampling pulse to initiate the operation of said weighing system, reset gate means having plural output terminals

connected to said sampling means, said reset gate means operating upon the reception of a sampling pulse from said sampling means to provide a first output pulse at one of said plural output terminals, and subsequent thereto, a second output pulse at another of said output terminals, a reset unit connected to receive the first output pulse from said reset gate means, said reset unit operating upon the reception of said first output pulse to provide a signal to zero said counting means, ramp gate means connected to receive said second output pulse from said reset gate means subsequent to the resetting of said counter means, said ramp gate means operating to simul-



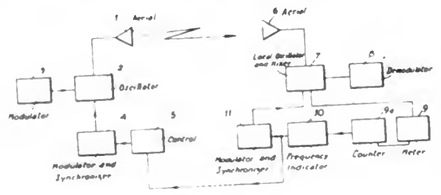
taneously provide a trigger pulse to said voltage generating means and said counter gate means, said trigger pulse simultaneously causing said counter gate means to open and permit the passage of constant frequency signals to said counter means and said voltage generating means to generate a linearly increasing reference voltage, and comparison means connected to receive and compare said linearly increasing reference voltage and said voltage from said first voltage source, said comparison means directing a signal to close said counter gate means when said reference voltage reaches a level equal to that of the voltage from said first voltage source.

3,160,812
COMPOSITE TRANSMISSION SYSTEM UTILIZING PHASE SHIFT AND AMPLITUDE MODULATION
John R. Scantlin, Los Angeles, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Nov. 9, 1961, Ser. No. 151,261
14 Claims. (Cl. 325—30)



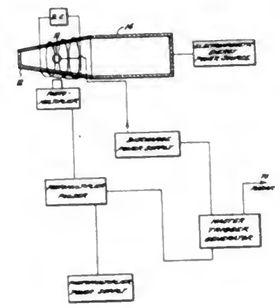
8. In a method of transmitting information in binary form and audio frequency information on a single carrier, the steps of:
generating a single radio frequency carrier;
varying the phase of the carrier within the range of plus and minus 180° as a function of the binary information, with a positive phase shift corresponding to one binary state and a negative phase shift corresponding to the other binary state;
amplitude modulating the carrier as a function of the audio frequency information;
and radiating the shifted modulated carrier.

3,160,813
TROPOSPHERIC RADIO COMMUNICATION SYSTEM
Victor Biggi and Jean Claude Simon, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 17, 1960, Ser. No. 36,952
Claims priority, application France, July 2, 1959, 799,131
6 Claims. (Cl. 325—58)



1. A tropospheric radio link comprising: a transmitter for transmitting a signal having a carrier frequency; means for cyclically tuning said frequency to sweep a predetermined frequency band during first periodically repeated time intervals and to be clamped to one of the frequency values comprised in said frequency band during second periodically repeated time intervals said first and second intervals having respectively fixed first and second durations t and T separating two consecutive first time intervals; a receiver for receiving said signal; means for measuring the amplitude of said received signal during said first intervals and for determining the frequency corresponding to the peak amplitude of said signal; means for making said one frequency equal to said last mentioned frequency; and means for constantly tuning said receiver to said transmitter.

3,160,814
ELECTROMAGNETIC ENERGY DETECTOR
Sheldon B. Herskovitz, R.F.D. 1, Acton, Mass.
Filed Apr. 4, 1961, Ser. No. 100,765
15 Claims. (Cl. 325—67)
(Granted under Title 35, U.S. Code (1952), sec. 266)

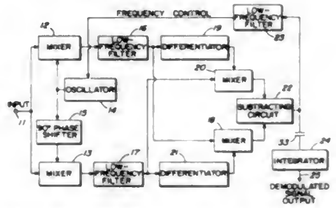


1. A method for detecting electromagnetic energy comprising the steps of ionizing a gas with a pulse of energy to render it luminescent, allowing the luminescence to decay, and adding electromagnetic energy to said gas during the decay of the luminescence of said gas, in order to compare the decay rate of said gas when no added energy is applied to the decay rate when added energy is applied.

3,160,815
COHERENT FREQUENCY DIFFERENCE DETECTOR HAVING DIRECT-CURRENT OUTPUT INDEPENDENT OF MODULATION

John L. Ford, Richardson, and Walter F. Davison, Dallas, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Sept. 14, 1962, Ser. No. 223,684
4 Claims. (Cl. 325—346)

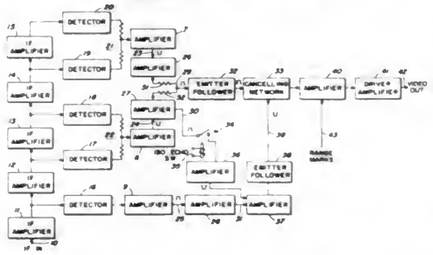


1. A coherent frequency difference detector circuit comprising, a signal input circuit for receiving frequency-modulated signal, a source of reference frequency for developing first and second reference signals differing in phase by 90 degrees, means for mixing said input signal with said first and with said second reference signals separately to develop first and second beat frequencies respectively, first and second differentiating means for differentiating said first and second beat frequencies respectively, means for mixing said first beat frequency and said differentiated second beat frequency to develop a third beat frequency, means for mixing said second beat frequency and said differentiated first beat frequency to develop a fourth beat frequency, and subtracting means having an output circuit for subtracting said third and fourth beat frequencies and for filtering the difference thereof to produce in said output circuit a direct-current output control votlage having an amplitude dependent upon the frequencies of the carrier of the signal applied to said input relative to the frequency of said source but independent of the frequency modulation of said carrier.

3,160,816
ISO-ECHO INTERFERENCE BLANKING WITH OUTPUT A LOGARITHMIC FUNCTION OF RADIO FREQUENCY ENERGY INPUT

Paul M. Cunningham, Richardson, and Theodore P. Kaufman, Plano, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Sept. 14, 1961, Ser. No. 138,132
12 Claims. (Cl. 325—475)

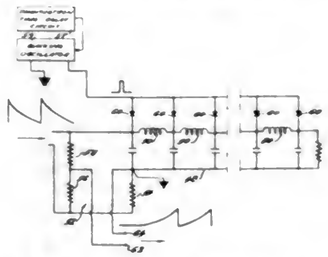


5. In a video signal development system of the type comprising a plurality of cascaded radio signal amplifiers including a first amplifier to which an input signal is connected and a like plurality of detectors each connected to the output from one of said amplifiers and including a first detector receiving the output of said first amplifier; means for effecting cancellations of those portions of said input signal as applied to said first amplifying means, which portions exceed a predetermined magnitude; comprising means for adding the outputs of each of said detectors excluding said first detector in parallel whereby a combined video signal is developed of a first relative polarity with respect to a fixed reference, threshold sensitive amplifying means receiving the output of said first detector and developing therefrom in response to an input thereto exceeding a first predetermined threshold a second video signal of opposite relative polarity with respect to said fixed reference, signal combining means receiving said combined and second video signals, said signal combining means being adapted to develop from the inputs thereto an output signal corresponding to said combined video signal with those portions thereof corresponding to an output from said first detector with amplitudes exceeding said predetermined threshold being substantially cancelled.

3,160,817
SEGMENTAL TIME REVERSAL DEVICE

Hugo L. Libby and James T. Russell, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 9, 1962, Ser. No. 208,653
2 Claims. (Cl. 328—56)



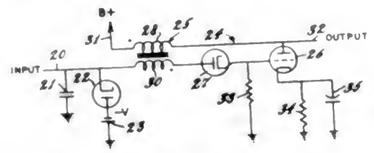
1. A device for segmentally reversing in time a periodic signal comprising an electric transmission line having a plurality of capacitor-inductor sections, a balanced electrical bridge having four impedance arms, said transmission line forming one of the impedance arms of said bridge, the input to said bridge being across said transmission line and an adjacent arm of said bridge, the output of said bridge being across said transmission line and the other adjacent arm of said bridge, means for applying said periodic signal to the input of said bridge to generate a periodic traveling wave on said transmission line, and means responsive to said periodic traveling wave for charging the capacitors of said sections of said transmission line whereby a traveling wave is propagated on said transmission line in reverse to said periodic traveling wave, said reverse traveling wave appearing at the output of said bridge and being in time reversal with respect to said applied signal.

3,160,818
INTEGRATOR UTILIZING A BLOCKING OSCILLATOR CIRCUIT

James L. Engle, New Lisbon, N.J., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 22, 1961, Ser. No. 161,477
4 Claims. (Cl. 328—66)

1. In an integrator adapted to discharge a pulse each time that a given amount of input current has been integrated, said integrator including, input means adapted to receive a variable input current, an integrating capacitor connected across said input means, a blocking oscillator triode having a cathode, an anode and a control electrode, a blocking oscillator transformer having a primary and a secondary, said primary being connected at one side to said blocking oscillator triode anode, and said secondary being connected at one side to said input means and at the other side to said control electrode of the blocking oscillator triode, a source of positive voltage connected to the other side of said primary of the blocking oscillator transformer, output means connected to said anode of the blocking oscillator triode, a first diode having an anode and a cathode connected in series with said secondary of the blocking oscillator transformer and said control electrode of said blocking oscillator triode, said cathode of the first diode being electrically on the side of said first diode next to said control electrode of the

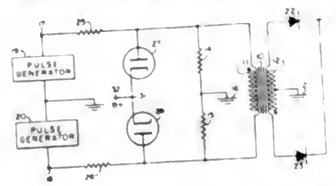


blocking oscillator triode, a clamping diode connected in parallel with said integrating capacitor for the voltage of said integrating capacitor to be brought to a substantially fixed value lower than the voltage of said cathode of the first diode prior to each of the times that a given amount of input current is to be integrated by said capacitor, and means connected with said cathode of said first diode for maintaining said cathode of said first diode at a substantially fixed potential until the end of each time said integrating capacitor integrates a given amount of input current and becomes conductive through said first diode to said control electrode of the blocking oscillator triode.

3,160,819
"EXCLUSIVE OR" LOGICAL CIRCUIT

Cyrus J. Creveling, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Original application Oct. 29, 1956, Ser. No. 619,090, now Patent No. 3,106,683, dated Oct. 8, 1963. Divided and this application Apr. 25, 1962, Ser. No. 190,184
1 Claim. (Cl. 328—93)
(Granted under Title 35, U.S. Code (1952), sec. 266)

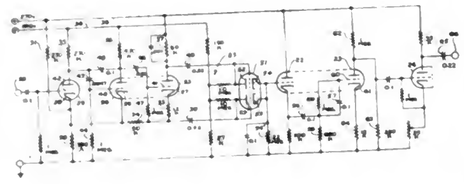


An "Exclusive OR" logic circuit comprising a first input terminal for receiving a first input pulse,
a second input terminal for receiving a second input pulse,
a transformer having a primary and a secondary winding,
a first resistor connected between one end of said transformer primary winding and said first input terminal,
a second resistor connected between the other end of said transformer primary and said second input terminal,
a pair of diodes each having an anode and a cathode, said cathodes being connected together,
a positive voltage bias connected to the juncture of said cathodes,
the anode of one of said diodes being connected between said first resistor and said one end of said transformer primary winding,
the anode of the other of said diodes being connected between said second resistor and the other end of said transformer primary winding,
said connections to the ends of said primary winding constituting the only electrical connections to said primary winding,
a third resistor connected between the anode of one of said diodes and a point of reference potential,
a fourth resistor connected between the anode of the other of said diodes and said point of reference potential,
means connected to said secondary winding for developing an output pulse of predetermined polarity irrespective of the polarity of the voltage induced in said secondary winding by said first or second input pulses,
whereby said output pulse is produced only when an input pulse is applied to a single one of either of said input terminals.

3,160,820
HIGH STABILITY PULSE SIGNAL AMPLIFIER WITH INVERSE FEEDBACK

Maurice D. De Mong, Torrance, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 22, 1957, Ser. No. 647,928
2 Claims. (Cl. 328—120)



2. A signal amplifier for pairs of input pulses of opposite polarity and of relatively low repetition rate comprising a three-stage amplifier the last stage of which constitutes a phase-splitter, adapted to provide a pair of balanced output signals in phase opposition to one another in response to a pulse applied to the input of said amplifier, said amplifier having relatively high overall inverse feedback and including first and second stages including triodes having anodes furnishing output terminals for said stages, a capacitor directly interconnecting the anodes of the first and second stages whereby to attenuate the high frequency output of said amplifier, a full-wave detector responsive to the balanced output signals from said phase splitter to provide unidirectional pulses in response to said input pulses, and a variable threshold clipper amplifier including biassing means responsive to the amplitude of said unidirectional pulses applied thereto to vary the clipping level thereof in accordance with such amplitude whereby to effectively compress the dynamic range of the resulting amplified pulses appearing at the output of said clipper amplifier.

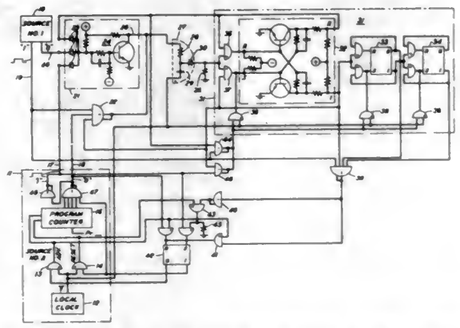
3,160,821
SYNCHRONIZING SYSTEM FOR PULSE SOURCES

Cecil W. Farrow, Monmouth Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 25, 1961, Ser. No. 141,247
9 Claims. (Cl. 328—155)

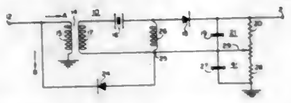
8. A synchronizing circuit for two pulse sources, said circuit comprising AND logic connected to said sources for producing a pulse in response to each mismatch in

the occurrence times of pulses from said sources, a counter connected to be operated by pulses from said logic, and



means responsive to an output condition of said counter adjusting the operating time of one of said sources to reduce said mismatch.

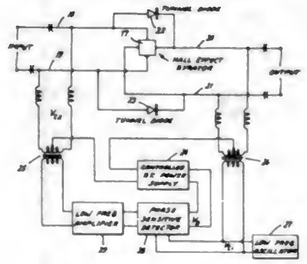
3,160,822
QUARTZ CRYSTAL DISCRIMINATING CIRCUIT
Edgar L. Dix, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 31, 1960, Ser. No. 66,364
5 Claims. (Cl. 329—117)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a narrow bandwidth frequency discriminator circuit comprising an RF input signal source, first means for frequency monitoring the RF signal and for converting the RF signal to a D.C. voltage proportional to the RF amplitude including a quartz crystal which exhibits both series and parallel resonant circuit characteristics, an isolating transformer for coupling said first means to said RF input signal source, second means connected to said RF input signal source and bypassing said isolation transformer for providing another signal whose D.C. voltage is substantially independent of the frequency of the input signal but is proportional to the level of the input signal, means for adding algebraically the D.C. bypass voltage of said second means to the frequency monitored D.C. voltage of said first means whereby said D.C. bypass voltage provides a self-adjustable balancing voltage for said circuit, and output means connected to said adding means.

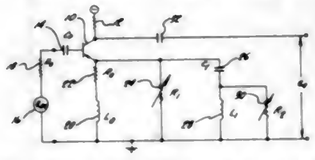
3,160,823
STABILIZED UNILATERAL NEGATIVE-RESISTANCE AMPLIFIER
Bent Christensen, Mountain View, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,431
7 Claims. (Cl. 330—6)

1. A stabilized unilateral amplifier, comprising a Hall effect gyrator having a pair of input leads and a pair of output leads, a pair of tunnel diodes, one of said diodes being connected between one of said input leads and one of said output leads, and the other diode being connected between the other input lead and the other output lead, means for biasing said diodes to their negative-resistance region, and means connected to said input leads and responsive to signals transmitted from said output leads to said input leads through said amplifier for controlling



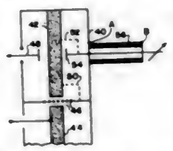
the bias on said diodes so as to maintain substantially zero reverse transmission of signal by the amplifier.

3,160,824
FREQUENCY COMPENSATED AMPLIFIER FOR MAGNETIC TAPE PLAYBACK
Henry H. Stair, San Jose, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Sept. 11, 1961, Ser. No. 137,209
6 Claims. (Cl. 330—28)



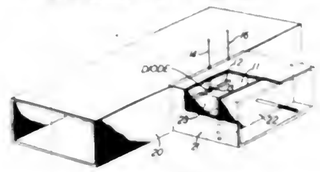
5. An amplifier circuit comprising a transistor having three electrodes, input and output terminals, a potential source connected at one end to a common junction, a capacitor connected between the input terminal and one of said electrodes, a load resistor connecting a second one of the electrodes to the potential source, means connecting the output terminal to the second one of the electrodes, and an impedance connecting a third one of the electrodes to the common junction, the impedance including an inductance forming a series resonant circuit with the said capacitor through the first and third electrodes of the transistor.

3,160,825
TEMPERATURE-COMPENSATING MEANS FOR CAVITY RESONATOR OF AMPLIFIER
Lloyd J. Derr, La Crescenta, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 19, 1961, Ser. No. 118,169
2 Claims. (Cl. 330—49)



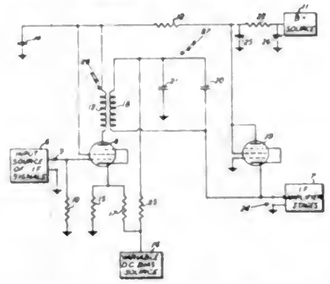
1. A device for automatically compensating for detuning of a micro-wave cavity and an active amplifier element therein due to the effects of temperature changes comprising: a metal cavity; a tuning structure supported in one wall of said cavity, said tuning structure including; a metal outer sleeve, an inner nylon sleeve mounted within said outer sleeve and threadedly engaged with said outer sleeve adjacent its internal end, whereby, said inner sleeve moves with said outer sleeve during said temperature changes and the outer end of said inner sleeve rapidly moves relative to said outer sleeve and said cavity during said temperature changes; a metal tuning probe mounted within said inner sleeve and threadedly engaged therewith adjacent its outer end, said tuning probe in contact with the internal end of said outer sleeve; said tuning probe capable of rapid movement relative to said cavity and outer sleeve during said temperature changes, whereby said tuning probe movement compensates for dimensional de-tuning of said cavity and cancels any changes in the output capacity of said active amplifier element due to said temperature changes.

3,160,826
MICROWAVE AMPLIFIER AND OSCILLATOR UTILIZING NEGATIVE RESISTANCE DEVICE
Enrique A. J. Marcatili, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 22, 1962, Ser. No. 181,589
12 Claims. (Cl. 330—61)



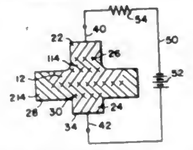
1. In combination, a conductively bounded waveguiding structure capable of supporting electromagnetic wave energy over a given band of frequencies, at least one slot in the wall of said structure being electromagnetically coupled thereto, a nonlinear impedance element mounted in each slot, said nonlinear impedance element displaying a negative dynamic resistance over a portion of its operating range, a cavity electromagnetically coupled to each slot, said cavity mounted external to said structure, the combination of each slot, nonlinear impedance element, and cavity being resonant at a frequency within said band of frequencies, and means for applying a bias voltage to each element.

3,160,827
VARIABLE BANDWIDTH AMPLIFIERS
Robert M. Chute, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed July 24, 1959, Ser. No. 829,454
2 Claims. (Cl. 330—167)



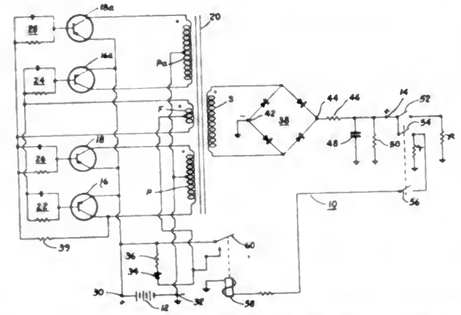
1. A variable bandwidth amplifier comprising a first pentode stage having a cathode element, two grid elements, a plate element and a first transconductance; said first pentode stage having an input circuit connected to a source of input signals and an output circuit; a second pentode stage having a second transconductance, said second pentode stage having an input circuit and an output circuit, said first transconductance being substantially equal to the square root of said second transconductance, a reference potential connected to the common side of said first and second pentode stages; tuned circuit means coupling the output circuit of said first pentode stage to the input circuit of said second pentode stages; and variable direct current bias means coupled through impedance means to said tuned circuit means and to the cathode element of said first pentode stage for varying the bandwidth of said amplifier.

3,160,828
RADIATION SENSITIVE SEMICONDUCTOR OSCILLATING DEVICE
Gene Strull, Pikesville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1960, Ser. No. 4,398
12 Claims. (Cl. 331—111)



1. A monolithic five-region radiation sensitive pulse generating semiconductor device comprising a body of a semiconductor material having a first type of semiconductivity, a thin layer of a second type of semiconductivity present on all but one surface of said body and forming a p-n junction with said body, a layer of a first type of semiconductive material disposed upon one surface of said thin layer and forming a p-n junction therewith, a central portion of said one surface of said body having a layer of a second type of semiconductivity disposed thereon, and the said last-mentioned layer of second type semiconductivity having disposed thereon a superimposed layer of said first type semiconductivity to provide a p-n junction therebetween, the p-n junction at the superimposed layer being exposed to receive radiation thereon.

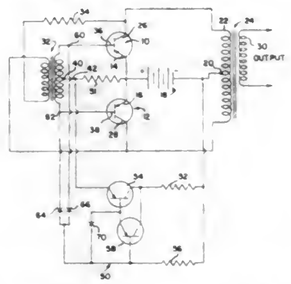
3,160,829
STARTING CIRCUIT FOR TRANSISTOR CONVERTER
Edward W. Mahland, Ashland, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 16, 1961, Ser. No. 96,205
7 Claims. (Cl. 331—113)



6. In combination, a transistor oscillator comprising only two transistors and adapted to be connected in parallel with similar transistor oscillators, each of said transistors having an input electrode, an output electrode,

and a common electrode, a pair of terminals for applying a voltage to said oscillator, a transformer having a primary winding and a feedback winding, means connecting said output electrodes to each other through said primary winding, a tap on said primary winding being connected to one of said terminals, said common electrodes being connected to the other of said terminals, means connecting opposite ends of said feedback winding to said input electrodes of the respective said transistors, a first impedance, means connecting said first impedance directly between (*a*) the output electrode of one of said transistors and (*b*) the junction of one end of said feedback winding and said means connecting said one end to the input electrode of the other of said transistors, a circuit consisting of a second impedance and a diode connected in series with each other, and means connecting said circuit between a tap on said feedback winding and said other terminal.

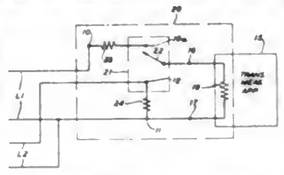
3,160,830
INVERTER STARTING CIRCUIT
Desmond F. Murphy, Wayne, N.J., assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Filed Oct. 20, 1961, Ser. No. 146,474
4 Claims. (Cl. 331—113)



1. In a transistor oscillator circuit of the type including at least a pair of switching transistors having base, emitter and collector electrodes, a first and a second transformer having primary and secondary windings, one electrode of each transistor being connected in a drive circuit with the secondary of said first transformer, and the remaining electrodes of said transistors being connected in an input circuit to the primary of said second transformer, said input circuit including a D.C. source; the combination therewith of a starting network comprising a biasing circuit for said drive circuit, said biasing circuit including a pair of voltage dividing resistances connected in series with said D.C. source and the emitter-collector path of a third transistor; and means for biasing the base operating point of said third transistor including an amplifying network in series with the emitter-base path of said third transistor and said D.C. source for amplifying the current flow through said amplifying network until the third transistor is brought into a state of conduction through its emitter-collector path.

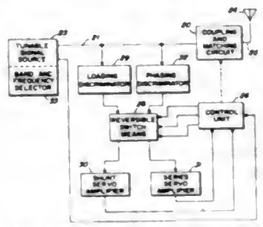
3,160,831
EQUAL POWER LOSS IMPEDANCE MATCHING BRANCHING NETWORK
Francis G. Merrill, Chatham, and Paul J. Snyder, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 3, 1962, Ser. No. 228,073
9 Claims. (Cl. 333—8)

1. In a signal transmission system, a pair of lines, each having two output terminals, said output terminal pairs having different impedances thereacross, signal receiving apparatus having a pair of input terminals, and impedance matching means connecting the output terminals of only one of said lines to said apparatus input terminals at a given time, comprising said apparatus input terminals having an impedance equal to the geometric mean value of the different impedances at said two pairs of output terminals, and a first impedance removably connectable in series between one of the two output terminals having the higher impedance thereacross



and one of said apparatus input terminals, the impedances of said first impedance and at said apparatus input terminals so proportioned as to match the impedance across said last-mentioned two output terminals to the impedance of said apparatus input terminals thereby providing the same signal transmission loss on both said lines, looking in the direction from said last-mentioned two output terminals toward said first impedance and apparatus input terminals.

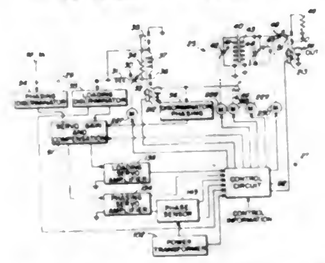
3,160,832
AUTOMATIC COUPLING AND IMPEDANCE MATCHING NETWORK
Bernard J. Beltman, Jr., Marion, Loney R. Duncan, Jr., Hiawatha, and Merrill T. Ludvigson and Donald R. Stevens, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 22, 1961, Ser. No. 161,598
7 Claims. (Cl. 333—17)



1. A network for matching the electrical impedance of an output line to an input line, said network comprising: an input line adapted to receive signals over a predetermined range of frequencies; an output line that is to be matched to said input line at a particular frequency within said predetermined range of frequencies; a variable coupling circuit for coupling said input line to said output line and varying the impedance of the latter, said coupling circuit including series connected reactance means and shunt connected reactance means, said reactance means inluding both capacitive and inductive elements; a phasing discriminator connected to said input line and producing an output signal proportional to deviation in phase of voltage and current; a loading discriminator connected to said input line and providing an output signal proportional to the relationship of actual loading impedance to a predetermined desired loading impedance; and control means including multi-position switching means in the first position of which said reactance means are caused to be driven to a predetermined homing position, in a second position of which the output line is caused to be disconnected from the input line and from said coupling means, in a third position of which said inductive element of said shunt connected reactance means is connected with said phasing discriminator to receive the output

therefrom whereby said inductive element is caused to be driven to parallel resonate stray capacitance of the input line, in a fourth position of which the output line is reconnected to said input line and said coupling means and said series connected reactance means are caused to be adjusted toward parallel resonating said output line, in a fifth position of which said output line is caused to be resonated with said input line by the output from said phasing discriminator at a value no greater than a predetermined desired loading impedance as determined by the output from said loading discriminator, and in a sixth position of which the inductive elements of said reactance means are caused to be positioned in response to output signals from said discriminators until said output signals are eliminated.

3,160,833
AUTOMATIC COUPLING NETWORK FOR MATCHING THE IMPEDANCE OF AN ANTENNA TO A PLURALITY OF LINES OPERATING AT DIFFERENT FREQUENCIES
Merrill T. Ludvigson, Cedar Rapids, and Virgil L. Newhouse and Loney R. Duncan, Jr., Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 1, 1962, Ser. No. 200,029
10 Claims. (Cl. 333—17)



1. An antenna coupling system, comprising: an input line; a tunable series trap connected to said input line; resistance means connected in parallel with said series trap; tunable band pass selection means connected to said series trap; variable impedance matching elements connected to said band pass selection means; an output line connected to said matching elements; and control means for tuning said series trap and band pass selection means and varying said impedance matching elements whereby the impedance of said output line is matched to that of said input line by said impedance matching elements and whereby high selectivity is attained by said tunable series trap and band pass selection means to maximize power transfer only at desired operating frequencies with, high attenuation and impedance being afforded in both the forward and backward directions at all frequencies of other than at said desired operating frequencies.

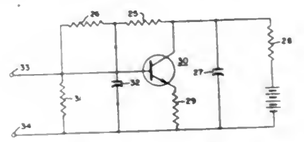
3,160,834
MAGNETOSTRICTIVE ELECTRO-MECHANICAL TRANSDUCERS
Leonard Perkins, Twickenham, Cyril Henry Stevens, Ilford, and Alan Philip Craven Thiele, London, England, assignors to A. C. Cossor Limited, London, England, a British company
Filed Nov. 9, 1959, Ser. No. 851,772
Claims priority, application Great Britain, Nov. 13, 1958, 36,497/58
6 Claims. (Cl. 333—30)

1. A magnetostrictive delay line comprising an elongated element of magnetostrictive material, an electromagnetic excitation transducer assembly for exciting said element including an energising coil surrounding a first part of the magnetostrictive element, an electromagnetic transducer pick-up assembly including a generally circular pick-up coil surrounding a second part of the magnetostrictive element and a shell of ferromagnetic material enclosing the pick-up coil, the shell having a permanently-magnetised portion in the form of a radially magnetised disc arranged on one side of said pick-up coil and a second portion of relatively soft magnetic properties arranged on the opposite side of said pick-up coil, both portions having a central aperture through which the magnetostrictive element passes, including a test pick-up electromagnetic transducer assembly positioned between said excitation transducer assembly and said pick-up trans-



ducer assembly and immediately adjacent said excitation transducer assembly, and a screen separating said excitation transducer assembly and said test transducer assembly to reduce direct coupling therebetween, said screen being separate from said shell, said test transducer assembly including a generally circular pick-up coil surrounding a third part of the magnetostrictive element, a disc positioned adjacent one face of said circular pick-up coil and being permanently magnetized radially thereof, and a member of material of relatively soft magnetic properties forming with the magnetised disc a shell enclosing the pick-up coil and having a central aperture through which the magnetostrictive element passes.

3,160,835
MONOLITHIC SEMICONDUCTOR CIRCUIT WITH ENERGY STORAGE JUNCTION AND FEEDBACK TO ACTIVE TRANSISTOR TO PRODUCE TWO TERMINAL INDUCTANCE
Bent Christensen, Mountain View, Calif., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1960, Ser. No. 70,630
6 Claims. (Cl. 333—80)

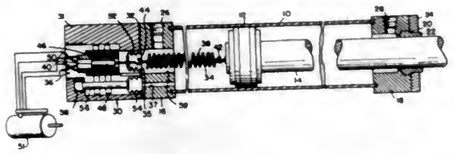


1. A monolithic semiconductor device comprising a body of semiconductor material made up of a plurality of layers of alternating conductivity types, a first region of said device comprising at least three adjacent layers cooperating to form an active region, an energy storage region in said material comprising at least two adjacent layers cooperating to form a p-n junction, one of the layers of the energy storage region and a first of the layers of the active region being connected together through the body of semiconductor material, a first energy dissipative region in the body of said semiconductor material effectively connected to said first layer, whereby said first energy dissipative region cooperates with said energy storage region to form a resistance capacitance output network for said active region, means including a second energy dissipative region in the body of the semiconductor material connecting said first layer to a second layer of the active region, thereby forming a feedback circuit for said active region, and means so connecting said active region, said feedback circuit and said output network that an active resistance-capacitance network is formed having an inductive input admittance between said second layer and a third layer of said active region.

3,160,836
ELECTROHYDRAULIC ACTUATOR

Howard G. Farley, Detroit, Mich., assignor to Guerin Engineering Inc., Ferndale, Mich., a corporation of Michigan

Filed July 1, 1960, Ser. No. 40,283
25 Claims. (Cl. 336—30)

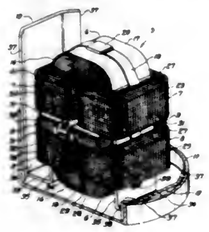


1. An integral electro-fluid device comprising a cylinder member, a piston member relatively movable in said cylinder member, a frame at one end of said cylinder member, a coil carried by said flame, an armature movable relative to said coil, and a coil spring connected directly between said movable armature and said movable piston member whereby the relative linear movement of said piston member in said cylinder member will produce a change in the mechanical energy of said spring, which change will in turn move said armature to produce an electrical energy change through said coil which is a function of the relative displacement between said members.

3,160,837
TRANSFORMER WITH HEAT DISSIPATING SUPPORT MEANS

Howard T. Jones, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed March 5, 1962, Ser. No. 177,308
8 Claims. (Cl. 336—61)

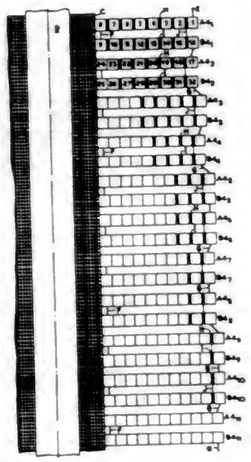


1. A transformer comprising a magnetic circuit loop formed of a plurality of laminations of magnetic material wound layer upon layer to form a closed path about a central window; a magnetic shunt of at least one flat stack of laminations of magnetic material placed against the side of said circuit loop spanning said window, the laminations of said loop and said shunt being placed in edge-to-edge relationship with each other; said loop being provided with a butt joint on one side of said magnetic shunt and with an area of reduced cross section on the other side of said magnetic shunt; a primary electrical winding on said loop on said one side of said magnetic shunt and overlying said butt joint; a secondary electrical winding on said loop on said other side of said loop, a heat-dissipating support means comprising a generally U-shaped bracket, one of the leg members thereof having therein a slot and being juxtapositioned against the magnetic circuit loop so as to underlie both primary and secondary coils, the bight extending away from the magnetic circuit loop and the other leg thereby being spaced away from the magnetic loop and the winding whereby heat may be drawn from the interior of the core and coil, conducted through the heat-dissipating means and radiated to the external surroundings; and a flexible band extending through said slot and around said core.

3,160,838
ELECTRIC TRANSFORMERS

Mustafa Fahrettin Bedil, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company

Filed Nov. 9, 1961, Ser. No. 151,355
Claims priority, application Great Britain, Nov. 24, 1960, 40,400/60
10 Claims. (Cl. 336—69)

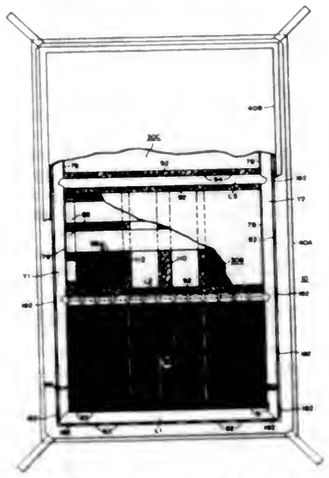


1. An electric transformer comprising a core, a high-potential terminal and a high-voltage winding, said high-voltage winding comprising a number of coils, each coil comprising a first pancake section including a normally-current-carrying conductor wound in a first plurality of turns forming a first spiral around said core and affording first and second end turns one at each end thereof, a second pancake section including a normally-current-carrying conductor wound in a second plurality of turns forming a second spiral around said core of opposite hand to said first spiral and affording first and second end turns one at each end thereof, a first connection between said first end turns of said first and second pancake sections of each coil, second connections interconnecting each of the adjacent second end turns of adjacent coils to one another and the second end turn of the first pancake section of the first coil to the high-potential terminal; a first non-current-carrying conductor wound together with said current-carrying conductor in one of said first pancake sections and between turns thereof, extending continuously for a plurality of turns, having one end turn coupled capacitively with said second end turn of said first pancake section and having its other end turn free; a second non-current-carrying conductor wound together with said current-carrying conductor in one of said second pancake sections and between turns thereof, extending continuously for a plurality of turns, having one end turn coupled capacitively with said second end turn of said second pancake section and having its other end turn free; and a third connection between said one end turns of said first and second non-current-carrying conductors, whereby a substantially wholly capacitative path is provided between the high-potential terminal and a coil spaced therefrom.

3,160,839
ELECTRICAL INDUCTIVE APPARATUS

Saul Bennon and Brian W. Hugon, Sharon, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 7, 1961, Ser. No. 115,552
12 Claims. (Cl. 336—84)

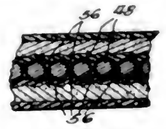


1. A three-phase reactor comprising a casing of magnetic material having a bottom portion and side wall portions, three electrical phase windings each having a central opening therein, disposed in said casing and spaced apart from one another, non-magnetic means disposed in the central openings in said three electrical phase windings, a first magnetic shielding member disposed between the respective phase windings and between said phase windings and the side wall portions of said casing, and a second magnetic shielding member disposed between the bottom portion of said casing and said phase windings, said first shielding member comprising a plurality of stacked layers of leg and yoke laminations formed from magnetic strip material and assembled to form three substantially rectangular windows with a closed magnetic circuit around each window, one of said phase windings being disposed in each of the respective windows of said first shielding member, with only one winding being disposed in each window.

3,160,840
METHOD OF MAKING IMPREGNATED COILS FOR ELECTROMAGNETIC APPARATUS AND THE PRODUCT THEREOF

Arnold J. Liberman, Chicago, Ill., assignor to Advance Transformer Co., Chicago, Ill., a corporation of Illinois

Filed Sept. 14, 1960, Ser. No. 55,967
3 Claims. (Cl. 336—96)

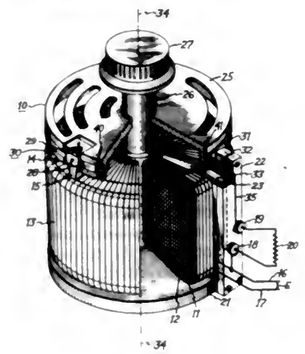


3. In a ballast for starting and operating gaseous discharge devices including a magnetic iron core formed of individual laminations of electrical steel assembled together and having at least one electrical coil mounted upon said core, the core and coil being disposed within a canister and immersed in a conventional potting compound; the electric coil comprising, a plurality of coated electrical wire layers wound on a winding form and a plurality of layers of sheet insulating material interleaved between adjacent layers of said wire, an asphaltic based insulating composition disposed on the surface of said sheet insulating material between said layers of wire, said insulating composition having a softening temperature between 250 and 260 degrees Fahrenheit and a sharp decrease of viscosity at said softening temperature, said insulating composition filling substantially all spaces within said coil unoccupied by said wire subsequent to immersion in said conventional potting compound and being compatible therewith.

3,160,841
ADJUSTABLE SLIDING BRUSH TRANSFORMER

Joseph P. Stefani, Richard A. Rawson, and Peter L. Soldato, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Aug. 9, 1961, Ser. No. 130,365
9 Claims. (Cl. 336—137)



1. In a sliding brush transformer of the type having its brush mounted on the periphery of a circular radiator member, whereby movement of the brush along the transformer winding is achieved by rotation of the radiator member about a central axis perpendicular to said member, the improvement in means for conducting current from the brush to a fixed terminal connectable to an external circuit comprising, a layer of electrically highly conductive material on the external circumferential edge of said radiator member electrically connected to said brush, a current collecting contact resiliently urged into sliding electrical contact with said layer, and said current collecting contact being electrically connected to said fixed terminal.

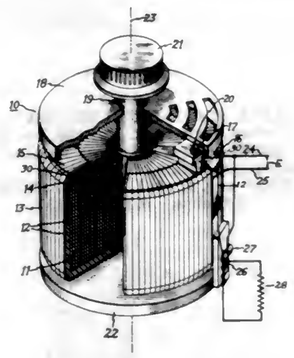
3,160,842
ADJUSTABLE SLIDING BRUSH TRANSFORMER

Clarence A. Neumann, Pittsfield, and Henry J. Helberg, Stockbridge, Mass., and Burnice D. Bedford, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Aug. 9, 1961, Ser. No. 130,364
12 Claims. (Cl. 336—149)

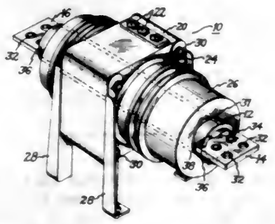
1. In an adjustable transformer of the type having a substantially toroidal winding of successively disposed adjacent turns of wire, said winding having on the exterior thereof a circular electrical contact surface that provides a circular path for sliding electrical contact between a high resistance brush connectable to an external circuit and successive turns of said toroidal winding, and sufficient heat being produced at the area of contact between said brush and contact surface to damage parts of said transformer, the improvement that

prevents damage from excessive heat at said area of contact comprising a closed continuous substantially circular ring-like metal heat sink having its central axis substantially coincident with the central axis of said toroidal winding, the axial thickness of the heat sink ring being at least several times the thickness of said wire, said heat sink being enveloped by said toroidal winding and having a flat even outer surface in heat transfer re-



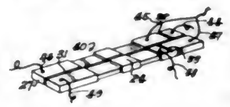
lationship with said contact surface and closely adjacent the inner surface of the winding opposite to said contact surface throughout the circular path of sliding movement of said brush, whereby heat produced at any area where said brush contacts said contact surface will be substantially equally distributed throughout said heat sink in opposite directions away from the area of contact for all positions of said brush along its circular path of movement.

3,160,843
VENTILATED PRIMARY BAR FOR CURRENT TRANSFORMER
Harry A. Thorpe, Somersworth, N.H., assignor to General Electric Company, a corporation of New York
Filed Aug. 3, 1961, Ser. No. 129,092
2 Claims. (Cl. 336—174)



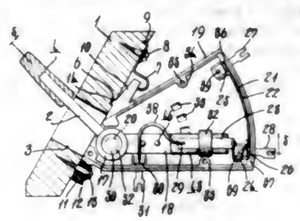
1. A ventilated primary bar current transformer having an insulated casing and a primary extending through said insulated casing, the improvement which comprises said primary being in the form of a hollow cylindrical tube having thin walls open to the atmosphere at the opposite ends thereof, said primary being provided with terminal pads at said opposite ends, said terminal pads being secured to said thin walls of said cylindrical tube diametrically across the openings thereof and without closing said openings, whereby cooling air may flow through said hollow cylindrical tube forming said primary.

3,160,844
HIGH OUTPUT ELECTRICAL STRAIN TRANSDUCERS
William H. McLellan, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Mar. 22, 1962, Ser. No. 181,644
21 Claims. (Cl. 338—4)



1. A semiconductor strain gauge comprising:
(*a*) an elongate single semiconductor crystal of predetermined crystallographic orientation and of a first predetermined conductivity type, said semiconductor crystal defining first and second opposed longitudinal surfaces, said first and second longitudinal surfaces and the end surfaces of said crystal containing therein active impurity atoms of a second predetermined conductivity type to thereby define a shallow peripheral surface band of said second predetermined conductivity type longitudinally encircling said crystal exclusive of its longitudinal edge surface, said peripheral surface band of said second predetermined conductivity type being electrically isolated from the remaining first conductivity type portion of said crystal by the high impedance barrier provided by the junction therebetween, said crystal having a plurality of predetermined grooves in the longitudinal and end surfaces thereof extending inwardly through said surface and penetrating the underlying junction, said grooves dividing said band into discrete electrically isolated surface regions of said second predetermined conductivity type; and
(*b*) a plurality of electrical contacts ohmically bonded to predetermined points on a longitudinal surface of said body for connection of electrical measuring circuitry thereto for measurement of changes in the electrical resistance of said discrete surface regions between said contacts upon stressing of said crystal.

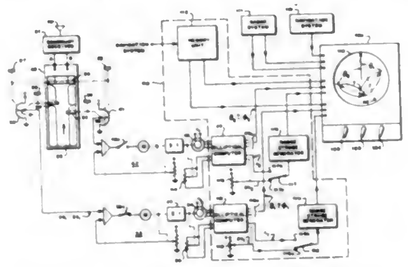
3,160,845
TONALITY CONTROLLER FOR ELECTRONIC ORGAN
Nobumitsu Hoshinomiya, Hamamatsu, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka, Japan, a corporation of Japan
Filed Feb. 23, 1962, Ser. No. 176,176
Claims priority, application Japan, Jan. 30, 1959, 34/4,132
7 Claims. (Cl. 338—69)



1. A variable resistance for a tone color controller for an electronic organ comprising a casing of electrically insulating material having an upper aperture, a transverse shaft supported in said casing, said casing including a side wall facing said shaft and circumferentially curved with the shaft as a center, said side wall having a circumferentially curved face provided with a stepped

portion, a thin electrical resistance element pressed against the side wall and held in said stepped portion, clips secured to said side wall and securing the resistance element in place, terminals connected to said clips and projecting beyond said side wall of said casing so that the resistance element is electrically connected with the terminals; an arm supported on said shaft for rotation and including a manipulating lever, means securing a slider to the arm for movement therewith while the slider is in contact with the electrical resistance element, a further terminal secured to the casing, an insulated elastic lead wire electrically connecting said slider with the further terminal and a cover on the casing over the upper aperture.

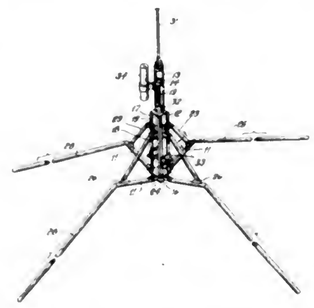
3,160,846
ELLIPTICAL COMPUTER
Walter R. Gustafson, Furlong, William H. McMillen, Levittown, James R. Rounding, Jr., Doylestown, and Leo Shore, Abington, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 3, 1961, Ser. No. 150,102
11 Claims. (Cl. 340—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for use in airborne anti-submarine warfare comprising: electronic plotter means comprising, a cathode ray tube system operative to independently generate and display a plurality of rotatable cursors, each provided with a range strobe, on the screen of a cathode ray tube, said plotter including cursor origin, bearing, and range strobe control means, and a plurality of cursor range strobe signal generating means adapted to be coupled to said cursor range strobe control means; means to apply signals proportional to the relative locations of a plurality of air-dropped sonobuoys and explosive charges to said cursor origin control means; means operative to provide signals proportional to the elapsed time between receipt of direct and echo signals at said sonobuoys from said air dropped explosive charges; means energized by the signals provided by said last mentioned means and operative in response thereto to provide rotational voltages coupled to said cursor bearing control means and control signals coupled to said range strobe signal generating means.

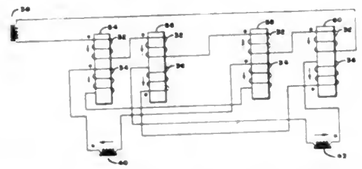
3,160,847
SUPPORT STRUCTURE FOR UNDERWATER SENSING EQUIPMENT
Henry C. Beck, Ossining, Harold E. Fowler, New City, and Falco J. Delmerico, Dobbs Ferry, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 8, 1963, Ser. No. 279,666
3 Claims. (Cl. 340—4)

1. Support structure for underwater sensing equipment comprising:
an upper and lower plate,
a plurality of guides mounted in spaced relationship between said plates,
a vertically movable platform slidably mounted on said guides between said plates,
a housing mounted on the upper of said plates,
an air-backed piston slidably mounted in said housing,
said piston having a dependent rod passing through said upper plate and connected to said platform,



a plurality of arms pivotally mounted in spaced relationship on the lower of said plates,
a plurality of tie-bars one end of each of which is pivotally attached to the body of one of said arms and the other end of which is pivotally attached to said movable platform, and
a plurality of extensions each of which is attached at an angle to the free end of said arms.

3,160,848
MAGNETOSTRICTIVE TRANSDUCER
Carroll L. Key, Jr., Donald T. Laird, and James M. Lawther, State College, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 16, 1960, Ser. No. 29,553
3 Claims. (Cl. 340—6)

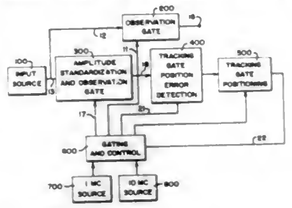


1. A multiple reception-pattern electro-acoustic system comprising, in combination:
(*a*) an electro-acoustic transducer having an array of magnetostrictive units;
(*b*) each said magnetostrictive unit having at least first and second separate windings thereon;
(*c*) said magnetostrictive units having their first windings connected to provide a first individual circuit, and having their second windings connected to provide at least a second individual circuit, for yielding signal-induced voltages in accordance with a first reception pattern and at least a second reception pattern, respectively;
(*d*) a receiver;
(*e*) individual transformers, connected to couple said individual circuits to said receiver;
(*f*) and said transformers having comparatively high impedance relative to said individual circuits, whereby to substantially reduce inductive flux-producing currents and correspondingly substantially reduce interwinding interference induced voltages.

3,160,849
AUTOMATIC TARGET SIGNAL TRACKER

John C. Munson, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 26, 1961, Ser. No. 127,068
15 Claims. (Cl. 340—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

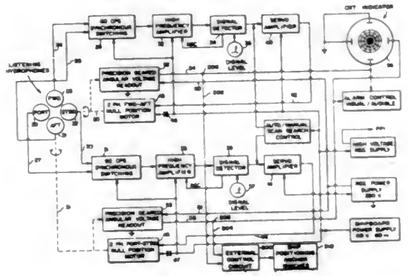


1. A target signal tracker for tracking a repeating target signal, said target signal occurring once during a fixed cycle interval comprising gate means for generating a gating pulse for each repetition of said target signal, error detecting means for determining the time displacement of the said target signal with relation to the center of said gating pulse, said error detecting means generating a first signal level when the target signal is to one side of said gating pulse and a second signal level when to the other side, and gate positioning means connected to said error detecting means for changing the position of said gating pulse by a fixed time step in response to said signal level for each repetition of said target signal, whereby the center of the gating pulse is maintained in substantial coincidence with said target signal.

3,160,850
UNDERWATER LOCATING APPARATUS

John W. Dudley, Seattle, Wash., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 27, 1960, Ser. No. 78,461
2 Claims. (Cl. 340—6)

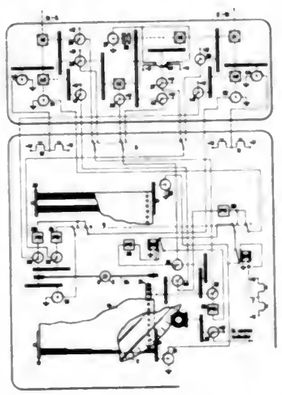


1. Control apparatus for maintaining a marine vessel over a predetermined point on the floor of a body of water comprising, in combination: a source of compressional wave energy fixed at the predetermined point; a directive transducer mounted on the underside of the marine vessel, said transducer detecting the compressional wave energy from said source and producing first and second pairs of electrical signals, the first and second pairs of signals representing the lateral displacement of the vessel along horizontal, perpendicular axes from a point directly above the source; first and second means for modulating the first and second pairs of signals respectively; first and second amplifiers, amplifying the output of said first and second modulating means respectively; first and second detectors, demodulating the outputs of said first and second amplifiers respectively; first and second phase sensitive servo means, including amplifiers, energized by said first and second detectors respectively, said servo means mechanically connected to rotate said transducer about two perpendicular axes; first and second angular voltage readouts, mechanically driven by said first and second servo means respectively, said readouts producing displacement error voltages that are functions of the lateral displacements of said vessel from said source; and, means including a vessel positioning external control circuit responsive to said error signals whereby the vessel may be maintained in fixed space relationship with said source.

3,160,851
EQUIPMENT FOR DISPLAYING THE POSITION OF CRAFTS ON THE MAP

Karl Heinrich Ramsayer, 54 Hasenbergstrasse, Stuttgart, Germany, and Willy Arthur Max Neubert, Gerlingen, near Stuttgart, Germany; said Neubert assignor to said Ramsayer

Filed Apr. 29, 1959, Ser. No. 809,642
Claims priority, application Germany, May 12, 1958, R 23,312
15 Claims. (Cl. 340—24)

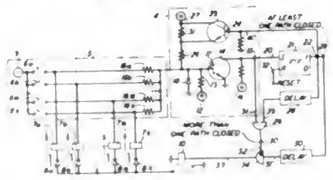


1. In an apparatus for displaying the position of a craft on a map, the combination which comprises: roller means having two rollers for supplying and taking up a strip map composed of individual map sections constituted by parallel strips of an overall map which strips are assembled to form a single composite strip such that one edge portion of each section corresponds geographically to the opposite edge portion of an adjacent section, said roller means feeding said strip map through a display area; indicator means cooperating with that part of the strip map which at any given instant is located in said display area, said indicator means being movable only in a direction transverse to the direction in which the strip map is moved as it is wound from one of said rollers to the other; actuator means responsive to the instantaneous position of the craft and connected to said roller means and to said indicator means for varying the longitudinal position of the strip map and for varying the transverse position of said indicator means such that said indicator means indicates on the map the geographical position of the craft; and change-over means effective when the geographic position being indicated on any one map section is in the region of an edge portion thereof and connected with both said roller means and said indicator means for bringing into said display area a new map section which has on the opposite side of said display area an edge portion corresponding geographically to the edge portion of the old map section and for moving said indicator means transversely so as to indicate on the new map section the same geographic position as was previously indicated on the old map section, in consequence of which said roller means serve (1) to move different map sections into said display area and (2) to effect the actual position indication, in longitudinal direction, on any one map section.

3,160,852
CHECKING CIRCUIT

Robert L. Simms, Jr., Colt's Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 19, 1962, Ser. No. 180,598
11 Claims. (Cl. 340—146.1)



6. A checking circuit comprising a plurality of conductive paths to be checked, time-sequenced checking means connectable to said paths, bistable switching means connected to said checking means and operative to indicate if at least a predetermined number of said paths has closed, first relay means, first and second gating means, said second gating means being operative to energize said relay means if said predetermined number of said paths have closed, said first gating means coupling said checking means to said second gating means, first and second time delay means, said second time delay means exceeding said first time delay means by a predetermined period, said first time delay means connecting said bistable switching means to said first gating means, and said second time delay means being connected between said bistable switching means and said second gating means.

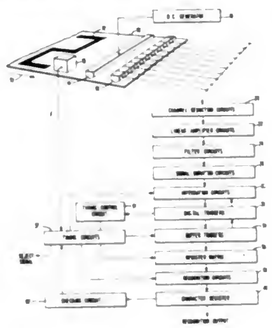
7. A checking circuit in accordance with claim 6, including a plurality of unidirectional current means and additional relay means, wherein each of said additional relay means is individually connected to a corresponding one of said conductive paths, and said second gating means includes means operative to govern said first relay means to energize said additional relay means through said unidirectional current means if said predetermined number of said conductive paths is energized.

3,160,853
CHARACTER RECOGNITION APPARATUS

Philip H. Howard, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 21, 1959, Ser. No. 861,017
9 Claims. (Cl. 340—146.3)

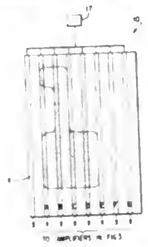
1. Character recognition apparatus comprising multichannel scanning means for scanning characters and producing a scanning signal in response thereto, quantizing means for each of said channels for determining whether successive increments of said scanning signal are indicative of scanned character-forming means, and means responsive to said quantizing means for identifying a character scanned, each of said quantizing means including means for filtering from said scanning signal frequencies above a predetermined upper cut-off value, integrating and clipping means responsive to said filtered signal for producing a first output signal when and only when the amplitude-time integral of said filtered signal exceeds a predetermined amplitude, means responsive to beginning and ending portions of said filtered signal for producing a delayed second output signal indicative of the duration of said signal, and means responsive to said first and said second output signals for signaling the scanning of a character-forming area.



3,160,854
LATTICE-TYPE CHARACTER RECOGNITION SYSTEM

Ralph A. Gregory, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 12, 1961, Ser. No. 82,307
10 Claims. (Cl. 340—146.3)



1. Character recognition apparatus comprising a lattice of spaced parallel photosensitive strips upon which the image of a character is projected, means to generate a single output signal from each of said strips when said image is projected thereon, the value of each of said strip signals being related to the portion of said strip occupied by said image, and means to decode said signals to provide an indication of said character.

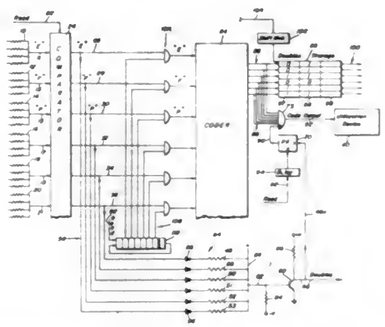
3,160,855
DOUBLES DECISION DETECTOR FOR READING MACHINES

Arthur W. Holt, Silver Spring, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 18, 1961, Ser. No. 138,916
14 Claims. (Cl. 340—146.3)

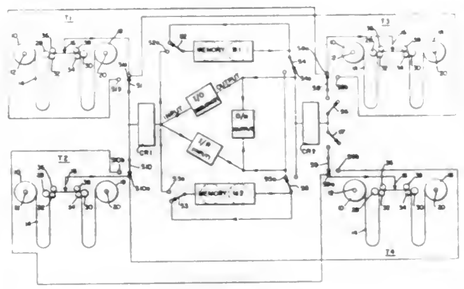
1. In a reading machine to identify individual characters of a set, said machine comprising; a comparator provided with inputs which represent the various possible characters when the machine endeavors to identify an unknown character of said set, said comparator having a separate output line for each character that the machine is capable of identifying, said comparator providing an output signal on a predetermined line when the machine identifies the character, and said comparator providing outputs on additional lines when the comparator determines that the unknown character can be two or more possible characters and not any of the other characters of

the set, and means responsive to outputs on more than one of said lines to provide a doubles signal indicating that



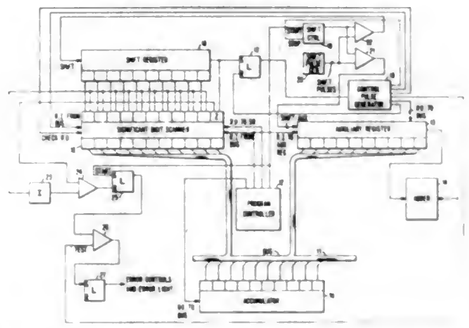
the comparator has determined that the identify of the unknown character is ambiguous but is one of said two or more possible characters of the set.

3,160,856
DATA PROCESSING MACHINE
Byron E. Phelps and Joseph J. Sochor, Poughkeepsie, and Arthur A. Kusnick, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Dec. 9, 1954, Ser. No. 474,115, now Patent No. 2,913,171, dated Nov. 17, 1959. Divided and this application Aug. 28, 1959, Ser. No. 836,751
16 Claims. (Cl. 340—172.5)



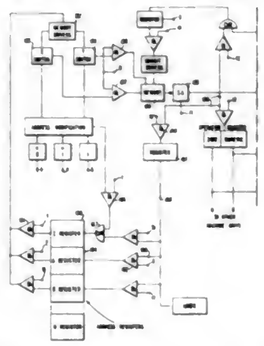
1. In a data processing machine, a pair of record input devices adapted to read input records from record media, a record storage device associated with each of said record input devices, means for transmitting to said storage devices and for storing therein a plurality of records read in said associated input record reading devices, a device for reproducing on continuous output record media records in said storage devices, a column counter adapted to emit an electrical control signal output at each of the columns of said storage devices, means for selecting a pair of column counter control signal outputs representative of spaced record columns, and means electrically connected to said last named means responsive upon receipt of said selected column counter control signal outputs for transmitting to said output reproducing device for reproduction therein of preselected parts of a record in each of said record storage devices.

3,160,857
DATA TRANSFER CONTROL AND CHECK APPARATUS
Donald I. Frush, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 24, 1960, Ser. No. 17,331
18 Claims. (Cl. 340—172.5)



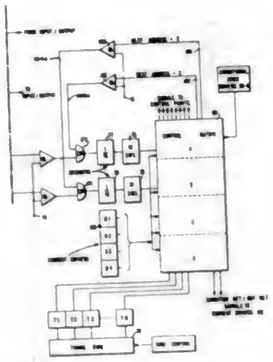
1. In a data processing machine, data storage means having a plurality of positions for storing data in coded form, said data storage means having the facility to receive data to be stored in parallel and to enable the transfer of data therefrom in serial and parallel fashion; significant digit scanning means operably connected to scan data transferred in parallel to and from said data storage means to determine the high order significant digit thereof; and shift register means having a plurality of positions corresponding to the position of said data storage means, the positions of said shift register being connected to be set by the location of the high order significant digit in said significant digit scanner, whereby the indication of the high order significant digit is transferred from said significant digit scanner to said shift register.

3,160,858
CONTROL SYSTEM FOR COMPUTER
Lester R. Adams, Endwell, and Arthur F. Collins, Vestal, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,663
8 Claims. (Cl. 340—172.5)



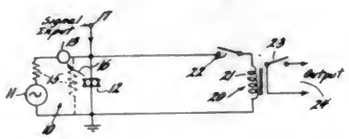
1. In a control matrix, first and second subgroups of bistable state cores arranged in pairs, address lines arranged to be energized for driving or setting said subgroups of cores, a first sense winding wound in relatively

opposite directions through the cores of a selected pair, a second sense winding wound through only one core of each such selected pair, means responsive to a functional condition of resetting only the last-mentioned core of such selected pair to one stable state, and timing means for providing resetting energization to both cores of such



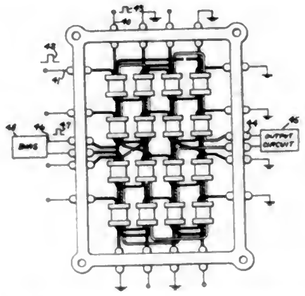
pair at a given period subsequent to the operation of said functional condition to cause an output signal to be provided through said first sense line only if said functional condition is present and cause an output signal to be provided through said second sense line only if said functional condition is not present.

3,160,859
OPTICAL INFORMATION STORAGE AND READOUT CIRCUITS
Raymond M. Wilmotte, Princeton, N.J. (4301 Massachusetts Ave. NW., Washington, D.C.)
Filed Nov. 30, 1959, Ser. No. 856,076
16 Claims. (Cl. 340—173)



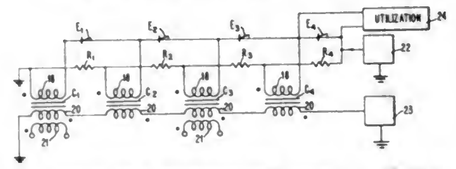
1. A memory and readout circuit comprising a voltage responsive light source variable in luminance in response to the voltage applied thereto, a bias circuit for applying a bias voltage to said light source, photoresponsive means optically coupled to said source for effecting a variation in the electrical series impedance of said bias circuit relative to said light source in inverse relation to the luminance of said source, an input circuit for applying an input voltage signal to said light source, and a readout circuit including means connected across said light source having a relatively high and a relatively low impedance state, said readout circuit further including means responsive to the voltage across said light source, on signal input operation said high and low impedance state means being in the high impedance state to permit a relatively large voltage to develop across said light source, and in the low impedance state on readout operation to shunt said light source and means for switching the readout circuit between the signal input operation condition and the readout operation condition.

3,160,860
METHOD AND MEANS FOR MANUFACTURE OF MAGNETIC CORES
Robert R. Henderson, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 30, 1958, Ser. No. 770,689
12 Claims. (Cl. 340—174)



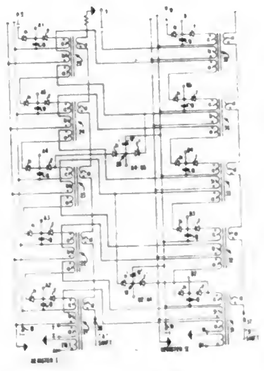
12. A matrix of signal storage devices comprising a plurality of nonmagnetic cylindrical elements each having a radially expansible axial opening; a plurality of insulated conductors arranged to form a plurality of wire groups each disposed within one of said openings and each containing a straight portion of at least two of said conductors; a plurality of thin strips of magnetic material each wrapped about one of said groups; and individual spring means disposed about each of said elements for maintaining a compressional force on the material wrapped about the associated group of conductors.

3,160,861
SHIFT REGISTERS
Sammy A. Butler, Peekskill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 2, 1959, Ser. No. 856,862
28 Claims. (Cl. 340—174)



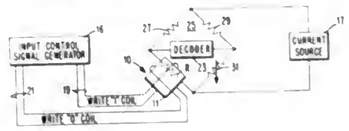
1. An information reversible shift register comprising, a current source, a plurality of tunnel diodes adapted to be operated in a first and a second stable state, means connecting said diodes head to tail in series with said source, a plurality of circuits each connected to a terminal intermediate said diodes and coupling a first and a second magnetic core, a plurality of winding means on each said core including a shift right winding for each of said first cores and a shift left winding for each of said second cores, said diodes normally operated in said first stable state whereby said cores are held in a datum saturation condition and adapted to operate in said second stable state to represent said information whereupon the first core of one of said circuits and the second core of another of said circuits is caused to be oppositely saturated, and means for selectively energizing the shift right and shift left windings to establish the associated cores in said datum saturation condition so that the diode operated in said second stable state is caused to assume said first stable state and another of said diodes is caused to assume said second stable state.

3,160,862
RING CIRCUIT
Lester R. Adams, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 30, 1961, Ser. No. 85,806
5 Claims. (Cl. 340—174)



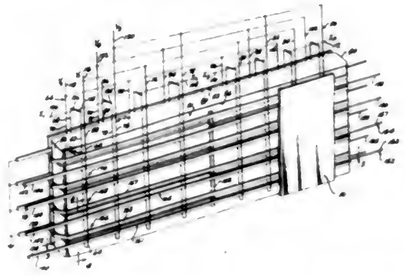
5. A system for providing timing pulses comprising first and second registers, each register including a plurality of saturable magnetic cores each having a first and second stable state, a core in one register having a corresponding core in the other register, each of said cores having a plurality of windings wound thereon, a first of said windings on each core being energizable to saturably magnetize the associated core to its first stable state, a second of said windings on each core being energizable to saturably magnetize the associated core to its second stable state, a plurality of first gating means, each gating means comprising a first and a second unidirectional conducting device connected in series, said first unidirectional conducting device of each gating means being connected to a third winding on an associated core, a capacitor means connected to each junction of said first and second unidirectional conducting devices for receiving and storing a voltage pulse, a second unidirectional conducting device connecting the associated capacitor means to said second winding on the succeeding core in a register for controllably gating a pulse from said capacitor means to said second winding of said succeeding core, a second winding of each core in one register being connected to said fourth winding of a preceding core in the other register, a second unidirectional conducting device being forward biased when the preceding core in said other register is shifted to a first stable state which enables the associated capacitor means to discharge through the second winding of the succeeding core in said one register whereby pulses are serially developed at the junction of said first and second unidirectional conducting devices, a plurality of second gating means each comprising first and second unidirectional conducting devices connected in series, second capacitor means connected to the junction of said first and second unidirectional conducting devices of said second gating means, said first unidirectional conducting device of a second gating means being connected to the third winding of a selected core in one register, and said second unidirectional conducting device of said second gating means being connected to the fourth winding of a selected core in the other register whereby pulses are provided at said junction of said first and second unilateral conducting devices of said second gating means, which pulses are initiated at a time and are of duration dependent on the selected cores to whose windings said first and second unidirectional conducting devices are connected.

3,160,863
MAGNETORESISTIVE STORAGE DEVICE
Firooz Partovi, Allston, Mass., and Charles Pettus, Vestal, and Thomas Young, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1961, Ser. No. 160,179
6 Claims. (Cl. 340—174)



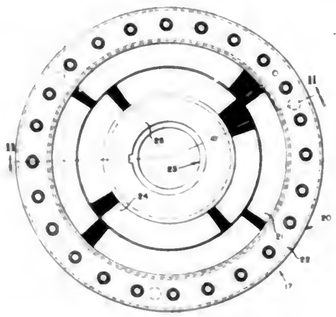
6. A ferro-magnetic thin film possessing magnetoresistive properties, means for providing current flow through said thin film in a given direction, a quiescent resistance being measurable across said film, first and second current carrying coils arranged transversely to one another to provide first and second magnetic fields respectively for said thin film, said magnetic fields being relatively transverse to one another, means for selectively energizing said coils for changing the resistance of said thin film and thereby the voltage developed thereacross dependent upon which of the magnetic fields is applied thereto, and means for sensing the change of voltage across said thin film.

3,160,864
RANDOM ACCESS HIGH SPEED MEMORY
Richard L. Snyder, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,677
10 Claims. (Cl. 340—174)



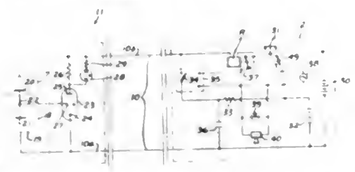
1. A memory element comprising a first conductor having a thin film of magnetic material thereon, a second conductor having a thin film of magnetic material thereon and positioned adjacent and parallel to said first conductor, write conducting means positioned between said first and second conductors at substantially right angles thereto, sense conducting means positioned between said first and second conducting means at substantially right angles thereto and adjacent to said write conducting means, whereby a magnetic domain having a magnetic state of a selected polarity is established in a continuous magnetic path through said thin films of said first and second conductors and through the space therebetween at the ends of said domain in response to current flowing through said write conducting means in a selected direction coincident with a current flowing through said first and second conductors in either direction, and a signal representative of the selected polarity is induced in said sense conducting means in response to the current flowing through said first and second conductors in either direction.

3,160,865
AUTOMATIC SIGNAL-TRANSLATING APPARATUS
Frederick Tourtellotte, Royal Oak, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 1, 1960, Ser. No. 19,354
3 Claims. (Cl. 340—174.1)



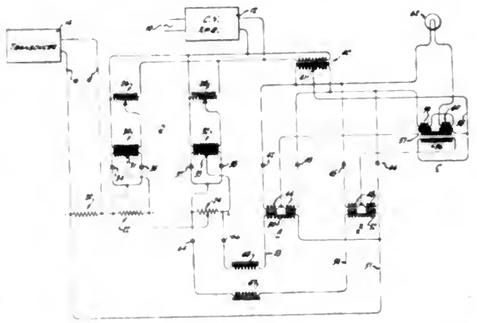
1. Automatic signal-translating apparatus responsive to the magnetization of a bead wire of a tire or the like comprising: a central shaft; non-magnetic means rotatable about said central shaft; a magnetic pick-up winding mounted on said non-magnetic means at a distance from said central shaft approximately equal to the radius of the bead wire of a tire and rotatable in proximity to the bead wire for developing a signal representative of the bead wire magnetization; a transformer comprising a first annulus including an annular core of E-shaped laminations and windings disposed between the arms of the laminations, and means for supporting said laminations, and a second annulus in rotatable relationship to said first annulus including an annular core of E-shaped laminations and windings disposed between the arms of said second annulus, said windings of said second annulus comprising a rotatable primary winding coupled to said pick-up winding and said windings of said first annulus comprising a stationary secondary winding; means for rotating said central shaft to rotate said pick-up winding and said primary winding to develop an output signal in said secondary winding representative of the magnetization of the bead wire; and utilizing means responsive to said output signal for developing an effect in accordance with the magnetization of the bead wire.

3,160,866
ELECTRIC ALARM SYSTEM
Ernst Meili, Kusnacht, Zurich, Switzerland, assignor to Cerberus G.m.b.H., Bad-Ragaz, Switzerland
Filed Apr. 15, 1963, Ser. No. 272,928
Claims priority, application Switzerland, Feb 19, 1957; Jan. 22, 1958
5 Claims. (Cl. 340—226)



1. An electric alarm system for indicating changes in a predetermined condition at a plurality of different points comprising; a plurality of alarm devices with one thereof located at each of said points, each alarm device including an indicating member pertaining thereto, a control center common to all of said alarm devices, a two wire circuit between which said alarm devices are connected in parallel and which circuit leads to said control center, said control center comprising a relay, a first voltage source and a normally closed switch connected in series between the two sides of said circuit, an alarm element operable in response to closing of said relay, a second voltage source in said control center having one side connected to one side of said circuit, means under the control of said relay and connected to the other side of said circuit and to the other side of said second voltage source and operable upon closing of said relay to connect said other side of said second voltage source to the said other end of said circuit, each alarm device comprising a sensing member sensitive to the said condition, each alarm device also comprising a normally non-conductive relay member connected across said circuit and under the control of said sensing member and operable by said sensing member upon the sensing of a condition to be detected to become conductive, each said relay member when conductive bringing about a flow of current in said circuit which will actuate said relay in the said control center into closed condition, the indicating member pertaining to each said alarm device becoming operative only upon the connection of said second source of voltage to the circuit upon closing of said relay, and said normally closed switch being operable when opened to interrupt said circuit to halt the flow of current through said relay and the actuated ones of said relay members thereby to reset the system.

3,160,867
VOLTAGE COMPARATOR
Alan S. FitzGerald, 333 Corte Madera Ave., Mill Valley, Calif.
Filed Feb. 21, 1962, Ser. No. 174,820
7 Claims. (Cl. 340—248)

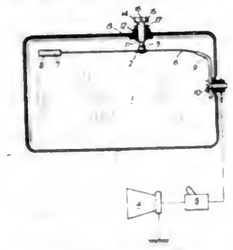


5. Apparatus for comparing the value of a test signal against a standard comprising
means for producing a differential voltage proportionate to the algebraic difference between a test signal and a standard signal,
means increasing said differential voltage by a predetermined positive direct current voltage increment to produce a first control voltage,
means decreasing said differential voltage by a predetermined negative direct current voltage increment to produce a second control voltage,
a pair of matched self-saturating magnetic amplifiers for delivering output signals which vary sharply in response to change in polarity of voltages applied to the control inputs thereof,
means applying said first control voltage to the control input of one of said magnetic amplifiers,

means applying said second control voltage to the control input of the other of said magnetic amplifiers, and

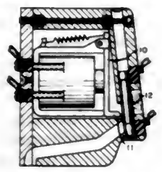
means coupled to the outputs of said magnetic amplifiers for detecting differences between said output signals therefrom as an indication of differences between said test signal and standard signal within tolerances defined by said positive and negative voltage increments.

3,160,868
THEFT ALARM FOR MOTOR VEHICLES
Josef Kowanda, Klagenfurt, Austria
Filed Jan. 14, 1963, Ser. No. 251,124
Claims priority, application Germany, June 14, 1962, K 46,992
5 Claims. (Cl. 340—261)



1. A vibration sensitive alarm system comprising: an elongated leaf spring having mutually perpendicular substantially straight end portions, said spring being curved through an arc of 90 degrees intermediate said end portions; an elongated flat sleeve of soft metal enclosing one of said end portions and extending toward the other end portion through at least a major portion of said arc, said sleeve constraining said spring to assume a curved configuration within a portion of said arc through which said sleeve extends; means fixedly positioning said one end portion of said sleeve together with said one end portion of said spring which is enclosed therein; weight means carried by said other end portion of said spring; movable contact means carried by said spring intermediate said weight means and said arc; fixed contact means positioned for cooperation with said movable contact means; and an alarm circuit controlled by said contact means.

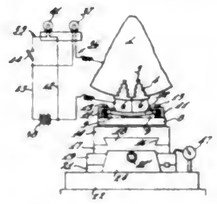
3,160,869
OVERSPEED EVENT INDICATOR
George Leland Rambo, Moline, Ill.
(523 12th St., Baraboo, Wis.)
Filed July 31, 1961, Ser. No. 127,975
6 Claims. (Cl. 340—263)



1. A system for determining whether a given vehicle has exceeded the set speed applicable to any one of several areas in which the vehicle has moved during a period of set length prior to inspection of the vehicle, comprising, a vehicle speed responsive apparatus in each vehicle, circuits responsive to each of several speeds closed by said apparatus, means at the entrance of each area covered by the system to select a particular one of said circuits in each vehicle, a time interval measuring apparatus normally in one condition set in operation by the selected circuit when the allowable speed in that area is exceeded and means to maintain said time measuring apparatus in its operating condition until the time interval has elapsed.

2. In a vehicle speed monitoring device, comprising a housing, a speed responsive device, an electric circuit closed by the speed responsive device when a set speed is exceeded, a passage in said housing, a cartridge in said passage having external contacts and capable of deteriorating at a set rate when current is supplied, means actuated when said circuit is closed that permit said cartridge to move from its normal position to a new position where contacts in the wall of the passage engage the contacts on the cartridge, an electrical circuit passing thru said contacts and said cartridge, a battery in said circuit providing a continuous supply of current.

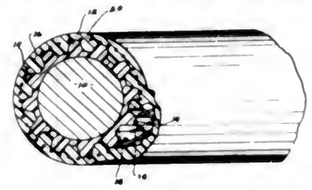
3,160,870
LAPPING MACHINE
Nathan A. Randall, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 23, 1961, Ser. No. 146,714
3 Claims. (Cl. 340—265)



2. A machine for lapping the mating surfaces of elements comprising: a first support for holding one of said elements; a second support for holding the other of said elements, said supports being positionable to hold said mating surfaces in spaced apart parallel relation to permit insertion of lapping compounds therebetween; first means for moving said elements in a manner to increase and decrease said spacing between said mating surfaces; second means for moving one of said elements relative to the other of said elements, said relative movement being in a plane parallel to the planes of said mating surfaces; first electric circuit means connected in series with said elements and including a source of electric energy and a first indicating means, said indicating means being responsive to changes in the resistance of said circuit, and the resistance of said circuit being proportional to the spacing of said mating surfaces; and second circuit means connected in series with said source and including a second indicating means identical to said first indicating means, said second indicating means giving a continuous indication identical to the indication of said first indicating means when the resistance in said first circuit is at a minimum.

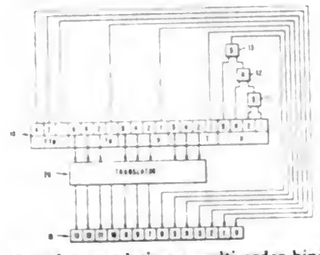
3,160,871
TAP-PROOF SECURITY COMMUNICATIONS CABLE
Solomon Rubinstein, Fanwood, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Apr. 2, 1962, Ser. No. 184,209
8 Claims. (Cl. 340—285)

1. A security cable comprising a cable core, an outer extruded jacket of polymeric material surrounding the cable core, an open wire braid which also surrounds the core and is completely imbedded within the jacket, said wire braid being formed of a plurality of carriers each of which comprises at least two insulated wires



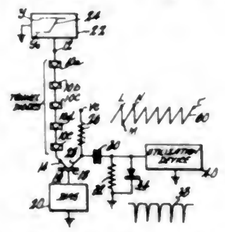
twisted together in a short lay and restrained against separation from each other.

3,160,872
BINARY CODED DECIMAL TO BINARY TRANSLATOR
Robert A. Anderson, Springfield, Mass., and David T. Brown, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 21, 1960, Ser. No. 57,499
7 Claims. (Cl. 340—347)



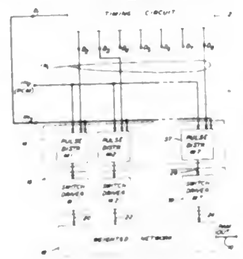
1. A system for translating a multi-order binary coded decimal number contained in a first register to a straight binary combination in a plurality of orders of a second register comprising, means directly connecting at least one binary digit from each decimal order to be translated of said first register to a corresponding predetermined order of said second register, and means responsive to each permutation of the remaining binary digits of said binary coded decimal orders to be translated for inserting a unique combination of binary digits in the remaining orders of said second register.

3,160,873
NEGATIVE RESISTANCE ANALOG TO DIGITAL CONVERTER
Juan J. Amodei, Levittown, Pa., and Walter F. Kosonocky, Iselin, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 24, 1960, Ser. No. 64,356
10 Claims. (Cl. 340—347)



3. An analog-to-digital converter comprising, in combination: a pair of terminals; a plurality of negative resistance devices connected between said terminals, each of said devices having a volt-ampere characteristic including two regions of positive resistance separated by a region of negative resistance; impedance means connected as a load on said devices and providing a load line having a slope slightly less than the slope of said characteristic in said negative resistance region; means for applying an analog input signal across said terminals for changing one of the currents into and voltage across said devices in proportion to the amplitude of said analog signal; and an output means connected to said devices for providing an output signal each time any of said devices is switched through its said negative resistance region.

3,160,874
PULSE CODE MODULATION DECODER
Andras Hamori, Cambridge, Mass., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,136
6 Claims. (Cl. 340—347)

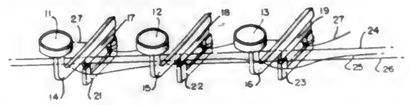


1. In a decoder for the digital-to-analog conversion of an incoming pulse train, a serial-to-parallel pulse distribution assembly which comprises a plurality of AND gates, means to supply the incoming pulse train to all of said gates simultaneously, timing means to pulse each of said gates in sequence, a separate storage capacitor connected to each of said gates to receive a charge whenever the gate passes a pulse, a separate distributor output lead connected to each of said storage capacitors, and means to discharge all of said storage capacitors into their respective distributor output leads simultaneously after all of said gates have been pulsed, a separate switch driver for each of said distributor output leads, each of said switch drivers comprising a source of direct current, a pair of transistors of like conductivity type having their emitter-collector paths connected in series in the forward direction between opposite sides of said source, positive feedback paths connected from the collector electrodes of each of said transistors to the base electrode of the other, and a driver output lead connected to the junction between the emitter-collector paths of said transistors remote from said source, means to trigger each of said switch drivers whenever a storage capacitor of said distribution assembly is discharged into its associated distributor output lead, a source of reference current, a separate switch operated from each of said divider output leads, and a weighted summing network connected to receive current from said source through said switches to derive the analog version of the incoming pulse train.

3,160,875
MAGNETIC ENCODER
David W. Bernard, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 214,034
18 Claims. (Cl. 340—347)

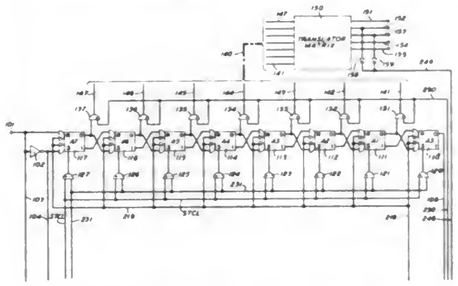
1. Apparatus for converting information from a keyboard into a digital code, said apparatus comprising a key-

board having a plurality of individually operable keys each of which represents a unique item of information, a magnetic core positioned adjacent each of said keys, each of said cores having an air gap, magnetic means mounted on said keys to be moved therewith and arranged to close the air gap, and thus complete the magnetic circuit, within the core adjacent the operated key when the key is oper-



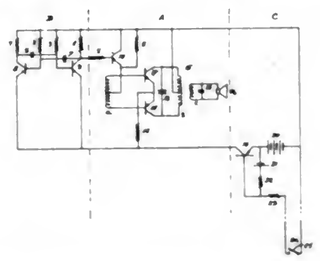
ated, electrical conductor means threading said cores in combinations according to a digital code, and means for simultaneously generating a magnetic field in all of said cores, the reluctance of the cores with closed air gaps being sufficiently low to cause the induction of electrical potentials in the conductor means threading said cores when a magnetic field is generated therein.

3,160,876
SERIAL TO PARALLEL CONVERTER FOR DATA SIGNALS
Nathan H. Stochel, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1963, Ser. No. 283,825
8 Claims. (Cl. 340—347)



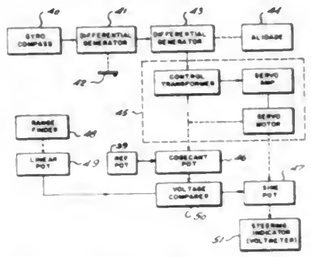
8. In a receiver for start-stop binary code character elements, a multistage shift register, receiving means for serially applying received binary elements to an initial stage of said shift register, timing means responsive to the reception of said start element by said receiving means for generating a timing interval, means responsive to said timing means during said timing intervals for applying shift pulses to said shift register, a translator circuit having a plurality of input leads and a plurality of output leads, gate means for selectively energizing each of said translator circuit input leads in accordance with the conditions of corresponding stages in said shift register, first circuit means enabled in response to the reception of said stop element by said receiving means at the termination of said timing interval, second circuit means enabled in the absence of said reception of said stop element by said receiving means at the termination of said timing interval, means jointly responsive to the shifting of said start element to a final stage of said shift register and said enabled first circuit means for enabling said gate means, means jointly responsive to the shifting of said start element to said final stage of said shift register and said enabled second circuit means for directly energizing selected ones of said translator output leads, and means for removing said binary elements from said shift register, said removing means rendered operable by one of said first and second enabled circuit means.

3,160,877
HIGH-PITCHED HORN
Alexandre Monomakhoff, Verneuil-en-Halatte, Oise, France, assignor to Charbonnages de France, Paris, France, a public institution of France
Filed Nov. 24, 1961, Ser. No. 154,617
Claims priority, application France, Nov. 29, 1960, 845,375
5 Claims. (Cl. 340—384)



1. A high-pitched horn emitting a sound which is simultaneously modulated in amplitude and in frequency comprising a non-aperiodic sound transducer, a single low-frequency oscillator supplying energy to said transducer, a multivibrator operatively connected to said oscillator whereby the operation of said oscillator is modified by the operation of said multivibrator, a transistor coupling said oscillator to said multivibrator and having a base, a collector, and an emitter, a resistance element connected to said emitter and to a common circuit connection with said collector whereby a frequency swing accompanied by periodic amplitude modulation is produced at said transducer, and a direct current supply connected in the circuitry.

3,160,878
STEERING INDICATOR FOR RANGE-BEARING NAVIGATION SYSTEM
Richard T. Galloway, Panama City, Fla., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 25, 1962, Ser. No. 168,851
3 Claims. (Cl. 343—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



3. A system for indicating the position of a ship with respect to a track selected to have a desired relation to a fixed reference point comprising,

range finder means for providing a first signal representative of the range to a reference point,

means for determining the angle between the bearing of said reference point and the bearing along a selected track and for producing a second signal representative thereof,

means for providing a third signal representative of the orthogonal distance from said selected track to said reference point,

computer means connected to said range finder means, said angle determining means, and said orthogonal distance signal providing means for producing in response to said first, second, and third signals an output signal representative of the displacement of said ship with respect to said track, said computer means including,

a cosecant multiplier coupled to the outputs of said orthogonal distance signal providing means and to said angle determining means for producing a fourth signal in response to said second and third signals that is proportional to the distance from said selected track to said reference point along a line passing through said ship,

means coupled to the outputs of said range finder means and said cosecant multiplier means for comparing said first and fourth signals and producing a fifth signal corresponding to the difference therebetween,

a sine multiplier coupled to the outputs of said comparing means and said angle determining means for providing in response to said second and fifth signals an output signal proportional to the orthogonal distance from said selected track to said ship, and

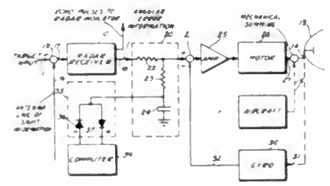
indicator means connected to said sine multiplier for indicating the orthogonal distance from said selected track to said ship in response to said output signal therefrom.

3,160,879
OBJECT LOCATING SYSTEM
James Robert Downing, Jackson Heights, N.Y., and John H. McClow, Jr., Torrance, Calif., assignors, by mesne assignments, to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed July 17, 1961, Ser. No. 124,400
10 Claims. (Cl. 343—6)



1. A system for locating the position of an object having a beacon transmitter contained therein which is adapted to radiate a radio signal, said system including: first radio transmitting and receiving means, a unit adapted to be airborne and including further radio transmitting and receiving means, a directional receiving antenna mounted on said unit and coupled to the further radio receiving means, an omni-directional transmitting antenna positioned on said unit and coupled to the further radio transmitting means, and means for causing the directional antenna on said unit cyclically to perform a scan to successively intercept signals from the beacon transmitter in the object and from the said first radio transmitting means at respective angular positions of the directional receiving antenna on said unit during each scanning cycle and to introduce such signals to said further radio receiving means in said unit, said further transmitting means in said unit serving to successively re-transmit over said omni-directional transmitting antenna to said first receiving means the signals introduced to said further receiving means.

3,160,880
VELOCITY SATURATION CONTROL FOR TRACK NETWORKS
Ramon H. Aires, Levittown, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 14, 1959, Ser. No. 846,516
2 Claims. (Cl. 343—7.4)



1. Means for eliminating saturation voltages from the control circuit of a radar target tracking system comprising:

a radar receiver for receiving target signals and having an output;

a radar antenna;

a servo motor coupled by a coupling circuit to said receiver output and mechanically coupled to said antenna to drive same in accordance with radar error tracking intelligence control voltage from said receiver output over said servo motor coupling circuit;

a loop coupling said radar antenna to said radar receiver for developing said error tracking intelligence control voltage at the receiver output;

a gyroscope providing reference voltage coupled to said servo motor coupling circuit for establishing a voltage reference in space and for stabilizing the servo motor antenna driving operation;

an integrating network in said servo motor coupling circuit including a first resistor in series in said servo motor coupling circuit providing an input and output thereto, and including a second resistor and a capacitor connected in series at the output of said first resistor and ground potential, said capacitor being chargeable to the average value of the amplitude of error tracking intelligence control voltage;

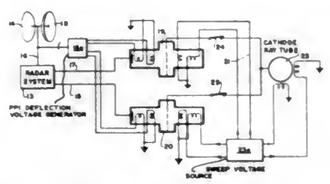
a limiter network having a pair of diodes with the anode of one and the cathode of the other coupled in common to the juncture of said second resistor and said capacitor in said integrating network; and

a means supplying a positive biasing voltage to the cathode of said one diode and a negative biasing voltage to the anode of said other diode to establish voltage amplitude limits of the average charge of said error tracking intelligence control voltage on said capacitor in either polarity to maintain said error tracking intelligence control voltage below saturation of said servo motor and related components whereby unrealistic amplitudes of tracking intelligence control voltage is controlled in amplitude to return the radar system to normal operating conditions in minimum time.

3,160,881
METHOD OF SIMULTANEOUSLY DISPLAYING AT LEAST TWO PICTURES ON THE SCREEN OF A CATHODE-RAY TUBE
Theodor Pederzani and Hans Stüve, Ulm (Danube), Germany, assignors to Telefunken Aktiengesellschaft
Filed May 13, 1958, Ser. No. 734,945
Claims priority, application Germany May 15, 1957
1 Claim. (Cl. 343—17.1)

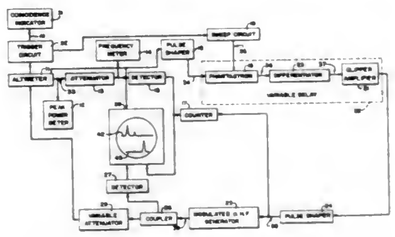
The method of combining on a single short-persistency screen a composite presentation representing trains

of echo signals from at least two continuously operating pulse-echo radar systems including antennas which are rotated in back-to-back relation at a common location, including the steps of separately and continuously recording the trains of received pulses from each radar system; retaining the separate records long enough for each to represent at least one complete radar scanning cycle from each associated radar system; reproducing in rapid



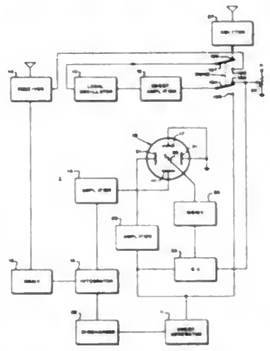
succession the various complete recorded scanning cycles; displaying the successively produced echo signals in superimposed relationship on said screen at a high enough rate that the successively displayed scanning cycles appear to the human observer to form a composite presentation; and applying the signal trains from both systems to said screen to provide an increased amount of information per cycle of antenna rotation.

3,160,882
RADAR EVALUATION APPARATUS
Morton Stimler, Hyattsville, Gerald N. Plotkin and John H. Malloy, Silver Spring, and James E. Swanekamp, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 7, 1960, Ser. No. 67,864
11 Claims. (Cl. 343—17.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



10. Apparatus for calibrating a radio altimeter of the type designed to generate successive series of identically time separated first and second signals at different times, comprising variable delay means coupled to the altimeter to generate an impulse a variable period of time after the first signal is produced, means coupled to said delay means for controlling the time delay introduced thereby in accordance with a simulated height and vertical speed of the altimeter, means coupled between the altimeter and said delay means for feeding the delayed pulse back to the altimeter and means coupled to the altimeter and the control means for maintaining the control means at a fixed operating point when the second signal coincides with the impulse whereby the time between the first signal and the termination of action of said control means is a measure of the height which the altimeter has been set.

3,160,883
RADAR SIGNAL DENSITY ANALYSIS CIRCUIT
Edward Buyer, Ramsey, N.J., and Robert H. Edmonds, New York, and Jesse R. Karp, New Rochelle, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 29, 1961, Ser. No. 141,918
6 Claims. (Cl. 343—18)

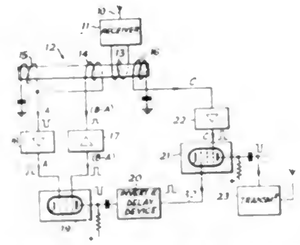


1. A system for displaying radar signal density as a function of frequency over a predetermined bandwidth, comprising in combination: a cathode ray tube, a local oscillator, a sweep generator, means connecting said sweep generator to said local oscillator to vary the frequency of said local oscillator throughout a predetermined bandwidth and to the horizontal deflection plates of said cathode ray tube, a superheterodyne receiver connected to said local oscillator whereby said superheterodyne receiver is continuously tuned to receive various frequencies within said predetermined bandwidth, said superheterodyne receiver having input means coupled to a receiving antenna to receive radar signal frequencies within said predetermined bandwidth and having output means providing said radar signal frequencies within said bandwidth as an output, pulse stretcher means connected to said output means providing a single stretched pulse for each of said radar signal frequencies as an output, integrator means connected said said pulse stretcher means providing a voltage input to the vertical deflection plates of said cathode ray tube having an amplitude proportional to radar signal density, means connected between said sweep generator and said cathode ray tube for applying a pulse to the intensifier grid of said cathode ray tube at a selected point within said predetermined bandwidth whereby a point on the screen of said cathode ray tube which displays radar signal density as a function of frequency over the bandwidth monitored by said superheterodyne receiver may be marked.

3,160,884
TRANSPONDERS FOR USE IN SECONDARY RADAR SYSTEMS
Kennyth Ernest Harris, New Barnet, and Leonard Perkins, Twickenham, England, assignors to A. C. Cossor Limited, London, England
Filed May 28, 1959, Ser. No. 816,554
Claims priority, application Great Britain, June 9, 1958, 18,378/58
2 Claims. (Cl. 343—6.8)

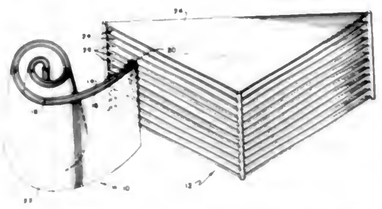
1. A transponder for use in secondary radar systems in which a set of at least three time-spaced pulses of radio frequency oscillation is transmitted recurrently, at least one pulse of each set being a control pulse radiated from a low-directivity serial and at least one pulse of each set being an interrogating pulse radiated from a

high-directivity aerial and the duration of said set being small compared to the interval between sets, said transponder comprising a receiver for said pulses, first time-delay pulse-transmitting means effecting a time delay equal to the time spacing between a pair of pulses of said set one of which is an interrogating pulse and the other of which is a control pulse, means coupling the output of said receiver to the input of said first time-delay means whereby two pulses coincident in time appear at the output of the first time-delay means and at the output of said receiver respectively in response to said pair of pulses amplitude-comparing means controlled by said two pulses to generate an amplitude-control pulse in response to the amplitude ratio of the interrogating pulse and control pulse of said pair exceeding a predetermined value first coincidence gate means having two inputs and generating at its output a gating



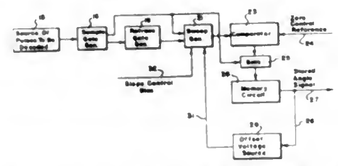
pulse in response to pulses applied simultaneously to the two inputs thereof, first and second coupling circuits coupling the output of said first time-delay means and the output of said amplitude-comparing means to said two coincidence gate inputs respectively, a second coincidence gate means having two inputs and generating at its output a triggering pulse in response to pulses applied simultaneously to the two inputs thereof, third and fourth coupling circuits coupling said receiver and the output of said first coincidence gate respectively to the two inputs of said second coincidence gate, second time-delay means in one of said third and fourth coupling circuits effecting a time delay equal to the time spacing between said amplitude-control pulse and a received pulse other than one of the pulses of said pair, a radio transmitter, and means coupling the output of said second coincidence gate to render said transmitter operative in response to said triggering pulse.

3,160,885
HEIGHT FINDING RADAR
William B. Bernard, Longboat Key, Fla., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 13, 1963, Ser. No. 258,359
3 Claims. (Cl. 343—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A scanning system for a height finding radar comprising:

3,160,886
PULSE DECODING APPARATUS
Frederick H. Battle, Jr., Huntington Station, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,301
9 Claims. (Cl. 343—106)

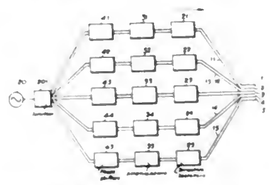


1. In apparatus for decoding a scanning beam coded by pulse modulations transmitted at intervals varying with the beam angle, including a sweep generator and means for starting and stopping the sweeps thereof under the control of said pulse modulations, and an angle memory circuit for storing a signal representing the beam angle, the improvement which comprises

(*a*) means for utilizing the stored angle signal to control the starting levels of the sweeps of the sweep generator,

(*b*) and means for determining differences between the terminal values of the sweeps and a reference level to obtain error signals representing departures of the stored angle signal from the then-existing beam angle.

3,160,887
BROADSIDE ARRAY WITH ADJUSTABLE COUPLING NETWORK FOR BEAM SHAPING
Georges Broussaud and Erich Spitz, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 30, 1960, Ser. No. 18,598
Claims priority, application France, Apr. 10, 1959, 791,715
7 Claims. (Cl. 343—777)

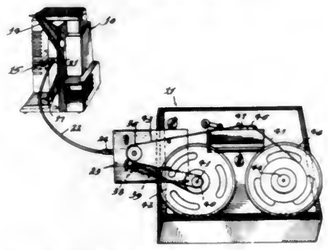


2. A directional aerial for electromagnetic waves comprising in combination: a plurality of parallel and similar radiating elements having respective longitudinal axes, located in the same plane and forming a rectangular radiating aperture, the distance between the respective longitudinal axes of any two adjacent elements being a fraction of the operating wavelength; an electromagnetic

energy generator; a plurality of transmission lines respectively connecting said generator to said elements; in each transmission line, a directional absorbing device for absorbing any energy flowing from said elements to said generator, phase adjusting means and amplitude adjusting means; and means for matching respectively said elements to said transmission lines.

3,160,888
SYNCHRONIZED MOTION PICTURE AND SOUND RECORDING SYSTEM AND DRIVE MECHANISM THEREFOR

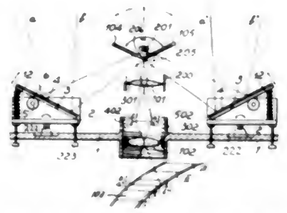
Arnold Y. Midlash, Chicago, Ill.
(800 Meadowlark Lane, Glenview, Ill.)
Filed July 7, 1961, Ser. No. 122,537
9 Claims. (Cl. 352—15)



1. A synchronized motion picture and sound recording system comprising a motion picture projector and a tape recorder, a drive motor for the projector, an exposed drive control shaft on the projector, a flexible cable connected at one end to the drive control shaft, a horizontal shaft on said tape recorder connected to the other end of the flexible cable, stabilizing means on said shaft to prevent whip and oscillation of said flexible cable, a vertical shaft in said tape recorder, means including meshing speed reduction gearing on said shafts for rotating the vertical shaft from said horizontal shaft and reducing the revolutions of said vertical shaft relative to said horizontal shaft including a worm gear secured to the horizontal shaft and a spring-loaded split gear engaging the worm gear and secured to the vertical shaft, said tape recorder including a feed spindle and reel and a take-up spindle and reel for magnetic tape running between said reels and means to record and play back the desired sound track, drive means on said vertical shaft for engaging said magnetic tape, and means connecting said vertical shaft with said take-up spindle to simultaneously drive the magnetic tape and the take-up reel.

3,160,889
APPARATUS FOR OBTAINING PHOTOGRAPHIC REPRODUCTIONS WITH STEREOSCOPICAL EFFECT

Adelmo Giacometti, C.so XXII Marzo 22, Milan, Italy
Filed June 20, 1962, Ser. No. 204,665
Claims priority, application Italy, June 24, 1961
11,666/61
3 Claims. (Cl. 352—60)

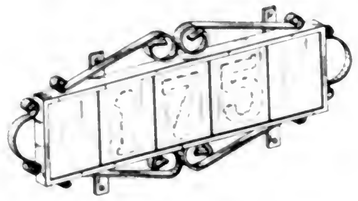


1. An apparatus for obtaining photographic reproductions with a stereoscopical effect, comprising at least two coaxial lenses, at least two first reflecting means offset with respect to the axis of the lenses, at least two second reflecting means, in front of said two lenses, said first reflecting means receiving the rays from the subject to be reproduced and reflecting them towards said second reflecting means, said second reflecting means receiving said rays reflected from the first reflecting means and reflecting them towards said lenses, a photosensitive film receiving said rays after their passage through said lenses, frame members for supporting said coaxial lenses, and said first and said second reflecting means, said first reflecting means having hinge means for hingedly connecting said first reflecting surface on one of said frame members, a plane surface rigid with said first reflecting means, a shaft offset with respect to said hinge means and journaled on one of said frame members, said shaft extending parallel to said plane surface, a faceted surface on said shaft in contact with said plane surface, spring means for pressing said faceted surface against said plane surface and transmission means for transmitting a rotatory motion to said shaft.

DESIGNS

DECEMBER 8, 1964

199,725
HOUSE NUMBER PLATE
Morris Sutton, 1653 Ocean Parkway, Brooklyn, N.Y.
Filed May 6, 1963, Ser. No. 74,757
Term of patent 3½ years
(Cl. D1—12)



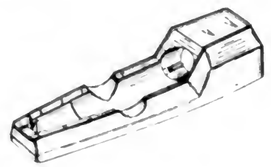
199,726
COMBINED DENTIFRICE DISPENSER AND TOOTHBRUSH HOLDER
Robert S. Hamilton, 5639 N. Millbrook, Fresno, Calif.
Filed June 10, 1963, Ser. No. 75,294
Term of patent 14 years
(Cl. D4—3)



199,727
ELECTRIC TOOTHBRUSH UNIT OR THE LIKE
Melvin H. Boidt, Glenview, Ill., assignor to National Presto Industries, Inc., Eau Claire, Wis., a corporation of Wisconsin
Filed Mar. 13, 1964, Ser. No. 78,985
Term of patent 14 years
(Cl. D4—3)



199,728
HOLDER FOR POWER TOOTHBRUSH UNIT
Richard B. Hall, Cincinnati, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Apr. 10, 1964, Ser. No. 79,438
Term of patent 14 years
(Cl. D4—3)



199,729
COMBINED WATER CLOSET TANK AND COVER
Jack Nelson Kaiser, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 17, 1962, Ser. No. 70,967
Term of patent 14 years
(Cl. D4—5)



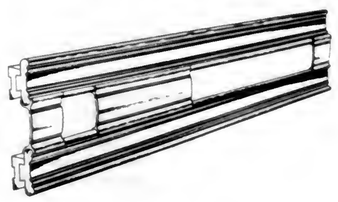
199,730
COMBINED SHOE HORN, GARMENT HANGER AND FOLDING BRUSH
Albert Wettberg, 6124 Beerfelden, Beerfelden, Odenwald, Germany
Filed June 23, 1964, Ser. No. 80,729
Term of patent 14 years
(Cl. D9—2)



199,731
HORIZONTAL FLUTED PUSH BAR
James L. Fountain, P.O. Box 30218, Dallas, Tex.
Filed June 24, 1963, Ser. No. 75,486
Term of patent 14 years
(Cl. D10—8)



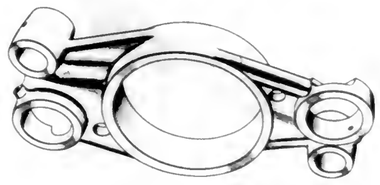
199,732
DUAL HORIZONTAL FLUTED PUSH BAR
John J. Grove, Dallas, Tex., assignor to Facade, Inc., Richardson, Tex., a corporation of Texas
Filed June 24, 1963, Ser. No. 75,494
Term of patent 14 years
(Cl. D10—8)



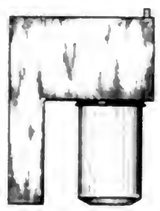
199,733
SHELTER
Allan J. Hastings, Los Angeles, Calif., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 67,135
Term of patent 14 years
(Cl. D13—1)



199,734
BRAKE SHOE ANCHOR
Lloyd D. Kay, San Marino, Calif., assignor to Kay-Brunner Steel Products, Inc., Alhambra, Calif., a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 73,739
Term of patent 14 years
(Cl. D14—30)



199,735
DEODORANT CARRYING CONTAINER FOR USE IN TOILET FLUSH TANKS
Roy P. Woodruff, 130 El Verano, Vallejo, Calif.
Filed Dec. 2, 1963, Ser. No. 77,638
Term of patent 14 years
(Cl. D16—2)



199,736
PHONOGRAPH TONE ARM
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 78,208
Term of patent 14 years
(Cl. D26—14)

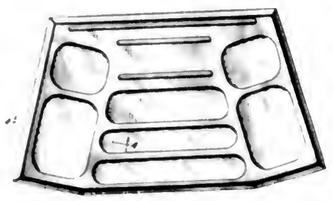




199,737
FISHHOOK DISGORGER
J Alan Cross, Jr., 1702 Ponce de Leon Blvd., Coral Gables, Fla.
Filed Dec. 18, 1962, Ser. No. 72,892
Term of patent 7 years
(Cl. D31—4)



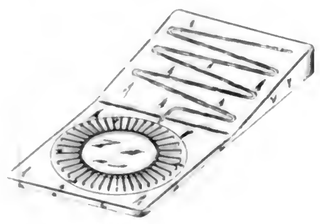
199,738
DRESSER VALET TRAY
Roger E. Davis, Traverse City, Mich., assignor to The Setwell Company, Traverse City, Mich., a corporation of Illinois
Filed Dec. 27, 1963, Ser. No. 77,948
Term of patent 14 years
(Cl. D33—3)



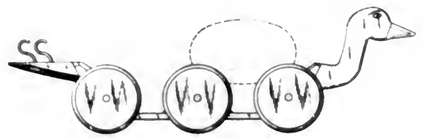
199,739
PLUSH DOG TOY
Paul Lofaro, Beechhurst, N.Y.
(601 W. 50th St., New York, N.Y.)
Filed Aug. 27, 1963, Ser. No. 76,368
Term of patent 3½ years
(Cl. D34—2)



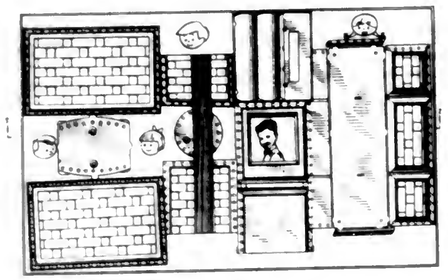
199,740
GAME BOARD
Sander W. Kuchlin, 10 Pauchogue Ave., East Islip, Long Island, N.Y.
Filed Feb. 5, 1964, Ser. No. 78,537
Term of patent 14 years
(Cl. D34—5)



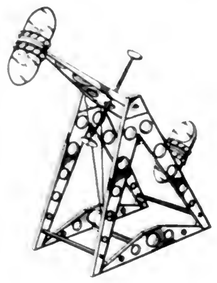
199,741
ANIMATED TOY
James A. Brown, 10712 Lockridge Drive, Silver Spring, Md.
Filed Oct. 4, 1962, Ser. No. 71,991
Term of patent 14 years
(Cl. D34—15)



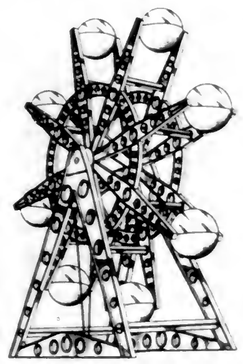
199,742
TOY LACING KIT PACKAGE
Frank Kohner, New York, N.Y., assignor to Kohner Bros., Inc., New York, N.Y., a corporation of New York
Filed June 7, 1963, Ser. No. 75,263
Term of patent 3½ years
(Cl. D34—15)



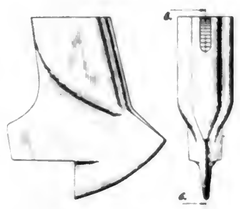
199,743
TOY AMUSEMENT RIDE
Frank D. McDonald, Los Angeles, Calif., assignor to Wen-Mac Corporation, a corporation of California
Filed June 18, 1963, Ser. No. 75,407
Term of patent 3½ years
(Cl. D34—15)



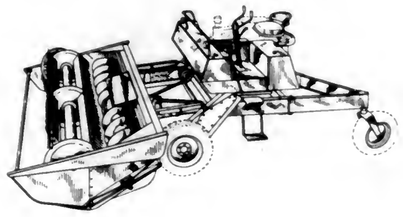
199,744
TOY AMUSEMENT RIDE
Frank D. McDonald, Los Angeles, Calif., assignor to Wen-Mac Corporation, a corporation of California
Filed June 18, 1963, Ser. No. 75,409
Term of patent 3½ years
(Cl. D34—15)



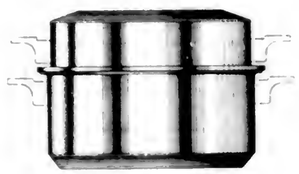
199,745
SEED PLANTER SHOE FOR OPENING A FURROW
Donald E. Williams, Garden City, Kans., assignor to Acra-Plant, Inc., Newton, Kans., a corporation of Kansas
Filed Mar. 30, 1964, Ser. No. 79,251
Term of patent 14 years
(Cl. D35—2)

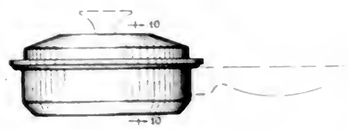


199,746
SWATHER
Raymond A. Adee, Newton, and Richard E. Ten Eyck, Wichita, Kans., assignors to Hesston Manufacturing Co., Inc., Hesston, Kans., a corporation of Kansas
Filed June 6, 1963, Ser. No. 75,249
Term of patent 14 years
(Cl. D40—1)

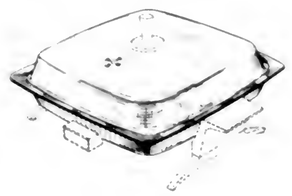


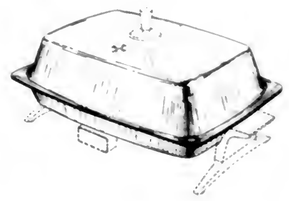
199,747
COOKING UTENSIL
Milton H. Farber, 54 Holly Drive, New Rochelle, N.Y.
Continuation of design applications Ser. Nos. 76,146 and 76,147, Aug. 8, 1963. This application Apr. 23, 1964, Ser. No. 79,812
Term of patent 14 years
(Cl. D44—1)



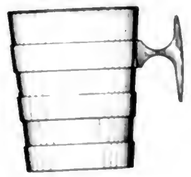


199,748
FRY PAN
Dominic J. De Fano, River Grove, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Continuation of design applications Ser. No. 75,994, July 26, 1963, and Ser. No. 76,212, Aug. 14, 1963. This application Apr. 28, 1964, Ser. No. 79,855
Term of patent 14 years
(Cl. D44—1)





199,749
MUG OR SIMILAR ARTICLE
Martin Schnur, West Orange, and Mel Appel, Murray Hill, N.J., assignors to Deka Plastics, Inc., Elizabeth, N.J.
Filed May 3, 1963, Ser. No. 74,733
Term of patent 14 years
(Cl. D44—9)



199,750
PLATE OR SIMILAR ARTICLE
Tetsuo Senda, Nagoya, Nishi-ku, and Tsugitaka Sugiyama, Inazawa, Nagano-cho, Japan, assignors to Noritake Co. (Calif.) Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 76,252
Term of patent 3½ years
(Cl. D44—15)



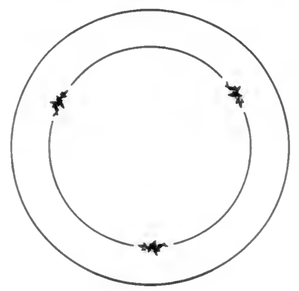
199,751
PLATE OR SIMILAR ARTICLE
Tetsuo Senda, Nagoya, Nishi-ku, and Tsugitaka Sugiyama, Inazawa, Nagano-cho, Japan, assignors to Noritake Co. (Calif.) Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 76,254
Term of patent 3½ years
(Cl. D44—15)



199,752
PLATE OR SIMILAR ARTICLE
Tetsuo Senda, Nagoya, Nishi-ku, and Tsugitaka Sugiyama, Inazawa, Nagano-cho, Japan, assignors to Noritake Co. (Calif.) Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 76,255
Term of patent 7 years
(Cl. D44—15)



199,753
PLATE OR SIMILAR ARTICLE
Tsugitaka Sugiyama, 170 Nagaide, Inazawa, Japan
Filed Jan. 7, 1964, Ser. No. 78,113
Term of patent 3½ years
(Cl. D44—15)



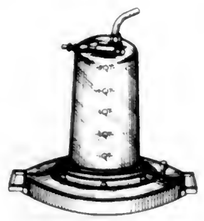
199,754
PLATE OR SIMILAR ARTICLE
Tsugitaka Sugiyama, 170 Nagaide, Inazawa, Japan
Filed Jan. 7, 1964, Ser. No. 78,117
Term of patent 7 years
(Cl. D44—15)



199,755
COMBINED PITCHER AND COOLER THEREFOR
Ted A. Bell, 201 West View Ave., and Richard C. Schneider, 403 S. Aiken Ave., both of Pittsburgh, Pa.
Filed Dec. 17, 1963, Ser. No. 77,826
Term of patent 14 years
(Cl. D44—21)



199,756
AUTOMOBILE OIL CHANGER OR SIMILAR ARTICLE
Ernest K. Gentit, Stryker, Ohio, assignor to The Aro Corporation, Bryan, Ohio, a corporation of Ohio
Filed Dec. 10, 1962, Ser. No. 72,778
Term of patent 14 years
(Cl. D46—1)



199,757
SWIVEL
John Ward Blakely, Glendale, Calif.
(13444 Wyandotte Ave., North Hollywood, Calif.)
Filed Jan. 20, 1964, Ser. No. 78,285
Term of patent 14 years
(Cl. D48—4)



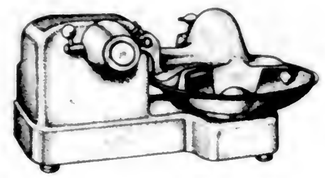
199,758
ELECTRIC LAMP
Orrick H. Biggs, Beverly, Frederick A. Loughridge, Manchester, and Paul E. Gates, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 72,994
Term of patent 14 years
(Cl. D48—20)



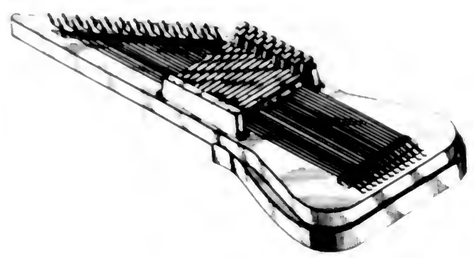
199,759
GRILLE UNIT
Raymond M. Becker and Theodore F. Au Claire, Sr., Petoskey, Mich., assignors to Permalum Industries, Inc., Harbor Springs, Mich., a corporation of Michigan
Filed Mar. 12, 1963, Ser. No. 73,937
Term of patent 14 years
(Cl. D54—2)



199,760
FOOD CUTTING MACHINE
David A. Meeker, Troy, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Nov. 6, 1963, Ser. No. 77,316
Term of patent 14 years
(Cl. D55—1)



199,761
STRINGED MUSICAL INSTRUMENT
Glen R. Peterson, Jr., Summit, and Henry Ruckner, Jersey City, N.J., assignors to Oscar Schmidt International, Inc., Jersey City, N.J.
Filed June 28, 1963, Ser. No. 75,577
Term of patent 14 years
(Cl. D56—1)



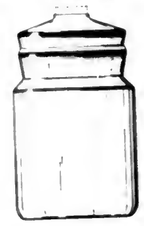
199,762
EYEGLASS FRAME OR THE LIKE
Edward W. Smith and Alexander C. Kono, Woodside, N.Y., assignors to Kono Manufacturing Co. Inc., Woodside, N.Y., a corporation of New York
Filed Dec. 5, 1963, Ser. No. 77,676
Term of patent 14 years
(Cl. D57—1)



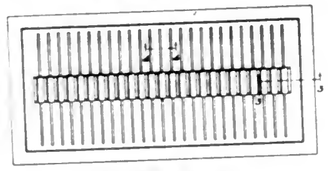
199,763
BOTTLE
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 15, 1964, Ser. No. 80,389
Term of patent 14 years
(Cl. D58—6)



199,764
BOTTLE
Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1964, Ser. No. 79,520
Term of patent 14 years
(Cl. D58—8)



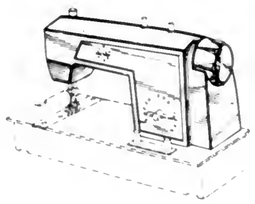
199,765
COMPARTMENTED PACKAGING TRAY
Hugh R. Weiss, Montclair, N.J., assignor to The Pantasote Company, Passaic, N.J., a corporation of New Jersey
Filed Mar. 20, 1964, Ser. No. 79,106
Term of patent 14 years
(Cl. D58—13)



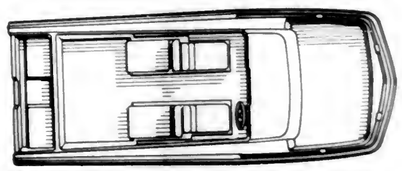
199,766
JAR
Arnold I. Lorenzen, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 8, 1963, Ser. No. 74,802
Term of patent 14 years
(Cl. D58—25)



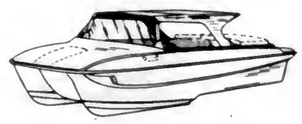
199,767
SEWING MACHINE
Ronald G. Martelet, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed May 8, 1963, Ser. No. 74,797
Term of patent 7 years
(Cl. D70—1)



199,768
BOAT
Richard C. Cole, 19701 Whispering Pines Road, Miami, Fla.
Filed Mar. 4, 1963, Ser. No. 73,790
Term of patent 14 years
(Cl. D71—1)



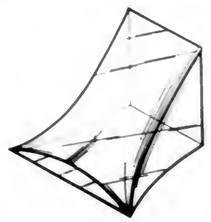
199,769
BOAT
Myron T. Stevens, Kenosha, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Original design application Mar. 21, 1962, Ser. No. 69,353, now Design Patent No. 197,363, dated Jan. 14, 1964. Divided and this application Sept. 27, 1963, Ser. No. 76,776
Term of patent 14 years
(Cl. D71—1)



199,770
DIVING BELL
Hugh D. Wilson, Goleta, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 13, 1964, Ser. No. 78,616
Term of patent 3½ years
(Cl. D71—1)



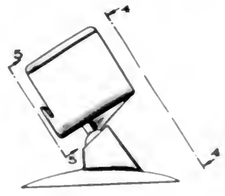
199,771
SOLARIUM
Mike Tecton, Oklahoma City, Okla.
Filed Aug. 30, 1962, Ser. No. 71,498
Term of patent 14 years
(Cl. D83—1)



199,772
UPRIGHT CONVENIENCE PANEL FOR HOSPITAL ROOM
William C. Boteler, Mission, Kans., assignor to Puritan Compressed Gas Corporation, Kansas City, Mo., a corporation of Missouri
Original design application Feb. 25, 1963, Ser. No. 73,695. Divided and this application Aug. 7, 1964, Ser. No. 81,205
Term of patent 14 years
(Cl. D83—1)



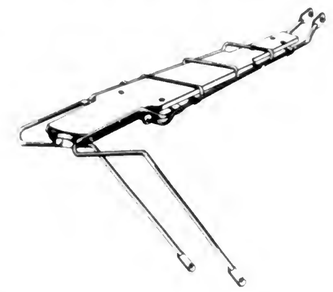
199,773
COMBINED STAND AND HOLDER FOR A BABY FOOD JAR
Edward G. Mueller, 1102 W.O.W. Bldg., Omaha, Nebr.
Filed July 16, 1963, Ser. No. 75,835
Term of patent 7 years
(Cl. D83—8)



199,774
BICYCLE LUGGAGE CARRIER
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Continuation of design applications, Ser. Nos. 74,033 and 74,034, Mar. 19, 1963. This application June 16, 1964, Ser. No. 80,539
Term of patent 14 years
(Cl. D90—3)



199,775
BICYCLE LUGGAGE CARRIER
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Continuation of design applications Ser. Nos. 74,031 and 74,032, Mar. 19, 1963. This application June 16, 1964, Ser. No. 80,540
Term of patent 14 years
(Cl. D90—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Cook, Melvin A., and H. E. Farnam, Jr., to Iron Ore Co. of Canada. Explosive composition comprising ammonium nitrate and heat-producing metal. Re. 25,695, 12-8-64, Cl. 149—21.

Farnam, Henry E., Jr.: *See*—
Cook, Melvin A., and Farnam. Re. 25,695.

Houben, Gerardus M. M., and E. W. Jonker, to Koninklijke Stearine Kaarsenfabrieken "Gouda-Appolo" N.V. Margarine, antispattering substances and methods for their manufacture. Re. 25,696, 12-8-64, Cl. 99—123.

Iron Ore Co. of Canada: *See*—
Cook, Melvin A., and Farnam. Re. 25,695.

Jonker, Everhardus W.: *See*—
Houben, Gerardus M. M., and Jonker. Re. 25,696.

Koninklijke Stearine Kaarsenfabrieken "Gouda-Appolo" N.V.: *See*—
Houben, Gerardus M. M., and Jonker. Re. 25,696.

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Adee, Raymond A., and R. E. Ten Eyck, to Hewston Mfg. Co., Inc. Swather. 199,746, 12-8-64, Cl. D40—1.

American Radiator & Standard Sanitary Corp.: *See*—
Kaiser, Jack N. 199,729.

Appel, Mel: *See*—
Schnur, Martin, and Appel. 199,749.

Aro Corp.: *See*—
Gentit, Ernest K. 199,756.

Au Claire, Theodore F., Sr.: *See*—
Becker, Raymond M., and Au Claire. 199,756.

Becker, Raymond M., and T. F. Au Claire, Sr., to Permalum Industries, Inc. Grille unit. 199,759, 12-8-64, Cl. D54—2.

Bell, Ted A., and R. C. Schneider. Combined pitcher and cooler therefor. 199,755, 12-8-64, Cl. D44—21.

Biggs, Orrick H., F. A. Loughridge, and P. E. Gates, to Sylvania Electric Products Inc. Electric lamp. 199,758. 12-8-64, Cl. D48—20.

Blakely, John W. Swivel. 199,757, 12-8-64, Cl. D48—4.

Boeing Co., The: *See*—
Hastings, Allan J. 199,733.

Boldt, Melvin H., to National Presto Industries, Inc. Electric toothbrush unit or the like. 199,727, 12-8-64, Cl. D4—3.

Boldt, Melvin H., to Zenith Radio Corp. Phonograph tone arm. 199,736, 12-8-64, Cl. D26—14.

Boteler, William C., to Puritan Compressed Gas Corp. Upright convenience panel for hospital room. 199,772, 12-8-64, Cl. D83—1.

Brown, James A. Animated toy. 199,741, 12-8-64, Cl. D34—15.

Cole, Richard C. Boat. 199,768, 12-8-64, Cl. D71—1.

Cross, J Alan, Jr. Fishhook disgorger. 199,737, 12-8-64, Cl. D31—4.

Davis, Roger E., to The Setwell Co. Dresser valet tray. 199,738, 12-8-64, Cl. D33—3.

De Fano, Dominic J., to McGraw-Edison Co. Fry pan. 199,748, 12-8-64, Cl. D44—1.

Deka Plastics, Inc.: *See*—
Schnur, Martin, and Appel. 199,749.

Dominion Electric Corp.: *See*—
Hall, Richard B. 199,728.

Facade, Inc.: *See*—
Grove, John J. 199,732.

Farber, Milton H. Cooking utensil. 199,747, 12-8-64, Cl. D44—1.

Fountain, James L. Horizontal fluted push bar. 199,731, 12-8-64, Cl. D10—8.

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Biggs, Orrick H., Loughridge, and Gates. 199,758.

Gentit, Ernest K., to Aro Corp. Automobile oil changer or similar article. 199,756, 12-8-64, Cl. D46—1.

Grove, John J., to Facade, Inc. Dual horizontal fluted push bar. 199,732, 12-8-64, Cl. D10—8.

Hall, Richard B., to Dominion Electric Corp. Holder for power toothbrush unit. 199,728, 12-8-64, Cl. D4—3.

Hamilton, Robert S. Combined dentrifice dispenser and tooth brush holder. 199,726, 12-8-64, Cl. D4—3.

Hastings, Allan J., to The Boeing Co. Shelter. 199,733, 12-8-64, Cl. D13—1.

Hewston Mfg. Co., Inc.: *See*—
Adee, Raymond A., and Ten Eyck. 199,746.

Hobart Mfg. Co., The: *See*—
Meeker, David A. 199,760.

Kaiser, Jack N., to American Radiator & Standard Sanitary Corp. Combined water closet tank and cover. 199,729. 12-8-64, Cl. D4—5.

Kay-Brunner Steel Products, Inc.: *See*—
Kay, Lloyd D. 199,734.

Kay, Lloyd D. 199,734.

Kohner Bros., Inc.: *See*—
Kohner, Frank. 199,742.

Kohner, Frank, to Kohner Bros., Inc. Toy lacing kit package. 199,742, 12-8-64, Cl. D34—15.

Kuno, Alexander C.: *See*—
Smith, Edward W., and Kono. 199,762.

Kuno Mfg. Co., Inc.: *See*—
Smith, Edward W., and Kono. 199,762.

Kuchlin, Sander W. Game board. 199,740, 12-8-64, Cl. D34—5.

Lofaro, Paul. Plush dog toy. 199,739, 12-8-64, Cl. D34—2.

Lorenzen, Arnold I., deceased, by G. M. Lorenzen, executrix, to Owens-Illinois Glass Co. Bottle. 199,764, 12-8-64, Cl. D58—8.

Lorenzen, Arnold I., to Owens-Illinois Glass Co. Jar. 199,766, 12-8-64, Cl. D58—25.

Lorenzen, Gertrude M.: *See*—
Lorenzen, Arnold I. 199,761.

Loughridge, Frederick A.: *See*—
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Martelet, Ronald G., to Sears, Roebuck and Co. Sewing machine. 199,767, 12-8-64, Cl. D70—1.

McDonald, Frank D., to Wen-Mac Corp. Toy amusement ride. 199,743, 12-8-64, Cl. D34—15.

McDonald, Frank D., to Wen-Mac Corp. Toy amusement ride. 199,744, 12-8-64, Cl. D34—15.

McGraw-Edison Co.: *See*—
De Fano, Dominic J. 199,748.

Meeker, David A., to The Hobart Mfg. Co. Food cutting machine. 199,760, 12-8-64, Cl. D55—1.

Mueller, Edward G. Combined stand and holder for a baby food jar. 199,773, 12-8-64, Cl. D83—8.

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Schreckengost, Viktor. 199,775.

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Senda, Tetsuo, and Sugiyama. 199,751.
Senda, Tetsuo, and Sugiyama. 199,752.

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Stevens, Myron T. 199,769.

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Lorenzen, Arnold I. 199,764.
Lorenzen, Arnold I. 199,766.
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Peterson, Glen R., Jr., and H. Ruckner, to Oscar Schmidt International, Inc. Stringed musical instrument. 199,761, 12-8-64, Cl. D56—1.

Puritan Compressed Gas Corp.: *See*—
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Ruckner, Henry: *See*—
Peterson, Glen R., Jr., and Ruckner. 199,761.

Schmidt, Oscar, International, Inc.: *See*—
Peterson, Glen R., Jr., and Ruckner. 199,761.

Schneider, Richard C.: *See*—
Bell, Ted A., and Schneider. 199,755.

Schnur, Martin, and M. Appel, to Deka Plastics, Inc. Mug or similar article. 199,749, 12-8-64, Cl. D44—9.

Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle luggage carrier. 199,774, 12-8-64, Cl. D90—3.

Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle luggage carrier. 199,775, 12-8-64, Cl. D90—3.

Sears, Roebuck and Co.: *See*—
Martelet, Ronald G. 199,767.

Senda, Tetsuo, and T. Sugiyama, to Noritake Co. (Cal.), Inc. Plate or similar article. 199,750, 12-8-64, Cl. D44—15.

Senda, Tetsuo, and T. Sugiyama, to Noritake Co. (Cal.), Inc. Plate or similar article. 199,751, 12-8-64, Cl. D44—15.

Senda, Tetsuo, and T. Sugiyama, to Noritake Co. (Cal.), Inc. Plate or similar article. 199,752, 12-8-64, Cl. D44—15.

Setwell Co., The: *See*—
Davis, Roger E. 199,738.
Smith, Edward W., and A. C. Kono, to Kono Mfg. Co., Inc. Eyeglass frame or the like. 199,762, 12–8–64, Cl. D57—1.
Stevens, Myron T., to Outboard Marine Corp. Boat. 199,769, 12–8–64, Cl. D71—1.
Sugiyama, Tsugitaka: *See*—
Senda, Tetsuo, and Sugiyama. 199,750.
Senda, Tetsuo, and Sugiyama. 199,751.
Senda, Tetsuo, and Sugiyama. 199,752.
Sugiyama, Tsugitaka. Plate or similar article. 199,753, 12–8–64, Cl. D44—15.
Sugiyama, Tsugitaka. Plate or similar article. 199,754, 12–8–64, Cl. D44—15.
Sutton, Morris. House number plate. 199,725, 12–8–64, Cl. D1—12.
Sylvania Electric Products Inc.: *See*—
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Union Carbide Corp.: *See*—
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Weiss, Hugh R., to The Pantasote Co. Compartmented packaging tray. 199,765, 12–8–64, Cl. D58—13.
Wen-Mac Corp.: *See*—
McDonald, Frank D. 199,743.
McDonald, Frank D. 199,744.
Wettberg, Albert. Combined shoe horn, garment hanger and folding brush. 199,730, 12–8–64, Cl. D9—2.
Williams, Donald E., to Acra-Plant, Inc. Seed planter shoe for opening a furrow. 199,745, 12–8–64, Cl. D35—2.
Wilson, Hugh D., to Union Carbide Corp. Diving bell. 199,770, 12–8–64, Cl. D71—1.
Woodruff, Roy P. Deodorant carrying container for use in toilet flush tanks. 199,735, 12–8–64, Cl. D16—2.
Zenith Radio Corp.: *See*—
Boldt, Melvin H. 199,736.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Carlson, Harold A. 3,160,150.
Carlson, Harold A., Frey, and Hertling. 3,160,684.
Carlson, Harold A., Johnson, and Frey. 3,160,682.
Johnson, Eldon A. 3,160,681.
Johnson, Eldon A. 3,160,683.
Natho, Paul J. 3,160,427.
AMP Inc.: *See*—
O'Keefe, Michael F., and Stull. 3,160,456.
Aalpoel, Marten G.: *See*—
Maas, Henricus J., and Aalpoel. 3,160,160.
Abbott, Frank R., to United States of America, Navy. Magnetostrictive transducer. 3,160,769, 12–8–64, Cl. 310—26.
Abell, Donald E., to Westinghouse Electric Corp. Generator-fed motor control for plural stand tensioning system with tensionless IR compensation. 3,160,802, 12–8–64, Cl. 318—6.
Abernathy, Miles H., and C. H. Dowen. Sliding guide. 3,160,448, 12–8–64, Cl. 308—3.6.
Abrasive Developments Ltd.: *See*—
Ashworth, Stewart I. 3,160,106.
Achenbach, Karl, K. Osterloh, and W. Rothe, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler and Dr. C. Otto & Co. G.m.b.H. Process for desulfurizing and deodorizing hydrocarbons. 3,160,580, 12–8–64, Cl. 208—266.
Aciego, Alfonso B. Garage door handle. 3,159,867, 12–8–64, Cl. 16—126.
Ackerman, Arnold W.: *See*—
Stone, Richard W., Ackerman, and Nyquist. 3,160,315.
Ackley, John W., and C. K. Stralow, to Deere & Co. Highway sprayer. 3,160,347, 12–8–64, Cl. 239—159.
Acme Appliance Mfg. Co.: *See*—
Kellems, Kenneth K. 3,159,866.
Adams, Lester R., to International Business Machines Corp. Ring circuit. 3,160,862, 12–8–64, Cl. 340—174.
Adams, Lester R., and A. F. Collins, to International Business Machines Corp. Control system for computer. 3,160,858, 12–8–64, Cl. 340—172.5.
Adler, Franklin P., to Pullman Inc. Door operating mechanism for railway cars. 3,160,198, 12–8–64, Cl. 160—113.
Advance Transformer Co.: *See*—
Liberman, Arnold J. 3,160,840.
Aeroil Products Co., Inc.: *See*—
Wollner, Paul. 3,160,401.
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Dunning, Charles E. 3,160,751.
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Wiklund, Carl H. 3,159,934.
Aires, Ramon H., to United States of America, Navy. Velocity saturation control for track networks. 3,160,880, 12–8–64, Cl. 343—7.4.
Air Products and Chemicals, Inc.: *See*—
Hess, Richard A. 3,160,527.
Aitchison, Robert B., to Union Carbide Corp. Blasting explosive. 3,160,536, 12–8–64, Cl. 149—8.
Ajinomoto Co., Inc.: *See*—
Simamura, Osamu, Tsuchiya, Takenishi, Kato, Mori, and Meguro. 3,160,625.
Alarie, Robert W. Filter apparatus and connecting means therefor. 3,160,588, 12–8–64, Cl. 210—457.
Albert, Frank P., L. W. Bleker, and A. A. Bowcutt, to Union Tank Car Co. Method of making cylinders. 3,159,911, 12–8–64, Cl. 29—471.1.
Albrecht, Leonard N. Shopping cart stacker. 3,160,292, 12–8–64, Cl. 214—6.
Aldrich, Lewis R., and J. L. Howard, said L. R. Aldrich assor. to said J. L. Howard. Safety cradle bed for vehicle and general use. 3,159,850, 12–8–64, Cl. 5—94.
Alexander, Clifford R.: *See*—
Sherman, Kenneth S., and Alexander. 3,160,105.
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Allen, Dewar L., and J. W. O'Malley. Shipping means. 3,159,930, 12–8–64, Cl. 40—2.
Allen, William M., C. W. Fick, A. M. Rockwood, and R. E. Bell, to Hoover Ball and Bearing Co. Apparatus for peeling sausages and the like. 3,159,868, 12–8–64, Cl. 17—1.
Allied Chemical Corp.: *See*—
Anello, Louis G., and Woolf. 3,160,623.
Hayworth, Curtis B., Hutzler, Michener, and Sobel. 3,160,473.
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Allegro, Richard A., to Norton Co. Refractory articles bonded to a metal base. 3,160,480, 12–8–64, Cl. 29—195.
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Ames, John E., Jr., to Fairchild Camera and Instrument Corp. Strain gauge isolation circuitry. 3,160,001, 12–8–64, Cl. 73—88.5.
Amodei, Juann J., and W. F. Kosonocky, to Radio Corp. of America. Negative resistance analog to digital converter. 3,160,873, 12–8–64, Cl. 340—347.
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Brandl, Willi. 3,159,889.
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Anderegg, John M., to International Business Machines Corp. Card reading device. 3,160,739, 12–8–64, Cl. 235—61.11.
Anders, Frank M. Thermoelectric system. 3,159,979, 12–8–64, Cl. 62—3.
Anders, Frederic J., Jr., to E. I. du Pont de Nemours and Co. Dispersion hardened metal product and process. 3,159,908, 12–8–64, Cl. 29—182.5.
Anderson, Malcolm G., to The Goodyear Tire & Rubber Co. Safety tire having an inner tire provided with a chafe and puncture resisting tread. 3,160,191, 12–8–64, Cl. 152—341.
Anderson, Ralph F., and C. G. Hallgren, to National Lock Co. Latch assembly for medicine cabinets. 3,160,431, 12–8–64, Cl. 292—42.
Anderson, Robert A., and D. T. Brown, to International Business Machines Corp. Binary coded decimal to binary translator. 3,160,872, 12–8–64, Cl. 340—347.
Andis Clipper Co.: *See*—
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Andis, Matthew G., to Andis Clipper Co. Reciprocable slide switch for appliances. 3,160,718, 12–8–64, Cl. 200—16.
Andresen, John H., Jr., to Kollsman Instrument Corp. Fail safe aircraft instrument. 3,160,012, 12–8–64, Cl. 73—384.
Andrews, Alvadore M. Method and apparatus for producing perforated sheeting and tubes. 3,160,687, 12–8–64, Cl. 264—25.
Andries, Francis M., J. L. Center, and G. J. Rabalais, to Texas Instruments Inc. Electronic stethoscope. 3,160,708, 12–8–64, Cl. 179—1.
Anello, Louis G., and C. Woolf, to Allied Chemical Corp. Manufacture of aryl diazonium fluorides. 3,160,623, 12–8–64, Cl. 260—141.
Angst, Walter: *See*—
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Angst, Walter, M. Wengryn, J. Goodlet, Jr., and L. I. Seifert, to Kollsman Instrument Corp. Data projector input device. 3,160,462, 12–8–64, Cl. 340—29.
Antoszewski, Eugeniusz, and J. W. F. Sheriff, to The English Electric Co. Ltd. Electrical protective relays. 3,160,788, 12–8–64, Cl. 317—36.
Appleby, Donald O., to The Pipe Machinery Co. Set of high speed thread cutting carbide chasers. 3,159,858, 12–8–64, Cl. 10—111.
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Armco Steel Corp.: *See*—
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Vogt, Norman H., Weprin, and Pasutin. 3,159,869.

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Arndt, Joseph M., Jr., to The Flo-Jo Corp. Portable commode. 3,159,848, 12–8–64, Cl. 4—135.

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Aro Corp., The: *See*—
Doyle, Arnold W., Jolkovski, and Laws. 3,160,686.

Asantcheeff, Paul, to Le Materiel Electrique S.W. Ventilating arrangements for an alternator with a rotor of large diameter. 3,160,770, 12–8–64, Cl. 310—57.

Ashworth, Stewart I., to Abrasive Developments Ltd. Centrifugal pumps. 3,160,106, 12–8–64, Cl. 103—103.

Astier, Pierre J. Composing computer and indicator. 3,160,742, 12–8–64, Cl. 235—164.

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Atlee Corp.: *See*—
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Aufricht, Gustave. Anti-fogging eyeglasses. 3,160,735, 12–8–64, Cl. 219—201.

Aune, Kenneth E., to United States of America, Army. Missile launch detection circuit. 3,160,795, 12–8–64, Cl. 317—148.5.

Aurora Corp. of Illinois: *See*—
Von Gunten, Lee L. 3,160,049.
Von Gunten, Lee L. 3,160,052.

Automatic Electric Laboratories, Inc.: *See*—
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Else, Robert K., and Meyer. 3,160,714.
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Ayers, David T., Jr., to Kelsey-Hayes Co. Brake operating mechanism. 3,159,975, 12–8–64, Cl. 60—54.6.

Aykanian, Ardashus A., E. E. Hardy, and G. A. Latinen, to Monsanto Co. Extrusion process. 3,160,688, 12–8–64, Cl. 264—53.

Bacsanyi, Thomas J., and G. A. Toteff, to Model Products Corp. Rotary turntable. 3,160,231, 12–8–64, Cl. 185—40.

Baggett, Roy, Jr. Paint roller. 3,159,905, 12–8–64. Cl. 29—110.

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Battle, Frederick H., Jr., to Cutler-Hammer, Inc. Pulse decoding apparatus. 3,160,886, 12–8–64, Cl. 343—106.

Bauer, Benjamin B., J. M. Hollywood, and G. P. Maerkle, to Columbia Broadcasting System, Inc. Stereophonic sound reproducing system. 3,160,706, 12–8–64, Cl. 179—1.

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Bean, Lawrence H. Method of rough registration for reprinting on a flexographic printing press. 3,160,094, 12–8–64, Cl. 101—181.

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Neumann, Clarence A., Helberg, and Bedford. 3,160,842

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Billie-Knudsen, Klaus, to Danfoss ved ing. M. Clausen. Thermostat with adjustable temperature range and combined semi-automatic operator. 3,160,725, 12–8–64, Cl. 200—140.

Blnkert, Carl F., and L. H. Laine, to Libbey-Owens-Ford Glass Co. Method of bending glass sheets or plates. 3,160,491, 12–8–64, Cl. 65—107.

Birum, Gail H., and G. A. Richardson, to Monsanto Co. Process for making 1-cyclohexenyl phosphonic acid diesters and an intermediate compound for use thereln. 3,160,650. 12–8–64, Cl. 260—461.

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Burton, William T., to The Goodyear Tire & Rubber Co. Tire building drum. 3,160,546, 12–8–64, Cl. 156—416.

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Mauvernay, Roland-Yves. 3,160,558.
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Kanai, Masakuni. Electric circuit element comprising an asymmetric couple of ionic conductors. 3,160,797, 12–8–64, Cl. 317—231.
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Holub, Fred F., and Kantor. 3,160,604.
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Harrison, Kenneth J. 3,160,400.

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Lipkins, Morton S. Spherical cutting apparatus. 3,159,947, 12–8–64, Cl. 51—33.

Lipkins, Morton S. Spherical cutting apparatus. 3,159,952, 12–8–64, Cl. 51—206.

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Mahland, Edward W., to Radio Corp. of America. Starting circuit for transistor converter. 3,160,829, 12–8–64, Cl. 331—113.

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Malone, Billy C., to Lynes, Inc. Inflatable packer well tool. 3,160,211, 12–8–64, Cl. 166—187.

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Manfredi, Dario, and A. Raiti. Airchute and ejection means. 3,160,374, 12–8–64, Cl. 244—138.

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Mann, Henry, and A. E. Ruppel, to Bell Telephone Laboratories, Inc. Random pulse distribution indicator. 3,160,740, 12–8–64, Cl. 235—92.

Marcattili, Enrique A. J., to Bell Telephone Laboratories, Inc. Microwave amplifier and oscillator utilizing negative resistance device. 3,160,826, 12–8–64, Cl. 330—61.

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Marko, Albert J., to General Telephone and Electronics Laboratories, Inc. Electro-optical pulse counter. 3,160,756, 12–8–64, Cl. 250—209.

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Martin, George J., to Parker-Hannifin Corp. Valve assembly. 3,160,167, 12–8–64, Cl. 137—101.

Martin, Heinz, and H. Vogt, to Siemens-Schuckertwerke Aktiengesellschaft. Semiconductor rectifier device for electric machines. 3,160,771, 12–8–64, Cl. 310—68.

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Martin, Robert J., to The Cessna Aircraft Co. Motor with delayed pressure loading. 3,160,072, 12–8–64, Cl. 91—87.

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Mastroianni, Emilio G., to General Aniline & Film Corp. Diazotype printing and developing apparatus including automatic paper reroll. 3,160,085, 12–8–64, Cl. 95—75.

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Mathews, Bernard C. Rotary scythe. 3,159,957, 12–8–64, Cl. 56—24.

Mathews, Bernard C. Rotary chopper for hay and like crops. 3,159,958, 12–8–64, Cl. 56—24.

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Mattox, William J., C. N. Kimberlin, Jr., and Z. W. Wilchinsky, to Esso Research and Engineering Co. Hydrocarbon desorption process. 3,160,581, 12–8–64, Cl. 208—310.

Maurice, Jean, to du Ferodo Francaise, Societe Anonyme. Diaphragm clutch with de-clutching ring. 3,160,253, 12–8–64, Cl. 192—89.

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Mayon, Leon, and J. A. Zang, Jr., to Burroughs Corp. Printed circuit boards and connectors therefor. 3,160,455, 12–8–64, Cl. 339—17.

Mayrath, Martin. Snap-over engine clutch for powered conveyors. 3,160,375, 12–8–64, Cl. 248—16.

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McClure, Glenn T., and T. F. Hursen, to Westinghouse Air Brake Co. Railway brake control valve device. 3,160,446, 303—83.

McClure, Glenn T., and T. F. Hursen, to Westinghouse Air Brake Co. Railway brake control valve device with continual quick service feature. 3,160,447, 12–8–64, Cl. 12–8–64, Cl. 303—36.

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McCormick, Jerry R. D., to American Cyanamid Co. 6-deoxytetracyclines. 3,160,661, 12–8–64, Cl. 260—559.

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McDaniel, Deryl G., and K. M. Blossom, to Westinghouse Electric Corp. Rectifier circuit. 3,160,806, 12–8–64, Cl. 321—47.

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McKee, John F., and R. E. Schumacher, to McKee Door Co. Drive mechanism for overhead doors. 3,160,200, 12–8–64, Cl. 160—189.

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Metcalf, Joe S., and C. Y. Shen, to Monsanto Co. Agglomeration of powdered tripolyphosphates. 3,160,472, 12–8–64, Cl. 23—106.

Metcalfe, Frederick S., to Westinghouse Electric Corp. Air conditioning apparatus. 3,159,983, 12–8–64, Cl. 62—262.

Meyer, Kurt, and G. von Struve, to Metallgesellschaft Aktiengesellschaft. Apparatus for the roasting of pellets. 3,160,402, 12–8–64, Cl. 263—28.

Meyer, Louis J.: *See*—
Else, Robert K., and Meyer. 3,160,714.

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Meyers, Douglas C., to Shell Oil Co. Mandrel for gas lift valves. 3,160,113, 12–8–64, Cl. 103—232.

Meyers, Vernon J., to United States of America, Navy. Gain control in response to ambient noise level. 3,160,707, 12–8–64, Cl. 179—1.

Micell, Joseph B. Hook and eye fastening device. 3,159,843, 12–8–64, Cl. 1—325.

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Midlash, Arnold Y. Synchronized motion picture and sound recording system and drive mechanism therefor. 3,160,888, 12–8–64, Cl. 352—15.

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Miller, Avy L. Fluid heater. 3,160,145, 12–8–64, Cl. 122—367.

Miller, Bob C., E. L. Graham, Jr., and J. D. Walter, to United States of America, Navy. Multi-sting Mach number sensor. 3,160,005, 12–8–64, Cl. 73—181.

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Mulder, Allen C. 3,160,783.

Miller, Eugene J., Jr., to Armour and Co. Method of preparing dialkyl esters of sulfofatty acids. 3,160,645, 12–8–64, Cl. 260—400.

Miller, Harry, to Sperry Rand Corp. Pressure responsive apparatus with line lag and velocity error correction. 3,160,013, 12–8–64, Cl. 73—386.

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Smith, Homer A., and Sawyer. 3,160,495.

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Green, Homer H., Radke, and Steingas. 3,159,956.

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Caldwell, Donald B., Brown, and Lavigne. 3,160,549.
Park, Joseph D., and Rosser. 3,160,660.

Minter, Clarke C. Vacuum gage and leak detector. 3,159,998, 12–8–64, Cl. 73—40.7.

Miron, Vladimir C., deceased (by The First National Bank in Sioux City, executor), to Wincharger Corp. Plural voltage electric generator. 3,160,772, 12–8–64, Cl. 310—146.

Mittler, Sheldon. Tubular electric circuits and component mounted thereon. 3,160,790, 12–8–64, Cl. 317—101.

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Shibata, Motoo, Nakazawa, Inoue, Hitomi, Mizuno, Fujino, Miyake, and Araki. 3,160,561.

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Moebius, Charles M., and C. H. Barricklow, Jr., to Parker-Hannifin Corp. Resilient nozzle mount. 3,159,971, 12–8–64, Cl. 60—39.74.

Mojonnier, Oliver W. Link member. 3,160,024, 12–8–64, Cl. 74—249.

Mollring, Gilman B. Apparatus for pulverizing and dispersing solid material into liquid suspension. 3,160,352, 12–8–64, Cl. 241—98.

Monahan, William C. Unitary paper towelling rack. 3,160,361, 12–8–64, Cl. 242—55.2.

Monday, Zephyr, to U-Stretch Corp. Elastic bobby sock top. 3,159,990, 12–8–64, Cl. 66—172.

Monomakhoff, Alexandre, to Charbonnages de France. High-pitched horn. 3,160,877, 12–8–64, Cl. 340—384.

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Aykanian, Ardashus A., Hardy, and Latinen. 3,160,688.
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Birum, Gail H., and Richardson. 3,160,650.
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Montani, Angelo, to Sperry Rand Corp., Ford Instrument Co. Division. Automatic dodging of photographs. 3,160,504, 12–8–64, Cl. 96—27.

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Moore, Lawrence A., to Beloit Corp. Weight stabilizing load handling machine. 3,160,284, 12–8–64, Cl. 212—49.

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Morgan, William C., to General Precision, Inc. Insulated exploding bridgewire header. 3,160,789, 12–8–64, Cl. 317—80.

Mori, Hisao: *See*—
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Moro, Antonio, to Soc. per Azioni Fratelli Borletti. Zig-zag sewing machine. 3,160,126, 12–8–64, Cl. 112—158.

Morra, Angelo: *See*—
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Morrison, Willard L. Insulated shipper container 3,160,307, 12–8–64, Cl. 220—9.

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Moscarini, Flaviano, to Editoriale Domus S.p.A. Device for taking and recording the performance data of a running motor vehicle. 3,160,463, 12–8–64, Cl. 346—33.

Mosher, Gerald W. Sediment testing device. 3,160,000, 12–8–64, Cl. 73—61.

Mowatt, Allan O., to Atlee Corp. Method of and apparatus for manufacturing heat-dissipating inserts and the like. 3,160,132, 12–8–64, Cl. 113—118.

Moy, Tsoy K., to United States of America, Navy. Re-entry body support. 3,160,061, 12–8–64, Cl. 89—1.7.

Moy, Tsoy K., and G. F. Mechlin, to United States of America, Navy. Flexible foam support. 3,160,062, 12–8–64, Cl. 89—1.7.

Moyer, Maynard M. Drill head. 3,160,033, 12–8–64, Cl. 77—34.7.

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Mueller, Peter A. Abutment-type seal for rotary elements. 3,160,417, 12–8–64, Cl. 277—40.

Mulch, Hans, to Ernst Leitz Gesellschaft mit beschrankter Haftung. Slide projector. 3,159,933, 12–8–64, Cl. 40—79

Mulconroy Co.: *See*—
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Mulder, Allen C., to Miller Electric Mfg. Co. Arc welder with a thermal control. 3,160,783, 12–8–64, Cl. 315—117.

Mulford, Stewart F., and D. G. Durst, to Baldwin-Lima-Hamilton Corp. Evaporator construction. 3,160,571, 12–8–64, Cl. 202—173.

Muller, Ulrich, to Siemens-Schuckertwerke Antiengesellschaft. Laminated high-voltage insulation of coaxial electric conductors. 3,160,703, 12–8–64, Cl. 174—120.

Munday, John C., to Esso Research and Engineering Co. Process of reducing electrostatic charges in fluid flow lines. 3,160,785, 12–8–64, Cl. 317—2.

Munia, Roberto O., and L. R. Culver, to Fairbanks Morse Inc. High speed weighing system using an automatically balanced electrical circuit to provide a digital indication. 3,160,811, 12–8–64, Cl. 324—99.

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Polansky, Raymond, Herbes, and Munro. 3,160,608.

Munson, John C., to United States of America, Navy. Automatic target signal tracker. 3,160,849, 12–8–64, Cl. 340—6.

Murdock, Thomas G., and C. D. Berger. Article dispensing container. 3,160,342, 12–8–64, Cl. 229—20.

Murphy, Desmond F., to Globe Industries, Inc. Inverter starting circuit. 3,160,830, 12–8–64, Cl. 331—113.

Murray, Thomas C., R. H. Liva, and N. H. Kaupp, to Xerox Corp. Xerographic processing apparatus. 3,160,057, 12–8–64, Cl. 88—24.

Musaphia, Georges. Animated displays. 3,159,936, 12–8–64, Cl. 40—106.53.

Mylo, John, J. C. Cole, and J. P. Richeson, to Monsanto Co. Continuous annealer. 3,159,873, 12–8–64, Cl. 18—1.

Naab, Gerard A.: *See*—
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Natho, Paul J., to ACF Industries, Inc. Gage-plug connection for wellhead assembly. 3,160,427, 12–8–64, Cl. 285—215.

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National Castings Co.: *See*—
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National-Standard Co.: *See*—
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Nazzareno, Toccacell, to Ormonoterapia Richter S.p.A. Purification of heparin. 3,160,563, 12–8–64, Cl. 167—74.

Nelsh, Richard A., to United States Steel Corp. Method of forming a protective coating. 3,160,532, 12–8–64, Cl. 148—6.16.

Nelson, Howard N., to Kimberly-Clark Corp. Cellulosic product. 3,160,337, 12–8–64, Cl. 225—32.

Nemphos, Speros P., to Monsanto Co. Molecular weight regulation in polymerization of vinylidene monomers using 3-methyl-1-phenyl-pyrazolone-5 as regulator. 3,160,617, 12–8–64, Cl. 260—85.5.

Nemphos, Speros P., and R. L. Walter, to Monsanto Co. Molecular weight regulation in polymerization of vinylidene monomers using unsaturated aldehydes as regulators. 3,160,614, 12–8–64, Cl. 260—85.5.

Nemphos, Speros P.: *See*—
Delacretaz, Richard E., Nemphos, and Walter. 3,160,613.
Delacretaz, Richard E., Nemphos, and Walter. 3,160,616.

Nepomniashtshy, Igor L., to Konstruktorskoje Bureau Koksohim-mash Giprokoksa. Machine for removal and mounting of covers of the coke oven loading manholes and for subsequent removal of coal charge around these manholes. 3,160,573, 12–8–64, Cl. 202—241.

Neubauer, Werner G. Sound velocity meter. 3,160,224, 12–8–64, Cl. 181—.5.

Neubert, Willy A. M.: *See*—
Ramsayer, Karl H., and Neubert. 3,160,851.

Neumann, Clarence A., H. J. Helberg, and B. D. Bedford, to General Electric Co. Adjustable sliding brush transformer. 3,160,842, 12–8–64, Cl. 336—149.

Neumeister, Ewald W. Adapter kit for cameras. 3,160,083, 12–8–64, Cl. 95—34.

Newell, George K., to Westinghouse Air Brake Co. Apparatus for controlling pressurization of inflatable dunnage members on freight cars. 3,160,118, 12–8–64, Cl. 105—369.

Newell, George K., to Westinghouse Air Brake Co. Variable load brake apparatus. 3,160,241, 12–8–64, Cl. 188—195.

Newell, William G.: *See*—
Norman, Ronald H., Newell, and Payne. 3,160,233.

Newgard, Peter M., to Schlage Lock Co. Sensing device and method. 3,160,045, 12–8–64, Cl. 83—63.

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Franzen, Gustav. 3,159,962.

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Hoshinomiya, Nobumitsu. 3,160,845.

Nixon, Phillip. Drink mixing and dispensing assembly. 3,160,324, 12–8–64, Cl. 222—144.5.

Nolan, Rober W., Jr., to The Bendix Corp. Sensing unit. 3,160,577, 12–8–64, Cl. 204—195.

Noland, James A.: *See*—
Cohen, Leonard D., and Noland. 3,160,781.

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Hudson, Holland R., Nolte, and Colebrook. 3,160,040.

Nolte, Robert K., to Metalwash Machinery Co. Pan washing machine. 3,160,262, 12–8–64, Cl. 198—134.

Nooker, Eugene L., to United States of America, Navy. Warhead projectile. 3,160,099, 12–8–64, Cl. 102—67.

Norem, Stanley D., to The Perkin-Elmer Corp. Heating apparatus for chromatographic column. 3,159,996, 12–8–64, Cl. 73—23.1.

Norman, Ronald H., W. G. Newell, and A. R. Payne, to Rubber and Plastics Research Assn. of Great Britain. Damping devices including shock absorbers. 3,160,233, 12–8–64, Cl. 188—1.

North American Aviation, Inc.: *See*—
Pesak, Frank J. 3,160,130.

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Richeson, James P. : *See*—
Mylo, John, Cole, and Richeson. 3,159,873.
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Ripley, Kenneth C., to McMullen, John J., Associates, Inc. Ship stabilization. 3,160,136, 12–8–64, Cl. 114—125.
Riske, Gilbert, and J. B. Ritzema, to Parker-Hannifin Corp. Lubricator. 3,160,230, 12–8–64, Cl. 184—55.
Risse, Willis H., D. P. Tortorici, and R. G. Bennett, to Novo Industrial Corp. Breather cap. 3,160,487, 12–8–64, 55—417.
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Russell, Charles R., Buchanan, and Rist. 3,160,552.
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Riske, Gilbert, and Ritzema. 3,160,230.
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Roark, Leon S., to Claiborne Sales Co. of Texas. Tile loading machines. 3,160,295, 12–8–64, Cl. 214—16.6.
Roberts, Thomas E., Jr., W. J. Fowler, and H. B. Brooks, to FMC Corp. Weight checking and correcting apparatus control, 3,160,320, 12–8–64, Cl. 222—55.
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Rocher, Pierre M., and C. G. Thomas, to Lentilles Ophtalmiques Rationnelles. Manufacturing of corneal lenses. 3,160,039, 12–8–64, Cl. 82—13.
Rogers, James E. Device for rounding the corners of various types of paper or card stock. 8,160,069, 12–8–64, Cl. 90—15.
Rogg, Otto, to Hurth, Carl, Maschinen-und Zahnradfabrik. Apparatus for crown shaving gear. 3,160,065, 12–8–64, Cl. 90—1.6.
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Rosen, Jacob. Self-contained lifting means for curtains. 3,160,202, 12–8–64, Cl. 160—344.
Rosen, Moe W. Gear transmission. 3,160,026, 12–8–64, 74—410.
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Norman, Ronald H., Newell, and Payne. 3,160,233.
Rubens, Arnold. Disappearing Santa in chimney. 3,159,935. 12–8–64, Cl. 40—106.31.
Rubinstein, Solomon, to General Cable Corp. Tap-proof security communications cable. 3,160,871, 12–8–64, Cl. 340—285.
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Ruhnke, Richard R., to Garcy Corp. Partition structure. 3,160,281, 12–8–64, Cl. 211—177.
Rummel, Theodor, M. Heim, W. Schauer, and F. Pfeifer, to Siemens & Halske Aktiengesellschaft. Apparatus for floating-zone melting. 3,160,478, 12–8–64, Cl. 23—273.
Runge, Wallace F., to Commercial Solvents Corp. Process alcohol modified polyamides. 3,160,611, 12–8–64, Cl. 260—78.
Runge, Wallame F., to Commercial Solvents Corp. Process for the production of cyclohexanone oxime. 3,160,663, 12–8–64, Cl. 260—566.
Ruozi, Aldo. Stalk and root lifting and shredding device. 3,160,214, 12–8–64, Cl. 171—58.
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Mann, Henry, and Ruppel. 3,160,740.
Russell, Charles R., R. A. Buchanan, and C. E. Rist, to United States of America, Agriculture. Cellulosic pulps comprising crosslinked xanthate cereal pulps and products made therewith. 3,160,552, 12–8–64, Cl. 162—146.
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Russell, Robert G., and H. L. F. Bond. Rolling mills 3,160,037, 12–8–64, Cl. 80—31.1.
Rutherford, Robert G. Seed sower. 3,160,328, 12–8–64, Cl. 222—196.
Rutkus, John, Jr., to Xerox Corp. Microfilm viewing apparatus. 3,160,058, 12–8–64, Cl. 88—24.
Ryffel, Hans, to Dr. G. Datwyler. Centrifugally biased floating seal ring of helical spring form. 3,160,416, 12–8–64, Cl. 277—1.
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Cerletti, Aurelio, and Fanchamps. 3,160,562.
Sandman, Thomas C., to The Imperial Tobacco Co. (of Great Britain & Ireland) Ltd. Apparatus and method for recovering tobacco from cigarettes. 3,160,161, 12–8–64, Cl. 131—96.
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Iwai, Issei, and Iwashige. 3,160,624.
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Savage, Conwell, to Westinghouse Electric Corp. Floor selector for an elevator control system. 3,160,232, 12–8–64, Cl. 187—29.
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Scantlin, John R., to Scantlin Electronics, Inc. Composite transmission system utilizing phase shift and amplitude modulation. 3,160,812, 12–8–64, Cl. 325—30.

Schaefer, William H., Jr., and J. K. Stanley, to Crucible Steel Co. of America. High temperature coating for silicon steel. 3,160,509, 12–8–64, Cl. 106—63.
Schaich, Wilbur A., to Owens-Illinois Glass Co. Method for making plastic articles. 3,160,690, 12–8–64, Cl. 264—163.
Schantzer, Bernard Z. Dual purpose bag. 3,160,343, 12–8–64, Cl. 229—53.
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Scheg, Marcian A., to General Signal Corp. Magnetic stick type relay having saturable core member. 3,160,796, 12–8–64, Cl. 317—171.
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Schicke, Hans-Gerd, and G. Schrader, to Farbenfebriken Bayer Aktiengesellschaft. Thioacetamino-decarboxylic acid esters of phosphorus acids. 3,160,651, 12–8–64, Cl. 260—461.
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Ogden, Wilbur L. 3,160,011.
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Schmerling, Louis, to Universal Oil Products Co. Halocycloalkenic derivatives of haloalkenyl dioxanes. 3,160,636, 12–8–64, Cl. 260—340.6.
Schmieding, Warren H. F. : *See*—
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Schmitt, Emil S., Jr. : *See*—
De Zubay, Egon A., and Schmitt. 3,159,999.
Schmitt-Thomas Karlheinz : *See*—
Fischer, Fritz, Schmitt-Thomas, and Seul. 3,160,533.
Schmitz, Friedrich, to Hochdruck-Dichtungs-Fabrik Schmitz & Schulte. Slide valve with a valve element covered by a diaphragm. 3,160,389, 12–8–64, Cl. 251—327.
Schnachner, Max H. Refrigerated container having primary and secondary cooling circuits. 3,159,982, 12–8–64, Cl. 62—175.
Schnoor, Walter G., and A. W. Yodis, to Allied Chemical Corp. Stabilization of liquid sulfur trioxide. 3,160,474, 12–8–64, Cl. 23—174.
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Schroeder, Manfred R., to Bell Telephone Laboratories, Inc. Nonsynchronous time-frequency multiplex transmission system. 3,160,711, 12–8–64, Cl. 179—15.
Schuler, L., A. G. : *See*—
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Davie, William R., and Schult. 3,160,668.
Schultz, George R. : *See*—
Holland, Edward T., Jr., and Schultz. 3,159,954.
Schulz, Alfred J., to S-B Mfg. Co. Door latch and lock 3,159,994, 12–8–64, Cl. 70—146.
Schulze, William A., and G. A. Kroll, to United States of America, Army. Missile separation system. 3,160,098, 12–8–64, Cl. 102—49.
Schumacher, Reynold E. : *See*—
McKee, John F., and Schumacher. 3,160,200.
Schwab, William B : *See*—
Steinberg, Robert, and Schwab. 3,160,567.
Schwertz, Frederick A., to Xerox Corp. High speed xeroprinter and method therefor. 3,160,091, 12–8–64, Cl. 101—92.
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Higashiuchi, Kazuo, and Schwoegler. 3,160,667.
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Scott, John N., Jr., and D. L. Peters, to Phillips Petroleum Co. Injection molding of plastic materials. 3,159,878, 12–8–64, Cl. 18—30.
Scott, Martin, to Metallized Carbon Co., Inc. Self-aligning bearings. 3,160,449, 12–8–64, Cl. 308—72.
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Jensen, Philip B. 3,159,890.
Scullin, James P., to Heyden Newport Chemicals Corp. Stain-resistant vinyl chloride composition containing a monoisobutyrate monobenzoate ester of 2,2,4-trimethylpentanediol-1,3 as plasticizer. 3,160,599, 12–8–64, Cl. 260—31.6.
Sechrist, Edward L. Sound reproduction system. 3,160,225, 12–8–64, Cl. 181—31.
Seidel, Robert B., to Automatic Timing & Controls, Inc. Timing or similar apparatus. 3,160,719, 12–8–64, Cl. 200—38.
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Angst, Walter, Wengryn, Goodlet, and Seifert. 3,160,462.
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Sellers, Woodrow W. Mercury switch mechanism for flashlights. 3,160,722, 12–8–64, Cl. 200—60.
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Jorda, Robert M. 3,160,208.
Jorda, Robert M. 3,160,518.
McEver, James W. 3,160,207.
Meyers, Douglas C. 3,160,113.
Middleton, Willis A. 3,160,016.
Price, James R., and Cunningham. 3,160,657.
Spooncer, William W. 3,160,593.
Shelton, Harry J., Jr., to Gruendler Crusher & Pulverizer Co. Disintegrators and feeding means therefor. 3,160,351, 12–8–64, Cl. 241—34.
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Shenk, Robert H., and G. Shea, to Zurn Industries, Inc. Lapping machine. 3,159,946, 12–8–64, Cl. 51—26.
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Sherman, Ralston M., to The Silent Glow Oil Burner Corp. Portable incinerator. 3,160,122, 12–8–64, Cl. 110—18.
Sherriff, John W. F. : *See*—
Antoszewski, Eugeniusz, and Sherriff. 3,160,788.
Shibata, Motoo, K. Nakazawa, M. Inoue, H. Hitomi, K. Mizuno, M. Fujino, A. Miyake, and T. Araki, to Takeda Chemical Industries, Ltd. Glumamycin and production thereof. 3,160,561, 12–8–64, Cl. 167—65.
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Komeno, Taichiro, and Kawanami. 3,160,627.
Shoemaker, Tom L., to United States Steel Corp. Matte tin plate. 3,160,481, 12–8–64, Cl. 29—195.
Shore, Leo : *See*—
Gustafson, Walter R., McMillen, Rounding, and Shore. 3,160,846.
Short, J. R., Milling Co. : *See*—
Higashiuchi, Kazuo, and Schwoegler. 3,160,667.
Siegel, Joel R., to Esso Research & Engineering Co. Stabilizing additives for distillate fuels. 3,160,484, 12–8–64, Cl. 44—62.
Siegrist, Adolf E., E. Maeder, and M. Duennenberger, to Ciba Ltd. Hydroxy-benzophenones. 3,160,665, 12–8–64, Cl 260—591.
Siemens & Halske Aktiengesellschaft : *See*—
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Siemens-Schuckertwerke Aktiengesellschaft : *See*—
Goeschel, Heinz, and Burhorn. 3,160,768.
Jakel, Gustav. 3,160,730.
Jantsch, Ottomar, and Matil. 3,160,520.
Martin, Heinz, and Vogt. 3,160,771.
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Siess, Gerhard : *See*—
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Silent Glow Oil Burner Corp., The : *See*—
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Simamura, Osamu, Y. Tsuchiya, T. Takenishi, T. Kato, H. Mori, and T. Meguro, to Ajinomoto Co., Inc. Process for the preparation of 2',3'-isopropylidene ribonucleosides. 3,160,625, 12–8–64, Cl. 260—211.5.
Simms, Robert L., Jr., to Bell Telephone Laboratories, Inc. Checking circuit. 3,160,852, 12–8–64, Cl. 340—146.1.
Simon, Frank C. Reversible position indicating dial. 3,160,137, 12–8–64, Cl. 116—115.
Simon, Jean C. : *See*—
Biggi, Victor, and Simon. 3,160,813.
Simpson, David M. Collet holder. 3,160,420, 12–8–64, Cl. 279—110
Sinclair, Frederick W., and M. H. P. A. Le Vie, to Gloucester Railway Carriage and Wagon Co. Ltd., and F. H. Lloyd and Co. Ltd. Draft and/or buffing gear for railway vehicles. 3,160,285, 12–8–64, Cl. 213—43.
Sinnott, Victor B. Anti-root sewer pipe liner. 3,160,425, 12–8–64, Cl. 285—55.
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Sirtl, Erhard, to Siemens & Halske Aktiengesellschaft. Process of producing compact boron, particularly in monocrystalline form. 3,160,476, 12–8–64, Cl. 23—209.
Sisson, Earl L., to Clark Metal Products, Inc. Machine brake 3,160,239, 12–8–64, Cl. 188—161.

Skeen, Virginia V., and C. J. Waitkus, to Monsanto Co. Treatment of polyamide filaments. 3,160,511, 12–8–64, Cl. 117—7.

Skubic, Leroy F., to The Paltier Corp. Stackable pallet of pressed sheet material. 3,160,120, 12–8–64, Cl. 108—53.

Slayter, John H., to John H. Slayter. Building construction. 3,159,882, 12–8–64, Cl. 20—4.

Smalley, Kenneth L., to Phillips Petroleum Co. Storage and transportation case. 3,160,306, 12–8–64, Cl. 220—9.

Smart, Ernest F., to Westinghouse Electric Corp. Apparatus for assembly of electron devices. 3,159,904, 12–8–64, Cl. 29—25.19.

Smart, Lee W., to Westinghouse Electric Corp. High power semiconductor switch. 3,160,800, 12–8–64, Cl. 317—235.

Smart, Roy: *See*—
Hamill, John, and Smart. 3,160,555.

Smith, Albert C. Automotive vehicle with sleeping compartment. 3,160,435, 12–8–64, Cl. 296—23.

Smith, Homer A., and E. W. Sawyer, Jr., to Minerals & Chemicals Philipp Corp. Wet process phosphoric acid and liquid fertilizer compositions containing the same. 3,160,495, 12–8–64, Cl. 71—32.

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Smith, Rolf M., to General Motors Corp. Flow regulating valve for actuators. 3,160,172, 12–8–64, Cl. 137—504.

Smith, Thomas A.: *See*—
Daniels, Charles J., Smith, and Harbin. 3,159,923.

Smith, Thomas R., to The Maytag Co. Variable speed drive. 3,160,023, 12–8–64, Cl. 74—192.

Smith, Tom Y. Metal crate. 3,160,305, 12–8–64, Cl. 220—4

Smithe, F. L., Machine Co., Inc.: *See*—
Novick, Abraham. 3,160,081.

Snyder, John R., to United States of America, Navy. Infrared optical system. 3,160,700, 12–8–64, Cl. 88—57.

Snyder, Paul J.: *See*—
Merrill, Francis G., and Snyder. 3,160,831.

Snyder, Richard L., to Hughes Aircraft Co. Random access high speed memory. 3,160,864, 12–8–64, Cl. 340—174.

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Sochor, Joseph J.: *See*—
Phelps, Byron E., Sochor, and Kusnick. 3,160,856.

Societ de Electro Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine: *See*—
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Societe d'Etudes et de Construction d'Apparells de Precision: *See*—
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Societe Francaise d'Entretien et de Reparation de Materiel Aeronautique (S.F.E.R.M.A.): *See*
Lecarme, Jacques A. M. 3,160,367.

Societe Generale "Isothermos": *See*—
Feuilly, Jules E. J. 3,160,242.

Societe Le Carbone-Lorraine: *See*
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Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Ernst, Adolphe O. G., and Tremouilles. 3,159,969.

Soldato, Peter L.: *See*—
Stefani, Joseph P., Rawson, and Soldato. 3,160,841.

Solley, Douglas A., Jr., to General Electric Co. Refrigerator including combination evaporator fan motor and defrost control. 3,159,980, 12–8–64, Cl. 62—155.

Somerville, Gareth G., to General Electric Co. Method of cutting wound magnetic cores. 3,160,044, 12–8–64, Cl. 83—19.

Sonnemann, William K., to Westinghouse Electric Corp. Restraint operation relay employing Zener diode. 3,160,787, 12–8–64, Cl. 317—32.

Sorkin, Morris, and G. J. Schowerer, to Champlain Co., Inc. Length measurement and control in web printing. 3,160,758, 12–8–64, Cl. 250—219.

South Machinery Co.: *See*—
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Sowell, Clarence W. Vehicular-type asphalt roadbed heater 3,160,154, 12–8–64, Cl. 126—271.2.

Specialties Inc.: *See*—
Ward, John W. 3,160,759.

Spencer, Frank R., to Formica Corp. Wax-containing melamine-formaldehyde foam and process of making same 3,160,596, 12–8–64, Cl. 260—2.5.

Sperry Rand Corp.: *See*—
Bernard, David W. 3,160,875.
Gunn, Donald A. 3,160,282.
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Rich, Charles E. 3,160,782.
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Sperry Rand Corp., Ford Instrument Co. Division: *See*—
Montani, Angelo. 3,160,504.
Vercesi, Americo A., and Rappaport. 3,160,810.

Spielberg, Nathan, to North American Philips Co., Inc. Spectrometer with novel plural crystal arrangement. 3,160,749, 12–8–64, Cl. 250—51.5.

Spieldiener, Robert, and K. Lukas, to Willy Buehler, AG. Line-storing assembly for towing apparatus or the like. 3,160,360, 12–8–64, Cl. 242—47.5.

Spillmann, Werner, to Escher Wyss Aktiengesellschaft. Thermal power plant with closed circuit of a gaseous worrking medium and an open gas-turbine plant. 3,159,970, 12–8–64, Cl. 60—39.18.

Spindler, William C., to United States of America, Navy. Galvanic cell electrode. 3,160,531, 12–8–64, Cl. 136—120.

Spitz, Erich: *See*—
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December 8, 1964 Volume 809 Number 2

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C. A. KALK,
November 9, 1964. *Director of Administration.*

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CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15,327
Date of oldest new application	Mar. 23, 1964
Date of oldest amended application	Mar. 10, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	4-1-64	4-6-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-23-64	3-10-64
Renewals (All Classes)	10-9-64	10-27-64
Sec. 12 (c) Publications (All Classes)	10-15-64	--

Applications filed during the month of October 1964—2,218

Registrations Issued—417—No. 781,162 to No. 781,578.
Renewals Issued—50

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C. A. KALK,
November 9, 1964. *Director of Administration.*

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate : antacid
Ambuphylline : Diuretic—myocardial stimulant
Aminacrine hydrochloride : bacteriostatic agent
Ampyzine sulfate : euphoriant
Anisacril : hypocholesteremic and anoretic agent
Anthelmycin : anthelmintic antibiotic
Benorterone : antiandrogen
Butacetin : analgesic agent
Calcium trisodium pentetate : heavy metal antagonist
Cetalkonium chloride : antibacterial agent
Clometherone : anti-estrogen
Clorethate : sedative and hypnotic
Clothixamide : tranquilizer
Codoxime : antitussive
Dactinomycin : antitumor agent
Diohippuric acid I 131 : radiopharmaceutical
Doxepin hydrochloride : antipruritic
Fenclorethate : analgesic and sedative
Furosemide : diuretic
Hydroxyhexamide : hypoglycemic agent
Iprindole : antidepressant
Mequinolate : poultry coccidiostat
Metaproterenol sulfate : bronchodilator
Metoclopramide hydrochloride : antiemetic
Metrogestone : oral progestin
Modaline sulfate : antidepressant
Norbolethone : anabolic agent
Oxamarin hydrochloride : systemic hemostat
Oxolinic acid : antiproteus agent
Perhexiline maleate : coronary vasodilator
Phenyl aminosalicylate : tuberculostatic agent
Piperamide maleate : antiparasitic
Polyoxyl 8 stearate : surface active agent
Polyoxyl 40 stearate : surface active agent
Polysorbate 20 : surface active agent
Polysorbate 40 : surface active agent
Polysorbate 60 : surface active agent
Polysorbate 65 : surface active agent
Polysorbate 80 : surface active agent
Polysorbate 85 : surface active agent
Rolodine : muscle relaxant
Septiphene : disinfectant
Silodrate : antacid
Sodium amylosulfate : peptic ulcer therapy
Sodium etoquinol : treatment of flash burns (ophthalmic)
Sorbitan monolaurate : surface active agent
Sorbitan monooleate : surface active agent
Sorbitan monopalmitate : surface active agent
Sorbitan monostearate : surface active agent
Sorbitan sesquioleate : surface active agent
Sorbitan trioleate : surface active agent
Sorbitan tristearate : surface active agent
Sulfanitran : antibacterial agent
Testolactone : antineoplastic agent
Thiamiprine : anti-leukemic
Thydromedan : lipid mobilizer and thyromimetic
Triampyzine sulfate : anti-secretory agent

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 69,201 (JAEGER), Dr. Jaeger's Sanitary Woolen System Co., Certain clothing; **Reg. No. 199,005** (JAEGER FEATHERWEIGHT AND DESIGN), same, Knitted and woven wearing apparel for men, women, and children—namely, underwear, hosiery, sweaters, and bathing suits; **Reg. No. 268,493** (JAEGER), The Jaeger Company, Inc., Woolen slippers, woolen abdominal bands, woolen knee warmers, woolen gloves, etc.; **Reg. No. 540,390**, same, Yarns of wool, camelhair, cashmere and angora fibres; **Reg. No. 551,911**, same, Infants underwear—namely, body belts, children's coats, jumpers, cardigans, pullover sweaters, etc., **filed** Sept. 17, 1963, D.C., S.D.N.Y., Doc. 63/2740, *Jaeger Co., Ltd.* v. *P & M Distributors, Inc.* Stipulation and order of discontinuance July 21, 1964.

Reg. No. 199,005. (See Reg. No. 69,201.)

Reg. No. 268,493. (See Reg. No. 69,201.)

Reg. No. 281,482 (SITROUX), Sitroux Importing Co., Inc., Facial and wiping tissue; **Reg. No. 659,561** (SITRUE), Sitrue, Inc., Facial tissues, bathroom tissues, dinner napkins, and paper towels, **filed** Sept. 6, 1963, D.C. Mass. (Boston), Doc. 63–738–S, *Sitrue, Incorporated, formerly Sitroux Importing Co., Inc. et al.* v. *Vachon Paper Mills, Inc.* Final judgment; trademarks infringed; defendant enjoined July 8, 1964.

Reg. No. 322,416 (DEBBYS IN SCRIPT AND DESIGN), Farr Bros. Co., Shoes of leather, fabric, rubber, or combinations thereof for women, misses, girls and children, **filed** Feb. 14, 1961, D.C., S.D.N.Y., Doc. 61/536, *Farr's, Inc.* v. *National Shoes, Inc.* Stipulation and order of dismissal July 14, 1964.

Reg. No. 352,408 (BEACON HILL COLLECTION), Kaplan Furniture Company, Dining, coffee, end, etc., tables, secretaries, bookcases, dressers, etc., **filed** May 27, 1964, D.C., S.D.N.Y., Doc. 64/1621, *W. & J. Sloane, Inc.* v. *Kaplan Furniture Company et ano.*

Reg. No. 410,946 (61), The Parker Pen Company, Fountain pens and mechanical pencils; **Reg. No. 583,470** (41), same, Fountain pens, mechanical pencils, and pen and pencil desk sets; **Reg. No. 626,577** ("21"), same, **filed** July 2, 1964, D.C.N.J. (Newark), Doc. 622–64, *The Parker Pen Company* v. *Rutherford Drug Store, Inc.* Consent judgment; injunction issued July 21, 1964.

Reg. No. 427,556 (REPLIQUE), Raphael Lopez, Perfumes, toilet waters, rouge, lipstick, and face creams, **filed** July 13, 1964, D.C. Md. (Baltimore), Doc. 15699, *Parfums Marcy, Inc.* v. *Vim Laboratories Co., Inc. et al.*

Reg. No. 501,706 (THE PRUDENTIAL HAS THE STRENGTH OF GIBRALTAR AND DESIGN), The Prudential Insurance Company of America, Services in providing individual and group life insurance protection; **Reg. No. 615,490**, same, **filed** July 13, 1964, D.C., N.D. Tex. (Dallas), Doc. CA–3–605, *The Prudential Insurance Company of America* v. *The Gibraltar Life Insurance Company of America.*

Reg. No. 535,064 (MILLIKEN IN SCRIPT AND DESIGN), Deering, Milliken & Company, Inc., Fabrics in the piece containing wool, cotton, nylon, and rayon and mixtures thereof, and for cotton sheets and pillowcases; **Reg. No. 548,641** (MILLIKEN), same, Fabrics in the piece of wool, cotton, nylon, rayon, other synthetic fibers or mixtures thereof, and for cotton sheets and pillow cases; **Reg. No. 734,979** (ADAGIO), Deering, Milliken, Inc., Textile fabrics made of wool and synthetic fibers and combinations thereof for use in the manufacture of outerwear; **Reg. No. 761,005** (ROYAL ADAGIO), same, **filed** July 6, 1964, D.C. S.D.N.Y., Doc. 64/2102, *Deering Milliken, Inc.* v. *Colonial Corp. of America et al.* **Same, filed** Aug. 21, 1964, D.C., S.D.N.Y., Doc. 64/2594, *Deering Milliken, Inc.* v. *Gwen Sportswear, Inc.* Final consent judgment; defendants enjoined Sept. 22, 1964.

Reg. No. 540,390. (See Reg. No. 69,201.)

Reg. No. 543,934 (DESIGN OF PENCIL), A. T. Cross Pencil Company, Mechanical pencils, **filed** July 27, 1964, D.C., S.D.N.Y., Doc. 64/2309, *A. T. Cross Company* v. *Windsor Pen Corp.*

Reg. No. 545,734 (ACRILAN), The Chemstrand Corporation, Yarns, threads, and yarn and thread filaments; **Reg. No. 583,881** (ACRILAN AND DESIGN), same; **Reg. No. 660,842** (CHEMSTRAND), same, **filed** Oct. 5, 1958, D.C., S.D.N.Y., Doc. 139–273, *The Chemstrand Corporation* v. *Perfect Fit Products Manufacturing Co., Inc.* Final judgment; defendants enjoined July 1, 1964.

Reg. No. 548,641. (See Reg. No. 535,064.)

Reg. No. 551,911. (See Reg. No. 69,201.)

Reg. No. 557,037 (BLUE SHIELD), Blue Shield Medical Care Plans (by change of name from Associated Medical Care Plans), Furnishing medical care on a pre-payment basis; **Reg. No. 557,040**, same, Underwriting the expense of medical care; **Reg. No. 562,430** (DESIGN OF SHIELD), same, Underwriting, on a prepayment bases, the expense to the patient of medical care and underwriting the doctor's expense in furnishing medical care; **Reg. No. 591,778**, same; **Reg. No. 617,304**, same, **filed** Jan. 24, 1962, D.C., W.D. Tex. (Austin), Doc. 1237, *National Association of Blue Shield Plans et al.* v. *United Bankers Life Insurance Company et al.* Defendant enjoined as to printing its mark and symbol of a shield in the color blue and from using its mark and shield on its advertising materials and policies in the color blue, and further enjoined from printing the words "red shield" in the color blue; but not enjoined from using the color blue in its advertising circulars, policies and similar materials July 16, 1964.

Reg. No. 557,040. (See Reg. No. 557,037.)

Reg. No. 562,430. (See Reg. No. 557,037.)

Reg. No. 566,190 (BUFFERIN), Bristol-Myers Company, Antacid aspirin, **filed** May 24, 1962, D.C. Dist. of Columbia, Doc. 1666–62, *Bristol-Myers Company* v. *Dart Drug Corporation.* Stipulation of dismissal with prejudice July 7, 1964

Reg. No. 583,470. (See Reg. No. 410,946.)

Reg. No. 583,881. (See Reg. No. 545,734.)

Reg. No. 590,765 (NF 180), Dr. Hess & Clark, Inc., Pharmaceutical preparation for the treatment of salmonellosis, fowl typhoid, pullorum, and the paratyphoids in poultry; **Reg. No. 667,040** (H AND DESIGN), Hess & Clark, Inc., Poultry, stock and veterinary remedies and medicated feeds concentrates for poultry and livestock, **filed** July 24, 1964, D.C., S.D. Miss. (Jackson), Doc. 3608(J)(C), *Richardson-Merrell, Inc.* v. *McCormick Wholesale Company, Inc. et al.*

Reg. No. 591,778. (See Reg. No. 557,037.)

Reg. No. 615,490. (See Reg. No. 501,706.)

Reg. No. 617,304. (See Reg. No. 557,037.)

Reg. No. 626,577. (See Reg. No. 410,946.)

Reg. No. 640,431 (YE OLDE TAVERN), Cheese Products Co, Inc., Cheese, mayonnaise, salad dressing, pickle relish, lemon beverage mix, cherries, and olives, **filed** July 9, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1187, *Cheese Products Co., Inc.* v. *Planters Peanuts Division et al.*

Reg. No. 651,640 (HURRICANE AND DESIGN), Hurricane Fence Company, Fences, **filed** July 22, 1964, DC., N.D. Ga. (Atlanta), Doc. 9044, *Hurricane Steel Industries Company* v. *Herbert E. Thrailkill et al.*

Reg. No. 659,561. (See Reg. No. 281,482.)

Reg. No. 660,842. (See Reg. No. 545,734.)

Reg. No. 667,040. (See Reg. No. 590,765.)

Reg. No. 704,722 (SERVICEMASTER AND DESIGN), Wade, Wenger & Associates, Inc., General household, office, and institutional cleaning and renovating services, such as wall and window washing, window shades, blind and drapery cleaning, etc., **filed** July 29, 1964, D.C. Conn. (New Haven), Doc. 10586, *Wade, Wenger Servicemaster Co.* v. *Robert L. De Frank et al.* Trademark held valid; injunction issued (notice Sept. 24, 1964).

Reg. No. 716,886 (VYMAR), Transfer Monogram Co., Inc., Transfer letters and numbers, **filed** Apr. 7, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c604, *Transfer Monogram Co., Inc.* v. *Chicago Decal Company.* Consent decree; trademark held valid and infringed; defendant enjoined July 31, 1964.

Reg. No. 732,002 (SEARS), Sears, Roebuck and Co., Receptacles, baggage and animal equipment, abrasives and polishing materials, chemicals and chemical compositions, explosives, firearms, equipment, construction materials and hardware and plumbing and steam fitting supplies, **filed** July 6, 1964, D.C., M.D. Fla. (Jacksonville), Doc. 64–170–J, *Sears Roebuck & Co.* v. *Sears Mobile Houses of Jacksonville, Inc.* Final judgment; injunction issued (notice Aug. 6, 1964).

Reg. No. 734,979. (See Reg. No. 535,064.)

Reg. No. 735,479 (MANHATTAN), Manhattan Auto, Inc., Inspecting, repairing, and maintaining automobiles for others, inspecting, servicing, and installing automobile accessories for others, **filed** July 10, 1964, D.C., S.D.N.Y., Doc. 61/2148, *Manhattan Auto, Inc.* v. *Manhattan Imported Cars, Inc.*

Reg. No. 750,614 (LOCK-LINED), Lock-Lined, Inc., Laminated fabric for use in conjunction with the fabrication of clothing such as dresses, suits, blouses, etc., **filed** July 23, 1964, D.C., S.D.N.Y., Doc. 64/2280, *Lock-Lined, Inc.* v. *Linden Gibbs, Ltd.*

Reg. No. 756,580 (SHIRTMAKER DIVISION AND DESIGN), Pantsmaker, Inc., Ladies' and girls' shirts and blouses, **filed** June 29, 1964, D.C., S.D.N.Y., Doc. 64/2002, *Pantsmaker, Inc.* v. *Briar Hall Classics, Inc.*

Reg. No. 761,005. (See Reg. No. 535,064.)

Reg. No. 761,085 (RED BALLOON), John R. Thompson Co., doing business as Red Balloon Coffee House, Restaurant services, **filed** July 16, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42584, *John R. Thompson Co.* v. *Entertainment Investments, Inc.*

Reg. No. 766,891 (. . . AND LEAVE THE DRIVING TO US), The Greyhound Corporation, Motor bus transportation services, **filed** July 28, 1964, D.C. Colo. (Denver), Doc. 8710, *The Greyhound Corporation et al.* v. *The Denver Tramway Corporation et al.*

Reg. No. 768,008 (THE JOHNNY RABBITT SHOW), Storz Broadcasting Co., Title of a radio program—namely, the title of a music, news, discussion and variety entertainment program, **filed** July 1, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C260(2), *Storz Broadcasting Co.* v. *H & E Balaban Corp. et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 145,139. Exhibitors, Inc., San Jose, Calif., assignee of Henry C. Thompson, d.b.a. Henry C. Thompson Associates, Saratoga, Calif. Filed May 21, 1962.

EXHIBITORS

Class 16—Protective and Decorative Coatings

For Paints, Oils, and Water Colors.

Class 29—Brooms, Brushes, and Dusters

For Brushes.

Class 37—Paper and Stationery

For Drawing Paper.

Class 50—Merchandise Not Otherwise Classified

For Artists' Canvas.

First use Mar. 15, 1962.

SN 145,264. Industrie A. Zanussi, Pordenone, Italy. Filed May 23, 1962.

NAONIS

Priority claimed under Sec. 44(d) on Italian application filed Dec. 16, 1961; Reg. No. 159,043, dated May 2, 1962.

Class 2—Receptacles

For Articles Consisting of Plastic Materials, viz. Boxes, Basins, Trays, Containers and the Like.

Class 21—Electrical Apparatus, Machines, and Supplies

For Complete Installations of Apparatus Set Up for Cooking Purposes, Apparatus and Machines for Preparing Food Stuffs, Including Cooking Appliances for Hotels, Communities and the Like, viz. Electric Cookers, Electric Cooking Stoves, Electric Kitchen Ranges and Ovens, Electric Grills, Electric Roasters, Electric Toasters, Electric Frying Machines, Electric Roasting Jacks, Infra-Red Lamps for Cooking Purposes, Electric Steamers, Electric Pressure Pots, Electric Saucepans, Electric Coffeepots, Electric Coffee Percolators, Electric Machines for Making "Ravioli," Electric Ice-Cream Makers, Electric Cream-Makers, Electric Juice-Extractors, Electric Lemon-Squeezers, Electric Egg-Whisks, Electric Mixers, Electric Whippers and Blenders, Electric Coffee-Grinders, Electric Graters, Electric Slicing Machines, Electric Mincers, Electric Potato-Peelers, Electric Machines Used in the Kitchen for Cleaning Pottery and Table Ware, Dishwashers, Kitchen-Waste Dissipators To Be Attached to Sinks; Electric Slot Machines (Vending Machines) Used for the Sale of Drinks and Refreshments; Iced-Water Fountains; Electric Lighters; Electric Bells; Controller Switches; Lamps, Including Quartz Lamps; Voltage Stabilizers, Transformers, Electric Motors (Not for Vehicles); Hand-Driers; Electric Heaters, Including Immersion Heaters, Radiating Panels, Electric Water-Heaters, Including Water-Heaters Applied to Cocks, Dish-Heaters, Electric Stoves, Electric Heating Blankets; Electric Fans; Radio and Television Sets; Installations for Refrigerating, Water Supply and Sanitary Purposes; Electric Shoe-Shining Machines, Eelectric Vacuum Cleaners, Combined Electric Vacuum Cleaners and Floor Polishers, Electrically Actuated Suction-Cleanning Brushes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine Couplings, Fire Extinguishers, Centrifuging Machine Apparatus, Agricultural Implements, Machines and Tools; Electric Razors; Non-Electric Slot Machines (Vending Machines) Used for the Sales of Drinks and Refreshments; Non-Electric Apparatus and Machines for Preparing Foodstuffs, viz. Agrume Squeezers, Manually Operated Ice-Crushers, Mincers, Grinders, Graters, Coffee Grinders, Slicing Machines, Potato-Peelers, Mixers, Juice Extractors, Lemon-Squeezers, Machines for Making "Ravioli," Egg-Whisks.

Class 24—Laundry Appliances and Machines

For Linen Dryers, Flat Irons, Ironing Machines, Laundry Washers, Electric Washing Machines for Domestic Purposes.

Class 27—Horological Instruments

For Electric Clocks for Kitchens.

Class 31—Filters and Refrigerators

For Refrigerators.

Class 34—Heating, Lighting, and Ventilating Apparatus metallic Tires

For Hot Air Fans and Blowers, Exhausters, Air Conditioners, Dehumidifiers, Hot Air Dispensing Apparatus, Drying Cabinets; Fuel and Gas Heaters, Non-Electric Water Heaters, Gas Burners, Boilers for Central Heating, Boilers for Water and Room Heating Installations, Radiators, Radiating Stoves, Gas Stoves; Complete Installations of Apparatus Set Up for Cooking Purposes, Cooking Appliances (Including Those for Hotels, Communities and the Like), viz. Non-Electric Cooking Stoves, Grills, Kitchen Ranges and Ovens, Roasters, Toasters, Steamers, Pressure-Pots.

Class 36—Musical Instruments and Supplies

For Phonographs or Gramophones and Similar Sound Recording Apparatus.

Class 44—Dental, Medical, and Surgical Appliances

For Hair-Dryers (Electric).

SN 156,129. Kommandit-Gesellschaft Ernst Gideon Bek & Company, Pforsheim/Baden, Germany. Filed Oct. 29, 1962.



Owner of German Reg. No. 369,106, dated May 21, 1927.

Class 8—Smokers' Articles, Not Including Tobacco Products

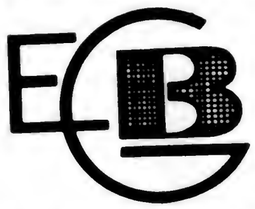
For Cigar and Cigarette Cases, Boxes, and Packets, and Cigar and Cigarette Lighters, Such Cases, Boxes, Packets, and Lighters Being Made in Whole or in Part of Gold or Silver or a Gold Alloy or a Silver Alloy.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry and Ornamental Objects for Personal Use, Made in Whole or in Part of Gold or Silver or a Gold Alloy or a Silver Alloy.

First use in or before 1928; in commerce in or before 1930.

SN 156,130. Kommandit-Gesellschaft Ernst Gideon Bek & Company, Pforsheim/Baden, Germany. Filed Oct. 29, 1962.



Owner of German Reg. No. 653,003, dated Feb. 6, 1954.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigar and Cigarette Cases, Boxes, and Packets, and Cigar and Cigarette Lighters, Such Cases, Boxes, Packets, and Lighters Being Made in Whole or in Part of Gold or Silver or a Gold Alloy or a Silver Alloy.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry and Ornamental Objects for Personal Use, Made in Whole or in Part of Gold or Silver or a Gold Alloy or a Silver Alloy.

First use in or before 1955; in commerce in or before 1955

SN 166,218. Seal, Incorporated, Shelton, Conn. Filed Apr 5, 1963.



Class 1—Raw or Partly Prepared Materials

For Heat Sealing Sheet Materials—Namely, Paper, Cloth, Films and Foils

First use January 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

For Heat Sealing Devices—Namely, Electrical Mounting Presses and Electrical Heat Sealing Irons.

First use September 1964.

SN 177,468. Toyotoki Kaisha, Ltd., d.b.a. The Toyo Toki Company, Ltd., Kokura, Fukuoka, Japan. Filed Sept. 20, 1963.

Toyotoki

Owner of Japanese Reg. Nos. 452,752, dated Oct. 7, 1954; 593,183, dated July 12, 1962; and U.S. Reg. No. 645,969.

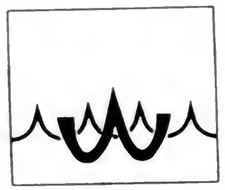
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fittings for Supplying and Draining Water—Namely, Valves, Cocks, Traps, Toilet Tank Trims and Nozzles; China Sanitary Wares—Namely, Wash Basins, Sinks, Bathtubs, Showers, Urinals, Bidets, Toilet Bowls, and Drinking Fountains.

Class 30—Crockery, Earthenware, and Porcelain

For China Dinnerware and Tableware.

SN 186,917. Waters Manufacturing, Inc., Wayland, Mass. Filed Feb. 17, 1964.



The mark consists of a "W" in a fanciful form.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receiving and Transmitting Equipment and Accessories, Specifically, Amplifiers, Couplers, Switches, and Filters.

Class 26—Measuring and Scientific Appliances

For Oscillators, Wattmeters, Potentiometers and Knobs Therefor.

First use May 26, 1962.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 148,824. Magnet Cove Barium Corporation, Houston, Tex. Filed July 11, 1962.

CHIP-SEAL

For Coarsely Shredded Wood Used as an Additive for Drilling Fluids.
First use Oct. 2, 1957.

SN 151,015. Continental Plastics of Oklahoma Incorporated, Oklahoma City, Okla. Filed Aug. 13, 1962.

STERIFLEX

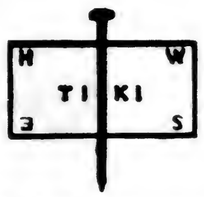
For Linear Polyethylene Plastic Material Used in the Manufacture of Such Products as Food and Beverage Containers and Dispensers, and Bails and Lids Therefor.
First use July 1961.

SN 164,778. Shurfine Foods, Inc., Northlake, Ill. Filed Mar. 15, 1963.

ENERGY

For Charcoal Briquets.
First use Feb. 27, 1963.

SN 176,961. William H. Scheel, Inc., Brooklyn, N.Y. Filed Sept. 13, 1963.



Owner of Reg. No. 19,158.
For Raw or Partly Prepared Waxes, Natural Resins and Synthetic Resins.
First use at least as early as August 1943 on waxes and natural resins.

SN 182,654. Rexall Drug and Chemical Company, Los Angeles, Calif. Filed Dec. 9, 1963.

REXWEL

For Plastic Mesh for General Use in the Industrial Arts.
First use Nov. 29, 1963.

SN 189,405. United States Rubber Company, New York, N.Y. Filed Mar. 23, 1964.

ROYALITE

Owner of Reg. Nos. 539,903, 757,354, and others.
For Sheets and Molding Compounds of a Rubber Resin Mixture.
First use Mar. 10, 1949.

SN 190,447. United States Rubber Company, New York, N.Y. Filed Apr. 6, 1964.

POLYCREST

For Synthetic Fibers.
First use Mar. 12, 1964.

SN 191,015. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Apr. 14, 1964.

MIKOL

For Colloid for Fluid Loss Control in Oil Well Drilling.
First use Aug. 2, 1950.

SN 191,448. Oliver A. Smith, Jr., d.b.a. Smith Vale Farms, Concord, Tenn. Filed Apr. 17, 1964.

SV

For Polled Hereford Cattle.
First use February 1959.

SN 191,452. Stepan Chemical Company, Northfield, Ill. Filed Apr. 17, 1964.

STEPANYL

For Water Soluble Resins.
First use Mar. 10, 1964.

SN 191,556. Inter-State Nurseries, Incorporated, Hamburg, Iowa. Filed Apr. 20, 1964.

KING KUSHION

For Chrysanthemums.
First use Dec. 30, 1963.

SN 191,628. Tenneco Corporation, Houston, Tex. Filed Apr. 20, 1964.

TENNECO

Owner of Reg. No. 713,035.
For Raw Materials—Namely, Asphalt.
First use prior to Oct. 10, 1963.

SN 192,094. Standard Milling Company, Kansas City, Mo. Filed Apr. 27, 1964.

RED HOT

For Charcoal in Lump and Briquet Form.
First use on or about Oct. 10, 1953.

SN 192,326. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company, Los Angeles, Calif. Filed Apr. 29, 1964.

REXALL

For Synthetic Resins.
First use Apr. 16, 1964.

Class 2 — Receptades

SN 149,744. Hydroponic Chemical Company, Inc., Copley, Ohio. Filed July 25, 1962.

WIK-FED

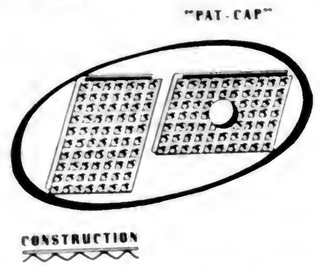
For Flower Pots.
First use June 1, 1947.

SN 180,652. J. L. Clark Manufacturing Co., Rockford, Ill. Filed Nov. 7, 1963.

TWIN TAB

For Cup-Like Sheet Metal Containers Having Tear Strip Covers, for Use in Packaging Small Quantities of Food Products Such as Cheese Spreads.
First use Mar. 18, 1963.

SN 181,672. Patterson Industries, Inc., East Liverpool, Ohio. Filed Nov. 21, 1963.



No claim is made to exclusive rights to the use of the word "Construction" or of the representation of jacket construction material apart from the mark as shown.
For Processing Vessels and the Like Having Heat Transfer Jackets Thereon.
First use Oct. 2, 1963.

SN 183,978. Habra-Werk Wilhelm F. Ott, Darmstadt, Germany. Filed Jan. 3, 1964.



Owner of German Reg. No. 696,004, dated Oct. 15, 1956; and U.S. Reg. No. 760,595.
For Non-Transparent Bags, Boxes, and Cartons.

SN 192,064. Monsanto Company, St. Louis, Mo. Filed Apr. 27, 1964.

MONSANTO

Owner of Reg. No. 647,498.
For Plastic Packages and Holders for Merchandising a Variety of Products; Food Cartons, Bottles, Dishes, and Similar Containers.
First use Dec. 10, 1963.

SN 192,066. Monsanto Company, St. Louis, Mo. Filed Apr. 27, 1964.

PLAXWARE

Owner of Reg. Nos. 548,558, 631,088, and others.
For Plastic Packages and Holders for Merchandising a Variety of Products; Food Cartons, Bottles, Dishes, and Similar Containers.
First use Mar. 13, 1964.

SN 198,181. A. Kimball Ltd., Toronto, Ontario, Canada. Filed July 20, 1964.

KLD

Owner of Canadian Reg. No. 135,053, dated Mar. 26, 1964.
For Label Dispensers.

SN 198,208. Pabst Brewing Company, Milwaukee, Wis. Filed July 20, 1964.

TAP-A-TOP

Owner of Reg. No. 337,571.
For Beer Cans With Tear-Open Lids.
First use Mar. 15, 1963.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 195,913. Amity Leather Products Co., West Bend, Wis. Filed June 18, 1964.

GOLDEN CIRCLE

For Billfolds.
First use on or about Jan. 1, 1962.

SN 198,950. Hartz Mountain Products Corp., New York, N.Y. Filed July 31, 1964.

HARTZ MOUNTAIN

Owner of Reg. No. 766,954.
For Pet Accessories—Namely, Leashes, Tie-Out Chains and Collars.
First use May 20, 1964.

Class 4 — Abrasives and Polishing Materials

SN 195,206. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 9, 1964.

SHINA-MITES

For Soap-Filled Scouring Pads.
First use May 6, 1964.

SN 196,004. Amway Corporation, Ada, Mich. Filed June 19, 1964.

BUFF-UP

For Protective and Decorative Coatings—Namely, a Leather Conditioner and Polish.
First use on or about Apr. 5, 1964.

Class 5 — Adhesives

SN 181,313. Brunswick Corporation, Chicago, Ill. Filed Nov. 18, 1963.

KU-GLU

For Glue.
First use Oct. 8, 1941.

SN 190,313. The Connecticut Hard Rubber Company, New Haven, Conn. Filed Apr. 3, 1964.

CHR

For Adhesive Tapes and Polymeric Adhesives Such as Cements Used for Bonding Polymeric Materials to One Another or to Metal.
First use Jan. 2, 1956.

Class 6 — Chemicals and Chemical Compositions

SN 161,987. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 4, 1963.

NEOPOLAR

Owner of Reg. No. 304,961.
For Dyestuffs.
First use Jan. 9, 1963.

SN 164,203. Consolidated Oil & Gas, Inc., Denver, Colo. Filed Feb. 11, 1963.



The drawing is lined for the color gold. Owner of Reg. No. 747,144.
For Natural Gas.
First use May 1958.

SN 168,156. Champion Chemicals, Inc., Odessa, Tex. Filed May 6, 1963.

FLEXOIL

For Chemical Composition for Dissolving and Suspending Paraffin in Petroleum Products.
First use Jan. 23, 1957.

SN 168,870. Technic, Inc., Cranston, R.I. Filed May 14, 1963.

OROCLAD

Owner of Reg. No. 740,191.
For Gold Plating Solutions and Compositions.
First use Feb. 6, 1962.

SN 168,871. Technic, Inc., Cranston, R.I. Filed May 14, 1963.

OROFLO

Owner of Reg. No. 740,191.
For Gold Plating Solutions and Compositions.
First use Nov. 9, 1962.

SN 168,894. Farnam Companies Livestock Equipment and Insecticides, d.b.a. The Farnum Company, Phoenix, Ariz. Filed May 16, 1963.

FLYS-AWAY

For Fly Repellent Bomb for Use on Livestock.
First use on or about Apr. 1, 1952.
Subj. to Intf. with SN 161,939 and SN 174,339.

SN 170,898. Economics Laboratory, Inc., St. Paul, Minn. Filed June 13, 1963.

KLENZ-SCALD

For Scalding Compound for Use in Poultry Feather Removal.
First use Apr. 4, 1963.

SN 170,923. Mallinckrodt Chemical Works, St. Louis, Mo. Filed June 13, 1963.

INDICATAR

Owner of Reg. Nos. 594,056, 642,462, and 644,347.
For Chemicals for Titration.
First use Apr. 1, 1963.

SN 171,106. Diamond Alkali Company, Cleveland, Ohio. Filed June 17, 1963.

NEOWAX

For Sole Leather Finish To Provide Luster and Spot Resistance.
First use June 18, 1945.

SN 173,010. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed July 15, 1963.

SANISPRAY

For Deodorant-Disinfectant for Embalmers' Use in the Preparation Room, Ambulance, Hearse, Cars, Sickroom and Service Areas.
First use June 10, 1960.

SN 173,012. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed July 15, 1963.

STERILENE

For Disinfectant for Use in Embalming Which Destroys Both Bacteria and Spores, Safely Sterilizes Instruments, Hands and Gloves.
First use June 10, 1960.

SN 173,013. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed July 15, 1963.

BISTAT

For Disinfectant Used in Embalming Fluid.
First use Mar. 1, 1961.

SN 173,014. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed July 15, 1963.

LANO-BASE

For Lanolin Composition Containing a Bacteriostatic Agent for Use in Embalming.
First use Apr. 1, 1961.

SN 174,339. Cardinal Laboratories, Inc., Los Angeles, Calif. Filed Aug. 5, 1963.

FLY-AWAY

For Insecticides and Insect Repellents.
First use Sept. 18, 1956.
Subj. to Intf. with SN 161,939 and SN 168,894.

SN 174,670. H. Kohnstamm & Co., Inc., d.b.a. General Color Company, New York, N.Y. Filed Aug. 8, 1963.

CadMerc

For Cadmium Mercury Pigments.
First use Aug. 29, 1961.

SN 174,735. Alcolac Chemical Corporation, Baltimore, Md. Filed Aug. 9, 1963.

SIPOMER

For Reactive Organic Monomers.
First use July 24, 1963.

SN 177,511. Eastman Kodak Company, Rochester, N.Y. Filed Sept. 23, 1963.

MYVOIL

Owner of Reg. Nos. 440,698, 514,909, and 527,509.
For Vacuum Pump Fluids.
First use Aug. 16, 1963.

SN 179,701. Eastman Kodak Company, Rochester, N.Y. Filed Oct. 24, 1963.

BIMAT

For Photographic Processing Chemicals.
First use Oct. 3, 1963.

SN 181,554. Morton Salt Company, Chicago, Ill. Filed Nov. 20, 1963.

PELLENS

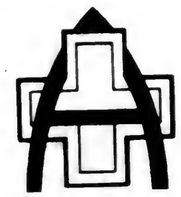
For Salt for Recharging Water Softeners.
First use on or about Sept. 12, 1963.

SN 186,183. Morton Salt Company, Chicago, Ill. Filed Feb. 6, 1964.

ELASTOCAL

Owner of Reg. No. 718,789.
For Compositions Used in Curing, Accelerating and Vulcanising Elastomers.
First use on or about Jan. 13, 1964.

SN 191,022. Axton-Cross Company, Shelton, Conn. Filed Apr. 14, 1964.



For Inorganic and Organic Chemicals and Chemical Compositions—Namely, Acids, Salts, and Alkalies; Chlorine; Urea; Formaldehyde; Metal Brighteners; Alcohols—Namely, Methanol, Ethanol, Isopropyl Alcohol, Glycols, and Glycerine; and Solvents—Namely, Acetone, Ethyl Acetate, Toluene, Xylene, Carbon Tetrachloride, Dichlorobenzene, Trichloroethylene and Methylene Chloride.
First use during March 1936.

SN 192,381. FMC Corporation, New York, N.Y. Filed Apr. 30, 1964.

LANSTAN

For Fungicide for Use in the Control of Certain Cotton Seedling Diseases.
First use Mar. 11, 1964.

SN 193,737. West Chemical Products, Inc., Long Island City, N.Y. Filed May 15, 1964.

CEILING ZERO

For Vaporific Insecticide.
First use Mar. 16, 1964.

SN 196,055. Miles Laboratories, Inc., Elkhart, Ind. Filed June 19, 1964.

EC-SYN

For Antioxidant for Curing Meat.
First use on or before June 10, 1964.

SN 196,202. Shell Oil Company, New York, N.Y. Filed June 22, 1964.

BIRLANE

For Insecticide.
First use June 4, 1964.

SN 196,203. Shell Oil Company, New York, N.Y. Filed June 22, 1964.

PLANAVIN

For Insecticide.
First use June 4, 1964.

SN 196,205. Shell Oil Company, New York, N.Y. Filed June 22, 1964.

BENAVIN

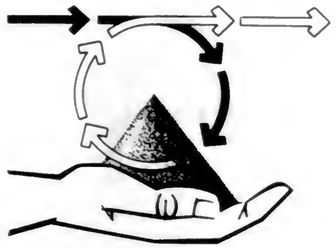
For Insecticide.
First use June 4, 1964.

SN 196,572. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed June 26, 1964.

MAINTAIN

For Weed Killer.
First use May 14, 1964.

SN 196,603. Barnebey-Cheney Company, Columbus, Ohio. Filed June 29, 1964.



For Activated Carbon.
First use May 12, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 170,902. Firma Gebruder Merkel & Co. G.m.b.H., Eckernforde, Germany. Filed Aug. 20, 1964.



The mark includes the letters "GM." Owner of German Reg. No. 786,641, dated Apr. 6, 1964.
For Hunting Rifles and Ammunition and Parts Thereof.

Class 10 — Fertilizers

SN 194,916. Prohoroff Poultry Farms, San Marcos, Calif. Filed June 4, 1964.

Flamingo



The drawing is lined for pink and green but no claim is made to color as a feature of the mark.
For Fertilizer.
First use May 13, 1964.

Class 11 — Inks and Inking Materials

SN 197,230. Scriptomatic, Inc., Philadelphia, Pa. Filed July 3, 1964.

SCRIPTOMATIC

Owner of Reg. Nos. 591,913 and 771,456.
For Inked Ribbons and Printing Liquids Specially Designed for and Intended for Use in Addressing Machines.
First use June 1, 1964.

SN 197,959. Interchemical Corporation, New York, N.Y. Filed July 16, 1964.

POLYFAST

For Printing Inks.
First use on or about July 15, 1961.

Class 12 — Construction Materials

SN 193,840. The Babcock & Wilcox Company, New York, N.Y. Filed May 20, 1964.

INSULPURE

For Refractory Brick.
First use Feb. 21, 1964.

SN 193,992. Silcoa Products, Inc., New York, N.Y. Filed May 21, 1964.

AQUA-DRI

Owner of Reg. No. 715,654.
For Vinyl-Concrete Patching Compound.
First use on or about Oct. 1, 1961.

SN 194,054. Johns-Manville Corporation, New York, N.Y. Filed May 22, 1964.

SPINSULATION

For Mineral Fiber Thermal Insulation.
First use at least on or about Feb. 8, 1962.

SN 194,398. Macklanburg Duncan Company, Oklahoma City, Okla. Filed May 27, 1964.

SEAL-O-MATIC

For Door Bottoms.
First use July 1961.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 156,837. Strato-Track, Inc., Elkhart, Ind. Filed Nov. 7, 1962.

STRATO-TRACK

For Sliding Door Hardware.
First use Sept. 2, 1957.

SN 179,835. VSI Corporation, Pasadena, Calif. Filed Oct. 25, 1963.

TENSILIZED

For Bolts.
First use Mar. 23, 1962.

SN 188,794. Price Pfister Brass Mfg. Co., Los Angeles, Calif. Filed Mar. 16, 1964.

CONTEMPERA

For Bathroom, Kitchen and Bar Plumbing Fittings for Sinks, Lavatories, Laundry Trays, Showers and Bath Tubs, and Parts Therefor.
First use Nov. 19, 1963.

SN 194,115. Associated Spring Corporation, Bristol, Conn. May 25, 1964.

TORQ-COIL

Owner of Reg. No. 767,405.
For Helical Coil Springs.
First use Nov. 1, 1962.

Class 14 — Metals and Metal Castings and Forgings

SN 181,644. Inland Steel Company, Chicago, Ill. Filed Nov. 21, 1963.

INCUT

For Free Machining Steels.
First use Nov. 1, 1962.

SN 189,791. McArdle and Cooney, Inc., Philadelphia, Pa. Filed Mar. 27, 1964.



For Metal Rods and Bar Stock.
First use Mar. 3, 1964.

SN 199,246. Alloy Engineering & Casting Company, Champaign, Ill. Filed Aug. 5, 1964.

DYNAECAST

For Centrifugally Cast High Nickel and Stainless Alloy Castings.
First use Dec. 26, 1963.

Class 15 — Oils and Greases

SN 149,561. Michael S. Gallo, d.b.a. Gallo Manufacturing Company, Racine, Wis. Filed July 23, 1962.

Handi-Lube

For Lubricating Oils, Greases and Dry Lubricants.
First use July 8, 1962.

Class 18 — Medicines and Pharmaceutical Preparations

SN 147,782. Anderson, Clayton & Co., Houston, Tex. Filed June 27, 1962.

GRO-PAC

For Medicated and Non-Medicated Poultry Feed Supplements Containing Vitamins and Minerals.
First use Mar. 30, 1962.

SN 154,365. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Oct. 2, 1962.

DIALPAK

For Dispensing Packages Sold Containing Medicinal Tablets.
First use June 27, 1962.

SN 154,481. Dental Research, Birmingham, Ala. Filed Oct 4, 1962.

SOC-EZE

For Medical Preparation Especially Useful for Treating Dry Sockets in Dental Surgery.
First use July 10, 1962.

SN 161,939. Atomic Basic Chemicals Corporation, Pittsburgh, Pa. Filed Feb. 4, 1963.

FLY-AWAY

For Composition Comprising Flavored Phenothiazine for Internal Application to Cattle for the Removal of the Larva of Horn Flies and Internal Parasites.
First use Nov. 6, 1962.
Subj. to Intf. with SN 168,894 and SN 174,339.

SN 171,144. Jelentogorskie Zaklady Farmaceutyczne "Polfa," Jelenia Gora, Poland. Filed June 17, 1963.

IPRONAL

Owner of Polish Reg. No. 43,349, dated July 4, 1962.
For Pharmaceutical Preparations Used in Ophtalmology, Especially Against Glaucoma and Attendant Phenomena, Also Used for Other Medicinal Purposes, for Instance, as a Sedative.

SN 172,559. Behringwerke Aktiengesellschaft, Marburg/Lahn, Germany. Filed July 8, 1963.

GAMMA-VENIN

Owner of German Reg. No. 761,512, dated May 18, 1962.
For Intravenously Administrable Preparations of Gamma-Globulin.

SN 176,339. Zyma S.A., Nyon, Switzerland. Filed Sept. 4, 1963.

ZYMA

Owner of Swiss Reg. No. 22,723, dated Oct. 2, 1907.
For Pharmaceutical and Veterinary Products.

SN 177,597. American Cyanamid Company, Wayne, N.J. Filed Sept. 24, 1963.

TETRIMUNE

For Vaccine.
First use Sept. 11, 1963.

SN 178,593. Corvel, Inc., Omaha, Nebr., by change of name from Corn States Laboratories, Inc., Omaha, Nebr. Filed Oct. 9, 1963.

CORVEL

For Veterinary Pharmaceuticals.
First use Sept. 9, 1963.

SN 179,597. Boehringer Ingelheim, G.m.b.H., Ingelheim (Rhine), Germany, assignee of C. H. Boehringer Sohn, Ingelheim (Rhine), Germany. Filed Oct. 23, 1963.

PRENOCLIN

Owner of German Reg. No. 564,285, dated May 18, 1944.
For Heart and Circulatory Drug.

SN 185,099. Aero-Fil Manufacturing Corporation, Camden, N.J. Filed Jan. 22, 1964.

VAPORAID

For Medicated Vaporizer.
First use Feb. 4, 1963.

SN 193,309. The Wander Company, Chicago, Ill. Filed May 12, 1964.

TRIAMINICIN

Owner of Reg. No. 659,738.
For Analgesic-Antipyretic, Nasal Decongestant, Antihistamine.
First use Apr. 30, 1964.

SN 196,908. Shell Oil Company, New York, N.Y. Filed July 1, 1964.

TASK

For Anthelmintic.
First use June 4, 1964.

SN 196,988. Richardson-Merrell Inc., Cincinnati, Ohio. Filed July 2, 1964.

DECAPRYN

Owner of Reg. No. 410,624.
For Antihistaminic in Tablet and Syrup Form.
First use July 3, 1947.

SN 197,052. Allied Animal Research Corporation, Charlotte, N.C. Filed July 6, 1964.

DIBISPI

For Anthelmintic Preparation for Domestic Animals.
First use June 5, 1964.

SN 197,053. American Home Products Corporation, New York, N.Y. Filed July 6, 1964.

DENETE

For Veterinary Depilatory Lotion.
First use June 19, 1964.

SN 197,216. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed July 6, 1964.

CONTROLAX

For Laxative.
First use June 26, 1964.

Class 19—Vehicles

SN 184,412. Wilson Trailer Company, Sioux City, Iowa. Filed Jan. 10, 1964.

For Livestock Trailers, Horse Trailers and Grain Trailers of the Flat Bed and Van Types.
First use Nov. 13, 1963.

SN 187,370. Whirlpool Corporation, St. Joseph, Mich. Filed Feb. 24, 1964.

TECTROL

Owner of Reg. No. 754,622.
For Apparatus for the Transportation of Plant and Animal Materials—Namely, Motor Trucks, Truck Trailers, Rail Cars, Airplanes, Ships and Parts Thereof.
First use Apr. 19, 1963.

SN 190,735. Magnaform, Inc., Atlanta, Ga. Filed Apr. 9, 1964.

HAMMERHEAD

For Boats.
First use on or about Mar. 20, 1964.

SN 190,830. Richardson Homes Corporation, Elkhart, Ind. Filed Apr. 10, 1964.

R
THE MARK OF QUALITY

No claim is made to the words "The Mark of Quality."
Owner of Reg. Nos. 762,656 and 774,429.
For Mobile Homes.
First use Feb. 26, 1963.

Class 20—Linoleum and Oiled Cloth

SN 194,454. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed May 28, 1964.

MIDAS

For Vinyl Flooring.
First use May 12, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 100,209. Alford Manufacturing Company, Boston, Mass. Filed July 5, 1960.

ALFORD

For Antennas, High Frequency Components, Such as Hybrid Junctions, Side Band Filters, Baluns, Diplexers, Slotted Lines, R-F Switching Systems, and High Frequency Phase Shifters.
First use in or before July 1955.

SN 167,415. Rogers Corporation, Rogers, Conn. Filed Apr. 23, 1963.

MEKTRON

For Printed Circuitry.
First use on or about Apr. 3, 1963.

SN 167,756. Prescolite Manufacturing Corporation, San Leandro, Calif. Filed Apr. 29, 1963.

REGENCY

For Electric Lighting Fixtures.
First use Feb. 28, 1963.

SN 178,546. Hi-G Incorporated, Windsor Locks, Conn. Filed Oct. 8, 1963.

HI-G

For Component Ovens Especially Adapted to Controlling Environments for Quartz Crystals, Diodes, Transistors, Cold Junctions for Thermocouples and Other Components and Sub-Circuits.
First use on or before July 17, 1963.

SN 178,949. Motoronics, Inc., New York, N.Y. Filed Oct. 14, 1963.

PRECISION IGNITION CONTACTS
PERMA POINTS

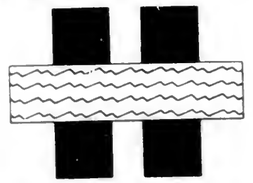
Applicant hereby disclaims the wording "Precision Ignition Contacts" and the word "Points."
For Electrical Ignition Points.
First use April 1963.

SN 179,105. Baird-Atomic, Inc., Cambridge, Mass. Filed Oct. 16, 1963.

TRIG-ALL

For Tubes for Electronic Instrumentation—Namely, Switching Tubes.
First use July 10, 1963.

SN 181,235. The Hercules Tire & Rubber Company, Stamford, Conn. Filed Nov. 15, 1963.



For Electric Vehicle Lights, Electric Marker and Clearance Lamps, Land, Air and Sea Vehicle Batteries and Battery Chargers.
First use Oct. 7, 1963, on batteries.

SN 181,922. Ransburg Electro-Coating Corp., Indianapolis, Ind. Filed Nov. 26, 1963.

R-E-H

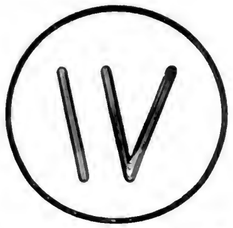
For Electrostatic Coating Apparatus and Parts Thereof and Attachments and Accessories for Use Therewith—Namely, Electrostatic Hydraulic Spray Coating Apparatus; High Voltage Supply Units, High Voltage Cable, Electrical Controls for Electrostatic Coating Apparatus, and High Voltage Electrodes for Spray Coating Apparatus.
First use on or about Oct. 10, 1963.

SN 182,416. Fifth Dimension, Inc., Princeton, N.J. Filed Dec. 5, 1963.

PULSE/LOCK

For Electronic Control for Synchronizing Motor Shafts With Time Reference.
First use July 29, 1963.

SN 184,522. Société A.R.L. Etablissements Gergey, Nice, France. Filed Jan. 13, 1964.



Owner of French Reg. No. 6,643, dated July 11, 1962 (Nice); Natl. Inst. No. 189,041.
For Electrical Connectors Comprising Plugs, Clips and Sockets.

SN 184,597. Allis-Chalmers Manufacturing Company, West Allis, Wis. Filed Jan. 15, 1964.

MAGIC CELL

For Electrical Power Supply of the Type Used To Replace Dry Cell Batteries.
First use Dec. 9, 1963.

SN 185,491. Bowmar Instrument Corporation, Fort Wayne, Ind. Filed Jan. 28, 1964.



Owner of Reg. Nos. 697,800 and 726,463.
For Potentiometers, Magnetic Clutches, Shaft Repositioning Devices, Commutator Switches, and Unitized Assemblies Variously Including Such Devices Used as Circuit Components in Phase Shifter Networks, Resolving Circuits, Function Generators, Computers, Servo Systems, Instrumentation and the Like.
First use Aug. 23, 1963.

SN 192,004. Cabot Corporation, Boston, Mass. Filed Apr. 27, 1964.

CAB-XL

Owner of Reg. Nos. 666,446 and 679,476.
For Electrical Wire, Cable and Moulding Compound.
First use May 31, 1957.

SN 192,268. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 29, 1964.

KORVETTENNA

For Antennas.
First use Apr. 22, 1964.

SN 192,608. Mite Corporation, New Haven, Conn. Filed May 4, 1964.



For Telegraphic Type Writing Receiving and Transmitting Apparatus, and Data Input and Output Devices.
First use Aug. 8, 1961.
Subj. to Intf. with SN 198,284.

SN 192,634. Quick Cable Corporation, Racine, Wis. Filed May 4, 1964.

QUICK-CABLE

For Cables, Cable Connectors, Ground Lugs, Terminal Clamps and Tools Therefor, and Kits Containing Said Cables, Cable Connectors, Ground Lugs, Terminal Clamps and Tools Therefor.
First use Jan. 27, 1964.

SN 195,389. Federal Sign and Signal Corporation, Blue Island, Ill. Filed June 11, 1964.

INTERCEPTOR

For Combination Electronic Siren, Public Address and Radio Amplifier.
First use at least as early as July 1960.

SN 195,421. Magnetic Metals Company, Camden, N.J. Filed June 11, 1964.

SHIELDFLEX

For Pliant, Spirally-Wound Tubings Made of High Permeability Magnetic Materials and Adapted To Contain Electrical Current Carrying Conductors, for Isolating Said Conductors From External Magnetic Fields and/or for Confining Magnetic Fields Generated by Said Conductors.
First use May 13, 1964.

SN 195,786. Gruenberg Electric Co., Inc., Garden City, N.Y. Filed June 16, 1964.



For Electrical Ovens for Industrial and Laboratory Use.
First use Apr. 15, 1964.

SN 195,807. Power Designs, Inc., Westbury, N.Y. Filed June 16, 1964.

REDULE

For Electronic Power Supply.
First use May 1, 1964.

SN 198,284. Mathatronics, Inc., Waltham, Mass. Filed July 21, 1964.



For Electrical Data Signal Processing Apparatus.
First use on or before June 29, 1963.
Subj. to Intf. with SN 192,608.

Class 22 — Games, Toys, and Sporting Goods

SN 121,740. La Lanne Incorporated, Hollywood, Calif. Filed June 9, 1961.

JACK LA LANNE'S

"Jack La Lanne" is the president of applicant corporation. Owner of Reg. No. 704,521.
For Physical Exercise Devices Comprising an Elongate Rubber Strand.
First use about Aug. 1, 1957.

SN 164,966. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Mar. 19, 1963.

PUPPETRINA

For Dolls and Puppets.
First use Mar. 4, 1963.

SN 164,967. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Mar. 19, 1963.

PUPPETINA

For Dolls and Puppets.
First use Mar. 4, 1963.

SN 167,794. Bachmann Bros., Inc., Philadelphia, Pa. Filed Apr. 30, 1963.



For Plastic Toys.
First use Mar. 4, 1963.

SN 168,298. Russell S. Cline, Statesville, N.C. Filed May 7, 1963.

TIC TOC

For Equipment Sold as a Unit for Playing a Game of Skill.
First use Mar. 7, 1963.

SN 189,615. Plymouth Golf Ball Sales Company, Plymouth Meeting, Pa. Filed Mar. 25, 1964.

ORBIT

For Golf Balls.
First use Feb. 11, 1964.

SN 189,616. Plymouth Golf Ball Sales Company, Plymouth Meeting, Pa. Filed Mar. 25, 1964.

STARLIGHT

For Golf Balls.
First use Feb. 11, 1964.

SN 189,617. Plymouth Golf Ball Sales Company, Plymouth Meeting, Pa. Filed Mar. 25, 1964.

278

For Golf Balls.
First use Feb. 11, 1964.

SN 189,618. Plymouth Golf Ball Sales Company, Plymouth Meeting, Pa. Filed Mar. 25, 1964.

WHITE MARSH

For Golf Balls.
First use Feb. 11, 1964.

SN 190,178. Ideal Toy Corporation, Hollis, N.Y. Filed Apr. 2, 1964.

PEPPER

For Dolls.
First use Apr. 18, 1963.

SN 190,179. Ideal Toy Corporation, Hollis, N.Y. Filed Apr. 2, 1964.

TED

For Dolls.
First use Apr. 18, 1963.

SN 190,611. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Apr. 8, 1964.

SINNER SPINNER

No registration rights are claimed for the word "Spinner" apart from the mark as shown.
For Artificial Fish Lures.
First use Jan. 30, 1964.

SN 191,040. De Luxe Reading Corporation, Elizabeth, N.J. Filed Apr. 14, 1964.

DEFENDER DAN

For Toy Gun.
First use Mar. 24, 1964.

SN 191,108. American Toy & Furniture Co., Inc., Chicago, Ill. Filed Apr. 15, 1964.

all-star

For Tool Belt and Hand Tools for Juvenile Use.
First use Jan. 1, 1964.

SN 191,183. Kohner Bros., Inc., New York, N.Y. Filed Apr. 15, 1964.

SNAP 'N BUILD

For Construction Toys.
First use Jan. 25, 1964.

SN 191,687. Mary Fitch Greenwood, Carmel, Calif. Filed Apr. 21, 1964.

SPECK

For Playing Cards.
First use Dec. 24, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 149,466. Jacobsen Manufacturing Co., Racine, Wis. Filed July 20, 1962.

TURF COMMANDER

For Tractors and Gang Lawn Mowers Therefor for Industrial Use Only.
First use as early as Mar. 27, 1962.

SN 149,467. Jacobsen Manufacturing Co., Racine, Wis. Filed July 20, 1962.

TURBOCONE

For Rotary Lawn Mowers.
First use as early as Mar. 31, 1960.

SN 150,471. United Shoe Machinery Corporation, Boston, Mass. Filed Aug. 3, 1962.

USM

For Industrial Machines, Tools and Parts Thereof for Shoe and Leather Making, Fastening, Cementing, Packaging, Cutting, and Similar Purposes.
First use Apr. 25, 1962.

SN 168,668. B & W Incorporated, Torrance, Calif. Filed May 13, 1963.

B & W

For Oil Well Tools—Namely, Centralizers, Scratchers, Cement Baskets, Stop Devices, Turbulators, Packer Adapters, Liner Hangers, and Other Oil Well Completion Tools.
First use Feb. 10, 1961.

SN 173,436. Dealer Associates, Inc., Minden, La. Filed July 22, 1963.

GRASKING

For Rotary Cutters for Mowing Grass and the Like.
First use June 3, 1963.

SN 179,453. Oneida Ltd., Oneida, N.Y. Filed Oct. 21, 1963.

CANTATA

For Stainless Steel Flat Tableware.
First use Aug. 9, 1963.

SN 184,387. Kuhn-Verpackungsmaschinen GmbH, Baden-Baden-Oos, Germany. Filed Jan. 10, 1964.

SOMAC

Owner of German Reg. No. 777,935, dated Oct. 2, 1963.
For Packaging Machinery.

SN 186,394. Price & Edwards (Engineering) Limited, Colnbrook, England. Filed Feb. 10, 1964.

LIBRAMAT

Owner of British Reg. No. 845,375, dated Feb. 20, 1963.
For Coin-Freed Book and Magazine Vending Machines and Parts Thereof.

SN 187,523. Schramm, Inc., West Chester, Pa. Filed Feb. 26, 1964.

MATCHMATIC

For Pressure-Responsive Controls for Engine-Driven Air Compressors.
First use Oct. 8, 1963.

SN 188,088. Dymo Industries, Inc., Emeryville, Calif. Filed Mar. 6, 1964.

For Embossing Machines.
First use January 1963.

SN 188,310. Van-Wilson Limited, Burlington, Ontario, Canada. Filed Mar. 9, 1964.

ROBIN

Owner of Canadian Reg. No. 191/N.S. 48,533, dated Dec. 31, 1953.
For Grain Loaders, Hydraulic Controls, Tractor Offset Mounts, Hydraulic Pumps and Valves, Post Hole Diggers, Tractor and Truck Power Take-Offs, Grain Sweeps, Universal Joints, Forage Harvesters, Swathers, Hydraulic Truck Hoists, Feed Grinders, Tractor Hoists, Hydraulic Hose and Fittings, Beet Loaders, Carburetors, Manifolds, Manure Spreaders, Pulleys, Pillow Blocks, Bale Loaders, Soil Packers and Mulchers, Threshing Machines, Wing Pump Holders, Vises, Variable Speed Controls, Traction Plates, Grain Rollers, Hay Conditioning Machines, Multi Crop Choppers, Mechanical Barn Cleaners, Sprayers, Tillage Tools, Tractor Cabs, Front End Tractor Loaders, Push Off Stackers, Angle Dozer Blades, Rod Weeders, Post Drivers, Deep Tillage Cultivators, Hydraulic Hose End Machines, Hydraulic Cylinders and Hydraulic Line Checks.
First use May 1941; in commerce 1946.

SN 188,506. Anderson, Clayton & Co., Houston, Tex. Filed Mar. 12, 1964.

LONG REACH

Owner of Reg. Nos. 624,944, 635,643, and 635,395.
For Material Handling Apparatus, Including: Lift Truck Attachments, Sheet and Coil Handling Equipment, Commodity and Warehouse Trailers and Hand Trucks, and Bale and Package Stackers and Conveyers; and Steam and Hydraulic Presses, Shears, Trip Hammers, Crushers, and Baling Press Attachments.
First use on or before 1930 on baling press attachments and hand trucks.

SN 188,968. Cutler Engineering, Inc., Elk Grove Village, Ill. Filed Mar. 18, 1964.

POWA-RAM

For Mechanically Actuated Hammers Wherein a Powerful Spring Is Repeatedly Loaded and Released To Deliver a Series of Blows.
First use on or about Oct. 4, 1962.

SN 190,426. W. W. Patterson Company, Pittsburgh, Pa. Filed Apr. 6, 1964.

ROPE WRENCH

For Tool in the Nature of a Winch or Windlass for Applying Power to Rope.
First use Feb. 3, 1964.

SN 190,764. Tavaro S.A., Geneva, Switzerland. Filed Apr. 9, 1964.

elna

Owner of U.S. Reg. Nos. 356,537, 738,573, and others.
For Sewing Machines and Parts Thereof, and Containers and Articles of Furniture Forming Receptacles for and Parts of Sewing Machines.
First use Feb. 2, 1937; in commerce Feb. 2, 1937.

SN 190,871. The Capewell Manufacturing Company, Hartford, Conn. Filed Apr. 13, 1964.

TUF-BAK

Owner of Reg. No. 577,018.
For Band Saw Blades.
First use on or about Apr. 1, 1961.

SN 191,905. Borg-Warner Corporation, Chicago, Ill. Filed Apr. 24, 1964.

ATKINS

Owner of Reg. Nos. 226,827, 656,076, and others.
For Saws of All Kinds, Manually and/or Power Operated, Saw Tools, Knives, Files, and Parts Thereof for Replacement and Repair.
First use on or prior to Aug. 25, 1961.

SN 192,417. Meyer Products, Inc., Cleveland, Ohio. Filed Apr. 30, 1964.

M
MEYER SNOW PLOWS

Applicant hereby disclaims any right in the words "Snow Plows." The drawing is lined for yellow but the trademark is not limited to colors.
For Snow Plows and Accessories Therefor, Including Without Limitation Power Lifts, Blades and Mounting Brackets.
First use at least Jan. 1, 1930.

SN 192,435. Taccone Corporation, North East, Pa. Filed Apr. 30, 1964.

TACCONE
INDEXED
SYSTEM

For Molding Machines and Accessories for Green Sand Foundries.
First use Apr. 3, 1958.

SN 192,476. DoAll Company, Des Plaines, Ill. Filed May 1, 1964.

Brite Line

The representation of the goods (twist drill) is disclaimed apart from the mark as a whole.
For Metal Cutting Twist Drills.
First use Apr. 7, 1964.

SN 192,606. Manostat Corporation, New York, N.Y. Filed May 4, 1964.

VARISTALTIC

For Power Operated Liquid and Gas Pump Which Functions by Alternately Compressing Flexible Tubing Through Which the Liquid or Gas Flows.
First use Apr. 21, 1964.

SN 193,683. Major Slicing Machine Corp., Walden, N.Y. Filed May 18, 1964.

MAX MAJOR

Owner of Reg. No. 674,136.
For Carving Knives.
First use on or about May 7, 1964.

SN 194,770. American Can Company, New York, N.Y. Filed June 3, 1964.

MINNI-MITE

For Packaging Machine.
First use Mar. 31, 1964.

SN 196,656. Gleason Reel Corp., Mayville, Wis. Filed June 29, 1964.

Gleason

For Automatic Payout and Take-Up Reels for Hose and Electric Cables and Cords.
First use Dec. 23, 1960; 1914 as to "Gleason."

SN 198,780. Springfield Cast Products, Inc., Springfield, Mass. Filed July 29, 1964.

CYCLE-MATIC

For Automatic Molding Machines for Expandable Polystyrene.
First use Aug. 31, 1959.

SN 199,280. Hoover Ball and Bearing Company, Saline, Mich. Filed Aug. 5, 1964.

LAM-N-HARD

For Press for Forming Sheets or Laminates From Various Materials Such as Fibrous Materials, Resinous Materials, and the Like.
First use Sept. 17, 1963.

SN 200,509. Towmotor Corporation, Cleveland, Ohio. Filed Aug. 24, 1964.

QUAD MAST

For Lift Trucks and Parts Thereof.
First use Aug. 11, 1964.

SN 200,633. Henry J. Dziekan, Chicago, Ill. Filed Aug. 26, 1964.

TAKON

For Hand Stamper Units for Stamping Indicia on Chassis Beside Electronic Components.
First use May 29, 1964.

SN 200,767. John E. Mitchell Company, Inc., Dallas, Tex. Filed Aug. 27, 1964.

HANDYWASH

For Coin-Operated Car Washing Machines.
First use July 3, 1964.

Class 24 — Laundry Appliances and Machines

SN 199,824. Hamilton Manufacturing Company, Two Rivers, Wis. Filed Aug. 13, 1964.

HERITAGE

For Domestic Type Laundry Dryers.
First use July 14, 1964.

Class 25 — Locks and Safes

SN 199,269. Curtis Industries, Inc., Eastlake, Ohio. Filed Aug. 5, 1964.

VANGUARD

For Key Blanks.
First use June 15, 1964.

Class 26 — Measuring and Scientific Appliances

SN 191,474. R. C. Allen Business Machines, Inc., Grand Rapids, Mich. Filed Apr. 20, 1964.

R. C. Allen

For Aircraft Instruments—Namely, Directional Gyros, Gyro Horizons, Turn and Bank Indicators, and Rate Gyroscopes.
First use Feb. 12, 1964.

SN 192,081. Ross Operating Valve Company, Detroit, Mich Filed Apr. 27, 1964.

LOGICAIR

For Binary Control and Operating Valve Elements for Digital Systems.
First use December 1961.

SN 192,236. Vare Industries, Inc., Roselle, N.J. Filed Apr. 28, 1964.

VARE

For Underwater Photography Apparatus Comprising an Underwater Vehicle for the Mounting of Underwater Television Cameras, Film Recorders, Hydrophotometers and Related Equipment, Including Underwater Winches, Buoy Equipment, Control Consoles, Power-Sources and Parts and Components for the System.
First use Oct. 15, 1959.

SN 195,136. Nuclear-Chicago Corporation, Des Plaines, Ill. Filed June 8, 1964.

AUTO/SUBTRACT

For Radioactivity Pulse-Counting Accessory for Blocking From a Register a Number of Detector Pulses Per Unit Time Corresponding to Detector Background.
First use Apr. 19, 1963.

SN 195,478. Westcott Heath, Jr., d.b.a. Westcott Electronics, Clifton, N.J. Filed June 11, 1964.

SOLIDTHERM

For Precision Thermostat.
First use May 11, 1964.

SN 195,547. Plaza Sunwear Company, Newark, N.J. Filed June 12, 1964.

Plaza

For Sunglasses and Temples.
First use Dec. 27, 1963.

SN 195,780. General Aniline & Film Corporation, New York, N.Y. Filed June 16, 1964.

PORTA-LITE

For Photographic Projectors.
First use Feb. 6, 1964.

SN 196,126. Eastman Kodak Company, Rochester, N.Y. Filed June 22, 1964.

KODABLITZ

Owner of Reg. Nos. 85,423; 721,837, and others.
For Photographic Flashlighting Apparatus.
First use Apr. 1, 1964.

Class 27 — Horological Instruments

SN 197,871. Benrus Watch Company, Inc., New York, N.Y. Filed July 15, 1964.



The drawing is lined for the colors red, gold and blue.
For Watches.
First use at least as early as Mar. 1, 1949.

SN 199,520. Joe B. Elkes, d.b.a. World Wide Associates and/or World Wide Creations, Skokie, Ill. Filed Aug. 7, 1964

VERSAILLES

For Watches and Clocks.
First use June 1962.

Class 28 — Jewelry and Precious-Metal Ware

SN 187,487. Rodi & Wienenberger Aktiengesellschaft, Pforsheim, Germany. Filed Oct. 7, 1963.

ADMIRA

Owner of German Reg. No. 617,733, dated Mar. 11, 1952; and U.S. Reg. No. 440,602.
For Genuine and Imitation Jewelry.

SN 180,357. L. G. Balfour Company, Attleboro, Mass. Filed Nov. 4, 1963.

JEWELRY'S FINEST CRAFTSMEN

For Jewelry for Personal Adornment (Not Including Watches)—Namely, Finger Rings, Fraternity Jewelry, and Insignia, and for Items Made in Whole of, in Part of, or Plated With Precious Metal—Namely, Emblems, Badges, Holloware, Trophies, Loving Cups and Medals.
First use Oct. 1, 1958.

SN 182,957. Medicated Products Company, Chicago, Ill. Filed Dec. 11, 1963.

PRIDE RINGS

Applicant disclaims the term "Rings" apart from the mark as shown. Owner of Reg. Nos. 551,057 and 604,854.
For Wedding Rings and Engagement Rings.
First use June 1, 1953.

SN 184,067. The Higbee Company, Cleveland, Ohio. Filed Jan. 6, 1964.

HC

For Jewelry and Silverware, the Silverware Being of Both Flat Form and Hollow Form.
First use September 1962.

SN 185,379. The Fractor Co., Inc., Beverly Hills, Calif. Filed Jan. 27, 1964.

JUNIOR JEWELS

For Children's Jewelry.
First use July 1, 1958.

SN 196,263. Dori-Gold, Inc., New York, N.Y. Filed June 23, 1964.

DG

For Jewelry for Personal Wear.
First use June 1, 1964.

SN 198,380. Edward Slutsky, Inc., New York, N.Y. Filed July 22, 1964.

Pearls by Chiyoda

The term "Pearls" is disclaimed apart from the mark.
For Cultured Pearls.
First use May 15, 1964.

Class 29 — Brooms, Brushes, and Dusters

SN 166,078. The Drackett Company, Cincinnati, Ohio. Filed Apr. 4, 1963.

"MAGIC" V-ACTION

For Mops and Refills Therefor.
First use May 1959.

Class 30 — Crockery, Earthenware, and Porcelain

SN 189,548. Castleton China, Inc., New Castle, Pa. Filed Mar. 25, 1964.

GOLDEN MOMENT

For China Dinnerware.
First use Mar. 3, 1964.

SN 189,629. Shenango Ceramics, Inc., New Castle, Pa. Filed Mar. 25, 1964.

PAVILION

For China Dinnerwear.
First use Nov. 11, 1964.

SN 190,874. Castleton China, Inc., New Castle, Pa. Filed Apr. 13, 1964.

BITTERSWEET

For China Dinnerwear.
First use Feb. 21, 1964.

SN 191,805. Stangl Pottery Company, Trenton, N.J. Filed Apr. 22, 1964.

GOLDEN BLOSSOM

For Dinnerwear Formed of Ceramic Material.
First use Apr. 13, 1964.

Class 31 — Filters and Refrigerators

SN 134,967. Flexo Products, Inc., Westlake, Ohio. Filed Jan. 2, 1962.

FLEX-A-LITE 

No claim is made to the representation of the goods apart from the mark as shown; applicant reserving its common law rights therein. Owner of Reg. Nos. 566,384 and 637,167.
For Mask Type Respirator.
First use Nov. 16, 1961.

SN 167,929. The Permutit Company Limited, Chiswick, London, England. Filed May 1, 1963.

STARVATION

Owner of British Reg. No. 774,432, dated Feb. 1, 1958.
For Installations for Use in Carrying Out Ion-Exchange Treatment of Liquids and Parts Thereof.

SN 175,225. Union Tank Car Company, Chicago, Ill. Filed Aug. 16, 1963.

Salt Saver

For Regenerating Liquid Controls for Home Water Softeners.
First use July 2, 1963.

SN 186,148. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Feb. 6, 1964.

CAMBRIDGE ABSOLUTE

Owner of Reg. Nos. 596,401 and 635,923.
For Air Filters for Air Conditioning and Ventilating Systems.
First use at least as early as July 1, 1955.

Class 32 — Furniture and Upholstery

SN 160,827. Arlington Aluminum Company, Detroit, Mich. Filed Jan. 17, 1963.

VERSA-PANEL

For Multiple Section Folding Display Stands for Small Articles, Posters and the Like.
First use on or about May 31, 1962.

SN 196,521. Globe Furniture Company, High Point, N.C. Filed June 26, 1964.

TUSCAN VILLA

For Living Room Furniture.
First use Apr. 17, 1964.

SN 196,758. Arkwright Merchandising Corporation, New York, N.Y. Filed June 30, 1964.

CHARM HOUSE

Owner of Reg. No. 647,825.
For Household Furniture—Namely, Tables, Chairs, Beds, Sofas, and Cabinets.
First use Nov. 1, 1963.

SN 197,231. Scriptomatic, Inc., Philadelphia, Pa. Filed July 3, 1964.

SCRIPTOMATIC

Owner of Reg. Nos. 591,913 and 771,456.
For Filing Equipment for Master Cards for Addressing Machines.
First use June 1, 1964.

SN 197,934. American Desk Manufacturing Company, Temple, Tex. Filed July 16, 1964.

REGULINE

For Chairs, Tablet Arm Chairs, Desks, Chair Desks, Combination Chair and Desk Units, Combination Chair and Lift Lid Desk Units, Open Front Desks, Lift Lid Desks, Stools, and Auditorium Chairs.
First use February 1960.

SN 197,976. National Mattress & Furniture Company, Inc., d.b.a Spring Air of Greater Washington, Muirkirk, Md. Filed July 16, 1964.

NOB HILL

For Mattresses and Box Springs.
First use Mar. 28, 1964.

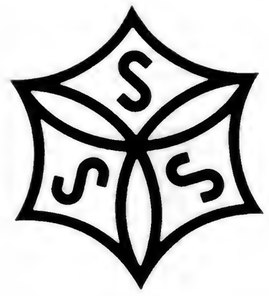
SN 198,031. D'Arcy Company, Dover, N.H. Filed July 17, 1964.

DARCOMITE

For Kitchen Cabinets.
First use December 1963.

Class 33 — Glassware

SN 188,803. Sasaki Glass Co., Ltd., Tokyo, Japan. Filed Mar. 16, 1964.



Owner of Japanese Reg. No. 88,907, dated Oct. 29, 1917.
For Glassware—Namely, Tumblers, Stemware, Decanters, Pitchers, Ice-Buckets, Sugar-Jars, Candy-Jars, Gum-Jars, Mugs, Jugs, Cruet-Stands, Pepper-Stands, Salt-Stands, Caster-Stands, Salt and Pepper Shakers, Lemon Squeezers, Bowls, Dishes and Plates, Covered Dishes, Flower Vases, Candle Stands, Cups and Saucers.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 164,407. Unitek Corporation, Monrovia, Calif. Filed Mar. 11, 1963.

MICROBOND

For Electrical Resistance Welders.
First use Dec. 28, 1962.

SN 186,289. Technical Components Co., Inc., Chicago Ridge, Ill. Filed Feb. 7, 1964.

T.C.C.

Owner of Reg. No. 644,089.
For Portable Electric Spot Welders, and Wire and Cable Assemblies.
First use Oct. 18, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 185,933. Prince Rubber & Plastics Co., Inc., Buffalo, N.Y. Filed Feb. 3, 1964.

PANACEA

Owner of Reg. No. 422,743.
For Tubing for Conducting Liquids and Gases, Sheet Material for Machinery Packing, and Hose.
First use Dec. 26, 1944.

SN 190,912. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Apr. 13, 1964.

FITZ KIT

For purposes of registration only, exclusive rights to the word "Kit" are disclaimed apart from the mark as shown.
For Gaskets.
First use Feb. 14, 1964.

SN 191,993. The Abel Corporation, Columbus, Ohio. Filed Apr. 27, 1964.

ABEL REGENCY FALCON

Owner of Reg. Nos. 681,162, 712,859, and others.
For Tires.
First use Feb. 17, 1964.

SN 194,757. Midwest Brake Bond Co., Detroit, Mich. Filed June 2, 1964.

B & R

For Brake Linings, Blocks and Segments.
First use May 6, 1964.

SN 194,934. United States Rubber Company, New York, N.Y. Filed June 4, 1964.



The drawing is lined for red. Owner of Reg. Nos. 110,334, 642,083, and others.
For Pneumatic Tires.
First use May 12, 1964.

SN 194,935. United States Rubber Company, New York, N.Y. Filed June 4, 1964.

U.S. ROYAL

The drawing is lined for red. Owner of Reg. Nos. 110,334, 642,083, and others.
For Pneumatic Tires.
First use May 12, 1964.

SN 195,522. The Firestone Tire & Rubber Company, Akron, Ohio. Filed June 12, 1964.

MAINLINER

For Pneumatic Vehicle Tires.
First use Mar. 12, 1964.

Class 36 — Musical Instruments and Supplies

SN 188,858. Fabrica de Discos Peerless, S.A., Mexico City, Mexico. Filed Mar. 17, 1964.

ECO

Owner of Mexican Reg. No. 101,404, dated Feb. 12, 1960.
For Phonograph Records and Prerecorded Tapes.

Class 37 — Paper and Stationery

SN 26,872. Alfred Robbins Organization, Inc., New York, N.Y. Filed Mar. 25, 1957.

AN EXECUTIVE LINE PRODUCT

All other wording except "Executive" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 714,404 and 722,474.
For Stationery—Namely, Pencil and Pen Sets, Paper Weights, Pocket and Desk Calendars, Pencil Caddies, Letter Openers, and Paper Clip Trays.
First use January 1946; Jan. 2, 1930, as to "Executive."

SN 178,966. The Parker Pen Company, Janesville, Wis. Filed Oct. 14, 1963.

SWITCHWRITER

For Fountain Pens, Mechanical Pencils, Ball Point Pens, and Desk Sets.
First use Aug. 29, 1963.

SN 180,718. Eagle Pencil Company, Danbury, Conn. Filed Nov. 8, 1963.

IMPERVIUM

For Ball Point Pens.
First use Sept. 19, 1963.

SN 182,812. Morgan Adhesives Company, Stow, Ohio. Filed Dec. 11, 1963.

QUIK-FROST

For Adhesive Plastic Sheet Material Coated on One Side With Pressure Sensitive Adhesive and Used as a Decorative Material for Covering, Insulating and Strengthening Glass.
First use May 15, 1963.

SN 182,930. Calwis Company, Green Bay, Wis. Filed Dec. 13, 1963.

DUBLWIPES

Owner of Reg. No. 715,790.
For Windshield Towels.
First use about June 20, 1941.

SN 186,713. The Ferber Corporation, Englewood, N.J. Filed Feb. 14, 1964.

FERBERITER

For Markers.
First use Jan. 10, 1964.

SN 186,714. The Ferber Corporation, Englewood, N.J. Filed Feb. 14, 1964.

FERBERMARKER

For Markers.
First use Jan. 10, 1964.

SN 190,959. Pacific Industries, Inc., San Francisco, Calif. Filed Apr. 13, 1964.

"IMPACT"

For Carbonless Transfer Copy Paper.
First use Jan. 11, 1964.

SN 191,945. National Blank Book Company, Holyoke, Mass. Filed Apr. 24, 1964.

tuf·vin

For Loose Leaf Binders and Blank Record Keeping Books.
First use Oct. 1, 1963.

SN 192,944. Taufek H. Ramsey, d.b.a. West Coast Sales, Campbell, Calif. Filed May 7, 1964.

MOIST-O-MATIC

For Finger Moisteners for Use in Offices, Banks, Schools, and Homes.
First use Aug. 1, 1957.

SN 195,761. J. C. Campbell Paper Company of Worcester, Worcester, Mass. Filed June 16, 1964.

POLY pg GARD

For Kraft Paper in Sheets and Envelopes for Use as a Moisture Barrier and Rust Inhibitor.
First use Oct. 1, 1960.

SN 197,232. Scriptomatic, Inc., Philadelphia, Pa. Filed July 3, 1964.

SCRIPTOMATIC

Owner of Reg. Nos. 591,913 and 771,456.
For Carbon Paper and Master Cards Specially Designed for and Intended for Use in Addressing Machines.
First use June 1, 1964.

Class 38 — Prints and Publications

SN 177,223. A. H. Belo Corporation, Dallas, Tex. Filed Sept. 18, 1963.

TEXAS ALMANAC

Owner of Reg. No. 405,323.
For Encyclopedia Publications.
First use 1954.

SN 183,026. A. H. Belo Corporation, Dallas, Tex. Filed Dec. 16, 1963.

TEXAS ALMANAC AND STATE INDUSTRIAL GUIDE

Owner of Reg. No. 405,323.
For Encyclopedia Publications
First use 1904.

Class 39 — Clothing

SN 131,878. Rosenblatt & Kahn, Inc., New York, N.Y. Filed Nov. 13, 1961.

Juniorettes by Bambury

No claim is made to the word "Juniorettes" apart from the mark as shown. Owner of Reg. No. 635,241.
For Clothing—Namely, Misses' and Girls' Outer Wear. More Particularly, Coats, Hats, Jackets, and Leggings, in Children's, Pre-Teen and Teen-Age Size Ranges.
First use Nov. 2, 1961.

SN 163,710. Wilhela Cushman, d.b.a. Wilia Products Unltd., New York, N.Y. Filed Mar. 1, 1963.

EVERYDAY-ANYDAY SAVE-A-PENNY

The words "Everyday-Anyday" are disclaimed apart from the mark as shown.
For Pinafores.
First use Jan. 28, 1963.

SN 169,033. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. Filed May 16, 1963.

Greybelle

Owner of Reg. Nos. 396,554, 565,274, and others.
For Hosiery for Women.
First use Sept. 13, 1962.

SN 169,787. Teenform, Inc., New York, N.Y. Filed May 27, 1963.

SWEET SIXTEEN

For Women's Brassieres, Girdles, Corsets, Panties, Slips, Drawers, Chemises, Undershirts, and Garter Belts.
First use Oct. 1, 1962.

SN 174,924. Kay Windsor, Inc., New York, N.Y. Filed Aug. 12, 1963.

HANBURY

For Ladies' and Misses' Suits, Dresses, and Knitted Suits.
First use July 24, 1963.

SN 176,303. Harnosand Knitting Mills, Limited, Ozone Park, N.Y. Filed Sept. 4, 1963.

HARNOSAND

For Sweaters, Dresses, Suits, Slacks, Skirts, and Jackets.
First use on or about Jan. 15, 1963.

SN 178,191. Th. Grimmelsen, Paris, Seine, France. Filed Oct. 2, 1963.

SPRING COURT

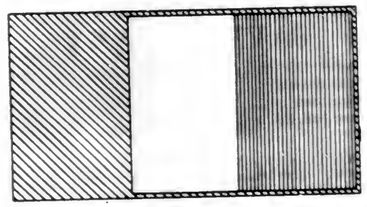
Owner of French Reg. No. 429,763, dated July 1, 1953 (Seine); Natl. Inst. No. 19,763.
For Sport Shoes of All Types.

SN 179,578. Alna Tricots De Luxe, Milan, Italy. Filed Oct. 23, 1963.

Alna

Owner of U.S. Reg. No. 727,753.
For Women's Sweaters, Cardigans, Slacks, Coats, Petticoats, Dresses, Suits, Jackets, Shirts, and Pullovers.
First use July 25, 1932; in commerce Mar. 19, 1954.

SN 179,998. Davidow Suits, Inc., New York, N.Y. Filed Oct. 29, 1963.



The drawing is lined for green and red. Owner of Reg. No. 406,485.
For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.
First use in or about December 1939.

SN 181,779. Industriewerke Lemm & Company, G.m.b.H., Gusterath-Tal, Kreis Trier, Germany. Filed Nov. 22, 1963.

ROMIKA

Owner of German Reg. No. 306,250, dated Sept. 25, 1923.
For Shoes of Leather, Rubber, Synthetic Materials and Textiles, Slippers, Sport Shoes and Rubber Boots.

SN 181,958. Catalina, Inc., Los Angeles, Calif. Filed Nov. 27, 1963.

SPORTICIPATOR

For Women's and Men's Pants, Shorts, Sport Shirts, Jackets, Sweaters; and Women's Skirts and Dresses.
First use Nov. 5, 1963.

SN 182,125. Sobel, Bernstein & Greene Co., Los Angeles, Calif. Filed Nov. 29, 1963.

A'MANO

For Shoes.
First use Apr. 14, 1951.

SN 182,628. Leisurely Corp., New York, N.Y. Filed Dec. 9, 1963.

Leisurely

For Ladies' and Misses' Dresses, Blouses, Skirts, Gowns, Robes, Pajamas, and Smocks.
First use Oct. 30, 1963.

SN 187,419. Hat Corporation of America, New York, N.Y. Filed Feb. 25, 1964.

BEGG

Owner of Reg. No. 606,767.
For Hats for Men.
First use January 1943.

SN 188,851. E-Z Mills, Inc., New York, N.Y. Filed Mar. 17, 1964.

DURAFIT

For Infants' and Children's Underwear and Sleepwear.
First use Mar. 4, 1964.

SN 189,518. John Winter & Son, Inc., Short Hills, N.J. Filed Mar. 24, 1964.

BARTHBY FOOTWEAR

The word "Footwear" is disclaimed apart from the mark as shown.
For Men's Shoes.
First use Mar. 6, 1964.

SN 189,799. Opp Textiles, Inc., Opp, Ala. Filed Mar. 27, 1964.

GAME WINNER

For Hunting and Sports Clothing for Men Namely, Jackets, Coats, Trousers, and Vests.
First use Oct. 9, 1961.

SN 190,945. McCubbin Hosiery, Inc., Oklahoma City, Okla. Filed Apr. 13, 1964.

Jon Halle

The name "Jon Halle" is not the name of any individual known to applicant, it is, insofar as applicant is concerned, a fictitious name.
For Clothing—That Is, Hosiery and Socks.
First use Feb. 1, 1964.

SN 192,116. Woolrich Woolen Mills, Woolrich, Pa. Filed Apr. 27, 1964.

Richmeister

For Ski Parkas.
First use Apr. 16, 1964.

SN 192,306. Melville Shoe Corporation, New York, N.Y Filed Apr. 29, 1964.

VOODOO

For Men's and Boys' Shoes.
First use Apr. 28, 1964.

SN 193,403. J. C. Penney Company, New York, N.Y. Filed May 13, 1964.

GAYMODE

Owner of Reg. Nos. 286,853 and 633,240.
For Women's and Girls' Shoes and House Slippers.
First use Apr. 20, 1964.

SN 193,483. Melville Shoe Corporation, New York, N.Y. Filed May 14, 1964.

MiLes

Owner of Reg. Nos. 221,835, 221,836, 621,367, and others.
For Men's, Women's, and Children's Shoes, Slippers, Boots, Casual Footwear, Sneakers, and Rubber Footwear; Women's Belts; Men's, Women's, and Children's Socks and Hosiery.
First use on about Jan. 1, 1905.

SN 194,367. D'Antonio Shoe Corporation, New York, N.Y. Filed May 27, 1964.

Twine

For Shoes.
First use May 25, 1964.

SN 194,409. Moran Shoe Company, Carlyle, Ill. Filed May 27, 1964.

MAGIC JET FLEX

Owner of Reg. Nos. 761,398, 763,994, and others.
For Infants' and Children's Shoes, Boots, and Slippers.
First use May 8, 1964.

SN 194,469. Cordé-De Parie, Inc., New York, N.Y. Filed May 28, 1964.

GIVE & TAKE

Owner of Reg. No. 669,737.
For Brassieres and Corselettes.
First use Jan. 4, 1955.

SN 194,725. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed June 2, 1964.

FLAX-FROST

For Sport Coats.
First use on or about Apr. 22, 1964.

Class 40—Fancy Goods, Furnishings, and Notions

SN 170,727. C. J. Bates & Son, Incorporated, Chester, Conn. Filed June 11, 1963

Princess

For Knitting Needles, Crochet Hooks, and Knitting Accessories and Aids Comprising Bodkins, Stilettos, Stitch Holders, Tatting Shuttles, and the Like.
First use May 24, 1963.

SN 185,139. Jimmie George, d.b.a. Hubby Co., Berkeley, Ill. Filed Jan. 22, 1964.

HUBBY

For Yarn Holder.
First use Oct. 31, 1963.

SN 191,546. Morris Gubin, d.b.a. M.G. Novelty Co., Chicago, Ill. Filed Apr. 20, 1964.

Bend Me Bows

The applicant hereby disclaims the word "Bows" apart from the mark as shown.
For Hair Bows.
First use Aug. 1, 1963.

SN 193,484. Melville Shoe Corporation, New York, N.Y. Filed May 14, 1964.

MiLes

Owner of Reg. Nos. 221,835, 221,836, 621,367, and others.
For Shoe Bows, Ornaments and Buckles Not of Precious Metal Ware.
First use on about Jan. 1, 1929.

SN 196,529. Dynalytic Engineering Co., Glendale, Calif. Filed June 26, 1964.

DYPON

For Clothes Fasteners.
First use on or about Mar. 31, 1964.

Class 41—Canes, Parasols, and Umbrellas

SN 193,485. Melville Shoe Corporation, New York, N.Y. Filed May 14, 1964.

MiLes

Owner of Reg. Nos. 221,835, 221,836, 621,367, and others.
For Umbrellas.
First use on about Jan. 1, 1939.

SN 194,325. Societe Rhovyl, Paris, France. Filed May 26, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Umbrellas and Parasols.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 136,533. Cabin Crafts Inc., Dalton, Ga. Filed Jan. 25, 1962.

Formula N^2

The word "Formula" is disclaimed apart from the mark as shown.
For Finish on Rugs or Carpets To Prevent Soiling and To Reduce Static Electricity.
First use March 1961.

SN 172,317. The Kroger Co., Cincinnati, Ohio. Filed July 2, 1963.

MI-T-FINE

For Crib Sheets.
First use July 1, 1961.

SN 173,544. Allen Knitting Mills, Inc., New York, N.Y. Filed July 23, 1963.

SIXTY-FIVE PLUS

For Cotton and Polyester Fiber Fabrics.
First use Apr. 8, 1963.

SN 185,507. Harlemark International, Inc., Natick, Mass. Filed Jan. 28, 1964.

DERMA TEX

For Bacteriostatic Face Cloths.
First use on or about Oct. 18, 1963.

SN 193,963. J. W. Johnson Company, Bellwood, Ill. Filed May 21, 1964.

BUTYL-TEX

For Treated Fabric, Used in Tents, Awnings and the Like, Which Is Water Repellent, Flame Resistant, and Mildew-Proof.
First use Apr. 15, 1963.

SN 194,163. Fabrica, Inc., New York, N.Y. Filed May 25, 1964.



For Piece Goods Made of Synthetic Fabrics.
First use Apr. 29, 1964.

SN 194,254. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 25, 1964.

SPANPLAY

For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use May 4, 1964.

SN 194,255. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 25, 1964.

JET STREAM PLUS

Owner of Reg. No. 662,889.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use May 19, 1964.

SN 194,256. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 25, 1964.

SUPER JET STREAM

Owner of Reg. No. 662,889.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use May 19, 1964.

Class 43 — Thread and Yarn

SN 181,531. Etablissements Louis Rochegude S.A., Valance, Drome, France. Filed Nov. 20, 1963.



For Synthetic Yarn.
First use Apr. 17, 1963; in commerce Apr. 17, 1963.

Class 44 — Dental, Medical, and Surgical Appliances

SN 194,326. Societe Rhovyl, Paris, France. Filed May 26, 1964.

CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Textile Articles for Use in Physiotherapy, Such as Dressings, Bandages, Knee-Pieces, Girdles, Belts, and Waistbands.

SN 196,907. The Seamless Rubber Company, New Haven, Conn. Filed July 1, 1964.

PROCEDURE-PACK

For Surgical Dressings.
First use Feb. 12, 1964.

SN 197,058. Aqua-Tec Corporation, Fort Collins, Colo. Filed July 6, 1964.



Owner of Reg. No. 762,414.
For Readily Portable Oral Hygiene Appliance Utilizing a Pulsed Jet of Water for Massaging the Gums and Cleaning Spaces Adjacent the Teeth.
First use Oct. 14, 1961.

Class 45 — Soft Drinks and Carbonated Waters

SN 195,778. Fritzsche Brothers, Inc., New York, N.Y. Filed June 16, 1964.



Owner of Reg. Nos. 62,432 and 770,198.
For Flavoring Compounds for Non-Alcoholic Maltless Beverages in the Nature of Soft Drinks.
First use June 7, 1963.

Class 46 — Foods and Ingredients of Foods

SN 159,194. Paul F. Beich Company, Bloomington, Ill. Filed Dec. 17, 1962.

U'-MIX-M'

For Candy.
First use Nov. 30, 1962.

SN 164,601. Cleveland Greenhouse Vegetable Growers Co operative Association, Cleveland, Ohio. Filed Mar. 14, 1963. COLLECTIVE MARK.



The words "Greenhouse Vegetable" and "Growers Association" are disclaimed.
For Greenhouse Grown Vegetables and Like Food Produce.
First use Dec. 27, 1961.

SN 166,704. Frozen Institutional Sales Co-Op. Inc., d.b.a. Frozen Institutional Sales Company, San Francisco, Calif. Filed Apr. 15, 1963.

FISCO

Owner of Reg. Nos. 720,096 and 751,370.
For Frozen Fruits, Vegetables, and Fruit Juices.
First use Sept. 14, 1960, on frozen vegetables.

SN 167,002. Jaret Imports, Inc., Brooklyn, N.Y. Filed Apr. 18, 1963.

MĒLANGE DELIGHTS

Applicant disclaims the word "Mēlange" separate and apart from the mark.
For Cookies, Crackers, and Candies.
First use Mar. 6, 1963.

SN 167,962. Victory Provision Co., Dayton, Ohio. Filed May 1, 1963.



For Meat and Meat Products—Namely, Cut and Trimmed Beef, Lamb, Pork, and Veal Either Fresh Cut, Frozen, or Cooked.
First use Apr. 25, 1963.

SN 168,153. M. Caratan, Inc., d.b.a. M. Caratan, Delano, Calif. Filed May 6, 1963.

COLUMBINE

For Fresh Peaches and Grapes.
First use 1926.

SN 171,340. Dufour, S.p.A., Genoa-Cornigliano, Italy. Filed June 19, 1963.



The word "Bar" is disclaimed apart from the mark as shown. Owner of Italian Reg. No. 157,801, dated Jan. 18, 1962.
For Candy Including Chocolate, Caramels, Drops, and Nougats.

SN 173,416. Balanced Foods, Inc., New York, N.Y. Filed July 22, 1963.

BALANCED

Owner of Reg. Nos. 651,530, 645,827, and others.
For Dairy Products—Namely, Cheeses.
First use 1958.

SN 177,698. Harold D. Harvey, d.b.a. Highland Kitchens, Denver, Colo. Filed Sept. 25, 1963.

HEATHER ANNE

For Frozen Bread Dough.
First use Aug. 13, 1963.

SN 178,237. Versis Foods, Inc., Washington, D.C. Filed Oct. 2, 1963.

VERSIS

For Pickles and Pickled Vegetables in Various Forms and Sweet and Hot Pickle Relishes, Mayonnaise, Salad Dressings (Plain and French), Mustard, Vinegars (Distilled, Apple Cider and Wine), Barbecue Sauce, Worcestershire Sauce, Potato Chips, Olives, Cherries (Maraschino), Catsup, Tomato Juice, Tomato Puree, Grated Cheese, Horseradish, and Onions (Cocktail and Sour).
First use in or about January 1956; in or about May 1927 as to "Versis."

SN 178,273. J. H. Filbert, Inc., Baltimore, Md. Filed Oct. 3, 1963.

QUAKER WHIP

The word "Whip" is disclaimed apart from the mark as shown.
For Mayonnaise and Salad Dressing.
First use October 1934.

SN 178,603. General Foods Corporation, White Plains, N.Y. Filed Oct. 9, 1963.

COUNTRY SQUARES

For Food Product, Dough-Like in Nature, With or Without a Fruit Filling, To Be Prepared in a Pop-Up Toaster.
First use Aug. 23, 1963.

SN 178,796. Fran Mushroom Co., Inc., Ravena, N.Y. Filed Oct. 11, 1963.

WHITE TOP

For Canned Mushrooms.
First use Sept. 1, 1963.

SN 179,051. Maison Julien, Inc., New York, N.Y. Filed Oct. 15, 1963.

RED COCK



The drawing is lined for red.
For Tomato Juice.
First use Mar. 31, 1963.

SN 179,980. Societe Pernod & Ricard, Paris, France. Filed Sept. 30, 1963.



The drawing is lined for yellow and orange, red, green, and blue. No claim is here made for the words "Les Grands Jus de Fruits Francais," translated "the great French fruit juices" apart from the combination shown. No claim is here made to the very small wording appearing underneath the "LI" portion of applicant's mark; it has no trademark significance and is not intended to have any such significance; it is merely the signature (illegible) of the artist who drew the label. Owner of French Reg. No. 497,340, dated June 27, 1961 (Seine); Natl. Inst. No. 167,399.
For Apple Juice.

SN 180,278. Armour and Company, Chicago, Ill. Filed Nov. 1, 1963.

GOBBLIN' GOOD

Applicant disclaims all rights in the word "Good" except as a part of the mark "Gobblin' Good."
For Fresh Turkey Meat Which Is Cooked and Frozen.
First use on or prior to Oct. 25, 1963.

SN 180,279. Armour and Company, Chicago, Ill. Filed Nov. 1, 1963.

GOLDEN GOBBLER

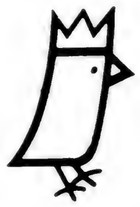
Applicant disclaims all rights in the word "Gobbler" except as a part of the mark "Golden Gobbler."
For Fresh Turkey Meat Which Is Cooked and Frozen.
First use on or prior to Oct. 25, 1963.

SN 182,580. Central Soya Company, Inc., Fort Wayne, Ind. Filed Dec. 9, 1963.

SWEET GEORGIA

For Frozen Dressed Fowl, Capon, Chicken, Pullet, and Rock Cornish Game Hen.
First use July 6, 1951.

SN 183,647. Regal Foods, Skokie, Ill. Filed Nov. 20, 1963.



For Frozen Ready To Cook Poultry Products—Namely, Stuffed Poultry Legs, Poultry Breasts, Poultry Steaks, and the Like.
First use on or about Jan. 10, 1963.

SN 183,997. Spaulding Bakeries Incorporated, Binghamton, N.Y. Filed Jan. 3, 1964.

BIG BOY

Owner of Reg. No. 650,658.
For Bread, Cookies, Pastry, Cake, and Doughnuts.
First use Oct. 11, 1956, on bread.

SN 186,455. General Foods Corporation, White Plains, N.Y. Filed Feb. 11, 1964.

MR. MUSCLE

Owner of Reg. No. 661,997.
For Cereal Breakfast Food.
First use Oct. 9, 1963.

SN 186,577. Trenton Foods, Inc., Kansas City, Mo. Filed Feb. 12, 1964.

PRESSURE flash 18 PROCESS T.F.T.

The words "Pressure Process" are disclaimed apart from the mark as shown.
For Canned Foods—Namely, Spaghetti With Tomato and Cheese Sauce.
First use Jan. 31, 1964.

SN 187,045. Regal Foods, Skokie, Ill. Filed Feb. 19, 1964.

REGAL HOSTESS

For Frozen, Prepared Poultry Foods—Namely, Stuffed Chicken Parts, Boned Stuffed Game Fowl, and Unstuffed Chicken Parts.
First use on or about Jan. 10, 1963.

SN 187,390. Biotta Gemusebau AG, Tagerwilen, Tagerwilen, Switzerland. Filed Feb. 25, 1964.

BIOTTA

Owner of U.S. Reg. No. 661,732.
For Canned Vegetable Juices and Preserved Vegetables.
First use Autumn 1957; in commerce June 1959.

SN 187,651. Cely Enterprises Corp., Honolulu, Hawaii. Filed Feb. 28, 1964

Cely-Puffs

For Snack Food—Namely, Vegetable Flavored-Puffed Chips.
First use on or about Jan. 1, 1964.

SN 188,780. National Frost Protection Co., Inc., Burbank, Calif. Filed Mar. 16, 1964.

CORS-PELL

For Food Pellets for Animals—Namely, Cattle and Horses.
First use Dec. 15, 1963.

SN 189,778. Hayden Flour Mills, Tempe, Ariz. Filed Mar. 27, 1964.

Tulip

Owner of Reg. No. 619,186.
For Wheat Flour (Harina Blanqueada).
First use Jan. 15, 1964.

SN 190,001. Frugone & Preve S.p.A., Genoa, Italy. Filed Mar. 31, 1964.



Owner of Italian Reg. No. 117,226, dated Apr. 30, 1954; and U.S. Reg. No. 279,235.
For Rice.

SN 190,245. Dean Foods Company, Franklin Park, Ill. Filed Apr. 3, 1964.

Flavorite

For Powdered Non-Dairy Product for Coffee.
First use Jan. 2, 1964.

SN 190,504. Ener-G Cereal, Inc., Seattle, Wash. Filed Apr. 7, 1964.

JOLLY JOAN

For Wheat Free Grain Mixes for Baking Purposes; Pancake Mixes; Breakfast Cereals; Instant Soy Milk Powder; and Flours.
First use April 1937.

SN 190,631. Meat Industry Suppliers, Inc., Northfield, Ill. Filed Apr. 8, 1964.

MISS CHICKEN

Applicant disclaims trademark rights in the word "Chicken" apart from the mark as a whole without waiving any common law rights therein.
For Chicken Style Soup Base.
First use on or about Oct. 28, 1946.

SN 190,848. Sioux Honey Associates Cooperative, Sioux City, Iowa. Filed Apr. 10, 1964.

Bradshaw's

Owner of Reg. Nos. 440,135 and 531,253.
For Honey.
First use 1905.

SN 190,994. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Apr. 13, 1964.

PENNY POPPER

The word "Penny" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Chewing Gum.
First use Aug. 17, 1963.

SN 191,049. Giant Distributing Co., Oakland, Calif. Filed Apr. 14, 1964.

BAR NUGGETS

For Shelled Peanuts.
First use Apr. 2, 1958.

SN 191,165. General Mills, Inc., Minneapolis, Minn. Filed Apr. 15, 1964.

DRIVE

For Ready-To-Eat Breakfast Cereal.
First use Mar. 4, 1964.

SN 191,166. General Mills, Inc., Minneapolis, Minn. Filed Apr. 15, 1964.

WHEAT STAX

Applicant hereby disclaims the word "Wheat" apart from the mark.
For Ready-To-East Breakfast Cereal.
First use Mar. 4, 1964.

SN 191,339. Jos. A. Zaloom & Co., Inc., New York, N.Y. Filed Apr. 16, 1964.



King Banana

No registration rights are claimed in the word "Banana" and representation of a banana apart from the mark as shown.
For Pure Banana Mash.
First use Mar. 26, 1964.

SN 192,152. E. J. Brach & Sons, Chicago, Ill. Filed Apr. 28, 1964.

PICK-A-MIX

Owner of Reg. No. 740,287.
For Candy.
First use on or about Apr. 3, 1959.

SN 192,987. Carter Products, Inc., New York, N.Y. Filed May 8, 1964.

DEMI

Owner of Reg. No. 766,842.
For Food Product—Namely, Imitation Margarine (a Low Calorie Margarine).
First use June 26, 1963.

SN 193,058. Swizzels, Inc., Hoboken, N.J. Filed May 8, 1964.

SWIZZETS

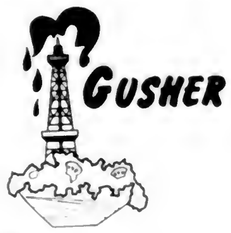
Owner of Reg. Nos. 517,166 and 561,491.
For Confectionery—Namely, Candy.
First use on or about Feb. 5, 1948.

SN 193,635. Dawe's Laboratories, Inc., Chicago, Ill. Filed May 18, 1964.

Dawe's
DEStrol

Owner of Reg. Nos. 708,808 and 725,840.
For Cattle Feed Supplement Containing Diethylstilbestrol.
First use Nov. 26, 1963.

SN 193,665. Gusher Foods, Denver, Colo. Filed May 18, 1964.



For Salad Dressing.
First use on or about Mar. 17, 1964.

SN 193,879. Just Born, Inc., Bethlehem, Pa. Filed May 20, 1964.

ROOT-T-TOOT

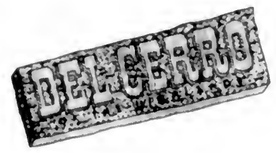
For Root Beer Flavor Candies.
First use Apr. 1, 1964.

SN 193,904. Sachs Nut Inc., Hopkins, Minn. Filed May 20, 1964.

SNACK TIME

Owner of Reg. No. 714,234.
For Peanut Butter.
First use June 1963.

SN 194,074. Stahmann Farms, Inc., Las Cruces, N. Mex. Filed May 22, 1964.



The Spanish wording "Del Cerro," when translated into English, means "of the highlands." The drawing is lined for yellow, red, and green, but no claim is made to the colors so named. Owner of Reg. No. 407,907.
For Fresh Eggs.
First use 1961; 1954 in a similar form but with a slightly different color combination.

SN 194,075. Stahmann Farms, Inc., Las Cruces, N. Mex. Filed May 22, 1964.



The Spanish wording "Del Cerro," when translated into English, means "of the highlands." The drawing is lined for yellow, brown, and red, but no claim is made as to the colors so named. Owner of Reg. No. 407,907.
For Nuts (Pecans—Shelled and Unshelled).
First use January 1964; 1954 in a similar form but with a slightly different color combination.

SN 195,242. Phoenix Candy Co., Inc., Brooklyn, N.Y. Filed June 9, 1964.



For Candy.
First use Jan. 19, 1962.

SN 195,712. Reading Milling Co., Inc., Reading, Pa. Filed June 15, 1964.

"HORSE SENSE"

For Horse Feed.
First use Jan. 6, 1964.

SN 195,961. Peter Paul, Inc., Naugatuck, Conn. Filed June 18, 1964.

EL DORADO

For Candy.
First use June 8, 1964.

SN 197,672. Central Nebraska Packing Co., North Platte, Nebr. Filed July 18, 1964.



The word "Brand" is disclaimed. Owner of Reg. No. 602,514.
For Frozen Horse Meat.
First use Apr. 5, 1948.

SN 197,938. Auguste Noel Limited, London, England. Filed July 16, 1964.

TURNMILL

Owner of British Reg. No. 751,463, dated Mar. 1, 1956.
For Cheese.

SN 198,066. National Biscuit Company, New York, N.Y. Filed July 17, 1964.

WARM WELCOME!

For Biscuits and Crackers.
First use June 24, 1964.

SN 198,244. Whitebrook Farms, Inc., Wilmington, N.C. Filed July 20, 1964.

WHITEBROOK FARMS

For Dairy Products—Namely, Fresh Milk and Cream.
First use on or about May 25, 1964.

Class 48 — Malt Beverages and Liquors

SN 192,298. Löwenbräu München, Munich, Germany. Filed Apr. 29, 1964.



The drawing is lined for gold, blue, and silver. Owner of U.S. Reg. Nos. 328,194, 733,516, and others.
For Beer.
First use January 1963; in commerce January 1963; 1885 as to the words "Löwenbräu" and the design mark consisting of a heraldic lion.

SN 192,299. Löwenbräu, München, Munich, Germany. Filed Apr. 29, 1964.



The drawing is lined for blue and gold. Owner of U.S. Reg. Nos. 328,194, 733,516, and others.
For Beer.
First use January 1963; in commerce January 1963; 1885 as to the word "Löwenbräu" and the design mark consisting of a heraldic lion.

SN 192,300. Löwenbräu München, Munich, Germany. Filed Apr. 29, 1964.



The drawing is lined for blue and gold. Owner of U.S. Reg. Nos. 328,194, 733,516, and others.
For Beer.
First use January 1963; in commerce January 1963; 1885 as to the word "Löwenbräu" and the design mark consisting of a heraldic lion.

SN 192,301. Löwenbräu München, Munich, Germany. Filed Apr. 29, 1964.



The drawing is lined for blue and gold. Owner of U.S. Reg. Nos. 328,194, 733,516, and others.
For Beer.
First use January 1963; in commerce January 1963; 1885 as to the word "Löwenbräu" and the design mark consisting of a heraldic lion.

Class 49 — Distilled Alcoholic Liquors

SN 173,161. Federal Liquors Ltd., Cambridge, Mass. Filed July 17, 1963.

LUAU

The Hawaiian word "Luau" means "a feast."
For Pineapple Vodka Cocktail.
First use May 7, 1963.

SN 187,926. J. & G. Stewart Limited, Edinburgh, Scotland. Filed Mar. 4, 1964.

"THOROUGHBRED"

For Whisky.
First use Feb. 5, 1909; in commerce Dec. 16, 1963.

SN 188,716. Brown-Forman Distillers Corporation, Louisville, Ky. Filed Mar. 16, 1964.

FORESTIER

The English translation of the French word "Forestier" means "pertaining to forests." Owner of Reg. No. 44,366.
For Bourbon Whisky.
First use Dec. 4, 1963.

Class 50 — Merchandise Not Otherwise Classified

SN 156,159. Para-Tone Incorporated, La Grange, Ill. Filed Oct. 29, 1962.

ZIP-A-LINE

For Tape for Use by Artists, Draftsmen, Designers, Layout Men, and the Like, and a Pen-Like Instrument for Applying the Same.
First use May 1958.

SN 188,260. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 9, 1964.

3M

Owner of Reg. Nos. 634,046, 749,591, and others.
For Synthetic Rubber Material in the Form of Pads for Application to Metal Drums To Minimize Damage to the Drums.
First use June 25, 1963.

SN 192,727. The Kiwi Polish Company Proprietary Limited, Richmond, near Melbourne, Victoria, Australia. Filed May 5, 1964.

KIWI

Owner of U.S. Reg. Nos. 294,323, 697,306, and others.
For Combination Shoe Tree and Shoe Horn.
First use Jan. 6, 1964; in commerce Jan. 6, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 142,895. Demert & Dougherty, Inc., Chicago, Ill. Filed Apr. 23, 1962.

ALL AGLOW

For Pressurized Hair Brightening Composition.
First use on or about Mar. 12, 1962.

SN 154,566. Cosmia Laboratoires d'Etudes Scientifiques, Inc., New York, N.Y., assignee of Cosmia Laboratories, New York, N.Y. Filed Oct. 5, 1962.

BLEU DE MER

The words "Bleu de Mer" in the drawing mean "blue of the sea."
For Bath Oil, Dusting Powder, Hand Cream, Skin Softener Cream, and After-Bath Toilet Water.
First use on or about Oct. 1, 1962.

SN 174,289. Revlon, Inc., New York, N.Y. Filed Aug. 2, 1963.

FRESH START

For Color Rinse for the Hair.
First use July 24, 1963.

SN 189,589. Richard Hudnut, Morris Plains, N.J. Filed Mar. 25, 1964.

MORNING, NOON, 'n NIGHT

For Lipstick.
First use Feb. 17, 1964.

SN 191,907. Jeff Clark Corp., Jeffersonville, Ind. Filed Apr. 24, 1964.

JEFF CLARK

The name "Jeff Clark" is fictitious.
For Pressurized Hair Spray.
First use on or about Apr. 7, 1964.

SN 192,939. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 7, 1964.

MICROBAN

For Skin Cleanser.
First use Apr. 21, 1964.

SN 193,094. Avon Products, Inc., New York, N.Y. Filed May 11, 1964.

CAPTAIN'S CHOICE

For After Shave Lotion.
First use Apr. 22, 1964.

Class 52 — Detergents and Soaps

SN 160,243. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Jan. 4, 1963.

ATANE

For Germicide and Chlorinated Cleaner for Use in Food and Beverage Processing Plants.
First use Oct. 26, 1962.

SN 165,932. Lever Brothers Company, New York, N.Y. Filed Apr. 2, 1963.

TRIM

Owner of Reg. No. 267,296.
For Toilet Soap and Hair Shampoo.
First use Sept. 21, 1962.

SN 175,134. Standard Motor Products, Inc., Long Island City, N.Y. Filed Aug. 15, 1963.

JIFFY CLEAN

Applicant disclaims the word "Clean" apart from the mark "Jiffy Clean." Owner of Reg. No. 695,261.
For Carburetor Cleaner.
First use June 15, 1963.

SN 179,654. The Procter & Gamble Company, Cincinnati, Ohio. Filed Oct. 23, 1963.

LO-RANGE

For Laundry Detergent.
First use Aug. 30, 1963.

SN 180,215. Herman A. Lemley, d.b.a. Valley Chemical Company, Williamstown, W. Va. Filed Oct. 31, 1963.



For Preparation for Removing Tarnish From Gold, Platinum, Sterling Silver, Silver Plate, Copper, Brass, and for Cleaning Diamonds and Other Hard Precious Stones, Metal Costume Jewelry, Musical Instruments, and Coins.
First use Oct. 1, 1962.

SN 189,362. Pines International Chemical Company, Chicago, Ill. Filed Mar. 23, 1964.

DURA BRITE

The word "Brite" is disclaimed apart from the entire mark as shown.
For Floor Cleaner.
First use Feb. 6, 1964.

SN 189,364. Pines International Chemical Company, Chicago, Ill. Filed Mar. 23, 1964.

DURA STRIP

The word "Strip" is disclaimed apart from the entire mark, as shown.
For Wax, Varnish, Lacquer, Paint, and Soil Remover.
First use Feb. 6, 1964.

SN 189,832. Stanley Harlan Bloom, d.b.a. Tar-Sol Oil Well Supply, Dallas, Tex. Filed Feb. 14, 1964.

TAR-SOL

For Depolymer for Oil Well Cleaning.
First use Nov. 15, 1956.

SN 190,432. Purex Corporation, Ltd., Wilmington, Calif. Filed Apr. 6, 1964.

BOTL-GLO

Owner of Reg. No. 410,291.
For Detergent Cleaning Compounds for Miscellaneous Household, Industrial, and Other Uses.
First use on or about July 1, 1938.

SN 190,745. Original Bradford Soap Works, Inc., West Warwick, R.I. Filed Apr. 9, 1964.

MONOGRAM

For Toilet Soap.
First use Mar. 9, 1964.

SN 191,922. Fuld Brothers, Inc., Baltimore, Md. Filed Apr. 24, 1964.



For Compositions Primarily Intended for Cleaning Various Portions of Boats, Including Their Wood, Metal, Glass, and Plastic Surfaces.
First use Apr. 2, 1964.

SN 192,258. Avon Products, Inc., New York, N.Y. Filed Apr. 29, 1964.

BLUE BLAZER

For Toilet Soap.
First use Apr. 8, 1964.

SN 192,343. Afta Solvents Corporation, Glen Cove, N.Y. Filed Apr. 30, 1964.

GOLDEN TOUCH

For Cleaning Fluid.
First use Apr. 1, 1964.

SN 193,143. Fast Chemical Corporation, Yonkers, N.Y. Filed May 11, 1964.

WHOOSH!

For Steam Iron Cleaner.
First use Feb. 5, 1964.

SN 193,305. Swank, Inc., Attleboro, Mass. Filed May 12, 1964.

JADE EAST

For Perfumed Toilet Soap.
First use August 1963.

SERVICE MARKS

Class 100 — Miscellaneous

SN 164,024. Erickson Petroleum Corporation, Minneapolis, Minn. Filed Mar. 6, 1963.



The drawing is lined for red and blue.
For Automobile Service Station Services.
First use Aug. 15, 1956.

SN 164,027. Erickson Petroleum Corporation, Minneapolis, Minn. Filed Mar. 6, 1963.



The drawing is lined for red and blue.
For Automobile Service Station Services.
First use Aug. 15, 1956.

SN 188,364. IIT Research Institute, Chicago, Ill. Filed Mar. 10, 1964.



For Research, Development and Engineering Services in the Fields of Physics, Chemistry, Mechanics, Electronics, Metallurgy, Ceramics, Propulsion, Data Processing, and Biology.
First use Feb. 14, 1964.

SN 189,913. Mercil Plating Equipment Company, Chicago, Ill. Filed Mar. 30, 1964.



For Engineering Service Relating to Plating Equipment.
First use during June 1963.

Class 101 — Advertising and Business

SN 163,080. Resources Council Inc., New York, N.Y. Filed Feb. 19, 1963.

D&D

For Organizing and Sponsoring a Home Furnishing Show To Promote the Sale of Goods of Others.
First use October 1959.

SN 163,855. National Auto Dealers Service, Cleveland, Ohio. Filed Mar. 4, 1963.

N.A.D.S.

For Processing Warranty and Policy Claims for Automobile Dealers.
First use Sept. 4, 1962.

SN 169,470. Michiana Personnel Service, South Bend, Ind. Filed May 22, 1963.

Star Girl

For Furnishing Temporary Office and Technical Help.
First use May 9, 1963.

Class 102 — Insurance and Financial

SN 169,469. Medical Assurance Plan, Inc., Milwaukee, Wis. Filed May 22, 1963.



The lining of the letters "MAP" is for red. The lines in the design of the map are for shading only. The words "Medical Assurance Plan" and the outline of the map of the United States are disclaimed apart from the mark as shown.
For Insurance Agency Services—Namely, Sales and Service of Life Insurance Policies for Medical Students, Interns and Residents Actively Studying for the Medical Profession.
First use May 1, 1963.

SN 187,363. Triton Insurance Co., Perry, Okla. Filed Feb. 24, 1964.



For Insurance Underwriting and the Issuance of Polices of Casualty Insurance.
First use Sept. 1, 1963.

Class 105 — Transportation and Storage

SN 165,014. The Agricultural Transportation Association of Texas, Fort Worth, Tex. Filed Mar. 20, 1963.



Applicant disclaims the phrase "Marketing Co-Op" apart from the mark as shown.
For Providing Refrigerated Interstate Truck Transportation to the Members of Applicant Association.
First use Feb. 20, 1962.
Subj. to Intf. with SN 166,342.

SN 166,342. ATA Foundation, Inc., Washington, D.C. Filed Apr. 8, 1963.



For Services Rendered to and for Members of Those Industries Supplying the Trucking Industry—Namely, Providing Assistance and Supervision in the Fields of Public Relations, Advertising, Research, and Related Activities.
First use Nov. 14, 1953.
Subj. to Intf. with SN 165,014.

SN 192,777. American Airlines, Inc., New York, N.Y. Filed Apr. 20, 1964.



Owner of Reg. No. 514,293.
For Transport of Passengers and Freight.
First use June 1, 1962.

Class 106 — Material Treatment

SN 186,451. Geltman Laminating Corporation, Los Angeles, Calif. Filed Feb. 11, 1964.

Gelco

For Bonding of Fabrics of Others.
First use May 24, 1963.

CERTIFICATION MARKS

Class A — Goods

SN 179,033. Farmers Forage Research, Cooperative, Madison, Wis. Filed Oct. 15, 1963.



The mark certifies the quality and prior processing of seeds; the said term "Quality" signifying that the said was bred by improved methods by the applicant; that the said has proven germ plasm, and that same has improved growing characteristics and has proper physical standards and is true to type.

For Seeds.

First use Aug. 15, 1963.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

781,162. THE SILK OF THE TRADE. The Winnsboro Granite Corporation. SN 172,357. Pub. 9–22–64. Filed 7–2–63.

781,163. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,682. Pub. 9–22–64. Filed 8–8–63.

781,164. U AND DESIGN. Ultra Carbon Corporation. MULTIPLE CLASS (Classes 1, 2, 23, and 26). SN 175,342. Pub. 9–22–64. Filed 8–19–63.

781,165. ATLANTIC. The Atlantic Refining Company. SN 180,639. Pub. 9–22–64. Filed 11–7–63.

781,166. VANOXY. R. T. Vanderbilt Company, Inc. SN 185,467. Pub. 9–22–64. Filed 1–27–64.

781,167. MODOCELL. Mo och Domsjö Aktiebolag. SN 186,742. Pub. 9–22–64. Filed 2–14–64.

781,168. BANCORA. Joseph Bancroft & Sons Co. MULTIPLE CLASS (Classes 1, 42, and 43). SN 187,385. Pub. 9–22–64. Filed 2–25–64.

Class 2 — Receptades

781,164. (See Class 1 for this trademark.)

781,169. TREXILOY. Habitat, Inc. SN 172,997. Pub. 9–22–64. Filed 7–15–63.

781,170. CLING-PAKS. Geo. J. Ball, Inc. SN 180,824. Pub. 9–22–64. Filed 11–12–63.

781,171. MAXIFOLD. Harold Jay Cohen, d.b.a. Maxwell Corrugated Box Company. SN 182,779. Pub. 9–22–64. Filed 12–11–63.

781,172. AMPAK. The American Packaging Corporation. SN 185,550. Pub. 9–22–64. Filed 1–29–64.

781,173. LUSTRE-TEX. Monsanto Company, by change of name from Monsanto Chemical Company. SN 185,702. Pub. 9–22–64. Filed 1–30–64.

781,174. SONIPAK AND DESIGN. Kleer-Vu Industries, Inc. MULTIPLE CLASS (Classes 2 and 3). SN 190,393. Pub. 9–22–64. Filed 4–6–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

781,174. (See Class 2 for this trademark.)

781,175. BEAU JAMES. McCrory Corporation. MULTIPLE CLASS (Classes 3 and 39). SN 176,824. Pub. 9–22–64. Filed 9–12–63.

781,176. COMMUTE-TACHE. Hartmann Luggage Company. SN 185,891. Pub. 9–22–64. Filed 2–3–64.

781,177. CAROLE JOANNE. G. C. Murphy Company. SN 196,892. Pub. 9–22–64. Filed 7–1–64.

Class 4 — Abrasives and Polishing Materials

781,178. PERMA LOK. Hysan Products Company. SN 132,921. Pub. 12–11–62. Filed 11–28–61.

781,179. SANI-BALM. Hollywood Shoe Polish Inc. SN 186,170. Pub. 9–22–64. Filed 2–6–64.

781,180. VIBROXIDE. Transelco, Inc. SN 188,680. Pub. 9–22–64. Filed 3–13–64.

781,181. DURA GLEAM. Pines International Chemical Company. SN 189,365. Pub. 9–22–64. Filed 3–23–64.

781,182. KENO. Abrasive Products, Inc. SN 190,140. Pub. 9–22–64. Filed 4–2–64.

Class 6 — Chemicals and Chemical Compositions

781,183. SPECTROGEN. Spectra Biologicals, Incorporated. SN 154,941. Pub. 7–30–63. Filed 10–1–62.

781,184. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,684. Pub. 9–22–64. Filed 8–8–63.

781,185. CARBITRON. Union Carbide Corporation. SN 174,809. Pub. 9–22–64. Filed 8–9–63.

781,186. SOLEGAL. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Brüning. SN 177,167. Pub. 9–22–64. Filed 9–17–63.

781,187. STRUKTOL. Schill & Seilacher Chemische Fabrik. SN 181,070. Pub. 9–22–64. Filed 11–13–63.

781,188. BENEFIT. Faultless Starch Company. SN 182,067. Pub. 9–22–64. Filed 11–29–63.

781,189. MILSOFT. Atlas Chemical Industries, Inc. SN 183,361. Pub. 9–22–64. Filed 12–23–63.

781,190. SCOT-PLATE. Scott Laboratories, Inc., assignee of Thomas J. Scott, d.b.a. Scott Laboratories. SN 183,464. Pub. 9–22–64. Filed 12–23–63.

781,191. FENATROL. Amchem Products, Inc. SN 183,549. Pub. 9–22–64. Filed 12–26–63.

781,192. SHIELD-PLAST. Stephen-Roger, Inc. SN 184,265. Pub. 9–22–64. Filed 1–8–64.

781,193. CARWINATE. The Upjohn Company. SN 185,466. Pub. 9–22–64. Filed 1–27–64.

781,194. VIM-OMATIC AND DESIGN. Pioneer Chemical Corporation. SN 186,643. Pub. 9–22–64. Filed 2–13–64.

781,195. NUTRA TINTONE AND DESIGN. Pacific Universal Products Corporation. SN 187,606. Pub. 9–22–64. Filed 2–27–64.

781,196. HERB-ALL. Kerr-McGee Oil Industries, Inc. SN 187,929. Pub. 9–22–64. Filed 3–4–64.

781,197. DURAX. The Goodyear Tire & Rubber Company. SN 188,097. Pub. 9–22–64. Filed 3–6–64.

781,198. PITT-CONSOL AND DESIGN. Pitt-Consol Chemical Company. SN 188,269. Pub. 9–22–64. Filed 3–9–64.

Class 7 — Cordage

781,199. MANILAC. Puritan Cordage Mills. SN 195,325. Pub. 9–22–64. Filed 6–10–64.

781,200. FESTIVE-TIE. Norcross, Inc. SN 196,467. Pub 9–22–64. Filed 6–25–64.

781,201. MIST. Norcross, Inc. SN 196,469. Pub. 9–22–64. Filed 6–25–64.

Class 8 — Smokers' Artides, Not Induding Tobacco Products

781,202. IDEAS IN ACTION. Gulton Industries, Inc. MULTIPLE CLASS (Classes 8, 21, 26, and 34). SN 170,747. Pub. 9–22–64. Filed 6–11–63.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

781,203. AMERICAN EAGLE. Federal Cartridge Corporation. SN 182,715. Pub. 9–22–64. Filed 12–10–63.

Class 10 — Fertilizers

781,204. PLANT PLUG AND DESIGN. John Greenberg, d.b.a. Tree Towns Manufacturing Co. SN 153,562. Pub. 9–22–64. Filed 9–20–62.

781,205. OSMOCOTE. Archer-Daniels-Midland Company. SN 195,918. Pub. 9–22–64. Filed 6–18–64.

Class 11 — Inks and Inking Materials

781,206. PELIKAN (DESIGN). Günther Wagner. SN 181,435. Pub. 9–22–64. Filed 11–18–63.

781,207. SPOTORITE. Fairchild Camera and Instrument Corporation. SN 181,536. Pub. 9–22–64. Filed 11–20–63.

781,208. SWIFTMARK. Mason Marking Systems Corporation. SN 191,784. Pub. 9–22–64. Filed 4–22–64.

781,209. SIMPLE SIGNMAN. Simple Signman Systems, Inc. SN 192,329. Pub. 9–22–64. Filed 4–29–64.

781,210. CAR/BOND. Port Huron Paper Company, by change of name from Port Huron Sulphite & Paper Co. SN 192,747. Pub. 9–22–64. Filed 5–5–64.

Class 12 — Construction Materials

781,211. SPARTAN CERAMICS. United States Ceramic Tile Company. SN 139,701. Pub. 9–22–64. Filed 3–12–62.

781,212. BROKEN RECTANGLE (DESIGN). Atlantic Cement Company, Inc. SN 170,371. Pub. 9–22–64. Filed 6–5–63.

781,213. CON-CAST. American Cement Corporation. SN 172,141. Pub. 9–22–64. Filed 7–1–63.

781,214. ISPC FUTURA AND DESIGN. International Swimming Pool Corporation. SN 172,388. Pub. 9–22–64. Filed 7–3–63.

781,215. NEO-WALL. M. E. Grogan Co. SN 172,989. Pub. 9–22–64. Filed 7–15–63.

781,216. STYK-A-STUD. Neslo Manufacturing Corp. SN 173,125. Pub. 9–22–64. Filed 7–16–63.

781,217. ELOXAL. Fentron Industries, Inc. SN 177,022. Pub. 9–22–64. Filed 9–16–63.

781,218. COLOR COOL. Paddock of Texas, Inc. SN 177,436. Pub. 9–22–64. Filed 9–20–63.

781,219. AROFLEUR. Aaronson Bros. Limited. SN 183,013. Pub. 9–22–64. Filed 12–16–63.

781,220. AROGLO. Aaronson Bros. Limited. SN 183,014. Pub. 9–22–64. Filed 12–16–63.

781,221. AURATONE. United States Gypsum Company. SN 183,638. Pub. 9–22–64. Filed 12–26–63.

781,222. U.S. ROYAL TRACK. United States Rubber Company. SN 183,715. Pub. 9–22–64. Filed 12–27–63.

781,223. SUPER BARNMASTER AND DESIGN. Wheeling Corrugating Company. SN 185,470. Pub. 9–22–64. Filed 1–27–64.

781,224. NALCOTE. Nalco Chemical Company. SN 187,788. Pub. 9–22–64. Filed 3–2–64.

781,225. DYCON. Koppers Company, Inc. SN 187,872. Pub. 9–22–64. Filed 3–3–64.

781,226. ULTRACRETE. Harry T. Campbell Sons' Corporation. SN 188,076. Pub. 9–22–64. Filed 3–6–64.

781,227. HUFCOR AND DESIGN. Hough Manufacturing Corporation. SN 188,240. Pub. 9–22–64. Filed 3–9–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

781,228. 20TH CENTURY POOLS. Mullen Form Corporation. SN 174,698. Pub. 9–22–64. Filed 8–8–63.

781,229. BUTT-SEAL. Liberty Manufacturing Company. SN 174,878. Pub. 9–22–64. Filed 8–12–63.

781,230. SILVER CROWN. International Staple & Machine Company. SN 175,115. Pub. 9–22–64. Filed 8–15–63.

781,231. ADVANCE. Capital Controls Company, Inc., d.b.a. Capital Controls Co., Inc. SN 175,631. Pub. 9–22–64. Filed 8–23–63.

781,232. RM AND DESIGN. Republic Manufacturing Company. SN 178,481. Pub. 9–22–64. Filed 10–7–63.

781,233. S (DESIGN). Senco Products, Inc. SN 179,468. Pub. 9–22–64. Filed 10–21–63.

781,234. HUGGER-HOOKS. Roman Products. SN 185,939. Pub. 9–22–64. Filed 2–3–64.

781,235. GOLD CROWN. Western Pump Distributors, Inc. MULTIPLE CLASS (Classes 13 and 23). SN 186,213. Pub. 9–22–64. Filed 2–6–64.

781,236. PEMHEX. Penn Engineering and Manufacturing Corporation. SN 188,140. Pub. 9–22–64. Filed 3–6–64.

781,237. STRONGHOLD AND DESIGN. The Independent Nail Corporation. SN 189,076. Pub. 9–22–64. Filed 3–19–64.

781,238. METAL-MATIC. Metal-Matic, Inc. SN 190,408. Pub. 9–22–64. Filed 4–6–64.

781,239. RAIN MAID AND DESIGN. Raymond Keesen. SN 190,621. Pub. 9–22–64. Filed 4–8–64.

781,240. ALDYL. E. I. du Pont de Nemours and Company. SN 190,904. Pub. 9–22–64. Filed 4–13–64.

781,241. SIMPLE SIGNMAN. Simple Signman Systems, Inc. SN 192,330. Pub. 9–22–64. Filed 4–29–64.

Class 14 — Metals and Metal Castings and Forgings

781,242. SANDVIK. Sandvikens Jernverks Aktiebolag. SN 184,013. Pub. 9–22–64. Filed 12–12–63.

781,243. S AND DESIGN. The Sawbrook Steel Castings Company. SN 189,378. Pub. 9–22–64. Filed 3–23–64.

781,244. VAPALLOY. Hamilton Watch Company. SN 190,374. Pub. 9–22–64. Filed 4–6–64.

781,245. ADMIRAL. Admiral Coated Prods., Inc. SN 191,104. Pub. 9–22–64. Filed 4–15–64.

781,246. SHALLOY. Capital Brass & Aluminum Foundry Company. SN 191,249. Pub. 9–22–64. Filed 4–16–64.

Class 15 — Oils and Greases

781,247. SUPER SERVICE ETC. AND DESIGN. Southwest Grease & Oil Co., Inc. SN 128,606. Pub. 9–22–64. Filed 9–25–61.

781,248. MODOC. Sinclair Refining Company. SN 185,628. Pub. 9–22–64. Filed 1–29–64.

781,249. TOPCO. Topco Associates, Inc. SN 193,063. Pub. 9–22–64. Filed 5–8–64.

Class 16 — Protective and Decorative Coatings

781,250. NOMAR. Nomar Coatings, Inc. SN 173,278. Pub. 9–22–64. Filed 7–18–63.

781,251. NU-AGAIN. Arthur C. Mangels Industries, Inc. SN 177,644. Pub. 9–22–64. Filed 9–24–63.

781,252. SHELTOR. Beltraction Co. SN 178,522. Pub. 9–22–64. Filed 10–8–63.

Class 17 — Tobacco Products

781,253. LORD EXTRA AND DESIGN. Martin Brinkmann Aktiengesellschaft. SN 184,940. Pub. 9–22–64. Filed 1–20–64.

781,254. MONTECRISPI AND DESIGN. Montecrispi Cigar Co., Inc. SN 186,741. Pub. 9–22–64. Filed 3–19–64.

781,255. LA ROSA DE MAYO GARCIA Y VEGA. Garcia y Vega, Inc. SN 189,461. Pub. 9–22–64. Filed 3–24–64.

Class 18 — Medicines and Pharmaceutical Preparations

781,256. HEMOCYL. Nelson-Boyer Company. SN 166,344. Pub. 9–3–63. Filed 4–5–63.

781,257. SMOKURB. Hudson Vitamin Products, Inc. SN 172,278. Pub. 9–22–64. Filed 6–14–63.

781,258. QUADRAMYCIN. Norden Laboratories, Inc. SN 172,402. Pub. 2–18–64. Filed 7–3–63.

781,259. NORDEN AND DESIGN. Norden Laboratories, Inc. SN 186,387. Pub. 9–22–64. Filed 2–10–64.

781,260. AGRIBON. Hoffmann-La Roche Inc. SN 188,757. Pub. 9–22–64. Filed 3–16–64.

781,261. ALUMI-CREAM. Invenex Pharmaceuticals. SN 189,591. Pub. 9–22–64. Filed 3–25–64.

781,262. SEPTORIN. Chemtest Products, Inc. SN 190,061. Pub. 9–22–64. Filed 4–1–64.

781,263. THEURGENE. Morton B. Gross, d.b.a. Theurgene Chemical Company. SN 190,413. Pub. 9–22–64. Filed 4–6–64.

781,264. SALAZOIN. Star Pharmaceuticals, Inc. SN 190,441. Pub. 9–22–64. Filed 4–6–64.

781,265. TRAVAFOR. Baxter Laboratories, Inc. SN 190,496. Pub. 9–22–64. Filed 4–7–64.

781,266. ELDOFORM. Sterling Drug Inc. SN 190,987. Pub. 9–22–64. Filed 4–13–64.

Class 19 — Vehicles

781,267. 4 STAR DE LUXE. Atlas International Company. SN 174,324. Pub. 9–22–64. Filed 8–5–63.

781,268. BRIDGESTONE. Bridgestone Tire Company Limited. SN 177,606. Pub. 9–22–64. Filed 9–24–63.

781,269. RECORD. Philip M. Rolla. SN 185,721. Pub. 9–22–64. Filed 1–30–64.

781,270. WONDOROLL AND DESIGN. C & F Machine Works. SN 188,891. Pub. 9–22–64. Filed 3–17–64.

781,271. MISCELLANEOUS DESIGN. Carl J. Burke, d.b.a. Trans-Pacific Yacht Imports. SN 190,590. Pub. 9–22–64. Filed 4–8–64.

Class 20 — Linoleum and Oiled Cloth

781,272. TROPICANA. Congoleum-Nairn Inc. SN 188,617. Pub. 9–22–64. Filed 3–13–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

781,202. (See Class 8 for this trademark.)

781,273. MULTI-COOKER. Sunbeam Corporation. SN 120,147. Pub. 9–22–64. Filed 5–16–61.

781,274. PSC-DUROCK. Physical Sciences Corporation, by assignment and change of name from Physical Sciences Corporation. SN 128,755. Pub. 4–9–63. Filed 9–27–61.

781,275. SIGMA. Channel Master Corporation. SN 141,160. Pub. 9–22–64. Filed 3–30–62.

781,276. THE QUALITY GOES IN BEFORE THE NAME GOES ON. Zenith Radio Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 159,795. Pub. 9–22–64. Filed 12–26–62.

781,277. DELTA (DESIGN). NGK Insulators, Ltd. SN 167,826. Pub. 9–22–64. Filed 4–30–63.

781,278. ACOUSTI-FLOAT. Fisher Radio Corporation. SN 172,055. Pub. 9–22–64. Filed 6–28–63.

781,279. FLEX-O-TWIST. Electronic Specialty Co. SN 174,268. Pub. 9–22–64. Filed 8–2–63.

781,280. 'G.' Midland-Ross Corporation. SN 174,281. Pub. 9–22–64. Filed 8–2–63.

781,281. VERNITRON AND DESIGN. Vernitron Corporation. SN 174,626. Pub. 9–22–64. Filed 8–7–63.

781,282. SWING-OUT. Mell Manufacturing Company. SN 175,120. Pub. 9–22–64. Filed 8–15–63.

781,283. JOIN-TENNA. Channel Master Corporation. SN 175,162. Pub. 9–22–64. Filed 8–16–63.

781,284. MAG II. Magnaflux Corporation. SN 175,769. Pub. 9–22–64. Filed 8–26–63.

781,285. SERVO-CONTACT. Servo Contact. SN 176,238. Pub. 9–22–64. Filed 9–3–63.

781,286. KIM HOTSTART. Kim Hotstart Manufacturing Company. SN 176,539. Pub. 9–22–64. Filed 9–9–63.

781,287. PI AND DESIGN. Precision Instrument Company. SN 177,371. Pub. 9–22–64. Filed 9–19–63.

781,288. PREPMASTER. The M. D. Brown Company. SN 180,362. Pub. 9–22–64. Filed 11–4–63.

781,289. OMNI-FLASH. R. E. Dietz Company. SN 183,743. Pub. 9–22–64. Filed 12–30–63.

781,290. ESTES ENGINEERING COMPANY ETC. AND DESIGN. Stanley E. Estes, d.b.a. Estes Engineering Company. SN 184,456. Pub. 9–22–64. Filed 1–13–64.

781,291. AMPLIFILM. AMP Incorporated. SN 185,003. Pub. 9–22–64. Filed 1–21–64.

781,292. CLYMATRON. Emerson Electric Co., by change of name from The Emerson Electric Manufacturing Company. SN 185,115. Pub. 9–22–64. Filed 1–22–64.

781,293. TIMOFLEX. E. W. Bliss Company, assignee of The Gamewell Company. SN 185,885. Pub. 9–22–64. Filed 2–3–64.

781,294. CYCLA JET. Mullins Manufacturing Corporation. SN 185,921. Pub. 9–22–64. Filed 2–3–64.

781,295. TEN AND DESIGN. Toyota Motor Sales, U.S.A., Inc. SN 186,910. Pub. 9–22–64. Filed 2–17–64.

781,296. REMOTRONIC. Automatic Radio Mfg. Co., Inc. SN 186,997. Pub. 9–22–64. Filed 2–19–64.

781,297. SINE FERRO. North Electric Company. SN 190,108. Pub. 9–22–64. Filed 4–1–64.

Class 22 — Games, Toys, and Sporting Goods

781,298. DISKO. Hannes Marker. SN 185,970. Pub. 9–22–64. Filed 1–15–64.

781,299. WATER LARK. Gentex Corporation. SN 186,073. Pub. 9–22–64. Filed 2–5–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

781,164. (See Class 1 for this trademark.)

781,235. (See Class 13 for this trademark.)

781,300. UNIHEAD. FMC Corporation. SN 171,116. Pub. 9–22–64. Filed 6–17–63.

781,301. CONVACTOR. Croll-Reynolds Company, Inc. SN 174,577. Pub. 9–22–64. Filed 8–7–63.

781,302. L AND DESIGN. Lockwood Grader Corporation. SN 174,673. Pub. 9–22–64. Filed 8–8–63.

781,303. FAIRMONT. Fairmont Railway Motors, Inc. SN 174,949. Pub. 9–22–64. Filed 8–13–63.

781,304. PAXMAN VENTURA. Davey Paxman & Company, Limited. SN 175,206. Pub. 9–22–64. Filed 8–16–63.

781,305. VEGA. Davey Paxman & Company, Limited. SN 175,207. Pub. 9–22–64. Filed 8–16–63.

781,306. SOLE-N-AIRE. Logansport Machine Co., Inc. SN 176,926. Pub. 9–22–64. Filed 9–13–63.

781,307. AD AND DESIGN. Abrasive Developments Limited. SN 179,304. Pub. 9–22–64. Filed 10–18–63.

781,308. ROLAUNDRY. Rolaundry, Inc. SN 179,462. Pub. 9–22–64. Filed 10–21–63.

781,309. VACUMAIRE. General Appliance Manufacturing Co. SN 183,395. Pub. 9–22–64. Filed 12–23–63.

781,310. NW AND DESIGN. The Bristol Brass Corporation. SN 186,055. Pub. 9–22–64. Filed 2–5–64.

781,311. CEMTOTE. Western Velo & Cement Specialties Company. SN 186,919. Pub. 9–22–64. Filed 2–17–64.

781,312. PURI-FILTER. The De Laval Separator Company. SN 187,567. Pub. 9–22–64. Filed 2–27–64.

781,313. BUSCHCOMBINE. Timberline Equipment Co. SN 188,481. Pub. 9–22–64. Filed 3–11–64.

781,314. T AND DESIGN. Tempress Research Co. SN 189,820. Pub. 9–22–64. Filed 3–27–64.

781,315. HY-DRAFT. Hy-Draft, Inc. SN 190,264. Pub. 9–22–64. Filed 4–3–64.

781,316. THERMALORD. Malaker Laboratories, Inc. SN 190,273. Pub. 9–22–64. Filed 4–3–64.

781,317. CRYOMASTER. Malaker Laboratories, Inc. SN 190,274. Pub. 9–22–64. Filed 4–3–64.

781,318. BALCO. Barnard & Leas Manufacturing Company, Inc. SN 190,584. Pub. 9–22–64. Filed 4–8–64.

781,319. CO-PILOT AND DESIGN. Curtiss-Wright Corporation. SN 190,704. Pub. 9–22–64. Filed 4–9–64.

781,320. MOTOR MASON. Demarest Machines, Inc. SN 190,705. Pub. 9–22–64. Filed 4–9–64.

781,321. STABLEND. A. E. Staley Manufacturing Company. SN 190,760. Pub. 9–22–64. Filed 4–9–64.

781,322. BAGITRONIC. SECO, Inc. SN 192,638. Pub. 9–22–64. Filed 5–4–64.

781,323. H. Hurst-Campbell, Inc. SN 193,013. Pub. 9–22–64. Filed 5–8–64.

781,324. FIRE BOY. M. Beelman Kemp, Sr., d.b.a. Standard Safety Products Company. SN 193,445. Pub. 9–22–64. Filed 5–14–64.

781,325. CINOVA. The Cincinnati Milling Machine Co. SN 193,749. Pub. 9–22–64. Filed 5–19–64.

781,326. CINEL. The Cincinnati Milling Machine Co. SN 193,750. Pub. 9–22–64. Filed 5–19–64.

Class 26 — Measuring and Scientific Appliances

781,164. (See Class 1 for this trademark.)

781,202. (See Class 8 for this trademark.)

781,327. CRYOTRONICS AND DESIGN. Cryogenic Engineering Company. SN 129,200. Pub. 9–22–64. Filed 10–4–61.

781,328. TORQUE TABLE. Lebow Associates, Inc. SN 146,201. Pub. 9–22–64. Filed 6–5–62.

781,329. CEN-TEC. Centri-Spray Corporation. SN 148,361. Pub. 9–22–64. Filed 7–5–62.

781,330. SPECTROVAC. Baird-Atomic, Inc. SN 158,217. Pub. 9–22–64. Filed 11–30–62.

781,331. CARBO-MIX. Carbo-Mix Dispensers, Inc. SN 162,698. Pub. 4–14–64. Filed 2–14–63.

781,332. TELESTATIC. La Telemecanique Electrique. SN 169,600. Pub. 9–22–64. Filed 5–23–63.

781,333. ALLOTTER. Fairchild Camera and Instrument Corporation. SN 174,179. Pub. 9–22–64. Filed 8–1–63.

781,334. HYCON. Hycon Mfg. Company. SN 174,378. Pub. 9–22–64. Filed 8–5–63.

781,335. HYCON. Hycon Mfg. Company. SN 174,379. Pub. 9–22–64. Filed 8–5–63.

781,336. THERMO STACK. Fabri-Tek Incorporated. SN 182,413. Pub. 9–22–64. Filed 12–5–63.

781,337. ORTEC. Oak Ridge Technical Enterprises Corporation. SN 182,436. Pub. 9–22–64. Filed 12–5–63.

781,338. CONTROL-O-TEMP. The Dole Valve Company. SN 184,364. Pub. 9–22–64. Filed 1–10–64.

781,339. SPEEGRAV. Biological Research, Inc. SN 185,858. Pub. 9–22–64. Filed 2–3–64.

781,340. CHANNELTRON. The Bendix Corporation. SN 186,142. Pub. 9–15–64. Filed 2–6–64.

781,341. DEPTH-O-MATIC. Airguide Instrument Company. SN 186,805. Pub. 9–22–64. Filed 2–17–64.

781,342. ECON-A-COLOR. Fairchild Camera and Instrument Corporation. SN 187,014. Pub. 9–22–64. Filed 2–19–64.

781,343. KUM-FIT. Whitney Optical Co., Inc. SN 187,058. Pub. 9–22–64. Filed 2–19–64.

781,344. SPIN-A-WIN. Spin-A-Win Sales. SN 187,351. Pub. 9–22–64. Filed 2–24–64.

781,345. XL-O-METER. Cabot Corporation. SN 187,471. Pub. 9–22–64. Filed 2–26–64.

781,346. CONTROLOG. Engler Instrument Company. SN 187,573. Pub. 9–22–64. Filed 2–27–64.

781,347. TRIMMER. The Flexible Tubing Corporation. SN 188,226. Pub. 9–22–64. Filed 3–9–64.

781,348. MORCEE. The Flexible Tubing Corporation. SN 188,227. Pub. 9–22–64. Filed 3–9–64.

781,349. FP AND DESIGN. Fischer & Porter Company. SN 188,433. Pub. 9–22–64. Filed 3–11–64.

781,350. TELE-CAM. Tele-Cam, Inc. SN 188,480. Pub. 9–22–64. Filed 3–11–64.

781,351. CARDINAL AND DESIGN. Cardinal Scale Manufacturing Company. SN 188,954. Pub. 9–22–64. Filed 3–18–64.

781,352. PROJECTOGRAPH. Paramount Industries, Inc. SN 189,050. Pub. 9–22–64. Filed 3–19–64.

781,353. SUNSTOPPERS. Monaco Optical Corporation. SN 189,092. Pub. 9–22–64. Filed 3–19–64.

781,354. TRISEAL. Neptune Meter Company. SN 189,094. Pub. 9–22–64. Filed 3–19–64.

781,355. MH. Harold A. Meyers. SN 189,489. Pub. 9–22–64. Filed 3–24–64.

781,356. VIVITRACE. General Aniline & Film Corporation. SN 189,575. Pub. 9–22–64. Filed 3–25–64.

781,357. VERTICON. Lanston Industries, Incorporated. SN 189,599. Pub. 9–22–64. Filed 3–25–64.

781,358. OLCOTT. George H. Olcott, d.b.a. Geo. Olcott Co. SN 189,723. Pub. 9–22–64. Filed 3–26–64.

781,359. THERMILINEAR. The Yellow Springs Instrument Company, Inc. SN 189,750. Pub. 9–22–64. Filed 3–26–64.

781,360. GOURMET. Thexton Manufacturing Company. SN 189,821. Pub. 9–22–64. Filed 3–27–64.

781,361. NESTAR. Spiratone, Inc. SN 189,955. Pub. 9–22–64. Filed 3–30–64.

781,362. ASTROPRINT. Xerox Corporation. SN 189,971. Pub. 9–22–64. Filed 3–30–64.

781,363. SEE-CURE! Orlando T. Giraldi, d.b.a. O-G Optical. SN 190,110. Pub. 9–22–64. Filed 4–1–64.

781,364. V AND DESIGN. Robert C. Ringholz. SN 190,207. Pub. 9–22–64. Filed 4–2–64.

781,365. CRYO-READER. Cryotronics, Inc. SN 190,240. Pub. 9–22–64. Filed 4–3–64.

781,366. CRYOMATIK. Cryotronics, Inc. SN 190,241. Pub. 9–22–64. Filed 4–3–64.

781,367. CRYO-RITER. Cryotronics, Inc. SN 190,242. Pub. 9–22–64. Filed 4–3–64.

781,368. CRYODIAL. Cryotronics, Inc. SN 190,243. Pub. 9–22–64. Filed 4–3–64.

781,369. CRYOSENSOR. Cryotronics, Inc. SN 190,244. Pub. 9–22–64. Filed 4–3–64.

781,370. PVB. Electro Scientific Industries, Inc. SN 190,502. Pub. 9–22–64. Filed 4–7–64.

781,371. THINPLET. Punch Products Corporation. SN 190,750. Pub. 9–22–64. Filed 4–9–64.

Class 27 — Horological Instruments

781,372. STARFIGHTER. Wyler Watch Corporation. SN 169,896. Pub. 7–7–64. Filed 5–28–63.

781,373. DESIGN. Sunbeam Corporation. SN 171,815 Pub. 9–22–64. Filed 6–25–63.

781,374. SOVEREIGN AND DESIGN. Sovereign Watch Company, Inc. SN 190,293 Pub. 9–22–64 Filed 4–3–64.

Class 28 — Jewelry and Precious-Metal Ware

781,375. DIA-FACET. Gold-Master Corp. SN 188,863. Pub. 9–22–64. Filed 3–17–64.

Class 29 — Brooms, Brushes, and Dusters

781,376. SHAMROCK. S. M. Arnold, Inc. SN 190,690. Pub. 9–22–64. Filed 4–9–64.

781,377. BROWN BEAUTY. Hanset Bros. Mfrs. SN 190,720. Pub. 9–22–64. Filed 4–9–64.

Class 31 — Filters and Refrigerators

781,378. EE AND DESIGN. Edwards Engineering Corporation. SN 166,453. Pub. 9–22–64. Filed 4–10–63.

781,379. SILVER SEAL. Swimquip, Inc. SN 167,773. Pub. 9–22–64. Filed 4–29–63.

781,380. HILL AND DESIGN. Embart Corporation, by merger and change of name from The Hill Corporation. MULTIPLE CLASS (Classes 31 and 32). SN 170,406. Pub. 9–22–64. Filed 6–5–63.

781,381. HILL AND DESIGN. Embart Corporation, by merger and change of name from The American Hardware Corporation. SN 189,247. Pub. 9–22–64. Filed 3–23–64.

781,382. D AND DESIGN. Walker Manufacturing Company. SN 190,131. Pub. 9–22–64. Filed 4–1–64.

Class 32 — Furniture and Upholstery

781,380. (See Class 31 for this trademark.)

781,383. DORSA AND DESIGN. Dixie Bedding Co., Inc. SN 179,125. Pub. 9–22–64. Filed 10–16–63.

781,384. HAMOC-AIRE AND DESIGN. Gleason Corporation. SN 187,922. Pub. 9–22–64. Filed 3–4–64.

781,385. THRIFTY MAID. Textron, Inc., d.b.a. Griswold Manufacturing Company. SN 188,157. Pub. 9–22–64. Filed 3–6–64.

781,386. TROUVAILLES. Trouvailles, Inc. SN 188,592. Pub. 9–22–64. Filed 3–12–64.

781,387. LA-Z-LOUNGER. La-Z-Boy Chair Company. SN 188,983. Pub. 9–22–64. Filed 3–18–64.

781,388. DINAIRE. Dormalux Sales Corp. SN 189,561. Pub. 9–22–64. Filed 3–25–64.

781,389. DREAM-PUFF. Whiting Manufacturing Company, Inc. SN 189,969. Pub. 9–22–64. Filed 3–30–64.

781,390. AMERICAN REVIEW. Drexel Enterprises, Inc. SN 189,989. Pub. 9–22–64. Filed 3–31–64.

781,391. BAG-O-RAMA. Glamorene, Incorporated. SN 195,222. Pub. 9–22–64. Filed 6–9–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

781,202. (See Class 8 for this trademark.)

781,392. SONOBOND. Sonobond Corporation. SN 180,335. Pub. 9–22–64. Filed 11–1–63.

781,393. OVENATOR. Aktiebolaget Ankarsrums Bruk. SN 189,526. Pub. 9–22–64. Filed 3–25–64.

781,394. TEX-STEAMER. Texsteam Corporation. SN 190,124. Pub. 9–22–64. Filed 4–1–64.

781,395. XHB. Besler Corporation. SN 190,146. Pub. 9–22–64. Filed 4–2–64.

781,396. IMMERSO-PAK. Eclipse Fuel Engineering Co. SN 190,353. Pub. 9–22–64. Filed 4–6–64.

781,397. CAMELOT. Hadco Aluminum Products Company. SN 190,372. Pub. 9–22–64. Filed 4–6–64.

781,398. PEARLESCENT. The Tappan Company. SN 190,556. Pub. 9–22–64. Filed 4–7–64.

781,399. PEAK TEMP AND DESIGN. Cleaver-Brooks Company. SN 191,131. Pub. 9–22–64. Filed 4–15–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

781,400. O.K. SNOWSTAR. O. K. Rubber Welders, Incorporated. SN 167,759. Pub. 9–22–64. Filed 4–29–63.

781,401. KLINGERIT. Istag A.G. SN 175,036. Pub. 9–22–64. Filed 8–14–63.

781,402. "KLINGERIT 1000." Istag A.G. SN 175,037. Pub. 9–22–64. Filed 8–14–63.

781,403. MET-L-LOY/6. The Firestone Tire & Rubber Company. SN 187,740. Pub. 9–22–64. Filed 3–2–64.

781,404. SAFE-TITE. National Utility Products Company. SN 188,651. Pub. 9–22–64. Filed 3–13–64.

781,405. TORQUE GRIP. The Goodyear Tire & Rubber Company. SN 188,746. Pub. 9–22–64. Filed 3–16–64.

781,406. NOVITANE. The B. F. Goodrich Company. SN 189,288. Pub. 9–22–64. Filed 3–23–64.

781,407. ARMOR GRIP. The Kelly-Springfield Tire Company. SN 189,322. Pub. 9–22–64. Filed 3–23–64.

781,408. RED-DOT. Federal-Mogul-Bower Bearings, Inc. SN 189,693. Pub. 9–22–64. Filed 3–26–64.

Class 36 — Musical Instruments and Supplies

781,276. (See Class 21 for this trademark.)

781,409. PHILIPS AND DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 145,392. Pub. 9–22–64. Filed 5–24–62.

781,410. SIMPLA-SWITCH. American Desk Manufacturing Company. SN 167,682. Pub. 9–22–64. Filed 4–29–63.

781,411. AMDESK. American Desk Manufacturing Company. SN 167,683. Pub. 9–22–64. Filed 4–29–63.

781,412. IBM EXECUTARY. International Business Machines Corporation. SN 168,325. Pub. 9–22–64. Filed 5–7–63.

781,413. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 176,856. Pub. 9–22–64. Filed 9–12–63.

Class 37 — Paper and Stationery

781,414. ANGEL SOFT. Hudson Pulp & Paper Corp., assignee of Angel Soft Tissue Mills, Inc. SN 150,668. Pub. 9–22–64. Filed 8–7–62.

781,415. TOPPS AND DESIGN. Plymouth Wholesale Corporation. SN 156,764. Pub. 3–17–64. Filed 11–6–62.

781,416. CON-FORM STRETCH. Arkell Safety Bag Company. SN 173,145. Pub. 9–22–64. Filed 7–17–63.

781,417. ZELCO. Zellerbach Paper Company, assignee of Crown Zellerbach Corporation. SN 173,743. Pub. 9–22–64. Filed 7–25–63.

781,418. UN-I-CA. John Rodolphe Dere (Jean). SN 176,892. Pub. 9–22–64. Filed 9–13–63.

781,419. ANNELIT. Aktiebolaget Jonkoping-Vulcan. SN 181,507. Pub. 9–22–64. Filed 11–20–63.

781,420. CHIEF ZIP. Zip-Mark Corp. SN 182,523. Pub. 9–22–64. Filed 12–6–63.

781,421. HELMSMAN. Paper Service Co., Inc. SN 184,305. Pub. 9–22–64. Filed 1–9–64.

781,422. JOUR AND DESIGN. Tomahawk Paper Company, Inc. SN 184,764. Pub. 9–22–64. Filed 1–16–64.

781,423. GOAL SYSTEMS ETC. AND DESIGN. Business Advisory Services, Inc. SN 185,019. Pub. 9–22–64. Filed 1–21–64.

781,424. EAGLE DESIGN. National Blank Book Company. SN 185,705. Pub. 9–22–64. Filed 1–30–64.

781,425. NATIONAL AND DESIGN. National Blank Book Company. SN 185,706. Pub. 9–22–64. Filed 1–30–64.

781,426. SKYLAND. Champion Papers Inc. SN 185,983. Pub. 9–22–64. Filed 2–4–64.

781,427. REDIMARK. The Joseph Dixon Crucible Company. SN 186,446. Pub. 9–22–64. Filed 2–11–64.

781,428. MAZEL TOV. Create-A-Check, Inc. SN 186,818. Pub. 9–22–64. Filed 2–17–64.

781,429. SIMPLE SIGNMAN. Simple Signman Systems, Inc. SN 192,331. Pub. 9–22–64. Filed 4–29–64.

Class 38 — Prints and Publications

781,430. STORYTOON EXPRESS. Storytoons, Inc. MULTIPLE CLASS (Classes 38 and 107). SN 142,903. Pub. 9–22–64. Filed 4–23–62.

781,431. SING-A-TOON. Storytoons, Inc. MULTIPLE CLASS (Classes 38 and 107). SN 142,904. Pub. 9–22–64. Filed 4–23–62.

781,432. THE SUNCOAST SHOWCASE. Garforth Mowll, d.b.a. Reservate Suncoast Showcase. SN 172,605. Pub. 9–22–64. Filed 7–8–63.

781,433. GOLF DIGEST. Golf Digest, Inc. SN 177,788. Pub. 9–22–64. Filed 9–26–63.

781,434. REPRESENTATION OF WINGS, GLOBE AND FLOWERS. Beverly Hall Corporation. SN 180,304. Pub. 9–22–64. Filed 11–1–63.

781,435. BETTER HOMES & GARDENS KITCHEN IDEAS. Meredith Publishing Company. SN 181,380. Pub. 9–22–64. Filed 11–18–63.

781,436. MICROFACTS NEWSLETTER. Minnesota Mining and Manufacturing Company. SN 181,381. Pub. 9–22–64. Filed 11–18–63.

781,437. KNOCK OUT AND DESIGN. Turn of the Century Fights, Inc. SN 188,818. Pub. 9–22–64. Filed 3–16–64.

781,438. THE MARKETING GUIDEPOST ETC. AND DESIGN. Danavox North America, Inc. SN 189,448. Pub. 9–22–64. Filed 3–24–64.

781,439. PRINTPARENCY AND DESIGN. Color Corporation of America. SN 189,658. Pub. 9–22–64. Filed 3–26–64.

781,440. JUBILEE. American Can Company. SN 190,229. Pub. 9–22–64. Filed 4–3–64.

781,441. CHAMPAGNE AND ROSES. Norcross, Inc. SN 190,419. Pub. 9–22–64. Filed 4–6–64.

781,442. OPINION-WISE. The McNaught Syndicate, Inc. SN 192,922. Pub. 9–22–64. Filed 5–7–64.

Class 39 — Clothing

781,175. (See Class 3 for this trademark.)

781,443. ROTHSCHILD. S. Rothschild & Company, Inc. SN 135,610. Pub. 9–22–64. Filed 1–11–62.

781,444. NATIONAL SHIRT SHOPS—COAST TO COAST. National Shirt Shops Inc., assignee of McCrory Corporation, d.b.a. National Shirt Shop. SN 146,401. Pub. 9–22–64. Filed 6–7–62.

781,445. BERKEMANN FUSSGYMNASTIK ETC. AND DESIGN. Heinrich Ad. Berkemann. SN 159,812. Pub. 9–22–64. Filed 12–27–62.

781,446. PERSONAL CONTOUR SHOES AND DESIGN. Personal Contour Shoe Co. SN 162,780. Pub. 9–22–64. Filed 2–14–63.

781,447. SOFT SHOULDERS. Perfect Brassiere Company, Inc. SN 171,175. Pub. 1–28–64. Filed 6–17–63.

781,448. FLOCOLAINE. Societe Rhovyl. SN 175,437. Pub. 9–22–64. Filed 8–20–63.

781,449. SMUTHTEX. Jones Knitting Corporation. SN 175,926. Pub. 9–22–64. Filed 8–28–63.

781,450. DANTWEED. Dan River Mills, Incorporated, SN 176,169. Pub. 9–22–64. Filed 9–3–63.

781,451. V.I.G. Kahn-Lucas-Lancaster, Inc. SN 177,056. Pub. 9–22–64. Filed 9–16–63.

781,452. BROOKSTWEED. Julius Garfinckel & Co., Incorporated. SN 178,343. Pub. 9–22–64. Filed 10–4–63.

781,453. ROOM AT THE TOP. Peter Pan Foundations, Inc. SN 178,969. Pub. 5–26–64. Filed 10–14–63.

781,454. MURFRESH. Murfresh Inc. SN 183,089. Pub. 9–22–64. Filed 12–16–63.

781,455. DAVID BLACK. David Schwartz. SN 183,226. Pub. 9–22–64. Filed 12–18–63.

781,456. CALUMET. Sol Golden, d.b.a. Max Golden & Son. SN 186,353. Pub. 9–22–64. Filed 2–10–64.

781,457. GOODY. H. Goodman & Sons, Inc. SN 186,939. Pub. 9–22–64. Filed 2–18–64.

781,458. MISS TANNIE. Howard Martin Knitting Mills, Inc. SN 186,959. Pub. 9–22–64. Filed 2–18–64.

781,459. KING-COTT. Palm Beach Company. SN 187,207. Pub. 9–22–64. Filed 2–21–64.

781,460. SLEEPYTOWNE. Herman S. Eisner, d.b.a. Herman S. Eisner Sales. SN 187,265. Pub. 9–22–64. Filed 2–24–64.

781,461. HEAD OF A BOY AND GIRL (DESIGN). Standard Romper Co., Inc. SN 187,897. Pub. 9–22–64. Filed 3–3–64.

781,462. MOTO. F. Jacobson & Sons, Inc. SN 188,367. Pub. 9–22–64. Filed 3–10–64.

781,463. KRAZY KWILT REVERSIBLE. Sun Valley Manufacturing Co. SN 188,479. Pub. 9–22–64. Filed 3–11–64.

781,464. SHARKEYE. Hart Schaffner & Marx. SN 188,978. Pub. 9–22–64. Filed 3–18–64.

781,465. LISSAK AND DESIGN. Lissak & Company, Inc. SN 188,987. Pub. 9–22–64. Filed 3–18–64.

781,466. DATRILOOM. Shelburne Shirt Co., Inc. SN 189,020. Pub. 9–22–64. Filed 3–18–64.

781,467. SECOND SEMESTER. Valsey-Bristol Shoe Company Incorporated. SN 189,124. Pub. 9–22–64. Filed 3–19–64.

781,468. DINGOS AND DESIGN. Acme Boot Company, Inc. SN 189,128. Pub. 9–22–64. Filed 3–20–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

781,168. (See Class 1 for this trademark.)

781,469. STORKTOWN. Marvin David and Robert David. SN 169,434. Pub. 9–22–64. Filed 5–22–63.

781,470. FLOCOLAINE. Societe Rhovyl. SN 175,438. Pub. 9–22–64. Filed 8–20–63.

781,471. SHARKSPAN. Deering Milliken, Inc. SN 187,566. Pub. 9–22–64. Filed 2–27–64.

781,472. GENTLE-AIR. J. P. Stevens & Co., Inc. SN 187,694. Pub. 9–22–64. Filed 2–28–64.

Class 43 — Thread and Yarn

781,168. (See Class 1 for this trademark.)

781,473. ADRIANA. Angora Corporation of America. SN 160,259. Pub. 9–22–64. Filed 1–7–63.

781,474. FLOCOLAINE. Societe Rhovyl. SN 175,439. Pub. 9–22–64. Filed 8–20–63.

781,475. CORD-HELION. Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A. SN 181,014. Pub. 9–22–64. Filed 11–13–63.

781,476. NORTHERN BAN-TRISE. Northern Yarn Mills. SN 187,511. Pub. 9–22–64. Filed 2–26–64.

Class 44 — Dental, Medical, and Surgical Appliances

781,477. REPRESENTATION OF A CHECK MARK. Becton Dickinson and Company. SN 140,908. Pub. 9–22–64. Filed 3–28–62.

781,478. ERIE AND DESIGN. Erie City Manufacturing Company. SN 163,717. Pub. 9–22–64. Filed 3–1–63.

781,479. REPRESENTATION OF FACES WITH WRINKLE-ERADICATING WAFERS APPLIED THERETO. Margaret Josephine Wright, d.b.a. The B & P Company. SN 167,351. Pub. 9–22–64. Filed 4–22–63.

781,480. VITALITONE. Treu Method, Inc. SN 170,359. Pub. 9–22–64. Filed 6–4–63.

781,481. FRANK MERRILL'S TRIPLE CROWN AND DESIGN. Merrill's Turf Supplies Co. Ltd. SN 178,942. Pub. 9–22–64. Filed 10–14–63.

781,482. DRESSLING AND DESIGN. Mabe Clark, Inc. SN 184,435. Pub. 9–22–64. Filed 1–13–64.

781,483. SCALPRO. Clarke-Heath Manufacturing Company. SN 187,247. Pub. 9–22–64. Filed 2–24–64.

781,484. TISSU-LINE. The Jectron Company. SN 188,883. Pub. 9–22–64. Filed 3–17–64.

Class 46 — Foods and Ingredients of Foods

781,485. FANCIFUL TREE (DESIGN). Leslie Salt Co., assignee of Spice Islands Company. SN 140,194. Pub. 9–22–64. Filed 3–19–62.

781,486. ESTEE. Estee Candy Co., Inc. SN 143,611. Pub. 9–22–64. Filed 5–2–62.

781,487. MME D'ORVILLIERS AND PICTURE DESIGN. Palheta Cafes Finos S.A. SN 147,953. Pub. 9–22–64. Filed 6–28–62.

781,488. SPARKLO. Dothan Oil Mill Company. SN 150,856. Pub. 1–29–63. Filed 8–9–62.

781,489. ROYAL RANCH. Standard Market Company. SN 164,474. Pub. 9–22–64. Filed 3–12–63.

781,490. TEXAS PETE AND DESIGN. T. W. Garner Food Co. SN 168,404. Pub. 9–22–64. Filed 5–8–63.

781,491. STALEY AND DESIGN. A. E. Staley Manufacturing Company. SN 179,956. Pub. 9–22–64. Filed 10–28–63.

781,492. FLANCE. Chas. Pfizer & Co., Inc. SN 181,062. Pub. 9–22–64. Filed 11–13–63.

781,493. ISLAND FAIR AND DESIGN. Edwin W. A. Cheng, d.b.a. Exotic Foods Company. SN 184,358. Pub. 9–22–64. Filed 1–10–64.

781,494. SMA. American Home Products Corporation. SN 186,992. Pub. 9–22–64. Filed 2–19–64.

781,495. LEMANCO. The Leon Manaster Company. SN 187,023. Pub. 9–22–64. Filed 2–19–64.

781,496. DUGAN'S. Noramco, Inc. SN 187,187. Pub. 9–22–64. Filed 2–20–64.

781,497. TK. Tandy Snacks, Inc. SN 189,220. Pub. 9–22–64. Filed 3–20–64.

781,498. CAPITOL CITY. F. W. Bolgiano & Company. SN 189,864. Pub. 9–22–64. Filed 3–30–64.

781,499. AIR MAIL. California Canners and Growers, d.b.a. Richmond-Chase Company. SN 189,868. Pub. 9–22–64. Filed 3–30–64.

781,500. MIDGETEA. A. Goodman & Sons, Inc. SN 189,896. Pub. 9–22–64. Filed 3–30–64.

781,501. RIVERDALE. Ralston Purina Company. SN 190,224. Pub. 9–22–64. Filed 3–30–64.

781,502. CAPEWAY. Capeway Seafoods, Inc. SN 190,333. Pub. 9–22–64. Filed 4–6–64.

781,503. BRONCO AND DESIGN. Model Mill Company, Inc., d.b.a. Model Bean Co. SN 190,532. Pub. 9–22–64. Filed 4–7–64.

781,504. TWIN R AND DESIGN. Rummonds Bros. Ranch. SN 190,544. Pub. 9–22–64. Filed 4–7–64.

781,505. BALD EAGLE. Lowell J. Schy Company, d.b.a. Lowell J. Schy Co. SN 190,834. Pub. 9–22–64. Filed 4–10–64.

781,506. PAMPER. The Quaker Oats Company. SN 191,884. Pub. 9–22–64. Filed 4–23–64.

781,507. ATLANTIC COAST BRAND. Sassoon Peress, d.b.a. Atlantic-Commander Company. SN 192,083. Pub. 9–22–64. Filed 4–27–64.

781,508. OLD TIMEY. Claussen's, Inc. SN 193,076. Pub. 9–22–64. Filed 4–24–64.

Class 49 — Distilled Alcoholic Liquors

781,509. JOLLY ROGER. Flagstaff Liquor Co. SN 180,870. Pub. 6–23–64. Filed 11–12–63.

Class 50 — Merchandise Not Otherwise Classified

781,510. RABUN. Gorham Brons, Inc., by change of name from Rabun Bronze Foundry, Incorporated. SN 157,142. Pub. 9–22–64. Filed 11–13–62.

781,511. TUBBY BUBL AND DESIGN. Laszlo I. Belenyessy. SN 157,440. Pub. 9–22–64. Filed 11–19–62.

781,512. ROYAL SUN-GLO. Hill International Display Corporation. SN 157,699. Pub. 9–22–64. Filed 11–21–62.

781,513. KAHIKI. Polynesian Enterprises, Inc. SN 158,095. Pub. 9–22–64. Filed 11–28–62.

781,514. WONDERLAND. Rexall Drug and Chemical Company, d.b.a. Kingsway Products Co. SN 196,903. Pub. 9–22–64. Filed 7–1–64.

Class 51 — Cosmetics and Toilet Preparations

781,515. MAGIC-MAN. Parfumerie L. T. Piver S.A. SN 158,559. Pub. 9–22–64. Filed 12–5–62.

781,516. MODERN TOUCH. Aerosol Specialties, Inc. SN 184,677. Pub. 9–22–64. Filed 1–16–64.

Class 52 — Detergents and Soaps

781,517. ARROW HEAD AND DESIGN. GNR Corporation. SN 149,383. Pub. 9–22–64. Filed 7–19–62.

781,518. UNIQUE. Royse Myers, d.b.a. Armco. SN 184,492. Pub. 9–22–64. Filed 1–13–64.

781,519. 190. Todd Chemical Company, Inc. SN 185,168. Pub. 9–22–64. Filed 1–22–64.

781,520. VYNL-GLEEM. G. N. Coughlan Company. SN 185,274. Pub. 9–22–64. Filed 1–24–64.

Service Marks

Class 100 — Miscellaneous

781,521. INDUSTRY PROMOTION ETC. AND DESIGN. National Institute of Locker and Freezer Provisioners. SN 162,279. Pub. 9–22–64. Filed 2–7–63.

781,522. KOA AND EMBLEM. Kampgrounds of America, Inc. SN 166,103. Pub. 9–22–64. Filed 4–4–63.

Class 101 — Advertising and Business

781,523. LUCKY BITE. Lucky Bite, Inc. SN 167,737. Pub. 9–22–64. Filed 4–29–63.

781,524. DRUG FAIR AND DESIGN. Drug Fair-Community Drug Co., Inc. SN 175,733. Pub. 9–22–64. Filed 8–26–63.

781,525. THE RUCKER PLAN. The Eddy-Rucker-Nickels Company. SN 179,215. Pub. 9–22–64. Filed 10–17–63.

Class 103 — Construction and Repair

781,526. GLS AND DESIGN. Charles E. Murman, d.b.a. Great Lakes Sales Company. SN 171,163. Pub. 9–22–64. Filed 6–17–63.

781,527. MWM AND DESIGN. Rubbermaid Incorporated. SN 177,740. Pub. 9–22–64. Filed 9–25–63.

Class 105 — Transportation and Storage

781,528. GALLERY PASSPORT LTD. Gallery Passport Ltd. SN 176,265. Pub. 9–22–64. Filed 8–30–63.

Class 107 — Education and Entertainment

781,430. (See Class 38 for this trademark.)

781,431. (See Class 38 for this trademark.)

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

781,567. Rexall Drug and Chemical Company, Los Angeles, Calif. SN 151,256. Filed P.R. 8–15–62; Am. S.R. 10–14–64.

BABY CARE

Class 51—Cosmetics and Toilet Preparations

For Toiletries for Infants—Namely, Baby Cream, Baby Bath, Baby Lotion, and Baby Skin Oil.

Class 52—Detergents and Soaps

For Cosmetics and Toilet Preparations, and Baby Shampoo.

First use October 1958.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

781,529. Polymers, Inc., Middlebury, Vt. SN 168,110. Filed P.R. 5–3–63; Am. S.R. 10–6–64.

ANGLE-CUT

For Extruded Synthetic Fibres, Particularly Adapted for Use as Brush Bristles.
First use Jan. 21, 1963.

781,530. Polymers, Inc., Middlebury, Vt. SN 168,111. Filed P.R. 5–3–63; Am. S.R. 10–6–64.

MAGAZINE PACK

For Packaged Form of Extruded Synthetic Fibres, Particularly Adapted for Use as Brush Bristles.
First use Mar. 15, 1963.

Class 5 — Adhesives

781,531. K & W Products, Inc., Whittier, Calif. SN 157,816. Filed P.R. 11–23–62; Am. S.R. 4–21–64.

Copper-Coat

For Rubber-Based Adhesive Gasket Compound With Powder Metal Particles.
First use Feb. 28, 1961.

Class 6 — Chemicals and Chemical Compositions

781,532. East Coast Soap Corporation, Brooklyn, N.Y. SN 178,536. Filed P.R. 10–8–63; Am. S.R. 10–8–64.

AK-SHUN MELT

For Ice Melting Compounds.
First use Sept. 3, 1963.

781,533. Turen, Inc., Danvers, Mass. SN 186,031. Filed P.R. 2–4–64; Am. S.R. 10–6–64.

NO CHEW

For Liquid Deterrent To Stop Pets From Biting Coated Items.
First use May 1, 1958.

Class 10 — Fertilizers

781,534. Red Barn Chemicals, Inc., Shreveport, La. SN 151,362. Filed P.R. 8–16–62; Am. S.R. 10–8–64.

N - Fe - Zn "PLUS"

For Liquid Fertilizers.
First use Apr. 18, 1962

Class 12 — Construction Materials

781,535. Simpson Timber Company, Seattle, Wash. SN 172,849. Filed P.R. 7–11–63; Am. S.R. 10–12–64.

SEA HAZE

For Prefinished Paneling.
First use June 27, 1963.

781,536. Simpson Timber Company, Seattle, Wash. SN 172,850. Filed P.R. 7–11–63; Am. S.R. 10–12–64.

FAWN

For Prefinished Paneling.
First use June 27, 1963.

781,537. Marken Plastic Corporation, Los Angeles, Calif. SN 175,422. Filed P.R. 8–20–63; Am. S.R. 7–21–64.

STRIP 'N STIK

For Plastic Cove Base.
First use July 18, 1963.

Class 18 — Medicines and Pharmaceutical Preparations

781,538. Day-Baldwin, Incorporated, Irvington, N.J. SN 138,169. Filed P.R. 2–19–62; Am. S.R. 10–8–64.

FOILPAC

For Package Containing Sterile Surgical Lubricant.
First use April 1961.

781,539. The Dow Chemical Company, Midland, Mich. SN 161,018. Filed P.R. 1–21–63; Am. S.R. 9–28–64.

GLOBULON

For Antibody Concentrate Useful for the Prophylaxis and Treatment of Infections in Dogs.
First use June 4, 1959.

Class 22 — Games, Toys, and Sporting Goods

781,540. Hassenfeld Bros. Inc., Central Falls, R.I. SN 169,254. Filed P.R. 5–20–63; Am. S.R. 9–21–64.

SNAP SHOT

For Board and Movable Pieces for Playing a Toy Game.
First use on or about Mar. 22, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

781,541. Seitz Werke G.m.b.H., Bad Kreuznach, Germany. SN 191,468. Filed P.R. 4–7–64; Am. S.R. 10–9–64.

SEITZ

Owner of German Reg. No. 46,387, dated Nov. 2, 1900, and applicant's related company owns U.S. Reg. Nos. 770,123 and 770,924.

For Machines and Devices for Cellarages, Breweries, and Dairies—Namely, Machines for Cleaning, Filling, Sealing, Sterilizing and Label Application, Packing and Unpacking Machines and Transport Devices Necessary Thereto and Pumps.

Class 32 — Furniture and Upholstery

781,542. V.S.I. Corporation, Azusa, Calif. SN 182,135. Filed P.R. 11–29–63; Am. S.R. 10–13–64.

KNICK KNACK

For Wall Racks.
First use Sept. 20, 1963.

Class 38 — Prints and Publications

781,543. The Seymour Mittelmark Organization, Inc., New York, N.Y. SN 141,549. Filed P.R. 4–4–62; Am. S.R. 10–16–64.

FASHION FLASHBACKS

For Publications.
First use Nov. 15, 1961.

781,544. Society for Visual Education, Inc., Chicago, Ill. SN 175,616. Filed P.R. 8–22–63; Am. S.R. 10–9–64.

PICTURE-STORY STUDY PRINTS

For Classroom Print and Study Data.
First use Aug. 16, 1963.

781,545. The Progressive Farmer Company, Birmingham, Ala. SN 179,656. Filed P.R. 10–23–63; Am. S.R. 10–14–64.

SOUTHERN HUNTING AND FISHING

For Magazine Published Periodically and Containing Articles, Information and Features of Particular Interest to Persons Residing in the Southern Part of the United States.
First use Oct. 11, 1963.

781,546. Scanpublic, Copenhagen, Denmark. SN 192,432. Filed 4–30–64.



Owner of Danish Reg. No. 924/61, dated Sept. 16, 1961.
For Travelers' Guides.

781,547. American Charts Company, Atlanta, Ga. SN 193,738. Filed 5–19–64.

SLIDAMATIC

For Sliding Charts.
First use May 1, 1963.

Class 39 — Clothing

781,548. Dutchess Underwear Corporation, New York, N.Y. SN 130,054. Filed P.R. 10–17–61; Am. S.R. 10–13–64.

KNIKKER-TITES

For Knee Length, Trimmed, Stretch Fabric Pants for Daytime and Sleepwear for Women and Misses.
First use Aug. 6, 1961.

781,549. Wilhela Cushman, d.b.a. Willa Products Unltd., New York, N.Y. SN 163,712. Filed P.R. 3–1–63; Am. S.R. 9–18–64.

EVERYDAY-ANYDAY

For Pinafores.
First use Jan. 28, 1963.

781,550. May Hosiery Mills, Nashville, Tenn. SN 166,476. Filed P.R. 4–10–63; Am. S.R. 8–31–64.

LO◇CUTS

For Sunsocks.
First use Mar. 29, 1963.

781,551. Palm Beach Company, Portland, Maine. SN 172,769. Filed P.R. 7–10–63; Am. S.R. 9–23–64.

MOOREFIELD

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Jan. 31, 1963.

781,552. Palm Beach Company, Portland, Maine. SN 172,770. Filed P.R. 7–10–63; Am. S.R. 9–23–64.

WILLIAMSTON

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Jan. 31, 1963.

781,553. Palm Beach Company, Portland, Maine. SN 172,772. Filed P.R. 7–10–63; Am. S.R. 9–23–64.

PEMBERTON

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Jan. 31, 1963.

781,554. Rudin & Roth, Inc., New York, N.Y. SN 176,319. Filed P.R. 9–4–63; Am. S.R. 10–7–64.

DEMI-SOCKS

For Socks.
First use Aug. 27, 1963.

781,555. Green Bros. Manufacturing Co., Dallas, Tex. SN 177,419. Filed P.R. 9–20–63; Am. S.R. 9–21–64.

PRETTYPANTY BY GREEN BROS.

For Girls' Panties.
First use Aug. 16, 1963.

Class 46 — Foods and Ingredients of Foods

781,556. Meat Industry Suppliers, Inc., Northfield, Ill. SN 120,321. Filed P.R. 5–18–61; Am. S.R. 7–29–64.

SWEET HAM

For Combination Cure for Meats Comprising Salt, Nitrites, Nitrates, and Dextrose, Sold Only to Processors and Packers of Meats.
First use on or about May 1, 1961.

781,557. Fearn Soya Foods, Melrose Park, Ill. SN 151,898. Filed P.R. 8–27–62; Am. S.R. 7–31–64.

SOY-O-SNAKS

For Roasted Soybeans.
First use Aug. 9, 1962.

781,558. Bremco Alfalfa Mills, Inc., New Bremen, Ohio. SN 155,369. Filed P.R. 10–18–62; Am. S.R. 9–16–64.

X-TENDER

For Additives of a Non-Medicated, Food Nature for Improving Digestibility of Livestock Feed.
First use Oct. 2, 1962.

781,559. Pellet Feeds, Inc., Highland Park, Ill. SN 159,769. Filed P.R. 12–26–62; Am. S.R. 10–1–64.

DRI-PAK

For Pelletized Grain Feeds for Equine and Bovine Animals and Fowls and Ground Grains for Animal Consumption.
First use June 6, 1962.

781,560. The East Asiatic Company, Inc., d.b.a. Danfoods Company, Los Angeles, Calif. SN 162,923. Filed P.R. 2–18–63; Am. S.R. 7–27–64.

TWIN-PACK

For Packaged Cooked Bacon.
First use Jan. 17, 1963.

781,561. Laurens Corporation, Middletown, Del. SN 166,388. Filed P.R. 4–9–63; Am. S.R. 3–26–64.

STA ★ WAKE

Applicant disclaims any rights to a representation of a star in association with the mark.
For Food Bars Consisting of Dried Milk, Fruit, Cereals, Vitamin A and Caffeine for Use as a Drowsiness Preventative.
First use Oct. 26, 1962.

781,562. Regan Bakeries, Inc., Minneapolis, Minn. SN 182,738. Filed P.R. 12–10–63; Am. S.R. 8–6–64.

MRS. BAILEY'S

The name "Mrs. Bailey's" is a fictitious name and does not have reference to any living person.
For Bread.
First use prior to February 1960.

Class 47 — Wines

781,563. Garvey, Sociedad Anonima, Bodegas de San Patricio-Jerez de la Frontera, Bodegas de San Patricio, Jerez de la Frontera, Spain. SN 184,463. Filed 1–13–64.

GARVEY O'CREAM

Garvey

JEREZ

BODEGAS DE SAN PATRICIO 1780

The lining on the drawing does not represent color. Owner of Spanish Reg. No. 426,676, dated Nov. 30, 1963; and U.S. Reg. Nos. 305,966, 756,591, and others.
For Wines.

Class 50 — Merchandise Not Otherwise Classified

781,564. Ravon D. Luttrell, d.b.a. Allied Rubber Plate Engravers, Chicago, Ill. SN 151,767. Filed P.R. 8–23–62; Am. S.R. 9–3–64.

CUSH-N-FACE

For Rubber Printing Plates.
First use Apr. 17, 1962.

781,565. Lane Marketing Incorporated, New York, N.Y. SN 178,553. Filed P.R. 10–8–63; Am. S.R. 10–14–64.

"MOTHER-TO-BE"

For Advertising Device in the Form of a Display Kit Containing an Assortment of Packaged Grooming and Toilet Articles for the Expectant Mother and for Infant Care.
First use May 20, 1963.

781,566. W. W. Holes Manufacturing Co., St. Cloud, Minn. SN 198,356. Filed 7–22–64.

EASYSIGN

For Sign Making Kits Including Individual Letters and Means for Variously Coloring Said Letters.
First use July 2, 1963.

Class 51 — Cosmetics and Toilet Preparations

781,567. See Section 1 (Combined Certificate).

781,568. Carley, Inc., Haddonfield, N.J. SN 165,210. Filed P.R. 3–22–63; Am. S.R. 10–19–64.

THE BRAND WITH THE TROPHY TOP

For Toilet Water and After-Shave Lotion.
First use Mar. 8, 1963.

781,569. Yardley of London, Inc., Totowa, Paterson, N.J. SN 167,592. Filed P.R. 4–25–63; Am. S.R. 4–30–64.

AQUAPLEX

For Oil Complex Incorporated as an Ingredient in a Skin Moisturiser Product.
First use Apr. 16, 1963.

781,570. Samuel Bonat & Bro., Inc., West Paterson, N.J. SN 175,969. Filed P.R. 8–29–63; Am. S.R. 9–4–64.

BODY&FORM

For Waving Lotion and Neutraliser for Cold Permanent Waving.
First use Apr. 30, 1963.

781,571. Bendiner & Schlesinger, Inc., New York, N.Y. SN 180,644. Filed 11–7–63.



For Hair Preparation, Which Imparts Color to Grey or Faded Hair.
First use July 1, 1935.

781,572. House of Westmore, Inc., New York, N.Y. SN 186,001. Filed P.R. 2–4–64; Am. S.R. 10–19–64.

KISSIN' COUSIN CORAL

For Lipsticks and Nail Polish.
First use Sept. 30, 1963.

781,573. House of Westmore, Inc., New York, N.Y. SN 186,002. Filed P.R. 2–4–64; Am. S.R. 10–19–64.

BOSS PINK

For Lipsticks and Nail Polish.
First use Sept. 30, 1963.

781,574. House of Westmore, Inc., New York, N.Y. SN 186,003. Filed P.R. 2–4–64; Am. S.R. 10–19–64.

BANJO RED

For Lipsticks and Nail Polish.
First use Sept. 30, 1963.

781,575. House of Westmore, Inc., New York, N.Y. SN 186,004. Filed P.R. 2–4–64; Am. S.R. 10–19–64.

GUI-TAH ORANGE

For Lipsticks and Nail Polish.
First use Sept. 30, 1963.

Class 52 — Detergents and Soaps

781,576. Clairol Incorporated, New York, N.Y. SN 179,115. Filed P.R. 10–16–63; Am. S.R. 9–29–64.

FIVE MINUTE COLOR

For Shampoo Tint.
First use June 12, 1963.

Service Marks

Class 102 — Insurance and Financial

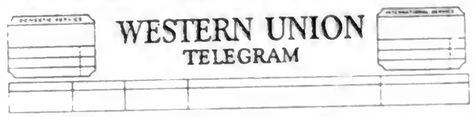
781,577. Saving Fund Society of Germantown and Its Vicinity, Philadelphia, Pa. SN 157,932. Filed P.R. 11–26–62; Am. S.R. 10–12–64.

TO BE SURE—SAVE FOR IT!

For Financial Services—Namely, Savings Account and Loan Services.
First use Aug. 27, 1962.

Class 104 — Communication

781,578. The Western Union Telegraph Company, New York, N.Y. SN 165,476. Filed P.R. 3–26–63; Am. S.R. 8–17–64.



For Telegraphic Communication Services.
First use in or about January 1926.

TRADEMARK REGISTRATIONS RENEWED

186,823. RED TRIANGLES ON YELLOW BACKGROUND (DESIGN). Cl. 46. 7–22–24.
189,757. WILLIAM ARMSTRONG AND DESIGN. Cl. 38. 9–23–24.
190,070. RED OX TWIST AND DESIGN. Cl. 17. 10–7–24.
190,536. CREAMETTE. Cl. 46. 10–14–24.
190,883. CLINCHFIELD AND DESIGN. Cl. 1. 10–28–24.
190,894. VISKAP. Cl. 50. 10–28–24.
190,952. TESCO AND DESIGN. Cl. 26. 10–28–24.
191,200. HAIR ON BELT (DESIGN). Cl. 35. 11–4–24.
191,298. AMERICAN ACE. Cl. 36. 11–4–24.
193,438. TUTTI-FRUITTI. Cl. 46. 12–30–24.
194,263. GRANGER AND DESIGN. Cl. 17. 1–20–25.
194,898. THEOCALCIN. Cl. 18. 2–10–25.
195,000. ESTRELLA. Cl. 15. 2–17–25.
195,079. EMPRESS. Cl. 37. 2–17–25.
195,169. WAYAGAMACK AND DESIGN. Cl. 37. 2–17–25.
195,406. THE BEST TASTE IN GIFTS. Cl. 46. 2–24–25.
195,446. ARCH RELIEF. Cl. 39. 2–24–25.
196,670. ZIV'S WIZARD. Cl. 14. 3–24–25.
408,019. DURA-LINER. Cl. 44. 7–11–44.
408,612. REGINA AND DESIGN. Cl. 28. 8–22–44.
408,705. TEXSHEEN. Cl. 39. 8–29–44.
409,147. SHREWSBURY. Cl. 1. 9–19–44.
409,231. PERMAWOOD. Cl. 12. 9–26–44.
409,463. PERMAMENTE. Cl. 1. 10–10–44.
409,649. STATION WAGON. Cl. 39. 10–17–44.
409,656. DURABOND. Cl. 16. 10–17–44.
409,726. 3-M. Cl. 44. 10–17–44.
409,731. FROZ-N-GOLD AND DESIGN. Cl. 46. 10–17–44.
409,749. TA-BOO AND DESIGN. Cl. 42. 10–17–44.
409,811. ACIDOLATE AND DESIGN. Cl. 51. 10–24–44.
409,840. PHOSPHOSIL. Cl. 52. 10–24–44.
409,850. CRO PAX AND DESIGN OF STAR. Cl. 18. 10–24–44.
409,919. BRAKE SHOE AND DESIGN. Cl. 26. 10–31–44.
409,954. SUPRECOOL. Cl. 51. 10–31–44.
410,371. MOUNTIES. Cl. 37. 11–21–44.
410,511. ORALINE. Cl. 51. 11–28–44.
410,556. BRAKE SHOE AND DESIGN. Cl. 19. 12–5–44.
410,745. Atlas Imperial. Cl. 23. 12–19–44.
411,378. PLANTOLS. Cl. 12. 1–16–45.
411,394. FLOTOFOAM. Cl. 1. 1–16–45.
411,658. ELECTRA TUFTED AND DESIGN. Cl. 42. 1–30–45.
411,845. SEATED MAN (DESIGN). Cl. 47. 2–6–45.
411,937. WHITE OAK AND DESIGN. Cl. 1. 2–13–45.
411,967. PAR. Cl. 44. 2–13–45.

412,260. ZIV BRM. Cl. 14. 2–27–45.
412,364. BARPRIME. Cl. 18. 3–6–45.
412,414. MEROPA. Cl. 15. 3–6–45.
412,627. ELOX. Cl. 21. 3–20–45.
412,631. ME-VE-OIL. Cl. 51. 3–20–45.
412,710. PLYOKEM. Cl. 52. 3–20–45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

772,703. GERIBOLIN. Cl. 18. 7–7–64.
673,145. SHUR-FIT. Cl. 22. 1–27–59.
770,964. PSC. Cl. 1. 6–9–64.

Section 8

The following registrations issued Oct. 21, 58

668,519. PAK-A-FYR. Cl. 1.
668,532. STIM-U-WELL. Cl. 6.
668,533. DE-WAX ALL. Cl. 6.
668,535. SENESPRAY. Cl. 6.
668,539. COSMOLEATHER. Cl. 6.
668,554. PLAYTIME PATIO SEA VIEW AND DESIGN. Cl. 12.
668,555. GOLD-E-LOCKS. Cl. 12.
668,556. T.C.P. Cl. 12.
668,557. METALTONES. Cl. 12.
668,558. KAR KOVERS. Cl. 12.
668,559. AFO. Cl. 12.
668,561. GB AND DESIGN. Cl. 12.
668,565. ARMORITE. Cl. 12.
668,572. C AND DESIGN. Cl. 13.
668,573. USI AND DESIGN. Cl. 13.
668,574. BULL MATHSEN'S. Cl. 13.
668,578. SATELLITE. Cl. 13.
668,581. B AND DESIGN. Cl. 13.
668,586. TUNG-AD. Cl. 14.
668,596. BBF AND DESIGN. Cl. 18.
668,597. ULTOX. Cl. 18.
668,598. EXUDASE. Cl. 18.
668,602. SYNTRIT. Cl. 18.
668,609. LAYETS. Cl. 18.
668,613. OMNIFUGE. Cl. 18.
668,616. STRETCHIT-KETCHIT. Cl. 19.
668,617. DAUPHINE FLORIDA. Cl. 19.
668,618. CAROVER AND DESIGN. Cl. 19.
668,627. SANTI. Cl. 21.
668,628. SANTI. Cl. 21.
668,630. ROLO-MATIC AND DESIGN. Cl. 21.
668,635. MAVERICK. Cl. 22.
668,636. TRIM-FORM. Cl. 22.
668,639. LADY SAND. Cl. 23.
668,640. POWER-PAK ETC. AND DESIGN. Cl. 23.
668,645. ROOT AND DESIGN. Cl. 23.
668,654. ELASTIMATIC. Cl. 23.
668,658. ALDENS. Cl. 23.
668,659. ERA. Cl. 23.
668,663. SEA SAFE. Cl. 25.
668,668. RENOLD. Cl. 28.
668,674. BONDI-COTE. Cl. 32.
668,675. SUPER ORTHO-BRACER. Cl. 32.
668,676. AIRCOMFORT. Cl. 32.
668,679. TURN BACK THE CLOCK ETC. AND DESIGN. Cl. 32.
668,681. GRIGGS TEMPO AND DESIGN. Cl. 32.
668,682. MMG. Cl. 32.
668,683. THE PALACE LINE AND DESIGN. Cl. 32.
668,684. ALL ABOARD. Cl. 32.
668,685. FADE SHIELD. Cl. 33.
668,687. WRIGHT AIRE. Cl. 34.
668,688. WRIGHT W AND DESIGN. Cl. 34.
668,691. DESIGN OF A WAVE WITHIN A CIRCLE. Cl. 34.
668,696. REV. Cl. 36.
668,698. ATLANTIC AND DESIGN. Cl. 36.
668,700. VIOLYN. Cl. 36.
668,701. MARCA D'ORO. Cl. 36.
668,704. RESOFLECTOR. Cl. 36.
668,707. SCULP-TU-ROLL. Cl. 37.
668,711. TEEN. Cl. 38.
668,718. DUANAT. Cl. 38.
668,724. MARC SCOTT. Cl. 39.
668,725. BRONZETTI. Cl. 39.
668,729. SWARTHMORE. Cl. 39.
668,730. SHOPPERS CORNER. Cl. 39.
668,747. ROYAL TROPHY. Cl. 42.
668,749. TANGARA. Cl. 42.
668,750. TULEMONDE. Cl. 42.
668,751. MELACAST. Cl. 44.
668,754. REVEILLE. Cl. 46.
668,756. UNISOL. Cl. 46.
668,764. MONODYNE. Cl. 46.
668,768. CHOC-O-LOPS. Cl. 46.
668,769. NELL GWYN AND DESIGN. Cl. 46.
668,772. HARVEST GOLD. Cl. 46.
668,774. GRILLERS. Cl. 46.
668,776. GOLDHAUSER AND DESIGN. Cl. 48.
668,777. GOLDHOFF AND DESIGN. Cl. 48.
668,786. SLIM ZELLE. Cl. 100.
668,787. SLIM ZELLE AND DESIGN. Cl. 100.
668,791. DE LA RAMA LINES. Cl. 105.
668,793. MOBILVISION. Cl. 107.
668,796. RE-FRESH-EN. Cl. 6.
668,798. FAMOUS FOR STAINLESS AND DESIGN. Cl. 19.
668,813. SPLIT KIT. Cl. 50.

Erratum

In the OFFICIAL GAZETTE of October 27, 1964, at page TM 199, under Trademark Registrations Canceled, Section 8, "666,905. EL DIARIO DE NEUVO YORK AND DESIGN. Cl. 38." should be deleted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

151,130. FOUKE DRESSING & DYE AND DESIGN. Cl. 1. 1–24–22. Fouke Fur Company, St. Louis, Mo. Amended: In the statement, column 1, line 3, "in the" is deleted and *at* is inserted, lines 4 through 6 are deleted and *Greenville, S.C., and doing business at Route 1, Box 168, White Horse Road, Greenville, S.C.* is inserted, in column 2, lines 6 and 7, "'St. Louis' and" is deleted, lines 9 through 12 are deleted, and the drawing is amended to appear:

FOUKE
DRESSING & DYE

321,309. SAFARI ETC. AND DESIGN. Cl. 1. 1–29–35. Fouke Fur Company, St. Louis, Mo. Amended: In the statement, column 1, line 3, "St. Louis, Mo." is deleted and *Greenville, S.C.* is inserted, in lines 4 and 5, "No. 1328 South Kingshighway, St. Louis, Mo." is deleted and *Route 1, Box 168, White Horse Road, Greenville, S.C.* is inserted, in column 2, line 2 of second paragraph as amended "'St. Louis'" is deleted, and the drawing is amended to appear:

SAFARI
ALASKA FUR SEAL
FOUKE
DRESSING & DYE

505,950. FOUKE DRESSING & DYE AND DESIGN. Cl. 1. 1–25–49. Fouke Fur Company, St. Louis, Mo. Amended: In the statement, column 1, line 1, "St. Louis, Missouri" is deleted and *Greenville, S.C.* is inserted, lines 4 and 5, "1328 South Kingshighway, St. Louis 10, Missouri" is deleted and *Route 1, Box 168, White Horse Road, Greenville, S.C.* is inserted, in line 27 "'St. Louis'" is deleted, and the drawing is amended to appear:

FOUKE
DRESSING & DYE

678,151. LEATHERMODE. Cl. 39. 5–5–59. Leathermode Sportswear, Inc., New York, N.Y. Amended to appear:

Leathermode

774,328. FOOD FAIR. Cl. 6. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 8, "restricted to" is deleted and *for* is inserted.

774,329. FOOD FAIR AND DESIGN. Cl. 6. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 8, "restricted to" is deleted and *for* is inserted.

774,348. FOOD FAIR AND DESIGN. Cl. 9. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 8 "restricted to" is deleted and *for* is inserted.

774,404. FOOD FAIR. Cl. 18. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 9, "restricted to" is deleted and *for* is inserted.

774,405. FOOD FAIR AND DESIGN. Cl. 18. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 9, "restricted to" is deleted and *for* is inserted.

774,678. FOOD FAIR AND DESIGN. Cl. 46. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 9, "restricted to" is deleted and *for* is inserted.

774,723. FOOD FAIR. Cl. 101. 8–4–64. Food Fair Stores, Inc., Philadelphia, Pa. Amended: In the statement, column 1, line 8, "restricted to" is deleted and *for* is inserted.

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DECEMBER 8, 1964

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AMP Inc., Harrisburg, Pa. 781,291, pub. 9–22–64. Cl. 21.
Aaronson Bros. Ltd., Rickmansworth, England. 781,219–20, pub. 9–22–64. Cl. 12.
Abbott Laboratories, North Chicago, Ill. 668,609, canc. Cl. 18.
Abrasive Developments Ltd., Solihull, England. 781,307, pub. 9–22–64. Cl. 23.
Abrasive Products, Inc., South Braintree, Mass. 781,182, pub. 9–22–64. Cl. 4.
Acme Boot Co., Inc., Clarksville, Tenn. 781,468, pub. 9–22–64. Cl. 39.
Acme Products: *See*—
Stein Bros. Mfg. Co.
Admiral Coated Prods., Inc., Hackensack, N.J. 781,245, pub. 9–22–64. Cl. 14.
Aerosol Specialties, Inc., Bridgeport, Conn. 781,516, pub. 9–22–64. Cl. 51.
Airguide Instrument Co., Chicago, Ill. 781,341, pub. 9–22–64. Cl. 26.
Aktiebolaget Ankarsrums Bruk, Ankarsrum, Sweden. 781,393, pub. 9–22–64. Cl. 34.
Aktiebolaget Jonkoping Vulcan, Jonkoping, Sweden. 781,419, pub. 9–22–64. Cl. 37.
Aldens, Inc., Chicago, Ill. 668,658, canc. Cl. 23.
Allied Rubber Plate: *See*—
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Amchem Products, Inc., Ambler, Pa. 781,191, pub. 9–22–64. Cl. 6.
American Brake Shoe Co., New York, N.Y. 409,919, ren. 12–8–64. Cl. 26.
American Brake Shoe Co., New York, N.Y. 410,556, ren. 12–8–64. Cl. 19.
American Can Co., New York, N.Y. 781,440, pub. 9–22–64. Cl. 38.
American Cement Corp., Los Angeles, Calif. 781,213, pub. 9–22–64. Cl. 12.
American Charts Co., Atlanta, Ga. 781,547. Cl. 38.
American Chicle Co., Long Island City, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 193,438, ren. 12–8–64. Cl. 46.
American Cyanamid Co., New York, N.Y. 668,751, canc. Cl. 44.
American Desk Mfg. Co., Temple, Tex. 781,410–11, pub. 9–22–64. Cl. 36.
American Hardware Corp., The: *See*—
Emhart Corp.
American Home Products Corp.: *See*—
Emdee Laboratories, Inc.
American Home Products Corp., New York, N.Y. 781,494, pub. 9–22–64. Cl. 46.
American Packaging Corp., The, Hudson, Ohio. 781,172, pub. 9–22–64. Cl. 2.
American Woolen Co., Boston, Mass., and New York, N.Y., to Deering Milliken, Inc., New York, N.Y. 499,749, ren. 12–8–64. Cl. 42.
Angel Soft Tissue Mills, Inc.: *See*—
Hudson Pulp & Paper Corp.
Angora Corp. of America, New York, N.Y. 781,473, pub. 9–22–64. Cl. 43.
Applicazioni Gomma Antivibranti "Saga" S.p.A., Societa, Milan, Italy. 668,559, canc. Cl. 12.
Archer-Daniels-Midland Co., Minneapolis, Minn. 781,205, pub. 9–22–64. Cl. 10.
Argenzio Brothers, Denver, Colo. 408,612, ren. 12–8–64. Cl. 28.
Arkell Safety Bag Co., New York, N.Y. 781,416, pub. 9–22–64. Cl. 37.
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Armstrong, William, to The Armstrong Daily, Inc., New York, N.Y. 189,757, ren. 12–8–64. Cl. 38.
Arnold, S. M., Inc., St. Louis, Mo. 781,376, pub. 9–22–64. Cl. 29.
Atlantic Cement Co., Inc., New York, N.Y. 781,212, pub. 9–22–64. Cl. 12.
Atlantic Recording Corp., New York, N.Y. 668,698, canc. Cl. 36.
Atlantic Refining Co., The, Philadelphia, Pa. 781,165, pub. 9–22–64. Cl. 1.
Atlantic-Commander Co.: *See*—
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Atlas Chemical Industries, Inc., Wilmington, Del. 781,189, pub. 9–22–64. Cl. 6.
Atlas Imperial Diesel Engine Co., to The White Motor Co., Cleveland, Ohio. 410,745, ren. 12–8–64. Cl. 23.
Atlas International Co., Chicago, Ill. 781,267, pub. 9–22–64. Cl. 19.
Atterbury, A. D., d.b.a. A. D. Atterbury Co., Yuba, Calif., to Green Giant Co., Le Sueur, Minn. 409,731, ren. 12–8–64. Cl. 46.
Atterbury, A. D., Co.: *See*—
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Automatic Radio Mfg. Co., Inc., Boston, Mass. 781,296, pub. 9–22–64. Cl. 21.
B & P Co., The: *See*—
Wright, Margaret J.
Baird-Atomic, Inc., Cambridge, Mass. 781,330, pub. 9–22–64. Cl. 26.
Ball, Geo. J., Inc., West Chicago, Ill. 781,170, pub. 9–22–64. Cl. 2.
Bancroft, Joseph, & Sons, Co., Wilmington, Del. 781,168, pub. 9–22–64. Multiple Class (Classes 1, 42, and 43)
Barnard & Lea Mfg. Co., Inc., Cedar Rapids, Iowa. 781,318, pub. 9–22–64. Cl. 23.
Baxter Laboratories, Inc., Morton Grove, Ill. 781,265, pub. 9–22–64. Cl. 18.
Behr-Manning Corp., Troy, N.Y., to United Merchants and Manufacturers, Inc., New York, N.Y. 411,658, ren. 12–8–64. Cl. 42.
Belenyessy, Laszlo I., Glendale, Ariz. 781,511, pub. 9–22–64. Cl. 50.
Beltraction Co., Chicago, Ill. 781,252, pub. 9–22–64. Cl. 16.
Bendiner & Schlesinger, Inc., New York, N.Y. 781,571. Cl. 51.
Bendix Corp., The, Detroit, Mich. 781,340, pub. 9–15–64. Cl. 26.
Benger Laboratories Ltd., Holmes Chapel, England. 668,598, canc. Cl. 18.
Berkemann, Heinrich Ad., Hamburg-Lokstedt, Germany. 781,445, pub. 9–22–64. Cl. 39.
Bertin & Cie, Societe, Paris, France. 668,654, canc. Cl. 23.
Besler Corp., Emeryville, Calif. 781,395, pub. 9–22–64. Cl. 34.
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Beverly Hall Corp., Quakertown, Pa. 781,434, pub. 9–22–64. Cl. 38.
Bilhuber, E., Inc., New York, N.Y., to Knoll Pharmaceutical Co., Orange, N.J. 194,898, ren. 12–8–64. Cl. 18.
Biological Research, Inc., Bridgeton, Mo. 781,339, pub. 9–22–64. Cl. 26.
Bliss, E. W., Co., Canton, Ohio, from The Gamewell Co., Davenport, Iowa. 781,293, pub. 9–22–64. Cl. 21.
Blood Bank Foundation, Nashville, Tenn. 668,596, canc. Cl. 18.
Bolgiano, F. W., & Co., Washington, D.C. 781,498, pub. 9–22–64. Cl. 46.
Bomar Distributors, Inc., New York, N.Y. 668,701, canc. Cl. 36.
Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 781,570. Cl. 51.
Bond, Charles, Co., Philadelphia, Pa. 191,200, ren. 12–8–64. Cl. 35.
Bourque Shoe Co. Inc., Raymond, N.H. 668,725, canc. Cl. 39.
Bradson Co., Inc., The, San Diego, Calif. 668,581, canc. Cl. 13.
Bremco Alfalfa Mills, Inc., New Bremen, Ohio. 781,558. Cl. 46.
Bridgestone Tire Co. Ltd., Chuo-ku, Tokyo, Japan. 781,268, pub. 9–22–64. Cl. 19.
Brinkmann, Martin, Aktiengesellschaft, Bremen, Germany. 781,253, pub. 9–22–64. Cl. 17.
Bristol Brass Corp., The, Bristol, Conn. 781,310, pub. 9–22–64. Cl. 23.
Brown, M. D., Co., The, Niles, Mich. 781,288, pub. 9–22–64. Cl. 21.
Burke, Carl J., d.b.a. Trans-Pacific Yacht Imports, Everett, Wash. 781,271, pub. 9–22–64. Cl. 19.
Business Advisory Services, Inc., Lexington, Ky. 781,423, pub. 9–22–64. Cl. 37.
C & F Machine Works, St. Paul, Minn. 781,270, pub. 9–22–64. Cl. 19.
Cabot Corp., Boston, Mass. 781,345, pub. 9–22–64. Cl. 26.
Calex Distributing, Inc., Compton, Calif. 668,640, canc. Cl. 23.
California Canners and Growers, d.b.a. Richmond-Chase Co., San Francisco, Calif. 781,499, pub. 9–22–64. Cl. 46.
Campbell, Harry T., Sons' Corp., Towson, Md. 781,226, pub. 9–22–64. Cl. 12.
Capeway Seafoods, Inc., New Bedford, Mass. 781,502, pub. 9–22–64. Cl. 46.
Capital Brass & Aluminum Foundry Co., Chicago, Ill. 781,246, pub. 9–22–64. Cl. 14.
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Carbo-Mix Dispensers, Inc., Los Angeles, Calif. 781,331, pub. 4–14–64. Cl. 26.
Cardinal Scale Mfg. Co., Webb City, Mo. 781,351, pub. 9–22–64. Cl. 26.
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Centri-Spray Corp., Livonia, Mich. 781,329, pub. 9–22–64. Cl. 26.
Champion Papers Inc., Knightsbridge, Ohio. 781,426, pub. 9–22–64. Cl. 37.
Channel Master Corp., Ellenville, N.Y. 781,275, pub. 9–22–64. Cl. 21.
Channel Master Corp., Ellenville, N.Y. 781,283, pub. 9–22–64. Cl. 21.
Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A., Milan, Italy. 781,475, pub. 9–22–64. Cl. 43.
Chemtest Products, Inc., Kansas City, Mo. 781,262, pub. 9–22–64. Cl. 18.

Cheng, Edwin W. A., d.b.a. Exotic Foods Co., San Francisco, Calif. 781,493, pub. 9–22–64. Cl. 46.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 781,325–6, pub. 9–22–64. Cl. 23.
City Stores Co., Philadelphia, Pa. 668,729, canc. Cl. 39.
Clairol Inc., New York, N.Y. 781,576. Cl. 52.
Clark, Mabe, Inc., Lexington, Ky. 781,482, pub. 9–22–64. Cl. 44.
Clarke-Heath Mfg. Co., Modesto, Calif. 781,483, pub. 9–22–64. Cl. 44.
Claussen's, Inc., Augusta, Ga. 781,508, pub. 9–22–64. Cl. 46.
Cleaver-Brooks Co., Milwaukee, Wis. 781,399, pub. 9–22–64. Cl. 34.
Cleveland Cap Screw Co., The, Cleveland, Ohio. 668,572, canc. Cl. 13.
Clinchfield Coal Corp., Dante, Va., to The Pittston Co., New York, N.Y. 190,883, ren. 12–8–64. Cl. 1.
Cohen, Harold J., d.b.a. Maxwell Corrugated Box Co., Charlestown, Mass. 781,171, pub. 9–22–64. Cl. 2.
Color Corp. of America, Tampa, Fla. 781,439, pub. 9–22–64. Cl. 38.
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Cougblan, G. N., Co., West Orange, N.J. 781,520, pub. 9–22–64. Cl. 52.
Creamette Co., The, Minneapolis, Minn. 190,536, ren. 12–8–64. Cl. 46.
Create-A-Check, Inc., Rockville, Md. 781,428, pub. 9–22–64. Cl. 37.
Croll-Reynolds Co., Inc., Westfield, N.J. 781,301, pub. 9–22–64. Cl. 23.
Crosbie's Pure Food Co. Ltd., Bradley, England. 668,769, canc. Cl. 46.
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Cryogenic Engineering Co., Denver, Colo. 781,327, pub. 9–22–64. Cl. 26.
Cryotronics, Inc., High Bridge, N.J. 781,365–70, pub. 9–22–64. Cl. 26.
Cumberland Tobacco Works, Inc., Nashville, Tenn. 190,070, ren. 12–8–64. Cl. 17.
Curran, Edward J., New York, N.Y. 668,618, canc. Cl. 19.
Curtiss-Wright Corp., Cleveland, Ohio. 781,319, pub. 9–22–64. Cl. 23.
Cushman, Wilhela, d.b.a. Wilia Products Unltd., New York, N.Y. 781,549. Cl. 39.
Dallas Iron & Wire Works, Inc., Dallas, Tex. 668,558, canc. Cl. 12.
Dan River Mills, Inc., Danville, Va. 781,450, pub. 9–22–64. Cl. 39.
Danavox North America, Inc., Wayzata, Minn. 781,438, pub. 9–22–64. Cl. 38.
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Darlington Veneer Co., Inc., Darlington, S.C. 409,231, ren. 12–8–64. Cl. 12.
David, Marvin, and Robert David, Brooklyn, N.Y. 781,469, pub. 9–22–64. Cl. 42.
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Day-Baldwin, Inc., Irvington, N.J. 781,538. Cl. 18.
Dearborn Glass Co., Bedford Park, Ill. 668,685, canc. Cl. 33.
Deering Milliken, Inc.: *See*—
American Woolen Co.
Deering Milliken, Inc., New York, N.Y. 781,471, pub. 9–22–64. Cl. 42.
De La Rama Steamship Co., Inc., The, Manila, Republic of the Philippines. 668,791, canc. Cl. 105.
De Laval Separator Co., The, Poughkeepsie, N.Y. 781,312, pub. 9–22–64. Cl. 23.
Demarest Machines, Inc., Port Washington, N.Y. 781,320, pub. 9–22–64. Cl. 23.
Dere, John Rodolphe (Jean), Washington, D.C. 781,418, pub. 9–22–64. Cl. 37.
Dickinson, Becton, and Co., Rutherford, N.J. 781,477, pub. 9–22–64. Cl. 44.
Dickerson, Walker T., Co., The: *See*—
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Diversey Corp., The, Chicago, Ill. 412,710, ren. 12–8–64. Cl. 52.
Dixie Bedding Co., Inc., Greensboro, N.C. 781,383, pub. 9–22–64. Cl. 32.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 781,427, pub. 9–22–64. Cl. 37.
Dole Valve Co., The, Morton Grove, Ill. 781,338, pub. 9–22–64. Cl. 26.
Dore, Alphonse M., St. Petersburg, Fla. 412,631, ren. 12–8–64. Cl. 51.
Dormalux Sales Corp., Buffalo, N.Y. 781,388, pub. 9–22–64. Cl. 32.
Dothan Oil Mill Co., Dothan, Ala. 781,488, pub. 1–29–63. Cl. 46.
Dow Chemical Co., The, Midland, Mich. 781,539. Cl. 18.
Drexel Enterprises, Inc., Drexel, N.C. 781,390, pub. 9–22–64. Cl. 32.
Drug Fair-Community Drug Co., Inc., Alexandria, Va. 781,524, pub. 9–22–64. Cl. 101.
Dubonnet Wine Corp., New York, N.Y. 411,845, ren. 12–8–64. Cl. 47.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 781,240, pub. 9–22–64. Cl. 13.
Dutchess Underwear Corp., New York, N.Y. 781,548. Cl. 39.
East Asiatic Co., Inc., The, d.b.a. Danfoods Co., Los Angeles, Calif. 781,560. Cl. 46.
East Coast Soap Corp., Brooklyn, N.Y. 781,532. Cl. 6.
Eclipse Fuel Engineering Co., Rockford, Ill. 781,396, pub. 9–22–64. Cl. 34.
Eddy-Rucker-Nickels Co., The, Cambridge, Mass. 781,525, pub. 9–22–64. Cl. 101.
Edwards Engineering Corp., Pompton Plains, N.J. 781,378, pub. 9–22–64. Cl. 31.
Eisner, Herman S., d.b.a. Herman S. Eisner Sales, Boston, Mass. 781,460, pub. 9–22–64. Cl. 39.
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Emerson Electric Co., from The Emerson Electric Mfg. Co., St. Louis, Mo. 781,292, pub. 9–22–64. Cl. 21.
Embart Corp., Hartford, Conn., from The American Hardware Corp., New Britain, Conn. 781,381, pub. 9–22–64. Cl. 31.
Emhart Corp., Hartford, Conn., from The Hill Corp., Trenton, N.J. 781,380, pub. 9–22–64. Multiple Class (Classes 31 and 32).
Engler Instrument Co., Jersey City, N.J. 781,346, pub. 9–22–64. Cl. 26.
Era Meter Co., Chicago, Ill. 668,659, canc. Cl. 23.
Erie City Mfg. Co., Erie, Pa. 781,478, pub. 9–22–64. Cl. 44.
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Estes Engineering Co.: *See*—
Estes, Stanley E.
Estes, Stanley E., d.b.a. Estes Engineering Co., Gardena, Calif. 781,290, pub. 9–22–64. Cl. 21.
Evening Star Newspaper Co., The, Washington, D.C. 668,711, canc. Cl. 38.
Exotic Foods Co.: *See*—
Cheng, Edwin W. A.
FMC Corp., San Jose, Calif. 781,300, pub. 9–22–64. Cl. 23.
Faber, Eberhard, Inc.: *See*—
Faber, Eberhard, Pencil Co.
Faber, Eberhard, Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 195,079, ren. 12–8–64. Cl. 37.
Fabri-Tek Inc., Minneapolis, Minn. 781,336, pub. 9–22–64. Cl. 26.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 781,207, pub. 9–22–64. Cl. 11.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 781,333, pub. 9–22–64. Cl. 26.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 781,342, pub. 9–22–64. Cl. 26.
Fairmont Railway Motors, Inc., Fairmont, Minn. 781,303, pub. 9–22–64. Cl. 23.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. 781,186, pub. 9–22–64. Cl. 6.
Faultless Starch Co., Kansas City, Mo. 781,188, pub. 9–22–64. Cl. 6.
Fearn Soya Foods, Melrose Park, Ill. 781,557. Cl. 46.
Federal Cartridge Corp., Minneapolis, Minn. 781,203, pub. 9–22–64. Cl. 9.
Federal-Mogul-Bower Bearings, Inc., Detroit, Mich. 781,408, pub. 9–22–64. Cl. 35.
Fentron Industries, Inc., Seattle, Wash. 781,217, pub. 9–22–64. Cl. 12.
Fine Products Corp.: *See*—
Nunnally Co., The.
Firestone Tire & Rubber Co., The, Akron, Ohio. 781,403, pub. 9–22–64. Cl. 35.
Fischer & Porter Co., Warminster, Pa. 781,349, pub. 9–22–64. Cl. 26.
Fisher Radio Corp., Long Island City, N.Y. 781,278, pub. 9–22–64. Cl. 21.
Flagstaff Liquor Co., Perth Amboy, N.J. 781,509, pub. 6–23–64. Cl. 49.
Flexible Tubing Corp., The, Guilford, Conn. 781,347–8, pub. 9–22–64. Cl. 26.
Forest City Products, Inc., Cleveland, Ohio. 409,850, ren. 12–8–64. Cl. 18.
GNR Corp., Palmer, Mass. 781,517, pub. 9–22–64. Cl. 52.
Gallery Passport Ltd., New York, N.Y. 781,528, pub. 9–22–64. Cl. 105.
Gamewell Co., The: *See*—
Bliss, E. W., Co.
Garcia y Vega, Inc., New York, N.Y. 781,255, pub. 9–22–64 Cl. 17.
Garfinckel, Julius, & Co., Inc., Washington, D.C. 781,452, pub. 9–22–64. Cl. 39.
Garner, T. W., Food Co., Winston-Salem, N.C. 781,490, pub. 9–22–64. Cl. 46.
Garvey, Sociedad Anonima, Bodegas de San Patricio-Jerez de la Frontera, Jerez de la Frontera, Spain. 781,563. Cl. 47.
General Aniline & Film Corp., New York, N.Y. 668,539, canc. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 781,356, pub. 9–22–64. Cl. 26.
General Appliance Mfg. Co., Omaha, Nebr. 781,309, pub. 9–22–64. Cl. 23.
Gentex Corp., New York, N.Y. 781,299, pub. 9–22–64. Cl. 22.
Gibraltar Corrugated Paper Co., Inc., Jersey City, N.J. 668,707, canc. Cl. 37.
Giraldi, Orlando, d.b.a. O-G Optical, Chicago, Ill. 781,363, pub. 9–22–64. Cl. 26.
Glamorene, Inc., Clifton, N.J. 781,391, pub. 9–22–64. Cl. 32.

Glaser's Wholesale Drug Co., Inc., Dallas, Tex. 668,776–7, canc. Cl. 48.
Gleason Corp., Milwaukee, Wis. 781,384, pub. 9–22–64. Cl. 32.
Golden, Max, & Son: *See*—
Golden, Sol.
Golden, Sol, d.b.a. Max Golden & Son, Philadelphia, Pa. 781,456, pub. 9–22–64. Cl. 39.
Gold-Master Corp., New York, N.Y. 781,375, pub. 9–22–64. Cl. 28.
Golf Digest, Inc., South Norwalk, Conn. 781,433, pub. 9–22–64. Cl. 38.
Goodman, A., & Sons, Inc., Long Island City, N.Y. 781,500, pub. 9–22–64. Cl. 46.
Goodman, H., & Sons, Inc., New York, N.Y. 781,457, pub. 9–22–64. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 781,406, pub. 9–22–64. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 781,197, pub. 9–22–64. Cl. 6.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 781,405, pub. 9–22–64. Cl. 35.
Gorham Bronze, Inc., from Rabun Bronze Foundry, Inc., Los Angeles, Calif. 781,510, pub. 9–22–64. Cl. 50.
Granite Board, Inc., Goffstown, N.H. 668,561, canc. Cl. 12.
Great Lakes Sales Co.: *See*—
Murman, Charles E.
Green Bros. Mfg. Co., Dallas, Tex. 781,555. Cl. 39.
Green Giant Co.: *See*—
Atterbury, A. D.
Greenberg, John, d.b.a. Tree Towns Mfg. Co., Gary, Ind. 781,204, pub. 9–22–64. Cl. 10.
Griggs Equipment, Inc., Belton, Tex. 668,681, canc. Cl. 32.
Griswold Mfg. Co.: *See*—
Textron, Inc.
Grogan, M. E., Co., Chicago, Ill. 781,215, pub. 9–22–64 Cl. 12.
Gross, Morton B., d.b.a. Theurgene Chemical Co., Minneapolis, Minn. 781,263, pub. 9–22–64. Cl. 18.
Gruber Industries, Inc., Royersford, Pa. 668,684, canc. Cl. 32.
Gulton Industries, Inc., Metuchen, N.J. 781,202, pub. 9–22–64. Multiple Class (Classes 8, 21, 26, and 34).
Habitat, Inc., New York, N.Y. 781,169, pub. 9–22–64. Cl. 2.
Hadco Aluminum Products Co., Littlestown, Pa. 781,397, pub. 9–22–64. Cl. 34.
Hamilton Watch Co., Lancaster, Pa. 781,244, pub. 9–22–64. Cl. 14.
Hannes Marker, Garmisch-Partenkirchen, Germany. 781,298, pub. 9–22–64. Cl. 22.
Hansel Bros. Mfrs., Portland, Oreg. 781,377, pub. 9–22–64. Cl. 29.
Hartmann Luggage Co., Lebanon, Tenn. 781,176, pub. 9–22–64. Cl. 3.
Hasenfeld Bros. Inc., Central Falls, R.I. 781,540. Cl. 22.
Hickey Leather Co., Grafton, Mass. 409,147, ren. 12–8–64. Cl. 1.
Hill Corp., The: *See*—
Emhart Corp.
Hill International Display Corp., Grand Rapids, Mich. 781,512, pub. 9–22–64. Cl. 50.
Hoffmann-La Roche Inc., Nutley, N.J. 781,260, pub. 9–22–64. Cl. 18.
Hohner, M., Inc., Hicksville, N.Y. 191,298, ren. 12–8–64. Cl. 36.
Holes, W. W., Mfg. Co., St. Cloud, Minn. 781,566. Cl. 50.
Hollywood Shoe Polish Inc., Richmond Hill, N.Y. 781,179, pub. 9–22–64. Cl. 4.
Hospital TV Rentals, Inc., Denver, Colo. 668,793, canc. Cl. 107.
Hough Mfg. Corp., Janesville, Wis. 781,227, pub. 9–22–64. Cl. 12.
House of Westmore, Inc., New York, N.Y. 781,572–5. Cl. 51.
Hudson Pulp & Paper Corp., from Angel Soft Tissue Mills, Inc., New York, N.Y. 781,414, pub. 9–22–64. Cl. 37.
Hudson Vitamin Products, Inc., New York, N.Y. 781,257, pub. 9–22–64. Cl. 18.
Hunter, H. B., Co., Inc., Norfolk, Va. 668,813, canc. Cl. 50.
Hurst-Campbell, Inc., Glenside, Pa. 781,323, pub. 9–22–64. Cl. 23.
Hycon Mfg. Co., Monrovia, Calif. 781,334–5, pub. 9–22–64. Cl. 26.
Hy-Draft, Inc., San Jose, Calif. 781,315, pub. 9–22–64. Cl. 23.
Hysan Products Co., Chicago, Ill. 781,178, pub. 12–11–62. Cl. 4.
Independent Nail Corp., The, Bridgewater, Mass. 781,237, pub. 9–22–64. Cl. 13.
International Business Machines Corp., New York, N.Y. 781,412, pub. 9–22–64. Cl. 36.
International Staple & Machine Co., Butler, Pa. 781,230, pub. 9–22–64. Cl. 13.
International Textbook Co.: *See*—
Technical Supply Co.
International Swimming Pool Corp., Roslyn Heights, N.Y. 781,214, pub. 9–22–64. Cl. 12.
Invenex Pharmaceuticals, San Francisco, Calif. 781,261, pub. 9–22–64. Cl. 18.
Istag A. G., Subr, Aargau, Switzerland. 781,401–2, pub. 9–22–64. Cl. 35.
Jacobson, F., & Sons, Inc., New York, N.Y. 781,462, pub. 9–22–64. Cl. 39.
Jectron Co., The, Toledo, Ohio. 781,484, pub. 9–22–64. Cl. 44.
Joal Mfg. Co., Inc., Chicago, Ill. 668,674, canc. Cl. 82.
Jones Knitting Corp., New York, N.Y. 781,449, pub. 9–22–64. Cl. 39.
K & W Products, Inc., Whittier, Calif. 781,531. Cl. 5.
Kahn-Lucas-Lancaster, Inc., New York, N.Y. 781,451, pub. 9–22–64. Cl. 39.
Kaiser Aluminum & Chemical Corp.: *See*—
Permanente Metals Corp., The.
Kampgrounds of America, Inc., Billings, Mont. 781,522, pub. 9–22–64. Cl. 100.
Keesen, Raymond, Denver, Colo. 781,239, pub. 9–22–64. Cl. 13.
Kelly-Springfield Tire Co., The, Cumberland, Md. 781,407, pub. 9–22–64. Cl. 35.
Kemp, M. Beelman, Sr., d.b.a. Standard Safety Products Co., Saginaw, Mich. 781,324, pub. 9–22–64. Cl. 23.
Kendall Co., The, Boston, Mass. 411,967, ren. 12–8–64. Cl. 44.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 781,196, pub. 9–22–64. Cl. 6.
Kim Hotstart Mfg. Co., Spokane, Wash. 781,286, pub. 9–22–64. Cl. 21.
Kingsway Products Co.: *See*—
Rexall Drug and Chemical Co.
Kleer-Vu Industries, Inc., New York, N.Y. 781,174, pub. 9–22–64. Multiple Class (Classes 2 and 3).
Klemtner, Paul, & Co., Inc., Newark, N.J. 668,718, canc. Cl. 38.
Knoll Pharmaceutical Co.: *See*—
Bilhuber, E., Inc.
Koppers Co., Inc., Pittsburgh, Pa. 781,225, pub. 9–22–64. Cl. 12.
Kranich & Bach, New York, N.Y. 668,700, canc. Cl. 36.
Lane Marketing Inc., New York, N.Y. 781,565. Cl. 50.
Lanston Industries, Inc., Philadelphia, Pa. 781,357, pub. 9–22–64. Cl. 26.
La Telemecanique Electrique, Nanterre, Seine, France. 781,332, pub. 9–22–64. Cl. 26.
Laurens Corp., Middletown, Del. 781,561. Cl. 46.
La-Z-Boy Chair Co., Monroe, Mich. 781,387, pub. 9–22–64. Cl. 32.
Lebow Associates, Inc., Oak Park, Mich. 781,328, pub. 9–22–64. Cl. 26.
Lee, Frank H., Co., The, Danbury, Conn., to John B. Stetson Co., Philadelphia, Pa. 409,649, ren. 12–8–64. Cl. 39.
Leslie Salt Co., from Spice Islands Co., San Francisco, Calif. 781,485, pub. 9–22–64. Cl. 46.
Libby, McNeill & Libby, Chicago, Ill. 186,823, ren. 12–8–64. Cl. 46.
Liberty Mfg. Co., Fort Worth, Tex. 781,229, pub. 9–22–64. Cl. 13.
Liggett & Myers Tobacco Co., New York, N.Y. 194,263, ren. 12–8–64. Cl. 17.
Lissak & Co., Inc., New Bedford, Mass. 781,465, pub. 9–22–64. Cl. 39.
Lockwood Grader Corp., Gering, Nebr. 781,302, pub. 9–22–64. Cl. 23.
Logansport Machine Co., Inc., Logansport, Ind. 781,306, pub. 9–22–64. Cl. 23.
Lucky Bite, Inc., Spokane, Wash. 781,523, pub. 9–22–64. Cl. 101.
Luttrell, Ravon D., d.b.a. Allied Rubber Plate Engravers, Chicago, Ill. 781,564. Cl. 50.
Magnaflux Corp., Chicago, Ill. 781,284, pub. 9–22–64. Cl. 21.
Malaker Laboratories, Inc., High Bridge, N.J. 781,316–17, pub. 9–22–64. Cl. 23.
Manaster, Leon, Co., The, San Francisco, Calif. 781,495, pub. 9–22–64. Cl. 46.
Mangels, Arthur C., Inc., Philadelphia, Pa. 781,251, pub. 9–22–64. Cl. 16.
Maple Lawn Farms Inc., New Park, Pa. 668,772, canc. Cl. 46.
Marken Plastic Corp., Los Angeles, Calif. 781,537. Cl. 12.
Martin, Howard, Knitting Mills, Inc., Brooklyn, N.Y. 781,458, pub. 9–22–64. Cl. 39.
Mason Marking Systems Corp., Norfolk, Va. 781,208, pub. 9–22–64. Cl. 11.
Mathsen, Bernard E. "Bull," d.b.a. Bull Mathsen's Pin Puller Co., Seattle, Wash. 668,574, canc. Cl. 13.
Mathsen's, Bull, Pin Puller Co.: *See*—
Mathsen, Bernard E. "Bull."
Maxwell Corrugated Box Co.: *See*—
Cohen, Harold J.
May Hosiery Mills, Nashville, Tenn. 781,550. Cl. 39.
Mayer, Oscar, & Co., Inc., Chicago, Ill. 668,774, canc. Cl. 46.
McCrory Corp., New York, N.Y. 781,175, pub. 9–22–64. Multiple Class (Classes 3 and 39).
McNaught Syndicate, Inc., The, New York, N.Y. 781,442, pub. 9–22–64. Cl. 38.
Meat Industry Suppliers, Inc., Northfield, Ill. 781,556. Cl. 46.
Mell Mfg. Co., Chicago, Ill. 781,282, pub. 9–22–64. Cl. 21.
Meredith Publishing Co., Des Moines, Iowa. 781,435, pub. 9–22–64. Cl. 38.
Merrill's Turf Supplies Co. Ltd., Islington, Ontario, Canada. 781,481, pub. 9–22–64. Cl. 44.
Metal-Matic, Inc., Minneapolis, Minn. 781,238, pub. 9–22–64. Cl. 13.
Meyers, Harold A., Glendale, Calif. 781,355, pub. 9–22–64. Cl. 26.
Midland-Ross Corp., Pittsburgh, Pa. 781,280, pub. 9–22–64. Cl. 21.
Miller, Gordon B., & Co., Cincinnati, Ohio. 668,616, canc. Cl. 19.
Miller, Herman, Furniture Co., Zeeland, Mich. 668,682, canc. Cl. 32.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 409,726, ren. 12–8–64. Cl. 44.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 781,436, pub. 9–22–64. Cl. 38.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 781,163, pub. 9–22–64. Cl. 1.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 781,184, pub. 9–22–64. Cl. 6.
Model Bean Co.: *See*—
Model Mill Co., Inc.

Model Mill Co., Inc., d.b.a. Model Bean Co., Jackson, Tenn. 781,503, pub. 9–22–64. Cl. 46.
Monaco Optical Corp., Flushing, N.Y. 781,353, pub. 9–22–64. Cl. 26.
Monsanto Chemical Co.: *See*—
Monsanto Co.
Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 781,173, pub. 9–22–64. Cl. 2.
Mo och Domsjo Aktiebolag, Ornskoldsvik, Sweden. 781,167, pub. 9–22–64. Cl. 1.
Montecrispi Cigar Co., Inc., Miami Beach, Fla. 781,254, pub. 9–22–64. Cl. 17.
Mosler Safe Co., The, Hamilton, Ohio. 668,663, canc. Cl. 25.
Mounties, Inc., Boston, Mass. 410,371, ren. 12–8–64. Cl. 37.
Mowll, Garforth, d.b.a. Reservate Suncoast Showcase, Palm Harbor, Fla. 781,432, pub. 9–22–64. Cl. 38.
Mullen Form Corp., Phoenix, Ariz. 781,228, pub. 9–22–64. Cl. 13.
Mullins Mfg. Corp., Salem, Ohio. 781,294, pub. 9–22–64. Cl. 21.
Murfresh Inc., New York, N.Y. 781,454, pub. 9–22–64. Cl. 39.
Murman, Charles E., d.b.a. Great Lakes Sales Co., Cleveland, Ohio. 781,526, pub. 9–22–64. Cl. 103.
Murphy, G. C., Co., McKeesport, Pa. 781,177, pub. 9–22–64. Cl. 3.
Myers, P. R., & Co., Mamaroneck, N.Y. 668,639, canc. Cl. 23.
Myers, Royse, d.b.a. Armco, Racine, Wis. 781,518, pub. 9–22–64. Cl. 52.
NGK Insulators, Ltd., Mizuho-ku, Nagoya City, Japan. 781,277, pub. 9–22–64. Cl. 21.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 781,409, pub. 9–22–64. Cl. 36.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 781,413, pub. 9–22–64. Cl. 36.
Nalco Chemical Co., Chicago, Ill. 781,224, pub. 9–22–64. Cl. 12.
Napro, N.V., Haarlem, Netherlands. 668,597, canc. Cl. 18.
National Blank Book Co., Holyoke, Mass. 781,424–5, pub. 9–22–64. Cl. 37.
National Institute of Locker and Freezer Provisioners, Elizabethtown, Pa. 781,521, pub. 9–22–64. Cl. 100.
National Oil Products Co., Harrison, to White Laboratories, Inc., Kenilworth, N.J. 409,811, ren. 12–8–64. Cl. 51.
National Shirt Shop: *See*—
National Shirt Shops Inc.
National Shirt Shops Inc., from McCrory Corp., d.b.a. National Shirt Shop, New York, N.Y. 781,444, pub. 9–22–64. Cl. 39.
National Utility Products Co., Cleveland, Ohio. 781,404, pub. 9–22–64. Cl. 35.
Nelson-Boyer Co., Glendale, Calif. 781,256, pub. 9–3–63. Cl. 18.
Neptune Meter Co., New York, N.Y. 781,354, pub. 9–22–64. Cl. 26.
Nesle Mfg. Corp., Doylestown, Pa. 781,216, pub. 9–22–64. Cl. 12.
New River Co., The: *See*—
White Oak Coal Co.
Nomar Coatings, Inc., Great Neck, N.Y. 781,250, pub. 9–22–64. Cl. 16.
Noramco, Inc., Queens Village, N.Y. 781,496, pub. 9–22–64. Cl. 46.
Norcross, Inc., New York, N.Y. 781,200–1, pub. 9–22–64. Cl. 7.
Norcross, Inc., New York, N.Y. 781,441, pub. 9–22–64. Cl. 38.
Norden Laboratories, Inc., Lincoln, Nebr. 781,258–9, pub. 2–18–64. Cl. 18.
North Electric Co., Galion, Ohio. 781,297, pub. 9–22–64. Cl. 21.
Northern Yarn Mills, Newark, N.J. 781,476, pub. 9–22–64. Cl. 43.
Nunnally Co., The, Atlanta, Ga., to Fine Products Corp., Augusta, Ga. 195,406, ren. 12–8–64. Cl. 46.
Nu Products Co., Inc., Brooklyn, N.Y. 668,756, canc. Cl. 46.
O-G Optical: *See*—
Giraldi, Orlando.
O.K. Rubber Welders, Inc., Littleton, Colo. 781,400, pub. 9–22–64. Cl. 35.
Oak Ridge Technical Enterprises Corp., Oak Ridge, Tenn. 781,337, pub. 9–22–64. Cl. 26.
Olcott, Geo., Co.: *See*—
Olcott, George H.
Olcott, George H., d.b.a. Geo. Olcott Co., Allegan, Mich. 781,358, pub. 9–22–64. Cl. 26.
Organon Inc., West Orange, N.J. 772,703, canc. Cl. 18.
Ouilliber Coffee Co., Inc., New Orleans, La. 668,754, canc. Cl. 46.
Pacific Universal Products Corp., Pasadena, Calif. 781,195, pub. 9–22–64. Cl. 6.
Paddock of Texas, Inc., Dallas, Tex. 781,218, pub. 9–22–64. Cl. 12.
Palace Metal Products, Inc., Brooklyn, N.Y. 668,683, canc. Cl. 32.
Palheta Cafes Finos S.A., Rio de Janeiro, Guanabara, Brazil. 781,487, pub. 9–22–64. Cl. 46.
Palm Beach Co., Portland, Maine. 781,459, pub. 9–22–64. Cl. 39.
Palm Beach Co., Portland, Maine. 781,551–3. Cl. 39.
Palmland Fashions Inc., Miami, Fla. 668,724, canc. Cl. 39.
Paper Service Co., Inc., Kansas City, Kans. 781,421, pub. 9–22–64. Cl. 37.
Paramount Industries, Inc., Flint, Mich. 781,352, pub. 9–22–64. Cl. 26.
Parfumerie L. T. Piver S.A., Paris, France. 781,515, pub. 9–22–64. Cl. 51.
Parman, Davey, & Co., Ltd., Colchester, Essex, England. 781,304–5, pub. 9–22–64. Cl. 23.
Pellet Feeds, Inc., Highland Park, Ill. 781,559. Cl. 46.
Penn Engineering and Mfg. Corp., Doylestown, Pa. 781,236, pub. 9–22–64. Cl. 13.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co., The.
Pennsylvania Salt Mfg. Co., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 409,840, ren. 12–8–64. Cl. 52.
Peress, Sassoon, d.b.a. Atlantic-Commander Co., New York, N.Y. 781,507, pub. 9–22–64. Cl. 46.
Perfect Brassiere Co., Inc., Jersey City, N.J. 781,447, pub. 1–28–64. Cl. 39.
Permanente Metals Corp., The, to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 409,463, ren. 12–8–64. Cl. 1.
Personal Contour Shoe Co., Haverhill, Mass. 781,446, pub. 9–22–64. Cl. 39.
Peter Pan Foundations, Inc., New York, N.Y. 781,453, pub. 5–26–64. Cl. 39.
Pfizer, Chas., & Co., Inc., New York, N.Y. 781,492, pub. 9–22–64. Cl. 46.
Physical Sciences Corp., Arcadia, Calif. 770,964, canc. Cl. 1.
Physical Sciences Corp., Los Angeles, Calif., from Physical Sciences Corp., Pasadena, Calif. 781,274, pub. 4–9–63. Cl. 21.
Physicians and Hospitals Supply Co., Inc., d.b.a. Ulmer Pharmacal Co., Minneapolis, Minn. 412,364, ren. 12–8–64. Cl. 18.
Pines International Chemical Co., Chicago, Ill. 781,181, pub. 9–22–64. Cl. 4.
Pioneer Chemical Corp., Fort Collins, Colo. 781,194, pub. 9–22–64. Cl. 6.
Pitt-Consol Chemical Co., Newark, N.J. 781,198, pub. 9–22–64. Cl. 6.
Pittston Co., The: *See*—
Clinchfield Coal Corp.
Plymouth Wholesale Corp., New York, N.Y. 781,415, pub. 3–17–64. Cl. 37.
Polymers, Inc., Middlebury, Vt. 781,529–30. Cl. 1.
Polynesian Enterprises, Inc., Columbus, Ohio. 781,513, pub. 9–22–64. Cl. 50.
Port Huron Paper Co., from Port Huron Sulphite & Paper Co., Port Huron, Mich. 781,210, pub. 9–22–64. Cl. 11.
Port Huron Sulphite & Paper Co.: *See*—
Port Huron Paper Co.
Precision Instrument Co., Palo Alto, Calif. 781,287, pub. 9–22–64. Cl. 21.
Products Plus, Inc., Brooklyn, N.Y. 668,565, canc. Cl. 12.
Progressive Farmer Co., The, Birmingham, Ala. 781,545. Cl. 38.
Punch Products Corp., Buffalo, N.Y. 781,371, pub. 9–22–64 Cl. 26.
Puritan Cordage Mills, Louisville, Ky. 781,199, pub. 9–22–64. Cl. 7.
Quaker Oats Co., The, Chicago, Ill. 781,506, pub. 9–22–64. Cl. 46.
Rabun Bronze Foundry, Inc.: *See*—
Gorham Bronze, Inc.
Rado-Matic Corp., The, Cleveland, Ohio. 668,630, canc. Cl. 21.
Ralston Purina Co., St. Louis, Mo. 781,501, pub. 9–22–64 Cl. 46.
Red Barn Chemicals, Inc., Shreveport, La. 781,534. Cl. 10.
Red Star Yeast and Products Co., Milwaukee, Wis. 668,764, canc. Cl. 46.
Regan Bakeries, Inc., Minneapolis, Minn. 781,562. Cl. 46.
Regie National des Usines Renault, Billancourt, Seine, France. 668,617, canc. Cl. 19.
Reliance Dental Mfg. Co., Chicago, Ill. 408,019, ren. 12–8–64. Cl. 44.
Republic Mfg. Co., Cleveland, Ohio. 781,232, pub. 9–22–64. Cl. 13.
Reservate Suncoast Showcase: *See*—
Mowll, Garforth.
Rev Records, Inc., Phoenix, Ariz. 668,696, canc. Cl. 36.
Rexall Drug and Chemical Co., d.b.a. Kingsway Products Co., Los Angeles, Calif. 781,514, pub. 9–22–64. Cl. 50.
Rexall Drug and Chemical Co., Los Angeles, Calif. 781,567. Multiple Class (Classes 51 and 52).
Reynolds, E. W., Co., Los Angeles, Calif. 668,668, canc. Cl. 28.
Rhovyl, Societe, Paris, France. 781,448, pub. 9–22–64. Cl. 39.
Rhovyl, Societe, Paris, France. 781,470, pub. 9–22–64. Cl. 42.
Rhovyl, Societe, Paris, France. 781,474, pub. 9–22–64. Cl. 43.
Richmond-Chase Co.: *See*—
California Canners and Growers.
Riley Shoe Mfg. Co., The, to The Walker T. Dickerson Co., Columbus, Ohio. 195,446, ren. 12–8–64. Cl. 39.
Ringholz, Robert C., San Bernardino, Calif. 781,364, pub. 9–22–64. Cl. 26.
Robbins Floor Products, Inc., Tuscumbia, Ala. 668,557, canc. Cl. 12.
Rolaundry, Inc., Cleveland, Ohio. 781,308, pub. 9–22–64. Cl. 23.
Rolla, Philip M., Turin, Italy. 781,269, pub. 9–22–64. Cl. 19.
Roman Products, Lakewood, Colo. 781,234, pub. 9–22–64. Cl. 13.
Root Mfg. Co., Inc., Baxter Springs, Kans. 668,645, canc. Cl. 23.
Rothschild, S., & Co., Inc., Philadelphia, Pa. 781,443, pub. 9–22–64. Cl. 39.
Rubbermaid Inc., Wooster, Ohio. 781,527, pub. 9–22–64. Cl. 103.
Rudin & Roth, Inc., New York, N.Y. 781,554. Cl. 39.
Rummonds Bros. Ranch, Thermal, Calif. 781,504, pub. 9–22–64. Cl. 46.
Russell-Newman Mfg. Co., to Russell-Newman Mfg. Co., Inc., Denton, Tex. 408,705, ren. 12–8–64. Cl. 39.
Russell-Newman Mfg. Co., Inc.: *See*—
Russell-Newman Mfg. Co.
St. John & Co., Chicago, Ill. 668,798, canc. Cl. 19.

Salsburg's, Helen K., Candies, Wilkes-Barre, Pa. 668,768, canc. Cl. 46.
Sandvikens Jernverks Aktiebolag, Sanviken, Sweden. 781,242, pub. 9–22–64. Cl. 14.
Satellite Ball Co.: *See*—
Shesler, Laurence F.
Saving Fund Society of Germantown and its Vicinity, Philadelphia, Pa. 781,577. Cl. 102.
Sawbrook Steel Castings Co., The, Cincinnati, Ohio. 781,243, pub. 9–22–64. Cl. 14.
Scanpublic, Copenhagen, Denmark. 781,546. Cl. 38.
Schaffner, Hart, & Marx, Chicago, Ill. 781,464, pub. 9–22–64. Cl. 39.
Schill & Seilacher Chemische Fabrik, Hamburg, Germany. 781,187, pub. 9–22–64. Cl. 6.
Scott Laboratories: *See*—
Scott Laboratories, Inc.
Scott Laboratories, Inc., from T. J. Scott, d.b.a. Scott Laboratories, Fiskeville, R.I. 781,190, pub. 9–22–64. Cl. 6.
Scott, Thomas J.: *See*—
Scott Laboratories, Inc.
Schwartz, David, New York, N.Y. 781,455, pub. 9–22–64. Cl. 39.
Schy, Lowell J., Co., d.b.a. Lowell J. Schy Co., Fresno, Calif. 781,505, pub. 9–22–64. Cl. 46.
Seaview Industries, Inc., Miami, Fla. 668,554, canc. Cl. 12.
Seco, Inc., Goodlettsville, Tenn. 781,322, pub. 9–22–64. Cl. 23.
Seita Werke G.m.b.H., Bad Kreuznach, Germany. 781,541. Cl. 23.
Senco Products, Inc., Cincinnati, Ohio. 781,233, pub. 9–22–64. Cl. 13.
Senefelder Co., Inc., The, Woodside, N.Y. 668,535, canc. Cl. 6.
Servo Contact, Paris, France. 781,285, pub. 9–22–64. Cl. 21.
Seymour Mittelmark Organization, Inc., The, New York, N.Y. 781,543. Cl. 38.
Shelburne Shirt Co., Inc., New York, N.Y. 781,466, pub. 9–22–64. Cl. 39.
Shesler, Laurence F., d.b.a. Satellite Ball Co., Yonkers, N.Y. 668,578, canc. Cl. 13.
Shur-Fit Co., Berkeley, Calif. 673,145, canc. Cl. 22.
Sievers, William E., Long Beach, Calif. 668,532–3, canc. Cl. 6.
Simple Signman Systems, Inc., Jacksonville, Fla. 781,209, pub. 9–22–64. Cl. 11.
Simple Signman Systems, Inc., Jacksonville, Fla. 781,241, pub. 9–22–64. Cl. 13.
Simple Signman Systems, Inc., Jacksonville, Fla. 781,429, pub. 9–22–64. Cl. 37.
Simpson Timber Co., Seattle, Wash. 781,535–6. Cl. 12.
Sinclair Refining Co., New York, N.Y. 781,248, pub. 9–22–64. Cl. 15.
Slim-Zelle Salons Une, Inc., Pittsburgh, Pa. 668,786–7, canc. Cl. 100.
Society for Visual Education, Inc., Chicago, Ill. 781,544. Cl. 38.
Sonobond Corp., West Chester, Pa. 781,392, pub. 9–22–64. Cl. 34.
South Bend Tackle Co., Inc., South Bend, Ind. 668,635, canc. Cl. 22.
Southwest Grease & Oil Co., Inc., Wichita, Kans. 781,247, pub. 9–22–64. Cl. 15.
Sovereign Watch Co., Inc., New York, N.Y. 781,374, pub. 9–22–64. Cl. 27.
Spectra Biologicals, Inc., East Brunswick, N.J. 781,183, pub. 7–30–63. Cl. 6.
Spice Islands Co.: *See*—
Leslie Salt Co.
Spin-A-Win Sales, Chicago, Ill. 781,344, pub. 9–22–64. Cl. 26.
Spiratone, Inc., Flushing, N.Y. 781,361, pub. 9–22–64. Cl. 26.
Spring-Air Co., The, Chicago, Ill. 668,679, canc. Cl. 32.
Staley, A. E., Mfg. Co., Decatur, Ill. 781,321, pub. 9–22–64. Cl. 23.
Staley, A. E., Mfg. Co., Decatur, Ill. 781,491, pub. 9–22–64. Cl. 46.
Standard Market Co., Lincoln, Nebr. 781,480, pub. 9–22–64. Cl. 46.
Standard Romper Co., Inc., New York, N.Y. 781,461, pub. 9–22–64. Cl. 39.
Standard Safety Products Co.: *See*—
Kemp, M. Beelman, Sr.
Star Pharmaceuticals, Inc., Atlanta, Ga. 781,264, pub. 9–22–64. Cl. 18.
Stein Bros. Mfg. Co., d.b.a. Acme Products, Chicago, Ill. 668,676, canc. Cl. 32.
Stephen-Roger, Inc., Hingham, Mass. 781,192, pub. 9–22–64. Cl. 6.
Sterling Drug Inc., d.b.a. Winthrop Laboratories, New York, N.Y. 668,613, canc. Cl. 18.
Sterling Drug Inc., New York, N.Y. 781,266, pub. 9–22–64. Cl. 18.
Stetson, John B., Co.: *See*—
Lee, Frank H., Co., The.
Stevens' Fireplace Log Corp., Oakland, Calif. 668,519, canc. Cl. 1.
Stevens, J. P., & Co., Inc., New York, N.Y. 781,472, pub. 9–22–64. Cl. 42.
Storytoons, Inc., Kenilworth, N.J. 781,430–1, pub. 9–22–64. Multiple Class (Classes 38 and 107).
Strategic Metals Corp., Conshohocken, Pa. 668,586, canc. Cl. 14.
Stroock, S., & Co., Inc., New York, N.Y. 668,747, canc. Cl. 42.
Stroock, S., & Co., Inc., New York, N.Y. 668,749–50, canc. Cl. 42.
Sun Valley Mfg. Co., Boston, Mass. 781,463, pub. 9–22–64. Cl. 39.
Sunbeam Corp., Chicago, Ill. 781,273, pub. 9–22–64. Cl. 21.
Sunbeam Corp., Chicago, Ill. 781,873, pub. 9–22–64. Cl. 27.
Suprewave Corp., d.b.a. Bes-Tone, Ltd., New York, N.Y. 409,954, ren. 12–8–64. Cl. 51.
Swimquip, Inc., El Monte, Calif. 781,379, pub. 9–22–64. Cl. 31.
Tandy Snacks, Inc., Orlando, Fla. 781,497, pub. 9–22–64. Cl. 46.
Tappan Co., The, Mansfield, Ohio. 781,398, pub. 9–22–64. Cl. 34.
Technical Supply Co., to International Textbook Co., Scranton, Pa. 190,952, ren. 12–8–64. Cl. 26.
Tele-Cam, Inc., Pittsburgh, Pa. 781,350, pub. 9–22–64. Cl. 26.
Tempress Research Co., Sunnyvale, Calif. 781,814, pub. 9–22–64. Cl. 23.
Tesco Chemicals, Inc., Atlanta, Ga. 668,796, canc. Cl. 6.
Texaco Inc.: *See*—
Texas Co., The.
Texas Co., The, Houston, Tex., and New York, N.Y., to Texaco Inc., New York, N.Y. 195,000, ren. 12–8–64. Cl. 15.
Texas Co., The, to Texaco Inc., New York, N.Y. 412,414, ren. 12–8–64. Cl. 15.
Texsteam Corp., Houston, Tex. 781,394, pub. 9–22–64. Cl. 34.
Textron, Inc., d.b.a. Griswold Mfg. Co., Sidney, Ohio. 781,385, pub. 9–22–64. Cl. 32.
Theurgene Chemical Co.: *See*—
Gross, Morton B.
Thexton Mfg. Co., Minneapolis, Minn. 781,360, pub. 9–22–64. Cl. 26.
Timberline Equipment Co., Dallas, Tex. 781,313, pub. 9–22–64. Cl. 23.
Todd Chemical Co., Inc., Great Neck, N.Y. 781,519, pub. 9–22–64. Cl. 52.
Tomahawk Paper Co., Inc., Tomahawk, Wis. 781,422, pub. 9–22–64. Cl. 37.
Topco Associates, Inc., Skokie, Ill. 781,249, pub. 9–22–64. Cl. 15.
Toyota Motor Sales, U.S.A., Inc., Los Angeles, Calif. 781,295, pub. 9–22–64. Cl. 21.
Transelco, Inc., Penn Yan, N.Y. 781,180, pub. 9–22–64. Cl. 4.
Trans-Pacific Yacht Imports: *See*—
Burke, Carl J.
Travenol Laboratories, Inc., Morton Grove, Ill. 668,602, canc. Cl. 18.
Tree Towns Mfg. Co.: *See*—
Greenberg, John.
Treu Method, Inc., San Francisco, Calif. 781,480, pub. 9–22–64. Cl. 44.
Trouvailles, Inc., Watertown, Mass. 781,386, pub. 9–22–64. Cl. 32.
Turen, Inc., Danvers, Mass. 781,533. Cl. 6.
Turn of The Century Fights, Inc., New York, N.Y. 781,437, pub. 9–22–64. Cl. 38.
Ulmer Pharmacal Co.: *See*—
Physicians and Hospitals Supply Co., Inc.
Ultra Carbon Corp., Bay City, Mich. 781,164, pub. 9–22–64. Multiple Class (Classes 1, 2, 23, and 26).
Union Carbide Corp., New York, N.Y. 781,185, pub. 9–22–64. Cl. 6.
United Merchants and Manufacturers, Inc.: *See*—
Behr-Manning Corp.
United States Ceramic Tile Co., Canton, Ohio. 781,211, pub. 9–22–64. Cl. 12.
United States Gypsum Co., Chicago, Ill. 409,656, ren. 12–8–64. Cl. 16.
United States Gypsum Co., Chicago, Ill. 781,221–2, pub. 9–22–64. Cl. 12.
U.S. Industries, Inc., New York, N.Y. 668,573, canc. Cl. 13.
United States Rubber Co., New York, N.Y. 411,394, ren. 12–8–64. Cl. 1.
Upjohn Co., The, Kalamazoo, Mich. 781,193, pub. 9–22–64. Cl. 6.
V.S.I. Corp., Azusa, Calif. 781,542. Cl. 32.
Valsey-Bristol Shoe Co., Inc., Monett, Mo. 781,467, pub. 9–22–64. Cl. 39.
Vallone Mfg. Inc., Buffalo, N.Y. 668,675, canc. Cl. 32.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 781,166, pub. 9–22–64. Cl. 1.
Vernitron Corp., Farmingdale, N.Y. 781,281, pub. 9–22–64. Cl. 21.
Viscose Development Co. Ltd., Croydon, England. 190,804, ren. 12–8–64. Cl. 50.
Voith, J. M., Gesellschaft mit beschrankter Haftung, Heidenheim, Brenz, Germany. 668,691, canc. Cl. 34.
Wagner, Gunther, Hannover, Germany. 781,206, pub. 9–22–64. Cl. 11.
Walker Mfg. Co., Racine, Wis. 781,382, pub. 9–22–64. Cl. 31.
Warner-Lambert Pharmaceutical Co.: *See*—
American Chicle Co.
Wayagamack Pulp & Paper Co., Ltd., to Consolidated Paper Corp. Ltd., Three Rivers, Quebec, Canada. 195,169, ren. 12–8–64. Cl. 37.
Western Pump Distributors, Inc., Lubbock, Tex. 781,235, pub. 9–22–64. Multiple Class (Classes 13 and 23).
Western Union Telegraph Co., The, New York, N.Y. 781,578. Cl. 104.
Western Velo & Cement Specialties Co., Los Angeles, Calif. 781,311, pub. 9–22–64. Cl. 23.
Wheeling Corrugating Co., Wheeling, W. Va. 781,223, pub. 9–22–64. Cl. 12.
White Laboratories, Inc.: *See*—
National Oil Products Co.
White Motor Co., The: *See*—
Atlas Imperial Diesel Engine Co.
White Oak Coal Co., to The New River Co., Mount Hope, W. Va. 411,937, ren. 12–8–64. Cl. 1.
White, S. S., Dental Mfg. Co., The, Philadelphia, Pa. 410,511, ren. 12–8–64. Cl. 51.

Whiting Mfg. Co., Inc., Cincinnati, Ohio. 781,389, pub. 9–22–64. Cl. 32.
Whitney Optical Co., Inc., Woodside, N.Y. 781,343, pub. 9–22–64. Cl. 26.
Willa Products Unltd.: *See*—
Cushman, Wilhela.
Winnsboro Granite Corp., The, Rion, S.C. 781,162, pub. 9–22–64. Cl. 1.
Winter & Co., Inc., New York, N.Y. 668,704, canc. Cl. 36.
Winthrop Laboratories: *See*—
Sterling Drug Inc.
Winthrop Mfg. Co., Inc., Brooklyn, N.Y. 668,555–6, canc. Cl. 12.
Wizard Mfg. Co., North Hollywood, Calif. 668,636, canc. Cl. 22.
Woodrow Stores, Inc., New York, N.Y. 668,739, canc. Cl. 39.
Wright, Margaret J., d.b.a. The B & P Co., Lakewood, Ohio. 781,479, pub. 9–22–64. Cl. 44.
Wright Mfg. Co., Phoenix, Ariz. 668,687–8, canc. Cl. 34.
Wyler Watch Corp., New York, N.Y. 781,372, pub. 7–7–64. Cl. 27.
Xerox Corp., Rochester, N.Y. 781,362, pub. 9–22–64. Cl. 26.
Yardley of London, Inc., Totowa, Paterson, N.J. 781,569. Cl. 51.
Yellow Springs Instrument Co., Inc., The, Yellow Springs, Ohio. 781,359, pub. 9–22–64. Cl. 26.
Zellerbach Paper Co., from Crown Zellerbach Corp., San Francisco, Calif. 781,417, pub. 9–22–64. Cl. 37.
Zenith Radio Corp., Chicago, Ill. 781,276, pub. 9–22–64. Multiple Class (Classes 21 and 36).
Zip-Mark Corp., Jersey City, N.J. 781,420, pub. 9–22–64. Cl. 37.
Ziv Steel and Wire Co., Chicago, Ill. 196,670, ren. 12–8–64. Cl. 14.
Ziv Steel & Wire Co., Chicago, Ill. 412,260, ren. 12–8–64. Cl. 14.

U.S. GOVERNMENT PRINTING OFFICE:0—1964

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 15, 1964 Volume 809 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1964

Examiner affirmed	271
Examiner affirmed in part	57
Examiner reversed	105
Total	433

Full Period for Response—a Reminder

Although, under the new examination program, most Office actions carry a shortened statutory period for response, applicants are reminded that the normal period provided in the Rules of Practice applies if no shortened period or time limit is specifically set in the Office action. See Rule 136 and 35 U.S.C. 133.

November 17, 1964. RICHARD A. WAHL,
Acting Superintendent,
Patent Examining Corps.

United States Court of Customs and Patent Appeals
Rule 26 and Payment of Printing Costs

Attorneys taking appeals to the United States Court of Customs and Patent Appeals are reminded of the provisions of Rule 26 which relate to the payment of costs for printing the transcript of record.

The rule specifies that the clerk shall cause an estimate to be made of the costs of printing the transcript of record and shall notify the party filing the transcript of the amount of the estimate. It further provides that if he does not pay the amount within thirty (30) days from the date of the clerk's letter, exclusive of Sundays and legal holidays, or any extension thereof granted on motion before the time expires and showing good cause therefor, the appeal may be dismissed.

The court wishes to advise attorneys that due to the increasing number of appeals and the resulting congested calendar, failure to deposit the estimated cost within the time allotted by Rule 26, or such extension provided therein, will result in the appeal being promptly dismissed.

November 10, 1964. GEORGE E. HUTCHINSON,
Clerk.

Disclaimers

Reissue No. 25,594.—*Johan Lund*, Detroit, Mich. TORQUE LIMITING SPRAG MECHANISM. Reissue patent dated June 9, 1964. Disclaimer filed Sept. 10, 1964, by the assignee, *Formsprag Company*.

Hereby enters this disclaimer to claims 24, 26 and 28 of said reissue patent.

3,049,895.—*Arthur G. Larson*, Minitrista, Minn., and *Francis M. Raver*, Yoe, Pa. MACHINE FOR MAKING ICE IN FLAKE FORM. Patent dated Aug. 21, 1962. Disclaimer filed Aug. 20, 1964, by the assignee, *McQuay, Inc.*

Hereby enters this disclaimer to claims 13 and 14 of said patent.

Adjudicated Patents

(C.A. Calif.) Pace Patent No. 2,826,307 (210—169), for fluid circulation systems, *Held* valid and infringed. *International Mfg. Co.* v. *London, Inc.*, 337 F.2d 723; 142 USPQ 421.

(C.A. Calif.) Cavenah and Steffen Patent No. 2,844,255 (210—170), for combination filter and surface skimmer, *Held* valid. *Id.*

(C.D. Ohio) Kalberg Patent No. 2,783,963 (248—361), for clamping block, *Held* invalid but not infringed. *B & S Screw Products Co.* v. *Cleveland Metal Stamping Company*, 233 F. Supp. 845; — USPQ —.

(D.C. Iowa), Piel Patent No. 2,794,422 (119—157), for liquid applicator for animal usage. Claims 1, 2 and 5 to 9 *Held* invalid. *Piel Mfg. Co.* v. *George A. Rolfes Co. et al.*, 233 F. Supp. 891; 143 USPQ 107.

(D.C. Iowa) Piel Patent No. 2,813,510 (119—157), for animal actuated liquid applicator for hide. Claims 1 to 5 and 12 *Held* invalid. *Id.*

(D.C. Ohio) Kamlukin Patent No. 2,903,077 (172—42), for a reversing mechanism for a rotor-propelled tiller. Claims 1, and 5 to 8 *Held* valid and infringed. *Simplicity Mfg. Co.* v. *Quick Mfg. Co.*, 223 F. Supp. 800; — USPQ —.

(D.C. Tenn.) Leipold and Evancich Patent No. 2,997,568 (219—213), for heating structure. Claims 1 to 5 and 7 *Held* invalid and not infringed. *Easy-Heat, Inc.* v. *Tennessee Plastics, Inc.*, 233 F. Supp. 989; 142 USPQ 442.

New Applications Received During October 1964

Patents	7,287
Designs	453
Plant Patents	15
Reissues	16
Total	7,771

Issue—December 15, 1964

Patents	996	No. 3,160,890 to No.	3,161,885, incl.
Designs	58	No. 199,776 to No.	199,833, incl.
Plant Patents	3	No. 2,462 to No.	2,464, incl.
Reissues	4	No. 25,697 to No.	25,700, incl.
Total	1061		

Patents Available for Licensing or Sale

2,551,149. Reel. Mrs. Clarence McCampbell, 19301 Parkmount Ave., Cleveland, Ohio, 44135.

2,875,982. Drive Clamp. Elmer I. Unglesby, 6701 Stockton Blvd., Sacramento 23, Calif.

3,116,377. Sub-Miniature Transducer. Joachim H. Todt, 301 Rice Creek Terrace, Minneapolis, Minn.

3,153,328. Braking System for Vehicles. R. J. Seethaler, 2044 N. Willis Blvd., Portland 17, Oreg.

3,154,065. Stove-Lantern Apparatus. Southwest International, Inc., P.O. Box 374, Albuquerque, N. Mex., 87103.

General Electric Company is prepared to grant non-exclusive licenses under the following 6 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, Major Appliance Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,080,742. Automatic Washing Machine Including Dispensing Means.

3,084,530. Automatic Washing Machine Including Dispensing Means.

3,091,110. Treating Agent Dispenser System for Washing Machines.

3,127,840. Clothes Washer With Improved Turbine Type Pump.

3,143,501. Laundry Centrifuging Machine With Improved Clothes Receptacle.

3,146,196. Laundry Centrifuging Machine With Improved Clothes Container.

Classification Data Available in Magnetic Tape

Magnetic tape containing current classification data for a selected group of patents is offered for sale by the Patent Office. Nearly 570,000 patents which presently comprise the below listed classes are recorded in this file. Entries consisting of the patent number and the class and subclass in which these patents are classified "original" are arranged in patent number order. Parties having a possible interest in this tape file are invited to make inquiry concerning it. The terms and cost of obtaining a copy will be furnished on request. As the offering of this file is partially experimental to ascertain public interest, the response will be taken into consideration in determining whether to extend the scope of the file to patents in other fields and to include cross-reference information.

CLASSIFICATION DATA IN MAGNETIC TAPE

Class No.	*Title*	*No. of Patents*
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	7,321
18	Plastics	9,583
21	Preserving, Disinfecting and Sterilizing	2,030
23	Chemistry	23,246
29	Metal working	26,429
31	Dairy	1,736
34	Drying and Gas or Vapor Contact With Solids	8,920
44	Fuel and Igniting Devices	3,873
48	Gas, Heating and Illuminating	8,214
51	Abrading	23,733
55	Gas Separation	9,516
62	Refrigeration	20,022
65	Glass Manufacturing	9,089
71	Chemistry, Fertilizers	2,645
75	Metallurgy	14,590
94	Roads and Pavements	5,732
96	Photographic Chemistry, Processes and Materials	5,850
99	Foods and Beverages	22,696
106	Compositions, Coating or Plastics	19,736
117	Coating: Processes and Miscellaneous Products	16,231
118	Coating Apparatus	9,542
127	Sugar, Starch and Carbohydrates	2,420
131	Tobacco	9,108
134	Cleaning and Liquid Contact With Solids	5,204
136	Batteries	8,054
146	Vegetable and Meat Cutters and Comminutors	13,038
148	Metal Treatment	6,194
149	Explosive and Thermic Compositions or Charges	2,318
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	12,835
159	Concentrating Evaporators	2,483
161	Stock Material and Miscellaneous Articles	7,839
162	Paper Making and Fiber Liberation	7,832
167	Medicines, Poisons and Cosmetics	10,782
176	Nuclear Reactions and Systems	925
195	Chemistry, Fermentation	2,818
196	Mineral Oils: Apparatus	1,654
202	Distillation	7,468
204	Chemistry, Electrical and Wave Energy	12,628
208	Mineral Oils: Processes and Products	12,590
209	Classifying, Separating, and Assorting Solids	21,202
210	Liquid Purification or Separation	17,296
233	Centrifugal-Bowel Separators	2,039
252	Compositions	19,351
260	Chemistry, Carbon Compounds	95,832
261	Gas and Liquid Contact Apparatus	12,060
263	Heating	8,896
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	11,450
266	Metallurgical Apparatus	4,455

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

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4. All references cited in a single office action will be mailed together, generally within two weeks after the mailing of the action. This mailing will include a copy of the first page of the office action identifying the references and the application.

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C. A. KALK,
Director of Administration.

November 9, 1964.

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Effective February 1, 1965, the Patent Office will no longer accept Deposit Account orders for U.S. patent, design, or trademark copies except for the following services: (1) automatic dissemination of cited references announced in the December 1, 1964, issue of the OFFICIAL GAZETTE, (2) class orders, and (3) subscription orders.

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C. A. KALK,
November 9, 1964. *Director of Administration.*

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate : antacid
Ambuphylline : Diuretic– myocardial stimulant
Aminacrine hydrochloride : bacteriostatic agent
Ampyxine sulfate : euphoriant
Anisacril : hypocholesteremic and anoretic agent
Anthelmycin . anthelmintic antibiotic
Benorterone : antiandrogen
Butacetin : analgesic agent
Calcium trisodium pentetate : heavy metal antagonist
Cetalkonium chloride : antibacterial agent
Clometherone : anti-estrogen
Clorethate : sedative and hypnotic
Clothixamide : tranquilizer
Codoxime : antitussive
Dactinomycin : antitumor agent
Dtohippuric acid I 131 : radiopharmaceutical
Doxepin hydrochloride : antipruritic
Fenclorethate : analgesic and sedative
Furosemide : diuretic
Hydroxyhexamide : hypoglycemic agent
Iprindole : antidepressant
Mequinolate : poultry coccidiostat
Metaproterenol sulfate : bronchodilator
Metoclopramide hydrochloride : antiemetic
Metrogestone : oral progestin
Modaline sulfate : antidepressant
Norbolethone : anabolic agent
Oxamarin hydrochloride : syatemic hemostat
Oxolinic acid : antiproteus agent
Perhexiline maleate : coronary vasodilator
Phenyl aminosalicylate : tuberculostatic agent
Piperamide maleate : antiparasitic
Polyoxyl 8 stearate : surface active agent
Polyoxyl 40 stearate : surface active agent
Polysorbate 20 : surface active agent
Polysorbate 40 : surface active agent
Polysorbate 60 : surface active agent
Polysorbate 65 : surface active agent
Polysorbate 80 : surface active agent
Polysorbate 85 : surface active agent
Rolodine : muscle relaxant
Septiphene : disinfectant
Silodrate : antacid
Sodium amylosulfate : peptic ulcer therapy
Sodium etoquinol : treatment of flash burns (ophthalmic)
Sorbitan monolaurate : surface active agent
Sorbitan monooleate : surface active agent
Sorbitan monopalmitate : surface active agent
Sorbitan monostearate : surface active agent
Sorbitan sesquioleate : surface active agent
Sorbitan trioleate : surface active agent
Sorbitan tristearate : surface active agent
Sulfanitran : antibacterial agent
Testolactone : antineoplastic agent
Thiamiprine : anti-leukemic
Thydromedan : lipid mobilizer and thyromimetic
Triampyzine sulfate : anti-secretory agent

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Petition to the Commissioner

The following amended rule is adopted. The text of the rule, except in one particular, was published in the Federal Register of July 28, 1964 (29 F.R. 10472) and all persons who desired to were invited to submit written data, views, arguments or suggestions in connection with the proposal. The rule is being adopted after full and careful consideration of all the material submitted. The rule departs from the published text only in changing the time within which a petition may be filed from "within 30 days" from the action complained of to "within 60 days."

This amendment shall take effect January 1, 1965, and shall apply only to Examiner's actions mailed after that date. In all other applications pending on the effective date, the rule prior to amendment shall apply.

Section 1.181 of 37 CFR (Patent Rule 181) is amended by deleting paragraph (f) thereof and replacing it with new paragraph (f) reading as follows:

§ 1.181 *Petition to the Commissioner.*

• • • • •

(f) Except as otherwise provided in these rules, any such petition not filed within sixty days from the action complained of, may be dismissed as untimely. The mere filing of a petition will not stay the period for reply to an Examiner's action which may be running against an application, nor act as a stay of other proceedings.

• • • • •

(Sec. 1, 66 Stat. 793 : 35 U.S.C. 6)

EDWARD J. BRENNER,
October 28, 1964. *Commissioner of Patents.*

Approved : October 30, 1964.
J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 64–11500 : Filed, Nov. 10, 1964 ; 8 : 46 a.m.]

Published in 29 F.R. 15028, Nov. 11, 1964

Commissioner's Order No. 5316

It is hereby ordered that, except by formal amendment duly filed or as hereafter provided, no corrections, erasures or interlineations be made in a trademark application or of any other paper filed in such application.

Correction of obvious errors in spelling or grammar may be made with pen by the Examiner, who will then initial the sheet margin and assume full responsibility for the change.

Obvious informalities in the application, including the classification of goods or services, may be corrected but said correction must be in the form of an amendment in writing, approved by the Examiner, entered in the file and made a part of the record.

It is directed that no other changes be made by any person in any trademark record of this Office without the written approval of the Commissioner of Patents.

EDWIN L. REYNOLDS,

Nov. 24, 1964. *First Assistant Commissioner of Patents.*

This supersedes Order No. 5297 of May 11, 1950.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	5- 4-56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11-30-62	6- 1-54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner... Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	12- 5-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	2-26-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner... Compositions (Part) e.g.. Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	3-11-57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner... Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-16-62	4- 9-56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner... Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	9-24-57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner... Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	8- 1-60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner... Generation and Utilization; General Applications, Conversion and Distribution; Heating and Related Art.	10- 5-62	1-28-54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner... Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries, Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	7-17-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner... Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	6-13-58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner... Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4- 5-56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner... Optics; Radiant Energy; Measuring.	9-12-62	1- 2-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner... Conductors; Switches; Miscellaneous.	12- 6-62	11-22-57

Total number of pending applications (excluding Designs)	210,072
Total number of Design applications pending	5,779
Total number of applications awaiting action (excluding Designs)	136,426
Total number of Design applications awaiting action	2,506
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*

Patents ..... Numbers 2,431,670 to 2,433,823, inclusive

Plant Patents. ..... Numbers 768 to 773, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-26-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HOMER G. THOMPSON

No. 6914. Decided September 24, 1964

[51 CCPA —; 336 F.2d 604; 143 USPQ 21]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS.

"The only limitation in claim 1 which is not taught by the Megow patents defines the head as comprising 'an inner enlarged portion, an outer enlarged portion, and a constricted portion between the two enlarged portions,' i.e. having the shape of an uneven sided dumbbell with the end having a smaller diameter extending inwardly into the body of the resistor. In our opinion, resistor terminal elements of the shape defined by claim 1 are clearly disclosed by Steenweg and also Kohring. That neither of those references discloses resistors *identical* to those of the Megow type we deem of little importance. What is significant is the teaching that in the electric resistor art dumbbell shaped metal terminal members are conventional. Each reference also shows the end with the smaller diameter to be inward."

2. SAME—SAME—SAME—SIMILARITY IN FUNCTION.

"The use of dumbbell shaped terminal elements being old in the art, we are faced with the question whether the use of such elements in resistors of the type shown by the Megow patents is fairly suggested by the references. We think it is. The frusto-conical heads shown in the drawings of Megow embody one shape which resists longitudinal movement after the thermosetting material hardens about the head, while the heads of dumbbell shape likewise resist such movement. In view of the obvious similarity in function between the terminal heads in the resistors of the Megow patents and the conventional dumbbell shaped head employed in the resistor art, use of the latter in the Megow type resistor is considered an obvious choice of terminal head to one skilled in the art."

3. SAME—CLAIMS—INVENTION AS DEFINED IN THE CLAIMS.

"The disclosure, as well as the brief, makes it abundantly clear that appellant's invention, *if any*, lies in *miniaturized* resistors. It is only with respect to those that appellant found peculiar problems, and it is only with respect to those that appellant may have discovered a solution. The claims, however, do not reflect either that invention or appellant's arguments. We are not here concerned with the merits of appellant's invention as it might appear in the disclosure, but are concerned with it only to the extent that the invention is defined in the claims."

4. SAME—SAME—SAME.

"Appellant's contention that the problems of miniaturization were not encountered or taught by the prior art is not relevant to the issue before us, since miniaturized resistors are not being claimed. A particular feature upon which an applicant predicates patentability must be recited in the claims; it is not sufficient merely to disclose it in the specification * * *."

5. SAME—PARTICULAR SUBJECT MATTER—"COMPOSITION RESISTOR WITH EMBEDDED TERMINAL LEAD HEAD."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Composition Resistor With Embedded Terminal Lead Head," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 720,845.

AFFIRMED.

Quarles, Fox, Seidel, Bateman and *Hoar* (*Arthur H. Seidel* and *Thomas O. Kloehn* of counsel) for appellant.

Clarence W. Moore (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal was orginally argued January 9, 1963, and majority and dissenting opinions handed down April 25, 1963. A petition for rehearing subsequently filed by appellant was granted and the case set for further argument on December 2, 1963. Pursuant thereto and after consideration of additional briefs filed on behalf of appellant and the Commissioner, the majority opinion of April 25, 1963, is withdrawn and the following is substituted therefor:

Appellant seeks reversal of the Board of Appeals' decision which affirmed the Examiner's rejection of claims 1, 3 to 6, 9 and 12 of appellant's application [1] entitled "Composition Resistor With Embedded Terminal Lead Head" as unpatentable over the prior art. Two claims have been allowed.

The invention relates to molded composition electrical resistors of fixed resistance, comprising an elongated cylindrical body of molded thermosetting insulating material having minute conductive particles distributed therein to form a high resistance conducting path. Preferably, an outer portion of plain insulating material surrounds the portion forming the conducting path. Each end of the cylindrical body contains a terminal electrode consisting of a lead wire with an enlarged head. The latter is embedded in the resistor body in contact with the portion forming the conducting path. The specification states that the principal object of the invention is to devise a more satisfactory terminal head to overcome the disadvantages of the frusto-conically shaped head of the prior art. Applicant states that the latter is particularly unsatisfactory in very small or miniaturized resistors.

Two head designs are disclosed. One construction consists of two enlarged annular portions separated by an annular groove extending completely around the head. The enlarged portion, extending farthest into the resistor body, has a smaller diameter than the outer enlarged portion, while the groove has about the same diameter as the lead wire. In his brief appellant refers to the head as being "dumbbell" shaped. That is a fair description if we add that one side of the dumbbell is larger than the other. The second construction shown has a head having a frusto-conical shape, with the constricted or grooved portion defined by two transverse flat grooves on opposite sides of the head.

Claim 1 is representative:

1. A molded composition fixed resistor, comprising an integral body, made of moldable insulating material; minute conductor particles distributed throughout at least a portion of said insulating material to form a high-resistance conducting path therethrough; and at each end of said resistance path a terminal electrode, which comprises a lead-wire and an enlarged head, coaxial and integral therewith, the head being intimately embedded in the body in intimate conductive contact with the resistance path portion of said body; wherein each head comprises an inner enlarged portion, an outer enlarged portion, and a constricted portion between the two enlarged portions, the outer face of the outer enlarged portion being exposed through and flush with a face of the body and constituting an outwardly facing shoulder of the terminal electrode; all of the head inwardly from the exposed portion of the head being in intimate supporting contact with the body.

The Examiner relied on the following references:

Bradley, 1,835,267, December 8, 1931.
Steenweg, 1,976,901, October 16, 1934.

[1] Serial No. 720,845, filed March 12, 1958.

As "background art" the Board added:

Megow et al., 2,271,774, February 3, 1942.
Kohring, 2,597,338, May 20, 1952.
Patla, 2,698,372, December 28, 1954.

The Steenweg patent discloses cylindrical resistors mounted on spark plugs. The most pertinent part of that reference shows a resistor unit comprising a molded tubular resistance element with terminals which engage the element at each end, and are embedded in an insulating binding cement within the element. The portion of the terminal element projecting into the cement has an annular groove interposed between two enlarged portions of that element.

The Bradley patent was considered cumulative by the Board. Since we shall not rely on it, it requires no discussion, nor does the Patla reference of which the Board made no particular use.

Kohring discloses electrical resistors made of cylindrical ceramic shells having resistance cartridges inside. The resistance cartridge comprises a ceramic core on which there is a resistance element made of "spiral convolutions of hard carbon as cut in a coating formed in situ." The ends of the resistance element are connected at each end to metal terminals which are anchored in the cores. Various shapes for terminals are shown, including one defined by the patentee as having "transverse or circular fins." That element may be described as being dumbbell shaped.

The record before us includes three Megow et al. patents. Two are referred to in appellant's specification [2] as describing processes by which the resistors of the present invention, except for the head, may be made. The third patent was cited by the Board as "background art." It discloses molded electrical resistors consisting of an insulating sleeve of thermosetting material, a conducting core made of conductor particles dispersed in a thermosetting binder, and wire terminals at each end. The terminals have a shank or lead wire portion and an integral, generally frusto-conical head. The latter is shown in the drawings to be embedded entirely in the conducting core portion of the resistor body, with the narrower outer portion of the head flush with the end of the molded cylinder body.

The exact manner in which the references are relied on is somewhat obscured by the fact the Board did not expressly combine them. The Board gives the folowing resume of the Examiner's rejection:

The Examiner has rejected the claims as unpatentable over either Bradley or Steenweg. Although the Examiner has not given a detailed discussion of the references and the application thereof to the claims, it is evident that he considers the basic feature of the claimed resistor as anticipated by the resistors disclosed in the cited art.

In our opinion, that evaluation is most generous in view of the obvious shortcomings of the Examiner's answer.

The Board found the claimed resistors to be of the type shown by Megow et al., Kohring, and Patla, as well as the Megow et al. patents referred to in appellant's disclosure. It was of the opinion that the essence of the alleged novelty in the combination claimed is found solely in the shape of the enlarged head. Considering the Bradley reference to be cumulative, the Board limited its discussion to the Steenweg patent, wherein it found the terminal element of a resistor unit having "a restricted portion interposed between two enlarged

[2] U.S. Patent No. 2,261,916, issued Nov. 4, 1941, and U.S. Patent No. 2,302,564, issued Nov. 17, 1942.

portions of the head embedded in the resistor composition," with the inner enlarged portion of the head smaller, and portions of the outer enlarged portion embedded in the molded material. The Board concluded, "consideration of the background of the asserted invention and the improvement over the admitted state of the art leads us to the conclusion that the claims do not patentably differentiate over the art before us."

We agree with appellant that the issue is one of obviousness within the meaning of 35 U.S.C. 103.

Appellant's specification states:

> In spite of the difference of the head * * * from the frusto-conical head of the prior art * * * the resistor of the present invention may be made by the process shown and described in Patent No. 2,302,564 * * *. Or, if the entire body be made of resistor material, as suggested herein for extremely small resistors, the resistor may be made by the process shown and described in United States Patent No. 2,261,916 * * *.

In view of that statement, as well as our evaluation of the three Megow patents, it is clear that the sole difference between the claimed resistors and the prior art lies in the particular shape and structure of the terminal head on the lead wires. The immediate question, therefore, becomes whether a terminal head such as claimed by appellant is disclosed in the prior art, and if so, whether its use in a resistor such as claimed is suggested by the prior art. We think both questions must be answered affirmatively.

[1] The only limitation in claim 1 which is not taught by the Megow patents defines the head as comprising "an inner enlarged portion, an outer enlarged portion, and a constricted portion between the two enlarged portions," i.e. having the shape of an uneven sided dumbbell with the end having a smaller diameter extending inwardly into the body of the resistor. In our opinion, resistor terminal elements of the shape defined by claim 1 are clearly disclosed by Steenweg and also Kohring. That neither of those references discloses resistors *identical* to those of the Megow type we deem of little importance. What is significant is the teaching that in the electric resistor art dumbbell shaped metal terminal members are conventional. Each reference also shows the end with the smaller diameter to be inward.

[2] The use of dumbbell shaped terminal elements being old in the art, we are faced with the question whether the use of such elements in resistors of the type shown by the Megow patents is fairly suggested by the references. We think it is. The frusto-conical heads shown in the drawings of Megow embody one shape which resists longitudinal movement after the thermosetting material hardens about the head, while the heads of dumbbell shape likewise resist such movement. In view of the obvious similarity in function between the terminal heads in the resistors of the Megow patents and the conventional dumbbell shaped head employed in the resistor art, use of the latter in the Megow type resistor is considered an obvious choice of terminal head to one skilled in the art. It is apparent that the Megow type resistor, modified as indicated, meets every limitation set forth in the appealed claims.

Appellant argues primarily that with *miniaturized* resistors considerable difficulty was encountered in meeting certain exacting military specifications, and that his recognition of the problem existing with respect to the prior art, helically wound, frusto-conically shaped

heads, coupled with a solution thereof, is deserving of patent protection. He specifically singles out as error the Board's declaration that, since the claims are unlimited as to size, the disclosure affords no basis for an advantage over the prior art. Appellant urges that, since the exact dimensions are not critical, they do not belong in the claims but rather in a statement of the objects of the invention.

We do not agree with those contentions. [3] The disclosure, as well as the brief, makes it abuandantly clear that appellant's invention, *if any*, lies in *miniaturized* resistors. It is only with respect to those that appellant found peculiar problems, and it is only with respect to those that appellant may have discovered a solution. The claims, however, do not reflect either that invention or appellant's arguments. We are not here concerned with the merits of appellant's invention as it might appear in the disclosure, but are concerned with it only to the extent that the invention is defined in the claims.

[4] Appellant's contention that the problems of miniaturization were not encountered or taught by the prior art is not relevant to the issue before us, since miniaturized resistors are not being claimed. A particular feature upon which an applicant predicates patentability must be recited in the claims; it is not sufficient merely to disclose it in the specification, *In re Lindberg*, 39 CCPA 866, 194 F.2d 732, 93 USPQ 23.

Appellant has not separately argued the patentability of claims 3, 4, 5, and 12 except for noting the additional limitations contained in each of these claims. We have considered them all and find they are disclosed by the prior art.

With respect to claim 6, wherein appellant defines the enlarged portions of the head as being "annular lands" and the constricted portion as being "annular grooves," we note that those limitations read on the aforementioned section of the Kohring patent.

The recitation in claim 9, that each head is a "columnar swaged head" has no patentable significance, since swaging the head is admitted by appellant to be old and therefore does not distinguish from the prior art.

In his petition for rehearing and his brief on rehearing, appellant argues that reference in the original opinion to the Megow drawings as showing a small concave depression extending around the head is improper because that construction of the Megow patents was not previously raised or discussed. Assuming, without deciding, that appellant is correct in that contention, the matter is moot since it should be clear that we have given no consideration to that aspect in concluding that the appealed claims are unpatentable.

[5] The decision is affirmed.

AFFIRMED.

RICH, *J.*, dissenting.

This opinion is in two parts. Part I is an opinion in the usual form developing the facts and issues as I see them, in more detail and I hope more accurately than does the majority opinion, and explaining the basis on which I believe the rejection should be reversed.[1] Part II states the grounds on which I consider the majority opinion to be untenable regardless of the result reached.

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[1] Judge Smith authorizes me to say that where I have used the first person plural "We" or "Us" in Part I it may be assumed to refer to both of us.

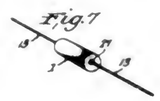
PART I

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1, 3–6, 9, and 12 of application Serial No. 720,845, filed March 12, 1958, for "Composition Resistor with Embedded Terminal Lead Head." Claims 10 and 11 were allowed.

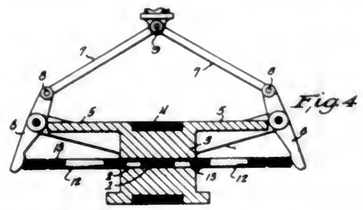
Background of the Invention

The invention relates to small molded fixed resistors of the type used as basic components in radio and TV sets and other electronic circuits. More particularly, the invention is an improvement in the type known as "end-molded resistors" which have easily bendable lead wires extending from each end by which the resistors are connected into circuits. The application at bar is assigned to Allen-Bradley Company, a manufacturer of such resistors in great volume, which owns other patents relating to their manufacture including two Megow and Thomson patents, No. 2,261,916 and No. 2,302,564, which are referred to in the specification as showing methods for making the resistors embodying the instant invention. Appellant was the coinventor with Megow in these patents. It will facilitate an understanding of the invention to explain how the resistors are made, using for illustration some drawings from Megow et al. '916.

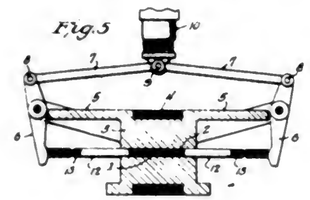
FIG. 7, below, shows a molded resistor having a body 1 and easily bendable lead wires 13. At 27 one sees the outer smaller end of a frusto-conical head which is buried in the body and forms a shoulder with wire 13.

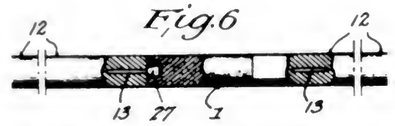


The fixed electrical resistance is an inherent characteristic of the body which is molded from a homogenous mixture of thermosetting resin binder such as phenol-formaldehyde, carbon black as a high resistance conductor in the form of fine particles, and a filler such as ground quartz. These materials are thoroughly blended and made into a blank or preform in which the resin is in only a partially set condition. FIGS. 4, 5, and 6 below show how wire terminals are attached to and integrated with the body blank, simultaneously with the complete setting of the resin by heat, to form the resistor of FIG. 7 which is thereafter covered with insulating paint and identifying markings.[4]



[4] In another form of the resistor, usually the larger sizes, an insulating tubular sleeve of thermosetting resin containing no carbon may surround the conductive body, in which case no painting is necessary except for the identifying markings. We need not consider this type, the making of which is described in Megow et al. No. 2,302,564, since the invention before us is applicable to either type but more particularly the one we are describing which is best adapted to resistors of smallest size.





FIGS. 4 and 5 are elevations, partly in section, of the same apparatus in different positions. A recessed die 3 having a cylindrical horizontal chamber 2 is heated by a coil 4 to an appropriate resin-setting temperature. In chamber 2 a resistor body blank 1 is positioned. The blank shown is a preform with shallow openings in its end but their use is optional. Electrode-carrying plungers 12 are shown in FIG. 4 just entering chamber 2 and carrying lead wires 13 having frusto-conical heads, the outer smaller shoulders of which are engaged by plungers 12. Rocker arms 6, 6 are moved by toggle links 7, 7 when pivot 9 is moved downwardly by presser foot 10 to press plungers 12 against heads 27 and the ends of blank 1 with equal force. The only agency limiting the movement of the plungers is the volume of blank 1.

An example is given by Megow et al. of a 100,000 ohm resistor whose blank weighs 0.165 gm. made in a chamber of 0.14″ diameter at a temperature of 425° F. and a pressure of 20,000 pounds per square inch applied intermittently at 3-second intervals for ½ second three times, after which the resistor remains in the mold 30 seconds and is then removed with the plungers which are stripped from the wires 13, yielding the finished resistor as shown in FIG. 7.

FIG. 5 shows the pressure being applied and FIG. 6 shows the resistor and plungers, both partly in cross-section, removed from the mold. The terminal lead head is seen at 27 embedded in the body 1 with its outer shoulder flush with the end of the body and abutting the end of the plunger which has pushed it into the body with great force, which force has also served to compact the material of the body solidly around the head. The inner end of the head having a greater diameter than the outer end, the compressed and molded body grips the head firmly. It will also be observed, however, than an axial pull tending to withdraw the head will cause it to exert a wedging action on the body due to the conical shape which tends to crack the body.

In resistors of the above-described type the head performs several functions. It anchors the lead wire mechanically. It makes electrical contact with the conductive particles in the body. When current passes through the resistors it generates heat in them and the metal head also serves to conduct that heat away, through the highly heat-conductive lead wire. In this connection it is useful to note that resistors are rated in watts according to the current they can withstand

without overheating, the size increasing with the wattage and vice versa, common sizes being 2, 1, and ½ watt.

Turning now to appellant's specification, it states the background of and reason for the invention as follows:

> In the most successful devices of this sort in the prior art, the head is frusto-conical, with the lead-wire integrally attached to the smaller end of the head, this smaller end being wider than the lead-wire, thus forming a shoulder, which shoulder is exposed at or about the surface of the body.
>
> These prior art resistors have proved highly satisfactory in the past. But recently there has arisen a demand for smaller and smaller resistors of this sort. With these smaller resistors, the prior art frusto-conical head and its cooperation with the body of the resistor are not so satisfactory.
>
> As an illustration of this trend to smaller and smaller resistors, it should be noted that there is already a demand for a 1/10 watt resistor, with a body 0.140" long and 0.067" in diameter, and with lead-wires 0.015" in diameter.
>
> The principal object of the present invention is to devise a more satisfactory head; not only to overcome the disadvantages of the frusto-conical head in the very small sizes, but also to have a better head in even the sizes in which the prior-art frusto-conical head is completely satisfactory.
>
> Another object of the present invention is to provide a head which resists rotation with respect to the body.

As an example of requirements which must be met to provide a satisfactory resistor, the application quotes from the specifications of the Department of Defense of the United States as follows:

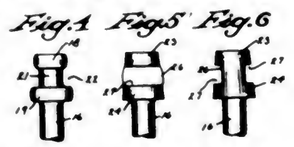
> 4. 6. 14. 1 *Direct Load.* Resistance shall be measured as specified in 4. 6. 2. Resistors shall then be held by one terminal, and the load shall be gradually applied in the direction of the longitudinal axis of the resistor until the applied load reaches 5 pounds. The 5-pound pull shall be applied for at least 5 seconds. (See 3. 17. 1.)
>
> 4. 6. 14. 2 *Twisting.* Following the test specified in 4. 6. 14. 1, terminals shall be bent through 90° at a point ¼ inch from the body of the resistor, with the radius of curvature at the bend approximately 1/32 inch. The terminals shall be clamped to within 3/64±1/64 inch of the bend on the side between the bend and the remaining portion of the lead, away from the body. The body of the resistor shall then be rotated about the original axis of the bent terminal through 360° in alternating directions for five such 360° rotations at the rate of approximately 5 seconds per rotation. Measurements of resistance shall again be made after completion of the test. (See 3. 17. 2.)
>
> 3. 17. 1 *Direct Load.* When resistors are tested as specified in 4. 6. 14. 1, resistor terminals shall withstand a pull of 5 pounds without mechanical damage.
>
> 3. 17. 2 *Twisting.* When resistors are tested as specified in 4. 6. 14. 2, the resistance shall not change in excess of 1 percent or 0.5 ohm, whichever is greater, nor shall there be any evidence of breakage or other mechanical damage.

An affidavit of an electrical engineer engaged for 28 years in the development and manufacture of molded resistors with appellant's assignee states that the frusto-conical heads of the prior art are not satisfactory for resistors of the now commercially available 1/10 watt size (dimensions above) and ¼ watt size (0.25" body length and 0.091" body diameter) for reasons stated including factors known to those skilled in the art which do not appear from the face of the bare patent disclosures. For example, it appears that the frusto-conical head which is formed on the end of a piece of solder-coated wire is created commercially by a swaging process which first forms an end section of wire into a helix of about 3 turns and then compacts the helix into the frusto-conical shape. It appears that in small sizes there is a tendency for the helix to unwind under load tests, for the head to bulge under molding pressures resulting in a loss of conical shape and gripping power, and that providing enough working surface on the small end for proper engagement by the molding plungers makes the larger end so big as to weaken the body of the resistor and

prevent adequate flow of material around the head during molding. Thus the frusto-conical head being unsatisfactory, a problem existed requiring the development of a new head. The affidavit states that the problem had been worked on at Allen-Bradley Company for over ten years and was solved by Thomson's present invention, which has gone into successful commercial use in the 1/10 and ¼ watt size resistors. It would seem, then, that a useful art has actually been advanced by this invention. We do not proceed on the assumption that it took ten years to make this advance, which seems unlikely, but on the basis that there *is* an advance resulting from a change in construction, now sought to be patented, making possible that which was not before possible with the old construction.

The Invention

Appellant's invention does not require much description for it is simple, involving a new configuration for the head on the lead wire and its formation in a manner different from that previously used. The head configuration will be clear from the following figures from appellant's drawings, showing two embodiments of the inevntion:



In each figure, 16 is the lead wire, FIG. 4 showing one form of head formed on its end and FIGS. 5 and 6 together showing the other form, in views taken at right angles to each other, allowed claims 10 and 11 being limited to the latter form. The appealed claims are either generic to both forms or specific to the FIG. 4 form.[5]

Utilizing the terminology of the claims and referring to FIG. 4, the head has an inner enlarged portion 18, an outer enlarged portion 19, and a constricted portion 21 formed by a groove 22 between the two enlarged portions, in the finished resistor the outer face of the outer enlarged portion 19 being exposed through and flush with the face of the body and constituting an outwardly facing shoulder of the terminal electrode, all of the head inwardly from the exposed portion of the head being in intimate supporting contact with the body. In the modification of FIGS. 5 and 6, there is an inner enlarged portion 23, an outer enlarged portion 24, which are frusto-conical, with an constricted portion 26 defined by two opposite transverse flat grooves 27. It is to be noted that insofar as either head partakes of the frusto-conical form or outline, it is the reverse of that previously used in end-molded resistors, the smaller, rather than the larger, end being innermost. So much for mere form.

With respect to function, the specification says:

> • • • because of the wedge-action of the frusto-cone, the direct-load test tends to cause cracks in the body. Contrast the inner enlarged portion 18 of head 17 of the present invention, which without appreciable wedge action, locks under that part of the body which protrudes into groove 22 of the head.

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[5] Allowed claim 10 is identical with appealed claim 1 except for the addition of the words: "wherein the constricted portion of the head is flattened to enable the head to resist turning with respect to the body."

Claim 11 likewise is identical with claim 1 with words added to the end limiting it to the head shape of FIG. 6 namely, "wherein the head is a frusto-cone, the larger end thereof being axially disposed with respect to the lead-wire and integrally attached to one end thereof, and wherein the constricted portion of the head is defined by two opposite transverse lateral grooves."

It is pointed out that any loosening of the heads or any cracks, even though so slight as to be unobservable, are apt to change appreciably the electrical characteristics of the resistor.

A particular method of making these heads is described in the specification, differentiating from the old method by which the frusto-conical heads were made wherein a *single-stroke* punching (or swaging) operation first formed the helix which was then compacted into a head. In the present invention the heads are described as "columnar" and as made by "multiple-stroke swaging." The specification gives the following definition and explanation:

> A "columnar" head is one formed by swaging without twisting that part of the wire or other stem which goes to form the head: in other words a swaged head with no latent helix.
>
> The twisting test tends to unwind the latent helix of the prior art. The direct-load test tends to enhance this effect. The smaller the resistor, the harder to meet is the direct-load test. Even bending the wire in the course of installation may loosen the helix. The head of the present invention, having no latent helix, avoids these effects.

There is no contention that any reference contains a disclosure of such a columnar swaged head.

The Claims

Claim 1 reads as follows:

> 1. A molded composition fixed resistor, comprising an integral body, made of moldable insulating material; minute conductor particles distributed throughout at least a portion of said insulating material to form a high-resistance conducting path therethrough; and at each end of said resistance path a terminal electrode, which comprises a lead-wire and an enlarged head, coaxial and integral therewith, the head being intimately embedded in the body in intimate conductive contact with the resistance path portion of said body; wherein each head comprises an inner enlarged portion, an outer enlarged portion, and a constricted portion between the two enlarged portions, the outer face of the outer enlarged portion being exposed through and flush with a face of the body and constituting an outwardly facing shoulder of the terminal electrode; all of the head inwardly from the exposed portion of the head being in intimate supporting contact with the body.

Claims 3–6 are dependent claims adding various limitations. Claim 9 is an independent claim identical with claim 1 through the words "wherein each head" from which point it concludes as follows:

> * * * wherein each head is a *columnar swaged* head, forming an outwardly facing shoulder with the lead-wire, said shoulder being exposed through and flush with the end face of the body; all of the head inwardly from the exposed portion of the head being in intimate supporting contact with the body. [Our emphasis.]

Claim 12 was accurately characterized by the Examiner to be a restatement of claim 1 in different terminology, though we would not speculate that the two claims would be adjudged to be of identical scope for the very reason that the terminology is different.

The Rejection

The Examiner's rejections of record and his answer cite and rely upon only the following two references:

Bradley, 1,835,267, December 8, 1931.
Steenweg, 1,976,901, October 16, 1934.

His ground of rejection is somewhat obscure but we will accept the Board's construction of it which was that the claims are "unpatentable over either Bradley or Steenweg," which we assume to be a rejection for obviousness. The Board said the Examiner considered the "basic feature of the claimed resistor" to be "anticipated" by the cited art. The Board found that "the rejection is without reversible error" but did not rest with affirming it as made. In its first opinion it added three patents not cited by the Examiner, referring to them as "background art," as follows:

Megow et al., 2,271,774, February 3, 1942.
Kohring, 2,597,338, May 20, 1952.
Patla, 2,698,372, December 28, 1954.

The Megow et al. patent is not one of those referred to in appellant's specification but is very similar to the '564 patent. The Board started its opinion with the observation that appellant's resistors "are of the type generally shown by Megow et al., Kohring, and Patla above cited as well as the Megow et al. patents referred to by appellant in his disclosure." We do not agree with this observation with respect to Kohring and Patla but need not discuss it. Appellant's own reference to the two other Megow et al. patents suffices to show the general type of resistor involved. The added background references add nothing to that.

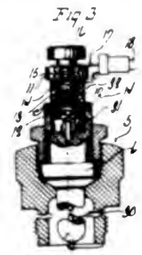
The Board then said it regarded the disclosure of Bradley as merely "cumulative" to that of Steenweg and devoted the balance of its opinion mostly to discussing the latter reference, concluding:

> Consequently, a consideration of the background of the asserted invention and the improvement over the admitted state of the art leads us to the conclusion that the claims do not patentably differentiate over the art before us.

Considering all circumstances, it appears to us that the Board's view was that the claims are unpatentable because they define inventions which are improvements in the Megow et al. type of resistors which would be obvious in view of the disclosure of Steenweg. We therefore direct our attention to that reference.

Steenweg, a patent also issued to Allen-Bradley Company in 1934, shows a type of resistor once used in conjunction with automobile sparkplugs in the early days of auto radio (the application was filed in 1929). FIGS. 2 and 3 will suffice for discussion and are here reproduced.





The resistors were attached to the sparkplugs to suppress ignition noises in the radio receiver. Alternatively they were to be built into sparkplugs. FIG. 2 shows one attached type wherein 5 is the sparkplug with porcelain insulator 6 and metal terminal 7. A hollow tubular resistance element 10 is secured to a metal angle-bracket 20 by means of a threaded bolt 22 extending through an insulating washer 23 and a metal plate 19. Threaded terminal 24 screws on the bolt as a nut and serves as the terminal for the sparkplug cable. The only use made of this structure by the Board with reference to appellant's

claim is in its statement that element 20, the bracket, "would be suggestive of the use of a lead wire." Comparing FIG. 2 of Steenweg with FIG. 7 at the beginning of this opinion illustrates, we think, that the Board was straining unduly to find non-existent similarities between appellant's resistor structure and that of the reference, which is of an entirely different type.

Turning to Steenweg's FIG. 3, we get to the crux of this case. Therein we find the same type of molded hollow tubular resistance element 10, again clamped between a pair of members 11 and 31 which are "in intimate engagement with the adjacent end[s] of the resistance element." Here we have an alternative to the bolt 22 and insulating washer 23 of FIG. 2 for holding these end-terminals in contact with the tubular resistor. It is described as follows:

*** * * the terminals [11, 31] each having a central projection 12 to snugly engage the bore 13 of the unit. The innermost ends of the projection[s] 12 are reduced and provided with annular grooves 14, which with the remaining space within the resistance element are completely filled with a binding cement C composed essentially of asbestos and a phenol composition product which being an insulating composition does not in any way affect the resistance value of the element 10, but serves to maintain the terminals 8 [or 31] and 11 in intimate contact with its ends.**

This is the disclosure upon which the Examiner and the Board relied to support the rejection. FIG. 1 of Steenweg, which we have not discussed, is like FIG. 3 except that the resistor is not built into the sparkplug. Instead it is made a separate unit, as is the resistor of FIG. 2. It resembles the resistor of FIG. 3 in form and the bottom terminal 8, corresponding to 31, is provided with a threaded bore extending into the projection 12 by means of which the resistor can be screwed onto the usual threaded post on the top of a sparkplug, avoiding the need for any bracket such as 25 in FIG. 2.

Appellant has characterized the metal end-terminals of Steenweg's resistors as "a hardware item produced from bar stock by a screw machine process" and argued that they bear little if any relation to the problems of attaching headed wire terminals in end-molded resistors, especially small ones wherein the problem existed. The characterization seems to us to be accurate and the argument to be sound, particularly in the solving of the problems which existed in the making of end-molded resistors in the very small ¼ and ⅒ watt sizes. Inserting terminals into such resistors with their diameters of .091″ and .067″, respectively, by end-molding processes does not seem to us to bear any real relation to inserting terminals into the Steenweg tubular resistors of the FIG. 3 type considering their diameters, which must have been of the order of ⅜ to ½ inch, by purely mechanical parts-assembly methods not concerned with molding, and securing them, moreover, with a filling of insulating cement rather than by molding the resistor composition around them. In Steenweg the tubular resistor is all made when the terminals are affixed to it.

Although the Board did not discuss Bradley, which it considered to be merely cumulative to Steenweg, since the Examiner relied on that reference in the rejection which the Board affirmed we think it should be mentioned briefly. The resistor of that patent, the application for which was filed in 1925, was a relatively large molded article with metal end caps adapted to various forms of connection in circuits. Like Steenweg, all forms of caps are screw-machine products, made of brass or the like by turning, threading, counterboring

and similar procedures, the diameter of the caps being the same as or greater than the diameter of the resistor bodies. There is no disclosure of a terminal formed on the end of a lead wire.

After giving much study to the grounds of rejection *as stated* by the Examiner and by the Board we think it would only confuse matters to discuss them. They were never precisely stated nor were the statutory grounds of rejection made clear. We know what the legal issue must be under the statute, regardless of what was said, and we will simply go to the point. Was the invention, as defined in the rejected claims, one which would have been obvious to one of ordinary skill in the art of making end-molded resistors with wire terminal leads as of the time the invention was made (herein taken to be the filing date of the application) in view of the disclosures of the acknowledged Megow et al. patented prior art taken with the disclosures of either Steenweg or Bradley? We think not. Neither Steenweg nor Bradley is in any way concerned with forming anchoring heads on the ends of lead wires nor with the problem of injecting them into resistor body blanks in the kind of machinery used to make such resistors. The most that can be said is that one can find in those two patents, when one is led for some reason (such as appellant's application disclosure) to go look for it, one or more grooves cut on a stud buried in cement or in a molded body to help anchor it therein. In our opinion that is not enough.

Due to the great disparity in the types of construction involved in the Megow et al. patents, on the one hand, and in the Steenweg and Bradley patents which have been deemed below to make obvious appellant's modifications in the Megow et al. type of resistors, on the other hand, we think there is no suggestion in either group of references to combine their disclosures with the others. *In re Hortman*, 46 CCPA 814, 264 F.2d 911, 121 USPQ 218. The situation here seems to us of the type we dealt with in *In re Herrmann*, 47 CCPA 975, 278 F.2d 527, 126 USPQ 59, wherein we said:

Hall was not confronted with the problems which have been solved by appellant.

While the change made by appellant seems, in retrospect, to have been comparatively simple, we do not feel that it can properly be said to have been obvious within the meaning of 35 U.S.C. 103. In view of the substantial differences between the construction and operation of the Lind and Hall engines, it is not likely that the latter would have been looked to for suggestions in solving problems arising in the former. Under such circumstances it becomes necessary to reverse the decision appealed from.

The decision of the Board should be reversed.

PART II

The foregoing shows, I think, that the majority was not compelled to affirm by the evidence in the record. It also shows, I believe, that there are many factors bearing on the obviousness issue which the majority has not considered or, at least, not discussed.

What I now propose to show is that the majority affirms in large part on grounds never stated in the Patent Office.

Men may reasonably differ on the issue of obviousness in view of the prior art and I have stated my views above. But in this court anyone's judgment on obviousness *must* be based, under 35 U.S.C. 103, on what the references show *to one skilled in the art* and, under 35 U.S.C. 142, 143, and 144 and general principles of appellate procedure, on a *review* of rejections *actually made by the Patent Office.*

We are not at liberty to make new rejections. In my opinion, the majority has clearly done that.

Appellant, in his Brief on Rehearing (39 pages) has more than adequately pointed out the matters discussed below, notwithstanding which the majority has found only one point of error in its original opinion. While the majority might be conscientiously able to find no error in its *decision* that the claimed invention would have been obvious, I cannot see how that view can be retained as to its new *opinion*, any more than as to its original opinion, in view of what appellant has brought to the court's attention.

I think a fair reading of the majority opinion shows that the decision that the claimed subject matter is obvious proceeds according to the following argument: 1. The novel *feature* of the claim is the shape of the head on the wire terminal which is that of a dumbbell with the inner "side" smaller than the outer. 2. The Steenweg patent shows a terminal element in a resistor which projects into an insulating binding cement and has a groove between two enlarged portions. 3. The Kohring patent discloses a dumbbell-shaped terminal in a resistor. 4. The Megow et al. patents show frusto-conical terminal heads embedded entirely in the conducting core of the resistor body. 5. Dumbbell-shaped metal terminal members are, therefore, "conventional" in the resistor art. 6. The Megow et al. frusto-conical heads resist longitudinal movement and so do the heads of dumbbell shape, so there is "obvious similarity in function" between the Megow heads and the "conventional dumbbell shaped head[s] employed in the resistor art."

Based on the foregoing assumed facts, the majority then reached its conclusion in the following words:

In view of the obvious *similarity in function* between the terminal heads in the resistors of the Megow patents and the *conventional* dumbbell shaped head employed in the resistor art, use of the latter in the Megow type resistor is considered an *obvious choice* of terminal head to one skilled in the art. It is apparent that the Megow type resistor, modified as indicated, meets every limitation set forth in the appealed claims. [Emphasis mine.]

Appellant justifiably pointed out that this is a rejection (originally stated in slightly different words) on a ground never used by the Patent Office, citing our decision in *In re Kalter*, 50 CCPA 1191, 316 F.2d 747, 137 USPQ 347, in support of the contention that we are without authority to make such a rejection. In that case the majority opinion by Judge Almond stated the well-established rule as follows:

We are without authority to advance new grounds of rejection, but are limited to deciding the issues before us.

The rule is not only based on fundamental principle but is one of very long standing in this court. In *In re Mooney*, 25 CCPA 1269, 97 F.2d 144, 37 USPQ 736 (1938), the court said:

We are not at liberty to affirm the decision of the Board of Appeals upon the ground urged by the Solicitor, above quoted, for such ground of rejection was not relied upon either by the Examiner or the Board of Appeals. *In re Tucker and Reeves*, 19 CCPA (Patents) 810, 54 F.2d 815.

And in the *Mooney* case the court pointed out that had the ground urged by the Solicitor been assigned by the Board it might have been inclined to affirm such ground. In the leading *Tucker and Reeves* case the court granted a rehearing to consider the question: * * * was it proper for this court to affirm the action of the Board of Appeals

and the Examiner in rejecting the claims *on grounds other than the grounds of rejection set out and relied upon by the lower tribunals*? [My emphasis.]

It concluded:

We feel, therefore, constrained to hold that even if the Board's rejection of the claims involved is regarded as proper, when reasons other than those assigned by it are considered, we would not be justified in affirming such action on such grounds.

It withdrew so much of its former opinion as was not limited to the grounds relied upon by the Board. In *In re Sebald*, 31 CCPA 1148, 143 F.2d 366, 62 USPQ 90 (1944), the court said:

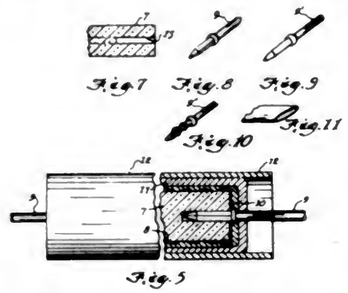
In *In re Tucker and Reeves* * * * we originally held that we had an inherent power equivalent to that exercised by courts in other jurisdictions to affirm a decision appealed from if it was right for any reason. Our holding there that we might affirm a decision of the Patent Office Board of Appeals upon *grounds other than those applied by the Patent Office tribunals* attracted great interest among members of the patent bar. Rehearing was granted * * *. Upon due consideration * * * we * * * came to the conclusion that [our] * * * former decision was "extrajudicial" and that it should be withdrawn. Our holding in *In re Tucker and Reeves* * * * has become the settled law of this court, and we have seen no disposition on the part of Congress to broaden our jurisdiction in this respect. [My emphasis.]

So much for the law. I turn to consideration of the new grounds on which the majority's rejection here rests.

In order of appearance, the first new finding of the court relied on appears in connection with the Kohring patent. (Item 3, supra, in my analysis.) As my opinion, Part I, shows, the Examiner *never mentioned* Kohring. The Board was the first to cite it and every word it said about it appears in the sentence:

The resistors are *of the type* generally *shown by* Megow et al., *Kohring*, and Patla above cited as well as the Megow et al. patents referred to by appellant in his disclosure. [My emphasis.]

It is worth looking at the Kohring disclosure for two purposes: (1) to show that *even what the Board says is not so* and (2) to make it clear beyond peradventure that *the use made of it by the majority is new and entirely different from any use made of it by the Board.* I here reproduce the relevant figures of Kohring's drawings.



Referring to the above figures collectively, the relevant portion of the specification states (my emphasis):

The detail structure of resistance cartridge involves a core or *ceramic body* 7 on which is a resistance element 8 * * * this being in *spiral convolutions of hard carbon as cut in* a coating formed in situ. And connecting the end of the resistance element to the terminal 9 is a metal layer 10 which may be from an applied metal coated on or may be a pressed-on end cover. This assures firm union with both resistance element and terminal. A casing or cover 11 of insulating plastic * * * is molded onto and over the resistance and core such as to completely envelop and protect. * * * Desirably, a flexible sleeve 12 is then slid over the plastic casing 11 * * *. Where paper is employed, * * * such

sleeves may be initially in flattened or compressed form, as shown at FIG. 11 * * *. As illustrated in FIG. 5, thus the sleeve envelops the enclosed encased resistance and affords protection about the end portions. * * *

The *ceramic core* 7 * * * may have a central bore, or at least at each end an open *bore 15 molded or drilled*, and within which the *terminal 9 is axially driven or pressed*, to hold by surface deformation. Thus, the terminal as of tinned copper may be of non-circular cross-section, for instance squared as in FIG. 8, or triangular in section as in FIG. 9, or with transverse or circular fins as in FIG. 10. or of other desired form which is non-circular, whereby on being *axially driven into the bore* there is sufficient *deformation in the contacting surfaces* to seize and hold. Desirably, the entering end of the terminal is tapered to a smaller diameter, to facilitate entry.

In other words, the terminals are driven like nails into preformed bores in a *hard ceramic* core, hard enough to distort the metal, whatever shape it may be, in order to grip it. The metal terminal is deformed in the bore. Nothing is molded around it. It grips *by friction* in a hole by engaging its wall. Mere reading of the foregoing is enough to show that the Board was wrong in saying that Kohring's resistor is of the general type of appellant's end-molded, plastic binder and carbon particle resistors.

Now as to what the majority did with this reference, instead of using it merely as an indication that end-molded resistors were old as a *type*, as did the Board (even though Kohring is *not* of that type), it found FIG. 10 in the disclosure of Kohring and then proceeded to rely on *it* to support a contention *never made* by the Patent Office, namely, that dumbbell-shaped terminals are "conventional" in the resistor art. *The Patent Office*, on the other hand, *never made any contention that such heads are conventional* and never mentioned FIG. 10; in fact it never referred to any aspect of Kohring's disclosure. Even the Patent Office Solicitor's brief on the original hearing fails to rely on any aspect of Kohring beyond the Board's statement it was "background" and showed a type of resistor. The use made of Kohring was, therefore, definitely new in the case and in support of a ground of rejection which the appellant had never heard of before reading the court's opinion herein. If rejection was to be predicated in any way on FIG. 10 of Kohring, with its flanges for engagement with the smooth walls of a bore in a hard ceramic core, appellant had the right to know it and to have his day in court. Kohring is obviously a very different structure from appellant's and made in a very different way. The statute, 35 U.S.C. 132, requires that the Commissioner shall state the reasons for the rejection so that the applicant can judge "of the propriety of continuing the prosecution of his application." The grounds stated by the majority and predicated on its application of the Kohring disclosure are *reasons for rejection* of which appellant had *never been advised* until the decision of this court, in violation of the spirit if not the letter of the statute.

I now turn to the majority's use of the Megow et al. patents.

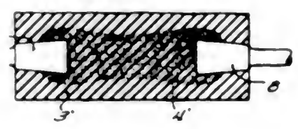
As with Kohring, the Examiner did not cite the Megow et al. patents, which were cited by the Board only as background art and relied on by it only to show what appellant's specification admits by reference to those patents, namely, that end-molded resistors were a *known type* of resistor. And as it did with Kohring, the majority found and relied on structure in the Megow et al. disclosures, which was relied on by neither the Board nor the Examiner to support its finding of obviousness.

The new majority opinion says that the Megow et al. patents show frusto-conical heads which have "obvious similarity in function" with respect to the "conventional dumbbell shaped head employed in the resistor art * * *."

The reasoning of the original majority opinion, now withdrawn, relied heavily for obviousness on a "small concave depression extending around the head" (to quote from the last paragraph of the new opinion). Appellant has convincingly established the factual nonexistence of that depression and the majority has at least been persuaded not to rely on it any more and to regard the propriety of relying on it as "moot" without conceding the non-existence of the depression. Its original opinion has, however, been changed in no respect other than to delete reliance on that depression and in all other respects the Megow et al. patents are still relied on. It would be well, therefore, to make clear the lead terminals which they disclose by reference to the following drawings:

MEGOW ET AL. PATENT
No. 2,271,774

Fig. 4



MEGOW ET AL. PATENT
No. 2,302,564

Fig. 9

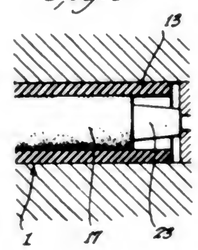


Fig. 2

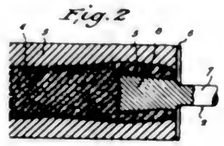


Fig. 10

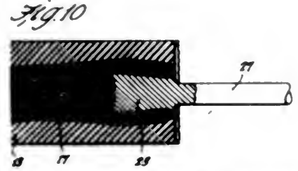


FIG. 4 of Patent '774 shows a head 8 and FIG. 9 of Patent '564 shows a head 23 having the identical frusto-conical shape of the heads in Patent '916. *They all have perfectly smooth sides.* The '916 patent, where the only written description of them appears, says they are "frusto-conical" so that the slight *taper* of the heads aids in their retention, the "inclined sides" forming retaining ledges. The same patent says "The particular shape, however, is a matter of secondary importance, since any suitable configuration is appropriate as long as the same is sufficiently large and massive with respect to the diameter of the shank portion 26 [27 in FIG. 10 of '564] as to render the same relatively nondeformable." Patent '774 merely refers to "embedded head portion 8" or "lead wire heads 8" without further description. Patent '564 says no more than "heads 23." It is perfectly clear, then, that the heads in no way resemble appellant's heads.

FIGS. 2 and 10 show the *same heads* 8 and 23 as they appear in a cross-section of the finished resistor. The only difference between

these two figures is that FIG. 2 shows a film of "contact material 5" coated on the end of head 8.

The first Megow et al. Patent '916 discloses that molding pressures may be as high as 50,000 pounds per square inch. If FIGS. 9 and 10 of '564 be compared, it is seen that the outer rim of the head might get slightly flared by the pressure, at least in spots. And the location of this flare is on the outside face of the finished resistor. Even if there is some flare, however, the body of the head, which alone is gripped by the molded resistor, is grooveless, unlike appellant's heads. We are concerned, of course, only with preventing axial movement in a direction to *withdraw* the head from the body and what holds the head in is its frusto-conical shape with the larger end inside.

In changing its rationale from a reliance on a non-existent concavity in the Megow et al. heads to reliance on "similarity in function" with appellant's heads, the majority has merely removed one error and replaced it with two others. First, it is assumed that there *is* similarity of function, which flies straight in the face of the record which shows that appellant's heads function in a *superior* manner of which the Megow et al. heads are incapable. Second, it assumes as a matter of *law* that *similarity of function* makes out a case of obviousness of structure.

On the latter point we have just pointed out in two very recent opinions (one unanimous and one dissented from *solely* by the author of the majority opinion here) that functional equivalence does not establish obviousness under 35 U.S.C. 103. *In re Scott*, 51 CCPA 747, 323 F.2d 1016, 139 USPQ 297, and *In re Flint*, 51 CCPA 1230, 330 F.2d 363, 141 USPQ 299.

The majority's case for obviousness is clearly weaker in its new opinion than it was before, since a prop it formerly relied on has had to be removed.

It clearly appears to me that neither the "conventionality" assumption nor the functional similarity assertion, on which the majority has predicated its obviousness decision will bear analysis, that they are not facts, that they are contrary to the record, contrary to law, and in any event they are *entirely new grounds of rejection*.

The majority opinion expresses dissatisfaction with the reasoning of both the Examiner and the Board in their decisions of the issue. Certainly this does not justify the assertion in this court of new and *different* grounds of rejection. Such action is "extrajudicial." *In re Sebald*, supra. If the court cannot agree with the rejection made by the Patent Office, it must reverse it or, if the rejection below leaves the court in doubt as to its propriety—which, at the very least, would appear to be the situation here—then applicant is entitled to the benefit of that doubt. That rule is too well established to require citation of authority.

The final point of the majority opinion is: "appellant's invention, if any, lies in *miniaturized* resistors. * * * The claims, however, do not reflect either that invention or appellant's arguments."

The function of claims is to point out what has been invented, not the problems that gave rise to it. The invention here is not a miniaturized resistor but a specific *structure* which contributes to making them successfully and which is also advantageous in larger sizes, as the specification points out. The majority does not suggest just how size should be injected into the claims. The Solicitor, however, makes

it perfectly clear what the Patent Office position would be if it were. His brief on rehearing says:

> The court correctly noted that *size* is not reflected on [in] the claims and therefore cannot be a basis for patentability (Decision-9, top). *But even if miniaturization were claimed, it would amount to a mere difference in size* * * *. [My emphasis.]

Furthermore, the majority's conclusion that the invention lies in miniaturized resistors flies straight in the face of the specification from which we derive our knowledge of what the invention is. I have quoted it above in Part I. The opinion appears to suggest the necessity of including in the claims some sort of size limitation to which the Patent Office admittedly would pay no attention, and with good reason. As to claiming size limitations, the majority might bear in mind one of the common "negative tests" for determining the presence of what used to be called "invention." As stated in *Walker on Patents* § 68 (6th ed. 1929): "It is not invention to change the size or degree of a thing, or of any feature or function of a machine or manufacture."[6] That is still a test generally applied in the Patent Office and courts.

In conclusion, the majority opinion is not a review of the rejection made in the Patent Office, which is all that is within our power. It is a new rejection based on the finding of new grounds in references, which grounds were neither found nor asserted by the Patent Office. It is legally untenable.

SMITH, *J.*, dissenting.

While I join in the dissenting opinion written by Judge Rich, I think it is desirable to amplify the discussion of an important point which arises in the following excerpt from the majority opinon:

> * * * In view of the obvious *similarity in function* between the terminal heads in the resistors of the Megow patents and the *conventional* dumbbell shaped head employed in the resistor art, use of the latter in the Megow type resistor is considered an obvious choice of terminal head to one skilled in the art. [Emphasis added.]

First, I am at a complete loss to determine *where*, in the prosecution of this application, an issue of "similarity in function" was raised. The majority thus predicates its opinion on what I believe to be a totally new ground of rejection, stated for the first time in the present majority opinion of this court. 35 U.S.C. 144 requires that our decision "shall be confined to the points set forth in the reasons of appeal." I do not find the issue of similarity of function set forth in any reason of appeal herein. This is due, I think, to the fact that issue was *not* raised by either the Examiner or the Board. Thus appellant did not argue the factual question raised in connection with this issue. To deny now his claims on this basis, as the majority would do, seems to me to be a denial of appellant's right to be heard.

Moreover, I agree fully with the view of Judge Rich in his dissenting opinion that such a statement merely begs the statutory question of obviousness of the invention. As Judge Rich indicates, we have held in the several cases which he cites that functional similarity per se cannot be equated with obviousness.

If, however, we assume the propriety of making such a new ground of rejection, it should be predicated on the *technical facts* rather than upon *judicial assumptions* of such facts. The judicial assumption of

[6] It is the same in the 5th ed. (1917) and in Deller's edition, § 31 (1937).

technical facts upon which the majority would act is clearly and demonstrably wrong. The dumbbell-shaped head used by appellant is *not* "conventional" in any resistor art of record. While Steenweg shows a dumbbell-shaped terminal head, the significant technical differences between the Steenweg resistor and that of appellant make a comparison of the terminal heads wholly without significance. In Steenweg, the terminal head is not imbedded in resistive material as are the terminal heads claimed by appellant. Instead, the Steenweg terminal head is imbedded in a core of insulating composition which can have no effect upon the resistance value of the resistive element. This core merely serves to hold the terminal head firmly in place. Electrical connection is made between the upper, cap-like portion of the terminal head and the end of the resistive element. The Steenwg device is of relatively high power, and is used to absorb transient, high voltage oscillations which interfere with automobile radio reception. Because of the transient nature of the energy dissipated, because of the relatively large size of the resistor, and because of the location of the resistive element, arrangements for carrying away the heat generated in the resistive material do not depend so critically upon the thermal conductivity characteristics of the portion of the terminal head which is embedded in the insulating core. Further, there is no problem of electrical contact and conductivity with respect to the embedded portion of Steenweg's terminal head.

Such is not the case with appellant's device, however. As stated in the specification, appellant's terminal heads are "highly conductive of both electricity and heat," and further:

> It should be noted that any loosening of the helix [of the prior art frustoconical terminals], even though so slight as to be unobservable, or any cracks in the resistance path, even though so slight as to be unobservable, are apt to change appreciably the electrical characteristics of the resistor.

Thus, appellant faced at least three distinct problems with respect to terminal head design which were of little or no consequence to Steenweg: (1) the need for a terminal head which would provide good thermal contact and conductivity, since the only effective way to dissipate heat generated in the resistive material, in a resistor like appellant's, is to conduct it away by means of the terminal leads; (2) the need for a terminal head which would provide good electrical contact and conductivity; and (3) the need for a terminal head whose mechanical design would resist displacement due to stress and thus ensure continued good physical contact with the resistive material.

There is no doubt that appellant's device overcomes these problems and there is no doubt that the Steenweg device is not subject to them. There is no suggestion in any prior art of record that appellant's dumbbell-shaped terminal head would be effective to establish and maintain satisfactory electrical and thermal contact with the surrounding resistive material and also to provide sufficient thermal conductivity. The areas of contact between appellant's dumbbell-shaped heads and the resistive material result not only in high mechanical strength, but, even more importantly, they provide the intimate surface contacts necessary to assure both electrical and thermal stability.

We are dealing here with electrical devices of a relatively high order of precision. They are effective only so long as they retain that precision. Thus a resistor of a certain rated wattage and resistance must retain those characteristics within predetermined tolerance limits

if it is to be effective. Heat build up in such a resistor can so disrupt the electrical path that the resistance may well fall outside the set tolerance limits; indeed, it may destroy the resistor altogether. Excess heat may also affect adversely the physical contact between the termial heads and the resistive material, resulting in further undesirable variation in the operating characteristics of the resistor. There is no suggestion in any of the art of record of any "similarity in function" in these respects.

I agree with Judge Rich that the appealed decision should be reversed.

U.S. Court of Customs and Patent Appeals

IN RE WALTER LORENZ AND GERHARD SCHRADER

No. 7211. Decided July 2, 1964

[51 CCPA —; 333 F.2d 908; 142 USPQ 101]

1. PATENTABILITY—COMPOUNDS—COMBINING REFERENCES—OBVIOUSNESS.

"• • •, Schrader discloses that the substituted mercaptoalkyl esters of both thiophosphoric and thiophosphonic acids are highly effective insecticidal agents and in Examples 3, 4, 12, and 14 with respect to the thiophosphonic acids, shows lower alkyl and phenyl groups bonded directly to the phosphorus atom. Hoffmann et al. discloses insecticidal thiophosphonic acid esters having a lower alkyl group bonded to the phosphorus. The Austrian patent discloses insecticidal and acaricidal thiophosphoric acid esters, while the German reference shows corresponding phenyl thiophosphonic acid esters to be highly effective acaricidal compounds. The secondary references indicate that thiophosphonic acids esters frequently are insecticidal. The secondary references, individually and collectively, also would seem to us to teach one of ordinary skill in this art that, where thiophosphoric acid esters (including the lower alkyl or phenyl esters) are known to be insecticidal, the corresponding thiophosphonic acid esters can also be expected to be effective insecticides. Thus, given the teachings of the secondary references, we think it would have been obvious for a person of ordinary skill in this art to substitute a lower alkyl or phenyl group for the lower alkoxy group in the thiophosphoric acid esters of the primary references, thus converting these esters into the corresponding thiophosphonic acid esters recited in the appealed claims."

2. SAME—SAME—SAME—SAME.

"The appellants' contention that the structural differences in the secondary references, since they do not contain the N-methyl-benzazimido group, would make it unobvious to modify the primary references to form the claimed compounds overlooks what appear to us to be controlling and compelling similarities. The appellants recognize that the phosphonates of the secondary references differ essentially only in one organic moiety or ester group from the primary references and that is the one corresponding to the benzazimido group. The other organic groups or ester moieties comprise the same or similar groups and correspond to those in the appealed claims. In addition, both groups of references indicate that the compounds disclosed therein are highly insecticidal and even acaricidal. Further, contrary to the appellants' position, the secondary references, considered separately or together, indicate that corresponding thiophosphoric acid esters and thiophosphonic acid esters would have at least generally similar insecticidal properties."

3. SAME—SAME—OBVIOUSNESS—EVIDENCE—SUPERIORITY OVER PRIOR ART NEED NOT BE DISCLOSED IN ORIGINAL APPLICATION.

"To avoid the rejection, appellants filed an affidavit by applicant Schrader, in which two thiophosphoric acid esters of the prior art were compared, as to insecticidal activity against aphids, with corresponding thiophosphonic acid esters of the appealed claims. The tests purport to show that the latter are more effective. As one of the grounds for refusing to recognize the affidavit showings as persuasive of patentability, the Examiner and the Board noted that the claimed compounds were not disclosed, in the specification as filed, to be *superior* in their insecticidal activity. In reply to this position appellants urge, and we think correctly, that there is no requirement that *superior-*

ity over the prior art be disclosed in the original application; it is enough if the basic property or utility is disclosed."

4. SAME—SAME—SAME—SAME—AFFIDAVIT INEFFECTIVE.

"We think • • • that the affidavit showings are not persuasive as to patentability of the appealed claims. • • • the limited comparative testing reported in the affidavit appears to be insufficient. The affidavit shows comparative tests between only the dithio esters, where an alkoxy group is replaced with an alkyl group, but no results are shown with respect to the monothio phosphonic acid esters or either the mono or dithio ester when R is a phenyl radical. Moreover, we agree with the Examiner that even the limited comparative test results actually obtained are not persuasive, • • •. Also, • • • appellants' specification states that the toxicity of the claimed compounds 'is of the order of the corresponding phosphoric acid esters.' In view of this statement, we are not persuaded by an affidavit which purports to show facts inconsistent therewith."

5. SAME—PARTICULAR SUBJECT MATTER—THIONOPHOSPHONIC ACID ESTERS.

The decision of the Board of Appeals, refusing certain claims to thionophosphonic acid esters, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 8,928.

AFFIRMED.

Connolly and Hutz (*Werner H. Hutz*, *John A. Sarjeant*, of counsel) for appellants.

Clarence W. Moore (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

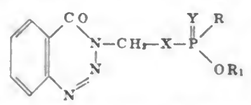
SMITH, *J.*, delivered the opinion of the court.

Stated generally, the issue presented by this appeal arises under 35 U.S.C. 103 and requires us to determine whether the differences between the compounds of the appealed claims and the prior art are such that the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time appellants made their invention.

The application in issue, Serial No. 8,928, filed February 16, 1960, is a joint application of appellants and is entitled "Thionophosphonic Acid Esters and a Process for their Production." Each of the appealed claims 1–6, 9 and 11 relates to such esters and to compounds having stated formulas. The claimed compounds are said to possess insecticidal and acaricidal properties.

Claim 1 is the generic claim and reads as follows:

1. A thiophosphonic acid ester of the following formula



in which R stands for a member selected from the group consisting of lower alkyl and alkenyl radicals up to 8 carbon atoms and phenyl radicals, R_1 stands for a lower alkyl radical up to 4 carbon atoms and X and Y stand for a member selected from the group consisting of oxygen and sulfur, at least one of them being sulfur.

Claims 2–4, 6 and 9 cover those compounds of claim 1 wherein R is a lower alkyl group and X and Y are both sulfur. Such compounds are referred to as alkyldithiophosphonates. Claims 5 and 11 cover those compounds of claim 1 wherein R is a phenyl radical, X is sulfur and Y is oxygen. Compounds in this group are called phenylthiophosphonates.

Appellants assert that the claimed compounds are highly active plant protective agents having insecticidal and acaricidal activity, as against aphids, mites, and caterpillars. The toxicity is said to be of the order of the known corresponding phosphoric acid esters disclosed in the prior art. Appellants also assert, however, that the new compounds have an advantage over the prior phosphoric acid esters in that their thermal stability is greater than that of the corresponding phosphoric acid esters. It is asserted that this stability is such that appellants' claimed compounds may be used even in moist, tropical climates. While no appealed claims cover a method of production of the new compounds, the method disclosed by appellants appears to be similar to the methods used for producing the corresponding phosphoric acid esters of the prior art.

The references relied upon by the Examiner and the Board in rejecting the claims are:

Lorenz I, 2,758,115, August 7, 1956.
Lorenz II, 2,843,588, July 15, 1958.
Schrader, 2,881,201, April 7, 1959.
Hoffmann et al., 2,907,787, October 6, 1959.
Schrader et al., 2,914,530, November 24, 1959.
Austrian Patent, 167,432, January 10, 1951.
German Auslegeschrift, 1,050,768, February 19, 1959.

In addition, the Board cited Kosolapoff, *Organophosphorus Compounds* 143 (1950).

The rejection which was affirmed by the Board is that stated in the Examiner's answers of March 30, 1962 and August 9, 1962. The answers show the rejection to have been based on Lorenz I, Lorenz II and Schrader et al. as the primary references in view of the disclosures of the secondary references, Hoffmann et al., Schrader, the Austrian patent and the German patent. The Examiner's position was that the primary references taught the corresponding analogous N-methylbenzazmido thiophosphoric acid esters which were disclosed as having the same utility as the insecticides and acaricides of the compounds of the rejected claims. It was the Examiner's position that the compounds of the prior art differed from the compounds of the appealed claims in that R is an alkoxy group instead of an alkyl or phenyl group on the active insecticidal chain. It was the Examiner's position as stated in his answer of March 30, 1962 that "The ancillary art demonstrates that it is generally known in this art to make such modifications to known insecticidal thiophosphoric acid esters for the purpose of obtaining modified esters wherein one of the alkoxy groups is replaced by alkyl or phenyl on the active insecticidal chain, and further demonstrates that this modification is applicable to diverse known insecticidal thiophosphoric acid esters." It was the Examiner's conclusion that such modification would be expected to lead to insecticides of equal or superior insecticidal action.

Upon remand, the Examiner filed a further answer dated August 9, 1962 in which the ground of rejection was more precisely stated as follows:

• • • The rejection is not based on equivalency as urged, but rather on the ground that the instant modification is obvious in view of the fact that such modification is expected to lead to better or outstanding insecticidal activity and better properties in general.

Appellants' disagreement with the Examiner's position is summarized in their brief as follows:

> Those skilled in the art would not convert the thiophosphates of the primary references to the thiophosphonates now claimed on the basis of the ancillary art of record, because the thiophosphonates of the ancillary references are structurally extremely different from the compounds of the primary references.

Appellants' brief seems to acknowledge that the primary references disclose the corresponding acaricidal thio and dithio phosphoric acid esters, the phosphorus atom being characteristically bonded to the organic radicals through an oxygen or sulfur atom; these compounds differing from those of the appealed claims only in that the radical corresponding to R is a lower alkoxy group. Thus, the more specific issue for decision becomes whether the claimed phosphonic acid esters would have been obvious within the meaning of 35 U.S.C. 103 from the teachings of the corresponding phosphoric acid esters in the primary references. A decision on this issue turns on whether the substitution of a lower alkyl or phenyl group for the lower alkoxy group in the compounds of the primary reference would have been obvious under the conditions specified in 35 U.S.C. 103.

To resolve this issue we shall first consider the references, Lorenz I, Lorenz II and Schrader et al. disclose thio and dithiophosphoric acid esters of benzazimides having the general structural formulae shown therein. While Lorenz I discloses both the thio and dithio esters, Lorenz II and Schrader et al. disclose only thio esters. Lorenz II indicates the thiol form and Schrader et al. the thiono form. The references state that these compounds are highly effective insecticides, especially against spider mites, and are therefore valuable plant protecting agents.

Schrader discloses that substituted mercaptoalkyl esters of thio or dithio phosphates and phosphonates are strong contact and systemic insecticides. The class of compounds disclosed (including phosphates and phosphonates) is represented by generic structural formulas and subgeneric structural formulas indicating subclasses of phosphates and phosphonates. With respect to the phosphonates indicated by the first two subgeneric structural formulas, the organic radical bonded directly to the phosphorous atom may be a lower alkyl (as methyl) or an aryl group (as phenyl), while the organic radical bonded to the phosphorous through oxygen is a lower alkyl radical (as ethyl or isopropyl).

Hoffmann et al. discloses the preparation of thiophosphonic acid esters of substituted thioethanols, wherein the organic radical (R^1) directly bonded to the phosphorous atom may be an alkyl group of from 1 to 4 carbon atoms, while the other organic radical (R^2) is an alkoxy group in which the alkyl group has 1 to 4 carbon atoms bonded to the phosphorous through oxygen. The substituent in the thioethanol moiety (R^3) "is either an alkyl, aryl or heterocyclic group" and "R^3, in particular, may be varied almost at will, so long as it is thermally stable and does not enter into side reactions." The compounds are described as insecticidal.

The German patent discloses that excellent insecticidal activity is found in thionophosphonic acid esters of negative substituted phenols having a phenyl group directly bonded to the phosphorus atom and a lower alkyl group bonded to the phosphorus through oxygen. The negative substituents of the substituted phenol moiety may be one or more halogens or a halogen plus nitro groups. The compounds are said to be effective against caterpillars and spider mites.

The Austrian patent discloses thionophosphoric acid esters having the structural formula shown therein wherein the organic radicals are bonded to the phosphorus atom through oxygen, and two of said radicals may be lower alkyl groups and the third radical is a negative substituted phenyl or alkyl group. The negative substituents may be a nitro group or a halogen. The compounds are said to be "outstanding for active or passive control of sucking or chewing insects," and effective "even against aphids."

Kosolapoff states that "Primary and secondary phosphonic acids are, as a rule, crystalline substances that have, respectively, dibasic and monobasic functions," and that "They are among the most stable derivatives of phosphorus in terms of thermal treatment."

[1] To summarize and apply the foregoing to the claimed invention, Schrader discloses that the substituted mercaptoalkyl esters of both thiophosphoric and thiophosphonic acids are highly effective insecticidal agents and in Examples 3, 4, 12, and 14 with respect to the thiophosphonic acids, shows lower alkyl and phenyl groups bonded directly to the phosphorus atom. Hoffmann et al. discloses insecticidal thiophosphonic acid esters having a lower alkyl group bonded to the phosphorus. The Austrian patent discloses insecticidal and acaricidal thiophosphoric acid esters, while the German reference shows corresponding phenyl thiophosphonic acid esters to be highly effective acaricidal compounds. The secondary references indicate that thiophosphonic acid esters frequently are insecticidal. The secondary references, individually and collectively, also would seem to us to teach one of ordinary skill in this art that, where thiophosphoric acid esters (including the lower alkyl or phenyl esters) are known to be insecticidal, the corresponding thiophosphonic acid esters can also be expected to be effective insecticides. Thus, given the teachings of the secondary references, we think it would have been obvious for a person of ordinary skill in this art to substitute a lower alkyl or phenyl group for the lower alkoxy group in the thiophosphoric acid esters of the primary references, thus converting these esters into the corresponding thiophosphonic acid esters recited in the appealed claims.

Appellants argue that since the secondary references "have chemical structures which are unlike those of the primary references," they "would not lead one skilled in the phosphorus insecticidal art to modify the primary reference compounds to form the claimed compounds." They also insist that the refusal of the claims is based upon the erroneous premise that any phosphonic acid derivative would be useful as an insecticide and that the thiophosphonic acid esters are commonly employed in insecticidal compounds, indicating that the allowed claims in the case rebut these suppositions. In addition, they urge that the patentability of the individual claims canot be predicated solely upon consideration of the generic claim since there are allegedly significant differences in the claims.

[2] The appellants' contention that the structural differences in the secondary references, since they do not contain the N-methyl-benzazimido group, would make it unobvious to modify the primary references to form the claimed compounds overlooks what appear to us to be controlling and compelling similarities. The appellants recognize that the phosphonates of the secondary references differ essen-

tially only in one organic moiety or ester group from the primary references and that is the one corresponding to the benzazimido group. The other organic groups or ester moieties comprise the same or similar groups and correspond to those in the appealed claims. In addition, both groups of references indicate that the compounds disclosed therein are highly insecticidal and even acaricidal. Further, contrary to the appellants' position, the secondary references, considered separately or together, indicate that corresponding thiophosphoric acid esters and thiophosphonic acid esters would have at least generally similar insecticidal properties.

Appellants contend that "significant differences" between the appealed claims were not considered below, inasmuch as some of these claims are to alkylthiophosphonates and others to phenylthiophosphonates. We think the Examiner's decision, affirmed by the Board, clearly recognized such differences in the claims and properly noted that the secondary references of the prior art disclosed alkyl and phenyl thiophosphates and thiophosphonates.

Our review of the references and our careful consideration of the arguments advanced by appellants lead us to agree with the Examiner and the Board that since the primary references show the corresponding thiophosphoric acid esters, which differ from the claimed compounds only with respect to the substituent (an alkoxy group) designated by R therein, instead of an alkyl or phenyl group as claimed, it would have been obvious to a person of ordinary skill in the art to make the indicated substitutions. We agree that the secondary references show that such modifications will produce compounds having the same or improved insecticidal activity.

[3] To avoid the rejection, appellants filed an affidavit by applicant Schrader, in which two thiophosphoric acid esters of the prior art were compared, as to insecticidal activity against aphids, with corresponding thiophosphonic acid esters of the appealed claims. The tests purport to show that the latter are more effective. As one of the grounds for refusing to recognize the affidavit showings as persuasive of patentability, the Examiner and the Board noted that the claimed compounds were not disclosed, in the specification as filed, to be *superior* in their insecticidal activity. In reply to this position appellants urge, and we think correctly, that there is no requirement that *superiority* over the prior art be disclosed in the original application; it is enough if the basic property or utility is disclosed.

Thus, we agree with appellants that the affidavit showings were proper evidence and that they must be considered. [4] We think, however, that the affidavit showings are not persuasive as to patentability of the appealed claims. As pointed out by the Solicitor, the limited comparative testing reported in the affidavit appears to be insufficient. The affidavit shows comparative tests between only the dithio esters, where an alkoxy group is replaced with an alkyl group, but no results are shown with respect to the monothio phosphonic acid esters or either the mono or dithio ester when R is a phenyl radical. Moreover, we agree with the Examiner that even the limited comparative test results actually obtained are not persuasive, since

> * * * The ancillary art of record, particularly Schrader, shows that the instant type of modification of old known esters of thiophosphoric acid generally leads to superior and outstanding systematic [systemic?] insecticidal activity. The affidavit thus shows no more than what is expected by way of this obvious modification. * * *

Also, as we have indicated, appellants' specification states that the toxicity of the claimed compounds "is of the order of the corresponding phosphoric acid esters." In view of this statement, we are not persuaded by an affidavit which purports to show facts inconsistent therewith.

With respect to appellants' assertion as to the greater thermal stability of the claimed compounds, it is noted that appellants specifically state in their brief that they "do not predicate patentability of the appealed claims on the thermal stability of their new compounds." Hence, we see no reason to consider whether the Kosolapoff reference suggests such an advantage.

[5] In view of the foregoing, we affirm the decision of the Board.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,458,982, R. C. Dehmel, AIRCRAFT TRAINING INSTRUMENT FOR SIMULATING ATTITUDE GYRO, **2,463,603**, same, TRAINING APPARATUS FOR SIMULATING GYRO COMPASS; **2,485,435**, same, AIRCRAFT NAVIGATING AND TRAINING APPARATUS; **2,494,508**, same, MEANS FOR AIRCRAFT FLIGHT TRAINING; **2,506,998**, same, FLIGHT NAVIGATION TRAINING APPARATUS; **2,510,384**, same, COORDINATE CONVERSION AND VECTOR APPARATUS; **2,522,434**, same, CONTROL RESPONSE TRAINER FOR AIRCRAFT PILOTS; **2,529,468**, same, RADIO RANGE NAVIGATION APPARATUS FOR TRAINING AIRCRAFT PERSONNEL; **2,533,361**, same, RADIO TRAINING FOR AIRCRAFT PILOTS; **2,560,528**, same, TRAINING MEANS FOR BLIND NAVIGATING SYSTEMS; **2,578,177**, same, TRAINING APPARATUS FOR SIMULATING FLIGHT INDICATING INSTRUMENTS; **2,687,580**, same, FLIGHT TRAINING APPARATUS FOR COMPUTING FLIGHT CONDITIONS AND SIMULATING REACTION OF FORCES ON PILOT; **2,697,285**, same, SIMULATED FLIGHT AND RADIO NAVIGATION APPARATUS; **2,731,737**, R. G. Stern, AIRCRAFT TRAINING APPARATUS FOR SIMULATING LANDING AND RELATED MANEUVERS; **2,808,659**, R. C. Dehmel, CONTROL LOADING SIMULATING APPARATUS FOR FLIGHT TRAINERS; **2,842,867**, same, FLIGHT COMPUTING SYSTEM AND APPARATUS; **2,849,807**, Stern and Theobald, Jr., APPARATUS FOR SIMULATING THE STATIC SYSTEM IN AN AIRCRAFT; **2,860,423**, R. C. Dehmel, FLIGHT TRAINING APPARATUS FOR SIMULATING CONTROL LOADING WITH PILOT PRESSURE CONTROL; **2,926,430**, Stern and Theobald, Jr., SIMULATED WING FLAPS CONTROL SYSTEM, **filed** Aug. 31, 1964, Ct. Cls., Doc. 286–64, *Curtiss-Wright Corporation* v. *The United States*.

2,463,603. (See 2,458,982.)

2,483,558, W. J. O'Brien, AREA IDENTIFICATION SYSTEM; **2,503,836**, same, RADIO FREQUENCY NAVIGATION SYSTEM; **2,530,903**, same, NAVIGATION SYSTEM; **2,531,908**, A. R. Grenfell, RADIO NAVIGATIONAL AID; **2,562,329**, W. J. O'Brien, DOUBLE PHASE COMPARATOR CIRCUIT; **2,568,250**, same, PHASE COMPARATOR CIRCUITS; **2,578,980**, same, RADIO FREQUENCY NAVIGATION SYSTEMS; **2,582,350**, same, RADIO BEACON SYSTEMS; **2,598,290**, same, AREA IDENTIFICATION SYSTEM; **2,690,559**, W. J. O'Brien et al., RADIO FREQUENCY NAVIGATION SYSTEM WITH LANE IDENTIFICATION, **filed** Aug. 24, 1964, Ct. Cls., Doc. 274–64, *The Decca Record Company, Limited* v. *The United States*

2,485,435. (See 2,458,982.)
2,494,508. (See 2,458,982.)
2,503,836. (See 2,483,558.)
2,506,998. (See 2,458,982.)
2,510,384. (See 2,458,982.)
2,522,434. (See 2,458,982.)
2,529,468. (See 2,458,982.)
2,530,903. (See 2,483,558.)
2,531,908. (See 2,483,558.)
2,533,361. (See 2,458,982.)
2,560,528. (See 2,458,982.)
2,562,329. (See 2,483,558.)
2,568,250. (See 2,483,558.)
2,578,177. (See 2,458,982.)
2,578,980. (See 2,483,558.)
2,582,350. (See 2,483,558.)
2,598,290. (See 2,483,558.)
2,687,580. (See 2,458,982.)
2,690,559. (See 2,483,558.)
2,697,285. (See 2,458,982.)
2,731,737. (See 2,458,982.)
2,808,659. (See 2,458,982.)
2,842,867. (See 2,458,982.)
2,849,807. (See 2,458,982.)
2,860,423. (See 2,458,982.)
2,926,430. (See 2,458,982.)

Erratum

In the OFFICIAL GAZETTE, Issue of Apr. 16, 1963, v. 789, p. 585, under the heading "Patent Suits," second column thereof, lines 55 and 56, for "2,834,233, V. E. Anderson, Engine reconditioning equipment;" read *2,845,253, Pfankuch and Wrighton, Safety apparatus*;.

REISSUES

DECEMBER 15, 1964

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

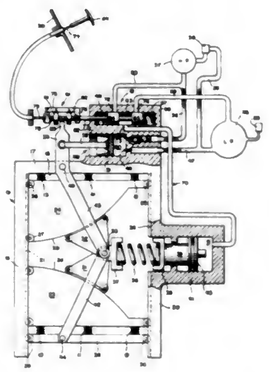
25,697

SPRING SUSPENSION WITH LEVELLING MEANS

James Hrebicek, 2327 61st Ave., Cicero, Ill.

Original No. 2,989,322, dated June 20, 1961, Ser. No. 824,414, July 1, 1959. Application for reissue June 17, 1963, Ser. No. 288,864

8 Claims. (Cl. 280—124)



8. In combination a support for a load comprising a relatively fixed element, an element adapted to receive impulses of variable force and movable relative to the fixed element in response to such impulses, a pair of diverging curved tracks disposed between said elements, means connecting a track to each element, follower means simultaneously contacting both diverging curved tracks and movable therealong as the spacing between said elements changes in response to said variable force impulses transmitted from the movable element to the relatively fixed element through said follower means, said follower means comprising a pair of frames, a pivot connecting said frames, a pair of spaced rollers on each frame, one pair of rollers riding on one curved track and the other pair of rollers riding on the other of said curved tracks, means urging said follower means against said diverging tracks, said urging means comprising a compression spring, a socket pivotally mounted on said pivot and adapted to receive one end of said spring to transmit the force of said spring to said pivot, an abutment against which the other end of said spring bears, and means connecting the abutment to the relatively fixed element, said last-mentioned connecting means being expandible to change the location of said other end of said spring relative to said relatively fixed element whereby to change the location of the follower means on the curved tracks and thereby cause said follower to compress said spring at a different rate for a given increment of movement of the movable element.

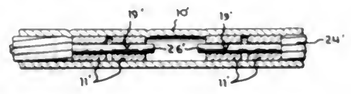
25,698

HIGH TENSILE SPLICE

Robert F. Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Original No. 3,052,750, dated Sept. 4, 1962, Ser. No. 840,065, Sept. 15, 1959. Application for reissue June 29, 1964, Ser. No. 390,255

7 Claims. (Cl. 174—90)



1. A device for connecting electrical conductors having at least one steel strand, comprising an aluminum ferrule, a plurality of cylindrically configured inserts made of highly frangible powdered metal within the ferrule, said inserts providing a central aperture adapted to accommodate the steel strand, a plurality of serrations in said inserts, said inserts adapted to be fractured into small pieces upon the application of crimping pressure to the outside of the aluminum ferrule.

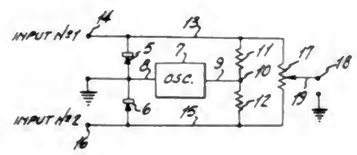
25,699

SIMPLIFIED TWO-CHANNEL MULTIPLEX SYSTEM

Marshall C. Kidd, Wayland, Mass., assignor to Radio Corporation of America, a corporation of Delaware

Original No. 2,921,981, dated Jan. 19, 1960, Ser. No. 425,455, Apr. 26, 1954. Application for reissue Sept. 21, 1961, Ser. No. 141,566

16 Claims. (Cl. 179—15)



16. A receiving terminal of a two-channel multiplex system comprising, input terminals to which a two-channel multiplex signal is applied, a first diode connected to said input terminals, a second diode connected to said input terminals, said diodes being oppositely poled with reference to said input terminals, a capacitor and an output impedance connected to said first diode, a capacitor and an output impedance connected to said second diode, and means to derive separate message signals from across said output impedance.

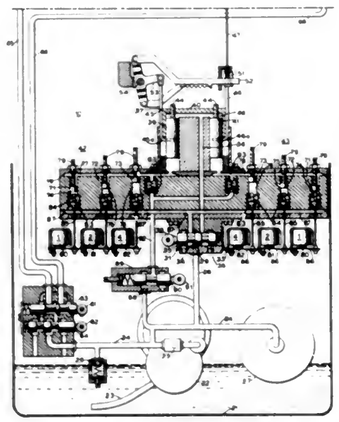
25,700

HYDRAULIC CONTROL APPARATUS

Frank J. Furman, Endicott, and Hugo A. Panissidi, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original No. 2,923,131, dated Feb. 2, 1960, Ser. No. 479,112, Dec. 31, 1954. Application for reissue Jan. 26, 1962, Ser. No. 170,306

27 Claims. (Cl. 60—54.5)



1. In cyclically operated hydraulic control apparatus, the combination of a driven piston having an initial starting position and whose limit of movement therefrom is to be selectively controlled to one of a plurality of positions, a control assembly including control pistons for providing the preselected limits of driven piston travel, means including a hydraulic column for connecting said control pistons to said driven piston, cyclically operated means for hydraulically shifting said driven piston to one of the plurality of positions and for hydraulically returning the same to its initial starting position through said hydraulic column, means for holding said driven piston stationary during cyclical operation of said last-named means, and valve means for periodically supplying liquid under pressure to said hydraulic column to maintain a constant volume of liquid between said control and driven pistons.

PLANT PATENTS

GRANTED DECEMBER 15, 1964

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,462

ROSE PLANT

Pedro Dot, Barcelona, Spain, assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed Sept. 26, 1963, Ser. No. 311,930

1 Claim. (Cl. Plt.—20)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a tall and upright habit of growth, a habit of bearing flowers both singly and several to a stem, said flowers being of moderate size and having good petalage, a distinctive and attractive general color tonality of the flowers, said color being dominantly Rose Pink in the open bloom stage and changing to a Bright Scarlet due to exposure to sunlight, good cut flower longevity, and a slight musk like fragrance of the flowers.

2,463

ROSE PLANT

Ernest Schwartz, Kingsville, Md., assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1963, Ser. No. 317,393

1 Claim. (Cl. Plt.—1)

A new and distinctive variety of rose plant of the shrub class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact and bushy plant habit, with a gradually spreading habit which makes the plant suitable for hedge or ground cover purposes, glossy, disease resistant foliage, outstandingly good floriferousness and continuity of flowering, a habit of bearing the flowers in clusters, a distinctive and attractive white flower color, a slight, spicy flower fragrance, and a superior winter hardiness.

2,464

APPLE TREE

William E. Silva, 408 Water Trough Road, Sebastopol, Calif.

Filed Oct. 7, 1963, Ser. No. 314,573

1 Claim. (Cl. Plt.—34)

A new and distinct variety of apple tree, substantially as shown and described, particularly characterized as to novelty by the deep red color of its very early ripening fruit which comes to marketing maturity in mid-August; by the relatively high percentage of soluble solids and sweet flavor for a fruit maturing so early in the season; and by the excellent and extraordinary keeping quality of the ripened fruit without cold storage.

PATENTS

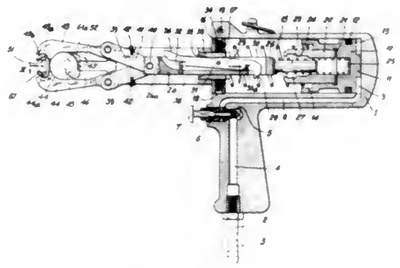
GRANTED DECEMBER 15, 1964

GENERAL AND MECHANICAL

3,160,890
APPARATUS FOR APPLYING CLIPS

Roger Lefebvre, Vosges, France, assignor to Société Française d'Agrafage Industriel par Abreviation Sofragrof, Vosges, France, a company of France

Filed Jan. 14, 1963, Ser. No. 251,343
Claims priority, application France, Jan. 24, 1962, 885,742
2 Claims. (Cl. 1—187)

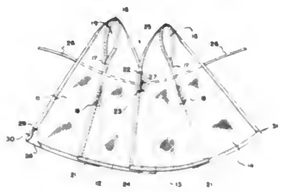


1. Apparatus for applying clips, comprising jaws for holding said clips, a frame along which said jaws can slide, a charging device associated with said frame, and a piston associated with a rod for controlling said jaws, said piston in a first stage repelling said rod to cause said jaws to close and then engaging said rod in opposition to a return spring, and, in a second stage, entraining said rod to return the jaws rearwardly of the charging device, the said rod then being disengaged and returned by said spring to the advanced position together with the jaws between which a fresh clip has been inserted, the piston being pneumatically controlled and its return movement being effected by a spring which is loaded during the advancing movement of the piston, the piston comprising a sleeve in which the rod can slide, said rod being provided with a lever adapted to latch onto the sleeve, and an abutment being provided on the means for guiding the rod to cause the disengagement of said lever.

3,160,891
MEDICAL EXAMINATION GOWN

Gladys E. MacDonald, 442 Lexington, Grosse Pointe Farms, Mich.

Filed June 15, 1961, Ser. No. 117,333
1 Claim. (Cl. 2—69)



A medical examination gown comprising four similarly shaped flat cut panels; each very narrow at its upper end and each having side edges diverging very considerably toward its lower end; the four panels being identified respectively as left front, left rear, right rear, right front;

with adjacent upper ends of the left panels being stitched to each other and with the adjacent upper ends of the right panels being stitched to each other, to provide shoulder straps;

with adjacent side edges of the left panels, and with adjacent side edges of the rear panels, and with adjacent side edges of the right panels, respectively, being stitched to each other longitudinally for the length of the approximately middle third only of such side edges, to define two side stitchings and a rear center stitching, all approximately waist high;

the width of the panels below such longitudinal stitchings being such that the widened lowermost parts of such panels overlap, with the front panels overlapping relative to each other when they are drawn together to enclose a human form inside the garment;

and a tie belt extending transversely of the garment across all four panels and secured by additional stitchings at the rear center stitching which secures the rear panels together, such belt drawing the front panels together;

with the upper parts of the adjacent edges of the rear panels defining a rear V-neck, and the upper parts of the adjacent edges of the front panels defining a front V-neck when the garment is drawn closed.

3,160,892
CONVERTIBLE WEARING APPAREL

Miriam M. Semons, 202 E. 38th St., New York 16, N.Y.

Filed May 16, 1961, Ser. No. 110,563
1 Claim. (Cl. 2—88)

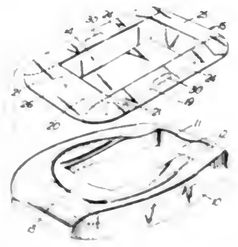


A garment adapted to be worn either as a short length stole or as a readily adjustable longer length jacket comprising a substantially rectangular imperforate sheet of readily foldable material, said sheet being adapted to fold about a pair of spaced transversely extending foldlines to define a three-ply oblong unit including a middle ply, an outer ply connected to said middle ply about a foldline extending along one end thereof, and an inner ply connected about a foldline extending along the other end of said outer ply, and fastening means connected along the opposed marginal edges of each ply which extend normal to the fold lines of the said plies, said fastening means including a first element connected to each side of said middle ply along the opposed narrow edges extending normal to the fold line thereof, and a complementary fastening element connected to the opposed narrow edges which extend normal to the fold line of said inner and outer plies, said respective complement fastening elements being connected to the side of each inner and outer ply facing said middle ply whereby said complementary elements of the inner and outer plies are fastened to the cooperating first elements of the middle ply when worn as a stole, and whereby only the cooperating fasteners of said inner ply and middle ply only are secured when worn as a jacket thereby permitting the length of said jacket to be adjusted in length by pulling down the unfastened free edge of said inner ply a desired amount.

3,160,893
BEDPANS

Geoffrey Carter Steel, 14 Roehampton Gate, London SW. 15, England, and Harold Alfred Doherty, Oak Trees, Cockfosters Road, Barnet, Hertfordshire, England

Filed June 6, 1962, Ser. No. 200,412
Claims priority, application Great Britain, June 7, 1961, 20,601/61
3 Claims. (Cl. 4—112)



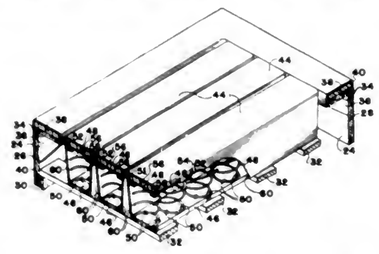
1. A bedpan for use by a patient confined to bed and comprising a support member providing an upwardly facing surface to support the user's body and having a rectangular aperture therein and means for holding said surface in a position raised from the bed surface and, in combination with the support member, an expandable container folded from a single blank of water-resistant flexible sheet material, said container comprising a rectangular open-mouthed tray having a flat base with upstanding walls folded upwardly from the base and said walls being continuous around the base and united at the corners of the tray by pleated portions of the material, and flanged portions which extend outwardly from the upper edges of the walls, overlapping each other at the corners, and seat on the said upwardly facing surface, the tray portion being located within the aperture and dependent from said surface.

3,160,894
SPRING CONSTRUCTION

Louis E. Frey, 382 Fairway, Wichita, Kans.

Filed Jan. 9, 1962, Ser. No. 165,131
6 Claims. (Cl. 5—243)

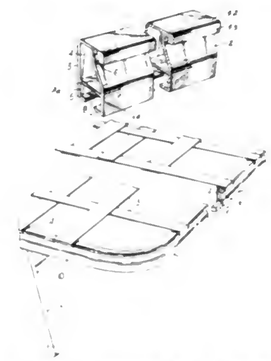
4. Spring means for a bed or the like comprising, in combination, open frame means, said frame means having mounting portions thereon in facing relation, support means positioned on said mounting portions of said frame means, and a plurality of elongated longitudinally extending compressible members, said compressible members being positioned in close proximity to each other within said frame means and carried by said support means, separate cover means on each of said compressible members and said frame means with said cover means being the outer surface of said spring means and with a portion of said cover means being positioned between adjacent ones of said compressible members, said compressible members being independently compressible in response to a weight placed thereon in use.



3,160,895
STRUCTURAL ELEMENTS FOR BEDS

John Neville Stafford, London, England, assignor to Stafford Patents and Holdings Limited, London, England, a British company

Filed Aug. 2, 1962, Ser. No. 214,241
Claims priority, application Great Britain, Feb. 22, 1962, 6,997/62
17 Claims. (Cl. 5—286)



1. A bed frame comprising side rails and end rails, said end rails being united to said side rails, at least said side rails each including a torsionally stiff, closed, substantially rectangular hollow section, dependent flanges with inturned lips thereon defining a continuous T-section slot disposed below the lower wall of said section and a second flange disposed on the outer side wall of said section, said second flange cooperating with said side wall to define a groove extending throughout the length of said rails, said groove being inclined relative to the horizontal.

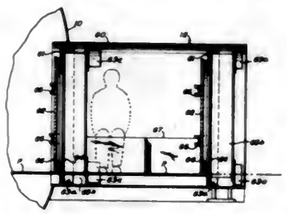
3,160,896
PRESSURIZED CHAMBER DYEING WITH PERSONNEL INGRESS INTO AND EGRESS FROM THE CHAMBER

Horace L. Smith, Jr., Richmond, Va., assignor, by mesne assignments, to Hupp Corporation, a corporation of Virginia

Filed July 28, 1959, Ser. No. 830,100
4 Claims. (Cl. 8—147)

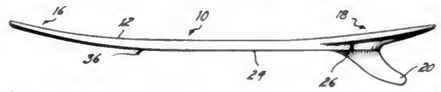
2. In a process for dyeing textile material in a dye bath positioned in a dye room which is of sufficient size to permit personnel to move freely therein while carrying out said dyeing operation, the improvement which comprises sealing said dye room and building up an air pressure therein in excess of atmospheric pressure out-

side said room; thereafter dyeing said material in said dye bath while maintaining the pressure over the dye bath substantially the same as the pressure in said room and while maintaining the dye bath at a temperature in excess of its boiling point at atmospheric pressure but below the boiling point thereof at the pressure in said room; maintaining a superatmospheric pressure in said room throughout said dyeing operation, providing a personnel



admitting and discharging zone between said dye room and the outside atmosphere, raising the pressure in said zone to above atmospheric pressure and equalizing the pressure inside the zone and said dye room to permit the admission of personnel into said dye room, and reducing the pressure in said zone from the pressure in said room to atmospheric pressure to permit the discharge of personnel from said dye room during the dyeing operation without substantially varying the pressure in said dye room.

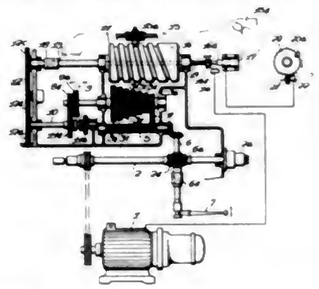
3,160,897
HYDROPLANE SURFBOARD
John M. Kelly, Jr., 4117 Black Point Road, Honolulu, Hawaii
Filed Apr. 15, 1963, Ser. No. 273,024
4 Claims. (Cl. 9—310)



1. A surfboard comprising an elongated member having a deck and a bottom face, and a vertically and transversely extending shoulder in the bottom face dividing said face into two discreet vertically spaced surfaces, the upper one extending aft of the shoulder to the stern and constituting a tail surface and the lower one extending forwardly of the shoulder and constituting a planing surface, the portion of the board aft of said shoulder being a scorpion tail whose sides taper inwardly towards the stern to provide a cutaway portion between the sides of the tail and extensions of the sides of the board aft of said shoulder, and a skeg depending from the after end of said planing surface the normal stance of the rider for planing being with one foot over the skeg and the other foot forwardly thereof over the planing surface.

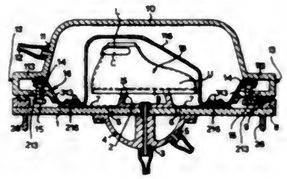
3,160,898
HIGH-SPEED, AUTOMATIC SCREW CUTTING MACHINE
Yoshizo Kitano, 1–22 Fukiagehonmachi, Chikusa-ku, Nagoya-shi, Japan
Filed Oct. 25, 1960, Ser. No. 64,819
Claims priority, application Japan Oct. 31, 1959
5 Claims. (Cl. 10—101)

1. A high speed, automatic screw-cutting machine comprising a frame, a main shaft carried by said frame and having a work holder at one end thereof, means for rotating the main shaft, a screw-pitch-adjusting gear mechanism rotatable with said main shaft, a lead cam mechanism operatively connected to said main shaft by said screw-pitch-adjusting gear mechanism, a ram member connected to said lead cam mechanism and reciprocable along an axis parallel to the longitudinal axis of said main shaft, and a tool head assembly mounted on said ram, said tool head assembly including means for holding a thread cutting tool in proper relationship to a work piece carried by said work holder, ratchet means carried by said ram member, said ratchet means controlling the number of threads cut by said tool, means on said tool holding means cooperating with said ratchet means to incrementally advance said tool towards a work piece to



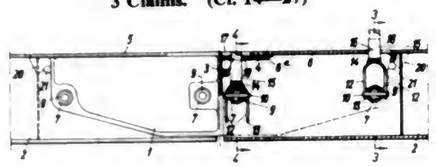
vary the depth of a cut, said ratchet means including a toothed ratchet wheel normally held in an initial position and adapted to rotate a one-tooth distance upon each reciprocation of said ram, a normally open switch operatively spaced from said ratchet wheel adjacent a first tooth and a switch closing member attached to said ratchet wheel adjacent a second tooth which is spaced apart from said first tooth a predetermined number of teeth equal to the number of threads to be cut in the work piece whereby upon rotation of the ratchet wheel, said predetermined number of teeth, the member closes the switch which in turn causes the rotational cessation of the work piece.

3,160,899
DEVICE FOR GLUEING THE UPPER TO SOLES OF SHOES
Mario Bille and Sergio Turato, both of 39 Via V. Veneto, Thiene, Vicenza, Italy
Filed May 3, 1962, Ser. No. 192,262
Claims priority, application Italy, May 8, 1961, 647,839; Mar. 12, 1962, 5,271/62
6 Claims. (Cl. 12—1)



1. A device for glueing shoe uppers to insoles, comprising a supporting plate, at least one open-top socket on said plate for supporting an assemblage including an insole, a last positioned on the insole and a shoe upper on said last having marginal portions surrounding the insole, the peripheral dimensions of said socket being less than those of the insole of said assemblage to free said marginal portions of the shoe upper for inturning to underlie the insole, a bell shaped cover for said plate, an elastic membrane spanning said cover, means sealing said membrane and said cover to form a pressure chamber therebetween, means for sealing said cover and said plate for forming a vacuum chamber between said plate and said membrane, first duct means leading to the interior of said socket for communication with a vacuum source for retaining the insole of said assemblage clamped on said socket by suction, second duct means through said plate outside said socket for communication with a vacuum source for evacuating said vacuum chamber to draw said membrane down over the shoe upper of said assemblage to hold the assemblage on said socket, and third duct means through said cover and in communication with said pressure chamber for communication with a fluid pressure source for pressing said membrane around the shoe upper to inturn said marginal portions and force the shoe upper tightly against the insole.

3,160,900
DISMOUNTABLE BRIDGE, FOR INSTANCE FLOATING BRIDGE
Hugo Sedlacek, Rheinhausen, Hans Jürgen Sontag, Krefeld-Forstwalde, and Helmut vom Endt, Rheinhausen, Germany, assignors to Fa. Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Feb. 26, 1960, Ser. No. 11,313
Claims priority, application Germany, Mar. 2, 1959, A 31,482
3 Claims. (Cl. 14—27)



1. A dismountable bridge, as a floating bridge or dike bridge, comprising

a plurality of longitudinal girders disposed in longitudinal direction in series relative to each other and having vertical walls oppositely spaced apart from each other,

a joint bar of H-shape seen from above and connecting each pair of said girders disposed adjacent each other in said series,

said joint bar including a vertically and transversely disposed stay member and two vertical cheeks spaced apart from each other to define an open space therebetween,

the abutting ends of each pair of said girders in said series projecting into said open space between said cheeks and said vertical walls of said girders engaging the inner faces of said cheeks,

each of said vertical walls of said abutting ends of said girders having two bores spaced apart from each other in longitudinal direction of said girders and aligned with said bores in said opposite walls,

each of said cheeks of said joint bar having two complementary bores aligned with corresponding of said bores of said girders,

a pair of guide bolts disposed in each pair of opposite bores of said vertical walls of said girders and movable towards and away from each other in axial direction, respectively, to enter into and withdraw from, respectively, the corresponding of said bores of said cheeks of said joint bar,

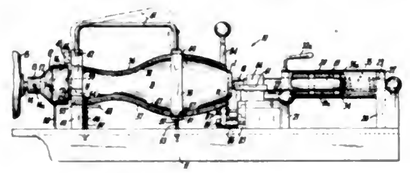
means disposed in said girders for positioning said guide bolts and moving the latter in axial direction towards and away from each other, respectively, and said means for positioning and moving said coupling bolts in axial direction comprising

a guide tube disposed between each pair of said aligned bores of said vertical walls of said girders and receiving the corresponding coupling bolts,

wall members straddling each of said guide tubes and, thereby, said coupling bolts,

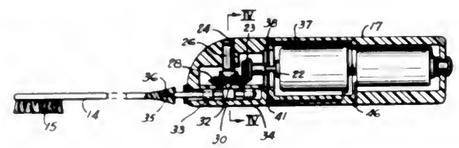
pins extending through each of said coupling bolts, and said wall members being provided with curved guide means engaging said pins for movement of said coupling bolts in axial direction thereof upon vertical movement of said wall members.

3,160,901
BOWLING PIN CONDITIONER
Abraham J. Cohen, Yonkers, N.Y., assignor to Sports Arenas, Inc., Yonkers, N.Y., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 256,024
12 Claims. (Cl. 15—4)



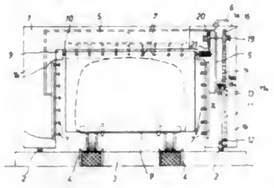
1. A device for conditioning bowling pins comprising a base, means on said base for releasably mounting a bowling pin for rotation about its longitudinal axis while horizontally disposed, means for rotating said pin, first shoe means movably mounted on said base for movement into and out of engagement with surface portions of said rotating pin, second shoe means movably mounted on said base and in opposed relation to said first shoe means for movement into and out of engagement with said rotating pin, cleaning means on the inner surface of said first shoe means, wiping means on the inner surface of said second shoe means, and means on said first shoe means engageable with said second shoe means upon the movement of said first shoe means into contact with said rotating pin for moving said second shoe means out of contact with said rotating pin.

3,160,902
MECHANICAL TOOTHBRUSH
Julian Robert Aymar, 2018 E. 67th St., Brooklyn, N.Y.
Filed Feb. 8, 1963, Ser. No. 257,239
8 Claims. (Cl. 15—22)



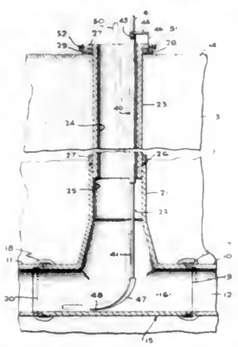
1. A mechanical toothbrush comprising an elongated hollow casing having an opening at one end, said opening being offset with respect to the longitudinal axis of said casing, a brush rod slidably supported in said casing and extending through and beyond said opening, a crank pin firmly connected with said brush rod and extending perpendicular thereto, a gear having a plain lower face and an opening in said lower face located eccentrically with respect to the center of said gear, means for supporting said gear in said casing for rotation in a plane parallel to the axis of said casing, said crank pin extending into the eccentric opening in said gear, means for rotating said gear whereby said crank pin transmits reciprocating and oscillating movement to said brush rod, and a brush element carried by said brush rod.

3,160,903
APPARATUS FOR AUTOMATICALLY CLEANING VEHICLES OR THE LIKE
Gary G. Grass, Rahway, N.J., assignor to Colonnag Ag., Zug, Switzerland
Filed Sept. 23, 1963, Ser. No. 310,836
Claims priority, application Germany, Sept. 25, 1962, C 28,014
9 Claims. (Cl. 15—97)



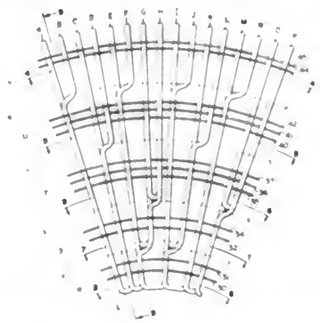
1. Apparatus for automatically cleaning objects, particularly vehicles and the like, comprising at least one cleaning member supported to be movable from a work position during which said cleaning member is in wiping contact with the object to be cleaned into a rest position out of contact with said object, nozzle means positioned to cooperate with said object for applying desired fluid medium onto said object, a conduit system for supplying said nozzle means with said desired fluid medium, fluid actuated adjustment means cooperating with each said cleaning member for displacing the latter from said rest position into said working position, said conduit system including means for supplying fluid medium moving through said conduit system to said fluid actuated adjustment means for actuating the latter, said at least one cleaning member being of curtain-like configuration, means for supporting each curtain-like configured cleaning member such that it can be rolled-up into said rest position or unraveled into said working position by means of said fluid actuated adjustment means.

3,160,904
ROOT CLEANER DEFLECTOR ASSEMBLY
Frank B. Swanson, 1016 E. Colorado Blvd., Glendale, Calif.
Filed Oct. 3, 1963, Ser. No. 313,686
3 Claims. (Cl. 15—104.3)



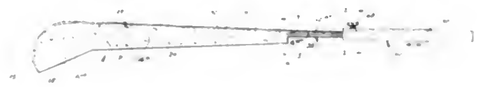
1. In a sewer pipe line adapted to extend through the earth beneath ground level, a deflector assembly for directing the path of a flexible root remover comprising a pipe fitting having a horizontal passage adapted to interconnect in said pipe line, a vertical section having a vertical passage therein in communication with said horizontal passage, and including an open outside end, and a deflector member comprising a shaft, a curved blade having a concave side and attached at the lower end of said shaft, a bracket at the upper end of the shaft having a releasable attachment to said outside end, said bracket having one position on one side of said end wherein the concave side of said blade faces said horizontal passage in one direction, said bracket being removable and attachable to said end on the opposite side wherein the concave side of said blade faces said horizontal passage in the opposite direction, whereby to direct said flexible root remover in a selected direction from said vertical passage into said horizontal passage.

3,160,905
BUFFING WHEEL
Frederick J. Lansing, Rochester, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,453
20 Claims. (Cl. 15—230.15)



1. A generally circular rotary buffing wheel comprising generally radial strands that are arranged so that the density of the strands, in circular sections of equal respective areas through the strands, concentrically of the axis of rotation of the wheel, increases from the periphery toward the center of the wheel.

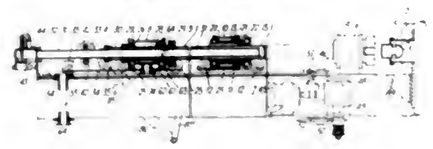
3,160,906
NON-GLARE COVER FOR WINDSHIELD WIPER
Diego J. Morena, 29 Blanche St., Plainview, N.Y.
Filed Nov. 21, 1963, Ser. No. 325,325
5 Claims. (Cl. 15—250.35)



1. A cover for a windshield wiper arm, comprising an elongated, hollow shell-like member having an elongated tapered top wall and two opposed elongated side walls integral with and extending outwardly of opposite lateral edges of the top wall, said side walls having inturned flanges for engaging lateral edges of the bottom of the wiper arm along its length, said side walls being flexible so that said member snaps on the wiper arm in engagement with its underside to enclose top and sides of the wiper arm, said member having an outer roughened surface to eliminate glare by light beams impinging on said member, said side walls having narrowed end portions defining with an end portion of said top wall a channel-like end structure for engaging on a bar of said wiper arm, a channel-like member slidably mounted on said channel-like end structure to serve as an extension thereof for

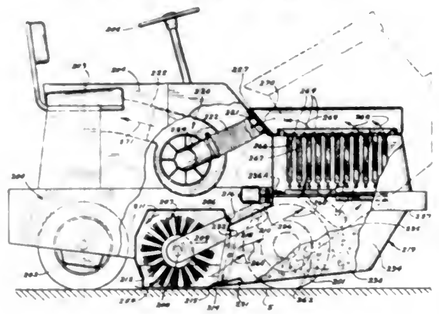
covering wiper arm bars of different lengths, and means for adjustably securing said channel-like member in place with respect to said end structure.

3,160,907
FLUID HEATER CLEANER
Frederick Sidney Tollow, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company
Filed May 31, 1962, Ser. No. 199,119
Claims priority, application Great Britain, June 2, 1961, 20,086/61
6 Claims. (Cl. 15—317)



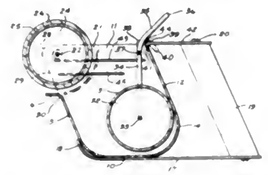
1. A fluid heater cleaner having an elongated nozzle tube axially reciprocable to advance the nozzle tube, for operation in a gas passage or the like containing a fluid heater to be cleaned, from an inoperative, retracted position and to withdraw the nozzle tube to the retracted position, wherein means are arranged automatically, throughout the advance of the nozzle tube, to increasingly rock about a horizontal axis transverse to the nozzle tube the length of the nozzle tube outside the gas passage or the like in a manner tending to compensate increasing sag under gravity of the discharge end of the nozzle tube due to the increasing unsupported length of the nozzle tube within the gas passage or the like and automatically, throughout the retraction of the nozzle tube, to decreasingly rock about the said horizontal axis of the length of the nozzle tube outside the gas passage or the like in a manner tending to compensate decreasing sag under gravity of the discharge end of the nozzle tube due to the decreasing unsupported length of the nozzle tube within the gas passage or the like.

3,160,908
POWER SWEEPER AIR FILTER AND DUST COLLECTOR SYSTEM
Ralph C. Peabody and Keith N. Krier, both of Minneapolis, Minn., assignors to The G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 13, 1961, Ser. No. 137,864
5 Claims. (Cl. 15—340)



1. In a mobile sweeping machine mounted for movement over a surface, said machine being thereby subjected to acceleration forces incidental to such movement, said machine having thereon an enclosure for a power driven brush, a dust collection chamber mounted on the machine and connected to said enclosure, and suction blower means on the machine connected to the chamber for moving through the chamber the dust laden air originating in said enclosure, the chamber being connected in circuit to said suction blower so that the dust laden air moves generally upwardly therethrough, the improvement comprising a filter across the chamber in the path of upward movement of the dust laden air, said filter being composed of a plurality of adjacent upwardly opening, downwardly depending pockets of filter fabric set side by side in spaced relation and connected together at their upper ends and connected to the walls of the chamber, said pockets being supported at their upper ends and hanging unrestrained downwardly in the chamber in a direction generally opposite to the movement of the dust laden air in the chamber, and separate spacer means in each of said pockets, said spacer means comprising a member made up of inter-laced filaments of material forming an open work structure providing a plurality of individual points of support for each of the filter pocket walls where the filaments are supported by other filaments, said spacer means being operable to hold the opposite side walls of said filter pockets substantially in spaced apart planes, said spacer means being flexible in the plane of the pockets and transverse to the plane of the pockets and permitting air flow in the plane of the pockets and transverse to the pockets.

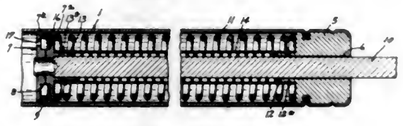
3,160,909
ROLLER PAINT APPLICATOR
Henry G. Nelkin, Kansas City, Mo., assignor to H.G. Enterprises, a co-partnership
Filed May 7, 1963, Ser. No. 278,575
4 Claims. (Cl. 15—522)



1. An applicator for fluid coatings comprising an open topped coating supply container having parallel forward and rear walls both inclining forwardly toward their top edges, side walls connecting said forward and rear walls and a bottom wall, said forward wall being of less height than said rear wall and said side walls, said side walls having forward edges that incline forwardly from adjacent the bottom thereof to the top thereof to project the upper forward corners of said side walls forwardly of the top of said front wall, an applicator roller mounted in said side walls for rotation about an axis parallel to said forward wall and intersecting said side walls adjacent the upper forward corners thereof in a position above the top of said forward wall substantially in vertical alignment with the top thereof to locate said roller so that the periphery of said roller extends forwardly beyond said top of said forward wall and upwardly above the tops of said side walls, said roller having a cylindrical body portion and an absorbent cover ply having end edges spaced inwardly from the ends of said body portion, a lip at the top of said forward wall extending forwardly from said wall for the full length thereof under the forwardly projecting portion of said applicator roller in adjacency thereto, said lip being located entirely below the bottommost portion of said roller, a supply roller having a continuous cylindrical applicator roller engaging surface extending endwise beyond the end edges of said cover ply and hook means engaging the top edge of said rear wall for swing-

ingly mounting said supply roller on said rear wall for movement between a position in which said roller is suspended from said top edge of said rear wall adjacent the bottom of said container in spaced relation to said bottom and a position with said cylindrical surface thereof in engagement with said applicator roller.

3,160,910
DOOR CLOSER
Bert A. Quinn, St. Paul, Minn., assignor to Ideal Brass Works, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 8, 1963, Ser. No. 263,834
2 Claims. (Cl. 16—51)



1. In an extensible and retractable fluid pressure-operated closure device of the type adapted to be interposed between a door frame and a hingedly connected door,

(*a*) an axially elongated cylinder having closure means at one end,

(*b*) partial closure means at the other end of said cylinder and defining a restricted axial opening,

(*c*) a plunger member,

(*d*) said plunger member including a piston mounted for axial sliding movements within said cylinder and having associated therewithin an actuating rod which is slidably received in said restricted opening,

(*e*) yielding means in said cylinder biasing said piston in a direction to retract said actuating rod,

(*f*) valve means operatively associated with said piston and restricting the passage therethrough of fluid within said cylinder during said retracting movements,

(*g*) means sealing escape of fluid from said cylinder between said partial closure and said actuating rod during movements of said plunger,

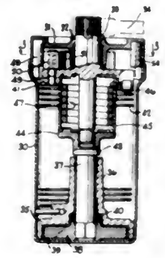
(*h*) said means including a longitudinally collapsible fluid impervious tube concentrically encompassing said actuating rod, one end of which has sealing engagement with said partial closure means and the opposite end of which has sealing engagement with said plunger in axially spaced relation to said partial closure means,

(*i*) said yielding means comprising a coiled compression spring interposed between said cylinder and said tube, and

(*j*) in further combination with collapsible and extensible spacer means interposed between said tube and said actuating rod and extending for substantially the full length of said tube.

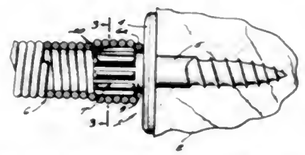
3,160,911
DOOR CHECKING APPLIANCE
John Neville Morris, 38 Carpenter Road, Edgbaston, Birmingham, England, and Ruth Margaret Williams, Littlecot Mill, Enford, near Pewsey, England
Original application Oct. 24, 1960, Ser. No. 64,499, now Patent No. 3,118,167, dated Jan. 21, 1964. Divided and this application Apr. 10, 1963, Ser. No. 271,900
2 Claims. (Cl. 16—52)

1. A door closer of the type having a return spring which is stressed when the door is opened and which operates to close the door against the resistance of a damping fluid, comprising a main casing, a primary shaft rotatably mounted within said casing, means connecting said primary shaft with the door structure whereby the primary shaft is rotated when the door is opened, a coiled return spring connected at one end to the primary shaft and at the other end to the main casing, a secondary shaft rotatably mounted within the casing, in co-axial alignment with said primary shaft, a cylindrical chamber formed within said casing, a rotor mounted upon said secondary shaft, and disposed within said chamber, a damping fluid of high viscosity filling the space between



the interior of said chamber and said rotor, a cup-shaped member fixed co-axially to said primary shaft, a similar cup-shaped member fixed co-axially to said secondary shaft, and a close-coiled spring engaging partly within one and partly within the other of said cup-shaped members, and acting as a one-way clutch device operating between said primary and secondary shafts to transmit rotary motion from the primary shaft to the secondary shaft when the door is closing.

3,160,912
DOOR STOP
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., a corporation of California
Filed Mar. 6, 1961, Ser. No. 93,673
4 Claims. (Cl. 16—85)



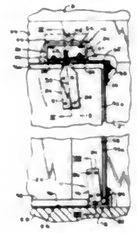
1. A door stop comprising: a fastening element; said element having a stud thereon provided with a circumferential groove; a flexible helically coiled spring stop member having coils at one end thereof surrounding said stud with a portion of one of said coils disposed in said groove to lock said spring member against axial movement relative to said fastening element; the normal inside diameter of said spring being less than the effective diameter of said stud; said fastening element including a screw having threads of opposite hand to that of the coils of the spring stop member so that rotation of the spring stop member in a direction for tightening coils thereof against said stud will apply to said fastening element a force for rotating it in a direction to tighten said screw in a support.

3,160,913
HINGE ASSEMBLY FOR A SWINGABLE DOOR
Russell N. Carey, Niles, Mich., assignor to Eliason Refrigerator Company, Hartford, Mich., a corporation of Michigan
Filed Feb. 7, 1963, Ser. No. 256,848
14 Claims. (Cl. 16—154)

1. A hinge structure for supporting a door adjacent an opening in a wall structure for movement around a hinge axis parallel with the plane of said door, said axis being

at a small acute angle to the vertical centerline of the door, comprising:

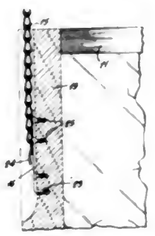
a support mechanism connected between substantially horizontal and adjacent edge portions of said door and said wall structure adjacent said opening, said support mechanism comprising pin means substantially parallel and substantially concentric with said axis, a pair of support elements mounted upon substantially opposite sides of said pin means, and a support plate substantially perpendicular to said pin means, said plate having a pin opening through which said pin means extends and substantially V-shaped recess means into which said support elements are



substantially simultaneously receivable on substantially opposite sides of said pin opening, whereby said door is substantially supported by said support mechanism for pivotal movement around said axis, said door being urged by gravity into a position wherein both support elements are disposed in said recess means and thereby opposite pivotal movement of said door; and

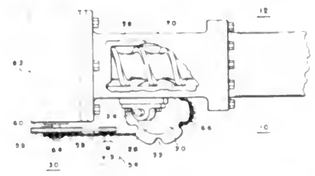
guide means connected between other adjacent edge portions of said door and said wall structure adjacent said opening and remote from said support mechanism, said guide means being located along said axis to guide the pivotal movement of said other adjacent portion of said door.

3,160,914
SASH WEIGHT MOUNTING MEANS
Angelo Brienza, 879 Pacific St., Brooklyn, N.Y.
Filed June 6, 1963, Ser. No. 285,914
1 Claim. (Cl. 16—206)



A device for attaching a weight supporting chain for a double hung window sash, said device comprising a unitary metal strip of a width less than that of the sash on which it is adapted to be mounted, said strip having a tongue extending away from one side thereof, said tongue adapted to be engaged by the weight supporting chain, said strip also having at one end a short support flange extending away from said strip at a right angle to said strip on the side of the strip opposite to the tongue carrying side, and means on said strip and cooperating with the support flange for mounting the strip on the sash.

3,160,915
APPARATUS FOR CONTINUOUSLY ADVANCING PLASTIC MATERIALS ALONG THE FLIGHTS OF AN EXTRUDER SCREW
James L. Wallace, Wilbraham, Mass., and George C. Vincent, 42 Decorie Drive, Wilbraham, Mass.; said Wallace assignor to Monsanto Company, a corporation of Delaware
Filed Jan. 31, 1962, Ser. No. 170,044
2 Claims. (Cl. 18—12)



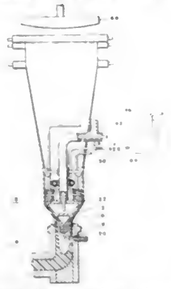
1. In combination in an extruder, an elongated casing defining a lengthwise bore and having an inlet for solid materials, a rotatable screw mounted within said bore and provided with solid helical flights, a rotatable member comprising a circular plate, chamfered and notched at intervals along its peripheral edge, positioned to intersect said casing through a slot substantially adjacent said inlet and to mesh with the flights of said screw and a variable speed motor linked to synchronizing means for rotating both the screw and circular plate at a predetermined speed ratio.

3,160,916
EXTRUDER SCREW
Angus Rucker Blakey, Jr., Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 178,822
2 Claims. (Cl. 18—12)



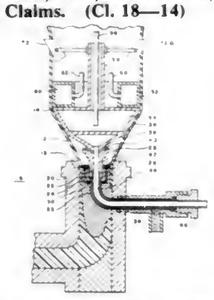
1. An extruder screw having two sections; the first section located on the up-stream portion of the screw and being a gradual compression zone having a main channel of gradually increasing root diameter lying within at least one helically disposed main flight; the second section being a rapid compression zone located on the down-stream end of said screw and having a shear ring, at least one channel of a rapidly increasing root diameter with substantially the same root diameter as said first section at their juncture, at least one main flight, at least one helically disposed primary auxiliary flight extending from the beginning of the second section through at least one revolution, having about the same pitch and hand as said main flight and being spaced at a substantially equal distance from said main flight and from each other, and at least two secondary auxiliary flights; said shear ring being circumferentially disposed about the second section down stream of said primary auxiliary flight and arranged to reduce the clearance between the channels and the barrel of the extruder; said secondary auxiliary flights being substantially equally spaced at about an equal distance from said main flight and from each other, having substantially the same outside diameter as the main flight, and extending from a location up stream of said ring to approximately the center portion of the ring and having substantially the same helical disposition and hand as the main flight.

3,160,917
COATING OF BIAXIALLY ORIENTED FILM
Loring J. Berggren, Wilbraham, Mass., and Charles T. Hathaway, 216 Ramona Road, Danville, Calif.; said Berggren assignor to Monsanto Company, a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,453
2 Claims. (Cl. 18—14)



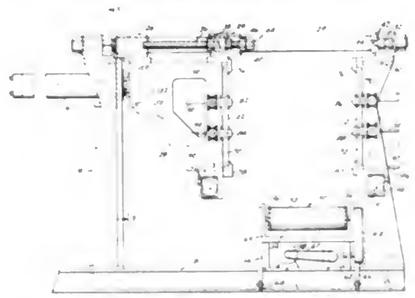
1. Apparatus adapted for coating biaxial oriented tubular-shaped members of thermoplastic synthetic polymeric material, comprising a mandrel of rigid non-porous construction stationed intermediate of an annular extrusion die orifice and take-off means, the said mandrel being provided externally with a longitudinally diverging advance end of cross-sectional continuous curvature, fluid coating means located on said mandrel above the diverging advance end, said coating means comprising an annularly grooved, rigid cylindrical section provided with means for the entry of a liquid coating material into said annular groove, the diameter of the cylindrical section extending rearwardly from said annular groove being reduced and coating fluid pressure control means adapted to adjust the pressure of the liquid coating material existing from said coating means; said mandrel being provided internally with a plurality of temperature control zones.

3,160,918
APPARATUS UTILIZING A LUBRICATED MANDREL FOR INTRODUCING BIAXIAL ORIENTATION INTO THERMOPLASTIC TUBULAR MEMBERS
Loring J. Berggren, Wilbraham, Mass., and Charles T. Hathaway, 160 Glen Court, Walnut Creek, Calif.; said Berggren assignor to Monsanto Company, a corporation of Delaware
Filed Nov. 15, 1961, Ser. No. 152,469
2 Claims. (Cl. 18—14)



1. Apparatus designed to introduce biaxial orientation into a tubularly-shaped member of thermoplastic synthetic polymeric material, the said apparatus comprising, in combination, a non-porous mandrel of rigid construction provided externally with a smooth, heat-conducting, longitudinally diverging advance end of cross-sectional continuous curvature, said mandrel being provided internally with a plurality of temperature control zones to control the surface temperature of various portions of said mandrel, an annular die extrusion head axially aligned with the longitudinally diverging advance end of said mandrel, lubricant distributing means for providing lubricating liquid within the enclosure defined by the connecting boundaries of (1) the inner surface of the tubularly-shaped member of said thermoplastic synthetic polymeric material, (2) the longitudinal diverging advance end of said mandrel, and (3) said annular die extrusion head, and lubricating liquid level control means to control the level of said liquid within said enclosure; the maximum diameter of the mandrel transverse to the direction of tubular travel being larger than the diameter of the annular die of said extrusion head.

3,160,919
MOLDING PRESS
Vincent A. Carter, Berkeley Heights, N.J., assignor to Champlain-Zapata Plastic Machinery, Inc., Caldwell, N.J., a corporation of Delaware
Filed June 12, 1962, Ser. No. 201,996
10 Claims. (Cl. 18—17)



1. A molding press for the molding of expandable plastic beads comprising

(*a*) a stationary frame including

(1) a first upright member having a portion defining a stationary platen adapted to have a first mold section mounted thereon,

(2) a second upright frame member spaced from said first upright frame member, and

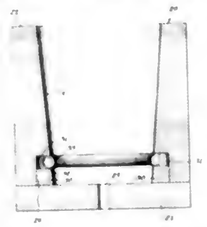
(3) means connecting said upright members at the upper end portions thereof comprising a pair of laterally spaced, horizontal tie rods,

(*b*) a movable platen adapted to have a second mold section mounted thereon and being slidably suspended only from said tie rods at two longitudinally spaced points thereon for movement toward and away from said stationary platen, the area between said platens being unobstructed and freely accessible in all positions thereof, and

(*c*) hydraulically operable means carried by said second upright member and connected to said movable platen at a point within the upper half thereof for moving said movable platen toward and away from said stationary platen.

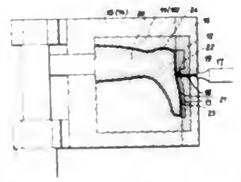
3,160,920
APPARATUS FOR FORMING PLASTIC CONTAINERS
Richard D. Busch, Springfield, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application May 20, 1959, Ser. No. 814,419. Divided and this application Nov. 17, 1961, Ser. No. 154,924
3 Claims. (Cl. 18—35)

1. In a mold for forming a container from thermoplastic sheet material, a rigid mold body having a forming cavity therein, said mold body having an annular channel therein opening to side wall portions of said cavity, and an annular modifying member formed of resilient material and positioned in said channel, said channel being of sufficient size to permit radial expansion of said modifying member, said modifying member projecting from said channel into said cavity and resisting



deformation during formation of a container to produce an annular groove in the side wall of said container, said modifying member being capable of undergoing resilient expansion outwardly into said channel for removal of a finished container from said mold cavity and of subsequently contracting to project into said cavity for formation of another container.

3,160,921
PRODUCTION OF PLASTICS MATERIAL FOOTWEAR
Herbert Ludwig, Desmastrasse 112, Uesen, near Bremen, Germany
Filed Nov. 22, 1961, Ser. No. 155,886
Claims priority, application Germany, Nov. 25, 1960, D 34,820; Oct. 17, 1961, L 40,235
7 Claims. (Cl. 18—42)



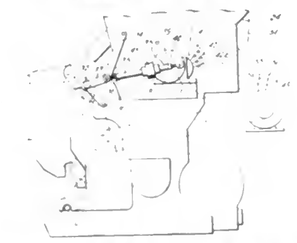
1. An injection molding device for producing footwear formed at least in part from different plastic materials comprising, in combination, mold means forming together a cavity for molding therein at least the sole of the footwear, said cavity having an open end and a peripheral surface substantially equal to that of the peripheral outline of the sole to be molded;

last means mounted opposite said open end for receiving the upper of the footwear and for closing with the upper thereon said open end, said last means having an end surface facing said cavity;

a single core means insertable in and withdrawable from said cavity and partly filling the same when inserted therein, said core means having an end face spaced from and facing said end surface of said last means and defining with the latter a free space within said cavity;

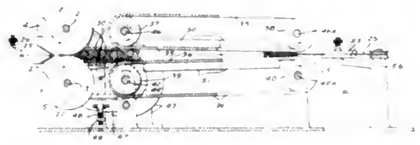
and injection means for injecting one plastic material in said free space formed in said cavity while the same is partly filled by said core means so that said one plastic material is at least in part supported by said last means and another plastic material into said cavity after said core means is withdrawn therefrom and while said last means remains in place to support said one plastic material during injection of said other plastic material.

3,160,922
GIN OVERLOAD ALARM
Joseph C. Neltzel and James A. Nelson, Dallas, Tex., assignors to The Murray Company of Texas, Inc., Dallas, Tex., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,697
3 Claims. (Cl. 19—55)



2. The combination with a cotton gin having a seed roll chamber, a saw cylinder with saw teeth passing through said chamber to cause the rotation of the seed roll therein, a main operating motor for said cylinder, a powering circuit for said motor, and a breast movable to operative and inoperative positions, of an actuating motor for said breast, an energizing circuit for said actuating motor, relay means in control of said energizing circuit, and a circuit in control of said relay means and including a current transformer coupled to said main motor powering circuit and including an element for actuating said relay means responsive to increase in current flow in said main powering circuit due to abnormal load conditions on said motor such as abnormal density of the seed roll to energize said second motor and thereby shift said gin breast to its inoperative position.

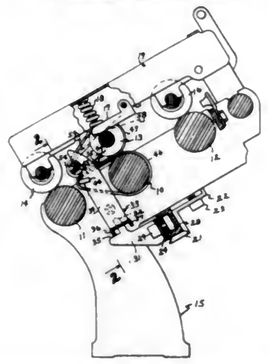
3,160,923
CRIMPING APPARATUS
Leo W. Rainard and Ewart H. Shattuck, Wilmington, Del., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Original application Dec. 24, 1956, Ser. No. 630,152. Divided and this application Jan. 18, 1961, Ser. No. 83,565
2 Claims. (Cl. 19—66)



1. Apparatus for crimping filaments comprising a tubular member forming a confined crimping zone; a pair of feed rolls disposed to feed said filaments into one end of said member to be folded over and crimped against a mass of previously crimped filaments held compacted in said member and discharged from the other end of said member and a pair of conveyor belts disposed at said other end of said member and spaced apart to receive therebetween the mass of crimped filaments discharged from said member and to form a continuation of said crimping zone, said conveyor belts converging toward each other to form a progressively tapered compacting zone therebetween so as to maintain the mass of filaments therebetween under a compacting pressure throughout their path of traveling, means driving said conveyor belts and said feed rolls at predetermined adjustable relative rates for thereby controlling the back pressure of the mass of crimped filaments in said member, means heating said filaments throughout at least a portion of their travel between said

belts, and delivery means disposed to withdraw the crimped filaments from the mass of filaments between said belts at a predetermined discharge point.

3,160,924
CRADLE ASSEMBLY FOR FIBER ATTENUATING APPARATUS
Burrel C. Cole, 1328 13th St., Columbus, Ga., assignor of fifty percent to Charlton H. Williams, Columbus, Ga.
Filed Apr. 9, 1962, Ser. No. 186,107
12 Claims. (Cl. 19—253)



1. In a drafting assembly for fiber attenuating apparatus including roll stands, cooperating pairs of top and bottom line rolls, and top and bottom aprons surrounding at least one pair of said cooperating top and bottom line rolls,

(*a*) a double-boss cradle unit having upstanding arms connected rigidly to each other and extending upwardly between adjacent pairs of said cooperating top and bottom line rolls and out of contact with said rolls,

(*b*) means pivotally supporting said cradle unit below said bottom line rolls for forward and rearward movement,

(*c*) a top unit having a double-boss top nose bar, a double-boss top roll and means connecting said double-boss top nose bar to its associated top roll and holding said top roll in spaced and parallel relation to said top nose bar,

(*d*) means pivotally attaching said top unit to at least two of said upstanding arms,

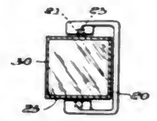
(*e*) means restricting forward movement of said top unit relative to said upstanding arms,

(*f*) removable bottom nose bars for said cradle unit attached to said upstanding arms in position for said bottom aprons to encircle said bottom nose bars, and

(*g*) means to apply pressure on said top roll to establish driving contact between said bottom and top aprons whereby said bottom aprons constitute the sole means of restricting forward movement of said bottom nose bars and said top unit associated therewith and at the same time establishes parallel alignment of said bottom nose bars and said top unit relative to said bottom line rolls.

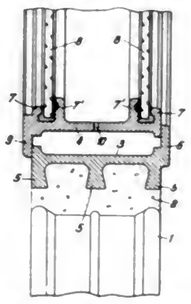
3,160,925
THERMALLY INSULATING PANELS
William J. Gort, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Mar. 31, 1961, Ser. No. 99,778
2 Claims. (Cl. 20—15)

1. A thermally insulating translucent building panel of predetermined dimensions which includes an interlayer of two sheets extruded expandable polystyrene film of different colors said sheets being arranged back-to-back such that they face in opposite directions from each other, rigid facing members on each of the parallel opposite sides of said interlayer comprising transparent glass, each outer facing member adhered to said interlayer by an adhesive which bonds the surfaces of the interlayers to the surfaces of the outer members along the outer edges of said panel to provide said interlayer to be locked and supported in position, edge protecting hardware extending vertically and horizontally along the edges of said panel enclosing the edges of the outer facing members



comprising slotted panel receiving members having a substantially U-shaped cross section, two opposite parallel sides of which being arranged to bear against the side edges of said outer facing members and the third side being arranged to bear against the outer edge of said interlayer and said outer facing members, said edge protecting hardware having mounted on opposite disposed horizontal side pivoting members for seating in oppositely disposed seating members, whereby the panel can be readily turned on a single axis to present an entirely different color scheme to the interior of an area.

3,160,926
WINDOW
Heinrich Bröse, Munsterplatz 33, Ulm (Danube), Germany
Filed Feb. 6, 1962, Ser. No. 171,407
1 Claim. (Cl. 20—53)



A window assembly of artificial material adapted to be mounted in a wall of glass bricks, comprising

at least two side-by-side window units,

window frames including top, bottom and side elements,

window wings swingably mounted on said frames,

a plurality of stays projecting outwardly from said frames,

said stays being adapted to be received by a wall surrounding said window frames,

at least one glass plate secured in each of said window wings,

at least said window frames having a width substantially identical with that of a glass brick forming a wall receiving said window assembly and being self-carrying,

said stays being thickened at their outer ends remote from said window wing,

said window frames and said window wings being disposed symmetrically to an imaginary center plane disposed parallel to said glass plates,

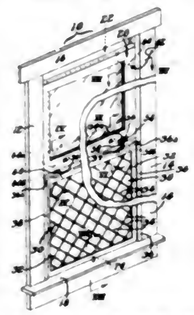
cooperating inner and outer stop ledges disposed along the periphery of said window assembly and forming part of said window frames and part of said window wings, respectively,

said pluarity of stays comprising at least two outer stays and a center stay,

an inverted rail surrounding the center stay of the top frame element in order to enforce said center stay and to assume great pressures from above, and

coupling members of a configuration complementary to that of said center stay of said window frames and disposed between and securing together said side-by-side window units.

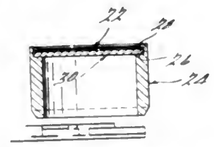
3,160,927
WINDOW SAFETY GUARD
Nicholas F. Busillo, 1340 Woodland Road, Rydall, Pa.
Filed May 29, 1963, Ser. No. 284,193
1 Claim. (Cl. 20—71)



A window safety guard for detachable mounting in an open window, said window having a frame and an inner and outer sash mounted for movement within said frame, a channel member mounted against each side of the window frame having an open end, said channel member extending from the bottom of the frame to a position not higher than the middle of the frame, a safety guard comprising a frame and means mounted within said frame for preventing access therethrough, said frame being mounted within said channel members so that the frame can be only removed by sliding out of the open ends of said members, means for locking said frame to the inner sash while said sash is in the raised position, said means comprising at least one generally Z-shaped, short length rigid bar having opposingly directed end portions, one end portion of said bar positioned within holding means in the lower portion of the inner sash and the other end portion of said bar positioned within the upper portion of the safety guard frame and an elongated, substantially uniform diameter stud extending through the inner sash and into the outer sash when said outer sash is in the raised position so that further upward movement of the inner sash to disengage the locking bar is prevented.

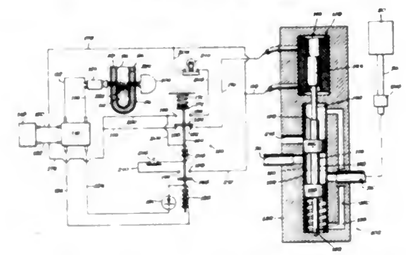
3,160,928
CORE MOLD VENT PLUG
Charles M. Smillie, Bloomfield Hills, Mich., assignor to C. M. Smillie and Company, Ferndale, Mich., a corporation of Michigan
Filed Apr. 2, 1963, Ser. No. 270,065
1 Claim. (Cl. 22—13)

An air vent plug for core boxes and the like comprising an annular body having a central opening therethrough and an annular recess at one end of said opening defining a radial shoulder and in-turned flange means extending from said shoulder, a wire mesh diaphragm extending across said opening with the annular marginal edge portion thereof confined between said shoulder and said flange means, and a flat radially extending supporting ring underlying the marginal edge portion of said wire mesh diaphragm and clamped against said shoulder by said flange means, said supporting ring having a diametrically extending bridge for supporting the central portion of said diaphragm and for providing an



abutment behind which a tool inserted into said opening through said wire mesh diaphragm can be engaged for removing said vent plug from the core box, said flange means clamping and securely holding the peripheral portion of said ring during removal of said plug to assure release of said body and the entire plug from said box.

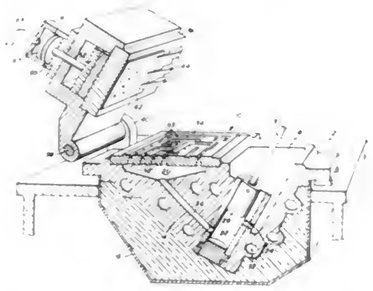
3,160,929
LADLE POURING CONTROL
James Woodburn, Jr., Wheaton, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Apr. 17, 1961, Ser. No. 103,388
7 Claims. (Cl. 22—68)



1. A control apparatus for a pressure pouring ladle having a chamber containing liquid material therein exposed to a source of relatively high pressure gas, said apparatus comprising a source of radiation located at one side of said liquid material, a radiation sensing device located at another side of said liquid material in a manner oppositely disposed to said source of radiation, a source of electrical potential, conduit means communicating between said source of high pressure gas and said chamber, solenoid operated valve means serially connected in said conduit means for at times terminating the communication between said chamber and said source of high pressure gas, a first circuit including first and second electrical contacts therein electrically connecting said solenoid valve means to said source of electrical potential, a solenoid switch assembly including first and second electrical coils and first and second switch members, a second electrical circuit operatively connecting said radiation sensing device to said first coil for energization thereof, and a third electrical circuit including third and fourth electrical contacts therein connecting said second coil to said source of electrical potential, said first switch member being so located as to close said first and second electrical contacts whenever said first coil is not energized and to open said first and second electrical contacts when said first coil is energized, said second switch member being so located as to close said third and fourth electrical contacts upon energization of said first coil so as to close said third electrical circuit thereby energizing said second coil, said second coil being effective to maintain said second switch

member in a position maintaining said third and fourth electrical contacts closed upon subsequent deenergization of said first coil.

3,160,930
CIRCUIT CASTING APPARATUS
William F. Fisher, Peterborough, Ontario, Canada, assignor to Fisher Gauge Works, Limited, Peterborough, Ontario, Canada, a corporation of Canada
Filed May 23, 1961, Ser. No. 111,999
4 Claims. (Cl. 22—71)



1. Apparatus for direct casting of metal onto a board to form a cast circuit unit, said apparatus comprising a pair of spaced molten metal containing reservoirs, a pressure cylinder interposed between said reservoirs, passage means connecting each reservoir to the pressure cylinder, a plunger reciprocably carried in said cylinder to pump molten metal from one reservoir to and out the other, one of said reservoirs having an open face, a die plate positioned on the reservoir having the open face so as to seal same, the effective area of the died plate being generally co-extensive with open face of said reservoir, heating means for maintaining the reservoirs, the pressure cylinder, the passage means connecting each reservoir with the pressure cylinder and die plate at a temperature to retain the molten metal in said molten condition, the die plate having channels on its upper face defining the circuit to be cast therein and feed passages in the lower face extending upwardly into the channels in the upper face of said die plate, the lower face of said die plate being positioned immediately adjacent the level of molten metal in the respective reservoir so that the molten metal flows directly from the reservoir through the die plate, and a platen assembly mounted for movement to and away from the upper face of the die plate, said platen being adapted to carry a board on its lower face so that when the platen is moved toward the upper face of the die plate the board will engage and register with the die plate.

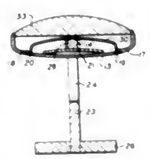
3,160,931
CORE CASTING METHOD
Edward M. Leach, Bunker Hill, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,292
6 Claims. (Cl. 22—194)

1. A process for forming ceramic cores for use in casting molds comprising preparing a liquid binder solution consisting essentially by weight of from about 35 percent to 75 percent alcohol, from about 65 percent to 25 percent ethyl silicate solution, from about 4 percent to 12 percent water and from about 0.2 percent to 0.6 percent concentrated hydrochloric acid, reducing the temperature of the liquid binder solution to a temperature between —10° F. and 20° F. and mixing therewith a refractory particle and binder solids mix consisting essentially by weight of from 6 percent to 9 percent by weight powdered feldspar, from about 1.5 percent to 3.5 percent powdered lead borate glass frit, from about 0.05 percent to 4.5 percent magnesia and the balance substantially all particulated refractory materials selected from the group consisting of zircon, silica, alumina, and firebrick grog, the amount of solids mix and liquid solution being from about 70 percent to 85 percent by weight solids mix and the balance liquid



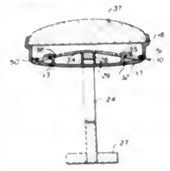
solution, maintaining the resulting slurry at not greater than room temperature until used, casting the resulting slurry at a slurry temperature no higher than room temperature in a die having a temperature from about 90° F. to about 140° F., removing the solidified core from the die and firing it to hardness at a temperature between about 1700° F. and 2400° F. for from 1 to 4 hours.

3,160,932
CUFF LINKS
Abraham Blumstein, 9803 69th Ave., Forest Hills, N.Y.
Filed Nov. 15, 1963, Ser. No. 324,066
4 Claims. (Cl. 24—97)



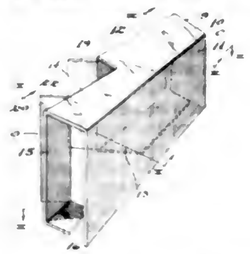
1. In a toggle finding for a jewel, a shell having an open top, and a peripheral wall sized and shaped to receive said jewel therein through said open top and having inward seat means for reception of the bottom of said jewel, said peripheral wall having opposing longitudinally extending sides having respective slots extending to the top edge of said peripheral wall, a bottom closure for said peripheral wall having longitudinally spaced bottom closure slots with said side slots longitudinally between said bottom slots, a longitudinally extending arcuate blade spring within said shell having an upper surface extending above the bottom of said side slots, a longitudinally extending resilient and flexible member within said shell below said seat means and extending between said bottom slots and having tabs respectively extended through said bottom slots and bent under said bottom closure, and a yoke having legs on each side of said shell and a crossbar extending between said legs, said bar substantially square in cross-section, said bar extending through said side slots and between and in turnable and resiliently clamped relationship with said blade spring and said longitudinally extending strip.

3,160,933
CUFF LINKS
Abraham Blumstein, 9803 69th Ave., Forest Hills, N.Y.
Filed Feb. 12, 1964, Ser. No. 344,350
6 Claims. (Cl. 24—97)



1. In a toggle finding for a jewel, a shell having an open top, and a peripheral wall sized and shaped to receive said jewel therein through said open top and having inward seat means for the reception of said jewel, said peripheral wall having opposing longitudinally extending sides having respective slots extending to the bottom edges of said peripheral wall, a bottom closure for said shell having a central longitudinally extending opening therein, a longitudinally extending blade spring within said shell below said seat means overlying and extending past the ends of said opening, a relatively flexible, longitudinally extending closure strip in said central opening having a bottom surface coplanar with the bottom surface of said bottom closure, complementary fastening elements on said blade spring and said bottom closure for fastening said bottom closure to said blade spring, and a yoke having legs on each side of said shell and a crossbar extending between said legs, said bar substantially square in cross-section, said bar extending through said side slots and between and in turnable and resiliently clamped relationship with said blade spring and said closure strip.

3,160,934
SLIDER
Steven Ausnit, 124 E. 61st St., New York, N.Y.
Filed Nov. 1, 1963, Ser. No. 320,803
6 Claims. (Cl. 24—201)



1. A slider for a flexible closure having strips with side-by-side parallel web portions and integral marginal portions, the marginal portion of one strip being above its web portion and the marginal portion of the other strip being alongside its web portion and connected thereto by an integral hinge portion, said marginal portions having facing interlocking rib and groove elements thereon, the slider comprising,

a back for sliding along above the marginal portions,

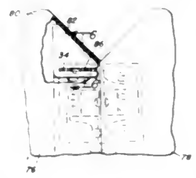
sides integral with the back extending downwardly therefrom straddling the strips for forcing them together to interlock the rib and groove elements,

a separating finger at a forward opening end of the slider positioned for projecting downwardly between the strips to separate the rib and groove elements,

said finger and one of said sides defining a lateral channel for one of the strips separating it from the other,

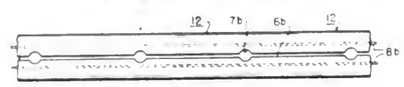
and a guide wing integral with said finger projecting forwardly and laterally ahead of said channel guiding a strip into the channel and preventing pinching thereof.

3,160,935
FASTENER
Marshall W. Broyles, 217 N. Harrison St., Alexandria, Ind.
Filed Sept. 19, 1961, Ser. No. 139,307
5 Claims. (Cl. 24—205.11)



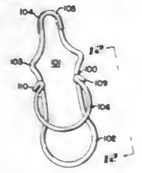
1. A fastener assembly comprising a male fastener element and a female fastener element, said male element including a plate having a lateral tongue on one edge thereof, said tongue terminating in a substantially cylindrical end edge, said female element including a plate having a pair of projecting tongues terminating in inwardly facing semicylindrical sockets at the end edges thereby defining a socket for receiving the end edge of the tongue on the male member, said tongues being of less width than the plates and constructed of resilient material for frictional locking engagement, each of said plates including a plurality of aligned openings whereby a sewing machine needle may project therethrough for stitching the elements of fabric members adapted to be connected thereby, each of said plates being constructed from a reversely folded member adapted to be positioned within the reversely folded end portion of a slide fastener mounting tape thus mounting the assembly at the end of a slide fastener, each of said tongues on the female element being reversely folded to clampingly engaging the edge of the slide fastener tape.

3,160,936
SNAP-FASTENER DEVICE
Paul B. Kapp, 512 W. Nittany Ave., State College, Pa.
Filed June 23, 1961, Ser. No. 119,214
6 Claims. (Cl. 24—208)



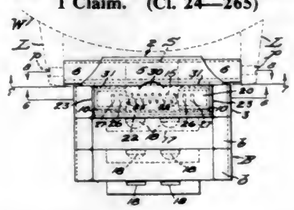
4. A snap-fastener device comprising an elongated member having a continuous top portion, at least one male snap-fastener element located on the longitudinal axis of and projecting upwardly above said top portion and integrally formed therewith, said male snap-fastener element having an outwardly flaring portion adjacent its upper end, and two resilient inturned flanges located below and spaced from said top portion, the edges of said inturned flanges being spaced apart to form a continuous throat extending throughout the length of said member, said throat having at least one enlarged portion shaped to form a female snap-fastener element in axial alignment with said male snap-fastener element and located on the opposite side of said member from said male element, and the area of said enlarged portion of said throat being slightly smaller than the maximum cross-sectional area of said outwardly flaring portion of said male element.

3,160,937
TOWEL CLAMP
Charles A. Nickason, 1581 Rupert St., Vancouver, British Columbia, Canada
Filed Nov. 27, 1962, Ser. No. 240,299
Claims priority, application Canada, Feb. 16, 1962, 842,443
9 Claims. (Cl. 24—263)



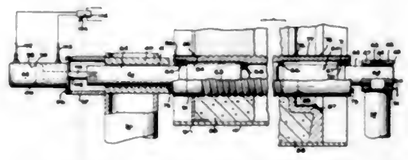
1. A clamping device for grasping a towel or the like flexible material adjacent an edge thereof comprising a first substantially U shaped member having a pair of spaced leg portions interconnected at one end by a semi-circular end portion and terminating at the opposite end in a pair of oppositely directed hooks adapted to be detachably secured to an anchoring means and a second member slidably mounted to slide along the leg portions of said first member, said second member comprising a pair of spaced arcuate, substantially parallel bars movable with respect to one another in a direction toward and away from one another and interconnected at opposed ends by further arcuate portions, said further arcuate portions having the axis thereof substantially normal to the axis of said bars and thereby being adapted to slidably embrace a portion of the respective legs of said first member, said bars being disposed respectively one on each side of said first member and radially outwards of the semi-circular end portion of the first member when said first and second members are in an article clamping position, said material being threaded in such manner whereby a tensile force thereon causes said bars to move in a direction toward one another to effect clamping of said material between the bars and the arcuate portion of the first member.

3,160,938
CLASP FOR ARTICLES OF JEWELRY AND THE LIKE
Anthony L. Minutoli, Pawtucket, R.I., assignor to Kestenman Bros. Mfg. Co., Providence, R.I., a corporation of Rhode Island
Filed Sept. 12, 1963, Ser. No. 308,458
1 Claim. (Cl. 24—265)



Means for attaching the ends of a bracelet to a wristwatch comprising an end-member having a hollow portion shaped to the contour of the links of the bracelet and a tubular portion overlying the forward side of said hollow portion for containing a conventional spring-pin, a pair of extension elements telescopically slidable within the ends of said tubular portion of the end-member and of the same shape to adapt said spring-pin to project therethrough, said spring-pin having *a formation* at its ends for engaging means on the lugs on the watch-case, an arm on each extension element extending perpendicularly from its side through a slot in the tubular portion of said end-member and enclosed in the hollow portion of the end-member, *each arm formed with a semi-circular portion having a wall closing one end thereof and provided with spaced notches on its periphery*, a spring extending between the arms on said extension elements *with its opposite ends in abutting engagement with the end walls of their semi-circular portions* for normally sliding said elements outwardly to project their ends beyond the lateral terminals of the end-member, a *cover* hinged to the hollow portion of said end-member to adapt it to be swung to close the *opening in the* bottom thereof, teeth on the inside of said *cover* engageable with *said* spaced notches in the arms on the extension elements, and means on said cover for frictionally engaging the tubular portion of said end-member to maintain the *cover* closed with its teeth engaged *with* the *spaced* notches in said arms *to lock said extension elements in adjusted relationship.*

3,160,939
OSCILLATING PACKER ROLLER
Matthew J. Franklin, Shafter, and Paul W. Kao, Bakersfield, Calif., assignors to Cen-Vi-Ro Pipe Corporation, Shafter, Calif., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,531
9 Claims. (Cl. 25—30)

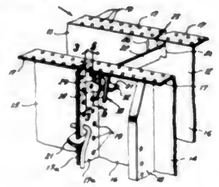


1. In a molded concrete pipe forming machine stationary means including a frame, a hollow cylindrical pipe mold rotatably mounted on the frame during deposit of a sand and aggregate concrete mix on the interior of said mold, said mold having a rotating motion on said frame during a pipe forming cycle, and a packer roller assembly for working the interior surface of the concrete in the mold, said frame including retaining means on the frame for said roller assembly, said roller assembly comprising a rotatable material working sleeve extending throughout the length of said mold, power means operably associated with said stationary means and said roller assembly acting transversely on said roller assembly adapted to impress said sleeve into pressure engagement with concrete in said mold, and power means operably associated with said frame and said roller assembly acting in an axial direction against said roller assembly adapted to reciprocate said sleeve in an axial direction whereby to reciprocate the area of engagement of said sleeve with said concrete in an axial direction while said sleeve is rolling in pressure engagement with the concrete and to create thereby a relatively smooth surface on the interior of said concrete pipe.

3,160,940
LOCKING CONNECTION FOR CONCRETE FORMS
William A. Jennings, Des Moines, Iowa, assignor to Economy Forms Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Feb. 1, 1963, Ser. No. 255,573
2 Claims. (Cl. 25—131)

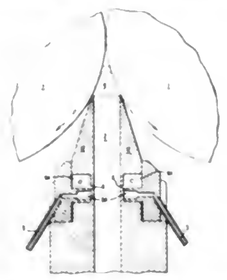
2. In combination,
(*a*) a mold form having a lateral flange formed with a circular hole and a plate extended substantially parallel to the flange and formed with a circular hole positioned in axial alignment with the hole in the flange,

(*b*) a spreader tie positioned between the flange and plate and projected laterally from said form, said tie being formed with a circular hole having substantially the same diameter as the hole in the flange,
(*c*) an elongated rod member having a first section projected through the hole in the plate and spreader tie and a second section projected through the hole in the flange, the longitudinal axis of said second section being angularly disposed from the longitudinal axis of said first section so as to hold the first section and second section in tight frictional engagement with opposite portions of the peripheral walls defining the holes in the plate and flange,



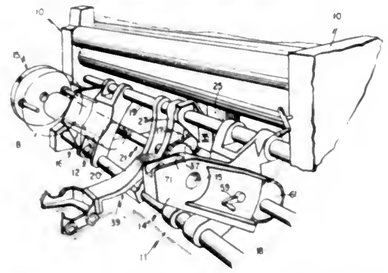
(*d*) said elongated member having an oval-shaped cross section with a major diameter substantially equal to the diameter of the hole in the spreader tie and a minor diameter less than the diameter of said major diameter, and
(*e*) means attached to the end of the first section of the elongated member providing an arm usable to rotate said member along the longitudinal axis thereof to position the major diameter of the rod member substantially parallel to the direction of the force applied to the spreader tie thereby eliminating lost motion between the spreader tie and rod member.

3,160,941
CRIMPING APPARATUS
Thomas D. Williamson, Lugoff, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,320
2 Claims. (Cl. 28—1)



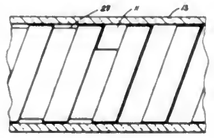
1. In a crimping device for synthetic fibers which comprises walls of substantial thickness defining an oblong, essentially rectangular crimping chamber through which the fiber to be crimped moves under compression, means for treating said fiber with a textile finish while it is contained in said chamber, said means comprising a horizontally disposed, elongated, straight edged orifice in the inner face of each of two oppositely facing walls of said chamber, the two orifices facing each other at the same distance from and relatively close to the point at which the fiber enters said crimping chamber, and two adjacent, horizontally elongated reservoir chambers communicating with said orifice within each of said two walls, each of said chambers and said orifice extending for the full width of the wall in which they are lodged, one of said chambers being positioned on one side of said orifice and being provided with means for feeding textile finish thereinto, and the other of said chambers being positioned on the other side of the orifice and being adapted to receive and pass into the crimping chamber through said orifice a gaseous fluid under pressure, whereby to drag along with said gaseous fluid, at a uniform rate, some of the finish contained in the first mentioned chamber, all to the effect that said finish enters the rectangular fiber mass within said chamber simultaneously from two opposite walls and penetrates quickly and uniformly throughout the mass of fibers contiguous to said pair of said oppositely facing orifices.

3,160,942
TEXTILE WARP PREPARING APPARATUS
Robert A. Mutter, Hawthorne, N.J., and Donald O. Shepherd, Clover, S.C., assignors, by mesne assignments, to Kidde, Walter & Company, Inc., Belleville, N.J., a corporation of New York
Filed Jan. 3, 1963, Ser. No. 249,212
12 Claims. (Cl. 28—32)



1. In warp preparing apparatus, the combination of a pair of spaced apart frame members, slide means mounted on and between said frame members, a head carriage and a tail carriage slidably mounted on said slide means and each having means for rotatably supporting one end of a beam, power driven means for said head carriage for effecting rotation of said head carriage beam supporting means, and power driven mechanism for moving said carriages simultaneously towards each other and for moving said carriages simultaneously away from each other to vary and maintain the distance therebetween, whereby said carriages can accommodate beams of various lengths.

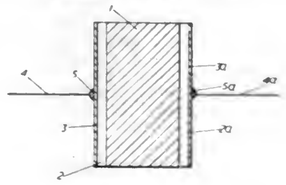
3,160,943
HELIX TRAVELLING WAVE TUBE ASSEMBLY METHOD AND APPARATUS
Raymond F. Stewart, Santa Cruz, and Daniel E. Wheeler, Soquel, Calif., assignors to Stewart Engineering Company, Santa Cruz, Calif., a corporation of California
Filed July 18, 1960, Ser. No. 43,659
22 Claims. (Cl. 29—25.15)



4. The method of mounting a helix in an external supporting structure which comprises placing a helix which has an outside normal diameter slightly greater than the inside diameter of the external supporting structure within the structure, inserting a mandrel in coopera-

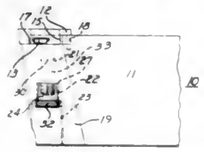
tive relationship with the helix, said mandrel having a helical groove of the desired final configuration adapted to receive the helix in the groove and position the helix, and subsequently vibrating the assembly to cause the helix to move radially outwardly against the supporting structure to be firmly engaged thereby.

3,160,944
ELECTRICAL CIRCUIT ELEMENTS
Ronald Alfred Hill and Alan William Stirling, London, England, assignors to International Standard Electric Corporation, New York, N.Y.
Filed Apr. 11, 1960, Ser. No. 21,430
Claims priority, application Great Britain, Apr. 24, 1959, 14,152/59
3 Claims. (Cl. 29—25.42)



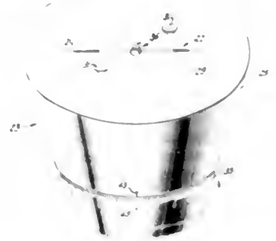
1. A method of manufacture of a circuit element which comprises mixing barium titanate with lanthanum titanate and a binder shaping the mixture thus formed into a body having a predetermined shape, firing the body in an oxidising atmosphere to produce an insulating ceramic body, firing the insulating ceramic body in a reducing atmosphere to produce a conducting ceramic body, firing a metal electrode on to the conducting ceramic body in an oxidising atmosphere and producing an oxidised layer beneath the electrode.

3,160,945
REPLACEABLE BIT TOOL
John Charles Johnson, North Huntington Township, Westmoreland County, Pa., assignor to Heppenstall Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1962, Ser. No. 211,971
6 Claims. (Cl. 29—96)



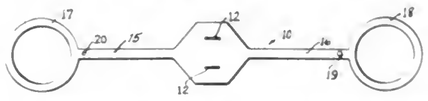
1. A bit tool comprising, in combination, a tool body having an open-topped and open-sided pocket in the upper front portion thereof, said pocket having at least two smooth upright sides at an angle to one another and a smooth bottom side generally perpendicular to said upright sides, a generally polyhedral cutting insert bit having at least three smooth sides to fit in said pocket without brazing and directly engage at least two of said pocket sides in surface contact support relation in the course of a cutting operation, said bit having a generally T-headed recess in the lower portion thereof opening out through at least one side of said bit and downwardly toward said bottom side of said pocket when said bit is therein, said recess being preformed and having rounded corners and comprising a larger holding portion above a smaller passage portion, said holding portion having upwardly facing surfaces to each side thereof, a retainer having a generally T-headed shaped head to slide into said recess and engage said surfaces to retain said bit in said pocket without movement, said retainer further having a stem narrower than said head extending downwardly through said passage portion and a bore in said tool body downwardly from said bottom side, and threaded means to hold the lower end of said retainer in fixed relation against a lower portion of said tool body below said pocket to removably secure said bit therein in smooth surface contact engagement.

3,160,946
ELECTRICAL HEATERS
Herbert F. Dickson, Jr., and Paul Haas, Seneca Falls, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 11, 1960, Ser. No. 14,471
2 Claims. (Cl. 29—155.62)



1. A process for forming a spiral reverse coil wound flat heater adapted for use in an electron discharge device comprising the steps of winding a spiral of heater wire upon a mandrel, holding the mandrel at a position along an axis intermediate the ends thereof, forming a substantially flat reverse wound mandrel coil by rotating said mandrel in a plane about said axis with the ends thereof rotatively arrested and guided for frictionally inhibited movement substantially in said plane toward the mandrel coil during rotation, heating the coiled mandrel and supported wire spiral in a reducing atmosphere between flat plates to anneal the coiled spiral, removing the mandrel from the reverse coiled spiral of wire by selectively etching away the mandrel, and electrophoretically coating the wire with an electrical insulating material.

3,160,947
ELECTRIC PLUG EXTRACTOR
Harold J. Sunderlin, 20 S. Ash, Palatine, Ill.
Filed Aug. 8, 1962, Ser. No. 215,714
4 Claims. (Cl. 29—206)



1. An electric plug extractor formed from a flat blank of non-conductive material adapted to embrace a conventional form of electric plug with the prongs thereof exposed for insertion into an associated power outlet,

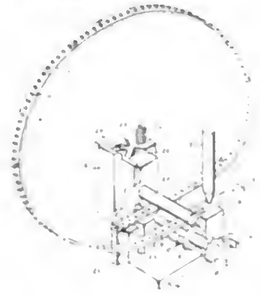
(*a*) said extractor having an enlarged body portion provided with spaced parallel slots through which the prongs of the plug may project so that said body portion may lie in facial abutment with the contacting side of the plug,

(*b*) integrally formed embracing members extending laterally from said body in opposite directions with respect to each other for embracing corresponding opposite sides of the plug when said body portion is in facial abutment with the contacting side thereof,

(*c*) finger gripping elements integrally formed on the opposite free end of said embracing members and extending in a direction opposite to the prongs of the plug and in facial abutment with respect to each other when said extractor is mounted on the plug,

(*d*) and means for releasably latching said embracing members about the sides of the plug and said finger gripping elements together in facial abutment to the rear of the plug when said extractor is mounted thereon.

3,160,948
METHOD AND APPARATUS FOR MAKING ZIPPER FASTENERS
Osborne Firing, Woodbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 14, 1962, Ser. No. 173,237
5 Claims. (Cl. 29—410)



1. In an apparatus for making zipper fastener elements from flat wire stock, the combination of

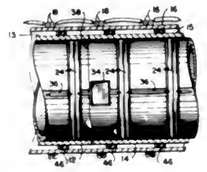
(*a*) a forming punch and complementary die movable relative to one another for forming fastener element heads consisting of recesses on one side of the wire and projections on the opposite side;

(*b*) shearing tools for cutting fastener elements from the end of the wire each containing one of said projections and recesses, said shearing tools being spaced both laterally and longitudinally from said forming punch and die with respect to the direction of movement of the wire, whereby the wire after passing through said forming punch and die may assume at least one complete loop and pass through the shearing tools in the same direction and with the fastener element heads oriented in the same way; and,

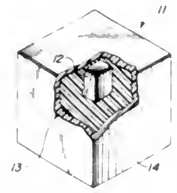
(*c*) wire feeding means operating simultaneously on a section of wire following said forming punch and die and another section preceding said shearing tools for pulling a length of wire from said forming tools and pushing an identical length of wire into said shearing tools.

3,160,949
METHOD OF JOINING ELONGATED OBJECTS
Atlee H. Bussey, Pasadena, Bud W. Morris, Anaheim, and Horace W. Ray, Pasadena, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed May 21, 1962, Ser. No. 196,388
13 Claims. (Cl. 29—421)

1. In a method of joining two objects of ductile material, the steps of inserting one of said objects into an opening in the second object, and placing high explosive charges in contact with a surface of the outer object, said high explosive charges comprising at least one unit of two strands of an elongated flexible explosive, and said strands positioned sufficiently close to each other in side-by-side relationship so that when the strands are exploded, the Mach stem effect causes the shock waves produced from each strand of explosive to interact to provide a broadened reinforced shock wave which deforms the surface of the outer object and forces it inwardly on the inner object and thereby effects a junction of said outer object and said inner object.



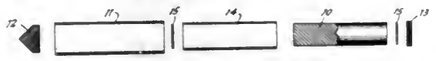
3,160,950
METHOD AND APPARATUS FOR SHOCK PROTECTION
William J. O'Sullivan, Jr., Hampton, and George F. Pezdirtz, Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 17, 1962, Ser. No. 166,970
22 Claims. (Cl. 29—423)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for protecting during transit from one site to a site of use an assembled sensitive instrument having at least a pair of delicate components normally positionable in contacting, relatively movable, operative relationship, comprising: a first solid decomposable embedding material maintaining the instrument inoperative by retaining the members of said pair of delicate components out of operative contacting relationship, and a second solid decomposable material completely encasing the entire assembled instrument, said first and said second decomposable materials having the physical property characteristics of being changeable from their solid state to a flowable state upon exposure thereof to a selected ambient condition that may exist at said site of use to thereby automatically release said delicate components and place the instrument in operative condition by permitting the contacting engagement and subsequent operative relative movement of said delicate components.

12. A method of protecting individual components of an assembled machine during transit from a first site to a site of use, comprising: spacing individual coacting assembled machine elements away from each other, embedding at least a portion of at least one of said spaced elements within a solid sublimating compound and, assembling the embedded portion of said one element out of operative position a distance at least equal to the thickness of said sublimating compound, in such manner that said one element will automatically become operative with said other element upon sublimation of said sublimating compound.

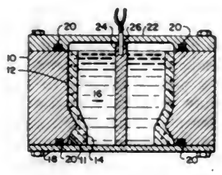
3,160,951
METHOD OF MAKING FUEL PINS BY EXTRUSION
Wallace Markert, Jr., and Paul C. Thys, Alliance, Ohio, assignors to the Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 29, 1957, Ser. No. 693,147
11 Claims. (Cl. 29—474.3)



6. In an extrusion press having a container with a die at one end thereof and an opposite end facing the end of a moveable ram, said ram being aligned with said container and die, the invention comprising the method of extruding a billet comprising the steps of mounting a billet in operative position with one end situated at said end of said ram, spacing said end of said ram from said container a distance substantially equal to the axial length of said billet, transmitting heat to said billet while said billet is positioned at the end of said ram, and then extruding said billet through said die by driving said ram toward said container.

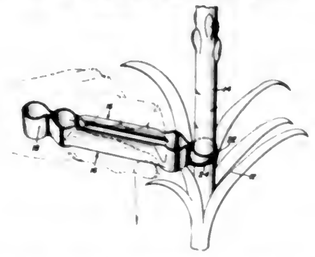
10. A method of fabricating a fuel element containing fissionable material for a nuclear reactor comprising the steps of enclosing said fissionable material in a sheath of shielding metal which is readily oxidizable and easily bonds with contacting metal surfaces at elevated hot working temperatures, forming a carbon steel jacketing element adapted to have a closely conforming sealing fit around said sheath, heating said jacketing element in an for a time sufficient to form a substantially uniform adhering oxide film on its surface adapted to contact with oxidizing atmosphere to a predetermined temperature and said sheath, sealingly enclosing said sheathed material in said jacketing element, hot working the jacketed sheathed material to form a sheathed and jacketed member having a core of said fissionable material, and removing the carbon steel jacketing element from the worked sheathed material.

3,160,952
METHOD OF EXPLOSIVELY PLATING PARTICLES ON A PART
Martin Corney, Glendora, Irving Lieberman, Covina, and Louis Zernow, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Mar. 26, 1962, Ser. No. 182,552
16 Claims. (Cl. 29—529)



1. A method of plating materials on a workpiece comprising the steps of covering the surface of the workpiece to be plated with a plurality of individual particles of plating material, inserting at least the surface of the workpiece with the particles of plating material thereon in a shock wave transmitting medium, inserting means for creating an explosion in said shock wave transmitting medium, and using said means to cause an explosive shock wave in said shock wave transmitting medium whereby the impact of the shock wave on the particles of plating material over the surface of the workpiece to be plated is with sufficient force to cause the particles of plating material to become adhered to each other and to the workpiece with a firm bond and cohesive structure.

3,160,953
FLOWER KNIFE
Jesse W. Darley, deceased, late of Fort Myers, Fla., by Malissie J. Darley, administratrix, 4430 Seminole Ave., Fort Myers, Fla.
Filed Nov. 1, 1963, Ser. No. 320,964
4 Claims. (Cl. 30—279)



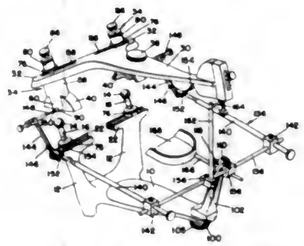
1. A flower knife comprising a pair of elongated diverging equal length arms, means resiliently interconnecting said arms at the near end thereof for movement of the far ends of said arms toward and away from each other, the far end portion of each arm being generally semi-circular in shape with the axis of rotation of the semi-circular portion being perpendicular to the length of the arms, the semi-circular portions terminating in the far ends of the arms, these far ends being inwardly directed and laterally aligned, said semi-circular portions each including an upper edge and a lower edge, said semi-circular portions opening generally toward each other so as to form substantially a complete circle upon an approach of these end portions toward each other, the lower edge of each semi-circular portion being in the form of a cutting edge.

3,160,954
DEVICE FOR TAKING CLIPPINGS FROM MAGAZINES OR THE LIKE
Arthur L. Martin, 801 Church St., Marion, Ohio
Filed Aug. 15, 1962, Ser. No. 217,023
1 Claim. (Cl. 30—294)



A tool for taking a clipping from a sheet of paper comprising in combination:
(*a*) handle having a socket,
(*b*) a head removably secured in said socket,
(*c*) a pair of parallel spaced feet extending from said head,
(1) the outer most surfaces of said feet being coextensive with the outer surface of said head,
(2) said feet having their bases lying below the central axis of said head, coextensive with the outer surface of said head and having their extending ends curving upwardly above said central axis,
(3) said extending ends being interconnected,
(*d*) a cutter blade including a forward piercing tip and a knife edge adjacent said tip,
(1) said blade being wire like and sickle shaped having a curved forward portion and a rearward shank portion,
(2) said shank being embedded in said head,
(3) the curved portion of said blade curving upwardly in the same direction as said feet and having a knife edge on the concave face of the blade,
(4) said piercing tip extending beyond and below said extending ends of feet, the entire blade being confined within a generated cross section of said head.

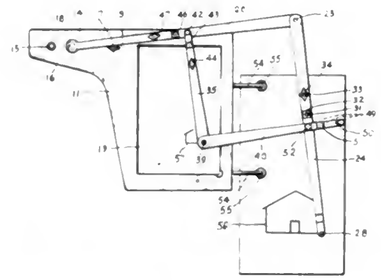
3,160,955
DENTAL ARTICULATOR AND ATTACHMENTS THEREFOR
Anthony J. De Pietro, Springfield, Pa., assignor to Medical Electronics and Research Corporation, Camden, N.J., a corporation of New Jersey
Filed Jan. 9, 1963, Ser. No. 250,985
2 Claims. (Cl. 32—32)



1. In apparatus for use in dental prosthesis, the lower bow member of a dental articulator, the upper bow member of a dental articulator, and means mounting said members in mutually overlying relation including laterally spaced corresponding hinge parts mounted at the rear of said upper bow member and having undersurfaces simulating the condyle paths in the natural skull and abutments facing away from one another along a hinge axis common to said hinge parts, an upright post mounted upon the fore end of said lower bow member, a clamp carried by said post, and a dental face bow affixed to said post by means of said clamp and extending rearwardly therefrom, said face bow including opposed condyle pins, said upper bow member being mounted upon said face bow with the opposed condyle pins of said face bow received respectively by said abutments, the ends of said condyle pins being thereby positioned in registry with said hinge axis and with the fore part of said face bow underlying the fore end of said upper bow member, said upper bow member being thereby mounted for swinging movement upwardly and rearwardly about said hinge axis.

3,160,956
PANTOGRAPH
Pasquale A. Mercorelli, 441 Summer Ave., Newark, N.J.
Filed Sept. 27, 1962, Ser. No. 226,586
1 Claim. (Cl. 33—25)

A pantograph comprising:
(*a*) a table having a generally rectangular depressed area dimensioned to receive a sheet of drawing paper,
(*b*) an offset portion on the table having a row of sockets positioned generally coincident with a line extending along one side of the depressed area,
(*c*) a first arm pivotally engaged at one end with one of the sockets in the offset portion, the first arm having a series of sockets intermediate its ends,
(*d*) a support on the other end of the first arm, extending transversely therethrough,
(*e*) a second arm pivotally engaged at one end with the top of the support of the first arm, the second arm having a series of sockets intermediate its ends and a support socket in its end opposite the first arm,
(*f*) a support engaged with the support socket on the second arm and also extending above the second arm to define a manipulating handle,
(*g*) a third arm,
(*h*) a series of pins on the bottom of the third arm, one of which is pivotally engaged with one of the series of sockets intermediate the ends of the first arm,
(*i*) a marker-support extending transversely through the end of the third arm opposite the first arm, defining on the top thereof a pivotal connection for a fourth arm and defining on the bottom thereof a marker,
(*j*) a fourth arm pivotally engaged at one end to the top of the marker support,
(*k*) a series of pins on the bottom of the fourth arm at the end opposite the third arm, one of said pins being pivotally engaged with one of the series of sockets intermediate the ends of the second arm,
(*l*) each of the pins and sockets in the respective arms and the sockets in the offset portion bearing a distinctive geometric indicium, the indicium on each pin and socket on each arm corresponding to an indicium on each other arm and an indicium on a socket on the offset portion,

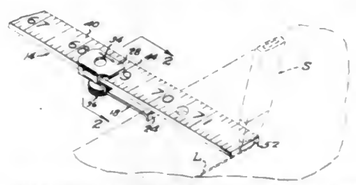


(*m*) the pins on the third and fourth arms bearing the same geometric indicia being pivotally engaged in sockets in the first and second arms respectively bearing geometric indicia identical to those of the said pins, the first arm being parallel to the fourth arm, and the second arm being parallel to the third arm at all times, and
(*n*) the pin on the end of the first arm being pivotally engaged in the socket in the offset portion bearing a geometric indicium identical to the indicium of the pivotally engaged pins and sockets in the arms aforesaid, the said socket on the offset portion being positioned with respect to the depressed area in the table, the length of the first and second arms and the position of the pins and sockets on the arms bearing identical indicia that the said work area remains generally the same size and generally in the same position adjacent to the side of the table opposite the offset portion.

3,160,957
STOP ATTACHMENT FOR RULES
Herbert G. Phillips, 60 Conklin Ave., Hillsdale, N.J.
Filed Aug. 25, 1961, Ser. No. 133,882
2 Claims. (Cl. 33—173)

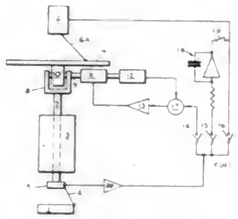
1. In combination, a folding extension rule having adjacent sections folded upon each other with a terminal section folded upon and registering with an adjacent section, said terminal section being formed with an unthreaded hole extending therethrough and spaced from said free end, said section having a linear scale on one

side thereof, an attachment comprising a U-shaped yoke engaged slidably on said rule section between the ends thereof, said yoke having parallel spaced first and second legs not longer than the width of the rule section and slidably engaging related surfaces of the rule section, and a bight connecting the legs at one end thereof and slidably engaged with an edge of the rule section, said legs being formed with aligned threaded holes which are registered with the hole in said terminal rule section, and a headed screw extending through the unthreaded hole of



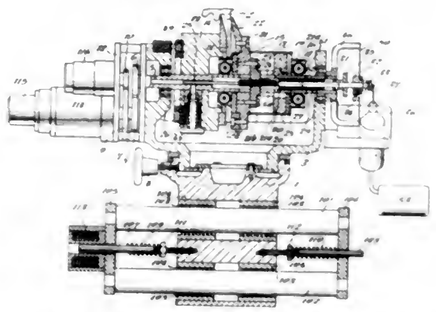
the rule section and threaded through the threaded holes of the yoke legs, said screw being adapted to be backed out of the hole of one leg and out of the rule section hole to enable the attachment to be adjusted along the rule section, said screw then being adapted to be turned against the rule so as to hold adjustments of the attachment along the rule section, the first leg of the yoke being located on the scale-equipped side of the rule section and the second leg thereof at the other side of the rule section, said second leg having on a side edge thereof a longitudinally elongated extension terminating in a lateral stop.

3,160,958
MEASURING AND RECORDING ARRANGEMENTS
Keith Gordon Huntley, Hillbrook, The Uplands, England, assignor to Rank Precision Industries Limited, London, England, a British company
Filed Nov. 21, 1960, Ser. No. 70,842
Claims priority, application Great Britain, Nov. 25, 1959, 40,109
8 Claims. (Cl. 33—174)



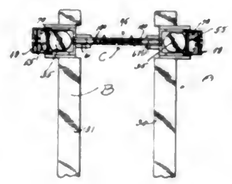
1. A system for testing the contour of an object which comprises sensing means arranged in approximately concentric and relative rotational relationship with the object and in contact with the periphery of the object for feeling its contour, means deriving from said sensing means a total electrical signal which is representative of the distance of each point on the periphery from a datum which is constant for the entire periphery of the object, said signal including a true contour component and an error component proportional to such mounting eccentricity as may be incurred in establishing the said rotational relationship as between object and sensing means, recorder means comprising chart and signal responsive recorder elements mountable for relative rotation about a recorder axis, means including motor means responsive to said signal for effecting a preliminary relative adjustment as between the center of said chart and said recorder axis in response to said error component in said signal to compensate for said mounting eccentricity, and means for then applying said signal to said recorder element of said recorder means for recording on said chart only the true contour component of said signal concentric with the center of said chart.

3,160,959
GEAR CHECKING INSTRUMENTS
Karl Muller, Zurich, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland, a company of Switzerland
Filed Mar. 2, 1962, Ser. No. 177,053
Claims priority, application Germany, Mar. 7, 1961, M 48,301
6 Claims. (Cl. 33—179.5)



1. A gear checking instrument of the type having two measuring jaws for engaging two tooth flanks of a member having a gear teeth-like profile for measuring the distance between such engaged tooth flanks, the two measuring jaws being disposed on a rotatable measuring spindle mounted in a measuring head, characterized in that the instrument comprises means for progressively moving continuously the toothed member to be tested, the measuring spindle is rotatably coupled to the means for moving the member so as to rotate one complete revolution for each tooth pitch movement of the said member, the measuring spindle and the measuring head being movable as a unit axially of the measuring spindle and being effected by reason of the movement of the measuring jaws when in engagement with the moving tooth flanks of the said member, and resilient means normally opposing the said axial movement of the measuring head, said resilient means being operative to return said measuring head and spindle axially when the measuring jaws during rotation of the spindle and jaws move out of contact with said tooth flanks.

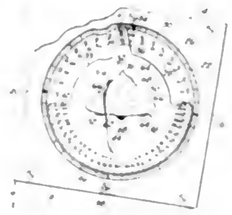
3,160,960
WHEEL ALIGNMENT TESTING MACHINE
Anthony J. Voelker, Lincoln, Nebr., assignor to 5th Wheel, Inc., Lincoln, Nebr., a corporation of Nebraska
Filed Oct. 2, 1961, Ser. No. 142,284
14 Claims. (Cl. 33—203.12)



1. In an automotive vehicle wheel aligning machine the combination of a supporting rack having radius plates

mounted thereon upon which are adapted to rest the front wheels of a vehicle to be tested for alignment, right and left abutment plates, supporting means for each of the abutment plates, rack frame connected means for each wheel upon which each of the supporting means of the abutment plates is mounted on a vertical axis, and extensible and retractable hitch means connecting the two abutment plate supporting means together for movement of said two abutment plate supporting means towards and away from each other, said extensible and retractable hitch means being constructed and arranged for lineal movement only against any turning or lateral movement whereby the abutment plates of the two supporting means will be maintained in absolute parallelism at all times independent of their spaced relationship.

3,160,961
CLINOMETER LEVEL WITH RISE INDICATOR
Irvin D. Linehan, 1011 E. Rockwell, Arlington Heights, Ill.
Filed Nov. 29, 1961, Ser. No. 155,566
8 Claims. (Cl. 33—210)



1. A measuring device of the character described comprising a body member having at least one straight side edge, a protractor scale on a face of said body member, an indicator disc rotatably mounted on said protractor scale, a level mounted on said indicator disc, means for rotating said indicator disc, a pointer on said indicator disc for cooperating with said protractor scale, a rise scale marked on a portion of said indicator disc opposite from said pointer, said rise scale cooperating with said protractor scale for indicating the rise per unit of horizontal length for any angular setting of said pointer, said level comprising a transparent substantially triangular vial having a slightly arcuate base, a back wall, a tapering front wall and an arcuate bottom wall, a liquid almost completely filling said vial, and a ball positioned in said vial, said ball adapted to roll freely on said arcuate bottom wall, a pair of triangular guidemarks marked on said indicator disc beneath said vial, said tapering and arcuate vial walls and liquid cooperating to distort and magnify the image of said ball so that the same appears ovate, said triangular guide marks cooperating with said distorted image to form an unbroken oval when said ball is perfectly centered.

3,160,962
LEVEL
James T. Brame and James M. Brame, both of P.O. Box 78, Corydon, Ky.
Filed Dec. 12, 1962, Ser. No. 244,203
1 Claim. (Cl. 33—215)

In a level including an elongated block having spaced sides, a top, and a bottom, said block being provided with a chamber in the mid-portion thereof, and a transparent cover extending over each side of said chamber and secured to said block sides, there being an opening in the top of said block, another transparent cover extending over the opening in said block top and secured to said block top, scale indicia on each of said covers, a cylindrical weighted body disposed within said chamber, a shaft projecting from each of the end faces of said body, said shafts being axially aligned and eccentrically arranged with respect to the longitudinal axis of said



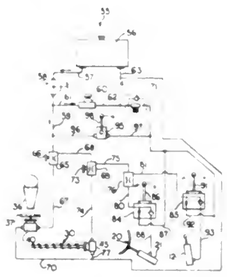
body, a bearing ring in each of said block side covers, each of said shafts having an end portion provided with a recess, a roller journaled in said recess in each shaft rollably supporting said shaft in said ring.

3,160,963
AIR-FILLED SANDAL
Helmer Aaskov, 8053 S. Orange Ave., Fresno 25, Calif.
Filed June 7, 1963, Ser. No. 286,379
5 Claims. (Cl. 36—11.5)



1. A sandal comprising a relatively rigid main body formed with a recess generally in the shape of a foot, a plurality of upstanding pins integrally formed in said main body adjacent the walls of the recess, an inflatable cushion member shaped to be received in said recess, means to secure the edge portions of the cushion member to said pins, and a plurality of upwardly facing suction cups on the top surface of the cushion member.

3,160,964
ROAD CLEARING AND MATERIAL SPREADING APPARATUS
Paul E. Boyer, 167 Northbridge Road, Columbus 14, Ohio; Walter O. Mansfield, 1506 Colgate Road, Marietta, Ohio; Ferrell E. Crawford, 34 W. Deland Ave., Columbus 14, Ohio; and James H. Lanier, Woodsfield, Ohio
Filed July 27, 1962, Ser. No. 212,932
4 Claims. (Cl. 37—41)



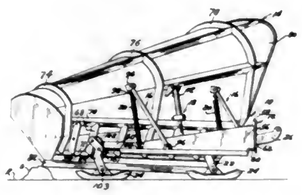
1. In combination with a vehicle having an engine, an operator's station, an hydraulic power system including a fluid reservoir, and a tiltable material storage section, material spreading apparatus comprising:

(*a*) a rotatable disk,

(*b*) a feed screw for feeding particulate material from a storage area onto said disk,

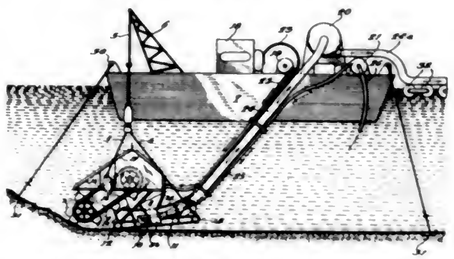
(*c*) a first hydraulic motor connected in said hydraulic system for driving said feed screw,
(*d*) a second hydraulic motor connected in said hydraulic system for driving said disk,
(*e*) a third hydraulic motor connected in said hydraulic system for tilting said storage section of the vehicle,
(*f*) an hydraulic pump in said hydraulic system adapted to be driven by said engine,
(*g*) a first fluid flow regulating valve connected between the outlet side of said pump and said first motor,
(*h*) a second fluid flow regulating valve connected between the outlet side of said pump and said second motor,
(*i*) a third fluid flow regulating valve connected between the outlet side of said pump and the inlet of a three-way valve having a first outlet connected to said third motor, and a second outlet connected to said reservoir,
(*j*) said three-way valve having an operating handle and being operable to direct fluid into said third motor, out of said motor, and for preventing flow into or out of said third motor.

3,160,965
SNOW PLOW MOUNTED ON CHASSIS WITH ONE CONNECTION BEING AN EXTENSIBLE STRUT
Ronald E. Walker, Riverside, Ontario, Canada, and Henry C. Johnson, Bloomfield Hills, Mich., assignors to Phil Wood Industries, Ltd., Windsor, Ontario, Canada, a corporation of Canada
Filed Nov. 26, 1962, Ser. No. 239,909
8 Claims. (Cl. 37—42)



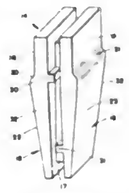
1. A snow plow, comprising
a chassis structure,
means for connecting said chassis structure to a propelling vehicle,
supporting levers pivotally mounted on said chassis structure in laterally-spaced relationship,
roadbed shoes pivotally mounted on the lower portions of said levers,
a mold board structure having its lower portion pivotally mounted on the upper portions of said levers,
an extensible strut device connected between the upper portion of said mold board structure and said chassis structure and responsive to the imposition of a predetermined force thereon resulting from the encountering of a major obstacle by said mold board a structure to extend and thereby permit temporary upward displacement of said mold board structure over said obstacle and relatively to said chassis structure,
links means pivotally connecting the upper portion of said mold board structure to portions of said chassis rearwardly of the pivotal connections thereto of said extensible strut device and of said supporting levers, and means connected to said mold board structure for resisting said upward displacement thereof.

3,160,966
SUBMERGED DREDGING DEVICE WITH AIR FILLED HOOD
James C. Skakel, Greenwich, Conn.
(277 Park Ave., New York 17, N.Y.)
Filed June 20, 1962, Ser. No. 203,861
5 Claims. (Cl. 37—60)

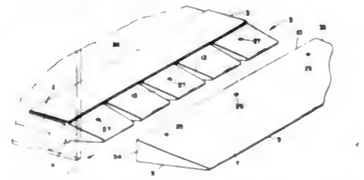


1. In a dredging system which comprises in combination: (1) a surface supporting element; (2) means on said surface supporting element for pumping water; and (3) means on and operatively connected to said surface supporting element for raising and lowering a dredging unit which is also operatively connected to said means; said dredging unit comprising an entirely submerged digging unit comprising at least one endless chain of digging buckets operatively connected to a submerged driving motor encased in a substantially water-tight compartment and a collecting hopper separate from said digging unit and positioned in such a manner by mechanical supports and connecting members that the digging buckets discharge into a portion thereof; the lower portion of said hopper comprising a mixing area having an inlet for receiving water under pressure from the water pump on said surface supporting element; and the lower portion of said hopper also having a venturi-discharge opening substantially opposite said inlet through which is formed an aqueous slurry of the dredged material dropped from said digging buckets, the improvement which comprises the addition of means on said surface supporting element for compressing air, and a pressurized air-tight hood, operatively connected to said means for compressing air, placed over the submerged digging unit and the hopper and attached thereto in such a manner that the material dug by the submerged digging buckets is enabled to fall freely through air prior to entering the hopper.

3,160,967
REMOVABLE BLADE ARRANGEMENT WITH RECESSES THEREIN FOR RECEIVING SUPPORT PROJECTIONS
Irvin H. Nichols, 10192 McMichael, Garden Grove, Calif.
Continuation of application Ser. No. 129,665, Aug. 7, 1961. This application Sept. 10, 1963, Ser. No. 308,303
22 Claims. (Cl. 37—141)



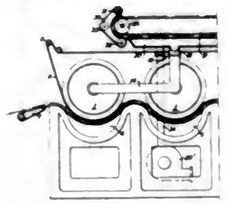
3. A connector pin comprising a duality of metal plates, and a resilient lamina interconnecting said metal plates, said plates having outer sides, said outer sides including substantially flat parallel outer faces remote from said lamina extending inwardly from one end thereof, shoulder portions at the inner edges of said outer faces remote from said end, said shoulder portions inclining outwardly toward the opposite ends of said metal plates, and outer faces remote from said lamina coverging from said shoulders to the opposite ends of said plates.



14. A removable blade arrangement comprising a support member, said support member having a transversely elongated outwardly tapering projection extending therefrom, said projection including a plurality of spaced inwardly extending relatively narrow slots, a wear plate, said wear plate having an elongated recess in one side thereof substantially complementarily receiving said projection of said support member, said wear plate having a plurality of interconnecting webs at said side thereof extending across said recess and received in said slots, said wear plate and projection having aligned tapered apertures therein, and a drive pin complementarily received in each of said apertures for securing said wear plate to said support member.

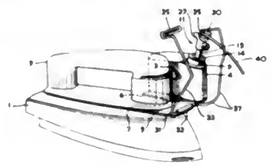
19. A removable blade device comprising an elongated member, said member having two principal surfaces, said surfaces being convergent from one relatively wide side edge to the opposite relatively narrow side edge, whereby said member defines a generally wedge-shaped configuration, said member having a recess therein, said recess extending substantially the length of said member, said recess having an entrance at said relatively wide side edge and being convergent from said entrance to the inner end of said recess intermediate said side edges of said side member; and a plurality of spaced interconnecting elements at said relatively wide edge extending transversely across said recess at said entrance thereof for strengthening said member along said relatively wide edge, said member having spaced sets of aligned apertures in said principal surfaces thereof communicating with said recess, each of said sets being adapted to receive a pin used in holding said member to a support.

3,160,968
APPARATUS FOR SUBSEQUENT DRYING OF ARTICLES TREATED IN A MANGLE
Gunnar Ivar Fredholm, Forfattarvagen 44, Bromma, Sweden
Filed May 10, 1961, Ser. No. 109,037
8 Claims. (Cl. 38—57)



1. Apparatus for subsequently drying an article treated in an ironing machine, the latter being provided with a heated bed, a perforated ironing roller adapted for cooperating with the bed for pressing the article therebetween, suction means for creating suction within the roller to draw surrounding air thereinto, which air absorbs heat from the bed, mean for advancing the article between the roller and bed, a heating chamber in communication with the roller and the suction means for receiving heated air from the roller and means for transporting the article after the same passes between the roller and bed into contact with said heating chamber to provide subsequent heating of the article, said apparatus comprising: means providing communication between the interior of the roller and the heating chamber to permit flow of heated air to the chamber, the latter means constituting a detachable partial support for the chamber above the roller and providing communication between the interior of the roller and the chamber to permit flow of heated air to the chamber, the latter said means constituting a partial support for said chamber.

3,160,969
WATER SPRAYING APPARATUS FOR A HAND IRON
Maurice I. Ensley, 26 Queen St. E., Toronto 1, Ontario, Canada
Filed Sept. 17, 1962, Ser. No. 223,971
20 Claims. (Cl. 38—78)

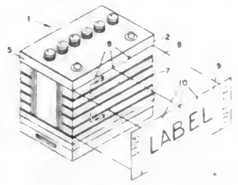


7. Water spraying apparatus for a hand iron, comprising a water reservoir having a filling opening located at the top and front of the reservoir, a pumping and spraying device removably mounted in the filling opening, the pumping and spraying device comprising a plunger having a forwardly facing spray outlet, the plunger being slidable downwardly and upwardly in the filling opening between an upper and a lower position to pump water from the reservoir to the spray outlet, resilient means normally holding the plunger in its upper position, means for securing the reservoir at one side of the front of an iron with the spray outlet adapted to be aimed ahead of the iron, manually operable means pivotally mounted on said apparatus and having a portion slidably engaging said plunger and being movable relative thereto for sliding the plunger downwardly and upwardly along its longitudinal axis in response to pivotal movement of said manually operable means, said manually operable means including means to oscillate said plunger about its longitudinal axis as it slides, to direct the spray from side to side ahead of the iron.

3,160,970
STORAGE BATTERY CONTAINER
Roger A. Worrell, Fullerton, Calif., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed May 25, 1962, Ser. No. 197,729
2 Claims. (Cl. 40—2.2)

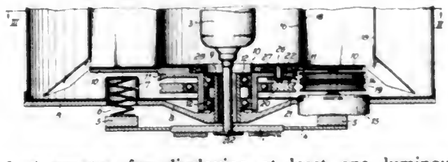
1. A storage battery container comprising a casing having two substantially identical side walls and two substantially identical end walls, two recessed label receiving surfaces extending along at least a part of one side wall and a portion of an adjacent end wall, said label receiving surfaces having a plurality of grooves spaced from one another and extending along substantially the entire length of said label receiving surfaces, and at least one of said label receiving surfaces having adhesively secured

thereto a label having on its exposed surface a coating resistant to attack by battery electrolyte, said label cov-



ering substantially all of the label receiving surface to which it is attached.

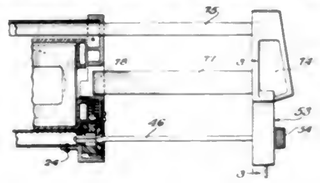
3,160,971
APPARATUS FOR PRODUCING LUMINOUS IMAGES WHICH APPEAR TO FLOAT IN SPACE AND ARE EQUALLY VISIBLE FROM ANY ANGLE OF VIEW
Wilhelm Schmidt, Berlin-Schmargendorf, Germany, assignor to Rotavision G.m.b.H., Basel, Switzerland, a corporation of Switzerland
Filed Dec. 23, 1958, Ser. No. 782,459
10 Claims. (Cl. 40—77)



1. Apparatus for displaying at least one luminous image apparently floating in space and visible from all sides, comprising a hollow rotatable body forming a plurality of radially arranged chambers, a light source located within the hollow of said body substantially on the axis of rotation of said body, said chambers being oper. towards the light source and having in their respective peripheral walls slots lying substantially parallel to said axis, a plurality of transparencies positioned in said chambers behind and in radially spaced relation to the respective slots and between said light source and said slots, each of said transparencies bearing an affine image of an original image to be displayed, said affine image having its image elements proportioned substantially as those of the original in the direction of said axis but substantially uniformly compressed into an image space substantially narrower proportionally than that of the original in the direction transverse to said axis, and means for rotating said body and said transparencies about said axis at a speed sufficient that from any of said transparencies a substantially correctly proportioned luminous image of the corresponding original, apparently floating in space. will be rendered visible from outside said body by light passing from said source through the corresponding affine image and the related slot.

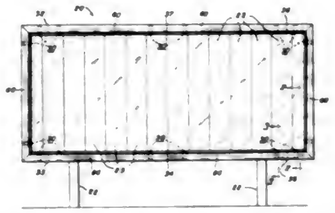
3,160,972
SLIDE CHANGER
Walter J. Hall, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 3, 1961, Ser. No. 129,158
8 Claims. (Cl. 40—79)

1. In a slide changer for a slide projector, a frame extending transversely of the light beam of the projector and having an aperture therein, a tray holder, a slide actuator slidably mounted in the frame for pushing a slide to and from a tray in the tray holder, rotatable indexing means for indexing the tray, detent means tending to hold the indexing means against movement, shaft means including cam means, said shaft means carried rotatably by the slide actuator, said rotatable indexing means including cam follower means adapted to cooperate with said cam means for driving the indexing means, and ratchet means mounted on the actuator for holding



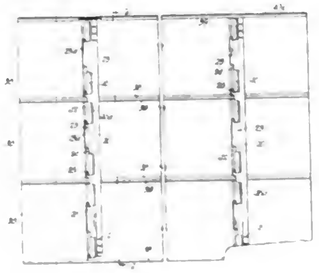
said shaft from rotation in one direction while permitting rotation of the shaft by the cooperating cam and cam follower means in the opposite direction near one end of the movement of the slide actuator, said indexing means and said ratchet means being splined to the shaft.

3,160,973
BILLBOARD FRAME
Francis A. Ruppelt, 483 Dover Center Road, Bay Village, Ohio, and Frederick F. Haddad, 5790 Edgehill Road, Parma, Ohio
Filed Jan. 27, 1961, Ser. No. 85,351
3 Claims. (Cl. 40—125)



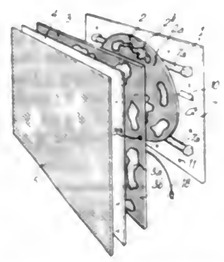
2. A frame for a billboard which is made up of a plurality of interlocked panels to form a flat assembly on which advertising media is to be placed, the interlocked panels being interlocked along their connecting edge portions by first and second generally parallel walls which form an interlocked enclosure; including in combination a plurality of mounting brackets connected at intervals to the periphery of the assembly, a plurality of sections of trim members secured by said mounting brackets and extending generally around the periphery of the assembly to create the frame for the billboard, each said mounting bracket comprising a channel shaped support member residing in the interlocked enclosure with the walls thereof engaging a wall of said interlocked enclosure, a bracket connected to said channel shaped support member at one portion and extending outwardly therefrom at another portion, a securing wall member secured to said other portion of said bracket and having a facing surface which extends at an acute angle with respect to the assembly, a first end portion of said securing wall member terminating in a V-shaped securing portion a second end portion thereof terminating in an L-shaped securing portion, each said trim member comprising a flat body portion which engages said facing surface of said securing wall member, a first attaching member secured to said flat body portion at one end and terminating at the other end portion in a V-shaped attaching portion which is snapped over and secured to said V-shaped securing portion, a second attaching member secured to said flat body portion at one end portion and terminating at the other end portion in an L-shaped attaching portion which is snapped over and secured to said L-shaped securing portion.

3,160,974
POSTER PANEL
Richard L. Carleton, Raytown, Mo., assignor to Butler Manufacturing Company, a corporation of Missouri
Filed Mar. 29, 1961, Ser. No. 99,201
7 Claims. (Cl. 40—125)



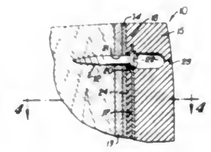
1. A sign construction comprising a plurality of essentially vertically oriented mounting means each laterally spaced one from the other, at least two first hook means on each said vertical mounting means vertically spaced from one another, said first hook means each open for engagement in a substantially vertical upward direction, a plurality of essentially horizontally oriented elongate panels removably mounted on said mounting means, means for removably mounting said panels on the first hook members of said vertical mounting means comprising at least two secondary hook members attached to the rear face of each panel, said secondary hook means each open for engagement in a substantially horizontal direction, said secondary hook members laterally spaced from one another on each said panel a distance at least substantially equal to the lateral spacing of two of said primary hooks on adjacent ones of said vertical mounting means and at least one of said first hook members on each adjacent vertical mounting means and one said secondary hook member on each said panel so spaced and formed as to be removably engageable one with the other.

3,160,975
LIGHTED, ANIMATED AND EVERCHANGING PICTURE ARRANGEMENT
Frank Joseph Malina, 17 Rue Emile Dunois, Boulogne-Billancourt, Seine, France
Filed Dec. 11, 1961, Ser. No. 158,271
2 Claims. (Cl. 40—132)



2. A lighted, animated and everchanging picture arrangement, comprising a carrier board, a system of lights mounted on the frontal surface of said carrier board, a movable assembly carried by said board to the front of said lights and having at least one essentially flat element made at least partially of a transparent material and on which a pattern is formed with irregularly shaped and irregularly distributed opaque and variously colored transparent parts, a stationary essentially flat element to the front of said movable assembly substantially parallel thereto, made at least partially of a transparent material and on which a pattern is formed with irregularly shaped and irregularly distributed opaque and variously colored transparent parts, a diffusing screen of translucent material to the front of said stationary essentially flat element substantially parallel thereto, means for driving said movable assembly into movement with reference to said stationary flat element to produce an everchanging combination of colors and shapes in the beams produced by said lights and passing through the patterns in order to obtain on said diffusing screen a permanently varying picture formed by moving illuminated zones with everchanging colors and everchanging outlines, and a common carrier to which the carrier board with the movable assembly, the stationary essentially flat element and the diffusing screen are removably secured to obtain through a change of one at least of the removable pattern carrying elements an unlimited range of animated and everchanging pictures, wherein the movable assembly comprises first and second coaxial flat rotors, means for driving said movable assembly into movement comprising for each rotor, a motor, a speed reducer driving said second rotor, and a transmission connecting one of said motors and said speed reducer and adapted to drive, at will, said second rotor into a regular, irregular and intermittent rotary movement.

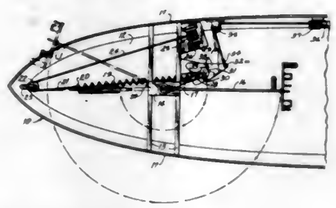
3,160,976
GUN RECOIL PAD
Frank A. Pachmayr, Los Angeles, Calif., assignor to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California
Filed May 21, 1962, Ser. No. 196,124
1 Claim. (Cl. 42—74)



A recoil pad for application to a gun stock comprising,
(A) a laminated base including a non-metallic first relatively stiff layer applicable to the end of the stock and a second non-metallic relatively flexible inner layer bonded to a surface of said first layer, said layers being substantially coextensive,
(B) a rubber cushion body bonded to the opposite surface of said inner layer,
(C) a metallic stiffening plate embedded and confined within said body and positioned parallel to said opposite surface of said inner layer, said plate being peripherally spaced inwardly from the periphery of said body,
(D) said layers and plate having registering openings for passage of headed screws insertable through said body to engage the screw heads against the plate and thereby enable the plate to compress both of said layers in the applied condition of the pad,
(E) said body including a thin rubber layer between the plate and said inner layer and extending between said openings to yieldably distribute over said plate and said inner layer the compressive forces resulting from screw attachment to the gun stock,

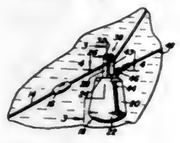
(F) said plate having countersunk portions deflected at said openings toward said second layer and located proximate opposite ends of said thin rubber layer extending between said openings.

3,160,977
CAST NET CASTING DEVICE
Jesse Kicklifter, Rte. 1, Box 44L, Ruskin, Fla.
Filed Aug. 28, 1963, Ser. No. 305,047
5 Claims. (Cl. 43—8)



5. A net casting device comprising:
a first rotatably mounted means adapted to support a net thereon and having an arm projecting therefrom;
a second rotatably mounted means adjacent said first rotatably mounted means and having a recess therein;
a spring member having one end attached to said arm;
a first cable attached to the other end of said spring member and to a first manually operable winding means;
a second cable attached to an end of said second rotatably mounted means and to a second manually operable winding means;
said arm being movable to a set position whereat it is disposed within said recess;
said first manually operable winding means being operative to preload said spring member when said arm is in its set position;
said second manually operable winding means being operative to rotate said second rotatably mounted means and hence to thereby move said recess and said arm within said recess;
said second rotatably mounted means being movable by said second manually operable winding means to a release position whereat said arm is released from said recess;
said preloaded spring member being operative when said arm is released to rapidly rotate said first rotatably mounted means; and
a stop member interposed in the path of said first rotatably mounted means whereby when said means strikes said stop member, said net is cast therefrom.

3,160,978
PLUG DISLODGING AND RETRIEVING DEVICE
Marshall D. Corley, P.O. Box 654, Hampton, Ark.
Filed Mar. 5, 1963, Ser. No. 262,952
2 Claims. (Cl. 43—17.2)



1. A retrieving device for a snagged fishing plug comprising: an elongated weighted plug striking and freeing body attachable to and adapted to slide down a fishing line attached at its lower end to the snagged plug, said body having a leading end which is convex and a trailing end which is flat and disposed at right angles to the long axis of the body, a first J-shaped hook having a shank portion lateral to the plane of said flat trailing end and having an end portion anchored in said flat end adjacent to but radially inward of an adjacent first marginal edge of said flat end and proximal to one lengthwise side of said body and a hook portion within the circumference of and spaced rearwardly from and bridging said flat end with its bill portion spaced from said flat end and also adjacent to but spaced radially inward from a second marginal edge of said body substantially diametrically opposite from said first marginal edge, and a second J-shaped hook, a duplicate of said first hook, opposed to but spaced in parallelism from the first hook and also having its shank portion likewise lateral to the plane of said flat end and having an attachable end portion anchored in and thus attached to said flat end adjacent to but radially inward of the second marginal edge of said body, and a hook portion spaced from said flat one end and directed toward the first-mentioned shank portion and with its bill portion proximal to but spaced from said first-mentioned shank portion, also spaced from said flat end and terminating adjacent to but radially inward of the first marginal edge and all portions of said J-shaped hooks being confined to a locale within the encompassing limits of said flat end, and means fixed to the flat end of said body for connecting a body lowering and retrieving line separate from the fishing line to the flat end only of said body.

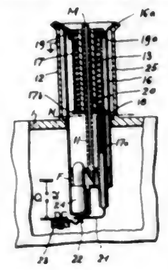
3,160,979
FISHING LINE DEVICE
Gerald Bissell, 15011 Littlefield, Detroit 27, Mich.
Filed Apr. 12, 1962, Ser. No. 186,922
7 Claims. (Cl. 43—44.85)



1. A device for attachment to a line, comprising:
a cylindrical member having a central passage extending along and throughout its length;
flared sections at each end of said member at which the inner diameter is greater than the inner diameter of the central passage and the outer diameter is greater than the central outer diameter of said member;
and said cylindrical member defining only a single elongated aperture in the wall of said member intermediate of said flared sections communicating with said central passage, whereby a line may be attached to one end of said member by pushing a loop of said line through one of said flared sections, along said passage, through said aperture and over the opposite end of said member.

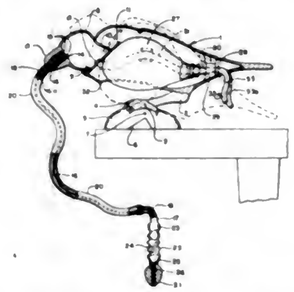
3,160,980
DEVICE TO PRODUCE STEAM FOR MOBILE AND STATIONARY TOYS
Eberhard Seuthe, Uhingen, Wurttemberg, Germany
Filed Nov. 13, 1959, Ser. No. 852,707
Claims priority, application Germany, Jan. 27, 1959, S 61,498; Aug. 3, 1959, S 64,262
9 Claims. (Cl. 46—9)

1. In a toy, a device for artificially producing smoke, visible vapor or the like, comprising in combination, an electric power source, storing means for storing a smoke producing liquid in said toy, at least one capillary tube extending from said storing means to the outside of said toy, a heating wire extending along a vertical portion of



said capillary tube, said spiral wire being electrically connected to said electric power source.

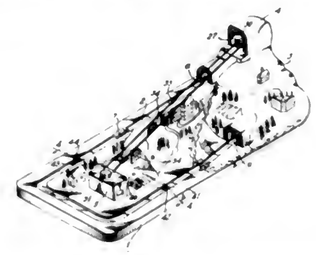
3,160,981
ANIMATED BIRD HOLDING MOVABLE SNAKE
Lyman Franklin Higgins, Jr., Norwich, Conn.
(10424 Evelyn Drive, Clio, Mich.)
Original application Nov. 6, 1959, Ser. No. 851,381, now Patent No. 3,089,279, dated May 14, 1963. Divided and this application Apr. 16, 1962, Ser. No. 187,602
4 Claims. (Cl. 46—124)



1. An animated device adapted to be placed on a horizontal support, and having a hollow body, parts movably mounted thereon and balloon means within said body operated by air forced thereinto by the user, comprising:
a head part pivotally mounted on said body;
a loading and balancing member carried by said head and formed with a flexible hollow body; and
means for supplying a flow of air under pressure to said balloon and hollow body of the loading and balancing member, and for releasing pressure air from the balloon.

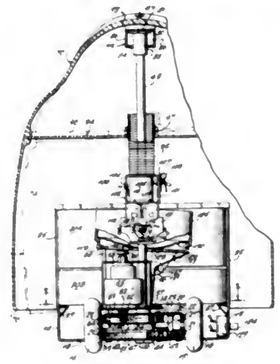
3,160,982
TOY TRACK AND AERIAL RAILWAY
Alfred Einfalt, Nurnberg, Germany, assignor to Gebruder Einfalt Blechsspielwarenfabrik, Nurnberg, Germany, a firm
Filed Aug. 31, 1962, Ser. No. 220,663
Claims priority, application Germany, Feb. 10, 1962, E 16,256
5 Claims. (Cl. 46—202)

1. A toy comprising: a continuous track having a raised and a sunken stretch on which toy vehicles are movable by rolling from the highest to the lowest point under the action of gravity; a motor-driven entrainment element positioned to closely overlie and movable on said track in the direction of vehicle movement between the lowest and highest points thereof for pushing the vehicles between said points; an imitation mountain housing that portion of said track which extends in the direction of vehicle travel from the lowest to the highest point thereof; a toy aerial railway extending between a



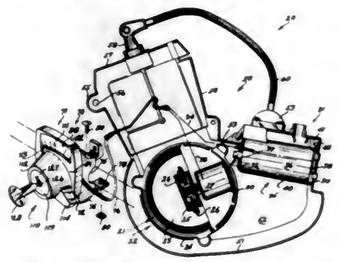
station at the summit and a second station at the base of said mountain; and a common drive assembly for said entrainment element and said aerial railway.

3,160,983
SELF-POWERED MOBILE TOY
James Smith, Raymond J. Lohr, and Richard Carver, Erie, Pa., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed May 7, 1963, Ser. No. 278,609
20 Claims. (Cl. 46—232)



10. A self-powered mobile toy animal comprising, in combination, a wheeled carriage; driving means on said carriage drivingly connected to supporting wheels thereof; control means selectively operable to activate said driving means to drive said carriage; a substantially vertical support mast rotatably mounted on said carriage for rotation about a substantially vertical axis; a substantially hollow animal body having a skirt arranged to substantially surround and concel said carriage; universal suspension means non-rotatably supporting said body on the upper end of said mast for lateral oscillation of said body in any direction; cooperating means on said body and said mast operable through said driving means, upon movement of said body from a substantially plumb position, to reverse the direction of movement of said carriage; means operable through said driving means, during such reversal of the direction of movement of said carriage, to rotate said mast to reverse the relative orientation of said body on said carriage; a sound producer mounted on said carriage; and means operable by said driving means, during each reversal of the relative orientation of said body, to activate said sound producer.

3,160,984
MOTOR SIMULATING SOUNDING TOY
John W. Ryan, 688 Nimes Road, Bel Air, Calif.
Filed Apr. 22, 1964, Ser. No. 361,653
4 Claims. (Cl. 46—232)



1. A motor simulating device comprising: a casing configured to simulate an internal combustion engine and adapted to be removably mounted on a wheeled vehicle; a vibratory diaphragm means in said casing; a rotary member adjacent said diaphragm means and having spaced striker elements thereon adapted to strike said diaphragm means upon rotation of said member to produce sound simulating an internal combustion engine sound; electric motor means for driving said rotary member independently of movement of said vehicle; control means for said electric motor means for starting and stopping the same and varying the speed thereof, said control means including a rheostat means and a manually operable member for actuating said rheostat means, outside said casing.

3,160,985
POLYMERIC COMPOSITION AND METHOD FOR TREATING PLANTS THEREWITH TO SUPPLY MOISTURE
Carl S. Ferguson, Fort Lauderdale, and Roland D. Earle, Hollywood, Fla., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Jan. 29, 1962, Ser. No. 169,638
30 Claims. (Cl. 47—1)

1. The method of supplying and maintaining plant moisture, which comprises coating at least part of a plant with a non-toxic, aqueous composition comprising water, a polyhydric alcohol humectant, and a salt of a hydrolyzed, preformed addition polymer of an alpha, beta-ethylenically unsaturated monomer having a hydrolyzable group selected from the class consisting of the ester group, the amide group, and the nitrile group, wherein said hydrolyzed addition polymer contains on an average 0.05 to 2.0 carboxyl groups per monomeric unit formed by the hydrolysis of said hydrolyzable group and wherein said hydrolyzed addition polymer comprises from about 5 to 86 weight percent of the combined dry weight of humectant and addition polymer.

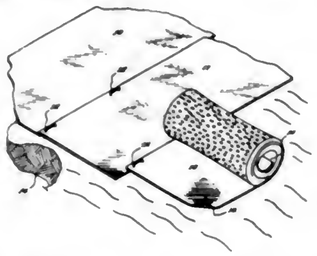
3,160,986
SEED PLANTING METHOD AND APPARATUS FOR ITS PRACTICE
James R. Watson, Minneapolis, David M. Lilly, St. Paul, and Elmer S. Conover, Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 18, 1960, Ser. No. 63,346
4 Claims. (Cl. 47—56)

1. A method for planting and germinating seeds and for promoting the development of seedlings therefrom which consists in

providing an imperforate highly flexible single ply, sheet of relatively thin, translucent, water-insoluble and substantially moisture-proof material which transmits at least a portion of the sun's rays,

attaching a multiplicity of seeds to one surface of said sheet, through use of a water-soluble adhesive,

then placing said seed-attached sheet directly on the surface of a prepared seed bed containing moisture with said one surface facing said seed bed, and with the opposite surface of said sheet uncovered and exposed to the sun's rays,

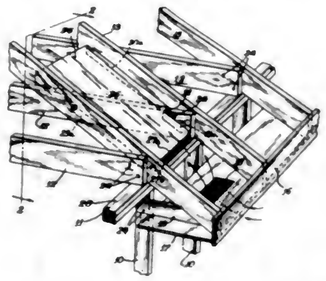


said sheet being effective to cause moisture which evaporates from said seed bed to condense and create a generally uniform wetness upon said one surface and thereby gradually dissolve said adhesive and cause said seeds to be released and fall upon said seed bed,

continuing to so expose said sheet in such relation until the seedlings have sufficiently developed beneath said sheet to withstand exposure to the prevailing environmental conditions,

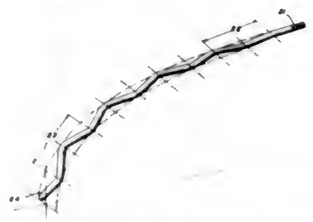
and then removing said sheet from said seed bed.

3,160,987
BUILDING CONSTRUCTION AND INSULATION DAM THEREFOR
Herbert B. Pinkley, Box 127, Warrenville, Ill.
Filed Mar. 20, 1963, Ser. No. 266,651
13 Claims. (Cl. 50—67)



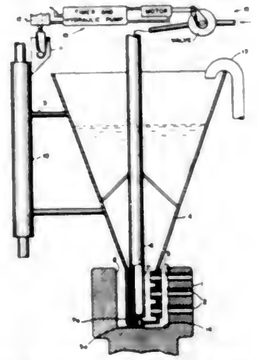
1. In a building of the type having a wall with a top plate, spaced apart inclined roof rafters, spaced apart ceiling joists fastened to lower portions of said roof rafters, said roof rafters and said ceiling joists carried on said wall plate, overhanging boxed-in eaves formed at the lower outer ends of said roof rafters outside of said wall plate, said eaves having vents in the underside thereof, and including an insulation dam adjacent a vent in the eaves comprising a generally rectangularly shaped flat sheet, an end tab bent angularly relative to said flat sheet and lying in abutting sealing relation to the top of said wall plate and spanning the space between adjacent spaced roof rafters and ceiling joists, the flat sheet inclined upwardly from said end tab and positioned between adjacent rafters and spaced below the tops thereof, side tabs bent angularly relative to said flat sheet, and means securing said side tabs in abutting and sealing relation with said roof rafters and ceiling joists whereby said dam between said side tabs spans the space between adjacent roof rafters and ceiling joists.

3,160,988
STRESS-GRADIENT ANCHOR
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich.
Filed Dec. 16, 1960, Ser. No. 76,339
8 Claims. (Cl. 50—481)



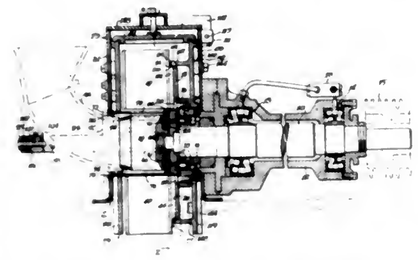
1. An achor for engagement with poured concrete, said anchor comprising: at least one rod member having a threaded coupling portion and an engaging portion extending from said coupling portion, said engaging portion having undulations of increasing curvature proceeding from said coupling portion, said undulations being formed with respect to an axis having continuous curvature and extending in tangential relationship to the axis of said coupling portion.

3,160,989
TRANSVERSE ABRASIVE BLAST TUBE
Robert G. Millhiser, Detroit, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.
Filed Apr. 27, 1961, Ser. No. 105,978
12 Claims. (Cl. 51—8)



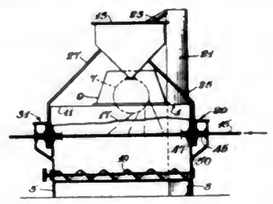
1. A device for surface reforming of an article surface comprising supply means for furnishing a fluent supply of blast granules, at least one blast tube having a central bore positioned to receive blast granules from said supply means and extending through a wall, which contains said granules, of said supply means with its discharge end opened outward therebeyond, and jet means for introducing a high pressure liquid jet with surface reforming energy into a portion of said supply means adjacent to, and out through, said blast tube whereby said blast granules are entrained in said jet for projection as an abrasive liquid jet through the access provided by the blast tube and against the surface to be reformed, the bore of said blast tube being large enough to accommodate the respective abrasive liquid jet streaming therethrough whereby the wear of said blast tube is minimal.

3,160,990
PARTICLE-THROWING APPARATUS
Joseph E. Bowling, Jr., Waynesboro, Pa., and Ralph W. Moore, Hagerstown, Md., assignors, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,801
1 Claim. (Cl. 51—9)



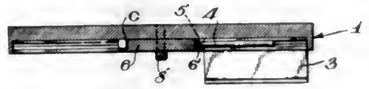
A housing for an abrasive throwing wheel assembly having a front, rear, top, and end walls, an open bottom through which a stream of blastant particles is projected, and wear liner plates completely covering the internal surface of said housing walls, said plates having sealing means covering all joints between them, securing means attaching said plates to said housing walls, said securing means including nuts cast-in-place in said plates with the threaded portions of said nuts being exposed to the internal surface of said housing walls, and the internal surface of each plate being unbroken and imperforate to minimize wear of said plates.

3,160,991
WORK PIECE PASSAGE SEALS FOR SHOT BLASTING APPARATUS
Charles H. Bradley, Hagerstown, Md., assignor, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Mar. 12, 1963, Ser. No. 264,622
4 Claims. (Cl. 51—9)



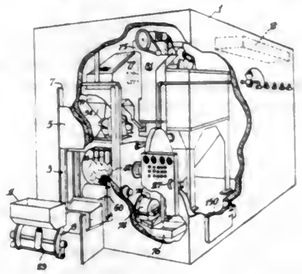
1. An abrasive blasting apparatus comprising a blasting cabinet, a rotary blasting wheel extending into the cabinet, an abrasive storage bin connected with said wheel for feeding abrasive to said wheel, a work piece entrance through one side of the cabinet, a work piece exit through the opposite side of the cabinet, a hollow enclosure over said entrance, a hollow enclosure over said exit, a work piece opening in said enclosure, means leading from said bin to each enclosure to feed abrasive therein to maintain the same filled with abrasive, and said hollow enclosures including abrasive confining means for sealing said abrasive around said work piece.

3,160,992
ABRASIVE BLASTING WHEEL
Ralph W. Moore, Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed July 10, 1963, Ser. No. 294,006
13 Claims. (Cl. 51—9)



1. An abrasive blasting wheel comprising a rotatable wheel, radially extending vane channels in one face of the wheel which terminate just prior to the periphery of said wheel, abrasive propelling vanes inserted in said channels, which vanes extend vertically from said wheel face, longitudinally extending grooves in each side wall of each channel, longitudinally extending grooves in each side wall of the base of said vanes, said vane grooves and said channel grooves lying directly opposite each other to form passageways, and a U-shaped locking pin inserted in said grooves with the cross leg of the U-lying adjacent the center portion of the wheel.

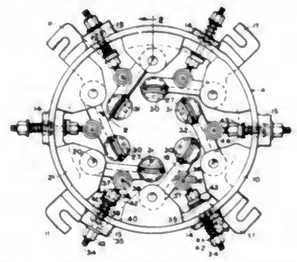
3,160,993
METHOD AND APPARATUS FOR DEFLASHING MOLDED RESILIENT PIECES
William A. McCormick, Jr., Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,959
29 Claims. (Cl. 51—9)



28. Apparatus for deflashing molded resilient pieces comprising a cooling and dehumidifying housing, a piece loading and unloading doorway for said housing, means supported within the housing for simultaneously supporting and tumbling said molded pieces having flashing, a freezing medium applicator means within said housing adjacent said piece supporting and turning means for applying freezing medium to said pieces to lower the temperature of said molded pieces, and means adjacent said housing doorway for providing an air curtain across said doorway when the door is raised to open position.

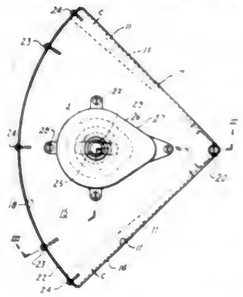
3,160,994
METHOD AND APPARATUS FOR MACHINING LIP EDGE PORTIONS OF A VESSEL
George E. Bonin, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 20, 1963, Ser. No. 281,562
6 Claims. (Cl. 51—161)

1. Apparatus for machining edge portions of cup-shaped articles to form smoothly rounded lip edges on the outer periphery thereof comprising, a rotatable chuck assembly for rotating a cup-shaped article about an axis substantially perpendicular to a plane formed by the peripheral lip edge thereof, a plurality of independently mounted edge finishing hones positioned equally distant from the axis of rotation about a circle having a diameter substantially equal to the diameter of the outer periphery of the cup-shaped article to be ground, an arcuately-extending contoured groove formed in each of said edge finishing hones having a radius substantially equal to the



radius of said circle to complimentarily receive the peripheral lip edge portion to be ground, pivotal mounting arms for supporting each of said edge finishing hones, and resilient means for flexibly positioning said arms so that said edge finishing hones may fluctuate perpendicular to said axis of rotation to compensate for out-of-roundness which may be present in the outer periphery being ground.

3,160,995
CORNER SANDER
Frank T. Danuski, Jr., 424 Poplar St., Warren, Pa.
Filed June 11, 1963, Ser. No. 287,004
10 Claims. (Cl. 51—170)

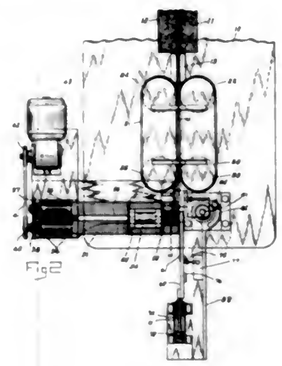


5. Abrading apparatus for smoothing corner surfaces comprising: a sector-shaped base plate, a sector-shaped platen for removably supporting a sheet of abrasive material on one surface thereof and having a sector angle that is substantially less than the sector angle of said base plate, means pivotally connecting said platen to said base plate adjacent their respective sector vertices and means for reciprocatingly rotating said platen about said pivotal connection.

3,160,996
WORK FEEDING DEVICE
Elman R. Dunn, Beloit, Wis., assignor, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Apr. 17, 1962, Ser. No. 188,215
1 Claim. (Cl. 51—215)

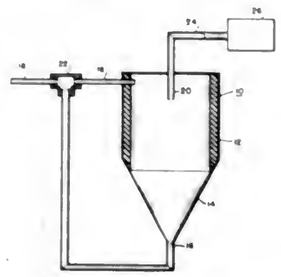
A work feeding device for feeding stacks of disc-like or ring-like workpieces in a machine tool comprising a pair of rotatably mounted parallel rollers, helical threads on said rollers for advancing workpieces axially by frictional rather than positive engagement with said workpieces in response to rotation of said rollers, means for

rotating said rollers, and a pusher resting freely on and movable by frictional engagement in response to ro-



tation of said rollers and adapted to bear against the last of a plurality of workpieces to hold said workpieces together.

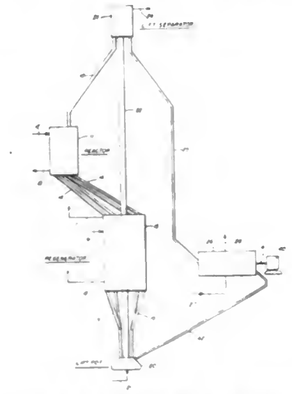
3,160,997
METHOD OF PRODUCING SPHERICAL PARTICLES
Harry G. Papacharalambous, Tonawanda, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed May 31, 1960, Ser. No. 32,639
3 Claims. (Cl. 51—281)



1. A method of producing rounded particles from angular particles which comprises suspending angular particles in a stream of gas, passing said stream tangentially into a vessel having a circular cross section, whereby to impart a spiral motion to said stream during at least a part of which the average velocity of said stream is progressively increased while the angular velocity thereof is caused to constantly change thereby to cause said particles to impinge one upon another and to undergo mutual attrition, and separating said gas from said particles.

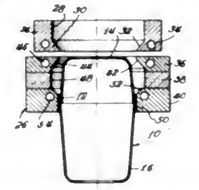
3,160,998
RESTORATION OF CATALYST BY SURFACE GRINDING
John W. Payne, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Original application Nov. 9, 1959, Ser. No. 851,870, now Patent No. 3,060,117, dated Oct. 23, 1962. Divided and this application Feb. 8, 1962, Ser. No. 172,021
4 Claims. (Cl. 51—313)

3. The method of removing metal contaminates from the surface of a granular particle of catalyst which comprises passing an aerated bed of metal contaminated granular catalyst particles through a horizontal abrading



zone containing a solid abrading member rotating at a high r.p.m.

3,160,999
METHOD OF SEALING AND FOLDING FLANGED EDGES OF CONTAINERS
Richard J. Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 26, 1960, Ser. No. 65,092
4 Claims. (Cl. 53—39)

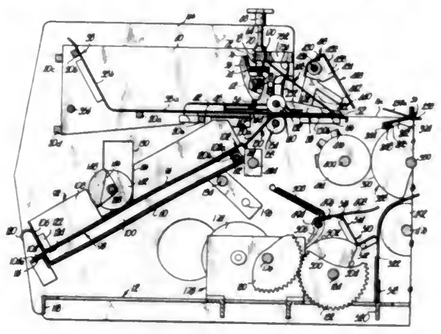


1. A method for sealing and folding flanged edges of thermoplastic containers comprising the steps of placing outwardly directed flange portions of adjacent container sections in abutting relationship, heating said flange portions and applying pressure thereto by the application of heated die means to force the flange portions together under temperature and pressure conditions sufficient to form a heat sealed flanged joint, releasing the pressure on said sealed flanged joint, moving said joint in one direction past said die means to fold the sealed flanged joint against the wall of one of said container sections to cause said joint to adhere thereto, and then moving the joint further, in the same direction, to a cooling zone.

3,161,000
APPARATUS FOR FOLDING AND SECURING NEWSPAPERS OR THE LIKE
Warren W. Hannon, 501 S. Chestnut, Olathe, Kans., and Charles N. Hannon, Olathe, Kans.; said Charles N. Hannon assignor to said Warren W. Hannon
Filed Aug. 21, 1961, Ser. No. 132,681
26 Claims. (Cl. 53—120)

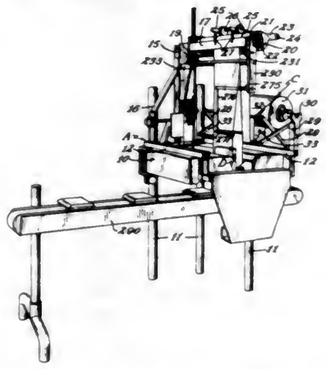
1. Apparatus for folding and securing individual newspapers comprising means for receiving a number of relatively flat newspapers in stacked relationship; means disposed to engage one of the newspapers in said stack thereof for shifting the same into a first station remote from said stack; means at said first station for engaging said one newspaper to fold the same in half transversely

thereof; means engageable with the folded newspaper for shifting the same to a second station in spaced relationship to said first station; grasping and folding means at said second station for grasping the leading transverse edge of the newspaper and operable to roll the same toward and into overlying relationship to the trailing transverse edge, to thereby fold the newspaper in half



transversely thereof and present a relatively small package capable of being thrown a considerable distance; and means actuated by said grasping and folding means as the latter folds the newspaper for placing a securing member around the folded newspaper at said second station for maintaining the newspaper in said fully folded condition thereof.

3,161,001
PLASTIC BAG AND PACKAGING MACHINE
John J. Grevich and Clifford W. Paulson, Star Prairie, Wis., assignors to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed May 21, 1962, Ser. No. 196,418
5 Claims. (Cl. 53—182)



1. An article packing apparatus for use in combination with a longitudinally folded web of heat sealable material, wherein the opposite sides of the web are disposed in confronting relation with each other, the apparatus including,

a frame,

means on the frame feeding a predetermined length of the web with the opposite sides in confronting relation with each other,

clamping means for clamping the opposite sides of the web together and including a pair of clamping portions, each disposed adjacent the web and in confronting relation with one side thereof to engage the web along transverse areas across the web, each clamping portion including a pair of spaced parallel clamping bars rigidly interconnected with each other and extending transversely across the web, the clamping bars of each clamping portion being spaced from each other longitudinally of the web to define an unobstructed space across which the web extends when clamped to be severed and sealed,

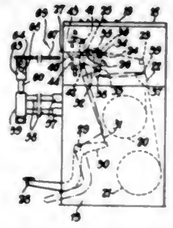
means on the frame mounting and moving said clamping portions toward and away from one another,

a burn-off blade lying in the unobstructed space between the pair of bars of one of said clamping portions and being movable through the clamped web and into the unobstructed space between the other of said clamping portions to burn-off and seal the clamped web,

means moving said burn-off blade into and out of engagement with the film and through said unobstructed spaces,

the clamping bars of one of said clamping portions having edge portions confronting the web and having a series of individually resilient retractable elements on said edge portions and in opposed relation to the clamping bars of the other clamping portions.

3,161,002
PACKAGING MACHINES
John Duns, Welwyn Garden City, England, assignor to Smith & Nephew Plastics Limited, Hull, England, a British company
Filed Dec. 26, 1961, Ser. No. 162,005
8 Claims. (Cl. 53—186)



1. A packaging machine, comprising spaced parallel side frames, horizontal guideways in said frames arranged in opposed relation, a horizontal table supported on said guides for forward and rearward horizontal reciprocating movement, a supply roll in said machine for feeding a flattened tubular plastic film to said table, a work station in front of said machine toward which said table is adapted to feed said tubular film, means for reciprocating the table toward and away from said work station, a pair of gripping rollers on said table between which the tubular plastic film is positioned for holding said film in a rest position adjacent the work station and for drawing off the film from the supply roll during movement of the table toward said work station and feeding the same toward said work station so that its front edge is presented thereto in a filling position, a free-wheel device associated with each gripping roller to permit the rollers to rotate when the desired length of material at the filling position is manually pulled by its front edge toward said work station, and when said rollers move rearwardly from the work station but which hold the rollers from rotation and in gripping relation with the tubular plastic film upon the return movement of the table to the work station position, said side frames being provided with vertical guideways adjacent the work station and positioned between the front of the table when the same is in the work station position, heat sealing means extending between the upper portion of said vertical guideways and movable between said guideways, a presser pad adapted to cooperate with said sealing means

slidably guided in the lower portion of said vertical guideways, mechanical connecting means between the heat sealing means and said table and between the presser pad and the table operable such that when the table is in the work station position at the front of the machine the heat sealing means and presser pad will be held in spaced apart relation, but will be moved together to hold the portion of the tubular film which has been moved to the front of the table and to the filling position when the table is moved to the rear to effectively heat seal the tubular material, a knife blade having an upper cutting edge carried by the presser pad, and operating means to move the blade upwardly and sever the tubular film while it is held between the heat sealing means and the presser pad, said blade being movable to a cutting position while the table is in a rearmost position, and a support located at the work station to receive the outer open end of the tubular film after the same has been pulled by hand from the machine to receive the package prior to the actuation of said operating means to move the table from the work station position rearwardly which automatically actuates the heat sealing cutting means, and thereby free the package goods in the front severed part of the tubular film with one end of said tubular film heat sealed.

3,161,003
GROCERY BAG LOADER
Joseph John Grintz, 1701 Bristol Road, Churchville, Pa.
Filed Oct. 2, 1962, Ser. No. 227,902
5 Claims. (Cl. 53—255)



1. A bagging and unloading device comprising a tray suitable for receiving merchandise therein, a tray support means comprising a tray support assembly, a tray release means, and a tray pivot block, a controllable means connected to said tray pivot block and operable to raise and lower the tray support means to a desired position, pivot means inter-connecting said tray support assembly and tray, said tray release means mounted on said tray support assembly to releasably secure the tray at one end to selectively maintain the tray in a substantially horizontal position while loading and actuable to allow the tray to swing vertically downward about said pivot means on said tray support assembly, and means inter-connecting said tray support assembly and said tray pivot block operable to allow said tray support assembly to swing vertically upward as desired.

3,161,004
PRODUCE PACKING TABLE UNIT
Anthony L. Muzinich, 207 Panorama Drive, Wheeler Ridge, Calif.
Filed Aug. 21, 1962, Ser. No. 218,408
1 Claim. (Cl. 53—391)

In a system for packing crates with sorted farm produce:

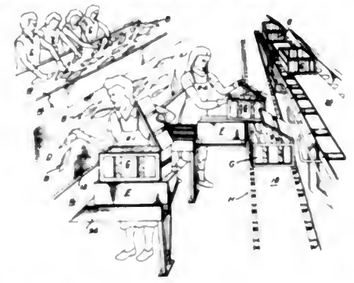
(*a*) a first horizontally disposed driven conveyor for carrying said farm produce dumped at random thereon;

(*b*) a perforated sheet that extends angularly downwardly from one longitudinal side of said first conveyor, which sheet is sufficiently strong to support produce which has been removably sorted from said produce on said first conveyor;

(*c*) an upright extending longitudinally along the lower end of said sheet to prevent said sorted produce from rolling therefrom;

(*d*) a plurality of tables in longitudinal spaced relationship along said upright, each of which tables is adapted to support an empty crate to be packed with said sorted produce;

(*e*) a second horizontal driven conveyor on which crates packed with said sorted produce can be deposited, said second conveyor being at a lower elevation than the upper surfaces of said tables;

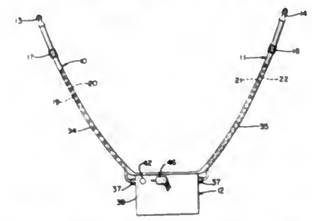


(*f*) a third horizontal driven conveyor disposed above said second conveyor that is parallel and adjacent thereto, which third conveyor serves to transport empty crates;

(*g*) means for movably supporting each of said tables to permit each of said tables to be disposed in a first position adjacent said upright where an empty crate thereon can be packed with said sorted produce and thereafter said table and packed crate manually moved to a second position adjacent said conveyor; and

(*h*) means for abruptly stopping each of said tables when it reaches said second position to cause said packed crate to slide therefrom onto said second conveyor, and said table when in said second position and after said packed crate has slid therefrom capable of receiving one of said empty crates from said third conveyor to be thereafter returned to said first position where said empty crate is packed with said sorted produce.

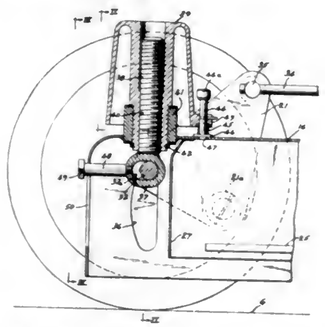
3,161,005
ELECTRIC ANIMAL TRAINING DEVICE
Richard E. Ackerson, 120 Marble, Apt. 304, Broomfield, Colo.
Filed July 12, 1963, Ser. No. 294,507
4 Claims. (Cl. 54—71)



3. An animal training device comprising: a member having means for attachment to the animal, a pair of spaced electrical leads mounted in said member, a series

of spaced-apart contact elements attached to each of said electrical leads, the contact elements passing through the inside of the member and through openings provided therein to contact the skin of the animal, a portable electric generator connected to the leads for supplying electric current of opposite polarity to said pair of leads in said member and to the corresponding series of contact elements, respectively, of each lead with sufficient voltage to close an electric circuit through the skin adjacent said contact elements of the animal's body between two series of contact elements in the member contacting the animal's body, and switch means controlled by the rider for selectively inducing current to said contact elements for training the animal.

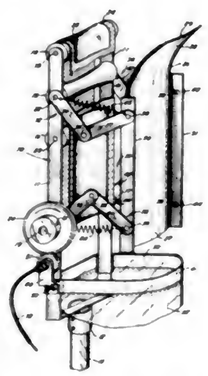
3,161,006
ADJUSTABLE ROTARY MOWER
Wayne Ronald Willette, Minneapolis, Minn., and Arnold Andrew De Baillie, Evansville, Ind., assignors, by mesne assignments, to Hahn Inc., a corporation of Indiana
Filed Aug. 31, 1962, Ser. No. 221,930
2 Claims. (Cl. 56—25.4)



1. An adjustable power mower comprising a power driven cutter, an engine connected to said cutter, a housing enclosing said cutter and supporting said engine, wheels disposed at each side of said housing, a wheel mount for each of said wheels pivotally secured to said housing and rotatably supporting a wheel for rotation about an axis eccentric to the pivotal axis of said wheel mount, rods connecting said wheel mounts at each side of said housing, an elevation adjustment shaft extending across said mower and connected to oppositely disposed wheel mounts serving as the axis for the wheels on such wheel mounts, means defining arcuate slots in said housing accommodating elevational movement of said elevation adjustment shaft an elevational adjustment knob for said elevation adjustment shaft rotatably mounted on said housing, a collar connected to said elevation adjustment shaft, an adjustment screw secured to said collar and received by said elevational adjustment knob, means releasably locking said elevational adjustment knob against rotation, an index pointer connected to said collar, and an index adjacent said pointer indicating the relative height of said cutter with respect to said wheels.

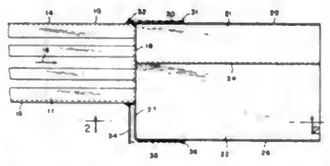
3,161,007
FRUIT PICKING APPARATUS
Arthur E. Bergquist, Lindstrom, Minn.
Filed May 9, 1962, Ser. No. 193,566
15 Claims. (Cl. 56—332)

1. Apparatus for picking fruit from a tree comprising:
(*a*) a bracket having elongated sides and a handle engaging portion at one end of said bracket;
(*b*) a pair of work engaging devices constructed and arranged for engaging fruit therebetween and being adapted for connection to said bracket with at least one of said pair being further adapted to have power applied thereto, each of said work engaging devices having an elongated surface with a central concave portion running longitudinally thereof guiding such fruit therein;
(*c*) a plurality of rotatable supporting elements extending between said sides of said bracket and rotatably supporting one of said pair of work engaging devices on said bracket;



(*d*) four pair of linkages, each pair having two arms pivotally connected at one of their ends and having their other ends pivotally connecting the other of said pair of work engaging devices to said bracket;
(*e*) four spring elements, each of which is connected adjacent to the ends of said arms to urge said pair of work engaging devices towards each other and keep tension applied thereto as the space between the surfaces of said pair of work engaging devices varies in accordance with the contours of such fruit therebetween;
(*f*) and a power source connected to said work engaging device which is adapted therefor and causing said supporting elements to rotate with said device and move such fruit engaged thereby between said pair of devices from one end to the other.

3,161,008
DISCHARGE DEVICE
John H. Shepley and Philip N. Bucher, Lancaster, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,525
5 Claims. (Cl. 56—474)



1. A bale chute attachable to the bale case of a baler to receive each bale progressively discharged therefrom, to topple each bale laterally a quarter turn and then support each bale for longitudinal movement and deposit onto the ground, comprising a first chute section and a second chute section extending generally parallel to each other and in different horizontal planes, means connecting said first section to said bale case as an extension of the bottom thereof and along one side of the bale case, means connecting said second section to said bale case along the opposite side thereof and spaced below said first section, said first section being unobstructed and of such narrow width that each bale when deposited thereon free of the bale case topples laterally onto said second section for support thereby, means on said second section along the side thereof remote from said first section to prevent each bale from falling laterally of said second section and preventing each bale from turning over more than a quarter turn, each bale when supported on said second section projecting above said first section and in the path of the next bale to be discharged from the bale case whereby the next bale progressively pushes the bale on said second section longitudinally for discharge rearwardly onto the ground.

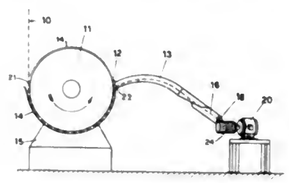
3,161,009
ARMOR ROD APPLYING TOOL
James L. Day, 1431 N. Modena, Gastonia, N.C., assignor of fifty percent to Brinton W. Pressley, Gastonia, N.C.
Filed Aug. 1, 1963, Ser. No. 299,369
9 Claims. (Cl. 57—10)



1. A tool for wrapping pre-formed, helically wound armor rod around an electric transmission line or the like, said tool comprising
(*a*) an elongate vertical shank;
(*b*) a downwardly opening hook carried by the upper end of said shank and adapted to engage the line for supporting the tool on the line for rotation thereabout;
(*c*) guide means carried by said shank adjacent said hook and adapted to receive armor rod therein for guiding the armor rod onto and around the line upon rotation of the tool about the line in a direction corresponding to the direction of the helical windings of the armor rod; and
(*d*) an elongate resilient member carried by said shank and having a portion thereof positioned closely adjacent a medial portion of said shank and normally forming a closure for the opening of said hook, said portion of said resilient member being adapted to be displaced from said medial portion of said shank for passage of the line upwardly and into engagement with said hook, whereby said closure serves to prevent inadvertent displacement of the tool from the line during rotation of the tool about the line.

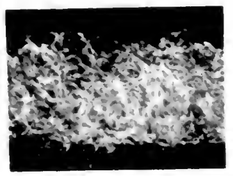
3,161,010
PROCESS AND DEVICE FOR THE MANUFACTURE OF GLASS YARNS
Renato Salteri, Milan, and Erich Hesselbarth, Barlassina, Milan, Italy, assignors to Vitrofil S.p.A., Milan, Italy, a company of Italy
Filed June 19, 1961, Ser. No. 118,055
Claims priority, application Italy, June 24, 1960, Patent 636,642
7 Claims. (Cl. 57—34)

1. A process for the preparation of continuous multifilament glass yarns, comprising the steps of
(*a*) forming a plurality of parallel glass filaments,
(*b*) causing said filaments to advance over a portion of a cylindrical surface,
(*c*) thereafter separating the advancing filaments from said surface and causing them to converge toward one another while continuing to advance thereby to form a bundle of parallel filaments,
(*d*) directing said bundle of filaments tangentially into a space bounded by a cylindrical surface,



(*e*) causing said bundle to advance in said space against the last-named cylindrical surface in a substantially helical path about the axis of said cylindrical surface while said filaments close together to form a helical bundle of filaments, and
(*f*) collecting said helical bundle of filaments by winding the same about a spooling device which rotates about an axis transverse to the axis of said cylindrical surface, thereby to draw about said spooling device a moderately twisted multifilamentary yarn.

3,161,011
BULKY TEXTILE YARN AND PROCESS FOR PREPARING SAME
Charles R. Humphreys, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 236,185
6 Claims. (Cl. 57—140)



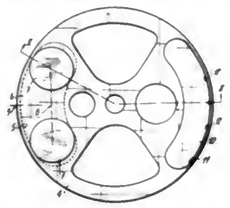
1. In a process for preparing bulky yarn, the steps comprising
(*a*) blending two species of textile fibers of staple length, one of said species being highly crimped, dimensionally stable fibers having a crimp frequency of at least 15, a crimp index from about 15 to 40, and a crimp product from about 225 to 1600, the other of said species being essentially straight, crimpable fibers having a shrinkage of about 25% to about 45% and developing a crimp frequency of at least 15, a crimp index from about 15 to 40, and a crimp product from about 225 to about 1600 when treated under shrinking conditions,
(*b*) aligning said fibers to form a yarn,
(*c*) twisting said yarn a predetermined amount to provide a twist multiplier not greater than about 2, and
(*d*) shrinking said crimpable fibers whereby they develop crimp and interlace with said crimped fiber to form a bulky, substantially core-free structure.

2. A bulky textile yarn prepared by the process of claim 1.

3,161,012
DRIVING BALANCE-WHEEL FOR AN ELECTRICAL TIMEPIECE

André Hug and René Meister, Neuchatel, Switzerland, assignors to Ebauches S.A., Neuchatel, Switzerland, a firm of Switzerland

Filed Aug. 1, 1963, Ser. No. 299,287
Claims priority, application Switzerland, Aug. 22, 1962, 9,990/62
2 Claims. (Cl. 58—28)

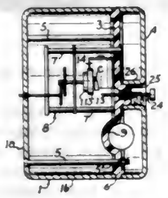


1. A driving balance-wheel for an electrical timepiece comprising two parallel circular plates of non-magnetic material, a shaft for supporting said plates for rotational motion, a recess having the shape of a segment of a circle in each of said plates adjacent the periphery thereof, an armature plate of magnetic material having the shape of a segment of a circle in each of said recesses, a pair of spaced permanent magnets fixed to each of said armatures, the magnets of one pair being disposed opposite the magnets of the other pair, said permanent magnets being polarized to establish a magnetic field in the form of a loop passing through said paths of permanent magnets and said armatures wherein the median plane of the magnetic field is parallel to the axis of said balance-wheel and perpendicular to the diametral plane of symmetry of said balance-wheel, and a counterweight in the shape of a segment of a circle fixed to each of said plates near the periphery thereof and diametrically opposite said recesses.

3,161,013
SOUND DEADENING CASE MEANS FOR ELECTRIC CLOCK

Roland Siefert, Schwenningen (Neckar), Germany, assignor to Kienzle Uhrenfabriken A.G., Schwenningen (Neckar), Germany, a corporation of Germany

Filed Mar. 26, 1962, Ser. No. 182,521
3 Claims. (Cl. 58—41)

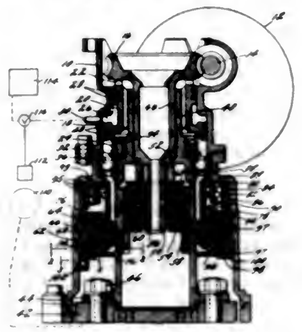


1. In an electrically wound clock of the type having a mainspring intermittently wound by a periodic blow on a carrier for the spring imparted by a clapper armature and cooperating electromagnet, the combination of a front wall member and a rear wall member, the latter being of somewhat soft yieldable material having noise deadening and electrical insulating properties, one of the members having a complete peripheral flange and extending to the other and joining same to provide a works casing; a works train and wind-up mechanism therefor carried on the rear wall member and between the two members; a rear cover secured to the rear wall member and free from metallic connection with the front wall member.

3,161,014
ACTUATOR MECHANISM

Robert N. Abild, New Britain, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,990
10 Claims. (Cl. 60—7)

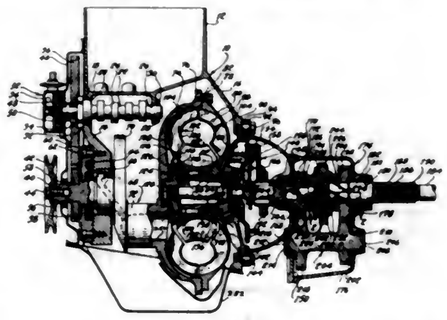


1. In an actuator mechanism, a driven member, driving means, latch means connecting said driving means and said driven member so that said driving means drives said driven member between first and second positions, a wound spring extending between and supported by said driving means and said driven member when so engaged, means for disengaging said driven member and said driving means, means for holding said driving means stationary when said driven member and said driving means are so disengaged to thereby permit said spring to move said driven member to one of said positions when so disengaged.

3,161,015
ENGINE AND HYDROKINETIC POWER TRANSMISSION ASSEMBLY

James Knowles, Bloomfield Hills, and Thomas R. Stockton, Northville, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 27, 1963, Ser. No. 291,002
6 Claims. (Cl. 60—12)



1. A power plant system comprising an internal combustion engine housing, an engine crankshaft, first bearing means for supporting one end of said crankshaft upon said housing for rotation about a principal axis, said crankshaft having a crank portion that is offset radially with respect to said principal axis, a hydrokinetic power transmitting unit comprising an impeller and a turbine disposed in toroidal fluid flow relationship in a torus circuit, said impeller being connected directly to said crank portion of said crankshaft whereby said impeller serves to balance said crankshaft dynamically and to form therewith a common assembly, said turbine being connected to a driven member, and second bearing means for journaling said impeller upon said housing for rotation about said principal axis, said first bearing means and said second bearing means providing the sole means for rotatably supporting the assembly of said impeller and said crankshaft.

3,161,016
STRAINED MONOCYCLOHEXANE HYDROCARBONS AS HIGH ENERGY FUELS

John O. Smith, Swampscott, and K Warren Easley, Wayland, Mass., assignors, by mesne assignments, to Monsanto Research Corporation, Everett, Mass., a corporation of Delaware

No Drawing. Filed Oct. 19, 1960, Ser. No. 63,476
7 Claims. (Cl. 60—35.4)

1. The method of developing thrust in a reaction chamber which comprises oxidizing in said chamber a hydrocarbon fuel comprising essentially a strained alicyclic hydrocarbon of the formula

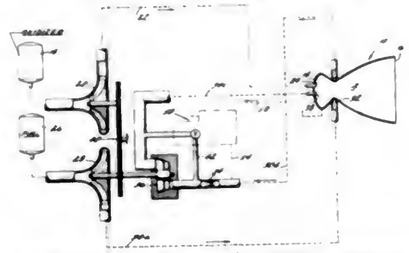


where R is alkyl of from 1 to 6 carbon atoms and wherein at least two alkyl are attached to adjacent carbon atoms, to produce a mass of high temperature gases and exhausting said gases from said chamber so as to develop thrust.

3,161,017
LIQUID ROCKET THRUST CONTROL

Trent H. Holmes, Rocky Hill, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 24, 1959, Ser. No. 822,688
2 Claims. (Cl. 60—35.6)

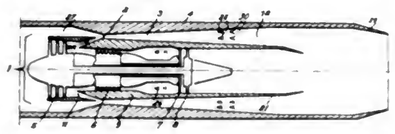


1. A liquid rocket having a combustion chamber, fuel conduit means with a first pump therein to provide fuel to said combustion chamber, oxidizer conduit means with a second pump therein to provide oxidizer to said combustion chamber, a turbine located in said fuel conduit means to be driven by the fuel passing therethrough, gear means connecting said first and second pumps to said turbine to be driven thereby, a bypass line in said fuel conduit means bypassing said turbine, rocket combustion chamber pressure control means including means sensing combustion chamber pressure, balanced bellows means movable in response to combustion chamber pressure, means controlling the setting of said bellows means, a servo system having a fixed and variable area orifice with means to pass fuel from said fuel conduit means therethrough to establish a servo pressure therebetween, a pivotal crank having a first arm engaging said movable means and a second arm positionable to vary the area of said variable area orifice so that the area of said variable area orifice and hence said servo pressure is responsive to the movement of said movable means, a flow restricting valve located in said bypass line and actuated by said servo pressure to regulate the amount of fuel bypassed around said turbine and hence speed and the amount of fuel pumped through said turbine and hence the speed of and the amount of fuel and oxidizer pumped by said pumps to said rocket combustion chamber, and feedback means repositioning said crank and bellows means in response to the movement of said flow restricting valve.

3,161,018
COMBINED TURBOJET-RAMJET ENGINE

Pierre Y. A. F. Sandre, Le Vesinet, France, assignor to Nord-Aviation, Société Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France

Filed Nov. 14, 1960, Ser. No. 68,727
Claims priority, application France, July 11, 1960, 832,622
14 Claims. (Cl. 60—35.6)



1. Combined turbojet-ramjet comprising: (*a*) a by-pass turbojet, including in series flow within an annular casing, compressor means, a combustion system, turbine means, a jet pipe, (*b*) a primary air stream passing directly through said compressor means, said combustion system, said turbine means, to said jet pipe, (*c*) a secondary air stream passing through at least a part of said compressor means and by-passing said combustion system and said turbine means, (*d*) an outer annular cowling coaxial with said turbojet casing, the forward extension of said cowling forming a single air inlet to said combined engine, (*e*) an annular space between said outer annular cowling and said annular casing of said by-pass turbojet, said annular space including in series flow an annular duct, an air mixing chamber, said air mixing chamber having constriction means at its upstream end adjacent said annular duct, said constriction means including a throat portion, a combustion chamber surrounding said jet pipe of said by-pass turbojet, (*f*) an exit nozzle terminating the downstream end of said outer annular cowling, beyond the extremity of said jet pipe, (*g*) a direct air stream passing through said annular duct to said mixing chamber, and passage means through said annular casing of said by-pass turbojet having an outlet situated between said annular duct and said air mixing chamber, directing at least a portion of said secondary air stream towards said constriction means in said air mixing chamber, so that said direct air stream and said portion of said secondary air stream intimately mix in said air mixing chamber before passing into said combustion chamber.

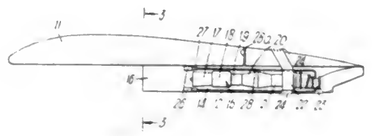
3,161,019
GAS TURBINE ENGINES

John Gregory Keenan, Shelton Lock, Jack Palfreyman, Tansley, near Matlock, and Frederick Freeman, Shelton Lock, England, assignors to Rolls-Royce Limited, Derby, England

Filed July 5, 1961, Ser. No. 121,992
Claims priority, application Great Britain, July 27, 1960, 26,205
13 Claims. (Cl. 60—35.6)

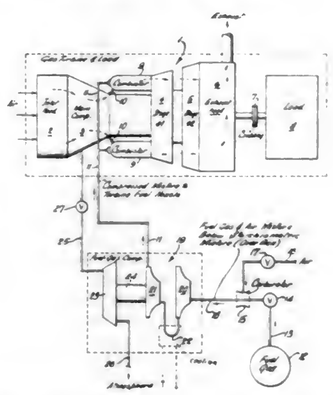
1. In a power plant for supersonic aircraft, the combination of: a gas turbine engine comprisnig supersonic air intake means, compressor means, combustion means, turbine means and a supersonic propulsion nozzle arranged in series; at least one auxiliary compressor, said auxiliary compressor having an intake duct communicating with said supersonic intake means upstream of the

compressor means of said gas turbine engine and arranged to receive a portion of the air therefrom; means to drive said auxiliary compressor off said gas turbine engine; said last mentioned means including a selectively operable clutch for engaging and disengaging said auxiliary compressor from said gas turbine engine; and duct means extending from the discharge end of said auxiliary



compressor to said supersonic propulsion nozzle of the gas turbine engine with the same bypassing the compressor means, combustion means, and turbine means of the gas turbine engine, said duct means receiving all of the air compressed by said auxiliary compressor and delivering it into the hot propulsive gas stream within said propulsion nozzle.

3,161,020
CENTRIFUGAL COMPRESSING OF LOW MOLECULAR WEIGHT GASES
Paul G. La Haye, Schenectady, N.Y., assignor to Mechanical Technology Incorporated, Latham, N.Y., a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,880
10 Claims. (Cl. 60—39.02)



1. A gas turbine system using a centrifugal compressor for supplying a gaseous fuel supply to a gas turbine, comprising:

(*a*) a gas turbine unit having a compressor, a combustor, and a turbine, said turbine being connected to said compressor and having an output shaft;

(*b*) a gaseous fuel compressor unit having a centrifugal compressor assembly for compressing and delivering a gaseous fuel mixture to said combustor at a pressure slightly higher than the pressure in said combustor;

(*c*) a turbine forming part of said gaseous fuel compressor unit connected to said centrifugal compressor assembly and having a high pressure gas supply line connected to said gas turbine unit for effecting movement of said turbine;

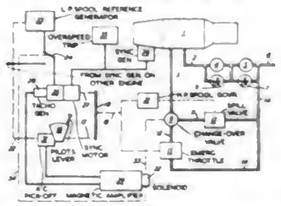
(*d*) carburetor means connected to said compressor assembly for supplying a mixture of gaseous fuel thereto;

(*e*) a low molecular weight gaseous fuel supply conduit connected to said carburetor means at one end and having its other end connected to a commercial fuel gaseous supply main containing high energy low molecular weight fuel gas at a pressure slightly higher than atmospheric pressure;

(*f*) a secondary gas conduit containing a high molecular weight gas connected to said carburetor means; and

(*g*) control means associated with said carburetor for controlling mixture of said gases to produce a relatively high molecular weight gaseous fuel mixture, whereby said centrifugal compressor is able to raise the pressure of said mixture above that in the combustor of said gas turbine unit at a high efficiency, and to deliver it to the combustor of said gas turbine unit.

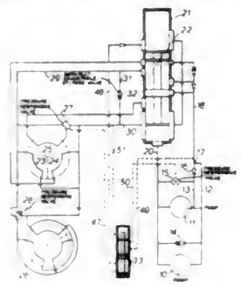
3,161,021
FUEL SYSTEM FOR TWIN SPOOL GAS TURBINE ENGINE
Stanley R. Tyler, Cheltenham, and John M. Masterman, Churchdown, England, assignors to Dowty Fuel Systems Limited, Cheltenham, England, a company of Great Britain
Filed Jan. 26, 1962, Ser. No. 169,064
Claims priority, application Great Britain, Jan. 27, 1961, 3,265/61, 3,266/61
9 Claims. (Cl. 60—39.16)



1. A fuel system for an internal combustion engine comprising a normal fuel flow control, an emergency fuel flow control, an operative connection between the two fuel flow controls to insure simultaneous and similar adjustment, a first speed-signal generator, a regulator operative on the first speed-signal generator to select the first speed-signal, a second speed-signal generator driven by the engine to generate the second speed-signal in accordance with engine speed, a synchronizing motor fed with the two speed-signals, an error signal generator driven by the synchronizing motor at a speed dependent on the difference of the speed-signals to generate an error signal, trimming means responsive to small error signals to modify the setting of the two fuel flow controls to tend to reduce the error signal to zero whereby to control engine speed in accordance with regulator setting, rapid switching means responsive to generation of a large error signal to switch from the normal fuel flow control to the emergency fuel flow control, and delay means operable on resetting of the regulator to select a new engine speed to prevent operation of the rapid switching means for a short period in response to the large error signal following resetting of the regulator.

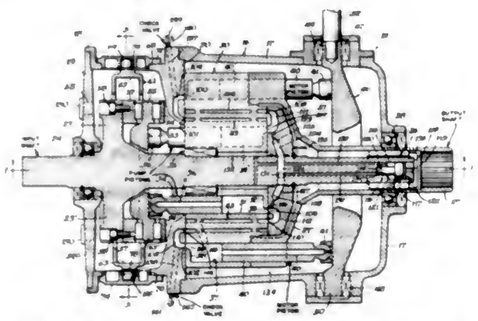
3,161,022
HYDRAULIC MOORING WINCH
Harry Sandöy, Brattvaag, Norway, assignor to Hydraulik A/S, Brattvaag, Norway
Filed Dec. 26, 1961, Ser. No. 162,143
Claims priority, application Norway, Dec. 24, 1960, 138,532
5 Claims. (Cl. 60—53)

1. A hydraulic system for a mooring winch, said system having pressure and discharge sides and comprising a pump, a hydraulic motor including vanes adapted for operating a winch drum and coupled in a hydraulic circuit in series with said pump, a manually operable control valve for regulating the quantity of fluid fed to said motor from said pump by directing an adjustable portion of the amount of liquid from said pump in a short circuit around said motor back to said pump, a bypass valve having a by-pass passage which leads from said pressure side of said system to said discharge side of said system



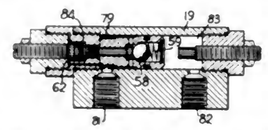
and connected in parallel with said motor, said bypass valve including means responsive to the pressure difference between said sides for maintaining the pressure on said pressure side of said system substantially at a constant value above the pressure on discharge side of said system and means for adjusting the pressure difference so that the resulting torque by said pressure acting towards the vanes of said motor will be maintained at a substantially constant value.

3,161,023
VARIABLE SPEED HYDROMECHANICAL POWER TRANSMISSION
William Margolin and Louis G. Haller, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 7, 1962, Ser. No. 215,307
19 Claims. (Cl. 60—53)



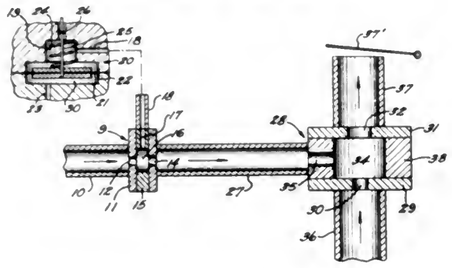
19. A fluid power transmission having an input shaft and an output shaft, a plurailty of pump cylinders positioned in operable relation with a rotatable swash plate and a plurality of motor cylinders positioned in operable relation with a stationary swash plate, a rotatable valve member and a stationary valve member positioned in operative relation for communicating fluid flow between said pump cylinders and motor cylinders, and externally accessible means for rotatively adjusting the position of said stationary valve member with respect to said stationary swash plate and externally accessible means for rotatively adjusting the position of said rotatable valve member with respect to said rotatable swash plate.

3,161,024
ISOLATING MECHANISM FOR AUTOMATIC HYDRAULIC BRAKE ADJUSTER
Neil J. Ryskamp, Markham, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 18, 1963, Ser. No. 288,831
4 Claims. (Cl. 60—54.6)



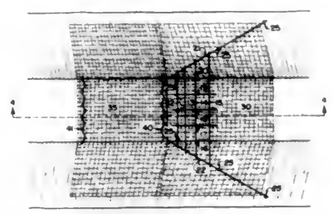
1. Apparatus for use in a hydraulic braking system for friction type brakes of the type including a master cylinder and a wheel cylinder, said apparatus comprising an automatic hydraulic brake adjuster adapted for connection between said master cylinder and said wheel cylinder having a reciprocable metering plunger with a valve, actuating means for opening said valve to provide make-up fluid to said wheel cylinder upon predetermined brake wear occurring and an isolating means preventing said actuating means from opening said valve when the pressure in said wheel cylinder does not exceed a predetermined value.

3,161,025
PNEUMATIC DEVICES HAVING CASCADED SETS OF CONCENTRIC ORIFICES
Joseph E. Fleckenstein, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 30, 1961, Ser. No. 148,321
8 Claims. (Cl. 60—60)



1. A vacuum producing device comprising: a first concentric orifice unit having a first plate with a relatively small high pressure orifice of .010 to .020 inch in diameter and having a second plate spaced therefrom with a low pressure orifice which is approximately 1.5 times larger than said high pressure orifice aligned with the latter, and there being an intermediate chamber in communication with both orifices which is of substantially larger size than said orifices with a vacuum duct leading therefrom which is connectable with a device to be controlled; an inlet conduit connectable with a relatively low pressure source of fluid leading to said high pressure orifice; a second concentric orifice unit like said first unit but having a high pressure orifice approximately 3 times the diameter of the high pressure orifice of said first unit and having a low pressure orifice and an intermediate chamber of respectively larger size; means for conducting the exhaust from the low pressure orifice of the first unit to the intermediate chamber of the second unit; a relatively low pressure source of fluid in communication with the high pressure orifice of the second unit; and means for exhausting fluid from the low pressure orifice of said second unit.

3,161,026
METAL-SOD DAM
Lee E. Smedley, 5744 Walker Ave., Lincoln 4, Nebr.
Filed Mar. 23, 1961, Ser. No. 97,970
2 Claims. (Cl. 61—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



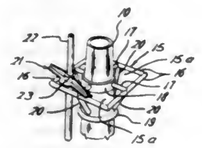
1. In combination, a gully having a bottom and sides, and a dam for stabilizing the gully against erosion, said dam comprising

(*a*) a rigid, open-mesh trapezoidally-shaped bar mat, positioned in the gully at an acute angle to the gully bottom facing the upstream direction, having its shorter base spanning the width of, and anchored to, the gully bottom, and having its diagonal sides set at angles corresponding to the slopes of the gully sides and anchored thereto;

(*b*) an open mesh member covering the bottom and sides of the gully and anchored thereto, said member being positioned under the bar mat with a portion thereof extending upstream of the bar mat and a portion thereof extending downstream of the bar mat, the latter portion being provided with a plurality of spaced, parallel, transverse openings spanning the width of the gully bottom; and

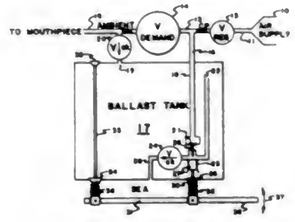
(*c*) a plurality of spaced, parallel barriers spanning the width of the gully bottom and positioned in said transverse openings of that portion of the open mesh member downstream of the bar mat, said barriers projecting above the member and presenting an impermeable upstream face.

3,161,027
PIPE SUPPORT FOR USE IN MARINE DRILLING
Tom S. Graham, New Orleans, La., assignor to Ocean Drilling & Exploration Company, a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,644
7 Claims. (Cl. 61—46)



1. A pipe support for use in marine drilling, comprising, an elongate tubular caisson vertically mountable in the land bottom underlying a water body and having a length when in place to extend above the surface of the water body, a horizontally disposed laterally extending support frame mounted on the caisson at a point adapted to be located above the water body, said frame having an opening therethrough to receive the upper end of a pipe to be driven into said land bottom alongside said caisson, and a horizontally disposed load-transmitting member slidably supported on an upwardly facing surface of said frame surrounding said opening and adapted to be rigidly secured to a pipe, said caisson having a slenderness ratio in the range from about one-third to about one-sixth of that of a pipe to be supported thereby.

3,161,028
BUOYANCY ADJUSTING DEVICE FOR SWIMMERS
William T. Odum, Robert H. Banks, and James E. Preston, all of Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 13, 1961, Ser. No. 116,892
1 Claim. (Cl. 61—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



In combination with underwater breathing apparatus having a supply of air under pressure and a demand valve providing a source of air at substantially ambient pressure, a buoyancy adjusting device comprising:

a constant volume ballast tank,

a conduit extending from said pressure air supply into said ballast tank,

a poppet valve in said conduit within said tank normally biased to a closed position by the air pressure,

a first check valve having an inlet and an outlet and operable to maintain a selected pressure difference therebetween,

an inlet port to said tank connected through said first check valve to said source of ambient pressure air to admit ambient pressure air to said tank when the air pressure in said tank is less than ambient pressure by an amount greater than the difference pressure maintained by said first check valve,

a second check valve having an inlet and an outlet and operable to maintain a selected pressure difference therebetween,

a passageway in said tank having an outlet port to the exterior of said tank,

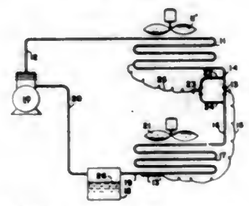
a standpipe within said tank having an inlet at a position intermediate said first and second check valves and connected through said second check valve to said passageway when the pressure in said tank exceeds the ambient pressure by an amount greater than said selected pressure (difference) maintained by said second check valve,

a valve assembly comprising a first valve means movable to a position providing direct communication between the inside and outside of said tank, and a second valve means movable to a position closing said standpipe to said second check valve and thereafter opening the poppet valve in said conduit,

valve disc means on said tank normally biased to closed position, and

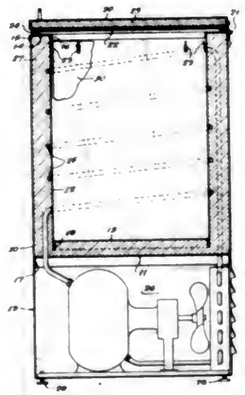
manually actuated means operatively connected to said valve assembly and to said valve disc means, movable in one direction for moving said valve assembly to its respective positions and in the other direction for actuating said valve disc means to open position to vent the top and bottom of said tank.

3,161,029
REFRIGERATION SYSTEMS OPERABLE AT LOW CONDENSER PRESSURES
Lawrence Macrow, Elma, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,430
1 Claim. (Cl. 62—197)



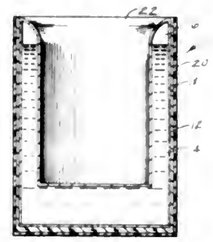
In a refrigeration system, the combination of a compressor, a condenser, expansion means, and an evaporator in a series-closed circuit relationship, circuit means for passing substantially only liquid refrigerant from said condenser into said evaporator when the pressure in said condenser falls below a predetermined value which is sufficient to force refrigerant from said condenser through said expansion means to said evaporator, thereby permitting said refrigeration system to operate at condenser pressures which are below said predetermined value, said circuit means being located in bypass relationship to said expansion means, a valve only in said circuit means, said valve when open permitting liquid refrigerant to bypass said expansion means and flow directly from said condenser to said evaporator through said circuit means and therefore flood said evaporator, control means for opening said valve when said condenser pressure is below said predetermined value and for closing said valve when said condenser pressure is above predetermined value.

3,161,030
GARBAGE RECEPTACLE WITH REFRIGERATING UNIT
Lee Brewton, R.F.D. 1, Box 134, Nokomis, Fla.
Filed Oct. 11, 1962, Ser. No. 229,908
1 Claim. (Cl. 62—440)



1. A receptacle for the collection and storage indoors of garbage, said receptacle including an inner casing having a tubular upright wall and a bottom wall and an outer casing having a tubular upright wall and a bottom wall, said outer casing enclosing the inner casing to define a space between the upright walls and bottom walls of said casings, said casings being joined along upper edge portions of said upright walls by a rim member defining an entrance to said receptacle at the upper limits of said upright walls, a closure having engagement with said rim to close said entrance, a housing defined by a downward extension of the upright wall of said outer casing, a refrigerating unit occupying a fixed position within the confines of said housing, refrigerant conducting coil wound about the surface of the upright wall of the inner casing facing the inner surface of the upright wall of the outer casing, said coil being connected to said refrigerating unit, a filler of insulating material separating said coil from the inner surface of the upright wall of the outer casing and a filler of insulating material between the bottom walls of said inner and outer casings, a lining member defining the inner face of said closure and a filler of insulating material between said lining member and the surface of the closure opposite thereto, and a sealing gasket provided at the junction of said rim and said closure when said closure is in closing relation to the receptacle, a series of upwardly projecting hooks secured to the inner wall of the inner casing along a line near to but spaced downwardly from said rim member and a disposable moisture proof bag suspended in upwardly open position within the confines of said inner case via detachable engagement with said hooks.

3,161,031
PORTABLE COOLER
Clyde G. Flannery, 7107 N. Tampania Ave., Tampa, Fla.
Filed Sept. 23, 1963, Ser. No. 310,762
4 Claims. (Cl. 62—457)

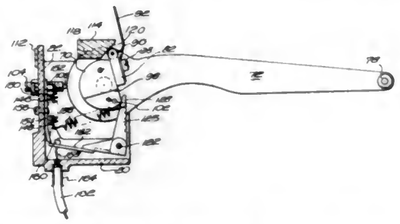


1. A portable cooler comprising, in combination, a hollow aluminum container providing a means for retaining a coolant such as propaline glycol, a cork insulation carried by said container providing insulation means for said container, a woven plastic cover carried by said container providing decorative appearance to said container of said cooler and helping to keep said container sanitary, said coolant being carried within said aluminum container which is of hollow configuration and sealed having an air space within said aluminum container providing a means for said coolant to expand within said container, thus preventing overstressing said container, said container being provided with a cylindrical opening having a vertical side wall for receiving a can of beverage to be cooled by said coolant after said coolant has been frozen in a refrigerator freezer and the inner edge of the upper rim of said aluminum container being harmoniously curved ninety degrees between the upper edge and the wall of said opening.

3,161,032
TENSION DEVICE FOR ELASTIC YARN
Robert H. Lawson, Pawtucket, and John B. Lawson, Barrington, R.I., assignors to Lawson Engineering Co., Pawtucket, R.I., a corporation of Rhode Island
Filed Dec. 20, 1961, Ser. No. 160,854
9 Claims. (Cl. 66—146)

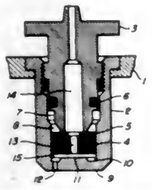
6. In combination with knitting mechanism including a feed finger for elastic yarn and control means for moving said finger into and out of feeding position, a tension de-

vice for said elastic yarn comprising an arm mounted for rocking movement about a pivotal axis, yarn snubbing means controlled by said arm, means yieldingly biasing



said arm in yarn snubbing direction and means operative to counteract the influence of said biasing means in response to action by said feed finger control means moving said finger out of feeding position.

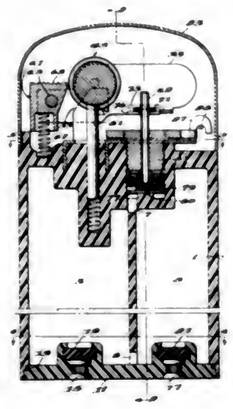
3,161,033
FLUID FLOW CONTROL DEVICES FOR LIQUEFIED GAS LIGHTERS
Taisho Iketani, 589 Nogatacho-1-chome, Nakano-ku, Tokyo, Japan
Filed July 11, 1962, Ser. No. 209,141
5 Claims. (Cl. 67—7.1)



1. A fluid flow control device for use in a liquefied gas lighter having a fuel reservoir and a burner tip comprising a stationary member secured to said fuel reservoir, a movable member fitted to said stationary member, said stationary and movable members being formed to define a fluid passage therethrough communicating the interior of the fuel reservoir with the burner tip of the lighter, a resilient block interposed between said stationary and movable members along said fluid passageway so as to be subjected to a variable compressive force through the intermediary of said movable member, said resilient block having a portion adapted substantially to block said fluid passage in cooperation with a portion of at least one of said members to divide said fluid passage into two sections, said block being provided with a diametric passageway 15 formed in the bottom of said block, said diametric passageway 15 interconnects with said fluid passage connecting the interior of the fuel reservoir to the burner tip of the lighter, said diametric passageway 15 being expandable and contractable with respect to its transverse cross section under said variable compressive force.

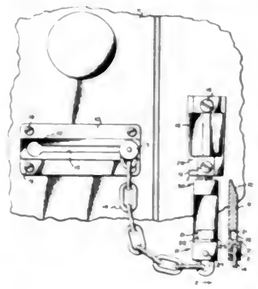
3,161,034
BUTANE LIGHTER CONSTRUCTION
Frederick Charles Meyers, 916 Cole Drive, Brielle, N.J.
Filed May 9, 1963, Ser. No. 279,162
9 Claims. (Cl. 67—7.1)

1. A lighter comprising a hollow body portion containing first and second chambers interconnected at their top and bottom portions and adapted to store a flammable fuel, valve means for controlling the escape of said flammable fuel, a spark assembly for igniting said fuel as it escapes, and means for inserting fuel into said chambers, said means for inserting fuel including a pair of rubber seals through which filling and venting tubes may be inserted to inject a flammable fuel while allowing the air



within said chambers to be displaced, whereby said chambers are completely filled.

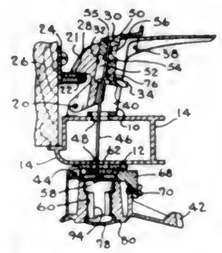
3,161,035
DOOR CHAIN LOCK
Joseph Adamec, Jackson Heights, N.Y., and Robert J. Bradley, Ridgewood, N.J., assignors to Security Hardware Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed June 28, 1961, Ser. No. 120,309
2 Claims. (Cl. 70—93)



1. A door chain lock comprising chain means adapted to be fastened to a door and a door frame of a structure by fastening means to permit restricted opening of the said door, in which at least one of the said fastening means comprises: locking slide receiving means having a housing containing an opening therethrough and a transverse latch bolt reciprocably mounted so that a portion thereof may be moved from a first, locking position within the said opening to a second, unlocking position outside of the said opening, and means to fasten the said housing to a portion of the said structure; and a locking slide adapted to slide fit into said locking slide receiving means attached to the said chain means and having a cross sectional dimension in at least a portion thereof corresponding to the cross sectional dimension of the opening through the said locking slide receiving means, said locking slide having a recess in a position which is in faced relationship to the said latch bolt of the locking slide receiving means when the said locking slide is slide fitted into the locking slide receiving means, in which the said housing includes a key operated lock to operate the said transverse latch bolt, and is provided with at least one

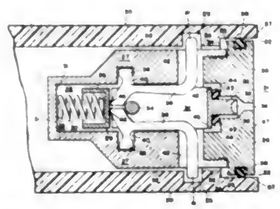
means to receive at least one fastener for mounting said housing; and in which the said locking slide, when fitted in the housing of said locking slide means, covers the said means to receive the fastener.

3,161,036
LATCH
John M. Himes, Hartford, and Ralph F. Garms, Brookfield, Wis., assignors to E. R. Wagner Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 14, 1962, Ser. No. 194,396
15 Claims. (Cl. 70—150)



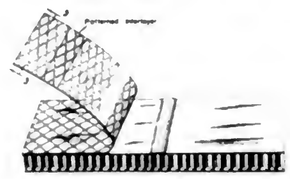
10. A door latch comprising,
a first handle adapted to be mounted on one side of the door and movable between door unlatching and door latching positions,
a second handle adapted to be mounted on the other side of the door and movable between door latching and door unlatching positions,
means operable to engage a catch and to thereby latch the door, said means being responsive to the movement of said first handle to its door unlatching position to thereby disengage the catch,
and a resilient link connected to said first and second handles to move said first handle to its door unlatching position in response to movement of said second handle to its door unlatching position, said resilient link also biasing said first and second handles to their respective door latching positions.

3,161,037
LATCH ASSEMBLY
Roger E. Lagerquist, Goleta, Calif., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Apr. 24, 1963, Ser. No. 275,281
4 Claims. (Cl. 70—169)



1. A latching system comprising a latch assembly and a specially shaped key for sealing the end of a small cylinder having an interior groove parallel to and near the end of said cylinder and a limit stop disposed between said groove and said end for limiting the inward movement of said latch assembly, said latch assembly comprising:
a latch having a latch arm adapted to engage said groove;
first means including a housing for holding said latch, a spring, and guide mean having a cavity specially shaped to receive the tip of said key, said first means being adapted to maintain said latch arm in engagement with said groove and to rotate said latch arm out of engagement with said groove and into said housing when said key is caused to move said guide means which thereupon compresses said spring and moves said latch causing said latch arm so to rotate; and
second means threadably fastened to said housing and having a shoulder to engage said limit stop, a special keyway to receive said key and a cavity specially shaped to hold said key axially fixed in position when said key is inserted through said keyway, is caused to move said guide means and is rotated out of alignment with said keyway, whereupon said latch assembly may be withdrawn from said cylinder by pulling said fixed-in-position key outwards.

3,161,038
STRIPPABLE PERMANENT THERMOGRAPHIC TEST PATTERN
David D. Seltzer, Towson, and Gilbert J. Chuhran, Baltimore, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Dec. 21, 1961, Ser. No. 161,012
7 Claims. (Cl. 73—15.4)



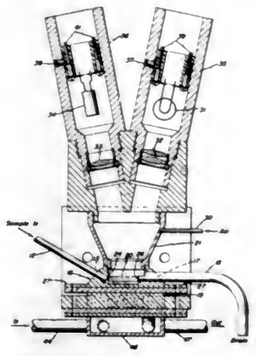
2. A method of determining the nature of a bond between a first metal of low heat conductivity and a second metal bonded thereto by a brazed bond of higher heat conductivity, which comprises covering a surface of said first metal opposite said bond with a fluid containing a color-imparting ingredient and a normally solid translucent flexible resinous binder dispersed in a volatile liquid and applying heat to said covering to induce migration of fluid and color at regions of good bond to thereby form regions of increased and decreased color while fixing said color in said regions by converting the fluid to a solid through the vaporizaiton of the volatile liquid.

6. A permanent thermographic test pattern comprising a flexible laminar sheet having transparent resinous flexible face lamina and a patterned flexible resinous interlayer sheet containing a color together with regions of different thickness outlining the pattern and a heat hardened normally solid transparent resinous binder fixing the pattern.

3,161,039
APPARATUS FOR DETERMINING POUR POINT
Sixt Frederick Kapff, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Jan. 19, 1961, Ser. No. 83,824
5 Claims. (Cl. 73—17)

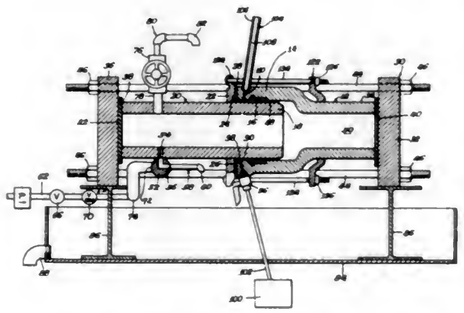
1. Apparatus for determining the pour point of an oil which apparatus comprises an apparatus housing, a thermally conductive sample cell positioned within said housing, said sample cell having a shallow cavity being adapted to contain a thin, plate-like sample of oil at a constant level therein, a thermoelectric element within said housing and in thermal contact with said sample cell, said thermoelectric element being adapted to cool said sample and said sample cell to at least the solidification temperature

of said sample, means for introducing an oil sample into said sample cell, light source means for directing a beam of light onto the surface of said sample, light sensitive receiving means for receiving light reflected from the surface of said sample, means for indicating the temperature



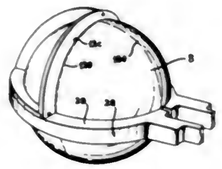
of said sample at which a change occurs in the reflectivity of the surface of said sample as a measure of said pour point, means for heating said cooled sample to at least its flow point subsequent to the occurrence of said change in said sample surface reflectivity, and means for flushing said heated sample from said sample cell.

3,161,040
GASKET TESTING DEVICE
Richard T. Ver Halen, Forest Park, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed June 11, 1962, Ser. No. 201,472
6 Claims. (Cl. 73—46)



1. An arrangement for testing sealing gaskets comprising a first pipe member having a bell end; a second pipe member partially received within said bell end; a ring portion formed closely about said second pipe member so as to be generally radially disposed thereabout; a resilient seal positioned between said ring portion and the extreme end of said bell end; a ring clamp slidably engaging the outer annular surface of said first pipe member, said ring clamp being abuttable with said bell end; retaining means interconnecting said ring portion and said ring clamp to urge said ring portion and said extreme end of said bell end against said resilient seal, said retaining means being disposed annularly about said joined pipe members, said retaining means being adjustable to permit the pipe members to be joined in axial alignment or so that the axis of said pipe members intersect at an angle, said test sealing gasket being disposed between said first and second pipe members; means forming a first chamber within said joined pipe members, said first chamber communicating with one side of said sealing gasket; means for admitting test pressure to said first chamber; means defining a second chamber with the opposite side of the gasket; a fluid filling said second chamber and means responsive to changes of the volume of said fluid in said second chamber for indicating distortion of said gasket by changes in the test pressure.

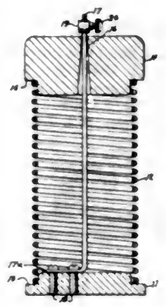
3,161,041
BALL MARKING DEVICE
Jay D. Amburgey, 1606 Alamosa, Odessa, Tex.
Filed Mar. 13, 1962, Ser. No. 179,446
2 Claims. (Cl. 73—65)



1. Apparatus for locating on the surface of a bowling ball a radial extension of an eccentrically located center of gravity of said ball comprising a spherically curved open framework defining a quarter of a spherical recess for reception of a portion of said ball, said framework comprising a pair of semicircular members each having a semicircular inner periphery concentric to said recess, said members being rigidly interconnected and having relatively remotely circumferentially presented faces intersecting their said inner peripheries to provide guide edges in planes at right angles to each other and contiguous to diametrical planes through said spherical recess, in combination with a dodo scale for weighing only a hemispherical portion of a bowling ball lying to one side of an imaginary vertical plane passing through the center of the ball, said scale including a ball holder of annular configuration in a horizontal plane for supporting said ball in any desired position of rotation about its said center, said ball holder having an upwardly presented horizontal flat surface disposed about the ball in the horizontal plane of said ball center, one of said semicircular members having its said remote face slidably supported on and in registering relation with a portion of said flat surface, for movement around said surface to accurately position the remote face of the other said semicircular member in contiguous relation to said imaginary vertical plane.

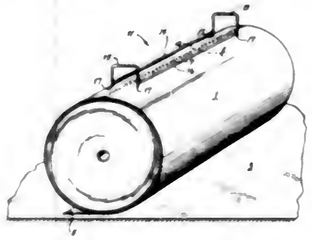
3,161,042
METHOD AND APPARATUS FOR MEASURING CORROSION RATES
Carl W. Gerhardt, 2945 Dryden Road, Dayton 39, Ohio
Application Sept. 7, 1960, Ser. No. 54,553, now Patent No. 3,112,641, dated Dec. 3, 1963, which is a division of application Ser. No. 514,408, June 9, 1955, now Patent No. 2,972,248, dated Feb. 21, 1961. Divided and this application June 25, 1963, Ser. No. 290,568
2 Claims. (Cl. 73—86)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A corrosion rate measuring apparatus comprising a circular frame having a circumferential notch in the upper surface thereof, a corrodible helical spring positioned in said notch and supported by said frame, said spring being made of such material that it will lose measurable resistance to compressive strength with time in a corrosive environment, a cylindrical weight having a circumferential notch in the lower surface thereof and an axial opening therethrough, said weight being supported by said spring the upper end of which is positioned in the notch of said weight, a scale attached to said frame,



said scale projecting axially through said spring and said weight, and a zero adjust means attached to said scale above said weight, said scale and weight cooperating to produce differing relative positions, over periods of time, which are indicative of the corrosion rates for said periods of time.

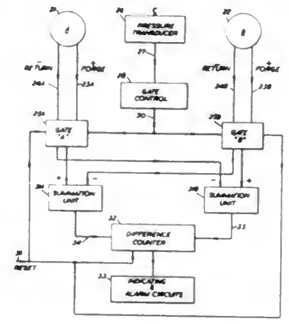
3,161,043
METHOD AND APPARATUS FOR USE IN ASCERTAINING WEB STRAIN IN A WOUND ROLL
Joseph Pundyk, New York, N.Y., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,068
4 Claims. (Cl. 73—88)



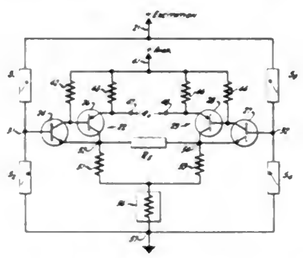
1. The method of ascertaining the strain in web material in a wound roll, comprising cutting the outermost non-loosened turn of the web material completely thereacross to relieve the strain in said turn and thereby permit said turn to assume a reduced length as in non-strained condition, and comparing said reduced length to the circumference of the wound roll.

3,161,044
INDICATING LOAD ECCENTRICITY IN FORGES
James Arthur Harrison, Chesterfield, and David Robert Howard, Sheffield, England, assignors to Davy and United Engineering Company Limited, Yorkshire, England
Filed Nov. 7, 1962, Ser. No. 235,927
Claims priority, application Great Britain, Nov. 8, 1961, 39,970/61
7 Claims. (Cl. 73—88)

1. Apparatus for giving an indication of the eccentric loading of a forging press comprising means for measuring change of tilt of the movable part of the press, means for rendering effective the measuring means only when the load applied by the press exceeds a prescribed value, and means operated by the measuring means for indicating the change of tilt occurring after the prescribed value has been exceeded.

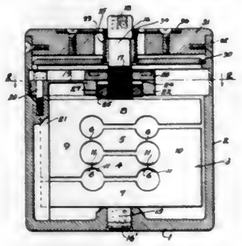


3,161,045
STRAIN GAUGE COMPENSATION
John E. Ames, Jr., Altadena, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware
Filed Aug. 18, 1961, Ser. No. 132,502
3 Claims. (Cl. 73—88.5)



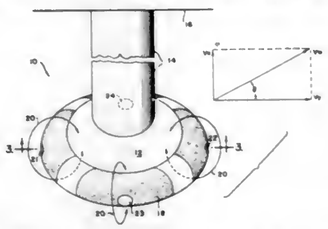
1. An improved strain gauge comprising a strain bridge including at least one strain-sensitive semiconducting element and having output terminals at opposite ends of one bridge diagonal, means connected across the other bridge diagonal for the application of excitation voltage to the bridge, a first transistor amplifier including at least one transistor having an input connected directly to a first output terminal of said bridge, a second transistor amplifier including at least one transistor having an input connected directly to a second output terminal of said bridge, whereby both signal and bias voltages to the amplifiers are obtained from the bridge, and additional resistance having a negative temperature coefficient selected to adjust the output of both said amplifiers to compensate within said amplifiers for variations in signal at said inputs of said transistors caused by changes in the temperature environment of said strain-sensitive elements, said additional resistance being coupled between the emitters of said one transistor of said first amplifier and said one transistor of said second amplifier, and said additional resistance being located in physical proximity to semiconductor elements of said bridge thereby exposing both said bridge elements and said additional resistance to the same temperature environment, whereby differential output voltage appearing between outputs of said amplifiers as a measure of stress applied to semiconductor bridge elements is compensated for temperature variations of the bridge.

3,161,046
LOAD CELL
Linwood Nelson Farley, Waltham, Mass., assignor to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed June 13, 1961, Ser. No. 116,845
3 Claims. (Cl. 73—141)



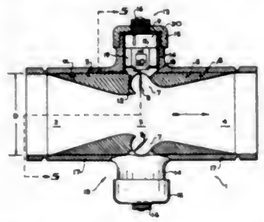
1. A load cell having a strain-sensitive load responsive element to which a load is applied in an axial direction, means for supporting one end of said element, axially flexible means having an outer portion operatively connected to said supporting means and a central portion operatively connected to the other end of the sensitive element for laterally guiding such other end, and differential threaded means interposed between said guided end of the sensitive element and said central portion for effecting a predetermined initial axial position of the flexible means.

3,161,047
OMNIDIRECTIONAL ELECTROMAGNETIC FLOWMETER
Lyman William Griswold, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 27, 1960, Ser. No. 32,490
10 Claims. (Cl. 73—189)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An omnidirectional electromagnetic flowmeter comprising an insulating plastic casing having an oblate ellipsoid shape and adapted to be placed in a conductive fluid to measure the relative fluid flow, an electromagnetic coil inside said casing in the same plane as the major diameter of said ellipsoid for projecting a symmetrical magnetic field around said casing, four electrodes mounted on the outer surface of said casing on the major diameter and spaced every 90° around said casing for deriving an output proportional to the fluid flow past said casing, a supporting plastic tube having a diameter smaller than said casing and attached by one end to the minor diameter of said casing and adapted to be attached by the other end to a support, an alternating current supply having a voltage output for energizing said coil through leads passing through said tube and casing, a dual detector amplifier having an input connected to said electrode output by connecting leads passing through said casing and tube, 90° phase shift means within said amplifier for shifting the phase of said supply voltage output and subtracting said phase shifted output from said amplified electrode output to eliminate quadrature voltages, and an XY plotter connected to said amplifier output for plotting the speed and direction of said fluid flow past said casing in the plane of said major diameter.

3,161,048
FLOWMETERS
Lothar Louis Pohl, Toronto, Ontario, Canada, assignor to Specialized Patents Sales and Developments Limited, Islington, Ontario, Canada, a corporation of Canada
Filed Oct. 25, 1960, Ser. No. 64,966
Claims priority, application Canada, June 26, 1958, 753,989
10 Claims. (Cl. 73—229)

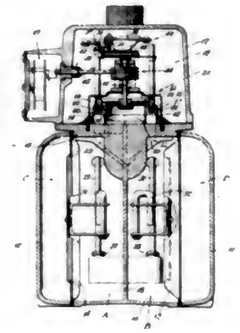


1. A flowmeter for determining the rate of flow of a fluid medium, comprising a casing, means defining a flow path for said fluid medium through said casing, means for constricting the cross-sectional area of said flow path in a downstream direction to a point of maximum constriction, means for increasing the cross-sectional area of said flow path in a downstream direction from said point of maximum constriction, means defining a cavity in the flow surface of said cross-sectional area increasing means adjacent to but downstream from said point of maximum constriction of said flow path, a single rotating blade member having a profile of aerodynamic design mounted in said cavity for rotation about an axis transverse to the direction of flow of said fluid medium through said casing at said cavity, and also parallel to the mean plane of the flow surface of said casing adjoining said cavity, and means associated with said member having an output proportional to the speed of rotation of said member, said member in its rotation having one position whereat one edge of said member projects into the main flow stream of said fluid medium through said casing and another position whereat said rotating member is contained substantially entirely within said cavity, whereby to cause said member when said fluid medium flows through said flow path to experience successively aerodynamic lift, dynamic, and static pressure forces each tending to rotate said member and sufficient in the aggregate to sustain continuous rotation of said member.

3,161,049
GAS METER
Theodore A. St. Clair, Fairfield, and Ernest L. Greenhill, Milford, Conn., assignors to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Aug. 13, 1962, Ser. No. 216,589
5 Claims. (Cl. 73—267)

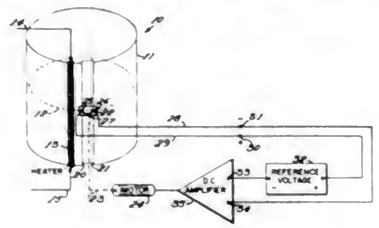
2. In a gas meter having a plurality of measuring chambers, an inlet chamber and an outlet passage and valve means communicating said measuring chambers sequentially to said inlet chamber and said outlet passage, the improvement wherein said valve means includes a rotatable, substantially circular valve cover adapted to control and direct the flow of gas through said valve means, and means including a drive yoke adapted to extend across said cover and having a pair of tapered surfaces engaging a pair of complementary tapered surfaces on said valve cover adjacent the periphery thereof and

actuated in response to operation of said measuring chambers for rotating said cover on an axis passing through the center of said valve means, said coacting



tapered surfaces pushing the cover and causing the rotation thereof and the valve cover to be pressed into sealing relation.

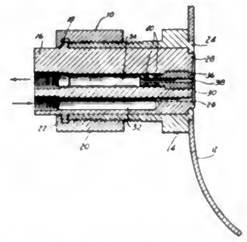
3,161,050
LIQUID LEVEL APPARATUS
Frank M. Exner, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,419
5 Claims. (Cl. 73—295)



1. Liquid level apparatus for use in measuring the height of liquid in a container, comprising;
a continuously energized electrical heater mounted on the liquid container along the height thereof to produce a heated zone on the container,
a pair of temperature sensitive devices spaced from each other in a direction normal to the border of said heated zone,
and means movably mounting said temperature sensitive devices along the height of the container in said heated zone to respond to the temperature differential in the liquid container wall adjacent said heated zone.

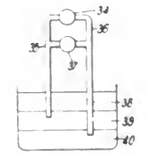
3,161,051
LEVEL INDICATING DEVICE AND SYSTEM
Joseph A. Perry, Jr., Cedar Rapids, Iowa, assignor to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed Apr. 4, 1961, Ser. No. 100,583
7 Claims. (Cl. 73—299)

1. A device for measuring the level of a flowable product in a tank, said device comprising means for positioning the device in fixed relationship at substantially the lowest level of the tank, a main body member fixed to said positioning means, a flexible diaphragm positioned to provide a fluid-tight seal between said main body member and said positioning means, one side of said diaphragm being exposed to the product in said tank, means for supplying fluid pressure to the other side of said diaphragm, and bleed means for exhausting fluid from the last mentioned side of the diaphragm, said diaphragm



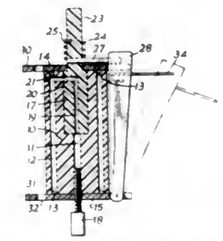
and said positioning means providing a substantially smooth and uninterrupted surface on the inside of said tank.

3,161,052
MEASUREMENT OF INTERFACIAL LEVELS
Ernest Leslie Harley, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed May 6, 1963, Ser. No. 278,212
Claims priority, application Great Britain, May 11, 1962, 18,190/62
7 Claims. (Cl. 73—302)



1. In an apparatus for determining a level of an interface between two liquid layers by determining that pressure which is just sufficient to introduce from the level of the interface a column of a measuring liquid having density characteristics similar to one liquid layer herein referred to as the first layer, the said column under said pressure extending into the other liquid layer to a known level, the other liquid layer being herein referred to as the second layer, the improvement wherein said column is substantially U-shaped.

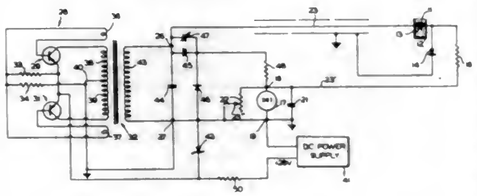
3,161,053
DEPTH GAUGES
Basil Edward Bell, Zanzibar, East Africa, assignor to National Research Development Corporation, London, England, a British corporation
Filed Feb. 1, 1962, Ser. No. 170,394
Claims priority, application Great Britain, Feb. 15, 1961, 5,671/61
11 Claims. (Cl. 73—300)



1. A depth gauge responsive to the pressure prevailing in a body of liquid at any depth to be measured to provide an indication of that depth after removal from the liquid comprising a body defining a cavity therein and

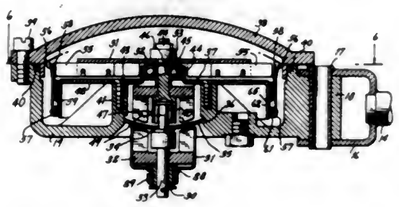
a channel open at one end to the exterior and communicating at its other end with the cavity, a valve disposed in said body to control communication between said cavity and said channel, and means for operating said valve to cut off communication between said cavity and said channel when the gauge is immersed in the body of liquid, whereby gas contained in said channel and said cavity is compressed by liquid entering said channel when said gauge is immersed in the liquid body.

3,161,054
CAPACITY-TYPE MEASURING SYSTEM
Irving H. Cohn, New York, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Dec. 20, 1961, Ser. No. 160,799
6 Claims. (Cl. 73—304)



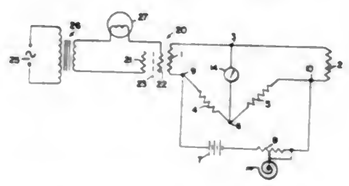
1. A capacity-type fuel measuring system comprising a saturable-core square wave oscillator, a capacitor having one side connected to a first output terminal of said oscillator, a rectifier connecting the other side of said capacitor to a second output terminal of said oscillator to form a charging circuit for said capacitor on positive waveforms of said oscillator, means for supporting said capacitor within a fuel tank for measuring the level of a fuel within the tank, a resistor having one end connected to the junction between said capacitor and said rectifier to provide a discharge path for said capacitor, a direct current meter at a location that is remote from said capacitor, means for connecting an ungrounded terminal of said meter to the other end of said resistor to complete said discharge path, and means for connecting the other terminal of said meter to the second output terminal of said oscillator.

3,161,055
LIQUID LEVEL RESPONSIVE GAUGE SYSTEM
Clarence A. de Giers, Brookville, N.Y., assignor to The Liquidometer Corporation, Long Island City, N.Y., a corporation of Delaware
Filed Sept. 19, 1961, Ser. No. 139,206
6 Claims. (Cl. 73—313)



1. A liquid level-responsive indicating means, comprising a float mounted for limited movement in a predetermined path so as to be afloat on the surface of the liquid, the level of which is to be indicated and to follow variations in the level of the liquid throughout a predetermined range of such levels, permanent magnet means mechanically connected to said float so as to be rotated by movement thereof, a wall having bearing means fixed with respect thereto on one side thereof on which said permanent magnet means is mounted for rotation, a second bearing means fixed with respect to and located on the other side of said wall, complementary permanent magnet means mounted on said second bearing means and located so as to be in the magnetic field of the first-named permanent magnet means, so that rotative movement of said first-named magnet means caused by movements of said float will be transmitted solely by magnetic flux through said wall to rotate said complementary permanent magnet means; a variable resistance coil comprising spaced turns of resistive wire supported upon a circular member fixedly positioned in concentric relation to the axis of said second bearing means and having the outermost peripheral wire surface thereof bared of electrical insulation, a plurality of electrically connected planar reeds of electrically conductive flexible sheet material fixedly supported in cantilever manner at one end to extend approximately parallel to said axis and to lie substantially in a planar cylindrical surface concentric with said circular member but radially spaced from and axially overlapping said peripheral wire surface of said coil, rotatable means fixed with respect to said complementary permanent magnet means so as to be rotatable therewith, a third permanent magnet carried by said rotatable means and movable thereby in a circular path adjacent the free ends of said plurality of parallel reeds so that as said third permanent magnet approaches each of said reeds the latter will be moved radially thereby to a position approaching but out of contact with said third permanent magnet but into contact with at least one bared turn of said coil; a source of electric energy, an indicator located at a distance from said liquid and said float, and electric circuit means including at least a part of said coil and said reeds for causing said indicator to indicate a value proportional to the liquid level controlled by at least one of said reeds coming into contact with a bared turn of said coil.

3,161,056
MOISTURE INDICATOR
Harold T. Faus, Lynn, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 25, 1961, Ser. No. 84,851
15 Claims. (Cl. 73—336.5)



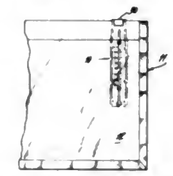
1. A circuit for deriving an electrical signal proportional to the relative humidity of an atmosphere to which it is exposed comprising: four impedance arms serially connected together to form four junctions therebetween, a source of voltage connected between alternate junctions of said circuit, means to derive an output signal across the remaining junctions, an impedance which varies as the dew point temperature of the atmosphere in circuit with one arm, an impedance which varies as the ambient temperature of the atmosphere in circuit with a second arm, and additional means to vary the output signal in response to the ambient temperature to provide an electrical signal proportional to relative humidity across said remaining junctions.

3,161,057
THERMOMETERS
Robert C. Du Bois, Fairfield, Conn., assignor to Manning, Maxwell & Moore, Incorporated, Stratford, Conn., a corporation of New Jersey
Filed Nov. 20, 1962, Ser. No. 238,955
5 Claims. (Cl. 73—363.9)



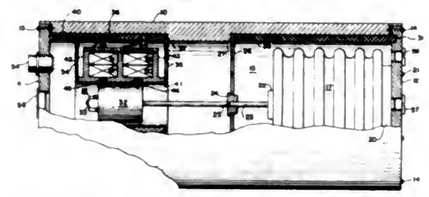
5. In a bimetal thermometer of the type having an elongated tubular stem containing a bimetal coil anchored at one end relative to the stem and at its other end connected in driving relation to a rotatable shaft, one end of the shaft extending outwardly of one end of the stem, the other end of the stem being closed by a plug, the other end of the shaft being rotatably supported by means as said plug, additional bearing means for said shaft disposed closely adjacent to said one end of the stem, said one end of the shaft mounting for rotation therewith a dial member having an outer partispherical indicia bearing surface disposed concentrically of and facing generally outwardly of and away from said one end of said stem, a dial housing including a transparent cover and a base, said cover being shaped generally complementary to said indicia bearing surface of the dial member and having a fixed reference indicator thereon and overlying said indicia bearing surface, said base including a bottom wall having a central tubular portion which projects outwardly of the dial housing and has an inner smoother curved surface flaring inwardly of the dial housing, said one end of the stem being engaged within said tubular portion and being flared outwardly of the stem in complementary relation to said inner surface of said tubular portion, said base further having a ring-like portion extending from the perimeter of said bottom wall and terminating in an inturned retaining lip overlying the perimeter of said cover, and a disc of resilient material disposed within said housing with its outer edge portion being clamped between the outer edge portion of said cover and said bottom wall, said disc having a central tubular portion projecting inwardly of said one end of the stem and having an outer smooth curved surface complementary engaging the inner flared surface of said one end of the stem, said disc having a radial slot extending from said tubular projection thereof to its outer edge and being flat in its free state but in assembly as described being deformed to a generally conical shape wherein the disc slopes from said tubular projection thereof toward the end of said stem opposite said one end thereof, said disc exerting a clamping force on the overlying flared portions of the stem and dial housing sufficient to retain the stem and dial housing in selected position angularly about the axis of said shaft but insufficient to preclude manual selective angular adjustment of the dial housing relative to the stem and about the shaft axis.

3,161,058
THERMOMETER ASSEMBLY
Allan H. Willinger and Harding W. Willinger, New Rochelle, N.Y., assignors to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed Aug. 15, 1960, Ser. No. 49,719
7 Claims. (Cl. 73—376)



1. A thermometer assembly including a thermometer tube, a scale panel and a back panel, said scale panel comprising a relatively thin planar element provided with an elongated slot-like aperture for receiving said tube for relative movement, retaining elements carried by said scale panel overlying at least a portion of said slot for retaining said tube in position within said slot, said scale panel being provided with graduated scale markings in juxtaposition with said tube, a back panel for said assembly, said back panel comprising a planar body provided with confining flanges disposed along the longitudinal side edges thereof, said scale panel being disposed between said flanges and said tube being retained in position between said retaining elements and the planar body of said back panel, said tube being locked on said back panel against relative movement, and said scale panel being movable relative to said locked tube and back panel for calibration purposes.

3,161,059
PRESSURE SENSING APPARATUS
Robert C. Burggren, North Oaks, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed July 2, 1959, Ser. No. 824,557
2 Claims. (Cl. 73—398)

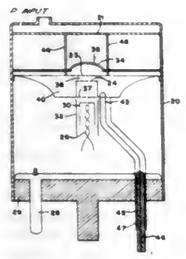


1. In combination: a bellows; means fixedly supporting said bellows at one end thereof; means supplying gas at different pressures to the inside and the outside of said bellows, so that the unsupported end thereof is physically displaced in accordance with the difference between said pressures; a rod extending from the unsupported end of said bellows in the direction of displacement thereof; means remote from said bellows resiliently supporting said rod for moving in said direction without appreciable movement having a component normal thereto; electrical pickoff means including a first portion carried by said rod for movement in said direction with respect to a second portion, the assembly of said bellows, said rod, the rod supporting means and said first portion of said pickoff means having a natural freqency in said direction; and means resiliently mounting said second portion of said pickoff means, in a position spaced from said bellows in said direction, for movement in said direction without appreciable movement having a component normal thereto, so that the natural frequency of said second portion in said direction is substantially the same as the natural frequency of said assembly.

3,161,060
MEANS AND TECHNIQUES FOR MEASURING PRESSURES

John P. Kemmer, Glendale, Calif., assignor, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed Jan. 4, 1960, Ser. No. 377
6 Claims. (Cl. 73—398)

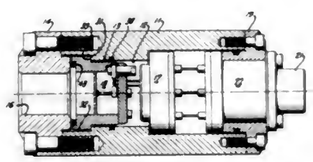


1. A system for measuring pressure comprising a resonant cavity electron beam oscillator including an evacuated housing having a deformable diaphragm forming one side thereof, a cavity resonator within said housing for establishing the frequency of oscillation of said oscillator, said frequency being a function of dimensions of said cavity, means for applying gas pressure to said diaphragm, means for mechanically coupling said diaphragm to said cavity to alter the size of said cavity in accordance with the flexing of said diaphragm and thereby alter the frequency of oscillation of said oscillator, and means for measuring the change in frequency of the oscillation in response to said pressure.

3,161,061
STRAIN GAUGE MOUNTING

John E. Ames, Jr., Altadena, Calif., assignor to Fairchild Camera & Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware

Filed Aug. 16, 1961, Ser. No. 131,868
3 Claims. (Cl. 73—398)

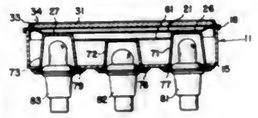


2. An improved pressure transducer comprising a capsule having a diaphragm closing a front end thereof, a force link engaging said diaphragm, means mounting said link for movement axially of said capsule, a beam extending transversely of said capsule within same in contact with said force link upon the capsule axis and adapted to have at least one strain-sensitive element mounted thereon, a rear wall upon said capsule, and means mounting said beam upon said rear wall at the outer periphery thereof to define an effective beam length L between mounting and force link contact, said rear wall having predetermined physical characteristics to deflect an angle α upon longitudinal acceleration of the capsule, such that $L\alpha$ equals a deflection of said diaphragm at the capsule axis from the same capsule acceleration, whereby said beam is substantially isolated from stresses from acceleration of the capsule.

3,161,062
CLUSTER GAUGE

William D. Huston, Rochester, N.Y., assignor to American-Standard Controls Division, a division of American Radiator & Standard Sanitary Corporation, Rochester, N.Y., a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,596
5 Claims. (Cl. 73—431)

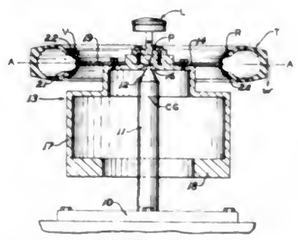


1. A cluster gauge comprising a casing closed at one end and open at its other end, a transparent cover secured over the open end of said casing, a plurality of indicators mounted in said casing to be visible through said transparent cover, said indicators being responsive to changes in different conditions existing at the exterior of said casing, said casing having at least one aperture therein, a hollow member, which is closed at one end and is open at its other end and which has an integral, laterally outwardly extending flange surrounding its open end, positioned in said aperture with its closed end extending into the interior of said casing adjacent said indicators, and means sealing said flange to said casing around said aperture to prevent the entry of dirt and moisture through said aperture into said casing, said member being adapted to have a light bulb removably positioned in the open end thereof, and at least a portion of said member being translucent to transmit light from said bulb to the interior of said casing.

3,161,063
TIRE BALANCING

Otto E. Hermanns, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 758,254, Sept. 2, 1958. This application Jan. 7, 1963, Ser. No. 249,916
1 Claim. (Cl. 73—483)

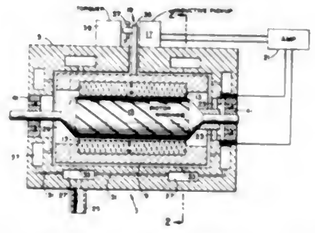


A method for measuring the magnitude of a mass causing static imbalance of a pneumatic tire independently of the total mass of the tire, comprising providing a tire-supporting tool for receiving a pneumatic tire in a horizontal position, the tool being itself horizontally balanced on a single pivot point and having a tire counterbalancing portion arranged so that the combined mass center of the support and said counterbalancing portion, with or without a tire thereon, lies below said pivot point; placing a tire horizontally on said supporting tool and locating the tire with its beads concentric of the pivot point of the supporting tool and further locating the tire so that the geometric midplane of the tire intersects said pivot point, allowing the tire to tilt freely relative to the horizonal about said pivot point in response to an unbalanced mass in the tire whereby the tilt angle is a function of the unbalanced mass of the tire and is independent of the total mass of the tire, and sensing the angle of inclination to the horizontal assumed by said tire resulting from an unbalanced mass therein as a measure of the unbalanced mass of the tire.

3,161,064
AIR BEARING DOUBLE INTEGRATING ACCELEROMETER

James V. Johnston, 821 Giles Drive, Madison, Ala.

Filed June 11, 1962, Ser. No. 201,740
3 Claims. (Cl. 73—490)
(Granted under Title 35, U.S. Code (1952), sec. 266)



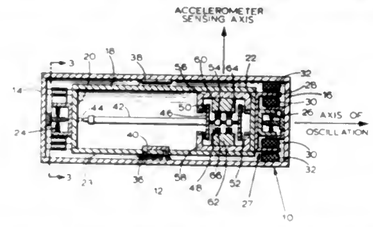
1. An air-bearing double integrating accelerometer comprising:
(*a*) a cylindrical housing;
(*b*) said housing having a segmental aperture therein normal to the longitudinal axis of the housing;
(*c*) a plurality of fluid chambers disposed within said housing to uniformly distribute fluid within said housing;
(*d*) means for supplying fluid to said chambers;
(*e*) a cylindrical fluid supported sensing element disposed within said housing;
(*f*) a lever arm having one end attached to said sensing element and a second end extending outwardly from said sensing element through said segmental aperture;
(*g*) a plurality of permanent magnet stator poles disposed on the inner surface of said sensing element;
(*h*) a D.C. motor rotor rotatably disposed within said housing;
(*i*) pickup means carried on said housing for generating an electrical signal responsive to rotational movement of said lever arm and said sensing element;
(*j*) means for energizing said rotor responsive to the signal produced by said pickup means; and
(*k*) a torquer mounted on the outer periphery of said housing and disposed adjacent said lever arm for positioning the lever arm to a null position prior to movement of said housing.

3,161,065
ORBITAL DRAG METER

Hugh E. Riordan, Wyckoff, and Walter M. Carow, West Orange, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,653
13 Claims. (Cl. 73—516)

3. A force balance accelerometer comprising a supporting body, a pendulum having a proof mass on one end with the other end thereof hingeably mounted on said body to pendulously support said proof mass for sensing acceleration along a sensing axis, pickoff means for detecting the position of said proof mass, force applying means controlled by said pickoff means for applying a restoring force to the proof mass tending to maintain it in a null position, and means for oscillating said supporting body through an angle greater than 180° about an axis perpendicular to said sensing axis and passing through

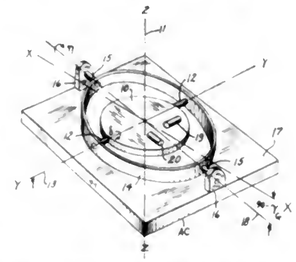


the point at which said other end of the pendulum is hingeably mounted on said supporting body.

3,161,066
AUTOMATIC ERECTION SYSTEMS

Maurits Ten Bosch, White Plains, and Paul Lang, Katonah, N.Y., assignors to M. Ten Bosch, Inc., Pleasantville, N.Y., a corporation of New York

Filed Mar. 2, 1960, Ser. No. 12,356
4 Claims. (Cl. 74—5.47)



1. A gyroscope erection system for a vertical gyroscope for aircraft and other vehicles without cutouts, comprising a central gyroscope unit, pitch and roll accelerometers separately mounted on said gyroscope and located at right angles to each other, a roll gimbal, pitch axis mountings between the central gyroscope unit and the roll gimball, roll axis mountings between the roll gimbal and the aircraft and erection means on the roll and pitch axes respectively receiving signals from said accelerometers to cause erection of said roll and pitch axes to erect the gyroscope to the gravity vertical during the steady state and maneuvering conditions said erection means including computer circuit connections between the accelerometers and the respective erection means to feed to erection means only such portion of the output of the accelerometers as corresponds to deviation of the vertical axis of gyroscope from the true gravity vertical.

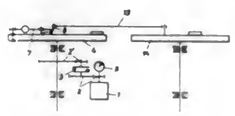
3,161,067
CRANK GEAR WITH ADJUSTABLE CRANK ARM LENGTH, IN PARTICULAR FOR ROTARY OSCILLATING TABLES

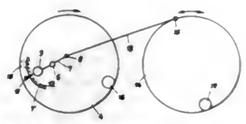
Waldemar Möller, Uberlingen (Bodensee), Germany, assignor to Bodenseewerk Perkin-Elmer & Co., G.m.b.H., Uberlingen (Bodensee), Germany

Filed Aug. 3, 1961, Ser. No. 129,131
2 Claims. (Cl. 74—42)

1. Apparatus for generating distortionless rotary oscillations comprising:
a flywheel disc;
a lever pivotally adjustable about a pivot pin eccentrically affixed to said flywheel disc;
a crankpin affixed to said lever at such a position that for every pivotal adjustment of said lever said crank-

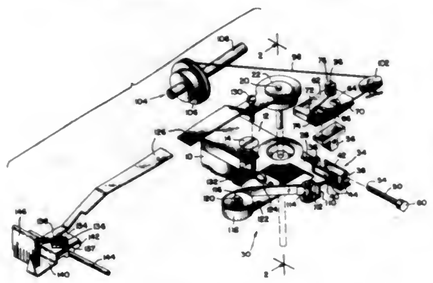
pin lies on a circular arc which extends through the center of said flywheel disc;
means for rigidly fixing said lever to said flywheel disc after said lever has been adjusted to a desired position;
a rotatable platform;
a coupling rod fixed to said crankpin and to said rotatable platform;





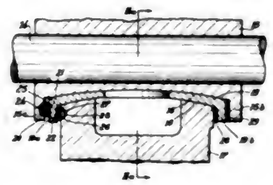
a first counterweight fixed to said lever on the opposite side of said pivot pin from said crankpin for balancing the weight of said crankpin and a portion of the weight of said coupling rod;
a second counterweight fixed to said flywheel disc for balancing said flywheel disc;
and a third counterweight fixed to said rotatable platform for balancing that portion of the weight of said coupling rod not balanced by said first counterweight.

3,161,068
MEASURING APPARATUS
Arie Bar-on, Moorestown, N.J., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,669
6 Claims. (Cl. 74—95)



1. Apparatus for varying the ratio of input to output motion of a lever of the first class, comprising a bearing member forming a fulcrum about which the lever is rotated, a sector pulley operably connected for applying a span adjusting movement with respect to an end portion of the lever to which an input motion is applied, a zero adjusting stud rotatably connected by way of a friction drag member to a flat side portion of the sector pulley, a drive cord of a preselected length, one end portion of the cord being adapted to have the input motion applied thereto, said drag member being in physical frictional contact with the sector pulley and the stud to enable the stud to the rotated in a clockwise or counterclockwise direction thereon to any one of a number of fixed angularly displaced positions, the other end portion of the cord having a surface thereof in engagement with an outer peripheral grooved surface of the sector pulley which has a terminal part thereof connected to an outer peripheral portion of the stud for winding and unwinding thereon to change the unwound active length of the drive cord when the stud is rotated between any one of the fixed angularly displaced positions without altering the distance between the bearing member and the surface of the cord that is in engagement with the grooved surface of the sector pulley, and a biasing means having one of its end portions fixed to a stationary member and another extensible end portion pivotally connected for movement with the lever.

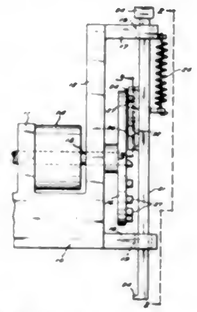
3,161,069
DEVICE FOR FINE ADJUSTMENT OF MACHINE PARTS
Egon G. Kirchner, Klinkerberg 19, Augsburg, Germany
Filed Oct. 31, 1960, Ser. No. 66,315
Claims priority, application Germany Nov. 2, 1959
8 Claims. (Cl. 74—110)



1. In an adjusting arrangement for fine adjustment of machine parts: a guiding member having a cylindrical guiding surface, a guided member arranged in spaced relationship to said guiding member and having a cylindrical guiding surface of different radius of curvature and different center of curvature than the guiding surface of said guiding member, at least one intermediate member interposed between said guiding and guided members and establishing a guiding connection between said guiding surfaces of said guiding and guided members, and means operatively connected to said guided member and said intermediate member and operable to displace said last mentioned two members relative to said guiding member for finely adjusting said guided member in a plane transverse to the axis of the cylinder of which the cylindrical guiding surface of said guiding member forms part.

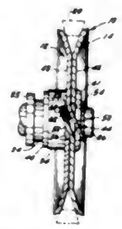
3,161,070
INDEXING APPARATUS
Herbert J. Venables III, Cleveland, Ohio, assignor to The Venables Machine & Tool Co., Cleveland, Ohio, a partnership
Filed Jan. 28, 1964, Ser. No. 340,643
10 Claims. (Cl. 74—129)

1. An indexing device comprising a base, an indexing member mounted on said base for indexing motion, brake means connected to said indexing member allowing motion thereof only in one direction, a slide mounted for reciprocation relative to said base, a plurality of spaced cam followers connected to said indexing member, cam means on said slide shaped to sequentially engage said cam followers as said slide reciprocates and cause step by step motion of said indexing member in said one direction, said cam means being formed with a dwell portion having opposed sides parallel to the line of movement of said slide, said opposed sides being spaced apart a distance proportioned to engage opposed sections of said followers and provide substantial locking of said member in predetermined indexed positions, said camming means permitting movement of said indexing member in a direction opposite said one direction during intermediate portions of



said reciprocation which movement is prevented by said brake means.

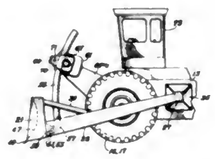
3,161,071
TORQUE TRANSMITTING DEVICE
Edward T. Getz, Cleveland Heights, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1963, Ser. No. 250,672
9 Claims. (Cl. 74—230.24)



1. A pulley mechanism for automatically maintaining a constant tension on a cooperating drive means, comprising:
a hub member;
a first sheave half secured to said hub member;
a second sheave half axially positioned relative to said first sheave half and rotatably journaled on said hub member, said sheave halves defining the effective diameter of said pulley mechanism;
a plurality of interfitting means circumferentially spaced on each of said sheave halves providing cooperating inclined surfaces effective to control relative rotation of one of said sheave halves with respect to the other of said sheave halves in response to variations in loads imposed on said pulley mechanism to vary the effective diameter of said pulley mechanism and maintain said tension on said driving means.

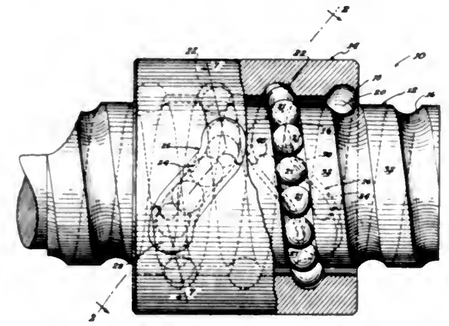
3,161,072
CONTROL ARRANGEMENTS AND MECHANISMS FOR PIVOTABLE DEVICES
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Filed Oct. 2, 1962, Ser. No. 227,877
4 Claims. (Cl. 74—422)

1. In an earthworking machine having a main frame and an earth engaging work tool structure pivotably mounted thereon for movement about an axis, a movement control mechanism for such earth engaging structure which comprises: a powered gear reduction mounted on said main frame above said earth engaging structure and having an output pinion; an arcuate length of rack connected at one end to said earth engaging structure and engaging said output pinion; and a single back-up roller journally mounted in a fixed position adjacent said pinion



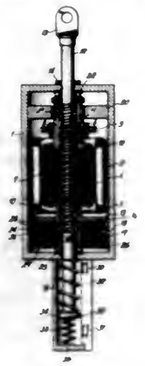
for rollable engagement with the back surface of said rack and disposed in radial alignment with said output pinion.

3,161,073
BALL SCREW MECHANISM
Hans W. Deutsch, Clarendon Hills, and Dale M. Price, Hinsdale, Ill., assignors to Scully-Jones and Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 2, 1961, Ser. No. 142,394
5 Claims. (Cl. 74—424.8)



1. A ball screw mechanism comprising a screw member and a nut member each having a helical groove which grooves together define a helical passage, a train of balls in said passage permitting transmission of force between the members, an opening formed in the wall of said nut member so as to extend at an inclination relative to the axis of the mechanism between the ends of less than one helical groove convolution, and a ball return member fixedly mounted in said opening so as to be disposed within the confines of the outer diameter of said nut and having a wall portion defining a ball return passage for transferring the balls between said ends and over an intervening screw crest whereby said ball return member and said less than one helical groove convolution together define an endless path for the train of balls, said ball return member being disposed closely adjacent said intervening screw crest and said wall portion having an opening therein extending substantially along the length of the ball return in a radially inner portion thereof facing said screw member, said opening being less wide than the diameter of said balls whereby when due to gravity the balls are urged toward said screw the edges of said wall portion adjacent said opening will suspend the balls out of contact with the crest of said intervening screw thread while yet permitting them to move in a path closely adjacent said crest as the balls are directed thereover.

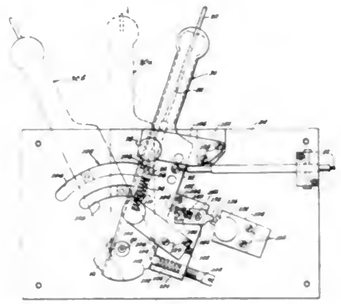
3,161,074
ELECTROMOTIVE ADJUSTING DEVICE
Helmut Korthaus, Fernblick 3, Wuppertal-Barmen, Germany, and Richard Wilke, Eschfeldstr. 11, Gelsenkirchen-Buer, Germany
Filed Feb. 8, 1963, Ser. No. 257,271
Claims priority, application Germany, Feb. 14, 1962, K 45,889
7 Claims. (Cl. 74—424.8)



1. An electromotive adjusting device comprising
a housing,
an electric motor including a rotor,
an operating rod non-rotatably extending axially through said rotor and reciprocating in axial direction within said rotor and having a ball receiving thread for a part of its length,
a magnet brake disposed axially spaced apart from said rotor,
at least one hollow shaft section having a flange disposed axially adjacent said rotor and mounted in said housing,
said hollow shaft section including along a part of its axial length a nut complementary to said ball receiving thread of said operating rod and receiving balls,
said nut supporting said operating rod,
means disposed at one end of said opertaing rod for returning the latter to its original position, and
means securing said hollow shaft to said rotor.

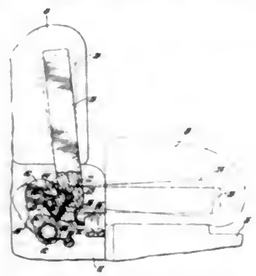
3,161,075
MOTOR CONTROL SYSTEM
Wayne F. Horning, Arcadia, and Robert W. Jones, San Gabriel, Calif., assignors to Inboard Marine, Inc., Temple City, Calif., a corporation of California
Filed Sept. 27, 1962, Ser. No. 226,690
19 Claims. (Cl. 74—472)

1. In a control system for a prime mover and a transmission that reversibly connects the prime mover with a power output member, the combination of:
a first electrically responsive means to adjust the transmission to drive said output member in one direction;
a second electrically responsive means to adjust the transmission to drive said output member in the opposite direction;
a third electrically responsive means to adjust said transmission to disconnect the output member from the prime mover;
a control member for the transmission movable in one respect from a neutral position through a range of positions to cause the transmission to drive said output member in said one direction and movable in a second respect from a neutral position through a range of positions to cause the transmission to drive said output member in the opposite direction;
means to increase the power output of said prime mover in response to movement of said control member in either of its respects away from neutral position beyond a predetermined point;
a first switch means responsive to said control member for actuation when the control member moves away from neutral position in said first respect;



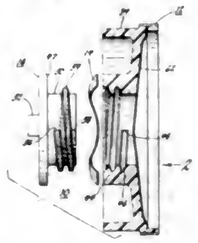
a second switch means responsive to the control member for actuation when the control member moves away from neutral position in said second respect;
an E.M.F. source; and
circuitry to connect said E.M.F. source to said first electrically responsive means in response to actuation of said first switch, to connect the E.M.F. source to the second electrically responsive means in response to actuation of said second switch means and to connect the E.M.F. source to said third electrically responsive means when neither of the two switch means is actuated.

3,161,076
LOCKING MEANS FOR RELEASABLE BOLSTERS AND SIDE WINGS FOR VEHICLE SEATS
Rudolph A. Ferrara, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,184
5 Claims. (Cl. 74—532)



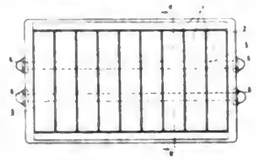
1. Locking means to secure two members from relative movement, comprising a fixed member, a member mounted for movement relative to said fixed member, a locking lever movably secured to one of said members, said locking lever being movable between a locked position and an unlocked position, shoulder means on the other of said members engageable by said lever when in said locked position to limit said relative movement of said members in one direction, detent means including an element on said other member engageable with a mating element on said lever, said detent means being interengaged in response to movement of said other member in the direction opposite said one direction from a position wherein said shoulder means is engaged by said lever, whereby return movement of said other member in said one direction with said detent means engaged effects the movement of said lever to unlocked position permitting relative movement between said members.

3,161,077
TIMER KNOB AND SHAFT FOR DOMESTIC APPLIANCE
Curtis P. Kelley, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 96,818
2 Claims. (Cl. 74—553)



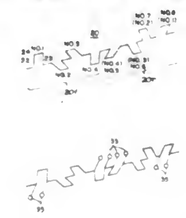
1. In combination, a timer having a fixed cam a rotationally nonreversible, axially movable shaft power rotatable forwardly for controlling a timed cycle and adapted by the axially inward movement thereof to connect said timer for the supply of power thereto for initiating the rotation of said shaft and adapted by the axially outward movement thereof to disconnect said timer from the supply of power thereto for terminating the rotation of said shaft, a pin on said shaft engageable by said cam once in every 360° rotation thereof to move said shaft axially outwardly and a stop spaced from said cam and in fixed relationship thereto, said stop being in blocking relationship to said pin when said shaft is in its axially outward position and in nonblocking relationship to said pin when said shaft is in its axially inward position, a timer knob hub attached at one end of said shaft for rotation therewith and having a flange portion and a male threaded portion, said male threaded portion including a raised thread having a blunt end, a timer dial having an indicating portion and a female threaded portion threadedly engaged with said male threaded portion on said timer knob hub, and a spring between said female threaded portion and said flange portion to yieldingly resist relative rotatable movement between said hub and said timer dial, said indicating portion having a start position and an off position, said female threaded portion including a recessed thread complementary to said raised thread and having a blunt end thereon abuttable with said blunt end on said raised thread, said blunt end on said recessed thread movable out of abutting enagement with said blunt end on said raised thread against the resistance of said spring when said timer dial is rotated reversely with said timer shaft in either its axially inward position or its axially outward position, whereby reverse rotation of said timer dial causes said timer dial to threadedly disengage said timer knob hub to prevent reverse rotation of said timer shaft, said blunt end on said recessed thread movable back into abutting engagement with said blunt end on said raised thread against the resistance of said spring when said timer dial is rotated forwardly with said timer shaft in its axially outward position and with said pin blocked by said stop to move said off position on said indicating portion back into predetermined proper relationship with said pin, whereby forward rotation of said timer dial re-establishes proper orientation of said timer dial with respect to said timer shaft and disengages said pin from said cam and aligns said pin with the space between said cam and said stop to thereby facilitate the movement of said timer shaft axially inwardly and the movement of said pin through said space for connecting said timer for the supply of power thereto.

3,161,078
PEDAL
Bernard H. Pohlkamp, 5 Julianastraat, Druten, Netherlands
Filed Dec. 11, 1961, Ser. No. 158,442
Claims priority, application Netherlands Feb. 1, 1961
4 Claims. (Cl. 74—560)



1. A pedal member comprising frame means, a plurality of strip members disposed in said frame means in parallel relationship, each strip member having at least one bore therethrough so that each bore of each strip member is in a plane perpendicular with the parallel disposition of said strip members, mounting means passing through the bores of said strip members and being connected to said frame means to movably mount each strip member to be movable relative to each other and relative to said frame means, the number of said strip members being in excess of the width of a foot so that when the foot presses on said pedal member, some adjacent strip members are pressed down leaving an abutment on each side of said foot, and spring means disposed between each strip member and said frame means to normally maintain the upper portions of said strip members even with the top portions of the end sections of said frame means.

3,161,079
CRANKSHAFT FOR 60°-W TYPE TWENTY-FOUR CYLINDER ENGINE
Kenji Okamura and Tsutomu Numata, Tokyo, and Tetsuya Matsumura, Yokohama, Japan, assignors to Mitsubishi Nippon Jukogyo Kabushiki-Kaisha, Tokyo, Japan, a corporation of Japan
Filed Oct. 23, 1962, Ser. No. 232,377
1 Claim. (Cl. 74—603)



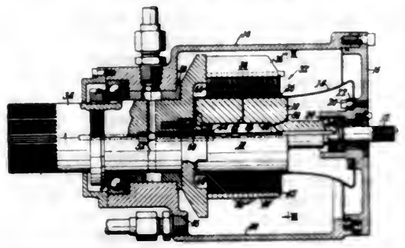
A crankshaft for a 60°-W type twenty-four cylinder engine comprising a crank arrangement consisting of a front crank portion including four pairs of crank arms and four crank pins connected between the associated pairs of the crank arms, the radial positions of said crank arm pairs being angularly displaced from each other at right angles in the order of cylinder Nos. 1, 3, 4 and 2, and a rear crank portion identical in configuration with said front crank portion and connected to said front crank portion in an end-for-end reversed position, said rear crank portion having pairs of crank arms at an angle of 45 degrees to the corresponding crank arm pairs on the front crank

portion, and a balance weight attached to at least one arm of each of the crank arm pairs for cylinder Nos. 1, 4, 5 and 8, said balance weight having a mass corresponding to a magnitude of one of two equal vectors derived from a resultant vector, said resultant vector being composed of vectors of a pair of unbalanced couples on said front and rear crank portions respectively, said first-mentioned equal vectors being less in magnitude than the respective vectors of said pair of couples, whereby said crank arrangement as a whole is maintained in substantially complete equilibrium with an internal couple on each of said front and rear crank portions being minimized.

3,161,080
TRANSMISSIONS INCLUDING SELF-ADJUSTING CIRCULAR SPLINES

Hans Frederick Schaefer, Jr., Rockport, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed July 27, 1961, Ser. No. 127,368
9 Claims. (Cl. 74—640)

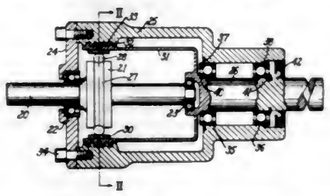


1. A transmission comprising an input means, an axially sectioned ring gear the sections of which are formed with spline teeth for cooperating with different portions of elongated axial splines on the input means, the rotary input means and ring gear being mounted one within the other for relative rotation about a common axis, and an output member comprising circularly disposed cantilevers respectively having axially extending radial faces against which the ring gear sections bear transversely to exert torque, the cantilevers being of a shape adapted to yield similarly, respectively, to torsion thus exerted, and in accordance with torsional deflection of the elongated splines whereby uniformly distributed load is transmitted by the respective ring gear sections.

3,161,081
ROLLING WEDGE DRIVE

C Walton Musser, Palos Verdes Estates, Calif., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Apr. 11, 1962, Ser. No. 186,759
15 Claims. (Cl. 74—640)

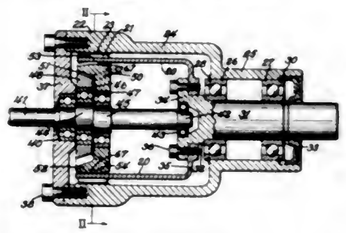


1. In a rolling wedge drive, a flexible tubular wedge carrier having circumferential wedges on one periphery, thread-like reaction elements of different diameter than the wedge carrier, concentric with and cooperating with wedges on the wedge carrier, the forms of the wedges and the thread-like reaction elements being the same, both the wedges and the thread-like elements having a helix angle greater than 10 degrees, and there being a difference in lead between that of the wedges and the thread-like elements, both the wedge carrier and the reaction elements being restrained against moving axially and one of the wedge carrier and the reaction elements being free to rotate, a wave generator operative to deflect the wedge carrier and maintain it deflected into mating engagement between the wedges and the thread-like elements at a plurality of circumferentially spaced lobe positions interspaced by non-mating positions, the difference in the number of leads per 360° between the wedges and the thread-like elements being selected from a class consisting of equality and a multiple of the number of lobes, and means for causing the wave generator to propagate a wave around the periphery of the wedge carrier and cause rotation of one of the wedge carrier and the thread-like reaction elements.

3,161,082
WAVE GENERATOR

C Walton Musser, Palos Verdes Estates, Calif., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Apr. 11, 1962, Ser. No. 187,175
20 Claims. (Cl. 74—640)



1. In a harmonic drive having a circular spline provided with spline teeth and serving as a reaction member, and having a flexspline provided with spline teeth which cooperate with the spline teeth on the circular spline, the circular spline and flexspline being relatively movable one within another, and the flexspline having its teeth in mesh and in contact with the teeth of the circular spline at a plurality of spaced points, the teeth of the flexspline being out of contact and out of mesh with the teeth of the circular spline at intermediate points, in combination, a wave generator shaft, eccentrics mounted on the wave generator shaft, one for each of the points at which the teeth of the flexspline are in contact and in mesh with the teeth of the circular spline, and wave generators, one on each eccentric, the wave generators having eccentric centers of rotation with respect to the wave generator shaft and a generally circular outside contour concentric with their respective eccentrics, each wave generator engaging the flexspline by a pressure element at a position opposite one of the points at which the teeth on the flexspline are in mesh and in contact with the teeth on the circular spline.

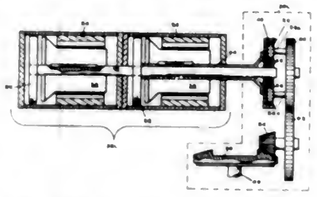
3,161,083
PLURAL MOTOR VARIABLE SPEED GEAR DRIVE

Charles C. Roe, East Peoria, Ill., assignor to LeTourneau-Westinghouse Company, Peoria, Ill., a corporation of Illinois

Filed Jan. 14, 1960, Ser. No. 2,473
7 Claims. (Cl. 74—675)

1. A multispeed electric motor mechanism comprising in combination: a pair of electric motors each having a rotor and an output shaft, the output shafts being telescopically related and substantially coterminous at one

end to define inner and outer independently driven shaft members having a common axis; a ring gear affixed to the outer shaft member; a sun gear affixed to the inner shaft member in alignment with the ring gear to define an annular gear space; planet gears; an output member, the output member being mounted for rotation about said common axis, said planet gears being mounted on the out-

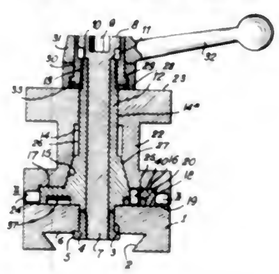


put member for rotation about axes parallel to and spaced from said common axis, said planet gears bridging said annular space and meshing with the sun gear and ring gear; means selectively operable to energize the motors in predetermined torque-speed characteristics; and brake means selectively operable to brake the motors, whereby selective energization and braking of the motors provides a variety of output member torque-speed characteristics.

3,161,084
MACHINE TOOL TURRET

Pierre François de Valliere, 100 Rue de Paris, Boulogne-Billancourt, France

Filed Aug. 22, 1962, Ser. No. 218,590
Claims priority, application France, Sept. 2, 1961, 872,200, Patent 1,309,243
6 Claims. (Cl. 74—817)

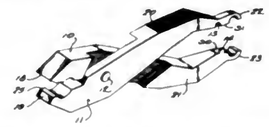


1. A machine tool-turret comprising a base, a core supported by said base, a turret body rotatably and slidably mounted on said core for movement with respect to an axis passing through said core, said core and turret body having respective conical matable surfaces and planar matable surfaces arranged such that upon relative sliding movement of the body on the core in opposite directions the matable surfaces are respectively engaged and disengaged, the planar matable surfaces being arranged substantially perpendicular to the directions of sliding movement of the turret body to limit the degree of engagement between the conical matable surfaces of the core and said body, said turret body including a portion having an external polygonal contour, a cylindrical recess being provided in the latter portion in coaxial relation, taper pins supported in said portion of said turret body at the corners thereof and projecting internally into the cylindrical recess, and means projecting within said recess and supported in fixed position therein for engaging respective of said taper pins upon rotation of the turret body for angular positioning of the turret body between particular positions, the latter means comprising a substantially fixedly supported member including a resilient portion which engages the taper pins.

3,161,085
FUSE PULLER

James T. Pratt, 10506 W. Villard Ave., Milwaukee, Wis.

Filed Jan. 25, 1963, Ser. No. 253,896
2 Claims. (Cl. 81—3.8)



1. In a fuse puller of the tongs type made of electrical insulating material of limited flexibility and relatively low elastic limit, a pair of members joined by a pivot intermediate their ends to provide shorter portions extending from one side of the pivot and longer handle portions extending from the other side of the pivot, the shorter portions having opposed nose stop surfaces for bearing on one another to stop pivoting of the members and being larger in cross section than the handle portions for withstanding pressures upon flexing of the handle portions, jaw parts at the free ends of the handle portions, said jaw parts being smaller in cross section than the handle portions and having adjacent opposing flat surfaces in spaced substantially parallel relation when the nose stop surfaces are engaged whereby gripping of fuses below a given size by the jaw parts depends upon flexing of the handle portions and thereby limits pressure on the smaller fuses.

3,161,086
TOOL FOR SPRING WIRE HOSE CLAMPS

Andrew J. Kircher, 4009 Oglethorpe St., Hyattsville, Md.

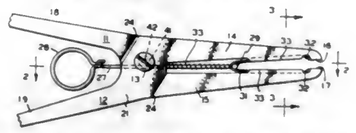
Filed Oct. 17, 1963, Ser. No. 316,964
6 Claims. (Cl. 81—9.3)



1. A plier-type tool for handling spring-wire clamp rings having overlapping ends with terminal ears bent radially outwardly and shaped for squeezing together to expand the clamp ring and for releasing to permit the ring to resiliently clamp itself around a hose connection of corresponding size comprising a pair of jaws with flat-bearing hinge surfaces hinged in a side by side relation with their adjacent faces slidably relative to each other in a plane normal to the axis of the hinge, the front face of each jaw extending to one side of said plane so that said faces pass each other when the tool is fully closed, a groove in the front face of each jaw near its slidable face and a pair of divergent plier-type

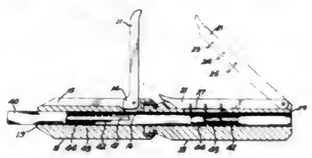
handles for operating said jaws from an open-position for separating the grooves in the jaws sufficiently to insert the ears of the clamp ring therein to a closed-position for fully expanding the ring within its limits of expansion.

3,161,087
WIRE STRIPPING TOOL
Leo S. Bartley, Rome, N.Y., assignor to Bartley Manufacturing Company, Incorporated, Rome, N.Y., a corporation of New York
Filed July 10, 1962, Ser. No. 208,722
6 Claims. (Cl. 81—9.5)



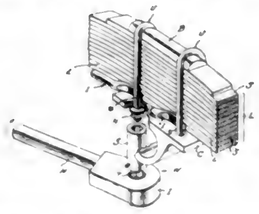
1. A wire stripper comprising a pliers having a pair of pivoted members with extensions on one side of said pivot terminating in opposed longitudinally grooved gripping jaws, opposed channels on the inner surfaces of said extensions, a flat spring strip member formed in a U-shape and positioned to slide in said channels with the open end of said U-shape strip adjacent said gripping jaws, notched cutting edges formed on said open end of said strip in alignment with said grooved gripping jaws, and means attached to the bend in said U-shaped strip for slidably retracting said U-shape strip independently of the position of said gripping jaws.

3,161,088
STRIPPER FOR COAXIAL CABLES
Harold J. Tolman, 3357 La Doga, Long Beach, Calif.
Filed Dec. 4, 1962, Ser. No. 242,187
3 Claims. (Cl. 81—9.5)



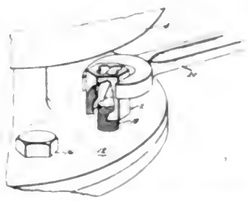
1. A coaxial cable stripper comprising: a cylindrical clamp and a cylindrical cutter-housing, each having a bore forming a guideway for said cable, said clamp comprising a cylindrical clamp-housing having a longitudinal recess terminating in an opening communicating with said bore, a clamp-arm pivoted in said opening having a cam at the pivoted end, said cam protruding into said bore only when said clamp-arm is positioned within said recess, a collar connecting said cutter-housing to said clamp rotatably about the common longitudinal axis, a longitudinal inspection aperture in the side of said cutter-housing communicating with said bore, a slot in the side of said cutter-housing communicating with said bore, a lever pivoted at one end of said cutter-housing so as to swing in the plane of said slot, a plurality of cutter blades mounted on said lever with their cutting edges transverse to said bore in step-wise array movable in unison in the plane of said slot into said bore, whereby on applying said stripper to said cable by means of said clamp so that the cable is positioned in said guideway, and rotating said housing around the cable simultaneously urging said lever toward said guideway, the layers of the cable are severed by said cutters and on release of said clamp and withdrawal of the cable the severed portions are stripped therefrom leaving the cable dressed in step-wise form.

3,161,089
REMOVING OR TIGHTENING THREADED FASTENERS USING IMPACT WRENCHES
Carl E. Sutherland, Cleveland, and Merrill A. Young, Gates Mills, Ohio, assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,277
3 Claims. (Cl. 81—13)



1. A method of preventing dissipation of torque through flexure in the operation of an impact wrench to remove or apply a threaded fastener from or onto an L-bolt, U-bolt or the like having a circular shank extending in close or abutting relationship to a face surface on a rigid support for the bolt extending along but unattached thereto, comprising forcing a serrated wedge between the shank and such face surface in a region close to the fastener and disposed in such position that the serrations of the wedge lie adjacent and in torque-flexure-resisting contact with the shank.

3,161,090
STUD ENGAGING WRENCH HAVING A FLUTED GRIPPING SURFACE
Silas B. McLellan, 36 W. Main St., Plymouth, Conn.
Filed Oct. 17, 1962, Ser. No. 231,163
6 Claims. (Cl. 81—53)



1. A device for transmitting axial torque to a threaded fastener comprising a block of polygonal transverse section having an axial bore therein tapering inwardly from the end of said block to a reduced diameter, said block having a plurality of helical flutes in the surface thereof about the periphery of said bore, said flutes being of generally curvilinear cross section with substantially equal chords and being closely spaced immediately adjacent each other with arcs of adjacent flutes intersecting to provide helically extending blade portions therebetween having side faces which are concave in section and taper to a relatively sharp blade edge for biting into the metal of a fastener received in said bore, said device being drawn tightly onto the fastener during application of torque thereto.

3,161,091
OPEN END RATCHET WRENCH
Kenneth L. Searcy, P.O. Box 116, Neah Bay, Wash.
Filed Apr. 29, 1963, Ser. No. 276,300
3 Claims. (Cl. 81—62)

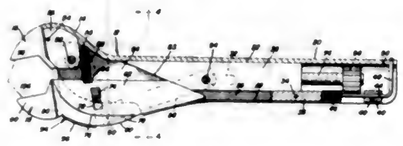
1. A wrench comprising a handle provided at at least one end thereof with an integral laterally extending jaw head including a pair of arcuate jaws extending circumferentially towards each other with their ends spaced apart

providing an entrance therebetween and flat top and bottom faces, each of said jaws having an outer and an inner wall converging towards one another to the jaw end and the inner walls of both jaws being contiguous providing a cylindrical inner wall for said jaw head, said head top face having a C-shaped recess opening into said head inner wall, a cover mating with said C-shaped recess, means detachably retaining said cover in said C-shaped recess, a pair of oppositely positioned dog recesses each positioned in one of said jaws and opening into said C-shaped recess and said head inner wall, a pair of oppositely directed pawl dogs each pivotally mounted in one of said dog recesses capable of being completely housed in its dog recess and pivoted to partially extend beyond said



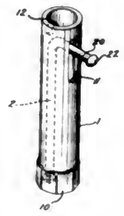
head inner wall, said head further having a shallow trough opening into said C-shaped recess and extending on a curve between said dog recesses, an actuator strip slideably mounted in said shallow trough, a pair of wire springs each linking one of said pawl dogs to said actuator strip whereby sliding of said actuator strip will selectively advance one pawl dog partially beyond said head inner wall while retracting the other pawl dog within its dog recess, said head top face having a slot therein opening into said C-shaped recess, means extending from said actuator strip through said slot for the moving of said actuator strip, and a cylindrical insert member rotatably and detachably positioned within said head inner wall and having a series of outer peripheral recesses for being engaged by one pawl dog at a time and a bore with straight sided walls.

3,161,092
ADJUSTABLE WRENCH
Wilbur A. Davis, R.R. 1, Mahomet, Ill.
Filed May 10, 1962, Ser. No. 193,806
11 Claims. (Cl. 81—128)



1. A wrench comprising, a handle, a pair of jaw members, one of said jaw members being fixed to the handle, means slidably supporting the other of said jaw members for displacement transversely to said handle toward and away from said one jaw member, wedge means slidably mounted in the handle longitudinally thereof in engagement with said other jaw member for resisting angular displacement thereof with respect to said one jaw member, cam means pivotally mounted on said handle in engagement with said other jaw member for slidable displacement thereof with respect to said one jaw member to close said jaw members and link means connecting said wedge means to the cam means for closing the jaw members in response to slidable movement of the wedge means away from the other jaw member.

3,161,093
SOCKET WRENCH WITH CAPTIVE HANDLE
Gilbert L. Hoag, 5818 Latona NE., Seattle, Wash.
Filed Aug. 3, 1962, Ser. No. 214,552
5 Claims. (Cl. 81—177)



1. A socket wrench of the character described comprising a sleeve formed at one end to fit and to rotate a nut or the like when entered therein, said sleeve having a slot extending in the axial direction at its opposite end, and also having a hole of a diameter exceeding the width of said slot, disposed opposite the slot, a turning bar extending through said slot, one end of said bar being disposed angularly relative to the greater portion of its length, heads at the bar's opposite ends, of a size to prevent their passage through the slot, but to permit passage of that head which is at the end of the greater portion of the bar's length through the hole, whereby the bar is retained captively assembled with the sleeve, and is disposable either in an operative position wherein it extends transversely of the sleeve and through the slot and the hole, or in an inoperative position wherein the end that constitutes the greater portion of the bar's length is withdrawn from the hole and is directed longitudinally within the sleeve.

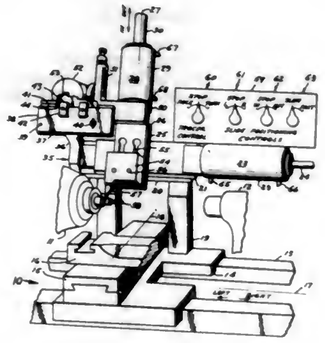
3,161,094
ADJUSTABLE PLIERS
Jesse W. Johnson, 2633 E. 21st St., Wichita, Kans.
Filed Nov. 16, 1962, Ser. No. 238,226
1 Claim. (Cl. 81—412)



Adjustable pliers comprising a handle having its upper end terminate in a flattened rectangular member, the upper end of said rectangular member terminating in a holding member at right angle thereto, said holding member being a jaw and said rectangular member having an elongated opening therein, the upper surface of which, is provided with a plurality of equally spaced and parallel ratchet teeth on the upper edge thereof, and each tooth being triangular, as viewed from the side, and a second handle having its upper end terminate in a rectangular member similar to the rectangular member of the first mentioned handle and terminating in a holding member identical to and normally mating with the first mentioned holding member, the lower end of the second mentioned holding member terminating in a rectangular member parallel to, and in equal spaced relation to the

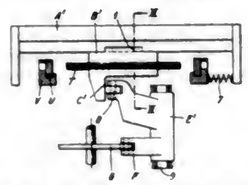
second mentioned rectangular member, which is also part of this second mentioned holding member and the rectagular member of the first mentioned handle swingably mounted between the two rectangular members of the second mentioned handle, and a tie bolt having a button head embodying a centrally located boss that slidably passes through an opening in the first mentioned rectangular member of the second mentioned handle, and said boss having a centrally located pivot that is triangular in cross-section, said pivot normally being in spring loaded engagement with said teeth of the first mentioned rectangular member and the pivot terminating in a centrally located threaded shank projecting through the last mentioned rectangular member of the second mentioned handle, and a nut screwed on the outer end of the said threaded shank of said tie bolt, thereby swingably securing the first and second mentioned handles together, and the holding member of the second handle having a cylindrical recess between the rectangular members, of the said second-mentioned handle, and a headed guide pin having a compression spring on the upper end thereof and projecting into the cylindrical recess thereby providing a spring load on the upper surface of said first mentioned rectangular member of the first mentioned handle of said adjustable pliers.

3,161,095
PLURAL SLIDE, TRACER CONTROLLED, MACHINE TOOL ATTACHMENT
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed June 1, 1961, Ser. No. 126,383
9 Claims. (Cl. 82—14)



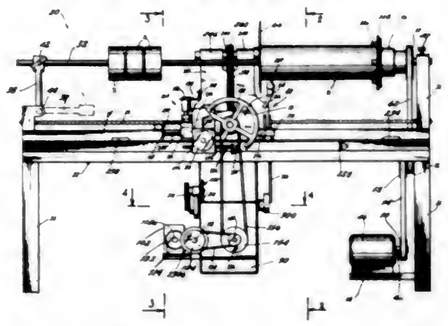
1. An attachment adapted to be mounted to the carriage of a lathe, said lathe having longitudinal axis, comprising: a base mountable to the carriage; a first ways mounted to the base; a first slide mounted to the first ways; a first motor interconnected between the first ways and the first slide; a second ways mounted to the first slide; a second slide mounted to the second ways, the ways being disposed at an angle to each other, and the slides being adapted to move along them; a second motor interconnected between the second ways and the second slide; a tool holder mounted to the second slide; a template holder mounted to the base and adapted to hold a template; a tracer valve mounted to the second slide and controlling application of power at least to the second motor; a stylus projecting from the tracer valve and adapted to contact the template, whereby the conventional carriage control of a lathe may be used to position the attachment for tracer controlled machining in selected regions.

3,161,096
DEVICE FOR ADJUSTING THE WORKING POSITION OF TOOLS IN A MACHINE TOOL
Pierre Kummer, Tramelan, Switzerland, assignor to Kummer Frères S.A. Fabrique de Machines, Tramelan, Switzerland
Filed July 3, 1961, Ser. No. 121,643
Claims priority, application Switzerland, July 15, 1960, 8,109/60
4 Claims. (Cl. 82—24)



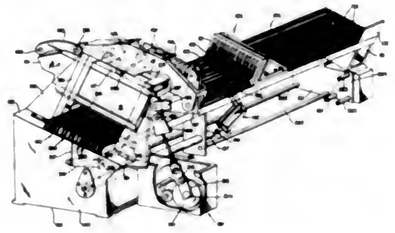
1. A device for effecting the fine adjustment of the working position of tools of a machine tool comprising a movable slide on which the tools are mounted, a rule member slidably mounted in a slideway on said movable slide in a direction at a slight angle to a line perpendicular to the direction of movement of said movable slide, said rule member having a surface dependent therefrom and parallel to the sides of said movable slide as well as being perpendicular to the direction of movement thereof, a rocking lever pivotally mounted on a shaft, said rocking lever having a first arm and a second arm, roller means mounted on each arm, cam means disposed on another shaft, biasing means engaging said movable slide to maintain said roller means in operative engagement with said surface of said rule member and said cam means, and adjusting means operatively connected to said rule member to move same with respect to said movable slide to adjust the position thereof.

3,161,097
CUTTING MACHINE
David N. Judelson, New York, N.Y., assignor to Oscar I. Judelshon, Inc., New York, N.Y., a corporation of New York
Original application Mar. 18, 1958, Ser. No. 722,301. Divided and this application Jan. 8, 1960, Ser. No. 1,368
16 Claims. (Cl. 82—48)



9. A cutting machine adapted for both manual and automatic operation, comprising a frame, a stationary shaft on said frame adapted to receive and support a roll of material, a driven chuck at one end of said shaft engageable with said roll for turning said roll on its axis, a knife carriage, means mounting said knife carriage on said frame for longitudinal traversing movement toward a chuck end postion adjacent said one end of said shaft, a traverse drive operatively connected to said knife carriage for moving said knife carriage toward and away from said chuck end position, an indexing mechanism on said knife carriage and selectively engageable with said frame for periodically stopping said knife carriage after successive traverse increments corresponding to the width of the cuts to be made on said roll, a knife carrier on said knife carriage, a knife on said carrier, means mounting said knife carrier for movement through a cutting cycle to advance said knife through a forward stroke toward said shaft and through a return stroke to a retracted position, drive means operable in response to operation of said indexing mechanism, a lost motion coupling connecting said drive means to said carrier for automatic actuation of said carrier, said lost motion coupling including a follower member operatively connected to said carrier and an actuating member operatively connected to said drive means and movable through an actuating and return stroke under control of said drive means, said actuating member having a guideway engaging said follower and being effective to impart motion to said follower member upon travel of said actuating member through the portion of said actuating stroke required to bring an end limit of said guideway into engagement with said follower member, the remaining portion of said actuating stroke being effective to impart a prescribed forward stroke to said carrier, manual actuating means operatively connected to said carrier for moving said carrier through said forward stroke, said follower member moving in said guideway away from said end limit through a lost motion travel in response to manual actuation of said carrier such that said manual actuation may be carried out with said lost motion coupling still operatively connected between said drive means and said carrier, a stop arranged to coact with said follower member and contacted by said follower member upon movement of said knife through said prescribed forward stroke, means for adjusting said follower member within said guideway relative to said end limit and to said stop such that said follower member may be moved closer to said end limit and correspondingly be moved away from said stop whereby by a single adjustment said stroke is increased for both automatic and manual actuation, and means responsive to movement of said carrier through said cutting cycle for resetting said indexing mechanism and for initiating traverse drive of said knife carriage.

3,161,098
AUTOMATIC EJECTOR MECHANISM FOR STOCK CUTTING MACHINES
Carl Thumim, Lombard, Ill., assignor to Miehle-Goss Dexter, Inc., Chicago, Ill., a corporation of Delaware
Original application Nov. 7, 1956, Ser. No. 620,928, now Patent No. 3,033,067, dated May 8, 1962. Divided and this application Feb. 13, 1962, Ser. No. 173,075
6 Claims. (Cl. 83—90)



1. A machine of the character described for successively cutting a stack of sheets transversely comprising a work table having spaced bars with intermediate slots for supporting the stack, a reciprocable knife assembly with a blade arranged transverse of said table for successively cutting forward portions of the stack when projected into the knife assembly, and ejector means arranged adjacent said knife assembly for abutting the last-cut portion of the stack and moving it past the knife assembly, said ejector means including a plurality of finger-like elements movable through said spaced slots in the work table to effect ejection of the last-cut portion, and said elements being normally disposed on one side of said table so as not to interfere with movement of said stack during said successive cutting.

3,161,099
APPARATUS FOR FORMING MASKING TABS
Ralph L. Comet, 14–1B Lloyd Court, Nutley, N.J.
Filed June 5, 1962, Ser. No. 200,229
4 Claims. (Cl. 83—108)

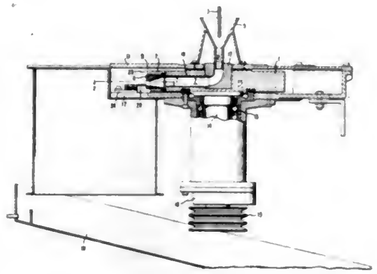


1. Apparatus for forming masking tabs comprising an elongated flat supporting body formed with longitudinally spaced apertures and adapted to receive a strip-shaped blank of tacky adhesive-coated material in overlying relationship to said apertures, a punch body comprising a vertical yoke member and a plate-like bottom wall secured to the bottom of said yoke member, said yoke member being adapted to receive said flat supporting body therein in transverse overlying relation to said bottom wall, a vertically reciprocable plunger slidably mounted in said yoke member perpendicular to said bottom wall, a depending cutting blade of closed configuration secured to the bottom of said plunger, an upstanding projection on said bottom wall vertically aligned with said plunger and engageable in the apertures of said flat supporting body to hold the flat supporting body against horizontal movement while the plunger is moved downwardly to cause said cutting blade to engage the strip-shaped blank, and said projection being engageable by said bottom of said plunger within said blade to prevent said blade from contacting said bottom wall in the absence of said supporting body.

3,161,100
FIBER CUTTING APPARATUS WITH OPPOSED GUIDE ELEMENTS
John Charles Resor, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 5, 1962, Ser. No. 221,477
1 Claim. (Cl. 83—403)

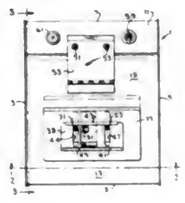
An improved apparatus for cutting continuous filaments into uniform lengths comprising, in combination, a stationary housing means, a rotatable disc member

mounted in said housing means for unidirectional rotation about an axis, means for feeding continuous filaments into said rotatable disc member, means for rotating said disc member about said axis, a shear member having a face projecting from the periphery of the disc member, said face comprising a first surface beveled toward said periphery and a second surface curved concentrically with said disc periphery, a passageway within the disc member for movement therethrough of said incoming continuous filaments, said passageway extending substantially radially of said axis through the shear member's first and second surfaces to form a discharge orifice in said projecting face for the continuous filaments, the shear member's shearing edge being the portion of said orifice established in said second surface, a cutting means arranged at a fixed position in the path of said discharging filaments for cooperating engagement with said shearing edge to periodically engage and cut said discharging filaments into predetermined uniform lengths, and filament guiding means mounted in said housing means substantially ahead of and extending into the zone of effective engagement between the cutting means and the shearing edge, said guiding means being adapted to laterally engage and positively position the discharging filaments into said effective shearing zone prior to cutting, said shearing edge further comprising a leading portion and a trailing portion relative to the direction of rotational movement of said shear member; and said cutting means comprises at least one cutting member having a cutting edge arranged at a fixed position in the path of said discharging filaments for cooperating with said shearing edge to periodically engage and cut said discharging filaments into predetermined uniform lengths, said cutting edge being positioned substantially parallel to an intermittent intersecting edge formed between said shear member's first and



second surfaces; said passageway being circular in cross-section at said passageway's intersection with said projecting face of the shear member; and said filament guiding means comprises a guiding member, said member having an inner surface spaced closely adjacent said disc member's periphery slightly outside of the rotational path of the shear member's second surface, said device further arranged to converge from a region of one outer face of said disc member inwardly toward said effective shearing zone in a manner such that said device overlaps a side of said discharge orifice near said shearing edge's trailing portion, said guiding member comprising at least one guide portion having an arcuate shape of relatively thin cross-section, said guide portion having a filament-engaging face gradually inclined from a first position upstream of said cutting means spaced laterally from the path of the shear member face to a second position in said overlapping relation to the path of shear member face, said filament-engaging face being further constructed and arranged for smoothly slidably engaging the discharging filaments flaring laterally from said orifice in the direction of said portion and sequentially positioning the flaring filaments into a compact bundle for movement through the effective shearing zone, said guide member being provided with means for relatively adjusting the extent of said overlapping relation so as to maintain effective cutting of all said discharging filaments by the engagement of the cutting member's cutting edge and the shear member's shearing edge, and said guiding means further comprising a second guide member opposed to said first member, each member having a corresponding arcuate shape of relatively thin cross-section and each being arranged to converge toward the other as they approach said effective shearing zone in the direction of disc member movement so that they overlap two opposing sides of said discharge orifice and positively maintain the discharging filaments in the effective shearing zone by physical engagement with both sides of a group of filaments discharging from said orifice.

3,161,101
PUNCHING APPARATUS
Robert J. Falk, Skokie, Ill., assignor to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed Apr. 16, 1962, Ser. No. 187,777
7 Claims. (Cl. 83—451)



1. Apparatus for punching an opening in a strip of translucent material in a predetermined location relative to a reference point of a fingerprint on said strip comprising a base, a die member, a punch member cooperable with the die member, one of said members being fixed on the base and the other of said members being movably mounted on the base, a strip carrier mounted on the base for adjustment to different positions and adapted to have the strip mounted thereon in different adjusted positions relative to the carrier, said carrier having an opening therein through which said die member is accessible to said punch member in any adjusted position of said carrier, and means associated with the base for indicating adjustment of the strip relative to the carrier and adjustment of the carrier relative to the base to a position wherein engagement of the punch and die members will effect punching of the opening in the strip in said predetermined location relative to said reference point.

3,161,102
WIND INSTRUMENTS
John de Lancie, 2015 Chestnut Ave., Ardmore, Pa., and W Hans Moennig, Philadelphia, Pa.; said Moennig assignor to said De Lancie
Filed Oct. 8, 1962, Ser. No. 229,006
8 Claims. (Cl. 84—380)

1. A wind instrument having a tapered bore throughout most of its length, and having a plurality of controllable tone-holes disposed therealong including a lowermost series of tone-holes for the lowest octave of which the instrument is capable, the bore diameter progressively changing and having its minimum diameter adjacent the mouthpiece end of the instrument and its maximum diameter adjacent the other end, and said bore further having



an abrupt change of bore diameter at a location near the upper end of said lowermost series of tone-holes.

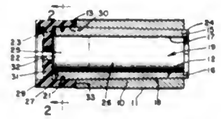
3,161,103
TRIGGER MECHANISM FOR TRUMPET
Vito Pascucci, Kenosha, Wis., and Alvin Glantz, Las Vegas, Nev., assignors to G. Leblanc Corporation, Kenosha, Wis., a corporation of Wisconsin
Filed Aug. 2, 1962, Ser. No. 214,375
9 Claims. (Cl. 84—394)



1. In a musical wind instrument of the type having a body with substantially vertical finger-operated valves and a longitudinally movable tuning slide, said instrument also having a mouthpiece and a bell, a trigger mechanism for said slide comprising a lever having a portion adapted for engagement by a finger, means pivotally mounting said lever from said body along the right side thereof as viewed from said mouthpiece to said bell with said portion positioned for engagement by a finger other than the thumb of the left hand with the left hand in substantially normal instrument holding position or by the palm of the right hand with the right-hand fingers in valve operating position, connection means extending between said lever and said slide and operative upon manual pivoting of said lever transversely of said valves to extend said slide longitudinally, and spring means acting from said body on said lever and slide resiliently to hold said slide in retracted position and said lever finger engaging portion away from said body.

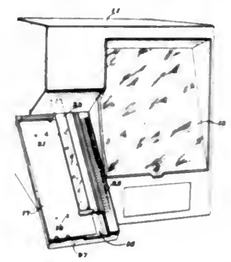
3,161,104
SHELL LOADING DEVICE
Louis J. Kalny, 2707 Carlos St., Alhambra, Calif., assignor of one-third to Lou E. Kalny, South San Gabriel, and one-third to William V. Zamiara, Covina, Calif.
Filed July 14, 1961, Ser. No. 124,077
4 Claims. (Cl. 86—10)

4. In a device for resizing, replacing the primer of and reloading a spent ammunition shell having an oversize body portion and a closed end with a radial lip, the combination of: a generally cylindrical housing having a tapered internal bore, said housing being open on both ends, said tapered bore causing one of said open ends to be larger than the other, a collapsible sleeve assembly comprising a pair of semi-cylindrical half sleeves and a split ring encircling said sleeves for resiliently holding said sleeves together, said sleeve assembly having two ends and a cylindrical bore with a diameter substantially equal to the diameter of the shell properly sized, said sleeve assembly having an external surface tapered for mating with and substantially equal in taper to said housing tapered bore thereby causing one end of said assembly to be larger than the other, an annular groove in said external surface near said larger end for receiving



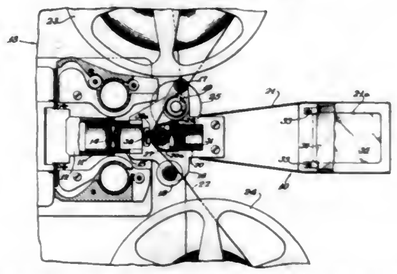
said split ring; whereby the spent shell is positioned within said cylindrical bore of said sleeve assembly with the closed end of the shell adjacent the said larger end of the assembly and the radial lip engaging said end, and the smaller end of the said assembly is inserted axially into the larger end of said housing with force to cause radial collapsing of said sleeve assembly to resize the shell; and a cap having an internal bore on one end for receiving the larger end of said sleeve assembly and the end of said cap engaging the larger end of said housing, said cap having an internal flange for engaging the closed end of the shell with a bore in said flange for receiving the primer of the shell for preventing detonation of the shell upon engagement with said cap.

3,161,105
STRIP FILM READER AND STORAGE DEVICE
Glen W. Offensend, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 3, 1961, Ser. No. 100,172
11 Claims. (Cl. 88—24)



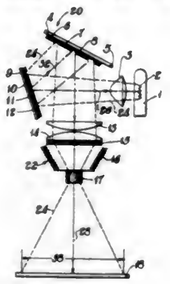
1. The combination comprising a strip storage device having a plurality of channels which slidably carry a plurality of image-bearing strips respectively therein, a viewing apparatus having a station for receiving said storage device and a station for scanning selected images on said strips, means in said receiving station for locating said device in a position in which a selected one of said strips is aligned with said scanning station, and means in said storage device uniformly spaced respectively from each of said channels for engagement with said locating means to selectively position any one of said strips in aligned relation to said scanning station.

3,161,106
VIEWING ATTACHMENTS
John W. Lang, Jr., Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 11, 1961, Ser. No. 109,374
1 Claim. (Cl. 88—24)



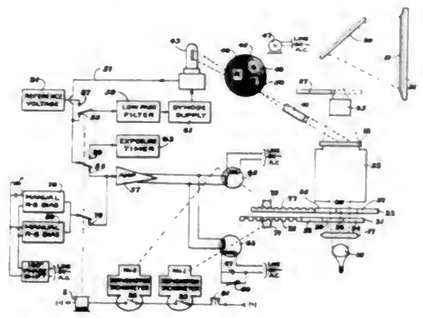
A viewing attachment for a motion picture projector, which comprises a tapered light tube having *a lens holding means at one end thereof designed* to be substituted for a lens holder of the projector, a plurality of lenses in the lens holding means, a mirror at the other end of the tube, a ground glass screen positioned to receive light from the mirror, *sprocket means rotatably mounted on said attachment* and adapted to engage a length of film passing through said attachment, *an aperture plate portion on said attachment* adapted to guide said film in a fixed path relative to said plurality of lenses, a *rotating shutter* adapted to be drivingly rotated by means associated with said sprocket means in synchronism with the movement of film through said attachment as said film movement causes said sprocket to be rotated.

3,161,107
ILLUMINATING SYSTEM FOR PHOTOGRAPHIC ENLARGER
Julius Durst and Leopold Muhlogger, Bressanone, near Bolzano, Italy, assignors to Durst S.p.A. Fabrica Macchine ed Apparecchi Fototecnici, Bolzano, Italy
Filed July 24, 1961, Ser. No. 126,045
Claims priority, application Italy Sept. 20, 1960
5 Claims. (Cl. 88—24)



1. An illuminating system for a photographic enlarger having an optical axis into which a transparency is inserted for projection comprising a light source, a condenser lens disposed along said optical axis, the optical axis of said light source being disposed at an angle relative to said optical axis of said enlarger, a pair of mirrors disposed between said light source and said condenser lens in the path of light rays issuing from said light source to provide means for reflectively rotating said light rays from said light source into line with said optical axis of said enlarger, one of said mirrors being movably mounted to permit said reflective rotation to be alternatively accomplished by one of said mirrors or by successive reflections by both of said mirrors whereby a relatively larger effective light distance from said light source to said condenser lens is provided by successive reflections from both of said mirrors and a relatively shorter effective light distance from said light source to said condenser lens is provided by direct reflection from one of said mirrors.

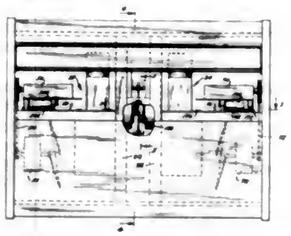
3,161,108
PHOTOGRAPHIC COLOR REPRODUCTION APPARATUS
William Modney, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 18, 1963, Ser. No. 252,414
12 Claims. (Cl. 88—24)



1. In apparatus for making photographic color reproductions, said apparatus having a light source of sufficient intensity to provide exposure of a preselected photosensitive surface after said light has passed sequentially through (*a*) two movable multi-color filters capable of modifying the proportion of the three primary colors in light passed therethrough, (*b*) light diffusing means, (*c*) the photographic record being reproduced, and (*d*) a lens, the improvement comprising: signal means selectively responsive to light of each primary color passed through said record for producing a signal having two distinct components, one of said signal components varying in accordance with the difference in intensity between a first and a second primary color, and the other of said signal components varying in accordance with the difference in intensity between said first primary color and the third primary color; and filter adjusting means responsive to said signal for adjusting at least one of said movable filters until each of said signal components assumes a predetermined value, whereby the spectral composition of said light source is modified to provide color balance in said reproduction.

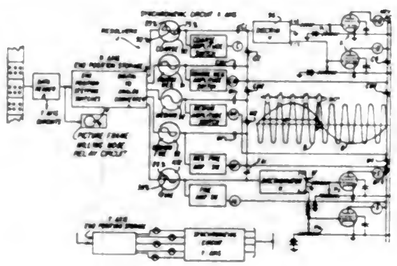
3,161,109
SLIDE PROJECTOR
Nestor Carrillo, I.B.E.C., Cangallo 332, Buenos Aires, Argentina
Filed Feb. 19, 1960, Ser. No. 9,750
8 Claims. (Cl. 88—28)

4. In a slide projecting machine, the combination of two adjacent units positioned side-by-side and oriented to project images upon the same area of a viewing screen, a slide track in each said projecting unit for positioning a slide for projection, a slide magazine mounted between said projecting units and having slots formed therein, means for moving said slide magazine forwardly and rearwardly of the units to align successive slots in the magazine with the slide tracks in the units, means for withdrawing slides one at a time from said magazine and inserting them into said units and for returning slides



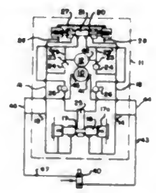
from the units to said magazine, and, means for operating said slide withdrawal and return means in timed relation with said magazine moving means.

3,161,110
CONTROLS FOR MACHINE TOOLS AND THE LIKE
Arthur O. Fitzner, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Oct. 2, 1961, Ser. No. 142,102
4 Claims. (Cl. 90—13)



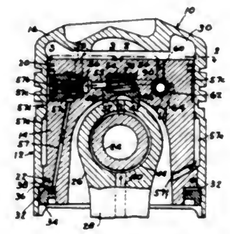
1. In an automatic machine having movable members and separate drive means for moving said members, respectively, relative to each other in either direction along either of two orthogonal axes to programmed end points along said axes, the combination comprising, error detecting elements of progressively finer resolution associated with each axis for comparing the physical location of each of said members with a programmed end point along the respective axis and for transmitting error signals as each of the members progress through the resolution ranges of the elements which are a function of the remaining distance thereto, said elements being progressively satisfied to produce a null error signal, means for operating a first one of said drive means to move said members relatively along one axis toward a programmed end point along said one axis, means responsive to a null error signal from an error detecting element associated with said one axis for operating both said drive means at a point displaced from said programmed end point to move said members simultaneously along both axes, and means responsive to a null error signal from an error detecting element of finer resolution than said first named element indicating the programmed end point has been reached along said one axis for continuing the operation of the other of said drive means and for halting the operation of the first of said drive means so that said members continue to move relatively along only the other of said axes.

3,161,111
TWO SPEED MOTORS
Arthur J. Williams, Hubbard, Ohio, assignor to Commercial Shearing & Stamping Company, a corporation of Ohio
Filed Jan. 31, 1963, Ser. No. 255,394
5 Claims. (Cl. 91—58)



1. A two speed motor comprising a pair of hydraulically driven rotors on a single shaft, a housing around each of said rotors and said shaft, a bearing carrier and motor spacer between said motors and carrying said shaft journaled therein, an inlet and discharge port on each of said motors, the inlet port on one of said motors receiving fluid under pressure from a pressure source and delivering said fluid to said motor to drive the driven rotor therein, a carrier inlet port in said bearing carrier receiving fluid from said pressure source, valve means in the bearing carrier acted upon by said fluid from said carrier inlet port connecting the discharge port of said one motor with the inlet of the other motor, second valve means in the bearing carrier acted upon by said fluid entering the inlet port in said bearing carrier whereby said valve is opened at a selected elevated pressure to connect the said bearing carrier inlet port with the second motor to drive the driven rotor therein and means closing the discharge port of said one motor from communication with the other motor when the second valve is opened.

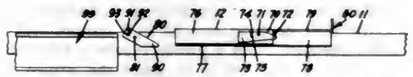
3,161,112
SPEED COMPENSATED VARIABLE COMPRESSION RATIO PISTON AND VALVE
William A. Wallace, Grosse Pointe Woods, and Thomas J. Pearsall, Grosse Pointe Farms, Mich., and Wilfred P. Mansfield, 7 Merton Road, Slough, England; said Wallace and said Pearsall assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed June 26, 1963, Ser. No. 290,705
13 Claims. (Cl. 92—82)



1. In an internal combustion engine piston having first and second parts movable relative to one another in response to reciprocation of the piston and a pressure fluid containing chamber within said piston which varies in internal volume in response to said relative movement and to variations in the quantity of pressure fluid therein, the combination therewith of means forming a first fluid flow passage communicating with said chamber, a valve member movable to open and close said first passage for controlling flow of fluid therethrough to thereby vary the quantity of fluid in said chamber, means for yieldably

biasing said valve member towards closed position to thereby regulate the pressure of the fluid in said chamber, means forming a second passage communicating with a source of pressure fluid which varies in pressure with the velocity of said piston and compensating means exposed to pressure fluid in said second passage and having an operable connection to said valve member for translating a velocity-related pressure variation in said source into a compensating force acting on said valve member so that it is operable to provide substantially uniform regulation of the fluid pressure in said chamber regardless of the velocity of said piston.

3,161,113
CASE OPENER
Joseph H. Walter, Haddam, Conn., and Eugene F. Cloutier, Sinking Spring, Pa., assignors to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Oct. 26, 1962, Ser. No. 233,291
13 Claims. (Cl. 93—53)



1. In a machine for opening flat folded cases each thereof comprising top and rear side walls overlying front side and bottom walls with end flaps corresponding to each of said walls extending therefrom in the plane thereof, means for supporting a folded case for advancing movement with said end flaps projecting laterally beyond said supporting means, means for advancing said case on said supporting means, a first freely rockable cam means in the paths of all of said flaps and adapted to depress said overlying top wall flaps and the underlying front side wall and bottom wall flaps from the plane of said case, means carried by said camming means for cooperation with said depressed flaps to rock said camming means out of the paths of said rear side wall flaps upon further advancing movement of said case, a second freely rockable camming means in the paths of all of said advancing flaps for returning said depressed top wall flaps and underlying front side wall flaps to the plane of said case while said first camming means retains said bottom wall flaps in their depressed positions, and means for opening said case while said bottom wall flaps are depressed.

3,161,114
PROCESS FOR TREATING SURFACES
Clifford V. Wittenwyler, Union, N.J., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Filed Oct. 7, 1957, Ser. No. 688,438
3 Claims. (Cl. 94—22)

1. A process for treating surfaces to render them non-skid which comprises applying to the surface a composition comprising a mixture of a glycidyl polyether of a dihydric phenol and pine oil, and then spreading small inert particles over the top of the layer of said material and allowing the combined mixture to set, the amount of the said inert particles making up at least 40% by weight of the combined mixture.

3,161,115
BRIDGE DECK FINISHER
Burnham L. Larsen and Bernard J. Larsen, both of Cedar Falls, Iowa, assignors to Curbmaster of America, Inc., Cedar Falls, Iowa, a corporation of Iowa
Filed May 24, 1961, Ser. No. 112,268
1 Claim. (Cl. 94—45)

An elongated deck finisher for use in finishing concrete slab or the like on bridges, overpasses and the like comprising,

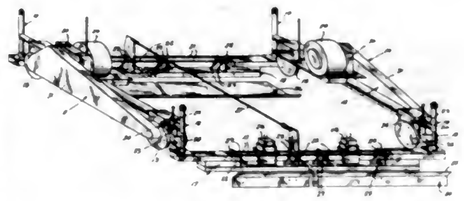
a pair of upright power driven units each of which is situated on one side of the longitudinal axis of the finisher,

said power driven units each being self-supporting for assembly in place on a bridge or the like and each comprising,

elongated wheel mounting means extending parallel to the longitudinal axis of the finisher and at least four wheels mounted on each of said wheel mounting means with pairs of wheels situated at the front and the back of the power unit and with wheels of each pair spaced transversely of each other such that each power unit is capable of supporting itself in an upright position,

power means on each of said power units for driving the wheels,

a transversely extending screed removably interconnecting the power units and comprising an elongated cross-sectionally substantially rectangular structure,



a plurality of upstanding transversely spaced flanges mounted along the upper surface of said screed,

a pair of continuously threaded truss rods extending substantially parallel to said structure and passing through said flanges, and means threaded complementarily to and carried on said rods and engaging each of said flanges, said means being adjustable on said rods to move said flanges relative to said rods whereby to impart a desired crown to said screed, and

swivel means at each end of said screed for selectively removably joining the screed to each of said power units and comprising

a ball joint connection carried by each of said power units,

a pair of horizontal pins rotatably connected respectively to said ball joint connections,

a pair of vertical hydraulic cylinders connected respectively to said pins, and

a pair of piston pins carried slidably telescopically respectively in said cylinders for selectively raising and lowering the screed.

3,161,116
CURB MOLDING AND SHAPING APPARATUS
Burnham L. Larsen and Bernard J. Larsen, Cedar Falls, Iowa, assignors, by mesne assignments, to Curbmaster of America, Inc., Cedar Falls, Iowa, a corporation of Iowa
Filed Apr. 22, 1960, Ser. No. 23,961
4 Claims. (Cl. 94—46)

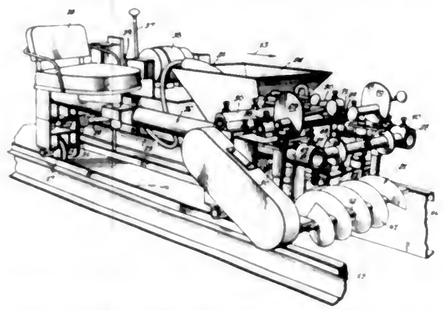
1. In a curb molding and shaping machine the combination comprising,

a frame supported on wheels,

a shaped mold member carried on the frame for forming a cement curb,

a screed extending across in front of the mold member and having a shaped cut out portion in registry with the mold member and carrying a vibrator thereon,

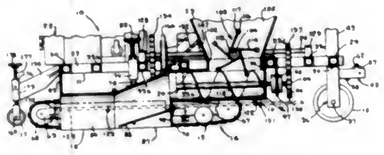
vertical support rods carrying the screed on the frame, said screed and vertical rods being vertically movable between a lowered operating position at the elevation of the mold member and an elevated non-operating position above the mold member,



a raising means comprising an adjustable lever means connected to said vertical rods and engageable cooperating flanges on said vertical rods and said screed for instantaneous full lowering and raising of the screed and movable from a first position wherein the screed is in said lowered position to a second position wherein said screed is in said elevated non-operating position with said screed movable independent of the mold member,

and independent vertical adjustment means separate from said lever means and having a movement independent thereof effecting fine vertical adjustment of the screed in small vertical movements.

3,161,117
CURB-FORMING MACHINE
Anthony B. Supject, 2118 Humphrey, Kalamazoo, Mich.
Filed Mar. 6, 1961, Ser. No. 93,480
6 Claims. (Cl. 94—46)



1. A curb-forming machine, comprising:

an elongated frame;

prime mover means supported upon said frame;

a single ground engaging track supporting one end of said frame;

a curb-shaping device secured to and supported from said frame near said one end thereof;

a substantially cylindrical casing secured to said frame in communication with said shaping device;

a hopper supported upon said frame and communicating with said casing;

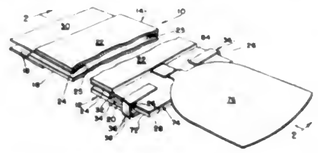
a screw in said casing adjacent said hopper;

first drive means connected to said prime mover means for rotating said screw within said casing, whereby materials in said casing are advanced into and through said shaping device;

discharge means supported in said hopper for rotational movement in response to rotation of said screw for urging material from said hopper into said casing;

second drive means connected to said first drive means for operatively connecting said track to said prime mover means whereby movement of said frame along said ground is positively effected, said second drive means including a speed control device for changing the speed of movement of the track without changing the rotational speed of the screw.

3,161,118
PHOTOGRAPHIC FILM ASSEMBLAGE
Richard R. Wareham, Marblehead, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Original application Feb. 14, 1958, Ser. No. 715,370, now Patent No. 3,079,849, dated Mar. 5, 1963. Divided and this application Mar. 4, 1963, Ser. No. 262,752
12 Claims. (Cl. 95—19)



1. A photographic film assemblage including a plurality of individual film units for use in photographic apparatus in which said film units are exposed and withdrawn in succession between a pair of juxtaposed pressure-applying members, said film assemblage comprising, in combination:

a container having an opening therein;

a plurality of individual film units each comprising a photosensitive sheet positioned for exposure within said container, a second sheet arranged for superposition with said photosensitive sheet, means including a first leader coupled with said sheets for drawing said sheets in superposition between said pressure-applying members and a second leader coupled with said first leader at a location thereon spaced from the leading edge of said first leader toward the trailing ends of said each film unit for drawing said first leader between said pressure-applying members in response to withdrawal movement of said second leader past and to one side of said pressure-applying members;

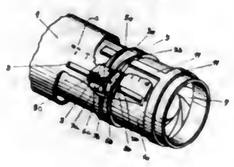
said film units being arranged in said container with said leading end of said first leaders located generally in alignment, said opening being dimensioned to permit withdrawal of said film units one at a time from said container;

said second leaders extending in overlying relation through said opening a substantial distance beyond said leading ends of said first leaders so as to project from said apparatus past and to one side of said pressure-applying members when said first leaders are disposed within said apparatus to the inside of said pressure-applying members.

3,161,119
DEPTH-OF-FIELD INDICATOR FOR OPTICAL OBJECTIVE WITH AXIALLY SHIFTABLE FOCUSING MEANS
Herbert Mahn, Kreuznach, Rhineland, Germany, assignor to Josef Schneider & Co., Optische Werke, Kreuznach, Rhineland, Germany, a corporation of Germany
Filed Dec. 22, 1961, Ser. No. 161,658
Claims priority, application Germany, Jan. 25, 1961, 29,113/61
12 Claims. (Cl. 95—45)

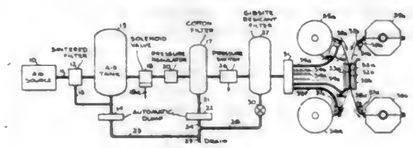
1. A camera objective comprising a stationary housing, a lens support slidable in said housing in the direction

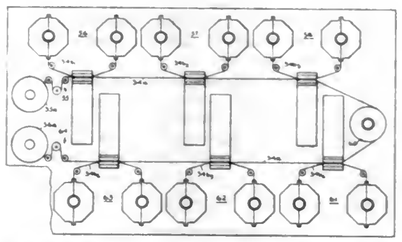
of the objective axis; control means for said lens support slidable on said housing in the direction of said axis; transmission means linking said control means with said support for concurrent axial displacement; an adjustable diaphragm in said housing provided with setting means, said housing carrying an axially extending distance scale; a member axially entrainable by said control means with freedom of displacement in a plane



transverse to said axis, said member having a portion with a pair of relatively inclined boudaries; indicator means including said boundaries for marking on said scale a variable range of distance representing depth of field, the extent of said range varying with the position of said member within said plane; and coupling means linking said setting means with said member for correlating the transverse displacement thereof in said plane with an adjustment of said diaphragm.

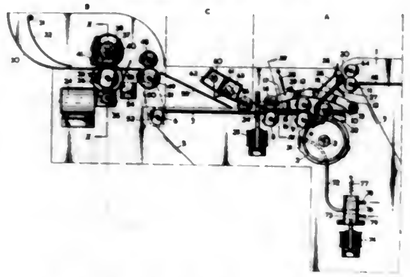
3,161,120
APPARATUS FOR BRINGING RIBBON-TYPE MEDIA TOGETHER
Norman R. Timares, Woodland Hills, and Robert F. Kiddle, San Pedro, Calif., assignors to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Feb. 25, 1963, Ser. No. 260,723
13 Claims. (Cl. 95—75)





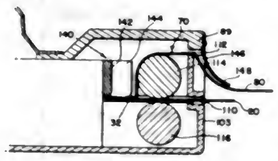
6. A film printer machine comprising: a pair of plate-like members in face-to-face relationship having identical patterns of orifices therethrough, said members including means mounted therein for passing a beam of light therethrough; a reel of film negative and a reel of unexposed film disposed in face-to-face relationship between said pair of members; a drive mechanism for moving one of said films; apparatus for forcing air through said orifices at a pressure sufficient to press said films together between said members such that said one film moves said other film in unison with it.

3,161,121
PROCESS AND APPARATUS FOR THE MANUFACTURE OF PHOTOPRINTS FROM COMPOSED TRANSLUCENT LAMINAR ORIGINALS
Theodoor Hillebrand Linthout, Venlo, Netherlands, assignor to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands, a corporation of the Netherlands
Filed June 22, 1961, Ser. No. 118,885
9 Claims. (Cl. 95—77.5)



1. Apparatus for making photoprints from composite translucent laminar originals, each consisting of a combination of two loosely superimposed originals, of which one is a so-called main original and one a so-called additional original, said device comprising a revolving exposure cylinder equipped with a controllable device for holding the leading edge of a laminar original, means for successively feeding the originals to said exposure cylinder, the main originals differing from the additional originals in a quality sensible by a scanning of the originals, means for scanning the originals fed and responsive to said sensible quality of the main originals for sending an impulse to inactivate the holding device for release of an original from the cylinder as a main original is fed toward the cylinder, means for guiding photoprinting material around the exposure cylinder and means for removing an exposed original from the cylinder.

3,161,122
PHOTOGRAPHIC PROCESS
Joel A. Hamilton, West Medway, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,443
5 Claims. (Cl. 95—89)



1. In a photographic process in which a photographic film element is manually moved within a photographic apparatus toward and between a pair of juxtaposed pressure-applying rolls and directly from said apparatus, the steps of:

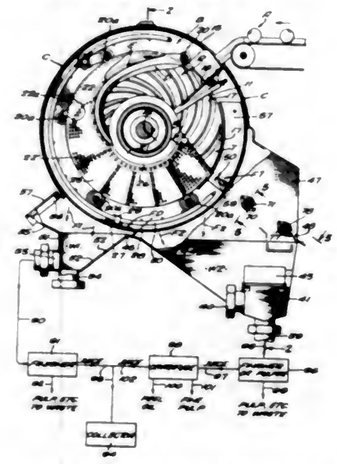
manually engaging a leader attached to said film element and withdrawing said leader from said apparatus to move said film element within said apparatus toward and between said pressure-applying rolls;

discontinuing the application of withdrawal force to said film element with a leading end portion of said element extending between said rolls and from said apparatus free to move laterally with respect to the direction of movement of said element when between and in the grip of said rolls;

during and after movement of said film element, predeterminedly orienting said film element with respect to said direction of movement of said film element between said rolls; and

thereafter manually engaging said leading end portion exterior of said apparatus and withdrawing said film element between said rolls so that said predeterminedly oriented film element is gripped by said rolls substantially immediately as withdrawal movement of said film element is resumed.

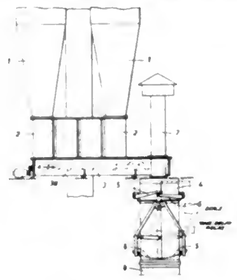
3,161,123
METHOD AND APPARATUS FOR PRODUCING CITRUS JUICES
Harry A. Leslie, Covina, and Franklin K. Holbrook and Richard A. Andrews, Whittier, Calif., assignors to Brown Citrus Machinery Corp., Whittier, Calif., a corporation of California
Filed Nov. 20, 1961, Ser. No. 153,526
9 Claims. (Cl. 100—37)



2. A method of extracting juice from citrus fruit comprising: dividing citrus fruit; passing the divided fruit through an extraction zone while compressing it with progressively increasing pressure to cause juice to flow progressively from said zone; intercepting said flow at a selected location in said zone and thereby dividing said flow into two flow paths so as to confine to one of said paths all of the juice extracted in the first portion of said zone and to confine to the other path the juice extracted in the remainder of said zone; discharging spent fruit from said zone; treating said spent fruit after it is discharged from said zone to cause juice carried thereby to gravitate therefrom in a third flow path; and collecting the juices derived from said flow paths so that the juices from said other flow path and said third flow path are collected as one batch isolated from the juice derived from said one flow path.

3,161,124
MEANS FOR COMPRESSING FLUFFY PAPER PULP TO THE SHAPE OF BALES
Nils Erik Strömberg, Sveavagen 48, Sundsvall, Sweden
Filed Dec. 3, 1962, Ser. No. 241,872
Claims priority, application Sweden Dec. 5, 1961
11 Claims. (Cl. 100—45)

1. A machine for forming bales of a fluffy material by a compressing action comprising a plant for drying the fluffy material by means of a hot gaseous fluid, a weighing device comprising a container and a scale, a housing connecting said drying plant with said container, said housing having an outlet for the hot gaseous fluid used in the drying operation, screw conveying means in said housing for transferring at intervals from the drying plant to the container of the weighing device predetermined



quantities of fluffy mass adapted each to form a bale, a container for individually collecting each such quantity as delivered from the weighing device, a bale press, means including a screw conveyor at least for transferring each such quantity to said bale press while subjecting it to a precompression.

3,161,125
ADJUSTABLE CROWN ROLL
Lloyd Hornbostel, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin
Filed Feb. 15, 1961, Ser. No. 89,527
5 Claims. (Cl. 100—155)

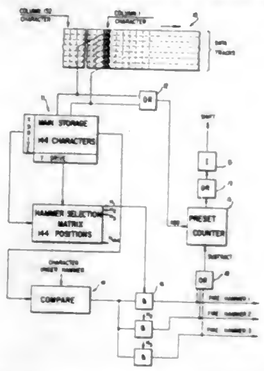


1. Apparatus comprising, a roll shell having normally a straight line centroidal axis that develops normally, a central deflection in response to a load applied to the shell, fixed bearings rotatably mounting the ends of said roll shell, shaft means for the roll shell having shaft portions extending outwardly from the opposite ends thereof, support means between said shaft means and said roll shell inwardly of the opposite ends thereof and normally maintaining said shaft means and said shell in coaxially spaced relation, and movable fluid actuated resilient means for applying a lifting force to each of said shaft portions in opposition to the restraint on said roll shell provided by said fixed bearings continuously counteracting said load to relieve the normal deflection in said shell, said roll shell having a given inherent resistance to deflection and said shaft means having a substantially greater inherent resistance to deflection, and said given inherent resistance to deflection of the shell yielding substantially to said greater inherent resistance of the shaft means.

3,161,126
VARIABLE CYCLE LENGTH IN CHAIN PRINTER OPERATION
Fred Saltz, Binghamton, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 82,308, Jan. 12, 1961. This application Sept. 11, 1963, Ser. No. 308,312
11 Claims. (Cl. 101—93)

1. An apparatus for transferring blocks of information of variable character length from a storage medium to an output device, said apparatus comprising; means for sequentially reading a first block of information to

be transferred character by character to said output device, a counter, means for adding one count to said counter each time a character of said first block of information is read, storage means, first means for transferring said characters of said first block of information from said reading means to said storage means, second means for transferring said characters of said first block of informa-

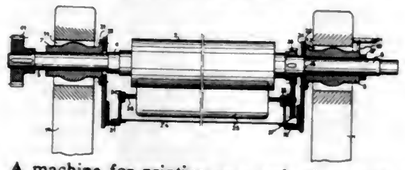


tion from said storage means to said output device character by character, means for subtracting one count from said counter each time a character of said first block of information has been transferred, and means responsive to a "0" count condition of said counter to enable said transfer apparatus to transfer a second block of information to said output device.

3,161,127
CYLINDER SUPPORT MEANS FOR ROTARY PRINTING MACHINE

Jean Lime, Haut-Rhine, France, assignor to Societe Alsacienne de Constructions Mechaniques, Haut-Rhine, France, a company of France

Filed Jan. 15, 1962, Ser. No. 166,012
Claims priority, application France Jan. 18, 1961
4 Claims. (Cl. 101—153)

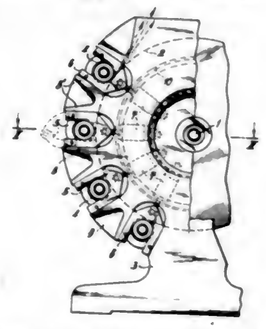


1. A machine for printing on a web of material comprising a frame; a backing roll mounted on the frame and adapted to receive said web therearound; at least one bodily detachable printing assembly comprising a printing cylinder having a pair of opposite journals, bearing members rotatably surrounding the respective journals, a pair of parallel spaced plates secured to inner sides of the respective bearing members and extending transverse to the cylinder on opposite sides thereof, a printing fluid tank removably supported from said plates, a supply roll rotatably supported across said plates in contact with said cylinder and dipping in said tank, and squeegee means supported from said plates and engaging said cylinder; bearing supports on the frame adapted to receive the bearing members of a printing assembly removably therein; means on the frame operative to engage an assembly in the mounted condition thereof to drive the cylinder in rotation and to urge the cylinder against the roll; means for adjusting the axial position of the printing cylinder of the mounted assembly relative to the frame including means for indexing the adjusted position, said bearing members being fixed in axial position relative to the cylinder journals and said axial adjusting means comprising means for adjusting the axial position of said bearing members relative to the bearing supports, and means for indexing the adjusted position thereof.

3,161,128
ROLLER PRINTING MACHINE, PARTICULARLY FOR TEXTILES

Karl-Heinz Liessem, Krefeld, Germany, assignor to Joh. Kleinewefers Söhne, Krefeld, Germany

Filed Jan. 31, 1962, Ser. No. 170,098
Claims priority, application Germany Feb. 4, 1961
1 Claim. (Cl. 101—178)



A roller printing machine, especially for textiles, which comprises: a machine frame, an impression cylinder rotatably supported by said machine frame, a plurality of circumferentially spaced printing rollers arranged parallel to and adjacent the periphery of said impression cylinder, individual bearing supports for said rollers having said rollers journalled therein, a plurality of circumferentially spaced radially outwardly opening U-shaped guiding means formed as an integral part of said machine frame and each including spaced parallel flat guide surfaces on opposite sides thereof extending radially of said impression cylinder, said bearing supports including spaced parallel flat surfaces on opposite sides thereof, said guide surfaces slidably engaging said flat surfaces of said bearing supports and supporting and guiding said bearing supports, and a fluid operable cylinder piston means for each bearing support connected at one end to said machine frame and having movable means at the other end operatively connected to the pertaining said bearing support for subjecting the same and thereby the roller journalled therein to movement in the pertaining guiding means in radial direction of said impression cylinder, said bearing supports being open toward the outside and including bearing lids hingedly connected to said bearing supports so as to be tiltable away therefrom, each said cylinder piston means extending from the respective bearing support toward the axis of said impression cylinder and the connection of each cylinder piston means with said frame being located between the axis of said impression cylinder and the axis of the respective printing roller.

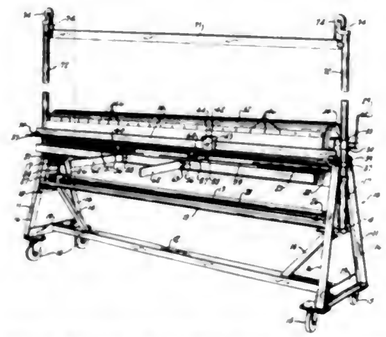
3,161,129
DIE MOUNTING MACHINE HAVING REMOVABLE CYLINDER AND METHOD OF REMOVING AND REPLACING ITS CYLINDER

Harvey C. Taylor, Milwaukee, Wis., assignor to Dorr Sales & Engineering Co., Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 19, 1962, Ser. No. 180,668
4 Claims. (Cl. 101—212)

1. A die mounting machine, comprising:
(A) a base having spaced upright end frames;

(B) coaxial bearings on the end frames;
(C) a cylinder journalled in said bearings;
(D) a row of sheet-engaging elements on the cylinder, parallel to the axis thereof,
  (1) said sheet-engaging elements providing means by which one end of a die mounting sheet may be attached to the cylinder to be wrapped about the cylinder as the cylinder is rotated, with the die mounting sheet in a predetermined position on the cylinder preparatory to having a flexible die or dies bonded to the die mounting sheet;
(E) an upright track member on each end frame extending upwardly therefrom, said track members being parallel to one another;
(F) a cross bar extending from one to the other of said track members;

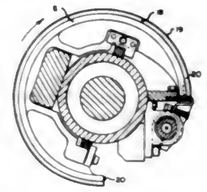


(G) means slidably mounting the opposite end portions of the cross bar on said track members so that the cross bar may be moved up and down with a translating motion toward and from the cylinder;
(H) sheet attaching elements on the cross bar;
(I) a check sheet having one end removably attached to said sheet attaching elements, and having its opposite end connectible to the sheet attaching elements on the cylinder; and
(J) means reacting between said upright track members and said bar, yieldingly urging the bar upwardly on said track members, whereby connection of the lower end of the check sheet to the sheet-engaging elements on the cylinder and rotation of the cylinder wraps the check sheet about a die mounting sheet on the cylinder to effect an imprint of a die or dies on the die mounting sheet, upon the check sheet.

3,161,130
PRINTING APPARATUS

William S. Vogel, Moon Township, Allegheny County, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 27, 1963, Ser. No. 283,454
20 Claims. (Cl. 101—422)

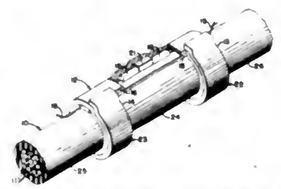


8. A cylinder for a printing press having gripper means for taking an advancing sheet as the cylinder rotates, the surface of the cylinder against which the sheet lies consisting of chromium having a roughness of at least 80 microinches (R.M.S.) but not to exceed 300 microinches (R.M.S.).

3,161,131
EXPLOSIVE MEANS FOR CUTTING AN ELECTRIC CABLE

Earl E. Kilmer, College Park, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 1, 1963, Ser. No. 292,168
10 Claims. (Cl. 102—24)
(Granted under Title 35, U.S. Code (1952), sec. 266)

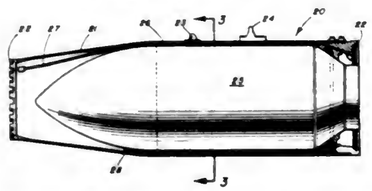


1. An explosive cable cutter comprising a flexible sheet of explosive configured to provide two elongated portions adapted to be wrapped around and cemented to the cable to be cut and each interconnected at an end portion thereof by a recessed longitudinal portion and at an intermediate portion by a second longitudinal portion thereby to provide a pair of explosive means tightly encircling the cable at a distance corresponding to the length of said longitudinal portions,
  electroresponsive detonating means carried by said first named longitudinal portion within the recess therein in such manner as to engage the cable when the sheet of explosive is wrapped thereabout, said second longitudinal portion being formed at such a distance from the first named longitudinal portion as to be superimposed thereon when the cutter is wrapped about the cable and cemented thereto,
  each of said elongated portions being of sufficient length to provide an explosive wrapping of double thickness completely around the cable thereby to sever the cable in a manner to remove a section thereof defined by said wrapped elongated portions.

3,161,132
EPOXY RESIN STRUCTURAL FILLER MATERIALS

Cletus J. Siebert, Winter Park, and Wilfred G. Burgan, Jr., Maitland, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 16, 1963, Ser. No. 251,993
1 Claim. (Cl. 102—49)



In a missile adapted to be transported and launched from an external location on an aircraft and having a forward guidance section, an intermediate warhead section and an aft propulsion section, the improvement in said intermediate section comprising,
  a generally cylindrical outer casing adapted at one end to be attached to said forward section and at the opposite end to be attached to said aft section,

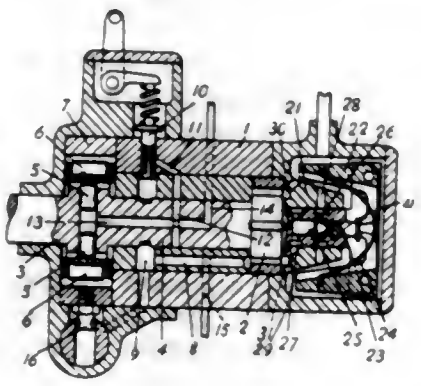
lugs secured to said casing for attachment to a launcher or other handling instrumentality whereby said missile may be supported thereby,

said casing being characterized by a thickness of such dimension as to be incapable of withstanding the concentrations of stress, shock and bending moments imposed thereon by said lugs in response to air resistance, centrifugal and centripetal forces and resultant components thereof,

a warhead positioned within said casing for transportation to a target by said missile, and

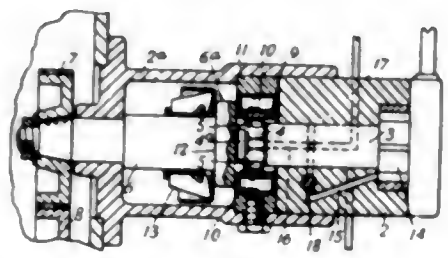
an epoxy resin high-strength structural material filling portions of the remaining volume within said casing and extending between and in contact with said casing and warhead thereby effectively coupling the casing, epoxy structural material and warhead into a structurally integrated unit for transferring loads and stresses imposed upon said casing by said lugs through said structural material into said warhead whereby said warhead is effectively a structural member strengthening said casing thus permitting a reduction in the required strength and thickness of said casing.

3,161,133
LIQUID FUEL INJECTION PUMPS
Keith Finer Hutcheon, Denham, England, assignor to C.A.V. Limited, London, England
Filed Sept. 10, 1962, Ser. No. 222,335
2 Claims. (Cl. 103—2)



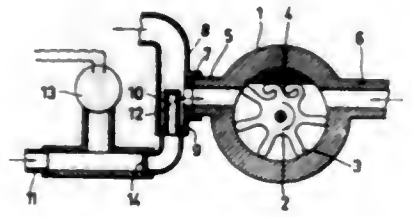
1. A liquid fuel injection pump for an internal combustion engine, comprising in combination a rotary distributor adapted to be driven by the engine, a feed pump at one end of the distributor, said feed pump having an inlet and an outlet, a head at the other end of the distributor, said head having therein a transversely extending bore, at least one plunger in said bore, a governor-controlled throttle valve through which the feed pump supplies fuel intermittently as the distributor rotates to the bore in the head so as to move the plunger outwardly, an annular cam surrounding the head and adapted to impart inward movements to the plunger as the head rotates and thereby deliver fuel through a passage in the distributor to the engine cylinders in turn, an extension of the distributor at said one end thereof, an axial bore in said extension, a flow path interconnecting the inlet and outlet of the feed pump, said flow path extending through said bore, a plunger slidable in the bore and serving to restrict the flow path by an amount dependent on the axial position of the plunger, so that the maximum output pressure at which the feed pump supplies fuel to said head as determined by the position of the plunger, and centrifugally operable means secured to said extension for moving the plunger to restrict said flow path by an amount dependent on the speed of the engine, so that said maximum output pressure of the feed pump increases with the speed of rotation of said distributor.

3,161,134
LIQUID FUEL INJECTION PUMPS FOR INTERNAL COMBUSTION ENGINES
Fraser Mackie Evans, Uxbridge, England, assignor to C.A.V. Limited, London, England
Filed Sept. 17, 1962, Ser. No. 223,952
Claims priority, application Great Britain Sept. 19, 1961
1 Claim. (Cl. 103—2)



A liquid fuel injection pump for a multi-cylinder internal combustion engine, and comprising in combination a stationary hollow body provided with a plurality of ports adapted for connection respectively to the engine cylinders, a rotary distributor mounted in said hollow body, a rotor which is rigidly united coaxially with one end of said distributor, and which is provided with a transverse bore, at least one plunger slidably mounted in said transverse bore, actuating means surrounding said rotor for imparting inward movements to said plunger during rotation of said rotor and said distributor, a driving shaft which is adjacent to and coaxial with said rotor, co-operating parts on the rotor and the driving shaft, engageable to impart rotation of the driving shaft to said rotor and said distributor, passages provided in said hollow body and said distributor so that, during rotation of said rotor and said distributor, liquid fuel under pressure can be fed to said transverse bore for moving said plunger outwardly towards said actuating means, and can be subsequently discharged through said ports in turn by inward movements imparted to said plunger by said actuating means, a cup-shaped extension which is integrally formed on the end of said driving shaft adjacent said rotor, and which has a cylindrical wall portion located between said rotor and said actuating means, and provided with at least one radical aperture in alignment with said transverse bore, and a radially movable push piece which is slidably mounted in said radial aperture, and which bears against an adjacent end of said plunger so that the latter causes said radially movable push piece to contact said actuating means during rotation of said rotor and said distributor irrespective of any relative angular displacement of the driving shaft and rotor.

3,161,135
DEVICE FOR SUCKING LIQUID, AIR AND SOLID PARTICLES
Sven Gustaf Eriksson, 15 Sveavagen, Djursholm, Sweden
Filed June 28, 1962, Ser. No. 206,070
Claims priority, application Sweden June 29, 1961
2 Claims. (Cl. 103—25)



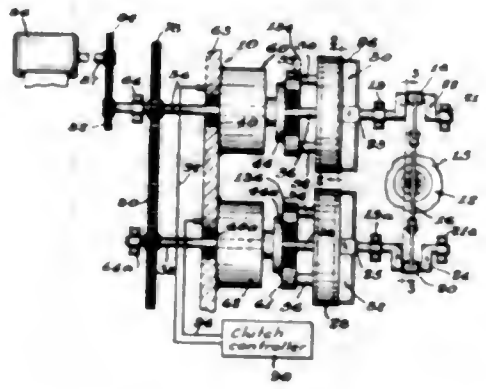
1. In combination with a liquid and air pump having a generally cylindrical housing provided with an inlet and

an outlet and having a cam at one side thereof between said inlet and outlet, a rotor mounted for rotation about an axis coaxial with said cylindrical housing, said inlet and said outlet being centered on a common line at right angles to said axis and adjacent said side of said housing at which said cam is located, said rotor having radially extending flexible and resilient vanes extending into engagement with said housing, and bending against said cam and toward said outlet by rotor rotation, a clean water source, a nozzle connected to said water source and directed towards said rotor through said outlet for continuously spraying clean water through said outlet inwards against said rotor during operation.

3,161,136
VARIABLE VOLUME PUMPING APPARATUS

Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 29, 1963, Ser. No. 298,034
12 Claims. (Cl. 103—38)

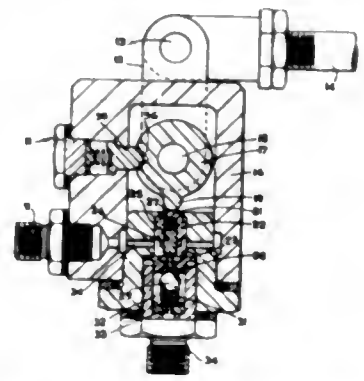


1. A mobile pumping unit comprising in combination a prime mover and a variable displacement pump, said pump comprising a frame, a cylinder and piston reciprocal therein, a crosshead, means for mechanically coupling the piston to the crosshead to reciprocate the piston with reciprocation of the crosshead, a walking beam having a central part and two end parts, said crosshead being pivotally coupled to said central part of said walking beam, a pair of crankshafts, each of said crankshafts having at least one throw, a pair of connecting rods, one of said connecting rods being pivotally coupled to one end part of said walking beam and to a throw on one of said pair of crankshafts, the other connecting rod being pivotally coupled to the other end of the walking beam and to a throw on said other crankshaft, a pair of planetary gear assemblies each comprising a sun gear, at least one planetary gear and a ring gear, said planetary gear being coupled to a rotatable planet carrier element, one of said crankshafts being operatively coupled to the ring gear of one of said planetary gear assemblies, the other of said pair of crankshafts being operatively coupled to the ring gear of the other of the planetary assemblies, a pair of drive shafts, means for coupling said prime mover to said drive shafts and for rotating each of said drive shafts at least approximately at the same rate, one of said drive shafts being operatively coupled to one of said sun gears, the other of said drive shafts being operatively coupled to the other of said sun gears, a pair of multiple disc clutches each having a fixed segment and a rotatable segment, the rotatable segment of each clutch being fixedly coupled to one of said planet carriers and the fixed segment of each clutch being rigidly coupled to said frame, and means for actuating said clutches independently of one another.

3,161,137
HYDRAULIC APPARATUS

Oswald Thoma, Charlton Kings, Kenneth Raymond Boydell, Bredons Hardwicke, near Tewkesbury, and Bertram Carl Kempson, St. Marks, Cheltenham, England, assignors to Dowty Hydraulic Units Limited, Ashchurch, England, a British company, and Unipat A.G., Glarus, Switzerland, a Swiss company

Filed June 12, 1962, Ser. No. 202,015
Claims priority, application Great Britain, June 12, 1961, 21,137/61
9 Claims. (Cl. 103—41)

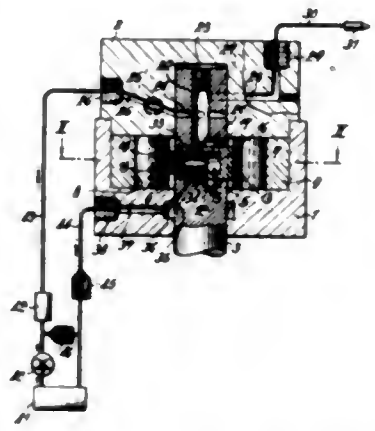


1. In combination with a hydraulic pump of the infinitely variable positive displacement type, means to adjust the pump's displacement through a range including zero displacement, a high pressure delivery duct leading from said pump, a normally closed vent valve having a small displacement range when open, operatively interposed between said high pressure duct and a low pressure region, and means operatively connected to said displacement adjusting means, and operable to open said vent valve for restricted flow only when the pump's displacement is substantially zero.

3,161,138
FUEL INJECTION PUMP FOR INTERNAL COMBUSTION ENGINES

Claus Köster, Backnang, Wurttemberg, Germany, assignor to Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart, Germany

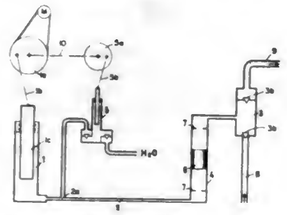
Filed Oct. 4, 1962, Ser. No. 228,372
Claims priority, application Germany, Oct. 28, 1961, B 64,572
8 Claims. (Cl. 103—41)



1. In a fuel injection pump for internal combustion engines having a casing consisting of a first and a second part, fuel inlet conduits, fuel outlet conduits, a shaft rotatably mounted in said casing and a stationary cam ring disposed in the casing and having a plurality of camming surface portions cooperating with roll means, the combination comprising a central section in said shaft which is rotatable therewith, said central section forming a pump body, an interior and an exterior piston in radial and coaxial arrangement, said pistons being slidably disposed in said pump body, a pump operating space between said

pistons, said roll means comprising a roll ram and roll each fixed to the ends of said pistons, said rolls being adapted to cam on the surface portions of said stationary cam ring upon rotation of said shaft and actuate said pistons, bore means in the interior piston and bore means in the exterior piston, and return passage means leading from said pistons through said casing and being connected back to said fuel inlet means, said bore means being adapted to be brought in opening connection with said return passage, thereby allowing fuel to return from said pump operating space through said return passage out of said casing.

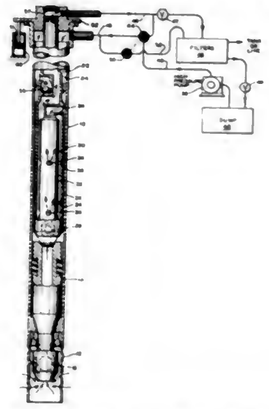
3,161,139
METHOD AND MEANS FOR PUMPING CORROSIVE LIQUIDS
Tito Borelli, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy
Filed July 30, 1962, Ser. No. 213,345
Claims priority, application Italy Aug. 3, 1961
4 Claims. (Cl. 103—44)



1. A method for pumping into a urea synthesis plant at superatmospheric pressures a corrosive liquid consisting essentially of a solution of aqueous ammonium carbamaate containing ammonia, water and carbon dioxide, comprising the steps of sucking in the corrosive liquid into the intake side of a valve box made of material chemically resistant to said corrosive liquid, cyclically forcing, from an auxiliary supply means of material chemically corrodible by said corrosive liquid, water under pressure into said valve box and into intimate contact with said corrosive liquid therein so that said water mixes with and diffuses into said corrosive liquid, and forcing the resulting diffused mixture of water and corrosive liquid out of an outlet side of said valve box to said urea synthesis plant while obstructing fluid flow of said corrosive liquid into said auxiliary supply means so that said auxiliary supply means is protected from said corrosive liquid.

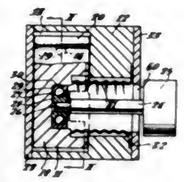
3,161,140
FLUID ACTUATED DOWNWELL PUMP
Peter S. Bloudoff, Whittier, Calif., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Mar. 20, 1962, Ser. No. 181,096
2 Claims. (Cl. 103—46)

1. In a fluid actuated downwell pump installation including a well tubing in which a fluid actuated pump is seated and a separate string of smaller tubing within said first tubing, said first tubing being normally connected to receive power oil for said pump unit in the annulus around said separate tubing, and said separate tubing being normally connected to receive fluid produced by said pump unit, the improvement comprising means to open said separate tubing for the reception of a soluble clean-out plug, valve means at the surface to connect said separate tubing to receive power oil and said first tubing to exhaust, whereby contaminants are removed from the interior of said separate tubing by forcing said soluble plug down under the pressure of power oil, and normally closed valve means disposed adjacent said pump unit openable by pressure in said separate tubing in the direction of said first tubing to



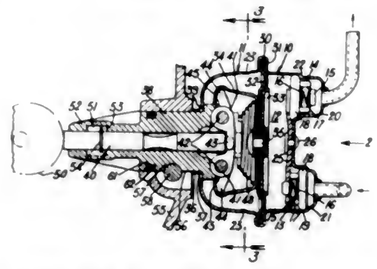
interconnect said first and separate tubing strings to bypass fluid and contaminants forced from said separate tubing by said soluble plug.

3,161,141
Bernard Henry Refson, "The Tangle," Ibstone, High Wycombe, England
Filed May 20, 1963, Ser. No. 281,631
2 Claims. (Cl. 103—132)



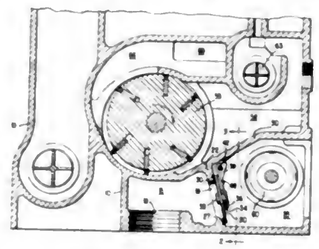
1. A rotary pump of the gyratory piston type, having an abutment affixed to the piston to prevent rotation thereof, comprising a pump casing, a substantially cylindrical pump chamber formed within said casing and having a recess extending radially outwardly from said chamber into said casing, a fluid inlet duct communicating with said chamber on one side of said recess, a fluid outlet duct communicating with said chamber on the other side of said recess, a substantially cylindrical piston disposed within said pump chamber, said piston having a vane affixed thereto, said vane extending the length of said piston and projecting radially from the surface thereof into said recess, the edge of said vane being bulbous and fitting within said recess in a sliding fit, said piston and vane being formed integrally from resilient and flexible material, said piston having a blind cylindrical axially extending recess formed therein, a bearing mounted in said recess in said piston, a drive shaft extending into said casing, a pin eccentrically mounted on said shaft and drivingly engaging said bearing in said piston, a flexible tubular sheath of impermeable material integrally formed with said piston with one end of said sheath positioned around the location of said recess in said piston, said tubular sheath extending over said drive shaft and having at the other end thereof a radially extending flange sealedly secured to said pump casing around the periphery of said flange to isolate said drive shaft and bearing from said chamber, the radius of said piston being less than the radius of said pump chamber by approximately the eccentric distance of said pin whereby rotation of said drive shaft will cause gyration of said piston without rotation thereof within said chamber and pumping of fluid from said inlet to said outlet duct with said vane sliding within said recess in sealed engagement therewith.

3,161,142
DIAPHRAGM PUMPS
Johannes Reitz, Neckarsulm, Germany, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,956
Claims priority, application Germany Sept. 10, 1960
5 Claims. (Cl. 103—150)



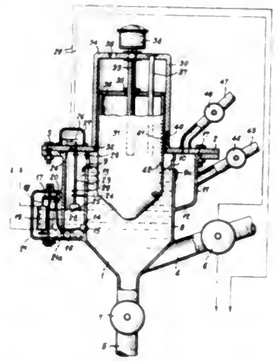
1. A diaphragm pump having a casing, a diaphragm dividing the interior of said casing into a pumping chamber and an actuating chamber, one-way pressure actuated valves arranged to serve said pumping chamber, a support member fixed to said casing and having a bore normal to the plane of said diaphragm, a plunger slidable in said bore, an inner cup member fixed to said diaphragm within said actuating chamber to move with said diaphragm, rocker levers within said inner cup member and pivotally fixed to said casing, one end of each of said levers engaging said plunger to move therewith, the other end of each of said levers engaging said inner cup member, and spring means urging said diaphragm, inner cup member and said other end of each of said levers in one direction.

3,161,143
LIQUID DISPENSER
John J. Piros, Homewood, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,811
7 Claims. (Cl. 103—203)



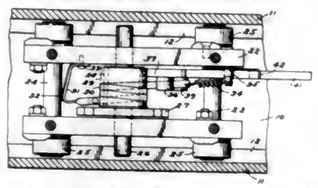
1. A liquid dispenser comprising a pump and a suction inlet for connecting the pump to a source of liquid below the pump, a suction chamber communicating with the suction inlet and provided with a generally vertically arranged gateway at a level above the floor of the suction chamber, a gate having a rigid closure disc and being pivotally mounted by a pin positioned above said gateway, said closure disc resting by gravity on the gateway to close the gateway when the pump is not in operation and which gate is free to swing into the said suction chamber when said pump is operating, and said gate being weakly biased to the closed position by a flat spring located in a bent compressive position by one end of said spring being against the upper part of said suction chamber and pointing in the direction of liquid flow through the gate and the other end of said spring being against the back of said gate and said spring passing between said pin and the closure disc of said gate.

3,161,144
INJECTION DEVICE
Kurt Hugentobler, Onex, Geneva, Switzerland, assignor to Etablissements G. Lesieur & ses Fils, Paris, France, a firm
Filed Apr. 18, 1963, Ser. No. 273,970
Claims priority, application Switzerland, Apr. 19, 1962, 4,819/62
9 Claims. (Cl. 103—248)



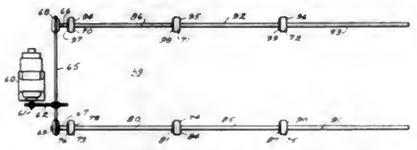
1. An injection device for measuring a predetermined quantity of liquid material and for subsequently discharging said quantity under pressure for an injection operation, said device comprising a container for receiving a predetermined quantity of liquid material into said container and having an overflow outlet, a gas inlet conduit communicating with said container for conducting gas under pressure into said container, inlet and outlet duct means including an inlet duct in communication with the interior of said container for introducing liquid material into the container and an outlet duct communicating with the interior of said container for discharging the liquid material from the container, a collector receptacle in communication with said overflow outlet from said container and having a drain outlet, and liquid flow control means, said flow control means including first valve means in said inlet duct for said inlet duct to be opened and closed, second valve means in said outlet duct for said outlet duct to be opened and closed, third valve means in said conduit for said conduit to be opened and closed, and drain outlet control and liquid level sensing means, the latter said means including liquid level sensing means associated with said collector receptacle and said first valve means for closing said first valve means after said predetermined quantity of liquid material in said container is obtained and when a predetermined level of liquid in said collector receptacle is obtained, and fourth valve means having open and closed positions relative to said drain outlet for said drain outlet to be closed respectively while said first valve means and third valve means are open and for said drain outlet to be opened after said second valve means has been opened and closed.

3,161,145
SPRING CLUTCH FOR CONVEYOR PALLET
Don A. Cargill, 822 Fairfax, Birmingham, Mich., and Lloyd M. Forster, 1624 Lochridge Road, Bloomfield Hills, Mich.
Filed Jan. 14, 1963, Ser. No. 251,229
20 Claims. (Cl. 104—172)



1. In a conveyor system having a track, continuous drive means extending along said track, a plurality of pallet assemblies adapted for intermittent travel along said track through releasable drive connection with said continuous drive means, each of said pallet assemblies including a drive element rotatably mounted on said pallet adapted to engage said drive means and to be restrained from rotation to establish drive and to be released for rotation to release drive; means controllably operable to restrain and release said drive element, comprising a cylindrical member connected to said drive element, helical clutch means adapted to engage said cylindrical member, means for anchoring one end of said clutch means to said pallet assembly, and means for actuating other end of said clutch means to produce clutch engagement or disengagement of said cylindrical member, said last means including inter-engaging elements between one pallet assembly overtaking another operative to release the clutch means of the overtaking pallet assembly.

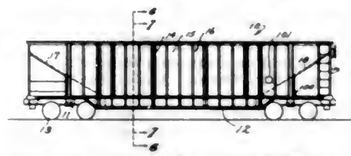
3,161,146
LONGITUDINAL SECTIONAL DOOR OPERATING SHAFT
William M. Lutts, Sr., and Lawrence K. Taliaferro, Sr., Louisville, Ky., assignors to Louisville and Nashville Railroad Company, a corporation of Kentucky
Filed June 10, 1963, Ser. No. 286,852
12 Claims. (Cl. 105—240)



1. A door operating mechanism connected to a door, said mechanism comprising means to lock and unlock said door, said means comprising a door operator connected to a cross shaft through a door operator shaft, said cross shaft connected to a door operating shaft through a right angle linkage, said door operating shaft comprising at least a first and second section, said first and second sections constituting a first door operating shaft coupling, said first section provided with a male portion in driving engagement with a female portion of said second section.

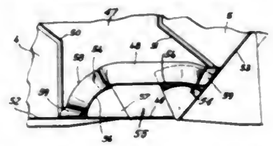
3,161,147
VEHICLE UNDERFRAME
Julian F. Sapp, Sr., Louisville, Ky., assignor to Louisville and Nashville Railroad Company, a corporation of Kentucky
Filed June 10, 1963, Ser. No. 286,853
5 Claims. (Cl. 105—250)

1. In a vehicle underframe, the combination: of forward and rearward center draft sills, said sills having ends extending toward the longitudinal center of said vehicle; forward and rearward header sills fixedly attached to said ends of said forward and rearward center draft sills extending toward the longitudinal center of said vehicle; a pair of intermediate sills in vertical alignment



with rails over which said underframe is disposed, said intermediate sills secured to and separating said header sills to form an aperture at the longitudinal center of said car, said aperture bounded by said intermediate sills and said header sills.

3,161,148
TILTING SECTION HOPPER CAR
Helmut F. König, Minden, Westphalia, and Christian J. Stiefel, Aachen, Germany, assignors to Waggonfabrik Talbot, Aachen, Germany
Filed Apr. 20, 1961, Ser. No. 104,439
Claims priority, application Germany, Sept. 14, 1960, W 28,565
5 Claims. (Cl. 105—262)

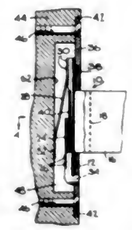


1. In an open freight car having longitudinal beams and a substantially central discharge opening between said beams having lateral edges on the sides thereof toward said beams, said car also having centrally located substantially vertical stationary side walls: a car box subdivided in a direction transverse to the longitudinal axis of said car so as to form two box sections, one section on each side of said opening, each of said box sections having side walls terminating in spaced relation to said opening and a bottom, said bottom having a portion thereof extending beyond said last mentioned side walls in a direction toward said opening and terminating adjacent said opening, a pair of shafts supported by said longitudinal beams in the central portion of said car and engaging the said portions of said bottom for extending in transverse direction thereof and engaging the said portions of said bottom for tiltably supporting said box sections for selective tilting movement of said box sections toward each other, discharging plates located between and fixed to said stationary side walls and the respective adjacent lateral edges of said discharge opening and inclined inwardly toward said opening, and lateral guiding means fixed to and upstanding from said bottoms adjacent said discharging plates for cooperation with said discharging plates to form substantially continuous discharge surfaces leading from the box sections to said discharge opening.

3,161,149
RELEASABLE ROPE TIE FASTENER
George Monus, Levittown, Pa., assignor to The Molamake Company, New York, N.Y., a co-partnership
Filed Jan. 7, 1964, Ser. No. 336,246
5 Claims. (Cl. 105—369)

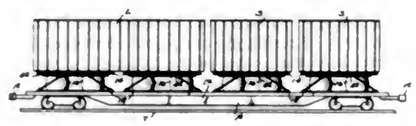
1. In combination with an anchor plate of the type described provided with
an elongated slot,

lateral lips extending inwardly from the slot and a central opening disposed below the slot,
a rope tie device comprising a rod,
a strap or webbing secured around the central portion of the rod and extending therefrom to form a rope-engaging loop,



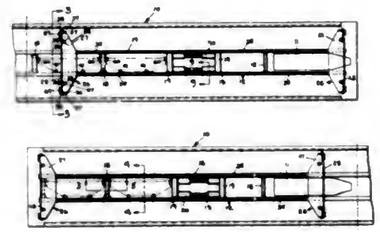
means to retain the strap or webbing to the rod,
spring means secured to and extending from the posterior surface of the rod top at an angle to the plane of the rod and adapted to tension the rod against the posterior surface of the anchor plate, and
a foot extending anteriorly from the base of the rod, the foot adapted to be releasably engaged by the central opening in the anchor plate to lock the rope tie device thereto.

3,161,150
LOAD RECEIVING, SUPPORTING AND CUSHIONING APPARATUS
Donald E. Sable, 2519 Tomahawk Road, Shawnee-Mission, Kans.
Filed Dec. 6, 1960, Ser. No. 74,120
20 Claims. (Cl. 105—366)



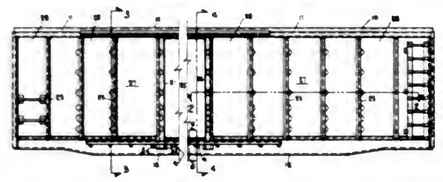
7. In a piggyback transport system for transferring a box load between a highway vehicle and a railway car for resiliently cushioning said box load on the railway car while in transit, comprising at least one load receiving and cushioning assembly on the railway car, each assembly being supported on a bottom plate carried on said car and comprising a top plate disposed above said bottom plate in spaced substantially parallel relation therewith; a plurality of symmetrically located inflatable pneumatic cushion means between said plates; box load receiving and guiding means on the top plate; torsion bar means having a central portion disposed transversely across one plate parallel therewith and pivotally fixed thereto and having two arm portions extending substantially longitudinally toward the other plate at an acute angle with respect thereto to resist tilting of the plates in a transverse direction; longitudinally disposed guide means on each transversely opposite side of said other plate and including slide means on said guide means and each attached to the outer end of one of said arm portions; and stop means attached to each guide means to limit the travel of the slide means in each guide means, whereby each torsion bar means will act as a crank to convert longitudinal forces of acceleration in one longitudinal direction and of deceleration in the opposite direction into downward forces.

3,161,151
FLAT CARS AND CRADLES THEREFOR
Carl E. Johansson, Cleveland, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 12, 1961, Ser. No. 147,701
10 Claims. (Cl. 105—368)



1. In a railway flat car equipped with trailer hitches hinged to the floor of the car for swinging movement longitudinally of the car and lying upon the floor when not in use, a cradle mounted upon the floor for longitudinal movement relative to said car, said cradle comprising a frame embodying side members straddling said hitches, cross members extending between and secured to said side members in spaced relationship to said hitches and cross bolsters supported upon and extending beyond said side members, means removably securing said bolsters to said side members, said bolsters lying above said hitches, said cradle being adapted to carry containers disposed with their ends supported upon said bolsters, and bolster supporting means carried by said frame between said side members and between adjacent cross members, said bolsters being removable from said side members for support and storage therebetween upon said latter means, said storage of said bolsters making the floor of said car available for supporting the wheels of trailers upon the floor of said car upon opposite sides of said cradle, said hitches being swingable upwardly between said side members to support trailers placed on said car upon removal of said bolsters and storage thereof on said storage means, whereby said bolsters are always available to support containers, said cradle becomes a permanent part of said car and said car is capable of carrying loads of containers, trailers and mixed containers and trailers.

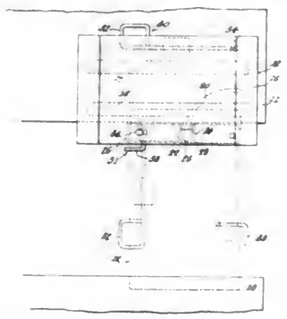
3,161,152
RAILWAY CAR SIDES
Carl E. Johansson, Cleveland, and Donald F. Leonhart, Youngstown, Ohio, assignors to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 3, 1961, Ser. No. 93,191
2 Claims. (Cl. 105—409)



1. In a railway car having a side plate extending substantially the length of the car, a side sill extending substantially the length of the car, metallic sheathing exending between and secured to said side plate and side sill, said sheathing being exposed to view on the outside and the inside of the car, a door opening provided in said sheathing, the top and bottom of said door opening being defined by said side plate and sill, respectively, spaced

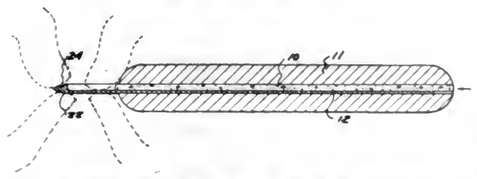
door posts and intermediate posts extending between said side plate and side sill on the outside of said sheathing, said sheathing extending from said door posts to the ends of said car, means securing said door posts and intermediate posts to said side plate, sill and sheathing, said door posts defining the width of the door opening, a member secured to said side plate across the door opening, said member being alined with said sheathing, and means directly securing said member to said sheathing on opposite sides of the door opening and making said sheathing a mechanically continuous stress-carrying column member along said side plate.

3,161,153
BRIDGING STRUCTURE FOR TRAILER CARRYING RAILWAY CARS
John A. Johnson, 9 Sheridan Drive, Short Hills, N.J.
Filed Oct. 19, 1960, Ser. No. 63,700
17 Claims. (Cl. 105—458)
(Granted under Title 35, U.S. Code (1952), sec. 266)



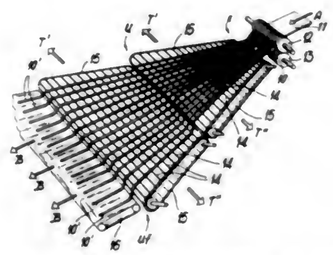
1. In combination with a railway flat car having a rigid end structure, a bridging plate assembly comprising a bracket rigidly mounted on the car end structure, a pin journalled in said bracket for turning movements about a substantially vertical axis, a bridging plate mounted near one end on the upper end of said pin and swingable about the rotational axis of said pin between an operative and an inoperative position, and means acting between said bracket and said plate for raising said plate sufficiently to clear said car end structure when said plate is moved from its operative to its inoperative position.

3,161,154
MEANS FOR FILLING A FRANKFURTER WITH A STRIP OF CHEESE
Lawrence A. Schott, 16261 Northlawn Ave., Detroit, Mich., assignor of one-half to Charles A. Raleigh, Detroit, Mich.
Filed Aug. 6, 1962, Ser. No. 214,940
2 Claims. (Cl. 107—1)



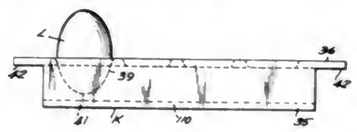
1. For inserting a strip of cheese in a frankfurter, a long channel shaped tool of the length and thickness of the desired strip, with the channel flanges being sharp edged to enable the tool to sever a strip of cheese from a slice of cheese; said tool having an open rear end and a closed pointed forward end formed for enabling the strip filled tool to be thrust longitudinally through a frankfurter, said forward end being enlarged relative to the channel so that the forward end of the tool forms a passage through the frankfurter wider than the channel.

3,161,155
FOOD-DOUGH CORDS SPACING DEVICE
Giorgio Orlandi, 8 Via Grigna, Milan, Italy
Filed Feb. 2, 1962, Ser. No. 170,637
Claims priority, application Italy, Feb. 4, 1961, 1,997/61
3 Claims. (Cl. 107—4)



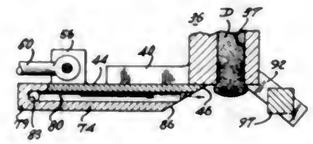
1. Strip conveyor apparatus comprising, in combination,
forming means for forming sheeted dough into closely adjacent strips;
transversely resiliently extensible moving means for receiving the strips formed by said forming means: and
driving means for moving said moving means to convey said strips from said forming means to an output, said strips being spaced from each other transversely to the direction of movement of said moving means, said transversely resiliently extensible moving means comprising a plurality of sections each comprising a plurality of resiliently extensible cord-like elements spaced from each other in the direction of movement of said means and extending in substantially parallel relation to each other transversely to the direction of movement of said moving means, the resiliently extensible cord-like elements of each of said sections being stretched transversely to the direction of movement of said moving means to increasing lengths as their distance from said forming means increases.

3,161,156
EGG-SHAPED GELATIN MOLDING SYSTEM
Harry J. Batista and Americo J. Guerriero, both of 1961 Prospect Ave., New York, N.Y.
Filed July 27, 1961, Ser. No. 127,235
6 Claims. (Cl. 107—19)



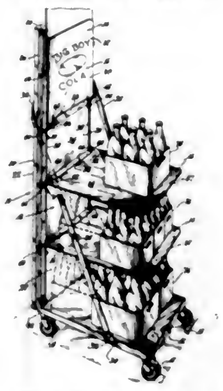
1. A gelatin egg molding system comprising a stand having vertical parallel laterally elongated side legs and an elevated platform mounted on said legs having end portions extending beyond said legs and said platform having a plurality of spaced openings arranged in parallel rows with downwardly convergent beveled edges and a plurality of ovular-shaped molds, each ovular shaped mold having split halves joined together on a plane transverse to the major longitudinal axis of the mold and having an inlet opening at one end to permit a liquid gelatin composition to be poured into the mold, each said mold having an upper half with a depending inside telescoping portion and a lower half with an upper outside telescoping portion and said platform being spaced by said legs so that the lower side of the lower half portions are substantially above the lower ends of the legs, and said spaced openings each having an upwardly beveled portion contacting the lower half portion of each mold.

3,161,157
APPARATUS FOR PRODUCING COMESTIBLES
Edward W. Fries, Baltimore, Md., assignor to DCA Food Industries Inc., New York, N.Y., a corporation of New York
Filed Sept. 14, 1961, Ser. No. 138,074
17 Claims. (Cl. 107—29)



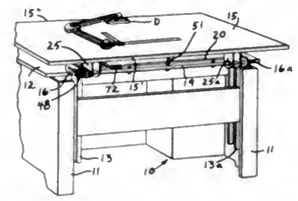
1. A dough forming apparatus comprising a nozzle having a discharge opening formed therein, means for extruding dough through said discharge opening, a dough gate and severing member, means reciprocating said gate and severing member across said discharge opening, and means directing a stream of high velocity air having a component in the direction of reciprocation of said severing member across a zone along the underface of said severing member.

3,161,158
DISPLAY RACK WITH VERTICALLY ADJUSTABLE SHELVES
Emanuel R. Lurey, Skokie, Ill., assignor to E. R. Lurey Company, Chicago, Ill., a corporation of Illinois
Filed May 2, 1963, Ser. No. 277,566
3 Claims. (Cl. 108—2)



1. A display device which comprises a stand including a base and an upright wall, said wall having a front side facing said base and two upwardly extending ends, upwardly extending channel means on each of said ends, and upwardly extending groove means on said front side, a plurality of partitions, a hinge rod journalled on each partition, and hinge spring means mounted on said rod to engage said partition, said rod having opposite ends slideably received in said channel means and extending horizontally for adjustably mounting said partition on said wall adjacent said front side, said partition being hingedly movable on said rod about a horizontal axis between a position extending over said base and a retracted position alongside of said wall, said spring means being received in said groove means for biasing said partition into said retracted position when unrestrained, said spring means frictionally engaging said groove means while being slideable therein to hold said partition in place while permitting forcible adjustment thereof, whereby individual superposed layers of articles may be supported on said base and said partitions in their extended positions with each partition seated on the layer therebeneath, and each partition moves to its retracted position when the layer thereon is removed.

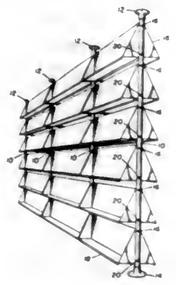
3,161,159
COUNTERBALANCED TILTABLE TABLE
Victor J. Kritske, Sheboygan, Wis., assignor to Mayline Company, Inc., Sheboygan, Wis., a corporation of Wisconsin
Filed Dec. 19, 1963, Ser. No. 331,865
8 Claims. (Cl. 108—2)



1. A drafting table comprising;
a base having first and second spaced supports;
a drafting board having mounting brackets adjacent opposite ends extending laterally from the underside of the board;
a tube rotatably mounted in said first and second spaced supports and extending horizontally therebetween;
said tube being non-rotatably secured to each of said mounting brackets to substantially equalize the torque applied to the mounting brackets and thereby minimize twisting of said board, said tube being spaced laterally from the underside of the board to pivotally support said board for movement about the axis of said tube between a generally horizontal position and a generally upright position, said tube being located relatively closer to the side edge of said board that is lowermost when the board is upright whereby the board is normally overbalanced as it approaches said horizontal position, the offset between the board and the tube axis causing the board to be normally overbalanced as it approaches said upright position;
a torque applying spring disposed inside said tube;
means non-rotatably attaching one end of said spring to the tube intermediate the ends of the latter to apply the torsion in the spring to the tube;
spring anchor means attached to the other end of the spring for angularly adjustably anchoring the other end of the spring on one of said supports;
said spring anchor means being attached to said support in a position to apply a twist in said spring, when the board is in said horizontal position, which twist is on one direction to yieldably urge the board up from its horizontal position and is less than one-quarter turn from the normal undistorted position of the spring whereby the twist in the spring decreases as the board is raised and reaches zero twist when the board reaches a position intermediate said horizontal and upright positions and the twist then increases in the other direction to yieldably oppose movement of the board toward its upright position;

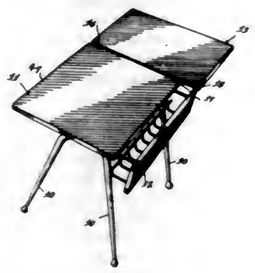
and selectively operable means for locking said board in different angularly adjusted positions between said horizontal and upright positions.

3,161,160
LIBRARY SHELVING SYSTEM
Robert A. Wilson, 3315 Daniels, Dallas, Tex.
Filed Nov. 27, 1961, Ser. No. 155,153
4 Claims. (Cl. 108—6)



1. A library shelf which comprises:
(*a*) a back panel and a bottom panel disposed at right angles to the back panel with outwardly flaring end panels connected to said back panel at the ends thereof and supporting said bottom panel at the ends thereof;
(*b*) a longitudinally extending trough formed in said bottom panel at its juncture with said back panel; and
(*c*) rearwardly and downwardly extending hook means attached to said back panel at the upper extremity thereof.

3,161,161
DROP LEAF DESK
La Verne H. Reinke, Fort Atkinson, Wis., assignor to Brunswick Corporation, a corporation of Delaware
Filed Mar. 22, 1962, Ser. No. 181,739
8 Claims. (Cl. 108—81)



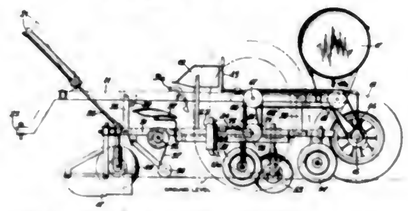
1. Drop leaf furniture comprising, a generally horizontal stationary top having a lower face and an undercut beveled edge, a drop leaf having a lower face and an undercut beveled edge extending along said top beveled edge, means hingedly mounting said leaf on said top for movement of said leaf between a compact position depending from said top, a work surface position generally coplanar with said top and an elevated position extending upwardly from said top, means for selectively and releasably holding said leaf in any of said positions including bracket means having spaced plates secured to and depending from said top, a pair of pivotally connected first and second link members having opposite ends, said first link member being snugly received between and pivotally connected with said bracket plates and said second link member being pivotally connected with said leaf, latch means including a detent mechanism and cooperating openings in said first link for releasably retaining said leaf in selected position, said detent mechanism including a detent rod having a shank generally parallel said beveled edges and underlying said top, an end of said shank slidably extending through at least one of said bracket plates and one of said link openings, and an opposite end of said shank near the periphery of said top having a loop including an offset at said shank and defining a handle spaced downwardly a substantial distance from said top face, a mounting plate secured to said top and underlying said loop to retain the shank on the top, flanges spaced apart in the direction of said shank and extending from the body toward the top face and receiving the loop offset therebetween for limiting movement of said detent rod in the direction of said shank, and resilient means urging said detent into one of said link openings.

3,161,162
FURNACE CONSTRUCTION
Harry P. Homolya, Mexico, Mo., assignor to A. P. Green Fire Brick Company, Mexico, Mo., a corporation of Missouri
Filed July 27, 1961, Ser. No. 127,348
6 Claims. (Cl. 110—99)



4. In an industrial furnace arch formed of molded castable or plastic refractory material which hardens upon heating of the furnace, said furnace having a framework, said arch construction comprising a series of anchor tile embedded in said refractory material to provide means for suspending it from said framework, said anchor tile each comprising an elongated, four-sided refractory block which is substantially rectangular in cross section throughout its length, said block having a head at one end and a bottom at the other end and a body portion extending between the head and bottom, said body portion tapering in cross-section from a minimum size at said head to a maximum at said bottom, said head being larger in cross-section than said body portion at the junction therewith to provide a downwardly facing shoulder on at least a pair of opposite sides thereof, hangers for connecting said tile to said framework each comprising a pair of U-shaped metal members having the bottoms of the U's bent inwardly to form shoulders to engage said downwardly facing shoulders on the head of said tile blocks, metal rod members extending between and secured at opposite ends to a leg of each said U-shaped member, said rod members providing means for supporting the U-shaped members and anchor tile blocks on said framework.

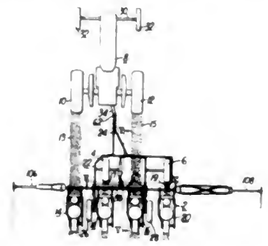
3,161,163
AGRICULTURAL TRANSPLANTER FOR USE WITH PLASTIC FILM MULCH
Robert R. Cosner, South Charleston, and Gene Le Roy, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 2, 1961, Ser. No. 142,370
2 Claims. (Cl. 111—3)



1. An agricultural seedling transplanter comprising, in combination, a wheel-supported first frame adapted for towing; a selectably retractable and extendable second frame suspended from said first frame; means to selectably extend said second frame into an operating position and retract said second frame from said operating position; furrow opener means mounted on said second frame and adapted to open a longitudinal planting aperture in soil to be palnted; further furrow opener means mounted on said second frame and disposed to open a pair of side furrows parallel to said planting aperture, each furrow of said pair of side furrows being spaced approximately equidistant from said planting aperture; roller means suspended from said second frame and arranged to apply an elongate plastic film mulch, having substantially parallel lateral edges, longitudinally on the soil over the side furrows and the planting aperture; tamping wheel means suspended from said second frame and disposed to impress the lateral edges of said plastic film mulch into said side furrows; side furrow closing means suspended from said second frame and arranged to close the side furrows over the lateral edges of the plastic film mulch; means mounted partly on said first frame and partly on said second frame for periodically opening the film mulch at spaced intervals above the planting aperture and concurrently depositing a seedling into each opening and releasing the seedling in place in the planting aperture during a time when the lateral edges of the plastic film mulch adjacent to each film mulch opening are being impressed into the side furrows; valve means mounted on said second frame and adapted to deposit a metered quantity of water into each film opening and soil thereunder following each seedling deposit; and wheel means suspended from said second frame and disposed to compact the soil around seedling roots following seedling and water deposit.

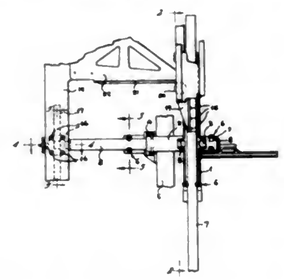
3,161,164
PLANTER
Willard H. Tanke, La Crosse, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 1, 1961, Ser. No. 106,623
3 Claims. (Cl. 111—52)

1. In an implement that can be used for either conventional or wheel track planting and that is adapted to be propelled by a tractor, the combination comprising: a frame including front and rear members connected by side members; four planter units; individual means to releasably clamp an individual planter unit to said rear member of said frame; each of said planter units being relatively adjustable along said rear member to plant rows of selected widths; a hitch member; a pivot member pivotally connecting said hitch member to said tractor; means to releasably clamp said hitch member to said front member, said means being releasable to permit said frame to be positioned relative to said tractor to place a planter unit in each rear tractor wheel track; first and second packer wheels, each having an axle; first and second support members carried by said frame, and positioned between said side members, the distance between said support members being the same as the distance from said side members to their adjacent support members; individual hangers; attaching means carried by each of said side and support members to removably connect said hangers to said side and support members, the axle of said first packer wheel being rotatably received in the hangers carried by one of said side members and its adjacent support member; said axle of said second weighted packer wheel being rotatably received in the



hangers carried by the other side member and its adjacent support member; said attaching means being constructed to permit attachment of said hangers in a position to permit the axle of one of said packer wheels to also be supported between said support members; releasable means carried by each packer wheel to fix said packer wheel relative to its axle, said means being releasable to permit said packer wheel to slide axially along its axle; each packer wheel being movable along said axle to a position ahead of and in line with a planter unit, said packer wheels being weighted to form wheel tracks for the two units that do not run in the rear tractor wheel tracks; said packer wheels being removable from said frame to permit conventional planting.

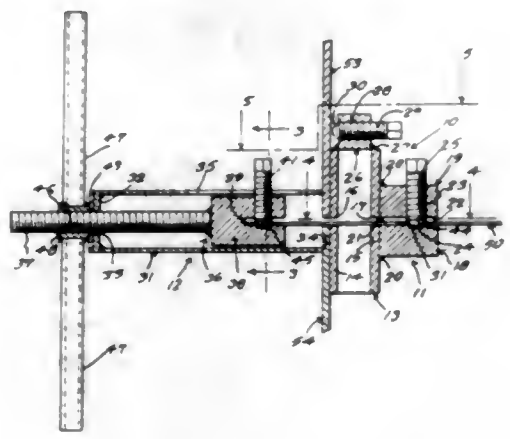
3,161,165
DEVICE FOR GUIDING THE FRAME IN AN EMBROIDERY MACHINE
Ercole Comerio, Busto Arsizio, Varese, Italy, assignor to Metalmeccanica S.p.A., Busto Arsizio, Italy
Filed Feb. 13, 1961, Ser. No. 88,985
Claims priority, application Italy, Sept. 7, 1960, 6,427
4 Claims. (Cl. 112—90)



1. A device for guiding the vertical and horizontal displacements of the movable workframe of an embroidery machine comprising a vertical guide and a horizontal guide fixed against movement and connected together, a vertical slide carried by said vertical guide for vertical

movement, a horizontal slide carried by said horizontal guide for horizontal movement, first cooperating means carried by said vertical slide and said frame for supporting and controlling the vertical position of said frame while permitting freedom of horizontal movement thereof, and second cooperating means carried by said horizontal slide and said frame for supporting and controlling the horizontal position of said frame while permitting freedom of vertical movement thereof, said first cooperating means including a roller carried by said vertical slide and having an axis of rotation disposed normal to said horizontal slide, and a horizontal bracket carried by said frame parallel to said horizontal slide and riding on said roller, whereby to allow free horizontal movements of the frame in the direction of said horizontal guides.

3,161,166
SHEET ALIGNING CLAMP
Harold E. Erwin, 2117 Missouri St., Keokuk, Iowa
Filed Feb. 14, 1963, Ser. No. 258,475
1 Claim. (Cl. 113—99)



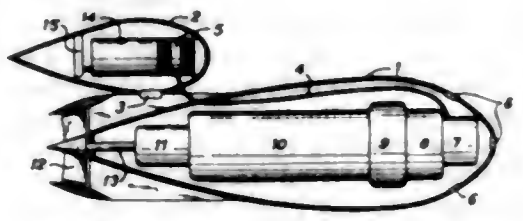
An implement for holding metal plate elements correctly aligned for fabricating comprising an elongated nonelastic connecting element adapted to extend freely through a gap between adjacent edges of two plates for connecting first and second implement sections disposed on opposite sides of said plates, said first implement section including an abutment member having a side adapted to abut corresponding sides of the plate and extending across said edges, said abutment member having a slot aligning with the gap between said edges and through which a part of the connecting element extends, anchoring means secured to and projecting from an opposite side of said abutment member and in which the connecting element is anchored at any desired distance from an end of the connecting element, said second section including an abutment member having a portion engaging flush against the other sides of the plates and defining an opening through which said end of the connecting element extends, a manually actuated pulling unit supported by said abutment member of the second section including means for detachably securing said end of the connecting element thereto, said pulling unit including a manually actuated part for exerting a pulling force on said end of the connecting element in a direction axially of the connecting element for drawing said abutment members toward one another for clamping the plates immovably therebetween and in alignment with one another, and means carried by said first mentioned abutment member and manually adjustable for displacing one of said plates away from the first mentioned abutment member and toward said second mentioned abutment member for positioning the sides of the plates engaged by the second mentioned abutment member in alignment with one another.

3,161,167
METHOD AND MEANS FOR REDUCING HYDRODYNAMIC NOISE
Murray H. Silverman, Washington, D.C., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 14, 1963, Ser. No. 258,971
4 Claims. (Cl. 114—20)



1. The method of reducing the hydrodynamic noise level of an underwater torpedo having at least one hydrofoil, said method including the step of roughening the surface area of such hydrofoil adjacent the trailing edge thereof so as to disturb the fluid flow over such surface when said torpedo is in motion, the said surface area of the hydrofoil being roughened by applying a granular substance thereto as an outer coating.

3,161,168
SUBMARINE SELF-PROPELLING DEVICE
Dimitri Issaiewitch Rebikoff, New York, N.Y., assignor to Loral Electronics Corporation, a corporation of New York
Filed Sept. 28, 1961, Ser. No. 141,425
3 Claims. (Cl. 114—21)



1. In combination with a principal hull adapted for self-propelled underwater travel including a hydro-acoustic transducer and detection means connected to said transducer to produce an actuating signal upon presentation of a predetermined underwater sound to said transducer comprising in combination:

(*a*) a buoyant self-emersion submarine hull,

(*b*) attachment means rigidly detachably securing said principal and self-emersion hulls,

(*c*) means connected to the detection means to release said attachment in response to said actuating signal,

(*d*) a radio transmitter connected to said self-emersion hull and adapted to emit an information signal upon emersion of said self-emersion hull,

(*e*) a deformable insulated electrical conductor extending between the interiors of said hulls,

(*f*) a radio receiver mounted to said self-emersion hull and connected to said electrical conductor, said reception means being adapted to receive a command signal from without said hulls, and

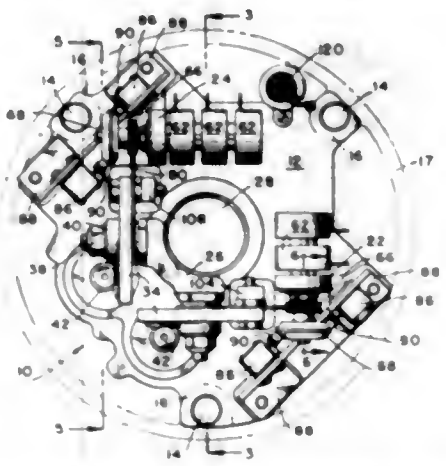
(*g*) said radio transmitter and radio receiver including a common antenna normally locked in a collapsed condition, means connected to said antenna to erect the same after said antenna is unlocked, locking means for said antenna attached thereto, including first locking means released by contact with water for a predetermined time and second locking means released upon exposure to a pressure less than a predetermined minimum pressure approximating atmospheric pressure whereby said antenna will be extended only after both a predetermined interval of submersion of said self-emersion hull and substantially upon emersion thereof from the water,

(*h*) means connected to said electrical conductor within said principal hull to control said principal hull.

3,161,169
TORPEDO STEERING CONTROL UNIT

Edward P. Beckwith, Adams, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 10, 1962, Ser. No. 243,684
6 Claims. (Cl. 114—23)



1. Unitary steering actuator apparatus for rotating aligned pairs of rudder shafts of a torpedo which are disposed perpendicular to each other, which apparatus may be bench tested as a unit outside of the torpedo and thereafter bodily inserted into and secured to the tail cone of the torpedo, comprising;

(*a*) a frame member, having means for detachably securing it to the tail cone and forming its sole support within the tail cone,

(*b*) said frame member having a central aperture through which a torpedo propeller drive shaft may extend,

(*c*) a pair of segmental gears supported by said frame member for rotation about perpendicular axes and parallel with the rudder shaft axes,

(*d*) a pair of reversible electric motors supported by said frame members having driving shafts disposed parallel with the torpedo axis, each shaft having a worm gear meshing with a segmental gear and adapted to lock a segmental gear from rotation when the worm gear is stationary,

(*e*) a link pivotally connected to each segmental gear and extending rearwardly, its rear end adapted to be pivotally connected to one of the pairs of rudder shafts, and

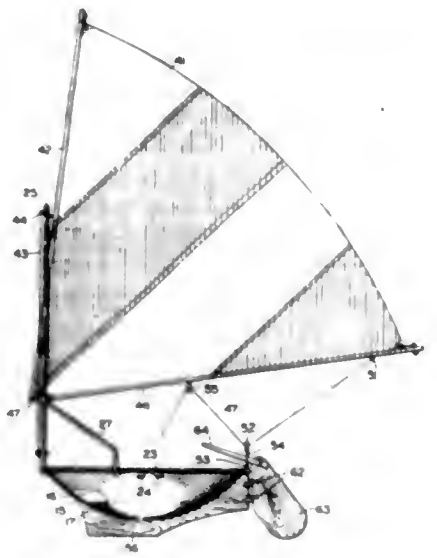
(*f*) a rotatable gear driven potentiometer carried by the frame member for each of said segmental gears for indicating the angular position of each pair of rudder shafts.

3,161,170
SAILING VEHICLE

Peter A. Latham, Hawthorne Lane, Concord, Mass.

Filed Jan. 11, 1963, Ser. No. 250,934
11 Claims. (Cl. 114—39)

1. A vehicle comprising, means defining a hull of elliptical cross section in its normally horizontal plane having a convex outside face, an inside concave face and a circumferential lip defining a gunwale at the perimeter of said convex face, a flexible deck sheet of material covering the opening exposing said inside concave face for supporting passengers above said hull, means for securing the perimeter of said sheet over said gunwale separated from said concave face by said gunwale so that the weight of objects on said sheet toward said concave face increases the pressure exerted on said lip by the edge of said sheet, at least one planar keel member generally perpendicular to said convex face outside the volume enclosed by said hull and said sheet, mast means extending from said gunwale substantially symmetrical about a plane perpendicular to and bisecting said deck sheet which plane includes the normal fore-aft axis of said vehicle, a sail, and means incuding said mast means for supporting said sail

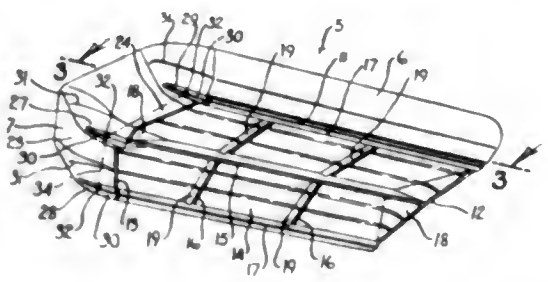


in a position for receiving wind to move said vehicle, said deck sheet, said hull and said means for securing coacting to define a substantially fluid tight volume within said sheet and said hull.

3,161,171
AIR CUSHION VEHICLE

Olle Ljungström, Lidingo, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

Filed Dec. 11, 1962, Ser. No. 243,803
Claims priority, application Sweden Dec. 14, 1961
4 Claims. (Cl. 114—67)



4. An air cushion vehicle adapted to be supported at a distance above the surface of land or water by downward displacement of air, said vehicle being characterized by:

(A) a body having a downwardly opening air outlet extending transversely thereacross near its front;

(B) a bow portion on the body in front of said air outlet; and

(C) at least three hydrodynamic lifting elements on said bow portion,

(1) each of said lifting elements being elongated lengthwise of the vehicle, terminating at its rear at said air outlet, and projecting downwardly substantially below the remainder of the bow portion,

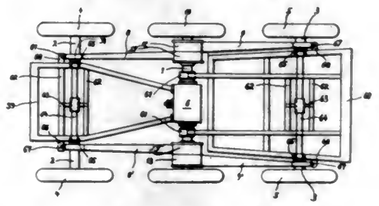
(2) said lifting elements being located at spaced intervals transversely across the vehicle and being disposed symmetrically with respect to the longitudinal centerline of the vehicle, and

(3) said lifting elements being so arranged that their centers of hydrodynamic lift are on a V shaped line which is spaced forwardly of said air outlet and which has its point foremost and on the longitudinal centerline of the vehicle.

3,161,172
SIX DRIVEN WHEEL VEHICLE WITH FRONT AND REAR WHEELS ARTICULATED ABOUT A TRANSVERSE AXIS

Karl Kässbohrer, Ulm (Danube), Germany, assignor to Firma Karl Kässbohrer Fahrzeugwerke G.m.b.H., Ulm (Danube), Germany

Filed May 17, 1960, Ser. No. 29,705
Claims priority, application Germany, June 6, 1959, K 37,929; Mar. 11, 1960, K 40,141
6 Claims. (Cl. 115—1)



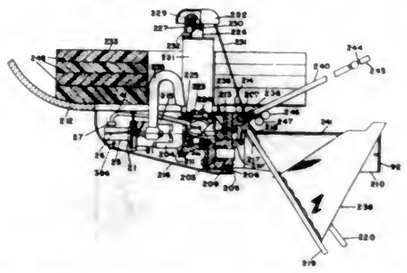
2. An articulated vehicle comprising, in combination, a central through driving axle extending transversely of the vehicle from one side to the other thereof; a first pair of wheels each secured to a respective end of said central axle; a pair of cylindrical casings each surrounding said central axle adjacent a respective wheel; means securing each of said casings against rotation relative to the vehicle; said casings rotatably supporting said central axle; a pair of relatively elongated substantially rectilinear hollow front swing arms each having, at one end, bearing means in engagement with a respective one of said casings for pivotal mounting of said front swing arms on said casings, each front swing arm extending forwardly of the vehicle and being oscillatable, independently of the other front swing arm, in a vertical direction; a pair of relatively elongated substantially rectilinear hollow rear swing arms each having, at one end, bearing means engaging a respective one of said casings for pivotal mounting of said rear swing arms on said casings, each rear swing arm extending rearwardly of the vehicle and each being oscillatable, independently of the other. in a vertical plane; a pair of front wheels each mounted in a respective front stub axle, each stub axle being secured to a corresponding free end of a respective one of said front swing arms; a pair of rear wheels each rotatably mounted on a respective rear stub axle secured to a corresponding free end of a respective one of said rear swing arms; a pair of drive sprockets secured to said central axle within each of said casings; drive chain means connecting one drive sprocket of each pair to the associated front stub axle and the other drive sprocket of each pair to the associated rear stub axle, each chain means extending through a pair of arcuately extending apertures in the bearing means of the associated front and rear swing arms and through an arcuately extending and elongated aperture in the associated casing; and a device for selectively moving one of said pairs of front and rear swing arms vertically relative to the other pair thereof; said swing arms constituting the sole means structurally supporting said stub axles for vertical oscillation about said central axle.

3,161,173
WATER CRAFT AND PROPULSION MEANS THEREFOR

John J. Horan, 420 Quigley Ave., Willow Grove, Pa.

Filed Dec. 31, 1962, Ser. No. 248,426
13 Claims. (Cl. 115—70)

1. A watercraft having a fore-to-aft centerline and comprising:
an internal combustion engine located at the bottom level thereof along said centerline;
a generally horizontal output power shaft extending from said engine along said centerline;
a screw propeller mounted on said shaft;
an elongated water planing platform structure extending forward and aft of said engine,

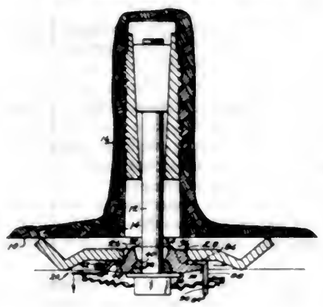


said engine being mounted upon said structure and depending at least in part below said structure and below the water level of said craft,
said engine being immersed in water for cooling itself and ballasting said craft;
and a buoyant element surmounting said platform structure.

3,161,174
MINE ROOF BOLT TENSION INDICATOR

Henry Harrison, Frost Creek Drive, Locust Valley, N.Y.

Filed Aug. 6, 1963, Ser. No. 300,227
16 Claims. (Cl. 116—114)

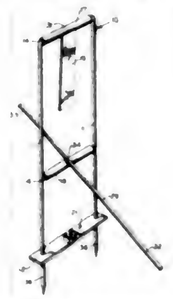


1. In a mine roof bolt assembly having an elongated bolt with an expansible anchoring means at its one end adapted for insertion in an upwardly extending hole in a mine roof with anchoring means end foremost, the other end of said bolt having head means thereon, the combination comprising: a bearing plate carried by said bolt adjacent the mine roof; first means carried by the bolt between the bearing plate and the bolt head for providing a visual indication of the application of tensile stress above a predetermined value to the bolt; the first indicating means comprising a metallic strip having a free end extending generally horizontally and outwardly from the bolt and arranged to be bent downwardly by stress induced movement of the bolt head toward the bearing plate, and including an overload tension indicating flag slidably supported on the upper surface of the metallic strip and arranged to fall therefrom upon the downward bending of the metallic strip; and second means carried by the bolt between the bearing plate and the bolt head for providing a visual indication of the lowering of tensile stress incident on the bolt below a predetermined value, the second indicating means including a pre-loaded wedge adapted to pop out and fall away from the bolt upon the movement of the bolt head away from the bearing plate by a predetermined amount, thereby indicating a loss of tensile stress incident on the bolt.

3,161,175
WATER FLOW INDICATOR

David L. Taylor, 1184 Arroyo Drive, Pebble Beach, Calif.

Filed Mar. 20, 1963, Ser. No. 266,756
4 Claims. (Cl. 116—118)

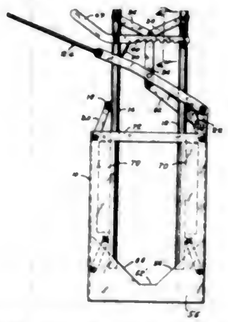


1. In an apparatus for indicating the presence of water the combination comprising a substantially vertical body member, means at the lower end of said body for penetrating the ground to maintain a substantially vertical operative position, means for retaining water soluble solid material in a small confine in said body above the penetrating holding means, a water soluble solid material in said confine, an elongated rod having one end in contact with and restrained by said material and positioned to penetrate said confine by its own gravity upon the dissolving of said material, and separate signal means offset and rotatably mounted at the upper end of said body member for free rotation in a vertical plane engageably set in an upward position and restrained against gravity by the other end of said rod when said rod is restrained from penetrating said confine.

3,161,176
ANIMAL CATCHING AND HOLDING MEANS

William Chester Derry, Bagley, Iowa

Filed May 10, 1963, Ser. No. 279,548
6 Claims. (Cl. 119—99)

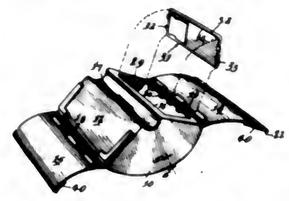


1. In an animal catching and holding means, comprising, in combination,
an open housing,
a first vertical jaw member in the opening of said housing,
a second vertical jaw member in the opening of said housing,
a link having one end hinged to said housing and its other end hinged to said first jaw member,
a second link having one end hinged to said housing and its other end hinged to said first jaw member,
a link having one end hinged to said housing and its other end hinged to said second jaw member,
a second link having one end hinged to said housing and its other end hinged to said second jaw member,
a third link hinged at one end to one of said jaw members,
a third link hinged at one end to said second jaw member and its other end hinged to the free end of said first mentioned third link,
an elongated link hinged at one end to the hinged connection of said two last mentioned third links and extending downwardly thereof,
a link having one end hinged to said last mentioned link, and its other end hinged to said housing,
and a lever having one end hinged to said housing and its central area pivoted to the link that is hinged to said first and second mentioned third links.

3,161,177
BLOTTER HOLDER

Peter P. Gach, Evansville, Ind., assignor to U. O. Colson Company, a corporation of Delaware

Filed Apr. 23, 1962, Ser. No. 189,363
4 Claims. (Cl. 120—24)



2. A blotter holder comprising, a pair of ends shaped substantially like segments of a circle, an integral top cover portion forming two divergent, radially extending side panels, and a pair of curved portions forming the bottom of the device formed integrally with the outer edges of the top portion side panels by strips of material of reduced thickness to form a bendable joint, said curved portions having adjacent edges overlapping and means thereon interfitting with portions of said ends to lock the curved portions in place.

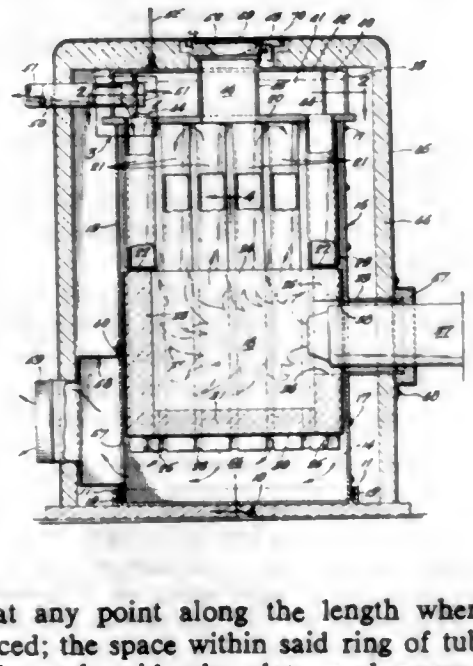
3,161,178
LIQUID HEATER

Frank J. Smith, 7352 Limekiln Pike, Philadelphia 38, Pa.

Filed Apr. 4, 1963, Ser. No. 270,574
4 Claims. (Cl. 122—318)

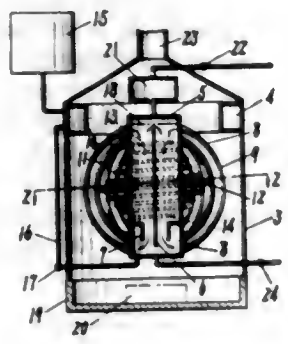
1. A liquid heater, comprising in combination: a vertical circumferential supporting frame; a horizontal tube plate secured to the tube frame at a distance above its lower end; said tube plate having a peripheral ring of tube holes near but spaced from its outer peirphery; a plurality of liquid tubes secured in the holes of the tube plate and extending downward in a ring therefrom; the tubes being closed at the lower end; means above said tube plate defining a liquid space; an annular baffle plate in said liquid space above and intermediate the width of said tube holes and dividing said liquid space into inner and outer liquid spaces; inlet and outlet liquid flow pipes connected respectively with said inlet and outlet liquid spaces; means defining a fire box below said tube plate within said ring of tubes; enclosure sheet means closely surrounding the outer side of said liquid tubes which confines fuel combustion gases within the ring of liquid tubes and closes the space on the outer side of said en-

closure sheet means against the flow of combustion gases; said liquid tubes being fully open and free from partition means inside to provide for free circulation of liquid therein down the covered cooler outer side which is not exposed to heating combustion gases and up the heated



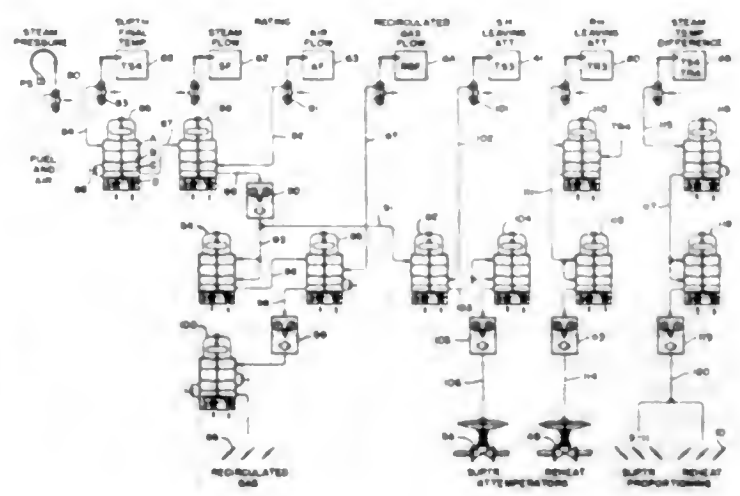
inner side at any point along the length where return flow is induced; the space within said ring of tubes being fully open beneath said tube plate; and means defining outflow space for fuel combustion gases adjacent the lower end of said tubes.

3,161,179
WATER-TUBE BOILER
Sojin Matsumoto, 540 Gokurakuji, Kamakura-shi, Kanagawa-ken, Japan
Filed Oct. 24, 1962, Ser. No. 232,815
1 Claim. (Cl. 122—321)



A water boiler for generating low pressure steam or for supplying hot water, comprising a boiler casing, an annular water pre-heating jacket provided around the upper portion of the interior of said boiler casing, a vertical convection cylinder in said boiler casing, a pipe connecting said water pre-heating jacket to said convection cylinder, a vertical diametrical baffle plate coaxially maintained in said convection cylinder, two symmetrical angular auxiliary baffle plates each mounted extending from said cylinder towards the vertical side of the lower part of said baffle plate and spaced from said vertical baffle plate, the lower ends of said angular baffle plates being located a little higher in said cylinder than the lower end of said vertical baffle plate, a plurality of vertical semi-circular water tubes positioned exteriorly of said convection cylinder and connecting vertically and radially the upper and lower parts of said convection cylinder with each other, and a plurality of inclined spiral water tubes in the space between the innermost semi-circular water tubes and said convection cylinder and extending through said convection cylinder interconnecting the spaces formed between said vertical baffle plate and said convection cylinder.

3,161,180
CONTROL SYSTEMS
Edwin Durham, Wadsworth, and Harry E. Weaver, Cleveland, Ohio; said Durham assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey; and said Weaver assignor to Bailey Meter Company, a corporation of Delaware
Original application Nov. 26, 1952, Ser. No. 322,646, now Patent No. 3,028,844, dated Apr. 10, 1962. Divided and this application July 7, 1961, Ser. No. 121,780
19 Claims. (Cl. 122—479)

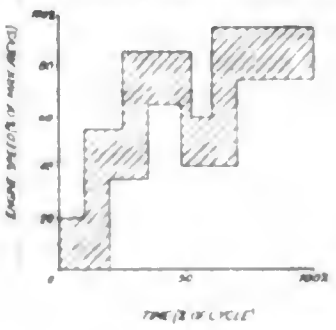


1. The method of operating a vapor generating unit having dual primary vapor circuits and dual reheat vapor circuits feeding convection superheating surfaces and convection reheating surfaces respectively, the superheating and reheating surfaces disposed respectively in divided and separate parallel gas flow paths from a common combustion zone, the superheater and reheater having generally similar uncontrolled load-temperature characteristic curves with different degrees of slope; a method including introducing fuel and air for combustion into the combustion zone spaced from the heating gas outlet at a rate to satisfy demand upon the unit, varying the heat availability of the heating gases leaving the combustion zone to the parallel paths to maintain superheat and reheat temperatures at predetermined values through a load range below a predetermined control point load in accordance with the preponderance of a plurality of operational variables of one of the dual streams of primary vapor over the same variables of the other stream of primary vapor, and limiting final superheated vapor temperature by liquid spray attemperation in accordance with an index of rating as well as superheat vapor temperature leaving the attemperator and superheat final vapor temperature.

3,161,181
PROCESS FOR RUNNING-IN INTERNAL COMBUSTION ENGINES
Erich Weise, Hamburg-Harburg, Germany, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed May 17, 1963, Ser. No. 281,140
Claims priority, application Germany, May 25, 1962, B 67,401
10 Claims. (Cl. 123—1)

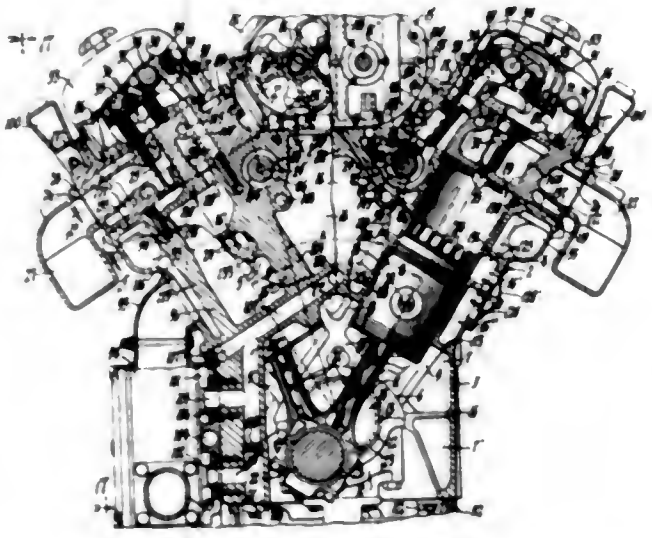
1. A method of running-in an internal combustion engine, in which a poly-oxo aluminium acylate is introduced into the cylinders of said engine, and throughout said in-

troduction the engine is operated without load; the poly-oxo aluminium acylate being introduced into the cylinders



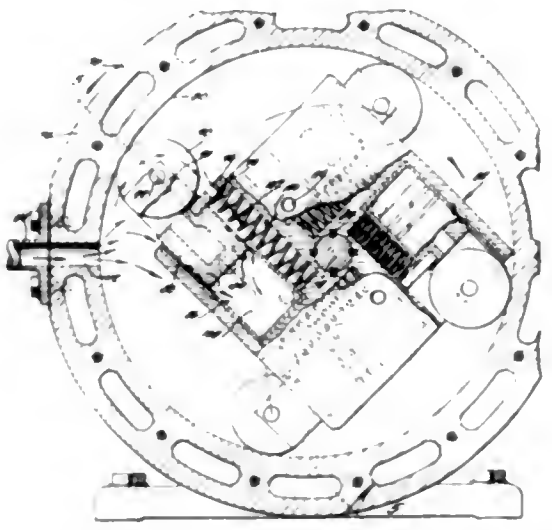
of said engine by running the engine on a fuel in which it is dissolved.

3,161,182
TWO-CYCLE INTERNAL COMBUSTION ENGINE
Harold H. Albinson, Detroit, George P. Hanley, Northville, Kenneth L. Hulsing, Plymouth, and Harvey G. Humphries and John J. May, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 11, 1960, Ser. No. 1,488
24 Claims. (Cl. 123—32)



1. A two-stroke uniflow scavenged interval combustion engine comprising a cylinder block defining a crankcase with two rows of cylinders inclined therefrom and forming a central scavenging air receiver extending longitudinally between said cylinder rows with branch passages extending laterally therefrom between and around the several cylinders, two cylinder heads mounted on said cylinder block and cooperating with the upper ends of each of said cylinders to define expansible combustion chambers with pistons reciprocably mounted in each of said cylinders, each of said cylinders having a plurality of inlet ports formed circumferentially thereof intermediate its ends and controllable by reciprocation of said pistons to admit scavenging air from said laterally extending passages to the several expansible combustion chambers, a crankshaft spacedly journaled in said crankcase and having a plurality of crankpin carrying throws intermediate the spaced journaling thereof, said crankpins each being drivingly connected to pistons in laterally adjacent V'd pairs of said cylinders, each of said cylinder heads having exhaust passages therein, overhead valve means carried by each of said heads and operable to control said exhaust passages, overhead fuel injection means carried by each of said cylinder heads for sequentially introducing an oil charge to each of the several expansible combustion chambers, and two camshafts journaled in said cylinder block in spaced parallel relation to each other adjacent to and intermediate the cylinder head mounting upper ends of the several cylinder rows, the axes of said camshafts and of the crankshaft of the engine defining intersecting planes equiangularly disposed with respect to a plane common to the axes of the several cylinders of the adjacent cylinder row and to the longitudinal vertical plane of the engine.

3,161,183
ROTARY INTERNAL COMBUSTION ENGINE
Harry A. Leath, 21932 Standing Rock Road, Apple Valley, Calif.
Filed July 17, 1962, Ser. No. 210,435
4 Claims. (Cl. 123—43)

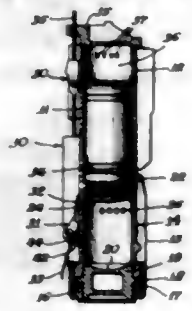


1. A rotary internal combustion engine comprising a casing having a pair of spaced end walls and a continuous side wall connecting the perimeters of said end walls together, a rotatable shaft journaled in said end walls, a rotor mounted on said shaft for rotation therewith, said rotor being provided with at least one bore extending inwardly from the perimeter of said rotor and terminating at a point spaced inwardly of said rotor perimeter, said bore being disposed tangentially with respect to said shaft, a piston slidably mounted in said bore, a continuous trackway extending about the interior of said casing, a roller carried on one end of said piston in rolling engagement with said trackways, a second bore disposed in communication with a respective first mentioned bore, a lug connected to said piston and disposed in said second bore, spring means provided in said second bore operatively connected to said lug for biasing said roller toward said trackway, there being an inlet in said casing for the admission of a fuel-air mixture and an outlet in said casing for the exhausting of combustion products, said rotor being provided with a port connecting in turn said inlet and said outlet with the portion of said rotor bore adjacent the other end of said piston, and ignition means in said casing for igniting said fuel-air mixture when admitted to said first bore portion.

3,161,184
DIESEL PILE HAMMER STARTING DEVICE
Dick J. Koftan, Cedar Rapids, Iowa, assignor, by mesne assignments, to Link-Belt Company, a corporation of Illinois
Filed May 10, 1962, Ser. No. 193,828
10 Claims. (Cl. 123—46)

1. In a diesel pile hammer having a body with a cylinder formed therein and a piston positioned within said cylinder for free movement and providing a compression chamber in the cylinder, the improvement which comprises, a source of low ignition temperature starting fuel, a valve associated with said body and having an outlet in open communication with said compression chamber and an inlet in communication with said fuel source, means maintaining said valve in a normally closed posi-

tion, and means for opening said valve to admit starting fuel to the compression chamber in response to a reduc-



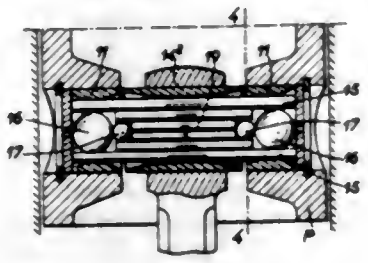
tion of the pressure within said compression chamber to a value below atmospheric pressure.

3,161,185

ELASTICALLY CONNECTED PISTONS FOR THE AUTOMATIC ADJUSTMENT OF VOLUMETRIC COMPRESSION RATIOS

Marcel Justinien, 20 bis Rue Jouvenet, and François de Chabot, 120 Rue du Bac, both of Paris, France

Filed Nov. 7, 1962, Ser. No. 235,941
Claims priority, application France, Nov. 17, 1961, 8,326; July 3, 1962, 8,481
17 Claims. (Cl. 123—78)



1. In combination with the combustion chamber and associated connecting rod of an internal combustion engine, the provision of a piston carried inside said combustion chamber and adapted to automatically adjust the volumetric ratio in the latter and comprising a body, a skirt rigid with said body and two diametrically opposed bosses rigid with the inner surface of the skirt near the outer end thereof and each provided with a radial aperture facing the other boss, and a piston pin fitted between the boss apertures, including an outer annular series of longer elastic rods, extending into the apertures formed in the piston bosses and the medial section of which is accommodated in the top of the connecting rod, an inner annular series of reinforcing elastic rods extending within the first annular series of rods and a ball fitted inside each end of said first annular series of rods to engage the latter tangentially and to form an axial abutment for the corresponding end of the inner series of rods.

3,161,186

METHOD AND MEANS FOR IMPROVING ACCELERATION OF SMALL ENGINES

Joseph V. Reichenbach and Robert G. Thompson, Milwaukee, Wis., assignors to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware

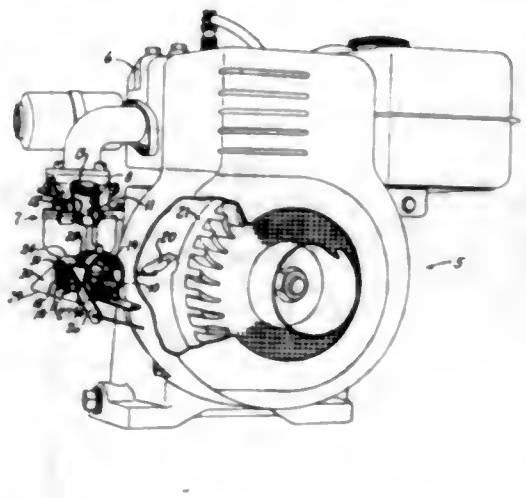
Filed Apr. 5, 1963, Ser. No. 270,950
3 Claims. (Cl. 123—119)

1. In an internal combustion engine having a blower which produces a stream of engine cooling air having a velocity that varies with engine speed, and a carburetor with a passage in the body thereof through which a combustible mixture of air and fuel flows to the engine with a throttle valve in said passage movable between open and closed positions for controlling the rate at which the combustible mixture flows to the engine:

(A) a choke valve in said passage to control the admission of air thereto, said choke valve being of the butterfly type and having a shaft which is journalled in the wall of said passage to mount the valve for free movement between defined closed and fully open positions;

(B) a weight eccentrically fixed to the choke valve shaft, gravity biasing the choke valve toward its closed position;

(C) a vane fixed to the choke valve shaft and located in the stream of cooling air to be responsive thereto and to move the choke valve toward its open position as the velocity of the air stream increases; and



(D) manually operable choke valve positioning means comprising

(1) a lever mounted for rotation about the axis of the choke valve shaft,

(2) a pair of angularly spaced apart opposing abutments on said lever, and

(3) an arm fixed to the choke valve shaft with it free end portion between said abutments to be engageable thereby so that by the adjustment of the lever the position and range of adjustment of the choke valve may be set,

adjustment of said lever in one direction to a first position effecting engagement between one of its abutments and said arm, to positively hold the choke valve in its closed position to facilitate starting, and adjustment of said lever in the opposite direction to a second position effecting engagement between the other abutment and said arm to move the choke valve to and hold it in a partially open low speed running position, to which position the choke valve freely moves in response to its gravity bias, whenever the engine slows down to its low running speed, so that the fuel-air mixture drawn into the engine upon sudden opening of the throttle valve while the engine is running at low speed, is sufficiently rich to enable rapid acceleration;

(E) means to limit the range of adjustment of said lever and define its said two positions; and

(F) means to releasably hold the lever in any position within its range of adjustment to which it may be manually moved.

3,161,187

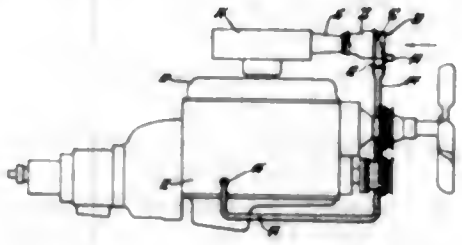
CRANKCASE VENTILATION CONTROL DEVICE

Leland C. Parker, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 14, 1964, Ser. No. 337,642
6 Claims. (Cl. 123—119)

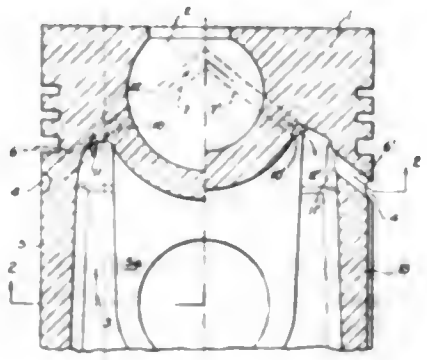
1. For use in combination with an internal combustion engine having a crankcase and an air inlet, a crankcase ventilation control device comprising tubular means adapted to be connected to said air inlet and defining a

flow path for the inlet air including connecting means on said tubular means defining an opening for admitting crankcase effluent into said flow path in response to vacuum created in said tubular means by engine operation,



said opening being subject to the impingement of a portion of said inlet air stream and adapted to utilize the ram effect of said inlet air stream to partially offset the effect of said vacuum.

3,161,188
PISTON FOR INTERNAL COMBUSTION ENGINES
Julius Liebel, Nurnberg, and Rudolf Maier, Stuttgart-Wellimdorf, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg Ag, Nurnberg, Germany, and Mahle Kommandit-Gesellschaft, Stuttgart-Bad Cannstatt, Germany
Filed Sept. 5, 1963, Ser. No. 306,947
Claims priority, application Germany, Sept. 8, 1962, M 54,176
4 Claims. (Cl. 123—41.39)



1. In a piston having a piston head, a combustion chamber in said head, a skirt attached to said head, and piston pin bosses extending within said skirt, cooling means comprising cooling fluid passageways upwardly inclined from a peripheral point on said skirt intermediate said bosses to a point in said head above said bosses and through the space within said skirt to form V-shaped passageways with each side of the V having one portion extending entirely through said skirt to said space and a second portion extending from said space into said head.

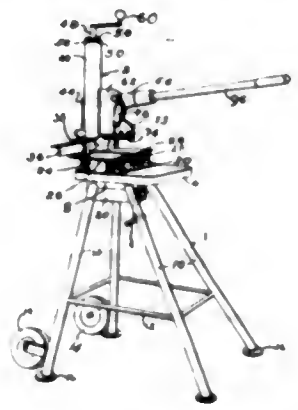
3,161,189
ARCHERY BOW AND METHOD OF FABRICATION
Sylvester Louis Chessman, Ellsworth, Mich., assignor to Morweld Steel Products Corporation, Ellsworth, Mich., a corporation of Michigan
Filed Sept. 8, 1961, Ser. No. 136,871
2 Claims. (Cl. 124—24)

2. In a take-apart bow wherein a limb retainer central handle member utilizes flexible retainer cap elements to lockably and flexibly retain the butt ends of limbs in elongate limb receiving rearwardly open channel openings provided therein, the combination comprising: limb members consisting of molded laminated layer elements and being configured for use in a take-apart bow having a central handle member; and a resin encapsulated butt end portion provided on each of said limb members, said butt



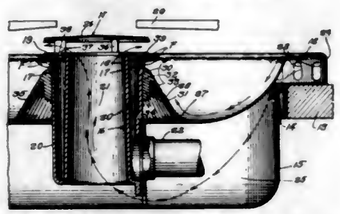
end portion formed by use of a substantially wedge-shaped filler member intermediate said laminate layer elements.

3,161,190
MASONRY CUTTER
Thomas H. Stephens, 300 SE. 6th, and James H. Stephens, 2204 W. 10th, both of Plainview, Tex.
Filed June 27, 1963, Ser. No. 291,034
7 Claims. (Cl. 125—23)



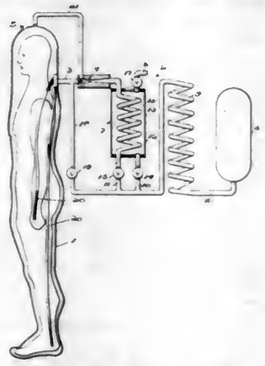
1. In a device for cutting masonry;
(*a*) a base,
(*b*) a standard secured to said base and upstanding therefrom,
(*c*) a tubular member slid over said upstanding standard in telescoping relation,
  (1) adjustment means to adjust said tubular member relative to the length of said upstanding standard,
(*d*) a divided, movable support table mounted on said base for supporting masonry thereon,
(*e*) a stationary cutter blade mounted on said base intermediate said divided table portions,
(*f*) a cutter blade mounted on said tubular member and being movable relative thereto,
(*g*) lever means pivotally mounted on said tubular member,
(*h*) linkage means interconnecting said lever means and said cutter blade movably mounted on said tubular member to move said cutter blade relative to said tubular member,
  (1) said stationary cutter blade being positioned in aligned relation with respect to said movable cutter blade, and
(*i*) resilient means mounted on said tubular member and being in connected relation with said movable cutter blade to normally urge said movable cutter blade away from said stationary cutter blade.

3,161,191
RANGE TOP
Eugene Stoligrosz and Delbert R. Baston, both of Hamilton, Ohio, assignors to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 11, 1962, Ser. No. 165,521
3 Claims. (Cl. 126—39)



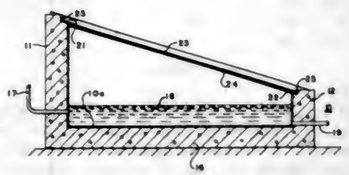
1. A range top structure comprising: a burner including an annular body defining a hollow wall provided with an upper end having burner ports; means for delivering combustible fuel through said hollow wall to said ports to provide a flame extending outwardly from said ports; a cooktop having an upwardly narrowing frusto-conical deflector portion circumjacent said wall and having an upper portion spaced below said upper end of the burner body; and an annular support encircling the burner body subjacent said ports and having a lower, first portion removably supported on said upper portion of the cooktop deflector and an upper, second portion removably supporting said burner body, said support being arranged to seal the cooktop to the burner body to preclude substantial air leakage and passage of dropped matter therebetween and defining an outer annular surface extending upwardly from said cooktop deflector to subjacent said burner ports, said upper portion of the cooktop deflector and said lower portion of the support having substantially the same diameter whereby said deflector and support define a substantially regular guide surface for guiding air flow smoothly upwardly from said cooktop to said ports.

3,161,192
AIR-CONDITIONED PROTECTIVE GARMENT AND AIR-SUPPLY-AND-CONDITIONING APPARATUS FOR THE SAME
Mark E. McCormack, Southboro, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 6, 1960, Ser. No. 74,207
8 Claims. (Cl. 126—204)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination, an air-impervious garment, and an air-supply-and-conditioning unit associated therewith, said unit comprising a container, pyrophoric material in the container, a pipe coil in the container in contact with the pyrophoric material, a liquid air-supply tank, a pipe leading from the tank and provided with two branches, one leading to the lower end of the pipe coil and the other emptying into the bottom of the container of pyrophoric material, and a pipe connection between the opposite end of the coil and the interior of said garment.

3,161,193
POOL-TYPE SOLAR HEAT AND ENERGY COLLECTOR
Richard J. Rowekamp, Springfield Township, Hamilton County, Ohio (440 Hilltop Lane, Cincinnati, Ohio)
Filed June 24, 1963, Ser. No. 289,988
2 Claims. (Cl. 126—271)



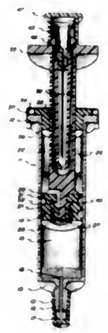
1. A heat accumulator for collecting solar energy in a liquid which comprises a pool having a base and walls extending upwardly from said base, transparent sheet means spanning the walls, said base and walls being formed of lightweight insulating concrete, an interior coating thereon comprising an inner layer of fine powdered grey-iron castings mixed with ammonia and water and an outer layer comprising finely divided coal dust and Portland cement to provide a dark inner face, means for introducing liquid into the pool to be heated by the sun and means for removing heated liquid from the pool.

3,161,194
HYPODERMIC SYRINGE
Samuel L. Chapman, 2814 Conner St., Port Huron, Mich.
Filed Feb. 4, 1963, Ser. No. 255,772
6 Claims. (Cl. 128—218)



2. A hypodermic syringe comprising in combination a cylindrical barrel having a closed end and an open end, a threaded opening through the closed end of the syringe barrel, an encasement chamber positioned in the barrel including a collapsible hollow cylinder and an inner end wall having an opening therethrough and an outer end wall secured to the opposite ends of the cylinder, means actuated by rotation of the chamber for securing the encasement chamber to the closed end of the barrel with the opening through the inner end wall and barrel end in alignment, a hollow needle and means for securing the hollow needle to the closed end of the barrel over the opening therethrough, means operable between the inner and outer end walls of the encasement chamber for preventing torque transfer to the collapsible portion of the encasement chamber on rotation of the inner end wall of the encasement chamber with respect to the lower end wall thereof with the encasement chamber in a collapsed position, a plunger having an inner end fitting within the open end of the barrel and means for securing the outer end wall of the encasement chamber to the inner end of the plunger against relative axial and rotational movement therebetween.

3,161,195
TWO-COMPARTMENT ASPIRATING HYPODERMIC SYRINGE
Arthur Sinclair Taylor, Spring Valley, and Ellsworth Roland Sandhage, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Jan. 29, 1963, Ser. No. 254,766
7 Claims. (Cl. 128—220)



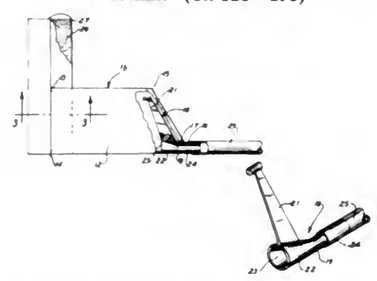
7. In a hypodermic syringe and two-compartment package, having one compartment for a solid component, and a separate compartment for a liquid component, a combination one-way valve and piston assembly comprising a resilient one-piece piston having at least one annular ring for sealing engagement with the barrel of a hypodermic syringe to divide the barrel into said two compartments, said piston having therein an axial passage and an annular plunger retaining groove in said passage, and coaxial with said passage, and at the forward end thereof, a resilient valve sleeve concentrically spaced inwardly from the main portion of the piston, and approximately axially the same length as the main portion of the piston; and a separate plunger extending from the rear of the piston, the forward end of the plunger having thereon a boss extending into the axial passage in said piston, and having on said boss a cooperating enlargement entering into and cooperating with the groove in the passage in said piston, thereby firmly retaining the piston on said plunger, the plunger boss having such size as to extend into and at least slightly expand the valve sleeve on the piston, said plunger having a slot therein, which serves as a liquid conduit, extending from the portion of the plunger behind the piston to the boss portion of the plunger inside of the resilient valve sleeve, whereby liquid flows between the sleeve and the boss for one-way forward flow, but which sleeve contracts on the boss, preventing reverse flow.

3,161,196
HYGIENIC DISPENSER APPARATUS
Samuel G. Berkow, Perth Amboy, N.J., assignor to Menlo Park Laboratories, Inc., Edison, N.J., a corporation of New Jersey
Filed Mar. 21, 1961, Ser. No. 97,261
4 Claims. (Cl. 128—225)



1. In combination, a bottle containing
a propellant gas and liquid to be discharged, said bottle having a neck,
a valve on said neck including a tiltable rigid outlet tube and means to open the valve when said tube is tilted.
a nozzle on and coaxial with said tube formed at the front end with discharge openings,
and at its rear end formed with a rearwardly and outwardly flaring portion, rigid with said nozzle,
said flaring portion terminating in a flange perpendicular to and coaxial with said nozzle and said flange having a reinforcing downwardly directed bead,
and reinforcing ribs extending rearwardly and outwardly along the flaring portion to lend rigidity to said portion, said flange and reinforcing ribs and bead enabling an operator with one hand to grasp the bottle and to finger engage the flange to tilt the nozzle.

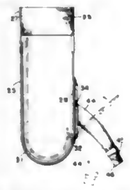
3,161,197
CATHETER
Wayne W. Glas, % Wayne County General Hospital, Eloise, Mich., and Charles J. Trick, 31811 W. Chicago Blvd., Livonia, Mich.
Filed July 2, 1962, Ser. No. 206,879
4 Claims. (Cl. 128—295)



1. A catheter adapted to be secured to the human penis comprising a pliable, foldable bag portion having an inlet opening at one end and an outlet opening at the other end, said outlet opening being substantially smaller than said inlet opening, a tube for conducting urine away from said bag portion, a member substantially disposed within said bag position, said member having an apertured portion at one end and an integrally formed flat wing shaped segment at the other end, said apertured portion having a first part sealingly received within said outlet opening and a second part extending through said outlet opening to the outside of said bag portion, one end of said tube being firmly secured to said second part of the apertured

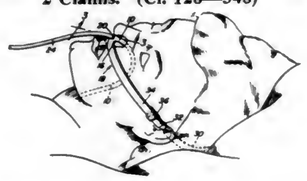
portion, said flat wing shaped segment projecting into said bag portion to maintain the latter in an unfolded condition to allow for an unobstructed flow of urine through said bag portion to said tube when said catheter is secured to the penis, and a band having an adhesive coating at least on one side thereof, a portion of said one side of the band affixed to the outside of said bag portion along the perimeter of said intake opening, the remaining portion of said one side of the band extending beyond said bag portion a distance sufficient to permit said band to be wrapped around the penis to substantially seal a portion of the latter in said bag portion.

3,161,198
COMBINATION DIAPER AND URINAL FOR USE BY MALE PARALYTICS
James Frank Moxley, 107 Hawthorne St., Beckley, W. Va.
Filed Apr. 2, 1963, Ser. No. 270,096
2 Claims. (Cl. 128—295)



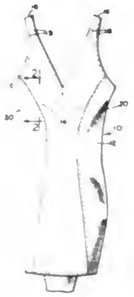
1. A combination diaper and urinal, for use by male paralytics, including a body-encircling belt engageable around the waist of the user, a diaper entity including a panel, the ends of which are secured to the belt, the intermediate part of the panel engaging the crotch of the user, the entity also including a removable pad secured to the panel, in position to span the interstice between the buttocks, said entity further including a urinal unit, accessible through an opening in the front of the panel, the unit embodying a sub panel, the lower margin of which is anchored to the main panel, in close proximity to the bottom of said access opening, the center of the sub panel having an opening adapted to register with the access opening when the urinal unit is in use, a reinforcing ring with stud sockets, secured to the sub panel, around the opening in the latter, the urinal unit also including an apertured ring assembly embodying a flexible bag-like receptacle, with a concentric sheath to embrace the male organ, studs carried by the second-mentioned ring complementing the sockets of the sub panel ring, to permit independent removal of the second-mentioned ring and receptacle.

3,161,199
STOMACH TUBE HOLDER
Betty L. Shaw, 1904 NW. 7th St., Oklahoma City, Okla., now by change of name Betty L. Sands, assignor of fifty percent to Varvel R. Robertson, Oklahoma City, Okla.
Filed Oct. 31, 1962, Ser. No. 234,338
2 Claims. (Cl. 128—348)



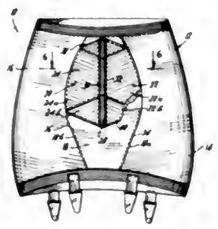
1. For use in positioning and reliably retaining a nasal-type stomach tube, gavaging tube or the like in position while it is being used comprising: a nasal tube, and means for retaining the tube in the intended nasal passage, said means comprising an elongated flexible applicator strap having a conformable median surface portion adapted to reside flatwise atop the patient's upper lip beneath the nose as usual, and adjustable head-encircling band having ends thereof connected to cooperating ends of said strap, said median portion having an accessible feeding hole communicable with and integrally joined with a cooperating intake end portion of said tube, and, in combination, a second tube complemental to said nasal tube and having an end portion projecting through said opening and telescoping into said cooperating portion of said nasal tube.

3,161,200
WOMEN'S SWIM SUIT CONSTRUCTIONS
Joan B. Brickman, Portland, Oreg., assignor to Jantzen Inc., Portland, Oreg., a corporation of Nevada
Filed Oct. 10, 1962, Ser. No. 229,581
2 Claims. (Cl. 128—455)



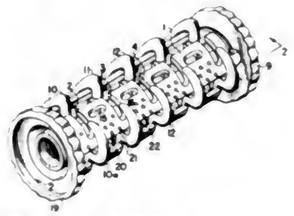
1. In a swim suit, a body portion having breast portions and shoulder straps extending upwardly from the breast portions, a hanger positioned in the body portion and having a pair of straps secured to the shoulder straps, a cross strap positioned in the body portion and secured at its ends to the sides of the body portion, a pair of brassiere cups secured to the cross strap and the hanger, a pair of cup-shaped pads adapted to fit into the cups, and a plurality of patches of fastener material secured to the pads, the cups having portions of material adapted to releasably interlock with the patches of fastener material to detachably secure the pads in the cups.

3,161,201
FOUNDATION GARMENT
Samuel L. Welsch, East Orange, N.J., assignor to Lewella Foundations, Inc., Newark, N.J., a corporation of New Jersey
Filed Mar. 21, 1963, Ser. No. 266,958
2 Claims. (Cl. 128—548)



1. A foundation garment comprising a body including opposed side panels and a front panel extending therebetween, said front panel being principally elastic in the girth direction of said garment, and a reinforcing panel underlying said front panel and extending between said side panels, said reinforcing panel including two side by side interconnected identical reinforcing members, each of said reinforcing members being comprised of a single blank of stretchable fabric which is principally elastic at an acute angle to the girth direction of the garment and is folded upon itself along a substantially vertical fold line to present in a folded condition a first section and a superposed second section having opposing directions of elasticity at an acute angle to the girth direction of the garment, said first section of each reinforcing member having generally triangular segments at opposite ends thereof extending beyond said second section, the base of each extending triangular segment lying on a substantially vertical line contiguous with said substantially vertical fold line, said reinforcing members being interconnected along the confronting respective fold lines and said contiguous base edges to each other and along opposite edges remote therefrom to each of said side panels.

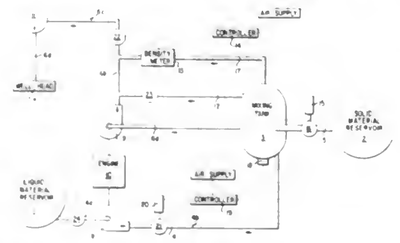
3,161,202
LOCKING HAIR CURLER
Xavier V. Mecca, 150 Chestnut St., Garden City, N.Y.
Filed Dec. 21, 1961, Ser. No. 161,156
1 Claim. (Cl. 132—40)



A locking hair curler comprising;
an outer tubular member having a plurality of parallel slots in its outer surface spaced substantially along the entire length of said tubular member,
said slots being generally perpendicular to the axis of said member,
means to lock hair to said outer member when curled around said outer member, comprising an inner member rotatably mounted inside said hollow outer member,
a plurality of hooked teeth mounted on said inner member and extending through the slots in locking relationship to said outer member, and a knob connected to said inner member,
said outer member having a long slot open at one end and parallel its axis to permit said toothed inner member to be inserted in said outer member in communication with said parallel slot, said outer and inner members having snap-in connection means.

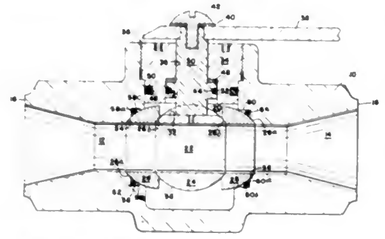
3,161,203
METHOD AND APPARATUS FOR PRECISION BLENDING OF COMPOSITE FLUID MEDIUMS
Don H. Hathorn and Bernard T. O'Loughlin, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed July 6, 1961, Ser. No. 122,199
3 Claims. (Cl. 137—8)

1. A method of effecting precision blending of a composite fluid medium for flow through a conduit system, said method comprising: conveying a liquid component of said medium into said system, conveying a relatively heavy, particulate, solid component of said medium into said system, blending said liquid and solid components to form said composite medium, applying pump pressure to said thus-formed medium so as to accelerate its flow to a rate exceeding the combined liquid and solid component flow rate into the system, diverting a first portion of said accelerated medium flow and using said first portion to agitate said liquid and solid components during said blending, with the rate of flow of said first portion being selectively variable, diverting a separate, second portion of said accelerated medium flow, independent of said first portion, and mixing said second portion with said solid and liquid components during blending, measuring the density of the medium flow in said second diverted portion after the acceleration thereof, and at a point within said



system where said medium flow is continuously subject to pump pressure and in continuous motion, regulating the flow of said solid component entering said system in response to the thus measured density of said medium to maintain a consistent medium density, and regulating the flow of said liquid component entering said system to maintain the combined liquid and solid component inflow rate equal to the medium outflow rate from the system.

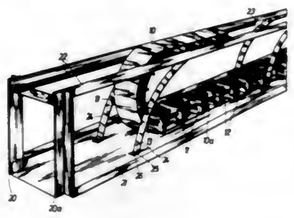
3,161,204
BALL VALVES
Henry A. Roy, Sr., 117 Lowell St., Peabody, Mass.
Filed May 11, 1962, Ser. No. 194,106
12 Claims. (Cl. 137—315)



1. A valve comprising:
(*a*) a housing having
(1) aligned inlet and outlet ports,
(2) means defining a bore having an axis perpendicular to a line passing through the center of said ports, and
(3) a pair of annular valve seats, one of each being disposed adjacent to and concentric with each said port, each of said valve seats comprising an annular hemispherical surface;
(*b*) a rotatable ball disposed within said bore and having a fluid passage arranged in one rotational position of said ball to provide communication between said ports, said ball in another rotational position thereof being arranged to prevent communication between said port; and
(*c*) a pair of rings each having an annular hemispherical surface and a planar face, each of said rings, during the assembled condition of the valve, being mounted in a respective one of said valve seats to hold said ball therebetween, each of said rings, during installation or removal of said ball in said bore, being mounted for slidable movement in a respective one of said valve seats, whereby the planar faces of said

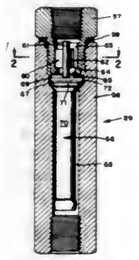
rings move from a position at an angle with a line passing through the centers of said ports to a final position parallel to the axis of said bore.

3,161,205
ARRANGEMENT FOR FEEDING CABLES, HOSES AND THE LIKE TO A MOVABLE STATION
Herbert Merker, Siegen, Westphalia, Germany, assignor to Kabelschlepp G.m.b.H., Siegen, Westphalia, Germany
Filed Feb. 18, 1963, Ser. No. 259,026
Claims priority, application Germany Feb. 28, 1962
6 Claims. (Cl. 137—355.17)



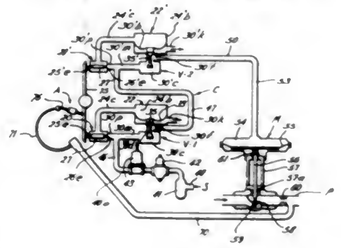
1. An arrangement for feeding energy and consumer goods through conveying means, especially cables and hoses, from a stationary station to a movable station, which comprises: flexible carrier band means having a variable and movable upper section and a variable stationary lower section, a return bend of substantially 180 degrees joining the sections, pairs of supporting means carried by said band means and protruding therefrom laterally beyond the longitudinal edges of said band means, said pairs of supporting means being spaced from each other in longitudinal direction of said band means, and supporting rail means arranged at substantially the level of the supporting means of said upper section for supporting the supporting means of said upper section, said supporting rail means being provided with passages therethrough for allowing respective adjacent supporting means to pass through said passages, said passages being spaced from each other in longitudinal direction of said band means in conformity with the spacing of said pairs of supporting means.

3,161,206
VALVE CONSTRUCTION
John F. Grundmann, 651 S. Irena Ave., Redondo Beach, Calif.
Filed Nov. 2, 1961, Ser. No. 149,567
4 Claims. (Cl. 137—433)



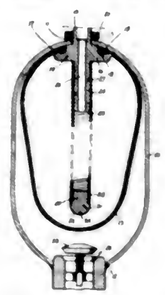
1. A fluid flow control device comprising: a vertically disposed cylindrical pipe; a fluid in said pipe; an annular shoulder inside of said pipe; a cylindrical float having a diameter sufficiently small at one of its ends to project through said annular shoulder inside said pipe on one side of said shoulder, said pipe on one side of said shoulder having a diameter to guide vertical movement of said one end of said float therein, said float having a radially projecting flange at the other of its ends to seat on said shoulder when the pressure in said pipe above said shoulder is greater than the pressure therebelow, said float having an average density less than that of said fluid; and stop means to resist upward vertical movement of said flange to a predetermined distance from said shoulder, said stop means including a spider assembly movable vertically.

3,161,207
CONTROL DEVICE FOR CONTROLLING THE UPPER AND LOWER LIMITS OF THE PRESSURE IN A FLUID FLOW LINE
John H. McCarvell and Willis C. Carlisle, both of 1525 Prince St., Houston 8, Tex.
Filed Apr. 13, 1961, Ser. No. 102,718
4 Claims. (Cl. 137—492.5)



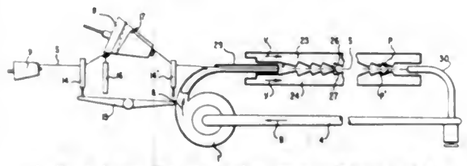
4. In combination with a fluid-pressure operated valve in a line having fluid flowing therein, and a control pilot connected to said valve, the improvement residing in the control pilot, comprising: a source of fluid pressure separate from the fluid in the line, a first valve assembly for controlling the lower limit of the fluid pressure in the line, a second valve assembly for controlling the upper limit of fluid pressure in the line, said first valve assembly having a first control valve and a first operating valve interconnected by a first fluid passage means, said second valve assembly having a second control valve and a second operating valve interconnected by a second fluid passage means, a third fluid passage means connecting the inlet of said first valve assembly to said separate source of fluid pressure, a fourth fluid passage means connecting the outlet of said first valve assembly with the inlet of said second valve assembly, a fifth fluid passage means connecting the outlet of said second valve assembly to said fluid-pressure operated valve, a single pivoted lever for controlling the opening and closing of said first and second control valves, a Bourdon tube adapted to be connected to the fluid pressure in the line and having one end fixed and the other end movable, an attachment means attaching the movable end of the Bourdon tube to said pivoted lever for moving said lever in response to fluid pressure changes in the line, means for transmitting the movement of the lever in one pivotal direction to said first control valve to close same to fluid pressure from said pressure source when the pressure in the line falls below a predetermined lower limit, and additional means for transmitting the movement of the lever in the other pivotal direction to said second control valve to close same to fluid pressure from said first valve assembly when the pressure in the line exceeds a predetermined upper limit.

3,161,208
PRESSURE VESSELS
Jean Mercier, 1185 Park Ave., New York, N.Y.
Original application Apr. 30, 1959, Ser. No. 810,165, now Patent No. 3,095,013, dated Jan. 25, 1963. Divided and this application May 8, 1963, Ser. No. 278,850
Claims priority, application France July 30, 1958
3 Claims. (Cl. 138—30)



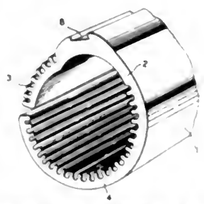
1. A pressure vessel comprising a rigid container having a deformable partition therein defining two chambers for fluid, each having a fluid passageway leading thereinto, a flexible closely wound coil spring defining a guide member for said partition in one of said chambers, said closely wound coil spring having adjacent convolutions substantially in engagement and being encompassed by said partition and having a substantially continuous surface with respect to said partition to restrain extrusion therethrough of said partition, said surface permitting passage therethrough of the fluid flowing through one of said fluid passageways, at least a portion of said coil spring being movable from its central position toward the wall of said container, said guide member having a core extending at least a portion of the length thereof, said core in cross section departing from the internal cross section of said guide member.

3,161,209
TEXTILE LOOMS
Walter Scheffel, Industriestrasse 53, Weissenburg, Bavaria, Germany
Filed May 20, 1960, Ser. No. 30,476
Claims priority, application Germany May 25, 1959
9 Claims. (Cl. 139—127)



1. In a loom for producing woven fabrics of a considerable width having a pneumatic picking system comprising a blow pipe located adjacent the side of the warp, means for admitting a weft thread to said blow pipe, and means for supplying compressed air to said blow pipe whereby said weft thread is propelled through the shed, the improvement consisting essentially of means for maintaining the weft thread in a predetermined trajectory along a considerable width of fabric comprising at least one air admission element extending across the width of the fabric adjacent to the shedding point, and compressed air being supplied to said element, said air admission element being formed by an air pipe adjacent the shedding point extending outside of the warp threads and transversely thereto, the side of said air pipe facing the shed being constructed in a saw-tooth manner, said air pipe including a plurality of nozzles spaced across the width of the fabric and arranged in the faces of the respective teeth formed on said air pipe, said nozzles being arranged to face in the direction of motion of said weft thread with the compressed air passing from said nozzles generating an air current in the direction of motion of the traversing weft thread to maintain the same in its predetermined trajectory across the width of the fabric.

3,161,210
PLASTIC STRIPS
Nils Oskar Tore Lööf, Gullspang, Sweden
Filed June 19, 1961, Ser. No. 118,176
4 Claims. (Cl. 138—128)



4. A pipe covering material which is adapted to securely fit around pipes of more than one diameter, comprising:

(*a*) a strip of resilient material having an exterior surface and an interior surface,

(*b*) said strip having two terminal edge portions, each of said edge portions extending along a line which is parallel to the axis of the pipe to be covered,

(*c*) a portion of the outer surface of said strip being provided with a plurality of alternating ribs and grooves which extend along lines which are parallel to the axis of the pipe to be covered,

(*d*) a portion of the inner surface of said strip also being provided with a plurality of alternating ribs and grooves which extend along lines which are parallel to the axis of the pipe to be covered,

(*e*) the number of ribs and grooves on said inner surface being substantially greater than the number of ribs and grooves on said outer surface,

(*f*) the terminal edge portions of said strip being adapted to overlap to a greater or lesser extent depending upon the size of the pipe which one desires to cover to thereby snugly fit around the exterior surface of the pipe,

(*g*) said ribs and grooves on said exterior surface interlocking with the grooves and ribs on said inner surface when said terminal edge portions are overlapped to thereby engage said terminal edge portions and hold them securely in position around the exterior of a pipe.

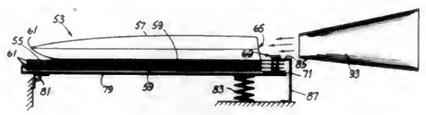
ERRATUM

For Class 139—127 see:
Patent No. 3,161,209

3,161,211
PACKAGING
James White, Fremont, Calif., assignor to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri
Original application Aug. 12, 1960, Ser. No. 49,188, now Patent No. 3,100,569, dated Aug. 13, 1963. Divided and this application Aug. 13, 1962, Ser. No. 216,661
4 Claims. (Cl. 141—10)

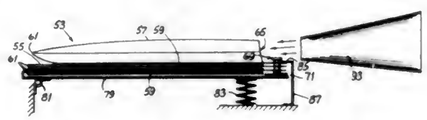
1. The method of filling bags utilizing a prefabricated packet of bags comprising a stack of open-mouth plastic

bags, each bag having a front wall and a back wall, the back wall of each bag having an extension at the mouth end of the bag projecting beyond the mouth edge of the front wall of the bag, each bag having openings in its said back wall extension outward of the mouth edge of the front wall, said bags being stacked with their edges substantially in register, their front walls on top, and with said openings substantially in register, a relatively rigid backing member backing the back wall of the last bag of the stack, a pair of fasteners extending from the backing member through said openings and having heads at their upper ends larger than said openings for holding said bags in packeted assembly on said fasteners, the front wall of each bag being free of the fasteners and each bag in the



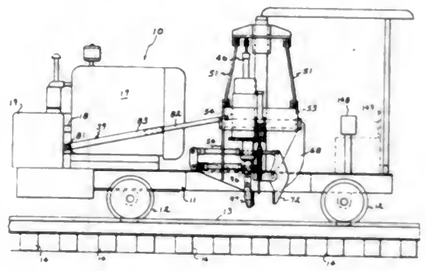
packet being free of the other bags in the packet apart from the fasteners, each successive bag being adapted to have its mouth opened by spreading its front wall away from its back wall while the later remains on the fasteners, comprising positioning the packet flatwise with the backing member at the bottom, maintaining the end of the packet which includes the back wall extensions pressed upward against a fixed member projecting over said end of the packet and terminating short of the mouth edge of the front wall of each bag in the packet, opening up the mouth of the top bag of the packet by spreading its front wall upward away from its back wall while the latter remains on the fasteners, filling the top bag so opened while its back wall remains on the fasteners, and then removing the filled bag from the fasteners.

3,161,212
PACKAGING
James White, Fremont, Calif., assignor to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri
Original application Aug. 12, 1960, Ser. No. 49,188, now Patent No. 3,100,569, dated Aug. 13, 1963. Divided and this application Aug. 13, 1962, Ser. No. 216,662
1 Claim. (Cl. 141—314)



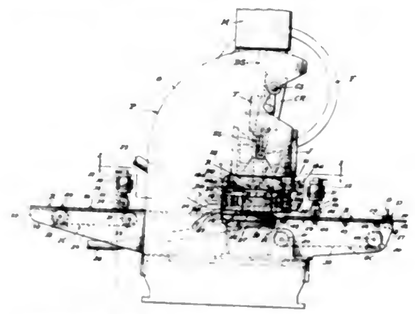
In a filling system for packaging merchandise, means for supporting a prefabricated packet of bags flatwise, said packet comprising a stack of open-mouth plastic bags, each bag having a front wall and a back wall, the back wall of each bag having an extension at the mouth end of the bag projecting beyond the mouth edge of the front wall of the bag, each bag having openings in its said back wall extension outward of the mouth edge of the front wall, said bags being stacked with their edges substantially in register, their front walls on top, and with said openings substantially in register, a relatively rigid backing member backing the back wall of the last bag of the stack, a pair of fasteners extending from the backing member through said openings and having heads at their upper ends larger than said openings for holding said bags in packeted assembly on said fasteners, the front wall of each bag being free of the fasteners and each bag in the packet being free of the other bags in the packet apart from the fasteners, each successive bag being adapted to have its mouth opened by spreading its front wall away from its back wall while the latter remains on the fasteners, said packet lying flatwise on said supporting means with the backing member at the bottom and with the end of the packet which includes the back wall extensions at one end of the supporting means, a fixed member projecting over said one end of the packet and terminating short of the mouth edge of the front wall of each bag in the packet, said supporting means being mounted in said system for movement of said one end thereof toward and away from said fixed member, means biasing said supporting means upward for holding said end of the packet in engagement with said fixed member, the top bag of the packet being adapted to have its mouth opened by spreading its front wall away from its back wall while the latter remains on said fasteners, and means for guiding merchandise into the top bag of the packet upon opening of its mouth, each successive bag after being filled being adapted to be removed from said fasteners.

3,161,213
VERTICALLY-RECIPROCATING SAW APPARATUS FOR CUTTING CROSSTIES
John F. Bryan, Jr., Montgomery, Ala., assignor to Kershaw Manufacturing Company, Inc., a corporation of Alabama
Filed Feb. 23, 1962, Ser. No. 175,024
7 Claims. (Cl. 143—68)



1. In apparatus to saw a crosstie in place on the roadbed of the track beneath the rails,
(*a*) a main frame having wheels to ride along the track,
(*b*) a tool frame mounted on the main frame,
(*c*) fluid pressure means to move the tool frame in a generally vertical direction relative to the main frame,
(*d*) means to hold the crosstie,
(*e*) a pair of pivotally mounted rail engaging means on the tool frame adapted to engage beneath the rails and force the crosstie holding means into the roadbed alongside the crosstie,
(*f*) fluid pressure means to actuate said rail engaging means,
(*g*) fluid lines connecting the fluid pressure means of said tool frame and the fluid pressure means of the rail engaging means,
(*h*) valve means interposed in said fluid lines and permitting the flow of fluid to said fluid pressure means of the rail engaging means for moving them into engagement with the underside of the rails only when a predetermined fluid pressure is reached in the fluid lines during lowering of the tool frame,
(*i*) a saw frame supported on the tool frame,
(*j*) a saw blade on the saw frame,
(*k*) and means to reciprocate the saw blade.

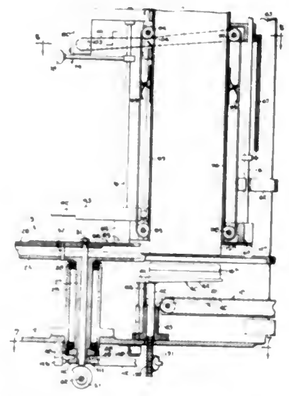
3,161,214
SHEET MATERIAL DRILLING EQUIPMENT
John R. Morden, West Chester, Pa., assignor to Bestwall Gypsum Company, Ardmore, Pa., a corporation of Maryland
Filed Mar. 14, 1961, Ser. No. 95,688
8 Claims. (Cl. 144—110)



1. Equipment for simultaneously drilling a multiplicity of holes in a sheet of set gypsum comprising bed plate means and head plate means in spaced parallel relation thereto, the head plate means having a multiplicity of apertures therethrough for accommodating a multiplicity of drills extending therethrough in direction toward the bed plate means and the bed plate means having a like number of apertures concentric with the apertures in the head plate means and adapted to accommodate the ends of said drills, the head plate means comprising a pressure plate and a face plate mounted in parallel spaced relation with the face plate nearer said bed plate means, the face plate having, for each aperture therethrough, a bushing member mounted in and extending through the aperture, the bushing members being free for axial movement in the apertures, stop means limiting travel of the bushing members within the apertures in direction toward the bed plate means, and resilient backing means interposed between the bushing members and the pressure plate, said resilient backing means being formed of a material capable of substantial elastic deformation and having an elastic yield point substantially below that of the other parts of the assembly, whereby, when a sheet of set gypsum is interposed between the head plate means and the bed plate means and pressure is applied to the head plate means to urge the pressure plate toward the bed plate means, the bushing members are free to assume individually different axial positions in which that end of each bushing member which is nearest the bed plate means intimately and forcefully contacts the surface of the set gypsum sheet.

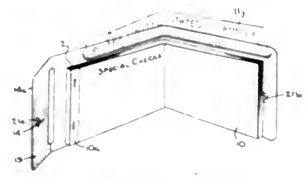
3,161,215
SLICING MACHINE
Theodore G. Werder, Chicago, and Hilmar O. Schuetze, Des Plaines, Ill., assignors to Great Lakes Stamp & Mfg. Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 28, 1961, Ser. No. 155,270
9 Claims. (Cl. 146—94)

2. A slicing machine comprising, in combination, a frame, a cutting table mounted on said frame, a carrier mounted on said frame above said table, a rotatable shaft disposed at right angles to said table, a slicer blade carried for rotation by said shaft, said blade being disposed between said table and said carrier, opposed conveyors mounted on said carrier for feeding the product loaf down to said table, said table having a discharge port through which slices from said loaf are passed, a vertically movable platform mounted on said frame beneath said port for receiving said slices in stacked relation, a discharge conveyor including spaced driven elements mounted on said frame, said platform having spaced finger portions movable from a starting position closely underlying said port to a discharge position wherein said fingers pass between said discharge conveyor driven elements, means for driving said shaft so as to rotate said blade past said carrier, means actuated each time said blade



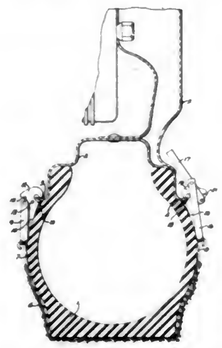
rotates past said carrier for driving said conveyors and lowering said platform in incremental steps, means for driving said platform down to said discharge position and returning the platform to said starting position after a selected number of said steps, and means for momentarily holding said platform in said discharge position so as to prevent rebound of the platform.

3,161,216
BANK CHECK WALLET
Jacob Sloves, Forest Hills, N.Y., assignor to Sloves Mechanical Binding Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,395
1 Claim. (Cl. 150—28)



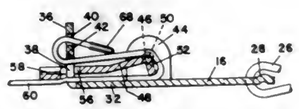
A foldable wallet for paper currency in combination with a foldable check pad having a rear insertion tab, said wallet comprising an outer folder and an inner folder installed therein, said foldable pad being received within said inner folder, said inner folder being constituted by an inner panel of the same length as said outer folder and sealed thereto at the lower edge and at either end to define therewith a compartment for receiving paper currency, and an outer panel of shorter length sealed to the inner panel at both edges and at one end to define a pocket opening for receiving the tab of said pad which is accommodated within the inner folder, said outer folder and said inner panel forming a flap extension at the end of said wallet adjacent said pocket opening, which flap is foldable over the other end of said wallet to lock same whereby the folded pad and paper currency are both held therein.

3,161,217
EMERGENCY TIRE CHAIN
Eldrick D. Chartier, 1405 Harper St., Santa Cruz, Calif.
Filed May 13, 1963, Ser. No. 279,902
4 Claims. (Cl. 152—236)



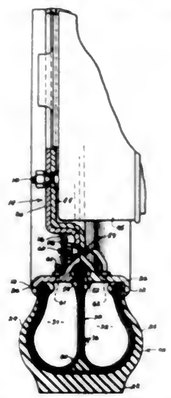
1. An emergency tire chain for a vehicle tire mounted on a wheel rim, comprising
a length of chain extending across the tread of the tire,
fastening means on both ends of said chain, including a dog and a jaw pivotally attached to the dog, said dog and jaw each having a tooth thereon engaging the rim of the wheel,
a link pivotally attached to the dog and engageable with the jaw to press said dog and jaw against the rim.

3,161,218
STRAP-ON TIRE CHAIN
Oscar Silberg, 727 E. Sharpnack St., Philadelphia 19, Pa.; George M. Iligas, 11718 Millbrook Road, Torresdale, Philadelphia 14, Pa.; and William Cornia, 160 Brown St., Philadelphia 23, Pa.
Filed May 24, 1963, Ser. No. 283,020
5 Claims. (Cl. 152—237)



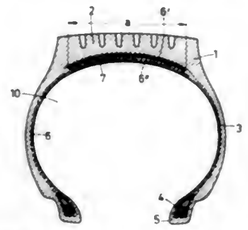
1. A tire chain unit comprising a pair of flat plates having at least one chain extending therebetween and connected at its ends thereto, one of said plates having a flexible strap extending freely therefrom and the other of said plates being a locking plate and having a clamping and locking means for releasably securing the free end of said strap, said clamping and locking means comprising a pivoted lever having a clamping lip and a latch plate spaced from each other longitudinally thereof, said clamping lip and latch plate being simultaneously movable with said lever into and out of simultaneous clamping and latching positions, a substantially perpendicular locking flange on said locking plate, said latch plate on said lever being slidably engageable with said locking flange during pivotal movement of said lever, a pair of locking slots spaced from each other longitudinally of said locking flange, and said locking slots being constructed and arranged to releasably receive and secure a looped portion of said free end of said strap when said strap is held in clamped and latched position by said clamping lip and said latch plate, said latch plate being provided with an offset portion constructed and arranged to be pressed against said strap by the looped portion of said free end of said strap when said strap is in clamped and latched position.

3,161,219
MULTI-COMPARTMENT VEHICLE TIRE
Morris M. Danhi, 2152 E. 47th St., Brooklyn, N.Y.
Filed Nov. 1, 1962, Ser. No. 234,634
9 Claims. (Cl. 152—339)



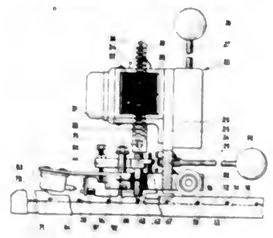
1. A vehicle tire including a hollow casing having a tread portion and side walls extending radially inward from the tread portion on both sides thereof, a partition connected with the tread portion and extending radially inward from the inside of the tread portion and dividing the space within the tire into two compartments, the partition being imperforate for preventing flow of fluid from one of said compartments to the other, and extending radially inward for a substantially greater distance than the side walls of the tire, and having an increased thickness extending from an inner end portion of the partition continuously outward to another portion of the partition where the radius of the partition is greater than the radius of the inside edges of the side walls for distortion to provide a seal between clamping jaws of a split rim by which the inner end of the partition is intended to be held.

3,161,220
PNEUMATIC VEHICLE TIRE
Richard Beckadolph, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Sept. 29, 1961, Ser. No. 144,000
Claims priority, application Germany, Oct. 1, 1960, C 22,456
2 Claims. (Cl. 152—356)



1. In a pneumatic tire with a tread strip and bead cores: a carcass layer extending in a continuous manner around said bead cores and having two end portions arranged in spaced overlapping relationship to each other in the zenith portion of said tire below said tread strip, said overlapping end portions extending over a width corresponding nearly to the width of said tread strip, said carcass layer comprising thread means inclined at substantially one and the same acute angle with regard to the circumferential direction of said tire, and an annular cord fabric layer interposed between said overlapping end portions while extending over a width substantially the width of said tread strip and having thread means likewise inclined at an acute angle with regard to said circumferential direction of said tire, the thread means of said carcass end portions and the thread means of said cord fabric layer being inclined with regard to said circumferential direction of said tire in such a way that the thread means of said cord fabric layer are inversely inclined with regard to the directly adjacent thread means of said carcass layer end portions, the acute angle formed by said thread means of said fabric layer with said circumferential direction of said tire substantially equalling the acute angle formed by the thread means of said carcass layer end portions with said circumferential direction of said tire.

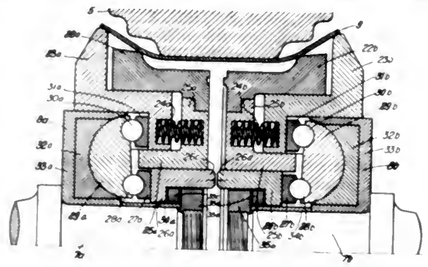
3,161,221
APPARATUS FOR PUNCHING SLAT ASSEMBLIES
Alfred Charles Taylor, Clayfield, Brisbane, Queensland, Australia, assignor to Hunter Douglas International (Quebec) Ltd., Montreal, Quebec, Canada
Filed Oct. 25, 1961, Ser. No. 147,621
Claims priority, application Australia, Oct. 28, 1960, 66,069
6 Claims. (Cl. 153—10)



1. Apparatus for punching rolled-edge joints of slat assemblies, including a table adapted to support a slat assembly, said table being provided with an edge-retaining bar and an edge-retaining means in parallelism across the table and adapted to retain the slats thereon with their ends in alignment; a guide rod, a punch-mounting frame mounted for sliding movement across the table on the guide rod in such manner that the frame may be moved transversely across the slats at or near to the end of the assembly; an engagement member associated with the frame and adapted to engage successive contact portions of the slats; a punch mounted on the frame above the slats and adapted to be moved downwards on to the latter, the punch occupying a punching position above a slat joint when the engagement member is engaged with a contact portion of a slat; and means for actuating the punch when it is in a punching position to cause it to move downwards to punch the slat joint therebeneath.

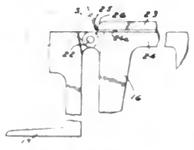
3,161,222
MACHINE FOR PROFILING WHEEL RIMS
Ernst Hendricks, Solingen, Germany, assignor to Kronprinz Aktiengesellschaft, Solingen-Ohligs, Germany, a company of Germany
Filed Dec. 27, 1961, Ser. No. 162,405
9 Claims. (Cl. 153—13)

1. A profiling machine for bending a cylindrical blank into a wheel rim comprising an outer roller and two inner rollers, the rollers being positioned to enable a cylindrical blank to be disposed with the inner rolls inside and the outer roller outside the blank, the inner rollers being coaxial with one another, axially adjustable, and each divided into two sections, means for moving the outer roller radially of a blank positioned between it and the inner rollers and thus pressing such blank against the inner rollers, means for moving the inner rollers toward one another and for moving a section of each inner roller toward the other section of that roller, two sets of roller



guide means, for centering a blank disposed between the outer roller and the inner rollers, each of said sets comprising two conical rollers and a cylindrical roller positioned between the conical rollers, both sets of guide means being movable with said outer roller.

3,161,223
SHEET METAL BRAKE
Walter G. Marsh, 14345 Warwick Road, Detroit, Mich.
Filed Oct. 9, 1963, Ser. No. 315,038
7 Claims. (Cl. 153—16)

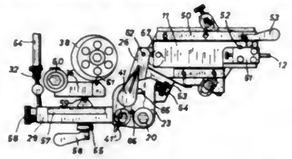


1. In a brake for bending sheet metal, the combination comprising
a first member having a clamping surface,
means for clamping a piece of metal on said clamping surface of said first member,
a second member having a bending surface,
each of said first and second members having substantially the entire length of the longitudinal edges thereof formed with longitudinally spaced intermeshing integral projections,
each said projection of each said member being positioned such that all portions thereof do not extend above the plane of the surface of its corresponding member when the surfaces are substantially aligned,
said projections having aligned openings therein,
a hinge pin extending through said integral projections and thereby defining a hinge so that said second member may be swung relative to the first member for bending sheet metal about said anvil member.

3,161,224
SPRING COILING MACHINE
Walter Hediger, Schonenwerd, Switzerland, assignor to Storen- und Maschinenfabrik Emil Schenker A.-G., Schonenwerd, Switzerland
Filed Sept. 26, 1961, Ser. No. 140,804
Claims priority, application Switzerland, Sept. 28, 1960, 10,968/60
2 Claims. (Cl. 153—65)

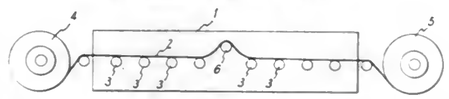
1. A machine for coiling wire into spring comprising a coiling tool, a holder therefor, a slide carrying the holder, adjusting mechanism operatively connected with said slide for positioning the tool, and quick-withdrawal quick return means, disposed between said slide and its adjusting mechanism for withdrawing, and returning, said slide

from, and to, its adjusted position, said adjusting mechanism including a movable plate, a rotatable eccentric pin mounted on said plate, a coupling lever journalled on said



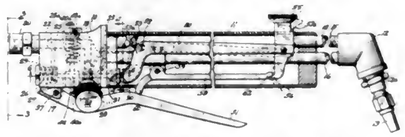
pin, an adjustable supporting member carried by said plate, said coupling lever resting on said supporting member and having a free end operatively connected with said slide.

3,161,225
METHOD FOR OBTAINING FLAT AND STRESS-FREE MAGNETIC STRIP
Chester E. Ward and Victor W. Carpenter, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Dec. 29, 1961, Ser. No. 163,283
9 Claims. (Cl. 153—86)



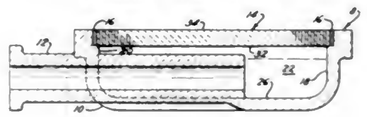
1. A process for flattening magnetic metallic strip material wherein the strip, as an incident of its processing, has been coiled and box annealed, said process comprising unwinding the coil strip and passing it through a heat treating furnace and subjecting it to a stress relieving heat treatment and, as said strip passes through said furnace, introducing a single reverse bend in said strip in opposition to the coil set thereof by contacting one side only of the strip and deflecting it in the direction opposite to the coil set, said strip being advanced through the furnace at a tension insufficient to produce creep or plastic elongation of the said strip which would impair its magnetic properties.

3,161,226
PRESSURE CONTROL MEANS FOR FLAME CUTTING TORCHES
Fred Stoneberg, 646 N. Laramie Ave., and Raymond Dorweiler, 2714 W. Bilden Ave., both of Chicago, Ill.
Filed Nov. 16, 1960, Ser. No. 69,630
5 Claims. (Cl. 158—27.4)



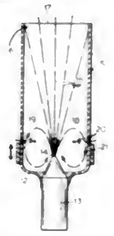
1. In a flame cutting torch which includes a mixing head, a burner tip mounted on said mixing head, separate tubes for delivering fuel gas, combustion oxygen and cutting oxygen to said mixing head and burner tip, a control valve assembly for controlling selectively the flow of said gases which comprises a fuel gas inlet channel, a conduit means adapted to flow fuel gas from the inlet channel to the fuel gas tube, adjustable valve means associated therewith for controlling flow of the gas therethrough, a second conduit means adapted to flow fuel gas at relatively high pressure from the inlet channel to the fuel gas tube, a quick-acting valve in said second conduit means adapted upon actuation to open and thereby increase the flow of fuel gas and resultant pressure in the fuel gas tube, an oxygen inlet channel, a first flow conduit from said oxygen inlet channel to the combustion oxygen tube, adjustable valve means associated therewith for controlling the flow of oxygen therethrough, a second flow conduit from the oxygen inlet channel to the combustion oxygen tube having a quick-acting valve associated therewith and adapted upon actuation to open and thereby increase the flow of combustion oxygen and resultant pressure in the combustion oxygen tube, a third flow conduit means adapted to flow oxygen from the oxygen inlet channel to the cutting oxygen tube, and having a quick-acting valve associated therewith, means for simultaneously actuating the quick-acting valves associated with said fuel gas and combustion oxygen conduits, and means for selectively closing the said quick-acting valves associated with said fuel gas and combustion oxygen conduits while opening the quick-acting valve associated with the cutting oxygen conduit.

3,161,227
INFRARED GAS BURNER
Charles L. Goss and Leonard C. Liptak, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 24, 1962, Ser. No. 189,785
8 Claims. (Cl. 158—99)



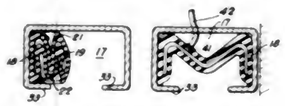
1. An infrared gas burner comprising a ceramic burner body member defining a mixing zone, inlet means through a wall of the body member for the introduction of air and fuel, a ceramic cover plate on said burner body member, and a foamed ceramic cement joining said cover plate and body member to one another providing a unitary structure, said cover plate comprising a thin walled ceramic honeycomb having a pair of opposed surfaces and a plurality of unobstructed gas passages extending between and terminating in those surfaces, the body member, cover plate and foamed cement all having a low and substantially similar coefficient of thermal expansion.

3,161,228
METHOD OF GASIFYING LIQUID FUELS
Willi Brödlin, Allensbach am Bodensee, Germany
Filed May 17, 1962, Ser. No. 196,573
Claims priority, application Germany May 17, 1961
1 Claim. (Cl. 158—117.5)



A method of producing a combustible gas, comprising the steps of axially injecting into a generally cylindrical chamber open at one end, adjacent a closed end of said chamber, an admixture of atomized liquid hydrocarbons with a high-velocity stream of oxidizing gas with a velocity of substantially 50 to 500 meters per second and constituting on the order of 5% of the stoichiometric quantity of oxygen necessary for complete combustion of said hydrocarbons, thereby creating a spray cone diverging toward said open end at an angle of substantially 10° to 30°, so positioning said cone within said chamber as to provide a generally toroidal pocket around the apex of said cone communicating with the remainder of said chamber over substantially its entire transverse cross-section while allowing at most a small clearance between the base of said cone and the inner chamber wall with consequent generation of a vortex of ignitable mixture from said spray cone within said pocket, igniting said mixture whereby a flame is established in said vortex, admitting additional oxygen to said pocket adjacent the apex of said cone, and limiting the supply of oxygen in said chamber to substantially less than the stoichiometric quantity needed for combustion of said hydrocarbons whereby a combustible gas issues from said open end, said spray cone blocking substantially completely the entrance of outside air into said chamber through said open end, said oxidizing gas being admitting into said chamber at a gauge pressure ranging between substantially 0.5 and 5 atmospheres and providing with said additional oxygen an oxygen supply in said chamber limited to approximately 70% of said stoichiometric quantity.

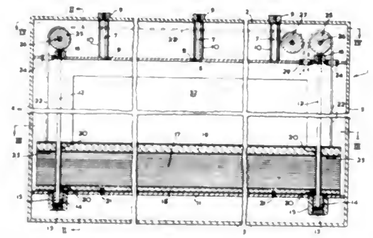
3,161,229
SEAL CONFIGURATION FOR FOLDING PARTITION
Guy J. Sanders, Severna Park, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,121
6 Claims. (Cl. 160—40)



1. A folding partition comprising a plurality of soundproof panels adapted to be supported on a horizontal track assembly, hinges connecting said panels such that the plurality of panels can selectively be extended along said track assembly so that said panels extend parallel to the track assembly to form a substantially uninterrupted barrier to close an opening with the surfaces of the panels approximating a single plane surface and be folded along the hinge connections so that the panels are normal to the track assembly to remove the panels from the opening, a recess extending along the lower edge of each of said panels, a continuous inflatable resilient sealing means spanning at least the length of said barrier and housed in said recess, said sealing means having a portion capable of being expanded out of said recess in the inflated state and being autogenously collapsible laterally within said recess in the deflated state and means for expanding said sealing means out of said recess.

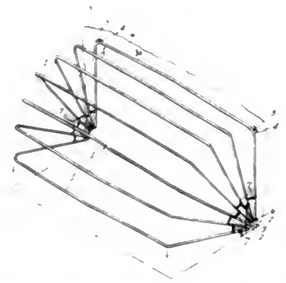
3,161,230
WINDOW FRAMES AND BLINDS THEREFOR
Alan E. Knight, Kingswinford, England, assignor to Accordo Blinds Limited, West Croydon, Surrey, England, a company of Great Britain
Filed Sept. 18, 1961, Ser. No. 138,756
9 Claims. (Cl. 160—107)

1. In a window, the combination of a frame adapted to be permanently secured in a wall structure and having two opposed parallel, channel section sides which open to the interior of the frame, two rails respectively seated wholly within and extending substantially from end to end of the said sides to close the side channels, at least one of said rails being of U-shaped channel section and having its mouth adjacent to the floor of the side in which it is seated, means accessible from inside said frame for detachably securing said rails in the corresponding sides, parallel guide rods extending between the said rails, means for releasing the guide rails accessible from inside said frame detachably securing the guide rods to said one channel section rail, anchor means releasably securing the guide rods the other rail and so arranged that when a guide rod is detached from said channel section rail the guide rod is displaceable longitudinally in the said other



rail and away from the channel section rail, a foldable blind slideably carried by said guide rods, and mechanism for drawing the blind across the interior of the frame along the guide rods, said mechanism being removably mounted within said channel section rail for removal after disassembly of the channel section rail from the frame side, said mechanism also including means for operating the blind which extends through the floor of said channel section rail into the interior of the frame where it is detachably connected to the blind.

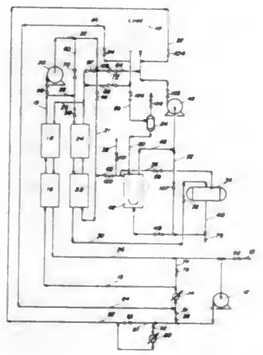
3,161,231
COLLAPSIBLE SHELTERS
Arnold Richard Dawson, 13 Lywood Drive, Worcester Park, Surrey, England, and Ramsay Vickers Todd, 40 Crescent Road, Burgess Hill, Sussex, England
Filed Jan. 24, 1963, Ser. No. 253,660
Claims priority, application Great Britain, Mar. 26, 1962, 11,457/62; Apr. 2, 1962, 12,583/62
6 Claims. (Cl. 160—132)



1. A collapsible shelter comprising a collapsible framework in the form of a plurality of inverted generally U-form frame members which have their lower ends pivotable at each end about pivot means, and means for securing one of the frame members to a wall with the pivot means adjacent the wall and so that when the shelter is collapsed all of the frame members are located close to each other and to the wall in a substantially vertical position and when the shelter is extended the frame

members pivot about the pivot means to spaced positions in which the frames are disposed in a generally fanwise array, and a flexible covering material arranged over and secured to the framework, wherein means are provided for counterbalancing the weight of the shelter, said counterbalancing means comprising a plurality of spring members of different powers arranged at each end of the shelter and respectively connected between different ones of the frame members of the shelter with the more powerful spring members connected to the frame members which are to be closest to said wall, and said spring members being loaded as the shelter is moved to its extended position whereby the force exerted by the spring members tends to assist the restoration of the frame members to the collapsed position.

3,161,232
REFRIGERATION-HEATING CIRCUIT
Harold R. Bishop, Ramsey, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Aug. 14, 1961, Ser. No. 131,241
6 Claims. (Cl. 165—62)



1. A heat exchange circuit for controlling the temperature of a load which includes interconnected elements as follows:

(*a*) a gaseous refrigerant compressor;

(*b*) means communicating with the compressor to remove the heat of compression from said refrigerant;

(*c*) a first pair of reversing exchangers to further cool said refrigerant;

(*d*) an expander to sub-cool a portion of said refrigerant;

(*e*) a second pair of reversing exchangers for reducing the temperature of the high pressure refrigerant to the dew point by heat interchange with the sub-cooled portion of refrigerant;

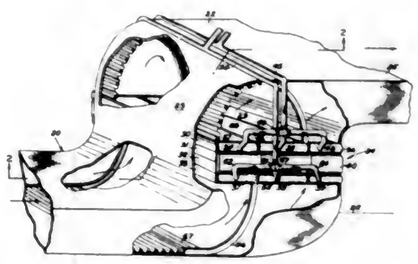
(*f*) an expansion valve to expand the high pressure refrigerant and form liquid refrigerant;

(*g*) a liquid refrigerant receiver in communication with the expansion valve;

(*h*) a separate heat exchange circuit for the load including a refrigerant condenser in communication with the liquid refrigerant, an evaporator in heat exchange with the load, a pump to circulate refrigerant through the separate circuit;

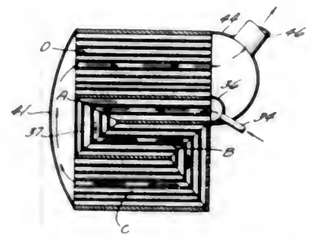
(*i*) and valve means communicating sub-cooled gaseous refrigerant from the first mentioned heat exchange circuit into the separate heat exchange circuit.

3,161,233
HEAT EXCHANGER WITH VARIABLE CONFIGURATION
John E. Ahern, Granada Hills, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Mar. 20, 1961, Ser. No. 97,075
3 Claims. (Cl. 165—101)



1. A heat transfer device having a configuration variable with operating conditions comprising heat exchanger means located transversely within a duct through which flows a fluid to be cooled, said heat exchanger means comprising a plurality of heat exchanger sections located side by said in a plane transversely across said duct, a first movable baffle located within said duct upstream of said heat exchanger means and located along the surface of the duct to provide a configuration of large face area and short flow depth, a second movable baffle located within said duct downstream of said heat exchanger means and located along the surface of the duct to provide a configuration of large face area and short flow depth, said first and second baffles permitting all of the fluid in said duct to pass through the full face area of said heat exchanger means when in position along the surface of said duct, means for moving said first and second baffles inwardly from the duct surface to reverse the flow of air through adjacent sections and pass all the fluid flow serially through each section to provide a configuration of small face area and long flow depth, inlet and discharge passages for a coolant utilized in said heat exchanger means, and valve means in said inlet and discharge passages for regulating the flow of coolant to said sections to maintain cross counter flow of the coolant for both configurations, said heat exchanger means comprising three sections, said valve means in said inlet passage distributing the coolant equally to said three sections on the downstream side and said valve means in said discharge passage discharging the coolant equally from the upstream side of the heat exchanger sections when both said first and second baffles are in position along the surface of said duct to provide a large face area and a small flow depth, said valve means in said inlet and discharge passage introducing fluid to the first section on the downstream, then to the second section on the upstream and finally to the third section on the downstream side to maintain cross counter flow when the first and second baffles are in their inward positions to provide a small face area and a long flow depth, each of said valve means comprising a valve plug slidable in a valve housing connected with passages leading to the heat exchanger sections, each of said valve plugs containing two separate sets of valve passages, the first set of valve passages in each plug being operative simultaneously for one configuration of said heat exchanger means and the second set being operative simultaneously for the other configuration of said heat exchanger means.

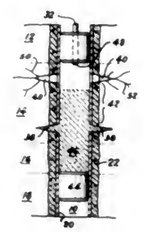
3,161,234
MULTIPASS EVAPORATOR
George C. Rannenberg, East Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,878
6 Claims. (Cl. 165—163)



1. A multiplate and fin core section of an evaporator comprising a first continuous fin element, a second continuous fin element located adjacent to said first continuous fin element, a third continuous fin element located adjacent to said second continuous fin element, and a fourth continuous fin element located adjacent to said third continuous fin element, spaced plates sandwiching said first, second, third and fourth continuous fin elements for defining parallel channels, closure plate members extending laterally from said spaced plates separating said first, second, third and fourth continuous fin elements from each other for defining four separate passes, means for connecting said parallel channels to each other to form a continuous flow path for a refrigerant, an inlet header mounted on the evaporator and having an opening communicating with one of said fin elements, means for connecting said first, second, third and fourth continuous fin elements so that said refrigerant passes successively through said second, third, fourth and first continuous fin elements, said evaporator also having a fifth continuous fin element disposed adjacent to said first, second, third and fourth continuous fin elements, spaced plates adjacent the edges of said fifth continuous fin element defining therewith open-ended channels extending transversely to said channels formed from first, second, third and fourth fin elements and being adapted to place fluid passing straight through said open-ended channel formed from said fifth continuous fin element in heat exchange relation to the fluid passing through channels formed from said first, second, third and fourth fin elements, so that the fluid entering said open-ended channel of the fifth continuous fin element is in immediate heat exchange relation with the fluid in said first continuous fin element and fluid discharging from said open-ended channel of the fifth continuous fin element is in heat exchange relation with the fluid in said third continuous fin element.

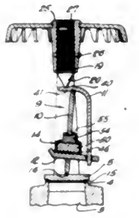
3,161,235
METHOD FOR PREVENTING CHANNELING IN HYDRAULIC FRACTURING OF OIL WELLS
Charles E. Carr, P.O. Box 419, Lawrenceville, Ill.
Filed Oct. 14, 1960, Ser. No. 62,767
18 Claims. (Cl. 166—29)

9. A method of treating a producing formation adjacent a casing-and-cement well structure to prevent channeling, comprising the steps of severing the cement at a preselected depth in the well, establishing communication between the inner portion of the casing and the severed cement portion by removing a portion of the adjacent casing, thereby forming an annular sealing cavity; removing at least a portion of the casing and adjacent cement in the producing formation in spaced relation with the annular sealing cavity; filling the annular sealing cavity with a plugging agent, treating the producing formation with a fluid, the plugging agent within the annular



sealing cavity serving to prevent a migration of the treating fluid into areas beyond the sealing cavity by channeling into water producing formations through a rupture in the cement-formation bond.

3,161,236
SPRINKLER HEAD
Bruce J. Macartney, Chatham, N.J., assignor to The Fyr-Fyter Company, Dayton, Ohio
Filed Oct. 30, 1962, Ser. No. 234,193
12 Claims. (Cl. 169—39)

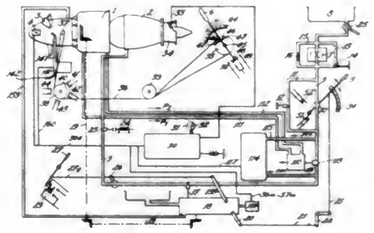


1. A sprinkler head comprising a body member having a passage therethrough terminating in a nozzle, the outer end of the nozzle defining a valve seat, a deflector member, a frame extending from the body member and supporting the deflector member in a position axially of the nozzle and in spaced relationship therewith, a valve member seated on the valve seat and releasably closing the passage, means forming a bearing surface carried by the valve member outwardly of its seating surface, an adjustably set member extending inwardly from the frame inwardly of the deflector member, means forming a second bearing surface carried by said adjustably set member, a strut member bearing at one end against one of said bearing surfaces, a lever member interposed between the strut member and the other of said bearing surfaces, the lever member fulcruming on the strut member thereby urging the strut member against one of the bearing surfaces responsive to the setting of the adjustable member, a fusible element, means supporting the fusible element on its sides and one end, piston means abutting the other end of the fusible element and adapted to move into the fusible element upon its melting, and holding means for the lever member, the supporting means and the piston for the fusible element interposed between the strut member and the holding means so that upon the melting of the fusible member the valve member is released from its seat.

3,161,237
CONTROL METHOD AND SYSTEM FOR AIRCRAFT POWERPLANTS COMPRISING A GAS TURBINE DRIVING A VARIABLE PITCH PROPELLING DEVICE

Joseph Szydlowski, % Société Turboméca, Bordes, Basses-Pyrenees, France

Filed Mar. 20, 1961, Ser. No. 96,971
Claims priority, application France, Mar. 25, 1960, 822,429
39 Claims. (Cl. 170—135.74)

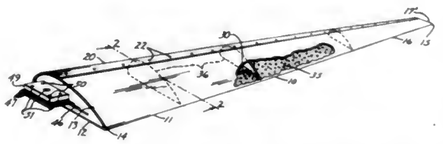


7. A control system for the powerplant of an aerodyne having a gas turbine and an aerodynamic propelling device driven thereby and equipped with blades the pitch of which may be varied, comprising means for adjusting the quantity of fuel delivered to the turbine in order to maintain constant the working rotation speed thereof, means for independently controlling manually the blade pitch of the propelling device between the maximum and minimum permissible pitches, means for continuously comparing the actual turbine temperature with an upper limit corresponding to the maximum permissible temperature for said turbine, means for continuously comparing the actual rate of flow for the fuel delivered to said turbine with upper and lower limits respectively corresponding to the theoretical maximum and minimum rates of fuel flow for said turbine and, independently from any manual controlling action, means for automatically reducing the blade pitch as soon and as long as the first one of the actual turbine temperature and of the actual rate of fuel flow tends to exceed its upper limit, means for automatically increasing the blade pitch as soon as the first one of the difference between the actual rate of fuel flow and its lower limit and of the fuel feeding in flight for the turbine tends to a zero value, and means for rendering such blade pitch increasing means, when the fuel feeding in flight tends to a zero value, inoperative in the case of a manually controlled pitch decreasing.

3,161,238
HELICOPTER ROTOR BLADE

Howard P. Key, 306 Bryant Road, Warrington, Fla.

Filed July 5, 1962, Ser. No. 207,660
3 Claims. (Cl. 170—159)

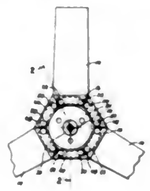


1. A helicopter rotor blade comprising hollow means constituting an elongated cambered airfoil having a chord which progressively diminishes in length from the root end to the tip end of the blade, a tapered spar extending spanwise in the hollow of said means, and cellular plastic material, formed in the hollow of said means, encasing said spar and securing it to said hollow means for supporting the airfoil against collapsing during use of the blade, said spar including a plurality of elongated flat metal plates arranged substantially in parallel with the chordal plane of the airfoil and being secured together in face to face relation, said plates being adapted and arranged to constitute a spar having a thickness dimension which diminishes stepwise from the root end to the tip end thereof and which at the root end of the spar increases stepwise in a forward direction from the trailing edge thereof.

3,161,239
IMPELLER CONSTRUCTIONS

Andreas Harold Andersen, San Augusti, Malorca, Spain; Finn Sigurd Andersen, heir of said Andreas Harold Andersen, deceased, assignor to F. S. Andersen, Ingeniør- & Maskinforretning I/S, Charlottenlund, Denmark, a company of Denmark

Filed Jan. 18, 1963, Ser. No. 252,378
30 Claims. (Cl. 170—173)



1. In an impeller construction the combination which comprises: a hub having an axis of rotation, a plurality of blades mounted in said hub, said hub comprising a first and second disc arranged opposite each other, each said disc having an annular peripheral portion provided with an annular groove coaxial to said axis of rotation and open towards the opposite of said two discs, each said blade having a foot portion arranged between said two annular portions, said foot portion having a first side face facing said annular portion of said first disc, said first side face being provided with exactly two separate projections both engaging said groove of said first disc, said foot portion having a second side face facing said annular portion of said second disc, said second side face being provided with one projection engaging said groove of said second disc, each said projection having all cross sections in planes perpendicular to said axis of rotation outwardly and inwardly limited by concentric circular arcs, and means interconnecting said two discs for urging them towards each other.

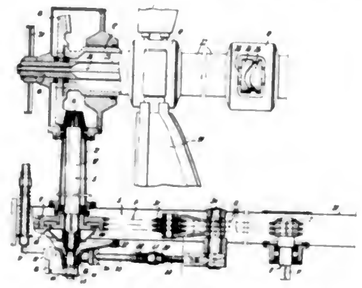
3,161,240
AGRICULTURAL IMPLEMENT PROVIDED WITH AN OVERLOAD PROTECTION

Alexandre Horowitz, Eindhoven, Netherlands, assignor to Herbert Vissers, Spoorstraat, Nieuw, Vennep, Netherlands

Filed Oct. 23, 1962, Ser. No. 232,358
13 Claims. (Cl. 172—103)

1. A digging implement for attachment to a tractor or like power source comprising a number of rotatable digging elements disposed in an annular configuration around a common axis of rotation, means for tilting said digging elements with respect to their planes of rotation as they rotate, a driving mechanism including clutch means connected to said digging elements for driving same and operating said tilting means, a first impulse sending means connected to said clutch means and to said driving mechanism and operative to disconnect said clutch means upon

receipt of an overload force in said driving mechanism, and a second impulse sending means operable to receive overload forces from said tilting means and operatively

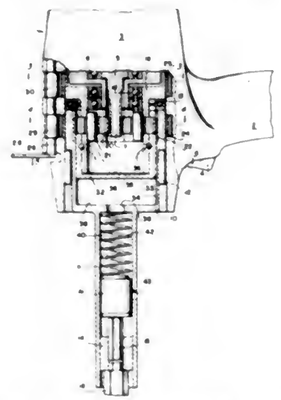


connected to said clutch means to disconnect the clutch means upon receipt of an overload force encountered during tilting of said digging elements.

3,161,241
ROTARY POWER HAMMER

Edward L. Allen, Ulster, and Albert F. Gattiker, Jr., Athens, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 8, 1963, Ser. No. 300,735
7 Claims. (Cl. 173—47)

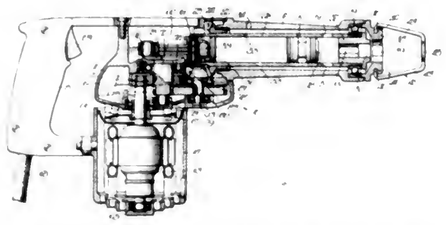


1. A power impact tool comprising:
(*a*) a frame;
(*b*) a rotary motor mounted on said frame and driving a pinion;
(*c*) a first carrier rotatably supported in said frame;
(*d*) a work implement slidably supported in said first carrier and adapted to receive periodic axial hammer blows;
(*e*) a piston reciprocably mounted in said first carrier;
(*f*) means for transmitting the reciprocation of said piston to said work implement as a series of hammer blows;
(*g*) a second carrier rotatably mounted in said frame;
(*h*) an epicyclic gear train interconnecting said first and second carriers to said pinion including a first gear fixed on one carrier and a second gear rotatably mounted on the other carrier;
(*i*) cam means engaged between one of said carriers and said piston for reciprocating said piston when relative rotation occurs between that carrier and said piston;
(*j*) key means locking said piston to the carrier which does not engage said cam means to prevent relative rotation therebetween while allowing the piston to reciprocate; and
(*k*) means for selectively locking either one of said carriers to said frame to prevent it from rotating whereby said work implement selectively can be simultaneously rotated and hammered or hammered without being rotated.

3,161,242
ROTARY-HAMMER DEVICES AND TOOL ELEMENT ACCESSORIES THEREFOR

Elmer F. Etzkorn, Park Ridge, and Oliver O. Amundsen, Chicago, Ill., assignors to Skil Corporation, Chicago, Ill., a corporation of Delaware

Filed May 31, 1960, Ser. No. 32,759
5 Claims. (Cl. 173—109)



1. In combination, a rotary-hammer device of the type characterized by a tubular housing having an axially extending cylinder rotatably mounted therein, which cylinder has a striker member reciprocal therein and a tool drive member in one end thereof, said drive member being disposed adjacent the corresponding end of the housing and including a central bore extending axially of the cylinder, power means in said device for simultaneously actuating said striker member and rotating said cylinder, a nose member fixedly attached to said end of the housing, which nose member includes a centrally disposed multi-sided opening extending axially of the housing, an elongated tool element axially disposed in said opening, which tool element has a shank extending into said bore with the portion of the tool element just forward of the opening having a forwardly facing annular shoulder, a retainer member pivotally mounted on said nose member for swinging movement between operable and inoperable positions, which retainer includes a tool engaging portion adapted for axial alignment with said opening when the retainer is in said operable position, said tool engaging portion being adapted in the operative position of the retainer to receive rotatably and slidably said tool element forward of said shoulder, whereby said tool element is retained in said device during operation thereof.

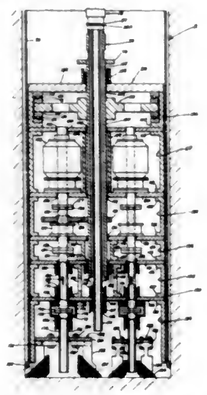
3,161,243
DRILLING SYSTEM WITH PLURAL BELOW GROUND MOTORS

Frank F. Davis, Sacramento, Calif. (1029 2nd St., Santa Monica, Calif.)

Filed July 22, 1960, Ser. No. 44,673
17 Claims. (Cl. 175—95)

1. An apparatus for the drilling of large diameter vertical bore holes in the surface of the earth which comprises a large diameter drill mill adapted to work at the bottom of a vertical bore hole, a stationary vertical drill stem extending from said drill mill to the earth's surface, said drill stem being non-circular in cross-section and comprised of a plurality of elongated sections each including multiple pipes, said drill mill including a housing, a central vertical tubular shaft extending from the upper end of said housing and adapted to be rigidly con-

nected to said drill stem, said housing journalled on said tubular shaft for rotation relative thereto, a plurality of rotary gangs of cutting members extending from the bottom of said drill mill housing, each of said gangs including a plurality of individual rotary cutting members,

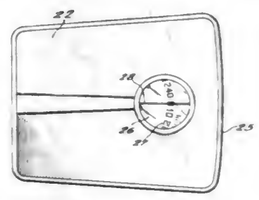


motor means within said housing operatively connected to rotate each of said gangs of cutting members, said motor means secured within said housing for movement therewith and operatively connected to said central tubular shaft to rotate said housing with respect to the stationary drill stem.

3,161,244
ZEROING DEVICE FOR BATHROOM TYPE SCALES

Stan B. Hanssen, Kenilworth, Ill., assignor to Hanson Scale Company, a corporation of Illinois

Filed June 15, 1961, Ser. No. 117,407
5 Claims. (Cl. 177—173)

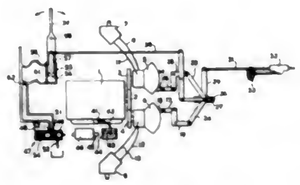


1. A platform scale, comprising:
a scale base;
weight sensing mechanism supported on said base including levers pivoted on the base, a weight supporting platform carried on the levers and spring suspension means for the levers providing movement of the levers relative to the base in proportion to the magnitude of weight placed upon the platform;
an indicating mechanism for visually indicating the amount of weight on the platform and a support therefor mounted in the scale base,
said indicating mechanism including a movable weight indicator member, mechanical linkage means biased into contact with a movable portion of said weight sensing means so as to be movable in proportion to movement of the latter means and being connected to the movable indicator member to cause movement thereof in like proportion,
said scale carrying a datum adjacent said movable indicator member, said datum and indicator member together providing visible indication of weight on the platform,
and means for adjusting the position of said indicating mechanism support relative to said scale base and levers whereby such adjustment may move said biased mechanical linkage relative to said levers changing the relative position of the indicator member and datum for adjusting the scale indication to zero with no weight thereon.

3,161,245
VEHICLE PROPULSION

Oswald Thoma, Grunwald uber Munich, Germany, assignor to Dowty Hydraulic Units Limited, Tewkesbury, England

Filed June 19, 1961, Ser. No. 118,028
Claims priority, application Great Britain, June 21, 1960, 21,769/60
9 Claims. (Cl. 180—6.48)



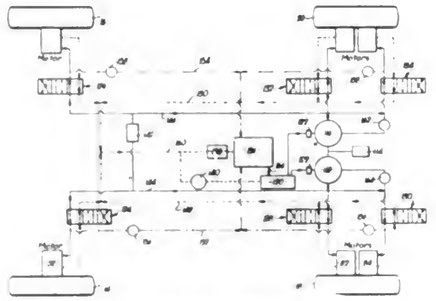
1. In combination, a vehicle having two ground engaging elements spaced transversely thereof, vehicle propulsion means comprising an engine and a pair of infinitely variable speed ratio power transmissions connecting the engine to the ground engaging elements to drive the vehicle, a transmission control connected to the transmissions to vary the speed ratios thereof, a speed control connected to the transmission control to select speed ratios for the transmissions, a steering control connected to the transmission control to establish a given proportionality between the speed ratios selected by the speed control, and an overload control connected to the transmission control to reduce the speed ratios of the transmissions commensurate with the proportionality established between them, in response to an overload condition in the propulsion means, there being overrider means in the connection between the speed control and the transmission control permitting the latter control to move independently of the speed control when such overload condition arises.

3,161,246
DRIVING AND SUSPENSION SYSTEM FOR AMPHIBIOUS VEHICLE

William D. Meeker, Leslie S. Simmons, and Wilson C. Vanderslice, Kansas City, Mo., assignors to Product Development Corporation, Kansas City, Mo., a corporation of Missouri

Filed July 16, 1962, Ser. No. 210,086
5 Claims. (Cl. 180—6.48)

1. A driving system for a vehicle having a body supported by a pair of front wheels and a pair of rear wheels; an hydraulic motor coupled to each of said front wheels; a pair of hydraulic motors coupled to each of said rear wheels; a first hydraulic circuit for supplying fluid to the motors on one side of the vehicle; a second hydraulic circuit for supplying fluid to the motors on the other side of said vehicle; a pump for each of said circuits; valves interposed in each circuit between the pump therefor and the motors thereof whereby to allow selective, independent control of the speed of each motor of each circuit; a return line for each circuit; a heat exchanger for receiving fluid from said circuits through said return lines, said return lines entering the heat exchanger through a common line; valve means interposed in said common line where-

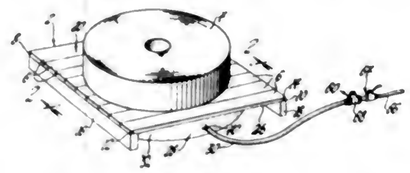


by to throttle the flow of fluid therein and thereby brake said vehicle; and a supplemental pump coupled with said common line for increasing the fluid pressure therein.

3,161,247
AIR CUSHION LOAD SUPPORTING DEVICE

Harry A. Mackie, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 19, 1961, Ser. No. 111,290
12 Claims. (Cl. 180—7)

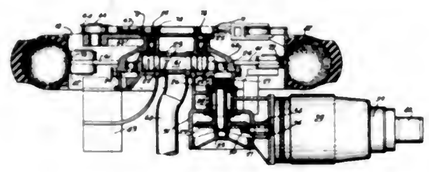


1. In combination with a platform pallet having depending runners normally engaging a supporting surface, a flexible toroidal body disposed between said runners, an imperforate surface enclosing the opening defined by the inner periphery of said toroidal body, means for introducing superatmospheric air into said toroidal body, and means for venting said toroidal body into the space bounded thereby and beneath said imperforate surface.

3,161,248
VEHICLE WHEEL SUSPENSION

Theodoric B. Edwards, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed June 8, 1962, Ser. No. 201,216
5 Claims. (Cl. 180—10)
(Granted under Title 35, U.S. Code (1952), sec. 266)

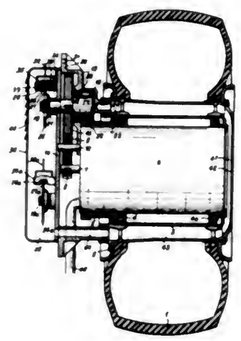


1. A vehicle wheel assembly comprising a hub, a torque source, a vehicle chassis, said hub rotatably mounted in substantially fixed relation to said torque source and to the vehicle chassis; first torque transmission means between said torque source and said hub; a cylindrical rim generally surrounding said hub; second torque transmission means between said hub and said rim; torsion suspension means including a plurality of torsion bars anchored on one end on said vehicle chassis and affixed to said chassis at a location different from the location of mounting said torque transmission means and said hub, torsion crank arms affixed on one end to the unanchored end of each of said torsion bars, and rollers rotatably mounted on the free ends of each of said torsion crank arms and so disposed as to roll along the inner surface of said rim and to exert forces tending to maintain said rim in a position concentric with said hub.

3,161,249
ELECTRIC DRIVING WHEEL EQUIPPED WITH A BRAKING SYSTEM

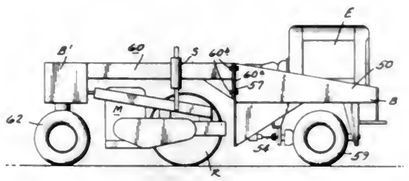
Gabriel Bouladon and Paul Zuppiger, Carouge, Geneva, Switzerland, assignors to Automobiles M. Berliet, Lyon, France, a firm

Filed July 17, 1962, Ser. No. 210,437
Claims priority, application Switzerland, July 17, 1961, 8,388/61
7 Claims. (Cl. 180—10)



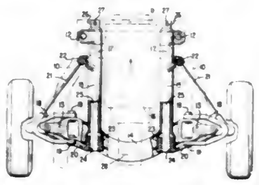
1. An electric driving wheel assembly comprising, a stub-axle structure adapted to be secured to a vehicle chassis and including an electric motor having a drive shaft, said assembly further including a wheel rim rotatably on said stub-axle structure, a drive gear associated with said drive shaft for rotating with said shaft, a driven gear associated with said wheel rim for rotating with said rim, and gearing and brake means for the drive of said motor to be transmitted to said wheel rim and for said wheel rim to be braked, said gearing and brake means including a plurality of individually corresponding transmission gears having like reduction speeds in diminishment of the speed of said drive gear and rotatably mounted on said stub-axle structure, said transmission gears correspondingly being in like gear trains with said drive gear and said driven gear and being in driven relation to said drive gear and in driving relation to said driven gear, and said gearing and brake means further including a plurality of similar brake means each to dissipate a fraction of total energy to be braked and each comprising a first component connected intermediately of a corresponding one of said gear trains with said transmission gear of the train to rotate at the speed of the other of said first components and intermediate the speeds of said drive gear and said driven gear for said wheel rim to be braked, and each of said brake means further comprising a second component on said stub-axle structure adjacent to a corresponding said first component correspondingly to engage said first component with a braking force.

3,161,250
MULTIPLE-WHEEL ARTICULATED DRIVE AXLE AND VEHICLE
Adryl W. Gardner, 19 N. Buena Vista Ave., Redlands, Calif.
Filed June 15, 1961, Ser. No. 117,470
10 Claims. (Cl. 180—22)



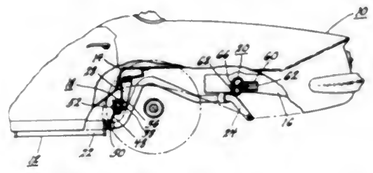
1. In combination with a vehicle chassis, an axle and multiple-wheel assembly comprising an axle disposed transversely of said chassis; axle-mounting means on said chassis and on said axle and pivotally supporting the latter for oscillation with respect to the former about a substantially horizontal axis longitudinally disposed at the transverse center of the chassis, said axis passing through the center of gravity of said axle and wheel assembly; spindle means at each end of the axle; a pivoted joint connecting each spindle means to an end of the axle about a horizontal axis of articulation disposed longitudinally of the chassis and in the same plane as said first-mentioned horizontal axis; and multiple wheels journaled on each spindle means with at least two of said wheels on each spindle means disposed on opposite sides of the axis of articulation of the adjacent pivotal joint.

3,161,251
WHEEL SUSPENSION FOR VEHICLES
Ludwig Kraus, Stuttgart-Sillenbuch, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 8, 1961, Ser. No. 115,801
Claims priority, application Germany June 11, 1960
4 Claims. (Cl. 180—64)



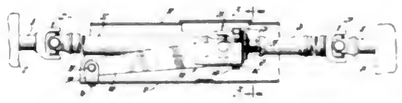
1. A front wheel suspension and spring system for a motor vehicle having a vehicle superstructure, steered front wheels, and a drive unit, comprising auxiliary frame means for supporting said steered front wheels and said drive unit including a substantially transversely extending frame member and two hollow tubular bearer members extending longitudinally of the vehicle and toward the front thereof from said transversely extending frame member, first means for elastically supporting said auxiliary frame means on said vehicle superstructure, second means for elastically supporting said drive unit exclusively on said auxiliary frame means, said transversely extending frame member being disposed approximately in a vertical plane extending transversely of the vehicle and including the wheel axes, two torsion springs in the form of leaf-spring packages one each arranged within a respective hollow longitudinal bearer member, and transverse guide means including upper and lower guide members for each wheel, the lower guide member for each wheel being directly connected with a respective end of a torsion spring and being supported within a respective tubular bearer member, and said lower guide member each being composed of an arm member extending approximately transversely of said vehicle and of a rod extending toward the front of said vehicle obliquely to the vehicle longitudinal direction, each of said rods being elastically secured at the forward end thereof to a respective hollow bearer member.

3,161,252
EXHAUST SYSTEM HANGER FOR MOTOR VEHICLES
Arthur S. Brown, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,792
5 Claims. (Cl. 180—64)



1. A vehicle having a body and an engine exhaust member carried by said body and means resiliently supporting said exhaust member on said body, said resilient supporting means comprising a first bracket secured to the vehicle body, a second bracket secured to the exhaust member, and a flexible noise insulating loop secured to and between said brackets, said loop having free upper and lower portions and a center axis, said free upper and lower portions permitting a rolling of the loop in either direction from the center axis whereby a directionally controlled movement of the engine exhaust member with respect to said body results.

3,161,253
DRIVE LINE SUPPORT MEANS
Robert W. Burton, Farmington, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,377
3 Claims. (Cl. 180—70)



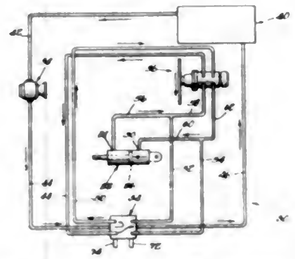
1. In a vehicle having a frame and a drive line adjacent said frame, said drive line including a pair of shaft sections connected by a universal joint, center support means for said drive line comprising:

a cradle member pivotally secured to said frame and extending longitudinally of said drive line, said cradle having a transverse wall formed on the end thereof surrounding one of said shaft sections adjacent said universal joint;

and resilient means securing said wall in a frictional face to face relationship to a rigid surface of a non-rotatable member transverse to the shaft axis supporting said one of said shaft sections;

said cradle and said resilient means permitting vertical movement of said universal joint relative to said frame to balance secondary couple forces in said drive line under normal changes of angularity of said shaft sections with changes of load conditions in said vehicle.

3,161,254
STEERING APPARATUS
James T. Monk, Jackson, Miss., assignor to M-R-S Manufacturing Company, Jackson, Miss., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,460
11 Claims. (Cl. 180—79.2)



1. Control apparatus comprising: means transducing a pressure differential to a mechanical movement for actuating a dirigible device, including means defining fluid-passing passageways; first control valve means; second control valve means remote from said first control valve means and having a plurality of fluid-passing ports; means supplying fluid under relatively high pressure to said first control valve means; means exhausting fluid under relatively low pressure from said first control valve means; first conduit means for communicating said first control valve means with one of said ports and with one of said passageways; second conduit means for communicating said first control valve means with another one of said ports and with the other one of said passageways; third conduit means for communicating said first control valve means with still another one of said ports; and fourth conduit means for communicating said first control valve means with yet another one of said ports, said first control valve means including fluid-circuit defining means operative to make connections between said fourth conduit means and said fluid exhausting means and between said fluid supplying means and said third conduit means whereby to condition said second control valve means for operating said transducing means, said fluid-circuit defining means being alterable to obstruct flow through said third and fourth conduit means whereby to disable said second control valve means, said fluid-circuit defining means being further alterable selectively to make connection between said fluid supplying means and one of said first and second conduit means and between said fluid exhausting means and the other of said first and second conduit means.

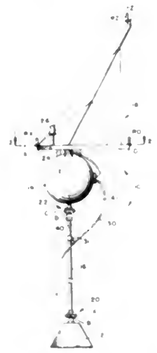
3,161,255
UNDERWATER PLATFORM
Peter L. Balise, Jr., Seattle, Wash., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 20, 1960, Ser. No. 37,536
2 Claims. (Cl. 181—.5)

1. In an underwater acoustic array of the type having a plurality of spaced acoustic devices rigidly affixed to a buoyant chamber and adapted to be maintained in a substantially fixed position in space near the bottom of a body of water irrespective of current of the water, the improvements, in combination, comprising:

(*a*) an anchor adapted to be disposed on the floor of the body of water,

(*b*) a rigid elongated arm disposed between said anchor and chamber, and

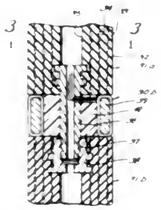
(*c*) universal joints connecting opposite ends of said arm to said anchor and chamber, having pivotal axes which permit the longitudinal axis of said arm to remain in a position away from the vertical in accordance with forces of the current and irrespective of relative movement at its ends with respect to said anchor and chamber,



(*d*) said universal joints also being so constructed to prevent rotation of said arm about its longitudinal axis,

whereby the array will remain directionally oriented in space irrespective of the current or settling of the anchor.

3,161,256
ACOUSTIC LOGGING TOOLS
George H. Pardue, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 16, 1961, Ser. No. 110,472
5 Claims. (Cl. 181—.5)



1. Apparatus for use in well bores including an elongated cylindrically shaped assembly which includes: a support member composed of an elastomer material and a screen of metal with intercoupled strands embedded in said material, said screen having a spiral curvature about a central axis of the support member with the strands disposed diagonally to the central axis, and at least one acoustic transducer secured to said support member.

3,161,257
JET PIPE NOZZLE SILENCERS
Alec David Young, "The Sycamores," Whitehall Lane, Buckhurst Hill, England
Filed Apr. 25, 1960, Ser. No. 24,553
Claims priority, application Great Britain May 1, 1959
8 Claims. (Cl. 181—33)

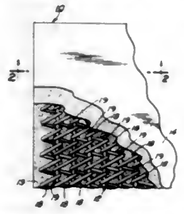
1. A jet pipe nozzle for partially inhibiting the generation of noise by a high velocity fluid stream issuing from the nozzle exit into ambient fluid, the nozzle including a boundary wall, a plurality of vanes mounted on the boundary wall and extending lengthwise upstream from the nozzle exit, some of said vanes projecting widthwise from one side of the boundary wall into the high velocity fluid stream and the others projecting widthwise away from the opposite side of the boundary wall into the

ambient fluid, said vanes in their operative position being inclined lengthwise with respect to the general direction



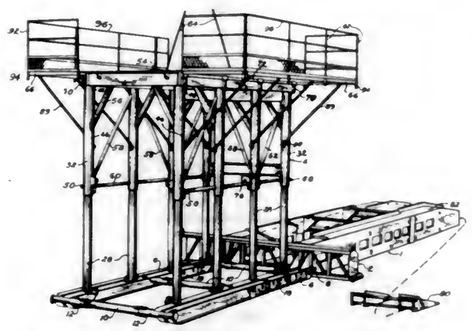
of fluid flow with all said vanes on either one of the boundary wall sides inclined in the same sense.

3,161,258
SOUND INSULATING MATERIAL AND METHOD OF MAKING THE SAME
Dave Chapman, Chicago, Ill., assignor to Mohasco Industries, Inc., Amsterdam, N.Y., a corporation of New York
Filed Nov. 29, 1961, Ser. No. 155,618
17 Claims. (Cl. 181—33)



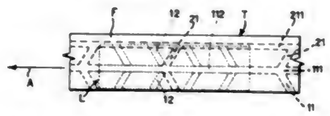
1. A sound insulating member comprising a sheet of limp, flaccid, flexible air-impervious material and a linkage of metallic wires embedded in said sheet, said wires and said sheet having a composite mass of at least 2.0 pounds per square foot.

3,161,259
TELESCOPING SUBSTRUCTURE FOR DRILLING RIGS
John Hart Wilson, P.O. Box 1031, Wichita Falls, Tex.
Filed May 21, 1962, Ser. No. 196,151
4 Claims. (Cl. 182—141)



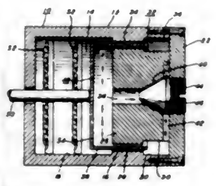
1. A substructure for drilling rigs comprising; a pair of sills forming a base, members mounted on and secured to said sills in spaced apart relation longitudinally thereof and extending upward therefrom, further members telescoped over said respective upstanding members, said further members having a platform secured to the upper ends thereof, bracing secured intermediate said further members and said platform to hold said platform in rigid relation with respect thereto, abutment means on said respective further members to engage said upstanding members to support said platform a selected spaced distance above said sills, hoisting means to raise said platform, each of said upstanding members has an abutment mounted thereon, on the upper end thereof, which abutment is larger in diameter than said upstanding member, means securing said respective abutments against longitudinal movement with respect to said respective upstanding members, which abutments are of a size to fit in sliding relation within the inside of said respective further members, a sleeve fitted within the inner diameter of each further member and being secured thereto near the lower end thereof, each said sleeve being engageable with said respective abutment secured on the respective upper ends of said upstanding members when said further members are in one position.

3,161,260
SELF-CLEANING AND VENTILATING BRAKE
Celestino Benini, 14 Via Lucchesi, Ferrara, Italy
Filed Sept. 11, 1962, Ser. No. 222,907
Claims priority, application Italy, Sept. 12, 1961, 16,293/61
1 Claim. (Cl. 188—78)



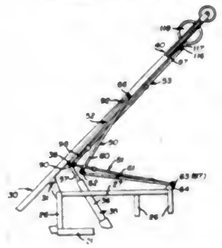
A brake comprising a rotatable drum having a circular braking surface, a brake shoe having a friction lining, said brake shoe being movably mounted so as to be capable of engaging a surface of the friction lining with said braking surface of the drum, each of said engageable surfaces of the drum and shoe friction lining being provided with a central longitudinal groove and with a plurality of transverse V-shaped grooves meeting said central groove at their apices, and said V-shaped grooves in one of the said engageable surfaces being inverted with respect to the V-shaped grooves in the other.

3,161,261
DASHPOT
Herbert W. Bryant, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,614
4 Claims. (Cl. 188—96)



2. A dashpot comprising:
a housing having a piston chamber therein and a protrusion extending into the chamber, the protrusion having an outside surface spaced from an inside surface of the housing to define a continuous slot having both a resistance portion uniform in cross section throughout its length and a terminus portion of larger cross section than the resistance portion, the terminus portion being in series with the resistance portion; and
a cup shaped piston movably positioned within the chamber, the piston including a base portion and a skirt portion, the skirt portion being uniform in cross section throughout a portion of its length, which cross section is smaller than the cross section of the resistance portion of the slot, the skirt portion of uniform cross section occupying the entire length of the resistance portion throughout the stroke of the piston and being spaced from the surfaces defining the slot throughout the stroke of the piston.

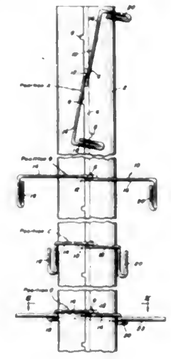
3,161,262
FOLDING BRACE CONSTRUCTION
Carl F. Back, Orrville, Ohio, assignor to The Sanderson Cyclone Drill Company, Orrville, Ohio, a corporation of Ohio
Filed Jan. 28, 1963, Ser. No. 254,057
7 Claims. (C. 189—11)



1. In a drilling machine having a frame and a retracting and extending mast, said mast having a base member **30** pivotally carried at the upper rear of the frame and an upper member **40** carried telescopically of the base member, four pairs of folding braces for said mast comprising:
a pair of diagonal braces **50**, each of these said braces including hingedly connected upper and lower rods **60**, **61**, the lower end of each lower rod being normally connected to said frame, the upper end of each upper rod being connected to said mast base member;
a pair of rear braces **51**, each of these said braces including relatively movable spaced parallel upper and lower rods **71**, **72**, the orientation of said rods being maintained by slip joint brackets, the lower end of each lower rod being normally connected to said frame, the upper end of each upper rod being carried by a pivot shaft **90**, there being a mechanism on said brackets to lock together said rods when said mast is extended.
a pair of tie braces **52**, each of these said braces including a fixed length rod, one end of said rod being connected to said base member, the other end of said rod being connected to said pivot shaft **90**; and
a pair of angle braces **53**, each of these said braces including relatively movable spaced parallel upper and lower rods **97**, **98**, the orientation of said rods being maintained by slip joint brackets, the lower end of each lower rod being carried by said pivot shaft **90**, the upper end of each upper rod being connected to said mast upper member, there being a mechanism **105** to lock together said rods when said mast is extended.

3,161,263
OBJECT SUPPORTING ASSEMBLY
William H. Stokes, Cleveland, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey
Filed Jan. 19, 1961, Ser. No. 83,707
5 Claims. (Cl. 189—23)

3. A post assembly comprising an elongated object to be supported in a generally horizontal plane, a post formed from a sheet bent into a hollow cylinder with a vertical slot between the longitudinal edges of the sheet, said post having a horizontal slot through the wall thereof extending from the said vertical slot, a clip formed from wire having a diameter at least as small as the width of said slots, said wire clip having a central loop therein of smaller size than the internal diameter of said post and a leg extending generally tangentially from each end of the loop, said loop being received within said supporting member with each leg extending through said slots at the intersection thereof and being bent around said supporting



member with the leg extending from the right side of the loop being around the left side of said post and the leg extending from the left side of the loop being around the right side of said post, the diameter of said loop being less than the length of said vertical slot and greater than the length of said horizontal slot, and means at the ends of each leg securing said object on the opposite side of the post from said slots in substantially the same plane as the horizontal slot.

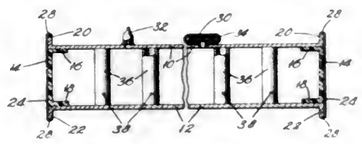
3,161,264
TREE-TYPE LIGHTING FIXTURE AND ROOM DIVIDER
Louis Isaacson, 3515 Armitage Ave., Chicago 47, Ill.
Filed Aug. 31, 1962, Ser. No. 220,671
3 Claims. (Cl. 189—26)



1. A fixture of the class described comprising
(*a*) an elongated tubular member,
(*b*) means at opposite ends of said tubular member for attaching said member between the ceiling and floor of a room,

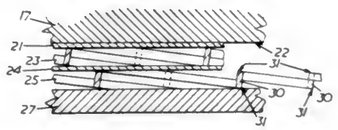
(*c*) one of said attaching means comprising a cap having a circular body portion with a center opening formed therein which projects into and substantially closes the adjacent open end of said tubular member,
(*d*) said cap providing integrally formed coaxial sleeves extending from opposite sides of said circular body portion with said sleeves having diameters which are less than the diameters of said circular body portion so that one of said sleeves extends freely into said tubular member when said cap closes the same,
(*e*) an elongated extension rod having one end projecting through said sleeves on either side of said cap and through the center opening formed therein and into said tubular member with its opposite end extending therefrom and into engagement with the floor for supporting said tubular member thereon,
(*f*) latching lugs carried by said circular body portion of said cap on opposite sides of said one of said sleeves and extending radially therefrom into facial abutment with the inner wall surface of said tubular member,
(*g*) said latching lugs having L-shaped camming notches formed therein, and
(*h*) projections provided by said tubular member and extending inwardly with respect thereto and into said notches for camming said cap into closing position with respect to said end portion of said tubular member upon rotation of said cap concentrically with respect to said tubular member.

3,161,265
VACUUM PANEL INSULATION
Ladislas C. Matsch, Kenmore, N.Y., and John H. Beckman, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 27, 1959, Ser. No. 789,401
4 Claims. (Cl. 189—34)



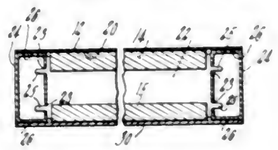
1. In a heat insulated vacuum panel having spaced parallel panel walls, an improved panel edge sealing construction comprising a non-metallic low conductive compression member supporting the ends of said spaced parallel panels, a flat coplanar supporting surface formed by the edges of said spaced parallel panel walls and said nonmetallic low conductive compression member for receiving thereon a metallic member which is gas tightly secured to said edges so as to form a leak-proof construction.

3,161,266
NUCLEAR REACTOR INSULATION
John M. Miller, and Thomas F. Dryden, London, England, assignors to Babcock & Wilcox Limited, London, England, a British company
Filed Oct. 26, 1959, Ser. No. 848,868
8 Claims. (Cl. 189—34)



1. Thermal insulation including a thin metal sheet, a second sheet having a surface spaced from and opposed to one surface of said thin metal sheet, an expanded metal sheet disposed between said first two sheets and consisting of integrally joined bands defining open areas and having diagonally opposed spaced terminal points contacting the opposed surfaces of said sheets, the faces of said bands being angularly displaced from a line normal to the sheets to provide a tortuous heat conductive path between said sheets.

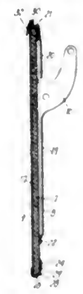
3,161,267
BUILDING WALL
Robert R. Keller, 150 Milford St., Manchester, N.H.
Filed Nov. 18, 1959, Ser. No. 853,790
1 Claim. (Cl. 189—34)



A prefabricated building panel comprising a grid formed of a multiplicity of rigid grid members mechanically connected together, each of said grid members having a web and flanges at each edge thereof extending at an angle to said web, the outer surfaces of each of said flanges being substantially flat and parallel to each other, the grid members extending in two directions and defining a multiplicity of open spaces surrounded by said grid members, said flanges at one edge of said webs defining a first set of bonding surfaces, said bonding surfaces being aligned in a single plane, a first outer sheet member extending in said plane over said grid, said first sheet member having an outer wear-resistant surface and an inner bonding surface, said inner bonding surface bonded with a layer of adhesive face-to-face to said first set of bonding surfaces, said layer of adhesive lying directly between the cooperating bonding surfaces of said first sheet member and said first set of bonding surfaces, said first sheet member extending continuously over all of said open spaces, a multiplicity of stiff, pre-formed backing sheet members one fitted in each of said open spaces in said grid, each backing sheet member having an area substantially corresponding to the area of said first sheet member lying over said open space, each backing sheet member having a planar bonding surface bonded by a layer of flexible adhesive face-to-face to said first sheet member substantially throughout said area, said backing sheet members each being thicker than said first sheet member and structurally of lesser density than said first sheet member and said grid members, the outer surfaces of said flanges on the other edge of said webs defining a second set of bonding surfaces, said second set of bonding surfaces being aligned in a single plane, a second outer sheet member adhesively secured to said second set of bonding surfaces, said second set of bonding surfaces locating said second sheet member in a spaced apart relationship to said backing sheet members, the smallest dimension of each of said open spaces parallel to said planes being substantially greater than the spacing between said planes.

3,161,268
LOUVER ASSEMBLY
Leo V. Bent, Marcellus, Mich., assignor to Tailormade Industries, Inc., Marcellus, Mich
Filed July 18, 1962, Ser. No. 210,659
6 Claims. (Cl. 189—69)

4. A louver assembly comprising a panel, oppositely facing panel support members having rearwardly projecting pivot arms spaced downwardly from their upper ends and having front panel supporting flanges terminating at their lower ends in rearwardly projecting panel supporting lugs and having slots therein above said lugs, said panel support members also having rear panel support members, a bottom crosspiece of upwardly facing channel section embracing the lower edge of said panel, said bottom crosspiece having slots in the bight and inner flange thereof aligned with said slots in said panel support member front flanges, clips disposed through said

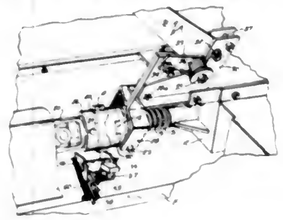


slots in said front flanges of said panel support members in interlocking engagement with said slots in said panel support members and said bottom crosspiece, and a top crosspiece disposed on the upper edge of said panel and detachably engaged with said panel support members and acting when engaged therewith to prevent upward movement of said panel relative to said panel support members.

ERRATUM

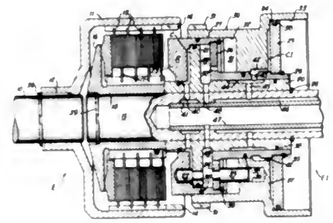
For Class 190—58 see:
Patent No. 3,161,271

3,161,269
CAM OPERATED CLUTCH FOR FORAGE WAGONS
Gail E. Janssen, West Bend, Wis., assignor to Gehl Bros. Manufacturing Co., West Bend, Wis., a corporation of Wisconsin
Filed Dec. 3, 1962, Ser. No. 241,971
5 Claims. (Cl. 192—24)



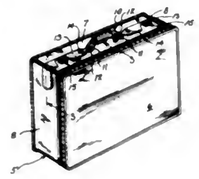
1. A declutching device for a self-unloading wagon of the type having rotatably driven parts, a power shaft for driving said parts, and a clutch for said power shaft, said clutch having a pair of disengageable elements, said device comprising a pair of tubular cams mounted on and around the outside of at least one of said elements and having complementary cam surfaces, said cams being rotatable with and enclosing said elements in normal drive operation, one of said cams abutting against one of said elements for shifting the latter to a clutch disengaged position, means for stopping rotation of the other of said cams to thereby cause relative rotation between said cams and consequently shifting one cam and its associated element to a clutch disengaging position.

3,161,270
FRICTIONAL AND POSITIVE PROGRESSIVE ENGAGEMENT CLUTCH
George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 27, 1963, Ser. No. 261,284
9 Claims. (Cl. 192—53)



1. A synchronizing clutch mechanism having a drive element and a driven element with a friction clutch therebetween, positive clutch means carried by one element, said other element including a fluid pressure actuated ring for axial sliding in one direction to cause engagement of said friction clutch, said other element also including a fluid pressure actuated positive clutch member which forms an expansible fluid pressure chamber with said ring, said chamber when pressurized causing axial sliding of said positive clutch member in said one direction and into contact wtih said positive clutch means and then causing sliding of said ring in the opposite direction and slipping of said friction clutch to thereby permit axial alignment and complete engagement of said positive clutch means and positive clutch member to form a positive drive connection between said elements.

3,161,271
LOCK PROTECTING HANDLE STRUCTURE FOR HAND LUGGAGE CASES
Harvey L. O'Neil, Lebanon, Tenn., assignor to Hartmann Luggage Company, Lebanon, Tenn., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 300,034
7 Claims. (Cl. 190—58)

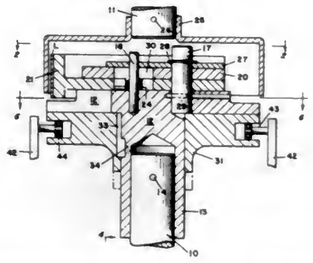


1. In a transportable case wherein a pair of companion, separable sections cooperate to form a six-sided body when said sections are mutually engaged, an assemblage applied to an outer wall portion of the case and including a grip portion, a lock mounted in the same wall of the case between said grip portion and an end of said wall, said assemblage including an elongated strap extending toward said end of said wall of the case and completely covering the lock, and means for releasably connecting an outer end portion of the strap to another wall portion of the case which is right angularly related to the first-mentioned wall of the case, the intermediate portion of the strap over the lock being free and being deflectable to expose the lock when the connecting means for the outer end portion of the strap is released.

3,161,272
SELF-ENERGIZING CLUTCH

Robert J. Malchodi, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 3, 1962, Ser. No. 192,294
6 Claims. (Cl. 192—74)

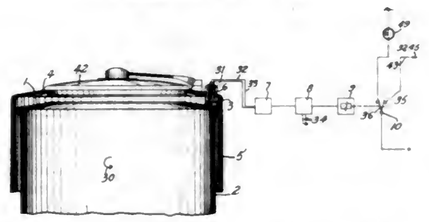


1. A self-energizable clutch device comprising in combination with a rotating input power shaft and an output shaft, a hub secured to and mounted centrally above said input shaft and including a first bore and an off-center bore, a pair of identical shoes disposed in inverted relation above said hub and providing a pair of opposed cam-actuated surfaces and a pair of spring-actuated surfaces, each of said shoes additionally providing a first hole aligned with and of larger diameter than said first hub bore and an off-center hole aligned with said off-center hub bore, a drum affixed to the output shaft concentrically proximately arranged about said shoes, a spring pin snug within said first hub bore and extending upwardly of each of said first shoe holes, a pivot snugly disposed in said off-center hub bore and extending upwardly of said off-center shoe holes, a spring around the spring pin disposed generally in said first shoe holes, said spring exerting pressure against the spring-actuated surfaces of each of said shoes for urging one of said shoes outwardly to engage said drum upon rotation of the input shaft, a slide secured to said hub generally axially therebelow for rotation therewith, a cam fixed to and extending upwardly adjacent the outer periphery of said slide, said cam providing a pair of downwardly converging faces, means for imparting vertical movement to said slide whereby a downward movement thereof will cause said cam faces to wedge against said shoe cam-actuated surfaces to disengage said shoe engaged against said drum.

3,161,273
ELECTRONIC MONITOR DEVICE FOR CENTRIFUGES

Aloys Simons, Aachen, Germany, assignor to H. Krantz-Aachen, Aachen, Germany, a German firm

Filed May 7, 1963, Ser. No. 278,602
5 Claims. (Cl. 192—136)

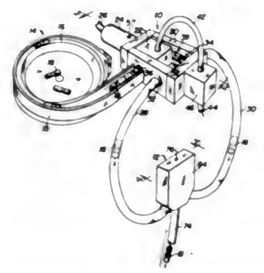


1. In a centrifuge construction of the type having a housing, a housing cover, lock means to lock said cover onto said housing and a centrifuge enclosure; the combination therewith of an automatic means to actuate said lock means to lock and unlock said lock means including an impulse generator actuated by rotation of said centrifuge to give spaced impulses closely spaced in normal operation and widely spaced when the centrifuge is slowly turning and stopping; electrical means to operate said lock means to unlock the same when the centrifuge is slowly turning and stopping and means to actuate said electrical means from the impulses actuated by said generator so that closely spaced impulses will maintain the lock means in position and widely spaced impulses will operate said lock means to unlock the same.

3,161,274
ORIENTATION APPARATUS AND METHOD

Donald D. Lanz, Oregon City, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Sept. 25, 1961, Ser. No. 140,459
8 Claims. (Cl. 193—43)



8. An orientation device for sorting a plurality of randomly oriented objects, each having opposite ends of different configuration, into a group of objects having predetermined orientation, comprising;

container means having a cavity therein and a pair of outlet openings at the opposite ends of said cavity, for holding one of said objects in a position inside said cavity with its ends in alignment with said outlet openings;

feeder means for feeding said objects into said container means, one at a time;

means to apply fluid under pressure to the one object inside said cavity so that said one object moves out of said container means through one of said outlet openings in one of two different directions determined by the orientation of said one object in said cavity; and

inverter means connected to each of said outlet openings for reversing the orientation of the objects passing through said outlet openings and for combining the objects into a single group of objects having the same predetermined orientation.

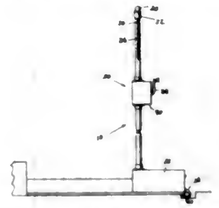
3,161,275
MECHANICAL PARKING ATTENDANT

John J. Sullivan, 3920 Granby St., Norfolk, Va.

Filed May 17, 1960, Ser. No. 29,709
21 Claims. (Cl. 194—84)

18. In a mechanical attendant for an automobile parking facility, in combination, a timer mechanism; a coin wheel having slots spaced along its periphery and extending toward the wheel center from the periphery, said slots being of graduated depths and being adapted to receive a graduated series of coins; means providing a fixed coin-receiver slot adjacent the wheel periphery, whereby coins are guided for insertion in the slots of the wheel; a wheel-actuating arm movable along the wheel periphery past the said slots, said arm being engageable with the last of a series of coins filling any one slot, thereby to effect a

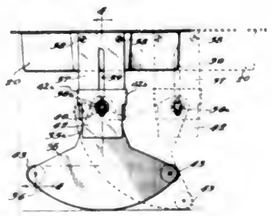
driving connection between the arm and wheel and means actuated by a car wheel and including a clutch, for coupling said timer mechanism to the coin wheel to advance the latter for presenting said slots consecutively at the said coin receiver slot.



3,161,276
STATIONERY CARRIER FOR WRITING MACHINES

Lester K. Fleischmann, Highland Park, and William J. Kenney, Villa Park, Ill., assignors to Standard Manifold Company, a corporation of Illinois

Filed Jan. 26, 1962, Ser. No. 169,067
8 Claims. (Cl. 197—133)



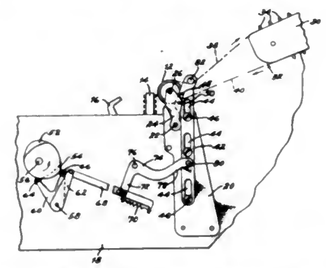
1. A stationery carrier for a writing machine having a laterally movable carriage, comprising: a platform member having a substantially upright rear wall and a front laterally extending part to rest upon the writing machine carriage; means for securing the platform member to the carriage to travel laterally therewith; a column-like pedestal depending from the rear wall of the platform member and including a pivoted rocker arranged to pivot against and over a supporting table surface and the like as said carriage and platform member move from side to side with said writing machine carriage, said rocker having an arcuate lower portion in rolling engagement with the supporting surface and a generally upright leg member joining the arcuate portion to the pedestal; and stop means on said pedestal in a position to abut said leg member as said stationery carrier moves with the typewriter carriage to limit the lateral movement of said rocker.

3,161,277
PAPER TAKE-UP MECHANISM FOR MOVABLE PLATEN

Donald J. Smithbauer, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 22, 1962, Ser. No. 232,237
2 Claims. (Cl. 197—133)

1. In a printing apparatus, supporting means, a rotatable platen mounted on said supporting means, a paper web feeder spaced laterally of the axis of said platen and operable to feed a paper web looped around said platen having a feed side and a trailing side, said platen being bodily movable from a printing position toward said feeder to a retracted position tending to effect a slackening in the web between said platen and feeder, a slide member movable transversely of the axis of said platen having a first position corresponding to the printing position of said platen and a second position corresponding to the retracted position of said platen, cam means interconnecting said slide member and said platen,

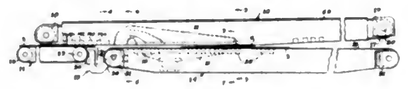


and a single slack take-up member carried by said slide member between said platen and feeder to hold the web taut about said platen throughout the range of movement of the latter.

3,161,278
METAL SHEET HANDLING APPARATUS

Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Company, Inc., Gary, Ind., a corporation of Indiana

Filed Nov. 6, 1961, Ser. No. 150,341
17 Claims. (Cl. 198—41)



1. A method of handling metal sheets of magnetic material in a continuous processing line, which comprises advancing successive sheets in a generally horizontal path to a horizontally disposed overhead magnetic conveyor, directing a stream of air upwardly toward the overhead conveyor in a direction diagonally across the path of advance of the sheets, advancing successive sheets across the stream of air so as to be partially supported thereby, deflecting the stream of air when the sheet has passed the same downwardly onto preselected areas of the top surface of the sheet and controlling the volume of air which is directed downwardly on each of said segregated areas by channeling the air onto said segregated areas whereby downward pressure is applied on the top surface of the sheet in varying degrees along the sheet so as to release the same from the magnetic conveyor at a predetermined position for deposit on a surface beneath.

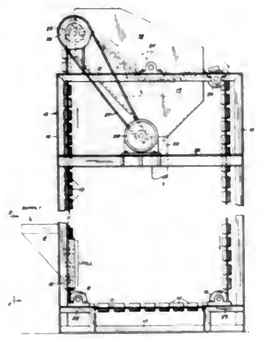
3,161,279
BOOTLESS GRAIN ELEVATOR

Troy Petree, Caldwell, Idaho
(P.O. Box 412, Branson, Mo.)

Filed Sept. 11, 1961, Ser. No. 137,220
4 Claims. (Cl. 198—55)

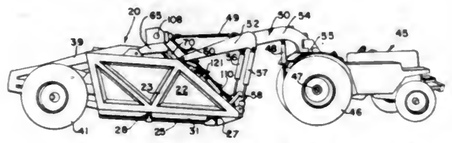
1. An elevator for grain or the like comprising: a supply hopper in which is placed grain or the like to be elevated; said supply hopper terminating at its lower end in a loading sleeve, said supply hopper having a wall sloping upwardly and outwardly from adjacent the top of said loading sleeve and said hopper increasing in cross sectional area to proivde sidewise movement of grain for filling said buckets, said loading sleeve having an inner wall forming a cylinder open at both ends, said upper open end of the cylinder directly communicating with and in alignment with the lower end of the hopper and in alignment with a portion of the supply hopper throughout the major portion of its height; a series of spaced buckets

attached to an endless chain; means to drive said chain whereby said buckets move upwardly through said loading sleeve and supply hopper and are filled with and elevate the grain or the like placed therein, a plurality of said buckets passing through said portion of the supply hop-



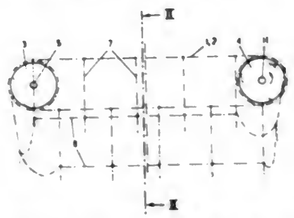
per and simultaneously receiving directly grain from said hopper; the periphery of each of said buckets fitting closely enough to said inner wall of said loading sleeve to prevent the entrance therebetween of particles of the grain or the like.

3,161,280
SCRAPER ELEVATOR
John H. Creighton, Bettendorf, Iowa, and Harold C. Welser, Rock Island, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,797
12 Claims. (Cl. 198—109)



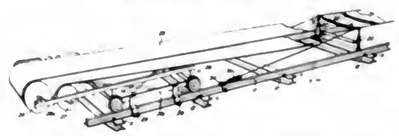
1. An elevator for use with an earth scraper having a forwardly opening material carrying bowl with upwardly extending opposed sides and a forward horizontally disposed cutting blade, the elevator comprising: a main frame inclined from a lower forward end to an upper rear end and composed of an upper laterally disposed portion having a pair of fore-and-aft extending side beams rigidly joined together by transverse framework, each of the side beams being disposed alongside a respective side; a pair of lower arms projecting forwardly from the respective side beams and joined with the side beams to permit independent fore-and-aft reciprocation of the arms; rotary drive means at the upper end of the laterally disposed portion; a sprocket on each of the arms; a flight type conveyor including a pair of continuous chains carried by the sprockets and rotary drive means and interjoined by transverse flights; a cushioning structure between the side beams and arms for biasing the arms forwardly toward a maximum extended position and yieldable to permit the respective arms and sprockets to retract relative to the side beams; an elongated rigid element underlying and normally engaging the underside of the upper run of each of the chains and pivotally connected at its forward end to the respective arm at a point closely adjacent the sprocket, the element extending rearwarly from its forward end to a remote end adjacent the respective side beam; a guide sprocket on each of the remote ends engaging the chain; and a link extending from each of the side beams to rear portions of the rigid elements permitting the rigid elements to move rearwardly as the arms are retracted.

3,161,281
CONVEYORS
Jan de Koning, Amsterdam, Netherlands, assignor to N.V. Ingenieursbureau voor Systemen en Octrooien Spanstaal, Rotterdam, Netherlands, a company of the Netherlands
Filed July 23, 1962, Ser. No. 211,582
Claims priority, application Netherlands, July 25, 1961, 267,511; Aug. 11, 1961, 268,111, 268,112
7 Claims. (Cl. 198—153)



1. A conveyor comprising at least two spaced apart substantially parallel endless movable conveying members, guiding members, said conveying members being supported and guided by said guiding members, rollers rotatably mounted in said conveying members, rails forming part of said guiding members for supporting said rollers, a relatively slack net having a free hanging leading edge suspended by and between said conveying members for carrying the material to be transported, said net including slack elongated supporting members suspended as to form chain lines, the ends of said chain lines being connected to the two spaced apart conveying members at points close to said rollers and forming the sole means for supporting the net from the conveying members, and a plurality of cables, each cable being attached at one end to the free hanging leading edge of the net and at the other end to a remote point of one of the conveying members.

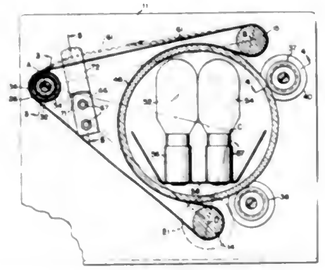
3,161,282
ROPE-SUSPENDED, SKID-MOUNTED, MOVABLE BELT CONVEYOR
Eino A. Koski and Howard A. Wilmeth, both of Silver City, N. Mex., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed July 27, 1961, Ser. No. 127,315
7 Claims. (Cl. 198—192)



1. A skid-mounted, movable, belt conveyor, comprising a series of ties arranged as skids; a pair of rails; means pivotally securing said rails to said ties as a track and permitting pivotal relative movement between rails and ties; pairs of wire-rope-supporting standards secured to and rising from respective ties; wire ropes extending from standard to standard lengthwise of said rails; belt-troughing idlers extending transversely of said wire ropes and secured thereto in mutually spaced relationship; an endless conveyor belt having its working run supported by said idlers; head and tail pulleys for said conveyor belt; supporting structures for the respective pulleys; idlers for the return run of said conveyor belt; and means rigidly securing adjacent ties together at one end of said track to prevent

relative longitudinal displacement of the rails, the remaining ties being free to move relative to the one another.

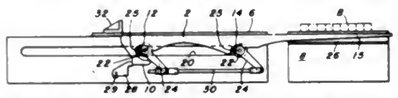
3,161,283
BELT TRACKING MECHANISM
Clarence S. Knab and Clarence R. Taylor, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 30, 1960, Ser. No. 89,331
5 Claims. (Cl. 198—202)



1. In a belt tracking mechanism, the combination comprising:
a plurality of rollers spaced from one another with their axes of rotation normally substantially parallel,
an endless belt trained over said rollers and guided thereby to move over a normal belt path when all of said rollers are substantially parallel,
means for driving said belt along said path defined by said rollers, and
means for automatically correcting for any improper tracking of said belt as it moves in said path about said rollers, and including
a mounting for at least one of said rollers providing for tilting and shifting of the axis of rotation of the roller from parallel relation with respect to an adjacent roller,
a fixed guide member mounted at each side of said belt adjacent said tiltable roller and between the same and the next succeeding roller in the direction of travel of said belt and between which guide members said belt moves when it is tracking properly over said rollers,
each of said guide members being inclined away from the edge of the belt adjacent thereto to form a ramp intersecting the plane of the reach of belt between said tiltable roller and said succeeding roller of said normal belt path, and on which the corresponding edge of said belt will move in an upwardly direction when said edge is forced along said ramp upon improper tracking of said belt from said normal belt path, and in response to which movement the tiltable roller will be tilted to cause the end thereof corresponding to the edge of said belt moving up said ramp to move in said upwardly direction so as to correct for the improper tracking of the belt.

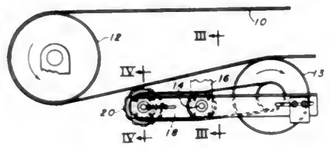
3,161,284
RECIPROCATING SHUFFLE-BAR CONVEYOR WITH BELL-CRANK LIFT
James E. Ashworth, Palo Alto, Calif., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Dec. 11, 1962, Ser. No. 243,939
3 Claims. (Cl. 198—219)

1. Apparatus for lifting and transferring articles comprising parallel horizontal lift bars, each of said bars having a pair of arcuate camming surfaces formed on its underside one adjacent each end thereof, a way adjacent opposite sides of each of said bars extending parallel with each other substantially in the horizontal plane containing the bottoms of said bars, supports for each bar spaced therealong, each support including a shaft extending transversely between the ways adjacent each bar and having a wheel disposed at each end adapted to travel along said ways, and a bell crank pivoted



on each of said shafts intermediate said wheels, a cam roller on each of said bell cranks adapted to engage said camming surfaces on the underside of said bars upon angular movement of said bell cranks about said shafts whereby to raise and lower said bars, and pivoted dogs positioned in the path of horizontal movement of said bars effective to restrain horizontal movement of said bars until after a predetermined vertical movement of the bars by said cranks.

3,161,285
ROTARY BELT CLEANER
Elmer D. Hummer, 2211 Orchard Way, Bluefield, W. Va., and Ted T. Zachwieja, Box 453, Thorpe, W. Va.
Filed June 7, 1963, Ser. No. 286,899
10 Claims. (Cl. 198—230)

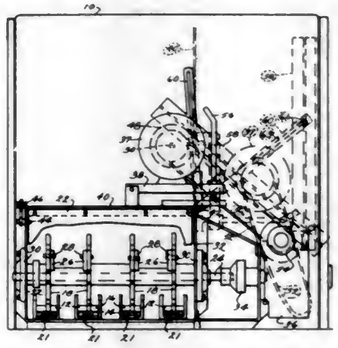


1. The combination, with a conveyor which includes a belt having carrying and return flights and pulleys over which said belt runs, of a cleaning device comprising an inflatable roller, means journaling said roller with its peripheral surface in contact with the surface of said belt on its return flight to wipe clinging material from the belt, and means operatively connected with said roller for inflating and deflating it at intervals while rotating to shed from its surface material wiped from the belt.

3,161,286
AUTOMATIC CONVEYER CUTOFF
William W. Robinson, Jr., Signal Mountain, and Dempsie C. Camp, Dunlap, Tenn., assignors to Cumberland Case Company, Chattanooga, Tenn., a corporation of Tennessee
Filed Jan. 24, 1963, Ser. No. 253,710
7 Claims. (Cl. 198—232)

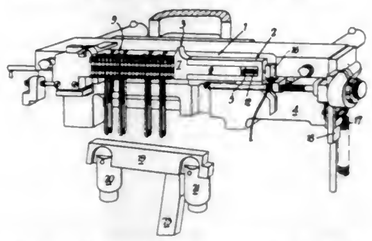
1. A conveyer comprising an endless chain supported in a trough, said chain comprising a plurality of interconnected chain links and said chain having upstanding, integral feed pushing flights on said links, means drivingly engaging said chain, a housing enclosing the chain engaging means, said housing having an access cover hingedly secured thereto, means securing a motor on the exterior of said access cover and a power transmission means communicating the motor with said chain engaging means, said access cover being swingable between a closed position wherein the motor is drivingly engaged with the power transmission means, chain engaging means and endless chain, and said chain engaging means is inaccessible for checking and maintenance, and an opened position wherein the motor having moved with said access cover is thereby disengaged from drivingly engaging the power trans-

mission means, chain engaging means and endless chain and access may be had to the interior of the housing for checking the interior of said housing and performing maintenance on the power transmission means, chain en-



gaging means and endless chain whereby inadvertent actuation of said power transmission means, chain engaging means and endless chain is precluded during said access to the interior of said housing.

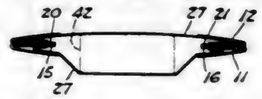
3,161,287
TYPOGRAPHIC COMPOSING MACHINES
Albert Lawless, Warrington, England, assignor to Linotype and Machinery Limited, London, England, a British company
Filed Apr. 17, 1962, Ser. No. 188,014
Claims priority, application Great Britain Apr. 17, 1961
5 Claims. (Cl. 199—50)



1. A vice mechanism for a typographical slug casting machine having a vice jaw adjustably mounted to be set in accordance with the length slug to be cast, characterized in that said jaw comprises an adjustably mounted body member having a longitudinal slot provided therein, a jaw member having a head portion with a face that extends inwardly to the side of the vice jaw which is parallel to and adjacent the mold disk of the machine and a shank that fits into said slot for sliding movement therein, means for limiting the movement of said jaw member out of said body member, and resilient means for urging said jaw member towards its limiting position to resiliently clasp a line of matrices and spacebands as they are being removed from between said vice jaws after a casting operation whereby the vice jaws are wiped clean of any adhering metal.

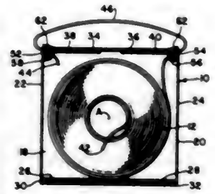
3,161,288
EXPANSIBLE RECEPTACLE
Kenneth E. Wagner, Williamsville, N.Y., assignor to Victor Wagner & Son, Inc., Buffalo, N.Y.
Filed May 29, 1963, Ser. No. 284,131
2 Claims. (Cl. 206—45.31)

1. A receptacle comprising a pair of juxtaposed generally rectangular paperboard panels joined at three marginal edges and disjoined at the fourth edge to form an envelope, a window opening in one of said panels, a flexible transparent film adhesively secured to the interior of said envelope along lines disposed outwardly of said window opening, at least one of said adhesive lines being between said film and the other of said panels, said film extending outwardly from said last mentioned adhesive



line toward the outer edge of the envelope thence inwardly across said window opening to provide an unadhered return bent portion outwardly of said last mentioned adhesive line whereby insertion of a three dimensional object in said envelope presses outwardly against said film in the window area and withdraws said return bent portion to permit said film to be bulged outwardly through said window opening to accommodate said article.

3,161,289
PACKAGE
Leyle V. Leysen, 2602 Western, Davenport, Iowa
Filed Mar. 5, 1963, Ser. No. 262,990
4 Claims. (Cl. 206—52)

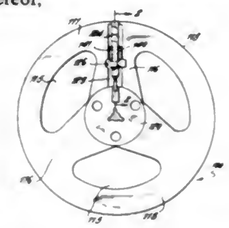


1. A package, comprising: an enclosing container having a pair of opposed upright walls and a peripheral wall joined to said walls, and a dispensible quantity of strand-like material disposed primarily in the container in the form of a coil having its principal axis normal to the upright walls and dispensible by unwinding thereof from its center so that its outer portions are the last to be dispensed, one of said upright walls being so constructed in the area of said axis to enable access to the terminal inner end of the coil for unwinding the coil by dispensing of the material through said one wall, said peripheral wall having a pair of peripherally spaced apertures in the area of the top of said container, said coil having a length of its outer terminal end in the form of a loop extending from the coil outwardly through one aperture and back inwardly through the other aperture to the interior of the container providing a carrying handle, and means operative on said loop for normally preventing separation thereof from the package while serving as said handle during dispensing of said material through said one wall.

3,161,290
REELS OR THE LIKE
Frederic A. Seff, 226—33 Manor Road, Queens Village, N.Y.
Filed Mar. 12, 1963, Ser. No. 264,572
7 Claims. (Cl. 206—53)

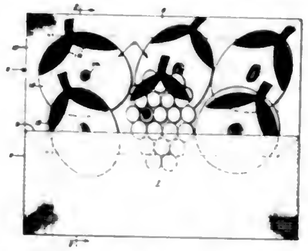
6. A self-locking reel comprising:
(*a*) an annular hub about which film is adapted to be wound,
(*b*) two parallel disks arranged about said hub to locate said film to be wound therebetween,
(*c*) an elongated spring member fastened across a radial cutout in one of said disks, said elongated

spring member being fastened only at its external ends in the same plane and radial to said disk,
(*d*) a thin lock member having an aperture adjacent one end thereof,



(*e*) the said spring member passing through said aperture and urging at least a portion of said lock member against said other disk whereby said lock member may be retained alternately in a first position almost parallel to said one disk and a second position perpendicular to said one disk.

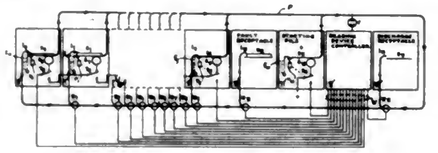
3,161,291
DISPLAY AND STORAGE DEVICE
Louis Bruce Matthai, Baltimore, Md., assignor to Ross-Matthai Corporation, New York, N.Y., a corporation of New York
Filed Oct. 15, 1963, Ser. No. 316,384
3 Claims. (Cl. 206—79)



1. A display and storage device comprising a sheet of loosely woven material folded upwardly upon itself at its lower end, said folded portion being of lesser vertical dimension than that of the underlying portion of said sheet and secured to the latter at its opposite, horizontal extremities forming a pocket which is open along its upper edge, a plurality of substantially flat articles individually contoured to fancifully represent horticultural products, and means securing said articles to the front face of said sheet respectively in vertically offset, partially overlapping rows with the lowermost row extending partially within the open edge of said pocket, whereby said assembled device presents the fanciful appearance of a basket of horticultural products.

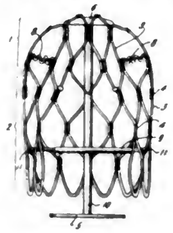
3,161,292
DEVICE FOR ELEVATING AND SORTING FLEXIBLE SHEETS
Christiaan Johannes Van Dalen, Leidschendam, Netherlands, assignor to de Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed June 27, 1961, Ser. No. 120,062
Claims priority, application Netherlands June 28, 1960
18 Claims. (Cl. 209—72)

9. A sorting device for sheets having a plurality of detectable group designations thereon comprising:
(*a*) a charging receptacle for a pile of sheets to be stored,
(*b*) a plurality of group receptacles for piles of sheets corresponding to each different group designation on said sheets,
(*c*) a discharge receptacle for the sorted pile of sheets,
(*d*) means at said charging receptacle and each group receptacle for removing one sheet at a time from the bottom of the pile in that receptacle,
(*e*) means at said discharge receptacle and each group receptacle for piling sheets successively one on top of the other in that receptacle,
(*f*) means for feeding sheets to each said piling means,



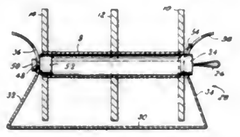
(*g*) circuit conveyor belt means passing each said removing means and each said feeding means,
(*h*) sheet switching means along said belt means at each said feeding means,
(*i*) means along said belt means before said feeding means and after said removing means for reading said designations on said sheets and controlling said switching means in accordance therewith,
(*j*) means at said charging receptacle for detecting when said charging receptacle is empty of sheets, and
(*k*) means controlled by said empty detecting means for transferring the piles of sheets in said group receptacles successively to said discharging receptacle.

3,161,293
HAT STAND
Frank S. Sander, Stamford, Conn., assignor to My Double Company, Inc., Stamford, Conn.
Filed May 13, 1963, Ser. No. 279,880
8 Claims. (Cl. 211—33)



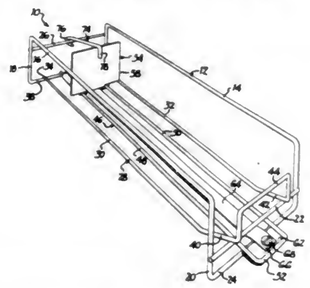
1. A hat and wig stand, comprising, in combination, an adjustable hat form including a dome-shaped top portion and a lateral portion extending downwardly from at least the major part of the periphery of said dome-shaped top portion, said adjustable hat form consisting essentially of a network of flexible substantially non-resilient relatively soft and deformable thin rods at least the surface portion of which consists of plastic material, and of elongated sleeve-shaped connecting members rigidly enclosing said rods at the connecting points of said network in such a manner that the rod portions within said sleeve-shaped connecting members are deformed, thus preventing turning and other relative movement of said connected thin rods at said connecting points relative to each other; and support means having a base and an upper portion located higher than said base and engaging said hat form so that said hat form is upwardly spaced from said base.

3,161,294
STORAGE RACK
Howard O. Meuche, 1312 S. 13th St., Vincennes, Ind.
Filed Jan. 16, 1963, Ser. No. 251,800
7 Claims. (Cl. 211—41)



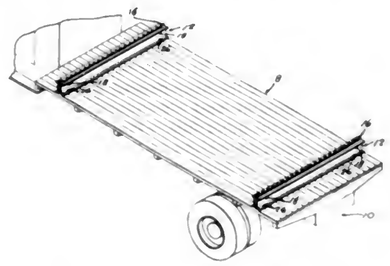
1. A storage rack comprising an elongated hollow tube, a plurality of circular discs on and concentric with said tube and spaced axially along said tube, two of said discs being the endmost of said discs and being positioned at opposite extremities of said tube, said discs each being provided with a plurality of radial slots spaced equally around said tube, the slots of the respective discs being axially aligned, selected ones of said discs being provided with a circular slot concentric with said tube, resilient retaining rings in the circular slots, said tube having predetermined inner and outer diameters, a plug fixedly engaged within said tube at and protruding axially from one extremity of the latter, and carrying means connected to said plug externally of said tube.

3,161,295
DISPLAY DEVICE FOR MERCHANDISE
Robert G. Chesley, Farmington, Mich., assignor to Chesley Industries Inc., Southfield, Mich., a corporation of Michigan
Filed Jan. 24, 1963, Ser. No. 253,560
1 Claim. (Cl. 211—49)



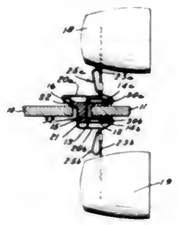
A display device for merchandise comprising a trough-like receptacle for containing a plurality of items of merchandise, said receptacle comprising a bottom wall, a pair of upstanding side walls and a front wall, said bottom wall including longitudinally extending guide means for a bracket, said receptacle bottom wall including longitudinally extending wire elements on each side of the guide means forming a surface for the items of merchandise to slide upon, said wire elements having an inclined portion adjacent the receptacle front wall upon which the foremost item slides to a position out of alignment with the other items to permit easy removal thereof from the display device, a bracket slidingly mounted on said guide means, said bracket having an upstanding wall for abutment with the rearmost item of merchandise, a flat coiled spring having one end secured to the front end of the receptacle, such spring continuing from the front end of the receptacle, passing through an opening in the bracket and terminating in a portion coiled upon itself and in abutment with the rearward surface of said bracket wall to constantly urge the bracket and items of merchandise towards the receptacle front wall, the said wire elements of the bottom wall being spaced apart a distance greater than the width of said bracket to permit the bracket to pass between the inclined portions of the wire elements and move the rearmost item of merchandise to the front wall of the receptacle.

3,161,296
VEHICLE PIPE RACK
Raymond A. Sartor, 23 MacAlester Road, Pueblo, Colo.
Filed Mar. 15, 1963, Ser. No. 265,484
6 Claims. (Cl. 211—60)



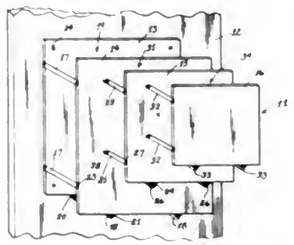
1. A vehicle pipe rack comprising a horizontal support, a pair of parallel transverse longitudinally spaced racks upstanding on and fixed to the support, said racks having pipe receiving notches spaced therealong in which pipes are adapted to rest with their sidewalls in laterally spaced relationship, said racks comprising upwardly opening channel holders secured upon the support, notched bars engaged in and extending upwardly out of the holders, the upper edges of the notched bars being formed with the bottoms of said notches on a level with the tops of the holders.

3,161,297
MOUNTING BRACKET FOR A VEHICLE ARTICLE
Richard S. Karbo, Whittier, Calif., assignor to Sutone Corporation, Paramount, Calif., a corporation of California
Filed June 3, 1963, Ser. No. 284,983
6 Claims. (Cl. 211—87)



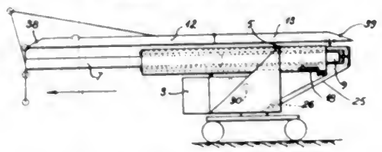
2. An article mounting bracket, comprising:
(*a*) a strap member formed to provide a U-shaped portion having spaced side legs interconnected by a bridging portion;
(*b*) integral arm portions respectively formed by the strap projecting in right angled opposed relation from said side legs; and
(*c*) resilient spring finger members respectively on opposite sides of said U-shaped portion, said finger members having anchored ends on said arms, and deflectable free ends extending toward the U-shaped portion between said legs.

3,161,298
COLLAPSIBLE STORAGE RACK
Ruth S. Naslund, 178 N. 8th Ave., Des Plaines, Ill.
Filed Jan. 28, 1963, Ser. No. 254,344
3 Claims. (Cl. 211—104)



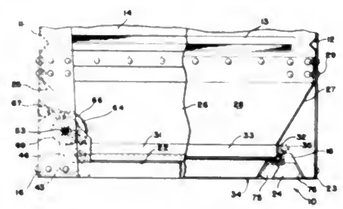
1. In combination with a vertical support, a first rigid panel member secured to said support, a plurality of additional rigid panel members disposed adjacent and parallel to said first panel member, respective groups of vertically spaced parallel link bars connecting the side edge portions of each of said additional panel members to the next inwardly adjacent panel member to maintain all the panel members substantially parallel, and respective rigid link means extending parallel to said link bars and connecting the bottom edge of each of said additional panel members at points spaced inwardly from the side edges of said additional panel members to the next inwardly adjacent panel member, whereby to define respective collapsible storage compartments between said panel members, with said rigid link means providing bottom support for articles placed in said storage compartments, said additional panel members being connected together so that their top edges are substantially at the same level when the compartments are all in fully expanded conditions and are so decreased successively outwardly in vertical height that their bottom edges are substantially at the same level when the compartments are all in substantially collapsed conditions, whereby the first rigid panel member may be mounted at a relatively low position on the support and said additional panel members will be clear of the floor when the compartments are in said substantially collapsed conditions.

3,161,299
FOLDING TOWER CRANE
Jean Noly, La Clayette, France, assignor to Etablissements F. Potain & Cie, La Clayette, France, a French joint-stock company
Filed Mar. 21, 1963, Ser. No. 266,909
Claims priority, application France, Apr. 6, 1962, 42,460, Patent 1,327,241
3 Claims. (Cl. 212—46)



1. A folding tower crane comprising: a support having lateral frames carrying a transverse axle; a telescopic tower consisting of a lower element pivotally supported by said transverse axle, an upper element slidably disposed within said lower element, and a removable element that may be secured to the lower portion of said upper element with which it may be telescopically moved within said lower element; a removable double set of tackle pulleys disposed at the lower portion of said removable element; a counter-jib rigidly secured to the upper portion of the said upper element; a head pivotally supported by the upper portion of said upper element; a jib pivotally supported at the upper portion of said upper element and connected to the end of said head by means of a tie-rod having a constant length; a hoisting carriage movable along said jib and comprising a set of tackle pulleys over which runs a hoisting cable carrying a hoisting hook; a telescoping winch and a hoisting winch both fixed to said support; a distributing winch fixed to said jib; a telescoping cable attached at one end to the lower portion of said lower element and successively passing over a pulley carried by said support, pulleys forming one part of said removable double set of tackle pulleys, a pulley carried by the upper portion of said lower element, pulleys forming the other part of said double set of tackle pulleys, another pulley carried by the upper portion of said lower element, a pulley carried by the lower portion of said lower element, the other ends of said cable being attached to said telescoping winch; a raising cable having a constant length attached at one end to said counter-jib and successively passing over a pulley carried by the end of said head and over a first pulley carried by the end of said counter-jib before being attached at its other end to said support; said hoisting cable attached at one end to the outer end of the jib and successively passing over, said tackle pulleys of said hoisting carriage supporting said hoisting hook, a pulley adjacent the point where said jib is pivoted to said upper tower element, a second pulley carried by the counter-jib, the other end of said hoisting cable being attached to said hoisting winch; a distributing cable stretching between pulleys at both ends of said jib winding about the drum of said distributing winch and attached at its ends to said hoisting carriage controlling the movement of said carriage along said jib; and a restraining device permitting said upper element and said removable element to be slidably displaced within said lower element in one direction only.

3,161,300
DROP BOTTOM CONTAINER HAVING LATCH MEANS THEREFOR
Carl E. Johansson, Cleveland, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 27, 1963, Ser. No. 261,377
10 Claims. (Cl. 214—1)



1. A transportation container for bulk materials having
a discharge opening in the bottom thereof,
a hinged door adapted to close the discharge opening,
a substantially hook shape latch member for said door pivotally mounted on said container,
the hook portion of said latch member being adapted to engage the underside of the swing end of said door,
a roller at the upper end of said latch member,
shaft means rotatably mounted on said container,
crank means carried by said shaft means for rotation therewith,

a roller on said crank means engageable with said roller on said latch member for maintaining the latter in latching engagement with said door,

a segmental drum secured to said shaft means at an end remote from said crank means,

biasing means fastened to said drum and said container, and

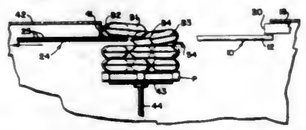
manually operable means fastened to said drum for imparting rotation thereto, against the action of said spring, whereby the roller on said crank means rolls over the roller on said latch member to allow pivoting movement of said latch member and permit opening movement of said door.

3,161,301
VEHICLE FOR SETTING AND REMOVING POLES AND THE LIKE
Roman H. Versch, Plymouth, Wis., assignor to Gilson Brothers Company, Plymouth, Wis., a corporation of Wisconsin
Filed Dec. 28, 1961, Ser. No. 162,684
7 Claims. (Cl. 214—3)



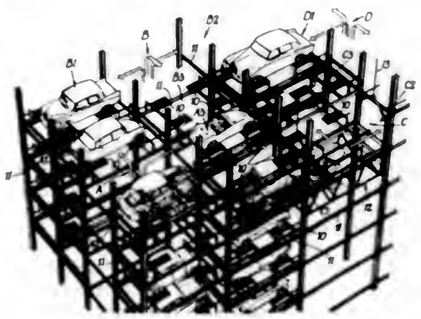
1. A vehicle for handling utility line poles or the like comprising, a wheel-supported and elongated chassis, a boom pivotally mounted at one end about a horizontal axis and to said chassis generally adjacent one end thereof, said boom having a free end which is vertically positionable by swinging movement of said boom about said axis, said free end extending beyond the other end of said elongated chassis, power-operated means for vertically swinging said boom, a table swingably mounted on the free end of said boom, power means between said boom and table for swinging the latter, and means for detachably securing a pole to said table for swinging therewith in respect to said boom and for being vertically positioned by said boom.

3,161,302
PALLET LOADING APPARATUS
David L. Poindexter, Bay St. Louis, Miss., and Robert L. Benchoff, New Orleans, and John B. Fos, Jr., Meraux, La., assignors to American Sugar Company, Jersey City, N.J., a corporation of New Jersey
Filed Nov. 9, 1961, Ser. No. 151,344
4 Claims. (Cl. 214—6)



1. A pallet loading mechanism which comprises a support for a pallet, an abutment at one side of the support, a main stripper for receiving a tier of non-rigid packages, means for moving the main stripper beneath the abutment in a horizontal plane from and to a position above the support, the abutment removing the tier of packages from the stripper as the stripper moves beneath the abutment from above the support, an auxiliary stripper disposed at the side of the support remote from the abutment and movable in the direction of movement of the main stripper to and from a position beneath the edge of a tier of packages being removed from the main stripper by the abutment, means for moving the auxiliary stripper, means actuated by the main stripper as it moves away from its position above the support to cause a limited movement of the auxiliary stripper in the same direction as the main stripper and means actuated by the main stripper as it approaches the end of its movement away from its position above the support to cause the auxiliary stripper to move in a direction opposite to the direction of movement of the main stripper.

3,161,303
PARKING OR STORAGE OF VEHICLES
Arthur Thomas Charles Burrows, Stevenage, England, assignor to Geo. W. King Limited, Stevenage, England, a British company
Filed Aug. 1, 1962, Ser. No. 214,138
Claims priority, application Great Britain, Aug. 1, 1961, 27,855; Nov. 28, 1961, 42,484
4 Claims. (Cl. 214—16.1)



1. A vehicle storage station comprisng a structure constituted by a plurality of stories, each story being identically subdivided into a plurality of substantially equal spaces, a plurality of lifts in said structure movable vertically through aligned open spaces in said stories, each open space through which said lift passes being associated with at least three adjacent spaces on each story of the structure to cooperatively associate all of the spaces in the structure with the lifts, and means associated with each lift to transfer a vehicle between said lift and the spaces associated with said lift; each lift comprising a base frame adapted for being raised and lowered in said structure through said open spaces, a trolley supported on said frame for relative movement in a substantially horizontal plane in longitudinal and transverse directions, means on said trolley for supporting a vehicle and means for imparting projective and retractive movements to the trolley in both directions relative to the frame to permit transfer of a vehicle in a fixed oriented position from the lift to the adjacent spaces associated therewith; said station further comprising power means in each lift movable relatively to the base frame and associated with the corresponding trolley for movement relatively thereto, said power means including a reversible motor and gear means, rack means associated with each said frame and rack means associated with the trolley for each said frame, said gear means being adapted for engaging both rack means to move the trolley relatively to said base frame upon operation of the motor.

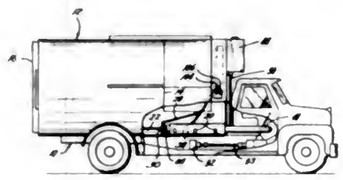
3,161,304
ANTI-FOUL DRIVE WHEEL FOR SILO UNLOADER
Robert W. Smith, Kaukauna, Wis., assignor to Badger Northland, Inc., Kaukauna, Wis., a corporation of Wisconsin
Filed July 24, 1963, Ser. No. 297,423
4 Claims. (Cl. 214—17)

1. In a silo unloader having a drive wheel operably engageable with the surface of silage in a silo, said drive wheel comprising, a high thermal conductive outer rim of a thinness to require internal support to give rigidity to said rim; hub means for said rim; and a rigid relatively



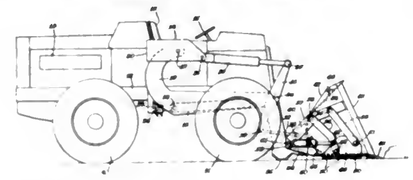
low thermal conductive core disposed in the space between said hub means and said rim and engaged with the inner periphery of said rim to provide rigidity to said rim.

3,161,305
REFUSE VEHICLE WITH LOAD COMPACTING AND UNLOADING MECHANISM
William A. Ferrari and Orin M. Anderson, both of 1123 SE. Military Drive, San Antonio 14, Tex., and Francis H. Dean, Suite 8, Meyerland Plaza Mall, Houston 35, Tex.
Filed Jan. 9, 1962, Ser. No. 165,119
7 Claims. (Cl. 214—82)



1. In a refuse handling vehicle having a body with its longitudinal axis parallel with the axis of the vehicle, said body having doors at its rear end and a loading opening proximate its front end, an upright packer member movably mounted in the body for longitudinal movement therein, said member being movable to one position to allow the loading of refuse into the body through said opening rearwardly of the member and to another position extending beyond the rear end of the body to unload such refuse and means for moving the member longitudinally in the body comprising horizontally disposed, axially aligned pressure cylinders in the body forwardly of the member, the combined lengths of said cylinders when either of said cylinders is retracted and the other cylinder is extended being less than the distance between the member and doors when the member is in said one position and the doors are closed and the combined lengths of the cylinders when extended being greater than such distance, means forming an operating connection between one of said cylinders and said member to move the member rearwardly away from the other cylinder upon the admission of pressure fluid into said one cylinder, means forming an operating connection between said other cylinder and said body to move said member with said one cylinder from said one position toward said other position upon the admission of pressure fluid into said other cylinder and means operable to selectively admit pressure fluid into each of said cylinders, said other cylinder being of smaller diameter than said one cylinder to provide for faster movement of said packer member from said one position toward said other position during extension of said other cylinder than the movement of said packer member during extension of said one cylinder.

3,161,306
TRACTOR LOADERS
Thorvald G. Granryd, Libertyville, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Aug. 31, 1961, Ser. No. 135,311
15 Claims. (Cl. 214—140)



1. A tractor loader having a bucket operatively carried from the forward end of said tractor, ground reaction means pivotally carried by said bucket and being formed to substantially resist any rearward movement thereof upon engaging the ground, and means connected between said bucket and said reaction means for moving said bucket forwardly relative to said reaction means.

3,161,307
AUTOMATIC BUCKET CONTROL
Frederick A. Schick and Ian Gordon, Springfield, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 24, 1963, Ser. No. 318,740
4 Claims. (Cl. 214—140)



1. In a material handling machine the combination comprising:

a support;

a longitudinally extending boom;

means pivotally connecting the rear end of said boom to said support for rotation relative thereto about a transverse axis;

a load carrying attachment pivotally connected to the front end of said boom for pivotal movement between loading and dumping positions;

means for pivoting said attachment relative to said boom including

a double acting hydraulic jack having a pair of relatively extensible and contractible elements,

a control valve mounted on said support having

a shiftable flow control member movable in opposite directions from a neutral position to dump and return positions; and

centering means resiliently biasing said flow control member toward its neutral position; and

manually operated control linkage connected to said control valve and

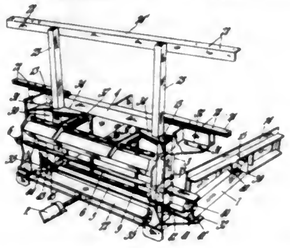
detent means for releasably holding said control valve in its return position when moved to the latter until said attachment has moved to said loading position including

a pair of cam members connected to said extensible and contractible elements, respectively, one of said cam members being shiftable in an axial direction relative to said jack and the other of said cam members being shiftable transversely to the movement of said one cam member;

a pair of detent elements connected to said control linkage and said other cam members, respectively, having tapered camming surfaces in abutable relation to one another, and

means resiliently urging one of said detent elements into contact with said other detent elements whereby said camming surfaces engage one another to releasably maintain said valve in its return position until said attachment is moved by said jack to its loading position.

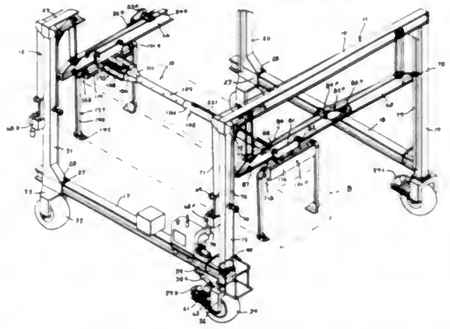
3,161,308
MECHANICAL HANDLING AND GRIPPING APPARATUS
John England Kennett, 5 St. Michael's Close, Bury St. Edmunds, England
Filed Mar. 6, 1961, Ser. No. 93,467
Claims priority, application Great Britain Mar. 7, 1960
9 Claims. (Cl. 214—147)



1. A load gripping device for loads of the type described in the specification comprising a pair of generally horizontal arms, a frame to which the arms are connected so as to be able to pivot about vertical axes and so as to be able to pivot together about a horizontal axis generally perpendicular to the arms, antifriction abutment means attached to the arms at a position vertically spaced from the horizontal axis, each antifriction means being offset from the axis of the arm to which it is attached, means for engaging these antifriction means so as to push the arms together on to a load between them and then, when the force exerted on the load has reached a certain value, to lift the load by tilting about the horizontal axis with the arms.

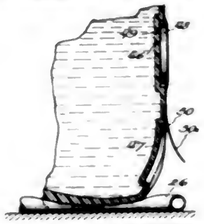
3,161,309
GRAPPLE CONSTRUCTION
George J. Baudhuin and Arnold C. Petersen, Sturgeon Bay, Wis., assignors, by mesne assignments, to Drott Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 23, 1960, Ser. No. 30,947
11 Claims. (Cl. 214—392)

10. In a load handling apparatus, a straddle type vehicle having a pair of spaced parallel gantry frames of inverted U-shape, wheels supporting the frames for movement over the ground, a horizontally elongated grapple frame, means supporting the grapple frame on the gantry frames for vertical movement relative thereto, two pairs of grapple arms mounted respectively adjacent to opposite ends of the grapple frame, the arms of each pair lying in a plane transverse to the grapple frame length, means pivotally mounting one end of each grapple arm of each pair at an opposite side of the grapple frame on an axis parallel to the length of the grapple frame and transverse to said planes for pivotal movement of the grapple arms of each pair in one of said planes toward and away from each other to engage and release a load, means mounting the grapple arms of each pair on the grapple frame for movement about a horizontal axis transverse to the grapple frame length and parallel to said planes for movement from a vertical position depending from the pivotal mounting means to a horizontal position substantially at the level of the grapple frame for movement over a load, power means to swing the grapple arms



toward and away from each other in said planes, and additional power means to swing the grapple arms from their depending position to their horizontal position.

3,161,310
PARENTERAL SOLUTION CONTAINER
Raymond W. Barton, Evansville, Ind., Hermann Heckel, Oxford, Ohio, and Paul Prickett and Edward G. Swenson, Evansville, Ind., assignors, by mesne assignments, to Don Baxter, Inc., Glendale, Calif., a corporation of Nevada
Filed Oct. 14, 1960, Ser. No. 62,585
4 Claims. (Cl. 215—1)



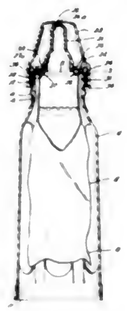
2. A container of solution suitable for intravenous administration, comprising: a polyethylene plastic bottle being partially deformable but being sufficiently rigid to maintain its shape and to stand upright when filled with a liquid, said bottle having an indented area formed in a side wall thereof; a pad of puncturable resealable material located in and substantially filling said indented area, said pad being on the outside of said rigid bottle; a double-faced, polyvinyl ether adhesive adhered to one surface of said pad and to the wall of said bottle within said indented area; and a covering of tape-like material overlying said pad and adhered to the side wall adjacent said indented area, said pad remaining attached to said bottle wall and being exposed upon removal of said tape-like covering.

3,161,311
DISPOSABLE NURSER
Frank E. Boston, Ravenna, Ohio, assignor to Dunhill International, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 255,015
4 Claims. (Cl. 215—11)

1. In a nurser designed for infant feeding, the combination of:

an outer shell having a plurality of openings therein including an opening at its top, exterior threads near said top and an exterior annular lug disposed below said threads;

a screw cap comprised of a top portion, a circular nipple receiving opening in the center of said top, and a depending annular skirt portion having interior threads releasably mated with the threads on said shell;

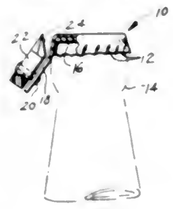


a nipple having an annular flange near its base, said flange being so dimensioned as to rest on the top of said shell between said shell top and said cap top, said nipple having a portion so proportioned as to allow removable thrusting through said cap top opening thereby positioning said nipple with respect to said cap and said shell;

a sack-like inner container partially disposed within said shell and having its top extending overly outwardly and downwardly around said shell top and below said nipple flange and having a portion of said container top disposed between the threads of said shell and said cap when said threads are mated, and a portion of said container top disposed below said lug; and

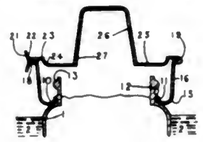
elastic sealing means removably positioned around said portion of said container below said lug securing said container to said shell, said sealing means having its upward motion limited by said lug.

3,161,312
BOTTLE CAP
William E. Cates, 131 N. Wabash, Hobart, Ind.
Filed Jan. 23, 1964, Ser. No. 339,675
5 Claims. (Cl. 215—46)



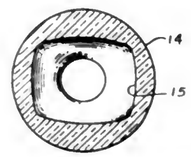
1. A bottle cap comprising, in combination, a circular metal section having gasket means received within said metal section for covering and capping a beverage bottle in an airtight condition, an angular tab carried by said metal section providing means for lifting said cap from said bottle neck, a thermoplastic block carried by said cap providing protection against injury to the fingers of the operator, said block having parallel, opposite longitudinal sides and parallel, top and bottom.

3,161,313
COMBINATION COLLAR, LID AND HANDLE FOR BABY FOOD JARS
Christian J. Sandfort, 2353 Dorma Ave., Louisville 17, Ky.
Filed Oct. 30, 1963, Ser. No. 320,017
11 Claims. (Cl. 215—64)



1. A collar and integral lid formed of a heat resistant material which, starting at the internal gripping surface, is a section of downwardly and outwardly progressing truncated cone, the minor diameter of the cone being essentially that of the neck of the jar, with the major diameter of the cone being essentially that of the body of the jar to be held forming a pilot surface, and margin which intersects at a circle tangential to the surface of the bottom of a segment of a torus progressing downwardly and outwardly then upwardly and outwardly intersecting tangentially another truncated cone progressing upwardly and outwardly from the surface of intersection terminating at a line of intersection with a continuous ledge portion extending outwardly from line of intersection, this portion being interconnected at any appropriate point with an integral hinge interconnected to a vertical upwardly progressing cylindrical section terminated at a line caused by the intersection of a plane generated by an arc of substantially similar radial dimensions as the continuous ledge, terminating at the intersection of the plane and a perpendicularly downward progressing inner cylinder which terminates at line of intersection formed by the inner cylinder and a perpendicular plane from which is formed a truncated conical section with a major diameter less than the inner cylinder but greater than the minor radius of the cone, the minor conical section ending at a line created by the intersection of the upwardly inwardly progressing conical wall and a disk defined by the minor diameter of the cone.

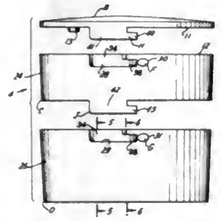
3,161,314
CATHODE RAY TUBE ENVELOPE
Charles P. Pfleeger, Big Flats, and John L. Webb, Jr., Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 19, 1961, Ser. No. 160,516
3 Claims. (Cl. 220—2.1)



3. In a component for a cathode ray tube envelope, which component has a funnel portion and a cylindrical neck portion, the improvement which comprises a yoke portion forming a gradual transition increasing in size from said neck portion to said funnel portion and having a substantially circular external cross-section increasing in diameter from said neck portion to said funnel portion and having an internal cross-section forming a gradual transition from a circular cross-section at the juncture of said yoke portion and said neck portion to a cross-section in the central part of said yoke portion in the form of a

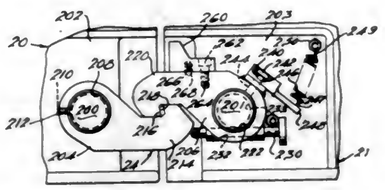
continuous curve approximating the shape of a rectangle having each of its sides curved slightly outwardly and having rounded corners.

3,161,315
SPECIALTY BOX
Samuel Braun, Rye, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,940
4 Claims. (Cl. 220—4)



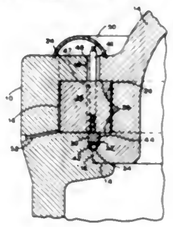
1. A display and merchandise box of the class described, comprising
(*a*) a cover,
(*b*) a first cylindrical container,
(*c*) an intermediate cylindrical container disposed between said cover and said first container,
(*d*) a vertical pivot element interconnecting said cover and said first and said intermediate containers,
(*e*) said cover and said containers movable about said pivot element to permit closure and access, respectively to said containers,
(*f*) first depending latch members formed on the peripheral edge of said cover and on the lower peripheral edge of said intermediate container,
(*g*) recessed portions formed in the upper peripheral edge of said first container and in the lower peripheral edge of said intermediate container,
(*h*) second latch members arranged in said recessed portion, and
(*i*) said first latch members movable into said recessed portions into latching engagement with said second latch members upon closure of said cover and intermediate container whereby the outer surfaces of said first latch members are flush with the outer surface of said containers.

3,161,316
AUTOMATIC CONTAINER TIE
Keith W. Tantlinger, Grosse Pointe Shores, and Richard T. Fujioka, Oxford, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Original application Aug. 21, 1961, Ser. No. 132,619, now Patent No. 3,092,282, dated June 4, 1963. Divided and this application Apr. 24, 1963, Ser. No. 280,481
2 Claims. (Cl. 220—23.4)



1. In a shipping apparatus comprising a pair of juxtaposed shipping containers having spaced parallel pins thereon, means for coupling the containers in said juxtaposed relationship comprising a pair of jaws engageable about the pins, respectively, and with each other to preclude relative movement of the pins away from each other in a direction generally normal to the axes thereof, and resilient means engageable with one of said jaws and conditionable for biasing said one jaw toward engagement and disengagement, selectively, with the other of said jaws upon movement of the containers toward one another.

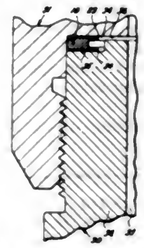
3,161,317
PRESSURE VESSEL CLOSURE
Norman R. Johanson, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,350
8 Claims. (Cl. 220—40)



1. A high pressure vessel closure comprising:
(A) a pressure vessel having an opening therein,
(B) an inwardly facing surface on said pressure vessel at said opening,
(C) an annular groove formed in said surface,
(D) a closure member disposed within and arranged to close the opening in said pressure vessel,
(E) an outwardly facing surface on said closure member in opposed relationship with said inwardly facing surface on said pressure vessel,
(F) an annular groove formed in said outwardly facing surface opposed to and registering with the groove in said pressure vessel,
(G) a ring disposed within said grooves to secure said closure member within the opening in said pressure vessel,
(H) the outer face of said ring rabbeted to form a number of channels extending in parallel relationship with the axis of said ring,
(I) the portion of said pressure vessel above its groove rabbeted to form a number of channels whereby the rabbeted portions of said ring and pressure vessel fit together permitting the ring to pass downwardly through the rabbeted portions of the pressure vessel and be inserted into its inwardly facing groove.

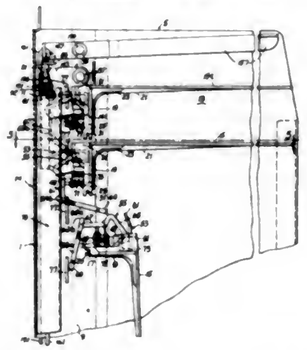
3,161,318
SEALING MEANS
Rudolph E. Krueger, 2446 N. Orchard Drive, Burbank, Calif.
Continuation of application Ser. No. 835,590, Aug. 24, 1959. This application Feb. 4, 1963, Ser. No. 256,503
9 Claims. (Cl. 220—46)

1. In a high pressure closure, the combination comprising first and second joint members each having substantially planar sealing surfaces adapted to be moved toward each other from an initial position to a final operative sealing position, an annular metal spacer body between the first and second joint members, first and second annular legs extending in parallel spaced-apart relationship from the spacer body, each leg having an inner and outer surface, the inner surfaces of the legs being parallel, the outer surfaces of the legs being parallel and each having a portion diverging toward a separate sealing surface to form a sealing lip projecting from the outer surface of each leg at its extremity, said sealing lip having an outer surface forming an obtuse angle with the outer surface of the leg and extending to a sealing tip when the sealing surfaces are in the initial position, said sealing tip



of each sealing lip contacting a sealing surface of the first and second joint members respectively to provide only a line contact in final operative sealing position.

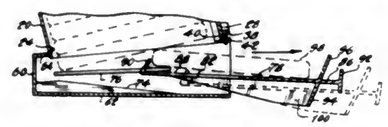
3,161,319
DISPENSING MECHANISM FOR VENDING MACHINES
Alvin W. Holstein, Brentwood, and James T. Schuller, St. Ann's, Mo., assignors, by mesne assignments, to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 161,836
7 Claims. (Cl. 221—15)



1. Article dispensing mechanism comprising a plurality of shelves located one above another, each shelf being pivoted for swinging movement on a horizontal axis and adapted to swing downward from a generally horizontal article-carrying position to a generally vertical discharge position for discharge of an article thereon, means for holding the shelves in said article-carrying position, and means for successively releasing the shelves, starting with the lowermost shelf, said releasing means including means for delaying downward swing of each shelf to avoid flatwise drop of the article thereon, said delaying means comprising means operable upon the release of each shelf for arresting the downward swing of the shelf and temporarily holding it in an intermediate inclined position prior to discharge of the article carried by the shelf.

3,161,320
ARTICLE DISPENSER HAVING ARTICLE WITHDRAWING MEANS
Clifford D. Swanson, 2101 Wellesley Drive, Lansing, Mich.
Filed July 30, 1962, Ser. No. 213,262
6 Claims. (Cl. 221—255)

1. A dispensing structure comprising a base, means for feeding stacked articles into said base, means within said base for supporting the end one of said stacked articles and article withdrawing means movable into and out of said base including a resilient relatively movable portion having a part movable into said base below the supporting means and movable above said supporting means for withdrawing the end article from the base



and means operable between the base and said means for withdrawing the end article from the base for moving the means for withdrawing the end article from the base above the supporting means to facilitate the relative movement of the resilient portion thereof on movement of the means for withdrawing the end article from the base into the base.

3,161,321
DISPENSING DEVICE HAVING A GROOVED DISPENSING WHEEL
Frank Mellion and Joseph Di Domenico, Providence, R.I., assignors to Jo-Dee Corp., Providence, R.I., a corporation of Rhode Island
Filed Nov. 5, 1962, Ser. No. 235,483
2 Claims. (Cl. 221—266)

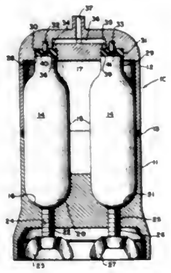


1. In a device for storing and dispensing articles, a hollow tubular body in which said articles are contained in generally vertically stacked relation, said body including opposed side walls and opposed end walls that form the upper portion of said tubular body in a generally rectangularly shaped cross sectional configuration, the lower portion of one of said end walls including an arcuate portion and the other of said end walls being foreshortened with respect to the adjacent side walls so that spaced depending ears are formed on said side walls, said spaced ears being located adjacent said arcuate portion, and a dispensing wheel mounted for rotation between said spaced ears, a portion of the periphery of said wheel extending outwardly of said spaced ears and outwardly of the other of said end walls for engagement by the user of the device, the periphery of said wheel being further spaced from the inner surface of said arcuate portion to define an interior arcuate discharge passage and a dispensing opening for said articles, said wheel including a groove that is formed therein and that normally communicates with the interior of said hollow body for receiving the lowermost of the stacked articles therein, wherein rotation of said wheel carries the article located in said groove through said dispensing passage and dispensing opening for dispensing of said article from said device, said dispensing wheel including an outwardly extending tab formed on the periphery thereof and that is shaped and proportioned for insertion into the dispensing opening, said tab defining a finger grip for rotating said wheel and further defining a closure for closing said dispensing opening when said wheel is located such that the groove therein communicates with the interior of said hollow body.

3,161,322
POCKET GAS DISPENSER

Arthur H. Stone, 212 Broadway, Massapequa Park, N.Y., assignor of ten percent to Clive H. Bramson, Oyster Bay, N.Y.

Filed Oct. 11, 1961, Ser. No. 144,367
4 Claims. (Cl. 222—5)

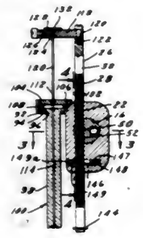


1. In a holder for a gas cartridge of the type having a discharge outlet initially closed by a frangible seal, the combination including recessed socket means to axially slidably receive the discharge outlet of a cartridge, said recess terminating inwardly in a flat wall, a solid puncturing pin projecting axially of and outwardly from said wall, said wall also being provided with an eccentrically disposed outlet port, washer means of soft, yieldable, elastomeric material in said recess between said wall and the discharge outlet of the cartridge, said washer means forming a seal between said cartridge and said socket means, and means to move the cartridge axially to pierce the frangible seal and compress said washer means to seal the outlet port and the discharge outlet of the cartridge, said latter means being adjustable to allow expansion of said washer means to unseal said outlet port and withdraw the pin from said cartridge to allow passage of the gas through said discharge port of the cartridge and thence through the outlet port.

3,161,323
REPEATING DISPENSER

John H. Bent, Fullerton, Calif., assignor to Hamilton Company, Inc., Whittier, Calif., a corporation of California

Filed May 20, 1963, Ser. No. 281,464
17 Claims. (Cl. 222—41)



9. A plunger assembly for a repeating dispenser, comprising:

(A) a plunger having cylindrical end portions and an intermediate outer arcuate portion, the inner side of which is flat, said plunger assembly being adapted to be slidably disposed in the cylindrical bore of a body member;

(B) a pivot pin secured to said intermediate portion and extending laterally of the flat side thereof;

(C) a dog having the rear end pivotally mounted on said pivot pin and movable in a plane parallel to said flat side, the forward end of said dog having a laterally extending portion terminating in a point for successive engagement with teeth of an index rod;

(D) means retaining said dog on said pivot pin;

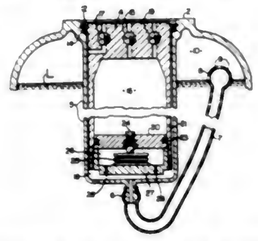
(E) yielding means reacting against one of the plunger end portions urging said dog toward the other end of said plunger;

(F) and means limiting spring urged pivotal movement of said dog.

3,161,324
DISPENSING CONTAINER AND PRESSURIZER THEREFOR

William C. O'Neill, Washington, D.C., assignor to Pneumodynamics Corporation, Cleveland, Ohio, a corporation of Delaware

Filed July 20, 1961, Ser. No. 125,465
5 Claims. (Cl. 222—52)

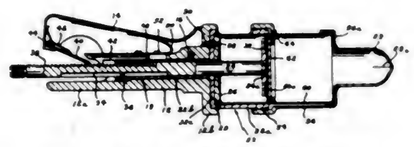


1. In combination, a container with a dispensing valve adapted to contain liquid under pressure to be dispensed therefrom by opening said dispensing valve; a high pressure vessel secured in said container in fluid tight relation thereto and having a passage from therewithin leading into said container above the level of the liquid therein, said passage terminating in a float buoyed by liquid in the container and through which fluid from said vessel is introduced into said container above the level of the liquid, said float being valved and effective to permit the flow of such fluid only from said vessel into the container; another valve in said passage to open and close the same; and pressure responsive means exposed to pressure in the container to open said other valve when the fluid pressure in the container is less than a prescribed value to admit fluid under pressure from said vessel into the container to raise the pressure in the latter to such prescribed value.

3,161,325
EXPULSION DEVICE

Lester H. Hinkel, Benton Harbor, and George Boswinkle, St. Joseph, Mich., assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 19, 1963, Ser. No. 289,148
1 Claim. (Cl. 222—80)



An expulsion device for expelling the contents of an open end metal container having an opposing closed end through a flexible mouthpiece attached to the open end thereof; and comprising: an elongated handle having a linear bore, a body having a container receiving cylinder

shorter than the container height and substantially closed at the inner end with external threads on the open outer end and further having a coaxial stem extending outwardly from the closed end of the container receiving cylinder and engaging the linear bore in said elongated handle, a cutter within and joined to the closed end of the container receiving cylinder in said body, said cutter having a cup shaped portion with a sharpened rim having an external diameter of substantially the inside diameter of the container and terminating in a plurality of sharpened knife points axially extending from the periphery of the sharpened rim, a plurality of screw means joining said cutter and said body to said handle, a pressure pad axially movable within the cylinder of said body and nesting within said cutter in the retracted position, a rod joined at one end to said pressure pad and coaxially passing through the said cutter, the closed end of the cylinder within said body and the stem extending outwardly from the closed end of the cylinder of said body, said rod having a linear rack on one side adjacent to the free end thereof and a linear slot having angular displacement from the rack on the periphery of said rod, a pin joined to the stem extending from the closed end of the cylinder of said body and slidably engaging the linear slot in said rod, an operating lever pivotally joined to said handle, an actuating pawl pivotally joined at one end to said operating lever, a spring biasing the free end of said actuating pawl into releasable operating engagement with the rack on said rod to axially advance said pressure pad within the cylinder of said body from the retracted position, a retaining pawl pivotally joined to said handle, a U-shaped spring joined to said handle and having one end in engagement with and biasing said operating lever to the open position and the other end in engagement with and biasing said retaining pawl into releasable engagement with the rack on said rod to retain said rod to the furthermost position advanced by said actuating pawl, and a retaining cap housing the upper end of the container with the mouthpiece projecting outwardly through a bore in the base of said retaining cap and having internal threads engaging the external threads on said body for securing the container and flexible mouthpiece within the cylinder while forcing the container against the knife points and sharpened rim on said cutter to sever the closed end of the container and to roll down and iron out the raw edge left in the container permitting said pressure pad to engage the severed end of the container and axially expel the contents of the container.

3,161,326
PACKAGE HOLDER

Raymond A. Parr, San Mateo, Calif., assignor to Packaging Frontiers, Inc., Waltham, Mass., a corporation of Delaware

Filed May 2, 1962, Ser. No. 191,946
3 Claims. (Cl. 222—183)

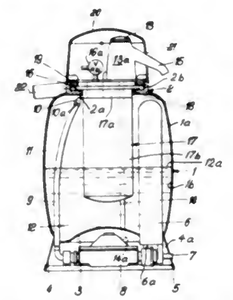


1. A holder adapted to hold a tetrahedron-shaped package in upright position, the package being open at the top, and to provide for dispensing of the contents of the package through its open top, comprising a base adapted to rest on a supporting surface and having an elongate slot for receiving the lower end of the package, a pair of supporting arms extending upward from the base at opposite ends of the slot, each arm having a cap-receiving portion at its upper end, said portions being adapted for reception therebetween of the open upper end of the package, and a dispensing cap mounted on said portions, said arms being resilient for springing their upper ends inward toward one another, said cap-receiving portions being of C-shape with their open sides opposed to one another for reception of the open upper end of a package with the latter spread open, said C-shaped cap-receiving portions being resilient so that they may be flattened against opposite sides of a package by pinching them together.

3,161,327
SIPHON DISPENSER

Franz Kraus, Cologne-Lindenthal, Germany, assignor to Wilhelm Schmidding, Cologne-Niehl, Germany

Filed Dec. 7, 1962, Ser. No. 243,083
Claims priority, application Germany, Feb. 15, 1962, Sch 30,990
6 Claims. (Cl. 222—204)

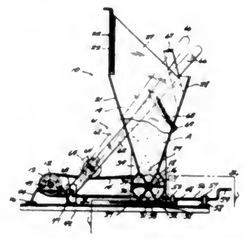


6. A siphon dispenser in which a gaseous phase subjects a liquid phase to a predetermined pressure, comprising a refillable container defining an internal chamber containing gas at said predetermined pressure, said chamber having a lower portion and an upper portion; liquid admitting means extending into said lower portion for admitting liquid thereto at a pressure above said predetermined pressure; and relief valve means mounted externally of said chamber for releasing gas contained therein in response to admission of liquid into said chamber so that gas displaced by the admitted liquid escapes through said valve means whereby the pressure within the chamber is maintained at said predetermined value.

3,161,328
GRANULAR MATERIAL METERING MACHINE

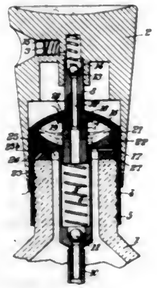
Oliver A. Haley, 720 14th St. Place, Nevada, Iowa

Filed Oct. 8, 1962, Ser. No. 228,847
1 Claim. (Cl. 222—311)

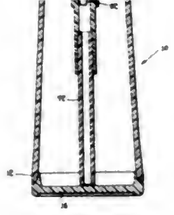


An apparatus for discharging a measured amount of granular material comprising in combination,

3,161,329
RECIPROCATING PUMPS FOR USE IN ATOMIZERS
René Fedit and Marcel Janodet, Paris, France, assignors to Société les Vaporisateurs Marcel Franck, Paris (Seine), France, a societe of France
Filed Aug. 7, 1963, Ser. No. 300,514
Claims priority, application France Aug. 30, 1962
4 Claims. (Cl. 222—321)



1. An atomizer head for use on a container which comprises, in combination, a cap adapted to be fixed on the neck of the container, said cap comprising a top end wall and a cylindrical skirt extending downwardly from said top end wall, a cylinder carried by said cap coaxially on the inside thereof so as to extend downwardly inside said container neck, a plunger tube carried by said cylinder to form an extension thereof into said container, a check valve in said cylinder opening in the upward direction, a piston slidable in said cylinder so as to be movable between two positions, a bottom one and a top one, said piston being provided with a passage extending longitudinally therethrough, a push-piece rigid with said piston slidable with respect to said cap, said push-piece being provided with a discharge nozzle in communication with said passage, a flexible fluidtight annular diaphragm having its outer edge secured in a fluidtight manner to said cylinder and its inner edge secured in a fluidtight manner to said piston and such that, in the top position of said piston, said diaphragm is applied tightly against the top end wall of said cap, means forming an air passage in said cap opening into said container neck, said cap end wall being provided with an aperture in communication with the atmosphere and forming



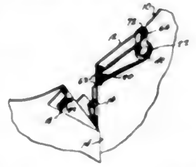
1. An aerosol device comprising in combination a pressure-tight plastic container all the walls of which are integral with each other, said container having an integral transverse wall at its top, provided with a through opening; valve seat means within the container adjacent said opening of the transverse wall; a valve stem extending through said opening, having a valve shoulder engageable with said valve seat means to close the said opening against egress of aerosol substance from within the container; a tubular plastic housing within the container, disposed around that portion of the valve stem which is located inside of the top transverse wall, said housing having at its lower end an opening to admit aerosol substance around the said valve stem portion and being engaged with and carried by the container adjacent the valve seat means, said means being confined by the housing; a transverse, pressure-tight, plastic closure wall at the bottom of and integral with the container whereby the latter constitutes a closed vessel; a dip tube carried by the lower end of the housing and extending downward therefrom to a point adjacent the closure wall at the bottom of the container, said tube being relatively short and rigid and serving to maintain the housing in position engaged with the container, the top transverse wall of the container being in the form of an inverted cup and said housing being received in the hollow of the cup and being locked against removal therefrom by the dip tube.

3,161,331
CLOSURE FOR PRESSURIZED PACKAGES
John R. Murtha, Wallingford, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Nov. 15, 1962, Ser. No. 237,806
5 Claims. (Cl. 222—394)

1. A closure for a pressurized package wherein a product is confined within a container under the superatmospheric pressure of a gaseous propellant and dis-

registry with the discharge orifice of said valve actuator when said hood is compressed to actuate the valve.

3,161,332
HOOK AND EYE ENGAGER
Fred B. Dierks, 1701 Hamilton Lane, Grants Pass, Oreg.
Filed Feb. 21, 1963, Ser. No. 260,169
2 Claims. (Cl. 223—111)



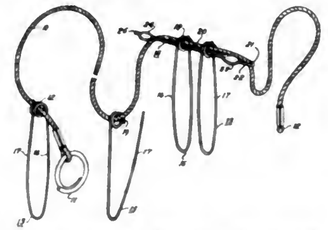
1. In combination, a garment panel having a free edge, there being in said panel an opening which is normal to and leading to said edge, a hook secured on the panel at one side of the opening, an eye secured to the panel at the opposite side of the opening, an engager comprising a body disposed against the side of said panel carrying said eye and inwardly of said eye, first means on said body engaging the edge of said panel and supporting the body from the edge of said panel and against the side thereof, and engaging means carried by said body and having an end portion releasably engaging a portion of said eye, the hook having a bill adapted to be moved through the eye, with said eye being engaged by the end portions of said engaging means to enlarge same for easy engagement of said hook with said eye.

3,161,333
SHIRT FOLDING MACHINE
Kai M. Lew, Emerson, N.J., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,771
5 Claims. (Cl. 223—37)

1. In a shirt folding machine of the type having a shirt folding surface, the improvement comprising a pair of bifurcated inner shirt folding arms, each of said bifurcated arms having a first arm section for folding long sleeved shirts and a second arm section adjacent said first arm section for folding short sleeved shirts, means mounting said bifurcated arms for swinging movement between a loading position with said bifurcated arms spaced from each other and a folded position with said bifurcated arms immediately adjacent each other, the paths of move-

fully folded position, said first arm sections in said loading and folded positions receiving and folding long sleeves of a long sleeved shirt placed on said shirt folding machine.

3,161,334
FISH STRINGER ATTACHMENT
William T. Baggett, 5934 Abrams Road, Dallas 31, Tex.
Filed June 4, 1962, Ser. No. 199,739
2 Claims. (Cl. 224—7)

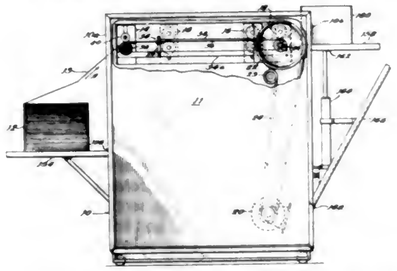


1. In combination with a fish stringer having a line with a ring at one end and a tip at its opposite end, an attachment including a substantially U-shaped retainer body having contiguous parallel legs extending longitudinally of and frictionally engaging the line, each leg being offset outward laterally adjacent each end to provide enlargements spaced from the ends of the legs, and a plurality of fasteners having loop means threaded on the line for sliding movement thereon and adapted to be removably confined on the retainer body between the enlargements of its legs by being slipped over one of said enlargements, each fastener having prong means for individually stringing a fish and its loop means having an internal diameter slightly less than the width of said enlargements to permit forcing of said loop means over either of said enlargements.

3,161,335
BURSTER
Robert M. Pine, Chicago, and Donald J. Steidinger, Clarendon Hills, Ill., assignors to Uarco, Incorporated, a corporation of Illinois
Filed July 19, 1962, Ser. No. 210,982
10 Claims. (Cl. 225—100)

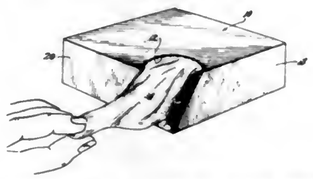
1. A bursting machine for bursting continuous forms of stationery into form lengths between transverse lines of weakening, comprising: a frame, a first pair of driven

coacting rollers in said frame, said first pair of driven rollers having surfaces normally in contact with a plurality of longitudinally extending recesses and being geared together for rotation in a common peripheral rate; a driven shaft operatively associated with said first pair of rollers and extending perpendicular to the longitudinal axis of said rollers; a second pair of coacting rollers operatively associated with said driven shaft and driven at a reduced speed relative to said first rollers, said second pair of rollers also having surfaces normally in contact and also geared together for rotation at a common peripheral speed, said second pair of rollers also having a plurality of longitudinally extending recesses of a number



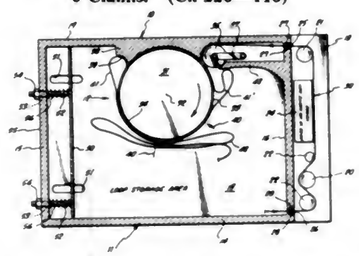
which in relation to the number of flats of said first pair of rollers equals the ratio of the speed between the two pairs of rollers; a plurality of spaced stationery supports, said spaced supports including a plurality of rods having their longitudinal extent extending in the direction of stationery travel and being in line contact with the underside of the stationery, said supports also including a flexible strip superposed above said rods and being held at each end in spaced relation to the rods, said flexible strip being adjustable in effective length therebetween with intermediate portions thereof flexible to allow the member to rise and fall in relation to the rods to urge the stationery towards the rods but not limit the travel of stationery through the bursting machine.

3,161,336
CELLULOSIC PRODUCT
Richard A. Loescher, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,231
6 Claims. (Cl. 225—106)



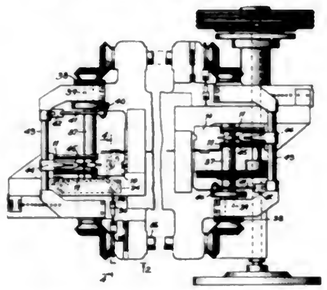
1. In combination, a rectangular carton, including top, bottom, end and side walls, said carton provided with a corner aperture marginally defined by relieved portions of said top wall and adjacent side and end walls of said corner, and a stack of lightly interbonded and reversely and flatly overfolded tissue sheets disposed within said carton and sequentially dispensable through said corner aperture, said tissue sheets being disposed one over another in flat uncreased configuration in said stack, and being interconnected with each other only by minor perforated segments along alternate marginal edges of said reverse overfolds.

3,161,337
RANDOM STORAGE BIN AND FEEDING DEVICE
Gordon R. Schulz, Tujunga, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Mar. 6, 1961, Ser. No. 93,696
6 Claims. (Cl. 226—118)



1. A tape storage apparatus for closed-loop tape elements comprising a bin having a tape inlet opening, means for continuously introducing the tape into the bin through the inlet opening, a tape transport wheel having a periphery in the bin, means for rotating the wheel with a peripheral speed at least as great as the speed at which the tape is introduced into the bin, a tape feed roller in the bin adjacent the inlet opening in juxtaposition to the transport wheel for introducing tape introduced into the bin into contact with the periphery of the wheel, and a fixed tape loop stop element positioned in juxtaposition to the transport wheel, the bin having a restricted internal volume so that tape in the bin reacts against the bin to urge the introduced tape into contact with the transport wheel between the tape feed roller and the tape stop element.

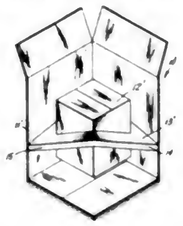
3,161,338
SLIDE FEEDS
Eric Grimm, East Orange, N.J., assignor, by mesne assignments, to Associated Patentees, Inc., Ampere, N.J., a corporation of New Jersey
Filed Apr. 10, 1963, Ser. No. 272,096
3 Claims. (Cl. 226—163)



1. A slide feed for metal working machines, comprising the combination of
a base,
a feed block mounted for longitudinal reciprocation on said base,
an overhead rock shaft journaled on said base above said feed block,
a lever dependent from said overhead rock shaft pivotally connected at its lower end with said feed block,
a stock gripper on said feed block,
a cam mounted to slide transversely on said feed block and arranged to effect stock gripping and releasing action of said gripper,

said transversely sliding cam projecting from one side of said feed block,
spaced rollers dependent from said projecting portion of said sliding cam,
a transversely shiftable bar for operating said sliding cam,
means mounting said bar so as always to extend in a direction parallel to the line of longitudinal movement of said feed block comprising pivoted parallel links supporting said bar for transverse movement toward and away from said feed block and parallel with the line of longitudinal movement of said feed block,
a longitudinally extending rail on said bar in position between said spaced rolls for shifting said sliding cam transversely in opposite directions said rail mounted so as to always extend parallel to the line of longitudinal movement of said feed block, and
a timing cam for reciprocating said bar transversely in respect to the feed block to effect closing and opening operation of the gripper on said feed block.

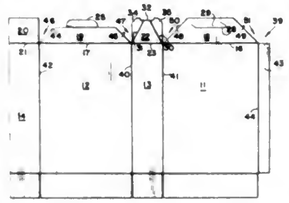
3,161,339
CARTON FOR RESILIENTLY SUPPORTING ARTICLES
John J. Weller, Allentown, Pa., assignor to Standard Plastics, Inc., Fogelsville, Pa., a corporation of Pennsylvania
Filed June 27, 1960, Ser. No. 39,008
1 Claim. (Cl. 229—14)



A carton to enclose an article for transportation and storage comprising an outer container, an inner container, said inner container being smaller in dimensions than said outer container to fit within said outer container and define a space between the two containers, only one continuous belt of resilient material within said space and bonded to both said outer and said inner containers, and said belt having portions displaced axially of said inner and outer containers from other portions of said belt so that the belt portions lie in substantially different planes to increase the rotational moment of inertia of said carton.

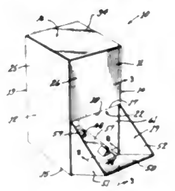
3,161,340
CARTON AND CARTON BLANK
Robert M. Mitchell, South Norwalk, Conn., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,192
12 Claims. (Cl. 229—17)

1. A carton, comprising front, back and end walls joined together along parallel edges to form a tubular structure, opposed closing flaps hingeably joined to edges of said front and back walls at one end of said structure, a closing flap hingeably joined to an edge of said end wall at the same end of said structure, said front and back wall-joined closing flaps being movable to a position in which they are substantially coextensive and one of said flaps overlies the other, and to a further position in which said front and back wall-joined flaps contact each other and are disposed inwardly of the plane of said front and back wall edges at said one end of said structure, means for locking said front and back



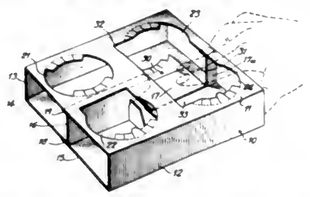
wall-joined flaps together in said further position, and means on said end wall-joined flap for forming a pour spout therefrom.

3,161,341
CONTAINER WITH DISPENSING HOPPER MEANS AND BLANKS FOR MAKING THE SAME
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,051
10 Claims. (Cl. 229—17)



1. In combination, a container having a plurality of walls forming the exterior thereof and an article-receiving compartment therein, one of said walls having an opening provided therein and interconnected to said compartment, a hopper means for opening and closing said opening, said hopper means including a front panel for filling said opening and a pair of side panels hinged to said front panel and cooperating therewith to define said hopper means, and means reinforcing the walls adjacent said one wall even when said hopper means is opened, said reinforcing means including panels carved from said one wall and defining said opening thereof.

3,161,342
SERVICE TRAY
Frederick A. Wenzel, Milwaukee, Wis., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Apr. 1, 1964, Ser. No. 356,374
3 Claims. (Cl. 229—28)



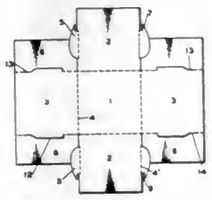
1. A collapsible service tray comprised of an area of sheet material shaped to provide a top surface, side walls and bottom wall portions connected thereto along score lines, whereby the tray may be collapsed to substantially flattened condition or erected to operative condition with the top surface spaced from the bottom wall portions,

said top surface having at one end thereof at least one opening for receiving a beverage container and having at the other end thereof at least a pair of openings normally adapted to receive beverage containers respectively, a portion of the sheet material of said top surface located between said pair of openings being relatively severable at each end thereof along weakened lines of perforations or the like from the remainder of the top surface, said severable portion being attached to a vertical partition portion along a score line, which partition is also attached to the bottom wall along a score line, whereby upon applying angularly downward pressure against said severable portion, same will become severed from the top surface and, together with its said vertical partition, become collapsed toward the bottom in the tray, whereby said pair of openings will become joined to form a single larger opening adapted to receive a sandwich or other food items, a vertical partition means being provided in said first-named end of the tray and connected to the top surface and bottom wall along score lines, and means hingedly mounted in the tray and adapted to be swung into locking engagement with the portion of the latter partition for holding the tray in set-up position independently of whether said severable portion has been displaced.

3,161,343
BOX OR CARTON WITH LOCKING MEANS

Richard E. Paige, 95 Madison Ave., New York, N.Y.

Filed Feb. 4, 1963, Ser. No. 256,797
2 Claims. (Cl. 229—35)



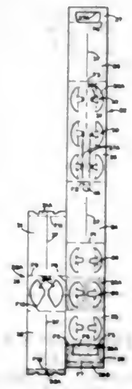
1. A folding box comprising a bottom and four side walls hinged to the bottom, an inside panel secured to two opposite side walls along each lateral edge of said opposite walls, and connected each to one of said edges along a hinge line thereat, and a hooked projection connected along a hinge line at each lateral edge of the two remaining side walls, said projections each having a curved convex outer edge from end to end, each of said panels having a slot along its connecting hinge line and parallel thereto at one side of last-named line, said slots being mostly in said panels, each of said first-named sides having therein a protruding portion at an edge of said slot therein, said portions extending along said slots, the upper extremity of each projection being narrowed and having an edge free from said remaining sides, said slots terminating in slits at the upper ends coinciding with said hinge lines of the panels, the protruding portions overlapping said slots, and the slits closing along the free edges of said narrowed ends when the box is set up.

3,161,344
WRAPPER TYPE CAN CARRIER

Joseph C. Spery, 527 Madison Ave., Room 1002, New York, N.Y.

Filed Jan. 31, 1962, Ser. No. 170,119
16 Claims. (Cl. 229—40)

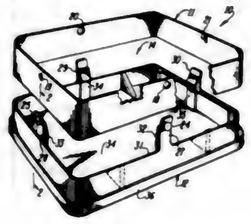
1. For use in a wrapper type can carrier having connected opposed wall panels, the improvement of a can retaining flap having a can chime engaging portion, said flap being cut from one of said wall panels so as to be foldable about a foldline inwardly of said wrapper whereby said chime engaging portion is raised slightly out of the plane of said one wall panel, and a tab hingedly connected to said flap, said tab being reversely folded relative said chime engaging portion wherein the free end of said tab is disposed between said one wall panel and flap cut therefrom whereby said tab functions to positively maintain said flap raised out of the plane of said panel.



3,161,345
SNAP FASTENED END-CLOSURE FOR TOY CONTAINERS AND THE LIKE

William McLeod, Deerfield, Ill., assignor to Halsam Products Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 12, 1963, Ser. No. 264,568
3 Claims. (Cl. 229—45)

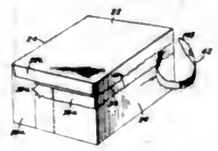


1. In a container, the combination comprising, a container body portion having an open end with at least a pair of opposed openings a predetermined axial distance from said body portion open end, an end-closure receivable at said container body portion open end and substantially closing said end when fitted thereto, said end-closure having at least a pair of flexible support arms extending axially along said container body portion outer wall, a projection carried on each of said arms, said projections positioned to register with respective ones of said openings upon installation of said end-closure, and biased opposed protuberances at said projection ends for retaining said projections in said openings upon insertion of said projections into said openings thereby retaining said end-closure installed.

3,161,346
DOUBLE-WALLED TEAR STRIP CARTON AND BLANK THEREFOR

Soldan A. Svensson, Tuscaloosa, Ala., assignor to Gulf States Paper Corporation, Tuscaloosa, Ala., a corporation of Delaware

Filed July 8, 1963, Ser. No. 293,432
7 Claims. (Cl. 229—51)



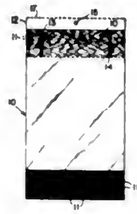
1. A carton comprising a single blank of suitable sheet material having a liner section and an integral body section foldably connected at adjacent longitudinal extremities; a series of longitudinally spaced, transverse crease lines in said liner section defining, in sequence from its junction with said body section, a top panel, a front side panel, a bottom panel, and a rear side panel, respectively foldable on said crease lines to form a tubular liner; a corresponding series of longitudinally spaced, transverse crease lines in said body section defining panels complementary to said liner panels and foldable in tubular form on said last-named crease lines to overlie corresponding liner panels, with corresponding crease lines of said liner and body panels in registering relation; adhesive means on the inner face of said body top panel adjacent the free transverse edge thereof, engageable with the outer face of the underlying liner top panel for securing respective liner and body panels in concentric tubular form; each of said body panels terminating at opposite extremities in laterally projecting end flaps, respectively foldable inwardly in overlapping relation on parallel crease lines extending longitudinally through said body section in line with opposite lateral boundaries of said liner sections; adhesive means on certain end flaps securing all of said end flaps in overlapping relation; a downwardly spaced tear strip extending transversely entirely across said body front side panel and its end flaps and free from the underlying liner front side panel and the body rear side panel end flaps; said body top panel and said liner top panel, upon removal of said tear strip, remaining hingedly supported above the tear strip on the upper extremities of respective body and liner rear side panels, along their adjacent registering crease lines; the severed upper edges of said body front side panel and its end flaps, together with the connected body top panel end flaps, forming a contiguous depending three-sided apron; the upper edges of said liner front panel and the end flaps of said body rear side panel jointly providing a contiguous three-sided upstanding lip over which said depending apron engages.

3,161,347
BAG PACKAGE

Gilbert H. Hannon, 551 Nicolet Road, Rte. 1, Green Bay, Wis.

Filed Aug. 20, 1962, Ser. No. 217,860
7 Claims. (Cl. 229—69)

6. A strip of open ended bags comprising a flexible supporting member, a plurality of open ended bags arranged longitudinally along said member in an overlying arrangement with one side of the opening of each of said bags being in contact with said member, each preceding bag in a given direction along said strip overlying and closing the opening of the following bag, adhesive means arranged between said one side of said opening of each of said bags and said member for detachably holding said bags to said member, and perforations arranged at spaced intervals along said member for removing portions of said strip and said bags from said member, said supporting means being provided with a plurality of indexing

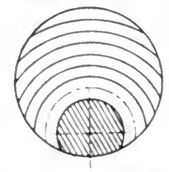


means arranged along its length for automatic machine use of said strip.

3,161,348
HIGH-OUTPUT BLOWER

Nikolaus Laing, 14 Albrecht-Duerer-Weg, Stuttgart, Germany

Filed Dec. 9, 1957, Ser. No. 701,643
1 Claim. (Cl. 230—125)

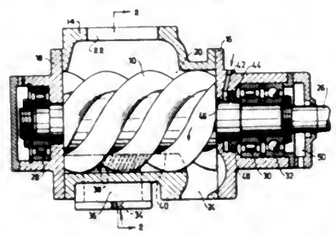


Blower for motor driven aircraft for the acceleration of air for the production of thrust forces, comprising a pair of discs mounted coaxially for rotation in spaced parallel planes, blades carried by the discs and extending from one to the other between the peripheries thereof, constituting a drum and leaving the center portion free, means partially enclosing the exterior of the drum in two spaced areas to provide suction and pressure openings therebetween, and guiding means inducing a potential swirl inside the rotor, the field of this swirl controlling the throughout between the first and the second passages of the air through the blades, the guiding means separating the suction and the pressure openings and constituting a swirl creator, the swirl creator including an at least partly circular, cylindrical body and means to rotate said body in a direction to create a fictive rotary swirl rotating contrary to the control swirl.

3,161,349
THRUST BALANCING

Lauritz Benedictus Schibbye, Saltsjo-Dubnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Stockholm, Sweden, a company

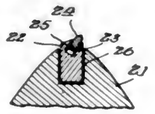
Filed Oct. 31, 1962, Ser. No. 234,486
Claims priority, application Sweden Nov. 8, 1961
8 Claims. (Cl. 230—143)



1. A rotary piston, positive displacement, elastic fluid machine having a housing structure including a barrel portion comprised of intersecting bores with co-planar

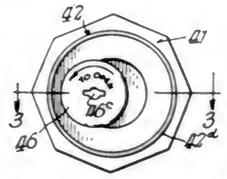
axes providing a working space extending longitudinally of said barrel portion and provided with a high pressure end wall, said structure having a low pressure port communicating with one end of said space the major portion of which port is located at one side of the plane of said axes and a high pressure port communicating with the other and high pressure end of said space the major portion of which port is located at the opposite side of said plane, rotors provided with helical lands and grooves having an effective wrap angle of less than 360° rotatably mounted in said bores and comprising a male rotor having lands provided with substantially convexly curved flanks and intervening grooves the major portions of which are outside the pitch circle of the male rotor and a female rotor having lands provided with substantially concavely curved flanks and intervening grooves the major portions of which lie inside the pitch circle of the female rotor, the lands and grooves of said rotors intermeshing to form with the confronting portions of said housing structure chevron-shaped closed chambers each comprised of a portion of a male rotor groove and of a portion of a female rotor groove communicating therewith, said chambers being defined at their base ends by said high pressure end wall of the working space and at their apex ends by the places of intermesh between the lands of the rotors, said apex ends moving axially toward said high pressure end wall as the rotors revolve to decrease the volume of said chambers and said chambers coming into communication serially with said high pressure port, means for supplying liquid to said working space for sealing the perimeters of said chambers and cooling the contents thereof, said male rotor having a shaft part extending through said high pressure end wall and said housing structure forming a pressure chamber encircling said shaft part on the side of said high pressure end wall remote from the body portion of said male rotor, sealing means between said shaft part and said high pressure end wall, a balancing piston in said pressure chamber fixed in sealing engagement with said shaft part against axial displacement thereon in a direction away from said high pressure end wall, and means for supplying liquid under pressure to said pressure chamber between said balancing piston and said high pressure end wall to produce an axial thrust on said male rotor acting in opposition to the axial thrust exerted thereon by the fluid being compressed in said compression chambers.

3,161,350
SEALING DEVICE FOR ROTATING PISTON ENGINES
Harry Lörcher, Witzhelden, Germany, assignor to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, near Cologne, Germany, a corporation of Germany
Filed Sept. 14, 1962, Ser. No. 223,848
Claims priority, application Germany, Sept. 14, 1961, G 33,122
1 Claim. (Cl. 230—145)



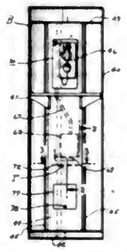
A sealing device for use in connection with a rotary piston engine, comprising an elongated relatively narrow one-piece sealing bar and an elongated carrier bar which is wider than said sealing bar and having a longitudinally extending open ended groove therein extending obliquely inwardly from the outer end thereof, for receiving said sealing bar, operative to limit the motion of the latter transversely of and beyond the tip of said carrier bar, said bars being of a length to provide a sealing action at the ends thereof when in operation, said sealing bar being shorter than said carrier bar by an amount which substantially compensates for greater expansion of said sealing bar in operation due to greater sliding friction thereof, the lesser expansion of said carrier bar permitting minimum initial end clearance therefor.

3,161,351
SAVINGS BANK
Nathan B. Lerner, Chicago, Ill., assignor to Harold B. Spector and Raymond B. Spector, doing business as Superior Toy & Mfg. Co., a co-partnership
Filed Jan. 9, 1963, Ser. No. 250,427
8 Claims. (Cl. 232—5)



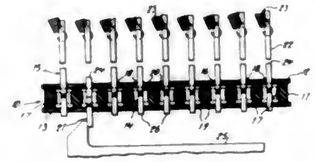
1. A savings bank for coins and the like comprising a base, a rotatably adjustable locking mechanism mounted on said base, and a compartmented coin-accommodating unit mounted upright on said base; said unit including an elongated depending element accommodated by said locking mechanism and in interlocking engagement therewith, when said mechanism is in one position of adjustment, and disengageable from said mechanism, when the latter is in a second position of adjustment whereby said unit is detachable from said base, the longitudinal axis of said depending element being offset with respect to the rotary axis of said locking mechanism, and a plurality of compartments arranged in upright substantially parallel spaced relation, a corresponding one end of each compartment being closed by a removable member, said member being removable from said compartment one end to expose said compartment interior, only when said depending element is disengaged from said locking mechanism and said base, each compartment being provided with an entrance through which a coin is capable of passing.

3,161,352
COIN DEPOSITORY
Edward Fitzgerald O'Brien, Warrenton, Mo., assignor to M/T Mfg. & Supply Co., Inc., Warren County, Mo., a corporation of Missouri
Filed Mar. 15, 1962, Ser. No. 179,962
1 Claim. (Cl. 232—16)



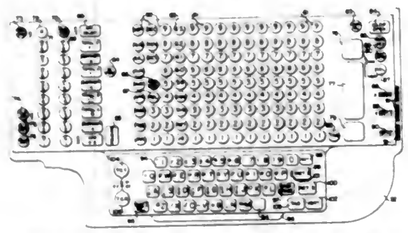
For use in combination with a coin-operating apparatus having a discharge passage for coins received, a coin depository located remotely from the coin-operating apparatus comprising a coin receptacle, means connecting said discharge passage with said coin receptacle, a plurality of juxtaposed connected walls defining an enclosure for said coin receptacle, means detachably mounting said coin receptacle on the inner face of one of said walls, there being an opening provided in one of said walls downwardly of the coin receptacle when in mounted position, closure means for said wall opening, and a plate hingedly mounted on the inner face of one of said walls downwardly of the mounted position of said coin receptacle and upwardly of the wall opening, said plate being adapted for movement between horizontal or closed position and vertical or opened position, and locking means for securing said plate in horizontal position for denying access to said coin receptacle.

3,161,353
PIN BOX AND SET PIN ASSEMBLY
Edward J. Dombrowski, Derby, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,053
11 Claims. (Cl. 235—60)



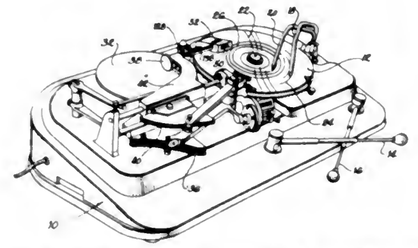
1. A pin box, comprising
(*a*) a pad member having a plurality of apertures,
(*b*) a settable pin slidably arranged in each aperture with each pin being movable between a pair of spaced positions within a said aperture,
(*c*) means on said pins limiting movement thereof within said apertures,
(*d*) and detent means including means on the wall of each aperture cooperating with said pin limiting means to detent a pin at the limits of movement in a said aperture,
(*e*) said wall means of said detent means being yieldable upon movement of a pin from either of said pair of spaced positions past an intermediate position to supply impetus to a said pin in the direction of movement thereof.

3,161,354
TABULATION CONTROL MECHANISM FOR ACCOUNTING MACHINES
Raymond A. Christian, Herbert C. Johnson, Arthur R. Colley, Sr., and Ralph C. Elfort, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 17, 1960, Ser. No. 9,261
6 Claims. (Cl. 235—60.47)



1. In a machine of the class described, having a traveling carriage, non-positive means to drive said traveling carriage in forward and return tabulating directions, and releasable means to hold said traveling carriage against movement by the non-positive driving means, the combination of stop means located in columnar positions on the traveling carriage; abutment means engageable with the stop means to terminate tabulating movement of the traveling carriage and to locate said traveling carriage in columnar positions; means operating under control of the traveling carriage in predetermined columnar positions to move the abutment means into the path of the stop means and to simultaneously release the holding means to cause the traveling carriage to tabulate; means including a shiftable member to release the machine for operation; initiating means coacting with the shiftable member, said initiating means rendered effective by the traveling carriage in preselected columnar positions and operable by the abutment means when engaged by the stop means, to initiate automatic operation of the machine; manually-controlled means to operate the moving means for the abutment means; means including a rockable element operated by the manually-controlled means to move the shiftable member out of coacting relationship with the initiating means to prevent automatic operation of the machine; means to latch the rockable element in operated condition to retain the shiftable member in ineffective position; and means effective upon subsequent operation of the machine to release the latching means.

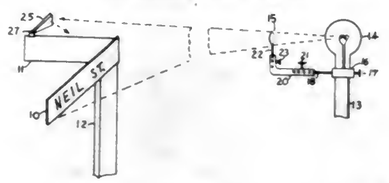
3,161,355
INTEGRATOR AND COUNTER MEANS THEREFOR
Elmer S. Messer, Tulsa, Okla., assignor to Flow Measurement Company, Inc., Tulsa, Okla.
Filed Apr. 7, 1961, Ser. No. 101,409
10 Claims. (Cl. 235—61)



1. In an integrating device having a rotatable chart plate, a rotatable time plate, a rotatable differential plate, a shiftable idler wheel between the time plate and differential plate to rotate the differential plate at various speeds with respect to the time plate and a differential wheel shiftable into and out of engagement with the differential plate and shiftable substantially radially relative thereto for rotation of the differential wheel in amounts depending upon the rate of rotation of the differential plate and the position of the differential wheel on the plate, means for counting the revolutions of the differential wheel comprising a stationary reset counter including a frame, a main drive shaft mounted for rotational movement on the frame, an operative connection between said main drive shaft and the differential wheel for transmission of rotational movement of said wheel to said main drive shaft, a rotatable reset counter shaft, a plurality of peripherally numbered wheels rotatably mounted on said reset counter shaft in spaced side by side relation, a tens transfer shaft in spaced parallel relation with the reset counter shaft and shiftable between a tens transfer position and retracted position, tens transfer gears rotatably mounted on said tens transfer shaft in operative engagement with adjacent numbered wheels when in tens transfer position for advancement of the next wheel one numbered increment responsive to a predetermined rotational movement of the other wheel, an operative connection between the main drive shaft and the first of the numbered wheels for rotating said first wheel responsive to rotational movement of the main drive shaft, said last mentioned operative connection including a gear means keyed to said drive

shaft for rotation therewith, said gear means being connected with said first wheel, and wherein said drive shaft includes a flexible section to permit radial movement of the differential wheel relative to the drive shaft, said drive shaft being slideable relative to said gear means to compensate for shifting movement of said differential wheel relative to said stationary counter, and means for returning the numbered wheels to zero position when the chart has been integrated and before the next chart integration is started, including a cam plate rigid with each wheel and having a cam edge which increases in offset in both directions from zero position, cam arms shiftable between normal and cam engaging positions, means for actuating said cam arms from normal to cam engaging position and back, and means for shifting the tens transfer shaft to retracted position when the cam arms are shifted to cam engaging position whereby the wheels are free for rotational movement on the reset counter shaft for return to zero position responsive to camming engagement of the cam arms on the cam plates.

3,161,356
STREET SIGN ILLUMINATION MEANS
William Brenner, 105 Neil Court, Levittown, N.Y., assignor of fifteen percent to James P. Malone, Mineola, N.Y.
Filed Mar. 22, 1961, Ser. No. 97,676
2 Claims. (Cl. 240—25)



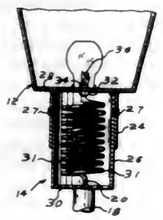
2. Means to illuminate a street sign on a first pole from an existing street light on a second pole of the type casting general illumination.

means for directing concentrated illumination onto said sign spaced from said existing street type lamp without substantially detracting from the normal general illumination light function of said street light including,

a focusing means,

and means to adjustably mount said focusing means on said street light to thereby control the area of illumination on said remote sign.

3,161,357
GAS LIGHT LAMP POST
Thomas Hart, 814 W. 5th St. S, Newton, Iowa
Filed Mar. 14, 1963, Ser. No. 265,140
5 Claims. (Cl. 240—82)



1. In a gas lamp post,

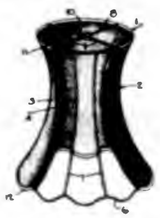
a standard;

a cylindrical unit mounted on top of said standard and comprising two telescoping sections;

a gas light lantern having a base secured to the top of one of said sections, the other section being secured to said standard;

and a metallic tube for supplying gas to said lantern extending longitudinally through said unit and coupled to the base of said lantern, said tube being coiled within said unit and adapted to be expanded longitudinally to permit relative longitudinal separation of said telescoping sections, thereby providing access to the interior of said telescoping sections.

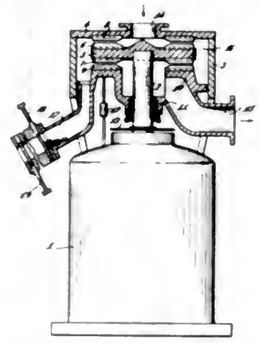
3,161,358
LAMP SHADE AND METHOD OF MAKING SAME
Bernard Gottlieb, 184 Salem Road, Westbury, N.Y.
Filed Dec. 28, 1962, Ser. No. 248,063
2 Claims. (Cl. 240—108)



1. A lamp shade comprising a frame member defining and enclosing a solid geometric space the outer surface of which consists at least in part of a curved region of complex curvature having at least two radii of curvature for each point thereon, a fabric member covering a major closed portion of the said outer surface of said frame member including at least a portion of said curved region of complex curvature and further covering the corresponding inner surface coordinate with said outer surface and separated therefrom by said frame member, said fabric member being of one continuous fabric web throughout said outer surface and therefrom to and throughout said inner surface, said web comprising a stretched fabric wherein the individual yarns vary from partially drawn to fully drawn depending directly upon the local degree of stretching tendency introduced by the radii of curvature of said surface, stretching tendency being prevented from transmitting along the yarns to neighboring regions of different radii of curvature and thus different stretching tendencies by a looped interrelationship of the yarns constituting said fabric.

3,161,359
SEPARATOR-REFINER
David R. Dalzell, Jr., Pittsfield, Mass., assignor to E. D. Jones Corporation, Pittsfield, Mass., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,672
2 Claims. (Cl. 241—82)

1. Refining apparatus comprising a rotary disk having a set of blades on each side, a set of stationary blades facing each of said sets with a radial passageway between the blades of each pair of opposed rotary and stationary blades throughout the circumference of the disk, a housing having a peripheral space surrounding the disk and an axial inlet on one side of the disk and an axial outlet on the other side of the disk so that incoming stock flows outwardly through the first radial passageway to said peripheral space and thence inwardly through the second radial passageway to said outlet, said housing also having a junk chamber below said peripheral space, a passageway leading downwardly from said space to said chamber, the chamber having a junk outlet, and a valve normally closing the junk outlet, whereby junk is thrown into said peripheral space by centrifugal force and then falls through said passageway into said chamber and may be removed



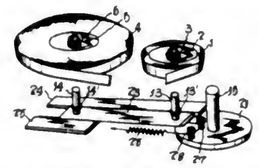
periodically by opening said valve, the grooves between the blades in said first passageway being wide and deep to allow junk to pass through the passageway.

3,161,360
GUARD FOR GARBAGE DISPOSAL
Zelda B. Levine, 11126 National Blvd., Los Angeles, Calif.
Filed June 10, 1964, Ser. No. 374,064
2 Claims. (Cl. 241—100.5)

1. In combination: a sink equipped with a drain, said drain having a peripheral shoulder coaxial therewith and displaced down from the entrance thereto; a garbage disposal unit mounted on the outlet of said drain; and a guard removably mounted on said peripheral shoulder in said drain, said guard comprising, a flat apertured disc of plastic material having a diameter corresponding to the internal diameter of said drain and dimensioned to fit into said drain and rest on said peripheral shoulder, and a hollow knob composed of plastic material positioned at the center of said disc and formed integral therewith and extending upwardly from the plane thereof so that its extremity is substantially flush with the entrance to said drain so as to facilitate the insertion and removal of the guard into and out of said drain.

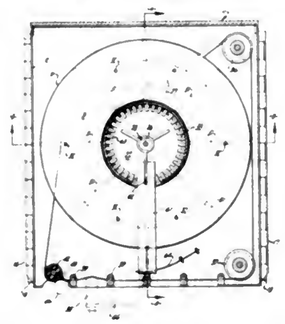
3,161,361
TAPE RECORDER
Jitsue Iida, 23 Nagasaki 4-chome, Toshima-ku, Tokyo, Japan, assignor of one-half to Eiraku Denki Kabushiki Kaisha, Tokyo, Japan
Filed Jan. 7, 1963, Ser. No. 249,931
1 Claim. (Cl. 242—55.12)

A tape recorder, comprising a sliding plate, two parallel shafts mounted on said sliding plate and spaced from each other, spools rotatably mounted on the shafts, said spools being adapted to have a tape wound thereon, one spool being a winding spool and the other being a supply spool, guide plates supporting said sliding plate for sliding in a direction transverse to the direction in which said parallel shafts extend and along a straight line extending through the two shafts, a capstan positioned adjacent the winding spool and adapted to press the tape being wound on the winding spool against the tape already wound on the winding spool for winding



the tape on the spool, and a tension spring connected to said sliding plate biasing said sliding plate toward said capstan.

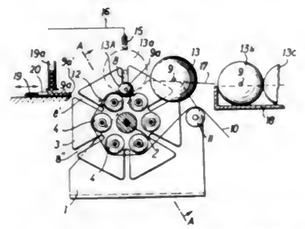
3,161,362
ENDLESS TAPE CARTRIDGE
Kobert Rey Smith II, Los Altos, Calif., assignor, by mesne assignments, to Continental Capital Corporation ("Continental") and Sierra Capital Company ("Sierra"), both of San Francisco, Calif., corporations of California
Filed Jan. 15, 1962, Ser. No. 166,311
1 Claim. (Cl. 242—55.19)



A magnetic tape cartridge comprising a flat rectangular housing having front end openings and containing a thrust bearing and an endless magnetic tape disposed in a coil with a loop extending from the center of the coil to the exterior thereof, a central hub mounted for rotation upon said thrust bearing in the housing and having a plate extending therefrom for supporting said tape coil which is disposed about the hub, said hub having a central recess coaxially of the top thereof with a plurality of radial slots about the rim of said recess, an annular floating disc disposed atop the tape coil about the top of the hub and maintained upon the coil by housing projections, an annular depending ridge within the housing above the hub and in close proximity therewith slightly inwardly of the periphery thereof, said tape loop being twisted from vertical to horizontal orientation in extension from the inner coil convolution over said floating disc, a guide roller mounted for rotation in the housing and having said tape loop extending thereabout beneath a top roller flange to twist the tape back into vertical position, tape guide means across the front of the housing, a pinch wheel adjacent an end guide means with the tape extending across same and back to the outside of the coil to complete said tape loop, said end guide means being disposed adjacent said pinch wheel behind the tape, said housing having an indentation in the front thereof between said pinch wheel and end guide means for partial entry of a tape recorder drive capstan upon insertion of the cartridge in a tape recorder, whereby the pinch wheel and capstan engage each other in off-center relation with the tape therebetween and such engagement partially wraps the tape about the capstan and about a substantial portion of

the pinch wheel for maximizing uniformity of tape velocity as imparted by the drive capstan, and braking means including an arm mounted within said housing for movement radially over said disc from the front end of said housing, said arm having a depending lug engageable with said slots, said arm spring loaded in the radially outward direction to normally engage said lug with said slots, said arm having an outer end disposed within one of said front end openings and engageable with tape recorder elements upon insertion of the cartridge in a tape recorder, said arm being thereby urged radially inward to disengage said lug from said slots and release said hub.

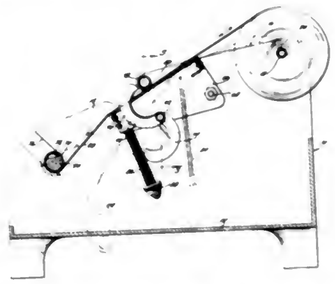
3,161,363
WINDING MACHINE
Ludwig Press, Eberstadt, Germany, assignor to Press & Co. Maschinenfabrik, Darmstadt-Eberstadt, Germany
Filed Feb. 6, 1963, Ser. No. 256,724
12 Claims. (Cl. 242—56)



1. A machine for winding a flexible strip onto consecutive cores to form convoluted rolls, comprising a rotary spool having a pair of spaced disks provided with radially inwardly extending slots, each slot of one of said disks being aligned with a slot of the other disk; a plurality of spaced winding rollers mounted in said spool and extending between said disks, said rollers having axes disposed on the periphery of a circle which is concentric with said spool and each slot being located between a pair of such rollers; means for driving said rollers in the same direction about their respective axes; means for delivering the strip between said disks so that the strip is trained around and is advanced by said rollers; feeding means for introducing cores into consecutive aligned slots so that each core enters the respective slots and maintains the strip in contact with the adjacent rollers whereby the rollers automatically convolute the strip onto the core, at least a portion of each of said cores having a diameter sufficiently smaller than the width of said slots so that said cores are freely rotatable in the respective aligned slots whereby each core floats on the respective pair of rollers and moves radially outwardly in response to winding of strip material therearound; and indexing means for intermittently turning the spool to move the next pair of aligned slots into registry with said feeding means.

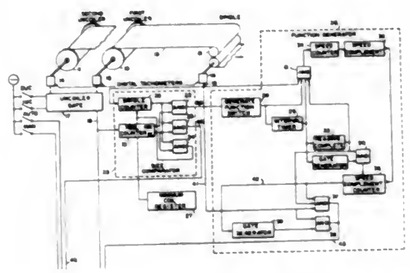
3,161,364
WEB SLITTER
Hugh L. House, Rte. 3, Rogersville, Tenn.
Filed Feb. 28, 1962, Ser. No. 176,295
4 Claims. (Cl. 242—56.2)

1. In a web cutting apparatus including a housing having spaced side walls, a shaft having its ends journaled in said side walls adjacent one end of said housing, said shaft being adapted to support thereon a roll of web to be slit, and a take-up roll having the ends thereof journaled in said side walls adjacent the other end of side housing, a cutter assembly extending between said side walls intermediate said shaft and said roll, said assembly comprising a plate member provided with a plurality of spaced parallel slots arranged so that their one adjacent ends face toward said shaft and their other adjacent ends face toward said roll, a bar extending transversely of and spaced below said slots, a plurality of arcuately curved knife elements disposed adjacent said bar, each of said knife elements having the concave edge thereof provided with a cutting edge, each of said knife elements having one end pivotally and slidably connected to said bar for movement about and along said bar between a position projecting through a selective one of



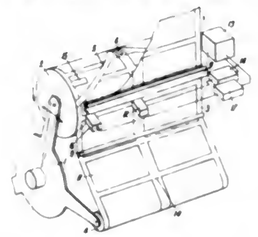
said slots with the cutting edge facing said shaft to a position below said plate member and free of said slots, and support means connecting said plate member to said housing, said knife elements being freely rotatable and slidable on said bar, and means on said plate member forming one end of said slots and forming a stop for engaging the convex edge of said knife elements when the knife elements project through the slots, said stop being located in laterally spaced relation to said bar for gravitationally retaining the knife elements in cutting position.

3,161,365
UNCOILER CONTROL SYSTEM
Donald W. Johnson and Kenneth R. Thompson, Roanoke, Va., assignors to General Electric Company, a corporation of New York
Filed Feb. 23, 1962, Ser. No. 175,177
13 Claims. (Cl. 242—57)



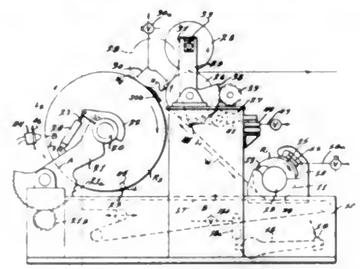
1. In a system for controlling the unwinding of material from a reel, means for generating a first plurality of pulses having a repetition rate commensurate with the rotational velocity of said reel, rotational means driven at a velocity proportional to the velocity of said material, means for generating a second plurality of pulses having a repetition rate commensurate with the rotational velocity of said rotational means, and means responsive to said first and second plurality of pulses to generate a signal when the repetition rates thereof attain a predetermined proportional relationship.

3,161,366
SPLICING OF PREPRINTED WEBS
Dennis Herbert Bent, Sidney Arthur Kirk, and Edward Thomas Astley, London, England, assignors to Crosfield Electronics Limited, London, England, a British company
Filed Feb. 11, 1963, Ser. No. 257,400
Claims priority, application Great Britain, Feb. 13, 1962, 5,495/62
4 Claims. (Cl. 242—58.3)



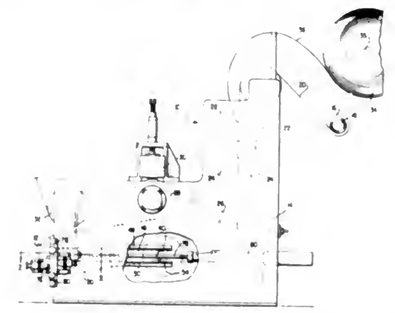
1. Apparatus for splicing a preprinted web on a rotating new reel with a similarly preprinted web from an expiring reel, comprising: first and second sensing devices, responsive respectively to the passage of a ferromagnetic register mark on the periphery of the rotating reel and the passage of register marks on the expiring web, for generating signals indicating the revolution of the new reel and the passage of pattern units on the expiring web; splicing means for splicing the expiring web to the web on the rotating new reel when the interval between signals from the first and second sensing devices indicates that a desired register condition exists between the preprinted webs; register detecting means responsive to signals from said first and second sensing devices for initiating the operation of said splicing means; and means for adjusting the position of the new reel so that a given distance, independent of the diameter of the new reel exists between the periphery of the new reel and the expiring web at splicing; said first sensing device being mounted adjacent to the position of operation of the splicing means on the side of the expiring web remote from the rotating reel for sensing the ferromagnetic register mark on the periphery of the rotating reel through the expiring web.

3,161,367
AUTOMATIC FLYING SPLICE
Denis A. Goddard, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Sept. 6, 1962, Ser. No. 221,733
10 Claims. (Cl. 242—58.4)



1. A mechanism for continuously unwinding a web in forming a flying splice comprising, a first parent roll support for a parent roll for an unwinding travelling web, a second parent roll support for a fresh parent roll having a lead end to be spliced to the travelling web, a transfer roll for removing the lead end from the fresh parent roll, a splice roll forming a splice nip with the transfer roll through which the lead end and travelling web travel for forming a splice, and means for applying a suction to the surface of the transfer roll over a limited area facing the fresh parent roll and extending between the fresh parent roll and said splice nip for carrying the lead end off the fresh parent roll to said splice nip.

3,161,368
BUTT SPLICER
Claude V. Allen, Newburgh, N.Y., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Oct. 18, 1962, Ser. No. 231,373
5 Claims. (Cl. 242—58.4)

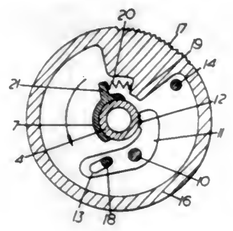


1. Apparatus for butt splicing moving webs of paperboard or the like, comprising in combination a pair of supply rolls each having a fluid pressure brake, means for continuously advancing a web from one of said supply rolls, splicing means for advancing the lead end of a new web from the other of said supply rolls, severing said lead end and the old web and automatically securing a butt joint between the new and old webs as said webs are being continuously advanced, and means responsive to web tension to simultaneously adjust the brake pressures on both said supply rolls and maintain substantially constant web tension, said last named means comprising an accumulator roll supported for substantial reciprocal movements and over which a spliced web is trained to form a loop, a fluid pressure cylinder device connected to said accumulator roll so that pressure in the cylinder device opposes movement of the accumulator roll in the direction caused by increased web tension in said loop, a source of pressure fluid connected to said cylinder device and to said brakes, and pressure fluid control means mechanically connected to and responsive to movements of said accumulator roll and so arranged as to simultaneously increase the pressure in said cylinder device and decrease the pressure of both said brakes when the web tension increases and simultaneously reduce the pressure in said cylinder device and increase the pressure of both said brakes when the web tension decreases.

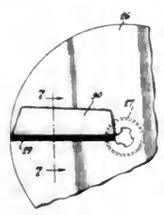
3,161,369
RE-WINDING DEVICE FOR PHOTOGRAPHIC CAMERAS
Horst Strehle and Herbert Welzel, Dresden, Germany, assignors to VEB Kamera- und Kinowerke Dresden, Dresden, Germany
Filed May 12, 1961, Ser. No. 109,748
4 Claims. (Cl. 242—71.6)

2. In a photographic camera having a casing containing mounting means for a film supply spool formed with a neck, and take-up means for drawing film off the film

supply spool during film wind-on, the provision of rewinding means adapted to rewind film back onto the film supply spool, said rewinding means comprising a collar having a portion adapted to receive and support the neck of the film supply spool, means rotatably mounting the collar on the casing, at least one clutch lever pivotally mounted on the collar on an axis displaced from the central axis of the collar and positioned adjacent the film spool neck so as to be engageable therewith on a side of said neck opposite said portion of said collar and arranged to drive said neck in one direction only, a drive member rotatably mounted on the casing for initial rotation relative to and coaxially of said collar, and lost motion means operatively connecting said drive member to said clutch lever first to rotate the latter into frictional engagement with the film spool neck on movement of said drive member in one direction to press said neck against the inside of said collar and subsequently to rotate said film supply spool on continued rotation of said drive member, the frictional engagement of the clutch lever with said neck being effective only on movement of said drive member in said one direction thereof, said supply spool being normally free to rotate for film wind-on when the rewinding means is not in use.

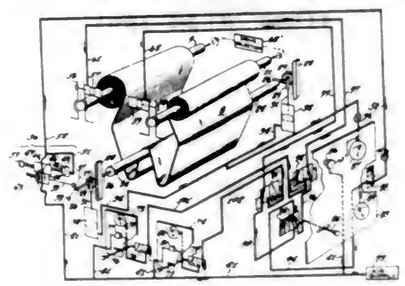


3,161,370
LIGHT SENSITIVE MATERIAL SPOOLING DEVICE
Sam Schwartz, 3550 Chesapeake St. NW., Washington, D.C.
Filed June 7, 1960, Ser. No. 34,478
2 Claims. (Cl. 242—74)



1. A reel for light sensitive material comprising spaced flanges connected by a central hub member, said hub member having a slot therein for receiving the free end of the light sensitive material, at least one of said flanges having a slot therein extending from an outer edge thereof to the slot formed in the hub member and merging therewith to permit threading of said reel through said flange slot, and resilient means secured to a face of said slotted flange and having a portion thereof covering said slot to prevent ingress of light to the interior of said reel.

3,161,371
CONSTANT TENSION SERVO SYSTEM FOR DYEING JIGS
Robert E. Kuhn, Saddle River, and Paul Frederick Rose, Wyckoff, N.J., assignors to Somatex Inc., Passaic, N.J., a corporation of New Jersey
Filed Feb. 2, 1962, Ser. No. 170,556
1 Claim. (Cl. 242—75.43)

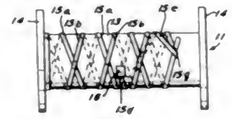


In a dyeing jig, a supporting end frame member, fabric web beam rolls journalled between the frame members for reverse rotation, selective reversible mechanism to drive either of said rolls as wind up roll and placing torque upon the other roll and adapted for manual and automatic operation, a dye vat disposed between the end frame members beneath the beam rolls and adapted to contain liquid dye, idler guide rollers journalled between the end frame members to guide the fabric web through the dye vat, an idler floating dancer roll means intervening between the idler rolls in the fabric circuit and including a dancer roll shaft having a spur gear secured to each end thereof and a sleeve freely journalled upon the shaft, a vertically-extending gear rack mounted on each end frame member and meshing with a spur gear to keep the dancer roll means parallel to the idler guide rollers while moving vertically, a journal bearing embracing each end of the dancer roll shaft, a pneumatic cylinder device mounted on each end frame and having a piston rod to the upper end of which a journal bearing is secured and the dancer roll means, regulated pressure means for supplying air under pressure to the pneumatic cylinder devices to extend their piston rods and to force upwardly the dancer roll whereby to increase the tension in the fabric web and to sense the downward force of the fabric upon the dancer roll, a fluid pressure impressed controller adjustably mounted upon one end frame member having cam lever means engaging the floating dancer roll means to be operated thereby and, said fluid pressure impressed controller serving to modulate its output pressure in proportional response to the displacement of the cam lever and the dancer roll, a pneumatically-operable braking device associated with each of the beam rolls, means for supplying air under pressure from the regulated pressure supply means to the pneumatically-operable beam roll braking devices, said regulated pressure supply means having a manually adjustable air regulator for setting the dancing roll to modulate the drag torque of a brake and to fix the tension of the fabric to be maintained by the dancer roll.

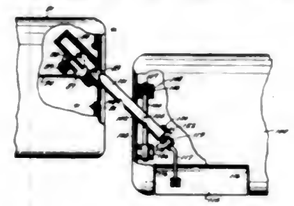
3,161,372
ATTACHMENT OF RIBBON AND THE LIKE TO SPOOL BARREL
Frank H. Kaufmann, Huntingdon Valley, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 8, 1963, Ser. No. 278,819
6 Claims. (Cl. 242—176)

1. An attachment of ribbon or the like to the barrel of a spool comprising ribbon or the like with a plurality of

spaced helical turns on the barrel extending from a starting terminal end portion in one axial direction, a continuous plurality of helical turns on the barrel in the opposite axial direction, the starting terminal end portion being wound in superposed relation to a plurality of the first mentioned turns to provide a bight around a portion of one turn of the last mentioned turns, a member securing said portion to the barrel, and a plurality of helical turns superposed thereon.

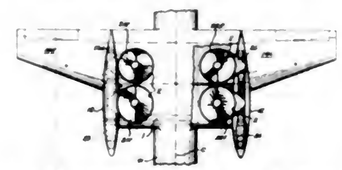


3,161,373
AUTOMATIC ALIGNMENT MECHANISM FOR COMPOSITE AIRCRAFT
Richard Vogt, Hamburg, Germany (R.R. 1, New Carlisle, Ohio)
Filed Jan. 24, 1949, Ser. No. 72,467
17 Claims. (Cl. 244—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

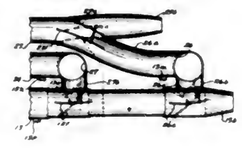


16. A multiple aircraft comprising a plurality of winged aircraft each separately powered and capable of independent flight, said aircraft attachably and releasably connected to one another in flight in a wing tip to wing tip arrangement, the juncture at the wing tips being clean aerodynamically whereby aerodynamic upwash from the connected wing tips mutually support one another, said aircraft being pivotally connected at the wing tips to permit the individual aircraft to assume different angles.

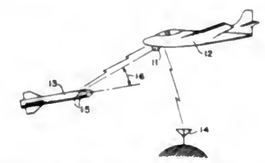
3,161,374
VERTICAL LIFT AIRCRAFT
Robert W. Allred, Bellevue, Frederick W. Clayton, Maple Valley, and Theodore W. Schmidt, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 22, 1962, Ser. No. 232,062
10 Claims. (Cl. 244—12)



1. An aircraft comprising a sustaining wing, propulsive jet engine means arranged to sustain the wing aerodynamically during forward flight, a plurality of vertical lift means arranged to sustain the wing by the reaction from downwardly directed air blasts, individual jet engine means arranged to drive each of said vertical lift means independently of the others, duct means interconnecting the propulsive jet engine means and the vertical lift jet engine means, and means to divert jet gas from the propulsive jet engine means to any selected vertical lift means, for emergency operation of the latter in event of failure of the corresponding vertical lift jet engine means.



3,161,375
SOLAR CELL LOOK-ANGLE DETECTING SYSTEM
Justin M. Ruhge, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 11, 1962, Ser. No. 223,311
9 Claims. (Cl. 244—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)



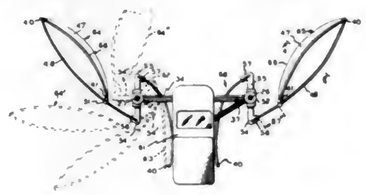
1. A system for determining the look-angle of a missile as it approaches its moving target comprising: means including a source of radiating light disposed at a target for radiating a beam of light; viewing means arranged within a leading portion of a missile for receiving the beam; lens means mounted within the said viewing means for converting a portion of the beam of light into a bar image and directing the bar along a path as the light passes therethrough; a photovoltaic cell array adapted to initiate a plurality of independent electrical currents disposed in the path of the directed bar so that the bar may be caused to impinge on the surface of the array and be displaced thereacross as said source is displaced relative to said missile; electrical output terminals mounted on said array for conducting a plurality of currents from said array; a telemetering circuit connected with said output terminals for converting conducted currents to intelligence signals and telemetering the signals to the target; means mounted in said target for relaying the signals; and means remotely disposed from said target for receiving the signals from the target and reducing the signals to intelligence whereby the look-angle may be determined.

3,161,376
ORNITHOPTER TYPE AIRCRAFT
Harold M. Lyle, Rte. 3, Box 360, Snohomish, Wash.
Filed Jan. 21, 1963, Ser. No. 252,780
1 Claim. (Cl. 244—20)

An improvement in an aircraft which flys by creating aerodynamic lifting forces through the rotative movement of wings about fuselage orientated longitudinal axes, wherein the wings are aerodynamically effective during downwardly rotative movements and ineffective during upwardly rotative movements about such axes, the improvement comprising in combination:

(*a*) a fuselage having wing camming surfaces and means to support fuselage orientated longitudinal axes structures on its respective sides at a wing passage restrictive area distance from its respective sides;

(*b*) axes structures rotatably positioned in the fuselage axes supporting means having radial arms terminating in structures which are adapted to provide angular near tangential supports for multiple transverse spring arms of adjustable wing-structure;
(*c*) a rotative power, drive and linkage means connected to the fuselage axes supporting means and to the rotative axes structures to rotate the rotative axes structures relative to the fuselage axes supporting means; and
(*d*) adjustable wing structures secured to the rotative axes structures and positioned therefrom radially expanded during at least one-half of a revolution to produce positive lifting forces and positioned therefrom radially contracted during the remainder of the revolution to avoid producing a negative lifting force as the adjustable wing structures are rotated on the rotative axes structures by the action of the power, drive and linkage means through the wing passage restrictive area between the fuselage and the rotative axes structures, the fuselage serving as a



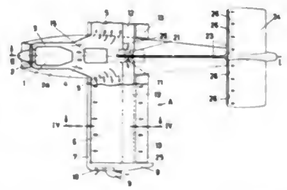
camming surface to so radially contract the adjustable wing, having multiple transverse spring arms secured at spaced distances along the wing structures and terminating in supporting connections of the radial arms of the rotative axes structures, an outboard longitudinal spanner joining with the spaced outboard ends of the multiple transverse spring arms, an inboard longitudinal spanner slidably joining with the spaced multiple transverse spring arms between their centers and inboard ends, and wing air foil producing flexible materials secured between the outboard longitudinal spanner and the inboard longitudinal spanner arranged to be substantially taut and aligned with the transverse spring arms as the inboard longitudinal spanner slides toward the rotative axes structures during the upward rotative movement of the adjustable wing structures and arranged to be billowed upwardly as the inboard longitudinal spanner slides away from the rotative axes structures during the downward rotative movement of the adjustable wing structures.

3,161,377
APPARATUS FOR CONTROLLING AIRCRAFT

Helmut Balluff, Donauworth, Germany, assignor to Siebelwerke-ATG G.m.b.H., Donauworth, Germany, a corporation of Germany

Filed Oct. 2, 1963, Ser. No. 313,393
Claims priority, application Germany, Nov. 9, 1962, S 82,393
17 Claims. (Cl. 244—52)

2. In a system for controlling aircraft according to the reaction principle including control nozzles providing combined control and propulsive jets disposed on the aircraft, means for supplying a gaseous medium to said control nozzles, said control nozzles providing the sole control means for directionally controlling the aircraft, means operatively communicating with said supplying

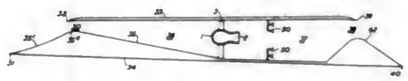


means for influencing the boundary-layer by discharging at least a portion of the gaseous medium at a surface of the aircraft.

3,161,378
SUPERSONIC AIRCRAFT WING WITH POWERPLANT

Raymond Frederick Creasey and Peter John Cooper, Lytham, St. Annes, England, assignors to English Electric Aviation Limited, Westminster, London, England, a British company

Filed July 26, 1963, Ser. No. 297,922
Claims priority, application Great Britain, July 31, 1962, 29,494/62
4 Claims. (Cl. 244—53)



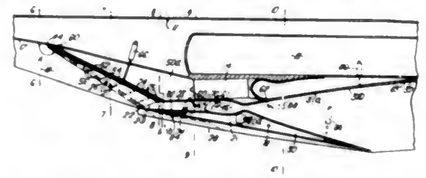
1. A supersonic aircraft wing comprising in combination: an upper wing panel having a leading edge and a trailing edge, a lower wing panel having a leading edge protruding forward beyond the leading edge of said upper wing panel and a trailing edge protruding rearward beyond the trailing edge of said upper wing panel, an inner wing panel having a leading edge integral with the leading edge of said lower wing panel, a two-dimensional isentropic surface aft of said leading edge and at supersonic speed generating shock waves converging on the leading edge of said upper wing panel and inducing a main airflow between said upper and inner wing panels, a hump aft of said isentropic surface including a throat with said upper wing panel immediately aft of the leading edge thereof, a diverging two-dimensional diffuser aft of said throat, a combustion chamber aft of said diffuser, a hump between said combustion chamber and the trailing edge of said lower wing panel and including a two-dimensional convergent-divergent nozzle with the trailing edge of said upper wing panel, struts integrating said upper, inner and lower wing panels to a structural unit and rocket motors mounted on said struts, inducing in operation a mass flow through said wing additional to said main air flow.

3,161,379
AIRCRAFT POWERPLANT

Raymond John Lane, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company

Filed Aug. 15, 1963, Ser. No. 302,388
Claims priority, application Great Britain, Aug. 23, 1962, 32,444/62
8 Claims. (Cl. 244—53)

1. An aircraft having an air-breathing propulsion power plant capable of propelling the aircraft at supersonic speeds, including an air intake for the propulsion plant having an upper wall comprising an inverted valley-shaped ramp having a pair of flat surfaces meeting at a ridge line in a fore and aft plane of intake symmetry and sloping laterally downwardly from said ridge line, said flat surfaces having straight leading edges diverging rearwards from a pointed front end, and a member bridging the valley of the ramp at a level below the ridge line

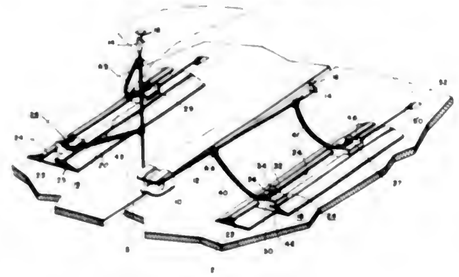


and having a lip at its forward edge at a position downstream from the pointed end.

3,161,380
SLIDER FOR RETAINING AIRCRAFT LAUNCHING TOWLINES

James M. Crines, Philadelphia, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 24, 1963, Ser. No. 318,770
6 Claims. (Cl. 244—63)

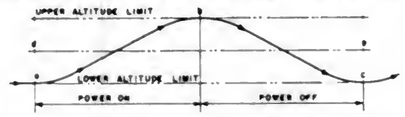


4. In a catapult launching device having a shuttle hook mounted for movement in given directions and a towline releasably secured to an aircraft and said shuttle hook,
a flexible, inextensible line secured at one end to said towline and having a sling at its other end,
a slider having a body mounted for movement parallel to the movement of said shuttle hook,
a projection extending upwardly from said body,
a bracket secured to said body forwardly of said projection having a passageway opening in the direction of launch permitting entrance of said sling,
said sling being removably secured by passage through said passageway and looping on said projection.

3,161,381
SUPERSONIC INTERMITTENT-POWERED LOW-ALTITUDE INCLINED BODY

Robert W. Pinnes, 4421 Faroe Place, Rockville, Md.

Filed Mar. 17, 1960, Ser. No. 15,770
2 Claims. (Cl. 244—75)
(Granted under Title 35, U.S. Code (1952), sec. 266)

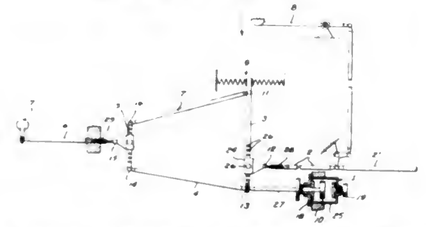


1. A method for increasing the range of a low density inclined body traveling at supersonic speeds below an altitude of 10,000 feet above sea level comprising the steps of flying at the conventional design angle of attack for the inclined body at some lower altitude limit, controlling said inclined body to increase the angle of attack to a value giving optimum increase in lift-to-drag ratio for minimum increase in drag coefficient, climbing at least 200 feet to some upper altitude limit, cutting off the power, gliding said inclined body at the best lift-to-drag ratio down to said lower altitude limit, turning on the power and continuing the cycle of climbing, cutting the power, gliding and turning on the power between said lower and upper altitude limits to completion of the mission.

3,161,382
ATTITUDE CONTROL OF V.T.O.L. AIRCRAFT

Klaus Pfaff, Meersburg, Germany, assignor to Dornier-Werke G.m.b.H., Friedrichshafen, Germany, a firm

Filed Oct. 28, 1963, Ser. No. 319,442
Claims priority, application Germany, Nov. 3, 1962, D 40,186
10 Claims. (Cl. 244—75)



1. In combination with an aircraft having at least two lift-producing engines placed symmetrically with respect to the longitudinal axis of the aircraft:
a control system for controlling the attitude of the aircraft, comprising:
a control stick movable from an ineffective zero position through a first range effecting a fine control of the attitude of the aircraft and subsequently through a second range effecting a rough control of the attitude of the aircraft,
variable position control means for controlling the lifting effect of said engines, and
means operatively connecting said stick to said control means for changing the position of the latter in opposite directions upon manipulation of the former.
said connecting means including first means for transmitting movements of said control stick within said first range at a predetermined ratio to said control means for effecting relatively small changes of the position of said control means upon movement of said control stick within said first range,
said connecting means including second means for transmitting movements of said control stick within said second range at a different predetermined ratio to said control means for effecting relatively great changes of the position of said control means upon movement of said control stick within said second range.

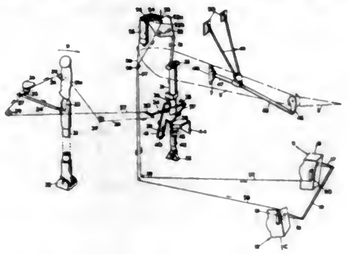
3,161,383
FLYING CONTROL SYSTEM FOR AIRCRAFT

Eric Ebdon, Caddington, near Luton, and Kenneth David Harris, Flitwick, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company

Filed May 25, 1962, Ser. No. 197,686
Claims priority, application Great Britain May 29, 1961
2 Claims. (Cl. 244—83)

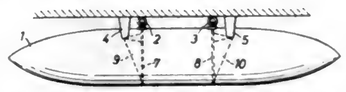
1. In an aircraft comprising a fin, an adjustable incidence tailplane pivotable on the fin and elevators pivotally attached to the tailplane; a flying control system comprising a pilot's control column, a jack connected at one end to the aircraft fixed structure and at the other end to the tailplane so as to adjust the incidence of the tailplane and having a servo-valve, a linkage connecting

the column to the servo-valve in such a way that the rate at which tailplane incidence is adjusted in response to movement of the column varies over the range of movement of the column being greatest at the end of the range corresponding to algebraically minimum tailplane in-



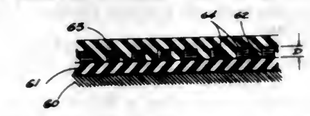
cidence, and a linkage connecting the elevators to the fin, the linkage consisting of an operating arm connected through a link to the apex of a tripod formed by legs pivotally connected at their other ends to brackets on the fin spar, so that elevator incidence is adjusted in dependence upon tailplane incidence.

3,161,384
JETTISON TANKS FOR AIRCRAFT
Gerhard Czerwenka, Bremen, Germany, assignor to Focke-Wulf Gesellschaft mit beschränkter Haftung
Filed Aug. 31, 1962, Ser. No. 220,745
Claims priority, application Germany Sept. 5, 1961
13 Claims. (Cl. 244—118)



1. A jettisonable tank for aircraft, and having a central longitudinal fore-and-aft axis of symmetry, a reinforcement plate fitting within said tank centrally thereof, and having a body portion in a plane normal to said axis, said plate having first and second reinforcements integral therewith and extending from a point at the lower end of a vertical line in said plane, through said axis, uniformly divergently upwardly and outwardly of said plane on opposite sides of said line, respectively, the upper ends of said reinforcements conforming to, and fitting the contiguous inner surface of said tank, to form abutments for respective sway brackets fixed with the craft, and means rigidly securing said plate about its periphery, to the contiguous wall of said tank.

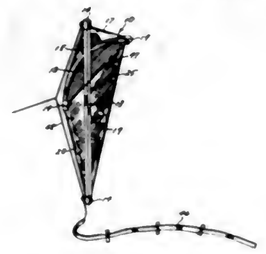
3,161,385
MEANS AND METHOD FOR STABILIZING LAMINAR BOUNDARY LAYER FLOW
Max O. Kramer, Pacific Palisades, Calif., assignor to Coleman-Kramer, Inc., Los Angeles, Calif., a corporation of California
Filed June 15, 1960, Ser. No. 36,287
18 Claims. (Cl. 244—130)



1. Means for reducing the resistance to relative movement between a solid body and a contiguous fluid created by boundary layer flow under conditions where a turbulent boundary layer of a given pulsation frequency range tends to occur, comprising

a composite structure including:
an outer membrane for exposure to said contiguous fluid; and
means for supporting said membrane in spaced relation to the surface of said body,
said supporting means including a base portion for attachment to the surface of said body and an intermediate portion comprising a resilient diaphragm having upper ribs for attachment to said outer membrane and lower ribs for attachment to said base portion,
said upper ribs being laterally displaced from said lower ribs so as to accommodate flexural displacement of said diaphragm in response to motion of said outer membrane,
said composite structure having a modulus of elasticity for yielding response to pressure pulsations of the given frequency range whereby the mechanical reaction of the covering to the range pulsations of the boundary layer substantially reduces the resistance to relative movement.

3,161,386
KITE CONSTRUCTION
Martin Umanoff, New York, N.Y., assignor to Pressman Toy Corporation, New York, N.Y.
Filed Oct. 25, 1963, Ser. No. 318,899
1 Claim. (Cl. 244—153)

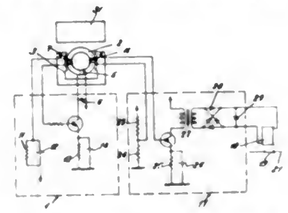


In a kit construction including first and second cross sticks and a diaphanous element secured to the ends of said cross sticks at peripheral areas thereof, the improvement comprising: a plurality of clamping means for interconnecting said diaphanous element to said cross sticks, each of said clamping means including a tubular portion having a hollow tapered bore therein, a portion of which is sufficiently constricted to frictionally maintain a portion of the diaphanous member upon an end of a respective cross stick, and a flange member, the plane of which extends laterally with respect to the axis of said bore, said flange having string-engaging means thereon.

3,161,387
DETECTOR OF PASSING FOR THE RAILWAY SIGNALLING
Jean Jutier, Chatenay-Malabry, France, assignor to Etablissements Saxby, Paris, France, a French company
Filed May 7, 1962, Ser. No. 192,703
Claims priority, application France, May 10, 1961, 861,476
7 Claims. (Cl. 246—249)

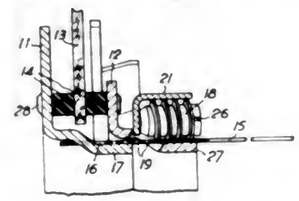
1. A magnetically operated railroad-signal controlling device comprising an oscillator, a reception coil connected to an output thereof, a first magnetic circuit connected to said oscillator, a second magnetic circuit, said second magnetic circuit being disposed across the field of said first magnetic circuit and in close proximity to a rail over which pass the vehicle wheels to be detected whereby the presence of a wheel on said rail modifies the induc-

tion of said second magnetic circuit and therefore the induction of said first magnetic circuit causing the output of



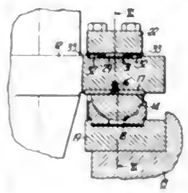
said oscillator to vary thereby causing said reception coil to give an indication of the passage of a wheel.

3,161,388
FAN MOUNTINGS
Eric D. Appleton, Colchester, England, assignor to Woods of Colchester Limited, Colchester, England, a British company
Filed Feb. 18, 1963, Ser. No. 259,240
Claims priority, application Great Britain, Feb. 28, 1962, 7,858/62
6 Claims. (Cl. 248—2)



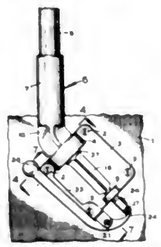
1. A mounting to support a fan in an aperture in a window pane or wall comprising a pair of annular clamping plates held in engagement with the periphery of the aperture in which the fan is to be located, metal strips engaging at least one of the plates to secure them clampingly together, and tensioning means for the strips comprising slots in each strip and a worm secured on one of the clamping plates for each strip to engage the slots therein.

3,161,389
ROTARY MACHINE SUPPORT
Floyd J. Beine, Greendale, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 19, 1962, Ser. No. 203,530
4 Claims. (Cl. 248—14)



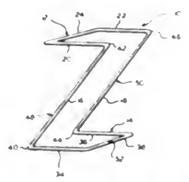
1. A support structure for attaching a machine to a supporting surface comprising: a support arm rigidly connected to said machine; a clamp plate; spaced means on opposite sides of said support arm securing said clamp plate to said support surface in overlying relation to said support arm; and resilient means positioned between and contacting both said support arm and said clamp plate, the surface area of said resilient means contacting said clamp plate being less than the surface area of said support arm between said securing means and spaced from said securing means to enable said clamp plate to act as a resilient member when said resilient means has been completely compressed.

3,161,390
OUTRIGGER POLE BRACKET FOR FISHING BOATS
Arvid Larson, Fort Lauderdale, Fla., assignor to Richard L. Jones, Fort Lauderdale, Fla.
Filed Nov. 14, 1962, Ser. No. 237,533
3 Claims. (Cl. 248—40)



1. A pole holder comprising, a bracket for attachment to a boat part, a pair of spaced lugs projecting from the bracket, a tubular socket member for receiving an outrigger pole, a shank extending integrally and at an angle from the socket member and constituting a rearward extension thereof, one of the lugs having a tapered passage extending through it, said passage being formed with a plurality of grooves, the shank having a tapered ribbed part shaped to fit in the tapered passage and to prevent rotative movement of the shank, the shank terminating at one end in a cylindrical stem, the second lug having an opening extending through it for the slidable reception of the stem, a pivoted stop piece on the stem for abutment against the second lug, the stop piece, when in one position of pivotal movement, permitting the forward axial movement of the socket member to an extent necessary to bring its ribbed portion out of the tapered passage, and when in another position preventing such movement of the socket member and retaining its ribs in engagement with the grooves.

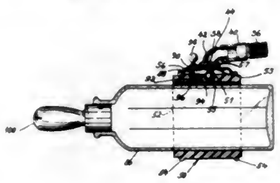
3,161,391
BAG STAND
Erwin B. Bahnsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada
Filed July 24, 1961, Ser. No. 126,180
1 Claim. (Cl. 248—99)



A bag stand of single-piece, resilient rod construction, comprising: a pair of spaced parallel aligned upright Z-shaped sides, each side including a substantially horizontal upper arm and a substantially horizontal lower arm of equal length, with said upper arm disposed directly above said lower arm, each said upper and lower arms of each said side being respectively joined at their opposite ends by a strut integral therewith; a first crossbar interconnecting the free ends of said upper arms and integral therewith; and a second crossbar interconnecting the

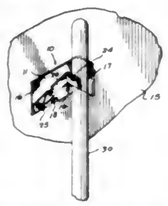
free ends of said lower arms and integral therewith; said lower arms and said second crossbar providing a base for said stand, and said upper arms and said first crossbar providing a horizontally disposed yoke for receiving and supporting the upper marginal portion of a laundry bag or the like, the resilience of said arms and said struts permitting said yoke to be resiliently displaced directly toward said base when subjected to a load, the right-side-up and upside-down positions of said stand being indistinguishable, and said stand being adapted to be closely nested with like stands in storage.

3,161,392
NURSING BOTTLE HOLDER
Mel Kopec, 550 Chester St., and Ben Monsher, 693 Bristle St., both of Brooklyn, N.Y.
Filed Apr. 10, 1963, Ser. No. 272,124
3 Claims. (Cl. 248—104)



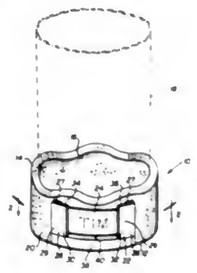
1. A nursing bottle holder assembly comprising an elongated flexible cable of coiled tubular formation having an elbow joint at one end thereof, a hollow cylindrical bottle support swivelly connected to said elbow joint, said elbow joint having an end disc with a hole therein, a raised platform fixedly mounted on the bottle support, said platform having a hole in line with the hole in the end disc of the elbow joint, and a swivel joint between the body of the holder and the cable including a ball loosely seated in the body of the holder and a threaded stem radiating from the ball and extending through the aligned holes.

3,161,393
UTILITY CLAMP ASSEMBLY
Bror W. Swanson, 81 Rumford St., West Hartford, Conn.
Filed Aug. 9, 1963, Ser. No. 301,084
2 Claims. (Cl. 248—113)



1. A utility clamp assembly comprising a flat mounting plate having front and rear faces and adapted to be disposed so that the rear face abuts against a wall surface, means on said plate for receiving securing means to attach said plate to a wall surface when positioned so that the rear face abuts against a wall surface, an abutment at one end of said plate and projecting perpendicularly from the front face of said plate, a saddle on the front face of said plate and located adjacent the lower side of and between the ends of said plate, an arm arranged in an upwardly-sloping direction disposed upon the front face of said plate so that it releasably engages said saddle with the lower end adjacent the other end of said plate and the upper end inwardly of and spaced from said abutment, an upright on the upper end of said arm, horizontal pivot means connecting the lower end of said arm to said plate for pivotal movement of said arm from the upwardly-sloping direction position and engaging said saddle to an elevated upwardly-sloping direction position and out of engagement with said saddle, and spring means operatively connected to said pivot means and said arm for urging the arm to the upwardly-sloping position and in engagement with said saddle, said arm upon insertion of a handle of a tool between its upright and said abutment followed by the application of a manually upwardly-directed force to the inserted handle causing the arm to shift toward its elevated sloping direction position and out of engagement with said saddle and upon release of said manually-applied directed force resulting in the upright and abutment to pendantly hold therebetween said handle, and upon application of a manually upwardly-directed force to the hande pendantly held between the upright and abutment followed by the application of a manual pulling force away from said plate causing release of said handle and permitting said arm to return to its upwardly-sloping direction position and in engagement with said handle under the action of said spring means.

3,161,394
COASTER
George Savitt, New York, N.Y. (1718 Grand Ave., Bronx, N.Y.)
Filed Aug. 3, 1962, Ser. No. 214,750
2 Claims. (Cl. 248—346.1)



1. A coaster comprising a bottom and an upstanding annular side wall defining a space adapted to receive at least a portion of a liquid holding vessel, and means on the outer surface of said side wall for releasably holding indicia, said indicia holding means including a pair of spaced apart members operatively connected to said side wall, each of said members having an L-shaped cross section with one leg extending radially outward from said side wall and the other leg extending toward the other of said members in spaced relation with said side wall, and abutment means underlying said members.

3,161,395
ADJUSTABLE STRUT
Lewis D. Carter, Richardson, Tex., assignor to Carter Craft, Inc., Plano, Tex., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 179,027
10 Claims. (Cl. 248—354)

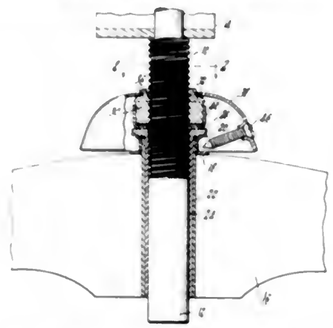
1. An adjustable strut which comprises:
(*a*) an elongated toothed rack,
(*b*) a tubular structure having a first longitudinal slot to receive said rack, and being secured thereto with the rack teeth facing inwardly, said structure having a second longitudinal slot extending parallel to said first slot in spaced circumferential relation,
(*c*) an outer armor encircling said structure and secured thereto adjacent to the edges of said first slot,

(*d*) a tubular member telescoping in said structure and including a pawl pivotally mounted thereon to engage said teeth, and



(*e*) a stop element mounted on said tubular member for travel in said second slot to maintain a predetermined rotational orientation between said pawl and said rack.

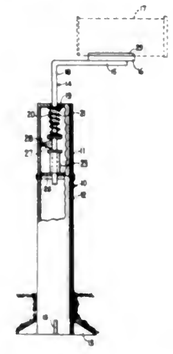
3,161,396
SWIVEL CHAIR SUPPORT CONSTRUCTION
George Albert Anderson, Gardner, Mass., assignor to Collier-Keyworth Company, Gardner, Mass., a corporation of Massachusetts
Filed Sept. 5, 1963, Ser. No. 306,840
8 Claims. (Cl. 248—405)



1. A swivel chair support construction comprising a spindle having one end adapted to be attached to a chair seat, a portion of said spindle being threaded for a sufficient distance to provide vertical adjustability of position of the chair to the desired extent, a nut engageable with the threaded portion of said spindle, said nut being divided axially into a plurality of separate parts to permit assembly thereof about and in threaded relation with the threaded portion of the spindle, and a cam engageable with said nut parts and adapted to be supported by a bearing for rotation about the axis of said spindle, said cam being arranged to hold said nut parts in rotatable threaded engagement with said spindle and to urge said nut parts into locking engagement with said spindle in response to the weight of said chair seat and its contents.

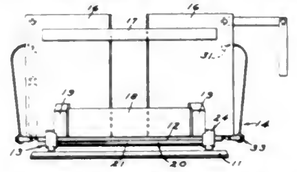
3,161,397
MAIL BOX STAND
John V. Nolander, 606 5th Ave., Two Harbors, Minn.
Filed Jan. 22, 1963, Ser. No. 253,125
3 Claims. (Cl. 248—417)

1. A mail box stand of the character described, comprising, a tubular member, a top plate secured to one end of the tubular member, said top plate having a central aperture, an inverted L-shaped arm having two portions substantially at right angles to each other, the first portion extending through said aperture into said tubular member along the axis of said tubular member, a weatherproof seal between the top plate and said first portion, a bearing within said tubular member for the end of said first



portion, the second portion of said inverted L-shaped arm extending radially of said tubular member, means for securing a mail box to said second portion and means within the tubular member for biasing the inverted L-shaped arm to a predetermined position.

3,161,398
READING STAND
Nathan Fisher, 11892 Ohio Ave., Detroit, Mich.
Filed Apr. 19, 1963, Ser. No. 274,159
14 Claims. (Cl. 248—451)

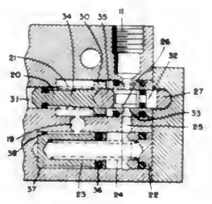


1. In a reading stand, a flat base, a spaced pair of hinge brackets secured to said base, a pintle-platform structure extending between said brackets and rotatably supported thereby, said pintle-platform structure including a book-supporting platform extending forwardly therefrom, a superstructure mounted on said pintle-platform structure above said book-supporting platform and including at least one plate adapted to support a book resting on said platform and leaning against said plate, a pair of page controls for adjustable page holding pressure secured to opposite sides of said pintle-platform structure and extending upwardly therefrom, each page control being movable between a page-holding position against the adjacent page of a book resting on said platform, and a retracted position, and means for frictionally restraining each page control against movement from its page-holding position to its retracted position.

3,161,399
STOP VALVE MECHANISM
Paul I. Evans, Livermore, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 19, 1961, Ser. No. 139,828
2 Claims. (Cl. 251—14)

1. In a hydraulic fuse apparatus, the combination with a housing of a pair of generally parallel laterally spaced slide valve members therein, respective seats for said valve

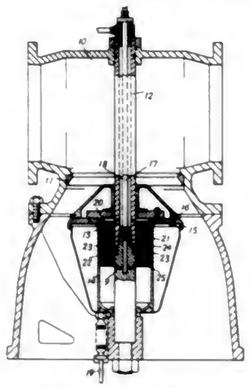
members, an inlet passageway between said members on an inlet side of said seats for supplying liquid to around the outside of each valve member, an outlet passageway communicatively interconnecting the outlet side of said seats, one of said valve members being stepped with an enlarged end adjacent its seat and being normally closed when not in operation, the other end of said one valve member being vented to relatively low pressure and sealed from said inlet, a spring engaging said housing and said enlarged end portion for slightly biasing said one valve member to a closed position when fluid pressure on the outlet side of its seat falls below a predetermined delivery fluid pressure, the other valve member of said pair being of a hollow cylindrical piston type having a closed end remote from its seat and a guide flange capable of leaking liquid past said closed end for applying pressure from said inlet passageway to move said piston type valve toward its seat and discharge liquid within it into



said outlet passageway, and a spring engaging said housing and said piston type valve for biasing said piston type valve member to an open position away from said outlet passageway, the relative strengths of said valve member springs being such that on initial application of inlet pressure to both of said valve members said first mentioned valve member stays closed and the piston type valve member is moved toward said outlet passageway, applying additional pressure to liquid in said outlet passageway for opening said first valve member and holding it open as liquid from said inlet passageway moves around said first valve member and into said outlet passageway without passing through or around said piston type member, said piston type valve member being returned to its initial position adjacent said inlet passageway under influence of its spring, and said first mentioned valve member being returned to its seated or closed position in response to substantial reduction of fluid pressure in said outlet passageway.

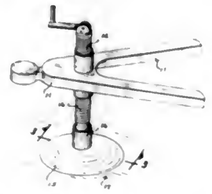
3,161,400
FLUID CONTROL VALVE
Terence John Floyd, Wellington, England, assignor to Audco Limited, Newport, England
Filed May 14, 1963, Ser. No. 280,288
9 Claims. (Cl. 251—62)

1. A fluid control valve comprising a valve casing, an annular seat formed in the casing, a fixed guide rod mounted in the casing and extending through said seat, a composite piston assembly mounted on the guide rod and comprising first and second relatively movable parts of which the first is fixed relative to the guide rod, a hollow cylinder supported by said guide rod, enclosing the piston assembly and sildably engaged with the first part thereof, a closure member connected to the cylinder for axial movement therewith and adapted sealingly to engage said annular seat, passages in said guide rod for conducting actuating fluid to and from opposite sides of said piston assembly, a plurality of locking elements mounted in the piston assembly for radial movement relative thereto, resilient means urging said locking elements into engagement with the cylinder and means connecting said second part of the piston assembly to said locking elements whereby movement of said second part of the



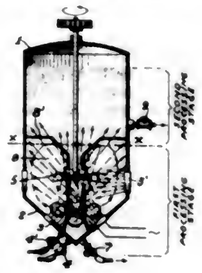
piston assembly out of a rest position effects release of the locking elements from the cylinder.

3,161,401
SUPPORTING MEANS FOR THE JACK OF TRAILERS AND LIKE
Ernest W. Starkey, 4107 E. 9th St., Des Moines, Iowa
Filed June 25, 1962, Ser. No. 204,687
1 Claim. (Cl. 254—86)



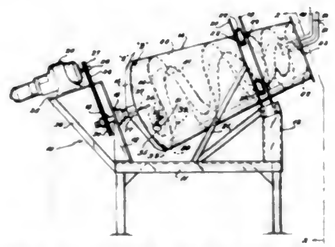
In a trailer jack support, comprising in combination,
a vehicle having a tongue with a plate portion on its outer end, said plate portion having an opening formed therethrough,
a unitary internally threaded sleeve extending vertically through said opening in said plate portion of the free end of said tongue, means rigidly securing said sleeve to said tongue, said sleeve having its end portions extending substantially beyond the upper and lower planes of said tongue;
an externally threaded circular jack shaft embraced by said sleeve, said sleeve and shaft threads being in mating engagement whereby said shaft is vertically adjustable relative to said tongue;
means connected to said jack shaft for rotating said jack shaft to obtain the desired positioning of said tongue above a supporting ground surface;
a circular base plate having a concave lower surface and a convex upper surface, said concave and convex surfaces meeting to form an outer circular peripheral edge,
an upstanding cylindrical sleeve fixedly secured at one end to the center of the convex surface of said base plate,
said jack shaft positioned with its lower end in said sleeve on said base plate, and
said sleeve on said base plate having an inner diameter sufficiently greater than the outer diameter of said jack shaft whereby said sleeve is loosely mounted on said lower end of said jack shaft and thereby permits limited movement of said base plate on a supporting ground surface, the peripheral edge of said base plate being adapted to cut into the supporting ground surface to limit movement of said trailer when supported by said jack support.

3,161,402
PROCESS AND APPARATUS FOR OSCILLATORY TREATMENT OF FUSIBLE MATERIALS
Peter Willems, 20–22 Steinhofhalde, Lucerne, Switzerland
Filed Jan. 21, 1963, Ser. No. 253,243
Claims priority, application Switzerland, Jan. 22, 1962, 710/62
24 Claims. (Cl. 259—8)



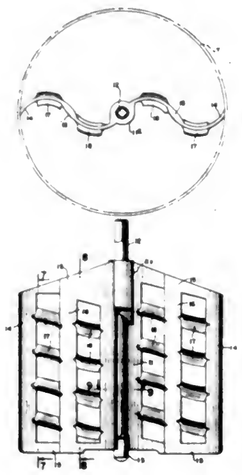
1. A process for the oscillatory treatment of pumpable stock, comprising feeding the stock into a turbulent and recycling zone constituted by only part of a pressure chamber having at least one rotary mechanical oscillator therein subjecting the stock in said zone to continuous high speed recycling through a field of high-frequency oscillations for simultaneous refining and activation of the stock, controlling the rate of feed of stock into said turbulent and recycling zone so as to effect the gradual transfer, at a relatively low rate, of partial flows of the stock from said turbulent and recycling zone into a relatively quiescent zone formed by the remainder of said pressure chamber and in which aging of the previously refined and activated stock proceeds following a predetermined stay of the stock in said turbulent and recycling zone, and controlling the speed of rotation of said oscillator for regulating the speed at which the stock is recycled in said turbulent and recycling zone.

3,161,403
ANGULAR TUMBLING SCREW BLENDER
Robert N. Lincoln, Florissant, Mo., and Perry R. Madsen, Orland, and Herschel W. Sudden, Fresno, Calif., assignors to Pet Milk Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,724
3 Claims. (Cl. 259—30)



1. A blender comprising a base, an angularly inclined vessel rotatably mounted on said base, said vessel having a large closed end and a smaller opposed end having an elevated opening, the inner surface of said vessel tapering continuously and uniformly from the large end to the small end, drive means operatively connected to said vessel, said drive means being of variable rotating speed and being reversible, a spiral flight positioned on the inner surface of said vessel, said flight having a lifting flight fastened to said vessel inner surface and projecting toward the center line of said vessel, and a carrying flight connected to said lifting flight and projecting therefrom toward the vessel opening, an auxiliary flight commencing at the vessel opening and spiraling into said vessel along the inner surface thereof at least one revolution, and means for draining said vessel positioned adjacent to the large end thereof.

3,161,404
ICE CREAM FREEZER BEATERS
Frederic C. Jay, Richmond, Va., assignor to Richmond Cedar Works Manufacturing Corporation, Richmond, Va., a corporation of Virginia
Filed Apr. 24, 1963, Ser. No. 275,268
1 Claim. (Cl. 259—134)

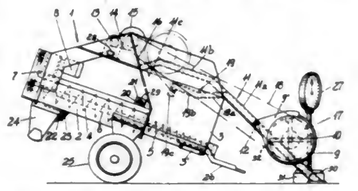


An ice cream freezer beater comprising a central column having at its ends means by which the beater may be rotatably supported and turned, a longitudinally extending member disposed at each side of said column and spaced therefrom in parallel relation therewith, a set of transversely disposed beater blades spanning the space between each said longitudinally extending member and said central column and rigidly secured to both, a second longitudinally extending member disposed radially beyond each of said first longitudinally extending members, and spaced therefrom in parallel relation, and a second set of transversely disposed beater blades spanning the space between each first and second longitudinally extending members, and rigidly secured thereto, said second longitudinally extending members serving as scraper blades, and the two adjacent sets of beater blades being set at opposite angles, the entire assembly of central column, first and second longitudinally extending members and beater blades constituting a structure of double curvature, as viewed endwise, and said first longitudinally extending members being relatively thin and wide and disposed almost tangentially with respect to this curvature.

3,161,405
PREPARATION OF MIXTURES, PARTICULARLY OF CONCRETE

Pablo August, Lavalle 652, Buenos Aires, Argentina

Filed July 11, 1962, Ser. No. 208,994
7 Claims. (Cl. 259—154)

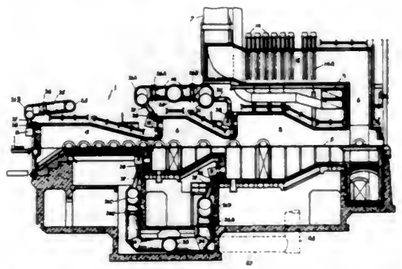


1. A mixer, particularly a concrete mixer, comprising weighing means for proportioning the mixture components associated with a charging receptacle for batchwise receiving the mixture components, this receptacle being constituted by the tub of a tub lift and being provided with a rotary stirring device, a winch mechanism including a driving motor connected with said tub for moving the same from its charging to its discharging position and vice-versa, U-shaped guide rails forming part of said tub lift, a pair of guide and carrier wheels provided on said tub and supported by upper guide surfaces of said rails, a pair of guide rollers provided on said tub and arranged in guide grooves which are formed in part by said U-shaped guide rails and in part by U-shaped branches of said guide rails, a chute having a closed bottom and a screw conveyor arranged on the bottom of said chute, and a screw mixer operatively connected with a driving motor and coaxially connected with said screw conveyor, said chute being arranged below said tub in its upper discharging position, said guide rails and said guide groove-forming branches including rail portions, respectively branch portions, extending through the open upper part of said chute and in a direction substantially parallel to the bottom of said chute, and switch means connected with the two cited driving motors for controlling their operation.

3,161,406
COMBUSTION AIR SYSTEM FOR CONTINUOUS HEATING FURNACE

Walter Suydam, Mount Lebanon Township, Allegheny County, Pa., assignor to Loftus Engineering Corporation, Pittsburgh, Pa., a corporation of Maryland

Filed June 8, 1961, Ser. No. 115,709
4 Claims. (Cl. 263—15)

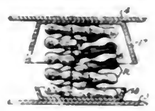


1. A continuous slab-heating furnace having an elongate heating chamber for a row of steel slabs, a plurality of combustion zones located in spaced relation with respect to each other in said heating chamber, each combustion zone having a bank of burners, a combustion air manifold and a fuel supply pipe connected to the burners of each combustion zone, a heat-exchanger, means for delivering combustion air through said heat-exchanger, two ducts extending longitudinally of the furnace, said ducts being connected to said heat-exchanger for delivering heated combustion air in two separated streams along the furnace, a plurality of headers extending transversely of the furnace and being connected adjacent their opposite ends severally to the two ducts for establishing a supply of heated air derived from both of said streams, a connector duct extending from each of said combustion air manifolds to one of said headers, whereby each header is adapted to supply heated combustion air to the burners respectively associated with the manifolds, and means comprising a metering orifice and a valve arranged in spaced relation in each connector duct for regulating the flow of heated combustion air from the header to the associated manifold and its burners.

3,161,407
VIBRATION AND SHOCK ABSORBER

Leo Victor Robin, Ville D'Avray, France, assignor to Vibrachoc, Paris, France, a corporation of France

Filed July 11, 1962, Ser. No. 209,167
Claims priority, application France, Dec. 13, 1961, 881,887
12 Claims. (Cl. 267—1)

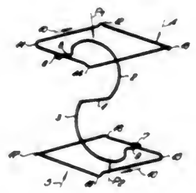


1. A vibration and shock absorber comprising a resiliently deformable convolution-forming wire, a continuous sheath made of resiliently deformable material embedding the individual convolutions of said wire and isolating convolutions from one another, said sheath comprising at least on its outer surface corrugations directed obliquely with respect to the convolution-forming wire.

3,161,408
COMPRESSION SPRINGS FOR MATTRESSES, UPHOLSTERED FURNITURE, AND THE LIKE

Otto P. Molt, Schorndorfer Strasse, Haubersbronn, Wurttemberg, Germany

Filed Jan. 29, 1963, Ser. No. 254,665
Claims priority, application Germany, Feb. 13, 1962, M 51,791
7 Claims. (Cl. 267—1)

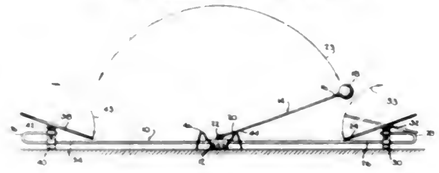


4. In a spring set for mattresses and the like, in combination, a pair of compression springs each comprising two spaced polygonal end turns and an intermediate portion between the respective end turns, each of said end turns having corner parts extending laterally beyond the respective intermediate portion and each end turn of one of said springs engaging with a corner part thereof the corner part of the corresponding end turn of the other spring and comprising a hook detachably coupled to the intermediate portion of said one spring so that, upon detachment of said hooks, the end turns of said one spring may be detached from the end turns of the other spring.

3,161,409
BALL AND PADDLE GAME

William B. Nutting, 15 Charles St., New York, N.Y., and John V. Joslyn, New York, N.Y. (6 John St., Sag Harbor, Long Island, N.Y.)

Filed Oct. 25, 1962, Ser. No. 233,044
3 Claims. (Cl. 273—97)

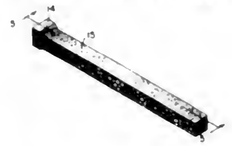


1. A game comprising a frame, flexible lever means disposed on said frame, one end of said flexible lever means being pivotably mounted on said frame, resilient means connected to the free end of said flexible lever means for receiving blows, a first striking means pivotably mounted on one end of said frame for striking said resilient means, a second striking means pivotably mounted on the other end of said frame for striking said resilient means, said resilient means being movable between said first and second pivotably mounted striking means, and stop means disposed on said frame for stopping said flexible lever means thereby keeping said resilient means out of reach of said first and second pivotably mounted striking means, said flexible lever means having a degree of flexibility rendering it capable of flexing about said stop means such that the free end of said flexible lever means is brought within range of said pivotably mounted first or second striking means, thereby allowing said resilient means to receive a blow.

3,161,410
DART-LIKE PROJECTILE WITH ELONGATED TAIL OF RESILIENT, COMPRESSIBLE MATERIAL

Leonard Cunningham, Randolph, Mass. (% Magic Wand Corp., 50 Brighton St., Charlestown, Mass.)

Filed Jan. 17, 1962, Ser. No. 166,842
7 Claims. (Cl. 273—106.5)



2. A projectile comprising a head of dense material adapted when impelled against a surface of a target to adhere thereto, and

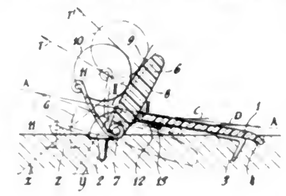
an elongated tail having a density lower than that of the head and formed of a flexible resilient compressible cellular material, said tail being so constructed and arranged as to be adapted to be flexed and compressed into a small ball between one's thumb and forefinger and straighten out as said tail is released.

3,161,411
ADJUSTABLE HEIGHT GOLF PRACTICE TEE WITH HINGED STRIKING PLATE

David Hamilton Cockburn, 1 N. Park, Iver, Buckinghamshire, England

Filed Dec. 11, 1962, Ser. No. 243,827
5 Claims. (Cl. 273—195)

1. A golf practice tee comprising a base plate provided with downwardly projecting means for locating the base plate fast on the ground, an upwardly and rearwardly inclined striking plate hinged to the base plate near its front end, at least one locating pin positioned on the front side of the striking plate and means frictionally pivoting one end of said locating pin for movement of the free end of the latter toward and away from said striking plate to

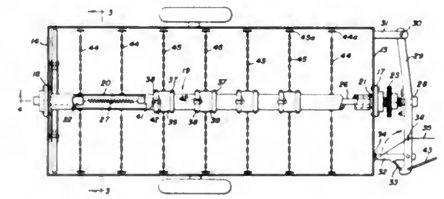


define a cradle for a golf ball, the vertical position of said ball with respect to said striking plate being determined by the spacing between the free end of the locating pin and the striking plate.

3,161,412
MATERIAL UNLOADER AND SPREADER WITH EXTENSIBLE FLAILS

Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois

Filed Feb. 26, 1963, Ser. No. 261,117
9 Claims. (Cl. 275—3)



1. A material spreader comprising, in combination: a wheeled material container having an arcuate wall providing the bottom and sides of the container; a rotatable unloader shaft extending longitudinally of the container; sleeve means mounted for rotation on said unloader shaft; a plurality of flexible flail members secured to said sleeve means and adapted to wind therearound; clutch means for clutching the shaft to the sleeve means for rotation therewith or releasing said shaft for rotation within the sleeve means; and clutch control means for selectively clutching or releasing the sleeve means at the will of an operator, whereby said flail members may be caused to unwind from said sleeve means at a controlled rate during rotation of the unloader shaft in response to operation of said clutch means.

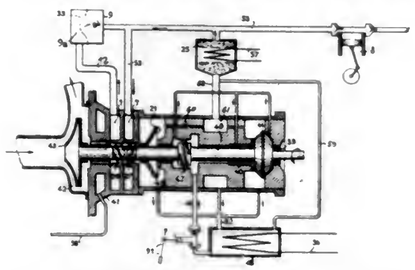
3,161,413
APPARATUS FOR PREVENTING LEAKAGE FROM AN ENCLOSED SPACE OR A CIRCULATING SYSTEM CONTAINING A POSSIBLY NOXIOUS FLUID

Pierre Audemar, Mulhouse, France, assignor to Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, a company of France

Filed Jan. 11, 1960, Ser. No. 1,574
Claims priority, application France Jan. 14, 1959
4 Claims. (Cl. 277—3)

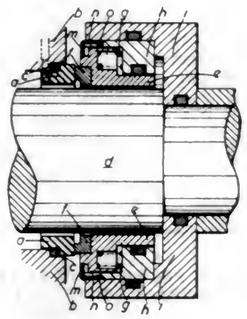
4. In a device wherein a rotatable shaft extends through a wall member and there is a fluid pressure on one side of said wall member, a shaft seal for preventing leakage of fluid along said shaft from said one side of the wall member to the other, said seal comprising a first chamber enclosing said shaft and located on said other side of the wall member adjacent thereto, a second chamber enclosing said shaft and located adjacent to said first chamber, a third chamber enclosing said shaft and located ad-

jacent to said second chamber, means including a supply pipe for supplying fluid under pressure to said second chamber, a first pump driven by said shaft to force fluid supplied to said second chamber to flow along said shaft from the second chamber to the first chamber, a second pump driven by said shaft to force fluid supplied to said second chamber to flow along said



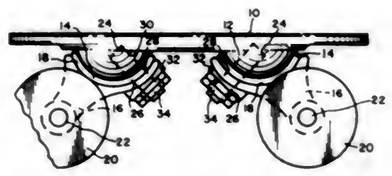
shaft from the second chamber to the third chamber, an auxiliary chamber, a partition freely movable in said auxiliary chamber to divide the same into two compartments of variable volume, first conduit means connecting said first chamber with one of said compartments, second conduit means connecting said second chamber with the other compartment, and third conduit means connecting said third chamber with said supply pipe.

3,161,414
MECHANICAL SEALS FOR USE WITH RELATIVELY ROTATING MEMBERS
Frederick B. Porges, Carr Wood, Hale Barns, England, assignor to Flexibox Limited, Manchester, Lancashire, England, a British company
Filed Apr. 18, 1962, Ser. No. 188,495
Claims priority, application Great Britain, May 10, 1961, 16,967/61
3 Claims. (Cl. 277—93)



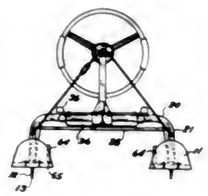
1. A mechanical seal comprising a first seal ring adapted to be positioned in a frame member or the like, a second seal ring coaxially aligned with said first seal ring, a seal ring insert fixed in said second seal ring and engageable with said first seal ring, a seal housing coaxially aligned with said second seal ring, spring means between said seal housing and said second seal ring to normally urge said second seal ring toward said first seal ring, a rotary shaft extending through said first and second seal rings and said seal housing, a member mounted on said shaft, said seal housing and said second seal ring removably mounted in said member, said member, seal housing and second seal ring all being rotatable with said shaft, and a seal housing cap removably mounted in said seal housing to retain said second seal ring and said seal housing in assembled relation in the member mounted on said rotary shaft.

3,161,415
ROLLER SKATE HAVING RESILIENTLY MOUNTED WHEEL TRUCKS
Caesar Novara, 3920 Bronx Blvd., Bronx, N.Y.
Filed May 29, 1962, Ser. No. 198,542
2 Claims. (Cl. 280—11.28)



1. A roller skate comprising a shoe supporting plate having a pair of spaced hemispherical portions on the underside thereof, a wheel hanger for each of said hemispherical portions being provided with a cup-shaped upper portion conforming to the configuration of the adjacent hemispherical portion, a cup-shaped resilient element located between and abutting said hemispherical portion and said cup-shaped upper portion of the wheel hanger whereby the shock transmitted from the wheels of the skate to the shoe supporting plate is cushioned by said resilient element, and a stud and lock nut combination securing said wheel hanger, resilient element and shoe supporting plate together, said stud being located off-center relative to the vertical center of said hemispherical portion and at an angle of about 30° to the longitudinal center line of said shoe supporting plate of the roller skate.

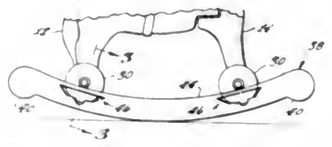
3,161,416
SKI-SLED
Leo L. Lechene, Patton, and Fred L. Soisson, Hastings, Pa., assignors to Skee-Bird Manufacturing Co., Inc., Benedict, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1963, Ser. No. 317,178
3 Claims. (Cl. 280—21)



1. A ski-sled comprising a pair of parallel skis;
longitudinally spaced upright front and rear U-shaped frames extending transversely between and flexibly secured to said skis, said frames including fixedly interconnected horizontal supports spaced above the skis and depending legs;
an elongated seat platform mounted over and secured to said supports;
the securing of the front frame including a pair of upright U-shaped brackets secured to forward end portions of the skis, each bracket having a front and a rear arm, the lower ends of the front frame legs extending into said brackets respectively and pivotally connected between said arms on axes parallel to the skis;
a transverse torsion bar at its ends pivotally connected to the respective upper ends of said bracket rear arms;

an upright steering post mounted and secured centrally upon the front frame;
a steering wheel journaled upon the upper end of said post and including a rotatable driving means; and
a movable driven means extending around and operably engaging said driving means, and at its ends connected to the respective ends of said bracket front arms.

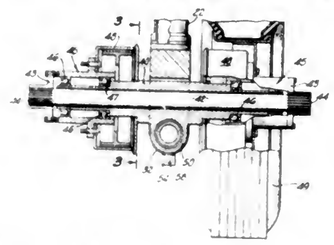
3,161,417
CONVERTIBLE HOBBY HORSE
Stanley Goldfarb, 98 Havilands Lane, White Plains, N.Y.
Filed Jan. 31, 1963, Ser. No. 255,344
1 Claim. (Cl. 280—7.1)



A convertible hobby horse comprising, in combination, a molded front section and a molded rear section pivotable on said front section, each of said sections being formed with a pair of legs, a first pair of wheels rotatably secured to one of the legs of the front section and one of the legs of the rear sections, a second pair of wheels rotatably secured to the other of the legs of the front section and the other of the legs of the rear section, said wheels having laterally extending rim portions; a pair of arcuate rockers provided with wheel receptacles for detachably securing said wheels; each of said rockers comprising a vertical web and horizontal top and bottom flanges integral therewith; each of said wheel receptacles comprising a pair of spaced, downwardly converging flanges extending laterally of said web; a vertically disposed resilient plate connecting said flanges, said plate being parallelly spaced from said web and having a bottom edge portion spaced from said rocker's bottom flange, a catch element extending laterally of said plate part way toward said web, for engaging the rim portion of a respective wheel, a tab extending downwardly of said plate's bottom edge portion for disengaging said catch, a pair of wheel support elements extending laterally of said web adjacent said bottom flange, a pair of projections extending from said web inwardly of said receptacle in a plane above said catch, said projections and said catch cooperating to lock a wheel rim therebetween, the top flange of said rocker having a pair of spaced cutout portions aligned with said receptacles to permit the passage of a respective wheel therethrough.

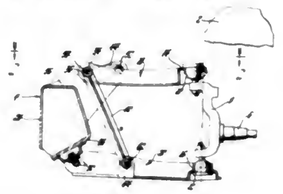
3,161,418
VEHICULAR WHEEL ASSEMBLY
George A. Brennan, La Mirada, and Evan S. Prichard, Newport Beach, Calif., assignors to Challenge-Cook Bros., Incorporated, Los Angeles, Calif., a corporation of California
Filed Mar. 4, 1963, Ser. No. 262,688
6 Claims. (Cl. 280—81)

1. A vehicular ground-contacting wheel assembly which comprises: a vertically disposed strut mounted on the vehicle and depending therefrom; a yoke having a body section and downwardly directed end sections, the yoke being mounted on the lower end of the strut at substantially the center of the body section; a transverse rod interconnecting the end sections of the yoke and spaced apart from the body section; a collar slidably disposed on the rod; an axle mounted on the collar and disposed between the body section of the yoke and the rod in transverse relation to the rod so that, upon slidable movement of the rod and the collar relative to each other, the collar will abut on one of the end sections of the yoke, and the axle will be disposed laterally of the vertical axis of the strut; wheel hub assemblies mounted on the axle; ground-contacting wheels mounted on the wheel hub assemblies; fluid pressure brakes mounted on the wheel hub assemblies; a source of fluid under pressure; a fluid passage be-



tween said source and said brakes; and control means mounted on said passage for supplying fluid under pressure to said brakes to brake the wheels when slidable movement of the rod and the collar relative to each other is to be accomplished and to automatically release the braking action on the wheels when said slidable movement has been completed.

3,161,419
INDEPENDENT WHEEL SUSPENSION LINKAGE
Henry W. Schaaf, Ortonville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,910
6 Claims. (Cl. 280—96.1)

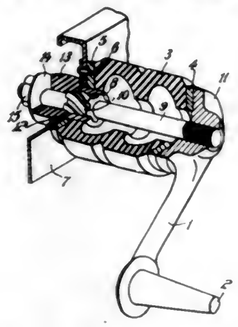


1. Independent wheel suspension linkage for a vehicle comprising, a pair of vertically spaced transversely extending control arms, a wheel knuckle extending between and pivotally connected to the outer ends of said arms, the lower of said arms being mounted on a longitudinally extending pivot shaft fixed relative to said vehicle and the inner end of the upper of said arms being mounted on a longitudinally extending pivot shaft pivotally mounted on said vehicle for swinging movement through an arcuate path, and a link connected at one end to the movable shaft and at the other end to said lower arm between the fixed pivot shaft and the outer end of said arm, said link operating to arcuately displace said movable shaft in a predetermined ratio to swinging movement of said lower arm.

3,161,420
SPRING SUSPENSION ARRANGEMENT IN WHICH SWINGING MOVEMENT OF AN ELEMENT IS TRANSLATED IN AN AXIAL THRUST ON A SPRING ELEMENT
Johannes Rix, Kassel, Germany, assignor to Aeon Products (London) Limited, London, England
Filed Nov. 29, 1961, Ser. No. 155,710
17 Claims. (Cl. 280—124)

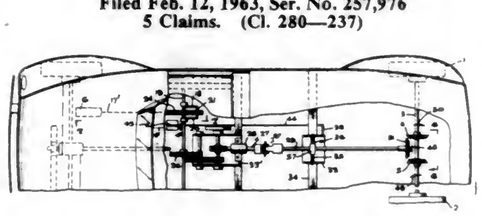
1. A spring suspension for vehicles, particularly for motor vehicles with independent wheel suspension, com-

prising a swinging arm, a torsion rod fast with said arm, a hollow rubber spring element adapted to be mounted around the torsion rod and freely axially braced between said arm and the chassis frame of the vehicle, and means associated with the torsion rod and the swinging arm



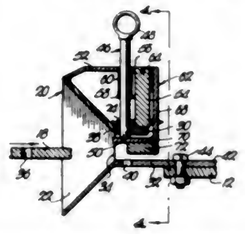
for converting swinging movements of the arm and corresponding torsional movements of the rod into an axial thrust to cause substantially only axial compression of the rubber spring element whereby progressively to stiffen the spring element so as to support the torsion rod and to absorb forces transverse to the axis of the torsion rod.

3,161,421
REVERSING MECHANISM FOR PASSENGER PROPELLED VEHICLE
Charles Kamondy, 7857 Paso Robles Ave., Van Nuys, Calif.
Filed Feb. 12, 1963, Ser. No. 257,976
5 Claims. (Cl. 280—237)



1. In a passenger propelled vehicle: a primary drive shaft constrained against movement excepting about an axis which is longitudinally disposed with respect to the vehicle; means operable by the passenger's feet for rotating said primary drive shaft; a pair of supporting wheels disposed on opposite sides of said axis and rotatable in planes generally parallel thereto; an axle at right angles to said axis, said axle having a positive driving connection to at least one of said supporting wheels; a pair of beveled wheels secured to said axle and tapering toward the portion of said axle that lies between said beveled wheels; a second drive shaft for selectively transmitting rotary motion from said primary drive shaft to one or other of said beveled wheels, one end of said second shaft connected to said first shaft by a universal joint; a third beveled wheel attached to the other end of said second shaft and tapering toward a point beyond said end, said third beveled wheel disposed between said pair of beveled wheels; a bearing for said second shaft disposed between said universal joint and said third beveled wheel; means for supporting said bearing, said means comprising (*a*) a bracket that is rigidly mounted with respect to said vehicle, (*b*) a rod carried by said bracket and extending transversely across said second shaft, (*c*) a block for housing said bearing, said block so mounted on said rod and said rod so supported by said bracket that the block and the bearing supported thereby may be moved laterally of said second shaft to bring said third beveled wheel selectively into engagement with either of said pair of beveled wheels; and manually controllable instrumentalities for effecting the recited movement of said block, said instrumentalities comprising (*a*) a pin integral with said block extending therefrom in a direction transverse to said rod and to said second shaft, and (*b*) a bell-crank lever pivotally mounted on said bracket, one arm of said lever having a forked end straddling said pin for moving said block transversely of said second shaft upon movement of the other arm of said lever.

3,161,422
HITCH ASSEMBLY
Arnold F. Wade, 126 Clark St., Chenoa, Ill.
Filed Aug. 1, 1963, Ser. No. 299,411
1 Claim. (Cl. 280—508)

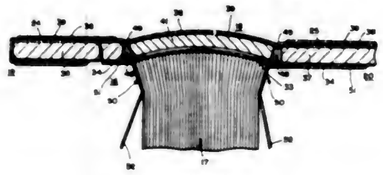


A hitch assembly adapted for attachment to a first vehicle for coupling said first vehicle to a second vehicle, said assembly comprising a guide chute having a mouth portion and a throat portion, said portions having an opening extending therethrough for receiving a perforate extension of said second vehicle, said throat portion having a pair of spaced-apart, aligned holes formed therein; a beam on said chute and having a hole formed therein in alignment with the holes in said throat portion; a coupling pin reciprocably carried within said aligned holes; a coil spring surrounding said pin between said beam and said throat portion; a support post interconnecting said beam with the throat portion of said chute; an L-shaped lever having its normally upper end pivotally coupled with said support port, said lever having a leg and a base; resilient means connected to said leg and normally biasing said lever to a position with the base thereof within the opening through said chute and completely between the holes formed in the throat portion of the chute, said base being substantially planar and lying in a plane parallel to and spaced between that part of the guide chute defining said throat portion whereby said base fully supports said pin, against the action of said coil spring, at one end of its path of travel; and an actuator block carried by said base and engageable by said perforate extension of the second vehicle as the latter moves through said opening whereby to swing the base of said lever out of said throat portion of the opening and allow said pin to move to the other end of its path of travel to a coupling position within the holes of said throat and a perforation of said extension.

3,161,423
PAPERBACK BOOK CONVERSION
Lawrence E. Hertzberg, Barrington, Ill., assignor to Hertzberg-New Method, Inc., Jacksonville, Ill., a corporation of Illinois
Filed May 3, 1961, Ser. No. 107,456
2 Claims. (Cl. 281—29)

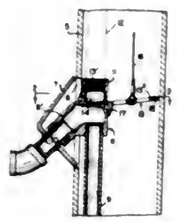
1. The method of converting a conventional short-term-use paperback edition into a relatively long-term-use edition which comprises, first severing the sheaf of leaves of the paperback edition closely inward along the bonded edges thereof and rebonding the sheaf of leaves together

along the severed edges, adhering a strip of fabric along its medial portion to the edges of the rebonded sheaf of leaves to dispose portions of the fabric oppositely outward from the rebonded sheaf of leaves, overlaying on and adhering to a pair of stiff-material cover-cores and an intermediate narrow spine core a sheet of thin tough material to hinge the cover-cores to the spine core, overlaying and adhering the front and back cover leaves of the paperback edition on the exposed faces of the sheet overlaying the cover-cores, overlaying and adhering a thin transparent plastic sheet on the paperback-edition



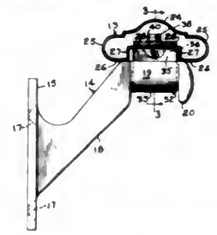
front and back cover-leaves and on the sheet overlaid on the cover-cores, bonding the fabric flaps to the inner faces of the cover-cores along the lateral margins thereof, subsequently adhering a pair of facing sheets of thin tough material along their respective narrow medial portions to the comparable marginal portions of the respective outermost leaves of the rebonded sheaf of leaves and finally adhering one portion of each of the two facing sheets to the opposed inner faces of the respective core-covers and dispose the other portions of these other sheets of thin tough material as fly leaves of the converted edition.

3,161,424
LOCKING PLATES FOR PITLESS WELL ADAPTORS
Herbert W. Maass, Wauwatosa, Wis. (10940 W. Congress St., Milwaukee 18, Wis.)
Filed June 4, 1963, Ser. No. 285,378
2 Claims. (Cl. 285—18)



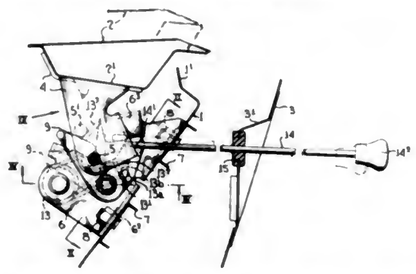
1. In combination, a vertical well casing, a fluid pipe fitting removably anchored within said well casing and having at its upper end a cylindrical socket whose axis is parallel to the axis of the well casing and whose outer surface is eccentrically spaced from the inner wall of the well casing, and a locking plate having an opening therein of greater diameter than the external diameter of said cylindrical socket with the latter extending loosely through said opening to rockingly mount the plate on the socket, said plate being of slightly greater length than the transverse dimension of the well casing and having, adjacent a margin of its opening, a depending boss, the locking plate, when mounted on the fluid pipe fitting socket and rocked toward a position at right angles to the axis of the well casing, releasably wedgingly engaging at its opposite ends spaced-apart inner wall portions of the casing to stabilize said fitting and said boss contacting a wall portion of the fitting to limit the rocking movement of the plate.

3,161,425
HAND RAIL FOR STAIRWAYS
Arvo O. Aho, Louisville, and Delma R. Atherton, Pleasure Ridge, Ky., assignors to Logan Co., Louisville, Ky., a corporation of Kentucky
Filed Sept. 22, 1961, Ser. No. 140,101
2 Claims. (Cl. 287—54)



1. In a hand rail for stairways, an integral supporting bracket having spaced top portions the upper extremities of which lie in a common plane, a hollow sheet metal rail spaced transversely to form top and side portions and then extending inwardly at the bottom of the rail to form transversely spaced base portions the inner extremities of which are co-planar and respectively seat directly on said top portions of said bracket, said rail at said inner extremities of said base portions extending upwardly into the rail to form spaced parallel walls, and then inwardly to form flat, relatively wide co-planar longitudinal edge portions terminating in spaced relation to each other to define therebetween a longitudinal slot, said parallel walls and said longitudinal edge portions forming a downwardly opening channel, said bracket between said top portions having a horizontal attaching portion of circular cross-section, a U-clamp extending around the bottom of said attaching portion and having end ears engaging the bottoms of said edge portions, and means lying above said base portions and partly within said channel and including an element engaging the tops of said edge portions for clamping said edge portions between said ears and said element in fixed relation to each other, and for clamping said base portions against said top portions of said bracket at spaced points beyond the respective ends of said attaching portion.

3,161,426
LATCH FOR VEHICLE CLOSURE MEMBER
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 7, 1961, Ser. No. 115,558
Claims priority, application France, June 10, 1960, 829,656, Patent 1,273,892; Nov. 24, 1960, 844,917
5 Claims. (Cl. 292—99)



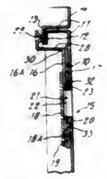
1. A fastening device for a closure member comprising a bolt element disposed on the inner surface of said closure member, a stationary support adjacent said closure member, two shaft stubs on said stationary sup-

port, a catch element pivoting about the first of said shaft stubs and having a notch which engages said bolt element when said closure member is in the closed position, a spring freely pivoting about the second of said shaft stubs and adjacent to said catch element, said spring having a first extension engaging said bolt element when the latter is engaged in said notch and a second extension operatively engaging said catch element, said stationary support being provided with limiting means which define limited pivoting of both said second extension and said catch about their respective shaft stubs between a first position, wherein said bolt element is locked in said notch, and a second position wherein said bolt element is ejected from said notch by the action of the first extension of said spring thereby causing the release of said closure member, and a control lever coupled to said catch element to actuate the latter.

3,161,427
LATCHING DEVICE

Walter G. Anders, Tonawanda, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 9, 1962, Ser. No. 165,083
7 Claims. (Cl. 292—194)



1. A self contained latch device for a sheet metal closure door having an aperture provided therein, said latch device comprising

(*a*) an outer mounting plate secured to the rear surface of said closure door,

(*b*) an inner retaining plate affixed to said outer mounting plate,

(*c*) a latch bar disposed between said plates,

(*d*) an aperture formed in said outer mounting plate and registering with the aperture in the closure door,

(*e*) movable disc means on said latch bar mounted in said registered apertures and having an exposed surface substantially flush with the front surface of the closure door,

(*f*) said disc means operable upon movement thereof to rotate said latch bar,

(*g*) first limiting means on one of said plates,

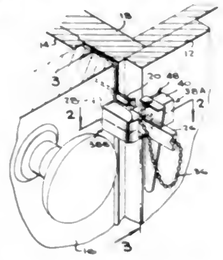
(*h*) and second limiting means on said latch bar, said second limiting means cooperating with said first limiting means to define the limits of rotation of said latch bar.

3,161,428
DOOR LOCK

Erle T. Zook, 601 N. 4th St., Las Vegas, Nev.

Filed Nov. 1, 1963, Ser. No. 320,733
1 Claim. (Cl. 292—292)

A door lock for a hingedly-supported door frame having an edge thereof normally confronting a jamb therefor when said door frame is in its closed position, said jamb having a trim strip connected thereto, said jamb having a substantially rectangular recess extending inwardly thereof and confronting an adjacent edge of said door frame when said door frame is in its closed position, a latch plate fixedly secured to said jamb and having a substantially rectangular aperture extending transversely therethrough and confronting said recess, an elongated substantially rectangular latching element having a wall projecting laterally therefrom adjacent one of its ends, said wall being substantially perpendicular to said latching element, said latching element being interposed between said edge of said door frame and said latch plate with said wall engaging a marginal edge of said latch plate aperture, the other end of said latching element projecting beyond a side of said door frame, the adjacent side of said jamb and the adjacent side of said trim strip, an L-shaped member having an elongated leg portion and an integrally-connected foot portion, said L-shaped member including a bight wall and a top and bottom wall projecting laterally therefrom in vertically-spaced relationship, said bight wall of said leg portion having a normally horizontal aperture extending transversely therethrough to receive said other end of said latching element therein, the bight wall of said foot portion terminating

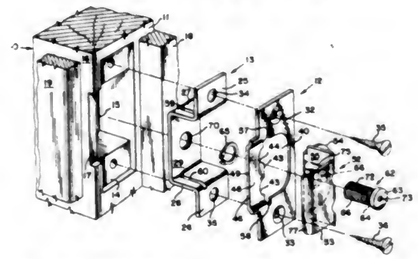


in an end wall extending perpendicularly with respect to its associated bight wall and top and bottom walls, said end wall abutting against a side of said door frame, the outer free end of said leg portion including a substantially rectangular block of resilient material secured between said top and bottom walls and having a side thereof engaging against adjacent portion of said bight wall, said block of resilient material having a side thereof oppositely-disposed with respect to said first side projecting laterally beyond the free edges of said top and bottom walls, said other end of said latching element having an aperture extending transversely therethrough, and wedge means extending transversely through said last-named aperture, said wedge means comprising a substantially triangular locking element extendable through said aperture for engagement with said top and bottom walls.

3,161,429
ADJUSTABLE STRIKE

John A. Tornoe and Robert A. Marotto, Redwood City, Calif., assignors to Schlage Lock Company, a corporation

Filed Jan. 7, 1964, Ser. No. 336,204
7 Claims. (Cl. 292—341.18)



7. An adjustable strike comprising:

a strike plate provided with means for securing the same to the jamb of a door,

a base plate having a portion spaced from said strike plate and provided with legs connecting said portion with said strike plate,

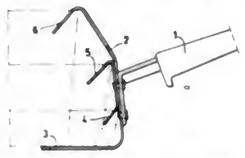
a Z-shaped keeper plate including an outer camming flange, an inner flange parallel to said camming flange and a web connecting said flanges and disposed at right angles to said strike plate, and

a screw threaded element extending between said inner flange and said portion of said base plate for adjustably positioning said keeper plate relative to said strike plate.

3,161,430
LIFTING DEVICE FOR HOT PANS, DISHES OR THE LIKE

Erik Henry Wiman, 54 Nygatan, Arboga, Sweden

Filed Sept. 28, 1962, Ser. No. 226,940
1 Claim. (Cl. 294—32)

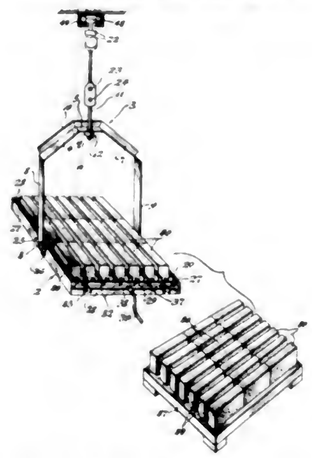


A lifting device for hot pans, dishes or the like, comprising an upright base plate secured on a handle, a horizontal support plate projecting from the lower end of the base plate, three grip members rigidly mounted one above the other on the base plate, the two lower grip members consisting of a U-shaped plate with its legs directed downwards-outwards of the base plate opposite the handle, the upper leg projecting somewhat beyond the lower one, the uppermost of the three grip members is formed in such a manner that the upper portion of the base plate somewhat above the handle extends slightly outwards away from the handle and the outermost upper portion of the base plate is formed parallel to the lower grip members to form a hook.

3,161,431
BRICK CARRIER

Wilbur C. Francis, Sioux City, Iowa, assignor, by mesne assignments, to William K. Mathews, P.E., Prairie Village, Kans.

Filed Mar. 9, 1962, Ser. No. 178,594
4 Claims. (Cl. 294—63)



1. In combination with a supporting surface having a guide member extending perpendicularly to the plane of said supporting surface and a plurality of rows of bricks positioned on said supporting surface in predetermined spaced relationship in a single layer, a brick carrier comprising a rectangular frame having an open top and an open bottom, means for moving said carrier vertically, a guide member mounted on said frame and extending vertically relative thereto, said second mentioned guide member being adapted to cooperate with said first mentioned guide member to position said frame in vertical alignment with said bricks above the upper surface thereof and to guide the downward movement of the frame in a vertical path so as to surround said layer of bricks when the frame is moved downwardly into the horizontal plane of said bricks, gripping bars mounted in said frame in parallel relationship, said gripping bars being spaced to move downwardly between said rows of bricks as said frame is moved downwardly into the horizontal plane of said bricks, means for moving each gripping bar between adjacent rows of bricks toward a gripping bar engaging the opposite sides of the bricks engaged by said first mentioned gripping bar to hold said bricks in said predetermined spaced relation as said brick carrier moves said layer of bricks as a unit, and means to move said gripping bars in the opposite direction to release said bricks from said carrier, whereby said bricks may be deposited on a second supporting surface in said predetermined relationship.

3,161,432
GROUND ANCHOR UPSETTING AND RETRIEVING DEVICE

Charles D. O'Leary, 103 Churchill Road, McLean, Va.

Filed Aug. 8, 1961, Ser. No. 130,199
1 Claim. (Cl. 294—106)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A clamp for holding a flexible line comprising a C-shaped body member having upper and lower legs and a bight portion, an elongated slot extending transversely through the length of said upper leg, a bifurcated portion provided by said lower leg having spaced furcations, a pair of opposed line engaging jaws positioned between said furcations and spaced to provide an opening through which a line is threaded and held, at least one of said jaws being secured for pivotal movement between said furcations, an arm carried by the pivotally secured jaw, a lever pivotally secured at one of its ends to said arm and extending through said slot in said upper leg, and clamp operating means engaging the lever adjacent its other end.

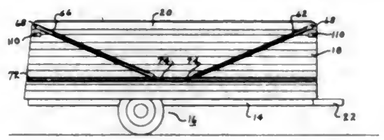
3,161,433
CAMPING TRAILER

Lee E. Markel, Bristol, Ind., assignor to Skamper Corporation, Bristol, Ind., a corporation of Indiana

Filed Feb. 4, 1963, Ser. No. 255,988
2 Claims. (Cl. 296—27)

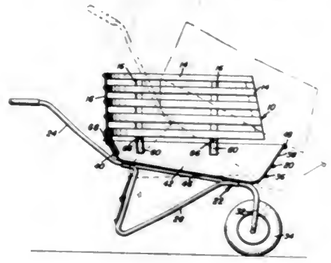
1. A collapsible camping trailer, comprising a frame, an undercarriage supporting said frame, a bed consisting of two side walls and front and rear end walls supported by said frame, a top of continuous construction adapted to rest on the upper edges of said walls and having an external flange extending over the external upper edges of said walls, four posts pivotally connected at their upper

ends to said top along the sides near the corners thereof for supporting said top in an elevated position, a track having upper and lower flanges mounted on each side of said bed for slidably supporting the lower ends of said posts, a U-shaped means mounted on said bed between said track and pivot for supporting each of said posts in



vertical position, moveable means on each of said posts disposed between said track flanges, and a holding means mounted at each track end for holding said moveable means at the end of the respective track with the posts in vertical position and for holding said top in its elevated position.

3,161,434
WHEELBARROW SIDE EXTENSION
James A. Jerpbak, 4890 Londonberry Drive, Santa Rosa, Calif.
Filed July 20, 1962, Ser. No. 211,281
5 Claims. (Cl. 296—36)



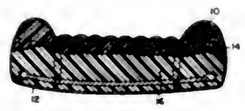
1. In combination with a wheelbarrow of the type including an upwardly opening load pan having three adjacent upwardly divergent side walls interconnected at their lower ends by means of a bottom wall and terminating at their upper ends in outwardly and downwardly curled reinforcing beads, a side extension comprising a single elongated member having a greater width than thickness and being disposed on one edge and bent so as to be of generally U-shaped configuration with the lower side edges of the three side portions formed thereby disposed adjacent and generally paralleling the reinforcing beads of said side walls, and mounting means carried by said three side portions defining downwardly opening channels in which the corresponding three side walls of said load pan are received, each of said channels having an innermost portion of greater width than the outer portions thereof so as to define a channel substantially keyhole-shaped in cross-section for interlocking engagement with the associated bead, each of said mounting means including a pair of depending legs between which the corresponding channel is formed, the outermost leg of each of said pairs of legs including an inwardly opening transversely extending groove for surface-to-surface interlocking engagement with the corresponding one of said beads and the adjacent portions of said side walls, the outermost leg of each pair of legs being formed integrally with said elongated member, means removably securing the inner leg of each pair of legs to the corresponding one of said outer legs, the contour of the outer surface of each of said inner legs being such as to conform with the inner surfaces of the adjacent upper portions of said side walls and the adjacent lower portions of said elongated member.

3,161,435
LEG SUPPORT FOR AUTOMOTIVE VEHICLE OPERATORS
Clyde M. Halverson, 2625 5th Ave. S., Fort Dodge, Iowa
Filed Mar. 22, 1962, Ser. No. 181,623
3 Claims. (Cl. 297—437)



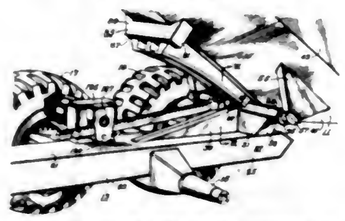
1. In an automotive driver's leg support unit, comprising,
an open U-shaped leg engaging cradle;
a first member secured at one end to the bottom of said cradle, the other end of said first member telescopically engaging a second member, said second member having a cap element provided on its free end and adapted to only frictionally engage the floor of an automobile;
said leg unit being separate from said automobile floor and engaging said floor only through said cap element on said second member and said support unit being maintained in an upright position by engagement with an automobile driver's leg;
and a means for selectively locking said telescoping first and second members thereby limiting relative longitudinal movement therebetween.

3,161,436
PRE-STRESSED MOLDED FOAM CUSHIONING ELEMENT
Bruce G. Hood, Marblehead Neck, Mass., assignor to Davidson Rubber Company Incorporated, a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 183,343
17 Claims. (Cl. 297—460)



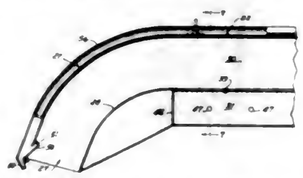
1. A molded article comprising; a substantially rigid base member; a substantially flexible non-stretchable skin member overlying and spaced from said base member and defining a cushion receiving cavity between said skin and said base; said skin member having a pressure and wear receiving surface; a first resilient cushioning element in said cavity having an outer surface comprised in part of at least one pre-stress pressure receiving surface, said first cushioning element filling only a portion of said cavity with said outer surfaces other than said pre-stress pressure receiving surface in contact with said skin, said skin being free from adhesion to said outer surfaces of said first resilient cushioning element in the area thereof corresponding to said pressure and wear receiving surface; and a second cushioning element comprising resilient resinous foam filling the entire remainder of said cavity and adhering to said pre-stress pressure receiving surface, said base and said skin in order to provide a unitized construction therebetween said second cushioning element cured to the contour defined by said cavity with said first cushioning element substantially compressed by pressure applied thereby against said pressure receiving surface, whereby both of said cushioning elements remain in resilient compression against said skin within said article.

3,161,437
OPERATING MECHANISM FOR DUMP VEHICLE
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Filed Jan. 8, 1963, Ser. No. 250,106
2 Claims. (Cl. 298—19)



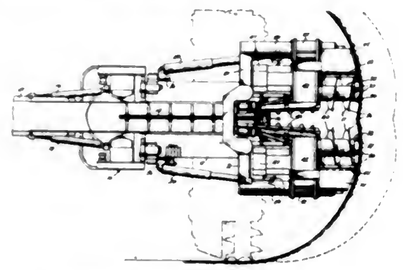
1. In a dump vehicle having a dump body and a chassis, with said body being fixed to said chassis so as to be pivotable about an axis from a load carrying to a dumping position, a dump operating mechanism comprising: a plurality of spaced juxtaposed plates fixed to the underside of said dump body and extending transversely and forwardly of said pivot axis with one end of each said plate disposed adjacent said pivot axis and with each said plate having substantially parallel top and bottom roller engaging arcuate surfaces; support means fixed to said chassis and having a planar roller engaging surface facing said arcuate surfaces and having one end disposed adjacent said axis; first roller means engaging said bottom arcuate surfaces; second roller means engaging said planar surface; means linking said first and second roller means in mutual substantially fixed spaced relation; third roller means engaging said top arcuate surfaces; means linking said third roller means to said first and second roller means; a rack fixed adjacent one end to said roller means and extending forwardly therefrom; and an electric motor driven gear reduction fixed to said chassis and having an output pinion drivingly engaging said rack; the curvature of said bottom arcuate surfaces relative to said planar surface being such that the rate of dump body pivoting movement will vary in general inverse accordance with the magnitude of the force couples required for pivoting movement of said body from the load carrying to the dumping position.

3,161,438
UNDERWATER DREDGE WITH SEPARATING MEANS
Milton J. Novak, 4418 Normandy, Dallas, Tex.
Filed July 12, 1961, Ser. No. 123,596
4 Claims. (Cl. 299—9)



1. A placer mining device for mining submerged placer deposits comprising: an elongate tubular housing positionable adjacent and above a submerged placer deposit having a passageway extending longitudinally therethrough; said tubular housing having an inlet end and an outlet end, the portion of said passageway adjacent said inlet end being of substantially uniform cross section, the portion of said passageway extending from said portion of uniform cross section to the outlet end of said housing being of increasing cross-section toward said outlet end; a first jet nozzle mounted on said housing adjacent said inlet end, said jet nozzle being oriented to deliver a stream of water downwardly from said housing against said placer deposits when connected to a supply of water under pressure; a second jet nozzle adjacent the inlet end of said tubular housing, said second nozzle being oriented to deliver a stream of water under pressure into the portion of uniform cross-section of said passageway when said second jet nozzle is connected to a supply of water under pressure, whereupon materials excavated by said first jet nozzle are caused to enter the inlet end of said tubular housing and are forced through the passageway thereof by the stream delivered by said second jet nozzle; means for delivering water under pressure to said jet nozzle; screen means in said housing between said portion of said passageway of uniform cross-section area and the outlet end for separating the excavated material into a first portion having only particles which are smaller than a predetermined size and a second portion having only particles which are greater than said predetermined size, said screen means forming the lower boundary of said portion of said passageway extending from said portion of uniform cross-section to the outlet end; means within said tubular housing adjacent the outlet end thereof for stratifying the portion of said smaller sized particles in accordance with their specific gravities; means for ejecting the strata of lighter specific gravity particles from said tubular housing; and means for recovering from said housing the lower strata of particles of heavier specific gravity.

3,161,439
CONTINUOUS MINING MACHINE OF THE SIDE CUTTING AUGER TYPE
John S. Newton, Glen Ellyn, Emil J. Hlinsky, La Grange Park, Joseph Gonski, Chicago, and Richard C. Lundquist, Palos Heights, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 26, 1961, Ser. No. 126,904
14 Claims. (Cl. 299—67)

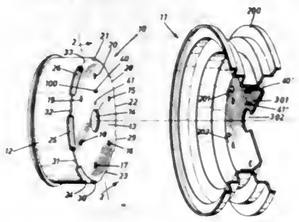


1. A continuous mining machine of the class described comprising a mobile main frame, a conveyor extending along said main frame from a position adjacent the ground at the forward end of said main frame, a boom arm on each side of said conveyor and extending in advance thereof, means pivotally mounting said boom arms on said main frame for movement about vertical axes at opposite sides of said main frame, said boom arms having side cutting mining heads rotatably supported thereon and extending in advance thereof, each side cutting mining head including a scroll having cutter bits projecting therefrom

and cuttings confining means including scraper blades having scraping engagement with the ground, means positioning said boom arms at right angles with respect to said conveyor and for swinging said boom arms toward each other across the front end of said conveyor, and individual screw conveyors extending along the inner sides of said boom arms and forming rearward continuations of said scrolls and inclined upwardly from the ground from positions adjacent the discharge ends of said scrolls as they extend along said boom arms and extending over said conveyor as said boom arms move toward each other toward the extended center of said conveyor, and cuttings confining means extending downwardly from said screw conveyors into scraping engagement with the ground.

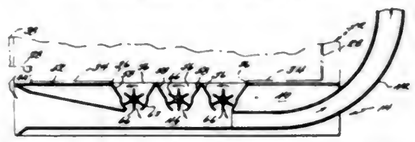
5. In a continuous mining machine and in combination with a laterally swingable boom arm having a side cutting mining head spaced to one side thereof and projecting forwardly therefrom, means pivotally mounting said mining head on said boom for vertical adjustment with respect thereto about the longitudinal axis of said boom arm, a cuttings confining plate extending between said mining head and boom arm and mounted for vertical adjustable movement with said mining head, a roof engaging plate extending along and pivotally mounted on the upper end portion of said cuttings confining plate, a scraper blade pivotally mounted on said boom arm for scraping engagement with the ground, and forming a downward continuation of said cuttings confining plate, and hydraulic cylinder and piston means connected between said scraper blade and roof engaging plate for engaging said roof engaging plate with a mine roof and for raising said scraper blade above the ground as said roof engaging plate is in a lowermost position of adjustment.

3,161,440
VEHICLE WHEEL SECURING MEANS
Harry A. Bentley, 87 Caroline St., Waterloo, Ontario, Canada
Filed July 29, 1963, Ser. No. 298,295
1 Claim. (Cl. 301—9)



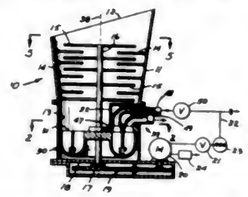
A vehicle wheel mounting comprising in combination a hub and a wheel having a web portion; said hub including a surface having a plurality of spaced apart channels, said web portion including a plurality of spaced apart inwardly extending hook-shaped lugs adapted to be received and engaged in said channels upon rotation relative thereto; said hub further including a plurality of spaced apart first holes in said surface and an equal plurality of retractable pins mounted behind said surface, actuating means adapted to project said pins beyond said surface each through a corresponding one of said holes, said web portion including an equal plurality of spaced apart holes corresponding to said holes of said hub, said web portion holes being radially offset and adapted to be aligned with said first hub holes upon relative rotation to receive said pins upon operation of said actuating means, said hub including a backing plate rigidly mounted in said hub rearward of said surface, a pin mounting plate movably mounted intermediate said backing plate and said surface, a plurality of pins secured to said plate in a spaced apart relationship, one pin corresponding to each of said first holes and plate guide means adapted to maintain said pins in an aligned relationship with said holes, said actuating means comprising an arcuate bar including a member extending radially of said hub rearward of said surface, said member including a first end engaging said mounting plate and a second end adapted to engage a lock in a first or second locking position, said member being hingedly connected intermediate its length to said pin mounting plate, said arcuate bar including first and second ends, each of said ends loosely engaging one of a pair of diametrically opposed pins, a pair of pins mounted on said member one on each side of said hinged connection whereby upon depression thereof, said bar moves about said hinge with an overcentre action to release and lock said wheel to said hub respectively.

3,161,441
APPARATUS FOR CLEANING AND/OR CLEARING THE BOOT OF AN ENDLESS CONVEYOR OR THE LIKE
Vernon G. Hayes, Fort Worth, Tex., assignor to Hayes & Stolz Industrial Manufacturing Co., Inc., Fort Worth, Tex., a corporation of Texas
Filed May 21, 1963, Ser. No. 282,075
6 Claims. (Cl. 302—12)



1. In an apparatus for elevating dry bulk materials, the apparatus including a boot for receiving the dry bulk materials and an elevator feeder extending into the boot for receiving and elevating dry materials therefrom, the improvement in means for clearing waste material from the bottom of the boot comprising: at least one chute extending downwardly from beneath the boot and communicating with the interior thereof; a rotatable vane type feeder extending across said chute and rotatable on a horizontal axis, said vane type feeder permitting passage of material through said chute when rotating; a duct communicating with the lower end of said chute, said duct having one end open to atmosphere; suction means attached to the other end of said duct, said suction means having a discharge for discharging material received in said duct from said boot when said vane type feeder is rotating.

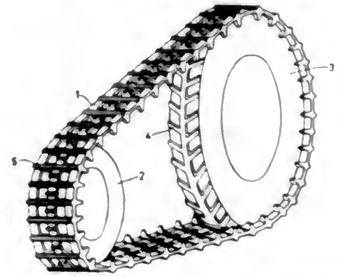
3,161,442
TRANSMISSION OF GRANULAR MATERIAL
Frank A. Reed, 1009 N. Raymond Ave., Pasadena, Calif.
Filed Apr. 18, 1962, Ser. No. 188,396
12 Claims. (Cl. 302—49)



1. A pickup and transmission device for granular material comprising: a hopper having an upper and a lower opening; a feed rotor having a substantially vertical central axis of rotation; a face on said feed rotor, which is a substantially continuous, upwardly facing, surface of revolution around said axis, portions of which face are

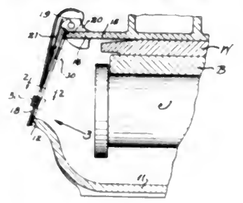
adapted to be moved into and out of registration with the lower opening by turning the feed rotor on its axis; a plurality of non-interconnecting chambers inside said feed rotor and disposed beneath said face; a first and a second set of upwardly facing ports in said face, said sets of ports being disposed in circular patterns in said surface of revolution around said axis, the first set being disposed within the second set, one member of each set being connected to each respective one of said chambers; said ports being so disposed and arranged that one member of each of said pairs will pass sequentially beneath said lower opening to receive material from the hopper as the feed rotor is rotated, whereupon material flows into the respective chambers through both ports; an expulsion station comprising an inlet conduit and an outlet conduit, the inlet conduit being adapted to be connected to a source of fluid under pressure, and the outlet conduit being adapted to receive and transmit granular material entrained by fluid from the inlet conduit, the inlet conduit being so disposed and arranged as to register with successive ones of one of the sets of ports, and the outlet conduit being so disposed and arranged as to register with successive ones of the other of sets of ports, whereby upon rotation of the feed rotor, ports of said sets pass across the lower opening to receive granular material, and whereupon the ports pass to the expulsion station where one member of each set corresponding to each respective chamber sequentially registers with the inlet and outlet conduits to cause expulsion of the granular material from the respective chamber.

3,161,443
TRACTOR TRACKS
Assar Natanael Svensson, Ersmark, Sweden, assignor to Skelleftea Gummifabriks A.-B., a Swedish joint-stock company
Filed Dec. 19, 1961, Ser. No. 160,488
Claims priority, application Sweden Dec. 21, 1960
11 Claims. (Cl. 305—13)



1. A vehicle track adapted to run on tires of a vehicle, said track comprising rod members extending transversely of the track and spaced apart longitudinally of said track, said rod members being connected by members extending longitudinally of the track and absorbing traction forces, a body of elastomer material substantially enclosing said traction-absorbing members together with said rod members, transversely extending, external projections of said elastomer material disposed at substantially equal distances from each other in the longitudinal direction of extent of said track at the same locations along the track as said rod members providing engagement between the track and the ground and said elastomer material having inwardly directed projections also disposed at the same locations along the track as said rod members guiding the track on the vehicle wheels, said external and inwardly directed projections being integral with the rest of said elastomer track material so that all said elastomer material can be formed in one operation.

3,161,444
RAILWAY JOURNAL BOX LID SEAL
James J. Hennessy, Jr., 605 Guilford Ave., Chambersburg, Pa.
Filed July 19, 1962, Ser. No. 210,898
4 Claims. (Cl. 308—47)



1. A railway journal box lid and seal, the seal comprising

an open rectangular frame unit of flat rubber-like material lying flat against the face of the lid,

and flat metal spring clips secured to and embedded in the unit substantially flush with one exposed face thereof

and extending beyond the unit in a direction parallel to the general plane of the unit and forming jaws distortable transversely of said plane and gripping the marginal portions of the lid between them.

3,161,445
SELF-ALIGNING SPHERICAL BEARING
John Haller, 18500 Sheldon Road, Northville, Mich.
Filed Sept. 28, 1962, Ser. No. 226,889
1 Claim. (Cl. 308—72)



A self-aligning monoball spherical bearing comprising

an outer bearing member of lubricant-charged porous sintered powdered metal containing an annular bearing socket with a spherically-curved concave inner surface and a substantially smooth-walled annular counterbore extending inward to said bearing socket,

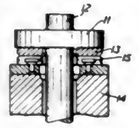
a through-bored inner bearing ball relatively rockably mounted in said bearing socket and having a spherically-curved convex outer surface mating with the spherically-curved concave inner surface of said bearing socket in substantial surface-to-surface engagement,

an annular retaining race member having a substantially smooth outer surface seated snugly in said counterbore and having a spherically-curved concave inner surface disposed substantially concentric with the concave inner surface of said bearing socket and mating with the spherically-curved convex outer surface of said inner bearing ball in substantial surface-to-surface engagement,

said counterbore having a transverse annular abutment shoulder at its junction with said bearing socket and said retaining race member having an inner edge engaging said abutment shoulder,

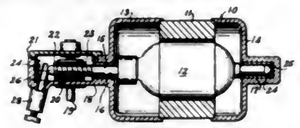
and means for securing said retaining race member in said counterbore comprising indentations in said outer bearing member and said annular retaining race member forming deformations spanning the junction therebetween.

3,161,446
BEARING PADS
Phil Prince Love, Wembley, England, assignor to The Glacier Metal Company Limited, Wembley, England, a company of Great Britain
Filed Jan. 14, 1963, Ser. No. 251,289
Claims priority, application Great Britain, Jan. 19, 1962, 2,114/62
9 Claims. (Cl. 308—160)



1. A thrust bearing pad, the shape of whose bearing surface conforms with the shape of an equal-lubricant-pressure contour for a thrust pad whose shape is defined between inner and outer concentric circular arcs, and two radial sides joining corresponding ends of the arcs, and whose area is between 30% and 50% greater than the area enclosed by the equal-lubricant-pressure contour.

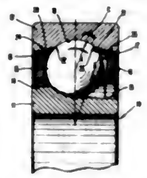
3,161,447
THRUST BEARING FOR ROTATABLE SHAFT
Nils Folke Larsson, Mariehall, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed May 29, 1963, Ser. No. 284,059
Claims priority, application Sweden, June 8, 1962
7 Claims. (Cl. 308—163)



1. A device for the play-free, axial support of a rotated shaft, comprising a shaft, a bearing member at least at one end of said shaft and having a planar bearing surface extending normal to the axis of said shaft and engageable with said one end of the shaft, and means supporting said bearing member for movement relative to said shaft along a path that includes an obtuse angle with said axis of the shaft so that movement of said bearing member along said path in one direction displaces said bearing surface toward said one end of the shaft, said obtuse angle being selected to prevent movement of said bearing member along said path in the opposite direction by axial loads applied by said one end of the shaft against said bearing surface.

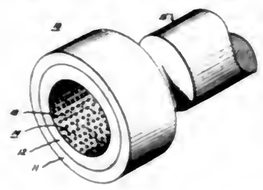
3,161,448
OUTER RING FOR ANTIFRICTION BEARING
Ronald W. Moran, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Continuation of application Ser. No. 148,928, Oct. 31, 1961. This application July 5, 1963, Ser. No. 294,463
5 Claims. (Cl. 308—187)

1. In a bearing having a plurality of antifriction elements and an outer bearing ring member against which said antifriction elements are adapted to act, said outer bearing ring member having an annular groove forming a race to receive a portion of each antifriction element in load supporting contact therewith, said outer bearing ring member having a first tapered annular recess on one side of said antifriction elements and a second tapered annular recess on the opposite side of said antifriction elements, said recesses each being shaped to direct a lubricant into said groove when said bearing is rotated, and the contact



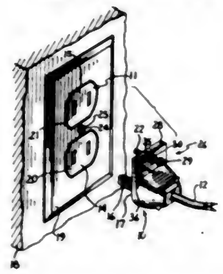
areas between said groove and each antifriction element being spaced from each of said recesses.

3,161,449
COMBINED ROLLING AND SLIDING BEARING
Donald G. Flom, Berwyn, Pa., assignor to General Electric Company, a corporation of New York
Filed June 1, 1962, Ser. No. 199,400
14 Claims. (Cl. 308—239)



4. In a bearing construction, two surfaces in juxtaposition, one of said surfaces being movable relative to the other surface in bearing relationship, a relatively uniformly thick layer of dry lubricant material disposed therebetween, and a plurality of small spheres dispersed in said lubricant material, each of said spheres having a greater hardness than said lubricating material and having a diameter substantially smaller than the thickness of said layer of lubricating material whereby no single sphere can directly transmit the bearing load between the said surfaces.

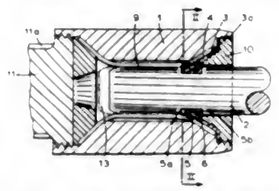
3,161,450
PILFERPROOF WALL PLUG
Bradford A. Goodenough, Athens, Ga., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 17, 1961, Ser. No. 145,577
1 Claim. (Cl. 339—80)



For use with an electrical receptacle having a tapped aperture and an outlet socket, a lockable cord comprising, in combination, a molded plug on the cord having a face with projecting conductive prongs slidable into the outlet socket, a tab molded integrally with said plug to constitute an offset extension of said plug face, a rigid backing plate for stiffening said tab for withstanding transverse bending forces applied to said plug, said plate being

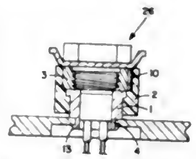
carried in a transverse recess in said plug behind said tab, and a screw fastener with a non-backout head, said screw passing through an opening in said tab and said backing plate and threaded into the receptacle tapped aperture so that upon rotation of said screw said tab and backing plate are drawn against the receptacle to lock said plug in the socket with said backing plate distributing the holding forces effected by said screw to prevent pivoting of the plug upon said prongs slidably engaged within the socket.

3,161,451
SELF-LOCKING ELECTRIC PLUG-AND-JACK CONNECTOR
Rudolf Neidecker, Basel, Switzerland, assignor to Multi-Contact Neidecker & Co., Basel, Switzerland, a corporation of Switzerland
Filed Aug. 16, 1961, Ser. No. 131,930
5 Claims. (Cl. 339—91)



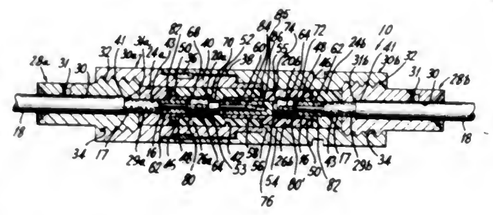
1. An electric connector comprising an elongated plug member, a tubular jack member removably receiving said plug member, one of said members being provided with a transverse annular shoulder, the other of said members being provided with an annular shell having an array of resilient barbs bearing upon said shoulder in a position of interengagement and preventing a relative displacement of said members in a disengaging sense, and a blocking ring axially slidable on said one of said members adjacent said shoulder, said blocking ring having a height which at least approaches that of said shoulder and being entrainable by said barbs toward said shoulder upon an initial engaging displacement of said members beyond said position of interengagement and a subsequent reverse displacement thereof in said disengaging sense, thereby enabling said barbs to clear said shoulder and facilitating separation of said members from each other, said other of said members comprising a support and a generally cylindrical array of contact springs carried on said support, said support being provided at its insertion end with clamping means holding said contact springs in place and also anchoring said barbs to said other of said members.

3,161,452
MOUNTING ADAPTER FOR ELECTRICAL CONNECTORS
Calvin R. Salter, Tewksbury, and Kenneth H. Pascoe, Lexington, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 5, 1963, Ser. No. 306,966
4 Claims. (Cl. 339—131)



1. An adapter for mounting an electrical connector, said adapter comprising: a hollow ferrule having a lip portion, a body portion and an extended sleeve, the diameter of said lip portion being larger than the diameter of said body portion and the diameter of said body portion being larger than the diameter of the said extended sleeve; a nut rotatably mounted on said ferrule, said nut having a collar, a step portion and a receiver portion, the inside diameter of said receiver portion having a semi-circular slot therein, the inside diameter of said collar and step portions being approximately the same as respective outside diameters of the body and lip portions of the ferrule; a cylindrical insert having its inner surface threaded, a semi-circular slot in the outer surface of said cylindrical insert, said insert being mounted within the receiver portion of said nut so as to align the semi-circular slots of the nut and insert; means mounted in said aligned semi-circular slots to prevent relative rotation between said nut and said insert; and means for attaching said insert to said nut.

3,161,453
SUBMINIATURE CONNECTOR FOR COAXIAL CABLES
Albert E. Powell, Old Greenwich, Conn., assignor to Micon Electronics, Inc., Garden City, Long Island, N.Y.
Filed Jan. 24, 1962, Ser. No. 168,397
2 Claims. (Cl. 339—177)



1. A subminiature assembly for releasably connecting first and second coaxial cables each of which has an inner conductor, an inner insulator concentrically disposed about the inner conductor and an unbraided, solid outer conductor of minimal wall thickness integral with the outside surface of the inner insulator, said cables being further defined by the end portions of the inner insulator and outer conductor being trimmed back to expose the next lower, concentric layer; said assembly comprising:

(*a*) a metallic contact pin and a metallic contact receptacle coaxially secured to the respective inner conductors of the first and second cables, said contact pin having a solid end portion opposite the exposed end of the inner conductor, said contact receptacle having an axial bore which defines a continuously surfaced end portion opposite the exposed end of the second inner conductor, said contact pin and contact receptacle being adapted to mate with each other in the assembled condition;

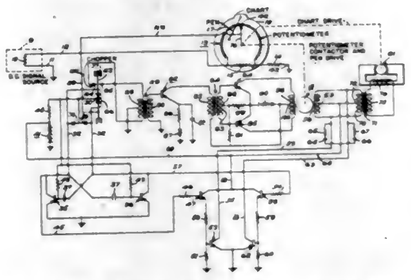
(*b*) first and second insulating sleeves tightly disposed about at least a portion of each of the respective contact pin and contact receptacle of the first and second cables proximate the exposed ends thereof, said first insulating sleeve also having an enlarged, concentric bore spacedly disposed about a portion of said contact pin extending from the end of the first inner conductor, said second insulating sleeve being tightly disposed about the entire length of said contact receptacle, said first and second insulating sleeves having a substantially uniform, continuous outside diameter in the assembled condition, said insulating sleeves being provided with integral, internal shoulders adapted to restrain said contact pin and contact receptacle from axial motion relative to their respective cables;

(*c*) first and second metallic sleeves coaxially secured to the respective outer conductors of the first and second cables;

(*d*) third and fourth metallic outer sleeves coaxially joined to said first and second metallic sleeves, respectively, each of said third and fourth metallic outer sleeves having a first axial bore which defines a continuously surfaced end portion coaxial with and opposite the trimmed-back ends of the respective first and second cable outer conductors, said fourth metallic sleeve having a second coaxial bore adapted to mate with the end portion of said third metallic sleeve whereby a substantially uniform outside diameter is provided in the assembled condition of said metallic sleeves; and

(*e*) annular retaining means adapted to releasably couple said first and second metallic sleeves upon axial motion of one of said metallic sleeves in the direction of the outer of said metallic sleeves.

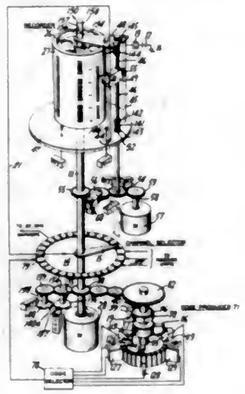
3,161,454
CONTROL CIRCUITS FOR ELECTRIC MOTORS
Arthur F. Cann, Winchester, Mass., assignor to Stevens-Arnold Inc., South Boston, Mass., a corporation of Massachusetts
Filed Jan. 14, 1963, Ser. No. 251,368
4 Claims. (Cl. 346—32)



1. In a control system for an electric motor having a control field winding and a power field winding, means including a chopper for converting a D.C. control signal to A.C., means for amplifying said A.C., and means for supplying the amplified A.C. to said control field winding the combination of means forming an effective center-tap on said coil, a first transistor having an output electrode connected to one end of said coil, a second transistor having an output electrode connected to the other end of said coil, a coupling capacitor connected to said output electrode of said first transistor and to an input electrode of said second transistor, a second coupling capacitor connected to said output electrode of said second transistor and to an input electrode of said first transistor, resistors connecting said input electrodes to said center-tap, means for connecting said center-tap and another input electrode of each of said transistors to opposite polarity terminals of a D.C. power source, and means including means connected to said output electrodes for supplying A.C. to said power field winding.

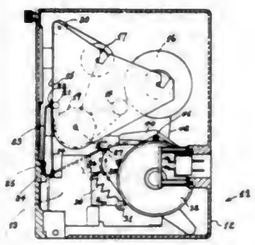
3,161,455
BAR CHART RECORDING SYSTEM HAVING A PLURALITY OF PRESELECTED CODED PATTERNS
John E. Gorrell, Ridgewood, N.J., assignor to Electronic Associates, Inc., Long Branch, N.J., a corporation of New Jersey
Filed Oct. 4, 1960, Ser. No. 60,507
12 Claims. (Cl. 346—45)

1. A recording system for recording at least two parameters for each of a plurality of devices, comprising a rotatable drum having a recording sheet attached to and carried by said drum, a stylus disposed along a line parallel to the rotational axis of said drum and movable adjacent said paper in accordance with one parameter to be recorded for each said device for selectively marking said sheet, means connected in circuit relation with said stylus for selectively enabling said stylus to mark said



sheet during periodically recurring marking intervals each associated with a respective device and in response to a signal representing another parameter to be recorded for each of said devices, and means connected in circuit with said enabling means for selectively controlling the periods when said stylus is responsive to said signal to mark said sheet in accordance with one of a plurality of preselected coded patterns during each of said marking intervals.

3,161,456
MULTIPLE CHANNEL CHART RECORDER
Leopold Perlaky, Washington, D.C., assignor to Hygrodynamics, Inc., Silver Spring, Md.
Filed Apr. 1, 1963, Ser. No. 269,301
7 Claims. (Cl. 346—50)



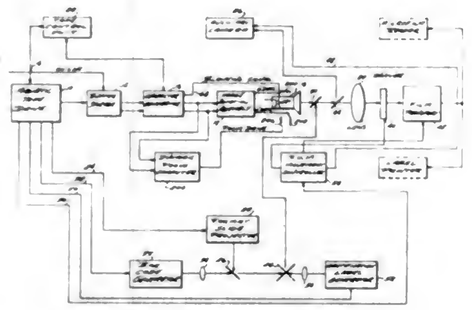
1. In a recorder including a meter having a pointer, a movable record strip adjacent said pointer, a pivoted striker plate engageable with said pointer to press the pointer against the record strip, and a rotary toothed cam engageable with the striker plate to intermittently rock the striker plate and cause it to apply a plurality of marking impulses on said pointer, providing a series of multiple individual impressions for each cycle of rotation of the cam, signal input means, switch means, circuit means connecting said signal input means to said meter through said switch means, switching cam means driven simultaneously with said rotary toothed cam, and follower means operatively coupled with said switch means and engaging said switching cam means, said switching cam means being contoured to cause operation of said switch means at predetermined portions during the cycle of rotation of said toothed cam coinciding with intervals between individual marking impulses.

3,161,457
THERMAL PRINTING UNITS
Hans Schroeder, Bellbrook, William H. Puterbaugh, Jr., Waynesville, and Robert C. Meckstroth, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Nov. 1, 1962, Ser. No. 234,668
23 Claims. (Cl. 346—76)



1. A printing head for thermally marking a thermally-sensitive record material comprising a substrate member of high resistivity material having at least one plane surface, a plurality of resistive elements selectively positioned upon said plane surface, and a pair of electrical conductors extending through said substrate member for each of said resistive elements whereby the passage of a short-duration electrical pulse through said electrical conductor pairs will produce in the corresponding resistive element a temperature rise of sufficient magnitude to produce a mark on thermally-sensitive record material in cooperative relationship therewith.

3,161,458
DATA CONVERSION APPARATUS
Harold R. Dell, Palo Alto, Edward E. Gray, Mountain View, Lorant E. Frank, Palo Alto, and John R. Stoltz, Menlo Park, Calif., assignors to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,167
8 Claims. (Cl. 346—110)



1. A data conversion system for transferring data stored on magnetic tape onto photographic film comprising,

(*a*) means for converting data stored on said magnetic tape into first electrical signals representative of said data and into second electrical signals representative of associated control signals;

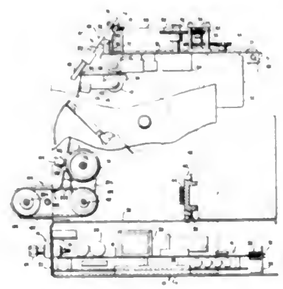
(*b*) a cathode ray tube operable to provide an intensity modulated visual display;

(*c*) a first of said second electrical signals effective to intensity modulate said display, a second of said second electrical signals effeetive to determine the resolution of said display, and a third of said second electrical signals effective to determine the sequence in which individual portions of said display are arranged whereby said second electrical signals in combination regulate the size of said display;

(*d*) means for modifying said first electrical signals to serially provide deflection signals for said cathode ray tube whereby said data is displayed on the face of said tube; and

(*e*) photographic means controlled by said converting means for recording said displayed data in synchronism with said modifying means.

3,161,459
AUTOMATIC NULL-BALANCING ELECTRICAL MEASURING RECORDERS
Charles E. Conklin, Main St., Pleasant Valley, N.Y.
Filed Feb. 27, 1962, Ser. No. 176,150
13 Claims. (Cl. 346—145)



1. A null self-balancing electrical measuring recorder comprising;

(*a*) a support carrying pluggable type electric connectors,

(*b*) an input variable measuring circuit module assembly removably pluggable to the connectors on the support,

(*c*) an amplifier circuit module assembly removably pluggable to the connectors on said support,

(*d*) a pivotable servo motor rack and stylus module. the entire module pivotably supported from the top rear of the support,

(*e*) electrical means connecting the electric connectors, measuring circuit module, amplifier circuit module and pivotable servo motor rack and stylus module when the same are secured to the support in their operative position,

(*f*) means for supporting a roll of chart paper with unprinted margins in the support,

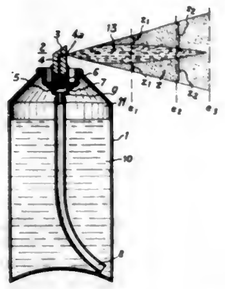
(*g*) means for driving the chart paper beneath a stylus on the servo rack and stylus module to thereby continually record a visible indication of an input variable applied to the measuring circuit module, and

(*h*) a removable printing cylinder carried by the servo rack and stylus module for continuously printing a function and range of the input variable on a margin of the chart paper.

3,161,460
SPRAYING UNIT

Ernst Huber, Forchstrasse 132, Zumikon, Switzerland

Filed Oct. 13, 1960, Ser. No. 62,443
Claims priority, application Switzerland, Oct. 16, 1957, 51,632
8 Claims. (Cl. 8—142)



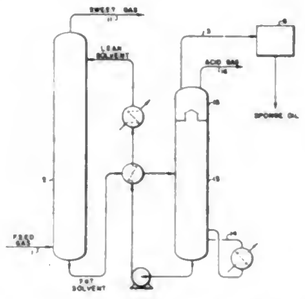
7. A method of removing oleophilic spots from textiles comprising the steps of confining a pressurized fluid medium consisting essentially of a solid absorbent in pulverized form and capable of absorbing oleophilic matter, and an organic solvent capable of dissolving oil and fat and having a boiling point, at substantially atmospheric pressure, less than ambient room temperature; releasing said pressurized fluid medium as an outwardly diverging conical spray directed on the spot to be treated; said organic solvent evaporating progressively longitudinally of said spray, with the evaporation progressing inwardly from the outer surface of the conical spray to provide a central zone of progressively decreasing cross sectional area longitudinally outwardly of said spray and comprising absorbent and solvent, and laterally surrounded by a conically annular zone of said absorbent essentially free of solvent increasing progressively in cross sectional area outwardly longitudinally of said spray; initially maintaining the apex of the spray cone at a distance from the textile material such that a layer containing both said solvent and said absorbent is deposited on the textile material in the immediate vicinity of the spot and surrounded by an annular layer of absorbent essentially free of solvent; thereafter increasing the distance at the apex of the spray cone from the textile material to deposit only absorbent essentially free of solvent in the immediate vicinity of the spot; and, after drying of the deposited absorbent, mecnanically removing the deposited absorbent from the textile material.

3,161,461
METHOD OF REMOVING ACIDIC GASES FROM GASEOUS MIXTURES

Carl H. Deal, Jr., Orinda, and Elwood L. Derr and Michael N. Papadopoulos, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 23, 1960, Ser. No. 78,162
5 Claims. (Cl. 23—3)

1. The process of separating acidic gas from gaseous mixtures wherein the partial pressure of the acidic gas in the feed is initially at least 10 pounds p.s.i.a. which comprises effecting contact of the mixture with a liquid absorbent comprising 7.5–70% by weight of an amine



having a pK_b at 25° C. of 3–14 and 30–92.5% by weight of a selective solvent comprising an aliphatic acid amide.

3,161,462
ELEMENT 96 AND COMPOSITIONS THEREOF

Glen T. Seaborg, Berkeley, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 7, 1949, Ser. No. 75,064
17 Claims. (Cl. 23—14.5)

1. Element 96.

3,161,463
METHOD FOR PURIFICATION OF PROMETHIUM-147

Porter B. Orr, Jr., Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 29, 1963, Ser. No. 255,158
5 Claims. (Cl. 23—14.5)

4. An ion exchange method for separating promethium values from an aqueous acidic solution containing promethium, americium and rare earth values comprising:

(*a*) passing said solution through a cation exchange resin bed under conditions whereby said values are sorbed on said bed;

(*b*) passing an aqueous solution of citric acid through said bed under conditions whereby said values are eluted and separately collecting the fraction of the solution containing promethium;

(*c*) adjusting the composition of the promethium-containing fraction to permit sorption of said promethium on a cation exchange resin;

(*d*) passing the resulting adjusted solution through a cation exchange resin bed under conditions whereby promethium values are sorbed on said bed; and

(*e*) passing an aqueous solution containing 0.1 to 1.5 percent diethylenetriaminepentaacetic acid and having a pH in the range of 4 to 7.5 through said bed under conditions whereby promethium values are eluted and separately collecting the fraction of the solution containing said promethium values.

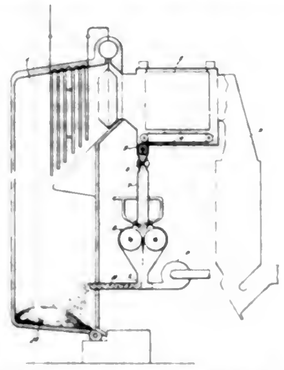
3,161,464
METHOD IN SODA RECOVERY BOILER PLANTS FOR RE-FEEDING DUST DISCHARGED FROM AN ELECTROSTATIC PRECIPITATOR

Harry Andersson, Stockholm, and Gösta Mildh, Vattersnas, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Apr. 18, 1961, Ser. No. 103,754
1 Claim. (Cl. 23—48)

The method of recovering combustion gas dust from a soda recovery boiler plant which comprises, passing the

combustion gases and dust from the fuel bed of the boiler past heat exchange elements and thence through a dust precipitator of the type which collects very fine particles in the dry state, collecting the dust from the precipitator,

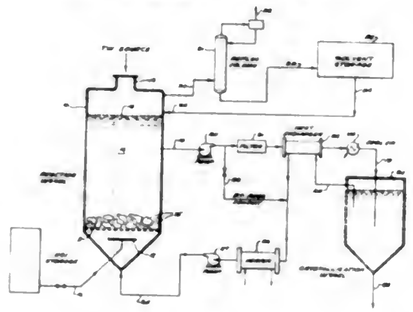


moistening and compacting the collected dust, granulating the compacted wet dust material, and feeding the granulated dust particles directly while moist and granular back upon the fuel bed in the boiler.

3,161,465
PREPARATION OF STANNOUS HALIDES

Richard E. Horn and Edward B. Stuart, Pittsburgh, Pa., assignors to Pitt Metals Company Incorporated, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 13, 1961, Ser. No. 151,741
2 Claims. (Cl. 23—98)



1. The process for preparing stannous chloride which comprises maintaining an organic non-aqueous solvent in a reaction zone at a temperature in the range from ambient room temperature to about 400° F., maintaining said reaction zone substantially free of water and air,

introducing a source of tin selected from the class consisting of tin metal and tin sulfide into said reaction zone,

introducing anhydrous hydrogen chloride gas into said reaction zone beneath the level of said non-aqueous solvent,

said organic non-aqueous solvent having a substantial solubility for hydrogen chloride gas without being chemically attacked by hydrogen chloride gas in the absence of water, said non-aqueous organic solvent further having a substantial solubility for stannous chloride at elevated temperatures,

recovering from said reaction zone a solution of said organic non-aqueous solvent containing stannous chloride,

introducing said solution into a crystallization zone at a temperature lower than that of the said reaction zone at which lower temperature the solubility of stannous chloride in said solvent is substantially decreased thereby to precipitate stannous chloride crystals in said crystallization zone,

recovering from said crystallization zone a supernatant solution of stannous chloride in said solvent, and returning said supernatant solution to said reaction zone.

3,161,466
PRODUCTION AND PURIFICATION OF PHOSPHATIC MATERIALS

Earl A. Fallin, 808 Rampart Drive, Kirkwood, Mo.

Continuation of application Ser. No. 768,162, Oct. 20, 1958. This application Jan. 26, 1961, Ser. No. 86,250
11 Claims. (Cl. 23—109)



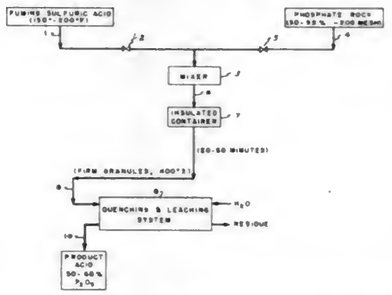
1. In a process of the kind described for producing phosphatic material from phosphate rock, the steps of: acidifying phosphate rock by mixing therewith at least one acid from the group consisting of sulfuric, phosphatic, nitric and hydrochloric acids, and water, and providing a pH of about 2.0; subsequently mixing and diluting the acidified phosphate rock with water to raise the pH to about 2.5 and not above about 3.3 and stopping the elevation of the pH before substantial precipitation of dicalcium phosphate occurs; leaching the aforesaid mass and producing separable impure solids and a phosphatic liquor relatively free from but containing some separable impurities, the solids relatively free from but containing some phosphates and the impurities comprising at least one of the group consisting of calcium sulphate, iron, aluminum and fluorine; separating the liquor and solids, purifying the liquor in a first purification stage by adding thereto an alkali that is at least one of the group consisting of lime, sodium carbonate and limestone; and raising the pH to about 2.7 and not over about 3.25; thereby precipitating impurities including fluorine and leaving the phosphates largely in solution; and also adding a defluorinated phosphate to the liquor in the first purification stage whereby to cause the fluorine of the liquor to combine therewith, and thereby reducing the amount of alkali required and reducing the degree of elevation of the pH required; separating the materials into a relatively purified liquor and solids; conducting the liquor to a second purification stage, and therein alkalizing it as in the first purification stage to further raise the pH to about 4.0 and precipitate additional, and purer, solids from the liquor; separating the solids from the liquor; conducting the liquor to a third stage of purification, therein further alkalizing it as in the first and second stages and further raising the pH to at least about 5.0 and

precipitating additional solids of high purity; passing the impure solids from the leaching stage, through at least two separating stages subsequent to the leaching stage, including introducing water and acid that is at least one of the group consisting of sulfuric, nitric, hydrochloric and phosphatic acids, as a diluent to the final such separating stage; producing a pH therein of about 2.0–3.0; taking up phosphates from the solids in the said final stage, into the diluent, and transmitting the resulting diluent to the preceding stage of separation, in said preceding stage maintaining a pH of about 2.0–3.0 by adding thereto one of the acids of the previously named group as needed; taking up phosphates from the solids in such preceding stage, into the diluent, and transmitting the diluent thus in counterflow to the solids, and finally mixing it with the initial leaching liquor; introducing solids from the first purification stage into the mass to be leached; introducing liquor from a purification stage into the process upstream of the leaching separation step, and into the diluent of the final separating stage for the impure materials derived from the leaching step; further acidifying the solids from the final separating step of the impure solids from the leaching step, by adding thereto acid from the previously described group, and acid from the purification steps as aforesaid thereto; returning acid liquor therefrom into the process upstream of the leaching separation, and downstream thereof into the liquor from the leaching separation, and recirculating liquor obtained from the liquor separation in a plurality of the purification stages into the alkalization steps of the purification stages.

3,161,467
DIRECT METHOD FOR THE PRODUCTION OF HIGH-ANALYSIS PHOSPHORIC ACID

Travis P. Hignett and Archie V. Slack, Sheffield, and John M. Potts, Florence, Ala., and Larrabee D. Hand, Jr., Pelham, Ga., assignors to Tennessee Valley Authority, a corporation of the United States

Filed Apr. 17, 1962, Ser. No. 188,285
3 Claims. (Cl. 23—165)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A process for the manufacture of concentrated phosphoric acid having a low fluorine content which comprises the steps of acidulating phosphate rock ground to approximately 20 to 90 percent minus 200 mesh with fuming sulfuric acid containing from about 15 to 20 percent free SO_3 (approximately 103 percent to 104.5 percent H_2SO_4 equivalent), said fuming sulfuric acid being heated to a temperature in the range from about 150° F. to about 200° F. the degree of fineness to which said phosphate rock is ground, in the range set forth, being inversely dependent and proportional to the percent of free SO_3 in said fuming sulfuric acid; retaining the resulting acidulate in a vessel equipped to provide a tumbling action for approximately 20 to 60 minutes to retain a substantial portion of the autogenous heat from the reaction between said phosphate rock and said fuming sulfuric acid, to permit fluorine and other gases to evolve and to allow the resulting granules or particles to become dry and firm; withdrawing from said vessel at a temperature of about 400° F. to 450° F. said resulting firm granules from said acidulate; quenching said firm granules in wash liquor from the end step of a countercurrent extraction system, said wash liquor containing approximately 46 to 58 percent P_2O_5 and leaching said firm granules countercurrently with water to form phosphoric acid containing approximately 50 to 60 percent P_2O_5, said process being characterized by the fact that substantially all of the heat necessary to effect the reaction between said fuming sulfuric acid and said ground phosphate rock in the acidulating vessel to cause said acidulate through the tumbling action therein to result in dry, firm granules during the holding period of approximately 20 to 60 minutes is supplied by the chemical heat of reaction of the reactants, thereby substantially eliminating the necessity for supplying external heat to the system comprising said process, and said process further characterized by the fact that the reaction between said reactants is carried out to a substantial extent during the holding period of approximately 20 to 60 minutes within the acidulating vessel wherein said tumbling action effects the transformation of the acidulate into the physical form of dry, firm granules.

3,161,468
PROCESS FOR PRODUCING HOLLOW SPHERES OF SILICA

Robert J. Walsh, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1961, Ser. No. 80,041
1 Claim. (Cl. 23—182)

Process for the manufacture of hollow, spheroidal particles of silica, which comprises dispersing a silica sol of from 5% to 30% SiO_2 content, weight basis, with the remainder being a solvent selected from the group consisting of water, methanol, ethanol, acetone, and methyl ethyl ketone, into a flame at a temperature of from 600° C. to 1800° C., for a residence time of 1 second to 0.001 second, volatilizing the said solvent, and dehydrating the said silica sol into spheroidal particles of silica.

3,161,469
PREPARATION OF BORON HYDRIDES

Eugene C. Ashby and Harold E. Podall, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 16, 1958, Ser. No. 748,813
7 Claims. (Cl. 23—204)

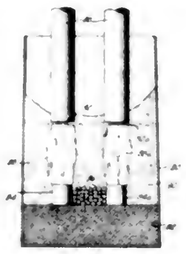
1. The process for preparing a boron hydride which comprises reacting a hydrocarbon ester of boric acid, wherein each hydrocarbon group contains up to and including about 20 carbon atoms and is selected from the group consisting of alkyl, cycloalkyl, alkenyl, cycloalkenyl, and aryl groups, with aluminum metal and hydrogen.

3,161,470
ARC FURNACE PROCESS FOR THE PRODUCTION OF ZIRCONIUM CARBIDE

John J. Scott, Willoughby, Ontario, Canada, assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Feb. 25, 1958, Ser. No. 717,374
4 Claims. (Cl. 23—208)

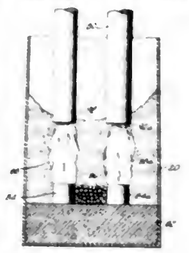
1. The process of synthesizing zirconium carbide by the reaction of zirconium oxide ore and coke in an electric arc furnace while maintaining reducing conditions at the zones of reaction, which comprises forming in an electric arc furnace having vertically movable electrodes a furnace bottom of refractory oxide material, placing a mass of carbon above said bottom at the eventual locus of each electrode, forming a bridge of carbon above said bottom electrically connecting said masses, maintaining said bridge of carbon at all times during the process, placing said electrodes at said loci in electrical contact with said masses of carbon and energizing said electrodes at from 50 to 150 volts, maintaining during the process a mixture of said zirconium oxide ore and coke around the bottoms of said electrodes and forming thereby as many distinct ingots of zirconium carbide as there are electrodes, one ingot under each electrode, feeding said mixture of zirconium oxide and coke to around the bottoms of said electrodes at the rate of from 0.4 to 0.8 lb. of mixture per kwh. of electrical energy energizing said electrodes, and maintaining the said ingots clear of each other whereby the path of the electric current after the process has been started is always from one electrode to another electrode, via first an arc, then through a zirconium carbide ingot synthesized by the process, then through one of said masses of carbon, then through the bridge, then through another of said masses of carbon, then through another zirconium carbide ingot synthesized by the process, then by an arc to another electrode, and building up the zirconium carbide ingots synthesized by the process under the electrodes without the formation of any considerable pool of molten zirconium carbide as the electrodes gradually rise during the process by reason of the energization of the electrodes at 1 kwh. for each 0.4 to 0.8 lb. of mixture fed.



3,161,471
ARC FURNACE PROCESS FOR THE PRODUCTION OF BORON CARBIDE

John J. Scott, Willoughby, Ontario, Canada, assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Feb. 25, 1958, Ser. No. 717,452
4 Claims. (Cl. 23—208)

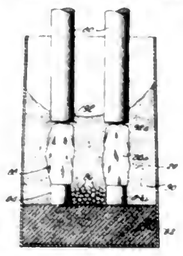


1. The process of synthesizing boron carbide by the reaction of boron oxide ore and coke in an electric arc furnace while maintaining reducing conditions at the zones of reaction, which comprises forming in an electric arc furnace having vertically movable electrodes a furnace bottom of refractory oxide material, placing a mass of carbon above said bottom at the eventual locus of each electrode, forming a bridge of carbon above said bottom electrically connecting said masses maintaining said bridge of carbon at all times during the process, placing said electrodes at said loci in electrical contact with said masses of carbon and energizing said electrodes at from 50 to 150 volts, maintaining during the process a mixture of said boron oxide ore and coke around the bottoms of said electrodes and forming thereby as many distinct ingots of boron carbide as there are electrodes one ingot under each electrode, feeding said mixture of boron oxide and coke to around the bottoms of said electrodes at the rate of from 0.8 to 1.2 lbs. of mixture per kw.-h. of electrical energy energizing said electrodes, and maintaining the said ingots clear of each other whereby the path of the electric current after the process has been started is always from one electrode to another electrode, via first an arc, then through a boron carbide ingot synthesized by the process. Then through one of said masses of carbon, then through the bridge, then through another of said masses of carbon, then through another boron carbide ingot synthesized by the process, then by an arc to another electrode, and building up the boron carbide ingots synthesized by the process under the electrodes without the formation of any considerable pool of molten boron carbide as the electrodes gradually rise during the process by reason of the energization of the electrodes at 1 kw.-h. for each 0.8 to 1.2 lbs. of mixture fed.

3,161,472
ARC FURNACE PROCESS FOR THE PRODUCTION OF TITANIUM CARBIDE

John J. Scott, Willoughby, Ontario, Canada, assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Feb. 25, 1958, Ser. No. 717,494
4 Claims. (Cl. 23—208)



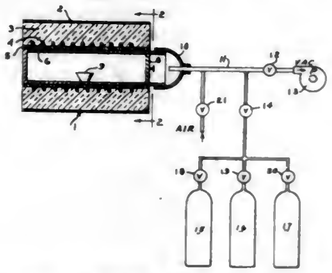
1. The process of synthesizing titanium carbide by the reaction of titanium oxide ore and coke in an electric arc furnace while maintaining reducing conditions at the zones of reaction, which comprises forming in an electric arc furnace having vertically movable electrodes a furnace bottom of refractory oxide material, placing a mass of carbon above said bottom at the eventual locus of each electrode, forming a bridge of carbon above said bottom electrically connecting said masses, maintaining said bridge of carbon at all times during the process, placing said electrodes at said loci in electrical contact with said masses of carbon and energizing said electrodes at from 50 to 150 volts, maintaining during the process a mixture of said titanium oxide ore and coke around the bottoms of said electrodes and forming thereby as many distinct ingots of titanium carbide as there are electrodes one ingot under each electrode, feeding said mixture of titanium oxide and coke to around the bottoms of said electrodes at the rate of from 0.5 to 0.75 lb. of mixture per kwi. of electrical energy energizing said electrodes, and maintaining the said ingots clear of each other whereby the path of the electric current after the process has been started is always from one electrode to another electrode, via first an arc, then through a titanium carbide ingot synthesized by the process, then through one of said

masses of carbon, then through the bridge, then through another of said masses of carbon, then through another titanium carbide ingot synthesized by the process, then by an arc to another electrode, and building up the titanium carbide ingots synthesized by the process under the electrodes without the formation of any considerable pool of molten titanium carbide as the electrodes gradually rise during the process by reason of the energization of the electrodes at 1 kwi. for each 0.5 to 0.75 lb. of mixture fed.

3,161,473
METHOD OF MAKING BETA-SILICON CARBIDE FIBERS

Wallace W. Pultz, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 6, 1962, Ser. No. 200,578
4 Claims. (Cl. 23—208)

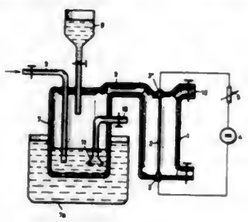


1. A method of making large fibers of beta-silicon carbide comprising the steps of providing a mixture of carbon and silica in a molar ratio of about 1:1 to 3.5:1 in a reaction chamber, simultaneously heating said reaction chamber to a temperature of at least about 1375° C. but not more than about 1550° C. and evacuating said reaction chamber to at least about 300 microns, introducing an atmosphere of nitrogen and hydrogen, wherein the initial pressure of nitrogen is about 50–150 mm. and the combined initial pressure of nitrogen and hydrogen is about 400–700 mm., maintaining said temperature for a time sufficient to attain the desired fiber formation, after which said fibers are cooled to room temperature.

3,161,474
METHOD FOR PRODUCING HYPERPURE SEMICONDUCTING ELEMENTS FROM THEIR HALOGEN COMPOUNDS

Erhard Sirtl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, and Munich, Germany, a German corporation

Filed June 9, 1961, Ser. No. 116,041
Claims priority, application Germany June 21, 1960
8 Claims. (Cl. 23—223.5)

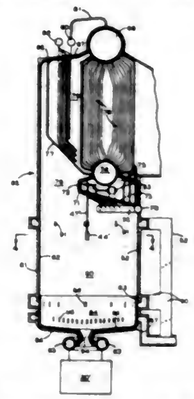


1. In the method of producing a semiconducting element, selected from the group consisting of silicon and germanium, by pyrolytic dissociation and precipitation of a gasified halogen containing compound of the same element, previously purified by partial hydrolysis, the improvement comprising the steps of adding to the semiconductor-halogen containing compound when in liquid condition prior to performing the partial hydrolysis, a metal halide wherein the halogen of the metal halide is selected from those of the group consisting of chlorine, bromine and iodine, and the metal is selected from the group consisting of aluminum and titanium, said metal halide being soluble in said liquid semiconductor-halogen compound and having a pyrolytic dissociation temperature higher than that of the semiconductor-halogen containing compound, said metal halide being more readily hydrolyzable than the semiconductor-halogen containing compound; partially hydrolyzing the mixture and thereafter performing the pyrolytic precipitation of the semiconductor element at a pyrolytic temperature at which no conversion leading to precipitation of metal from said metal halide takes place.

3,161,475
CHEMICAL AND HEAT RECOVERY APPARATUS

Leslie S. Wilcoxson, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed June 22, 1960, Ser. No. 38,055
6 Claims. (Cl. 23—262)

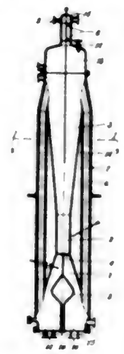


1. Apparatus for the recovery of chemicals and heat from waste liquor containing inorganic chemicals and combustible organic matter comprising fluid cooled walls defining a vertically elongated furnace chamber having a heating gas outlet in the upper portion thereof, means for passing the heating gases leaving said furnace outlet through a convection gas pass to cool said gases by heating a vaporizable fluid, a hearth at the bottom of said furnace chamber on which the inorganic chemicals are smelted, means for removing molten chemicals from said hearth, and means for spraying said liquor into said furnace chamber in a substantially vertical sheet occupying a minor portion of the horizontal cross-section of said furnace and to minimize entrainment of liquor in the gases entering said convection gas pass including a liquor supply pipe projecting into and susbtantially along the vertical axis of said furnace chamber, means defining a spray nozzle above said hearth connected to said liquor supply pipe and having a discharge opening formed to project a vertically elongated horizontally narrow spray of said liquor against a vertically elongated portion of the wall of said furnace, and means for slowly rotating said nozzle about an axis substantially coaxial with the vertical axis of said furnace so as to deposit sprayed liquor in a circumferential band on the furnace wall on each revolution thereof.

3,161,476
APPARATUS FOR THE CATALYTIC OXIDATION, IN LIQUID PHASE, OF ORGANIC MATERIALS

Giacomo Lemetre, Rinaldo Orlandi, and Carlo Alberto Pauri, all of Colleferro, Rome, Italy, assignors to Bombrini Parodi-Delfino Società per Azioni, Rome, Italy, a company of Italy

Filed Oct. 3, 1961, Ser. No. 142,614
Claims priority, application Italy, Oct. 18, 1960, 17,955/60
3 Claims. (Cl. 23—288)



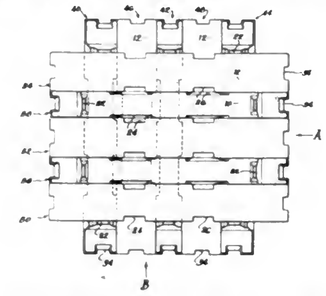
1. Apparatus for effecting liquid phase catalytic oxidation or organic materials comprising a vertical cylindrical casing having a dome-shaped top, a central hollow portion and a bottom, a first hollow frusto-conical member located interiorly of said casing, the maximum-diameter end of said first member being secured to the upper inner portion of said casing, a second hollow frusto-conical member located interiorly of said casing, the maximum-diameter end of said second member being secured to the lower inner portion of said casing, a cylindrical hollow member connecting the other ends of said first and second members, said first member having a height greater than said second member, baffle means located at the upper end of said second member, means for injecting gas into said second member, said means being located interiorly of said second member and having a foraminated substantially pear-shaped upper portion and a tubular lower portion protruding through said bottom, a plurality of liquid recycle means connecting the upper portion of said first frusto-conical member with the lower portion of said second frusto-conical member, said recycle means being located in the interstice formed between said casing and the outer surface of said first and second members and said cylindrical hollow member, said interstice being means for containing liquid whereby the temperature of said recycle means is controlled, input means in said dome-shaped top for charging liquid into said first frusto-conical member, outlet means in said dome-shaped top for exhausting gas from said second frusto-conical member, discharge means in said bottom for exhausting said liquid organic material.

3,161,477
STACKING INGOTS AND STACK FORMED OF SAME

Jacques Chambran, Surariege, France, assignor to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Oct. 15, 1962, Ser. No. 230,565
Claims priority, application France Oct. 18, 1961
13 Claims. (Cl. 29—184)

1. A symmetrical ingot comprising two parallel rectangular upper and lower faces joined by four lateral faces arranged in symmetrical pairs of different dimension, one of the rectangular parallel faces having at least one nipple and the larger of the lateral faces having notches dimensioned to receive the nipple.

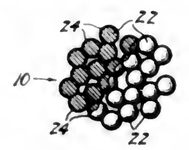


11. A stacked layer of ingots claimed in claim 1 with the ingots in one layer arranged crosswise of the ingots in adjacent layers, with each layer comprising n ingots arranged with the larger face in one direction and $(n-1)$ ingots arranged with the larger face in the opposite direction, the n ingots of consecutive layers being reversed in relation to one another, and with the side faces of larger dimension having $(n-1)$ notches of a depth equal to the taper of the side walls of the ignot.

3,161,478
HEAT RESISTANT POROUS STRUCTURE

Hyman Chessin, Olean, N.Y., assignor to Van Der Horst Corporation of America, Olean, N.Y.

Filed May 29, 1959, Ser. No. 816,955
9 Claims. (Cl. 29—191.2)



1. A high heat-resistant fabrication comprising a porous basic structure consisting of high heat-strength material parts selected from the group consisting of molybdenum and nickel chromium alloys agglomerated to a thickness several times greater than the thickness of any one of said parts interjoined by means of an interstitially deposited metalliferous material selected from the group consisting of tungsten and tungsten alloys bonding said parts together and encapsulating the latter by layers of material of such thicknesses that residual pores of predetermined sizes are provided.

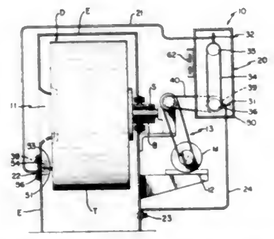
3,161,479
CLOTHES DRIER STATIC REMOVAL APPARATUS

Adolph M. Biderman, Littleton, Colo., assignor to Electro Development Co. Inc., Littleton, Colo., a corporation of Colorado

Filed Aug. 31, 1960, Ser. No. 53,116
2 Claims. (Cl. 34—1)

1. Clothes drying apparatus comprising, in combination: static electricity discharging apparatus for neutralizing unwanted electrostatic attraction between moving surfaces in said apparatus; a rotatable drum for drying clothes including a conducting housing; a first electrode in movable contact with one side of said housing; a second electrode in contact with the other side of said housing; a belt drive for generating a high potential electrostatic charge including a belt, a deposit brush and a pick-up brush both connected to said belt; said first electrode

being in electrical connection with said pick-up brush; a ground terminal connected to said second electrode; a ground connection between said deposit brush and said

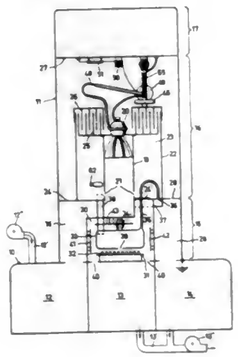


ground terminal to establish a closed circuit for the conduction of the high potential charge through the rotatable drum; and a motor drive unit for simultaneous rotation of said belt drive unit and the drum.

3,161,480
DIELECTRICALLY HEATED DRYING APPARATUS THROUGH WHICH THE ARTICLES TO BE DRIED ARE CONTINUOUSLY ADVANCED

Åke Birch-Iensen, Arlov, Sweden, and Harald Ekman, deceased, late of Goteborg, Sweden, by Gunda Ekman, administratrix, Goteborg, Sweden, assignors to Svenska Sockerfabriks Aktiebolaget, Malmo, Sweden, a company of Sweden

Filed Sept. 8, 1961, Ser. No. 137,482
Claims priority, application Sweden, Sept. 12, 1960, 8,701/60
6 Claims. (Cl. 34—1)

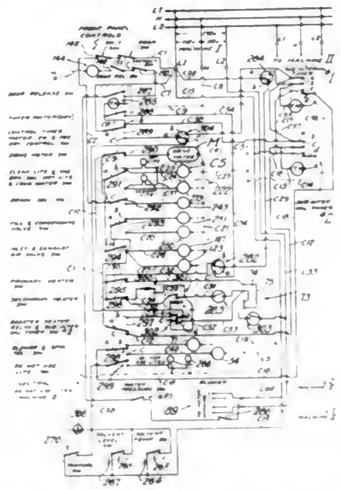


1. A dielectrically heated drying apparatus comprising a high frequency generator, the oscillation circuit of which is formed as a resonator, a box-like electrode having electrically conducting top, bottom and side walls, inductive coupling means providing a firm inductive coupling between said box-like electrode and said oscillating circuit, a conveyor spaced from the bottom wall of said box-like electrode and connected to said generator to form together with said bottom wall an output condenser for the generator, said conveyor being arranged for transporting articles to be dried through said output condenser between the electrodes thereof formed by said bottom wall and said conveyor, and means connected to have the same electric potential as said conveyor and disposed opposite at least one of the side walls of said electrode in spaced relationship thereto to form together with said one side wall a compensation condenser in parallel with said output condenser.

3,161,481
FABRIC DRYING MACHINE WITH TIMER CONTROL

James D. Edwards, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 4, 1961, Ser. No. 142,863
5 Claims. (Cl. 34—45)



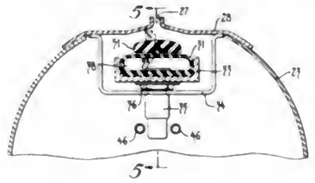
1. In a fabric-drying machine, a container; a basket rotatably mounted in said container; an electric motor for rotating said basket; a first electric circuit for energizing said motor; a heater element in said container and operable to heat the air in said container; means for circulating the heated air in said container to dry the fabric in said basket and including a fan, a clutch, and electromagnetic means energizable to actuate said clutch for coupling said fan to said motor for rotation of said fan by said electric motor; a second electric circuit for energizing said electromagnetic means, and including a first switch; a third electric circuit for energizing said heater element including a thermostat, and a double throw second switch operative by said thermostat at a predetermined temperature to interrupt said third electric circuit; a programming arrangement including an interval control timer having a timer motor, a cam bank advanced by impulses of the timer motor in a step-by-step manner and providing time intervals of the timer, and interval switches operative by said cam bank according to a prescribed sequence, and first and second subinterval timers each having a timer motor and a cam bank advanced by impulses thereof in a step-by-step manner, and subinterval switches operative by said subinterval cam bank to complete circuits periodically energizing and advancing said interval timer motor during a time interval of the interval timer, said subinterval switches being connected in circuit with certain of the interval switches to modify circuits controlled by the interval switches in accordance with the operation of the subinterval switches, said programming arrangement including a fabric-drying sequence in which said interval timer motor is energized to operate interval switches establishing said first, second and third circuits, said interval timer thereafter interrupting its energizing circuit for said interval timer motor while establishing a fourth circuit energizing said first subinterval timer motor to periodically establish the interval timer motor-energizing circuit to advance the interval timer motor during the remaining portion of the drying period; a fifth electric-circuit for energizing said second subinterval timer motor and including said second switch operative to establish said fifth

circuit upon operation of said thermostat to interrupt said third electric circuit, energization of said second subinterval timer motor being effective to open said first switch to interrupt said second circuit for deenergizing said electromagnetic means and to energize said second subinterval timer motor to establish a sixth circuit to energize said interval timer motor to advance the interval timer motor until said thermostat switch is operative, upon the air temperature being below said predetermined air temperature, to interrupt said fifth circuit and to reestablish said second circuit, said subinterval timer circuits being in parallel relation to each other, and said first subinterval timer having its interval timer motor circuit-establishing contacts open during energization of said second subinterval timer motor.

3,161,482
FLUID DISTRIBUTING APPARATUS FOR MATERIAL TREATING

Jean F. Gschwind, Short Hills, and Jose A. Villalobos, New Brunswick, N.J., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 27, 1961, Ser. No. 91,736
7 Claims. (Cl. 34—54)

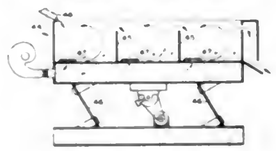


1. A fluid conveying apparatus for treating material comprising a conduit member presenting a continuous slot extending longitudinally of said conduit member, a single elongated closure element for said slot normally disposed in spaced relation to said slot and within said conduit, said conduit member receiving fluid for delivery through said slot, a plurality of actuating means disposed in said conduit and operable on longitudinally spaced portions of said closure element for moving selected portions toward and away from corresponding portions of said slot independently of the movement of adjacent portions of said closure element to vary the delivery of fluid across the longitudinal extent of said slot and a plurality of hydraulic control means disposed at a common location exterior of said conduit member, each of said control means being operatively connected to one of said actuating means.

3,161,483
VIBRATING FLUIDIZED SYSTEMS

John M. Morris, Louisville, Ky., assignor to Rex Chainbelt Inc., a corporation of Wisconsin

Filed Feb. 15, 1960, Ser. No. 8,690
3 Claims. (Cl. 34—57)

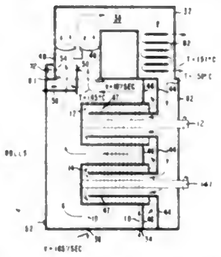


3. Mixing conveyor apparatus comprising, in combination; a conveyor trough to receive material having fluidizable components; means for vibrating said trough such that said material is conveyed along said trough; means for passing an aeriform fluid up through said material at a velocity sufficient to fluidize the vibrated fluidizable material but less than the velocity required to fluidize said fluidizable components in the absence of said vibration, including a conveyor trough which is imperforate and which has slits formed along the sides of said trough to admit said aeriform fluid beneath the material; at least one baffle plate disposed in said conveyor trough and transverse to the direction of travel of said material dividing said conveyor trough into a plurality of compartments; a lower extension gate slidably attached to said baffle adapted to control the conveyed flow of non-fluidizable components along said trough; an upper extension slidably attached to said baffle plate adapted to control the flow of fluidized materials over said baffle plate.

3,161,484
TEMPERATURE CONTROL SYSTEM FOR HEAT TREATMENT OF RUNNING YARN LINES

Eno Bagnoli, Newark, and Sheldon E. Isakoff, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

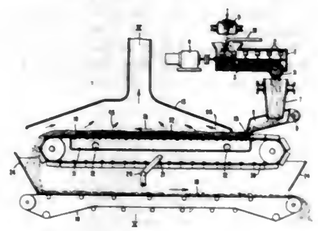
Filed Nov. 16, 1960, Ser. No. 69,651
3 Claims. (Cl. 34—114)



1. An apparatus for the heat treatment of a running yarn line comprising a housing defining a heat treatment zone and a high volumetric flow rate pressurized air flow conduit having an inlet portion and an outlet portion, an air blower means positioned in said air flow conduit capable of circulating a high volume of air per unit time, relative to the volume of said zone and relative to the velocity of said moving yarn line, through said conduit, a variable high output, large heat transfer area, and constant temperature heat exchange unit comprising a vapor condensing heat exchanger positioned in said conduit, for continuously supplying heat to the circulating air, the velocity and displacement rate of said circulating air being of such a magnitude, and the heat output capacity of the heat exchanger being such that the temperatures of the moving air in said zone and of a yarn line moving through said zone are substantially the same and maintained substantially constant during heat transfer from the air to the yarn and heat losses from the zone, said apparatus further comprising a plurality of hollow rotatable roll elements supported in said zone to contact and guide the running yarn line in a tortuous path through said zone, the outlet portion of said air flow conduit connected to a circulating air distributing means which directs the heated air first into the interior of said roll elements to maintain them at a constant temperature substantially that of the heated air, and secondly against and over the outer surfaces of said elements and said yarn line in said zone to maintain the outer surface of the roll elements and the yarn line at substantially the same constant temperature as the heated air, conduit means connecting said zone to the inlet portion of said air flow conduit, means for directing a portion of said heated air through an opening in said housing joining the zone with the atmosphere outside said housing and auxiliary means for concurrently adding an amount of outside air to said inlet portion of said conduit system to

compensate for the portion of the heated air directed through said opening, said heater constructed and arranged to increase its output in response to the presence of the outside air in the conduit to bring the air admitted by the auxiliary means to said constant temperature level of the circulating air and maintain the temperature in said zone substantially at its constant level.

3,161,485
SAND COOLING PLANT
Erwin Bührer, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland, a company of Switzerland
Filed Feb. 28, 1958, Ser. No. 718,273
Claims priority, application Switzerland, Dec. 20, 1957, 54,009; Jan. 30, 1958, 55,276
3 Claims. (Cl. 34—236)



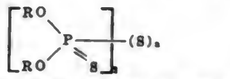
1. In a cooling system for treating a granular mass, in particular for cooling molding sand from a foundry mold; a conveyor provided with horizontally spaced apart sections interconnected with each other, said sections being provided with perforations for the passage of cooling air therethrough for contact with a layer of sand when supported thereupon to facilitate cooling thereof, air supply means located below the surface of said conveyor, so that the latter carries said sand layer and cooling air may be forced through the perforations of said conveyor sections at a pressure in accordance with the thickness of said sand layer while a drop in said pressure takes place during the passage of said cooling air through the perforations of said sections and through said sand layer, whereby the position of said layer remains substantially unaltered during passage of air therethrough, means flexibly and extendably interconnecting said sections, and means for removing air after its passage through said sand layer, the number and size of said perforations being such that the cooling air passes through said perforations under turbulent flow conditions and said perforations cause a pressure drop in said airflow which is about between 5–25% of the total pressure drop occurring during the flow of the air through said perforations and said layer.

3,161,486
ANTISTATIC ADDITIVES AND THEIR PREPARATION
Dilworth T. Rogers, Summit, and John P. McDermott, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 18, 1961, Ser. No. 110,898
17 Claims. (Cl. 44—51)

10. A combustible organic liquid boiling in the range of from 75° to 750° F., said liquid containing a minor amount sufficient to increase the electrical conductivity of said liquid to a value greater than 1×10^{-12} mhos per centimeter of a concentrated colloidal fraction prepared by selecting an antistatic additive which additive comprises a colloidal fraction and a noncolloidal fraction; dialyzing said antistatic additive in order to effect at least partial separation of the noncolloidal fraction; and recovering the concentrated colloidal fraction.

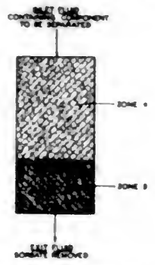
3,161,487
GASOLINE CONTAINING SULFIDE IGNITION CONTROL AGENTS
John J. Giammaria and Edwin M. Nygaard, Woodbury, N.J., assignors to Socony Mobil Oil Company Inc., a corporation of New York
No Drawing. Filed Jan. 6, 1958, Ser. No. 707,108
4 Claims. (Cl. 44—69)

1. A leaded gasoline containing a small amount, sufficient to reduce preignition, of a compound having the formula,



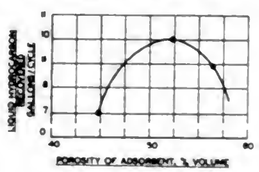
wherein R is a lower alkyl group and n is an integer varying between 1 and 2.

3,161,488
WATER ADSORPTION PROCESS
Sylvander C. Eastwood, Woodbury, and Luther J. Reid, Jr., West Deptford Township, Gloucester County, N.J., and Albert B. Schwartz, Philadelphia, Pa., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Jan. 18, 1961, Ser. No. 83,413
9 Claims. (Cl. 55—30)



1. A method of selectively and economically separating a component from a stream of fluid containing said component comprising first passing said stream into contact with a solid porous adsorbent having a porosity of from about 50 to 75 percent volume and an average pore diameter of from about 30 to 100 angstrom units, and then passing said stream into contact with a solid porous adsorbent having an average pore diameter of from 15 to 25 angstrom units.

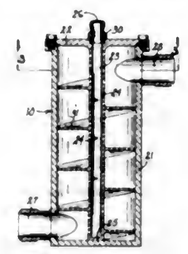
3,161,489
ADSORPTION PROCESS FOR TREATING NATURAL GAS
Francis G. Dwyer, Abington, Pa., Sylvander C. Eastwood, Woodbury, and Luther J. Reid, Jr., West Deptford Township, Gloucester County, N.J., and Albert B. Schwartz, Philadelphia, Pa., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Mar. 8, 1961, Ser. No. 94,349
11 Claims. (Cl. 55—35)



1. An improved method for the separation of water, propane and heavier hydrocarbons from a natural gas stream, this method comprising passing said stream through a zone containing a solid porous inorganic-oxide

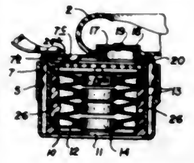
adsorbent having a porosity of from about 46 to 58 percent by volume and an average pore diameter of from about 15 to 40 angstrom units.

3,161,490
GAS-LIQUID SEPARATOR
Edmund F. Dudek, 160 Cedar Hill Road, Milford, Conn.
Filed Nov. 1, 1960, Ser. No. 66,570
10 Claims. (Cl. 55—205)



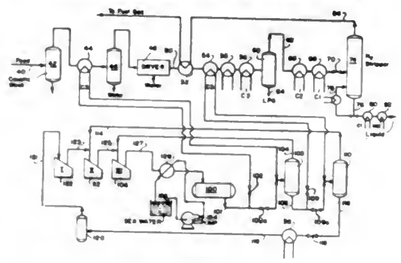
1. A gas-liquid separator comprising means providing a closed chamber having inlet and outlet openings, means defining a continuous helical passage for the liquid from the inlet to the outlet opening, a hollow stem extending along the axis of the helical passage and having openings therein communicating with the passage to admit gas separated from the liquid into said stem, a pump having its high pressure side connected to the inlet opening for forcing liquids into the inlet opening and through the helical passage under pressure and causing the liquid to be subjected to centrifugal forces in passing through the helical passage to separate gas therefrom, said stem being closed at one end thereof and having an opening at the other end thereof venting said stem externally of said chamber, and means on said stem for maintaining the pressure in said stem and said chamber greater than atmospheric when said pump is in operation.

3,161,491
RESPIRATOR FILTER UNIT
Vernon F. Gongoll, Shillington, Guy G. Klinger, Wernersville, and William J. Wiswesser, Reading, Pa., assignors to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Mar. 15, 1961, Ser. No. 95,989
2 Claims. (Cl. 55—502)



1. A respirator filter unit comprising an accordion filter including a base filter ring and a filter disc with according pleats therebetween, a hollow cylindrical casing of transparent plastic material comprising an outer end face immediately adjacent said ring and having a central hole of the order of ¾ inch in diameter in registery with the opening in said ring to provide an air inlet to the interior of said filter, a peripheral sealing ring for forming a seal with the peripheral portion of said filter ring, the opposite end face of said casing being perforated, spacing means for spacing said filter disc from said perforated end, there being no other air inlet openings in the casing, whereby plugging of the central hole in the first mentioned end face will completely seal out atmospheric air, and separating means extending along the inner walls of said casing for separating said pleats.

3,161,492
MOBILE GAS LIQUEFACTION PLATFORM
Percival C. Keith, Peapack, and Andrew D. Korin, Oakland, N.J., and George B. Farkas, Jackson Heights, N.Y., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Aug. 25, 1961, Ser. No. 134,008
5 Claims. (Cl. 62—40)

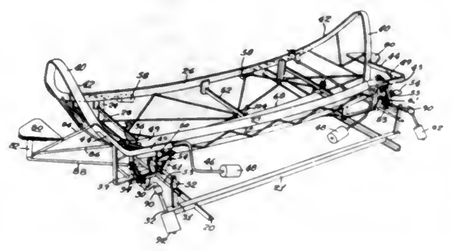


1. A mobile gas liquefaction plant comprising a multilevel buoyant platform adapted to be transported over water to a relatively deep off-shore site and containing a plurality of marine floor engaging caissons, means to depress said caissons against the marine floor at the predetermined site to support said platform from said marine floor substantially above the water surface, said platform having means adapted to liquefy a feed gas including a gas liquefaction assembly mounted on multilevels of said platform, said assembly having a gaseous material inlet conduit adapted to be interconnected to a fixed gas supply at said off-shore site, the gas being liquefied in said liquefaction assembly by an external refrigeration circuit comprising a plural stage compressor, a condenser cooled by said water, expansion means and a first evaporator at a first pressure, the said first evaporator being in heat exchange relation with the gas supply to reduce the temperature thereof, a second evaporator connected to the said refrigeration circuit for expanding refrigerant to a second pressure lower than the first pressure and further cooling the gas supply at a point in the supply line downstream from the first evaporator to liquefy the supply, conduit means returning evaporator refrigerant from the second evaporator to an early stage of compression and evaporated refrigerant from the first evaporator to a last stage of compression.

3,161,493
APPARATUS FOR BENDING GLASS SHEETS TO COMPOUND CURVATURES
James S. Golightly, Fox Chapel, Pittsburgh, Pa., David H. Doehlert, Newark, Del., and Charles R. Davidson, Jr., Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 531,461, Aug. 30, 1955. This application Feb. 24, 1961, Ser. No. 91,476
15 Claims. (Cl. 65—158)

1. A device for shaping glass sheets into compound curvatures including a longitudinal bend of non-uniform curvature and a transverse bend of non-uniform curvature comprising a support structure, a skeletonized mold, having an upper shaping surface, operatively associated with said support structure, said mold comprising an elongated rail fixed to said support structure and having an upper shaping surface, a pair of longitudinally spaced hinges mounted on said support structure and spaced from said upper shaping surface, a first rail member ro-

tatably mounted on said hinges, outboard molding members rotatable about spaced axes angularly disposed relative to the axis defined by said hinges, a fixed rail member at either longitudinal extremity of the first rail member, and means urging said first rail member to rotate from a relatively low position spaced from said elongated rail to a relatively high position closer to said elongated rail.

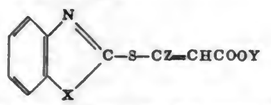


3,161,494
KILLING OF GRASSES AND CONTROL OF CRAB GRASS
Paul F. Warner, Phillips, and Bradford L. Archer and Richard D. Franz, Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Original application Aug. 14, 1959, Ser. No. 833,697, now Patent No. 3,064,025, dated Nov. 13, 1962. Divided and this application Mar. 2, 1962, Ser. No. 176,900
11 Claims. (Cl. 71—2.4)

1. A method for selective control of crab grass in a Bermuda grass lawn which comprises applying thereto in an amount effective to give said control an addition product of a heavy metal cyanide and a compound selected from the group consisting of alkyl thioethers and alkyl dithioethers in which any alkyl group contains 1–6 carbon atoms, said control being accomplished by applying with said addition product both ammonium nitrate and a deoiled aromatic concentrate obtained from effluent of dehydrogenation of hydrocarbons in an amount effective to enhance the action of the addition product.

3,161,495
METHOD OF INHIBITING GROWTH OF UNDESIRABLE PLANTS
Lee A. Miller, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Original application Dec. 28, 1959, Ser. No. 862,095, now Patent No. 3,068,239, dated Dec. 11, 1962. Divided and this application May 28, 1962, Ser. No. 197,855
9 Claims. (Cl. 71—2.5)

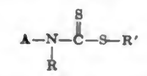
1. The method of treating soil for the purpose of inhibiting the growth of undesired plant growth which comprises the addition to said soil of a herbicidal quantity of a composition comprising as the essential ingredient a compound of the formula



in which X is selected from the class consisting of —S—, —O— and —NH—, in which Y is alkyl of from 1 to 5 carbon atoms, and Z is selected from the class consisting of alkyl of from 1 to 5 carbon atoms, hydrogen and hydrocarbon aryl of from 6 to 10 carbon atoms.

3,161,496
METHOD OF REDUCING POPULATION OF WEEDS AND COMBATTING INSECTS
John J. D'Amico, Nitro, W. Va., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 26, 1958, Ser. No. 737,546
12 Claims. (Cl. 71—2.6)

1. The method of reducing the population of weedy grasses and soil borne insects which comprises applying to soil a concentration toxic to weedy grasses and soil borne insects of a compound of the structure



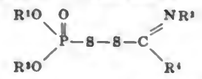
where A is selected from the group consisting of phenyl and halogenated phenyl, R and R′ are selected from the group consisting of lower alkenyl and lower alkyl at least one of R and R′ being allyl.

3,161,497
TOXICANT COMPOSITION COMPRISING CORN GLUTEN AS CARRIER
Ray D. Amburn, Elsie, Mich., assignor to A.L. Processing Company, Keego Harbor, Mich.
No Drawing. Filed Mar. 28, 1963, Ser. No. 268,563
12 Claims. (Cl. 71—2.6)

1. A chemically active composition consisting essentially of a particulate organic carrier and an effective amount of a toxicant on said carrier, said carrier characterized as being substantially corn gluten obtained from comminuted kernels of corn and having a particle size ranging for about 10 to 60 mesh, said toxicant being selected from the group consisting of herbicides, fungicides, insecticides, and mixtures thereof.

3,161,498
HERBICIDAL THIOCARBIMIDATES, PHOSPHOROTHIOCARBIMIDATES, AND PHOSPHOROTHIOIMIDES
Glenn R. Price, South Chicago Heights, and Edward N. Walsh, Chicago Heights, Ill., and Chester L. Dewald, San Jose, and Stassen Y. C. Soong, Mountain View, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 16, 1962, Ser. No. 217,281
15 Claims. (Cl. 71—2.3)

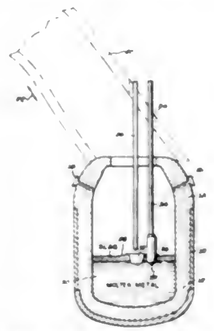
6. A method of controlling plant life which comprises contacting said plant life with an herbicidal amount of at least one compound of the formula



wherein R^1 and R^2 are lower alkyl, R^3 is selected from the class consisting of phenyl and substituted phenyl, and R^4 is selected from the class consisting of lower alkyl, phenyl and substituted phenyl, the substituents for the phenyl radicals being selected from the group consisting of halo- and alkoxy-.

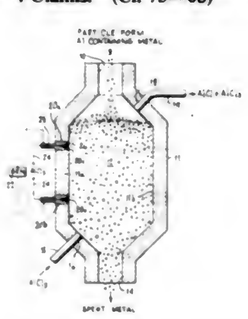
3,161,499
METALLURGICAL PROCESS CONTROL
James Ward Percy, Pittsburgh, Pa. (55 Wingra Ave., Rutherford, N.J.)
Original application Oct. 12, 1960, Ser. No. 62,255, now Patent No. 3,080,755, dated Mar. 12, 1963. Divided and this application July 9, 1962, Ser. No. 208,201
1 Claim. (Cl. 75—60)

In the manufacture of steel, the method for controlling the carbon content of a molten steel bath which comprises the steps of blowing oxygen onto the surface of the molten bath to burn out impurities and reduce the carbon content, immersing a temperature measuring device into the molten bath at a point removed from the area onto which oxygen is blown, continuously measuring the temperature of the molten bath during the time that the oxygen is blown thereon, the temperature be-



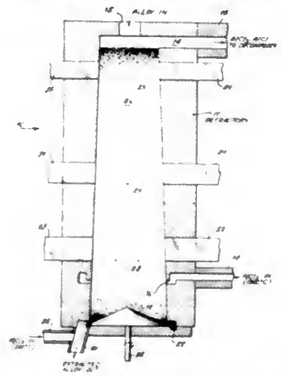
ing measured at said point removed from the area onto which oxygen is blown, and stopping the oxygen blow when the instantaneous actual measured temperature indicates that the carbon content has fallen to the desired level.

3,161,500
PROTECTION OF GRAPHITE SURFACES FROM ATTACK BY ALUMINUM MONOHALIDE
Frederick William Southam, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Aug. 4, 1961, Ser. No. 129,348
4 Claims. (Cl. 75—68)



1. In a method wherein a mass of particle-form aluminum-containing metal is disposed within a vertically extending converter, said mass of particle-form aluminum-containing metal moving downwardly within said converter in direct countercurrent contact with an upwardly flowing stream of gaseous aluminum trihalide and wherein graphite electrodes are provided in the wall of said converter in contact with said mass of particle-form aluminum-containing metal for the supply of electrical current to said mass of particle-form metal to heat same so as to bring about reaction between the aluminum in said metal and the gaseous aluminum trihalide with the resultant formation of gaseous aluminum monohalide and wherein the resulting formed gaseous aluminum monohalide tends to contact the exposed surfaces of said graphite electrodes within said converter with the resultant deterioration of the surface of said graphite electrodes due to the formation of aluminum carbide thereon, the improvement in combination therewith which comprises preventing the deterioration of the exposed surfaces of said graphite electrodes within said converter by recessing said electrodes in the wall of said converter to provide recessed, exposed surfaces of said graphite electrodes within said converter and supplying a sufficient flow of gaseous aluminum trihalide to the recessed, exposed surfaces of said graphite electrodes so as to maintain a film of gaseous aluminum trihalide on the recessed, exposed surfaces of said graphite electrodes so as to substantially exclude said gaseous aluminum monohalide from contacting the exposed graphite surfaces of said recessed electrodes.

3,161,501
METHOD AND APPARATUS FOR THE REFINING OF ALUMINUM
Frederick William Southam, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Jan. 2, 1962, Ser. No. 163,625
8 Claims. (Cl. 75—68)



1. A method which comprises introducing particle-form aluminum-containing alloy into the top of a substantially vertical converter and withdrawing spent particle-form alloy from the bottom of said converter to provide a compact, downwardly moving mass of particle-form aluminum-containing alloy within said converter, introducing gaseous aluminum trihalide into the bottom of said converter, withdrawing a gaseous admixture comprising aluminum monohalide and aluminum trihalide from the top of said converter and, during the aforesaid aluminum trihalide contacting operation carried out at an elevated temperature of at least approximately 1200 degrees centigrade whereby reaction is effected between the aluminum in said aluminum-containing alloy and the gaseous aluminum trihalide to yield gaseous aluminum monohalide, causing electrical current to flow through the mass of particle-form aluminum alloy within said converter to provide heat to yield said elevated temperature such that electrical current flows through the upper portion of said mass of alloy within said converter at a higher rate than flows through the lower portion of said mass of alloy within said converter to maintain said upper portion of said mass of alloy at a temperature in the range 5–75 degrees centigrade higher than the temperature of said lower portion of said mass of alloy.

3,161,502
ALUMINUM BASE ALLOY CASTING
Harold Y. Hunsicker, New Kensington, Pa., and Robert C. Lemon, Cleveland, Ohio, assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,866
9 Claims. (Cl. 75—143)

1. A casting composed of an aluminum base alloy consisting of 0.5 to 6% copper, 1.0 to 12% silicon, 0.2 to

3% tin, 0.2 to 2% lead, 0.2 to 5% cadmium and the balance aluminum and impurities, the total amount of lead plus cadmium being not less than the tin content, said casting being characterized by higher anti-friction properties and substantial freedom from hot shortness than the same composition devoid of said cadmium and lead components.

3,161,503
CORROSION RESISTANT ALLOY

Gilbert A. Lenning, Las Vegas, and Harry W. Rosenberg, Henderson, Nev., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 27, 1961, Ser. No. 141,003
2 Claims. (Cl. 75—174)

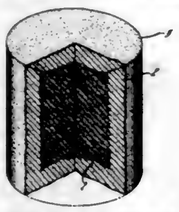
1. An alloy formed by melting its constituents characterized by resistance to corrosion by HCl indicated by a corrosion rate of less than 10 mils per year in boiling 20% HCl, 48 hour test, and by thermal stability indicated by substantial retention of ductility after exposure to temperatures up to about 800° F. consisting essentially of:

(*a*) about 40% by weight tantalum,
(*b*) about 10% by weight columbium,
(*c*) about 1.5% by weight aluminum, and
(*d*) about 8.5% by weight vanadium,
(*e*) balance titanium.

3,161,504
RADIATION SOURCE AND METHOD FOR MAKING SAME

Robert E. Black, Utica, and Farno L. Green, Bloomfield Hills, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 31, 1960, Ser. No. 19,009
2 Claims. (Cl. 75—206)



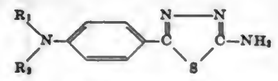
1. A method for making a photon radiation source comprising the steps of coating the surfaces of a die opening with a tacky organic material, applying to the tacky surfaces a powdered metal such that a layer of the powdered metal is formed on said surfaces, said metal being selected from the group consisting of aluminum, columbium and aluminum-columbium alloys, placing in the remaining portions of the die opening a powdered mixture consisting essentially of a rare earth material and said metal, adding a powdered layer of said metal over said mixture and then pressing to form a composite powder compact having surface portions of said metal and a center portion of said mixture and heating said compact to cause sintering thereof.

3,161,505
MATERIAL FOR ELECTROPHOTOGRAPHIC PURPOSES

Martha Tomanek née Kunitzer, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,277
Claims priority, application Germany Jan. 28, 1961
20 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support having a photoelectrically conductive insulating layer thereon, the latter comprising a thiodiazole having the formula



in which R_1 and R_2 are selected from the group consisting of hydrogen and straight and branched chain alkyl groups in which the longest carbon chain contains up to six carbon atoms.

3,161,506
PHOTOGRAPHIC MULTICOLOR DIFFUSION TRANSFER PROCESS USING DYE DEVELOPERS

Richard W. Becker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1961, Ser. No. 98,292
10 Claims. (Cl. 96—3)

1. A color photographic diffusion transfer process which comprises exposing to a subject a photographic element comprising a support having superposed thereon a plurality of light-sensitive hydrophilic organic colloid-silver halide emulsion layers optically sensitized to different regions of the spectrum, at least one of said emulsion layers containing an azaindene selected from the group consisting of a hydroxy triazaindene, an amino triazaindene, a hydroxy tetrazaindene, an amino tetrazaindene, a hydroxy pentazaindene and an amino pentazaindene, and a dye developer that is both a silver halide developing agent and a dye contiguous to the silver halide of each of said emulsion layers, pressing said photographic element into superposed contact with a mordanted reception layer with a layer of alkaline solution therebetween and thereby developing silver halide in regions of exposure and rendering the said dye developers nondiffusible in regions of exposure and development, and allowing the said dye developers in unexposed regions to transfer imagewise by diffusion and in register to said reception layer.

3,161,507
PROCESS FOR TREATING PHOTOSENSITIVE MATERIAL

Herman E. Erikson, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Original application Oct. 21, 1958, Ser. No. 768,662, now Patent No. 2,966,103, dated Dec. 27, 1960. Divided and this application Mar. 7, 1960, Ser. No. 13,122
8 Claims. (Cl. 96—27)

1. The method of exposing and treating a photosensitive surface of a first strip of photographic material, said method comprising the steps of: disposing said first strip between a first and a second storage means along a first path which includes an exposure position at which a portion of said photosensitive surface may be photoexposed, disposing a second strip in superposed relation to said photosensitive surface substantially along at least a portion of said first path including said exposure position, moving said first strip along said first path from said first toward said second storage means whereby a succession of portions of said photosensitive surface are sequentially disposed at said exposure position, retaining said second strip in a stationary position relative to said exposure position during movement of said first strip from said first toward said second storage means, photoexposing said succession of portions of said photosensitive surface through the portion of said second strip adjacent said exposure position, following photoexposure moving said first strip along said first path from said second toward said first storage means, moving said second strip along said first path in superposition with said photosensitive surface during movement of said first strip from said second toward said first storage means, and distributing a layer of processing fluid between said first and second strips during the last-named movement for effecting processing of said photosensitive surface.

3,161,508
PROCESS OF LITHOGRAPHIC PRINTING

Martin Hepher, Anthony Marriage, Alan Maurice Vincent, and Leslie Alfred Williams, all of Harrow, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

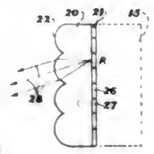
No Drawing. Filed Aug. 26, 1959, Ser. No. 836,077
Claims priority, application Great Britain Aug. 29, 1958
11 Claims. (Cl. 96—29)

1. A lithographic printing process which comprises forming on a support containing a silver precipitating agent a silver image from the diffusing silver halide of an exposed and developed silver halide emulsion layer in contact with the support and then directly bathing the silver image so formed in a solution of a compound of the class consisting of oleophilic organic compounds containing a thiol group, oleopnilic organic compounds generating a thiol group, and selenium analogues of said compounds, inking the silver image with greasy printing ink and printing therefrom in a lithographic printing press.

3,161,509
LINE STEREO COLOR PICTURES

Donald J. Howe and Richard E. Maurer, Rochester, N.Y., and James W. Henry, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 24, 1962, Ser. No. 189,748
13 Claims. (Cl. 96—40)



5. The method of producing a color stereo print which comprises printing yellow, magenta and cyan separation halftone prints in subject register on a sheet of paper, then printing a black separation horizontal line, line halftone, print in similar subject register therewith, the black print consisting of narrow vertical sections having in each section variations in line width from left to right of the section corresponding to right and left eye stereo distinctions, then coating the surfaces with a transparent plastic and producing on the front of the coating, a light azimuth defining viewing element in front of each vertical section of the black print.

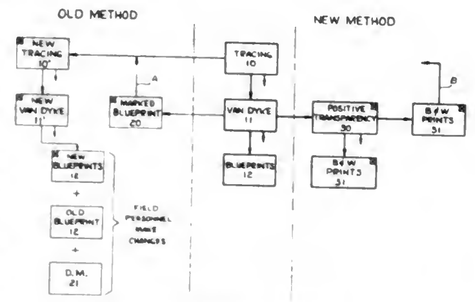
8. A product comprising:

a support sheet,
a halftone substantially natural color print of at least three color separations on a surface of said sheet,
a transparent layer overlying said print, with light azimuth defining viewing elements vertically oriented on the front surface of said layer,
said halftone print containing the darkest of the color separations approximately horizontal halftone lines, said lines containing behind individual viewing elements variations in width corresponding to binocular stereo distinctions, and
said halftone print containing in the color separations other than said darkest one, halftones representing one viewpoint azimuth only.

3,161,510
VISUAL AID TECHNIQUE OF PRESENTING DRAWING CHANGES

Enart Gosmann, Hinsdale, Ill., assignor to Western Electric Company, Incorporated, a corporation of New York

Filed Oct. 26, 1961, Ser. No. 147,951
2 Claims. (Cl. 96—43)



1. The method of presenting drawing changes, which method comprises the steps of:

preparing a negative print from the original drawing;
preparing a positive transparency from a single exposure of a transparentized blueprint paper to the negative print, the transparentized blueprint paper being pretreated on both sides thereof with a relatively dilute solution of blueprint coating such that the image on the negative print will be reproduced on both sides of the positive transparency;
drawing only on one side of the positive transparency with a pencil in such a manner as to provide markings clearly indicating the changes in the image reproduced on the positive transparency; and
producing positive prints from the marked positive transparency;
the relative opacity of the image reproduced on the positive transparency and the pencil markings added thereto being such that upon production of the positive print markings representative of the original drawing reproduce faintly but distinctly, while markings representative of the added markings reproduce much darker and thus stand out as to indicate at a glance the changes that were made.

3,161,511
METHACRYLONITRILE VEHICLE FOR VESICULAR PHOTOGRAPHY AND METHOD OF USING SAME

Rienzi B. Parker, Jr., Weston, and Brian V. Mokler, Cambridge, Mass., assignors, by mesne assignments, to Kalvar Corporation, New Orleans, La., a corporation of Louisiana

No Drawing. Filed May 3, 1962, Ser. No. 192,067
2 Claims. (Cl. 96—49)

2. A method of preparing vesicular images comprising exposing to light a photographic material capable of furnishing a record solely in the form of a distribution pattern of radiation scattering discontinuities formed within an otherwise substantially homogeneous vehicle, said material being in the form of a dry, water-resistant non-hygroscopic film, the continuous phase of said film being essentially a synthetic, water-insoluble, non-hygroscopic, non-water swelling, highly linear thermoplastic homopolymer of methacrylonitrile, and a light decomposable solid agent substantially uniformly dispersed therein as the sole essential decomposable agent, said decomposable agent itself being non-reactive to said vehicle and upon

exposure to light decomposing into products which are chemically non-reactive to said vehicle and which solely upon warming are volatile to form said radiation scattering discontinuities only in the light struck areas in said polymer to thereby furnish said record, and thereafter heating said photographic material to develop a vesicular image.

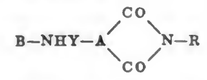
3,161,512

COLOUR COUPLERS AND THEIR PRODUCTION AND USE IN COLOUR PHOTOGRAPHY

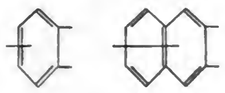
Colin William Greenhalgh, Swinton, Manchester, England, assignor to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,081
Claims priority, application Great Britain, Dec. 23, 1959, 43,668/59
3 Claims. (Cl. 96—55)

3. A photographic colour developer comprising in alkaline solution a substituted p-phenylene diamine and a colour coupler of the formula:



where A is a trivalent radical selected from the class consisting of



and



where *n* is selected from 1 and 2, B—NH— is the residue of a colour coupler compound of the formula B—NH_2 selected from the class consisting of such compounds wherein B contains a —CO—CH_2—CO— group and the compound gives a yellow dyestuff on colour development with substituted p-phenylene diamines, such compounds wherein B contains a cyanacetyl group and the compound gives a magenta dyestuff on said colour development, such compounds wherein B contains a pyrazolone ring and the compound gives a magenta dyestuff on said colour development, and such compounds wherein B is a phenolic residue and the compound gives a cyan image on said colour development, and such compounds wherein B is a naphtholic residue and the compound gives a cyan image on said colour development, Y is selected from the class consisting of the groupings —CO—, —SO_2—, —CONH—, —$COCH_2$— and —CSNH—, and R is selected from the class consisting of hydrogen and hydrocarbon groups.

3,161,513

PHOTOGRAPHIC DEVELOPER COMPOSITIONS CONTAINING AN ANTISTAIN AGENT

Richard W. Henn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 22, 1961, Ser. No. 97,421
8 Claims. (Cl. 96—61)

1. A photographic developing solution containing an organic silver halide photographic developer selected from the group consisting of hydroquinone, paramethylaminophenol sulfate, paraphenylenediamine, p-aminophenol, 2,4-diaminophenol, pyrogallol and a 1-phenyl - 3 - pyrazolidone, a silver halide solvent in sufficient amount to exert considerable solvent action for silver halide and from about 0.02 to about 5.0 grams of 2,4-dihydroxybenzophenone per liter of the developing solution.

3,161,514

NONSTAINING PHOTOGRAPHIC DEVELOPERS

Richard W. Henn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,622
7 Claims. (Cl. 96—66)

1. A photographic developing solution containing
(*a*) a silver halide photographic developer selected from the group consisting of hydroquinone, paramethylaminophenol sulfate, paraphenylenediamine, p-aminophenyl, 2,4-diaminophenol, pyrogallol and a 1-phenyl-3-pyrazolidone;
(*b*) an alkaline material;
(*c*) a silver halide solvent in an amount that is has a minimum solvent action equal to about 75 grams per liter of sodium sulfite; and
(*d*) from about 0.05 to about 10.0 grams of chlororesorcinol per liter of the developing solution.

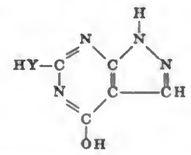
3,161,515

STABILIZED LIGHT-SENSITIVE SILVER HALIDE EMULSIONS

John A. Welsh, Binghampton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,376
5 Claims. (Cl. 96—66)

1. A light-sensitive silver halide emulsion containing in a stabilizing and antifogging amount, a compound of the following formula:



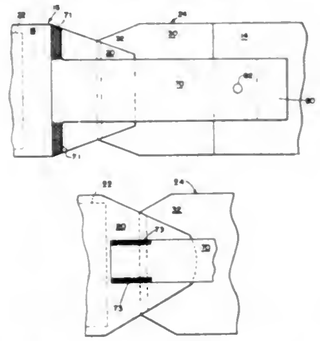
wherein Y is a member of the group consisting of oxygen and sulfur.

3,161,516

PHOTOGRAPHIC FILM ASSEMBLAGE

Joel A. Hamilton, West Medway, and Philip D. Bartlett, Worcester, Mass.; said Hamilton assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 26, 1961, Ser. No. 112,940
8 Claims. (Cl. 96—67)



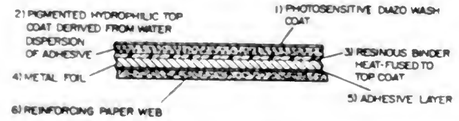
1. A photographic film unit comprising, in combination:
a first sheet;
a light-sensitive sheet adapted to be exposed and then processed in conjunction with said first sheet by movement in superposition with said first sheet between a pair of juxtaposed pressure-applying members;
a first leader comprising a sheet coupled with said first and light-sensitive sheets for drawing said first and light-sensitive sheets in superposition between said pressure-applying members, and having a leading end section adapted to be advanced between said juxtaposed members to a position at which said section can be engaged for moving said sheets; and
an elongated second leader coupled at its trailing end with said first leader and adapted to be drawn to one side of said juxtaposed members for advancing said first leader between said juxtaposed members, at least the major portion of said second leader being narrower than said first leader, said second leader having a strength in tension which is substantially uniform throughout the length of said second leader and being coupled near said trailing end with said first leader at a position thereon spaced from the leading edge of said first leader toward the opposite end thereof;
said second leader including laterally spaced portions at said trailing end at which said second leader is adhered to said first leader by an adhesive bond which is at least as strong in shear as said second leader is in tension, said portions of said second leader being adhered to said first leader at areas of said leaders having facing edges which are linear and extend lengthwise of said first leader, the latter having a strength in shear which is less than the tensile strength of said adhesive bond and the shear strength of said first leader so that said second leader tends to tear lengthwise along said facing edges of said areas in response to the application of tension to said first leader in a direction divergent from the direction of movement of said first leader between said pressure-applying members.

3,161,517

PRESENSITIZED LITHOPLATE WITH COATED METAL BASE AND METHOD OF PREPARING SAME

Towers Doggett, Westbrook, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed May 4, 1961, Ser. No. 107,657
5 Claims. (Cl. 96—75)



1. A method of preparing a photolithographic printing plate comprising the steps of depositing a thin anchor coating of a solvent solution of a thermoplastic carboxylated polymer adhesive onto a supporting substrate of an impervious flexible metal film; drying said thin anchor coating to remove solvent therefrom and to secure adhesion of said adhesive to said metal film; depositing a continuous and uniform hydrophilic coating of a water dispersion of a water dispersible hydrophilic adhesive and mineral pigment that upon drying yields a hydrophilic, water insoluble coating with a matte finish, the weight ratio of pigment to adhesive therein being in the range of 1 to 4 and said hydrophilic adhesive being selected from the group consisting of cellulose ethers, polyvinyl alcohols, and starches; drying said hydrophilic coating to remove the water from said water dispersion; thereafter heat sealing the thus dried hydrophilic coating to said anchor coating; and sensitizing said hydrophilic coating with a wash solution of a photosensitive organic diazo compound.

2. The product of the process of claim 1.

3,161,518

DIAZO SENSITIZED LITHOGRAPHIC PLATE COMPRISING A HYDROPHILIC AMINE FORMALDEHYDE INTERMEDIATE LAYER

Elmer F. Deal, West Covina, and Isadore M. Richlin, San Gabriel, Calif., assignors to Lithoplate, Inc., a corporation of California

No Drawing. Filed May 8, 1962, Ser. No. 193,338
19 Claims. (Cl. 96—75)

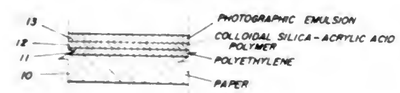
4. In a sensitized lithographic plate having a support member with a metal surface, an overlying layer of a diazo compound reactive to light to define printing and non-printing areas and an intermediate coat between said support member and diazo and directly above said support member, the improvement characterized by providing as said coat a resin consisting essentially of a modified melamine-formaldehyde resin condensation product polymerized to a water-insoluble hydrophilic state, said resin being selected from the group consisting of a methylated methylol melamine, an ethylated methylol melamine and a polyalkylenepolyamine-melamine-formaldehyde.

3,161,519

NON-PIGMENTED WHITE COATING

Michael J. Alsup, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 14, 1961, Ser. No. 116,952
8 Claims. (Cl. 96—85)



1. A polyethylene-coated photographic paper having thereon a coating composition comprising, based on the dry weight of solids on the composition 95–99.6% by weight of colloidal silica the particles of which are about 5–100 millimicrons in size and 0.4–5% by weight of a polymer selected from the class consisting of homopolyacrylic acid and a copolymer of at least one acid selected from the group consisting of acrylic acid and methacrylic acid with further ethylenic unsaturated monomer.

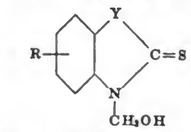
3,161,520

FOG REDUCTION IN PHOTOGRAPHIC SILVER HALIDE EMULSIONS

Emil B. Rauch, Port Dickinson, and Fritz Dersch, Binghampton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 11, 1962, Ser. No. 243,745
15 Claims. (Cl. 96—109)

1. A light-sensitive silver halide emulsion containing as an antifoggant a compound selected from the group of those having the following general chemical formula:

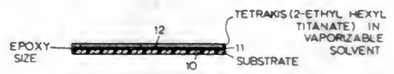


wherein R is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and carboxy; and Y is a member selected from the group consisting of oxygen and sulfur.

3,161,521
METHOD OF MAKING LITHOGRAPHIC PRINTING PLATES

Bernard Cohn, Elmsford, Harry Lopetz, Katonah, and Jitendra N. Shah, Mount Vernon, N.Y., assignors to Technilith Inc., Mount Vernon, N.Y., a corporation of New York

Filed Mar. 30, 1962, Ser. No. 183,817
6 Claims. (Cl. 96—75)

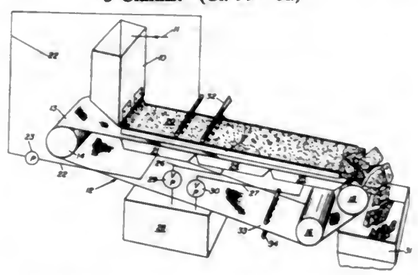


4. A printing plate comprising a flexible substrate, a hydrophilic layer of hydrolyzed tetrakis(2-ethylhexyl)-titanate on said substrate and a photosensitive layer of a polymeric diazo compound overlying said hydrophilic layer.

3,161,522
CONTINUOUS LAUTERING OF BREWERS' WORT

John Compton, 8 Jarvis St., R.R. 4, London, Ontario, Canada

Filed Oct. 4, 1961, Ser. No. 142,877
Claims priority, application Canada, Dec. 30, 1960, 814,019
3 Claims. (Cl. 99—52)



1. A continuous lautering process which comprises the steps of forming into a continuous moving layer a slurry of grains and wort liquid from a mashing operation in a brewing process, the speed of the continuous layer and the rate of feed of mash being regulated to form a filtering bed of grains of substantially uniform depth, said bed being between about 1 inch and 12 inches in depth, moving said filtering bed successively through a first filtration zone and a second filtration zone, collecting by gravity a filtrate which has passed downwardly through said bed of grains in said first zone, applying suction to the underside of said bed to collect a filtrate of clear wort liquid in said second zone and spraying the filtering bed with water to sparge out residual sugar values in said second zone.

3,161,523
METHOD OF PREPARING AN INCOMPLETELY COOKED SLICED LOAF OF BREAD

Lewis John Ort, La Vale, Md., assignor to Ort Brothers Bakery, Inc., Cumberland, Md., a corporation of Maryland

Filed Oct. 11, 1961, Ser. No. 144,393
5 Claims. (Cl. 99—90)

1. The method of preparing an incompletely cooked sliced loaf of bread intended to be later converted to toast of improved flavor which comprises: mixing a yeast bread dough; dividing said dough into loaf portions and immediately placing same in pans; proofing said dough into voluminous loaves; heating said proofed loaves to semi-cook the same until the starch is gelatinized; discontinuing heating before external browning of the dough and before said dough becomes completely cooked; immediately removing said loaves from the pans and allowing said loaves to cool naturally at room temperature for a sufficient period of time whereby the exterior thereof becomes sufficiently firm to withstand knife pressure without collapsing; and slicing said loaves into toast-sized pieces thereby exposing for subsequent toasting a large surface of semi-cooked dough which has not previously been exposed to browning factors and which produces when exposed to browning factors in a subsequent toasting process a flavor and appearance different from those of conventional toast.

3,161,524
CULINARY MIX CONTAINING A POLYGALACTOMANNAN

Joseph W. Opie and Ernest W. Johnson, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

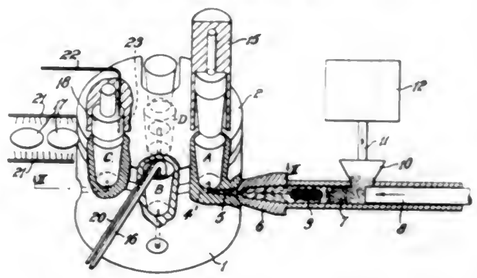
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,865
13 Claims. (Cl. 99—94)

1. A culinary mix useful for preparing baked goods comprising flour, sugar, leavening agent, liquid shortening, an emulsifier and a sufficient amount of a polygalactomannan to improve the volume and texture of the baked goods prepared from the culinary mix.

3,161,525
MANUFACTURE AND FILLING OF CONTAINERS

Arie Hey, Julianalaan 59, Etten, North Brabant, Netherlands

Filed Nov. 10, 1960, Ser. No. 68,564
Claims priority, application Great Britain Nov. 12, 1959
7 Claims. (Cl. 99—171)



1. A method of manufacturing closed filled containers which comprises introducing a core member into a mold cavity to define a space therebetween corresponding to the shape of a container having an open end, injecting a hot molten thermoplastic resin into said space, cooling said resin to harden it and form a container, removing said core, introducing a filling substance into said container while the container is still in the mold, closing the container with a separate cover while the container is still in the mold, and discharging the closed, filled container from the mold.

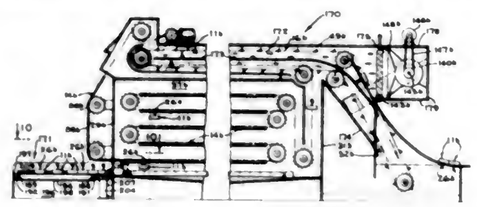
3,161,526
METHOD OF AND APPARATUS FOR PROCESSING FISH

Samuel A. Mencacci, St. Nicolas-Waes, Belgium, assignor to International Machinery Corporation S.A., St. Nicolas-Waes, Belgium, a corporation of Belgium

Filed Mar. 27, 1961, Ser. No. 98,423
23 Claims. (Cl. 99—188)

11. In an apparatus for cooking fish adapted to be packed in open containers and constrained in the containers by grill type carriers having supporting hooks thereon comprising, a pair of parallel conveyor chains mounted for movement through a cooker, a plurality of hook engaging pins secured to each chain at evenly spaced intervals therealong, a vertically movable table disposed below said chains, a feed conveyor disposed in position to advance carriers onto said table when said table is in its lowermost position, means for vertically reciprocating said table and the carrier thereon in timed relation with the movement of said chains for locating the carrier supporting hooks in position to be engaged by predetermined ones of said pins, and drive means connected to said chains and to said feed conveyor to drive the same.

20. A method of cooking fish packed in open containers and constrained in the containers by a grill type



carrier which comprises the steps of passing the containers of fish in an inverted position through a cooking medium, advancing the containers of fish from the cooking medium into and through a dehydrating medium, maintaining the containers of fish in an inverted position during approximately the first half of their travel through the dehydrating medium, turning the containers of fish to an upright position while in the dehydrating medium, advancing the containers of fish in an upright position during the remainder of their travel through the dehydrating medium, and conducting the containers of fish out of said dehydrating medium.

3,161,527
TREATMENT OF EGG ALBUMEN

Charles F. Smith, Prospect Heights, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 26, 1961, Ser. No. 126,898
3 Claims. (Cl. 99—210)

1. A method for reducing the level of viable bacteria in dried egg albumen, comprising the steps of fermenting liquid egg albumen to minimize its sugar content, drying the albumen to a moisture level of less than about 7 percent, and subjecting the dried albumen to temperatures from about 160° F. to about 210° F. for about 8 hours at the lower temperature and about one hour at the higher temperature.

3,161,528
SEMICRYSTALLINE CERAMIC BODY AND METHOD OF MAKING IT

Richard A. Eppler, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 3, 1962, Ser. No. 228,036
3 Claims. (Cl. 106—39)

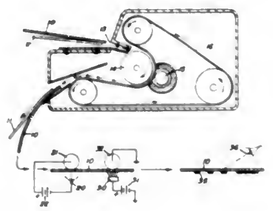
1. A semicrystalline ceramic body having a coefficient of thermal expansion at 0–300° C. ranging from about $19–80\times10^{-7}$/° C. and a specific gravity of 99–101% of that of the glass body of identical composition consisting essentially of a multiplicity of heterogeneously-nucleated inorganic crystals randomly dispersed in a glassy matrix, said crystals being predominantly lithium metasilicate, silica O, and beta-spodumene solid solution and being formed by crystallization in situ about submicroscopic nuclei of a photosensitive metal from a glass body consisting essentially, by weight, of 7–11% Li_2O, 1–2% Na_2O, 3–5% K_2O, 3–4% ZnO, 12–16% Al_2O_3, 62–74% SiO_2, and the indicated proportion of at least one photosensitive metal selected from the group consisting of 0.001–0.03% gold computed as Au, 0.001–0.3% silver computed as AgCl, and 0.001–1% copper computed as Cu_2O, substantially all of said crystals being smaller than 30 microns in diameter and comprising at least 30% by weight of said semi-crystalline ceramic body, said glassy matrix consisting essentially of the uncrystallized portion of the glass remaining after the development of the crystals.

2. A method of manufacturing a semicrystalline ceramic body having a coefficient of thermal expansion at 0–300° C. ranging from about $19–80\times10^{-7}$/° C. and a specific gravity of 99–101% of that of the glass body of identical composition which comprises providing an article of photothermally opacifiable glass consisting essentially, by weight, of 7–11% Li_2O, 1–2% Na_2O, 3–5% K_2O, 3–4% ZnO, 12–16% Al_2O_3, 62–74% SiO_2, and the indicated proportion of at least one photosensitive metal selected from the group consisting of 0.001–0.03% gold computed as Au, 0.001–0.3% silver computed as AgCl, and 0.001–1% copper computed as Cu_2O, exposing the article to short-wave radiations, heating the exposed article to a temperature of at least about 560° C., but not more than about 620° C., for at least 2 minutes to initiate the nucleation of submicroscopic nuclei of photosensitive metal, raising the temperature of said article to at least about 625° C., but not more than about 670° C., for at least 5 minutes to opacify the glass by forming therein siliceous crystallites which are predominantly lithium metasilicate in an amount adequate to support the article against deformation upon heating to a temperature above the softening point of the original glass, raising the temperature of said article to at least about 750° C., but not more than about 850° C., for a time sufficient to attain the desired crystallization consisting predominantly of lithium metasilicate, silica O, and beta-spodumene solid solution, and thereafter cooling said article to room temperature.

3,161,529
THERMOXEROGRAPHY

Henry G. Curme, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 24, 1961, Ser. No. 98,057
9 Claims. (Cl. 117—17.5)

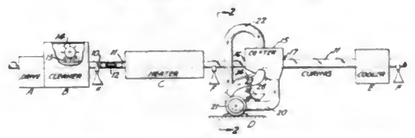


1. The process of recording an energy pattern which comprises impinging said energy pattern on a sheet of material which increases in electric charge storing ability when heated by said energy, then uniformly applying electrostatic charge to the surface of said sheet which charge accumulates more in the areas heated by said energy than in the non-heated areas and xerographically toning said surface while a substantially greater charge remains on the heated areas than on the non-heated areas, whereby toner is deposited in an imagewise distribution on said surface.

3,161,530
COATED PIPE AND PROCESS

Rupert F. Strobel, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Aug. 10, 1959, Ser. No. 832,553
6 Claims. (Cl. 117—18)

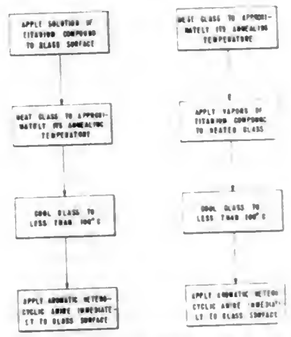


1. A continuous process of coating metal pipe with an infusible resin coating to protect the pipe against corrosion, the process being one wherein the pipe is coated by passing it horizontally through an enveloping mist of a pulverulent temporarily-thermosoftenable organic resin material which rapidly thermosets to an infusible state, and comprising continuously moving a pre-cleaned and pre-heated pipe horizontally through said mist of pulverulent material at a rate of movement sufficient to allow particles of said pulverulent material to strike and adhere upon the entire circumference of the outer surface of said pipe and coalesce thereupon to form an essentially uniformly thick pinhole-free coating which autogenously thermosets in situ to an infusible state using residual heat from said underlying pipe, said pipe being left free of contact in the portion thereof exiting from said mist until the coating thereon is substantially thermoset to an infusible state, the pre-heat temperature of said pipe being above the lowest temperature at which said pulverulent material becomes infusible and up to the temperature at which decomposition of said pulverulent material occurs on contact with said heated pipe, said pulverulent material comprising a room-temperature-solid epoxy resin having oxirane oxygen groups, a latent heat-activatable epoxy-reactive hardener for said epoxy resin, and a curing accelerator for the reaction between said epoxy resin and hardener.

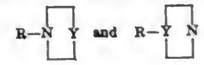
3,161,531
PROCESS FOR INCREASING THE SCRATCH RESISTANCE OF GLASS

Robert Harold Dettre, Brandywine Hundred, and Jerry Allen Nelson, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,417
3 Claims. (Cl. 117—62)



1. In a process for increasing the scratch resistance of glass by applying an organo-titanium compound to the surface of the glass, which is in non-fibrous form, heating the glass, and then allowing the glass to stand in air for a period of not less than 20 minutes to develop the desired scratch resistance, the improvement which comprises eliminating the standing period required to develop scratch resistance by coating the surface of the glass, immediately after the heating step and at a temperature between room temperature and 100° C., with a nitrogenous compound selected from the group consisting of salts and quaternary derivatives of heterocyclic nitrogenous bases of the formula selected from the group consisting of

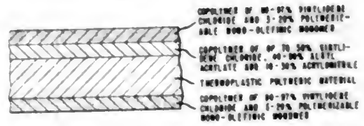


where R is a saturated aliphatic radical containing 12–22 carbon atoms and a continuous hydrocarbon chain of at least 12 carbon atoms, said continuous hydrocarbon chain being connected to Y through an atom selected from the group consisting of C-atoms, and N-atoms; and Y represents a group of atoms which in conjunction with the N-atom in the above formulae form a heterocyclic ring selected from the group consisting of pyridine, pyrimidine, pyrazine, pyridazine, and quinoline rings.

3,161,532
THERMOPLASTIC POLYMERIC FILMS

Richard H. Sill, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 17, 1962, Ser. No. 217,530
7 Claims. (Cl. 117—68)



1. A base film of thermoplastic polymeric material having one surface coated with a subcoating having a thickness of at least 4.5 grams per square meter and comprising a copolymer obtained from up to 50% vinylidene chloride, 40–90% alkyl acrylate and 10–30% acrylonitrile and a top coating comprising a copolymer obtained from 80–97% vinylidene chloride and 3–20% of at least one other polymerizable mono-olefinic monomer copolymerizable therewith and the opposite surface coated directly with a copolymer obtained from 80–97% vinylidene chloride and 3–20% of at least one other polymerizable mono-olefinic monomer copolymerizable therewith.

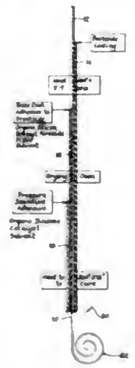
3,161,533
PRESSURE-SENSITIVE ADHESIVE TAPE FOR USE AT LOW AND HIGH TEMPERATURES

Raymond A. Gaynes, Chicago, Ill., assignor, by mesne assignments, to Mystik Tape, Inc., a corporation of Illinois

Filed Aug. 25, 1958, Ser. No. 756,784
8 Claims. (Cl. 117—68.5)

1. The method of preparing a self-sealing, thermally stable, pressure-sensitive adhesive tape comprising: providing a flexible backing sheet having interstices extending crosswise therethrough, coating the backside of said flexible backing sheet with a curable silicone rubber composition capable of plastic flow in the applied condition to extend at least part way through the interstices of the backing sheet while providing a continuous coating over the backside thereof, advancing the curable silicone rubber composition to an advanced stage of cure, coating the frontside of the flexible backing sheet with a curable pressure-sensitive silicone adhesive containing a curing catalyst and from 0 to 30 parts by weight filler per 60 parts by weight of the silicone adhesive and which

is capable of flow in the applied condition sufficient to fill the remainder of the interstices through the flexible backing sheet for communication with the silicone rubber composition in the advanced stage of cure on the backside of the flexible backing sheet, applying a second coating of a curable pressure-sensitive silicone adhesive containing a curing catalyst but without filler onto the



previously applied coating on the frontside of the flexible backing sheet, and heating the composite structure to advance the coating to a set stage during which the silicone rubber coating on the backside of the flexible backing sheet and the pressure-sensitive silicone adhesive in the first layer on the frontside of the flexible backing sheet become integrated one with the other at their communicating interfaces.

3,161,534
PROCESS FOR INCREASING THE SCRATCH RESISTANCE OF GLASS

Robert Harold Dettre, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,414
6 Claims. (Cl. 117—69)



1. In a process for increasing the scratch resistance of glass by applying an organo-titanium compound to the surface of the glass, which is in non fibrous form, heating the glass, and then allowing the glass to stand in air for a period of not less than 20 minutes to develop the desired scratch resistance, the improvement which comprises eliminating the standing period required to develop scratch resistance by coating the surface of the glass, immediately after the heating step and at a temperature between room temperature and 150° C., with an olefinic compound selected from the group consisting of monoolefinic hydrocarbons containing 8–20 C-atoms; diolefinic hydrocarbons of the formula

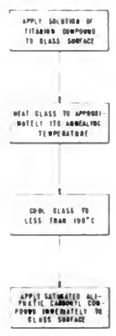
$$CH_2=CH(CH_2)_nCH=CH_2$$

wherein n may vary from 2–18; and unsaturated hydrocarbon carboxylic acids containing 10–22 C-atoms; and the alkali metal and ammonium salts of said acids.

3,161,535
PROCESS FOR INCREASING THE SCRATCH RESISTANCE OF GLASS

Robert Harold Dettre, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,415
5 Claims. (Cl. 117—69)



1. In a process for increasing the scratch resistance of glass by applying an organo-titanium compound to the surface of the glass, which is in non-fibrous form, heating the glass, and then allowing the glass to stand in air for a period of not less than 20 minutes to develop the desired scratch resistance, the improvement which comprises eliminating the standing period required to develop scratch resistance by coating the surface of the glass, immediately after the heating step and at a temperature between room temperature and 205° C., with an aliphatic compound selected from the group consisting of unsubstituted, saturated aliphatic aldehydes, unsubstituted, saturated aliphatic ketones, and unsubstituted, saturated aliphatic carboxylic acids, containing a maximum of 23 carbon atoms in an aliphatic chain of at least 9 carbon atoms.

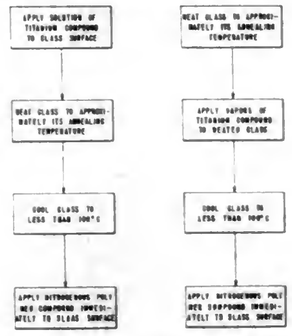
3,161,536
PROCESS FOR INCREASING THE SCRATCH RESISTANCE OF GLASS

Robert Harold Dettre, Brandywine Hundred, and Jerry Allen Nelson, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,416
6 Claims. (Cl. 117—69)

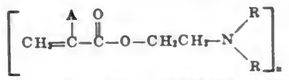
1. In a process for increasing the scratch resistance of glass by applying an organo-titanium compound to the surface of the glass, which is in non-fibrous form, heating the glass, and then allowing the glass to stand in air for a period of not less than 20 minutes to develop the desired scratch resistance, the improvement which comprises eliminating the standing period required to develop scratch resistance by coating the surface of the glass, immediately after the heating step and at a temperature between room temperature and 120° C., with a nitrogenous polymeric compound selected from the group consisting of nitrog-

enous polymeric bases and their acetate salts, said nitrogenous polymeric bases being water-soluble compounds of



the structural formula selected from the group consisting of

(1)



where A is from the group consisting of H and CH_3;
R is from the group consisting of H and C_1 to C_4 alkyl radicals; and
n is an integer greater than 1 and less than 500,

and

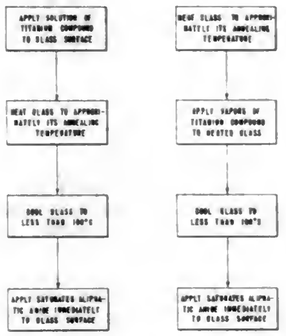
(2) $R'—X—(CH_2CH_2NH)_m—CH_2CH_2NH_2$

where R' is a C_{12} to C_{22} alkyl radical;
X is from the group consisting of O, COO, and NH; and
m is an integer of from 1 to 10.

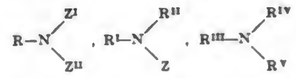
3,161,537
PROCESS FOR INCREASING THE SCRATCH RESISTANCE OF GLASS

Robert Harold Dettre, Brandywine Hundred, and Jerry Allen Nelson, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,418
6 Claims. (Cl. 117—69)



1. In a process for increasing the scratch resistance of glass by applying an organo-titanium compound to the surface of the glass, which is in non-fibrous form, heating the glass, and then allowing the glass to stand in air for a period of not less than 20 minutes to develop the desired scratch resistance, the improvement which comprises eliminating the standing period required to develop scratch resistance by coating the surface of the glass, immediately after the heating step and at a temperature between room temperature and 150° C., with a nitrogenous compound selected from the group consisting of aliphatic and cycloaliphatic amines, their salts and quaternary derivatives, said amines being compounds of the formulas



and



wherein Z, Z^I and Z^{II} represent members of the group consisting of hydrogen and lower alkyl of 1 to 6 C-atoms, Y is an alkylene radical of 4 to 6 C-atoms, R is an alkyl radical of 12 to 22 C-atoms having a straight chain of at least 12 C-atoms, R^I and R^{II} are alkyl radicals of 10 to 22 C-atoms, having a straight chain of at least 10 C-atoms, while R^{III}, R^{IV} and R^V are alkyl radicals of 8 to 22 C-atoms, having a straight chain of at least 8 C-atoms.

3,161,538
METHOD OF TREATING TEXTILE MATERIALS

Julian L. Azorlosa, Easton, Pa., and George G. Stoner, Suffern, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 15, 1962, Ser. No. 202,693
7 Claims. (Cl. 117—139.5)

1. A method of treating a yarn formed of a material selected from the group consisting of natural and synthetic filamentary materials which comprises, preliminary to fashioning said yarn into a fabric, sizing the surfaces of said yarn by applying thereto an aqueous solution of an alkali salt of a partial ester of a vinyl lower alkyl ether-maleic anhydride copolymer, said partial ester being about a half ester of (1) said vinyl lower alkyl-maleic anhydride copolymer and (2) an alcohol selected from the group consisting of methanol, ethanol, methoxyethanol, isopropanol, and n-propanol, said solution having a pH of at most 8, said solutions being applied in an amount sufficient to deposit from about 1% to about 10% by weight, based on the weight of said yarn, of said salt of said ester of said copolymer on the surface of said yarn upon the removal of water from said solution, and then drying said treated yarn.

3,161,539
COMPOSITION OF MATTER HAVING HIGH DIELECTRIC CONSTANT

George P. Touey and Richard G. Devaney, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 11, 1961, Ser. No. 109,263
5 Claims. (Cl. 117—143)

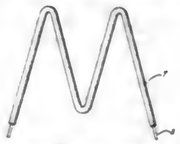
1. A composition of matter having high dielectric constant comprising an organic polymeric sheet forming material having dielectric qualities and 5–50%, based on the weight of the polymeric material of cyanoethylsucrose in which greater than 5 hydroxyl groups of the sucrose have been cyanoethylated.

3,161,540
PROCESS OF MANUFACTURING INSULATED HEATER WIRE AND ARTICLE

Wayne H. Kingsley and Douglas S. Monroe, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,962
6 Claims. (Cl. 117—217)

1. A process for forming an insulated wire adapted for use in indirectly heated electron tubes comprising the steps of depositing a film of a noble metal on a refractory wire, depositing a coating of volatile binder and aluminum oxide on said film, heating the coated wire above the volatilization temperature of the binder and below the vaporization temperature of the noble metal to cause adherence of the aluminum oxide to the film, and subsequently heating the insulated wire to a temperature above the vaporization temperature of said noble metal.



3,161,541
SYNTHETIC RESIN AND CONDUCTORS INSULATED THEREWITH

Fred F. Holub, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

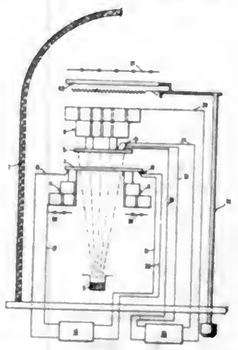
Filed Apr. 27, 1959, Ser. No. 809,227
5 Claims. (Cl. 117—232)

1. An insulated conductor comprising a metallic conducting core selected from the class consisting of copper, aluminum, alloys of copper, and alloys of aluminum, and a cured polyester-amide resin as an insulation of said core consisting essentially of the product of reaction of (1) from about 25 to 56 equivalent percent of dimethyl ester of an acid selected from the class consisting of terephthalic acid and isophthalic acid and mixtures of said acids, (2) from about 15 to 46 equivalent percent of ethanolamine, (3) up to 30 equivalent percent ethylene glycol and (4) from about 12 to 44 equivalent percent of glycerine, the total equivalent percent of (2) and (3) being at most 46 equivalent percent, the said insulation having an improved resistance to moisture.

3,161,542
PELTIER HEATING AND COOLING OF SUBSTRATES AND MASKS

Irving Ames, Peekskill, and Ralph B. De Lano, Jr., Chappaqua, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,328
7 Claims. (Cl. 118—5)

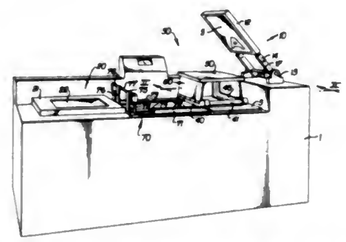


1. In a temperature controlled vapor deposition system a source of vaporizable material, a substrate, a mask interposed between the source and the substrate, thermoelectric elements adjacent the mask and the substrate, and means for energizing the thermoelectric elements in accordance with the temperatures of the mask and the substrate to maintain predetermined desired temperatures.

3,161,543
WORK HANDLING APPARATUS FOR APPLYING FLOCKED DESIGNS

Edgar W. Borders, 1111 S. Wall St., Los Angeles 15, Calif., and Thomas O. Woodring, Los Angeles, Calif.; said Woodring assignor to said Borders

Filed Apr. 16, 1962, Ser. No. 187,873
5 Claims. (Cl. 118—621)

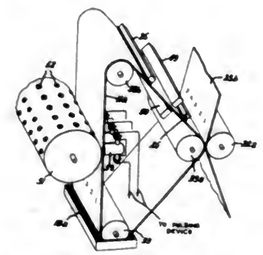


1. In a flock applying apparatus of the character described, the provision of:
movable carriage means adapted to hold and support an item to be treated, said movable means being movable between an adhesive applying station and a flock applying station, and
hinged plate means hinged upon a vertically spaced axle adjacent said flock applying station, said plate means being adapted to be swung between an inverted position over said flock applying station and an upright position adjacent said flock applying station;
automatically operating means for moving said movable carriage means onto and off of said hinged plate means between said adhesive applying station and an upright position on said plate means adjacent said flock applying station; and
automatically operating means to swing said hinged plate means between said inverted position over said flock applying station and said upright position adjacent said flock applying station.

3,161,544
RECORDING AND PORTRAYING APPARATUS

Theodore M. Berry, deceased, late of Schenectady, N.Y., by Albert L. Berry, administrator, Jewell, Kans., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 223,423, Apr. 27, 1951. This application June 14, 1960, Ser. No. 36,097
28 Claims. (Cl. 118—637)



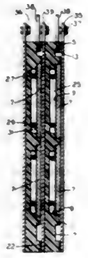
22. A high speed magnetic image recording system comprising: a locally magnetizable ferromagnetic member supported for movement along a predetermined path; a rotatable cylinder; means for rotating said cylinder; a plurality of magnetically permeable character image members arranged around the circumference of said cylinder, said rotatable cylinder being located to bring each of said image members in proximity with a region of one side

of said ferromagnetic member while being rotated; a selectively energizable electromagnet having a core member aligned to the region of proximity of said permeable character image members on the opposite side of said ferromagnetic member whereby said ferromagnetic member is magnetized in the configuration of the character image member aligned to said electromagnet when said electromagnet is energized; means for selectively energizing said electromagnet; developing means including comminuted magnetic particles arranged to be attracted to said ferromagnetic member by magnetic configurations thereon; printing means for transferring said comminuted magnetic particles attracted to said ferromagnetic member to a print receiving medium; and demagnetizing means for erasing said magnetic configurations on said ferromagnetic member after the development and printing thereof.

3,161,545
RECHARGEABLE CELL AND ELECTRODE THEREFOR
Samuel Ruben, 52 Seacord Road, New Rochelle, N.Y.
Filed July 13, 1960, Ser. No. 42,629
17 Claims. (Cl. 136—20)

2. An electrode for alkaline cells comprising a base of titanium, and a tough deposit of pyrolytically produced manganese dioxide on said base and bonded thereto, said deposit and its bond with said base being the product of heating manganous nitrate in contact with the surface of said base to the decomposition temperature of manganous nitrate.

3,161,546
CONTINUOUS FEED PRIMARY BATTERY
Ernest B. Yeager and Harry J. Dietrick, Cleveland, and Romeo R. Witherspoon, Medina, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 14, 1959, Ser. No. 859,542
4 Claims. (Cl. 136—86)

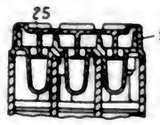


1. A primary cell comprising a generally vertical metal plate, an active carbon porous block facing said metal plate and spaced therefrom, means for spraying a liquid alkali metal amalgam against the upper portion of that face of said plate opposite said carbon block; a chamber at the lower end of said plate wherein said amalgam can accumulate without contacting said carbon block; means for withdrawing amalgam from said chamber; a second chamber in communication with that side of said carbon block remote from said metal plate; means for supplying a cathodic gas to the upper portion of said second chamber; means for withdrawing said gas from the lower portion of said second chamber; means for establishing an electrical connection to said metal plate; means for establishing an electrical connection to said carbon block; and means for venting the space between said plate and said carbon block.

3,161,547
RESIN TREATED FLEXIBLE BATTERY SEPARATORS
Raymond D. Beaulieu, North Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed July 5, 1963, Ser. No. 293,133
13 Claims. (Cl. 136—146)

7. A permeable cellulosic fibrous battery separator treated with a thermosetting resin composition which has been advanced to an infusible state and wherein the resin composition consists of in admixture 25–95 weight percent of a phenol-aldehyde resin and, correspondingly, 75–5 weight percent of a thermoplastic polymer selected from the group consisting of styrene copolymers and interpolmers and acrylonitrile copolymers and interpolymers, and mixtures thereof, which thermoplastic polymer contains carboxylic groups in an amount not sufficient to render the thermoplastic polymer water-soluble; said styrene copolymers and said acrylonitrile copolymers containing at least 90 weight percent thereof of styrene and acrylonitrile, respectively, with the balance thereof being at least one alpha,beta-ethylenically unsaturated carboxylic acid which is copolymerized therewith and wherein said styrene interpolymers and said acrylonitrile interpolymers containing (1) at least 25 weight percent of styrene and acrylonitrile, respectively, (2) at least 0.1 weight percent of at least one alpha,beta-ethylenically unsaturated carboxylic acid which is interpolymerized therewith, respectively, and (3) the balance of said interpolymers being any other monomer which is also interpolymerized therewith, respectively; said aqueous media being selected from the group consisting of water and a mixture of a major amount of water and a minor amount of an organic solvent.

3,161,548
MEANS FOR CLOSING THE FILLING ORIFICES OF ELECTRIC STORAGE BATTERIES
Charles H. Goldingay, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 29, 1961, Ser. No. 120,633
2 Claims. (Cl. 136—177)



1. Means for closing plural filling orifices of a multicell electric storage battery comprising in combination a hollow battery casing, a lid on the casing and having formed in its upper surface an elongated recess in the base of which the filling orifices are formed, a separable unitary cover piece adapted to extend over the recess to define, with the recess, a cavity. plural baffle means formed integrally with the cover piece and adapted to extend into the filling orifices respectively, and means for resiliently retaining said cover piece relatively to the recess, the orifices and baffles defining between them passage means affording communication between said cavity and the interior of the battery casing.

3,161,549
SOLUTION FOR FORMING ZINC PHOSPHATE COATINGS ON METALLIC SURFACES
Rudolf Kallenbach, Windsor, Ontario, Canada, assignor to The Lubrizol Corporation, a corporation of Ohio
No Drawing. Filed Apr. 8, 1955, Ser. No. 500,287
2 Claims. (Cl. 148—6.15)

1. A solution for forming a protective phosphate coating on the surfaces of iron, steel, zinc and aluminum, which comprises an aqueous acidic solution consisting essentially of about 0.05% to about 1.5% zinc ion, about 0.012% to about 7.5% calcium ion, the weight ratio of calcium ion to zinc ion being in the range of 0.25 to 5.0, the phosphate ion, and the nitrite ion, the weight ratio of nitrite to phosphate being in the range of 0.01 to about 0.05.

3,161,550
AMMONIUM NITRATE PROPELLANT COMPOSITION PROVIDING EXHAUST GASES OF REDUCED TEMPERATURE
Robert A. Mosher and William G. Stanley, Seymour, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,740
5 Claims. (Cl. 149—19)

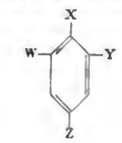
1. A solid composition consisting of cellulose acetate, about 8.5–12.0%; acetyl triethyl citrate, about 9.0–11.5%; triethyl citrate, about 9.5–11.0%; alkali metal barbiturate, about 1–3%; finely divided carbon, about 2–3%; aromatic hydrocarbon amine gassing inhibitor, about 1%; and the remainder of said composition essentially ammonium nitrate.

3,161,551
AMMONIUM NITRATE-CONTAINING EMULSION SENSITIZERS FOR BLASTING AGENTS
Richard S. Egly, West Terre Haute, and Albert E. Neckar, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Apr. 7, 1961, Ser. No. 101,352
15 Claims. (Cl. 149—46)

1. A blasting agent comprising a mixture of from about 0.5 to 4 parts by weight of a solid inorganic oxygen supplying salt for an explosive and about 1 part by weight of an emulsion containing from about 50 to about 70% ammonium nitrate, from about 15 to about 35% water, and from about 5 to about 20% of a sensitizing liquid organic compound having a solubility of less than 5% in water and from about 1 to 5% of a hydrophobic emulsifier capable of forming a water in oil emulsion, the said mixture having an oxygen balance ranging from about +10% to about −10%.

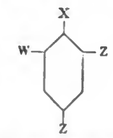
3,161,552
COMPOSITION AND PROCESS FOR POWDERLESS ETCHING
James W. Bradley, Atlanta, Ga., and Paul F. Borth, Park Forest, Ill., assignors to Photo-Engravers Research Inc., Savannah, Ga., a corporation of Georgia
No Drawing. Filed June 22, 1961, Ser. No. 127,779
20 Claims. (Cl. 156—14)

1. In a process of etching photoengraving copper to make therein an image in relief which comprises providing a copper plate having the image area exposed for etching, and contacting the image area with an etching solution including a protective film precursor which tends in the etching environment to provide a protective film over the copper, the protective film being abraded in a manner to allow the film to continue to protect the image area from undercutting, the improvement which comprises, including in the etching solution a film modifier in effective amounts of at least one percent by weight, based on protective film precursor, so as to effect modification of the protective film thereby improving its removal characteristics and affording more effective etching, said film modifier being of the formula:



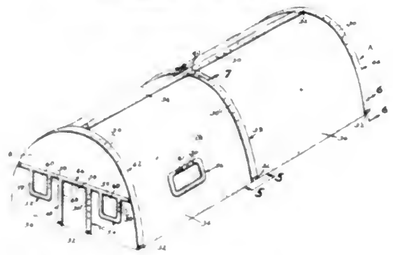
wherein W, X, Y, and Z are each selected from the group consisting of nitro, amino, lower alkyl substituted amino, acid radical of a lower fatty acid, hydroxy, and hydrogen with the proviso that at least two of W, X, Y, and Z are other than hydrogen and are in ortho or para relation.

19. A composition for use in the powderless etching of photoengraving copper to provide a protective film about the periphery of the image area during the etching wherein the film has been modified so as to permit its abrasion from small areas of the image area so as to permit proper etching thereof, consisting essentially of, in admixture, a 26° to 46° Bé. ferric chloride etching solution, a thiourea compound as protective film precursor in amounts sufficient to provide a protective film along the side walls of the image area, and at least 1 wt. percent based on thiourea compound and in amounts effective to modify the protective film produced by said thiourea compound of a film modifier having the following formula:



wherein W, X, Y, and Z are each selected from the group consisting of nitro, amino, lower alkyl substituted amino, acid radical of a lower fatty acid, hydroxy, and hydrogen with the proviso that at least two of W, X, Y, and Z are other than hydrogen and are in ortho or para relation.

3,161,553
METHOD OF MAKING A REINFORCED SEMI-RIGID STRUCTURE
Gerrit A. Visser, Wayzata, Minn., assignor to Space Structures, Inc., Chanhassen, Minn.
Filed Dec. 14, 1959, Ser. No. 859,380
5 Claims. (Cl. 156—156)

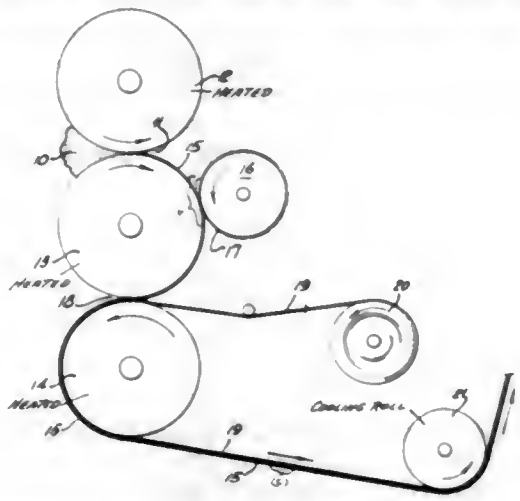


1. The method of making a reinforced semi-rigid structure consisting in forming a thin flexible enclosed base form, then forming a series of openings in the base form, then securing a thin channel-shaped member to the base form over the series of openings to enclose the same. then admitting air under pressure into the base form and the channel-shaped member through the openings whereby the form and the channel-shaped member are supported in extended opened condition, then covering the base form and channel-shaped member with a self-hardening composition to thereby form a semi-rigid structure having a reinforcing channel-shaped rib thereon.

3,161,554
ADHESIVE TAPE
Benjamin B. Blackford, Metuchen, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 5, 1958, Ser. No. 772,123
18 Claims. (Cl. 156—242)

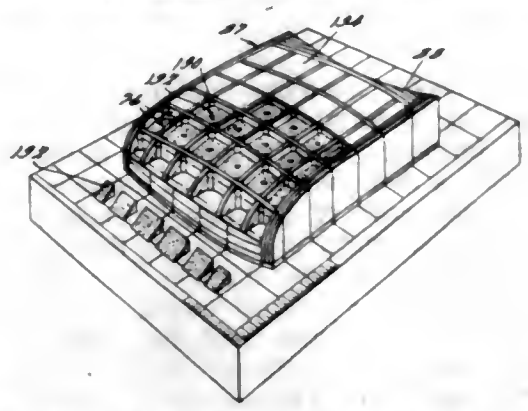
6. The method of making pervious pressure-sensitive adhesive-coated sheets comprising heating a thermoplastic

pressure-sensitive adhesive having a flow temperature below the temperature at which loss of adhesiveness due to pyrolysis occurs, calendering said adhesive while in a heat-softened state into a pressure-sensitive adhesion film by passing said adhesive while in said heat-softened state between a pair of calender rolls having heated, imperforate, essentially non-yielding surfaces, supporting said film on the heated surface of one of said rolls, maintaining the temperature of said supporting roll surface, while said adhesive film is supported thereon, at a temperature sufficiently high to maintain the adhesive of said film in its heat-softened state but below the temperature at which



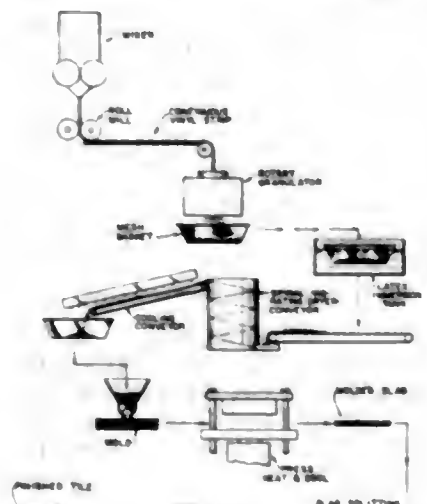
said adhesive will be decomposed, forming openings in said adhesive film while so supported by pressing against said film a third roll containing a plurality of heated projections coated with a release agent, said heated projections passing into said heat-softened adhesive film to cause lateral flow of the adhesive without decomposition of the same in the area of contact of said projections with said adhesive film, withdrawing said projections from said film and pressing said film of pressure-sensitive adhesive with said openings therein into intimate contact with the surface of a pervious fabric to bond said adhesive film to said fabric while avoiding closing of said openings in said adhesive film.

3,161,555
METHOD OF MAKING PLASTIC FIXTURES
Steven P. Kish, 1301 Turner St., Lansing, Mich.
Original application Dec. 19, 1958, Ser. No. 781,522, now Patent No. 3,072,971, dated Jan. 15, 1963. Divided and this application Mar. 23, 1962, Ser. No. 181,926
8 Claims. (Cl. 156—245)



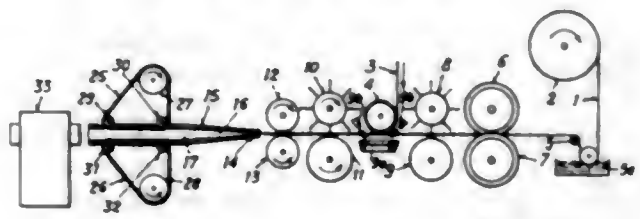
1. The method of making plastic fixtures comprising making a rough shape of laminated layers of preformed plastic material bonded together, said shape having a surface approximating and extending above a predetermined surface contour to be duplicated on the fixture, forming grooves in the mentioned surface of said shape extending below said predetermined surface contour, placing a moldable plastic material in said grooves to a level above said predetermined surface contour and establishing reference lines on said contour by impressing templates conforming to said lines in said plastic material and then curing the plastic material to fix said reference lines, and then conforming the areas of said shape between said grooves to said predetermined surface contour using said reference lines as guides.

3,161,556
METHOD OF MAKING PLASTIC TERRAZZO SHEET MATERIAL
David K. Slosberg, Yardley, Pa., assignor to Bonafide Mills, Inc., Winthrop, Maine, a corporation of Maine
Filed Aug. 1, 1961, Ser. No. 128,373
1 Claim. (Cl. 156—278)



The method of producing a plastic sheet having a surface which resembles teerrazzo in appearance, which comprises the steps of covering solid chips of a material comprising a vinyl polymer, while said chips are in a hot condition, with a thin coating of a water containing latex of a vinyl compound, whereby water in said latex is evaporated by the residual heat in said chips, applying pressure to said coated chips to reduce said coated chips to sheet form, heating said sheet while maintaining it under pressure until said chips under the influence of heat and pressure have been deformed and said chips and said coating have bonded together to form an integrated substantially self-supporting sheet.

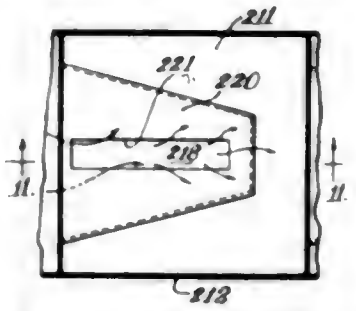
3,161,557
APPARATUS FOR MAKING AN ENDLESS FILTER STRING FOR CIGARETTE FILTER PLUGS
Paul A. Müller, Rosenhugel, Herrliberg, Switzerland
Filed Apr. 28, 1955, Ser. No. 504,647
6 Claims. (Cl. 156—462)



1. A plant for producing a filter member for processing the same in filter plug and cigarette machines, comprising: supply means for feeding an elongated paper web along a path; deforming and stretching means arranged along said path and including a plurality of pairs of rollers, one pair of said rollers being provided with annular stamping means for working upon the paper web to stretch the paper web in transverse direction of said path and form longitudinal corrugations therein, and another pair of said rollers including a roller provided with peripheral teeth for perforating the paper web thereacross at spaced locations thereof to provide holes having frayed

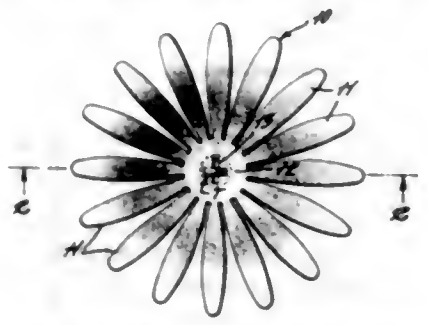
edges in the paper web; and means for folding and gathering the paper web arranged along said path subsequent to said deforming and streching means and including means to progressively increase the amplitude of the corrugations in the paper web during passage thereof through said folding and gathering means.

3,161,558
FLASH CHAMBER STRUCTURE
Vjekoslav Pavelic, West Allis, and Richard W. Goeldner, Brookfield, Wis., assignors to Aqua-Chem, Inc., a corporation of Wisconsin
Filed July 5, 1960, Ser. No. 40,615
3 Claims. (Cl. 159—2)



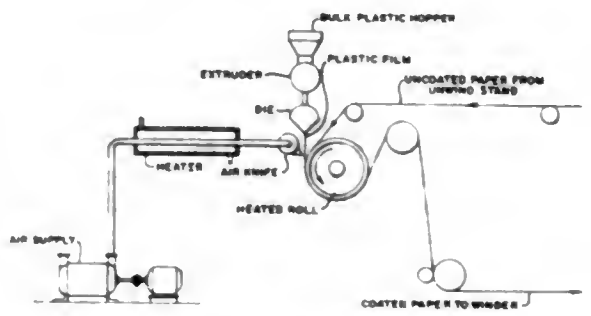
1. A flash chan ber structure including means for removing the flashed vapor for use in a multistage evaporator comprising: a shell; first upright partition means extending across the shell and having an inlet opening adjacent the bottom thereof; second upright partition means extending across the shell at a distance forwardly of the first partition means and defining with the shell and first partition means a flash chamber therebetween in which a liquid flowing therethrough may be flashed, said second partition means having an outlet opening adjacent the bottom thereof; upright wall means cooperating with the shell and first partition means to define an upwardly opening inlet space in said flash chamber, said inlet opening communicating with said space; and a plate defining the upper boundary of said space, said plate having an opening therethrough for conducting substantially all liquid to be flashed in the flash chamber and said plate being inclined at an angle in the range of approximately 5° to 45° from the horizontal downwardly from said plate opening generally in the direction of flow of the liquid through said chamber for passing the liquid in a thin layer thereover defining an inclined liquid vaporization surface thereby to provide improved vaporization of the liquid.

3,161,559
STEM MOUNTING FOR ARTIFICIAL FLOWERS
Duncan Tong, Central Bldg., 3 Pedder St., Victoria, Hong Kong
Filed July 25, 1961, Ser. No. 126,686
4 Claims. (Cl. 161—30)



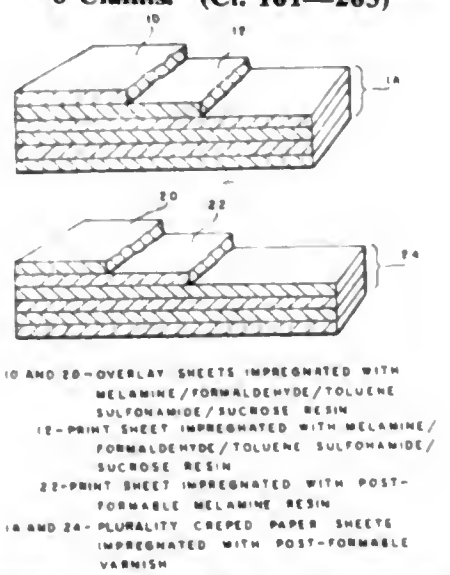
1. An artificial flower comprising a flexible petal unit of molded plastic material and a stem of molded plastic material having an end thereof detachably engaged with said petal unit, said petal unit having a slot with a rectangular opening forming at least part thereof disposed at the central portion of said petal unit, a terminal member at said end of said stem comprising a thin shank and an enlarged head having a cross-section similar to but slightly larger than that of said slot to require a slight stretching of the central portion of the petal unit to effect the passage of the head through said slot, said petal unit adapted to be interlocked with said stem by a relative rotation of said stem and petal unit which is permitted by said thin shank within said slot while the edge of said enlarged head adjacent to said shank overlies the surface of said petal unit adjacent to said slot to interconnect the stem therewith.

3,161,560
EXTRUSION COATED PAPER AND METHOD OF MAKING THE SAME
Leon J. Paquin and Owen D. Mosher, Glens Falls, and Glenn M. Violette, Greenwich, N.Y., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Jan. 4, 1961, Ser. No. 80,584
8 Claims. (Cl. 161—250)



1. The continuous process of coating a substrate with a film of a compound selected from the group consisting of polymers and copolymers of ethylene, propylene, and butylene consisting essentially of the step of extruding the compound as a film and the step of forming a bond between the substrate and the film solely by blowing a stream of gas selected from the group consisting of air, steam, and inert gases at greater than atmospheric pressure against one side of the film.

3,161,561
MODIFIED MELAMINE-TOLUENE SULFONAMIDE RESINS
William A. Laurie, Somers, Conn., assignor to Monsanto Company, a corporation of Delaware
Filed Sept. 26, 1958, Ser. No. 763,475
8 Claims. (Cl. 161—263)



1. A resinous co-condensation product of (1) a material of the group consisting of melamine and a mixture of 97.5 parts of melamine with up to about 2.5 parts of thiourea, (2) toluene sulfonamide (3) sucrose and (4) formaldehyde having a water-dilutability point of 15–

45%; said toluene sulfonamide constituting 5–25 weight percent of the resin; said sucrose constituting 10–35 weight percent of the resin; and said formaldehyde being present in the ratio of 2.0–4.0 mols per mol of melamine.

7. A normally rigid post-formable laminate comprising a sheeted inert filler bonded with a thermoset resin of claim 1.

3,161,562

PULPING CELLULOSE MATERIAL WITH AN ALKALINE COOKING LIQUOR CONTAINING HYDRAZINE

Athey G. Gillaspie, Hamilton, Ohio, assignor to Champion Papers Inc., a corporation of Ohio

No Drawing. Filed Dec. 13, 1960, Ser. No. 75,476
9 Claims. (Cl. 162—72)

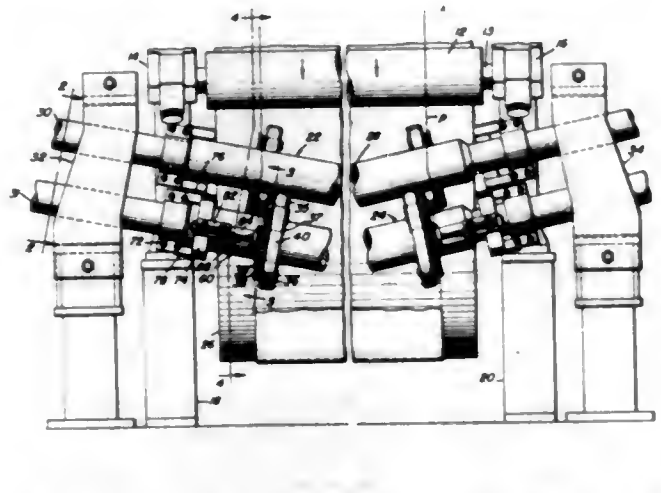
1. The method of producing a cellulosic pulp which comprises cooking a cellulosic material with an aqueous alkaline cooking liquor containing an amount of hydrazine which is at least about 8% by weight based on the dry weight of the cellulosic material.

3,161,563

METHOD AND APPARATUS FOR THE LATERAL STRETCHING OF WEBS, AND RESULTANT PRODUCT

William C. Walker, Williamsburg, and Norman Weberg, Altoona, Pa., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Sept. 4, 1962, Ser. No. 222,992
15 Claims. (Cl. 162—197)



1. A device for increasing the lateral stretching effect of a bowed roll on a traveling web of paper passing around the surface of the bowed roll which comprises a bracket member and an endless resilient belt rotatably mounted on said bracket member, said device mounted and disposed in relation to the bowed roll whereby a portion of the endless resilient belt presses the traveling web at the web margin against the surface of the bowed roll to grip the web between the endless resilient belt and the bowed roll surface.

10. In the method of treating a traveling web of paper which involves passing the web before final drying around successive bowed rolls in tandem disposed with their longitudinal axes substantially at right angles to the longitudinal axis of the paper machine, stretching the web laterally as said web passes around each bowed roll to recover a substantial fraction of the loss of deckle that has been sustained due to shrinkage of the web in the cross-machine direction, and completing the drying operation, the improvement for reducing the coefficient of hygroexpansivity of the paper in the cross-machine direction and increasing the stiffness of the paper which comprises gripping the web at its margins as said web passes around each bowed roll to decrease the lateral slippage between the web and the bowed rolls.

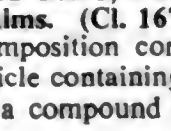
3,161,564

VETERINARY COMPOSITION CONTAINING HALO-NITRO-BENZAMIDES AND METHODS OF USING SAME

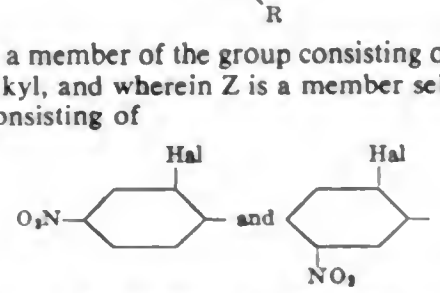
Neal F. Morehouse, Charles City, Iowa, assignor to Dr. Salsbury's Laboratories, a corporation of Iowa

No Drawing. Filed Oct. 3, 1960, Ser. No. 59,843
11 Claims. (Cl. 167—53)

1. A veterinary composition comprising an orally ingestible non-toxic vehicle containing a small, but effective non-toxic amount of a compound having the formula



wherein R is a member of the group consisting of hydrogen and lower alkyl, and wherein Z is a member selected from the group consisting of



in which Hal is a halogen of the group consisting of chlorine, bromine and iodine, said compound being present in an approximate concentration range of 0.01% to 0.4% by weight of the composition.

3,161,565

LYSINE OROTATE

Maurice Gustave Eugène Vigneron, Paris, France, assignor to A.E.C. Societe de Chimie Organique et Biologique, Commentry, France, a French body-corporate

No Drawing. Filed July 27, 1961, Ser. No. 127,154
Claims priority, application France, July 29, 1960, 834,523
7 Claims. (Cl. 167—55)

2. A therapeutic composition in dosage unit form acting on the protein synthesis, and regenerating the hepatic tissues, useful in the treatment of cirrhosis, containing in each dosage unit an amount of from about 0.25 g. to about 1 g. of lysine orotate in a therapeutically-administrable carrier, said lysine orotate having the characteristic of being water soluble and thereby administrable orally and parenterally.

3,161,566

DIHYDROXYBENZOIC ACID FOR USE IN DELAMINATING EPITHELIUM

William Turkewitsch, Toronto, Ontario, Canada, assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,038
12 Claims. (Cl. 167—61)

1. A composition for the delamination of cornified epithelium comprising one of the six isomers of dihydroxy benzoic acid in an amount sufficient to delaminate said epithelium and a non-toxic resinous carrier, selected from the group consisting of vinyl resins and cellulosic ethers and esters.

3,161,567

PROCESS FOR RELIEVING PAIN WITH 3-p-CHLOROPHENOXY - 2 - HYDROXY-PROPYL CARBAMATE

Robert James Collins, Kalamazoo Township, Kalamazoo County, Mich., and Richard J. Matthews, Abbington Township, Lackawanna County, Pa., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 283,993
4 Claims. (Cl. 167—65)

1. A process for inducing a state of analgesia comprising the administration of 3-p-chlorophenoxy-2-hydroxypropyl carbamate to a subject in a state of pain of traumatic origin.

3,161,568

PARENTERAL SOLUTIONS OF HYDROXOCOBALAMIN

Edward J. Hanus, Palisade, N.J., and John W. Carr, Beverly, Mass., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,363
1 Claim. (Cl. 167—81)

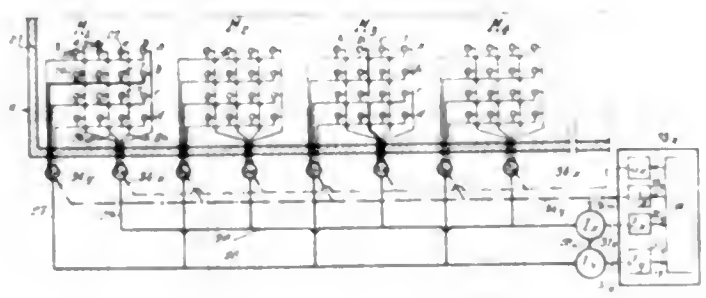
A composition of matter comprising, in aqueous solution, from 0.95 to 1.25 mg. per cc. of hydroxocobalamin, from 7.5 to 9.0 mg. per cc. of sodium chloride, from 0.8 to 1.4 mg. per cc. of sodium acetate and from 1.7 to 2.7 mg. per cc. of acetic acid, said solution having a pH in the range of 4.0 to 4.5 and being substantially free from dissolved air.

3,161,569

METHODS AND DEVICES FOR DETECTING THE PRESENCE OF FISSION PRODUCTS IN THE COOLANT FLUID STREAMS OF A NUCLEAR REACTOR

René Donguy, Vanves, and Jean Megy, Bourg-la-Reine, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Nov. 30, 1960, Ser. No. 72,662
Claims priority, application France Dec. 2, 1959
4 Claims. (Cl. 176—19)



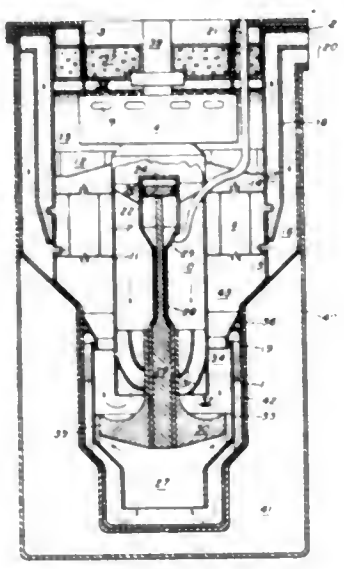
1. System for detecting the presence of fission products in the coolant fluid streams emerging from a plurality of channels provided in a heterogeneous nuclear reactor, by monitoring the radioactivity level in said streams, comprising: a plurality of collecting tubes, each having a first extremity located in one of said streams for picking-up a portion thereof and a second extremity, the plurality of second extremities being grouped to form a series of square matrices having each a same number of lines and of columns of second extremities; a multiplicity of line header pipes, one for each line in each matrix; a multiplicity of column header pipes, one for each column in each matrix; a plurality of line collecting channels, each having a first extremity opening in said second extremity of one of said collecting tubes for collecting substantially half of the portion of coolant fluid picked-up thereby and a second extremity ending in one of said line header pipes for delivering therein the collected coolant fluid; a plurality of column collecting channels, each having a first extremity opening in said second extremity of one of said collecting tubes for collecting substantially half of the portion of coolant fluid picked-up thereby and a second extremity ending in one of said column header pipes for delivering therein the collected coolant fluid; a series of line output channels, one for each matrix; a series of column output channels, one for each matrix; a series of line selector means, each connected between the line output channel of one matrix and the line header pipes of the same matrix and adapted to occupy a number of operative positions equal to the number of line header pipes in said matrix, in each of which positions it puts into communication a different one of said line header pipes with said line output channel, plus one non-operative position, in which it does not put into communication any one of said line header pipes with said line output channel; a series of column selector means, each connected between the column output channel of one matrix and the column header pipes of the same matrix and adapted to occupy a number of operative positions equal to the number of column header pipes in said matrix, in each of which positions it puts into communication a different one of said column header pipes with said column output channel, plus one non-operative position, in which it does not put into communication any one of said column header pipes with said column output channel; a line common channel connected to all line output channels for receiving the fluid output thereof; a column common channel connected to all column output channels for receiving the fluid output thereof; a line radioactivity detector located relatively to said line common channel for monitoring the radioactivity level in the fluid reecived by said line common channel; a column radioactivity detector located relatively to said column channel for monitoring the radioactivity level in the fluid received by said column common channel; cyclical line switching means for switching, according to a general line switching cycle, one after the other said line selector means each one successively through all of said operative and non-operative positions thereof according to a matrix line switching cycle; and cyclical column switching means for switching, according to a general column switching cycle, one after the other said column selector means each one successively through all of said operative and non-operative positions thereof according to a matrix column switching cycle.

3,161,570

HOMOGENEOUS-LIQUID METAL-FAST REACTOR

Roland Philip Hammond, Harold M. Busey, and John R. Humphreys, Jr., all of Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 13, 1961, Ser. No. 159,195
5 Claims. (Cl. 176—40)



1. A homogeneous nuclear reactor comprising in combination:

(*a*) a vessel,

(*b*) a pump in the upper end of said vessel,

(*c*) a heat exchanger located below said pump,

(*d*) a core in the bottom of said vessel containing a quantity of liquid fissionable fuel,

(*e*) means for attaining nuclear criticality in a zone of criticality in said core,

(*f*) means for providing a jet of liquid sodium above said core,

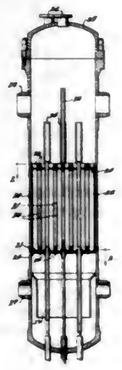
(*g*) means for providing fluid communication between said core and said jet whereby a portion of said fuel is removed from said core and carried into said jet and mixed with said jet,

(*h*) means for centrifugally separating said portion of fuel from said mixture of fuel and liquid sodium,

(*i*) means for returning said separated fuel to said core, and

(*j*) means for directing said sodium to said heat exchanger and then to said pump whereby said pump forces said liquid sodium back into said means for providing a jet of liquid sodium.

3,161,571
BOILING-WATER NUCLEAR REACTOR
Joseph M. Harrer, Elmhurst, Ill., Charles F. Bullinger, Palo Alto, Calif., and Verne M. Kolba, Plainfield, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 21, 1960, Ser. No. 70,878
1 Claim. (Cl. 176—54)



A boiling-water nuclear reactor comprising a pressure vessel, a lower support grid extending across the pressure vessel, a thermal shield located just inside the pressure vessel and supported by the lower grid, an upper guide grid formed in two sections extending across the pressure vessel within the thermal shield, control assembly shrouds attached to the top of said upper guide grid, a plurality of vertical fuel assemblies extending between said lower support grid and said upper guide grid, said fuel assemblies consisting of an open top basket-like fuel holder having a lower end fitting removably set in said lower support grid and an upper end fitting of the same width as the holder having elongated, vertical slots therein, said upper grid meshing with said slots, two fuel units each of which is symmetric about a plane located midway of the ends of the unit and perpendicular to the longitudinal axis of the unit having the same cross-sectional shape as does the holder removably disposed in each of said fuel holders, said fuel units being formed of a plurality of spaced parallel fuel elements containing a material fissionable by neutrons of thermal energy, and a plurality of control assemblies disposed in the array and vertically movable in the control assembly shrouds.

3,161,572
NUCLEAR REACTOR PLANT FOR UTILIZING HEAT GENERATED THEREIN
Jakob Kägi, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland
Filed Apr. 5, 1961, Ser. No. 100,888
Claims priority, application Switzerland, Apr. 11, 1960, 4,056/60
4 Claims. (Cl. 176—59)

1. A system for utilizing the heat generated in a nuclear reactor having a zone wherein relatively much heat is generated and a zone wherein relatively little heat is generated, said system comprising:

a first circuit formed by conduit means having a portion extending through the reactor,

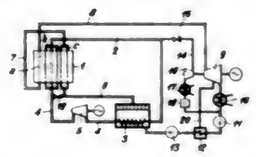
steam only circulating in said first circuit and being superheated therein,

a second circuit formed by conduit means having a portion extending through said reactor,

steam only circulating through said portion of said conduit means of said second circuit and being superheated therein,

said conduit means of said second circuit including a steam heat consumer and condenser,

an evaporator placed outside of the reactor and connected to said condenser for receiving water therefrom and connected to said portion of said second conduit means for supplying steam thereto,



said evaporator being interposed in the conduit means of said first circuit for transferring heat from the steam circulating in said first circuit to the water in said evaporator for evaporating the water,

the pressure of the superheated steam leaving said portion of said first conduit means being lower than the pressure of the superheated steam leaving said portion of said conduit means of said second circuit, and

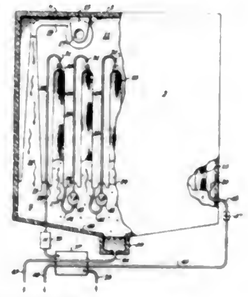
fuel elements placed in each reactor zone and including tubular means forming part of the conduit means forming said circuits,

the elements including tubular means forming part of the conduit means of the second circuit and through which the steam of the second circuit flows last before leaving the reactor being placed in a zone wherein relatively little heat is generated.

3,161,573
METHOD FOR THE PRODUCTION OF 6-AMINOPENICILLANIC ACID
Wagn Ole Godtfredsen, Copenhagen, Denmark, assignor to Løvens Kemiske Fabrik Veb A. Kongsted, Ballerup, Denmark, a firm
No Drawing. Filed Apr. 29, 1960, Ser. No. 25,513
Claims priority, application Great Britain, May 6, 1959, 15,605/59; June 19, 1959, 21,195/59; Aug. 17, 1959, 28,080/59; Jan. 14, 1960, 1,445/60
3 Claims. (Cl. 195—36)

1. A method for the production of 6-aminopenicillanic acid, which comprises adding a penicillin produced by a fermentation process to a fluid culture medium wherein a mould is grown submerged and under aeration, said mould being selected from the group consisting of Monotospora 1703, Stemphylium 1758, *Cylindrocarpon tonkinense*, *Cephalosporium ciferrii* Verona, *Cephalosporium acremonium* Cda., the following members of the genus Aspergillus: *A. flavus*, *A. oryzae*, *A. niger*, *A. sojae*, *A. terreus* and *A. effusus*, and the genus Fusarium, and thereafter growing the mould in the culture medium until a substantial part of the penicillin has been converted into 6-aminopenicillanic acid.

3,161,574
STILL HAVING THIN RESINOUS HEAT TRANSFER SURFACES
Daniel W. Elam, Sunnyvale, Calif.
(Lista de Correo, Apartado 112, Ajijic, Jalisco, Mexico)
Filed Aug. 21, 1961, Ser. No. 132,984
7 Claims. (Cl. 202—236)



1. A water still comprising:

(*a*) a housing;

(*b*) a thin, resinous plastic, water-impermeable film serving as a heat transfer surface dividing said housing into first and second chambers which are respectively a high pressure chamber and a low pressure chamber, said plastic film being of a material not wetted by water and inert to water;

(*c*) a perforated screen covering said plastic film on the low pressure side thereof and in intimate contact therewith;

(*d*) means for spreading water on the side of said thin plastic heat transfer surface in communication with the low pressure chamber for evaporation of water therefrom;

(*e*) means for heating the said water before said water is spread on said plastic heat transfer surface, means for transferring said heated water to said spreading means;

(*f*) means for effecting a pressure differential between either side of said plastic film heat transfer surface whereby a relatively higher pressure is created in the first chamber and a relatively lower pressure is created in the second chamber, one side of said last mentioned means being in open communication with the lower pressure chamber and the other side of said means being in open communication with the said higher pressure chamber; and

(*g*) said plastic film being of such thickness that it lacks the mechanical strength to support itself during normal operation of the still and said screen serving to strengthen the film and hold it in shape.

3,161,575
COPPER PYROPHOSPHATE ELECTROPLATING SOLUTIONS
Frederick Herbert Wells, Erdington, Birmingham, and Derek Martin Lyde, Stourbridge, England, assignors, by mesne assignments, to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, Warwickshire, England, a British company
No Drawing. Filed July 20, 1961, Ser. No. 125,363
Claims priority, application Great Britain July 23, 1960
14 Claims. (Cl. 204—52)

1. The method of electroplating a bright, well-levelled deposit of copper upon a metal substrate which comprises:

(*a*) providing an aqueous solution having a pH between about 7.5 to 9.5 containing dissolved therein:

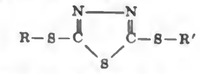
(1) a copper salt complex of the formula

$$X_6Cu(P_2O_7)_2$$

where X is alkali metal,

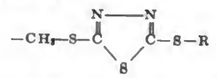
(2) alkali metal pyrophosphate, and

(3) from 0.5 p.p.m. to saturation of an additive having the formula:



wherein R is selected from the group consisting of hydrogen and metal atoms, and

R′ is selected from the group consisting of hydrogen, metal atoms, alkyl radicals of 1 to 4 carbon atoms, and radicals of the formula:



(*b*) maintaining the temperature of said solution at between about 95° to 140° F.,

(*c*) placing a metal substrate in said solution, and

(*d*) passing a D.C. electric current of a current density between about 5 to 60 amps./sq. ft. through the solution between said metal substrate as a cathode and a copper anode until a copper deposit of the desired thickness is formed upon the metal substrate.

3,161,576
ELECTROETCH PROCESS FOR SEMICONDUCTORS
Robert W. Teichner, Palo Alto, Calif., assignor to Clevite Corporation, a corporation of Ohio
Filed Dec. 22, 1961, Ser. No. 161,573
4 Claims. (Cl. 204—143)

1. In a process of selectively removing semiconductor material from a surface of a body of semiconductor material the steps of forming an insulating oxide layer of said semiconductor material on said surface with a window therein exposing the portion of the body from which it is desired to remove material, placing said surface in conductive contact via said window with a moving wettable member wetted wth a buffer, and passing current through the body of semiconductor material during movement of said member whereby the exposed portion of said surface is oxidized and the oxidized material is drained away by the buffer.

3,161,577
PROCESS FOR PREPARING β,β-DICHLORO-PROPIONITRILE
Michael J. D'Errico, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Oct. 4, 1961, Ser. No. 142,790
3 Claims. (Cl. 204—158)

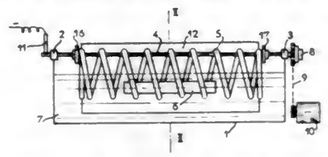
1. A process for preparing β,β-dichloropropionitrile which comprises reacting β-chloropropionitrile at a temperature of from about 0° C. to about 100° C., with chlorine in the presence of a free radical initiator and recovering the resultant product.

3. A process as in claim 1 in which the free radical initiator is chemical.

3,161,578
APPARATUS FOR CARRYING OUT ELECTROLYTIC TREATMENTS ON THE ENTIRE SURFACE
Louis Facquet, Vaucresson, Jacques Daboval, Clichy, and Guy Chauvin, Fontenay-aux-Roses, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Feb. 16, 1961, Ser. No. 89,679
Claims priority, application France, Mar. 22, 1960, 822,063
4 Claims. (Cl. 204—212)

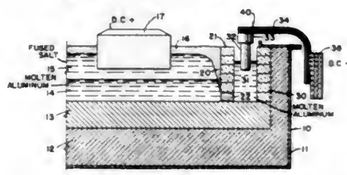
1. Apparatus for electrolytic treatment of the surface of an electrically conductive work piece, the work piece

being substantially a solid of revolution about one axis, comprising a container containing an electrolytic bath including salts of metal compounds to be deposited, an electrically conducting substantially helicoidal coil for containing and for supporting the work piece, the part of said coil containing the work piece being immersed in said bath, a horizontal cylindrical member projecting through and supporting said coil, means for imparting rotation to said member about its longitudinal axis, the coefficients of friction between said coil and said mem-



ber and between said coil and the work piece imparting rotation to said coil and to the work piece, means for limiting the axial displacement of said coil along said member, at least one electrode immersed in the bath and means for applying an electric voltage between said coil and said electrode, the interior surface of said coil being electrically conducting and constituting an electrode, said support being electrically conducting and being connected to said electric voltage supply means and insulation on the exterior surface of said coil.

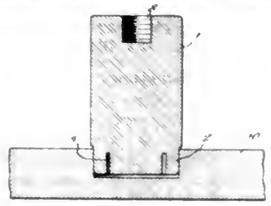
3,161,579
ELECTROLYTIC CELL FOR THE PRODUCTION OF ALUMINUM
Jack L. Henry, Los Altos, and William A. Klemm, Monta Vista, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,539
10 Claims. (Cl. 204—243)



1. In an electrolytic cell for the production of aluminum having side walls and a bottom floor, at least one refractory wall structure dividing said cell into at least one electrolytic reduction chamber and at least one cathode current collecting chamber, said refractory wall structure comprising substantially non-electrically conductive refractory material and including at least one current conducting refractory hard metal body disposed in the wall and adapted to pass electric current from an anode in the electrolytic reduction chamber to a current lead in the cathode current collecting chamber.

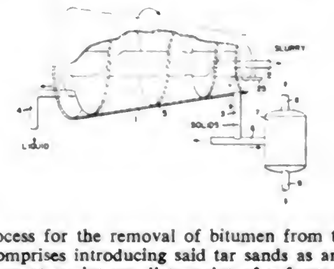
3,161,580
GRAPHITE JOINTS OF HIGHLY UNIFORM ELECTRICAL RESISTANCE
Edward C. Thomas, Lewiston, N.Y., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1961, Ser. No. 82,558
9 Claims. (Cl. 204—288)

1. In combination, a graphite pin electrically coupling an external power supply to an electrical conducting member having a non-threaded socket receiving an engaging portion of said pin under compression, said pin being characterized by having a main body portion coupled to said engaging portion and to an external power supply, said engaging portion being interiorly cut away to make it more pressure compliant than said engaging portion



would be if the interior cutting were absent, said cut away portion extending longitudinally from the face of the engaging portion in the direction of the main body portion and terminating within said graphite pin.

3,161,581
CENTRIFUGAL PROCESSING OF TAR SANDS
John L. Tiedje, Sarnia, Ontario, John A. Bichard, Point Edward, Ontario, and Roger M. Butler, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 24, 1960, Ser. No. 51,591
4 Claims. (Cl. 208—11)

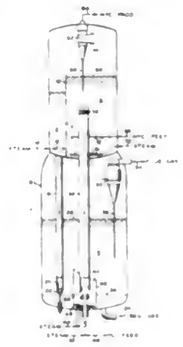


1. Process for the removal of bitumen from tar sands which comprises introducing said tar sands as an oil solvent slurry at an intermediate point of a frustro conical type centrifuge zone operating on a horizontal axis and centrifuging the same, allowing extracted oil to flow by gravity downwardly and be withdrawn from the lower end of said centrifuge zone, fractionating said oil to separate a gas oil fraction and mixing a portion of said fraction with the tar sands introduced into said intermediate point, causing extracted tar sands to move upwardly toward the upper end of said centrifuge zone by rotating means at a speed different from the speed of rotation of said centrifuge zone, withdrawing extracted sand from the upper end of said centrifuge zone, treating said sand in a second stage to separate solvent therefrom and introducing a second solvent stream into said centrifuge zone at a point intermediate the point of introduction of said slurry and the point of withdrawal of said extracted sands.

3,161,582
TWO-STAGE HYDROCARBON CONVERSION PROCESS
Henry P. Wickham, Glen Head, N.Y., assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 218,210
7 Claims. (Cl. 208—74)

7. A process for the catayltic cracking of hydrocarbon oil feed materials boiling essentially above gasoline boiling range products into desired gasoline and lower boiling range products which comprises passing a fresh hydrocarbon feed material to be cracked upwardly from the lower portion of a dense fluid bed of catalyst in a regeneration zone through a first high temperature-high velocity

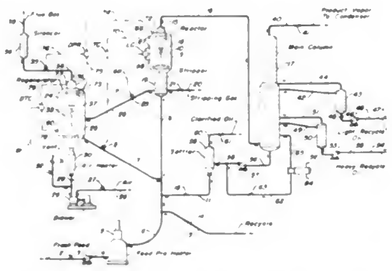
reaction zone in vapor phase in contact with freshly regenerated finely divided solid conversion catalyst at a rate sufficient to form a relatively dilute suspension of catalyst in the oil vapors and a time of contact sufficient to effect the desired degree of conversion of the hydrocarbon feed, the linear velocity employed in said first conversion zone being above the highest linear velocity at which the catalyst can separate into a dense pseudo liquid phase condition and the temperature of said high velocity reaction zone being above the temperature employed in a second reaction zone, discharging conversion products and finely divided catalyst from the upper portion of said first reaction zone into the upper portion of a relatively dense fluid bed of catalyst in said second reaction zone at a point substantially above the upper level thereof to separate entrained catalyst from the hydrocarbons discharged from said first reaction zone, the catalyst passed from said first



reaction zone into the dense fluidized bed of catalyst in the second reaction zone being at a temperature sufficiently elevated to provide the major portion of the heat requirements of said second reaction zone, passing a hydrocarbon feed more refractory than the feed to said first reaction zone into the lower portion of said second reaction zone for contact with said dense fluidized bed of catalyst at a velocity sufficient to maintain the catalyst in a fluidized condition in said second reaction zone, removing hydrocarbon conversion products of the first and second reaction zones from above the dense fluidized bed of catalyst in said second reaction zone, passing contaminated catalyst from the dense catalyst bed in said second reaction zone to an adjacent stripping zone, stripping catalyst in said stripping zone and passing stripped catalyst substantially vertically downwardly as a confined stream to said fluid bed of catalyst in said regeneration zone.

3,161,583
FLUID CATALYTIC CRACKING OF HYDROCARBONS
Jack B. Pohlenz, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,271
3 Claims. (Cl. 208—164)

1. In a continuous process for cracking a hydrocarbon charge stream in the presence of subdivided catalyst particles, wherein the hydrocarbon stream effects a fluidized contacting of the particles in a confined reaction zone, conversion products are separated from the contacted particles, separated catalyst particles containing a coke deposit effect fluidized contacting of an oxygen containing stream in a separate confined regeneration zone, combustion gas products are separated from regenerated catalyst particles and such regenerated catalyst particles with a reduced coke content are returned to the reaction zone for contact with hydrocarbon charge stream, the improved method of effecting improved product yields from the hydrocarbon charge stream by operating to provide a high temperature level in the regeneration zone and an overall reduction of coke yield in the process which comprises, varying the reaction zone temperature and the contact time of the hydrocarbon stream with the catalyst in the reaction zone responsive to the refractory characteristics of said hydrocarbon charge stream and effecting a coke



deposition on the catalyst particles sufficient to provide a temperature above 1150° F. in the regeneration zone when oxidizing the coke on the catalyst particles in the presence of a controlled oxygen containing stream introduced to such regeneration zone, and regulating the introduction of the oxygen containing stream to the regeneration zone directly responsive to a predetermined temperature differential between the gas outlet section and the catalyst contacting section of the regeneration zone to minimize excess oxygen therein and to preclude afterburning in the upper portion of the regenerating zone.

3,161,584
HYDROREFINING WITH DECOMPOSED ORGANO-METALLIC CATALYST
William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,070
10 Claims. (Cl. 208—264)

1. A method of producing a catalyst which comprises forming a hydrocarbon solution of at least one xanthate complex of a metal selected from the group consisting of vanadium, niobium, tantalum, chromium, molybdenum, tungsten, iron, nickel and cobalt, and heating said solution at a temperature less than about 310° C. for a time sufficient to decompose said xanthate complex.

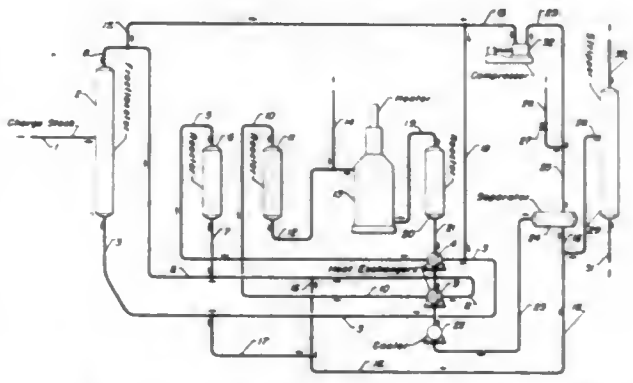
3,161,585
HYDROREFINING CRUDE OILS WITH COLLOIDALLY DISPERSED CATALYST
William K. T. Gleim, Island Lake, and John G. Gatsis, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,071
9 Claims. (Cl. 208—264)

1. A process for hydrorefining a petroleum oil containing pentane-insoluble asphaltenes which comprises colloidally dispersing in said petroleum oil a catalyst selected from the group consisting of a metal of Groups VB and VIB, an oxide of said metal, and a sulfide of said metal, reacting the resultant dispersion with hydrogen at a temperature in excess of about 225° C. and a pressure in excess of about 500 p.s.i.g., and recovering a hydrorefined petroleum oil.

3,161,586
HYDROREFINING OF COKE-FORMING HYDROCARBON DISTILLATES

Charles H. Watkins, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 21, 1962, Ser. No. 246,458
9 Claims. (Cl. 208—264)

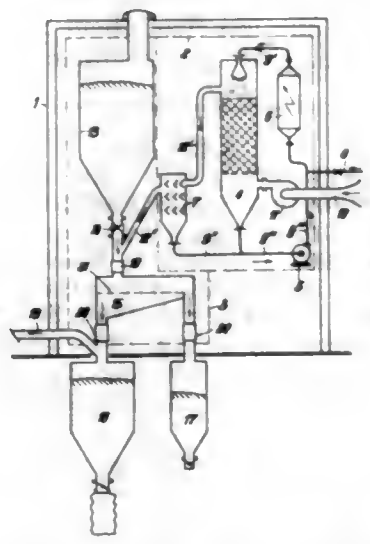


1. A process for hydrorefining an unsaturated, coke-forming hydrocarbon distillate which comprises initially fractionating said distillate to provide a light fraction having an end boiling point of from about 200° F. to about 300° F. and a heavy fraction having an initial boiling point above about 200° F.; reacting said heavy fraction and hydrogen in a first reaction zone at a temperature less than about 500° F., combining at least a portion of the effluent from said first zone with said light fraction, and reacting the resulting mixture and hydrogen in a second reaction zone at a temperature less than about 500° F., raising the temperature of the effluent from said second zone and passing the heated effluent into a third reaction zone; effecting further reaction of said effluent from the second zone and additional hydrogen in said third zone at a temperature in excess of about 500° F., separating the effluent from said third reaction zone into a gaseous product and a liquid product, and commingling separate portions of said liquid product with the aforesaid light and heavy fractions prior to reacting the same in said second and first reaction zones, respectively.

3,161,587
SIFTING METHOD

Robert Bach, Basel, Switzerland, assignor to Lonza Electric and Chemical Works Limited, Basel, Switzerland

Filed June 28, 1960, Ser. No. 39,257
Claims priority, application Switzerland, July 1, 1959, 75,195
2 Claims. (Cl. 209—3)

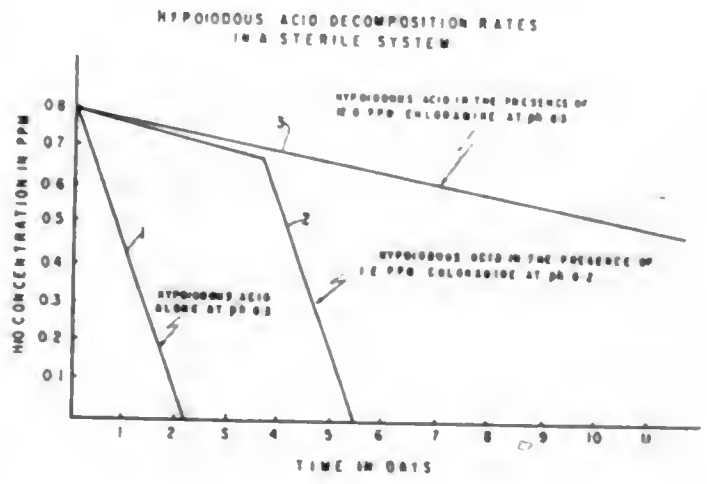


1. A continuous process of sifting electrostatically chargeable, pulverulent material, comprising the steps of introducing pulverulent material having a first predetermined temperature of introduction into a closed chamber; introducing into said closed chamber also a gaseous medium having a second predetermined temperature of introduction which is higher than said first predetermined temperature of introduction and the temperature difference between said first and second predetermined temperatures being between about 0.5° C. and 5° C., said gaseous medium having a relative humidity of between 95% and 100% sufficiently high to cause moisture condensation on a body having said first predetermined temperature; said pulverulent material having said first predetermined temperature of introduction mixing in said closed chamber with said gaseous medium having said second predetermined temperature of introduction and having said sufficiently high relative humidity so that said gaseous medium is cooled by said pulverulent material and so that moisture condensation will take place on the surface of the particles of said pulverulent material forming a thin film of moisture thereon thereby making said particles substantially incapable of carrying electrostatic charges; and sifting said pulverulent material in said closed chamber while the same is thus substantially free of electrostatic charges, whereby a sifted material is obtained substantially without increasing the moisture content thereof.

3,161,588
PROCEDURE FOR WATER TREATMENT

Frank J. Zsoldos, Jr., 25—63 33rd St., Astoria, N.Y.

Filed June 1, 1962, Ser. No. 199,483
7 Claims. (Cl. 210—64)



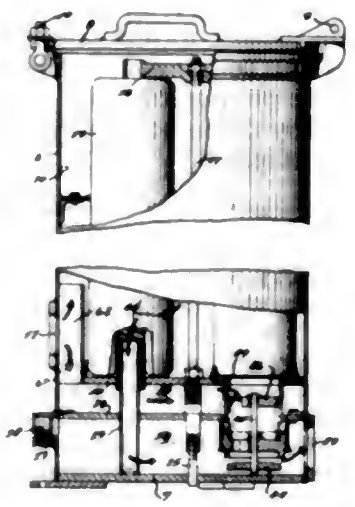
1. The procedure for generating within a body of water, subject to oxidizable contamination, a stabilized and continually regenerated source of germicidal concentration of hypoiodous acid, whereby the accumulation of objectionable iodination products are largely eliminated by constant reconversion to said hypoiodous acid, said procedure comprising the inclusion in said body of water of an alkaline material sufficient to impart a pH between about 7.8 and about 8.4, a substantially stable oxidant and an iodine compound that has an oxidation potential lower than that of hypoiodous acid and that is reactive with said oxidant at a pH within said range to provide hypoiodous acid within said body of water at a concentration between 0.20 and 30 parts per million, said oxidant at a pH within said range being essentially non-reactive with hypoiodous acid and being essentially non-reactive with the non-iodine portion of said iodine compound, and maintaining a quantity of said oxidant in said body of water such that the molar ratio of said oxidant to monoatomic iodide is essentially between 6:1 and 120:1, said ratio being expressed on an available basis.

3,161,589

BY-PASS ASSEMBLY FOR FILTERS

Robert N. Burckhalter, Michigan City, Ind., assignor to Commercial Filters Corporation, Melrose, Mass., a corporation of New York

Filed Jan. 25, 1962, Ser. No. 168,726
1 Claim. (Cl. 210—130)



A filter having a bottomed casing with an inlet port substantially above the bottom and an outlet port adjacent to the bottom,

(*a*) said casing defining a filtering compartment provided with filtering means therein,

(*b*) separator means sealingly related to the casing and defining with the casing bottom an outlet chamber communicating with said outlet port,

(*c*) retainer means sealingly related to the casing and spaced above said separator means and providing a bottom for the filtering compartment below the filtering means and defining a by-pass chamber between itself and said separator means,

(*d*) tubular filtrate outlet means extending through both of said separator and retainer means and discharging into said outlet chamber beneath said separator means,

(*e*) said separator means having a by-pass opening therethrough from said by-pass chamber into said outlet chamber,

(*f*) closingly biased by-pass valve means normally closing said by-pass opening,

(*g*) said retainer means having an opening therethrough adjacent to said inlet port,

(*h*) and means including a baffle connected to the retaining means about said opening through the retaining means and opposing said inlet opening to guide incoming fluid to be filtered upwardly to a substantial height above the retainer means into the filtering compartment and to guide by-pass flow into said by-pass chamber without flowing into the filtering compartment, and forming a barrier between said inlet port and the filtering compartment against by-pass flow from said inlet port reaching the top of said retainer means directly,

whereby by-pass fluid flow cannot wash contaminants and sludge from above the retainer means into the by-pass chamber.

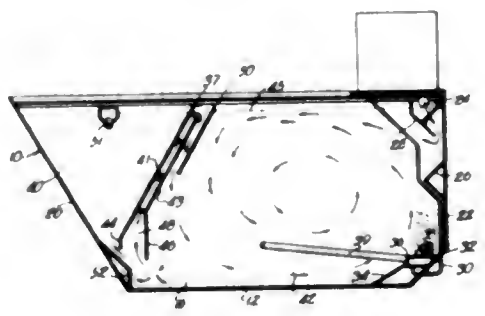
3,161,590

ACTIVATED SLUDGE TYPE SEWAGE TREATING APPARATUS

Frank G. Weis, Kansas City, Mo., and Millis R. Golly, Leawood, Kans., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed May 9, 1960, Ser. No. 27,787
2 Claims. (Cl. 210—221)

1. In a plant for the treatment of liquid carried sewage material, a treatment tank comprising: a bottom having end walls and side walls extending upwardly therefrom, partition means extending between said side walls to divide said tank into an aeration chamber and a settling chamber, means for introducing sewage bearing liquid into said aeration chamber adjacent the upper edge of one of said end walls, means adjacent said introducing means for directing introduced sewage bearing liquid downwardly along said one end wall, air releasing means in said tank adjacent said one end wall, means adjacent said one end wall for turning the downward flow of sewage bearing liquid outwardly away from said one end wall over said air releasing means, rising air from said air releasing means turning the flow of introduced sewage bearing liquid upwardly toward the surface of the liquid in said tank and toward the other end wall thereof, outlet means in said settling chamber formed at a predetermined level in at least one of said walls for limiting the surface level of sewage bearing liquid in said tank, substantially all of the sewage bearing liquid flowing toward the surface of the liquid in said tank and toward the other end wall being directed downwardly toward the bottom of said tank by said partition means, said partition means including a first partition wall having its lower extremity in spaced relationship from said bottom and its upper extremity extending above the level of liquid in said tank, a second partition wall having its lower extremity in spaced relation to said bottom and its upper extremity terminating below the level of liquid in said tank and spaced from said first partition wall on the aeration chamber side of said first partition wall, and a third

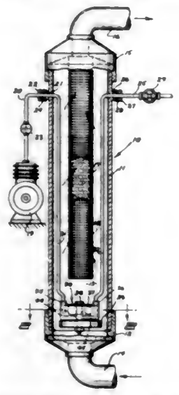


partition wall having its upper extremity terminating above the level of liquid in said tank and spaced from said second partition wall on the aeration chamber side of said second partition wall, said third partition wall blocking the stream of sewage bearing liquid flowing toward said settling chamber and directing said stream downwardly along said partition means, a first portion of said downwardly directed sewage bearing liquid flowing under said partition means into said settling chamber, a second portion of said downwardly directed sewage bearing liquid flowing upwardly between said first and second partition walls and then downwardly between said second and third partition walls into said aeration chamber once more, and a third portion of said downwardly directed sewage bearing liquid flowing back toward said one end wall along said tank bottom to define a rotational flow of sewage bearing liquid in said aeration chamber, said third partition wall being shorter than said second partition wall and said partition walls being spaced a predetermined relatively short distance from each other, whereby the flow of said downwardly directed sewage bearing liquid past the lower end of said third partition wall is effective to create a reduction in pressure between said second and third partition walls and induce the flow of said second portion of sewage bearing liquid upwardly between said first and second partition walls and then downwardly between said second and third partition walls.

3,161,591
FILTERING APPARATUS FOR LIQUID MATERIALS

William J. Petter, Robert M. Ronningen, and Helmer A. Ronningen, Vicksburg, Mich., assignors to Ronningen-Petter Company, Kalamazoo, Mich., a corporation of Michigan

Filed Mar. 2, 1961, Ser. No. 92,898
4 Claims. (Cl. 210—251)

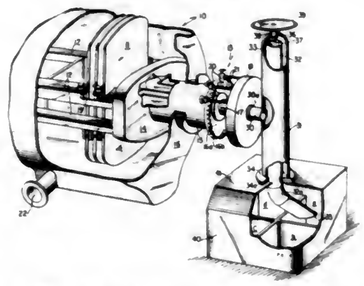


1. A filtering apparatus for use in a fluid line carrying liquids of the character described under pressure, said line having vertically spaced upper and lower fluid conduits, a casing having a top outlet closure member and a bottom inlet closure member each of which is provided with an aperture, means for respectively connecting the top and bottom closure members to said upper and lower fluid conduits through said apertures in sealing relationship whereby the casing and closure members jointly provide a closed fluid connection for carrying fluid upwardly between said conduits, an enclosed perforate filtering element disposed within the casing and having an open connection with the upper conduit leaving a liquid chamber within the casing surrounding and extending below the element, an air operated vibrator disposed in the chamber over the bottom inlet closure member and below the element and spaced therefrom, and air lines extending through a wall of the casing for carrying air to and from the vibrator.

3,161,592
FILTER DISCHARGE APPARATUS

Arthur R. Dominguez, New York, N.Y., assignor to Suchar Sales Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 248,089
5 Claims. (Cl. 210—331)

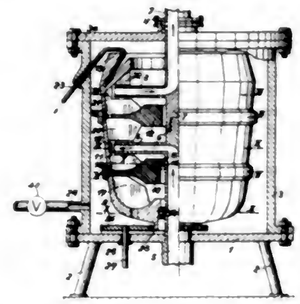


1. In a filter apparatus comprising a shell containing filter leaves and into which a mixture of liquid and finely divided suspended solids is supplied for collection of the solids on said leaves and passage of the liquid through said leaves, there being conduit means extending from said shell for conducting therefrom the liquid passed through the leaves; a riser chamber connected with said conduit means, a pipe opening in said chamber at a level at least as high as the top of said leaves and extending downwardly therefrom within, and through the bottom of, said chamber to an outlet of the pipe disposed below said chamber and leading to one side of the axis of said pipe, and means for rotating said pipe about said axis whereby to vary the position of said outlet relative to said chamber and thereby the location to which liquid flowing from the shell is directed.

3,161,593
METHOD OF AND APPARATUS FOR UTILIZING THE FORMATION ENERGY OF PETROLEUM DEPOSITS

Richard Schiel, Stuttgart-Lederberg, Germany, assignor to Fa. Schoeller-Bleckman Stahlwerke Aktiengesellschaft, Vienna, Austria

Filed Mar. 29, 1960, Ser. No. 18,293
Claims priority, application Germany, Apr. 2, 1959, Sch 25,818
8 Claims. (Cl. 233—21)



1. A method of separating, with the aid of a rotatable centrifuge drum, oil from contaminants having a higher specific gravity than said oil in a crude petroleum foam issuing from a petroleum deposit and charged with a gas under pressure, comprising the steps of introducing said foam into said drum; rotating said drum by substantially isothermally expanding said gas to produce a high-velocity jet of said foam and directing said jet generally tangentially into said drum to drive it with a velocity sufficient to concentrate said contaminants at an outer zone, said oil in a layer along an inner wall of said drum at an intermediate zone and said gas at an inner zone thereof; discharging said contaminants from said outer zone and said gas from said inner zone; imparting an angular velocity to said oil by entraining it along with the rotating drum; and withdrawing said oil from said drum under pressure substantially tangentially at a location in said intermediate zone by intercepting said layer along said wall with an outlet body projecting generally radially into said layer.

3,161,594
TEXTILE LUBRICANT COMPOSITION

Charles C. White and Raymond E. Donaldson, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 14, 1961, Ser. No. 124,014
4 Claims. (Cl. 252—8.8)

1. A textile lubricant composition especially adapted for the lubrication of hydrophobic fibers consisting principally of 20–60 parts of a polyoxyethylene glycol having an average molecular weight of 400–800; 10–40 parts of polyoxyethylene glycol monolaurate wherein the polyoxyethylene group has a molecular weight of about 200; 10–40 parts of N,N-di(beta-hydroxyethyl)lauramide, and 5–20% by weight of stearamidopropyl dimethyl-beta-hydroxyethyl ammonium nitrate.

3,161,595
HOT METAL WORKING LUBRICANT

Grafton F. J. Fenker, Rocky River, Ohio, assignor to Pennsylvania Refining Company, a corporation of Pennsylvania

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,442
4 Claims. (Cl. 252—28)

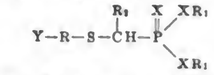
1. A hot metal working lubricating composition especially adapted for use in working solid metal at a temperature above 750° F. but below the melting point of the metal consisting essentially of from about 95% to about 60% by weight of a clay grease, and from about 5% to about 40% by weight of a low fusion point frit in finely divided form and intimately admixed therewith, said frit having a fusion point in the range of from about 750° F. to about 1,400° F.

3,161,596
LIQUID LUBRICANT COMPOSITION

George M. Calhoun, Berkeley, Calif., assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Dec. 14, 1959, Ser. No. 859,128
3 Claims. (Cl. 252—46.6)

1. A lubricating oil composition comprising a major amount of a lubricating oil and a minor amount, sufficient to impart extreme pressure properties to organic liquid of an oil-soluble alkylmercaptomethylphosphono compound having the general formula



wherein R is an oil-soluble C_{2-18} alkyl radical, the R_1's are selected independently from the group consisting of hydrogen and C_{1-4} alkyl radical, and mixtures thereof, R_2 is selected from the group consisting of hydrogen and a C_{1-4} alkyl radical, X is oxygen, and Y is a polar radical selected from the group consisting of —OH and —COOH radicals.

3,161,597
NONSEGREGATING GRANULAR DETERGENT-BLEACH PRODUCTS AND THEIR PREPARATION

James H. Young, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 14, 1961, Ser. No. 152,181
9 Claims. (Cl. 252—99)

1. The method of producing a granular, nonsegregating detergent-bleach product comprising adding to an agitated body of material consisting essentially of granules of a detergent, a borate perhydrate solution in an amount such as will result in the formation of a mixture of moist crumb-like aggregates and will provide in said product an active oxygen content of from 0.1 to 3% based upon the product weight, said addition being made while each of said body of material and said solution is at a temperature of from room temperature to 55° C., and continuing the agitation of said mixture until a dry-appearing free-flowing product is obtained; said detergent being from the group consisting of (*a*) the sodium and potassium alkylbenzene sulfonates in which the alkyl groups contain from 10 to 18 carbon atoms and (*b*) the sodium and potassium sulfates of fatty alcohols containing 12 to 14 carbon atoms; said solution consisting essentially of 45 to 75% by weight of water and 25 to 55% by weight of a borate perhydrate solute consisting essentially of from 1 to 2 moles of H_2O_2 and 0.5 to 1 mole of alkali per mole of B_2O_3, said alkali being calculated as M_2O in which M represents at least one cation of the group consisting of sodium, potassium and ammonium.

5. A granular, nonsegregating detergent-bleach product whose granules are uniform in their over-all chemical composition with each granule consisting essentially of a granule of a detergent having a borate perhydrate component as an integral part of the granule structure; said borate perhydrate being present in an amount to provide active oxygen equal to 0.1 to 3% based upon the weight of said product, and said borate perhydrate being a sodium-ammonium borate perhydrate consisting essentially of from 1 to 2 moles of H_2O_2, 0.5 mole of Na_2O and from 0.25 to 1 mole of NH_3 per mole of B_2O_3; and said detergent being from the group consisting of (*a*) the sodium and potassium alkylbenzene sulfonates in which the alkyl groups contain from 10 to 18 carbon atoms and (*b*) the sodium and potassium sulfates of fatty alcohols containing 12 to 14 carbon atoms.

3,161,598
METHOD AND COMPOSITION FOR CHEMICAL RUST REMOVAL

Isidore Geld, Flushing, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Dec. 11, 1961, Ser. No. 158,616
5 Claims. (Cl. 252—147)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A composition of matter for rust removal from ferrous metal articles consisting essentially of an aqueous solution formed by the mixture of about equal parts by volume of concentrated hydrochloric acid and an aqueous solution of sodium iodide in which the proportion of sodium iodide to water is about 75 grams to 50 milliliters of water.

3,161,599
METHOD OF REMOVING RADIOACTIVE PRODUCTS FROM AN ORGANIC MODERATOR-COOLANT USED IN A NUCLEAR REACTOR

James F. Black, Convent, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,953
8 Claims. (Cl. 252—301.1)

1. The method of removing radioactive S^{35} and P^{32} containing material from a liquid aromatic hydrocarbon moderator-coolant containing sulfur substantially in excess of 100 parts per million by weight after said coolant has been exposed to nuclear radiation and thermal effects under conditions to convert sulfur S^{34} atoms to radioactive S^{35} atoms and S^{32} atoms to P^{32} atoms in said coolant, while a portion of the aromatic hydrocarbons in the liquid coolant is polymerized, which comprises contacting the polymer in said liquid coolant after exposure to nuclear radiation with a strongly basic alkali metal-containing material and reacting said basic material with the radioactive S^{35} and P^{32} containing material in said polymer to separate said radioactive material thus reacted and concentrate said radioactive material into a relatively small volume with the reacted basic material as a reject product prior to discard of the polymer from which said radioactive material has been separated.

3,161,600
RADIOACTIVE STRONTIUM CONTAINMENT

Gerald B. Barton, Kennewick, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,949
5 Claims. (Cl. 252—301.1)

1. A glass composition consisting essentially of from about 30 to about 60 weight percent $Sr^{90}O$ and from about 33 to about 65 weight percent P_2O_5.

3,161,601
RADIOACTIVE CESIUM CONTAINMENT

Gerald B. Barton, Kennewick, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,950
5 Claims. (Cl. 252—301.1)

1. A method of containing radioactive cesium, comprising incorporating it in a glass containing cesium oxide, alumina and phosphate and having an additive selected from the class consisting of lanthanum in the plus three oxidation state and zirconium in the plus four oxidation state.

3,161,602
PROCESS FOR MAKING CAPSULES

James A. Herbig, Dayton, and John Franklin Hanny, West Carrollton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Sept. 5, 1961, Ser. No. 135,736
16 Claims. (Cl. 252—316)



1. A process for making minute wax-walled capsules en masse, including the steps of providing a three-phase heated and agitated system consisting of a substantially inert oily vehicle material and finely-divided capsule-forming materials including a waxy capsule wall material and a nucleus material, the waxy capsule wall material being liquid in the heated system but solid at room temperature, and the ratio of nucleus material to waxy material ranging from 1 to 10 to 10 to 1 by volume, and the vehicle, capsule wall, and nucleus materials being mutually immiscible, whereby by said agitation the finely-divided liquid waxy material deposits on each entity of nucleus material to form liquid-walled capsules; and with continued agitation, cooling the system until the liquid waxy walls are solidified to form self-sustaining capsules that may be recovered from the oily vehicle.

3,161,603
RECOVERY OF COPPER-VANADIUM CATALYST

David Morgan Leyshon and John Stewart, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,334
Claims priority, application Great Britain, Jan. 23, 1961, 2,578/61
4 Claims. (Cl. 252—413)

1. A process for the recovery of copper-vanadium catalyst from the waste liquor obtained in the manufacture of adipic acid by nitric acid oxidation of a member of the group consisting of cyclohexanol, cyclohexanone, and mixtures thereof and containing nitrate salts as a result of said oxidation, said process comprising the steps of adding to the waste liquor an acid selected from the group consisting of sulphuric acid and phosphoric acid in an amount slightly more than the chemical equivalent of the nitrate salts present in the waste liquor, evaporating substantially all of the water and nitric acid from said waste liquor by the application of heat thereto, filtering the molten residue to separate the insoluble catalyst, redissolving the catalyst in a member of the group consisting of water and dilute nitric acid, reprecipitating the catalyst by adding alkali thereto to raise the pH to above 7 and washing the precipitated catalyst with water.

3,161,604
NOVEL COPPER CONTAINING POLYMERIZATION CATALYSTS

Perry A. Argabright, Piscataway, and Edwin A. Schmall, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1959, Ser. No. 851,245
4 Claims. (Cl. 252—429)

1. An alpha olefin polymerization catalyst comprising a lower alkyl aluminum compound and a reduction product comprising a metal compound selected from the group consisting of $TiCl_3$, $TiBr_3$, VCl_3, and $VOCl_3$ co-crystallized with CuX, wherein X is the same halogen as the halogen in the metal compound, the molar ratio of metal compound to CuX being in the range of from about 1:1 to 3:1.

3,161,605
PREPARATION OF SUPPORTED CATALYSTS

John Hubert Beck and Alvin Barber Stiles, Charleston, W. Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 31, 1961, Ser. No. 99,748
6 Claims. (Cl. 252—455)

1. A method for preparing a catalyst which comprises bringing an aqueous solution of an ionizable salt of an element of the class consisting of platinum, rhodium, palladium, ruthenium and silver, said salt being a member of the class consisting of chlorides and nitrates, into contact with a silica-gamma alumina support, whereby 0.1% to 5.0% by weight of said element is incorporated in said support, the quantity of the said silica being from 0.05% to 15% of the weight of said gamma alumina, subjecting the resultant undried solid to the action of a reducing gas at a controlled humidity at a temperature initially above 0°, and below 100° C., said humidity being 15% to 90% R.H., whereby the said element is reduced to metal, while said ionizable salt is migrating to the surface of the solid support, said temperature and humidity being so balanced against each other that the rate of migration of the said salt to the surface is not so rapid as to cause accumuation of unreduced salt at the surface as evidenced by the formation of a metal coating which can be sloughed off by abrasion, and continuing said reduction until all of the element is reduced and converted to a coating of said metal on the outer surface of said support.

3,161,606
POLYETHYLENE NEUTRON SHIELD CONTAINING DISPERSED BORIC OXIDE

Donald E. Rash, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,810
11 Claims. (Cl. 252—478)

1. A neutron shield comprising a polyolefin having incorporated therein a complex of glycerol and boric oxide in the ratio of 1 mole boric oxide to 0.33–3.75 moles glycerol, said complex being present in the polyolefin in sufficient quantity to render the polyolefin resistant to penetration by neutron radiation.

7. A process of dispersing boric oxide in a polyolefin comprising mixing 0.25–3.75 moles of a polyhydric alcohol having 2–10 carbon atoms with 1 mole boric oxide to form a complex, and blending said complex with said polyolefin to form a homogenous mixture.

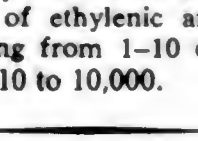
3,161,607

POLYPHOSPHINATE RESINS

Albert Y. Garner, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

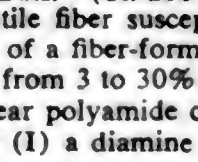
No Drawing. Filed Sept. 6, 1960, Ser. No. 53,922
3 Claims. (Cl. 260—2)

1. As compositions of matter, polyphosphinate resins corresponding to the general formula:

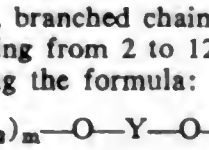


wherein R and R′ are radicals independently selected from the group consisting of hydrogen and hydrocarbon radicals free of ethylenic and acetylenic unsaturation, R″ is a hydrocarbon radical free of ethylenic and acetylenic unsaturation and containing from 1–10 carbon atoms and *n* is an integer of from 10 to 10,000.

3. A process for preparing polyphosphinate resins corresponding to the general formula:



which comprises heating a halophosphonite monomer in a substantially oxygen-free atmosphere at a temperature above the activation temperature of the halogen groups thereof; said halophosphonite monomer corresponding to the general formula:



wherein, in the above formulae, X is a halogen selected from the group consisting of bromine and chlorine, R and R′ are radicals independently selected from the group consisting of hydrogen and hydrocarbon radicals free of ethylenic and acetylenic unsaturation, R″ is a hydrocarbon radical free of ethylenic and acetylenic unsaturation and containing from 1–10 carbon atoms and *n* is an integer of from 10 to 10,000.

3,161,608

POLYAMIDE MORDANT FOR DYEING SYNTHETIC TEXTILE FIBERS

John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 5, 1961, Ser. No. 80,734
8 Claims. (Cl. 260—13)

1. A synthetic textile fiber susceptible of dyeing with basic dyes composed of a fiber-forming polymer containing dispersed therein from 3 to 30%, based on the weight of the fiber, of a linear polyamide consisting of the condensation product of (I) a diamine of the formula

$$H_2N—B—NH_2$$

wherein B is a member selected from the group consisting of:

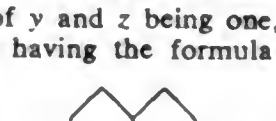
(*a*) straight chain, branched chain and cyclic alkylene radicals containing from 2 to 12 carbon atoms,

(*b*) radicals having the formula:

$$—(CH_2)_m—O—Y—O—(CH_2)_n—$$

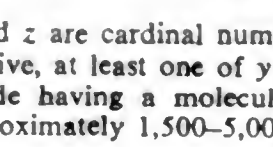
wherein Y is a divalent radical selected from the group consisting of straight chain alkylene radicals, branched chain alkylene radicals, cyclic alkylene radicals and oxydialkylene radicals and wherein *m* and *n* are cardinal numbers of from 2 to 4, inclusive,

(*c*) radicals having the formula:



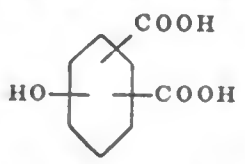
wherein R is a radical selected from the group consisting of lower alkyl and phenyl radicals, and

(*d*) a radical having the formula:

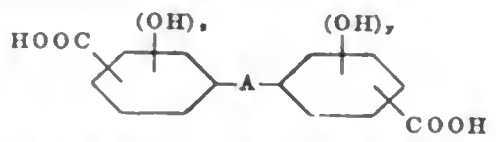


and (II) an aromatic hydroxy dicarboxylic acid selected from the group consisting of:

(*a*) compounds having the formula:

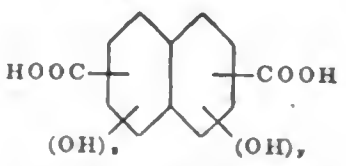


(*b*) compounds having the formula:



wherein A is selected from the group consisting of —CH_2—, —SO_2— and —O—, and wherein *y* and *z* are cardinal numbers of from zero to one, inclusive, at least one of *y* and *z* being one, and

(*c*) compounds having the formula:



wherein *y* and *z* are cardinal numbers of from zero to one, inclusive, at least one of *y* and *z* being one, said polyamide having a molecular weight in the range of approximately 1,500–5,000.

3,161,609

COMPOSITION COMPRISING LIQUID PHOSPHATE ESTER, THERMOPLASTIC RESIN AND CELLULOSE DERIVATIVE

Paul R. Graham, Richmond Heights, and Joseph R. Darby, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware

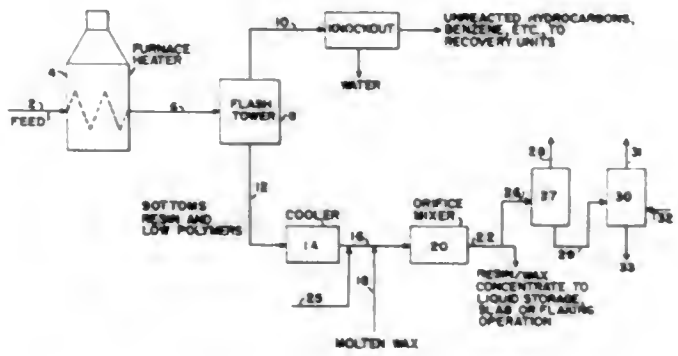
No Drawing. Filed Aug. 22, 1960, Ser. No. 50,833
15 Claims. (Cl. 260—17)

1. A liquid composition consisting essentially of from about 80 to about 98 percent by weight of a liquid phosphate ester, from about 1.5 to about 10 percent by weight of a thermoplastic resin selected from the group consisting of polyvinyl acetate, a vinyl halide polymer containing more than 50% of the polymerized vinyl halide monomer, a methacrylate polymer containing at least 75% of the polymerized methacrylate monomer and an acrylate polymer containing at least 75% of the polymerized acrylate monomer, the balance of said polymers comprising a different monoethylenically unsaturated monomer in polymerized form, and from about 0.5 to about 10 percent by weight of a cellulosic material selected from the group consisting of cellulose esters of lower alkane monocarboxylic acids, mixed cellulose esters of lower alkane monocarboxylic acids; lower alkyl cellulose ethers and carboxyalkyl cellulose ethers.

3,161,610
PETROLEUM RESIN/WAX COMPOSITIONS

George A. Weisgerber, Cranford, and Herman L. Thwaites, Clark, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,087
6 Claims. (Cl. 260—28.5)



1. An improved process for preparing a wax-petroleum resin composition which comprises subjecting to a Friedel-Crafts polymerization reaction a hydrocarbon fraction boiling from about 20° C. to about 170° C. and containing diolefins, olefins and aromatics at temperatures in the range of from about —10° to about 60° C. to secure a polymerization product containing molten resin, subjecting said polymerization product to a hydrolytic reaction to secure a hydrolyzed product, heating the hydrolyzed product to remove unreacted hydrocarbons from the molten resin, cooling the molten resin to a temperature in the range from about 260° to 300° F., and immediately mixing said molten resin with molten petroleum wax.

3,161,611
AQUEOUS SOLUTIONS OF HYDROXYPROPYL SILANOLS AND THEIR PREPARATION

Gerd Rossmy, Altendorf (Ruhr), Germany, assignor to TH. Goldschmidt A.G. Chemische Fabriken, Essen, Germany, a corporation of Germany

No Drawing. Filed June 27, 1961, Ser. No. 119,809
Claims priority, application Germany, July 6, 1960, G 29,995
8 Claims. (Cl. 260—29.2)

1. An aqueous solution of the silanol of the formula

$$(HO)_3Si[(CH_2)_3OH]$$

where the silanol is in equilibrium with its condensation products in the aqueous solution, said silanol being present in larger amounts than said condensation products.

3. A process for the preparation of organosilicon compounds of the general Formula A:

$$R_a'Si(MOH)_{(a'+d'-a')}(MO)_{a'}(OH)_{f'}O_{\frac{4-(a'+c'+d'+e'+f')}{2}}$$

which comprises saponifying aqueous solutions of organosilicon compounds of the Formula B:

$$R_a'X_b'Si(MO\overset{O}{\overset{\|}{S}}O(_{c'}(MO\overset{O}{\overset{\|}{S}}OB)_{d'}O_{\frac{4-(a'+b'+2c'+d')}{2}}$$

wherein the symbols in said Formulas A and B have the following meanings: R is a member selected from the group consisting of alkyl, aryl, alkaryl, aralkyl, hydrogen and mixtures thereof; X is selected from the group consisting of halogen, OR, $\frac{1}{2}SO_4$ and combinations thereof; M is a divalent hydrocarbon radical whose terminal groups are separated by at least one additional carbon atom and combinations of such radicals; B is a member selected from the group consisting of hydrogen, NR_4, the equivalent of a metal and combinations thereof; and a', b', c', d', e' and f' are numbers defined by:

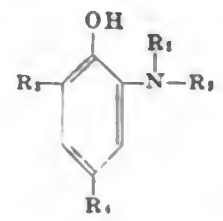
$$a',b'=0\text{–}3$$
$$c'=0\text{–}1.5$$
$$d'=0\text{–}3$$
$$e'=0\text{–}1$$
$$f'=0\text{–}3$$
$$(c'+d')=0.01\text{–}3$$
$$(a'+b'+2c'+d')=2\text{–}4$$
$$(a'+c'+d''+e'+f')=2\text{–}4$$

3,161,612
ALKYLATED AMINO PHENOLS PROTECTING RUBBER GOODS AGAINST OZONE

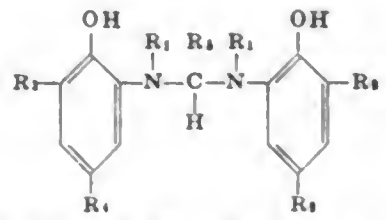
Kurt Ley, Leverkusen, Friedrich Lober, Leverkusen-Bayerwerk, Theo Kempermann, Cologne-Lindenthal, and Hans Pohle, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 13, 1960, Ser. No. 21,897
Claims priority, application Germany Apr. 15, 1959
6 Claims. (Cl. 260—45.9)

1. A novel compound having a formula selected from the group consisting of



and



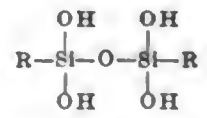
wherein R_1 is selected from the group consisting of a saturated hydrocarbon radical containing up to 16 carbon atoms and hydrogen, R_2 is a saturated hydrocarbon radical containing up to 16 carbon atoms, and wherein R_3, R_4, R_8, and R_9 each represent a saturated hydrocarbon radical containing from 4–9 carbon atoms, the carbon atom of the hydrocarbon radicals R_3, R_4, R_8, and R_9 which is adjacent to the aromatic nucleus only being substituted by additional hydrocarbon radicals, and wherein R_5 represents a member selected from the group consisting of a hydrogen atom and a saturated hydrocarbon radical containing 1–6 carbon atoms.

3,161,613
POLYMERIC REACTION PRODUCT OF AN ORGANOSILANETETROL AND PHENYLBORONIC ACID

Murray M. Sprung, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 12, 1960, Ser. No. 28,510
6 Claims. (Cl. 260—46.5)

1. The solid, fusible, polymeric product having the empirical formula $[(C_6H_5)_3R_4Si_4B_3O_8]_x$, where x is an integer from 10 to 1000, said product being obtained by effecting reaction at a temperature of from 60–150° C. between (1) a hydrocarbon silanetetrol having the formula



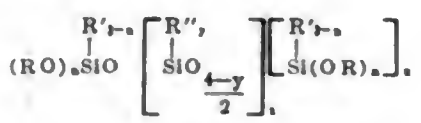
where R is a member selected from the class consisting of the cyclohexyl and cyclohexenyl radicals, and (2) phenylboronic acid.

3,161,614
POLYFUNCTIONAL ALKOXY ENDBLOCKED POLYSILOXANES AND THEIR CURED COMPOSITIONS

Paul L. Brown, Saginaw, and James Franklin Hyde, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,455
6 Claims. (Cl. 260—46.5)

1. A composition of matter consisting essentially of a siloxane of the formula



in which R is selected from the group consisting of monovalent haloaliphatic hydrocarbon radicals having no halogen on the carbon alpha to the oxygen and monovalent aliphatic hydrocarbons radicals both of said radicals havings from 1 to 8 inclusive carbon atoms, both R′ and R″ are each selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals and monovalent cyanoalkyl radicals all of from 1 to 18 carbon atoms, *n* has an average value from 2 to 3 inclusive, *y* has an average value from 1.99 to 2 inclusive, *z* has an average value from 1 to 1.01 inclusive and the sum of $y+z$ is 3 and *x* has a value of at least 7.

3,161,615
RESINOUS COPOLYMERIC POLYCARBONATE OF A MIXTURE OF DIHYDRIC PHENOLS

Eugene P. Goldberg, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 5, 1957, Ser. No. 638,239
1 Claim. (Cl. 260—47)

A high molecular weight, resinous, copolymeric polycarbonate of (1)a dihydric phenol, (2) a dihydroxyalkyl ether of a dihydric phenol and (3) carbonic acid.

3,161,616
POLYOXYMETHYLENE DIETHERS

Northrop Brown, William Philip Langsdorf, Jr., and Carl Earle Schweitzer, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 6, 1957, Ser. No. 682,325
8 Claims. (Cl. 260—67)

1. A polyoxymethylene dialkyl ether, in which the alkyl ether groups have 1–6 carbon atoms, having a number average molecular weight of at least 15,000 and characterized by having reaction rate constant for thermal degradation at 222° C. of less than 1% by weight per minute.

3,161,617
POLYMERIZATION OF FORMALDEHYDE

Helmuth Kritzler, Cologne-Flittard, and Kuno Wagner, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 15, 1960, Ser. No. 22,402
Claims priority, application Germany Apr. 29, 1959
10 Claims. (Cl. 260—67)

1. A process for the production of a high molecular weight polyoxymethylene which comprises polymerizing substantially anhydrous formaldehyde in the presence of catalytic amounts of an organic nitrogen compound selected from the group consisting of urea, thiourea, carboxylic acid amides with up to 25 carbon atoms, carboxylic acid imides with up to 25 carbon atoms, caprolactam, urethane, melamine, dicyandiamide, guanidine, and hydrazodicarbonamides having up to 20 carbon atoms, the nitrogen atoms of the aforesaid organic nitrogen compound being substituted by a radical of one of the formulae —CH_2OH, —CH_2—S—R, and —CH_2—O—R, wherein R represents an alkyl group having 1–12 carbon atoms, said polymerization being carried out in an inert organic solvent at a temperature between −90° and +70° C., the catalytic amount of said catalyst being in the range of 0.000001 to 0.2 mol of catalyst per one thousand parts by volume of solvent.

3,161,618
HIGH-IMPACT ALKYD RESINS MODIFIED WITH TRIETHYLENE GLYCOL

Robert W. F. Kreps, Geert C. Vegter, and Felje H. Sinnema, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

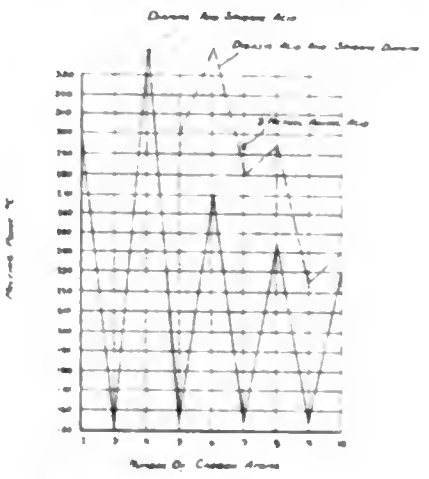
No Drawing. Filed Mar. 14, 1961, Ser. No. 95,496
Claims priority, application Netherlands, Apr. 20, 1960, 250,691
6 Claims. (Cl. 260—75)

1. A process for preparing alkyd resins which comprises mixing together and simultaneously reacting (1) glycidyl esters of saturated alpha-alkyl monocarboxylic acids prepared by reacting epichlorohydrin with alpha-alkyl monocarboxylic acids, said acids containing from 4 to 20 carbon atoms and prepared by reacting an olefin with carbon monoxide and water in the presence of acid catalysts, (2) a member of the class consisting of polycarboxylic acids and polycarboxylic acid anhydrides and (3) at least two polyols wherein at least one contains two hydroxyl groups on a carbon chain in which at least four carbon atoms separate the two hydroxyl groups and the other polyol has at least three hydroxyl groups, the former being present in sufficient amount to provide a substantial improvement in impact strength of the resulting resin.

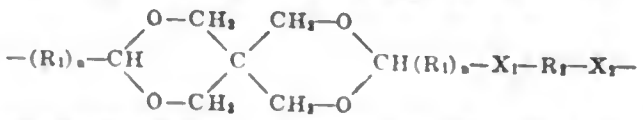
3,161,619
POLYMERS WITH SPIRO STRUCTURE

Leonard M. Rice, Baltimore, Md., and John B. Clements, Short Hills, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

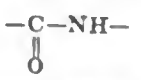
Filed Dec. 3, 1959, Ser. No. 857,106
18 Claims. (Cl. 260—78)



7. Fiber-forming linear polycarbonamides consisting essentially of recurring units having the structure



where *n* is an integer from 0 to 1; X_1 and X_2 are



groups, R_1 is an alkylene radical having up to about 7 carbon atoms; and R_2 is a divalent radical having up to 20 carbon atoms, selected from the group consisting of

arylene, alkylene, alkarylene, aralkylene, and organic radicals having hydrocarbon ends linked together by a hetero atom of the group consisting of oxygen and sulfur.

3,161,620

REACTION OF HYDROCARBON RESINS WITH MALEIC ANHYDRIDE

Roderic B. Perkins, Jr., Highland, Ind., and Robert G. Weisz, Park Forest, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Dec. 16, 1960, Ser. No. 76,199
2 Claims. (Cl. 260—78.4)

1. The free radical-initiated reaction product of maleic anhydride and a hydrocarbon resin, said product having been produced by the reaction of an essentially non-conjugated olefinic hydrocarbon resin with 5 to 20 weight percent of maleic anhydride in the presence of from 1 to 10 weight percent of a catalyst capable of producing free radicals, at a reaction temperature in the range of 150° F. to 400° F. and for a reaction time in the range of 1 to 15 hours, said olefinic hydrocarbon resin having an iodine number between about 140 and 160, a softening point of about 200° F., an average molecular weight of about 590 and having been produced by the thermal polymerization of an unsaturated hydrocarbon condensate having been obtained from the quenching step in the high temperature pyrolysis of normally gaseous hydrocarbons and having an API gravity of about 20°, an iodine number of about 260 and a maleic anhydride value of about 35 and an ASTM boiling range of 175° F. to about 560° F.

3,161,621

WATER SOLUBLE FILMS OF VINYL ALCOHOL-VINYLALKYL ETHER-VINYL ACETATE COPOLYMERS

Gordon J. Arquette, New Providence, N.J., and Sidney Ariemma, Fishkill, N.Y., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 19, 1961, Ser. No. 103,965
3 Claims. (Cl. 260—85.7)

1. A water-soluble film comprising an interpolymer of vinyl alcohol, a vinyl alkyl ether, and 0 to 20 mol percent of vinyl acetate, said vinyl alkyl ether being present in said interpolymer in the amount of from 1 to about 15 mol percent and the alkyl radical of said ether containing from one to four carbon atoms.

3,161,622

POLYAMIDE FIBERS HAVING MICROBIOCIDAL ACTIVITY

Robert C. Harrington, Jr., and James L. Smith, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,537
9 Claims. (Cl. 260—78)

1. A composition of matter comprised of, by weight, from about 0.2% to 1.2% of 3,4,4'-trichlorocarbanilide and from about 99.8% to 98.8% of nylon, said 3,4,4'-trichlorocarbanilide being substantially uniformly dispersed throughout the nylon.

3,161,623

PROCESS FOR THE MANUFACTURE OF VINYL CHLORIDE POLYMERS AND COPOLYMERS HAVING IMPROVED PROCESSING PROPERTIES

Gerhard Kühne, Burghausen, Upper Bavaria, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 14, 1960, Ser. No. 42,748
Claims priority, application Germany, July 18, 1959, F 28,968/59
9 Claims. (Cl. 260—92.8)

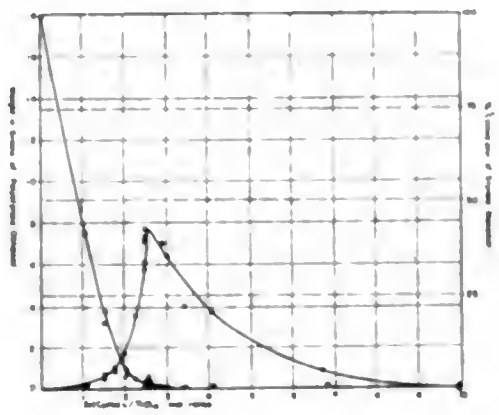
1. In the process for the manufacture of polymers with a porous grain structure from an aqueous suspension of polymerizable starting material consisting of at least 20% of vinyl chloride and 80 to 0% of at least one further vinyl monomer copolymerizable with said vinyl chloride and selected from the group consisting of vinyl ester, vinylidene chloride, maleic acid esters, and esters of acrylic acid and methacrylic acid, in the presence of a suspension agent and a peroxide catalyst, by heating and agitating said suspension to a moderate temperature and subsequently isolating the solid polymerization product formed, the preliminary steps which comprise first admixing with the monomeric starting material 0.02 to 3% by weight of the monomeric starting material of a non-electrolyte surfactant selected from the group consisting of oxyalkylation products of organic compounds containing carboxyl groups, hydroxyl groups, and amino groups, said surfactant being readily soluble in vinyl halide and which, when dissolved in water in an amount of 0.05% by weight and at a temperature of 25° C. creates a surface tension of not more than 60 to 68 dynes/cm., and then suspending the mixture of monomeric starting material and surfactant in an aqueous medium in the presence of a suspension agent selected from the group consisting of methyl cellulose, gelatine, polyvinyl alcohol and partially esterified polyvinyl alcohol.

3,161,624

POLYMERIZATION OF STYRENE

Giulio Natta, Ferdinando Danusso, and Dario Sianesi, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

Filed Feb. 15, 1957, Ser. No. 640,523
Claims priority, application Italy Feb. 24, 1956
6 Claims. (Cl. 260—93.5)



1. A process for catalytically polymerizing styrene to a polystyrene consisting for at least 90% of isotactic macromolecules, which process comprises preparing the catalyst at a temperature between 70° C. and 100° C. by adding an aluminum trialkyl to a titanium chloride, in a molar ratio between the aluminum trialkyl and titanium chloride higher than 2:1 and not higher than 3:1, at said temperature and while avoiding any separate contact between the styrene and titanium chloride prior to adding the aluminum trialkyl to the titanium chloride, and then polymerizing the styrene in contact with the catalyst thus prepared at a polymerization temperature between 70° C. and 100° C.

3,161,625

DESOLVATED Rb AND Cs TRIPHENYL METHIDE CATALYST AND PROCESS OF POLYMERIZING STYRENE THEREWITH

Michael J. Vignale, Lunenburg, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 22, 1961, Ser. No. 139,860
5 Claims. (Cl. 260—93.5)

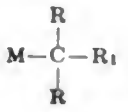
1. A method for preparing isotactic styrene polymers by anionic polymerization in aliphatic hydrocarbon media

which comprises contacting styrene monomer with catalytic quantities of desolvated alkali metal polyphenylmethides in said media at temperature of from −10 to 70° C. under an inert atmosphere; said desolvated alkali metal polyphenylmethides corresponding to the general formula:



wherein M is an alkali metal selected from the group consisting of rubidium and cesium, each R is a radical independently selected from the group consisting of phenyl and alkylphenyl groups containing from 7 to 10 carbon atoms, and R_1 is a radical selected from the group consisting of hydrogen, alkyl groups containing from 1 to 3 carbon atoms and R groups.

5. An anionic catalyst for the polymerization of styrene to isotactic polystyrene which comprises a desolvated alkali metal polyphenylmethide corresponding to the general formula:



wherein M is an alkali metal selected from the group consisting of rubidium and cesium, each R is a radical independently selected from the group consisting of phenyl and alkylphenyl groups containing from 7 to 10 carbon atoms, and R_1 is a radical selected from the group consisting of hydrogen, alkyl groups containing from 1 to 3 carbon atoms and R groups.

3,161,626

PROCESS FOR THE PRODUCTION OF POLYPROPYLENE

André Fournet and Michel Ruaud, Lyon, and Yannik Bonnet, Tassin la Demi-Lune, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body

No Drawing. Filed Feb. 2, 1959, Ser. No. 790,320
Claims priority, application France Feb. 8, 1958
16 Claims. (Cl. 260—93.7)

1. Process for the production of solid polypropylene, which comprises polymerising propylene in the presence as catalyst of a mixture of titanium dichloride and aluminium, in which the aluminium has been obtained by reacting an aluminium trihalide with an alkali metal selected from the class consisting of sodium and potassium in a liquid organic medium which is inert to the reactants, is a solvent for the aluminium trihalide and is selected from the class consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons, at a temperature such that the alkali metal melts, in an inert atmosphere and in the absence of reactive hydrocarbons, and stirring the reaction medium to disperse the molten alkali metal in the organic medium, the atomic ratio of aluminium to titanium in the said mixture being at least 2:1, and the said mixture being free from higher chlorides of titanium and from aluminium halides.

3,161,627

FOUR-COMPONENT TRANSITION METAL CATALYST FOR POLYMERIZING OLEFINS

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,147
9 Claims. (Cl. 260—93.7)

1. In the polymerization of α-monoolefinic hydrocarbon containing at least three carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture consisting essentially of a transition metal selected from the group consisting of titanium, zirconium, vanadium, chromium and molybdenum, a second metal selected from the group consisting of aluminum, zinc and magnesium, a halogen selected from the group consisting of chlorine, bromine and iodine and an ester having the formula $RCOOR_1$ wherein R has the formula

$$-(CH_2)_nCOOR_2$$

wherein *n* is a number from 0 to 4 and R_1 and R_2 are alkyl radicals containing 1 to 4 carbon atoms, the molar ratio of halogen to ester being within the range of 0.1 to 0.5.

3,161,628

PROCESS FOR POLYMERIZING OLEFINS IN THE PRESENCE OF A "ZIEGLER TYPE" CATALYST TREATED WITH SULFURIC OR PHOSPHORIC ACID

Nicolaas Dost and Franciscus Johannes Fredericus van der Plas, Amsterdam, Netherlands, and Norman Entwistle, Timperley, England, assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Apr. 30, 1957, Ser. No. 655,944
Claims priority, application Great Britain, Aug. 2, 1956, 23,907/56
1 Claim. (Cl. 260—94.9)

In the polymerization of ethylene with a catalyst prepared by the interaction of (*a*) an aluminum compound of the general formula R_2AlX wherein R is an alkyl radical and X is selected from the group consisting of halogen and alkyl radicals, with (*b*) a metal halide, MeX_n in which Me represents a metal of the B subgroup of Group IV, X represents halogen and *n* represents the valence of the metal, the improvement which comprises directly treating the catalyst prior to polymerization, with inorganic acid selected from the group consisting of sulfuric acid and phosphoric acid in an amount such as to cause production of a lower molecular weight polyethylene.

3,161,629

PREPARATION OF POLYETHYLENE USING A CATALYST CONTAINING MONO-CYCLOPENTADIENYL TITANIUM TRICHLORIDE

Richard D. Gorsich, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 23, 1958, Ser. No. 730,270
1 Claim. (Cl. 260—94.9)

The process of preparing polyethylene which comprises subjecting ethylene to polymerization in the presence of a co-catalyst system consisting essentially of (A) monocyclopentadienyl titanium trichloride and (B) triethyl aluminum.

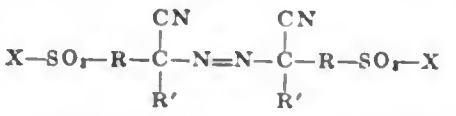
3,161,630

AZONITRILES

Jean Auguste Phelisse and Claude Albert Quiby, Lyon, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body corporate

No Drawing. Filed Apr. 1, 1960, Ser. No. 19,192
Claims priority, application France Apr. 20, 1959
4 Claims. (Cl. 260—192)

1. Sulphonated azo-compounds of the formula:



wherein R is a radical selected from the class consisting of $—CH_2CH_2—$, $—CH_2—$, and $—CH(COOC_2H_5)—$, R′ is an alkyl radical of 1 to 4 carbon atoms, and X is a member of the class consisting of hydrogen and alkali metal atoms.

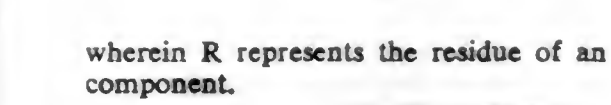
3,161,631

BENZOTHIAZOLE AZO COMPOUNDS CONTAINING A DICARBOXIMIDO RADICAL

James M. Straley and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,239
8 Claims. (Cl. 260—158)

1. Azo compounds having the general formula



wherein

R=a 2-benzothiazolyl radical,
R_1=a monocyclic aromatic radical,
R_2=a member of the class consisting of hydrogen, alkyl, hydroxyalkyl, phenoxyalkyl, acyloxyalkyl, haloalkyl and cyanoalkyl, the alkyl groups of which are lower alkyl,
R_3=lower alkylene and
Z=a dicarboximido radical, said compounds being free of water-solubilizing groups.

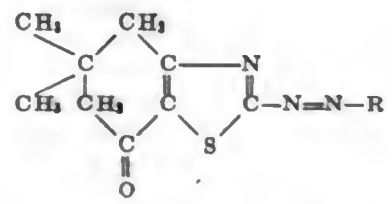
3,161,632

THIAZOLE DYES

James M. Straley and John G. Fisher, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 16, 1963, Ser. No. 295,510
7 Claims. (Cl. 260—158)

1. Azo compound having the formula



wherein R represents the residue of an aniline coupling component.

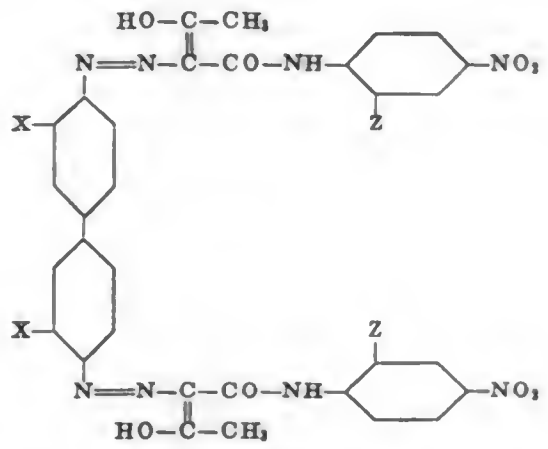
3,161,633

ACETYLACETOARYLIDE DISAZO PIGMENTS

Maurice Auguste Jacques Lenoir, Paris, and Michel Maigrot, Piscop, France, assignors, by mesne assignments, to Etablissements Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed June 4, 1962, Ser. No. 199,634
Claims priority, application France, June 9, 1961, 864,386; Jan. 13, 1962, 884,761
1 Claim. (Cl. 260—176)

Disazo pigments of the formula:



in which X represents a member selected from the group consisting of hydrogen, chlorine, methyl and methoxy and Z represents a member selected from the group consisting of chlorine and methyl.

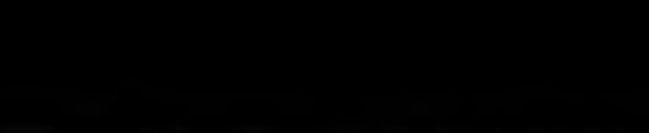
3,161,634

PROCESS OF MAKING N-ACYL DERIVATIVES OF 6-AMINO-PENICILLANIC ACID

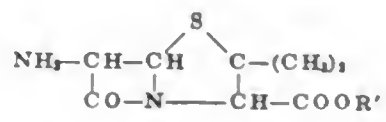
William Andersen, Lyngby, Denmark, assignor to Novo Terapeutisk Laboratorium A/S, Copenhagen, Denmark, a joint-stock company of Denmark

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,278
Claims priority, application Denmark, Dec. 21, 1960, 5,063/60
7 Claims. (Cl. 260—239.1)

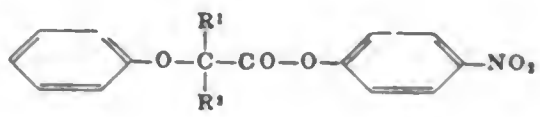
1. A process for preparing N-acyl-6-amino-penicillanic acid derivatives of the formula



where R' is a substituent selected from the group consisting of hydrogen, lower alkyl, and pharmaceutically acceptable cations, R^1 is alkyl of 1 to 4 carbon atoms, and R^2 is a substituent selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, which comprises reacting a derivative of 6-amino-penicillanic acid of the formula



where R' is as already defined, in an inert organic solvent with a p-nitrophenyl ester of the formula



where R^1 and R^2 are as already defined, in the presence of a tertiary amine catalyst selected from the group consisting of tertiary alkyl amines of up to 4 carbon atoms in the alkyl group, N-methylpiperidine, and N-methylmorpholine.

3,161,635

9α,10α-EPOXY-19-NOR-TESTOSTERONE AND PROCESS FOR ITS PRODUCTION

Gérard Nominé, Noisy-le-Sec, Robert Bucourt, Sevigne, Clichy-sous-Bois, and André Pierdet, Noisy-le-Sec, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,204
Claims priority, application France, Dec. 13, 1960, 846,776, Patent 1,282,638
9 Claims. (Cl. 260—239.55)

9. A compound selected from the group consisting of 9α,10α-epoxy-Δ^4-estrene-3ξ,17β-diol having a melting point of 202° C. and a specific rotation $[\alpha]_D^{20}=+65°$ (c.=0.4% in methanol) and its 17β-acyl esters wherein the acyl radical is derived from an organic hydrocarbon carboxylic acid having 1 to 18 carbon atoms.

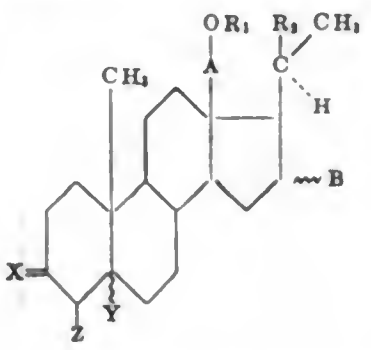
3,161,636

PARAVALLARIDINE COMPOUNDS AND DERIVATIVES AND PROCESS OF MAKING SAME

Jean Le Men, Limeil-Brevannes, Seine-et-Oise, France, assignor to Roger Bellon, Neuilly-sur-Seine, Seine, France

Filed Jan. 28, 1963, Ser. No. 254,336
Claims priority, application Great Britain, Jan. 30, 1962, 3,467/62
11 Claims. (Cl. 260—239.57)

1. The paravallaridine derivative of the formula:



wherein

X represents a member selected from the group consisting of oxo, the secondary alcohol group, and lower dialkoxy;

A represents a member selected from the group consisting of methylene and carbonyl;

R_1 represents hydrogen;

R_2 represents a member selected from the group consisting of hydroxyl and, when A is carbonyl, forming together with R_1 and oxygen to carbon bond to complete a five-membered lactone ring;

B represents a member selected from the group consisting of hydroxyl and oxo; and

Y and Z are members selected from the group consisting of hydrogen and, when X is oxo and di-lower alkoxy, a second carbon to carbon bond between the carbon atoms in 4- and 5-positions.

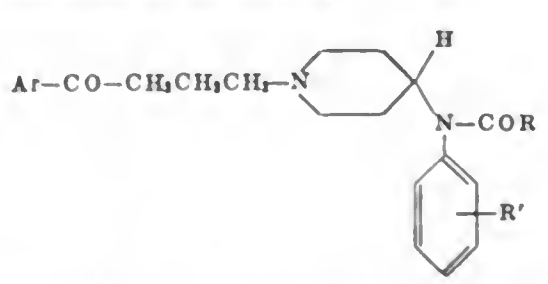
3,161,637

1-(GAMMA-AROYL-PROPYL)-4-(N-ARYLCARBONYL AMINO) PIPERIDINES AND RELATED COMPOUNDS

Paul A. J. Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen, N.V., Beerse, Belgium, a company of Belgium

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,016
12 Claims. (Cl. 260—247.2)

1. A compound of the formula



wherein Ar is selected from the group consisting of phenyl, halophenyl, tolyl, methoxyphenyl, and thienyl; R is selected from the group consisting of lower alkyl, lower alkoxy, phenyl, cyclopropyl, dimethylamino, morpholino, 1-piperidinyl, and 1-pyrrolidinyl; and R′ is selected from the group consisting of hydrogen, methyl and methoxy.

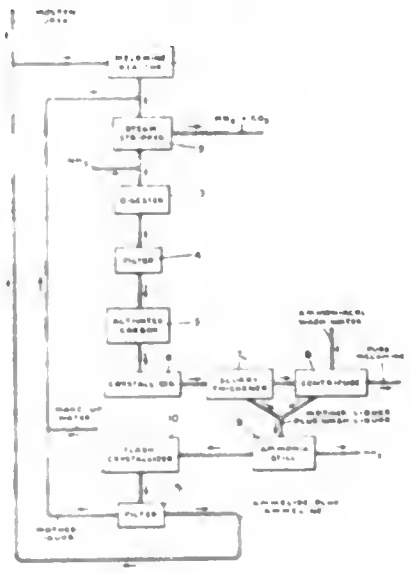
12. N-{1-[γ-(4-fluorobenzoyl)propyl]-4-piperidyl}-N-phenyl-N′,N′-(3-oxapentamethylene)urea.

3,161,638

PURIFICATION OF MELAMINE

Ivan Christoffel and Delbert P. Schutz, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 13, 1959, Ser. No. 852,685
9 Claims. (Cl. 260—249.7)



1. The process for the purification of melamine produced by heating at least one of the aquo-ammono carbonic acids, said melamine being accompanied by genetic impurities, including an hydroxy-triazine, which comprises digesting a dispersion of said melamine accompanied by genetic impurities in an aqueous ammonia at temperatures in the range of about 140° C. to about 230° C. while maintaining the concentration of aqueous ammonia in the range of about 8% to about 28% NH_3 by weight of the ammonia and water present, said dispersion containing no more than 3% by weight carbon dioxide, and thereafter crystallizing from a solution of the thus treated melamine in an aqueous ammonia, a purified melamine separated from genetic impurities made soluble in the ammoniacal mother liquor from which the purified melamine is crystallized by the aforesaid digesting of the dispersion of melamine and genetic impurities in aqueous ammonia.

3,161,639

3,6-DI(BENZOTHIAZOLYLTHIO) PYRIDAZINE

Douglas I. Relyea, Pompton Plains, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,877
1 Claim. (Cl. 260—250)

3,6-di(benzothiazolylthio) pyridazine.

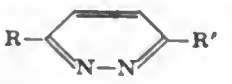
3,161,640

3,6-BIS(DILOWERALKYLAMINOANILINO)-PYRIDAZINES

Douglas I. Relyea, Pompton Plains, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Original application Oct. 29, 1962, Ser. No. 233,877. Divided and this application July 24, 1964, Ser. No. 385,055
2 Claims. (Cl. 260—250)

1. A chemical represented by the formula



wherein R and R′ are the same and are dialkylaminoanilino radicals in which the alkyl groups have 1 to 8 carbon atoms.

3,161,641
PYRIMETHAMINE SALT WITH FLUORESCEIN

Edward F. Elslager and Donald F. Worth, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,984
1 Claim. (Cl. 260—256.4)

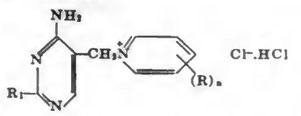
A salt of 2,4-diamino - 5 - (p-chlorophenyl)-6-ethylpyrimidine with one formula weight of fluorescein.

3,161,642
PREPARATION OF PYRIMIDINE DERIVATIVES BY ETHER CLEAVAGE

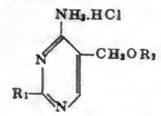
Roger J. Tull, Metuchen, and Edward W. Tristram, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 10, 1963, Ser. No. 279,618
5 Claims. (Cl. 260—256.4)

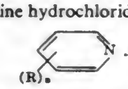
5. The process for preparing 1-(2-loweralkyl-4-amino-5-pyrimidylmethyl)-loweralkyl pyridinium chloride hydrochloride of the formula



that comprises heating together at about 110°–200° C. 2 - loweralkyl-4-amino-5-hydrocarbonoxymethyl pyrimidine hydrochloride of the formula



and an alkyl pyridine hydrochloride of the formula



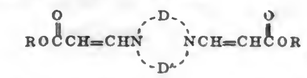
wherein the reaction is carried out at atmospheric pressure and in a water-immiscible organic solvent having a boiling point of between 110°–200° C., and wherein the amount of hydrochloric acid present is from about 7.5–100% in excess of that required for formation of said pyrimidine and said alkyl pyridine hydrochlorides, and continuously removing from the reaction medium substances that are insoluble in the reaction solvent and that have a boiling point of less than 110° C., wherein in the above formulas R and R_1 are loweralkyl radicals, R_2 is selected from the class consisting of alkyl and aralkyl radicals having less than 9 carbon atoms and n is a positive interger of less than 3 and where only one of the alpha carbon atoms of the pyridine is alkylated when n is 2.

3,161,643
BIS(CARBOALKOXYVINYL)DIAMINES AND DIIMINES

Lee A. Miller, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,785
3 Claims. (Cl. 260—268)

1. A compound of the formula



in which R is alkyl from 1 to 6 carbon atoms, D and D' are alkylene having 1 to 3 carbon atoms in the alkylene chain and a total of from 1 to 7 carbon atoms and wherein D and D' together with the nitrogen atoms to which they are attached complete a ring of 5 to 6 members.

3,161,644
1-BENZYL-4-SUBSTITUTED PIPERIDINES

Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen N.V., a corporation of Belgium

No Drawing. Filed June 22, 1962, Ser. No. 204,624
9 Claims. (Cl. 260—293)

1. 1-benzyl-4-R_1-4-NHR_2-piperidine wherein R_1 is a member selected from the group consisting of cyano and carbamoyl and NHR_2 is a member selected from the group consisting of anilino, lower alkylanilino, lower alkoxyanilino, chloroanilino, lower alkylamino, cyclohexylamino and haloanilino, the lower alkyl and lower alkoxy substituents containing from 1 to 6 carbon atoms.

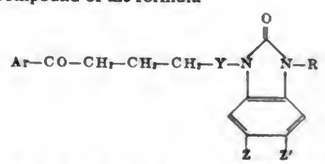
2. 1-benzyl-4-cyano-4-N-anilinopiperidine.

3,161,645
1-(1-AROYLPROPYL-4-PIPERIDYL)-2-BENZIMIDAZOLINONES AND RELATED COMPOUNDS

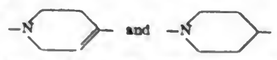
Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen N.V., a corporation of Belgium

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,398
21 Claims. (Cl. 260—293.4)

1. A compound of the formula



wherein Ar is selected from the group consisting of phenyl, halophenyl, methoxyphenyl, thienyl, (lower alkyl)phenyl, and dimethylphenyl; R is selected from the group consisting of hydrogen, hydroxymethyl, lower alkyl, and lower alkanoyl; Z and Z' are the same and are selected from the group consisting of hydrogen and methyl; and Y is a member selected from the group consisting of



the nitrogen atom of the ring being attached to the carbon atom of the propyl function.

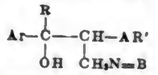
15. 1 - {1 - [γ - (2 - thenoyl)propyl] - 4 - piperidyl}-2-benzimidazolinone.

3,161,646
1,2-BIS(SUBSTITUTED PHENYL)-3-TERTIARY-AMINO-1-PROPANOLS

Bill Elpern, Walnut Creek, Calif., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 19, 1959, Ser. No. 794,253
18 Claims. (Cl. 260—294.7)

1. Compounds having the formula



wherein Ar and Ar' represent phenyl substituted by from one to three members of the group consisting of lower-alkoxy, lower-alkylmercapto and halogen; R represents a member of the group consisting of alkyl having from four to ten carbon atoms, cycloalkyl having 5–6 ring members, cycloalkyl-lower-alkyl having 5–6 ring members, phenyl-lower-alkyl, and phenyl substituted by from one to three members of the group consisting of lower-alkoxy and lower-alkylmercapto; and N=B represents a member of the group consisting of di-lower-alkylamino, 1-piperidyl, 1-pyrrolidyl, 4-morpholinyl, lower-alkylated 1-piperidyl, lower-alkylated 1-pyrrolidyl and lower-alkylated 4-morpholinyl.

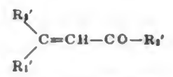
3,161,647
PIPERIDONES

Rolf Denss and Hans Herbert Kühnis, Basel, and Conrad Hans Eugster, Wallisellen, near Zurich, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,456
Claims priority, application Switzerland Dec. 5, 1961
10 Claims. (Cl. 260—294.7)

1. A process for the production of hydrogenated pyridones comprising

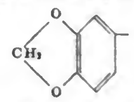
(*a*) condensing one mole of an unsaturated ketone of the formula



with from one mole to a slight excess thereover of a compound of the formula

$$R_4'NH_2$$

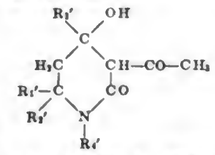
in which formulas each of R_1', R_2' and R_3' is, independently, alkyl with maximally 5 carbon atoms and R_4' is a member selected from the group consisting of alkyl with maximally 6 carbon atoms, alkenyl of maximally 6 carbon atoms, dialkylaminoalkyl in which each alkyl has at most 3 carbon atoms, phenylalkyl in which alkyl has at most 3 carbon atoms and phenylalkenyl in which alkenyl has at most 3 carbon atoms, the benzene ring of the two last mentioned members being substituted with from 0 to 3 substituents selected from the group consisting of methyl, methoxy, fluorine, chlorine and bromine and from 0 to 1 methylenedioxy linked with the benzene ring to form a group of the formula



the reaction being carried out at a temperature ranging from 0 to 30° C.

(*b*) adding one mole of diketene gradually at a temperature ranging from about 0 to 30° C. to each mole of the resulting reaction product

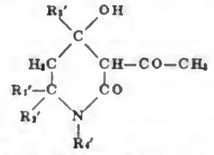
(*c*) heating the reaction mass resulting from step (*b*) at a temperature ranging from 15 to 25° C. until the cyclization is complete thereby producing a compound of the formula



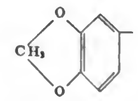
wherein R_1', R_2', R_3' and R_4' have the above meaning, and

(*d*) recovering the last mentioned compound.

5. A compound of the formula



wherein each of R_1', R_2' and R_3' is, independently, alkyl with maximally 5 carbon atoms and R_4' is a member selected from the group consisting of alkyl with maximally 6 carbon atoms, alkenyl of maximally 6 carbon atoms, dialkylaminoalkyl in which each alkyl has at most 3 carbon atoms, phenylalkyl in which alkyl has at most 3 carbon atoms and phenylalkenyl in which alkenyl has at most 3 carbon atoms, the benzene ring of the two last mentioned members being substituted with from 0 to 3 substituents selected from the group consisting of methyl, methoxy, fluorine, chlorine and bromine and from 0 to 1 methylenedioxy linked with the benzene ring to form a group of the formula



3,161,648
PROCESS FOR PREPARING N,N-DIISOPROPYL-BENZOTHIAZOLE-2-SULFENAMIDE

James Michael Rodgers, Hillsborough Township, Somerset County, and Robert Chalk Kinstler, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,239
4 Claims. (Cl. 260—306.6)

1. The process of preparing N,N-diisopropylbenzothiazole-2-sulfenamide which comprises:

(*a*) bringing into reactive contact, in an inert, non-aqueous, organic medium, approximately equimolar amounts of 2-mercaptobenzothiazole, N-chlorodiisopropylamine and diisopropylamine,

(*b*) said inert medium being a mixture of an aromatic non-polar solvent selected from the group consisting of benzene, toluene, xylene and chlorobenzene and methanol in a weight proportion between about 1:1 and 4:1,

(*c*) maintaining the reaction temperature in the range of about 40–60° C. until the reaction is completed, and

(*d*) recovering the product thus formed.

3,161,649
SUBSTITUTED BENZOXAZOLES

Philip J. Breivogel, Glen Ridge, N.J., assignor to White Laboratories, Kenilworth, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,200
3 Claims. (Cl. 260—307)

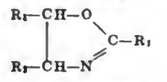
1. Benzoxazole having at the 2-position a member of the group consisting of hydroxyl and amino, a lower alkanoyl group in the 5-position, and in the benzenoid portion of the nucleus in other than the 5-position a member of the group consisting of hydrogen, halogen and lower alkyl.

3,161,650
2-AMINO-5-ARYLOXAZOLINE PRODUCTS

George Ireland Poos, Ambler, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 211,841, July 23, 1962. This application Jan. 25, 1963, Ser. No. 253,983
11 Claims. (Cl. 260—307)

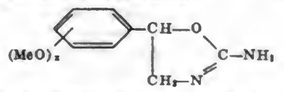
1. A compound of the formula



where R_1 is a member of the group consisting of amino, phenylamino, α-naphthylamino, mono-lower alkylamino, and di-lower alkylamino, R_2 is a member of the group consisting of hydrogen and lower alkyl and R_3 is a member of the group consisting of halophenyl, hydroxyphenyl, phenyl-lower alkoxyphenyl, lower alkyl-alkylene-phenyl,

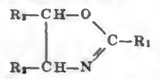
di-lower alkyl-alkylene-phenyl, halo-methyl-phenyl, alkylene-dioxy-phenyl, and lower alkoxy-carbonyl-phenyl.

2. A compound of the formula



wherein x is an integer not greater than 4.

3. A compound of the formula



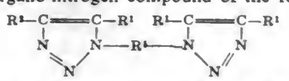
where R_1 is a member of the group consisting of mono-lower alkylamino, di-lower alkylamino, phenylamino and α-naphthylamino, R_2 is a member of the group consisting of hydrogen and lower alkyl, and R_3 is phenyl.

3,161,651
POLYFUNCTIONAL ALIPHATIC-BIS-(v-TRIAZOLE) COMPOUNDS

Harry A. Stansbury, Jr., John A. Durden, Jr., and William H. Catlette, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,320
5 Claims. (Cl. 260—308)

1. The organo-nitrogen compound of the formula:



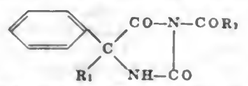
wherein R^1 and R^2 are independently selected from the group consisting of hydrogen and hydroxyalkyl of from 1 to 8 carbon atoms, at least one of which is hydroxyalkyl; and R^3 is selected from the group consisting of alkylene of from 2 to 8 carbon atoms and oxy-bis-alkylene, carbonyloxy-bis-alkylene, and phenylene-bis-alkylene of from 1 to 4 carbon atoms in each alkylene moiety thereof.

3,161,652
5,5-DISUBSTITUTED-N³-CARBO(LOWER) ALKOXYHYDANTOINS

Hideji Takamatsu, Amagasaki-shi, Hyogo-ken, Susumu Umemoto, Sakai-shi, Osaka-fu, Katsuro Fujimoto, Neyagawa-shi, Osaka-fu, and Keiji Nakamura, Amagasaki-shi, Hyogo-ken, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,418
Claims priority, application Japan, Sept. 12, 1962, 37/39,217
3 Claims. (Cl. 260—309.5)

1. A compound of the following formula



in which R_1 is a member selected from the group consisting of phenyl and alkyl having 1 to 3 carbon atoms; and R_2 is alkoxy having 1 to 3 carbon atoms.

3,161,653
2-[(2'-METHYL - BENZO - THIENYL - 3') - METHYL]-Δ²-IMIDAZOLINE AND ITS PHARMACEUTICALLY ACCEPTABLE ACID ADDITION SALTS

Wolfgang Fruhstorfer and Helmut Müller-Calgan, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,053
Claims priority, application Germany, Nov. 23, 1960, M 47,194
2 Claims. (Cl. 260—309.6)

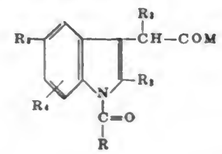
1. Imidazoline derivatives selected from the group consisting of 2-[(2'-methyl-benzo-thienyl-3')-methyl]-Δ²-imidazoline and the pharmaceutically acceptable acid addition salts thereof.

3,161,654
α-(1-AROYL-3-INDOLYL) ALKANOIC ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 11, 1963, Ser. No. 286,935
14 Claims. (Cl. 260—319)

1. A compound of the formula



in which

R_1 is selected from the group consisting of benzene, naphthalene, bipbenyl and substituted benzene, naphthalene and biphenyl radicals in which said substituent is selected from the group consisting of halogen, lower alkyl, lower alkylthio, lower alkoxy, trifluoromethyl, phenoxy, lower alkyl phenoxy, lower alkoxy phenoxy, halogenophenoxy, trifluoroacetyl, difluoroacetyl, monofluoroacetyl, di-lower alkyl sulfamyl, lower alkanoyl, di-lower alkyl carboxamido, cyano, carb-lower alkoxy, trifluoromethylthio, lower alkyl sulfinyl, lower alkylsulfonyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, mercapto, nitro, amino, di-(lower alkyl)amino, lower alkylamino, lower alkanoylamino, hydroxy, lower alkanoyloxy, trifluoroacetoxy, difluoroacetoxy, monofluoroacetoxy, benzyloxy, lower alkylbenzyloxy, lower alkoxylbenzyloxy, and halogenobenzyloxy;

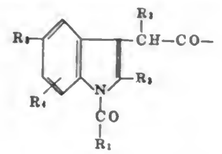
R_2 is selected from the group consisting of hydrogen, lower alkenyl and lower alkyl;

R_3 is selected from the group consisting of hydrogen and lower alkyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl;

R_5 is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower alkyl) amino, lower alkanoylamino, lower alkanoyl, lower alkylamino, bis(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperizinyl, 4-morpholinyl, cyano, amino lower alkyl, di-lower alkyl amino, lower alkyl, trifluoromethyl, halogen, di(lower alkyl)sulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, halogenobenzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopropyl, cyclopropyl(lower alkoxy) methyloxy, and cyclobutyl(lower alkoxy) methyloxy; and

M is selected from the group consisting of OH, NH_2, benzyloxy, lower alkoxy, OZ where Z is a cation selected from the group consisting of alkali metals, alkaline earth metals, aluminum, iron, magnesium, dimethylammonium morpholium, methyl cyclohexylammonium and glucosammonium and OY where Y represents the structure

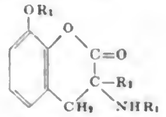


3,161,655
3-ALKYL-3-AMINO-6-HYDROXY-3,4-DIHYDRO-COUMARINS

Donald F. Reinhold, North Plainfield, N.J., John H. Markillie, Kalamazoo, Mich., and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application June 10, 1960, Ser. No. 35,132. Divided and this application Mar. 22, 1963, Ser. No. 267,351
2 Claims. (Cl. 260—343.2)

1. A compound selected from the group consisting of (1) a compound of the formula:



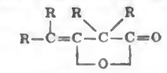
where R_1 is selected from the groups consisting of hydrogen and lower alkanoyl, and R_2 is straight chain lower alkyl, and (2) a non-toxic acid addition salt thereof.

3,161,656
UNSATURATED β-LACTONES AND METHOD OF PREPARING THEM

Edward U. Elam, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 9, 1961, Ser. No. 108,740
10 Claims. (Cl. 260—343.9)

1. An unsaturated β-lactone of the formula



wherein the substituents, R, taken singly, are unsubstituted alkyl groups of 1 to 4 carbon atoms and, taken collectively, are unsubstituted alkylene groups which, with the carbon atom to which they are attached, form a saturated carbocyclic ring of 5 to 6 carbon atoms.

3,161,657
CYCLIC ETHER OF TETRAHYDROPYRAN AND PROCESS FOR THE MANUFACTURE THEREOF

Albert Eschenmoser, Zurich, Switzerland, Casimir F. Seidel, deceased, late of Zurich, Switzerland, by Jakob Diggelmann, administrator, Zurich, Switzerland, and Dorothea Felix, Zurich, Switzerland, assignors to Firmenich & Cie, Geneva, Switzerland, a corporation of Switzerland

No Drawing. Filed Nov. 3, 1961, Ser. No. 150,097
Claims priority, application Switzerland, Nov. 5, 1960, 12,390/60
10 Claims. (Cl. 260—345.1)

2. A composition of matter selected from the group consisting of cis and trans 2-(2-methyl-1-propen-1-yl)-4-methyl-tetrahydropyran, and mixtures thereof.

7. A process for the manufacture of 2-(2-methyl-1-propen-1-yl)-4-methyl-tetrahydropyran which comprises heating a member selected from the group consisting of 1-hydroxy-3,7-dimethyl-4,6-octadiene, 1 - hydroxy - 3,7 - dimethyl-5,7-octadiene and mixtures thereof in admixture with a catalyst comprising an aryl sulfonic acid.

3,161,658
TRIMELLITIC ACID RECOVERY AND CONVERSION TO ANHYDRIDE

Delbert H. Meyer, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,617
7 Claims. (Cl. 260—346.3)

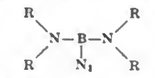
1. In the process for producing trimellitic anhydride by the steps of oxidizing in a reaction zone in which a liquid phase is maintained 1,2,4-trialkylbenzene with air in the presence of acetic acid in an amount of from 3 to 5 parts by weight based on said trialkylbenzene and in the presence of a catalyst system comprising bromine and a heavy metal oxidation catalyst, cooling the reaction effluent to crystallize trimellitic acid therefrom, separating the crystallized solid trimellitic acid from the acetic acid mother liquor containing dissolved trimellitic acid and recovering separately solid trimellitic acid and the acetic acid mother liquor, dehydrating said trimellitic acid to its anhydride, and fractionating said trimellitic anhydride to recover high purity trimellitic anhydride; the improvement which comprises: adding said acetic acid mother liquor containing dissolved trimellitic acid to a molten pool of trimellitic anhydride at a temperature of from 330 to 450° F. to flash off water and acetic acid, withdrawing a portion of said pool of molten trimellitic anhydride and combining it with a solvent selected from the group consisting of dialkyl ketones and aromatic hydrocarbons to form a solution of trimellitic anhydride in said solvent substantially saturated with respect thereto, separating said solution from the insoluble residue, recovering crude trimellitic anhydride from said solution, adding said crude trimellitic anhydride to the anhydride obtained by dehydration of the first recovered crystallized trimellitic acid, and fractionating said mixture of trimellitic anhydride to obtain a purified trimellitic anhydride of at least 99% purity.

3,161,659
AZIDOAMINOBORANES

Herbert C. Newsom, Whittier, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,259
6 Claims. (Cl. 260—349)

1. A bis(dialkylamino)azidoborane of the formula



where R is alkyl of one to six carbon atoms.

3,161,660
2α-LOWER-ALKYL-9α-HALO-11,17-DIOXYGENATED-3-KETO-4-ANDROSTENES

John A. Hogg, Charleston Township, Kalamazoo County, and William P. Schneider, Kalamazoo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 12, 1960, Ser. No. 42,206
6 Claims. (Cl. 260—397.3)

3. A process for the production of a 2α-lower-alkyl-9α-fluoro-4-androsten-3,11,17-trione which comprises the steps: reducing a 2α-lower-alkyl-11β-hydroxy-4-androstene-3,17-dione wherein the lower-alkyl radical contains from one to eight carbon atoms, inclusive, with an alkali borohydride to reduce the 17-keto group and oxidizing the resulting mixture with manganese dioxide to obtain 2α-lower-alkyl-11β,17β-dihydroxy-4-androsten-3-one; esterifying the thus obtained 2α-lower-alkyl-11β,17β-dihydroxy-4-androsten-3-one with an acylating agent selected from halides and anhydrides of organic carboxylic acids containing from one to eight carbon atoms, inclusive, to obtain the corresponding 2α-lower-alkyl-11β-hydroxy-17α-acyloxy-4-androsten-3-one; treating the thus produced 2α-lower - alkyl-11β-hydroxy-17α-acyloxy-4-androsten-3-one with an N-halo-acylamide wherein the halogen is of atomic weight 34 to 130, inclusive, in an organic base under anhydrous conditions and treating the thus produced intermediate, 11β-hypohalite, with sulfur dioxide under anhydrous conditions to obtain the corresponding 2α-lower - alkyl - 17β - acyloxy-4,9(11)-androstadien-3-one; treating the thus produced 2α-lower-alkyl-17β-acyloxy-

4,9(11)-androstadien-3-one with a hypohalous acid wherein the halogen is of atomic weight from 33 to 130, inclusive, to obtain the corresponding 2α-lower-alkyl-9α-halo-11β-hydroxy-17β-acyloxy-4-androsten-3-one; treating the thus obtained 2α-lower-alkyl-9α-halo-11β-hydroxy-17β-acyloxy-4-androsten-3-one in acetone solution with an alkali-metal acetate to obtain the corresponding 2α-lower - alkyl-9β,11β-oxido-17β-acyloxy-4-androsten-3-one; treating the thus obtained 2α-lower-alkyl-9-11-oxido-17β-acyloxy-4-androsten-3-one with hydrogen fluoride to obtain the corresponding 2α-lower-alkyl-9α-fluoro-11β-hydroxy-17β-acyloxy-4-androsten-3-one, oxidizing the thus produced 2α-lower-alkyl-9α-fluoro-11-β-hydroxy-17β-acyloxy-4-androsten-3-one with chromic acid to obtain the corresponding 2α-lower-alkyl-9α-fluoro-17β-acyloxy-4-androstene-3,11-dione; hydrolyzing the thus obtained 2α-lower - alkyl - 9α-fluoro-17β-acyloxy-4-androstene-3,11-dione with base to give 2α-lower-alkyl-9α-fluoro-17β-hydroxy-4-androstene-3,11-dione and oxidizing the thus obtainer 2α-lower-alkyl-9α-fluoro-17β-hydroxy-4-androstene-3,11-dione with chromic acid to obtain 2α-lower-alkyl-9α-fluoro-4-androstene-3,11,17-trione.

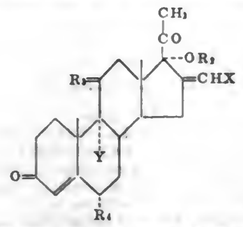
6. 2α-lower - alkyl-9α-halo-4-androstene-3,11,17-trione wherein the lower alkyl radical contains from one to eight carbon atoms, inclusive, and wherein the halo atom has an atomic weight from 17 to 130, inclusive.

3,161,661
16-HALOMETHYLENE STEROIDS

Fritz von Werder and Klaus Brückner, Darmstadt, Karl-Heinz Bork, Griesheim, near Darmstadt, and Harald Metz, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed June 5, 1962, Ser. No. 200,060
Claims priority, application Germany, June 8, 1961, M 49,291; July 8, 1961, M 49,608; July 20, 1961, M 49,747; July 27, 1961, M 49,842
12 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of



and the Δ^1-, Δ^6- and $\Delta^{1,6}$-derivatives thereof, wherein

R_2 is a member of the group consisting of hydrogen and the acid moiety of an aliphatic carboxylic acid containing up to 8 carbon atoms;

R_3 is a member of the group consisting of α-H, β-OH; H, H; and keto;

R_4 is a member of the group consisting of hydrogen, methyl, chlorine and fluorine;

X is a member of the group consisting of chlorine and fluorine;

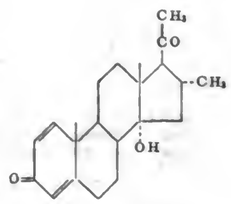
Y is a member of the group consisting of hydrogen and fluorine.

3,161,662
11β-HYDROXYL-16α-METHYL STEROIDS AND 14α-HYDROXYL-16α-METHYL STEROIDS

Klaus Kiesslich and Gerhard Raspe, both of Berlin-Charlottenburg, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed May 8, 1961, Ser. No. 108,260
Claims priority, application Germany, May 13, 1960, Sch 27,885; Sept. 9, 1960, Sch 28,457; Feb. 3, 1961, Sch 29,168
5 Claims. (Cl. 260—397.45)

3. A compound of the formula:



3,161,663
NOVEL 17-DESOXY-$\Delta^{1,4}$-PREGNADIENES AND PREPARATION THEREOF

Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, Jean Jolly, Clichy-sous-Bois, and Bernard Goffinet, Paris, France, assignors, by mesne assignments, to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed May 3, 1961, Ser. No. 124,248
Claims priority, application France, May 14, 1960, 827,205; May 16, 1960, 827,304; July 1, 1960, 831,770; July 13, 1960, 832,913
10 Claims. (Cl. 260—397.45)

1. 21-acetoxy-16α-methyl-2α,4β-dibromo-5β-pregnane-3,11,20-trione.

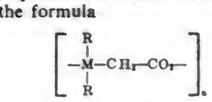
2. 3,20-disemicarbazone of 21-acetoxy - 16α - methyl-$\Delta^{1,4}$-pregnadiene-3,11,20-trione.

3,161,664
MANUFACTURE OF ORGANOMETALLIC ACIDS AND SALTS THEREOF

David O. Depree, Rancho Cordova, Calif., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,972
11 Claims. (Cl. 260—429.7)

1. As a composition of matter an organometallic polymer having the formula



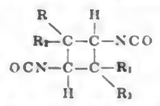
wherein R is a hydrocarbon group having 1 to about 10 carbon atoms; M is an element selected from the group consisting of silicon, germanium, tin and lead; n is an integer having a value of from about 4 to about 90.

3,161,665
1,3-CYCLOBUTANEDIISOCYANATES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,018
7 Claims. (Cl. 260—453)

1. A compound having the formula



wherein R and R_1 each represent an alkyl group of from 1 to 12 carbon atoms and R_2 and R_3 each represent a member of the class consisting of hydrogen and an alkyl group of 1 to 12 carbon atoms.

3,161,666
METHOD OF PRODUCING THIOCARBAMATES AND THIOCARBONATES

Frank J. Sowa, Cranford, N.J.
(305 E. 46th St., New York, N.Y.)

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,813
12 Claims. (Cl. 260—455)

1. The method of producing a thio compound which is an ester of carbamic acid which comprises the steps

of mixing together a compound having the formula HXR where X is selected from the group consisting of sulfur and oxygen and R is selected from the group consisting of alkyl and aryl hydrocarbon groups, mono- and polychlorinated alkyl and aryl hydrocarbon groups and groups containing only hydrogen, carbon and sulfur, with a urea compound having the formula



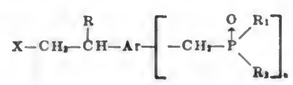
where R^1 and R^2 are selected from the group consisting of hydrogen, alkyl and aryl hydrocarbon groups and mono- and polychlorinated alkyl and aryl hydrocarbon groups, and X is selected from the group consisting of sulfur and oxygen one of which compounds in the mixture contains sulfur, and heating said mixture in the presence of not more than one mol of a deamminating agent selected from the group consisting of boron trifluoride, zinc chloride, tin chloride, ferric chloride phosphorous trichloride and cuprous acetate, based on the weight of the urea compound employed.

3,161,667
VINYLIDENE AROMATIC PHOSPHORUS MONOMERS

John G. Abramo, Albert Y. Garner, and Earl C. Chapin, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1960, Ser. No. 15
7 Claims. (Cl. 260—461)

1. A beta-haloalkyl aromatic phosphorus compound corresponding to the general formula:



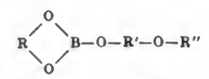
wherein X is a halogen radical, R is a radical selected from the group consisting of hydrogen and methyl, n is an integer of from 1 to 3, Ar is a polyvalent aromatic residue selected from the group consisting of benzene, naphthalene and anthracene residues having a valency numerically equal to $n+1$, R_2 is a hydrocarbon radical containing from 1 to 20 carbon atoms and R_1 is a radical selected from the group consisting of —R_2 and —OR_2 radicals.

3,161,668
HALOPHENOXYALKYL GLYCOL MONOBORATE ESTERS

Irving S. Bengelsdorf, Costa Mesa, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,557
5 Claims. (Cl. 260—462)

1. Halophenoxyalkyl glycol monoborate esters having the formula



where R is an alkaline radical of from 2 to 4 carbon atoms in length and containing a total of from 2 to about 10 carbon atoms, R′ is an alkylene radical selected from the group consisting of ethylene and propylene, and R″ is a halogen substituted phenyl radical containing from 1 to 5 halogen substituents, said halogen substituents selected from the group consisting of chlorine, bromine and iodine.

3,161,669
ACETONITRILE PROCESS

Max Statman and Hugh J. Hagemeyer, Jr., both of Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

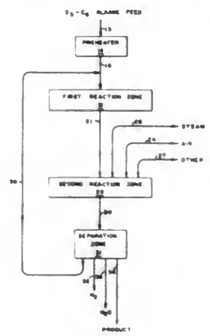
Filed July 10, 1961, Ser. No. 122,851
4 Claims. (Cl. 260—465.2)

1. A process for the production of acetonitrile which consists essentially of reacting ammonia and a member selected from the group consisting of acetic acid and acetic anhydride in the vapor phase at an ammonia to acetic anhydride ratio in the range from 1.5:1 to 4:1 when acetic anhydride is selected and an ammonia to acetic acid ratio in the range from 1:1 to 1.35:1 when acetic acid is selected, at a contact time in the range from 1.5 to 16 seconds and at a temperature of from 375° C. to 700° C. in the presence of catalytic alumina pellets impregnated with from 5 to 75% by weight of phosphoric acid and wherein the reactants are separately heated to the desired reaction temperature and then, while in the vapor phase and while in said heated condition, reacted under the reaction conditions set forth hereinbefore.

3,161,670
PREPARATION OF OLEFINIC COMPOUNDS

Charles R. Adams, Oakland, and Thomas J. Jennings, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 12, 1960, Ser. No. 75,222
8 Claims. (Cl. 260—465.3)



1. The process for converting a C_2 to C_6 alkane to a conversion product having a higher carbon to hydrogen ratio than said alkane, which comprises dehydrogenating said alkane to a reaction mixture predominating in the corresponding C_2 to C_6 alkene and a corresponding proportion of free hydrogen in a first reaction zone, and then reacting said reaction mixture comprising said alkene and free hydrogen with uncombined oxygen at a temperature in the range of from about 650 to 1200° F., and at a space velocity to convert at least 95% of said oxygen, in the presence of a catalytically active material consisting essentially of bismuth oxide associated with an oxide of an element selected from the group consisting of phosphorus, molybdenum, and tungsten, in a second reaction zone, thereby converting said alkene to a conversion product having a higher carbon to hydrogen ratio in the absence of any substantial hydrogen conversion in said second reaction zone.

3,161,671
PROCESS FOR PREPARING ACRYLONITRILE

Saburo Minekawa, Toshima-ku, Tokyo, Shohei Hoshino, Suginami-ku, Tokyo, and Atsushi Shibata and Naoya Kominami, Itabashi-ku, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 6, 1961, Ser. No. 87,075
Claims priority, application Japan Feb. 26, 1960
1 Claim. (Cl. 260—465.3)

A process for preparing acrylonitrile which comprises contacting at a temperature of 300°–380° C. a gaseous mixture of propylene, ammonia and molecular oxygen-containing gas with a catalyst composed of a tungsten component selected from the group consisting of tungsten oxide and phosphotungstic acid and a tellurium component selected from the group consisting of tellurium and tellurium oxide.

3,161,672
PRODUCTION OF UNSATURATED MONOESTERS BY THE RHODIUM CATALYZED CARBONYLATION OF CONJUGATED DIOLEFINS

James Bryan Zachry, Baton Rouge, La., and Clyde Lee Aldridge, Bryan, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,184
6 Claims. (Cl. 260—486)

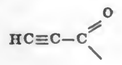
1. A process for producing a mono-olefinically unsaturated monoester which comprises carbonylating a C_4–C_{20} conjugated diolefin in a C_1–C_{20} alkanol solvent, at least 2 moles of said alkanol being present per mole of said diolefin, with substantially hydrogen-free carbon monoxide in the presence of from 0.001 to 5 wt. percent, calculated as metal on diolefin, of a catalyst selected from the group consisting a rhodium oxide, rhodium nitrate, rhodium carbonyl and rhodium metal, said carbonylation being carried out at a temperature in the range of 125° to 225° C. and a pressure of between 500 and 3000 p.s.i.g., and recovering said unsaturated monoester.

3,161,673
PROCESS FOR THE PRODUCTION OF CIS-3-HALO-ACRYLIC COMPOUNDS

Thomas H. Vaughn, Tenafly, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 27, 1962, Ser. No. 190,813
11 Claims. (Cl. 260—539)

1. The process for the cis-directed addition of a halogen acid selected from the group consisting of hydrochloric and hydrobromic acids to the triple bond of a hydrolyzable propiolic acid compound selected from the group consisting of propiolic acid and carboxylic derivatives thereof having the formula



wherein the free carboxylic valence is satisfied by a member chosen from the class consisting of —OM where M is a monovalent metal and —OR where R is alkyl of from 1 to 10 carbon atoms which process comprises reacting, at a temperature of from 0° C. to 110° C., the propiolic acid compound with the halogen acid in the contacting presence of a catalytically significant amount of a metal salt which is hydrolyzed under the reaction conditions and yields, under the reaction conditions, a cation of a metal selected from the group consisting of copper, chromium, mercury, manganese, iron, zinc, cadmium, and aluminum.

3,161,674
PREPARATION OF CARBOXYLIC ACIDS BY THE HYDROGENATION OF GAMMA-LACTONES

Edward U. Elam and James C. Martin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 22, 1961, Ser. No. 97,420
4 Claims. (Cl. 260—540)

1. The process for preparing branched chain saturated carboxylic acids from gamma-lactones which comprises hydrogenating at a pressure of 500 to 5000 pounds per square inch, in the presence of a Group VIII metal catalyst and 0.1 mole to 10 moles of water per mole of lactone, and at a temperature within the range of 200° C. to 400° C., a lactone of the structure:

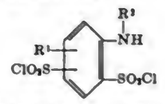
wherein R^1 and R^2 are alkyl groups having 1 to 4 carbon atoms, and R^3 and R^4 are independently selected from the group consisting of hydrogen and alkyl groups containing 1 to 4 carbon atoms.

3,161,675
PROCESS FOR PREPARING SULFONAMIDE COMPOUNDS

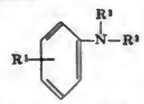
Erwin F. Schoenewaldt, Metuchen, Arthur E. Erickson, Cranford, and John M. Chemerda, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 17, 1957, Ser. No. 666,212
2 Claims. (Cl. 260—543)

1. A process for preparing an aniline-disulfonyl chloride compound of the formula



wherein R^1 is selected from the group consisting of halogen, lower alkyl, lower alkoxy, nitro and amino; and R^2 is selected from the group consisting of hydrogen and lower alkyl, wherein a reaction mixture containing as its only essential reactants chlorosulfonic acid and an aniline compound of the formula



wherein R^1 and R^2 have the meaning assigned each of them above and R^3 is selected from the group consisting of hydrogen and lower alkanoyl is heated within the temperature range of 95–130° C.; then cooling, and then adding a chlorinating agent selected from the group consisting of thionyl chloride, sulfuryl chloride, phosphorus trichloride and phosphorus pentachloride and heating at a temperature just below the boiling point, the reactants being employed in the ratio of at least 5 molar equivalents of chlorosulfonic acid and two molar equivalents of chlorinating agent to each mole of aniline compound.

3,161,676
PREPARATION OF SUBSTITUTED ALKYL UREAS

Phillip Adams, Murray Hill, N.J., assignor to Berkeley Chemical Corporation, Berkeley Heights, N.J., a corporation of New Jersey

No Drawing. Filed May 21, 1962, Ser. No. 196,514
8 Claims. (Cl. 260—553)

1. A process for preparing a substituted alkyl urea having the formula:

$$R_1R_2NCONHR_3$$

which comprises reacting, at a temperature in the range

of about 110–160° C., in the presence of a metal compound Lewis acid catalyst selected from the group consisting of aluminum alkoxides, alkyl tin oxides, cupric acetate, stannic chloride and stannous oxalate an amine having the formula:

$$R_1R_2NH$$

wherein R_1 and R_2 are radicals selected from the group consisting of H, alkyl and cycloalkyl radicals, with a maximum of one radical being H, with a carbamic acid ester having the formula:

$$R_3NHCOOR_4$$

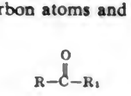
wherein R_3 is a radical selected from the group consisting of H, alkyl, cycloalkyl, and aryl radicals, and R_4 is an alkyl radical having from 1 to 12 carbon atoms and derived from an alkanol lower boiling than the amine reactant, the catalyst being used in an amount of from about 0.05–1.0 weight percent, based on amine, and recovering the alkyl urea.

3,161,677
PROCESS FOR REDUCTIVE ALKYLATION OF UREA

Rudolph Schlatter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,804
7 Claims. (Cl. 260—553)

1. The process comprising reacting from about 0.5 to 1.5 moles of urea with one mole of a ketone containing from 3 through 9 carbon atoms and having the following formula:



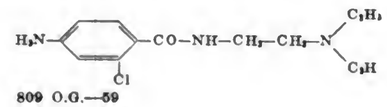
where R is an alkyl radical containing from 1 through 7 carbon atoms inclusive, R_1 in an alkyl radical containing from 1 through 7 carbon atoms inclusive, with the maximum sum of R plus R_1 being 8, and where R and R_1 can be joined together to form with the carbon of the carbonyl group in the ketone a saturated hydrocarbon ring of from 5 through 6 carbon atoms inclusive in said ring and where said ring can be substituted with a member of the group consisting of hydrogen, methyl, ethyl, propyl and isopropyl; wherein said process is carried out in the presence of about 0.05 to 0.5 mole of ammonia for each mole of said ketone, at a temperature from about 80° to 200° C. and a hydrogen pressure from 500 to 4000 pounds per square inch gauge, in the presence of a hydrogenation catalyst, for a reaction time of less than about 3 hours, to produce excellent yields of the corresponding monoalkylated urea.

3,161,678
PROCESS FOR MAKING "ORTHO-CHLORO-PROCAINE AMIDE"

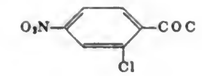
Michel Thominet, Paris, France, assignor, by mesne assignments, to Société d'Etudes Scientifiques et Industrielles de l'Ile de France, Paris, France, a corporation of France

No Drawing. Filed Dec. 17, 1956, Ser. No. 628,512
3 Claims. (Cl. 260—558)

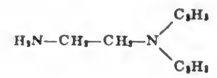
1. In the production of



by reacting



with



at lowered temperatures, and reduction of the resulting hydrochloride of N(diethyl-amino-ethyl)-2-chloro-4-nitro-benzamide, the improvement which comprises conducting said first mentioned reaction in the presence of acetone solvent whereby substantially only the nitro-benzamide product formed precipitates out of the acetone solvent, separating the nitro-benzamide product from the solvent in which impurities remain, thereby providing the nitro-benzamide in a condition of purity ready for the reduction step.

3,161,679
PROCESS FOR THE PREPARATION OF N-ALKYLACRYLAMIDES

Michael Joseph D'Errico, Stamford, Conn., and Winfried Josef Fremuth, Frankfurt, Germany, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 23, 1963, Ser. No. 282,599
6 Claims. (Cl. 260—561)

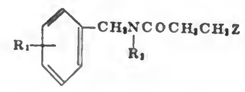
1. In a process for preparing N-alkylacrylamides by reacting an α-unsaturated nitrile and an olefin having at least 10 carbon atoms in the presence of strong sulfuric acid, the improvement which comprises employing said acid in an amount from about 30 to 250% in excess of the theoretical one mole required to react relative amounts of one mole of said olefin with one mole of said nitrile, and carrying out the reaction between said olefin and said nitrile in the presence of said sulfuric acid at a temperature of from about 40° C. to less than about 90° C.

3,161,680
N-ALKYL-N-BENZYL-β-THIOPROPIONAMIDES

James M. McManus, Uncasville, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1962, Ser. No. 195,962
12 Claims. (Cl. 260—562)

1. A compound of the formula



wherein

R_1 is selected from the group consisting of hydrogen, chloro, bromo. iodo, fluoro and trifluoromethyl;

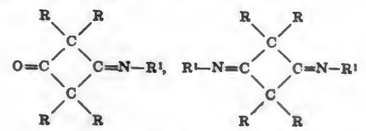
R_2 is lower alkyl having up to about 2 carbon atoms; and Z is selected from the group consisting of lower alkylthio, lower alkylsulfinyl, lower alkylsulfonyl, said lower alkyl groups having up to about 4 carbon atoms, 2-propenylthio, 2-propenylsulfinyl, 2-propenylsulfonyl, methyl - 2 - propenylsulfinyl, methyl-2-propenylsulfonyl, 3 - butenylthio, 3 - butenylsulfinyl and 3-butenylsulfonyl.

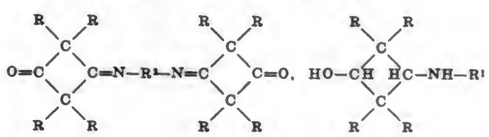
3,161,681
CYCLOBUTANE DERIVATIVES CONTAINING AROMATIC AMINE OR IMINE GROUPS

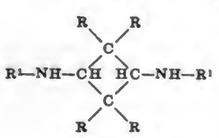
James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,396
11 Claims. (Cl. 260—566)

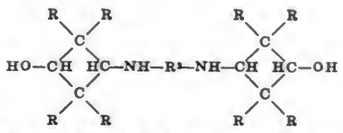
1. A cyclobutane derivative having a formula selected from the group consisting of







and



wherein R is an alkyl radical having 1 to 8 carbon atoms, R^1 is a mononuclear hydrocarbon aryl radical and R^2 is a mononuclear hydrocarbon arylene radical joined to the nitrogen atoms at the para positions of said arylene radical.

3,161,682
METHOD FOR PREPARING POLYOXYALKYLENE PRIMARY AMINES

Sherman D. Lesesne, Georgetown, and Norman B. Godfrey and Philip H. Moss, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Apr. 28, 1960, Ser. No. 25,187
5 Claims. (Cl. 260—584)

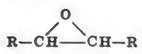
1. A method for preparing a basic polyether having the formula:

$$NH_2—Z—(oxyalkylene)_x—OH$$

which comprises the steps of reacting an alkanolamine having the formula:

$$NH_2—Z—OH$$

with a strongly alkaline member selected from the group consisting of the metals, hydrides, amides and hydroxides of sodium, potassium and lithium in the molar ratio of said strongly alkaline member to said alkanolamine in the range from about 0.5:1 to about 2:1, and removing any by-product water and by-product alcohol of the reaction to thereby provide a first reaction mixture containing an anhydrous alkali alkoxide, adding to said first reaction mixture from about 2 to about 200 mols per mol of said alkanolamine of an alkylene oxide having the formula:



under reaction conditions including a temperature within the range of about 50° to about 200° C. and a pressure within the range of 0 to about 100 p.s.i.g. to form a second reaction mixture containing said basic polyether and recovering said basic polyether from said second reaction mixture, Z in the above formulae being a member selected from the group consisting of C_2 to C_6 divalent alkylene groups, C_4 to C_6 cycloalkylene groups and C_4 to C_6 dialkylene ether groups represented by the formula:

$$—R'—O—R'—$$

x being a number from 2 up to about 200, R being selected from the group consisting of hydrogen, methyl and ethyl and R' being a hydrocarbon group containing 2 to 3 carbon atoms.

3,161,683
PROCESS FOR PARTIAL OXIDATION OF ACETYLENE

John E. Clocchetti, Armenia, Colombia, assignor to Acidos Grasos Limitada, Armenia (Caldas), Colombia

Filed Feb. 9, 1960, Ser. No. 7,699
15 Claims. (Cl. 260—585.5)

1. A process for the partial oxidation of acetylene to ketene by air, comprising reacting acetylene with air in the presence of a catalyst which is free from moisture and which is selected from the group consisting of (*a*) silica gel containing zinc oxide and calcium oxide and having silver oxide distributed thereon, and (*b*) calcium feldspar containing zinc oxide and having silver oxide distributed thereon, said catalyst containing silver oxide in the amount in the range of from about 6–10% by weight, zinc oxide in the amount in the range of from about 8–10% by weight, and calcium oxide in the amount in the range of from about 10–15% by weight at a temperature in the range of 98° to 220° C.

3,161,684
PURIFICATION OF PSEUDO-IONONE

Peter Alfred Wilkinson, South Croydon, and John Caesar Tebby, Acton, London, England, assignors to Glaxo Group Limited, Greenford, England, a British company

No Drawing. Filed May 25, 1959, Ser. No. 815,321
Claims priority, application Great Britain, June 2, 1958, 17,551/58
9 Claims. (Cl. 260—593)

1. A process for the purification of pseudo-ionone containing water-insoluble impurities which comprises reacting, in the presence of an aqueous solvent medium, the impure pseudo-ionone with a bisulphite selected from the group consisting of alkali metal and ammonium bisulphites to form a water-soluble complex with pseudo-ionone without rendering said impurities water-soluble, the molar ratio of bisulphite to pseudo-ionone being from 1.0 to less than 2.0, dissolving said complex in an aqueous medium, separating water insoluble impurities from said complex dissolved in said aqueous medium and decomposing the complex.

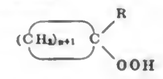
3,161,685
PROCESS FOR THE PREPARATION OF HALOGENATED KETONES

Francesco Minisci, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Jan. 11, 1960, Ser. No. 1,410
Claims priority, application Italy Jan. 12, 1959
10 Claims. (Cl. 260—593)

1. A process for the preparation of halogenated ketones of the general formula $R—CO—(CH_2)_n—CH_2X$, where R is a hydrocarbon radical taken from the group consisting of lower alkyl, phenyl, lower-alkyl-phenyl, cyclohexyl, and cyclopentyl groups, X is taken from the group consisting of chlorine and bromine and n is a whole number

from 3 to 4 characterized in that a cycloaliphatic hydroperoxide of the formula



where R has the above meaning, is treated with an agent of the group consisting of hydrochloric acid, hydrobromic acid, and their respective alkaline salts, in the presence of water and a redox reducing agent, at temperatures ranging between −20 and +50° C., said reducing agent comprising a salt of a polyvalent heavy metal of the group consisting of iron and copper, in the lowest valency form.

3,161,686
NOVEL ORGANOBORON COMPOUNDS

Herbert C. Brown, 1840 Garden St., West Lafayette, Ind.

No Drawing. Filed Mar. 30, 1960, Ser. No. 18,491
8 Claims. (Cl. 260—606.5)

6. Tri(β-pinyl)borane.

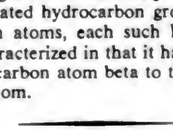
8. Dihydrocarbon boron hydrides in which each of 2 of the 3 boron valences is satisfied by a carbon to boron bond and wherein the remaining valence is satisfied by a hydrogen to boron bond, each of said carbon to boron bonds constituting a chemical linkage between the boron atom and a saturated hydrocarbon group which contains at least 5 carbon atoms, each such hydrocarbon group being further characterized in that it has a chemical structure such that a carbon atom beta to the boron atom is a tertiary carbon atom.

3,161,687
PHOSPHINE OXIDE POLYMERS

Albert Y. Garner, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

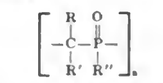
No Drawing. Filed Sept. 6, 1960, Ser. No. 53,921
3 Claims. (Cl. 260—606.5)

1. As compositions of matter, phosphine oxide polymers of the general formula:

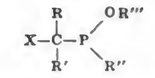


wherein R and R' are radicals independently selected from the group consisting of hydrogen and saturated hydrocarbon radicals, R'' is a saturated hydrocarbon radical containing from 1–10 carbon atoms and n is an integer of from 10 to 10,000.

3. A process for preparing phosphine oxide polymers of the general formula:



which comprises heating a halophosphinite monomer in an oxygen-free atmosphere at a temperature above the activation temperature of the halogen groups thereof; said halophosphinite monomer corresponding to the general formula:

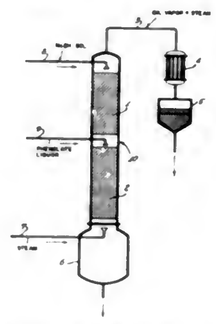


wherein, in the above formulae, X is a halogen selected from the group consisting of bromine and chlorine, R and R' are radicals independently selected from the group consisting of hydrogen and saturated hydrocarbon radicals, R'' and R''' are saturated hydrocarbon radicals containing from 1–10 carbon atoms and n is an integer of from 10 to 10,000.

3,161,688
PROCESS FOR THE REMOVAL OF NEUTRAL OILS FROM PHENOLATE LIQUORS

Rudolf Bemmann, Sandhofer Strasse 106, Mannheim-Waldhof, Germany

Filed Apr. 4, 1960, Ser. No. 19,603
2 Claims. (Cl. 260—627)



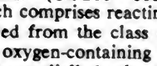
1. In a process for the separation of phenols and neutral oils from phenol-containing oils by reacting said oils with an alkali metal hydroxide solution to obtain an alkali metal phenolate solution and subjecting said phenolate solution to a clear-steaming process, the improvement which comprises reacting said oils with an aqueous alkali metal hydroxide solution in a substoichiometric amount in relation to the amount of phenols to be recovered from said oil, so as to obtain an alkali phenolate solution containing from about 110 to about 180% of phenols relative to the amount of phenols equivalent to the amount of alkali metal in said solution, subjecting said free phenols containing alkali phenolate solution to said clear-steaming process by heating it to boiling temperature, washing the phenol-containing vapors escaping from the clear-steaming operation with hot alkali metal hydroxide solution, whereby a liquid phase is obtained which contains alkali metal phenolate substantially free of neutral oils and a vapor phase, which is substantially free of phenols, and recovering said oils by condensation of said vapor phase.

3,161,689
PROCESS FOR MAKING GRIGNARD REAGENTS

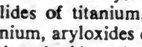
Glenn D. Cooper, Las Cruces, N. Mex., and Herman L. Finkbeiner, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,249
15 Claims. (Cl. 260—665)

1. The process which comprises reacting in a Grignard solvent medium selected from the class consisting of dialkyl ethers, cyclic oxygen-containing aliphatic compounds, alkyl aryl ethers, dialkyl ethers of an ethylene glycol, and pyridine, an olefinic hydrocarbon having the formula



with an alkyl Grignard reagent having the formula R'MgX in the presence of a catalyst selected from the class consisting of halides of titanium, halides of zirconium, alkoxides of titanium, aryloxides of titanium, alkoxides of zirconium, and aryloxides of zirconium, thereby producing a Grignard reagent having the



group present therein, where R is a monovalent organic radical free of substituents reactive with the alkyl Grignard reagent, R' is an alkyl radical of at least two carbon atoms having a hydrogen on the beta carbon atom, and X is a halogen, there being employed from about 0.2 to 2 moles of the olefinic hydrocarbon for each mole of the alkyl

Grignard reagent, and the catalyst concentration being such that the metal in the catalyst is within the weight range of from about 0.0625 to 2 parts per part of magnesium in the Grignard reagent.

3,161,690
SEPARATION PROCESS
Frank T. Eggertsen, Orinda, Calif., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Filed June 9, 1958, Ser. No. 740,540
4 Claims. (Cl. 260—666)

1. A process for the separation of hydrocarbon compounds of approximately equal polarity and differing in molecular weight by at least 10, which comprises passing a mixture containing such compounds and boiling within a temperature range not exceeding about 100° C. in breadth through a mass of molecular sieve sorbent having the crystal structure of faujasite having a pore size of about thirteen Angstrom units diameter, whose uniform pore diameter is larger than the maximum dimension of the minimum projected cross section of said hydrocarbon compounds and recovering an effluent containing the lower molecular weight component of the mixture in increased concentration.

3,161,691
PREPARATION OF 1-ALKYLCYCLOHEXENES
Jerome A. Vesely, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Nov. 23, 1960, Ser. No. 71,134
15 Claims. (Cl. 260—666)

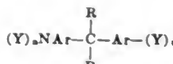
1. A process for the preparation of a 1-alkylcyclohexene by the catalytic dehydration of a 2-alkylcyclohexanol which comprises contacting the 2-alkylcyclohexanol at dehydration reaction conditions with a complex of a boron trihalide and a metal halide selected from the group consisting of iron halides, cobalt halides, chromium halides, manganese halides, vanadium halides and zirconium halides to produce said 1-alkylcyclohexene substantially free of other isomeric forms of alkylcyclohexene.

3,161,692
PREPARATION OF 1,1,3-TRIMETHYL-3-PHENYL-INDANES AND HEAT TRANSFER FLUIDS AND LUBRICANTS THEREFROM
Robert L. McLaughlin, Westfield, and John W. Schick, Merchantville, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Oct. 10, 1961, Ser. No. 144,028
15 Claims. (Cl. 260—668)

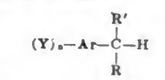
1. A process for producing 1,1,3-trimethyl-3-phenylindane and homologues thereof, which comprises contacting at least one alpha-methylstyrene reactant selected from the group consisting of alpha-methylstyrene and mono-lower-alkyl-alpha-methylstyrene with a catalyst selected from the group consisting of acid activated montmorillonite type clay and synthetic silica-alumina containing between about 7 percent and about 15 percent alumina by weight, and at a temperature varying between about 140° C. and about 150° C.; the amount of said catalyst being between about one percent and about 10 percent, by weight of said alpha-methylstyrene reactant.

3,161,693
AROMATIC POLYCARBOXYLIC ACIDS
Carl Serres, Jr., Whiting, Ind., and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 6, 1962, Ser. No. 214,806
10 Claims. (Cl. 260—668)

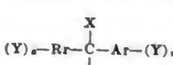
1. The method of preparing diaryl alkanes of the formula



wherein R is an alkyl radical, Ar is an aromatic radical, Y is a substituent on the aromatic nucleus of the group consisting of alkyl, chlorine and bromine, and n is 0 to 4, which comprises reacting (A) an arene having 0 to 5 substituents of the group consisting of alkyl, chlorine and bromine attached to the aromatic nucleus with (B) an aralkane having the formula

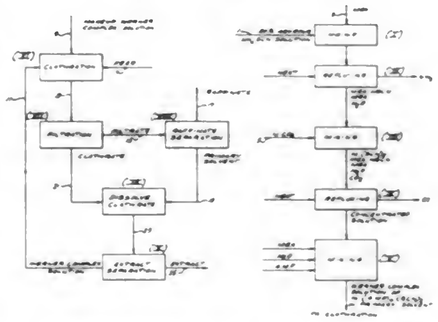


wherein Ar is an aromatic radical, Y is a substituent on the aromatic nucleus of the group consisting of alkyl, chlorine and bromine, n is 0 to 4, and R and R′ each represent an alkyl radical, in the presence of a strong Lewis acid and a substituted diaryl methane having the formula



wherein Ar is an aromatic radical, Y is a substituent on the aromatic nucleus of the group consisting of alkyl, chlorine and bromine, n is 0 to 4, and X represents Cl, Br and OH; said reaction being performed in liquid phase at a temperature of from about −10° C. to about 140° C., for a period of time sufficient to form said diaryl alkane.

3,161,694
CLATHRATION PROCESS
William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Apr. 17, 1961, Ser. No. 103,625
20 Claims. (Cl. 260—674)



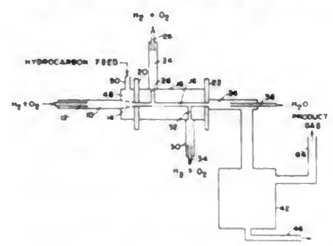
3. A method of preparing a solution of a Werner complex dissolved in a primary solvent, said solvent comprising an aqueous alkanolamine solution having dissolved therein a minor proportion of a water-soluble alkanolammonium salt, comprising mixing an aqueous solution of an ammonium salt of an anion capable of forming a salt with a metal having an atomic number above 12, which latter salt is capable of forming relatively water-insoluble Werner complexes with Werner amines, with a stoichiometric excess of alkanolamine, adding to the resulting solution less than a stoichiometric quantity of a salt of a metal having an atomic number above 12 and an anion selected from the group consisting of hydroxide and carbonate, and adding a quantity of a Werner amine to the solution.

9. In a selective clathration process for the separation of a mixture of organic compounds where the components of said mixture differ in molecular configuration and where at least one component of said mixture is clathratable, wherein the feed mixture to be resolved is contacted with a solution of a Werner complex dissolved in a primary solvent comprising an aqueous alkanolamine solution having dissolved therein a minor proportion of a water soluble alkanolammonium salt and clathration is effected by cooling the resulting mixture to effect precipitation of solid Werner complex clathrate; the improvement which comprises preparing the solution of said Werner complex in said primary solvent by mixing an aqueous solution of an ammonium salt of an anion capable of forming a salt with a divalent metal having an incomplete *d* shell, which latter salt is capable of forming relatively water-insoluble Werner complexes with Werner amines, with a stoichiometric excess of alkanolamine; adding less than a stoichiometric quantity of a salt of a divalent metal having an incomplete *d* shell and an anion selected from the group consisting of hydroxide and carbonate to the resulting solution; and adding a quantity of a Werner amine to the solution.

18. A method of preparing a solution which is convertible to a Werner complex solution by the addition of a heterocyclic nitrogen base thereto comprising mixing an aqueous solution of ammonium thiocyanate with a stoichiometric excess of alkanolamine and adding less than the stoichiometric quantity of a material selected from the group consisting of the hydroxides and carbonates of manganese, iron, cobalt and nickel, and mixtures thereof, to the resulting solution.

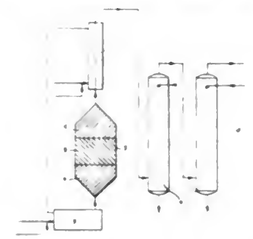
19. As a new composition of matter, a solution prepared by mixing an aqueous solution of ammonium thiocyanate with a stoichiometric excess of alkanolamine and adding less than the stoichiometric quantity of a material selected from the group consisting of the hydroxides and carbonates of manganese, iron, cobalt and nickel, and mixtures thereof, to the resulting solution.

3,161,695
PROCESS FOR MAKING ACETYLENE
Edward P. Goffinet, Jr., Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 13, 1960, Ser. No. 28,982
7 Claims. (Cl. 260—679)



1. The process for continuously forming acetylene by the pyrolysis of an aliphatic hydrocarbon of 1 to 6 carbon atoms which is a member of the group consisting of alkanes and olefins, which comprises mixing the aliphatic hydrocarbon with a hot combustion gas which is completely formed in a combustion zone by the combustion of a combustible gas and about a stoichiometrical proportion of oxygen, continuously passing the mixture through an elongated tubular reaction zone while maintaining the temperature of the gaseous mixture at the exit of the reaction zone at a temperature of from about 1000° C. to about 1600° C. and maintaining the temperature of the gaseous mixture throughout the length of the reaction zone at from 800° C. to not more than 250° C. above the exit temperature by employing an initial amount of the combustion gas sufficient to provide a mixture at the entrance to the reaction zone having a temperature within the last mentioned temperature range and supplying additional heat to the gaseous mixture intermediate the length of the reaction zone to replace heat consumed in the pyrolysis reaction, and quenching the gaseous mixture flowing from the reaction zone.

3,161,696
AUTOTHERMAL CRACKING OF HYDROCARBONS TO CRACKED GAS RICH IN OLEFINES
Kurt Eder, Ursenbach, and Helmut Nonnenmacher and Paul Schmulder, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Sept. 3, 1959, Ser. No. 837,832
Claims priority, application Germany Sept. 6, 1958
10 Claims. (Cl. 260—683)



1. A continuous process for the autothermal cracking of hydrocarbons to produce olefines which comprises preheating hydrocarbons selected from the group consisting of normally gaseous hydrocarbons, normally liquid hydrocarbons having a boiling point of up to about 200° C. and mixtures thereof to a temperature of from 300 to 650° C., leading the vapors of said hydrocarbons together with an amount of oxygen insufficient for the complete combustion of said hydrocarbons through a reactor containing three adjacent layers of inert non-porous refractory bodies, said bodies in each layer having a minimum diameter of 10 mm. and a maximum diameter of one eighth of the diameter of the reactor, only the bodies in the middle layer having been previously coated with from 0.05 to 2.0% by weight with reference to the weight of said bodies of a catalytic material selected from the group consisting of copper and compounds thereof.

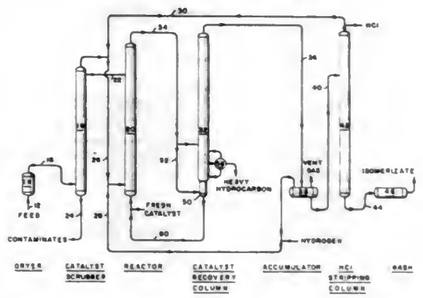
3,161,697
CATALYTIC CONVERSION OF PROPENE INTO HIGHER BOILING HYDROCARBONS
Johannes H. Choufoer, Hendrikus de Rulter, and Dick van Zoonen, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 31, 1960, Ser. No. 65,896
Claims priority, application Netherlands, Apr. 29, 1960, 251,102
6 Claims. (Cl. 260—683.15)

2. A process for the conversion of propene into higher boiling branched hydrocarbons having from 4–6 carbon atoms per molecule which comprises contacting propene in the presence of hydrogen at a temperature of about 100° C. to about 500° C. and a pressure of about 10 atmospheres to about 100 atmospheres with a solid acidic cracking catalyst on which is deposited a sulfide of a metal selected from the group consisting of chromium, molybdenum, tungsten, iron, cobalt, nickel, and mixtures thereof, and recovering branched hydrocarbons having 4–6 carbon atoms per molecule.

3,161,698
CONVERSION PROCESS

Eugene B. Fountain, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1962, Ser. No. 244,413
3 Claims. (Cl. 260—683.74)



1. In an isomerization process wherein a C_5 to C_7 saturate fraction containing normal paraffins and naphthenes is contacted in a reaction zone with molten salt catalyst comprising aluminum halide and antimony trihalide and reaction zone effluent is separated in a fractionation zone into a vaporous phase containing isomerization product and a liquid catalyst phase containing heavy hydrocarbon, the improvement which comprises contacting the liquid catalyst phase in an extraction zone with at least a portion of the reactor effluent, withdrawing from the extraction zone catalyst substantially reduced in concentration of heavy hydrocarbon and using the catalyst for the isomerization of further quantities of normal paraffin.

3,161,699
PRODUCTION OF POLYVINYL ALCOHOL HAVING IMPROVED DYEABILITY AND COMPOSITION THEREFOR INCLUDING POLYMERS CONTAINING BASIC NITROGEN

Kanji Matsubayashi and Osamu Fukushima, Kurashiki, Japan, assignors of one-fourth to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York, and three-fourths to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan

No Drawing. Filed Mar. 18, 1960, Ser. No. 15,799
Claims priority, application Japan, Mar. 20, 1959, 34/8,626
5 Claims. (Cl. 260—898)

1. A method of manufacturing a polyvinyl alcohol fiber having improved dyeability which comprises,

preparing an aqueous spinning fluid containing dissolved polyvinyl alcohol and dispersed particles of a water-insoluble basic-nitrogen containing polymeric material,

said dispersed particles of said polymeric material in said spinning fluid being in finely-divided form and having a particle size of from about 0.01μ to about 10μ;

said polymeric material comprising the reaction product obtained by the reaction of cyano groups in a compound selected from the group consisting of

(1) a homopolymer containing cyano groups,

(2) and a copolymer containing cyano groups,

with a reagent selected from the group consisting of hydroxylamine, primary amines, and hydrazine,

whereby said reaction results in the conversion of said cyano groups in said compound to form an aminotriazole ring in the case of hydroxylamine and hydrazine and to form an amidine in the case of said primary amines,

said basic nitrogen in said polymeric material due to the presence of said aminotriazole ring and said amidine,

and where the number of cyano groups in said compound is sufficient to produce a said polymeric material containing at least about 0.2% basic nitrogen by said reaction of said cyano groups and said reagent,

said homopolymer being prepared by the homopolymerization of a monomer selected from the group consisting of

acrylonitrile, methacrylonitrile, allyl cyanide, vinylidenecyanide, and α-cyanovinylacetate,

said copolymer containing cyano groups being a copolymer prepared by the copolymerizaion of a monomer selected from the group consisting of

acrylonitrile, methacrylonitrile, allyl cyanide, vinylidenecyanide, and α-cyanovinylacetate,

and a comonomer selected from the group consisting of

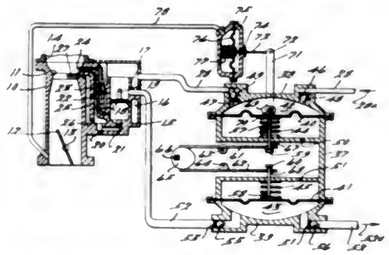
styrene, vinyl chloride, vinylidene chloride, vinyl acetate, vinyl benzoate, butadiene, methyl acrylate, methyl methacrylate, vinylpyrrolidone, ethyl methacrylate, acrylamide, acrolein, methylvinyl-ketone, allylamide, allyl acetate, allyl chloride, diallylphthalate, divinylbenzene, 2-vinylpyridine, 4-vinylpyridine, 2-methyl-5-vinylpyridine, 5-ethyl-2-vinylpyridine, 2-methyl-5-vinylpyridiniumethyl-bromide, 4-vinylpyridinium-ethyl-methylsulfate, dimethylaminoethylmethacrylate, and allylpyridiniumchloride;

and preparing a polyvinyl alcohol fiber from said aqueous spinning fluid by spinning wherein said aqueous fluid contains a sufficient amount of said dispersed water-insoluble polymeric material whereby said prepared polyvinyl alcohol fiber contains an amount of basic nitrogen that is at least about 0.05% due to the presence of said polymeric material in said prepared fiber.

3,161,700
RETURN FLOW CARBURETOR

Thomas M. Ball, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed July 28, 1959, Ser. No. 830,007
6 Claims. (Cl. 261—27)



1. In a carburetor for an internal combustion engine, movable wall-type pumping means for connecting a source of fuel with said carburetor, fuel flow control means for controlling the fuel flow to said carburetor, said pumping means having a reciprocable wall movable in alternate intake and pumping strokes, resilient means for yieldingly urging said wall in said pumping strokes, a pivotal actuating lever, means operatively connecting said lever and wall for alternately moving the same in said intake strokes in opposition to said resilient means and for releasing said wall for movement in said pumping strokes upon alternate pivoting of said lever in opposite directions, operable cam means for pivoting said lever in said opposite directions including a cyclical cam and adjustment means for varying the amplitude of said pumping strokes, said adjustment means operatively connecting said cam and lever to adjust the angular relationship of said lever with respect to said cam, and means responsive to operation of said fuel flow control means for actuating said adjustment means to increase the amplitude of said pumping strokes upon operation of said fuel flow control means to increase said fuel flow.

3. In a carburetor for an internal combustion engine having an air intake manifold system, flow control means for controlling the air flow in said system, movable wall type pumping means for connecting a source of fuel with said carburetor, said pumping means having a reciprocable wall movable in alternate intake and pumping strokes, resilient means for yieldingly urging said wall in said pumping strokes, a reciprocating member, means operatively connecting said member and wall for alternately moving the same in said intake strokes in opposition to said resilient means and for releasing said wall for movement in said pumping strokes upon alternate reciprocating of said member in opposite directions, adjustable movement limiting means engageable with said pumping means to limit the length of the pumping stroke thereof, and means responsive to operation of said flow control means and operatively connected with said movement limiting means to adjust the latter to increase said pumping stroke with increasing air flow in said system.

3,161,701
METHOD OF MAKING NUCLEAR FUEL COMPACT

Dale E. Johnson, Cardiff, and Fred H. Lofftus, Del Mar, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 30, 1960, Ser. No. 59,485
4 Claims. (Cl. 264—21)

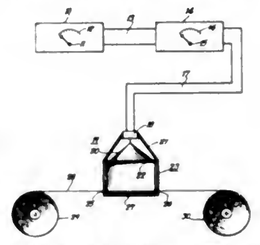
1. The method of making a high temperature heterogeneous ceramic fuel body for use in a neutronic reactor which comprises thoroughly mixing compact dense particulate ceramic nuclear fuel larger than about 150 microns in size being formed of a powdered nuclear fuel with admixed first binder and mechanically compacted to a dense state into a wet paste comprising powdered refractory material selected from the group consisting of alumina, beryllia, aluminum carbide, beryllium carbide and mixtures thereof, a second binder for said refractory material and a solvent for said second binder in which said first binder is insoluble to provide a fuel body mixture in which said nuclear fuel is uniformly distributed in said wet paste, said nuclear fuel selected from the group consisting of the oxides, carbides, and silicides of nuclear fuel metal and mixtures thereof, drying and compressing said fuel body mixture, and then sintering said fuel body to a dense, thermally conductive ceramic fuel body resistant to fission product migration, said ceramic fuel body retaining said nuclear fuel in particulate form.

3,161,702
PROCESS FOR RENDERING POLYMERIC SURFACE ADHERENT TO A COATING

Thomas Gerald Howington, Pensacola, Fla., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Jan. 4, 1962, Ser. No. 164,346
4 Claims. (Cl. 264—23)

1. The method of treating a surface of a polymeric material which is relatively non-adherent to adhesives, inks, printed matter and the like, for imparting a high degree of adherency of such surface thereto, said material consisting at least predominantly of a polymer selected from the group consisting of a polyethylene, polypropylene and copolymers thereof, said method comprising: subjecting said surface, immersed in a fluid medium, to mechanical waves transmitted thereto through said medi-

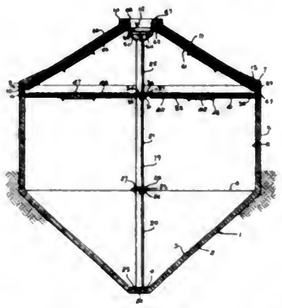


um at a frequency of at least 20,000 cycles per second and at a power level of about 150 watts for about 15 seconds so as to impart said adherency to said surface.

3,161,703
METHOD AND APPARATUS FOR FABRICATING A ROOF ON LARGE CONCRETE STRUCTURES

James J. Watson, 4331 Ridgeway Drive, Kansas City, Mo.

Filed Feb. 19, 1962, Ser. No. 174,229
6 Claims. (Cl. 264—32)



2. The method of supporting a roof soffit form deck while fabricating large structures of the type in the order of about 50 feet in width and having a floor and an at least partially surrounding wall with an upper horizontal edge and an inside surface and a generally frusto-conical concrete roof supported entirely on said edge and having a central opening therethrough, said method comprising the steps of:

(*a*) forming a group of circumferentially spaced integral members in said wall having ledges adjacent said wall inside surface and near said wall upper edge,

(*b*) positioning a lower section of a temporary multiple section rigid supporting column in upright relation on said floor substantially at the vertical center of said structure with a spread of engagement of a base on said lower section with the floor that the column is self-stabilizing,

(*c*) moving additional column sections onto said lower column section and securing them in end to end alignment,

(*d*) temporarily assembling an upper column section axially of said lower column section and provided with a platform of greater diameter than said column forming a bearing ring surface above said wall upper edge a distance approximating the height of said roof,

(*e*) temporarily expanding a plurality of longitudinally telescopic beams into supported contact at opposite ends thereof respectively on said bearing ring surface

and said ledges with said beams being rigid and circumferentially spaced and extending radially from said bearing ring producing a frusto-conical form supporting frame structure, and

(*f*) laying the form deck including a central opening form of greater diameter than said bearing ring on said frame structure, whereby the entire vertical support for said form deck is provided by said column and wall through said beams and said column and beams are removable through said central opening.

6. A structure adapted to support a soffit form deck for molding a concrete frusto-conical roof on a large concrete tank of the type having a floor and a vertically extending wall having an upper horizontal circular edge and a cylindrical inside surface, said frusto-conical roof after formation being supported entirely on said edge and having a central opening therethrough, said structure comprising:

(*a*) a group of circumferentially spaced pockets horizontally extending radially outwardly of said cylindrical inside surface into said walls and respectively presenting a group of ledges at a level adjacent said wall upper edge,

(*b*) a removable self-stabilizing multiple section supporting column having a rigid lower section positioned in upright relation on said floor axially of said cylindrical inside surface,

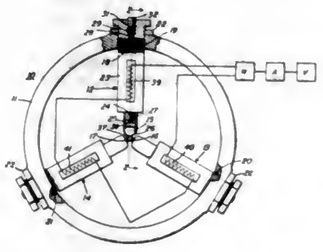
(*c*) an upper rigid column section assembled axially with said lower column section and provided with a circular platform on the top thereof greater in diameter than said column and forming an upper bearing ring extending above said wall upper edge a distance approximating the height of said roof,

(*d*) a plurallty of longitudinally telescopic upper rigid beams supported at opposite ends thereof respectively on said supper bearing ring and said ledges in regular circumferentially spaced radial relation producing a frusto-conical frame structure,

(*e*) said frame structure being adapted to support said form deck including a central opening form of greater diameter than said upper bearing ring,

(*f*) whereby said frame structure and form deck and column may be dismantled and removed through said central opening.

3,161,704
TESTING DEVICE AND USE IN PROCESS CONTROL
Donald G. Le Grand, Scotia, N.Y., and Donald G. Flom, Berwyn, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,166
8 Claims. (Cl. 264—40)



7. A wire coating productlon control device comprising in combination:

(*a*) an annular support member,

(*b*) three beam members supported by said annular support member substantially in a common plane in equal peripherally spaced relationship of 120° and extending towards the center of said annulus with the distal ends thereof in juxtaposition,

(*c*) a rolling friction ball element retained in the distal end of each of said support members and adapted to have rolling contact with a coated wire passing between said rolling elements,

(*d*) an electrical signal generating means operatively connected to each of said support members to provide an electrical signal varying with changes induced in the bending moments in said beams by rolling friction between said elements and said coated wire, and

(*e*) control means responsive to said electrical signal to control at least one parameter of the coating operation.

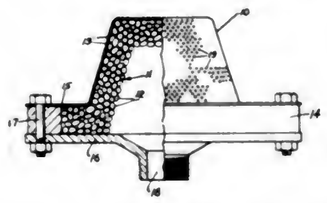
8. A method of controllably producing predetermined characteristics in a material during the conduct of a process step thereon wherein a plurality of process parameters are subject to control comprising the steps of:

(*a*) detecting changes in rolling friction between said material and a rotatable element at a station downstream of the station at which the process step is conducted,

(*b*) generating a signal which varies with changes in the rolling friction, and

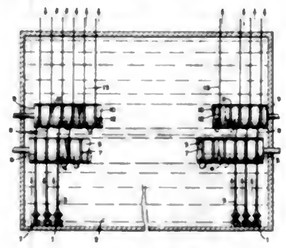
(*c*) utilizing said electrical signal to control at least one parameter of said process to conform said parameter to predetermined standards for the surface characteristics of the material being subjected to the process.

3,161,705
METHOD OF MAKING MOLDING FORMS
Harold V. Kindseth and John A. Johnson, Minneapolis, and Thomas B. Ludlow, St. Paul, Minn., assignors to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Original application Feb. 6, 1958, Ser. No. 713,762, now Patent No. 3,001,582, dated Sept. 26, 1961. Divided and this application Oct. 6, 1958, Ser. No. 765,573
7 Claims. (Cl. 264—92)



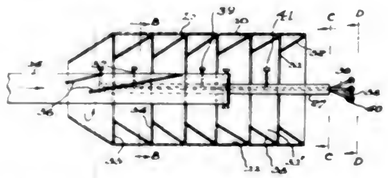
1. A method for producing shaped perforated resinous sheets comprising forming a temporary laminate by placing a continuous air impermeable thermoplastic and thermoformable resinous sheet over the surface of a flat perforated thermoplastic and thermoformable resinous sheet, interposing means between the sheets to prevent said sheets from fusing together under the influence of heat, heating the temporary laminate thus produced to a temperature at which it may be formed, stretching said temporary laminate over the surface of a pattern, said pattern having the shape desired in the finished sheets, withdrawing substantially all the air from between said temporary laminate and said pattern, allowing said temporary laminate to cool below the softening point, removing the temporary laminate from said pattern and separating said temporary laminate by removing said continuous sheet from said perforated sheet.

3,161,706
METHOD AND APPARATUS FOR WET SPINNING ELASTOMERIC POLYMERS INTO A FUSED MULTIFILAMENT FIBER
Timothy V. Peters, Jr., Barrington, R.I., assignor, by mesne assignments, to Polythane Corporation, Rumford, R.I., a corporation of Delaware
Filed Sept. 28, 1961, Ser. No. 141,530
7 Claims. (Cl. 264—103)



1. The method of wet spinning isocyanate modified dihydroxy elastomeric polymers dissolved in a solvent to produce a multifilament fiber having a substantially round cross-section, which comprises extruding the polymer solution through a plurality of orifices into a liquid coagulating bath to form a plurality of filaments, gathering together the filaments and applying sufficient pressure to them, while they are in contact with the coagulating bath liquid and while they are in the state of semi-plastic flow, to consolidate them into a fused multifilament fiber, and subsequently imparting a twisting action to the multifilament fiber while it is in contact with the coagulating bath liquid and while it is in the state of semi-plastic flow.

3,161,707
PROCESS AND APPARATUS OF MAKING LARGE BALLS IN A DRUM PELLETIZER
Harold T. Stirling, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Nov. 2, 1960, Ser. No. 66,781
5 Claims. (Cl. 264—117)



1. A method for making ball-like particles from finely divided iron ore such as specular hematite concentrates having particle sizes in the range from about 20–325 mesh, using a rotatable drum having a plurality of adjacent internal zones, comprising the steps of:

(*a*) rotaing said drum;

(*b*) introducing a first quantity of said material into a first internal zone as said drum rotates, said material forming ball-like particles in said first zone;

(*c*) flowing the ball-like particles into a second zone as said drum rotates;

(*d*) wetting the surface of the respective ball-like particles in said second zone as said drum rotates;

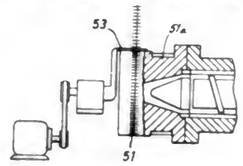
(*e*) flowing said wetter ball-like particles into a third zone as said drum rotates;

(*f*) introducing another quantity of said finely divided material into said third zone as said drum rotates so that the latter material adheres to the wetted surface of the respective ball-like particles whereby each ball-like particle increases in size;

(*g*) flowing the enlarged ball-like particles into a fourth zone as said drum rotates; and

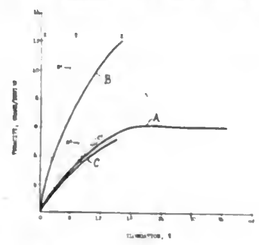
(*h*) repeating the foregoing sequence of steps until said ball-like particles achieve a desired size.

3,161,708
PROCESS AND APPARATUS FOR MANUFACTURING MONOFILAMENTS
Frederick Scragg, Macclesfield, England, assignor to Ernest Scragg & Sons Limited, Macclesfield, England
Filed Dec. 5, 1961, Ser. No. 157,160
Claims priority, application Great Britain June 3, 1961
9 Claims. (Cl. 264—148)



1. A process for manufacturing a monofilament having a continuous filament trunk and a plurality of filament branches formed integrally therewith, comprising the steps of continuously extruding, by means of an extruder, a plastic sheet having integral fins projecting therefrom, and continuously cutting the sheet and fins in a direction extending across said fins during issue of the sheet from the extruder, so as to form a monofilament.

3,161,709
THREE STAGE DRAWING PROCESS FOR STEREOSPECIFIC POLYPROPYLENE TO GIVE HIGH TENACITY FILAMENTS
Herman Dietrich Noether, Millburn Township, Essex County, N.J., and Robert William Singleton, New York, N.Y., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,509
12 Claims. (Cl. 264—210)

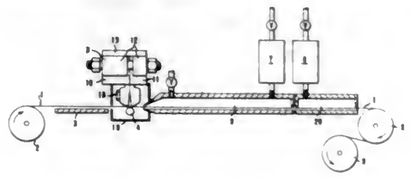


1. The process which comprises extruding stereospecific polypropylene in liquid state through an orifice to produce a filament, drawing said filament continuously from said orifice, drawing said filament a second time at a temperature of about room temperature to 110° C. and a draw ratio ranging from about 2:1 to 10:1, and drawing said filament a third time at a temperature of about 140 to 150° C. and a draw ratio ranging from about 1.1:1 to 4:1.

3,161,710
POLYMERIZATION PROCESS FOR POLYESTER FILMS
Gilbert M. Turner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,402
15 Claims. (Cl. 264—216)

1. In the condensation reaction of bifunctional ester-forming material in the presence of condensation catalyst

with evolution of volatile by-product to form linear polyesters, the process of polymerizing material containing at least 75% of a glycol terephthalate which comprises forming the said material into a film having a thickness between about 0.1 and 1 mil while at least a substantial part of said reaction evolving volatile by-product remains for completion and then polymerizing the glycol terephthalate by heating the said film to a temperature of at least 260° C. for a period of time between about 2 seconds and 2 minutes until a polyester having an intrinsic viscosity between about 0.6 and about 2.5 is obtained, and during the heating maintaining the partial pressure of the glycol released from the said material at less than about 2 mm. of mercury.



3,161,711
STRETCHING OF THERMOPLASTIC FILM TO IMPROVE THICKNESS UNIFORMITY

Milford Charles Tassler, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

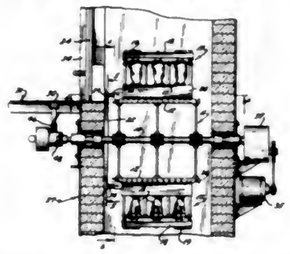
Filed Mar. 29, 1963, Ser. No. 270,138
3 Claims. (Cl. 264—289)

1. A process comprising: preferentially heating a substantially amorphous thermoplastic polymeric film while substantially free from tension along at least one selected longitudinal lane of greater thickness than the adjacent thinner portions of said film; cooling the film to sharpen the temperature differential between said thinner portions and said longitudinal lane of greater thickness and thereafter stretching the unsupported film to impart at least lateral tension to said film, thereby improving the thickness uniformity of said film.

3,161,712
ROTATIONAL MOLDING

Dan C. Hungerford, Morristown, and William A. Stankiewitch, Dover, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York

Filed June 12, 1961, Ser. No. 116,482
6 Claims. (Cl. 264—310)



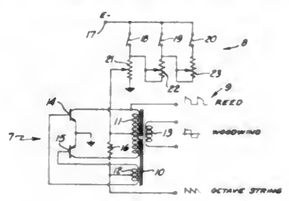
1. The process of making a hollow article having a major longitudinal axis and major and minor transverse axes, comprising mounting a mold for said article for rotation about an axis of rotation and with the major longitudinal axis of the mold cavity substantially parallel to a radial line disposed in a plane disposed at right angles to the axis of rotation and with the cavity disposed so that a plane which is at right angles to the axis of rotation passes intermediate the major and minor transverse axes of the mold cavity, depositing a measured liquid charge of plastisol in the mold, closing the mold, and rotating the mold intermittently for brief intervals in one direction and then in the other while subjecting it to heat for a sufficient time to cause the mixture to gel and fuse.

ELECTRICAL

3,161,713
MAGNETIC TONE GENERATOR FOR MUSICAL INSTRUMENTS

Louis Martinez, Arlington, Calif., assignor to Pantronic, Inc., Arlington, Calif., a corporation of California

Filed Aug. 9, 1962, Ser. No. 215,936
12 Claims. (Cl. 84—1.01)



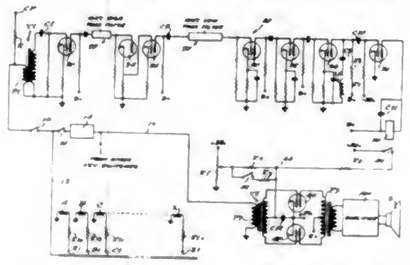
1. In a musical instrument including an electronic tone generator, the combination of:
- a magnetic multivibrator having a core, a tapped winding on said core, and a pair of current switching elements for alternately completing a circuit through each portion of said winding;
- means for connecting a direct current actuating voltage to said multivibrator, including means for varying the magnitude of the voltage to adjust the frequency of the tones generated, to generate a reed-type tone at an end of said winding and a string-type tone at a tap of said winding;
- amplifier means;
- a speaker;
- means for selectively connecting said winding to said amplifier means; and
- means for connecting the amplifier means output to said speaker.

3,161,714
LEGATO PERCUSSION CIRCUIT

Donald R. Kern, Chicago, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 29, 1962, Ser. No. 220,227
11 Claims. (Cl. 84—1.26)

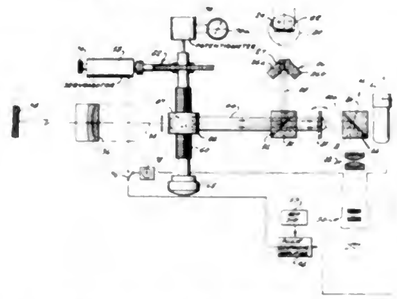
1. A legato percussion system for use in an organ having a plurality of keys each adapted to close a switch for rendering a tone generator effective to transmit a tone signal, the improvement comprising an impedance common to said keys, an impedance individual to each of said keys, means for connecting a signal to said common impedance, means for connecting said signal to either one or a plurality of said individual impedances responsive to the operation of a respective key whereby the signal level across said common impedance is altered in correspondence with the number of operated keys, and means for detecting each alteration of said signal for providing a percussive tone envelope to each transmitted tone signal.



3,161,715
AUTOCOLLIMATOR AND AUTOMATIC CONTROL MEANS THEREFOR

Donald E. Davidson, La Habra, Calif., assignor to Davidson Optronics, Inc., West Covina, Calif., a corporation of California

Filed Jan. 26, 1960, Ser. No. 4,745
10 Claims. (Cl. 88—14)

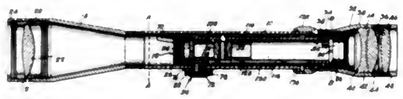


1. In an autocollimator for aligning a distant optical reflector, the combination of:
- a collimator lens system having an optic axis along which said reflector is adapted to be located,
- a light source along said axis including two light emitters which are energized out of phase and located at opposite sides of an optic plane parallel to said axis,
- means along said axis between said lens system and light emitters defining a narrow light separator in said optic plane,
- said lens system receiving and collimating light rays from said emitters to produce a collimated light beam which is transmitted to and reflected back by said reflector and said lens system being focused to procedure an optical image of said separator in an image plane transverse to said axis,
- a photoelectric receiver along said axis for receiving the reflected light beam including a narrow zone of photosensitive detection parallel to said optic plane and located in said image plane,
- an optical tipping plate along said axis directly before said zone arranged with its tipping axis parallel to said planes,
- means for indicating the angle of said plate on its tipping axis,
- means for tipping said plate, and
- phase-sensing means coupled to the output of said receiver for sensing and indicating changes in the phase of the light incident on said zone from said emitters.

3,161,716
VARIABLE POWER RIFLESCOPE WITH TILTING RETICLE AND ERECTOR TUBE

Donald J. Burris, Broomfield, Colo., and John L. Maulbetsch, Northampton, Mass., assignors to Redfield Gun Sight Company, Denver, Colo., a limited partnership of Colorado

Filed Feb. 19, 1962, Ser. No. 173,922
8 Claims. (Cl. 88—32)



1. A riflescope which comprises, an elongate tubular barrel, objective lens means mounted in the forward end of the barrel adapted to reproduce an inverted and reversed image of a real object in a first image plane located intermediate the ends of said barrel, a second tubular element of smaller diameter than the barrel mounted therein for limited universal tilting movement relative thereto, means adapted to receive the image from the objective lens means and reproduce same in erect unreversed form at varying degrees of magnification in a second image plane located a fixed distance behind the first image plane, said means comprising a pair of erector lens elements carried by the second tubular element forwardly of the center of universal movement thereof that cooperate to define an optical axis and are mounted for longitudinal adjustment relative to one another, ocular lens means located in the rear extremity of the barrel and adapted to focus upon the erect unreversed image in the second image plane, first external adjustment means carried by the barrel and operatively connected to the second tubular element in longitudinally spaced relation to its center of limited universal tilting movement, said adjustment means including control means adapted upon actuation to tilt the second tubular element and shift the optical axis defined by the erector lens elements so as to introduce corrections for windage and elevation, second external means located on the outside of the barrel connected to the erector lens elements and operable upon actuation to change the spacing therebetween, said second external means including a coupling extending into the barrel and accommodating the tilting movement of the second tubular element, a reticle carried by the second tubular element within the second image plane which includes means defining an aiming point located on the optical axis defined by the erector lens elements, and a diaphragm carried by the second tubular element for movement therewith, said diaphragm having an aperture therein defining a field of view which remains substantially unobstructed at maximum deflections of the second tubular element relative to the barrel.

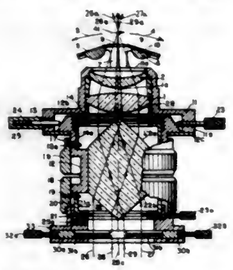
3,161,717
MICROSCOPE SUBSTAGE ILLUMINATING DEVICE

János Barabás, 91 Attila u.; Károly Láng, 34 Daroczy ut.; and László Zselyonka, 74 Baross u., all of Budapest, Hungary

Filed May 3, 1961, Ser. No. 107,476
Claims priority, application Hungary May 4, 1960
10 Claims. (Cl. 88—40)

1. In a microscope substage illuminating device, in combination, an afocal refractive body positioned in the path of a bundle of light rays paralleling a reference line in a median plane of said body, said body being shaped to transpose light rays in said bundle remote from said line into a position close to said line and vice versa, adjustable diaphragm means positioned adjacent said body at the ray-entrance side thereof for selectively cutting off certain of said rays remote from said line, thereby creating a variable zone free from light rays in the vicinity

of said line at the ray-exit side of said body, focusing means for the transposed rays at said exit side, supplemental lens means, and mounting means for said supplemental lens means adapted to position the latter in the path of the transposed light rays beyond said focus means,

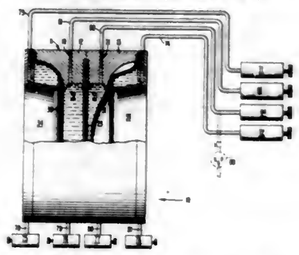


said supplemental lens means comprising two collective lens members alternately alignable with said focusing means, one of said lens members being provided with discriminating means for optically differentiating the transposed light rays on opposite sides of said median plane.

3,161,718
VARIABLE POWER FLUID LENS

Wallace V. De Luca, Levittown, Pa., assignor of one-half to William Kurasch, Los Angeles, Calif., and one-half to United Research & Development Corp., a corporation of Pennsylvania

Filed July 12, 1961, Ser. No. 123,574
5 Claims. (Cl. 88—57)



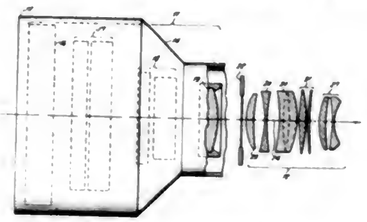
1. A variable fluid lens comprising in combination; a lens block having an axial opening therethrough, a flexible and resilient transparent lens diaphragm spanning one end of said opening, transparent means axially spaced from said lens diaphragm and spanning said opening, said diaphragm and transparent means defining a fluid chamber therebetween, a pressure fluid within said chamber, an annular tension controlling diaphragm, means retaining said tension controlling diaphragm in proximity to the peripheral edge portion of said lens diaphragm, fluid pressure means for variably expanding said tension controlling diaphragm against the peripheral portion of said lens diaphragm, whereby tension of the lens diaphragm may be varied.

3,161,719
PANCRATIC LENS SYSTEM RELAY

Frank G. Back, Lattingtown, N.Y.
(55 Sea Cliff Ave., Glen Cove, N.Y.)

Filed Sept. 1, 1961, Ser. No. 135,638
1 Claim. (Cl. 88—57)

A pancratic lens assembly comprising in the order of the direction of the incident light, a front section, a series of fixed and axially movable lens elements in the front section to vary the field, a diaphragm behind the front section, a multielement relay behind the diaphragm of collective power adapted to form the final image, said relay comprising at least one negative lens, and at least one positive meniscus lens, said positive and negative lenses together forming a meniscus element having its external surfaces concave towards the incident light and in which the lenses have the following optical characteristics wherein N_D is the refractive index for D line, V is Abbe's dispersion number, LaK is Lanthanum Crown, F is Flint, BaF is Barium Flint, SK is Dense Crown, SFS is Special Dense Flint, R_3, to R_{14}, are the respective radii of the refracting lens surfaces, numbered from the front to the rear of the lens system, d_{20} to d_{32} are the respective axial thicknesses and a_2 to a_7 are the respective axial separations from the front to rear of the lens system:



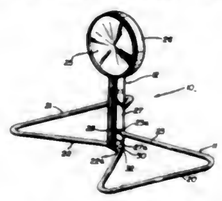
[f=100.0 mm. (10 diopters)]

Lens No.	Radius (R) mm.	Thickness d and air space a	Glass	Index N_D	Dispersion V
20	R_1=−20.755	$a_1 \equiv a_9$=3.670			
	R_4=+617.66	d_{20}=1.294	LaK-14	1.6968	55.6
21	R_5=−47.446	a_2=4.745			
	R_6=−22.153	d_{21}=3.192	F-2	1.6200	36.3
32	R_7=+387.89	a_4=0.345			
	R_8=−62.163	d_{32}=2.588	BaF-7	1.6080	46.2
33	R_9=+33.505	a_5=1.380			
	R_{10}=+253.92	d_{33}=3.364	SK-16	1.6204	60.3
29	R_{11}=+32.997	a_6=2.243			
	R_{12}=−152.88	d_{29}=4.313	SK-16	1.6204	20.3
30	R_{13}=±plano	a_7=0.086			
	R_{14}=+20.255	d_{30}=1.725	SFS-5	1.7618	27.0

3,161,720
PORTABLE HIGHWAY REFLECTOR UNIT

Alexander B. Musichuk, Tallmadge, Ohio, assignor to Duncan-Morris Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 14, 1961, Ser. No. 131,206
5 Claims. (Cl. 88—79)



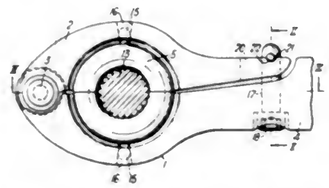
1. A portable reflector unit of the character described, comprising; an endless resilient frame of generally butterfly configuration in plan and including opposed V-shaped segments whose apexes are disposed in substantially overlapped relationship with each other; a reflector unit having an elongate mounting handle that includes a notch at one free end thereof; at least one reflector element

disposed on the remaining end of said mounting handle; said mounting handle being pivotally connected to one said apex adjacent said notched end; said notched end releasably and tensionally engaging said remaining apex upon pivotal movement of said handle whereby said reflector unit is positioned in upright position during the period said notched end is in engagement with said apex said reflector element being disposed at right angles to the plane of said endless frame during the period that said notched end is in engagement with said remaining apex.

3,161,721
CLAMPS OF SPACING DEVICES FOR OVERHEAD ELECTRICAL CONDUCTORS

Ralph Percival Torr, New Malden, England, assignor to Andre Rubber Company Limited, Hook Rise, Tolworth, Surbiton, Surrey, England, a British company

Filed Nov. 26, 1962, Ser. No. 240,119
8 Claims. (Cl. 174—40)



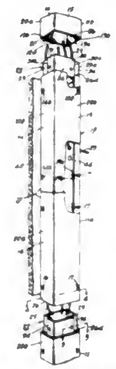
1. A clamp for a spacing device for spacing the individual conductors of an electrical transmission line comprising at least two rigid jaws, a bush consisting of elastomeric material embraced and compressed by said jaws and adapted to embrace an electrical conductor, the interior surfaces of said jaws and the exterior surface of said bush being of circular symmetary about an axis and being flared outwardly from the median plane transverse to the axis of said clamp and bush towards the ends of the area over which said bush seats in said clamp, the cross-section of the interior surfaces of said jaws in planes containing the axis being the arc of a circle and convex, the similar cross-sections of the exterior surface of said bush being the arc of a circle and concave, and the radius of curvature of the said cross sections of said interior surfaces of said jaws being greater than the radius of curvature of said cross-sections of said exterior surface of the uncompressed bush.

3,161,722
READY ACCESS WIRING DUCT

Harry Edward Wellens, Wayne, Pa., and Robert Martin, Ridgewood, N.J., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 13, 1963, Ser. No. 258,293
4 Claims. (Cl. 174—101)

1. A section for a multi-section wireway, comprising,
an elongated base member having a generally L-shaped cross section and including first and second relatively narrow inwardly extending flanges integral therewith,
said first flange extending at a right angle from the end of the base portion of the L parallel to and in the direction of the stem portion of the L,
said second flange extending at a right angle from the end of the stem portion of the L parallel to and in the direction of the base portion of the L,
said narrow flanges defining an opening into said base member which is wider than the width of either the base portion or the stem portion of said L-shaped base member,
elongated cover means having an L shaped cross section, and



means removably fastening said cover means to said flanges.

3,161,723
SPREADER FOR BUNDLED ELECTRIC CONDUCTORS

Archibald T. Flower, Glenside, Pa. (Queen St. and Ivy Hill Road, Philadelphia, Pa.), and John I. MacPherson, 711 Hartranft St., Fort Washington, Pa.

Filed May 9, 1963, Ser. No. 279,090
4 Claims. (Cl. 174—146)



1. A spreader for bundled electric conductors comprising a pair of plates disposed in parallel abutting relation, pivot means disposed medially of said plates rotatably connecting said plates together, each of said plates having a like plurality of spaced apart upwardly extending notches in the lower edge thereof, and hook members extending longitudinally of the upper edges of said plates in opposite directions, with the end of the hook of one plate overlapping the end of the hook of the other plate to define an opening to receive a conductor, and with the notches of one plate registering with the notches of the other plate to receive the other conductors.

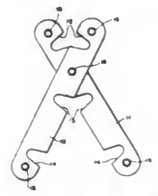
3,161,724
SPREADERS FOR AERIAL CONDUCTORS

Nicholas H. Greene, Jr., Springfield, and Archibald T. Flower, Glenside, Pa. (both % Arch T. Flower Co., Queen St. and Ivy Hill Road, Philadelphia 18, Pa.)

Filed Mar. 1, 1963, Ser. No. 262,099
6 Claims. (Cl. 174—146)

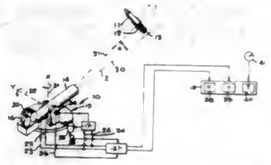
1. A spreader bar for conductor wires comprising a pair of superimposed elongated flat bars of electrical insulating material having a pivotal connection, each of said bars having a like plurality of spaced lateral slots with some of the slots opening through one edge of each bar and at least one of the slots opening through the other edge of each bar, the slots of each bar being disposed oppositely to the slots of the other bar and extending across the bars beyond the longitudinal axis of the bar so that the closed ends of the slots of one bar overlap the closed ends of the slots of the other bar, all the slots opening in

one edge of each bar lying to one side of the pivot point and all of the slots opening in the other edge of each bar lying to the other side of the pivot point, said bars



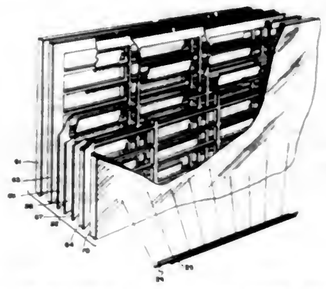
having opposite transverse openings disposed endwardly of an endmost opposing pair of lateral slots, said openings being adapted to register when the bars are in parallel relation.

3,161,725
OPTICAL DISPLACEMENT FOLLOWER
Geoffrey A. Hotham, Santa Barbara, Calif., assignor to Optron Corporation, Santa Barbara, Calif., a corporation of California
Filed Aug. 17, 1961, Ser. No. 132,086
18 Claims. (Cl. 178—7.2)



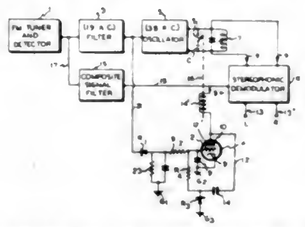
1. A displacement follower which includes: an image dissector tube having a photocathode, a focusing electrode, and an image shield with a dissecting aperture, all disposed along a longitudinal Z-axis defining the region of the path of an electron beam from said photocathode to said image shield, and an electron multiplier downstream from said dissecting aperture, whereby an optical image falling on said photocathode may be reproduced as an electron image projected on said image shield in the region of said dissecting aperture; an accelerating anode disposed around the cross-over point of said electron beam and having a restricting aperture on said Z-axis upstream from said cross-over point; a source of regulated voltage and a voltage dividing network adapted to establish operating potentials at the elements of said image dissector tube and of said electron multiplier; a pair of deflection plates disposed on opposite sides of said Z-axis between said focal point and said image shield deflection of said electron beam to compensate when said optical image departs from its initial position on said photocathode; voltage sources integral with said voltage divider network to establish static potentials for said deflection plates; a capture voltage source for adjustably selecting a capture voltage corresponding to the voltage output of said electron multiplier for an initial target position; a differential amplifier connected to said electron multiplier output and said capture voltage source to produce a signal corresponding to the difference between said capture voltage and said electron multiplier output; and means for connecting the output of said differential amplifier to one pair of said deflection plates to superimpose the output voltage of said differential amplifier upon said deflection plate static voltage, thereby substantially retaining the location of said electron image upon said dissecting aperture, regardless of displacement of said optical image upon said photocathode.

3,161,726
DISPLAY PANEL COMPRISED OF A PLURALITY OF MAGNETICALLY-CONTROLLED, MOVABLE, LIGHT REFLECTING, THIN PANELS
Joachim H. Todt, Minneapolis, Minn., assignor to Maico Electronics, Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 13, 1961, Ser. No. 88,881
20 Claims. (Cl. 178—7.3)



1. A display panel for producing visual images for an observer comprising: thin film means having magnetic properties and light reflecting surfaces adapted for limited movement under predetermined conditions; current conducting means cooperating with said thin film means for conducting a plurality of energizing currents therethrough to control the movement of said thin film means; magnetic field producing means producing a magnetic field of sufficient strength to magnetically influence said thin film means and located adjacent said current conducting means for controlling the position of said thin film means; and intermittently controlled energizing means connected to said current conducting means for intermittently energizing said current conducting means so that light is directed towards and away from said observer whereby images are produced on said panel.

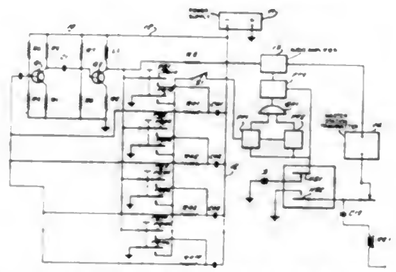
3,161,727
STEREOPHONIC-TO-MONOPHONIC RECEPTION APPARATUS
Daniel R. von Recklinghausen, Arlington, Mass., assignor to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts
Filed May 17, 1962, Ser. No. 195,556
11 Claims. (Cl. 179—15)



1. Apparatus for converting from multi-channel broadcast reception to single-channel broadcast reception having, in combination, a tuner for receiving and detecting a multi-channel broadcast transmission comprising a frequency-modulated carrier carrying first and second channel modulations and a pilot-frequency modulation, a filter tuned to the pilot frequency and connected to the tuner for extracting the pilot frequency from the detected carrier, oscillator means connected to the filter for producing oscillations of predetermined frequency synchronized with the pilot frequency, demodulator means connected with the oscillator means and the tuner and provided with a

pair of outputs for reproducing therein the first and second channel modulations, the latter as a result of the application of the said oscillations to the demodulator means, and means for altering the tuning of the oscillator means to cause its oscillations to occur at a different frequency higher not only than the said predetermined frequency but also than any of the channel modulation frequency components, thereby to provide in both of the said outputs of the demodulator means, only the first channel modulation.

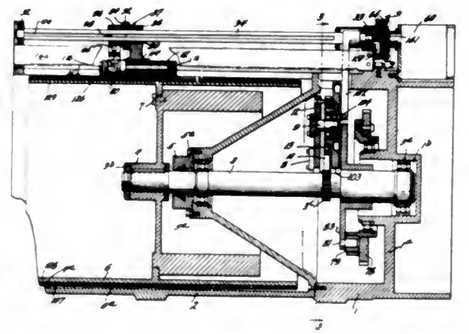
3,161,728
COMMUNICATION NETWORK
Ned Rose, 636 Brooklyn Ave., and Harold C. Rose, 1648 E. 55th St., both of Brooklyn, N.Y.
Filed Dec. 18, 1961, Ser. No. 159,996
13 Claims. (Cl. 179—84)



2. A signalling network comprising a master station including means for generating successive signals of different audio frequencies in a preselected sequence, a plurality of remote substations, a common channel connecting said remote substations to said master station, each of said remote substations comprising a first and at least one following flip-flop circuit switchable between and on and off state, means coupled to said common channel and responsive to a signal of a predetermined frequency for switching said first flip-flop circuit to an on state, means coupled to said common channel and responsive to the on state of a respective next preceding flip-flop circuit and a signal of predetermined frequency on said common channel for switching the corresponding flip-flop circuit, and means responsive to the state of the last flip-flop circuit for controlling an output device.

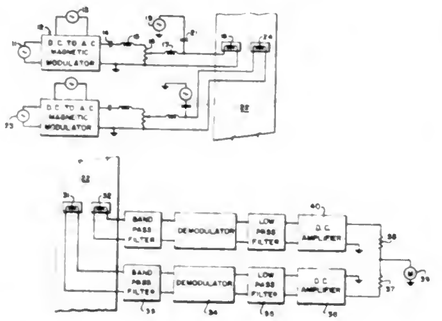
3,161,729
TEMPERATURE ANNOUNCING MACHINE
John O. McCarty and Ellis H. Bryant, Jr., Atlanta, Ga., assignors to The Audichron Company, Atlanta, Ga., a proprietorship
Filed Oct. 9, 1959, Ser. No. 845,392
12 Claims. (Cl. 179—100.2)

1. A system for announcing a bidirectional aperiodic physical variable comprising a servosystem continuously and bi-directionally operable in response to change in said aperiodic variable, an announcing machine operatively connected to said servosystem, said announcing system including a housing, a record drum rotatably mounted in said housing and adapted to receive a record thereon, said record having circumferential tracks recorded thereon, magnetic head means including a magnetic head positioned for co-operation with said record, carriage means supporting said head means, said last mentioned means including means reciprocably supporting said head means for movement along the axis of said drum relative to said carriage means, carriage drive means for controlling the movement of said carriage, means connecting said servosystem to said carriage means for translating said carriage means and said magnetic head means relative to said record drum to effect continuous translation of said magnetic head means to a position indicative of the instantaneous value of said aperiodic variable, said announcing machine further including means for moving said magnetic head into and out of engagement with a record on said record drum, said last men-



tioned means including means for independently and accurately positioning said magnetic head means relative to said carriage means to a position for coaction with the nearest circumferential track on said record, and means preventing translation of said magnetic head during engagement thereof with the record.

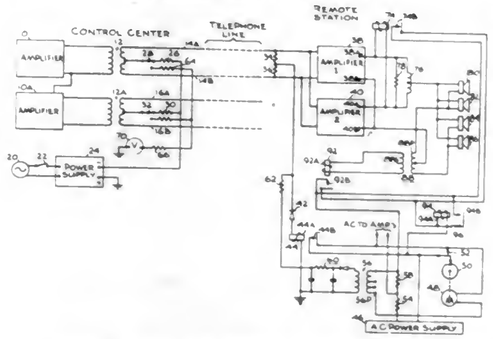
3,161,730
ULTRA-LOW FREQUENCY RECORDING
Joseph L. Collins, Austin, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1960, Ser. No. 68,320
5 Claims. (Cl. 179—100.2)



1. Apparatus for comparing a pair of ultra-low frequency signals comprising a magnetic recorder system including first and second recording channels and respective first and second playback channels, each of said recording channels including a sinusoidal magnetic modulator having a control circuit and a load circuit, an ultra-low frequency signal source, means connecting said ultra-low frequency signal source to said control circuit, a recording head, integrator means connecting the load circuit of said magnetic modulator to said recording head, a high frequency voltage source, means connecting said high frequency voltage source to said recording head, each of said first and second playback channels comprising a playback head, a band pass amplifier, demodulator, and a low pass filter serially interconnected between said playback head and a D.C. amplifier, first means connect-

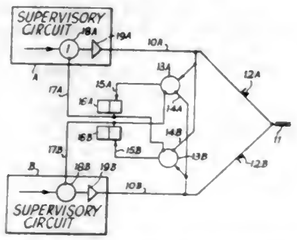
ing the D.C. amplifier of the first playback channel to an indicator, second means connecting the D.C. amplifier of the second playback channel to said indicating means.

3,161,731
REMOTE SOUND SYSTEM MONITOR CIRCUIT
Edward S. Seeley, Santa Ana, Calif., assignor to The Altec Lansing Corporation, Anaheim, Calif., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,882
6 Claims. (Cl. 179—175.1)



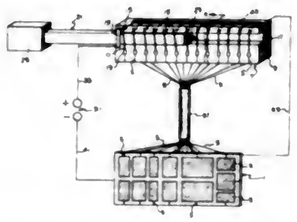
1. A system for indicating at a control location the operating condition of equipment including amplifier means and loud speaker means in circuit therewith, said amplifier means receiving audio signals from said control location over a telephone pair comprising a source of operating potential at said remote location, impedance means connecting said source of operating potential to said amplifier means, a relay having a relay coil, means operated responsive to a defect occurring in the circuit of said amplifier means, and said loud speaker means for connecting said relay coil to said source of operating potential through said impedance to cause said relay to become operative, means for detecting a voltage across said impedance means, means for transmitting said voltage to said control location over said telephone pair, and means connected to said telephone pair at said control location for indicating said detected voltage whereby the operating condition of said equipment may be determined.

3,161,732
TESTING AND CONTROL SYSTEM FOR SUPERVISORY CIRCUITS IN ELECTRONIC TELEPHONE EXCHANGES
Alfred Dargie Martin and John Dawson, both of Beeston, Nottingham, England, assignors to Ericsson Telephones Limited, London, England, a British company
Filed Mar. 8, 1962, Ser. No. 178,317
5 Claims. (Cl. 179—175.2)



1. A testing and control circuit for electronic telephone exchange apparatus including two duplicate supervisory circuits and comprising, means for simultaneously comparing the output signal from one supervisory circuit with the signal from the other supervisory circuit including means for detecting a state of non-correspondence between said output signals and for producing a control signal in response thereto, means responsive to said control signal for inhibiting the output of one of said supervisory circuits so as to cause output signals to be supplied to other parts of the exchange apparatus from the other supervisory circuit only, testing means responsive to said control signal for feeding a sequence of test signals automatically to the supervisory circuits in succession following detection of said state of non-correspondence, means for detecting departures in the resulting output signals of said supervisory circuits from the known correct output signals which should result from such test signals, and means responsive to said means for detecting departures in said resulting output signals for replacing the said one supervisory circuit supplying output signals to other parts of the exchange apparatus by the other supervisory circuit if a departure is detected in testing the said one circuit.

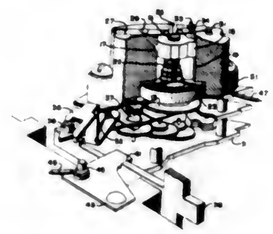
3,161,733
CAPACITANCE SHORTING SWITCH FOR ELECTRICAL TRANSLATING DEVICES
Robert S. Bowser, Wakefield, and Richard C. Huggins, Somerville, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,390
3 Claims. (Cl. 200—16)



1. An electrical switch in combination with a plurality of unshielded wires in a cable, each leading to separate portions of a segmented electrical translating device, said switch comprising: an insulated base member; a series of spring-leaf contacts positioned on said base member; a common ground strip on said base member connected to said electrical translating device, each of said spring-leaf contacts when closed being electrically connected to said common ground strip; a guideway in said insulated base member beneath said spring-leaf contacts; means within said guideway for opening said spring-leaf contacts and for conducting current sequentially to each of said spring-leaf contacts and thence to said electrical translating device.

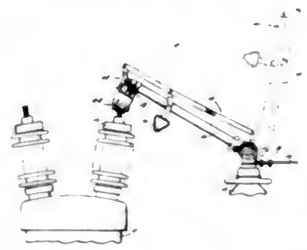
3,161,734
TIME DELAY SWITCH
Manning K. Bethune, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 15, 1962, Ser. No. 180,061
3 Claims. (Cl. 200—38)

1. A timing mechanism for breaking an electrical circuit after a desired delay time comprising a clutter retarded gear train, a power spring connected to said gear train and adapted to operate said gear train when said spring is wound, locking means on said gear train for locking said gear train, a threaded shaft connected to said gear train, said shaft being rotated by said gear train when said gear train is operating, a threaded nut mounted on said shaft, means restricting said nut from rotation such that said nut will travel along said shaft when said shaft is rotating, a contact plate normally connected to a terminal at one end and grounded at the other end, whereby an electrical circuit is closed, said contact plate having an adjustable screw contacting said nut as said



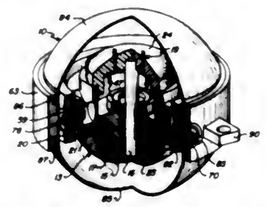
nut travels along said shaft, said screw adjustable to contact said nut at a preselected position along the travel distance of said nut, said nut operable to open the contact between said contact plate and said terminal when said nut contacts said adjustable screw.

3,161,735
ELECTRIC DISCONNECT SWITCH
Walter Kowalski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 25, 1961, Ser. No. 112,561
6 Claims. (Cl. 200—48)



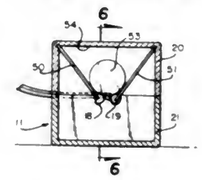
1. In an electric switch, a pair of terminals having a generally horizontal spaced relation, stationary contact means mounted on one of said terminals, a switch blade mounted on the other of said terminals and pivotal in one direction out of engagement with said stationary contact means, latch means mounted adjacent said stationary contact means and having a member pivotally mounted for movement into and out of latching engagement with said switch blade when the latter is in its connected position, an operating lever pivotally mounted intermediate its ends on said switch blade and extending in a substantially vertical direction and having hook engaging means at its lower end, link means coupling the upper portion of said lever to said member, pivotal movement of said lever in said one direction being operative to move said member out of latching engagement with said switch blade and to pivot said switch blade to its disengaged position, pivotal movement of said lever in an opposite direction being operative to pivot said switchblade into engagement with said stationary contact means and to pivot said member into latching engagement with said switchblade.

3,161,736
OMNIDIRECTIONAL SWITCH
Robert A. Randall and Donald F. Wilkes, Albuquerque, N. Mex., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 11, 1963, Ser. No. 264,745
6 Claims. (Cl. 200—61.45)



1. A device of the character described comprising in combination switch means including a housing having a cavity therein, contact means associated with said cavity, movable mass means disposed adjacent one end of the cavity, spring means normally under restraint and disposed intermediate said mass means and the housing adapted to move said mass means and actuate said contact means upon removal of the restraint upon said spring means, a further housing enclosing said switch means and comprising a pair of oppositely disposed cover means secured to an annular ring, and gimbal means operatively associated with said housings comprising a further annular ring disposed intermediate said housings and including a first pair of pivot means disposed intermediate said further annular ring and the first mentioned annular ring with the centers of said pivot means being circumferentially spaced 180° apart from each other, and a second pair of pivot means disposed intermediate said further annular ring and the housing for the switch means with the center of each of said second pair of pivot means being disposed circumferentially intermediate the centers of the first mentioned pivot means, said gimbal means adapted to normally maintain said switch means in a particular position irrespective of the orientation of said further housing.

3,161,737
INCLINATION RESPONSIVE ELECTRICAL SWITCH
William D. Hall, Montgomery County, Md. (5112 Westpath Court, Washington 16, D.C.)
Filed Jan. 18, 1960, Ser. No. 2,917
11 Claims. (Cl. 200—61.52)



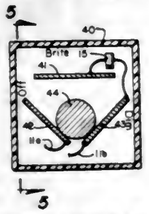
1. An electrical switch comprising a rotatable casing of insulating material, a pair of elongated conducting elements supported within said casing in parallel spaced relation to each other and adjacent the inner side wall of the casing, a rod resting on said conducting elements and supported between the elements when the casing is in a first inclination, said rod being freely movable under force of gravity when the vertical position of one of the elements with reference to the other is changed, one of said elements being positioned adjacent the inside wall of the casing and so close to said inside wall as to prevent passage of the rod between such element and the inside wall of the casing, said casing being adapted to be moved in

a plane transverse to the axis of the rod to thus cause the rod to roll away from the position where it contacts both said elements and into a position where it rests against the inside wall of the casing and is supported by said one of said elements as well as by the inside wall of the casing.

3,161,738
SWITCH ADAPTED TO REST ON A TABLE OR OTHER FLAT SURFACE

William D. Hall, 5112 Westpath Court, Washington 16, D.C.

Filed May 5, 1960, Ser. No. 27,147
2 Claims. (Cl. 200—61.52)

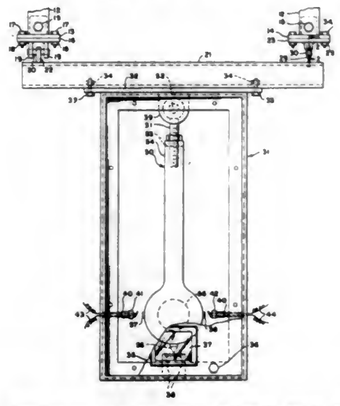


1. A switch for remote control of an alternating current appliance comprising a box having at least three sides on which it may rest, said box having three different inclinations respectively when resting on the three sides a half-wave rectifier in the box means in the box and carried thereby responsive to the three different inclinations for providing an open circuit in the circuit to the appliance when the box is in the first of said inclinations, for connecting said half-wave rectifier in series with the appliance and thereby partially energizing the appliance when the box is in the second of said inclinations, and for fully energizing the appliance when the appliance is in the third of said inclinations, and means for remotely connecting the above-named means in series with the appliance, said first-named means including three contact plates and a round metal member which rolls to different positions in said three inclinations respectively to provide the three controlling relations.

3,161,739
LEVEL AND POSITION SENSING SWITCH AND INDICATING APPARATUS FOR PIPING OR THE LIKE

Leonard S. Suozzo, Hackensack, N.J.
(50 Church St., New York, N.Y.)

Filed May 15, 1961, Ser. No. 109,886
7 Claims. (Cl. 200—61.52)



1. In apparatus for use with a load, such as piping, at least a portion of which is subjected to angular movement in opposite directions while in active service, said apparatus comprising support means adapted to be secured to the load and subjected to said angular movement of said portion of the load, said support means comprising a member and a pair of spaced coupling devices attached to the member and adapted to be secured to the load, a first unit secured to and movable with the member, and a second unit comprising a plumb device depending from and pivotal relative to the member, one of the units including electric switch means, the other unit including means for operating the switch means in response to predetermined angular movement of the first unit in at least one direction.

3,161,740
BOILING POINT ANTICIPATOR FOR EFFECTING WARNING SIGNAL

Robert C. Schniers and David L. Van Ostrom, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 6, 1962, Ser. No. 200,434
7 Claims. (Cl. 200—81)

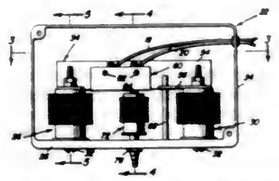


1. A boiling point anticipator comprising a conductive casing adapted to be placed in heat transfer relation with a confined fluid subject to boiling, a yieldable wall structure forming a part of said casing and cooperating with the latter in enclosing a non-conductive fluid having a vapor pressure versus temperature curve substantially conforming with that of said fluid in which said casing is adapted to be immersed, a terminal fixed to said casing, and contact means immersed in said non-conductive fluid and connected to said terminal and arranged and adapted to be actuatable by movement of said wall structure to make and break a circuit through said terminal and casing in accordance with a variation in the differential pressure existent at opposite sides of said yieldable wall structure.

3,161,741
ALTITUDE COMPENSATOR FOR VACUUM CONTROL OF IDLING VALVE

Robert D. Wren, Jr., Compton, Calif.
(13443 Kornblum, Hawthorne, Calif.)

Filed Jan. 19, 1961, Ser. No. 83,796
7 Claims. (Cl. 200—83)

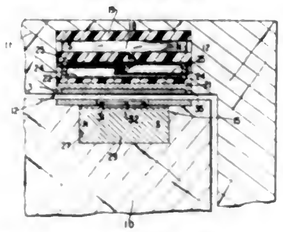


1. An altitude compensator for a vacuum control, said compensator comprising a support member and a mounting member, a plurality of means secured between said members at corresponding spaced points thereon mounting said members for relative movement toward and away from each other and including at least one fluid pressure-responsive extensible means extending between said members and operable in response to ambient pressure changes to vary the distance between said members, switch means supported from said mounting member between two of said mounting means and including an actuator movable relative to said mounting member toward said support member, vacuum responsive operating means carried by said support member and including a portion movable toward and away from and engageable with said actuator, and means adapting said vacuum responsive means for communication with a source of vacuum.

3,161,742
MAGNETIC INTRUDER AND FIRE DETECTOR

Samuel M. Bagno, Belleville, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey

Filed Aug. 24, 1961, Ser. No. 133,714
1 Claim. (Cl. 200—87)



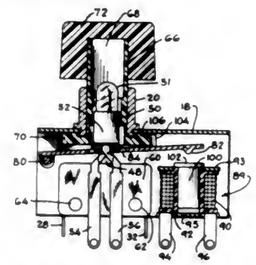
In a detector for giving an indication in response to the opening of a closure having adjacent relatively movable first and second portions, the combination of a magnetically operated switch carried by said first closure portion, first magnet means carried by said first closure portion producing a magnetic field having sufficient strength to operate said switch, second magnet means carried by said second closure portion producing a magnetic field opposing that produced by said first magnet means, a metallic member carried by one of said closure portions and positioned between said second magnet means and said switch when said closure is closed to partially shield said switch from the field of said second magnet means at normal temperatures, said second magnet means producing a magnetic field of sufficient strength at said switch to balance that produced by said first magnet means at said switch for preventing the operation of said switch at normal temperatures when said closure is closed, said metallic member being of a ferromagnetic material having a Curie point temperature such that said member loses its magnetic shielding properties when exposed to the heat of a fire so that the effect of said second magnet upon said switch increases and said switch is operated.

3,161,743
ELECTRICALLY LIGHTABLE LATCHABLE PUSH BUTTON ASSEMBLY

John O. Roeser, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,812
8 Claims. (Cl. 200—87)

1. In a lighted push button switch assembly comprising movable contact means having an at-rest position and movable to a second position, means biasing said movable contact means to its at-rest position, housing means for said movable contact means, lamp means mounted on said housing means, and lightweight lightable push button means mounted relative to said housing means and said lamp means to operate said movable contact means without moving said lamp means, the improvement comprising lever means interposed between said lightweight lightable push button means and said movable contact means, latching means cooperable with said lever means to provide a latched and unlatched position, said lever means being

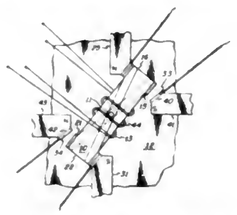


biased from its latched to its unlatched position to in turn bias said lightable push button means by the means biasing said movable contact means to its at-rest position.

3,161,744
ELECTROMAGNETIC CIRCUIT CONTROLLING DEVICES

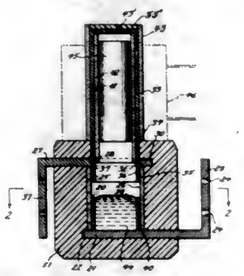
Gale H. Thorne, Salt Lake City, Utah, and Gary J. Vincent, Bloomfield, Colo., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Oct. 29, 1962, Ser. No. 233,588
5 Claims. (Cl. 200—93)



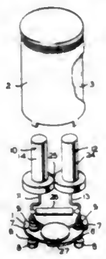
1. A circuit controlling device comprising
(1) first, second, third and fourth bar magnets having first, second, third and fourth north and south polar extremities respectively disposed substantially in a single predetermined plane,
(2) said first and second bar magnets being spaced to form a first air gap therebetween,
(3) said third and fourth bar magnets being spaced to form a second air gap therebetween,
(4) said air gaps being defined by polar extremities of opposite magnetic orientation,
(5) first, second, third and fourth contacts mounted on respective extremities of said first, second, third and fourth bar magnets within said air gaps,
(6) a positionable magnetizable armature having first and second extremities disposed in said plane and within said first and second air gaps respectively and adapted to be magnetically oriented oppositely with respect to each other,
(7) fifth, sixth, seventh and eighth contacts mounted on said armature for cooperation with said first, second, third and fourth contacts respectively,
(8) and at least one magnetizing coil wound on said magnetizable armature for magnetically orienting said armature whereby with said armature having said first magnetic orientation said armature is attracted towards said first and third polar extremities and repelled by said second and fourth polar extremities and with said armature having said second magnetic orientation the magnetic attraction and repulsion is reversed.

3,161,745
DISPLACEABLE PLUNGER MERCURY SWITCH
Donald Jay Anderson, Haddonfield, N.J.
(74 Harestone Hill, Catherham, Surrey, England)
Filed Apr. 16, 1962, Ser. No. 187,853
11 Claims. (Cl. 200—112)



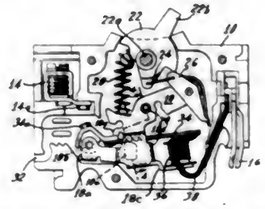
1. In a switch for electrical contact having an open and a closed position, an upper and lower tubular terminal longitudinally and vertically aligned and spaced, a lead-in conductor connected to each of said terminals, electrical insulation in contact with and surrounding the terminals and forming with the terminals and conductors a cylinder closed at the bottom wherein the lower terminal forms the lower portion of said cylinder and the upper terminal forms the upper portion of said cylinder, mercury within the cylinder which extends to a level below the upper terminal when the switch is in an open position, and a longitudinally and vertically movable cylindrical plunger extending concentrically within the cylinder and spaced therefrom and which is adapted to extend above the mercury when the switch is in an open position, and to displace the mercury into the shape of a tube extending longitudinally in the space between the plunger and cylinder and into annular contact with the upper terminal, lower terminal, and plunger whereby a continuous concentric metallic tubular cross section is created between the lead-in conductors.

3,161,746
FLUORESCENT LAMP STARTER INCLUDING A GLOW SWITCH CONTIGUOUS AND THERMALLY CONNECTED TO A THERMAL SWITCH
Leonard W. Cook and Robert I. Schauseil, Warwick, R.I., assignors to General Electric Company, a corporation of New York
Filed Jan. 21, 1963, Ser. No. 252,665
11 Claims. (Cl. 200—113.5)



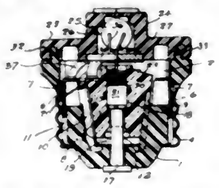
1. A fluorescent lamp starter comprising:
(*a*) a pair of terminals,
(*b*) a glow switch having normally open contacts,
(*c*) a thermal switch having normally closed contacts,
(*d*) means connecting said glow switch and said thermal switch in electrical series circuit across said pair of terminals,
(*e*) said glow switch and said thermal switch being contiguous and thermally connected so that heat generated by said glow switch due to repeated cycling thereof causes said normally closed contacts of said thermal switch to open, and
(*f*) a resistance heater connected across said pair of terminals, said heater being energized upon opening of the normally closed contacts of said thermal switch to maintain said normally closed contacts open.

3,161,747
AUTOMATIC CIRCUIT BREAKER HAVING A COMBINED LATCH AND CONTACT UNIT PIVOTED TO A CONTACT CARRIER
Thomas M. Cole, Harrison, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed July 10, 1961, Ser. No. 122,822
11 Claims. (Cl. 200—116)



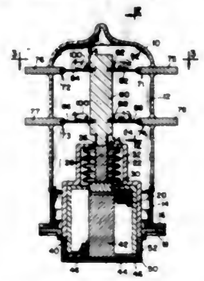
9. A circuit breaker including a pivoted contact carrier, a releasable element pivoted to the carrier, a contact-and-latch unit pivoted to said carrier and including a movable contact and an overcurrent latch co-operable with said releasable element, a companion contact engageable by said movable contact, and an opening spring acting on said carrier and reacting at a point remote from said overcurrent latch for driving the carrier and the movable contact therewith in the contact-opening direction.

3,161,748
MULTIPLE FUSE PLUG
William C. Linton, Washington, D.C., assignor to Fuse Indicator Corporation, Rockville, Md., a corporation of Maryland
Filed Aug. 17, 1960, Ser. No. 50,192
6 Claims. (Cl. 200—125)



1. A multiple plug type fuse comprising an insulating body having an open end cavity formed therein, ribs provided upon and extending longitudinally of said body and extending within the cavity thereof, an insulating cam insert extending within the cavity of said body and having recesses provided in and extending longitudinally of the outer periphery thereof mating with said ribs provided on said body for preventing rotation of said cam insert therein, fusible link compartments provided within said cam insert and each being arranged between the longitudinally extending recesses thereof, with said longitudinally extending ribs provided on said body separating and enclosing each fusible link compartment from the others, a center contact terminal rivet extending through said body and within one end of said cam insert and retaining the latter within the open end cavity thereof, cams provided upon the opposite end of said cam insert, a fusible link mounted within each compartment of said cam insert having one end connected to said center contact terminal between said body and said cam insert and its opposite end positioned on said cam insert between a pair of said cams of said cam insert, a side contact terminal mounted on and extending into said body adjacent to, but spaced from said fusible link opposite ends, a cover rotatably connected to said body open end cavity, means retaining said cover from movement from said body and a resilient blade carried by said cover and having two contacts with one contact capable of riding over said cams of said cam insert for successively contacting each of the opposite ends of said fusible links and the other contact slideably engaging said side contact terminal.

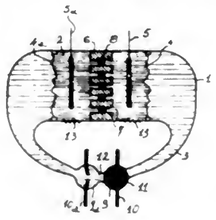
3,161,749
VACUUM RELAY
John T. Perry, Bellwood, and Chester J. Kawiecki, Chicago, Ill., assignors to Joslyn Manufacturing and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 30, 1962, Ser. No. 190,927
8 Claims. (Cl. 200—144)



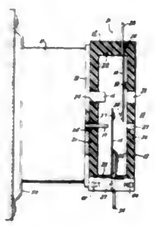
1. In a vacuum relay,
an evacuated envelope including a dielectric bulb having a cylindrical wall portion,
means defining an end wall sealed to one end of said bulb,
said end wall having an opening therein coaxial with the axis of said cylindrical wall portion,
a bellows hermetically sealed at one end thereof to the outer surface of said end wall about said opening,
said bellows being positioned outwardly of said wall,
a circular magnetic plate sealed to and closing the opposite end of said bellows,
a rigid fixed contact mounted in said bulb,
a movable contact mounted in said bulb for movement into and out of engagement with said fixed contact,
an actuator rod operatively connecting said movable contact to said magnetic plate,
magnetic means mounted on said end wall for moving said magnetic plate including a core mounted adjacent said magnetic plate, and adapted upon energization to move said plate outwardly, a coil surrounding said core for energizing said core, and a housing of magnetic material surrounding said core and coil.

3,161,750
RELAY OPERATING BY ELECTROCAPILLARITY
Jacques Bourdel, 8 Rue Marat, St. Cyr l'Ecole (Seine-et-Oise), France
Filed June 27, 1962, Ser. No. 205,643
Claims priority, application France, July 3, 1961, 866,814
5 Claims. (Cl. 200—152)

1. A relay operating by electrocapillarity, characterised in that it comprises, in a completely closed duct, an electrolyte separated from an insulating liquid by two flexible partitions, two electrodes in the said electrolyte, an insulating partition disposed between the two electrodes and formed with a large number of capillary passages each containing a bead of mercury movable by electrocapillarity in the direction of either of the flexible partitions, contacts situated within the insulating liquid in two enlarged portions of the said duct which are separated from one another by a constriction, and a bead of mercury in said duct and displaceable at will into either one or the other of the two enlarged portions under the action of the displacement of the electrolyte, whereby the switching of the relay is effected.



3,161,751
REVERSIBLE ELECTRICAL CONTACT STRUCTURE
Robert A. Pusch, Le Roy, and Lyle J. Wenzel, Normal, Ill., assignors to General Electric Company, a corporation of New York
Filed May 17, 1962, Ser. No. 195,603
11 Claims. (Cl. 200—166)

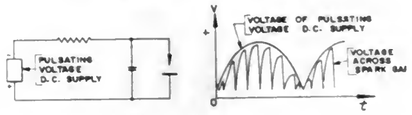


1. A reversible contact structure for association with apparatus having a fixed contact biasing member and a movable contact actuator, said structure including a housing having opposed walls, and a pair of resilient electroconductive contacts mounted within the housing adjacent opposite ends thereof and extending in opposite directions towards each other in overlapping spaced relation, each of said opposed walls having a pair of spaced apertures for receiving respectively the biasing member and the actuator when the housing is associated with the apparatus in either of two different positions respectively providing open and closed contact conditions, the apertures for receiving the actuator being aligned along a first line which is generally parallel to the direction of contact deflection and which intersects only one of said contacts, the apertures for receiving the biasing member being aligned along a second line which is parallel to said first line and which intersects only the other contact, said contacts being positioned such that when the housing is associated with the apparatus said one contact is spaced from the actuator for either position of the housing, and said other contact is biased into engagement with said one contact by the biasing member for one position of the housing and is spaced from the biasing member and from said one contact for the other position of the housing.

3,161,752
CURRENT SUPPLY INCLUDING HIGH FREQUENCY COMPONENT FOR SPARK EROSION MACHINING APPARATUS

Whitfield M.P. Stuart, 5910 Charles St., North Burnaby, British Columbia, Canada

Filed Jan. 16, 1962, Ser. No. 166,532
2 Claims. (Cl. 219—69)



1. In an apparatus for spark erosion machining operations on an electrically conductive workpiece,

a machining electrode

a terminal spaced from said electrode to define a spark discharge gap therebetween,

means for positioning said electrode in predetermined spaced relationship with said terminal to maintain said spark discharge gap,

a singular pulsating high frequency direct current source and circuit means connecting said electrode and said terminal serially therewith to form a machining circuit to supply a pulsating charging current across said gap, the frequency of said pulsating charging current ranging from 200 to 20,000 pulses per second,

said circuit means including means for supplying pulsations of said charging current having a wave-form substantially the shape of one-half of a sine wave and rising from substantially zero to a peak and dropping to substantially zero with said pulsations recurring continuously without any time lapse therebetween,

said last-named means including resistance-capacitance relaxation circuit means connected between said source and said electrode-terminal gap and including a resistance in series with said source and said electrode and a condenser across said gap and across said source and said resistance, for discharging at a frequency greater than the frequency of pulsations of said charging current across said gap.

3,161,753
ARTICLE TRANSFER APPARATUS

Quentin L. Schmick, Wyomissing, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 22, 1962, Ser. No. 167,610
5 Claims. (Cl. 219—79)

1. An article transfer apparatus which comprises:

a hollow, outer shaft;

a turret connected to said outer shaft and having first and second passages extending therethrough;

a plurality of sleeve-like units mounted for axial movement within the turret, each of said sleeve-like units having porting means extending through the sleeve wall and being arranged to connect said first and second passages alternately to the interior of the sleeve-like unit dependent upon the axial position of the unit relative to the turret;

an inner shaft extending through the outer shaft and arranged for axial reciprocation relative to the outer shaft, said inner shaft and outer shaft having a channel disposed therebetween communicating with the one of the first and second passages in the turret and said inner shaft having a channel extending therethrough communicating with the other of said first and second passages in the turret;

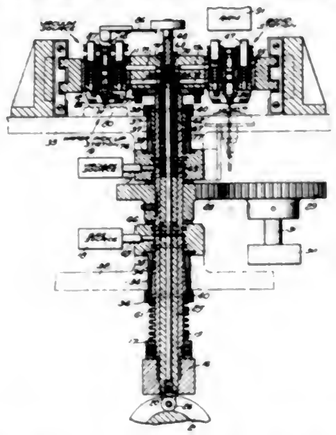
means for drawing a vacuum through the one of said channels;

means for supplying gas under pressure through the other of said channels;

means for moving the turret between a raised position and a lowered position;

means for moving the inner shaft between a raised and lowered position;

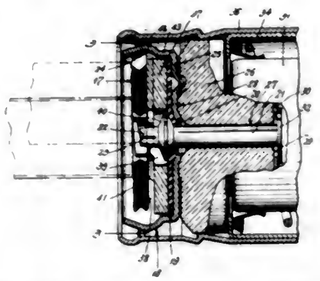
an arm extending radially from the inner shaft for engaging one of the sleeve-like units when the inner shaft is in its lowered position and holding the engaged sleeve-like unit stationary during movement of the turret to its raised position, said last-mentioned movement causing relative movement between said engaged sleeve-like unit and the turret to connect said porting means to said vacuum drawing means through the one of said first and second passages communicating therewith.



3,161,754
ELECTRIC CIGARETTE LIGHTER

Laurence G. Horwitt, New Haven, Conn., assignor to The Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut

Filed Apr. 17, 1962, Ser. No. 188,027
3 Claims. (Cl. 219—270)



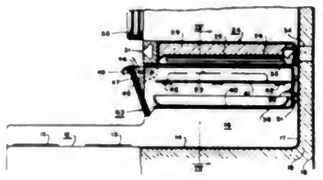
1. An igniting plug for an electric cigar lighter adapted to be energized in a socket and removed therefrom for use comprising a shallow cup fixed on one end portion of said plug and having a current conducting flange, an igniting device comprising a substantially flat coil of spirally wound resistance wire positioned in said cup with the outer edges of the convolutions of the coil exposed for engagement with a cigar or cigarette, said coil having an outer end secured to the inner surface of the flange of the cup, a post located centrally in said cup and having an outer end secured to the inner end of the resistance wire and adapted to conduct current therebetween, and

a disk having an aperture into which said post extends interposed between the bottom of the cup and the inner edges of the convolutions of the resistance wire to engage and support the coil flatwise, said disk having sufficient thickness to position the outer edges of substantially all of the spiral coil convolutions outwardly from and in a plane substantially spaced from the outer end of the post to which the inner end of the resistance wire is secured, whereby the outer end of the post and the inner end of the coil are recessed substantially below the plane of the outer edges.

3,161,755
COOKING RANGE

Carl W. Tilus, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1961, Ser. No. 99,585
4 Claims. (Cl. 219—403)

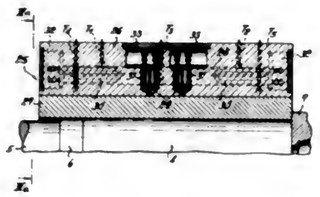


3. In a range, an oven having an open bottom and having a space below said bottom, a heating unit having a heating element, means for removably supporting said unit across said oven bottom with said element within said oven and for removably supporting said unit inverted with said element in said space, a broiler unit, and means supporting said broiler unit in said space below said inverted heating unit.

3,161,756
ELECTRICALLY HEATED BILLET-CONTAINERS FOR METAL-EXTRUSION PRESSES

Bernhard Haverkamp, Dusseldorf-Oberkassel, and Horst Hans Groos, Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Feb. 5, 1962, Ser. No. 170,889
Claims priority, application Germany, Feb. 9, 1961, Sch 29,215
2 Claims. (Cl. 219—422)

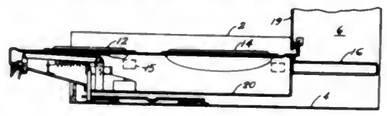


1. A billet-container equipped with resistance heating means for a metal-extrusion press, the billet-container comprising a casing formed with bores extending through the container casing parallel to its axis and also with bores extending radially into the container casing from its periphery, and the heating means consisting of hairpin-shaped tubular electrical-resistance heating elements arranged in said bores, some inserted into the longitudinal bores from both ends of the casing and others inserted inwardly into the radial bores.

3,161,757
COOKING APPLIANCE

Philip J. More, Evanston, Ill., assignor to General Electric Company, a corporation of New York

Filed Mar. 26, 1962, Ser. No. 182,256
8 Claims. (Cl. 219—444)



4. A cooking appliance comprising, in combination:

a body structure including spaced parallel side walls and a base wall extending therebetween;

structure providing a drawer-like cooking top slidably mounted between said side walls above said base for withdrawal to a certain operating position;

means on said cooking top providing electrical resistance heating units;

an electric switch mounted within said cooking top for movement therewith, said switch being in the energizing circuit of certain of said resistance heating units;

an actuator for operating said switch between open and closed circuit positions, said actuator bearing against said base wall to maintain said switch in open circuit condition at all positions of said cook top except said certain operating position;

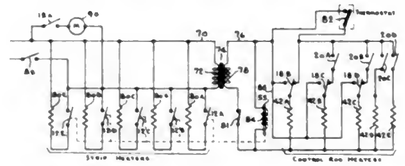
means responsive to movement of said cooking top to its said operating position to displace said switch actuator into locking engagement with said base wall to immobilize said cooking top while effecting closure of said switch;

and means accessible from the front of said cooking top to disengage said actuator from said base wall while concurrently operating said switch to open position.

3,161,758
SEQUENCE CONTROL FOR ELECTRIC CIRCUITS

William A. Biermann, Brookfield, and Louis R. Germanotta and Edward V. Madritsch, Milwaukee, Wis., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware

Filed Sept. 5, 1961, Ser. No. 135,855
11 Claims. (Cl. 219—480)

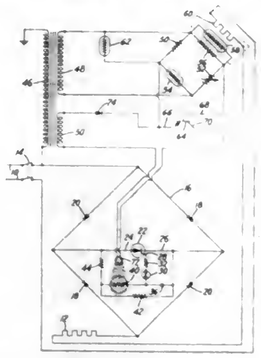


11. A control system for sequentially energizing and de-energizing a number of electric heaters comprising, a switch connected in series with each heater, a number of electrically energized time delay devices connected to and controlling the opening and closing of respective ones of said heater switches, first transfer switch means connected in circuit with each time delay device and controlled by the preceding time delay device for sequentially energizing the delay devices, and circuit means connected to the delay devices and controlled by the succeeding device for sequentially de-energizing the devices upon de-energization of said circuit so that said heaters are connected for sequential energization and de-energization.

3,161,759
ELECTRIC RANGE HEATER CONTROL

Charles C. Gambill, Tipp City, and Alfred B. Roby, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 21, 1961, Ser. No. 161,005
11 Claims. (Cl. 219—494)

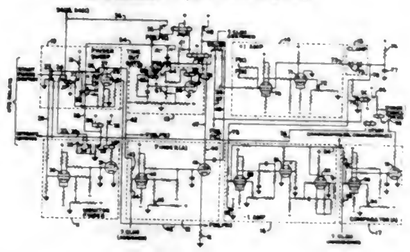


11. In combination, an electrical load, alternating current supply conductors electrically connected to said electrical load, a silicon controlled rectifier connected in series with said load for controlling said load and having a gate, a bridge circuit having input terminals electrically energized from said supply conductors and having output terminals, first and second resistances connected between an input terminal and an output terminal of said bridge circuit, means responsive to the current flow through said electrical load for gradually varying the resistance of said second resistance, means including semiconductor amplifying means connected to the output of said bridge circuit for controlling the voltage applied to said gate, and means for gradually varying the resistance of said first resistance to gradually vary the output of said electrical load.

3,161,760
TARGET SELECTOR AND COMPARATOR CIRCUITS

Noel C. Olmstead, Whippany, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 21, 1955, Ser. No. 483,447
6 Claims. (Cl. 235—61.5)



1. In a multiple target gun fire-control system, wherein targets are selected on the basis of the closing-time between the gun and the target, the combination of:

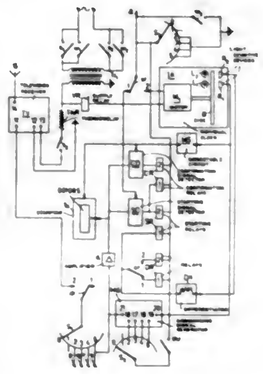
means for producing a voltage representative of each target under consideration, the amplitude of each voltage being indicative of the closing-time between a particular target and the gun;

means for comparing the amplitude of said voltages, and means for selecting the voltage with the smallest amplitude, thereby indicating which of the targets under consideration has the smallest closing-time.

3,161,761
SYSTEM FOR SELECTIVELY REGISTERING THE OPERATING PERIODS OF A PLURALITY OF CONSUMING APPARATUS

Hermann Karl Maria Grosser and Franz Josef Schramel, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 22, 1962, Ser. No. 197,817
Claims priority, application Netherlands May 31, 1961
9 Claims. (Cl. 235—92)



1. A system for registering in a central apparatus the number of units of time that each of a number of consuming apparatus, or each of a number of groups of consuming apparatus to be considered as a unit, have been in operation:

(*a*) each consuming apparatus comprising an individual apparatus, means connecting said individual apparatus together with a number of further individual apparatus by way of a common telecommunication channel to said central apparatus for processing and recording information, said system comprising means permitting the use of more than one group of individual apparatus, means connecting the apparatus of each group by way of a telecommunication channel common to the group to the central apparatus;

(*b*) said central apparatus comprising a central clock having a cycle time T, which is equal to the duration of said time units, to be charged to the subscribers account for the use of their consuming apparatus, a starting signal generator, said central clock comprising means for controlling said starting signal generator which produces, during each cycle of the central clock, *p* starting signals, where *p* is the number of common telecommunication channels, said central apparatus also comprising switching means controlled by said central clock for connecting the output of the starting signal generator separately in cyclic order of succession to one of the *p* common telecommunication channels, so that at the instant when a starting signal is produced, all individual apparatus connected to a common telecommunication channel simultaneously receive a starting signal;

(*c*) each individual apparatus comprising an individual clock and a starting signal detector, said detector being connected to detect said starting signal, and in response thereto to start said individual clock in the individual apparatus concerned, means for synchronizing said individual clock with the central clock, said individual clock comprising means whereby after having started, the individual clock stops automatically after a time interval which is at least equal to T/p and at the most equal to T;

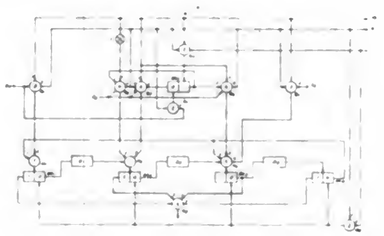
(*d*) each individual apparatus comprising an adjusting switch and an announcing signal generator, means for controlling said announcing signal generator by the individual clock of the individual apparatus and by the adjusting switch of the consuming apparatus concerned, said announcing signal generator comprising means for producing in the switched-on state of the consuming apparatus, an announcing signal at an instant of each cycle individually allotted to the consuming apparatus, so that an instant of the cycles of the central clock is allotted individually to each consuming apparatus, said individual apparatus comprising switching means for connecting the output of the announcing signal generator to the common telecommunication channel, whereby the announcing signals produced by the individual apparatus are transferred to the central apparatus;

(*e*) said central apparatus comprising an announcing signal detector connected to detect an announcing signal emitted by an individual apparatus, and in response thereto to produce a number of counting pulses, depending upon the rate to be applied, the central apparatus also comprising switching means controlled by the central clock for connecting, at each instant of the pulse cycles of the central clock, the output of the announcing signal detector to a counter individually allotted to the consuming apparatus, to which the said instant is allotted.

3,161,762
CALCULATING APPARATUS

Jacques Y. P. R. Rosenoer and Raymond E. A. Sprangers, both of Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 8, 1961, Ser. No. 137,489
Claims priority, application Netherlands Sept. 14, 1960
5 Claims. (Cl. 235—153)



1. In apparatus for calculating a linear digital function of the various decimal digits a_i which form a decimal number, for the purpose of verifying a manifestation of said number, the combination of:

a binary counter,

means for sequentially manifestating each digit of a set of decimal digits in a four bit binary code,

means coupled to said manifesting means for applying said manifested digits to said counter with the binary bits thereof individually added into bistable stages of corresponding weight in said counter, and

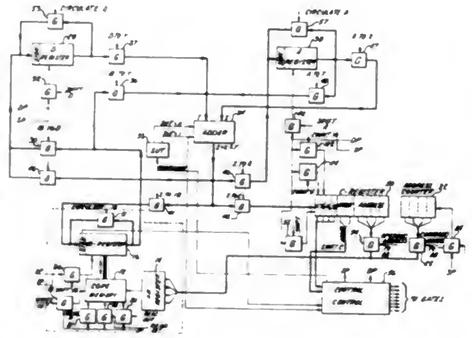
means coupled to said counter for doubling the contents thereof, after each said application of a manifested digit, by resetting all of the bistable stages therein to a predetermined condition and by applying carry signals resulting from said resetting to given stages of said counter,

whereby each partial sum resulting from the application of a manifested decimal digit to the said counter is multiplied by the factor 2, and thus whereby successive manifestations of decimal digits are in effect multiplied by successive powers of the factor 2 and summed.

3,161,763
ELECTRONIC DIGITAL COMPUTER WITH WORD FIELD SELECTION

Edward L. Glaser, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 26, 1959, Ser. No. 788,822
7 Claims. (Cl. 235—157)



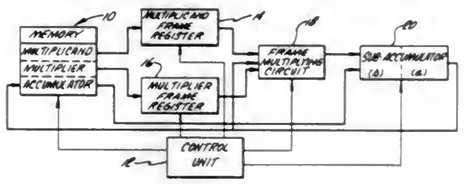
1. In an internally programmed computer in which digits are transferred serially in binary-coded decimal form, the four binary bits of each decimal digit being transferred in parallel, the combination comprising shift register means for storing and serially shifting a group of digits constituting a command, the shift register means including four flip-flops for each digit stored, means for coupling the four flip-flops storing a first one of the digits in the register means as a first decimal counter, means for coupling the four flip-flops storing a second one of the digits in the register means as a second decimal counter, means for counting up the first decimal counter in response to applied counting pulses, means for counting down the second counter in response to applied counting pulses, a clock pulse source, first gating means for gating pulses from said source to the means for counting up the first decimal counter, second gating means for gating pulses from said source to the means for counting down the second decimal counter, the first gating means being initially open at the start of an execute operation by the computer, means responsive to the count condition of the first decimal counter for closing the first gating means when the first decimal counter is counted up through nine and returned to zero, means responsive to the closing of the first gating means for opening the second gating means, whereby the second counter is caused to count following the counting of the first counter, means responsive to the count condition of the second counter for closing the second gating means when the second counter is counted down to zero, and means for transferring the digits of an operand word digit by digit in synchronism with the counting of the decimal counters by the counting pulse, the

transferring means including gating means controlled by the counters for selectively passing the digits of the operand word to one output only during the counting of the second counter.

3,161,764
ELECTRONIC MULTIPLIER FOR A VARIABLE FIELD LENGTH COMPUTER

John E. Croy, East Hills, Roslyn, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 25, 1961, Ser. No. 126,603
5 Claims. (Cl. 235—160)

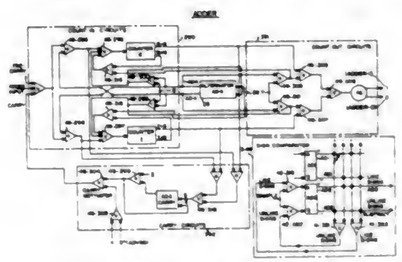


1. Apparatus for multiplying two decimal numbers of variable digit length utilizing a storage facility in which numbers are stored in binary coded form in groups of fixed decimal digit length greater than one, said apparatus comprising an arithmetic unit arranged to receive two groups of binary coded decimal digits of said fixed length and generate the product, temporary storage means for storing two groups of digits comprising the product as it is generated, the product consisting of a high order group of decimal digits of said fixed length and a low order group of decimal digits of said fixed length, first transfer means for transferring groups of digits comprising a multiplicand in sequence starting with the lowest order group from the storage facility to the arithmetic unit, second transfer means for transferring groups of digits comprising a multiplier in sequence starting with the lowest order group from the storage facility to the arithmetic unit, control means for operating the first and second transfer means to transfer all the groups of digits comprising the multiplicand to the arithmetic unit for each group of the multiplier transferred to the arithmetic unit, whereby each digit group of the multiplicand is multiplied with each digit group of the multiplier in succession, means for sensing the transfer of the highest order multiplicand groups to the multiplying means, means actuated by said sensing means for transferring both the high order and low order groups of digits in the temporary storage means to the storage facility, means for counting the number of multiplier digit groups transferred to the multiplying means and sensing if the highest multiplier order has been transferred to the multiplying means, means responsive to the multiplier group counting and sensing means and the highest order multiplicand group sensing means for selectively transferring a pair of said digit groups from the storage facility to the temporary storage means after the highest order multiplicand group is sensed and the highest order multiplier has not been sensed, said last-named transferring means including means controlled by said counting means for selecting the digit groups in the storage facility that are the next two higher orders of digit groups in the stored product than the order of the last multiplier groups transferred to the multiplying means as identified by said counting means, and means for adding the highest order group of digits in the temporary storage means to the next product generated by the multiplying means.

3,161,765
ELECTRONIC ADDER USING TWO DECADE COUNTERS ALTERNATELY

George G. Hoberg, Devon, Pa., John R. Van Andel, Dearborn, Mich., and Edward W. Veltch, Rosemont, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Original application Mar. 4, 1955, Ser. No. 492,062, now Patent No. 3,053,449, dated Sept. 11, 1963. Divided and this application Apr. 20, 1961, Ser. No. 104,363
23 Claims. (Cl. 235—176)

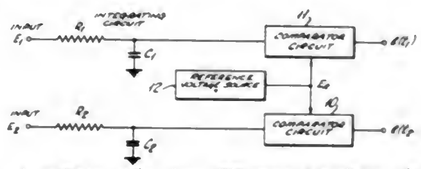


1. An electronic adder circuit for adding a plurality of sequentially presented pulse count coded decimal digits comprising a word comprising in combination, two decimal counters, means for storing alternate decimal digits presented in sequence throughout the duration of said word into respective ones of said counters, and means for alternately counting out and recombining in sequence the digits stored in said decimal counters.

3,161,766
VOLTAGE RATIO TO TIME DIFFERENCE TRANSLATOR

John Kenneth Bates, Jr., State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Pennsylvania

Filed May 3, 1963, Ser. No. 277,766
3 Claims. (Cl. 235—195)



1. A voltage ratio time difference translator circuit comprising: a pair of inputs for receiving two signals to be compared; a pair of logarithmic decay function generators, each connected respectively to said pair of inputs for similarly decaying the input signals received thereon; and means coupled to said function generators for producing an output signal when each of the generated functions reaches a predetermined level, whereby the time difference between the occurrence of the thus produced output signals is a function of the voltage ratio of the input signals.

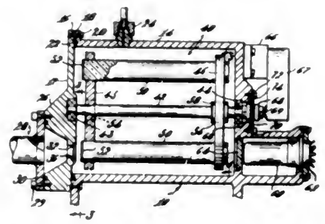
3,161,767
FLUID FLOW MEASUREMENT METHOD

Bernard A. Fries, Orinda, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,498
2 Claims. (Cl. 250—43.5)

1. The method of determining the volume flow rate of a fluid stream, which comprises measuring the radioactivity of a quantity of radioactive material in counts per unit time, C, detected by a radioactivity counter, introducing said quantity of radioactive material into said fluid stream, withdrawing a sample of said fluid from said fluid stream at a point downstream from the point of introduction of said radioactive material, the withdrawal being at a constant rate and continuing for a time, T, which includes the time during which the introduced radioactive material passes the withdrawal point, determining the number of counts per unit time per unit volume, R, of the sample detected by a radioactivity counter having a corrected response equivalent to that of the first mentioned counter, and determining the volume flow rate, Q, of said fluid stream according to the formula:

$$Q=C/RT$$

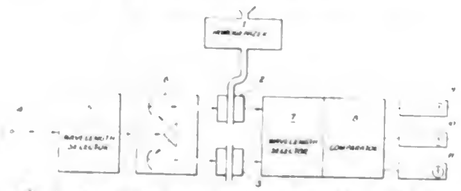


by said elements in the respective positions is representative of the absorption of the sample material.

3,161,768
METHOD AND APPARATUS FOR THE ANALYSIS OF EMULSIONS AND SUSPENSIONS

John Desmond Spencer Goulden, Reading, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

Filed Jan. 15, 1962, Ser. No. 166,342
Claims priority, application Great Britain, Jan. 27, 1961, 3,308/61; June 22, 1961, 22,692/61
8 Claims. (Cl. 250—43.5)



8. Apparatus for quantitative estimation of fat, protein and lactose in milk which comprises in combination,
(*a*) a source of infra-red radiation,
(*b*) monochromators to provide from said source ranges of wavelengths of 3.5–5.8 microns and 6.5–10.5 microns,
(*c*) radiation splitting means for dividing the infra-red radiation into two paths,
(*d*) a first sample cell having a path length of up to 0.1 millimeter to contain a sample to be analyzed,
(*e*) a second sample cell located in the other of said resulting radiation paths to contain a sample of the dispersion medium of said mixture,
(*f*) a homogenizer to provide in the first sample cell a particle size range of the dispersed fat, protein and lactose which is about 0.4 to 4.0 microns,
(*g*) a wavelength divider to provide selected peak absorption wavelengths of 5.8, 6.5 and 9.6 microns for the fat, protein and lactose respectively, and
(*h*) means to measure and compare the infra-red radiation absorbed by the two cells at the selected peak absorption wavelengths of (*g*).

3,161,769
ULTRAVIOLET SPECTROMETER WITH MEANS TO CHANGE THE LENGTH OF THE OPTICAL PATH IN THE FLUENT MATERIAL

Paul M. McPherson, Acton, Mass., assignor to McPherson Instrument Corporation, Acton, Mass., a corporation of Massachusetts

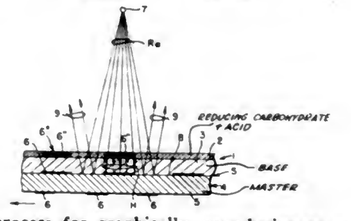
Filed Sept. 11, 1962, Ser. No. 222,781
12 Claims. (Cl. 250—43.5)

1. Apparatus for measuring the absorption of radiation by a sample comprising: a chamber for containing the sample, said chamber including an aperture for admitting a beam of radiation; means, including a plurality of detecting elements, for bringing detecting elements into said beam alternatingly at a position adjacent said aperture and at a position more distant from said aperture along said beam whereby the relation of the intensities measured

3,161,770
THERMOGRAPHIC REPRODUCTION PAPER AND METHOD OF USING

George C. Huett and Hartwell L. Briggs, Chicago, and Ken G. Probst, Northlake, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

Filed Mar. 20, 1962, Ser. No. 181,091
4 Claims. (Cl. 250—65)

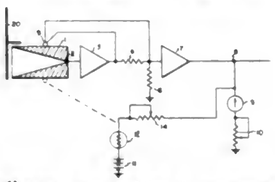


1. A process for graphically reproducing an original which comprises: placing an original having preferentially radiation absorbing areas in contact with a visibly heat-sensitive composition coated on a base support, said composition comprising a reducing carbohydrate selected from the group consisting of glucose, mannose, galactose, maltose, lactose, fructose, arabinose, xylose, lyxose, ribose, cellobiose, and starch and an organic acid, said acid having an ionization constant varying from that of citric acid to that of meta-benzene disulfonic acid, and irradiating said original with heat producing radiations to increase the temperature of the composition in the areas of said supported layer registering with said radiation absorbing areas to from about 240° F. to about 360° F., whereby said original is visibly reproduced.

3,161,771
TEMPERATURE COMPENSATED RADIOMETER SYSTEM

Nelson E. Engborg, Old Greenwich, Frank Schwarz, Stamford, and Mark G. Lowenstein, Norwalk, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Jan. 19, 1962, Ser. No. 167,290
14 Claims. (Cl. 250—83.3)



1. A radiometer comprising in combination,
(*a*) a first radiation detector having a nonlinear change of response with temperature,
(*b*) amplifying circuits of variable gain,
(*c*) a second detector at ambient temperature having substantially the same variation with temperature as the first detector and connected to actuate the ampli-

fier gain variation to oppose automatically that of the first detector whereby an output is produced invariant with ambient temperature.

3,161,772

HYPERIMMERSED BOLOMETER SYSTEM

Monty M. Merlen, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,966
4 Claims. (Cl. 250—83.3)



1. In a hyperimmersion radiation detector optical system in which the radiation detector is optically immersed on the base of a lens at a point beyond the center of curvature of the lens face and the acceptance angle for radiation of the detector is thereby determined, the improvement which comprises

(*a*) a substantially radiation opaque light baffle in front of the lens located in proximity to the plane in which a real image formed by radiation reflected from the detector and the curved and other surfaces of the lens is formed,

(*b*) the extent of the radiation opaque baffle being at least approximately as large as the real image, whereby radiation passing through the real image is substantially blocked from reaching the radiation detector.

3,161,773

SOLID STATE INFRARED DETECTOR CELL WITH MEANS TO DISCRIMINATE BETWEEN THE SPECTRAL BANDS IN THE INFRARED SPECTRUM

Alvin H. Boerio, Turtle Creek, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 18, 1962, Ser. No. 195,755
7 Claims. (Cl. 250—83.3)



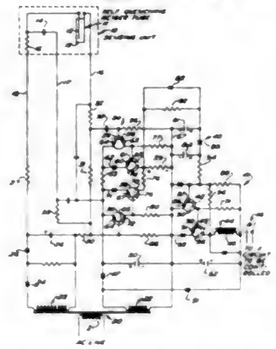
1. An infrared detector comprising an impurity doped semiconductor member adapted to have impinged thereon a continuous infrared spectrum, said semiconductor member having an intrinsic transition response to a first spectral band of said infrared spectrum and an impurity transition response to another spectral band of such radiation, a first pair of terminals and a second pair of terminals connected to said semiconductor member, one of said pairs of terminals being positioned adjacent a region of said semiconductor member having a transition responsive due predominantly to intrinsic photoconductivity, said second pair of terminals connected to said member between points on said member between which transition responses due predominantly to impurity photoconductivity takes place, said first and second pair of leads having one lead in common, a source of voltage connected in a series circuit including said first pair of terminals and a load resistor, a second source of voltage in a series circuit including said second pair of terminals and said load resistor, instantaneous polarities of said voltage sources being such as to cause opposing voltage drops in said load resistor.

3,161,774

PULSE CONVERTER CONTROL APPARATUS

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Jan. 30, 1961, Ser. No. 85,626
7 Claims. (Cl. 250—83.6)



4. Control apparatus comprising; Geiger tube condition sensing means sensitive to a given condition and providing a continuous series of short time duration signal pulses upon being subjected to the given condition, said Geiger tube having an inherent background count in the absence of the given condition to provide infrequent signal pulses; a first and a second transistor each having input electrodes and output electrodes, a capacitor, circuit means connecting said capacitor in series with the input electrodes of said first and second transistors, the input electrodes of said first and second transistors being connected in a reverse relation such that a charging current for said capacitor is effective to render one of said transistors nonconductive and a discharging current for said capacitor is effective to render the other of said transistors nonconductive, further transistor means connected to be controlled jointly by the output electrodes of said first and second transistors to provide a continuous output signal so long as one or the other of said first and second transistors is in a non-conducting state; circuit means connecting said capacitor to said Geiger tube to provide a charging current therefor for each of said signal pulses, said capacitor discharging during the time interval between said signal pulses; and further means connected to be controlled by said further transistor means, said further means being continuously controlled only in the event that the signal pulses provided by said Geiger tube are spaced by no more than a given time interval as determined by said capacitor to thereby discriminate against the inherent background count of said Geiger tube.

3,161,775

RADIATION THERMOMETER

Morris Weiss, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

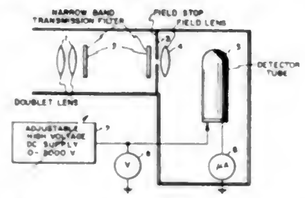
Filed Aug. 21, 1961, Ser. No. 132,790
4 Claims. (Cl. 250—86)

1. An instrument for radiation temperature measurement comprising in combination and optical alignment

(*a*) a single radiation detector,

(*b*) means for collecting radiation and concentrating it on the detector,

(*c*) a narrow transmission filtering means passing only a single band centered about a wavelength from one-



sixth to one-half the wavelength of maximum radiation for the temperature to be measured, and

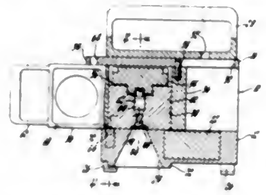
(*d*) means for indicating radiation detector output.

3,161,776

PORTABLE RADIOGRAPHIC EXPOSURE UNIT

Caleb P. Moore, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 20, 1961, Ser. No. 96,932
3 Claims. (Cl. 250—105)



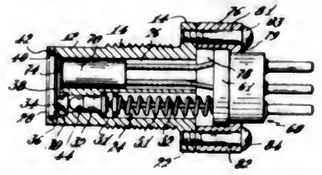
1. A portable radiographic exposure unit comprising a body, a hollow channel portion defined by and extending through said body proximate one side thereof, the other side of said body being provided with a first mass of radiation shielding material on one end thereof and a first conical aperture on the other end thereof, a rectilinearly movable slide member within said channel, a radiation source mounted in a cavity in said slide member, means for limiting escape of radiation from said source to one direction comprising a second mass of radiation shielding material on said slide member enveloping said source and defining a single conical aperture therethrough, said source and the second said aperture being arranged to register with said first mass of radiation shielding material when said slide member is positioned at one extreme position of its stroke and to register with said first conical aperature when said slide member is positioned at the other extreme position.

3,161,777

PHOTOELECTRIC SCANNING DEVICE

John M. Farmer, Wayland, Mass., assignor to Farmer Electric Products Co., Inc., Newton Lower Falls, Mass., a corporation of Massachusetts

Filed Aug. 1, 1960, Ser. No. 46,763
8 Claims. (Cl. 250—239)



1. A photoelectric scanning device comprising:

opaque body means having a pair of straight bores with ends axially open at both sides of the body means, and said body means having a common recess extending over both said bores at one side of the body means;

radiant energy source means disposed within one of said bores for directing radiant energy freely through said open end on one side of said bore upon an external object for unobstructed reflection of said energy directly through the adjacent open end of the other of said bores;

means sensitive to radiant energy disposed within said other bore and fully exposed on said one side of the body means to said reflection so that the reflection energy can axially impinge thereon;

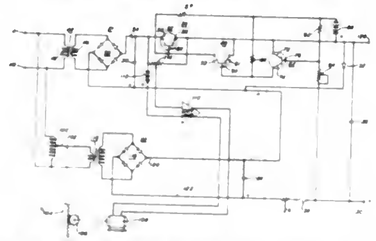
and at said recessed side of said body means and axially extending into said recess, socket means for supplying through the recess current to and for supporting said source means and said sensitive means respectively, and having flange means for securing it to said body means.

3,161,778

PROTECTION OF CIRCUIT ELEMENTS

Charles W. Harrison, Millington, Robert E. Graham, Chatham Township, Morris County, and Arthur M. Darbie, South Plainfield, N.J., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 18, 1960, Ser. No. 50,350
10 Claims. (Cl. 307—61)



1. In a regulated power supply system, in combination, first and second power supply units, a regulator, means for connecting said regulator to produce a regulated output from said first power supply unit, means connecting said power supply unit in series with said regulated output and with a load circuit, and means responsive to the signal across said regulator and connected to said second power supply unit for controlling the output thereof, said regulator acting to control the output to the load.

3,161,779

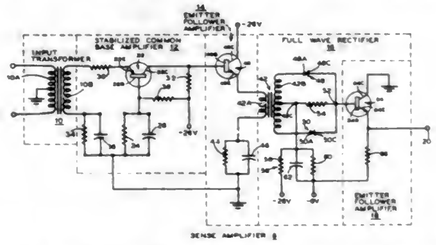
COMMON BASE AMPLIFIER RESISTIVELY STABILIZED

Stanford A. Fingerhood, New York, N.Y., assignor to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Filed Sept. 2, 1959, Ser. No. 837,638
8 Claims. (Cl. 307—88.5)

1. Apparatus for amplifying signals comprising input means with two input signal terminals, a transistor having a base, an emitter and a collector, a source of operating potential having first and second terminals at different potentials, first resistive means connected between said emitter and one signal terminal of said input means, first impedance means connected between the other signal terminal of said input means and said first potential source terminal, second impedance means connected between said base and said first potential source terminal, second resistive means connected between said collector and said second potential source terminal, third resistive means connected between said base and said second potential source

terminal, an emitter-follower transistor amplifier having a base, an emitter and a collector, with its base connected to the collector of said first transistor, and with its emitter circuit including an energy-transfer impedance, an ampli-

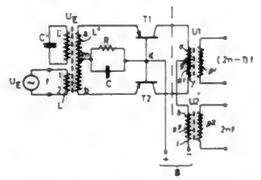


tude discriminator means connected to be energized from said energy-transfer impedance, said impedance being responsive to said emitter-follower transistor amplifier, and an output means responsive to said amplitude discriminator means.

3,161,780
PULSE DISTORTION CIRCUIT FOR PRODUCING ODD AND EVEN MULTIPLES OF A FUNDAMENTAL FREQUENCY

Heinz Plügge and Erhard Steiner, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Sept. 13, 1960, Ser. No. 55,617
Claims priority, application Germany, Sept. 29, 1959, S 65,198
4 Claims. (Cl. 307—88.5)



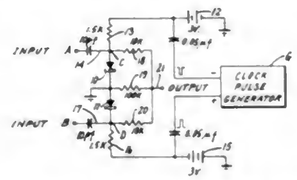
1. A pulse distortion circuit for separately producing even number and odd number multiples of a fundamental frequency, comprising a push-pull input transformer having two primary windings and a secondary winding, means for connecting one of said primary windings in a flywheel circuit, means for connecting to the other primary winding the input voltage which is to be shaped, two transistors connected in push-pull circuit, means for connecting the secondary winding of said input transformer over at least one RC-member with the base-emitter paths of said transistors, a first push-pull output transformer having primary and secondary winding means, circuit means for connecting the collectors of the respective transistors with the outer ends of the primary winding of said first output transformer, a second output transformer having a primary and a secondary winding, and circuit means for connecting the primary winding of said second output transformer to a center tap of the primary winding of said first output transformer.

3,161,781
ANTI-COINCIDENCE CIRCUIT USING TUNNEL DIODES

Philip Spiegel, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 30, 1961, Ser. No. 85,857
15 Claims. (Cl. 307—88.5)

1. An anti-coincidence circuit comprising first and second tunnel diodes, means connecting the cathode of the first diode and the anode of the second diode together and to a point of reference potential, means for biasing the anode of said first diode to a predetermined positive potential, a first input connection connected to the anode of said first diode for application of positive pulses, means for biasing the cathode of said second diode to a predetermined negative potential, a second input connection con-

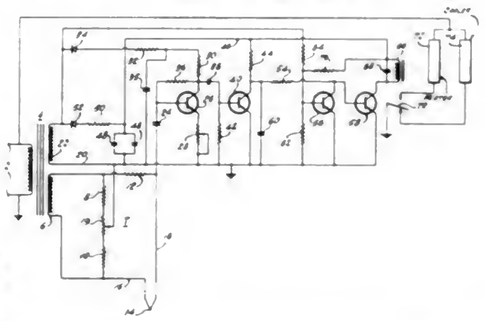


nected to the cathode of said second diode for applicaton of negative pulses, an output connection, and means connected between said output connection and said diodes for producing an output pulse at said output connection only when an input pulse is applied to one of said input connections and no input pulse is applied to the other input connection.

3,161,782
CONTROL CIRCUIT

Adolf Vleth, Wanaque, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware

Filed May 19, 1961, Ser. No. 111,248
3 Claims. (Cl. 307—88.5)



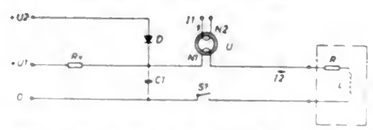
1. A phase sensitive alternating current amplifier for control of a direct current output circuit in response to an alternating current signal comprising in combination an alternating current source of energy, an alternating current signal source, a transistor amplifier having a collector, a base and an emitter, current rectifying means connected in series with the collector and emitter of said transistor across said first mentioned source, means coupling said signal source to the base of said transistor to yield an amplified signal at its collector, a second transistor and an output transistor, each having a collector, a base and an emitter, the collector of said second transistor and the base of said output transistor being tied together and connected to the collector of said first transistor for reception of the amplified signal therefrom, the emitters of said second and output transistors being connected together and to said first mentioned source, a direct current output circuit connected between the collector of said output transistor and said current rectifying means for energization when said output transistor is rendered conductive by the half cycles of the signal of a given polarity impressed on its base and means for impressing alternating potentials on the base of said second transistor in phase with said first mentioned source whereby said second transistor shunts said output transistor during half

cycles of said given polarity when the signal is in phase with said first mentioned source to render said output transistor conductive only during half cycles of out-of-phase signals.

3,161,783
PULSE-CURRENT GENERATOR

Arndt Irmisch, Stuttgart-Zuffenhausen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 24, 1962, Ser. No. 212,076
Claims priority, application Germany, July 27, 1961 St 18,127
5 Claims. (Cl. 307—106)

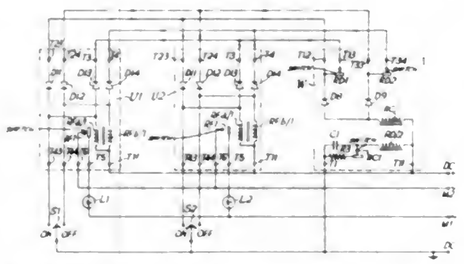


1. A pulse current generator for producing rectangular pulses, across an inductive load, each pulse leading edge having a short rise time and small transient overshoot, comprising an inductive load circuit, a magnetic core having an approximately rectangular hysteresis loop characteristic, a first winding on said core in series with said load circuit, a source of bias current, a second winding on said core connected to said bias current source, said bias current drawing said core far into its region of magnetic saturation, and means connected across said load circuit and series first winding for producing a pulse of current in opposition to said bias current, said pulse initially rising rapidly to a high level and then dropping at a predetermined rate to a lower holding level.

3,161,784
ELECTRIC CONTROL SYSTEMS

John Peter Woodnutt, Esher, England, assignor to Delmatic Limited, London, England, a British company

Filed July 25, 1960, Ser. No. 45,211
Claims priority, application Great Britain, July 30, 1959, 26,127/59
13 Claims. (Cl. 307—112)

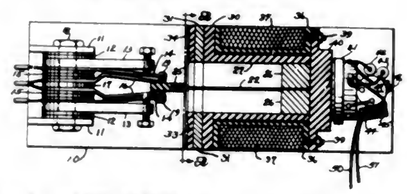


4. An electrical installation comprising: at least two loads; electrical supply terminals for said loads; separate electromagnetic relays for switching said loads, each electromagnetic relay having relay contacts and electromagnetic operating means; circuits connecting the contacts of said relays in series with said loads respectively to said supply terminals; separate manually operable switches to operate said relays; circuit means connecting said manually operable switches to said electromagnetic operating means of said relays respectively; and delay switching means connecting at least one of said manually operable switches to the electromagnetic operating means of at least one of the relays associated with the other of said manually operable switches, to operate said at least one of the relays on prolonged operation of said at least one of the manually operable switches.

3,161,785
ELECTROMAGNETIC SWITCHES

Arthur F. Cann, Winchester, Mass., assignor to Stevens-Arnold Inc., South Boston, Mass.

Filed June 20, 1960, Ser. No. 37,433
6 Claims. (Cl. 307—132)

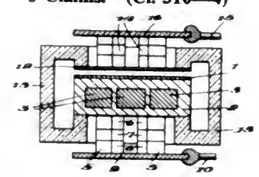


4. In a chopper having a reed, at least a portion of which is of magnetizable metal, cantilever supported at one end, said chopper having at least one fixed contact means at the free end of said reed and adapted to be operated by the movement of said free end, and having polarizing magnet means for magnetizing the magnetizable portion of said reed, the combination of a drive coil for said reed so positioned with respect to said reed that the reversals of current flowing through said coil cause said free end to vibrate and actuate said contact means, first and second transistors, said first transistor having a collector electrode connected to one end of said coil, a capacitor connected to said electrode and to the base of said second transistor, said second transistor having a collector electrode connected to the other end of said coil, a second capacitor connected to said collector electrode of said second transistor and to the base electrode of said first transistor, said coil having a center-tap, resistors connecting said base electrodes to said center-tap, a bias resistor connected to the emitter electrodes of said transistors, means for connecting said bias resistor to the positive terminal of a D.C. source, and means for connecting said center-tap to the negative terminal of said source.

3,161,786
SYSTEM FOR THE DIRECT PRODUCTION OF ELECTRICITY IN ATOMIC REACTORS

Rainer Gunther, Georg-Speyer-Strasse 77, Frankfurt am Main, Germany

Filed Mar. 20, 1961, Ser. No. 102,621
Claims priority, application Germany, Mar. 19, 1960, G 29,264
3 Claims. (Cl. 310—4)

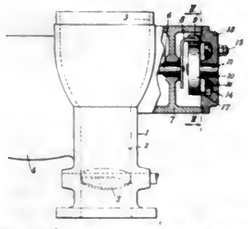


1. A thermionic reactor comprising an emitting electrode heated by fission and a cold collecting electrode opposite to and electrically insulated from the emitting electrode, a base of a material which is a good conductor of electricity at high temperatures enclosing radio-active fissionable material and in electrical contact with the emitting electrode on the side thereof opposite from the collecting electrodes, a current conductor in contact with the side of the base opposite to the emitting electrode, said current conductor being formed of at least two contacting layers separated transversely to the direction of current flow, the layer next to the base being formed of a material highly resistant to heat and the other layer of a less heat-resistant material having a higher ratio of electrical to thermal conductivity than the layer next to the base.

3,161,787
AUTOMATIC DEVICES FOR CONTROLLING THE STARTING MEANS IN INTERNAL COMBUSTION ENGINE CARBURETORS

Willy van Saan, Neuss (Rhine), Germany, assignor to Société Industrielle de Brevets et d'Etudes (S.I.B.E.), Neuilly-sur-Seine, Seine, France, a society of France

Filed Apr. 6, 1962, Ser. No. 185,749
Claims priority, application France, June 26, 1961, 866,108
1 Claim. (Cl. 310—4)

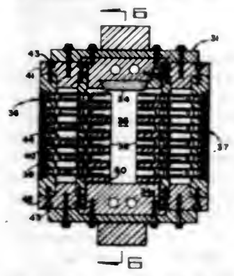


In an internal combustion engine carburetor, a heat responsive control device which comprises, in combination, a cylindrical casing comprising a cover made of a ceramic material capable of withstanding without damage temperatures as high as 800° C., the inner wall of said cover being provided with a groove extending along a substantially circular line, coaxial with said casing, the outer circular wall of said groove being of substantially cylindrical shape, a heating resistor coil housed in said groove, two electric terminal members carried by said cover and connected to the ends of said resistor coil respectively, a bimetallic strip mounted in said casing in close proximity to said cover, said strip being spiral wound about the axis of said casing, the outer end of said strip being at a distance from said axis substantially equal to the radius of said groove, the opening of said groove being located opposite said spiral wound bimetallic strip and extending toward the axis of said casing to a greater distance than said resistor coil, whereby the heat from said resistor coil is transmitted to most of said bimetallic strip, projections carried by the edge of said recess circular periphery for keeping said resistor coil in said groove, means for holding in fixed position the inner end of said bimetallic strip, and means operatively connected with the outer end of said bimetallic strip for transmitting the displacements of said last mentioned end.

3,161,788
WALL STRUCTURE FOR AN MHD GENERATOR

Frederick B. Russell, Reading, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Dec. 2, 1960, Ser. No. 73,374
11 Claims. (Cl. 310—11)

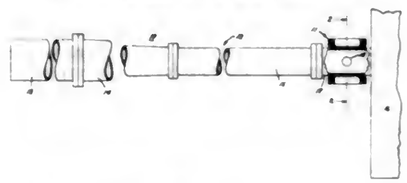


1. In combination in a wall structure forming part of a duct for receiving a high temperature electrically conductive fluid in a magnetohydrodynamic device wherein an electric field is parallel to a major surface of said wall structure, a pair of spaced parallel plates of electrical insulation, spacer bars for holding said plates in spaced relationship and defining with said plates a coolant channel therebetween, said plates including rows of coaxial counterbored holes, and metal rods extending through the counterbored holes in electrically mutually insulated relation, each rod including a shoulder cooperating with the counterbore of one associated hole and fastening means cooperating with the counterbore of the other associated hole for securing said rod and said plates relative to each other and preventing movement of said plates away from each other, said rods projecting beyond at least one of said plates, the portion of said rods projecting beyond said one of said plates being solid and having substantially flat and continuous end surfaces all lying in substantially a single plane and in communication with said fluid.

3,161,789
MHD POWER GENERATION

Henry T. Nagamatsu and Joseph R. Schmid, Schenectady, and Russell E. Sheer, Jr., Cohoes, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 23, 1961, Ser. No. 84,178
4 Claims. (Cl. 310—11)



1. In an MHD electrical power generating device wherein a hot ionized plasma passes through a magnetic field between a pair of electrodes located substantially in alignment with the magnetic field and at right angles to the direction thereof so that electric power may be withdrawn from said electrodes by introducing electrons from an outside source into the plasma, the improvement which comprises the steps of:

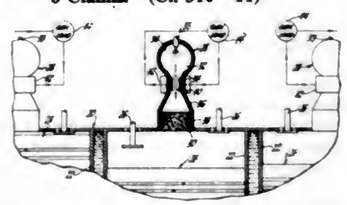
(*a*) passing the hot ionized plasma through the magnetic field at a velocity of at least about 10 times the speed of sound and,

(*b*) maintaining the temperature of said electrodes below the emissivity temperature thereof.

3,161,790
COMBUSTION GAS ELECTRICAL GENERATOR

Worth H. Percival, New Baltimore, and Michael T. Tsou, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 19, 1961, Ser. No. 125,135
8 Claims. (Cl. 310—11)

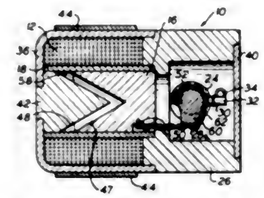


5. An electrical generator comprising a reciprocating internal combustion engine comprising means for producing conductive gases, a cylinder, a precombustion chamber, a passage connecting said cylinder and said chamber, a regenerator in said passage, magnet means for producing a magnetic field across said duct, and a set of electrodes within said duct for collecting the electrical energy generated by the coaction of the magnetic field and conductive gases passing therethrough.

3,161,791
ROTARY SHAFT DRIVE SOLENOID INCLUDING A CHAIN CONNECTOR

Arthur Gerstenfeld, Great Neck, N.Y., assignor, by mesne assignments, to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed Apr. 4, 1962, Ser. No. 185,130
1 Claim. (Cl. 310—23)



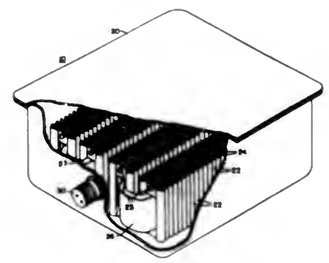
A rotary shaft drive solenoid comprising a hollow electrical coil adapted to be energized and deenergized, a stop of magnetic material fixed relative to said coil and disposed at least in part within said hollow coil, a plunger of magnetic material slidably disposed within said coil for movement from and to a normal or deenergized position in which said plunger is spaced from said stop and to and from an actuated or energized position in which said plunger is in engagement with said stop, a rotatable output shaft extending transversely of the line of movement of said plunger for rotation a predetermined angular distance from and to a first or normal position and to and from a second or actuated position concomitantly with movement of said plunger from and to its normal position and to and from its actuated position, respectively, and a serially pivoted chain connected at one end to said plunger and at the other end to said shaft, said chain being wrapped around said shaft at least said predetermined angular distance when said shaft is in said normal position, the portion of the shaft about which said chain is wrapped being formed with high and low parts, whereby to impart said concomitant rotation to said shaft from said first to said second positions in response to movement of said plunger from its normal to its actuated position, a pair of stops one fixed to said shaft and the other fixed relative to said coil, said stops being engageable when said shaft is in said normal position for preventing rotation of said shaft away from its actuated position beyond said normal position, and a spring connected to said shaft for biasing said shaft and said plunger toward their normal positions, whereby the serially pivoted chain is under minimum stresses during the unwinding and winding from and onto the high and low parts of the shaft during reciprocation of said plunger resulting in minimum fatigue failures of the serially pivoted chain.

3,161,792
MAGNETOSTRICTIVE TRANSDUCER APPARATUS

Edwin B. Wright, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of abandoned application Ser. No. 722,817, Mar. 20, 1958. This application Sept. 11, 1962, Ser. No. 223,305
6 Claims. (Cl. 310—26)

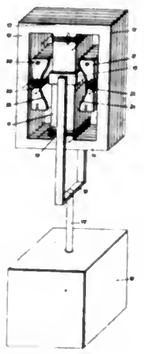
1. A transducer assemblage comprising a rectangular sheet-like radiating plate member for vibration-inducing contact with a liquid; a plurality of groups of parallel-arranged magnetostrictive laminations less than six mils thick extending lengthwise in a direction normal to said radiating plate in respective rows, bonded at respective ends to said radiating plate as the exclusive agents for vibrating such plate, and constructed and arranged to have an average spacing of from thirty to ninety mils between all adjacent elements; and a plurality of coil means coupled magnetically to the groups of lamination elements, respectively, to produce a uniform vibratory response of said radiating plate.



3,161,793
ELECTRICAL MACHINES INVOLVING THE RECIPROCATION OF MOVING PARTS

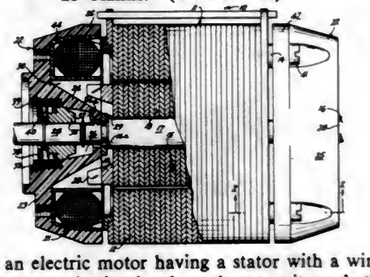
Eric Roberts Laithwaite, Cheadle, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Sept. 5, 1961, Ser. No. 135,993
Claims priority, application Great Britain Sept. 13, 1960
9 Claims. (Cl. 310—27)



1. An electrical machine comprising a magnetic structure having a centre limb and two outer limbs all of which are joined at both ends, two fixed coils mounted on said centre limb and carrying alternating current, a third coil mounted on said centre limb intermediate said two fixed coils and capable of reciprocatory movement therebetween and multi-polar field structures located adjacent opposite faces of said centre limb and energised from a direct current source to generate a steady magnetic field having a plurality of poles in the direction of said centre limb, the steady magnetic field being traversed by said third coil during its reciprocatory movement.

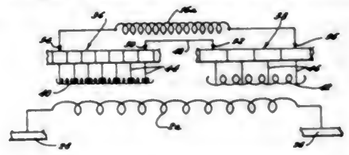
3,161,794
END BELLS FOR ELECTRIC MOTORS
Nils Kauri Lindgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 19, 1961, Ser. No. 83,815
Claims priority, application Sweden Oct. 1, 1960
15 Claims. (Cl. 310—89)



1. In an electric motor having a stator with a winding that includes projecting heads at the opposite ends thereof, and a rotor assembly including a central part rotatable in said stator and a shaft projecting axially from the opposite ends of the central part; the combination of bearing support members disposed at the opposite ends of said stator, at least one of said bearing support members including an annular radially directed end wall and peripheral and central annular portions which extend axially from the outer and inner edges of said end wall toward one end of the stator and respectively terminate at free end edges which are disposed in the same radial plane normal to the axis of rotation of said rotor assembly, said one bearing support member being formed from a single part in which said radially directed end wall and said peripheral and central annular portions are joined to one another, said end wall and said peripheral and central annular portions defining an annular recess opening axially toward the one end of the stator and receiving the projecting heads at one end of the stator winding, means securing the free end edge of said peripheral annular portion to the one end of the stator, the free end edge of said central annular portion defining a central annular opening through which the rotor shaft extends and said central annular portion defining a central recess receiving the shaft and opening axially in a direction away from the stator, radial bearing means in the central recess rotatably supporting said shaft relative to said one bearing support member, means coacting with said one bearing support member and said radial bearing means for removably positioning the latter in the central recess of said central annular portion, said last-mentioned means being accessible at the opening of the central recess to remove said bearing means from the central recess while said end wall and said peripheral and central annular portions of said one bearing support member remain positioned at the one end of the stator by said securing means, said shaft having a radial shoulder, and thrust bearing means which is disposed on said shaft at said radial shoulder and axially engaged by the free end edge of said central annular portion, and the free end edge of said central annular portion being axially displaced from said radial bearing means and disposed between the latter and the central part of said rotor assembly.

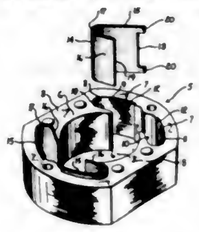
3,161,795
INDUCTION MOTOR INCLUDING TWO COMMUTATED WINDINGS FOR SPEED CONTROL
Andrew Bekey, Los Angeles, Calif., assignor to Genisco, Incorporated, Los Angeles, Calif., a corporation of California
Filed Oct. 16, 1961, Ser. No. 145,118
12 Claims. (Cl. 310—173)

1. In a polyphase alternating current variable speed induction motor, a rotor, a plurality of commutators carried by the rotor, slip rings carried by the rotor, primary coil windings carried by the rotor and electrically coupled to the slip rings, first adjusting windings carried by the rotor and electrically coupled to one of said commutators, second adjusting windings carried by the rotor and electrically coupled to the other of said commutators,



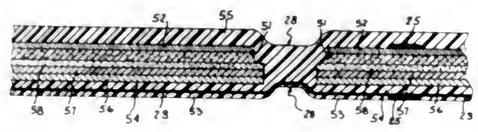
both the first and second adjustable windings operative at the same time to provide a variable adjustment in the speed of the motor, a stator, secondary coil windings carried by the stator, and variable electrical coupling means interconnecting the secondary windings and the commutators.

3,161,796
STATOR FOR FRACTIONAL HORSEPOWER MOTORS
Richard R. Annis and John R. Dorner, Milwaukee, Wis., assignors to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 8, 1961, Ser. No. 94,355
1 Claim. (Cl. 310—215)



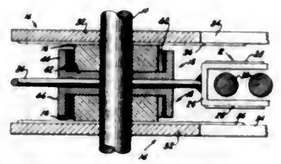
In a stator for a fractional horsepower electric motor:
(A) a core having paired back-to-back oppositely facing slots defining a pole for the motor and a narrow neck connecting the pole with the core,
  (1) said slots having inner and outer side walls connected by concavely curved bottom walls,
  (2) the portions of the bore between said curved bottom walls forming the narrow neck;
(B) an abrupt shoulder in the outer side wall of each slot near the end thereof and facing the bottom of the slot;
(C) an insulating liner covering the walls of each slot,
  (1) said liners comprising strips of resilient insulating material wider than the thickness of the core and long enough to extend to the ends of the side walls of the slot when the medial portion of the strip is tight against the bottom wall of the slot;
  (2) the portion of the insulating liners which covers the outer wall of each slot having its end abutting the shoulder therein and being confined between the shoulder and the bottom of the slot so that the resilience of the liners holds them in their respective slots in snug engagement with the walls thereof;
(D) a pair of spaced ears projecting from the end of each insulating liner which abuts a shoulder,
  (1) said spaced ears extending beyond the shoulders and embracing the adjacent portions of the core to hold the liners against edgewise displacement from a position substantially centered with respect to the core thickness so that the edge portions of the insulating liners project substantially equal distances beyond the adjacent faces of the core; and
(E) a coil wound about said neck so that the opposite portions of the coil occupy the slots, the projecting edge portions of the insulating liners holding the coil spaced from the opposite faces of the core, whereby said liners constitute the sole means for insulating the coil from the core.

3,161,797
ELECTROLUMINESCENT DEVICE
Keith H. Butler, Marblehead, Joseph M. Harris, Topsfield, and Horace H. Homer, Arlington, Mass., assignors to Sylvania Electric Products Inc., Salem, Mass., a corporation of Delaware
Filed Feb. 28, 1962, Ser. No. 176,373
5 Claims. (Cl. 313—108)



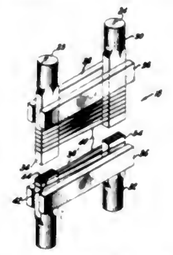
1. A laminated electroluminescent device comprising:
an envelope of thermoplastic material,
  at least a portion of which is light transmitting;
at least two electroluminescent cells,
  hermetically sealed within said envelope and insulated from each other by the hermetic seal of said envelope,
said cells comprising,
  at least two superposed electrodes,
    at least one of which is light transmitting,
  and a layer of light-emitting material including an electroluminescent phosphor disposed between said electrodes;
means to conduct current to each of said electrodes in each of said electroluminescent cells,
said means comprising,
  at least two longitudinal disposed current conveying means,
  insulated from each other and each insulated from one of the electrodes in said cells,
  said current conveying means extending along the length of said electroluminescent device and passing across the seal between each of said electroluminescent cells.

3,161,798
ELECTRODE SHIELD
Harold W. Herbert, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 25, 1960, Ser. No. 71,731
1 Claim. (Cl. 313—240)



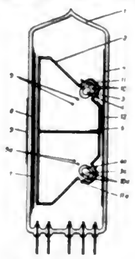
An evacuated electron discharge device comprising a thermionic cathode employing materials which sublime during heated cathode operation, a metal support for the cathode, at least one electrode normally operated at a potential different than said cathode and spaced therefrom, an insulating spacer of a given thickness abutting said electrode, and a metallic shield having an insulating coating thereon, said coating providing a surface that is relatively rougher than the surface of the metal and said shield having a base of a given thickness abutting said insulating spacer on one surface and said support on the opposed surface whereby the spacer and the shield base given thicknesses additively determine the cathode to electrode spacing, said shield having a wall upstanding from the base thereof positioned a given offset distance from said spacer disposed intermediate said cathode and spacer, the end of said wall terminating a given distance away from said electrode, said given distance being greater than the arcing distance in said evacuated device between the electrode and said wall and less than the distance required to shield substantially all of said spacer from deposition thereon of the subliming cathode material.

3,161,799
FRAME GRID
Archibald J. Robinson, Jr., Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 20, 1961, Ser. No. 104,404
6 Claims. (Cl. 313—350)



6. A frame grid comprising a pair of solid side members bridged by cross straps and grid laterals secured to the side members, said side members each comprising like shaped and sized ends for insertion within like shaped and sized openings within insulating spacers and intermediate rectangular in cross section flat portions of equal thickness and each having substantially flat parallel faces engaged by the grid laterals, said intermediate portions being smaller in thickness than said ends in a direction perpendicular to the plane of said grid laterals.

3,161,800
INDICATOR TUBE HAVING TWO INDICATION SYSTEMS
Albert Lieb, Bad Cannstatt, Stuttgart, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 6, 1961, Ser. No. 101,296
Claims priority, application Germany Apr. 16, 1960
14 Claims. (Cl. 315—13)

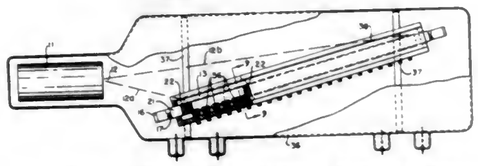


1. An indicator tube comprising an envelope having mounted therein two image producing systems including

a common image display screen, first cathode means associated with one of said image producing systems for producing a first and second electron beam, second cathode means associated with the other of said image producing systems for producing a third and fourth electron beam, means for deflecting said first and second beams, means for deflecting said third and fourth beams, and a partition member mounted in relation to said screen and cathodes such that said first and fourth beams are deflected onto said screen from opposite sides of said partition forming two spaced patterns on respective portions of said screen remote from said partition and said second and third electron beams are deflected onto opposite sides of said partition member for deflection voltages below a given value.

3,161,801
DELAY APPARATUS AND METHOD EMPLOYING ELECTRON STREAM

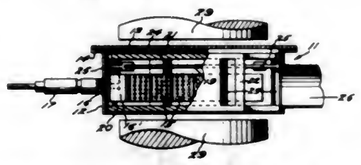
Joseph Stevens Allen, 87 Rosewood Drive, Atherton, Calif.
Filed Mar. 31, 1960, Ser. No. 19,013
9 Claims. (Cl. 315—39.3)



1. A delay apparatus for introducing a variable delay to a signal comprising means forming an electron stream, means for modulating the stream in accordance with the signal to be delayed, means for deflecting the electron stream, an elongated delay means adapted to delay a signal applied thereto by an amount dependent upon the point of application of the signal to the same, said elongated delay means being disposed to receive said electron stream, said deflection means serving to control the point of impingement of the electron stream on the delay means to thereby control the delay introduced by the delay means, and a shield surrounding said delay means and including a longitudinally extending slot through which the electron stream passes to strike the delay means, and means carried adjacent said slot and serving to emit light when the stream of electrons strikes the same to thereby provide means for aligning the delay means.

3,161,802
SPUTTERING CATHODE TYPE GLOW DISCHARGE DEVICE VACUUM PUMP

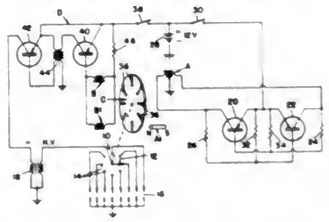
Robert L. Jepsen, Los Altos, and Louis Malter, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 30, 1960, Ser. No. 40,111
2 Claims. (Cl. 315—111)



1. A glow discharge sputter ion vacuum pump apparatus including: a vacuum tight envelope adapted to be connected to a structure it is desired to evacuate; an apertured anode electrode defining a glow discharge passageway therethrough contained within said envelope; a solid sputter cathode electrode disposed on one side of said anode electrode and contained within said envelope; a solid collector cathode electrode disposed on the opposite side of said anode electrode and contained within said envelope; an apertured sputter cathode electrode disposed between said anode and said collector cathode electrodes; means for applying operating potentials to said anode, sputter cathode and collector cathode electrodes for initiating and maintaining a glow discharge, said collector cathode electrode being maintained at a potential intermediate with respect to said anode and sputter cathode electrode potentials, whereby ions from said glow discharge striking said collector cathode will cause very little sputtering therefrom; and means for producing and directing a magnetic field through said anode, sputter cathode and collector cathode electrodes so as to enhance said glow discharge.

3,161,803
IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINE

Walter F. Knittweis, 3122 Knorr St., Philadelphia, Pa.
Filed Nov. 2, 1961, Ser. No. 149,549
9 Claims. (Cl. 315—209)

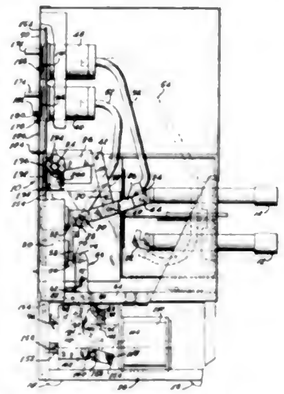


1. In an ignition system for an internal combustion engine having a plurality of spark plugs and a rotatable distributor communicating therewith, a high voltage pulse generator comprising a conductive disk rotatable with the distributor and having a plurality of circumferentially-spaced slits radially extending therein from a medial annulus to the periphery thereof, magnetic field inducing means laterally spaced from one side of said disk and registering with the annular circle developed by the slits, magnetic pick-up means laterally spaced from the other side of said disk and inductively coupled with said inducing means as each slit is rotated therebetween, and means applying electrical pulses induced in said pick-up means to the distributor, said magnetic field inducing means including both a permanent magnet and independently thereof a coil having high frequency electrical oscillations applied thereto, said electrically oscillating coil acting as a source for supplying voltage at low engine speed and said magnet being operative for supplying voltage at high engine speed, whereby a synchronized high voltage pulse of constant amplitude at all engine speeds will be delivered to the spark plugs at regular intervals without the necessity of breaker points.

3,161,804
GROUND TESTING DEVICE

Thomas F. Guinan, Scranton, Pa., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Sept. 16, 1959, Ser. No. 840,369
14 Claims. (Cl. 317—99)

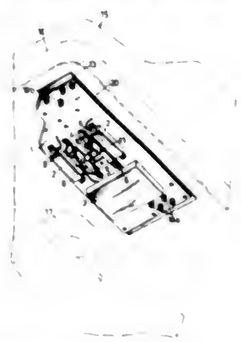
1. In a ground testing device for insertion into a companion cell, a frame structure having a plurality of contact members, a selector switch operable to engage a selected one of said contact members, a plurality of test sockets having test ports mounted in said structure, one of said sockets being electrically connected to one of said contact members and another one of said sockets being electrically connected to said selector switch, one of said test sockets having a shutter for controlling the opening and closing of the test port thereof, a grounding switch mounted in said structure and adapted for electrical connection to said selector switch for grounding a selected contact member, and mechanical interlocking means for



said shutter operatively connected to and extending between said grounding and selector switches, said interlocking means conditioning said shutter for release to open said test port in predetermined positions only of said grounding and selector switches.

3,161,805
CIRCUIT ASSEMBLY FOR ELECTRICAL OFFICE MACHINES AND THE LIKE

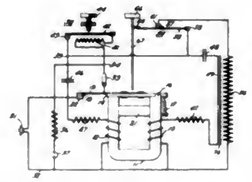
Ludwig Hackler, Wilhelmshaven, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany, a corporation of Germany
Filed Sept. 7, 1962, Ser. No. 222,160
Claims priority, application Germany, Sept. 8, 1961, O 8,252
4 Claims. (Cl. 317—101)



1. An assembly of circuit elements for office machines and the like, comprising a mounting plate with printed circuitry on one side, a set of circuit elements including two spaced-apart groups of terminals on the other side of said plate, said circuit elements further including reactance means and mechanically operable switch means for selectively connecting said reactance means between said groups of terminals, leads extending through said plate and connecting said circuit elements to different portions of said printed circuitry, and a cover plate adjacent said mounting plate overlying said printed circuitry, said plates being provided with registering cutouts accommodating an actuating element for said switch means.

3,161,806
CONTROL DEVICE AND CIRCUITS FOR ELECTRIC BEDCOVERS

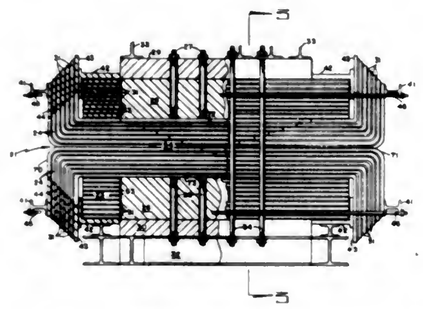
Walter H. Gordon, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York
Filed Mar. 6, 1961, Ser. No. 93,766
7 Claims. (Cl. 317—132)



3. In an alternating current electrically protective control circuit, a relay having a U-shaped core and an armature movable toward and away from said core between open and closed positions, means biasing said armature away from said core to its open position, a work circuit energized when said armature is engaged against said core in closed position, a permanent magnet associated with said core to provide a magnetic force sufficient to maintain said armature against said core and insufficient to move said armature from open to closed position, a pair of alternating current windings on said core arranged to produce simultaneously equal and opposite alternating magnetic flux while said armature is in the closed position and while operation is normal, an impedance circuit associated with each of said windings, means to modify the value of at least one element in one of said impedance circuits upon an abnormal condition, whereby a net alternating flux is produced in said core to reduce magnetic flux in said core during an alternation to a point at which said biasing means moves said armature to an open position.

3,161,807
COIL ASSEMBLY FOR AN ELECTRIC MAGNET

Thomas R. Brogan, Arlington, and John W. Lothrop, Essex, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 1, 1961, Ser. No. 92,537
8 Claims. (Cl. 317—158)



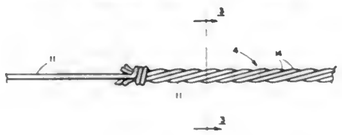
1. An electric magnet comprising: a conducting winding having a plurality of center turns disposed between a plurality of end turns, oppositely disposed portions comprising the entire cross section of said center turns extending past the outer periphery of said end turns and being bent aside out of the plane of said turns to provide openings in said winding, said end turns being coplanar with the unbent portion of said center turns and located inwardly of and spaced away from the said oppositely disposed portions of said center turns;

and means to prevent displacement of said turns when said winding is connected to and disconnected from a source of current.

3,161,808
ARRANGEMENT FOR ELECTRICAL CONNECTIONS

Hans E. Tromholt, Monrovia, Calif., assignor to Leach Corporation, Compton, Calif.

Filed July 24, 1961, Ser. No. 126,016
7 Claims. (Cl. 317—158)

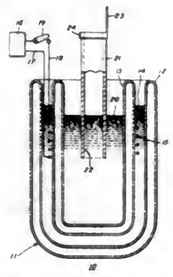


1. In combination with a relatively fine wire, an arrangement for connecting said relatively fine wire into an electrical circuit comprising a multiple strand cable of individual wires, one end of said cable being twisted together with an end of said relatively fine wire to form a unitary woven connection, the opposite end of said multiple strand cable being attachable in an electrical circuit.

3,161,809
HIGH FIELD SUPERCONDUCTIVE DEVICE

Paul S. Swartz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 14, 1962, Ser. No. 202,516
2 Claims. (Cl. 317—158)



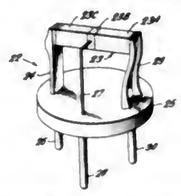
1. An apparatus comprising a high field superconductive body having an aperture therethrough, means to produce a constant magnetic field generally parallel to the axis of said body aperture within successive adjacent portions of said aperture, and means to cool simultaneously associated successive adjacent portions of said body below their critical temperature.

3,161,810
TEMPERATURE COMPENSATED TRANSISTOR

Gerald R. Broussard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 11, 1959, Ser. No. 858,874
2 Claims. (Cl. 317—234)

1. A temperature-compensated transistor assembly which includes header means; a plural layer transistor element comprising collector, base, and emitter zones; a rigid tab connected in ohmic contact with one of the end surfaces of said transistor, said tab being mounted to secure said surface in spaced relationship with said header; and a temperature-responsive formed spring tab connected in ohmic contact with the other end surface of said transistor and mounted to maintain said other end surface in spaced relationship with respect to said header, said spring tab being adapted to experience changing degrees of flexure with changing temperatures in order to

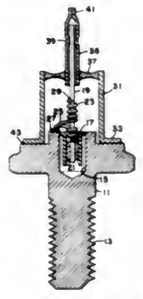


provide a varying longitudinal compressive stress on said transistor.

3,161,811
SEMICONDUCTOR DEVICE MOUNT

Elmer G. Brown, Mountain View, Calif., assignor, by mesne assignments, to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 15, 1960, Ser. No. 8,619
2 Claims. (Cl. 317—234)

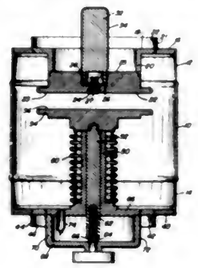


1. A mount for semiconductor devices comprising a header having a semiconductive element thereon, said header having an indentation therein, an electric insulator within said indentation, a lead disposed in said indentation and mounted on said insulator, a spring having a coiled portion and a radial extension from said coiled portion, said extension being intermediate the ends of the coiled portion, said coiled portion being disposed about said lead and having one end seated on said insulation, and said extension being in resilient contact with said element.

3,161,812
VACUUM VARIABLE CAPACITOR

John T. Perry, Melrose Park, and Chester J. Kawiecki, Chicago, Ill., assignors to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed Feb. 4, 1963, Ser. No. 255,788
4 Claims. (Cl. 317—245)



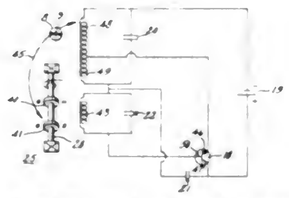
1. A variable, vacuum capacitor comprising an evacuated envelope comprising a tubular, glass wall portion,

a pair of tubular glass-to-metal seal elements sealed one to each of the opposite ends of said glass wall portion,
a first mounting member comprising an annular disc-like porton secured at its outer edge to one of said elements and a flange portion extending inwardly of said envelope from the inner edge of said annular portion coaxially of said glass wall portion,
a fixed capacitor plate comprising a relatively thick conductive body having flat, parallel opposed faces extending at right angles to the axis of said envelope wall portion,
said flange portion being hermetically secured at its inner end to one edge of said capacitor body,
a second mounting member comprising an annular, disc-like portion secured at its outer edge to the other of said glass-to-metal seal elements,
a movable capacitor plate comprising a relatively thick conductive body having a flat face opposed to the inner face of said fixed plate,
a movable capacitor plate support comprising a circular base portion, sealed to the inner edge of said last mentioned disc-like portion, and a tubular guide portion extending coaxially of said base portion inwardly of said envelope,
a bellows surrounding said guide portion and coaxial thereto,
said bellows being sealed at one end to said movable capacitor plate and at its other end to said movable capacitor plate support base portion,
a support rod slidably mounted within said guide portion and secured at one end to said movable capacitor plate,
a cup-shaped cap secured at its periphery to said second mounting member,
and an adjusting element operatively arranged between said cap and said rod for axially moving said rod and said movable capacitor plate.

3,161,813
MAGNETIC OSCILLATOR CONTROLLED MOTOR

George L. de Wolf, Ithaca, N.Y., and Reade Williams, Pittsburgh, Pa., assignors to General Electric Company, a corporation of New York

Filed July 30, 1962, Ser. No. 213,341
10 Claims. (Cl. 318—138)

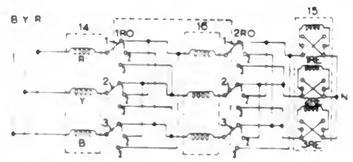


5. In a clock, the combination of a motor having a permanent magnet rotor for driving a clock, a direct current energy source, electronic oscillating means connected to said energy source and said motor for converting said direct current into an oscillating power supply for driving said motor, a mechanical oscillator having a relatively accurate natural frequency of oscillation close to the frequency of oscillation of said electronic oscillator, permanent magnet means positioned on said mechanical oscillator, said permanent magnet means being positioned in inductive relation with respect to said motor so that the changing magnetic fields produced by said permanent magnet motor cause said mechanical oscillator to oscillate, a pickup coil connected to said electronic means and positioned in flux inducing relation with said permanent magnet means so that the mechanical oscillator supplies signals to said electronic means to synchronize the oscillation of said power supply in accordance with the frequency of oscillation of said mechanical oscillator whereby said clock is driven at an accurate rate.

3,161,814
ALTERNATING CURRENT MOTOR

Frederic Calland Williams, Romily, Eric Roberts Laithwaite, Cheadle, and John Frederick Eastham, Preston, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Mar. 27, 1961, Ser. No. 98,437
Claims priority, application Great Britain Mar. 31, 1960
8 Claims. (Cl. 318—224)

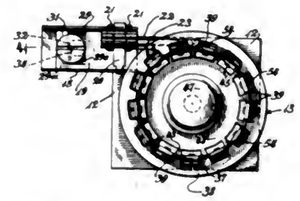


1. An induction machine comprising a first slotted structure, a primary winding accommodated in slots of said first slotted structure, a second slotted structure movable with respect to said first slotted structure, a secondary winding accommodated in the slots of said second slotted structure and electromagnetically coupled to said primary winding, said primary winding consisting of at least first and second sets of coils which overlap so that the magnetomotive force in at least some of the slots of said first slotted structure is generated by the addition of the magnetomotive forces caused by current flow in the conductors of coils of said first and second set, each of said sets of coils being so wound that the magnitude of the current flow in the conductors in the slots of said first slotted structure due to the coils of one set is a single-valued function of the distance along the arc of said first slotted structure occupied by said one set of coils, a three-phase alternating current supply and switching means for connecting different phases of the current supply in different combinations to corresponding coils of said sets of coils to enable different predetermined values of the average phase difference between the currents in adjacent slots to be obtained.

3,161,815
AUTOMATIC TELEVISION CHANNEL SELECTOR

Bernard R. Kuhl, Arlington Heights, and Joseph A. Carlson, Glen Ellyn, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware

Filed July 12, 1960, Ser. No. 42,377
7 Claims. (Cl. 318—467)



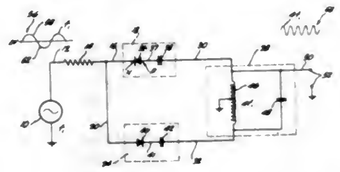
1. An automatic television channel selector comprising: a tuning circuit with a channel selector switch associated therewith; a control knob attached to said switch; means for rotating said selector switch to different channel positions including a motor drivingly connected to said switch, a means for controlling the operation of said motor including a momentary starting contact and a spring leaf switch, said spring leaf switch mounted in-

dependently of said channel selector switch and having one leaf in contact with the surface of said control knob and riding thereon; and means for automatically operating said spring contact switch including at least one cam clip mounted on the periphery of said control knob and engaging the upper leaf of said spring contact switch as the control knob is rotated.

3,161,816
PARAMETRIC EVEN HARMONIC FREQUENCY MULTIPLIER

Don R. Holcomb, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 29, 1960, Ser. No. 11,667
4 Claims. (Cl. 321—69)



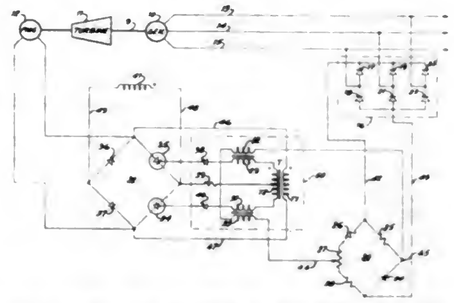
1. A frequency multiplier circuit comprising: a signal generator for providing a driving signal at a fundamental frequency, first variable reactance means having a non-linear reactance vs. voltage characteristic coupled to said generator for developing current signals at even and odd harmonic frequencies of said fundamental frequency, second variable reactance means having a non-linear reactance vs. voltage characteristic coupled to said generator for developing current signals at even and odd harmonic frequencies of said fundamental frequency, with the odd harmonic signals developed by said first and second reactance means being in phase with each other and the even harmonic signals developed by said first and second reactance means being 180° out of phase with each other, means for maintaining both said first and second reactance means non-conductive of direct current during the entire cycle of said driving signal, and tank circuit means resonant at a preselected even harmonic frequency of said fundamental frequency for developing output signals at said preselected frequency, said tank circuit means including means for canceling the odd harmonic signals and combining the even harmonic signals developed by said first and second reactance means.

3,161,817
MEANS FOR SUPPLYING FULL WAVE RECTIFIED CURRENT TO THE FIELD OF AN A.C. GENERATOR

Harold G. Carlson, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Apr. 18, 1961, Ser. No. 103,773
6 Claims. (Cl. 322—28)

4. In a regulating system for a three-phase alternating current generator having a field winding, the combination of a three-phase rectifier adapted to be connected to the output of said generator and responsive to the voltage produced thereby to yield direct current voltages proportional to the output voltages thereof, a voltage reference bridge including means for providing a predetermined voltage level for comparison with said D.C. voltages, said voltage reference bridge being adapted to produce a voltage proportional to the magnitude of variation between said predetermined voltage level and said direct current voltages, a self-saturating magnetic amplifier having direct current control windings energized by said voltage conditions for modifying the degree of saturation thereof by an order of magnitude determined by the amplitude of the current therein, a constant source of alternating current, means responsive to said alternating current for supplying rectified alternating current to said magnetic amplifier having a polarity to increase saturation thereof, a full wave rectifying bridge circuit connected to said field winding, said full wave rectifying

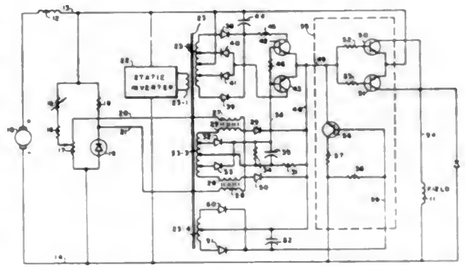


bridge circuit being supplied by said alternating current source and having normally blocked unidirectional current conducting means in each rectifying path, and means operative in response to saturation of said magnetic amplifier for unblocking said unidirectional current conducting means.

3,161,818
TRANSISTOR SWITCHING CIRCUIT UTILIZING VARIABLE IMPEDANCE BIASING MEANS

Harold H. Britten and Henry W. Gayek, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed Oct. 4, 1961, Ser. No. 142,797
1 Claim. (Cl. 322—28)



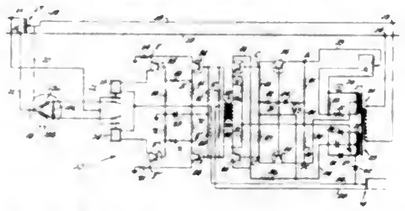
In a voltage regulating circuit for controlling the energization of a generator field in accordance with the output voltage at the terminals of the generator, transistor means having emitter, collector, and base electrodes, said emitter and collector electrodes being serially connected with said generator field across the terminals of said generator, a low impedance, a transistor having its emitter and collector electrodes serially connected with said low impedance between the base electrode of said transistor means and the junction between said generator field and said generator terminal, means for rendering said transistor conductive even in response to the output voltage developed entirely due to residual magnetism in said generator field, inversion means connected across the terminals of said generator operative in response to output voltages above a predetermined level to produce an alternating voltage, means operative in response to said alternating voltage to produce signals every half cycle thereof at a time determined by the magnitude of said output voltage, first control means operative in response to said alternating voltage to render said transistor nonconductive, second control means

initially operative in response to said alternating voltage to render said transistor means nonconductive and further operative upon occurrence of said signals to render said transistor means conductive.

3,161,819
AUTOMATIC ELECTRIC POWER REGULATOR

Allen R. Perrins, Cheshire, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Mar. 14, 1960, Ser. No. 14,764
9 Claims. (Cl. 323—47)



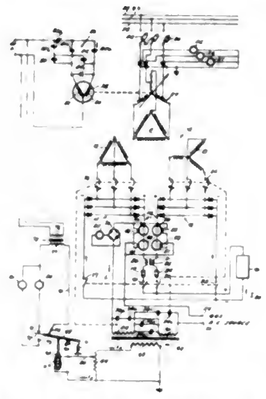
1. An automatic power regulator for providing a selected value of output power, comprising input terminals; output terminals; regulating means interconnected therebetween including one circuit which when energized increases the output power and a second circuit which when energized decreases the output power to maintain the selected value of output power; sensing means for producing a signal indicative of the magnitude and direction of the deviation of the output power from the selected value; means for amplifying the signal including a first pair of transistors connected to the sensing means for primarily amplifying the voltage of the signal and a second pair of transistors connected to receive the output of the first pair of transistors for primarily amplifying the current of the signal; an isolation transformer having a primary winding connected to receive the output of the second pair of transistors and a secondary winding; a source of pulsating direct current; a trigger circuit for each of the circuits in the regulating means, each trigger circuit comprising a pair of transistors, means for applying the pulsating direct current voltage in the emitter-base circuit of one of the transistors to normally cause conduction in its emitter-collector circuit, means connecting the other transistor to the one transistor to cause conduction through the emitter-collector circuit of the other transistor upon a decrease in conduction in the emitter-collector circuit of the one transistor, means connecting the emitter-collector circuit of the other transistor to one of the circuits of the regulating means to cause energization thereof upon conduction through the emitter-collector circuit of the other transistor; and means connecting the secondary winding in the emitter-base circuits of the one transistors whereby a signal which is of the opposite polarity to the pulsating direct current renders one of the one transistors non-conducting in its emitter-collector circuit causing its associated other transistor to be conducting in its emitter-collector circuit to cause energization of its associated regulating circuit.

3,161,820
FEED-BACK CONTROL SYSTEM

Walter V. Chumakov, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 28, 1961, Ser. No. 134,415
18 Claims. (Cl. 323—66)

1. A feed-back control system; said feed-back control system comprising a first and second device operable to drive a common output system, a first and second switching means for said first and second device for selectively connecting and disconnecting said first and second device to said common output system, a regulator means connected to said first and second devices and said output system for adjusting the output of said first and second devices in accordance with a predetermined parameter of said output system, a regulator control means for controlling the level of operation of said first and second devices, and a regulator level control means; said regulator level control means being operable to change said level

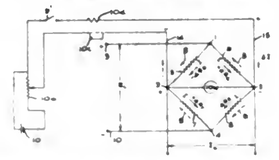


of operation of said regulator independently of said regulator control means from a first level to a second level; said regulator level control means being operatively connected to said first and second switching means; said regulator level control means changing said level of operation of said regulator to said first level when only one of said first and second devices are connected to said output system, and to said second level when both of said first and second devices are connected to said output system.

3,161,821
WHEATSTONE BRIDGE TRANSDUCER CIRCUITS WITH EXTERNAL BALANCING MEANS

John Francis Price, Van Nuys, and Gerald Richard Curtis, La Canada, Calif., assignors to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

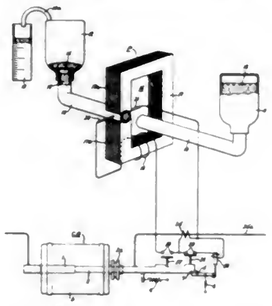
Filed July 2, 1962, Ser. No. 206,777
13 Claims. (Cl. 323—75)



2. In combination, a Wheatstone bridge circuit comprising a Wheatstone bridge and means to change the impedance of at least one of the arms of said bridge to unbalance said bridge at the output corners of said bridge, said circuit including means for connecting a source of excitation current to the input corners of said bridge, a second current source electrically connected through a resistance to at least a part of at least one of said arms of said bridge, a pole of said second current source being connected to one of the output corners of said bridge said pole being of potential higher than and of opposite sign to the polarity existing at said one output corner of said bridge, said resistance being greater in value than the impedance of said bridge, and of magnitude sufficient to

reduce the potential at said pole to a potential substantially equal to and of opposite sign to the potential at said one of the output corners of said bridge to modify the current in said bridge, passing through said bridge from said excitation current source to substantially remove the voltage unbalance of said bridge resulting from said impedance change, and means responsive to a function of said current from said second named current source and to the degree of said impedance change.

3,161,822
ELECTRIC INTEGRATING APPARATUS FOR INTEGRATING A VARIABLE ELECTRIC QUANTITY
August L. Streater, Broomall, Pa., assignor to General Electric Company, a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,274
11 Claims. (Cl. 324—28)

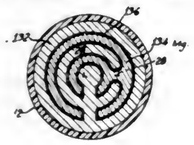


1. In combination, an electric circuit interrupting device including a pair of separable contact members between which an arc may be drawn, integrating means responsive to current traversing said contacts during a series of spaced time intervals for providing an indication proportional to the summation of the integrals

$$\int_0^T I^n dt$$

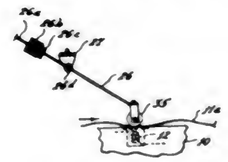
for the individual time intervals, where I^n is a function of the current I traversing said contacts and T is the period of time over which the current I flows in a given interval, and means responsive to relative position of said contacts for rendering said integrating means operable only when said contacts are separated, said integrating means being operable to add to the previously-existing indication in response to currents traversing said contacts during a given interval irrespective of whether the current during said given interval is less than during a preceding interval that said integrating means responded to.

3,161,823
DEVICE FOR TESTING THE CONCENTRATION OF AN ELECTROLYTE IN SOLUTION
Felix E. Ulthoven, 268 Spruce St., West Hempstead, N.Y.
Filed Apr. 23, 1963, Ser. No. 275,007
1 Claim. (Cl. 324—29)



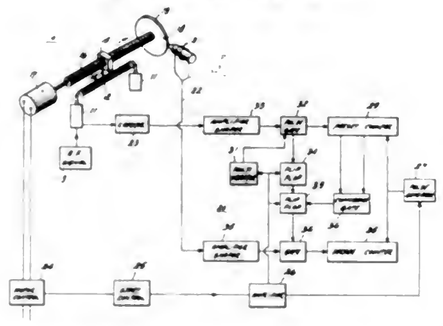
A device for testing the concentration of an electrolyte in solution comprising a hand manipulatable substantially hollow body open at one end thereof, an ammeter in said body at an end thereof remote from said open end, said ammeter having two terminals, two relatively insulated electrical conductors each connected with a respective one of said terminals and extending in said body from said ammeter to said open end, an insulating electrode support of non-conductive material in said body and closing said open end thereof to retain said hollow body fluid tight to prevent the passage of fluid into said body from said open end and the shorting of said terminals, said electrode support and said open end of said body forming a planar horizontally disposed immersion end, said electrode support having two sets of recesses defined therein, one set of said recesses forming a plurality of arcs, another set of said recesses forming a plurality of discontinuous arcs which partially encompass said one set of arcs, said sets of recesses being defined in the end of said electrode support facing in the direction of the open end of said body and recessed inward from the open end of said body and from said planar horizontally disposed immersion end, two electrodes of dissimilar electrically conductive material each connected with a respective one of said conductors, each of said electrodes being contained within a respective one of said sets of recesses and conforming to the set of discontinuous arcs thereof with one of said electrodes being partially encompassed by a discontinuous arcuate portion of another of said electrodes, each of said electrodes having a single exposed surface, said support means insulating each of said electrodes from the other, and each electrode having a flat elongated surface defined in planar horizontal alignment with said planar horizontally disposed immersion end to insure their simultaneous and equal immersion at their single exposed surface for contact with the electrolyte to test the concentration thereof.

3,161,824
METHOD AND APPARATUS UTILIZING A MAGNETIC ARMATURE AND SENSING COIL FOR DETERMINING FLATNESS
Harry Eugene Brys, Butler, Pa., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed June 23, 1958, Ser. No. 743,633
4 Claims. (Cl. 324—34)



4. The method of measuring the deviation of a metallic strip having substantial air permeability from an arbitrary standard of flatness, which comprises providing an inductive sensing device having a neutral response when no metallic strip is in proximity thereto, passing said strip, free from flattening influence thereon, over said sensing device, causing a body having magnetic permeability to ride on said strip over said sensing device without substantially affecting the flatness of said strip, to cause said sensing device to respond to the inductance generated therein by said body, the proximity being such that the inductance generated by said body at a given point is linearly related to the distance between said strip at said given point and said sensing device, and indicating the inductive response of said sensing device.

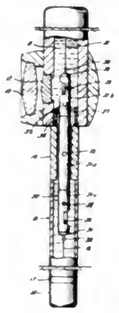
3,161,825
APPARATUS FOR TESTING WAVE TRANSMISSION LINES INCLUDING HELICAL TRANSMISSION LINE AND WAVE DISTORTING MEANS
George F. Wilkinson, Jr., Bethlehem, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 27, 1960, Ser. No. 5,047
4 Claims. (Cl. 324—58)



1. Apparatus for measuring the axial wave length of a wave transmission line comprising:
a wave interaction circuit,
means for supplying a high frequency signal to one end of said circuit for propagating wave energy therealong,
radio-frequency field distorting means positioned adjacent said circuit for producing predetermined wave reflections exhibiting half-wave length maxima and minima values of signal amplitude,
means for moving said field distorting means along a path parallel to the axis of said circuit during a measuring operation,
means electrically coupled to said circuit for recording the number of cycles of said reflected waves, said last-mentioned means including a preset counter for counting a predetermined number of said reflected wave cycles, and
circuit means responsive to the operation of the moving means for recording the distance traveled by the distorting means while simultaneously a predetermined number of cycles is recorded by the cycle recording means, said circuit means including signal producing means providing a pulse for each predetermined increment of travel of said field distorting means, and a counter under the control of said preset counter and responsive to said signal producing means for counting the number of pulses produced by said last-mentioned means during a predetermined number of wave reflections counted by said preset counter.

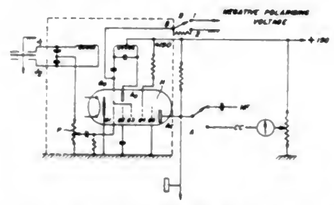
3,161,826
FLUID IMMERSED MIRROR GALVANOMETER WITH BALANCED SUSPENSION ASSEMBLY
Maxime Felix Benoit Picard, Levallois, France, assignor to Société de Prospection Electrique, Procédés Schlumberger, Paris, France, a corporation of France
Filed May 8, 1961, Ser. No. 108,381
Claims priority, application France May 12, 1960
9 Claims. (Cl. 324—97)

1. In a galvanometer having a liquid-filled housing and a suspension assembly suspended therein, an improved suspension assembly comprising: an elongated cylindrical body member of non-magnetic material; a coil winding mounted on the body member within the cylindrical confines thereof and so that the center of the coil coincides with the center of gravity of the body member; a mirror mounted on the body member adjacent one end thereof and to one side of the longitudinal center axis of the body member; means mounted on the body member adjacent the other end thereof on the other side of the longitudinal axis of the body member for counterbalancing the mirror; a pair of balancing weights adjustably mounted in the



body member, one near one end and the other near the other end thereof, for aligning the center of gravity of the suspension assembly with the center of thrust of the coil winding; and terminal means located at the two ends of the body member for enabling suspension of the body member in the galvanometer housing.

3,161,827
ELECTRICAL APPARATUS FOR SUCCESSIVE MEASUREMENT AND SIMULTANEOUS INDICATION ON AN OSCILLOSCOPE OF A PLURALITY OF INPUTS TOGETHER WITH A FIXED REFERENCE
Pierre Buisson, 16 Ave. Victor Hugo, Vanves, Seine, France
Filed July 10, 1959, Ser. No. 826,159
12 Claims. (Cl. 324—121)



1. An electrical system for the successive measurement and the simultaneous visual indication of a plurality of variable quantities together with at least one fixed reference quantity, in which one channel is provided for each said quantity, said system comprising: a device in each variable-quantity channel for converting the variations of said quantity to electrical values, said converting device including a Wheatstone bridge circuit the ratio of which is varied in dependence on the variations of the quantity considered; a Wheatstone bridge circuit in each reference-quantity channel, said bridge circuit having a fixed ratio; each of said channels including an oscillation generator, coupling means for applying high-frequency oscillations from said generator across one diagonal of said bridge circuit, an electronic tube, means for applying the oscillatory voltage from the other diagonal of said bridge to one grid of said tube, and direct coupling means for applying the oscillations from said generator to another grid of said tube; blocking means for simultaneously closing all said channels except one, and switching means for rendering said channels operative in succession, one at a time; an oscilloscope device having scanning plates and deflecting plates and a scanning-voltage generator coupled to said scanning plates; and means for selectively and

successively coupling said deflecting plates to the outputs of said successively-operative channels, the return trace of the scanning beam being utilized to indicate a reference quantity, whereby there is formed on the screen of said oscilloscope an image representing a closed curve, of which all the horizontal lines are significant and which each represent a quantity to be measured or a reference quantity, irrespective of the magnification employed and of the position of said image on said screen.

3,161,828
COMMUNICATION SYSTEM EMPLOYING PHASE SHIFTERS AND QUANTIZERS TO REDUCE NOISE

Kenneth W. Cattermole, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1961, Ser. No. 148,966
Claims priority, application Great Britain, Nov. 16, 1960, 39,385/60
20 Claims. (Cl. 325—42)

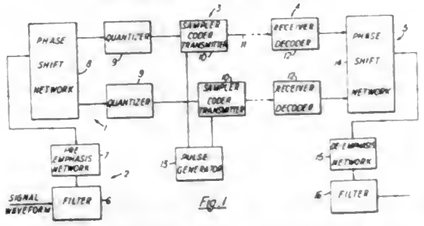


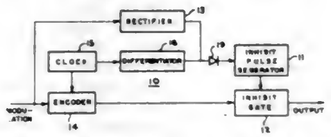
Fig. 1

3. A signal transmission system comprising a source of signal waveforms, a phase shift network coupled to said source to produce a plurality of said signal waveforms phase displaced with respect to each other, means coupled to said phase shift network to maintain the information contained in each of said phase displaced signal waveforms substantially independent, means coupled to said maintaining means to convert each of said phase displaced signal waveforms into a pulse signal, means coupled to said converting means to transmit said pulse signals, means to receive said transmitted pulse signals, means coupled to said receiving means to translate said pulse signals to said phase displaced signal waveforms, and means coupled to said translating means to recombine said phase displaced signal waveforms into an approximation of said signal waveforms.

3,161,829
DEVICE FOR PREVENTING TRANSMISSION OF PULSE POSITION MODULATED ENERGY IN ABSENCE OF MODULATOR INPUT

Charles H. Schulman, Orlando, Fla., assignor to Martin-Marietta Corporation, a corporation of Maryland

Filed Sept. 5, 1961, Ser. No. 136,075
15 Claims. (Cl. 325—152)

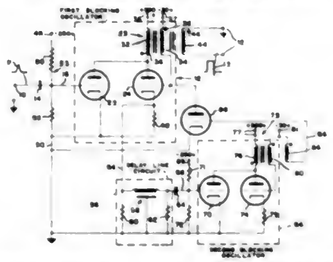


3. A modulation- operated switch for use with a pulse position modulated transmitter, said switch comprising a gate for receiving a stream of position modulated pulses, an inhibit pulse generator connected to said gate for controlling the operation of said gate, said generator normally generating inhibit pulses in coincidence with unmodulated pulses, timing means for assuring the coincidence of said inhibit pulses with unmodulated pulses of said stream, said inhibit pulses preventing the passage of unmodulated pulses through said gate, said gate allowing the passage of modulated pulses by virtue of their time change of position with respect to said inhibit pulses.

3,161,830
PULSE GENERATOR FOR DEVELOPING PULSES OF PREDETERMINED WIDTH AND SHORT FALL TIME

Edward B. Frysinger, Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 15, 1959, Ser. No. 859,814
8 Claims. (Cl. 328—34)

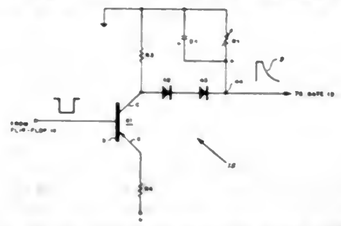


8. A pulse generator comprising a source of trigger signals, delay means, blocking oscillator means coupled between said source of trigger signals and said delay means, said blocking oscillator means developing a first and a second pulse and applying said first pulse to said delay means to form a delayed pulse, control means coupled to said delay means to develop a control signal in response to said delayed pulse, and controllable impedance switching means coupled between said control means and said blocking oscillator means for decreasing its impedance in response to said control signal to deenergize said blocking oscillator means to terminate said second pulse with a fast fall time.

3,161,831
ACOUSTICAL NOISE PULSE SIMULATOR

Samuel Pure, Rydal, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 22, 1961, Ser. No. 161,749
7 Claims. (Cl. 328—67)
(Granted under Title 35, U.S. Code (1952), sec. 266)

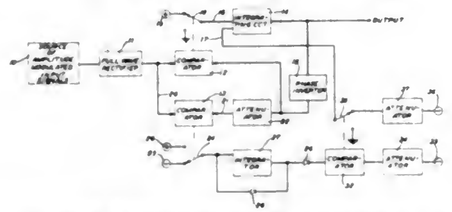


7. A circuit for generating electrical noise pulses simulating acoustical noise pulses generated by a direct blast and the blast echo from a target used in blast echo ranging equipment, comprising in combination:
first means generating an exponentially decayed pulse having the shape of an acoustical noise pulse,
noise frequency generating means for generating a wide band frequency having the frequency characteristics of an acoustical noise pulse,
modulating means connected to said first means and said noise frequency generating means modulating said wide band frequency in accordance with said exponentially decayed pulse,
second means providing a noise pulse,
said second means including third means for varying the time of occurrence of said noise pulse with respect to said exponentially decayed pulse,
output means connected to said modulating means and said second means providing said modulated wide band frequency pulse and said noise pulse as a pulse pair output.

3,161,832
FAST-ACTING ENVELOPE DETECTOR

Robert E. La Marche, Berkeley Heights, and Carl F. Simone, Florham Park, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 22, 1962, Ser. No. 204,516
3 Claims. (Cl. 329—178)

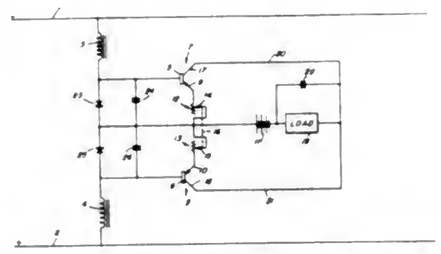


1. A fast-acting envelope detector comprising, in combination, a source of amplitude modulated carrier input signals, an integrating circuit, means connected between said source of input signals and said integrating circuit to detect when the peak voltage of said source of input signals exceeds the output voltage of said integrating circuit, means responsive to said detection means to increase the output voltage of said integrating circuit when the peak voltage of said input signal exceeds the output voltage of said integrating circuit, second detection means to detect when said peak voltage of said input signal is less than the output voltage of said integrating circuit and to predict the new peak voltage of said input signal, and means responsive to said second detection means to reduce the output voltage of said integrating circuit to the new predicted value of said peak voltage of said input signal when the peak voltage of said input signal falls below the output voltage of said integrating circuit.

3,161,833
NON-POLARIZED D.C. TRANSISTORIZED TELEMETERING AMPLIFIER

Edward Joseph Ross, McKeesport, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 18, 1961, Ser. No. 132,396
5 Claims. (Cl. 330—24)

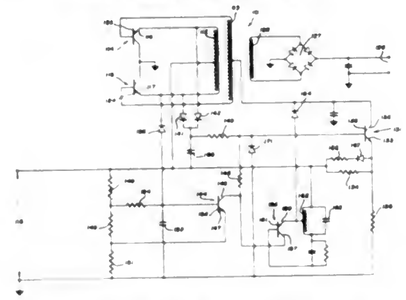


1. A non-polarized D.C. amplifier comprising a pair of semiconductor devices of the same conductivity type, each including base, emitter and collector circuits, load circuit means including a source of potential for operating said semiconductor device, said collector circuits coupled in common to one side of said load circuit means, said emitter circuits coupled in common to the other side of said load circuit means, A.C. choke means connected individual to the base circuit of each of said semiconductor devices, input circuit means connected to the other ends of said A.C. choke means, unidirectional conducting means connected between the base and emitter circuits of each of said semiconductor devices with the direction of conduction of each opposite to that of the associated semiconductor device, and one of said unidirectional conducting means and the opposite semiconductor device disposed to conduct to energize said load circuit means upon presence of a D.C. voltage of one polarity on said input circuit means and the other of said unidirectional conducting means and its opposite semiconductor device disposed to conduct to energize said load circuit means upon presence of a D.C. voltage of opposite polarity on said input circuit means.

3,161,834
PROTECTION CIRCUIT FOR TRANSISTOR POWER SUPPLY

Atherton Noyes, Jr., Mountain Lakes, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey

Filed Oct. 7, 1960, Ser. No. 61,121
6 Claims. (Cl. 331—62)



1. In combination with a transistor oscillator having a pair of transistors connected in a push-pull oscillating circuit with a saturable core reactor and a source of unidirectional current, a sensing device coupled to the oscillating circuit for detecting a decrease in the amplitude of oscillations thereof and switch means between the source of unidirectional current, said switch means being electrically coupled to and actuated by said sensing device on a decrease in the amplitude of oscillation in the oscillating circuit for disconnecting the oscillator circuit from said source of unidirectional current, and a normally inoperative source of reverse bias potential, said source of reverse bias potential being rendered operative and applied to at least one electrode of each of the transistors in said oscillator circuit on actuation of said switch means by said sensing device.

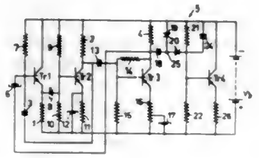
3,161,835
OSCILLATOR CIRCUIT FOR DETECTING IRREGULARITIES IN YARNS

Albert Charles Leenhouts, Wakefield, Mass., and Jacob van Wilgen, Albert Cornelis Lampe, and Jan Nijmeyer, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 9, 1961, Ser. No. 143,935
8 Claims. (Cl. 331—65)

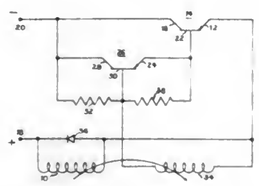
1. Apparatus for detecting variations in a filamentary material, comprising an oscillator circuit having an input

circuit and an output circuit, a feedback circuit comprising a measuring capacitor coupled to said input circuit and said output circuit thereby to generate an alternating voltage of a given frequency at said output circuit, said measuring capacitor comprising two electrode plates spaced apart and adapted for passage of said filamentary material therebetween, said capacitor undergoing variations in capacitance as determined by variations of said filamentary material thereby to produce variations of the amplification of said oscillator circuit and variations of



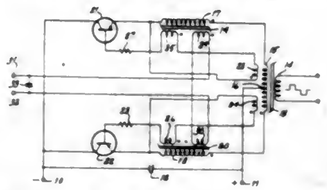
the amplitude of said alternating voltage, and means for compensating the variations of said amplification comprising an output impedance coupled to said output circuit and comprising a non-linear impedance element having a continuous variation in impedance as determined by the amplitude variations of the alternating voltage applied thereto, said non-linear element providing an amplitude dependent variable load for said oscillator circuit whereby said variations in impedance produce a change in the feedback voltage of said given frequency supplied to said input circuit.

3,161,836
PULSING CIRCUIT
Philip C. Miller, Dayton, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio
Filed Nov. 3, 1960, Ser. No. 67,047
11 Claims. (Cl. 331—112)



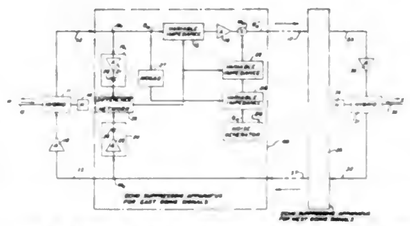
1. A circuit for producing intermittent electrical pulses through an inductive load comprising a first transistor having a collector, a base and an emitter, voltage supply terminals adapted for connection to a voltage source, means connecting said voltage supply terminals and said load in series relation with the emitter-to-collector circuit of said first transistor, a second transistor having a collector, a base and an emitter, means connecting the emitter of said second transistor with the base of said first transistor, means interconnecting the collectors of said transistors, means providing an external control current path between the emitter of said first transistor and the base of said second transistor, and means responsive to increasing and decreasing current flow through said load for increasing and decreasing respectively current flow in said external current path.

3,161,837
SELF-OSCILLATORY DIRECT-CURRENT TO ALTERNATING-CURRENT INVERTERS WITH MAGNETIC AMPLIFIER CONTROLS
Allan G. Lloyd, Newark, N.J., assignor to The Daven Company, Livingston, N.J., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,337
15 Claims. (Cl. 331—113)



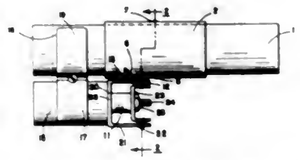
1. A controllable self-oscillatory direct-current to alternating-current inverter comprising an input circuit for energization with unidirectional powder, means providing an alternating current output circuit and including a pair of controllable magnetic amplifiers having amplifier windings and including a pair of conductance-control devices having conductance electrodes serially included with individual ones of said amplifier windings in circuits coupling said input circuit to said output circuit with a polarity of coupling by one of said devices opposite to that of the other and with an average magnitude of coupling in each said polarity controllable by an individual one of said amplifiers, a magnetically saturable core energized alternately to opposite polarities of magnetic saturation by energy supplied through said amplifiers, and feed-back winding means magnetically coupled to said core for developing and applying to conductance-control electrodes of said devices regenerative conductance-control voltages to render said devices alternately and successively conductive and thereby render said inverted self-oscillatory while enabling an operating characteristic thereof to be controlled by control of said amplifiers.

3,161,838
ELIMINATION OF OPERATIONALLY INDUCED NOISE FLUCTUATIONS IN ECHO SUPPRESSOR APPARATUS
James L. Flanagan, Warren Township, Somerset County, and Mark B. Gardner, Chatham Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,161
7 Claims. (Cl. 333—2)



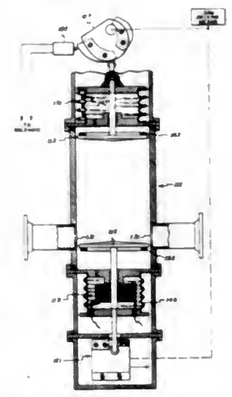
1. In a system for suppressing echoes in a two-way intelligence signal circuit comprising incoming and outgoing one-way paths, means connected in said outgoing path for suspending transmission thereover when transmission is being effected over said incoming path, means for generating noise signals, means for continuously adjusting the level of the noise signals produced by said generator means to a level substantially equivalent to the noise level in said outgoing path in the absence of intelligence signals, and means for smoothly adding said adjusted noise signals to said outgoing path when transmission over said outgoing path is suspended.

3,161,839
MEANS FOR SHIFTING THE PHASE OF POLARIZATION IN HIGH FREQUENCY WAVE GUIDES
David J. Levinson, 5738 Vanalden Ave., Tarzana, Calif.
Filed June 4, 1962, Ser. No. 199,960
11 Claims. (Cl. 333—31)



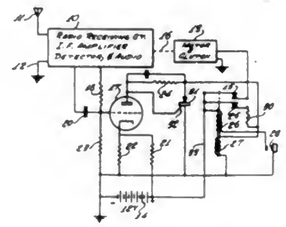
1. In a high frequency radio wave guide, a combination including: a first tube for guiding a polarized wave, a second tube surrounding at least a portion of said first tube and having a slot therein extending at least a few degrees therearound at a non-right angle to the axes of said tubes; a member supported exteriorly of said tubes for longitudinal movement in a direction parallel to the axes of said tubes, said member having a depending boss extending therefrom into the slot in said second tube, said boss acting upon longitudinal movement of said member to impart angular movement to said second tube; and a vane for rotating the plane of polarization of said wave, said vane supported within said first tube and so connected to said second tube through the walls of said first tube that the vane and second tube will rotate together and shift the phase polarization of said wave upon longitudinal movement of said member.

3,161,840
TUNABLE CAVITY RESONATORS
William N. Hoeck and John J. Ryan, Dunedin, Fla., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,244
10 Claims. (Cl. 333—83)



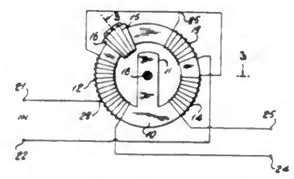
1. A cavity resonator comprising a cylindrical cavity body, movable parallel end walls defining the boundaries of an enclosed electromagnetic field, means for moving one end wall to vary the tuning within a given band of frequencies, and means for moving the second end wall to shift the mode of oscillation without a change in frequency.

3,161,841
AUTOMATIC SIGNAL SEEKING TUNER
Mathew A. Slaats, Livingston, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,575
5 Claims. (Cl. 334—24)



1. An automatic signal seeking tuner for a radio receiving set comprising: a movable means for tuning the set over a predetermined band of frequencies; an electric motor and clutch with coupling means between the clutch and said movable means for changing the tuning; a source of electric power for driving the motor; a relay having a winding which is connected to the power source by a manually operable switch and a pair of contacts connected in series between the source of power and the motor; a semiconductor switching device having two electrodes connected across said relay winding; a normally non-conducting electron discharge device having an anode, a cathode, and a control electrode for sensing the presence of a carrier wave in said set; circuit coupling means between portions of said set and the control electrode for rendering the discharge device conductive when a carrier wave is sensed, and circuit coupling means between the anode and the switching device for short circuiting the relay winding and normalizing the relay when current flows through the electron discharge device.

3,161,842
VARIABLE VOLTAGE TRANSFORMER
Warren Master, Rutherford, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed June 19, 1962, Ser. No. 203,566
11 Claims. (Cl. 336—75)

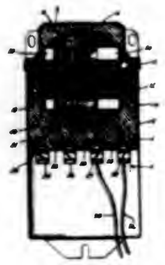


1. A variable voltage transformer comprising: a core of ferromagnetic material having an annular main magnetic portion, a plurality of windings on said annular portion with terminals for connection to a source of alternating current power and a load circuit, said core having at least one magnetic shunt for diverting a part of the flux from the main portion, a rotatable short-circuited winding enclosing said annular core and movable exterior to said plural windings, and means for supporting the short-circuited winding to move it in a circular path.

3,161,843
RESIN-COATED SAND FILLED INDUCTIVE DEVICE

Ralph D. Hodges, Stanley J. Antalis, and Don C. Wood, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Filed Sept. 6, 1960, Ser. No. 54,257
10 Claims. (Cl. 336—96)



1. In a magnetic core and coil assembly having a magnetic core, at least one coil assembly mounted on said core, and a metallic case partially encasing said core and coil assembly and a portion of said magnetic core, the improvement comprising a dielectric and thermally conductive interstitial mass filling the space between said metallic case and said core and coil assembly, said mass being formed of particles of inert material coated with a thermosetting resin coating cured to an infusible state to cohesively join said particles and form interstices of said interstitial mass, the interstices of said mass essentially impregnated with an insulating varnish.

3,161,844
SEMICONDUCTOR BEAM STRAIN GAUGE

Louis J. Kabell, Palo Alto, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed Dec. 5, 1961, Ser. No. 157,112
1 Claim. (Cl. 338—2)

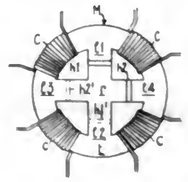


A semiconductor strain gauge comprising a single integral flat piece of monocrystalline semiconducting material divided into two portions with openings therebetween, one portion being a linear portion extending interiorly from a second larger base portion, said base portion surrounding said linear portion, and at least said linear portion having a substantially uniform doping of impurities of one conductivity type; a sensor region diffused into and surrounded by said linear portion, said sensor region having a predominance of impurities of the opposite conductivity type, whereby a PN junction is formed between said sensor region and said linear portion; spaced-apart contact means for making contact with two points on the surface of said sensor, whereby deflection of said linear portion by external forces stresses said sensor to vary its electrical properties in such manner that these variations in electrical properties, measured across said contact means, are proportional to and thus an indication of the magnitude of said forces, said variations being enhanced by the provision of said openings between said portions.

3,161,845
HALL EFFECT APPARATUS

Robert Keith Portway Galpin, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed May 7, 1963, Ser. No. 278,550
Claims priority, application Great Britain May 7, 1962
4 Claims. (Cl. 338—32)

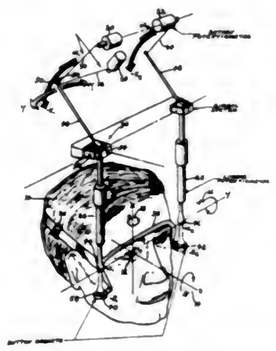


1. Hall effect apparatus comprising a magnetic structure having an outer peripheral portion and two pairs of limbs extending inwardly towards a central region, the limbs of each pair being in alignment with each other along a line substantially at right angles to the line of the other pair, magnetizing coils embracing said magnetic structure at positions appropriate for producing on suitable energization of the coils a rotating magnetic field in said outer portion of the structure and in said central region, and at least one pair of Hall plate devices the two plates of which are accommodated in respective air gaps at such positions in the magnetic structure that the plates of the two devices of the pair will be subjected to respective in-quadrature components of said rotating magnetic field.

3,161,846
HEAD MOTION SENSING SYSTEM

Herbert A. Wagner, 4625 Lindley Ave., Tarzana, Calif., and Stewart C. Brown, Chatsworth, Calif.; said Brown assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 20, 1961, Ser. No. 155,520
(Filed under Rule 47(a) and 35 U.S.C. 116)
5 Claims. (Cl. 338—67)

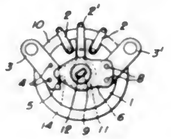


1. A head motion headset apparatus, comprising means adapted to be attached to the brow of a human subject and carried by the head for movement therewith, means coupled to said brow means for sensing the motions thereof, said head motion sensing means being operatively connected to signal generating means for generation of servo control signals.

3,161,847
COMBINED VARIABLE RESISTOR AND SWITCH DEVICES

Takaho Matsunaga, Osaka, Japan, assignor to Sanyo Electric Co., Ltd., Moriguchi-shi, Japan, and Yamano Electric Manufacturing Co., Ltd., Kawachi-shi, Japan, both corporations of Japan

Filed Feb. 19, 1962, Ser. No. 174,162
Claims priority, application Japan Nov. 9, 1961
5 Claims. (Cl. 338—172)

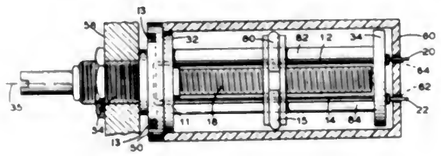


1. A combined variable resistor and switch device comprising a casing, a resistance element enclosed in said casing, a rotatable operating shaft mounted through said casing, means carried by said shaft for rotation therewith in said casing to cooperate with said resistance element for forming a variable resistor, a pair of terminal elements fixedly mounted to an end face of said casing, a resilient electrical contact member, means for securing one end of said resilient contact member to said end face in electrical connection with one of said terminal elements, the other of said terminal elements having an upwardly bent end provided with at least one sloping surface on the side thereof, the free end of said resilient contact member engaging the top of said upwardly bent end to close an electrical circuit across said terminals, and an actuating member of insulating material mounted on said shaft for rotation therewith and free to swing up and down with respect to said shaft, rotation of said shaft to a predetermined position causing the free end of said actuating member to ride up a sloping surface of the upwardly bent end of said other terminal element and move said electrical contact member out of engagement with said other terminal to open the electrical circuit across said terminals.

3,161,848
ADJUSTABLE PRECISION RESISTORS

John P. Smith, Jr., Allentown, Pa., assignor, by mesne assignments, to Nytronics, Inc., Phillipsburg, N.J., a corporation of New Jersey

Filed Sept. 24, 1963, Ser. No. 311,074
2 Claims. (Cl. 338—180)

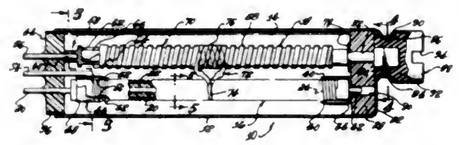


1. An adjustable variable resistor comprising
an elongated structural frame having an axis, and consisting of two end plates co-axially disposed,
and two parallel tie rods radially spaced from said axis and disposed parallel to said axis and disposed between and secured to said two end plates to hold said two end plates in fixed rigid spaced relationship;
a wire loop in U-shape, with a bail and two side elements threaded through both end plates with the bail of the loop pulled against the outer side of one end plate and with the two terminal ends of the two side elements anchored in tension at the outer side of the second end plate, and with the two side elements disposed parallel to said axis and symmetrically spaced therefrom;
a pair of terminals at the terminal ends of said two wires for connection to an external circuit;
a bridging element transverse to said axis for engaging each of both wires over a small continuous incremental length,
said axially shifting bridging element including two concentric circular ring segments, each having a gap to leave the shank of the segment resilient, one ring segment as an inner ring segment fitting and nesting in the other or outer ring segment with the two gaps disposed diametrically opposite each other and with the gap of the outer ring segment disposed within the lateral space between the two wires and in a plane transverse to said wires, and with the two wires disposed between the outer peripheral surface of the shank of the inner ring and the inner peripheral surface of the outer ring just adjacent the ends of the ring adjacent the gap;
a carriage for supporting the two ring segments in nested position and having a supporting plate for said ring segments, said supporting plate having a co-axial threaded bore;
means including a threaded lead screw co-axially supported between said two end plates, and threaded through said threaded bore of said carriage for axially moving said carriage to shift the position of said bridging ring elements on said wires;
and means for rotating said threaded lead screw to axially shift said carriage.

3,161,849
POTENTIOMETERS

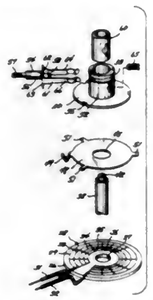
Marlan E. Bourns, 2530 Piedmont Drive, Riverside, Calif.; Marvin E. Harrison, 981 Thatcher Drive, Los Altos, Calif.; Wilbur T. Hardison, 4920 Luther St., Riverside, Calif.; Donald L. Gaa, 3951 Heidi Road, Riverside, Calif.; and George F. Kuli, 4343 Bandini Ave., Riverside, Calif.

Filed Oct. 30, 1961, Ser. No. 148,438
30 Claims. (Cl. 338—183)



1. In a potentiometer of the type having a housing defining a cavity wherein there is an elongated resistance element, a rotatably supported threaded shaft, a contact element slidably engaging said elongated resistance element and carried by said threaded shaft to be moved along said resistance element with rotation of said shaft, and terminal means affording external connections with said elongated resistance element and said contact element, the improvement comprising means forming walls including an end wall having therein an opening, said shaft being disposed principally in said cavity and with one end thereof extending into the opening defined by said end wall, an elastomeric ring extending through said opening and disposed in part in said cavity and in part outside thereof and having end dimensions larger than the opening and at said opening being of a diameter sufficiently large to be under compression by said end wall at said opening and constructed and arranged to hold said one end of said threaded shaft which extends into said elastomeric material ring.

3,161,850
ADJUSTABLE POTENTIOMETER
Robert F. Klug, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr.
Filed Apr. 15, 1963, Ser. No. 272,957
4 Claims. (Cl. 338—195)



1. An adjustable potentiometer comprising in combination,

a case having a chamber formed therein,

a non-conductive plate secured within said chamber,

a printed circuit on said plate, said printed circuit including at least three arcuate resistance elements deposited on said plate, said resistance elements forming segments of circles concentric about a center axis through said plate, said arcuate resistance elements being electrically connected in parallel by radial conductive elements, and a plurality of additional radial conductive elements spaced circumferentially around said axis and interconnecting said resistance elements,

said arcuate resistance elements and conductive elements being adapted to be selectively opened at at least one predetermined point whereby the resistance value of said circuit is varied,

a pair of leads connected to said conductive elements,

a rotatable shaft positioned within said case so as to project within said chamber and to project therefrom,

a conductive contact arm secured to said shaft and rotatable therewith, said contact arm insulated from said shaft and including a contact member engaging one of said arcuate resistance elements,

a conductive collector mounted on said shaft, insulated therefrom, and engaged with said contact arm, and

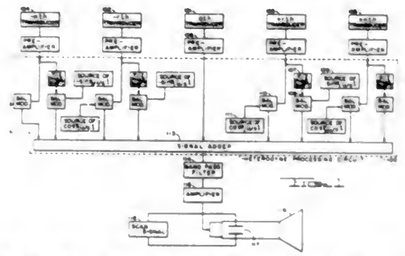
conductive means secured to said case, extended within said chamber, engaged with said collector, and adapted for electrical connection externally of said case.

3,161,851
OBJECT DETECTING AND LOCATING APPARATUS
Gregory M. Voglis, Teddington, and Hector F. Willis, London, England, assignors to the Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland
Filed May 31, 1957, Ser. No. 662,942
6 Claims. (Cl. 340—6)

1. Apparatus for controlling the directional reception of compressional waves in a fluid medium by an array of transducers, comprising:

a plurality of modulating means each coupled to a different one of said transducers for modulating output signals therefrom at a frequency proportional to the spacing of the center of said one transducer from a preselected reference point in said array, thus producing upper and lower sideband signals for each transducer,

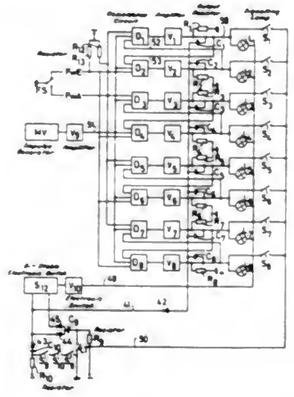
said modulating means comprising two modulators connected in parallel to each transducer; a quarter-wave length phase shifter interposed in the input path of one of said modulators; and each modulator being connected to a separate source of modulating



signal, said sources being synchronized in phase quadrature;

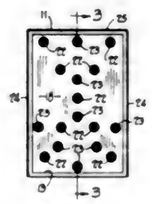
and a first adder means coupled to said modulating means for directly combining all of said sideband signals from at least half of the transducers having their centers spaced from said preselected reference point.

3,161,852
INDICATING DEVICE, ESPECIALLY FOR INDICATING THE POSITION OF THE LANDING GEAR AND LANDING GEAR DOOR OF AIRPLANES
Heinz Timm, Regensburg, Germany, assignor to Diehl, Nurnberg, Germany
Filed June 25, 1962, Ser. No. 204,835
Claims priority, application Germany, June 27, 1961, D 36,677
8 Claims. (Cl. 340—27)



1. An indicating device for movable elements which have two end positions for indicating when the elements occupy their end positions and the direction of movement of the elements when the elements are moving between said end positions, especially elements such as landing gears and landing gear flaps of airplanes, which comprises: first and second signal lamps associated with each movable element and each lamp indicating one of the end positions of the element pertaining thereto, a circuit for each lamp, an end switch in each circuit, each end switch being so arranged that it is closed when the element pertaining thereto occupies its corresponding end position, a further switch for each lamp, each said further switch having a terminal connected to the pertaining lamp, a control circuit connected to the other terminal of each of said further switches, an impulse generator connected to said control circuit to supply pulsating current through said further switches to said lamps, and switch means having a predetermined position for each of the directions of movement of said movable elements, said switch means being operatively connected with said control circuit for selectively blocking the control circuits pertaining to one of said first or second lamps with regard to the voltage produced by said impulse generator and means responsive to closing of all of the end switches pertaining to the lamps which pertain to the unblocked control circuits for interrupting the supply of pulsating current.

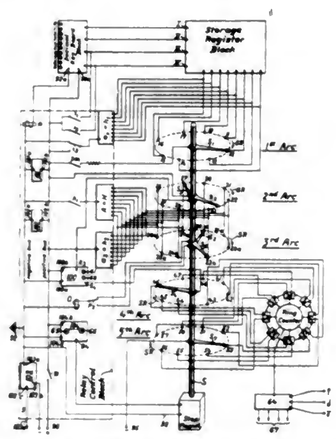
3,161,853
TRAFFIC SIGNAL LIGHT
Irwin M. Hart, Lorain, Ohio, assignor to Winko-Matic Signal Company, Lorain, Ohio, a corporation of Ohio
Filed May 20, 1963, Ser. No. 281,602
12 Claims. (Cl. 340—107)



1. A signal device comprising in combination a housing having opposed faceplates, each of said plates having apertures forming an X and an arrow on a common vertical axis, a first group of lamps disposed within the housing in alignment with the apertures forming the X and a second group of lamps disposed within the housing in alignment with the apertures forming the arrow, said first group of lamps being adapted to transmit light of a first color and said second group of lamps being adapted to transmit light of a second color, and means for alternately illuminating the first and second groups of the lamps associated with each of said faceplates to alternately present a visible X of the first color on either one of said faceplates and a visible arrow of the second color on the other of said faceplates.

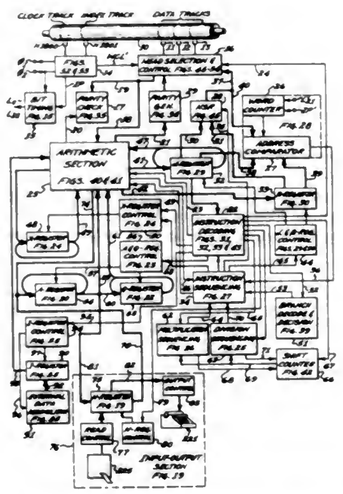
3,161,854
DIGITAL CONVERSION AND STORAGE SYSTEM (INPUT DEVICE FOR ELECTRONIC COMPUTERS)
Theo Hense, Wilhelmshaven, Germany, assignor to Olympia Werke AG., Wilhelmshaven, Germany
Filed July 30, 1958, Ser. No. 752,105
Claims priority, application Germany Aug. 22, 1957
21 Claims. (Cl. 340—172.5)

1. An input system for digital conversion and storage of information destined as input data for an electronic computing machine, comprising, key-actuated switch means including ten keys for reading in decimal digits, a circuit network including ten inputs connected to said keys and four outputs, for decimal-binary conversion of keyed input signals a matrix line-and-column storage register comprising four lines connected to said four outputs of said network to receive said decimal digits in the form of from 0 to 4 simultaneous currents corresponding to a binary code from said key-actuated switch means, rotary step-by-step selector switch means connected in succession to all of the columns of said storage register, said rotary selector switch means connected to said key actuated switch means so as to become excited and to carry out a one-step angular displacement at the reading in of every decimal digit on said key-actuated switch means and to contact at every such step a next following



column of said storage register and pass a current therethrough, thereby storing said decimal digit in the form of four binary digits at those line-and-column intersections where said column current coincides with a line current.

3,161,855
ELECTRONIC DATA PROCESSOR
Charles H. Propster, Jr., and Emery A. White, Phoenix, Ariz., Allen J. Trangle, Minneapolis, Minn., and Joyce L. Barbe, Mesa, Ariz., assignors to General Electric Company, a corporation of New York
Filed Dec. 9, 1960, Ser. No. 74,975
4 Claims. (Cl. 340—172.5)



3. In a synchronous stored-program digital computer having an addressable memory section with sequentially accessible locations n, $n+1$, $n+2$ . . . $n+q$ . . . $n+s$,

were n, q and s are arbitrary integers, for the storage of words consisting of groups of digital signals representative of instruction addresses, instructions and operands, said locations being sequentially accessible during successive word-times and said instructions comprising a stored program which includes an alternative sequence of instructions to be executed under control of a conditional branch instruction in the main sequence of instructions if a condition specified by the branch instruction is present, the combination comprising:

a first register for storing a group of digital signals representative of an instruction;

a second register for storing a group of digital signals which represents the address of the first instruction of a sequence of instructions, the instructions of said sequence being stored in successive alternate memory locations;

a first means for transferring to said second register a group of digital signals representing the address of a memory location wherein the first of a sequence of instructions is located;

a second means for sequentially reading instructions from said main sequence of instructions during alternate word-times;

a third means coupled to said second means for transferring said instructions read from alternate memory locations to said first register;

a fourth means for decoding and executing a given instruction during a word-time immediately following the word-time during which it is transferred to said first register;

a fifth means responsive to said fourth means when a conditional branch instruction read from location n is decoded for transferring to said second register a group of digital signals from a location $n+1$, said group of digital signals representing the address $n+q$ of a location wherein an instruction is located which is the first instruction of an alternative sequence of instructions;

a sixth means responsive to said fifth means for determining whether said specified condition is present and for producing a control signal if the specified condition is not present;

a seventh means responsive to said control signal for inhibiting a transfer of said group of digital signals from said location $n+1$ to said second register, whereby the next instruction of the main sequence of instructions is transferred to said first register from a memory location $n+2$;

means responsive to the absence of said control signal for initiating a search for the next instruction at the location $n+q$ after a group of digital signals is transferred to said second register from the location $n+1$;

and means for initiating a transfer of a group of digital signals from the memory location $n+q$ to said first register when the location $n+q$ is found.

3,161,856
ELECTRONIC DATA PROCESSOR
Charles H. Propster, Jr., Phoenix, and Joyce L. Barbe, Mesa, Ariz., assignors to General Electric Company, a corporation of New York
Filed Dec. 9, 1960, Ser. No. 74,976
3 Claims. (Cl. 340—172.5)

1. In a serial, stored-program, digital computer having an instruction sequencing section for controlling the execution of single-address and one-plus-one address instructions, said one-plus-one address instruction consisting of two groups of digital signals, a first group of a given one-plus-one address instruction specifying an operation to compare the absolute value of a given number with the absolute value of a specified constant and to branch to an alternative sequence of instructions beginning with an instruction at an address specified by a second group of digital signals if a specified relation is present between the value of said given number and the value of said specified constant, said specified constant being represented by a portion of said first group of digital signals which group includes two distinctive digital signals, the combination comprising:

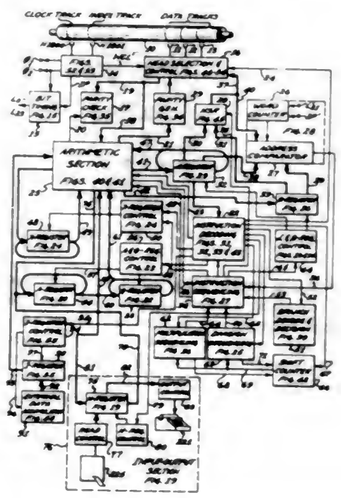
a memory section having a plurality of sequentially accessible memory locations;

a first and second register;

a third register for storing a group of digital signals representing said given number;

first means for transferring said first group of digital signals to said first register including a serial binary adder through which said first group of digital signals is serially transferred to said first register;

sensing means for determining the presence of said two distinctive digital signals of said first group of digital signals;



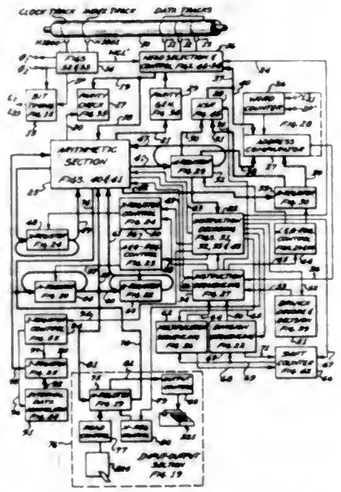
a second means coupled to said sensing means and responsive to the presence of a particular one of said distinctive digital signals for causing said group of digital signals in said third register to be transferred in synchronism with said first group of digital signals to effect a binary addition of like binary orders of said specified constant and said given number, the sum being transferred to said first register for storage;

means for decoding said first group of digital signals in said first register and for simultaneously determining the presence of said specified relation by testing for the presence of a carry propagated into a predetermined order of said first group of digital signals transferred to said first register;

a third means coupled to said sensing means and responsive to the presence of the other one of said distinctive digital signals for causing said second group of digital signals of said given one-plus-one address instruction to be transferred to said second register;

and a fourth means coupled to said decoding means for inhibiting said third means from transferring said second group of digital signals to said second register if it is determined that said specified relation is not present.

3,161,857
ELECTRONIC DATA PROCESSOR
Emery A. White, Phoenix, Ariz., Ralph William Austad, Santa Clara, Calif., and Allen J. Trangle, Minneapolis, Minn., assignors to General Electric Company, a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,220
2 Claims. (Cl. 340—172.5)



1. In a stored-program digital computer, the combination comprising:

an instruction sequencing means for effecting the execution of single-address and one-plus-one address instructions in proper sequence, each one-plus-one address instruction including a distinctive digital signal effective to cause said instruction sequencing section to switch from a first mode of operation, the complete sequencing cycle of which includes reading a single-address instruction and executing it, to a second mode of operation, the complete instruction sequencing cycle of which includes reading a one-plus-one address instruction, searching for an operand, executing it, and reading the next instruction from a memory location specified by it;

means for selectively inhibiting the execution of each one-plus-one address instruction whereby the instruction sequencing for each one-plus-one address instruction is suspended during a search for an operand until the inhibiting effect of said means is removed;

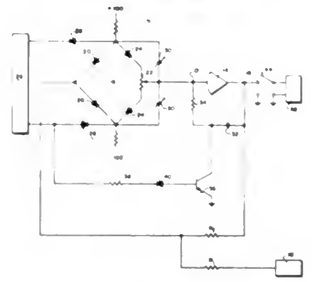
manual switching means for selectively removing the inhibiting effect of said first mentioned means whereby all single-address instructions in sequence are executed automatically and each one-plus-one address instruction is not executed until said manual switching means is actuated for the purpose of removing the inhibiting effect of said first mentioned means;

a register for storing a group of digital signals representative of an operation to be performed, and the location of an operand if one is required, of a given instruction while it is being executed;

means for selectively preventing the contents of said register from being altered whereby the operation of an instruction in said register may be repeatedly executed;

and means for selectively forcing said instruction sequencing means to switch to said second mode of operation for each single-address instruction thereby forcing a search for an operand for each single-address instruction and suspending further instruction sequencing until said inhibiting effect of said inhibiting means is selectively removed by said manual switching means.

3,161,858
ELECTRICAL STORAGE CIRCUIT
James W. Sanders and James R. Patmore, Neptune, N.J., assignors to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed Nov. 8, 1960, Ser. No. 67,997
7 Claims. (Cl. 340—173)

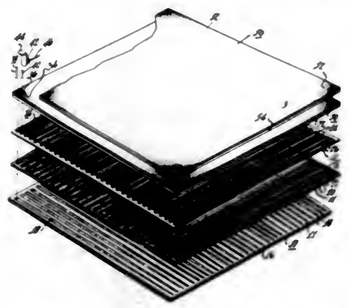


7. An electrical storage circuit comprising a high gain negative feedback amplifier including an input terminal and an output terminal, a series circuit arrangement of an input impedance element and a feedback impedance element, the free end of said input element being adapted to be connected to a source of input signal and the free end of said feedback element being connected to said output terminal, a series circuit arrangement of a resistor element and a capacitor element connected between said input terminal and said output terminal, and switch means having one position for connecting the common juncture of said resistor element and said capacitor element to a point of fixed potential whereby said capacitor is charged by the output signal from said amplifier while connecting a common juncture of said impedance elements to said input terminal, and having a second position for disconnecting said common juncture of said impedance elements from said input terminal while disconnecting the common juncture of said resistor element and said capacitor element from the point of fixed potential.

3,161,859
MODULAR MEMORY STRUCTURES
Albert H. Medwin, Whippany, and Eduard Luedicke, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 12, 1961, Ser. No. 82,225
6 Claims. (Cl. 340—173)

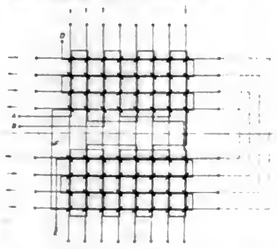
1. A modular structure for a random access storage device comprising a first sheet of insulating material having an electrically conductive film on one side thereof and a first plurality of electrically conductive, substantially parallel lines on the other side thereof, a second sheet of insulating material having one side disposed over said lines of said first sheet, said second sheet having an electrically conductive film on the other side thereof and being formed with a plurality of substantially parallel slots disposed transversely to said lines, a third sheet of insulating material having one side disposed over said film on said second sheet, said third sheet also being formed with a plurality of slots substantially similar to and in communicative alignment with said slots in said second sheet, said third sheet having a plurality of electrically conductive, substantially parallel lines on the other side thereof, each of said second plurality of lines and said film of said second sheet forming a transmission line of

a predetermined characteristic impedance, each of said first plurality of lines forming with said film on said first sheet a transmission line of said characteristic impedance, each of said lines on said first sheet being exposed through said slots in said second and third sheets, whereby circuit components may be connected thereto, a component-positioning sheet disposed over said third sheet and being formed with a plurality of openings each exposing portions of said first and said second plurality of lines, said component-positioning sheet having a side remote from said third sheet comprising insulating material and the opposite side thereof comprising an electrically conductive film, two resistors and a tunnel diode disposed within each of said openings, one end of one of said two resistors



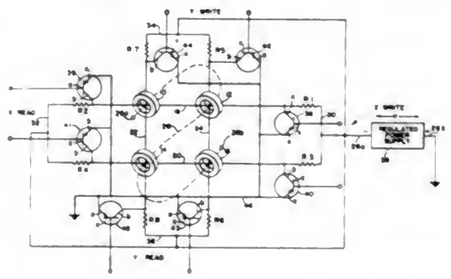
in each of said openings contacting a line of said first plurality of lines, one end of the other of said two resistors in each of said openings contacting a line in said second plurality of lines, each of said tunnel diodes having an anode terminal and a cathode terminal, the other ends of said resistors in each of said openings contacting said anode terminals of the respective said tunnel diodes, the cathode terminal of said tunnel diode in each of said openings contacting said film on said component-positioning sheet, and an output sheet disposed over said anode terminals of all of said tunnel diodes, said output sheet having one side of insulating material in contact with said anode terminals and the other side of electrically conductive material forming a capacitive coupling with said anode terminals.

3,161,860
FERRITE MATRIX STORING DEVICES WITH INDIVIDUAL CORE READING AND INTERFERENCE-PULSE COMPENSATION
Wilhelm Grooteboer, Duisdorf, near Bonn, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 10, 1959, Ser. No. 852,030
Claims priority, application Germany, Nov. 19, 1958, St 14,466
6 Claims. (Cl. 340—174)



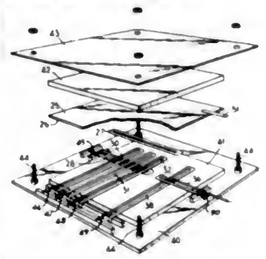
2. A ferrite matrix storing device comprising a plurality of cores arranged in four partial matrices with like wiring, a group of row wires and a group of column wires for each partial matrix threading the cores thereof and adapted to have half-current call-up pulses applied to them for selectively saturating any core by the coincident application of said half-current call-up pulses to its row and column wires in a predetermined direction, the row and column wires of adjacent matrices being connected in pairs such that the call-up pulses assigned to a row and a column wire of a given partial matrix are simultaneously assigned to the corresponding row wire of a partial matrix adjacent one side of said given matrix and to the corresponding column wire of still another partial matrix adjacent another side of said given matrix, a common reading wire threading all said cores, said reading wire being threaded similarly through the cores within each partial matrix, each two of the four partial matrices whose row wires are connected being so combined into one matrix that the reading loops passing through the first and second, fifth and sixth, etc., columns form the reading wire of the one partial matrix, and the reading loops passing through the third and fourth, seventh and eighth, etc., columns form the reading wire of the other partial matrix, and means for connecting said reading wire between partial matrices so that interference signals induced in said reading wire by the half-current call-up pulses in one partial matrix will be compensated by the interference signals induced in said reading wire by the half-current call-up pulses in another partial matrix.

3,161,861
MAGNETIC CORE MEMORY
Kenneth H. Olsen, Bedford, and Richard L. Best, Wayland, Mass., assignors to Digital Equipment Corporation, Maynard, Mass.
Filed Nov. 12, 1959, Ser. No. 852,274
22 Claims. (Cl. 340—174)



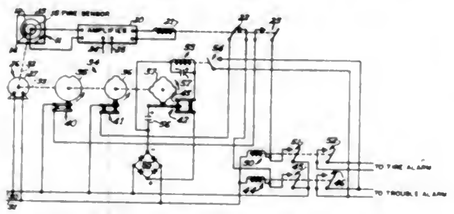
11. A magnetic core memory comprising, in combination, a plurality of magnetic cores schematically arranged in rows and columns, column conductors magnetically coupled to the cores in the respective columns, row conductors magnetically coupled to the cores in the respective rows, a power supply having first and second terminals of opposite polarity, single pole-double throw switching means providing alternative reversible conducting paths between adjacent ends of said row and column conductors and said first and second terminals of said power supply, thereby to apply the voltage from said supply across said conductors with selected polarity, bidirectional switches in series with each of said conductors, actuation of one of said switches connected to one of said row conductors selecting said one row conductors for the passage of current from said power supply and selection of one of said switches in series with one of said column conductors selecting said one column conductor for passage of current from said power supply, and a separate resistor in series with each of said selected conductors, the impedances of said power supply, said single pole-double throw switching means and said switches being substantially less when said switches and switching means conduct than the resistances of said series resistors.

3,161,862
ARRANGEMENT FOR EFFECTING CONDITIONAL SWITCHING OPERATIONS
Michael Williams, Watford, England, assignor to The General Electric Company Limited, London, England
Filed June 15, 1962, Ser. No. 202,916
Claims priority, application Great Britain, June 16, 1961, 21,888/61
8 Claims. (Cl. 340—174)



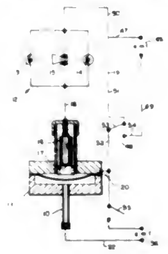
1. An arrangement for effecting conditional switching operations and comprising a conducting sheet carrying magnetic thin film having an easy axis of magnetisation and providing at least one group of storage elements including at least one input storage element and one output storage element closely coupled electro-magnetically by a closed conducting loop overlying the storage areas of all the elements of the group and crossing the storage areas perpendicular to the easy axis of the film, means for writing information into at least one storage element, and means for modifying the magnetisation of the storage areas so that by virtue of the electromagnetic coupling due to the closed coupling loop the output storage element may be switched to a state of magnetisation depending on the state of magnetisation of the other storage elements of the group.

3,161,863
FLAME DETECTING APPARATUS WITH FLAME SIMULATION TEST
Fred T. Deziel, Bloomington, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 136,589
7 Claims. (Cl. 340—214)



1. Condition detecting apparatus for use in supervising an area comprising; condition sensing means sensitive to the presence of a given condition, rotatable blocking means to restrict the field of view of said condition sensing means, supervising means including said blocking means and said condition sensing means adapted to continuously sweep the area to be supervised in successive discrete segments, condition simulating means adapted to be positioned at a given location within the area to thereby simulate the given condition at the given location, and output means connected to said supervising means, said output means including an alarm output effective upon said condition sensing means sensing the presence of the given condition at any position in said area other than said given location, said output means including a fault output effective upon failure of said condition sensing means to sense the presence of said condition simulating means at said given location.

3,161,864
FIRE DETECTOR CIRCUIT ARRANGED TO PREVENT FALSE WARNING
John E. Lindberg, 3296 Springhill Road, Lafayette, Calif.
Filed May 21, 1962, Ser. No. 196,303
5 Claims. (Cl. 340—214)



1. A critical-temperature-detection system comprising an imperforate electrically conductive enclosure of extended length;

heat-to-pressure transducing means for substantially increasing the pressure within said enclosure when said enclosure is externally heated;

pressure-actuated switch means actuated by the pressure in said enclosure;

an electrical warning circuit including, in series, signal means, a first source of electrical current, said switch means, and a return line from said switch means to said signal means, so that when said first switch means is closed by a pressure increase in said enclosure it causes said warning circuit to actuate said signal means; and

a test circuit including, in series, a second source of electrical current, an external switch, said conductive enclosure, and said return line to said second source so that said transducing means can be electrically heated to cause closure of said pressure-actuated switch means and therefore actuation of said signal means,

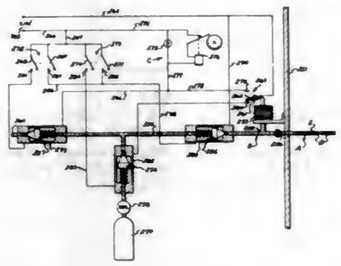
said return line being connected to both said conductive enclosure and to one side of said pressure-actuated switch means, and said first source being located between the other side of said pressure-actuated switch means and said signal means,

so that grounding of said enclosure or said return line cannot result in a false warning by actuation of said signal means, whereas actual closing of said pressure-actuated switch means does result in actuation of said signal means.

3,161,865
REPLENISHABLE FIRE DETECTOR
John E. Lindberg, Jr., 1170 Oleander Drive, Lafayette, Calif.
Original application May 25, 1959, Ser. No. 815,406, now Patent No. 3,122,728, dated Feb. 25, 1964. Divided and this application Nov. 17, 1960, Ser. No. 70,030
8 Claims. (Cl. 340—229)

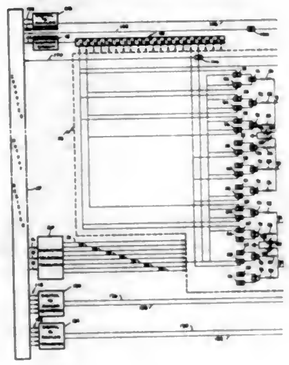
1. A temperature-level detector comprising: an enclosure containing a transducing agent that releases large quantities of gas when its temperature is changed; pressure-responsive means having an interior in communica-

tion with said enclosure to make a normally closed system; manually operated normally closed bleed means independent of the pressure in said interior for venting said



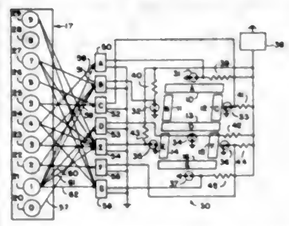
interior outside said system at any time desired during operation of the detector; and means actuated by said pressure-responsive means when the pressure in said system reaches a predetermined level.

3,161,866
CATHODE RAY TUBE SYMBOL DISPLAY SYSTEM HAVING EQUAL RESISTOR POSITION CONTROL
Edward D. Orenstein, Minneapolis, and Malcolm Macaulay, St. Paul, Minn., assignors to Data Display Incorporated, a corporation of Minnesota
Filed May 11, 1959, Ser. No. 812,384
5 Claims. (Cl. 340—324)



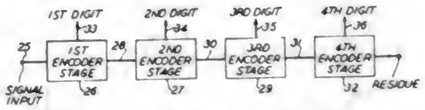
1. A system for displaying coded information in the form of visually recognizable symbols, the system including a source of digitally encoded data to be converted to symbol form, a cathode ray tube including a fluorescent screen at one end, an electron gun at the other end, means connected in circuit with said electron gun for directing an uninterrupted beam of electrons onto said screen, said beam being of substantially uniform intensity, means for deflecting said beam vertically and means for deflecting said beam horizontally, a first group of symbol forming resistors of equal ohmic value joined together at one end, means connecting said joined ends to said vertical deflecting means, a second group of symbol forming resistors of equal ohmic value joined together at one end, means connecting the joined ends of said second group of resistors to said horizontal deflecting means, and a plurality of digital logic elements responsive to discrete voltage signals derived from said source for successively and uninterruptedly applying a given potential to various of the other resistor ends of both groups to provide an uninterrupted trace in accordance with the symbol that is to be produced on said screen so that said symbol will be indicative of the encoded data.

3,161,867
LOGIC SYSTEMS
Carl L. Isborn, Richmond, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 14, 1960, Ser. No. 14,835
13 Claims. (Cl. 340—347)



3. A logic system for energizing a numeral readout device having at least seven lighted segments, comprising a plurality of lamps which are lit one at a time to indicate each of the Arabic digits except "8," at least seven photoconductors respectively connected in parallel with said lighted segments, and a plurality of light paths greater in number than said photoconductors interconnecting each of said lamps to a single one or more of said photoconductors so that the appropriate segments are inhibited for displaying the numeral indicated by the lighted lamp.

3,161,868
PCM ENCODER
Frederick D. Waldhauer, Morris Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,271
10 Claims. (Cl. 340—347)



10. Apparatus for encoding a signal amplitude E_{in} into an n-digit code word capable of representing any signal amplitude within a range between a minimum amplitude $E_{min.}$ and a maximum amplitude $E_{max.}$, said range being divisible into 2^n steps of different sizes, each of said steps being represented by a particular one of the 2^n possible code words, said apparatus comprising, in combination,

means for comparing said signal amplitude E_{in} with a first reference amplitude and generating a first digit in said code word, said first digit being a first symbol when E_{in} is less than said first reference amplitude and being a second symbol when E_{in} is greater than said first reference amplitude, said first reference amplitude being substantially offset from the midrange amplitude

$$\frac{E_{max.}-E_{min.}}{2}$$

means for operating on said signal amplitude E_{in} to produce an output signal having an amplitude E_{out} having the value

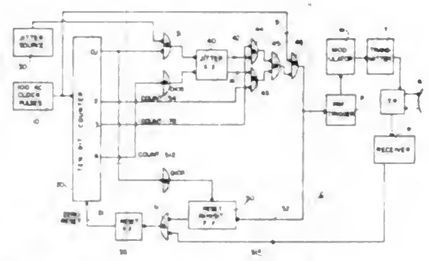
$$AE_{in}+C_1$$

whenever said first digit is said first symbol and having the value

$$BE_{in}+C_2$$

whenever said first digit is said second symbol, the quantities A and B being constants having the same sign but substantially different magnitudes and the quantities C_1 and C_2 being unequal constants, and means for comparing the amplitude E_{out} with a second reference amplitude and generating a second digit in said code word, said second digit being a first symbol when E_{out} is less than said second reference amplitude and being a second symbol when E_{out} is greater than said second reference amplitude.

3,161,869
NON-INTERFERING PLURAL COMMUNICATIONS SYSTEM
John P. Chisholm, Olympic Valley, Calif., and Martin R. Bates, Kenmore, and Roger B. Russell, Jr., Williamsville, N.Y., assignors to Sierra Research Corporation, a corporation of New York
Filed Aug. 1, 1962, Ser. No. 213,924
19 Claims. (Cl. 343—5)



1. A system for establishing and maintaining a non-interfering sequence of operation for a number N of independent periodic communications units occupying a common channel and each having means for transmitting signals and having means for detecting signals from other units in the channel, comprising in each unit similar cyclic time measuring means for continuously measuring an interval of time beginning at a time zero and for determining at least one other instant of time not later than 1/N of said measured interval after time-zero, trigger means connected with the time measuring means and the transmitting means for triggering the latter at said other instant, reset means connected to the time measuring means and to the detecting means and rendered operative by the former after the time zero and before the transmitting means is triggered to reset the time measuring means to time-zero if a signal from another unit is received by the detecting means while the reset means is operative.

3,161,870
SYSTEM FOR INCREASING THE DETECTION RANGE OF A GROUP OF SEARCH RADARS
Peter H. Pincoffs, Severna Park, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 6, 1963, Ser. No. 278,812
3 Claims. (Cl. 343—5)

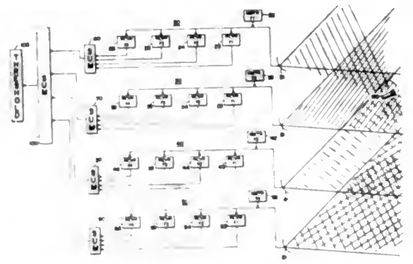
1. A system for increasing the detection range of a group of search radars, said system comprising in combination:

(*a*) a plurality of radar transmitters for radiating signals having different frequencies and positioned at different radar sites,

(*b*) receiver means positioned at each of said radar sites for detecting target echoes,

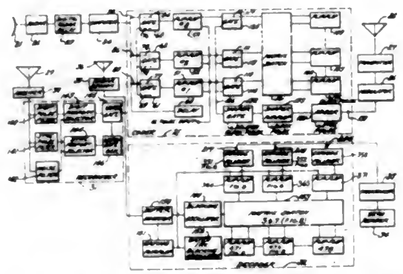
(*c*) each said receiver means having a number of separate receivers equal to the number of radar sites,

(*d*) said separate receivers of each receiver means being tuned to receive a target echo from a different transmitter, and



(*e*) means for non-coherently adding the outputs of all receivers for providing a composite echo signal.

3,161,871
AUTOMATIC GROUND-AIR COMMUNICATION SYSTEM
Edmund B. Staples, Fairborn, Ohio, and Harry Schecter, 233 Massachusetts Ave., Arlington 74, Mass.; said Staples assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 29, 1961, Ser. No. 113,559
5 Claims. (Cl. 343—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

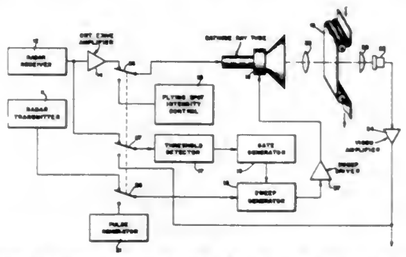


1. An automatic ground-air communication system for transmitting supervisory and control intelligence to an airborne instrumentality comprising at a ground station, radar means capable of distinguishing targets within its range, means for putting into digital form the output of said radar means, means for continually computing from said digital information an azimuth command for said targets, means for encoding said computed information, and means for transmitting said coded information to certain preselected airborne instrumentalities in combination with at said airborne instrumentalities, means for receiving said transmitted coded information, and means for distinguishing said coded information from noise.

3,161,872
BEACON RADAR RECORDING AND REPRODUCING
Robert M. McClure, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 22, 1961, Ser. No. 97,674
20 Claims. (Cl. 343—6.5)

1. In combination with a radar beacon system comprising a radar beacon transmitter to transmit interrogation signals and a radar receiver to detect beacon responses, said beacon responses each beginning with a framing pulse; a radar beacon recording system comprising a cathode ray tube, means to cause the electron beam to

sweep across the face of said cathode ray tube in a single fixed straight line in synchronization with said interrogation signals, means to intensity modulate the trace displayed on the face of said cathode ray tube with the pulses of the beacon responses detected by said radar receiver, means operative in response to the framing pulse leading each of said beacon responses detected by said radar receiver to increase the rate at which said electron

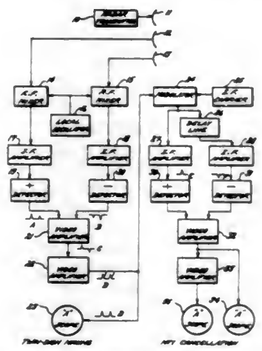


beam is being swept across the face of said cathode ray tube for a time interval approximately equal to the length of a beacon response, a strip of film positioned to photograph the display on the face of said cathode ray tube, and means to move said strip of film continuously across the face of said cathode ray tube perpendicularly to the direction of said fixed straight line to continuously photograph the trace displayed on the face of said cathode ray tube.

3,161,873
MOVING TARGET INDICATION METHOD AND SYSTEM

Lowell M. Hollingsworth, Lincoln, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 3, 1961, Ser. No. 150,103
3 Claims. (Cl. 343—7.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

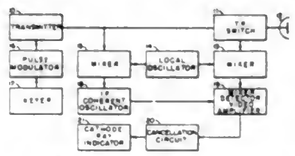


1. A system of radar moving target indication comprising means for illuminating simultaneously with radar transmitted pulses a moving target framed against ground and also the ground itself, said illumination occurring within the same radar pulse length, means for receiving the reflected signals from said moving target framed against ground and said ground itself at two positions, one of said positions being vertically displaced from the other, said reflected signals having variations in amplitude, means for detecting the positive portions of said reflected signals received at one of said positions, means for detecting the negative portions of said reflected signals received at the other of said positions, and means for comparing in amplitude said negative and positive portions of said signals to each other to obtain a resultant signal for display upon an oscilloscope, said display being representative of said moving target.

3,161,874
FIXED PULSE REJECTION SYSTEM FOR RADAR MOVING TARGET INDICATOR

Irving H. Page, 3115 Westover Drive SE., Washington 20, D.C.

Original application May 1, 1951, Ser. No. 224,019, now Patent No. 3,114,110, dated Dec. 10, 1963. Divided and this application Nov. 28, 1961, Ser. No. 155,511
4 Claims. (Cl. 343—7.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

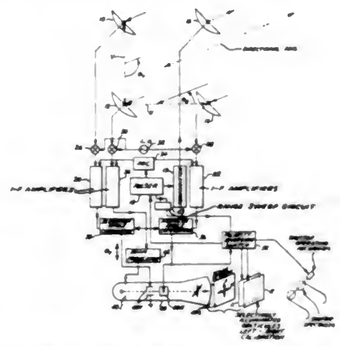


1. In a moving object locator system which includes a transmitter for periodically transmitting energy pulses at a given repetition rate and a receiver for receiving said energy pulses after reflection from remote objects and for providing a video pulse output modulated with the Doppler frequency shift of a moving object, a fixed object echo cancelling device comprising a rejection filter circuit tuned to provide energy rejection points at the repetition frequency of the transmitter and successive harmonic components thereof, and means coupling said filter circuit to the output of the receiver comprising a pulse converter for converting the receiver output video pulse into a pair of time spaced pulses before application to the rejection filter circuit, said pair of pulses having a time spacing and polarity suitable to increase the energy content of the receiver output at the frequency of the highest frequency rejection point of said filter circuit.

3,161,875
OBJECT LOCATING SYSTEM

Fritz K. Preikschat, Bellevue, Wash., assignor to Boeing Airplane Company, Seattle, Wash., a corporation of Delaware

Filed May 29, 1961, Ser. No. 125,307
7 Claims. (Cl. 343—7.9)



1. An object locating system comprising in combination with means to transmit recurrent propagative wave energy impulses of predetermined wave frequency into a selected space region and receiver means to receive the reflection impulses from objects within said region, said receiver means including directionally selective antenna

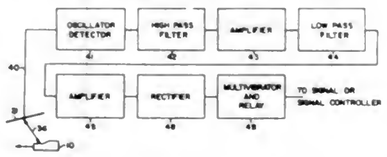
elements in an array having a directional axis and with elements therein spaced apart in said array transversely to said axis, phase comparator circuit means energized thereby to produce from each received reflection impulse impinging the respective antenna elements a direct voltage impulse related in magnitude and polarity to the angle and sense of deviation from said axis of the reflecting object producing such received reflection impulse, a cathode ray tube indicator having beam deflection means responsively connected to said phase comparator circuit means and further having beam intensity control means normally biased against image production on the screen of said indicator, modulator means responsively connected to said receiver means and operatively connected to said intensity control means for applying a beam intensifying impulse to the latter substantially at the height of said direct voltage impulse in response to each received reflection impulse to produce from each of the latter a visible angular position object spot image on said screen, a range sweep waveform generator operatively connected to said beam deflection means to be triggered cyclically with the propagative wave energy impulses, said generator applying to said deflection means a progressively changing time-base cathode ray tube beam deflection signal of selected polarity superimposed on the direct voltage impulses to deflect the spot images in accordance with range to the associated reflecting objects, and switching means operable to reverse the polarity of said range sweep signals at a reversal frequency above the critical persistence-of-vision frequency to produce spot images on the screen separated by a distance on the screen inversely proportional to the range of the associated reflecting objects.

7. In an object locating system having means to produce on a cathode ray tube indicator screen two image spots spaced apart horizontally approximately inversely in proportion to range for each object located by the system, the median of said spots being located on the screen in accordance with the azimuth and elevation angles of the associated objects, and calibrated stereoscopic viewing means for the indicator comprising left and right stereoscopically related graticules mutually superimposed optically on the indicator screen, each of said graticules being associated with one of said image spots, and means operable to render the left and right graticules and their associated image spots visible alternately and selectively to the observer's left and right eyes at a frequency above the persistence-of-vision frequency to the human eye.

3,161,876
PULSE DOPPLER RADAR SYSTEM

John L. Barker, Norwalk, Conn., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Dec. 7, 1959, Ser. No. 857,830
27 Claims. (Cl. 343—8)

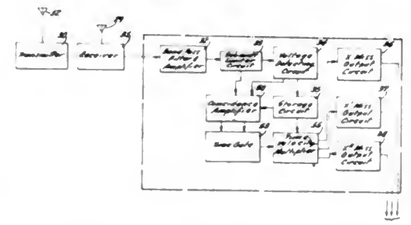


1. A system for detecting vehicles proceeding along a traffic path, including means for transmitting radiant wave energy in a beam at an angle to said traffic path and receiving such wave energy as reflected from one or more vehicles passing through said angled beam, means for deriving a Doppler beat frequency signal from said transmitted and received reflected waves, and means controlled by the amplitude of said Doppler signal providing multiple output pulses in response to said signal to give the effect of more Doppler signals than the number of Doppler signals actually obtained from such vehicles.

3,161,877
RADAR SCORING SYSTEM

William E. Thornton, Chapel Hill, N.C., and Isaac R. Cherry, Torrance, and Clifford Sanctuary, Rolling Hills Estates, Calif., assignors to Del Mar Engineering Laboratories, Los Angeles, Calif., a corporation of California

Filed May 5, 1961, Ser. No. 107,999
7 Claims. (Cl. 343—12)

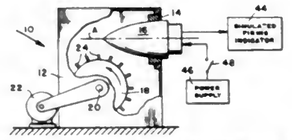


1. In combination for determining the distance missed by a missile in moving toward a target, means for transmitting signals toward the missile and for receiving signals representing signals reflected from the missile, means responsive to the transmitted and received signals for combining these signals to produce difference signals having characteristics representing the speed of the missile relative to the target, and means responsive to the difference signals and to particular changes in the difference signals before the movement of the missile to its minimum miss distance relative to the target for combining the difference signals and the particular changes in the difference signals to produce an output indication representing the miss distance.

3,161,878
APPARATUS AND METHOD FOR TESTING RADIO FUSES

John E. Quinlivan, 914 13th St., Bremerton, Wash.

Filed Mar. 7, 1961, Ser. No. 94,087
8 Claims. (Cl. 343—17.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



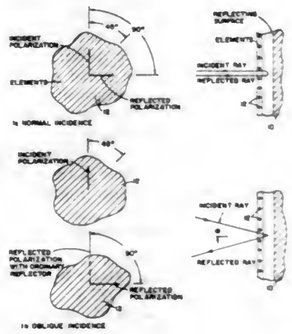
1. A method for testing a radio fuse projectile of the type including an oscillator detector connected to a directive antenna element, comprising the steps;

(*a*) supporting the projectile in a stationary relationship, and

(*b*) moving an electrically open detuning coil along a predetermined path from a first sequential portion of the path to a second sequential portion of the path adjacent the projectile, with a predetermined speed of movement from the first to the second sequential portions of the path, and with the detuning coil in a substantially non-inductively coupled relationship to the electromagnetic field pattern of the antenna element during movement through the first sequential portion of the parth and in inductively coupled relationship to the electromagnetic field pattern of the antenna element during movement through the second sequential portion of the path,

said detuning coil having a number, size, and relative spacing of loops matched to the oscillating detector to exhibit resonance of predetermined characteristics tending to react upon the oscillator detector to pull the frequency of operation of the oscillator detector away from its normal operating frequency, said predetermined speed being sufficient to cause the detuning coil to abruptly shift the frequency of operation of the oscillating detector from said normal frequency to a finitely different frequency accompanied by transient pulse of output energy appearing at the output of the oscillating detector, whereby appearance of said transient pulse at the output of the oscillating detector indicates that the oscillating detector is operating within desired frequency tolerance limits.

3,161,879
TWISTREFLECTOR
Peter W. Hannan, Great Neck, and Henry Jasik, Flushing, N.Y., and Kenneth B. Woodard, Basking Ridge, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 5, 1961, Ser. No. 80,961
1 Claim. (Cl. 343—18)



A twistreflector for electromagnetic radiation of a wavelength λ comprising a plane metal sheet; a plurality of wires embedded in a thin dielectric sheet and lying in a plane parallel to said metal sheet; and a dielectirc material of very low dielectric constant substantially filling the space between said plane and said sheet, the diameter of said wire being substantially smaller than the wire to wire spacing, the wire to wire spacing being small with respect to λ, and the distance between said plane and said sheet being approximately equal to

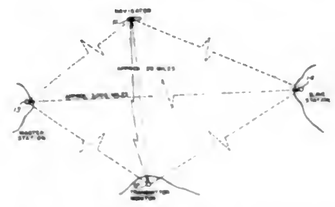
$$L-\frac{L(K_c-1)}{2\cos^2\Theta}+\frac{\lambda(K_c-1)}{8\pi\cos^2\Theta}\sin\frac{(4\pi L\cos\Theta)}{\lambda}-\frac{T(K_s-1)}{\cos\Theta}\sin^2\frac{(2\pi L\cos\Theta)}{\lambda}$$

where λ is the wavelength in free space, L is the distance from metal surface to wire centerline in the general all-metal design having a value of

$$\frac{0.358}{\cos\Theta}\lambda$$

in the optimum all-metal design, T is the dielectric skin thickness, K_c is the dielectric constant of the core, K_s is the skin dielectric constant, and Θ is the angle of incidence of said radiation.

3,161,880
SYSTEM AND METHOD FOR OBTAINING MEDIUM ACCURACY NAVIGATION
Eric R. Swanson, San Diego, and Wayne E. Davis, Santa Ana, Calif.; said Swanson assignor to the United States of America as represented by the Secretary of the Navy; and said Davis assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,787
6 Claims. (Cl. 343—105)

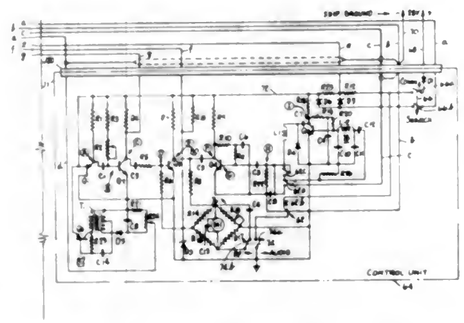


1. A method of obtaining medium accuracy navigation comprising the steps of:
(*a*) transmitting electromagnetic energy from a first station;
(*b*) transmitting electromagnetic energy from another station;
(*c*) receiving said electromagnetic energy transmitted from said first station and from said another station at a position wherein it is desired to determine fixed location on the earth with respect to the earth;
(*d*) receiving said electromagnetic energy from said first station and from said another station at another receiver;
(*e*) determining the exact geographic position of said another receiver by means other than the received electromagnetic energy;
(*f*) determining the geographic position of said another receiver by means of said received electromagnetic energy from said first station and from said another station;
(*g*) comparing said geographic position as determined from said other means and said geographic position as determined from said received electromagnetic energy at said another receiver;
(*h*) determining the difference between said two geographic positions as determined by said other means and said received electromagnetic energy;
(*i*) and sending said difference to said position which is to be determined in order that said receiver may correct said position as determined by said received electromagnetic energy from said first station and from said another station.

3,161,881
BEACON LOCATOR SYSTEM
Harold R. Monroe, Santa Monica, and Isidor Sandoval and John P. Kemp, Los Angeles, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Sept. 7, 1962, Ser. No. 222,005
15 Claims. (Cl. 343—120)

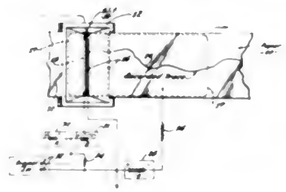
1. A beacon locator system, comprising:
antenna means including first and second antenna elements in spaced relationship to each other;
an antenna switch for alternately sampling said first and second elements;
amplifier means, said switch alternately connecting said first and second elements to said amplifier means for alternately amplifying respective signals of said first and second elements; and
comparator means for comparing relative signal strengths of said first and second elements and including

an electronic switch adapted to be operated open and closed in synchronism with the alternate sampling of said elements,
an electronic amplifier adapted to receive the amplified signals of said amplifier means, and
a capacitor connecting output electrodes of said electronic switch and electronic amplifier together, an output connection being obtained



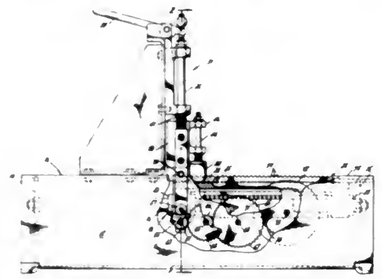
from the output electrode of said electronic switch connected to said capacitor whereby an output signal of one condition is provided from said output connection when signal strength of said first element is greater than that of said second element and of another condition when signal strength of said first element is less than that of said second element.

3,161,882
GALVANOMETER USING ELECTROSTATIC ORIFICE RECORDING MEANS
John T. Mullin, Beverly Hills, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 5, 1960, Ser. No. 47,653
21 Claims. (Cl. 346—74)



8. An electrostatic oscillograph for providing a recording formed by fine particles of powder, including, a container for the powder and defining an opening, a first electrode having an elongate shape and made of electrically resistive material positioned adjacent the container along the opening in the container, biasing means coupled to the ends of the elongate shape of the first electrode for developing a continuous potential gradient along said first electrode, a second electrode having an elongate shape and positioned in a spaced relationship relative to said first electrode and adjacent the container along the opening in the container, said second electrode being made of electrically conductive material, biasing means coupled to said second electrode for establishing a predetermined biasing potential along said second electrode, a recording medium movable adjacent said first and said second electrode for receiving powder through the opening in the container and passing between the first and the second electrodes, means for moving the recording medium at a predetermined speed, and means for introducing an input signal to said first electrode for varying the level of the potential gradient across said first electrode whereby the point between the first and the second electrodes through which the powder is provided to the recording medium varies in accordance with the input signal.

3,161,883
INDEXING AND MAGNETIZING DEVICE FOR DATA STORAGE CARD
Leslie N. Hale, Glen Burnie, James N. Tracey, Baltimore, and Kenneth E. Wood, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 15, 1962, Ser. No. 203,431
2 Claims. (Cl. 346—74)

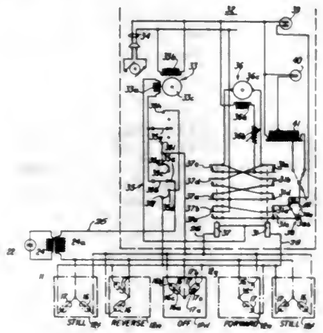


1. In an indexing system,
(*a*) a horizontally disposed frame,
(*b*) an upstanding frame attached to said horizontally disposed frame,
(*c*) first and second parallel shafts slidably attached to said upstanding frame,
(*d*) a plate connecting said first and second parallel shafts,
(*e*) a magnetizing head attached to said plate,
(*f*) a carriage slidably mounted on said horizontally disposed frame and having a plurality of V-shaped notches thereon,
(*g*) a drive shaft rotatably supported by said horizontally disposed frame,
(*h*) cam means on said drive shaft engaging said first and second parallel shafts,
(*i*) a gear train interconnecting said drive shaft and said carriage, and
(*j*) means engageable with said V-shaped notches for positioning said carriage relative to said magnetizing head.

3,161,884
REMOTE CONTROL FOR A PROJECTOR
Herbert T. Perkins, Grayslake, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 20, 1960, Ser. No. 77,224
2 Claims. (Cl. 352—179)

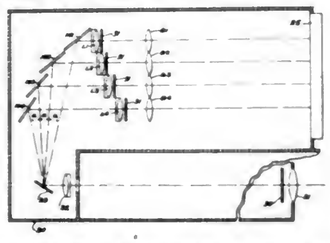
1. In a motion picture projector including a reversible electric drive motor, a projector lamp and a power source, the combination therewith of a first relay means operable when energized to connect the lamp to the power source and connect the reversible motor to the power source in a manner such as to run the projector in a forward direction, second relay means operable when energized to connect the lamp to the power source and connect the reversible motor to the power source in a manner such as to run the projector in a reverse direction, the first and second relay means being operable when both are en-

ergized to de-energize the motor and connect the lamp to the power source, a manually operable remote control switch unit including a pair of switches for selectively energizing only the first relay means, only the second relay means, and both the first and second relay means, and to



de-energize both the first and second relay means, and manually operable switch means located at the projector having a plurality of positions for controlling the relay means and having one position connecting the remote control switch unit to the relay means.

3,161,885
FRAMING CAMERA WITH RECTANGULARLY GROUPED FRAME AREA
John W. Corcoran, Redwood City, Calif., assignor to Beckman & Whitley, Inc., San Carlos, Calif., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,763
5 Claims. (Cl. 352—84)



4. A framing camera comprising means to sweep a bundle of light containing an image of an event to be recorded in one direction across a front relay lens, a group of rear relay lenses spaced from each other in a direction substantially perpendicular to said first named direction, and mirrors between the front and rear relay lenses to reflect said bundle successively to said group of rear relay lenses, and a film plane at which said image is focused in spaced frames by said relay lenses.

DESIGNS

DECEMBER 15, 1964

199,776
LETTER FOR SIGNS OR THE LIKE
Tsui K. Mei, Kowloon, Hong Kong, assignor to Ming Wah Electric Bulbs Factory, Kowloon, Hong Kong
Filed July 25, 1963, Ser. No. 75,955
Claims priority, application Great Britain Feb. 22, 1963
Term of patent 7 years
(Cl. D1—12)



199,777
LETTER FOR SIGNS OR THE LIKE
Tsui K. Mei, Kowloon, Hong Kong, assignor to Ming Wah Electric Bulbs Factory, Kowloon, Hong Kong
Filed July 25, 1963, Ser. No. 75,959
Claims priority, application Great Britain Feb. 22, 1963
Term of patent 7 years
(Cl. D1—12)



199,778
LETTER FOR SIGNS OR THE LIKE
Tsui K. Mei, Kowloon, Hong Kong, assignor to Ming Wah Electric Bulbs Factory, Kowloon, Hong Kong
Filed July 25, 1963, Ser. No. 75,964
Claims priority, application Great Britain Feb. 22, 1963
Term of patent 7 years
(Cl. D1—12)



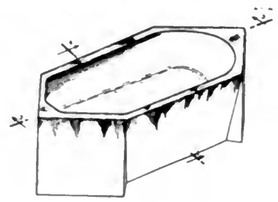
199,779
HAT
Martin Newman, 818 N. La Cienega, Los Angeles, Calif.
Filed Oct. 30, 1962, Ser. No. 72,314
Term of patent 14 years
(Cl. D3—13)



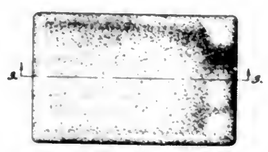
199,780
DISPENSING HOLDER FOR COLLAPSIBLE TUBES
Gene L. English, 14 Harvard St., Ext., Woburn, Mass.
Filed Oct. 16, 1963, Ser. No. 77,001
Term of patent 14 years
(Cl. D4—3)



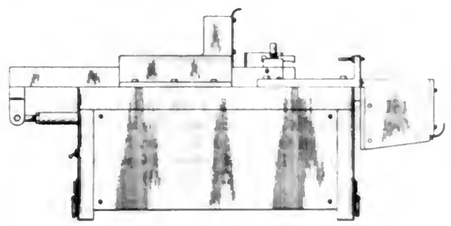
199,781
BATHTUB
Amedeo Ciavarino, 6 Via Brera, Milan, Italy
Filed June 20, 1962, Ser. No. 70,622
Term of patent 14 years
(Cl. D4—4)



199,782
BODY SUPPORT FOR USE IN SHAMPOOING THE HAIR OR THE LIKE
Pauline Rankin, 201 NE. 6th, Tulia, Tex.
Filed July 18, 1963, Ser. No. 75,862
Term of patent 14 years
(Cl. D4—4)



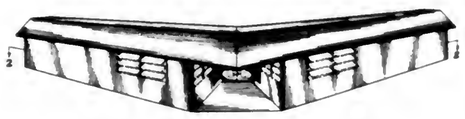
199,783
SPACE-BAND CLEANING MACHINE
Herbert T. Catalano, 11 Chestnut St., Franklin, Mass., assignor of twenty-five percent each to Francis N. Fournier, Seekonk, Mass., and Edgar L. Levasseur, East Providence, R.I.
Filed Aug. 13, 1962, Ser. No. 71,256
Term of patent 14 years
(Cl. D9—2)



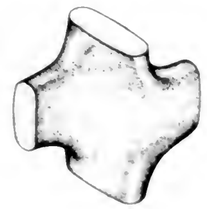
199,784
CALF FEEDER
Mathew H. Stapleton, National Ave., Jefferson, Iowa
Filed July 9, 1963, Ser. No. 75,720
Term of patent 14 years
(Cl. D12—2)



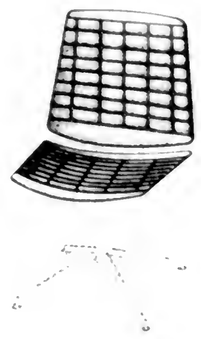
199,785
PREFABRICATED BUILDING
Dave Chapman, Chicago, Ill., assignor to Panelfab Products, Inc., North Miami, Fla., a corporation of Florida
Filed July 2, 1963, Ser. No. 75,623
Term of patent 14 years
(Cl. D13—1)



199,786
MODULAR UNIT FOR GRILLE PANELS
Richard Harvey, 66 Denton Ave., Lynbrook, N.Y.
Filed Jan. 22, 1964, Ser. No. 78,309
Term of patent 14 years
(Cl. D13—1)



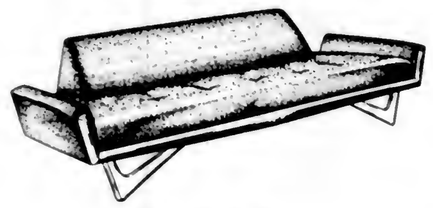
199,787
CHAIR OR SIMILAR ARTICLE
Nicholas S. Kategianis, Chicago, Ill., assignor to Emil J. Paidar Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 71,457
Term of patent 14 years
(Cl. D15—1)



199,788
ARM CHAIR
Lester S. Pearl, 401 Beauwood Court, Olivette, Mo.
Filed July 22, 1963, Ser. No. 75,921
Term of patent 7 years
(Cl. D15—1)



199,789
SOFA
Adrian M. Pearsall, Forty Fort, Pa. (1212 Scott St., Wilkes-Barre, Pa.)
Filed Apr. 14, 1964, Ser. No. 79,482
Term of patent 14 years
(Cl. D15—11)



199,790
MICROTOME BLADE GUARD
Louis A. Robertson, Edgewood, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 1, 1963, Ser. No. 76,069
Term of patent 14 years
(Cl. D16—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



199,791
SCIENCE MEDALLION
Dorothy K. Allen, Libertyville, Ill., and Donald W. Carter, Lake Geneva, Wis., assignors to F. H. Noble & Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1963, Ser. No. 76,985
Term of patent 14 years
(Cl. D29—11)



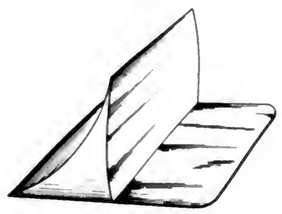
199,792
MEDALLION
Adolph Frankenthaler, 10 W. 33rd St., New York, N.Y.
Filed Dec. 12, 1962, Ser. No. 72,819
Term of patent 14 years
(Cl. D29—19)



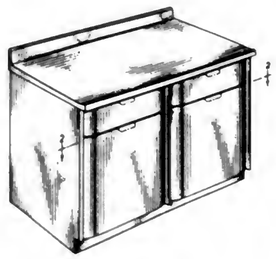
199,793
TROPHY BASE
Alexander Pistey, 140 Hurd St., Bridgeport, Conn.
Filed Dec. 30, 1963, Ser. No. 77,951
Term of patent 7 years
(Cl. D29—28)



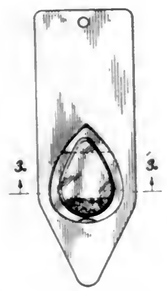
199,794
BOOK END
Donald C. Lindley, 106 Cuba Hill Road, Greenlawn, N.Y.
Filed June 26, 1964, Ser. No. 80,596
Term of patent 7 years
(Cl. D33—3)



199,795
CABINET
Stephen Pechenik, York, Pa., assignor to Colonial Products Company, Dallastown, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1963, Ser. No. 77,862
Term of patent 14 years
(Cl. D33—19)



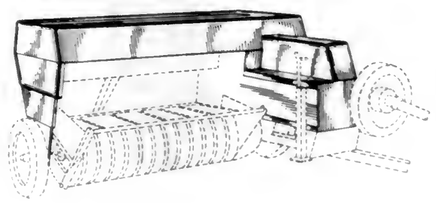
199,796
COMBINATION SEED PACKAGE AND GARDEN MARKER
Oliver H. Roskam, R.R. 4, Parkville, Mo.
Original design application Aug. 5, 1963, Ser. No. 76,101, now Design Patent No. 199,032, dated Sept. 1, 1964. Divided and this application July 21, 1964, Ser. No. 80,943
Term of patent 14 years
(Cl. D35—1)



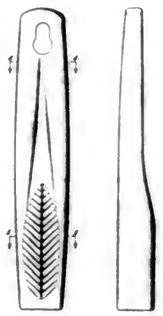
199,797
FOOTED TUMBLER OR SIMILAR ARTICLE
Robert Alexander Wilkin, London, England, assignor to Peter Pan Productions Limited, London, England, a British company
Filed Jan. 3, 1964, Ser. No. 78,061
Claims priority, application Great Britain July 9, 1963
Term of patent 14 years
(Cl. D36—8)



199,798
HAY BALER
James E. Bywater, Royal Oak, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 9, 1963, Ser. No. 75,711
Term of patent 14 years
(Cl. D40—1)



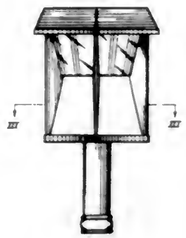
199,799
HANDLE FOR KITCHEN IMPLEMENTS OR SIMILAR ARTICLES
Charles A. Rowley, 7803 E. Harper Ave., Downey, Calif.
Filed Feb. 1, 1963, Ser. No. 73,397
Term of patent 14 years
(Cl. D44—29)



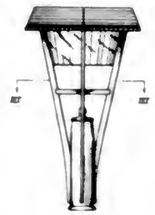
199,800
FLASHLIGHT
Sidney Schwartz, New York, N.Y., assignor to Bantam-Lite, Inc., New York, N.Y., a corporation of New York
Filed Aug. 6, 1963, Ser. No. 76,127
Term of patent 14 years
(Cl. D48—24)



199,801
LUMINAIRE
Charles E. Turner, Memphis, Tenn., and Sheldon M. Rutter, Miami, Fla., assignors to American Electric Manufacturing Corporation, Southaven, Miss.
Original design application Sept. 23, 1963, Ser. No. 76,674, now Design Patent No. 199,077, dated Sept. 8, 1964. Divided and this application July 29, 1964, Ser. No. 81,057
Term of patent 14 years
(Cl. D48—31)



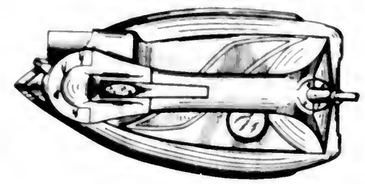
199,802
LUMINAIRE
Charles E. Turner, Memphis, Tenn., and Sheldon M. Rutter, Miami, Fla., assignors to American Electric Manufacturing Corporation, Southaven, Miss.
Original design application Sept. 23, 1963, Ser. No. 76,687, now Design Patent No. 199,078, dated Sept. 8, 1964. Divided and this application July 29, 1964, Ser. No. 81,058
Term of patent 14 years
(Cl. D48—31)



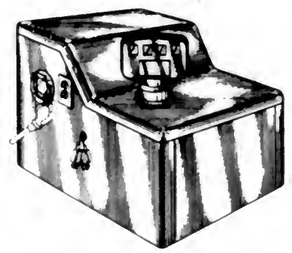
199,803
ROOF LIGHT HOUSING FOR AUTOMOTIVE VEHICLES AND THE LIKE
Jeanne C. M. Heim, % National Taxicab Supply Co., 488 Bryant St., San Francisco, Calif.
Filed Apr. 8, 1963, Ser. No. 74,344
Term of patent 14 years
(Cl. D48—32)



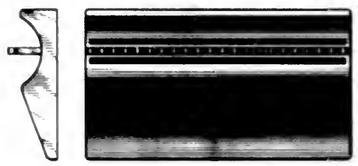
199,804
ELECTRIC IRON
Austin E. Cox, Wadsworth, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Aug. 21, 1963, Ser. No. 76,304
Term of patent 14 years
(Cl. D49—6)



199,805
AIRCRAFT FUEL DISPENSER
Floyd E. MacSpadden, 13050 Memorial Drive, Houston, Tex.
Filed Nov. 22, 1963, Ser. No. 77,543
Term of patent 14 years
(Cl. D52—2)



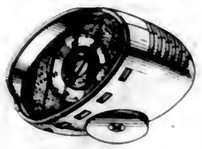
199,806
COIN HOLDER
Bernhard W. Maute, 336 Edgewood Ave., West Englewood, N.J.
Filed Aug. 16, 1963, Ser. No. 76,247
Term of patent 14 years
(Cl. D52—4)



199,807
MEASURING RULER OR SIMILAR ARTICLE
Jack J. Wilson, P.O. Box 1511, Colorado Springs, Colo.
Filed June 14, 1963, Ser. No. 75,344
Term of patent 14 years
(Cl. D52—6)



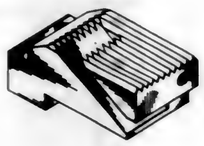
199,808
WEATHER INDICATING INSTRUMENT
Joseph M. Gazzam III, 7801 Ruxway Road, Baltimore, Md.
Filed Sept. 23, 1963, Ser. No. 76,688
Term of patent 14 years
(Cl. D52—7)



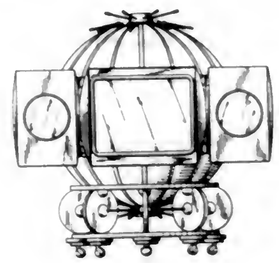
199,809
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Oct. 21, 1963, Ser. No. 77,080
Term of patent 14 years
(Cl. D54—12)



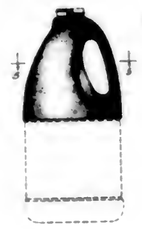
199,810
BRIDGE PIECE FOR A GUITAR OR THE LIKE
James Ormston Burns, Buckhurst Hill, England, assignor to Ormston Burns Limited, Stamford Hill, London, England, a British company
Filed Oct. 23, 1963, Ser. No. 77,128
Claims priority, application Great Britain Apr. 25, 1963
Term of patent 14 years
(Cl. D56—1)



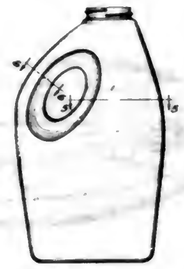
199,811
TELEVISION CABINET OR SIMILAR ARTICLE
Roman Becerra, 85—05 159th St., New York, N.Y.
Filed Aug. 25, 1964, Ser. No. 81,434
Term of patent 14 years
(Cl. D56—4)



199,812
JUG
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 16, 1963, Ser. No. 76,599
Term of patent 14 years
(Cl. D58—5)



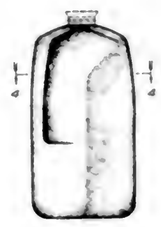
199,813
JUG
Edgar F. Trombly, Grosse Pointe Farms, and Clara Virginia Eicholtz, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 79,656
Term of patent 14 years
(Cl. D58—5)



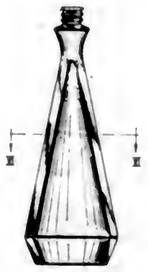
199,814
JUG
Albert B. Mojonnier, Chicago, Ill., assignor to Albert Mojonnier, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 2, 1964, Ser. No. 80,681
Term of patent 14 years
(Cl. D58—5)



199,815
BOTTLE
Clarence A. Price and Richard L. Platte, Ann Arbor, and James R. Whelan, Rochester, Mich., assignors to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 13, 1963, Ser. No. 76,572
Term of patent 14 years
(Cl. D58—6)



199,816
WINE BOTTLE
John Mariani, Jr., 250 Stewart Ave., Garden City, N.Y.
Filed Apr. 7, 1964, Ser. No. 79,374
Term of patent 14 years
(Cl. D58—7)



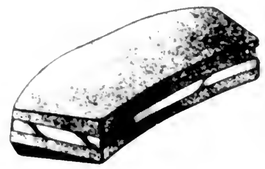
199,817
COMBINED BOTTLE AND CLOSURE
William C. Harris and Warren J. Luedtke, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 29, 1963, Ser. No. 74,188
Term of patent 14 years
(Cl. D58—8)



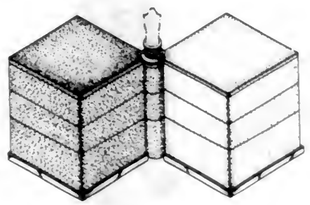
199,818
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, and Robert Jacob Musel, Linwood, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Dec. 5, 1963, Ser. No. 77,706
Term of patent 14 years
(Cl. D58—8)



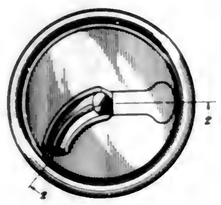
199,819
BOX
Richard C. J. Palson, Medfield, Mass., assignor to Wismar, Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 6, 1964, Ser. No. 78,085
Term of patent 7 years
(Cl. D58—12)



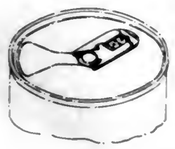
199,820
JEWELRY BOX
William H. Meeker, 128 Russell Ave., Rochester, N.Y.
Filed May 1, 1964, Ser. No. 79,762
Term of patent 14 years
(Cl. D58—12.7)



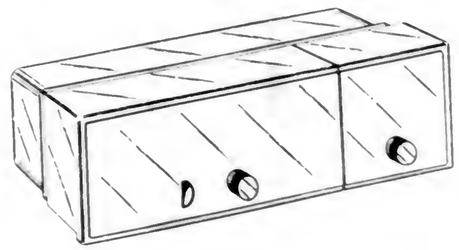
199,821
CLOSURE WITH A TEAR STRIP OPENER
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio
Filed Aug. 21, 1963, Ser. No. 76,316
Term of patent 14 years
(Cl. D58—26)



199,822
PULL TAB FOR A TEAR STRIP OPENER
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 10, 1964, Ser. No. 79,442
Term of patent 14 years
(Cl. D58—26)



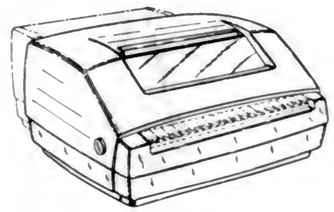
199,823
FILM UNIT FOR A PHOTOGRAPHIC COPYING APPARATUS
Ralph M. Vigna, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 16, 1963, Ser. No. 77,815
Term of patent 14 years
(Cl. D61—1)



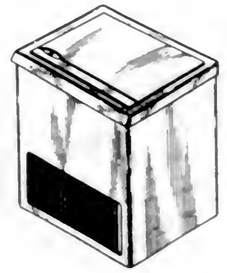
199,824
COMBINED KEYBOARD AND ELECTRONIC DATA PRINTER
Philip H. Stevens, Syracuse, and David O. Chase, Camillus, N.Y., and Roger A. Schindler, Allison Park, Pa., assignors to SCM Corporation, a corporation of New York
Filed Oct. 17, 1962, Ser. No. 72,137
Term of patent 14 years
(Cl. D64—11)



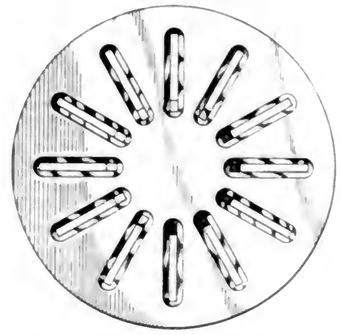
199,825
ELECTRONIC DATA PRINTER
Philip H. Stevens, Syracuse, and David O. Chase, Camillus, N.Y., and Roger A. Schindler, Allison Park, Pa., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original design application Oct. 17, 1962, Ser. No. 72,137. Divided and this application June 18, 1964, Ser. No. 80,544
Term of patent 14 years
(Cl. D64—11)



199,826
REFRIGERATED CHEST OR SIMILAR ARTICLE
James Robert Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Apr. 14, 1964, Ser. No. 79,498
Term of patent 14 years
(Cl. D67—3)



199,827
DEAERATION PLATE FOR SOLID FUEL PROPELLANTS
Robert H. Oelnck, Sr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 22, 1962, Ser. No. 70,655
Term of patent 14 years
(Cl. D71—1)



199,828
MESSAGE PAD HOLDER
William E. Regan, Hillsborough, Calif., assignor to Regan Industries, Inc., San Bruno, Calif., a corporation of California
Filed Aug. 26, 1963, Ser. No. 76,357
Term of patent 7 years
(Cl. D74—1)



199,829
UPRIGHT CONVENIENCE PANEL FOR HOSPITAL ROOM
William C. Boteler, Mission, Kans., assignor to Puritan Compressed Gas Corporation, Kansas City, Mo., a corporation of Missouri
Filed Feb. 25, 1963, Ser. No. 73,695
Term of patent 14 years
(Cl. D83—1)



199,830
TRAY FOR URINALYSIS EQUIPMENT
Edward J. Hill, 1660 Lochridge, Bloomfield Hills, Mich.
Filed May 7, 1964, Ser. No. 79,871
Term of patent 14 years
(Cl. D83—1)

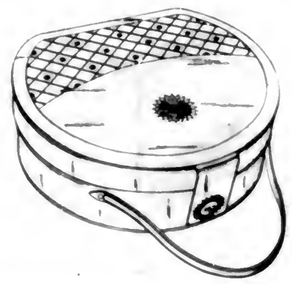
199,831
BALLING GUN FOR USE IN INTRODUCING BOLUSES INTO AN ANIMAL'S MOUTH
James H. Klein, Greenwood Village, and Francis I. Tallentire, Aurora, Colo., assignors to Frost Engineering Development Corporation, Englewood, Colo., a corporation of Colorado
Filed June 19, 1963, Ser. No. 75,417
Term of patent 14 years
(Cl. D83—12)



199,832
TOOTHPICK
William Edelman, Tyler, Abe Albert Fox, Dallas, and Tom B. Francis, Longview, Tex., assignors to The Dentist Toothpick Company, Inc., a corporation of Texas
Filed Mar. 19, 1962, Ser. No. 69,312
Term of patent 14 years
(Cl. D86—10)



199,833
HAIR DRYER CARRYING CASE OR SIMILAR ARTICLE
William V. Judson, Westport, and Theodore G. Daher, Stratford, Conn., assignors to General Electric Company, a corporation of New York
Filed May 7, 1964, Ser. No. 79,873
Term of patent 14 years
(Cl. D87—5)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 15TH DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Cobaugh, Robert F. Re. 25,698.
Cobaugh, Robert F., to AMP Inc. High tensile splice. Re. 25,698, 12–15–64, Cl. 174—90.
Furman, Frank J., and H. A. Panissidi, to International Business Machines. Hydraulic control apparatus. Re. 25,700, 12–15–64, Cl. 60—54.5.
Hrebicek, James. Spring suspension with levelling means. Re. 25,697, 12–15–64, Cl. 280—124.
International Business Machines: *See*—
Furman, Frank J., and Panissidi. Re. 25,700.
Kidd, Marshall C., to Radio Corp. of America. Simplified two-channel multiplex system. Re. 25,699, 12–15–64, Cl. 179—15.
Panissidi, Hugo A.: *See*—
Furman, Frank J., and Panissidi. Re. 25,700.
Radio Corp. of America: *See*—
Kidd, Marshall C. Re. 25,699.

LIST OF PLANT PATENTEES

Conard-Pyle Co., The: *See*—
Dot, Pedro. 2,462.
Schwartz, Ernest. 2,463.
Dot, Pedro, to The Conard-Pyle Co. Rose plant. 2,462, 12–15–64, Cl. 20.
Schwartz, Ernest, to The Conard-Pyle Co. Rose plant. 2,463, 12–15–64, Cl. 1.
Silva, William E. Apple tree. 2,464, 12–15–64, Cl. 34.

LIST OF DESIGN PATENTEES

Allen, Dorothy K., and D. W. Carter, to F. H. Noble & Co. Science medallion. 199,791, 12–15–64, Cl. D29—11.
American Electric Mfg. Corp.: *See*—
Turner, Charles E., and Rutter. 199,801.
Turner, Charles E., and Rutter. 199,802.
Bantam-Lite, Inc.: *See*—
Schwartz, Sidney. 199,800.
Becerra, Roman. Television cabinet or similar article. 199,811, 12–15–64, Cl. D56—4.
Boteler, William C., to Puritan Compressed Gas Corp. Upright convenience panel for hospital room. 199,829, 12–15–64, Cl. D83—1.
Bosek, John S., to Continental Can Co., Inc. Pull tab for a tear strip opener. 199,822, 12–15–64, Cl. D58—26.
Burns, James O., to Ormston Burns Ltd. Bridge piece for a guitar or the like. 199,810, 12–15–64, Cl. D56—1.
Bywater, James E., to Ford Motor Co. Hay baler. 199,798, 12–15–64, Cl. D40—1.
Carter, Donald W.: *See*—
Allen, Dorothy K., and Carter. 199,791.
Catalano, Herbert T., 25% each to F. N. Fournier and E. L. Levasseur. Space-band cleaning machine. 199,783, 12–15–64, Cl. D9—2.
Chapman, Dave, to Panelfab Products, Inc. Prefabricated building. 199,785, 12–15–64, Cl. D13—1.
Chase, David O.: *See*—
Stevens, Philip H., Chase, and Schindler. 199,824.
Stevens, Philip H., Chase, and Schindler. 199,825.
Clavarino, Amedeo. Bathtub. 199,781, 12–15–64, Cl. D4—4.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C., and Musel. 199,818.
Colonial Products Co.: *See*—
Pechenik, Stephen. 199,795.
Continental Can Co., Inc.: *See*—
Bosek, John S. 199,822.
Cornelius Co., The: *See*—
Reichow, James R. 199,826.
Cox, Austin E., to Dominion Electric Corp. Electric iron. 199,804, 12–15–64, Cl. D40—6.
Daher, Theodore G.: *See*—
Judson, William V., and Daher. 199,833.
Dentist Toothpick Co., Inc., The: *See*—
Edelman, William, Fox, and Francis. 199,832.
Dominion Electric Corp.: *See*—
Cox, Austin E. 199,804.
Douglas, Livingston C., and R. J. Musel, to Colgate-Palmolive Co. Bottle or similar article. 199,818, 12–15–64, Cl. D58—8.
Dow Chemical Co., The: *See*—
Trombly, Edgar F., and Eicholtz. 199,813.
Eastman Kodak Co.: *See*—
Vigna, Ralph M. 199,823.
Edelman, William, A. A. Fox, and T. B. Francis, to The Dentist Toothpick Co., Inc. Toothpick. 199,832, 12–15–64, Cl. D86—10.
Eicholtz, Clara V.: *See*—
Trombly, Edgar F., and Eicholtz. 199,813.
English, Gene L. Dispensing holder for collapsible tubes. 199,780, 12–15–64, Cl. D4—3.
Ford Motor Co.: *See*—
Bywater, James E. 199,798.
Fournier, Francis N.: *See*—
Catalano, Herbert T. 199,783.
Fox, Abe A.: *See*—
Edelman, William, Fox, and Francis. 199,832.
Francis, Tom B.: *See*—
Edelman, William, Fox, and Francis. 199,832.
Frankenthaler, Adolph. Medallion. 199,792, 12–15–64, Cl. D29—19.
Fraze, Ermal C. Closure with a tear strip opener. 199,821, 12–15–64, Cl. D58—26.
Frost Engineering Development Corp.: *See*—
Klein, James H., and Tallentire. 199,831.
Gazzam, Joseph M., III. Weather indicating instrument. 199,808, 12–15–64, Cl. D52—7.
General Electric Co.: *See*—
Judson, William V., and Daher. 199,833.
Harris, William C., and W. J. Luedtke, to S. C. Johnson & Son, Inc. Combined bottle and closure. 199,817, 12–15–64, Cl. D58—8.
Harvey, Richard. Modular unit for grille panels. 199,786, 12–15–64, Cl. D13—1.
Heim, Jeanne C. M. Roof light housing for automotive vehicles and the like. 199,803, 12–15–64, Cl. D48—32.
Hill, Edward J. Tray for urinalysis equipment. 199,830, 12–15–64, Cl. D83—1.
Hoover Ball and Bearing Co.: *See*—
Platte, Richard L. 199,812.
Price, Clarence A., Platte, and Whelan. 199,815.
Johnson, S. C., & Son, Inc.: *See*—
Harris, William C., and Luedtke. 199,817.
Judson, William V., and T. G. Daher, to General Electric Co. Hair dryer carrying case or similar article. 199,833, 12–15–64, Cl. D87—5.
Kategianis, Nicholas S., to Emil J. Paidar Co. Chair or similar article. 199,787, 12–15–64, Cl. D15—1.
Klein, James H., and F. I. Tallentire, to Frost Engineering Development Corp. Balling gun for use in introducing boluses into an animal's mouth. 199,831, 12–15–64, Cl. D83—12.
Levasseur, Edgar L.: *See*—
Catalano, Herbert T. 199,783.
Lindley, Donald C. Book end. 199,794, 12–15–64, Cl. D33—3.
Luedtke, Warren J.: *See*—
Harris, William C., and Luedtke. 199,817.
MacSpadden, Floyd E. Aircraft fuel dispenser. 199,805, 12–15–64, Cl. D52—2.
Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 199,809, 12–15–64, Cl. D54—12.
Mariani, John, Jr. Wine bottle. 199,816, 12–15–64, Cl. D58—7.
Maute, Bernhard W. Coin holder. 199,806, 12–15–64, Cl. D52—4.
Meeker, William H. Jewelry box. 199,820, 12–15–64, Cl. D58—12.7.
Mei, Tsui K., to Ming Wah Electric Bulbs Factory. Letter for signs or the like. 199,776, 12–15–64, Cl. D1—12.
Mei, Tsui K., to Ming Wah Electric Bulbs Factory. Letter for signs or the like. 199,777, 12–15–64, Cl. D1—12.
Mei, Tsui K., to Ming Wah Electric Bulbs Factory. Letter for signs or the like. 199,778, 12–15–64, Cl. D1—12.
Ming Wah Electric Bulbs Factory: *See*—
Mei, Tsui K. 199,776.
Mei, Tsui K. 199,777.
Mei, Tsui K. 199,778.

Mojonnier, Albert B., to Albert Mojonnier, Inc. Jug. 199,814, 12–15–64, Cl. D58—5.
Mojonnier, Albert, Inc.: *See*—
Mojonnier, Albert B. 199,814.
Musel, Robert J.: *See*—
Douglas, Livingston C., and Musel. 199,818.
Newman, Martin. Hat. 199,779, 12–15–64, Cl. D3—13.
Noble, F. H., & Co.: *See*—
Allen, Dorothy K., and Carter. 199,791.
Oelnck, Robert H., Sr., to Thlokol Chemical Corp. Deaeration plate for solid fuel propellants. 199,827, 12–15–64, Cl. D71—1.
Oneida Ltd.: *See*—
Manderfield, Elien B. 199,809.
Ormston Burns Ltd.: *See*—
Burns, James O. 199,810.
Paidar, Emil J., Co.: *See*—
Kategianis, Nicholas S. 199,787.
Palson, Richard C. J., to Wismar, Inc. Box. 199,819, 12–15–64, Cl. D58—12.
Panelfab Products, Inc.: *See*—
Chapman, Dave. 199,785.
Pearl, Lester S. Arm chair. 199,788, 12–15–64, Cl. D15—1.
Pearsall, Adrian M. Sofa. 199,789, 12–15–64, Cl. D15—11.
Pechenik, Stephen, to Colonial Products Co. Cabinet. 199,795, 12–15–64, Cl. D33—19.
Peter Pan Productions Ltd.: *See*—
Wilkin, Robert A. 199,797.
Pistey, Alexander. Trophy base. 199,793, 12–15–64, Cl. D29—28.
Platte, Richard L.: *See*—
Price, Clarence A., Platte, and Whelan. 199,815.
Platte, Richard L., to Hoover Ball and Bearing Co. Jug. 199,812, 12–15–64, Cl. D58—5.
Price, Clarence A., R. L. Platte, and J. R. Whelan, to Hoover Ball and Bearing Co. Bottle. 199,815, 12–15–64, Cl. D58—6.
Puritan Compressed Gas Corp.: *See*—
Boteler, William C. 199,829.
Rankin, Pauline. Body support for use in shampooing the hair or the like. 199,782, 12–15–64, Cl. D4—4.
Regan Industries, Inc.: *See*—
Regan, William E. 199,828.
Regan, William E., to Regan Industries, Inc. Message pad holder. 199,828, 12–15–64, Cl. D74—1.
Reichow, James R., to The Cornelius Co. Refrigerated chest, or similar article. 199,826, 12–15–64, Cl. D67—3.
Robertson, Louis A., to United States of America, Army. Microtome blade guard. 199,790, 12–15–64, Cl. D16—2.
Roskam, Oliver H. Combination seed package and garden marker. 199,796, 12–15–64, Cl. D35—1.
Rowley, Charles A. Handle for kitchen implements or similar articles. 199,799, 12–15–64, Cl. D44—29.
Rutter, Sheldon M.: *See*—
Turner, Charles E., and Rutter. 199,801.
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Schwartz, Sidney, to Bantam-Lite, Inc. Flashlight. 199,800, 12–15–64, Cl. D48—24.
Stapleton, Mathew H. Calf feeder. 199,784, 12–15–64, Cl. D12—2.
Stevens, Philip H., D. O. Chase, and R. A. Schindler, to SCM Corp. Combined keyboard and electronic data printer. 199,824, 12–15–64, Cl. D64—11.
Stevens, Philip H., D. O. Chase, and R. A. Schindler, to SCM Corp. Electronic data printer. 199,825, 12–15–64, Cl. D64—11.
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Trombly, Edgar F., and C. V. Eicholtz, to The Dow Chemical Co. Jug. 199,813, 12–15–64, Cl. D58—5.
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Turner, Charles E., and S. M. Rutter, to American Electric Mfg. Corp. Luminaire. 199,802, 12–15–64, Cl. D48—31.
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Vigna, Ralph M., to Eastman Kodak Co. Film unit for a photographic copying apparatus. 199,823, 12–15–64, Cl. D61—1.
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Wilkin, Robert A., to Peter Pan Productions Ltd. Footed tumbler or similar article. 199,797, 12–15–64, Cl. D36—8.
Wilson, Jack J. Measuring ruler or similar article. 199,807, 12–15–64, Cl. D52—6.
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Amburn, Ray D. 3,161,497.
Aaskov, Helmer. Air-filled sandal. 3,160,963, 12–15–64, Cl. 36—11.5.
Abild, Robert N., to United Aircraft Corp. Actuator mechanism. 3,161,014, 12–15–64, Cl. 60—7.
Abramo, John G., A. Y. Garner, and E. C. Chapin, to Monsanto Co. Vinylidene aromatic phosphorus monomers. 3,161,667, 12–15–64, Cl. 260—461.
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Ackerson, Richard E. Electric animal training device. 3,161,005, 12–15–64, Cl. 54—71.
Adamec, Joseph, and R. J. Bradley, to Security Hardware Mfg. Co., Inc. Door chain lock. 3,161,035, 12–15–64, Cl. 70—93.
Adams, Charles R., and T. J. Jennings, to Shell Oil Co. Preparation of olefinic compounds. 3,161,670, 12–15–64, Cl. 260—465.3.
Adams, Phillip, to Berkeley Chemical Corp. Preparation of substituted alkyl ureas. 3,161,676, 12–15–64, Cl. 260—553.
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Bussey, Atlee H., Morris, and Ray. 3,160,949.
Corney, Martin, Lieberman, and Zernow. 3,160,952.
Ahern, John E., to The Marquardt Corp. Heat exchanger with variable configuration. 3,161,233, 12–15–64, Cl. 165—101.
Aho, Arvo O., and D. R. Atherton, to Logan Co. Hand rail for stairways. 3,161,425, 12–15–64, Cl. 287—54.
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Matsubayashi, Kanji, and Fukushima. 3,161,699.
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Noyes, Atherton, Jr. 3,161,834.
Ajem Laboratories, Inc.: *See*—
Millhiser, Robert G. 3,160,989.
Albinson, Harold H., G. P. Hanley, K. L. Hulsing, H. G. Humphries, and J. J. May, to General Motors Corp. Two-cycle internal combustion engine. 3,161,182, 12–15–64, Cl. 123—32.
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Allen, Edward L., and A. F. Gattiker, Jr., to Ingersoll-Rand Co. Rotary power hammer. 3,161,241, 12–15–64, Cl. 173—47.
Allen, Joseph S. Delay apparatus and method employing electron stream. 3,161,801, 12–15–64, Cl. 315—39.3.
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Amburgey, Jay D. Ball marking device. 3,161,041, 12–15–64, Cl. 73—63.
Amburn, Ray D., to A.L. Processing Co. Toxicant composition comprising corn gluten as carrier. 3,161,497, 12–15–64, Cl. 71—2.6.
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American-Standard Controls Division, a division of American Radiator & Standard Sanitary Corp.: *See*—
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Ames, Irving, and R. B. De Lano, Jr., to International Business Machines Corp. Peltier heating and cooling of substrates and masks. 3,161,542, 12–15–64, Cl. 118—5.
Ames, John E., Jr., to Fairchild Camera and Instrument Corp. Strain gauge compensation. 3,161,045, 12–15–64, Cl. 73—88.5.
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Anderson, Donald J. Despaceable plunger mercury switch. 3,161,745, 12–15–64, Cl. 200—112.
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Anderson, Orin M.: *See*—
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Arquette, Gordon J., and S. Areimma, to Air Reduction Co., Inc. Water soluble films of vinyl alcohol-vinylalkyl ether vinyl acetate copolymers. 3,161,621, 12–15–64, Cl. 260—85.7.
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Aymar, Julian R. Mechanical toothbrush. 3,160,902, 12–15–64, Cl. 15—22.

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Bagnoli, Eno, and S. E. Isakoff, to E. I. du Pont de Nemours and Co. Temperature control system for heat treatment of running yarn lines. 3,161,484, 12–15–64, Cl. 34—114.

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Barton, Gerald B., to United States of America, Atomic Energy Commission. Radioactive cesium containment. 3,161,601, 12–15–64, Cl. 252—301.1.

Barton, Raymond W., H. Heckel, P. Prickett, and E. G. Swenson, to Don Baxter, Inc. Parenteral solution container. 3,161,310, 12–15–64, Cl. 215—1.

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Bell, Basil E., to National Research Development Corp. Depth gauges. 3,161,053, 12–15–64, Cl. 73—300.

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Benini, Celestino. Self-cleaning and ventilating brake. 3,161,260, 12–15–64, Cl. 188—78.

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Bent, John H., to Hamilton Co., Inc. Repeating dispenser. 3,161,323, 12–15–64, Cl. 222—41.

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Biermann, William A., L. R. Germanotta, and E. V. Madritsch, to Controls Co. of America. Sequence control for electric circuits. 3,161,758. 12–15–64, Cl. 219—480.

Bille, Mario, and S. Turato. Device for glueing the upper to soles of shoes. 3,160,899, 12–15–64, Cl. 12—1.

Birch-Iensen, Ake, and H. Ekman, deceased (by G. Ekman), to Svenska Sockerfabriks Aktiebolaget. Dielectrically heated drying apparatus through which the articles to be dried are continuously advanced. 3,161,480, 12–15–64, Cl. 34—1.

Bishop, Harold R., to Hydrocarbon Research, Inc. Refrigeration-heating circuit. 3,161,232, 12–15–64, Cl. 165—62.

Bissell, Gerald. Fishing line device. 3,160,979, 12–15–64, Cl. 43—44.85.

Black, James F., to Esso Research and Engineering Co. Method of removing radioactive products from an organic moderator-coolant used in a nuclear reactor. 3,161,599, 12–15–64, Cl. 252—301.1.

Black, Robert E., and F. L. Green, to General Motors Corp. Radiation source and method for making same. 3,161,504, 12–15–64, Cl. 75—206.

Blackford, Benjamin B., to Johnson & Johnson. Adhesive tape. 3,161,554, 12–15–64, Cl. 156—242.

Blakey, Angus R., Jr., to E. I. du Pont de Nemours and Co. Extruder screw. 3,160,916, 12–15–64, Cl. 18—12.

Bloudoff, Peter S., to Armco Steel Corp. Fluid actauted downwell pump. 3,161,140, 12–15–64, Cl. 103—46.

Blumstein, Abraham. Cuff links. 3,160,932, 12–15–64, Cl. 24—97.

Blumstein, Abraham. Cuff links. 3,160,933, 12–15–64, Cl. 24—97.

Bodenseewerk Perkin-Elmer & Co., G.m.b.H.: *See*—
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Boeing Airplane Co.: *See*—
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Boeing Co., The: *See*—
Allred, Robert W., Clayton, and Schmidt. 3,161,374.

Boerio, Alvin H., to Westinghouse Electric Corp. Solid state infrared detector cell with means to discriminate between the spectral bands in the infrared spectrum. 3,161,773, 12–15–64, Cl. 250—83.3.

Bombrini Parodi-Delfino Societa per Azioni: *See*—
Lemetre, Giacomo, Orlandi, and Pauri. 3,161,476.

Bonafide Mills, Inc.: *See*—
Sloseberg, David K. 3,161,556.

Bonin, George E., to Corning Glass Works. Method and apparatus for machining lip edge portions of a vessel. 3,160,994, 12–15–64, Cl. 51—161.

Bonnet, Yannik: *See*—
Fournet, Andre, Ruaud, and Bonnet. 3,161,626.

Borders, Edgar W., and T. O. Woodring; said Woodring, assor. to said Borders. Work handling apparatus for applying flocked designs. 3,161,543, 12–15–64, Cl. 118—621.

Borelli, Tito, to Montecantini Societá Generale per L'Industria Mineraria e Chimica. Method and means for pumping corrosive liquids. 3,161,139, 12–15–64, Cl. 103—44.

Borg-Warner Corp.: *See*—
Edwards, James D. 3,161,481.

Bork, Karl-Helns: *See*—
Von Werder, Fritz, Bruckner, Bork, and Metz. 3,161,661

Borth, Paul F.: *See*—
Bradley, James W., and Borth. 3,161,552.

Bosch, Robert, Gesellschaft mit beschrankter Haftun: *See*—
Koster, Claus. 3,161,138.

Boston, Frank E., to Dunhill International, Inc. Disposable nurser. 3,161,311, 12–15–64, Cl. 215—11.

Boswinkle, George: *See*—
Hinkel, Lester H., and Boswinkle. 3,161,325.

Bouladon, Gabriel, and P. Zuppiger, to M. Berliet Automobiles. Electric driving wheel equipped with a braking system. 3,161,249, 12–15–64, Cl. 180—10.

Bourdel, Jacques. Relay operating by electrocapillarity. 3,161,750, 12–15–64, Cl. 200—152.

Bourns, Marlan E., M. E. Harrison, W. T. Hardison, D. L. Gaa, and G. F. Kull. Potentiometers. 3,161,849, 12–15–64, Cl. 338—183.

Bowling, Joseph E., Jr., and R. W. Moore, to The Pangborn Corp. Particle-throwing apparatus. 3,160,990, 12–15–64, Cl. 51—9.

Bowser, Robert S., and R. C. Huggins, to Sylvania Electric Products Inc. Capacitance shorting switch for electrical translating devices. 3,161,733, 12–15–64, Cl. 200—16.

Boydell, Kenneth R.: *See*—
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Boyer, Paul E., W. O. Mansfield, F. E. Crawford, and J. H. Lanier. Road clearing and material spreading apparatus. 3,160,964, 12–15–64, Cl. 37—41.

Bradley, Charles H., to The Pangborn Corp. Work piece passage seals for shot blasting apparatus. 3,160,991, 12–15–64, Cl. 51—9.

Bradley, James W., and P. F. Borth, to Photo-Engravers Research Inc. Composition and process for powderless etching. 3,161,552, 12–15–64, Cl. 156—14.

Bradley, Robert J.: *See*—
Adamec, Joseph, and Bradley. 3,161,035.

Brame, James M.: *See*—
Brame, James T. and J. M. 3,161,962.

Brame, James T., and J. M. Brame. Level. 3,160,962, 12–15–64, Cl. 33—215.

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Braun, Samuel, to Sperry Rand Corp. Specialty box. 3,161,315, 12–15–64, Cl. 220—4.

Breivogel, Philip J., to White Laboratories. Substituted benzoxazoles. 3,161,649, 12–15–64, Cl. 260—307.

Brennan, George A., and E. S. Prichard, to Challenge-Cook Bros., Inc. Vehicular wheel assembly. 3,161,418, 12–15–64, Cl. 280—81.

Brenner, William, 15% to J. P. Malone. Street sign illumination means. 3,161,356, 12–15–64, Cl. 240—25.

Brewton, Lee. Garbage receptacle with refrigerating unit. 1,361,030, 12–15–64, Cl. 62—440.

Brickman, Joan B., to Jantzen Inc. Women's swim suit constructions. 3,161,200, 12–15–64, Cl. 128—455.

Brienza, Angelo. Sash weight mounting means. 3,160,914, 12–15–64, Cl. 16—206.

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Huett, George C., Briggs, and Probst. 3,161,770.

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British Petroleum Co. Ltd., The: *See*—
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Britten, Harold H., and H. W. Gayek, to General Electric Co. Translator switching circuit utilizing variable impedance biasing means. 3,161,818, 12–15–64, Cl. 322—28.

Brodlin, Willi. Method of gasifying liquid fuels. 3,161,228, 12–15–64, Cl. 158—117.5.

Brogan, Thomas R., and J. W. Lothrop, to Avco Corp. Coil assembly for an electric magnet. 3,161,807, 12–15–64, Cl. 317—158.

Bröse, Heinrich. Window. 3,160,926, 12–15–64, Cl. 20—53.

Broussard, Gerald R., to Texas Instruments Inc. Temperature compensated transistor. 3,161,810, 12–15–64, Cl. 317—234.

Brown, Arthur S., to General Motors Corp. Exhaust system hanger for motor vehicles. 3,161,252, 12–15–64, Cl. 180—64.

Brown Citrus Machinery Corp.: *See*—
Leslie, Harry A., Holbrook, and Andrews. 3,161,123.

Brown, Elmer G., to Clevite Corp. Semiconductor device mount. 3,161,811, 12–15–64, Cl. 317—234.

Brown, Herbert C. Novel organoboron compounds. 3,161,686, 12–15–64, Cl. 260—606.5.

Brown, Northrop, W. P. Langsdorf, Jr., and C. E. Schweitzer, to E. I. du Pont de Nemours and Co. Polyoxymethylene diethers. 3,161,616, 12–15–64, Cl. 260—67.

Brown, Paul L., and J. F. Hyde, to Dow Corning Corp. Polyfunctional alkoxy endblocked polysiloxanes and their cured compositions. 3,161,614, 12–15–64, Cl. 260—46.5.

Brown, Stewart C.: *See*—
Wagner, Herbert A., and Brown. 3,161,846.

Broyles, Marshall W. Fastener. 3,160,935, 12–15–64, Cl. 24—205.11.

Bruckner, Klaus: *See*—
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Brunswick Corp.: *See*—
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Bryan, John F., Jr., to Kershaw Mfg. Co., Inc. Vertically-reciprocating saw apparatus for cutting crossties. 3,161,213, 12–15–64, Cl. 143—68.

Bryant, Ellis H., Jr.: *See*—
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Bryant, Herbert W., to Bell Telephone Laboratories, Inc. Dashpot. 3,161,261, 12–15–64, Cl. 188—96.

Brys, Harry E., to Armco Steel Corp. Method and apparatus utilising a magnetic armature and sensing coil for determining flatness. 3,161,824, 12–15–64, Cl. 324—34.

Bucciconе, Dario, to Bucciconi Engineering Co., Inc. Metal sheet handling apparatus. 3,161,278, 12–15–64, Cl. 198—41.

Bucciconi Engineering Co., Inc.: *See*—
Buccicone, Dario. 3,161,278.

Bucher, Philip N.: *See*—
Shepley, John H., and Bucher. 3,161,008.

Bucourt, Robert: *See*—
Nomine, Gerard, Bucourt, and Pierdet. 3,161,635.

Buhrer, Erwin, to Georg Fischer Aktiengesellschaft. Sand cooling plant. 3,161,485, 12–15–64, Cl. 84—236.

Buisson, Pierre. Electrical apparatus for successive measurement and simultaneous indication on an oscilloscope of a plurality of inputs together with a fixed reference. 3,161,827, 12–15–64, Cl. 324—121.

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Burckhalter, Robert N., to Commercial Filters Corp. By-pass assembly for filters. 3,161,589, 12–15–64, Cl. 210—130.

Burgan, Wilfred G., Jr.: *See*—
Siebert, Cletus J., and Burgan. 3,161,132.

Burggren, Robert C., to Honeywell Inc. Pressure sensing apparatus. 3,161,059, 12–15–64, Cl. 73—398.

Burris, Donald J., and J. L. Maulbetsch, to Redfield Gun Sight Co. Variable power riflescope with tilting reticle and erector tube. 3,161,716, 12–15–64, Cl. 88—32.

Burroughs Corp.: *See*—
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Glaser, Edward L. 3,161,763.
Hoberg, George G., Van Andel, and Veitch. 3,161,765.
Smithbauer, Donald J. 3,161,277.

Burrows, Arthur T. C., to Geo. W. King, Ltd. Parking or storage of vehicles. 3,161,303, 12–15–64, Cl. 214—16.1.

Burton, Robert W., to General Motors Corp. Drive line support means. 3,161,253, 12–15–64, Cl. 180—70.

Busch, Richard D., to Scott Paper Co. Apparatus for forming plastic containers. 3,160,920, 12–15–64, Cl. 18—35.

Busey, Harold M.: *See*—
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Busillo, Nicholas F. Window safety guard. 3,160,927, 12–15–64, Cl. 20—71.

Bussey, Atlee H., B. W. Morris, and H. W. Ray, to Aerojet-General Corp. Method of joining elongated objects. 3,160,949, 12–15–64, Cl. 29—421.

Butler, Keith H., J. M. Harris, and H. H. Homer, to Sylvania Electric Products, Inc. Electroluminescent device. 3,161,797, 12–15–64, Cl. 313—108.

Butler Mfg. Co.: *See*—
Carleton, Richard L. 3,160,974.

Butler, Roger M.: *See*—
Tiedje, John L., Bichard, and Butler. 3,161,581.

C.A.V. Ltd.: *See*—
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Caldwell, John R., and E. H. Hill, to Eastman Kodak Co. Polyamide mordant for dyeing synthetic textile fibers. 3,161,608, 12–15–64, Cl. 260—13.

Calhoun, George M., to Shell Oil Co. Liquid lubricant composition. 3,161,596, 12–15–64, Cl. 252—46.6.

California Research Corp.: *See*—
Fries, Bernard A. 3,161,767.
Cameron Machine Co.: *See*—
Pundyk, Joseph. 3,161,043.
Camp, Dempsie C.: *See*—
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Cann, Arthur F., to Stevens-Arnold, Inc. Control circuits for electric motors. 3,161,454, 12–15–64, Cl. 346—32.
Cann, Arthur F., to Stevens-Arnold, Inc. Electromagnetic switches. 3,161,785, 12–15–64, Cl. 307—132.
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Papacharalambous, Harry G. 3,160,997.
Carey, Russell N., to Ellason Refrigerator Co. Hinge assembly for a swingable door. 3,160,913, 12–15–64, Cl. 16—154.
Cargill, Don A., and L. M. Forster. Spring clutch for conveyor pallet. 3,161,145, 12–15–64, Cl. 104—172.
Carleton, Richard L., to Butler Mfg. Co. Poster panel. 3,160,974, 12–15–64, Cl. 40—125.
Carlisle, Willis C.: *See*—
McCarvell, John H., and Carlisle. 3,161,207.
Carlson, Harold G., to General Electric Co. Means for supplying full wave rectified current to the field of an A.C. generator. 3,161,817, 12–15–64, Cl. 322—28.
Carlson, Joseph A.: *See*—
Kuhl, Bernard R., and Carlson. 3,161,815.
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Riordan, Hugh E., and Carow. 3,161,065.
Carpenter, Victor W.: *See*—
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Carr, Charles E. Method for preventing channeling in hydraulic fracturing of oil wells. 3,161,235, 12–15–64, Cl. 166—29.
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Hanus, Edward J., and Carr. 3,161,568.
Carrier Corp.: *See*—
Macrow, Lawrence. 3,161,029.
Carrillo, Nestor. Slide projector. 3,161,109, 12–15–64, Cl. 88—28.
Carter Craft, Inc.: *See*—
Carter, Lewis D. 3,161,395.
Carter, Lewis D., to Carter Craft, Inc. Adjustable strut. 3,161,395, 12–15–64, Cl. 248—354.
Carter, Vincent A., to Champlain-Zapata Plastic Machinery, Inc. Molding press. 3,160,919, 12–15–64, Cl. 18—17.
Carver, Richard: *See*—
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Casco Products Corp., The: *See*—
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Cates, William E. Bottle cap. 3,161,312, 12–15–64, Cl. 215—46.
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Cattermole, Kenneth W., to International Standard Electric Corp. Communication system employing phase shifters and quantizers to reduce noise. 3,161,828, 12–15–64, Cl. 325—42.
Celanese Corp. of America: *See*—
Noether, Herman D., and Singleton. 3,161,709.
Rice, Leonard M., and Clements. 3,161,619.
Cen-Vi-Ro Pipe Corp.: *See*—
Franklin, Matthew J., and Kao. 3,160,939.
Chainbelt Inc.: *See*—
Morris, John M. 3,161,483.
Challenge-Cook Bros., Inc.: *See*—
Brennan, George A., and Prichard. 3,161,418.
Chambran, Jacques, to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques. Stacking ingots and stack formed of same. 3,161,477, 12–15–64, Cl. 29—184.
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Chapman, Dave, to Mohasco Industries, Inc. Sound insulating material and method of making the same. 3,161,258, 12–15–64, Cl. 181—33.
Chapman, Samuel L. Hypodermic syringe. 3,161,194, 12–15–64, Cl. 128—218.
Chartier, Eldrick D. Emergency tire chain. 3,161,217, 12–15–64, Cl. 152—236.
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Chemerda, John M.: *See*—
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Cherry-Burrell Corp.: *See*—
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Chesley Industries Inc.: *See*—
Chesley, Robert G. 3,161,295.
Chesley, Robert G., to Chesley Industries Inc. Display device for merchandise. 3,161,295, 12–15–64, Cl. 211—49.
Chessin, Hyman, to Van Der Horst Corp. of America. Heat resistant porous structure. 3,161,478, 12–15–64, Cl. 29—191.2.
Chessman, Sylvester L., to Morweld Steel Products Corp. Archery bow and method of fabrication. 3,161,189, 12–15–64, Cl. 124—24.
Chisholm, John P., M. R. Bates, and R. B. Russell, Jr., to Sierra Research Corp. Non-interfering plural communications system. 3,161,869, 12–15–64, Cl. 343—5.
Choufoer, Johannes H., H. de Ruiter, and D. van Zoonen, to Shell Oil Co. Catalytic conversion of propene into higher boiling hydrocarbons. 3,161,697, 12–15–64, Cl. 260—683.15.
Christian, Raymond A., H. C. Johnson, A. R. Colley, Sr., and R. C. Elfort, to The National Cash Register Co. Tabulation control mechanism for accounting machines. 3,161,354, 12–15–64, Cl. 235—60.47.
Christoffel, Ivan, and D. P. Schuts, to Allied Chemical Corp. Purification of melamine. 3,161,638, 12–15–64, Cl. 260—249.7.
Chrysler Corp.: *See*—
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Chuhran, Gilbert J.: *See*—
Seltzer, David D., and Chuhran. 3,161,038.
Chumakov, Walter V., to I-T-E Circuit Breaker Co. Feedback control system. 3,161,820, 12–15–64, Cl. 323—66.
Ciocchetti, John E., to Acidos Grasos Limitada. Process for partial oxidation of acetylene. 3,161,683, 12–15–64, Cl. 260—585.5.
Clark, Claude A., to The Dow Chemical Co. Variable volume pumping apparatus. 3,161,136, 12–15–64, Cl. 103—38.
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Cockburn, David H. Adjustable height golf practice tee with hinged striking plate. 3,161,411, 12–15–64, Cl. 273—195.
Cohen, Abraham J., to Sports Arenas, Inc. Bowling pin conditioner. 3,160,901, 12–15–64, Cl. 15—4.
Cohn, Bernard, H. Lopata, and J. N. Shah, to Technilith Inc. Method of making lithographic printing plates. 3,161,521, 12–15–64, Cl. 96—75.
Cohn, Irving H., to Simmonds Precision Products, Inc. Capacity-type measuring system. 3,161,054, 12–15–64, Cl. 73—304.
Cole, Burrel C., 50% to C. H. Williams. Cradle assembly for fiber attenuating apparatus. 3,160,924, 12–15–64, Cl. 19—253.
Cole, Thomas M., to Federal Pacific Electric Co. Automatic circuit breaker having a combined latch and contact unit pivoted to a contact carrier. 3,161,747, 12–15–64, Cl. 200—116.
Coleman-Kramer, Inc.: *See*—
Kramer, Max O. 3,161,385.
Colley, Arthur R., Sr.: *See*—
Christian, Raymond A., Johnson, Colley, and Elfort. 3,161,354.
Collier-Keyworth Co.: *See*—
Anderson, George A. 3,161,396.
Collins, Joseph L., to United States of America, Navy. Ultra-low frequency recording. 3,161,739, 12–15–64, Cl. 179—100.2.
Collins, Robert J., and R. J. Matthews, to The Upjohn Co. Process for relieving pain with 3-*p*-chloro-phenoxy-2-hydroxy-propyl carbamate. 3,161,567, 12–15–64, Cl. 167—65.
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Grass, Gary G. 3,160,903.
Colson, U. O., Co.: *See*—
Gach, Peter P. 3,161,177.
Comerio, Ercole, to Metalmeccanica S.p.A. Device for guiding the frame in an embroidery machine. 3,161,165, 12–15–64, Cl. 112—90.
Comet, Ralph L. Apparatus for forming masking tabs. 3,161,099, 12–15–64, Cl. 83—108.
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Burckhalter, Robert N. 3,161,589.
Commercial Shearing & Stamping Co.: *See*—
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Commercial Solvents Corp.: *See*—
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Voglis, Gregory M., and Willis. 3,161,851.
Compton, John. Continuous lautering of brewers' wort. 3,161,522, 12–15–64, Cl. 99—52.
Conklin, Charles E. Automatic null-balancing electrical measuring recorders. 3,161,459, 12–15–64, Cl. 346—145.
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Smith, Robert R., II. 3,161,362.
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Biermann, William A., Germanotta, and Madritsch. 3,161,758.
Cook, Leonard W., and R. I. Schauseil, to General Electric Co. Fluorescent lamp starter including a glow switch contiguous and thermally connected to a thermal switch. 3,161,746, 12–15–64, Cl. 200—113.5.
Cooper, Glenn D., and H. L. Finkbeiner, to General Electric Co. Process for making Grignard reagents. 3,161,689, 12–15–64, Cl. 260—665.
Cooper, Peter J.: *See*—
Creasey, Raymond F., and Cooper. 3,161,378.
Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Four-component transition metal catalyst for polymerizing olefins. 3,161,627, 12–15–64, Cl. 260—93.7.

Corcoran, John W., to Beckman & Whitley, Inc. Framing camera with rectangularly grouped frame area. 3,161,885, 12–15–64, Cl. 352—84.
Corley, Marshall D. Plug dislodging and retrieving device. 3,160,978, 12–15–64, Cl. 43—17.2.
Corney, Martin, I. Lieberman, and L. Zernow, to Aerojet-General Corp. Method of explosively plating particles on a part. 3,160,952, 12–15–64, Cl. 29—529.
Cornia, William: *See*—
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Goss, Charles L., and Liptak. 3,161,227.
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Pulta, Wallace W. 3,161,473.
Cosner, Robert R., and G. LeRoy, to Union Carbide Corp. Agricultural transplanter for use with plastic film mulch. 3,161,163, 12–15–64, Cl. 111—3.
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Creasey, Raymond F., and P. J. Cooper, to English Electric Aviation Ltd. Supersonic aircraft wing with powerplant. 3,161,378, 12–15–64, Cl. 244—53.
Creighton, John H., and H. C. Welser, to Deere & Co. Scraper elevator. 3,161,280, 12–15–64, Cl. 198—109.
Crines, James M., to United States of America, Navy. Slider for retaining aircraft launching towlines. 3,161,380, 12–15–64, Cl. 244—63.
Crosfield Electronics Ltd.: *See*—
Bent, Dennis H., Kirk, and Astley. 3,161,366.
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Cunningham, Leonard. Dart-like projectile with elongated tail of resilient, compressible material. 3,161,410, 12–15–64, Cl. 273—106.5.
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Larsen, Burnham L. and B. J. 3,161,115.
Larsen, Burnham L. and B. J. 3,161,116.
Curme, Henry G., to Eastman Kodak Co. Thermoxerography. 3,161,529, 12–15–64, Cl. 117—17.5.
Curtis, Gerald R.: *See*—
Price, John F., and Curtis. 3,161,821.
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Sutherland, Carl E., and Young. 3,161,089.
Czerwenka, Gerhard, to Focke-Wulf Gesellschaft mit beschrankter. Jettison tanks for aircraft. 3,161,384, 12–15–64, Cl. 244—118.
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Fries, Edward W. 3,161,157.
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Takamatsu, Hideji, Umemoto, Fujimoto, and Nakamura. 3,161,652.
Dale Electronics, Inc.: *See*—
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Dalsell, David R., Jr., to E. D. Jones Corp. Separator-refiner. 3,161,359, 12–15–64, Cl. 241—82.
D'Amico, John J., to Monsanto Co. Method of reducing population of weeds and combating insects. 3,161,496, 12–15–64, Cl. 71—2.6.
Danhi, Morris M. Multi-compartment vehicle tire. 3,161,219, 12–15–64, Cl. 152—339.
Danuski, Frank T., Jr. Corner sander. 3,160,995, 12–15–64, Cl. 51—170.
Danusso, Ferdinando: *See*—
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Flanagan, James L., and M. B. Gardner, to Bell Telephone Laboratories, Inc. Elimination of operationally induced noise fluctuations in echo suppressor apparatus. 3,161,838, 12–15–64, Cl. 333—2.
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Fleckenstein, Joseph E., to Johnson Service Co. Pneumatic devices having cascaded sets of concentric orifices. 3,161,025, 12–15–64, Cl. 60—60.
Fleischmann, Lester K., and W. J. Kenney, to Standard Manifold Co. Stationery carrier for writing machines. 3,161,276, 12–15–64, Cl. 197—133.
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Flower, Archibald T., and J. I. MacPherson. Spreader for bundled electric conductors. 3,161,723, 12–15–64, Cl. 174—146.
Floyd, Terence J., to Audco Ltd. Fluid control valve. 3,161,400, 12–15–64, Cl. 251—62.
Focke-Wulf Gesellschaft mit beschraenkter : *See*—
Czerwenka, Gerhard. 3,161,384.
Ford Motor Co. : *See*—
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Poindexter, David L., Benchoff, and Fos. 3,161,302.
Fountain, Eugene B., to Shell Oil Co. Conversion process. 3,161,698, 12–15–64, Cl. 260—683.74.
Fournet, Andre, M. Ruaud, and Y. Bonnet, to Societe des Usines Chimiques Rhone-Poulenc. Process for the production of polypropylene. 3,161,626, 12–15–64, Cl. 260—93.7.
Francis, Wilbur C., to W. K. Mathews. Brick carrier. 3,161,431, 12–15–64, Cl. 294—63.
Franck, Marcel, Société les Vaporisateurs : *See*—
Fedit, René, and Janodet. 3,161,329.
Frank, Lorant E. : *See*—
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Franklin, Matthew J., and P. W. Kao, to Cen-Vi-Ro Pipe Corp. Oscillating packer roller. 3,160,939, 12–15–64, Cl. 25—30.
Franz, Richard D. : *See*—
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Freeman, Frederick : *See*—
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Fremuth, Winfried J. : *See*—
D'Errico, Michael J., and Fremuth. 3,161,679.
Frey, Louis E. Spring construction. 3,160,894, 12–15–64, Cl. 5—243.
Fries, Bernard A., to California Research Corp. Fluid flow measurement method. 3,161,767, 12–15–64, Cl. 250—43.5.
Fries, Edward W., to DCA Food Industries, Inc. Apparatus for producing comestibles. 3,161,157, 12–15–64, Cl. 107—29.
Fruehauf Corp. : *See*—
Tantlinger, Keith W., and Fujioka. 3,161,316.
Fruhstorfer, Wolfgang, and H. Muller-Calgan, to E. Merck Aktiengesellschaft. 2-[(2'-methyl-benzo-thienyl-3')-methyl]-Δ^2-imidazoline and its pharmaceutically acceptable acid addition salts. 3,161,653, 12–15–64, Cl. 260—309.6.
Frysinger, Edward B., to Hughes Aircraft Co. Pulse generator for developing pulses of predetermined width and short fall time. 3,161,830, 12–15–64, Cl. 328—34.
Fujimoto, Katsuro : *See*—
Takamatsu, Hideji, Umemoto, Fujimoto, and Nakamura. 3,161,652.
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Fyr-Fyter Co., The : *See*—
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Gaa, Donald L. : *See*—
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Gach, Peter P., to U. O. Colson Co. Blotter holder. 3,161,177, 12–15–64, Cl. 120—24.
Galpin, Robert K. P., to Associated Electrical Industries Ltd. Hall effect apparatus. 3,161,845, 12–15–64, Cl. 338—32.

Gambill, Charles C., and A. B. Roby, to General Motors Corp. Electric range heater control. 3,161,759, 12–15–64, Cl. 219—494.

Gardner, Adryl W. Multiple-wheel articulated drive axle and vehicle. 3,161,250, 12–15–64, Cl. 180—22.

Gardner, Mark B.: *See*—
Flanagan, James L., and Gardner. 3,161,838.

Garms, Ralph F.: *See*—
Himes, John M., and Garms. 3,161,036.

Garner, Albert Y., to Monsanto. Polyphosphinate resins. 3,161,607, 12–15–64, Cl. 260—2.

Garner, Albert Y., to Monsanto Co. Phosphine oxide polymers. 3,161,687, 12–15–64, Cl. 260—606.5.

Garner, Albert Y.: *See*—
Abramo, John G., Garner, and Chapin. 3,161,667.

Gatsis, John G.: *See*—
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Gattiker, Albert F., Jr.: *See*—
Allen, Edward L., and Gattiker. 3,161,241.

Gayek, Henry W.: *See*—
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Gaynes, Raymond A., to Mystik Tape, Inc. Pressure-sensitive adhesive tape for use at low and high temperatures. 3,161,533, 12–15–64, Cl. 117—68.5.

Gehl Bros. Mfg. Co.: *See*—
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Geigy Chemical Corp.: *See*—
Denss, Rolf, Kuhnis, and Eugster. 3,161,647.

Geld, Isidore, to United States of America, Navy. Method and composition for chemical rust removal. 3,161,598, 12–15–64, Cl. 252—147.

General Aniline & Film Corp.: *See*—
Azorlosa, Julian L., and Stoner. 3,161,538.
Rauch, Emil B., and Dersch. 3,161,520.
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General Electric Co.: *See*—
Berry, Theodore M. 3,161,544.
Britten, Harold H., and Gayek. 3,161,818.
Carlson, Harold G. 3,161,817.
Cook, Leonard W., and Schausell. 3,161,746.
Cooper, Glenn D., and Finkbeiner. 3,161,689.
De Wolf, George L., and Williams. 3,161,813.
Faus, Harold T. 3,161,056.
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Goldberg, Eugene P. 3,161,615.
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Hodges, Ralph D., Antalis, and Wood. 3,161,843.
Holub, Fred F. 3,161,541.
Johnson, Donald W., and Thompson. 3,161,365.
Le Grand, Donald G., and Flom. 3,161,704.
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Nagamatsu, Henry T., Schmid, and Sheer. 3,161,789.
Propster, Charles H., Jr., and Barbe. 3,161,856.
Propster, Charles H., Jr., White, Trangle, and Barbe. 3,161,855.
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Sprung, Murray M. 3,161,613.
Streater, August L. 3,161,822.
Swartz, Paul S. 3,161,809.
White, Emery A., Austad, and Trangle. 3,161,857.
Williams, Michael. 3,161,862.

General Foods Corp.: *See*—
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General Mills, Inc.: *See*—
Opie, Joseph W., and Johnson. 3,161,524.

General Motors Corp.: *See*—
Albinson, Harold H., Hanley, Hulsing, Humphries, and May. 3,161,182.
Black, Robert E., and Green. 3,161,504.
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Percival, Worth H., and Tsou. 3,161,790.
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General Precision, Inc.: *See*—
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General Time Corp.: *See*—
Goodenough, Bradford A. 3,161,450.

Genisco, Inc.: *See*—
Bekey, Andrew. 3,161,795.

Gerhardt, Carl W. Method and apparatus for measuring corrosion rates. 3,161,042, 12–15–64, Cl. 73—86.

Germanotta, Louis R.: *See*—
Biermann, William A., Germanotta, and Madritsch. 3,161,758.

Gerstenfeld, Arthur, to Heinemann Electric Co. Rotary shaft drive solenoid including a chain connector. 3,161,791, 12–15–64, Cl. 310—23.

Getz, Edward T., to Eaton Mfg. Co. Torque transmitting device. 3,161,071, 12–15–64, Cl. 74—230.24.

Giammaria, John J., and E. M. Nygaard, to Socony Mobil Oil Co., Inc. Gasoline containing sulfide ignition control agents. 3,161,487, 12–15–64, Cl. 44—69.

Giddings & Lewis Machine Tool Co.: *See*—
Fitzner, Arthur O. 3,161,110.

Gillaspie, Athey G., to Champion Papers Inc. Pulping cellulose material with an alkaline cooking liquor containing hydrazine. 3,161,562, 12–15–64, Cl. 162—72.

Gilson Bros. Co.: *See*—
Versch, Roman H. 3,161,301.

Glacier Metal Co. Ltd., The: *See*—
Love, Phil P. 3,161,446.

Glants, Alvin: *See*—
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Glas, Wayne W., and C. J. Trick. Catheter. 3,161,197, 12–15–64, Cl. 128—295.

Glaser, Edward L., to Burroughs Corp. Electronic digital computer with word field selection. 3,161,763, 12–15–64, Cl. 235—157.

Glaxo Group Ltd.: *See*—
Wilkinson, Peter A., and Tebby. 3,161,684.

Gleim, William K. T., to Universal Oil Products Co. Hydrorefining with decomposed organo-metallic catalyst. 3,161,584, 12–15–64, Cl. 208—264.

Gleim, William K. T., and J. G. Gatsis, to Universal Oil Products Co. Hydrorefining crude oil with colloidally dispersed catalyst. 3,161,585, 12–15–64, Cl. 208—264.

Goddard, Denis A., to Beloit Corp. Automatic flying splice. 3,161,367, 12–15–64, Cl. 242—58.4.

Godfrey, Norman B.: *See*—
Leseane, Sherman D., Godfrey, and Moss. 3,161,682.

Godtfredsen, Wagn O., to Løvens Kemiske Fabrik Ved A. Kongsted. Method for the production of 6-aminopenicillanic acid. 3,161,573, 12–15–64, Cl. 195—36.

Goeldner, Richard W.: *See*—
Pavelic, Vjekoslav, and Goeldner. 3,161,558.

Goetzewerke Friedrich Goetze Aktiengesellschaft: *See*—
Löscher, Harry. 3,161,350.

Goffinet, Bernard: *See*—
Joly, Robert, Warnant, Jolly, and Goffinet. 3,161,663.

Goffinet, Edward P., Jr., to E. I. du Pont de Nemours and Co. Process for making acetylene. 3,161,695, 12–15–64, Cl. 260—679.

Goldberg, Eugene P., to General Electric Co. Resinous copolymeric polycarbonate of a mixture of dihydric phenols. 3,161,615, 12–15–64, Cl. 260—47.

Goldfarb, Stanley. Convertible hobby horse. 3,161,417, 12–15–64, Cl. 280—7.1.

Goldingay, Charles H., to Joseph Lucas (Industries) Ltd. Means for closing the filling orifices of electric storage batteries. 3,161,548, 12–15–64, Cl. 136—177.

Goldschmidt, Th. A. G. Chemische Fabriken: *See*—
Rossmy, Gerd. 3,161,611.

Golightly, James S., D. H. Doehlert, and C. R. Davidson, Jr., to Pittsburgh Plate Glass Co. Apparatus for bending glass sheets to compound curvatures. 3,161,493, 12–15–64, Cl. 65—158.

Golly, Millis R.: *See*—
Weis, Frank G., and Golly. 3,161,590.

Gongoll, Vernon F. G. G. Klinger, and W. J. Wiswesser, to The Electric Storage Battery Co. Respirator filter unit. 3,161,491, 12–15–64, Cl. 55—502.

Gonski, Joseph: *See*—
Newton, John S., Hlinsky, Gonski, and Lundquist. 3,161,439.

Goodenough, Bradford A., to General Time Corp. Pilferproof wall plug. 3,161,450, 12–15–64, Cl. 339—80.

Goodman Mfg. Co.: *See*—
Newton, John S., Hlinsky, Gonski, and Lundquist. 3,161,439.

Goodrich, B. F., Co., The: *See*—
Hermanns, Otto E. 3,161,063.

Gordon Ian: *See*—
Schick, Frederick A., and Gordon. 3,161,307.

Gordon, Walter H., Jr., to General Electric Co. Control device and circuits for electric bedcovers. 3,161,806, 12–15–64, Cl. 317—132.

Gorrell, John E., to Electronic Associates, Inc. Bar chart recording system having a plurality of preselected coded patterns. 3,161,455, 12–15–64, Cl. 346—45.

Gorsich, Richard D., to Ethyl Corp. Preparation of polyethylene using a catalyst containing mono-cyclopentadienyl titanium trichloride. 3,161,629, 12–15–64, Cl. 260—94.9.

Gort, William J., to Koppers Co., Inc. Thermally insulating panels. 3,160,925, 12–15–64, Cl. 20—15.

Gosmann, Enart, to Western Electric Co., Inc. Visual aid technique of presenting drawing changes. 3,161,510, 12–15–64, Cl. 96—43.

Goss, Charles L., and L. C. Liptak, to Corning Glass Works. Infrared gas burner. 3,161,227, 12–15–64, Cl. 158—99.

Gottlieb, Bernard. Lamp shade and method of making same. 3,161,358, 12–15–64, Cl. 240—108.

Goulden, John D. S., to National Research Development Corp. Method and apparatus for the analysis of emulsions and suspensions. 3,161,768, 12–15–64, Cl. 250—43.5.

Graham, Paul R., and J. R. Darby, to Monsanto Co. Composition comprising liquid phosphate ester, thermoplastic resin and cellulose derivative. 3,161,609, 12–15–64, Cl. 260—17.

Graham Robert E.: *See*—
Harrison Charles W., Graham, and Darbie. 3,161,778.

Graham, Tom S., to Ocean Drilling & Exploration Co. Pipe support for use in marine drilling. 3,161,027, 12–15–64, Cl. 61—46.

Granryd, Thorvald G., to The Frank G. Hough Co. Tractor loaders. 3,161,306, 12–15–64, Cl. 214—140.

Grass, Gary G., to Colonnag Ag. Apparatus for automatically cleaning vehicles or the like. 3,160,903, 12–15–64, Cl. 15—97.

Gray, Edward E.: *See*—
Dell, Harold R., Gray, Frank, and Stoltz. 3,161,458.

Great Lakes Carbon Corp: *See*—
Thomas, Edward C. 3,161,580.

Great Lakes Stamp & Mfg. Co., Inc.: *See*—
Werder, Theodore G., and Schuetze. 3,161,215.

Green, A. P., Fire Brick Co.: *See*—
Homolya, Harry P. 3,161,162.

Green, Farno L.: *See*—
Black, Robert E., and Green. 3,161,504.

Greene, Nicholas H., Jr., and A. T. Flower. Spreaders for aerial conductors. 3,161,724, 12–15–64, Cl. 174—146.

Greenbalgh, Colin W., to Ilford Ltd. Colour couplers and their production and use in colour photography. 3,161,512, 12–15–64, Cl. 96—55.

Greenbill, Ernest L.: *See*—
St. Clair, Theodore A., and Greenbill. 3,161,049.

Grevich, John J., and C. W. Paulson, to Doughboy Industries, Inc. Plastic bag and packaging machine. 3,161,001, 12–15–64, Cl. 53—182.

Grimm, Eric, to Associated Patentees, Inc. Slide feeds. 3,161,338, 12–15–64, Cl. 226—163.

Grintz, Joseph J. Grocery bag loader. 3,161,003, 12–15–64, Cl. 53—255.

Griswold, Lyman W., to United States of America, Navy. Omnidirectional electromagnetic flowmeter. 3,161,047, 12–15–64, Cl. 73—189.

Groos, Horst H.: *See*—
Haverkamp, Bernhard, and Groos. 3,161,756.

Grooteboer, Wilhelm, to International Standard Electric Corp. Ferrite matrix storing devices with individual core reading and interference-pulse compensation. 3,161,860, 12–15–64, Cl. 340—174.

Grosser, Hermann K. M., and F. J. Schramel, to North American Philips Co., Inc. System for selectively registering the operating periods of a plurality of consuming apparatus. 3,161,761, 12–15–64, Cl. 235—92.

Grundmann, John F. Valve construction. 3,161,206, 12–15–64, Cl. 137—433.

Gschwind, Jean F., and J. A. Villalobos, to Midland-Ross Corp. Fluid distributing apparatus for material treating. 3,167,482, 12–15–64, Cl. 34—54.

Guerriero, Americo J.: *See*—
Batista, Harry J., and Guerriero. 3,161,156.

Guinan, Thomas F., to Federal Pacific Electric Co. Ground testing device. 3,161,804, 12–15–64, Cl. 317—99.

Gulf States Paper Corp.: *See*—
Svensson, Soldan A. 3,161,346.

Gunther, Rainer. System for the direct production of electricity in atomic reactors. 3,161,786, 12–15–64, Cl. 310—4.

H. G. Enterprises: *See*—
Nelkin, Henry G. 3,160,909.

H. Krants-Aachen: *See*—
Simons, Alois. 3,161,273.

HRB-Singer, Inc.: *See*—
Bates, John K., Jr. 3,161,766.

Haas, Paul: *See*—
Dickson, Herbert F., Jr., and Haas. 3,160,946.

Hackler, Ludwig, to Olympia Werke A.G. Circuit assembly for electrical office machines and the like. 3,161,805, 12–15–64, Cl. 317—101.

Haddad, Frederick F.: *See*—
Ruppelt, Francis A., and Haddad. 3,160,973.

Hagemeyer, Hugh J., Jr.: *See*—
Statman, Max, and Hagemeyer. 3,161,669.

Hahn Inc.: *See*—
Willette, Wayne R., and De Baillie. 3,161,006.

Hale, Leslie N., J. N. Tracey, and K. E. Wood., to United States of America, Navy. Indexing and magnetizing device for data storage card. 3,161,883, 12–15–64, Cl. 346—74.

Haley, Oliver A. Granular material metering machine. 3,161,328, 12–15–64, Cl. 222—311.

Hall, Walter J., to Bell & Howell Co. Slide changer. 3,160,972, 12–15–64, Cl. 40—79.

Hall, William D. Inclination responsive electrical switch. 3,161,737, 12–15–64, Cl. 200—61.52.

Hall, William D. Switch adapted to rest on a table or other flat surface. 3,161,738, 12–15–64, Cl. 200—61.52.

Haller, John. Self-aligning spherical bearing. 3,161,445, 12–15–64, Cl. 308—72.

Haller, Louis G.: *See*—
Margolin, William, and Haller. 3,161,023.

Halliburton Co.: *See*—
Hathorn, Don H., and O'Loughlin. 3,161,203.

Halsam Products Co.: *See*—
McLeod, William. 3,161,345.

Halverson, Clyde M. Leg support for automotive vehicle operators. 3,161,435, 12–15–64, Cl. 297—437.

Hamilton Co., Inc.: *See*—
Bent, John H. 3,161,323.

Hamilton, Joel A., to Polaroid Corp. Photographic process. 3,161,122, 12–15–64, Cl. 95—89.

Hamilton, Joel A., and P. D. Bartlett, to Polaroid Corp. Photographic film assemblage. 3,161,516, 12–15–64, Cl. 96—67.

Hammond Organ Co.: *See*—
Kern, Donald R. 3,161,714.

Hammond, Roland P., H. M. Busey, and J. R. Humphreys, Jr., to United States of America, Atomic Energy Commission. Homogeneous-liquid metal-fast reactor. 3,161,570, 12–15–64, Cl. 176—40.

Hand, Larrabee D., Jr.: *See*—
Hignett, Travis P., Slack, Potts, and Hand. 3,161,467.

Hanley, George P.: *See*—
Albinson, Harold H., Hanley, Hulsing, Humphries, and May. 3,161,182.

Hannan, Peter W., H. Jasik, and K. B. Woodard, to United States of America, Army. Twistreflector. 3,161,879, 12–15–64, Cl. 343—18.

Hannon, Charles N.: *See*—
Hannon, Warren W. and C. N. 3,161,000.

Hannon, Gilbert H. Bag package. 3,161,347, 12–15–64, Cl. 229—69.

Hannon, Warren W. and C. H.; said C. N. Hannon, assor. to W. W. Hannon. Apparatus for folding and securing newspapers or the like. 3,161,000, 12–15–64, Cl. 53—120.

Hanny, John F.: *See*—
Herbig, James A., and Hanny. 3,161,602.

Hanson Scale Co.: *See*—
Hansson, Stan B. 3,161,244.

Hansson, Stan B., to Hanson Scale Co. Zeroing device for bathroom type scales. 3,161,244, 12–15–64, Cl. 177—173.

Hanus, Edward J., and J. W. Carr, to Merck & Co., Inc. Parenteral solutions of hydroxocobalamin. 3,161,568, 12–15–64, Cl. 167—81.

Hardison, Wilbur T.: *See*—
Bourns, Marlan E., Harrison, Hardison, Gaa, and Kull. 3,161,849.

Harley, Ernest L., to Imperial Chemical Industries Ltd. Measurement of interfacial levels. 3,161,052, 12–15–64, Cl. 73—302.

Harrer, Joseph M., C. F. Bullinger, and V. M. Kolba, to United States of America, Atomic Energy Commission. Boiling-water nuclear reactor. 3,161,571, 12–15–64, Cl. 176—54.

Harrington, Robert C., Jr., and J. L. Smith, to Eastman Kodak Co. Polyamide fibers having microbiocidal activity. 3,161,622, 12–15–64, Cl. 260—78.

Harris, Joseph M.: *See*—
Butler, Keith H., Harris, and Homer. 3,161,797.

Harris, Kenneth D.: *See*—
Ebdon, Eric, and Harris. 3,161,383.

Harrison, Charles W., R. E. Graham, and A. M. Darbie, to Hewlett-Packard Co. Protection of circuit elements. 3,161,778, 12–15–64, Cl. 307—61.

Harrison, Henry. Mine roof bolt tension indicator. 3,161,174, 12–15–64, Cl. 116—114.

Harrison, James A., and D. R. Howard, to Davy and United Engineering Co. Ltd. Indicating load eccentricity in forges. 3,161,044, 12–15–64, Cl. 73—88.

Harrison, Marvin E.: *See*—
Bourns, Marlan E., Harrison, Hardison, Gaa, and Kull. 3,161,849.

Hart, Irwin M., to Winko-Matic Signal Co. Traffic signal light. 3,161,853, 12–15–64, Cl. 340—107.

Hart, Thomas. Gas light lamp post. 3,161,357, 12–15–64, Cl. 240—82.

Hartmann Luggage Co.: *See*—
O'Neil, Harvey L. 3,161,271.

Hathaway, Charles T.: *See*—
Berggren, Loring J., and Hathaway. 3,160,917.
Berggren, Loring J., and Hathaway. 3,160,918.

Hathorn, Don H., and B. T. O'Loughlin, to Halliburton Co. Method and apparatus for precision blending of composite fluid mediums. 3,161,203, 12–15–64, Cl. 137—8.

Haverkamp, Bernhard, and H. H. Groos, to Schloeman Aktiengesellschaft. Electrically heated billet-containers for metal-extrusion presses. 3,161,756, 12–15–64, Cl. 219—422.

Hayes, Vernon G., to Hayes & Stols Industrial Mfg. Co., Inc. Apparatus for cleaning and/or clearing the boot of an endless conveyor or the like. 3,161,441, 12–15–64, Cl. 302—12.

Hayes & Stols Industrial Mfg. Co., Inc.: *See*—
Hayes, Vernon G. 3,161,441.

Heckel, Hermann: *See*—
Barton, Raymond W., Heckel, Prickett, and Swenson. 3,161,310.

Hediger, Walter, to Storen- und Maschinenfabrik Emil Schenker A.-G. Spring coiling machine. 3,161,224, 12–15–64, Cl. 153—65.

Heinemann Electric Co.: *See*—
Gerstenfeld, Arthur. 3,161,791.

Hendricks, Ernst, to Kronprinz Aktiengesellschaft. Machine for profiling wheel rims. 3,161,222, 12–15–64, Cl. 153—13.

Henn, Richard W., to Eastman Kodak Co. Photographic developer compositions containing an antistain agent. 3,161,513, 12–15–64, Cl. 96—61.

Henn, Richard W., to Eastman Kodak Co. Nonstaining photographic developers. 3,161,514, 12–15–64, Cl. 96—66.

Hennessy, James J., Jr. Railway journal box lid seal. 3,161,444, 12–15–64, Cl. 308—47.

Henry, Jack L., and W. A. Klemm, to Kaiser Aluminum & Chemical Corp. Electrolytic cell for the production of aluminum. 3,161,579, 12–15–64, Cl. 204—243.

Henry, James W.: *See*—
Howe, Donald J., Maurer, and Henry. 3,161,509.

Hense, Theo, to Olympia Werke A.G. Digital conversion and storage system (input device for electronic computers). 3,161,854, 12–15–64, Cl. 340—172.5.

Hepher, Martin, A. Marriage, A. M. Vincent, and L. A. Williams, to Eastman Kodak Co. Process of lithographic printing. 3,161,508, 12–15–64, Cl. 96—29.

Heppenstall Co.: *See*—
Johnson, John C. 3,160,945.

Herbert, Harold W., to Sylvania Electric Products Inc. Electrode shield. 3,161,798, 12–15–64, Cl. 313—240.

Herbig, James A., and J. F. Hanny, to The National Cash Register Co. Process for making capsules. 3,161,602, 12–15–64, Cl. 252—316.

Hermanns, Otto E., to The B. F. Goodrich Co. Tire balancing. 3,161,063, 12–15–64, Cl. 73—483.

Hertzberg, Lawrence E., to Hertzberg-New Method, Inc. Paperback book conversion. 3,161,423, 12–15–64, Cl. 281—29.

Hertzberg-New Method, Inc.: *See*—
Hertzberg, Lawrence E. 3,161,423.

Hesselbarth, Erich: *See*—
Salteri, Renato, and Hesselbarth. 3,161,010.

Hewlett-Packard Co.: *See*—
Harrison, Charles W., Graham, and Darbie. 3,161,778.

Hey, Arte. Manufacture and filling of containers. 3,161,525, 12–15–64, Cl. 99—171.

Heyer, Don, to Heyer Hardware Mfg. Co. Door stop. 3,160,912, 12–15–64, Cl. 16—85.

Heyer Hardware Mfg. Co.: *See*—
Heyer, Don. 3,160,912.

Higgins, Lyman F., Jr. Animated bird holding movable snake. 3,160,981, 12–15–64, Cl. 46—124.

Hignett, Travis P., A. V. Slack, J. M. Potts, and L. D. Hand, Jr., to Tennessee Valley Authority. Direct method for the production of high-analysis phosphoric acid. 3,161,467, 12–15–64, Cl. 23—165.

Hill, Edward H.: *See*—
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Hill, Ronald A., and A. W. Stirling, to International Standard Electric Corp. Electrical circuit elements. 3,160,944, 12–15–64, Cl. 29—25.42.

Himes, John M., and R. F. Garms, to Wagner Mfg. Co. Latch. 3,161,036, 12–15–64, Cl. 70—150.

Hinkel, Lester H., and G. S. Boswinkle, to United States of America, Air Force. Expulsion device. 3,161,325, 12–15–64, Cl. 222—80.

Hlinsky, Emil J.: *See*—
Newton, John S., Hlinsky, Gonski, and Lundquist. 3,161,439.

Hoag, Gilbert L. Socket wrench with captive handle. 3,161,093, 12–15–64, Cl. 81—177.

Hoberg, George G., J. R. Van Andel, and E. W. Veitch, to Burroughs Corp. Electronic adder using two decade counters alternately. 3,161,765, 12–15–64, Cl. 235—176.

Hodges, Ralph D., S. J. Antalis, and D. C. Wood, to General Electric Co. Resin-coated sand filled inductive device. 3,161,843, 12–15–64, Cl. 336—96.

Hoeck, William N., and J. J. Ryan, to Sperry Rand Corp. Tunable cavity resonators. 3,161,840, 12–15–64, Cl. 333—83.

Hogg, John A., and W. P. Schneider, to The Upjohn Co. 2a-lower-alkyl-9α-halo-1, 17-dioxygenated - 3 - keto - 4 - androstenes. 3,161,660, 12–15–64, Cl. 260—397.3.

Holbrook, Franklin K.: *See*—
Leslie, Harry A., Holbrook, and Andrews. 3,161,123.

Holcomb, Don R., to Hughes Aircraft Co. Parametric even harmonic frequency multiplier. 3,161,816, 12–15–64, Cl. 321—69.

Hollingsworth, Lowell M., to United States of America, Air Force. Moving target indication method and system. 3,161,873, 12–15–64, Cl. 343—7.7.

Holmes, Trent H., to United Aircraft Corp. Liquid rocket thrust control. 3,161,017, 12–15–64, Cl. 60—35.6.

Holstein, Alvin W., and J. T. Schuller, to Universal Match Corp. Dispensing mechanism for vending machines. 3,161,319, 12–15–64, Cl. 221—15.

Holub, Fred F., to General Electric Co. Synthetic resin and conductors insulated therewith. 3,161,541, 12–15–64, Cl. 117—232.

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Homolya, Harry P., to A. P. Green Fire Brick Co. Furnace construction. 3,161,162, 12–15–64, Cl. 110—99.

Honeywell Inc.: *See*—
Bar-on, Arie. 3,161,068.
Burggren, Robert C. 3,161,059.
Deziel, Fred T. 3,161,863.
Exner, Frank M. 3,161,030.
Pinckaers, Balthasar H. 3,161,774.

Hood, Bruce G., to Davidson Rubber Co. Inc. Pre-stressed molded foam cushioning element. 3,161,436, 12–15–64, Cl. 297—460.

Horan, John J. Water craft and propulsion means therefor. 3,161,173, 12–15–64, Cl. 115—70.

Horn, Richard E., and E. B. Stuart, to Pitt Metals Co. Inc. Preparation of stannous halides. 3,161,465, 12–15–64, Cl. 23—98.

Hornbostel, Lloyd, to Beloit Iron Works. Adjustable crown roll. 3,161,125, 12–15–64, Cl. 100—155.

Horning, Wayne F., and R. W. Jones, to Inboard Marine, Inc. Motor control system. 3,161,075, 12–15–64, Cl. 74—472.

Horowitz, Alexandre, to Herbert Vissers. Agricultural implement provided with an overload protection. 3,161,240, 12–15–64, Cl. 172—103.

Horwitt, Laurence G., to The Casco Products Corp. Electric cigarette lighter. 3,161,754, 12–15–64, Cl. 219—270.

Hoshino, Shohei: *See*—
Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,161,671.

Hotham, Geoffrey A., to Optron Corp. Optical displacement follower. 3,161,725, 12–15–64, Cl. 178—7.2.

Hough, Frank G., Co., The: *See*—
Granryd, Thorvald G. 3,161,306.

House, Hugh L. Web slitter. 3,161,364, 12–15–64, Cl. 242—56.2.

Howard, David R.: *See*—
Harrison, James A., and Howard. 3,161,044.

Howe, Donald J., R. E. Maurer, and J. W. Henry, to Eastman Kodak Co. Line stereo color pictures. 3,161,509, 12–15–64, Cl. 96—40.

Howington, Thomas G., to St. Regis Paper Co. Process for rendering polymeric surface adherent to a coating. 3,161,702, 12–15–64, Cl. 264—23.

Huber, Ernst. Spraying unit. 3,161,460, 12–15–64, Cl. 8—142.

Huett, George C., H. L. Briggs, and K. G. Probst, to Eugene Dietzgen Co. Thermographic reproduction paper and method of using. 3,161,770, 12–15–64, Cl. 250—65.

Hug, André, and R. Meister, to Ebauches S.A. Driving balance-wheel for an electrical timepiece. 3,161,012, 12–15–64, Cl. 58—28.

Hugentobler, Kurt, to G. Lesieur Etablissements & ses Fils. Injection device. 3,161,144, 12–15–64, Cl. 103—248.

Huggins, Richard C.: *See*—
Bowser, Robert S., and Huggins. 3,161,733.

Hughes Aircraft Co.: *See*—
Frysinger, Edward B. 3,161,830.
Holcomb, Don R. 3,161,816.

Hulsing, Kenneth L.: *See*—
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Hummer, Elmer D., and T. T. Zachwieja. Rotary belt cleaner. 3,161,285, 12–15–64, Cl. 198—230.

Humphreys, Charles R., to E. I. du Pont de Nemours and Co. Bulky textile yarn and process for preparing same. 3,161,011, 12–15–64, Cl. 57—140.

Humphreys, John R., Jr.: *See*—
Hammond, Roland P., Busey, and Humphreys. 3,161,570.

Humphries, Harvey G.: *See*—
Albinson, Harold H., Hanley, Husling, Humphries, and May. 3,161,182.

Hungerford, Dan C., and W. A. Stankiewitch, to Air Reduction Co., Inc. Rotational molding. 3,161,712, 12–15–64, Cl. 264—310.

Hunsicker, Harold Y., and R. C. Lemon, to Aluminum Co. of America. Aluminum base alloy casting. 3,161,502, 12–15–64, Cl. 75—143.

Hunter Douglas International (Quebec) Ltd.: *See*—
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Hupp Corp.: *See*—
Smith, Horace L., Jr. 3,160,896.

Huston, William D., to American-Standard Controls Division, a division of American Radiator & Standard Sanitary Corp. Cluster gauge. 3,161,062, 12–15–64, Cl. 73—431.

Hutcheon, Keith F., to C.A.V. Ltd. Liquid fuel injection pumps. 3,161,133, 12–15–64, Cl. 103—2.

Hyde, James F.: *See*—
Brown, Paul L., and Hyde. 3,161,614.

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Hydrocarbon Research, Inc.: *See*—
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Hygrodynamics, Inc.: *See*—
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I-T-E Circuit Breaker Co.: *See*—
Chumakov, Walter V. 3,161,820.

Ideal Brass Works, Inc.: *See*—
Quinn, Bert A. 3,160,910.

Iida, Jitsuo, to Eiraku Denki Kabushiki Kaisha. Tape recorder. 3,161,361, 12–15–64, Cl. 242—55.12.

Iketani, Taisho. Fluid flow control devices for liquefied gas lighters. 3,161,033, 12–15–64, Cl. 67—7.1.

Ilford Ltd.: *See*—
Greenhalgh, Colin W. 3,161,512.

Ilgas, George M.: *See*—
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Imperial Chemical Industries Ltd.: *See*—
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Inboard Marine, Inc.: *See*—
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Ingenieursbureau voor Systemen en Octrooien Spanstaal N.V.: *See*—
De Koning, Jan. 3,161,281.

Ingersoll-Rand Co.: *See*—
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Inta-Roto Machine Co., Inc., The: *See*—
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International Business Machines Corp.: *See*—
Ames, Irving P., and De Lano. 3,161,542.
Salts, Fred. 3,161,126.

International Harvester Co.: *See*—
Margolin, William, and Haller. 3,161,023.

International Machinery Corp. S.A.: *See*—
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International Paper Co.: *See*—
Paquin, Leon J., Mosher, and Violette. 3,161,560.

International Standard Electric Corp.: *See*—
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Grooteboer, Wilhelm. 3,161,860.
Hill, Ronald A., and Stirling. 3,160,944.
Irmisch, Arndt. 3,161,783.
Lieb, Albert. 3,161,800.
Rosenoer, Jacques Y. P. R., and Sprangers. 3,161,762.

Irmisch, Arndt, to International Standard Electric Corp. Pulse-current generator. 3,161,783, 12–15–64, Cl. 307—106.

Isaacson, Louis. Tree-type lighting fixture and room divider. 3,161,264, 12–15–64, Cl. 189—26.

Isakoff, Sheldon E.: *See*—
Bagnoli, Eno, and Isakoff. 3,161,484.

Isborn, Carl L., to Beckman Instruments, Inc. Logic systems. 3,161,867, 12–15–64, Cl. 340—347.

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Janssen, Paul A. J., to Research Laboratorium Dr. C. Janssen, N.V. 1-(Gamma-aroyl-propyl)-4-(N-aryl-carbonyl amino) piperidines and related compounds. 3,161,637, 12–15–64, Cl. 260—247.2.

Janssen, Paul A. J., to Research Laboratorium Dr. C. Janssen, N.V. 1-benzyl-4-substituted piperidines. 3,161,644, 12–15–64, Cl. 260—293.

Janssen, Paul A. J., to Research Laboratorium Dr. C. Janssen, N.V. 1-(1-aroylpropyl-4-piperidyl)-2-benzimidazolinones and related compounds. 3,161,645, 12–15–64, Cl. 260—293.4.

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Brickman, Joan B. 3,161,200.

Jasik, Henry: *See*—
Hannan, Peter W., Jasik, and Woodard. 3,161,879.

Jay, Frederic C., to Richard Cedar Works Mfg. Corp. Ice cream freezer beaters. 3,161,404, 12–15–64, Cl. 259—134.

Jefferson Chemical Co., Inc.: *See*—
Lesesne, Sherman D., Godfrey, and Moss. 3,161,682.

Jennings, Thomas J.: *See*—
Adams, Charles R., and Jennings. 3,161,670.

Jennings, William A., to Economy Forms Corp. Locking connection for concrete forms. 3,160,940, 12–15–64, Cl. 25—131.

Jepsen, Robert L., and L. Malter, to Varian Associates. Sputtering cathode type glow discharge device vacuum pump. 3,161,802, 12–15–64, Cl. 315—111.

Jerpbak, James A. Wheelbarrow side extension. 3,161,434, 12–15–64, Cl. 296—36.

Jo-Dee Corp.: *See*—
Mellon, Frank, and Di Domenico. 3,161,321.

Johanson, Norman R., to The Babcock & Wilcox Co. Pressure vessel closure. 3,161,317, 12–15–64, Cl. 220—40.

Johansson, Carl E., to The Youngstown Steel Door Co. Flat cars and cradles therefor. 3,161,151, 12–15–64. Cl. 105—368.

Johansson, Carl E., to The Youngstown Steel Door Co. Drop bottom container having latch means therefor. 3,161,300, 12–15–64, Cl. 214—1.

Johansson, Carl E., and D. F. Leonhart, to The Youngstown Steel Door Co. Railway car sides. 3,161,152, 12–15–64, Cl. 105—409.

Johnson, Dale E., and F. H. Lofftus, to United States of America, Atomic Energy Commission. Method of making nuclear fuel compact. 3,161,701, 12–15–64, Cl. 264—21.

Johnson, Donald W., and K. R. Thompson, to General Electric Co. Uncoiler control system. 3,161,365, 12–15–64, Cl. 242—57.

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Opie, Joseph W., and Johnson. 3,161,524.

Johnson, Henry C.: *See*—
Walker, Ronald E., and Johnson. 3,160,965.

Johnson, Herbert C.: *See*—
Christian, Raymond A., Johnson, Colley, and Elfort. 3,161,354.

Johnson, Jesse W. Adjustable pliers. 3,161,094, 12–15–64, Cl. 81—412.

Johnson, John A. Bridging structure for trailer carrying railway cars. 3,161,153, 12–15–64, Cl. 105—458.

Johnson, John A.: *See*—
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Johnson, John C., to Heppenstall Co. Replaceable bit tool. 3,160,945, 12–15–64, Cl. 29—96.

Johnson & Johnson: *See*—
Blackford, Benjamin B. 3,161,554.

Johnson Service Co.: *See*—
Fleckenstein, Joseph E. 3,161,025.

Johnston, James V. Air bearing double integrating accelerometer. 3,161,064, 12–15–64, Cl. 73—490.

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Joly, Robert, Warnant, Jolly, and Goffinet. 3,161,663.

Joly, Robert, J. Warnant, J. Jolly, and B. Goffinet, to Roussel-UCLAF, S.A. Novel 17-desoxy-$\Delta^{1,4}$-pregnadienes and preparation thereof. 3,161,663, 12–15–64, Cl. 260—397.45.

Jones, E. D., Corp.: *See*—
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Jones, Richard L.: *See*—
Larson, Arvid. 3,161,390.

Jones, Robert W.: *See*—
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Nutting, William B., and Joslyn. 3,161,409.

Joslyn Mfg. and Supply Co.: *See*—
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Perry, John T., and Kawiecki. 3,161,812.

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Coover, Harry W., Jr., and Joyner. 3,161,627.

Judelshon, Oscar I., Inc.: *See*—
Judelson, David N. 3,161,097.

Judelson, David N., to Oscar I. Judelshon, Inc. Cutting machine. 3,161,097, 12–15–64, Cl. 82—48.

Justinien, Marcel, and F. de Chabot. Elastically connected pistons for the automatic adjustment of volumetric compression ratios. 3,161,185, 12–15–64, Cl. 123—78.

Jutier, Jean, to Saxby, Etablissements. Detector of passing for the railway signalling. 3,161,387, 12–15–64, Cl. 246—249.

Kabell, Louis J., to Fairchild Camera and Instrument Corp. Semiconductor beam strain gauge. 3,161,844, 12–15–64, Cl. 338—2.

Kabelschlepp G.m.b.H.: *See*—
Merker, Herbert. 3,161,205.

Kägi, Jakob, to Sulzer Freres S.A. Nuclear reactor plant for utilizing heat generated therein. 3,161,572, 12–15–64, Cl. 176—59.

Kaiser Aluminum & Chemical Corp.: *See*—
Henry, Jack L., and Klemm. 3,161,579.

Kallenbach, Rudolf, to The Lubrisol Corp. Solution for forming zinc phosphate coatings on metallic surfaces. 3,161,540, 12–15–64, Cl. 148—6.15.

Kalny, Lou E.: *See*—
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Kalny, Louis J., ½, to L. E. Kalny and ½ to W. V. Zamiara. Shell loading device. 3,161,104, 12–15–64, Cl. 86—10.

Kalvar Corp.: *See*—
Parker, Rienzi B., Jr., and Mokler. 3,161,511.

Kamondy, Charles. Reversing mechanism for passenger propelled vehicle. 3,161,421, 12–15–64, Cl. 280—237.

Kao, Paul W.: *See*—
Franklin, Matthew J., and Kao. 3,160,939.

Kapff, Sixt F., to Standard Oil Co. Apparatus for determining pour point. 3,161,039, 12–15–64, Cl. 73—17.

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Karbo, Richard S., to Sutone Corp. Mounting bracket for a vehicle article. 3,161,297, 12–15–64, Cl. 211—87.

Kassbohrer, Karl, to Karl Kassbohrer Fahrzeugwerke G.m.b.H., firma. Six driven wheel vehicle with front and rear wheels articulated about a transverse axis. 3,161,172, 12–15–64, Cl. 115—1.

Kassbohrer, Karl, Fahrzeugwerke G.m.b.H., firma: *See*—
Kassbohrer, Karl. 3,161,172.

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Perry, John T., and Kawiecki. 3,161,749.
Perry, John T., and Kawiecki. 3,161,812.

Keenan, John G., J. Palfreyman, and F. Freeman, to Rolls-Royce Ltd. Gas turbine engines. 3,161,019, 12–15–64, Cl. 60—35.6.

Keith, Percival C., A. D. Korin, and G. B. Farkas, to Hydrocarbon Research, Inc. Mobile gas liquefaction platform. 3,161,492, 12–15–64, Cl. 62—40.

Keller, Robert R. Building wall. 3,161,267, 12–15–64, Cl. 189—34.

Kelley, Curtis P., to General Motors Corp. Timer knob and shaft for domestic appliances. 3,161,077, 12–15–64, Cl. 74—553.

Kelly, John M., Jr. Hydroplane surfboard. 3,160,897, 12–15–64, Cl. 9—310.

Kemmer, John P., to Litton Industries, Inc. Means and techniques for measuring pressures. 3,161,060, 12–15–64, Cl. 73—398.

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Kennett, John E. Mechanical handling and gripping apparatus. 3,161,308, 12–15–64, Cl. 214—147.

Kenney, William J.: *See*—
Fleischmann, Lester K., and Kenney. 3,161,276.

Kern, Donald R., to Hammond Organ Co. Legato percussion circuit. 3,161,714, 12–15–64, Cl. 84—1.26.

Kershaw Mfg. Co., Inc.: *See*—
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Key, Howard P. Helicopter rotor blade. 3,161,238, 12–15–64, Cl. 170—159.

Kickliter, Jesse. Cast net casting device. 3,160,977, 12–15–64, Cl. 43—8.

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Mutter, Robert A., and Shepherd. 3,160,942.

Kiddle, Robert F.: *See*—
Timares, Norman R., and Kiddle. 3,161,120.

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Kiesslich, Klaus, and G. Raspe, to Schering A.G. 11β-hydroxyl-16α-methyl steroids and 14α-hydroxyl-16α-methyl steroids. 3,161,662, 12–15–64, Cl. 260—397.45.

Kilmer, Earl E., to United States of America, Navy. Explosive means for cutting an electric cable. 3,161,131, 12–15–64, Cl. 102—24.

Kimberly-Clark Corp.: *See*—
Loescher, Richard A. 3,161,336.

Kindseth, Harold V., J. A. Johnson, and T. B. Ludlow, to Bemis Bro. Bag Co. Method of making molding forms. 3,161,705, 12–15–64, Cl. 264—92.

King, Geo. W., Ltd.: *See*—
Burrows, Arthur T. C. 3,161,303.

Kingsley, Wayne H., and D. S. Monroe, to Sylvania Electric Products Inc. Process of manufactuing insulated heater wire and article. 3,161,540, 12–15–64, Cl. 117—217.

Kinstler, Robert C.: *See*—
Rodgers, James M., and Kinstler. 3,161,648.

Kircher, Andrew J. Tool for spring wire hose clamps. 3,161,086, 12–15–64, Cl. 81—9.3.

Kirchner, Egon G. Device for fine adjustment of machine parts. 3,161,069, 12–15–64, Cl. 74—110.

Kirk, Sidney A.: *See*—
Bent, Dennis H., Kirk, and Astley. 3,161,366.

Kish, Steven P. Method of making plastic fixtures. 3,161,555, 12–15–64, Cl. 156—245.

Kitano, Yoshiso. High-speed, automatic screw cutting machine. 3,160,898, 12–15–64, Cl. 10—101.

Kleinewefers, Joh. Sohne: *See*—
Liessem, Karl-Heinz. 3,161,128.

Klemm, William A.: *See*—
Henry, Jack L., and Klemm. 3,161,579.

Klinger, Guy G.: *See*—
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Klug, Robert F., to Dale Electronics, Inc. Adjustable potentiometer. 3,161,850, 12–15–64, Cl. 338—195.

Knab, Clarence S., and C. R. Taylor, to Eastman Kodak Co. Belt tracking mechanism. 3,161,283, 12–15–64, Cl. 198—202.

Knight, Alan E., to Accordo Blinds Ltd. Window frames and blinds therefor. 3,161,230, 12–15–64, Cl. 160—107.

Knittweis, Walter F. Ignition system for internal combustion engine. 3,161,803, 12–15–64, Cl. 315—209.

Knowles, James, and T. R. Stockton, to Ford Motor Co. Engine and hydrokinetic power transmission assembly. 3,161,015, 12–15–64, Cl. 60—12.

Koftan, Dick J., to Link-Belt Co. Diesel pile hammer starting device. 3,161,184, 12–15–64, Cl. 123—46.

Kolba, Verne M.: *See*—
Harrer, Joseph M., Bullinger, and Kolba. 3,161,571.

Kominami, Naoya: *See*—
Minekawa, Saburo, Hoskino, Shibata, and Kominami. 3,161,671.

König, Helmut F., and C. J. Stiefel, to Waggonfabrik Talbot. Tilting section hopper car. 3,161,148, 12–15–64, Cl. 105—262.

Kopec, Mel, and B. Monsher. Nursing bottle holder. 3,161,392, 12–15–64, Cl. 248—104.

Koppers Co., Inc.: *See*—
Gort, William J. 3,160,925.
Sanders, Guy J. 3,161,229.
Stirling, Harold T. 3,161,707.

Korin, Andrew D.: *See*—
Keith, Percival C., Korin, and Farkas. 3,161,492.

Korthaus, Helmut, and R. Wilke. Electromotive adjusting device. 3,161,074, 12–15–64, Cl. 74—424.8.

Koski, Eino A., and H. A. Wilmeth, to Kennecott Copper Corp. Rope-suspended, skid-mounted movable belt conveyor. 3,161,282, 12–15–64, Cl. 198—192.

Koster, Claus, to Robert Bosch Gesellschaft mit beschrankter Haftung. Fuel injection pump for internal combustion engines. 3,161,138, 12–15–64, Cl. 103—41.

Kowalski, Walter, to McGraw-Edison Co. Electric disconnect switch. 3,161,735, 12–15–64, Cl. 200—48.

Kramer, Max O., to Coleman-Kramer, Inc. Means and method for stabilizing laminar boundary layer flow. 3,161,385, 12–15–64, Cl. 244—130.

Kraus, Franz, to W. Schmidding. Siphon dispenser. 3,161,327, 12–15–64, Cl. 222—204.

Kraus, Ludwig, to Daimler-Benz Aktiengesellschaft. Wheel suspension for vehicles. 3,161,251, 12–15–64, Cl. 160—64.

Kreps, Robert W. F., G. C. Vegter, and F. H. Sinnema, to Shell Oil Co. High-impact alkyd resins modified with triethylene glycol. 3,161,618, 12–15–64, Cl. 260—75.

Krier, Keith N.: *See*—
Peabody, Ralph C., and Krier. 3,160,908.

Kritske, Victor J., to Mayline Co., Inc. Counterbalanced tiltable table. 3,161,159, 12–15–64, Cl. 108—2.

Kritzler, Helmuth, and K. Wagner, to Farbenfabriken Bayer Aktiengesellschaft. Polymerization of formaldehyde. 3,161,617, 12–15–64, Cl. 260—67.

Kronprinz Aktiengesellschaft: *See*—
Hendricks, Ernst. 3,161,222.

Krueger, Rudolph E. Sealing means. 3,161,318, 12–15–64, Cl. 220—46.

Kuhl, Bernard R., and J. A. Carlson, to Warwick Electronics, Inc. Automatic television channel selector. 3,161,815, 12–15–64, Cl. 318—467.

Kuhlmann, Etablissements: *See*—
Lenoir, Maurice A. J., and Maigrot. 3,161,633.

Kuhn, Robert E., and P. F. Rose, to Somatex Inc. Constant tension servo system for dyeing jigs. 3,161,371, 12–15–64, Cl. 242—75.43.

Kuhne, Gerhard, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of vinyl chloride polymers and copolymers having improved processing properties. 3,161,623, 12–15–64, Cl. 260—92.8.

Kuhnis, Hans H.: *See*—
Denss, Rolf, Kuhnis, and Eugster. 3,161,647.

Kull, George F.: *See*—
Bourns, Marian E., Harrison, Hardison, Gaa, and Kull. 3,161,849.

Kummer Freres S.A. Fabrique de Machines: *See*—
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Kummer, Pierre, to Kummer Freres S.A. Fabrique de Machines. Device for adjusting the working position of tools in a machine tool. 3,161,096, 12–15–64, Cl. 82—24.

Kunitzer, Martha: *See*—
Tomanek, Martha, and Kunitzer. 3,161,505.

Kurasch, William: *See*—
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Kurashiki Rayon Co., Ltd.: *See*—
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Laboratory for Electronics, Inc.: *See*—
Barker, John L. 3,161,876.

Lagerquist, Roger E., to Edgerton, Germeshausen & Grier, Inc. Latch assembly. 3,161,037, 12–15–64, Cl. 70—169.

La Haye, Paul G., to Mechanical Technology Inc. Centrifugal compressing of low molecular weight gases. 3,161,020, 12–15–64, Cl. 60—39.02.

Laing, Nikolaus. High-output blower. 3,161,348, 12–15–64, Cl. 230—125.

Laithwaite, Eric R., to National Research Development Corp. Electrical machines involving the reciprocation of moving parts. 3,161,793, 12–15–64, Cl. 310—27.

Laithwaite, Eric R.: *See*—
Williams, Frederic C., Laithwaite, and Eastham. 3,161,814.

La Marche, Robert E., and C. F. Simone, to Bell Telephone Laboratories, Inc. Fast-acting envelope detector. 3,161,832, 12–15–64, Cl. 329—178.

Lampe, Albert C.: *See*—
Leenhouts, Albert C., Van Wilgen, Lampe, and Nijmeyer. 3,161,835.

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Lane, Raymond J., to Bristol Siddeley Engines Ltd. Aircraft powerplant. 3,161,379, 12–15–64, Cl. 244—53.

Lang, John W., Jr., to Bell & Howell Co. Viewing attachments. 3,161,106, 12–15–64, Cl. 88—24.

Láng, Károly: *See*—
Barabás, János, Láng, and Zselyonka. 3,161,717.

Lang, Paul: *See*—
Ten Bosch, Maurits, and Lang. 3,161,066.

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Brown, Northrop, Langsdorf, and Schweitzer. 3,161,616.

Lanier, James H.: *See*—
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Lansing, Frederick J., to The Schlegel Mfg. Co. Buffing wheel. 3,160,905, 12–15–64, Cl. 15—230.15.

Lanz, Donald D., to Omark Industries, Inc. Orientation apparatus and method. 3,161,274, 12–15–64, Cl. 193—43.

Larsen, Bernard J.: *See*—
Larsen, Burnham L. and B. J. 3,161,115.
Larsen, Burnham L. and B. J. 3,161,116.

Larsen, Burnham L. and B. J., to Curbmaster of America, Inc. Bridge deck finisher. 3,161,115, 12–15–64, Cl. 94—45.

Larsen, Burnham L. and B. J., to Curbmaster of America, Inc. Curb molding and shaping apparatus. 3,161,116, 12–15–64, Cl. 94—46.

Larson, Arvid, to R. L. Jones. Outrigger pole bracket for fishing boats. 3,161,390, 12–15–64, Cl. 248—40.

Larsson, Nils F., to Electrolux, Aktiebolaget. Thrust bearing for rotatable shaft. 3,161,447, 12–15–64, Cl. 308—163.

Latham, Peter A. Sailing vehicle. 3,161,170, 12–15–64, Cl. 114—39.

Laurie, William A., to Monsanto Co. Modified melamine-toluene sulfonamide resins. 3,161,561, 12–15–64, Cl. 161—263.

Lawless, Albert, to Linotype and Machinery Ltd. Typographic composing machines. 3,161,287, 12–15–64, Cl. 199—50.

Lawson Engineering Co.: *See*—
Lawson, Robert H. and J. B. 3,161,032.

Lawson, John B.: *See*—
Lawson, Robert H. and J. B. 3,161,032.

Lawson, Robert H. and J. B., to Lawson Engineering Co. Tension device for elastic yarn. 3,161,032, 12–15–64, Cl. 66—146.

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Leach, Edward M., to Union Carbide Corp. Core casting method. 3,160,931, 12–15–64, Cl. 22—194.

Leath, Harry A. Rotary internal combustion engine. 3,161,183, 12–15–64, Cl. 123—43.

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Miller, Philip C. 3,161,836.

Lee, Richard J., to The Dow Chemical Co. Method of sealing and folding flanged edges of containers. 3,160,999, 12–15–64, Cl. 53—39.

Leenhouts, Albert C., J. van Wilgen, A. C. Lampe, and J. Nijmeyer, to North American Philips Co., Inc. Oscillator circuit for detecting irregularities in yarns. 3,161,835, 12–15–64, Cl. 331—65.

Lefebvre, Roger, to Societe Francaise d'Agrafage Industriel par Abreviation Sofragraf. Apparatus for applying clips. 3,160,890, 12–15–64, Cl. 1—187.

Le Grand, Donald G., and D. G. Flom, to General Electric Co. Testing device and use in process control. 3,161,704, 12–15–64, Cl. 264—40.

Le Men, Jean, to R. Bellon. Paravallaridine compounds and derivatives and process of making same. 3,161,636, 12–15–64, Cl. 260—239.57.

Lemetre, Giacomo, R. Orlandi, and C. A. Pauri, to Bombrini Parodi-Delfino Societa per Azioni. Apparatus for the catalytic oxidation, in liquid phase, of organic materials. 3,161,476, 12–15–64, Cl. 23—288.

Lemon, Robert C.: *See*—
Hunsicker, Harold Y., and Lemon. 3,161,502.

Lensing, Gilbert A., and H. W. Rosenberg, to Titanium Metals Corp. of America. Corrosion resistant alloy. 3,161,503, 12–15–64, Cl. 75—174.

Lenoir, Maurice A. J., and M. Maigrot, to Etablissements Kuhlmann. Acetylacetoarylide disazo pigments. 3,161,633, 12–15–64, Cl. 260—176.

Leonhart, Donald F.: *See*—
Johansson, Carl E., and Leonhart. 3,161,152.

Lerner, Nathan B., to H. B. and R. B. Spector. Savings bank. 3,161,351, 12–15–64, Cl. 232—5.

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Leseane, Sherman D., N. B. Godfrey, and P. H. Moss, to Jefferson Chemical Co., Inc. Method for preparing polyoxyalkylene primary amines. 3,161,682, 12–15–64, Cl. 260—584.

Lesieur, G., Etablissements & ses Fils: *See*—
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Leslie, Harry A., F. K. Holbrook, and R. A. Andrews, to Brown Citrus Machinery Corp. Method and apparatus for producing citrus juices. 3,161,123, 12–15–64, Cl. 100—37.

Le Tourneau, Robert G. Control arrangements and mechanisms for pivotable devices. 3,161,072, 12–15–64, Cl. 74—422.

Le Tourneau, Robert G. Operating mechanism for dump vehicle. 3,161,437, 12–15–64, Cl. 298—19.

LeTourneau-Westinghouse Co.: *See*—
Roe, Charles C. 3,161,083.

Levine, Zelda B. Guard for garbage disposal. 3,161,360, 12–15–64, Cl. 241—100.5.

Levinson, David J. Means for shifting the phase of polarization in high frequency wave guides. 3,161,839, 12–15–64, Cl. 333—31.

Lew, Kai M., to Ametek, Inc. Shirt folding machine. 3,161,333, 12–15–64, Cl. 223—37.

Lewella Foundations, Inc.: *See*—
Welsch, Samuel L. 3,161,201.

Ley, Kurt, F. Lober, T. Kempermann, and H. Pohle, to Farbenfabriken Bayer Aktiengesellschaft. Alkylated amino phenols protecting rubber goods against ozone. 3,161,612, 12–15–64, Cl. 260—45.9.

Leysen, Leyle V. Package. 3,161,289, 12–15–64, Cl. 206—52.

Leyshon, David M., and J. Stewart, to Imperial Chemical Industries Ltd. Recovery of copper-vanadium catalyst. 3,161,603, 12–15–64, Cl. 252—413.

Lieb, Albert, to International Standard Electric Corp. Indicator tube having two indication systems. 3,161,800, 12–15–64, Cl. 315—13.

Liebel, Julius, and R. Maier, to Maschinenfabrik Augsburg-Nurnberg Ag and Mahle Kommandit-Gesellschaft. Piston for internal combustion engines. 3,161,188, 12–15–64, Cl. 123—41.39.

Lieberman, Irving: *See*—
Corney, Martin, Lieberman, and Zernow. 3,160,952.

Liessem, Karl-Heinz, to Joh Kleinewefers, Sohne. Roller printing machine, particularly for textiles. 3,161,128, 12–15–64, Cl. 101—178.

Lilly, David M.: *See*—
Watson, James R., Lilly, and Conover. 3,160,986.

Lime, Jean, to Societe Alsacienne De Constructions Mecaniques. Cylinder support means for rotary printing machine. 3,161,127, 12–15–64, Cl. 101—153.

Lincoln, Robert N., P. R. Madsen, and H. W. Sudden, to Pet Milk Co. Angular tumbling screw blender. 3,161,403, 12–15–64, Cl. 259—30.

Lindberg, John E. Fire detector circuit arranged to prevent false warning. 3,161,864, 12–15–64, Cl. 340—214.

Lindberg, John E., Jr. Replenishable fire detector. 3,161,865, 12–15–64, Cl. 340—229.

Lindgren, Nils K., to Electrolux, Aktiebolaget. End bells for electric motors. 3,161,794, 12–15–64, Cl. 310—89.

Linehan, Irvin D. Clinometer level with rise indicator. 3,160,961, 12–15–64, Cl. 33—210.

Link-Belt Co.: *See*—
Koftan, Dick J. 3,161,184.

Linotype and Machinery Ltd.: *See*—
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Linthout, Theodoor H., to L. van der Grinten Chemische Fabriek, N.V. Process and apparatus for the manufacture of photoprints from composed translucent laminar originals. 3,161,121, 12–15–64, Cl. 95—77.5.

Linton, William C., to Fuse Indicator Corp. Multiple fuse piping. 3,161,748, 12–15–64, Cl. 200—125.

Liptak, Leonard C.: *See*—
Goss, Charles L., and Liptak. 3,161,227.

Liquidometer Corp., The: *See*—
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Lithoplate, Inc.: *See*—
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Litton Industries, Inc.: *See*—
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Ljungström, Olle, to Svenska Aeroplan Aktiebolaget. Air cushion vehicle. 3,161,171, 12–15–64, Cl. 114—67.

Lloyd, Allan G., to The Daven Co. Self-oscillatory direct-current to alternating-current inverters with magnetic amplifier controls. 3,161,837, 12–15–64, Cl. 331—113.

Lober, Friedrich: *See*—
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Loescher, Richard A., to Kimberly-Clark Corp. Cellulosic product. 3,161,336, 12–15–64, Cl. 225—106.

Loftus, Fred H.: *See*—
Johnson, Dale E., and Loftus. 3,161,701.

Loftus Engineering Corp.: *See*—
Suydam, Walter. 3,161,406.

Logan Co.: *See*—
Aho, Arvo O., and Atherton. 3,161,425.

Lohr, Raymond J.: *See*—
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Lonza Electric and Chemical Works Ltd.: *See*—
Bach, Robert. 3,161,587.

Loof, Nils O. T. Plastic strips. 3,161,210, 12–15–64, Cl. 138—128.

Lopets, Harry: *See*—
Cohn, Bernard, Lopets, and Shah. 3,161,521.

Loral Electronics Corp.: *See*—
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Brogan, Thomas R., and Lothrop. 3,161,807.

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Latta, William M., Sr., and Taliaferro. 3,161,146.
Sapp, Julian F., Sr. 3,161,147.

Love, Phil P., to The Glacier Metal Co. Ltd. Bearing pads. 3,161,446, 12–15–64, Cl. 308—160.

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Lubrizol Corp., The: *See*—
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Lucas, Joseph (Industries), Ltd.: *See*—
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Kindseth, Harold V., Johnson, and Ludlow. 3,161,705.

Ludwig, Herbert. Production of plastic material footwear. 3,160,921, 12–15–64, Cl. 18—42.

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Medwin, Albert H., and Luedicke. 3,161,859.

Lundquist, Joseph: *See*—
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Lurey, Emanuel R., to E. R. Lurey Co. Display rack with vertically adjustable shelves. 3,161,158, 12–15–64, Cl. 108—2.

Lutts, William M., Sr., and L. K. Taliaferro, Sr., to Louisville and Nashville Railroad Co. Longitudinal sectional door operating shaft. 3,161,146, 12–15–64, Cl. 105—240.

Lyde, Derek M.: *See*—
Wells, Frederick H., and Lyde. 3,161,575.

Lyle, Harold M. Ornithopter type aircraft. 3,161,376, 12–15–64, Cl. 244—20.

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Maass, Herbert W. Locking plates for pitless well adaptors. 3,161,424, 12–15–64, Cl. 285—18.

Macartney, Bruce J., to The Fyr-Fyter Co. Sprinkler head. 3,161,236, 12–15–64, Cl. 169—39.

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Orenstein, Edward D., and Macaulay. 3,161,866.

MacDonald, Gladys E. Medical examination gown. 3,160,891, 12–15–64, Cl. 2—69.

Mackie, Harry A., to General Motors Corp. Air cushion load supporting device. 3,161,247, 12–15–64, Cl. 180—7.

MacPherson, John I.: *See*—
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Macrow, Lawrence, to Carrier Corp. Refrigeration systems operable at low condenser pressures. 3,161,029, 12–15–64, Cl. 62—197.

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Madsen, Perry R.: *See*—
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Mahn, Herbert, to Josef Schneider & Co., Optische Werke. Depth-of-field indicator for optical objective with axially shiftable focusing means. 3,161,119, 12–15–64, Cl. 95—45.

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Maigrot, Michel: *See*—
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Malchodi, Robert J., to United States of America, Army. Self-energizing clutch. 3,161,272, 12–15–64, Cl. 192—74.

Malina, Frank J. Lighted, animated and everchanging picture arrangement. 3,160,975, 12–15–64, Cl. 40—132.

Malone, James P.: *See*—
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Mansfield, Wilfred P.: *See*—
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Markel, Lee E., to Skamper Corp. Camping trailer. 3,161,433, 12–15–64, Cl. 296—27.

Markert, Wallace, Jr., and P. C. Thys, to The Babcock & Wilcox Co. Method of making fuel pins by extrusion. 3,160,951, 12–15–64, Cl. 29—474.3.

Markillie, John H.: *See*—
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Marsh, Walter G. Sheet metal brake. 3,161,223, 12-15–64, Cl. 153—16.

Martin, Alfred D., and J. Dawson, to Ericsson Telephones Ltd. Testing and control system for supervisory circuits in electronic telephone exchanges. 3,161,732, 12–15–64, Cl. 179—175.2.

Martin, Arthur L. Device for taking clippings from magazines or the like. 3,160,954, 12–15–64, Cl. 30—294.

Martin, James C.: *See*—
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Martin, James C., to Eastman Kodak Co. 1,3-cyclobutanediisocyanates. 3,161,665, 12–15–64, Cl. 260—453.

Martin, James C., to Eastman Kodak Co. Cyclobutane derivatives containing aromatic amine or imine groups. 3,161,681, 12–15–64, Cl. 260—566.

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Martin-Marietta Corp.: *See*—
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Seltzer, David D., and Chuhran. 3,161,038.

Martinez, Louis, to Pantronic, Inc. Magnetic tone generator for musical instruments. 3,161,713, 12–15–64, Cl. 84—1.01.

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Master, Warren, to Tung-Sol Electric, Inc. Variable voltage transformer. 3,161,842, 12–15–64, Cl. 336—75.

Masterman, John M.: *See*—
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Mathews, William K.: *See*—
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Matsch, Ladislas C., and J. H. Beckman, to Union Carbide Corp. Vacuum panel insulation. 3,161,265, 12–15–64, Cl. 189—34.
Matsubayashi, Kanji, and O. Fukushima, ¼ to Air Reduction Co., Inc., and ¾ to Kurashiki Rayon Co., Ltd. Production of polyvinyl alcohol having improved dyeability and composition therefor including polymers containing basic nitrogen. 3,161,699, 12–15–64, Cl. 260—898.
Matsumoto, Sojin. Watertube boiler. 3,161,178, 12–15–64, Cl. 122—321.
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Matsunaga, Takaho, to Sanyo Electric Co., Ltd., and Yamano Electric Mfg. Co., Ltd. Combined variable resistor and switch devices. 3,161,847, 12–15–64, Cl. 338—172.
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McCarty, John O., and E. H. Bryant, Jr., to The Audichron Co. Temperature announcing machine. 3,161,729, 12–15–64, Cl. 179—100.2.
McCarvell, John H., and W. C. Carlisle. Control device for controlling the upper and lower limits of the pressure in a fluid flow line. 3,161,207, 12–15–64, Cl. 137—492.5.
McClure, Robert M., to Texas Instruments, Inc. Beacon radar recording and reproducing. 3,161,872, 12–15–64, Cl. 343—6.5.
McCormack, Mark E., to United States of America, Army. Air-conditioned protective garment and air-supply-and-conditioning apparatus for the same. 3,161,192, 12–15–64, Cl. 126—204.
McCormick, William A., Jr., to The Pangborn Corp. Method and apparatus for deflashing molded resilient pieces. 3,160,993, 12–15–64, Cl. 51—9.
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Rogers, Dilworth T., and McDermott. 3,161,486.
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McLaughlin, Robert L., and J. W. Schick, to Socony Mobil Oil Co., Inc. Preparation of 1,1,3-trimethyl-3-phenylindanes and heat transfer fluids and lubricants therefrom. 3,161,692, 12–15–64, Cl. 260—668.
McLellan, Silas B. Stud engaging wrench having a fluted gripping surface. 3,161,090, 12–15–64, Cl. 81—53.
McLeod, William, to Halsam Products Co. Snap fastened end-closure for toy containers and the like. 3,161,345, 12–15–64, Cl. 229—45.
McManus, James M., to Chas. Pfizer & Co., Inc. N-alkyl-N-benzyl-β-thiopropionamides. 3,161,680, 12–15–64, Cl. 260—562.
McNeil Laboratories, Inc.: *See*—
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McPherson Instrument Corp.: *See*—
McPherson, Paul M. 3,161,769.
McPherson, Paul M., to McPherson Instrument Corp. Ultraviolet spectrometer with means to change the length of the optical path in the fluent material. 3,161,769, 12–15–64, Cl. 250—43.5.
Mecca, Xavier V. Locking hair curler. 3,161,202, 12–15–64, Cl. 132—40.
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Meckstroth, Robert C.: *See*—
Schroeder, Hans, Puterbaugh, and Meckstroth. 3,161,457.
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Medwin, Albert H., and E. Luedicke, to Radio Corp. of America. Modular memory structures. 3,161,859, 12–15–64, Cl. 340—173.
Meeker, William D., L. S. Simmons, and W. C. Vandersilce, to Product Development Corp. Driving and suspension system for amphibious vehicle. 3,161,246, 12–15–64, Cl. 180—6.48.
Megy, Jean: *See*—
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Meister, René: *See*—
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Meillon, Frank, and J. Di Domenico, to Jo-Dee Corp. Dispensing device having a grooved dispensing wheel. 3,161,321, 12–15–64, Cl. 221—266.
Mencacci, Samuel A., to International Machinery Corp. S.A. Method of and apparatus for processing fish. 3,161,526, 12–15–64, Cl. 99—188.
Menlo Park Laboratories, Inc.: *See*—
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Mercier, Jean. Pressure vessels. 3,161,208, 12–15–64, Cl. 138—30.
Merck & Co., Inc.: *See*—
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Mercorelli, Pasquale A. Pantograph. 3,160,956, 12–15–64, Cl. 33—25.
Merker, Herbert, to Kabelschlepp G.m.b.H. Arrangement for feeding cables, hoses and the like to a movable station. 3,161,205, 12–15–64, Cl. 137—355.17.
Merlen, Monty M., to Barnes Engineering Co. Hyperimmersed bolometer system. 3,161,772, 12–15–64, Cl. 250—83.3.
Messer, Elmer S., to Flow Measurement Co., Inc. Integrator and counter means therefor. 3,161,355, 12–15–64, Cl. 235—61.
Metalmeccanica S.p.A.: *See*—
Comerio, Ercole. 3,161,165.
Metz, Harald: *See*—
Von Werder, Fritz, Bruckner, Bork, and Metz. 3,161,661.
Meuche, Howard O. Storage rack. 3,161,294, 12–15–64, Cl. 211—41.
Meyer, Delbert H., to Standard Oil Co. Trimellitic acid recovery and conversion to anhydride. 3,161,658, 12–15–64, Cl. 260—346.3.
Meyers, Frederick C. Butane lighter construction. 3,161,034, 12–15–64, Cl. 67—7.1.
Micon Electronics, Inc.: *See*—
Powell, Albert E. 3,161,453.
Midland-Ross Corp.: *See*—
Gschwind, Jean F., and Villaloboa. 3,161,482.
Miehle-Goss Dexter, Inc.: *See*—
Thumim, Carl. 3,161,098.
Mildh, Gosta: *See*—
Andersson, Harry, and Mildh. 3,161,464.
Miller, John M., and T. F. Dryden, to Babcock & Wilcox Ltd. Nuclear reactor insulation. 3,161,266, 12–15–64, Cl. 189—34.
Miller, Lee A., to Monsanto Co. Method of inhibiting growth of undesirable plants. 3,161,495, 12–15–64, Cl. 71—2.5.
Miller, Lee A., to Monsanto Co. Bis(carboalkoxyvinyl)diamines and diimines. 3,161,643, 12–15–64, Cl. 260—268.
Miller, Philip C., to Ledex, Inc. Pulsing circuit. 3,161,836, 12–15–64, Cl. 331—112.
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Vogel, William S. 3,161,130.
Millhiser, Robert G., to Ajem Laboratories, Inc. Transverse abrasive blast tube. 3,160,989, 12–15–64, Cl. 51—8.
Mine Safety Appliances Co.: *See*—
Ross, Edward J. 3,161,833.
Minekawa, Saburo, S. Hoshino, A. Shibata, and N. Kominami, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for preparing acrylonitrile. 3,161,671, 12–15–64, Cl. 260—465.3.
Minisci, Francesco, to Montecatini Società Generale per l'Industria Mineraria e Chimica. Process for the preparation of halogenated ketones. 3,161,685, 12–15–64, Cl. 260—593.
Minnesota Mining and Mfg. Co.: *See*—
Mullin, John T. 3,161,882.
Strobel, Rupert F. 3,161,530.
Minutoli, Anthony L., to Kesterman Bros. Mfg. Co. Clasp for articles of jewelry and the like. 3,160,938, 12–15–64, Cl. 24—265.
Mitchell, Robert M., to General Foods Corp. Carton and carton blank. 3,161,340, 12–15–64, Cl. 229—17.
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Okamura, Kenji, Mumata, and Matsumura. 3,161,079.
Modney, William, to Eastman Kodak Co. Photographic color reproduction apparatus. 3,161,108, 12–15–64, Cl. 88—24.
Moennig, W. Hans: *See*—
De Lancie, John, and Moennig. 3,161,102.
Mohasco Industries, Inc.: *See*—
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Mokler, Brian V.: *See*—
Parker, Rienzi B., Jr., and Mokler. 3,161,511.
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Monus, George. 3,161,149.
Möller, Waldemar, to Bodenseewerk Perkin-Elmer & Co., G.m.b.H. Crank gear with adjustable crank arm length, in particular for rotary oscillating tables. 3,161,067, 12–15–64, Cl. 74—42.
Molt, Otto P. Compression springs for mattresses, upholstered furniture, and the like. 3,161,408, 12–15–64, Cl. 267—1.
Monk, James T., to M-R-S Mfg. Co. Steering apparatus. 3,161,254, 12–15–64, Cl. 180—79.2.
Monroe, Douglas S.: *See*—
Kingsley, Wayne H., and Monroe. 3,161,540.
Monroe, Harold R., I. Sandoval, and J. P. Kemp, to Douglas Aircraft Co., Inc. Beacon locator system. 3,161,881, 12–15–64, Cl. 343—120.
Monsanto Co.: *See*—
Abramo, John G., Garner, and Chapin. 3,161,667.
Beaulieu, Raymond D. 3,161,547.
Berggren, Loring J. 3,160,917.
Berggren, Loring J. 3,160,918.
D'Amico, John J. 3,161,496.
Garner, Albert Y. 3,161,607.
Garner, Albert Y. 3,161,687.
Graham, Paul R., and Darby. 3,161,609.
Laurie, William A. 3,161,561.
Miller, Lee A. 3,161,495.
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Vignale, Michael J. 3,161,625.
Wallace, James L. 3,160,915.
Walsh, Robert J. 3,161,468.
Monsanto Research Corp.: *See*—
Smith, John O., and Easley. 3,161,016.
Monsher, Ben: *See*—
Kopec, Mel, and Monsher. 3,161,392.

Montecatini Società Generale per L'Industria Mineraria e Chimica: *See*—
Borelli, Tito. 3,161,139.
Minisci, Francesco. 3,161,685.
Natta, Giulio, Danusso, and Sianesi. 3,161,624.
Monus, George, to The Molamake Co. Releasable rope tie fastener. 3,161,149, 12–15–64, Cl. 105—369.
Moore, Caleb P., to General Motors Corp. Portable radiographic exposure unit. 3,161,776, 12–15–64, Cl. 250—105.
Moore, Ralph W.: *See*—
Bowling, Joseph E., Jr., and Moore. 3,160,990.
Moore, Ralph W., to The Pangborn Corp. Abrasive blasting wheel. 3,160,992, 12–15–64, Cl. 51—9.
Moran, Ronald W., to The Fafnir Bearing Co. Outer ring for antifriction bearing. 3,161,448, 12–15–64, Cl. 308—187.
Morden, John R., to Bertwall Gypsum Co. Sheet material drilling equipment. 3,161,214, 12–15–64, Cl. 144—110.
More, Philip J., to General Electric Co. Cooking appliance. 3,611,757, 12–15–64, Cl. 219—444.
Morehouse, Neal F., to Dr. Salsbur's Laboratories. Veterinary composition containing halo-nitrobenzamides and methods of using same. 3,161,564, 12–15–64, Cl. 167—53.
Morena, Diego J. Non-glare cover for windshield wiper. 3,160,906, 12–15–64, Cl. 15—250.35.
Morris, Bud W.: *See*—
Bussey, Atlee H., Morris, and Ray. 3,160,949.
Morris, John M., to Chainbelt Inc. Vibrating fluidized systems. 3,161,483, 12–15–64, Cl. 34—57.
Morris, John N., and R. M. Williams. Door checking appliance. 3,160,911, 12–15–64, Cl. 16—52.
Morweld Steel Products Corp.: *See*—
Chessman, Sylvester L. 3,161,189.
Mosher, Owen D.: *See*—
Paquin, Leon J., Mosher, and Violette. 3,161,560.
Mosher, Robert A., and W. G. Stanley, to Standard Oil Co. Ammonium nitrate propellant composition providing exhaust gases of reduced temperature. 3,161,550, 12–15–64, Cl. 149—19.
Moss, Philip H.: *See*—
Lesne, Sherman D., Godfrey, and Moss. 3,161,682.
Moxley, James F. Combination diaper and urinal for use by male paralytics. 3,161,198, 12–15–64, Cl. 128—295.
Muhlogger, Leopold: *See*—
Durst, Julius, and Muhlogger. 3,161,107.
Muller, Karl, to Maag Gear Wheel & Machine Co. Ltd. Gear checking instruments. 3,160,959, 12–15–64, Cl. 33—179.5.
Muller, Paul A. Apparatus for making an endless filter string for cigarette filter plugs. 3,161,557, 12–15–64, Cl. 156—462.
Muller-Calgan, Helmut: *See*—
Fruhstorfer, Wolfgang, and Muller-Calgan. 3,161,653.
Mullin, John T., to Minnesota Mining and Mfg. Co. Galvanometer using electrostatic orifice-recording means. 3,161,882, 12–15–64, Cl. 346—74.
Multi-Contact, Neldecker & Co.: *See*—
Neldecker, Rudolf. 3,161,451.
Mumata, Tsutomu: *See*—
Okamura, Kenji, Mumata, and Matsumura. 3,161,079.
Murray Co. of Texas, Inc., The: *See*—
Neitzel, Joseph C., and Nelson. 3,160,922.
Murtha, John R., to The Risdon Mfg. Co. Closure for pressurized packages. 3,161,331, 12–15–64, Cl. 222—394.
Musichuk, Alexander B., to Duncan-Morris Co. Portable highway reflector unit. 3,161,720, 12–15–64, Cl. 88—79.
Musser, C. Walton, to United Shoe Machinery Corp. Rolling wedge drive. 3,161,081, 12–15–64, Cl. 74—640.
Musser, C. Walton, to United Shoe Machinery Corp. Wave generator. 3,161,082, 12–15–64, Cl. 74—640.
Mutter, Robert A., and D. O. Shepherd, to Walter Kidde & Co., Inc. Textile warp preparing apparatus. 3,160,942, 12–15–64, Cl. 28—32.
Musinich, Anthony L. Produce packing table unit. 3,161,004, 12–15–64, Cl. 53—391.
My Double Co., Inc.: *See*—
Sander, Frank S. 3,161,293.
Mystik Tape, Inc.: *See*—
Gaynes, Raymond A. 3,161,533.
Nagamatsu, Henry T., J. R. Schmid, and R. E. Sheer, Jr., to General Electric Co. MHD power generation. 3,161,789, 12–15–64, Cl. 310—11.
Nakamura, Keiji: *See*—
Takamatsu, Hideji, Umemoto, Fujimoto, and Nakamura. 3,161,652.
Naslund, Ruth S. Collapsible storage rack. 3,161,298, 12–15–64, Cl. 211—104.
National Cash Register Co., The: *See*—
Christian, Raymond A., Johnson, Colley, and Elfort. 3,161,354.
Herbig, James A., and Hanny. 3,161,602.
Schroeder, Hans, Puterbaugh, and Meckstroth. 3,161,457.
National Dairy Products Corp.: *See*—
Smith, Charles F. 3,161,527.
National Research Development Corp.: *See*—
Bell, Basil E. 3,161,053.
Goulden, John D. S. 3,161,768.
Laithwaite, Eric R. 3,161,793.
Williams, Frederic C., Laithwaite, and Eastham. 3,161,814.
Natta, Giulio, F. Danusso, and D. Sianesi, to Montecatini Societa Generale per l'Industria Minearia e Chimica. Polymerization of styrene. 3,161,624, 12–15–64, Cl. 260—93.5.
Neckar, Albert E.: *See*—
Egly, Richard S., and Neckar. 3,161,551.
Neldecker, Rudolf, to Multi-Contact, Neldecker & Co. Self-locking electric plug-and-jack connector. 3,161,451, 12–15–64, Cl. 339—91.
Neitzel, Joseph C., and J. A. Nelson, to The Murray Co. of Texas, Inc. Gin overload alarm. 3,160,922, 12–15–64, Cl. 19—55.
Nelkin, Henry G., to H.G. Enterprises. Roller paint applicator. 3,160,909, 12–15–64, Cl. 15—522.
Nelson, James A.: *See*—
Neitzel, Joseph C., and Nelson. 3,160,922.
Nelson, Jerry A.: *See*—
Dettre, Robert H., and Nelson. 3,161,531.
Dettre, Robert H., and Nelson. 3,161,536.
Dettre, Robert H., and Nelson. 3,161,537.
Newsom, Herbert C., to United States Borax & Chemical Corp. Azidoaminoboranes. 3,161,659, 12–15–64, Cl. 260—349.
Newton, John S., E. J. Hlinsky, J. Gonski, and R. C. Lundquist to Goodman Mfg. Co. Continuous mining machine of the side cutting auger type. 3,161,439, 12–15–64, Cl. 299—67.
Nichols, Irvin H. Removable blade arrangement with recesses therein for receiving support projections. 3,160,967, 12–15–64, Cl. 37—141.
Nickason, Charles A. Towel clamp. 3,160,937, 12–15–64, Cl. 24—233.
Nijmeyer, Jan: *See*—
Leenhouts, Albert C., van Wilgen, Lampe, and Nijmeyer. 3,161,835.
Noether, Herman D., and R. W. Singleton, to Celanese Corp. of America. Three stage drawing process for stereospecific polypropylene to give high tenacity filaments. 3,161,709, 12–15–64, Cl. 264—210.
Nolander, John V. Mail box stand. 3,161,397, 12–15–64, Cl. 248—417.
Noly, Jean, to Etablissements F. Potain & Cie. Folding tower crane. 3,161,299, 12–15–64, Cl. 212—46.
Nomine, Gerard, R. Bucourt, and A. Pierdet, to Roussel-Uclaf, S.A. 9α,10α-epoxy-19-nor-testosterone and process for its production. 3,161,635, 12–15–64, Cl. 260—239.55.
Nonnenmacher, Helmut: *See*—
Eder, Kurt, Nonnenmacher, and Schmulder. 3,161,696.
Nord-Aviation, Societe Nationale de Constructions Aeronautiques: *See*—
Sandre, Pierre Y. A. F. 3,161,018.
North American Philips Co., Inc.: *See*—
Grosser, Hermann K. M., and Schramel. 3,161,761.
Leenhouts, Albert C., van Wilgen, Lampe, and Nijmeyer. 3,161,835.
Norton Co.: *See*—
Scott, John J. 3,161,470.
Scott, John J. 3,161,471.
Scott, John J. 3,161,472.
Novak, Milton J. Underwater dredge with separating means. 3,161,438, 12–15–64, Cl. 299—9.
Novara, Caesar. Roller skate having resiliently mounted wheel trucks. 3,161,415, 12–15–64, Cl. 280—11.28.
Novo Terapeutisk Laboratorium A/S: *See*—
Andersen, William. 3,161,634.
Noyes, Atherton, Jr., to Aircraft Radio Corp. Protection circuit for transistor power supply. 3,161,834, 12–15–64, Cl. 331—62.
Nutting, William B., and J. V. Joslyn. Ball and paddle game. 3,161,409, 12–15–64, Cl. 273—97.
Nygaard, Edwin M.: *See*—
Glammaria, John J., and Nygaard. 3,161,487.
Nytronics, Inc.: *See*—
Smith, John P., Jr. 3,161,848.
O'Brien, Edward F., to M/T Mfg. & Supply Co., Inc. Coin depository. 3,161,352, 12–15–64, Cl. 232—16.
Ocean Drilling & Exploration Co.: *See*—
Granbam, Tom S. 3,161,027.
O'Donnell, William R.: *See*—
Sagarin, Philip H., and O'Donnell. 3,161,330.
Odum, William T., R. H. Banks, and J. E. Preston, to United States of America, Navy. Buoyancy adjusting device for swimmers. 3,161,028, 12–15–64, Cl. 61—69.
Offensend, Glen W., to Eastman Kodak Co. Strip film reader and storage device. 3,161,105, 12–15–64, Cl. 88—24.
Okamura, Kenji, T. Mumata, and T. Matsumura, to Mitsubishi Nippon Jukogyo Kabushiki-Kaisha. Crankshaft for 60° W-type twenty-four cylinder engine. 3,161,079, 12–15–64, Cl. 74—603.
O'Leary, Charles D. Ground anchor upsetting and retrieving device. 3,161,432, 12–15–64, Cl. 294—106.
Olmstead, Noel C., to United States of America, Navy. Target selector and comparator circuits. 3,161,760, 12–15–64, Cl. 235—61.5.
O'Loughlin, Bernard T.: *See*—
Hathorn, Don H., and O'Loughlin. 3,161,203.
Olsen, Kenneth H., and R. L. Best, to Digital Equipment Corp. Magnetic core memory. 3,161,861, 12–15–64, Cl. 340—174.
Olympia Werke A.G.: *See*—
Hackler, Ludwig. 3,161,805.
Hense, Theo. 3,161,854.
Omark Industries, Inc.: *See*—
Lanz, Donald D. 3,161,274.
O'Neil, Harvey L., to Hartmann Luggage Co. Lock protecting handle structure for hand luggage cases. 3,161,271, 12–15–64, Cl. 190—58.
O'Neill, William C., to Pneumo Dynamics Corp. Dispensing container and pressurizer therefor. 3,161,324, 12–15–64, Cl. 222—52.
Opie, Joseph W., and E. W. Johnson, to General Mills, Inc. Culinary mix containing a polygalactomannan. 3,161,524, 12–15–64, Cl. 99—94.
Optron Corp.: *See*—
Holtham, Geoffrey A. 3,161,725.
Orenstein, Edward D., and M. Macaulay, to Data Display Inc. Cathode ray tube symbol display system having equal resistor position control. 3,161,866, 12–15–64, Cl. 340—324.

Orlandi, Giorgio. Food-dough cords spacing device. 3,161,155, 12–15–64, Cl. 107—4.

Orlandi, Rinaldo: *See*—
Lemetre, Giacomo, Orlandi, and Pauri. 3,161,476.

Orr, Porter B., Jr., to United States of America, Atomic Energy Commission. Method for purification of promethium-147. 3,161,463, 12–15–64, Cl. 23—14.5.

Ort Brothers Bakery, Inc.: *See*—
Ort, Lewis J. 3,161,523.

Ort, Lewis J., to Ort Brothers Bakery, Inc. Method of preparing an incompletely cooked sliced loaf of bread. 3,161,523, 12–15–64, Cl. 99—90.

Oster, John, Mfg. Co.: *See*—
Annis, Richard R., and Dorner. 3,161,796.

O'Sullivan, William J., Jr., and G. F. Pezdirtz, to United States of America, National Aeronautics and Space Administration. Method and apparatus for shock protection. 3,160,950, 12–15–64, Cl. 29—423.

Otis Elevator Co.: *See*—
Wellens, Harry E., and Martin. 3,161,722.

Pachmayr, Frank A., to Pachmayr Gun Works, Inc. Gun recoil pad. 3,160,976, 12–15–64, Cl. 42—74.

Pachmayr Gun Works, Inc.: *See*—
Pachmayr, Frank A. 3,160,976.

Packaging Frontiers, Inc.: *See*—
Parr, Raymond A. 3,161,326.

Page, Irving H. Fixed pulse rejection system for radar moving target indicator. 3,161,874, 12–15–64, Cl. 343—7.7.

Palge, Richard E. Box or carton with locking means. 3,161,343, 12–15–64, Cl. 229—35.

Palfreyman, Jack: *See*—
Keenan, John G., Palfreyman, and Freeman. 3,161,019.

Pangborn Corp., The: *See*—
Bowling, Joseph E., Jr., and Moore. 3,160,990.
Bradley, Charles H. 3,160,991.
McCormick, William A., Jr. 3,160,993.
Moore, Ralph W. 3,160,992.

Pantronic, Inc.: *See*—
Martinez, Louis. 3,161,713.

Papacharalambous, Harry G., to The Carborundum Co. Method of producing spherical particles. 3,160,997, 12–15–64, Cl. 51—281.

Papadopoulos, Michael N.: *See*—
Deal, Carl N., Jr., Derr, and Papadopoulos. 3,161,461.

Paquin, Leon J., O. D. Mosher, and G. M. Violette, to International Paper Co. Extrusion coated paper and method of making the same. 3,161,560, 12–15–64, Cl. 161—250.

Pardue, George H., to Schlumberger Well Surveying Corp. Acoustic logging tools. 3,161,256, 12–15–64, Cl. 181—.5.

Parke, Davis & Co.: *See*—
Elslager, Edward F., and Worth. 3,161,641.

Parker, Leland C., to General Motors Corp. Crankcase ventilation control device. 3,161,187, 12–15–64, Cl. 123—119.

Parker, Rienzi B., Jr., and B. V. Mokler, to Kalvar Corp. Methacrylonitrile vehicle for vesicular photography and method of using same. 3,161,511, 12–15–64, Cl. 96—49.

Parr, Raymond A., to Packaging Frontiers, Inc. Package holder. 3,161,326, 12–15–64, Cl. 222—183.

Pascoe, Kenneth H.: *See*—
Salter, Calvin R., and Pascoe. 3,161,452.

Pascucci, Vito, and A. Glantz, to G. Leblanc Corp. Trigger mechanism for trumpet. 3,161,103, 12–15–64, Cl. 84—394.

Patmore, James R.: *See*—
Sanders, James W., and Patmore. 3,161,858.

Paulson, Clifford W.: *See*—
Grevich, John J., and Paulson. 3,161,001.

Pauri, Carlo A.: *See*—
Lemetre, Giacomo, Orlandi, and Pauri. 3,161,476.

Pavelic, Vjekoslav, and R. W. Goeldner, to Aqua-Chem, Inc. Flash chamber structure. 3,161,558, 12–15–64, Cl. 159—2.

Payne, John W., to Socony Mobil Oil Co., Inc. Restoration of catalyst by surface grinding. 3,160,998, 12–15–64, Cl. 51—313.

Peabody, Ralph C., and K. N. Krier, to The G. H. Tennant Co. Power sweeper air filter and dust collector system. 3,160,908, 12–15–64, Cl. 15—340.

Pearsall, Thomas J.: *See*—
Wallace, William A., Pearsall, and Mansfield. 3,161,112.

Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques: *See*—
Chambran, Jacques. 3,161,477.

Pennsylvania Refining Co.: *See*—
Fenker, Grafton F. J. 3,161,595.

Peras, Lucien, to Regie Nationale des Usines Renault. Latch for vehicle closure member. 3,161,426, 12–15–64, Cl. 292—99.

Percival, Worth H., and M. T. Tsou, to General Motors Corp. Combustion gas electrical generator. 3,161,790, 12–15–64, Cl. 310—11.

Percy, James W. Metallurgical process control. 3,161,499, 12–15–64, Cl. 75—60.

Perkins, Herbert T., to Bell & Howell Co. Remote control for a projector. 3,161,884, 12–15–64, Cl. 352—179.

Perkins, Roderic B., Jr., and R. G. Weisz, to Standard Oil Co. Reaction of hydrocarbon resins with maleic anhydride. 3,161,620, 12–15–64, Cl. 260—78.4.

Perlaky, Leopold, to Hygrodynamics, Inc. Multiple channel chart recorder. 3,161,456, 12–15–64, Cl. 346—50.

Perrins, Allen R., to The Superior Electric Co. Automatic electric power regulator. 3,161,819, 12–15–64, Cl. 323—47.

Perry, John T., and C. J. Kawiecki, to Joslyn Mfg. and Supply Co. Vacuum relay. 3,161,749, 12–15–64, Cl. 200—144.

Perry, John T., and C. J. Kawiecki, to Joslyn Mfg. and Supply Co. Vacuum variable capacitor. 3,161,812, 12–15–64, Cl. 317—245.

Perry, Joseph A., Jr., to Cherry-Burrell Corp. Level indicating device and system. 3,161,051, 12–15–64, Cl. 73—299.

Pet Milk Co.: *See*—
Lincoln, Robert N., Madsen, and Sudden. 3,161,403.

Peters, Timothy V., Jr., to Polythane Corp. Method and apparatus for wet spinning elastomeric polymers into a fused multifilament fiber. 3,161,706, 12–15–64, Cl. 264—103.

Petersen, Arnold C.: *See*—
Baudhuin, George J., and Petersen. 3,161,309.

Petree, Troy. Bootless grain elevator. 3,161,279, 12–15–64, Cl. 198—55.

Petter, William J., and R. M. and H. A. Ronningen, to Ronningen-Petter Co. Filtering apparatus for liquid materials. 3,161,591, 12–15–64, Cl. 210—251.

Pezdirtz, George F.: *See*—
O'Sullivan, William J., Jr., and Pezdirtz. 3,160,950.

Pfaff, Klaus, to Dornier-Werke G.m.b.H. Attitude control of V.T.O.L. aircraft. 3,161,382, 12–15–64, Cl 244—75.

Pfizer, Chas., & Co., Inc.: *See*—
McManus, James M. 3,161,680.

Pfleeger, Charles P., and J. L. Webb, Jr., to Corning Glass Works. Cathode ray tube envelope. 3,161,314, 12–15–64, Cl. 220—2.1.

Phelisse, Jean A., and C. A. Quiby, to Societe des Usines Chimiques Rhone-Poulenc. Azonitriles. 3,161,630, 12–15–64, Cl. 260—192.

Philco Corp.: *See*—
Swanson, Eric R., and Davis. 3,161,880.
Spiegel, Philip. 3,161,781.

Phillips, Herbert G. Stop attachment for rules. 3,160,957, 12–15–64, Cl. 33—173.

Phillips Petroleum Co.: *See*—
Warner, Paul F., Archer, and Franz. 3,161,494.

Photo-Engravers Research Inc.: *See*—
Bradley, James W., and Borth. 3,161,552.

Picard, Maxime F. B., to Societe de Prospection Electrique, Procedes Schlumberger. Fluid immersed mirror galvanometer with balanced suspension assembly. 3,161,826, 12–15–64, Cl. 324—97.

Pierdet, Andre: *See*—
Nomine, Gerard, Bucourt, and Pierdet. 3,161,635.

Pinckaers, Balthasar H., to Honeywell Inc. Pulse converter control apparatus. 3,161,774, 12–15–64, Cl. 250—83.6.

Pincoffs, Peter H., to United States of America, Army. System for increasing the detection range of a group of search radars. 3,161,870, 12–15–64, Cl. 343—5.

Pine, Robert M., and D. J. Steidinger, to Uarco, Inc. Burster. 3,161,335, 12–15–64, Cl. 225—100.

Pinkley, Herbert B. Building construction and insulation dam therefor. 3,160,987, 12–15–64, Cl. 50—67.

Pinnes, Robert W. Supersonic intermittent-powered low-altitude inclined body. 3,161,381, 12–15–64, Cl. 244—75.

Piros, John J., to Sinclair Research, Inc. Liquid dispenser. 3,161,143, 12–15–64, Cl. 103—203.

Pitt Metals Co. Inc.: *See*—
Horn, Richard E., and Stuart. 3,161,465.

Pittsburgh Plate Glass Co.: *See*—
Golightly, James S., Doehlert, and Davidson. 3,161,493.

Plögge, Heinz, and E. Steiner, to Siemens & Halske Aktiengesellschaft. Pulse distortion circuit for producing odd and even multiples of a fundamental frequency. 3,161,780, 12–15–64, Cl. 307—88.5.

Pneumo Dynamics Corp.: *See*—
O'Neill, William C. 3,161,324.

Podall, Harold E.: *See*—
Ashby, Eugene C., and Podall. 3,161,469.

Pohl, Lothar L., to Specialized Patents Sales and Developments Ltd. Flowmeters. 3,161,048, 12–15–64, Cl. 73—229.

Pohle, Hans: *See*—
Ley, Kurt, Lober, Kempermann, and Pohle. 3,161,612.

Pohlenz, Jack B., to Universal Oil Products Co. Fluid catalytic cracking of hydrocarbons. 3,161,583, 12–15–64, Cl. 208—164.

Pohlkamp, Bernard H. Pedal. 3,161,078, 12–15–64, Cl. 74—560.

Poindexter, David L., R. L. Benchoff, and J. B. Fox, Jr., to American Sugar Co. Pallet loading apparatus. 3,161,302, 12–15–64, Cl. 214—6.

Polaroid Corp.: *See*—
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Hamilton, Joel A. 3,161,122.
Hamilton, Joel A., and Bartlett. 3,161,516.
Wareham, Richard R. 3,161,118.

Polythane Corp.: *See*—
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Poos, George I., to McNeil Laboratories, Inc. 2-amino-5-aryloxazoline products. 3,161,650, 12–15–64, Cl. 260—307.

Porges, Frederick B., to Flexibox Ltd. Mechanical seals for use with relatively rotating members. 3,161,414, 12–15–64, Cl. 277—93.

Potain, F., & Cie, Etablissements: *See*—
Noly, Jean. 3,161,299.

Potts, John M.: *See*—
Hignett, Travis P., Slack, Potts, and Hand. 3,161,467.

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Power Jets (Research and Development) Ltd.: *See*—
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Pratt, James T. Fuse puller. 3,161,085, 12–15–64, Cl. 81—3.8.

Preikschat, Fritz K., to Boeing Airplane Co. Object locating system. 3,161,875, 12–15–64, Cl. 343—7.9.

Press & Co. Maschinenfabrik: *See*—
Press, Ludwig. 3,161,363.

Press, Ludwig, to Press & Co. Maschinenfabrik. Winding machine. 3,161,363, 12–15–64, Cl. 242—56.

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Day, James L. 3,161,009.

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Preston, James E.: *See*—
Odum, William T., Banks, and Preston. 3,161,028.

Price, Dale M.: *See*—
Deutsch, Hans W., and Price. 3,161,073.

Price, Glenn R., E. N. Walsh, C. L. Dewald, and S. Y. C. Soong, to Stauffer Chemical Co. Herbicidal thiocarbimidates, phosphorothiocarbimidates and phosphorothioimides. 3,161,498, 12–15–64, Cl. 71—2.3.

Price, John F., and G. R. Curtis, to Statham Instruments, Inc. Wheatstone bridge transducer circuits with external balancing means. 3,161,821, 12–15–64, Cl. 323—75.

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Prickett, Paul: *See*—
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Propster, Charles H., Jr., and J. L. Barbe, to General Electric Co. Electronic data processor. 3,161,856, 12–15–64, Cl. 340—172.5.

Propster, Charles H., Jr., E. A. White, A. J. Trangle, and J. L. Barbe, to General Electric Co. Electronic data processor. 3,161,855, 12–15–64, Cl. 340—172.5.

Prospection Electrique, Procedes Schlumberger, Societe de: *See*—
Picard, Maxime F. B. 3,161,826.

Pullman Inc.: *See*—
Wickham, Henry P. 3,161,582.

Pults, Wallace W., to Corning Glass Works. Method of making beta-silicon carbide fibers. 3,161,473, 12–15–64, Cl. 23—208.

Pundyk, Joseph, to Cameron Machine Co. Method and apparatus for use in ascertaining web strain in a wound roll. 3,161,043, 12–15–64, Cl. 73—88.

Pure, Samuel, to United States of America, Navy. Acoustical noise pulse simulator. 3,161,831, 12–15–64, Cl. 328—67.

Pusch, Robert A., and L. J. Wenzel, to General Electric Co. Reversible electrical contact structure. 3,161,751, 12–15–64, Cl. 200—166.

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Schroeder, Hans, Puterbaugh, and Meckstroth. 3,161,457.

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Quinn, Bert A., to Ideal Brass Works, Inc. Door closer. 3,160,910, 12–15–64, Cl. 16—51.

Radio Corp. of America: *See*—
Medwin, Albert H., and Luedicke. 3,161,859.

Rainard, Leo W., and E. H. Shattuck, to Joseph Bancroft & Sons Co. Crimping apparatus. 3,160,923, 12–15–64, Cl. 19—66.

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Schott, Lawrence A. 3,161,154.

Randall, Robert A., and D. F. Wilkes, to United States of America, Atomic Energy Commission. Omnidirectional switch. 3,161,736, 12–15–64, Cl. 200—61.45.

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Huntley, Keith G. 3,160,958.

Rannenberg, George C., to United Aircraft Corp. Multipass evaporator. 3,161,234, 12–15–64, Cl. 165—163.

Rash, Donald E., to Eastman Kodak Co. Polyethylene neutron shield containing dispersed boric oxide. 3,161,606, 12–15–64, Cl. 252—478.

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Bussey, Atlee H., Morris, and Ray. 3,160,949.

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Burris, Donald J., and Maulbetsch. 3,161,716.

Reed, Frank A. Transmission of granular material. 3,161,442, 12–15–64, Cl. 302—49.

Refson, Bernard H. Rotary pumps. 3,161,141, 12–15–64, Cl. 103—132.

Regie Nationale des Usines Renault: *See*—
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Reichenbach, Joseph V., and R. G. Thompson, to Briggs & Stratton Corp. Method and means for improving acceleration of small engines. 3,161,186, 12–15–64, Cl. 123—119.

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Eastwood, Sylvander C., Reid, and Schwartz. 3,161,488.

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Reinke, La Verne H., to Brunswick Corp. Drop leaf desk. 3,161,161, 12–15–64, Cl. 108—81.

Reitz, Johannes, to General Motors Corp. Diaphragm pumps. 3,161,142, 12–15–64, Cl. 103—150.

Relyea, Douglas I., to United States Rubber Co. 3,6-di(benzothiazolylthio) pyridazine. 3,161,639, 12–15–64, Cl. 260—250.

Relyea, Douglas I., to United States Rubber Co. 3,6-bis(diloweralkylaminoanilino)-pyridazines. 3,161,640, 12–15–64, Cl. 260—250.

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Janssen, Paul A. J. 3,161,645.

Resor, John C., to E. I. du Pont de Nemours and Co. Fiber cutting apparatus with opposed guide elements. 3,161,100, 12–15–64, Cl. 83—403.

Reynolds Metals Co.: *See*—
Farquhar, Melville T. 3,161,341.

Rice, Leonard M., and J. B. Clements, to Celanese Corp. of America. Polymers with spiro structure. 3,161,619, 12–15–64, Cl. 260—78.

Richard Cedar Works Mfg. Corp.: *See*—
Jay, Frederic C. 3,161,404.

Richlin, Isadore M.: *See*—
Deal, Elmer F., and Richlin. 3,161,518.

Riordan, Hugh E., and W. M. Carow, to General Precision Inc. Orbital drag meter. 3,161,065, 12–15–64, Cl. 73—516.

Risdon Mfg. Co., The: *See*—
Murtha, John R. 3,161,331.

Rix, Johannes, to Aeon Products (London) Ltd. Spring suspension arrangement in which swinging movement of an element is translated in an axial thrust on a spring element. 3,161,420, 12–15–64, Cl. 280—124.

Robertson, Varvel R.: *See*—
Shaw, Betty L. 3,161,199.

Robin, Leo V., to VIBRACHOC. Vibration and shock absorber. 3,161,407, 12–15–64, Cl. 267—1.

Robinson, Archibald J., Jr., to Sylvania Electric Products Inc. Frame grid. 3,161,799, 12–15–64, Cl. 313—350.

Robinson, William W., Jr., and D. C. Camp, to Cumberland Case Co. Automatic conveyor cutoff. 3,161,286, 12–15–64, Cl. 198—232.

Roby, Alfred B.: *See*—
Gambill, Charles C., and Roby. 3,161,759.

Rodgers, James M., and R. C. Kinstler, to American Cyanamid Co. Process for preparing N,N-dilsopropylbenzothiazole-2-sulfenamide. 3,161,648, 12–15–64, Cl. 260—306.6.

Roe, Charles C., to Le Tourneau-Westinghouse Co. Plural motor variable speed gear drive. 3,161,083, 12–15–64, Cl. 74—675.

Roeser, John O., to Illinois Tool Works Inc. Electrically lightable latchable push button assembly. 3,161,743, 12–15–64, Cl. 200—87.

Rogers, Dilworth T., and J. P. McDermott, to Esso Research and Engineering Co. Antistatic additives and their preparation. 3,161,486, 12–15–64, Cl. 44—51.

Rolls-Royce Ltd.: *See*—
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Ronningen, Helmar A.: *See*—
Petter, William J., and R. M. and H. A. Ronningen. 3,161,591.

Ronningen, Robert M.: *See*—
Petter, William J., and R. M. and H. A. Ronningen. 3,161,591.

Ronningen-Petter Co.: *See*—
Petter, William J., and R. M. and H. A. Ronningen. 3,161,591.

Rose, Harold C.: *See*—
Rose, Ned and H. C. 3,161,728.

Rose, Ned and H. C. Communication network. 3,161,728. 12–15–64, Cl. 179—84.

Rose, Paul F.: *See*—
Kuhn, Robert E., and Rose. 3,161,371.

Rosenberg, Harry W.: *See*—
Leuling, Gilbert A., and Rosenberg. 3,161,503.

Rosenoer, Jacques Y. P. R., and R. E. A. Sprangers, to International Standard Electric Corp. Calculating apparatus. 3,161,762, 12–15–64, Cl. 235—153.

Ross, Edward J., to Mine Safety Appliances Co. Non-polarised D.C. transistorised telemetering amplifier. 3,161,833, 12–15–64, Cl. 330—24.

Ross-Matthai Corp.: *See*—
Matthai, Louis B. 3,161,291.

Rossmy, Gerd to Th. Goldschmidt, A.G. Chemische Fabriken. Aqueous solutions of hydroxypropyl silanols and their preparation. 3,161,611, 12–15–64, Cl. 260—29.2.

Rotavision G.m.b.H.: *See*—
Schmidt, Wilhelm. 3,160,971.

Roussel-UCLAF, S.A.: *See*—
Joly, Robert, Warnant, Jolly, and Gofinet. 3,161,663.
Nomine, Gerard, Bucourt, and Pierdet. 3,161,635.

Rowekamp, Richard J. Pool-type solar heat and energy collector. 3,161,198, 12–15–64, Cl. 126—271.

Roy, Henry A., Sr. Ball valves. 3,161,204, 12–15–64, Cl. 137—315.

Ruaud, Michel: *See*—
Fournet, Andre, Ruaud, and Bonnet. 3,161,626.

Ruben, Samuel. Rechargeable cell and electrode therefor. 3,161,545, 12–15–64, Cl. 136—20.

Ruhge, Justin M., to United States of America, Navy. Solar cell look-angle detecting system. 3,161,875, 12–15–64, Cl. 244—14.

Ruppelt, Francis A., and F. F. Haddad. Billboard frame. 3,160,973, 12–15–64, Cl. 40—125.

Russell, Frederick B., to Avco Corp. Wall structure for an MHD generator. 3,161,788, 12–15–64, Cl. 310—11.

Russell, Roger B., Jr.: *See*—
Chisholm, John P., Bates, and Russell. 3,161,869.

Ryan, John J.: *See*—
Hoeck, William N., and Ryan. 3,161,840.

Ryan, John W. Motor simulating sounding toy. 3,160,984, 12–15–64, Cl. 46—232.

Ryskamp, Nell J., to Allis-Chalmers Mfg. Co. Isolating mechanism for automatic hydraulic brake adjuster. 3,161,024, 12–15–64, Cl. 60—54.6.

Sable, Donald E. Load receiving, supporting and cushioning apparatus. 3,161,150, 12–15–64, Cl. 105—366.

Sagarin, Philip H., and W. R. O'Donnell, to VCA, Inc. Aerosol dispenser having a wall-surrounded valve actuator button. 3,161,330, 12–15–64, Cl. 222—394.

St. Clair, Theodore A., and E. L. Greenhill, to Textron, Inc. Gas meter. 3161,049, 12–15–64, Cl. 73—267.

St. Regis Paper Co.: *See*—
Howington, Thomas G. 3,161,702.
Wensel, Frederick A. 3,161,342.

Salsbur's, Dr., Laboratories.: *See*—
Morehouse, Neal F. 3,161,564.

Salter, Calvin R. and K. H. Pascoe, to United States of America, Army. Mounting adapter for electrical conectors. 3,161,452, 12–15–64, Cl. 339—131.

Salteri, Renato, and E. Hesselbarth, to Vitrofil S.p.A. Process and device for the manufacture of glass yarns. 3,161,-010, 12–15–64, Cl. 57—34.

Saltz, Fred, to International Business Machines Corp. Variable cycle length in chain printer operation. 3,161,126, 12–15–64, Cl. 101—93.

Sanctuary, Clifford: *See*—
Thorton, William E., Cherry, and Sanctuary. 3,161,877.

Sander, Frank S., to My Double Co., Inc. Hat stand. 3,161,-293, 12–15–64, Cl. 211—33.

Sanders, Guy J., to Koppers Co., Inc. Seal configuration for folding partition. 3,161,229, 12–15–64, Cl. 160—40.

Sanders, James W., and J. R. Patmore, to Electronic Associates, Inc. Electrical storage circuit. 3,161,858, 12–15–64, Cl. 340—173.

Sanderson Cyclone Drill Co., The: *See*—
Back, Carl F. 3,161,262.

Sandfort, Christian J. Combination collar, lid and handle for baby food jars. 3,161,313, 12–15–64, Cl. 215—64.

Sandhage, Ellsworth R.: *See*—
Taylor, Arthur S., and Sandhage. 3,161,195.

Sandoval, Isidor: *See*—
Monroe, Harold R., Sandoval, and Kemp. 3,161,881.

Sandoy, Harry, to Hydraulik AS. Hydraulic mooring winch. 3,161,022, 12–15–64, Cl. 60—53.

Sandre, Pierre Y. A. F., to Nord-Aviation, Societe Nationale de Constructions Aeronautiques. Combined turbojet-ramjet engine. 3,161,018, 12–15–64, Cl. 60—35.6.

Sanyo Electric Co., Ltd.: *See*—
Matsunaga, Takaho. 3,161,847.

Sapp, Julian F., Sr., to Louisville and Nashville Railroad Co. Vehicle underframe. 3,161,147, 12–15–64, Cl. 105—250.

Sartor, Raymond A. Vehicle pipe rack. 3,161,296, 12–15–64, Cl. 211—60.

Savitt, George. Coaster. 3,161,394, 12–15–64, Cl. 248—346.1.

Saxby, Etablissements: *See*—
Jutier, Jean. 3,161,387.

Schaaf, Henry W., to General Motors Corp. Independent wheel suspension linkage. 3,161,419, 12–15–64, Cl. 280—96.1.

Schaefer, Hans F., Jr., to United Shoe Machinery Corp. Transmissions including self-adjusting circular splines. 3,161,080, 12–15–64, Cl. 74—640.

Schaeffer, William D., to Union Oil Co. of California. Clathration process. 3,161,694, 12–15–64, Cl. 260—674.

Schausell, Robert I.: *See*—
Cook, Leonard W., and Schausell. 3,161,746.

Scheffel, Walter. Textile looms. 3,161,209, 12–15–64, Cl. 139—127.

Schering A. G.: *See*—
Kiesslich, Klaus, and Raspe. 3,161,662.

Schibbye, Lauritz B., to Svenska Rotor Maskiner Aktiebolag. Thrust balancing. 3,161,349, 12–15–64, Cl. 230—143.

Schick, Frederick A., and I. Gordon, to Allis-Chalmers Mfg. Co. Automatic bucket control. 3,161,307, 12–15–64, Cl. 214—140.

Schick, John W.: *See*—
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Schiel, Richard, to Schoeller-Bleckman Stahlwerke Aktiengesellschaft. Method of and apparatus for utilizing the formation energy of petroleum deposits. 3,161,593, 12–15–64, Cl. 233—21.

Schlage Lock Co.: *See*—
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Schlatter, Rudolph, to E. I. du Pont de Nemours and Co. Process for reductive alkylation of urea. 3,161,677, 12–15–64, Cl. 260—553.

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Haverkamp, Bernhard, and Groos. 3,161,756.

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Schmall, Edwin A.: *See*—
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Schmick, Quentin L., to Western Electric Co., Inc. Article transfer apparatus. 3,161,753, 12–15–64, Cl. 219—79.

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Schmidding, Wilhelm: *See*—
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Schmidt, Theodore W.: *See*—
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Schmulder, Paul: *See*—
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Schneider, Josef & Co., Optische Werke: *See*—
Mahn, Herbert. 3,161,119.

Schneider, William P.: *See*—
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Schniers, Robert C., and D. L. Van Ostrom, to General Motors Corp. Boiling point anticipator for effecting warning signal. 3,161,740, 12–15–64, Cl. 200—81.

Schoeller-Bleckman Stahlwerke Aktiengesellschaft: *See*—
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Schoenewaldt, Erwin F., A. E. Erickson, and J. M. Chemerda, to Merck & Co., Inc. Process for preparing sulfonamide compounds. 3,161,675, 12–15–64, Cl. 260—543.

Scholl Mfg. Co., Inc., The: *See*—
Turkewitsch, William. 3,161,566.

Schott, Lawrence A., ½ to Charles A. Raleigh. Means for filling a frankfurter with a strip of cheese. 3,161,154, 12–15–64, Cl. 107—1.

Schramel, Franz J.: *See*—
Grosser, Herman K. M., and Schramel. 3,161,761.

Schroeder, Hans, W. H. Puterbaugh, Jr., and R. C. Meckstroth, to The National Cash Register Co. Thermal printing units. 3,161,457, 12–15–64, Cl. 346—76.

Schuetze, Hilmar O.: *See*—
Werder, Theodore G., and Schuetze. 3,161,215.

Schuller, James T.: *See*—
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Schulman, Charles H., to Martin-Marietta Corp. Device for preventing transmission of pulse position modulated energy in absence of modulator input. 3,161,829, 12–15–64, Cl. 325—152.

Schuls, Gordon R., to Consolidated Electrodynamics Corp. Random storage bin feeding device. 3,161,337, 12–15–64, Cl. 226—118.

Schutz, Delbert P.: *See*—
Christoffel, Ivan, and Schutz. 3,161,638.

Schwartz, Albert B.: *See*—
Eastwood, Sylvander C., Reid, and Schwartz. 3,161,488.
Dwyer, Francis G., Eastwood, Reid, and Schwartz. 3,161,489.

Schwartz, Sam. Light sensitive material spooling device. 3,161,370, 12–15–64, Cl. 242—74.

Schwarz, Frank: *See*—
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Schweitzer, Carl E.: *See*—
Brown, Northrop, Langsdorf, and Schweitzer. 3,161,616.

Scott, H. H., Inc.: *See*—
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Scott, John J., to Norton Co. Arc furnace process for the production of zirconium carbide. 3,161,470, 12–15–64, Cl. 23—208.

Scott, John J., to Norton Co. Arc furnace process for the production of boron carbide. 3,161,471, 12–15–64, Cl. 23—208.

Scott, John J., to Norton Co. Arc furnace process for the production of titanium carbide. 3,161,472, 12–15–64, Cl. 23—208.

Scott Paper Co.: *See*—
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Scovill Mfg. Co.: *See*—
Firing, Osborne. 3,160,948.

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Scragg, Frederick. 3,161,708.

Scragg, Frederick, to Ernest Scragg & Sons Ltd. Process and apparatus for manufacturing monofilaments. 3,161,708. 12–15–64, Cl. 264—148.

Scully-Jones and Co.: *See*—
Deutsch, Hans W., and Price. 3,161,073.

Seaborg, Glen T., to United States of America, Atomic Energy Commission. Element 96 and compositions thereof. 3,161,-462, 12–15–64, Cl. 23—14.5.

Searcy, Kenneth L. Open end ratchet wrench. 3,161,091, 12–15–64, Cl. 81—62.

Security Hardware Mfg. Co., Inc.: *See*—
Adamec, Joseph, and Bradley. 3,161,035.

Sedlacek, Hugo, H. J. Sontag, and H. vom Endt, to Fa. Beteiligungs- und Patenverwallungsgesellschaft mit beschrankter Haftung. Dismountable bridge, for instance floating bridge. 3,160,900, 12–15–64, Cl. 14—27.

Seeley, Edward S., to The Altec Lansing Corp. Remote sound system monitor circuit. 3,161,731, 12–15–64, Cl. 179—175.1.

Seff, Frederic A. Reels or the like. 3,161,290, 12–15–64, Cl. 206—53.

Seidel, Casimir F.: *See*—
Eschemmoser, Albert, and Seidel. 3,161,657.

Seltzer, David D., and G. J. Chuhran, to Martin-Marietta Corp. Strippable permanent thermographic test pattern. 3,161,038, 12–15–64, Cl. 73—15.4.

Semons, Miriam M. Convertible wearing apparel. 3,160,892, 12–15–64, Cl. 2—88.

Serres, Carl, Jr., and E. K. Fields, to Standard Oil Co. Aromatic polycarboxylic acids. 3,161,693, 12–15–64, Cl. 260—668.

Seuthe, Eberhard. Device to produce steam for mobile and stationary toys. 3,160,980, 12–15–64, Cl. 46—9.

Shah, Jitendra N.: *See*—
Cohn, Bernard, Lopetz, and Shah. 3,161,521.

Shattuck, Ewart H.: *See*—
Rainard Leo W., and Shattuck. 3,160,923.

Shaw, Betty L., now by change of name B. L. Sands, 50% to V. R. Robertson. Stomach tube holder. 3,161,199, 12–15–64, Cl. 128—348.

Sheer, Russell E., Jr.: *See*—
Nagamatsu, Henry T., Schmid, and Sheer. 3,161,789.

Shell Oil Co.: *See*—
Adams, Charles R., and Jennings. 3,161,670.
Calhoun, George M. 3,161,596.
Choufoer, Johannes H., De Ruiter, and Van Zoonen. 3,161,697.
Deal, Carl H., Jr., Derr, and Papadopoulos. 3,161,461.
Dost, Nicholaas, Van der Plas, and Entwistle. 3,161,-628.
Eggertsen, Frank T. 3,161,690.
Fountain, Eugene B. 3,161,608.
Kreps, Robert W. F., Vegter, and Sinnema. 3,161,618.
Wittenwyler, Clifford V. 3,161,114.

Shen, Tsung-Ying, to Merck & Co., Inc. α-(1-aroyl-3-indolyl) alkanoic acids. 3,161,654, 12–15–64, Cl. 260—319.

Shepherd, Donald O.: *See*—
Mutter, Robert A., and Shepherd. 3,160,942.

Shepley, John H., and P. N. Bucher, to Sperry Rand Corp. Discharge device. 3,161,008, 12–15–64, Cl. 56—474.

Shibata, Atsushi: *See*—
Minekawa, Saburo, Hoshino, Shibata, and Komioami. 3,161,671.

Sianesi, Dario: *See*—
Natta, Giullo, Danusso, and Sianesi. 3,161,624.

Siebelwerke-ATG G.m.b.H.: *See*—
Balluff, Helmut. 3,161,377.

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Siefert, Roland, to Kienzle Uhrenfabriken A.G. Sound deadening case means for electric clock. 3,161,013, 12–15–64, Cl. 58—41.

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Sirtl, Erhard. 3,161,474.

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Eastwood, Sylvander C., Reid, and Schwartz. 3,161,488.
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Spector, Raymond B.: *See*—
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Hoeck, William N., and Ryan. 3,161,840.
Shepley, John H., and Bucher. 3,161,008.
Thorne, Gale H., and Vincent. 3,161,744.

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Stafford, John N. 3,160,895.

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Standard Manifold Co.: *See*—
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Standard Oil Co. (Indiana): *See*—
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Meyer, Delbert H. 3,161,658.
Mosher, Robert A., and Stanley. 3,161,550.
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Serres, Carl, Jr., and Fields. 3,161,693.

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Hingerford, Dan C., and Stankiewitch. 3,161,712.

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Starkey, Ernest W. Supporting means for the jack of trailers and like. 3,161,401, 12–15–64, Cl. 254—86.

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Straley, James M., and D. J. Wallace, to Eastman Kodak Co. Benzothiazole azo compounds containing a dicarboximido radical. 3,161,631, 12–15–64, Cl. 260—158.
Streater, August L., to General Electric Co. Electric integrating apparatus for integrating a variable electric quantity. 3,161,822, 12–15–64, Cl. 324—28.
Strehle, Horst, and H. Welzel, to VEB Kamera- und Kinowerke Dresden. Re-winding device for photographic cameras. 3,161,369, 12–15–64, Cl. 242—71.6.
Strobel, Rupert F., to Minnesota Mining and Mfg. Co. Coated pipe and process. 3,161,530, 12–15–64, Cl. 117—18.
Strömberg, Nils E. Means for compressing fluffy paper pulp to the shape of bales. 3,161,124, 12–15–64, Cl. 100—45.
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Supject, Anthony B. Curb-forming machine. 3,161,117, 12–15–64, Cl. 94—46.
Sutherland, Carl E., and M. A. Young, to Curtiss-Wright Corp. Removing or tightening threaded fasteners using impact wrenches. 3,161,089, 12–15–64, Cl. 81—13.
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Swanson, Bror W. Utility clamp assembly. 3,161,393, 12–15–64, Cl. 248—113.
Swanson, Clifford D. Article dispenser having article withdrawing means. 3,161,320, 12–15–64, Cl. 221—255.
Swanson, Eric R., and W. E. Davis; said Swanson assor. to United States of America, Navy, and said Davis assor. to Philco Corp. System and method for obtaining medium accuracy navigation. 3,161,880, 12–15–64, Cl. 343—105.
Swanson, Frank B. Root cleaner deflector assembly. 3,160,904, 12–15–64, Cl. 15—104.3.
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Szydlowski, Joseph. Control method and system for aircraft powerplants comprising a gas turbine driving a variable pitch propelling device. 3,161,237, 12–15–64, Cl. 170—135.74.
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Tassler, Milford C., to E. I. du Pont de Nemours and Co. Stretching of thermoplastic film to improve thickness uniformity. 3,161,711, 12–15–64, Cl. 264—289.
Taylor, Alfred C., to Hunter Douglas International (Quebec) Ltd. Apparatus for jounching slat assemblies. 3,161,221, 12–15–64, Cl. 153—10.
Taylor, Arthur S., and E. R. Sandhage, to American Cyanamid Co. Two-compartment aspirating hypodermic syringe. 2,161,195, 12–15–64, Cl. 128—220.
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Ten Bosch, Maurits, and P. Lang, to M. Ten Bosch, Inc. Automatic erection systems. 3,161,066, 12–15–64, Cl. 74—5.47.
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Thomas, Edward C., to Great Lakes Carbon Corp. Graphite joints of highly uniform electrical resistance. 3,161,580, 12–15–64, Cl. 204—288.
Thominet, Michel, to Societe d'Etudes Scientifiques et Industrielles de l'Ile de France. Process for making orthochloro-procaine amide. 3,161,678, 12–15–64, Cl. 260—558.
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Thumim, Carl, to Miehle-Goss Dexter, Inc. Automatic ejector mechanism for stock cutting machines. 3,161,098, 12–15–64, Cl. 83—90.
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Tilus, Carl W., to Westinghouse Electric Corp. Cooking range. 3,161,755, 12–15–64, Cl. 219—408.
Timares, Norman R., and R. F. Kiddle, to FMA, Inc. Apparatus for bringing ribbon-type media together. 3,161,120, 12–15–64, Cl. 95—75.
Timm, Heinz, to Diehl. Indicating device, especially for indicating the position of the landing gear and landing gear door of airplanes. 3,161,852, 12–15–64, Cl. 340—27.
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Todt, Joachim H., to Maico Electronics, Inc. Display panel comprised of a plurality of magnetically-controlled, movable, light reflecting thin panels. 3,161,726, 12–15–64, Cl. 178—7.3.
Tollow, Frederick S., to Babcock & Wilcox Ltd. Fluid heater cleaner. 3,160,907, 12–15–64, Cl. 15—317.
Tolman, Harold J. Stripper for coaxial cables. 3,161,088, 12–15–64, Cl. 81—9.5.
Tomanek, Martha (nee Kunitser), to Azoplate Corp. Material for electrophotographic purposes. 3,161,505, 12–15–64, Cl. 96—1.
Tong, Duncan. Stem mounting for artificial flowers. 3,161,559, 12–15–64, Cl. 161—30.
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Touey, George P., and R. G. Devaney, to Eastman Kodak Co. Composition of matter having high dielectric constant. 3,161,539, 12–15–64, Cl. 117—143.
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Vieth, Adolf. 3,161,782.
Turato, Sergio: *See*—
Bille, Mario, and Turato. 3,160,899.
Turkewitsch, William, to The Scholl Mfg. Co., Inc. Dihydroxybenzoic acid for use in delaminating epithelium. 3,161,566, 12–15–64, Cl. 167—61.
Turner, Gilbert M., to E. I. du Pont de Nemours and Co. Polymerization process for polyester films. 3,161,710, 12–15–64, Cl. 264—216.
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Aschauer, George R. 3,161,270.
Tyler, Stanley R., and J. M. Masterman, to Dowty Fuel Systems Ltd. Fuel system for twin spool gas turbine engine. 3,161,021, 12–15–64, Cl. 60—39.16.
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324— 58: 3,161,825
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121: 3,161,827
325— 42: 3,161,828
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328— 34: 3,161,830
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CLASSIFICATION OF DESIGNS

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CLASSIFICATION OF PLANTS

P.— 1: 2,463
P.— 20: 2,462
P.— 34: 2,464

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 15, 1964 Volume 809 Number 3

TRADEMARKS

NOTICES

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

1. An authorization letter requesting this service must be filed for *each* application for which this service is desired. The authorization letter may be filed initially upon the filing of a new application or it may be filed for a pending application indicating the serial number of the application. Blanket authorizations for a number of applications in a single authorizing letter will not be accepted.

2. The authorizing letter should indicate the applicant's (or his representative's) deposit account number and the number of copies of cited references desired.

3. All references cited *after* the receipt of the authorizing letter will be mailed, in the quantity indicated, to the addressee of record in the application. References will not be mailed to any other address.

4. All references cited in a single office action will be mailed together, generally within two weeks after the mailing of the action. This mailing will include a copy of the first page of the office action identifying the references and the application.

5. Monthly charges will appear on deposit account billings which will include an additional copy of the first page of the office action indicating the charges incurred. Such charges will be at the current published prices for patents, designs and the reproduction of document pages.

November 9, 1964. C. A. KALK, *Director of Administration.*

Discontinuance of Deposit Account Services for Sale of Patent Copies

Effective February 1, 1965, the Patent Office will no longer accept Deposit Account orders for U.S. patent, design, or trademark copies except for the following services: (1) automatic dissemination of cited references announced in the December 1, 1964, issue of the OFFICIAL GAZETTE, (2) class orders, and (3) subscription orders.

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CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15,327
Date of oldest new application	Mar. 23, 1964
Date of oldest amended application	Mar. 10, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 6, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	4-1-64	4-6-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3-23-64	3-10-64
Renewals (All Classes)	10-9-64	10-27-64
Sec. 12 (c) Publications (All Classes)	10-15-64	

Applications filed during the month of October 1964—2,218

Registrations Issued—302—No. 781,579 to No. 781,880
Renewals Issued—50

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C. A. KALK,
November 9, 1964. *Director of Administration.*

United States Adopted Names

List No. 8

March 1, 1964–June 30, 1964

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

Almadrate sulfate : antacid
Ambuphylline : Diuretic—myocardial stimulant
Aminacrine hydrochloride : bacteriostatic agent
Ampyzine sulfate : euphoriant
Anisacril : hypocholesteremic and anoretic agent
Anthelmycin : anthelmintic antibiotic
Benorterone : antiandrogen
Butacetin : analgesic agent
Calcium trisodium pentetate : heavy metal antagonist
Cetalkonium chloride : antibacterial agent
Clometherone : anti-estrogen
Clorethate : sedative and hypnotic
Clothixamide : tranquilizer
Codoxime : antitussive
Dactinomycin : antitumor agent
Diohippuric acid I 131 : radiopharmaceutical
Doxepin hydrochloride : antipruritic
Fenclorethate : analgesic and sedative
Furosemide : diuretic
Hydroxyhexamide : hypoglycemic agent
Iprindole : antidepressant
Mequinolate : poultry coccidiostat
Metaproterenol sulfate : bronchodilator
Metoclopramide hydrochloride : antiemetic
Metrogestone : oral progestin
Modaline sulfate : antidepressant
Norbolethone : anabolic agent
Oxamarin hydrochloride : systemic hemostat
Oxolinic acid : antiproteus agent
Perhexiline maleate : coronary vasodilator
Phenyl aminosalicylate : tuberculostatic agent
Piperamide maleate : antiparasitic
Polyoxyl 8 stearate : surface active agent
Polyoxyl 40 stearate : surface active agent
Polysorbate 20 : surface active agent
Polysorbate 40 : surface active agent
Polysorbate 60 : surface active agent
Polysorbate 65 : surface active agent
Polysorbate 80 : surface active agent
Polysorbate 85 : surface active agent
Rolodine : muscle relaxant
Septiphene : disinfectant
Silodrate : antacid
Sodium amylosulfate : peptic ulcer therapy
Sodium etoquinol : treatment of flash burns (ophthalmic)
Sorbitan monolaurate : surface active agent
Sorbitan monooleate : surface active agent
Sorbitan monopalmitate : surface active agent
Sorbitan monostearate : surface active agent
Sorbitan sesquioleate : surface active agent
Sorbitan trioleate : surface active agent
Sorbitan tristearate : surface active agent
Sulfanitran : antibacterial agent
Testolactone : antineoplastic agent
Thiamiprine : anti-leukemic
Thydromedan : lipid mobilizer and thyromimetic
Triampyxine sulfate : anti-secretory agent

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 179,743 (ENCO), The Engineer Company, Oil burners, balanced draft equipment for furnaces, stoker-control equipment, and baffle-wall constructions; **Reg. No. 709,570**, same, Humble Oil & Refining Company, Storage batteries; **Reg. No. 712,759**, same, Refined, semirefined and unrefined oils made from petroleum, both with and without admixture of animal, vegetable or mineral substances for illuminating, burning, power, fuel, and lubricating purposes, and lubricating greases; **Reg. No. 712,985**, same, Synthetic rubber and rubber-like materials and compounding agents (for use in rubber, plastics, coating compositions, paints, asphalts, and resins), for use in the industrial arts, but exclusive of use by the graphic arts industry, the office machine reproduction field, the engineering reproduction field, and the field of photographic and transfer reproduction; **Reg. No. 712,994**, same, Polishing materials in semi-solid and liquid form for general use, but exclusive of use by the graphic arts industry, the office machine reproduction field, the engineering reproduction field, and the field of photographic and transfer reproduction; **Reg. No. 712,997**, same, Adhesives in semi-solid and liquid form, sold as such for general use, but exclusive of use by the graphic arts industry, the office machine reproduction field, the engineering reproduction field, and the field of photographic and transfer reproduction; **Reg. No. 713,000**, same, Insecticides and hydrocarbon solvents, rust preventatives and corrosion inhibtors for general use, but exclusive of use by the graphic arts industry, the office machine reproduction field, the engineering reproduction field and the field of photographic and transfer reproduction; **Reg. No. 713,039**, same, Pigmented, unpigmented, transparent, plastic and semi-plastic, ready mixed, paste and dry metallic, bituminous, asphaltic heat resisting, rust and corrosion inhibiting and gas proofing coatings of the nature of paints and primers, and thinners, reducers and oils for use therewith for general use, but exclusive of use by the graphic arts industry, the office machine reproduction field, the engineering reproduction field, and the field of photographic and transfer reproduction; **Reg. No. 713,163**, same, Oil filters and oil filter elements; **Reg. No. 713,355**, same, Asphalt surfacing materials; **Reg. No. 713,520**, same, Tires and tubes; **Reg. No. 746,477**, same, Pharmaceutical grade petrolatum; **Reg. No. 746,761**, same, Construction of airplane hangars and other buildings, **filed** Nov. 1, 1963, D.C., S.D.N.Y., Doc. 63/3237, *Engineer Company* v. *Humble Oil & Refining Co.* Stipulation and order of dismissal June 17, 1964.

Reg. No. 308,053 (BURROUGH'S BEEFEATER DISTILLED LONDON DRY GIN), James Burrough Limited, Gin; **Reg. No. 678,606** (BEEFEATER), same; **Reg. No. 678,610** (REPRESENTATION OF MALE FIGURE), same, **filed** July 20, 1964, D.C., S.D. Calif. (San Diego), Doc. 3103–SD–K, *James Burrough Ltd. et al.* v. *Larry E. McSeaton et al.*

Reg. No. 586,989 (UMPA AND DESIGN), United Mink Producers Association, Fur pelts; **Reg. No. 613,699** (EMBA), Mutation Mink Breeders Association, Mink fur pelts, **filed** Oct. 28, 1963, D.C., W.D. Wis. (Madison), Doc. 3681, *Emba Mink Breeders Association* v. *United Mink Producers Association*. Reg. No. 586,989 included by counterclaim November 20, 1963. Case settled June 29, 1964.

Reg. No. 578,719 (REPRESENTATION OF A FAN), The Kono Manufacturing Company, Eyeglass and spectacle frames and temple bars thereof; **Reg. No. 740,605** (SHIELD DESIGN), Kono Manufacturing Co., Inc., Eyeglass and spectacle frames and parts therefor, **filed** Jan. 29, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–113, *Kono Mfg. Co., Inc.* v. *Foremost Optical Products Corp.* Consent judgment for injunction in favor of the plaintiff July 24, 1964.

Reg. No. 613,699. (See Reg. No. 586,989.)

Reg. No. 678,606. (See Reg. No. 308,053.)

Reg. No. 678,610. (See Reg. No. 308,053.)

Reg. No. 678,655 (NATIONWIDE), Nationwide Trailer Rental System, Providing to independent operators of trailer rental stations affiliated with applicant, promotional and advertising material and information such as directories to facilitate transfer of trailers among affiliated stations; **Reg. No. 739,550** (NATIONWIDE AND DESIGN), same; **Reg. No. 751,053**, same, Leasing to individuals utility-trailers adapted to be attached to vehicles operated by the individuals for the transportation of goods by the individuals; **Reg. No. 751,054** (NATIONWIDE), same, **filed** June 26, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C–255(2), *Nationwide Trailer Rental System, Inc.* v. *Alp Oil Co. and Alp Trailer Rentals et al.* By leave, plaintiff dismisses action without prejudice as to defendant, Green-Way Trailer Co., Inc., doing business as Nat'l Trailer Rentals of St. Louis and National Trailer Rental Assn.; consent judgment holding trademarks infringed; defendants enjoined July 17, 1964.

Reg. No. 709,570. (See Reg. No. 179,743.)

Reg. No. 712,759. (See Reg. No. 179,743.)

Reg. No. 712,985. (See Reg. No. 179,743.)

Reg. No. 712,994. (See Reg. No. 179,743.)

Reg. No. 712,997. (See Reg. No. 179,743.)

Reg. No. 713,000. (See Reg. No. 179,743.)

Reg. No. 713,039. (See Reg. No. 179,743.)

Reg. No. 713,163. (See Reg. No. 179,743.)

Reg. No. 713,355. (See Reg. No. 179,743.)

Reg. No. 713,520. (See Reg. No. 179,743.)

Reg. No. 739,550. (See Reg. No. 678,655.)

Reg. No. 740,605. (See Reg. No. 578,719.)

Reg. No. 746,477. (See Reg. No. 179,743.)

Reg. No. 746,761. (See Reg. No. 179,743.)

Reg. No. 751,053. (See Reg. No. 678,655.)

Reg. No. 751,054. (See Reg. No. 678,655.)

Reg. No. 753,442 (STYLE), La Maur, Inc., Hair fixative, **filed** July 17, 1964, D.C., S.D.N.Y., Doc. 64/2230, *Revlon, Inc.* v. *La Maur, Inc.*

Commissioner's Order No. 5316

It is hereby ordered that, except by formal amendment duly filed or as hereafter provided, no corrections, erasures or interlineations be made in a trademark application or of any other paper filed in such application.

Correction of obvious errors in spelling or grammar may be made with pen by the Examiner, who will then initial the sheet margin and assume full responsibility for the change.

Obvious informalities in the application, including the classification of goods or services, may be corrected but said correction must be in the form of an amendment in writing, approved by the Examiner, entered in the file and made a part of the record.

It is directed that no other changes be made by any person in any trademark record of this Office without the written approval of the Commissioner of Patents.

EDWIN L. REYNOLDS,
Nov. 24, 1964. *First Assistant Commissioner of Patents.*

This supersedes Order No. 5297 of May 11, 1950.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 170,954. Shields, Inc. of Attleboro, Mass., New York, N.Y. Filed June 13, 1963.

Shields

Owner of Reg. No. 619,047.

Class 2—Receptacles

For Jewel Boxes and Dresser Valets.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Leather Goods—Namely, Key Cases.

Class 19—Vehicles

For Receptacles for Jewelry, Keys and Sundry Other Articles Also Known as Ponches for Attachment to Automobile Visors.

Class 39—Clothing

For Trouser Belts.

First use June 1959.

SN 182,104. National Presto Industries, Inc., Eau Claire, Wis. Filed Nov. 29, 1963.

PRESTO

Owner of Reg. Nos. 236,795, 651,688, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Food Mixers and Food Warmers.
First use Mar. 18, 1963.

Class 44—Dental, Medical, and Surgical Appliances

For Hair Dryers and Cordless Automatic Toothbrushes.
First use on or before Aug. 8, 1962.

SN 182,883. Lips' Brandkasten- en Slotenfabrieken N.V., Dordrecht, Netherlands. Filed Dec. 12, 1963.

LIPS

Owner of Dutch Reg. No. 79,075, dated Apr. 3, 1923.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Bolts, Side-Bolts, Espagnolettes, Handles, Cranks, Knobs, Plates for Letter Boxes and Pillar-Boxes, Grips, Window Fasteners, Roller Lock Bolts, Floor Springs and Window Latches.

Class 25—Locks and Safes

For Plate-Armourings for Safes, Safe-Blocks in Banks, Cash-Boxes, Strong Room Doors, Safes, Fire-Proof Boxes, Strong Boxes, Buffers for Safe Doors, Entering Plates for Safes, Locks, Hasps With Padlock, Shields for Locks, Keys, and Keyhole Escutcheons, Night Safe Deposits, Wall-Safes, Safe-Boxes, and Drive-In-Windows in Banks.

Class 32—Furniture and Upholstery

For Writing Tables, Chairs, Drawer Cupboards, Caskets, or Cassettes, Writing Desks, Filing Cabinets, Cupboards, Wall Cupboards, and Tabernacle Cupboards.

First use Apr. 3, 1923; in commerce Nov. 23, 1939.

SN 191,580. The Modella Manufacturing Company, Inc., Port Chester, N.Y. Filed Apr. 20, 1964.

MITEY - DRYE

Owner of Reg. No. 635,641.

Class 39—Clothing

For Sportshirts.

Class 40—Fancy Goods, Furnishings, and Notions

For Dress Shields.

First use Dec. 30, 1963.

SN 196,378. W. T. Hedlund Manufacturing Co., d.b.a. Whirlaway, Inc., Los Angeles, Calif. Filed June 24, 1964.

MEDALLION

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Dishwashers and Electric Waste Disposers.

Class 31—Filters and Refrigerators

For Electric Refrigerators.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Ranges and Electric Ovens.

First use on or about Dec. 18, 1963.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 179,247. Morton Salt Company, Chicago, Ill. Filed Oct. 17, 1963.

SUPACT

For Activated Clay.
First use on or about Sept. 18, 1963.

SN 180,576. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 6, 1963.

THPC RESIN 101

Applicant disclaims the word "Resin" and the grade designation "101" apart from the mark as shown. Owner of Reg. No. 683,844.

For Resinous Compositions for Imparting Flame-Retardancy to Cellulosic Materials.
First use June 19, 1963.

SN 192,461. Armour and Company, Chicago, Ill. Filed May 1, 1964.

OVERTURE

For Leather.
First use Nov. 6, 1963.

SN 192,463. Armour and Company, Chicago, Ill. Filed May 1, 1964.

MICHELE

For Leather.
First use Jan. 7, 1964.

SN 194,070. Quaker Chemical Corporation, Conshohocken, Pa. Filed May 22, 1964.

QUASET

Owner of Reg. No. 688,955.

For Synthetic Organic Polymeric Resins for Application to Fibrous Materials, Pigments, Cements, Paper, Leather, Plastics, Textiles, and Metals.
First use Mar. 25, 1964.

Class 2 — Receptacles

SN 183,831. Cumberland Case Company, Chattanooga, Tenn. Filed Dec. 31, 1963.



For Doorstep Milk Boxes, and Repair Parts for Milk Bottle Cases.
First use on or about Aug. 15, 1955.

SN 187,423. R. A. Jones & Co., Inc., Covington, Ky. Filed Feb. 25, 1964.

CLEAN TOP

For Packaging and Carrying Cartons for a Plurality of Containers.
First use Feb. 11, 1964.

SN 195,417. Jaycrest Corp., Brooklyn, N.Y. Filed June 11, 1964.

MAGIC POUCH

The word "Pouch" is disclaimed apart from the mark as a whole.

For Bag-Like Holder of Sponge-Type Material for Safe Washing of Delicate Garments.
First use Apr. 20, 1964.

SN 196,259. Dempster Brothers, Inc., Knoxville, Tenn. Filed June 23, 1964.

DINOSAUR

Owner of Reg. Nos. 697,086 and 743,746.

For Containers for Receiving, Transporting, and Dumping Materials of Various Kinds—Namely, Refuse, Trash, Garbage, Scrap, Dirt, and Rocks.
First use Sept. 24, 1958.

SN 196,260. Dempster Brothers, Inc., Knoxville, Tenn. Filed June 23, 1964.

DUMPSTER

Owner of Reg. Nos. 353,486, 743,745, and others.

For Containers for Receiving, Transporting, and Dumping Materials of Various Kinds—Namely, Refuse, Trash, Garbage, Scrap, Dirt, and Rocks.
First use Sept. 1, 1936.

SN 196,261. Dempster Brothers, Inc., Knoxville, Tenn. Filed June 23, 1964.

DUMPMASTER

Owner of Reg. Nos. 353,486, 730,025, and others.

For Containers for Receiving, Transporting, and Dumping Materials of Various Kinds—Namely, Refuse, Trash, Garbage, Scrap, Dirt, and Rocks.
First use Apr. 19, 1957.

SN 196,262. Dempster Brothers, Inc., Knoxville, Tenn. Filed June 23, 1964.

DINOMASTER

Owner of Reg. Nos. 712,475 and 743,747.

For Containers for Receiving, Transporting, and Dumping Materials of Various Kinds—Namely, Refuse, Trash, Garbage and Scrap.
First use May 16, 1960.

SN 197,563. E. Greene and Company, Inc., Brooklyn, N.Y. Filed July 10, 1964.

Greenetree

For Paper Cups, Paper Bags, Paperboard Containers, Paperboard Trays, Paperboard Cartons for Packaging Various Products, and Paper Plates.
First use at least prior to June 1, 1955.

SN 202,625. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Sept. 24, 1964.

WAGON WHEEL

For Coasters.
First use Sept. 11, 1964.

Class 4 — Abrasives and Polishing Materials

SN 192,042. J.N.T. Mfg. Co., Inc., Stormville, N.Y Filed Apr. 27, 1964.

VARNA SMOOTH

For Preparation Having an Abrasive and Cleaning Action and Adapted To Be Rubbed Against Surface Portions Marred by Stains Resulting From Spilled Liquids, Alcohol, etc., and by Hot Plate Rings, and the Like for Removing Stains and Heat Rings From Varnish, Lacquer, Shellac, Plastic, Marble, and Metal Surfaces.
First use June 18, 1934.

Class 5 — Adhesives

SN 131,347. Daniel A. Cooper, d.b.a. Cooper Engineering Co., Van Nuys, Calif. Filed Nov. 6, 1961.

SUPER SEAM

For Adhesive Cement for Securing Aircraft Components Including Sheet Material, Upholstering, and Sound Proofing.
First use March 1961.

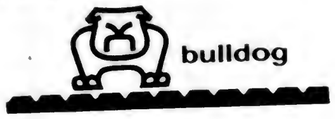
SN 182,459. The Borden Company, New York, N.Y. Filed Dec. 6, 1963.

CASCOMELT

Owner of Reg. Nos. 388,311, 636,329, and others.

For Hot-Melt Industrial Adhesives Used To Bond Impervious or Porous Substrates Together.
First use Feb. 7, 1962.

SN 193,306. Templar Oil Products Company, Inc., Brooklyn, N.Y. Filed May 12, 1964.



FIRETARD

Owner of Reg. No. 680,245.

For Non-Flammable, Fire-Retardant and Waterproof Floor Tile Adhesives.
First use Nov. 27, 1963.

SN 195,995. Ferro Corporation, Cleveland, Ohio. Filed June 11, 1964.

CORDOBOND

Owner of Reg. No. 409,965.

For Adhesives Made of Plastic Resins Combined With Other Materials.
First use on or about May 17, 1944.

Class 6 — Chemicals and Chemical Compositions

SN 164,912. Stauffer Chemical Company, New York, N.Y. Filed Mar. 18, 1963.

TRIFUME A

For Grain Fumigant.
First use Sept. 19, 1961.

SN 167,824. Hysan Products Company, Chicago, Ill. Filed Apr. 30, 1963.

A OK

For Volatile Liquid Deodorant for Industrial and Household Uses.
First use Nov. 1, 1962.

SN 179,616. Citrus and Allied Essential Oils Co., Brooklyn, N.Y. Filed Oct. 23, 1963.

VERTINOL

For Odor Neutralizers.
First use Apr. 22, 1963.

SN 179,617. Citrus and Allied Essential Oils Co., Brooklyn, N.Y. Filed Oct. 23, 1963.

VERTINATE

For Odor Neutralizers.
First use June 24, 1963.

SN 180,577. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 6, 1963.

THPC RESIN 101

Applicant disclaims the word "Resin" and the grade designation "101" apart from the mark as shown. Owner of Reg. No. 683,844.

For Phosphorous-Containing Compositions Useful as a Flame Retardant for Cellulosic Materials.
First use June 19, 1963.

SN 186,288. Stauffer Chemical Company, New York, N.Y. Filed Feb. 7, 1964.

VERNAM

For Weed Killing Compound for Manufacturing Use Only.
First use Dec. 17, 1963.

SN 186,294. Watson-Rooter Corporation of America, Van Nuys, Calif. Filed Feb. 7, 1964.

NEOZYME

For Bacteria and Enzyme Activator for Septic Tanks and Cesspools.
First use July 18, 1962.

SN 187,329. R.I.T.A. Organics, Inc., Chicago, Ill. Filed Feb. 24, 1964.

BOVINAL

For Bovine Serum Albumin for Use in Cosmetics.
First use Jan. 9, 1964.

SN 189,216. Sou-Tex Chemical Company Incorporated, Mount Holly, N.C. Filed Mar. 20, 1964.

CASSANTHRENE

For Dyestuffs.
First use Feb. 17, 1964.

SN 190,482. American Petrofina Company of Texas, Dallas, Tex. Filed Apr. 7, 1964.

PINK AIR

No claim is made to the exclusive use of the word "Air" apart from the mark.
For Room Freshener Preparation.
First use Mar. 30, 1964.

SN 190,716. The Great Western Sugar Company, Denver, Colo. Filed Apr. 9, 1964.

GW

Owner of Reg. No. 541,013.
For Herbicide for the Selective Control of Certain Weeds in Sugar Beets.
First use on or about Mar. 22, 1964.

SN 191,197. Merck & Co., Inc., Rahway, N.J. Filed Apr. 15, 1964.

DETEC

For Chemical Preparation for Use in Clarifying Tissue Sections for Laboratory Purposes.
First use October 1962.

SN 192,959. Union Carbide Corporation, New York, N.Y. Filed May 7, 1964.

6·12

Owner of Reg. No. 680,625.
For Insect Repellent Candles.
First use Apr. 6, 1964.

SN 193,069. The Upjohn Company, Kalamazoo, Mich. Filed May 8, 1964.

CURITHANE

For Curing Agent for Urethane Elastomers and Resins.
First use Mar. 13, 1964.

SN 193,747. Chemco Photoproducts Company, Inc., Glen Cove, N.Y. Filed May 19, 1964.

POWERLAQ

For Photosensitive Resists, Lacquers, and Thinners, Sensitizers, Dyes, Developers, and Stripping Solutions Therefor—for Photomechanical Reproduction.
First use Apr. 20, 1964.

SN 194,038. Diamond Alkali Company, Cleveland, Ohio. Filed May 22, 1964.

EIDERDOWN

For Precipitated Calcium Carbonate.
First use Apr. 26, 1964.

SN 194,071. Quaker Chemical Corporation, Conshohocken, Pa. Filed May 22, 1964.

QUAFLEX

For Softening and Plasticizing Agents for Application to Fibrous Materials, Pigments, Cements, Paper, Leather, Plastics, and Textiles.
First use Mar. 25, 1964.

SN 194,348. Basso Chemicals, Inc., Jacksonville, Fla. Filed May 27, 1964.

SHUR-REPEL

For Insect Repellent.
First use Feb. 15, 1963.

Class 11 — Inks and Inking Materials

SN 192,721. Heyer Inc., Chicago, Ill. Filed May 5, 1964.

HEKTO-PRINTER

For Gelatin Transfer Duplicators.
First use Apr. 29, 1964.

Class 12 — Construction Materials

SN 160,598. Bridgeport Fabrics, Inc., Bridgeport, Conn. Filed Jan. 14, 1963.

INNER-SEAL

For Weather Stripping.
First use about May 1938.

SN 160,888. Stuart W. Peel, Overland Park, Kans. Filed Jan. 17, 1963.

MAGNADOR

For Pet Door Outlet.
First use Nov. 24, 1962.

SN 161,540. Meyer Machine, Inc., Red Wing, Minn. Filed Jan. 28, 1963.

POLY-12

Applicant disclaims "12" apart from the mark as shown.
For Metal Towers for Supporting Equipment Such as Floodlights and Power Lines.
First use Feb. 14, 1962.

SN 164,242. Habitant Fence, Inc., Bay City, Mich. Filed Mar. 8, 1963.



Applicant disclaims the words "A Good Neighbor Fence" apart from their usage with the mark as a whole, reserving however all common law rights thereto.
For Wood Fencing.
First use Jan. 21, 1963.

SN 172,430. Sta-Crete, Inc., d.b.a. Black Technical Industries, San Francisco, Calif. Filed July 3, 1963.

CABLENCAP

For Industrial Two-Component Epoxy Resin Splice Closure Compound for Plastic Communication Cable.
First use Apr. 3, 1963.

SN 186,391. Pecora, Inc., Philadelphia, Pa. Filed Feb. 10, 1964.

CALKELASTIC

For Caulking Compounds.
First use about Jan. 1, 1932.

SN 189,122. United States Plywood Corporation, New York, N.Y. Filed Mar. 19, 1964.

PLANK-TONE

Owner of Reg. Nos. 429,397 and 613,377.
For Prefinished Plywood Having a Plank Effect Finish.
First use Dec. 17, 1963.

SN 194,123. Julius Blum & Co., Inc., Carlstadt, N.J. Filed May 25, 1964.

CARLSTADT

Owner of Reg. No. 703,385.
For Railing Systems, Handrails, Trellisages, and Components Thereof.
First use Feb. 15, 1959.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 177,891. Kinkead Industries Incorporated, Chicago, Ill. Filed Sept. 27, 1963.

SHOWERFOLD

Owner of Reg. No. 688,172.
For Bath Tub and Shower Enclosures.
First use Sept. 3, 1963.

SN 179,900. Gerber Plumbing Fixtures Corp., Chicago, Ill. Filed Oct. 28, 1963.

GERBER

Owner of Reg. Nos. 528,972, 633,443, and 633,850.
For Plumbing Fixtures—Namely, Water Closets, Water Closet Tanks, Lavatories, Bathtubs, Urinals, Bidets, Shower Stalls, Valves and Plumbing Brass Goods, Including Bath and Shower Fixtures, Bathtub Drains, Lavatory Fixtures, Laundry Tray Faucets, Closet Tank Trims, Kitchen Faucets, and Kitchen Sink Strainers.
First use Jan. 2, 1963.

SN 180,797. Wade, Inc., Franklin Park, Ill. Filed Nov. 8, 1963.

WADE

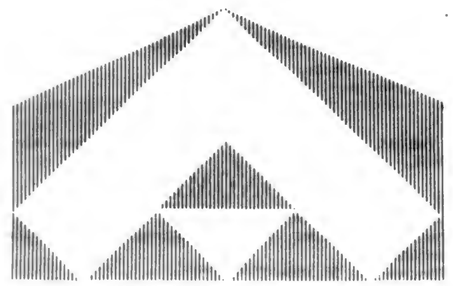
For Floor Drains, Roof Drains, Interceptors, Cleanouts, Water Hammer Arrestors, Plumbing Fixture Carriers, Swimming Pool Inlet and Drain Outlet Fittings, and Backwater Valves.
First use 1900.

SN 181,476. Hankison Corporation, Canonsburg, Pa. Filed Nov. 19, 1963.

TRIP-L-TRAP

For Devices for Automatically Valving Liquid (e.g., Traps, etc.).
First use on or about Oct. 27, 1961.

SN 190,692. Astonia Screw Machine Products, Inc., Plainview, N.Y. Filed Apr. 9, 1964.



The applicant's mark is a geometrical pattern, in which the "A" is formed by a half square and an inverted triangle, with the "A" inscribed in a half-hexagon. The drawing is lined for red.
For Nuts and Screws.
First use Apr. 11, 1963.

SN 193,472. Industrial Plastic Molders, Inc., Hialeah, Fla. Filed May 14, 1964.

IPM

For Molded Plastic Products Including Pipe Plugs, Nuts and Bolts, Washers, Finger Pulls for Doors, Screws, Candy Dish, Toy Hour Glass, Bushings, Rollers, Nails, All Formed of Plastic.
First use May 28, 1963.

SN 195,050. American Chain & Cable Company, Inc., Bridgeport, Conn. Filed June 8, 1964.

SURE-GO

For Garden Tractor and Snow Thrower Tire Chains.
First use May 25, 1964.

SN 195,052. The Atlas Bolt & Screw Company, Cleveland, Ohio. Filed June 8, 1964.

STRIPGARD

For Screws.
First use May 13, 1964.

SN 195,099. Heatron, Incorporated, York, Pa. Filed June 8, 1964.

THERMEK

For Heat Exchange Surfaces and Tubing.
First use June 10, 1938.

SN 195,948. Legion Utensils Co., Inc., Long Island City, N.Y. Filed June 18, 1964.

Legionaire

Owner of Reg. No. 417,108.
For Metal Sinks.
First use on or about Mar. 1, 1964.

SN 196,180. The F. E. Myers & Bro. Co., Ashland, Ohio. Filed June 22, 1964.

GLASSTRAN

For Sprayer Tanks.
First use June 4, 1964.

SN 196,985. Poor & Company, Chicago, Ill. Filed July 2, 1964.

MECONOMIZER

Owner of Reg. No. 605,770.
For Pressure Relief Valves for Railway Rail and Flange Lubricators.
First use May 18, 1964.

SN 197,709. Green-Penny Co., Los Angeles, Calif. Filed July 13, 1964.

MULTI RACK

For Metal Storage Racks.
First use on or about Mar. 29, 1961.

SN 197,912. South Chester Corporation, Lester, Pa. Filed July 15, 1964.

DRIVESERTS

For Threaded Receptacles Adapted To Be Received and Maintained in Holes or Apertures for the Purpose of Anchoring Screws and Similarly Threaded Elements Therein.
First use June 24, 1964.

SN 197,978. Penn-Akron Corp., Terryville, Conn. Filed July 16, 1964.

DUSK

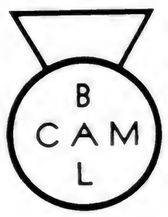
For Cabinet Hardware.
First use on or about May 15, 1964.

SN 198,119. Bal-Cam, Inc., Erlanger, Ky. Filed July 20, 1964.

B
CAM
L

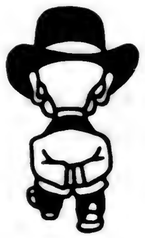
For Kitchen, Lavatory, Bath and Shower Valves.
First use Dec. 12, 1962.

SN 198,120. Bal-Cam, Inc., Erlanger, Ky. Filed July 20, 1964.



For Kitchen, Lavatory, Bath and Shower Valves.
First use Dec. 12, 1962.

SN 198,257. The Deutsch Company, Los Angeles, Calif. Filed July 21, 1964.



Owner of Reg. No. 698,914.
For Gas Appliance Controls, Threaded Fluid Fittings, Hydraulic Couplings and Fluid Fittings for Attachment by Brasing.
First use on or about Jan. 21, 1959.

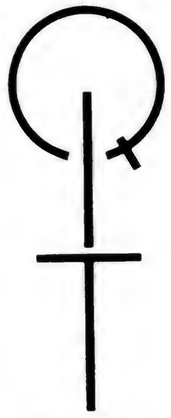
Class 14 — Metals and Metal Castings and Forgings

SN 170,036. Consolidated Foundries and Mfg. Corp., Chicago, Ill. Filed May 31, 1963.

AQUACAST

Owner of Reg. No. 687,065.
For Investment Castings.
First use May 17, 1963.

SN 177,722. Quebec Iron and Titanium Corporation, Sorel, Quebec, Canada. Filed Sept. 25, 1963.



Priority claimed under Sec. 44(d) on Canadian application filed Mar. 27, 1963; Reg. No. 133,162, dated Oct. 18, 1963.
The mark consists of the letters "QIT" in design form.
For Metallurgical Products—Namely, Pig Iron, Iron Titanium-Bearing Slag, and Anorthosite Hematite Ilmenite Mixture.
First use Aug. 7, 1962; in commerce Aug. 7, 1962.

SN 195,847. Chicago Foundry Co., Chicago, Ill. Filed June 17, 1964.

CF-200

For Ductile Iron Alloys.
First use Mar. 19, 1964.

SN 197,245. American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. Filed July 7, 1964.

H COLORPLY

Owner of Reg. Nos. 736,666 and 753,963.
For Prepainted Aluminum Products in the Form of Sheet and Strip Materials and the Like.
First use Mar. 18, 1964.

Class 15 — Oils and Greases

SN 196,397. Sealectro Corporation, Mamaroneck, N.Y. Filed June 24, 1964.

SLIP 'N SLIDE

For Dry Powdered Lubricant for General Use.
First use Jan. 6, 1964.

SN 199,755. Nationwide Industries, Inc., Philadelphia, Pa. Filed Aug. 12, 1964.

NU-CARD

For Automatic Transmission Fluid Winterizing Additive.
First use July 29, 1964.

Class 16 — Protective and Decorative Coatings

SN 155,767. Ajem Laboratories, Inc., Livonia, Mich. Filed Oct. 24, 1962.

JEM LIQUI-PHOS

No claim is made to the word "Phos" per se apart from the mark of which it is a part. Owner of Reg. Nos. 641,141, 773,951, and others.
For Phosphate Undercoating Compositions in the Nature of Primers for Preparing Metals for Organic Coatings.
First use on or about July 12, 1962.

SN 160,779. Caridon Hall Finishes, Inc., Branford, Conn. Filed Jan. 16, 1963.

TRANSFORMAGIC-X

For Liquid Compound Which Is a Quick Drying, Impregnating Scratch Resistant, Oil Finish Which Preserves, Stains, and Seals Wood Paneling and Furniture, So as To Protect and Decorate.
First use Mar. 12, 1962.

SN 169,009. California Texas Oil Corporation, New York, N.Y. Filed May 16, 1963.

CALTEX

Owner of Reg. No. 389,865.
For Rust-Proofing Compounds for Application to Metal Surfaces and Paint and Varnish Thinners.
First use at least as early as 1947.

SN 181,421. Strathmore Products, Inc., Syracuse, N.Y. Filed Nov. 18, 1963.

ALUMICLAD

For Lacquer Finishing Coating Agent Sold for Industrial Use for Application to Electrical Apparatus, Heating Equipment, Furniture, and Other Items.
First use Jan. 27, 1960.

SN 181,425. Strathmore Products, Inc., Syracuse, N.Y. Filed Nov. 18, 1963.

THINSOL

For Lacquer Thinner Sold for Use in Connection With Industrial and Automotive Finishes.
First use Aug. 15, 1956.

SN 186,184. Morton Salt Company, Chicago, Ill. Filed Feb. 6, 1964.

SERFENE

For Water, Grease and Chemical Resistant Coating Material for Paper, Paperboard, and Other Flexible or Rigid Surfaces.
First use on or about Jan. 24, 1964.

SN 188,095. Gillespie-Rogers-Pyatt Company, Inc., New York, N. Y. Filed Mar. 6, 1964.

GRP

For Shellac Used as Raw Material in the Manufacture of Other Products, Such as Paints, Varnishes, Floor Waxes, Inks, and Leather Coatings; Shellac Varnish for Use as a Floor Finish; Shellac Varnish Used as Raw Material in the Manufacture of Other Products, Such as Inks, Finger Nail Polish, and Metal Coatings; Edible Shellac and Edible Shellac Coating for Use as a Glaze in the Pharmaceutical and Confectionery Industries; and Epoxy Resin Dispersion for Use as a Raw Material in the Coatings Industry, Such as in the Manufacture of Automotive and Appliance Primers, Metal Coatings, Fiberglass and Paper-Coatings; in the laminating of Natural and Synthetic Materials and in the Shoe Industry.
First use June 1929.

SN 193,062. Tobias Paint Manufacturing Co., Cleveland, Ohio. Filed May 8, 1964.

Master-Tone

For Wall Paints.
First use in or about September 1963.

SN 193,575. Murray P. Poznak, d.b.a. Acrolite Products, Rahway, N.J. Filed May 15, 1964.

INK-O-SAVER

For Liquid Spray Coating To Prevent Drying and Skinning of Letterpress and Offset Printing Inks.
First use December 1956.

Class 17—Tobacco Products

SN 197,864. The American Tobacco Company, New York, N.Y. Filed July 15, 1964.



Owner of Reg. Nos. 223,213, 223,214, and 734,806.
For Cigarettes.
First use Apr. 17, 1964; May 22, 1871, as to "Half and Half."

Class 18—Medicines and Pharmaceutical Preparations

SN 145,750. Airtone Chemical Company, Baltimore, Md. Filed May 31, 1962.

"THE WICK DOES THE TRICK!"

For Vaporizing Fluid Products for Instant Symptomatic Relief of Colds, Coughs, Hay Fever, and Sinus.
First use May 1, 1962.

SN 152,020. Tri-Kem Corporation, Washington, D.C. Filed Aug. 27, 1962.

LANODERM

For Therapeutic Composition for Skin Treatment.
First use Sept. 2, 1960.

SN 155,539. Whittaker Laboratories, Inc., Peekskill, N.Y. Filed Oct. 19, 1962.

SPANX

For Medicinal Cream for Use Externally on the Human Body To Prevent Diaper Rash and Minor Skin Troubles.
First use May 1, 1962.

SN 172,948. Scott-Lee Laboratories, Inc., New Orleans, La. Filed July 12, 1963.

POLYSONE

For Steroid, Antibiotic Eye Drops.
First use Jan. 3, 1962.

SN 173,078. Heinrich Mack Nachf., Au, near Illertissen, Germany. Filed July 15, 1963.

FORAPIN

Owner of German Reg. No. 450,032, dated Nov. 8, 1932.
For Unguent for Use in the Treatment of Rheumatism, Ischiagra, Neuralgia, and Lumbago.

SN 177,685. Edwin D. Crane, Jr., d.b.a. E.C. Enterprise, Atlanta, Ga. Filed Sept. 25, 1963.

J-O-Y

For Medicated Lubricating Jelly.
First use on or about Aug. 23, 1963.

SN 177,686. Edwin D. Crane, Jr., d.b.a. E.C. Enterprise, Atlanta, Ga. Filed Sept. 25, 1963.

GLADNESS

For Medicated Lubricating Jelly.
First use on or about Aug. 23, 1963.

SN 177,844. Armour Pharmaceutical Company, Chicago, Ill. Filed Sept. 27, 1963.

ENTOC

For Clostridium Perfringens Toxoid for Veterinary Use.
First use Nov. 17, 1959.

SN 177,848. Armour Pharmaceutical Company, Chicago, Ill. Filed Sept. 27, 1963.

ANTI-ENTOC

For Clostridium Perfringens Antitoxin for Veterinary Use.
First use Nov. 17, 1959.

SN 177,971. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 30, 1963.

HYPAROTIN

For Human Blood Fraction—Namely, an Anti-Mumps Serum.
First use on or before July 27, 1956.

SN 184,956. Pharmachem Specialties, Inc., Bethlehem, Pa. Filed Jan. 20, 1964.

PHARMIRON

For Veterinary Pharmaceutical—Namely, an Injectable Iron Composition.
First use Aug. 25, 1959.

SN 188,044. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 5, 1964.

SYNCHROSYN

For Steroid Hormone Preparations for Oral Use in the Synchronisation of Estrus in Domestic Animals.
First use Jan. 30, 1964.

SN 190,008. Hoffmann-La Roche Inc., Nutley, N.J. Filed Mar. 31, 1964.

PENTRIUM

For Psychotherapeutic Agent.
First use Mar. 25, 1964.

SN 190,060. Chemtest Products, Inc., Kansas City, Mo. Filed Apr. 1, 1964.

Chem·A·col

For Antibacterial Mouthwash.
First use at least as early as Jan. 1, 1964.

SN 191,883. The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 23, 1964.

KAO-KAO

For Preparation for the Relief of Diarrhea.
First use Apr. 17, 1964.

SN 193,277. Interpharm Limited, Toronto, Ontario, Canada. Filed May 12, 1964.

NIXOTINE

For Pharmaceutical Preparations—Namely, Smoking Deterrents Sold in the Form of Tablets, Mouthwash and Chewing Gum.
First use July 24, 1963; in commerce Sept. 24, 1963.

SN 193,434. Alberto-Culver Company, Melrose Park, Ill. Filed May 14, 1964.

SILMAGNUM

For Neutralizing Agent Incorporated as an Ingredient in a Chewable Antacid Tablet.
First use Apr. 28, 1964.

SN 193,435. Alberto-Culver Company, Melrose Park, Ill. Filed May 14, 1964.

SR-3

For Flavoring Preparation Incorporated as an Ingredient in a Chewable Antacid Tablet.
First use Apr. 28, 1964.

SN 194,788. Ercopharm A/S, Trorod per Vedabek, Denmark. Filed June 3, 1964.

ERCORIL

Owner of Danish Reg. No. 1,406, dated June 11, 1960.
For Anticholinergic Drug for Topical Application.

SN 195,704. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 15, 1964.

LASPRIN

For Analgesic Product.
First use in or before March 1958.

SN 196,076. Sterwin Chemicals Inc., New York, N.Y. Filed June 19, 1964.

SW-5063

For Chemotherapeutic Agent for Use in the Prevention, Control and Treatment of Disease in Animals.
First use May 20, 1964.

SN 196,101. Barnes-Hind Barium Products, Sunnyvale, Calif. Filed June 22, 1964.

ESOTRAST

For Esophageal Paste of Micronized Barium Sulfate To Be Used for X-Ray Examination.
First use Mar. 3, 1964.

SN 196,200. Schering Corporation, Bloomfield, N.J. Filed June 22, 1964.

FULVINIL

For Medicated Animal Feed Additive for Control of Fungus Infections in Animals.
First use Dec. 20, 1963.

SN 196,583. Allergan Pharmaceuticals, Santa Ana, Calif. Filed June 29, 1964.

P. V. CARPINE

For Ophthalmic Preparation.
First use Mar. 15, 1964.

SN 197,295. Hudson Vitamin Products, Inc., New York, N.Y. Filed July 7, 1964.

INFAGUENT

For Medicated Ointment for Diaper Rash, Chafing, Prickly Heat, and Other Minor Skin Irritations.
First use June 10, 1964.

SN 197,453. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. Filed July 9, 1964.

EMTOBIL

Owner of Swedish Reg. No. 107,571, dated Sept. 27, 1963.
For Pharmaceutical Preparation—Namely, a Preparation for Emptying The Bile Duct as Auxiliary Means in Radiography.

SN 197,523. The Wander Company, Chicago, Ill. Filed July 9, 1964.

TRIAMINICOL

Owner of Reg. No. 659,739.
For Preparation To Provide Relief From Cough and Nasal Congestion Due to the Common Cold.
First use June 25, 1964.

SN 197,790. Stanley Drug Products, Inc., Portland, Oreg. Filed July 13, 1964.

HEMRODYNE

For Hemorrhoidal Ointment.
First use June 29, 1964.

SN 197,791. Stanley Drug Products, Inc., Portland, Oreg. Filed July 13, 1964.

THERMODYNE

For Burn Ointment.
First use June 29, 1964.

SN 197,809. American Home Products Corporation, New York, N.Y. Filed July 14, 1964.

ANAPLAZ

For Anaplasmosis Vaccine.
First use June 29, 1964.

SN 197,836. The S. E. Massengill Company, Bristol, Tenn. Filed July 17, 1964.

SWINEX

For Pharmaceutical—Namely, a Veterinary Product for the Treatment and Prevention of Enteritis and Related Diarrheas.
First use June 29, 1964.

SN 198,268. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 21, 1964.

INCOLUMIN

For Antibiotic Preparation.
First use July 16, 1964.

SN 198,287. Mead Johnson & Company, Evansville, Ind. Filed July 21, 1964.

TRIND

Owner of Reg. Nos. 662,798 and 690,434.
For Liquid and Tablet Preparations Used for the Symptomatic Relief of Colds and Coughs Due to Colds.
First use prior to July 10, 1964.

SN 198,309. Peter E. Adamopoulos, d.b.a. Adams Mfg. Co., Haverhill, Mass. Filed July 22, 1964.

ADAMCO

Owner of Reg. No. 436,985.
For Ointment for Relief of Arthritis and Rheumatism.
First use July 1, 1961.

Class 19—Vehicles

SN 174,999. Vegas Mfg. Inc., Compton, Calif. Filed Aug. 13, 1963.

casa Loma

The drawing is lined for red and gray. The mark translated from Spanish means "house on the hill."
For Mobile Homes.
First use July 20, 1963.

SN 175,000. Vegas Mfg. Inc., Compton, Calif. Filed Aug. 13, 1963.

casa Vegas

The drawing is lined for red and gray. The mark translated from Spanish means "house on the plains."
For Mobile Homes.
First use Apr. 19, 1963.

SN 179,438. Michaike Manufacturing Co., Arvada, Colo. Filed Oct. 21, 1963.

American Traveler

The drawing is lined for the color red.
For Camper Bodies for Pick-Up Trucks, Camping Trailers, and House Trailers.
First use Aug. 15, 1961.
Subj. to Intf. with SN 192,019.

SN 183,833. Emilio Bozzi S.p.A., Milan, Italy. Filed Dec. 31, 1963.

CICLO LEGNANO MARCA DEPOSITATA

The words "Ciclo" and "Marca Depositata" are disclaimed apart from the mark as shown. Owner of Italian Reg. No. 31,142, dated June 8, 1925.
For Bicycles, Motorbicycles, Motorcycles, and Three-Wheel Motor Carts.

SN 185,315. Reliart Trailer Manufacturing Corp., Stanton, Mich. Filed Jan. 24, 1964.

RELIART

For Vehicles—Namely, Camping Trailers and Particularly Camping Trailers Having a Main Enclosure Portion Which Folds for Storage in the Lower Portion of the Trailer Structure When the Trailer Is in Transit, and Parts Thereof.
First use in or about August 1957.

SN 187,717. Beachcomber Marine Corporation, Lincoln, Nebr. Filed Mar. 2, 1964.

Beachcomber

For Sporting and Recreational Accessories for Boats Including Water Skier Tow Bar, Swimmers' Boarding Ladder, Demountable Charcoal Broiler and Picnic Table Wherein Both the Broiler and Table Are Uniquely Constructed for Mounting on a Special Adaptor Affixed to the Boat for Interchangeable Mounting of All Said Accessories and Step Pads.
First use July 2, 1963.

SN 192,091. The Snyder Trailer Company, Butler, Ohio. Filed Apr. 27, 1964.

TRAVELER

For Automobile Trailers—Namely, Travel and Camping Trailers.
First use Oct. 1, 1963.
Subj. to Intf. with SN 179,438.

SN 192,852. Skyline Homes, Inc., Elkhart, Ind. Filed May 6, 1964.

LAYTON

For Travel Trailers.
First use July 7, 1958.

SN 192,854. Skyline Homes, Inc., Elkhart, Ind. Filed May 6, 1964.

NOMAD

For Travel Trailers.
First use on or before Apr. 25, 1960.
Subj. to Intf. with SN 196,019.

SN 193,168. Hughes Tool Company, Houston, Tex. Filed May 11, 1964.

HUGHES 300

Owner of Reg. No. 748,681.
For Helicopters.
First use March 1964.

SN 195,339. Tel-E-Lect Products, Inc., Minneapolis, Minn. Filed June 10, 1964.

TEL

Owner of Reg. Nos. 539,299, 774,038, and others.
For Truck Bodies.
First use Apr. 1, 1961.

SN 195,361. Barth Corporation, Milford, Ind. Filed June 11, 1964.

B

For Travel Trailers, Travel Coaches, Portable Pickup Coaches and Mobile Homes Providing Complete Living Accommodations.
First use Apr. 8, 1964.

SN 195,549. Raleigh Industries Limited, Nottingham, England. Filed June 12, 1964.

SUN

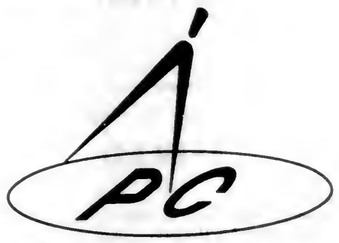
For Bicycles and Parts Therefor.
First use Mar. 26, 1964; in commerce Mar. 26, 1964.

SN 195,726. Skyline Homes, Inc., Elkhart, Ind. Filed June 15, 1964.

BUDDY

For Mobile Homes.
First use on or before Aug. 31, 1948.

SN 195,890. Perfect Circle Corporation, Hagerstown, Md. Filed June 17, 1964.



For Front End Suspension Parts Such as Upper and Lower Control Arms, Coil Springs, Spring Shackles, Spring Bolts and Bushings, King Bolt Sets, Torsion Bars, Stabilizer Links, Control Shafts and Ball Joints; Steering Mechanisms Such as Tie Rods, Tie Rod Ends Including Ball Joints, Drag Link Assemblies, Pitman Arms, Idler Arms and Center Links.
First use on or about Apr. 8, 1964.

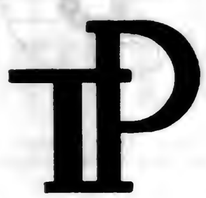
SN 196,019. Colin McCallum, Waterloo, Ontario, Canada. Filed June 19, 1964.

NOMAD

For Camping and Boating Equipment—Namely, a Car Trailer With a Tent Foldable Out of the Trailer and With a Boat That Can Rest Upside Down on the Trailer To Form a Lid Therefor, Boat Covers, Mattresses, Bunks, Folding Tables, and Camp Storage Cabinets, the Foregoing Items Being Sold as a Unit.
First use at least July 1961; in commerce Mar. 28, 1963.
Subj. to Intf. with SN 192,854.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 137,102. ACDC Electronics, Inc., Burbank, Calif. Filed Feb. 2, 1962.



For Electronic Apparatus—Namely, Regulated Electronic Power Supplies for Direct Current and the Like.
First use Jan. 5, 1962.

SN 158,690. Eberdt Company, Sutton, Quebec, Canada. Filed Dec. 7, 1962.

SELECTRA

For Frequency Generators and Transmitters, Audio Amplifiers, Loudspeakers, Microphones, Pickups, Reverberation Systems, Echo Chambers, Magnetic Recorders, Audio Controls, Switches, Connectors, Sound Mixers, Intercommunication Equipment, Annunciators, Electronic Tubes, Parts and Supplies, Flash Devices, Lamps, Lighting Fixtures, Fans, and Power Supplies.
First use Sept. 1, 1958; in commerce Sept. 1, 1959.

SN 164,544. Milgo Electronic Corporation, Miami, Fla. Filed Mar. 13, 1963.



For Stepping Switch Assemblies, and Amplifier Packages.
First use June 1, 1962.

SN 181,417. Scovill Manufacturing Company, Racine, Wis. Filed Nov. 18, 1963.



Owner of Reg. No. 667,351.
For Electric Motor Driven Vacuum Cleaners, Food Mixers, Blenders, and Power Units; and Electric Blankets, Toasters, and Fry Pan Controls.
First use July 31, 1957, on vacuum cleaners and electric blankets.

SN 184,046. Erie Technological Products, Inc., Erie, Pa. Filed Jan. 6, 1964.

MONOBLOC PROCESS

Applicant disclaims the word "Process" apart from the mark.
For Electronic Network Consisting of Layerized Elements Fused Into an Integral Block Assembly.
First use January 1963.

SN 189,502. Realtone Electronics Corp., New York, N.Y. Filed Mar. 24, 1964.

SOUNDESIGN

For Transistor Radios.
First use Jan. 1, 1963.

SN 189,977. Anaconda Wire and Cable Company, New York, N.Y. Filed Mar. 31, 1964.

A.I.-220

For Insulated Magnet Wire.
First use Mar. 12, 1964.

SN 191,188. The Leece-Neville Company, Cleveland, Ohio. Filed Apr. 15, 1964.

LEECE-NEVILLE

Owner of Reg. Nos. 426,051, 515,558, and 769,507.
For Electrical Apparatus—Namely, Cranking Motors, Generators, Armatures, Commutators, Field Coils, Field Rings, Brush Riggings, Motor and Generator Housings, Brushes, Relays, Circuit Breakers, Switches, Cutout Relays, Voltage Regulators, Electric Motors, Magnetic Switches, Flexible Drive Couplings for Generators, Alternators, Power Convertors, Ignition Systems, and Diodes for Alternator Systems and Testers for Such Diodes.
First use 1910.

SN 192,093. Solar Light Manufacturing Co., Melrose Park, Ill. Filed Apr. 27, 1964.



For Fluorescent Lighting Fixtures.
First use Apr. 6, 1964.

SN 194,887. Jefferson Electric Company, Bellwood, Ill. Filed June 4, 1964.

ECONO-MERC

For Ballasts for Mercury Vapor Lamp.
First use Apr. 10, 1964.

SN 194,891. Lambda Electronics Corporation, Huntington, N.Y. Filed June 4, 1964.

LAMBDA

Owner of Reg. No. 600,289.
For Regulated Electronic Power Supplies.
First use 1948.

SN 196,104. BIC Inc., Seattle, Wash. Filed June 22, 1964.

BIC

For Sleeves for Binding, Insulating and Coding Purposes for Use With Wire, Wire Terminals and Joints, Pipes and Tools.
First use Jan. 10, 1962.

SN 196,502. Clairex Corporation, New York, N.Y. Filed June 26, 1964.



Owner of Reg. Nos. 681,085 and 717,479.
For Photoelectric Cells, Kits of Photoelectric Cells, Kits of Photoelectric Cells and Other Electric Components, Parts of Photoelectric Cells, Electric Circuits Containing Photoelectric Cells, Photoelectric Cells of the Photoconductive Type and Parts Thereof, Kits of Photoelectric Cells of the Photoconductive Type and Parts Thereof, and Electric Circuits Containing Photoelectric Cells of the Photoconductive Type and Parts Thereof, and Kits Containing Photoelectric Cells of the Photoconductive Type Together With Other Electric Circuit Components.
First use Mar. 2, 1960.

Class 22—Games, Toys, and Sporting Goods

SN 132,210. Wilson Sporting Goods Co., River Grove, Ill. File Nov. 16, 1961.

Play to WIN with **Wilson**

Owner of Reg. No. 632,617.
For Athletic Equipment for Baseball, Football, Basketball, Tennis, Badminton, Hockey, Golf, and Other Sports—Namely, Baseball Gloves; Tennis Balls; Basketballs; Footballs; Shuttlecocks; Tennis and Badminton Rackets and Presses; Golf Clubs and Bags; Hockey Sticks; Nets for Sports Requiring Such Nets; Football Helmets and Shoulder Pads; Mouthpieces; Blocking Dummies for Football Practice; and Shoes for Baseball, Football and Track.
First use on or about Aug. 31, 1961.

SN 159,773. R & M Company, Storm Lake, Iowa. Filed Dec. 26, 1962.

Pic-a-Piece

For Equipment Comprising Partially Completed Jigsaw Puzzles and Pieces Therefor Sold as a Unit to Retail Outlets Which in Turn Use Them To Distribute Prizes as a Promotional Scheme To Encourage and Stimulate the Sale of Their Goods.
First use Sept. 20, 1962.

SN 161,863. Dunham's Inc., Farmington, Mich. Filed Feb. 1, 1963.

ESCANABA

For Sleeping Bags for Outdoors or Campers' Use.
First use Feb. 3, 1956.

SN 169,276. Jolly Toys, Inc., New York, N.Y. Filed May 20, 1963.

"Switch-a-Wig"

For Wigs for Dolls.
First use Apr. 15, 1963.

SN 174,102. Junior Achievement of Omaha Incorporated, Omaha, Nebr. Filed July 31, 1963.

V.I.P.

For Amusement Devices—Namely, Toys Comprising Propeller Supporting and Actuating Sticks.
First use Oct. 15, 1962.

SN 180,419. Helen H. Malsed, Seattle, Wash. Filed Nov. 4, 1963.

LITTLE MR. ZIP

For Children's Toys—Namely, Mailboxes, Mail Trucks, and Mail Trains.
First use Oct. 11, 1963.

SN 185,540. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Jan. 28, 1964.

WISH-NIK

For Dolls.
First use Sept. 25, 1963.

SN 186,989. Alexander Doll Company, Inc., d.b.a. Madame Alexander, New York, N.Y. Filed Feb. 19, 1964.

PETTI TOTS

No claim of exclusive right is made to "Tots" for dolls.
For Dolls.
First use Jan. 15, 1964.

SN 187,999. David William Berkus, d.b.a. Custom Fidelity Company, Pasadena, Calif. Filed Mar. 5, 1964.

PILOTAGE!

For Equipment Sold as a Unit for Playing a Pilot Training Game Used in Conjunction With Instructional Materials in the Field of Aviation.
First use Jan. 16, 1964.

SN 188,128. Momoi Company, Inc., Long Beach, Calif. Filed Mar. 6, 1964.

MARLON

For Fishnetting, Said Fishnetting Being Especially Fabricated in Such Configuration and of Such Material as To Be Particularly Intended for Fabrication Into Fish Nets.
First use May 15, 1952.

SN 189,587. The House of Ideas, Inc., Spencer, Ohio. Filed Mar. 25, 1964.

BEYOND THE STARS

For Equipment Sold as a Unit for Playing a Board Game.
First use Mar. 17, 1964.

SN 189,588. The House of Ideas, Inc., Spencer, Ohio. Filed Mar. 25, 1964.

DANGER PASS

For Equipment Sold as a Unit for Playing a Board Game.
First use Mar. 17, 1964.

SN 190,071. Dynaball Company, Skokie, Ill. Filed Apr. 1, 1964.

MR. BILLIARD

No claim of exclusive right is made to "Billiard" for billiard supplies and equipment apart from the mark as a whole.
For Billiard Supplies Comprising Balls, Cues, Chalk, Cloth, and Cue Tips.
First use Feb. 24, 1964.

SN 191,970. Henry D. Whittlesey, d.b.a. Whittlesey, Powers & Cameron, Hayward, Calif. Filed Apr. 24, 1964.

ROYALE

For Ski Poles.
First use Jan. 15, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 179,451. Oneida Ltd., Oneida, N.Y. Filed Oct. 21, 1963.

FROSTFIRE

For Stainless Steel Flat Tableware.
First use Aug. 9, 1963.

SN 180,345. Wilton Corporation, Schiller Park, Ill., by change of name from Wilton Tool Manufacturing Co., Inc., Schiller Park, Ill. Filed Dec. 2, 1963.

PowRslide

For Clamps for Holding Work Pieces During Machining Operations.
First use Oct. 9, 1963.

SN 180,433. Ortman-Miller Machine Co., Inc., Hammond, Ind. Filed Nov. 4, 1963.

OM

For Fluid Cylinders and Parts Therefor.
First use Jan. 15, 1962.

SN 180,686. Seneca Falls Machine Company, Seneca Falls, N.Y. Filed Nov. 7, 1963.

TAPETRONIC

For Tape Operated Numerical Control Systems for Machines.
First use Apr. 25, 1963.

SN 182,062. Ex-Cell-O Corporation, Detroit, Mich. Filed Nov. 29, 1963.

WIL-DEX

For Cutting Tools—Namely, Tool Holders and Replaceable Cutting Inserts, and the Like.
First use on or about Jan. 24, 1957.

SN 186,983. Voelker & Company, Inc., Chicago, Ill. Filed Feb. 18, 1964.

PATTYMASTER

For Patty-Making Machines.
First use Feb. 1, 1963.

SN 194,031. The Cambridge Wire Cloth Company, Cambridge, Md. Filed May 22, 1964.

GRIPPER

Owner of Reg. No. 633,427.
For Cargo Lifting and Securing Equipment.
First use January 1945.

SN 194,142. Dean Research Corporation, Mission, Kans. Filed May 25, 1964.

STOCKMASTER

For Apparatus and System for Handling Materials, in Particular for Handling Sheet Materials.
First use May 12, 1964.

SN 197,987. Royal McBee Corporation, New York, N.Y. Filed July 16, 1964.

MUSTANG

For Typewriters and Parts Thereof.
First use June 15, 1964.

SN 199,414. Sam Stein Associates, Inc., Sandusky, Ohio. Filed Aug. 6, 1964.

SKOR-O-MATIC

For Meat Scoring Machines.
First use on or about Dec. 30, 1963.

SN 200,240. E & L Distributors, Inc., Bridgeport, Conn. Filed Aug. 20, 1964.

STARFIRE

For Fuel Pumps.
First use Aug. 10, 1962.

SN 200,313. American Can Company, New York, N.Y. Filed Aug. 21, 1964.

Flora-View

For Apparatus for Packaging Horticultural Products.
First use July 22, 1964.

SN 201,201. Heberlein & Co., A.G., Wattwil, Switzerland. Filed Sept. 3, 1964.

ROTOWA

Owner of Swiss Reg. No. 199,043, dated July 24, 1963.
For Textile Machinery and Parts Thereof; Apparatus for the Wet Treatment of Threadlike, Tapelike and Weblike Material, Especially Textile Material.

SN 201,273. Chicago Pneumatic Tool Company, New York, N.Y. Filed Sept. 4, 1964.

AIR-NIP

For Pneumatically Powered Wire Cutters.
First use April 1961.

SN 201,357. The Ansul Company, Marinette, Wis. Filed Sept. 8, 1964.

ENSIGN

For Fire Extinguishers—Namely, Portable Water Fire Extinguishers.
First use July 27, 1964.

SN 201,415. The Grand Union Company, East Paterson, N.J. Filed Sept. 8, 1964.

GRAND WAY

For Razor Blades.
First use on or about June 19, 1964.

SN 201,455. National Jet Company, Lavale-Cumberland, Md. Filed Sept. 8, 1964.

VEEDRILL

For Drilling Machines and Accessories.
First use July 27, 1964.

SN 201,584. Gorham Corporation, Providence, R.I. Filed Sept. 10, 1964.

ROSELLE

For Stainless Steel Table Flatware and Table Cutlery.
First use Dec. 17, 1963.

SN 201,626. The Speed-Mate Company, Minneapolis, Minn. Filed Sept. 10, 1964.



For Fractional Horsepower Variable Speed Drives.
First use Sept. 10, 1963.

SN 201,659. Coldelite Corporation of America, New York, N.Y. Filed Sept. 11, 1964.

COLDELITE

For Ice Cream-Making Machinery.
First use July 18, 1964.

SN 202,299. Orendorff Manufacturing Company, Los Angeles, Calif. Filed Sept. 21, 1964.

ORMCO

For Ground Working Implements for Agricultural and Construction Equipment—Namely, Buckets, Scrapers, Ditcher Blades, Rippers, Scarifiers, Grader Blades, Digging Teeth, Tooth Shanks, Digging Shovels, Plows, Chisels, Agricultural Sweeps, Bed Knives, Tines, Tool Bar Clamps, Tool Bar Spacers, Grain Drill Shoes, Cultivator Standards, Supporting Racks for Agricultural Sweeps, Furrowers, and Gauge Wheels.
First use May 1964.

Class 24 — Laundry Appliances and Machines

SN 178,576. Animal Trap Company of America, Lititz, Pa. Filed Oct. 9, 1963.

LIFETIME

For Clothes Pins.
First use Sept. 11, 1963.

SN 197,223. Whirlpool Corporation, Benton Harbor, Mich. Filed July 6, 1964.

MAGIC CLEAN

For Fluid Filtering Apparatus Incorporated as a Component Part of a Laundry Washing Machine.
First use May 1, 1964.

Class 26—Measuring and Scientific Appliances

SN 158,708. Irving R. Hautula, Oak Park, Mich. Filed Dec. 7, 1962.

Camera Guard

For the purpose of this registration and without waiving any common law rights, applicant disclaims the word "Camera" apart from the mark as used.

For Camera Enclosures Used for Housing Special Cameras Used in the Detection of Suspects in Financial Institutions Such as Banks.

First use June 20, 1962.

SN 162,028. Royal Research Corporation, Hayward, Calif. Filed Feb. 4, 1963.

ERINVAC

Owner of Reg. Nos. 720,336, 726,968, and 731,499.

For High Vacuum Systems for Research and Development and Component Parts, Including High Vacuum Pumps, High Vacuum Valves, High Vacuum Baffles, High Vacuum Traps, High Vacuum Measurement Instruments, High Vacuum Deposition Systems, High Vacuum Evaporators, High Vacuum Furnaces, High Vacuum Space Simulation Chambers, High Vacuum Electron Beam Chambers, High Vacuum Pumping Systems, and High Vacuum Chambers.

First use July 17, 1962.

SN 162,693. Bellco Glass, Incorporated, Vineland, N.J. Filed Feb. 14, 1963.

DELONG

For Culture Flasks.

First use Nov. 7, 1958.

SN 169,066. Richards Industries, Inc., Cincinnati, Ohio. Filed May 16, 1963.

TEMPILOT

For Temperature Operated Controllers.

First use June 1, 1962.

SN 171,077. Bailey Meter Company, Cleveland, Ohio. Filed June 17, 1963.



The drawing is lined for red, but no claim is made to color.

For Electrically Operated Analog and Digital Computers, Process Control Systems, Data Logging Systems, and Combinations and Components Thereof.

First use Mar. 28, 1961.

SN 171,578. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed June 21, 1963.

SONY

Owner of U.S. Reg. Nos. 691,940, 692,023, and 705,902.

For Analysis Apparatus and Equipment—Namely, Automatic Analog Correlators, Automatic Transient Waveform Recorders and Data Recorders, Correlators and Meters.

First use Jan. 27, 1962; in commerce Jan. 27, 1962.

SN 172,365. The Budd Company, Philadelphia, Pa. Filed July 3, 1963.

DATRAN

For Strain Gage Instrumentation—Namely, Resistance Bridge Indicators, Polarity Transposers, Digital Strain Indicators, Switch and Balance Units, and Printer Control Units.

First use 1954.

SN 177,738. John Yellott Engineering Associates, Inc., Phoenix, Ariz. Filed Sept. 25, 1963.

TRA-SCOPE

For Instrument for Measuring the Transmission, Reflectance and Absorption of Light for Transparent Material.

First use Oct. 10, 1962.

SN 178,435. Falling Number Aktiebolag, Stockholm, Sweden. Filed Oct. 7, 1963.

FALLING NUMBER

For Consistence and Viscosity Measuring Instruments, Penetrometers and Dough Investigating and Measuring Instruments and Parts Thereof—Namely, Testing Tubes To Be Used for Such Instruments.

First use Feb. 10, 1962; in commerce December 1962.

SN 178,518. Atlantic Research Corporation, Alexandria, Va. Filed Sept. 27, 1963.

ARCOSORB

For Gas Treating Apparatus and Devices—Namely, Gas Purifying Apparatus and Devices for Selective Removal of Particular Components.

First use Aug. 30, 1963.

SN 178,634. Nova Tech Incorporated, Manhattan Beach, Calif. Filed Oct. 9, 1963.

nova-tech

For Aircraft and Marine Radio Direction Finders.

First use Nov. 1, 1960.

SN 179,245. Honeywell Inc., Minneapolis, Minn., by change of name from Minneapolis-Honeywell Regulator Company, Minneapolis, Minn. Filed Oct. 17, 1963.

COPIPOD

For Photographic Copying Stand.

First use at least as early as Aug. 10, 1963.

SN 179,357. Weston Instruments, Inc., Murray Hill, N.J., by assignment and change of name from Rotek Instrument Corporation, Watertown, Mass. Filed Oct. 18, 1963.

ROTEK

For Electronic Testing Equipment—Namely, Voltmeters, Voltage Monitors, Comparators, Voltage Calibration Devices, and Converters.

First use in or about February 1961.

SN 179,358. Weston Instruments, Inc., Murray Hill, N.J., by assignment and change of name from Rotek Instrument Corporation, Watertown, Mass. Filed Oct. 18, 1963.

ROTEK

For Electrical Apparatus—Namely, Adjustable Voltage Sources, Including Volt-Boxes and Voltage Multipliers.

First use in or about February 1961.

SN 179,427. The W. A. Kates Company, Deerfield, Ill. Filed Oct. 21, 1963.

VARIO

For Variable Orifice Fluid Flow Indicators.

First use Sept. 6, 1963.

SN 179,826. Swanson Engineering & Manufacturing Co., Inglewood, Calif. Filed Oct. 25, 1963.

MONITROL

For Electronic Apparatus for Automatically Monitoring Industrial Processes—Namely, Processes in the Petroleum, Chemical, Cement, and Food Industries.

First use on or about July 27, 1963.

SN 179,945. Jos. Schneider & Co., Optische Werke, Kreuznach, Rhineland, Germany. Filed Oct. 28, 1963.

COMPONAR

Owner of German Reg. No. 176,450, dated June 5, 1913; and U.S. Reg. No. 680,772.

For Optical and Photographic Apparatus and Device—Namely, Photographic and Motion-Picture Objectives, Varifocal Objectives and Attachments, Enlargement and Projection Objectives, Telescopes and Binoculars and Lenses Therefor, Lens Attachments, Optical Filters, View Finders, Range Finders, Loupes, and Magnifying Devices.

SN 179,947. Jos. Schneider & Co., Optische Werke, Kreuznach, Rhineland, Germany. Filed Oct. 28, 1963.

REPRO-CLARON

Owner of German Reg. No. 776,303, dated Aug. 14, 1963.

For Optical and Photographic Apparatus and Device—Namely, Photographic and Motion-Picture Objectives, Varifocal Objectives and Attachments, Enlargement and Projection Objectives, Telescopes and Binoculars and Lenses Therefor, Lens Attachments, Optical Filters, View Finders, Range Finders, Loupes, and Magnifying Devices.

SN 180,984. Woodland Development Corp., Huntington, N.Y. Filed Nov. 12, 1963.

CHECK MATIC

For Indicating Device for Mechanized Preflight and Prelanding Check List for Aircraft.

First use Oct. 30, 1963.

SN 183,506. Mamiya Koki Kabushiki Kaisha, d.b.a. Mamiya Camera Co., Ltd., Bunkyo-ku, Tokyo-to, Japan. Filed Dec. 24, 1963.

MAMIYA

Owner of U.S. Reg. Nos. 627,353, 627,792, and others.

For Cameras Including Cine-Cameras and Fundus Cameras; Lenses for Cameras and Projectors; Slide-Projectors and Cine-Projectors; Exposure Meters, Range Finders, Tripods, Shutter for Cameras, Filters, Flash Gun Apparatuses, Lens Hood, Lens Brushes and Cleaning Cloths; Photographic Instruments for Developing, Printing and Enlarging Films, Developing Tanks, Darkroom Timers, Film Dryers, Safe-Light and Filters, Print Boxes, Print Washers, Print Rollers, Print Dryers, Trays, Printing Masks; Magazines, Print-Editing Machines, and Portable Screens.

First use Aug. 6, 1948; in commerce June 20, 1950.

SN 187,236. Beacon Electronics Corp., d.b.a. Beacon Electronics Incorporated, Haddon Heights, N.J. Filed Feb. 24, 1964.

ACCU-TEMP

For Temperature Measuring and Indicating Devices—Namely, Resistance Temperature Bulbs of the Spot and Averaging Types, and Temperature Indicating Equipment Used in Conjunction With the Bulbs.

First use Feb. 4, 1964.

SN 188,167. Visual Systems, Inc., Milwaukee, Wis. Filed Mar. 5, 1964.

FLIPATRAN

For Transparency Storage, Feeding and Viewing Kit for Use With Light Projector.

First use in or about June 1963.

SN 190,388. Jet Air Corporation, Fort Lauderdale, Fla. Filed Apr. 6, 1964.

KALEIDORAMA

For Kaleidoscopic Viewing Apparatus.

First use Oct. 15, 1963.

SN 191,062. New West Optical Company, Los Angeles, Calif. Filed Apr. 14, 1964.

NOVAMATIC

For Lens Grinding Machines.

First use May 1, 1958.

SN 192,349. Bachmann Bros., Inc., Philadelphia, Pa. Filed Apr. 30, 1964.

SOLARAMA

For Sunglasses.

First use May 1962.

SN 192,916. Kollmorgen Corporation, Northampton, Mass. Filed May 7, 1964.

COLOR-RAD

For Photo-Electric Spectroradiometer.
First use May 31, 1963.

SN 193,021. Logetronics, Inc., Alexandria, Va. Filed May 8, 1964.

LOGETROL

Owner of Reg. Nos. 619,530 and 698,111.
For Control Apparatus for Photographic Printing.
First use Apr. 30, 1963.

SN 193,210. Precision Scientific Company, Chicago, Ill. Filed May 11, 1964.

SWIRLITE

For Laboratory Apparatus, Particularly, Devices for Mixing and Stirring Liquids.
First use Jan. 15, 1964.

SN 193,325. Canal Industrial Corporation, Bethesda, Md. Filed May 13, 1964.

Coulachron

For Electronic Instruments for Electro-Chemical Analysis.
First use Apr. 14, 1964.

SN 193,336. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed May 13, 1964.

ACRALIGN

For Gage for Measuring Machine Tool Swivel Table Movement.
First use Sept. 6, 1963.

SN 193,540. Eastman Kodak Company, Rochester, N.Y. Filed May 15, 1964.

CARALUX

For Motion-Picture Projectors.
First use May 4, 1964.

SN 193,918. American Seating Company, Grand Rapids, Mich. Filed May 21, 1964.

SUZETTE

For Electronic Learning Equipment Employing Phonograph, Recording Tape, and Acoustic Head Sets-Microphone for Students, etc.
First use in or before June 1962.

SN 194,170. General Electric Company, Schnectady, N.Y. Filed May 25, 1964.

leisure-timer

For Appliance Timing Devices.
First use Mar. 30, 1962.

SN 194,320. Perry A. Seay, Huntington, N.Y. Filed May 26, 1964.

DYTEK

For Potentiometer Voltage Dividers.
First use May 14, 1964.

SN 194,863. American Meter Company Incorporated, Philadelphia, Pa. Filed June 4, 1964.

LO-FLO

For Fuel Oil Meters.
First use June 1963.

SN 195,263. Beckman Instruments, Inc., Fullerton, Calif. Filed June 9, 1964.

MICROZONE

For Electrophoresis Apparatus.
First use Feb. 19, 1964.

SN 195,476. Westcott Heath, Jr., d.b.a. Westcott Electronics, Clifton, N.J. Filed June 11, 1964.

MINISTAT

For Precision Thermostat.
First use May 11, 1964.

SN 195,546. Parametrics, Inc., Waltham, Mass. Filed June 12, 1964.

PARAMETRICS

For Instrumentation for the Measurement of Density and Pressure and Circuitry for Use Therewith.
First use in or about June 1962.

SN 195,668. Hydra-Electric Company, Burbank, Calif. Filed June 15, 1964.

VistaScope

For Optical Comparators.
First use May 22, 1964.

SN 195,707. Photo Devices Incorporated, Rochester, N.Y. Filed June 15, 1964.

PHODITRON

For Photosensing Device and More Particularly a Density Control for the Time Exposure of Photographic Film.
First use Jan. 2, 1964.

SN 195,900. Texas Nuclear Corporation, Austin, Tex. Filed June 17, 1964.

TEXLIUM

For Radiation Detectors Incorporating Helium-3 for Neutron Detection.
First use May 16, 1962.

SN 196,264. Electronic Associates Limited, Willowdale, Ontario, Canada. Filed June 23, 1964.

CODATRON

Owner of Canadian Reg. No. 132,933, dated Oct. 4, 1963.
For Business Data Processing Equipment.

SN 196,506. Compass Instrument & Optical Co., Inc., New York, N.Y. Filed June 26, 1964.

HORIZON

For Binoculars and Telescopes.
First use May 7, 1963, on binoculars.

SN 196,578. VEB Carl Zeiss Jena, Jena, Germany. Filed June 26, 1964.

NEOPHOT

For Metal Microscopes.
First use December 1949; in commerce Sept. 13, 1950.

SN 196,782. The Hairlok Company Limited, London, England. Filed June 30, 1964.

OMNIG

For Acceleration Indicating or Measuring Appliances.
Priority claimed under Sec. 44(d) on British Reg. No. 859,877, dated Feb. 6, 1964.

Class 27 — Horological Instruments

SN 176,584. Tiara S.A., Saignelegier, Switzerland. Filed Sept. 9, 1963.

TIARA

Owner of Swiss Reg. No. 183,588, dated Nov. 23, 1960.
For Horological Products—Namely, Watches, Watch Movements, Watch Cases, Watch Dials, and Parts of Watches.

SN 198,992. Willie Hanhart, d.b.a. Adolf Hanhart, Schwenningen, Neckar, Germany. Filed July 6, 1964.

hanhart

For Watches and Clocks, Electric, Light-Powered and Spring Wound; and Including Stop-Watches.
First use July 27, 1962; in commerce July 27, 1962.

Class 28 — Jewelry and Precious-Metal Ware

SN 184,315. The Stieff Company, Baltimore, Md. Filed Dec. 24, 1963.



The individual pictured on the drawing is fictitious.
For Hollowware and Flatware, All Made of Sterling Silver or Solid Gold.
First use Mar. 28, 1962.

SN 192,972. American Gold Chain Company, Inc., New York, N.Y. Filed May 8, 1964.

a AMERICAN

The word "American" is disclaimed. Owner of Reg. No. 765,881.
For Bracelets, Charms, and Chains Made of Gold, Silver, and Gold-Filled Material.
First use January 1963.

SN 194,137. A. Cohen & Sons Corp., New York, N.Y. Filed May 25, 1964.

LADY CROSBY

Owner of Reg. No. 407,636.
For Ladies' Diamond Rings and Wedding Rings in Which the Rings Are Made of 14 K. Gold or Better.
First use Dec. 4, 1942.

Class 31 — Filters and Refrigerators

SN 148,999. Primore Sales, Inc., Adrian, Mich. Filed July 13, 1962.

ROTALOCK

For Refrigeration Valves.
First use on or about Oct. 1, 1956.

SN 151,489. Emhart Corporation, Hartford, Conn., by assignment, Merger and change of name C. V. Hill & Company, Inc., Trenton, N.J. Filed Aug. 20, 1962.

HILL

Owner of Reg. No. 342,821.
For Refrigerated Store Fixtures.
First use June 26, 1962.

SN 169,468. McQuay, Inc., Minneapolis, Minn. Filed May 22, 1963.

SEASONPAK

Owner of Reg. Nos. 568,300, 692,007, and others.
For Packaged Water Chillers.
First use May 1, 1963.

SN 189,486. McQuay, Inc., Minneapolis, Minn. Filed Mar. 24, 1964.



The slogan "Make the Seasons Come to You" is disclaimed apart from the mark as shown. Owner of Reg. No. 568,300.
For Ice Making Machines and Refrigeration Units and Devices and Parts Therefor.
First use January 1964.

SN 193,634. Cummins Engine Company, Inc., Columbus, Ind. Filed May 18, 1964.

FLEETGUARD

For Filters for Air, Oil, Fuel and Gasoline and Parts Thereof.
First use May 14, 1963.

SN 196,492. Aquionics, Inc., Buffalo, N.Y. Filed June 26, 1964.

AQUIONICS

For Water Softening Equipment.
First use Mar. 2, 1964.

SN 196,651. Fleischman Plumbing Company, Inc., Whittier, Calif. Filed June 29, 1964.

AQUA-METAL

For Sacrificial Electrode for a Water Conditioner.
First use Nov. 25, 1963.

Class 32 — Furniture and Upholstery

SN 175,827. The Preservation Society of Newport County, Newport, R.I. Filed Aug. 27, 1963.

HISTORIC NEWPORT

For Furniture—Namely, Chairs, Sofas, Upholstery for Chairs and Sofas, Tables, Dressers, Benches, Beds, Chests, Desk-and-Bookcases, Desks, Sideboards, and Candle Stands.
First use at least as early as Dec. 26, 1960.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 181,477. Hydrotherm, Inc., Northvale, N.J. Filed Nov. 19, 1963.

AQUA THERM

For Gas and Oil Fired Hot Water and Steam Boilers and Accessory Equipment Using Temperatures Below 240° F.
First use June 15, 1963.

SN 181,478. Hydrotherm, Inc., Northvale, N.J. Filed Nov. 19, 1963.

MULTI THERM

For Superimposed Horisontal Cast Iron Section Small Size Gas Fired Hot Water Boilers.
First use June 15, 1963.

SN 181,480. Hydrotherm, Inc., Northvale, N.J. Filed Nov. 19, 1963.

PLEASURE TEMP

For Gas and Oil Fired Hot Water and Steam Boilers and Accessory Equipment.
First use Sept. 1, 1960.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 151,735. World Rubber Co., Dearborn, Mich., assignee of Detroit-World Rubber Co., Dearborn, Mich. Filed Aug. 23, 1962.

WORLD

For Automobile Tires.
First use Aug. 15, 1962.

SN 181,602. Air Reduction Company, Incorporated, New York, N.Y. Filed Nov. 21, 1963.

EASY VAC

For Flexible Vacuum Hoses.
First use in or about October 1961.

Class 36 — Musical Instruments and Supplies

SN 181,108. Aurora Corporation of Illinois, Chicago, Ill. Filed Nov. 14, 1963.

AURORA

For Piano Actions and Parts Thereof.
First use Oct. 18, 1963.

Class 37 — Paper and Stationery

SN 172,999. Heritage House Stationers, Inc., Kansas City, Mo. Filed July 15, 1963.

Heritage House

For Stationery, Notepaper, and Envelopes.
First use June 25, 1963.

SN 182,926. Calwis Company, Green Bay, Wis. Filed Dec. 13, 1963.

SINGLWIPES

Owner of Reg. No. 715,790.
For Windshield Towels.
First use about June 20, 1941.

SN 193,648. Exeter Paper Company, Inc., Chicago, Ill. Filed May 18, 1964.

SPECTRUM

For Printed and Embossed Foil Laminated Decorative Paper.
First use Oct. 21, 1963.

SN 194,037. Keith Clark, Inc., New York, N.Y. Filed May 22, 1964.

WORK-A-DAY

For Calendar Desk Pads.
First use November 1921.

SN 194,162. Erving Paper Mills, Erving, Mass. Filed May 25, 1964.

HOMESPUN

Owner of Reg. No. 571,061.
For Place Mats.
First use Mar. 26, 1964.

SN 194,979. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed June 5, 1964.

"EGRET"



For Paper Towels, Paper Napkins, Toilet Tissue, and Household Towels.
First use Apr. 15, 1964.

SN 196,730. Sherfy's Ltd., d.b.a. King Paper Company, San Francisco, Calif. Filed June 29, 1964.



NOB HILL

For Envelopes.
First use Apr. 7, 1964.

SN 196,774. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed June 30, 1964.

WORLDWIDE

Owner of Reg. Nos. 227,006 and 593,255.
For Felt Tip or Nib Dry Ink Marker.
First use Dec. 15, 1963.

SN 196,851. John Dickinson & Co. Limited, Hemel Hempstead, England. Filed July 1, 1964.

Three Candlesticks

Owner of British Reg. No. 856,673, dated Nov. 18, 1963.
For Paper and Stationery.

SN 197,147. Marbelite Co., Inc., Brooklyn, N.Y. Filed July 6, 1964.

GREISS-O-GRAPH

For Graph Paper.
First use Aug. 9, 1963.

SN 197,369. The Crystal Tissue Company, Middletown, Ohio. Filed July 8, 1964.

DAINTYPRINT

For Wrapping Tissue.
First use June 25, 1964.

SN 197,718. International Paper Company, New York, N.Y. Filed July 13, 1964.

FEEDWELL

For Printing and Writing Papers.
First use June 9, 1934.

Class 38 — Prints and Publications

SN 177,859. John G. Cashin, d.b.a. Cashin Publishing Company, Cleveland, Ohio. Filed Sept. 27, 1963.

DARE

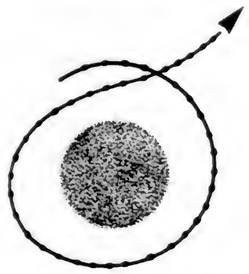
For Magazine for Men, Published Monthly.
First use Aug. 6, 1963.

SN 177,991. Hamilton Management Corporation, Denver, Colo. Filed Sept. 30, 1963.

TALK-BACK

For Looseleaf Textbook—Namely, a Sales Training Aid for Securities Salesmen.
First use July 30, 1963.

SN 189,520. World Book Encyclopedia Science Service Inc., Houston, Tex. Filed Mar. 24, 1964.



For Printed Releases of News, Feature Articles and Pictures Distributed Periodically to Newspapers and Other Periodical Publications.
First use on or about Jan. 9, 1964.

SN 194,002. United Newspapers Magazine Corporation, New York, N.Y. Filed May 21, 1964.

This Week
MAGAZINE...SPECIAL RECREATION EDITION

No claim is made to the words "Magazine . . . Special Recreation Edition" separate and apart from the mark as shown. Owner of Reg. Nos. 534,217 and 720,021.
For Syndicated Magazine or Newspaper Supplement.
First use Apr. 19, 1964.

SN 198,003. United Newspapers Magazine Corporation, New York, N.Y. Filed July 16, 1964.

This Week
MAGAZINE...SPECIAL FEATURES EDITION

No claim is made to the words "Magazine . . . Special Features Edition" separate and apart from the mark as shown. Owner of Reg. Nos. 534,217 and 720,021.
For Syndicated Magazine or Newspaper Supplement.
First use May 10, 1964.

SN 198,004. United Newspapers Magazine Corporation, New York, N.Y. Filed July 16, 1964.

This Week
MAGAZINE SPECIAL STORY EDITION

No claim is made to the words "Magazine . . . Special Story Edition" separate and apart from the mark as shown. Owner of Reg. Nos. 534,217 and 720,021.
For Syndicated Magazine or Newspaper Supplement.
First use May 3, 1964.

Class 39 — Clothing

SN 111,309. American Biltrite Rubber Co., Inc., Chelsea, Mass. Filed Jan. 5, 1961.

UNISOLE

For One-Piece Molded Sole and Heel Unit.
First use Dec. 1, 1960.

SN 134,503. Wonderknit Corporation, New York, N.Y. Filed Dec. 21, 1961.

JR. PRO

For Infants', Young Boys' and Girls' Under and Outer Shirts, Sleeping Shirts and Pants, T-Shirts Basque Shirts, Polo Shirts, Shirt and Pants Combinations, and Sweaters, of Natural and Synthetic Fibers and of Combinations of Such Fibers.
First use Sept. 15, 1961.

SN 143,343. Cape Ann Manufacturing Co., Gloucester, Mass. Filed Apr. 30, 1962.

BOATCOAT

For Outer Coats.
First use July 1961.

SN 143,625. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed May 2, 1962.

MEDICOAT

For Ladies' Over-Blouses.
First use on or about Apr. 4, 1962.

SN 143,626. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed May 2, 1962.

Jane Hunter
MEDICOAT

The name "Jane Hunter" does not identify a particular living individual. Owner of Reg. No. 644,239.
For Ladies' Over-Blouses.
First use on or about Apr. 4, 1962.

SN 169,318. Sheridan Creations, Inc., New York, N.Y. Filed May 20, 1963.

SHERIDAN CREATION

Applicant disclaims the word "Creation," separate and apart from the mark.
For Ladies' Sweaters Made of Natural and Synthetic Fibers.
First use in or about December 1953.

SN 181,037. Imperial Outfitters to Large Men, Inc., New York, N.Y. Filed Nov. 13, 1963.

IMPERIAL WEAR

The word "Wear" is disclaimed apart from the mark as shown. Owner of Reg. No. 711,892.
For Men's Sportswear—Namely, Swim Trunks and Beach Jackets.
First use January 1946.

SN 181,038. Imperial Outfitters to Large Men, Inc., New York, N.Y. Filed Nov. 13, 1963.

IMPERIAL WEAR

The word "Wear" is disclaimed apart from the mark as shown. Owner of Reg. No. 711,892.
For Men's Topcoats, Overcoats, Sport Jackets, and Sweaters.
First use January 1946.

SN 182,315. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Dec. 4, 1963.

Miss Arrow

Owner of Reg. Nos. 613,238 and 749,162.
For Women's Shirts and Blouses and Sweaters.
First use Nov. 11, 1963.

SN 183,405. The L. N. Gross Company, Cleveland, Ohio. Filed Dec. 23, 1963.

STRIDE-A-WAY

Owner of Reg. No. 169,769.
For Women's Slacks, Pedal Pushers, Shorts, Culottes, Stretch Pants, and Skirts.
First use Aug. 1, 1922.

SN 187,046. Roanna Togs, Inc., New York, N.Y. Filed Feb. 19, 1964.

ROANNA togs...

No claim is made to the word "Togs" apart from the mark as shown.
For Clothing for Young Children—Namely, Pants for Outer Wear, Shirt Toppers for Outer Wear, and Topper Blouses for Outer Wear for Boys; and Dresses for Infants and Young Girls.
First use Jan. 10, 1964.

SN 188,438. Genesco Inc., Nashville, Tenn. Filed Mar. 11, 1964.

GUARDIAN ANGEL

For Foundation Garments.
First use Feb. 11, 1964.

SN 188,667. The Servus Rubber Company, Rock Island, Ill. Filed Mar. 13, 1964.

SYLIN

For Moldable Plastic Material Made Up Into Rubbers and Overshoes and Sold as Such.
First use just before Feb. 25, 1964.

SN 189,523. Anton Feller, Salzburg, Austria. Filed Mar. 20, 1964.



The word "Hosen" is disclaimed apart from the mark as shown. The drawing is lined for the colors blue and red.
Owner of Austrian Reg. No. 45,003, dated Feb. 7, 1961.
For Men's and Women's Trousers.
First use August 1955; in commerce August 1955.

SN 190,173. Julius Garfinckel & Co., Incorporated, Washington, D.C. Filed Apr. 2, 1964.

BROOKSLINEN

For Men's and Boys' Clothing—Namely, Sport Jackets and Summer Weight Suits.
First use January 1964.

SN 190,249. J. Edwards & Co., Inc., Philadelphia, Pa. Filed Apr. 3, 1964.

Boone-Doggies

Owner of Reg. No. 742,037.
For Children's Shoes.
First use Dec. 11, 1963.

SN 190,317. Air Reduction Company, Incorporated, New York, N.Y. Filed Apr. 6, 1964.

TRIPLECROWN

For Suspensions for Safety Headgear.
First use on or about Nov. 13, 1963.

SN 190,696. Bettersox Knitting Mills, Fort Atkinson, Wis. Filed Apr. 9, 1964.

JOAN HILL

The name "Joan Hill" is fanciful.
For Hosiery.
First use Jan. 10, 1964.

SN 191,245. Beautiful Bryans, Inc., Chattanooga, Tenn. Filed Apr. 16, 1964.

LACE-O-TARDS

For Leotards Made of Lace.
First use July 25, 1963.

SN 191,252. Colonial Frocks, Inc., Aurora, Ill. Filed Apr. 16, 1964.

Pennypacker



For Dresses.
First use Apr. 16, 1963.

SN 192,302. Maidenform, Inc., New York, N.Y. Filed Apr. 29, 1964.

BARE NECESSITY

For Foundation Garments.
First use Apr. 14, 1964.

SN 192,516. Lester Pincus Shoe Corporation, New York, N.Y. Filed May 1, 1964.

"FOAMAGIC"

Owner of Reg. Nos. 673,243 and 719,707.
For Shoes, Slippers, and Boots.
First use Aug. 16, 1960.

SN 192,607. McGregor-Doniger Inc., New York, N.Y. Filed May 4, 1964.

DRIZZLER

For Golf Jackets.
First use spring of 1947.

SN 192,734. Manchester Hosiery Mills, Manchester, N.H. Filed May 5, 1964.



For Hosiery.
First use Feb. 5, 1953.

SN 193,247. F. W. Woolworth Co., New York, N.Y. Filed May 11, 1964.



The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 660,382 and 664,117.
For Infants' Hose.
First use on or about Mar. 12, 1962.

SN 193,258. Ball Brassiere Co., Inc., New York, N.Y. Filed May 12, 1964.

FIBER FLUFF

No claim is made to the word "Fiber" apart from the mark as shown.
For Brassieres.
First use Mar. 12, 1964.

SN 193,365. Hayes Garment Company, Nashville, Tenn. Filed May 13, 1964.

GAUCHOS

For Men's and Boys' Western Wear, Consisting of Pants, Shirts, and Jackets.
First use Apr. 1, 1956.

SN 193,178. Vanity Fair Mills, Inc., Reading, Pa. Filed June 8, 1964.

SHEER POWER

For Foundation Garments—Namely, Girdles.
First use May 5, 1964.

SN 193,416. International Seaway Trading Corp., Cleveland, Ohio. Filed June 11, 1964.

Angel Eyes

For Footwear—Namely, Sandals and House Slippers.
First use October 1963.

SN 193,717. Salant & Salant, Inc., New York, N.Y. Filed June 15, 1964.

TRIPLE 44

For Shirts, Pants, and Jackets for Men, Boys, and Children.
First use Feb. 26, 1964.

SN 193,718. Salant & Salant, Inc., New York, N.Y. Filed June 15, 1964.

S AND S

For Shirts, Pants, and Jackets for Men, Boys, and Children.
First use Mar. 11, 1964.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 164,851. Joh. Morits Rump, Altena, Westphalia, Germany. Filed Mar. 18, 1963.

IMRA-LOOP

Priority claimed under Sec. 44(d) on German application filed Sept. 18, 1962; Reg. No. 769,763, dated Jan. 25, 1963.
For Needles for Needle Work—Namely, Darning Needles, Knotting Needles, Carpet Needles (Blunts), Filleting Needles, Filleting Bars, Loop Collecting Needles, Loop Holders, Protectors for Knitting Needles, Forked Knitting Needles, Needles Made of Metal, Particularly Steel and Light Metal, Knitting and Crocheting Needles, Sewing Needles, Embroidery Needles, Basting Needles, Packing and Mattress Needles; Pins and Safety Pins; Hooks and Eyes; and Snap Fasteners.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 156,774. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 6, 1962.

TETREX

Owner of Japanese Reg. No. 536,517, dated May 22, 1959.
For Fabrics of Rayon, Nylon, and Other Synthetic Fibre, and of Mixed Fibres Comprising Various Synthetic Fibres, or Synthetic Fibre or Fibres and Natural Fibre or Fibres.

SN 193,248. F. W. Woolworth Co., New York, N.Y. Filed May 11, 1964.



The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 660,382 and 664,117.
For Infants' Receiving Blankets.
First use June 18, 1963.

SN 195,207. Dan River Mills, Incorporated, Danville, Va. Filed June 9, 1964.

DAN-PRESS

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, Including Fabrics Finished With Crease-Proofing Chemicals.
First use May 12, 1964.

SN 195,208. Dan River Mills, Incorporated, Danville, Va. Filed June 9, 1964.

DAN-STRETCH

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, Including Stretch Fabrics.
First use Mar. 10, 1964.

SN 195,209. Dan River Mills, Incorporated, Danville, Va. Filed June 9, 1964.

DANTUCK

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use Apr. 27, 1964.

SN 195,337. J. P. Stevens & Co., Inc., New York, N.Y. Filed June 10, 1964.

STE-VEL

Owner of Reg. Nos. 511,773, 735,714, and others.
For Piece Goods of One or More Natural Fibers Including Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use June 2, 1964.

SN 195,459. J. P. Stevens & Co., Inc., New York, N.Y. Filed June 11, 1964.

CONSORT-AIRE

For Piece Goods of Synthetic Fibers or of Blends of the Foregoing.
First use June 8, 1964.

Class 43 — Thread and Yarn

SN 195,154. Revonah Spinning Mills, Hanover, Pa. Filed June 8, 1964.

DELCY

For Yarn.
First use Mar. 24, 1964.

SN 195,155. Revonah Spinning Mills, Hanover, Pa. Filed June 8, 1964.

CORVIS

For Yarn.
First use Nov. 23, 1959.

SN 195,156. Revonah Spinning Mills, Hanover, Pa. Filed June 8, 1964.

EXCELLO BOND

For Yarn.
First use Oct. 24, 1960.

SN 195,157. Revonah Spinning Mills, Hanover, Pa. Filed June 8, 1964.

RX-2

For Yarn.
First use Jan. 18, 1956.

Class 44—Dental, Medical, and Surgical Appliances

SN 183,110. Resilex Laboratory, Inc., Los Angeles, Calif. Filed Dec. 16, 1963.

WEE BAG

The word "Bag" is disclaimed apart from the entire mark as shown.
For Pediatric Urine Collection Pouches.
First use Nov. 22, 1963.

SN 184,685. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Jan. 16, 1964.

PLEXITRAY

For Vaginal Irrigation Unit Containing Irrigation Container With Attached Tubing, Clamp and Tip, Waterproof Pad, Drape, Gloves, Cotton Balls, Bacteriostatic Agent, Towel and Plastic Tray.
First use Nov. 25, 1963.

SN 189,640. John P. Weitzel, d.b.a. John Weitzel Mfg., La Crosse, Kans. Filed Mar. 25, 1964.

HELPMATE

For Mechanical Physical Therapy Exercisers in the Form of a Dual Crank Equipped Wheel Mounted on a Floor Supported Standard With Bed Frame Clamps and a Brake To Vary the Resistance to Wheel Rotation and Can Be Operated by Hands or Feet Even While Lying Prone.
First use Jan. 2, 1963.

SN 197,163. O.R.A. Table Company, Inc., Jackson, Wis. Filed July 6, 1964.



For Operating Room Anesthesia Table.
First use Apr. 17, 1964.

SN 197,220. John A. Welty, Harlingen, Tex. Filed July 6, 1964.



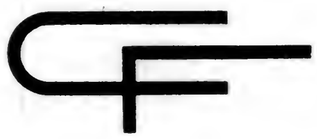
For Medical Kit Containing Instructions for Use of Items Therein Which Include Universal Poison Antidote, Emetic, Acidifier, Alkalizer, Lotion for Burn Treatment, Anesthetic Lotion, Tourniquet, Mouth-To-Mouth Resuscitator, Splint, Wound Dressing Materials, Antiseptic, and Antibiotic Ointment.
First use May 19, 1964.

SN 197,364. Corbin-Farnsworth, Inc., Palo Alto, Calif. Filed July 8, 1964.

VARITRAK

For Cyclic Traction Devices and Accessories.
First use in or about May 1960.

SN 197,366. Corbin-Farnsworth, Inc., Palo Alto, Calif. Filed July 8, 1964.



For Single and Dual Trace Cardioscope (Medical Oscilloscope) and Accessories, Defibrillators and Accessories, Cardiac Synchronizers and Accessories, Cardiac Portable Hand Resuscitators and Accessories, Electrodes, Heart Rate Meters, Heart Rate Alarms and Pacemakers and Accessories.
First use in or about September 1960.

Class 45—Soft Drinks and Carbonated Waters

SN 152,572. Fries & Fries, Inc., Cincinnati, Ohio. Filed Sept. 6, 1962.

PEEL

For Soft Drinks and Flavors for Soft Drinks.
First use May 24, 1961.

SN 188,572. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 12, 1964.

FUNNY-FACE

For Powder for Preparing Soft Drinks.
First use Feb. 15, 1964.

Class 46—Foods and Ingredients of Foods

SN 141,094. National Biscuit Company, New York, N.Y. Filed Mar. 29, 1962.



The drawing is lined for gold.
For Biscuits, Crackers, and Cookies.
First use Jan. 4, 1962.

SN 152,573. Fries & Fries, Inc., Cincinnati, Ohio. Filed Sept. 6, 1962.

PEEL

For Powdered and Liquid Flavors for Use in Foods and Food Beverages.
First use May 24, 1961.

SN 160,405. Sam Braman & Son, Cleveland, Ohio. Filed Jan. 9, 1963.



The term "Stacy Lee" is fanciful.
For Fresh and Frozen Packaged Poultry.
First use on or about Dec. 1, 1962.

SN 178,733. Ralston Purina Company, St. Louis, Mo. Filed Oct. 10, 1963.



For Fresh Dressed Turkeys.
First use Sept. 18, 1963.
Subj. to Intf. with SN 198,162.

SN 191,004. Young's Market Company, Los Angeles, Calif. Filed Apr. 13, 1964.



Applicant disclaims the word "Sourdough" apart from the mark as shown.
For Frozen Breaded Shrimp.
First use Apr. 6, 1964; at least as early as the year 1919 as to the mark "Young's and Y design" on related goods.

SN 191,167. Good Humor Corporation, Englewood Cliffs, N.J. Filed Apr. 15, 1964.

WHAMMY-STIX

Owner of Reg. No. 735,447.
For Frozen Confections on a Stick.
First use Mar. 20, 1964.

SN 191,168. Good Humor Corporation, Englewood Cliffs, N.J. Filed Apr. 15, 1964.

WAHOO BAR

The word "Bar" is disclaimed apart from the mark as shown.
For Frozen Confections on a Stick.
First use Mar. 27, 1964.

SN 191,700. Abner Michaud, d.b.a. A. Michaud Co., Philadelphia, Pa. Filed Apr. 21, 1964.

STEAK-A-BOBS

For Beef Cut Up Into Chunks for Roasting on Skewers.
First use on or about Nov. 1, 1961.

SN 194,332. Standard Brands Incorporated, New York, N.Y. Filed May 26, 1964.

ROYAL

Owner of Reg. Nos. 135,855, 669,690, and others.
For Individual Servings of Syrup and Jelly.
First use May 16, 1963.

SN 194,898. Merit Frozen Foods Corp., d.b.a. Cheryl Ann Frozen Foods Co., Cheshire, Conn. Filed June 4, 1964.



For Fresh and Frozen Beef, Veal, Pork, Lamb, and Mutton in the Form of Steaks, Patties, and Other Fabricated Cuts Thereof.
First use May 1960.

SN 194,915. Bernard S. Pincus Co., Philadelphia, Pa. Filed June 4, 1964.



For Frankfurters.
First use Apr. 15, 1958.

SN 195,962. Peter Paul, Inc., Naugatuck, Conn. Filed June 18, 1964.

CARAVELLE

For Candy.
First use June 1, 1964.

SN 196,140. Fruit Products Corporation, Englewood, N.J. Filed June 22, 1964.

BULLET

For Frozen Confections on Sticks and Liquid Concentrates for Making the Same.
First use March 1952.

SN 198,679. Tip Top Products, Inc., Dallas, Tex. Filed July 28, 1964.

OLD SOUTH

For Processed Food Products Known in the Food Industry as Hush Puppies, Corn Fritters, Apple Fritters, and Corn Dogs.
First use October 1963.

SN 198,680. Tip Top Products, Inc., Dallas, Tex. Filed July 28, 1964.

TIP TOP

For Corn Dogs.
First use July 1963.

SN 198,907. A. E. Staley Manufacturing Company, Decatur, Ill. Filed July 30, 1964.

Staley

Owner of Reg. Nos. 753,575, 753,804, and others.
For Corn Feed for Livestock and Poultry—Namely, Corn Gluten Feed, Corn Gluten Meal, and Corn Germ Meal.
First use June 13, 1964, on corn gluten feed.

Class 47 — Wines

SN 191,100. Flagstaff Liquor Co., Perth Amboy, N.J. Filed Apr. 14, 1964.

CARTLEY BRAND

Applicant disclaims the word "Brand."
For Wine.
First use Oct. 15, 1963.

Class 49 — Distilled Alcoholic Liquors

SN 183,272. John E. McPherson & Sons Limited, Edinburgh, Scotland. Filed Dec. 19, 1963.

CLUNY

Owner of U.S. Reg. No. 306,488.
For Scotch Whisky.
First use in or about the year 1863; in commerce Apr. 3, 1886.

SN 190,629. E. Martinoni Company, d.b.a. Dunhill & Co., San Francisco, Calif. Filed Apr. 8, 1964.



The picture forming a part of the mark is that of Pancho Villa, a celebrated Mexican bandito, now deceased.
For Tequila.
First use Jan. 16, 1964.

SN 190,630. E. Martinoni Company, d.b.a. Dunhill & Co., San Francisco, Calif. Filed Apr. 8, 1964.

GALWAY MIST

The word "Galway" is disclaimed apart from the mark as shown.
For Irish Whiskey.
First use Dec. 24, 1963.

Class 50 — Merchandise Not Otherwise Classified

SN 162,632. Douglass-Guy, Incorporated, Akron, Ohio, assignee of Douglass-Guy Designers, Akron, Ohio. Filed Feb. 13, 1963.

ASTRO-GLAS

The term "Glas" is disclaimed apart from the mark as shown.
For Cast, Translucent, Rigid, Glass-Like, Plastic Pictures Comprising Works of Art Useable Per Se as Such, and Useable Also in Connection With the Manufacture of Divider Screens, Lamp Shades, Doors, and Windows.
First use Nov. 7, 1962.

SN 182,740. Robelan Displays Inc., Brooklyn, N.Y. Filed Dec. 10, 1963.

PUPPET

For Mannequins.
First use Oct. 18, 1963.
Subj. to Intf. with SN 183,525.

SN 183,051. General Plastics Corporation, Los Angeles, Calif. Filed Dec. 16, 1963.

RESILOFLEX

For Container Packaging Materials—Namely, Mats, Battens and Padding Manufactured of Resilient Thermoplastic Material.
First use Oct. 23, 1963.

SN 183,525. Puppet Mannequins, Inc., Forest Hills, N.Y. Filed Dec. 19, 1963.

PUPPET

For Mannequins.
First use Oct. 18, 1963.
Subj. to Intf. with SN 182,740.

SN 185,158. Related Enterprises, Inc., Palm Beach, Fla. Filed Jan. 22, 1964.

MONOPLATE

For Emblems for Vehicles.
First use on or about Dec. 20, 1963.

SN 194,866. Carlton Paper Corp., Brooklyn, N.Y. Filed June 4, 1964.

"PIN-TO-IT"

For Metal Garment Hangers.
First use Apr. 25, 1964.

SN 198,410. Stevan Dohanos, Westport, Conn. Filed July 23, 1964.

S★D

For Kit of Artists' Material Containing Compartments for Accommodating Such Articles as Drawing Boards, Drawing Paper, Illustration Boards, Artists' Brushes and Pencils, All Arranged in a Tabouret.
First use May 5, 1964.

SN 202,342. Robert P. Hughes, d.b.a. Hughes Manufacturing Company, Houston, Tex. Filed Sept. 23, 1964.

MOLDAFOAM

For Molded Plastic Products—Namely, Letters Used as Display Material.
First use Mar. 27, 1963.

Class 51 — Cosmetics and Toilet Preparations

SN 184,391. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Jan. 10, 1964.



For Home Permanent Wave Preparation.
First use Dec. 12, 1963.

SN 189,455. Etienne Aigner Parfums, Inc., New York, N.Y. Filed Mar. 24, 1964.

CUIR DE CHASSE

The French words "Cuir de Chasse" translated into English mean "hunting leather."
For Perfume and Cologne.
First use Nov. 4, 1963.

SN 190,706. Paul B. Elder Company, Bryan, Ohio. Filed Apr. 9, 1964.

RVPaba

For Ointment for Human Use Containing a Protectant From the Sun's Rays and p-Amino Benzoic Acid.
First use Mar. 25, 1964.

SN 190,861. Avon Products, Inc., New York, N.Y. Filed Apr. 13, 1964.

AVON ACADEMY

For Hair Dressing Stick, After Shave Lotion, Talc and Spray Deodorant.
First use Mar. 20, 1964.

SN 193,462. Fairfield Laboratories, Inc., d.b.a. Econo Laboratories, Pasadena, Calif. Filed May 14, 1964.

ROMANCE

For Hair Sprays.
First use on or about Mar. 2, 1964.

Class 52 — Detergents and Soaps

SN 151,474. Carpet Technical Service Institute, Inc., Media, Pa. Filed Aug. 20, 1962.

OUT

For Stain Remover for Carpets and Rugs.
First use Jan. 27, 1962.

SN 154,393. Ajem Laboratories, Inc., Livonia, Mich. Filed Oct. 3, 1962.

JEM LIQUI-PHOS

No claim is made to the word "Phos" per se apart from the mark of which it is a part. Owner of Reg. Nos. 641,141, 773,951, and others.
For Acid Cleaners for Preparing Ferrous Metals for Organic Coatings.
First use on or about July 12, 1962.

SN 165,762. Fleetwood Company, Chicago, Ill. Filed Apr. 1, 1963.

New TINT MATE By Tintz

Applicant disclaims the words "Tint" and "New" separate and apart from the combination "Tint Mate." Owner of Reg. Nos. 319,402 and 511,302.
For Hair Shampoo Concentrate.
First use Mar. 1, 1962.

SN 179,727. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Oct. 24, 1963.

PENN CARB

For Metal Cleaner for Automobile and Machine Parts.
First use Mar. 2, 1962.

SN 179,728. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Oct. 24, 1963.

MC-7

Owner of Reg. Nos. 430,777 and 608,470.
For General Purpose Alkaline Cleaner. Especially for Use in Dairies and Food Plants.
First use June 15, 1963.

SN 179,730. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Oct. 24, 1963.

KON-JECT-O

For General Purpose Solvent Cleaner for Metals and Machine Parts.
First use Feb. 27, 1958.

SN 185,289. Hodges Research & Development Company, New York, N.Y. Filed Jan. 24, 1964.

LAUNDRY LIFE

No claim is made to the word "Laundry" apart from the mark as shown.
For All-Purpose Detergent for the Washing of All Types of Fabrics.
First use May 1, 1963.

SN 188,848. Harold Crosby, d.b.a. Town & Country Products Company, Newton, Mass. Filed Mar. 17, 1964.

MEGATRON

For Solvents for Use on Machinery.
First use Sept. 24, 1962.

SN 190,862. Avon Products, Inc., New York, N.Y. Filed Apr. 13, 1964.

AVON ACADEMY

For Toilet Soap.
First use Mar. 20, 1964.

SN 192,601. Lever Brothers Company, New York, N.Y. Filed May 4, 1964.

DOVE

Owner of Reg. Nos. 425,318, 587,722, and 746,360.
For Detergent for Laundry and Dishwashing.
First use Dec. 27, 1945.

SN 194,630. Magnus Chemical Company, Inc., Garwood, N.J. Filed June 1, 1964.

MAGNUS

Owner of Reg. Nos. 175,886, 667,202, and others.
For Soaps for Detergent Purposes and Soap Mixtures for Cleaning Finished Surfaces.
First use May 2, 1922.

SERVICE MARKS

Class 100 — Miscellaneous

SN 159,202. ITT Cannon Electric Inc., Los Angeles, Calif., assignee of Cannon Electric Company, Los Angeles, Calif. Filed Dec. 17, 1962.

CAPS

For Assembly and Servicing of Products in the Electrical Connector Field.
First use on or about Jan. 24, 1961.

SN 183,173. Hotel Corporation of America, Boston, Mass. Filed Dec. 17, 1963.

Instant Reservation Service

No registration rights are claimed for the words "Reservation Service" apart from the mark as shown. Owner of Reg. Nos. 660,655 and 660,656.
For Services Rendered to Travelers—Namely, Providing Confirmed Reservations of Rooms and Other Accommodations and Services in Hotels and Motor Hotels Located in Various Cities in the United States and in Certain Foreign Countries Upon Telephonic Request to Any One Such Hotel, and to Specified Reservation Offices.
First use Feb. 26, 1957.

SN 191,031. Bionetics Research Laboratories, Inc., Falls Church, Va. Filed Apr. 14, 1964.

BRL

For Biological, Chemical, and Medical Research Services.
First use Nov. 9, 1961.

Class 101 — Advertising and Business

SN 173,647. Fund Ways, Inc., Neenah, Wis. Filed July 24, 1963.

FUND WAYS, INC.

For Services Consisting of Providing Promotional and Advertising Aids, Prizes and Supplies, Games and Concession Equipment for Carnivals, Fairs, and Other Events for Raising Funds.
First use Mar. 26, 1963.

SN 182,495. Frederic A. Naglestad, d.b.a. Results Employment Agency, San Jose, Calif. Filed Dec. 6, 1963.

Results

For Employment Agency Service.
First use Oct. 9, 1961.

SN 184,521. Smith Enterprises, Inc., Rock Hill, S.C. Filed Jan. 13, 1964.

THE COMPANY CHRISTMAS TREE

For Providing Facilities for the Selection and Delivery of Gifts by Firms for Their Employees.
First use May 17, 1963.

Class 103 — Construction and Repair

SN 135,498. Getz Exterminators, Inc., St. Louis, Mo. Filed Jan. 10, 1962.

THE INSPECTOR

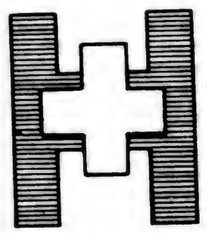
Owner of Reg. Nos. 297,145, 653,904, and others.
For Exterminating Services.
First use 1953.

SN 175,007. Armstrong Building Maintenance, Inc., Albuquerque, N. Mex. Filed Aug. 14, 1963.

ARMSTRONG
BUILDING MAINTENANCE

No claim is made to the wording "Building Maintenance" apart from the mark.
For Janitorial Services.
First use 1954.

SN 184,020. Associated Hospital Linens, Inc., Utica, N.Y Filed Jan. 6, 1964.



The drawing is lined for blue.
For Linen Rental Service for Hospitals and/or Nursing Homes.
First use May 24, 1963.

SN 184,675. Whitfield Systems Inc., Cincinnati, Ohio. Filed Jan. 15, 1964.



For Dry Cleaning Services.
First use Nov. 22, 1963.

Class 104 — Communication

SN 182,372. Sveriges Radio Aktiebolag, New York, N.Y. Filed Dec. 4, 1963.

RADIO SWEDEN

For Radio and Television Broadcasting Services.
First use Jan. 15, 1958.

Class 105 — Transportation and Storage

SN 176,274. Arcoa, Inc., Portland, Oreg. Filed Sept. 4, 1963.

U-HAUL

The drawing is lined for the color orange. Owner of Reg. No. 746,034.
For Truck Rentals.
First use Dec. 9, 1957.

Class 106 — Material Treatment

SN 177,665. Arthur Tickle Engineering Works, Inc., Brooklyn, N.Y. Filed Sept. 24, 1963.

Alumicoat

For Coating Ferrous Metals With Aluminum for Protection Against Heat Oxidation and Corrosion in Accordance With Customer's Specifications, and Furnishing Engineering and Consultation Services in Connection Therewith.
First use May 1, 1954.

Class 107 — Education and Entertainment

SN 176,281. James W. Copeland, d.b.a. The Sensational Skylarks, Detroit, Mich. Filed Sept. 4, 1963.

SENSATIONAL SKYLARKS

The word "Sensational" is disclaimed apart from the mark.
For Musical Performances—Namely, Gospel and Spiritual Singing.
First use 1946.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

781,579. COSIBRA. Companhia Sisal do Brasil-Cosibra. SN 124,890. Pub. 9–29–64. Filed 7–28–61.

781,580. KATRINE GLEN. Henry M. Glasgow and Loreen S. Glasgow (joint owners). SN 157,215. Pub. 9–29–64. Filed 5–14–63.

781,581. MAGNA-FLEX. Magic Decorator Company. SN 180,928. Pub. 7–14–64. Filed 11–12–63.

781,582. ENVEE. Black Magic, Inc. SN 182,703. Pub. 8–4–64. Filed 12–10–63.

781,583. CAMEL-CHIP. Harry T. Campbell Sons' Corporation. SN 183,029. Pub. 9–29–64. Filed 12–16–63.

781,584. THIOLON. Thiokol Chemical Corporation. SN 185,329. Pub. 9–29–64. Filed 1–24–64.

781,585. PX. Bryant Edward Pearce. SN 186,437. Pub. 9–29–64. Filed 2–11–64.

Class 2 — Receptades

781,586. AMERICAN. American Paper & Plastic Products, Inc. SN 173,999. Pub. 9–29–64. Filed 7–30–63.

781,587. LIN-A-KAN. Parish Manufacturing & Distributing Corp. SN 174,605. Pub. 9–29–64. Filed 8–7–63.

Class 5 — Adhesives

781,588. CHEM SEAL AND DESIGN. Cox Tire Machinery Co., Inc. SN 187,858. Pub. 7–28–64. Filed 3–3–64.

Class 6 — Chemicals and Chemical Compositions

781,589. FL AND DESIGN. Flow Laboratories Incorporated. SN 152,548. Pub. 9–29–64. Filed 9–5–62.

781,590. NALKYLENE. Continental Oil Company. SN 170,379. Pub. 7–14–64. Filed 6–5–63.

781,591. DUX. Eaton Chemical Corporation. SN 170,627. Pub. 7–7–64. Filed 6–10–63.

781,592. BUSPERSE. Buckman Laboratories, Inc. SN 170,730. Pub. 9–29–64. Filed 6–11–63.

781,593. CEREVASE. Chas. Pfizer & Co., Inc. SN 175,868. Pub. 9–29–64. Filed 8–27–63.

781,594. BOKAY. Chas. Pfizer & Co., Inc. SN 175,869. Pub. 9–29–64. Filed 8–27–63.

781,595. F AND DESIGN. Faultless Starch Company. SN 180,388. Pub. 9–29–64. Filed 11–4–63.

781,596. PITT-CONSOL AND DESIGN. Pitt-Consol Chemical Company. SN 188,267. Pub. 9–29–64. Filed 3–9–64.

781,597. PITT-CONSOL AND DESIGN. Pitt-Consol Chemical Company. SN 188,268. Pub. 9–29–64. Filed 3–9–64.

781,598. HUDSON AND DESIGN. Hudson Oil Company. SN 188,634. Pub. 9–29–64. Filed 3–13–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

781,599. VIBROCOL. Hercules Powder Company. SN 180,091. Pub. 9–29–64. Filed 10–30–63.

Class 10 — Fertilizers

781,600. HI-LITE. Lee Patten Seed Company. SN 195,307. Pub. 9–29–64. Filed 6–10–64.

Class 11 — Inks and Inking Materials

781,601. NEV-R-KURL. Phillips Process Co. Inc. SN 137,788. Pub. 9–29–64. Filed 2–12–62.

781,602. KLEAN WRITE. Frankel Carbon & Ribbon Company. SN 150,777. Pub. 9–29–64. Filed 8–8–62.

Class 12 — Construction Materials

781,603. ORSANETTES. United States Ceramic Tile Company. SN 139,702. Pub. 9–29–64. Filed 3–12–62.

781,604. SLIMLINE. Simpson Timber Company. SN 171,278. Pub. 9–29–64. Filed 6–18–63.

781,605. REDITRUSS. Reditruss International, Inc. SN 173,502. Pub. 9–29–64. Filed 7–22–63.

781,606. PAVEBRITE. The Neville Chemical Company. SN 174,283. Pub. 9–29–64. Filed 8–2–63.

781,607. WELDWOOD AND DESIGN. United States Plywood Corporation. SN 181,431. Pub. 9–29–64. Filed 11–18–63.

781,608. SOLITE. Solite Corporation. SN 184,843. Pub. 9–29–64. Filed 1–17–64.

781,609. SILVER MAGIC. Swiss Laboratory, SN 184,987. Pub. 9–29–64. Filed 1–20–64.

781,610. CONCORA-. Container Corporation of America. SN 185,273. Pub. 9–29–64. Filed 1–24–64.

781,611. GREEN MAGIC. Swiss Laboratory, Inc. SN 185,454. Pub. 9–29–64. Filed 1–27–64.

781,612. OLIBOND. E. J. Lavino and Company. SN 186,861. Pub. 9–29–64. Filed 2–17–64.

781,613. GAR-FLOR. The Garland Company. SN 187,102. Pub. 9–29–64. Filed 2–20–64.

781,614. RAILWOOD. Blumcraft of Pittsburgh. SN 188,187. Pub. 9–29–64. Filed 3–9–64.

781,615. MONOLITE. Butler Manufacturing Company. SN 188,193. Pub. 9–29–64. Filed 3–9–64.

781,616. HUFCOR. Hough Manufacturing Corporation. SN 188,239. Pub. 9–29–64. Filed 3–9–64.

781,617. CARBANA. Maurice L. Presley. SN 188,394. Pub. 9–29–64. Filed 3–10–64.

781,618. PORTERSITE. H. K. Porter Company, Inc. SN 188,793. Pub. 9–29–64. Filed 3–16–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

781,619. STERLING. Sterling Automotive Manufacturing Co. SN 138,061. Pub. 9–29–64. Filed 2–15–62.

781,620. WHIRL-BIRD. Foot Coating Utensil, Inc. SN 171,636. Pub. 9–29–64. Filed 6–24–63.

781,621. OMICRON. Bertha Chakine, d.b.a. Omicron Plastics Company. SN 174,083. Pub. 9–29–64. Filed 7–31–63.

781,622. NR. Akron Brass Company. SN 176,606. Pub. 9–29–64. Filed 9–10–63.

781,623. DIXIE-MAID. W. E. Raines Company, Inc. SN 176,949. Pub. 9–29–64. Filed 9–13–63.

781,624. PRUDENTIAL AND DESIGN. Ekco Products Company. SN 184,455. Pub. 7–28–64. Filed 1–13–64.

781,625. WELIN-FORMED AND DESIGN. Continental Copper & Steel Industries, Inc. SN 186,603. Pub. 9–29–64. Filed 2–13–64.

781,626. COLONIAL ETC. AND DESIGN. Colony House, Inc. SN 187,176. Pub. 9–29–64. Filed 2–21–64.

781,627. CHECK STREAM. Texsteam Corporation. SN 190,125. Pub. 9–29–64. Filed 4–1–64.

781,628. JET STREAM. Texsteam Corporation. SN 190,126. Pub. 9–29–64. Filed 4–1–64.

781,629. B-LINE AND DESIGN. Buckner Manufacturing Company, Inc. SN 190,787. Pub. 9–29–64. Filed 4–10–64.

781,630. CRITERION. Crane Co. SN 190,789. Pub. 9–29–64. Filed 4–10–64.

781,631. DYNAREG. Engelberg, Inc. SN 190,797. Pub. 9–29–64. Filed 4–10–64.

781,632. KWIK-KLAMP. Hearth Craft, Inc. SN 190,803. Pub. 9–29–64. Filed 4–10–64.

Class 14 — Metals and Metal Castings and Forgings

781,633. ILKOLOY. Ilikon Corporation. SN 178,201. Pub. 9–29–64. Filed 10–2–63.

781,634. 'CANSUPER. Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.). SN 190,711. Pub. 9–29–64. Filed 4–9–64.

781,635. AMTEL. American Metal Climax, Inc. SN 191,476. Pub. 9–29–64. Filed 4–20–64.

781,636. AMSIL. American Metal Climax, Inc. SN 191,477. Pub. 9–29–64. Filed 4–20–64.

Class 15 — Oils and Greases

781,637. WHITING BROS. Whiting Brothers Oil Company, d.b.a. Whiting Brothers and Whiting Bros. SN 121,886. CONCURRENT USE. Pub. 6–18–63. Filed 6–12–61.

781,638. SHOPPERS WORLD AND DESIGN. Aldens Shoppers World, Inc., d.b.a. Shoppers World. SN 176,472. Pub. 9–29–64. Filed 9–9–63.

781,639. QUIK-RELEZE. Space Chemicals, Inc. SN 176,858. Pub. 9–29–64. Filed 9–10–63.

781,640. FALLOUT. Walter G. Milanko, d.b.a. Crescent Sales Company. SN 193,487. Pub. 9–29–64. Filed 5–14–64.

Class 16 — Protective and Decorative Coatings

781,641. DURANE. Raffi and Swanson, Inc. SN 144,540. Pub. 9–29–64. Filed 5–14–62.

Class 17 — Tobacco Products

781,642. BALBO. Lupo Cigar Co., Inc. SN 165,439. Pub. 9–29–64. Filed 8–26–63.

781,643. NATURALES. Bayuk Cigars Incorporated, assignee of E. Regensburg & Sons. SN 185,075. Pub. 8–4–64. Filed 1–21–64.

Class 18 — Medicines and Pharmaceutical Preparations

781,644. OMSUL-PEN. Delta Drug Corporation. SN 146,146. Pub. 9–29–64. Filed 6–1–62.

781,645. BURTONE. Drug Products Inc. SN 165,415. Pub. 9–29–64. Filed 3–26–63.

781,646. PILOCAR. Smith, Miller & Patch, Inc. SN 172,013. Pub. 9–29–64. Filed 6–27–63.

781,647. ASPIRPAK AND DESIGN. The International Trade & Investment Corp. SN 172,664. Pub. 9–29–64. Filed 7–9–63.

781,648. PHARM ETHIC ETC. AND DESIGN. Ethical Pharmaceuticals of Cleveland, Inc. SN 175,399. Pub. 9–29–64. Filed 8–20–63.

781,649. SHOPPERS WORLD AND DESIGN. Aldens Shoppers World, Inc., d.b.a. Shoppers World. SN 176,474. Pub. 9–29–64. Filed 9–9–63.

781,650. CLARKOTABS. Clark & Clark Co. SN 179,022. Pub. 9–29–64. Filed 10–15–63.

781,651. AMESEC. Eli Lilly and Company. SN 180,385. Pub. 9–29–64. Filed 11–4–63.

781,652. SINUCAINE. Sedaquil, Inc. SN 180,532. Pub. 9–29–64. Filed 11–5–63.

781,653. ESTRO-V HC. The William A. Webster Company. SN 182,136. Pub. 9–29–64. Filed 11–29–63.

781,654. HEX-A-FLUKE. American Home Products Corporation. SN 183,869. Pub. 9–29–64. Filed 1–2–64.

781,655. AZULFIDINE ETABS. Pharmacia Laboratories, Inc. SN 185,441. Pub. 9–29–64. Filed 1–27–64.

781,656. CHARGE. Chesebrough-Pond's, Inc. SN 187,724. Pub. 9–29–64. Filed 3–2–64.

781,657. FIRMENICH AND DESIGN. Firmenich, Incorporated. SN 188,530. Pub. 9–29–64. Filed 3–12–64.

781,658. TRANIMUL. Hoffmann-La Roche Inc. SN 188,759. Pub. 9–29–64. Filed 3–16–64.

781,659. M MAYFAIR AND DESIGN. Mayfair Markets. SN 189,334. Pub. 9–29–64. Filed 3–23–64.

781,660. DELTA. Sterneo Industries, Inc. SN 189,958. Pub. 9–29–64. Filed 3–30–64.

781,661. CLISTIN-D. McNeil Laboratories, Incorporated. SN 190,097. Pub. 9–29–64. Filed 4–1–64.

781,662. EQUILET. Mission Pharmacal Co. SN 190,100. Pub. 9–29–64. Filed 4–1–64.

781,663. VITA-STAR. Star Pharmaceuticals, Inc. SN 190,442. Pub. 9–29–64. Filed 4–6–64.

781,664. SUBSTACIN. Ortho Pharmaceutical Corporation. SN 190,637. Pub. 9–29–64. Filed 4–8–64.

781,665. GIVY. Unimed, Inc. SN 190,996. Pub. 9–29–64. Filed 4–13–64.

781,666. OTOCEROL. Bartlett Pharmaceutical Co., Inc. SN 191,243. Pub. 9–29–64. Filed 4–16–64.

781,667. PORTA-SEP. Superior Pharmacal Co. SN 191,807. Pub. 9–29–64. Filed 4–22–64.

781,668. KENACILLIN. Olin Mathieson Chemical Corporation. SN 191,942. Pub. 9–29–64. Filed 4–24–64.

781,669. ASPIRAND-PLUS. Sterling Drug Inc. SN 191,961. Pub. 9–29–64. Filed 4–24–64.

781,670. STERO-GESIC. Eli Lilly and Company. SN 192,045. Pub. 9–29–64. Filed 4–27–64.

781,671. SWIMYCIN. Olin Mathieson Chemical Corporation. SN 192,055. Pub. 9–29–64. Filed 4–27–64.

781,672. QUE-ESS. Southwestern Drug Corporation, d.b.a. Brooke Laboratories. SN 192,221. Pub. 9–29–64. Filed 4–28–64.

781,673. MEDI-TEK. Veterinary Supply Depot Incorporated. SN 192,237. Pub. 9–29–64. Filed 4–28–64.

781,674. VI-NATURA. Veterinary Supply Depot Incorporated. SN 192,238. Pub. 9–29–64. Filed 4–28–64.

781,675. REDOTEX. Nysco Laboratories, Inc. SN 193,201. Pub. 9–29–64. Filed 5–11–64.

781,676. MONOMEB. Sterling Drug Inc. SN 193,304. Pub. 9–29–64. Filed 5–12–64.

781,677. SANILENS. Sterimed, Inc. SN 193,320. Pub. 9–29–64. Filed 5–19–64.

781,678. PROLENS. Sterimed, Inc. SN 193,322. Pub. 9–29–64. Filed 5–19–64.

781,679. SUROMATE. Smith, Miller & Patch, Inc. SN 194,248. Pub. 9–29–64. Filed 5–25–64.

781,680. VELMOL. Smith, Miller & Patch, Inc. SN 194,249. Pub. 9–29–64. Filed 5–25–64.

781,681. SECOMAT. Texas Pharmacal Company. SN 194,682. Pub. 9–29–64. Filed 6–1–64.

781,682. CYSTO-SPAZ. Conal Pharmaceuticals, Inc. SN 194,780. Pub. 9–29–64. Filed 6–3–64.

781,683. CHYMODREX. Societe d'Applications Chimiques, d'Etudes et de Recherches SACER. SN 194,924. Pub. 9–29–64. Filed 6–4–64.

781,684. OS-CAL. Marion Laboratories, Inc. (Delaware corporation), assignee of Marion Laboratories, Inc. (Missouri corporation). SN 195,124. Pub. 9–29–64. Filed 6–8–64.

Class 19 — Vehicles

781,685. DEMCO. Diesel Engineering & Manufacturing Corporation, d.b.a. Demco. SN 174,351. Pub. 9–29–64. Filed 8–5–63.

781,686. RENEGADE. American Machine & Foundry Company. SN 189,849. Pub. 9–29–64. Filed 3–30–64.

781,687. SWITCH-CART. SI Handling Systems, Inc. SN 190,547. Pub. 9–29–64. Filed 4–7–64.

Class 20 — Linoleum and Oiled Cloth

781,688. PAISELLE. Armstrong Cork Company. SN 176,144. Pub. 9–29–64. Filed 9–3–63.

781,689. AMRON. American Biltrite Rubber Co., Inc. SN 188,173. Pub. 9–29–64. Filed 3–9–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

781,690. KARI-VAC. Kari-Vac, Inc. SN 177,888. Pub. 9–29–64. Filed 9–27–63.

781,691. REF-CON. Ref-Con Corporation. SN 178,223. Pub. 9–29–64. Filed 10–2–63.

781,692. S. Botany Industries, Inc., d.b.a. Sea and Ski Company. SN 178,868. Pub. 7–7–64. Filed 10–14–63.

781,693. ADD-ON. Sound-Craft Systems, Inc. SN 186,403. Pub. 9–29–64. Filed 2–10–64.

781,694. DYNAQUAD. Tung-Sol Electric Inc. SN 186,414. Pub. 9–29–64. Filed 2–10–64.

781,695. SE AND DESIGN. The Superior Electric Company. SN 186,483. Pub. 9–29–64. Filed 2–11–64.

781,696. ARTOLIER ETC. AND DESIGN. Emerson Electric Co., assignee of Artolier Corp. SN 186,680. Pub. 9–29–64. Filed 2–14–64.

781,697. VERSAFRAME. Design Products Corporation. SN 186,703. Pub. 9–29–64. Filed 2–14–64.

781,698. CONSTAC. Parametrics. SN 186,888. Pub. 9–29–64. Filed 2–17–64.

781,699. THE LOG WATCH. Adrian L. White, d.b.a. Station KPOC. SN 187,980. Pub. 9–29–64. Filed 3–4–64.

781,700. SELECTRON. Selectrons, Ltd. SN 191,617. Pub. 9–29–64. Filed 4–20–64.

Class 22 — Games, Toys, and Sporting Goods

781,701. CHART-TOOL. John R. Tusson. SN 161,653. Pub. 9–29–64. Filed 1–24–63.

781,702. GOLDEN NUGGET. Crisloid Plastics Inc. SN 167,876. Pub. 3–24–64. Filed 5–1–63.

781,703. MONDAY MORNING QUARTERBACK. Monday Morning Quarterback, Inc. SN 172,510. Pub. 9–29–64. Filed 7–5–63.

781,704. 19TH HOLE. Brandell Products Corporation. SN 173,333. Pub. 9–29–64. Filed 7–19–63.

781,705. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,897. Pub. 9–29–64. Filed 8–12–63.

781,706. V-RROOM! Mattel, Inc. SN 176,821. Pub. 9–29–64. Filed 9–12–63.

781,707. JIGLY-IKE. Lazy Ike Corporation. SN 184,390. Pub. 9–29–64. Filed 1–10–64.

781,708. K2. Kirschner Manufacturing Company. SN 185,521. Pub. 9–29–64. Filed 1–28–64.

781,709. AL-CUE. Kathleen D. Reynolds, d.b.a. Al-Cue Company. SN 185,532. Pub. 9–29–64. Filed 1–28–64.

781,710. ONE EYED JACK. Fred Arbogast Company, Inc. SN 185,753. Pub. 9–29–64. Filed 1–31–64.

781,711. FAB-U-LUS. Fabco, Incorporated. SN 185,881. Pub. 9–29–64. Filed 2–3–64.

781,712. LUCKY 711. Sanville Gloves. SN 185,943. Pub. 9–29–64. Filed 2–3–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

781,713. GLOBE AND BAR DESIGN. Atlas Crane Co., Inc. SN 166,523. Pub. 9–29–64. Filed 4–11–63.

781,714. QUESTRON AMERICA. Questron America, Inc. SN 166,926. Pub. 9–29–64. Filed 4–17–63.

781,715. CII. Compact Industries, Inc. SN 167,872. Pub. 9–29–64. Filed 5–1–63.

781,716. AMERICAN AUTOMATIC VENDING AND DESIGN. American Automatic Vending Corporation. MULTIPLE CLASS (Classes 23 and 31). SN 168,897. Pub. 9–29–64. Filed 5–15–63.

781,717. SIV-O. Daniel Lamar Christy, d.b.a. Christy Machine Company. SN 174,169. Pub. 9–29–64. Filed 8–1–63.

781,718. LONG LIFE COLOR-TROL AND DESIGN. Long Life Products, Incorporated. SN 175,297. Pub. 9–29–64. Filed 8–19–63.

781,719. "CHROM-WELD." Standard Crankshaft Company, Inc. SN 175,694. Pub. 9–29–64. Filed 8–23–63.

781,720. THRISSELL. The Thrissell Engineering Company, Ltd. SN 176,329. Pub. 9–29–64. Filed 9–4–63.

781,721. ECONALIGN ETC. AND DESIGN. Metal Bellows Corporation. SN 176,384. Pub. 9–29–64. Filed 9–5–63.

781,722. JACKLEG. Ingersoll-Rand Company. SN 176,528. Pub. 9–29–64. Filed 9–9–63.

781,723. JACKDRILL. Ingersoll-Rand Company. SN 176,530. Pub. 9–29–64. Filed 9–9–63.

781,724. ACETATOR. Heinrich Frings Kommanditgesellschaft. SN 177,256. Pub. 9–29–64. Filed 9–18–63.

781,725. DYNA-TROL. Mead Specialties Company, Inc. SN 177,649. Pub. 9–29–64. Filed 9–24–63.

781,726. RHINO-RAIL. Draper Corporation, assignee of Burns Manufacturing Company, Inc. SN 177,758. Pub. 9–29–64. Filed 9–26–63.

781,727. LIGHTHOUSE (DESIGN). Illinois Tool Works Inc. SN 178,454. Pub. 7–7–64. Filed 10–7–63.

781,728. 8 (DESIGN). Senco Products, Inc. SN 179,469. Pub. 9–29–64. Filed 10–21–63.

781,729. THOMAFLEX AND DESIGN. Jean Thoma. SN 183,340. Pub. 9–29–64. Filed 12–20–63.

781,730. CRESCENT. Royal McBee Corporation. SN 187,689. Pub. 9–29–64. Filed 2–28–64.

781,731. DYNASPHERE. American Metal Products Company. SN 187,995. Pub. 9–29–64. Filed 3–5–64.

781,732. TRI-SET. Dover Corporation. SN 190,903. Pub. 9–29–64. Filed 4–13–64.

781,733. RAM-JOLT. The Osborn Manufacturing Company. SN 193,491. Pub. 9–29–64. Filed 5–14–64.

781,734. FLEX-A-DEX. The Valeron Corporation. SN 193,508. Pub. 9–29–64. Filed 5–14–64.

781,735. SELECTRIC. International Business Machines Corporation. SN 193,551. Pub. 9–29–64. Filed 5–15–64.

Class 24 — Laundry Appliances and Machines

781,736. FRENCH-QUARTER. Sjostrom Automations, Inc. SN 190,984. Pub. 9–29–64. Filed 4–13–64.

Class 26 — Measuring and Scientific Appliances

781,737. AUTO-DILUTOR. Research Specialties Co. SN 173,600. Pub. 9–22–64. Filed 7–23–63.

781,738. DISPO. American Hospital Supply Corporation. SN 183,872. Pub. 9–29–64. Filed 1–2–64.

Class 27 — Horological Instruments

781,739. SHIELD (DESIGN). Sovereign Watch Company, Inc. SN 190,294. Pub. 9–29–64. Filed 4–3–64.

781,740. VOS. Sheffield Watch, Inc. SN 191,446. Pub. 9–29–64. Filed 4–17–64.

Class 28 — Jewelry and Precious-Metal Ware

781,741. SAFARI. Lovebright Diamond Company, Inc. SN 147,293. Pub. 9–15–64. Filed 6–20–62.

781,742. PIN CUSHION. Coro Incorporated of Rhode Island. SN 192,012. Pub. 9–29–64. Filed 4–27–64.

781,743. MOZELLE. The Mozelle Company. SN 192,930. Pub. 9–29–64. Filed 5–7–64.

Class 29 — Brooms, Brushes, and Dusters

781,744. FABRI-COMB. Helmac Products Corporation. SN 191,574. Pub. 9–29–64. Filed 4–20–64.

Class 31 — Filters and Refrigerators

781,716. (See Class 23 for this trademark.)

781,745. KOLD-GUARD. Frick Company. SN 172,303. Pub. 9–29–64. Filed 7–2–63.

781,746. FIL-TER-FRIGE. Teps Fil-Ter-Frig Corp. SN 189,395. Pub. 9–29–64. Filed 3–23–64.

781,747. SPARKLE FREEZE. American Machine & Foundry Company. SN 189,422. Pub. 9–29–64. Filed 3–24–64.

781,748. PRIMA-SEP. Union Tank Car Company. SN 190,129. Pub. 9–29–64. Filed 4–1–64.

781,749. BENDIX. The Bendix Corporation. SN 190,585. Pub. 9–29–64. Filed 4–8–64.

781,750. MODERN MAID. Tennessee Stove Works, Inc., d.b.a. Modern Maid. SN 190,838. Pub. 9–29–64. Filed 4–10–64.

781,751. HOLLIDAY. Water-Rite Corporation. SN 190,841. Pub. 9–29–64. Filed 4–10–64.

Class 33 — Glassware

781,752. LA REINE. Anchor Hocking Glass Corporation. SN 180,276. Pub. 9–29–64. Filed 11–1–63.

Class 34 — Heating, Lighting, and Ventilating Apparatus

781,753. VIVA. Whirlpool Corporation. SN 164,927. Pub. 9–29–64. Filed 3–18–63.

781,754. DEFLECT-O. Deflecto Corporation. SN 166,892. Pub. 9–29–64. Filed 4–17–63.

781,755. THREE-SIXTY SEALED FLAME. John J. Nesbitt, Inc. SN 180,225. Pub. 9–29–64. Filed 10–31–63.

781,756. POLECAT. Engelhard Industries, Inc. SN 186,611. Pub. 9–29–64. Filed 2–13–64.

781,757. NITEC. Eutectic Welding Alloys Corporation. SN 191,373. Pub. 9–29–64. Filed 4–17–64.

781,758. STAINTEC. Eutectic Welding Alloys Corporation. SN 191,374. Pub. 9–29–64. Filed 4–17–64.

781,759. GRITALLOY. Eutectic Welding Alloys Corporation. SN 191,376. Pub. 9–29–64. Filed 4–17–64.

781,760. CONVECTION-FLO. Bakers Pride Oven Co., Inc. SN 191,485. Pub. 9–29–64. Filed 4–20–64.

781,761. PIOLITE. Piolite Plastics Corporation. SN 191,591. Pub. 9–29–64. Filed 4–20–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

781,762. KRAFTREAD. The General Tire & Rubber Company. SN 188,436. Pub. 9–29–64. Filed 3–11–64.

781,763. TWIN-DUTY. Martin Tire and Supply, Inc. SN 188,557. Pub. 9–29–64. Filed 3–12–64.

781,764. DUAL-DUTY. Martin Tire and Supply, Inc. SN 188,558. Pub. 9–29–64. Filed 3–12–64.

781,765. BOSTRON. American Biltrite Rubber Co., Inc. SN 189,759. Pub. 9–29–64. Filed 3–27–64.

781,766. PLYLON. The Goodyear Tire & Rubber Company. SN 189,897. Pub. 9–29–64. Filed 3–30–64.

781,767. FOODCRON. The Arbee Corporation, d.b.a. Manheim Manufacturing and Belting Company. SN 189,978. Pub. 9–29–64. Filed 3–31–64.

781,768. BUCCANEER. Market Tire Company of Maryland, Inc. SN 190,093. Pub. 9–29–64. Filed 4–1–64.

781,769. SUP-R-LON. The Firestone Tire & Rubber Company. SN 190,253. Pub. 9–29–64. Filed 4–3–64.

781,770. SPRING-FLEX. Callahan Mining Corporation. SN 190,497. Pub. 9–29–64. Filed 4–7–64.

Class 36 — Musical Instruments and Supplies

781,771. HUSH BRUSH. Audio Dynamics Corporation. SN 171,605. Pub. 9–29–64. Filed 6–24–63.

781,772. HILTON. Tessler Industries, Incorporated. SN 183,295. Pub. 9–29–64. Filed 12–19–63.

781,773. ARAVEL. Aravel Records, Inc. SN 186,045. Pub. 9–29–64. Filed 2–5–64.

781,774. NORELCO. North American Philips Company, Inc. SN 189,350. Pub. 9–29–64. Filed 3–23–64.

Class 37 — Paper and Stationery

781,775. MINIPOINTER AND DESIGN. George R. Fraser. SN 191,850. Pub. 9–29–64. Filed 4–23–64.

Class 38 — Prints and Publications

781,776. THE SALESMAKER. Farm Journal, Inc. SN 164,234. Pub. 9–29–64. Filed 3–8–63.

781,777. LUNO AND DESIGN. CBS Films, Inc. SN 168,285. Pub. 9–29–64. Filed 5–7–63.

781,778. CREATIVE ARTISTS. H. S. Crocker Co., Inc., d.b.a. California Artists. SN 190,790. Pub. 9–29–64. Filed 4–10–64.

781,779. LOOK AND DESIGN. Cowles Magazines and Broadcasting, Inc. SN 191,821. Pub. 9–29–64. Filed 3–30–64.

781,780. ACCU-RECORD. Hubert A. Madden. SN 192,837. Pub. 9–29–64. Filed 5–6–64.

781,781. INFINITY FILMS AND DESIGN. Kenneth Semenchuk, d.b.a. Infinity Films. SN 193,411. Pub. 9–29–64. Filed 5–13–64.

781,782. THE TOLEDO TIMES. The Toledo Blade Company. SN 193,591. Pub. 9–29–64. Filed 5–15–64.

781,783. PHYSICIAN'S PANORAMA. Sandox, Inc. SN 193,706. Pub. 9–29–64. Filed 5–18–64.

781,784. REM-PAK. Fact Professional Photo Finishers, Inc. SN 194,164. Pub. 9–29–64. Filed 5–25–64.

Class 39 — Clothing

781,785. REPRESENTATION OF A GOLFER. Rugby Knitting Mills, Inc. SN 164,266. Pub. 9–29–64. Filed 3–8–63.

781,786. ROGER VIVIER. Roger Vivier. SN 172,695. Pub. 9–29–64. Filed 7–9–63.

781,787. DAINTY DEB. Guy M. James, assignee of James Hosiery Mills, Inc. SN 172,823. Pub. 9–29–64. Filed 7–11–63.

781,788. THREE DIAMONDS. Mitsubishi Shoji Kaisha, Ltd. SN 174,781. Pub. 9–29–64. Filed 8–9–63.

781,789. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,900. Pub. 9–29–64. Filed 8–12–63.

781,790. PEDI-PAD. Annette T. Stoker, d.b.a. Pedi-Pad Sandals. SN 183,472. Pub. 9–29–64. Filed 12–23–63.

781,791. ACRYLUX. Superba Cravats, Inc. SN 183,474. Pub. 9–29–64. Filed 12–23–63.

781,792. CURPLE. Peter Pan Foundations, Inc. SN 183,700. Pub. 9–29–64. Filed 12–27–63.

781,793. LEECO. The H. D. Lee Company, Incorporated. SN 183,769. Pub. 9–29–64. Filed 12–30–63.

781,794. NETTI. Sigrun Bech, d.b.a. Netti. SN 183,800. Pub. 9–29–64. Filed 12–30–63.

781,795. BONNIE LADDIE AND DESIGN. International Shoe Company. SN 187,493. Pub. 9–29–64. Filed 2–26–64.

781,796. IN-FORM. Exquisite Form Industries, Inc. SN 187,658. Pub. 9–29–64. Filed 2–28–64.

781,797. VALTEST. Mercantile Stores Company, Inc. SN 187,676. Pub. 9–29–64. Filed 2–28–64.

781,798. UPPER STORY. Peter Pan Foundations, Inc. SN 187,687. Pub. 9–29–64. Filed 2–28–64.

781,799. ALIBI. Maidenform, Inc. SN 187,875. Pub. 9–29–64. Filed 3–3–64.

781,800. CHARLES CHESTER. Charles A. Eaton Company, d.b.a. Charles Chester Shoe Manufacturing Co. SN 187,910. Pub. 9–29–64. Filed 3–4–64.

781,801. TADS. H. R. Kaminsky & Sons, Inc. SN 188,014. Pub. 9–29–64. Filed 3–5–64.

781,802. PUTNAM HALL AND DESIGN. Lad 'N Dad Slacks, Inc. SN 188,015. Pub. 9–29–64. Filed 3–5–64.

781,803. ROLLING HILLS AND DESIGN. Lad 'N Dad Slacks, Inc. SN 188,016. Pub. 9–29–64. Filed 3–5–64.

781,804. COMFORT-V. Sidney Daniel Blue. SN 188,046. Pub. 9–29–64. Filed 2–25–64.

781,805. ZAAK. Carlton Lingerie Corp. SN 188,077. Pub. 9–29–64. Filed 3–6–64.

781,806. FRANTONE. F. W. Woolworth Co. SN 188,598. Pub. 9–29–64. Filed 3–12–64.

781,807. CHIN-UP. The Puritan Sportswear Corp. SN 188,796. Pub. 9–29–64. Filed 3–16–64.

781,808. EMELON. Emle Mills, Inc. SN 189,453. Pub. 9–29–64. Filed 3–24–64.

781,809. LEGETTES. Samuel V. Lang, Sr. SN 189,482. Pub. 9–29–64. Filed 3–24–64.

781,810. PONDEROSA. Endicott Johnson Corporation. SN 189,568. Pub. 9–29–64. Filed 3–25–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

781,811. COSIBRA. Companhia Sisal do Brasil-Cosibra. SN 124,891. Pub. 9–29–64. Filed 7–28–61.

781,812. CHOISETTE. Stretch Fabrics, Inc. SN 184,266. Pub. 9–29–64. Filed 1–8–64.

781,813. GRAND-WAY. The Grand Union Company. SN 187,865. Pub. 9–29–64. Filed 3–3–64.

781,814. AMORAH. Beaunit Corporation. SN 187,905. Pub. 9–29–64. Filed 3–4–64.

Class 44 — Dental, Medical, and Surgical Appliances

781,815. GAUNTLEX. The Macbick Company. SN 190,272. Pub. 9–29–64. Filed 4–3–64.

781,816. LEUKO-PAK. Baxter Laboratories, Inc. SN 190,493. Pub. 9–29–64. Filed 4–7–64.

781,817. INFLEX. Baxter Laboratories, Inc. SN 190,494. Pub. 9–29–64. Filed 4–7–64.

781,818. INTRAFLEX. Baxter Laboratories, Inc. SN 190,495. Pub. 9–29–64. Filed 4–7–64.

781,819. GYNEKOIL. Ortho Pharmaceutical Corporation. SN 190,638. Pub. 9–29–64. Filed 4–8–64.

781,820. GYNEPROBE. Ortho Pharmaceutical Corporation. SN 197,420. Pub. 9–29–64. Filed 7–8–64.

Class 46 — Foods and Ingredients of Foods

781,821. SUPREMA DOGETTS AND DESIGN. Quisenberry Mills, Inc. SN 124,840. Pub. 9–29–64. Filed 7–27–61.

781,822. QUALITY HOUSE. The Procter & Gamble Company. SN 154,286. Pub. 9–29–64. Filed 10–1–62.

781,823. HILLS BROS. Hills Bros. Coffee, Inc. SN 159,347. Pub. 9–29–64. Filed 12–18–62.

781,824. LEMONHEAD. Ferrara Candy Co. SN 166,797. Pub. 9–29–64. Filed 4–16–63.

781,825. YOUR OWN. Original Crispy Pizza Crust Co., Inc. SN 174,603. Pub. 9–29–64. Filed 8–7–63.

781,826. CHOW. Ralston Purina Company. SN 179,929. Pub. 9–29–64. Filed 10–28–63.

781,827. MILKBOY AND DESIGN. Lemann & Cie. SN 181,370. Pub. 9–29–64. Filed 11–18–63.

781,828. APPLBERRY. Southern Packing Company, Inc. SN 183,802. Pub. 9–29–64. Filed 12–30–63.

781,829. TEMPLE DERR. Stevning Citrus, Inc. SN 184,118. Pub. 9–29–64. Filed 1–6–64.

781,830. SHO-CHIKU-BAI. Bill & Ed Koda. SN 185,299. Pub. 9–29–64. Filed 1–24–64.

781,831. MUNCH-KINS. Jack's Cookie Corporation. SN 185,517. Pub. 9–29–64. Filed 1–28–64.

781,832. SAP'S. Sap's Bakery, Inc. SN 185,626. Pub. 9–29–64. Filed 1–29–64.

781,833. PIZZA QUEEN AND DESIGN. Pizza King Enterprises, Inc. SN 186,276. Pub. 9–29–64. Filed 2–7–64.

781,834. K-VOL. The Keever Starch Company. SN 188,769. Pub. 9–29–64. Filed 3–16–64.

781,835. STEWART'S. A. L. Stewart & Sons. SN 188,813. Pub. 9–29–64. Filed 3–16–64.

781,836. $100,000. The Nestlé Company, Inc. SN 189,347. Pub. 9–29–64. Filed 3–23–64.

781,837. CONTESSA. United States Products Corporation, Ltd. SN 190,839. Pub. 9–29–64. Filed 4–10–64.

781,838. BJE AND DESIGN. Batley-Janss Enterprises. SN 190,864. Pub. 9–29–64. Filed 4–13–64.

781,839. APRIL HILL. April Hill Frozen Foods, Inc. SN 191,013. Pub. 9–29–64. Filed 4–14–64.

781,840. HOTSIES. Giant Distributing Co. SN 191,046. Pub. 9–29–64. Filed 4–14–64.

781,841. FIRST CHOICE. Recipe Foods, Inc. SN 192,518. Pub. 9–29–64. Filed 5–1–64.

781,842. SOUTHERN HOSTESS. Recipe Foods, Inc. SN 192,519. Pub. 9–29–64. Filed 5–1–64.

781,843. VANITY FAIR. Recipe Foods, Inc. SN 192,521. Pub. 9–29–64. Filed 5–1–64.

781,844. BETTER HALF. Carter Products, Inc. SN 192,560. Pub. 9–29–64. Filed 5–4–64.

781,845. FINICKY. Ibec Packing Company of New York, Inc. SN 192,723. Pub. 9–29–64. Filed 5–5–64.

781,846. PEEBLES' SOWEENA. Foremost Dairies, Inc. SN 192,816. Pub. 9–29–64. Filed 5–6–64.

781,847. MIVOCO. Mirandolle, Voûte & Co., N.V. SN 192,929. Pub. 9–29–64. Filed 5–7–64.

781,848. CRISCO. The Procter & Gamble Company. SN 193,211. Pub. 9–29–64. Filed 5–11–64.

Class 47 — Wines

781,849. PIERRE BEAUVALLON. Louis Bert & Cie. SN 177,481. Pub. 9–29–64. Filed S.R. 9–23–63; Am. P.R. 5–7–64.

Class 49 — Distilled Alcoholic Liquors

781,850. CATTO'S. James Catto & Company Limited. SN 182,773. Pub. 9–29–64. Filed 12–11–63.

781,851. RONRICO. Ronrico Corporation. SN 193,047. Pub. 9–29–64. Filed 5–8–64.

Class 51 — Cosmetics and Toilet Preparations

781,852. PASSIONNEMENT. Parfums Lucien Lelong Corporation. SN 169,161. Pub. 9–29–64. Filed 5–17–63.

781,853. STAR MAKER OF HOLLYWOOD AND DESIGN. Beauty Sales, Inc. SN 174,642. Pub. 9–29–64. Filed 8–8–63.

781,854. GIVENCHY. Hubert de Givenchy, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 175,098. Pub. 9–29–64. Filed 8–15–63.

781,855. THREE OVALS (DESIGN). Sybil Ives Incorporated, by change of name from Sybil Ives Ltd. SN 183,809. Pub. 9–29–64. Filed 12–30–63.

781,856. DURENAMEL. Bristol-Myers Company. SN 183,880. Pub. 9–29–64. Filed 1–2–64.

781,857. MIRACLE MOUNTAIN. Luella B. Daily, d.b.a. Daily Cosmetics Co. SN 187,092. Pub. 9–29–64. Filed 2–20–64.

Class 52 — Detergents and Soaps

781,854. (See Class 51 for this trademark.)

781,858. EASY-OFF. American Home Products Corporation. SN 184,195. Pub. 9–29–64. Filed 1–8–64.

781,859. DRI-RUG. Fantastic Products, Inc. SN 184,907. Pub. 9–29–64. Filed 1–20–64.

781,860. LOCKOTE. Wyandotte Chemicals Corporation. SN 186,425. Pub. 9–29–64. Filed 2–10–64.

Service Marks

Class 100 — Miscellaneous

781,861. PSC. Perfecting Service Company. SN 138,642. Pub. 9–3–63. Filed 2–26–62.

781,862. INVENTROL. Marketing Factors, Inc. SN 147,294. Pub. 9–29–64. Filed 6–20–62.

781,863. MULTI CHROME AND DESIGN. School Pictures, Inc. SN 157,933. Pub. 9–29–64. Filed 11–26–62.

781,864. PHOTO-DIAGRAMICS AND DESIGN. The Bond Press, Inc. SN 163,028. Pub. 9–29–64. Filed 2–19–63.

781,865. AMERICAN AUTOMATIC VENDING AND DESIGN. American Automatic Vending Corporation. SN 168,898. Pub. 9–29–64. Filed 5–15–63.

Class 101 — Advertising and Business

781,866. YORK QUALITY CONTROL SEAL. York Research Corporation. SN 94,379. Pub. 2–7–61. Filed 4–4–60.

Class 103 — Construction and Repair

781,867. CSI. Contract Sales, Inc. SN 162,535. Pub. 9–29–64. Filed 2–12–63.

781,868. CSI AND DESIGN. Contract Sales, Inc. SN 162,536. Pub. 9–29–64. Filed 2–12–63.

781,869. CONSTRUCTION DYNAMICS H AND DESIGN. Hunter Corporation. SN 171,879. Pub. 9–29–64. Filed 6–26–63.

781,870. H AND DESIGN. Hunter Corporation. SN 171,880. Pub. 9–29–64. Filed 6–26–63.

781,871. CONSTRUCTION DYNAMICS. Hunter Corporation. SN 171,881. Pub. 9–29–64. Filed 6–26–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 12 — Construction Materials

781,872. California Redwood Association, San Francisco, Calif. SN 147,185. COLLECTIVE MARK. Filed P.R. 6–19–62; Am. S.R. 9–10–64.

FACTRI LONG

For Redwood Lumber.
First use May 25, 1962.

781,873. California Redwood Association, San Francisco, Calif. SN 147,697. COLLECTIVE MARK. Filed P.R. 6–26–62; Am. S.R. 9–10–64.

FACTRI WIDE

For Redwood Lumber.
First use June 11, 1962.

Class 16 — Protective and Decorative Coatings

781,874. United States Plywood Corporation, New York, N.Y. SN 178,574. Filed P.R. 10–8–63; Am. S.R. 10–26–64.

COLOR TONES

For Pigmented Wood Finishing Liquid for Obtaining Shade Effects.
First use Aug. 12, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

781,875. American Powerstage Company, Houston, Tex. SN 165,280. Filed P.R. 3–25–63; Am. S.R. 9–23–64.

WATER BLASTER

For Cleaning Machines Adapted To Discharge Water on Various Surfaces for Degreasing, Stripping Mastics, Removing Filth and Marine Growth, and for Other Similar Cleaning Operations.
First use June 3, 1960.

Class 26 — Measuring and Scientific Appliances

781,876. John Dritz & Sons, Inc., Spartanburg, S.C. SN 169,438. Filed P.R. 5–22–63; Am. S.R. 10–16–64.

ROLL-UP

For Yardstick.
First use Mar. 22, 1963.

781,877. Agfa Incorporated, Rockleigh, N.J. SN 178,663. Filed P.R. 10–10–63; Am. S.R. 9–10–64.

SHOOT AND SHOW

For Photographic Color Slide Kits.
First use July 24, 1963.

Class 34 — Heating, Lighting, and Ventilating Apparatus

781,878. McDuffee Brothers, Inc., Wheaton, Ill. SN 173,940. Filed P.R. 7–29–63; Am. S.R. 5–13–64.

MCDUFFEE

For Humidifying Equipment.
First use on or about Mar. 9, 1963.

781,879. Eldon Industries, Inc., Hawthorne, Calif. SN 179,877. Filed P.R. 10–28–63; Am. S.R. 10–22–64.

MICRO-TIP

For Soldering Iron Tips.
First use May 24, 1963.

Class 39 — Clothing

781,880. H. Zimmerman & Sons, Chicago, Ill. SN 178,315. Filed P.R. 10–3–63; Am. S.R. 10–19–64.

PALERMO

For Men's and Boys' Coats and Jackets.
First use Sept. 25, 1963.

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190,192. WINTER-TEX AND DESIGN. Cl. 39. 10–7–24.
190,306. PETER BAIN. Cl. 39. 10–14–24.
190,334. BROADCASTER. Cl. 36. 10–14–24.
190,672. MAZZINI. Cl. 46. 10–21–24.
191,195. BARRCO. Cl. 46. 11–4–24.
191,373. CRUSH. Cl. 46. 11–4–24.
191,597. IN THE WAKE OF THE NEWS. Cl. 38. 11–11–24.
192,663. THEATRE GUILD. Cl. 38. 12–9–24.
192,736. THE THEATRE GUILD AND DESIGN. Cl. 38. 12–9–24.
192,881. REPRESENTATION OF ROPE. Cl. 7. 12–16–24.
193,474. TEXACO. Cl. 6. 12–30–24.
193,760. EXCELLO. Cl. 46. 1–6–25.
195,703. JEWELTONE. Cl. 42. 3–3–25.
196,131. MAYFLOWER. Cl. 46. 3–10–25.
196,637. TRIANGLE (DESIGN). Cl. 13. 3–24–25.
196,732. EPICURE. Cl. 38. 3–24–25.
407,810. EPREUVE. Cl. 51. 6–27–44.
408,290. PARAGON. Cl. 23. 8–1–44.
408,921. HENRI BENDEL. Cl. 3. 9–5–44.
409,353. KATANOL. Cl. 6. 10–3–44.
409,611. "SYMPHONETTE." Cl. 27. 10–10–44.
409,664. SYRPALTA. Cl. 18. 10–17–44.
409,742. CM AND DESIGN. Cl. 18. 10–17–44.
409,849. OZON. Cl. 18. 10–24–44.

409,912. ADMIRAL. Cl. 21. 10–31–44.
409,913. ADMIRAL. Cl. 36. 10–31–44.
410,105. RANDTEX. Cl. 39. 11–7–44.
410,180. SR–4. Cl. 26. 11–14–44.
410,202. TRA-DEX. Cl. 37. 11–14–44.
410,231. PLASTOFLEX. Cl. 44. 11–14–44.
410,232. PLYOPLAST. Cl. 44. 11–14–44.
410,310. AMERISEER. Cl. 42. 11–21–44.
410,897. AVEENO AND DESIGN. Cl. 46. 12–26–44.
411,042. BEAVER FLOW AND DESIGN. Cl. 39. 1–2–45.
411,136. PERK. Cl. 46. 1–2–45.
411,362. PHOS-FEED. Cl. 18. 1–16–45.
411,420. VELVET TOUCH. Cl. 35. 1–16–45.
411,840. CERROTRU. Cl. 14. 2–6–45.
412,170. PLASTO-PAK. Cl. 16. 2–20–45.
412,282. FM AND DESIGN. Cl. 26. 2–27–45.
412,399. LIVIBRON. Cl. 18. 3–6–45.
412,506. SMOOTHIE. Cl. 39. 3–13–45.
412,625. DREAM MAKERS. Cl. 39. 3–20–45.
412,646. DESOGEN. Cl. 18. 3–20–45.
412,671. PONY. Cl. 23. 3–20–45.
412,786. LE ROI AND DESIGN. Cl. 23. 3–27–45.
412,827. STIKFAST. Cl. 23. 3–27–45.
412,830. ME. Cl. 21. 3–27–45.
412,960. ALCOLEC. Cl. 46. 4–3–45.
413,123. KOTAMS. Cl. 44. 4–10–45.

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651,013. THE CANNER AND FREEZER. Cl. 38. 8–27–57.
659,920. GRIME-GO. Cl. 52. 3–25–58.

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668,822. ORLEANS DUAL-SEAL AND DESIGN. Cl. 2.
668,825. TRAY SEAL. Cl. 2.
668,828. TOWN AND COUNTRY. Cl. 2.
668,830. LEATH-O-STEEL AND DESIGN. Cl. 3.
668,831. PLASTI-O-STEEL AND DESIGN. Cl. 3.
668,832. DOG-A-LONG. Cl. 3.
668,834. A-T-A. Cl. 6.
668,840. PLANT-SHOOT. Cl. 6.
668,846. HOMCO. Cl. 6.
668,854. MAYA. Cl. 7.
668,857. LITTLE MIZER. Cl. 8.
668,861. GREEN GODDESS AND DESIGN. Cl. 9.
668,866. ROOTAGEN. Cl. 10.
668,867. SUPER-BUD-SPROUT. Cl. 10.
668,873. PLYWELSH AND DESIGN. Cl. 12.
668,875. PLYCOA AND DESIGN. Cl. 12.
668,879. SHORE CRAFT. Cl. 13.
668,886. ROBIN-WARE. Cl. 13.
668,887. STAR PIN-DRIVE. Cl. 13.
668,892. PLY-FAS-NERS. Cl. 13.
668,893. TEMP-MATIC. Cl. 13.
668,894. MONOSUMP. Cl. 13.
668,897. J-CUT. Cl. 15.
668,904. SHELLACPLUS. Cl. 16.
668,910. ACTITHIOL. Cl. 18.
668,911. NEWTRIENT-PLUS AND DESIGN. Cl. 18.
668,912. BLOCKIDERMA. Cl. 18.
668,913. PENOTRANE. Cl. 18.
668,918. NO-BEAU. Cl. 18.
668,921. GEVRABIOTIC. Cl. 18.
668,922. LANTHASOL-INHALANT. Cl. 18.
668,925. GLYCARB. Cl. 18.
668,928. TRU-V. Cl. 19.
668,929. ZATELLITE AND DESIGN. Cl. 19.
668,933. RADALITE. Cl. 21.
668,943. USI AND DESIGN. Cl. 23.
668,950. TCD. Cl. 23.
668,955. NUCLON. Cl. 26.
668,960. ZONE-X. Cl. 27.
668,964. MATURELLE. Cl. 28.
668,968. GEM-TONES. Cl. 28.
668,969. LOUVRE. Cl. 29.
668,970. SANI-PUF. Cl. 29.
668,971. KURL-X. Cl. 29.
668,973. POREFLEX. Cl. 31.
668,974. ICELLER. Cl. 31.
668,975. AMCO AND DESIGN. Cl. 32.
668,977. TABLEAU. Cl. 32.
668,979. VISTA-VENT. Cl. 34.
668,981. TRUCOLITE AND DESIGN. Cl. 34.
668,986. DESIGN AND DESIGN. Cl. 36.
668,987. IVY. Cl. 36.
668,992. PROCEL. Cl. 37.
668,995. B.T. TELESTATUS. Cl. 38.
668,998. SCIENSTUNTS. Cl. 38.
668,999. RELAX. Cl. 38.
669,001. LEAP FROG. Cl. 39.
669,003. MIRACLE FELT. Cl. 39.
669,007. ABCO. Cl. 39.
669,013. CLINGING VINE. Cl. 39.
669,015. L AND DESIGN. Cl. 42.
669,020. CABLETWEED. Cl. 42.
669,027. NOVELTEE. Cl. 45.
669,031. GORDON'S SPICY PINK BRAND AND DESIGN. Cl. 46.
669,036. MINNE-KA-JUN. Cl. 46.
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669,045. MELON HEAD AND DESIGN. Cl. 46.
669,046. SOLEDAD. Cl. 46.
669,054. HACIENDA. Cl. 46.
669,062. GEORGIANNA. Cl. 46.
669,063. RAINBOW. Cl. 46.
669,070. IRVIN AIRSHELTER AND DESIGN. Cl. 50.
669,072. TRAVEL TRIFLES. Cl. 50.
669,075. SHAMPADS. Cl. 52.
669,079. MAGIC WAND. Cl. 52.
669,080. THE WYBRANT SYSTEM. Cl. 52.
669,082. WOOL QUEEN. Cl. 52.
669,087. SNAK KING. Cl. 100.
669,091. DESIGN OF CIRCLE AND STARS. Cl. 100.
669,092. AUDEX. Cl. 101.
669,095. ORKIN-TOX AND DESIGN. 103.
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669,109. DUAL-SEAL. Cl. 2.
669,113. KAMPERS KABIN AND DESIGN. Cl. 19.
669,115. P-A-X ETC. AND DESIGN. Cl. 21.
669,121. "MODAS INFANTILES" CHILDREN'S FASHIONS. Cl. 38.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

391,724. BEWITCHING. Cl. 51. Mary Dunhill, Inc. 11–18–41. New Cert. Sec. 7(c) to Screen Gems, Inc., New York, N.Y.

509,829. PETAL SOFT. Cl. 6. A. W. Curits, Jr. 5–17–49. New Cert. Sec. 7(c) to Yardley of London, Inc., Totowa, N.J.

580,742. FUTUR MILL. Cl. 23. Howell E. Begle, doing business under the name and style of Detroit Milling Cutter Company. 10–6–53. New Cert. Sec. 7(c) to Futurmill, Inc., Southfield, Mich.

676,685. RATIOTRAN. Cl. 26. Gertsch Products, Inc. 4–7–59. New Cert. Sec. 7(c) to The Singer Company, New York, N.Y.

680,714. STATEWIDE AND DESIGN. Cl. 21. Statewide Electric Corporation. 6–23–59. New Cert. Sec. 7(c) to Statewide Rural Electric Cooperative Corporation, Louisville, Ky.

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Admiral Corp., Chicago, Ill. 409,912–13, ren. 12–15–64. Cl. 21.

Agfa Inc., Rockleigh, N.J. 781,877. Cl. 26.

Akron Brass Co., Wooster, Ohio. 781,622, pub. 9–29–64. Cl. 13.

Al-cue Co.: *See*—
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Aldens Shoppers World, Inc., d.b.a. Shoppers World, Chicago, Ill. 781,638, pub. 9–29–64. Cl. 15.

Aldens Shoppers World, Inc., d.b.a. Shoppers World, Chicago, Ill. 781,649, pub. 9–29–64. Cl. 18.

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American Automatic Vending Corp., Cleveland, Ohio. 781,716, pub. 9–29–64. Multiple Class (Classes 23 and 31).

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American Biltrite Rubber Co., Inc., Trenton, N.J. 781,689, pub. 9–29–64. Cl. 20.

American Biltrite Rubber Co., Inc., Chelsea, Mass. 781,765, pub. 9–29–64. Cl. 35.

American Bonded Cars, Inc., Philadelphia, Pa. 669,105, canc. Cl. A.

American Cyanamid Co., New York, N.Y. 668,834, canc. Cl. 6.

American Cyanamid Co., New York, N.Y. 668,921, canc. Cl. 18.

American Home Products Corp., New York, N.Y. 781,654, pub. 9–29–64. Cl. 18.

American Home Products Corp., New York, N.Y. 781,858, pub. 9–29–64. Cl. 52.

American Hospital Supply Corp., Evanston, Ill. 781,738, pub. 9–29–64. Cl. 26.

American Lecithin Co., Cleveland, Ohio, and Elmhurst, N.Y., to American Lecithin Co., Atlanta, Ga. 412,960, ren. 12–15–64. Cl. 46.

American Machine & Foundry Co., New York, N.Y. 781,686, pub. 9–29–64. Cl. 19.

American Machine & Foundry Co., New York, N.Y. 781,747, pub. 9–29–64. Cl. 31.

American Metal Climax, Inc., New York, N.Y. 781,635–6, pub. 9–29–64. Cl. 14.

American Metal Products Co., Detroit, Mich. 781,731, pub. 9–29–64. Cl. 23.

American Paper & Plastic Products, Inc., Milwaukee, Wis. 781,586, pub. 9–29–64. Cl. 2.

American Powerstage Co., Houston, Tex. 781,875. Cl. 23.

Amory Counter & Plastics Co., Inc., Boston, Mass. 669,007, canc. Cl. 39.

Anchor Hocking Glass Corp., Lancaster, Ohio. 781,752, pub. 9–29–64. Cl. 33.

Aravel Records, Inc., Long Island City, N.Y. 781,773, pub. 9–29–64. Cl. 36.

Arbee Corp., The, d.b.a. Manheim Mfg. and Belting Co., Manheim, Pa. 781,767, pub. 9–29–64. Cl. 35.

Arbogast, Fred, Co., Inc., Akron, Ohio. 781,710, pub. 9–29–64. Cl. 22.

Armstrong Cork Co., Lancaster, Pa. 781,688, pub. 9–29–64. Cl. 20.

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Atlas Crane Co., Inc., New York, N.Y. 781,713, pub. 9–29–64. Cl. 23.

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Container Corp. of America, Chicago, Ill. 781,610, pub. 9–29–64. Cl. 12.
Continental Copper & Steel Industries, Inc., New York, N.Y. 781,625, pub. 9–29–64. Cl. 13.
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D'Applications Chimiques, Societe, d'Etudes et de Recherches Sacer, Monte Carlo, Monaco. 781,683, pub. 9–29–64. Cl. 18.
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Ekco Products Co., Chicago, Ill. 781,624, pub. 7–28–64. Cl. 13.
Eldon Industries, Inc., Hawthorne, Calif. 781,879. Cl. 34.
Emerson, Charles A., d.b.a. Emerson Laboratories, to Margi Emerson Lage and Mrs. Mossie Emerson, trustees of the estate of C. A. Emerson, deceased, d.b.a. Emerson Laboratories, Dallas, Tex. 409,664, ren. 12–15–64. Cl. 18.
Emerson Electric Co., St. Louis, Mo., from Artoller Corp., Garfield, N.J. 781,696, pub. 9–29–64. Cl. 21.
Emerson Laboratories: *See*—
Emerson, Charles A.
Emerson, Mossie, Mrs.: *See*—
Emerson, Charles A.
Emle Mills, Inc., New York, N.Y. 781,808, pub. 9–29–64. Cl. 39.
Endicott Johnson Corp., New York, N.Y. 781,810, pub. 9–29–64. Cl. 39.
Engelberg, Inc., Syracuse, N.Y. 781,631, pub. 9–29–64. Cl. 13.
Engelhard Industries, Inc., Newark, N.J. 781,756, pub. 9–29–64. Cl. 34.
Ethical Pharmaceuticals of Cleveland, Inc., Cleveland, Ohio. 781,648, pub. 9–29–64. Cl. 18.
Eutectic Welding Alloys Corp., Flushing, N.Y. 781,737–9, pub. 9–29–64. Cl. 34.
Express Publishing Co., San Antonio, Tex. 668,999, canc. Cl. 38.
Exquisite Form Industries, Inc., New York, N.Y. 781,796, pub. 9–29–64. Cl. 39.
Fabco, Inc., Dayton, Ohio. 781,711, pub. 9–29–64. Cl. 22.
Fact Professional Photo Finishers, Inc., St. Louis, Mo. 781,784, pub. 9–29–64. Cl. 38.
Fairbanks, Morse & Co., Chicago, Ill., to Fairbanks Morse Inc., New York, N.Y. 412,282, ren. 12–15–64. Cl. 26.
Fairbanks Morse Inc.: *See*—
Fairbanks, Morse & Co.
Fantastic Products, Inc., Tulsa, Okla. 781,859, pub. 9–29–64. Cl. 52.
Farm Journal, Inc., Philadelphia, Pa. 781,776, pub. 9–29–64. Cl. 38.
Faultless Starch Co., Kansas City, Mo. 781,595, pub. 9–29–64. Cl. 6.
Ferrara Candy Co., Forest Park, Ill. 781,824, pub. 9–29–64 Cl. 46.
Firestone Tire & Rubber Co., The, Akron, Ohio. 781,769, pub. 9–29–64. Cl. 35.
Firmenich, Inc., New York, N.Y. 781,657, pub. 9–29–64. Cl. 18.
Fitler, Edwin H., Co., The, Philadelphia, Pa., to Columbian Rope Co., Auburn, N.Y. 192,881, ren. 12–15–64. Cl. 7.
Flow Laboratories Inc., Arlington, Va. 781,589, pub. 9–29–64. Cl. 6.
Food Coating Utensil, Inc., Hurst, Tex. 781,620, pub. 9–29–64. Cl. 13.
Foremost Dairies, Inc., San Francisco, Calif. 781,846, pub. 9–29–64. Cl. 46.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 195,703, ren. 12–15–64. Cl. 42.
Frankel Carbon & Ribbon Co., Denver, Colo. 781,602, pub. 9–29–64. Cl. 11.
Fraser, George R., New London, Conn. 781,775, pub. 9–29–64. Cl. 37.
Frick Co., Waynesboro, Pa. 781,745, pub. 9–29–64. Cl. 31.
Fuji Seitetsu Kabushiki Kaisha, (Fuji Iron & Steel Co., Ltd.), Chiyoda-ku, Tokyo, Japan. 781,634, pub. 9–29–64. Cl. 14.
Furlager Mfg. Co., Inc., Corona, N.Y. 668,970, canc. Cl. 29.
Garland Co., The, Cleveland, Ohio. 781,613, pub. 9–29–64. Cl. 12.
Geigy Chemical Corp.: *See*—
Geigy Co., Inc.
Geigy Co., Inc., New York, N.Y., to Geigy Chemical Corp., Yonkers, N.Y. 412,646, ren. 12–15–64. Cl. 18.
General Aniline & Film Corp.: *See*—
General Dyestuff Corp.
General Dyestuff Corp., to General Aniline & Film Corp., New York, N.Y. 409,353, ren. 12–15–64. Cl. 6.
General Foods Corp., White Plains, N.Y. 669,027, canc. Cl. 45.
General Tire & Rubber Co., The, Akron, Ohio. 781,762, pub. 9–29–64. Cl. 35.
Gertsch Products, Inc., to The Singer Co., New York, N.Y. 676,685, new cert. Cl. 26.
Giant Distributing Co., Oakland, Calif. 781,840, pub. 9–29–64. Cl. 46.
Gibford-Weiffenbach Co., The, d.b.a. The Habanix Leather Products Co., Adrian, Mich., to Hickok Mfg. Co., Inc., Rochester, N.Y. 190,306, ren. 12–15–64. Cl. 39.
Glasgow, Henry M., and Loreen S. Glasgow, Salem, Va. 781,580, pub. 9–29–64. Cl. 1.
Glasgow, Loreen S.: *See*—
Glasgow, Henry M., and Loreen S. Glasgow.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 781,766, pub. 9–29–64. Cl. 35.
Gordon's All Pork Products Co., Detroit, Mich. 669,031, canc. Cl. 46.
Grand Union Co., The, East Paterson, N.J. 781,813, pub. 9–29–64. Cl. 42.
Green, Elvis, Houston, Tex. 669,104, canc. Cl. 107.
Habanix Leather Products Co., The: *See*—
Gibford-Weiffenbach Co., The.
Hardware Specialties Co., Kansas City, Mo. 668,892, canc. Cl. 13.
Hat Corp. of America, New York, N.Y. 411,042, ren. 12–15–64. Cl. 39.
Hat Corp. of America, Norwalk, Conn. 669,003, canc. Cl. 39.
Hearth Craft, Inc., Portland, Oreg. 781,682, pub. 9–29–64. Cl. 13.
Heinrich Fringe Kommanditgesellschaft, Bonn, (Rhine), Germany. 781,724, pub. 9–29–64. Cl. 23.

Helmac Products Corp., Flint, Mich. 781,744, pub. 9–29–64. Cl. 29.
Henequen Industrial, S.A., Merida Yucatan, Mexico. 668,854, canc. Cl. 7.
Hercules Motors Corp., Canton, Ohio. 668,950, canc. Cl. 23.
Hercules Powder Co., Wilmington, Del. 781,599, pub. 9–29–64. Cl. 9.
Hickok Mfg. Co., Inc.: *See*—
Gibford-Weiffenbach Co., The.
Hill, April, Frozen Foods, Inc., Coatsville, Pa. 781,839, pub. 9–29–64. Cl. 46.
Hills Bros. Coffee, Inc., San Francisco, Calif. 781,823, pub. 9–29–64. Cl. 46.
Hoffmann-La Roche Inc., Nutley, N.J. 781,658, pub. 9–29–64. Cl. 18.
Hohner, M., Inc., Hicksville, N.Y. 190,334, ren. 12–15–64. Cl. 36.
Holliday, Peggy G., Buffalo, N.Y. 305,283, canc. Cl. 46.
Hough Mfg. Corp., Janesville, Wis. 781,616, pub. 9–29–64. Cl. 12.
House of Worsted-Tex, Inc.: *See*—
Cohen, Goldman & Co., Inc.
Houston Oil Field Material Co., Inc., The, Houston, Tex. 668,846, canc. Cl. 6.
Hudson Oil Co., Kansas City, Kans. 781,598, pub. 9–29–64. Cl. 6.
Hunter Corp., Youngstown, Ohio. 781,869–71, pub. 9–29–64. Cl. 103.
Hycrest Farms: *See*—
Sawyer, Lester T.
Ibec Packing Co. of New York, Inc., New York, N.Y. 781,845, pub. 9–29–64. Cl. 46.
Ilikon Corp., Natick, Mass. 781,633, pub. 9–29–64. Cl. 14.
Illinois Tool Works Inc., Chicago, Ill. 781,727, pub. 7–7–64. Cl. 23.
Infinity Films: *See*—
Semenchuk, Kenneth.
Ingersoll-Rand Co., New York, N.Y. 781,722–3, pub. 9–29–64. Cl. 23.
International Business Machines Corp., Armonk, N.Y. 781,735, pub. 9–29–64. Cl. 23.
International Cellucotton Products Co., Chicago, Ill., to Kimberly-Clark Corp., Neenah, Wis. 413,123, ren. 12–15–64. Cl. 44.
International Shoe Co., St. Louis, Mo. 781,795, pub. 9–29–64. Cl. 39.
International Trade & Investment Corp., The, Atlanta, Ga. 781,647, pub. 9–29–64. Cl. 18.
Irving Air Chute Co., Inc., Lexington, Ky. 669,070, canc. Cl. 50.
Ives, Sybil, Inc., from Sybil Ives Ltd., Yonkers, N.Y. 781,855, pub. 9–29–64. Cl. 51.
Ivy Music Corp., New York, N.Y. 668,987, canc. Cl. 36.
Jack's Cookie Corp., Charlotte, N.C. 781,831, pub. 9–29–64. Cl. 46.
James, Guy M., from James Hosiery Mills, Inc., Greeneville, Tenn. 781,787, pub. 9–29–64. Cl. 39.
James Hosiery Mills, Inc.: *See*—
James, Guy M.
Johnson, S. C., & Son, Inc., Racine, Wis. 668,897, canc. Cl. 15.
Kaminsky, H. R., & Sons, Inc., Fitzgerald, Ga. 781,801, pub. 9–29–64. Cl. 39.
Kampers Kabin: *See*—
Pugel, Frank J.
Karl-Vac, Inc., Chicago, Ill. 781,690, pub. 9–29–64. Cl. 21.
Keever Starch Co., The, Columbus, Ohio. 781,834, pub. 9–29–64. Cl. 46.
Kimberly-Clark Corp.: *See*—
International Cellucotton Products Co.
Kirschner Mfg. Co., Vashon, Wash. 781,708, pub. 9–29–64. Cl. 22.
Koda, Bill & Ed, South Dos Falos, Calif. 781,830, pub. 9–29–64. Cl. 46.
Lad 'N Dad Slacks, Inc., Cumming, Ga. 781,802–3, pub. 9–29–64. Cl. 39.
Lage, Margi E.: *See*—
Emerson, Charles A.
Lang, Samuel V., Sr., Missoula, Mont. 781,809, pub. 9–29–64. Cl. 39.
Lanthasol-Verwaltung, Wilhelm L., Hamburg-Niendorf, Germany. 668,922, canc. Cl. 18.
Lavino, E. J., and Co., Philadelphia, Pa. 781,612, pub. 9–29–64. Cl. 12.
Lazy Ike Corp., Fort Dodge, Iowa. 781,707, pub. 9–29–64. Cl. 22.
Lee, H. D., Co., Inc., The, Kansas City, Mo. 781,793, pub. 9–29–64. Cl. 39.
Lemann & Cie, Bern, Switzerland. 781,827, pub. 9–29–64. Cl. 46.
Le Roi Co., West Allis, Wis., to Westinghouse Air Brake Co., Pittsburgh, Pa. 412,785, ren. 12–15–64. Cl. 23.
Lilly, Eli, and Co., Indianapolis, Ind. 781,651, pub. 9–29–64. Cl. 18.
Lilly, Eli, and Co., Indianapolis, Ind. 781,670, pub. 9–29–64. Cl. 18.
Longines-Wittnauer Watch Co., Inc., New York, N.Y. 409,611, ren. 12–15–64. Cl. 27.
Long Life Products, Inc., Riverside, Conn. 781,718, pub. 9–29–64. Cl. 23.
Louis Bert & Cie, Barsac, Gironde, France. 781,849, pub. 9–29–64. Cl. 47.
Lovebright Diamond Co., Inc., New York, N.Y. 781,741, pub. 9–15–64. Cl. 28.
Lupo Cigar Co., Inc., New York, N.Y. 781,642, pub. 9–29–64. Cl. 17.
Macbick Co., The, Wilmington, Mass. 781,815, pub. 9–29–64. Cl. 44.
Madden, Hubert A., Lewiston, Maine. 781,780, pub. 9–29–64. Cl. 38.
Magic Decorator Co., St. Louis, Mo. 781,581, pub. 7–14–64. Cl. 1.
Maidenform, Inc., New York, N.Y. 781,799, pub. 9–29–64. Cl. 39.
Manheim Mfg. and Belting Co.: *See*—
Arbee Corp., The.
Mantrose Corp., Brooklyn, N.Y. 668,904, canc. Cl. 16.
Marathon Electric Mfg. Corp., Wausau, Wis. 412,830, ren. 12–15–64. Cl. 21.
Marcotte, Oswald J., Ironton, Mo. 668,857, canc. Cl. 8.
Marion Laboratories, Inc., from Marion Laboratories, Inc., Kansas City, Mo. 781,684, pub. 9–29–64. Cl. 18.
Market Tire Co. of Maryland, Inc., Rockville, Md. 781,768, pub. 9–29–64. Cl. 35.
Marketing Factors, Inc., Minneapolis, Minn. 781,862, pub. 9–29–64. Cl. 100.
Marofin Candies, Inc., d.b.a. The Chocolate House, Milwaukee, Wis. 669,040, canc. Cl. 46.
Martin Tire and Supply, Inc., Wichita, Kans. 781,763, pub. 9–29–64. Cl. 35.
Martin Tire and Supply, Inc., Wichita, Kans. 781,764, pub. 9–29–64. Cl. 35.
Marvella Pearls, Inc., New York, N.Y. 668,964, canc. Cl. 28.
Mattel, Inc., Hawthorne, Calif. 781,706, pub. 9–29–64. Cl. 22.
Mayfair Markets, Los Angeles, Calif. 781,659, pub. 9–29–64. Cl. 18.
Mayflower Fruit Association, Exeter, Calif. 196,131, ren. 12–15–64. Cl. 46.
McDuffee Bros., Inc., Wheaton, Ill. 781,878. Cl. 34.
McGregor-Doniger Inc., New York, N.Y. 669,001, canc. Cl. 39.
McNeil Laboratories, Inc., Fort Washington, Pa. 781,661, pub. 9–29–64. Cl. 18.
Mead Specialties Co., Inc., Chicago, Ill. 781,725, pub. 9–29–64. Cl. 23.
Mercantile Stores Co., Inc., Wilmington, Del. 781,797, pub. 9–29–64. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 668,925, canc. Cl. 18.
Metal Bellows Corp., Sharon, Mass. 781,721, pub. 9–29–64. Cl. 23.
Meyer, Joseph H., Bros., Brooklyn, N.Y. 668,968, canc. Cl. 28.
Mico Photo Products Co., Inc., Chicago, Ill. 668,825, canc. Cl. 2.
Milanko, Walter G., d.b.a. Crescent Sales Co., Chicago, Ill. 781,640, pub. 9–29–64. Cl. 15.
Mirandolle, Voute & Co., N.V., Amsterdam, Netherlands. 781,847, pub. 9–29–64. Cl. 46.
Mission Pharmacal Co., San Antonio, Tex. 781,662, pub. 9–29–64. Cl. 18.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 781,705, pub. 9–29–64. Cl. 22.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 781,788–9, pub. 9–29–64. Cl. 39.
Modern Maid: *See*—
Tennessee Stove Works, Inc.
Monday Morning Quarterback, Inc., Mobile, Ala. 781,703, pub. 9–29–64. Cl. 22.
Morton Salt Co., Chicago, Ill. 669,103, canc. Cl. 107.
Moselle Co., The, Stratford, Conn. 781,743, pub. 9–29–64. Cl. 28.
National Association of Broadcasters, Washington, D.C. 669,108, canc. Cl. B.
Nesbitt, John J., Inc., Philadelphia, Pa. 781,755, pub. 9–29–64. Cl. 34.
Nestle Co., Inc., The, White Plains, N.Y. 781,836, pub. 9–29–64. Cl. 46.
Nettl: *See*—
Bech, Sigrun.
Neville Chemical Co., The, Pittsburgh, Pa. 781,606, pub. 9–29–64. Cl. 12.
No-Beau, Inc., Los Angeles, Calif. 668,918, canc. Cl. 18.
North American Philips Co., Inc., New York, N.Y. 781,774, pub. 9–29–64. Cl. 36.
Nott Mfg. Co., Inc., Mount Vernon, N.Y. 668,840, canc. Cl. 6.
Nusbaum, Alan D., d.b.a. The Vistair Co., Livonia, Mich. 668,979, canc. Cl. 34.
Nysco Laboratories, Inc., Long Island City, N.Y. 781,675, pub. 9–29–64. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 781,668, pub. 9–29–64. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 781,671, pub. 9–29–64. Cl. 18.
Omicron Plastics Co.: *See*—
Chakine, Bertha.
Orange Crush Co., Chicago, Ill., to Crush International Inc., Evanston, Ill. 191,373, ren. 12–15–64. Cl. 46.
Original Crispy Pizza Crust Co., Inc., New York, N.Y. 781,825, pub. 9–29–64. Cl. 46.
Orkin Exterminating Co., Inc., Atlanta, Ga. 669,095, canc. Cl. 103.
Orleans Mfg. Co., New Orleans, La. 668,822, canc. Cl. 2.
Orleans Mfg. Co., New Orleans, La. 669,109, canc. Cl. 2.
Ortho Pharmaceutical Corp., Raritan, N.J. 781,664, pub. 9–29–64. Cl. 18.
Ortho Pharmaceutical Corp., Raritan, N.J. 781,819–20, pub. 9–29–64. Cl. 44.
Osborn Mfg. Co., The, Cleveland, Ohio. 781,733, pub. 9–29–64. Cl. 23.
Paragon Gear Works, Inc., Taunton, Mass. 408,290, ren. 12–15–64. Cl. 23.
Parametrics, Costa Mesa, Calif. 781,698, pub. 9–29–64. Cl. 21.
Parfums Lucien Lelong Corp., New York, N.Y. 781,852, pub. 9–29–64. Cl. 51.
Parish Mfg. & Distributing Corp., New Augusta, Ind. 781,587, pub. 9–29–64. Cl. 2.

Parke, Davis & Co., Detroit, Mich. 412,399, ren. 12–15–64. Cl. 18.
Patten, Lee, Seed Co., Moonachie, N.J. 781,600, pub. 9–29–64. Cl. 10.
Pearce, Bryant E., Quitman, Ga. 781,585, pub. 9–29–64. Cl. 1.
Pedi-Pad Sandals: *See*—
Stoker, Annette T.
Perfecting Service Co., Charlotte, N.C. 781,861, pub. 9–3–63. Cl. 100.
Peter Pan Foundations, Inc., New York, N.Y. 669,013, canc. Cl. 39.
Peter Pan Foundations, Inc., New York, N.Y. 781,792, pub. 9–29–64. Cl. 39.
Peter Pan Foundations, Inc., New York, N.Y. 781,798, pub. 9–29–64. Cl. 39.
Pfizer, Chas., & Co., Inc.: *See*—
Coty, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 781,593–4, pub. 9–29–64. Cl. 6.
Pharmacia Laboratories, Inc., New York, N.Y. 781,655, pub. 9–29–64. Cl. 18.
Philadelphia Brief Case Co., Philadelphia, Pa. 668,830–1, canc. Cl. 3.
Phillips Process Co. Inc., Rochester, N.Y. 781,601, pub. 9–29–64. Cl. 11.
Pickwick Sales Corp., Brooklyn, N.Y. 668,986, canc. Cl. 36.
Pierce, S. S., Co., Boston, Mass. 196,732, ren. 12–15–64. Cl. 38.
Piolite Plastics Corp., Salem, Mass. 781,761, pub. 9–29–64. Cl. 34.
Pitegoff Brothers, Inc., Brooklyn, N.Y. 668,971, canc. Cl. 29.
Pitt-Consol Chemical Co., Newark, N.Y. 781,596–7, pub. 9–29–64. Cl. 6.
Pizza King Enterprises, Inc., Atlanta, Ga. 781,833, pub. 9–29–64. Cl. 46.
Plastic Products Corp., Bedford Heights, Ohio. 668,828, canc. Cl. 2.
Plywood Corp. of America, Oakland, Calif. 668,875, canc. Cl. 12.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 781,618, pub. 9–29–64. Cl. 12.
Presley, Maurice L., Sylacauga, Ala. 781,617, pub. 9–29–64. Cl. 12.
Princeton Phytochemicals, Inc., Princeton Junction, N.J. 668,866–7, canc. Cl. 10.
Procter & Gamble Co., Cincinnati, Ohio. 781,822, pub. 9–29–64. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 781,848, pub. 9–29–64. Cl. 46.
Pugel, Frank J., d.b.a. Kampers Kabin, Van Nuys, Calif. 669,113, canc. Cl. 19.
Puritan Sportswear Corp., The, Altoona, Pa. 781,807, pub. 9–29–64. Cl. 39.
Quaker Oats Co., The, Chicago, Ill., to Cooper, Tinsley Laboratories, Inc., Harrison, N.J. 410,897, ren. 12–15–64. Cl. 46.
Questron American, Inc., Ellenville, N.Y. 781,714, pub. 9–29–64. Cl. 23.
Quisenberry Mills, Inc., Kansas City, Mo. 781,821, pub. 9–29–64. Cl. 46.
Radalite Corp., The, Long Island City, N.Y. 668,933, canc. Cl. 21.
Raffi and Swanson, Inc., Wilmington, Mass. 781,641, pub. 9–29–64. Cl. 16.
Railton, B. A., Co., Chicago, Ill. 191,195, ren. 12–15–64. Cl. 46.
Rainbow Shops, Inc., Brooklyn, N.Y. 412,625, ren. 12–15–64. Cl. 39.
Raines, W. E., Co., Inc., Augusta, Ga. 781,623, pub. 9–29–64. Cl. 13.
Ralston Purina Co., St. Louis, Mo. 781,826, pub. 9–29–64. Cl. 46.
Rand Rubber Co., Brooklyn, N.Y. 410,105, ren. 12–15–64. Cl. 39.
Recherches et Propagande Scientifiques, Societe a Responsabilite Limitee, Paris, France. 668,910, canc. Cl. 18.
Recipe Foods, Inc., Baltimore, Md. 781,841–3, pub. 9–29–64. Cl. 46.
Reditruss International, Inc., Miami, Fla. 781,605, pub. 9–29–64. Cl. 12.
Ref-con Corp., Valparaiso, Ind. 781,691, pub. 9–29–64. Cl. 21.
Regensburg, E., & Sons: *See*—
Bayuk Cigars Inc.
Research Specialties Co., Richmond, Calif. 781,737, pub. 9–22–64. Cl. 26.
Reynolds, Kathleen D., d.b.a. Al-cue Co., Cleveland, Ohio. 781,709, pub. 9–29–64. Cl. 22.
Rodania Watch Co., Inc., New York, N.Y. 668,960, canc. Cl. 27.
Roguewoods Boats, Central Point, Oreg. 668,928, canc. Cl. 19.
Romrico Corp., San Juan, Puerto Rico. 781,851, pub. 9–29–64. Cl. 49.
Rosen, Hans M., New York, N.Y. 668,969, canc. Cl. 29.
Ross Mfg. Co., Kansas City, Mo. 196,637, ren. 12–15–64. Cl. 13.
Royal McBee Corp., New York, N.Y. 781,730, pub. 9–29–64. Cl. 23.
Rugby Knitting Mills, Inc., Buffalo, N.Y. 781,785, pub. 9–29–64. Cl. 39.
SI Handling Systems, Inc., Easton, Pa. 781,687, pub. 9–29–64. Cl. 19.
Sall Bros. Co., Rockford, Ill. 668,893, canc. Cl. 13.
Sandoz, Inc., Hanover, N.J. 781,783, pub. 9–29–64. Cl. 38.
Sanville Gloves, Johnstown, N.Y. 781,712, pub. 9–29–64. Cl. 22.
Sap's Bakery, Inc., Columbus, Ind. 771,832, pub. 9–29–64. Cl. 46.
Sawyer, Lester T., d.b.a. Hycrest Farms, Sterling, Mass. 669,044, canc. Cl. 46.
School Pictures, Inc., Jackson, Miss. 781,863, pub. 9–29–64. Cl. 100.
Schreter, A., & Sons Co., Inc.: *See*—
Schreter, A., & Sons, Inc.
Schreter, A., & Sons, Inc., to A. Schreter & Sons Co., Inc., Baltimore, Md. 412,506, ren. 12–15–64. Cl. 39.
Screen Gems, Inc.: *See*—
Dunhill, Mary, Inc.
Sea and Ski Co.: *See*—
Botany Industries, Inc.
Sedaquil, Inc., Cleveland, Ohio. 781,652, pub. 9–29–64. Cl. 18.
Selectrons, Ltd., New York, N.Y. 781,700, pub. 9–29–64. Cl. 21.
Semenchuk, Kenneth, d.b.a. Infinity Films, Monterey Park, Calif. 781,781, pub. 9–29–64. Cl. 38.
Senco Products, Inc., Cincinnati, Ohio. 781,728, pub. 9–29–64. Cl. 23.
Sheffield Watch, Inc., New York, N.Y. 781,740, pub. 9–29–64. Cl. 27.
Shepard, William W., d.b.a. Warhill Products, Amelia, Ohio. 669,075, canc. Cl. 52.
Shoppers World: *See*—
Aldens Shoppers World, Inc.
Siegel, M., Co., Chicago, Ill. 668,886, canc. Cl. 13.
Simpson Timber Co., Seattle, Wash. 781,604, pub. 9–29–64. Cl. 12.
Singer Co., The: *See*—
Gertsch Products, Inc.
Sjostrom Automations, Inc., Boca Raton, Fla. 781,736, pub. 9–29–64. Cl. 24.
Smith, Miller & Patch, Inc., New York, N.Y. 781,646, pub. 9–29–64. Cl. 18.
Smith, Miller & Patch, Inc., New York, N.Y. 781,679–80, pub. 9–29–64. Cl. 18.
Snak-King Corp., Brookline, Mass. 669,087, canc. Cl. 100.
Solite Corp., Richmond, Va. 781,608, pub. 9–29–64. Cl. 12.
Sound-Craft Systems, Inc., Morrilton, Ark. 781,693, pub. 9–29–64. Cl. 21.
Southern Packing Co., Inc., Baltimore, Md. 781,828, pub. 9–29–64. Cl. 46.
Southwestern Drug Corp., d.b.a. Brooke Laboratories, Dallas, Tex. 781,672, pub. 9–29–64. Cl. 18.
Sovereign Watch Co., Inc., New York, N.Y. 781,739, pub. 9–29–64. Cl. 27.
Space Chemicals, Inc., Burbank, Calif. 781,639, pub. 9–29–64. Cl. 15.
Sperry Rand Corp., New York, N.Y. 668,992, canc. Cl. 37.
Standard Brands Inc., New York, N.Y. 669,063, canc. Cl. 46.
Standard Brands Inc., New York, N.Y., to Campbell Soup Co., Camden, N.J. 411,136, ren. 12–15–64. Cl. 46.
Standard Crankshaft Co., Inc., Charlotte, N.C. 781,719, pub. 9–29–64. Cl. 23.
Standard Medicine Co.: *See*—
Duncan, William H.
Standard T Chemical Co., Inc.: *See*—
Standard Varnish Works.
Standard Varnish Works, Staten Island, N.Y., to Standard T Chemical Co., Inc., Chicago, Ill. 412,170, ren. 12–15–64. Cl. 16.
Star Expansion Co., from Star Expansion N.Y., Inc., New York, N.Y. 668,887, canc. Cl. 13.
Star Expansion N.Y., Inc.: *See*—
Star Expansion Co.
Star Pharmaceuticals, Inc., Atlanta, Ga. 781,663, pub. 9–29–64. Cl. 18.
Statewide Electric Corp., to Statewide Rural Electric Cooperative Corp., Louisville, Ky. 680,714, new cert. Cl. 21.
Statewide Rural Electric Cooperative Corp.: *See*—
Statewide Electric Corp.
Station KPOC: *See*—
White, Adrian L.
Sterimed, Inc., Brooklyn, N.Y. 781,677–8, pub. 9–29–64. Cl. 18.
Sterling Automotive Mfg. Co., Elk Grove Village, Ill. 781,619, pub. 9–29–64. Cl. 13.
Sterling Drug Inc., New York, N.Y. 781,669, pub. 9–29–64. Cl. 18.
Sterling Drug Inc., New York, N.Y. 781,676, pub. 9–29–64. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 781,660, pub. 9–29–64. Cl. 18.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.
Stevning Citrus, Inc., Coachella, Calif. 781,829, pub. 9–29–64. Cl. 46.
Stewart, A. L., & Sons, Cherryfield, Maine. 781,835, pub. 9–29–64. Cl. 46.
Stoker, Annette T., d.b.a. Pedi-Pad Sandals, Denver, Colo. 781,790, pub. 9–29–64. Cl. 39.
Stretch Fabrics, Inc., New York, N.Y. 781,812, pub. 9–29–64. Cl. 42.
Superba Cravats, Inc., Rochester, N.Y. 781,791, pub. 9–29–64. Cl. 39.
Superior Electric Co., The, Bristol, Conn. 781,695, pub. 9–29–64. Cl. 21.
Superior Pharmacal Co., Dayton, Ohio. 781,667, pub. 9–29–64. Cl. 18.
Swiss Laboratory, Inc., Cleveland, Ohio. 781,609, pub. 9–29–64. Cl. 12.
Swiss Laboratory, Inc., Cleveland, Ohio. 781,611, pub. 9–29–64. Cl. 12.
Tennessee Stove Works, Inc., d.b.a. Modern Maid, Chattanooga, Tenn. 781,750, pub. 9–29–64. Cl. 31.
Tepa Fil-Ter-Frig Corp., Glendale, Ariz. 781,746, pub. 9–29–64. Cl. 31.

Tesco Chemicals, Inc., Atlanta, Ga. 659,920, canc. Cl. 52.
Tessler Industries, Inc., Cleveland, Ohio. 781,772, pub. 9–29–64. Cl. 36.
Texaco Inc.: *See*—
Texas Co., The.
Texas Co., The, Houston, Tex., and New York, N.Y., to Texaco Inc., New York, N.Y. 193,474, ren. 12–15–64. Cl. 6.
Texas Pharmacal Co., San Antonio, Tex. 781,681, pub. 9–29–64. Cl. 18.
Texsteam Corp., Houston, Tex. 781,627–8, pub. 9–29–64. Cl. 13.
Theatre Guild, Inc., to The Theatre Guild, New York, N.Y. 192,663, ren. 12–15–64. Cl. 38.
Theatre Guild, Inc., The, to The Theatre Guild, New York, N.Y. 192,736, ren. 12–15–64. Cl. 38.
Theatre Guild, The: *See*—
Theatre Guild, Inc.
Thiokol Chemical Corp., Bristol, Pa. 781,584, pub. 9–29–64. Cl. 1.
Thoma, Jean, Zug, Switzerland. 781,729, pub. 9–29–64. Cl. 23.
Thrissell Engineering Co., Ltd., The, Bristol, England. 781,720, pub. 9–29–64. Cl. 23.
Tillman Produce Co., Inc., Wilton, Wis. 669,036, canc. Cl. 46.
Toledo Blade Co., The, Toledo, Ohio. 781,782, pub. 9–29–64. Cl. 38.
Tribune Co., The, Chicago, Ill. 191,597, ren. 12–15–64. Cl. 38.
Tru-Co-Lite, Inc., New York, N.Y. 668,981, canc. Cl. 34.
Tung-sol Electric Inc., Newark, N.J. 781,694, pub. 9–29–64. Cl. 21.
Tusson, John R., New Orleans, La. 781,701, pub. 9–29–64. Cl. 22.
Unimed, Inc., Morristown, N.J. 781,665, pub. 9–29–64. Cl. 18.
Union Atomic, Inc., Windsor, Conn. 668,955, canc. Cl. 26.
Union Tank Car Co., Chicago, Ill. 781,748, pub. 9–29–64. Cl. 31.
United Merchants and Manufacturers, Inc.: *See*—
Cohn-Hall-Marx Co.
United States Department of Commerce, Washington, D.C. 669,107, canc. Cl. A.
United States Ceramic Tile Co., Canton, Ohio. 781,603, pub. 9–29–64. Cl. 12.
U.S. Industries, Inc., New York, N.Y. 668,943, canc. Cl. 23.
United States Plywood Corp., New York, N.Y. 781,607, pub. 9–29–64. Cl. 12.
United States Plywood Corp., New York, N.Y. 781,874. Cl. 16.
United States Products Corp., Ltd., San Jose, Calif. 781,837, pub. 9–29–64. Cl. 46.
Universal Products Corp., St. Louis, Mo. 669,082, canc. Cl. 52.
Valeron Corp., The, Detroit, Mich. 781,734, pub. 9–29–64. Cl. 23.
Versal, Inc., South Bend, Ind. 668,894, canc. Cl. 13.
Veterinary Supply Depot Inc., Dallas, Tex. 781,673–4, pub. 9–29–64. Cl. 18.
Vistair Co., The: *See*—
Nusbaum, Alan D.
Vivier, Roger, Paris, France. 781,786, pub. 9–29–64. Cl. 39.
Ward Blenkinsop & Co. Ltd., London, England. 668,913, canc. Cl. 18.
Warhill Products: *See*—
Shepard, William W.
Water Resources Council, Inc., New York, N.Y. 669,091, canc. Cl. 100.
Water-Rite Corp., Anaheim, Calif. 781,751, pub. 9–29–64. Cl. 31.
Webster, William A., Co., The, Memphis, Tenn. 781,653, pub. 9–29–64. Cl. 18.
Wellman, S. K., Co., The, Cleveland, Ohio, to The S. K. Wellman Co., Bedford, Ohio. 411,420, ren. 12–15–64. Cl. 35.
Welsh Plywood Corp., Memphis, Tenn. 668,878, canc. Cl. 12.
Westinghouse Air Brake Co: *See*—
Le Roi Co.
Whirlpool Corp., Benton Harbor, Mich. 781,753, pub. 9–29–64. Cl. 34.
White, Adrian L., d.b.a. Station KPOC, Pocahontas, Ark. 781,699, pub. 9–29–64. Cl. 21.
White-Stokes Co., Inc., Chicago, Ill. 193,760, ren. 12–15–64. Cl. 46.
Whiting Bros.: *See*—
Whiting Brothers Oil Co.
Whiting Brothers Oil Co., d.b.a. Whiting Brothers and Whiting Bros., Holbrook, Ariz. 781,637, pub. 6–18–63. Cl. 15.
Wisconsin Produce, Inc., d.b.a. Wis-Produce, Inc., Eleva, Wis. 669,038, canc. Cl. 46.
Wis-Produce, Inc.: *See*—
Wisconsin Produce, Inc.
Woolworth, F. W., Co., New York, N.Y. 668,977, canc. Cl. 32.
Woolworth, F. W., Co., New York, N.Y. 781,806, pub. 9–29–64. Cl. 39.
Wyandotte Chemicals Corp., Wyandotte, Mich. 781,860, pub. 9–29–64. Cl. 52.
Wybrant System Products Corp., New York, N.Y. 699,080, canc. Cl. 52.
Xlnt Spanish Food Co., Los Angeles, Calif. 669,054, canc. Cl. 46.
Yardley of London, Inc.: *See*—
Curtis, A. W., Jr.
York Research Corp., Stamford, Conn. 781,866, pub. 2–7–61. Cl. 101.
Zieman Products Inc., Whittier, Calif. 668,929, canc. Cl. 19.
Zimmerman, H., & Sons, Chicago, Ill. 781,880. Cl. 39.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 22, 1964 Volume 809 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1964

Examiner affirmed	241
Examiner affirmed in part	36
Examiner reversed	87
Total	364

Re Meeting on Proposed New Interference Practice

Pending further consideration of proposed changes in the interference practice, the public hearing scheduled for January 12, 1965 (808 O.G. 381) is hereby canceled.

EDWARD J. BRENNER,
Commissioner.

Dec. 9, 1964.

Full Period for Response—a Reminder

Although, under the new examination program, most Office actions carry a shortened statutory period for response, applicants are reminded that the normal period provided in the Rules of Practice applies if no shortened period or time limit is specifically set in the Office action. See Rule 136 and 35 U.S.C. 133.

RICHARD A. WAHL,
Acting Superintendent,
Patent Examining Corps.

November 17, 1964.

United States Court of Customs and Patent Appeals

Rule 26 and Payment of Printing Costs

Attorneys taking appeals to the United States Court of Customs and Patent Appeals are reminded of the provisions of Rule 26 which relate to the payment of costs for printing the transcript of record.

The rule specifies that the clerk shall cause an estimate to be made of the costs of printing the transcript of record and shall notify the party filing the transcript of the amount of the estimate. It further provides that if he does not pay the amount within thirty (30) days from the date of the clerk's letter, exclusive of Sundays and legal holidays, or any extension thereof granted on motion before the time expires and showing good cause therefor, the appeal may be dismissed.

The court wishes to advise attorneys that due to the increasing number of appeals and the resulting congested calendar, failure to deposit the estimated cost within the time allotted by Rule 26, or such extension provided therein, will result in the appeal being promptly dismissed.

GEORGE E. HUTCHINSON,
Clerk.

November 10, 1964.

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

1. An authorization letter requesting this service must be filed for *each* application for which this service is desired. The authorization letter may be filed initially upon the filing of a new application or it may be filed for a pending application indicating the serial number of the application. Blanket authorizations for a number of applications in a single authorizing letter will not be accepted.

2. The authorizing letter should indicate the applicant's (or his representative's) deposit account number and the number of copies of cited references desired.

3. All references cited *after* the receipt of the authorizing letter will be mailed, in the quantity indicated, to the addressee of record in the application. References will not be mailed to any other address.

4. All references cited in a single office action will be mailed together, generally within two weeks after the mailing of the action. This mailing will include a copy of the first page of the office action identifying the references and the application.

5. Monthly charges will appear on deposit account billings which will include an additional copy of the first page of the office action indicating the charges incurred. Such charges will be at the current published prices for patents, designs and the reproduction of document pages.

C. A. KALK,
Director of Administration.

November 9, 1964.

Disclaimers

3,004,212.—*John E. Coolidge,* Arlington Heights, Ill., and *Robert J. S. Brown,* Fullerton, Calif. INDUCTION AND NUCLEAR MAGNETISM LOGGING. Patent dated Oct. 10, 1961. Disclaimer filed Sept. 24, 1964, by the assignees, *Borg-Warner Corporation* and *California Research Corporation.*

Hereby enter this disclaimer to claim 5 of said patent.

3,077,308.—*Tibor A. Rozsa,* Minneapolis, Minn., *Arlin B. Ward,* Springfield, Ill., and *Rezsoe Graeza,* Minneapolis, Minn. PROCESS OF REDUCING AND SURFACE TREATING CEREAL ENDOSPERM PARTICLES AND PRODUCTION OF NEW PRODUCTS THROUGH ATTENDANT SEPARATIONS. Patent dated Feb. 12, 1963. Disclaimer filed Sept. 23, 1964, by the assignee, *The Pillsbury Company.*

Hereby enters this disclaimer to claims 1, 2, 4 and 5 of said patent.

New Applications Received During October 1964

Patents	7,287
Designs	453
Plant Patents	15
Reissues	16
Total	7,771

Issue—December 22, 1964

Patents	975	No. 3,161,886 to No. 3,162,860, incl.
Designs	57	No. 199,834 to No. 199,890, incl.
Reissues	4	No. 25,701 to No. 25,704, incl.
Total	1036	

Dedication

2,877,196.—*Frederick P. Reding,* Charleston, W. Va. COATING COMPOSITION CONTAINING WAX AND ETHYLENE-VINYL ACETATE COPOLYMER. Patent dated Mar. 10, 1959. Dedication filed Nov. 18, 1964, by the assignee, *Union Carbide Corporation.*

Hereby dedicates to the public the remaining term of said patent.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Interferences

The following amended rules are adopted. The text of these rules, except in certain particulars, was published in the Federal Register of July 9, 1964 (29 F.R. 9398), and all persons who desired to were invited to submit written data, views, argument or suggestions, or to attend the hearing held on September 1, 1964, in connection therewith. The rules are being adopted after full and careful consideration of all the material submitted. The departures from the published text meet the views expressed in the material.

The time and manner of taking effect is as follows:

The amended rules shall take effect January 1, 1965, and shall apply only to interferences proposed for declaration after that date. In all other cases, the rules prior to amendment shall apply.

Section 1.204(b) of Title 37 CFR (Patent Rule 204) is amended and new paragraph (c) is added, as follows:

§ 1.204 *Interference with a patent; affidavit by junior party.*

• • • • •

(b) When the effective filing date of an applicant is three months or less subsequent to the effective filing date of a patentee, the applicant, before the interference will be declared, shall file an affidavit that he made the invention in controversy in this country before the effective filing date of the patentee, or that his acts in this country with respect to the invention were sufficient to establish priority of invention relative to the effective filing date of the patentee.

(c) When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee, the applicant, before the interference will be declared, shall file two copies of affidavits by himself and by one or more corroborating witnesses, supported by documentary evidence if available, setting out a factual description of acts and circumstances which would prima facie entitle him to an award of priority relative to the effective filing date of the patentee, and accompanied by an explanation of the basis on which he believes that the facts set forth would overcome the effective filing date of the patentee. Upon a showing of sufficient cause, an affidavit on information and belief as to the expected testimony of a witness whose testimony is necessary to overcome the filing date of the patentee may be accepted in lieu of an affidavit by such witness. If the examiner finds the case to be otherwise in condition for the declaration of an interference he will consider this material only to the extent of determining whether a date prior to the effective filing date of the patentee is alleged, and if so, the interference will be declared.

Section 1.226 is amended to read as follows:

§ 1.226 *Notice and access to applications.*

(a) After the preliminary statements have been received and approved, or the time for filing them has expired, the parties will be notified, and given the serial numbers and filing dates of the applications of each adverse party, including any applications which the parties may be entitled to inspect, and the parties will be permitted to see or obtain copies of each other's applications, except copies of affidavits filed under §§ 1.131, 1.202 and 1.204 which shall be and remain sealed until preliminary statements are opened under § 1.227, except as provided in § 1.228 regarding affidavits under § 1.204(c). The preliminary statements will be resealed by an examiner of interferences and shall not be revealed to the opposing parties except as provided in § 1.227.

(b) The notices will also ordinarily specify the motion period (§ 1.231) and may also include an order to show cause (§§ 1.225 and 1.228).

Section 1.228, is added, reading as follows:

§ 1.228 *Summary judgment.*

When an interference has been declared on the basis of a showing under § 1.204(c), such showing will be examined by a Board of Patent Interferences. If the Board considers that the facts set out in the showing provide sufficient basis for overcoming the effective filing date of the patentee, the interference will proceed in the normal manner as provided by these rules; otherwise an order shall be entered after the preliminary statements have been received and approved or the time for filing them has expired (§ 1.226), pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than thirty days, unless cause be shown why such action should not be taken. Any response made during the specified period will be considered by the Board without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing justifying their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one of the copies of the showing under § 1.204(c) and will be allowed thirty days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter.

Section 1.261 is amended to read as follows:

§ 1.261 *Termination of interference.*

An interference will be terminated by judgment of priority after final hearing (§§ 1.251 to 1.259), or by judgment on the record as provided by § 1.225 or § 1.252, or by summary judgment because of an insufficient showing under § 1.204(c) as provided by § 1.228, or by dissolution as provided by § 1.232 or § 1.237, or as otherwise provided.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: November 13, 1964.

WILLIAM W. EATON,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 64-12090; Filed, Nov. 25, 1964; 8:47 a.m.]

Published in 29 F.R. 15866, 15867, Nov. 26, 1964

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Petition to the Commissioner

The following amended rule is adopted. The text of the rule, except in one particular, was published in the Federal Register of July 28, 1964 (29 F.R. 10472) and all persons who desired to were invited to submit written data, views, arguments or suggestions in connection with the proposal. The rule is being adopted after full and careful consideration of all the material submitted. The rule departs from the published text only in changing the time within which a petition may be filed from "within 30 days" from the action complained of to "within 60 days."

This amendment shall take effect January 1, 1965, and shall apply only to Examiner's actions mailed after that date. In all other applications pending on the effective date, the rule prior to amendment shall apply.

Section 1.181 of 37 CFR (Patent Rule 181) is amended by deleting paragraph (f) thereof and replacing it with new paragraph (f) reading as follows:

§ 1.181 *Petition to the Commissioner.*

• • • • •

(f) Except as otherwise provided in these rules, any such petition not filed within sixty days from the action complained of, may be dismissed as untimely. The mere filing of a petition will not stay the period for reply to an Examiner's action which may be running against an application, nor act as a stay of other proceedings.

• • • • •

(Sec. 1, 66 Stat. 793; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

October 28, 1964.

Approved: October 30, 1964.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 64-11500; Filed, Nov. 10, 1964; 8:46 a.m.]

Published in 29 F.R. 15028, Nov. 11, 1964

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,874,592, J. W. Oehrli, Self-controlled variable speed planetary type drive, decided Aug. 12, 1964, Interference No. 91,900, claim 9.

Patent No. 2,893,261, G. E. Flinn, Transmission, decided Nov. 2, 1964, Interference No. 91,918, claims 1 and 9.

Patent No. 2,905,026, J. W. Oehrli, Variable ratio transmission, decided Aug. 12, 1964, Interference No. 91,901, claims 1, 2, 4, 5 and 7.

Patent No. 2,905,750, G. S. Ley, Ungated continuous color sequence displays, decided Nov. 13, 1963, Interference No. 92,138, claims 1, 2, 3, 7, 8 and 9.

Patent No. 2,921,933, A. C. McKinnis and W. D. Schaeffer, Manufacture of polyethylene, decided Aug. 21, 1964, Interference No. 91,362, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 and 17.

Patent No. 2,923,488, J. W. Gratian and R. J. O'Brien, Winding and reeling control system, decided Oct. 23, 1963, Interference No. 92,029, claims 2, 4 and 6.

Patent No. 2,932,491, L. M. Miller, Heat transfer unit, decided Mar. 31, 1964, Interference No. 93,943, claim 1

Patent No. 2,959,565, G. W. Stanton and T. G. Traylor, Compositions comprising graft copolymers of certain monomeric polyglycol esters of acrylates and methacrylates on superpolyamide substrates, decided Nov. 22, 1963, Interference No. 92,145, claims 1, 3, 4 and 5.

Patent No. 2,972,600, C. A. Braidwood, Substituted phenols, decided Feb. 7, 1964, Interference No. 93,624, claims 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 16, 17, 18, 19, 21, 22 and 24

Patent No. 2,973,312, J. R. Logan, Method and means for ultrasonic activating of solvent and sand solution, decided Oct. 15, 1964, Interference No. 93,484, claim 1.

Patent No. 2,983,586, A. Blanchard, Borehole testing method and apparatus, decided Oct. 15, 1964, Interference No. 93,017, claims 3 and 4.

Patent No. 2,993,154, J. M. Goldey and I. M. Ross, Semiconductor switch, decided Dec. 16, 1963, Interference No. 93,491, claim 2.

Patent No. 3,001,711, R. Frohman, Transistor adder circuitry, decided Apr. 30, 1964, Interference No. 93,163, claims 4, 5 and 6.

Patent No. 3,004,174, H. A. Seidman, Four phase clock, decided July 15, 1963, Interference No. 93,332, claims 2, 19 and 20.

Patent No. 3,006,920, W. R. Boehme and E. S. Schipper, N-substituted 2,5-bishalomethylpyrrolilidines, decided Nov. 12, 1963, Interference No. 93,004, claims 4 and 5.

Patent No. 3,014,591, A. M. Stone and J. C. Worst, Laundry machine, decided Nov. 5, 1964, Interference No. 93,342, claims 1 and 2.

Patent No. 3,019,714, S. Teiser and W. R. Sassaman, Charging and developing apparatus for electrostatic printing, decided July 31, 1964, Interference No. 93,507, claims 1 and 4.

Patent No. 3,023,126, W. F. Underwood and S. V. Urs, Method of bonding a synthetic resin coating to a polyolefin surface and article produced thereby, decided Oct. 15, 1964, Interference No. 93,689, claims 1 and 22.

Patent No. 3,023,744, S. H. Mick, Idle mixture control air valve carburetor, decided Jan. 30, 1964, Interference No. 93,323, claim 1.

Patent No. 3,025,682, W. G. Kniffin, Ice block making and harvesting, decided July 27, 1964, Interference No. 93,359, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,042,128, R. E. Bell and R. B. Williams, Jr., Condition responsive device with motion detecting means, decided Aug. 14, 1964, Interference No. 93,465, claims 4, 5, 6 and 7.

Patent No. 3,044,725, T. C. Gams and P. J. Kiefer, Jr., Tape feeding means, decided Oct. 15, 1964, Interference No. 93,547, claims 3, 6, 10 and 13.

Patent No. 3,050,127, K. W. Foster, N. B. Newman, and R. L. Geer, Wellhead seal, decided Nov. 6, 1964, Interference No. 93,485, claim 4.

Patent No. 3,055,006, A. W. Dreyfoos, Jr., R. V. Mazza, W. A. Radke and A. A. Staley, High density, erasable optical image recorder, decided Sept. 17, 1964, Interference No. 93,460, claims 4 and 8

Patent No. 3,057,762, F. F. Gans, Heterojunction transistor manufacturing process, decided Nov. 10, 1964, Interference No. 93,886, claim 1.

Patent No. 3,095,193, W. H. Sorenson, Pile separating device, decided Oct. 29, 1964, Interference No. 94,128, claims 1, 2, 3, 4 and 5.

Patents Available for Licensing or Sale

3,133,982. Eyeglass Sweat Bands. J. B. Janz, Omaha, Nebr. Correspondence to: George R. Nimmer, 940 First National Bank Bldg., Omaha, Nebr.

3,137,523. Air Conditioned Seat. Frank Karner, East Riverdale, Md. Correspondence to: Burns, Doane, Benedict, Swecker & Mathis, 850 Munsey Bldg., Washington, D.C.

Great Western Drilling Company is prepared to grant non-exclusive licenses under the following patent to responsible parties on uniform reasonable terms.

Applications for license under the following patent may be addressed to: Great Western Drilling Company, Box 1659, Midland, Tex.

3,150,085. Method of Drilling a Well Through a Subsurface Formation Employing an Oil-In-Water Emulsion Drilling Fluid.

General Signal Corporation is prepared to grant non-exclusive licenses under the following 50 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patents may be addressed to: General Railway Signal Company, a Unit of General Signal Corporation, Attn.: Manager, Patent Department, P.O. Box 600, Rochester, N.Y., 14602.

2,434,240. Centralized Traffic Controlling Systems for Railroads.

2,434,241. Means for Mounting Covers on Mechanism Cases.

2,435,000. Relay Bearing Structures

2,446,232. Plug Board Arrangement.

2,448,349. Track Circuits With Battery Charging or Depolarizing Means.

2,448,487. Selective Signaling Systems.

2,456,533. Centralized Traffic Control Systems for Railroads.

2,457,703. Plugboard Arrangements.

2,457,748. Speed Governors for Railway Vehicles.

2,458,401. Light Signals for Railroads.

2,459,494. Line Circuit Communication Systems.

2,461,994. Wire Terminals.

2,475,252. Power Supply Systems.

2,480,443. Recorders Actuated by Electrically Heated Wires.

2,486,086. Relays.

2,487,102. Code Communication Systems.

2,487,412. Centralized Traffic Controlling Systems for Railroads.

2,490,280. Electromagnetically Operated Pretensioned Contact Springs.

2,491,098. Polar Biased Relays.

2,494,435. Crossover Protection Systems for Railroads.

2,498,807. Relay Housings.

2,499,728.	Coded Track Circuit Signaling System for Railroads.
2,502,811.	Polarized Relays.
2,503,657.	Adjusting Pliers for Electrical Spring Contacts.
2,503,671.	Continuous Inductive Train Control and Cab Signaling Systems.
2,506,527.	Automatic Field Start Control for Code Type Communication Systems.
2,507,921.	Control Machine Panels for Switch and Signal Control Systems.
2,507,989.	Timing Devices.
2,515,624.	Railway Switch Throw Rod Connections.
2,515,658.	Electromagnetic Control of Recording Mechanisms.
2,516,400.	Switch Circuit Controlling Devices for Railroads.
2,519,979.	Coded Track Circuit Signaling Systems for Railroads.
2,522,892.	Coded Track Circuit Signaling Systems for Railroads.
2,529,697.	Joint (Switch Rods).
2,535,977.	Magnetic Stick Relays.
2,536,162.	Relays.
2,536,223.	Coded Track Circuit Signaling Systems.
2,536,244.	Spring Holders for Permanent Magnets.
2,543,555.	Switch Circuit Controlling Devices for Railroads.
2,543,869.	Centralized Traffic Controlling Systems.
2,550,859.	Switch and Signal Control Systems for Railroads.
2,550,860.	Coded Track Circuit Signaling Systems.
2,559,390.	Centralized Traffic Control Systems.
2,559,397.	Speed Control With Penalty Means in Continuous Inductive Train Control Systems.
2,559,448.	Alternating Current Vane Relays.
2,559,468.	Code Transmitting Apparatus in Track Circuit Signaling Systems.
2,559,477.	Switch Machines for Railroads.
2,565,773.	Electric Switch Locks for Railroads.

Classification Data Available in Magnetic Tape

Magnetic tape containing current classification data for a selected group of patents is offered for sale by the Patent Office. Nearly 570,000 patents which presently comprise the below listed classes are recorded in this file. Entries consisting of the patent number and the class and subclass in which these patents are classified "original" are arranged in patent number order. Parties having a possible interest in this tape file are invited to make inquiry concerning it. The terms and cost of obtaining a copy will be furnished on request. As the offering of this file is partially experimental to ascertain public interest, the response will be taken into consideration in determining whether to extend the scope of the file to patents in other fields and to include cross-reference information.

CLASSIFICATION DATA IN MAGNETIC TAPE

Class No.	*Title*	*No. of Patents*
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	7,321
18	Plastics	9,583
21	Preserving, Disinfecting and Sterilising	2,030
23	Chemistry	23,246
29	Metal working	26,429
31	Dairy	1,736
34	Drying and Gas or Vapor Contact With Solids	8,920
44	Fuel and Igniting Devices	3,873
48	Gas, Heating and Illuminating	8,214
51	Abrading	23,733
55	Gas Separation	9,516
62	Refrigeration	20,022
65	Glass Manufacturing	9,089
71	Chemistry, Fertilisers	2,645
75	Metallurgy	14,590
94	Roads and Pavements	5,732
96	Photographic Chemistry, Processes and Materials	5,850
99	Foods and Beverages	22,696
106	Compositions, Coating or Plastics	19,736
117	Coating: Processes and Miscellaneous Products	16,231
118	Coating Apparatus	9,542
127	Sugar, Starch and Carbohydrates	2,420
131	Tobacco	9,108
134	Cleaning and Liquid Contact With Solids	5,204
136	Batteries	8,054
146	Vegetable and Meat Cutters and Comminutors	13,038
148	Metal Treatment	6,194
149	Explosive and Thermic Compositions or Charges	2,318
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	12,835
159	Concentrating Evaporators	2,483
161	Stock Material and Miscellaneous Articles	7,839
162	Paper Making and Fiber Liberation	7,832
167	Medicines, Poisons and Cosmetics	10,782
176	Nuclear Reactions and Systems	925
195	Chemistry, Fermentation	2,818
196	Mineral Oils: Apparatus	1,654
202	Distillation	7,468
204	Chemistry, Electrical and Wave Energy	12,628
208	Mineral Oils: Processes and Products	12,590
209	Classifying, Separating, and Assorting Solids	21,202
210	Liquid Purification or Separation	17,296
233	Centrifugal-Bowel Separators	2,039
252	Compositions	19,351
260	Chemistry, Carbon Compounds	95,832
261	Gas and Liquid Contact Apparatus	12,060
263	Heating	8,896
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	11,450
266	Metallurgical Apparatus	4,455

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November 9, 1964.

C. A. KALK,
Director of Administration.

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	5- 4-56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11-30-62	6- 1-54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	12- 5-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	2-26-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	3-11-57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-16-62	4- 9-56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	9-24-57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	8- 1-60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	1-28-54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	7-17-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	6-13-58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4- 5-56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	1- 2-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	12- 6-62	11-22-57

Total number of pending applications (excluding Designs)	210,072
Total number of Design applications pending	5,779
Total number of applications awaiting action (excluding Designs)	136,426
Total number of Design applications awaiting action	2,506
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*

Patents ..... Numbers 2,431,670 to 2,433,823, inclusive
Plant Patents. ..... Numbers 768 to 773, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements, Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-25-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

ROBERT C. SWITZER AND RICHARD A. WARD
v.
LOY W. SOCKMAN AND ELLIOT W. BRADY

No. 7128. Decided July 16, 1964

[— CCPA —; 333 F.2d 935; 142 USPQ 226]

1. INTERFERENCE—PATENT AND APPLICATION—STATUTORY PERIOD FOR MAKING PATENTED CLAIM—35 U.S.C. 135.

"We do not • • • agree • • • that the language of the statute is so clear and unambiguous as to preclude a finding that the anniversary date of the issuance of a patent is not 'prior to one year from the date on which the patent was granted,' within the meaning of 35 U.S.C. 135 • • •."

2. SAME—SAME—SAME—SAME.

"Appellees concede that the statutory provision antecedent to section 135 here under consideration permitted copying claims from a patent on the one year anniversary date of the issuance thereof. A clear change in the law thus must have occurred with the enactment of section 135 of the 1952 Patent Act if that section is to be construed to exclude the anniversary date on which the interfering patent was granted. We think that in such circumstances the new construction, to be sustained, must find clear congressional sanction."

3. SAME—SAME—SAME—SAME.

"• • • we are of the opinion that the Switzer et al. application Serial No. 484,319, filed on January 26, 1955, with the claims copied from the Sockman et al. patent was filed prior to one year from the January 26, 1954 date on which the Sockman et al. patent was granted within the meaning of 35 U.S.C. 135."

4. SAME—RIGHT TO MAKE—EFFECT OF DISTRICT COURT EX PARTE JUDGMENT ON RIGHT TO MAKE.

On the question whether an ex parte judgment in the U.S. District Court on the right to make certain claims by the party Switzer et al. forecloses the Board of Patent Interferences from considering that question as to those claims constituting the counts in an interference between Switzer et al. and Sockman et al., and with reference to the contention by Switzer et al. that the matter is *res judicata*, *Held* that "It is obvious that the doctrine of res judicata is not available as a defense since the parties are different here than in the proceeding before the district court"; that "The district court case was an ex parte proceeding with the Patent Office as the defendant"; that "Since it was an ex parte proceeding Sockman et al. was not able to participate"; and that "On the other hand, Sockman et al., not the Patent Office, is a party here."

5. SAME—SAME—SAME—*Henning* v. *Hunt* CONSTRUED.

"• • • we do not think that *Henning* v. *Hunt* forecloses the Board [of Patent Interferences] from considering whether the additional evidence, not not considered in the district court [ex parte] proceeding [on the right to make certain claims involved as counts in the interference on appeal], showed that a contrary state of facts existed from what was found by the district court in *Switzer* v. *Watson*."

6. SAME—SAME—SAME.

"We think • • • that the Board, in discharging its duty of determining priority here, has the responsibility of expressly determining whether the earlier application of Switzer et al., Serial No. 606,708, supports the counts. While that determination must be made in the light of the district court's decision, recognition that Sockman et al. had no opportunity to participate in the trial before that court requires that the Board also shall consider such arguments and additional evidence as are now properly presented by Sockman et al."

APPEAL from the Patent Office. Interference No. 87,474.

REVERSED AND REMANDED.

Albert L. Ely, Jr., for appellants.

Foster York (*Benton Baker*, of counsel) for appellees.

Harold J. Kinney and *Stanley G. De La Hunt*, as amicus curiae.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority of invention to Sockman et al., in Interference No. 87,474. The interference involves an application Serial No. 484,319, filed on January 26, 1955 by Switzer et al. and a Patent No. 2,667,070 issued to Sockman et al., on January 26, 1954 on application Serial No. 83,614 filed March 26, 1949. The five counts of the interference correspond to all of the original claims 1–5 of the Switzer et al. application Serial No. 484,319, which claims were copied from the Sockman et al. patent.[1]

Interference No. 87,474 was originally declared on May 23, 1955 with Sockman et al. as senior party and Switzer et al. as junior party. It was later dissolved on the ground that a Switzer et al. parent application Serial No. 606,708, filed July 23, 1945 relied on to antedate the filing date of the application on which the Sockman et al. patent issued, would not support the counts. Hence, a Canadian patent of Sockman et al., corresponding to the Sockman et al. Patent No. 2,667,070 and having issued in Canada more than one year before the filing of the Switzer et al. application Serial No. 484,319 was considered a statutory bar against the claims in Serial No. 484,319 and thus made the counts unpatentable to Switzer et al. In ex parte prosecution following the dissolved interference, the Primary Examiner adhered to his position and further finally rejected the claims of application Serial No. 484,319 on the Sockman et al. Canadian patent. The Board of Appeals sustained the Primary Examiner's final rejection: However, in an action under 35 U.S.C. 145, the district court in *Switzer* v. *Watson*, 183 F. Supp. 467, 125 USPQ 48, held that Switzer et al. were "entitled to rely as to all of claims 1–5 on the filing date of application Serial No. 606,708 and that the Canadian patent to Sockman et al. is, therefore, not a statutory bar." As a result of the judgment of the district court, the Primary Examiner reinstated the interference on September 29, 1960, changing the order of the parties so that Switzer et al. became the senior party.

Two questions are involved in this appeal.

Question No. 1

The first question is whether the Switzer et al. application Serial No. 484,319 with the claims copied from the Sockman et al. patent was filed "prior to one year from the date on which the patent

[1] The first of the five counts reads:

> The method of inspecting a part for surface defects which comprises applying to a surface of said part a solution of a dye in a penetrant liquid consisting of a volatile liquid and a relatively non-volatile liquid having a higher surface tension than said volatile liquid, said relatively non-volatile liquid consisting essentially of an oxygen-containing organic liquid, removing penetrant liquid from the surface to permit evaporation of part of the volatile liquid from the penetrant liquid remaining in the defect whereby there is an increase in the surface tension of liquid in said defect, and depositing on said surface a layer of finely divided penetrant liquid absorbing material of a color contrasting with that of said dye whereby penetrant liquid will be absorbed in said deposit to form a visible trace.

[Sockman et al.] was granted" within the meaning of 35 U.S.C. 135.[2] The Sockman et al. patent was granted on January 26, 1954 and the Switzer et al. application was filed on January 26, 1955.

The Board in finding for Sockman et al. made reference to the following statements of the First Assistant Commissioner in *Rubenstein* v. *Schmidt*, 133 USPQ 91:

> The party Schmidt petitions from the decision of the Primary Examiner denying his motion to dissolve the above entitled interference on the ground that the claims of his patent, which form the counts of the interference, were not made by Rubenstein "prior to one year from the date on which the patent was granted," within the meaning of Title 35, section 135 of the United States Code. The Schmidt patent was issued on June 4, 1957 and the Rubenstein application, containing the claims in issue, was filed on June 4, 1958.
>
> The sole issue here, therefore, is whether the anniversary date of the issuance of a patent is "prior to one year from the date on which the patent was granted." It seems clear that this question must be answered in the negative.
>
> The "date on which the patent was granted" in the present case is June 4, 1957, and one year from that date cannot reasonably mean anything other than the anniversary date, June 4, 1958. Fractions of a day cannot properly be considered in computations of time such as that here involved and events occurring on the same day are considered as having occurred simultaneously. It follows that the Rubenstein application here involved was filed "one year from the date on which the patent was granted" and not prior to that time as required by the statute.
>
> . . . . . .

The majority of the Board stated that the *Rubenstein* v. *Schmidt* decision "obviously must be followed by the Board of Patent Interferences as part of the Patent Office," and, accordingly, held that the Switzer et al. application presenting the claims copied from the Sockman et al. patent was not filed "prior to one year from the date on which the patent was granted" within the meaning of 35 U.S.C. 135.[3]

Appellants argue that the *Rubenstein* decision was rendered without regard to established rules of law for computation of time and the consequent divergence with other authorities, without regard to prior decisions construing section 135 of the 1952 Patent Act, and without regard to the construction with parallel statutes, or even generally accepted and established practice. Amicus curiae[4] contends that the legislative history behind section 135 shows no intent, by the choice of language employed, to make the one year anniversary date of the issuance of patent untimely, under 35 U.S.C. 135 for copying claims for purposes of interference.

Appellees argue that the words "prior to" used in the present statute do not mean the same thing as the word "within" used in the previous statute.[5] It is contended that when the term "within" a certain period is used in the old statute, the first day of the act, such as the issuance of a patent, is excluded, and a period such as one year

[2] 35 U.S.C. 135 reads:

> § 135. Interferences
>
> . . . . . .
>
> A claim which is the same as, or for the same or substantially the same subject matter as, a claim of an issued patent may not be made in any application unless such a claim is made prior to one year from the date on which the patent was granted.

[3] One member of the Board did not agree with the majority of the Board on this point and would hold that the presentation of a claim from an issued patent on the first anniversary of the grant thereof is timely within the meaning of 35 U.S.C. 135.

[4] This court granted a motion on January 17, 1964 for leave of Harold J. Kinney and Stanley G. De La Hunt to appear as amicus curiae in PA 7128, to file a brief and to participate in the oral argument.

[5] The pertinent portion of the prior statute 35 U.S.C. 51, RS 4903, reads:

> No amendment for the first time presenting or asserting a claim which is the same as, or for substantially the same subject matter as, a claim of an issued patent may be made in any application unless such amendment is filed within one year from the date on which said patent was granted. R.S. § 4903; Aug. 5, 1939, c. 452, § 1, 53 Stat. 1213.

starts running the next day after the day of the act and terminates one year later, which includes the entire anniversary date. On the other hand, appellees contend that whenever the term "prior to" is used in the statute, as it is in the present 35 U.S.C. 135, the period still starts on the next day after the issuance of the patent but it expires prior to or before the year period, which year period ends at the anniversary day or date.

It seems clear that the Board's position is based on the *Rubenstein* decision, which decision, incidentally, is contra to the construction of section 135 by the Board in *Tilley* v. *Johnson*, 130 USPQ 340, decided less than a year before the *Rubenstein* decision.

In the *Tilley* case, the Board stated:

* * * * * * * *

Finally there is to be determined the matter of whether Johnson copied the claims of Tilley's patent in timely fashion under the statute.

Tilley's patent issued August 20, 1957. Johnson copied the claims which are the counts in issue from the patent on August 20, 1958.

Tilley urges that the anniversary date is without the period allowed by 35 U.S.C. 135 for this purpose. It is asserted that inasmuch as the language used in this section is different from that in section 133 of the same title (which relates to response to avoid abandonment), the construction placed upon the former section must be different from that placed upon the latter.

Johnson opposes this construction of the statute making reference to *In re Donaldson*, 59 USPQ 302, which is authority for disregarding the first and including the anniversary date, citing *Sheets* v. *Selden*, 69 U.S. 177.

Cases are not numerous upon the matter of computation of periods. We have been unable to discover any which specifically construe Title 35 U.S.C. 135, and the parties have cited none.

* * * * * * * *

In the absence of a specifically indicated intention on the part of Congress to depart from accepted methods for computation of periods, we are not disposed to place a novel construction on the section in question. We feel constrained to hold that copying of the claims in question by Johnson on the anniversary date of August 20, 1958 was timely under the rule enunciated in the *Donaldson and Sheets* decisions supra.

We think the basis for the Commissioner's decision in the *Rubenstein* case is clearly evident from the following paragraph which immediately follows the passage of the *Rubenstein* decision quoted supra:

The Primary Examiner, in denying Schmidt's motion to dissolve, relied on the legislative history of the section here involved. The best evidence of legislative intent, however, is the language of the statute itself. If that is clear and unambiguous, as is the case here, resort cannot properly be had to legislative history to give it another meaning.

[1] We do not, however, agree with the Commissioner that the language of the statute is so clear and unambiguous as to preclude a finding that the anniversary date of the issuance of a patent is not "prior to one year from the date on which the patent was granted," within the meaning of 35 U.S.C. 135 and we agree with the following statements of the dissenting member of the Board:

When is prior to one year from a date? A date is a day, a specified day. A day is twenty-four hours long, from midnight to midnight. A period of time cannot be measured *from* it until it has expired. A period of time can be measured from a particular hour, or minute, or microsecond of a day if it is specified, but the statute does not so specify, and it is agreed that no account shall be taken of fractions of a day. Now the period of time is "one year." The legal year is a period of 365 days, or in the case of leap year, 366 days. This period does not expire until the 365th day expires at midnight. If measurement of the year period is begun at the midnight that marks the end of, say, June 3, 1962 and the beginning of June 4, 1962, the year period of 365 days ends at midnight at the close of June 3, 1963, and anything that happens before midnight June 3, 1963 has happened prior to one year from June 3, 1962.

The decision in *Rubenstein* v. *Schmidt* seems, however, to take the view that the words "one year" means not just the time period usually devoted by them but a date, a date that is called out by the time period, namely what is called the anniversary date of the grant. With this construction of course the making of a claim on the anniversary day would not be timely as it is not prior to that date. I just cannot bring myself to subscribe to this interpretation. The time period in such case necessarily includes the day of the patent grant, and I do not see how the year time period can be viewed as measured from it as the statute explicitly requires. I am aware of some early rulings in some jurisdictions making a distinction between measurement of time from a specified act, but the trend has been away from making this distinction. Moreover, in the statute we are dealing with it is the date on which the patent is granted and not the act of granting the patent that is recited.

The statute [35 U.S.C. 135] is a statute of repose. Its purpose is to leave a person, whose right might otherwise be challenged, undisturbed after a reasonable period, fixed at one year. The difference of opinion concerning the interpretation of the statute revolves around one day only in the actual effective length of the period. It seems to me more important that those who would have the right to challenge in due season should not be trapped by their reliance upon an understandable reading of the statute than that prospective reposers gain one day in three hundred and sixty-five days.

Moreover, we think this is clearly a case where the matter of legislative intent cannot be ignored. In *Peter Pan Fabrics, Inc.* v. *Martin Weiner Corp.*, 274 F.2d 487, 124 USPQ 154 (2d Cir., 1960), Judge Learned Hand stated:

* * * it is a commonplace that a literal interpretation of the words of a statute is not always a safe guide to its meaning. Indeed, in extreme situations this doctrine has been carried so far that language inescapably covering the occasion has been disregarded when it defeats the manifest purpose of the statute as a whole. *Holy Trinity Church* v. *United States*, 143 U.S. 457, 12 S. Ct. 511, 36 L.Ed. 226; *Markham* v. *Cabell*, 326 U.S. 404, 66 S. Ct. 193, 90 L.Ed 165; *Caminetti* v. *United States*, 2 Cir., 1959, 272 F.2d 443.

Certainly prior to the *Rubenstein* decision, the Board as evidenced by the *Tilley* decision, supra, construed 35 U.S.C. 135 as appellants urge here. [2] Appellees concede that the statutory provision antecedent to section 135[6] here under consideration permitted copying claims from a patent on the one year anniversary date of the issuance thereof. A clear change in the law thus must have occurred with the enactment of section 135 of the 1952 Patent Act[7] if that section is to be construed to exclude the anniversary date on which the interfering patent was granted. We think that in such circumstances the new construction, to be sustained, must find clear congressional sanction. Thus, section 3709 of Sutherland Statutory Construction states:

A statute incorporated into a code is presumed to be incorporated without change even though it is recorded and rephrased and in the organization of the code its original sections are separated. Where, however, the legislative intent is clear that a change in the law is intended, the new provision prevails. In case of ambiguity it is permissible to resort to the prior legislative history of the act, the form and language of the prior statute, prior interpretation and all matters in pari materia in order to arrive at the true meaning of the code provision. (3rd ed.)

Because of the fact that a code represents and contains a systematic arrangement of laws, the position in which a provision appears in an enacted code has greater weight for purposes of interpretation than the position of a provision in a regular act. [Supp. 1964] [Emphasis ours.]

Section 3710 of Sutherland Statutory Construction states:

Inasmuch as the function of a code is principally to reorganize the law and to state it in simpler form, the presumption is that change in language is for

[6] See footnote 5.
[7] The 1952 Patent Act revised and codified the laws relating to patents and the Patent Office and enacted into law Title 35 of the United States Code.

purposes of clarity rather than for a change in meaning. In order to achieve clarity, it is frequently necessary to reorganize and recast large numbers of sections in order to form a unified and consistent chapter. Thus in the construction of a particular code section attention should be given to the entire chapter or even the entire code in order to determine the purpose and the objective of the legislature in organizing the material. If such study does not disclose the true legislative intent then the legislative history of the enactment and all contemporaneous legislation should be considered. *But the disclosure of a changed intention must be clear for it is presumed that if the language used in the code fairly admits of a construction consistent with the old law it was not the legislature's intent by a change in language to change the meaning of the law.* (3rd ed.) [Emphasis ours.]

Appellees refer to the final paragraph concerning section 135 in S. Rep. No. 1979, 82d Cong., 2d sess. (1952) (Appendix), 2 U.S. Code Cong. & Ad. News 2414 (1952). This paragraph reads:

The second paragraph is based on Title 35, U.S.C., 1946 ed., § 51 (R.S. 4908, amended Aug. 5, 1939, ch. 452, § 1, 53 Stat. 1213). Changes in language are made.

Certainly that paragraph is not persuasive of a clear congresisonal intent to provide a new period for copying claims from issued patents for purposes of interference.

[3] For the foregoing reasons, we are of the opinion that the Switzer et al. application Serial No. 484,319, filed on January 26, 1955, with the claims copied from the Sockman et al. patent was filed prior to one year from the January 26, 1954 date on which the Sockman et al. patent was granted within the meaning of 35 U.S.C. 135.

Question No. 2

The second question we consider posed by this appeal is whether the judgment in the ex parte action of *Switzer* v. *Watson*, 183 F. Supp. 467, 125 USPQ 48, forecloses the Board, based on the record before it, from considering the question of the right of Switzer et al. to make the claims constituting the interference counts.

Both parties have taken testimony on that question. Prior to the taking of the testimony, Switzer et al. moved that especially in view of the *Switzer* decision and its effect on the Board under *Henning* v. *Hunt*,[8] 42 CCPA 1064, 223 F. 2d 926, 106 USPQ 307, the Board determine in advance of taking testimony the issues which could be considered at final hearing and the permissible scope of testimony, if any.[9] The Patent Interference Examiner, stating that an ex parte decision of a district court is not entirely immune from attack in an inter partes proceeding, denied the Switzer et al. request for a hearing and set times for the taking of testimony. On a request for reconsideration by Switzer et al. of the Examiner's action, the Board stated that "the interpretation and propriety of testimony is determined more accurately after the testimony is filed rather than indulging in premature determination of limiting 'issues,' the logical sequel to which may be a second determination of whether the testimony taken is within the limits imposed."

In its decision after final hearing the Board referred to that portion of *Henning* v. *Hunt* which reads:

The appeal, Civil Action 20,023, was taken for the purpose of reviewing the

[8] In *Henning* v. *Hunt* this court in an interference proceeding, involving a party who previously received a judgment in an ex parte civil action holding that the party was entitled to a claim forming a count of the interference, held that the Patent Office tribunals in the interference proceeding did not err as to the weight they accorded the decision in the civil action.

[9] Appellees, Sockman et al. had been placed under order to show cause why judgment should not be issued against them because they alleged no date in their preliminary statement prior to the filing date of the Switzer et al. application Serial No. 606,708.

action of the Board of Appeals of the Patent Office, and the court reversed the Board's decision, as noted in the above-cited conclusions of law. The court found that Hunt was entitled to the claim forming the count of this interference. *The Commissioner (and the Patent Office tribunals) cannot question the court's decision*; their failure or refusal to execute it by appropriate action would undoubtedly be corrected by judicial process; the decree of the court is the final adjudication on the question of right. *Buttercorth* v. *Hoe*, 112 U.S. 50. If the Patent Office tribunals did not follow the court's decision, it would be tantamount to reversing its appellate court. This obviously would be an anomaly, and in effect cause the court's decision to be a nullity. For the orderly administration of the law, *the giving full force to the court's decision was the only course which the Patent Office tribunals could have followed*, unless of course, *new issues and facts* were presented in the inter partes action which were not considered in the ex parte action.

We might state, at this point, that *we will not directly consider any questions in this appeal which were determined in the above-mentioned civil action.* To do so, and pass judgment thereon, would in effect cause us to be an appellate tribunal of the district court. Obviously this is not our function. We must therefore take the decision of the district court as we find it, and consider only those questions, based on different facts, which arose in the Patent Office after the court's decision. We will also, for the sake of completeness review the applicable law.

As stated above, *once the district court's decision was rendered, it governed further proceedings in the Patent Office.* • • • As we have stated above, *the Patent Office tribunals had no choice in the matter; their duty was to follow the court's decision.* [The Board's emphasis.]

The Board then stated:

Accordingly, since we find no "new issues and facts" have been presented on the matter, we will follow the decision of the District Court and hold that the disclosure of Switzer et al. application Serial No. 606,708 supports the counts. While we do not have the transcript before us, the issues are clearly set out in • • • [the decision of the District Court] and the above quotation refers to new issues and facts, not new issues or facts.

The Board deemed that the evidence in the record complained of by Switzer et al. should not be striken from the file, but did grant the motion of Switzer et al. to strike such evidence "to the extent, and to that extent only, that no weight has been accorded this evidence in deciding whether or not the disclosure of the earlier Switzer et al. application supports the counts."

Sockman et al. argue that *Henning* v. *Hunt* does not preclude the consideration and the giving of any weight to evidence, including new facts and admissions, on the issue of inadequacy of disclosure to support the counts in the Switzer et al. application Serial No. 606,708 because the district court in *Switzer* v. *Watson* held on different evidence that application Serial No. 606,708 was adequate to support the claims corresponding to the counts before us.

Switzer et al., on the other hand, urge that the position of Sockman et al. as to the right of Switzer et al. to make the claims constituting the interference counts is untenable because, so far as this court's powers can be invoked, the matter is res judicata in *Switzer* v. *Watson*.

[4] It is obvious that the doctrine of res judicata is not available as a defense since the parties are different here than in the proceeding before the district court. The district court case was an ex parte proceeding with the Patent Office as the defendant. Since it was an ex parte proceeding Sockman et al. was not able to participate. On the other hand, Sockman et al., not the Patent Office, is a party here.

Moreover, in the instant case, additional evidence has been presented by Sockman et al. which is relied on to allegedly show that the Switzer et al. application Serial No. 606,708 does not support the counts.

Sockman et al., a highly interested party in the instant case, was obviously not able to present that evidence in the ex parte proceeding in the district court. Thus the district court did not have the benefit of all of the evidence which Sockman et al. now rely on to allegedly show lack of support in Serial No. 606,708 for the counts at issue.

[5] In such circumstances we do not think that *Henning* v. *Hunt* forecloses the Board from considering whether the additional evidence, not considered in the district court proceeding, showed that a contrary state of facts existed from what was found by the district court in *Switzer* v. *Watson*.

In *Henning* v. *Hunt*, this court stated:

> We are of the opinion that the Patent Office tribunals did not err in the weight accorded to and their interpretations of the findings and conclusions in ex parte Civil Action No. 20,023 since *Henning has not shown that the facts are contrary to what was found by the district court.* [Emphasis ours.]

It is true that a portion of the *Henning* decision reads:

> * * * For the orderly administration of the law, the giving full force to the court's decision was the only course which the Patent Office tribunals could have followed, unless of course, new issues and facts were presented in the *inter partes* action which were not considered in the *ex parte* action.

However, we think that the above must be read in conjunction with succeeding portions of the decision:

> We might state, at this point, that we will not directly consider any questions in this appeal which were determined in the above-mentioned civil action. To do so, and pass judgment thereon, would in effect cause us to be an appellate tribunals of the district court. Obviously this is not our function. We must therefore take the decision of the district court as we find it, and consider only those questions, *based on different facts*, which arose in the Patent Office after the court's decision. We will also, for the sake of completeness review the applicable law.
>
> * * * * * * *
>
> Thus, we are of the opinion that the effect given to Civil Action 20,023 by the Patent Office was the only course which could have been followed, *and since Henning did not show that a contrary state of facts existed from what was found by the district court*, we feel that Civil Action 20,023 properly governed further proceedings of the Hunt-Henning interference notwithstanding that Henning was not a party to the civil action. [Emphasis ours.]

It is obvious that the Board in reaching its decision in the present case did not consider the evidence and arguments presented by the party Sockman et al. concerning the question of whether or not the disclosure of the earlier Switzer et al. application Serial No. 606,708 discloses the invention defined by the counts. It specifically stated that "no weight has been accorded this evidence [10] in deciding whether or not the disclosure of the earlier Switzer et al. application supports the counts." As a dissenting member of the Board stated:

> * * * The statute expressly states that "The question of priority of invention *shall be* determined by a board of patent interference (consisting of three examiners of interferences) * * *." The question of the right of Switzer et al. to support the claims forming the counts of this interference upon an earlier application for patent than his involved application is a matter that is of the essence of the priority to be determined. I deem that I am under a statutory mandate to consider the evidence and the arguments presented by the party Sockman et al. * * *

[6] We think, as did the dissenting Board mmeber, that the Board, in discharging its duty of determining priority here, has the responsibility of expressly determining whether the earlier application of

[10] The evidence presented by Sockman et al. and complained of by Switzer et al.

Switzer et al., Serial No. 606,708, supports the count. While that determination must be made in the light of the district court's decision, recognition that Sockman et al. had no opportunity to participate in the trial before that court requires that the Board also shall consider such arguments and additional evidence as are now properly presented by Sockman et al.[11]

Appellants, Switzer et al., have moved that the costs of preparing so much of the printed record as includes material added by appellees, Sockman et al., be taxed against appellees. Under the circumstances here we think appellees followed the only prudent course in requesting that the added material be included, even though we did not find it necessary to consider all of that material. The printing costs being the only costs handled through the court, the motion is denied and we assess the printing costs of the added material against appellants.

In summary since we find that the Board was in error in holding that appellants had not timely copied the claims of the Sockman et al. patent within the meaning of 35 U.S.C. 135, the decision of the Board is reversed. However, we remand this case to the Board of Patent Interferences so that action may be taken which is not inconsistent with this opinion.

REVERSED AND REMANDED.

RICH, *J.*, sat but did not participate in decision.

WORLEY, *Chief Judge*, concurring.

Litigants coming to this court would be more certain of their rights if we were more consistent in our methods of determining Congressional intent. Here, for example, a literal interpretation of the statute is rejected because there is no convincing evidence Congress intended to change the existing law. Quite opposite was the rationale employed in *In re Palmquist*, 51 CCPA 839, 319 F.2d 552, 138 USPQ 234. There a literal interpretation was fiercely embraced although there was no evidence Congress intended to change the existing law. On the contrary, the prior practice of the Patent Office [12] and the decisions of this court [13] provided ample evidence that Congress did *not* intend to change the existing law.

[11] Our reasoning on this point appears to coincide to a considerable extent with that of the District Court, District of Delaware, in *Turchan* v. *Bailey Meter Co.*, 167 Fed. Sup. 58, 119 USPQ 165.

[12] *Ex parte Austin*, 72 USPQ 384.

[13] *In re Wenzel*, 24 CCPA 1050, 88 F.2d 501, 33 USPQ 30. *In re Ruscetta*, 45 CCPA 968, 255 F.2d 687, 118 USPQ 101.

U.S. Court of Customs and Patent Appeals

IN RE GERALD STENZLER

No. 7186. Decided May 21, 1964

[— CCPA —; 331 F.2d 898; 141 USPQ 576]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"SELF SIZING BAND CONSTRUCTIONS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Self Sizing Band Constructions" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 783,522.

AFFIRMED.

Barnett & Barnett (*Edwin M. Barnett*, of counsel) for appellant.

Clarence W. Moore (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

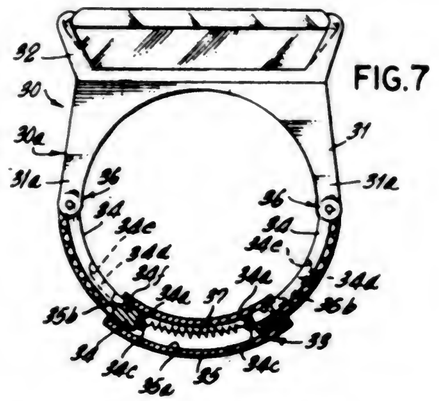
Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals which sustained the Examiner's rejection of claims 13–15, 17–18, and 23–29 of appellant's patent application, Serial No. 783,522, filed December 29, 1958 for "Self Sizing Band Constructions." All of the appealed claims stand rejected as unpatentable over various combinations of prior patents. The legal issue is one of obviousness under 35 U.S.C. 103.

The specification states, "This invention relates to jewelry and more particularly is directed to expansible band constructions for incorporation in finger rings, bracelets and the like articles." However, all the appealed claims are directed specifically to a finger ring. The object of the invention is to provide a ring construction capable of expansion and contraction to fit a predetermined range of finger sizes.

Appellant's specification and drawings disclose a multitude of embodiments and the appealed claims define many variations of the basic idea. For simplicity, we reproduce below FIG. 7 of the drawings and claim 13 as representative. In the claim we have inserted in brackets reference numerals corresponding to those used in FIG. 7.



In a finger ring of the character described, a finger encircling sectionalized band comprising a sectional support member [31] connected at opposite ends thereof [31*a*] to a size adjustable portion, said portion including a pair of arcuate arms [34] each having one end thereof forming said sectional support connection [hinge 36] and having the other end [34*a*] free and radially movable from minimum to maximum adjustable size positions, means [spring 37] for normally resiliently urging said arcuate arms into said minimum size position, an arcuate shaped sleeve [35] having a bore telescopingly receiving through opposite ends thereof said arm free ends, said sectional support connection of each of said arms being located beyond said sleeve in all size positions, means [pins 35*b*, grooves 34*d*, and end walls 34*e* and 34*f*] coacting with said arms and sleeve for controlling and limiting the telescoping movement of the sleeve with respect to said arms and for centering the sleeve on the arms when the latter are in said minimum size position, and a bezel [32] for said ring carried by said sectional support member diametrically opposite said sleeve, said sleeve being symmetrically movable with respect to said arms on application of radial pressure applied thereto to effect expanding of the size adjustable portion.

All twelve of the appealed claims appear to have in common at least five elements or limitations: (1) a support member; (2) a pair of arcuate arms; (3) a sleeve; (4) means for limiting and controlling movement of the arms; and (5) the requirement that the point of connection between the arms and the support member be outside the sleeve. However, proper resolution of the issues will require a somewhat more detailed consideration of the other limitations in each claim.

Claims 14 and 15 are dependent upon claim 13. Claim 14 specifically defines the resilient means as a "spring actuated hinge" (rather than the spring 37 which extends through the sleeve and connects the arms, as shown in FIG. 7). Claim 15 adds the further limitation that the "coacting" means be "a tongue means extending into said bore and engaging a groove formed in said arms."

Claim 23 is very similar to claim 13, except that the sectional support member is said to be "adapted to carry ornamentation normally visibly oriented on the back-hand surface of the finger of a wearer." Presumably this language defines a structure which would take the place of the bezel recited in claim 13. In addition, the resilient means is defined as a "spring actuated hinge means" (much like claim 14).

Claims 24, 25 and 26 are all dependent upon claim 23. Claim 24 specifies that the coacting means be a tongue and groove structure (like that in claim 15). Claim 25 also specifies a tongue and groove structure, but requires that tongue be "integrally formed at opposite ends of the sleeve as bent tab-like projections." Claim 26 defines another modification, in which the coacting means must include a "pin extending into said bore centrally of the sleeve for engaging said arm free ends."

Claim 27 is perhaps the broadest of those on appeal, in that it recites only the five elements or limitations which we have indicated are common to all the claims. It is more detailed only with respect to the definition of the coacting means, which is as follows:

• • • said arms each having an elongated cut out portion located to terminate in a first wall adjacent said other arm end, said cut out portion extending longitudinally of said arm toward said first mentioned end and terminating in a second wall, a tongue means extending from opposite end portions of said sleeve into each of said cut out portions, the latter and said tongue means being constructed and arranged to center said sleeve with respect to the arms when the latter are in fully telescoped position by engagement of the tongue means with said second walls and to prevent separation of the parts when the arms are in fully extended position with the tongues in engagement with said first walls.

Claims 17 and 18 are dependent upon claim 27. Claim 17 requires that the tongue means be "integrally formed with said sleeve as tab-like projections" (much like claim 25). Claim 18 defines the tongue means as "pins extending through a wall of said sleeve" (similar to claim 26).

Claim 28 is very similar to claim 23, differing substantially only in that it does not recite *separate* resilient means. Instead of providing for a spring actuated hinge, as in claim 23, or for resilient means generally, as in claim 13, it specifies that the arcuate arms themselves have resilient properties and that they be rigidly connected to the support member and arranged so as to "normally resiliently urge said arms into said minimum ring size position."

Claim 29 defines a somewhat different embodiment than the others, in that the bezel is mounted on the sleeve. In other words, when the ring is worn in the normal position, the sectional support member is on the underside (palm side) of the finger.

The Examiner relied on the following reference patents:

Castiglioni, 842,625, January 29, 1907.
Garst et al., 1,550,024, August 18, 1925.
Cibor, 1,641,575, September 6, 1927.
Ritter, 2,457,275, December 28, 1948.
Bender, 2,608,050, August 26, 1952.
Walters (British patent), 3,389, March 15, 1906.
Matthews (British patent), 18,619, June 29, 1905.
Pelissier (British patent), 26,731, September 17, 1914.
Bathilde (German patent), 188,872, September 14, 1907.

All of the claims save claim 28 were rejected as unpatentable over various combinations of the above, always with Bathilde as a principal reference. In addition, all of the claims except claims 26 and 28 were rejected as unpatentable over Walters, with Pelissier cited where appropriate to show that spring-loaded hinges are the equivalent of hinged members pulled by a spring (as shown in FIG. 7, supra). Claim 28 was rejected as unpatentable over Matthews. The Board of Appeals sustained all these grounds of rejection.

Since it is our opinion that the Patent Office committed no reversible error in the rejection based upon Walters and, where appropriate, Pelissier, it will not be necessary to consider the alternate grounds for rejection, except as to claims 26 and 28. With respect to claim 28, we agree with the Examiner that it is unpatentable over Matthews. We also agree with the Examiner's rejection of claim 26 as unpatentable over Bathilde in view of Bender and Ritter.

Claims 13–15, 17–18, 23–25, 27 and 29

The Walters patent relates to "improvements in so-called expanding bracelets or bangles or like articles of jewelry of band form." Walters discloses an expansible band consisting of two tubes, a pair of arcuate arms, and an ornamental member, arranged in a circular configuration. The tubes are hinged together at the bottom of the circle and the arms fit telescopically into the opposite open ends of the tubes. The other ends of the arms are hinged to opposite sides of the ornamental member. Tension springs located within the tubes serve to pull the arms further into the tubes, thus continually urging the structure into its minimum size configuration. The arms are provided with longitudinal grooves which coact with pins fixed internally in the tubes to limit and control the telescoping motion of the arms with respect to the tubes.

It should be apparent from the foregoing description that Walters discloses a structure which embodies all the five main elements or limitations of the appealed claims save one. Thus, the tubes of Walters correspond to appellant's sleeve; the ornamental member corresponds to appellant's sectional support member; both Walters and the appealed claims call for a pair of arms; and Walters discloses means for limiting and controlling movement of the arms. The only limitation missing in Walters is that which requires that the point of connection of the arms to the support member be beyond the sleeve

in all size positions. Appellant further argues that the tubes of Walters are not similar to appellant's sleeve, since they are hinged together at the bottom rather than being a one-piece construction. We think, however, that this difference is immaterial. It would be obvious to provide Walters with a one-piece tube rather than two tubes hinged together.

Turning then to the requirement that the point of connection between the arms and the support member be outside the sleeve, we agree with the Examiner that it is obvious that the ends of the tubes in Walters could be cut off so as to expose the hinge connections, without in any way affecting the operation of the structure. Indeed, it would appear that the tubes in Walters are made long enough to cover the hinge connections only as a matter of choice in design, for the sake of appearance.

Pelissier was cited by the Examiner as teaching the equivalency of spring-loaded hinges to the tension spring construction disclosed by Walters. Pelissier discloses an expansible, segmented finger ring, and specifically states, "Although the floating-segment has been described as being connected by means of tension springs to the pivoted ring-segments it is to be understood that such a construction is not essential to the invention." The specification further states that "the ring-segments might have their ends forced together by means of springs acting between parts of the said segments and of the body portion." In view of this teaching, we agree with the Examiner that it would be obvious to use spring-loaded hinges in place of the tension spring disclosed in Walters.

With respect to the other limitations in the various claims: We think the pin and groove construction of Walters is the full equivalent of the tongue and groove construction specifically recited in claims 15, 24, 27. And the further limitation in claims 17 and 25 to the effect that the tongue be a tab-like projection formed integrally with the sleeve is of no patentable significance, since we think it would be obvious to bend down a portion of the sleeve to serve as the tongue, rather than providing a separate pin. As for claim 18, which requires that the tongue be a pin "extending through a wall of said sleeve," Walters discloses pins and it would be but an obvious expedient to affix them by extending them through the sleeve wall.

Claim 29 adds to the structures previously discussed only the requirement that the bezel be carried by the sleeve. Placing the bezel there amounts to a mere change in position and does not affect the functioning of the ring in any way. We think the claimed ring is obvious regardless of whether the bezel is mounted on the sleeve or on the support member.

Appellant urges that Walters is ineffective as a reference since it deals with bracelets while appellant's claims are all directed to a ring. In this connection, we point out that Walters specifically states that it is concerned with "bracelets or bangles or like articles of jewelry of band form." This language would appear to include finger rings. At any rate, however, we think that a person engaged in devising an expansible ring would reasonably be expected to know about achievements in the expansible jewelry art generally.

We therefore affirm the rejection of claims 13–15, 17–18, 23–25, 27 and 29.

Claim 28

As indicated above, claim 28 stands rejected as unpatentable over Matthews. Matthews shows a construction for a finger ring. The ring is made in two semi-circular, hollow portions which are attached or held to each other by means of a spring band. The spring band, which is arcuate in shape, is passed partially around the interior of the two hollow portions, so that the contracting force of the spring normally holds the two portions together, but permits expansion of the ring when it is pushed onto the finger. Located within the hollow portions are plates which coact with the turned-down ends of the spring band to limit movement of the parts.

Thus it is clear that Matthews meets all of the significant limitations of claim 28. In particular, the spring band (which may be in two pieces) is the full equivalent of the resilient arms called for in claim 28, except that the arms are not connected to opposite ends of the supporting member as required in claim 28. However, considering one of the two hollow portions as the supporting member, it would be but an obvious expedient to use a two-piece spring band and attach the spring ends to the ends of the hollow portion. Accordingly, we affirm the rejection of claim 28.

Claim 26

Claim 26, as we have indicated, adds to claim 23 the same limitation which claim 18 adds to claim 27; namely, that part of the coacting means be a pin extending into the sleeve bore through a wall of the sleeve. Although the two claims, 18 and 26, employ somewhat different language, there is no significant difference between the structures defined therein. For this reason, it seems clear to us that a rejection based on Walters as the principal reference would have been as equally applicable to claim 26 as it was to claim 18. For some reason not apparent to us, the Examiner failed to reject claim 26 as unpatentable over Walters, but relied instead on a combination of Bathilde, Bender and Ritter. To include herein a detailed discussion of Bathilde and Ritter would only further complicate an already involved factual situation. Suffice it to say that the combination of Bathilde and Ritter discloses substantially the same structural features as Walters. Bender shows that the use of a pin extending into a sleeve through the sleeve wall is old in the jewelry art. We therefore affirm the rejection of claim 26.

[1] For the foregoing reasons, the decision of the Board is affirmed with respect to all of the claims on appeal.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE RUDOLPH S. BLEY

No. 7215. Decided November 5, 1964

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—COMBINING REFERENCES—SUGGESTION IN PRIOR ART THAT COMBINATION MIGHT NOT YIELD BETTER RESULTS—*In re Sutton et al.* AND *Mathieson Alkali Works* v. *Coe* DISTINGUISHED.

Appellant relies on *In re Sutton et al.*, 41 CCPA 816, 211 F.2d 582, 101 USPQ 186 and *Mathieson Alkali Works, Inc.* v. *Coe*, 99 F.2d 443, 39 USPQ 96 (D.C. Cir. 1938), in support of his contention that the references should not be

combined because of the teaching that zinc sulfate in combination with the modifiers is essential. In both *Sutton* and *Mathieson* the prior art could be construed as suggesting that the claimed process would produce undesirable results. In the present case, the only negative teaching which can be attributed to the prior art is that the combination of a modifier with an aluminum sulfate bath *might not* yield rayon yarn of any better properties than the aluminum sulfate bath alone. Since there is a clear distinction between a teaching that the addition of an element may give no improvement to an operable process and a teaching that the addition of an element will render the process inoperative, we do not feel that *Sutton* and *Mathieson* are apposite.

2. SAME—PARTICULAR SUBJECT MATTER—"PROCESS OF SPINNING VISCOSE."

The refusal of certain claims in an application entitled "Process of Spinning Viscose," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 647,977.

AFFIRMED.

Rudolph S. Bley, pro se (*James H. Ewing*, of counsel) for appellant.

Clarence W. Moore (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Rudolph S. Bley appeals from a decision of the Board of Appeals affirming the Examiner's rejection of all of the claims in appellant's application [1] for a process of spinning viscose rayon yarn. Claims 7, 8, 9, 10 and 12, which are directed to a process of producing high tenacity regenerated cellulose by extruding unripened viscose containing a spinning modifier into a spin bath containing aluminum sulfate, were rejected as unpatentable over the prior art.

In claims 7, 8 and 9 the unripened viscose is characterized by its salt point and in claims 10 and 12 by its degree of polymerization. Claims 7 and 10 are illustrative and read as follows:

7. A process for producing high tenacity regenerated cellulose products by extruding a substantially unripened viscose having a salt point of at least 7.5 and containing a small amount of a spinning modifier which inhibits the gel swelling of the freshly formed filaments into a spin bath devoid of zinc salts comprising a sulfuric acid solution, aluminum sulfate, and at least one other inorganic sulfate soluble in said sulfuric acid solution, whereby the formation of insoluble products resulting from chemical interaction with hydrogen sulfide during spinning is avoided.

10. A process for producing high tenacity regenerated cellulose products comprising extruding viscose containing a small amount of a spinning modifier which inhibits the gel swelling of freshly prepared filaments and prepared from cellulose containing less than 25% by weight of molecular chains with a degree of polymerization below 500, and less than 4% by weight of molecular chains with a degree of polymerization below 250, said viscose being prepared from alkali cellulose having a mean degree of polymerization after ripening of at least 450, into a spin bath devoid of zinc salts comprising an acid solution, an aluminum salt soluble in said acid solution, and at least one other inorganic salt soluble in said acid solution, whereby the formation of insoluble products resulting from chemical interaction with hydrogen sulfide during spinning is avoided.

The essence of the claimed invention is spinning viscose containing a spinning modifier in a bath containing aluminum sulfate. Appellant states that zinc sulfate, which is present in a conventional spin bath, results in the formation of undesirable zinc sulfide deposits

[1] Serial No. 647,977, filed March 25, 1957, for "Process of Spinning Viscose."

on the spinning equipment and that these undesirable metal sulfide deposits do not occur when aluminum sulfate is used in place of zinc sulfate. Appellant's specification indicates that an improved yarn is obtained if the viscose or the spin bath or both contain a spinning modifier which inhibits swelling of the freshly formed filaments.

In disclosing spinning modifiers suitable for use in his process, appellant referred to eleven patents all directed to viscose spinning. These patents and the modifier they diclose are listed below.

Patent	*Modifiers*
Cox, U.S. 2,535,044	aliphatic monoamines
Cox, U.S. 2,535,045	aliphatic monoamines
Cox, U.S. 2,536,014	quaternary compounds
Dietrich, U.S. 2,696,423	N-substituted dithiocarbamates
Edwards, U.S. 2,777,775	diaryl thioureas
Tallis, U.S. 2,784,107	polyethylene polyamines
Courtaulds, British 755,469	mercaptothiazoles
Courtaulds, British 739,072	dithiocarbamates
Cowling, U.S. 2,397,338	polyethylene oxides
British Cellophane, British 557,218	polyalkylene oxides
Onderzoekingsinstituut, British 765,905	quinoline

Each of the foregoing discloses spinning viscose in a bath containing zinc sulfate.

The appellant relied upon Richter 2,598,834, June 3, 1952, for a disclosure of a "green" viscose suitable for use in his process. Richter discloses a process for forming high tenacity viscose rayon fibers by extruding unripened viscose through spinnerets into an acid-salt bath containing sulfuric acid, sodium sulfate and zinc sulfate or an equivalent polyvalent metal sulfate such as the sulfates of iron, magnesium, chromim, cadium, manganese, nickel and aluminum.

The Examiner rejected the claims as unpatentable over Richter, pointing out that Richter discloses that "aluminum sulfate may be *substituted for*, or used in combination with zinc sulfate" (emphasis added). With regard to the claimed molecular chain distribution, the Examiner held that the distinction was not patentable because it had not been shown to be critical. The Examiner reasoned that the use of modifiers did not patentably distinguish appellant's process over Richter because appellant in his application had admitted that modifiers and their function were well known.

Appellant contends that it is not obvious to spin viscose containing a spinning modifier in a bath containing aluminum sulfate. He argues that since Richter does not mention spinning modifiers, the spinning modifier art cited in appellant's application must be considered as part of the rejection. It is contended that the spinning modifier art teaches that zinc sulfate is an essential component when spinning modifiers are used and thus that it teaches that other sulfates should not be used in combination with spinning modifiers. The Solicitor apparently agrees that the eleven patents cited in appellant's disclosure may be considered here.

Four of the eleven patents, the three Cox patents and Dietrich, contain disclosures which are almost identical and will thus be considered together. All four patents state that zinc sulfate is an essential component of the spin bath and that in its absence the modifiers have no effect on spinning and yarn properties. It is further stated that part of the zinc sulfate may be replaced by "salts of divalent metals

known to reinforce or supplement the action of zinc sulfate * * * such as ferrous sulfate, manganese sulfate, nickel sulfate, or chromic sulfate * * *." This group of patents does not specifically state that aluminum sulfate should not be used with the modifiers. There is, however, as appellant contends, a strong implication that zinc sulfate is the only known salt which can be used in conjunction with spinning modifiers.

The Onderzoekingsinstituut patent indicates that the presence of zinc sulfate in the spin bath is necessary. In Edwards and the two Courtaulds patents, it is stated that zinc sulfate is preferably present in the spinning bath but there is no teaching that the presence is critical. All of the examples of these three patents do, however, have zinc sulfate present in the spin bath. Cowling states that the spinning modifier prevents jet incrustation during spinning in a zinc sulfate containing bath. In all of the examples, zinc sulfate is a necessary component. Tallis indicates that the spin bath in which the modifier is used may contain zinc sulfate. All of the examples indicate that zinc sulfate is used. British Cellophane indicates that the bath should contain at least one metallic salt which may be zinc sulfate. Zinc sulfate is used in all of the examples.

All of the references specify a preference for zinc sulfate. On the other hand, none of the references state that aluminum sulfate may not be used in place of zinc sulfate. The Cox patents and Dietrich may be construed to imply that only zinc sulfate may be used and that all other sulfates, including aluminum sulfate, will not operate properly. However, Cowling and Tallis give no indication that the use of zinc sulfate is critical and British Cellophane suggests that metallic salts other than zinc sulfate may be used. Our analysis of the references fails to convince us that there is any such negative teaching as would dissuade one from using a spinning modifier in the Richter bath containing aluminum sulfate rather than zinc sulfate.

[1] Appellant relies on *In re Sutton et al.*, 41 CCPA 816, 211 F.2d 582, 101 USPQ 186 and *Mathieson Alkali Works, Inc.* v. *Coe*, 99 F.2d 443, 39 USPQ 96 (D.C. Cir. 1938), in support of his contention that the references should not be combined because of the teaching that zinc sulfate in combination with the modifiers is essential. In both *Sutton* and *Mathieson* the prior art could be construed as suggesting that the claimed process would produce undesirable results. In the present case, the only negative teaching which can be attributed to the prior art is that the combination of a modifier with an aluminum sulfate bath *might not* yield rayon yarn of any better properties than the aluminum sulfate bath alone. Since there is a clear distinction between a teaching that the addition of an element may give no improvement to an operable process and a teaching that the addition of an element will render the process inoperative, we do not feel that *Sutton* and *Mathieson* are apposite.

We agree with the Examiner and the Board that there is nothing in the cited prior art which would lead one away from using spinning modifiers in an aluminum sulfate containing spinning bath. On the contrary, the fact that spinning modifiers and their function are well known would make it obvious to use them in the aluminum sulfate containing spinning bath suggested by Richter.

Appellant also contends that his process is patentable because the prior art does not disclose spinning green viscose having the same

degree of polymerization and salt point as that defined by the claims. The record contains no indication of the significance of this limitation. Appellant's specification states only that

> "Green," i.e., substantially unripened viscose suitable for use in my improved spinning process is described, for example, in U.S. Patents No. 2,581,835 and No. 2,598,834 [Richter].

The only mention of degree of polymerization in appellant's application is found in the claims. In answer to appellant, the Board stated, "* * * there is no basis to assume that the young viscose in Richter would be essentially different than that claimed herein." The Solicitor contends:

> Since unripened viscoses are known to have salt index of about 7 or higher (Patent No. 2,535,044), it would appear that Richter's young viscose of salt-test value between 8 and 18 is the same or substantially the same as appellant's "green" viscose "of salt-point of about 8.5" * * *.

We agree that Richter's viscose would appear to be substantially the same as appellant's. However, even if it does vary in some degree from Richter's viscose, there is no indication that the variation is critical.

[2] For the foregoing reasons, we affirm the decision of the Board of Appeals.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,500,629, A. J. Crookston, SHINGLING AND ROCK LATHING TOOL, **filed** July 7, 1964, D.C., N.D. Ill. (Freeport), Doc. 64c30, *James R. Crookston* v. *Estucing Manufacturing Company.*

2,514,130, H. T. Jones, LOCKING WRENCH AND PLIER, **filed** Oct. 17, 1963, C.C.A., 8th Cir., Doc. 17473, *Kash Industries, Inc.* v. *Petersen Manufacturing Company, Inc. et al.* Judgment of District Court reversed and cause remanded to District Court for further proceedings June 12, 1964.

2,526,529, Arrighini and Van Sickle, PREFABRICATED WALL FORM, **filed** July 9, 1962, D.C., E.D. Mich. (Detroit), Doc. 22739, *Rocform Corporation* v. *Acitelli-Standard Concrete Wall, Inc.* Final order and judgment dismissing complaint July 28, 1964.

2,540,494, M. H. Schwarz, PERMANENT HAIR WAVING, **filed** July 17, 1964, D.C., M.D. Fla. (Jacksonville), Doc. 64–185–J, *Turner Hall Corporation* v. *Stylors, Inc. et al.*

2,541,828, G. V. Peck, CONDENSER MOUNTING CLIPS, **filed** July 2, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–706, *The Bishop & Babcock Corp.* v. *Anchor Plastics Co., Inc.*

2,558,803, C. Wittgren, TRANSFER SHEET AND METHOD, **filed** May 20, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c857, *Visual Art Industries, Inc.* v. *Para-Tone, Inc. et al.*

2,560,655, A. T. McMain et al., METHOD OF MENDING KNITTED FABRICS FORMED OF THERMOPLASTIC THREAD, **filed** July 9, 1964, D.C., S.D.N.Y., Doc. 64/2127, *Marvel Specialty Company, Inc.* v. *Magnet Mills, Inc.*

2,563,084, D. C. Turnbull, CONTINUOUS TUMBLING MILL, **filed** July 24, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–506, *The GS Equipment Company* v. *Albert Singleton et al.*

2,563,794(*a*), Rickes and Wood, VITAMIN B_{12}, **filed** July 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–697, *Merck & Co., Inc.* v. *Fred Nassau.* **Same,** Doc. 64C–694, *Merck & Co., Inc.* v. *Mayflower Surgical Supply Co.* Case dismissed July 17, 1964.

2,563,794(*b*); **2,703,302**, same, VITAMIN B_{12}-ACTIVE COMPOSITION AND PROCESS OF PREPARING SAME, **filed** May 22, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–544, *Merck & Co., Inc.* v. *Wolins Pharmacal Corp. et al.* Consent judgment for injunction Aug. 5, 1964. **Same, filed** July 16, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–749, *Merck & Co., Inc.* v. *Mayflower Medical Supply Co.*

2,589,146, C. T. Samuelson, SUBMERSIBLE DEEPWATER DRILLING APPARATUS, **filed** July 1, 1964, D.C., E.D. La. (New Orleans), Doc. 14691, *Bertha Anna Samuelson, individually and as independent executrix of the estate of Charles T. Samuelson* v. *Tidal, Inc.*

2,589,794, V. L. Frantz, OPERATING VALVE; 2,739,570, same, AUTOMATIC BELL RINGER, **filed** June 24, 1958, D.C., E.D. Wis. (Milwaukee), Doc. 58–C–181, *Graham-White Sales Corporation* v. *Prime Manufacturing Co.* Patents held invalid, except claim 6 on No. 2,739,570 June 30, 1964.

2,593,957, W. F. Aller, FLUID LEAKAGE GAUGING DEVICE; **2,749,742**, same, PNEUMATIC GAUGING DEVICE. **filed** July 14, 1964, D.C., E.D. Mich. (Detroit), Doc. 25567, *The Sheffield Corp.* v. *Freeland Gauge Company.*

2,602,780, W. A. Zisman et al., HYDRAULIC FLUID, **filed** July 16, 1964, D.C. Okla. (Tulsa), Doc. 5993, *Union Carbide Corporation* v. *Cities Service Oil Company.* **Same, filed** Sept. 28, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1648, *Wyandotte Chemicals Corporation* v. *Union Carbide Corporation.*

2,610,167, T. A. Te Grotenhuis, PIGMENTED SILICONE ELASTOMERS, **filed** July 22, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–502, *Westwood Chemical, Inc.* v. *The General Electric Company.*

2,627,798, W. T. Graham, CLAMP FOR VIBRATING SHANK PLOWS, **filed** Sept. 19, 1963, C.C.A., 8th Cir., Doc. 17441, *John Deere Company of Kansas City et al.* v. *William T. Graham et al.* Judgment of District Court reversed; cause remanded with directions to dismiss the action June 18, 1964.

2,648,610, J. T. Martin, PACKAGED POPCORN KERNELS AND POPPING OIL, **filed** Nov. 10, 1960, D.C., W.D. Ky. (Owensboro), Doc. 923, *Popcorn-In-Oil Council, Inc.* v. *Wyandall's Super Market, Inc.* Patent held invalid as to claims 1 and 4; complaint dismissed July 2, 1964.

2,655,901, L. N. Brown, PNEUMATIC HAMMER; **3,043,002**, same, METHOD AND TOOLS FOR REPAIRING MUFFLER ASSEMBLIES; **3,044,169**, same, TOOL FOR REPAIRING MUFFLER ASSEMBLIES, **filed** July 16, 1964, D.C., S.D. Fla. (Miami), Doc. 64–438, *Lowell N. Brown* v. *James O. Taylor.*

2,656,508(*a*), W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID, **filed** June 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1032, *Particle Data Laboratories, Inc.* v. *Coulter Electronics, Inc.*

2,656,508(*b*); **2,869,078**, W. H. Coulter et al., FLUID METERING APPARATUS, **filed** July 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1148, *Coulter Electronics, Inc.* v. *Lars Ljungberg.*

2,657,618, W. Elsbein, DEVELOPING APPARATUS, **filed** July 14, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1217, *American Photocopy Equipment Company* v. *Inter-Continental Photocopy Corporation.* Consent decree; patent held valid and infringed Sept. 11, 1964. **Same, filed** Nov. 9, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2081, *American Photocopy Equipment Company* v. *Hunter Photo Copyist, Inc.* Patent held valid and infringed; complaint dismissed Sept. 15, 1964.

2,667,775, F. L. Albel, KNITTED FABRIC, **filed** Mar. 13, 1962, D.C., S.D.N.Y., Doc. 62/1142, *Artvale, Inc.* v. *Rugby Fabrics Corp.* Final judgment; complaint and counterclaim dismissed July 14, 1964.

2,668,468, H. A. Flogaus, RIVET, **filed** July 21, 1964, D.C., S.D.N.Y., Doc. 64/2269, *South Chester Corporation* v. *Star Expansion Industries Corp.*

2,680,274, J. M. Bender, WRIST WATCH BRACELET CONNECTOR; **3,030,686**, N. C. Burkhardt, VARIABLE WIDTH END ATTACHMENT; **Des. 194,942**, E. Rodriguez, LINK CHAIN FOR A BRACELET OR THE LIKE, **filed** July 20, 1964, D.C., S.D.N.Y., Doc. 64/2250, *Jacoby-Bender, Inc.* v. *Baldwin Bracelet Corporation et ano.*

2,697,661, R. F. Hollis, DIGESTION OF PULP, **filed** May 24, 1961, D.C. Md. (Baltimore), Doc. 13050, *Fibre Conservation Corporation* v. *Elk Paper Manufacturing Co., Inc.* Stipulation and order dismissing complaint and counterclaim July 28, 1964.

2,703,302. (See 2,563,794(*b*).)

2,714,066, C. L. Jewett et al., PLANOGRAPHIC PRINTING PLATE, **filed** May 6, 1958, D.C., N.D. Ill. (Chicago), Doc. 58c815, *Minnesota Mining & Manufacturing Co.* v. *Harris Intertype Corp. et al.* Patent held valid; claims 1, 2, 3, 4 and 5 of said patent infringed; defendants enjoined; counterclaim dismissed July 31, 1964.

2,739,570. (See 2,589,794.)

2,740,494, B. Salvatore, VACUUM CLEANERS, **filed** Mar. 19, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–291, *Nobles Engineering & Mfg. Co.* v. *Piggy Vac Sales Corp.*

2,747,118, Coggeshall and Stafford, SUPPORTING OF COIL END TURNS; **2,747,119**, Petersen and Zeissler, BINDING OF ROTOR END TURNS, **filed** July 16, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–493, *General Electric Company* v. *Westinghouse Electric Corporation.*

2,747,119. (See 2,747,118.)

2,749,742. (See 2,593,957.)

2,757,514, H. T. Wyatt, METHOD OF FORMING AN IMPERMEABLE WALL IN THE TERRAIN, **filed** July 9, 1964, D.C., E.D. Wash. (Spokane), Doc. 2551, *Cranese-Terminal Division of America M.A.R.C., Inc.* v. *Douglas County Constructors et al.*

2,758,162, M. G. Tekosky, MAGNETIC AMPLIFIER, **filed** July 7, 1964, D.C., S.D.N.Y., Doc. 64/2106, *General Magnetics, Inc.* v. *Espey Mfg. & Electronics Corp.* **Same, filed** July 31, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–787, *General Magnetics, Inc.* v. *Transmagnetics, Inc.*

2,763,019, F. Huber, FLOOR TREATING APPARATUS, **filed** Aug. 5, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1386, *Brunswick Corporation et al.* v. *D.B.A. Products Co. et al.* Patent held valid and infringed; defendant enjoined; all claims dismissed July 27, 1964.

2,776,139, Blamey, Jr., and Mullany, GAME BALL, **filed** July 2, 1964, D.C. Conn. (New Haven), Doc. 10536, *David N. Mullany et al.* v. *Bradley's, Inc.*

2,795,677, S. I. Slater, ELECTRICAL WIRING DEVICE; **2,969,518**, same, DUPLEX PLUG RECEPTACLE; **2,974,301**, same; **3,037,146**, same, LIGHT DIMMING SWITCH; **3,103,618**, same, CONTINUOUSLY VARIABLE DIMMER SWITCH, **filed** July 30, 1964, D.C., S.D.N.Y., Doc. 64/2359, *Slater Electric, Inc.* v. *General Electric Company.*

2,796,740, A. I. McFarlan, AIR CONDITIONING SYSTEM; **2,982,523**, same, **filed** July 27, 1964, D.C.N.J. (Newark), Doc. 696–64, *American Radiator & Standard Sanitary Corporation* v. *Alden I. McFarlan.*

2,869,078. (See 2,656,508(*b*).)

2,969,518. (See 2,795,677.)

2,974,301. (See 2,795,677.)

2,982,523. (See 2,796,740.)

3,030,686. (See 2,680,274.)

3,037,146. (See 2,795,677.)

3,043,002. (See 2,655,901.)

3,044,169. (See 2,655,901.)

3,103,618. (See 2,795,677.)

Des. 194,942. (See 2,680,274.)

REISSUES

DECEMBER 22, 1964

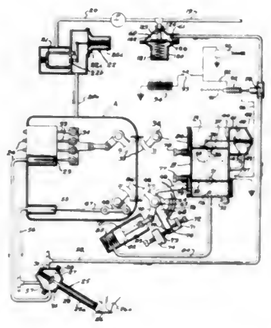
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,701
INJECTION CARBURETION

James F. Armstrong, St. Louis, Mo., assignor, by mesne assignments, to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Original No. 2,785,669, dated Mar. 19, 1957, Ser. No. 516,358, June 20, 1955. Application for reissue Mar. 18, 1959, Ser. No. 800,354

83 Claims. (Cl. 123—119)



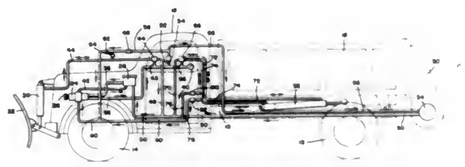
1. In a fuel metering device for an internal combustion engine, the combination with a fuel passage connected with said engine, a variable area fuel metering orifice in said passage, and a pump for delivering fuel through said orifice to the engine, of means for regulating the pressure downstream of said orifice to maintain across said orifice a fluid pressure drop which is independent of, and not affected by, changes in engine speed, and a sensing means responsive to the rate of air flow to said engine for varying the area of said orifice with changes in air flow to the engine.

25,702
HYDRAULIC SYSTEM *AND APPARATUS* FOR [DUMP TRUCKS] *VEHICLES*

Charles P. de Biasi, 74 Braman Road, Waterford, Conn.

Original No. 3,003,262, dated Oct. 10, 1961, Ser. No. 2,240, Jan. 13, 1960. Application for reissue Apr. 6, 1962, Ser. No. 186,603

15 Claims. (Cl. 37—41)



9. Apparatus for positioning, powering, driving controlling or in some way actuating a hydraulically operable unit, comprising, in combination,

hydraulic means for positioning, powering, driving, controlling or in some way actuating such unit,

a normal minimum flow variable displacement hydraulic pump device having control structure for varying the displacement thereof,

fluid pressure supply conduit means for placing the fluid pressure discharge of the pump device in communication with the hydraulic means,

valving for selectively controlling the fluid pressure discharge of the pump device through the fluid pressure supply conduit means, and

control conduit means for transmitting the developed fluid pressure of the discharge fluid pressure supply conduit means directly back to the pump control structure by placing the fluid pressure supply conduit means in direct communication with the pump control structure,

said control conduit means extending directly between the pump control structure and the fluid pressure supply conduit means at a location therealong which is intermediate the valving and the hydraulic means to enable the fluid pressure which has been transmitted ot the pump control structure through the control conduit means to be effective in varying the fluid pressure discharge of the pump device in direct response to the demand which has been placed thereon by the hydraulic means which is being operated thereby.

25,703
DISPENSER TAP

Frank Martorelli, % Joseph Falco, 310–16 Hills Bldg., Syracuse, N.Y.

Original No. 3,052,386, dated Sept. 4, 1962, Ser. No. 843,795, Oct. 1, 1959. Application for reissue Aug. 30, 1963, Ser. No. 305,905

4 Claims. (Cl. 222—517)



1. A closure for a container which has a discharge opening member, said closure comprising a body having a bore, means at one end of said bore for attaching the body to the container member with said bore in registry with the dscharge opening of the container member, a valve member, resilient means supporting said valve member in liquid flow controlling relationship with said bore, said resilient means including a self-sustaining supporting arm of resilient substance integral with said body and protruding laterally therefrom in the plane of the other end of the body, mechanical means securing said valve member to said arm, said arm being tensioned and yieldingly retaining the valve member in closed position, and sealing means connected between said valve member and the discharge end of said bore, said arm having longitudinally spaced openings therein, said mechanical means including spaced rivets on the valve member engaged in the openings.

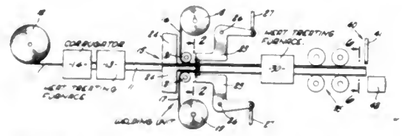
25,704
METHOD OF FABRICATING STRUCTURAL SANDWICHES

Carl A. Van Pappelendam, Rivera, Calif., assignor to North American Aviation, Inc., a corporation of Delaware

Original No. 2,746,139, dated May 22, 1956, Ser. No. 313,222, Oct. 6, 1952. Application for reissue Aug. 1, 1956, Ser. No. 601,599

8 Claims. (Cl. 29—455)

1. A method of forming structural sandwich elements, which comprises feeding a core strip of metal through a corrugator to form corrugations extending longitudinally of the core strip, subjecting the corrugated core strip to heat treatment to relieve internal stresses, feeding flat face strips of metal transversely from opposite sides of said core strip and bending said face strips at points adjacent said core strip and into contact therewith, said face strips contacting said core strip at lines of initial contact which are generally opposite each other, and operating directly upon the ridges of said core strip in a manner effecting joining of said core strip to said face



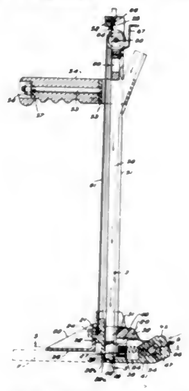
strips by heat bonding, said last-named step being performed adjacent said lines of initial contact between said core strip and face strips, and subjecting the formed sandwich to heat treatment to relieve internal stress.

PATENTS

GRANTED DECEMBER 22, 1964

GENERAL AND MECHANICAL

3,161,886
SPLINE TOOL
Ray E. Omholt, Berwyn, Pa. (% Powerlock Floors, Inc., 2026 Chancellor St., Philadelphia 3, Pa.)
Filed Oct. 10, 1962, Ser. No. 229,633
5 Claims. (Cl. 1—343)



1. A spline tool comprising a mounting head, spaced upright frame bars extending upwardly from said mounting head and having a spline chute carried thereby and terminating in said mounting head, a supporting handle mounted on said frame bars and extending from said frame bars at the upper portion thereof, said mounting head having a rear wall and rearwardly extending side spaced walls connected by said rear wall, each of said side walls having a guide rail carried thereby, a driving head having opposite spaced portions in interengaging relation with said guide rails mounting said driving head for horizontal movement in said mounting head, spaced resilient members contiguous to said spaced portions for urging said driving head in one direction, said driving head having a striking face intermediate said spaced portions and on the opposite side of said frame bars from said handle for impact impelling of said driving head in the opposite direction, said mounting head having a spline stripping and guiding surface, said driving head having a plate portion movable beneath said mounting head, said plate portion providing a spline shelf with a spline supporting face and a driving face extending upwardly from said supporting face at the rear thereof, and a gage plate adjustably mounted on said mounting head and having a face portion for vertical adjustment with respect to said stripping and guiding surface of said mounting head.

3,161,887
PROTECTIVE GARMENT
Julian Silver, Scarsdale, N.Y., assignor to Instant Fold Products, Inc., New York, N.Y.
Filed Jan. 18, 1963, Ser. No. 252,479
1 Claim. (Cl. 2—88)

A garment adapted to be worn in various fashions over the upper part of the body of a wearer, said garment comprising a rectangular body of flexible sheet material, closely spaced pleats extending longitudinally of the body from end to end thereof, the pleated ends of the body being gathered, grommets extending through the pleated ends for holding the ends in gathered fashion, strings extending through and outwardly of the grommets for securing the body around the upper part of the body of the wearer, said strings being knotted at both ends of the



grommets to prevent displacement of the strings, said body having an opening centrally thereof adapted to be slipped over the head of the wearer, with the remainder of the body adapted to cover the upper part of the body of the wearer in spread-eagle fashion.

3,161,888
COLLAR LININGS ON MEN'S AND LADIES' GARMENTS
Günther von Eisenhart-Rothe, Glengen (Brenz), Germany, assignor to Vereinigte Filzfabriken A.G., Glengen (Brenz), Germany, a company of Germany
Filed June 28, 1960, Ser. No. 39,214
6 Claims. (Cl. 2—98)



1. In a coat construction the improvement which comprises a collar construction for maintaining the shape of a deformable material in a collar, said construction consisting solely of a one-piece undercollar consisting essentially of a resilient mixture of felted card fleece of fibers made highly elastic and springable by synthetic resins incorporated in said fleece, and having longitudinal edges cut diagonally to the card fleece, the undercollar having high stretchability in one direction only when heated and being highly and uniformly resilient at every point of its area at lower temperatures, having the characteristic of retaining and re-establishing its shape.

3,161,889
VENTILATED CAP
Milton S. Kaye, Newton, and Arnold J. Kaplan, Quincy, Mass. (both of 116 Bedford St., Boston, Mass.)
Filed Dec. 6, 1963, Ser. No. 328,536
6 Claims. (Cl. 2—209.4)

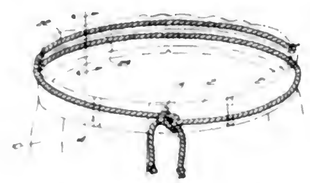
1. In a cap construction a circular frame formed of self supporting woven material with said material having

a plurality of parallel horizontal strands extending around said frame and a plurality of parallel vertical strands interwoven with said horizontal strands, and with the uppermost of a plurality of said horizontal strands severed along a plurality of vertical lines at regular intervals



about said frame to form the upper portion of said frame into a plurality of upwardly extending spaced tabs with each tab formed of said uppermost plurality of discontinuous horizontal strands interconnecting a plurality of vertical strands.

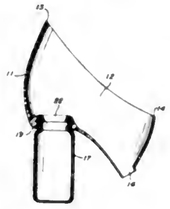
3,161,890
ADJUSTABLE TROUSER WAIST
John Betz, 91 Algonquin Drive, Warwick, R.I.
Filed Dec. 10, 1962, Ser. No. 243,387
2 Claims. (Cl. 2—237)



1. In an adjustable garment comprising a pair of trousers having a waist portion, the rear segment of said waist portion having a double thickness of material defining a passageway therebetewen extending from one side of said waist portion to the other side through said rear segment, a pair of adjustment cords adapted to be fastened together in front of said waist portion and extending in opposite directions around the front and through said passageway, means for guiding said cords on the exterior of said front waist portion, said cords terminating at opposite sides of said waist portion at the ends of said passageway, said terminals being anchored to said waist whereby pulling on the front ends of said cords will cause said rear segment to pucker and narrow said waist, said cord terminals extending through openings in said passageway and being knotted for anchoring against withdrawal, said openings having grommet perimeters, said trousers being made of waterproof material.

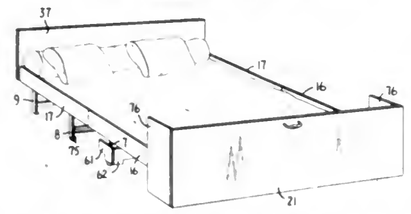
3,161,891
PORTABLE URINE SPECIMEN COLLECTING DEVICE
Ralph M. Bauman, 7845 Lake Adlon Drive, San Diego, Calif.
Filed Dec. 12, 1963, Ser. No. 330,165
7 Claims. (Cl. 4—110)

1. A portable urine specimen collecting device for females comprising:
a funnel member having a top opening contoured for a snug fit over a user's pelvic area;
a first bottom opening in said funnel member;
a container;
holding means for holding said container under said first bottom opening; and



a second bottom opening in said funnel member, said second bottom opening being positioned for disposition of any overflow from said container.

3,161,892
SELF-SUPPORTING FOLDING BEDS WITH A VIEW TO UPHOLSTER THEM INTO FURNITURE ELEMENTS WHEN THEY ARE FOLDED
Albert Ducrot, 20 Rue Rampal, Paris, France
Filed Sept. 26, 1961, Ser. No. 140,786
Claims priority, application France, Oct. 17, 1960, 841,380, Patent 1,063,529
3 Claims. (Cl. 5—5)

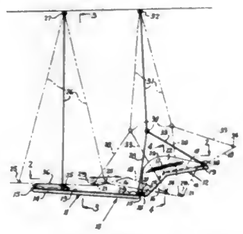


1. In a folding bed consisting of a three-element metal frame of which two end elements of same length are hingedly connected to a shorter intermediate element and carried by pairs of legs pivoted thereon and having extensions adapted to act in turn as pivot means to connecting links for retracting said legs in synchronism along said end elements during the folding movements of said frame elements toward each other about their hinge connections on said intermediate element, the arrangement of a panel of a height corresponding substantially to the length of said intermediate element, which is secured at right angles to the head element of the bed, of a substantially U-shaped coffer having the same width as the bed and a height inferior to the length of the foot element of the bed, of rods pivoted at one end on said coffer and at the other end on said connecting links for retracting said legs of said foot element, said rods being so disposed as to apply said coffer against said foot element of the bed when said bed is closed and to cause said coffer to rest on the floor at right angles to said foot element when the bed is unfolded, and of another substantially U-shaped coffer secured on the pair of legs adjacent to said intermediate element, which is of same width as said first coffer and of such a height that it constitutes the continuation of said first coffer when the bed is closed.

3,161,893
SWING
Robert W. Siler, P.O. Box 241, Williamsburg, Ky.
Filed July 30, 1963, Ser. No. 298,750
12 Claims. (Cl. 5—120)

1. A swing construction comprised of a relatively flat substantially rectangular elongated body supporting portion, reenforcing members extending longitudinally along

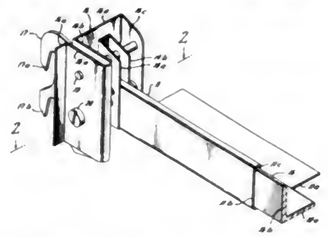
the underside edges thereof, the ends of said reenforcing members being bevelled in a direction away from said body supporting portion, a leg supporting portion including a normally upwardly inclined portion and a normally downwardly inclined portion, said upwardly and downwardly inclined portions being substantially rectangular and fixedly secured together at their upper ends at an angle of approximately 30°, hinge means securing the lower end of said upwardly inclined portion to one end of said body supporting portion for pivotal movement relative thereto, reenforcing members extending longitudinally along the underside edges of both said upwardly and downwardly inclined portions and having their ends bevelled to permit pivotal movement of said body supporting portion downwardly below 180°, a first pair of flexible chain supports extending perpendicularly from a point adjacent the other end of said body supporting portion but spaced therefrom in transverse alignment on opposite sides thereof adapted to be secured to an overhead support, a second pair of flexible chain supports ex-



tending upwardly from transversely aligned points on opposite sides of said body support portion at said one end thereof immediately adjacent said hinge means, ring connections at the upper end of each of said second pair of supports, a third pair of flexible chain supports extending upwardly from said ring connections in longitudinal and transverse parallelism to said first pair of supports, a fourth pair of flexible chain supports extending from said connections to transversely aligned opposite points immediately adjacent the lower end of said normally downwardly inclined portion, one chain support of each pair lying in the same longitudinal plane at right angles to the axis of pivotal movement of said leg supporting portion relative to said body supporting portion with one chain of every other pair, whereby leg pressure exerted downwardly against said leg supporting portion will cause linear swinging movement of said body supporting and leg supporting portions and simultaneous variation of the relative angular inclination of said leg supporting portion to said body supporting portion.

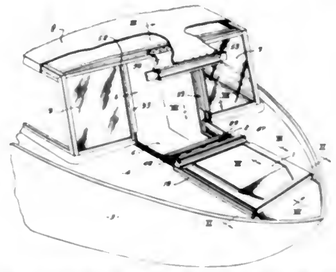
3,161,894
ADJUSTABLE BED RAIL
Cecil L. Short, 1450 N. Flores St., San Antonio, Tex., assignor of twenty-five percent to Harold R. Short, San Antonio, Tex.
Filed Jan. 22, 1962, Ser. No. 167,740
4 Claims. (Cl. 5—296)

1. An adjustable bed rail comprising, in combination, a side rail, a rail extension, said side rail and rail extension having horizontal and vertical extending portions, the horizontally-extending portion of the side rail overlying the corresponding portion of the rail extension and including means whereby said side rail is longitudinally adjustable to accurately accommodate a spring unit positioned on said side rail, a bracket member including a hook plate, said hook plate being adjustably positioned relative to said bracket member and a threaded element



in said bracket member and rail extension whereby rotation of said threaded element causes the rail extension to traverse laterally.

3,161,895
RETRACTABLE HATCH AND WINDSHIELD COMBINATION FOR BOATS
Roy W. Lewis, Plano, Tex., assignor to Lone Star Boat Company, Plano, Tex., a corporation of Texas
Filed Jan. 31, 1963, Ser. No. 255,251
7 Claims. (Cl. 9—1)



5. In combination with a boat, having an upwardly extending windshield with a deck extending forwardly thereof; a hatchway in the deck extending forwardly of the windshield; an upwardly extending opening in the windshield communicating with, and substantially corresponding to the width of the hatchway; oppositely disposed parallel channels extending along the inner side of the hatchway; oppositely disposed parallel channels extending along the inner side of the windshield opening; the channels on the inner sides of the hatchway and on the inner sides of the windshield opening intersecting each other at the intersection of the inner end of the hatchway with the lower end of the windshield opening to provide continuous oppositely disposed parallel channels along the inner side of the windshield opening and the hatchway; a retractable windshield section; guide means on the opposite edges of the windshield section extending into the channels and being slidably disposed therein; a hatch cover; the top of the hatch cover being spaced above the channels on the inner side of the hatchway sufficiently to allow the windshield section to be retracted thereunder, whereby the windshield section may be moved upwardly to close the windshield opening and may be moved downwardly in the hatchway to a position underneath the hatch cover.

3,161,896
RAM AIR INFLATED FLOTATION BAG
Ira T. Holt and Harold E. Widdows, Albuquerque, N. Mex., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 20, 1963, Ser. No. 325,193
4 Claims. (Cl. 9—8)

1. Combination parachute and flotation means comprising, when inflated, a canopy having a centrally dis-

posed aperture for venting air from the canopy, suspension lines affixed to marginal portions of the canopy and extending therebelow for connection with an object, flotation means comprising an elongate tubular container having generally parallel oppositely disposed side wall sections and terminating in a closed upper end and having an open lower end disposed wholly above said canopy and of diameter less than that of said canopy but greater than that of said canopy aperture with said open lower end in registry with said canopy aperture for air flow into and out of said container solely through said open lower end, connecting members circumferentially spaced about said canopy aperture and said container lower end and affixed to said canopy immediately adjacent said canopy aperture and to said container adjacent said



lower end maintaining said open end in registry with and spaced above said canopy aperture and so orienting the container to the canopy that the latter including its aperture is disposed wholly intermediate the container and said suspension lines, air flow egressing from within the canopy through the canopy aperture and through said open end to inflate the container and through the spaces intermediate said connecting members to vent air from within both the canopy and the container, said canopy upon descending into a body of water serving to force air out of the canopy through the aperture thereof and into said container through said open lower end thereof while sinking to submerge a lower portion of the container including said open end and trapping air within the container.

3,161,897
FLOAT FOR BABIES OR YOUNG CHILDREN
Penny Hill, 48 Linden Drive, Maryville, Tenn.
Filed Nov. 26, 1962, Ser. No. 240,037
2 Claims. (Cl. 9—347)



1. A structure for floatably supporting a child in water, comprising:

a pair of elongated foamed plastic pontoons, each symmetrical about a longitudinally extending central axis;

said pontoons being juxtaposed in spaced alignment with one another with said central axes being parallel to one another;

a first tubular frame means connected between said pontoons for maintaining said pontoons in their spaced alignment;

said first tubular frame means including a pair of spaced apart linear rods which extend between said pontoons, with said linear rods being coplanar and each having an axis which is perpendicular to the central axes of said pontoons;

a second tubular frame means formed as a continuous planar ring of generally rectangular shape and hence having two spaced apart side portions joined together by two spaced end portions;

each of said end portions being juxtaposed to a linear rod of said first frame means;

connecting means securing said end portions to their respective juxtaposed linear rods and thereby interconnecting said first and second frame means;

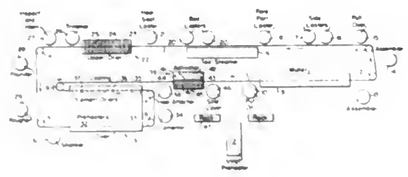
each of said side portions being spaced inwardly from said pontoons and extending generally parallel to said pontoons; and,

supporting seat means depending from said second frame means between said linear rods and projecting downward to a distance beneath said pontoons;

said supporting seat means including a forward and a rear upper portion respectively connected to said second frame means end portions and lateral upper portions respectively connected to said second frame means side portions;

said supporting seat means further including a pair of spaced leg openings through which a child's legs may extend when the child is seated in the structure.

3,161,898
SHOE MAKING APPARATUS
Morton S. Bromfield, 8 Hubbard St., Canton, Mass., and Jack D. Ferner, Lowell St., Carlisle, Mass.
Filed Mar. 6, 1962, Ser. No. 177,785
Claims priority, application Great Britain Apr. 28, 1961
10 Claims. (Cl. 12—1)



2. Control apparatus for a shoe upper muller provided with pressure spray nozzles and a water tank in which a source of wet steam is mounted, comprising, means for controlling the supply of steam, means operable when actuated to supply hot water under pressure to said nozzles, and means for programming the actuation of said water supply means comprising a drain valve for releasing the pressure behind said nozzles, a supply valve for admitting water under pressure to said nozzles, adjustable timing means for alternately opening said supply valve and closing said drain valve and closing said supply valve and opening said drain valve, and means for adjusting said timing means and said steam control means, whereby a predetermined relation can be maintained between the moisture introduced into said muller by said steam source and said spray nozzles to achieve a predetermined differential between the moisture absorbed in the opposite surfaces of uppers passing through said muller.

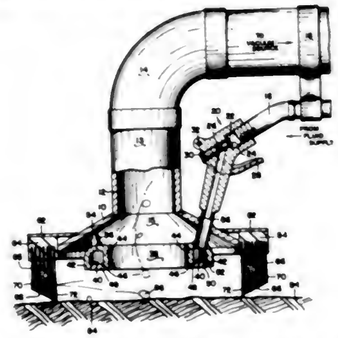
3,161,899
REVERSIBLE ROTARY TOOTHBRUSH
Pierre Fleury Poizat, 27 Rue du Nord, Cours, France
Filed July 9, 1962, Ser. No. 208,475
Claims priority, application France, July 20, 1961, 41,753, Patent 1,296,174
2 Claims. (Cl. 15—23)



1. A toilet implement comprising driving means, a main casing enclosing the latter, a shaft controlled by the driving means and extending outwardly of the main casing, an operative part carried by the outer end of said shaft, a rotary unit revolvably carried around the shaft and extending between a point inside said main casing and a point immediately to the rear of the operative part, a protecting casing rigid with said unit and extending around said operative part to protect the latter along a fraction of its outer surface and provided with a lateral opening facing said operative part, the edges of said opening in said protecting casing being adapted to engage the operator's skin one at a time at the same time as the operative part, a sleeve rigid with the unit and fitted revolvably over the end of the main casing facing the operative part, a manually operable annular projection rigid with said sleeve and revolvably fitted around the main casing, and means carried by said unit inside the main casing and adapted to control the direction of rotation of the driving means according to the direction of shifting of the protecting casing upon engagement of one of the edges of its openings against the operator's skin.

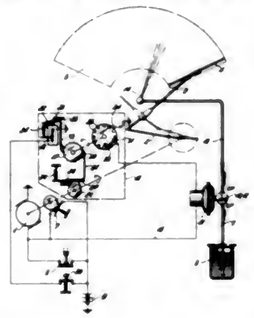
3,161,900
VACUUM CLEANING HEAD
Hanns Hornschuch, Easton, and Jack R. Webb, Bethlehem, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 14, 1962, Ser. No. 173,299
3 Claims. (Cl. 15—345)

1. A hand operated cleaning device for removing dust particles and other objects heavier than dust from an area of a surface, said device comprising:
(*a*) a hollow frame having a narrow upper end and a wide lower end;
(*b*) a suction hose secured to the upper end of said hollow frame;
(*c*) high pressure fluid means communicating with the lower end of said hollow frame for delivering fluid under pressure to said hollow frame;
(*d*) a valve disposed in said high pressure fluid means for controlling the flow of high pressure fluid to the frame;
(*e*) high pressure fluid distribution means communicating with said high pressure fluid means suspended beneath and inside the lower end of said hollow frame and being provided with a continuous chamber for receiving said fluid under pressure from said valve;
(1) said continuous chamber being circular in shape and being provided with a continuous channel disposed at an angle relative to said surface for distributing said fluid at an angle relative to said surface;
(*f*) means for varying the size of said continuous channel allowing the amount of said fluid impinging on said surface to be varied; and



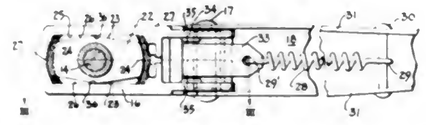
(1) said means comprising an annular ring adjustably connected to the outer lower peripheral edge of said channel, but variably spaced from the inner peripheral edge of said channel, and
(*g*) air pervious skirt means connected to the lower end of said frame defining said area of the surface to be cleaned and confining the flow of high pressure fluid.

3,161,901
WIPER ASSEMBLY FOR WINDSHIELDS OR THE LIKE
Erich Kolb, Ebental, near Buhl, and Kurt Groetzner, Stuttgart-Zuffenhausen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Sept. 18, 1963, Ser. No. 309,619
Claims priority, application Germany, Sept. 22, 1962, B 68,947
10 Claims. (Cl. 15—250.02)



4. In a wiper assembly for windshields or the like, in combination, motor means for driving a wiper over a given area of a windshield or the like; feeding means for feeding liquid to said area, said feeding means being electrically operable; operating means operatively connected to said feeding means for operating the latter to feed liquid during a given number of cycles of operation of the wiper and for then terminating the operation of said feeding means, said operating means automatically maintaining itself in operation after effecting an initial increment of operation, and said operating means including a rotary member, a pair of slip-contacts engaging said rotary member and connected electrically with said feeding means and drive means controlled by said motor means for turning said rotary member after said initial operation of said operating means, said rotary member including electrically non-conductive and electrically conductive portions cooperating with said slip-contacts for energizing said feeding means at at least one angular position of said rotary member; and manually operable means operatively connected to said operating means for manually actuating the latter to effect said initial increment of operation.

3,161,902
WIPER ARM
Anthony C. Scinta, Hamburg, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Oct. 10, 1962, Ser. No. 229,623
10 Claims. (Cl. 15—250.34)



6. A windshield wiper arm comprising a mounting head and a wiper carrying portion, an elongated aperture having a relatively long side and a relatively short side in said mounting head, an elongated drive burr having a relatively long side and a relatively short side, means for movably retaining said elongated drive burr in said elongated aperture, said elongated aperture having a first longitudinal axis, said elongated drive burr having a second longitudinal axis, said elongated aperture being of a larger size than said elongated drive burr to permit the relative positioning therebetween with said first and second longitudinal axes in various orientations, first serrations on said relatively short side of said elongated drive burr, second serrations on said relatively short side of said elongated aperture for receiving said first serrations in interlocking engagement in said vaious orientations to thereby permit said mounting head to be fixedly mounted in various positions relative to said elongated drive burr, and spring means operatively coupling said wiper carrying portion and said mounting head for both biasing a wiper carried by said wiper carrying portion into engagement with an associated windshield and for causing said wiper carrying portion to transmit a reactive force produced by the action of said wiper on said windshield to said mounting head to thereby bias said first and second serrations into said interlocking engagement.

3,161,903
SHOE DAUBING AND POLISHING DEVICE
Samuel L. Worthington, 1621 Fuller Drive, Salt Lake City, Utah
Filed May 13, 1963, Ser. No. 279,957
7 Claims. (Cl. 15—506)



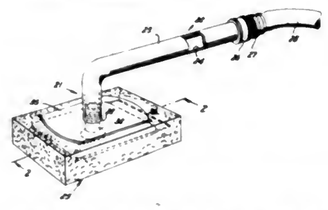
1. As an article of manufacture a daubing device, comprising a flexible sponge member having top and bottom surface as well as a side surface transverse to said top and bottom surface, a columnar anchor defined in a medial portion of one of said top and bottom surfaces, said anchor being defined by an endless cut in said one surface extending into said sponge toward said other surface, a base, means securing the surface of said columnar anchor to said base.

3,161,904
LIQUID DISPENSER
David E. Goldich, Lake Forest, Ill., assignor to The Permalux Company, Aurora, Ill., a corporation of Illinois
Filed Sept. 9, 1963, Ser. No. 307,694
9 Claims. (Cl. 15—528)



1. A liquid container comprising a tubular body, openings defined in each end of said tubular body, one of said openings comprising a constricted end whereby small amounts of said liquid can be removed from said body, a wick member located in the other of said openings whereby said liquid can be applied to a surface through contact with said other member, and closures for each end of said container.

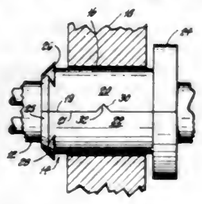
3,161,905
DETACHABLE SPONGE HOLDER WITH LIQUID-SUPPLY CONNECTION MEANS
Eva Dryden, 6137 Morella Ave., North Hollywood, Calif.
Filed Jan. 23, 1961, Ser. No. 84,015
9 Claims. (Cl. 15—567)



1. A detachable sponge holder comprising: handle means including liquid-supply means, said handle means and liquid-supply means having a sponge-communication end adapted to be placed in communication with the interior of a unitary cleaning sponge having a substantially flat front cleaning surface, a substantially flat back surface portion rearwardly spaced therefrom and a transverse end portion provided with a flat blind slit extending into said sponge from an opening in said transverse end portion and lying in a plane substantially parallel to said front cleaning surface of said sponge, said sponge-communication end of said handle means and said liqiud-supply means being provided with retaining means for retaining said sponge-communication end in said interior communication with said cleaning sponge and providing a firm mechanical connection of said sponge-communication end with respect to said sponge and an interior communication of said liquid-supply means with said interior of said sponge for interiorly supplying said sponge with liquid in a controllable manner; said handle means and liquid-supply means being provided with liquid-supply connection and attachment means; said retaining means carried by said sponge-communication end of said handle means

and liquid-supply means comprising a substantially flat, spatulate insertion element removably insertable through said opening in said transverse end surface of said cleaning sponge into said flat blind slit so as to lie in a plane rearwardly spaced from, and substantially parallel with respect to, said flat front cleaning surface of said sponge and forwardly spaced from said back surface portion of said sponge, said retaining means also including threaded fastener means transversely engageably directed with respect to said flat spatulate insertion element and extending rearwardly therefrom for effective and controllably engageable and disengageable fastening cooperation with respect to said sponge-communication end of said handle means and liquid-supply means substantially at right angles and centrally located with respect to said back surface portion of said sponge, said retaining means also including sponge-abutment means carried by said sponge-communication end of said handle means and liquid-supply means positioned for forcible exterior abutment with respect to a substantial area of said back surface portion of said cleaning sponge in a position substantially parallel to said insertion element adapted to be positioned within said cleaning sponge in said flat blind slit therein.

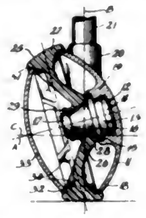
3,161,906
SPLIT BUSHING
Sidney D. Yarm, 1919 Lincoln Ave., East Meadow, N.Y.
Filed Nov. 7, 1961, Ser. No. 150,845
6 Claims. (Cl. 16—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A bushing for insertion and retention in an encompassing opening in an object comprising, in combination: a hollow, rigid longitudinal element formed from resilient material, the outer circumferential dimension of said element being substantially equal to the circumferential dimension of said encompassing opening, said element being split longitudinally into sections the abutting surfaces of which have mating pairs of teeth and notches to prevent relative longitudinal motion between said sections, said element having a retaining flange at one end and being inwardly tapered at the other end, the tapered end having a sectioned, tapered flange constituting an extension of the taper of said element, the amount of extension of the sectioned flange beyond the outer circumference of said element being just sufficient to prevent said bushing from passing back through said encompassing opening after it has been pushed therethrough, said section of said tapered flange being located along the circumference of its associated element section intermediate the split-surface ends.

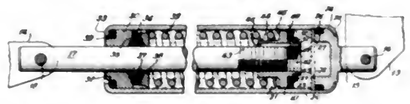
3,161,907
CASTER
Silvio Vincent Anthony, 172 Perry St., Fairfield, Victoria, Australia
Filed Dec. 8, 1961, Ser. No. 158,046
Claims priority, application Australia, Dec. 16, 1960, 67,655/60
1 Claim. (Cl. 16—18)

A caster comprising a body member having a portion adapted to be connected to an article such as furniture and equipment for swivelling movement about a vertical axis on a substantially horizontal supporting surface, mounting means disposed in said body member which has an axis spaced from said portion and being disposed at an inclined angle with respect to said supporting surface, said mounting means including a tapered bearing portion providing a bearing section which is substantially parallel with respect to said supporting surface, and an inclined roller member having engaging means centrally therein and a peripheral flange extending exteriorly of said body member, said engaging means including a bore having a tapered configuration corresponding to that of said tapered bearing portion so that when said engaging means is mounted on said tapered bearing portion for rotation with respect to the axis of said mounting means



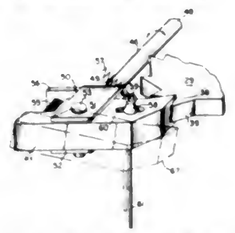
the peripheral flange of said inclined roller member engages said supporting surfaces at a point in a vertical plane extending through said vertical axis which vertical plane is perpendicular with respect to said bearing section, said tapered bearing portion including a flange adjacent said body member and a further flange at a tip portion of said tapered bearing portion, said engaging means defining a wall having said bore therethrough and in engagement with said tapered bearing portion between said flanges, one side of said wall adjacent said bore engaging the first-mentioned flange, the other side of said wall adjacent said bore having an annular lip engaging said further flange to maintain said roller member mounted on said mounting means.

3,161,908
HYDRAULIC DOOR CLOSER
Paul Walach, Chicago, Ill., assignor to Monteray Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 25, 1962, Ser. No. 168,701
5 Claims. (Cl. 16—52)



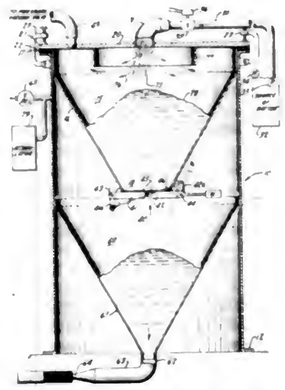
1. A door check apparatus or the like including a hydraulic cylinder; a piston member in said cylinder and frictionally contacting the cylinder; a piston rod member rotatably engaging the piston member and extending out through one end of the cylinder; a mounting means connected to the outwardly extending end of the rod member to hold the rod member against rotation when the apparatus is in use; seal means between the cylinder and the rod member at said end of the cylinder; means providing a fluid-tight closure at the other end of the cylinder; a mounting bracket adapted to be fixedly mounted; means rotatably connecting the bracket and the cylinder whereby the cylinder may be rotated with respect to the bracket about the axis of the cylinder; and a fluid passageway extending between opposite sides of the piston member and including a groove; in one of the members, said fluid passageway being adjustable in size by the rotation of one member with respect to the other to vary the degree of restriction to the flow of fluid therethrough, whereby with said apparatus mounted in a fixed position by said mounting means and said mounting bracket the speed at which the fluid flows through said passageway may be adjusted by rotating the cylinder.

3,161,909
DOOR OPERATING APPARATUS
Leopold Strauss, 14 Walnut Road, East Rockaway, N.Y.
Filed Sept. 5, 1961, Ser. No. 135,883
4 Claims. (Cl. 16—70)



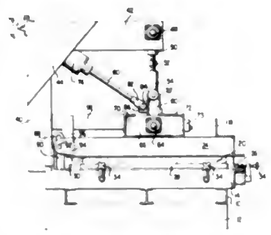
1. In an apparatus for operating a door mounted for pivotal movement between open and closed positions, pivoted means with abutment shoulders thereon which rotates in either of opposite directions in a plane of rotation as said door moves between said positions, blocking means mounted independently of said pivoted means, said blocking means in at least one position thereof being stationary independent of the rotation of said pivoted means, means urging said blocking means against said abutment shoulders of said pivoted means in said plane of rotation so that said blocking means permits rotation of said pivoted means in one direction of rotation and blocks rotation thereof in the opposite direction, means separate from said urging means for retaining said blocking means at said plane of rotation, and means operable from a location remote from said blocking means to move said blocking means against the force of said retaining means out of abutment with said shoulders and out of said plane to permit rotation of said pivoted means.

3,161,910
SAUSAGE STUFFING MACHINE
Alvin W. Hughes, 4N194 Church Road, Bensenville, Ill.
Filed Nov. 2, 1962, Ser. No. 235,001
8 Claims. (Cl. 17—39)



1. In a vacuum-pressure apparatus for handling batter in a sausage stuffing machine or the like, the combination comprising an enclosed vacuum treating chamber having an inlet conduit at its upper end, a pump connected to said conduit for forcing batter therethrough, an inlet valve interposed in said conduit, a receptacle below said chamber having an outlet at its lower end terminating in a discharge nozzle, a check valve interposed between the lower end of the chamber and the receptacle, control means for (*a*) substantially simultaneously operating said pump, opening said inlet valve, closing said check valve and applying vacuum to the chamber so that entrained air is removed from the batter as it flows into the chamber from said conduit and subsequently (*b*) turning off said pump, closing said inlet valve, opening said check valve and applying air pressure to said chamber for discharge of the contents of the chamber into said receptacle, means for cycling said control means so timed that the pressure portion of the cycle is initiated when the receptacle is partially filled, and means for maintaining pressure in said receptacle so that the batter deposited therein continues to flow to said discharge nozzle even during the vacuum portion of the cycle when the check valve is closed.

3,161,911
MOLD FOR FOAMED PANELS AND THE LIKE
Howard G. Mathews, Levittown, N.J., assignor to Foam Products Corporation, Thomasville, Ga., a corporation of Georgia
Filed Oct. 2, 1962, Ser. No. 227,888
7 Claims. (Cl. 18—5)



5. A mold comprising a lower platen and an upper platen pivotable with respect to said lower platen, frame means including a frame portion extending over said platens, hold-down arm means positioned between said frame portion and said upper platen, said hold-down arm means including a plurality of upper and lower arm portions, said upper arm portions having upper ends fixed to rotatable shaft means mounted at said frame portion, said upper arm portions having lower ends fixed upon essentially horizontal shaft means extending in the longitudinal direction of the mold, a plurality of longitudinally spaced hinge members fixed to said lower platen and each provided with an essentially vertical slot positioned at the rear of said upper platen, a shaft connected to said upper platen and slidable within said slot, and upper platen elevating means to pivot the front of said upper platen upwardly while depressing said shaft within said slots.

3,161,912
CONTINUOUS MOLDING APPARATUS
Charles R. Wiles and David L. Russell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,553
5 Claims. (Cl. 18—6)

1. A continuous molding apparatus comprising in cooperative combination a body defining a passageway,
said passageway being provided with a first major opening and a second major opening,
said openings being disposed generally along the major dimension of said passageway,
said passageway also being provided with a plurality of spaced side ports adapted to provide communication between the interior of the passage and ex-

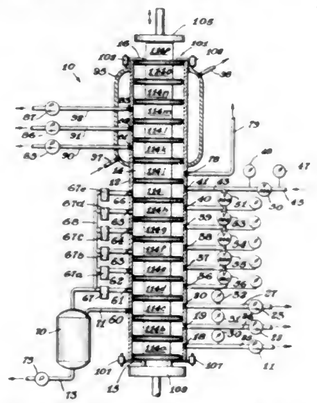
ternal supply means individually in communication with each of the plurality of ports,

a plurality of molds, said molds adapted to slide within said passageway and each of said molds having means to seal said passage and means to maintain spaced relationship between said sealing means, each of said molds being provided with a communication passageway from the interior of said mold to the exterior of said mold on the opposite side of said sealing means from said cavity,

said mold communication passageway being provided with a check valve so constructed and arranged so as to permit the flow of fluid from the interior of said mold cavity only,

said molds adapted to be placed in stacked relationship within said body and said side ports of said passageway adapted to communicate with the space between the sealing means of adjacent molds,

said mold passageway having a first end and a second end, said molds adapted to enter said first end and be removed at said second end,



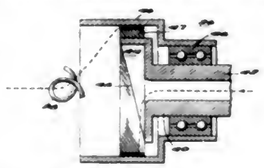
means provided adjacent said first end to maintain a mold adjacent said first end in affixed position when desired and means adapted to insert a mold into said first end without releasing a mold positioned within said first end,

means adjacent said second end of said passageway to optionally maintain said molds in position and means in operative cooperation with said means to insert said mold adjacent said first end to remove said molds at said second end,

the ports adjacent said first end in operative communication with means to remove fluids from said passageway, the ports adjacent said ports operatively connected to means to evacuate fluids from said passageway, operatively connected to means to introduce a heating fluid into said passageway, and the ports adjacent to said second end operatively connected to means to remove fluids from said passageway and means to cool said molds within said passageway.

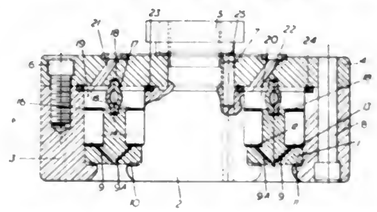
3,161,913
YARN RELAXING APPARATUS
Claude Russell Pound, Aiken, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,675
5 Claims. (Cl. 18—8)

1. An apparatus for relaxing yarn, said apparatus comprising: a first stationary tubular member adapted for the passage of yarn therethrough; a second rotatable tubular member mounted coaxially with and in surrounding relationship to said first member adjacent its outlet end: drive means connected to said second member for imparting rotation thereto, said second member being of unitary construction, having a substantially uninterrupted



inner surface adapted to receive and carry any accumulation of yarn and being open at one end to permit the withdrawal of yarn therefrom; and means associated with said second member for withdrawing yarn from said accumulation.

3,161,914
SPINNERETS FOR PRODUCING HETEROFILAMENTS
Allan Arthur Bloomfield, Monmouth, John Anthony Carter, Newport, Geoffrey Hugh Jones, Abergavenny, James Saunders, Glascoed, near Pontypool, and John Gilbert Searle, Cannock, England, assignors to British Nylon Spinners Limited, Pontypool, England
Filed July 30, 1962, Ser. No. 213,544
Claims priority, application Great Britain July 28, 1961
4 Claims. (Cl. 18—8)

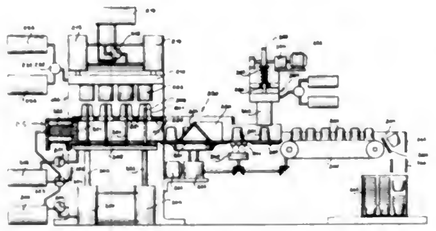


1. A spinneret for the extrusion of heterofilaments comprising: a housing having an aperture therein; a spinneret plate closing said aperture, said plate exhibiting an inverted T-shaped cross-section and forming with said housing two chambers divided by the upstanding flanges of the inverted T, said plate having extrusion orifices formed at an angle in each of the horizontal arms of the inverted T on opposite sides of the upstanding flange, the median lines of at least one orifice from each side of the upstanding flange intersecting at a point near the outer face of said plate, said plate having an annular groove cut in the face thereof, the sides of said groove being substantially at right angles with the median lines of said orifices at the points of intersection therewith; and means for directing a polymer stream to each of said chambers whereby the polymers which are simultaneously extruded through the orifices having intersecting median lines meet and coalesce after such extrusion to form a single heterofilament.

3,161,915
APPARATUS FOR THE PRODUCTION OF THIN-WALLED PLASTIC ARTICLES
Alfons Wilhelm Thiel, 11 Raimundistrasse, Mainz, Germany
Filed Aug. 24, 1960, Ser. No. 51,669
Claims priority, application Germany, Nov. 8, 1957, T 14,382, T 14,383, T 14,384; Aug. 31, 1959, T 17,146; Nov. 3, 1959, T 17,421
21 Claims. (18—19)

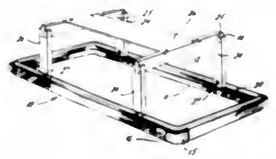
1. In an apparatus for the production of thin walled plastic articles having a bead of rounded contour on their

rim, a first shaping station for shaping each of said articles in a sheet of plastic material such as to have a substantially unbeaded and outwardly and frusto-conically backwardly flared skirt at their rim portions, cutting means for cutting each shaped article from the sheet such as to have a substantially unbeaded skirt, and a second shaping station for forming a bead of rounded contour on the rim of said article, said second shaping station comprising a plurality of shaping tools mounted for movement against the outwardly and backwardly flared skirt of the article and each having a first heated die ring zone for inwardly bending said outwardly flared skirt into a position sub-



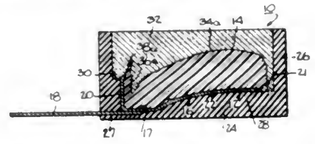
stantially perpendicular to its former outwardly flared position, said first heated die ring zone having an inwardly frusto-conically tapered heated surface, an inlet region and an outlet region, the inlet region of said first die ring zone having a greater diameter than the outside diameter of the said outwardly and backwardly flared skirt of the article and said outlet region corresponding in diameter to the outside diameter of the finished rim portion of the article, and a second heated die ring zone having a curved surface for engaging said skirt in said perpendicular position so as to form a smooth finished bead of rounded contour on said article.

3,161,916
FORMING APPARATUS
Norman F. Houghton, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 5, 1961, Ser. No. 157,192
3 Claims. (Cl. 18—19)



1. An assist-plug arrangement to be mounted in a machine for forming deep-drawn articles from heated thermoplastic sheet material, comprising: a plug portion consisting of a firm body of rigid cellular foam plastic; a member for reinforcing and mounting said body, said member being constructed of rigid material embedded in said body to reinforce the same and having portions disposed exteriorly of said body to mount the latter; and a protective covering for said body, said covering consisting of lightweight fabric wrapped about and affixed to the outside of said body to protect it against heat when coming in contact with the heated thermoplastic sheet material.

3,161,917
MOLDING FLASK FOR DENTAL IMPRESSIONS
Lawrence Wiland, 42—45 Kissena Blvd., Flushing, N.Y.
Filed Apr. 12, 1963, Ser. No. 272,785
5 Claims. (Cl. 18—34.1)



1. In combination, a dental impression tray carrying impression material and having a curved upstanding wall and a one-piece molding flask of flexible resilient material for forming dental castings from tooth, gum and buccal surface impressions in the impression material carried by the dental impression tray, said flask comprising:

a base shaped to seat the tray,

an upstanding continuous side wall unitarily joined to the base, and

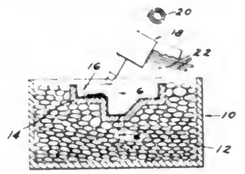
a shoulder integrally jutting from the side wall and shaped to enter into sealed relationship with the wall of the tray.

3,161,918
DIE-CASTING APPARATUS
Francis E. Zearbaugh, Rte. 3, Muncie, Ind.
Filed June 10, 1963, Ser. No. 286,762
18 Claims. (Cl. 18—42)



17. In a die-casting machine, a mold section having a parting surface which is provided with a cavity surface portion, a core pin assembly mounted in said mold section and comprising a socket in said mold section having an opening which opens through the surface portion thereof, said opening having a uniform taper which diverges toward said surface portion, a core pin having a shank engageably inserted into said tapered opening, said shank having a taper which matches the taper of said opening, one end of said core pin projecting beyond said last-mentioned surface portion, and abutment means which is selectively engageable with the other end of said core pin for moving the latter relative to said socket.

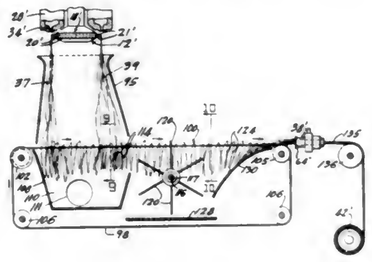
3,161,919
RESIN-BONDED MOLDS, DIES, FIXTURES AND THE LIKE
Harold E. Renaud, Okemos, Mich., assignor to Ren Plastics, Inc., Lansing, Mich., a corporation of Michigan
Original application Feb. 12, 1959, Ser. No. 792,915, now Patent No. 3,018,520, dated Jan. 30, 1962. Divided and this application Jan. 22, 1962, Ser. No. 167,602
16 Claims. (Cl. 18—47)



1. A metal sprayed facing or like product comprising a build-up in a predetermined thickness of minute globules of metal which are in a relatively flattened condition, in the direction of a surface of the product, said globules being laterally overlapped and interleaved in flat-wise

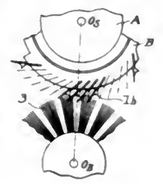
contact with one another, and being intimately bonded rigidly in said overlapped and interleaved contact relation by a thermosetting bonding agent.

3,161,920
METHOD FOR PROCESSING FIBERS
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application July 25, 1957, Ser. No. 674,227. Divided and this application Aug. 8, 1960, Ser. No. 48,017
3 Claims. (Cl. 19—.51)



1. The method of processing fibers formed by high velocity blast-attenuation of bodies of heat-softenable mineral material including the steps of continuously collecting the fibers out of the blast into catenary formations, and continuously advancing the catenary formations of fibers away from the region of the attenuating blast.

3,161,921
NEEDLE BARS IN A COMBER
Ryosuke Hattori, 2–20 Oaza Nishi Imashuku Aza Gonai, Jinmokuji-machi, Ama-gun, Aichi-ken, Japan
Filed Mar. 1, 1962, Ser. No. 176,611
Claims priority, application Japan Mar. 7, 1961
3 Claims. (Cl. 19—234)



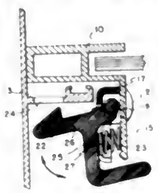
1. The combination, with a half-lap cylinder rotatable about an axis and a brush for clearing residue from said half-lap cylinder rotatable about an axis parallel to the axis of said cylinder and generating a generally cylindrical brushing surface upon rotation, of a plurality of needle bars angularly spaced about the periphery of said half-lap cylinder and lying substantially along generatrices thereof, each of said needle bars having a front lateral surface disposed forwardly in the direction of rotation of said half-lap cylinder and provided with a common array of outwardly extending parallel needles, a rear lateral surface, and an extremity projecting outwardly beyond said cylinder and provided with an outwardly concave end face terminating at said rear surface in a generally radially outwardly projecting edge engageable by said brush in a position of closest approach of said needle bar and said brush upon rotation of said brush and said half-lap cylinder.

3,161,922
DRAWING BOARD CONSTRUCTION
Bernard Morcheles, South Orange, and Nunzio L. D'Agostino, Belford, N.J., assignors to Stacor Corporation, Newark, N.J., a corporation of New Jersey
Filed June 7, 1963, Ser. No. 286,395
3 Claims. (Cl. 20—15)



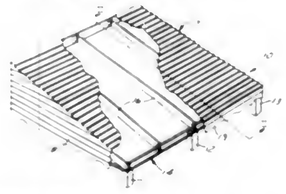
1. A drawing board comprising,
(*a*) a frame, said frame including,
(*b*) a top structural member substantially H-shaped in cross-section for defining the upper longitudinal side of said frame,
(*c*) a bottom structural member substantially U-shaped in cross-section defining the opposed lower longitudinal side of said frame,
(*d*) said "U" shaped bottom member having an opposed leg portion directed toward said upper H-shaped member,
(*e*) a pair of opposed end structural members interconnected between the corresponding ends of said upper and lower structural members,
(*f*) each of said end members having spaced opposed flange portions directed inwardly of said board,
(*g*) a rigid back member connected between the respective structural members defining said frame,
(*h*) a rigid front member having a smooth drawing surface connected to said structural members in spaced relationship to said backing member,
(*i*) a honeycomb cellular core sandwiched between said front and back members,
(*j*) and adhesive means securing said honeycomb core between said front and back members.

3,161,923
FASTENING DEVICE
Philip Crain, Valley Stream, N.Y., assignor to Allen-Stevens Corp., a corporation of New York
Filed Mar. 26, 1963, Ser. No. 268,144
5 Claims. (Cl. 20—52)



1. A releasable fastening device for latching first and second vertically positioned mutually translatable members to each other, said first member having an aperture therein and said second member having a support plate extending perpendicular to said second member, said fastening device comprising
(*a*) a recessed housing member adapted for securing to said support plate,
(*b*) a latching member including a lever portion having one end non-translatably pivoted within said recessed housing member and having a catch at the other end thereof, said lever portion being angularly displaceable about a fixed vertical axis through said housing member, said latching member further including a pressure plate portion extending substantially perpendicular to said lever portion at a location intermediate said catch and said pivoted end,
(*c*) spring means located between the pressure plate portion of said latching member and said support plate, said spring means forcing said catch into the aperture in said first member when said first and second members are brought together, and
(*d*) a cover portion affixed to the end of the pressure plate portion of said latching member, said cover portion extending toward said support plate.

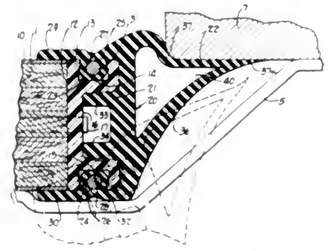
3,161,924
AWNING CONSTRUCTION
Marshall V. Noecker, Grosse Pointe, Mich., assignor to Kaufmann Awning Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 18, 1961, Ser. No. 138,907
3 Claims. (Cl. 20—57.5)



1. An awning sheet, comprising:
an elongated sheet having continuous wall means extending upwardly from the sheet adjacent one edge thereof, said wall means having an end portion which extends toward the opposite edge of the sheet and which is spaced upwardly from the remainder of the sheet, said wall means defining a groove which opens toward the opposite edge of said sheet, said groove being narrowed at its open end;
said sheet having a continuous downturned leg at said opposite edge thereof, said leg being of greater vertical extent than the open end of said groove so that said leg can abut against the free end of said end portion of another similarly shaped sheet and extend across the open end of the groove thereof;
a continuous resiliently flexible locking flange comprising an intermediate wall extending from the lower end of said downturned leg toward said one edge of said sheet and terminating in an upturned portion, said upturned portion converging with said leg in an upward direction and its upper end being spaced from said leg, the vertical extent of said intermediate wall and said upturned portion being greater than the height of said groove at the narrowest part thereof and being less than the height of the groove at the widest part thereof, the width of said locking flange being less than the depth of said groove so that said locking flange can be received in the corresponding groove of an adjacent sheet by momentary flexing of said upturned portion toward said leg as said upturned portion passes through the narrowed open end of the groove, said upturned portion returning to its normal position when it has passed beyond said open end so that it is held against outward movement therefrom.

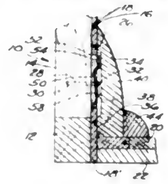
3,161,925
COMPRESSION DOOR SEAL
William A. Bertolini, Seaford, N.Y., assignor to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware
Filed Dec. 22, 1960, Ser. No. 77,540
7 Claims. (Cl. 20—69)

1. In sealing construction of the class described, in combination, a pair of doors having free edges swingable into adjacent aligned positions and sealing means at said edges, said sealing means comprising substantially identical members each consisting of a mounting section engaged with its corresponding door edge and a single flexible hollow tongue section to engage with the single hollow tongue section of the opposite door edge to effect sealing action therewith irrespective of the closing order



of the doors, said mounting section having inwardly extending gripping elements seated in mating portions of the door edge and extending toward one another.

3,161,926
DETACHABLE BASEBOARD ASSEMBLY
Dennis E. Schaub, 68 Taft St., Battle Creek, Mich.
Filed Jan. 13, 1961, Ser. No. 82,637
8 Claims. (Cl. 20—74)

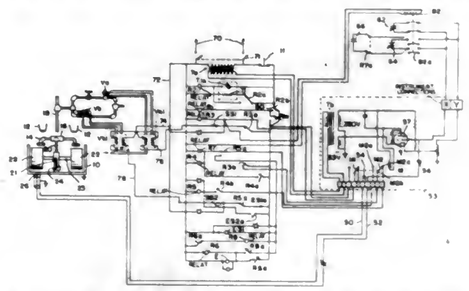


1. A detachable baseboard assembly mountable over wooden members subject to attack by termites, comprising support means in the form of wooden studding in a wall, sheathing means juxtaposed and anchored to the front face of said studding, an elongated means in the form of a baseboard, to be removably secured in juxtaposed relation along a marginal portion of said sheathing means so that when removed the wooden members subject to termite attack may be examined, and separable fastening means including a pair of detachably connectable cooperating portions respectively connected to and extending between the front face of said studding and the back face of said baseboard and when fully connected drawing the latter into flush engagement against said sheathing means which has an aperture at the front of said studding, one of said cooperating portions comprising a forwardly projecting aperture forming element anchored to the front face of said studding in said aperture of said sheathing, said other cooperating portion comprising a resilient tongue means mounted on the back face of said baseboard substantially parallel thereto and grippingly engageable in said aperture forming element.

3,161,927
METHOD AND APPARATUS FOR TAKING A MEASUREMENT OF COMPENSATED MOISTURE CONTENT OF GRANULAR MATERIAL
Randolph L. Dietert, Detroit, Mich., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed Oct. 12, 1959, Ser. No. 845,727
8 Claims. (Cl. 22—89)

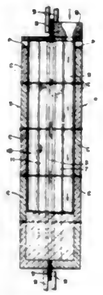
1. The method of obtaining a compensated measurement of the moisture content of moist granular material which comprises providing a probe having a pair of spaced electrode surfaces positioned in the bottom wall of a mill in position to be driven alternately by a roller and a plow effective to remove granular material from the surface of

the plow, providing a continuous flow of drying air through granular material deposited on the probe following passage of the plow, compressing the partially dried granu-



lar material against the surface of the probe by the roller, and measuring an electrical condition dependent on moisture content of the granular material between the electrodes.

3,161,928
WELDING APPARATUS AND PROCESS
Harold F. Bishop and Michael Bock II, Conneaut, Ohio, assignors to Exomet Incorporated, Conneaut, Ohio, a corporation of Ohio
Filed Jan. 16, 1962, Ser. No. 162,420
9 Claims. (Cl. 22—116)



5. The process for welding metal plates together which comprises securing two plates spaced apart to provide a gap for receiving molten metal, securing a sprue unit to each of the two opposite sides of the plates over the gap, the sprue unit on one side of the plates having a down sprue and an ingate and the sprue unit on the opposite side having an overflow sprue and an outgate, flowing molten metal into the down sprue, through the ingate, through the gap, through the outgate and through and out of the overflow sprue, and fusing the ends of the plates to the metal in the gap to form the weld.

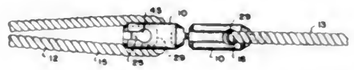
3,161,929
HOLDER FOR SHEET MATERIAL AND THE LIKE
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Jan. 18, 1962, Ser. No. 167,041
1 Claim. (Cl. 24—73)

A one-piece plastic holder for fabric materials and the like for attaching the materials to a supporting structure, comprising a flat elongated, flexible, plastic strip having first and second ends, a button affixed near the extremity of said first end, the button having a shank affixed to and extending substantially normal to said flat strip, and a head portion on said shank spaced from the strip, said head portion having parts extending beyond the sides of the shank, a finger grip integral with said first end, and a finger pushing ledge integral with said second end, said grip and ledge extending transversely outwardly from said strip when said first and second ends are releasibly held together, an elongated, non-expandable slot near the extremity of said second end, said slot extending longitudinally of said strip and having a narrow portion near said second end and a wide portion remote from the narrow portion, said slot tapering evenly between and including said narrow and wide portions, said head portion on the button being constructed to freely pass through said



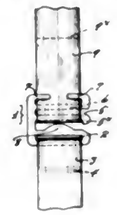
wide portion of the slot and being impassable through the narrow portion of the slot, said shank being receivable in said wide and narrow portions, said strip being looped in a U-shape around the supporting structure when in use so that the button is encompassed by the fabric and enters the wide portion of the slot and the button and fabric are slid to the narrow portion of the slot to releasibly connect said first and second ends of the holder together, with the fabric snugly held by the button within the slot, and said fabric being released from the holder by sliding the button and encompassing fabric from the narrow portion to the wide portion of the slot and removing the button transversely from the slot.

3,161,930
LINE CONNECTOR
William C. Crosson, Brackendale, British Columbia, Canada
Filed May 2, 1963, Ser. No. 277,597
5 Claims. (Cl. 24—123)



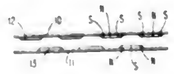
1. A line connector comprising an elongated body, a shank extending outwardly from one end of the body and having a head on its outer end, there being a socket in the body adjacent the opposite end thereof and having a narrow outlet opening out through the latter end, said socket having an entrance opening laterally from a side of the body large enough to permit the head of another similar connector to pass therethrough into the socket, a narrow slot extending from said entrance to said narrow outlet, said slot opening laterally into the socket and outwardly from said body side, said slot and outlet being wide enough to permit the shank of the head of said other connector to pass therethrough but too small for the latter head to move through said slot, and a swivel passage extending transversely through the body and clear of the headed shank and the socket, said passage being adapted to have a portion of a connecting loop extending therethrough without interfering with said shank and socket, whereby the body may be swung around said loop portion to selectively project the head end or socket end of the body outwardly from the loop portion.

3,161,931
BRASSIERE SHOULDER STRAP BUCKLE
Jehiel Zif, Brooklyn, N.Y., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Nov. 8, 1962, Ser. No. 236,278
1 Claim. (Cl. 24—200)



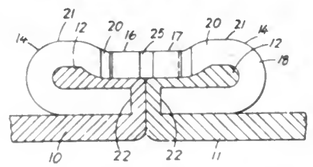
A buckle adapted for receiving and holding a shoulder attaching strap of brassieres and other garments, consisting of a relatively rigid and flat member having at one end an elongated slot for receiving a first strap, and having at its opposite end a bar carrying two oppositely directed hooks which are mutually spaced and which overlie an elongated passageway, and said rigid and flat member carrying immediately between said elongated slot area and said hook area, and spaced therefrom, an outwardly projected bar exposed at its ends and throughout its length and having a free end portion bent toward the said slot but spaced from the inner wall of said slot, said inner wall being formed with an intermediate rounded friction shoulder directed toward said outwardly projected bar to a distance approximately in line with the free end of the bent portion of said bar, whereby said projected bar may receive a loop of a second tape by passing the loop over said projecting bar and its friction shoulder, and whereby the two webs of the loop of said second tape may be pressed into the space between said oppositely directed hooks and then into the passageway over which said hooks extend.

3,161,932
MAGNETIC FASTENER
Anne Seymour Russell, 99—44 67th Road, Forest Hills, N.Y.
Filed Apr. 15, 1963, Ser. No. 272,910
4 Claims. (Cl. 24—203)



1. In a closure fastener for a garment, first and second ribbon-like strips of flexible material each adapted to be secured to and along a respective closure edge of the garment, and a multiplicity of like, discrete, thin, wafer-like circular magnets fixed to and along each said strip in face-to-face relation therewith, the center points of the magnets of each strip defining a line parallel with an edge of its respective strip, the spacing between contiguous magnets of each strip being slightly less than the corresponding diameter of the magnets measured in and along said line so that each magnet of one strip may be superposed over and in contact with two contiguous magnets of the other strip to partially nest therebetween, each magnet of said first strip having a positive pole at each intersection with its periphery of its said line, and a negative pole intermediate said positive poles, each magnet of said second strip having a negative pole at each intersection with its periphery of its said line, and a positive pole intermediate said negative poles.

3,161,933
CONTINUOUS FASTENERS
Gandolph Doelter, 96 Beaufort Mansions, Beaufort St., London SW. 3, England
Filed Oct. 23, 1962, Ser. No. 232,467
1 Claim. (Cl. 24—205.1)



A continuous fastener for joining together edge portions of two tapes of flexible material in face to face pressure-tight relation consisting of, for each tape, a row of fastener elements along the edge portion to be joined, each element formed of strip section material bent about an axis parallel to its width to U-form, the end portion of one arm of each U-shaped element being formed into a shank and a laterally enlarged head and the remainder of the U-shaped element providing a root portion, at least a part of said head projecting beyond the extremity of the root portion and each element being located with the mouth of the U-form facing towards the elements of the other row and having the edge portion of the flexible material secured within the U-form, the head of the element being joggled inwardly of the U-form to clamp the flexible material against the opposing section of the root portion of the U-form and to bring the head nearer the central plane of the U, the head, shank and root portions of the element being of substantially uniform thickness throughout, and the heads of the fastener elements of each row, when the joint is closed, overlying parts of the root portions of the elements of the other row with intervention therebetween only of portions of the tapes which are clamped between the head and root portions of said other row, whereby not only is disengaging movement of the fastener elements in a direction perpendicular to the plane of the tapes precluded but also the two elements are held, substantially, against relative pivotal movement about an axis along the joint.

3,161,934
MACHINE FOR INJECTION MOLDING HOLLOW ARTICLES FROM A MOIST MIXTURE OF FIBERS AND HYDRAULIC BINDER
Giuseppe Gremigni, Milan, Italy, assignor to Societe Anonyme Francaise Eternit, Paris, France, a company of France
Filed May 23, 1962, Ser. No. 197,039
Claims priority, application France, May 26, 1961, 863,052, Patent 1,291,221
5 Claims. (Cl. 25—30)

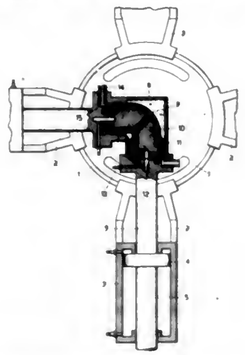
1. A machine for molding a hollow article having a plurality of communicating pipe sections with angularly related intersecting axes from a moist mixture of fibers and a hydraulic binder, comprising

a mold including two mating parts with permeable walls corresponding in shape to that of the article to be produced and including a plurality of communicating, outwardly opening tubular sections with intersecting axes having the same angular relationship as the axes of the pipe sections of the article, said two parts of the mold meeting, and being separable along planes passing through said axes of the tubular sections thereof,

a plurality of core sections corresponding to said tubular sections of the mold and each including a rigid, substantially cylindrical member and an elastic water-impervious sheath enveloping said rigid member, said

core sections being slidable coaxially into and out of the corresponding tubular sections of the mold through the open outer ends of the latter, said core sections having inner ends which are engageable with each other in planes that are angular related to the respective axes of the core sections when the latter are axially inserted in the corresponding tubular sections of the mold,

means mounting said core sections for rectilinear axial movements in the directions of said axes of the corresponding tubular sections of the mold so as to permit insertion and withdrawal of the core sections,

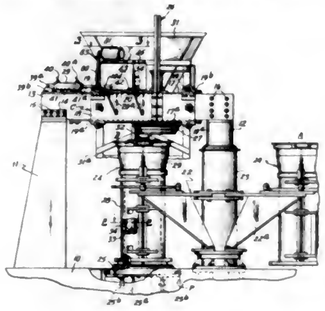


fluid-pressure actuated means operative to simultaneously urge said core sections axially into the corresponding tubular sections of the mold, thereby to effect fluid tight engagement of said ends of the core sections within the mold,

means for introducing the moist mixture between said permeable walls of the mold and the elastic sheaths of the core sections, and

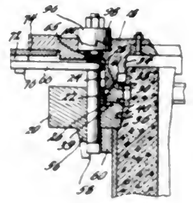
means for introducing a fluid under pressure between said rigid members of the core sections and said sheaths of the latter, thereby to mold the mixture to the shape of said permeable walls and express moisture from the mixture through said permeable walls.

3,161,935
TAMPING MECHANISM
Carl W. Chanlund, 412 Maple St., Nampa, Idaho
Filed Apr. 28, 1959, Ser. No. 809,456
5 Claims. (Cl. 25—37)



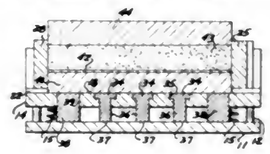
1. In a pipe molding machine having means adapted to support a mold, in combination: an elevated track; a carriage mounted for movement along said track to a position directly over a mold for material to be tamped; a pair of gear housings supported in spaced relation on said carriage, each housing including an input shaft and an output shaft and connecting gearing within the housing, each output shaft including a crank arm supported by a wall of said housing; a separate power element for each gear housing mounted on the respective housings; a pair of tamping sticks; a driving connection between each crank arm and a separate one of said tamping sticks, said driving connections including a friction box enclosing a tamping stick and cooperating means carried by each gear housing and friction box for guiding its associated friction box, said gear housings being disposed with their respective output shaft axes at obtuse angles with each other and coinciding with radii of the axis of said mold supporting means, and with the tamping sticks disposed in the space between the gear housings, whereby either of said tamping sticks may be used independently of the other.

3,161,936
APPARATUS FOR FORMING PERIPHERAL GROOVES IN CONCRETE PIPES
Milton Tiller, Sioux City, Iowa, assignor to Concrete Pipe Machinery Company, Sioux City, Iowa, a corporation of Iowa
Filed Feb. 4, 1963, Ser. No. 256,057
12 Claims. (Cl. 25—39)



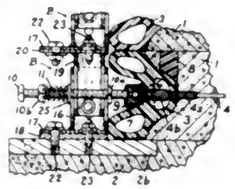
9. For forming an annular groove in the outer surface of molded products, a pair of telescopically mating rings having inner surfaces for molding, said rings having inner, annular recesses, a split ring received in said recesses, a slant surface in one of said recesses and a cooperating lant surface on said split ring for camming said split ring radially inwardly to a closed position, with its inner surface located inwardly of the said inner surfaces of said mating rings for forming said annular groove in a molding operation, power means to bias said mating rings together, thereby closing said split ring, and to move said mating rings apart, thereby releasing said split ring from said molded product, connective means for said telescopically mating rings, for limiting axial movement thereof, and means engaging at least one of said mating rings for removing said rings from the molded product simultaneously, the product remaining stationary during the removal operation.

3,161,937
MOLD APPARATUS USED IN MAKING CERAMIC AND ABRASIVE PRODUCTS
Paul R. Gjertsen, 9038 Dearborn Ave., Detroit, Mich.
Filed May 4, 1962, Ser. No. 192,556
2 Claims. (Cl. 25—119)



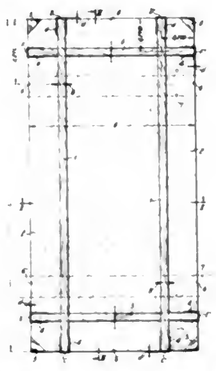
1. A mold apparatus for compacting a mix used in making ceramic and abrasive products comprising a base adapted for mounting upon the fixed platen of a press, a hollow mold block guidably and yieldably positioned above said base for movement relatively thereto, a hollow mold body open at its top and bottom mounted upon and within the mold block and secured therein, a mold platform snugly, but movably positioned within the bottom of the mold body resting upon said block, reaction means movably extending through the bottom of the block and interposed between said platform and base fixedly supporting said platform, said mold body and platform adapted to receive a mix of ingredients to be compressed, a pressure plate snugly and movably extending into the top of the mold body bearing against said mix, said pressure plate adapted for registry with the movable platen of said press for exerting a uniform predetermined pressure upon the mix for compacting the same, and an elongated flattened spacer yoke snugly and removably interposed between the top of said base and the undersurface of said block after the initial application of pressure and for the purpose of permitting a secondary application of pressure and maintaining a non-yielding relation between said block and base, the guided and yieldable positioning of the mold block including upright leader pins anchored in said base and received within corresponding apertures in said block, and coiled springs interposed in compression between said base and block, said reaction means consisting of a series of longitudinally spaced posts extending throughout the length of said platform, some of said posts retained against relative movement in one direction with respect to said block.

3,161,938
FLEXIBLE PANEL FORM FOR THIN SHELLS
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa.
Filed Feb. 2, 1961, Ser. No. 86,814
2 Claims. (Cl. 25—121)



2. A form for molding at least a portion of a thin cementitious building panel having stiff embeddable metal strand means spaced along at least its edging. said form comprising an elongated elastic strip, a base for supporting said strip, said strip being sufficiently rigid so as to prevent sagging of its top portion when supported on said base, said strip having an effective height substantially equal to the thickness of said building panel portion to be cast, said strip having a length at least sufficient to mold said edging of said building panel portion, said strip being sufficiently flexible so as to be bendable in all directions to allow it to follow the contours of curved and flat planes, said strip having an offset portion substantially centrally of the height of said strip extending throughout its length and protruding inwardly toward the said building panel portion for molding a keying groove in said edging of said building panel portion, said strip confining the fresh cementitious aggregate of said panel portion deposited onto said base and defining its edge shape, said strip having spaced transverse holes through an intermediate portion of its height and substantially parallel to the plane of the said base, said embeddable metal strand means of said building panel portion having end portions extending through said holes, and fastener means disposed along the length of said strip for fastening said strip to said base and for anchoring the said end portions of said embeddable metal strand means, said end portions include connector means, said connector means including an aperture, said fastener means including pin means supported thereon for coupling said connector means wherein said anchoring is provided, said pin means accurately positioning said connector means so that said apertures face towards the planes of the major surfaces of said building panel portion, said pin means projecting outwardly away from said base, whereby said connector means may be quickly coupled to said fastener means and whereby said building panel portion may be removed from engagement with said pin means without objectionably disturbing said pin means, together with a longitudinally extending, flexible metallic spacing wire means mounted substantially centrally of the height of said strip, said spacing wire means being bendable in every direction and accurately spacing said connector means of said embeddable metal strand means, said spacing wire means also restraining said strip from stretching or contracting in length, said spacing wire means being coupled to an outer portion of said pin means outwardly from said connector means, whereby said spacing wire means may be positioned after said connector means are positioned, and said spacing wire means may be removed while said connector means remain anchored to said fastener means, so that the spacing wire means may be used elsewhere while said building panel portion is curing.

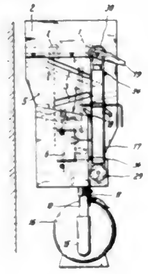
3,161,939
COMPOSITE FORMWORK FOR CASTING STRUCTURAL BODIES
Karl Speidel, Kupferzell, Wurttemberg, Germany, assignor to Futura G.m.b.H., Glarus, Switzerland, a corporation of Switzerland
Filed Sept. 18, 1961, Ser. No. 138,676
Claims priority, application Germany Jan. 25, 1961
9 Claims. (Cl. 25—131)



1. A composite formwork for casting structural bodies from hardening material such as concrete, comprising a number of individual panel units, each having a front side to be contacted by the material to be cast and having a rear side, each of said panels having reinforcing means and means for connection to adjacent panels arranged on the rear side, and having a plurality of reference abutments rigidly secured to each of said panels and protruding slightly over each of the edges of the panel, said reference abutments having a thickness at least substantially equal to the thickness of said panels, being located at the rear side on the corners of a regular geometric polygonal figure and having front sides respectively in flush abutment with corresponding front sides of abutments of adjacent panels, whereby a number of the panel units can be aligned and assembled in vertical and horizontal row by means of said reference abutments, said panels in assembled condition defining a relatively thin

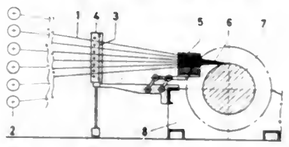
intervening gap between portions of adjacent panels, said abutments each protruding beyond the edges of the panels a distance half the width of said intervening gap, and clamping means for connecting abutments of adjacent panels to retain said panels in adjacent assembled condition.

3,161,940
DEVICE FOR FITTING TO A LOOM FOR THE REMOVAL OF YARN RESIDUE FROM BOBBINS
Georg Röhl, 1 Haidschlagweg, Regensburg, Germany
Filed June 1, 1962, Ser. No. 199,484
Claims priority, application Germany June 9, 1961
14 Claims. (Cl. 28—19)



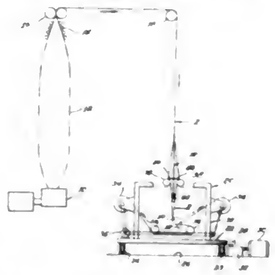
1. A device adapted to be fitted to a loom for the removal of yarn residue from bobbins, the device comprising a downwardly inclined track for receiving bobbins from the loom, down which the bobbins can slide with their heads uppermost; a vertical tubular casing fitted at its lower end with a suction device spaced beneath the end of the track by a distance at least equal to the length of the bobbin stem, the upper end of the casing being fitted with a spacer for engaging the head of a bobbin to provide an annular suction opening between the top of the casing and the head of the bobbin; and mechanism for lifting a bobbin out of the casing after the removal of the yarn residue by the effect of the suction.

3,161,941
METHOD OF UNITING WARPS
Heinz John, Uzwil, Switzerland, assignor to Maschinenfabrik Benninger A.-G., Uzwil, Switzerland
Filed Nov. 28, 1960, Ser. No. 72,183
1 Claim. (Cl. 28—72.5)



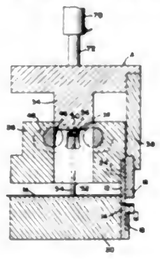
A method of uniting two groups of unwoven threads with the threads in each group disposed parallel to each other and which threads are adapted to be guided through a lease reed at one spacing of the parallel threads and afterwards with smaller spacing through a guide reed of a textile machine, said method comprising the steps of applying a non-extensible, flexible adhesive tape to paired threads, said paired threads consisting of a thread from each group, said tape being applied when the threads are near the lease reed the respective pairs of threads being spaced from adjacent pairs, and severing the tape between adjacent pairs of threads.

3,161,942
APPARATUS FOR DISTRIBUTING UNIFORM GAUGE VARIATIONS OF PLASTIC EXTRUDED FILM ON WINDUP ROLLS
Grant W. Cheney, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 3, 1961, Ser. No. 80,153
7 Claims. (Cl. 29—2.12)



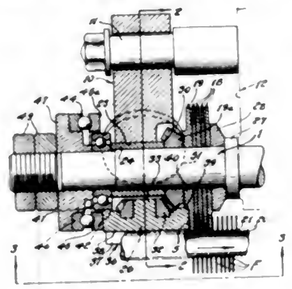
1. Apparatus for uniformly distributing gauge variations of plastic extruded tubular film on windup rolls comprising, a rotatable platform, a frame means mounted upon said platform, a pair of windup rolls supported by said frame means, means to cut the tubular film into two sheets each of which will be wound upon a windup roll, and tube spreading means positioned within the tubular film and supported by said frame means for rotation therewith.

3,161,943
EXPANDED METAL APPARATUS
Eugene Maier, San Mateo, Calif., assignor to Soule Steel Company, San Francisco, Calif.
Filed June 27, 1962, Ser. No. 205,687
7 Claims. (Cl. 29—6.2)



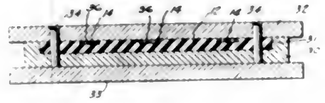
7. Apparatus for making expanded metal from a flat sheet of metal comprising a base plate for supporting the flat sheet, first and second fixed dies disposed on said base plate, and a carriage slidably mounted above said base, said carriage including a first element, a first upper die attached to said first element, a second element slidably mounted relative to said first element, a second upper die attached to said second element, means to vertically reciprocate said carriage relative to said base, gate means for releasably locking said first and second element against relative movement during a first downward moving phase of said carriage, gate releasing means for releasing said gate means to allow movement between said first and second element, and means carried by said carriage and depending towards said base plate to actuate said gate releasing means when said carriage is moved beyond a predetermined distance relative to said base plate when said first element has reached a preselected position relative to said base.

3,161,944
COMBINATION FIN-FORMING AND FIN-ATTACHING METHODS AND APPARATUS
Otto R. Schuler, Detroit, Mich., assignor to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed July 10, 1961, Ser. No. 122,703
17 Claims. (Cl. 29—33)



1. Apparatus for use in attaching fin strip material to an elongated, helically grooved tube or like member advancing axially in the direction of its length, comprising means disposed forwardly in the direction of said advance to receive fin strip material for application to the grooving of said member, including coacting first and second rotary members between which said strip material is received under substantial force in the direction axially of the first thereof, the second rotary member being mounted to rotate on an axis at an angle to the axis of the first, and means for exerting adjustable resilient force on said first member in the direction of its axis and toward said second member to apply and control the force exerted on the fin material by said first and second members.

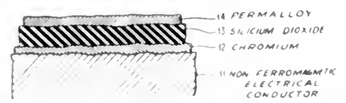
3,161,945
METHOD OF MAKING A PRINTED CIRCUIT
Paul L. Anderson, Rockville, Conn., and John A. Zagusta, Jackson Heights, N.Y., assignors to Rogers Corporation, Manchester, Conn., a corporation of Massachusetts
Filed May 21, 1958, Ser. No. 736,846
2 Claims. (Cl. 29—155.5)



1. The method of making a printed circuit assembly comprising the steps of perforating a relatively thin conductive metal foil sheet, die-cutting a circuit pattern from the sheet against an uncured insulating base sheet embodying a curable resin, removing the unwanted foil and molding the foil sheet and base sheet by applying heat and pressure to flow the base sheet resin into the perforations and key the foil sheet to the base sheet upon curing of the base sheet.

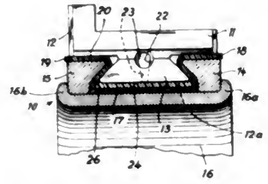
3,161,946
METHOD FOR THE PRODUCTION OF THIN MAGNETIC LAYERS WITH REPRODUCIBLE AND STABLE PROPERTIES
Hans J. Birkenbeil, Boblingen, Baden-Wurttemberg, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 2, 1961, Ser. No. 149,560
Claims priority, application Switzerland Mar. 30, 1961
4 Claims. (Cl. 29—155.5)

1. A method of making magnetic memory elements comprising the steps of, plasticly deforming one surface of a planar, non-magnetic, electrically conductive, metallic substrate member having a specific resistance below 5×10^{-4} ohm cm. to form at said one surface a Beilbyan layer; maintaining said substrate member within a predetermined temperature range while depositing a continuous layer of a second non-magnetic metallic material, having a melting melting point above approximately 1300° C. and a lattice spacing which diverges from the metal of



said substrate member by less than 15%, on the one surface of said substrate member, said predetermined temperature range being 100° C. minimum and a maximum temperature which if exceeded produces recrystallization of the second metallic material when deposited on said substrate member; and thereafter depositing a continuous thin film layer of ferromagnetic material in the presence of an orienting magnet field.

3,161,947
METHOD OF MAKING COMMUTATORS
Fridolin Schäfer, Stuttgart, and Karl Wick, Stuttgart-Rohr, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Original application Sept. 8, 1958, Ser. No. 759,694, now Patent No. 2,990,488, dated June 27, 1961. Divided and this application Mar. 10, 1961, Ser. No. 94,891
Claims priority, application Germany, Oct. 5, 1957, B 46,300
6 Claims. (Cl. 29—155.54)



1. In the manufacture of commutators of the type in which the core and the annulus of dovetailed segments define therebetween an annular space which communicates with the surrounding atmosphere through a passage extending through said annulus to a point above said annular space, the steps of mounting the core on the spindle of an armature, soldering the armature wires to segments, and submerging the commutator after assembly into a hardenable plastic insulating substance for filling said space through said passage and for coating the armature wires with said substance.

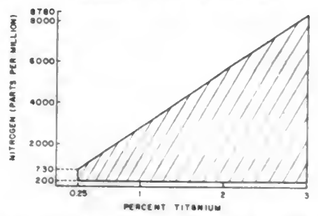
3,161,948
COMPOSITIONS CONTAINING IRON, MOLYBDENUM, SILICON AND SELECTED LOW-MELTING METALS
Max F. Bechtold, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 29, 1963, Ser. No. 254,584
10 Claims. (Cl. 29—182.5)

1. A powder metallurgy composition consisting essentially of, by weight, 15–67% iron, 15–65% molybdenum, 8–57% silicon, and 5–25% of a low-melting component of the group consisting of silver, lead, tin, and combinations thereof.

3,161,949
REFRACTORY METAL BASE ALLOYS AND METHOD OF MAKING SAME

Clayton D. Dickinson, Port Washington, and Robert Steinitz, Harrison, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Feb. 21, 1963, Ser. No. 260,963
7 Claims. (Cl. 29—182.5)



1. An alloy consisting essentially of a refractory metal selected from the group consisting of molybdenum and tungsten; a reactive metal chosen from the group consisting of titanium, hafnium, and zirconium; and nitrogen, the amount of nitrogen in said alloy being between 200 parts per million and the amount required to transform all the contained reactive metal into stoichiometric nitride, said nitride being uniformly dispersed throughout the matrix as fine particles having a diameter predominantly less than 0.1 micron.

3,161,950
ELECTRON BEAM WELDING PROCESS

Harold M. Cobb, Wallingford, Conn., assignor, by mesne assignments, to United Nuclear Corporation, New Haven, Conn., a corporation of Delaware

No Drawing. Filed Apr. 1, 1960, Ser. No. 19,146
4 Claims. (Cl. 29—471.5)

1. The method of forming a corrosion resistant composite metal element having an outer layer of zirconium and a metallurgically bonded inner layer which comprises

(*a*) forming an enclosure of at least two mating parts of zirconium,

(*b*) assembling the enclosure about a core material which closely conforms to the interior configuration of the enclosure,

(*c*) placing the assembled parts in a high vacuum environment,

(*d*) electron beam welding the parts of the enclosure together by directing a beam of high energy electrons along the line of joining of the enclosure parts while maintaining the high vacuum environment,

(*e*) subjecting the assembled parts to high pressure at an elevated temperature, and

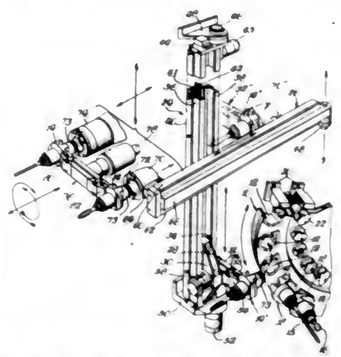
(*f*) removing foreign substances from the external surfaces of the enclosure by wet blasting with a slurry of water and particles of aluminum oxide.

3,161,951
AUTOMATIC TOOL HANDLING APPARATUS

Myron L. Anthony, La Grange, Ill., assignor to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois

Filed Sept. 17, 1962, Ser. No. 224,058
18 Claims. (Cl. 29—568)

1. In an automatic tool changing system for use in conjunction with a machine tool having a head on which a spindle is mounted, which system includes a tool storage member mounted independently of said head and tool transfer means mounted on said head for taking a newly selected tool disposed in an intermediate tool transfer position and transporting the same to said spindle, the improvement comprising shuttle means including a first rectilinear shuttle track member having first carrier means movable along said track for gripping a tool selected from said storage member and transporting said tool along a first rectilinear path, a second rectilinear shuttle track member having second carrier means movable along said track for receiving said tool from said first carrier means and transporting said tool along a second rectilinear path to an intermediate tool transfer position for

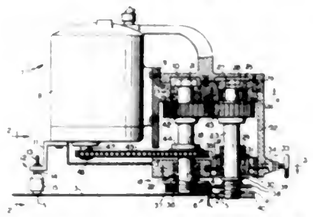


transfer to said tool transfer means, said second path being in intersecting relation with said first path whereby a tool may be transferred between said first movable carrier means and said second movable carrier means, and drive means associated with each of said carrier means for moving a carrier in either direction along its corresponding track.

3,161,952
METAL BARREL OR DRUM TOP CUTTER

Joseph S. Czapiewski, 805 E. Locust St., Milwaukee, Wis.

Filed Oct. 7, 1963, Ser. No. 314,133
1 Claim. (Cl. 30—4)



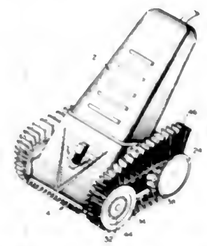
In a power driven machine for cutting a flanged head free from a metal drum, a main frame for movement peripherally of the drum, a first shaft rotatable on a fixed axis in the main frame, a drive wheel mounted by means of right hand threads on the first shaft to engage with the drum head, a spherical bearing mounted in the main frame, a second shaft mounted at one end in the spherical bearing and driven by the first shaft, a cutter mounted by means of left hand threads on the second shaft adjacent the other end thereof for swinging on an arc toward and away from the drive wheel and for bearing on a flange of the drum head opposite the drive wheel, a guide shoulder mounted on the end of the second shaft beyond the cutter, adjustable spacer washer disposed between said cutter and said guide shoulder, means for driving the cutter shaft from the first shaft, a pair of guide wheels rotatably mounted on the main frame, the guide wheels severally being at each side of the drive wheel for bearing on the end of the drum and on a vertical surface of the drum head, a support frame attached to the main frame, and means adjustably mounted on the support frame for movably bearing on the drum head whereby the drive

wheel is adjustable for maximum bearing on a head flange as the machine moves peripherally of the drum and over the drum head.

3,161,953
HAIR CLIPPER ATTACHMENT

Ignatius E. Theodorou, 183 Warren St., Watertown, Mass.

Filed Apr. 1, 1963, Ser. No. 269,332
7 Claims. (Cl. 30—202)

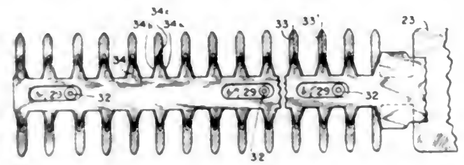


1. An attachment for a hair clipper having a forward cutter assembly and a flat sole plate, said attachment comprising a body member carrying a plurality of rotatable members in parallel tandem relationship, said body member being removably secured to said clipper adjacent to the sole plate and providing for exposure of the forward edge of the cutter assembly, movable band members linking each tandem array of rotatable members to provide for movement of said body member and hair clipper along the human head, each of said band members defining an array of laterally disposed fin members over a portion thereof, each of said fin members varying successively in height from a first member having a minimal dimension to a last member representing the highest dimension to thereby successively elevate the forward edge of the cutter assembly as the fin members contact the human head.

3,161,954
BLADE ASSEMBLY FOR PORTABLE POWER-OPERATED HEDGE TRIMMER

Robert H. Riley, Jr., and Harry L. Beam, Towson, Md., assignors to Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Nov. 14, 1962, Ser. No. 237,647
2 Claims. (Cl. 30—224)



1. A blade assembly for a portable power-operated hedge trimmer, comprising:

(*a*) a stationary blade;

(*b*) a movable blade disposed on top of said stationary blade and adapted to reciprocate with respect to it;

(*c*) a plurality of spaced-apart slots formed in said movable blade along a substantially common longitudinal axis;

(*d*) a blade cover plate disposed on top of said movable blade and covering said slots;

(*e*) teeth formed on each of said blades and extending laterally from at least one side of said cover plate, the teeth on said movable blade having cutting edges formed thereon;

(*f*) fastening means between said stationary blade and said blade cover plate, extending through each of said slots in said movable blade, and including a respective spacer washer in each of said slots;

(*g*) each of said spacer washers having a vertical height exceeding that of said movable blade; and

(*h*) said respective spacer washers in the two furtherest removed slots having a diameter exceeding that of the order of said spacer washers, and closely approaching the width of each slot, thereby positioning the movable blade with respect to said stationary blade.

3,161,955
BLADE ASSEMBLY

Herbert D. Cronin, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Dec. 3, 1962, Ser. No. 241,975
3 Claims. (Cl. 30—225)



1. A blade assembly comprising:

(*a*) a pair of blades, each of which has a ferrous core;

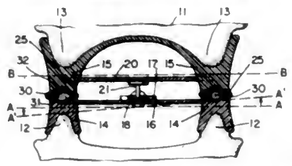
(*b*) one of said blades having an outer layer of cadmium; and

(*c*) the other of said blades having an outer layer of chromium.

3,161,956
METHOD AND APPARATUS FOR ADAPTING DENTURES

Carl P. Van Court, Canoga Park, and Harold E. Kinsman, Southgate, Calif., assignors to Air-Balance Corporation, a corporation of California

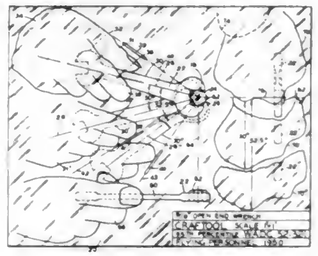
Filed May 2, 1960, Ser. No. 26,109
3 Claims. (Cl. 32—19)



1. An improved method of establishing angular mandibular-maxillary relationship in cooperation with a centric anterior-posterior-vertical indexing pin, comprising the steps of: positioning mandibular and maxillary bite blocks with a centric assembly secured thereto over the corresponding alveolar ridges of a patient with said indexing pin in previously established anterior-posterior-vertical position; positioning fluid receiving means in collapsed condition over the rim area only of said mandibular bite block; pumping a quick setting material in fluid form into said fluid receiving means to provide a uniform pressure between the opposed bite rims of said bite blocks having a value substantially equal to the physiologic pressure corresponding to the diastolic cardio-vascular pressure characteristic of the patient; maintaining said pressure until said quick setting material has hardened where-

by said hardened material will together with said centric pin enable re-establishment of the angular relationship of the mandible and maxillary in the subsequent fabrication of dentures; and thereafter transferring the assembly of bite blocks and fluid receiving means with the hardened material therein to an articulator for further processing.

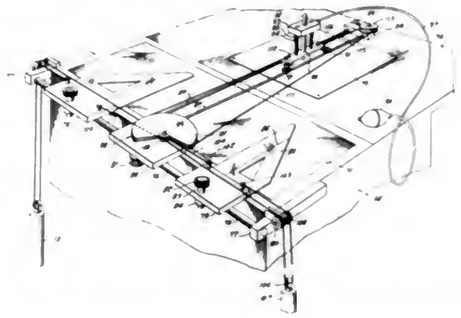
3,161,957
TOOL CLEARANCE OVERLAY
Peter H. Kach, Syracuse, N.Y.
(12012 Galena Road, Rockville, Md.)
Filed Jan. 4, 1962, Ser. No. 164,330
4 Claims. (Cl. 33—1)



1. As an article of manufacture, a substantially transparent sheet of material for use over a drawing of a detail of a component of an assembly having a part such as the head end of a threaded fastening requiring the application of a hand tool in the ultimate assembly or servicing of the component, said sheet of material having stiffness, and said sheet of material having inscribed thereon the outline of the head end of a threaded fastening to which a standard tool is to be applied for rotating the fastening, and an outline of a standard tool in engagement therewith in the normal grip of an operator's hand of a selected percentile in plan view whereby the space requirements for said tool and an operator's hand may be quickly checked against the component design for actuation of the threaded fastening thereof, said sheet having narrow linear slots disposed on lines closely embracing the outline of the operator's hand and converging at the center of the head end of the threaded fastening.

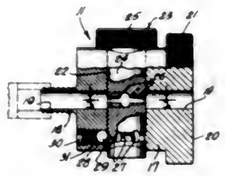
3,161,958
METHOD AND APPARATUS FOR STUDYING EXPLOSIONS STEREOSCOPICALLY
Norman R. Zabel, Menlo Park, Calif., and David E. Brink, deceased, late of Palo Alto, Calif., by Virginia W. Brink, executrix, Palo Alto, Calif., assignors to Jet Research Center, Inc., Arlington, Tex., a corporation of Texas
Original application Oct. 23, 1959, Ser. No. 848,476, now Patent No. 3,074,170, dated Jan. 22, 1963. Divided and this application June 27, 1962, Ser. No. 213,076
4 Claims. (Cl. 33—20)

1. A stereo plotting machine comprising: means providing a plotting surface; means providing a working surface for receiving a stereo-pair of images from which a plot is to be made; a straight track adjacent to said working surface; a first car mounted for movement along said track; first index means carried by said first car for movement over said working surface; a second car mounted for movement along said track; second index means carried by said second car for movement over said working surface; a follower mounted for movement along said track; a plotting arm carried by said follower, said plotting arm having a portion moveable over said plotting surface; a carriage mounted for movement along said plotting arm in a direction perpendicular to said track and over said plotting surface; a marker mounted on said carriage; means for actuating said marker to apply a mark to said plotting surface; differential linkage means coupling each of said cars to said follower and to said carriage such that, for all positions of said cars on said



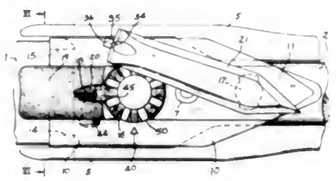
track, the distance between said follower and said first car is equal to the distance between said follower and said second car plus a constant distance, and the distance of said carriage from said track is equal to one-half the distance between said cars multiplied by a constant factor plus a constant distance.

3,161,959
REAR GUN SIGHT
Samuel J. Wilbur, Center St., Ballston Spa, N.Y.
Filed Dec. 5, 1961, Ser. No. 157,120
13 Claims. (Cl. 33—54)



1. A rear gun sight for mounting on a rifle for use in aligning a front sight with a small target area, comprising a body having one sight passage therethrough from side to side, and another and cylindrical bearing passage therethrough at right angles to said one passage, with the axes of said passages intersecting one another, a member having a cylindrical shank thereof rotatable in and fitting said another passage and extending outwardly of said body at one end where it terminates exteriorly of said body in an operating element, the portion of said shank which crosses said one passage, having a plurality of intersecting bores of different diameters arranged in different angular relations to one another about the axis of said shank, all extending diametrically through the shank with their axes intersecting one another and with the axes of both of said passages, each bore being straight and of uniform cross-sectional area from end to end, and in both directions from its intersection with the other bores, the balance of said shank between said sight bores being solid and rigid, and means acting between said body and said shank for yieldingly holding said shank in each of its rotative positions in which a bore is in axial alignment with said one passage.

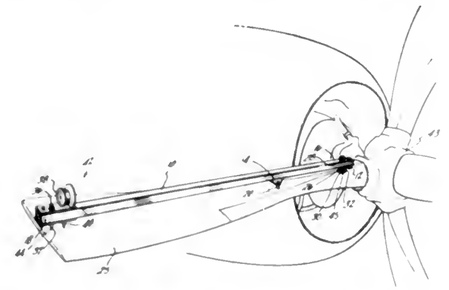
3,161,960
GUN SIGHT
Joseph A. Badali, Branford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Jan. 30, 1962, Ser. No. 169,748
9 Claims. (Cl. 33—56)



1. A gun sight comprising a barrel-mounted sight base, a flexible sight-supporting leaf mounted at one end on said base for both annular and flexing movement of the opposite end of said leaf with respect to said base, said opposite end carrying the sight, an annular elevation adjustment member carrying a cam surface extending in graduated steps substantially all around one side of said member, said opposite end of said leaf also carrying a cam follower, said base and opposite end of the leaf having mating means engageable with each other for holding said leaf in a predetermined operable position transversely with respect to said base and cam surface, a leaf spring mounted between said base and leaf, said spring having a curvature adapted to bias said opposite end of the leaf so as to urge said follower to rest against said cam surface for raising and lowering said opposite end and urge said mating means into engagement, said base having mounting means slidably receiving said leaf at said one end so that said opposite end of the leaf may be not only turned aside within limits set by said mating means but also flexed upwardly and moved aside for disengaging said mating means and also said slidable mounted means from said one end to permit replaceable displacement of said adjustment member, spring and leaf from said base, said adjustment member being mounted centerlessly and extending outwardly between said base and said opposite end of the leaf under said bias for manual rotation of said member, and controllable means for carrying and shifting the mating means on said base transversely thereby providing windage adjustment.

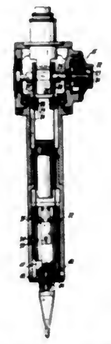
3,161,961
BLADE ALIGNMENT GAGE
Donald W. Lyna, Windsor Locks, Donald J. O'Hare, West Hartford, and George G. Walker, Jr., Manchester, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 25, 1960, Ser. No. 64,832
5 Claims. (Cl. 33—174)

1. A measuring device for measuring the longitudinal alignment of a propeller blade supported in a hub or fixture, comprising an elongated arm, means for supporting said arm in a predetermined position on the surface of a blade to be measured and including a foot adjacent one end of the arm and spaced feet spaced transversely of said arm intermediate the ends of said arm, said feet adapted to rest on a blade surface and locate said arm in a predetermined position spaced from said surface, locating means comprising pins axially movable transversely of said arm and extending transversely outward adjacent each end of said arm and adapted to cooperate with and engage respective mating reference stations on the blade surface for locating the arm in a single fixed predetermined transverse and axial position with respect to said blades, and indicator means adjacent the other end of said



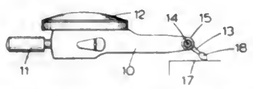
arm remote from said foot adapted to contact the blade surface to determine the longitudinal alignment of the blade.

3,161,962
FEELER MICROSCOPE FOR MEASURING MACHINE
Jacques A. Pettavel and Andre H. Mottu, Geneva, Switzerland, assignors to Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, a company of Switzerland
Filed Dec. 5, 1961, Ser. No. 157,062
Claims priority, application Switzerland, Dec. 14, 1960, 13,952/60
11 Claims. (Cl. 33—169)



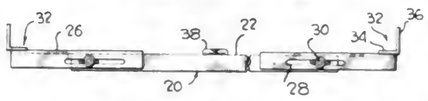
1. A feeler microscope comprising a cylindrical body, means supporting said body in an approximately vertical position, a head on the upper portion of said body, an optical system comprising an objective lens system mounted in said body and a microscope eyepiece mounted in said head, a carriage vertically displaceably in a lower portion of said body, a balancing device mounted in said head, means for suspending said carriage from said balancing device, a feeler support resiliently in said carriage for oscillation about a horizontal axis from a normal vertical position, a feeler carried by said support, visual position indicating means on said feeler support for indicating both the transverse position of the feeler with reference to said carriage and the vertical position of said carriage with reference to said body, said position indicating means being viewable through said optical system, means for illuminating said position indicating means, and said balancing device being selectively adjustable to provide a selected pressure of said feeler on a work piece and to place said feeler in neutral vertical equilibrium.

3,161,963
LINEAR DIMENSION GAUGES
Desmond Capp, % Verdict Gauge Works, Thames Road, Crayford, Kent, England, assignor of one-half to A. Capp & Son Limited, Crayford, Kent, England
Filed May 1, 1962, Ser. No. 192,037
Claims priority, application Great Britain, Apr. 4, 1962, 12,969/62
2 Claims. (Cl. 33—172)



1. A linear dimension gauge comprising a body, a spring pressed stylus having one end pivotally mounted on the body so that its free end can bear on the surface of the workpiece, with the pivot about which said stylus turns and a point on said free end which bears on the working surface constituting working centers, a graduated scale carried on the body, an indicator member cooperating with said graduated scale, a mechanical transmission connecting said stylus and said indicator member, and means for moving said stylus into a tilted position relative to said body, the free end of said stylus in said tilted position projecting to one side of said body, said free end of said stylus being tapered, the taper being such that the component of the distance between the working centers taken in one specific direction relative to said body remains constant in all operating positions of the stylus.

3,161,964
ELEVATOR RAIL BRACKET POSITIONING DEVICE
John J. Myles, Box 163, Rte. 1, Indian Head, Md., assignor of one-half to Eugene T. Dimmick, Temple Hills, Md.
Filed Apr. 28, 1961, Ser. No. 106,369
1 Claim. (Cl. 33—180)



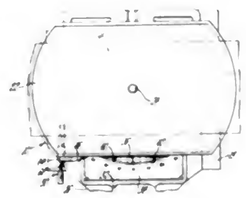
A tool for positioning elevator support brackets on mounting brackets secured one to each of two opposed wall surfaces of an elevator shaft, said tool comprising a pair of elongated end members disposed in end to end spaced relation, a central member disposed between said end members and telescopingly connected to the portions of said end members adjacent their inner ends, a spirit level carried by said central member, a transversely arranged angle bracket disposed adjacent the other end of each of said end members, each of said brackets being arranged with one leg horizontal and the other leg vertical and exteriorly of said one leg, each of said horizontal legs being fixedly secured to the adjacent portion of the contiguous end member, each of said vertical legs being adapted to removably support thereon a support bracket for attachment to a wall mounted mounting bracket, and indicia on each of said end members for alignment with a plumb line depending in said shaft adjacent to and spaced from each of said wall surfaces.

3,161,965
TURNING RADIUS GAUGE
Carl S. Taylor, Springfield, Ill., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed Feb. 8, 1963, Ser. No. 257,307
11 Claims. (Cl. 33—203)

1. A device for checking the turning radius of vehicle steering road wheels, and comprising:

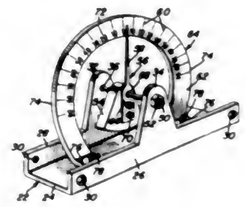
(*a*) a vehicle wheel supporting member journaled for wheel turning ease in opposite directions from and back to a given position,

(*b*) means for engaging and stopping of said vehicle wheel supporting member in one of said turning directions,



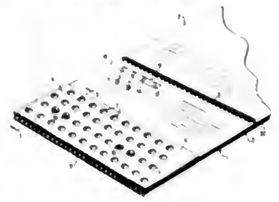
(*c*) and means operatively engaged by said stopping means for automatic retraction thereof upon overpositioning of said supporting member.

3,161,966
GRAVITY LEVEL
Delbert C. Gilliland, Walnut St., McArthur, Ohio, assignor of one-third to Harry R. Kwatkosky, McArthur, Ohio
Filed May 16, 1962, Ser. No. 195,174
4 Claims. (Cl. 33—215)



1. For installation and use in a recess provided therefor in the lengthwise bottom of a conventional-type straight-edged mechanic's level stock; a prefabricated self-contained ready-to-install unit structurally designed and uniquely adapted to be fitted and enclosed for use in said recess, and unit embodying an elongated channel-shaped member constituting a fixture, said channel-shaped fixture embodying a central web provided along opposite lengthwise edges with spaced parallel flanges, the median portions of said flanges being provided with similarly constructed and performing upstanding lugs, said lugs being positioned in spaced-apart parallelism and being provided with aligned shaft bearings, one bearing being axially adjustable toward and from the other bearing, a shaft spanning the space between said lugs and having needlepoint terminal ends seated and operable in their respective bearings, a sector-shaped counterweight depending into the space between said lugs and having an upper end thereof connected to a median portion of the shaft whereby said weight is thus adapted to function as a pendulum, a horseshoe-shaped bracket having a median portion arching over the shaft and having depending legs provided with terminal feet and said feet being superimposed on and removably attached to a top side of the aforementioned web, said bracket having a flat face provided with measuring graduations, and a pointer having a pointed upper end cooperable with the graduations and having a lower end secured to and operable by said weight.

3,161,967
EDUCATIONAL APPARATUS AND METHOD
Sidney Siegel, 5332 Locust St., Philadelphia, Pa., and John H. Emore, Jr., 101 Church St., Ambler, Pa., assignors of one-third to Stationers' Guild of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 22, 1963, Ser. No. 282,254
5 Claims. (Cl. 35—5)



1. An educational apparatus for self teaching of typewriting comprising

a flat backing member having hinge means positioned at opposite top and bottom edges thereof,

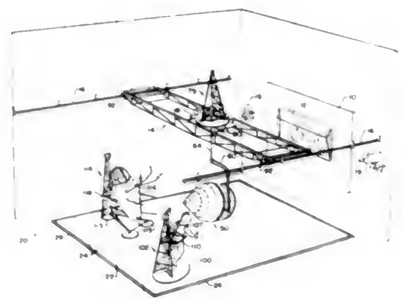
a plurality of lesson sheets hinged to the top edge of said backing member, said sheets bearing coded indicia representing about four selected typewriter keys in correlated positions on the bottom portion of each sheet and bearing an indicia code and instructions on the top portion of each sheet,

a flat typing board hinged to said bottom edge of said backing member, said board having a plurality of holes simulating the complete keyboard of a typewriter and adapted to overlie the bottom portion of said lesson sheets to expose said coded indicia through corresponding holes in said board,

a plurality of discs of substantial thickness simulating typewriter keys coded to correspond to the indicia on said lesson sheets,

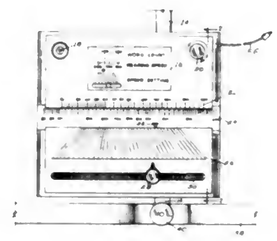
and means for removably securing said discs in selected holes of said typing board to withstand inadvertent displacement thereof by normal digital typewriting strikes on said discs.

3,161,968
TASK TRAINER
Marvin F. De Boy, Buffalo, and Ralph E. Flexman, Tonawanda, N.Y., assignors to Bell Aerospace Corporation
Filed Feb. 19, 1962, Ser. No. 173,905
8 Claims. (Cl. 35—12)



1. In a training theater for personnel prior to space exploratory work, a floor, means for supporting an object simulating a workpiece in a universally displaceable and rotatable condition and at an elevation above said floor, carriage means for supporting a trainee against gravity forces while being vertically displaceable thereon and universally rotatable, pneumatic cushion means reacting against said floor and said carriage means for maintaining said carriage means free from said floor without restraint of movement of said carriage means in directions parallel to said floor, and jet thrust means adapted to be attached to a trainee's body under control by the trainee for effecting movement of said carriage means to approach the object simulating a workpiece and for controlling vertical and universally rotatable motions of the trainee.

3,161,969
READING PACER
William S. Schaill, Bronxville, N.Y., assignor to The Reading Laboratory, Inc., New York, N.Y., a corporation of New York
Filed Jan. 31, 1962, Ser. No. 170,085
1 Claim. (Cl. 35—35)



A reading pacer device comprising:

(A) a housing;

(B) a channel supported between two interior walls of said housing;

(C) a power source slidably suspended from said channel;

(D) a horizontally rotatable plate depending from said power source and rotatable thereby in a horizontal plane;

(E) a pacer arm extending through the bottom of said housing at right angles to said channel;

(F) a vertical roller supported upon the bottom of said housing on a horizontal axis parallel to said channel and positioned beneath said horizontally rotatable plate and above said pacer arm and in rolling engagement with said plate;

(G) spring means fixed in the bottom of said housing beneath said pacer arm and resiliently urging said pacer arm against said vertically rotatable element for transmitting horizontal rotation of said plate to lineal movement of said arm through the bottom of said housing;

(H) a control arm horizontally pivoted at one end against a wall of said housing, a median portion of said control arm engaging said power source upon said channel for transversely positioning said power source and said horizontally rotatable plate with respect to said vertically rotatable element, and a free end of said control arm being presented beneath the top of said housing and having a vertical shaft extending through the top of said housing;

(I) a control knob extending through the top of said housing and engaging in said vertical shaft the free end of said control arm;

(J) a word count per page and speed setting scale positioned beneath said control knob upon the top of said housing; and

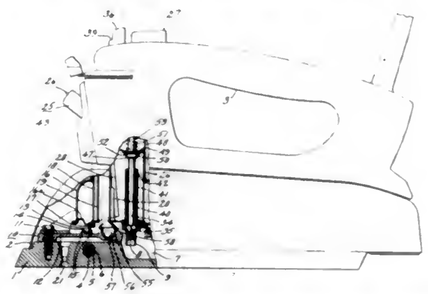
(K) an extensible leg member supported within the walls of said housing and adjustably extensible through the bottom of said housing for support of said housing and said pacer arm above a book being studied.

3,161,970
SHOE INSOLES
Raymond F. Purtell, Beloit, Wis.
(79 E. Stark St., Nashua, N.H.)
Filed July 17, 1961, Ser. No. 124,629
2 Claims. (Cl. 36—43)



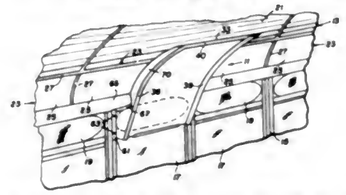
1. A one-piece insole having a heel portion shaped to conform to the contour of the heel of a human foot, an integral flexible forepart portion partially reduced in thickness only in the area located inwardly of the edges of the insole, a rib formed on the bottom of said insole and being located outwardly of the reduced portion of the insole thereby defining a cavity in the forepart of said insole, a resilient pad of cushioning material underlying substantially the entire forepart of said insole within the cavity defined by said rib, whereby the flexibility and the support of the insole are achieved in a manner that improves the normal functioning of the human foot during walking.

3,161,971
STEAM IRON WITH SELF-CLEANING VALVE ASSEMBLY
Alfred G. Swenson, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Filed Sept. 20, 1962, Ser. No. 224,990
11 Claims. (Cl. 38—77)



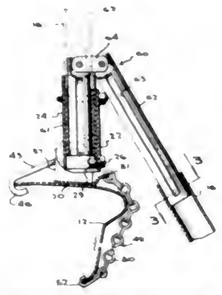
1. In a flatiron having a steam generator and a water tank, a self-cleaning valve and filter assembly controlling the flow of water from the tank into the steam generator comprising: a valve body having an orifice therein for permitting water to flow from the tank to the steam generator, a spring guide positioned within said tank with one end of the guide surrounding the entry to said orifice, said guide having a plurality of openings for permitting the passage of water therethrough, a coiled compression spring surrounding said orifice and positioned adjacent said spring guide, so that together the spring and the guide form a screen for filtering the water flowing through the valve orifice, and an axially movable valve stem centrally positioned within said spring and guide for controlling the flow of water through said valve orifice, said valve stem being biased by said spring so that the spring is axially flexed whenever the stem is axially moved, whereby the relative movement between adjacent coils of said springs and between the spring and the guide crushes and dislodges deposits which may have formed on the screen.

3,161,972
SIGN CONSTRUCTION
Harold Newcomb and Joseph G. Schexnayder, Memphis, Tenn., assignors of one-half to Tom O'Ryan Advertising Co., Inc., Memphis, Tenn., and one-half to National Guard Products, Inc., Memphis, Tenn.
Filed Aug. 22, 1961, Ser. No. 133,079
3 Claims. (Cl. 40—12)



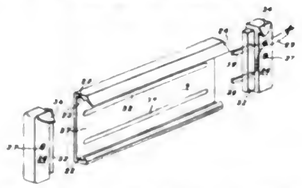
1. In a public transportation vehicle having an arcuate ceiling and having a wall structure with windows therein and having side-by-side advertising card holders mounted above said windows, the combination therewith of a sign comprising a contoured frame extending upwardly and outwardly over said advertising card holders and over a portion of said ceiling; said frame including a substantially rectangular and arcuate member, and lip members attached to said arcuate member adjacent the edges thereof and extending inwardly over a portion of said arcuate member to establish slots; a display member received in said frame with the edges of said display member being received in said slots and held by said lip members, bracket means connected to the backside of said frame adjacent only the lower edge thereof for attaching said frame only adjacent the lower edge thereof to said wall structure of said vehicle in such a manner that said frame is spaced from said vehicle and extends upwardly and outwardly from said bracket means over a portion of advertising card holders and upwardly therebeyond over a portion of said ceiling with the upper edge of said frame projecting beyond the lower edge of said frame and being unattached to said vehicle, and resilient cushion means coupled to the backside of said frame around a major portion of the edge of said frame and contacting said vehicle in conforming relationship thereto for closing off from access the space behind the frame in said vehicle and for preventing rattle thereof.

3,161,973
SIGN MOUNTING MEANS FOR A VEHICLE BUMPER
Warren S. Hastings, 202 N. Front St., Mounds, Ill.
Filed Nov. 27, 1963, Ser. No. 326,417
3 Claims. (Cl. 40—129)



1. A sign mounting means for a vehicle comprising a saddle adapted to be positioned so as to rest upon and be supported upon the top portion of a bumper of a vehicle, a backing member, a socket extending along one face of and fixedly attached to said backing member, said backing member being disposed in spaced relation to said saddle, horizontally-disposed pivot means connecting said backing member to said saddle for swinging movement of said backing member about said pivot means to a position in which said socket extends in an upright direction, at least two ears each supported on said pivot means for rocking movement therearound, a fastening element extending through and adjustably securable to each of said ears and having means on one end adapted to embracingly engage an edge of the top portion of a bumper of a vehicle when said saddle is positioned on the top portion of the bumper of said vehicle, strap means carried by said saddle and having a free end provided with means adapted to embrace the lower end edge of a bumper of a vehicle when said saddle is positioned upon the top portion of the bumper of said vehicle to hold the saddle in position on the bumper of said vehicle, an articulated support member arranged in an upright direction and having the lower end portion extending into and secured to said socket and having the upper end portion swingable from the upright direction to a downward direction, and a sign supporting post for a display sign having the lower end portion circumposed about and connected to the upper end portion of said support member for sliding back-and-forth movement thereon, said lower end portion of said post being telescopically and releasably received in said socket when the articulated support member is in the upright direction for holding said post in the upright direction.

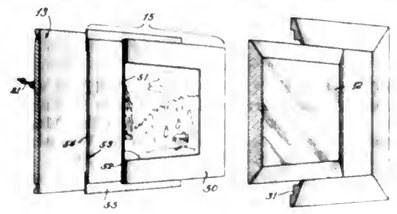
3,161,974
ELECTROLUMINESCENT SIGN AND METHOD OF MAKING THE SAME
Ellis A. Blockson, 305 Centennial Ave., Sewickley, Pa.
Filed Nov. 30, 1961, Ser. No. 156,000
7 Claims. (Cl. 40—130)



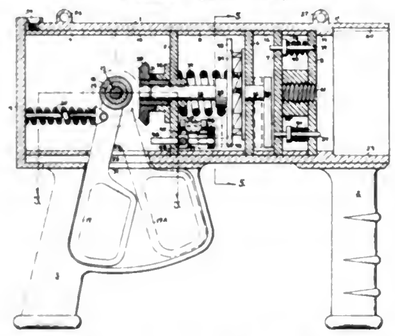
1. An electroluminescent sign comprising a holder having a body portion and upstanding spaced channels on the body portion and opening thereon in confronting relation, a plurality of transparent indicia blocks with portions slidably received within the channels with an electroluminescent indicia of phosphor between transparent conductive sheets embedded within the block and exposed on the body portion of the holder, an electrical lead connected to each conductive sheet of the indicia and terminating on the rear face of the indicia block, a pair of resilient electrical contacts connected at their one ends to the terminals of the leads with their other ends in frictional contact with the block rear face, the contacts being arched outwardly from the rear face of the block intermediate their ends, a spaced pair of bus bars positioned on the holder body portion in electrical engagement with the arch of the contacts, the arched contacts urging the front face of the block portions within the channels into frictional engagement with one wall of the channels to effect a water-tight seal.

3,161,975
PICTURE FRAME
John L. McMillan, P.O. Box 1045, Springfield, Ill.
Filed Nov. 8, 1962, Ser. No. 236,286
6 Claims. (Cl. 40—152)

1. A picture mounting assembly comprising, a unitary open frame member of polygonal plan configuration having an inner peripheral lip portion of substantially wedge-shaped cross-section and a shoulder portion recessed inwardly of its rearward face and defining a planar platform surface paralleling said rearward face, a transparent picture protective means having bevelled peripheral surfaces and a planar frontal surface adapted to be disposed forwardly of the frame member mounted within said frame member with said bevelled surfaces thereof in substantial bearing engagement with said lip portion, a unitary rigid mounting member disposed across the open back side of said frame member against the platform surface in the recessed shoulder thereof, a multiple-layer sandwich assembly disposed beneath said mounting member and extending between the latter and said picture protective means and comprising a planar seal plate disposed adjacent beneath said mounting member and having one face substantially coplanar with said platform surface, and seal means extending between said one face and said platform surface and sealing the junction between said seal plate and said frame member; said seal means being disposed totally within said frame member and being protected inaccessibly beneath said mounting member.



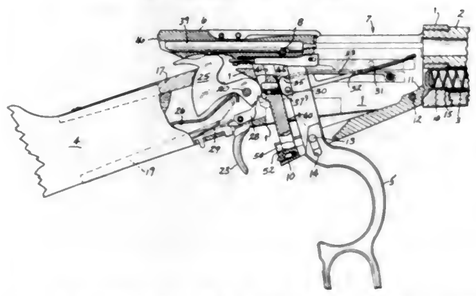
3,161,976
MISSILE GUN WITH ROTATABLE HAMMER
Chandley William Lambert, Lake Dallas, Tex.
Filed Feb. 10, 1964, Ser. No. 343,765
4 Claims. (Cl. 42—5)



1. A missile gun combining, a cylindrical frame having a receiver forwardly and means for securing a missile container therein, a forward handle secured to said frame, a detachable rear hand grip and trigger guard secured to said frame, longitudinal grooves within said cylindrical frame holding the parts of the mechanism in proper operative relationship to each other and to said frame, a trigger biased forwardly by a spring and rotatively disposed to operate a ratchet wheel rotatably connected to a transverse shaft, a longitudinal splined shaft receiving the ratcheting motion from the said transverse shaft by meshing bevel gears mounted on said transverse and longitudinal shafts, a spring biasing said longitudinal shaft forwardly, spaced cams secured to said shaft, said spring holding said spaced cams in contact with similar spaced camming surfaces

secured to a transverse frame, a hammer secured to said shaft and receiving rotative motion from the ratchet action and striking motion from the movement of said shaft cams over the camming surfaces secured to the frame, spaced retractable firing pins having restricted longitudinal movement in a transverse frame cooperatively to the said receiver, transverse frame plates and separating rings fitting within said cylindrical frame and having projecting lugs fitting said grooves in said cylinder, an inwardly projecting shoulder within said cylindrical frame adjacent to said receiver and a removable rear frame cap on said cylinder holding said mechanism against said inwardly projecting shoulder.

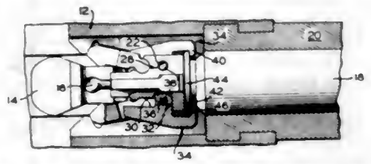
3,161,977
BREECH BLOCK LOCKING BOLT FOR A GUN
Jay P. Jarvis, North Branford, and Edwin S. Vartanian, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Dec. 26, 1963, Ser. No. 333,304
12 Claims. (Cl. 42—21)



1. In a firearm having a receiver and a barrel mounted on said receiver, the combination comprising a sliding breech block mounted on said receiver for movement forwardly and rearwardly, a link pivoted at one end on said receiver, a finger lever pivotally and slidably connected intermediate its upper end and lower end to said link adjacent the opposite end of said link, said breech block being pivotally connected to said upper end of said lever, said lever being thus connected to said block as well as said link to impart said breech block movement, and a locking bolt slidably mounted in said receiver for movement upwardly and downwardly, said bolt having a lower end forming a slidable pivot connection with said opposite end of the link for moving said bolt upwardly against one end of said breech block and downwardly away from said breech block end through an angle of relative movement between said bolt and the link operating said bolt, said lower end slidable pivot connection comprising a trunnion on one of said bolt and said link, said connection also comprising spaced parallel upper and lower sides of a corresponding groove on the other of said bolt and said link for receiving said trunnion, said trunnion having substantially spaced parallel flat upper and lower bearing surfaces presentable at least when said bolt is moved upwardly adjacent said breech block end in substantial parallelism against either of said groove sides.

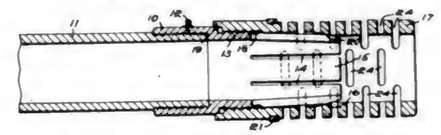
3,161,978
TORSION BAR CARTRIDGE EXTRACTOR
John F. O'Brien, Springfield, Mass., and Edward A. Santos, Enfield, Conn., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 2, 1964, Ser. No. 335,442
5 Claims. (Cl. 42—25)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a gun having a firing chamber and a longitudinally reciprocating bolt for ramming a rimmed cartridge into the chamber during the forward travel thereof, means for withdrawing the cartridge from the firing chamber during the rearward travel of the bolt comprising a rigid extractor pivotally mounted in the front end of the bolt in position to ride over the rim of the chambered cartridge and engage therewith at the conclusion of the forward travel of the bolt, a torsion pin extending trans-



versely through the bolt having one end thereof in fixed engagement with said extractor, and means for retaining the opposite end of said pin against axial rotation in the bolt whereby the torsional energy imparted to said pin by the pivotal movement of said extractor required to ride over the cartridge rim biases said extractor into positive engagement therewith.

3,161,979
ADJUSTABLE SHOTGUN CHOKE DEVICE
Charles E. Lowe, West Hartford, Conn., assignor to Hartford Gun Choke Co., Inc., Newington, Conn., a corporation of Connecticut
Filed Aug. 11, 1961, Ser. No. 130,905
2 Claims. (Cl. 42—79)

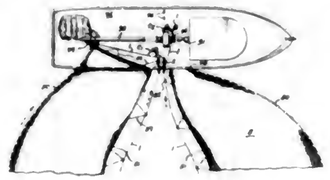


1. In a shotgun choke device, a tubular element attachable at one end to the muzzle of a shotgun barrel and including at the other end a plurality of forwardly disposed, resilient choke fingers, said fingers being circumferentially spaced to provide intermediate slots, the outer surface of the free extremities of each finger including a forwardly and inwardly tapering end portion, and a sleeve closely fitting over said fingers with its rear end threaded on said element rearwardly of said fingers and including a forwardly and inwardly tapering, internal shoulder engageable with said finger end portions whereby, as said sleeve is threaded on said element, said fingers are forced inwardly and away from said sleeve to provide a choke effect and an annular space between the fingers and the sleeve, the width of said slots at the free extremities of the fingers decreasing as they are forced inwardly to increase the choke effect, said sleeve having a plurality of apertures in and rearwardly of said shoulder and overlying said element slots, the apertures in the shoulder becoming increasingly operative as vents therefor as the choke effect increases.

3,161,980
PURSE SEINING METHOD AND APPARATUS
Rudy A. James, Snohomish County, Wash.
(Rte. 3, Box 567, Everett, Wash.)
Filed June 3, 1963, Ser. No. 285,005
5 Claims. (Cl. 43—4.5)

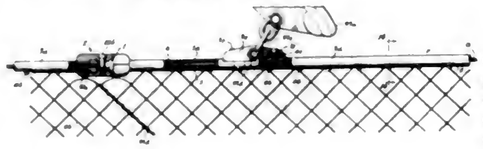
5. A purse net seining method for a seiner equipped with a power block suspended adjacent the stern, which comprises securing the forward end of the net, provided with a cork line, lead line and purse line at the rail amidship, setting the net in a circle, hanging from its cork

line, and bringing its after end to the rail amidship, taking on board, amidship, the forward and the after ends of its purse line, and taking on board, aft of amidship, the after end of the net and its cork line and lead line, passing the after end of the purse line, while still reeved through rings bridled to the lead line, about powered sheaves at the rail amidship, passing the after end of the net, its cork line, and its lead line directly over the power



block, to distend the net fore and aft between its purse line as it runs over such powered sheaves, and the cork line aft thereof, passing the free after end of the purse line, beyond the powered sheaves, also over the power block, and hauling the same in thereby with the net and its other lines, and hauling in the forward end of the purse line simultaneously with hauling of the after end of the net and its lines by the power block.

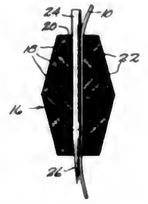
3,161,981
LINES FOR TRAWL NETS
Frank J. Luketa, 5567 Greenwood Ave., Seattle, Wash.
Filed Dec. 18, 1961, Ser. No. 160,013
11 Claims. (Cl. 43—9)



5. In a trawl net or the like, the combination of a mesh panel having a point cut edge and a net line extending lengthwise of said point cut edge, said net line including a flexible but substantially inextensible core and a protective casing surrounding said core, said protective casing having a plurality of longitudinally spaced cavities formed therein, with the mesh point portions of said point cut edge of the net panel disposed within said cavities, and means to secure the mesh panel to the net line comprising a hanging line extending generally parallel to the net line, within the cavities formed in the protective casing, said hanging line engaging the mesh point portions of the net panel in said cavities, and means disposed at intervals lengthwise of said casing and connected to the net line, said last mentioned means being formed with holes of a size to receive the hanging line, and said hanging line extending through said holes to support the edge of the mesh panel close to the net line and in the cavity portions of the protective casing.

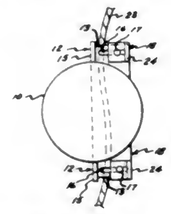
3,161,982
FISHING BOBBER
Matthew E. Lee, Land-O-Lakes, Wis.
Filed Dec. 27, 1960, Ser. No. 78,725
4 Claims. (Cl. 43—43.1)

1. A fishing bobber having an opening therethrough to constrictively receive a line and a wedging member, said body being buoyant and formed of a plurality of apertured resilient members cemented together at apertured surfaces thereof with their apertures substantially in register, whereby said body may be compressed to crush ice thereon without breakage thereof,



said resilient members being of different colors and characterized by closed voids throughout to render them non-absorbent.

3,161,983
ADJUSTABLE FISHING FLOAT
Eldon E. Stanek, 2009 10th Ave., Belle Plaine, Iowa
Filed Aug. 2, 1962, Ser. No. 214,279
1 Claim. (Cl. 43—44.90)



An adjustable fishing float of the character described, comprising a spherical fishing float body having an elongated recess therein and a pair of U-shaped structures secured to the said float, one structure being located at each end of the elongated opening and in line with the opening, and each said structure embodying a pair of spaced side plates secured together at one end by an end plate and a U-shaped slide adapted to slide over the ends and outer sides of the said side plates, and one of the said side plates having a transversely disposed elongated opening therein adapted to receive a pin projecting inwardly from one side of the said U-shaped slide and the other one of the said side plates having a horizontally disposed U-shaped recess therein adapted to receive a mating ridge on the lower inside of that side of the said U-shaped slide that is opposite the said pin and the said adjustable fishing float being adapted to receive a fishing line that normally passes through the elongated opening in the said float and in the U-shaped structures, the said line having its movement controlled by the said U-shaped slides.

3,161,984
ANIMAL TRAP
Andrew M. Martin, R.R. 2, Box 66, Felton, Del.
Filed July 18, 1961, Ser. No. 124,834
1 Claim. (Cl. 43—85)

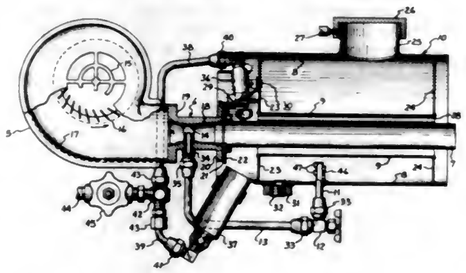
An animal trap comprising a frame, first and second jaws supported on said frame, said second jaw having a substantially round shape and fixedly secured to said frame, said first jaw being formed of an elongated loop enclosing at the height of said loop said second jaw, said first jaw being pivotally mounted on said frame for movement toward and away from a side of said second jaw adjacent the pivotal mounting of said first jaw to form an open and closed position, a sole animal entrance having an axis perpendicular to the plane of pivotal movement, a trigger assembly releasably preventing relative movement between said jaws, said trigger assembly being pro-

vided with animal contact means including a plurality of vertically disposed, coplanar, and parallel elongated rods having free ends extending horizontally in one direction through the center of said entrance and towards said pivotal mounting, a vertical pivotal shaft on said trap within the plane of relative movement of the jaws positioned to one side of said entrance and remote from said pivotal mounting and to which the opposite ends of said rods are secured, a latch means having lateral width and pivotally connected to said frame and movable in the plane of the first jaw for releasably holding said first jaw in open position and extending transversely to said entrance and remote from said entrance relative to said contact means, said latch means being operable by a locking means operatively connected to said animal contact



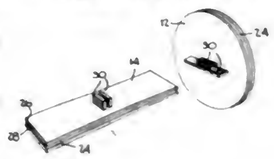
means, said locking means extending transversely to said entrance and substantially oppositely directed with respect to said contact means from said pivotal means, said locking means including a head integral and movable horizontally with said contact means, said head being elongated laterally in the direction of the pivotal movement and slidably engageable with said latch means, the elongation of said head and the width of said latch means being such that said head is permitted substantial pivotal movement and sliding contact with said latch means on the upper side of the latch means before releasing the latch means whereby an animal to be caught by the trap must move the contact means substantially away from the entrance before the head rides off the upper side of the latch means and releases the first jaw.

3,161,985
FOG GENERATOR
Kenneth V. Fiske, Woodstock, and Edward P. Soder, Antioch, Ill., assignors of fifty percent to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois and fifty percent to Burgess Vibrocrafters, Incorporated, Grayslake, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,400
5 Claims. (Cl. 43—129)



1. A fog generator comprising an air blower, a venturi tube in communication with and secured at its inlet end to the discharge end of the air blower, a discharge tube extending from and secured to the discharge end of the venturi tube, an endwise closed tank mounted in annularly spaced relationship about said discharge tube, means for introducing material to said tank to be heated therein, a liquid conduit in communication at one end with the interior of the tank, means in said conduit for metering a heated liquid in its passage therethrough, the opposed end of said conduit being secured to and in communication with the venturi tube at the throat thereof, fuel burner means leading to the annular space between the external surface of the discharge tube and the tank, and means for controlling a supply of fuel to the fuel burner means.

3,161,986
CIRCULAR CONSTRUCTION ELEMENT WITH PERIPHERAL AND AXIAL CONNECTING FLANGES
Albert Stubbmann and Frank Kohner, New York, N.Y., assignors to Kohner Bros., Inc., New York, N.Y., a corporation of New York
Filed Mar. 9, 1962, Ser. No. 178,713
1 Claim. (Cl. 46—31)

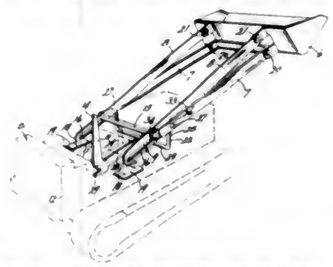


For use in a construction kit having a plurality of principal constructional elements which are adapted to be frictionally intercoupled: a principal constructional single-piece molded slightly flexible and resilient element comprising a thin flat disc the configuration of which is dominated by two broad coextensive flat parallel registered surfaces, said disc having a completely circumambient narrow peripheral groove in the edge thereof and a pair of completely circumambient flanges each on opposite sides of the groove, and a pair of parallel straight flanges integral with the element and located centrally with respect to and extending perpendicularly away from a flat broad surface of the element, each of said perpendicular straight flanges having a thickness substantially equal to the thickness of a circumambient flange, said pair of straight flanges forming a narrow straight groove therebetween having a width substantially equal to the width of the peripheral groove, each of said grooves being dimensioned to be frictionally interengaged by any flange of a similar element, so that each pair of flanges of one element are adapted to be interlocked with any pair of flanges of another element, whereby two principal constructional elements either can be coupled edge-to-edge with a circumambient flange of one element frictionally received in any portion of a circumambient groove of another element and with the circumambient flange of the other element frictionally received in the circumambient groove of the one element whereupon the two elements will be in substantially coplanar mutual relationship or can be coupled with a straight perpendicular flange of one element frictionally received in any portion of a circumambient groove of another element and with a circumambient flange of the other element received in the straight groove of the one element whereupon the two elements will be in perpendicular mutual relationship.

3,161,987
BULLDOZER TOY WITH AUTOMATIC DUMP MECHANISM
Raymond H. Decker, Freeport, Ill., assignor to Structo Manufacturing Company, Freeport, Ill., a corporation of Illinois
Filed Jan. 16, 1963, Ser. No. 251,824
8 Claims. (Cl. 46—40)

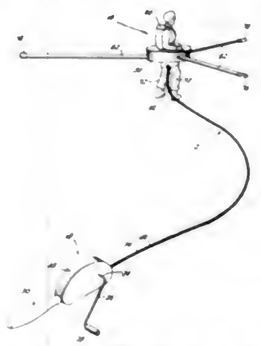
5. A bulldozer comprising a frame, a bucket in front of said frame pivotally mounted on the front end of an

elongated link the rear end of which is pivoted on the frame, a second elongated link pivotally connected at its front end to said bucket above and in vertically spaced relation to the first link and having a sliding pivotal connection at its rear end with said frame, means providing



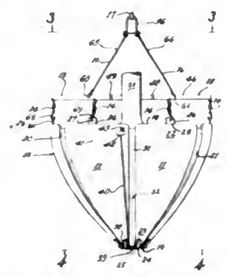
a detachable connection between the second link and its pivot prohibiting endwise movement of said second link relative to said pivot except when the bucket is elevated to a predetermined level for tripping of the bucket, and means for raising and lowering the bucket by means of the first mentioned link.

3,161,988
AIR-BORNE AUTOGYRO TOY
Arnold E. Junker, State St., Bridgeport, Conn., assignor of one-half to Benjamin W. Friedman, Bridgeport, Conn.
Filed May 28, 1962, Ser. No. 198,033
6 Claims. (Cl. 46—75)



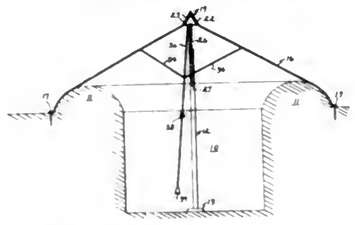
1. An air-borne toy comprising, in combination:
(*a*) an elongate non-rotative wire-like element,
(*b*) a non-rotative lateral extension fixedly carried at one end of the wire-like element, said element and extension together constituting a non-turning angular configuration adapted to be positioned with the extension substantially upright and the element extending in a horizontal direction,
(*c*) an elongate flexible sleeve-like turnable drive member encircling both the wire-like element and the said extension,
(*d*) means for rotatably driving the sleeve-like member while the wire-like element and extension thereof are held against turning,
(*e*) impeller blades rotatable on the said lateral extension as an axis,
(*f*) means driving said blades in response to turning of the sleeve-like member, and
(*g*) means located below the impeller blades and constituting a structure representing a figure, said structure being carried and turnably mounted an said lateral extension and including spaced depending portions engaging opposite sides of the sleeve-like member to prevent the figure from turning when the drive member and impeller blades are turning.

3,161,989
APPARATUS FOR MOVING TREES, EARTH OR OTHER OBJECTS
Richard J. Sigler and John J. Schnellbacher, Houston, Tex., assignors, by mesne assignments, to Green Shade Enterprises, Inc., a corporation of Texas
Filed Aug. 13, 1959, Ser. No. 833,565
3 Claims. (Cl. 47—37)



1. An apparatus for moving trees, earth or other objects, comprising a plurality of segments adapted to be releasably connected together with a locking means to form the structure of a container, each of said segments having an upper and a lower end, a partial ring for releasably supporting and connecting together each of said upper ends of said segments, releasable locking means on said segments for locking said segments together and adapted to be released for releasing said lower ends of said segments from each other and a releasable flexible connection means between said segments and said partial ring.

3,161,990
FALLOUT SHELTER
Ewel J. Morris, Jr., 901 W. Walnut St., Sylacauga, Ala.
Filed June 5, 1961, Ser. No. 114,890
1 Claim. (Cl. 50—100)



A fallout shelter comprising
(*a*) a pit,
(*b*) a berm extending around and above the upper edge of the pit and being of a sufficient height and thickness to provide a shield against radioactive particles,
(*c*) an outwardly and downwardly flaring flexible cover over the pit extending over and outwardly of the berm and having a smooth slick outer surface to impart sliding action to radioactive dust particles whereby they are removed from the cover to a position outwardly of said berm,
(*d*) means anchoring the outer edges of the cover outwardly of the berm,
(*e*) an intermediate support in said pit supporting the apex of the cover at a height to provide a sufficient outer slope of the cover from the apex for radio-

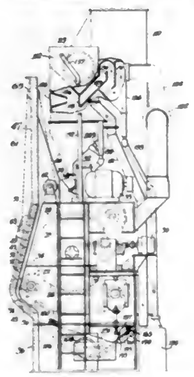
active dust particles to slide off the slick cover to a position outwardly of the berm,

(*f*) movable means adjacent the upper end of the support operatively connected to the cover and urging continuously the cover outwardly of the pit to fully expanded position,

(*g*) manual means to move successively said movable means so that it moves to a position to collapse partially the upper portion of the cover and then permits expansion of the cover through the return of the movable means to its original position to produce concomitantly vibration and a bellows effect,

(*h*) and there being an exhaust vent communicating with the pit inwardly of the cover to permit air under the cover to be removed from the pit upon collapsing of the upper portion of the cover and to permit fresh air to be brought in upon expansion of the cover.

3,161,991
ABRASIVE BLASTING APPARATUS
George W. Powell and Maxwell E. Fahrney, Hagerstown, Md., assignors, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,101
10 Claims. (Cl. 51—9)



1. In an apparatus for separating blastant particles from admixture with particles of lighter materials by sucking air across a falling curtain of said admixture in a separation chamber to cause the air to blow the lighter particles more to one side of the curtain than the blastant particles, and separately collecting the more deflected particles, the improvement according to which air velocity increasing means is in said separation chamber causing the air sucked into said separation chamber to increase its speed as it moves across said curtain, said velocity increasing means including an air inlet for the sucked in air said air inlet being provided with a nozzle that tapers over a substantial portion of its length that gradually reduces the cross sectional area of the air stream as it moves through the nozzle and thereby increases the speed of the air as it moves across the curtain.

3,161,992
AUTOMATIC LAPPING MACHINE TOOL
Richard S. Gentry and George A. Sowden, Perry Township, Marion County, Ind., assignors to Gentry Carbide Tool & Die Co., Inc., Beech Grove, Ind., a corporation of Indiana
Filed Mar. 18, 1963, Ser. No. 265,844
22 Claims. (Cl. 51—34)

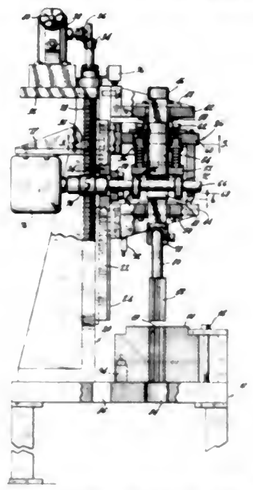
1. A surface abrading machine, comprising

a holder for mounting an abrading tool in cutting relation with a workpiece,

drive means for reciprocating the holder through forward and return strokes within a predetermined stroke range,

feeding means to advance the stroke range relative to the workpiece,

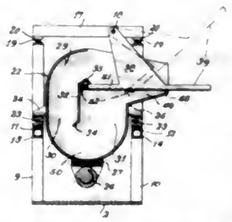
means to limit the forward-stroke force of the holder to a predetermined force less than sufficient to over-



come a predetermined resistance between the workpiece and the tool in the abrading operation, whereby such resistance will arrest the forward movement of the holder at an intermediate point in its forward stroke,

and means to actuate the feeding means to advance the stroke range in response to forward progress of the point at which such arrest occurs.

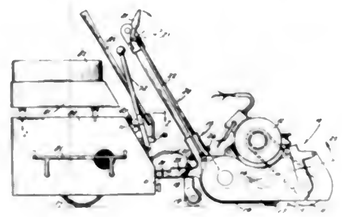
3,161,993
FINISHING APPARATUS AND METHOD
Gunther W. Balz, Kalamazoo, Mich., assignor to Roto-Finish Company, Kalamazoo, Mich., a corporation of Michigan
Filed Nov. 12, 1963, Ser. No. 323,004
49 Claims. (Cl. 51—163)



7. A finishing machine for finishing the surface of a part comprising a housing mounted for vibration defining a finishing chamber comprising a downwardly positioned receiving zone and an upwardly positioned separation zone, a vertically oriented septum in said housing dividing said chamber into a pair of vertical chambers communicating with each other at both their top and bottom including an ascending chamber and a descending chamber, an opening provided in said housing communicating with said finishing chamber adapted to receive said part and a finishing medium and discharge said part, vibratory means operatively associated with said housing comprising a motor having its shaft oriented in a generally horizontal

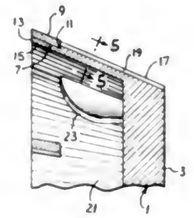
direction, said vibratory means being adapted to subject the mixture comprising said part and said finishing medium to vibration to cause finishing of said part, and to cause said mixture to rise in said ascending chamber and to fall in said descending chamber to be returned to said receiving zone, and separation means adapted to be inserted in said separation zone for separating said finishing medium from said part and permitting it to fall into said receiving zone, and means for discharging said part.

3,161,994
SELF-PROPELLED RIDING ATTACHMENT FOR AN IMPLEMENT
Jacob Neltzer, Jr., 2821 N. 18th St., Milwaukee, Wis.
Filed July 11, 1961, Ser. No. 123,974
15 Claims. (Cl. 51—176)



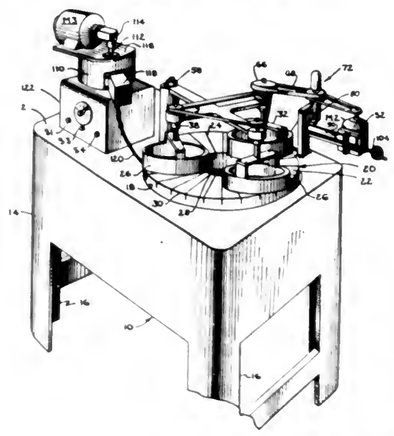
6. The combination with a sander having an abrasive-carrying rotor and a driving motor therefor, and having means for moving said rotor bodily to and from operative sanding position, of a guiding handle provided with an operating lever connected with said means, and a self-propelled riding attachment provided with a motor and driving wheels and with a connection with said sander and having a seat proximate to said lever whereby an operator on said seat can readily move the rotor to and from operative position.

3,161,995
GRINDING WHEEL
Frederick W. Lindblad, 835 Illinois Ave., Aurora, Ill.
Filed Nov. 14, 1961, Ser. No. 152,219
7 Claims. (Cl. 51—209)



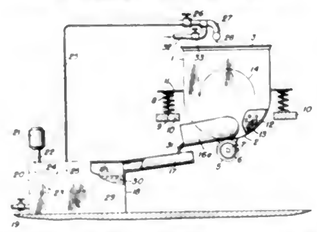
1. A grinding wheel comprising a body having means for mounting same for rotation about the central longitudinal axis of the body, means on said body forming a seat surrounding said axis, and an abrasive member on said seat, the portion of the body that extends between the abrasive member and the means for mounting the body being substantially a surface of revolution centered on said axis but deviating from a surface of revolution by having means for directing a flow of cooling air against the abrasive member, said flow directing means comprising channels in the surface of revolution and each channel extending to the juncture of the abrasive member with the body, and directing a flow of air toward said juncture for accentuating motion of cooling air at the region of said juncture.

3,161,996
METHOD OF CONDITIONING A ROTATABLE LAP
Raymond G. Roshong, North Hollywood, Calif., assignor to Crane Packing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 25, 1954, Ser. No. 418,647
5 Claims. (Cl. 51—281)



1. The method of controlling the contour as to flatness, convexity, or concavity of the operating surface of a lap plate rotating about a fixed axis, by means of a rigid dressing tool which comprises positioning the tool to rest upon the lap surface, constraining the tool to rotate about an axis eccentric to the axis of rotation of the lap while allowing the tool to move through an angle with respect to the axis of the lap so that the dressing face of the tool may follow the contour of the lap, positively rotating the tool about its axis, and regulating the linear velocity between the contacting lap and tool surfaces to produce different degrees of wear of the lap surface by the tool along a radius of the lap surface.

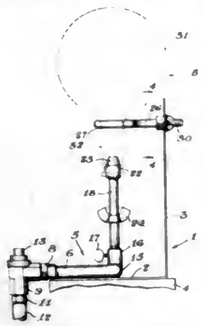
3,161,997
FINISHING AND POLISHING METHOD
Gunther W. Balz, 2014 S. Westnedge Ave., Kalamazoo, Mich.
Filed May 7, 1962, Ser. No. 192,939
4 Claims. (Cl. 51—316)



1. The method of finishing and polishing work pieces and of providing a finished surface on said work pieces substantially free of discoloration comprising mixing said work pieces with abrasive pieces of polishing material to form a mass, adding to said mass a limited quantity, up to 15% of the volume of said mass, of a liquid finishing compound, imparting vibratory and en masse orbital motion to said mass including said liquid and during said vibratory and orbital motion, while maintaining the vibratory and orbital motion substantially uniform by maintaining the quantity of liquid in said mass substantially constant, removing heat generated in said mass by fric-

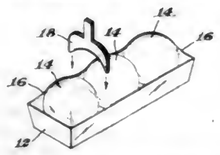
tion created by said motion and maintaining said mass substantially free from fines and sediment created by the vibratory and orbital motion of the pieces in the mass by continually and cyclically withdrawing a portion of the liquid along with entrained fines and sediment from said mass when fines and sediment have formed and heat has been generated and separating the fines and sediment from and cooling the removed liquid for return to said mass and simultaneously adding an equal quantity of said liquid free from fines and sediment at a temperature below that of the mass whereby fines and sediment and heat created by vibratory and orbital motion of the mass are maintained at a low level in the mass.

3,161,998
METHODS AND APPARATUS FOR INFLATING BALLOONS
Bruce J. Lennox, Saginaw, Mich., assignor of fifty percent to William A. Muehlenbeck, Saginaw, Mich.
Filed Nov. 15, 1961, Ser. No. 152,519
6 Claims. (Cl. 53—7)



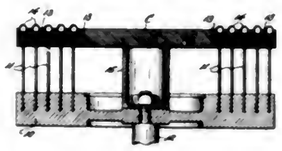
1. A method of inflating and sealing a balloon having an inflatable body terminating at one end in an open mouth neck, said method comprising inserting said balloon within a ring-like holder; frictionally fitting the open mouth of said neck over a rotatable gas discharge nozzle, inflating said body with a gas until said body frictionally engages said holder; rotating said nozzle while said body is frictionally engaged by said holder against rotation to twist said neck; tying said neck in twisted condition between said nozzle and said body; and removing said nozzle from the mouth of said neck.

3,161,999
PACKAGING
Galen J. Klusmire, Westlake, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,512
4 Claims. (Cl. 53—30)



1. A method of forming a package comprising overwrapping at least one shaped article in a thermoplastic shrinkable heat formable membrane, joining said membrane to a supporting means to form an overwrap, subjecting the overwrapped object to a temperature sufficiently high to cause said thermoplastic film to shrink and at least partially conform to the shape of its contents, maintaining said overwrap at a heat formable temperature and mechanically forcing the overwrap at least to partially conform to said contents, the overwrap conforming smoothly to the contents in such a manner that the portion of the overwrap in contact with the contents is increased from the area in contact with the contents when the minimal plastic surface is formed by the initial shrinking of the overwrap and then cooling said overwrap below its heat formable temperature.

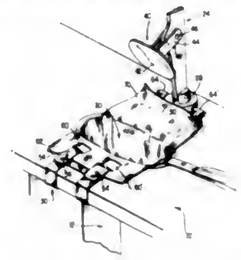
3,162,000
METHOD OF SEALING TWO-PIECE GELATIN CAPSULES
Max Kraven, Nutley, N.J., assignor to Cooper, Tinsley Laboratories, Inc., Harrison, N.J., a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,676
1 Claim. (Cl. 53—37)



A method for filling and sealing hard gelatin capsules formed from mated body and cap parts, each of which parts has one closed end and one open end, and wherein the open end of each cap part is telescoped over the open end of the mated body part, which method comprises, disposing a plurality of said body parts in sockets therefor in a body ring with their open ends upward, filling each of said body parts with a charge of material to be encapsulated, disposing a plurality of said cap parts in sockets therefor in a cap ring with the open ends thereof downward, the number and arrangement of the sockets in said cap ring corresponding to the number and arrangement of the sockets in said body ring, applying a liquid medium to the inner surface of each of said cap parts by axially inserting therein a peg-like applicator having a liquid-retaining tip portion, causing said tip portion in a moistened condition to move laterally within the cap to contact the inner surface of said cap part, removing said peg-like applicators from said cap parts, moving said cap ring to a position above said body ring whereby each of said cap parts is axially aligned in registration with a corresponding charged body part, and forcing each of said capsule body parts into assembled relation with its corresponding cap part, whereby reliable application of said liquid medium to the inner surfaces of said cap parts and adequate sealing of said capsules is assured.

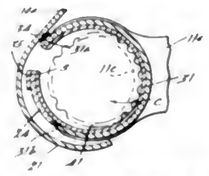
3,162,001
DRAG CHUTE PACKING DEVICE
Jerry Reynolds, 1721 S. 16th St., Las Vegas, Nev.
Filed Oct. 9, 1963, Ser. No. 314,970
2 Claims. (Cl. 53—124)

1. A drag chute packing device comprising a rigid container adapted to snugly receive a flexible drag chute pack, said container having an open top and closed side and bottom walls and conforming in configuration to the desired configuration of the flexible drag chute pack, an extended planar surface member surrounding the plane of the open top of said container, a lever arm, means mounting said lever arm to the planar surface member for pivotal movement over the open top of the container, a presser foot pivotally mounted to said lever arm at a position intermediate the length of the arm and at a position to be telescopically received within the container at one position of the lever arm, stop means cooperating with the lever arm and the presser foot, and means for releasably securing the closure flaps of the drag chute pack in an



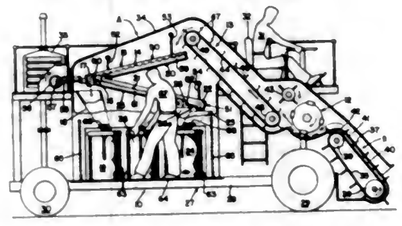
extended open position to the extended surface member when the side walls and the bottom of the pack are received within the container.

3,162,002
CONTRACTING BAND CAP RE-APPLIER
Carl Breer, 15600 Windmill Pointe Drive, Grosse Pointe, Mich.
Filed Dec. 3, 1962, Ser. No. 241,831
7 Claims. (Cl. 53—363)



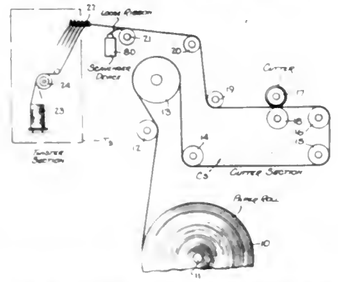
1. A cap applying tool comprising a first lever having a depending flange adjacent one end thereof, a second lever having a depending, substantially C-shaped cup formation at one end thereof, a pivot pin pivotally connecting the said ends of the levers with the flange on the first lever positioned to fill a portion of the space between the end edges of the C-shaped cup formation of the second lever, a substantially C-shaped spring positioned concentrically within the cup-shaped formation of said second lever with one end anchored to the flange on said one lever and the other end anchored to the cup-shaped formation on the other lever, relative oscillatory movement of said levers about said pivot pin effecting radial contracting movement of said spring band for clinching a cap on a spout.

3,162,003
METHOD AND MECHANISM FOR HARVESTING AND GRADING ALFALFA
Henry H. Schapansky, 440 Patch Ave., San Jose, Calif.
Filed June 29, 1962, Ser. No. 206,357
3 Claims. (Cl. 56—19)



1. An alfalfa field harvesting and grading machine comprising a wheeled vehicle, means for moving and guiding the vehicle along a windrow of air dried alfalfa in a field, pickup mechanism on the vehicle for picking up such alfalfa from such windrow, power driven reducing mechanism on the vehicle positioned to receive such alfalfa from the pickup mechanism, said reducing mechanism operating to reduce the alfalfa to a condition wherein the stems thereof are of short length, thereby reducing the more fragile leaf and flower portions of such alfalfa to particles smaller than the stem particles, first, power driven, coarser screening means on the vehicle, means for transferring such reduced alfalfa from the reducing mechanism to the first, coarser screening means, the latter having a mesh size to retain thereon a major portion of the stem particles of such reduced alfalfa and to pass the remainder thereof therethrough, first receiving means on the vehicle for receiving the portion of the reduced alfalfa retained on the first, coarser screening means, second, power driven, finer screening means on the vehicle, means for transferring the portion of the reduced alfalfa which passes through the first, coarser screening means to the second, finer screening means, the latter having a mesh size to retain thereon intermediate size particles of such reduced alfalfa and to pass the remainder thereof therethrough, second receiving means on the vehicle for receiving the portion of the reduced alfalfa retained on the second screening means, and third receiving means on the vehicle for receiving the remainder of the reduced alfalfa which passes through the second screening means.

3,162,004
AUTOMATIC SCAVENGER FOR PAPER YARN MACHINE
William J. Hogg and Boyd Cates, Hazlehurst, Ga., assignors to Patchogue-Plymouth Corporation, Scarsdale, N.Y., a corporation of New York
Filed May 17, 1963, Ser. No. 281,127
10 Claims. (Cl. 57—31)

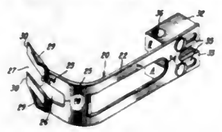


1. In a machine for manufacturing paper yarn wherein a paper web is conveyed through a cutting mechanism and is slit into a row of ribbons which are then individually twisted, said machine including a roll conveying said row of ribbons, a scavenger device for picking up broken ends of said ribbons to facilitate repair thereof, said device comprising a reciprocating carriage repeatedly scanning an area adjacent said roll below said row of ribbons, and a suction device supported on said carriage to pick up a loose ribbon end from any ribbon in said row.

3,162,005
STOP MOTION FOR TWISTING FRAME OR THE LIKE
Fred T. Glass, Sanford, N.C., assignor to Roberts Company, Sanford, N.C., a corporation of North Carolina
Filed Aug. 21, 1963, Ser. No. 303,485
6 Claims. (Cl. 57—84)

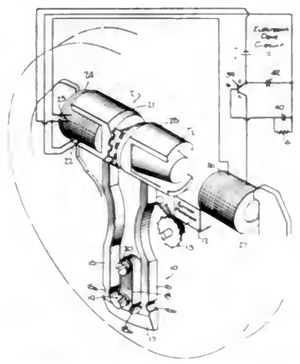
1. A stop motion for use in textile twisting frames or the like comprising a pair of front and bottom rolls in rolling contact relationship, said bottom roll being

bearingly supported for rotation, said top roll being bearingly supported and elevatable during rotation, and L-shaped yarn guide and stop motion device pivotally mounted in juxtaposition to said rolls, said stop motion device having a pair of laterally spaced arms forming



a U-shaped yarn-receiving opening, each of said arms having a top roll elevating cam thereon whereby upon yarn severance said yarn guide and stop motion device pivots to introduce said cams between said rolls elevating the top roll out of rolling contact relationship with the bottom roll.

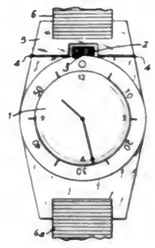
3,162,006
TUNING FORK FOR ELECTRONIC TIMEPIECE
Egbert Van Haaften, Closter, N.J., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Original application Jan. 19, 1961, Ser. No. 89,896. Divided and this application Aug. 19, 1963, Ser. No. 303,020
2 Claims. (Cl. 58—23)



1. In a timepiece having a mounting plate, a tuning fork structure supported on said plate comprising a pair of tines and a connecting base thereof, a stem integral with said base and extending upwardly therefrom to occupy a position intermediate said tines, and means attaching said stem to said mounting plate, the junction of said stem and said base being constricted to provide a flat spring elastically mounting said fork on said plate.

3,162,007
WATERPROOF WRIST-WATCH
Jean Parmentier, 7 Rue Léonard de Vinci, Paris, France
Filed Apr. 4, 1963, Ser. No. 270,597
Claims priority, application France, Apr. 10, 1962, P.V. 893,890
3 Claims. (Cl. 58—63)

1. A waterproof wrist watch having a band and having a setting and winding stem and a watertight hood around the stem, a safety piece articulated on the watch about a spindle, one end of the band of the watch being secured on the safety piece, the safety piece surrounding the watertight hood for at least a large part of the periphery of the watertight hood so as to protect the watertight hood against contact with other objects when the wrist watch is on the wrist of the wearer, the watertight hood being removable from the setting and winding stem in another



position of the safety piece when the wrist watch is off the wrist of the wearer.

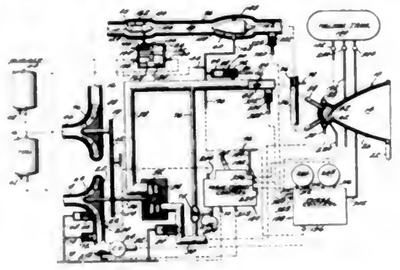
3,162,008
DISPLAY DEVICE
Michael Z. Berger, 1500 Grand Concourse, Bronx, N.Y., and Joseph Mermelstein, 732 Henry Road, Far Rockaway, N.Y.
Filed Apr. 2, 1963, Ser. No. 269,911
3 Claims. (Cl. 58—126)



1. A time piece display device comprising an opaque face plate carrying a visual representation on the front face thereof, a layer of light polarizing material directly superimposed upon said visual representation, a disc of light polarizing material overlying said polarizing layer, a timing motor disposed behind said face plate and including a second hand drive shaft passing axially through said face plate and polarizing layer and affixed to said polarizing disc substantially at the center thereof, a pair of minute hand and hour hand drive cannon shafts coaxial with said second hand drive shaft and driven by said timing motor, and a minute hand and an hour hand affixed to said cannon shafts and disposed between said polarizing layer and said polarizing disc.

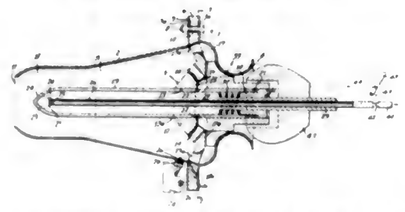
3,162,009
ROCKET MOTOR CONTROL SYSTEM
Robert N. Abild, New Britain, Claude O. Broders, Simsbury, and Hugh S. Crim, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 30, 1959, Ser. No. 824,130
9 Claims. (Cl. 60—35.6)

9. In a propellant flow and control system for a rocket engine including a thrust chamber having a combustion chamber therein, a fuel supply line and an oxidizer supply line to said combustion chamber, means for pumping fuel and oxidizer through said supply lines to said combustion chamber, means associated with said thrust chamber for simultaneously heating all of the fuel in said fuel supply line prior to combustion and cooling the thrust chamber, means in said fuel supply line for driving said pumping means by expansion of said fuel after heating, bypass means around said driving means, valve means in said bypass means, means responsive to combustion chamber pressure connected to said valve means for varying the flow of fuel through said bypass means to



control the flow of fuel to said driving means, and means for closing said bypass valve to deliver the full flow of fuel to said driving means on starting the rocket engine.

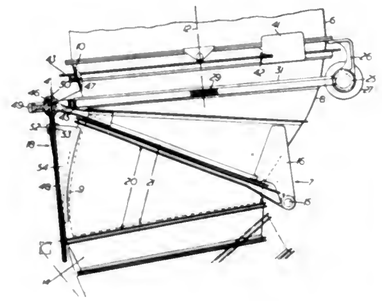
3,162,010
JET ENGINE
John P. Mohrhauser, 804 Prospect St., Maplewood, N.J.
Filed May 29, 1962, Ser. No. 198,536
10 Claims. (Cl. 60—35.6)



1. A jet engine comprising a casing having an inlet and outlet, a first tubular member having a closed end and an open end, the first tubular member being mounted in and longitudinally of the casing with its closed end directed toward the casing outlet, a second tubular member mounted in the first tubular member, the second tubular member having an open end positioned adjacent the closed end of the first tubular member and another end extending outwardly of the first tubular member, a plurality of circumferentially spaced outlet means through the wall of the first tubular member, pressure responsive closure means for the outlet means located within the first tubular member, means for passing fuel through the second tubular member and through the outlet means of the first tubular member, turbine means located adjacent the outlet means, and means for selectively directing the fuel from the first tubular member outlet means in fuel receiving relationship with the turbine means and into the casing.

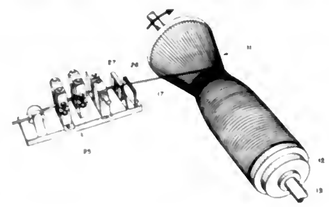
3,162,011
DEFLECTING JET DISCHARGE NOZZLES FOR JET PROPULSION ENGINES
John Albert Mullins, Darley Abbey, and Addison Charles Maguire, Alvaston, England, assignors to Rolls-Royce Limited, Derby, Derbyshire, England, a company of Great Britain
Filed Feb. 7, 1963, Ser. No. 256,875
5 Claims. (Cl. 60—35.55)

1. A nozzle comprising a hollow casing member through which a fluid is discharged, a hollow support member, a first mounting connecting said support member to said casing member, a hollow outlet member, a second mounting connecting said outlet member to said support member, fluid which is discharged from said casing member passing successively through said support member and said outlet member and being deflected depending on the positions of the support member and the outlet member relative to the casing member, one of said mountings permitting relative rotation between the parts interconnected thereby, and the other of said mountings comprising a pivot connection and permitting only relative pivoting movement between the parts interconnected thereby, whereby said outlet member is both rotatable and pivotable relative to said casing member, said nozzle having a drive device for effecting both rotating and pivoting



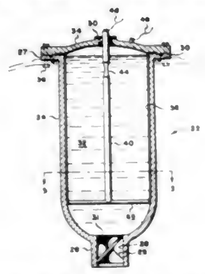
movement of said outlet member relative to said casing member, said drive device including a drive member which is mounted on the casing member, a releasable clutch by which said drive member is operatively associated with the support member, and drive mechanism operatively connecting said drive member to said outlet member, said releasable clutch depending on whether it is engaged or disengaged controlling whether operation of said drive member effects relative movement between said casing and support members, or between said support and outlet members.

3,162,012
FORMED METAL RIBBON WRAP
Casey J. Blaze and Carl G. Richter, both of Parma, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 4, 1961, Ser. No. 107,870
7 Claims. (Cl. 60—39.66)
(Granted under Title 35, U.S. Code (1952), sec. 266)



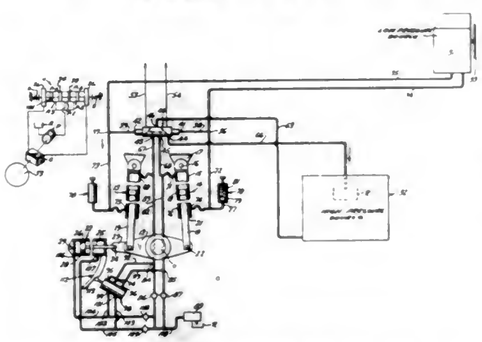
1. A combustion chamber comprising a multiplicity of elongated channels secured together in an assembly to form a hollow enclosure with the ribs of said channels extending outwardly of said enclosure, a continuous length of ribbon wound about the ribs of said assembly of channels in contiguous turns, said ribbon having coacting surfaces for forming an interlink between the adjacent turns thereof and means for rigidizing the interlink between said adjacent turns.

3,162,013
IGNITER FOR ROCKET MOTOR
Robert R. Scobee, Redlands, Calif., assignor, by mesne assignments, to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
Filed Feb. 26, 1962, Ser. No. 175,556
10 Claims. (Cl. 60—39.82)



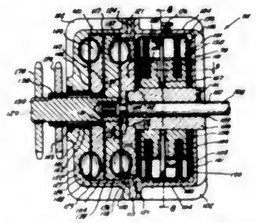
8. An igniter for a solid propellant rocket motor comprising: a casing; a highly reactive fluid contained in said casing, said fluid being hypergolic with the propellant; a fuel component for the fluid; and electrical firing means for initiating reaction between the fuel component and the fluid to generate high pressure gases which discharge the fluid onto the propellant.

3,162,014
HYDRAULIC CONTROL SYSTEM
Jean Mercier, 1185 Park Ave., New York, N.Y., and Bernard Mercier, New York, N.Y.; said Bernard Mercier assignor to Mercier Olaer Patent Corporation, Wilmington, Del., a corporation of Delaware
Filed June 22, 1962, Ser. No. 204,328
Claims priority, application France Dec. 26, 1961
28 Claims. (Cl. 60—51)



1. A hydraulic control system for effecting rotary movement of a shaft on each side of a neutral position, said system comprising a hydraulic actuator having a cylinder pivotally mounted at one end to a fixed support and having a piston rod slidable therein, an arm rigidly connected to said shaft and extending at right angles thereto, means pivotally connecting said arm to the end of said piston rod; the pivotal axis of said shaft, the pivotal connection of said piston rod to said arm and the fixed pivotal mount of said cylinder being longitudinally aligned when said shaft is in neutral position, means initially to effect movement of said movable member on each side of its neutral position and means controlled by the initial movement of said shaft away from its neutral position to actuate said hydraulic actuator to apply additional force to said shaft in the direction of such movement away from its neutral position.

3,162,015
VEHICLE DRIVE MECHANISM
Frank A. De Puydt, 200 SW. 16th, Des Moines, Iowa
Filed May 21, 1963, Ser. No. 281,906
12 Claims. (Cl. 60—54)

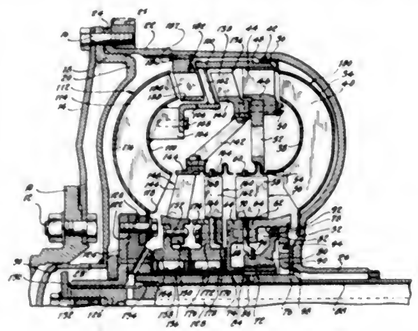


1. A drive mechanism for coupling a power input shaft with first and second power output shafts comprising:
(*a*) housing means operably connected to said input shaft for rotation thereby, said housing means having axially spaced end walls and a middle wall dividing the housing means into first and second chambers, said middle wall having at least one passage providing fluid communication between said chambers, and vane means located in said second chamber,
(*b*) a first driven shaft rotatably mounted on said housing means with a portion thereof positioned in said second chamber,
(*c*) first rotor means positioned in said second chamber and secured to said first shaft for rotation therewith, said first rotor means having vane members projected toward the vane means on the housing means,
(*d*) a second driven shaft mounted on said housing means with a portion thereof positioned in said second chamber,
(*e*) a second rotor means positioned in said second chamber and secured to said second shaft for rotation therewith, said second rotor means having vane members projected toward the vane means on the housing means,
(*f*) power transmitting means connecting the first driven shaft to one of the output shafts and connecting the second driven shaft to the other of the output shafts
(*g*) a plurality of hydraulic fluid displacing blocks circumferentially positioned in said first chamber, said blocks being responsive to the speed of rotation of said housing means for moving hydraulic fluid from said first chamber to said second chamber thereby establishing a fluid drive connection between said housing means and said first and second rotor means, and
(*h*) cage means positioned in said first chamber and rotatably mounted on said housing means, said cage means operatively supporting said blocks for movement in radial directions.

3,162,016
PLURAL TURBINE HYDROKINETIC TORQUE CONVERTER
Vladimir J. Jandasek, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,516
3 Claims. (Cl. 60—54)

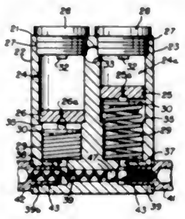
1. A hydrokinetic torque converter mechanism comprising a bladed impeller, a compound bladed turbine assembly and a compound bladed stator assembly situated in toroidal fluid flow relationship within a common torus circuit, said turbine comprising at least three bladed sections, and said stator comprising two bladed sections,

the first turbine section being located at the flow exit region of said impeller, the first stator section being located at the flow exit region of said first turbine section, the second stator section being located at the flow exit region of the second turbine section, said impeller having a first portion located at a radial outflow region of said circuit and a second portion in a radially outward region of said circuit adjacent a bladed section of said turbine, the second turbine section being located at a radial inflow



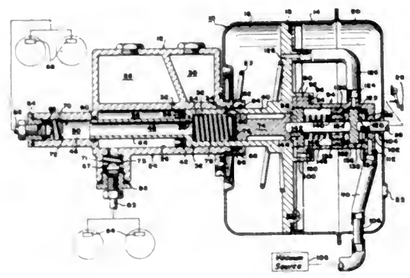
region of said circuit, the third turbine section being located at the flow entrance region of said impeller at a radially inward location, and servo means for adjusting the angularity of the blades of said third turbine section, said servo means comprising a hub defining a cylinder, a piston in said cylinder defining in part a fluid working chamber, and a mechanical connection between said piston and each blade of said third turbine section whereby the angularity of the latter can be controlled.

3,162,017
DISPLACEMENT TYPE BRAKE SAFETY VALVE
Frank J. Margida, Cuyahoga Falls, Ohio, assignor to Saf-T-Brake Valve Co., Inc., Cuyahoga Falls, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 246,926
8 Claims. (Cl. 60—54.5)



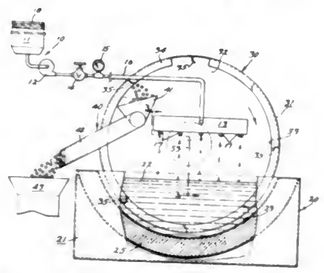
1. A safety device for controlling hydraulic flow between the master cylinder and the front and rear brake lines of an automotive vehicle, comprising;
A. a housing having
(1) an axial bore therethrough that defines
a. outlet ports that communicate with said front and rear brake lines;
(2) first and second elongate fluid reservoirs each having
a. an axial length;
(3) connecting passages connecting at one axial end of said reservoirs with said axial bore at axially spaced points therein;
(4) an inlet port connected to said master cylinder;
(5) conduit means connecting said inlet port with the remaining axial ends of said reservoirs;
B. first and second pistons each being
(1) respectively received in said first and second reservoirs and being
(2) shiftable axially thereof in response to pressure from said master cylinder;
C. spring members urging said pistons away from said connecting passages;
D. a valve element
(1) balanced medianally of said axial bore and
(2) being shiftable into seating engagement with either of said outlet ports to terminate flow therethrough upon failure of the brake line associated therewith;
E. sealing means
(1) defined by at least one said reservoir and at least one said piston and
(2) preventing the flow of braking fluid past said piston to and toward said connecting passage after predetermined movement of said pistons toward said connecting passage associated therewith;
F. and relief means
(1) permitting flow of additional fluid past at least one said piston during the period said sealing means are operative, with said flow occurring in response to pressure from said master cylinder greater than the pressure normally required to move said pistons.

3,162,018
SPLIT SYSTEM MASTER CYLINDER AND BRAKE BOOSTER
Frank R. L. Daley, Jr., Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,862
10 Claims. (Cl. 60—54.6)



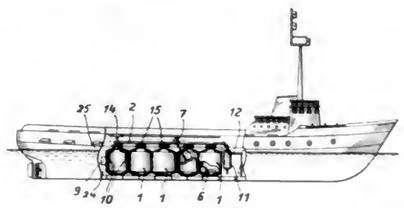
3. A power unit for an automotive brake comprising, a power wall, valve means for controlling said power wall, a first fluid pressurizing piston for pressurizing fluid in response to movement of said power wall, a second fluid pressurizing piston for pressurizing fluid, manually effective actuating means for moving said valve means to control said power wall, force transfer means transferring forces between said second fluid pressurizing piston and said valve means including force responsive to fluid pressurization to deliver a reaction force to said manually effective actuating means through said valve means from said second fluid pressurizing piston whenever fluid is pressurized, said manually effective actuating means and said valve means and said force transfer means further acting to move said second fluid pressurizing piston to pressurize fluid manually.

3,162,019
METHOD AND APPARATUS FOR FREEZING LIQUIDS TO BE USED IN A FREEZE-DRYING PROCESS
William L. Porter and William L. Root III, Bethlehem, Pa., assignors to The Bethlehem Corporation, Bethlehem, Pa., a corporation of Pennsylvania
Filed Nov. 16, 1962, Ser. No. 238,155
16 Claims. (Cl. 62—67)



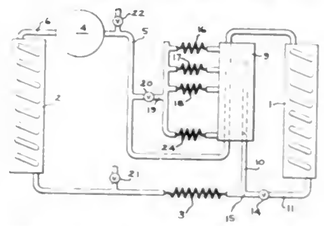
1. A method of freezing material which comprises the steps of providing a low temperature liquid bath having a boiling point below the freezing point of the material to be frozen, feeding at a low impingement velocity small portions of the material to be frozen onto the surface of said bath, and suspending said portions in proximity to the surface of the bath by utilizing the heat in said portions to boil the liquid and evolve a gas therefrom until said portions are frozen into discrete particles having a low temperature approximately equal to said liquid bath, the specific gravity of said material and said liquid being such that said particles thereafter fall to the bottom of said bath.

3,162,020
METHOD OF CONSERVING FRESH FISH
Hans Beckmann, Hamburg, Germany; Erna Marie Dora Emilie Beckmann, Ludwig E. H. K. D. Beckmann, and Uta Renate Beckmann, heirs to Hans Beckmann, deceased
Original application Apr. 11, 1957, Ser. No. 652,139, now Patent No. 2,987,404, dated June 6, 1961. Divided and this application Apr. 12, 1961, Ser. No. 111,886
5 Claims. (Cl. 62—240)



1. A fishing vessel comprising an outer skin and a deck defining a hold, the deck having a plurality of apertures, an equal plurality of tanks within said hold, each of said tanks having an opening at its top and a cover lid, said opening being vacuum tight-sealable by means of said cover lid, said openings of said tanks registering with the apertures in the deck and being thereby accessible, a piping system and vacuum pumping means connected to said piping system, each of said tanks being provided with a connection pipe at its upper part, a shut-off valve being disposed in said connection pipe, by means of which each of said tanks is disconnectably connected to said piping system, and a water supply system, each of the tanks being connected to said water supply system at the top of the tank.

3,162,021
REFRIGERATION SYSTEM INCLUDING CHARGE CHECKING MEANS
Herbert M. Brody, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed Mar. 9, 1964, Ser. No. 350,366
4 Claims. (Cl. 62—292)



1. A refrigeration system comprising a first heat exchanger, a conduit including a fixed flow restricting means, a second heat exchanger, a suction line and a compressor series connected to form a closed normal refrigerant circuit in which the compressor withdraws low pressure refrigerant from the second heat exchanger and discharges high pressure refrigerant to the first heat exchanger,

charge modulating means comprising a dead-end storage receptacle capable of containing the entire refrigerant charge for said system and connected by a two-way flow connection to a point in said conduit,

a normally open valve between said point and said second heat exchanger and adapted when closed to stop the flow of refrigerant to said second heat exchanger,

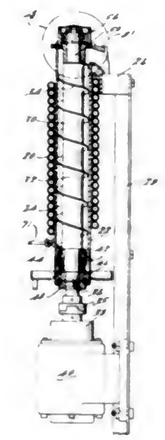
at least one charge checking line including a flow restrictor and normally closed valve means connecting said receptacle to a portion of said circuit containing low pressure refrigerant when said first valve is closed,

said flow restrictor having a flow restriction such that when said system is operated with said normally open valve closed and said normally closed valve means open substantially all of the refrigerant in said system will collect as a liquid in said receptacle,

said charge checking line being connected to said receptacle at an elevation such that said flow restrictor will frost due to the passage of liquid refrigerant therethrough when the amount of liquid collected in said receptacle is substantially equal to the proper charge of refrigerant for said system.

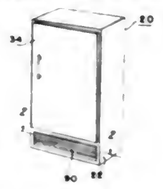
3,162,022
AUGER ICE MAKING MACHINE
James M. Relph, Ann Arbor, and Cyrus G. Minkler, Pleasant Ridge, Mich., assignors to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Oct. 16, 1961, Ser. No. 145,163
1 Claim. (Cl. 62—320)

Ice making apparatus having a tubular ice forming chamber, ice removing means mounted in said ice forming chamber to remove ice by rotative and axial displacement, ice discharge means having side surfaces extending substantially parallel to the direction of axial displacement of ice from said ice forming chamber, an ice compacting chamber provided at one end of said tubular ice forming chamber adjacent said ice discharge means to receive and compact the ice prior to delivery through said ice discharge means, said ice compacting chamber being defined by an internally mounted member of reduced diameter fixedly mounted relative to said ice removing means, a shoulder portion formed on said internally mounted member and extending radially from said internally mounted member to provide a first abutment means extending substantially transversely to the direction of movement of ice during axial displacement by said ice removing means, a radially protruding rib having a smooth arcuate surface of uniform height throughout its length and extending along the length of said internally mounted member between said shoulder portion and said ice forming chamber to define a second abutment means extending substantially transversely to the first abutment means and substantially transversely to the direction of move-



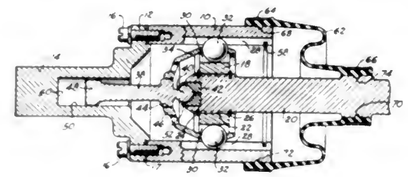
ment of ice during rotative displacement by said ice removing means and being aligned with said ice discharge means and having side surfaces extending substantially parallel to said side surfaces of said ice discharge means and being substantially narrower than the width of said ice discharge means and defining a restricted outlet passage from said ice compacting chamber to said ice discharge means to cause disintegration of compacted ice moving from said ice compacting chamber to said ice discharge means.

3,162,023
REFRIGERATING APPARATUS
Robert Smith, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,431
3 Claims. (Cl. 62—455)



1. A refrigerator including a cabinet having insulated walls and door means enclosing a compartment to be cooled and having support means extending downwardly from said insulated walls providing a space beneath the compartment to be cooled, said insulated walls including a bottom wall having a raised rear portion and a lower front portion, a U-shaped baffle having spaced legs located beneath and extending substantially into contact with said lower front portion having said spaced legs extending forwardly and extending downwardly substantially to but out of contact with the floor for guiding air in a U-shaped path through said space, a refrigerant condenser located beneath said raised rear portion and extending substantially throughout the area between the raised rear portion and the floor on which the cabinet rests and the rear of said U-shaped baffle and the rear of the cabinet, said condenser having an air flow passage arrangement extending laterally across the rear of said cabinet, a fan and shroud aligned with said condenser and extending substantially across the area between the rear of said U-shaped baffle and the rear of the cabinet and the raised rear portion and the floor, said space beneath the compartment having ingress and egress air flow openings at the front on opposite sides of said U-shaped baffle providing ingress and egress for the air moved by said fan, a motor-compressor unit located in said space beneath the rear raised portion operatively connected to said condenser, and an evaporator associated with said compartment to be cooled operatively connected to said motor-compressor unit and said condenser.

3,162,024
UNIVERSAL JOINT
John V. Breuer and Irving R. Ritsema, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,968
2 Claims. (Cl. 64—8)

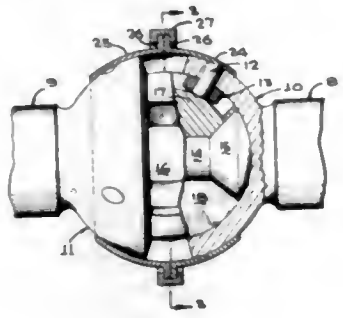


1. In a universal joint comprising an outer member and an inner member, a plurality of power transmitting balls for transmitting torque from one of the members to the other of said members, and a cage intermediate said outer and inner members for maintaining all of said balls in a common plane, a lever for causing an angular movement of said cage which is substantially one-half the relative angular movement of said outer and inner members, said lever having one end thereof fixedly connected to said inner member through socket means enveloping and retaining the end of said lever to form a unitary assembly therewith and the other end thereof slidably connected to said outer member, said socket means being formed in the end of said inner member, and means for permitting substantial axial movement of one of said members with respect to the other of said members at all angular positions of said members, said means including a plurality of corresponding parallel straight race grooves formed in said outer and inner members for receiving said balls.

3,162,025
CONSTANT VELOCITY UNIVERSAL COUPLING
Carl F. Benson, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Oct. 24, 1962, Ser. No. 232,755
1 Claim. (Cl. 64—21)

A constant velocity universal coupling comprising a drive shaft, a driven shaft, a part-spherical cup on each shaft, an intermediate spindle having flaring ends slidable on the spherical inner surface of each cup, a plurality of

part-spherical segments having longitudinal slots supported on the spindle and slidable on the spherical inner

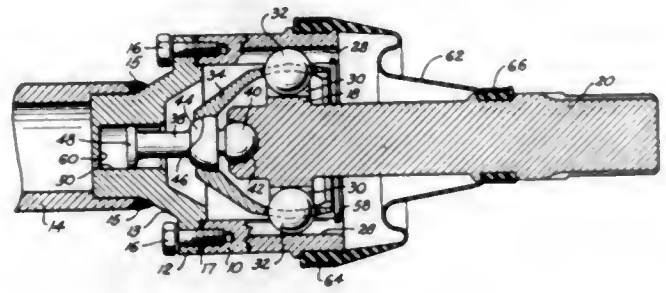


surface of each cup, and means on both cups for slidably engaging the slot in each segment.

3,162,026
UNIVERSAL JOINT

Irving R. Ritsema, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Aug. 23, 1963, Ser. No. 304,127
4 Claims. (Cl. 64—21)



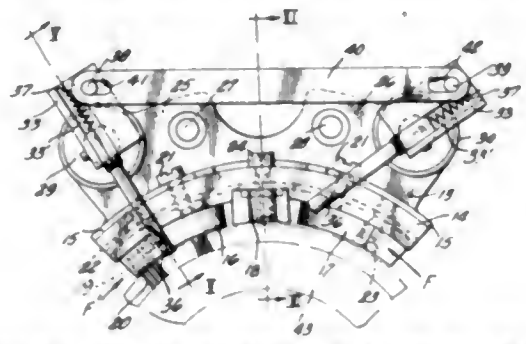
1. A universal joint comprising an outer and an inner member, a plurality of lands located within said outer member and on said inner member for forming a plurality of corresponding ball race grooves in said members, a plurality of power transmitting balls movably engaging the corresponding grooves of said members for transmitting torque from one of said members to the other of said members, a ball retainer located between said outer and inner members, said retainer having apertures formed therein for receiving and retaining said balls in said race grooves and for maintaining said balls in a common plane, a plurality of slots located inside of said retainer and in line with the apertures therein for receiving the lands of said inner member during insertion of said inner member within said retainer, and a plurality of ridges located between said slots for preventing withdrawal of said inner member from said retainer after said inner member has been rotated to a position wherein the race grooves of said inner member correspond with the apertures of said retainer.

3,162,027
DEVICE FOR EFFECTING THE NARROWING IN KNITTING MACHINES AND SUCHLIKE

Guido Azzolari, Bergamo, Italy, assignor to Fabrique National d'Armes de Guerre, Societe Anonyme, Herstal, near Liege, Belgium

Filed Dec. 28, 1960, Ser. No. 79,040
Claims priority, application Italy, Jan. 5, 1960, Patent 860; Dec. 12, 1960, 21,303/60
4 Claims. (Cl. 66—48)

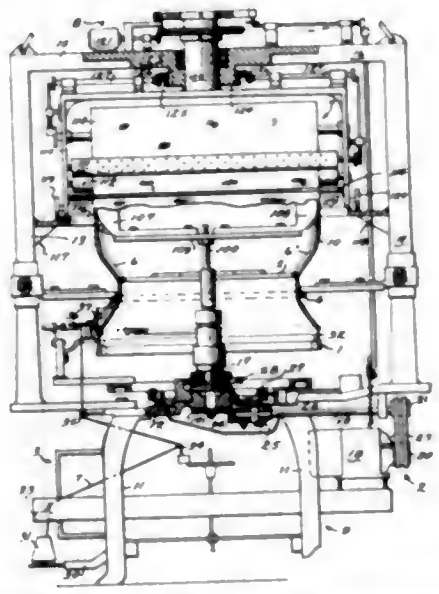
1. In a circular knitting machine having a rotary needle cylinder, a narrowing device consisting of a compact unit comprising a frame having an arcuate portion concentric with said needle cylinder, needle cams on a concave face of said arcuate portion, two uprights on said frame, a picker lever pivotally and oscillatably mounted on each upright, said picker levers being interconnected, and guiding means for said picker levers on a convex face of said arcuate portion.



3,162,028
KNITTING MACHINE

Robert Grey Egerton, 3703 Henderson Road, Greensboro, N.C., and James N. Lancaster, E. Main St., Stoneville, N.C.

Filed Jan. 8, 1963, Ser. No. 250,156
4 Claims. (Cl. 66—151)



1. In a circular knitting machine for manufacture of tubular fabrics from twisted paper yarn comprising a cylinder carrying a ring of needles, yarn supply means, fabric take-up means for winding the tubular fabric as a collapsed, double-layered sheet, contracting means drawing the fabric to a diameter less than that of the needle ring and spreader means intermediate the contracting means and the fabric take-up means to increase the diameter of the tubular fabric; the improved spreader means which comprises an elliptical spreader having its plane perpendicular to the axis of the tubular fabric and a pair of rapidly diverging spreader bars commencing adjacent the remote ends of said elliptical spreader and extending to near said take-up means, the angle between said axis and the parts of said spreader bars adjacent the remote ends of said elliptical spreader being at least substantially as great as the angles between said axis and lines drawn from said remote ends to the distal ends of said spreader bars, so that said fabric will remain in contact with the spreader bars as it leaves said elliptical spreader.

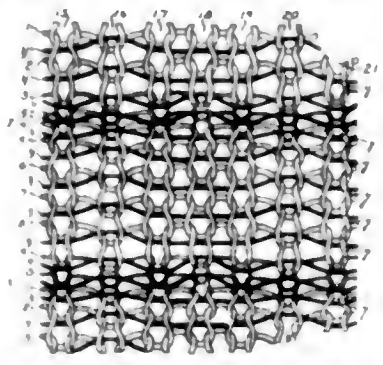
3,162,029
SOCK CONSTRUCTION

Rufus F. Laws and James M. Hoots, High Point, N.C., assignors to Morpul, Inc., Greensboro, N.C., a corporation of North Carolina

Filed June 7, 1960, Ser. No. 34,521
7 Claims. (Cl. 66—172)

7. A tubular plain knitted fabric comprising spaced mock rib portions separated by restricted portions, said

mock rib portions each comprising a plurality of courses knit of a plurality of yarns and having elastic yarns inlaid therein, said elastic yarns being incorporated in spaced wales separated from each other by a plurality of wales across which said elastic yarn is floated, said



restricted portions each being knit of a lesser number of yarns than said mock rib portions, and elastic yarns inlaid therein, said elastic yarns being incorporated in spaced wales which are separated from each other by a lesser number of wales than said first mentioned spaced wales and across which said elastic yarn floats.

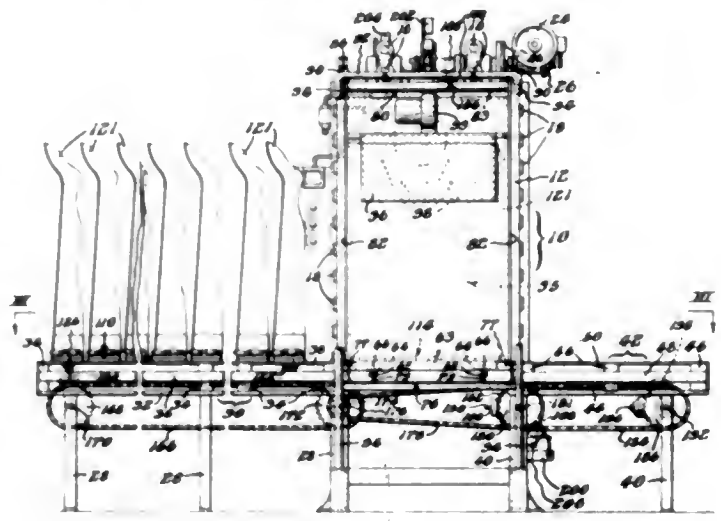
3,162,030
PERMANENT WICK STRUCTURE
Keith Irving, 19 Melville Ave., Toronto, Ontario, Canada
Filed Sept. 8, 1961, Ser. No. 137,484
Claims priority, application Canada Sept. 9, 1960
4 Claims. (Cl. 67—70)



1. A permanent wick structure adapted to provide a predetermined flame-contour upon generating a flame from a liquid hydrocarbon fuel, thereby to develop a flame of improved illumination characteristics, said structure comprising in combination: a liquid fuel reservoir; a rigid foraminous wick body having shaped flame-generating surfaces determining a generally corresponding flame-contour in a flame generated therefrom, said body being formed of a plurality of uniformly sized sintered particles of oxygen resistant substantially non-inflammable material selected from the group consisting of silica containing materials in the form of rice hull ash, mineral silicates, glass, and mineral oxides; a substantially impermeable rigid outer case for said wick body extending over a major portion of the surface between the ends thereof and defining free surfaces of said body at both ends, the one end surfaces defining said flame-generating surfaces of predetermined permanent contour, the other end surfaces defining fuel intake surfaces; a porous liquid fuel conductor formed of an absorbent material, one end of said conductor being connected about said fuel intake surfaces of said wick body, the other end of said conductor extending into said reservoir for communication of fuel therefrom to said fuel intake surfaces.

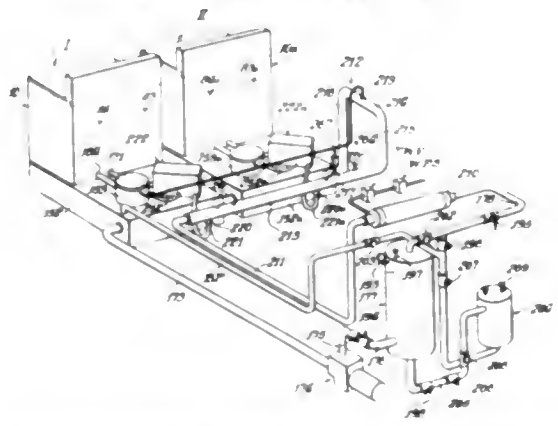
3,162,031
TEXTILE TREATING APPARATUS
Emil J. Berger and Howard K. West, Lansdale, Pa., assignors to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1963, Ser. No. 274,958
10 Claims. (Cl. 68—5)

1. In apparatus or treating textiles, the combination comprising means providing a main treatment chamber closed by a door in the front thereof movable bodily outwardly from the chamber, track means extending along the front of said door including longitudinally spaced stationary load-unload and transfer track sections respectively on opposite sides of the chamber, and track sections mounted respectively upon the inner and outer sides of said door for movement therewith, said outer movable track section being interposed between and aligned with said stationary track sections, and said inner movable track section being adapted for being interposed between and aligned with said stationary track sections when said door is open, means coacting with said door to provide an



auxiliary chamber over said outer movable track section, carriages for supporting textile materials to be treated, said carriages being respectively mounted upon said stationary load-unload and movable inner and outer track sections, and means for opening and closing said chambers and actuating said carriages in predetermined timed relation whereby each carriage is progressively advanced from said stationary load-unload track section successively to the other track sections and then back to said stationary load-unload track sections for treatment of the textile materials first in said main treatment chamber and then in said auxiliary chamber.

3,162,032
DRY CLEANING MACHINE
Curtis E. Behrens, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 3, 1961, Ser. No. 142,633
20 Claims. (Cl. 68—18)

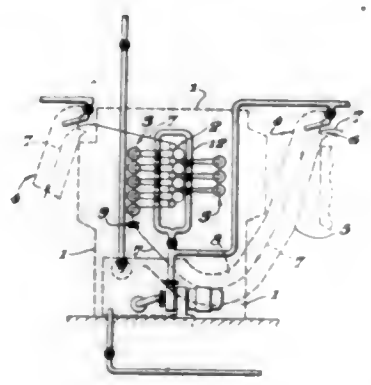


1. In a dry cleaning system, a dry-cleaning machine including a fluid-containing receptacle; a fluid-storage container at a lower level than said receptacle and receiving fluid from said receptacle; a filter; and a closed fluid circuit including means connecting said filter to said receptacle and said container and providing continuous flow of fluid solely by gravity from said filter to and through said receptacle into said container and concurrently to and through said container.

3,162,033
MACHINES FOR WASHING CONTINUOUS TEXTILE LENGTHS

Robert Charles Grimes, 46 Gerrard St., London, England

Filed Aug. 29, 1963, Ser. No. 305,497
4 Claims. (Cl. 68—22)

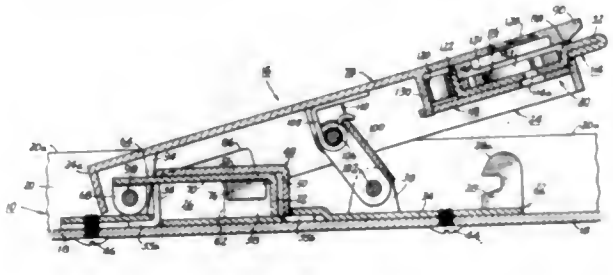


1. Machine for washing continuous lengths of textile and other materials including a framework, a roll assembly consisting of a plurality of horizontally disposed rotatable squeezing rolls mounted in vertical alignment and two columns of horizontal jockey rolls also rotatable and in vertical alignment and laterally spaced from said squeezing rolls, one column on each side thereof, all said rolls being mounted in said framework, a liquid supply and distributory system for soaking material passing into the roll assembly, said squeezing rolls being arranged in two vertical lines, the rolls of one line being power-driven and those of the other line (the second line) being driven by rolling engagement with those of the first line, the individual rolls of each line being spaced apart vertically and the two lines being so juxtaposed that the rolls of one line alternate with those of the other and are in peripheral contact with one another, the rolls of the second line being each cradled on a pair of the driven rolls to form squeezing nips, and means to press the two lines of squeezing rolls together in a lateral direction.

3,162,034
DOUBLE ACTION LATCH

John B. Humphries, Stamford, Conn., assignor to The Excelsior Hardware Company, Stamford, Conn.

Filed Jan. 28, 1963, Ser. No. 254,208
7 Claims. (Cl. 70—70)



1. A lockable latch mechanism comprising in combination

(A) a resiliently biased latch member movable with respect to a housing to engage and to release a prong member,

(1) guide means on said latch member,

(2) a cam peak on said latch member protruding transversely with respect to the guide direction of said guide means,

(B) a stop on the housing and,

(C) a lock member movably mounted on said latch member and shiftable along said guide means between a locked position where it engages said stop to block the prong-releasing movement of said latch member and an unlocked position where it does not interfere with movement of said latch member,

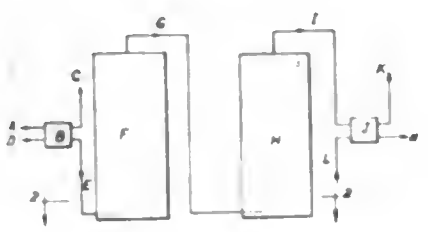
(1) facing convex cam shoulders disposed on said lock member for alternate engagement by a key to shift said lock member between said locked unlocked positions, and

(2) resilient detent means on said lock member engaged by said cam peak to maintain said lock member in one of said locked and unlocked positions.

3,162,035
SAMPLE INJECTION FOR ANALYSIS

Thomas Brian Kent, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed June 19, 1961, Ser. No. 118,110
Claims priority, application Great Britain, June 22, 1960, 21,848/60
4 Claims. (Cl. 73—23.1)



1. An apparatus for introducing a sample fluid to an analytical device comprising first conduit means for a continuous stream of diluent fluid; first valve means for introducing predetermined volumes of said sample fluid at known intervals of time into the continuous stream of diluent fluid in said first conduit means, said diluent fluid being substantially chemically inert to the said sample fluid, the rate of flow of said diluent stream at any time being known; at least one mixing vessel; second conduit means for continuously passing the resulting stream of combined fluids through said mixing vessel to thoroughly mix the fluids; third conduit means for conveying a continuous stream of carrier gas to said analytical device; second valve means for subsequently introducing a measured amount of the mixed fluids into the continuous stream of carrier gas in said third conduit means, said third conduit means thereafter introducing the combined stream of mixed fluids and carrier gas into said analytical device.

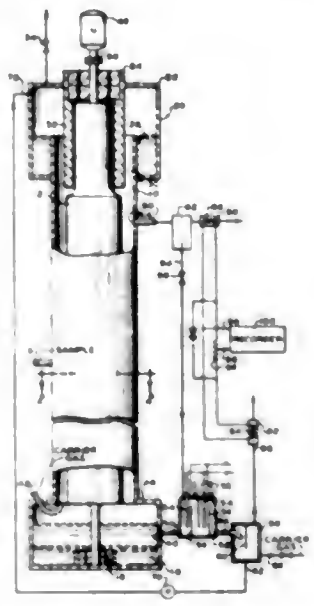
3,162,036
SPINNING BAND CHROMATOGRAPHIC COLUMN WITH FALLING FILM

Buell O. Ayers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 21, 1962, Ser. No. 196,422
18 Claims. (Cl. 73—23.1)

1. In a combination of apparatus for performing chromatographic analyses, an improved means for separating that comprises a column; a rotor disposed within and extending substantially the length of said column; means to actuate said rotor; means for analyzing a fluid drawn from said column; first condiut means connected to said column for removing a fluid from an upper region of said column and for transporting such fluid to said means for analyzing; second conduit means connected to said column for removing another fluid from a lower region of said column; means in communication with said second conduit means for circulating a liquid derived from said

another fluid to the first-said region of said column; and third conduit means connected to said column between



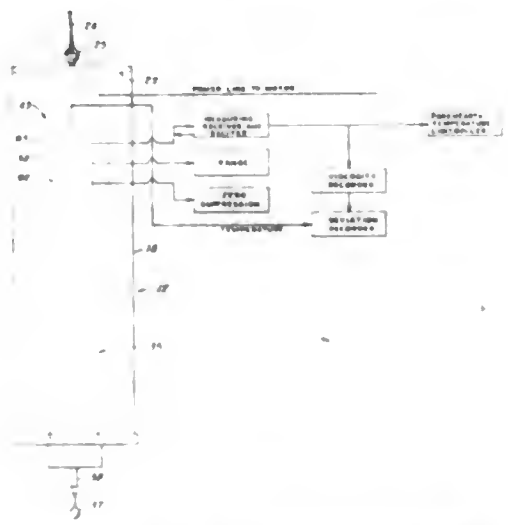
said upper and lower regions to introduce a sample into said column.

3,162,037
METHOD OF MEASURING PERMEABILITY OF FRACTURED SUBTERRANEAN FORMATIONS
Robert E. Hurst, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,793
4 Claims. (Cl. 73—38)



1. A method of ascertaining the susceptibility of a subterranean formation to improvement, by hydraulic fracturing and subsequent treatment of the fractured formation employing a liquid composition, consisting essentially of taking a cylindrical core substantially transverse to the bedding planes of the formation; cutting cylindrical plugs from said core at substantially right angles to the axis of the core and parallel to the bedding planes; cutting the plug axially to divide it into two substantially equal halves having mating substantially flat faces; reassembling the halves by placing the mating flat faces in substantially their original position prior to cutting, inserting a removable spacer between the two thus positioned mating faces to provide a space therebetween and, while said spacer is in position between the two halves of the plug, packing propping agent into the space between the halves thus formed by the spacer, and thereafter removing the spacer, said plug now having a simulated fracture therein; positioning the thus assembled plug in a flexible sleeve of the general shape of the assembled plug, said sleeve being provided with open ends, to permit passage of a fluid along the bedding planes, and with fluid-confining sidewalls, and being positioned in a rigid cylindrical chamber of the same general shape as the sleeve, said chamber being provided with openings at each end for communication with the interior of said sleeve, pressure-type sidewalls, and a circumferential opening in said sidewalls for the admission of a fluid to simulate overburden pressure in the formation; introducing a testing fluid under pressure into one end of said plug so as to enter the plug substantially parallel to the bedding planes thereof and out the other end of the plug while introducing a fluid under pressure into the circumferential opening in the sidewall of said chamber at various pressures to exert force against the circumferential periphery of said flexible sleeve thereby to simulate various overburden pressures on the plug and measuring the rate of flow of said testing fluid from the plug at various overburden pressures.

3,162,038
VISCOMETER
Cletis L. Roberson, Sheldon A. Canfield, and James D. Riley, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed June 30, 1960, Ser. No. 39,923
11 Claims. (Cl. 73—59)

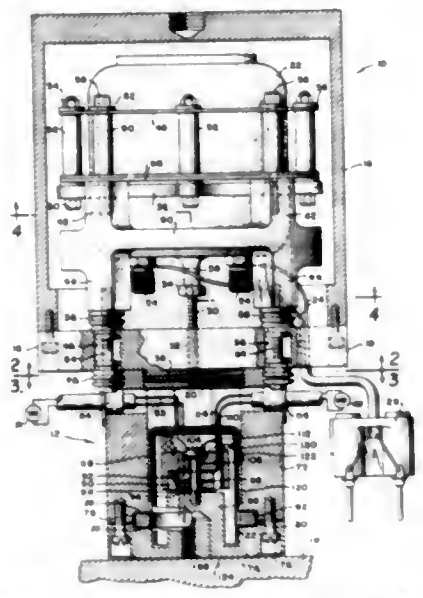


1. An apparatus for determining viscosity including a rotatable member to be immersed in a liquid being tested, a shaft on which the member is supported, an electric motor for supplying the driving force for rotating the shaft and the member, a motor shaft extending from the motor, an electro-magnetic coupling between the shaft supporting the rotatable member and the motor shaft and positioned externally of the motor, said electro-magnetic coupling having a yielding spring-like property proportionally responsive to the amount of resisting torque imposed upon the rotating member by the viscosity of the liquid being tested, and electrical means associated with the shaft supporting the rotatable member and responsive to the angular lag of the shaft permitted by the yielding response of the electro-magnetic coupling and converting the angular lag to terms of viscosity.

3,162,039
MECHANICAL IMPEDANCE METER
Fred Schloss, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 21, 1961, Ser. No. 118,747
17 Claims. (Cl. 73—67.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A device for measuring mechanical impedance of a mechanical element, comprising, a mechanical impedance head, a mechanical vibration generator connected to one end of said impedance head, said impedance head comprising a force sensitive means for sensing the force imparted to said mechanical element by said vibration generator, and a piezoelectric accelerometer for measuring acceleration imparted to said mechanical element by said vibration generator, and a magnetic shield means, comprising a ferro magnetic material within said impedance head and partially enclosing said piezoelectric ac-

celerometer to shield said piezoelectric accelerometer from the effects of stray magnetic fields thereby substan-



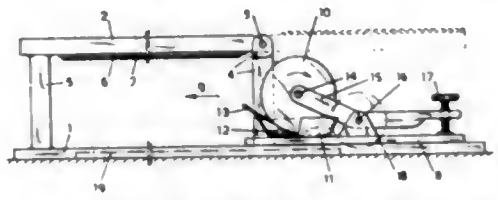
tially eliminating the voltage effects produced by the stray magnetic fields reacting on the piezoelectric crystal.

3,162,040

METHODS AND DEVICES FOR EXAMINING THE FLATNESS OR THE EXACTLY CONCENTRIC CYLINDER-SHAPE OF A PLANE OR CYLINDRIC SURFACE, E.G. THE ACTIVE SURFACE OF PRINTING-FORMS AND/OR OF THE SUPPORTING MEMBER THEREOF

Max Cahen, Papierstraat 6–8, 's-Hertogenbosch, Netherlands

Filed May 24, 1961, Ser. No. 112,427
Claims priority, application Netherlands May 28, 1960
9 Claims. (Cl. 73—104)



1. Method of locating low and high spots in printing surfaces comprising the steps of selecting a surface to be tested, applying an uninterrupted layer of dry powder to the surface of a cylindric testing roller, making the outer surface of said layer exactly cylindric and concentric to the axis of rotation of said roller and rolling said powdered roller over said surface to be tested while maintaining the axis of rotation of said roller at constant distance from said surface to be tested, said distance being equal to the radius of the outer surface of said layer of powder.

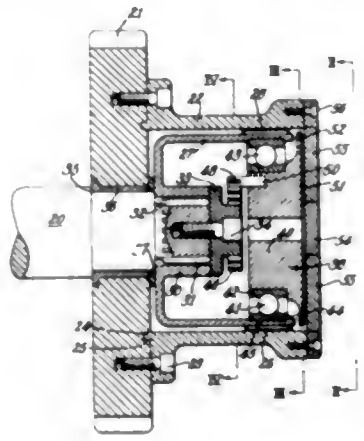
3,162,041

TORQUE INDICATOR

C Walton Musser, Palos Verdes Estates, Calif., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed June 5, 1962, Ser. No. 200,281
15 Claims. (Cl. 73—136)

1. In a torque indicator, a circular spline having a set of teeth arranged in a circular configuration, a flexspline having a set of teeth which mesh and contact with the teeth on the circular spline at a plurality of circumferentially spaced points with intermediate points at which the teeth on the flexspline are out of mesh and out of contact with the teeth on the circular spline, the circular spline and the flexspline being concentric members one within another and one having external teeth and the other having internal teeth, a concentric wave generator on the side of the flexspline remote from the circular spline, having lobes which deflect the flexspline into mesh and contact with the circular spline at points of mesh and contact, with intervening points at which the teeth are out of mesh, the difference in the number of teeth between the outer member and the inner member equalling the number of lobes on the wave generator or a multiple



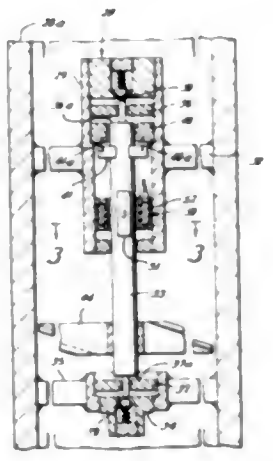
thereof, rotary means for applying input torque to one of the flexspline and the circular spline, rotary means for connecting output to the other of the flexspline and the circular spline, means for resiliently biasing the wave generator in one rotative direction, and means for indicating rotation of the wave generator as a measure of the torque delivered.

3,162,042

FLOWMETER APPARATUS

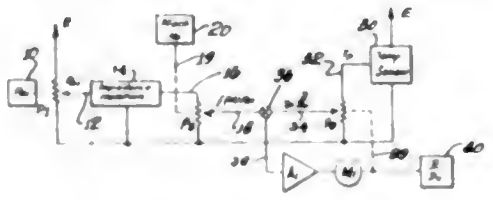
Herbert J. Hart, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed June 20, 1960, Ser. No. 37,147
9 Claims. (Cl. 73—155)



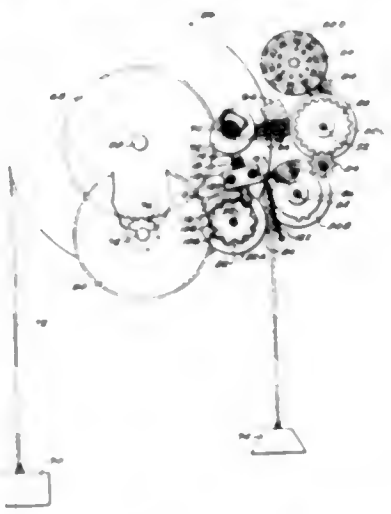
9. Flowmeter apparatus including a housing; a shaft rotatably mounted in said housing to rotate about its longitudinal axis in response to fluid flow; magnet means on said shaft for producing a magnetic field; detecting means in said housing including at least one detecting coil disposed adjacent but separate from said magnet means for detecting the magnetic field of said magnet means upon rotation of said shaft and magnet means, said detecting means having uniform magnetic properties about the periphery of said magnet means on said shaft for eliminating any preferential magnetic attraction between said magnet means and said detecting means; said magnet means and coil cooperating for developing electrical signals having a waveform and frequency related to rotation of the magnet means on the shaft relative to said coil.

3,162,043
COMPENSATED AIR DENSITY COMPUTER
Arthur W. Conow, La Mirada, and Robert Charles Howard, Costa Mesa, Calif., assignors to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Aug. 12, 1960, Ser. No. 49,182
3 Claims. (Cl. 73—178)



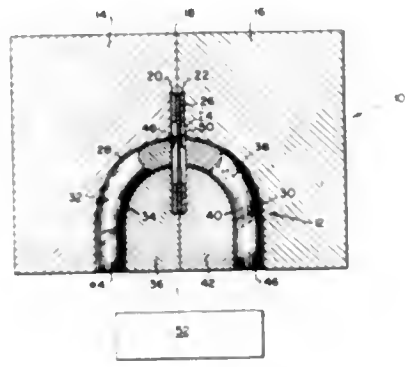
1. A system responsive to the true air density surrounding a moving aircraft or the like, said system comprising the combination of means for developing a temperature voltage that represents indicated air temperature, means for developing a static pressure voltage that represents indicated static pressure, means acting to develop from one of said voltages a corrected voltage proportional to said one voltage multiplied by a first correction factor and divided by a second correction factor, said first correction factor being proportional to the ratio of the true value to the indicated value of the variable corresponding to said one voltage, and said second correction factor being proportional to the ratio of the true value to the indicated value of the variable corresponding to the other voltage, and means responsive to said corrected voltage and said other voltage for developing an output signal that is proportional to the quotient of one of those two voltages by the other and that represents the true air density.

3,162,044
MAGNETIC DATA RECORDER
Harold G. Lee, Portland, Oreg., assignor to Leupold & Stevens Instruments, Inc., Portland, Oreg., a corporation of Oregon
Filed Nov. 30, 1962, Ser. No. 241,422
9 Claims. (Cl. 73—312)



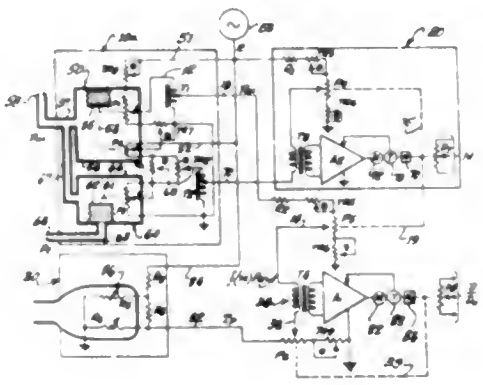
1. Measuring apparatus comprising:
a shaft mounted for rotational movement;
a plurality of counter cylinders each having a plurality of elements of magnetic material arranged in a numerical code on its outer surface;
means for rotating said cylinders in response to the movement of said shaft to indicate the number of rotations of said shaft by the rotational position of said elements;
a plurality of magnetic responsive devices mounted adjacent the outer surfaces of said cylinders;
means for moving said devices past the indicator elements of the counter cylinders which indicate the number of rotations of the shaft to obtain an electrical readout signal which corresponds to the number represented by said indicator elements; and
means for monitoring said electrical readout signal.

3,162,045
RADIATION PYROMETER
Arthur G. Kudelko, Glenside, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 31, 1960, Ser. No. 19,031
7 Claims. (Cl. 73—355)



3. A radiation pyrometer, including, a detection device having two spaced oppositely directed surfaces, a first sapphire rod having one end thereof directed toward the outside of said pyrometer and the other end directed at one of said surfaces of the detection device, and a second sapphire rod having one end thereof directed toward the outside of said pyrometer in substantially the same direction as said outwardly directed end of said first rod and the other end directed at the other of said surfaces of the detection device, whereby to direct radiant energy to both surfaces of said detection device.

3,162,046
TEMPERATURE PROBE
Arthur W. Conow, La Mirada, and Robert Charles Howard, Costa Mesa, Calif., assignors to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Original application Aug. 12, 1960, Ser. No. 49,182. Divided and this application Sept. 22, 1961, Ser. No. 140,079
3 Claims. (Cl. 73—362)

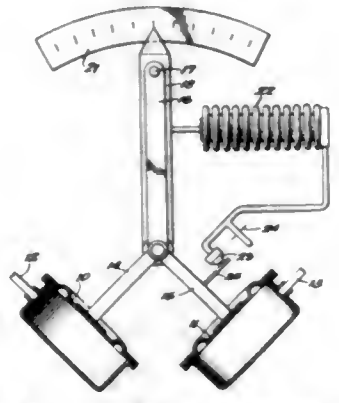


1. In a temperature probe for sensing atmospheric ram temperature, the combination of two temperature responsive resistive elements adapted to be exposed to ram temperature, two impedance means, a source of reference voltage, circuit means connecting one impedance means and one element in series with the voltage source, circuit means series connecting the other impedance means and the other element in shunt to said one element, and output means responsive to the votlage at the junction of said other impedance means and said other element.

3,162,047
RATIO INDICATOR

Albert J. Rosenberger, Chicago, Ill., assignor, by mesne assignments, to Republic Flow Meters Company, Chicago, Ill., a corporation of Delaware

Filed July 19, 1954, Ser. No. 444,085
1 Claim. (Cl. 73—407)

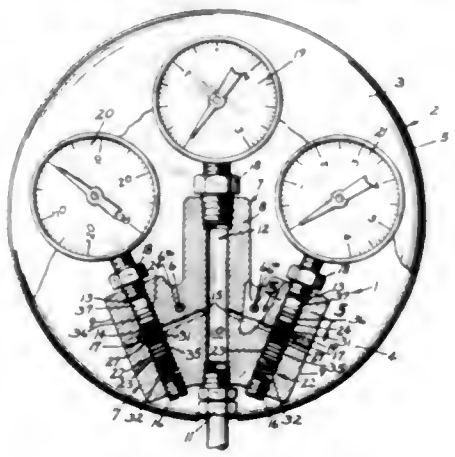


A ratio indicator comprising a pair of force producing devices, links lying at an acute angle to each other and respectively connected to the force producing devices to have a force exerted thereon longitudinally of the links by the force producing devices, a reaction link pivoted at one end on a supporting pivot and at its other end pivotally interconnected to the first named links, means mounting the supporting pivot for movement in an arc about the pivotal interconnection, means responsive to movement of the links to produce a regulated force, and means responsive to the value of the regulated force to shift the supporting pivot in a direction to rebalance the forces acting on the first named links, the position of the supporting pivot indicating the ratio of said forces.

3,162,048
PRESSURE TESTING DEVICE

Victor N. Albertson and Robert V. Albertson, Minneapolis, Minn., assignors to Minnesota Automotive, Inc., Mankato, Minn., a corporation of Minnesota

Filed Nov. 18, 1960, Ser. No. 70,168
3 Claims. (Cl. 73—420)



1. A pressure testing device comprising:

(*a*) a body having a fluid inlet passage and multiple fluid outlet passages in communication with said inlet passage, said fluid outlet passages each comprising a generally cylindrical bore defined in said body,

(*b*) said fluid outlet passages each having an outlet end portion adapted for connection to a pressure sensitive gauge, and

(*c*) a normally open pressure actuated valve disposed in one of said bores intermediate said inlet passage and the gauge associated with said one of the bores, said valve comprising:

(1) a generally cylindrical piston disposed for axial movement in said one bore,

(2) a generally cylindrical valve seat element disposed within said one bore between said passage outlet end portion and said piston element, said valve seat element being further disposed in axially spaced relation to said piston and defining therebetween and with the bore a pressure chamber for the reception of fluid from said inlet passage,

(3) said valve seat element defining a generally annular valve seat on the side thereof adjacent said outlet end portion of the passage,

(4) said valve seat element defining an aperture which extends therethrough in a generally axial direction,

(5) a valve stem generally co-axially received within said one bore and having an intermediate portion which is received in and projects through the aperture of said valve seat element and also having one end portion secured to said said piston, said valve stem further having a head portion for valve closing engagement with the valve seat of said valve seat element, and

(6) yielding means urging said piston in a direction to move said valve stem head portion away from seating engagement with the valve seat, the bias of said yielding means being such as to be overcome by an increase in fluid pressure in said chamber approaching the limit of pressure measurement of the associated gauge, said one bore being of uniform diameter and a plug threaded in one end of said bore for supporting the yielding means.

3,162,049
SAMPLER FOR REACTION KETTLES AND OTHER VESSELS UNDER PRESSURE OR VACUUM

Thomas R. Blanchard, Pittsburgh, Pa., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Mar. 5, 1962, Ser. No. 177,578
2 Claims. (Cl. 73—421)



2. A device for extracting a substantial and representative sample from the interior of a closed vessel which comprises:

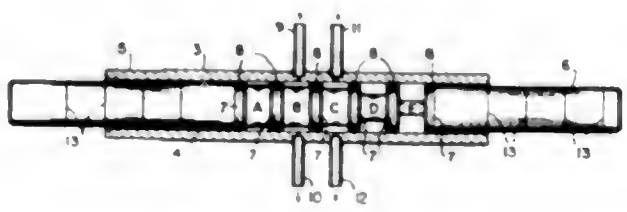
(*a*) a first tubular casing,

(*b*) valve means positioned in said first casing,

(*c*) an elongated chamber, positioned lengthwise, attached to the end of said first casing above said valve means and having a diameter larger than that of said first casing and a tapered bottom portion adapted so as to cause liquid therein to drain therefrom,

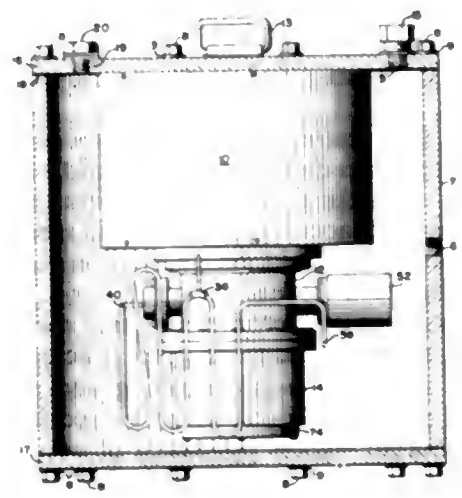
(*d*) an aperture in the side of said chamber of sufficient size so as to allow the passage of a sampling cup therethrough,
(*e*) an air-tight door attached to said chamber and positioned so as to seal said aperture when closed,
(*f*) a second tubular casing attached to said chamber at the opposite end thereof from said first casing,
(*g*) a valve-containing vent attached to and positioned in said second casing,
(*h*) a gas-tight housing attached to the extreme outer end of said second casing and adapted so as to receive a rod member,
(*i*) a rod passing through said housing, centrally positioned in said second casing, and of sufficient length to vertically travel the entire length of the device,
(*j*) automatic means for lowering and raising said rod attached to the outer end thereof,
(*k*) an elongated, detachable container, positioned lengthwise, attached to the inner end of said rod and having a tapered top portion, tapered, open bottom portion and a diameter smaller than that of said first casing,
(*l*) a grate in the bottom portion of said container adapted so as to hold a sampling cup and allow liquid to flow therethrough, and,
(*m*) sampling cup clamping and securing means positioned in said container so as to securely retain a cup therein on said grate,
(*n*) said second casing being of sufficient length so as to allow rod (*i*) to raise container (*k*) to a position opposite aperture (*d*) without fouling housing (*h*) with material picked up on said rod while said container is in contact with material in the reaction vessel from which a sample is being taken.

3,162,050
SAMPLE VALVE
Ronald A. MacDonald and Patrick M. Handke, Pittsburgh, Pa., assignors to Fisher Scientific Company, Pittsburgh, Pa.
Filed Nov. 9, 1962, Ser. No. 236,634
1 Claim. (Cl. 73—422)



A sample valve comprising,
A. a barrel having an internal bore extending the length of the barrel,
B. a plunger movable axially within said bore,
C. at least two segments of the plunger
(1) spaced from each other along the length of the plunger,
(2) having cross sectional areas less than the cross sectional area of the bore, and differing in amount from each other,
D. seals
(1) mounted on the portions of the plunger between said segments and at the outer ends of the segments closest to the ends of the plunger, and
(2) engaging the surface of the barrel bore to form at least two sealed enclosures,
E. a first pair of conduits
(1) leading into the interior of the barrel and
(2) spaced from each other along the length of the barrel a distance less than the axial length of the said segments, and
F. a second pair of conduits
(1) leading into the interior of the barrel and
(2) spaced from each other along the length of the barrel a distance less than the axial length of said segments of reduced cross section,
G. the conduits of each pair which are closest to a conduit in the other pair being spaced from each other along the barrel a distance at least equal to the length of the portions of the plunger between said segments,
H. said plunger being movable axially within the bore of said barrel to bring one of said sealed enclosures in communication with said first pair of conduits and another sealed enclosure in communication with said second pair of conduits.

3,162,051
TEMPERATURE SHIELD FOR HYDROBAROPHONE
Edward L. Peters, University Park, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 20, 1963, Ser. No. 266,762
7 Claims. (Cl. 73—431)
(Granted under Title 35, U.S. Code (1952), sec. 266)



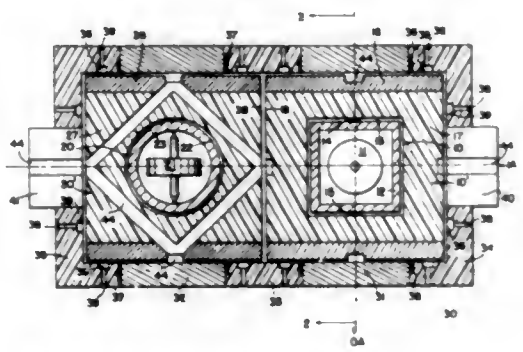
1. In a hydrobarophone apparatus for measuring the ambient hydrostatic pressure by sensing changes in the interior air pressure of said apparatus equal to said hydrostatic pressure, the improvement comprising
a glass fiber reinforced plastic temperature shield attached to and substantially surrounding said apparatus,
said shield having an aperture therein for admitting pressures from the exterior of said shield to said apparatus,
said shield having a low thermal conductivity and a low thermal coefficient of expansion;
said shield further having high shock resistance and being substantially impervious to water whereby said shield provides a heat sink to aid in maintaining said apparatus at a substantially constant temperature during measurement of ambient hydrostatic pressure.

3,162,052

PENDULOUS GYROSCOPIC ACCELEROMETERS

John Edward Anderson, Golden Valley, and Isaac W. Metzger, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware

Filed Sept. 6, 1962, Ser. No. 221,700
5 Claims. (Cl. 73—504)



3. A gyroscopic device comprising:

(*a*) a housing having a cylindrical opening therein;

(*b*) first and second pendulous gyro accelerometers each having a spin motor mounted to rotate about a spin axis, a mass pendulously supported for rotation about an acceleration sensitive axis perpendicular to said spin axis and a signal generator responsive to movement of said mass for providing output signals indicative of such movement, each accelerometer being contained within a cylindrical outer casing with an outer diameter smaller than the inner diameter of said cylindrical opening in said housing so that said sensitive axis is substantially parallel to the longitudinal axis of said casing and each of said casings having one end perpendicular to the longitudinal axis of said casings;

(*c*) means for rotatably mounting said first and second pendulous gyro accelerometers within said opening in said housing so the input axes of said accelerometers are parallel with the longitudinal axis of said cylindrical opening and said perpendicular ends are adjacent;

(*d*) means for rotating said first and second accelerometers in opposite directions about said sensitive axes;

(*e*) means connecting said signal generator of said first pendulous gyro accelerometer to said means for rotating said first pendulous gyro accelerometer and means connecting said signal generator of said second pendulous gyro accelerometer to said means for rotating said second pendulous gyro accelerometer; and

(*f*) means attached to said housing and responsive to rotation of said pendulous gyro accelerometers to provide output signals indicative of accelerations applied to said device along said longitudinal axis, said output signals being relatively free of errors due to drift in said accelerometers.

3,162,053

GOVERNOR FOR ONE SHOT GYRO

Daniel Blitz, Boston, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed May 10, 1961, Ser. No. 109,108
4 Claims. (Cl. 74—5.7)

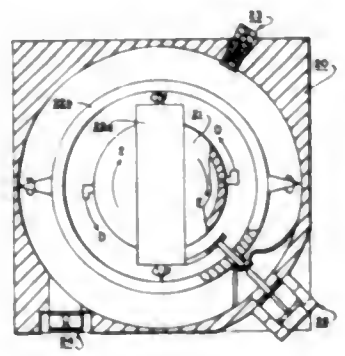
1. In a fluid actuated gyroscope of the type having

(*a*) a hollow rotor arranged to store a fluid under pressure,

(*b*) a reaction impeller communicating between the interior and exterior of said rotor, and

(*c*) means for initiating the flow of said fluid through said impeller to cause rotation of said rotor, the improvement comprising a rotor speed governor including

(*d*) a valve member arranged to throttle said fluid flow upon movement of said member away from the axis of rotation of said rotor in response to the centrifugal force caused by rotation about said axis, and



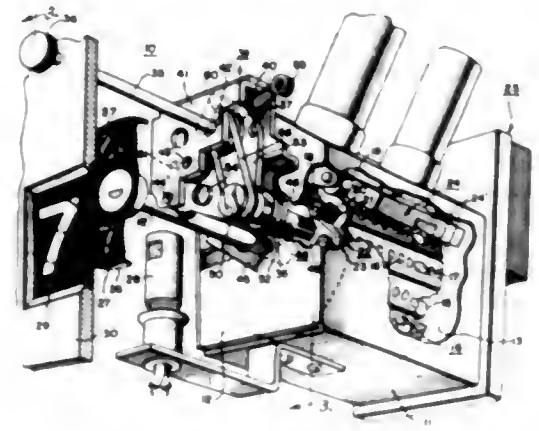
(*e*) means resiliently urging said member toward said axis and against said centrifugal force.

3,162,054

TUNER MECHANISM

Howard C. Grossenheider, Deerfield, and Richard R. Kolkau, Bensenville, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed May 9, 1962, Ser. No. 193,404
5 Claims. (Cl. 74—10.6)



1. In a wave signal receiver having a tuner in which a plurality of adjustable frequency selectors are disposed in a circular array about a reference axis, a fine tuning mechanism comprising:

a fine tuning control shaft disposed eccentrically of said reference axis at a distance exceeding the radius of said circular array and supported for both axial and rotational displacement;

a driving member disposed eccentrically of said control shaft and normally retained in a rest position but movable to an actuated position in a plane which includes the adjustable portion of the one of said selectors instantaneously in a predetermined index position to effect a driving engagement therewith to tune said one selector;

a coupling link supporting said driving member and disposed transversely of but mechanically engageable with said control shaft for positive displacement, in response to axial displacement of said control shaft, to move said driving member to said actuated position;

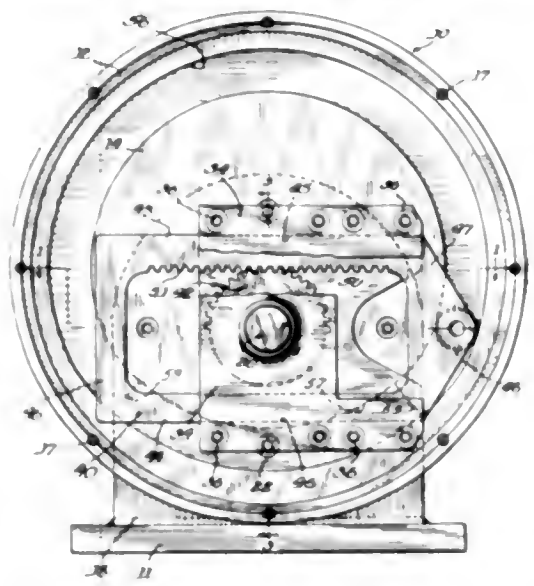
and means for extending a driving connection from said control shaft to said driving member to effect rotation of said driving member in response to rotation of said control shaft.

3,162,055

DEVICE FOR MODIFYING ROTARY MOTION

Frederick Moore Littell, Winnetka, and George Albert Sykes, Chicago, Ill., assignors to F. J. Littell Machine Co., Chicago, Ill., a corporation of Illinois

Filed Mar. 18, 1963, Ser. No. 265,659
4 Claims. (Cl. 74—84)



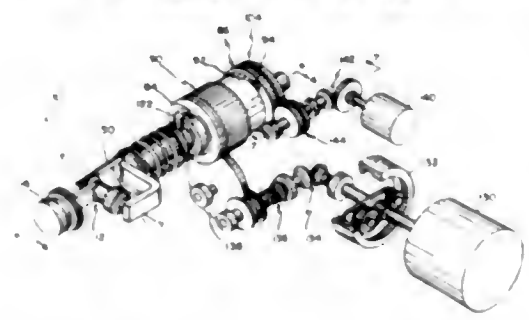
1. In a device for modifying rotary motion to produce intermittent rotary motion from a continuous rotating input shaft, the combination with a housing providing a cam plate having a cam race of characteristic contour, an input shaft journalled by the housing, said input shaft having rack retaining means formed intermediate its length and which has location within the housing, said input shaft including a tubular part projecting from the housing on one side thereof, a rack member carried by the rack retaining means and adapted to have reciprocating movement, an output shaft journalled by the tubular part of the input shaft and projecting from the same, a drive gear fixed to the output shaft and having location within the rack member and being operatively geared thereto, and a roller fixed to the rack member at one end thereof and having location within the said cam race.

3,162,056

SCAN AND TRACK NUTATION DEVICE

Robert N. Boyd, San Carlos, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 3, 1962, Ser. No. 164,202
4 Claims. (Cl. 74—86)



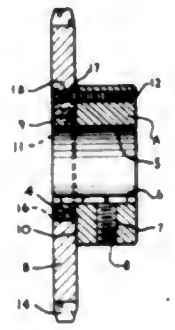
1. A device for selectively providing scanning and tracking motion on a radar apparatus comprising: a nod spindle, means for rotating said nod spindle about a first axis, and rotating means being journaled in bearings adapted to be supported by a housing, said nod spindle being trunnioned to said rotating means on a second axis transverse to said first axis, a pinion gear coaxial with said second axis and joined to said nod spindle, radar antenna support means on said spindle at right angle to said second axis, means for oscillating said nod spindle in a first direction about said second axis, a circular cam for controlling said oscillating means, means for varying the rate of oscillations in relation to spindle rotation; said varying means comprising a differential input gear joined to said cam, a differential output gear joined to said means for rotating said nod spindle, a differential, and differential control means; said oscillating means comprising an axially movable sleeve co-axial with said rotating means, a cam follower joined to said sleeve and engaging said circular cam, a spring biased for holding said cam follower in engagement with said circular cam, and a rack joined to said sleeve and engaging said pinion joined to said nod spindle; said circular cam being programmed for a variable angular rate of change per oscillation, means for overriding said circular cam and displacing said nod spindle to a fixed angle in a second direction about said second axis, and means for driving said rotating means in either clockwise or counterclockwise direction.

3,162,057

SPROCKET WHEEL

Alfred A. Burrell, 10323 106th St., Edmonton, Alberta, Canada

Filed Oct. 17, 1962, Ser. No. 231,164
3 Claims. (Cl. 74—243)



1. A sprocket wheel comprising a hub and a separable sprocket wheel plate, wherein the said hub is of generally cylindrical form with opposite ends flat and parallel and has an axial bore with a keyway slot, one end of said hub being of reduced diameter and forming an abrupt, flat radial shoulder of substantial area between the reduced diameter end portion and the main body of the hub, said shoulder lying in a plane at right angles to the axis of the hub, said reduced diameter end portion of the hub having about its entire periphery radial teeth that extend the length thereof substantially parallel with the axis of the hub the inner end of the reduced diameter toothed portion of the hub having an undercut chip clearance recess, and said sprocket wheel plate being flat, of uniform thickness throughout and having a toothed central bore corresponding with and fitting on the toothed reduced diameter end portion of said hub in relative non-rotatable relation and lying in tight engagement against said shoulder in true radial positioning in a plane at right angles to the axis of the hub.

3,162,058

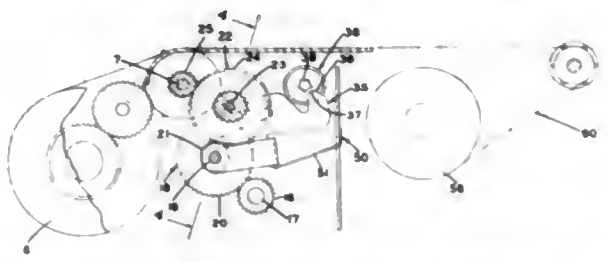
VARIABLE SPEED TRANSMISSION

Morton P. Matthew, Norwalk, Conn., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Aug. 10, 1961, Ser. No. 130,593
8 Claims. (Cl. 74—354)

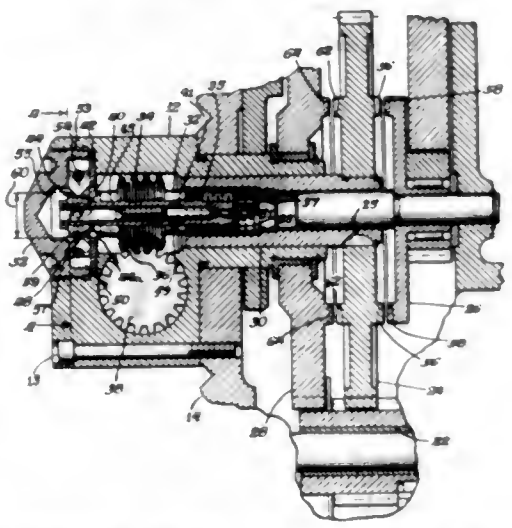
1. A variable speed transmission comprising in combination, a driving gear, a driven gear, a gear train including, at least two intermediate gears in said gear train and one of said intermediate gears meshing with said driving gear, at least two output gears having at least one of said output gears engaging one of said intermediate gears, means pivotally supporting said output gears about the axis of said intermediate gears in said gear train and for rotation on axes parallel with said in-

termediate gear axis, means selectively engaging one of said output gears of said gear train with said driven gear



to selectively and alternatively provide a means for varying the output speed of the transmission.

3,162,059
POWER FEED CLUTCH MECHANISM
Stephen Emery Farekas, South Bend, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Oct. 8, 1962, Ser. No. 229,072
8 Claims. (Cl. 74—371)



8. In a machine having a selector gear keyed to an axially movable and rotatable shaft for selective engagement with first and second gears or for disengagement from both of said gears, circular teeth formed on said shaft for engagement with gear selector means, first and second annular rings formed on said shaft, said rings being positioned relatively close to each other to form an annular recess therebetween, resiliently positionable locating means adjacent said shaft, said locating means being effective to abut against only said first ring when said selector gear is engaging said first gear and effective to abut against only said second ring when said selector gear is engaging said second gear, and effective to abut against both said first and second rings when said selector gear is disengaged from both said first and second gears.

3,162,060
TRIP LEVER STRUCTURE
Andrew J. Van Noord, Grand Rapids, Mich., assignor, by mesne assignments, to Fort Recovery Industries, Inc., Fort Recovery, Ohio, a corporation of Ohio
Filed Dec. 16, 1960, Ser. No. 76,279
6 Claims. (Cl. 74—523)

1. A trip lever structure comprising:

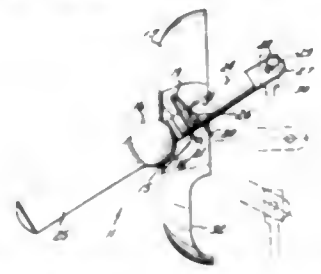
(*a*) a flange plate defining a spherical lever opening therethrough;

(*b*) a pair of fulcrum members secured to said plate in spaced apart parallel register extending on one side of said opening defined by said flange plate;

(*c*) a lever having a spherical enlargement engaging said opening, said lever extending through said opening in said plate and between said fulcrum members;

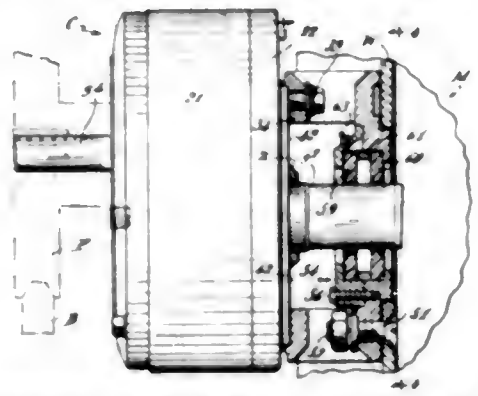
(*d*) abutment means on said lever; and

(*e*) a spring clip having a registering opening therethrough permitting said clip to be passed over said lever including said abutment means whereby rotation of said clip engages said clip with said abutment



means and said fulcrum members to prevent removal of said clip and thereby providing a bias against said fulcrum members and said lever whereby said lever and said flange plate are urged into resilient close relationship.

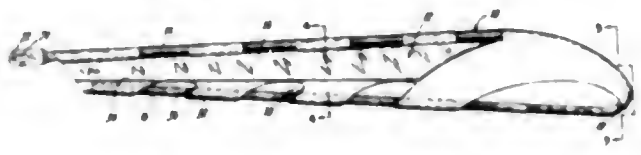
3,162,061
ADAPTER FOR MOUNTING A SPEED-REDUCER
Stratis G. Belezos, Canton, Mass., assignor to The Murray Company of Texas, Inc., Dallas, Tex., a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,691
4 Claims. (Cl. 74—606)



1. In combination with a speed-reducer of the kind wherein an output shaft, turning in bearings in a hollow casing, is driven by a power input shaft, parallel to the output shaft, through the intermediary of gearing within the casing and wherein the wall of the casing of said reducer has an aperture through which the output shaft projects, and wherein the apertured wall of the casing of said speed-reducer has an external annular rib concentric with the output shaft, an adapter for supporting said speed-reducer unit at the exterior of a machine to be driven thereby, said adapter comprising a rigid frame comprising a part provided with an opening for the passage of the output shaft, said rigid frame part having an external annular shoulder coaxial with the output shaft when the parts are assembled and so designed as to receive the rib of the speed-reducer casing with a rotary sliding fit, and means for connecting the casing of the reducer unit to said frame part with the rib of the casing fitting within the annular shoulder of the frame member, said means for connecting the speed-reducer unit casing to the adapter comprising a plurality of bolts having screw-threaded engagement with one of said parts and which pass through arcuate slots in the other of said parts, said slots being circumferentially elongate and concentric with the output shaft, the machine to be driven by the speed-reducer including a housing whose wall has an aperture through which the output shaft of the speed-reducer projects into the interior of said housing when the parts are assembled, means, including bolts, operative to secure the adapter leak-tight to the wall of the housing, the adapter comprising means operative to prevent escape of material from the receptacle along the output shaft when the adapter is operably secured to the apertured wall of

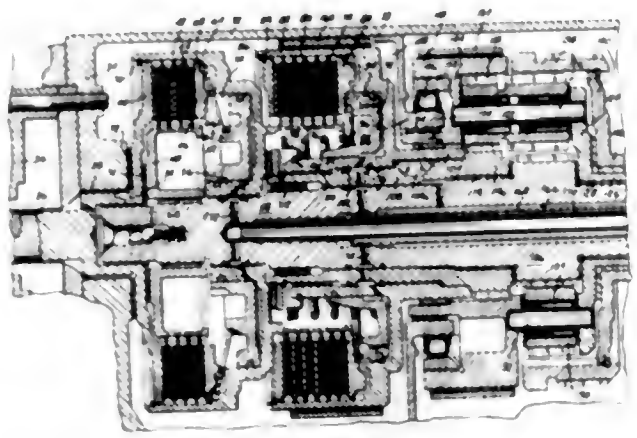
the receptacle, and the speed-reducer being rotatable about the axis of its output shaft without loosening the bolts which secure the adapter to said housing, the means for preventing escape of material from the receptacle along the output shaft comprising at least one resilient gasket housed within the adapter and which has an aperture for the passage of the shaft, said aperture being of a normal diameter less than the outside diameter of the shaft.

3,162,062
BICYCLE CHAIN GUARD
William F. Jacoby, Little Rock, Ark., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 13, 1963, Ser. No. 287,597
8 Claims. (Cl. 74—611)



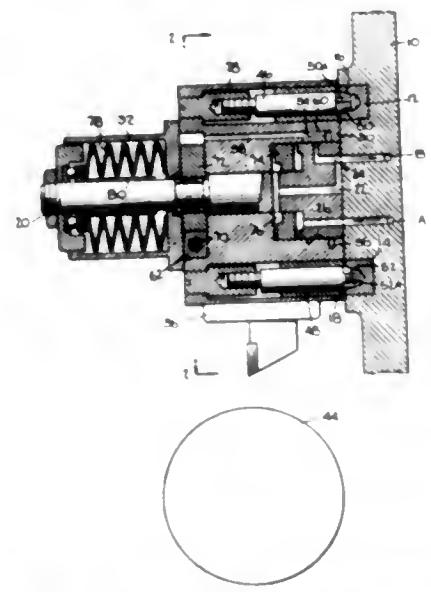
1. A bicycle chain guard comprising a generally U-shaped resilient member, a cover plate for said member, opposed lateral flanges on said plate, the cover plate being detachably mounted over said member by a spring fit of said member between said flanges, and means on said member for coupling the latter to the frame of a bicycle so that the cover plate lies in a substantially vertical plane with one flange extending over the sprocket drive and the upper run of a sprocket chain.

3,162,063
GEARING WITH FLUID PRESSURE OPERATED FRICTION CLUTCH
Eugene W. Konrad, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,810
1 Claim. (Cl. 74—763)



In a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, a gear unit having a plurality of elements that form torque delivery paths between said driving member and said driven member, friction torque establishing means for controlling the relative motion of said elements to establish speed ratio changes, means for coupling one element of said gear unit to said driving member, another element of said gear unit being connected to said driven member, said friction torque establishing means including friction disc elements carried by relatively rotatable portions of said mechanism in adjacent relationship, a fluid pressure operated servo including an annular cylinder and a fluid pressure operated annular piston within said cylinder, said piston and cylinder cooperating to define an annular pressure chamber, said cylinder being connected to and forming a part of one of said relatively rotatable portions, an annular pressure disc carried by said one rotatable portion adjacent said disc elements, a dished annular spring disposed between said friction disc elements and said piston and including an inner peripheral margin and an outer peripheral margin, said dished spring being deformed upon application of fluid pressure to said cylinder to cushion the application of said friction torque establishing means, one margin of said spring engaging said pressure disc and the other margin thereof engaging said piston as fluid pressure is admitted to said pressure chamber, said margins normally being displaced axially relative to the axis of rotation of said rotatable portions, a flow restricting passage formed in said piston at a radial location that is intermediate the two peripheries of said spring, said passage being adapted to exhaust fluid from said chamber to prevent centrifugal pressure build-up in said chamber when said friction torque establishing means is deactivated, adjacent annular surfaces of said spring and said piston being disposed in sealing engagement when said chamber is pressurized to seal said passage, and means for normally applying to said piston a clutch disc disengaging force to interrupt the frictional driving engagement of said discs, the force that is necessary to compress said spring to a passage sealing position exceeding said disengaging force, said pressure disc being disposed directly in the line of motion of said piston.

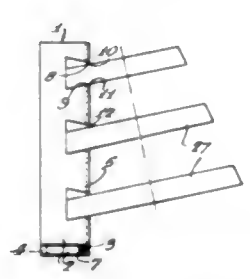
3,162,064
HYDRAULICALLY OPERATED TOOL HOLDER INDEXING
Andre Paul Musy, Couvet, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie (Societe Anonyme), Couvet, Neuchatel, Switzerland
Filed Sept. 19, 1963, Ser. No. 310,092
Claims priority, application Switzerland, Sept. 9, 1959, 78,033
1 Claim. (Cl. 74—822)



A tool holder turret indexable hydraulically into two positions more particularly respectively for roughing down the finishing operations during a single chucking of a work piece with appropriate tools for the respective operations, said turret comprising a slide having a flat surface, a central axle secured fixedly to said slide and extending from its said flat surface, a tool holder body mounted on said axle to move freely axially thereof and also being freely rotatable thereon, said body having annular grooves and borings respectively communicating therewith, said body having a pair of recesses, a piston positioned within one of said recesses, said axle having borings communicating with opposite sides of said piston, and said slide having passageways selectively connectable with a pressure source and communicating with said last-named borings, a pressure spring mounted on said axle

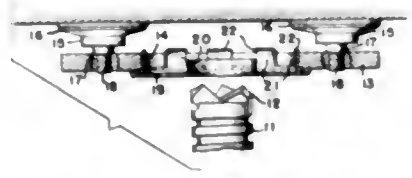
to bias said body towards said flat surface, an abutment to limit axial movement of said body on said axle away from said flat surface, a segment-shaped part having plane end surfaces positioned in the second of said recesses and secured to said body to serve as a piston responsive to fluid pressure to rotate said body in selected indexing directions on said axle, a stationary abutment in said second recess cooperating with said end faces of said segment for limiting the extent of indexing rotation of said body in either direction about said axle, means for controlling supply of pressure fluid from said source selectively to said passageways so as to feed the fluid selectively therefrom to the respective borings in said axle to displace the body axially of said axle away from said flat surface in opposition to said spring and thereafter via the annular groove in the body then registering with the pressure-supplying boring of the axle into the body boring communicating with such groove so as to act against the appropriate end surface of the segmental shaped piston and rotate said body in desired indexing direction on said axle to the limit permitted by said stationary abutment, means for thereafter removing pressure from the pressure-supplying boring to permit said pressure spring now in compressed state to move said body back into contact with said flat surface, a pair of fixed pins mounted on said body and having protruding ends, a pair of bushings with conical recesses opening in said flat surface into which said protruding ends of said pins will penetrate when said body is moved by said spring against said flat surface, one of the protruding ends of said pins being generally frusto-pyramidal in shape with at least three tapered surfaces and the other of said protruding ends being generally frusto-wedge shaped with two tapered surfaces, the penetration and engagement of said pins in said conical recesses serving to rigidly fix the body on said axle against any lateral displacement thereon and to lock it in its selected indexed position on said axle.

3,162,065
METHOD FOR FORMING CUTTING ELEMENTS
Thomas H. Sheehan, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 4, 1960, Ser. No. 47,536, now Patent No. 3,104,500, dated Sept. 24, 1963. Divided and this application Jan. 29, 1963, Ser. No. 254,656
3 Claims. (Cl. 76—104)



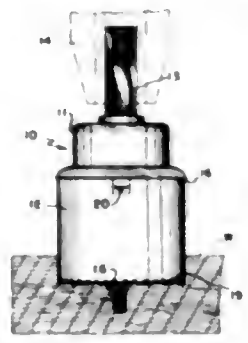
1. A method of forming a plurality of closely spaced undercut shearing teeth across the external side of the bight portion of an elongated and generally channel-shaped shear cutting member of electric dry shavers, said method comprising the step of simultaneously engaging all of the discs of a truncated cone-shaped rotary grinding wheel which has plural and closely spaced thin flexible grinding discs with said member at high speed to impart stiffness to said flexible discs and in a direction extending across said member to grind one side of said shearing teeth, and repeating said step but with end for end relative reversal between said member and such a grinding wheel to grind the other side of said shearing teeth.

3,162,066
STARTER GUIDE FOR USE IN DRILLING HOLES IN CONCRETE AND THE LIKE
Willis R. Morey, 2119 Brandywine St., Arlington, Va., and Richard K. Morey, 11846 Strathern St., North Hollywood, Calif.
Filed June 1, 1961, Ser. No. 114,184
3 Claims. (Cl. 77—62)



1. A pocket size guide for use in drilling starter holes in concrete, including a plate with a single central drill bit opening, the plate being of a size to provide adequate surface area around the opening, for impingement of the hand of the user, in holding the plate against the work, retention elements carried by the work-engaging face of the plate, to stabilize the plate while the starter hole is being drilled, adapter plates for selective engagement in the central drill bit opening of the plate, to accommodate drill bits of lesser diameters than the diameter of the bit used in the plate, and fingers issuing, in spaced relation, from the margin of each adapter plate, the fingers being flexed when pushed into the drill bit opening.

3,162,067
HOLE SAW
Theodore R. Koons, Finksburg, and Charles B. Pittinger, Reisterstown, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Nov. 23, 1962, Ser. No. 239,727
1 Claim. (Cl. 77—69)



A hole saw comprising:
(*a*) a driving body member having an annular shoulder and further having an annular flange extending from said shoulder;
(*b*) a central piloting member carried coaxially within said body member;
(*c*) a replaceable tubular blade comprising a substantially-continuous hollow cylindrical member, open at both ends, and telescopically received over said annular flange of said body member;
(*d*) cutting teeth formed along the exposed forward end of said blade;
(*e*) a plurality of substantially-coplanar inwardly-projecting lanced out tabs formed in the opposite end of said blade, each of which is directed radially towards said piloting member;
(*f*) said tabs being circumferentially-spaced uniformly with respect to each other, and each of said tabs being substantially at right angles to said blade;
(*g*) a corresponding plurality of bayonet-type slotted openings, circumferentially-spaced uniformly with respect to each other, in said annular flange to receive said respective tabs, whereby said blade is detachably mounted to said body member, and

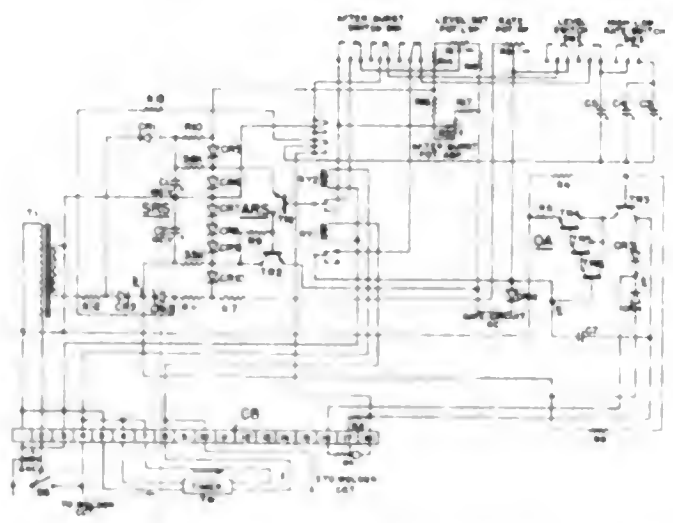
whereby said tabs automatically strip the workpiece plug from said piloting member whenever said blade is removed from said body member following the completion of a cut; and

(*h*) the respective main body portions of each of said tabs having an axial clearance with respect to the respective bottoms of said respective bayonet slots, whereby the axial thrust loads are absorbed substantially by said annular shoulder on said driving body member, and whereby the tabs are generally required to accommodate only radial loads.

3,162,068
FRICTION WELDER VARIABLE ELECTRONIC TIME CONTROL

Herbert L. Hardy, Monroe, Conn., assignor to American Machine and Foundry Company, a corporation of New Jersey

Filed May 8, 1962, Ser. No. 193,096
12 Claims. (Cl. 78—82)

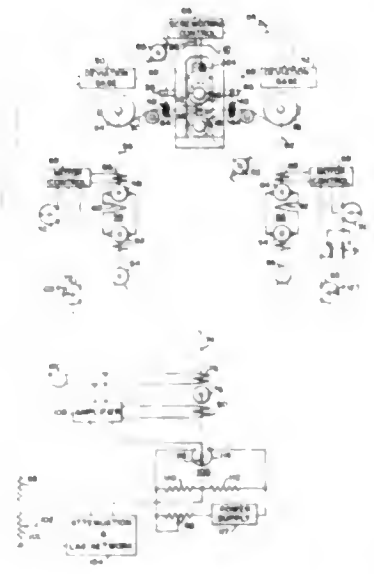


3. In combination with a friction welder including a current-responsive hydraulic relief valve for applying pressure to the material being welded, a variable time control circuit comprising starting means including a start switch, a source of A.C. power, a timer controlled from said source; an amplifier having said valve included in its output so as to be responsive to the amplifier output current, a RC network including resistors connected in series with the input of the amplifier and capacitors adapted to be connected across the output thereof for converting the amplifier into an operational integrator, a semi-regulated D.C. power supply controlled from said A.C. power source, an adjustable regulated D.C. power supply controlled from said semi-regulated supply, three groups of manual controls each including a different adjustable potentiometer for adjusting the amount of resistance in the input of said amplifier, means to derive from said semi-regulated supply and apply to the input of said amplifier through the potentiometer of one group of said manual controls adjusted to control the slope of the increase in pressure required by said valve in the first stage of the welding cycle, a step voltage input of a predetermined value to charge said capacitors through said amplifier so as to cause its output voltage, and thus its output current through said valve, to rise linearly with time up to a given output voltage, a gating device responsive to said given output voltage to shift the connection of the input of said amplifier from the output of said semi-regulated supply to the output of said adjustable regulated supply through said gating device and the potentiometer of said second group of manual controls set to an intermediate pressure level, to cause the output voltage of said amplifier, and thus the current though said valve, to be held constant at said intermediate level for a predetermined time interval determined by said timer set into action at the start of the welding cycle, and means at the end of said interval for connecting the output of said adjustable regulated power supply through the potentiometer of the third group of said manual controls adjusted to a final higher pressure level, and for disconnecting said capacitors from the output of said amplifier, causing said amplifier to assume and hold constant its output voltage, and thus the current through said valve, at said final higher pressure level until the end of the welding cycle.

3,162,069
METHOD AND APPARATUS FOR METAL ROLLING

Alexander McLay, Leechburg, and Eugene A. Weremeychik, Brackenridge, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed Oct. 27, 1961, Ser. No. 148,087
9 Claims. (Cl. 80—32)



2. In rolling mill apparatus of the type having a pair of work rolls, an unwinding reel for strip material to be rolled between the work rolls, and electromotive means on the unwinding reel for producing back tension in the strip material during rolling; the improvement of gage means for producing an electrical signal which varies in direct proportion to the deviation in thickness of the strip material entering the work rolls from a predetermined value, and means connected to said gage means for controlling the electromotive means on the unwinding reel whereby the back tension will vary in proportion to variations in said electrical signal.

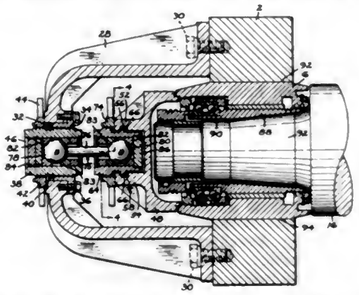
3,162,070
ROLL ADJUSTING MEANS

Myles Morgan, Worcester, Mass., and Alexander I. Wilson, High Green, near Sheffield, England, assignors to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed Aug. 9, 1962, Ser. No. 215,859
8 Claims. (Cl. 80—56)

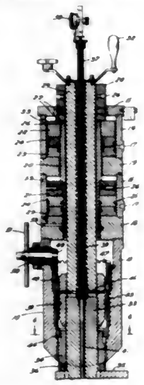
1. Means for effecting longitudinal adjustment of a roll in a roll stand and for holding the roll in fixed longitudinal position once the adjustment has been attained and without restricting the vertical movement of the roll within limits and without restraining movement of the chock as it is moved by the roll neck in accord with roll deflection or misalignment, said means comprising a chock fixed axially with respect to the roll, a member fixed with respect to the roll stand and spaced in an axial direction from the chock, a no-clearance flexible connection between said chock and member, said connection comprising a first element rigidly connected to said member, a second element rigidly connected to said chock, and a

third element pivotally connected to both said first and second elements whereby said chock is fixed axially but



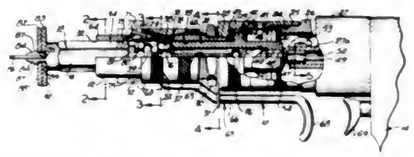
can move up or down within limits with respect to said member or turn in a vertical plane within limits without restraint by said second and third elements.

3,162,071
TENSIONING APPARATUS
John L. Biach, Cranford, N.J., assignor to Biach Industries, Inc., Westfield, N.J., a corporation of New Jersey
Filed May 8, 1961, Ser. No. 108,645
4 Claims. (Cl. 81—54)



1. Bolt tensioning apparatus including in combination a housing having one end adapted to thrust against a surface from which a threaded nut-supporting bolt extends, a puller bar having one end disposed within said housing and another end projecting beyond the other end of the housing, an internally threaded socket member fixed to the one end of said bar within said housing, bar rotating means mounted by the projecting end of said bar to rotate the latter to interengage the threads of the socket member with the threads of the nut-supporting bolt, power means within said housing and coupled with said bar to retract the latter and, consequently, said socket member to thereby tension said bolt when said socket member is engaged with the bolt, an axially shiftable and rotatable nut-engaging sleeve encircling said bar within said housing, sleeve supporting means on said housing adjacent its thrusting end for supporting the sleeve therein so that it is adapted to rotate and axially shift with respect to the housing and bar whereby it is adapted to axially shift into coupling engagement with the nut so that the nut may be rotated relative to the bolt, sleeve driving means for rotating said sleeve and, consequently, said nut, means for axially fixing the sleeve driving means relative to the housing, and interengaging means between said sleeve and said sleeve driving means for permitting the relative axially movement of the sleeve so that the sleeve is adapted to shift into engagement with the nut while maintaining its driving connection with the sleeve driving means, said interengaging means being substantially axially fixed with respect to the housing.

3,162,072
NUT RUNNER ATTACHMENT
Kenneth V. Stewart, Northridge, Calif., assignor to Wedgelock Corporation of California, North Hollywood, Calif., a corporation of California
Filed June 19, 1963, Ser. No. 286,715
2 Claims. (Cl. 81—55)



1. A releasable locking means for a nut runner having a first tubular member adapted to internally support an outer body of a fastener having a non-circular outer configuration in non-rotative relationship to the first member and a second, driven tubular member co-axial to said first tubular member and adapted to engage an actuator nut of non-circular configuration for rotation thereof to axially move a stud of said fastener in said second tubular member while rotating the actuator nut with the second tubular member, said releasable locking means comprising:

a slot in said first tubular member, said slot extending along said first tubular member parallel to the major axis thereof;

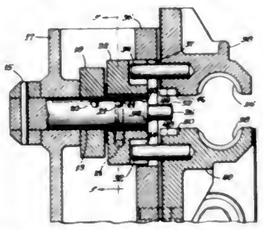
an aperture in said first tubular member adjacent said slot, said aperture extending into the interior of said first tubular member;

detent means mounted in said slot, said detent means having a portion engageable with said aperture to extend into said first tubular member into engagement with said fastener body;

a sleeve member slidably mounted on said first tubular member, said sleeve member encompassing said slot and said tubular member and having a cam slidably engaging said detent means for selectively depressing said detent means into engagement with said fastener body; and

trigger means attached to said sleeve member for sliding said cam unpon said detent means.

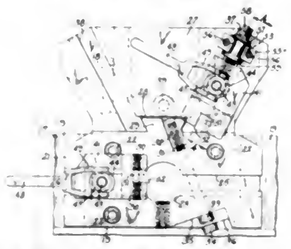
3,162,073
HALF-NUT CLOSING ARRANGEMENT
Stephen Emery Farekas, South Bend, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Oct. 18, 1962, Ser. No. 231,357
6 Claims. (Cl. 82—23)



1. In a power driving arrangement, having a primary moving force, such as a lead screw, a slideably operated

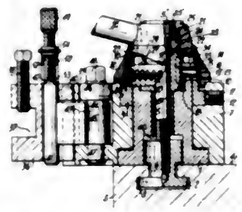
apron and carriage, an engagement means to receive and transmit said power from said lead screw to said apron, comprising a plurality of moveable threaded jaws to engage and disengage the threads of said lead screw, a cam operated means for opening and closing said threaded jaws, a rotatable shaft, a cam loosely mounted on said shaft, a cam driving means rigidly received through said rotatable shaft and loosely received in said cam, and means for guiding and stopping said jaws in proper threaded engagement with said lead screw.

3,162,074
MULTIPLE ADJUSTABLE TOOL HOLDER
Edwin K. Kennedy, Villa Park, Ill., and William F. Schofield, West Hartford, Conn., assignors to Pratt & Whitney Company, Incorporated, West Hartford, Conn.
Filed Sept. 29, 1961, Ser. No. 141,759
13 Claims. (Cl. 82—24)



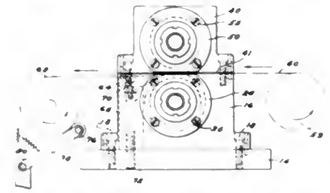
1. A tool holder for mounting to the turret of a lathe having a rotating spindle comprising a base mounted on one face of the turret, a plurality of grooves in said base, each of said grooves positioned on a radial line perpendicular to the axis of rotation of the spindle, a tool fixture slidably mounted in at least one of said grooves, adjusting means slidably mounted in said groove with said tool fixture, means for securing said adjusting means in said groove at any selected position, means extending from said adjusting means and cooperating with said tool fixture for adjusting the position of said tool fixture relative to said adjusting means, and means for securing said tool fixture in said groove at any adjusted position therealong.

3,162,075
TOOL HOLDER TURRET
Auguste Affolter, 42 Rue Vermont, Geneva, Switzerland
Filed Sept. 25, 1961, Ser. No. 140,313
Claims priority, application Switzerland, Sept. 29, 1960, 10,992/60
8 Claims. (Cl. 82—36)



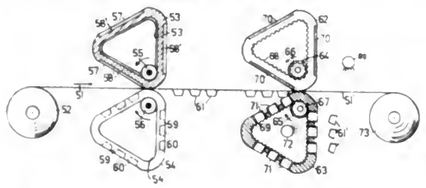
1. A tool holder turret comprising a pivot provided means enabling the fixing of said pivot on a machine tool, a support orientable in different angular positions engaged and fixed by tightening means on said pivot, said support having a fixing device for a tool holder piece, a locking device for fixing the angular positions of said support and of said pivot with respect to a slide of the machine tool including a first and a second locking member fast with said pivot and said support respectively, a third locking member displaceable with respect to said first and second locking members, and tightening means engaging said third locking member to maintain same in an inactive position wherein said first and second locking members are disengaged from said third locking member and to move said third locking member into an active position wherein said third locking member is simultaneously in locking engagement with said first and second locking members and fixes their relative angular position whereby said support is rigidly fixed in a precise angular position on the slide of the machine tool.

3,162,076
MECHANISM FOR SLITTING FOIL
Francis H. Emerson, Detroit, Mich., and Edward C. Parker, 804 Barrington, Grosse Pointe, Mich.; said Emerson assignor to said Parker
Filed June 22, 1961, Ser. No. 118,899
3 Claims. (Cl. 83—122)



1. Apparatus for slitting a linearly extending sheet of metal foil to provide therein circumferentially spaced apart rows of short length slits extending transversely thereof comprising, in combination, a rotatably supported slitting roll provided with a succession of circumferentially spaced apart rows of short length slitting knives extending generally axially of the roll and projecting radially therebeyond, said knives being spaced apart within the rows axially of the roll, the knives in successive rows being staggered circumferentially of the roll, a companion roll supported for rotation generally in parallelism with the slitting roll and spaced therefrom a distance less than the projecting distance of the knives beyond the surface of the slitting roll, the outer circumferential face of the companion roll being penetrable by the knives of the slitting roll, said companion roll being responsively rotatable upon penetration of its surface by the knives of the rotating slitting roll.

3,162,077
APPARATUS FOR THE PRODUCTION OF OBJECTS FROM SHEET MATERIAL
Friedrich Brümmer, Dinkelsbuhl, Germany, assignor, by mesne assignments, to Rudolf Brümmer, Dinkelsbuhl, Germany
Filed May 22, 1961, Ser. No. 111,520
Claims priority, application Germany May 23, 1960
5 Claims. (Cl. 83—99)



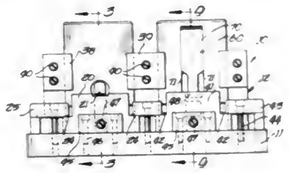
5. In an apparatus for cutting blanks from sheet material, in combination, a pair of co-operating compression elements, each of said elements including a polygonal drum with flat surfaces and supporting means for each drum en-

abling successive displacement of its surfaces within a given plane, the flat outer surfaces of one of said drums being resilient, each of the flat surfaces of the other of said drums being substantially coextensive with said resilient surfaces and provided with upstanding blade means of closed configuration positioned for contact with said resilient surfaces upon displacement thereof in parallel planes, thereby severing corresponding portions of a sheet passing between said elements.

3,162,078
APPARATUS FOR PREPARING MITERED TUBULAR JOINTS

Edward Coulon, Chicago, and Harry May, Lombard, Ill., assignors to Vogel Tool & Die Corporation, Melrose Park, Ill., a corporation of Illinois

Original application Oct. 1, 1959, Ser. No. 843,796, now Patent No. 3,074,302, dated Jan. 22, 1963. Divided and this application Sept. 26, 1962, Ser. No. 234,270
3 Claims. (Cl. 83—191)



1. Apparatus for preparing the end of a tubular member to provide thereon a mitered end comprising:

(*a*) a first female die having a first recess adapted to support and conform to the outer configuration of a tubular member,

(*b*) a generally first vertical face on said first female die, said first vertical face including

(*c*) a first vertical groove terminating at its upper end in said first recess and providing therewith a generally first U-shaped cutting edge,

(*d*) a first punch positioned above said recess, said first punch having a second cutting edge conforming to said first cutting edge and being disposed within the end of a tube whereby during movement of said punch in sliding relation to said first vertical face said cutting edges engage each other and a relatively wide notch is sheared in said tube end to form an open end slot in the tube end,

(*e*) a second female die having a second outwardly inclining recess adapted to support and conform to the outer configuration of a tube,

(*f*) said second female die having a vertical flat face,

(*g*) said second recess having at one end a third cutting edge,

(*h*) a second punch positioned for reciprocation adjacent said vertical face,

(*i*) said second punch having a generally T-shape construction including a front relatively flat face,

(*j*) and a narrow elongated extension on a lower portion of said second punch, said extension having a front flat face of a dimension less than the transverse dimension of the notch sheared by said first punch,

(*k*) said second punch having an upper wider portion of a substantially greater width across its front flat face than said notch on said tube end and forming with said extension on opposite sides thereof,

(*l*) a pair of shoulders having oppositely outwardly extending lower fourth cutting edges,

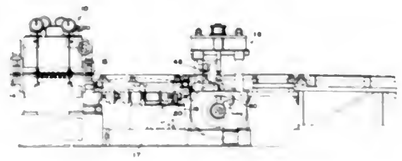
(*m*) said second punch being movable toward said second die whereby said extension initially moves through said slot and whereby said fourth cutting edges initially shear the upwardly extending wall portions of said tube adjacent said slot and progressively shear the wall of said tube end to provide a mitered end thereon,

(*n*) said extension providing stop means to prevent movement of said tube in a direction toward said second punch as said tube end is sheared.

3,162,079
APPARATUS FOR CUTTING METAL STRIP INTO SHEETS

Kenneth L. Bandy, Canfield, and Edwin H. Rohrer, Poland, Ohio, assignors to The McKay Machine Company, Youngstown, Ohio, a corporation of Ohio

Filed Sept. 12, 1961, Ser. No. 137,626
5 Claims. (Cl. 83—287)



1. Apparatus for producing metal sheets from strip comprising means to advance said strip longitudinally and continuously and to measure the length of strip advanced, a power source for said means to advance, a flying shear at the exit end of said means to advance and measure operative to receive said strip and cut the same into sheets, means to accelerate the cutting blades of said shear to a speed synchronous with the movement of the strip comprising a driving member movable parallel with said strip for a predetermined distance, power transmission means comprising a remotely controlled air-actuated friction clutch for connecting said power source to said driving member and operative to effect synchronous movement of said blades and strip over a substantial portion of said distance, means controlled by said measuring means to actuate said clutch, means operative during said synchronous movement to effect relative movement of said shear blades through a shearing and opening cycle, means to disconnect said clutch and to retract said driving member and shear upon completion of said cycle, said means to accelerate comprising a drum-type rotary cam and said driving member comprising a cam follower for said cam, said power transmission means comprising a flywheel driven continuously from said power source and said clutch being adapted to drivingly interconnect said flywheel and rotary cam; said means to retract said driving member and shear comprising a second continuously driven flywheel and a second remotely-controlled air-operated friction clutch for drivingly interconnecting said second flywheel and said rotary cam for driving said cam in a reverse direction, and said rotary cam having a spiral groove engaged by said follower whereby rotation of said cam in opposite directions results in opposite directions of linear movement of said follower.

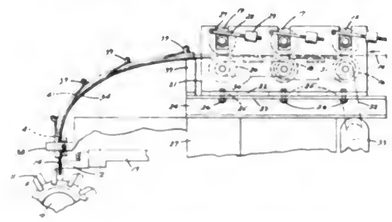
3,162,080
FEED MEANS FOR STAPLE FIBER CUTTER

Herman W. Hemker, West Chester, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,396
6 Claims. (Cl. 83—355)

6. In a fiber cutting apparatus, a rotary cutting element mounted on a horizontal axis and having a plurality of blades extending therefrom so that the blades describe a circular path as said element rotates, means for rotating said element, a bed knife engaged by the blades of said element at the top of the circular path, the line of engagement between said blades and said knife defining

a cutting station, metering rolls for projecting a tow horizontally in the direction of said cutting station, means for driving said rolls at a speed which will project the tow at a preselected speed, said metering rolls being

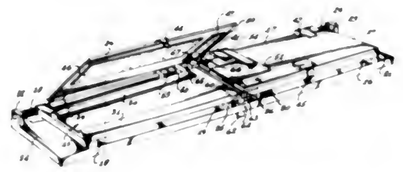


located at a point displaced horizontally from and vertically above said cutting station, and a curved chute leading from said metering rolls to said cutting station, said chute extending substantially vertically at the discharge end thereof, said chute having a curvature substantially conforming to the natural trajectory of the tow at the said preselected speed.

3,162,081
APPARATUS AND METHOD FOR SPLICING TAPE HAVING MEANS FOR LOCATING MAGNETIC PARTICLES ON THE TAPE

Myron W. Gates, Jr., 15183 Encanto Drive, Sherman Oaks, Calif.

Filed Dec. 7, 1959, Ser. No. 857,627
12 Claims. (Cl. 83—456)



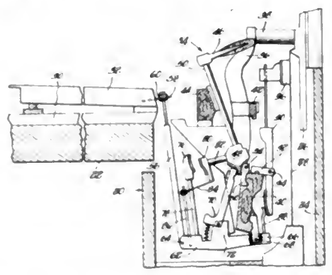
1. Measuring apparatus for locating objects so that respective magnetic particles thereon are a predetermined distance apart comprising; a pair of magnetic transducers spaced apart the predetermined distance; means for vibrating said transducers in unison while maintaining the spacing therebetween, said transducers developing respective signals when the objects are located with their particles adjacent said transducers; and means coupled to said transducers and to said vibrating means to develop indications when said signals are equal in magnitude.

3,162,082
SYMMETRICAL BRIDLE WIRE

Clifford W. Andersen, Chicago, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed May 2, 1963, Ser. No. 277,507
9 Claims. (Cl. 84—240)

3. A symmetrical bridle wire for use in a piano action assembly, comprisng: an elongated, radially symmetrical shank having a free-end portion adapted to be passed through a cooperating hole in an associated bridle strap; and a formation on said shank beneath said free-end portion defining a radial enlargement adapted to prevent migration of said strap along said shank in a direction away from said free-end portion, said enlargement having at least one axis of symmetry for cooperation with the

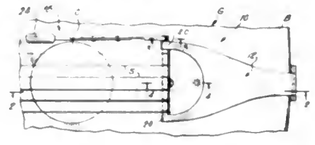


symmetry of said shank whereby to permit automatic handling of said bridle wire.

3,162,083
TREMOLO DEVICE FOR STRINGED MUSICAL INSTRUMENTS

James D. Webster, Northport, N.Y., assignor to The Fred. Gretsch Mfg. Co., Brooklyn, N.Y., a corporation of New York

Filed May 22, 1964, Ser. No. 369,559
7 Claims. (Cl. 84—313)



1. A tremolo device for a stringed musical instrument which device comprises an anchor plate, a tail plate having one end hinged to said anchor plate and having bearing means at its other end aligned transversely with respect to lengthwise direction of said tail plate, a member rotatably mounted on said bearing means having means for securement of strings of the instrument thereto, a handle having one end secured to said member to effect turning movement thereof, a rod having one end attached to said member for movement therewith and depending from said member, a pressure plate having one end secured to said rod for movement therewith and extending transversely thereof towards the anchor plate end of said tail plate, and a compression spring mounted on the other end of said pressure plate and extending upwardly therefrom with its upper end beneath the tail plate.

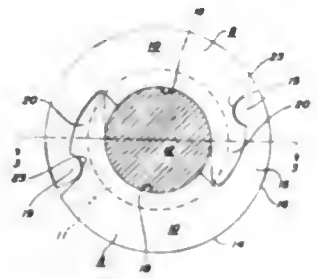
3,162,084
RIGID MULTIPARTITE RETAINING RING WITH SPRING TONGUE ENGAGING MEANS

Hugo Wurzel, Bronx, N.Y., assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York

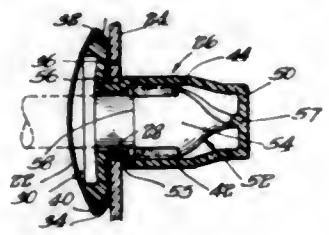
Filed Apr. 17, 1961, Ser. No. 103,375
1 Claim. (Cl. 85—8.8)

A retaining ring for forming an artificial shoulder on a cylindrical workpiece provided with a ring seating groove, comprising identical ring parts of spring material adapted when assembled to one another to form a complete annulus having a substantially continuous circular periphery and to be assembled in said groove by being brought together in the plane of said groove and diameter-wise of the workpiece, each ring part having an internal diameter corresponding substantially to the diameter of the groove bottom, the body portion of each ring

part having radial width such that it is substantially rigid and the opposite ends of the parts being formed to provide integral, complemental locking means which are adapted to springingly interlock and secure the ring parts together as a complete annulus, the locking means on one end of each ring part comprising an arcuately extending, radially flexible cantilever beam terminating in a radial-inward hook-bill and having arcuate length approaching that of the ring-part body portion and whose outer edge extends in continuation of the arc of the outer edge of said body portion and whose inner edge is set back and from the extended arc of the inner edge of said body portion an amount as results in said beam having radial width which decreases progressively from its root portion which has radial width slightly greater than one-half that of the ring-part body portion toward the hook-bill terminus thereof which has radial width slightly less than one-half that of said body portion, whereby said beam has limited flexibility in radial outward direction and space is provided along its inner edge portion for the reception of the complemental locking means on the opposite end of the other ring part, said complemental locking means on the opposite end of the other ring part comprising a tongue-like projection whose inner edge extends in substantial continuation of the arc of the inner edge of its body portion and which extends into said space, said projection having arcuate length substantially equal to the total arcuate length of said beam and its hook-bill and radial width which progressively decreases from its root portion towards its free end by an amount such that its outer edge extends along and complementally to the inner edge of the associated arcuately extending beam of the other ring part, said projection further having formed in the outer edge of its root portion a radially outwardly disposed recess for the reception of said hook-bill of the associated beam, the inner edge of each beam and the outer edge of each associated projection being arcuate and the inner edge of each said hook-bill and the edge defining each associated recess being also arcuate.

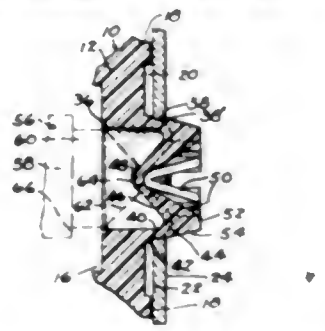


3,162,085
FASTENER STUD
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed May 5, 1961, Ser. No. 108,110
4 Claims. (Cl. 85—63)



1. A fastening device comprising a resiliently transversely expandable plastic shank portion insertable through an aperture in a work structure, a head portion integrally joined to a trailing end of said shank portion and projecting laterally from the shank portion for overlying one side of the work structure, said shank and head portion having an axially extending opening therein, said shank and head portions having internal cross sectional configurations of substantially the same size and shape, said internal cross sectional configuration having a first predetermined transverse dimension, said shank and head portions joining each other at a circumferentially continuous junction and said shank portion having circumferentially continuous walls extending axially from said junction to an integral closed end remote from said head portion, said shank portion having an exterior transverse cross section having its maximum dimensions adjacent said junction and similar to and not substantially greater than corresponding dimensions of the aperture in the work structure for facilitating easy insertion of the shank portion through the aperture, and substantially filling the aperture, and a twistable resilient expansion element integrally secured to said closed end in said opening and having a first transverse dimension in one direction greater than said first predetermined transverse dimension of said opening and a second transverse dimension in a second direction less than said first predetermined transverse dimension of said opening for enabling the expansion element to be twisted within said opening for expanding the shank portion behind a work structure during assembly of the device with the work structure, said expansion element being located substantially entirely within said shank portion and avoiding axially directed engagement with said head portion.

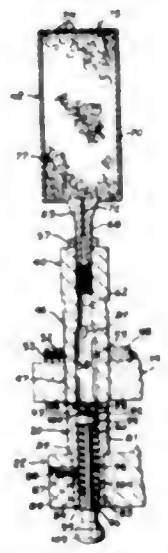
3,162,086
DIAPHRAGM TYPE PLASTIC FASTENER
John R. Wells, Detroit, Mich., and Robert L. Brown, Ferndale, Mich. (% Robin Products Co., 27027 Groesbeck Highway, Warren, Mich.); said Wells assignor to said Brown
Filed July 3, 1961, Ser. No. 121,732
16 Claims. (Cl. 85—82)



1. A fastener adapted for mounting on an apertured panel, the fastener being molded from a resilient plastic material which is adapted to flex and flow under moderate pressure exerted by a hand tool, said fastener including a body member having portions on the bottom side thereof adapted to seat against one face of the apertured panel, said body portion having an aperture therethrough, the aperture being open at the top or upper side of the body member and having a plurality of radially inwardly extending ribs at the lower end thereof, said ribs being inclined upwardly in a radially inward direction, the outer ends of said ribs being spaced apart circumferentially about the periphery of said aperture, said outer ends being connected to said body member at the lower end of said aperture by means of a flexible connection, said ribs having their inner ends interconnected so as to form struts which, when the fastener is seated against an apertured panel with said aperture aligned with an aperture in the panel and the inner ends of said ribs are displaced axially downwardly about said flexible connection through the aperture in the panel to a level below said flexible connection, provide a toggle action which causes the outer ends of the ribs to tightly clinch against the underside of the panel at the edge of the aperture therein, the aperture in the body member being defined by a hollow shank extending downwardly from the bottom face of the body member beyond said panel en-

gaging portions a distance no greater than the thickness of the panel, said shank being adapted to project into and terminate within the aperture in the panel and said ribs being connected at their outer ends to the lower end of said shank.

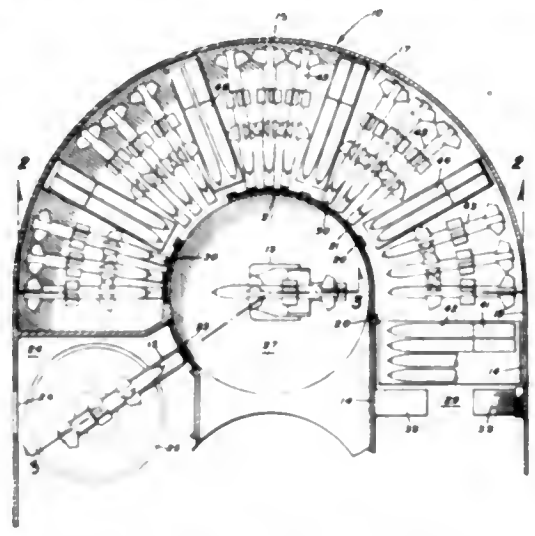
3,162,087
CARTRIDGE FORMING APPARATUS UTILIZING EXPLOSIVE PRESSURE
Jack Lakes, 7038 Lear Nagle Road, North Ridgeville, Ohio
Filed Mar. 23, 1962, Ser. No. 182,141
4 Claims. (Cl. 86—10)



2. Apparatus for forming a wildcat shell to increase the accuracy and range of a rifle using such a shell by increasing the volume of a blank shell having a primer in the base thereof, comprising a die member having an elongated bore therein with an opening in one end thereof, said bore adapted to receive a blank shell and hold the same in a vertical position so that a few grains of powder will rest on or near the primer, said bore including a body section terminating in said one end and having a diameter corresponding to the outer diameter of the body of the wildcat shell, said bore having a reduced diameter portion adjacent said body section and spaced from said open end a predetermined distance for forming the neck and shoulder of a wildcat shell, shell holder means releasably secured to said die member for closing said one end and adapted to receive the base of the blank shell, said shell holder means being movable between a first position spaced from said die member and an operative position with said die member wherein the blank shell is moved into said bore through said open end, means for locking said shell holder means and said die member in said operative position, means for exploding the few grains of gun powder in the blank shell adjacent the primer to create a pressure therein sufficient to cause the blank shell to assume the shape of said bore, and a restricted passage in said die member in communication with said reduced diameter portion for relieving the pressure at a predetermined controlled rate sufficiently low to effect expansion of the blank shell to the configuration of said bore and thus produce a wildcat shell.

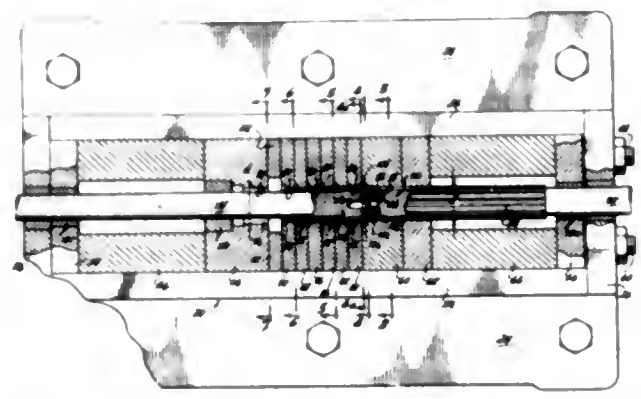
3,162,088
MISSILE LAUNCHING SYSTEM
Sven Landstrom, Stockholm, Sweden, assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 22, 1958, Ser. No. 769,045
4 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A launching system for guided missiles comprising:
a horizontal substantially circular annular missile stowage area;
a missile launching device movable in azimuth and elevation located at the center of the annulus and slightly below said stowage area;
a plurality of missile support means spaced throughout said stowage area and extending radially from said launching device, said support means being inclined downwardly toward said launching device;
rail means extendable from said launching device to bridge the gap between said launching device and



selected ones of said missile support means with which said launching device may be brought into alignment; and
transport means movable along said support means and said rail means for transporting a missile from said stowage area to said launching device;
whereby a missile may be loaded onto said launching device solely by the gravity-powered movement of said transport means for said inclined support means onto said launching device.

3,162,089
GEAR BROACHING APPARATUS
Frank L. Riggio, Essex, and Alfred B. Strempel, Deep River, Conn., assignors to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Nov. 2, 1962, Ser. No. 234,952
8 Claims. (Cl. 90—10)



1. A machine for broaching or shaving a peripheral surface of a blank to a predetermined size and shape, comprising the combination of
a die unit with an axial opening provided with broaching edges adapted, on forcing a blank through the opening, to form the peripheral surface of the blank to approximately the predetermined size and shape,
a finishing die with an axial opening accurately corresponding to the predetermined size and shape and situated in axial alignment with the die unit at one axial end thereof,
a forcing head axially alined with the openings in the die unit and the finishing die and having a trans-

verse working face of a size and shape accurately the same as the opening in the finishing die,

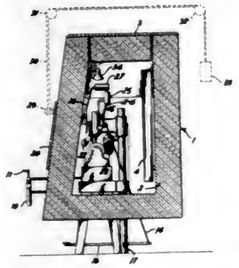
said forcing head having an initial position with the working face spacedly opposing the other end of the die unit and being movable in a forward stroke to move the working face through the die unit and into the finishing die,

means for positioning a blank in axial alinement upon the forcing head in intimate contact with the working face thereof,

guide means for positively and accurately guiding the forcing head during said forward stroke to enable the forcing head to enter the opening in the finishing die wherein its working face fits accurately,

and means for driving the forcing head and the positioned blank axially from said initial position through the die unit and into the finishing die to form the peripheral surface of the blank accurately to the predetermined size and shape, any burrs formed on the blank by the broaching edges of the die unit being eliminated by virtue of the accurate fit of the working face of the forcing head in the opening in the finishing die.

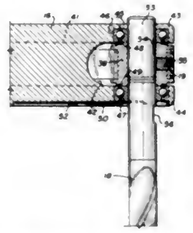
3,162,090
APPARATUS FOR CUTTING RUBBER AND THE LIKE
John F. Vosburg, 340 Broad St., Salamanca, N.Y.
Original application Nov. 23, 1959, Ser. No. 854,627, now Patent No. 3,078,560, dated Feb. 26, 1963. Divided and this application May 31, 1962, Ser. No. 199,176
6 Claims. (Cl. 90—11)



1. Apparatus for cutting a printing surface on a member of normally resiliently compressible material comprising, an enclosing housing, means for supporting a member to be cut within said housing, refrigerating means for maintaining a freezing temperature within said housing, means for supporting a cutting tool in said housing adjacent a member to be cut, viewing means through a wall of said housing in operative alinement with a supported tool and member therein, and means including remotely positioned control means for producing relative motion between a tool and member supported within said housing under control of an operator looking through said viewing means.

3,162,091
ATTACHMENT FOR MILLING MACHINES
Martin Keller, Golden, Colo., assignor to K-F Products, Inc., Denver, Colo., a corporation of Colorado
Filed June 3, 1963, Ser. No. 284,998
3 Claims. (Cl. 90—17)

1. An offset attachment for milling machines and the like comprising a rigid arm, means for securing said arm to the quill of a milling machine in a position extending laterally therefrom, a drive wheel having a shaft for mounting in the collet of a milling machine, a driven wheel, a bearing assembly on the outer end of said arm for mounting a shaft for rotation on an axis parallel to that of the machine, said bearing assembly comprising two aligned bearings spaced apart to receive said driven wheel therebetween, said arm having a recess therein between said bearings for affording insertion and removal of the driven wheel transversely of the axis of said bearings, said bearings and said driven wheel having aligned shaft openings of the same diameter as that of the shank of a tool to be mounted in said bearings, a keeper shaft mounted in said bearings, means for detachably locking said driven wheel to said keeper shaft, power transmission means for connecting said wheels in driving relationship, said keeper shaft being slidable from said bearing assembly and drive wheel upon release of said locking means whereby the shank of a tool may be inserted in said openings and employed to push out the keeper shaft while maintaining said driven wheel in its position aligned with said bearings, said locking means being effective to lock the shank of the tool in rigid driving relationship with said driven wheel.

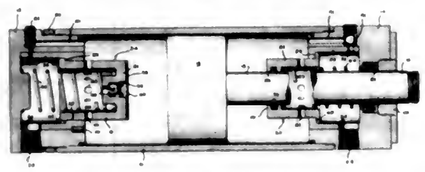


2. An offset attachment for milling machines and the like comprising a rigid arm, means for rigidly securing said arm to the quill of a milling machine in a position extending laterally therefrom, a drive wheel having a shaft for mounting in the collet of a milling machine, spaced supporting fingers on the outer end of said arm, said fingers having openings therein arranged in alignment on an axis parallel to the driving axis of the machine, axial thrust transmitting bearings mounted in said openings and movable under pressure parallel to said axis, one of said fingers having a shoulder extending into its opening on the outer side thereof to seat the bearing therein and receive axial thrust transmitted through the bearing, a driven wheel mounted between said bearings and engaging the rotatable elements thereof in axial thrust transmitting relationship, power transmission means for connecting said wheels in driving relationship, spring means for urging the bearing in the other of said openings axially toward said shoulder whereby said bearings and driven wheel are retained in thrust transmitting relationship, a shaft mounted for rotation in said bearings, and means for detachably securing said driven wheel to said shaft for rotation on said bearings.

3,162,092
CYLINDER CUSHION STRUCTURE
Howard D. Corwin, Jackson, Mich., assignor to Tomkins-Johnson Company, Jackson, Mich., a corporation of Michigan
Filed July 9, 1962, Ser. No. 208,306
6 Claims. (Cl. 91—26)

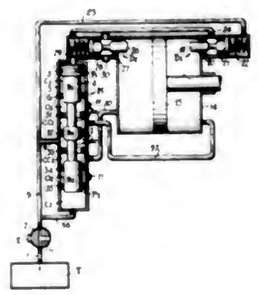
1. An expansible motor comprising, in combination, a tubular cylinder, a piston slideably received within said cylinder, a head mounted on each end of said cylinder sealingly associated therewith, a piston rod affixed to said piston extending through one of said heads, a port defined in at least one of said heads, a chamber defined in said one head in communication with said port, said chamber being of cylindrical configuration having an axis coinciding with the axis of said cylinder, a cylindrical cup-shaped valve slideably received within said chamber, said valve having an open end opening toward said chamber,

a side wall and an end wall disposed toward said cylinder and piston, a compression spring within said chamber and valve biasing said valve toward said piston, abutment means limiting movement of said valve toward said piston, an opening defined in the side wall of said valve communicating with said chamber and communicating with



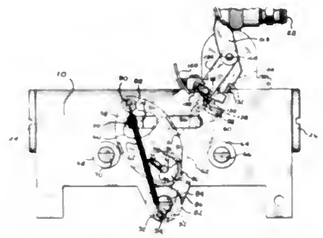
said cylinder upon said valve projecting its maximum extent toward said piston, said piston engaging said valve upon approaching said one head whereby predetermined movement of said valve by said piston closes said opening to said cylinder, and a bleed-off conduit defined in said one head establishing communication between said cylinder and said chamber.

3,162,093
HYDRAULIC SERVO-MECHANISM
Hans Zöller, deceased, late of Laubenheim, near Mainz, Germany, by Elisabeth Katharina Zöller, née Kehl, and Helga Schulz-Zöller, née Zöller, heirs, both of 50–60 Wormserstrasse, Laubenheim, near Mainz, Germany
Filed June 9, 1961, Ser. No. 116,662
2 Claims. (Cl. 91—306)



1. A main control slide valve which is operated by differential pressure for operating a pressure-medium engine, of which the working piston is fed and driven by a pressure-medium from two sides in alternation during the working strokes, comprising at least three stationary valve chambers formed by an annular space between the outer surface of the full diameter zones of a slide valve having two zones of constricted diameter and the inner surface of a cylindrical valve housing, said stationary valve chambers being arranged side by side along the longitudinal axis of said cylindrical valve housing and being separated from each other by packing rings secured to the inner surface of the valve housing and alternately engaged and released by said full diameter zones of the slide valve so that chambers which are in communication in a first slide position are separated in the second position and vice versa; and differential pressure means to move said slide valve between said two positions comprising a first piston head of enlarged cross section on a first end of said control slide valve, which piston head works in a first operating chamber of said valve housing and a second piston head of smaller cross section on a second end of said control slide, which second piston head works in a second operating-chamber of said valve housing and means independent from said pressure inlet of the valve which connect said second operating-cylinder directly with pressure-medium piping at all times and which connect said first operating-cylinder selectively with said pressure medium inlet valve and with said second operating-cylinder via valves, and connect selectively with said pressure-medium piping and with a pressure-medium vent.

3,162,094
FLUID ACTUATED RECIPROCATING MECHANISM AND CONTROLS THEREFOR
James T. Toman, 7705 Palm Drive, Des Moines, Iowa, assignor of one-half to David H. Lipsey, Des Moines, Iowa
Filed Jan. 8, 1962, Ser. No. 164,825
5 Claims. (Cl. 91—335)



1. A fluid pressure actuated reciprocating mechanism comprising in combination:

(*a*) a housing having a hollow bore therein,

(*b*) a slot in said housing communicating with said bore,

(*c*) a piston reciprocably movable in said bore,

(*d*) a first member fixedly attached to said piston and extending radially therefrom through said slot,

(*e*) a valve chamber in said housing communicating with inlet and outlet means for a fluid under pressure,

(*f*) first and second passageways in said housing, each communicating at one end with said bore and at the other end with said valve chamber,

(*g*) a valve member rotatably mounted within said valve chamber for movement between a first position, wherein said first passageway communicates with said inlet means and said second passageway communicates with said outlet means, and a second position, wherein said second passageway communicates with said inlet means and said first passageway communicates with said outlet means,

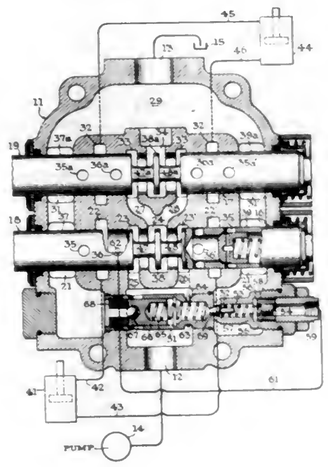
(*h*) a pivotally mounted toggle arm having an opening therein through which said first member extends,

(*i*) a rotatable member to which said toggle arm is pivotally mounted in operative engagement with a portion of said toggle arm for rotation in response to movement of said toggle arm by said first member,

(*j*) a spring mounted at one of its ends upon a portion of said toggle arm and at the other upon a portion of said rotatable member whereby after movement of said toggle arm to a predetermined position by said first member said toggle arm is tripped by said spring, and

(*k*) a second member operatively connected to said valve member and movable in response to tripping of said toggle arm to cause movement of said valve member between said first and second positions.

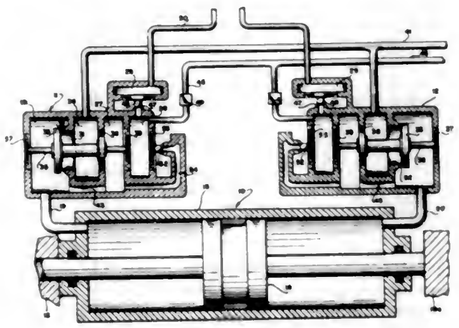
3,162,095
FLUID DISTRIBUTION SYSTEM
Charles W. Koons, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Mar. 26, 1962, Ser. No. 182,425
3 Claims. (Cl. 91—414)



1. A fluid system comprising
(*a*) a pump and a sump;
(*b*) at least two control valves connected with the pump, each valve having an outlet and first and second positions in which, respectively, the outlet is connected with and disconnected from the pump;
(*c*) a pressure relief valve connected with the pump and the sump;
(*d*) first means, including a fluid pressure motor, connected with the relief valve for varying its cracking pressure; and
(*e*) second means for pressurizing and venting the fluid pressure motor when one of the control valves is in one and the other of its first and second positions, respectively,
(*f*) the second means including a control port associated with said one control valve, a passage independent of the connection between the pump and the control valves and interconnecting the control port and the fluid pressure motor, and valve means carried by said one control valve and controlling flow through the control port.

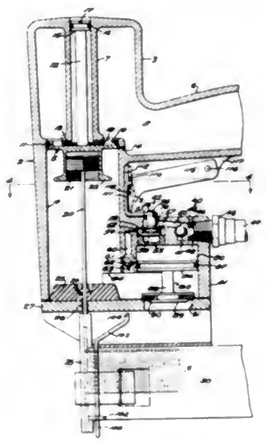
3,162,096
METHOD AND MEANS FOR PLATFORM STABILIZATION
Reinhard N. Lahde, Tarzana, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 23, 1961, Ser. No. 84,201
4 Claims. (Cl. 91—421)

1. A fluid actuator attached between and supporting a platform with respect to a separate structure comprising a cylinder, a piston positioned in said cylinder for relative movement, a valve for each end of said cylinder, conduits connecting each end of said cylinder to one of said valves, a source of high pressure fluid, means to conduct the high pressure fluid to each valve means, means to simultaneously vary the opening of each valve means responsive to pressure changes in each end of said cylinder to maintain constant pressure therein, and pressure relief means to



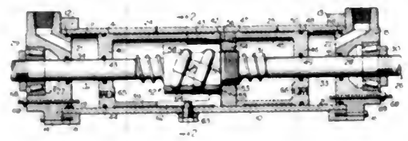
bleed excess fluid from said valves in maintaining said constant pressure.

3,162,097
FASTENER APPLYING MACHINE
Howard G. Allen, Cranston, and Edward I. Fisher, Westerly, R.I., assignors to Bostitch, Inc., East Greenwich, R.I., a corporation of Rhode Island
Filed Nov. 9, 1962, Ser. No. 236,579
17 Claims. (Cl. 91—399)



1. In a machine for driving fasteners, a cylinder, a piston slidable in said cylinder, a driver reciprocable by said piston for driving the fasteners into a workpiece, a valve connected to a source of pressure fluid, means in said valve for energizing the pressure fluid in said reservoir to drive said piston in an operative stroke, a manually operable trigger, and safety means for preventing accidental driving of said piston, said safety means including a contact element movable by engagement with the workpiece, and an intermediate member movable by concomitant action of said trigger and said contact element, said intermediate member being connected to operate said valve for reciprocating said piston to drive fasteners into the workpiece.

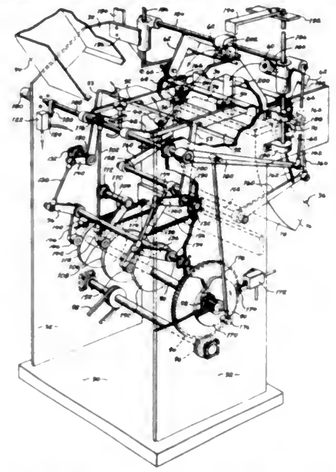
3,162,098
FLUID ACTUATOR
Paul G. Lindberg, Willoughby, Ohio; Aria V. Lindberg, administratrix of said Paul G. Lindberg, deceased
Filed May 10, 1962, Ser. No. 193,727
4 Claims. (Cl. 92—13)



1. A fluid actuator comprising a housing having a cylindrically walled chamber therein, a cylindrical double ended hollow piston disposed in said chamber for axial slidable movement relative thereto, means interposed between said piston and said housing to prevent relative rotation therebetween, said piston defining a pair of spaced pressure cavities between the ends of said piston and the ends of said housing, a shaft having a screw portion intermediate a pair of spaced cylindrical end portions, said shaft extending axially through said housing with said cylindrical end portions extending axially through the ends of said piston and pressure cavities and journaled in the ends of said housing for relative rotation therebetween, said housing having a pair of ports extending therethrough with each port communicating with one of said pressure cavities to transmit pressurized hydraulic fluid into and from said pressure cavities, hydraulic fluid sealing means interposed between said piston and said cylindrical shaft portions for permitting relative rotation therebetween while preventing pressurized hydraulic fluid in said pressure cavities from being emitted into the interior of said piston, a ball nut located in the interior of said piston, said piston including an inwardly extending ball nut mounting member interposed between the ends of said piston and serving to secure said ball nut to said piston and divide the interior of said piston into two portions, said ball nut being in threaded engagement with said intermediate screw portion of said shaft to coact therewith to convert axial slidable movement of said piston into rotational movement of said shaft.

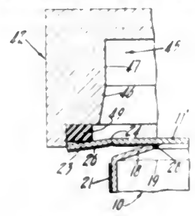
3,162,099
MACHINE FOR SETTING UP EGG CARTONS AND THE LIKE
Grover C. Currie, Charlotte, N.C., and Joseph Arthur Cook, London, Ontario, Canada, assignors to Somerville Industries Limited, London, Ontario, Canada
Filed Sept. 4, 1962, Ser. No. 221,260
5 Claims. (Cl. 93—37)

1. An apparatus for setting up egg carton blanks, each of said blanks having a main blank part which carries a plurality of partition members in transverse slots in the center thereof and is folded over as to contain the partition members in overlapping relationship with one another and between those portions of the main blank which form the side walls of the set up carton, the said slots and partition members being located and sized to effect interlocking of said partition members with the said side wall portions of the blank as the blank is fully spread open and stretched in a direction paralleling said slots while said partition members are advanced against the side wall portion of the blank, said apparatus comprising a pair of said wall portion gripping devices, means for feeding folded blanks in succession to said gripping devices, actuating means for moving said gripping devices relative to each other whereby to simultaneously fully spread open and stretch a blank held between them, and plunger means for advancing the partition members of a spread and stretched blank against its side wall partitions



whereby to interlock said partition members therewith whereby said carton is set up.

3,162,100
METHOD OF MAKING A CONTAINER
Arnold Robert Rein and Roland Norbert Wendricks, Barrington, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 26, 1962, Ser. No. 246,919
8 Claims. (Cl. 93—55.1)

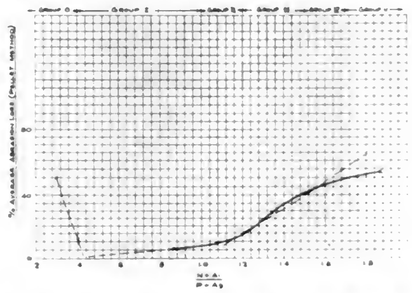


5. A method of making containers, which comprises the steps of providing a tubular body having marginal flanges extending from its side walls, partially deforming said flanges inwardly of said walls to an unrestrained position, positioning over said flanges an end closure having a planar panel with side flaps extending therefrom in registry with said side walls and a coating of pliable adhesive on its surface nearest said flanges, and assembling said body and said closure by moving the two relatively together to first bring the edges of said partially deformed flanges into sliding contact with said adhesive and then to fully deform said flanges and said flaps into secured engagement with said panel and said side walls, respectively.

3,162,101
METHODS FOR IMPROVEMENT OF ASPHALTS AND OIL EMULSIONS USEFUL THEREIN
Fritz S. Rostler, Bakersfield, Calif., assignor, by mesne assignments, to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,193
47 Claims. (Cl. 94—23)

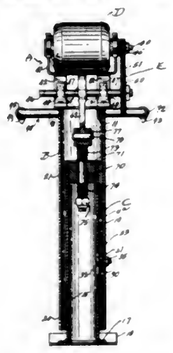
39. A method of reclaiming weathered asphaltic pavement composition comprising aggregate and weathered asphalt, said weathered asphalt containing asphaltenes and

which pavement was originally formed with asphalt fractions of not more than 6% by weight of the asphalt-aggregate composition, the asphaltenes in said weathered asphalt consisting of the asphaltenes originally present in the asphalt fraction and asphaltenes formed by weathering, the amount of said weathered asphalt in said pavement composition, calculated by excluding from said weathered asphalt the amount of the asphaltenes content formed by said weathering, being in amounts less than the asphalt content in the original asphaltic pavement composition, and said weathered asphalt containing also nitrogen bases, first acidaffins and second acidaffins, and having less than about 10% of paraffins, which method



comprises applying to said pavement composition at cationic water emulsion of a petroleum fraction substantially free of asphaltenes and containing paraffins in the range of about 20% to 85% of said petroleum fraction, the remaining portion of said petroleum fraction being composed of nitrogen bases, first acidaffins and second acidaffins, said petroleum fraction being added in amounts sufficient to increase the asphaltic content of the asphaltic pavement substantially above the asphaltic content of the weathered pavement and up to about 1.3 times the asphaltic content of the asphalt-aggregate composition as originally formed and prior to weathering, to produce a reclaimed asphalt in said asphalt-aggregate mix containing substantially more than 10% of paraffins.

3,162,102
ELECTRO-MECHANICAL TAMPERS
Lindsey P. Juneau, 5404 Random Drive, Alexandria, La.
Filed Dec. 20, 1961, Ser. No. 160,867
4 Claims. (Cl. 94—49)



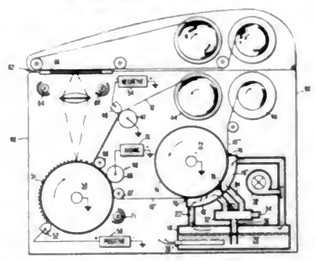
1. In a mechanical tamper the combination of an elongated tubular frame having a passageway therethrough, a cylinder reciprocably mounted within said passageway, bushings in the passageway having orifices through which said cylinder slides, said cylinder at one end projecting from the passageway of the tubular frame and at its opposite end having a wall, a tamping foot on the projecting end of the cylinder, a reciprocating rod slidably mounted through the end wall of said cylinder, compression springs telescoped on said rod at the opposite sides of said end wall, means on said rod holding said springs compressed to a predetermined extent against said end wall, a motor mounted on said frame, and means driven by the motor and connected to said rod for reciprocating the same and the cylinder therewith.

3,162,103
PHOTOGRAPHIC METHOD FOR LOCATING OBJECTS ADRIFT AT SEA
James M. Perkins, 425 E. Hemlock St., Oxnard, Calif.
Filed Oct. 26, 1961, Ser. No. 148,002
8 Claims. (Cl. 95—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



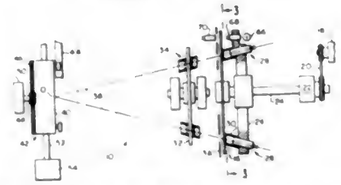
1. A method of obtaining a pictorial representation from which the location of an object on the surface of a given search area in relation to two known points may be determined, which includes the steps of deploying from each of said points and from said object a defined source of energy distinguishable from the background surface, at least one source of energy from said points being distinguishable from the other, and subjecting said search area to a recording medium sensitive to said energy source at an elevation above the surface sufficient to encompass said search area, whereby recordable images of said energy sources are obtained from which the range and bearing of said object from said points can be ascertained.

3,162,104
DEFORMATION IMAGE DEVELOPMENT APPARATUS
Harold Clinton Medley, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 2, 1961, Ser. No. 142,399
3 Claims. (Cl. 95—1.7)



1. Apparatus for producing deformation images on dielectric material soluble in a chemically related solvent and having an electrostatic charge pattern thereon, comprising,
means for transporting said dielectric material,
means associated with said transporting means for forming a pair of vapor sealed chambers contiguously of said transporting means,
means for guiding said charged dielectric material to said transporting means and through said chambers in succession,
a tank containing liquid solvent,
means arranged in said tank for vaporizing said solvent,
a manifold connecting said tank to said chambers,
solvent vapor condensing means interposed in said manifold between said chambers and said tanks, and
pressurizing means interposed in said manifold for forcing vapor of said solvent into the first chamber for softening said dielectric material and deforming it in accordance with the electrostatic stresses of the charge patterns thereon and for forcing an excess of said vapor into said condensing means and for forcing vapor out of said second chamber and into said condensing means for permitting said deformed dielectric material to harden and for returning excess solvent to said tank.

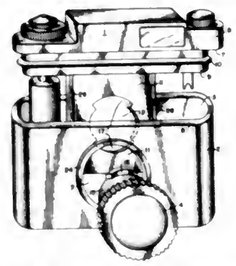
3,162,105
TYPE COMPOSING APPARATUS
Louis M. Moyroud, 50 Brooks St., West Medford, Mass.
Filed Mar. 29, 1963, Ser. No. 269,038
11 Claims. (Cl. 95—4.5)



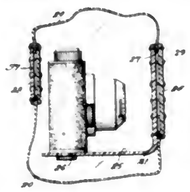
1. Type composing apparatus having, in combination, a rigid support bearing a plurality of character circles having their centers in a common axis and each having a plurality of characters, means to rotate said support continuously about said axis, image recording means having an image receiving surface intersected by said axis, a frame bearing as many lenses as there are circles of characters, each lens being supported in a predetermined position so that it projects successively to a common image position on said surface all of the characters in a corresponding circle as the support is rotated, said image position being identical for all lenses and their corresponding circles, means to illuminate selectively by a flash of brief duration the portion of the support in the projection axis of any selected lens corresponding to a circle containing a selected character, and means to time the instant of flash to coincide with the instant when said selected character is in the projection axis of said selected lens.

3,162,106
WATER-TIGHT PHOTOGRAPHIC CAMERA
Jean Guy Marie Joseph de Wouters d'Oplinter, Roquefort-les-Pins, France, assignor to La Spirotechnique, Paris, France
Filed Jan. 16, 1961, Ser. No. 82,927
Claims priority, application France, Jan. 27, 1960, 816,882, Patent 1,255,466
4 Claims. (Cl. 95—11)

1. A watertight photographic apparatus comprising, a trough-shaped case, a separable lid assembly and a separable objective assembly, said case having an elongated base with rounded ends, a first aperture opposite said base, of substantially the same extension and shape as said base, for receiving the lid assembly, and a second aperture for receiving the objective assembly in one of the sides of the case extending from said base to said first aperture, said lid assembly comprising a closure member mating closely with the inner edge of said aperture, said closure member being provided with a peripheral groove and an O-ring in said groove in watertight relationship with the inner wall of the case, said lid assembly further comprising a photographic chamber having a light aperture in registry with said second aperture of the case, mobile parts on the inner side of said closure member, and control members for said mobile parts on the outer side of said closure member, respectively connected to said mobile parts by stems extending through said closure member in watertight relationship therewith.



3,162,107
EQUIPMENT FOR UNDERWATER PHOTOGRAPHY AND RELATED USES
Donald J. Byers, 509 Berkely St., Falls Church, Va.
Application July 27, 1959, Ser. No. 829,928, now Patent No. 3,026,784, dated Mar. 27, 1962, which is a continuation of application Ser. No. 420,338, Apr. 1, 1954. Divided and this application Feb. 23, 1962, Ser. No. 175,260
1 Claim. (Cl. 95—11)

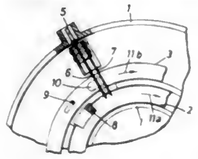


A cover for use in protecting equipment of the type of camera and photographic instruments, and the controls thereof, from the deleterious effects of water, comprising a yielding portion and rigid portion, said yielding portion being formed of thin, pliant, water-impervious material, said rigid portion being formed of relatively stiff material, and comprising a window and an internally disposed platform rigidly attached to said window, said yielding portion being attached to said window by a water-tight seal about the periphery of said window, said platform being provided with means for mounting said equipment thereon, said yielding portion constituting a cover loosely surrounding said equipment and said controls, said cover being normally out of contact with said equipment, except at said platform mounting, said cover being water-tight and air-tight, said yielding portion normally extending out of contact with and away from said camera, said cover being of a size in proportion to said equipment to contain a body of entrapped air, said yielding portion being movable with respect to said camera whereby and wherethrough the controls of the camera may be reached and manually operated, said cover being provided with at least one window in addition to said first-named window, said additional window being movable with reference to said first-named window.

3,162,108
PHOTOGRAPHIC FLASH SYNCHRONIZING ASSEMBLY

Roland Knorr, Gerd Kiper, and Ferdinand Fackler, all of Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerke, Germany

Filed May 22, 1961, Ser. No. 111,805
Claims priority, application Germany, July 16, 1960, A 15,303, A 15,304
2 Claims. (Cl. 95—11.5)



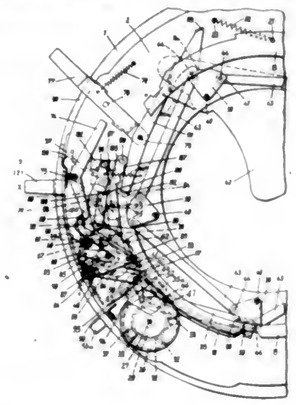
1. In a between-the-lens shutter assembly which is adapted to operate with flash illumination, in combination, switch means for providing flash illumination when said switch means is closed, said switch means having a pair of switch blades which close a circuit when said switch blades contact each other; rotary opening-ring means for opening a shutter during turning of said opening-ring means through a predetermined angle; an electrically non-conductive projection carried by said opening-ring means for turning movement therewith, one of said blades of said switch means being located in the path of turning movement of said projection to be engaged thereby and moved toward the other of said blades for closing said circuit, said one blade being positioned with respect to said projection to be engaged thereby substantially at the end of the turning of said opening-ring means through said predetermined angle; a second projection carried by the other of said blades of said switch means; closing-ring means turnable through a given angle for closing the shutter; and a third projection which is electrically non-conductive and which is carried by said closing-ring means for turning movement therewith through said given angle, said second projection being located in the path of turning of said third projection and being positioned to be engaged by said third projection substantially at the end of the turning of said closing-ring means through said given angle so that the movement of said second projection by said third projection will move said other blade away from said one blade to open said circuit.

3,162,109
PHOTOGRAPHIC SHUTTER

Franz Singer and Herbert Benninger, Munich, Germany, assignors to Compur-Werk G.m.b.H. & Co., Munich, Germany, a firm of Germany

Filed Oct. 5, 1962, Ser. No. 229,284
Claims priority, application Germany, Oct. 6, 1961, C 25,219
7 Claims. (Cl. 95—11.5)

1. A photographic shutter comprising shutter blades, a spring-operated master member for opening and closing said blades, a latch for holding said master member in a tensioned position, an electric flash synchronizer switch, a spring-urged switch operating member for closing said switch, retarding mechanism including a spring-operated rotary member and a retarding gear train having a first portion operatively connected to said rotary member to impede rotation thereof and a second gear train portion selectively connectable to said first portion to increase the rotational resistance thereof, a second latch for holding said rotary member in a tensioned position, means on said rotary member for releasing said spring-urged switch operating member for making a switch closing movement upon rotation of said rotary member, means on said rotary member for releasing said first latch after a further interval of rotation of said rotary member, transmission means operatively interposed between said first latch and said second latch for releasing said first latch simultaneously with movement of said second latch to its released position, when said transmission means is in one position, said transmission means being shiftable to another position ineffective to release the first latch, and adjustable setting means for determining the position of said transmission means and the operative relation of said second gear train portion to said first gear train portion and the relation of said switch operating member to said rotary member, the parts being so arranged that in one position of said adjustable setting means, said transmission means

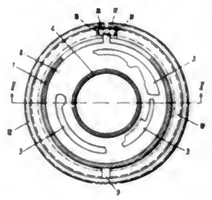


with said first gear train portion to resist the rotation of will be in a position effective to release said first latch simultaneously with the release of said second latch and said second gear train portion will be operatively engaged said rotary member to a relatively great extent, and so that in another position of said adjustable setting means, said transmission means will be ineffective and said second gear train portion will also be ineffective, so that rotation of said rotary member will be resisted to a substantially lesser extent and the rotation of said rotary member will release said first latch to start operation of said master member only at an interval after commencement of rotation of said rotary member.

3,162,110
SELECTOR RING FOR PHOTOGRAPHIC UNITS

Walter Miessen, Munich, Germany, assignor to Compur-Werk G.m.b.H. & Co., Munich, Germany, a firm of Germany

Filed July 23, 1962, Ser. No. 211,648
Claims priority, application Germany, July 28, 1961, C 24,740; Aug. 3, 1961, C 24,791
18 Claims. (Cl. 95—44)

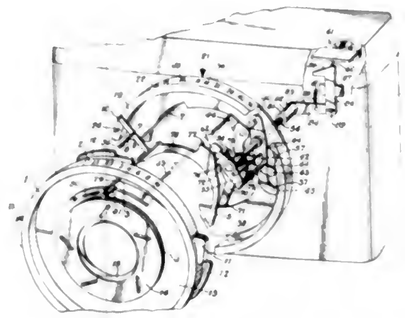


1. In a photographic unit, the combination of a casing, a setting disk rotatable within said casing, a selector ring rotatable on said casing substantially concentrically with said disk, and a coupling between said ring and said disk to cause them to rotate together, characterized by the fact that said selector ring includes a ring of plastic material bearing on said casing and rotatable thereon and having a gap at one point of its circumference to allow for differences in thermal expansion between said casing and said ring of plastic material, and metallic means extending across the gap in said plastic ring and turning with said plastic ring and assisting in holding said plastic ring in snug sliding engagement with the part of said casing against which it bears while turning.

3,162,111
PHOTOGRAPHIC CAMERA PROVIDED WITH AN AUTOMATIC FLASH EXPOSURE MECHANISM

Heinz Köppen, Stuttgart, and Willi Günther, Stuttgart-Mohringen, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany

Filed July 5, 1962, Ser. No. 207,578
Claims priority, application Germany, July 15, 1961, Z 8,864
4 Claims. (Cl. 95—64)

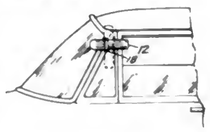


1. In a photographic camera, the combination with an interchangeable lens system, a distance adjusting means and an adjustable diaphragm, of means providing for flash bulb exposure operation and for a plurality of other operations, including an automatic exposure adjustment and a manual diaphragm adjustment including a diaphragm preselection; a manual adjustment means for selectively adjusting the camera to any one of said operations and for rendering the nonselected operations ineffective, said manual adjusting means including a ring rotatably mounted on said camera and provided on its outer circumference with a serially arranged guide number scale, a mark for the automatic exposure adjustment and a diaphragm aperture scale for the manual diaphragm adjustment, said rotatably mounted ring being provided on its inner circumference with a plurality of cams for operating pivotally mounted intermediate levers, one end of which engaging said cams to be deflected by the same while the other ends of said levers are adapted to be selectively operatively connected with said adjustable diaphragm, means for mounting said distance adjusting means on said interchangeable lens system, cam means on said distance adjusting means, said cam means operating a pivotally mounted intermediate lever (**44**), said lever being operatively connected with one (**37**) of said levers which is controlled by that cam (**38**) on said ring (**19**) which is associated with said guide number scale thereon, and means for transferring the sum of the deflections of said levers to a common member (**70**, FIG. 1; **35**, FIG. 2) which effects an adjustment of said diaphragm.

3,162,112
AUTO PRESSURE COOLER AND VENTILATOR

Ralph R. Wheeler, St. Petersburg, Fla. (4919 Gulfport Blvd., Gulfport 7, Fla.)

Filed Sept. 4, 1963, Ser. No. 306,509
2 Claims. (Cl. 98—2)



1. In a pressure auto cooler, the combination of
(*a*) an enlongated tube with means forming a window opening of a motor vehicle,
(*b*) a strap having spaced parallel perforated ends extended around said tube, and positioned with said ends extended from the tube and with the tube discharging through the window opening into the vehicle,
(*c*) a swivel bolt having a sleeve thereon extended through the perforated ends of said strap, and projected from side surfaces thereof,
(*d*) an adjusting screw also extended through said perforated ends of the strap and positioned parallel to said swivel bolt,
(*e*) an a U-shaped support having right angularly disposed ends positioned with the ends between said parallel perforated ends of the strap and with the ends of the swivel bolt also extended through said right angularly disposed ends of the support.

3,162,113
ADJUSTABLE GRILL UNIT

Robert R. Tallaksen, 4025 Lassiter Mill Road, Raleigh, N.C.

Filed Nov. 13, 1963, Ser. No. 323,289
2 Claims. (Cl. 99—446)



1. A portable grill for supporting meats and other foods for broiling comprising a handle, a rectangular grill portion attached to said handle, two grease catching pans hinged to opposite edge portions of said grill portion and swingable from a free hanging vertical position to a horizontal grease catching position beneath said grill portion, a cam pivotally mounted on said handle and having a lower portion engageable with one of said pans and an upper portion, means movable with the upper portion of said cam for swinging the other of said pans from its free hanging position to its grease catching position in response to pivoting of said cam and means for pivoting said cam whereby the lower portion of said cam swings one of said pans to its grease catching position and the upper portion of said cam swings the other of said pans to its grease catching position.

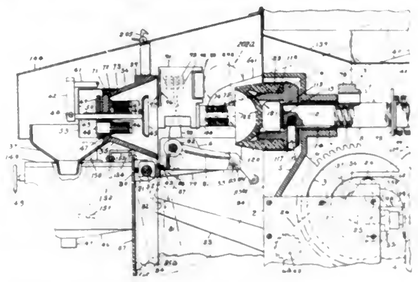
3,162,114
FRUIT JUICE EXTRACTOR

Francisco Angel Quiroz, 170 Eastern Parkway, Newark, N.J.

Continuation of application Ser. No. 201,947, June 12, 1962. This application Oct. 15, 1963, Ser. No. 298,811
45 Claims. (Cl. 100—37)

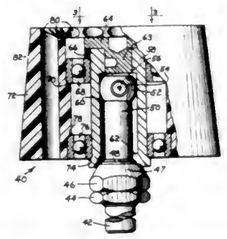
1. In extraction of juice from fruit having a rind, the improvement comprising enclosing a whole fruit and supporting substantially its entire exterior surface, essentially one half thereof being rigidly supported and

the other half thereof yieldably supported without significant surface deformation, excising a piece of rind from the rigidly supported half, and deforming the yield-



ably supported half to compress the fruit and thereby express the juice therefrom via the opening left by the excision of the piece of rind.

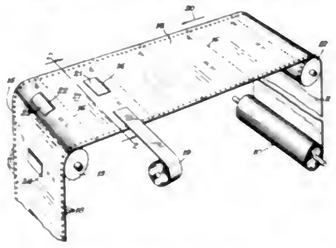
3,162,115
CONTAINER SIDE WALL PRINTING APPARATUS
Philipp J. Bauer, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,548
5 Claims. (Cl. 101—39)



1. Apparatus for printing the side walls of containers, including rotatable indicia imparting means located at a fixed station and turret means for moving containers to said fixed station for printing, comprising the improvement of mandrel means mounted on said turret, said mandrel means having an outer configuration substantially complementary to the interior of the container workpiece, and means mounting said mandrel means to said turret means, said means mounting said mandrel means to said turret means being characterized as affording limited pivotal movement to said mandrel means about an axis intersecting opposite surfaces on the side walls of the container workpiece which are to be printed to accommodate to variations in the thickness of the side walls of the container workpiece.

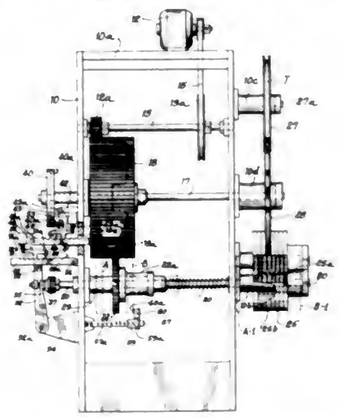
3,162,116
STENCIL ASSEMBLY AND ATTACHMENT THEREOF TO A PAPER BUSINESS FORM
Joseph A. Weber, 408 Hill Court, Prospect Heights, Ill.
Filed Jan. 26, 1962, Ser. No. 168,977
5 Claims. (Cl. 101—128.1)

1. A stencil assembly fastened to a business form comprising said stencil assembly having a stencil sheet, a thermoplastic stencil coating on said stencil sheet, said stencil assembly having means to directly impart material inscribed on the stencil to said business form, said stencil sheet fastened to said business form by heat sealing said thermoplastic stencil coating, said means for imparting the material inscribed on the stencil to the business form including a porous carbon sheet, and the heat seal being formed by a flowing of the thermoplastic



coating of the stencil sheet through the porous carbon sheet to the business forms.

3,162,117
MEASURING TAPE PRINTING MACHINES
Irvin L. Young, 2435 N. Sheffield Ave., Chicago, Ill.
Filed Mar. 16, 1962, Ser. No. 180,276
5 Claims. (Cl. 101—219)

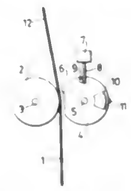


1. Means for imposing linear printing units on a tape, comprising a rotary printing roll in peripheral rolling engagement with the tape and formed with a series of peripheral sections arranged in axial succession, the sections having printing forms for said units, and means for shifting the printing roll periodically in an axial course for the individual application of said sections to the tape for printing said units, the rotation of the printing roll procuring the printing of a given length of the tape, said printing forms occupying less than the circumference of the printing roll, and means operative when the unoccupied part of the printing roll faces the tape to return the printing roll to its original position in order to repeat its operation in respect to another length of the tape.

3,162,118
ROTARY MARKING DEVICE FOR A CONTINUOUSLY OR INTERMITTENTLY FED WEB
Kjell Halvard Martensson, Spangatan 62K, and Harald Georg Swede, Vanasgatan 116, both of Malmo, Sweden
Filed Jan. 31, 1963, Ser. No. 255,392
Claims priority, application Sweden, Feb. 3, 1962, 1,196/62
2 Claims. (Cl. 101—219)

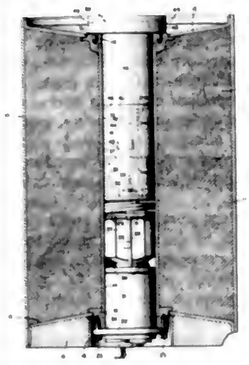
1. In a marking mechanism for effecting a marking operation on a surface such as a web moving in a substantially vertical direction, the combination comprising

an essentially cylindrical marking member, means mounting said cylindrical marking member for rotation about its axis, a marking element located on a first portion of the periphery of said cylindrical marking member, said cylindrical marking member being eccentrically weighted to one side of said axis of rotation and including a depressed second peripheral portion located to the opposite side of said axis of rotation and so positioned when said cylindrical marking member occupies an initial position, as to establish an initial clearance between the periphery of said cylindrical marking member and said mov-



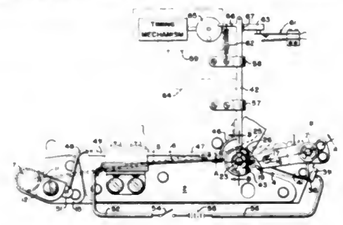
ing surface, locking means for holding said cylindrical marking member in said initial position and against rotation by the force of gravity which would otherwise occur due to its eccentrically weighted characteristic, and means for releasing said locking means thereby to permit an initial gravitational rotation of said cylindrical marking member and which brings said first peripheral portion into frictional driving engagement with said moving surface whereby said marking element is thereafter caused to rotate into position adjacent said moving surface and establish a marking contact with and move in the same direction as said moving surface.

3,162,119
DEPTH CHARGE FIRING CONTROL SYSTEM
Joseph B. Tate, Jr., 3926 Southern Ave. SE., and Louis W. Erath, 4087 Minnesota Ave. NE., both of Washington, D.C.
Filed Oct. 8, 1945, Ser. No. 621,155
17 Claims. (Cl. 102—18)
(Granted under Title 35, U.S. Code (1952), sec. 266)



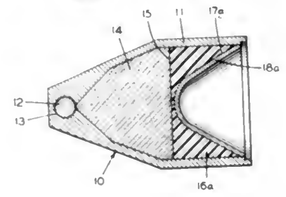
1. In a firing control system for a depth charge, the combination of a total field magnetometer detector adapted to yield a measurable quantity variably in accordance with changes in the scalar value of the ambient magnetic field of a depth charge as it moves within the vicinity of a submarine to be destroyed thereby, means including a bridge circuit having said detector connected therewith to form a portion thereof for producing an electrical signal variably in accordance with variations in said quantity, distortion-preventing means in said bridge circuit for substantially suppressing harmonic frequency current flow therein, a firing circuit for the depth charge, and means controlled by the electrical signal for rendering the firing circuit effective when the signal changes by predetermined amounts in opposite directions successively.

3,162,120
DOUBLE-ACTING SAFETY INITIATOR
Robert J. Lyon, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 31, 1962, Ser. No. 248,815
4 Claims. (Cl. 102—18)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A double-acting safety initiator unit comprising in combination, an extensible wire connected in an electrical circuit for heating said wire, said circuit including a normally-closed first switch and a normally-open second switch, said wire being connected to a fixed support at one end and affixed to a gear means at its other end, said gear means being spring biased to assume a first position, said gear means being operatively connected to the first of a pair of cylindrical drums, said drums being resiliently interlocked for rotary movement together and relative movement therebetween, each of said drums having a slot parallel to the axis thereof, and a spring-urged slide means abutting said drums adapted, when said slots are in alignment, to engage said slots and to actuate said first switch whereby, when said second switch is closed current flows in said circuit, heating and thereby expanding said wire to permit said gear means to be moved from its first position by the associated spring biasing means, thus rotating the first of said drums and allowing said slide means to assume an intermediate position engaging the slot in the second of said drums, thereby opening said first switch interrupting current flow through said wire, allowing said wire to cool and exert a tensional force on said gear means for rotating the first of said drums to its initial position causing alignment of said slots and allowing said slide means to assume a final position engaging both slots in said pair of drums.

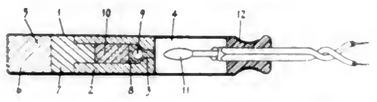
3,162,121
EXPLOSIVE CHARGE ASSEMBLIES
Horace R. Crawford, Richardson, Tex., assignor to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,259
11 Claims. (Cl. 102—24)



1. An explosive charge assembly comprising a container housing capable of confining an explosive detonation

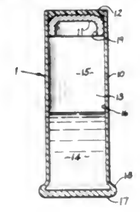
and having an open end and containing a detonatable explosive charge having a substantially planar surface oriented toward the open end of said container housing, a non-explosive lens element having a substantially planar surface adjacent to and in contact with said substantially planar surface of said explosive charge and having a concave cavity oriented toward the open end of said container housing, and a metallic liner superimposed over the concave cavity of the lens element.

3,162,122
SELF-PRESSURIZING DETONATORS
Owen Allen Gurton, Fairlie, and Alexander McLellan Yuill, Seamill, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Oct. 24, 1962, Ser. No. 232,842
Claims priority, application Great Britain, Oct. 24, 1961, 38,053/61
11 Claims. (Cl. 102—28)



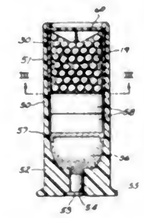
1. A detonator comprising a detonator casing having a closed end and a mouth end; a rigid metal walled tube within said casing; a charge of highly compressed secondary explosive confined in said metal walled tube; a charge of less highly compressed secondary explosive within said casing between its closed end and said highly compressed charge of secondary explosive and spaced from said highly compressed charge; sealing means for the end of said metal walled tube nearer to the mouth end of said casing which sealing means is normally sufficiently open to permit ignition of the contents of said tube by the passage of flame therethrough but is closeable by the effects of said ignition substantially to prevent the escape of gas from the space within said casing between said closed end and the sealed end of the metal walled tube.

3,162,123
LIQUID PROPELLANT CARTRIDGE
Charles F. Turner, Mount Carmel, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Nov. 28, 1962, Ser. No. 240,521
8 Claims. (Cl. 102—39)



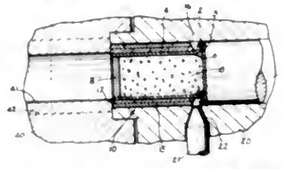
1. A cartridge for generating propellent gas at high pressure comprising a tubular case having a generally cylindrical mouth at one end of its length and a closed end wall at the opposite end, said end wall having a thickness such that rupture occurs at a predetermined pressure to provide a propellent gas dispensing opening in said case, a charge of propellant adapted for percussive adiabatic compression ignition disposed in said case, a piston completely received snugly within said case adjacent the mouth, a superposed layer of plastic resin in sealing and adhesive relationship with said piston and case within the mouth to define with said case a compression cavity containing said charge, said piston being frictionally retained by said case and adhesively retained by said layer against movement out of said case to thereby seal said charge under substantially atmospheric pressure, said piston having an inner concave surface to form a gas sealing skirt in said cavity and an outer surface protectively exposed in said case under said layer operative to receive a blow through said layer to compress said layer and drive said layer and piston inwardly against said charge whereby said charge is compressed above atmospheric pressure until said propellant is ignited adiabatically and said end wall subsequently ruptured at said high pressure.

3,162,124
PLASTIC CARTRIDGE
Charles E. Miller, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 2, 1962, Ser. No. 184,061
2 Claims. (Cl. 102—42)



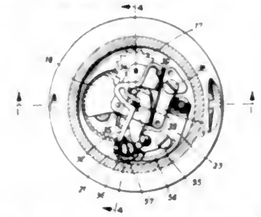
1. A reloadable ammunition cartridge comprising a casing including a relatively thick base closure and integral relatively thin side wall, said side wall having a decreasing wall thickness from the base to an opposite end of said casing and an increasing tensile strength from the base to said opposite end, said base and side wall being a one piece unit formed from a linear high density polyethylene, a propellant charge in said casing, a shot charge arranged in a column in said casing, wad means positioned between said charges, said wad means including an expansible flanged portion positioned next to said propellant charge, said opposite end terminating in a generally round opening for releasing said shot charge on firing of said propellant charge, said end having a longitudinal tensile strength at least 3–5 times the tensile strength of said base, said opening having a tendency to curl inwardly permanently after said firing, a member having at least one split in a sidewall thereof positioned in said tubular side wall to encircle said column, and a yieldable end closure formed by folding in said end of said casing over said shot charge to normally retain said shot charge, said member having extremities constrained by contact with said side wall of said casing to form a collar open ended at least at the edge adjacent said end closure and being effective to expand outwardly and separate from said shot charge when said shot charge is projected from a shotgun, said collar being effective with said shot charge to cause said end closure to yield and reform said end into a generally round opening substantially free from said tendency to curl and substantially free of mutilation rendering said opening fully open and round thereby providing access for reloading.

3,162,125
PROPELLENT CARTRIDGE
Oliver Nelson Lewis, Woodbridge, and Charles J. De Caro, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed July 25, 1961, Ser. No. 126,629
6 Claims. (Cl. 102—43)



1. An explosive propellant cartridge including a case having an annular rim and an integral tubular body and said rim extending radially outwardly from said tubular body at one end, primer means inserted in the rim of said cartridge, said rim having a front-faced surface, a non-metallic jacket completely encircling said tubular body and extending between said front-faced surface of said rim and at least the other end of said body, said jacket having an outside diameter adjacent said rim which is not more than the outside diameter of said rim to expose said rim sufficiently for firing by a generally transversely disposed firing pin operable on said surface.

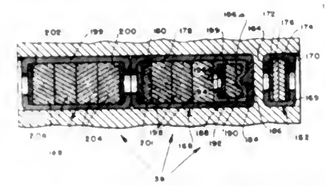
3,162,126
PERCUSSION FUZE FOR PROJECTILES WITHOUT RIFLING
Rudolf Weber and Paul Kaiser, Schramberg, Germany, assignors to Messrs. Gebrüder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Jan. 31, 1961, Ser. No. 86,135
Claims priority, application Germany Feb. 11, 1960
5 Claims. (Cl. 102—78)



1. Percussion fuze for projectiles without rifling, comprising a fuze body, a plunger having a pin and striker head in a nose of the fuze and mounted therein a safety position of the fuze, a spring in the nose and abutting against the striker head, a resilient latch having two arcuately bent resilient arms normally engaging an annular groove in the pin, said latch having a semi-circular end section at one end and the other end of the resilient latch being secured in the fuze, an inertia bolt mounted in the fuze body with the semicircular end section embracing the inertia bolt, a safety inertia bolt in the fuze body, and a locking ball adjacent said inertia bolt, said ball locking said inertia bolt until released by said safety inertia bolt.

3,162,127
DELAY TRAIN FOR FUZE
Bertram A. Breslow and Richard K. Blanche, Sr., China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 21, 1955, Ser. No. 517,098
1 Claim. (Cl. 102—85)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A delay train comprising a supporting member having a bore therein; a diaphragm separating said bore into a first section and a second section; a primary primer in said first section comprising a tubular element having open ends closed by rupturable discs and having one end adjacent said diaphragm; a compacted charge of stab action initiated type primer mix in the area of the tubular element adjacent the open end of said first section, said mix consisting of approximately 33% potassium chlorate, 33% antimony sulphide, 28% lead azide and 6% Carborundum; a compacted charge of lead azide between said charge of primer mix and the rupturable disc closing the end of said tubular element adjacent said diaphragm; a delay element in the second section of said bore comprising a tubular member having a closed end and an open end; a rupturable disc closing said open end, said closed end being adjacent said diaphragm; an anvil on the internal side of said closed end; a secondary primer adjacent said closed end comprising a cup having a crimped open end and a closed end, the closed end of said cup nesting with the internal surface of the closed end of said tubular member and the open end of said cup being closed by a

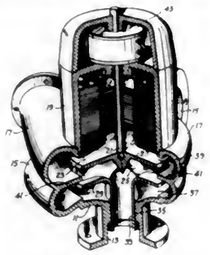


rupturable disc; a washer between said rupturable disc of the cup and its crimped open end having an internal diameter less than that of the open end of the cup; a primer composition in said cup consisting of 97% of a mixture and 3% of tetracene, the mixture consisting of approximately 27% zirconium and 73% lead peroxide; a relay charge consisting of compacted lead azide adjacent the inner side of the rupturable disc closing the open end of said tubular member; a delay charge between said relay charge and the open end of said cup, said delay charge having a composition of approximately 35% alloy and 65% lead peroxide, the alloy consisting by weight of approximately 70% nickel and 30% zirconium; a flash detonator in said bore comprising a tube having open ends, said ends being closed by rupturable discs, one end of said tube being adjacent the open end of said delay element; a lead azide charge in the section of said tube adjacent the delay element; and a tetryl charge between the rupturable disc closing the end of said tube removed from said delay element and the lead azide charge in said tube.

3,162,128
COMBINED DISTRIBUTION VALVE AND PUMP
Anders Bertel Hörlén, Bandhagen, Sweden, assignor to Regulator A.G., Glarus, Switzerland, a company of Switzerland
Filed June 11, 1962, Ser. No. 201,410
Claims priority, application Sweden, June 14, 1961, 6,180/61
9 Claims. (Cl. 103—2)

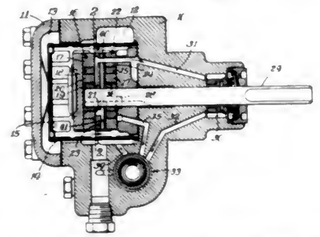
1. A combined distribution valve and pump comprising: a housing, a rotary pump wheel enclosed within said housing and mounted for rotation therein, said housing having an inlet for admission of liquid to said pump wheel, said pump wheel having an outlet for discharging fluid from said pump wheel, said housing having a pair of outlets for the discharge of fluid into separate pipes from said housing, said outlets being mutually offset in the direction of the axis of rotation of the pump wheel, said pair of outlets having inner orifices adjacent said pump wheel, means for adjusting the pump wheel in its axial direction between end positions whereby positioning of the pump wheel at its end positions permits

liquid discharge from said pump wheel outlet to one of said pair of outlets and positioning of the pump wheel at locations intermediate the end positions permits liquid



discharge to said pair of outlets thereby varying the proportion of the liquid quantities discharged through said outlets.

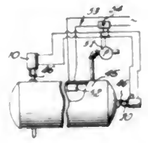
3,162,129
TWO-STAGE FUEL UNIT
Robert W. Erikson, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed July 13, 1962, Ser. No. 209,595
5 Claims. (Cl. 103—2)



1. In a two-stage oil burner pump having in combination, a casing, a first stage pumping means in the casing, a second stage pumping means in the casing, a reservoir in the casing to which the inlet to the second stage pumping means is connected, and a shaft rotatably mounted in the casing for driving said pumping means, means associated with said pumping means for maintaining a level of oil in the reservoir above the position of said inlet to the second stage pumping means at various rotative positions of the pump relative to said shaft, comprising, means providing at least two channels, each communicating at one end with the inlet to the first stage pumping means and opening at the other end to the reservoir at spaced apart points, said channels each having a fluid flow capacity less than the pumping capacity of said first stage pumping means whereby a vacuum exists in each of said channels during operation of said oil burner pump.

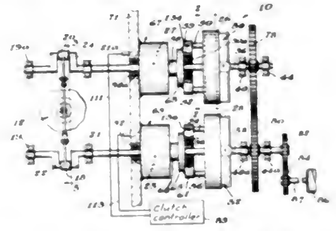
3,162,130
AIR CHARGER FOR WATER STORAGE TANKS
Frederick M. Glisson, 1720 Jameston Drive, Charlotte, N.C.
Filed Aug. 20, 1963, Ser. No. 303,337
5 Claims. (Cl. 103—6)

1. Control apparatus for supplying air to an air chamber over a predetermined level of water in a water storage tank having pressure sensitive switch means responsive to a selected minimum air pressure in the tank signifying selected minimum water level conditions to complete a supply circuit initiating operation of a water pump to supply additional water to the tank, the control apparatus comprising a cylinder for periodically supplying a selected volume of air to said tank, conduit means at one end of the cylinder for delivering air from the cylinder to the upper portion of the tank, a reciprocative piston in said cylinder defining a compression chamber between said piston and one end of said cylinder movable axially thereof through a uniform advance stroke toward said one end for discharging the selected volume of air through said conduit means to said tank, means for admitting ambient air to said compression chamber during each re-



turn stroke of said piston away from said one end, a solenoid having a reciprocative plunger mechanically intercoupled with said piston to move the piston through its advance stroke upon energization of the solenoid, and means for connecting said solenoid with said supply circuit to energize said solenoid and drive said piston through its advance stroke each time the supply circuit is completed to initiate operating of the water pump.

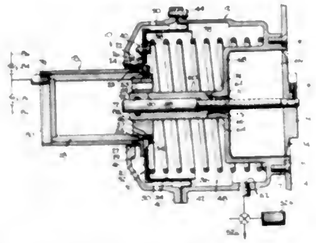
3,162,131
PUMPING APPARATUS
Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,011
12 Claims. (Cl. 103—38)



1. A mobile pumping unit comprising in combination a prime mover and a variable displacement pump, said pump comprising a frame, a cylinder and piston reciprocal therein, a crosshead, means for mechanically coupling the piston to the crosshead to reciprocate the piston with reciprocation of the crosshead, a walking beam having a central part and two end parts, said crosshead being pivotally coupled to said central part of said walking beam, a pair of crankshafts, each of said crankshafts having at least one throw, a pair of connecting rods, one of said connecting rods being pivotally coupled to one end part of said walking beam and to a throw on one of said pair of crankshafts, the other connecting rod being pivotally coupled to the other end of the walking beam and to a throw on said other crankshaft, a pair of planetary gear assemblies each comprising a sun gear, at least one planetary gear and a ring gear, said planetary gear being coupled to a rotatable planet carrier element, one of said crankshafts being operatively coupled to the sun gear of one of planetary gear assemblies, the other of said pair of crankshafts being operatively coupled to the sun gear of the other of the planetary gear assemblies, a pair of drive shafts, means for coupling said prime mover to said drive shafts and for rotating each of said drive shafts at least approximately at the same rate, one of said drive shafts being operatively coupled to one of said ring gears, the other of said drive shafts being operatively coupled to the other of said ring gears, a pair of multiple disc

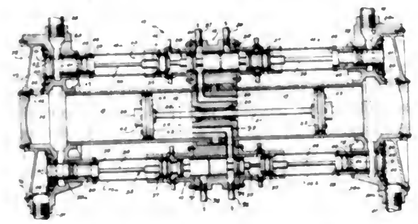
clutches each having a fixed segment and a rotatable segment, the rotatable segment of each clutch being fixedly coupled to one of said planet carriers and the fixed segment of each clutch being rigidly coupled to said frame, and means for actuating said clutches independently of one another.

3,162,132
PUMP
Nelson G. Kling, Ringwood, N.J., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Mar. 15, 1963, Ser. No. 265,405
8 Claims. (Cl. 103—50)



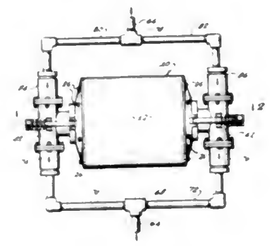
1. A fluid pump, comprising a cylinder provided with fluid passage means for the flow of fluid into and out of the cylinder, a hollow piston reciprocable in said cylinder for effecting the flow of the fluid into and out of said cylinder, a housing, means including fluid-pressure responsive means operatively connected to said piston for reciprocating the piston in said cylinder, said fluid-pressure responsive means including a flexible diaphragm and dividing said housing into first and second chambers with a fluid-tight seal therebetween, said first chamber being open to the atmosphere, means for connecting said second chamber periodically to a source of sub-atmospheric pressure for effecting the movement of the piston in one direction into said second chamber for the flow of fluid into said cylinder and for periodically providing said second chamber with atmospheric pressure, guide means extending into the interior of said hollow piston, means connecting the interior of said hollow piston with said second chamber, and means in said second chamber operatively connected to said piston for moving the piston in the opposite direction when said second chamber has atmospheric pressure therein, for effecting the flow of fluid out of said cylinder.

3,162,133
HYDRAULIC POWER CONVERTER
James E. Smith, 302 Plantation Drive, Lake Jackson, Tex.
Filed Feb. 26, 1962, Ser. No. 175,767
15 Claims. (Cl. 103—52)



1. A hydraulic power converter comprising a central portion, a pair of cylinders extending therefrom, a main piston rod, piston heads flexibly positioned on the ends of said main piston rod for limited longitudinal movement with respect to said main piston rod, said piston heads being positioned in said cylinders, said piston rod being slidable through said central portion, inlet valves for controlling flow of fluid to each of said cylinders, outlet valves for controlling flow of fluid from each of said cylinders, and means for rapidly opening and closing said inlet and outlet valves in response to movement of said piston heads in said cylinders.

3,162,134
ELECTROMAGNETIC PUMP AND ENERGIZING MEANS THEREFOR
Mark E. Lovell, 4060 Sumac Drive, Sherman Oaks, Calif.
Filed Nov. 24, 1961, Ser. No. 154,417
8 Claims. (Cl. 103—53)

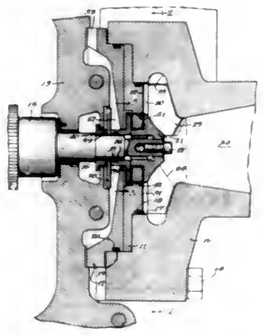


1. In combination, a nonmagnetically permeable cylinder; an electromagnetic field structure on the outside of said cylinder including three poles located at the center and ends, respectively, of said cylinder, a first winding to be energized for creating a first electromagnetic field between said center pole and one end pole, and a second winding to be energized for creating a second electromagnetic field between said center pole and the other end pole; a magnetically permeable plunger reciprocable in said cylinder between said end poles, said center pole being disposed in close proximity to said plunger, whereby when said first winding is energized, magnetic lines of force of said first field extend between said one end pole and said plunger and the latter is moved toward said one end pole, and when said second winding is energized, magnetic lines of force of said second field extend between said other end pole and said plunger and the latter is moved toward said other end pole; and an energizing circuit for said windings comprising silicon control rectifiers in circuit with said windings, respectively, means to impress a voltage across said windings and rectifiers, an electrical oscillator for generating periodic electrical impulses, and circuit means for applying the output of said oscillator to the gates of said rectifiers, whereby the latter are periodically triggered to allow current flow through said windings, including a commutating capacitor connected across said windings for causing said rectifiers to be triggered alternately by said impulses.

3,162,135
CENTRIFUGAL PUMPS
Kenneth E. Nichols, Westminster, Clifford N. Hall, Denver, and Anthony Malgieri, Broomfield, Colo., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Feb. 20, 1961, Ser. No. 90,393
6 Claims. (Cl. 103—103)

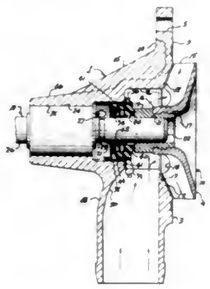
1. In a centrifugal pump, the combination of an impeller comprising a hub and a set of impeller blades mounted on said hub, an impeller housing surrounding said impeller, an annulus having a semi-circular cross section in said impeller housing surrounding said impeller

blades, a cone diffuser passage in said housing, and a logarithmic spiral section in said annulus and extending



over less than a 90° arc of said annulus to connect said annulus to said diffuser passage.

3,162,136
CENTRIFUGAL TYPE PUMPS
Harry E. Clary, Chesterland, and Joseph A. O'Neill, Parma, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 17, 1959, Ser. No. 853,649
6 Claims. (Cl. 103—111)



1. A low-cost one-pice impeller entry housing portion for a generally centrifugal type liquid pump having an impeller, said housing portion having

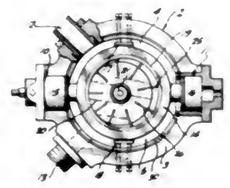
an axially inner end,

a substantially straight axial recess of circular cross section extending axially out from said inner end and including

a generally circular cross section impeller entry chamber opening axially and directly into the pump impeller at said inner end for unimpeded flow of the liquid

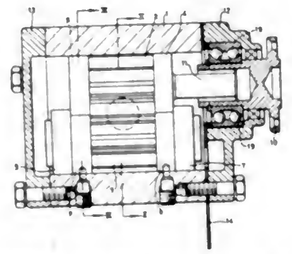
and a substantially straight transverse recess extending laterally and transverse to said axial recess and providing a substantially uniform cross section liquid supply passage opening in from a side of said housing to only one side of said entry chamber along an arc of substantially 90° from substantially tangential to one side of its periphery, said axial recess and said transverse recess each having non-reentrant surfaces and internal cross sectional areas which are at most equal to succeeding cross sectional areas inward from their open discharge ends to permit the removal of inter-embracing die pins from said recesses.

3,162,137
VARIABLE FLOW AND REVERSIBLE HYDRAULIC PUMP
James F. Carner, Elsinore, Calif.
(666 Coronado Ave., Long Beach 14, Calif.)
Filed Dec. 8, 1958, Ser. No. 778,774
7 Claims. (Cl. 103—120)



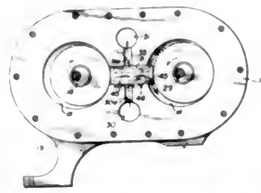
1. In a variable displacement pump, the combination of: a shaft; a radially slotted rotor rigidly affixed to said shaft; a plurality of rectangular blades slidably supported in said slots; a rigid ring of greater internal diameter than that of said rotor and said blades which said ring embraces; a yoke that rotatably supports said ring; two diametrically opposed pistons affixed to said yoke and extending outwardly therefrom in opposite directions; first and second cylinders in which said pistons are slidably and sealingly disposed; first and second fluid-carrying sleeves; a hollow housing defined by two parallel side plates having a flange extending between the outer edges thereof through which flange said cylinders and said first and second sleeves extend with said sleeves being disposed on opposite sides of said second cylinder; said side walls having transversely aligned openings formed therein through which said shaft extends to support said rotor and blades within said housing, which side walls have inwardly projecting portions that extend between said cylinders and slidably engage opposite sides of said rotor blades, ring and yoke to divide the interior of said housing into first and second compartments that are in communication with said first and second sleeves respectively; two independent fluid passage means communicating with said first and second compartments and two oppositely disposed circular grooves formed on said inwardly projecting portions of said side walls, which circular grooves are at all times in communication with said slots; two spring-loaded check valves communicating with said fluid passage means, said check valves being so loaded as to admit fluid under pressure from said first and second compartments into said circular grooves and said slots to move said blades outwardly into contact with said ring, but said check valves preventing escape of said fluid under pressure from said circular grooves and said slots to said first and second compartments; and means to move said pistons, said yoke and said ring relative to said rotor and blades, with said shaft when driven in a direction to rotate said blades passing said first sleeve toward said second sleeve causing positive displacement of fluid admitted into said first compartment through said first sleeve to said second compartment so long as the volume of said spaces adjacent said second piston is greater than that of said spaces adjacent said first piston, but with the direction of fluid flow being reversed to effect positive fluid displacement from said second compartment to said first compartment when the volume of said spaces adjacent said first piston is greater than that of said spaces adjacent said second piston.

3,162,138
HYDRAULIC GEAR ENGINE, ALSO ADAPTED FOR USE AS A GEAR PUMP
Pierre Robert Mingot, Morges, Switzerland, assignor to Prematex S.A., Morges, Switzerland, a firm
Filed Apr. 29, 1963, Ser. No. 276,332
Claims priority, application Switzerland, May 4, 1962, 5,405/62
4 Claims. (Cl. 103—126)



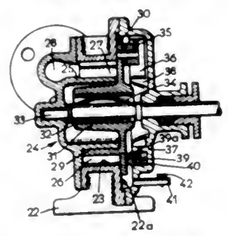
1. A hydraulic machine usable alternatively as a gear pump or a gear motor, comprising a casing defining a gear chamber, two gears rotatable in said chamber and intermeshing with one another, an inlet opening into said chamber in front of the zone of intermeshing of said gears and an outlet opening from said chamber on the opposite side of said zone, cylindrical journals at opposite ends of each of said gears and rotatable respectively therewith, said journals having an outside diameter equal to the outside diameter of the gears and the journals of one gear being offset in an axial direction relative to the journals of the other gear with an end face of each journal of one gear overlapping an adjacent end face of a corresponding journal of the other gear, said axial offset resulting in one of the journals at each end of the gears being axially spaced from its respective gear and connected therewith by a shaft portion having a diameter not exceeding the root diameter of the gear, a stationary cylindrical ring surrounding each said shaft portion and filling the space between said spaced journal and the respective gear, said ring having an arcuate recess receiving and fitting the overlapping portion of the adjacent journal of the other gear and an input-output shaft connected with one of said gears and extending to the exterior of said casing.

3,162,139
ROTARY PISTON PUMP
Theodore F. Thompson, 409 E. 12th St., Davenport, Iowa, assignor of one-half to William D. Hewit, Denver, Colo.
Filed May 20, 1963, Ser. No. 281,490
4 Claims. (Cl. 103—130)



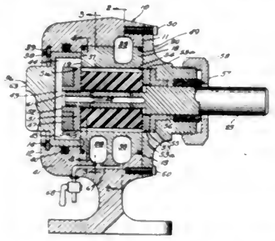
1. Fluid pumping apparatus comprising a housing having enclosed therein at least a pair of spaced apart cylindrical chambers with a rectangular cross-section passage therebetween, a shaft rotatably mounted in each chamber and said shafts being connected for conjoint and opposite rotation, an eccentric rigidly mounted on each shaft in each chamber and mounted 180° opposed to each other, a rotary piston mounted on each eccentric and in each chamber, each said piston being of a smaller diameter than its enclosing chamber and arranged for rotation on its eccentric so as to be in continuous essentially tangential contact with its cylinder wall, a reciprocable slide valve mounted in said passage between said chambers and arranged to be in continuous contact with both of said pistons, a fluid inlet in said housing communicating with one side of said slide valve, a fluid outlet in said housing communicating with the opposite side of said slide valve, said valve forming a continuous barrier between said inlet and said outlet, said valve having a length substantially the same as said passage so as to close said inlet and said outlet from both said chambers when said valve is centered in said passage and to close one chamber when the other chamber is open to said inlet and said outlet whereby said chambers are completely separated, said valve having end walls arranged to close said passage when positioned therein, there being a depression on each side of said valve to provide communication between said chambers and said inlet and outlet, whereby rotation of said pistons reciprocally moves said valve to separately and alternately provide communication between said inlet and said outlet and each said chamber, and means for rotating said shafts.

3,162,140
ROTARY PUMP
Albert Alfred Paul Petit, Paris, France, assignor to A. Petit & Cie., S.A.R.L.
Filed Mar. 15, 1961, Ser. No. 95,874
Claims priority, application France, Apr. 7, 1960, 823,715; Nov. 24, 1960, 844,923
5 Claims. (Cl. 103—131)



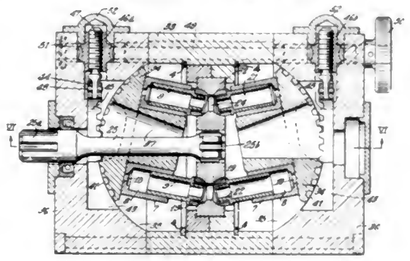
1. A volumetric pump with rotary drive comprising a casing which forms a cylindrical cavity, a radial fixed partition in said cavity, a cover secured to said casing, said cover having internal blind hole means, a recess constituting an extension of said cavity and limited by said cover, a movable cylinder having a radial slot for receiving the location of said fixed partition located in said cavity, said cylinder dividing the latter into a suction and a delivery chambers, a suction port connected to said suction chamber, a delivery port connected to said delivery chamber, a power shaft, means eccentrically secured on said power shaft for imparting to said movable cylinder a movement of circular translation combined with an oscillatory motion, a flange formed solid with said movable cylinder and located in said recess, said flange constituting a separating wall between said cavity and said recess, the assembly comprising said flange and said movable cylinder being displaceable in translation parallel to the axis of said power shaft to permit a direct interconnection between said suction and delivery chambers, spring-loaded studs slidably mounted in said blind hole means and projecting in said recess for resiliently urging said flange toward said cylindrical cavity, and duct means openingn in said recess to connect the latter to a space kept at a controlled pressure, said duct means comprising a control valve means for adjusting at will the pressure prevailing in said recess, the output of the volumetric pump being thus a function of the value of said pressure.

3,162,141
FLUID FLOW DEVICE
Constantinos H. Vlachos, Box 448, Washington, D.C.
Filed Oct. 4, 1962, Ser. No. 228,415
8 Claims. (Cl. 103—136)



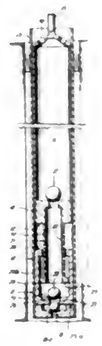
1. A fluid flow device suitable for use either as a pump or motor comprising a casing having an inlet port and an outlet port, said device having a chamber, a rotor disposed in said chamber to provide at least one pump chamber, said pump chamber having an intake port and a discharge port, said device having a first fluid passage means communicating with said inlet port of said casing and said intake port of said pump chamber and a second fluid passage means communicating with said discharge port of said pump chamber and said outlet port of said casing, said rotor shaft being journaled in said device, said rotor having a plurality of slots, each slot having a slidable vane disposed therein, said rotor having a fluid passage means communicating with the bottom of said vane slots and one end of said shaft, a rotatable means mounted in said device having a surface forming an end wall of a pump chamber, said rotatable means having an opening in said surface and a fluid passage means extending from said opening to and communicating with the fluid passage means in said rotor and shaft and means mounted on said device for rotating said rotatable means correspondingly to vary the amount of exposure of said opening to said pump chamber.

3,162,142
HYDRAULIC AXIAL-PISTON MACHINE
Georg Wiggermann, Spitzgartenweg 10, Kressbronn, Germany, assignor of one-half to Walter Reiners, Monchen-Gladbach, Germany
Original application May 23, 1957, Ser. No. 661,128, now Patent No. 2,968,286, dated Jan. 17, 1961. Divided and this application May 23, 1960, Ser. No. 30,791
Claims priority, application Germany May 29, 1956
4 Claims. (Cl. 103—162)



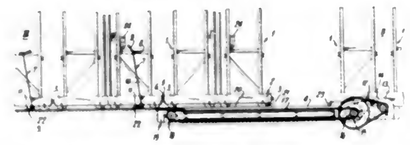
1. A hydraulic machine of the axial-piston type comprising a shaft, a stationary enclosure assembly having a housing structure around said shaft and having two axially spaced cover members, said cover members being provided with two axially spaced control bodies within said housing structure at opposite sides of the machine, said cover members and control bodies having respective circular openings therein at said opposite machine sides to define respective axes through said openings, said control bodies forming respective planar valve surfaces generally facing each other and inclined relative to the shaft axis, two multi-cylinder drums surrounding the axis of said shaft and rotatable against said respective valve surfaces, each drum having peripherally distributed cylinder bores parallel to the drum axis, said bores having respective ports adjacent to said valve surface to coact therewith, pistons reciprocable in said respective bores, a rotatable disc structure coaxially connected with said shaft and journalled in said housing structure between said two cylinder drums, ball-joint means joining said respective pistons of both said drums with said disc structure, said disc structure being in journalled engagement on its periphery with said housing structure and forming a rotatable support for said shaft, means for nesting said two cover members into mutually relative fixed positions, a bearing ring fixedly mounted in said housing structure and surrounding said disc structure for forming said journalling engagement of the latter with said housing structure, each of said cover members forming a cylindrical trough at its inner side, and each of said control bodies being seated in said troughs for angular displacement of said valve surface whereby the quantity and direction of delivery are controllable, each of said cover members having ducts for hydraulic medium which open into said trough, each of said control bodies having a cylindrical area in sealing engagement with the cylinder surface of said trough and having channels communicating with said respective ducts within said area and hydraulically connecting said ducts with said respective channels in said valve surface, and displacement control means connected with said two control bodies for simultaneously displacing them in said respective troughs equal respective angles of inclination relative to the axis of said shaft.

3,162,143
WELL PUMPS
Jack B. Ferguson, P.O. Box 1711, Houston, Tex., assignor of sixty percent to Robert B. Ferguson, Brazoria, Tex.
Filed Jan. 10, 1962, Ser. No. 165,333
11 Claims. (Cl. 103—179)



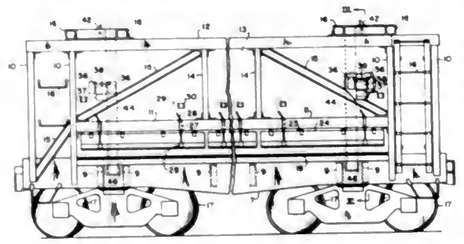
1. A well pump including,
a stationary cylinder,
a movable piston in sealing engagement with said cylinder and slidable relative thereto,
a standing inlet valve supported at the lower end of said cylinder,
said piston being spaced from said standing valve at the completion of the downstroke of said piston,
a first upwardly opening check valve supported by said movable piston,
a tubular sleeve telescoping the lower end of the piston and having sealing engagement with said cylinder,
a second upwardly opening check valve supported at the lower end of said sleeve,
means for connecting the said sleeve to said piston whereby said sleeve may undergo limited sliding movement relative to said piston,
the length of said sleeve and the position of the connecting means being such that at the completion of the downstroke of the piston the lower end of said sleeve is in close proximity to said standing valve.

3,162,144
ARRANGEMENT FOR STORING OBJECTS IN MOVABLE RECEPTACLES
Hans Ingold, Seefeldstrasse 224, Zurich 8, Switzerland
Filed Mar. 12, 1963, Ser. No. 264,541
4 Claims. (Cl. 104—162)



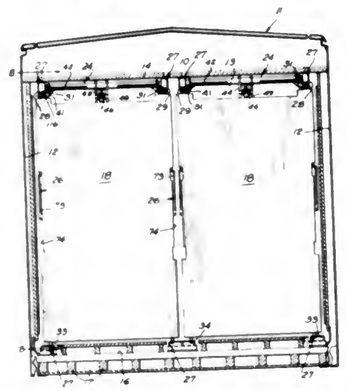
1. An arrangement for storing objects in movable receptacles, comprising, in combination, a plurality of movably mounted receptacles juxtaposed along a substantially rectilinear path, said receptacles being selectively relatively displaceable along said path to open a passage between adjacent receptacles; at least one endless chain extending along said path and having parallel runs each of a length at least equal to the desired passage width; reversible driving mechanism operatively connected to said chain; a single relatively elongated substantially rigid shifting rod associated with each chain and extending along one run of the associated chain, and along said path through substantially the conjoint length of the juxtaposed receptacles; means connecting the end of each rod nearest said mechanism to the associated chain; means connecting each rod to one receptacle nearest said mechanism; and coupling means on each of the other receptacles selectively operable to connect the respective other receptacles to each shifting rod.

3,162,145
RAILWAY TIE HAULING APPARATUS
Richard E. Franklin, Chevy Chase, Md., and Herbert C. Fox, Atlanta, Ga., assignors to Railway Maintenance Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Apr. 17, 1957, Ser. No. 653,315. Divided and this application July 25, 1961, Ser. No. 132,517
10 Claims. (Cl. 105—355)



8. A car for hauling ties comprising a flat, elongated floor member mounted on wheels for operation along a track, side walls extending upwardly from the longitudinal edges of the floor member, removable bulkhead means positioned between the side walls at each end of the car and forming the ends of the car, the lower ends of said bulkhead means extending into recesses in the floor member and the upper ends being clamped rigidly with respect to the side walls, each of the side walls having an opening in the lower portion thereof for removing the ties from the car the vertical dimension of said openings being such that only one tie at a time can pass therethrough, elongated members fixed to the floor member to maintain the ties above the floor member, and rails positioned longitudinally within the car for operation of an unloading machine therealong.

3,162,146
COMPARTMENTIZER SUSPENSION AND OPERATING ARRANGEMENT
Willis H. Knippel, Palos Park, Ill., and William R. Shaver, Munster, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,230
10 Claims. (Cl. 105—376)

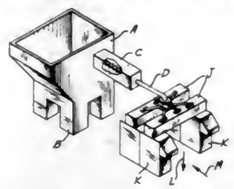


1. In a freight vehicle having a floor, a ceiling, and opposing sidewalls, means for dividing said vehicle into compartments comprising rectangular gate means, longitudinally extending track means mounted on said ceiling, transversely extending means supported on said trackways for movement thereon, means on said transversely extending means for suspending said gate therefrom so as to be longitudinally movable therewith, gate locating means on said floor and ceiling, and at least one latching means on said gate along at least one side thereof coacting with said locating means for locking said gate in a selective position lengthwise of said car, said latching means including means coacting with said transversely extending means to maintain said gate means disposed transversely of said car in the selective longitudinal position thereof, and further means for separably detaching said gate from said suspending means when said latching means is in a locked position and while so detached said gate being pivotal about said at least one latching means to a position longitudinally of said car.

3,162,147
MACARONI RADIAL FEED MACHINE
John Amato, Brooklyn, N.Y., assignor to Clermont Machine Company, Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 23, 1960, Ser. No. 58,094
13 Claims. (Cl. 107—14)

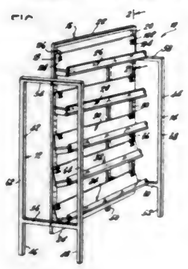
1. In a macaroni extrusion machine of the type having two spaced transverse elongated dies for producing rows

of elongated strips of extruded macaroni, a dough feed hopper, a screw extruder receiving dough from the hopper, a single outlet conduit receiving dough from the screw extruder; the combination therewith of a radial spider distribution unit positioned between the elongated dies and receiving dough from said outlet conduit and feeding it to said elongated dies along the length thereof, said spider having a hollow head, said head having a single entrance at one side and a plurality of outlets around an adjacent side and having compression means to cause said



dough to become compressed as it passes from the entrance to the outlets, and radiating outlet conduits, said hollow head being positioned above and midway of the length of said dies and said single conduit opening into the top of the hollow head, and said radiating outlet conduits consisting of tubes having the same internal diameter throughout and being three in number for each die and having a central outlet to the center of the top of the die and terminal outlets to the top of the ends of the die and having cooling sections of the same length along each conduit adjacent the outlets to the die.

3,162,148
ADJUSTABLE DISPLAY DEVICE
Daniel M. Ganz, Rockville Centre, N.Y., assignor to Darrol Company, New York, N.Y., a corporation of New York
Filed Nov. 8, 1962, Ser. No. 237,434
2 Claims. (Cl. 108—10)



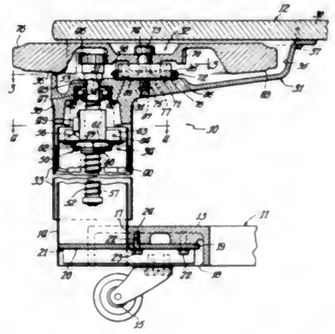
1. A card display device comprising a vertical support, a plurality of elongated shelf trays each having bottoms, rear walls and front walls for receiving cards in an upright orientation resting on said bottoms and leaning against said rear walls and held in position by said front walls, and bracket means securing said shelf trays to said vertical support and for individually and selectively tilting said shelf trays to a number of different positions for maximum visibility of cards displayed in the device, said bracket means comprising one bracket at each end of each of said shelf trays, said brackets each including a first plate having means thereon for securement to said vertical support, a second plate pivotally secured at a shelf pivot to said first plate, means on said second plate for securing one of said shelf trays thereto, a spring loaded detent pin mounted on said first plate movable between a normally extended position wherein the end of said pin extends outwardly from one side of said first plate into the plane of said second plate and a retracted position wherein the end of said pin is even with the side of said first plate, said second plate having formed therein a plurality of pin-receiving openings along an arc about said shelf pivot, said pin being movable, by finger pressure, unto said retracted position to permit said second plate to be pivoted with respect to said first plate and to permit a shelf tray supported by a pair of said brackets to be tilted about the axis of said shelf pivots to move said shelf tray into a position for maximum visibility of the cards displayed therein.

3,162,149
FOLDING AUXILIARY TABLE
James G. Hansen, Deerpath Road, Batavia, Ill.
Filed Oct. 8, 1962, Ser. No. 228,806
7 Claims. (Cl. 108—79)



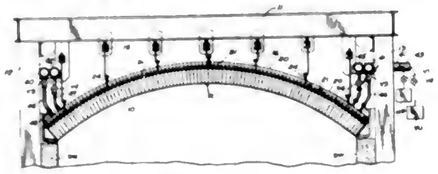
1. In an auxiliary folding table, in combination, a pair of supporting units each consisting of a horizontal bar and a pair of legs connected by said bar to form a unitary structure, means pivotally connecting one leg of one unit to a leg of the other unit, whereby the units can be spread apart or folded against each other with respect to a vertical axis parallel to the pivotally connected legs, a third leg member pivoted to each unit, each third leg member including a horizontal bar having a leg at one end, the other end of the horizontal bar of each third leg member being pivoted to the horizontal bar of a unit approximately centrally of the unit, and a top for the table formed of two sections, one section being pivotally secured to the horizontal bar of one unit and the other top section being pivotally secured to the horizontal bar of the other unit.

3,162,150
OVERBED TABLE
William H. Armstrong, Birmingham, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 28, 1962, Ser. No. 220,018
9 Claims. (Cl. 108—147)



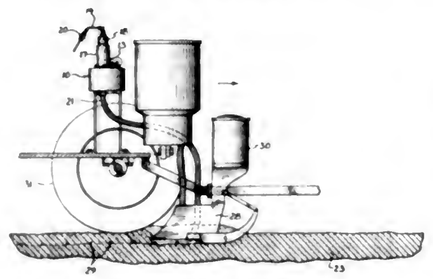
1. A vertically adjustable overbed table comprising a base having a vertical tubular extension, a table top having a vertical tubular extension telescopically movably mounted on said tubular base extension, means for adjustably interconnecting said table top extension and said base extension and operable to position said table top extension on said base extension to vertically position said table top relative to said base, a wheel housing forming a part of said table top and having an aperture therein, a wheel rotatably mounted on said table top within said wheel housing and drivingly connected with said adjustable interconnecting means for operating said adjustable interconnecting means when said wheel is rotated, said wheel extending beyond said housing through the housing aperture for providing exterior access to said wheel to allow manual rotation thereof, and means for resisting adjustment of the table other than by movement of said wheel.

3,162,151
FURNACE EQUIPPED WITH CLEANING APPARATUS
Ned W. Roudabush, 112 Irwin-Ben Avon, Pittsburgh, Pa.
Filed June 13, 1962, Ser. No. 202,222
9 Claims. (Cl. 110—99)



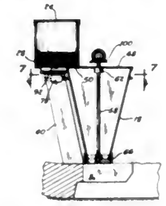
1. In a furnace of the kind described, a suspended roof of refractory bricks subject to accumulations of debris during use of the furnace, means for suspending said bricks including a plurality of spaced brick-supporting pipes disposed over the tops of the bricks in close proximity thereto, selected of said pipes being connected to a source of air under pressure, and said pipes having spaced openings in the walls thereof throughout substantially the entire length thereof enabling blasts of air under pressure to be directed onto the tops of said bricks, incidental to loosening and removing the debris from the tops of the bricks.

3,162,152
METHOD OF APPLYING A PESTICIDE
Joseph Regenstein, Jr., Chicago, Ill., and Eugene P. Ordas, Gary, Ind., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 27, 1963, Ser. No. 261,413
5 Claims. (Cl. 111—7)



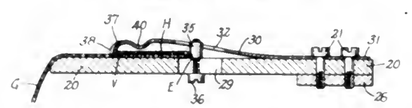
2. In a method for the application of pesticides into the soil the improvement which comprises applying into the soil a fog of a concentrated, solvent-free, organic chlorine-containing pesticide having a softening point and a boiling point, said fog being obtained by heating the pesticide to a first temperature above its softening point and below its boiling point, atomizing the heated pesticide into a liquid spray and vaporizing the liquid spray by heating the spray at an elevated temperature above the first temperature.

3,162,153
CORN PLANTER
John W. Schulz, Jr., Irvington, Iowa
Filed Apr. 24, 1963, Ser. No. 275,426
11 Claims. (Cl. 111—51)



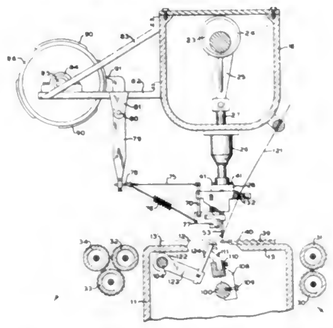
8. In a corn planter, comprising,
a frame;
a planter shoe carried by said frame, said shoe having an opening extending vertically therethrough;
a hopper having a plurality of uniformly spaced longitudinally extending walls to form a plurality of chambers, said hopper having a base plate at its lower outlet end with a plurality of openings formed therein, each of said chambers being in communication with a separate one of said plurality of openings, said hopper being rotatably mounted on said shoe and each of said openings adapted to register successively with said opening in said shoe as said hopper is rotated;
and means in engagement with said hopper to provide for its rotation.

3,162,154
STITCHING DEVICE AND GUIDE
Irving Medoff, Flushing, N.Y., assignor to Emsig Manufacturing Co., New York, N.Y., a partnership
Filed Apr. 11, 1962, Ser. No. 186,800
1 Claim. (Cl. 112—2)



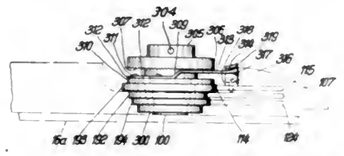
A garment stitching device comprising a stitching station and powerized garment transport means engageable with a garment at at least one point thereon for advancing the same longitudinally beyond said stitching station, a base plate adjacent said stitching station, an abutment gauge mounted on said plate, a spring clamp member spaced from said gauge member and including a flange directed toward said plate and terminating in a generally planar edge portion biased into engagement with said plate, said edge portion and said plate defining a single, extended, substantially linear area of contact, said linear area being angularly oriented with respect to the direction of movement of said garment beyond said stitching station at an angle to urge a garment compressed between said edge portion and plate into engagement with said abutment gauge member, said clamp member including a depressed portion intermediate said edge and said gauge member extending toward said base plate and disposed in proximate spaced relation thereto.

3,162,155
UNIVERSAL MULTI-NEEDLE TUFTING MACHINE
Artis E. Charles, Chatsworth Road, Dalton, Ga.
Filed Feb. 15, 1960, Ser. No. 8,645
14 Claims. (Cl. 112—79)



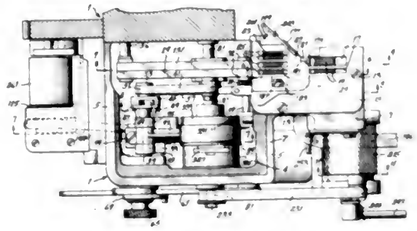
1. In a multi-needle tufting machine of the type having a needle bar reciprocated at uniform amplitude, and a plurality of needles carried by said needle bar for reciprocation therewith to insert yarns through a base fabric fed beneath said needles to form loops, the combination with said needles of control means connected between said needle bar and said needles for protracting and retracting selectively said needles along the path of their reciprocation, means synchronized with the feed of said base fabric for actuating said control means, and looper means beneath said fabric for engaging the loops formed by said yarns.

3,162,156
ZIGZAG SEWING MACHINE WITH CONTROL DEVICE FOR PRODUCING COMPOSITE ENCLOSED-AREA STITCH PATTERNS
Heinrich Theenhausen, Bielefeld, and Wilhelm Siebrasse, Heepen, near Bielefeld, Germany, assignors to Anker-Phoenix Nähmaschinen A.G., Bielefeld, Germany, a corporation of Germany
Original application Aug. 12, 1959, Ser. No. 833,216. Divided and this application Dec. 27, 1962, Ser. No. 247,729
Claims priority, application Germany Aug. 14, 1958
6 Claims. (Cl. 112—158)



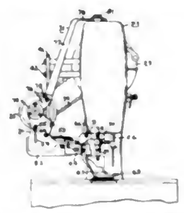
1. In a zigzag sewing machine, the combination of a material feed device, an axially reciprocable needle bar laterally oscillatable for producing lateral stitches, automatic control apparatus having rotary cam means and operably linked to said material feed device and to said needle bar to control the rate of feeding of the material being sewed on and thereby the stitching length, and to move the needle bar laterally to control the stitching area and stitching width of said lateral stitches, drive means arranged to reciprocate said needle bar and to turn said rotary cam means, transmission means of variable speed ratio operably and disengageably connected to said drive means to turn said rotary cam means in variable speed correlation with the reciprocating movements of said needle bar, a selectably exchangeable cam element rotatably arranged to be turned by said transmission means, manual setting means operably connected to said transmission means for selectively setting the ratio thereof, said manual setting means having a transmission coupling member operable, in one predetermined position of said manual setting means, to disengage said transmission means from said said drive means for manual control of said lateral oscillations of said needle bar, said selectably exchangeable cam element having a cam surface and cam follower means cooperative therewith operatively linked to said transmission coupling member to move said manual setting means to said predetermined position to disengage said transmission means, a coupling device comprising a disk having a cylindrical portion, entraining means comprising a coupling lever for disengageably entraining said cylindrical portion, said coupling lever being joined to said cam means for rotation therewith, mounting means removably mountable relative to said transmission means and rotatably joined to said selectably exchangeable cam element, said mounting means, said coupling lever and said disk forming together an independent structural unit bodily removable from said transmission means, whereby said manual setting means serves for manual control of the stitching area position, for switching from manual to automatic control of the stitching area position, and also for switching on the automatic drive of said cam means from said drive means through said transmission means.

3,162,157
BLIND STITCHING MEANS
Rosario John Chinnici, Jr., Garden City, N.Y., assignor to Peerless Sewing Machine Company, New York, N.Y., a corporation of New York
Filed June 6, 1961, Ser. No. 123,343
3 Claims. (Cl. 112—176)



1. In a sewing machine the combination with a needle plate having feed slot therein, said needle plate having an upper surface and an extent for supporting in flat relation to said upper surface a flat fabric to be stitched, said fabric having a predetermined width, a needle supported for movement lengthwise thereof in a line of movement transverse to said upper surface of said needle plate, and means cooperating with said needle plate for effecting feeding movement of the flat fabric lengthwise thereof transversely of its width in a given direction over said upper surface of said needle plate and transversely of the line of movement of the needle, of means for effecting delivery of said flat fabric lengthwise thereof toward said line of movement of the needle, in a path extending beneath said needle plate in a direction transverse to said given direction, and in a plane generally parallel to said given direction, from a location at the side of said plate opposite to said upper surface thereof, and means disposed adjacent said path of delivery and engaging the flat fabric for changing the direction of movement of said flat fabric from said direction of said path of delivery to said given direction, said direction changing means engaging said flat fabric in changing said direction of movement thereof to effect folding of said flat fabric upon a line which is in a plane generally parallel to said upper surface of said needle plate and which extends transversely of said given direction in inclined relation both to said given direction and to said direction of said path of delivery, said line being disposed adjacent the line of movement of the needle and so that said needle pierces the fabric adjacent the outer face thereof at said fold to produce a stitch that is blind at the face of the fabric within said fold, said direction-changing means comprising an edge portion of said needle plate providing an edge engaged by a face of said flat fabric as it moves lengthwise thereof and over which edge said fabric changes its direction of movement, said edge determining said line which extends transversely of said given direction.

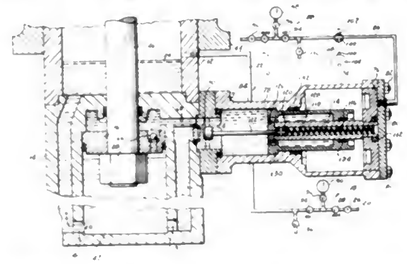
3,162,158
FEED MECHANISM FOR SEWING MACHINES
Joseph Chudner, 2907 Brighton Beach 8 St., Brooklyn, N.Y.
Filed July 2, 1963, Ser. No. 292,370
8 Claims. (Cl. 112—207)



1. For external attachment to and use with a sewing machine of the type having a work support, a presser foot bar and a movable feed dog operating with a four way feed motion through the work support to engage from below the material being stitched and advance the same from front to rear of the sewing machine, an attachable and detachable auxiliary feed device comprising in combination, a movable auxiliary feed dog positioned to overlie the sewing machine feed dog in upwardly spaced relation thereto for engaging from above the material being stitched, drive means carrying said auxiliary feed dog for coupling the latter to the sewing machine power drive effective to operate the auxiliary feed dog with a four way feed motion to advance the material being stitched from front to rear of the sewing machine, support means for said drive means detachably fixedly securable to non-moving parts of the sewing machine, means securable to and shiftable with the sewing machine presser foot bar operative to engage said drive means and raise said auxiliary feed dog whenever the sewing machine presser foot is raised and operative to permit lowering of said auxiliary feed dog and disengage from said drive means whenever the sewing machine presser foot is lowered, spring means operative to resiliently bias said auxiliary feed dog toward said sewing machine feed dog, and means for synchronizing the four way feed motion of the auxiliary feed dog with the four way feed motion of the sewing machine feed dog to cause both said feed dogs to move the material being stitched in the same direction and substantially simultaneously when such material is engaged thereby.

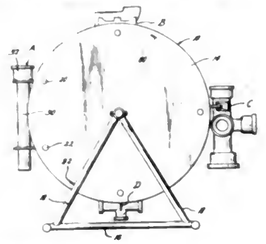
3,162,159
DIE CUSHION LOCKING AND PULL DOWN CYLINDER
Robert E. Krauss, Western Springs, and Vasil Georgeff, La Grange Park, Ill., assignors to Danly Machine Specialties, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 4, 1961, Ser. No. 100,591
5 Claims. (Cl. 113—45)

1. In a power press having a locking device comprising a locking cylinder and a locking piston and a passage providing communication between the opposite sides of the piston, a locking and pull down assembly including in combination a normally open valve adapted to be actuated to block said passage to trap fluid between said locking piston and said locking cylinder on one side of said piston, an operating cylinder, means providing communication between said operating cylinder and said locking cylinder on said one side of the locking piston, a pull down piston having a certain dimension in cross-section, means mounting said pull down piston for movement within said operating cylinder, a valve operating piston having a dimension corresponding to said certain dimension which is appreciably less than said certain dimension, means mounting said valve operating piston for movement with respect to said pull down piston, means



responsive to movement of said valve operating piston for closing said valve, means responsive to movement of said pull down piston for supplying fluid under pressure to said locking cylinder on said one side of the locking piston, means for supplying fluid under pressure to said locking and pull down assembly, first means responsive to a first predetermined pressure of fluid supplied to said locking and pull down assembly for moving said operating piston to close said valve and second means including said first means responsive to a second predetermined pressure of fluid supplied to said assembly for moving said operating piston to close said valve and for moving said pull down piston to supply fluid under pressure to said locking cylinder on said one side of said locking piston.

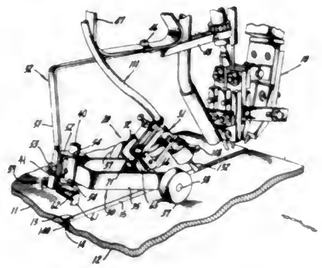
3,162,160
PLUMBING PIPE FABRICATION APPARATUS
Robert R. Brown, Houston, Tex., assignor to Ralph P. Gilbert, Houston, Tex.
Filed Mar. 18, 1963, Ser. No. 265,631
9 Claims. (Cl. 113—102)



5. A plumbing pipe fabrication apparatus comprising,
two end plates,
means for supporting said end plates for rotation,
three pipe working stations supported between said end plates and spaced from each other,
one of said stations including,
two elongate pipe ring supports rotatably supported from and between said end plates, said elongate pipe supports being spaced from and parallel to each other,

a plurality of pipe support rings of a first size connected to each of said elongate supports,
a plurality of pipe support rings of a second size connected to each of said elongate supports,
the pipe support rings of each size on each of said elongate supports being connected in the same plane,
each of the pipe support rings of each size on one of said elongate supports being in a vertical plane with one of the pipe support rings of the same size on said other elongate support whereby they may support lengths of pipe in a vertical plane,
and another of said stations including,
an elongate fitting support rotatably supported from and between said end plates,
a plurality of first fitting jaws connected to said fitting support,
a plurality of second fitting jaws cooperating with said first fitting clamps and connected to said fitting support,
one of said first and second jaws being yieldably urged toward the other of said first and second fitting jaws. and
locking means locking said first and second fitting jaws toward each other thereby securely holding pipe fittings therebetween.

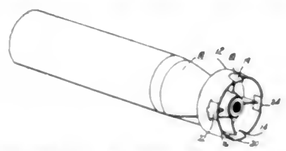
3,162,161
WELDING DEVICE
Clarence Verbeek, Lansing, Ill., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 12, 1961, Ser. No. 137,580
10 Claims. (Cl. 113—133)



1. A device for depositing metallic particulate in a seam precedent to its being welded by a welding assembly so as to provide superior quality welds comprising a carriage adapted to be secured to the welding assembly in advance of the assembly, a frame supported on said carriage, a feed conduit mounted on said frame for movement relative thereto and adapted to receive metallic particulate from a source and deliver it to the seam, means mounted on said conduit for metering the flow of particulate deposited in the seam and means mounted on said frame for vibrating said conduit relative to said frame to tamp the deposited particulate into the seam and smooth the tamped particulate precedent to welding the seam.

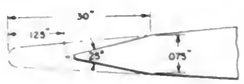
3,162,162
TORPEDO STEERING SYSTEM
Halley H. Hamlin, Lyndhurst, and Alfred L. W. Williams, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Continuation of application Ser. No. 827,663, July 16, 1959. This application Aug. 6, 1962, Ser. No. 214,879
7 Claims. (Cl. 114—23)

1. In a torpedo having an elongated body with a tapered tail end comprising: annular shroud means encircling the tail end in uniform spaced relationship, said shroud means having an outside diameter not greater than the outside diameter of the elongated body, said shroud means including a plurality of steering control surfaces movably mounted along the trailing edge of said annular



shroud means and being normally substantially flush therewith, said control surfaces being angularly movable relative to the central axis of said body for steering the torpedo body; and support means between said body and said shroud means.

3,162,163
HYDRODYNAMIC NOISE REDUCTION
Murray H. Silverman, Washington, D.C., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 19, 1962, Ser. No. 174,323
5 Claims. (Cl. 114—20)



1. The combination of an underwater torpedo having standard horizontal and vertical cruciform fins disposed circumferentially around the longitudinal axis of the torpedo and in addition four auxiliary fins respectively disposed between the cruciform fins and lying at an angle of essentially 45° thereto, each such auxiliary fin normally having an aft portion which exhibits a constant progressive decrease in thickness rearwardly of the torpedo, and hydrodynamic noise-reducing means for modifying the fluid flow along the surface of the aft portion of each said auxiliary fins during torpedo operation to change either the frequency of the vortex street which is developed in the wake of such fin or the resonant frequency of the body in accordance with the Strouhal Number, where such number is represented by the expression

$$f\frac{d}{v}$$

in which

f=the vortex street frequency
d=the effective thickness of the auxiliary fin aft portion
v=the velocity of the fluid

whereby such change in vortex street frequency is in a direction away from the natural resonant frequency of vibration of said fin, to result in a decrease in that portion of the hydrodynamic noise level of said torpedo caused by said fins.

3,162,164
PROTECTIVE MOUNT FOR SENSITIVE INSTRUMENTS
Robert C. Eck, State College, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 7, 1963, Ser. No. 278,794
7 Claims. (Cl. 114—20)

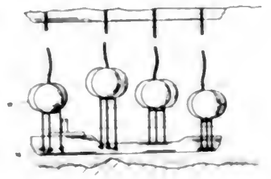
1. In a missile of the type having a guidance instrument rigidly secured thereto when the missile is in operation and being guided toward a target, said instrument being fragile and subject to damage by vibration during transportation to a locus of use, the improvements, in combination, comprising;

(*a*) a shock mounting resiliently supporting said instrument for movement in all directions relative to the missile when the missile is vibrating during transportation, whereby vibrating forces applied to the missile are not transmitted to the instrument in sufficient intensity to damage the same,



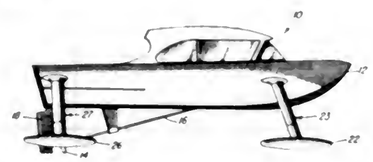
(*b*) registry means for locating the instrument in an accurate predetermined fixed rigid position when the missile is to be readied for operation, and
(*c*) means for moving said instrument from its shock mounting position to said fixed and rigid position when desired, whereby the instrument may be rendered free of damaging vibration during transportation and until readied for operation.

3,162,165
SALVAGE SYSTEM
Edith Brien, % Canadian Research & Development Foundation, 1437 Van Horne Ave., Montreal, Quebec, Canada
Filed Aug. 10, 1961, Ser. No. 130,549
3 Claims. (Cl. 114—54)



1. A salvage system for the raising of sunken vessels including magnet means, said magnet means providing the sole means of attachment to said sunken vessel; inflatable bags attached to said magnet means and means for the lowering and raising of said said magnet means.

3,162,166
VARIABLE SWEEP HYDROFOIL
Eugene H. Handler, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 28, 1963, Ser. No. 261,910
3 Claims. (Cl. 114—66.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



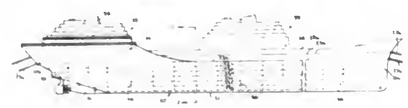
1. A waterborne craft comprising
a hull,
a hydrofoil system including at least a pair of symmetrically located hydrofoil supports extending generally downwardly from said hull,
variable sweep hydrofoils, each hydrofoil having a foil-shaped cross-scetion about each of two substantially perpendicular axes, continuously immersed during operation and rotatably secured to said supports,
said hydrofoils having effective aspect and chord/thickness ratios which vary as a function of the angle of sweep of said hydrofoils,
control means in said craft operatively connected to said hydrofoils to set the foils to any selected intermediate sweep angle between two predetermined limits,
thereby to provide at any given speed within the speed range of the craft a hydrofoil sweep angle which optimizes the lift/resistance ratio for that particular speed.

3,162,167
PLANING HULL
James R. Wynne, Miami, Fla., assignor to Climax Marine Corporation, Sarasota, Fla., a corporation of Florida
Filed July 29, 1963, Ser. No. 298,360
3 Claims. (Cl. 114—66.5)



1. In a V bottom speedboat hull of the type having a first longitudinal strake disposed entirely above the level of compacted water during high speed operation, and a second longitudinal strake disposed inwardly and downwardly of said first strake and including an after portion which is below the water level at low speeds and which does not extend below the level of compacted water at high speeds, said strakes extending forwardly from the stern of said hull, said hull presenting a smooth hull surface between said strakes, a discontinuous outer hull surface portion disposed between said strakes fairing gradually from said hull surface at a distance from the stern equal to between about one-fifth to one-twentieth of the length dimension of said hull and extending aftwardly therefrom at an angle of between about two and six degrees outwardly in relation to said hull surface and rearwardly and terminating substantially at said stern, said discontinuous surface portion being at least substantially entirely below the water level during acceleration of the hull from low speeds and being substantially entirely out of compacted water during high speed straight ahead operation.

3,162,168
SHIP WITH INCREASED CARGO CAPACITY
Nathaniel James Ferris, Westchester County, and Thomas R. Galanor, Bronx, N.Y., assignors to Theodore E. Ferris & Sons, New York, N.Y., a partnership
Filed June 22, 1962, Ser. No. 204,314
8 Claims. (Cl. 114—72)



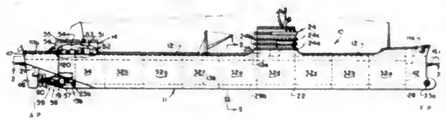
1. A self-propelled ship with increased cargo capacity, said ship comprising (1) a hull having a freeboard deck, (2) a pair of bulkheads within said hull extending longitudinally for substantially the entire length of the hull and vertically for substantially the entire depth of the hull said bulkheads being fairly closely spaced in respect of the overall beam of the hull on either side of a vertical longitudinal centerline plane through the hull and defining an open space between them, (3) a plurality of decks within said hull extending longitudinally for substantially the entire length of the hull and defining a plurality of vertically arrayed cargo spaces outboard of the longi-

tudinally extending bulkheads between these bulkheads and the hull, these cargo spaces being adapted to receive container cargo and the like and in the aggregate on either side of said pair of bulkheads occupying substantially the full depth of the hull as well as individually extending the considerably greater part of the length thereof, (4) a prime mover unit positioned at a level at least as high as that of the freeboard deck, said prime mover unit having means for providing a source of energy to propel the ship, (5) at least one propulsion unit extending from the exterior of said hull below the water line but not lower than the keel line thereof, said propulsion unit comprising (*i*) at least one propulsion motor adapted to be energized by said energy providing means and (*ii*) propulsion means actuated by said propulsion motor for propelling the ship, and (6) power transmitting means extending from said energy providing means to said propulsion unit.

3,162,169
SHIP OF REDUCED STRUCTURAL WEIGHT FOR GIVEN CARGO WEIGHT CARRYING CAPACITY

Nathaniel James Ferris, Chappaqua, N.Y., assignor to Theodore E. Ferris & Sons, New York, N.Y., a partnership

Filed Jan. 23, 1964, Ser. No. 339,630
24 Claims. (Cl. 114—72)

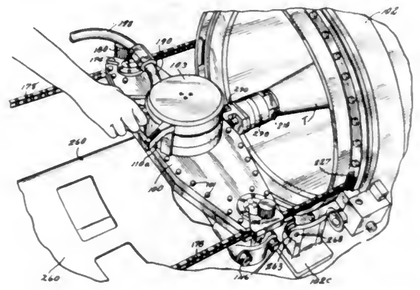


1. A self-propelled ocean-going surface cargo ship having a ratio of total deadweight to total displacement of at least 0.80:1 and comprising a hull which is characterized by (1) a ratio of length between perpendiculars to molded depth not greater than 13.30:1 and (2) a ratio of molded beam to molded draft at summer freeboard not less than 2.80:1, essentially all of the propulsion machinery of said ship being located outside of said hull and including a prime mover unit which is substantially fixedly attached to said hull and derives buoyant support therefrom.

3,162,170
DEVICE FOR LOADING A TORPEDO TUBE

John T. Gondek, Minneapolis, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 22, 1956, Ser. No. 573,305
23 Claims. (Cl. 114—238)

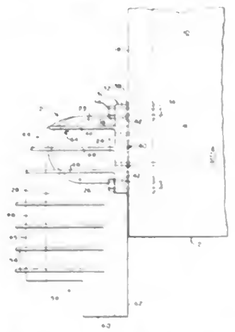


1. A device for moving a torpedo into a tube having in combination, a member having means for mateably engaging said torpedo and having rotatable members at each side thereof, means carried by said first-mentioned member for rotating said rotatable members, stationary members at each side of said tube respectively and extending longitudinally therefrom in a manner to be engaged by said rotatable members for moving said member and torpedo to move the latter into said tube.

3,162,171
UNDERWATER EXHAUST

Donald S. Willy, North Quincy, Mass., assignor to Submarine Research Laboratories, Inc., Everett, Mass., a corporation of Massachusetts

Filed Aug. 21, 1962, Ser. No. 218,400
1 Claim. (Cl. 115—.5)

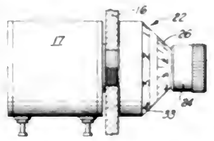


An exhaust silencer device for a motor vessel having a hull through which an exhaust pipe for an inboard engine extends in a generally horizontal direction in the vicinity of the waterline of the vessel for discharge into the open air, said device comprising a body having a generally horizontal inlet passage and a generally vertical passage in communication therewith, the body having a flange for securing the device to the hull of the vessel over the open end of the exhaust pipe outwardly thereof with the inlet passage of the body aligned with the discharge passage of the exhaust pipe, the body of the device extending downwardly from the hull of the vessel to a region below the surface of the water when the vessel is under way, the cross-sectional configuration of the body below the surface of the water being elongated in a fore and aft direction of the vessel, the body tapering toward its leading and trailing edges from a region intermediate said edges, the body at its bottom end being deeper toward its tapered fore part than in the trailing portion, the exhaust gas discharge passage extending vertically downward through the bottom of the body through both the deeper fore part and the trailing portion of said body.

3,162,172
INSTRUMENT SHAFT POSITION INDICATING STRUCTURE

Wilbur T. Hardison, Riverside, Calif., assignor to Bourns, Inc., a corporation of California

Filed Mar. 13, 1963, Ser. No. 264,833
7 Claims. (Cl. 116—115)



1. An instrument shaft position indicating structure adapted for use with an instrument having a rotary adjustment shaft arranged for rotation through a whole number N of turns in adjusting the instrument from a lower limit to an upper limit of adjustment thereof, said structure comprising:

first means, including rotatable means arranged to be secured to such an adjustment shaft for rotation therewith;

second means, comprising stationary support means and ledger means supported thereby furnishing a ledger base of reference;

third means, including first rotary means disposed adjacent said second means and providing a circular array of numerical indicia including a reference indicia and said indicia arranged for movement past said ledger, said first rotary means being connected to and rotatable in unison with said rotatable means and thus cooperate with said ledger to furnish a visible indication of the fractional part of one revolution of rotation of said rotatable means following registry of said reference indicia with said ledger;

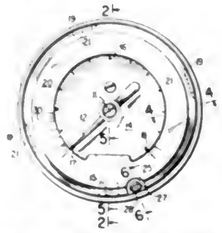
fourth means, including second rotary means providing a second circular array of numerical indicia including a second reference indicia and the latter numerical indicia being arranged for movement of any of the indicia of said latter array to and from positions adjacent said ledger; and

fifth means, comprising power-transmitting means interposed between and connected to said third means and said fourth means, arranged to transmit rotary motion from said first rotary means to said second rotary means to rotate the latter whereby during rotation of said first rotary means through N complete revolutions the said second reference indicia is rotated from a position closely adjacent to and at one side of said ledger to a position closely adjacent to and at the other side of said ledger, whereby there are provided unambiguous different indications of the rotational attitude of said rotatable means at the respective opposite limits of adjustment of the instrument.

3,162,173
GAUGE

Jack Morgan, Maple Glen, and Earl Donald Zuck, Quakertown, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,313
5 Claims. (Cl. 116—129)

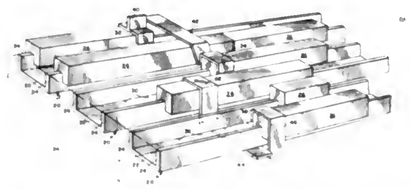


1. In a receiver gauge having a condition responsive movement therein and a pointer, said gauge having sub-dial means with predetermined scale indicia including marked end limits thereon, said gauge being calibrated so as to be accurate between said end limits of said sub-dial scale indicia, the combination with said sub-dial, of annular dial means having predetermined indicia thereon, the end limits of which correspond to those of said indicia on said sub-dial and means between said sub-dial and annular dial means for retaining said end limits of both the sub-dial and annular dial in registering and cooperating positions, whereby a receiver gauge can be assembled from a gauge having a standard calibrated sub-dial and a selected annular dial having indicia thereon representing the range of variation of a condition in a process.

3,162,174
WORK SCHEDULING MEANS

George E. A. Whyte, 9125 Jonell Court, La Mesa, Calif.

Filed May 23, 1963, Ser. No. 282,704
4 Claims. (Cl. 116—135)



1. A device for use in scheduling the rate and time of performance of the work of a plurality of operations comprising:

supporting means including a plurality of elongated spaced parallel guides;

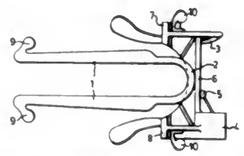
a series of blocks with certain of said blocks shiftably mounted on each of said guides; and

first means removably connected to a first block on one guide, spanning an adjacent guide and permitting independent movement of any blocks on the spanned guide and second means removably connected to a block on a guide remote from said one guide and adapted to be engaged by said first means.

3,162,175
HOLDER FOR EGG PRODUCTION RECORDING APPARATUSES

Hans Eugen Birch-Iensen, Hallstorps Gards, Billeberga, Sweden

Filed Aug. 30, 1963, Ser. No. 305,748
Claims priority, application Sweden, Sept. 6, 1962, 9,640/62
3 Claims. (Cl. 119—1)



1. A holder to be fastened to a hen by means of a harness and including a counter with a movable input element actuated by an egg during discharge by the hen, comprising:

(*a*) a pair of spaced back portions adapted to lie along opposite sides of a hen's spine,

(*b*) said back portions terminating at their rear end portions in a pair of downwardly and rearwardly extending limbs,

(*c*) said limbs curving inwardly and meeting at their rear end portions to underlie the hen's tail root,

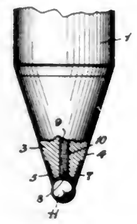
(*d*) a cross member secured to said limbs at the rear portion thereof and extending downwardly and forwardly on either side and below said limbs,

(*e*) said cross member terminating at its forward end in rounded spaced end portions so located as to engage the hen on opposite sides at the ischium,

(*f*) said cross member being recessed between said spaced rounded end portions so that only said spaced rounded end portions engage the hen,

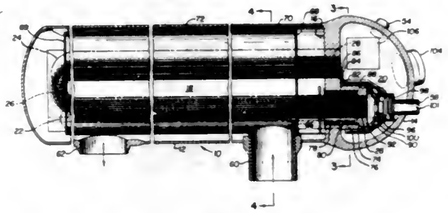
(*g*) and a pair of spaced arms secured to said cross member, extending downwardly and forwardly therefrom and terminating downwardly and forwardly of said rounded spaced end portions of said cross member, to bear upon the bottom of the hen's body on each side thereof.

3,162,176
BALL POINT PEN
Harry M. Dombrow, 52 W. Runyon St., Newark, N.J.
Filed Jan. 21, 1963, Ser. No. 252,646
6 Claims. (Cl. 120—42.4)



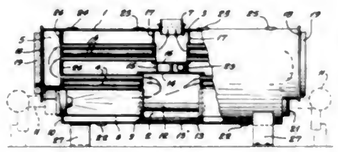
5. A pen comprising a barrel having at least one open end, a block disposed within an open end of said barrel and having an end portion projecting beyond said barrel, said block also having an elongated bore extending from said end portion and into said barrel to thereby define an ink passage, a cap member secured to said block end portion and having a frusto-spherical seat portion concavely recessed into said block, said seat portion having a central opening therein communicating with said elongated bore, and a spherical writing ball member with a portion thereof disposed contiguously within said frusto-spherical seat portion, said ball member portion disposed within said seat portion forming less than one-half the circumference of said ball member, one of said members being formed of magnetic material and the other of said members being formed of magnetically attractable material whereby said ball member and said cap member are held together by magnetic attraction.

3,162,177
VAPOR GENERATOR HAVING DESIGN PROVISIONS FOR THE REMOVAL OF HIGH TEMPERATURE VAPOR THEREFROM
Harold F. Loew, Chattanooga, and Albert L. Gaines, Signal Mountain, Tenn., and Edward M. Bullen, Chickamauga, and James H. Hargis, Rossville, Ga., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,079
8 Claims. (Cl. 122—32)



1. A vapor generator of the shell and tube type comprising a substantially closed vessel; a tube sheet dividing said vessel into a vapor generating portion and a head portion; tube seats in said tube sheet; a tube bundle formed of U-shaped tubes arranged in clusters having their heating surface positioned in said vapor generating portion, the ends of said tubes being anchored in said tube seats in communication with said head portion; means for passing a heating fluid through said vapor generating portion in heat exchange relation with said heating surfaces; means communicating with said head portion for passing a heated fluid through said tube bundle; means for anchoring the outlet ends of at least one of said tube clusters to said tube sheet including an aperture in said tube sheet in alignment with said outlet ends and of a diameter to spacedly encompass said outlet ends; a tube sheet offset aligned with and spaced from said tube sheet aperture; tube seats in said tube sheet offset to receive said outlet ends; a thermally expandable cylindrical transition member coaxially related to said tube sheet aperture rigidly fastened to the periphery of said tube sheet offset and said tube sheet; and thermal insulation means for insulating said transition member.

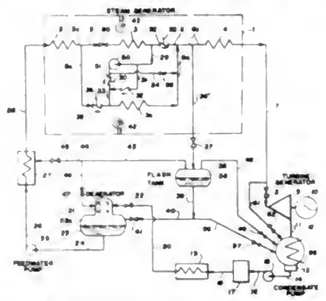
3,162,178
CYLINDRICAL BOILER
Delphis Vandal, 2030 Hanover Road, Mount Royal, Quebec, Canada
Filed June 24, 1963, Ser. No. 289,929
1 Claim. (Cl. 122—95)



A boiler comprising a horizontally disposed elongated shell, having flat end walls and a cylindrical lateral wall, a transfer box located in the bottom center portion of said shell and partly defined by said shell cylindrical wall, a horizontal top plate and transverse vertical walls having a semi-circular shape, said plate and said vertical transverse walls directly secured to said cylindrical wall, a smoke box spacedly disposed above said transfer box and located in the upper central portion of said shell and having a smoke discharge opening at the top of said shell, upper and lower sets of fire tubes located within said shell on each side of said transfer box and smoke box and in communication with said boxes respectively at their inner ends and supported by and passing through said shell end walls at their outer ends, head covers spaced from said shell end walls and defining therewith transfer chambers for establishing communication between the outer ends of said upper and lower sets of fire tubes, and combustion chambers mounted within said shell spaced from said cylindrical wall, disposed on each side of said central transfer box and in communication therewith at their inner ends and passing through said shell end walls and opening to the exterior at their outer ends, said outer ends adapted to receive a burner, and water transfer tubes extending across said central transfer box and through said transverse vertical walls and supported by the latter, and opening into the shell on each side of said combustion chambers.

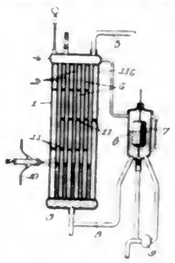
3,162,179
FLUID CIRCULATION SYSTEM FOR A ONCE-THROUGH TYPE STEAM GENERATOR
Charles Strohmeyer, Jr., Wyomissing, Pa., assignor to Gilbert Associates, Inc., Reading, Pa.
Filed Dec. 5, 1962, Ser. No. 242,395
6 Claims. (Cl. 122—406)

1. A fluid circulation system for a once-through type steam generator having elements comprising a feedwater inlet, a preheating section, a generating section, a superheating section, a steam outlet from the superheating section for furnishing steam to a steam consumer, fluid conduit means serially connecting all of said elements, at least a portion of said steam generating section comprising multiple parallel conduits arranged in multiple conduit groups, conduit and fluid flow control means to selectively flow fluid from said preheating section through the conduit groups in series or parallel arrangement, or in combinations therebetween, before said fluid enters at least a portion of said downstream superheating section, said conduit and fluid flow control means being arranged to flow fluid in the conduit groups more serially as steam gener-



ator load is decreased, and more parallelly as steam generator load is increased, throughout at least a portion of the load range of the steam generator.

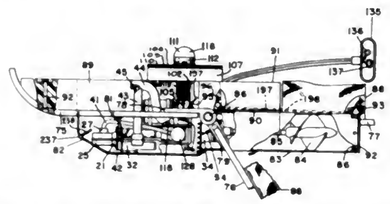
3,162,180
STEAM GENERATING DEVICE
Kazuo Arisawa, Nakano-ku, Tokyo, Japan, assignor to Fuji Boiler Co., Ltd., Tokyo, Japan
Filed June 6, 1962, Ser. No. 200,479
3 Claims. (Cl. 122—451)



1. A vapor generator comprising an upper substantially horizontal header, a lower substantially horizontal header spaced vertically downwardly therefrom, a plurality of vapor generating tubes connected to said upper and lower headers, means for directing heat against the vapor generating tubes for generating vapor therein at a location between said upper and lower headers, a liquid tank located between said upper and lower headers and connected above the liquid line therein to said upper header and below the liquid line therein to said lower header, means for maintaining the liquid level which corresponds to a level to maintain the level in said generating tubes in alignment with said heat directing means in said tank at a predetermined level, said tank continuously supplying liquid to the vapor generating tubes by gravity feed to said lower header.

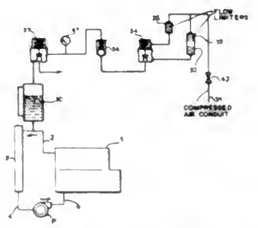
3,162,181
PROPULSION MEANS FOR WATERCRAFT
John J. Horan, 420 Quigley Ave., Willow Grove, Pa.
Original application Dec. 31, 1962, Ser. No. 248,426. Divided and this application Dec. 19, 1963, Ser. No. 337,120
10 Claims. (Cl. 123—41.01)

1. An internal-combustion engine comprising:
at least one cylinder and a cylinder head at one end of said cylinder,
said cylinder and head being adapted to be cooled from without by immersion thereof in water;
a piston reciprocating in said cylinder;
a wristpin in said piston having a centerline perpendicular to said cylinder;
a crankcase extending from the end of said cylinder opposite said head, said crankcase having a transverse axis therethrough parallel to the centerline of said wristpin, two side walls intersecting said axis at opposite ends of said crankcase, and an end wall opposite said cylinder;
a crankpin adapted to rotate remotely about said axis and remain parallel thereto;
a connecting rod pivotably secured between said wristpin and said crankpin,
said crankpin constituting a rigid link between two



crank members flanking said crankpin and adapted to rotate within said crankcase,
at least one of said members having an axial opening containing a bearing surface therewithin,
said crankcase having a cylindrical projection extending axially inward from one of said sidewalls thereof,
said projection having thereon an external bearing surface centered on said axis, said projection extending to within said axial opening of said crank member, said crank member being centrally supported by said projection and adapted to rotate thereabout,
said side wall thereby constituting a barrier against leakage via said bearing surfaces.

3,162,182
COOLING SYSTEMS FOR INTERNAL COMBUSTION ENGINES
Jean Louis Gratzmuller, 66 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed Dec. 19, 1960, Ser. No. 76,929
Claims priority, application France, Dec. 17, 1959, 813,301, Patent 1,252,170; Mar. 9, 1960, 820,782; Dec. 7, 1960, 846,155
7 Claims. (Cl. 123—41.08)



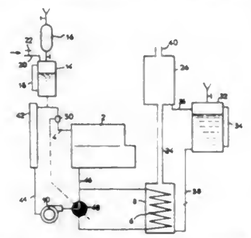
1. A method of operating a closed cooling liquid circuit for an internal combustion engine, which circuit includes a circulation pump, said method comprising the steps of:
(*a*) independently of said pump, creating a substantially constant fluid pressure, said pressure being sufficiently high to prevent the formation of steam within said cooling circuit under conditions where the temperature of the liquid in the cooling circuit ranges between values above, and values below, the boiling point of the liquid at atmospheric pressure;
(*b*) applying said fluid pressure to the liquid in said cooling circuit; and,

(c) continuously maintaining said substantially constant fluid pressure on said liquid in the cooling circuit independently of the operating temperature thereof and independent of the speed of the engine from and including zero upward to a maximum value.

3,162,183
DEVICE FOR COOLING INTERNAL COMBUSTION MOTORS

Jean Louis Gratzmuller, 66 Boulevard Maurice Barres, Neuilly-sur-Seine, France

Filed July 24, 1963, Ser. No. 297,362
Claims priority, application France, Aug. 1, 1962, 905,739; Aug. 27, 1962, 907,879
15 Claims. (Cl. 123—41.08)



1. A method of liquid cooling an internal combustion engine through the use of a primary closed fluid circuit and a secondary fluid circuit having at least a portion thereof open to the atmosphere, said method comprising the steps of:

(a) circulating a cooling liquid in said primary closed circuit,

(b) at a first location, dissipating heat from said engine by heat transfer to the liquid in said primary closed circuit,

(c) maintaining said liquid in said primary circuit under sufficient substantially constant pressure to prevent its vaporization at temperatures thereof experienced during heat transfer thereto with normal operation of said engine;

(d) passing the fluid in said primary closed circuit which has engine heat transferred thereto to a second location spaced from said first location;

(e) feeding said secondary circuit with liquid, and

(f) at said second location, dissipating heat from said fluid in said primary circuit by liquid-liquid heat exchange causing liquid in said secondary circuit to boil.

3,162,184
SPARK TIMING CONTROL

Brooks Walker, 1280 Columbus Ave., San Francisco, Calif.

Filed July 20, 1962, Ser. No. 211,449
3 Claims. (Cl. 123—117)

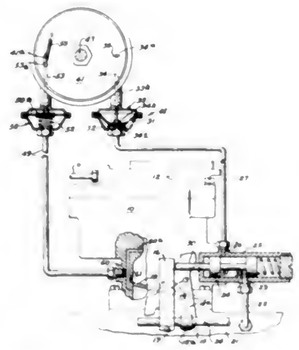
1. An engine including in combination:

a carburetor having a main air passage therethrough, a throttle valve in said air passage, a first port to said air passage on the intake side of said valve when said valve is in its engine-idle position, and a second port to said air passage on the engine side of said valve when said valve is in its engine-idle position,

an ignition distributor having a housing and a breaker plate rotatable relative to said housing,

an engine-suction-operated spark-advance mechanism connected to said first port and to said breaker plate for rotation of said breaker plate in the spark-advance direction under the action of suction from said first port, first spring means for opposing the rotation of said breaker plate in the spark-advance direction and for providing different vacuum operated advances of said breaker plate for each substantial incremental change in suction from said first port,

an engine-suction-operated spark-retard mechanism connected to said second port and to said breaker plate for rotation of said plate in the spark-retard direction,



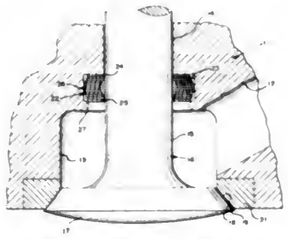
second spring means much less resistive than said first spring means for opposing the rotation of said breaker plate in the spark-retard direction, and

control means actuated upon movement of said throttle valve to its engine-idle position for admitting high engine suction to said spark-retard mechanism.

3,162,185
VALVE STEM OIL SEAL

John E. Knoblock, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 8, 1962, Ser. No. 201,066
1 Claim. (Cl. 123—188)

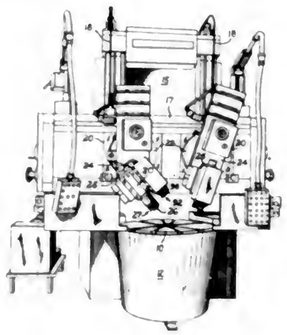


A poppet valve assembly including a supporting body having a gas flow port opening through a lower side thereof, said supporting body defining a valve guide positioned at least in part above said gas flow port, a valve having a reduced diameter stem portion reciprocally received in said valve guide, said valve further having an enlarged diameter head portion positioned below said stem portion and adapted to alternately open and close the opening of said gas flow port, said body having an enlarged diameter opening adjacent the lower end of said valve guide adjacent said gas flow port, and an oil seal for permitting oil to accumulate between said valve guide and the adjacent portion of said valve stem without entering into said gas flow port, said oil seal comprising coiled spring means having abutting adjacent convolutions interposed between said enlarged diameter opening and the adjacent valve stem portion, said coiled spring means having at least one convolution engaging said valve stem portion around its circumference and at least one convolution engaging said enlarged diameter opening, said coiled spring means further being operative to urge said valve stem portion in a radially centralized location in said valve guide.

3,162,186
FORM DRESSER FOR GRINDERS

Richard C. Montanus, Springfield, Ohio, assignor to The Springfield Machine Tool Company, Springfield, Ohio, a corporation of Ohio

Filed June 5, 1961, Ser. No. 114,744
5 Claims. (Cl. 125—11)



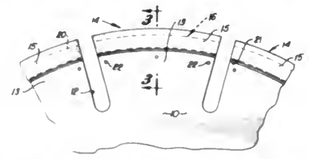
1. A portable form dresser adapted to be mounted in any of a plurality of positions parallel to the arbor of a grinding wheel for dressing the surface of said wheel to a desired peripheral configuration, said dresser comprising a base adapted for mounting in precise parallel relation to the rotational axis of the wheel, a traverse slide mounted for movement on said base along the axis of said wheel, a traverse motor connected to reciprocate said traverse slide through a predetermined movement, a cross-slide on said traverse slide mounted for movement thereon normal to the movement of said traverse slide, a follower stylus carried on said cross-slide and centered with respect thereto, a template mounted in a fixed position on said base adjacent said traverse slide and extending along the direction of movement thereof, means urging said stylus into contact with said template to follow the configuration thereof during traversing motion of said traverse slide and thus to cause movement of said cross-slide, a single dressing tool mounted on said cross-slide to contact the grinding wheel and operable to transcribe a continuous path across the surface of the wheel according to the configuration of said template for dressing the peripheral surface of the wheel to the configuration determined by said template, and compensating means acting on said dressing tool to alter the position thereof on said cross-slide in a direction parallel to the movement of said cross-slide providing compensation for the reduction in diameter of the grinding wheel.

3,162,187
DIAMOND SAW BLADES

Frank L. Christensen, Salt Lake City, Utah, assignor to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah

Filed Dec. 11, 1961, Ser. No. 158,248
21 Claims. (Cl. 125—15)

1. In an abrasive cutting device: a supporting disc having a peripheral groove; cutting segments disposed around said disc, each segment comprising a central reinforcing section having an inner tongue portion secured within said groove and brazed to the sides and bottom thereof and an outer predominantly imperforate anchor portion extending outwardly of the periphery of said disc, and one or more abrasive sections furnace bonded to



the opposite sides of said anchor portion and extending axially beyond the sides of said disc.

3,162,188
FIREPLACE FRONT OR FIXTURE

Theodore C. Tompers, 185 N. Fairfield Ave., Susanville, Calif.

Filed June 6, 1962, Ser. No. 200,386
4 Claims. (Cl. 126—140)



1. A fireplace front comprising a frame defining an opening and including top, bottom and side rails, doors for the opening hingedly mounted on said side rails, a soot shield for the frame and the doors mounted on the back of said frame, said shield including top, bottom and side baffles mounted on the corresponding rails, at least one fire draft damper mounted on the bottom rail, and a damper mounted on the top rail to be opened when the first-named damper is closed for checking combustion in the fireplace, said bottom rail having air inlet openings therein between the bottom baffle and the frame opening, said bottom baffle including a rearwardly and upwardly extending portion for deflecting air from the inlet openings upwardly behind the doors and further including an inverted U-shaped intermediate portion, and an upstanding support for the bottom baffle engaged in said inverted U-shaped intermediate portion thereof.

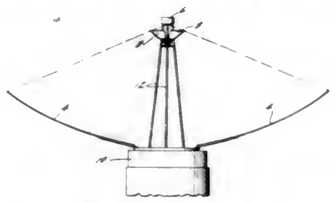
3,162,189
RAY INTENSITY CONTROL FOR SOLAR MIRROR

Leslie C. Small, Glastonbury, and Trent H. Holmes, Rocky Hill, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 22, 1960, Ser. No. 44,686
7 Claims. (Cl. 126—270)

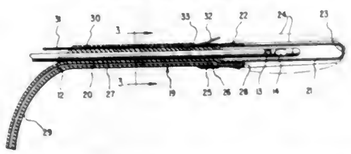
1. In combination, a reflector forming substantially a surface of revolution and having an axis and a focal point on the axis, an energy device located substantially at the focal point of said reflector, a plurality of rotatably mounted blades interposed between said reflector and

said energy device and entirely within the extremities of said reflector to vary the amount of energy transmission from said reflector to said energy device, each of said blades having a reflecting surface on one side thereof, said blades in a first position allowing a maximum transmission of energy from said reflector to said energy device and in a second position allowing a minimum transmission of energy from said reflector to said energy device, means for rotating said blades to any position be-



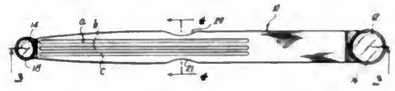
tween said first and second positions, said blades in said second position having the reflecting surfaces thereof facing said reflector and inclined at an angle to said axis to form an obtuse angle between said blades and said axis on the side of said blades facing said reflector such that signals impinging on said reflecting surfaces from said reflector are directed away from said energy device and away from said reflector, and means for preventing rotation of said blades beyond said second position.

3,162,190
DIAGNOSTIC AND EXPLORATORY INSTRUMENT
Giovanni Del Gizzo, 27 E. 13th St., New York, N.Y.
Filed Oct. 31, 1962, Ser. No. 234,414
1 Claim. (Cl. 128—6)



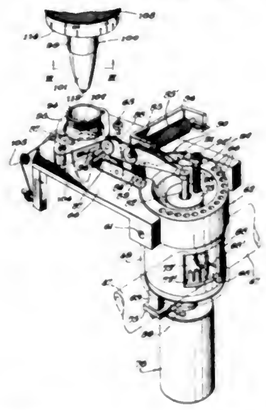
A combination diagnostic, exploratory and bioptic instrument comprising a unitary all-elastomer body portion having a main longitudinal through bore adapted to receive snugly and removably the stem of an illuminated optical examining probe and with the examining window of said probe projecting forwardly of said body portion, a substantially rigid transparent tubular housing secured to the forward end of said body portion and having a closed forward end and extending for a substantial distance forwardly of the body portion and adapted to surround and enclose the probe stem adjacent the window thereof in spaced substantially concentric relation thereto, a thin walled substantially transparent elastic inflatable bladder attached to the forward end of the body portion and surrounding and enclosing said transparent tubular housing and adapted to be inflated for forcing surrounding body tissue outwardly from the transparent housing, said body portion having a secondary longitudinal bore separate from and generally parallel to said main bore with the forward end of the secondary bore communicating directly with the interior of the bladder at the forward end of the body portion, a flexible lateral extension on the rear end of the body portion having a bore communicating with said secondary bore and through which air may be forced to temporarily inflate said bladder, and said body portion having a third longitudinal bore extending therethrough in spaced substantially parallel relation to the main and secondary bores and adapted to receive removably an elongated bioptic instrument, the forward end of the third bore terminating near and rearwardly of said housing and bladder and opening through the side wall of said body portion to facilitate removal of a tissue sample exteriorly of and adjacent the inflated bladder.

3,162,191
ORAL EXAMINER
Walter T. Canan, 2518 E. Huntington Drive, Duarte, Calif.
Filed Nov. 13, 1962, Ser. No. 236,909
9 Claims. (Cl. 128—15)



2. An oral examiner comprising a body portion, a mirror therein, said body portion being elongate, being formed of thin flexible material, and having multidirectional flexibility, said body being provided with at least one end area set at an angle to the longitudinal direction of said elongate body portion, said mirror being mounted within said end area, said body portion being provided with a plurality of longitudinal slots.

3,162,192
ANAESTHETIC AND ANALGESIC INHALERS
Frank H. Gardner, Oxford, England, and David T. Codd, 46 Wootton Road, Abingdon, Berkshire, England; said Gardner assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 9, 1962, Ser. No. 229,435
17 Claims. (Cl. 128—188)



16. An anaesthetic vaporiser for delivering to a patient preselected concentrations of a vaporised liquid anaesthetic agent in admixture with a respirable diluent gas comprising a casing,
- a chamber defined in said casing for holding a supply of a liquid anaesthetic agent,
- means for delivering a respirable diluent gas through said chamber and obtaining therefrom a gas mixture comprising the vapour of said anaesthetic agent and said diluent gas,
- means for supplying a flow of a diluent gas and admixing said flow of diluent gas with said mixture from said chamber to form an inhalant mixture for delivery to a patient,
- valve means located in said casing and operable to control the flow of said mixture from said chamber to produce a range of desired predetermined vapour concentrations in said inhalant mixture,
- temperature responsive means responsive to the temperature of the mixture in said chamber to adjust said valve means in response to changes in such temperature,
- adjustable control means calibrated separately for each of a plurality of preselected vapor concentrations determining the positions of said valve means,
- and actuating means operatively connected with said control means and said temperature responsive means for automatically positioning said valve means in response to such temperature changes to maintain such preselected vapour concentration constant.

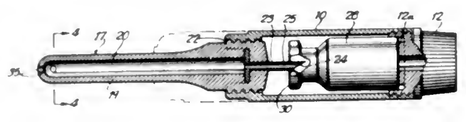
3,162,193
COMBINATION SHOWER AND DOUCHE
Florence B. Zacks, 78 E. Chestnut St., Columbus, Ohio
Filed Aug. 16, 1961, Ser. No. 131,764
7 Claims. (Cl. 128—227)



1. A shower douche device comprising, in combination, a supporting structure, a shower bath spray rose having a neck extending from said supporting structure and serving to suspend said rose to extend and to face in a generally downward direction, and means for supplying said rose with water under normal water supply pressure, and a douche bag of somewhat flexible material and provided with a discharge tube extending from the bottom thereof and a douche nozzle carried by the remote end of said discharge tube, said bag having a wide upwardly-opening mouth constituting the greater portion of the upper end of the bag and being of an area considerably greater than that of the shower rose, and means for suspending said bag with its mouth positioned generally beneath said rose and spaced somewhat therefrom, said suspending means having a lower end secured to the upper end of the bag and provided with means at its upper end for attaching said suspending means to the neck of the shower bath rose, the vertical length of said suspending means being somewhat greater than the vertical height of the rose from its lower end to its neck and thus sufficient to position the wide upwardly-opening mouth of the bag at a level below that of the rose, whereby the entire flow from the rose is not confined by the bag and the pressure head of the water in the bag is not increased above that of the gravity of the contents.

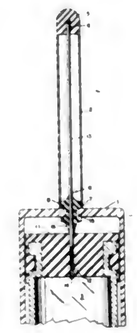
3,162,194
SPRAY DEVICE
Vincent Indelicato, 16 Spring St., New York, N.Y.
Filed Apr. 13, 1961, Ser. No. 102,758
9 Claims. (Cl. 128—261)

1. A medicinal spray device comprising a substantially cylindrical housing having a tubular bore, a nozzle which is long relative to its cross section and which has one end thereof slidably received in said bore, said nozzle being slidable longitudinally of said bore from a first position in which a substantial lengthwise portion thereof is within said bore to a second position in which a major portion of said nozzle and the opposite end thereof extend from said housing and said nozzle having a longitudinally extending tubular passageway therein and having openings at said opposite end thereof extending from said passageway to the exterior of said nozzle, cooperating stop means



at one end of said housing and at said one end of said nozzle for maintaining said nozzle in said second position, puncturing means mounted on said nozzle at said one end thereof and having a passageway therein communicating with said passageway in said nozzle, pressing means at the opposite end of said housing movable in a direction longitudinally of said bore, and means interconnecting said housing and said pressing means for moving said pressing means in said direction.

3,162,195
VACUATED BODY FLUID COLLECTION VIAL
Peter Dick, 225 W. 232nd St., Bronx, N.Y.
Filed Jan. 2, 1962, Ser. No. 164,227
3 Claims. (Cl. 128—276)

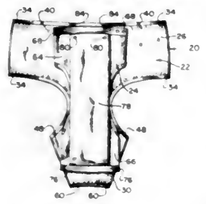


3. A disposable throw-away device for collection of body fluids comprising a container having one end open and adapted to withstand evacuation, a resilient closure sealably seated within said open end of said container, said closure having a longitudinal uniform cylindrical opening therethrough, said container being evacuated, a tubular needle having an axial bore slidably mounted within said opening of said closure and forming an airtight seal therewith, said needle having one end closed and having between its ends a transverse opening communicating with said bore and disposed within said closure and sealed thereby, said needle transverse opening being sealed directly by the wall of said closure opening, said closed end of said needle projecting beyond said closure and into said container, and means compressing said closure, and simultaneously urging said needle further into said evacuated portion of said container so that said transverse opening therein communicates with the interior of said container.

3,162,196
GARMENT FOR INCONTINENT INDIVIDUALS

Gilbert Salk, Waban, Mass., assignor to Murray Salk & Co., Inc., Brighton, Mass., a corporation of Massachusetts

Filed May 23, 1962, Ser. No. 197,032
9 Claims. (Cl. 128—287)

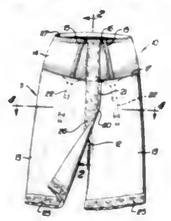


1. A garment for persons exhibiting incontinence of natural evacuations, said garment comprising: a first sheet-like element of moisture-absorbent material and having a substantially hour-glass shape adapted to be folded into pants form wherein the curved edges of said shape are intended to enclose a crotch covering portion; means for fastening said first element immediately adjacent and about the body of the wearer so as to form first and second elongated seams respectively adjacent each hip of the wearer; a second sheet-like element of moisture-impervious material having a substantially T-shaped form including top and stem portions and adapted to be folded into pants form; means for coupling said first element to and adjacent said second element as a layer thereon and inside said second element when worn by the wearer; means for so fastening the ends of the top portion of said T-shaped form about the wearer's waist about said first elements as to shield said first and second seams and form a third elongated seam extending substantially along the midline of the wearer; and means for fastening an intermediate part of the stem portion of said T-shaped form to the edges of said top portion adjacent the crotch, and for fastening the end of said stem portion adjacent the edge of said top portion at the waist so as to shield said third seam.

3,162,197
MULTIPLE PURPOSE UNDERGARMENT

Olga Erteszek, Van Nuys, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California

Filed Jan. 25, 1963, Ser. No. 253,800
6 Claims. (Cl. 128—519)

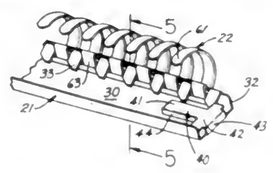


1. A half-slip length undergarment comprising an upper torso encircling portion made at least in part of elastic fabric to have girdle characteristics, a lower portion made of inelastic fabric sewn at its top about the garment to the lower edge portion of said elastic fabric, said lower portion comprising side sections sewn together, and a closed crotch formed by said sewing together of the side sections at a seam extending upwardly to a terminal at the bottom front center of said torso encircling portion, said side sections forming separate leg extents below the crotch and adapted to be worn loosely about the legs of the wearer, the fabric of one of said leg extents having a fold extending from a bottom front central edge of said torso encircling portion to the bottom of the garment and the fold extending laterally beyond the vertical center line of the garment to overlap said crotch seam terminal and to overlap also the other of said leg extents.

3,162,198
BINDER UNIT

Ralph E. Dennis, Columbus, Ohio, assignor to Bindematic Corporation, Columbus, Ohio, a corporation of Ohio

Filed Aug. 17, 1961, Ser. No. 132,152
9 Claims. (Cl. 129—24)



1. A binder unit formed of two main sections oscillatably and slidably connected together for movement between opened and closed positions comprising a backbone section and a loose-leaf engaging ring section having a root portion and a free tip end, said ring section including a longitudinally extending pivot rib at the root portion thereof and a longitudinally extending web spaced outwardly from the rib in substantially parallel relationship thereto, locking lug portions extending transversely from said rib connected to said web and being disposed in a plane spaced inwardly of the plane of the web, said locking lug portions being spaced longitudinally of said rib and said web so as to provide longitudinally spaced openings therebetween, said backbone section being of substantially channel form with a back having two inwardly extending flanges, one of which is at each edge thereof, said pivot rib being disposed adjacent the first of said flanges and the ring section being oscillatable about the axis of the rib to bring the free tip end of the ring section into and out of cooperation with the second of said flanges of the backbone section, said second flange serving as a retaining flange with the tip end of the ring section laterally inwardly thereof when it is moved into cooperation therewith, said first flange being provided with locking lugs which extend inwardly and overlie said rib, said locking lugs being spaced longitudinally of said first flange and being spaced substantially the same as the openings between said locking portions of the ring section and being of less width than the openings so that they can extend therethrough in order to permit oscillation of the ring section about the axis of the rib, sliding movement of the ring section relative to the backbone section moving said locking lug portions beneath said locking lugs to prevent said oscillation and to retain said ring section tip end in cooperation with said second flange of said backbone section.

3,162,199
SMOKING ARTICLES HAVING ENCAPSULATED TOBACCO ADDITIVES AND THEIR MANUFACTURE

Charles J. Moll, Jr., Louisville, Ky., assignor to Brown & Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware

Filed Apr. 21, 1961, Ser. No. 104,693
5 Claims. (Cl. 131—9)

1. As an article of manufacture, an improved smoking tobacco rod comprising a filler of tobacco, a wrapper embracing the longitudinally extending periphery of said filler, said rod being cut to predetermined length, a hollow tubular ribbon extending longitudinally within the filler for substantially its entire length, said ribbon being cut to predetermined length with its cut ends being adjacent the cut ends of said rod, a tobacco additive contained within the hollow of said ribbon and adapted to be released upon pyrolysis of the tobacco and drawn through the rod by the smoker, said ribbon, when subjected to the heat of



burning, permitting the release of said additive, and said ribbon being pinched at predetermined intervals to provide separate compartments of said additive to prevent escape of said additive and to permit its uniform release upon pyrolysis of the tobacco throughout the length of the burning rod.

3,162,200
TOBACCO FOIL AND A PROCESS FOR ITS PRODUCTION

Ragnar Jansson, Solna, and Lars Edvin Lilja, Farsta, Sweden, assignors to Arenco Aktiebolag, Siktgatan, Vallingby, Sweden, a joint-stock company limited of Sweden

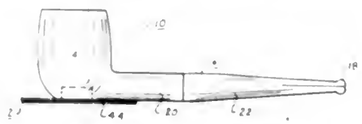
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,451
Claims priority, application Sweden, Dec. 11, 1961, 12,385/61
7 Claims. (Cl. 131—17)

5. A tobacco foil made from tobacco flour, sodium carboxymethyl cellulose in an amount 12–18% by weight of the tobacco flour, a combustion catalyst, a plasticizer and citric acid in such as amount that a 6.5% aqueous solution prepared from newly produced water-soluble foil has a pH within the range 3.5 to 6.

3,162,201
TOBACCO PIPE AND A HOLDER THEREFOR

Maurice J. Menzie, 110 E. Main St., Warsaw, Ind.

Filed Oct. 25, 1962, Ser. No. 232,946
6 Claims. (Cl. 131—186)

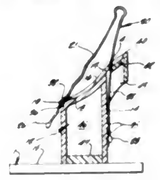


1. A tobacco pipe with a holder, comprising a bowl with a flattened surface on the bottom thereof and with a curved portion on each side of the base of said bowl being connected to said flattened portion, a stem connected to said bowl and extending laterally therefrom on a substantially horizontal common plane, a metallic disc-shaped permanent magnet embedded in the base of said bowl with its lower surface on a common plane with said flattened surface, a disc-shaped metal plate for holding said magnet, and an adhesive means on the underside of said plate.

3,162,202
APPARATUS FOR OPENING A BOBBY PIN

Leida M. Apri and Eduard V. Apri, Altadena, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Mar. 12, 1962, Ser. No. 178,967
1 Claim. (Cl. 132—1)



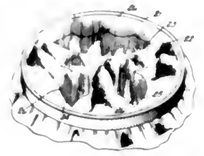
An opener and holder for a bobby pin having first and second similar parallel legs joined at one end by a resilient connector to maintain the legs resiliently together and having free ends movable apart relative to each other, said opener and holder comprising a block of material having a first vertically extending substantially plane surface and a second surface extending downwardly obliquely from the first surface; said surfaces intersecting along a horizontal line at an acute angle to each other; said second surface being continuous, concave and extending to an outer edge spaced from and substantially parallel to said horizontal intersecting line; a third surface spaced from and connected to the first and second surfaces, said third surface being connected to the first and second surfaces by connector bars extending between and joined to the surfaces, said third surface being plane and forming an extension of said second surface but spaced from the second surface a sufficient distance to provide a slot between the second and third surfaces along said horizontal intersecting line of the first and second surfaces, said slot being sufficiently wide between the second and third surfaces to admit only one leg of the bobby pin, said bobby pin being opened and held by the user grasping the connector of the pin, engaging and sliding the free end of the first pin leg along the third surface until the last mentioned pin leg enters said slot and engages the first surface and the second pin leg engages the second surface, and then pushing downwardly on the pin connector to resiliently spread the legs apart by the first pin leg sliding downwardly along the first surface and the second leg sliding downwardly along the second surface.

3,162,203
METHOD OF IMBEDDING HAIRS FOR WIGS

Leonard L. Cramer, 7510 Granby St., Norfolk, Va.

Filed Dec. 17, 1962, Ser. No. 245,035
2 Claims. (Cl. 132—5)

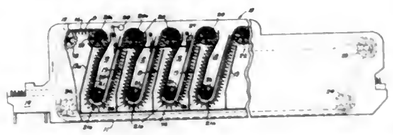




1. In a method of fabricating a hair-piece, the steps of uniformly placing a plurality of hairs in a holder hav-

ing numerous closely set comb-like teeth to maintain proper positioning of said hairs, and locking the holder to secure the hairs from changing position, and then cutting the hairs short to the applicator and flush to each other, then preparing a netting held tight in an embroidery type hoop by outlining the areas of netting to be implanted to a specific size and shape, applying an adhesive to said areas, then using the holder prepared with flush cut hair ends, whereby said hair ends are gently inserted to penetrate the netting, then releasing the holder from the inserted hairs, leaving them adhesively secured to said netting, repeating the above imbedding steps until the outline areas are filled with imbedded hairs, then after a suitable drying period, cutting the dried hair-coated areas of netting out of the hoop, leaving a suitable sewing edge, sewing the mating surfaces to each other with an inside seam, thus transforming the flat surfaces to a cup-shaped or headformed hair-piece.

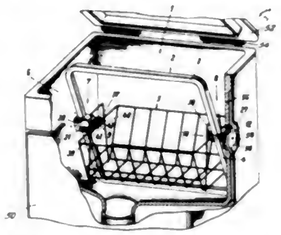
3,162,204
APPARATUS FOR REMOVING LABELS FROM BOTTLE WASHERS
Momir Babunovic, Kirkwood, and John C. Goessmann, St. Louis County, Mo., assignors to Barry-Wehmiller Machinery Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 29, 1963, Ser. No. 276,372
8 Claims. (Cl. 134—74)



8. Apparatus for washing containers bearing detachable labels and preventing label accumulation during the washing, comprising means forming at least one compartment for containing a quantity of washing fluid above the bottom, carrier means for moving containers successively into and out of said compartment whereby the labels become detached from the containers and move toward the container bottom, and means for intercepting and removing labels to prevent accumulations in said compartment on the bottom, said last means including a label collector spaced above the compartment bottom and between the path of containers moving into and out of said compartment.

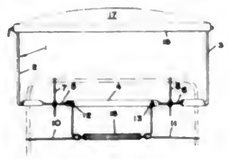
3,162,205
DEVICE FOR WASHING ARTICLES, SUCH AS DISHES, EMPLOYING A ROTARY LIQUID SPRAY FRAME
Ludwig Bölkow, Periacherstrasse 24a, Grunwald, near Munich, Germany, Werner Oelschig, Taufkirchen, near Munich, Germany, and Lothar Körner, Munich, Germany; said Oelschig and said Körner assignors to Ludwig Bölkow, Grunwald, near Munich, Germany
Filed Sept. 25, 1962, Ser. No. 226,123
Claims priority, application Germany Sept. 27, 1961
6 Claims. (Cl. 134—180)

1. A dishwasher comprising a rotatable nozzle frame, said frame being made up of two substantially U-shaped separable frame elements, said frame elements each having inner faces with a plurality of nozzle discharge openings directed inwardly, first and second bearings for rotatably supporting said frame at laterally spaced locations arranged in opposition on each side of said frame, means detachably connecting said frame elements together at the location of each of said bearings, said connecting means rotatably supporting said frame on said first and second bearing elements, and permitting circulation of liquid completely around the interior of said frame and the separation of said frame elements at the locations of respective ones of said first and second bearings, said first and second bearings each including a projection extending interiorly of said frame for supporting a basket for dishes and the like for washing by liquid directed through the nozzles of said frame, said first bearing comprising a stationary hollow sleeve element, a bearing pin rotatable in said



sleeve element, a driving member secured to said rotatable pin for receiving power for rotating said frame, and means for supplying washing liquid through said second bearing and into said frame for discharge out of said frame through said nozzle discharge openings, each of said first and second bearings defining with the associated frame a liquid flow passage for the circulation of liquid around said frame.

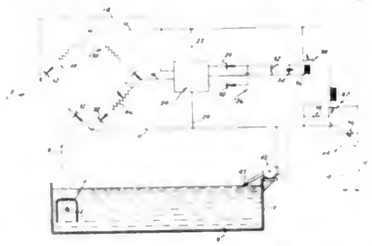
3,162,206
SUNSHADE
Murrie C. Betts, P.O. Box 10816, St. Petersburg, Fla.
Filed Mar. 7, 1963, Ser. No. 263,474
4 Claims. (Cl. 135—7.1)



2. A shade for attachment to a chair comprising, in combination, a frame, means for connecting a sunshade to said frame, a pair of hanger members mounted on said frame and adapted to engage the top edge of the back of a chair, a pair of hook members pivotally mounted on said frame, spring means operatively associated with said hook members and urging said hook members into a retracted position, said hook members adapted to engage the sides of the back of a chair in an extended position of the hook members whereby said spring means retains said hook members in engagement with the chair and said frame is supported so as to extend generally upwardly from the back of a chair.

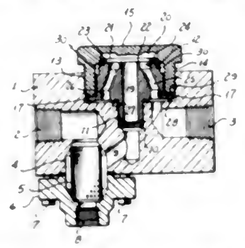
3,162,207
METHOD OF CONTROLLING CHROMATE CONVERSION COATING BATHS
William C. Jones, Thompsonville, Conn., assignor to The Chemical Corporation, Springfield, Mass., a corporation of Massachusetts
Filed Apr. 3, 1962, Ser. No. 184,779
1 Claim. (Cl. 137—5)

In the method of chromate conversion coating the steps which comprise forming a chromate conversion coating bath containing hexavalent chromium, the trivalent chromium and the metal dissolved from that being coated, electrically sensing the effective hexavalent chromium present in said bath, obtaining an electrical signal which is a function of the conductivity of effective hexavalent chromium content of said bath, comparing said signal with a similar signal of predetermined value, and introducing into said bath in a response to deviation of said



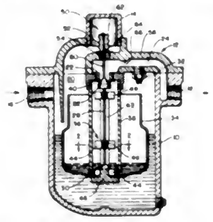
signal from said predetermined value a chromate concentrate whereby said bath is continuously and automatically maintained at optimum coating effectiveness.

3,162,208
THERMODYNAMIC TRAP
Paul C. Curatola, Bethlehem, Pa., assignor to Sarco Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 30, 1961, Ser. No. 156,052
15 Claims. (Cl. 137—183)



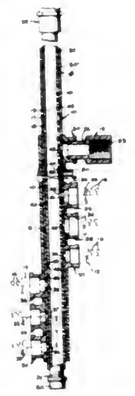
1. A thermodynamic trap comprising:
(*a*) a metal trap housing having fluid inlet and outlet ducts,
(*b*) a metal valve seat insert removably positioned within the housing and provided with inlet and outlet flow passages communicating with the respective fluid inlet and outlet ducts of the housing, said seat insert being provided with an integral peripheral flange,
(*c*) a removable metal cap secured to the housing for securing said seat insert in the housing and forming with the housing a joint,
(*d*) a metal sealing ridge element interposed between the inlet and outlet passages of the seat insert and having metal-to-metal sealing relation between the housing and the seat insert to form therewith a hermetic seal between said passages,
(*e*) another metal sealing ridge element interposed between said flange and housing peripherally of both of said inlet and outlet passages collectively and between said passages and the joint between the cap and the housing and having metal-to-metal sealing relation with both the flange and the housing to form therewith a hermetic seal between said passages and the joint between the cap and the housing, and
(*f*) still another metal sealing ridge element interposed between said cap and flange and having metal-to-metal sealing relation with both of them to form an additional hermetic seal against the escape of pressure through the joint between the cap and the housing,
all of said metal sealing ridge elements having substantially flat sealing edges sufficiently narrow to conform under pressure to irregularities in the metal surfaces of the trap with which they engage.

3,162,209
STEAM TRAP
William C. Gaines, Jr., Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,122
10 Claims. (Cl. 137—190)



1. In a steam trap:
(*a*) a casing having an inlet and an outlet including means dividing the casing interior into an inlet chamber and an outlet passage on opposite sides of a valve seat;
(*b*) a single valve adapted to seat against the inlet chamber side of said seat;
(*c*) float means operatively connected to said valve to actuate said valve in accordance with the quantity of condensate in said casing;
(*d*) a bellows having its exterior and interior subject to the pressure in said inlet chamber and said outlet passage respectively, and including a movable wall carrying rod means operable to exert force against said valve in a valve unseating direction, when said valve is closed, proportional to the difference in pressure across said movable wall, said rod means being unattached to said valve to permit its independent positioning after said valve has been unseated.

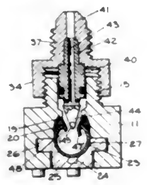
3,162,210
VALVE FOR SPRINKLER SYSTEMS OR THE LIKE
Edwin G. Bemis, 2601 Bruce Lane, La Habra, Calif.
Filed Aug. 24, 1961, Ser. No. 133,598
8 Claims. (Cl. 137—218)



3. A valve comprising an elongated essentially tubular valve body, a first fitting on said valve body communicating with the interior thereof at a predetermined

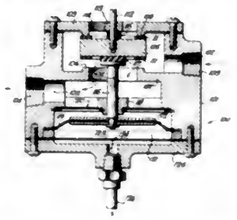
location, a plurality of second fittings on said valve body communicating with its interior at different locations, an elongated slide valve element taking the form of a tube extending axially within said body and movable axially relative thereto, said slide valve tube having apertures in its sidewall communicable with said first and second fittings to place the first fitting in communication with different second fittings selectively in different settings of said slide valve tube, said slide valve tube having an end portion projecting axially beyond said body and forming a handle accessible to an operator by which the tube is manually shiftable between said different settings, said apertures including aperture means in the tube wall registrable with said second fittings selectively in different settings of the tube, and including an elongated slot in the tube communicable with said first fitting in a plurality of said different settings, a locating part carried by said body and projecting into said slot to limit movement of the tube relative to said body, said slot forming laterally projecting notches at axially spaced locations for receiving said locating part to retain the tube in different settings thereof, and an anti-siphon check valve carried by and movable with said end portion of the slide valve tube and operable to pass fluid into the tube from the atmosphere but preventing fluid flow in a reverse direction, said anti-siphon check valve being communicable through the interior of said inner tube and said aperture with said first fitting and with said second fittings selectively to prevent back siphoning therefrom.

3,162,211
COMBINATION LINE PENETRATING VALVE DEVICE
Edward J. Barusch, 504 Ponce de Leon Blvd., Coral Gables, Fla.
Filed Dec. 27, 1960, Ser. No. 78,626
7 Claims. (Cl. 137—318)



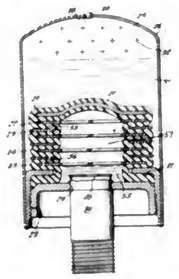
7. A combination line penetrating valve device comprising a main body member, a threaded neck portion extending upwardly at one end of said main body member, said main body member having a slotted portion at the other end for receiving a line to be penetrated, means for securing said main body member to said line, annular sealing means mounted in said slotted portion adapted to engage said line, said main body member having a fluid passageway communicating with said slotted portion at said annular sealing means, a needle supporting cap threadedly mounted on said neck portion of said main body member, said cap having a bore, a line penetrating body member secured to said cap at said bore and extending in said fluid passageway, said line penetrating body member having a passageway communicating with said bore at one end and with said main body fluid passageway adjacent the other end, a conical head member mounted on said line penetrating body member at said other end in proximity of said annular sealing means, said conical head member having an oval shaped cutting edge at its free end whereby upon the threading of said cap on said neck portion of said main body member, said cutting edge will cut and penetrate said line and said conical head member will seat on said formed opening in said line to seal said opening.

3,162,212
FLUID FLOW CONTROL DEVICE
William A. Leding, 507 N. 14th St., Fort Smith, Ark.
Filed Sept. 11, 1961, Ser. No. 137,240
8 Claims. (Cl. 137—625.6)



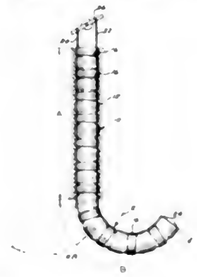
1. A fluid flow control device comprising a valve body providing a fluid passageway through said body, a partition dividing said passageway into first and second portions, said partition having an opening to provide fluid communication between said portions, a valve mounted in said valve body to control flow through said opening, said valve being movable between open and closed positions, means to bias said valve toward one of said positions, fluid pressure responsive wall means spaced from said opening and extending across said first portion, said valve being located in said second portion on the opposite side of said opening from said wall means, said wall means being connected to said valve to move said valve to the other of said positions when the fluid pressure on opposite sides of said wall means is unbalanced to overcome said bias, said wall means being exposed on one side to a control chamber and on the other side to said first portion of said passageway, said wall means having a restricted conduit connecting its opposite sides, means adapted to be connected to a source of fluid pressure connected to said first portion of said passageway to produce a first fluid pressure in said first portion, and control means shiftable between a first condition to connect said control chamber to a source of second fluid pressure different from said first pressure to unbalance said wall means to overcome said bias and a second condition to close said chamber so that said valve will be biased to said one position.

3,162,213
SURGE ATTENUATING DEVICES
Melville F. Peters, 29 N. Ridge Road, Livingston, N.J.
Filed June 13, 1962, Ser. No. 202,274
6 Claims. (Cl. 138—30)



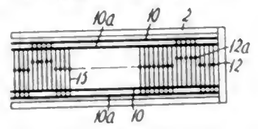
1. A fluid line surge suppressor comprising a hollow fluid tight housing having an opening therein, a compressed convoluted elastomer bellows closed at one end, secured to the housing across the housing opening at its other end and disposed within the housing to form a fluid retaining chamber between the elastomer bellows and the interior of the housing, support means comprising a series of flat ring shaped members disposed within the interior of the bellows convolutions, a continuous rigid dome shaped member carried by the closed portion of the elastomer bellows and of a size greater than the inside diameter of the said bellows, a quantity of fluid around the elastomer bellows within the fluid chamber, a quantity of gas under pressure between the fluid in the chamber and the fluid tight housing to maintain the elastomer bellows under compression at all times, and means to connect the interior of the elastomer bellows to the fluid in the line.

3,162,214
FLEXIBLE TUBULAR STRUCTURES
Wilfred P. Bazinet, Jr., Webster, Mass., assignor to American Optical Company, Southbridge, Mass., a corporation of Massachusetts
Filed Jan. 16, 1963, Ser. No. 251,974
4 Claims. (Cl. 138—120)



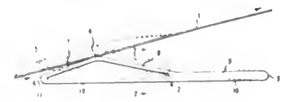
1. A flexible tubular structure of the character described comprising a tube formed of elastic material, a series of rigid rings fitted to said tube in adjacent end-to-end relation with each other along the length thereof, said rings in said series being alternately positioned internally and externally of said tube with the intermediate sections of said tube alone providing connections therebetween which are universally flexible, the rings disposed internally of said tube each having a number of pairs of diametrically opposed openings extending longitudinally through the side walls thereof, said openings in each internally disposed ring being aligned with corresponding openings in preceding and succeeding similar rings, a like number of pairs of cables extending respectively through said pairs of aligned openings in each of said alternate rings, and means adjacent one end of said structure for preventing withdrawal of said cables in a direction toward the opposite end of said structure so that universal flexing of said structure can be effected by differentially varying the tension of the cables of each pair thereof.

3,162,215
HEALDS FOR A JET LOOM
Hifumi Saito, Fukuoka-ken, Japan
(14–10 Nakasuji, Harue-cho, Fukui-ken, Japan)
Filed Dec. 14, 1962, Ser. No. 244,786
6 Claims. (Cl. 139—91)



1. A heald for a jet loom having a nozzle for carrying a weft yarn through the shed in a stream of fluid and having at least one additional nozzle on the beat up means for directing a stream of fluid in the direction of the stream of fluid produced by the weft yarn nozzle, said heald comprising a plurality of heald wires each having an eye therein, the eyes in at least one group of adjacent heald wires which are positioned intermediate the heald wires at the ends of the heald having at least part of the peripheries of the eyes offset in one direction from the eyes in the remainder of the heald wires in the direction of the length of the heald wires, all of the peripheries of the eyes in the group being off-set in the same direction, whereby the warp yarns extending through the eyes in said group of heald wires are lifted out of the plane of the shed to produce an opening in the shed through which the additional nozzle can direct the stream of fluid toward the stream of fluid produced by the weft yarn nozzle.

3,162,216
TINE FOR LOOM STOP MECHANISM
Ralph Walter Nugent, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 21, 1962, Ser. No. 174,742
2 Claims. (Cl. 139—374)



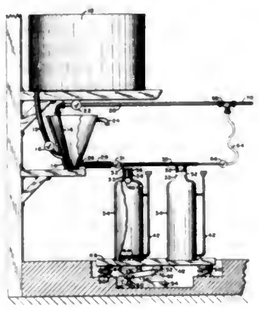
1. An improved tine for a loom stop mechanism, said tine comprising a thin elongated member of substantially uniform thickness, said tine member further comprising one end adapted to be operatively mounted in a loom stop mechanism and the other end positioned and adapted for movement through a warp formed of a plurality of parallel aligned yarns at a given position along a warp, said movement occurring in a plane substantially parallel to the individual warp yarns and substantially perpendicular to the plane of the warp at the given position, said tine member further comprising a leading edge constructed and arranged to move into engagement with and between lower warp yarns without displacing any engaged lower warp yarn more than a given maximum distance out of the plane of the lower warp, and a trailing edge, said leading edge comprising a first lower warp yarn engaging portion having a limited yarn contact area intermediate the ends of the tine member, and a second lower warp yarn engaging portion positioned between said first portion and said other end of said tine member, said second portion having a significantly increased yarn contact area along the tine member length relative to the yarn contact area of said first yarn engaging portion, said first and second portions having a predetermined ratio of contact areas and positioned along the tine member leading edge so that said first portion engages the lower yarns of the warp first as said tine member moves into engagement with the lower warp, and said second portion subsequently also engages the lower warp yarns during such movement to insure by its significantly increased contact area along the tine member length that any lower warp yarn directly engaged by the tine member in its movement into engagement with the lower warp will slip laterally off of said leading edge and return to its position in the plane of the lower warp before being displaced out of said plane more than said given maximum distance due to the great difference between the high displacing force exerted on the yarn by the increased contact area of said second portion of the tine leading edge and the low frictional force resisting lateral movement of the engaged yarn off of the leading edge of the thin tine member.

3,162,217
HYPODERMIC SYRINGE
Albert Anthony Poli, Jr., Pittsburgh, and Ronald John Faycik, Johnstown, Pa., assignors to Fisher Scientific Company, Pittsburgh, Pa.
Filed Sept. 25, 1962, Ser. No. 226,086
3 Claims. (Cl. 141—27)



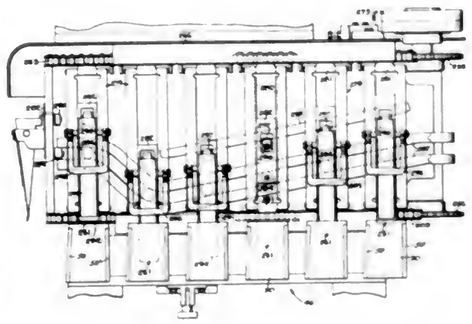
1. A hypodermic syringe comprising,
A. a hollow glass tube closed at one end,
B. a hypodermic needle mounted in the closed end of the tube,
C. a plunger movable within said tube toward and away from said needle,
D. a metal sleeve surrounding the glass tube,
E. a first barrel secured to the end of the sleeve away from the needle,
F. a second barrel concentrically mounted on the first barrel and movable axially with respect to the first barrel toward and away from the needle,
G. a plunger rod carrying said plunger at one of its ends and extending into said tube, through both said barrels, and beyond the end of the second barrel,
H. a compression spring surrounding the plunger rod and connected to the rod to resiliently press it and the plunger toward the needle end of the tube,
I. a handle on the end of the plunger rod which extends beyond the end of the second barrel whereby the plunger rod and plunger may be withdrawn in said tube away from the needle and against the force of said spring, and
J. means on the second barrel for releasably holding the plunger rod in a position withdrawn from the needle,
K. axial movement of the second barrel with respect to the first barrel determining the amount of movement of the plunger rod and plunger toward the needle under the force of said spring upon release of said plunger rod holding means.

3,162,218
TANK FILLING APPARATUS
Walter P. Casey, Jr., Las Vegas, Nev., assignor to Pier, Inc., Las Vegas, Nev., a corporation of Nevada
Filed Sept. 14, 1961, Ser. No. 138,187
5 Claims. (Cl. 141—72)



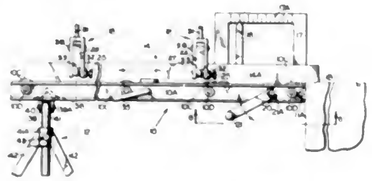
1. Apparatus for filling a portable tank having a mouth and an outlet provided with a retaining screen with an aqueous slurry of ion exchange resin particles comprising; supply means leading from a supply of said aqueous slurry of ion exchange resin particles, a rigid distributor pipe connected to said supply means by a section of flexible hose, a support member resiliently mounted underneath said distributor pipe, a tank connector communicating with said distributor pipe adapted to be temporarily firmly attached to the mouth of a portable tank standing on said support member, and means for jolting said support member which in turn jolts a portable tank standing thereon and the said distributor pipe attached thereto during flow of aqueous slurry of ion exchange resin particles from said supply means, through said section of flexible hose, said distributor pipe and said tank connector into said portable tank.

3,162,219
DISPENSING MECHANISM
Kenneth R. Johnson and Carl J. Beert, Rockford, Robert G. Nutting, Glenview, Kenneth K. Christensen, Lombard, and Richard C. Wagner, Clarendon Hills, Ill., assignors, by direct and mesne assignments, to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 102,010
4 Claims. (Cl. 141—135)



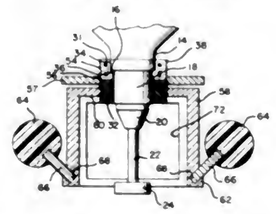
1. In a machine for filling bags having open upper ends, the combination of, a frame, a first carrier on said frame operable to support a succession of equally spaced bags and advance the same open end up along a predetermined path through a filling station with a continuous motion, a second carrier on said frame having a run extending over said path, mechanism for driving said second carrier continuously at the same speed as said first carrier, a plurality of spouts equally spaced along said second carrier and each disposed above one of said bags along said run, each of said spouts comprising a pair of shells pivotally connected together to swing toward and away from each other about an axis paralleling said run and spaced from the lower ends of the shells thereby to close and open the lower end of the spout, a spring urging the shells of each spout together and normally closing the spout, means mounting said spouts on said second carrier for up and down movement between elevated positions above the level of the bags and lowered positions in which the lower ends of said spouts are inserted in the bags, means on said frame for moving said spouts into said lowered positions and into the bags as the spouts approach said filling station, a follower fast on one shell of each spout and operable when moved in one direction to open the spout, and a cam fast on said frame and positioned to engage said followers and open successive spouts when the latter are in said filling station.

3,162,220
SAW MEASURING GUIDE
Owen E. Raab, P.O. Box 389, and Chester E. Kirk, 704 N. 17th St., both of Corvallis, Oreg.
Filed Aug. 26, 1963, Ser. No. 304,451
3 Claims. (Cl. 143—174)



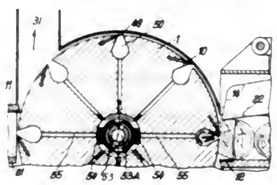
1. For use with a saw table and conveyor arranged in tandem relation, said conveyor including a horizontally disposed longitudinally extending frame element, a measuring guide comprising a bracket of L-shaped configuration, said bracket having one flange vertical and adapted to be secured to said frame element exteriorly of said conveyor, said bracket having the other flange thereof horizontal and above said one flange, an upwardly facing guideway on said other flange, a carriage mounted in said guideway for sliding longitudinal movement therealong, said carriage including an upright flange arranged in parallel relation with respect to said guideway, a vertically disposed support member slideably mounted on said upright flange for longitudinal back and forth movement therealong, a vertically disposed abutment member positioned adjacent said support member and having the portion adjacent the upper end thereof pivotally connected to said support member for swinging movement from the vertical position to a position in which the portion of said abutment member adjacent the lower end projects over said conveyor into the path of movement of a work piece on said conveyor when said bracket one flange is secured to said conveyor frame element, a weight carried by the upper end of said abutment member and operable by the force of gravity to hold said abutment member in the projected position when manually moved from the vertical position, means for effecting the longitudinal movement of said carriage along said guideway, and means for locking said carriage in a selected position with respect to said guideway.

3,162,221
ROUTER ATTACHMENT
Burl D. Lacey, 7480 Potter Road, Davison Township, Genesee County, Mich.
Filed July 25, 1962, Ser. No. 212,274
3 Claims. (Cl. 144—134)



1. A portable router comprising:
an electric hand drill housing containing an electric motor and having near its forward end a cylindrical neck followed by a cylindrical throat of reduced diameter, there being a substantially radially extending shoulder between said throat and said neck;
a rotatable chuck extending outwardly from said housing through said throat and adapted to releasably engage the shank of a router bit to support same for rotation but to hold same against axial movement with respect to said housing;
a cylindrical bushing having a throughbore and a counterbore at one end thereof, said neck extending into said counterbore with said shoulder abutting against the radial end wall of said counterbore, said throat extending through said throughbore, said bushing being axially split partway along its length to divide the inner portion thereof into two opposed arcuate segments, bolt means extending between said segments for drawing said segments toward each other into clamping engagement with said neck whereby said bushing is fixed to said housing, said bushing being externally threaded along at least a substantial portion of its length;
a lock nut threaded onto the external threads on said bushing;
a sleeve having at one end thereof an end wall with a threaded central opening into which the forward end of said bushing is threaded whereby said sleeve can be moved along said bushing and thereby with respect to said housing by rotation of said sleeve with respect to said bushing, said sleeve being releasably lockable in fixed position on said bushing by threading said lock nut into engagement with said end wall, said sleeve having a substantially cylindrical side wall integral with said end wall and extending away from the bushing, said sleeve surrounding and being spaced from the router bit, said side wall having viewing apertures therethrough so that the operator can view the routing operation, said side wall also having work engaging portions at the other end thereof, whereby by adjusting said sleeve along said bushing the amount which the router bit projects beyond said work engaging portions can be adjusted to control the depth of cut of the work by the router bit.

3,162,222
CUTTER HEAD FOR CYLINDER TYPE FLAKERS
Paul Arthur Kirsten, Bonner Talweg 26, Bonn, Germany
Filed Sept. 8, 1959, Ser. No. 838,672
7 Claims. (Cl. 144—172)

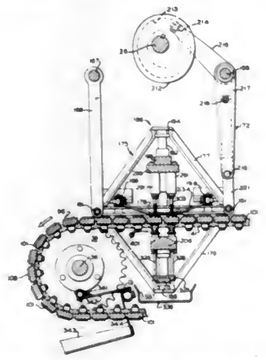


1. A cutter head for a cylinder-type flaker comprising a plurality of segments, each segment including: a cutting knife having a cutting edge extending radially beyond the periphery of the cutter head; a wedge-shaped pressure bar defining a flake-collecting space adjacent the cutting knife; an angle iron including a radial portion and a transverse portion having a cant at the free edge thereof, the transverse portion being positioned substantially flush with the periphery of the cutter head to support the wood during the flaking operation, the cant of the angle iron and the cutting edge of the knife defining a slit at the entrance to the flake-collecting space, and the radial displacement between the cutting edge of the knife and the transverse portion of he angle iron determining the thickness of the flakes produced; and means for rotating the cutter head to cut flakes from wood positioned adjacent thereto, the flakes being pushed into the flake-collecting space by the reaction to the cutting forces and subsequently ejected from the flake-collecting space by centrifugal forces developed by rotation of the cutter head.

3,162,223
OLIVE PITTER HAVING PIT AND FRUIT DISLODGING JETS

Malcolm W. Loveland, Orinda, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California

Filed Apr. 1, 1963, Ser. No. 269,471
2 Claims. (Cl. 146—27)



1. In an olive pitting machine having an endless conveyor trained about vertically disposed rotatable sprockets, said sprockets being spaced in a horizontal plane whereby said conveyor is moved horizontally during a major portion of its path of travel and wherein said conveyor supports a plurality of open-ended olive-holding chucks, each chuck being mounted for support in an upright orientation during a first portion of the horizontal movement of the said conveyor in which the longitudinal axes of said olives extend vertically, said chucks being inverted during a second horizontal portion of the said conveyor travel, the improvements comprising:

(*a*) a pitting station positioned adjacent the conveyor at a point where said conveyor is in said first horizontal movement portion with the said chucks upright, said pitting station including a punch and coring knife mounted coaxially respectively above and below the said conveyor;

(*b*) means for moving the punch and coring knife back and forth substantially horizontally and parallel to the path of travel of said conveyor at the said pitting station;

(*c*) means for moving the punch and coring knife toward said conveyor and toward one another during their said parallel movement at the said pitting station and thereafter in the same direction to cut a core into an olive to the pit of the said olive and then to force the pit and core downwardly and out of the olive;

(*d*) means for then moving the coring knife and punch apart while said knife and punch are moving substantially horizontally in the direction of movement of the said conveyor;

(*e*) means mounted adjacent said pitting station and at a spot where the said conveyor traverses said first horizontal portion of its path of travel, said means being capable of ejecting a liquid stream horizontally and directed immediately below the said conveyor at a spot normally occupied by a pit on the tip of the said coring knife following removal of the pit from the said olive;

(*f*) means for supplying liquid to the said stream ejecting means immediately after said coring knife and said punch have dislodged a pit from an olive;

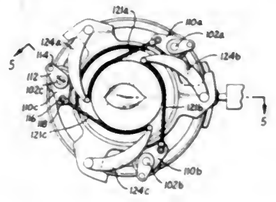
(*g*) means positioned adjacent the path of conveyor travel at a point subsequent to said point where said conveyor traverses said first horizontal portion of the said path of travel for dislodging the said olive from a chuck while the said chuck is substantially inverted, said means comprising apparatus for directing a liquid jet downwardly at the inverted bottom of the said chuck as the said chuck passes adjacent the said means whereby to dislodge an olive from the said chuck; and

(*h*) means for supplying liquid to the said jet means at such time as the chuck passes adjacent to said means.

3,162,224
PEACH GRIPPER FOR PEACH PITTING HEAD

Malcolm W. Loveland, Orinda, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California

Filed July 3, 1963, Ser. No. 292,626
9 Claims. (Cl. 146—28)



1. A peach pitting head comprising:

(*a*) first and second band-anchoring members arranged for rotation relative to each other on a common axis and substantially in a common plane transverse to said axis;

(*b*) means for rotating said first band-anchoring member;

(*c*) means for resisting rotation of said second band-anchoring member at the same rate and in the same direction as said first band-anchoring member; and

(*d*) means securing at least a pair of flexible peach-gripping bands at one end of each band to the said second band-anchoring member and at the opposite end of each band to the first band-anchoring member, said means for securing said peach-gripping bands to the said first band-anchoring member comprising arms pivoted to the said first band-anchoring member, said peach-gripping bands being secured to the said arms at the distal ends thereof, said means for securing said bands to said second band-anchoring means having resilient means in operative association therewith, said resilient means permitting the ends of the said bands secured to the second anchoring means to yield in the direction of forces applied to the ends of the said bands secured to the arms of the said first band-anchoring member.

3,162,225
FRUIT CORER

Malcolm W. Loveland, Orinda, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California

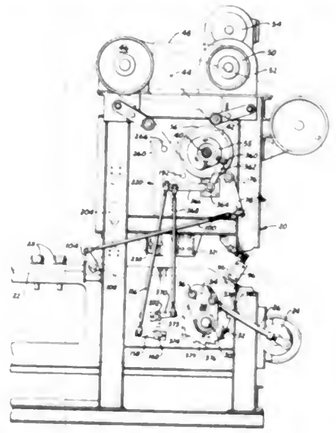
Filed Apr. 23, 1963, Ser. No. 274,969
10 Claims. (Cl. 146—52)

1. In a machine for removing the seed pods from pears:

(*a*) a cup for holding said pears, said cup incorporating a pair of jaws, at least one of which can be moved toward and away from the other to accommodate pears of differing thicknesses;

(*b*) means for determining the extent to which the said jaws are spread whereby to determine the thickness of a pear therein;

(*c*) a knife rotatably mounted on a support therefor, said support being mounted for reciprocating movement toward and away from one end of a pear in said cup, said knife being mounted in a position to permit contact with a pear at an end thereof and to permit penetration of the said one end of said pear,

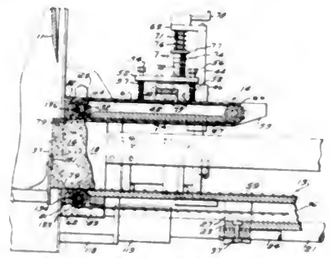


(*d*) and means in communication with the means of (*b*) above and said knife for permitting said last-mentioned means to control the depth of penetration of said knife into the said one end of said pear in response to information supplied by the means of (*b*) above.

3,162,226
SLICING MACHINE FEED APPARATUS

Max E. Toby and Daniel J. Toby, San Francisco, Calif., assignors to Toby Enterprises, San Francisco, Calif., a corporation of California

Filed Dec. 14, 1962, Ser. No. 244,796
11 Claims. (Cl. 146—95)

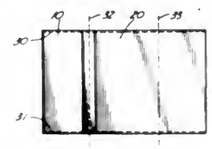


1. In combination with a slicing machine having a cutter mounted on a support frame, feed apparatus comprising a generally elongated first track member mounted on said frame and having one end disposed adjacent said cutter, an endless conveyor member disposed longitudinally around said track, a generally elongated second track member mounted on said frame and disposed in substantially parallel spaced relationship with said first track, a second endless conveyor member disposed longitudinally around said second track, said conveyor members having spaced confronting portions disposed intermediate said support tracks, and means for driving said conveyor members about their respective track members with said confronting portions thereof moving towards said cutter, said first and second tracks being mounted for lateral movement on said frame in a direction generally perpendicular to the longitudinal extent of said tracks.

3,162,227
BILLFOLD

Joseph Edwin Bakken, 212 State St., Crookston, Minn.

Filed Oct. 15, 1962, Ser. No. 230,486
5 Claims. (Cl. 150—35)



1. A trilaterally foldable wallet comprising:

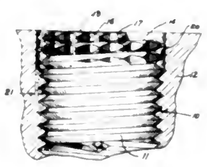
(*a*) A rectangular blank of sheet material having portions thereof folded upon other portions thereof along fold lines parallel to the narrow dimension thereof to thereby form a pair of pockets on either side of said blank with a central portion thereof common to one pocket in each pair, the elongate open edges of the pockets in each pair being in opposed, adjacent relation, and the folded open edge of one pocket being folded back upon itself to form an inwardly turned resilient flap for holding said one pocket closed; and

(*b*) a stiffener having a resilience greater than said sheet material and a width greater than said flap inserted into the fold of said open edge portion of said one pocket prior to the formation of said flap and effective when folded into said flap as it is formed to increase the pocket-closing ability of said flap, said folded blank being sewn along the non-folded edges to close the ends of said pockets.

3,162,228
WIRE COIL INSERT HAVING PLASTICALLY DEFORMABLE HEAD PORTION AND METHOD OF MAKING SAME

José Rosán, San Juan Capistrano, and Albert Jack La Torre, Santa Ana, Calif., assignors to Rosan Engineering Corporation, Newport Beach, Calif., a corporation of California

Filed Dec. 23, 1960, Ser. No. 78,009
3 Claims. (Cl. 151—41.72)



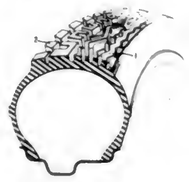
3. An insert comprising:

a body, said body formed by helically-wound wire;

an integral tubular head formed by at least two adjacent convolutions of the wire at one end of said body, said adjacent convolutions which form said head being longitudinally joined by a plurality of spot welds, said wire forming said head adapted to be readily expanded throughout its circumference, the adjacent convolutions in the remaining portion of said body being free from any longitudinal bond, said wire forming said body being shaped so as to form external and internal threads;

locking means comprised of a plurality of projecting serrations provided throughout the circumference of the external periphery of said head, said locking means adapted to lock in the bore of the workpiece.

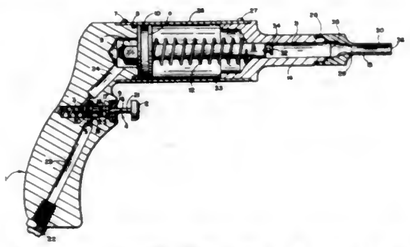
3,162,229
SNOW TIRE
Willy Ellenrieder, 73 Esslingen A.N., Hoelderlingweg, Germany, and Rudolf Hennecke, 22 Hohenstaufenstrasse, Ebersbach, Fils, Germany
Filed Apr. 5, 1963, Ser. No. 270,981
Claims priority, application Germany, Apr. 17, 1962, D 38,705
12 Claims. (Cl. 152—209)



1. A motor vehicle snow tire with an "M and S" tread design and provided with two tire shoulders, characterized in that one tire shoulder has an uninterrupted tread design rib whereas substantially the remaining portion of the tire tread surface including the other shoulder is provided with an "M and S" tread design interrupted in the circumferential direction,

the tread design becoming increasingly coarse from said one shoulder rib to the other.

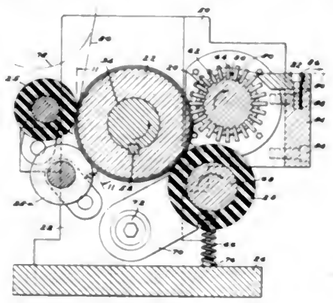
3,162,230
REPAIR PLUG
Thomas Best, 10310 Tennessee Ave., Los Angeles, Calif.
Original application Jan. 10, 1961, Ser. No. 81,768, now Patent No. 3,083,597, dated Apr. 2, 1963. Divided and this application Jan. 30, 1963, Ser. No. 254,939
3 Claims. (Cl. 152—370)



2. A flexible resilient repair plug adapted for placement in a hole in an inflatable article, a nozzle into which said plug is adapted to be compressed, said nozzle being adapted to be placed through the hole in the inflatable member and then withdrawn from around the plug leaving the plug in the hole, said plug comprising an elongated stem, a head at one end of said stem having a laterally extending flange and a recess at the other end of said stem, the volume of said stem from said recess to said flange being substantially the same as the volume of said nozzle when compressed thereinto.

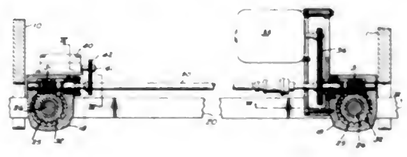
3,162,231
MECHANISM FOR AND METHOD OF EXPANDING SLITTED FOIL
Francis H. Emerson, Detroit, Mich., assignor to Edward C. Parker, Grosse Pointe, Mich.
Filed July 11, 1961, Ser. No. 123,966
14 Claims. (Cl. 153—2)

1. That method of fabricating an expanded sheet of metal foil comprising providing a sheet strip of foil having a multiplicity of short length slits formed transversely therein and disposed in spaced succession linearly thereof, projecting a plurality of slit engaging points into a plurality of slits and shifting said points while within the slits linearly with respect to the strip expanding the



slits formed into strip linearly thereof into larger openings providing an expanded sheet of foil.

3,162,232
MULTIPLE DEPTH CONTROL FOR POWER PRESS BRAKES
Frederick E. Munschauer, Jr., Eggertsville, and George H. Trautman, Jr., Kenmore, N.Y., assignors to Niagara Machine & Tool Works, Buffalo, N.Y.
Filed Jan. 14, 1963, Ser. No. 251,376
8 Claims. (Cl. 153—21)



1. In a power press brake having a bed and a crosshead reciprocable toward and away from the bed, a drive shaft, eccentric means thereon and means connecting the same to said crosshead for reciprocating the latter, screw adjustment means for varying the effective length of said connecting means, and motor means for rotating said screw adjustment in opposite directions to vary the depth of the reciprocating movement of said crosshead toward said bed, a cam shaft and speed reduction means driving the same from said screw adjustment means, a pair of angularly adjustable cams on said shaft, a pair of control circuits operable to actuate said motor means in opposite directions, a normally closed switch in each of said circuits, each of said cams being adapted to open one of said switches when such cam reaches a predetermined angular position as determined by the adjusted setting thereof on said cam shaft, and means for selectively rendering either of said control circuits operative for automatic positional adjustment of said crosshead.

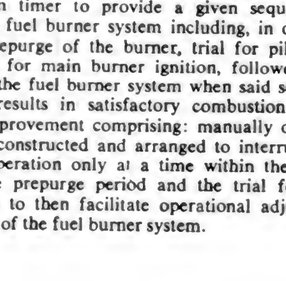
3,162,233
TIRE BUFFING MACHINE
John A. Stull, La Mirada, Calif., assignor to Salsbury Corporation, Los Angeles, Calif., a corporation of California
Filed July 30, 1963, Ser. No. 298,704
15 Claims. (Cl. 157—13)

1. In an apparatus for buffing a tire casing, the combination comprising:

two carriages with one of the said carriages being movable longitudinally of the apparatus and with the other carriage being movable in a transverse direction thereof;

means for rotatably mounting a tire casing on one of the two carriages;

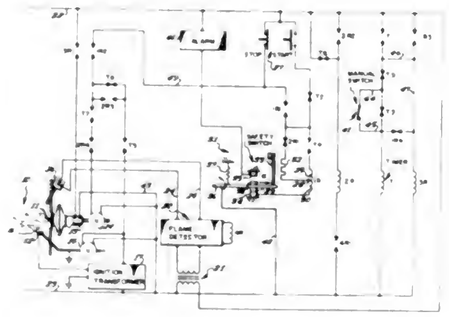
a buffing wheel rotatably supported by the other of the two carriages and movable into buffing engagement with the tire casing;



a tire casing profile template member and a template follower member with one of said members being supported on one of the carriages and with the other one of said members being carried by the other of the carriages; and

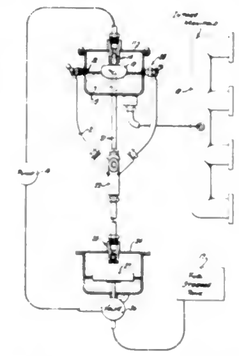
means urging the template members into engagement.

3,162,234
BURNER CONTROL APPARATUS
William B. Hamelink, Richfield, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,433
8 Claims. (Cl. 158—28)



1. In a fuel burner control system having means including a program timer to provide a given sequence of operation of a fuel burner system including, in order of occurrence, prepurge of the burner, trial for pilot ignition, and trial for main burner ignition, followed by a run period of the fuel burner system when said sequence of operation results in satisfactory combustion at the burner, the improvement comprising: manually operable switch means constructed and arranged to interrupt said sequence of operation only at a time within the period comprising the prepurge period and the trial for pilot ignition period to then facilitate operational adjustment of components of the fuel burner system.

3,162,235
CARBURETOR WITH ADJUSTABLE FUEL LEVEL CONTROL DRAINS
Lonnie Robert Capehart, Ukiah, Calif., assignor to The Capehart-Zbitnoff Corporation, Ukiah, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 293,438
3 Claims. (Cl. 158—36.3)

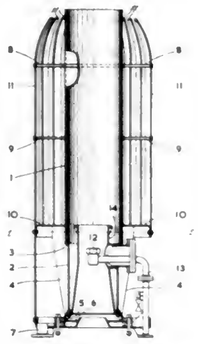


1. In a carburetor fuel level controller of a type which includes an overflow tank provided with an inlet for connection to a carburetor float-bowl at the normal fuel level thereof, and float actuated valve means having an inlet communicated with the overflow tank, a second inlet communicated with a fuel storage tank, an outlet communicated with a fuel pump in turn connected to the float chamber to pump fuel thereinto, and an actuating float disposed in the overflow tank for switching communication from between the second inlet and outlet of the valve means to between the first inlet and outlet thereof in response to a predetermined fuel level in the overflow tank, the improvement comprising adjustable drain fittings, each including a head for securance to a carburetor float-bowl below the normal fuel level thereof and having an axial inlet passage for communicating with the interior of said bowl, means defining a second passage extending from said head in angular relation to said inlet passage and communicating therewith, means venting said second passage to atmosphere, means providing for selective rotation of said second passage with respect to the axis of said inlet passage, means defining an outlet communicating with said second passage at a point displaced from said inlet passage, and fastener means for selectively rigidly fixing the rotational position of said second passage relative to the axis of said inlet passage; and means communicably connecting said outlets of said drain fittings to the inlet of said overflow tank.

3,162,236
APPARATUS FOR REDUCING SMOKE EMISSION FROM ELEVATED FLARE STACKS
Charles Avalon Hinvest Williams, London, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed May 29, 1961, Ser. No. 113,519
Claims priority, application Great Britain June 3, 1960
3 Claims. (Cl. 158—99)

1. In an elevated flare stack arrangement having water injection apparatus positioned at the top of said flare stack, said water injection apparatus comprising in combination, (*a*) a burner head unit comprising: pipe means adapted to receive discharged gases from a flare stack, said pipe means providing a combustion zone for said gases, a nozzle located in the pipe means below the combustion zone and adapted to direct an atomized spray of

water in an upward direction into the combustion zone, and means adapted for the admission of air into the com-

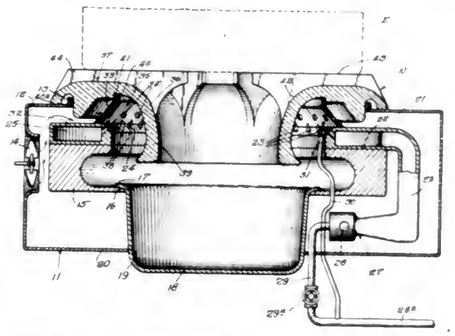


bustion zone and (*b*) a wind deflector adapted to set about the burner head unit in such manner that air is deflected to the leeward side of the stack under windy conditions.

3,162,237
PRESSURIZED GAS BURNER

Gordon H. Brown and Creston J. Bruce, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,285
12 Claims. (Cl. 158—99)



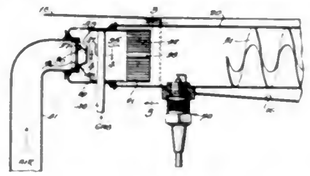
12. A burner comprising: means defining a combustion chamber; means providing combustible gas and primary air at a positive pressure to said chamber; means providing secondary air at a positive pressure to said chamber for supporting combustion of said gas to provide a flame therein; and cover means fully overlying said chamber for effectively fully precluding upward exposure of the flame in normal operation of the burner, said cover means defining a passage for passing hot products of combustion upwardly to heat a superposed element.

3,162,238
GAS BURNER UTILIZING AIR ABOVE ATMOSPHERIC PRESSURE

Jack W. Claywell and Casimir J. Pavlak, both of Wisconsin Rapids, Wis., assignors to Preway, Inc., a corporation of Wisconsin

Filed Oct. 9, 1961, Ser. No. 143,736
1 Claim. (Cl. 158—99)

A gas burner utilizing air above atmospheric pressure for premix of gas and air without requiring secondary air for combustion comprising, a generally cylindrical casing having a mixing chamber with an inlet and an outlet at opposite ends thereof, a combustion blower, means defining an air passage from said blower to said mixing chamber inlet, a gas line with an orifice within said mixing chamber for supplying gas under pressure, said orifice being positioned adjacent the center of the casing and opening toward said mixing chamber inlet for counterflow relative to said air into said mixing chamber to mix with said air, a target in the mixing chamber including a disc positioned centrally in the casing to have the air impinge against one side thereof and the gas against the other

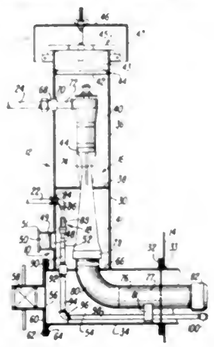


side with both the air and gas moving radially outwardly for thorough intermixing across the entire mixing chamber, said disc being of a size less than the casing and extending generally transversely thereof to define a generally annular air flow space between the disc and the casing, means defining a combustion chamber downstream of said mixing chamber, fuel ignition means in said combustion chamber in the path of the gas and air mixture, and a flame stop extending across the casing between said mixing chamber and said fuel ignition means.

3,162,239
FLAME ARRESTOR BURNER

Jeffery D. Irons, Tulsa, Okla., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed Apr. 25. 1961, Ser. No. 105,339
2 Claims. (Cl. 158—112)

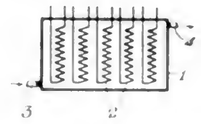


1. A flame arrestor burner that is safely operable in a combustible external environment; which burner comprises a tubular housing that defines a first mixing chamber, a second mixing chamber sealed from said first mixing chamber and a combustion chamber sealed from said first and second mixing chambers; a venturi-type main burner assembly including an air-fuel mixer disposed within said first mixing chamber and a main burner outlet disposed within said combustion chamber and connected to said main burner mixer so as to receive the output therefrom; a venturi-type pilot burner assembly including an air-fuel mixer disposed within said second mixing chamber and a pilot burner outlet disposed within said combustion chamber adjacent said main burner outlet and connected to said pilot burner mixer so as to receive the output therefrom; flame arresting air inlet means provided in said first mixing chamber for supplying primary air to said air-fuel mixer of said main burner assembly; flame arresting air inlet means provided in said second mixing chamber for supplying primary air to said air-fuel mixer of said pilot burner assembly; and flame arresting air inlet means provided in said combustion chamber for supplying secondary air to said main burner outlet and said pilot burner outlet.

3,162,240
PREPARATION OF HIGHLY PURIFIED FORMALDEHYDE

Kuno Wagner, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed May 17, 1961, Ser. No. 110,810
Claims priority, application Germany June 2, 1960
2 Claims. (Cl. 165—1)

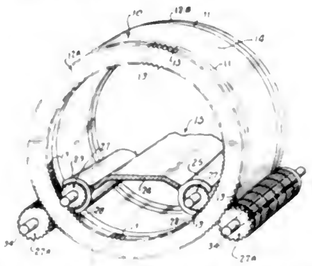


1. A process for the production for formaldehyde having a high degree of purity and containing less than 0.02% by weight of water, less than 0.004% by weight of formic acid, and less than 0.002% by weight of methanol, from crude formaldehyde containing between about 1 and about 7% by weight of water, which comprises passing vapors of the said crude formaldehyde preheated to a temperature between about 30 and about 100° C. at an inlet flow rate of at least 500 milliliters per second into a series of chambers, the internal surfaces of which are maintained at a temperature gradient from not more than 130° C. at the inlet to approximately −20° C. at the outlet of the series, the ratio of the contact surface area to volume of the said series of chambers being not more than 0.6 square centimeter per cubic centimeter while maintaining the contact period of the formaldehyde vapors in the said series of chambers between about 5 and about 20 minutes.

3,162,241
SEAL FOR ROTARY REGENERATOR

Raymond Smith, Fraser, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed Oct. 25, 1961, Ser. No. 147,512
10 Claims. (Cl. 165—9)



7. In a heat exchanger apparatus having a casing providing at least two sections and a matrix rotating in said sections, a sealing means engaging said matrix to seal one section from the other and comprising

(*a*) a roller adapted to be rotatably carried in said casing closely adjacent said matrix,

(*b*) said roller being provided with a plurality of annularly spaced radially extending slots,

(*c*) a plurality of vane elements carried in each of said slots,

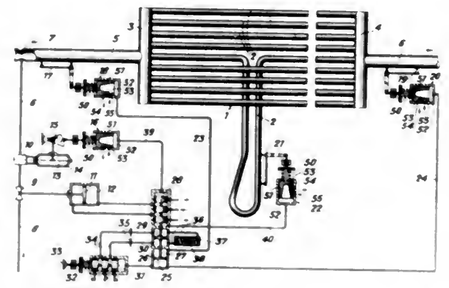
(*d*) retaining means carried by said roller and resiliently securing adjacent vane elements one to the other, and

(*e*) means resiliently urging said vane elements radially outwardly into contact with said matrix.

3,162,242
TEMPERATURE CONTROL OF AN INDIRECT HEAT EXCHANGER

Paul Profos, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland

Filed Aug. 22, 1960, Ser. No. 51,109
Claims priority, application Switzerland Sept. 8, 1959
8 Claims. (Cl. 165—32)



1. The combination of a heat exchanger and a temperature control system therefor, comprising:

a tube system having an inlet and an outlet,

a fluid to be heated entering said tube system through said inlet and leaving said tube system through said outlet,

means for controlling the temperature of the fluid entering said tube system,

first temperature responsive means connected to said outlet for producing a first control signal corresponding to the temperature of the fluid leaving said tube system,

a device having a proportional-integral character and connected to said first temperature responsive means for receiving said first control signal therefrom for producing a regulating signal,

second temperature responsive means connected to said tube system for producing a second control signal corresponding to the temperature of the fluid at a point of said tube system between said inlet and said outlet,

said second temperature responsive means being operatively connected to said device for combining said regulating signal and said second control signal, and

a motor operator operatively connected to said means for controlling the temperature of the fluid entering said tube system and to said device for receiving the combined regulating and second control signal therefrom and being capable of operation in response to the combined signal.

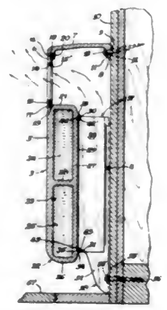
3,162,243
COMBINED RADIATOR AND CONVECTOR HEAT EXCHANGER

James P. Dziekonski, 5407 W. Sunnyside, Chicago, Ill.

Filed May 1, 1961, Ser. No. 106,820
4 Claims. (Cl. 165—55)

1. An extruded metal baseboard heater for mounting on an attachment wall and having longitudinally elongated radiator portion including integral longitudinal front and rear walls and interconnecting top, bottom and intermediate webs defining longitudinal fluid chambers,

means providing fluid inlets and outlets for said chambers, and said intermediate web providing rigidity to said walls of the radiator portion in an area contiguous thereto, said rear wall having vertically spaced bendable longitudinal flanges integral therewith, a plurality of convector fins disposed in laterally spaced relation against said rear wall, said rear wall and fins having contacting surfaces for establishing thermal conductance therebetween, one of the surfaces being flat and the other being convex, and means including said flanges holding said fins edgewise under tension along its edges remote from the rear wall and under compression against the rear wall with the surfaces on the fins in conformance with the surface on the



rear wall and in complementary engagement between said surfaces with a fulcrum reaction against said intermediate web to provide good thermal contact therebetween, said fins defining convection air passages therebetween having air inlets at their lower ends defined between said attachment wall and the lower end of said radiator portion, said front wall having an apertured upper section extending above said radiator portion and defining with said attachment wall an air outlet space for said air passages, and a top wall integral with said upper section and extending toward said attachment wall above said air outlet space and having means thereon for attachment to said attachment wall.

3,162,244
RADIATION-INCREASING DEVICE AND SYSTEM
Charles E. Wambo, Wayne County, Ind., assignor to Rehl Products, Incorporated, Richmond, Ind., a corporation of Indiana
Filed Oct. 19, 1961, Ser. No. 146,203
2 Claims. (Cl. 165—184)



1. Heating apparatus adapted for use in greenhouses and the like, comprising a radiation pipe of a size of the order of 1-inch to 1½-inch pipe, and a radiation-increasing element on said pipe, said element comprising

a helical coil formed of a multiplicity of turns of a continuous length of heat-conductive resilient wire, wrapped helically in a plurality of turns about the surface of a length of said pipe,

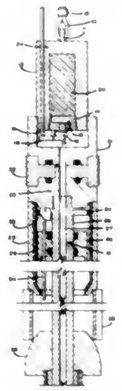
said wire being of a size having a diameter of the order of one-fifteenth to one-tenth the diameter of the pipe, having a continuous flat face at the outer periphery of the coil to make face-to-face contact with the pipe surface at each turn of the coil, the width of the flat face being at least two thirds of the wire diameter, and also having a flattened face at the inner periphery of the coil,

the coil being a substantially round coil of a diameter of the order of one half the diameter of said pipe and less than the full diameter of said pipe, and being wound about the pipe in a helix having a pitch of the order of two to three times the diameter of said pipe,

the successive turns of the coil being pressed by the resilience of the coil into firm contact with the pipe at said flat outer faces thereof and being spaced from each other by distances of the order of the wire diameter,

and means releasably securing the ends of the coil in fixed poistions on the pipe.

3,162,245
APPARATUS FOR LINING CASING
George C. Howard and Clarence R. Fast, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,535
12 Claims. (Cl. 166—63)

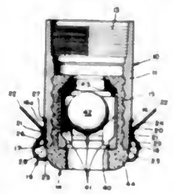


5. Apparatus for placing a metallic liner inside a substantially cylindrical metallic vessel having the axis of the cylinder vertical comprising a longitudinally corrugated tube of malleable metal, said tube having an external cross-sectional perimeter greater than the internal cross-sectional circumference of said vessel, the thickness of the wall of said tube times the maximum compressive strength of the metal of which said tube is made being less than the thickness of the wall of said vessel times the maximum tensile strength of the metal of which said vessel is made, a downwardly moving expander tool above said corrugated tube to expand said tube to a substantially cylindrical form, means for forcing said expander tool downwardly through said tube, a retainer head below said tube to hold said tube against downward motion when said expander tool is forced through said tube, and a frangible member spacing said retainer head from said tube whereby when said expander tool comes in contact with said frangible member, said member is broken, permitting said expander tool to pass through the entire length of said tube.

3,162,246
DRILLING FLUID CONDITIONING CASING SHOE
Kenneth A. Wright, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed July 14, 1961, Ser. No. 124,175
5 Claims. (Cl. 166—173)

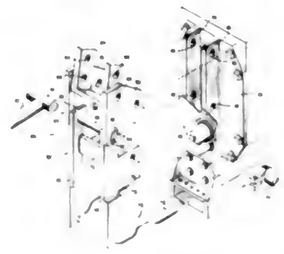
1. In a tool for use on the bottom end of a well casing for conditioning the drilling fluid in the annular space between the well bore and the casing while running the

casing into the well bore, the combination of: a cylindrical housing having upper and lower ends, thread means on the said upper end of the housing for connecting said housing to the bottom end of the well casing, drillable means mounted on the inside of the said lower end of the housing, the said lower end of the housing having an external cylindrical portion with an external downward facing shoulder at the upper extremity of such portion, a sleeve mounted on said cylindrical portion, a plurality of



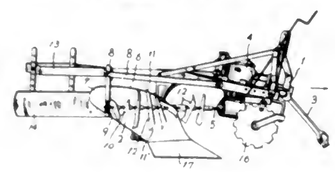
flexible means mounted on said sleeve and adapted to project into the annular space for agitating the drilling fluid in such space as the well casing is lowered into the well bore, said flexible means having a length and orientation for engaging and abrading the well bore wall, and at least part of said flexible means extending outwardly below the largest outside diameter of said housing for agitating fluid in such space before the largest obstruction formed by said housing is reached.

3,162,247
TRACTOR HITCH
William E. Miller, 2431 S. 13th St., Springfield, Ill.
Filed Sept. 18, 1961, Ser. No. 138,807
1 Claim. (Cl. 172—7)



A hitching device for use on a tractor of the type having a three point hitch including an elongated shaft extending transversely beneath said tractor, linkage means pivotally supporting said shaft on said tractor for limited movement fore and aft thereof, spring means urging said shaft forward with respect to said tractor, a pair of elongated laterally spaced rearward extending draft links having their respective forward ends pivotally connected near the opposite ends of said shaft, means sensing fore and aft movement of said shaft, means responsive to said sensing means for pivoting said draft links about said shaft to vary the elevation of the rearward ends of said links, a draft bracket formed on the rear of said tractor, said bracket including a pair of elongated vertically extending webs projecting rearward from said tractor, a plurality of vertically spaced openings extending through each of said webs, the openings in each of said webs being symmetrical and disposed transversely opposite to one another to form a plurality of vertically spaced pairs of pivotal openings, an elongated rearwardly extending stabilizing link having one end operatively connected to one of said pairs of vertically spaced pivotal openings, said hitching device comprising a first lever member pivotally mounted on the rear of said tractor for limited rotation about a horizontal axis parallel to the axis of said shaft, said first lever member including a pair of generally vertically extending substantially parallel laterally spaced arms each having a forwardly extending portion intermediate its ends, pin means pivotally mounting said forwardly extending portions to a first pair of said pivotal openings, a second lever member pivotally mounted on the rear of said tractor for limited rotation about a horizontal axis parallel to the axis of said shaft, said second lever member including a pair of generally vertically extending substantially parallel laterally spaced arms each having a forwardly extending portion intermediate its ends, pin means pivotally mounting said forward extending portions of said second lever member to another of said pairs of pivotal openings, said second lever member being mounted in a pair of pivotal openings vertically above said first pair of pivotal openings, pin means pivotally mounting the forward end of said stabilizing link between said vertical arms of said second lever member adjacent the top thereof, means hingedly connecting the upper end of said first lever member to the lower end of said second lever member, and a pair of elongated substantially horizontal connecting arms having their respective rearward ends pivotally connected to the bottom end of one of said spaced arms of said first lever member and each having its forward end connected to said shaft for fore and aft movement therewith.

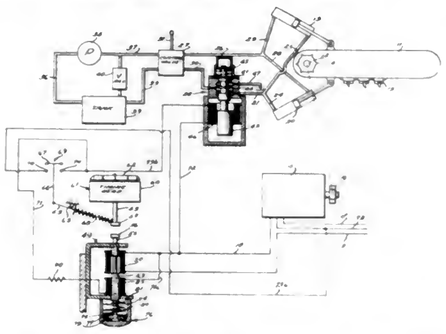
3,162,248
MOLD BOARD TYPE PLOUGH
Kaichi Nishimoto, Sapporo, Japan, assignor to Hokunoki Company Limited, Sapporo, Japan, a corporation of Japan
Filed Apr. 23, 1963, Ser. No. 275,109
Claims priority, application Japan, Apr. 28, 1962, 37/17,246; Oct. 31, 1962, 37/49,095
1 Claim. (Cl. 172—66)



A plough adapted to be drawn in a forward direction comprising a supporting frame adapted to be detachably connected to a tractor, a mold board dependingly secured to said frame, said mold board comprising an arcuately-shaped face extending from a lower forward position to an upper rearward position and angularly disposed with respect to the forward direction, a ground cutting blade affixed to the bottom of said face, a longitudinal crushing shaft disposed in substantially a horizontal plane and extending parallel to at least one chord in said arcuate face, a plurality of cultivating blades spaced longitudinally from each other and mounted on said crushing shaft, said blades having at least one face which is inclined rearwardly for forcing the cultivated soil upwardly and rearwardly when said blades are rotated, said blades having at least one sharp edge adapted to contact the soil being cultivated, each of said plurality of blades being angularly positioned with respect to adjacent blades so that the ends of said blades lie in a spiral envelope, said crushing shaft rotatably supported by said frame and said blades being positioned such that the tips of said blades when rotated come in close proximity to said arcuate face, and driving means for rotating said crushing shaft to cause said blades to rotate in an upward direction when said blades are contiguous to said arcuate face, and a leveling plate dependingly secured to mounting means on said frame, said

plate being adjacent to and rearward of the upper rearmost portion of said mold board, and said mounting means enabling said plate to move away from said mold board in opposition to a bias.

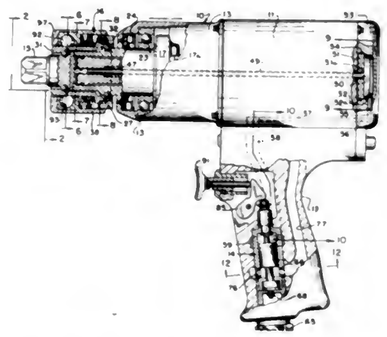
3,162,249
LOAD CONTROL FOR CUTTING APPARATUS
John J. Kuipers, Chicago, and Coleman Gyure, Riverdale, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 3, 1962, Ser. No. 207,288
6 Claims. (Cl. 173—7)



1. In an automatic control for cutting apparatus and the like,
a motor,
a cutting member,
means driven by said motor for driving said cutting member,
feeding means for advancing said cutting member to effect a cutting operation,
electrically energizable stop means stopping operation of said feeding means and the advance of said cutting member upon overload of said motor,
an energizing circuit for said electrically energizable stop means including an overload relay having a switch in said energizing circuit,
a series coil connected in series with said motor,
an armature movable along said series coil and operable to close said switch upon a predetermined load on said motor and coil,
a shunt coil encircling said armature and wound reversely of said series coil and energized through the energizing circuit to said electrically energizable stop means upon the closing of said switch,
said shunt coil opposing said series coil upon the closing of said switch and the energization of said electrically energizable stop means and raising the current value at which said armature will move to its inoperative position,
above the no load current value of said motor and thereby enabling said switch to open and effect the continued operation of said feeding means at a higher current value than the current value for effecting opening of said switch by the series coil alone.

3,162,250
TORQUE CONTROL MEANS FOR POWER TOOLS
William F. Sindelar, Seven Hills, Ohio, assignor to Master Power Corporation, Solon, Ohio, a corporation of Ohio
Filed Dec. 14, 1961, Ser. No. 159,320
24 Claims. (Cl. 173—12)

23. Torque control means for a power tool, comprising, in combination:
(*a*) a pair of torque-responsive members comprising a driving member and a driven member having relative movement therebetween at the predetermined point of torque release;
(*b*) a pressurized conduit, normally isolated during the operation of the tool, and communicating with



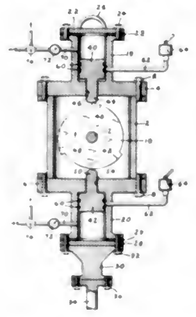
the atmosphere in accordance with the relative movement between said members; and
(*c*) valvular means responsive to a change in pressure in said conduit to shut off the tool at the predetermined torque.

3,162,251
ENCLOSED CASE MUD PERCUSSION TOOL
Ross Bassinger, Rte. 11, Box 588, San Antonio, Tex.
Filed Jan. 19, 1960, Ser. No. 3,300
16 Claims. (Cl. 173—73)



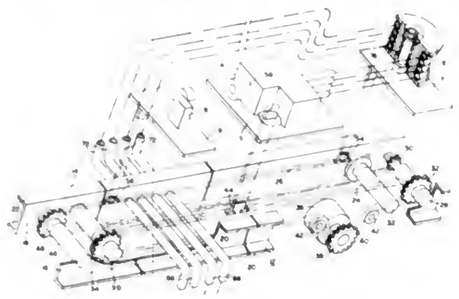
10. In a hydraulic percussion tool wherein a hammer is slidably disposed in a housing to beat upon an anvil, said hammer having a piston surface tending to move the hammer away from the anvil upon which hydraulic pressure is alternately increased and diminished to cause reciprocation of the hammer, and means for intermittently admitting hydraulic fluid to press upon said piston surface is provided, the improvement which comprises an outlet passageway for hydraulic fluid through the anvil; a hydraulically actuated reciprocating finger valve mounted in the hammer and disposed to move into and close the passageway through the anvil upon contact of the hammer with the anvil; and hydraulic means for preventing movement of said finger valve into said passageway through the anvil until contact of hammer and anvil occurs.

3,162,252
PILE DRIVING HAMMER
Walter H. Cobi, North St., Greenwich, Conn.; James G. Holland and Silva K. Cobi, executors of said Walter H. Cobi, deceased
Filed Aug. 3, 1962, Ser. No. 214,624
8 Claims. (Cl. 173—91)



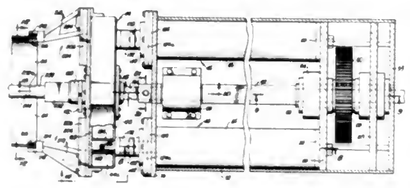
1. A hammer for driving piles comprising a housing, a cylinder in said housing, a cover at one end of said cylinder, a plate at the opposite end of said cylinder, a piston in said cylinder, said cylinder and said piston forming a chamber on one side of said piston, means in said chamber for forcing said piston into engagement with said plate, an extension on said piston extending through said plate, and means on said housing for engaging said piston extension to move said piston toward said cover, said last mentioned means including means for releasing said piston after said piston has been moved toward said cover to permit said means in said chamber to move said piston into engagement with said plate.

3,162,253
DRILLING DEVICE
John C. Curtis, Newport, N.H., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 6, 1961, Ser. No. 81,070
9 Claims. (Cl. 173—147)



1. Drilling apparatus comprising, an elongated drill guide frame, a pair of elongated endless flexible elements, means connected to said drill guide frame and being cooperable with said elements for circulating said elements relative to said drill guide frame in longitudinally extending and laterally spaced orbits with one of said elements circulating at one half the orbital speed of the other of said elements, a drilling motor mounted for longitudinal movement on and relative to said guide frame and being secured to the other element of said flexible elements having the higher orbital speed, elongated flexible pressure fluid conducting means secured adjacent one end of said drill guide frame and connected to said drilling motor, reel means mounted between said drilling motor and the other end of said drill guide frame for longitudinal movement on and relative to said drill guide frame with said reel means being operatively connected to said one flexible element having the slower orbital speed, and said pressure fluid conducting means intermediate said drilling motor and said one end of said drill guide being trained about said reel means.

3,162,254
EARTH BORING AND CONDUIT LAYING MACHINE
Steven L. Rose, Arcadia, Calif., assignor to Calweld Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 24, 1961, Ser. No. 154,522
5 Claims. (Cl. 173—148)



5. The combination of: a platform, a pair of spaced apart hydraulic telescoping push rams mounted on said platform, a push yoke means carried by said hydraulic telescoping push rams and extending therebetween, a kelly bar slidably and rotatably mounted on said platform and projecting through said push yoke means, said hydraulic telescoping push rams, push yoke means and said kelly bar all having travel axes that lie in a common plane, releasable kelly keeper means to lock said push yoke means and said kelly bar for simultaneous axial movement, coupling means on said kelly bar forward of said push yoke means, an auger flight including bit means operatively connected to said kelly bar by said coupling means whereby rotation of said kelly bar will rotate said auger flight, a hollow conduit encasing said auger flight, said push yoke means including conduit guide means for releasably non-fixedly receiving said conduit, a motor drive means on said platform to rotate said kelly bar, a hydraulic fluid system to activate said hydraulic telescoping push rams along said travel axes whereby said push yoke means, said kelly bar, said auger flight and said conduit may all be simultaneously moved on an outward stroke from said platform to bore the earth and simultaneously position said conduit in said bore, and said push yoke means and said kelly bar being retractable on an inward stroke toward said platform by said hydraulic push rams and said conduit guide means being freely disengaged from said conduit so that said conduit will remain in the position assumed on said outward stroke.

3,162,255
VACUUM DUST-COLLECTING APPARATUS FOR ROTATING HAMMER-DRILL
George W. McCarty, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Aug. 25, 1961, Ser. No. 133,986
1 Claim. (Cl. 175—213)

Vacuum dust-collecting apparatus for a power-driven rotating hammer, comprising, in combination:
(*a*) a substantially-cylindrical rotating chuck body having one end driven by the hammer and the opposite end provided with a socket to receive a hollow drilling tool;
(*b*) an external annual flange formed intermediately of the ends of said chuck body;

(*c*) a hollow stationary hose coupling member comprising:

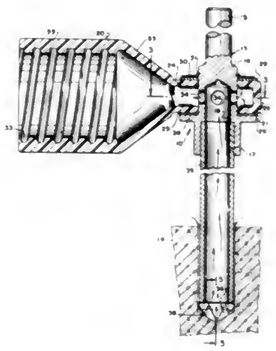
(1) a substantially-cylindrical portion having means for connection with a flexible vacuum hose;

(2) a substantially funnel-shaped transition portion which converges away from said cylindrical portion; and

(3) a substantially-flat portion comprising:

(*aa*) a pair of parallel walls having respective alined circular apertures formed therein;

(*bb*) said flat portion resting upon said external annular flange of said chuck body and closely engaging the outer cylindrical surface of said body; and



(*cc*) a continuing peripheral wall portion joined integrally with said paraliel walls to form a dust-collecting chamber;

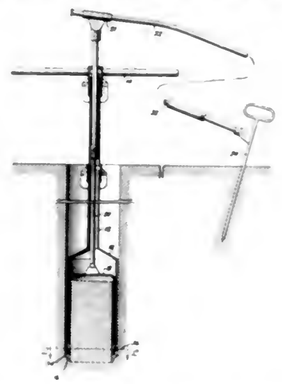
(*d*) means including an axial bore leading from said socket and a communicating radial canal formed in said chuck body to communicate the interior of the hollow drilling tool with said chamber;

(*e*) means including a resilient washer to constantly urge said flat portion of said hose coupling member against said external annular flange of said chuck body; and

(*f*) means to retain said resilient washer and said hose coupling member to said chuck body.

3,162,256
BORING APPARATUS FOR REMOVING UNDISTURBED TEST SAMPLES OF SOIL
Erich Meinecke, Berkhopen, Peine, Germany
Filed Jan. 22, 1962, Ser. No. 167,655
Claims priority, application Germany, Feb. 15, 1961, M 37,198
4 Claims. (Cl. 175—252)

1. A boring device for removing a cylinder of earth from the ground without disturbing the normal disposition of the soil lamina comprising a cylindrical rotatable mantle having a pair of lugs extending from the lower end thereof, a bit connected to said lower end and having arcuate slots in the top edge thereof adapted to receive said lugs to effect turning of the bit with rotation of the mantle in either direction after said lugs have traversed the length of said arcuate slots without turning said bit, a pair of wires each having one end connected to said bit and the other end connected to said mantle, and recesses in the inside wall of said bit for receiving said wires, whereby upon rotating said mantle in a clockwise direction, the wires are placed in compression and lie within said recesses, and upon rotating said mantle in a counter-clockwise direction, the wires are placed in tension and are stretched as a chord across the circle defined by the



bit to sever upon rotation the soil within the mantle from the ground.

3,162,257
BARREL-TYPE SOIL AUGER
Newton E. Noyes, Grand Junction, Colo.
Filed Oct. 12, 1962, Ser. No. 230,298
3 Claims. (Cl. 175—403)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A soil auger for obtaining soil samples comprising, a cylinder,

a plurality of cutting teeth at one end of said cylinder, each tooth being generally triangular in shape and having a base, a sharpened leading edge, a trailing edge and an apex,

the base of the tooth having a curvature equal to that of the surface of the cylinder, said base being integral with the said end of the cylinder,

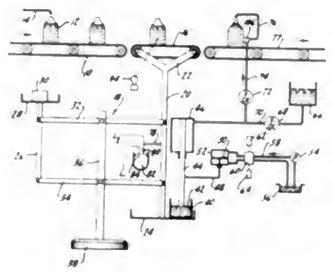
the apex of the tooth being spaced from the base of the tooth, in a direction generally longitudinal from the said end of the cylinder and approximately aligned with the surface thereof,

the leading edge being curved so as to be convex when viewed from the exterior of the cylinder so that at its upper portion the said leading edge protrudes outwardly away from the cylinder surface a short distance and the trailing edge being curved so that a substantial portion thereof protrudes inwardly away from said cylinder surface,

whereby the surface of the tooth is warped and has a cupped shape,

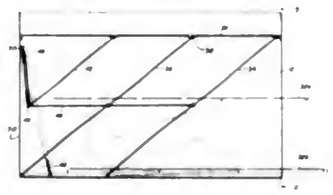
and means fastened to the other end of the cylinder for revolving and forcing the teeth into the soil.

3,162,258
METHOD AND APPARATUS FOR ACCURATELY FILLING LIQUID CONTAINERS
Robert W. Schmidt, La Grange, Ill., assignor to Imac Corporation, Oak Lawn, Ill., a corporation of Illinois
Filed Nov. 13, 1962, Ser. No. 236,947
10 Claims. (Cl. 177—1)



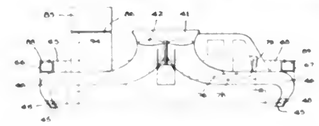
1. An assembly line method of filling a series of moving containers with a predetermined weight of a fluid, including the steps of filling each container with an amount of said fluid less than said predetermined weight, weighing each container and the fluid therein to determine the weight of fluid that must be added to reach said predetermined weight, simultaneously drawing the weight of fluid necessary to bring said container up to said predetermined weight from a reservoir, and, after completion of the weighing step, directing the fluid drawn from the reservoir into the container.

3,162,259
SORTING MACHINE POCKET
Franklin P. Burroughs, Kensington, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 20, 1963, Ser. No. 259,885
8 Claims. (Cl. 177—230)



1. In a sorting machine having a plurality of pockets to which articles are sorted, the improvement comprising a pocket structure having a fixed part and an article support which moves in response to the weight of the articles thereon and which provides a visual signal to indicate the presence of articles in the pocket solely by the position of the support, said support being in a first elevated position with respect to the machine when unloaded, means connected to said support to constrain the motion of said support to a predetermined path as it becomes loaded with sorted articles so that said support assumes a second lowered position with respect to the machine when loaded with articles, said second position being such that a part of said support projects outwardly from a side of the machine thereby serving as a visual indicator of the pocket being full and also presenting portions of the article support outwardly from said machine side to facilitate pocket-unloading, said constraining means including a pair of links pivoted at one set of ends to said fixed part and the other set of ends pivoted to the support to cooperate with said part and said support and form a parallelogram linkage, and a synchronizing link pivoted to both of said links intermediate the ends thereof thereby requiring said pair of links to operate in unison and to remain parallel during all positions of said support.

3,162,260
VEHICLE FOR TRAVELLING OVER LAND AND/OR WATER
Christopher Sydney Cockerell, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed May 31, 1960, Ser. No. 33,025
Claims priority, application Great Britain June 10, 1959
5 Claims. (Cl. 180—7)

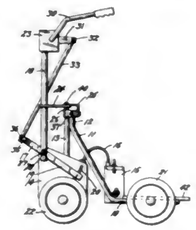


1. A vehicle of the type adapted to hover or travel over a surface at a predetermined height which is small in relation to the size of said vehicle and having means which in operation produce and maintain a cushion of pressurised air underneath the vehicle, said vehicle additionally comprising means for producing a propulsive thrust operable to move said vehicle including at least one port through which fluid is expelled for producing a propulsive thust having a component parallel to the fore and aft axis of the vehicle, at least one port through which fluid is expelled for producing a sideways thrust having a component normal to the fore and aft axis in one direction, at least one port through which fluid is expelled for producing a sideways thrust having a component normal to the fore and aft axis in the other direction, and means for supplying fluid to each of said ports, means for varying the relative mass flows of the fluid through said ports for controlling the direction of operation of the resultant thrust upon the vehicle, at least one vane in each of said ports mounted for movement about a vertical axis, and means for turning said vanes about the vertical axes thereof to deflect a controlled part of the thrust produced by the fluid issuing from said ports and thereby exert a turning moment about a vertical axis.

3,162,261
MOTORIZED PERSONNEL CARTS
Herbert L. Everroad, 4454 York St., Denver, Colo.
Filed May 27, 1963, Ser. No. 283,309
6 Claims. (Cl. 180—26)

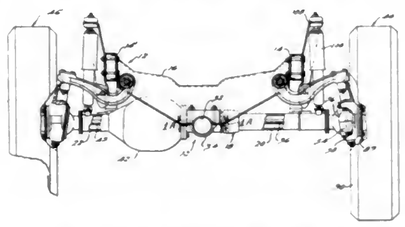
1. A motorized personnel carrier comprising: a traction element supported on traction wheels and containing a motor for driving said traction wheels and a rheostat for controlling the speed of said motor; a tiltable yoke mounted on said traction element and operatively connected to said rheostat for controlling the latter; a tubular column extending upwardly from said traction element, the latter being mounted on said column so as to be rotatable in a horizontal plane; a chassis frame; wheels supporting said chassis frame, said chassis frame extending forwardly and upward to a fixed connection with said column; a platform supported by said chassis frame;

speed control means connected to said yoke for tilting the latter for actuating said rheostat, a tubular post mounted on each side of said traction element and extending upwardly in parallel relation; a brace plate mounted on said posts and extending rearwardly therefrom to a posi-



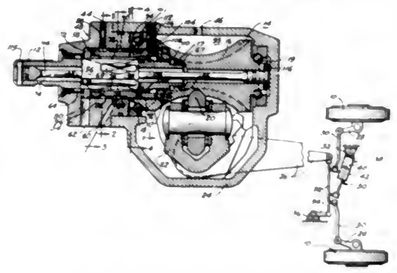
tion over said column; a pivot stud affixed to and extending downwardly from said brace plate into rotatable engagement in the upper extremity of said column so that said posts may rotate with said traction unit about the axis of said column; and means for manually rotating said posts to the right and left.

3,162,262
SUSPENSION FOR STEERABLE AND DRIVEN WHEELS
Miguel A. Ordorica, Lambertville, Mich., and Lamont A. Cadmus, Toledo, Ohio, assignors to Willys Motors, Inc., Toledo, Ohio, a corporation of Pennsylvania
Filed Mar. 12, 1962, Ser. No. 178,813
16 Claims. (Cl. 180—43)



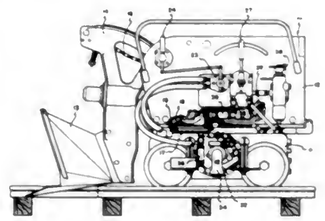
1. An independent suspension system having wheels for driving and steering a vehicle comprising an axle assembly including a pair of axle housing members pivotably secured to each other, a pair of steering knuckle assemblies, each of said steering knuckle assemblies comprising a ring member pivotably secured to an outer end portion of one of said pair of axle housing members for pivotable movement about a plurality of axes, a steering knuckle member rotatable about a substantially vertical axis relative to said ring member, and anti-friction means disposed between said steering knuckle member and said ring member for rotatably connecting said steering knuckle member to said ring member, each of a pair of wheel assemblies rotatably secured to each said steering knuckle member of said pair of steering knuckle assemblies, control arm means pivotally connected to said each of said steering knuckle assemblies and pivotally connected to the vehicle chassis for guiding said steering knuckle assemblies in up-and-down swinging motion, spring means operatively connected to said control arm means and to the vehicle chassis for resiliently resisting said up-and-down swinging motion, means including said axle assembly for transmitting power to said wheel assemblies and steering means including said steering knuckle assemblies for steering said wheel assemblies.

3,162,263
POWER STEERING MECHANISM
Arthur K. Brown, Jr., South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,442
10 Claims. (Cl. 180—79.2)



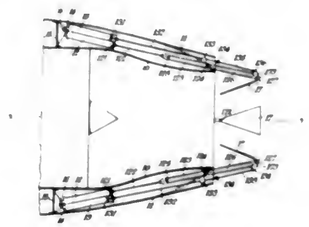
1. In a power steering mechanism including an input member, an output member, and a fluid motor operatively connected to said output member, the combination within a housing, of a worm having grooves means formed thereon and a stepped diameter bore located within and at one end thereof which extends substantially to the bottom of said groove means without interfering therewith follower means operatively connected to said output member and engaging said groove means, a pair of relatively rotatable telescoped tubular elements through which fluid flow to and from said motor is controlled, one of which is a part of said input member and the other of which is connected to said worm, said tubular elements each having one end thereof extending into and located substantially within said stepped diameter bore of said worm, and mechanical drive through pick-up means located on one end of said input member and in said stepped diameter bore of said worm for permitting limited relative rotary motion between said input member and said worm.

3,162,264
MUFFLING DEVICE ON PNEUMATICALLY DRIVEN MATERIAL HANDLING MACHINE
Donald E. Hendrickson and James D. Brown, Salt Lake City, Utah, assignors to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,755
2 Claims. (Cl. 181—36)



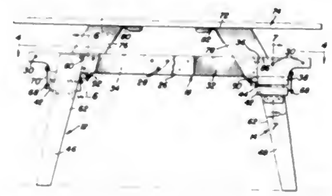
1. Muffling means for an industrial structure of the type including a base support, a first deck fixed on said base support, a second deck overlying said first deck, industrial tools carried by said second deck and exhaust-producing motor means associated with said industrial structure, said muffling means comprising a gas-permeable bearing means between said decks enabling relative motion of said decks, said bearing means defining the sidewalls and said decks defining the top and bottom of a plenum space between said decks, and conduit means interconnecting the exhaust of said motor means with the interior of said plenum space for conducting exhaust gases into said plenum space for eventual discharge through said bearing means.

3,162,265
NOISE SUPPRESSION DEVICE FOR TURBO-JET ENGINES
John A. Hay, Addlestone, England, assignor to Vickers-Armstrongs (Aircraft) Limited, London, England, a British company
Filed June 14, 1961, Ser. No. 117,013
Claims priority, application Great Britain, May 5, 1961, 16,424/61
5 Claims. (Cl. 181—51)



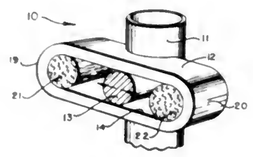
1. Means for reducing the noise of the efflux of a turbo-jet engine, comprising, in combination with an engine nacelle including an exterior shell enclosing a gas duct and open at its rear end to define a jet nozzzle for the efflux of gases from the gas duct, a plurality of vanes each having a pointed vertex, and means for mounting said vanes in the efflux at a position close to and downstream of the jet nozzle with the vertex of each vane extending obliquely upstream toward the central axis of the jet nozzle to induce an admixture of additional air with the jet efflux, said vane mounting means including carrier means slidably supported from the engine nacelle mounting each vane in equi-angular spaced relationship about the jet nozzle, and means for operating said vanes and carrier means for retracting and extending said vanes respectively from a position downstream of said jet nozzle to a position upstream of said jet nozzle, said operating means including a pair of fluid-pressure jacks each jack having a ram, the ram of one such jacks being connected to said carrier means, the ram of the other jack pivotally attached to its respective vane, the arrangement being such that the operation of the jacks is effective to extend and retract said vanes from their operative and inoperative position.

3,162,266
MULTIPURPOSE WORK UNIT
Russell W. Franzen, 307 W. McGaffey, Roswell, N. Mex.
Filed Jan. 31, 1963, Ser. No. 255,285
5 Claims. (Cl. 182—182)



1. A multipurpose work unit of the sawhorse type comprising a pair of upright leg assemblies interconnected at their upper ends by means of generally horizontal elongated brace means secured and extending therebetween, generally horizontally disposed and elongated platform means disposed above and generally paralleling said brace means, said brace means including a pair of opposing and upwardly facing abutment means extending transversely thereof and spaced longitudinally therealong, said platform means including depending legs pivotally secured to said platform means for rotation about generally horizontal axes extending transversely and spaced longitudinally of said platform means and for swinging movement between generally vertical free hanging positions and substantially downwardly divergent limit positions, the lower end portions of said legs, when the latter are in said limit positions, having downwardly and outwardly opening notches formed therein in which, when said legs are in said downwardly divergent limit positions, said opposing abutment means are seatingly receivable for supporting said legs upon the lowering of said platform means from an elevated position toward said brace means to an upper supported position, said legs being freely swingable to said free hanging position upon the raising of said platform means above said upper supported position and thereafter receivable, when in said free hanging positions, between said abutment means upon the lowering of said platform means toward a lowered position supported from said elongated brace means independently of said legs, said opposing abutment means being spaced considerably further apart than the transversely extending axes of rotation of said legs relative to said platform means.

3,162,267
SCOTCH-YOKE MECHANISM HAVING LUBRICANT APPLICATOR SECURED TO THE YOKE
Sherwood G. Enders, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Original application Sept. 12, 1960, Ser. No. 55,320, now Patent No. 3,033,312, dated May 8, 1962. Divided and this application Dec. 4, 1961, Ser. No. 156,659
1 Claim. (Cl. 184—5)



In a Scotch-yoke type of motion-translation mechanism, the combination of:

(*a*) a closed yoke, substantially channel-shaped, and having a pair of parallel side walls forming a guide track therebetween;

(*b*) said yoke having a back wall and further having a pair of closed ends all joining integrally with said side walls;

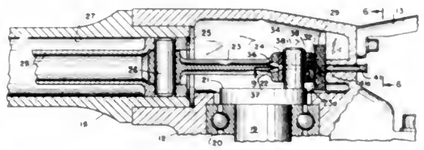
(*c*) means to reciprocate said yoke in a direction transverse to said side walls, said means comprising a rotating eccentric member entering said yoke in a direction which is opposite from said back wall of said yoke;

(*d*) said eccentric member being guided for reciprocation in said track; and

(*e*) a pair of lubricant-impregnated felt applicators mounted between the parallel side walls of said yoke, one at each end of the yoke, and carried by said yoke during its reciprocation, whereby said eccentric member engages said applicators, in sequence, once

per rotation and at the mid-point in the reciprocation of the yoke, and acquires lubricant therefrom, and whereby the lubricant is confined substantially within said closed yoke.

3,162,268
LUBRICATOR FOR A MOTION-TRANSLATING MECHANISM
Harold O. Short, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Aug. 22, 1962, Ser. No. 218,678
1 Claim. (Cl. 184—5)

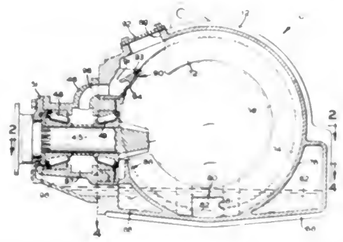


In a portable power-operated tool having a housing and a motion-translating mechanism comprising a rotating crankshaft journaled in the housing, a crank pin carried by the shaft, a bearing on the pin, and a connecting rod having a head mounted on the bearing; lubrication means comprising:

(*a*) a lubricant applicator retained within the housing radially of the crank pin and within the zone of travel of the connecting rod, whereby the head of the rod may wipe against said applicator once per revolution of the crankshaft;
(*b*) means including a duct formed in the housing and leading to said applicator to replenish the supply of lubricant in the applicator from an external source;
(*c*) a canal formed in the head of the connecting rod to communicate said applicator with the external surface of the bearing;
(*d*) a first duct formed in the bearing and communicating with said canal in the head of the connecting rod;
(*e*) a second duct formed in the bearing diametrically opposite to said first duct;
(*f*) an internal annular recess formed in the bearing between said first and second ducts;
(*g*) a pair of internal longitudinal canals formed within the bearing diametrically opposite to one another, one each of said longitudinal canals communicating with a respective one of said ducts; and
(*h*) a pair of passageways formed in the connecting rod head, diverging with respect to each other, communicate with said second duct in the bear in, and terminating at the outer surface of the connecting rod.

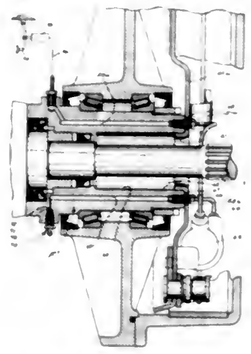
3,162,269
LUBRICATION ARRANGEMENT FOR A RAIL CAR AXLE DRIVE
George Raymond Reed, Lambertville, Mich., assignor, by mesne assignments, to Safety Electrical Equipment Corporation, Hamden, Conn., a corporation of Connecticut
Filed June 7, 1962, Ser. No. 200,873
14 Claims. (Cl. 184—6)

1. The combination with a rail car drive unit of the type having a ring gear adapted to be drivingly connected to the axle of the rail car, a pinion gear drivingly meshed with the ring gear, and gear case means having a lubricant retaining sump and rotatably mounting the ring gear and pinion gear, of a channel means carried by said gear case means in close proximity to said ring gear, said ring gear being positioned within said channel means and said channel means extending above the lubricant level of said sump from below the same both clockwise and counterclockwise and terminating above and below the meshing points of said ring gear and pinion gear whereby lubricant



is directed upon the meshing portion of the ring gear and pinion gear up one rotation of the ring gear both clockwise and counterclockwise.

3,162,270
VEHICLE WHEEL ASSEMBLY
Louis Demas, Oak Park, and Norbert W. Tesch, Grosse Pointe Farms, Mich., assignors to American Motors Corporation, Kenosha, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 190,587, Apr. 27, 1962. This application July 2, 1962, Ser. No. 206,793
2 Claims. (Cl. 188—2)



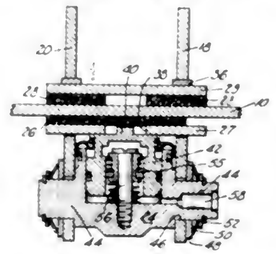
1. A vehicle wheel assembly comprising: a wheel rim and body; a hollow hub formed at the center of the wheel body; a hollow hub support projecting through the hub and having an external wall spaced radially inwardly from the internal wall of the hollow hub; a brake drum housing anchored to the wheel body and forming in conjunction therewith a substantially liquid tight chamber; a wheel spindle rotatively supported internally of the hub support and connected to the brake drum housing for driving said housing and wheel rim and body; bearings interposed between the hub support and hub; a backing plate having its central portion anchored to the end face of the hub support; a hydraulic cylinder carried on the backing plate; said hub support having a passage therethrough; a hydraulic feed conduit leading into the hydraulic cylinder and having one end opening into the passage in the hub support, said feed conduit being located within the interior of the brake drum housing; said hub support having a second passage therein; a bleed conduit leading from the wheel cylinder and having one end opening into one end of the second passage; said second passage having its other end opening to atmosphere exteriorly of the brake drum housing and a bleed valve normally closing off the second passage.

3,162,271
CORROSION RESISTANT DISC BRAKE
John Harry Arthur Hanson, New Cubbington, near Leamington, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Dec. 14, 1960, Ser. No. 75,715
Claims priority, application Great Britain, Jan. 1, 1960, 142/60
3 Claims. (Cl. 188—73)



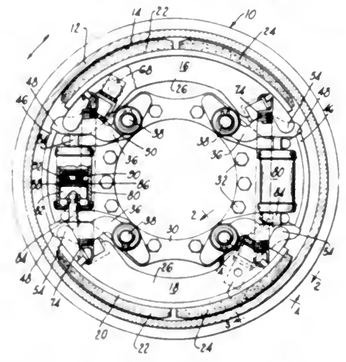
1. A disc brake including friction pads slidable in contact with guides towards and away from the braking disc and in which the contacting surfaces of the pads and the guides are of materials which are inherently resistant to corrosion, which are not deleteriously affected by exposure to braking temperatures and which are unable to develop between them an electrolytic potential difference sufficient to cause corrosion and in which the material of said guides in contact with said pads is a non-metallic electrically inert material.

3,162,272
YOKE-CALIPER TYPE DISC BRAKE
Pierre Gancel, Levallois, France, assignor to Société Anonyme D.B.A., Paris, France, a company of France
Filed Nov. 6, 1961, Ser. No. 150,505
Claims priority, application France Nov. 10, 1960
12 Claims. (Cl. 188—73)



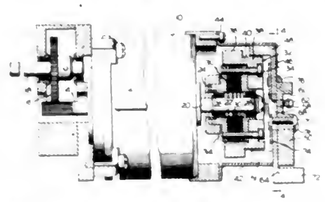
1. A disc brake comprising: a rotor having friction surfaces thereon, a support member, a pair of spaced caliper members straddling said rotor, a cylinder block on one side of said rotor and extending between said caliper members, actuating means carried by said cylinder block, a round opening in each of said calipers, a round boss on each lateral end of said cylinder block projecting through a respective one of said openings, said openings being oversized relative to their respective bosses, means resiliently securing said bosses and thereby said cylinder block to said calipers whereby said cylinder block is pivotable and angularly movable relative to said caliper members, means securing said caliper members to said support member for movement in a direction transverse to the plane of said rotor friction surfaces, a pair of friction members one opposite each of said rotor friction surfaces, one of said friction members being carried by said calipers for movement thereby into engagement with said rotor and the other of said friction members being slidable relative to said caliper members for engagement with said rotor by said actuating means.

3,162,273
LEVER ACTUATED AND ANCHORED BRAKE
Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 6, 1960, Ser. No. 27,327
21 Claims. (Cl. 188—78)



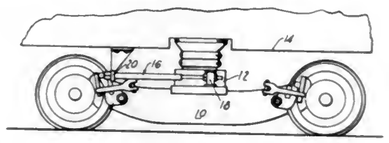
1. In a brake: a rotatable drum having a cylindrical braking surface, a stationary support member, brake shoes slidably arranged in end-to-end relationship on said stationary support, actuating means located between a pair of said adjacent shoe ends, abutment means on at least one of said adjacent shoe ends of one of said shoes, an actuating lever pivotally connected at one end to said support member and so ararnged that at least a portion thereof is located between and engages said abutment means and said actuating means, and anchor means separate from said actuating means and operatively connected to said support member and so located thereon that the other end of said lever will engage said anchor means to anchor thereon during brake actuation in at least one direction and will engage said anchor means in retracted position.

3,162,274
SERVO-MOTOR DAMPING ASSEMBLY
James R. Patmore, Neptune, and Harry A. Williamson, Red Bank, N.J., assignors to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed Oct. 30, 1962, Ser. No. 234,186
10 Claims. (Cl. 188—90)



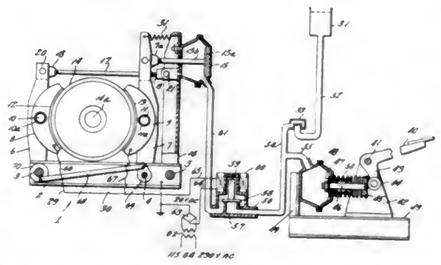
1. In a servo-motor mechanism, the combination comprising
a rotatable shaft,
output means connected to said shaft and adapted to record data fed to a servo motor,
a casing rotatably connected to said shaft and containing a volume of fluid,
fluid damping means secured to said shaft and extending into said casing for viscous damping of said shaft during its rotation, and
an inertial element secured to said casing for rotation therewith whereby viscous damping of said shaft is combined with inertial damping of said shaft during rotation thereof.

3,162,275
RAILWAY CAR TRUCK LINK
Garold E. Grossnickle, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Mar. 15, 1962, Ser. No. 179,860
3 Claims. (Cl. 188—129)



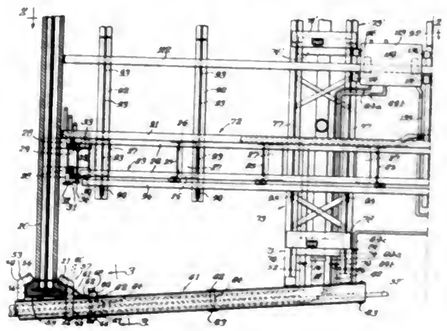
1. A mechanical shock absorber comprising:
a cylinder;
a rod;
a slidable carrier assembly attached to said rod and reciprocably inserted in said cylinder, said assembly including a one-piece block having drilled openings, a plurality of plates overlying said block, a plurality of spring means within said openings compressed between said plates and means to hold said plates axially on said block, which means allows said plates to move in a normal direction to the axis of said block;
a lost motion connection means joining one end of said assembly to one end of said cylinder which connection will allow said assembly limited movement in said cylinder and at the same time provide a solid mechanical link after the allowed movement has been experienced;
a means to join the other end of said assembly to said rod;
a closure for the other end of said cylinder opposite the end of said cylinder that is connected with said assembly, which closure is adapted to slidably and sealingly support said rod;
a plurality of friction linings joined to said plates to be thrust against said cylinder whereupon said assembly is frictionally restrained in said cylinder; and
bearing means on said assembly for holding said assembly centrally of said cylinder to prevent structural deformation and failure of said shock absorber.

3,162,276
SELF-ADJUSTING BRAKE
Donald I. Bohn, Asheville, N.C., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 18, 1963, Ser. No. 273,960
9 Claims. (Cl. 188—152)



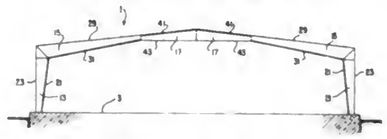
1. A self-adjusting hydraulic brake comprising a brake shoe having a lining, a brake drum, hydraulic actuating means connected to said brake shoe, a solenoid valve in said hydraulic actuating means movable between an open and closed condition, and electrical circuit means connected to said solenoid valve, said brake shoe lining and said brake drum, said brake shoe lining being movable between a brake position and release position with respect to said brake drum; said electrical circuit means providing current for said solenoid valve responsive to engagement between said brake shoe lining and said brake drum; said solenoid valve being open when electrical current flows thereto and closed when said electrical current is interrupted; time delay means connected to said solenoid valve to delay the closing of said solenoid valve for a predetermined length of time after electrical current to said solenoid valve is interrupted whereby said brake lining has a constant release spacing from said brake drum.

3,162,277
SERVICE FACILITIES FOR BUILDING SYSTEM
Lafayette Markle, Donlea Road, Barrington, Ill.
Filed Oct. 17, 1960, Ser. No. 63,097
27 Claims. (Cl. 189—1)



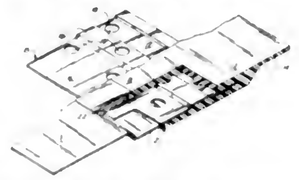
1. In a building system having an outside wall, a service facilities structure comprising an entrance unit including an elongated cluster framework extending from the outside to the inside of said wall, a plurality of elongated service lines mounted within said cluster framework, means at the outer end of said cluster framework for supporting the same on said wall, a distributing unit mounted within the building and including a generally T-shaped framework with vertical and horizontal frame portions, and detachable connection means between the lower end of said vertical frame portion and the inner end of said cluster framework, said lines extending upwardly from the inner end of said cluster framework through said vertical frame portion and at least some of said lines thence extending laterally along said horizontal frame portion.

3,162,278
METALLIC BUILDING STRUCTURE
Herman R. Rasch, Terre Haute, Ind., assignor to National Steel Corporation, a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,472
4 Claims. (Cl. 189—1)



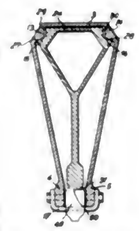
1. A rigid portal frame comprising
first and second spaced upright columns and a rafter structure connected to the columns,
the rafter structure including a first rafter member extending between one knee of the frame and the ridge of the frame and a second rafter member extending between the other knee of the frame and the ridge,
the first rafter member and the second rafter member each including a first portion extending from its respective knee and a second portion between the first portion and the ridge,
the first portion including an upper flange and a lower flange,
the second portion including an upper flange and a lower flange,
the upper flange of the first portion and the upper flange of the second portion being substantially coplanar,
and the cross-sectional area of the upper flange of the second portion being substantially greater than the cross-sectional area of the lower flange of the second portion and of the cross-sectional area of the upper flange of the first portion.

3,162,279
PLASTIC-METAL JOINT
Alfred E. Leininger, Ypsilanti, and Marvin E. Lickert, Rochester, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,688
12 Claims. (Cl. 189—36.5)



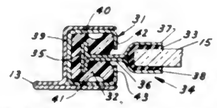
1. A continuous surface joint between a sheet metal panel and a synthetic material panel, comprising a metal weld strip, means securing said weld strip to said synthetic material panel, a weld flange on said sheet metal panel, said metal weld strip and flange being welded together, and filler material covering the surface irregularities contiguous to said weld strip and flange to complete the continuity of said surface joint.

3,162,280
FALSEWORK GIRDER
Otto Hinze, Hannover-Kleefeld, Germany, assignor to Hico Corporation of America, New York, N.Y.
Filed June 1, 1961, Ser. No. 114,215
Claims priority, application Germany June 7, 1960
13 Claims. (Cl. 189—37)



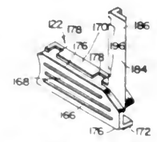
1. A telescopic girder construction comprising at least one outer girder section and at least one inner girder section adapted to be telescoped one into the other, and means for locking the girder sections together, the outer girder section including a transverse upper web and side webs extending downwardly from the edge portions of said transverse upper web, characterized by the provision of inclined plane bearing surfaces at the inside corners where the upper web is joined to the side webs, the inner girder section including a transverse upper web and side webs extending from edge portions thereof, the upper corners of the inner girder section having slidable engagement with said inclined plane bearing surfaces of the outer girder section, and a clearance being provided between the transverse upper webs of the outer and inner girder sections.

3,162,281
GLASS RUN GUIDE
Milton A. Kraska, Dearborn, and Gay P. Gaulien, Southfield, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1963, Ser. No. 248,928
7 Claims. (Cl. 189—72)



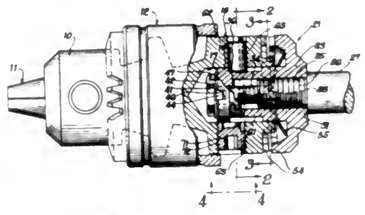
1. A window assembly comprising in combination a transparent panel reciprocally movable between a first terminal position and a second terminal position; a side support at one side of said panel comprising an elongated channel member having a longitudinal opening extending from said first terminal position to said second terminal position, and connecting means interposed between said panel and support comprising oppositely disposed retention means and guide means, said retention means securing said panel to said connecting means; said channel member being constructed and arranged to receive, retain and slidably support said guide means; a channel liner comprising a resilient organic polymeric material having a low coefficient of friction in contact with said guide means, positioned within said channel member and having an essentially T shaped longitudinal slot extending between said terminal positions and communicating with said longitudinal opening; said guide means comprising an essentially T shaped projection of said connecting means extending into said channel member and into slidable contact with said channel liner within said T shaped slot, said channel member, said channel liner, and said guide means coacting to prevent withdrawal of said guide means from said slot and said channel member in a direction longitudinally of said panel.

3,162,282
WINDOW BRACKET
Bernard E. Mendelsohn, Waban, Mass., assignor to Harvey Window Incorporated, Dorchester, Mass.
Filed Feb. 25, 1963, Ser. No. 260,741
10 Claims. (Cl. 189—76)



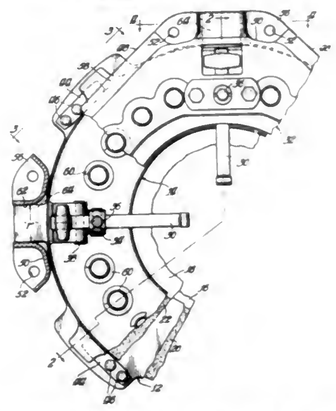
6. A corner bracket comprising
a pair of arms connected together at their ends and disposed at right angles to one another,
front faces provided for the arms and disposed parallel to one another,
an inner flange provided as a part of each of the arms and defining a continuous wall about substantially the entire inner edge of the bracket,
and a bevelled edge provided along the outer side of at least one of the arms and extending substantially the full length of that arm.

3,162,283
DUAL PURPOSE CHUCK
Henry G. Saul, Western Springs, and Albin G. Troka, Des Plaines, Ill., assignors to Supreme Products Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1963, Ser. No. 261,743
12 Claims. (Cl. 192—34)



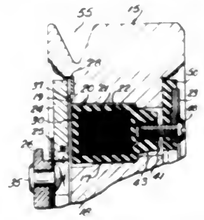
1. Clutch mechanism to be interposed between the output spindle of a source of rotary power and means for holding a rotatable tool comprising: a driven clutch part adapted to be secured to said tool-holding means, a driving clutch part adapted to be secured to said spindle, said parts having interengageable respective clutching faces, means interposed between said parts normally to bias said parts to disengaged position, said driven part having an axial bore, said driving part having a stem received in said bore with an axial sliding fit whereby said parts may be engaged and disengaged selectively against the force of said bias means, said stem having a peripheral groove and said driven part having a bore receiving a pin engaging said groove to retain said parts in operative relation, said groove having an axial length sufficiently greater than the axially-measured groove-engaging portion of the pin to provide for axial, relative sliding engagement of the stem and bore during engagement and disengagement of the clutching faces, said pin being arranged for removal from the exterior of the driven part to effect disengagement of the driving and driven parts, and means removably retaining said pins in groove-engaging position.

3,162,284
MULTIPLE DISC CLUTCH WITH SHEET METAL COVER
Byron D. Montgomery, Birmingham, and Sidney U. Gatewood, Roseville, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 7, 1962, Ser. No. 171,730
2 Claims. (Cl. 192—69)



1. A multiple disc clutch comprising in combination a driving member; a pressure plate; a pressure ring having drive lugs thereon; a first driven disc interposed between said driving member and said pressure ring; a second driven disc interposed between said pressure ring and said pressure plate; pressure spring members acting on said pressure plate to pack said pressure plate, said second driven disc, said pressure ring, and said first driven disc against said driving member: a stamped sheet metal clutch cover plate having an axial depth sufficient to extend from said driving member to encompass said multiple disc clutch; a rear portion formed on said clutch cover plate; clutch release levers pivotally supported on said cover plate; means to support said pressure springs; a plurality of leg portions extending from said rear portion toward said driving member, each of said leg portions including an outwardly flared flange portion adapted to engage said driving member and a radially flared drive lug recess extending substantially perpendicular to said leg portion and extending from a point near said rear portion to a point near said driving member, said radially flared drive lug recess providing substantial radial and substantial axial support defining a driving surface for said drive lugs whereby the radially flared drive lug recess increases the structural strength of said clutch cover plate.

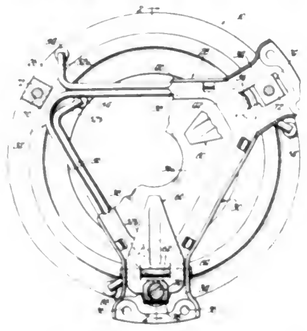
3,162,285
ELECTRO-MAGNETIC CLUTCH WITH MOLDED COIL UNIT
William E. Sala, Lyndhurst, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 28, 1959, Ser. No. 816,446
4 Claims. (Cl. 192—84)



1. A clutch of the type described comprising a hub member, a pole member, said hub member and pole member being relatively rotatable on a common axis, said pole member having an axially facing annular recess therein and annularly extending outer and inner pole portions on radially opposite sides of said recess and connected by rear wall means forming the bottom wall of said recess, said bottom wall having a plurality of circumferentially spaced recesses therein communicating with said axially facing annular recess, annular armature means supported by said hub member for rotation therwith and axially shiftable to and from a clutch engaged position relative to said pole member and in spanning relation to said annular recess, an annular coil unit positioned in said annular recess and electrically energizable for causing the axial shifting of said armature means to said clutch engaged position, said coil unit comprising coil means and a one-piece molded homogeneous body of set electrical insulating material having said coil means embedded therein and completely surrounded thereby, said one-piece molded homogenous body having plural boss portions received in said recesses in said bottom wall of said pole member, plural threaded metal insert fastening means embedded in said boss portions of said one-piece homogenous body and communicating with the exterior of said boss portions to receive complementary screw fastening elements, first and second of said metal inserts being electrically connected to the respective opposite leads of said coil means, means providing passages in the back wall of said pole member communicating with a plurality of said recesses

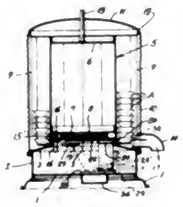
and in alignment with the metal inserts in said bosses in the recesses, and screw fastening means extending through the passages in said bottom wall and into said metal inserts and supporting said coil unit in said annular recess.

3,162,286
CLUTCH WITH TORSION BAR ENGAGING SPRINGS
Grant H. Smith and Romas B. Spokas, Rockford, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 6, 1961, Ser. No. 150,499
6 Claims. (Cl. 192—89)



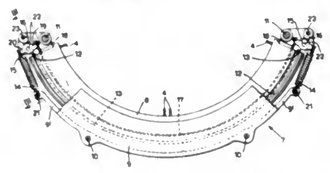
1. A clutch device of the friction type having an annular drive member, a driven plate and a pressure plate, the drive member and pressure plate being adapted to frictionally engage the driven plate therebetween, said device comprising a clutch actuating assembly, said assembly comprising a bracket secured to said annular drive member and disposed adjacent one side of said pressure plate opposite the driven plate, a plurality of torsion elements disposed between said bracket and said pressure plate for resiliently urging said pressure plate toward said driven plate, said torsion elements each having an effective torsion length greater than any chord of a circle enclosing said pressure plate, and a plurality of levers pivotally mounted on said bracket and adapted to move said pressure plate in a direction to overcome the effect of said torsion elements and release said pressure plate from the driven plate.

3,162,287
VENDING MACHINE
David Lupovici, 7482 Spring Road, Cote St. Luc, Quebec, Canada
Filed May 29, 1963, Ser. No. 284,157
1 Claim. (Cl. 194—85)



A vending machine comprising a casing having an article discharge chute, a rotor rotatably mounted within said casing for rotating movement about a vertical axis, said rotor carrying a plurality of compartment means for holding a plurality of stacks of solid state articles to be dispensed, adjusted rotation of said rotor moving a selected stack in vertical alignment with said discharge chute and with the lowermost article of said selected stack at a discharge station opposite said discharge chute, a base plate secured within said casing at a level below said rotor, a guide sleeve secured to said base plate, axially aligned with said discharge chute and said discharge station inwardly of the latter, a horizontally displaceable plunger slidably inserted within and guided by said sleeve, and coin controlled means to move said plunger between a retracted position in which its free end is spaced from said lowermost article at said discharge station and an ejecting position in which its free end extends across said discharge station, said means including said base plate, said base plate having a coin discharge opening made therethrough, a coin box carried by said casing underneath said base plate and in register with said coin discharge opening, a coin chute secured to said base plate above the latter and having an inlet opening at the exterior of said casing below said rotor and an outlet spaced above base plate and laterally offset from the discharge opening of said base plate, a movement transmission lever and an operating lever arranged in partially overlapping position and both pivotally connected one to the other and to said base plate and having their overlapping portions disposed at a level between said coin chute outlet and said base plate, one end of said operating lever protruding outwardly from said casing, one end portion of said transmission lever having an elongated slot, said plunger having a pin engaging said slot and forming therewith a pivotal and sliding connection between said transmission lever and plunger, the overlapping portions of said levers each provided with a coin receiving slit, said slits being in register with each other when said levers are in alignment, said levers when in alignment and in the retracted position of said plunger, having their slits in register with the outlet of said coin chute, said levers when in alignment and in the ejecting position of said plunger, having their slits in register with the coin discharge opening of said base plate, said levers movable during an operating stroke between a retracted position and an ejecting position, and vice versa during a return stroke, spring means connecting said operating lever to said casing and urging said operating lever into retracted position, and abutment means carried by said operating lever and engageable with said transmission lever only upon return stroke of said operating lever to return said transmission lever to its retracted position and resilient abutment means secured to said casing in the ejection path of the lowermost article at said discharge station to prevent discharge of said lowermost article through said discharge chute by tilting or shaking of the machine.

3,162,288
TYPE BAR REST SUPPORT
Rinaldo Saito, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Sept. 13, 1963, Ser. No. 308,709
Claims priority, application Italy, Sept. 17, 1962, 18,405/62
5 Claims. (Cl. 197—42)



1. In a typewriter having a substantially semicircular segment with a plurality of type bars pivotally mounted

thereon at differential angular positions, a type bar rest support comprising in combination:

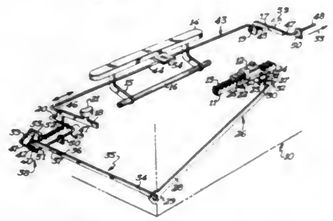
(*a*) an arcuate element for cushioning the head of said type bars when restored,

(*b*) an arcuate rigid guide secured to said segment and mounting said element for radial as well as tangential relative displacement,

(*c*) a pair of springs for connecting each one of the two ends of said elements to said guide,

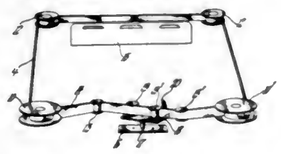
(*d*) and intermediate means interposed between each one of said two ends and the corresponding spring of said pair so pivoted on said guide as to enable said pair of springs to be affected by said element under the shock of the restored type bar substantially in a constant manner irrespective of the angular position thereof.

3,162,289
MARGIN RETURN AUTOMATICALLY ACTUATED BY SPACER BAR
John T. Davies, 2023 Stevens Ave., Minneapolis, Minn.
Filed Dec. 4, 1961, Ser. No. 156,653
4 Claims. (Cl. 197—65)



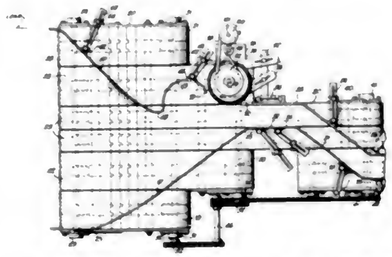
1. In an electric typewriter having a spacer bar, a carriage for relatively advancing typing positions with respect to the type as it is used, and a carriage return mechanism, the combination of an elongated pivoted linking device adjacent said spacer bar and adapted to be pivoted thereby and having a portion in close proximity to said return mechanism and in abuttable relation thereto, and means associated with said carriage and connected to said linking device to move the said linking device portion into abutting relation with said return mechanism when said carriage has reached a predetermined marginal position near the end of its advanced travel whereby on movement of said spacer bar to pivot said linking device said return mechanism would be actuated by said linking device.

3,162,290
INK TRANSFER
John P. Knight, P.O. Box 364, Detroit, Mich.
Filed June 29, 1961, Ser. No. 120,668
9 Claims. (Cl. 197—151)



7. In a printing machine using an ink-permeable transfer member part of which is rolled on a spool and having a printing station in which another part of the transfer member is disposed and at which is located at least one type element, the improvement comprising a first thin ink-impermeable member disposed in area contact with the ink-transfer member on the same side of the ink-transfer member as the printing element in the printing station, a fabric member disposed in area contact with the second member on the side of the second member opposite the first member, a second ink-impermeable member wound on the spool and in area contact with the first member and the fabric member and on the side of the first and fabric members opposite the first ink-impermeable member, and means spacing the second ink-impermeable member from the other said members at the printing station so that the second ink-impermeable member bypasses the printing station.

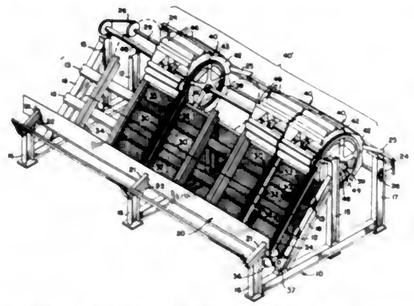
3,162,291
CONVEYING APPARATUS FOR ARRANGING MASSED ARTICLES INTO A COLUMNIZED RELATIONSHIP
John J. Bell, Pasadena, Md., assignor to Maryland Glass Corporation, Baltimore, Md., a corporation of Maryland
Filed May 2, 1962, Ser. No. 191,931
8 Claims. (Cl. 198—30)



1. Apparatus for arranging a mass of upright standing articles into columnized relationship comprising conveyor means presenting a generally horizontal conveying surface and having an infeed end to receive the mass of articles in random upright standing formation and an outfeed end, means for driving said conveyor means to move said conveying surface along a path from said infeed to said outfeed end, and means for converging the mass of articles on the conveyor means into columnized relationship as they are carried along said path on said conveying surface, said converging means including a wheel mounted to rotate about a vertical axis with a peripheral portion of said wheel overlying one lateral edge of said outfeed end of said conveyor means, means for driving said wheel to move the periphery overlying said one lateral edge in a direction opposite to the direction of movement of said conveying surface, guide wall means mounted extending along each side of said conveyor means converging toward the outfeed end of said conveyor means, said wall means along said one lateral edge extending generally toward said peripheral portion of said wheel and terminating upstream from said peripheral portion in the path of said conveying surface, and wall means forming a recessed pocket between said wheel and said termination with said pocket overlying said conveying surface.

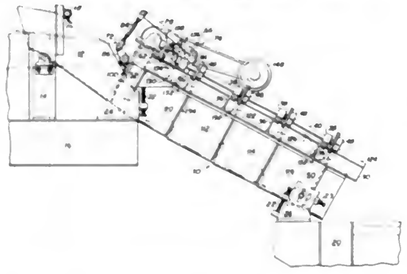
3,162,292
LUMBER HANDLING APPARATUS
Joseph M. Lawson, 4334 Woodcrest Drive, Memphis, Tenn.
Filed Mar. 7, 1962, Ser. No. 178,067
7 Claims. (Cl. 198—33)

1. Handling apparatus for individually dispensing elongated articles such as boards in a predetermined orientation comprising, means for dispensing elongated articles having random orientations, first conveyor means having a plurality of spaced supporting means thereon for receiving said randomly oriented articles and carrying same upwardly along a line of travel, second conveyor means traveling a circular path and having a plurality of spaced supporting means thereon for receiving certain of said articles from said first conveyor means, means driving said first conveyor means and said second conveyor means in synchronism whereby the spaced supporting means on said second conveyor means selectively engage and retain only those individual articles which are carried directly



by the spaced supporting means of said first conveyor means and have longitudinal axial orientations substantially perpendicular to said line of travel, with the remainder of said articles being rejected back onto said first conveyor means, and means for dispensing said individually selected articles.

3,162,293
DEVICE FOR ORIENTING PEARS
Malcolm W. Loveland, Orinda, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California
Filed Feb. 27, 1963, Ser. No. 261,464
4 Claims. (Cl. 198—33)



1. A device for orienting a pear comprising:

(*a*) a flexible elongated sheet;

(*b*) means supporting said sheet with one end elevated with respect to the other, said sheet being mounted on said support means to provide a U-shaped chute having its opposite side walls depending, in the absence of a pear, in a substantially parallel spaced relationship in which the side walls are spaced apart a distance, measured at normal to said side walls, which is substantially less than the maximum diameter of the butt end of the pear whereby when a pear is in the chute the side walls engage the maximum dimension of said pear at its butt end;

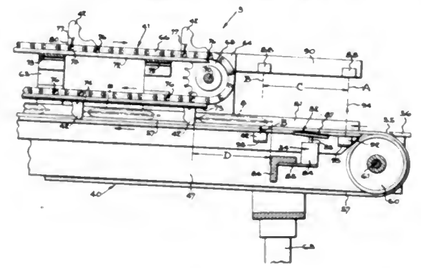
(*c*) an opening at either end of said chute for receipt and discharge of a pear;

(*d*) means for feeding pears into the elevated end of said chute;

(*e*) a first and a second finger, each finger depending on a side of the chute with each pair of fingers in a parallel spaced relationship normally less than the diameter of the butt of the pear sliding through the chute whereby the fingers restrain momentarily passage to the pear down said chute and impart an over-turning movement to a pear sliding down the chute butt-end first; and

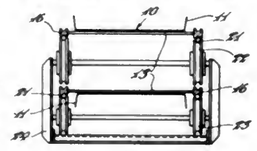
(*f*) means for separating the fingers to permit the pear to continue its passage down the chute.

3,162,294
ARTICLE TIMING MECHANISM FOR PACKAGING MACHINES
Julian A. Dieter, Cincinnati, Ohio, assignor to R. A. Jones & Company, Inc., Covington, Ky., a corporation of Kentucky
Filed July 5, 1962, Ser. No. 207,725
15 Claims. (Cl. 198—34)



1. In a mechanism for receiving articles which issue from a machine at random and for advancing said articles at a substantially uniform normal spacing, a belt type article conveyor adapted to receive successive articles delivered from the said machine and to frictionally engage and advance the articles at said random spacing, a hold-back conveyor mounted relative to the article conveyor, said hold-back conveyor advancing in the same direction and at a rate slower than the articles conveyor, said hold-back conveyor having hold-back elements adapted to intercept and restrain the articles which are frictionally transported on the belt type article conveyor, a photoelectric apparatus mounted relative to said article conveyor and adapted to respond to the advancement of the articles at random spacing along the article conveyor, said photoelectric apparatus including an arresting device operating in response to the photoelectric apparatus and adapted to arrest a trailing article on the article conveyor which is located at less than the normal spacing relative to an adjacent leading article, said arresting device adapted to release the arrested article in response to operation of the photoelectric apparatus when the normal spacing thereof relative to the adjacent leading article is reestablished, whereby said articles are advanced into engagement with the hold-back conveyor at substantially uniform spacing.

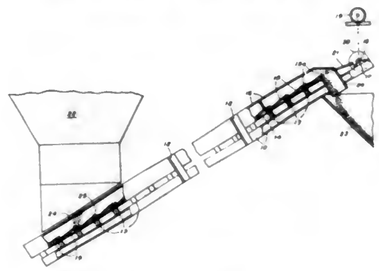
3,162,295
PLATE BELT CONVEYORS
James Morrison Adamson, Inverness, Scotland, assignor to Cable Belt Limited, Inverness, Scotland
Filed Mar. 30, 1961, Ser. No. 99,460
5 Claims. (Cl. 198—196)



1. A plate belt conveyor, including plate elements, laterally spaced ropes extending longitudinally of the conveyor for driving and supporting the plate elements, two

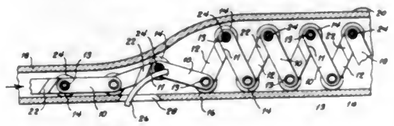
beltlike band members of substantially constant cross section with relation to their length, said members being formed of flexible material between which the plate elements are mounted, each band member forming a continuous loop at one side of the array of plate elements, the flexible band members being grooved longitudinally to straddle and frictionally engage the ropes.

3,162,296
CONVEYOR FOR MAGNETIC MATERIAL
Joseph W. Leonard III, Morgantown, W. Va., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Oct. 10, 1962, Ser. No. 229,541
4 Claims. (Cl. 198—41)



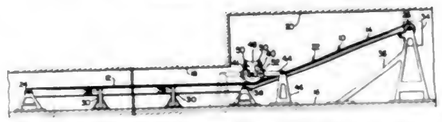
1. A conveyor comprising a frame, a plurality of magnets fixed to said frame and spaced lengthwise thereof, a pan supported on said magnets for reciprocating movement relative thereto along a path lengthwise of said frame, a plurality of riffles on the upper surface of said pan, said pan and riffles being of nonmagnetic material, each of said riffles having a face perpendicular to the upper surface of said pan, said faces being spaced apart at distances corresponding to the spacing between said magnets, and drive means operatively connected with said pan for moving the pan and riffles back and forth along said path, the perpendicular face of each riffle overlying a magnet at one end of said path and overlying the next magnet at the other end of said path.

3,162,297
SWINGING TRAY CONVEYORS
John M. Leach, Port Washington, N.Y.
(P.O. Box 350, Port Jefferson, N.Y.)
Filed July 7, 1961, Ser. No. 122,519
6 Claims. (Cl. 198—110)



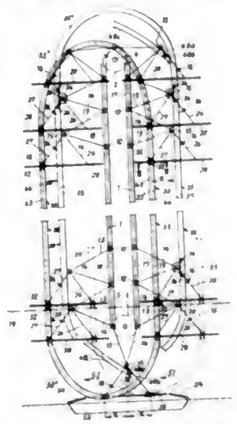
1. A conveyor comprising a chain having links and pivotal connections between the links, means for moving the chain lengthwise, a guide for the chain having opposite surfaces to retain the chain in substantially straight line position during movement, one surface of the guide deflecting sharply away from the other surface at a selected point in the movement of the chain to provide a sharply expanded area between the guide surfaces, means for moving a pivotal connection at right angles to the direction of movement of the chain into the sharply expanded area and at a higher rate of movement than the rate of movement of the chain lengthwise, and means on one link adjacent the so moved pivotal connection which contacts the other link at a point near the so moved pivotal connection to limit the movement of the two links away from the line of movement of the chain lengthwise.

3,162,298
CONVEYOR
Donald Duane Murphy, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1962, Ser. No. 183,905
8 Claims. (Cl. 198—137)



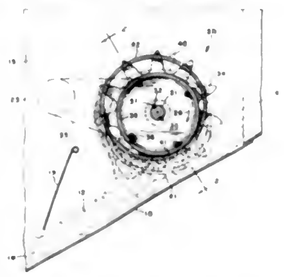
8. A belt hold-down apparatus comprising, a first support, a second support extending laterally from and pivotally connected to said first support, a plurality of readily deformable members supported by said second support for rotation with respect thereto about axes parallel to an axis about which said second support pivots with respect to said first support, and said second support having a lateral extension to which rollers are rotatably secured to engage the outer surface of said deformable members, respectively.

3,162,299
PARKING ELEVATOR FOR VEHICLES
August Wullschleger, 26 Martin Distelistrasse, Olten, Switzerland
Filed Nov. 28, 1962, Ser. No. 240,567
Claims priority, application Switzerland Dec. 22, 1961
11 Claims. (Cl. 198—158)



1. A parking elevator for vehicles, comprising in combination: a stationary structure, a single endless pull member movably mounted in said structure, elevator units in operation driven by and suspended on said pull member, rollers journalled on said elevator units, and guide rails mounted in said stationary structure operatively engaged by said rollers, said pull member in operation moving in a vertical plane, and said rollers in contact with said guide rails generating horizontal reaction forces perpendicular to said plane, each of said elevator units having a suspension axle attached to said pull member and at least one platform fixedly connected with and suspended on said suspension axles and said endless pull member having joint bolts, and comprising pairs of bars, one end of each said pairs forming a suspension joint with one of said suspension axles, and the other ends of each of said pairs being pivotally connected with two of said joint bolts spaced from one another.

3,162,300
FEEDER
Miles L. Sensenig, Stevens, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 21, 1963, Ser. No. 282,033
8 Claims. (Cl. 198—211)



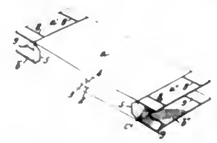
2. A self-stripping feeder for moving hay and other material, comprising a rotatable roll, a plurality of teeth projecting radially from said roll and engageable with material on said surface, said teeth being arranged in annular sets axially spaced from each other, and a plurality of loose rings surrounding said roll, there being at least one ring between adjacent sets of teeth, said rings being supported by the roll and having a diameter greater than the diameter of the roll whereby the axes of the rings may move in a radial direction relative to the roll by engagement of material with the rings.

3,162,301
PILL DISPENSER
Conrad Cage, Jr., 107 Linderman Ave., West Monroe, La.
Filed Nov. 21, 1962, Ser. No. 239,179
8 Claims. (Cl. 206—42)



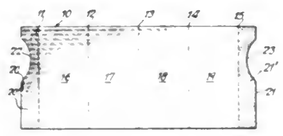
1. A pill dispenser and reminder comprising:
(*a*) an elongated tubular member;
(*b*) a plurality of partitions equal in diameter to the internal diameter of said tubular member mounted perpendicular to the axis of said tubular member and adapted to close the top and bottom and divide said tubular member into a plurality of laterally-disposed compartments for receiving pills;
(*c*) said tubular member having formed in its side wall openings opposite each of said compartments, said openings having an arcuate dimension of less than 180° and being vertically aligned one above the other to permit insertion of and removal of pills from said compartments;
(*d*) indicia receiving means formed on the outer wall of said tubular member opposite each of said compartments and adapted to temporarily receive visible reminders of times to consume the contents of each of said compartments; and
(*e*) transparent sleeve means frictionally engaging the outer surface of said tubular member and adapted to alternately close all of said compartment openings and open a selected one of said openings.

3,162,302
SHIPPER CARTON AND PACKAGE
Charles L. Champlin, Rittman, and Robert J. Hickin, Seville, Ohio, assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,130
10 Claims. (Cl. 206—46)



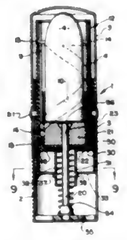
1. A shipper package including a multi-walled carton, a book, and a wrapper member for embracing the book in a direction substantially parallel to the bound edge thereof, said carton having four interconnected side walls arranged to form a sleeve relatively snugly encompassing the wrapper-embraced book in a direction tranverse to the book bound edge, the wrapper member of the wrapper-embraced book being adapted to be affixed to at least one of said side walls, and end walls for said carton serving to close the ends of the sleeve and disposed in spaced relation with respect to the wrapper-embraced book encompassed by said side walls.

3,162,303
CONTAINERS FOR ELECTRICAL BULBS AND THE LIKE
Kermit Greene, Newton Center, Mass., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 271,311
4 Claims. (Cl. 206—46)



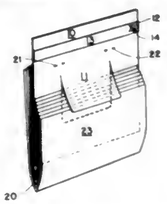
1. A blank for forming a container for enclosing a bulbous object and comprising an elongated area of single-faced corrugated laminate of flexible sheet material, a plurality of spaced-apart transverse score lines being formed on said area for demarking the borders of wall panels when the blank is folded along said lines to form an enclosure of polygonal cross-section, relatively narrow flap portions extending along each of the ends of said area, said flap portions on the surface reverse to the corrugated surface being coated with adhesive, said flap portions being adapted to be folded inwardly of the enclosure and adhered together to form brace means for protruding diagonally inwardly of a corner of the enclosure, the terminal edges of said flap portions being formed with curved cut-out areas adapted to be positioned to engage along a portion of the surface of the bulbous object to be contained in the enclosure for yieldably retaining the same against displacement.

3,162,304
COSMETIC STICK CONTAINER
Robert Gordon Bau, 3271 Laurel Canyon, North Hollywood, Calif.
Filed June 5, 1961, Ser. No. 114,870
12 Claims. (Cl. 206—56)



1. A cosmetic container comprising telescoping casing members, one of said members having inside thereof a plunger, said other casing member having relatively rotatable parts having a drive for a magnetic slide, said slide forming one coupling member for an elongate cosmetic having a ferrous base, said base being freely slidable into said other casing member for connection with said slide by magnetic attraction, said slide having an aperture through which said plunger extends to separate said slide from said base when said slide is in a lowermost position, and when said casing members are telescoped towards each other, spring means for telescoping said casing members away from each other, and stop means limiting telescoping movement of said members away from each other.

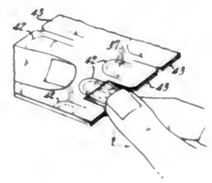
3,162,305
LITTER BAG DISPENSER
Norbert J. R. Schoppa, 1213 Eastern Ave., Davenport, Iowa
Filed Jan. 21, 1963, Ser. No. 252,828
4 Claims. (Cl. 206—57)



1. A litter bag dispenser comprising a mounting board of semi-rigid material, a tab formed by said mounting board and projecting to the rear, an adhesive strip attached to the back of said mounting board, the adhesive side facing away from said mounting board, a plurality of collapsed bags each in the same vertically disposed position stapled to the front of said mounting board at the top of said bags, the bottom of each bag being folded around the bottom of said mounting board and inserted under said tab.

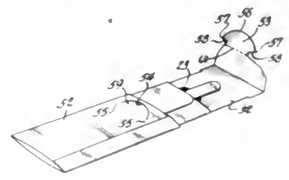
3,162,306
PACKAGE WITH INDIVIDUAL POCKETS FOR PADS
Eli A. Zackheim, Princeton, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed May 9, 1963, Ser. No. 279,057
5 Claims. (Cl. 206—63.2)

1. A package with individual pockets for pads of sheet material comprising a product sheet portion and coextensive portions of a relatively heavy backing sheet and a cover sheet, said product sheet portion being sandwiched between the coextensive portions of the backing sheet and the cover sheet to form a laminate, said product sheet portion comprising a plurality of pads at least partially cut from the product sheet portion and remaining in position therein, said product sheet portion in an area completely surrounding said pads being adhered one side to the backing sheet and the other side to the cover sheet, but loose from said backing sheet and said cover sheet throughout the areas of said pads to form a plurality of



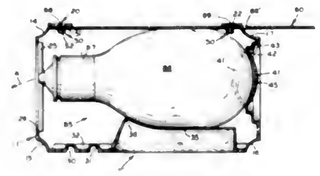
sealed pockets enclosing said pads, said backing sheet at the individual pockets being scored from the outside of and partially through the backing sheet along a breaking line crossing the pockets, and said laminate being cut from the breaking line to the nearest edge of the laminate on each side of the individual pockets to form a tab separable from the remainder of the package by tearing the backing sheet and the cover sheet along the breaking line to open the pocket and expose the pad it contains.

3,162,307
SURGICAL PACKAGE
Paul E. Regan, Jr., Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
Filed July 10, 1963, Ser. No. 293,969
13 Claims. (Cl. 206—63.3)



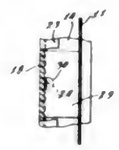
7. A surgical package which comprises a stiff heat-sterilizable envelope and a surgical product inside said envelope; said envelope comprising a panel on which the product is adapted to be positioned, said panel having a dispensing section at one end; top and bottom flaps foldably connected to the top and bottom edges of said panel and terminating short of the dispensing section thereof; a first side flap foldably connected to the side edge of said panel opposite its dispensing end, said top and bottom flaps and said first side flap being adapted to overlap one another at least partially when they are folded down over said panel; an opening flap foldably connected to the side edge of said panel at the dispensing end thereof; and a sleeve adapted to slide over said panel and said flaps when the flaps are folded down over said panel and hold said flaps in their folded down position, whereby said sleeve may be moved with respect to said panel to uncover said opening flap and said opening flap may be folded upwardly to expose one end of the product positioned on said panel for ready access thereto.

3,162,308
THERMOPLASTIC PACKAGE FOR FLASHBULBS AND LIKE FRAGILE ARTICLES
Carlton L. Whiteford, New Canaan, Conn., assignor to Poly-Pak Corporation of America, Springdale, Conn., a corporation of Delaware
Filed Feb. 1, 1960, Ser. No. 5,868
11 Claims. (Cl. 206—65)



1. A package containing a plurality of flashbulbs and like fragile articles comprising a thermoplastic sheet portion including a plurality of panel members having conformations projecting therefrom, resiliently expandable corner means integral with adjacent ones of said panel members comprising an inverted V-shaped portion extending in the direction of said conformations, said V-shaped portion having a tapered cross section converging at the apex of said V whereby said panel members are hingedly interconnected with one another by said resiliently expandable corner means, a separate member, a flashbulb located between said separate member and one of said panel members, flashbulb being cradled in said location by the conformation of said one of said panel members and being urged against said separate member by the remainder of said panel members being folded into planes normal to said one panel member and connected with said separate member.

3,162,309
HANG-UP DISPLAY DEVICE WITH PILFER PROOF SLIDE COVER BOX
Lud H. Kimbrough, Jr., Richmond, Va., assignor to Ideal Fishing Float Company, Inc., Richmond, Va., a corporation of Virginia
Filed Mar. 14, 1962, Ser. No. 179,754
5 Claims. (Cl. 206—80)

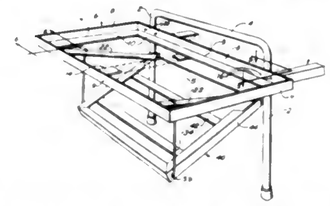


1. In a display assembly,
a hang-up supporting card,
said card having an aperture therethrough receptive of a merchandise container,
said card having projecting integrally in one piece therefrom material struck from said aperture and comprising a pair of aligned tabs each of which has a tab portion in a plane with the opposite tab and an angular connecting flange joining it to the card,
a container having a bottom wall and a peripheral wall received in said aperture with the bottom wall projecting from the face of the card opposite said tabs and with the edge of said peripheral wall of the container engaging said tabs,
said peripheral wall at the open end of the container having means thereon interengageable with a slide-on cover,
a slide-on cover engaging said means and closing the container and clamping said tabs against said peripheral wall,
and interlock means on said cover engageable with said peripheral wall to resist removal of the cover, one of said tabs having an aperture therein for clearing said interlock means and interlockingly coacting with said interlock means.

3,162,310
METHOD OF MANUFACTURING CONTAINERS
Robert D. Tiberiis, Newport, Ark., assignor to Victor Industries Corporation, Greenwich, Conn., a corporation of New York
No Drawing. Filed July 27, 1962, Ser. No. 213,008
1 Claim. (Cl. 207—10)

In the process of manufacturing impact extruded metal containers the steps of lubricating the work-piece with a lubricant having a boiling point lower than the annealing temperature of the metal, extruding the lubricated work-piece and thereafter heating the extruded work-piece to a temperature, higher than the boiling point of the lubricant but lower than the annealing temperature of the metal, until a complete evaporation of the lubricant takes place.

3,162,311
DETACHABLE, COLLAPSIBLE COMBINATION RACK FOR FOOT LOCKER AND SHOES
Rono W. Scott, 312 N. 6th St., Lawton, Okla.
Filed May 25, 1962, Ser. No. 197,723
3 Claims. (Cl. 211—34)



1. A demountable rack for use with a bedstead, an end of which bedstead has an upright post on each side thereof with a transverse bar extending between said upright posts, which rack comprises;
(*a*) a rectangular frame detachably secured to the upright posts of the bedstead a spaced distance above the transverse bar between said upright posts so said frame will extend substantially horizontally outward,
(*b*) downwardly extending abutment means on the side of said frame farthest from said bedstead,
(*c*) a pair of braces, each brace having a bifurcation formed in each end thereof,
(1) the bifurcation on the corresponding ends of each said brace being adapted to detachably engage said transverse bar which extends between said upright posts of said bedstead in straddling relation,
(2) the bifurcation at the other end of each said brace being adapted to engage said downwardly extending abutment means on the lower side of said rectangular frame in straddling relation.

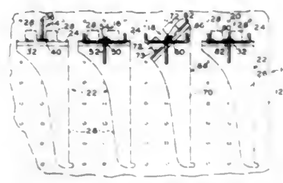
3,162,312
RACK FOR SHELF BRACKETS
Lawrence M. Hobson, Portland, Oreg., assignor to Dor-File Manufacturing Co., Portland, Oreg., a corporation of Oregon
Filed Feb. 28, 1963, Ser. No. 261,747
8 Claims. (Cl. 211—59)

1. In combination,
a shelf bracket having a base and a pair of hooklike ears projecting from the base and provided with parallel shank portions spaced apart a first predetermined distance and hook portions extending in the

same direction from the shank portions and spaced laterally from the base a second predetermined distance,

a generally vertical support,

and a hook fixed to and keyed to the support in a position extending therefrom and comprising an elongated, rigid keying plate permitting the bracket to be slid therealong and removed therefrom and to fit between the shank portion and under one of the hook



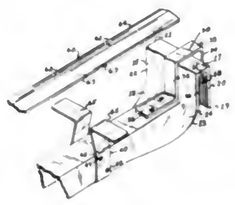
portions and having a width almost as great as said first predetermined distance and a thickness not greater than said second predetermined distance and fitting between the shank portions and under one of the hook portions of one of the ears and engaging the other ear to prevent turning movement of the shelf bracket on the hook, suspend the shelf bracket from said one of the hook portions and permit sliding movement of the bracket on to and off of the plate.

3,162,313
DEVICES INCLUDING AN OPENWORK BASE FRAME FOR PROVIDING HANGER SUPPORT OF WRITING IMPLEMENTS
Francis M. Aimes, Chatham, N.Y.
Filed June 27, 1962, Ser. No. 205,695
5 Claims. (Cl. 211—60)



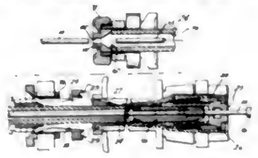
1. A device of the character described comprising a rod-like base defined by two rods arranged at right angles to each other, one rod being arched upwardly and having enlarged foot ends, the other rod having a long horizontal member with an enlarged foot end and a short upright member fixed to the central portion of the arch of the first rod, an upstanding hanger rod fixed to the foot of said long member and including a curved upper portion arranged over and in widely spaced relationship to the base, the upper end of the hanger rod having an implement supporting ball member directly over the arched rod, a writing implement for coupling and uncoupling said ball member, and said implement and ball member having cooperating means for magnetically supporting the implement in hanger position with respect to said ball member.

3,162,314
HANGER BAR ASSEMBLY
Samuel P. Belsinger, Atlanta, Ga., assignor, by mesne assignments, to Belsinger, Inc., Atlanta, Ga., a corporation of Georgia
Filed Apr. 8, 1963, Ser. No. 271,084
8 Claims. (Cl. 211—124)



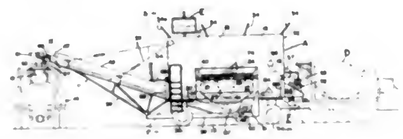
1. In a hanger bar assembly of the type having a hanger bar adapted to be disposed horizontally for receiving over its upper surface hooks of hangers, the combination therewith of a restraining member for extending over said hooks and clamping means rigidly secured on opposite sides of said hanger bar and having portions extending over the upper surface of said hanger bar for receiving and holding said restraining member, said portions of said clamping means defining above the upper surface of said bar a wholly open area for the free ingress and egress of said restraining member.

3,162,315
WORK BUSHING GUIDE FOR AUTOMATIC SCREW MACHINES
Richard A. Holden, 3852 W. 70th St., Chicago, Ill.
Filed Oct. 9, 1962, Ser. No. 229,323
5 Claims. (Cl. 214—1.1)



1. In an automatic screw machine having multiple feeds with a spindle and a stop means for making articles from bar stock, a movable support for the outer free end of the bar stock being fed to the machine, a tubular bushing, said bushing secured within said support and through which the bar stock normally travels to the feed tube of the machine due to the feeding mechanism, said bushing having cylindrical end portions with the normal inlet end portion smaller in exterior diameter than the diameter of the normal outlet end portion, said bushing having a central longitudinal passageway extending therethrough, said passageway having a cylindrical bore at its normal inlet end and extending a fair distance therethrough and joining a truncated shaped cone-type cavity therein having an outwardly conical tapered inner wall surface, the diameter of the outer free end of said conical wall surface being greater than the inner diameter of the feed tube adjacent thereto in the machine, whereby there is established sufficient taper to the wall surface of the cavity to guide the free rear end of a rod pressed against its surface into said cylindrical bore at its inner end when the free rear end of a rod remains stationary as its opposite end contacts the said stop means and the support and bushing moves forwardly with the attached feed tube, thereby preventing non-movement of the rod and breakage of the feeding mechanism of the machine.

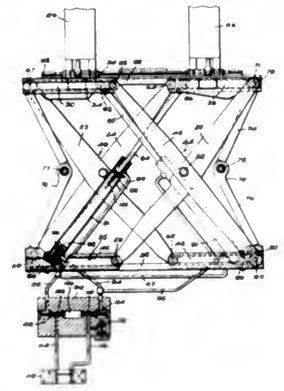
3,162,316
PORTABLE BATCH PLANT
Dariel R. Camp, 10250 Bret Ave., Cupertino, Calif.
Filed Sept. 5, 1961, Ser. No. 135,866
5 Claims. (Cl. 214—2)



1. A portable concrete batching mechanism comprising a trailer type vehicle, a body on said vehicle, a plurality of hopper bottom sand and aggregate bins in said body, an individual discharge gate in the lower end of each of said sand and aggregate bins, a weigh batcher mounted beneath said sand and aggregate bins and in position to receive material gravitating through all of said sand and aggregate bin gates, an individual cement compartment in the weigh batcher, a batch materials conveyor mounted with a receiving end thereof beneath the weigh batcher and above a supporting surface upon which the vehicle rests, gate means in the weigh batcher and in the cement compartment for gravity discharge of the contents thereof onto the receiving end of the batch materials conveyor mounted therebeneath, said batch materials conveyor sloping upwardly and extending endwise beyond the vehicle body to a height to discharge material from the upper end thereof into the receiving hopper of a selected cement mixing truck, support means extending from projecting end portions of the conveyor to the vehicle body, a cement receiving mechanism for mounting on the ground adjacent said trailer type vehicle, a cement receiving hopper in the cement receiving mechanism, a pair of track members mounted on the cement receiving mechanism, one on each side of the cement receiving hopper, for supporting thereon a hopper bottom cement truck having a gravity discharge hopper in the bottom thereof with the discharge hopper of the cement truck spotted over the cement receiving hopper of the cement receiving mechanism, a cement conveyor communicating with the lower end of the cement receiving hopper on said cement receiving mechanism and positioned to convey cement in controlled amounts from the cement receiving hopper into the cement compartment within the weigh batcher.

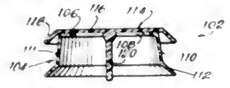
3,162,317
MECHANISM FOR EXTENDING AND RETRACTING A LOAD SUPPORTING MEMBER ON AN INDUSTRIAL TRUCK
Bernard B. Becker, Belmont, Mass., assignor to Lewis-Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed Oct. 25, 1962, Ser. No. 233,031
4 Claims. (Cl. 214—731)

4. A materials handling truck comprising: a mobile truck base; a vertical mast affixed to said truck base and extending upwardly therefrom; elevational means housed in said vertical mast having a rear plate mounted thereon; a front plate spaced from said rear plate and having load carrying means attached thereto; side hinges having vertical hinge pins, said side hinges pivotally attached to said front and rear plates and arranged to support the weight transferred from said load carrying means; a pivoted arm pantograph assembly extending between said front and rear plates, said pantograph assembly being pivotally attached and slidably engaged to said front and rear plates to maintain said plates continuously in parallel alignment; and actuating means for extending and retracting said front plate relative to said rear plate, said actuating



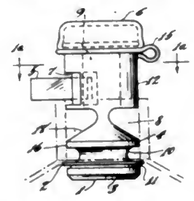
means attached to and extending between said front plate and said rear plate.

3,162,318
BABY FOOD FEEDER
Clifford R. Woodbury, Jr., 7747 N. Hermitage, Chicago, Ill.
Filed Sept. 7, 1962, Ser. No. 221,957
6 Claims. (Cl. 215—11)



4. Piston means comprising a pair of parts of preformed shape, each having a transverse element and a rearwardly trailing conical peripheral portion, all portions other than the conical peripheral portions being relatively rigid and the conical peripheral portions being at least slightly more flexible than the other portions.

3,162,319
DISPENSING, SELF-LOCKING CLOSURES
Paul Lee, 1809 E. Clearfield St., Philadelphia 34, Pa.
Filed Nov. 6, 1961, Ser. No. 150,221
3 Claims. (Cl. 215—74)



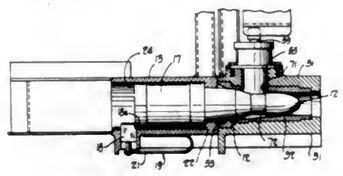
1. In a container closure for insertion in the orifice of a container, a flexible body having a generally longitudinally extending discharge opening a passage extending into the discharge opening between the two ends of the closure and adapted to be open to the contents of the container when the closure is inserted into the container and to be closed from the contents of the container when the closure is moved outwardly in the orifice, said body having plug means located inwardly of said passage and sealing on the orifice when the container closure is in closed position, means for imprisoning said closure in said container comprising a flexible annular flange of

larger diameter than the orifice located on said body inwardly of the plug means and adapted to be located in a position beyond the diameter of the orifice, said body having a groove located outwardly of said flange and large enough to permit collapse of said flange into said groove when said closure is inserted into said orifice, said body having a second groove located inwardly of said flange, and an annular abutment located inwardly of said flange and beyond said inwardly located groove extending out to substantially the diameter of the orifice and adapted to engage said flange to imprison said closure when an effort is made to withdraw the same from the orifice.

3,162,320
BODY MEMBER CONNECTING MECHANISM

Robert A. Hitch, Milford, N.J., and William A. Bertolini, Seaford, and Calvin O. Smith, Chappaqua, N.Y., assignors to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware

Filed June 22, 1961, Ser. No. 130,444
18 Claims. (Cl. 220—23.4)

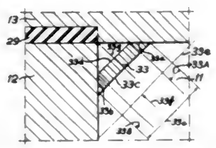


1. In body construction of the class described, in combination, at least two container units arranged to be assembled and disassembled, and gathering means at adjoining ends of said units to facilitate such assembly and disassembly, said means including retractable and extensible gathering members in one end to coact with mating gathering members in the adjoining end, certain of said members being structurally formed to operate as guiding parts during assembly of the units and as tension parts when assembly is effected.

3,162,321
APPARATUS HAVING SEALING GASKET FOR GENERATION OF HIGH PRESSURE

Fritz Wallin, Farsta, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Nov. 29, 1961, Ser. No. 155,579
Claims priority, application Sweden, Dec. 7, 1960, 11,821/60
6 Claims. (Cl. 220—46)

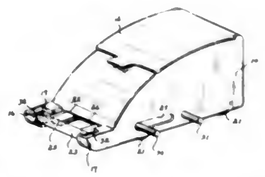


1. A high pressure apparatus comprising parts having walls limiting a pressure space, between some of which parts a gap may occur, said walls forming substantially a right angle with each other where said gap is situated, a solid gasket of rigid material sealing said pressure space from said gap, said gasket having the shape of a continuous frame with a central opening, said frame having sealing surfaces in contact with said walls on both sides of said gap, the cross section of said gasket in a plane containing the axis of said opening comprising contact portions on said walls and a limiting line facing the inside of the pressure space and substantially symmetrical with respect to the bisector of the angle between said walls, the projection of each contact portion of the gasket on a plane perpendicular to the direction of the pressure exerted on the gasket from within the pressure chamber being less than the projection on the same plane of half the limiting line facing the inside of the pressure diameter and one contact portion of the cross section of the gasket being situated nearer to said axis than the other one.

3,162,322
SANITARY DISPENSER FOR CARTRIDGES HOLDING FLUID MEDICANTS

John E. Gilbertson, 3209 Douglas Ave., Des Moines, Iowa

Filed Mar. 29, 1962, Ser. No. 183,564
7 Claims. (Cl. 221—135)



7. In a dispensing means for dispensing liquid holding tubular members used in the field of medicine and dentistry, in combination,

a housing having a compartment for holding a plurality of tubular members,

said housing having a horizontal slot in its lower forward end,

said housing having therein a notch in the top forward area, bottom forward area and central forward end wall area, in communication with said horizontal slot,

a passageway in said housing having one end communicating with the inside bottom of said compartment and its other end communicating with the inside top of said horizontal slot,

a piston slidable in said horizontal slot, closing said passageway when in a forward sliding position and to the rear of said passageway when in a rear sliding position,

an arcuate shaped projection on the forward top portion of said piston,

a headed post in said housing having its upper headed end in communication with the inside bottom of said passageway and its lower end in communication with said horizontal slot, and in the sliding path of said arcuate shaped projection on said piston, whereby said post will engage said projection when said piston slidably moves rearwardly,

said piston having a notch in the forward central end thereof to accommodate the finger and thumb of one removing a tubular member from said horizontal slot,

said housing having side wall members on opposite ends of said horizontal slot,

a disinfectant holding means on each of the two side wall members,

said two disinfectant means being of flexible, resilient, liquid absorbing material,

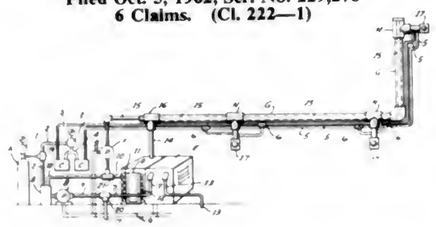
a handle member on said piston means to facilitate its manual movement,

and a spring means for yieldingly holding said piston means in one direction of its sliding movement.

3,162,323
METHOD OF AND APPARATUS FOR CARBONATING, COOLING, STORING, DISTRIBUTING AND DISPENSING BEVERAGES

Wallace R. Kromer, 12700 Fairhill Road, Shaker Heights 20, Ohio

Filed Oct. 5, 1962, Ser. No. 229,278
6 Claims. (Cl. 222—1)



1. The method of cooling, storing and dispensing carbonated water which comprises:

maintaining a body of carbonated water in direct heat exchange relation with a refrigerating medium and retaining such water at a temperature no higher than approximately 29 degrees Fahrenheit;

withdrawing such water from the body continuously;

circulating the withdrawn water over a closed path and in a continuous stream of relatively small cross sectional area past a remote dispensing point;

returning the circulated water to said body;

intermittently releasing water from the stream at the dispensing point for consumption as desired;

maintaining a confined atmosphere of pressurized carbon dioxide at a pressure at least 100 pounds per square inch pressure in the path of the circulating water and passing the circulating water through and picking up carbon dioxide from such carbon dioxide atmosphere for augmentation of the carbon dioxide content of such circulating water;

automatically adding water to said body to replace that released for consumption to maintain said body of water within predetermined volumetric limits; and

automatically adding pressurized carbon dioxide to said atmosphere in replacement of that picked up by the circulating water to maintain the carbon dioxide atmosphere at a pressure at least 100 pounds per square inch, whereby slush ice is emitted from the remote dispensing point when the carbonated water is released to normal atmospheric pressure.

3,162,324
PNEUMATIC DISPENSER

Roy W. Houser, Orange, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Nov. 22, 1961, Ser. No. 154,178
9 Claims. (Cl. 222—18)

1. A pneumatic dispenser comprising;

a hollow casing,

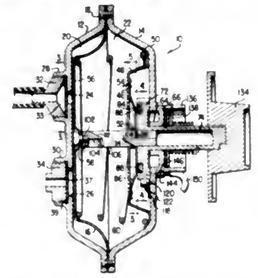
a diaphragm dividing the interior of the casing into a pump chamber and a motor chamber,

means biasing said diaphragm to contract said pump chamber,

a valve in said motor chamber having a first position subjecting said motor chamber to a pressure less than the pressure in the pump chamber to expand the pump chamber, and a second position to subject the chambers to equal pressures to contract the pump chamber,

valve actuating means operable in response to contraction and expansion of the pump chamber to actuate the valve to said first and second positions, respectively,

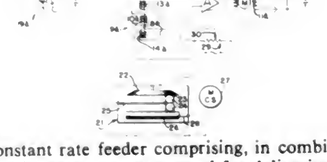
and means for setting said valve actuating means in a selected starting position with said valve in said first position, said valve actuating means thereafter alternately moving said valve between said positions a selected number of cycles with the valve coming to rest in said second position.



3,162,325
CONSTANT RATE FEEDER

Donivan L. Hall and Roger B. Williams, Jr., Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio

Filed Apr. 12, 1961, Ser. No. 102,441
12 Claims. (Cl. 222—55)



12. A constant rate feeder comprising, in combination, first means driven at a constant speed for delivering material, second means for measuring weight deviation from a desired weight of the material upon the first means and for continuously averaging instantaneous errors in weight of material on and delivered by the first means, a feeder for feeding the material onto the first means, and a control for said feeder, said control being responsive to said second means and continuously controlling said feeder to maintain said constant rate.

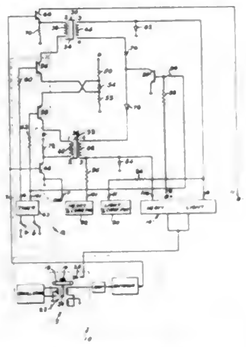
3,162,326
APPARATUS FOR PROCESSING ELECTRICAL SIGNALS

Virgle E. Porter, Country Club Hills, Ill., assignor to Unexcelled Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 27, 1962, Ser. No. 240,392
9 Claims. (Cl. 222—55)

1. An electrical circuit for deriving from a first signal representing in amplitude an element of input data a second signal the duration of which represents the said data element, comprising a transformer means including a core and at least one winding to energize and reset the core, the core being formed from material having hysteresis characteristics such that the stored magnetic energy produced by the application of an input signal to the means varies approximately with the time integral of the amplitude of the input signal, means for generating a constant-voltage signal for saturating the core of the said transformer means, and control means operative when

the core has been saturated to apply the input signal to the transformer means for a predetermined period, the direction of saturation and the polarity of the signal being such that the magnetic condition of the core will depart from saturation to an extent dependent on the amplitude



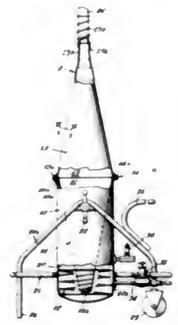
of the input signal, and thereafter to apply to the transformer means the constant voltage signal to reset the core to a saturated condition, whereby the duration of the output signal derived from the transformer means during the application of the constant-voltage signal is representative of the input data element.

3,162,327
CAPLESS PLASTIC SNIP-TIP BOTTLE
Ronald Bennett, Livingston, N.J., assignor to Fluid Chemical Company, Inc., Newark, N.J., a corporation of New Jersey
Filed May 19, 1961, Ser. No. 111,316
1 Claim. (Cl. 222—143)



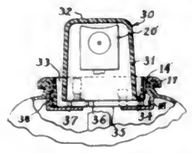
A plastic bottle comprising, a molded upright one-piece tubular body having its bottom end initially open to permit filling therethrough with the intended contents when inverted, said body including a head molded in integral relation thereto, said head including an elongated axially upwardly projecting non-threaded dispensing neck with a snip-tip having an axial orifice therein in communication with the interior of said body, and an upper end wall closing said orifice to the atmosphere in such a manner that only the bottom end of the body is open initially, and a bottom wall heat-sealed to the bottom end of said body after the latter has been filled to permanently close the bottom of said bottle, wherein the dispensing neck forms a male nesting member and the bottom wall is indented to form a mated female nesting member and corresponding substantially in internal shape and diameter to the external shape and diameter of said dispensing neck to permit stacking of more than one bottle, the respective external and internal side surfaces of the dispensing neck and bottom wall being tapered upwardly at a divergence from cylindrical form just sufficient to afford draft.

3,162,328
DISPENSER FOR SEMI-INERT FLUID MATERIAL
Edward F. Frume, 1301 W. Parkside Drive, Peoria, Ill.
Filed Feb. 28, 1961, Ser. No. 92,394
16 Claims. (Cl. 222—176)



1. In a system for discharging under pressure an inert material such for illustration as mixed cement including a chamber open at one end, the combination comprising a cornucopia of material insertable as a filler downwardly and apexially through said open end into said chamber and having a flanged upper filler edge to seat on an edge of said open end to support said cornucopia in downwardly depending and progressively increased spaced relation to the wall of said chamber, a conical-like cover comprised of a flexible material to resist cement adherence thereto for said chamber having a discharge orifice at its apex and resting at its base on said flanged upper filler edge, said cover having a continuous uninterrupted conical surface engageable with the inert material which continuous interrupted conical surface has a cone angle of between 10° to 30°, means for detachably securing said chamber and cover together with said flanged upper filler edge tightly sealed therebetween, the wall of said cornucopia being resiliently yieldable, and means to apply pressure over substantially the entire area of said cornucopia to progressively turn the wall of said cornucopia inside out and upwardly into said conical cover for discharging the material in the cornucopia out of said cover orifice.

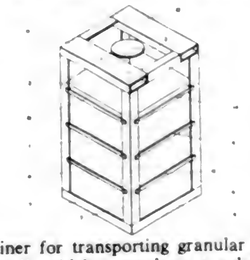
3,162,329
VALVE PROTECTING CAP FOR AEROSOL-TYPE CONTAINERS
Joseph J. Gregory, Westchester, Ill., assignor to Arnel Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 11, 1962, Ser. No. 165,637
5 Claims. (Cl. 222—182)



1. A protective cap for an aerosol-type dispensing container, which container is characterized by a body member having a dispensing opening in a wall thereof with a valve assembly supported in said opening by a closure of cup-like shape which opens upwardly and is provided

with an inwardly facing annular recess in its outside wall, said protective cap being formed of transparent plastic material and comprising a tubular valve covering body section with an integral closure at one end thereof, a tubular base section of substantially less height than the body section and having an internal diameter somewhat greater than the external diameter at the edge of the open end of said body section and peripherally spaced, readily breakable members connecting the open end of said body section with said base section, said body section extending into said base section radially spaced from said base section and having its open bottom end spaced above the bottom end of the base section, said base section being constructed and arranged so that it may be seated in said recess, bottomed within said closure and retained therein frictionally engaged with the inner annular surface of said outside wall while an axially directed force is applied to the body section to break said connecting members and free said body section whereby said body section may be removed and discharded thereby providing access to said valve.

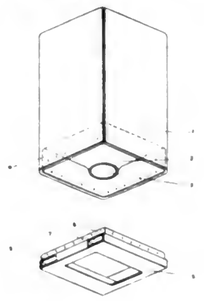
3,162,330
TRANSPORTABLE CONTAINER
Francis Anderson Dickson, Harpenden, and Peter Terrick Stainforth, Knebworth, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 25, 1961, Ser. No. 140,295
Claims priority, application Great Britain, Sept. 28, 1960, 33,286/60; Oct. 13, 1960, 35,119/60
9 Claims. (Cl. 222—183)



1. A container for transporting granular and powdery materials in bulk which comprises: a substantially rectangular box-like vessel having four generally flat sides and one end convergent to form an aperture, said vessel being formed from a resilient impact resistant thermoplastic organic polymeric material and the vessel being wholly contained within a rigid metal framework having supporting surfaces at each end, the framework in the region of the convergent end having additional supporting surfaces on either side of the convergent end for engagement with the horizontal lifting arms of a lifting device when the container is in position with the convergent end downwards, and the aperture of said container being closed by a truncated cone-like fitting removably secured to said aperture and provided with a closure and also provided with an internal sock-type valve, the cone-like fitting and closure being wholly contained within said framework.

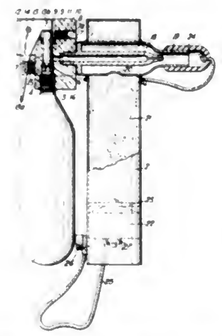
3,162,331
TRANSPORTABLE CONTAINER
Peter Douglas Throssell Hutchins, Hatfield, and Peter Terrick Stainforth, Knebworth, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 25, 1961, Ser. No. 140,294
Claims priority, application Great Britain, Oct. 27, 1960, 37,020/60
16 Claims. (Cl. 222—184)

1. A container for bulk transportation of granular, powdery materials or the like comprising: a substantially rectangular box-like container having four generally flat sides and a convergent lower end terminating in a circular aperture for filling and emptying purposes, the flat sides of said container also terminating in a skirt portion surrounding said convergent end and extending beyond said aperture; a rigid structure having surfaces constructed and arranged to support the end of said container with its convergent end downward and a truncated cone-like fitting removably secured to said opening and contained within said rigid structure, said fitting includ-



ing a sock-type valve having one circular end secured to the wall of said fitting, said structure including flat, generally horizontal lifting surfaces on either side of said convergent end, said lifting surfaces being downwardly directed and spaced vertically above said supporting surface when said container is in said normal standing position and thereby operative to accommodate the arms of a lifting apparatus, said container and skirt being formed of resilient, impact-resistant, thermoplastic, organic, polymeric material.

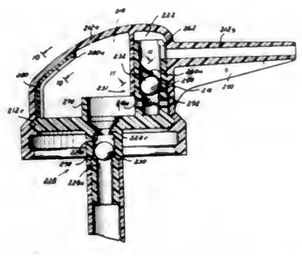
3,162,332
APPARATUS FOR DISSEMINATING PULVERULENT MATERIAL
Joseph Hayim Hayim, 14 Lowndes Square, London, England
Filed Oct. 15, 1962, Ser. No. 230,428
Claims priority, application Great Britain, Oct. 19, 1961, 37,568/61
1 Claim. (Cl. 222—193)



An apparatus for disseminating pulverulent material, comprising a container for gas under pressure; an elongated gas discharge nozzle in communication with said container; valve means controlling flow from said container to said gas discharge nozzle; a receptacle for the pulverulent material; an elongated pulverulent material discharge nozzle coaxially surrounding said gas discharge nozzle and in communication with said receptacle, flow of said gas under pressure through said gas discharge

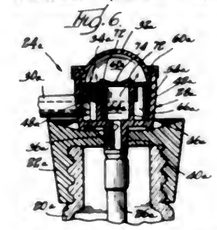
nozzle causing a gas pressure entraining pulverulent material from the receptacle and through the pulverulent material discharge nozzle for projection therefrom; and a piston forming a bottom for the receptacle remote from the region of its communication with the material discharge nozzle, said piston separating the pulverulent material from the atomsphere and moving in response to the pressure differential existing between the gas pressure in the gas discharge nozzle, when the valve means is operated to permit the gas flow, and the atmosphere, whereby the pulverulent material in the receptacle is transported towards the pulverulent material discharge nozzle.

3,162,333
MULTIPLE-PART PLASTIC PUMP FOR LIQUIDS
Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York
Filed July 30, 1959, Ser. No. 830,665
7 Claims. (Cl. 222—207)



1. A pump comprising a pump body fabricated of resilient material and shaped to define therein a pumping chamber, an upper wall of said pump body being sufficiently resilient to be depressible for producing pressure changes in said pumping chamber, said pump body having a base opening communicating with said pumping chamber, mounting means on said pump body for mounting said pump at the mouth of a liquid container, a base member fabricated of resilient material inserted in said base opening to close off said pumping chamber and the mouth of said container and formed with an intake conduit depending therefrom and communicating with said pumping chamber for delivering liquid thereto in response to pressure decreases therein, a one-way intake valve in said intake conduit allowing a flow therethrough only inwardly toward said pumping chamber, an outlet passage formed in said pump body, said base member being formed with an outlet conduit projecting therefrom snugly into said outlet passage, said outlet conduit communicating with said outlet passage and said pumping chamber for discharge of liquid therethrough in response to pressure increases in said pumping chamber, a one-way outlet valve in said outlet conduit allowing a flow therethrough only outwardly from said pumping chamber, said intake and outlet valves each including constrictions formed within said intake and outlet conduits respectively shaped to define an annular valve seat and a retainer shoulder and a valve member slidable in said conduit between said valve seat and retainer shoulder and sized for a sealing fit with said valve seat and to be snapped past at least one of said valve constrictions, and means on said base member and said pump body shaped for a snap fit of said base member into said base opening, said base member being integrally formed with a resilient leaf spring projecting upwardly therefrom to exert an outward biasing force on said depressible pump body wall.

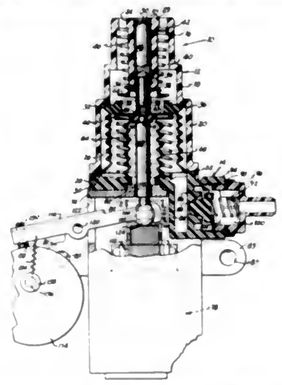
3,162,334
DISPENSER AND VALVES FOR SAME
Christian F. Miller, Chicago, Ill., assignor to Formold Plastics, Inc., Blue Island, Ill., a corporation of Illinois
Original application Oct. 7, 1960, Ser. No. 61,273. Divided and this application Nov. 29, 1963, Ser. No. 326,681
6 Claims. (Cl. 222—207)



1. A dispenser adapted to be attached to a primary reservoir, said dispenser comprising: a body member defining a first fluid passageway of substantially fixed volume communicating with said reservoir, said body member further defining a second fluid passageway of substantially fixed volume communicating with an outlet for dispensing a fluid, said body member including a tubular wall separating said first fluid passageway from said second fluid passageway, said second passageway being of generally annular shape and surrounding the first fluid passageway; a pumping member defining a variable volume chamber selectively communicable with said first passageway and with said second passageway; a check valve-defining member supported by said tubular wall and including an annular deflectable flange extending radially from said tubular wall normally to separate the variable volume chamber from said second passageway; means providing arcuately spaced lands around said second passageway exteriorly and spaced radially of said tubular wall and maintaining the corresponding areas of the outer edge of the deflectable flange fixed while permitting the outer edge of the deflectable flange between the said lands to flex upon dispensing movement of the pumping member for charging fluid into the second passageway at plural areas around the periphery thereof; and check valve means attached to said check valve-defining member for controlling fluid flow through said first passageway, including a resiliently deformable, circular, vane-type valve.

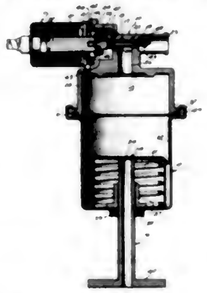
3,162,335
ADJUSTABLE LIQUID DISPENSER
Henry W. Kogan, Oak Park, James C. Budde, Utica, and Arthur J. Wisniewski, Hamtramck, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 96,827
11 Claims. (Cl. 222—212)

1. In a liquid dispenser comprising a body having a liquid metering chamber; an inlet to said metering chamber; an outlet from said metering chamber; valve means for said inlet operative to open the inlet for filling the metering chamber and to close the inlet during dispensing; valve means for said outlet operative to close the outlet during filling of the chamber and to open the outlet during dispensing; and flexible wall means forming a portion of the wall of said metering chamber; said flexible wall means being deformable to expel liquid from the metering chamber through said outlet; the improvement comprising the provision of resilient means biasing the flexible wall means to a deformed position; a slidable stem member normally positioned to oppose said resilient means and prevent deformation of the flexible wall means; means to move the stem out of its normal opposing position and through a stroke of predetermined length whereby the resilient means is effective to deform the flexible wall means to dispense a quantity of liquid through said outlet; the amount of liquid dispensed being determined by the amount of deformation of the flexible wall means; the amount of deformation of the flexible wall means being determined by the length of the stem stroke; and means to adjust the length of the stem stroke comprising



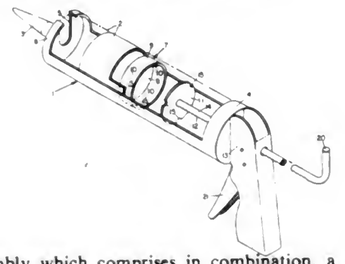
a stop member on the stem; an arm pivotally mounted intermediate its ends; a first end of said arm being positionable along the longitudinal axis of the stem; means associated with a second end of the arm to pivot the arm and move the first end to a selected position with respect to the stem stop member; contact of said first end with the stop member on the stem being effective to determine the length of the stem stroke.

3,162,336
ADJUSTABLE SLUG LIQUID DISPENSER
Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Nov. 29, 1960, Ser. No. 72,448
1 Claim. (Cl. 222—309)



A dispenser comprising:
- a dispenser body having a chamber formed therein and having aligned inlet and outlet ports communicable with said chamber,
- means communicating said inlet port with a source of pressurized liquid,
- a valve rod extending through said ports having valve members mounted thereon in spaced relation from one another and which are cooperable with said ports to control liquid flow therethrough,
- a solenoid assembly mounted on said dispenser body and having an armature connected to said valve rod whereby energization of said solenoid assembly will effect movement of said valve rod in a direction to close said inlet port and open said outlet port,
- a spring means biasing said valve rod in an opposite direction to close said outlet port and open said inlet port,
- a flexible bag disposed within said dispenser body with its periphery sealed to the wall thereof to define a wall of said chamber,
- a backing plate disposed within said chamber on the opposite side of said bag from said ports and spaced from the wall of said chamber,
- a spring engageable with said plate to bias same in the direction of said ports to discharge liquid contained within said chamber through said outlet port when said outlet port is open,
  - whereby said spring has a biasing force of sufficiently small magnitude to permit movement of said plate and bag in an opposite direction by the force of pressurized liquid flowing into said chamber from said inlet port, and
- a threaded adjustment member threadedly mounted within said dispenser body on the same side of said bag as said backing plate and having an end engageable with said plate
  - whereby axial threaded adjustment of said adjustment member will determine the limit of liquid-pressure-caused movement of said plate and bag.

3,162,337
FLOW CONTROL PLUNGER ASSEMBLY
George Sabaka, R.D. 3, Hanover, Pa.
Filed Nov. 15, 1963, Ser. No. 324,026
1 Claim. (Cl. 222—327)

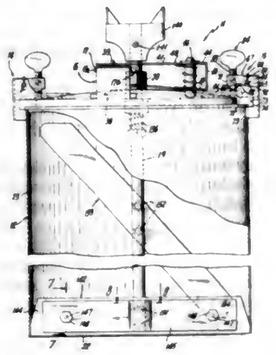


An assembly which comprises in combination, a disposable cylindrical cartridge containing a viscous material, having a spout at one end and an axially movable piston element at the other end; and a gun which supports the cartridge provided with an axial movable plunger and including a plunger rod containing indentations about part of its circumference for meshing with means for incrementally advancing said plunger rod and said plunger, said piston element being characterized by having a piston base and a circumferentially backwardly extending piston skirt, said piston skirt containing projections and perforations both formed by portions of the skirt being punched with said projections extending inwardly from said piston skirt distant from said piston base, said plunger being characterized by containing a number of indentations about its periphery so as to permit said plunger to pass by said projections and bear against said piston base, means for rotating said plunger and said plunger rod so as to secure a nonalignment between said indentations and said projections and to secure a demeshing of the indentations of the plunger rod from said means for incrementally advancing said plunger rod and said plunger, whereby as said plunger is withdrawn rearwardly, said projections bear against the top surface of said plunger causing said piston element to move rearwardly within said cartridge and causing air to backflow through said spout.

3,162,338
CLOSURE DEVICE FOR LIQUID CONTAINERS SUCH AS PAINT CANS

Nicholas T. Grubelic, 680 Willis Ave., Williston Park, Long Island, N.Y.

Filed July 25, 1962, Ser. No. 212,380
19 Claims. (Cl. 222—484)



6. A closure device adapted to cover paint cans and other containers, said device comprising a cover portion adapted to extend over an open upper end of said container, means on said cover portion for removably securing the latter to said container, said cover portion having an opening therethrough, a pouring spout having one end in communication with said opening and having a discharge orifice in the opposite end thereof, a cap, means slidably mounted said cap for reciprocal movement to either a closed position covering said discharge orifice or an open position exposing said discharge orifice, a lever pivotally mounted to said cover portion for angular displacement about a vertical axis, means pivotally connecting said lever to said cap, a vent opening in said cover portion, means on said lever for covering said vent opening in said closed position of said cap and for completely uncovering said vent opening immediately upon movement of said cap into said open position and spring means urging said cap toward said closed position.

3,162,339
CONTAINER WITH A BREAKABLE SEAL

Edouard Lecluyse, Vienne-le-Chateau, Marne, France, assignor to Tuboplast-France, Paris, France, a corporation of France

Filed Nov. 29, 1961, Ser. No. 155,722
2 Claims. (Cl. 222—541)

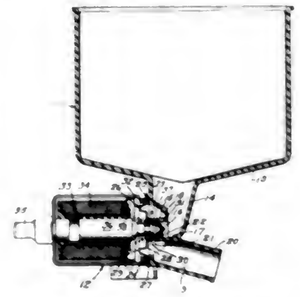


1. A collapsible dispensing container, comprising:
a flexible container body;
an end wall closing one end of said body and having a discharge passage terminating in a sealed dispensing orifice;
said end wall including an inner mouth portion having a conical aperture converging from the inner surface of said wall and communicating with said discharge passage;
an upstanding ring-shaped closure including a conical base portion, said base portion formed integrally with the outer surface of said end wall and having the upper end of said discharge passage therein;
and a fracturable annular stem portion connecting said end wall with said base portion, said stem portion having a reduced outside diameter and thus reduced wall thickness as compared to said base portion, thereby providing an easily fracturable area for separating said upstanding closure from said end wall for opening said orifice.

3,162,340
LIQUID DISPENSER

Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Sept. 13, 1963, Ser. No. 308,904
2 Claims. (Cl. 222—559)



1. A liquid dispensing unit comprising:
a liquid container of one-piece molded plastic construction having a well formed integrally therewith and depending therefrom along a generally vertical axis and having a hollow boss protruding from the bottom of said well along a generally horizontal axis,
a passage formed within said boss and opening to said well,
a lip defining said passage at the outer end of said boss,
an annular shoulder formed on said container coaxial with said passage,
an annular passage formed intermediate said boss and said shoulder,
an outlet nipple angling downwardly from said well and having an outlet therein communicable with said annular passage,
a diaphragm having its periphery sealed to said shoulder and having a central valve head cooperable with said lip to control liquid flow therepast, and
means engageable with said valve head for moving same relative to said lip to control the flow of liquid from said container.

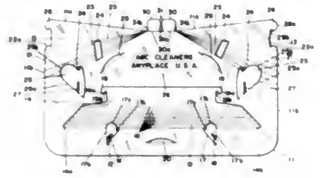
3,162,341
GARMENT HANGER

George Daniel Strampe, 518 Wingra St., Madison, Wis.

Filed June 7, 1962, Ser. No. 200,861
10 Claims. (Cl. 223—87)

1. A garment hanger comprising in combination:
(*a*) a bendable body section having a trouser support section and a pair of shoulder support sections,
(*b*) said trouser support section including a plurality of substantially vertical arcuate support members being extendable outwardly from said body section and each having an upper arcuate support surface and slot means, and further including a partially cut-out portion being downwardly bendable about a substantially horizontal axis and having a substantially downwardly facing surface adapted to engage

said vertical support member upper arcuate support surfaces for substantially their entire lengths and having an upwardly facing approximately arcuate trouser support surface, said support member upper arcuate support surfaces being adapted to maintain said partially cut-out portion and said trouser support surface in approximately arcuate shape when supporting heavy garments,
(*c*) said partially cut-out portion having tabular means for engaging said slot means in said vertical arcuate support members in fixed relation and maintaining said trouser support surface in approximately arcuate shape,
(*d*) each of said shoulder support sections including an upper support member being extendable outwardly from said body section and having an upper

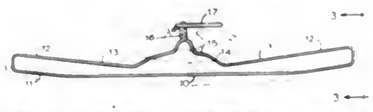


arcuate support surface and slot means, and further including a shoulder support surface being downwardly bendable about a downwardly sloping axis to engage said support member upper arcuate support surface for substantially its entire length, said support member upper arcuate surface being adapted to maintain said shoulder support surface in approximately arcuate shape when supporting heavy garments,
(*e*) each of said shoulder support surfaces having tabular means for engaging said upper arcuate support member slot means in fixed relation to maintain said shoulder support surface in approximately arcuate shape,
(*f*) hook means attached to said body section whereby to support said hanger in suspended relation.

3,162,342
GARMENT HANGER

John B. Mueller and Theodore Thorsen, Peoria, Ill., assignors to W. A. Laidlaw Wire Company, Peoria, Ill., a corporation of Illinois

Filed Mar. 4, 1963, Ser. No. 262,717
3 Claims. (Cl. 223—88)

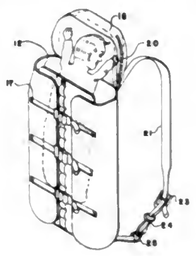


3. A garment hanger comprising a wire having a substantially straight intermediate portion forming a spreader bar adapted to extend across and contact with the back of a garment, the wire being bent forwardly horizontally through an angle of at least 180° at each end of the spreader bar to form an open generally horizontal loop to provide a relatively wide generally horizontal support for the shoulder portions of a garment, the wires converging upwardly from the inner forward ends of the loops and joining at the upper central portion of the hanger and defining a hook by which the hanger is suspended, the converging portions of the wires intermediate the upper and lower ends thereof being offset rearwardly with respect to said spreader bar and adapted to be located toward the back of a garment on the hanger and away from the chest or lapel portion of a garment, the hook being bent relative to the upper converging portions of the wire to lie in a plane forwardly of a parallel plane through the lower ends of the converging portions of the wire.

3,162,343
BABY CARRIERS

Mary Ann Anderson, Box 984, Point Lookout, N.Y.

Continuation of application Ser. No. 106,034, Apr. 27, 1961. This application Jan. 27, 1964, Ser. No. 340,569
1 Claim. (Cl. 224—6)

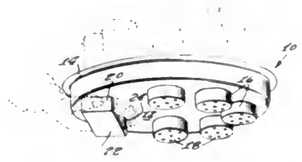


A baby carrier comprising, in combination, a piece of fabric adapted to encircle the body of a baby, a separate piece of similar fabric being stitched to the inside, or rear, of said encircling fabric and adapted to close an opening at the front of the latter, when said encircling fabric substantially embraces the body of the baby, said separate piece of fabric extending between the ends of the encircling fabric and being bent upon itself to form a seat for the baby, said separate piece of fabric being upon its outside formed with a number of short sleeves, members fastened upon one side of the carrier and adapted to engage said sleeves, and buckles arranged upon the other side of said carrier, whereby to engage said members and secure the carrier in position, a headrest integral with said carrier, said headrest being formed with an opening in one side thereof adapted to receive a pillow, and a zipper for closing said opening.

3,162,344
BOTTLE TRAY

Raymond Sabol, 7 Highland Place, Yonkers, N.Y.

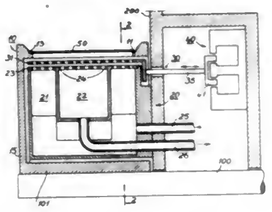
Filed Jan. 4, 1963, Ser. No. 249,424
2 Claims. (Cl. 224—48)



1. A tray comprising a rigid flat plate, a flange of uniform height extending upwardly from said plate around the entire periphery thereof and integral therewith, a plurality of cylindrical pockets depending from said flat plate, and disposed in a row adjacent a portion of said peripheral flange and formed integral therewith, each of said pockets having a cylindrical wall and an integral bottom with all of said pockets being of the same depth, whereby each of said pocket bottoms will lie in the same plane and parallel to said flat plate, a depending yoke secured to the underside of said flat plate adjacent an edge thereof, opposite said row of pockets, said yoke having a flat bight portion positioned in the same plane as said pocket bottoms, said yoke providing a handhold to facilitate grasping and holding the tray in a person's hand

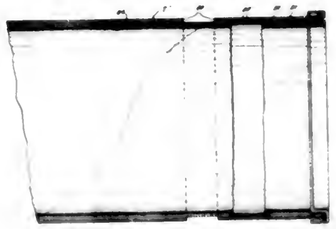
and said yoke bight portion and said pocket bottoms forming a support for said tray to horizontally support the tray when placed on a supporting surface.

3,162,345
TAPE FEEDING APPARATUS
Jean Hilaire Marcel Gallard, Paris, and Pierre Louis Sigel, Choisy le Roi, France, assignors to Compagnie des Machines Bull (Societe Anonyme), Paris, France
Filed July 6, 1962, Ser. No. 207,954
Claims priority, application France, July 18, 1961, 868,192
4 Claims. (Cl. 226—95)



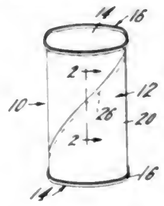
1. A tape feeding apparatus comprising a rotor constituted of a rotatable shell mounted on a rotating shaft and having a cylindrical rim with an exterior surface and an interior surface, said cylindrical rim being provided with radially extending apertures which allow communication of air between said exterior surface and said interior surface, a stator disposed within said shell and provided with a pressure chamber and a suction chamber said chambers being separated from each other by a partition disposed perpendicularly to the axis of said shaft, said chambers being peripherally limited by a thin wall having a cylindrical outer side located inside said rim at a small radial distance of the interior surface of said rim, within such tape-contacting angle within which the exterior surface of said rim is contacting the tape, means for supplying pneumatic pressure and suction to respective ones of said chambers, a first group of ports being provided in said wall for allowing communication of air between said pressure chamber and said outer side of said wall, a second group of ports being provided in said wall for allowing communication of air between said suction chamber and said outer side of said wall, and an air distributing means including an arcuate thin plate located between said outer side of said wall and the interior surface of said rim, said arcuate plate being adapted to occupy either a first or a second operating position and being provided with a first group of openings which register with the ports of said first group of ports in said wall while imperforate portions of said arcuate plate cover the ports of said second group of ports when said arcuate plate occupies its first operating position, said arcuate plate being further provided with a second group of openings which register with the ports of said second group of ports in said wall while imperforate portions of said arcuate plate cover the ports of said first group of ports when said arcuate plate occupies its second operating position, whereby, according to whether said arcuate plate occupies its first or its second operating position, either said pressure chamber or said suction chamber is placed in communication with portions of said exterior surface of the rim passing through said tape-contacting angle, said tape feeding apparatus further comprising an electrically controlled actuator mechanically connected to said arcuate plate for shifting said arcuate plate from one of its operating positions to the other and vice versa.

3,162,346
CAN WITH TELESCOPIC COVER AND IMPERFORATE CONTINUOUS LINING
William L. Geist, St. Louis, Mo., assignor to R.C. Can Company, St. Louis, Mo., a corporation of Missouri
Original application May 27, 1959, Ser. No. 816,215, now Patent No. 2,988,970, dated June 20, 1961. Divided and this application Jan. 11, 1961, Ser. No. 86,564
2 Claims. (Cl. 229—4.5)



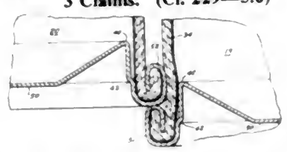
1. A reusable, non-refillable, multi-ply paper can with an imperforate liner, said can and liner being formed of a plurality of spirally wound tapes adhesively secured in overlapping relation having a telescoping section between said plies for a can cover part and a can body part which are separable only by rupture of the imperforate liner adjacent the telescoping connection between said can cover part and said can body part, said can comprising a multi-ply paper tube, and spaced circumferential scores each extending through different plies forming the tube but not through said liner for defining parting lines for said telescoping section.

3,162,347
FLUID-TIGHT CONTAINER BODY
William Edward Taylor, Fairfield, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 1, 1961, Ser. No. 156,267
2 Claims. (Cl. 229—4.5)



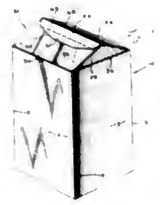
1. A fluid-tight container body for holding a fluid product, comprising:
- at least on helical body ply which is pervious to the fluid product,
- a helical liner ply disposed inwardly of said body ply, said liner ply comprising an inner layer which is impervious to the product and an outer backing layer which is pervious to the product,
- the edges of said liner ply being disposed in a helical joint, and
- a helical sealing ribbon disposed inwardly of said helical joint and covering it to prevent the product from gaining access to the pervious backing layer of said liner ply and said pervious body ply,
- said sealing ribbon comprising a layer which is impervious to the product, said impervious sealing ribbon layer being disposed directly adjacent the inner impervious layer of said liner ply and being secured thereto on both sides of said helical liner ply joint by an adhesive which is impervious to the product.

3,162,348
COLLISION-PROOF PAPER OR FIBER WALLED CONTAINER
Jerome J. Galbierz, Glendale, and Peter J. Ditto, St. Ann, Mo., assignors to R.C. Can Company, Overland, Mo., a corporation of Missouri
Filed May 27, 1963, Ser. No. 283,161
3 Claims. (Cl. 229—5.6)



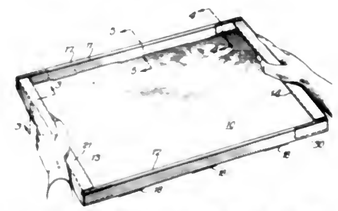
1. In a can having a tubular body, can ends on said tubular body, and a circumferential rolled seam between the edges of said can ends and the edges of said can body forming a protective bead at each end of the can body protruding outwardly of the can end around the sides of the body, the improvement for eliminating damage to one can body from the beads on an adjacent can located side by side when can tilting during a collision between cans in a shipping carton is caused by an impact on the shipping carton, comprising,
- (*a*) a second circumferential bead with a radial resistance to crushing comparable with said rolled seam located on one of said can ends spaced inwardly of one of said protective beads and extending toward and along the inside of the can body within the can from said protective bead toward the opposite can end to back up the can body in a circumferential zone within a width less than a bead width of said protective bead when the beads on adjacent side by side cans slip out of protective contact with one another by tilting which displaces the cans relatively axially during a collision.

3,162,349
CONTAINER CLOSURE CONSTRUCTION
Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana
Filed Oct. 23, 1961, Ser. No. 146,964
8 Claims. (Cl. 229—17)



1. In a container construction fashioned from a blank of plastic coated paperboard or the like, said container construction including four side walls and a bottom wall capable of defining a substantially rectangular compartment, a gabeled closure structure for said container construction comprising:
- four substantially rectangular panels integral with and substantially equidistantly from the upper ends of the side walls, the junctions between said panels and said side walls being defined by first fold lines lying substantially within a plane substantially parallel with the bottom wall, each panel being connected to the adjacent panels and such connections being defined by second fold lines transverse of said first fold lines, and each panel extending from its first fold line a distance at least approximately equal to half the length of a first fold line associated with an adjacent panel, said distance being no greater than said length of said first fold line;
- means defining a slit through at least substantially the entire thickness of one panel adjacent to and extending substantially the full length of the free, upper edge of said one end panel between points near the second fold lines adjacent said one panel;
- means defining in said one panel and in the two panels adjacent said one panel a pair of fold lines converging from the opposite ends of the adjacent first fold line toward the midpoint in the free edge of the respective panel, the converging fold lines in said one panel terminating at said slit to form a pouring spout from said one panel when said one panel is moved away from said opposite panel;
- a flap integral with and extending from the free edge of the panel opposite said one panel, the inner surface of said flap being engageable with the upper edge portion of said one panel and overlying said slit, and said one panel and said opposite panel converging upwardly from their respective first fold lines so that their upper edges are in adjacent and substantially abutting relationship to each other when said panels are bent along said fold lines toward each other to form the closure structure; and
- means defining an elongated cut in said inner surface of said flap arranged to extend along said slit adjacent thereto and on the opposite side thereof from the upper free edge of said one panel when said flap is overlying said slit, said cut penetrating only partway through the flap and at least substantially through the coating on said inner surface of said flap.

3,162,350
PAPERBOARD TRAY
Bernard J. Miller, Braddock, Pa., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,418
2 Claims. (Cl. 229—34)



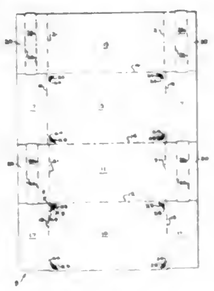
1. A paperboard blank adapted to be folded into a rigid tray, said blank comprising a main base portion of substantially rectangular configuration, an end flap handle construction formed along each opposite end edge of said main base portion, said end flap handle construction comprising first, second and third handle flap portions which extend longitudinally of said end edges, each said first handle flap portions being integral with one of said end edges along a first handle flap fold line, said first handle flap fold line having handle flap lug slots formed therein, each said second handle flap portion being integral with and interconnecting said first and third handle flap portions along second and third handle flap fold lines respectively, said second handle flap portions being of substantially the same width as said first handle flap portions, the outer edge of said third handle flap portion having protruding lugs thereon at locations corresponding to said handle flap lug slots, said handle flap portions being of relative width to form a right triangular cross sectional configuration when said first and second handle flap portions are bent at right angles about said first and second

fold lines and said lugs are inserted into said lug slots, the width of such handle flap portions further being such as to form said triangular configuration of a size which may be conveniently grasped by full encirclement with the thumb and fingers of a user's hand, tab flaps extending from the ends of said first handle flaps, first and second side rail flap portions extending longitudinally along each opposite side edge of said main base portion and first side rail flap portions being integral with and connected to said main base portion along a first side rail fold line having lug slots formed therealong, each said second side rail flap portion being integral with and connected along the outer edge of a first side rail flap portion along a second side rail fold line, the outer edge of each said second side rail flap portions having lugs protruding therefrom at locations corresponding to the lug slots formed along said first side rail fold lines, the width of each side rail flap portions being substantially equal to the width of said tab flaps so as to fold about and snugly enclose said tab portions when said end flap portions are folded into said triangular cross sectional configuration.

3,162,351
SHIPPING CONTAINER

Le Roy V. Rudofski, Chicago, Ill., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed May 31, 1962, Ser. No. 199,017
3 Claims. (Cl. 229—37)



1. A shipping container formed of compressible sheet-like material comprising

an opposed pair of side wall panels and an opposed pair of top and bottom panels foldably connected together to define an open ended tubular configuration,

means for closing the ends of said tubular configuration,

corner flaps foldably attached to the end edges of said side wall panels,

said corner flaps transversely scored and folded to form columns having a triangular cross-section, and

depressed areas adjacent the corners in the top and bottom panels adjacent each end of said columns when in an erected position,

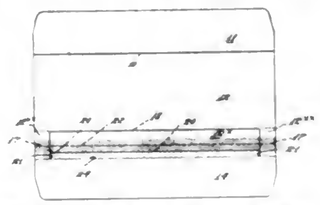
said corner flaps having end portions thereof extending into said depressed areas at said corners to maintain said corner flaps in said columnar positions.

3,162,352
EGG TRAY AND COVER THEREFOR

Marvin W. Swaim, Alton, Ill., assignor to Alton Box Board Company, Alton, Ill., a corporation of Illinois

Filed Mar. 15, 1962, Ser. No. 179,955
2 Claims. (Cl. 229—51)

1. A cover member blank adapted for folding into a cover form for an egg-holding tray, comprising a unitary flexible member having a first longitudinal score line for defining the juncture between a first side wall and a top wall, a second longitudinal score line defining the juncture between a second side wall assembly and the top wall, two transverse cuts inwardly of the second side wall assembly and providing a web at each end of said second side wall, a longitudinal cut intermediate the ends of said transverse cuts and extending thereto, opposed marginal

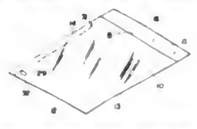


areas of the second sidewall at said longitudinal cut being folded back each in a direction reversely to the other, and a tear line extending across each web area adjacent the top wall.

3,162,353
PERFORATED HEAT SEALABLE BAG, AND METHOD OF USE

John D. Sylvester, Garden City, and Gene G. Cignoli, New Hyde Park, N.Y., assignors to Amsco Packaging Machinery, Inc., Long Island City, N.Y., a corporation of New York

Filed July 27, 1962, Ser. No. 212,852
2 Claims. (Cl. 229—53)

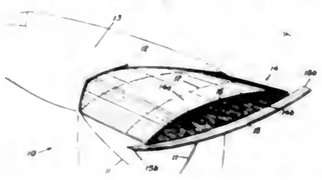


1. A bag for packaging merchandise, said bag comprising a pair of superposed rectangular walls made of heat sealable material joined along their bottom and two side edges but free along their top edges to define a filling opening, said walls each being provided with a line of perforations along one of the side edges of the bag, said lines of perforations extending to the bottom edge of the bag but terminating short of the filling opening to leave an unperforated region between the ends of the lines and the filling opening.

3,162,354
VALVE BAG CLOSURE MEANS

Merwin Frankel, Scarsdale, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

Filed Jan. 16, 1963, Ser. No. 251,926
2 Claims. (Cl. 229—62.5)

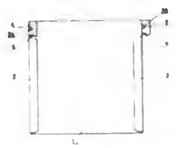


1. In combination, a bag having side and end panels with the side panels brought together at the top, stitching along the top of the bag for securing the side panels together, a flattenable tuck valve tube extending out of one of the end panels of the bag adjacent to the top of the bag and having the upper edge of the flattenable tube sewn to the side panels by the said stitching, the inner end of the tube being secured to said end panel from which it projects, a strip of soft bendable material which will remain in the bent condition after it has been bent secured to the outer end of said tube and extending transversely of the end of the tube with one edge extending along the end of the tube, said strip extending beyond the longitudinal edges of the tube, whereby when the strip is folded over the end of the tube and back against the tube for flattening the tube and the tube is folded back against itself at least once for closing the bag, the ends of the bendable strip must be bent around the edges of the flattened tube for holding the folded over end against the tube before the folded tube can be tucked into the bag so that a secure closure of the tube is insured when the folded tube is tucked into the bag.

3,162,355
DISC JACKET

Johannes Wilhelmus Boon, Weverslaan, Voorburg, Netherlands

Filed Oct. 23, 1962, Ser. No. 232,348
Claims priority, application Netherlands Nov. 1, 1961
3 Claims. (Cl. 229—68)

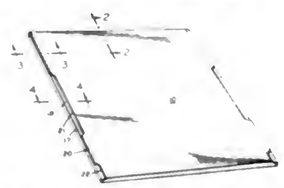


1. A jacket for phonograph discs comprising an envelope formed of a front and back panel of sheet material, separably hinged along their upper edges and having substantially the same dimensions, a closure flap adapted to overlie and seal the lower edge, each of the side edges of at least one of said panels being provided with an inwardly bent folding strip, said strips being divided into two unequal portions, said front and back panels being sealed together by means of the longest of said portions, the shortest of said portions forming foldable tab members lying near the upper side inside of said cover when it is closed, said tab members being capable of being folded into supporting tabs projecting outwardly from the periphery of each of said side edges after having opened said cover, said supporting tabs being adapted for vertical suspension of said envelope.

3,162,356
PHONOGRAPH RECORD ENVELOPE

Louis Triolo, 26 Bulwer Place, Brooklyn, N.Y.

Filed Oct. 28, 1963, Ser. No. 319,120
2 Claims. (Cl. 229—68)

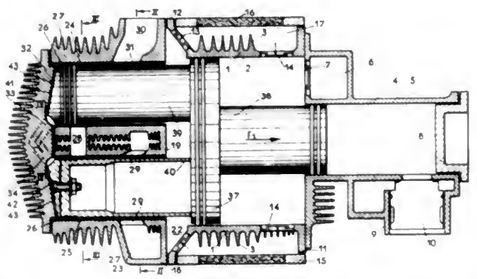


2. A square phonograph record envelope having an open side for the insertion of the record and three closed sides and formed from a rectangular cardboard blank having two narrowly spaced central transverse fold lines forming an end wall opposite the open side and connecting a top and a bottom wall, the bottom wall provided with side extensions having two narrowly spaced fold lines forming side walls, and glue flaps which are adhered to the lower side margins of said top wall, said margins having narrow cut-out sections along the central portion thereof, and shorter cut-out sections at the open side, the edges of said cut-out sections substantially abutting the adjoining edge sections of the glue flaps and being disposed on the same plane as said edge sections of the glue flaps, and a cover sheet adhesively joined to said envelope including the upper wall and the portions of the glue flaps which are exposed as a result of said cut-out sections.

3,162,357
POWER-DRIVEN COMPRESSOR DEVICE

Etienne Philippe Burion, La Frette, Isere, France, and René Antoine Michel Toesca, Robin Dell R.D. 1, Boyertown, Pa.

Filed June 12, 1962, Ser. No. 201,981
Claims priority, application France, June 22, 1961, 865,767, Patent 1,300,305
6 Claims. (Cl. 230—56)



1. A free piston machine comprising a motor casing and a compression casing in aligned relationship, a single movable unit located in said motor and compression casing to be reciprocated therein, said movable unit comprising a first piston located in said compressor casing and delimiting therein an inlet scavenging air chamber and a compression chamber for the compression of at least one charge of gas, at least one motor piston rigidly connected to said first piston and slidably mounted in said motor casing delimiting a cylinder for said motor piston, a collecting chamber surrounding at least in part said cylinder and scavenging ports communicating said cylinder with said collecting chamber, said scavenging ports being successively closed and uncovered by said motor piston, a partition provided between said collecting chamber and said inlet scavenging air chamber, valve members mounted in said partition for communication from said inlet scavenging air chamber to said collecting chamber, said motor cylinder further delimiting an exhaust collector having openings for communication with said cylinder, said openings being successively closed and uncovered by said motor piston and a channel for location of a fuel injector.

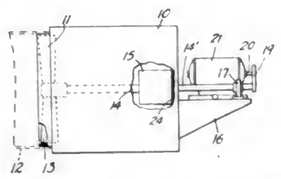
3,162,358
DRAFT INDUCERS

Abraham A. Arvintz, 54—40 Little Neck Parkway, Little Neck, N.Y., and Nathan A. Arvins, 350 Lefferts Ave., Brooklyn, N.Y.

Filed May 7, 1963, Ser. No. 278,630
7 Claims. (Cl. 230—117)

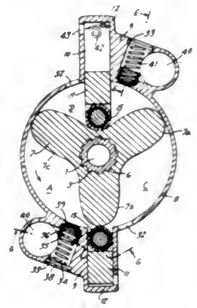
1. A draft inducing apparatus of the character defined comprising a casing having a large discharge in one wall thereof, a platform extending from said casing, a bearing assemblage mounted in said casing on an opposed wall of the casing, a shaft passing through said assemblage and having an impeller at one end adjacent said discharge, the other end of the shaft projecting from the casing and arranged over said platform, a bearing on the platform for said extending end of the shaft, an electric motor supported on said platform, a drive between the motor and said extending end of the shaft, said assemblage comprising a casing, through which said shaft passes, a wheel housing

detachably mounted in said assemblage casing, a bearing holder mounted on said housing, a bearing in said holder and arranged upon said shaft, a collar fixed to the shaft adjacent said bearing holder, the wall of the casing to which the assemblage is fixed having an aperture opening



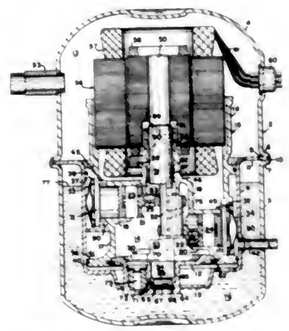
into the casing of said assemblage, and a cooling wheel fixed to said shaft within said housing for circulation of air through said aperture and a chamber of said assemblage casing and around the bearing supported in said bearing holder for cooling said last named bearing.

3,162,359
POSITIVE DISPLACEMENT PUMP
Harold Becher, Brooklyn, and Cleburne B. Hatfield, New York, N.Y., assignors to Strato-Missiles, Inc., New York, N.Y.
Filed Mar. 8, 1962, Ser. No. 178,392
2 Claims. (Cl. 230—149)



1. In a positive displacement pump, a circular cylindrical housing, a rectangular chamber extending radially outward of said housing and disposed diametrically opposite a second chamber extending radially outward of said housing, a pair of inlet ports disposed into said housing diametrically opposite with respect to each other, a pair of outlet ports leading from said housing and disposed diametrically opposite with respect to each other, end plates on the top and bottom of said housing, a multilobed rotor in said housing, a shaft supported centrally to and between said end plates and passing through the center of said rotor, a gate joined at its top and bottom by bifurcated bars straddling said shaft, an opening in said gate substantially equal in width to the diametric distance from the bottom of a valley between two adjacent lobes to the tip of the diametrically opposite lobe of said rotor and in height to the length of the face of said rotor, a pair of roller bearings mounted on each inner axial face of said opening and disposed opposite with respect to each other at the ends of the said face, each bearing extending axially a small portion of the respective end of said face, said bearings adapted to roll between the inner face of said opening and the surface of the lobes of said rotor and to prevent the inner face of said opening from contacting said rotor, said rotor constructed to reciprocate said gate diametrically in said chambers by the rotation of said rotor, the reciprocation of said gate and rotation of said rotor serving to draw a fluid into said housing through said inlet ports and to discharge the fluid through said outlet ports.

3,162,360
COMPRESSOR VENTING SYSTEM
George T. Privon, Camillus, and Tadek M. Kropiwnicki, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,307
2 Claims. (Cl. 230—206)

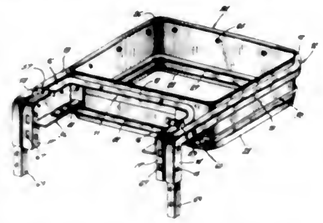


1. A reciprocating compressor comprising the combination of a crankcase, cylinder means in said crankcase, piston means reciprocatingly mounted in said cylinder means, a motor compartment above said crankcase, a motor in said motor compartment, partition means separating said motor compartment and said crankcase, upper bearing means in said crankcase above said cylinder means, lower bearing means in said crankcase below said cylinder means, a vertically extending crankshaft journaled in said bearings and operatively connected to said piston means and motor, a lubricating pump adjacent said lower bearing, said upper bearing means comprising first and second spaced bearing members, a vertically extending passage in said crankshaft communicating with said pump, said passage terminating opposite said first bearing member of said upper bearing, a first horizontal passage communicating the terminal end of said vertical passage with said first bearing member, a second horizontal passage communicating said vertical passage with said second bearing member, a connecting passage communicating said space between said first and second bearing members with said terminal portion of said vertical passage, and a vent passage communicating said terminal end of said vertical passage with said motor compartment whereby refrigerant gas in said vertical passage and in said space between said first and second bearing members is vented into said motor compartment.

3,162,361
REFUSE CONTAINER
John C. Brighton and Lawrence C. Fisher, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 8, 1962, Ser. No. 229,107
9 Claims. (Cl. 232—43.2)

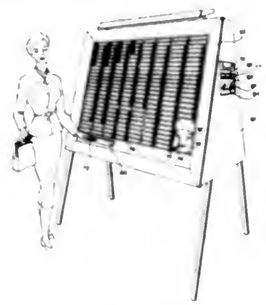
1. In a refuse container,
(*a*) a generally rectangularly shaped collar,
(*b*) a frame connected to said collar around a plurality of the sides thereof and having a pair of laterally spaced members projecting outwardly from said collar,
(*c*) said collar projecting downwardly from said frame for reception in the open end of a refuse bag,
(*d*) clamp means comprising a plurality of angulated members swingably interconnected to said frame and

movable in the horizontal plane of said collar between an open position in spaced relation to said collar and a closed position disposed immediately adjacent the outer face of said collar and extending



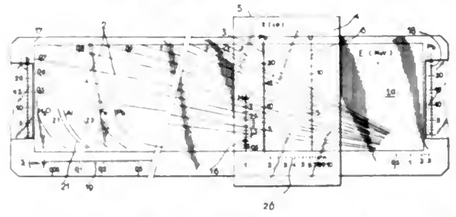
around the four sides thereof for bindingly retaining said bag thereon,
(*e*) a lid for closing the upper end of said collar, and
(*f*) bracket means operatively connected to said pair of members for mounting said frame on a support.

3,162,362
VOTING MACHINE AND SYSTEM
Anatolijus Jazbutis, Jamestown, N.Y., assignor, by mesne assignments, to Automatic Voting Machine Corporation, Jamestown, N.Y., a corporation of Delaware
Filed Oct. 27, 1959, Ser. No. 849,067
19 Claims. (Cl. 235—54)



1. A vote receiving device comprising a casing having an open front ballot face, said face including series of vertically aligned openings, electrical contact means carried by said casing interiorly of said openings, a programmable circuitry panel disposed at the rear of said unit and having electrical conductors interconnected with one of said contact means, vote selection module devices adapted to slip-fit into said openings and each carrying a voting switch and an actuation device therefor at the front end thereof and contact devices at the rear end thereof adapted for slip-fitting connections with corresponding of said first contact means when said modules are disposed in mounted relation within said openings, each of said modules including circuitry interconnecting the switches thereof and selected ones of the contact devices thereof, a counter device for each of said vote selection module devices and conductor means separately interconnecting different leads of the circuitry of said back panel to corresponding counter devices, each vote selection module device including flip-flop means having a first stable state and a vote registering second stable state, said voting switch being connected to said flip-flop means to actuate the same from its first stable state to its second stable state, and at least one of said contact devices in each vote selection module being connected to said flip-flop means to shunt the voting switches of other vote selection modules to ground when any one of the flip-flop means of the several associated vote selection modules is in its second stable state.

3,162,363
SLIDE-RULE FOR PERFORMING CALCULATION INVOLVING SCREENS TO PROTECT PERSONNEL AGAINST RADIATIONS
Jean-Marie Lavie, Massy, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Sept. 8, 1959, Ser. No. 838,611
Claims priority, application France, Sept. 9, 1958, 774,037
6 Claims. (Cl. 235—70)



1. In a slide-rule for calculations involving protective screens and radioactive sources, a base, a movable slider and a transparent cursor on said base, a family of curves on one face of said base for the function

$$Y_1 = f(Ex) = \frac{kER\mu_a}{e^{\mu x}}$$

where k is a numerical, coefficient dependent upon the chosen units, E is the energy of the photons, B is the build-up factor, x is the thickness of the screen and μ_a and μx are the linear coefficients respectively of absorption of air and of the material of the screen, Y_1 being shown logarithmically on the abscissa of the family of curves, a linearly graduated ordinate on said cursor for and movable over said family of curves for the values of the thickness of the screen x, a logarithmic scale on the opposite face of said base for the function R of intensity of irradiation and a system of logarithmic coordinates on the face of said slider movable over and cooperating with the scale for R for the family of curves representing the function

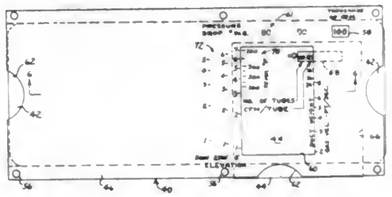
$$y = \frac{r^2}{A}$$

where r is the distance to the operator from the source and A is the activity of the source, y being shown as the abscissa on said slider, an ordinate scale graduated logarithmically on the other side of said cursor for the values of r beneath which ordinate scale said system of logarithmic coordinates are moved and reference marks on said slider cooperating with said scale for the function R providing values from said scale for the function R in milliröntgens per hour and in röntgens per hour.

3,162,364
SLIDE RULE TYPE SELECTOR
Benjamin Ragland, Birmingham, and George C. Patterson, Dearborn, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,392
5 Claims. (Cl. 235—89)

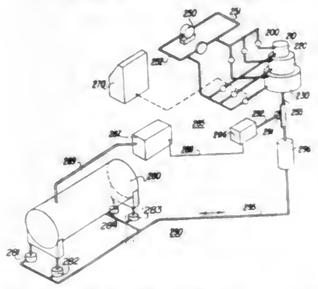
5. A dust collector selector comprising a holder having parallel front and back walls, and intervening wall structure cooperating therewith to define a longitudinal slideway and a transverse slideway; said front wall having a cut-away area and a gas volume indicator window; at least one main insert member adapted to be slidably dis-

posed in the longitudinal slideway for adjustment therein; each main insert member having a front face and a rear face; the front face of each main insert member having a scale of gas volume numerals arranged to register with the gas volume window in the holder, and a column of collector size numerals for each gas volume numeral arranged to register with the aforementioned cut-away area; and an auxiliary insert member adapted to be slid-



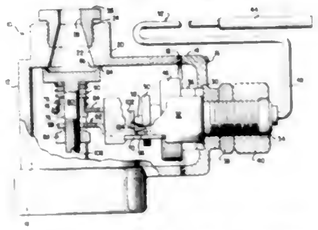
ably positioned in the transverse slideway for viewing through the aforementioned cut-away area; said auxiliary insert member and holder front wall having cooperating pressure drop and temperature graduations arranged to register with one another, and said auxiliary insert member having a collector size window arranged to expose the collector size numerals on the front face of the main insert member.

3,162,365
DIGITAL CONTROL SYSTEM
Terrence Gizeski, 11357 S. Normal, Chicago, Ill.
Filed Mar. 1, 1961, Ser. No. 92,572
11 Claims. (Cl. 235—200)



1. In a system including a digital controller for rendering control direction to a dynamical operator wherein the digital controller provides not less than 2^n discrete incremental control signals; the combination comprising a series of n number mechanical-analog vector suppliers, each of said vector suppliers in said series being a selectively operative dynamical ternary device thereby providing 3^n possible operational combinations for said n number of suppliers, each of said vector suppliers in one ternary condition providing a mechanical-analog vector output different from the mechanical-analog vector output of the other of said vector suppliers, means for cumulating the vector outputs of said series of vector suppliers thereby to provide to said dynamical operator cumulative mechanical-analog vectors corresponding to selected ones of said 3^n possible operational combinations wherein any one of said cumulative mechanical-analog vectors differs from every other cumulative mechanical-analog vector in magnitude by at least a discrete increment, and connector means between the output of said digital controller and said vector suppliers for selectively operating said suppliers in accordance with any one of said discrete increment control signals so as to provide correlation with the corresponding one of said discrete incremental cumulative mechanical-analog vectors at said cumulating means whereby the selection of any one of said control signals in said digital controller produces a corresponding cumulative mechanical-analog vector at said dynamical operator.

3,162,366
THERMALLY ACTUATED VALVE
Wilbur F. Jackson, Rolling Hills, and John W. Wright, Long Beach, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Oct. 31, 1961, Ser. No. 149,030
3 Claims. (Cl. 236—48)



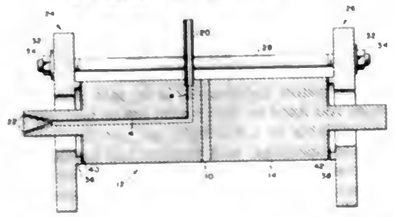
1. A thermally responsive valve comprising a body having a passage for fluid flow, a thermal element including an expansible power element mounted in said body and a remotely positioned sensing element, a bracket mounted in said body, at least one notch formed in said bracket having an upper inclined edge forming a pivot corner, guide means fixedly supported in the notch, a normally closed valve element slidably mounted in the guide means for controlling flow in said passage, a lever having a pivot tab positioned in said notch to support the lever for pivotal movement about the pivot corner, one end of said lever being operatively engaged with said expansible power element and the other end engageable with said valve element to actuate the valve element in response to expansion and contraction of the power element.

3,162,367
COLORED ILLUMINATED LAWN SPRINKLER
Arthur Nowack, 8 Remsen St., Elmont, N.Y.
Filed Jan. 11, 1963, Ser. No. 250,819
5 Claims. (Cl. 239—19)



1. A garden spray and light unit comprising a vertically disposed elongated tubular base open at its upper end and closed at its bottom end, an inwardly extending annulus connected to said base adjacent its open end, a clear lens supported by said annulus closing said upper end of the base, a spray head connected to said lens and having a water connection connected thereto, to provide a spray when water is delivered, a lamp supported on the bottom end of the base having an electrical connection for providing light rays through a spray from the spray head when connected to a source of electricity, and vent means in the base spaced from its ends to provide air flow for cooling the lamp, having tabs bent outwardly to form the vents and provide shields to prevent water from passing through the vents, a second lens disposed in the upper end of said base below the lens supporting the spray head, the connected lens and spray head being removable to provide a garden lamp unit when a spray is not desired, and a hood having spaced upper and lower surfaces each with an opening therethrough aligned with the opening in the other surface, the base with only the second lens connected to the bottom surface in the opening therein, the connected spray head and lens supported in the opening in the upper surface, a motor mounted on the bottom surface, and a color wheel connected to and rotated by the motor to provide various colors to the light from the lamp.

3,162,368
SONIC ENERGY TRANSDUCER
William Clay Choate, Miami Beach, Fla., and Jerrold D. Atlas, Plainfield, and James A. Wilson, Stanhope, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 6, 1961, Ser. No. 122,308
8 Claims. (Cl. 239—102)

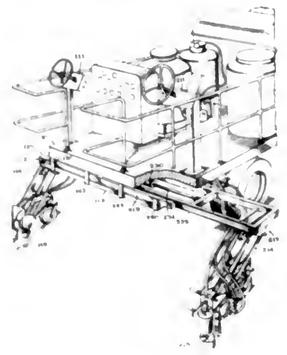


6. A transducer apparatus for receiving inputs of alternating voltage and providing outputs of mechanical displacement comprising:
- a piece of piezo-electric material characterized by two opposite and essentially parallel faces;
- a first metallic resonator configured as a stepped cylinder and which has its end of larger diameter in close relation to the first face of said piece of piezo-electric material;
- a second metallic resonator configured as a stepped cylinder and which has its end of larger diameter in close relation to the second face of said piece of piezo-electric material;
- clamping means engaging said first and second resonators whereby said resonators exert compressive force upon said piece of piezo-electric material, said clamping means engaging each of said resonators at the periphery of the shoulder between the portion of larger diameter and the other portion of the stepped cylinder, said resonators being designed so that each of said shoulders is a surface of essentially zero displacement.

7. A transducer apparatus according to claim 6 which is characterized by a main axial hole extending at least part way through said first metallic resonator, and which is characterized further by means wherethrough liquid to be atomized may be fed to said main axial hole.

3,162,369
HYDRAULIC SYSTEM OF SPRAY GUN CARRIAGE CONTROL
Wayne R. Mitchell, Lewistown, Pa., assignor to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania
Filed June 11, 1963, Ser. No. 287,044
5 Claims. (Cl. 239—150)

1. Hydraulic road striping mechanism comprising
- a first retractable means;
- a second retractable means mounted so as to extend in a direction opposite to said first retractable means;
- spraying means mounted on the outer end of each of said retractable means;
- an hydraulic system operatively attached to said first and second retractable means including
- a first hydraulic operating means attached to said first retractable means for controlling the transverse movement of said first retractable means,
- a second hydraulic operating means attached to said second retractable means for controlling the transverse movement of said second retractable means,
- a first control means hydraulically connected to opposite ends of said first hydraulic operating means,
- a second control means hydraulically connected to opposite ends of said second hydraulic operating means,

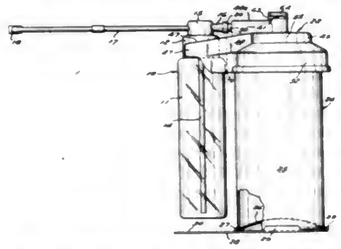


- and a power source connected to said first control means and said second control means;
- said first and second hydraulic operating means each including
- a first end having a piston rod extending therefrom
- and a second end on the opposite end of said hydraulic operating means from which said piston rod protrudes;
- and a first valve means operatively connected between said first control means and said first end of said first hydraulic operating means and hydraulically connected to said second end of said second hydraulic operating means;
- and a second valve means operatively connected between said first control means and said second end of said first hydraulic operating means and hydraulically connected to said first end of said second hydraulic operating means.

3,162,370
CONTAINER, ATOMIZER AND ADAPTER SPRAYING DEVICE
William Moonan, Shaker Heights, and Vernon C. Groth, Mentor, Ohio, assignors to Sprayon Products, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 271,078
12 Claims. (Cl. 239—304)

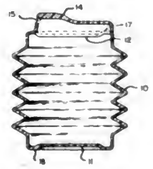
1. An adapter for connecting an atomizer to a container for a liquified propellant gas, said atomizer comprising a body having a fitting adapted for connection to a source of propellant gas, a discharge nozzle projecting from the body and a reservoir for liquid to be sprayed depending from the body, said container having a discharge opening and a valve for controlling the discharge

of gas therefrom; said adapter comprising a body portion adapted to be frictionally and detachably mounted on said container, said body portion of said adapter having a passageway adapted to communicate with the discharge opening of the container when said adapter is in



place on said container, said adapter also comprising means for connecting said passageway to said fitting of said atomizer by straight-line movement of said atomizer with respect to said adapter and means for frictionally and detachably engaging said atomizer and supporting it with said fitting connected to said passageway.

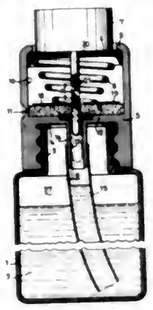
3,162,371
MANUALLY OPERABLE AIR BLOWER
Anthony J. Palmer and Robert Lee Palmer, Grove City, Pa., assignors to Palmer Products Co.
Filed Dec. 20, 1963, Ser. No. 332,072
3 Claims. (Cl. 239—327)



1. A manually operable air blower comprising an axially collapsible side wall of a generally cylindrical corrugated configuration joined at each end by axially spaced end walls, said blower being unitarily formed of a flexible resilient air-impervious material, said side wall offering relatively moderate resistance to manual collapsing thereof in a direction along the axis of said side wall and being self-expanding to its normal expanded position upon release from any degree of said manual collapsing, one of said end walls having a nozzle portion with an aperture for the passage of air therethrough, the interior space of said air blower otherwise being completely enclosed, said nozzle portion being generally rectangular and rising from said end wall and bisecting said end wall and being sufficiently narrow to allow space adjacent each side thereof on said end wall for finger gripping depressions disposed in said end wall on each side of said nozzle portion, said aperture being disposed at one end of said nozzle portion adjacent said side wall at an angle to the axis of said side wall.

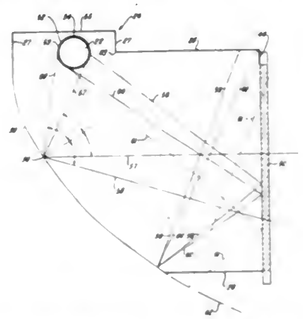
3,162,372
SPRAYER HAVING A RESERVOIR WITH A SPRAY HEAD MOUNTED TIGHTLY THEREON
Marcel Viard, 123 Rue Saint-Maur, Paris, France
Filed Jan. 21, 1963, Ser. No. 252,960
Claims priority, application France Feb. 8, 1962
10 Claims. (Cl. 239—354)

1. A sprayer adapted to operate in the normal upright position, this sprayer comprising: a liquid reservoir having a reservoir chamber, and a sprayer head mounted in a fluidtight manner on said reservoir; said sprayer head comprising a wall defining a piston chamber, said wall having a spraying orifice provided therethrough between said piston chamber and the atmosphere and an aperture between said reservoir chamber and said piston chamber, a sealing element closing said aperture and having a first opening, a mass of porous material inside said piston chamber at the level of said spraying orifice and applied against said spraying orifice whereby said piston chamber communicates with the atmosphere through said porous mass and said spraying orifice, said porous mass having a second opening in axial alignment with said first



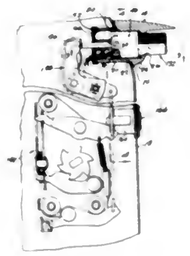
opening; a piston reciprocatable in said piston chamber, a plunger rod fixed on said piston inside said piston chamber and slidable in a fluidtight manner through said first and second openings; said plunger rod having a passageway whose ends, at least, communicate with the space around said plunger rod, the distance between said ends being sufficient, in a given position of the plunger rod, to put said reservoir chamber into communication with said piston chamber; and conduit means extending from said aperture down to the lower part of said reservoir, the lower end of said plunger rod extending, with clearance, into the upper end of said conduit means.

3,162,373
RUNWAY LIGHTING SYSTEM
Orrick H. Biggs, Beverly, Domina E. Spencer, Cambridge, and Sandford C. Peek, Jr., Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 712,203, Jan. 30, 1958. This application Dec. 12, 1962, Ser. No. 247,432
6 Claims. (Cl. 240—1.2)



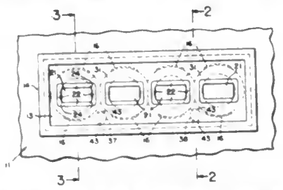
1. An electric lighting fixture comprising: an elongated hollow tubular light-emitting fluorescent surface having a longitudinal axis and a substantially circular cross-section perpendicular to said axis; a reflector in position to reflect away from said surface the light emitted from a first portion of said surface, said reflector having a longitudinal axis parallel to the longitudinal axis of said fluorescent surface, the curve of said reflector in a plane transverse to its longitudinal axis having its own axis tangent to the circular cross-section of said fluorescent surface, said reflector being substantially entirely on the side of said tangent axis opposite the side on which said fluorescent surface is positioned; a second reflector extending closely around a second portion of said fluorescent surface whose light is directed away from said reflector, to reflect the light from said second portion back onto said first portion of said fluorescent surface to increase the light intensity of said first portion of said surface; and a shield for all light emitted directly from said fluorescent surface in directions away from said reflector.

3,162,374
ILLUMINATING MEANS FOR THE KEYHOLE OF DOOR LOCKS
Louis Skokut, P.O. Box 424, Monongahela, Pa.
Filed Nov. 24, 1961, Ser. No. 154,628
5 Claims. (Cl. 240—2.13)



5. Illuminating means for the keyhole of an automobile door lock comprising, in combination, an automobile door, a door handle, said handle having an integrally formed, cylindrical casing projecting laterally therefrom and transversely of said door, a substantially hollow cylindrical housing mounted for reciprocation in said casing, resilient means interposed between said casing and said housing constantly biasing said housing for movement toward the exterior side of said door, means extending from said housing and through said casing to actuate door-latching means, said door-actuating means being operable against the tension of said resilient means, an electric light socket disposed in said housing, a pair of arcuately-shaped levers pivotally connected intermediate their ends on said socket on diametrically-opposed sides thereof, means extending through an adjacent pair of ends of said levers to move the other pair of ends of said levers toward and away from each other, a transparent push button shell mounted for reciprocation within said casing and having an end thereof engaging against said housing to effect operation thereof, an electric light disposed in said socket and extending into said shell, a normally open electric switch mounted on said door, said switch having button-operating means, an electric circuit including said switch, said light and a source of current, an elongated arm pivotally connected at one of its ends on said door, said switch button being disposed in the path of the movement of the other end of said arm to be actuated by the latter, said pivotal connection including an arm-operating handle on the exterior side of said door, a second handle mounted for pivotal movement on the interior side of said door, a rod extending between said arm and said second handle and pivotal therewith to effect the pivotal movement of said arm, said handles being selectively operable to cause energization of said circuit from the interior or exterior of said car door.

3,162,375
INSTRUMENT ILLUMINATING MEANS
William D. Huston, Monroe County, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1962, Ser. No. 166,862
5 Claims. (Cl. 240—8.16)



1. In combination with a support having a plurality of gauges and light bulbs mounted in spaced relation thereon,

(*a*) a sheet of plastic material capable of transmitting light,

(*b*) said sheet having a plurality of spaced apertures therein and a like plurality of first recesses in the back thereof, each of said recesses being spaced from and surrounding the edge of a respective aperture at the back of said sheet,

(*c*) said sheet having a plurality of second recesses in the back thereof adjacent said first recesses,

(*d*) means securing said sheet to the support,

(*e*) means mounting a plurality of gauges on said support behind said sheet with their front indicating faces confronting the rear face of said sheet and in registry with said apertures and with each of said first recesses receiving the marginal edge of the front indicating face of a respective gauge and forming a seat therefor,

(*f*) each of said apertures being smaller in area than the front indicating face of the gauge mounted behind the aperture,

(*g*) means for mounting a light bulb on said support behind each of said second recesses with its front end in registry with a second recess,

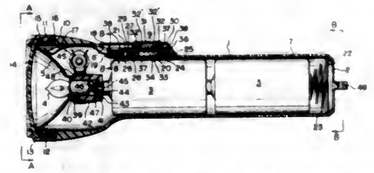
(*h*) said plastic sheet including refracting means on the portions of said sheet confronting the indicating faces of said gauges in the areas defined by the marginal edges of said apertures and the surrounding first recesses, and operative upon the lighting of said bulbs to cause light therefrom to be transmitted through said portions to illuminate said gauge faces, and

(*i*) further means on the front, marginal edges, and back of said sheet reflecting back the light from the bulbs and onto said refracting means, whereby the light from the bulbs will be transmitted through said sheet to illuminate the front faces of the gauges.

3,162,376
WATER-TIGHT PORTABLE ELECTRIC LAMP FOR UNDER-WATER USE
Syoichi Furuya, 6 Misono 3-chome Ota-ku, Tokyo, Japan
Filed Nov. 5, 1962, Ser. No. 235,428
4 Claims. (Cl. 240—10.66)

1. A water-tight portable electric lamp comprising, in combination, a water-tight enclosure including a magnetically permeable cylindrical casing having a closed inner end, and a lens assembly disengageably secured in water-tight relation to the open front end of said casing; a metallic reflector positioned adjacent the inner surface of said lens; a lamp socket secured to said reflector and including a central contact; a lamp bulb mounted in said lamp socket and having a central base contact engageable with said central contact; electrically conductive means establishing electric circuit connection between a

lateral contact of said lamp bulb and said reflector; a dry cell battery disposed in said cylindrical casing and including one terminal electrically and mechanically engageable with said central contact; an electrically conductive coil spring disposed between the closed rear end of said cylindrical casing and the other terminal of said battery; a switch recess formed in said cylindrical casing and opening toward the interior thereof, the walls of said recess being integral with said cylindrical casing to form part of said water-tight enclosure; a first electrically conductive metal strip extending along said enclosure and mounted on the inner surface thereof, said first electrically conductive strip having a forward end in electrical connection with said reflector and a rear end positioned in said switch recess and constituting a fixed switch contact; a second electrically conductive metal strip extending longitudinally of said enclosure and secured on the inner surface thereof, said second electrically conductive strip having a rear end in electrical connection with said coil spring and a resilient front end extending into said switch recess and in longitudinally overlapping relation with the rear end of said first electrically conductive strip, the front end of said electrically conductive strip normally



being spaced from the rear end of said first electrically conductive strip and constituting a movable switch contact; a first permanent magnet mounted on the front end of said second electrically conductive strip; a switch operator mounted for sliding movement on the exterior surface of said enclosure and longitudinally of the outer surface of the outer wall of said switch recess; and a second permanent magnet movable with said switch operator; said permanent magnets extending longitudinally of said enclosure and having relatively reversed respective polar orientations; said operator having a first position in which said magnets are in longitudinally displaced relation with like poles of said magnets being in adjacent relation to repel each other, and a second position wherein said two magnets are substantially laterally aligned with respective poles of opposite polarity being laterally opposite each other; whereby, in said second position, said second permanent magnet will attract said first permanent magnet to move said movable switch contact into engagement with said stationary switch contact to complete a series energizing circuit including said lamp bulb, said battery, said spring, said electrically conductive strips, and said reflector.

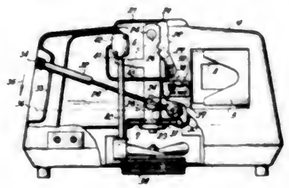
3,162,377
COLLAPSIBLE LANTERN STRUCTURE
Hidetaro Ozeki, Oguma-cho 1–7, Gifu, Gifu Prefecture, Japan
Filed Mar. 22, 1962, Ser. No. 181,602
Claims priority, application Japan, Mar. 24, 1961, 36/14,452
1 Claim. (Cl. 240—36)

A collapsible lantern structure for a Japanese lantern, comprising two spaced aligned end frames in the form of closed figures, a plurality of resilient ribs extending between said end frames and adapted to curve outwardly with respect to the central axis through the two spaced aligned end frames, a connecting means at each end of each rib connected to the rib and the end frame adjacent thereto and connecting said ribs to said end frames at points spaced around the peripheries of said end frames, each of said connecting means being a coil spring having a hook on one end hooked around an end frame for providing a rotatable connection of the coil spring to the end frame, and having the other end secured to a rib, whereby the coil spring tends to assume a position sub-



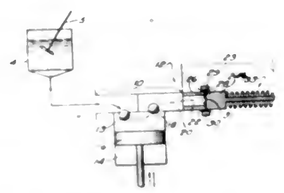
stantially coaxial with the line between the end of the rib and the end frame and to expand and contract along this line, and an expansible covering secured to the ribs along the length of the ribs and being expansible to the fully outwardly curved condition of said resilient ribs.

3,162,378
SLIDE PROJECTOR WITH ADJUSTABLE LAMP SUPPORT
Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Jan. 3, 1961, Ser. No. 80,200
11 Claims. (Cl. 240—44.2)



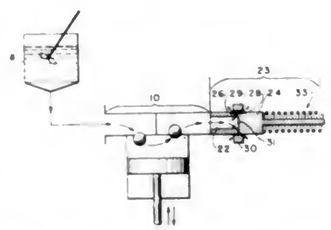
1. A slide projector comprising, in combination, a housing; means providing a fixed optical axis for said projector; an upwardly extending element fixed within said housing; a socket support slidably mounted upon said element; and a lamp socket fixedly mounted on said support and arranged to interchangeably receive projector lamp bulbs of different ratings and having respectively significantly different spacings of their respective luminous spots from their respective socket-engaging bases; said socket support and said element being provided with cooperating and vertically spaced pin and aperture means for guiding said socket support for movement, relative to said element and in a plane perpendicular to said optical axis, between selected fixed positions in each of which the base of a respective lamp engaged in said socket is positioned at a distance from said optical axis corresponding to the spacing between the luminous spot of the lamp and the base of the lamp; the pin and aperture of each pin and aperture means having sufficient clearance to provide for such adjustment of said socket support relative to said element and to provide for swinging of said support laterally of the optical axis and in said plane about one of said pin and aperture means; whereby said support may be adjusted both vertically and laterally relative to said optical axis to properly align the luminous spots of lamp bulbs of different ratings with such optical axis.

3,162,379
METHOD FOR DELAMINATING SIZED LAMINAR MINERAL PARTICLES
Morris I. Cohn, Needham, and Roy D. Perdue, Tewksbury, Mass., assignors to Mineral Industries Corporation of America, Needham, Mass., a corporation of Massachusetts
Continuation of applications Ser. Nos. 197,812 and 197,813, May 17, 1962; said application Ser. No. 197,813 being a continuation of application Ser. No. 189,933, Apr. 24, 1962, which is a continuation of application Ser. No. 782,992, Dec. 22, 1958. This application Oct. 14, 1963, Ser. No. 316,187
13 Claims. (Cl. 241—4)



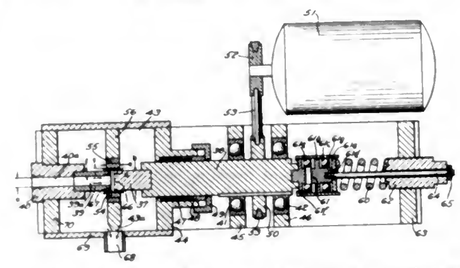
1. A method of delaminating sized laminar, mineral particles selected from the group consisting of mica particles and talc particles, said method comprising forcing a flowable liquid slurry of said mineral particles in the form of a thin film edgewise through a thin, hard surfaced gap under a high pressure of at least 250 pounds per square inch and at an extremely high velocity by virtue of reduction of said higher pressure to a substantially lower pressure to separate the layers of said laminar mineral particles.

3,162,380
METHOD OF TREATING ASBESTOS MINERALS
Morris I. Cohn, Needham, and Roy D. Perdue, Tewksbury, Mass., assignors to Mineral Industries Corporation of America, Needham, Mass., a corporation of Massachusetts
Application Oct. 14, 1963, Ser. No. 316,187, which is a continuation of applications Ser. No. 197,812, May 17, 1962, and Ser. No. 197,813, May 17, 1962; said application Ser. No. 197,812 being a continuation of application Ser. No. 189,934, Apr. 24, 1962, which is a continuation of application Ser. No. 22,667, Apr. 18, 1960. Divided and this application Apr. 10, 1964, Ser. No. 359,818
9 Claims. (Cl. 241—4)



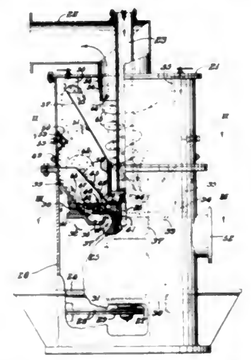
9. A method of fiberizing sized mineral particles of the group consisting of asbestos and serpentine mineral particles, said method comprising forcing a flowable liquid slurry of said mineral particles in the form of a thin film edgewise through a thin, hard-surfaced gap under a high pressure of at least 100 pounds per square inch and at an extremely high velocity by virtue of reduction of said high pressure to a substantially lower pressure to separate the fibrous layers of said mineral particles.

3,162,381
APPARATUS FOR DELAMINATING LAMINAR MINERALS
Morris I. Cohn, Needham, and Roy D. Perdue, Tewksbury, Mass., assignors to Mineral Industries Corporation of America, Boston, Mass., a corporation of Massachusetts
Original application Dec. 22, 1958, Ser. No. 782,992. Divided and this application Feb. 13, 1961, Ser. No. 88,951
4 Claims. (Cl. 241—40)



1. An apparatus for continuously delaminating and grinding laminar mineral particles of the group consisting of mica and talc particles comprising means for forming a liquid slurry of mica particles, a spring loaded valve, a pump for pumping said slurry against said valve under a pressure sufficient to force said spring loaded valve to open a fraction of an inch and force the slurry to flow through the valve opening at a high velocity, a classifier for classifying the delaminated and ground mica discharged from said valve opening to remove coarse mica particles and means for recycling said coarse particles back through said pump.

3,162,382
CENTRIFUGAL PULVERIZER
Ostap Danyluke, Newtown Square, Pa., assignor to Bath Iron Works Corporation, Bath, Maine, a corporation of Maine
Filed Mar. 22, 1962, Ser. No. 181,552
7 Claims. (Cl. 241—53)



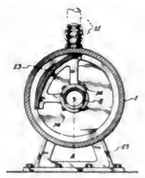
1. A centrifugal pulverizer comprising: a cylindrical housing having a cover; a bowl mounted for rotation in said housing, said bowl having an inclined wall having an annular inner recess, the upper edge of said bowl forming with the inner wall of said housing a narrow annular opening, the floor of said bowl having vents therethrough; means for rotating said bowl; an impeller mounted for rotation within said bowl for ejecting particles toward the recess in the wall of said bowl, said impeller having a central opening through which particles

to be pulverized may be dropped into said impeller; means for rotating said impeller at a speed substantially higher than the rotative speed of said bowl; a plurality of arcuate directional vanes generally radially disposed and secured at spaced-apart circumferential locations to the wall of said housing; a lower stationary cone secured to said directional vanes and supported thereby in an axial position, the lower portion of said cone extending down into said bowl and terminating above said central opening of said impeller; an upper stationary cone secured to said directional vanes and supported by said vanes in an axial position above said lower cone, the lower portion of said upper cone being cylindrical and extending down within said lower cone and terminating above said impeller opening; a feed tube vertically disposed on the axis of said housing and extending down through said cover and down through said upper and lower cones to a point above said impeller opening; a product collection conduit having a portion vertically disposed on the axis of said housing and surrounding said feed tube concentrically at the cover of said housing; a plurality of classification vanes mounted below the cover of said housing at spaced locations along an annular path, said classification vanes occupying positions adjacent the upper edge of said upper cone and being adapted to be adjusted from radial positions to positions forming an acute angle with the radial line; and external means for forcing air into and upwardly through said housing and out said collection conduit, said housing and its fixtures providing two paths for said forced air, one upward through the vents in the floor of said bowl along the inner wall of said bowl and the other upward along the outside of said bowl and through the annular opening between the upper edge of said bowl and the inner wall of said housing, said air paths then combining and passing upward along the outer wall of said upper cone, inward into said upper cone, then upward and out through said product collection conduit, the radial position of said plurality of classification vanes controlling the path of the inward flow of air into said upper cone.

3,162,383
GRINDING MILLS

Federico de los Santos Izquierdo, Insurgentes Ave. S. 1510–405, and Rafael Diaz Gómez, Mar Negro St. 168, both of Mexico City, Mexico

Filed Apr. 5, 1962, Ser. No. 185,398
Claims priority, application Mexico, Apr. 10, 1961, 62,295
5 Claims. (Cl. 241—54)

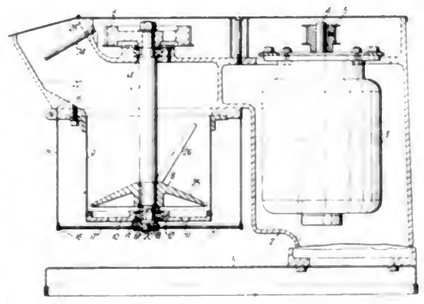


1. A grinding mill comprising an elongated hollow and substantially horizontally disposed spindle, a tubular casing surrounding said spindle and having end walls forming an enclosure through which said spindle passes, said end walls having bearing means journaling said casing for rotation on said spindle, a grinding member within said casing and fixed to said spindle, said grinding member having an arcuate portion terminating in an edge spaced closely to the inner surface of said tubular casing, pulley means secured to said casing end walls and having V-shaped grooves for reception of belts for driving said casing at a high rate of rotation, hopper means connected to one end of said spindle for feeding material to be ground, an opening in the wall of said spindle within the casing for entry of material to be ground into the casing, and extractor means including a suction pump and a sectional discharge pipe connected to the other end of said spindle for sucking ground material from the casing, the sections of said discharge pipe including elbow sections and being slideably connected to permit variable tilting of said pipe to locate its discharge end at different levels for classifying the sizes of the discharged grains of ground material.

3,162,384
GRATING APPARATUS

Edward James Wright, Hendon, London, England, assignor to Peerless & Ericsson Limited, London, England, a British company

Filed Jan. 16, 1963, Ser. No. 251,983
Claims priority, application Great Britain, Jan. 22, 1962, 2,323
11 Claims. (Cl. 241—90)

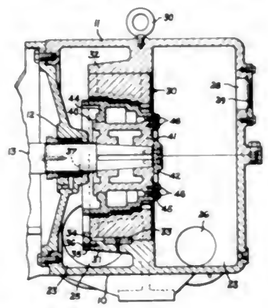


7. Apparatus for grating blocks of ice into small chips comprising a cylindrical perforate grating drum, means for moving ice to be grated in contact with the interior of the drum, a flexible screen impervious to the passage of ice chips surrounding and spaced from the drum for collecting grated ice chips, a portion of said screen being fixed in relation to said drum, and means for continuously flexing the screen whereby the build up of self adherent grated ice chips thereon is prevented.

3,162,385
PAPER MAKING PULP REFINER

Joseph Baxter, Jr., Franklin, Ohio, assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Feb. 14, 1961, Ser. No. 89,281
9 Claims. (Cl. 241—163)

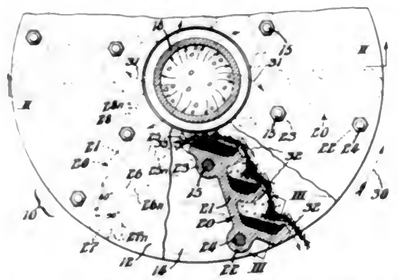


1. Refining apparatus of the character described for liquid slurry stock, comprising a shell defining a refining chamber, means in said shell forming an inlet chamber and an outlet chamber on opposite sides of said refining chamber, a rotor mounted for rotation in said shell and including a rotor body extending through said refining chamber, said rotor body having thereon at least two circumferential rows of substantially uniform and uniformly spaced teeth forming working surfaces, said teeth in said row nearest said inlet chamber being of substantially greater depth and spacing than said teeth in said row nearest said outlet chamber to provide a correspondingly greater number of teeth in said row nearest said outlet chamber, said shell having thereon rows of teeth substantially complementary to and in radially spaced and overlying relation with said teeth on said rotor body to define therewith a correspondingly plurality of stepped working zones for the stock passing from said inlet chamber to said outlet chamber, and said teeth and the grooves therebetween in each of said rows extending substantially parallel with the axis of rotation of said rotor to minimize the pumping action of said apparatus and to effect a substantially uniform rate of axial travel of the stock with respect to each of said zones.

3,162,386
IMPELLER FOR CENTRIFUGAL PULVERIZER

Ostap Danyluke, Newtown Square, Pa., assignor to Bath Iron Works Corporation, Bath, Maine, a corporation of Maine

Filed May 7, 1963, Ser. No. 278,530
12 Claims. (Cl. 241—275)



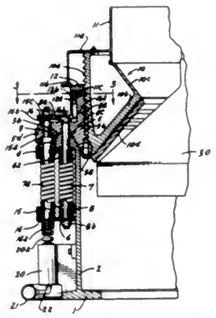
1. In a centrifugal pulverizer for reducing the size of particles of material, an impeller assembly adapted to be rotated at high speed, said impeller assembly including an upper and a lower horizontally-disposed impeller disc, and a plurality of radially-disposed impeller vanes vertically secured between said discs, each of said impeller vanes having a radial main portion and having a plurality of cupped arms extending generally circumferentially therefrom in the direction of rotation of said impeller assembly and loctaed at different radial distances from the axis of rotation, said cupped arms being cupped inwardly forming pockets, the extremity of each of said arms having a relatively large lateral notch disposed between the upper and lower discs for passage therethrough of particles of material.

3,162,387
HYDRAULIC BOWL RELEASE FOR CONE CRUSHERS

Loren G. Symons, North Hollywood, Calif., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Original application Oct. 16, 1957, Ser. No. 690,458, now Patent No. 3,019,994, dated Feb. 6, 1962. Divided and this application Nov. 13, 1961, Ser. No. 151,708
17 Claims. (Cl. 241—290)

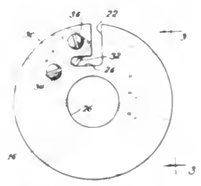
1. In a gyratory crusher, a circumferential main frame with an outwardly extending flange adjacent its upper edge, a bowl supporting ring tiltably mounted on said flange and movable upwardly therefrom, a bowl mounted on the bowl supporting ring, yielding means for normally holding the bowl supporting ring downwardly against said flange and substantially fixed in relation to the main frame while permitting overload release, including a plurality of bowl holding and release springs, their upper ends abutting the lower side of said main frame flange, movable abutments for the lower ends of the springs, and spring bolts passing through apertures in said main frame flange, and connecting said abutments and bowl supporting ring with said springs under compression therebetween, thrust members extending upwardly among the springs through the main frame flange with a surface opposing the bowl supporting ring, and a plurality of hydraulic jacks positioned about the main frame relative to the thrust members so that when the jacks are energized, they apply an upthrust to the thrust members which will be communicated to the bowl supporting ring, thereby raising the bowl to allow the free escape of lodged material.



3,162,388
CORE WINDING START DEVICE

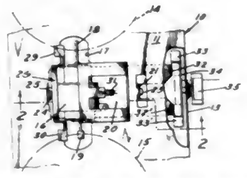
Donald J. Balash, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,337
3 Claims. (Cl. 242—19)



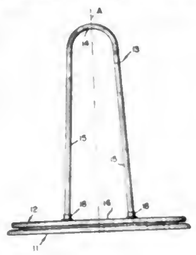
1. A core winding starter for use on a thread winding machine having a spindle for receipt of a core and including, a flat circular disc arranged for attachement to the end of a spindle for rotation therewith, said disc having an L-shaped slot formed therein which extends inwardly from the periphery of the disc with the base leg of said slot extending in a direction opposite to the direction in which the disc is rotated while on the spindle, said slot being arranged for engagement of a thread when brought into contact with the disc to cause initial wrapping of the thread upon the core, and a cutting means positioned near the end of the base leg of the slot for cutting a thread after it is engaged by the slot.

3,162,389
TAPE RECORDER
Harold E. Sloier, Tokyo, Japan, assignor, by mesne assignments, to Sun Wave Kogyo Kabushiki Kaishya, Tokyo, Japan, a corporation of Japan
Filed Jan. 2, 1962, Ser. No. 163,631
5 Claims. (Cl. 242—55.12)



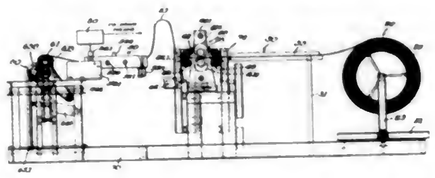
1. A drive mechanism for a tape recorder having a pair of rotatable turntables adapted to receive a pair of tape winding reels, comprising: a motor having a driving shaft with oppositely extending driving shaft ends for respectively driving said turntables; a pivotally mounted support for normally supporting said motor in a position with its driving shaft ends in a non-driving relationship with the turntables; a brake member engageable by said support, said brake member being supported for vertical reciprocable movements into braking and non-braking positions with respect to said turntables; a tension spring biasing said support and engaged brake member into said braking position; and means for tilting said support from said position to selectively position said shaft ends in driving relationship with said turntables and release the biasing spring force on said brake member, whereby it may assume a non-braking position.

3,162,390
CLOTH BOLT HANDLING DEVICE
Sidney Meyer, Elizabeth, N.J., assignor to A. S. Epple, Inc., Rumson, N.J., a corporation of New Jersey
Filed Jan. 27, 1961, Ser. No. 85,283
2 Claims. (Cl. 242—55.54)



1. In a device for display mounting of a bolt of cloth or the like, a base member comprising a relatively stiff horizontal plate having readily releasable means on its bottom for anchoring said device against sliding on a support such as a flat counter or table top, a platform member comprising a substantially imperforate member parallel to said base member mounted for free rotation on said base member, said mounting comprising cooperating means on said members adjacent their outer peripheries providing means mounting ball bearings between them to enable stabilized free rotation of the platform on said base, peripheral skirt means on at least one of said members preventing cloth from entering the bearings, an arbor mounted in vertical upstanding relation upon said platform and comprising an inverted generally V-shaped member having an uppermost smoothly rounded top and rigid smooth legs extending from said top through diametrically spaced openings in said platform, said base being apertured radially inwardly of said bearings, and fastener means securing the lower ends of said legs to said platform accessible through the apertured portion of said base.

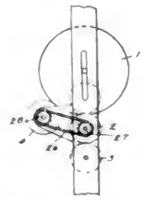
3,162,391
CORE WINDING MACHINE AND METHOD
Horace Clifford Westcott, Lemont, and Richard M. Ryde, Oak Park, Ill., assignors to Hubbard and Company, Chicago, Ill., a corporation of Pennsylvania
Filed Jan. 25, 1961, Ser. No. 84,805
6 Claims. (Cl. 242—56.2)



1. A machine for winding a magnetic core circuit comprising, a reel mechanism for delivering a continuous strip of magnetic core material, a rotary cutter assembly for continuously cutting said continuous strip of magnetic core material, said rotary cutter assembly comprised of at least two pair of rotary cutters spaced from one another and adapted to cut adjacent opposite edges of said continuous strip of magnetic core material, drive means for said continuous strip of magnetic core material to pull said continuous strip of magnetic core material from said reel mechanism and through said rotary cutter assembly at a constant speed, a winder assembly for tightly wrapping said cut continuous strip of magnetic core material on a provided core form, a guide mechanism for orientating said cut continuous strip of magnetic core material about a predetermined point before said cut continuous strip of magnetic core material is wound on said provided core form by said winder assembly, said pairs of rotary cutters in said rotary cutter assembly being movable relative to one another, means for programming the relative movement of said pairs of said rotary cutters in said rotary cutter assembly responsive to the winding of said continuous strip of magnetic core material on said provided core form, and magnetic core circuit length means for determining the length of the final wrapping of said magnetic core circuit for interrupting the wrapping of said continuous strip of magnetic core material on said provided core thereby enabling said continuous strip of magnetic core material to be so cut that a magnetic core circuit of a predetermined configuration is wound on said provided core form by said winder assembly.

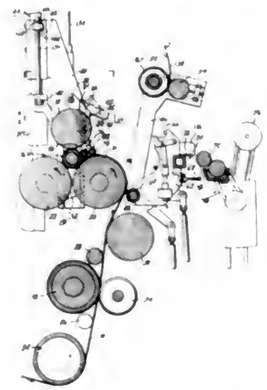
3,162,392
TAKE-UP MECHANISM FOR CIRCULAR KNITTING MACHINE
James N. Lancaster, E. Main St., Stoneville, N.C., and Charles H. Ponder, 2807 Northampton Drive, Greensboro, N.C.
Filed Feb. 4, 1963, Ser. No. 255,887
6 Claims. (Cl. 242—66)

1. A take-up mechanism for circular knitting machines comprising a draw roll, means for turning said draw roll about its axis, a take-up roll for accumulating fabric in a readily compressible roll, means for mounting the ends of said take-up roll with the axis of said take-up roll parallel to the axis of said draw roll, for rotation about its axis, and for movement toward and away from said draw roll, said take-up roll being urged toward said draw roll to peripherally and frictionally engage the draw roll and be turned by it, an auxiliary drive roll, means for mounting said auxiliary drive roll with its axis parallel to that of said draw roll but spaced from a line connecting the axes of said draw roll and said take-up roll, the respective axes of said rolls being positioned at the corners of a triangle, and said auxiliary drive roll being in position to peripherally engage and radially compress the fabric ac-



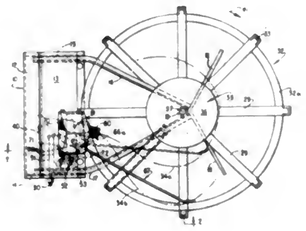
cumulated on said take-up roll only after a predetermined minimum of fabric has accumulated, and means for turning said auxiliary drive roll about its axis, whereby said auxiliary drive roll aids in the turning of said take-up roll by peripherally engaging it only after a part of the fabric has been wound on said take-up roll.

3,162,393
TUCKING MEANS FOR A WEB-WINDING MACHINE
Gerrit De Gelleke, Parsippany, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Original application Jan. 17, 1961, Ser. No. 83,229, now Patent No. 3,134,553, dated May 26, 1964. Divided and this application Oct. 16, 1963, Ser. No. 316,692
3 Claims. (Cl. 242—66)



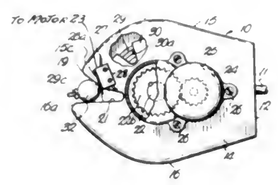
1. In web-winding apparatus comprising a rotatably driven, cylindrical, winding drum member, and a rewind core member supported in parallelism with and in frictional driving relation to said drum member to derive rotation therefrom to draw elongate web material through a nip area between said drum and core members at a web-receiving side thereof, and tucking means for pushing a leading web portion into said nip area at the start of a winding operation; said tucking means comprising a pair of spaced, parallel, tucking rollers, means supporting said rollers at said web-receiving side, in parallelism with said members, for engagement of said rollers with spaced parts of said leading web portion which rest upon said members; and said engagement being sufficiently forceful to cause the two tucking rollers to be driven oppositely by rotation of said members to push web material of said leading web portion, located between the latter's said spaced parts, toward and into said nip area.

3,162,394
STRAP DISPENSER
John W. Culpepper, 3 La Fayette Drive, Jericho Vt., and Edward J. Stahnke and Alvin L. Winkler, Chicago, Ill.; said Stahnke and said Winkler assignors to Acme Steel Company, Chicago, Ill., a corporation of Illinois
Filed May 7, 1963, Ser. No. 278,658
10 Claims. (Cl. 242—78.6)



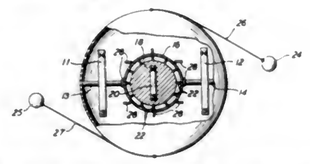
10. In mechanism for dispensing strapping and the like from a coil thereof, means for supporting the coil for rotation about an axis, means including motor means for driving said supporting means in a coil-unwinding direction about said axis and for feeding the strapping along a curved discharge path, a movable sensor unit, means on said sensor unit in substantially constant contact with said strapping in said discharge path and gripping said strapping when said sensor unit is moved responsive to bulging of said strapping with respect to said discharge path, and means responsive to the movement of said sensor unit for controlling said motor means.

3,162,395
LINE CARRYING AND RETRIEVING APPARATUS
James A. Bray, R.F.D. 1, Lexington, Mo.
Filed Feb. 27, 1963, Ser. No. 261,442
7 Claims. (Cl. 242—86.5)



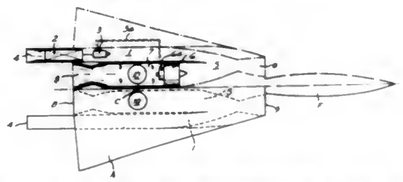
1. A water ski line retrieving and carrying unit comprising a housing having a front entrance opening elongated in the horizontal direction, said entrance opening merging at the sides of said housing with openings in said sides defining generally V-shaped notches in the sides, a shaft rotatably supported in said housing with its axis parallel with the long axis of said entrance opening, said shaft having thereon longitudinally spaced circumferential flanges near the respective sides of the housing, said flanges each being provided with generally radially directed notches adapted to simultaneously register with the notches in said sides at one selected rotational position of said shaft, a ski line connected at one end with said shaft, said selected position corresponding with the position of the shaft when said line is completely unwound from said shaft and drawn taut through said entrance opening, and drive means drivingly connected with said shaft for winding said ski line thereon between said flanges.

3,162,396
SPATIAL ORIENTATION OF ACTIVE SATELLITE REPEATERS
Leif Rongved and Irving E. Yu, both of New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 31, 1961, Ser. No. 113,709
7 Claims. (Cl. 244—1)



1. In an earth satellite, means for reducing substantially to zero initial rotational motion of said satellite about any axis, said means comprising at least one permanent magnet, and means for mounting said magnet within and for rotation relative to said satellite, said mounting means having frictional contacts between said magnet and said satellite to oppose relative motion therebetween.

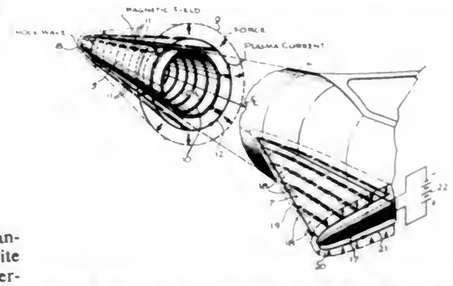
3,162,397.
V/STOL AIRCRAFT WITH DIRECTIONAL CONTROL NOZZLE
Konrad Eichholtz, Dammarie-les-Lys, Seine et Marne, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed July 26, 1962, Ser. No. 212,593
Claims priority, application France, Aug. 4, 1961, 870,097
3 Claims. (Cl. 244—12)



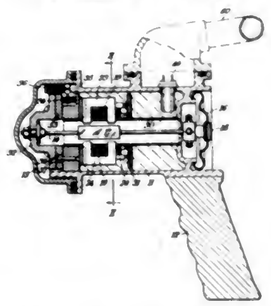
1. A VTOL or STOL aircraft comprising at least one downwardly directed lifting nozzle which is designed to produce upward thrust for exerting a lifting action on the aircraft, at least one rearwardly directed propulsion nozzle which is distinct from said lifting nozzle and which is designed to produce forward thrust for exerting a propelling action on the aircraft, at least one directional nozzle which is distinct from said lifting nozzle and from said propulsion nozzle and which is designed to produce orientable thrust for exerting control moments on the aircraft, said directional nozzle being controllable to a neutral position in which it produces a rearward jet substantially parallel to the longitudinal axis of the aircraft, means for supplying motive gas to said lifting nozzle and to said propulsion nozzle, and further means, distinct from said means, for permanently supplying motive gas to said directional nozzle.

3,162,398
MAGNETOHYDRODYNAMIC CONTROL SYSTEMS
Milton U. Clauser, Rolling Hills, and Rudolf X. Meyer, Pacific Palisades, Calif., assignors, by mesne assignments, to Space Technology Laboratories, Inc., El Segundo, Calif., a corporation of Delaware
Filed Jan. 26, 1959, Ser. No. 789,202
10 Claims. (Cl. 244—14)

1. In a system for controlling relative movement between an electrically conductive fluid and a flight vehicle, the combination of a flight vehicle casing capable of being propelled through an electrically conductive medium, and means enclosed within the flight vehicle casing for inducing electrical currents in the electrically conductive medium to produce forces acting between the flight vehicle casing and the electrically conductive fluid which control relative movement between the electrically conductive medium and the flight vehicle.

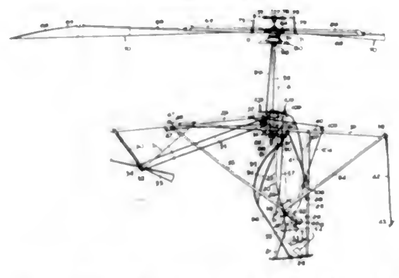


3,162,399
CONTROL MEANS FOR GUIDED MISSILES, AERODYNES AND THE LIKE
William Fleck, Glentara, Deneight, Lisburn, Northern Ireland, assignor to Short Brothers and Harland Limited, Belfast, Northern Ireland, a British company
Filed July 5, 1960, Ser. No. 40,894
Claims priority, application Great Britain, July 28, 1959, 25,887/59
8 Claims. (Cl. 244—14)



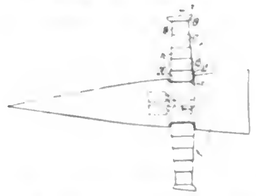
1. Apparatus for controlling pitch and yaw control surfaces of a missile or other moving body, comprising a housing, a pistol-grip type handle to be grasped by an operator and fixedly secured to said housing, a control lever mounted within the housing for angular movement therein in two planes at right angles to each other, said lever being secured at one end so as to be angularly movable in said planes by transverse forces applied to the other end, a flexible diaphragm closing an opening in said housing at the said other end of said lever, a button secured to said other end of the lever and mounted in said flexible diaphragm for engagement by the thumb of the operator when said handle is gripped, to effect the aforesaid two-plane movement of said control lever without moving said housing, there being within said housing a first magnetic circuit including a pole piece extending in the direction of the control lever and terminating in the region of the control lever in a pole face at right angles to the direction of movement of the lever in one of the said two planes, whereby a change in the position of the control lever in the said one of the planes produces a change in the magnetic reluctance of the said first circuit, a second magnetic circuit including a pole piece extending in the direction of the control lever and terminating in the region of the control lever in a pole face at the right angles to the direction of movement of the lever in the other of said two planes, whereby a change in the position of the control lever in the said other of the planes causes a change in the magnetic reluctance of said second circuit, and first and second coil assemblies respectively coupled with the first and second magnetic circuits for generating electric signals representative of the changes in magnetic reluctance to control actuators of the pitch and yaw control surfaces.

3,162,400
RECIPROCATING WING HELICOPTER ADAPTED TO BE MANUALLY POWERED
Benjamin Graham Wood, The Coppice, S. Down's Road, Bowden, Cheshire, England
Filed June 11, 1963, Ser. No. 287,140
Claims priority, application Great Britain June 12, 1962
17 Claims. (Cl. 244—17.11)



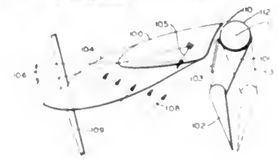
1. A helicopter comprising, a main frame, a rotor having following airfoils, means for effecting vertical reciprocation of said rotor in relation to said main frame for imparting rotary thrust by the reaction of air pressure on the following airfoils during rotor downstroke, and supplemental means for maintaining rotary speed more particularly during rotor upstroke.

3,162,401
AIRCRAFT AND LIFT DEVICES THEREFOR
Thomas Hopwood, Esher, England, assignor to Hawker Siddeley Aviation Limited, Surrey, England
Filed Dec. 8, 1961, Ser. No. 158,009
Claims priority, application Great Britain, Dec. 12, 1960, 42,767/60
11 Claims. (Cl. 244—42)



1. In an aircraft having a fuselage, a lift-augmenting device including a substantially cylindrical structure which is extendable to a configuration in which it projects laterally from the aircraft fuselage with its axis across the direction of flight, said cylindrical structure comprising a first hollow cylindrical section fixedly mounted wholly within the aircraft fuselage in alignment with a fuselage side wall aperture, a plurality of further cylindrical sections of progressively decreasing diameter the largest of which is mounted to slide telescopically within said first cylindrical section while each of the remaining cylindrical sections is mounted to slide telescopically within the section next larger in diameter, said plurality of further cylindrical sections being extendable at will out through said aperture to project laterally from the fuselage and being retractable at will to bring all said cylindrical sections into a nested condition entirely within the fuselage, the cylindrical structure being supported from the fuselage at the larger diameter end only when extended, each of said cylindrical sections except said first section having a plurality of slots spaced around its circumference through which air is delivered out of the cylindrical section substantially tangentially, and means for supplying air under pressure to said slots.

3,162,402
STABILITY AND CONTROL SYSTEM AND APPARATUS FOR AIRCRAFT
Alberto Alvarez-Calderon, 1560 Castilleja St., Palo Alto, Calif.
Filed Jan. 12, 1962, Ser. No. 165,794
6 Claims. (Cl. 244—42)

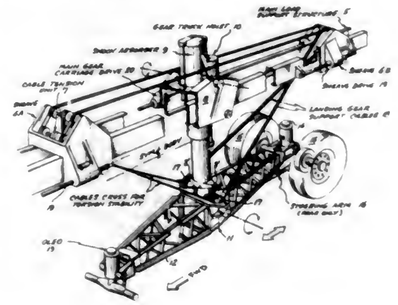


4. A boundary layer control high lift flap for wings having greatly reduced flap hinge moments and pitching moments comprising: a wing having an upper surface; a main trailing edge flap mounted on said wing and having a main flap leading edge portion and a main flap upper surface, with said main flap having said upper flap surface and leading edge portion substantially immediately adjacent to the upper surface of said wing with said main flap being mounted for movement to a downwardly inclined high lift position by a large angle at least as great as approximately fifty degrees, boundary layer control means contiguous to said flap leading edge and said wing upper surface to secure attached high lift fluid flow field downwardly on top of said upper surface of said flap at said large angles; an auxiliary flap for modulating the pitching moments of said wing and the hinge moments of said main flap mounted on the trailing edge of said main flap for movement with respect to said main flap between a high speed position in which the surfaces of said auxiliary flap are approximately parallel to the surfaces of said main flap adjacent to said auxiliary flap when said main flap is in a retracted main flap position trailing said wing for high speed flight, to a slow speed position of decreased main flap hinge movement and wing pitching moment in which, when said main flap is deflected downwards by said large angles, said auxiliary flap is permanently inclined to said main flap at a fixed upward angular relationship with said auxiliary flap turned upwards at negative angle from said main flap to decrease the overall effective camber of said wing and main flap in said high lift position and to redirect said attached high lift fluid flow field which were secured by said boundary layer control means from said downwardly direction towards an upwardly direction.

3,162,403
AIR VEHICLE CARRIAGE GEAR ASSEMBLY
Walter M. Hoke, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,482
11 Claims. (Cl. 244—100)

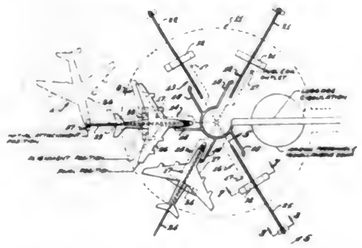
1. In combination with an air vehicle having a fuselage, at least one carriage gear assembly therefor located sub-

stantially under the center of gravity of said vehicle and movable in a fore and aft direction with respect to said fuselage, said carriage gear assembly including: support means fixedly attached to said fuselage, adjustable strut means having one end movably positioned on said support means and the other end operatively connected to ground engaging means, means for actuating said adjustable strut



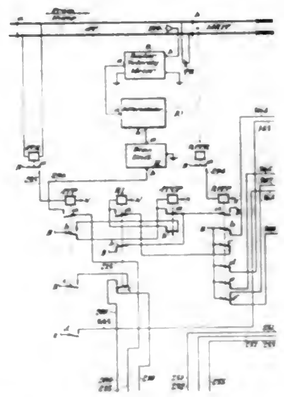
means, at least two adjustable means movably positioned on said support means at locations extending in opposite directions from said strut means, means attached to said ground engaging means and extending through each of said adjustable means, and means for positioning said strut means and both said adjustable means with respect to said support means.

3,162,404
GROUND HANDLING SYSTEM FOR AIRCRAFT
Robert K. Squire, Los Angeles, Calif., assignor to Superior Scaffold Co., Torrance, Calif., a corporation of California
Filed Apr. 2, 1962, Ser. No. 184,315
11 Claims. (Cl. 244—114)



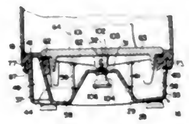
1. Ground handling means for moving an aircraft into an indexed staging position, comprising: a conveyor leading into said staging position; means on said conveyor connecting to said aircraft adjacent one end thereof so that said end of said aircraft moves with said conveyor; means providing a shifting platform disposed transversely of said conveyor intermediate the ends thereof in position to be engaged by the main landing wheels of the aircraft; means for moving said conveyor to effect movement of said one end of the aircraft therealong with the main landing wheels tracking thereafter; and means for shifting said platform when said main landing wheels are seated thereon so as to shift the opposite end of the aircraft and the axis of the fuselage into alignment with said conveyor, whereby movement of said conveyor after operation of said shifting platform effects head on movement of the aircraft into its final staging position.

3,162,405
INFORMATION HANDLING SYSTEM
William A. Robison, Jr., Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1958, Ser. No. 728,230
18 Claims. (Cl. 246—2)



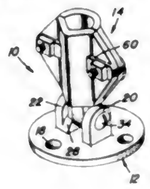
1. In combination, a series of signal storage devices, circuit means for successively selecting the first device of said series void of a signal storage and storing in each selected device one of a succession of signals, means for establishing a code identifying each said selected storage device, means for transferring each said code over a circuit network to a selected point, relay means at each said selected point for interpreting each said code and interrogating the signal storage device identified with each said code, circuit network means for transferring to each said selected point the signal stored in each interrogated signal storage device, and circuit means controlled by each said transferred signal.

3,162,406
CARRYING CASE BASE FOR SEWING MACHINES
Edward W. Stanton, Cranford, and Kenneth Perkins, Scotch Plains, N.J., assignors to The Singer Company, a corporation of New Jersey
Original application Mar. 27, 1959, Ser. No. 802,413, now Patent No. 3,050,899, dated Aug. 28, 1962. Divided and this application Oct. 16, 1961, Ser. No. 146,077
3 Claims. (Cl. 248—20)



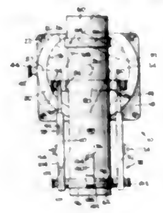
1. A base for a sewing machine, comprising an integrally molded or cast member having a bottom wall, a front wall, a left end wall, a rear wall, and a right end wall, each of said walls being formed integral with at least one adjacent wall; a vertical rib extending outwardly from the inside surface of said front wall and from the inside surface of said rear wall; a vertical rib extending outwardly from the inside surface of said left end wall and from the inside surface of said right end wall, each of said ribs being formed integral with the wall from which it extends; and a resilient pad carried on the upper end of some of said vertical ribs, said pads providing cushioned support for a sewing machine.

3,162,407
ROOF MOUNT FOR TV ANTENNAS
Ferdinand M. Yax, % French Radio Mfg. Co., 164 W. Parker St., Scranton, Pa.
Filed July 25, 1962, Ser. No. 212,372
8 Claims. (Cl. 248—40)



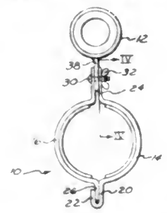
1. An adjustable support for an antenna mast or the like comprising, a base, a pair of spaced pivotal support members projecting from the base, bolt means rotatably mounted by said support members to define a pivotal adjustment axis therebetween, angularly positioned means pivotally mounted on said bolt means in axial abutting relation to a first of said pair of pivotal support members, nut means threadedly engaged with said bolt means between said angularly positioned means and a second of said pair of pivotal support members, and locking surface means mounted on said second pivotal support member to slidingly engage said nut means for axial displacement thereof into clamping engagement with the angularly positioned means in response to rotation of the bolt means in order to lock the angularly positioned means in an adjusted position between said pivotal support members.

3,162,408
FISHING ROD AND TROLLING POLE HOLDER
Michael Markman, 225 W. 86th St., New York 24, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,582
2 Claims. (Cl. 248—40)



1. A fishing rod and trolling pole holder comprising:
(*a*) a flat support plate adapted to be secured to a surface on a boat,
(*b*) a base comprising a flat plate having a cylindrical slide wall and a central through-bore,
(*c*) means mounting said base on the support plate for rotation about a fixed axis perpendicular to the plane of the support plate,
(*d*) said mounting means comprising a guide wall having an interior cylindrical bearing face, said guide wall being fixed on the support plate on the exposed face thereof opposite from the face against the surface of the boat, the diameter of said cylindrical bearing face matching the diameter of the cylindrical side wall of the base and being rotatably slidably engaged therewith, and a headed shaft including a shank in the through-bore in the base and detachably connected to said support plate with the head of the shaft bearing against the base,
(*e*) first manually operable lock means selectively fixing the angular relationship of the base to the support plate,
(*f*) said first lock means comprising a plurality of indents in the side wall of the base, a manually operable pin carried by the support plate and mounted for movement on said support plate between a first position wherein the tip of the pin is within any selected one of said indents so as to lock the base to the support plate and a second position wherein the tip is clear of said indents so as to allow rotation of the base relative to the support plate,
(*g*) means selectively retaining the pin in its first position,
(*h*) an elongated tube having an open end and a blocked end and adapted to receive a rod or pole handle,
(*i*) means mounting the tube on said base for pivotal movement relative thereto about an axis parallel to the plane of support plate,
(*j*) said tube turning with the base about the fixed axis perpendicular to the plane of the support plate,
(*k*) said pin being located radially outwardly of the base out of the path of travel of the tube relative to the support plate, and
(*l*) second manually operable lock means separate from and independent of the first lock means and selectively fixing the angular relationship of the tube to the base,
(*m*) so that the tube is selectively lockable about both said axes in a variety of angular relationships relative to the boat whereby a fishing rod or trolling pole can be secured in a desired position.

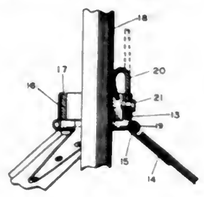
3,162,409
FLAG POLE HOLDER
Cornelius J. Straayer, 1110 W. Michigan Ave., and Ventry Conway Oren, 1427 Wickwire Road, both of Jackson, Mich.
Filed May 8, 1959, Ser. No. 811,849
1 Claim. (Cl. 248—41)



A flag pole holder adapted to be affixed to a vertical cylindrical support member comprising in combination a first formed clamp portion of strip material, said clamp portion having an intermediate semicylindrical support member engaging section, a first planar radially outwardly extending portion defined on one end of said clamp portion, a second planar radially outwardly extending portion defined on the other end of said clamp portion, said second outwardly extending portion having the end thereof deformed back inwardly whereby said end is in spaced parallel relation to said second outwardly extending portion, a flag pole receiving socket, said socket comprising a tubular member having an upper pole receiving end and a lower end having a circumferentially inwardly deformed flange for abutting the end of a flag pole, an ear affixed to said socket, a second clamp portion affixed to said first clamp portion in opposed relation thereto, said second clamp portion being formed of strip material having a central semicylindrical support member engaging section and radially outwardly extending first and second planar flanges formed adjacent the ends of said second clamp portion in relative diametrical relationship, said first flange being received between said second radially extending portion of said first clamp portion and the deformed end

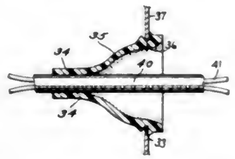
thereof and removable clamping means drawing said first radially extending portion of said first clamp portion and said second flange toward each other whereby said support member may be gripped between the cylindrical sections of said clamp portions, said removable clamping means adjustably securing said ear to said first radially extending portion and said second flange whereby said socket may be angularly adjusted relative to said clamp portions.

3,162,410
RANGE POLE HOLDER
Stephen W. Owens, 89 NW. 85th St., Miami, Fla.
Filed May 31, 1963, Ser. No. 284,572
2 Claims. (Cl. 248—46)



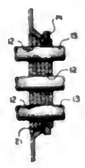
1. A range pole holder comprising three hinge members, each of said hinge members having a pad, a strap and pin pivotally securing said pad to said strap, means securing edge portions of said pads together in a substantially vertical position to form a triangular shaped head for receiving a rod, leg portions secured to said straps for supporting said head, resilient material secured to the inner surfaces of two of said pads, and pole locking means mounted on said third pad for engaging said pole and securing said pole in said triangular head.

3,162,411
GROMMET ASSEMBLY
James E. Duggan, Berkley, Mich., assignor, by mesne assignments, to Watts Electric & Mfg. Co., Birmingham, Mich., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 179,147
2 Claims. (Cl. 248—56)



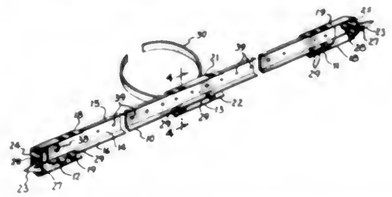
1. A grommet assembly, comprising a sheet metal member having a circular opening therein, and a reversible resilient grommet, after being reversed, having a hollow substantially conical body provided with imperforate walls, provided with a relatively large open end, provided with a relatively small opposite open end, provided at the relatively small open end thereof with an axially extending tubular stem projecting endwise from and registering with the relatively small open end of said conical body and having imperforate walls, and provided at the relatively large open end thereof with an annular portion extending through and fitting tightly within said circular opening, said annular portion having on the outer walls thereof a pair of laterally spaced annular flanges cooperating with said annular portion to define an annular channel-shaped groove opening outwardly from said annular portion at substantially right angles to the axis of said conical body and receiving and sealingly engaging the edges of said circular opening, thereby causing the material at the interior of said annular portion to be under compression and simultaneously causing the material at the exterior of said annular portion, including the material defining the outwardly opening annular channel-shaped groove, to be under tension.

3,162,412
CLAMPING STRUCTURE FOR CONTROL TUBING OR THE LIKE
Jack W. McEntire, Ferguson, Mo., assignor to E & R Laboratory Service Corporation, St. Louis, Mo., a corporation of Missouri
Filed Aug. 6, 1962, Ser. No. 215,069
4 Claims. (Cl. 248—56)



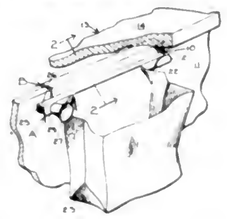
1. A clamping structure for supporting elements such as tubing and adapted to be mounted within an aperture in a bulkhead, bracket or other supporting surface, said clamping structure comprising a disc formed from a plurality of circle sectors, a plurality of element receiving apertures through said disc disposed at the abutting margins of said sectors, the circumferential margin of said disc having a continuous groove therein, said groove having a bevelled wall terminating short of the base of the groove, and a clamp ring having an inclined marginal area extending within the groove exerting a radial compressive force on said sectors to clamp the elements within said apertures, and to lock said bevelled groove wall against the supporting surface.

3,162,413
BAR HANGER
Andrew M. Hexdall, Morris, Ill.
Filed Apr. 26, 1962, Ser. No. 190,376
9 Claims. (Cl. 248—71)



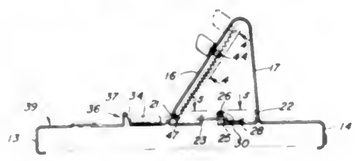
1. A bar hanger for supporting building components between a pair of laterally spaced supports such as wooden joists or the like, comprising, in combination, a relatively long channel-shaped body member having depending longitudinal edges, a pair of channel-shaped end members having depending flanges shaped to lie over and conform to the outer surface of said body, a plurality of ears struck from said flanges to leave an opening therein, said ears being hingedly connected at their lower edge and extending inwardly from said flanges to engage the inner surface of said longitudinal edge, and said end members being slidably mounted on opposite ends of said body and having axially protruding points for penetration into the laterally spaced supports.

3,162,414
BAG HOLDING DEVICE
Adrian M. Maschek, 20341 NE. 14th Ave., North Miami Beach, Fla., assignor of fifty percent to Francis J. Maschek, North Miami, Fla.
Filed Apr. 17, 1962, Ser. No. 188,129
2 Claims. (Cl. 248—101)



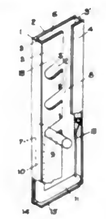
1. A bag holding device comprising a pair of elongated vertical side wall members mounted in substantially spaced parallel relation, a horizontally disposed wall member mounted along a top edge of each of said side wall members, a second elongated and horizontally disposed wall member mounted along the lower edge of one of said vertical side wall members, a further vertically disposed wall mounted on a free edge of said second horizontal wall member in substantially parallel relation with said one of said vertical side wall members, an arm member, said arm member having a pair of elongated vertical side wall members mounted in substantially parallel relation, an elongated and horizontally disposed wall member mounted along the top edges of said side wall members of said arm member, pivot means pivotally mounting one end of said arm member to said further vertically disposed wall and said one of said pair of vertical side walls adjacent the lower edge whereby a top portion of a bag will be engaged by said arm member when pivoted to a closed position.

3,162,415
IRON HOLDER
Arsene J. St Pierre, Glastonbury, Conn., assignor, by mesne assignments, to Albert R. Zicardi, North Westport, Mass., and Francis Souza, Arsene J. St Pierre, Charles St Pierre, and Roger O. Banville, all of Fall River, Mass.
Filed Jan. 4, 1962, Ser. No. 164,246
8 Claims. (Cl. 248—117.6)



1. An iron holder comprising
a pair of parallel rails having substantially straight side portions spaced apart by an inverted V-shaped portion,
the ends of said rails having reversely bent portions to receive the sides of an ironing board, said V-shaped portions having an inclined leg and a leg substantially perpendicular to the side portions,
latch means connecting the side portions across the open part of the V-shaped portion,
said latch means in locked position drawing the ends closer together than when in unlocked position,
a toe holder mounted on the inclined legs,
said toe holder having spaced side extensions for engaging the toe of an iron and connected by a web member adapted to support the sole of an iron,
said inclined legs having elongated slots therein,
said toe holder having projections extending through said slots,
spring means attached at one end to said projections and at its other end to the base of said inclined leg and tending to urge said toe holder toward said base,
and a heel rest for said iron,
said heel rest comprising a web extending between said rails adjacent to the base of said inclined leg and having upstanding portions adapted to restrict lateral movement of the heel of the iron,
and a stop member projecting upwardly from the rear of said heel rest and adapted to engage said iron to prevent longitudinal movement thereof away from said inclined leg.

3,162,416
ADJUSTABLE SUPPORT
Lorenzo Amarillas, Av. Juarez 100, 9th Floor, Mexico City, Mexico
Filed May 27, 1963, Ser. No. 283,378
8 Claims. (Cl. 248—244)



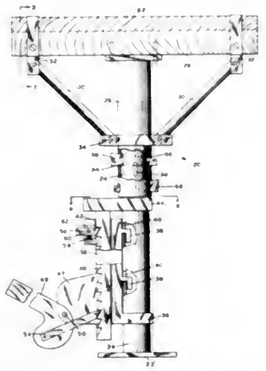
1. An adjustable supporting structure comprising an elongated hollow standard (**1**),
the hollow portion of the standard forming a longitudinal passageway (**6**),
one surface of the standard being formed by oppositely disposed spaced flanges (**4**) and (**5**) defining a longitudinal slot (**8**) therebetween,
a plurality of spaced slots (**12**) along one of said flanges (**5**),
one end of each slot (**12**) opening to the longitudinal slot (**8**),
the other end of each slot (**12**) terminating in an angularly disposed slot (**12'**),
a slidable supporting element (**7**) received in the longitudinal passageway (**6**) of the supporting structure,
said supporting element (**7**) comprising a pair of angularly related legs (**10**) and (**11**) held slidably captive in the longitudinal passageway (**6**),
a finger (**9**) projecting transversely from an end of one of said legs (**10**),
said finger being adapted to ride in and extend from the longitudinal slot (**8**) and to be received by any one of the spaced slots (**12**) and its complementary angularly disposed slot (**12'**) in the flange (**5**),
and a spring member (**13**) carried by the supporting element urging the finger into engagement with the selected slots (**12**) and (**12'**).

3,162,417
SMOKE RACK AND TREES
Lester F. Briggs, 6601 Columbia Park Road, Landover, Md.
Filed Nov. 8, 1963, Ser. No. 322,479
2 Claims. (Cl. 248—345.1)



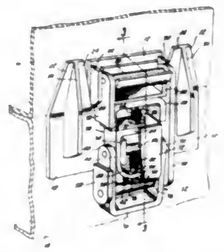
1. A protector for use on smoke stick supporting members of smoke trees and racks comprising an elongated member having a concave-convex cross-sectional configuration, a plurality of clips of resilient material each having a V-shaped cross-sectional configuration with one side affixed to the concave side of said elongated member and said clips being similarly positioned and spaced apart along the length of said elongated member with the sides thereof extending laterally of said elongated member for receiving the smoke stick supporting member between said side detachably supporting said elongated member along the length of the smoke stick supporting member.

3,162,418
APPARATUS FOR CONCRETE BUILDING STRUCTURE
Homer T. Dudley, 2819 N. Garrison, Tulsa, Okla.
Filed Apr. 10, 1961, Ser. No. 101,771
1 Claim. (Cl. 248—354)



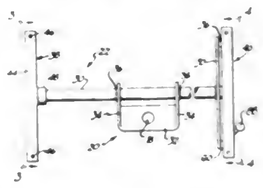
A form support comprising, in combination, a base flange and a lower tubular support column vertically supported thereon, an upper tubular support column telescopically adjustable outside of said lower column, a horizontal member attached to said upper column at its upper end, a jack lift housing attachable to said lower column, a jack lift terminating its upper end with a platform member, said member having a partial circumferential recess of dimension to substantially fit one-half of the periphery of said lower column and yet be buttable against the lower end of said upper column, a jack lift handle pivotal about said housing and engageable with said jack lift for vertical movement to a desired position, and vertically alignable grooves in said upper and lower columns to receive opposing wedge locking means for interlocking said upper and lower columns at the said desired position.

3,162,419
FASTENING DEVICE
Thomas W. Blasingame, P.O. Box 1327, Rapid City, S. Dak.
Filed Mar. 15, 1962, Ser. No. 179,977
15 Claims. (Cl. 248—361)



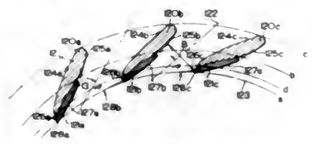
1. A fastening device for releasably securing respective sides of two members in abutting relationship, said fastening device comprising a base plate rigidly attached to the one side of one member, a receiver plate rigidly attached to the abutting side of the other member, a lock mount movably mounted within predetermined limits on said base plate, a locking link carried by said lock mount, spaced guide members extending upwardly and outwardly from said base plate for effecting proper alignment of said receiver plate with said lock mount when said members to be fastened are introduced to each other, and a receiver on said receiver plate for engagement by said locking link.

3,162,420
TORSION BAR CHAIR IRON
Finn Lie, Ring Station, near Hamar, Norway
Filed Aug. 17, 1961, Ser. No. 132,037
6 Claims. (Cl. 248—373)



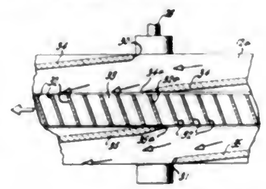
1. In a tilting chair iron, a spindle engaging yoke, a support tube fixedly carried by said yoke and having first and second ends, a stop bracket arm fixed on the first end of said support tube, first and second spaced stop members on said stop bracket arm, a torsion bar within said support tube and having first and second ends with the second end connected to said support tube at its second end, a first chair seat frame bracket rotatably journaled on the first end of said support tube, a second chair seat frame bracket rotatably journaled on the second end of said support tube, said torsion bar having its first end extended through said first chair seat frame bracket in freely rotatable relation, and a tension arm connected at its one first end to the second end of said torsion bar to retain said first chair seat frame bracket on said support tube and having its second end abutting said first chair seat frame bracket.

3,162,421
GAS TURBINE CONSTRUCTION
Gottfried Schwarz, Oberursel, Taunus, Germany, assignor to Aktiengesellschaft Kühnle, Kopp & Kausch, Frankenthal, Pfalz, Germany
Filed Jan. 18, 1962, Ser. No. 167,141
Claims priority, application Germany, Jan. 24, 1961, A 36,566
14 Claims. (Cl. 253—52)



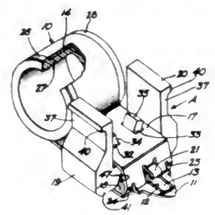
1. In a turbine, in combination, a first stator member including an annular row of first guide vane means; a second stator member including an annular row of second guide vane means; and means for moving one of said stator members between a first end position in which each second guide vane means abuts one first guide vane means and a second end position in which each second guide vane means laterally abuts another first guide vane means, said second guide vane means in both said first and second positions of said second stator member partly overlapping the respective first guide vane means and being partly located downstream of the same, each pair of first and second guide vane means abutting each other in said first end position forming a composite vane means having a first profile, and each pair of first and second guide vane means abutting each other in said second end position forming a composite vane means having a second different profile, said composite vane means forming free flow passages between each other in both said first and second positions so that the flow of fluid between said composite vane means is differently controlled in said first and second end positions due to said different first and second profiles.

3,162,422
TURBINE-TYPE METERING DEVICE
Paul B. Renfrew, Oakland, Calif., assignor, by mesne assignments, to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1962, Ser. No. 216,827
3 Claims. (Cl. 253—148)



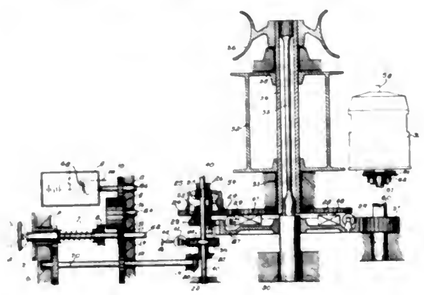
1. A fluid meter comprising: a housing having a helical passageway of substantially uniform and rectangular cross-section extending intermediate inlet and outlet openings, said helical pasageway extending slightly less than one convolution intermediate said inlet and outlet opening, rotor means disposed within said housing including a plurality of uniformly spaced rotor blades mounted upon a rotor core and extending radially into said passageway intermediate said inlet and outlet openings, and characterized in that a portion of said housing that defines said passageway and a portion of said rotor means provide a fluid seal between said inlet and outlet openings, said seal extending angularly about the axis of said passageway of substantially uniform and rectangular cross-tween adjacent blades of said rotor means.

3,162,423
STAPLE PULLER
James A. Hall, 401 S. 15th St., and Gustaf L. Shoberg, 1352 Keoncrest, both of San Jose, Calif.
Filed Dec. 7, 1962, Ser. No. 243,025
8 Claims. (Cl. 254—28)



1. A staple puller comprising:
(*a*) a pair of strips of spring metal mounted in parallel, spaced, superposed relation,
(*b*) a presser foot projecting from one end of the lower strip,
(*c*) a staple pulling tongue projecting from the end of the upper strip, and having an opening therein of a size to receive the presser foot therein,
(*d*) a handle grip portion interconnecting the rear portions of said parallel spring strips and lying wholly above the lower one of said strips,
(*e*) and a pair of actuating levers interposed from opposite sides between the superposed portions of the strips and tiltable toward each other to forcibly urge the tongue upwardly relative to the presser foot, thereby to exert a pulling force on a staple into which the tongue, with the presser foot flush therein, has been inserted.

3,162,424
MOORING WINCH
Rolf Franz Günther Hatlapa, Utersen, Holstein, Torneschерweg 7, Hamburg, Germany
Filed Nov. 5, 1962, Ser. No. 235,302
1 Claim. (Cl. 254—172)



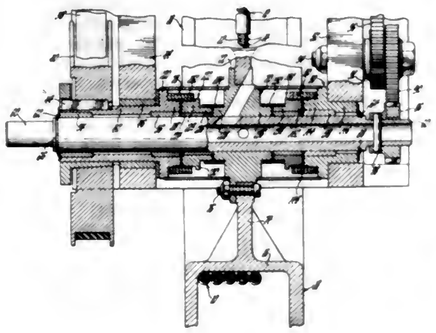
A motor driven winch comprising:
(*a*) motor drive means;
(*b*) a cable drum and a capstan supported upon a hollow drive shaft, having a driven gear at its base;
(*c*) a torsion bar positioned upon a driving gear engaging said drive means, said torsion bar extending within said hollow drive shaft and interconnecting said shaft and said drive means within said winch;
(*d*) differential means interconnecting said driving gear and said driven gear and including a motor shaft being divided in line and consisting of a first and second portion, said first portion connected to said gears and responsive to variations in movement therebetween;

(*e*) motor drive control means connected to said second portion of said motor shaft and responsive to said differential and controlling said motor drive means in terms of differential movement between said driving gear and said driven gear;

(*f*) a first hydraulic damping means positioned intermediate said driving and driven gears; and

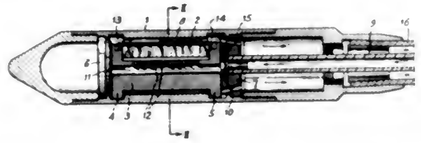
(*g*) a second hydraulic damping means attached to and positioned intermediate said first and said second portions of said motor shaft, said second damping means including a hydraulic shock absorber connected in yielding relation to said second portion of said motor shaft to permit only the stronger impulses caused by the variation in movement between said gears to reach said second portion of said motor shaft.

3,162,425
CABLE STORAGE AND DRIVE MECHANISM
Lewis J. Babacz, Philadelphia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,594
5 Claims. (Cl. 254—175.7)



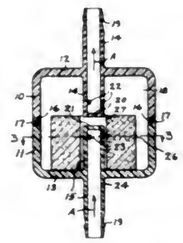
1. A cable storage and drive apparatus comprising a cable storage reel, a flexible cable of the type including electrical lead wires disposed therein and having a convoluted wire formed on the exterior thereof, a first support structure, a shaft rotatably mounted in said support structure, said storage reel being fixed for rotation with said shaft, a second support structure, a second shaft rotatably mounted in said second support structure, power means, means operatively connecting said power means to drive said first and second shafts, a cable driving member fixed for rotation with said second shaft and having a convoluted periphery corresponding to and coacting with the wire formed on said cable, said member being adapted to move said cable in a coiling or uncoiling direction relative to the storage reel, said connecting means including a clutch assembly disposed intermediate said power means and said first shaft, said clutch assembly including a first preloaded spring device adapted to prevent the driving force transmitted from said power means to said storage reel from exceeding a predetermined value during the coiling of said cable upon the storage reel, a second spring device for operatively disconnecting said power means from said storage reel when said cable driving member is operative to move said cable in an uncoiling direction relative to said storage reel, and a third spring device for imposing a frictional drag on said first shaft when said second spring device interrupts the operative connection between said power means and said reel.

3,162,426
VIBRATOR
Michel Alphonse Irénée Fontaine, Paris, France, assignor to Vibratechniques S.A., Paris, France, a company of France
Filed Nov. 20, 1961, Ser. No. 153,492
Claims priority, application France, June 23, 1961, 865,912
5 Claims. (Cl. 259—1)



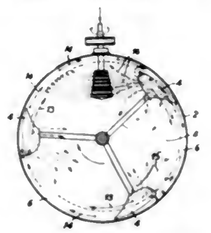
1. In a vibrator of the type comprising a hollow outer cylinder and at least one inner cylinder of smaller diameter, one of the cylinders being fixed and the other cylinder or cylinders being movable, and means to drive the movable cylinder or cylinders in a revolving movement about the axis of the fixed cylinder, each cylinder having guide surfaces perpendicular to its axis, the guide surface of at least one of the movable cylinder or cylinders sliding in contact on the guide surfaces of the fixed cylinder, the improvement residing in that at least one of the guide surfaces of one cylinder is provided on a piece loosely mounted against a yieldable element carried by said one cylinder.

3,162,427
MEANS FOR CLEANING DAIRY BARN VACUUM LINES
Russell A. Knudson, 616 NW. 116th St., and Ned D. Bailey, 822 NW. 116th St., both of Seattle, Wash.
Filed Dec. 7, 1961, Ser. No. 157,787
5 Claims. (Cl. 259—4)



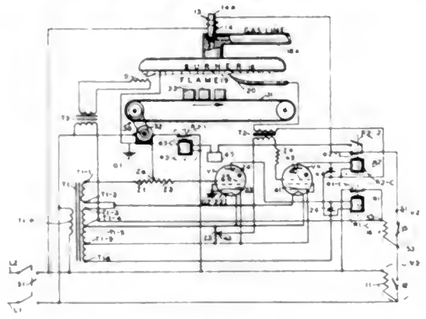
2. In apparatus for cleaning a vacuum line used in connection with a milking machine, two cup shaped members; means capable of detachably securing said two cup shaped members together with their open ends in registration in forming a mixing chamber in said two cup shaped members; and two aligned liquid conduit tubes rigid with the respective cup shaped members, the outer end portions of said tubes extending outwardly from said cup shaped members, the inner end portions of said tubes extending into said cup shaped members and the inner ends of said tubes being closed and being positioned close together within said mixing chamber when said cup shaped members are in assembled relation, the inwardly extending portions of said tubes having perforations in the side walls thereof.

3,162,428
PROCESS FOR MIXING AND WETTING SOLID MATERIALS
Wilhelm Lödige, 9c Elsener Strasse, Fritz Lödige, 9b Elsener Strasse, Josef Lucke, 13 im Lohfeld, and Georg Ohsé, all of Paderborn, Germany, assignors to Wilhelm Lödige, Fritz Lödige, and Josef Lucke, all of Paderborn, Germany
Filed May 16, 1962, Ser. No. 195,062
Claims priority, application Germany, July 15, 1961, L 39,550
2 Claims. (Cl. 259—9)



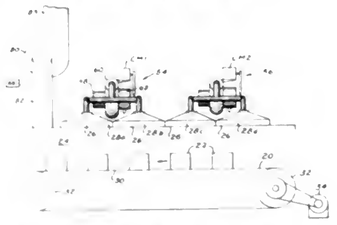
1. A process for mixing and wetting fibrous, granular, powderous or flake-shaped solid materials comprising filling the material to be mixed and wetted into a mixing device having a horizontally positioned drum container, a shaft extending horizontally therethrough, supporting arms on said shaft, and mixing tools at the end of said supporting arms and close to the drum wall, with a quantity of solid material not exceeding 30% of the gross volume of said drum container, rotating said mixing tools at such a peripheral speed that the material substantially collects in a rotating ring of material on the inner wall of said drum container and partly is hurled and whirled around in the empty space within said ring of material, and spraying a liquid onto the inner surface of said rotating ring of material and on the particles of solid material hurled and whirled around by means of a spray device arranged in the space of the drum container surrounded by the rotating ring of material.

3,162,429
IGNITION SYSTEM AND CONTROL FOR BURNER AND CONVEYOR
Joseph Leo La Pointe, Detroit, Mich., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Sept. 28, 1961, Ser. No. 141,379
11 Claims. (Cl. 263—6)



1. A control system for a fluid fuel burner means, comprising a structural element means providing part of the structure of said system and burner means and a flame sensing element means located in a given relative position contiguous to the location of a flame from said burner means, means responsive to flame sensing by said flame sensing element means for providing ignition at said burner means when the flame is absent, and means responsive to displacement of at least one of said element means out of said given relative position to a fuel cut-off position into contact with the other element means for cutting off the supply of fuel to said burner means.

3,162,430
OVEN CONTROL
Rufus Wilkerson, Mount Clemens, Mich., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Dec. 29, 1961, Ser. No. 163,112
15 Claims. (Cl. 263—6)



1. Industrial heating apparatus, comprising:

(*a*) combustion type infrared generator means;

(*b*) fuel-air premixing means for supplying a fuel-air mixture to said generator means and including means for varying the fuel to air ratio of said mixture;

(*c*) means for igniting said mixture; and

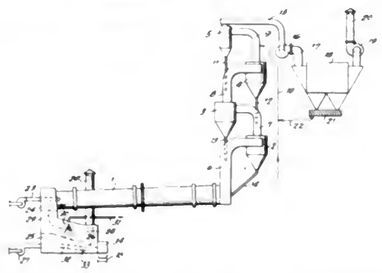
(*d*) control means for sequentially:

(1) activating said premixing means with said ratio varying means in a first operating condition to supply a fuel-rich starting mixture to said generator means;

(2) activating said means for igniting said mixture; and

(3) activating said ratio varying means to a second operating condition to supply a leaner fuel-air operating mixture to said generator means for maximum combustion efficiency.

3,162,431
METHOD AND MEANS FOR IMPROVING ELECTRIC PRECIPITATION OF DUST FROM KILN WASTE GASES
Franz Müller, Bensberg-Refrath, Herbert Deussner, Cologne-Dellbruck, and Kunibert Brachthäuser, Cologne-Poll, Germany, assignors to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed Apr. 5, 1962, Ser. No. 185,373
Claims priority, application Germany Apr. 7, 1961
11 Claims. (Cl. 263—32)



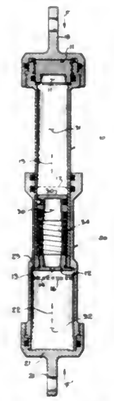
4. The method of improving electric precipitation of dust from waste gases of a kiln having an air-traversed

cooler for material issuing from the kiln, which comprises introducing water into the moving air in the cooler and passing at least a portion of the resulting steam-laden and heated air into the kiln, and adjusting the quantity of the introduced water to a value at which the dew point of the kiln waste gases is about 40° C., whereby the amount of subsequent electric precipitation of dust is increased.

3,162,432
OLEO STRUT

Leland V. Hall, Culver City, Calif., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware

Filed Mar. 27, 1963, Ser. No. 268,414
7 Claims. (Cl. 267—34)



3. In a landing-gear oleo strut for an aircraft, the combination comprising:

first and second generally cylindrical members respectively defining first and second cylindrical cavities, said members being constructed and arranged for telescoping movement relative to each other between preselected extended and contracted positions, and such that said cavities are fluid-conductively interconnected so as to constitute a unitary fluid-pressure chamber of a character such that any telescoping movement of said members causes variations in the volume of said chamber;

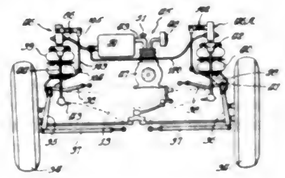
first means associated with the first cylindrical members so as to cooperate with the first cavity for dividing the unitary fluid-pressure chamber into first and second discrete compartments such that pressurized gas filling the first compartment is prevented from mingling with liquid filling the second compartment, said first means being constructed and arranged so as to movably respond to the pressurized gas filling the first compartment and the liquid filling the second compartment such that the pressure of said gas is effective as a force continuously pressurizing said liquid for continuously urging the first and second cylindrical members toward their preselected extended positions, and such that said liquid is effective for moving said first means for decreasing the volume of the first compartment for increasing the pressure of said gas in response to telescoping movement of said cylindrical members toward their contracted positions; and

yieldable means cooperatively associated with the first cylindrical member and the first means such that movement of the first and second cylindrical members toward their extended positions is effective for providing a counterforce acting on said first means in opposition to the first named force such that the effectiveness of said first named force for continuously urging the first and second members toward their extended positions is reduced substantially when movement of said members toward their extended positions exceeds a predetermined magnitude, said yieldable means comprising a compressible reilient element compressibly arranged with respect to the first means and one end of the first cylindrical member such that movement of the first means by pressurized gas filling the first compartment is effective for compressing said resilient element for providing the counter force when telescoping movement of the cylindrical members toward their extended positions exceeds a predetermined portion of the distance between the contracted and extended positions of said cylindrical members.

3,162,433
LEVELING VALVE MECHANISM

Richard L. Smirl, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 29, 1956, Ser. No. 618,837
13 Claims. (Cl. 267—65)



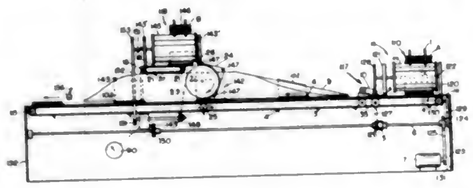
13. In a mechanism for controlling the inflation of an air inflated vehicle air spring device from a source of air pressure for maintaining a substantially constant standing height of a vehicle body with respect to the vehicle wheels, the combination of a valve body, valving in said body for either connecting the air pressure source with the air spring device or for exhausting air from the air spring device, a shaft rotatably disposed in said body for actuating said valving on rotation in one direction or the other of said shaft, means in said valve body defining a first cavity adapted to receive air when said valving is actuated, means in said valve body defining a second cavity, vane means carried by and operable by movement of said shaft and disposed for movement within said second cavity, means separating said second cavity from said first cavity, damping fluid in said second cavity effective to provide a drag as said vane means are moved in said second cavity so that said vane means act to provide a drag on the rotation of said shaft whereby a moment must be put on said shaft for a substantial time before said shaft can rotate sufficiently to actuate said valving, said shaft being adapted for actuation by mechanical means connected between the wheels and the vehicle body and shaft so that said shaft is rotated due to change in the vehicle body with respect to the vehicle wheels from said constant standing height.

3,162,434
PROCESS AND APPARATUS FOR COLLATING SHEETS

Rudolf Hepp, Schmidt-Ott-Strasse 7a, Berlin-Steglitz, Germany

Filed May 31, 1962, Ser. No. 198,878
Claims priority, application Germany, June 1, 1961, H 42,754
9 Claims. (Cl. 270—57)

1. A method of collating sheets, comprising the steps of displacing a plurality of sheets folded along a line in a predetermined direction parallel to said line along a transport path, partially unfolding said sheets, and depositing a second sheet upon each of said first sheets by

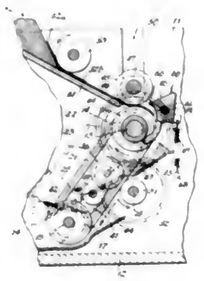


displacing said second sheet above said first sheet in said predetermined direction at the speed of said first sheets while dropping it thereon.

3,162,435
ENVELOPE FLAP CONDITIONING APPARATUS

Andrew W. Rastorguyeff, Norwalk, and Lawrence J. Kresan, Springdale, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed Sept. 5, 1962, Ser. No. 221,537
4 Claims. (Cl. 271—2)



1. In an apparatus for handling articles each of which has a bent over flap:

a frame;

transport means for serially transporting individual articles through a flap conditioning station, said transport means including an article feed roll that is rotatably mounted on said frame;

a flap intercepting member, said member having an article flap engaging nose which extends substantially parallel to the axis of said roll, there normally being a narrow gap between said nose and the adjacent periphery of said roll;

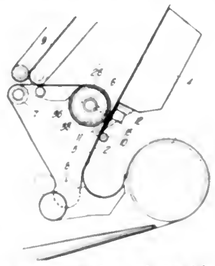
mounting means for movably mounting said flap intercepting member on said frame, the movement of said member being such that said flap engaging nose moves along a predetermined path which when extended intersects the surface of said roll;

said flap intercepting member having camming means fixedly connected thereto, said camming means comprising at least one feeler finger that is displaceable in response to the transport movement of an article through the flap conditioning station so as to press said flap engaging nose against that portion of the article that is supported by said roll, said nose thereby slidably engaging the flap side face of said article so as to intercept and bend the flap of said article as the latter moves through said flap conditioning station.

3,162,436
PHOTOCOPYING APPARATUS

Joseph Gerald Brocton Halden, Loughton, England, assignor to Ozalid Company Limited, Loughton, England, a company of Great Britain

Filed July 3, 1962, Ser. No. 207,265
15 Claims. (Cl. 271—64)

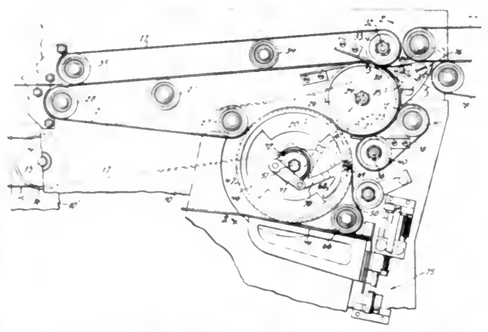


1. A photocopying machine of the kind comprising a printing section in which a sheet of sensitised material superposed on an original is exposed to actinic light, a developing section for the exposed sensitised material, a feed path from the printing section to the developing section, separating means in the feed path to separate the original from the sensitised sheet so that the sensitised sheet may continue along the feed path and the original may be delivered outside the machine, which separating means comprises a first vacuum device on the "original" side of the feed path to which the original is attracted and a second vacuum device on the "sensitised-sheet" side of the feed path to which the sensitised sheet is attracted, one of the vacuum devices being a hollow rotatable roller perforate around its circumference and having stationary sealing means within the roller isolating a hollow section bounded on the outside by the part of the perforate circumference opposite to said path and means for connecting said hollow section to a source of vacuum and a detection device in the feed path between the printing section and the separating means which device controls the application of vacuum to the said roller section and is effective, on detecting the passage of a superposed original and sheet of light sensitised material, to cause evacuation of said roller section.

3,162,437
DOCUMENT OUTPUT MECHANISM

William L. Poland and Morton P. Matthew, Norwalk, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

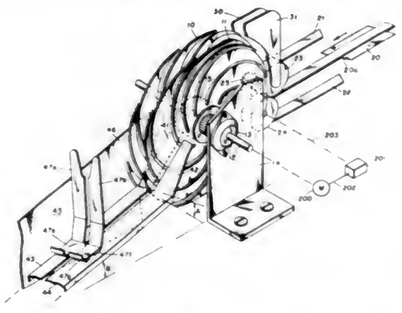
Filed Oct. 11, 1961, Ser. No. 144,448
13 Claims. (Cl. 271—68)



1. In a document handling apparatus including a table and power means mounted on said table, the combination

of document conveying means driven by said power means, rotary document carrying drum means at the terminus of and adjacent said conveying means, said drum means including a plurality of peripheral ports communicating with a source of reduced pressure, means movably mounted on the table for selectively deflecting documents from said conveying means to said document carrying means, means for disengaging documents from said carrying means, means for decelerating documents including a break member mounted juxtaposed said drum means and along the document path, said brake member further including an aperture formed therethrough for communicating with one of said peripheral ports during a portion of the time said port experiences reduced pressure, a channel formed in said brake member so positioned to transmit the pressure at said aperture to the edges of said document conveying means, and means adjacent said carrying means for successively stacking the documents.

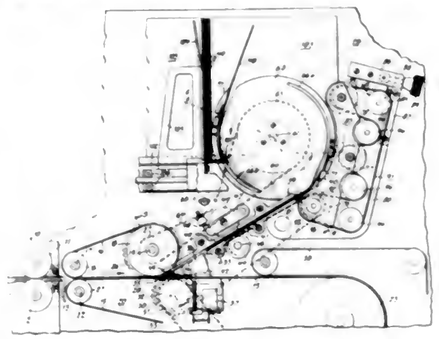
3,162,438
HIGH SPEED SHEET STACKING SYSTEM
Edward Gordon Perry, Jr., Dallas, Tex., assignor, by mesne assignments, to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 102,023
11 Claims. (Cl. 271—71)



4. In a high speed mechanism for stacking documents the combination of a disk having a plurality of arcuate slots extending inwardly from the perimeter of the disk, means for rotating said disk about the center thereof at a predetermined peripheral velocity, means for delivering said documents into said slots tangentially of said disk in a loading zone at an entry velocity substantially in excess of said peripheral velocity for developing braking forces between the surfaces of said documents and the outer surfaces of said slots to arrest the motion of said documents relative to said disk, and a pair of inwardly facing arcuate guide means lying in planes parallel to the plane of said disk and on opposite sides thereof and having edges extending within the perimeter of said disk in the region of said loading zone.

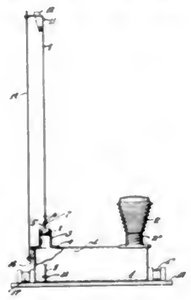
3,162,439
DOCUMENT STACKING DEVICE
William L. Poland, Norwalk, Gustave D. Cerf, East Norwalk, and Warren J. Pinckney, Ridgefield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,440
2 Claims. (Cl. 271—71)

1. In a document handling mechanism having feeding means operable at a predetermined velocity for serially advancing documents in flexible sheet form along a feed path, stacking means cooperating with said feeding means, and receptacle means for receiving the documents from said stacking means, said stacking means comprising a continuously rotating drum revolving within an orbit disposed tangentially to said feed path and at a surface velocity less than that of said feeding means, said drum being formed with at least one arcuately inwardly extending slot and a surface recess communicating with its peripheral surface, said drum being positioned adjacent the receptacle means so that the peripheral surface of said drum bears against documents in said receptacle means to retain the documents in a stacked formation, a deflector member, means supporting said deflector member by that portion of said drum which defines the outer surface of said slot, said deflector member carried by said drum substantially within said recess and formed with a deflecting tip normally projecting beyond the circumferen-



tial plane of said drum for intercepting an incoming document and directing it into said slot, said deflector member further including a spring member for biasing said deflector member to the position wherein the deflecting tip portion thereof projects beyond the circumferential plane of said drum, but recedes into said surface recess when carried into bearing contact with a stack of documents in said receptacle means, said feeding means cooperating with and operating at higher velocity than said drum for advancing a document relative to said drum and causing the document to penetrate said slot, and stop means disposed across the path of a document being carried within said slot for stripping same from said slot and guiding its transfer into a stacked formation in said receptacle means.

3,162,440
HAMMER OPERATED REGISTRATION DEVICE FOR AMUSEMENT CENTERS
Nicholas T. Argiro, 780 Riverside Drive, New York, N.Y.
Filed Aug. 30, 1961, Ser. No. 134,988
1 Claim. (Cl. 272—76)



A pressure-impelled device, consisting of a relatively rigid box member which is airtight and hollow, the box having an inlet at one end and an outlet at its opposite end, and having an air path between said inlet and outlet formed solely by the hollow interior of the box, the inlet being surmounted by an upstanding outwardly threaded neck, and the outlet being bounded by an upward extending tubular projection, a corrugated bellows member threaded on said neck and in the form of an inverted frusto-cone, a piston slidingly mounted within said tubular projection, the piston having an upwardly projecting striking element for a bell, a carrier for the piston and which is provided with spaced apertures, spaced vertical rods within said apertures, means connecting and rigidly spacing said rods, and a bell device carried at the upper end of the rods in register with the striking element of the piston, the construction being such that displacement of the piston upon contraction of the bellows member permits air to enter the box through the tubular projection and thus restore the bellows member to its normal expanded condition.

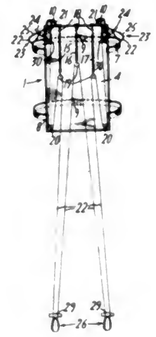
3,162,441
UNIVERSAL EXERCISER
Laddie Karlik, 410 E. 163rd St., New York, N.Y.
Filed Feb. 2, 1960, Ser. No. 6,210
3 Claims. (Cl. 272—80)



1. An exerciser comprising a generally rectangular frame, a buoyant member and a lifting member in said frame, means for securing said frame to the trunk of a person using the exerciser, three elongated springs, means releasably attaching one end of each of said springs to said frame at laterally spaced points near the upper end thereof, a pulley on the other end of each of said springs, a pair of laterally spaced pulleys mounted on said frame near the lower end thereof, a pair of foot stirrups each having a pulley thereon, a cord passing successively through one of said pulleys on said frame, the pulley on a first one of said springs, the pulley on one of said stirrups, the pulley on the intermediate spring, the pulley on the other stirrup, the pulley on the third spring and the other pulley on said frame, and handgrips on the ends of said cord.

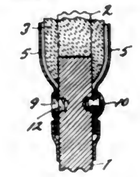
3,162,442
UNIVERSAL EXERCISER
Laddie Karlik, 410 E. 163rd St., Bronx, N.Y.
Filed Nov. 22, 1963, Ser. No. 326,332
10 Claims. (Cl. 272—80)

7. An exerciser comprising, in combination, a base with means to attach said base to the trunk of the user, said base carrying pivots having pulleys thereon and springs having pulleys thereon, foot stirrups with pulleys, and an adjustable cord attached to handgrip means, said cord being passed over the pulleys of said base, the pulleys of said springs, and the pulleys of said stirrups in such a manner that a pull of any one of the user's limbs will exert a pull on the remaining limbs with a strength according to the power of said springs which



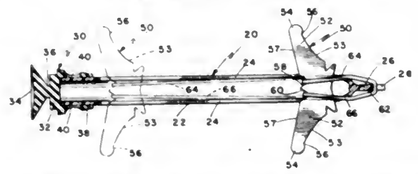
will be distributed with equal balance by said pulleys and yieldingly cushioned by said springs.

3,162,443
RACKET WITH RESILIENT SURFACES
David Arthur Petri, Risingholme Heathfield, England
Filed July 6, 1962, Ser. No. 207,951
1 Claim. (Cl. 273—73)



A racket comprising a frame having a handle and a hoop or closed looped end which is provided with a filling of resilient material, both said looped end and filling being enclosed by a flexible cover, said cover being formed with orifices therein for ingress and egress of air to and from the interior, bores in said frame registering with said orifices, and said orifices being provided with valve means in the form of detachable plugs adapted to coact with the orifices and with said registering bores in the said frame.

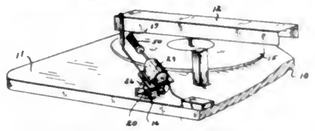
3,162,444
SELF-PROPELLED DART
James A. Jackson, 1151 Washington Heights Place, and Walter L. Jackson, 1069 Washington Heights Place, both of El Cajon, Calif.
Filed Dec. 19, 1962, Ser. No. 245,765
7 Claims. (Cl. 273—106.5)



7. A self-propelled dart, comprising in combination:
(A) an elongated body having a head end and a tail end, the tail end of the body forming a hand grip;
(B) a suction cup extending forwardly from the head end of the body;
(C) a hand grip member mounted on the body for sliding movement longitudinally of the body;

(D) and a resilient member interconnecting the slidably mounted member and the tail end of the body, said hand grip member being adapted to be held by one hand of the user and the tail end of the body being adapted to be held by the other hand of the user to effect relative spreading movement between the hand grip member and the body and said resilient member resisting said movement.

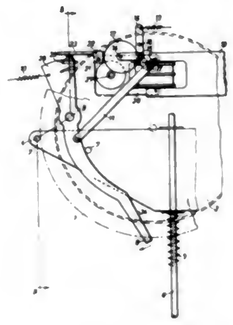
3,162,445
PHONOGRAPH NEEDLE CLEANING DEVICE
Lyell D. Henry, 2234 Knapp St., Ames, Iowa
Filed May 28, 1962, Ser. No. 198,357
7 Claims. (Cl. 274—1)



1. In a needle cleaning means, comprising, in combination;
an arm having both horizontal and vertical movement,
a needle carried by said arm,
a base member,
a bracket hinged to said base member capable of limited forward and rear swinging movement,
an electric motor operatively mounted on said bracket and having a drive shaft,
a brush means operatively secured to the drive shaft of said motor capable of engaging said needle when said arm is in at least one position of its movement; said motor being so positioned on, and relative to said bracket that the weight of said motor will yieldingly hold said bracket in a rear position of its swinging movement,
an electric lead wire extending to said electric motor,
a switch terminal on said base member,
an electric lead wire operatively extending to said switch terminal,
a switch terminal operatively carried by said motor, and capable of engaging the switch terminal on said base member when said brush means is in a given position and said bracket is in a rear position of its swinging movement,
and an electric lead wire extending between said switch terminal operatively carried by said motor and said motor.

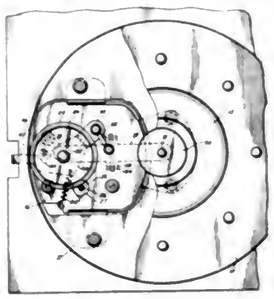
3,162,446
SPEED CHANGER FOR A RECORD PLAYER
Horst Zarm, Berlin-Zehlendorf, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1960, Ser. No. 77,977
Claims priority, application Germany Jan. 18, 1960
4 Claims. (Cl. 274—9)

1. An automatic switching device for changing the rotational speed of a record player comprising a turntable, a driving motor for rotating said turntable, a drive shaft operatively connected to said motor and having parts thereof of different diameters, a friction wheel, a pivoting control lever having a curved edge serving as a control curve coupling, a slide swingable in the direction of the insertion of the record, said slide being provided with a stop member, said curved edge sliding along said stop member, said control member being operatively connected to said friction wheel whereby the latter is shifted axially with respect to said drive shaft of the motor, a switchable reduction device provided between said driving motor and said turntable, a feeler member operatively connected to said switchable reduction device whereby the former operates the latter in accordance with the diameter of the particular record to be played, said slide also being moved by said feeler if a larger diameter record is inserted in the phonograph record presently being played,



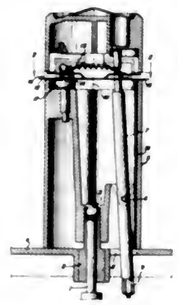
and said coupling adjusting the dive shaft to the rotational speed required for the particular record diameter to be played after said slide is located at the preselected position for the particular record diameter to be played.

3,162,447
PLURAL-SPEED PHONOGRAPH TURNTABLE DRIVE MECHANISMS
Herbert L. Hartman, Elyria, Ohio, assignor to The General Industries Company, Elyria, Ohio, a corporation of Ohio
Filed Apr. 12, 1961, Ser. No. 102,438
9 Claims. (Cl. 274—9)



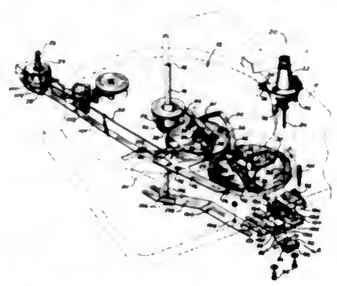
6. In a record player comprising a turntable having a dependent peripheral flange, mounting means for said turntable, a rotor shaft having different diameter steps thereon, idler pulley means adapted to be interposed in driving engagement with said turntable flange and one of said steps, first rod means, second rod means, and means interposed between said first rod means and said second rod means whereby when either said rod means is depressed the other rod means is elevated to cause the idler wheel integral therewith to be engaged with a different level of said peripheral flange and a different one of said steps, said idler wheel being mounted on a horizontally and vertically movable idler mount, manually movable lever means being rotatably secured to said idler mount, said lever having a notch in a peripheral portion lockingly engaging a pin fixed to said mounting means, whereby when said lever is rotated horizontally said pin engages said notch and holds said idler pulley means in a non-playing position.

3,162,448
GRAMOPHONE COMPRISING A TURNTABLE
Piet van der Lely, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1961, Ser. No. 95,680
Claims priority, application Netherlands Mar. 14, 1960
8 Claims. (Cl. 274—10)



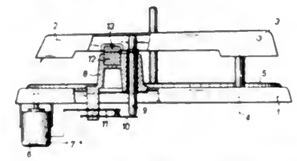
2. A record player comprising a turntable provided with a centrally located bearing sleeve, an aperture through said turntable located eccentrically with respect to the central axis of said bearing sleeve, said bearing sleeve having a part projecting above the planar surface of said turntable, a record changing post adapted to be mounted on said bearing sleeve, said record changing post including an operating member which in the mounted position of said changing post on said bearing sleeve projects through said aperture in said turntable, and means pivotally mounting said operating member whereby said member pivots in a plane substantially at right angles to the plane of said turntable.

3,162,449
RECORD CHANGING PHONOGRAPHS
Hans Christian Hansen, 14 Christiansholmsvej, Klampenborg, Denmark
Filed May 1, 1962, Ser. No. 191,600
Claims priority, application Great Britain, May 5, 1961, 16,389/61
22 Claims. (Cl. 274—10)



9. In a phonograph having a turntable, electric drive means for driving said turntable including switch means, a relatively stationary record support means for supporting a stack of records above said turntable and including means to supply the records sequentially to said turntable, a tone arm structure including a tone arm adapted to carry stylus means, and a cycle control means including a cycle cam and engageable and disengageable cycle cam gear means, an actuator mechanism for said cycle control means comprising in combination: an elongated manually operable actuator member mounted for reciprocation, a trip starter means operable in response to termination of the playing of a record and including a lever mounted for reciprocation, a stop control means operable in response to the absence of a record on said record support means and including a member assuming an inoperative position when at least one record is supported on said stationary support and being moved to an operative position after supply of the last record to the turntable, a single pivotable cycle cam gear actuator lever operatively connected with said reciprocable trip starter lever as well as with said elongated actuator member and operable to be actuated to individually engage said cycle cam gear upon operation of said trip starter lever means as well as upon manual operation of said actuator member, and a single pivotable switch control member operatively connected with said stop control member as well as with said actuator member and operable to be alternatively pivoted to the switch-off position by each of said members as well as operable to be moved to a switch-on position upon operation of said actuator member.

3,162,450
RECORD PLAYERS CUT-OUT DEVICES
Heinrich Zimmermann, St. Georgen, Black Forest, Germany, assignor to Oskar Steidinger and Siegfried Steidinger, trading as the firm Gebrueder Steidinger
Filed Sept. 20, 1960, Ser. No. 57,215
Claims priority, application Germany, Sept. 24, 1959, St 15,611
8 Claims. (Cl. 274—23)

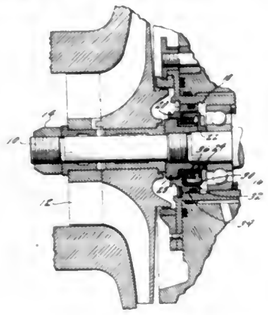


1. A control for a record player, comprising, a base, a turntable journaled on said base for rotation about a fixed, vertical first axis, a tone arm support fixed with said base in horizontally-offset relation with said turntable, a tone arm, having a first end mounted to said base for pivoting about second and third, respectively, vertical and horizontal axes, whereby the distal end of said tone arm may move from a first position resting on said support, to a second position for traverse over and across said turntable, a motor connected to rotate said turntable, a circuit for energizing said motor including a normally-closed switch carried by said support, first means carried by said support and operated only by and in response to a predetermined vertical force between the distal end of said tone arm and support, to open said switch, and magnet and armature means carried by said tone arm and said support and coacting only when said tone arm is in its said first position, to exert said predetermined vertical force upon said first means.

3,162,451
INVERSE LABYRINTH LIQUID SEAL
Harlan F. Brose, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,868
3 Claims. (Cl. 277—53)

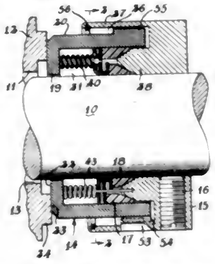
1. A labyrinth fluid seal for a chamber receiving lubricant comprising, in combination, a body having an annular flange, serrations formed on the inner diameter of said annular flange, a stationary ring member in juxtaposition to said flange and having a surface formed from a soft metallic substance engaging said serrations, means for imparting rotary motion to said body, and

passages in the body terminating adjacent to the serrations communicating with the chamber for receiving



lubricant directed thereto by the rotating serrations and returning the lubricant back to the chamber.

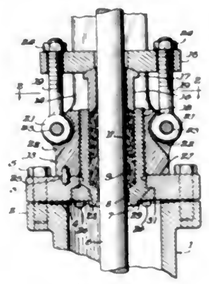
3,162,452
HYDRAULICALLY BALANCED ROTARY MECHANICAL SEAL WITH DOUBLE SEALING WEDGES
Harry Tankus, Wilmette, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed Dec. 3, 1962, Ser. No. 241,842
9 Claims. (Cl. 277—86)



1. A rotary mechanical sealing device for effecting a fluid-tight seal between relatively rotatable machine elements, said device comprising a seal seat mounted on one of said elements, a primary sealing element having a running sealing fit with the said seal seat, an abutment on the other of said machine elements, and secondary seal means for effecting a fluid-tight seal between the primary sealing element and the said other of said machine elements, said secondary seal means comprising a first wedge ring for effecting a seal between the abutment and said other of said machine elements a second wedge ring for effecting a seal between the abutment and the primary sealing element, resilient means compressed between the primary sealing element and the first wedge ring and other resilient means compressed between the primary sealing element and the second wedge ring, all of said resilient means being disposed on the same circle.

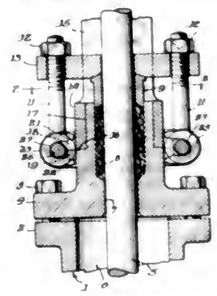
3,162,453
COMBINED VALVE STUFFING BOX AND BONNET MOUNTING
John P. Magos, Wilmette, and Kurt B. Bredtschneider and Joseph A. Englert, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed May 14, 1963, Ser. No. 280,212
8 Claims. (Cl. 277—105)

1. In a valve, means for supporting an actuating mechanism including a stem, a body, a yoke, a bonnet for the yoke between said body and yoke, means for securing said yoke to said bonnet member in fluid sealing relation, said securing means consisting of a threaded hollow member,



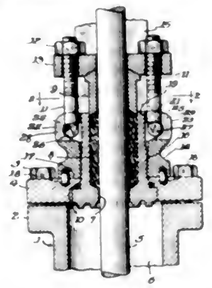
the latter member providing a stuffing box for said stem, packing therefor, bolting means to compress the packing, means for inhibiting relative rotation between said yoke and bonnet.

3,162,454
STUFFING BOX EYE-BOLT-CLAMP CONSTRUCTION FOR VALVES
Joseph A. Englert, Chicago, John P. Magos, Wilmette, and Kurt B. Bredtschneider, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed May 22, 1963, Ser. No. 282,365
3 Claims. (Cl. 277—105)



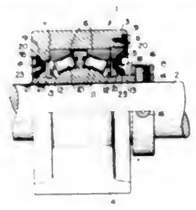
1. In a valve construction or the like for supporting an actuating mechanism including a combined bonnet and stuffing box with packing therefor, a stem, a casing, a yoke therefor having a central aperture and a pair of spaced-apart arms, a gland for the stuffing box, means for compressing the packing in the said stuffing box, a bonnet having a hollow elongated hub portion and an annular surface defining the base of said hub portion for supporting and snugly engaging said yoke to align said bonnet accurately with said yoke, divided clamp means for joining said yoke to the combined bonnet and stuffing box, bolt means for drawing said divided clamp means together, the said yoke and the combined bonnet and stuffing box having oppositely disposed flanges with annularly disposed inclined rear surfaces thereon for engagement by complementary inclined surfaces within said divided clamp means, the said means for compressing the said packing in the said combined bonnet and stuffing box comprising a plurality of eye bolts pivotally mounted on said bolt means for drawing said divided clamp means together, the said bonnet hollow hub portion forming at least a portion of said stuffing box and said yoke and bonnet flange having oppositely disposed cut away portions for receiving the said eye-bolts.

3,162,455
REMOVABLE STUFFING BOX T-BOLT LUG ARRANGEMENT FOR VALVES
Joseph A. Englert, Chicago, John P. Magos, Wilmette, and Kurt B. Bredtschneider, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed June 7, 1963, Ser. No. 286,303
8 Claims. (Cl. 277—105)



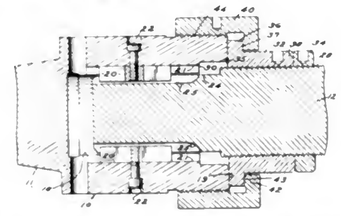
1. In a valve construction or the like for cooperation with an actuating stem, the combination including a bonnet member therefor, a separable combined yoke and stuffing box means, the yoke having spaced apart arms for journalling the said stem at its upper limit, gland and gland T-bolt means for the said stuffing box means for compressing the packing in the stuffing box means, supporting means for said gland T-bolt means, threaded retaining means cooperating with said bonnet member and yoke for joining the said yoke and stuffing box to the said bonnet member, hollow spaced apart lug means engaging said gland T-bolt means cooperating with said threaded retaining means, the said stuffing box means having an outer wall portion to prevent removal of said gland bolt means inwardly of said lug means upon completion of the assembly of the stuffing box and yoke means with said bonnet.

3,162,456
SEAL WITH REINFORCED MOUNTING
Arthur H. Williams, Riverside, Ill., assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Filed Mar. 3, 1961, Ser. No. 93,201
3 Claims. (Cl. 277—136)



1. In a bearing for rotatably supporting a shaft extending therethrough, said bearing having an outer housing with an annular groove at one end of the housing opening inwardly in the direction of the shaft, a seal to close said one end of the housing and having an inwardly extending lip adapted to engage the periphery of a shaft and an outer annular flange of generally rectangular cross-section to fit within said groove of the housing, said seal being molded of elastomeric material and having a helical metal spring imbedded in said flange of the seal and extending substantially continuously around the seal and having a small part of each turn of the spring projecting from the outer diameter of the flange, the turns of said spring being uniformly spaced throughout so that sufficient circumferential compression of the seal is allowed for insertion and securement in said groove as determined by the span of the elastomeric material between said turns and the same circumferential compression is effective to hold the entire outer periphery of said flange including said projecting parts of the spring in radial engagement with the bottom of the groove for preventing rotation of the seal as with the shaft.

3,162,457
AXIALLY ADJUSTABLE CUTTING TOOL
Albert A. Iacco, Gaylord, Mich., assignor to Beaver Tool & Engineering Corporation, Gaylord, Mich., a corporation of Michigan
Filed July 25, 1962, Ser. No. 212,343
4 Claims. (Cl. 279—91)



1. A tool construction for mounting a cutting element on the spindle of a machine in defined relation to the gauge line thereof comprising:

a holder having a cylindrical socket extending inwardly from the outer end face thereof, said end face being formed at right angles to the axis of the socket, a shank portion at the inner end of the holder, said shank portion adapted to be secured to the machine spindle thereby placing said outer end face in fixed relation to the gauge line;

a tool carrier having a cylindrical shank slidably engageable in the holder socket and an externally threaded portion axially adjacent the tool carrier shank portion;

drive means carried by the holder and slidably engaging the tool carrier shank portion; an annular internally threaded stop collar engaging the tool carrier threaded portion, said stop collar including a radially extending end flange providing a radial end surface directed toward the tool carrier shank portion for engagement with the end face of the holder and providing an oppositely directed shoulder;

means for retaining the stop collar in a desired position on the tool carrier threaded portion;

a locking collar including a portion overlapping and engageable with said stop collar shoulder;

and means mounting the locking collar on the holder for movement between an unlocked position in which the tool carrier can be inserted into the holder socket to the limit defined by engagement between the holder end face and the radial end surface of the stop collar and a locked position in which the stop collar shoulder is securely engaged between the holder end face and the locking collar.

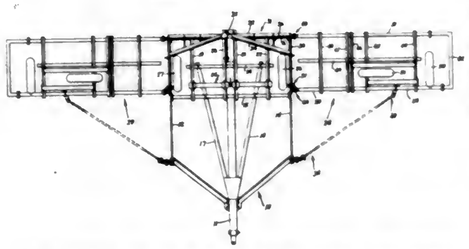
3,162,458
REAR GUARD FOR THE BLADE OF A SKATE
André Fiset, Ville d'Anjou, Quebec, Canada, assignor to St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada, a corporation of Canada
Filed Jan. 24, 1963, Ser. No. 253,688
1 Claim. (Cl. 280—11.12)

A guard for the rear end of the blade assembly of a skate, said assembly including a substantially flat blade part and a tube-like upper supporting part holding said flat blade part and being mounted thereon in saddle fash-

ion, said tube-like upper supporting part terminating short of the rear end of said flat blade part, said guard comprising: a body generally yoke-shaped in cross-section and having a tube-like upper guard part having a closed end and formed to fit over the tube-like upper supporting part of said blade assembly, and two spaced parallel flat extensions integral with and depending from said tube-like upper guard part, said depending portions extending from said closed end of said upper guard part and formed to fit over and be secured to said flat part of said blade assembly, said closed end of said upper guard part corresponding with the rearward extremity of said blade, the open end of said tube-like upper guard part and the corresponding ends of said depending extensions thereof being disposed to fit over the rear end of said blade assembly to a position inwardly with respect to said terminal end of said tube-like supporting part of said blade assembly, the closed end of said body being formed with a portion which bulges outwardly with respect to said tube-like upper guard part to present a wide front area and wide top area relatively to the thickness of the flat part of said blade assembly, said areas having rounded lateral edges.

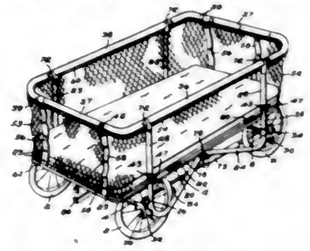


3,162,459
FOLDING FRAME FOR FARM IMPLEMENTS
Marvin O. Marmorine and Lewis E. Lawson, Le Sueur, Minn., assignors to Green Giant Company, Le Sueur, Minn., a corporation of Minnesota
Filed Nov. 15, 1962, Ser. No. 237,829
5 Claims. (Cl. 280—34)



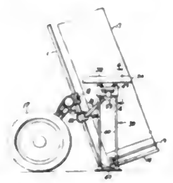
1. A frame for supporting agricultural implements comprising a central frame section of greater length than breadth and having a tongue extending forwardly from its forward end for attaching it to a draft vehicle, a pair of wheels pivotally secured near the rear and outer marginal edges of said central frame portion, power means secured to said central frame portion and said pivotally secured wheels for raising and lowering them, a pair of flanking frame members of substantially greater breadth than their front to rear extensions pivotally secured to the center rear of said central frame section, the means for pivotally securing them thereto being an extending arm of a length substantially equal to the distance from said point of pivotal connection to their respective sides of said central frame section, whereby said flanking frame members when pivoted from behind said central frame portion toward the front of said central frame section have their rears precisely aligned with the rear portion of said central frame section, means for securing the forward portion of each flanking frame member releasably to an intermediate side portion of said central frame section, tension means secured to said flanking frame members near their outboard ends and near the front of said central frame section, wheels near the outboard ends of said flanking frame members positioned to rotate on axes substantially parallel to the wheels of said central frame section, said flanking frame member wheels being pivotally secured to said flanking frame members, power means secured to said flanking frame members and the pivotal supports of said wheels for raising and lowering them selectively, and manually raised and lowered wheels on said flanking frame members near the front outboard portions thereof and positioned to rotate on axes at right angles to the outboard power controlled wheels of said flanking frame members.

3,162,460
PORTABLE ENCLOSURE
Leon J. Davidson, 29 Karlton Circle, Andover, Mass.
Filed Dec. 19, 1962, Ser. No. 245,828
6 Claims. (Cl. 280—36)



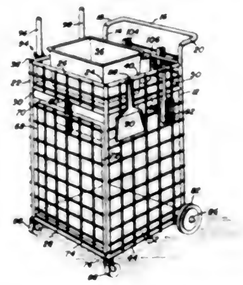
1. A playpen comprising supporting wheels and axles, a floor carried by said axles over said wheels, supports on opposite sides of said floor comprising two upwardly extending members detachably secured to the said axles, a top rail carried by the upper ends of said supports, flexible material secured to said floor and top rail and closing the space therebetween, said members rotatably secured to said rail and constituting the sole support therefor, whereby when said members are detached from said axles they may be swung to a position over said floor and said members, top rail and flexible material may drop to substantially the level of said floor.

3,162,461
GOLF PLAYER'S REST
Herbert L. Krell, Portland, Oreg., assignor to Jarman-Williamson Company, a partnership
Filed Jan. 18, 1962, Ser. No. 167,073
1 Claim. (Cl. 280—47.19)



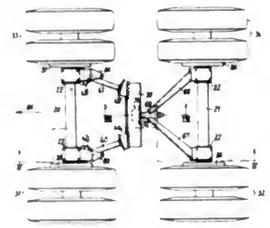
The combination of a two wheeled golf cart having a golf bag supporting frame in a vertical plane midway between said wheels together with a foldable player's rest and means for attaching said rest to said frame, said means for attaching said rest to said frame including a bracket means secured at one end to said frame and at the other end to journal means for rotatably supporting said rest for rotation about an axis perpendicular to said plane, said rest including a seat part, a ground post part and parts forming a motion parallelogram for connecting said post and said seat with said journal means, said parts forming a motion parallelogram including a collar rotatable on said journal means about the common axis of said journal means and said collar, a collar hinge for hinging said seat to said collar to support said rest on said journal means, a seat hinge for hinging said ground post to said seat about an axis parallel to said collar hinge for supporting said post on said seat to raise said post with said seat and fold both said post and said seat into line with said collar for storage of said rest on said cart, a ground post hinge for additionally supporting said ground post on said journal means for maintaining said ground post in parallelism as said post is raised or lowered by said seat and a ball hinge means rotatable about the axes of both said collar and said collar hinge for combination with said collar and said motion parallelogram parts to rotate said rest about the axis of said journal means to a desired storage position for said rest, wherein said ball hinge is connected to said post hinge by a ball arm and said journal means includes a pair of slots formed therein to receive said ball arm when all said hinges are operated to tip up said seat to raise said post and said rest is rotated about said journal means to secure said rest in its storage position.

3,162,462
UTILITY CART
Irene R. Elders, 446 Ponus Ridge Road, New Canaan, Conn.
Filed Feb. 14, 1962, Ser. No. 173,220
3 Claims. (Cl. 280—47.35)



1. A multipurpose household self-contained device comprising, in combination, a portable cart characterized by a rigid, vertically elongated openwork box-like frame, said frame embodying pairs of spaced, parallel, vertical front and rear legs, said rear legs including rearwardly bent upper end portions having a lateral and an integral handle extending therebetween, upper, intermediate and lower front braces extending between the front legs, upper, intermediate and lower rear braces extending between the rear legs, upper, intermediate and lower side braces extending between the front and rear legs, caster wheels mounted in the lower end portions of the front legs, an axle extending through the lower rear brace and projecting beyond the ends thereof, supporting wheels on the end portions of said axle, wire mesh panels mounted on the sides and rear of the frame, means comprising a vertically swingable door closing the front of the frame and providing access to said receptacle portion, said door including a generally rectangular frame comprising upper, lower and side members, pins in the end portions of said lower door member projecting therefrom and journaled in the front legs adjacent to but upwardly vertically spaced from said lower front brace for pivotally mounting said door between said front legs, means for releasably securing the door in adjusted positions on the front legs, a removable bottom shelf in the lower portion of the frame resting on the lower front, rear and side braces and extending beneath the pivoted end of the door, and a removable upper shelf in the frame resting on the intermediate front, rear and side tubular braces, said upper shelf having an opening therein, and a downwardly tapered bucket-like container fitting removably into said opening, the open top thereof projecting to a plane above the plane of the uppermost portion of said frame.

3,162,463
TWIN-AXLE TRACKING ASSEMBLY
Josef Schmitz, 8 Bahnhofstrasse, Altenberge, Westphalia, Germany
Filed Sept. 6, 1961, Ser. No. 136,310
Claims priority, application Germany, Sept. 6, 1960, Sch 28,443
14 Claims. (Cl. 280—104.5)

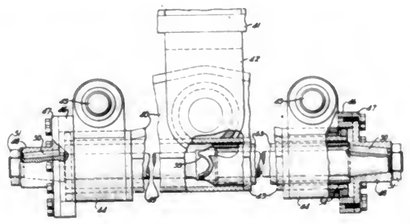


1. A twin-axle tracking assembly for a vehicle comprising front and rear axles on the vehicle frame, load-supporting springs swingably mounted intermediate their ends on said vehicle frame and bearing by their front ends on said front axle and by their rear ends on said rear axle, means on said rear axle for transmitting lateral movement on the rear axle to at least one of said springs to cause swinging thereof and means on said front axle for transmitting swinging movement of either of said springs to said front axle to cause corresponding lateral movement thereof, including push means connecting said front axle to said vehicle frame for universal movement with respect thereto comprising a pair of track-rods located rearwardly of said front axle and converging in the rearward direction, means universally articulating the front ends of said track-rods to said front axle and means universally articulating the rear ends of said track-rods to said vehicle frame at points spaced apart transversely of said frame, said tracking assembly being constructed and arranged so that during vehicle turning, the axis of the front axle is inclined with respect to the axis of the rear axle, said front axle being inclined less with respect to said vehicle frame than said rear axle.

3,162,464
TRAILER RUNNING GEAR
Homer J. Woolslayer, Cecil Jenkins, and Charles D. Iddings, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 5, 1962, Ser. No. 170,984
2 Claims. (Cl. 280—104.5)

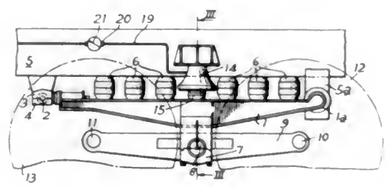
1. A trailer running gear comprising a walking beam adapted to extend lengthwise of an overlying trailer frame and including a longitudinal rigid tube and means midway between the ends thereof for pivotally connecting it to such a frame on a transevrse axis, an axle housing encircling each end of the tube and rotatably mounted thereon, an axle secured to each housing and extending across the tube, the opposite ends of each axle being

formed to receive wheels, a torsion member rotatably disposed in said tube and projecting from its ends, and means rigidly connecting the ends of said member with



the adjoining axle housings whereby longitudinal tilting of either axle relative to the other one will be resisted by the resistance of the torsion member to twisting.

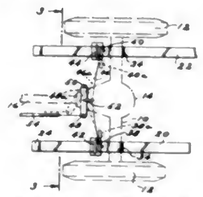
3,162,465
SUSPENSION SYSTEM FOR VEHICLES
Alexandre Vaugoyeau, Saint Marcel, Marseille, France
Filed July 27, 1961, Ser. No. 127,296
Claims priority, application France, July 29, 1960, 18,959, Patent 1,266,077
2 Claims. (Cl. 280—124)



1. A wheel suspension system in a vehicle comprising a first resiliently deformable solid compression support mounted between a vehicle axle and a vehicle chassis, said support being compressed by the axle and chassis only and always when the vehicle is under a first degree of loading and a second pneumatically inflatable support means comprising two engageable members fixed respectively one on said axle and one on said chassis, at least one member being deformable, said second support means preventing simultaneous contact of said first support means with both said axle and said chassis and retains an internal air cushion only when the vehicle is under a second degree of loading lighter than said first degree of loading, said second support means being entirely compressed and allowing said simultaneous contact of said first support means with said axle and chassis whenever the vehicle is under said first degree of loading.

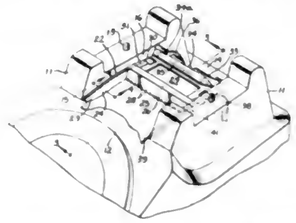
3,162,466
VEHICLE WHEEL SUSPENSION HAVING SPRING RATE ADJUSTMENT FEATURE
Donald H. Beisel, Royal Oak, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,632
8 Claims. (Cl. 280—124)

1. A vehicle suspension having sprung and unsprung components, a suspension spring interconnecting said components, said spring being adapted to be loaded in both bending and torsion modes, said spring supporting the weight of said sprung components when loaded in one of said modes, means constructed for stressing said spring



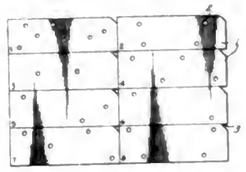
to change its spring rate in said one mode by loading said spring in the other of said modes.

3,162,467
MEMORANDUM DEVICE
Ray R. Terrell, 2 W. Columbia St., Springfield, Ohio
Filed Mar. 11, 1963, Ser. No. 264,284
5 Claims. (Cl. 281—6)



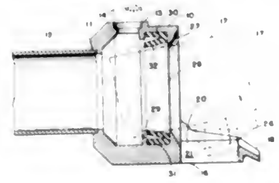
1. A memorandum device for a telephone of the type in which there is a base having a pair of laterally spaced upstanding cradle arms and a transmitter-receiver adapted for being cradled in said cradle arms, said base having a finger hole area extending therein from the back between said cradle arms, said memorandum device comprising; a one piece main frame having an opening therein, legs attached to said main frame and sprung outwardly to frictionally engage the insides of said upstanding cradle arms, side sections on said main frame sprung outwardly to frictionally engage the insides of said upstanding cradle arms, a back wall integral with said main frame at least partially closing said finger hole area for retaining a roll of paper in said finger hole area, and a transverse bar extending between said legs, for cutting a paper strip from said roll of paper.

3,162,468
INTEGRATION OF SUPERIMPOSABLE CARDS
Frederick Jonker, Washington, D.C., assignor to Jonker Business Machines, Inc., a corporation of Delaware
Filed Mar. 14, 1961, Ser. No. 95,639
9 Claims. (Cl. 281—43)



1. A data retrieval system based on the superposition of at least two physical records having encoded therein by geometrically differentiated selectively light-transmitting regions the identifications of particular documents to be retrieved from a collection, said system including:
(*a*) a plurality of physical records all in the form of flat, superposable arrays of unit matrix elements;
(*b*) each unit matrix element being a physical element having a pattern of selectively light-transmitting regions whose positions, relative to the edges of said element, designate the identities of particular documents, amongst a limited group of the documents in the collection, which have a characteristic peculiar to that unit matrix element; and
(*c*) each of said physical records constituting the edge-to-edge assembled and secured plurality of those unit matrix elements which deal with the same peculiar characteristic of all of the documents in said collection.

3,162,469
PIPE COUPLER
Elliot Shohan, 4828 Mountain View, San Bernardino, Calif.
Filed Feb. 14, 1961, Ser. No. 89,317
3 Claims. (Cl. 285—5)

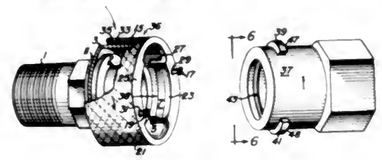


1. A pipe coupling combination for two adjacent sections of above ground irrigation pipe comprising: a hollow cylindrical barrel at the forward end of one pipe section; a trough extending forwardly from the bottom portion of the open end of said barrel; wall means defining a recess in said trough one of said wall means being adjacent the forward end thereof, the side walls of the recess being substantially vertical; a downwardly inclined ramp extending from the forward end of said trough, said ramp being substantially V-shaped in transverse cross section, the internal ridge of said V-shaped ramp being alined with said recess and extending longitudinally from the forward end of said trough; a lug member secured in spaced relationship with the free end of said adjacent pipe section and extending downwardly and normally therefrom, the length of said lug member extending longitudinally along said adjacent pipe section being shorter than the length of said recess, said lug member having a rear end portion adapted to abut the forward end wall portion of the recess and having a maximum width adapted to be snugly received between the side walls of the recess, the forward end portion of the lug being tapered to a narrow width to permit it to engage and be slidably guided by the internal ridge of the V-shaped ramp into said recess, said lug member being engaged by the wall portions of the recess when the end of the adjacent pipe section is inserted in the cylindrical barrel and the longitudinal axis of the adjacent pipe section is moved downwardly to place it in substantially axial alinement with said cylindrical barrel, thereby locking the two adjacent pipe sections together

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3,162,470
QUICK DISCONNECT HIGH PRESSURE COUPLING
Charlie H. Davidson, Edgewood, and Franklin Owens, Towson, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed May 23, 1961, Ser. No. 112,130
2 Claims. (Cl. 285—86)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a quick disconnect high pressure coupling, the combination comprising:
(*a*) a cylindrical male body member having a flange thereon located adjacent one end thereof,
(*b*) a cylindrical lock ring member rotatably mounted between said flange and the remote end of said body member and extending axially around the adjacent end,
(1) said lock ring member having a diametrically opposed pair of inner ledges at said adjacent end thereof which extend circumferentially a predetermined distance and a diametrically opposed pair of lugs which extend axially a predetermined distance on one end of said ledges,
(2) said lock ring member having a predetermined radial opening on said adjacent end thereof,
(*c*) a cylindrical safety ring member extending axially around said lock ring member,
(1) said safety ring member being slideably secured to said lock ring member by means of a plurality of retaining screws mounted on the adjacent end of said lock ring,
(2) said safety ring member having a diametrically opposed inner pair of axially extending lugs on said adjacent end thereof which are positioned adjacent the opposite end of said lock

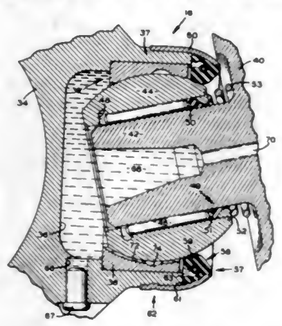


ring ledges from said lock ring lugs and which extend the same axial distance as said lock ring lugs,
(3) said safety ring member having a radial opening on said adjacent end which is congruous with said lock ring member,
(*d*) spring means located on the exterior of said lock ring member and on the interior of said safety ring member whereby said safety ring member is biased toward the remote end of said male body member,
(*e*) a cylindrical male connector having a remote end and an adjacent end and an internal "O" ring seal on said adjacent end thereof adapted to fit on said adjacent end of said male body member,
(1) said male connector having an external pair of circumferentially extending, diametrically opposed key lugs on said adjacent end thereof adapted to engage and lock between the lugs of said lock ring member and safety ring member after passing through said predetermined opening of said lock ring member and said safety ring member.

3,162,471
SEALING MEANS FOR A BALL AND SOCKET JOINT
Philip J. Mazziotti, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed May 7, 1962, Ser. No. 192,914
4 Claims. (Cl. 287—87)

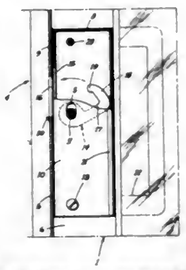
2. A centering device for a double Cardan universal joint comprising in combination, a first universal joint member having an axially extending projection thereon which projection is provided with an axially extending central aperture therein closed at its inward end and open at its outward end, an annular sleeve pressed in said aperture and having a central opening, the inner surface of the opening in said sleeve being adapted as a socket means, a second universal joint member disposed in opposed relationship relative to said first universal joint member and having a ball means extending axially therefrom into the aperture in said projection and slidably engaging said socket means, the portion of the aperture in said projec-

tion inwardly of the engagements of said ball and socket means defining a lubricant reservoir, and a sealing means for said centering device adapted to sealingly interconnect the outer end of said projection, said sleeve and said ball means to prevent the escape of lubricant from said reservoir past the same, said sealing means including an annular resilient sealing member and a cup-shaped securing portion, said sealing member being of U-shaped configuration in cross section and comprising first and second integral lip portions, said securing means being bonded



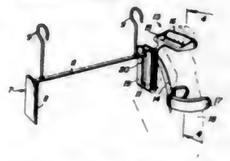
integrally with said first lip portion and being pressed on to said projection and secured thereto and compressively engaging said first lip portion with the end of said projection, said second lip portion being spaced radially inwardly from said first lip portion and slidably engaging said ball means, and a garter spring positioned between said first and second lip portions and biasing said second lip portion into engagement with said ball means whereby said ball means and said seal member are secured in a sliding sealing relationship.

3,162,472
LATCH FOR SLIDING DOORS
David J. Rust, San Leandro, Calif., assignor to Rylock Company, Ltd., San Leandro, Calif., a corporation of California
Filed May 27, 1963, Ser. No. 283,365
2 Claims. (Cl. 292—114)



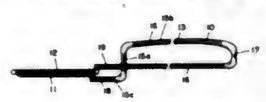
1. A latch for a sliding door mounted in a fixed frame having a locking jamb against which the adjacent stile of the door abuts when the door is in a fully closed position, the latch comprising a hook-shaped latch member disposed parallel to the door, mounting means for the latch member comprising a housing secured on and projecting laterally inward from the inner face of the stile adjacent but clear of the jamb when the door is closed, the housing including a vertical wall spaced from the stile, and a manually turnable transverse spindle journaled in said wall and on which spindle the end of the latch member opposite the hook thereof is fixed, the latch member being disposed between said wall and the adjacent face of the stile, and said latch member being adapted to project from the side of the housing nearest the jamb and into latching relation with the jamb through a slot therein when the spindle is rotated in one direction; said wall of the housing being formed with a vertical slot in which the spindle is turnable and slidable.

3,162,473
PORTABLE RACK
Warren T. George, 1611 Clark Ave., Billings, Mont.
Filed June 19, 1961, Ser. No. 117,865
10 Claims. (Cl. 294—5.5)



1. A portable clothes rack for mounting on a support and comprising a horizontal rod for receiving thereon a pluarlity of loaded garment hangers, a carrying handle for the rod, said handle including an angulated bar, a hand-grip on one end of the bar, an arm saddle on the other end of the bar, and a generally U-shaped clip on an intermediate portion of the bar, said rack further comprising a plate on at least one end portion of the rod removably inserted in the clip for detachably securing the handle on the rod.

3,162,474
HOLDER FOR A STRAINER OR FILTER
Norbert J. Lefebvre, 625 S. Jackson St., Green Bay, Wis.
Filed July 15, 1963, Ser. No. 294,983
2 Claims. (Cl. 294—16)



1. A holder for a strainer comprising a first ring, a second ring and a handle, said handle comprising a pair of matching, substantially U-shaped wires each having a curved portion and first and second legs, each of said legs having a tip end, said first legs extending in spaced relation to each other and diverging slightly in the direction of their tips to form an opening, said second legs being secured to each other in substantially parallel relation and having transverse portions near their tips which extend through said opening such that their tips are on the opposite side of said first legs from the major portion of said second legs, said transverse portion being constrained from substantial lateral movement within said opening by said first legs, said curved portions of said handle having a spring effect which tends to force the major portions of said legs apart and the tips of said first and second legs together, said first and second rings being secured to the tip ends of said first and second legs, respectively, said rings being adapted to be forced together when said tip ends are forced together to engage a strainer between said rings in fixed relation.

3,162,475
FOOD HANDLING IMPLEMENT
John W. Van Allen, Box 803, Tahoe City, Calif.
Filed May 9, 1961, Ser. No. 108,917
3 Claims. (Cl. 294—26)

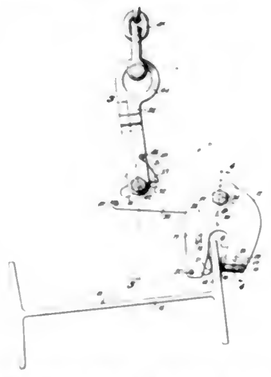
1. A food handling implement comprising a handle, an elongated shaft extending therefrom, curved hook means

secured to the end of said elongated shaft, said curved hook means lying in a plane disposed transversely relative to said elongated shaft and stop means being a continuation of said hook means and secured to said shaft for preventing the food from riding freely along the shaft,



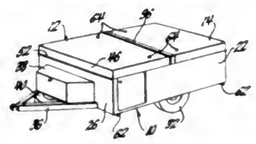
said stop means comprising an arcuate section having an end secured to an intermediate section of said shaft and aligned in a plane including said shaft whereby the hook means and the stop means define perpendicular planes such that passage of food from the hook means past the stop means is impeded.

3,162,476
LIFTING CLAMP
Raymond L. Renfroe, 1926 Spearing St., Jacksonville, Fla.
Filed Aug. 28, 1961, Ser. No. 134,378
6 Claims. (Cl. 294—101)



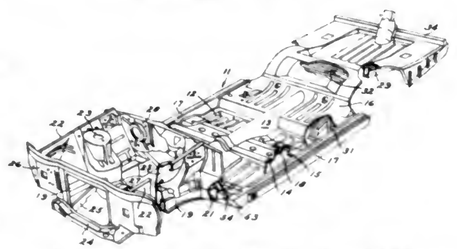
1. A lifting clamp which comprises a clamp body defining a slot to receive an article to be lifted, a pair of opposed jaws connected to said body on opposite sides of said slot, one of said jaws being movable laterally in said slot between an inactive position and a gripping position relative to the other jaw, lever means extended transversely of such slot and having a first pivotal connection to said body, said lever means being connected to said movable jaw to urge said movable jaw toward said gripping and inactive positions when the outer end of said lever means is raised and depressed respectively, a clevis having a lifting connection at its upper end and a first transverse pin at its lower end extending in sliding pivotal relation through a slot in the outer end of said lever means, said clevis having an outwardly pivoted position relative to said lever means where lifting force applied to said lifting connection exerts a substantial moment on said lever means to bring said jaws into gripping relation, and releasable means to retain said clevis in an inwardly pivoted position relative to said lever means where lifting force applied to said lifting connection exerts substantially no moment on said lever means to leave said jaws in an inactive relation, said clevis having a second transverse pin extending across said lever means, said lever means having a cam surface engageable with said second pin to urge said clevis toward said inwardly pivoted position when lifting force is released from said lifting connection, said lever means having a longitudinal recess to receive said second pin to retain said clevis in said inwardly pivoted position, said lever slot being inclined away from said recess to permit said first pin to slide longitudinally of said lever arm and said second pin to move into said recess.

3,162,477
CAMP TRAILER
Elmer W. Jackson, Jr., Washington, Mich., assignor to Bebco Experimental & Manufacturing Co., Washington, Mich., a corporation of Michigan
Filed Feb. 12, 1962, Ser. No. 172,498
2 Claims. (Cl. 296—23)



1. A camp trailer, comprising: a trailer body member having side and end walls, a trailer body floor having a trailer wheel supporting structure provided thereunder, trailer wheel enclosing cabinets provided in said trailer body along opposite sides thereof, trailer body enclosing cover members hinged to the end walls of said trailer body member and being one-half the length thereof for non-overlapping closure of said trailer body member as disposed thereover, said cover members being formed to provide shallow box shaped members having side and end walls, said cover member end wall hinged to said trailer member end wall provided temporary support for said cover member when opened and disposed in extended relation beyond said trailer body member, said cover member boxes being receptive of sleeping mattresses therein and including means for retaining said mattresses engaged thereto when closed and in the course of opening thereof, a tent cover supporting framework structure including cross frame supporting members provided in the corners of said trailer body member and outer disposed corners of said open cover members, a tent cover member engaged to said cross frame members and erected therewith, means securing said tent cover to said trailer body member and open cover members, tensioning means provided between said cross frame supporting members and said cross frames for tensioning the latter relative to said cover member, ridge pole members removably engaged between said cross frame members for retaining said cross frames in fixed spaced relation, and combination trailer jack and cover lids supporting members including ground engaging jack members received under the corner of said trailer body member and having cover engaging brace members pivotally secured thereto.

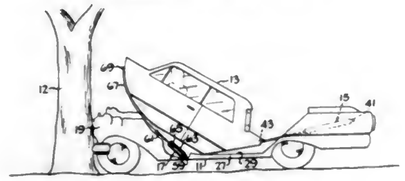
3,162,478
VEHICLE UNDERBODY CONSTRUCTION
Jesse W. Richards, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 17, 1962, Ser. No. 224,042
8 Claims. (Cl. 296—28)



1. A vehicle underbody assembly comprising:
laterally spaced, longitudinally extending sills defining

the side perimeters of a passenger compartment portion of said underbody,
laterally spaced, longitudinally extending rails defining the side perimeters of a compartment portion of said underbody at one end of said passenger compartment portion and providing wheel suspension unit supports,
the sills being spaced laterally outwardly of the rails,
torque box means extending laterally inboard from one end portion of each sill to an adjacent end portion of each rail,
each torque box means being constructed and arranged to torsionally deflect about a transverse axis in response to wheel suspension unit reaction forces acting on each rail, respectively,
and a floor panel connected at its lateral edges to said sills to form an integral structure therewith,
said floor panel having an extension extending upwardly at an angle,
a portion of said extension overlying each torque box means with an isolation space therebetween,
said space isolating the torsional deflection of each torque box means from the adjacent portion of said extension and thereby inhibiting the transmittal to said floor pan through said extension of the reaction forces acting on each rail.

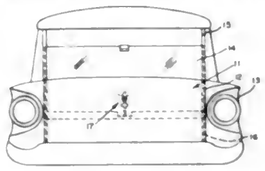
3,162,479
AUTOMOBILE CONSTRUCTION FOR SAFELY DECELERATING PASSENGERS UPON HIGH SPEED IMPACT
Harlan D. Hewitt, 1210 Astor St., Chicago, Ill.
Filed Dec. 10, 1963, Ser. No. 329,541
10 Claims. (Cl. 296—35)



1. In a safety construction for vehicles, the combination of a chassis with a longitudinal track between its front and rear, said track curving upwardly at its front, a passenger body adapted to fit into the contour of said track so that upon longitudinal movement of said body relative to said track the curve of the track will separate the front end of the body from the chassis and add a vertical component to the movement of the body, and shock cushioning elements connecting the chassis and the body so as to check the travel of the passenger body and absorb kinetic energy, whereby physical shock to passengers may be reduced by affording additional distance for their deceleration.

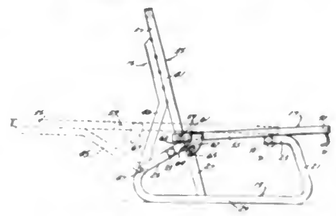
3,162,480
WINDOW CONTROL MECHANISM
Milton E. Siegert, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,564
9 Claims. (Cl. 296—57)

1. A vehicle including an exit opening, a tailgate member pivotally mounted in said exit opening, a window slidably mounted within said tailgate member adapted to move to an opened or closed position, receiving means rotatably mounted on said tailgate member, at least one spring member having one end portion attached to said window and the remaining portion received in a tightly rolled spiral upon said receiving means, said spring member having spring gradients providing a substantial constant spring force with increased deflection, detent means pivotally mounted on said tailgate member engageable with said receiving means, a key operable lever means operable to pivotally disengage said detent means from said receiving means to permit movement of said win-



dow to an opened position, the remaining portion of said spring member upon movement of said window to a closed position being received in a coiled condition on said receiving means to provide a slipping clutch action when the latter is engaged by said detent means to permit the closing movement of said window.

3,162,481
RECLINING CHAIR FRAME
Robert B. Gaylor, Fox Lake, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,917
6 Claims. (Cl. 297—65)

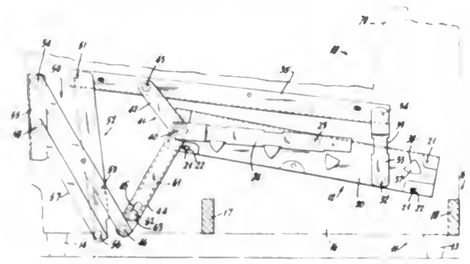


1. A chair including a base frame, a back rest, means mounting said back rest on said base frame for swinging movement of said back rest about a point on said base frame below said back rest, a seat frame movable relative to said base frame and engaged with said base frame for support of said seat frame, means pivotally connecting the rearward end of said seat frame and the lower end of said back rest, and means on said seat frame and on said base frame for selectively limiting movement of said seat frame rearwardly of said base frame to selectively fix the location of said pivot means relative to said point on said base frame in a first position locating said back rest and said seat frame in a first angular relation to each other and in a second position locating said seat frame and said back rest in another angular relation to each other.

3,162,482
RECLINING FURNITURE AND RECLINING MECHANISM THEREFOR
Alex J. Katz, West Orange, N.J., assignor to Super Sagless Spring Corporation, Bayonne, N.J., a corporation of New Jersey
Filed July 2, 1962, Ser. No. 206,752
8 Claims. (Cl. 297—85)

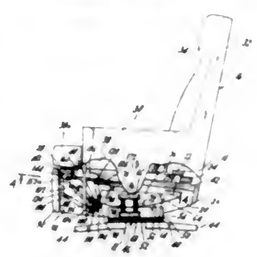
6. In combination, a support means, a member pivoted thereto, a body supporting member, a lever pivoted to said pivoted member at a point spaced from the pivotal connection of said pivoted member to said support means, said lever having an arm pivoted to said body supporting member, a link pivoted to said support means on an axis coaxial with the pivotal connection of said lever to said pivoted member, in one angular position of said

pivoted member, said lever having a second arm, and said link having a pin and slot connection to said second arm of said lever, with the pin abutting one end of the slot and



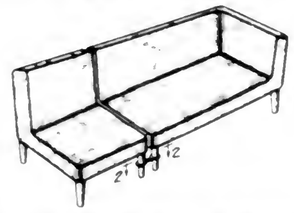
the slot radial with respect to said pivotal axes of said lever and link, in said one angular position of pivoted member.

3,162,483
ROCKER CHAIR WITH T-CUSHION SEAT CONSTRUCTION
Peter S. Fletcher, Delray Beach, Fla., assignor to Anton Lorenz, Boynton Beach, Fla.
Filed Jan. 16, 1961, Ser. No. 82,892
9 Claims. (Cl. 297—89)



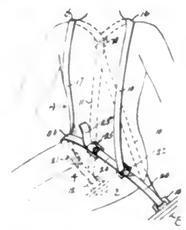
1. A chair comprising a base, a rocker member engaging said base to rock thereon, a body-supporting structure including a rigidly-formed seat, back-rest and chair arms, guide means mounting the seat on the rocker member for movement of the body-supporting structure rearwardly relative to the rocker member from a forward position to a rearward position, a leg-rest, leg-rest control and actuating means mounting the leg-rest on the body-supporting structure and moving the leg-rest from a retracted position to a leg-supporting position in response to movement of the body-supporting structure relative to the rocker member from the forward position to the rearward position, said guide means and the center of gravity of the body-supporting structure in the forward position being so arranged as to cause the body-supporting structure to move rearwardly automatically to its rearward position, and manually-releasable locking means rigidly coupling the body-supporting structure with the rocker member in the forward position, the rocker member carrying the body-supporting structure in its forward position with the leg-rest retracted having a first stable position of balanced equilibrium on said base and being adapted to be rocked on said base in said first stable position, the rocker member carrying the body-supporting structure in said rearward position with the leg-rest extended having a second stable position of balanced equilibrium on said base and being also adapted to be rocked on said base in the second stable position.

3,162,484
FURNITURE-ENSEMBLE RETAINING DEVICE
Mildred Kleffman, 8600 Wolf Road, Rte. 1, Hinsdale, Ill.
Filed Sept. 20, 1963, Ser. No. 310,348
1 Claim. (Cl. 297—248)



A device, for retaining the juxtaposed ensemble relationship of two pieces of sectional furniture, comprising a pair of ring parts formed of flexible material of rubber, or its equivalent, and dimensioned to fit over the opposed legs of the ensemble pieces, each ring part having a radially-disposed integrated spacing strip, and separable fasteners fixed on the respective strips comprising a plurality of the conventional two-unit snap-type respectively fixed in uniform spacing along the respective strips to permit one or more of the pair of fasteners to be connected together to vary the radial spacing of the ring parts, to accommodate variable distances between the opposed legs of the ensemble.

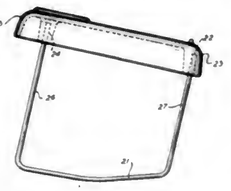
3,162,485
SAFETY HARNESS
John J. M. Pragnell, Tilford, near Farnham, Surrey, England, assignor to Irving Air Chute Co., Inc., Lexington, Ky., a corporation of New York
Filed Mar. 27, 1962, Ser. No. 182,784
2 Claims. (Cl. 297—389)



1. In a safety harness, the combination of a supporting frame, a pair of relatively spaced connectors attached to said frame, back straps attached to said connectors and extending upwardly to a point centrally at the back of a wearer, a fitting attached to said back straps at said point, shoulder straps attached to said fitting and normally extended over the shoulders of a wearer, side breast straps connected to said shoulder straps and adapted to extend downwardly in front of a wearer in spaced relation at the sides and front of the wearer, a pair of lap strap side portions respectively attached to the lower ends of said back straps and to said frame connectors, one at each side of a wearer, a second pair of lap straps, fittings connecting the proximate ends of said first mentioned pair of lap straps to said second pair of lap straps, and an adjusting buckle connecting the proximate ends of said second pair of lap straps, said breast straps at their lower ends being connected to the fittings of said lap straps at each side front of the wearer, the upper ends of said back straps being continuous and slidably extended through the back strap fitting, said shoulder straps being continuous and slidably extended through said back strap fitting, and said breast straps at the lower ends thereof being con-

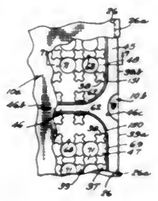
tinuous one with each of the second pair of lap straps mentioned and slidably extending through the lap strap fittings.

3,162,486
LEG RESTS
William M. Emery, 44 Pittsford Way, New Providence, N.J.
Filed Oct. 31, 1963, Ser. No. 320,334
3 Claims. (Cl. 297—439)



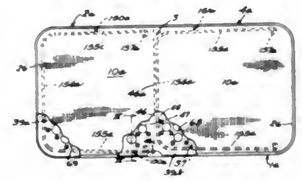
1. A leg and foot rest comprising a molded non-resilient substantially one piece top, imprints molded therein of both heels, ankles, large tendon and calf, said imprints being similar to an impression which would be made in a resilient media if said bodily parts were impressed therein including a deep heel impression and a somewhat flattened calf impression, all of said impressions being loosely fitting to allow freedom of foot and leg, normal angular or rotational leg movement and ankle movement, and means to support said leg and foot rest at a suitable height and inclination.

3,162,487
AIR-CARRYING FLEXIBLE LAYER FOR UNDER-BODY VENTILATING
Herbert H. Trotman, Churchland, Va., assignor, by mesne assignments, to Phillips Petroleum Company
Filed Aug. 31, 1962, Ser. No. 220,612
21 Claims. (Cl. 297—453)



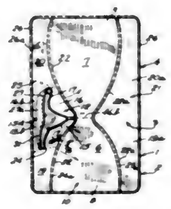
1. A flexible under-body ventilating pad for use on cushioned surfaces, comprising a thin sheet of suitably non-brittle and strong plastic shaped to support at least one person, said sheet having
hollow columnar projections three-dimensionally deformed from said sheet for rigidity, with their outer ends coplanar and integral therewith,
said projections being spaced apart in all directions by substantially more than the dimensions across their larger ends to permit substantially unobstructed flow of air therebetween and against the supported human body,
said projections being interconnected in different directions, spaced and held against excess tilting by integral web portions of said sheet,
said web portions being sufficiently bendable between said relatively rigid projections to flexibly conform to a supported person and with the deformations of a yieldable under cushion but having a limited rigidity to normally hold said sheet substantially flat.

3,162,488
HINGED AND MARGINALLY STIFFENED UNDER-BODY VENTILATING PAD
Herbert H. Trotman, Churchland, Va., assignor, by mesne assignments, to Phillips Petroleum Company
Filed Aug. 31, 1962, Ser. No. 220,613
22 Claims. (Cl. 297—453)



1. An under-body ventilating pad portion for use on cushioned surfaces, said pad portion comprising
a thin layer of non-metallic material,
human body-supporting supports on and extending outwardly from at least one face of said layer and spaced apart for relatively free air flow therebetween and to the supported body,
said layer having a limited springy stiffness to normally hold itself substantially flat but being flexible to bend relatively freely under a human body and with an under cushioned surface,
materially stronger and more rigid marginal stiffening means having at least two connected opposite sides around at least part of the peripheral edge portions of said layer
and lost-motion-type securing means to hold said layer and said stiffening means together in operative relation, with said layer being held untensioned and relatively loose and with relative limited movability between opposite sides of said stiffening means to substantially prevent tensioning of said layer relative to said stiffening means when said layer curves down into a cushion under a supported body.

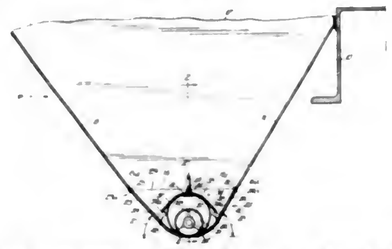
3,162,489
FORCED AIR UNDER-BODY VENTILATING PAD DEVICES
Herbert H. Trotman, Churchland, Va., assignor, by mesne assignments, to Phillips Petroleum Company
Filed Aug. 31, 1962, Ser. No. 220,614
20 Claims. (Cl. 297—453)



1. A forced-air under-body ventilating flexible pad device of the free type for substantially non-tied-down use on cushioned automobile seats or the like, comprising
frame-like marginal stiffening means for each of seat and back portions connected by hinge means and each comprising
at least one layer of interconnected body supports spaced apart for forced air flow therebetween and enclosed by substantially impervious means except for an open top area shaped to supply forced air under at least one person
and common means to supply forced air directly into the upper faces of both said seat and back portions, including

a distributing chamber and conduit adapted to be connected to a forced air source,
located above and having its air entry at one side of said pad,
with its discharge portions extending materially to either side of said hinge means
and defined in part by areas of said hinged seat and back portions and also by substantially air-impervious wall means extending across the angle between and over said seat portion and said upright back portion.

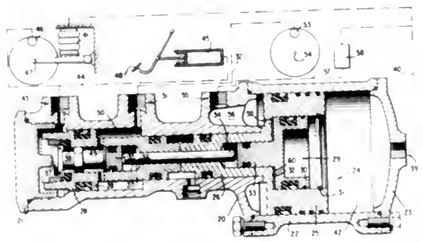
3,162,490
HOPPER OUTLET CONSTRUCTION
Clarence J. Koranda, Western Springs, and William E. Fritz, Hinsdale, Ill., assignors to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Original application Feb. 29, 1960, Ser. No. 11,648. Divided and this application Dec. 10, 1962, Ser. No. 249,545
5 Claims. (Cl. 302—52)



1. For combination with a hopper containing finely divided lading and formed by downwardly extending walls defining at their coplanar lower edges a rectangular opening, a generally U-shaped bottom member adapted to be secured along the upper edges of its sides to two opposite lower edges of said walls, closure members secured to and extending vertically at the ends of said bottom member and adapted to be secured along their upper edges to the other two opposite lower edges of said walls, and an inverted generally U-shaped hood mounted at its ends on said closure members and having its lower edges spaced from the upper surfaces of the respective sides of said bottom member and forming therewith a vacuum chamber into which lading can flow through the longitudinally extending slots therebetween.

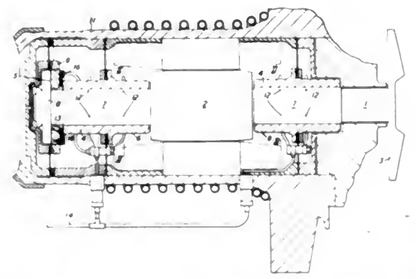
3,162,491
BRAKE FORCE REGULATING DEVICE FOR VEHICLES ESPECIALLY THOSE WITH PNEUMATIC SPRINGS
Friedrich H. van Winsen, Kirchheim-Teck, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 3, 1961, Ser. No. 93,160
Claims priority, application Germany Mar. 3, 1960
10 Claims. (Cl. 303—6)

1. In a brake force control system for the hydraulic brakes of motor vehicles provided with pneumatic spring means, which system for purposes of distribution of the brake force to the front and rear axles is operatively associated with the line system connected between the master brake cylinder and the brake cylinders of one of said axles, and which comprises a pressure control piston assembly including piston means acted upon on one side thereof by the brake pressure of the brake cylinders of the other axle and on the other side thereof by the brake pressure of the brake cylinders of said one axle, and said piston means being provided with a controllable passage interconnecting the one and other sides of said piston means, and a control member for controlling said passage adapted to be acted upon in opposite directions by the pressure prevailing within said master brake cylinder and by the pressure within said pneumatic spring means in such a manner that said control member, with a given pressure within said pneumatic spring means closes said passage only with a higher pressure within said master brake cylinder,



the improvement essentially consisting of control piston means forming part of said piston assembly and operatively connected with said control member for actuating said control member, said control piston means being acted upon on one side thereof and in a direction opposite the brake pressure prevailing on the other side of said piston means by a pressure depending on the pressure within said pneumatic spring means and on the other side thereof by a counterpressure.

3,162,492
JACKING SYSTEM FOR GAS BEARINGS
Ernest Stanton Walkling, Orpington, Kent, England, assignor, by mesne assignments, to Bristol Siddeley Engines, Limited, Bristol, England, a British company
Filed Oct. 27, 1961, Ser. No. 148,168
Claims priority, application Great Britain, Nov. 1, 1960, 37,489/60
6 Claims. (Cl. 308—122)



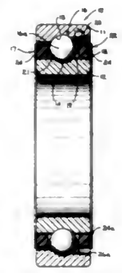
1. Apparatus including a fluid lubricated rotary bearing assembly comprising two relatively rotatable bearing elements having closely spaced complemental bearing surfaces, one of which surfaces having a plurality of circumferentially spaced recesses formed therein, a source of jacking pressure fluid, a jacking means for delivering jacking fluid from said source to between the bearing surfaces, which jacking means includes valve apparatus operably coupled between said source and said recesses to control flow of jacking fluid therebetween, signalling means responsive to the speed of relative rotation of the bearing surfaces to provide a signal dependent upon said relative speed, and control mechanism responsive to said signal when the speed of relative rotation is decreasing and falls below a predetermined value to actuate the valve

apparatus to permit flow of jacking fluid to the recesses, whereby jacking fluid is delivered between the bearing surfaces.

3,162,493
REINFORCING GRAPHITE AND PLASTIC SEPARATORS BY ELECTROFORMED METALLIC SHELLS

Heinz Hanau, Los Angeles, Calif., assignor to Industrial Tectonics, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Aug. 31, 1962, Ser. No. 220,693
5 Claims. (Cl. 308—201)



1. A separator for rolling-element bearings, comprising:

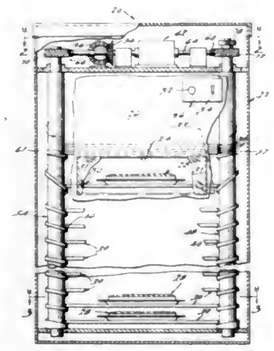
a curved body extending parallel to the path of travel of said rolling elements and having a series of circumferentially spaced, radially extending openings therethrough into which rolling elements can be placed, said body being composed of a self-lubricating material, and

an adherent, electrodeposited metal shell of uniform wall thickness and smooth exterior finish on at least the external periphery of said body, said shell holding said body in compression.

3,162,494
VENDING MACHINE

Harry B. Tassie, 1802 Vine St., St. Clair, Mich.

Filed May 11, 1961, Ser. No. 109,425
1 Claim. (Cl. 312—35)



A vending machine comprising an enclosure having

a storage area for loaded pallets,

a storage area for unloaded pallets,

a discharge area,

a plurality of pallets movable into alignment with the discharge area, successively, for the discharge of vendible articles, and

a plurality of spaced parallel rotatable shafts extending between said loaded storage area, said unloaded storage area and said discharge area, each of said shafts having threads thereon for supporting said pallets, the lead of the thread on a first portion of each of said shafts in the loaded storage area being dictated by the size of the vendible articles to maximize the capacity of said vending machine,

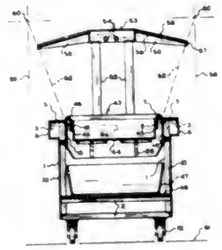
the lead of a second threaded portion of said shafts increasing in said discharge area relative to the lead of the threads on the first portion of said shaft to increase the spacing of said pallets thereby to facilitate removal of the vendible articles from said pallets,

the lead of the threads on a third portion of said shafts in the unloaded storage area being relatively smaller than the lead of the threads in said first portion to minimize the space required for storage of the unloaded pallets and therefore minimize the size of said vending machine commensurate with its capacity.

3,162,495
TABLE CONSTRUCTION

Eugene C. Swift, Saginaw, Mich., assignor to Saginaw Industries Company, Saginaw, Mich., a corporation of Michigan

Filed June 26, 1961, Ser. No. 119,489
12 Claims. (Cl. 312—223)



1. A table construction comprising supporting frame means; means supported on said frame means and forming a table top having at least one opening therein; heat transfer means positioned in said opening; means mounting said heat transfer means on said frame means for universal movements relative to said frame means; linkage means operatively connected to said heat transfer means; and overbalancing means connected to said linkage means and constantly but yieldably urging said heat transfer means upwardly.

3,162,496
CONVENIENCE CABINET UNIT

Ruth M. Morgan, 3025 N. Meridian St., Apt. 106, Indianapolis, Ind., assignor of one-half to Agnes Wagoner, Indianapolis, Ind.

Filed Aug. 23, 1962, Ser. No. 218,950
3 Claims. (Cl. 312—228)

1. A convenience unit comprising:

a frame; a top on said frame;

a basin mounted in an upper portion of said frame and opening in the top of said frame;

a hopper means under said basin;

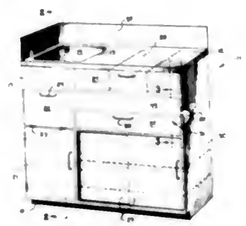
a container under said hopper means to receive refuse placed in said hopper means;

said hopper means including a door on said frame swingable downwardly;

a door on said frame adjacent said container and accommodating removal of said container from said frame;

a first drawer with a plurality of parallel dividers, disposed at one side of said basin;

a second drawer disposed below said first drawer, said second drawer having left-hand, right-hand and rear walls of substantially equal height and a plurality of parallel dividers therein providing compartments in said drawer, and said second drawer having a front wall divided horizontally into an upper and lower portion, said lower portion having a pull thereon and said lower portion being fixed on the drawer, the upper portion being pivotably suspended from said left-hand and right-hand walls and rearwardly slideable on said drawer to provide access to said com-



partments without moving said second drawer in said frame, said second drawer having a floor sloping upwardly from the lower marginal portion of said rear wall to the upper margin of said lower portion of said front wall, the upper portion of said front wall having a lower marginal portion meeting the upper marginal portion of the lower portion of said front wall, and said upper portion of said front wall having a recess adjacent the front margin thereof and in front of said lower marginal portion thereof;

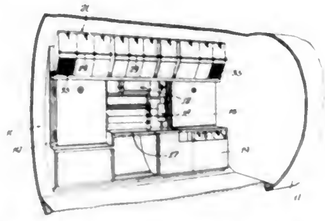
a shelf below said second drawer;

and a sliding door on said frame in front of said shelf.

3,162,497
STORAGE BUNKERS

George Boswinkle, St. Joseph, Mich., Donald A. Nordal, Scottsdale, Ariz., and William F. Saenger, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Jan. 19, 1962, Ser. No. 167,257
5 Claims. (Cl. 312—248)

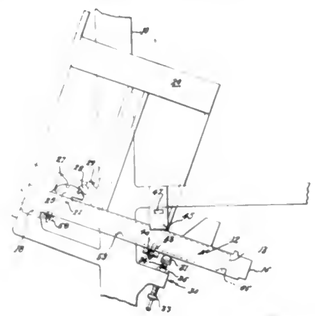


1. Storage apparatus for a space vehicle and the like having interior wall means, comprising: a plurality of storage units movable from and toward storage position adjacent said wall means; support means for said units; and means in one of said units forming a first ventilating passage having one end communicating with a space adjacent said wall means and an opposite end communicating with a space inwardly of said wall means and storage units when said one unit is in the storage position, said support means being arranged to space said one unit from said interior wall means to provide a second ventilating passage therebetween when said one unit is moved away from said storage position.

3,162,498
INCLINED CHASSIS MOUNTING FOR ELECTRONIC EQUIPMENT

Vincent J. Galati and Edwin L. Herd, Los Angeles, Calif., assignors to the United States of America as represented by the Secretary of the Air Force

Filed July 2, 1963, Ser. No. 292,505
4 Claims. (Cl. 312—323)

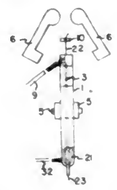


1. A readily accessible inclined chassis mounting, comprising: a cabinet structure; a pair of extensible arms carrying a chassis pivoted therebetween, said arms hung on horizontal pivots in said structure to swing upward upon extension beyond said pivots and downward upon contraction towards said structure; adjustable fastening means on said arms and chassis to affix a desired tilt posture therebetween; a stop means on said structure for blocking a downward swing of said arms at a contracted, inclined position and holding said chassis at an inclined mount; and latch means between said structure and arms for engagement upon an upward swing of said arms to lock said arms at a horizontal extended position accessible to said chassis.

3,162,499
FABRICATION OF INCANDESCENT LAMPS

Daniel S. Gustin, Londonderry, N.H., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 9, 1961, Ser. No. 130,307
12 Claims. (Cl. 316—24)



1. In the process of fabricating a lamp having an envelope of generally regular and smooth outer surfaces the steps which comprise: flowing an inert gas into a glass envelope containing a filament, through an unsealed end of said envelope; refrigerating a seal end of said envelope to a temperature below the boiling point of said inert gas, thereby forming a pool of liquified inert gas therein; gasifying said pool of inert gas and heating said unsealed end of said envelope to soften the glass concurrently with said gasification; sealing the softened end of said envelope when substantially all of the pool of liquified inert gas is gasified, thereby forming an incandescent lamp containing a filling of inert gas at a pressure of about one atmosphere.

3,162,500
MULTIPLE-CIRCUIT PIN FOR MULTILAYER CIRCUITRY

Robert B. Pittman, River Edge, N.J., assignor to Industrial Electronic Hardware Corp., New York, N.Y., a corporation of New York

Filed Apr. 16, 1962, Ser. No. 187,692
5 Claims. (Cl. 339—18)

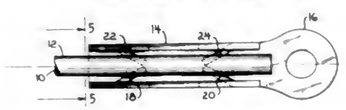


2. A pin for use in multilayer circuitry comprising a plurality of superposed perforated matrix boards having printed wiring, said pin having a point at one end and a small metal head at the other end with a shank of uniform outside diameter therebetween, said shank having a slender metal core, metal sleeves where contact is to be made, insulation sleeves where no contact is to be made, and an insulation sleeve between said core and one or more of said metal sleeves, the latter sleeves having the same external diameter but a larger internal diameter than other metal sleeves which directly engage the core, whereby each pin may provide multiple circuits which are insulated from one another, and one of said metal sleeves of larger internal diameter having a portion intermediate its ends reduced in diameter and having an insulation band received in said reduced diameter portion, whereby said last-named metal sleeve may be used to connect two boards without contacting an intermediate board.

3,162,501
ELECTRICAL CONNECTOR

Frederick W. Wahl, Hummelstown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Jan. 21, 1960, Ser. No. 3,773
5 Claims. (Cl. 339—98)

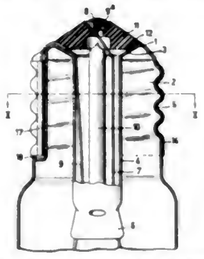


1. An electrical connector adapted to be secured to an insulated conductor comprising: a U-shaped body member having parallel sidewalls connected by a bottom portion, a plurality of tabs projecting inwardly from said sidewalls, said tabs having bottom edges which are parallel and top edges which are disposed at an angle to said bottom edges, said tabs converging inwardly toward the axis of said U-shaped body member, with one set of tabs converging toward one end of the U-shaped member and the other set of tabs converging toward the other end of the U-shaped member, whereby an insulated conductor can be inserted into the U-shaped member between the tabs so that the tabs slice the insulation on the conductor to make an electrical connection.

3,162,502
ELECTRIC LAMP BASE CONSTRUCTION

Leo Henricus Verbeek, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1961, Ser. No. 126,732
Claims priority, application Netherlands May 2, 1960
4 Claims. (Cl. 339—144)

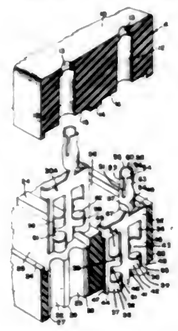


1. An electric lamp base construction provided with a pair of current supply wires comprising a lamp base having a central contact and a peripheral groove therein, a lamp cap shell portion being structural separate from said lamp base and constituting a thin foil pressed into engagement with the periphery of said lamp base and having at least one conductive surface, one of said current supply members being connected to said central contact, and a side conductor connected to the other of said current supply wires and electrically connected to the end parts of said foil, said side conductor and end parts of said foil, being located in said peripheral groove of said lamp base.

3,162,503
ELECTRICAL CONNECTORS

Herbert B. Warzecka, New Brighton, Minn., assignor to Modular Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 16, 1962, Ser. No. 217,461
2 Claims. (Cl. 339—258)

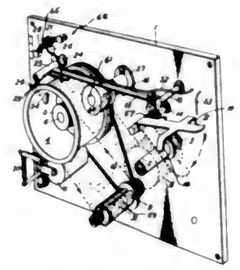


2. An electrical connector for use with a plug, said connector comprising,
(*a*) a connector element constructed from sheet metal and formed with,
(*b*) a flat body,
(*c*) a plurality of juxtaposed sockets for the reception of prongs and carried by said body,
(*d*) said sockets being arranged in parallel relation and each comprising,
(*e*) spaced curved bands extending outwardly from the plane of the body on opposite sides thereof and forming a cavity for the reception of the plug,
(*f*) an extension on said body formed with parallel kerfs therein providing,
(*g*) a number of fingers connected thereto and with
(*h*) a circular connecting portion therebetween,
(*i*) said fingers being arranged to provide a longitudinally extending cavity open at the outer end thereof for the reception of a prong,
(*j*) said fingers extending longitudinally relative to said cavity and being movable in radial directions,
(*k*) said connecting portion being in the form of a circle and movable in a direction to alter the circumference of the circle in which it lies,
(*l*) and a neck between said connecting portion and said body.

3,162,504
GRAPHIC RECORDING APPARATUS

Cecil E. J. Pecknold, Vancouver, British Columbia, Canada, assignor to Greater Vancouver Sewerage and Drainage District, Vancouver, British Columbia, Canada, a body corporate of British Columbia

Filed Dec. 1, 1961, Ser. No. 156,247
9 Claims. (Cl. 346—23)

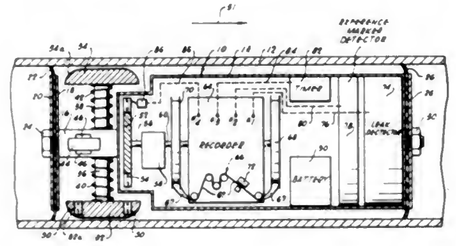


1. Graphic recording apparatus for recording a signal on paper tape and the like, comprising a rotatable traction drum, means for rotating the drum at a constant speed, a take-off spool adapted to hold a roll of tape, a take-up spool mounted to receive tape from the roll after said tape has passed around the drum, means causing the tape frictionally to engage the drum as it passes thereover whereby said drum moves the tape from the take-off spool to the take-up spool, an arm having a first end extending over the tape and a second end pivotally mounted on a support to permit said first end to move back and forth transversely of the tape, a scribing instrument carried by said first end of the arm and engaging the tape to draw a continuous line thereon during movement thereof, rotatable shitfing means connected to the arm between said ends thereof and spaced from said second end and adapted to move the arm to shift the scribing instrument back and forth across the tape, and means connected to the shifting means for intermittently rotating the latter in response to external signals to produce step-like oscillations in the line drawn on the tape.

3,162,505
DEVICE FOR LOCATING PIPELINE LEAKS

Marvin L. Hall, Houston, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,785
2 Claims. (Cl. 346—33)



1. A device for logging pipeline data comprising:
(*a*) a nonmagnetic fluid-tight housing transportable through a pipeline by the force of the fluid flowing therein,
(*b*) a recording means mounted within said fluid-tight housing,
(*c*) a drive wheel means rotatably journaled on said housing and adapted to engage the inner walls of said pipeline,
(*d*) permanent magnet transmitting means mounted in said drive wheel means,
(*e*) magnetic flux responsive means mounted within said housing, and
(*f*) drive means connected between said magnetic flux responsive means and said recording means,
whereby movement of said housing through said pipeline will cause rotation of said drive wheel means, said permanent magnetic coupling means transporting the rotation of said wheel means to said magnetic flux responsive means wherein said recorder is driven at a speed corresponding to the rate of movement of said housing through said pipeline.

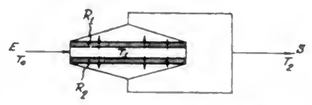
CHEMICAL

3,162,506
METHOD OF CARRYING OUT EXOTHERMIC REACTIONS CONTINUOUSLY

Marcel Delassus, Mazingarbe, Raymond Maux, Bully-les-Mines, and Pierre Vasseur, Vermelles, France, assignors to Houilleres du Bassin du Nord et du Pas-de-Calais, Douai, France

Filed Apr. 26, 1962, Ser. No. 191,400
Claims priority, application France, Apr. 28, 1961, 860,179
2 Claims. (Cl. 23—1)

1. A method of continuously carrying out exothermic reactions in a gaseous phase under adiabatic conditions, which comprises supplying the reagents to at least one space which is bounded in part by at least two reaction zones, the thickness of the reaction zones being small in relation to their other two dimensions, the reagents being supplied to said space at a temperature at which the reaction rate is too slow for the reaction to be maintained



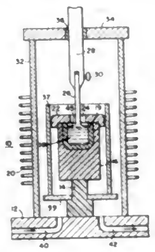
of its own accord, and the reagents being passed from said space through the thickness of the reaction zones with a mass velocity in the range from 0.0025 to 0.02 gm./cm.²/second to ensure preheating of the reagents in said space

before their entry into the reaction zones, by thermal retrodiffusion of heat released in the reaction zone, to a temperature at which the reaction rate is sufficient for the reaction to be maintained of its own accord.

3,162,507
THICK WEB DENDRITIC GROWTH

Steve N. Dermatis, Youngwood, and John W. Faust, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 30, 1962, Ser. No. 191,145
4 Claims. (Cl. 23—1)



1. An elongated body of a material crystallizing in the diamond cubic lattice structure comprised of at least two substantially parallel elongated dendritic crystals joined crystallographically into a unitary body by a web portion extending between the dendritic crystals over the length of the body, the web portion being thicker than the dendritic crystals, and there being a plurality of twin planes extending at least through the dendritic crystal portions over the entire length of the body.

3,162,508
PREPARATION OF LITHIUM ALUMINUM HYDRIDE

Robert W. Bragdon, Marblehead, and Frank P. Del Giudice, Beverly, Mass., assignors to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 6, 1960, Ser. No. 20,273
4 Claims. (Cl. 23—14)

1. In a method for preparing lithium aluminum hydride by the metathetical reaction of a lithium halide and sodium aluminum hydride, the steps which comprise forming a slurry of the lithium halide and sodium aluminum hydride in diethyl ether, introducing an amount of a catalyst into said slurry effective to initiate said reaction, said catalyst being selected from the group consisting of lithium aluminum hydride, lithium borohydride, and etherates of aluminum hydride and aluminum borohydride, and agitating the slurry containing said catalyst at a temperature between room temperature and the reflux temperature of said ether to cause said lithium halide and sodium aluminum hydride to react to form lithium aluminum hydride.

3,162,509
PROCESS FOR PREPARATION OF SULFUR-CONTAINING COMPOUNDS OF PLUTONIUM

Norman R. Davidson, Sierra Madre, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

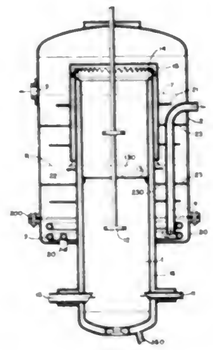
No Drawing. Filed Sept. 2, 1947, Ser. No. 771,700
1 Claim. (Cl. 23—14.5)

A process for the preparation of a sulfur-containing compound of plutonium which comprises contacting plutonium dioxide with hydrogen sulfide in the presence of graphite at an elevated temperature.

3,162,510
MIXING AND SEPARATING APPARATUS

Fritz Meissner, Cologne-Marienburg, Norbert Rudolph, Rodenkirchen (Rhine), and Helmut Becker, Cologne, Germany, assignors to Josef Meissner, Cologne-Bayenthal, Germany, a firm

Filed Nov. 28, 1960, Ser. No. 72,070
Claims priority, application Germany, Dec. 3, 1959, M 43,585
3 Claims. (Cl. 23—267)



1. Apparatus for the mixing and separation of liquids of different specific gravities, comprising, in combination: a mixing vessel and a separating vessel, said separating vessel having a bottom region and said mixing vessel being located within and projecting downwardly beyond said bottom region of said separating vessel; inlet means communicating with said mixing vessel for introducing unmixed liquids; overflow means for conveying mixed liquids from the mixing vessel to the separating vessel; outlet means communicating with said separating vessel for removing fractions of different specific gravities, said outlet means including at least two outlets each for a respective one of said fractions of different gravities; and heating means common to both of said vessels for heating the mixed liquids in said mixing vessel and the respective fractions of different specific gravities in said separating vessel, said heating means including a heating jacket surrounding the wall of said mixing vessel throughout substantially the entire length thereof and thus being located at the interior of said separating vessel, said heating jacket constituting the sole heating means for said mixing vessel as well as for at least so much of said separating vessel as is located above said bottom region thereof.

3,162,511
COMPOSITE ALLOY

George S. Foerster and Milton I. Blubaugh, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 18, 1963, Ser. No. 296,077
7 Claims. (Cl. 29—192)

5. A composite metal body comprising two particulate metals, one of the metals being magnesium alloyed with at least 0.05 to 6 percent by weight of one magnesium-soluble element selected from the group which consists of thorium, the rare earths and calcium and the other of said metals being at least one essentially magnesium-insoluble metal selected from the group which consists of silicon and antimony, said magnesium-insoluble metal being present in an amount of from about 0.05 to about 3 weight percent of said magnesium base alloy.

3,162,512
IMMERSION PLATING WITH NOBLE METALS AND THE PRODUCT THEREOF

Harold W. Robinson, Union, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Mar. 21, 1961, Ser. No. 97,172
8 Claims. (Cl. 29—199)

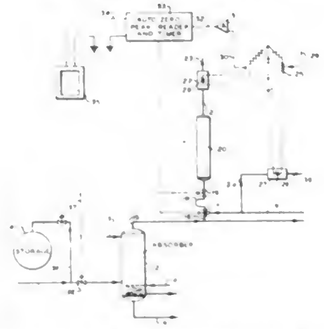


1. In a printed circuit, a composite electrically-conductive circuit portion consisting of a base metal selected from the group consisting of copper and copper base alloys having a first layer thereon of a metal selected from the group consisting of platinum, rhodium, palladium and ruthenium, and a layer of gold on the first layer as a second layer.

3,162,513
ABSORBER CONTROL

Melvin M. Fourroux, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 4, 1960, Ser. No. 273
4 Claims. (Cl. 55—19)



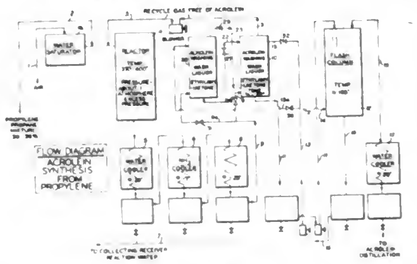
1. In an absorption process comprising in combination an absorption zone and a by-pass raw feed surge storage zone, which comprises continuously contacting a raw natural gas feed, primarily C_1 through C_7 hydrocarbons, with a lean absorption oil in an absorption zone, continuously passing overhead from said absorption zone a residual vaporous stream, continuously withdrawing rich absorption oil from the bottom of said absorption zone; an improvement comprising the analysis of said residual vaporous stream for the presence of C_5 hydrocarbons by means of a single type peak reader chromatograph analyzer, and adjusting the rate of flow of said raw natural gas feed to said by-pass surge storage zone in response to said analysis.

3,162,514
METHOD OF RECOVERING ACROLEIN AND METHACROLEIN PRODUCED BY OXIDATION OF OLEFINS

Otto Roelen, Oberhausen-Holten, and Walter Rottig, Oberhausen-Sterkrade-Nord, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a German corporation

Filed Oct. 30, 1962, Ser. No. 234,196
Claims priority, application Germany Nov. 22, 1961
11 Claims. (Cl. 55—31)

1. In the production of unsaturated aldehyde selected from the group consisting of acrolein and methacrolein by oxidation of, respectively, propylene, and isobutylene, wherein a reaction product gas containing the unsaturated aldehyde and water vapor is produced, the improvement, for recovering of the unsaturated aldehyde from the reaction product gas, which comprises:

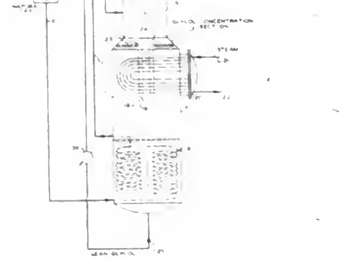


(*a*) removing water from the reaction gas;
(*b*) washing the resulting gas with saturated aliphatic ketones having about 4 to 14 carbon atoms to take up unsaturated aldehyde from the gas; and
(*c*) stripping unsaturated aldehyde from the ketone.

3,162,515
DEHYDRATION AND CONCENTRATION METHOD AND APPARATUS

James S. Connors and Jack R. Fryar, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

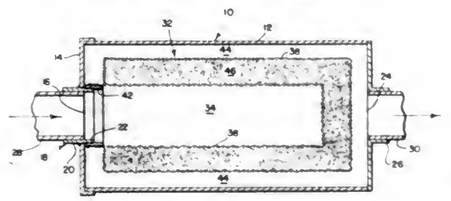
Filed Dec. 28, 1960, Ser. No. 78,935
2 Claims. (Cl. 55—32)



1. A method for the dehydration of natural gas which comprises contacting said gas with a liquid dehydration agent in a dehydration zone passing said agent containing water resulting from dehydration of said natural gas to the bottom of an agent concentration zone, in the bottom of said agent concentration zone heat exchanging said agent containing water indirectly with hot concentrated agent thus heating said agent containing water, passing the thus heated dehydration agent containing water to the top of said agent concentration zone and therein indirectly heat exchanging the same with vapors rising from agent undergoing concentration in an intermediate concentrating section, thereby creating a reflux which is passed downwardly in said agent concentration zone, thus further heating said dehydration agent containing water, then introducing the thus further heated dehydration agent containing water into a contact section beneath said top of said agent concentration zone and above said intermediate concentrating section of said agent concentration zone into direct contact with vapors rising from said concentrating

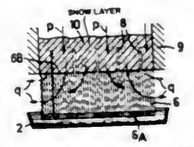
section, still further heating said dehydration agent containing water, then passing said thus heated and thus directly contacted agent to said concentrating section, therein concentrating said agent and then passing the most concentrated portion of said agent in said concentrating section from a bottom of said concentrating section upwardly through an annulus of two concentric pipes, the outermost of which is closed to the concentrating liquid along its entire length and extends to a point above the surface of the liquid at the top of said concentrating section and open to said concentrating liquid only near to the bottom of said concentrating section, the innermost of said two concentric pipes extending upwardly from the bottom of said concentrating section and being in open communication with the bottom of said agent concentration zone, and then downwardly through the innermost of said concentric pipes to the bottom of said concentration zone.

3,162,516
METHOD OF FILTERING EXHAUST GASES
Richard E. Dwyer, 173 Adams St., Dedham, Mass.
Filed Aug. 14, 1961, Ser. No. 131,130
4 Claims. (Cl. 55—98)



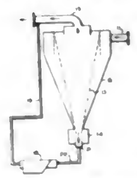
1. A method for treating exhaust gases produced by the combustion of a fuel to reduce the emission of noxious materials into the atmosphere which comprises passing said exhaust gases through a filter composition comprising vermiculite treated with at least one salt selected from the group consisting of the alkali metal salts and the alkaline-earth metal salts of an aliphatic carboxylic acid having less than five carbon atoms.

3,162,517
ARRANGEMENT FOR SEPARATING IN A SOLID STATE CONSTITUENTS FROM A GAS MIXTURE
Hendrik Jozef Verbeek, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,347
Claims priority, application Netherlands, May 7, 1960, 251,343
3 Claims. (Cl. 55—269)



1. A separator for a gas mixture in which constituents are separated out in a solid state by cooling, comprising a partition having means defining a gas passage through which the gas mixture passes, a gauze-like screen secured to said partition in the path of flow of the gas mixture and comprising a helically wound gauze-like strip having a first substantially plane continuous end surface in abutting relationship with said means defining said gas passage, said end surface of said screen completely covering said gas passage whereby the gas mixture flows through said passsage and axially into said screen through said end surface, projecting portions extending from said end surface of said screen into said gas passage in said partition, said screen having a second substantially plane continuous end surface, a cooling device in uniform heat exchanging relationship with said second end surface and blocking the passage of gas through said second end surface, said cooling device uniformly cooling said screen and causing the constituents in said gas mixture to be separated out and deposited on said first end surface of said screen in the form of snow, said gas mixture then passing axially into said screen and being deflected laterally through said screen by said cooling device.

3,162,518
LEAD REMOVAL DEVICE
Alan H. Thomas, Laurel, Warren S. Briggs, Silver Spring, and Donald S. Henderson, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed July 24, 1963, Ser. No. 297,434
1 Claim. (Cl. 55—316)



A device for removing lead particles from auto exhaust gases comprising a source of auto exhaust gases containing lead particles, a cyclone chamber, means for introducing said gases into said chamber in a downward rotational flow pattern, a trap attached at the bottom of said cyclone chamber having an exit aperture in its bottom surface, an inverted cone-shaped lead adsorbent bed extending through the central portion of said chamber from above said trap to an exit aperture at the top of said chamber, a means for directing exhaust from said top exit aperture of said chamber to a conventional automobile muffler system, a means for directing exhaust from said exit aperture at the bottom of said trap to a mechanical lead removal device containing an exit aperture and a means for directing exhaust from said mechanical device to a conventional automobile muffler system.

3,162,519
LIQUEFACTION OF NATURAL GAS
Frank M. Peters, Mission, Kans., and James De Lury, Kansas City, Mo., assignors, by mesne assignments, to Conch International Methane Limited, Nassau, Bahamas, a corporation of the Bahamas
Filed June 30, 1958, Ser. No. 745,390
11 Claims. (Cl. 62—23)

1. In the method of liquefying natural gas available in a stream at a pressure above atmospheric, the steps of:

(*a*) cooling the natural gas stream to a liquid without a substantial reduction in the pressure of the stream,

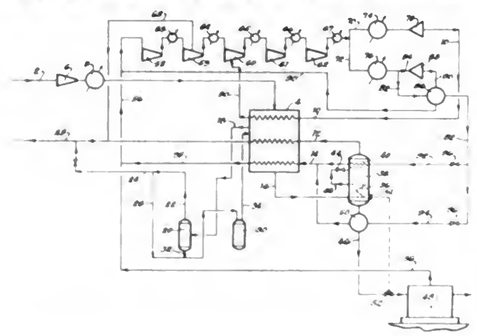
(*b*) expanding the liquefied gas into a storage vessel,

(*c*) compressing and cooling methane vapor, a portion of which is recovered from the vaporization of liquid gas contained in the storage vessel,

(*d*) expanding at least a portion of the compressed methane vapor through a work producing zone to produce refrigerant having a temperature below the initial temperature of the natural gas stream, and

(*e*) passing said refrigerant in heat exchange relation with the natural gas stream to obtain at least a portion of the cooling called for in step (A);

characterized further in dividing the compressed and cooled methane vapor into first, second, and third separate streams; expanding the first separate stream through a work-producing zone to form a first refrigerant having a temperature below the initial temperature of the natural gas stream; passing said first refrigerant in heat-exchange relation with the natural gas stream to obtain a portion of the cooling called for in step (*a*); expanding the second separate stream through a work-producing zone to a temperature below the condensation temperature of the third separate stream; passing the expanded second separate stream in heat-exchange relation with the third separate stream to condense the third separate stream; expanding the condensed third separate stream to form a second refrigerant having a temperature below the condensation temperature of the natural gas stream, then passing the second refrigerant in heat-exchange relation with the natural gas stream to complete the cooling called for in step (*a*).



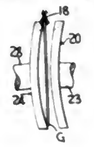
3,162,520
TREATING GLASS SHEETS
Lee R. Robinson, Tarentum, Pa., assignor to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania
Filed May 18, 1959, Ser. No. 814,081
3 Claims. (Cl. 65—104)



1. In a method of bending and tempering elongated glass sheets into a shape having a substantially flat elongated main portion and only one end portion bent about an axis connecting points of sharpest curvature extending oblique to the longitudinal axis of said main portion wherein an unbent glass sheet is supported in bending relation to a shaping surface, conveyed along a linear path of movement through a hot atmosphere having a temperature sufficient to soften the glass for a period of time sufficient for the glass to attain its softening temperature, force is applied to the heat-softened glass sheet to help conform the latter to said shaping surface, and the surfaces of the bent sheet are suddenly chilled by exposing the surfaces of the bent sheet to opposing blasts of tempering fluid blasted from spaced, opposed sets of nozzles having orifices arranged along opposite sides of a curved space of substantially cylindrical cross-section having a non-uniform radius of curvature transversely of said linear path of movement by causing the bent glass sheet to occupy said transversely curved space while exposing the heated, bent glass sheet surfaces thereto, the improvement comprising supporting an elongated flat glass sheet to be bent to said shape in a substantially horizontal plane; orienting the glass sheet so that its oblique bending axis connecting said points of sharpest curvature is parallel to said linear path of movement; maintaining said horizontal support and said orientation of said sheet relative to said linear path of movement while moving said sheet through said hot atmosphere along said linear path of movement to cause the end portion of the glass sheet to be bent about said axis oblique to the longitudinal axis of said main portion; and continuing to maintain the oblique orientation of the sheet after it is bent so that the bent sheet presents a substantially cylindrical cross-sectional shape of non-uniform radius of curvature transversely of said linear path of movement that substantially conforms in elevation and curvature to said curved space when occupying said curved space between said spaced, opposed orifices of said nozzles.

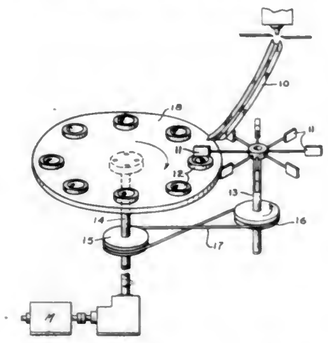
3. Apparatus for bending glass sheets into a shape comprising a substantially flat main portion and only one end portion bent about an axis oblique to the longitudinal axis of the main portion and tempering the bent glass sheet comprising a tunnel-like furnace, tempering apparatus, a conveyor extending through said furnace and tempering apparatus to define a linear path of movement therethrough, said tempering apparatus comprising upper and lower nozzles defining a space of substantially cylindrical cross-section having a non-uniform radius of curvature transversely of said linear path of movement, a bending mold having an upper shaping surface conforming in elevation and outline to the shape desired for a bent glass sheet, an open frame carriage comprising spaced, parallel carriage support runners adapted to extend parallel to said linear path of movement, mold support means attached to said carriage, and means attached to said bending mold and cooperating with said mold support means to support the bending mold in a horizontal plane at an oblique angle relative to the carriage support runners, said angle being of a size to cause said oblique axis to be substantially parallel to said linear path of movement defined by said conveyor.

3,162,521
METHOD OF SHAPING A VERTICALLY SUPPORTED GLASS SHEET
James H. Cypher, New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1961, Ser. No. 130,028
6 Claims. (Cl. 65—106)



1. In the art of press bending glass sheets wherein a heat-softened glass sheet is supported in a substantially vertical plane in spaced relation between two substantially complementary glass forming members having complementary shaping surfaces by a support means susceptible of imposing localized stress in the glass during its shaping and is shaped by being sandwiched between the shaping surfaces of said forming members, the improvement comprising moving a selected one of the forming members into contact with one surface of the glass sheet while continuing to support the glass sheet by said support means and the other forming member is out of contact with the glass sheet, and subsequently moving the other forming member toward a mating position with said one forming member while maintain-contact between the first forming member and said one surface of the glass sheet and until the forming members are in alignment with one another and in contact with the opposite surfaces of the glass sheet.

3,162,522
LOADING GLASS INTO MOLDS
Donald J. Tingley, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 17, 1961, Ser. No. 89,970
2 Claims. (Cl. 65—225)



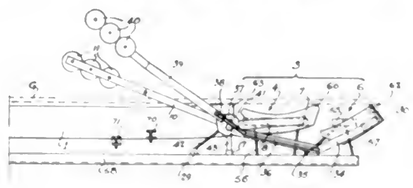
1. Apparatus for molding glass which comprises a series of molds attached to a table which is horizontally rotatable about a first axis, said molds being at equal distances from said axis, means for rotating said table about said first axis to impart a predetermined linear velocity to said molds and to move said molds in succession through a loading zone, a plurality of paddles having substantially vertical surfaces as their trailing surfaces revolvable above said molds about a second axis, means for revolving said paddles about said second axis in succession through said loading zone with linear velocities equal to said predetermined linear velocity, means for synchronizing a paddle over each of said molds as it passes through said loading zone, and a chute having a discharge end above the entrance to said loading zone and facing in the general direction of motion of said paddles in said loading zone and facing said trailing surfaces at said loading zone.

3,162,523
BENDING GLASS
Harold E. McKelvey, Box 82, Rural Valley, Pa., and David H. Doehlert, 360 Vernon St., New Kensington, Pa.
Original application June 15, 1956, Ser. No. 591,696, now Patent No. 2,901,866, dated Sept. 1, 1959. Divided and this application Jan. 7, 1959, Ser. No. 796,716
7 Claims. (Cl. 65—289)



1. In a glass bending mold having an upper shaping surface conforming in elevation and outline to the shape desired for the margin of a bent glass sheet, the improvement comprising hinge support means secured to each mold extremity and extending longitudinally outwardly thereof, hinge means attached to the outermost extremity of said hinge support means, a pivotable glass edge contacting member pivotably mounted to said hinge means beyond each mold extremity to rotate relative to its adjacent mold extremity, said glass edge contacting member including first means for supporting the bottom surface of a longitudinal extremity of the glass sheet and second means angularly disposed relative to said first means, and means attached to said glass edge contacting member for urging said glass edge contacting member to pivot from a first position wherein said first means supports the bottom surface of an extremity of a flat glass sheet mounted on the mold for bending into a second position wherein the second means contacts the upper edge corner of said extremity to pinch the glass sheet extremity against an extremity of the mold.

3,162,524
GLASS BENDING MOULDS
Ronald E. Richardson, Oshawa, Ontario, Canada, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa.
Filed Sept. 13, 1960, Ser. No. 55,743
Claims priority, application Canada July 21, 1960
12 Claims. (Cl. 65—290)



1. A concave glass bending mould of the multi-part skeleton type movable between an open position for receiving a sheet of flat glass thereon and a closed position peripherally defining a curved contour to which the glass is to conform after bending, said mould including a main mould portion comprising a pair of laterally spaced, generally parallel, continuous, elongated glass supporting side members, and an end mould section comprising at least two continuous, elongated, auxiliary mould portions situated longitudinally outboard of an end of said elongated glass supporting members, each auxiliary mould portion, comprising an elongated glass supporting member having a continuous upper surface defining a continuous portion of the curved contour, said auxiliary mould portions being adapted to co-operate with each other in the closed condition of the mould to form a substantially continuous glass supporting surface extending between an end of a first side member of said pair and the corresponding end of a second side member of said pair, means pivotally mounting each of said auxiliary mould portions for movement relative to said main mould portion between open and closed position independently of the movement of the remainder of said auxiliary mould portions, and means connected to each auxiliary mould portion for urging each of the latter to its closed position.

3,162,525
METHOD FOR THE CONTROL OF PLANT GROWTH
John Keith Leasure, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 6, 1962, Ser. No. 185,518
8 Claims. (Cl. 71—2.7)

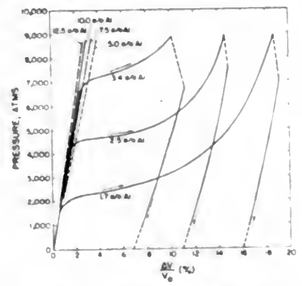
1. A method for the control of plant growth which comprises spraying the above-ground portions of plants with an aqueous solution containing a herbicidal amount of a compound selected from the group consisting of aminooxyaliphatic acids having the formula

wherein R is selected from the group consisting of hydrogen and methyl, and water-soluble alkali metal and hydrochloride, hydrobromide and sulfuric acid salts thereof.

3,162,526
METHOD OF DOPING SEMICONDUCTOR MATERIALS
Milton C. Vanik, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,310
16 Claims. (Cl. 75—65)

1. Process for doping semiconductive bodies which comprises heating a semiconductive body to a temperature no greater than about 50° C. below its melting point, passing over said heated body an inert carrier gas containing from about 0.1 to about 10 percent by volume of a doping substance, said gas being passed over said body for a sufficient period of time to react said doping substance with said body, cooling the surface-reacted body to ambient temperatures, and zone-refining said cooled surface-reacted body.

3,162,527
PLUTONIUM ALLOYS CONTAINING CONTROLLED AMOUNTS OF PLUTONIUM ALLOTROPES OBTAINED BY APPLICATION OF HIGH PRESSURES
Reed O. Elliott and Karl A. Gschneidner, Jr., Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 2, 1959, Ser. No. 817,679
4 Claims. (Cl. 75—122.5)

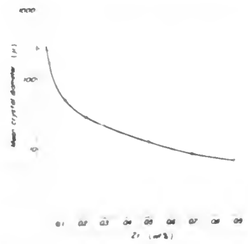


1. A method of making stabilized binary alloys of plutonium with said binary element being selected from the class consisting of aluminum, zinc, and gallium, said element being present in said alloy in the range of 1.0 to 4.0 atomic percent, whereby a controlled mixture of alpha and delta phases are obtained in such alloys, the method consisting of continuing to compress said alloy to at least a pressure marked by rapid increase in density of the alloy with a negligible increase in pressure, and wherein the resulting volume decrease of the alloy with increasing pressure is negligible.

3,162,528
PRODUCTION OF URANIUM-CARBON ALLOYS
Jack Williams, Abingdon, and Charles Brian Davis, Didcot, England, assignors to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Sept. 2, 1960, Ser. No. 53,634
Claims priority, application Great Britain Sept. 8, 1959
3 Claims. (Cl. 75—122.7)

1. A method for producing a uranium-carbon alloy of high density and low porosity comprising mixing a uranium metal powder and carbon powder with one another, cold compacting the mixture, passing the compacted mixture to a sintering zone maintained at the time of passing of the mixture at a temperature within the range of about 1000–1125° C., permitting the temperature of the compact in the sintering zone to rapidly rise for a short period of time solely as a result of the exothermic heat generated by the reaction of the mixture at a rate greater than about 100° C. per minute to a temperature between about 1200–1450° C., and thereafter heating the mixture in said sintering zone at a temperature in the range of about 1000–1125° C. for a period of time sufficient to effect a complete sintering of the mixture.

3,162,529
AGE-HARDENING Cu-P-Ni ALLOY CONTAINING Zr
Toshio Doi, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 7, 1963, Ser. No. 263,668
Claims priority, application Japan Mar. 10, 1962
4 Claims. (Cl. 75—153)



1. An age-hardening copper alloy consisting essentially, by weight, of from 0.5% to 1.5% of nickel, from 0.1% to 0.3% of phosphorus, and from 0.5 to 0.3% zirconium, the balance consisting essentially of copper and including traces of silver, cobalt, chrome and beryllium.

3,162,530
FABRICATION OF Cr-Y SHEET
Robert W. Harrison, Portland, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,840
9 Claims. (Cl. 75—214)

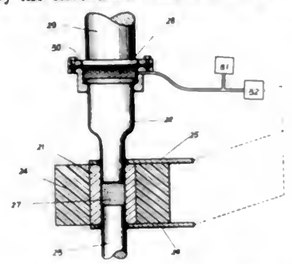
1. A binary sintered alloy of chromium-yttrium consisting of Cr-1 w/o Y having less than 100 p.p.m. nitrogen and having a density of approximately 100% of theoretical maximum density and having extreme ductility enabling sheath rolling into a stampable 8 mil sheet.

3. A ductile sintered alloy of chromium-yttrium consisting of Cr-1 w/o Y having less than 100 p.p.m. nitrogen and having a density of approximately 7.16 g./cc. and a grain size less than ASTM 7.

3,162,531
METHOD FOR THE PRODUCTION OF SEMICONDUCTOR ELEMENTS MADE OF AN INTERMETALLIC COMPOUND
Masaru Yamano, Hirakata, Osaka, and Eiichi Komatsu, Goganzuka, Itami, Japan, assignors to Sanyo Electric Co., Ltd., Moriguchi, Osaka, Japan
Filed Mar. 30, 1961, Ser. No. 99,466
4 Claims. (Cl. 75—226)

1. A method for the production of semiconductor thermoelements made of intermetallic compounds which comprises preparing a mixture in powder form of the component elements bismuth and a member selected from the group consisting of tellurium, selenium, antimony, and mixtures of the foregoing, compressing said mixture in a die, heating said mixture while under pressure in said die to an ignition temperature at which an exothermic reaction occurs between the component elements to form an intermetallic compound, permitting the exothermic reaction to proceed rapidly to completion with evolution of heat and expansion of the contents of the die, and

simultaneously forming the hot intermetallic compound formed by the exothermic reaction into a define shape by



hot-pressing through the utilization of the heat and expansion force given off by the exothermic reaction.

3,162,532
PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHIC PURPOSES
Helmut Hoegl, Wiesbaden, and Wilhelm Neugebauer, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey
No Drawing. Filed June 13, 1960, Ser. No. 35,417
Claims priority, application Germany June 25, 1959
20 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a solid polymer of at least one monovinyl aromatic polynuclear hydrocarbon and at least one compound selected from the group consisting of dyestuff sensitizers and activators for the photoconductor.

3,162,533
METHOD AND MEANS FOR CONTROLLING PHOTOGRAPHIC MASKS AND COLOR SELECTIONS
Paul Pieter De Pelsmaker, Edegem-Antwerp, and Joseph Louis De Kerf, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian Company
Filed Oct. 3, 1960, Ser. No. 59,790
10 Claims. (Cl. 96—6)



1. A method for controlling photographic color reproductions on a photosensitized masking film with a control member consisting of a first grey area of fixed photographic density and a second grey area of a photographic density less than the density of said first grey area, the steps comprising exposing the masking film to the image of the object to be photographically reproduced and to the image of the control member to form simultaneously on said masking film a photographic image of the object to be photographically reproduced and a photographic image of said control member, the time of exposure of said film to said images being set to form an image on said film of the first grey area of said control member which, when said film is developed, will give a developed image of said first grey area within a predetermined density range, placing said exposed film in a developing solution to develop on said film the photographic images of said object and said control element, fixing said developed film, said film being suitable for further use in photographic reproduction processes, if the image of the second grey area of said control member has a density differential within a predetermined density range when compared with the density of the image of the first grey area.

3,162,534
PHOTOGRAPHIC DEVELOPER
Augustin J. Powers, Jr., Old Brookville, and George Schwarz, Glen Head, N.Y., assignors to Powers Chemco, Inc., Glen Cove, N.Y., a corporation of New York
No Drawing. Filed June 26, 1962, Ser. No. 205,215
6 Claims. (Cl. 96—66)

1. A process for reenergizing and maintaining the activity of a hydroquinone containing carbonyl-bisulfite developer for lithographic film, the hydroquinone being the sole developing agent, which comprises adding to the developer, after some film has been developed therein, an aqueous solution consisting essentially of from 0.5 to 10 grams of an alkali metal sulfite and from 0.1 to 3.2 grams of an alkali metal hydroxide per liter of developer, the said aqueous solution being substantially free of hydroquinone and other organic developing agents.

3,162,535
PREPARATION OF DIRECTLY CONSUMABLE FOOD RATION WHEAT PRODUCTS
Robert E. Ferrel, Richmond, Calif., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Feb. 12, 1962, Ser. No. 172,830
2 Claims. (Cl. 99—80)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for preparing a directly-consumable food ration which comprises providing grains of dry, parboiled wheat having a dense, vitreous texture and a moisture content about from 6 to 14%, contacting said wheat with a current of air having a temperature about from 400 to 650° F. for a sufficiently long period of time whereby the grains are expanded to form porous grains having the same shape as the original grains, the expansion causing the formation of a multitude of small spheroidal voids uniformly dispersed throughout the interior of the grains, said porous grains having a volume of about 1.5 to 2 times that of the original grains and being readily rehydratable and consumable without cooking, grinding said expanded wheat to form a mixture having a range of particle sizes from half-grains and quarter-grains to 60-mesh particles, admixing said ground material with an edible binder and compressing the mixture into a self-sustaining shape.

3,162,536
METHOD FOR PRODUCING ALIMENTARY PASTE FOODS FROM STARCHY FLOURS OF LOW PROTEIN CONTENT
Ernst Kaufmann, Sankt Gallen, Switzerland, assignor to Gebrueder Buehler, Uzwil, Switzerland, a Swiss firm
Filed Oct. 18, 1960, Ser. No. 63,297
Claims priority, application Switzerland Oct. 19, 1959
6 Claims. (Cl. 99—85)

1. A method for producing paste foods from starchy, low protein flour selected from the group consisting of manioc tubers, peantus, chestnuts, potatoes and mixtures

and blends thereof comprising, the steps of intimately mixing such flour with water at a temperature of from approximately 80° to 100° C. for approximately twenty minutes to form a dough, vacuum treating said dough to remove free water therefrom, pressing the vacuum treated dough and, while pressing the vacuum treated dough, increasing the temperature of said dough to approximately 80° C., extruding said pressed and heated dough, cutting said extruded dough into lengths and, thereafter, drying said extruded and cut dough to reduce the moisture content thereof to an ultimate moisture content of 10% to 12% by weight of the dried dough.

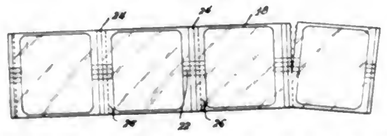
3,162,537
PROCESS FOR REMOVAL OF SUGARS BY ENZYMATIC ACTION
Don Scott, Chicago, Ill., assignor to Fermco Laboratories, Inc., a corporation of Illinois
No Drawing. Filed Feb. 8, 1962, Ser. No. 171,804
8 Claims. (Cl. 99—113)

1. The process of removing an aldose from liquid whole egg containing fat formable into discrete globules at temperatures in the range between about 30° F. and about 65° F., which comprises admixing with said liquid whole egg when said liquid whole egg is being maintained at a temperature in the range between about 30° F. and about 65° F., an enzyme system having aldose oxidase activity, saturating the liquid admixture with respect to oxygen and maintaining discharge of gas from said admixture in quantities to maintain foaming throughout the reaction period, whereby particulate material is floatable from the admixture and removable from the system.

3,162,538
VEGETABLE BASE FOOD COLORING FOR OLEOMARGARINE AND THE LIKE
Paul H. Todd, Jr., Kalamazoo, Mich., assignor to Kalamazoo Spice Extraction Company, Kalamazoo, Mich., a corporation of Michigan
No Drawing. Filed Apr. 26, 1962, Ser. No. 190,226
9 Claims. (Cl. 99—148)

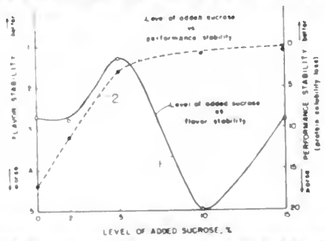
1. An edible oil product, colored with a stable coloring composition and having a coloring due essentially to the bixin dissolved therein, containing about four to about eight parts per million of normally unstable bixin and about four to about eight parts per million of curcumin, the curcumin being present in an amount between about one part of curcumin for each 3.3 parts of bixin and about three parts of curcumin for each part of bixin, the curcumin present in the said edible oil product serving to stabilize the normally unstable bixin against deterioration and to prevent undesirable reddening-out of the bixin pigment and thus to extend the shelf-life of the bixin-colored edible oil product.

3,162,539
PACKAGING ARRANGEMENTS
John P. Repko, Parma, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,509
1 Claim. (Cl. 99—171)



A plurality of interconnected packets of heat sealed plastic material capable of being stacked in folded condition, each packet containing a food product and connected at opposite ends in sequential order to an adjacent packet forming a strip package arrangement and each readily separable from said arrangement as an opened packet comprising a plurality of individual food products with a strip of heat sealable plastic material wrapped about said food products and having its longitudinal edges overlapped and heat sealed together providing a longitudinal seam and transverse heat seals formed between each of said packets containing said food products, and perforated tear lines formed adjacent each of said transverse heat seals whereby each packet of said plurality of interconnected packets may be simultaneously opened and easily torn from its adjoining packet in said arrangement.

3,162,540
DRYING OF YOLK-CONTAINING EGG LIQUID
Leo Kline, El Cerrito, and Takashi F. Sugihara, Richmond, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Nov. 8, 1961, Ser. No. 151,113
13 Claims. (Cl. 99—210)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method for determining the proportion of a water-soluble carbohydrate to be added to yolk-containing egg liquid, containing at least 5% egg lipids on a solids basis, prior to drying in order to prepare a dried egg product that exhibits maximum flavor stability combined with high performance quality and stability, which comprises adding graded levels of a selected water-soluble carbohydrate to samples of the egg liquid, drying the carbohydrate-containing samples of egg liquid, and ascertaining the state of the fat in the dried samples, the highest amount of added carbohydrate consistent with existence of the fat largely in the form of globules coalesced at or near the surfaces of the particles of egg material denoting the level of added carbohydrate which will provide a dried product of maximum flavor stability and high performance quality and stability.

3,162,541
METHOD OF COLORING FOODS AND OTHER MATERIALS AND THE RESULTING PRODUCT
Orlando A. Battista, Drexel Hill, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed July 3, 1961, Ser. No. 121,302
6 Claims. (Cl. 106—165)

1. A uniformly colored material having uniformly distributed therethrough level-off D.P. cellulose crystallite aggregates having an average level-off D.P. of 15 to 375 in finely divided form having particle sizes below the limits of discrimination by the unaided eye, said aggregates uniformly carrying a coloring material.

3,162,542
PATCHING COMPOUND
Donald E. Christensen, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
No Drawing. Filed June 5, 1961, Ser. No. 115,044
5 Claims. (Cl. 106—200)

1. A composition of matter consisting essentially of from 35 to 65% by weight of a coniferous bark fraction

and from 55 to 35% by weight of a resin selected from the group consisting of rosin and lime-treated rosin, said bark fraction comprising at least 60% by weight coniferous bark cork mixed principally with sclerenchyma tissue.

3,162,543
COATED PAPER PRODUCTS AND COATING COMPOSITIONS AND METHOD THEREFOR

Colbert W. Wilkins, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,565
8 Claims. (Cl. 117—76)

7. The method of preparing a paper product which is characterized by being anti-stick and bleed-proof in nature which comprises applying to said product a first coating of the following composition:

Component—	Parts by weight
Acetylated starch, solids	1.4–2.0
Thermoplastic resin, solids	0.2–0.7
Water	7–16

thereafter applying a second coating of the following composition:

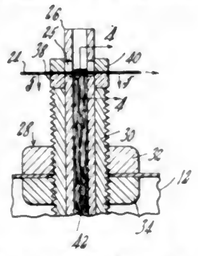
Component—	Parts by weight
Acetylated starch, solids	0.9–2.75
Thermoplastic resin, solids	.3–1.5
Water	8
Polysiloxane resin, solids	.1–.3

in which the ratio by weight of the first coating to the second coating is about 5:1 and thereafter heating the coated paper product at about 200° F. for about 5 minutes.

3,162,544
THREAD LUBRICATING DEVICE

Arthur J. Cobert, 309 S. Union St., Concord, N.C.

Filed Oct. 8, 1962, Ser. No. 228,828
4 Claims. (Cl. 118—125)



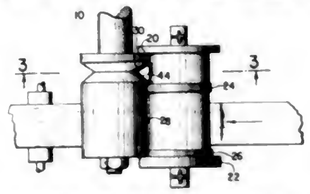
1. A device for lubricating thread in transit having in combination a lubricant container, a capillary tube having formed adjacent the upper end thereof an aperture adapted to permit passage of the thread transversely through said tube, guiding and stripping means for the thread passing through said aperture, a wick extending from said container upwardly through said tube to a point the thread is guided, said capillary tube having an internal slightly beneath and out of contact with the path in which wall of a substantial diameter chosen for raising the lubricant level above said wick into the path of travel of said thread.

3,162,545
APPARATUS FOR COATING A MOVING WEB WITH ADHESIVE

George Dearsley, London, England, assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Dec. 5, 1960, Ser. No. 73,867
5 Claims. (Cl. 118—203)

4. In apparatus for applying adhesive to the upper side of an endless web of cigarette paper, the combination of a first rotatably driven roller for applying said adhesive to said web and of a second rotatable roller resiliently urged thereagainst to form a bight therebetween, flanges on said second roller at each end thereof overlapping the ends of said first roller to be driven thereby, raised lands on said second roller in contact with said first roller to provide a space therebetween, a single annular V-shaped groove in said first roller, near an end of said first roller,

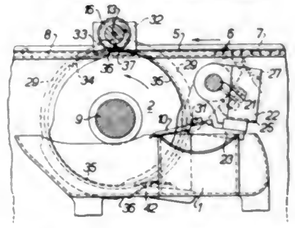


means for supplying to the bight of said rollers a quantity of adhesive in excess of that applied to said web and scraping means, shaped to conform to said groove, mounted below said groove for collecting surplus adhesive in the bight of said rollers carried through said groove by gravity and by the movement of said rollers to be returned by gravity to said feeding means.

3,162,546
APPARATUS FOR APPLYING PATCHES OF ADHESIVE TO BLANKS IN AUTOMATIC MACHINES

Albert George Jefferys, London, England, assignor to Molins Machine Company Limited, London, England, a British company

Filed May 22, 1962, Ser. No. 196,673
Claims priority, application Great Britain, June 1, 1961, 19,799/61
3 Claims. (Cl. 118—212)



1. Apparatus for applying patches of adhesive to both sides of a blank, comprising an adhesive container and a rotatable plate having in irregular periphery, at least one part of which is shaped to constitute an adhesive-applying sector, the remainder of the periphery being of less radius than any such sector, said plate being arranged to dip into adhesive in the container, a doctor movable to doctor the periphery of the plate as it rotates, excepting at least part of such adhesive-applying sector, means for moving the doctor, and means for moving the blank past the plate for adhesive application by said adhesive-applying sector to one side of said blank, and a transfer device arranged to receive adhesive from part of the sector and apply it to the reverse side of said blank.

3,162,547
SECONDARY DEOXIDIZER FOR ALUMINUM AND ITS ALLOYS

Earl W. Kendall, San Diego, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California

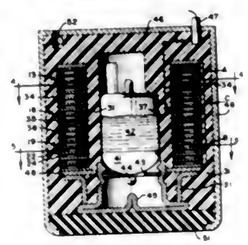
No Drawing. Filed July 31, 1961, Ser. No. 127,852
2 Claims. (Cl. 134—3)

1. The secondary method of cleaning the oxide coating and grease and oil contaminants from a pre spot weld surface area of aluminum and its alloys which comprises the steps of applying by hand to said surface area a non-toxic, non-etching, aqueous secondary deoxidizer solution operating at ambient temperature of the order of 65° to 90° F. and consisting of from 5 to 15% by weight of citric acid, from 2 to 10% by volume of triethylene glycol, from 0.5 to 1.0% by volume of a non-ionic alkylphenoxy polyethoxy ethanol wetting agent, and the balance demineralized water, allowing said solution to remain on said surface area for a period of from 3 to 5 minutes, and at the end of said period removing said solution with a water-dampened towel, and drying said surface area with a dry towel and in a wiping action sufficient to remove said solution except for a remaining protective film of said acid.

3,162,548
RESERVE ENERGIZER

Roswell J. Bennett, Lakewood, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 23, 1961, Ser. No. 147,107
1 Claim. (Cl. 136—90)

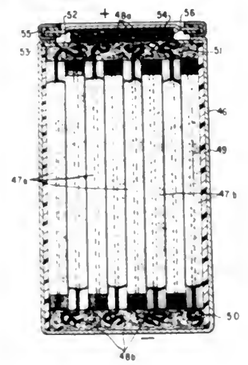


A reserve energizer for use as a power source in a spin-type projectile; said energizer comprising a plurality of annular parallel connected cells forming the filament heater section of the energizer, a plurality of semi-annular series connected cells forming the grid bias section and the high voltage section of said energizer, said annular parallel connected cells and semi-annular series connected cells located adjacent each other and being formed by an annular stack of spaced energizer plates, a jacket of impervious insulating material surrounding the outer circumference of said stack, a cylindrical compartment of impervious insulating material eccentrically disposed within said annular stack, said compartment having a pair of fill channels therein located wholly within a semi-cylindrical wall of said compartment and arcuately spaced less than 180° apart, said fill channels wholly interrupting said compartment adjacent said annular stack, paper separator means disposed between adjacent plates comprising said semi-annular series connected cells and having a pair of arcuate openings therethrough eccentric to said jacket, said separator means further having a pair of entry ports each communicating respectively with a different one of said arcuate openings at sections of maximum width thereof, said entry ports being positioned at closely adjacent points on the inner periphery of said separator means and each aligned with and abutting, respectively, a different one of said fill channels, paper separator means additionally disposed between adjacent plates comprising said parallel connected cells and having a pair of arcuate openings therethrough concentric with said jacket, a frangible ampule containing an electrolyte located in said eccentrically disposed compartment, means for breaking said ampule upon being properly accelerated, whereby said electrolyte will flow into said closely spaced adjacent entry ports in substantially equal quantities during off center spins of said energizer.

3,162,549
PROCESS FOR MANUFACTURING ELECTRODES FOR PRIMARY AND SECONDARY CELLS AND CELLS PRODUCED THEREWITH

Robert Achille Antoine Jeannin, Paris, France, assignor to Société des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France

Filed July 24, 1962, Ser. No. 211,992
Claims priority, application France, July 25, 1961, 868,978; Jan. 5, 1962, 884,003; Jan. 12, 1962, 884,742
35 Claims. (Cl. 136—175)

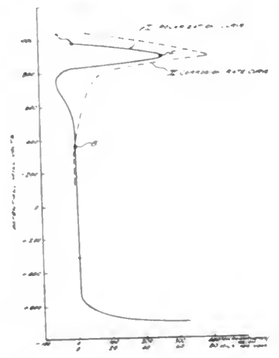


1. In a process for manufacturing wire type electrodes for primary and secondary cells, the steps comprising passing a conductive wire through a suspension of a coating material including active electrode material, drying the coated wire, thereafter applying an insulating covering to the coated dried wire, then severing the so-treated wire into prescribed lengths, baring a portion of the wire at one of the cut ends of each severed length and covering its other cut end with protective insulation.

3,162,550
PROCESS OF PREVENTING CORROSION OF FERROUS METAL BY AN AQUA AMMONIA SOLUTION

Louis M. Dvoracek, Brea, and Loren L. Neff, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 8, 1961, Ser. No. 108,646
5 Claims. (Cl. 148—6.14)



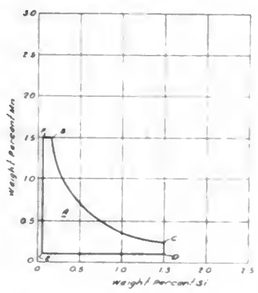
2. The method of preventing corrosion of ferrous metals by an aqua ammonia solution consisting essentially of water and ammonia that comprises:

(1) subjecting said ferrous metal to a passivating treatment by contact with a solution of a strong oxidizing agent to impart to said metal a potential when immersed in said solution that is more electropositive than the Flade potential of said metal in said solution;
(2) exposing said ferrous metal in said passivated state to contact with said aqua ammonia solution; and
(3) preventing said corrosion during said contact with said aqua ammonia solution by maintaining said aqua ammonia solution saturated with oxygen throughout the period of said contact by the introduction of oxygen gas into said solution.

3,162,551
SOLDER
Oliver A. Short, Brookmeade, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,907
8 Claims. (Cl. 148—24)

1. An air-drying electrically conducting solder consisting essentially of 60% to 90% by weight of precipitated silver powder having an apparent density of 2 to 5 grams per ml. and 10% to 40% of a vehicle consisting essentially of 10% to 60% by weight of polyvinyl acetate dissolved in 90% to 40% by weight of a volatile solvent therefor.

3,162,552
MAGNESIUM-BASE EXTRUSION ALLOY
George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 2, 1961, Ser. No. 114,508
7 Claims. (Cl. 148—32)



6. The magnesium base alloy in extruded form which consists essentially of, by weight, from 0.05 to 1.5 percent of silicon, at least one of the ductility imparting metals selected from the group consisting of manganese and aluminum, the amount of aluminum in the presence of at least 0.1 percent of manganese being not more than 1.5 percent and in the absence of manganese being from 0.2 to 1.5 percent, and the amount of manganese in the presence of at least 0.2 percent of aluminum being not more than 1.5 percent and in the absence of aluminum being from 0.1 to 1.5 percent, and the amount of both manganese and silicon not exceeding that which is mutually soluble in molten magnesium at casting temperatures, and the balance being substantially magnesium, said alloy having been pushed through an extrusion die at a speed in the range of 50 to 100 feet per minute while the alloy was at an elevated temperature above 550° F.; the extruded alloy being weldable without stress relief and having a compression yield strength of at least 17,000 pounds per square inch.

3,162,553
PRODUCTION OF GRAIN ORIENTED ELECTRICAL STEELS WHEREIN A PRECONDITIONING STEP IS EMPLOYED PRIOR TO DECARBURIZING
Peter N. Richards and Donald Ian Cameron, Merewether, New South Wales, Australia, assignors to John Lysaght (Australia) Limited, Sydney, New South Wales, Australia
No Drawing. Filed Aug. 21, 1962, Ser. No. 220,118
Claims priority, application Australia, Aug. 22, 1961, 8,333/61
3 Claims. (Cl. 148—112)

1. A method of making grain oriented electrical steel from hot strip comprising the steps of cold reducing the hot strip to an intermediate thickness, heating said strip from about 700° C. to about 900° C., cooling said strip to room temperature, and coating said strip with Fe_2O_3 to form a decarburizing medium so as to precondition the strip, heating the coated strip within the range from about 600° C. to 750° C. to decarburize the strip, cold reducing the strip to a final thickness and heat treating the strip to effect primary and secondary recrystallization and purification.

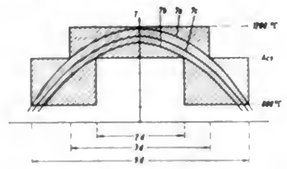
3,162,554
HEAT TREATMENT OF GRAIN ORIENTED STEEL TO OBTAIN A SUBSTANTIALLY CONSTANT MAGNETIC PERMEABILITY
Peter G. Frischmann, Schenectady, and John L. Walter, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Original application Oct. 5, 1960, Ser. No. 60,720. Divided and this application Apr. 1, 1963, Ser. No. 269,645
2 Claims. (Cl. 148—113)



1. In the method for producing cube-on-edge oriented silicon-iron alloy bodies of up to 0.015 inch thickness consisting of from 4 to 6 weight per cent silicon, remainder substantially all iron, and containing not more than about 0.010 weight per cent incidental impurities having a substantially constant magnetic permeability, the steps comprising preparing cube-on-edge oriented bodies of up to 0.015 inch thickness, and heating said bodies in dry hydrogen at from 1100 to 1350° C. for not less than about one-quarter hour in the presence of a small percentage of oxygen to develop substantially constant magnetic permeability.

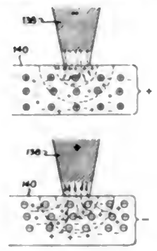
3,162,555
METHOD FOR HEAT TREATING WELDED METAL PLATES
Heinz Alfred Barth, Pullach, near Munich, Germany, assignor to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Hollriegelskreuth, near Munich, Germany, a company of Germany
Filed Feb. 19, 1962, Ser. No. 174,224
Claims priority, application Germany, July 9, 1958, G- 24,879
2 Claims. (Cl. 148—145)

1. A method of normalizing welded plates of steel exhibiting an Ac_3 characteristic upon heating wherein a welded seam and a primary band on both sides of the welded seam are heated to a temperature above the Ac_3-point and two secondary bands adjoining said primary band on both sides are heated to a temperature below the Ac_3-point, which comprises exposing the welded seam and the adjacent bands to a heat source thereby heating the welded seam and said primary band to a temperature above the Ac_3-point and the two secondary bands to a temperature below Ac_3-point, and effecting progressive relative movement between said welded plate and said heat source to form a primary band which ranges in



width from two to three times the thickness of the plate and the total width of said primary and said secondary bands is maintained at a maximum at five times the thickness of the plate.

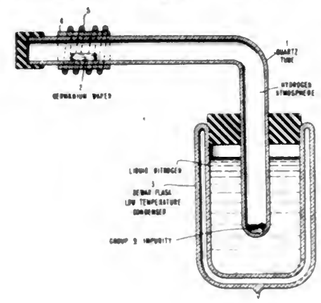
3,162,556
INTRODUCTION OF DISTURBANCE POINTS IN A CADMIUM SULFIDE TRANSISTOR
Leonard E. Ravich, Brookline, Mass., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Original application Jan. 7, 1953, Ser. No. 329,973. Divided and this application July 8, 1959, Ser. No. 825,801
14 Claims. (Cl. 148—174)



1. In a method producing a cadmium sulphide transistor, the steps of: providing a vapor of cadmium sulphide without decomposition thereof; producing condensation of such vaporized cadmium sulphide at a region maintained at an appropriately high temperature above room temperature and lower than vaporization temperature of cadmium sulphide to permit proper molecular orientation to promote crystalline growth; introducing disturbance points of a first polarity substantially uniformly distributed therethrough by regulating the temperature to which the crystal is raised and its rate of cooling; and then introducing disturbance points of the opposite polarity into a zone of said crystal by diffusion.

3,162,557
SELECTIVE REMOVAL OF IMPURITIES FROM SEMICONDUCTOR BODIES
Geoffrey E. Brock, Mount Kisco, and Gene A. Silvey, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 13, 1961, Ser. No. 158,962
7 Claims. (Cl. 148—191)

1. A process for *out-diffusing* an impurity from *an elemental* semiconductor body comprising the steps of, providing a reaction container having a first temperature zone wherein a semiconductor body containing said impurity is situated, introducing hydrogen into said reaction container at a predetermined pressure, out-diffusing the impurity by heating said semiconductor body containing said impurity in the presence of said hydrogen whereby the surface energy barrier normally encountered in the out-diffusion of said impurity is minimized and the impurity is thereby removed from said semiconductor body, said reaction container having a second low temperature



zone wherein said impurity that is out-diffused from said semiconductor body is deposited.

3,162,558
MOLDABLE EXOTHERMIC COMPOSITION
Harold F. Bishop, Donald E. Wiley, and Michael Bock II, Conneaut, Ohio, assignors to Exomet Incorporated, Conneaut, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,516
5 Claims. (Cl. 149—2)

1. An exothermic article molded in the shape of molds, riser sleeves, cores, hot-tops, pads, and the like for metal casting, said exothermic article being formed of a composition comprising

	Range, percentage by weight
Aluminum, particles	18–40
Refractory particles	25–45
MnO_2	0.25–10
Iron oxide	5–30
Sodium chlorate	0.1–8
Alkali fluoride	0.1–8
Thermosetting resin	3–18

3,162,559
POLYAMIDE BASED SOLID PROPELLANTS
Richard O. Thomas, Arlington, James V. Duffy, Alexandria, and William D. Stewart, North Springfield, Va., assignors to Atlantic Research Corporation, a corporation of Virginia
No Drawing. Filed Feb. 19, 1960, Ser. No. 9,994
18 Claims. (Cl. 149—19)

1. A solid propellant consisting essentially of a finely divided, solid, inorganic oxidizer selected from the group consisting of salts and peroxides dispersed in a matrix of a polyamide fuel binder, said polyamide being selected from the group consisting of

(1) Interpolymers of
  (*a*) two compounds selected from the group consisting of alkylene dibasic acids and amide-forming derivatives thereof; and
  (*b*) two alkylene diamines;
(2) terpolymers of
  (*a*) an alkylene diamine,
  (*b*) a compound selected from the group consisting of an alkylene dibasic acid and an amide-forming derivative thereof, and
  (*c*) a compound selected from the group consisting of an amino acid in which the >N— and the

$$-C{=}O$$
$$\diagdown$$

group are connected by an alkylene group and an amide-forming derivative thereof;

(3) interpolymers of
(*a*) an alkylene diamine,
(*b*) two compounds selected from the group consisting of alkylene dibasic acids and amide-forming derivatives thereof;
(*c*) a compound selected from the group consisting of an amino acid in which the >N— and the

$$-C=O$$

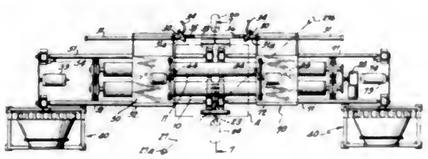
are connected by an alkylene group and amide-forming derivatives thereof;
(4) N-alkoxyalkyl derivatives of polyamides selected from the group consisting of
(*a*) the reaction product of
(*aa*) an alkylene diamine and
(*bb*) a compound selected from the group consisting of alkylene dibasic acid and amide-forming derivatives thereof, and
(*b*) the self polymer of a compound selected from the group consisting of amino acid in which the >N— and

$$-C=O$$

are connected by an alkylene group, and amide-forming derivatives thereof;
(5) N-alkyl derivatives of the reaction products of
(*a*) an alkylene diamine and
(*b*) a compound selected from the group consisting of alkylene dibasic acid and amide-forming derivatives thereof;
(6) interpolymers of
(*a*) an alkylene diamine,
(*b*) a compound selected from the group consisting of alkylene dibasic acid and amide-forming derivatives thereof, and
(*c*) an alkylene polyhydroxy alcohol,

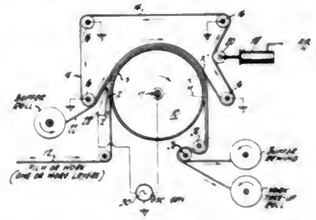
the oxidizer being present in amount sufficient to maintain active combustion of said fuel.

3,162,560
PAPER ROLL FINISHING APPARATUS
Paul M. Henson, Lynn Haven, Fla., and Joe Spivey, Jr., Pine Bluff, Ark., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed July 6, 1962, Ser. No. 207,908
20 Claims. (Cl. 156—361)



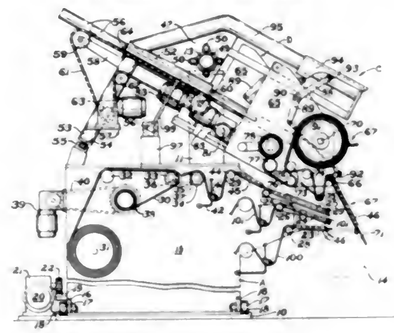
1. In a machine for finishing a roll of a web wound about a hollow core, in combination, a roll feed means responsive to gravity, a roll chocking means, a roll positioning means, a roll position sensing means, a roll chocking release means responsive to the roll position sensing means, a roll tail gluing sub-assembly responsive to the roll position sensing means, and two core plugging sub-assemblies responsive to the roll position sensing means wherein the roll tail gluing sub-assembly comprises a roll rotating means, a roll tail positioning means, and a glue application means and the core-plugging sub-assemblies comprise core plug orienting means, core plug pick-up means, core plug travelling means, and core plug inserting means.

3,162,561
HIGH FREQUENCY DIELECTRIC HEATING APPARATUS
Robert D. Farkas, 644 Derby Ave., Woodmere, N.Y.
Filed Mar. 9, 1961, Ser. No. 94,458
26 Claims. (Cl. 156—380)



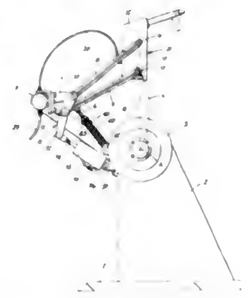
20. Dielectric heating apparatus for heating a dielectric work, means for continuously advancing said work comprising a pair of electrodes, one of said electrodes being stationary said electrodes spaced from each other to permit the insertion of said work therebetween, a high frequency generator coupled between said electrodes for producing a high frequency electric field therebetween of sufficient intensity to heat the work to plasticity, means for exerting pressure on the work and for impressing a pattern having high and low elevations in said work during the time said work is upon and continuously advancing between said electrodes, and means for cooling said work under pressure while solely in the areas of said impressed pattern after the work has been heated.

3,162,562
TIRE BUILDING STOCK SERVICER
Courtney H. Wenger, Cuyahoga Falls, and Walter F. Head, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 10, 1962, Ser. No. 229,711
8 Claims. (Cl. 156—406)



1. Apparatus for supplying sheet material to a rotatable building form, comprising a first portion movably mounted on said apparatus adjacent a rotatable building form, means on said apparatus to move said first portion in a first direction which direction is parallel to the axis of rotation of said guiding form, a second portion movably mounted on said first portion, means on said first portion operatively connected to said second portion to move said second portion in a direction perpendicular to the direction of movement of said first portion, at least one other portion movably mounted on said first portion, means on said first portion operatively to move said other portion in a direction perpendicular to the direction of movement of said first portion, and means to move said other portion relative to said first portion in a direction of movement parallel to the direction of movement of said first portion, and at least one sheet material letoff means mounted on each of said portions whereby various elements of sheet material may be sequentially supplied to said building form.

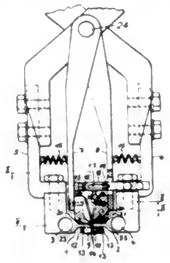
3,162,563
TREAD BUILDER FOR TIRE RETREADING
Ernst Roesch, Lodi, Calif., assignor to Super Mold Corporation of California, a corporation of California
Filed Oct. 29, 1962, Ser. No. 233,515
9 Claims. (Cl. 156—411)



1. A tire-tread builder comprising in combination, a pedestal, a wheel mounted on the pedestal adapted to support a tire for treading, a stitching head above the wheel including a casing adapted to straddle such tire, and opposed stitching rollers in the casing; means mounting the rollers in the casing for tilting movement in a vertical plane transversely of the tire, uniform pressure means acting on the rollers and resisting such tilting thereof, means mounting the head in connection with the pedestal for vertical reciprocating movement while maintaining the rollers in a plane radially of the wheel, and pressure means acting on the head mounting means tending to lower the head; the head mounting means comprising transversely spaced brackets mounted in a fixed position rearwardly of the pedestal and head, and upper and lower pairs of links pivoted at one end on the brackets and at the other end on the sides of the casing; the distance from the rear pivot of the lower links to the head pivot thereof being the same as the distance from said rear pivot to the axis of the wheel, and the upper links being pivoted relative to the lower links so as to maintain the rollers, as the head is swung up and down and the rollers become tilted, in a plane radially of the wheel; the rollers being mounted in the casing in axial alinement, when horizontally disposed, with the corresponding pivots of the lower links.

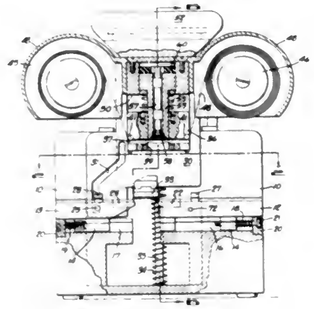
3,162,564
HEAT SEALING APPARATUS
Norbert Buchner, Hegnach, Waiblingen, Wurttemberg, Germany, assignor to Firma Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed Sept. 6, 1961, Ser. No. 136,348
Claims priority, application Germany Sept. 7, 1960
7 Claims. (Cl. 156—498)

1. Heat sealing apparatus comprising a movable sealing jaw with a leading sealing face, means for heating said sealing jaws, a counter member co-operating with said sealing jaw to grip thermoplastic sheet material to be sealed, a clamping jaw movable relatively to said sealing jaw and formed to engage the thermoplastic sheet material at the two sides of said sealing jaw, means for moving said sealing jaw and said clamping jaw respectively into engagement with, and away from, the thermoplastic sheet material, said means being arranged to retract said sealing jaw prior to the retraction of the clamping jaw, at least one weld-cooling nozzle on said clamping jaw, means



defining a supply of cooling air to said nozzle, and means controlling the operation of said nozzle in response to relative motion between the sealing jaw and the clamping jaw.

3,162,565
TAPE SPLICER
Armin Miller, Menlo Park, and Frank M. Goodrich, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 10, 1961, Ser. No. 101,882
6 Claims. (Cl. 156—506)

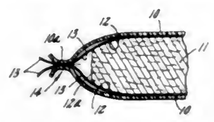


1. Apparatus for automatically trimming, positioning and splicing two sections of strip material comprising first and second means for respectively holding each section on a common plane, third means mounted transverse to the first and second means for transverse movement with respect thereto, therebetween, and at least partly beyond for trimming the ends of the sections, means respectively coupled between the second and third means for moving the second means into abutment with the first means after movement of said third means between and beyond said first and second means whereby the trimmed ends of the sections are brought together, splicing material being carried by the third means in parallel relation to the two sections, the third means being also for severing a portion of the splicing material, and for providing pressure between the severed portion of splicing material and the positioned trimmed ends of strip material whereby the two sections are secured together.

3,162,566
THERMAL INSULATING BLANKET FOR CONCRETE CURING

Isadore H. Katz, 312 S. New Jersey St., Indianapolis, Ind.

Filed Sept. 4, 1962, Ser. No. 221,179
3 Claims. (Cl. 161—43)

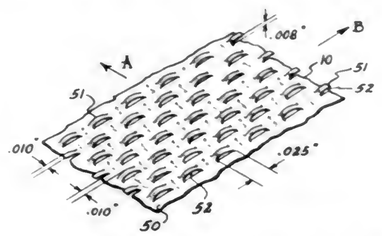


1. An insulating blanket consisting of a flattened, flexible and moisture impervious tube formed of polyethylene, an insulating component comprising a section of cohesive, fibrous material sized so as to substantially fill all of said tube except the marginal end areas thereof, a sheet of thin, flexible polyethylene adhered to each of the major surfaces of said fibrous material section, said sheets extending beyond the end margins of the fibrous material section to provide stacked flaps extending between the adjacent marginal end areas of the tube, the stacked flaps and adjacent marginal end areas at each end of the tube being sealed together to provide an enclosure for the insulating component, whereby said insulating component is anchored at its ends to said tube but can shift intermediate its ends upon distortion of the tube.

3,162,567
PAPERMAKING MACHINE FORMING MEMBER

Harold H. Heller, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed May 18, 1961, Ser. No. 110,982
3 Claims. (Cl. 162—348)



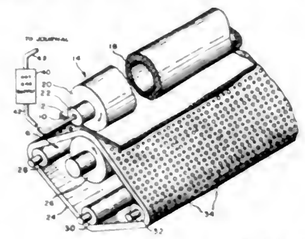
1. A perforate stock draining support for forming a web of a fluent mass of fibers and water comprising a belt of flexible sheet material, said belt having arched portions thereof extending out of the plane of the sheet material so as to provide drainage openings beneath the arched portions which are at angles to the plane of the sheet material.

3,162,568
PRESS UNITS FOR MOISTURE REMOVAL

James E. Post, Samoset Road, Box 367, South Duxbury, Mass.

Filed Mar. 23, 1961, Ser. No. 97,914
3 Claims. (Cl. 162—358)

1. A press assembly for use in extracting liquid from a moving web of material comprising, in combination, an upper press unit and a lower press unit, said units defining a nip therebetween, said upper press unit comprising a hollow roll of sintered metal having a predetermined porosity and means for heating said roll at least in the area of and adjacent the nip, said lower press unit comprising an endless belt of a resilient material and a plurality of rolls around which said endless belt travels, said endless belt having circumferentially and widthwise on the outer surface thereof a profusion



of holes of a depth which is less than the thickness of said endless belt.

3,162,569
METHOD OF SELECTIVELY DESTROYING PARASITE-CARRYING MOLLUSKS AND THE LIKE

Sébastien Pastac, 27 Rue Rieussec, Viroflay, France

No Drawing. Filed May 11, 1962, Ser. No. 194,166
16 Claims. (Cl. 167—16)

1. A method of selectively destroying parasite-carrying mollusks in a body of mollusk-infested water, comprising the step of introducing into said body of water a suspension of cuprous oxide in a quantity between substantially 1 and 50 weight parts per million of the water.

3,162,570
ORGANOPHOSPHORUS COMPOUNDS AS INSECTICIDES AND NEMATOCIDES

John Henry Wilson, Jr., Richmond, Va., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed May 21, 1962, Ser. No. 196,492
11 Claims. (Cl. 167—22)

1. A method of controlling insects and nematodes which comprises applying thereto a pesticidal amount of a compound of the formula

RPX

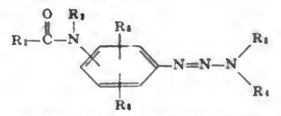
wherein R is an alkyl group containing from 1 to 6 carbon atoms and X is a member of the group consisting of $-(SR')_2$, $-(S)(SR')_2$ and $-(O)(SR')_2$, in which R' is an alkyl group containing from 1 to 6 carbon atoms.

3,162,571
METHOD OF PROTECTING PLANTS AND ORGANIC MATTER WITH SUBSTITUTED TRIAZENES

Frederic H. Adams, Bound Brook, N.J., and Donald P. Wright, Jr., New Canaan, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Sept. 24, 1959, Ser. No. 841,948. Divided and this application July 6, 1962, Ser. No. 213,839
8 Claims. (Cl. 167—30)

1. A method of protecting living plants and other organic matter from damage by insects, mammals and birds which infest living plants and other organic matter which comprises applying thereto in amounts which render such matter unappetizing to insects, mammals and birds which infest such matter a 1-(acylaminoaryl)-3,3-disubstituted triazene of the formula:



wherein R_1 is a member of the group consisting of hydrogen, phenyl and lower alkyl, R_2 is a member of the group consisting of hydrogen and lower alkyl, R_3 and R_4 are members of the group consisting of lower alkyl, hydroxy lower alkyl, benzyl, cyclohexyl, lower alkenyl and



when taken together form a six-membered heterocyclic ring, and R_5 and R_6 are members of the groups consisting of hydrogen, chlorine, lower alkyl and lower alkoxy.

3,162,572
HEXACHLOROPHENE COMPOSITION AND METHOD FOR RENDERING NATURAL BRISTLE BACTERIOSTATIC

Charles Lee Granquist, North Amherst, Mass., and John C. Lazanas, Chicago, Ill., assignors, by mesne assignments, to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 27, 1961, Ser. No. 155,202
5 Claims. (Cl. 167—38.7)

1. The method of rendering natural bristle material bacteriostatic which comprises immersing the natural bristle material for a period of 2 to 4 hours in an aqueous solution made up of one part of a hexachlorophene concentrate comprising 5 to 150 grams of borax, 150 millilitres of water, 150 millilitres of diethanolamine, 200 millilitres of diethylene glycol monoethyl ether and 150 grams of hexachlorophene, said concentrate being diluted with substantially 60 parts water with the addition of sufficient borax to bring the total borax content of the solution to 150 grams for each part of the concentrate used, and thereafter drying the bristle material.

3,162,573
INTERNAL TREATMENT OF ANIMALS WITH RESIN BIOCIDAL COMPOSITIONS

Robert J. Geary, Vero Beach, Fla., assignor to Plants Products Corporation, Long Island, N.Y., a corporation of New York

No Drawing. Filed Oct. 14, 1959, Ser. No. 846,276
14 Claims. (Cl. 167—53)

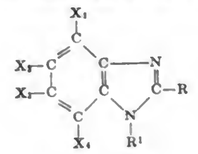
1. A method for the control of animal pests which comprises treating the animal pest internally with a composition comprising an amido-aldehyde resin having molecularly occluded therein a biocide effective against said pest, said composition being produced by the action of an acid catalyst on a substantially homogeneous mixture of said biocide and monomeric amido and monomeric aldehyde reactants capable of forming said resin in the presence of said catalyst.

3,162,574
ANTHELMINTIC COMPOSITION CONTAINING SUBSTITUTED BENZIMIDAZOLE AND PHENOTHIAZINE AND METHOD OF USING SAME

Bruce Adam Forsyth, Croydon, Victoria, Australia, assignor to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Victoria, Australia

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,858
Claims priority, application Australia, Apr. 24, 1962, 16,833/62
13 Claims. (Cl. 167—53)

1. A composition of matter comprising components A and B, where A is selected from the group consisting of 2-substituted benzimidazoles of the formula:



wherein X_1, X_2, X_3 and X_4 are selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy; R is selected from the group consisting of thiazolyl; thienyl; furyl; phenyl; o-methylphenyl; o-chlorophenyl; o-bromophenyl; o-nitrophenyl; p-aminophenyl; mono-lower alkylamino-phenyl; di-lower alkylamino-phenyl; and pyridyl; and R^1 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, and a $\beta\beta\beta$-trichloro-α-hydroxyethyl group; and the non-toxic acid addition salts of said benzimidazoles, and where B is phenothiazine.

3,162,575
METHOD OF CONTROLLING FACE FLIES ON LIVESTOCK

Dickson S. Lang, Kansas City North, Mo., assignor to Consumers Cooperative Association, Kansas City, Mo., a corporation of Kansas

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,942
2 Claims. (Cl. 167—53.2)

1. A method of controlling face flies on livestock comprising applying a composition to the area of the face of each of the animals adjacent its eyes, nose and mouth, said composition consisting essentially of, by weight, from ¼% to 1½ of dimethyl-dichloro-vinyl-phosphate, from 40% to 80% of microcrystalline wax having a melting point of about 160° F., from 10% to 60% of petroleum oil having a viscosity of approximately 80 SUS at about 210° F., and up to about 50% of particulate sugar.

3,162,576
GLYCERALDEHYDE AS A TOPICAL ANTI-INFLAMMATORY AGENT

Eldridge Myles Glenn, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

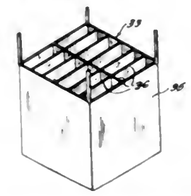
No Drawing. Filed Nov. 16, 1961, Ser. No. 152,940
3 Claims. (Cl. 167—58)

1. A method of local anti-inflammatory thereapy which comprises: topically applying glyceraldehyde at the side of the inflammation.

3,162,577
REACTOR CONTROL WITH THORIUM CONTROL GRID

William C. Redman, Hinsdale, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 6, 1963, Ser. No. 321,984
4 Claims. (Cl. 176—21)



1. A nuclear reactor comprising a core consisting of a plurality of vertically disposed clusters of fuel elements immersed in heavy water, said fuel elements being composed of a major proportion of thoria and a minor proportion of enriched urania and said core being of approximately twice the height required for criticality, and a control grid of thorium of slightly greater than one-half the height of the reactor core mounted for vertical movement within the core.

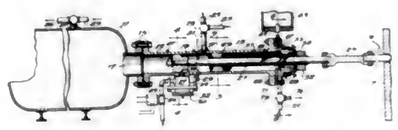
3. A method of operating a urania-thoria, heavy-water power reactor which is approximately twice the height required for criticality comprising adjusting a thorium

control grid so that one-half of the reactor is critical while the other half is not critical, operating the reactor for approximately 27 days, moving the thorium control grid to shut down the originally critical half of the reactor and make the other critical, again operating for 27 days, and repeating the procedure as long as criticality is attained.

3,162,578
REACTOR AND APPARATUS FOR CONTROL THEREOF

Abbott Allen, Medford, Mass., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 10, 1945, Ser. No. 582,091
1 Claim. (Cl. 176—36)



A control rod for use in a nuclear reactor comprising an elongated member of a material having high neutron capture capabilities and operating means for said control rod actuable to move said control rod at high speed, said operating means comprising an elongated cylinder having a gland outlet at one end thereof, a source of fluid pressure including a reservoir of large capacity containing compressed air attached to the end of the cylinder opposite the gland, a piston slidably mounted in the cylinder and a pusher rod mechanically connecting said piston to said control rod and adapted to pass through said gland outlet, said piston and rod being normally biased to an extended control position by fluid pressure from said source, a releasable latch mounted upon the cylinder and positioned to restrain the control rod in a retracted position, piston decelerating means comprising a vent in the cylinder disposed between the retracted and extended positions of the rod operating piston, means connecting the vent to a source of high-pressure air and to the atmosphere, a second piston surrounding said pusher rod and independently movable within said cylinder ahead of said rod operating piston, said second piston having a tubular extension surrounding said pusher rod extending through said gland outlet, stop means associated with said extension for restraining the movement of said second piston forward of said vent, a closed pressure chamber connected to said cylinder at a point ahead of said second piston, a vent in the cylinder disposed ahead of the second piston, and means connecting the vent to the atmosphere and to a source of high-pressure air.

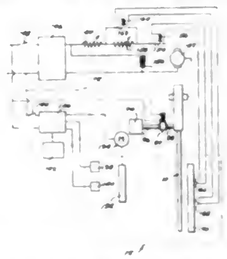
3,162,579
ROD DRIVE SYSTEM FOR USE WITH NEGATIVE TEMPERATURE COEFFICIENT REACTOR

Harold A. Thomas, San Diego, and Charles E. Clifford, Del Mar, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 9, 1960, Ser. No. 48,419
8 Claims. (Cl. 176—36)

1. A control rod drive system for a nuclear reactor, comprising a support means, a cylinder carried by said support means for movement relative thereto, a piston movable within said cylinder, a control rod, means connecting said piston to said control rod, motor means directly connected to said cylinder for axially moving said cylinder relative to said support means, a source of fluid pressure, means connecting said source of fluid pressure to said cylinder so that said piston is moved in one direction by said pressure, and means for controlling the fluid pressure applied to said cylinder.

6. A control rod drive system for raising the power level of a nuclear reactor having a prompt negative temperature coefficient, said system comprising a first control rod in said reactor, means for instantaneously withdrawing said first control rod to a predetermined position whereby the reactivity of the reactor is raised to a predetermined level, additional means for withdrawing said first control rod at a predetermined rate, means responsive to the temperature of a fuel element in the reactor for stopping said first control rod when said control rod has

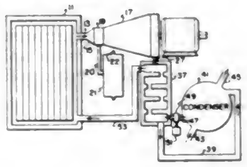


been withdrawn from the reactor to a position at which the fuel element is approximately at its desired operating temperature, a second control rod in said reactor, drive means for moving said second control rod and means responsive to the difference between the power level of the reactor and the desired power level and connected to the drive means for controlling said drive means so as to move said second control rod to a position in said reactor wherein sufficient reactivity is inserted by said second control rod to raise the power level of the reactor to the desired level.

3,162,580
METHOD OF OPERATING NUCLEAR POWER PLANTS

James F. Black, Convent, and William J. Sweeney and Frank T. Barr, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 16, 1962, Ser. No. 209,985
7 Claims. (Cl. 176—39)

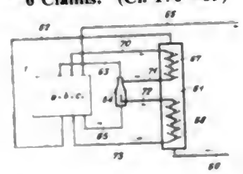


1. The method of operating an atomic reactor which comprises passing preheated liquid benzene at supercritical pressure continuously into the reactor wherein the benzene takes up heat of reaction to raise the temperature of the benzene above its critical temperature accompanied by radioactive degradation of part of the benzene to higher boiling polymers in such proportion so that said polymers are carried as vapors in the benzene passing through the reactor and are continuously removed thereby as they are formed from the reactor, passing said benzene at supercritical temperature, removed from the reactor to a turbine, condensing said high boiling polymers as heavy liquid ends in said benzene as it is expanded with a pressure drop before complete passage through the turbine, removing said heavy liquid ends from the benzene remaining as vapor before complete passage of the benzene as vapor through the turbine, withdrawing effluent benzene vapor from the turbine under reduced pressure to a heat exchange zone for effecting therein heat exchange between said effluent benzene vapor and liquid benzene which is thus preheated and is the preheated liquid benzene passing continuously into the reactor, condensing said effluent benzene vapor cooled in the heat exchange zone to liquid benzene, and returning with pumping the resulting condensed liquid benzene as the liquid benzene preheated in the heat exchange zone passing continuously at supercritical pressure into the reactor.

3,162,581
FLUID COOLED NUCLEAR REACTOR PLANT

Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland

Filed Apr. 5, 1961, Ser. No. 100,889
Claims priority, application Switzerland Apr. 11, 1960
6 Claims. (Cl. 176—59)



1. A nuclear reactor plant comprising a nuclear reactor having groups of fuel elements generating relatively little heat, groups of fuel elements generating relatively much heat, each of said fuel elements including conduit means, a coolant fluid of relatively high temperature flowing through the conduit means of fuel elements generating relatively little heat, a coolant fluid of relatively low temperature passing through the conduit means of fuel elements generating relatively much heat, a heat exchanger having a primary side including first conduit means located in a relatively hot zone of the heat exchanger, said primary side including second conduit means located in a relatively cool zone of the heat exchanger, said heat exchanger having a secondary side receiving heat from said primary side, said secondary side forming part of a fluid circuit including a heat consumer and extending through conduit means of said fuel elements, an ejector interposed in said fluid circuit downstream of the fuel elements through which said circuit extends, said ejector being connected to and receiving fluid from said first condut means and being connected to and discharging fluid into said second conduit means.

3,162,582
PROCESS FOR THE PRODUCTION OF ITACONIC ACID

Mario Alexander Batti, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,293
5 Claims. (Cl. 195—36)

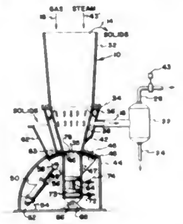
1. In the elaboration of itaconic acid by means of fermentation of a medium with an itaconic acid producing organism, the method of suppressing the formation of contaminating acids comprising adding to the medium when the concentration of itaconic acid formed reaches about 4.6% sufficient neutralizing agent to control the pH of said medium within a range of from about 3.0 to about 5.0.

3,162,583
SHALE DISTILLATION

Charles E. Hemminger, Westfield, and Richard I. Bergman, Princeton, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 1, 1960, Ser. No. 66,567
3 Claims. (Cl. 202—33)

1. In a process wherein shale solids are moved upwardly as a compact non-fluid moving bed through a retorting zone maintained at a temperature between about 2000° F. and 2400° F. and a burning zone countercurrent to downwardly flowing oxygen-containing gas and shale solids are retorted in said retorting zone to form shale oil and spent carbon-containing shale solids and the spent carbon-containing shale solids are burned in said burning zone to provide the heat for the retorting zone and insufficient residual carbon is provided by the spent shale solids to supply all the heat for the retorting zone, the

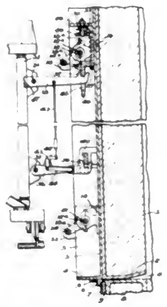


improvement which comprises admixing bituminous coal and fluid coke particles with said shale solids so that the mixture contains between about 25 and 50 wt. percent of coal and between about 15 and 25 wt. percent of fluid coke particles to increase the amount of burnable carbon available after retorting to be burned to provide heat for said retorting zone without substantially burning shale oil product and to increase the yield of retorted hydrocarbon oil.

3,162,584
DOOR FOR BYPRODUCT HORIZONTAL COKE OVEN

Walter Cremer, Karl Kolks, Walter Stanke, and Georg Henseleit, Essen, Germany; Anna Theresia Henseleit, sole heir of said Georg Henseleit, deceased, assignors, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 19, 1961, Ser. No. 139,270
16 Claims. (Cl. 202—248)



1. In a closure device for a door for a horizontal coking chamber of a byproduct coke oven wherein said door has a plurality of inclined, downwardly arranged door-supporting latch levers fastened along a portion thereof to the body of the door and engaging at their distal ends against door fastening members on the body of the oven during placement of the door into juxtaposition with a doorway at the horizontal end of the coking chamber, and said door further has a sealing edge which is brought into sealing engagement with a sealing surface on the frame of the oven doorway by the weight of the door itself, the improvement comprising:

(*a*) each door-supporting latch lever being constructed in the form of a crank having a pair of crank arms joined by a shaft,

(*b*) a plurality of bushings mounted on said body of the door,

(1) each of said latch levers being rotatably supported in one of said bushings and

(2) each of said bushings having an off-center bore therethrough and the surface of the shaft of the latch lever received therein being in contact with the surface of the bore and one of said surfaces being curved in the direction of the longitudinal central axis of said bore and

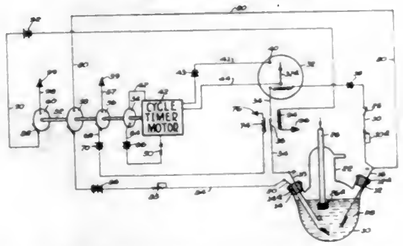
(*c*) means for selectively adjusting each of said bushings around the longitudinal central axis thereof to axially relocate the shaft of the latch lever supported therein to alter the effective length of the crank arms between said shaft and the opposing door fastening members on the body of the oven,

whereby after initial adjustment of said bushing with said adjusting means, said latch levers are self-adjusting to insure the exertion of uniform sealing pressure between said sealing edge and said sealing surface under the weight of the door itself.

3,162,585
CONTINUOUS AUTOMATIC COULOMETRIC TITRATION SYSTEM

Donald D. De Ford, Glenview, and Robert S. Braman, Chicago, Ill., assignors, by mesne assignments, to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 12, 1960, Ser. No. 21,674
5 Claims. (Cl. 204—1)



1. A continuous automatic coulometric titration system comprising, in combination with a titrometric vessel containing an electrolyte, means responsive to the concentration of a titrometric agent in said electrolyte in said vessel, sensing means operatively associated with said titrometric vessel indicating when the concentration of said agent therein falls below a predetermined value, means automatically responsive to said indication by said sensing means to impress a predetermined constant D.C. current across said electrolyte for a predetermined fixed period of time, whereby a predetermined fixed quantity of titrometric agent is generated, means operative upon each said generation of titrometric agent indicating the number of times said agent is generated, and means to deliver samples of the material to be monitored to said electrolyte in said vessel.

3,162,586
ELECTRODEPOSITION OF NICKEL USING AN UNTREATED ANODE

Donald H. Schantz, Grand Rapids, Mich., assignor to Michigan Plating & Stamping Co., Grand Rapids, Mich., a corporation of Delaware

No Drawing. Filed July 16, 1962, Ser. No. 210,224
4 Claims. (Cl. 204—49)

1. A method of electroplating nickel comprising the steps of: forming an aqueous bath consisting essentially of nickel sulfate; a fluoride salt selected from the group consisting of nickel fluoride, potassium fluoride, and sodium fluoride, and mixtures thereof; immersing into said bath an anode of substantially pure untreated electrolytic nickel, immersing into said bath the article to be plated as the cathode; and electroplating said article from said pure nickel anode.

3,162,587
ELECTROLYTIC PRECIPITATION OF METAL SULPHIDES FROM LEACH SLURRIES

Nicolas Zubryckyj, Fort Saskatchewan, Alberta, Canada, assignor to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Ontario

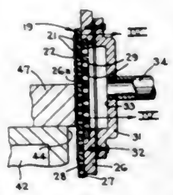
Filed May 8, 1959, Ser. No. 811,847
5 Claims. (Cl. 204—92)

1. In a process for recovering values of a metal selected from the group consisting of silver, copper, lead, zinc, nickel and cobalt from metal bearing material in which finely divided metal bearing material is leached with a leach solution to form a slurry of undissolved residue and a solution which contains dissolved values of at least one of said metals, the improved method of separating said dissolved metal values from said slurry which comprises the steps of feeding said slurry of leach solution and undissolved residue into an anode compartment of an insoluble anode, diaphragm type electrolytic cell having at least one anode compartment and at least one cathode compartment, said compartments being separated from each other by a diaphragm permeable to the passage of ions and impermeable to the passage of solid particles, said solution forming the anolyte in said cell, electrolyzing said anolyte at a pH value within the range of from about pH 2 to about pH 5 and at a temperature within the range of from about 100° to about 200° F. whereby ions of at least one of said dissolved metals migrate through said diaphragm into the cathode compartment, a catholyte in said cathode compartment having a pH value within the range of from about pH 3 to about pH 7, providing in said catholyte a sulphidizing agent in amount at least sufficient to provide sulphide ions for combination with metal ions migrating into said catholyte as insoluble metal sulphides, and separating and recovering said insoluble metal sulphides from the cathode compartmnet of said cell.

3,162,588
BELT TYPE ELECTROLYTIC GRINDING MACHINE

Ramsay M. Bell, Schoolcraft, Mich., assignor to Hammond Machinery Builders, Inc., Kalamazoo, Mich., a corporation of Michigan

Filed Apr. 17, 1961, Ser. No. 104,201
1 Claim. (Cl. 204—141)



A method of electrolytically grinding a workpiece using an endless, perforate abrasive belt having nonconductive abrasive grit thereon, said belt being backed by a perforated platen, which comprises:

placing a workpiece in touching relationship with the grit on the abrasive belt which is continuously moved unidirectionally past said workpiece so that the workpiece is spaced a small distance from the belt proper;

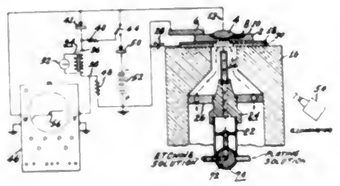
continuously circulating an electrolyte through said perforated platen and said belt and against said workpiece, the electrolyte being supplied through the region of the belt contacted by the workpiece and in the region of the belt above the workpiece so that all portions being ground of the workpiece, including the upper portion, are bathed by the electrolyte; and

continuously applying a unidirectional electrical potential difference between the workpiece as the anode and the electrolyte as it passes through said belt.

3,162,589
METHODS OF MAKING SEMICONDUCTOR DEVICES

Louis Pensak, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 1, 1954, Ser. No. 433,495
13 Claims. (Cl. 204—143)



1. In a method of electroetching a surface of a crystalline semi-conductive body having a rectifying barrier, said surface bounding a region of said body having n-type semiconductivity, and said method including the steps of contacting an electrolyte to the portion of said surface to be etched, applying an electroetching potential between said electrolyte and an n-type region of said body to etch away a portion of said n-type region thereby to reduce the spacing between said surface and said barrier, the improvement comprising applying an alternating electrical potential across said barrier in the direction of its maximum resistance, the negative portion of the input cycle of said alternating potential thereby momentarily increasing the thickness of the depletion layer associated with said barrier to extend said layer toward said surface, said alternating potential having a peak value exceeding said electroetching potential, and illuminating said surface, said spacing between said surface and said barrier being indicated by the instantaneous value of said alternating potential at which the electric current induced thereby is abruptly increased by reason of said depletion layer's extension toward said surface.

3,162,590
PROCESS FOR PREPARING POLYFLUORINATED NITROSOALKANES

Joseph D. Park, Boulder, Colo., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed June 5, 1961, Ser. No. 114,646
8 Claims. (Cl. 204—158)

1. The process for the production of polyfluoronitrosoalkanes which comprises subjecting a nitrosyl polyfluoroacylate to decarboxylation with actinic radiation.

3,162,591
SYNTHESIS OF AMINO ACIDS BY HIGH INTENSITY IONIZING RADIATION

Torsten Hasselstrom, 33 Delmar Ave., Framingham, Mass., and Malcolm C. Henry, E. Slough Road, Harvard, Mass.

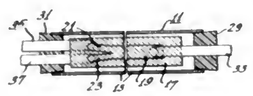
No Drawing. Filed Oct. 10, 1957, Ser. No. 689,454
16 Claims. (Cl. 204—154)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process of converting ammonium acetate into amino acids, comprising subjecting an aqueous solution of ammonium acetate to high intensity ionizing radiation equivalent to at least about 1,000,000 electron volts, until a dosage of at least about 10,000,000 roentgen equivalent physical units has been absorbed and at least a substantial portion of said ammonium acetate is converted into a mixture of amino acids, and separating said mixture into discrete portions of glycine, aspartic acid, and diaminosuccinic acid.

3,162,592
MATERIALS SEPARATION USING NON-UNIFORM ELECTRIC FIELDS

Herbert Ackland Pohl, Princeton, N.J.
(338 Franklin Ave., Princeton Township, N.J.)

Filed Apr. 20, 1960, Ser. No. 23,431
10 Claims. (Cl. 204—186)

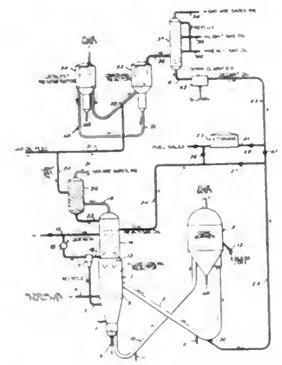


1. The method of treating a mixture of electrically neutral solid materials having different dielectric polarizations comprising, applying a non-uniform electric field to said mixture to deflect one of the solid materials in said mixture to a greater extent than other solid materials in said mixture, and withdrawing from said deflection field at least one of said solid materials.

3,162,593
FLUID COKING WITH CRACKING OF MORE REFRACTORY OIL IN THE TRANSFER LINE

Charles L. Persyn, Concord, Calif., assignor to Tidewater Oil Company, Los Angeles, Calif., a corporation of Delaware

Filed Mar. 21, 1962, Ser. No. 181,406
4 Claims. (Cl. 208—53)

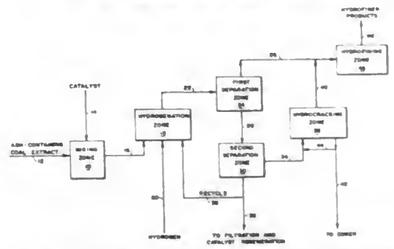


1. In a fluid coking process wherein a heavy hydrocarbon charge oil is cracked to lower boiling hydrocarbons by contact with a dense fluidized bed of heated coke particles in a coking zone and the bed is maintained at coking temperature by circulation of coke particles from said bed to a burning zone wherein a portion thereof is burned to heat the remainder substantially above the temperature of said bed and thus heated coke particles art returned to said bed through an elongated transfer zone,

the method of simultaneously cracking a heavy oil more refractory and more volatile than said charge oil which comprises

introducing only said more refractory oil into said transfer zone to travel therethrough in contact with heated coke particles therein, for a distance sufficient that said more refractory oil is cracked therein at a temperature substantially above that to which said charge oil is subjected.

3,162,594
PROCESS FOR PRODUCING LIQUID FUELS FROM COAL
Everett Gorin, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1962, Ser. No. 185,994
9 Claims. (Cl. 208—57)

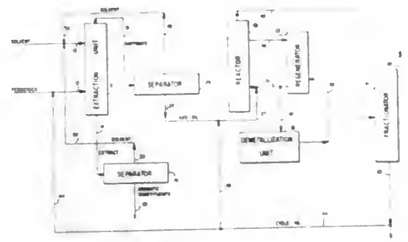


1. An improved process for producing liquid fuels from ash-containing coal extract, said extract being essentially non-distillable without decomposition, at least a portion of said extract being insoluble in benzene and at least a portion of said ash being below 0.01 micron in diameter, which process comprises

(*a*) subjecting said ash-containing coal extract to hydrogenation in a hydrogenation zone maintained under conditions such that an ash-containing, non-distillable hydrocarbonaceous liquid comprising at least 50 weight percent of the coal extract is obtained, said non-distillable liquid being more soluble in benzene and containing less ash below 0.01 micron in diameter than said coal extract, and

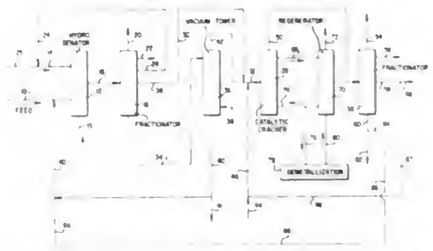
(*b*) subjecting at least a portion of said non-distillable hydrocarbonaceous liquid to catalytic hydrocracking in a hydrocracking zone maintained under conditions such that an ash-free, benzene-soluble, distillable hydrocarbonaceous liquid is obtained.

3,162,595
CRACKING OF HEAVY HYDROCARBONS
Stephen Szepe, Chicago, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,210
8 Claims. (Cl. 208—87)



1. A process for treating a hydrocarbon feedstock boiling above the gasoline range containing aromatic hydrocarbons and at least about 0.3 p.p.m. nickel and at least about 1.2 p.p.m. vanadium metal contaminants which comprises contacting said hydrocarbon oil in a dearomatizing zone with a selective solvent to form a dearomatized oil raffinate phase containing at least 1.0 p.p.m. of said contaminating metal and an aromatic extract phase, subjecting said dearomatized oil phase to catalytic cracking, regenerating the catalyst to remove carbon, removing a portion of metal contaminated catalyst from the cracking system and demetallizing removed catalyst, returning demetallized catalyst to said cracking system, and recovering the gasoline from said cracking, said metal contents being calculated as the metal oxides.

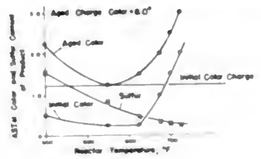
3,162,596
PRETREATMENT AND CRACKING OF RESIDUAL OILS
Arvin D. Anderson, Santa Ana, Calif., and Robert A. Sanford, Homewood, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,131
14 Claims. (Cl. 208—89)



1. A process for treating a residual hydrocarbon oil boiling above the gasoline range and containing at least about 5 p.p.m. of a metal contaminant selected from the group consisting of nickel and vanadium in an amount sufficient to cause deterioration in selectivity of a cracking catalyst, comprising the steps of treating said hydrocarbon oil in a hydrogenation zone to reduce by about 10–90% the content of said contaminant metal, subjecting a thus hydrogenated fraction boiling essentially above about 400° F. to vacuum distillation to separate a gas oil fraction containing a metal contaminant selected from the group consisting of about 1–5 p.p.m. nickel and about 1–10 p.p.m. vanadium, said nickel and vanadium being calculated as the metal oxides, and an undistilled residue boiling primarily above about 1100° F. and containing asphaltic material, subjecting to catalytic cracking a hydrocarbon feedstock containing said gas oil fraction in an amount to provide at least about 0.5 p.p.m. of said contaminating metal, in the presence of a solid cracking catalyst under cracking conditions to produce gasoline, removing metal contaminated catalyst from the cracking system, the removed catalyst containing at least about 50 p.p.m. of a metal contaminant selected from the group consisting of nickel and vanadium, demetallizing removed catalyst to withdraw about 10 to 90% of said metal contaminant, returning resulitng demetallized catalyst to said cracking system and recovering the products from said cracking.

3,162,597
PROCESS FOR COLOR STABILIZATION AND HYDRODESULFURIZATION OR CRACKED GAS OILS
Joseph Hill Rogers Davis, Jr., Rose Valley, and Earl M. Honeycutt, West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Sept. 12, 1960, Ser. No. 55,263
10 Claims. (Cl. 208—216)

1. Process for desulfurizing and increasing the color stability of sulfur-containing cracked gas oil boiling mainly within the range of 425° F. and 700° F. and containing at least 0.3% sulfur which comprises contacting in liquid phase said gas oil with a sulfur-resistant hydrogenation catalyst in an atmosphere of hydrogen in a contact zone, said contacting being effected at a temperature from 500°



F. to 675° F., at a pressure from 300 p.s.i.g. to 1,000 p.s.i.g. and without any net flow of hydrogen vapor through said zone; and recovering a substantially desulfurized cracked gas oil of improved color and increased color stability.

3,162,598
REMOVING NITROGEN COMPOUNDS BY OXIDATION
Wayne L. Disegna, Markham, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 12, 1962, Ser. No. 179,206
4 Claims. (Cl. 208—254)

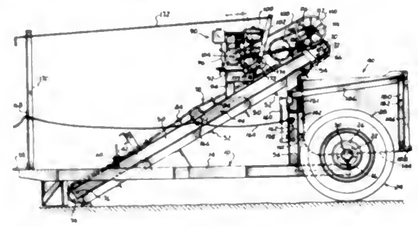
1. A method of reducing the nitrogen content of hydrocarbon feedstocks which comprises intimately contacting a liquid hydrocarbon feedstock containing nitrogen contaminants with a minor, effective concentration of peroxychromate ions and separating the precipitate formed.

3,162,599
GASOLINE PURIFICATION BY POLYMERIZATION
William McArthur and Alan Marchant, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 10, 1962, Ser. No. 186,351
Claims priority, application Great Britain, Apr. 13, 1961, 13,355/61
8 Claims. (Cl. 208—255)

1. A process for the recovery of purified gasoline and other valuable products from a crude gasoline feedstock containing polymerizable olefinic material including cyclic and acyclic conjugated diolefines which comprises in succession selectively polymerizing the conjugated cyclic diolefines in the mixture at a temperature of 100 to 150° C., separating low boiling material without substantially decomposing the polymerized residue, polymerizing the conjugated acyclic diolefines in the separated low boiling material at a temperature of 200 to 300° C., and separating gasoline therefrom.

3,162,600
PORTABLE AGGREGATE SCREENING AND TRANSPORTING APPARATUS
Joseph H. Montgomery, 1614 Business Loop 70, E., Columbia, Mo.
Filed June 4, 1962, Ser. No. 199,974
2 Claims. (Cl. 209—259)

1. In a portable tractor-drawn aggregate screening and transporting apparatus, in combination, a chassis including a transverse crossbar having upwardly-turned end portions, wheel spindles carried at the ends of said upwardly-turned portions, and traction wheels mounted on said spindles for tractional support on a ground surface whereby the medial region of the crossbar is supported in underslung fashion, an elongated generally rectangular chassis frame including longitudinally extending side members having their rear ends secured to and supported on the medial region of the crossbar, the forward regions of said side members being bowed outwardly away from each other to provide a relatively wide generally polygonal clearance opening, the extreme front portions of said outwardly bowed portions converging inwardly and being connected together by a tractor hitch, said side members having medial regions extending rearwardly of said outwardly bowed portions. a pair of vertically extending supports projecting upwardly from the medial regions of said side members to an appreciable height above the crossbar and said sidemembers, an elongated generally rectangular inclined conveyor frame including side frame bars, means pivotally connecting the rear end regions of said side frame bars to the upper end regions of the vertically extending supports whereby the conveyor frame is capable of limited swinging on the chassis about an elevated horizontal axis extending transversely of the chassis. said conveyor frame being inclined rearwardly and downwardly and the forward end region thereof dipping completely through said clearance opening and extending to a point closely adjacent to the ground surface, a pair of supporting brackets on the side frame bars in the forward regions thereof and overlying the outwardly bowed portions of the side members of the chassis frame, compression springs interposed between



the supporting brackets and said outwardly bowed portions whereby the forward region of the conveyor frame may follow an undulatory ground surface pattern, a plurality of spaced apart screening bars substantially coextensive with the conveyor frame and establishing an inclined aggregate screening plane, an endless conveyor operatively mounted on said conveyor frame and having a lower reach section closely overlying said screening plane, a series of pusher flights on said conveyor for impelling aggregate upwardly along said screening plane, an internal combustion engine mounted on said conveyor frame and operative to drive said conveyor in a direction to cause said flights to move upwardly along the screening plane, means operatively connecting said engine and conveyor in driving relationship, a wide open-top tiltable dump receptacle mounted for tilting movement on said crossbar and having a full width pivoted discharge gate in the rear side thereof, said dump receptacle being movable between a retracted aggregate-receiving and retaining position wherein a portion thereof underlies the upper end of said screening plane and an advanced aggregate-discharge position wherein the dump receptacle is inclined for gravity discharge of aggregate, and releasable pivoted latch means for retaining said dump receptacle in its retracted position.

3,162,601
PARAFFIN REMOVAL AND PREVENTION
Loyd W. Jones, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan. 10, 1962, Ser. No. 165,388
9 Claims. (Cl. 252—8.3)

1. A composition for removing paraffin from surfaces, said composition consisting essentially of from about 0.03 to about eighty percent by volume of an aliphatic alcohol having from about six to about ten carbon atoms

per molecule, from about 0.05 to about seventy-five percent by volume of an ethoxylated polypropylene glycol, and from zero to about 99.9 percent by volume of a hydrocarbon oil, the ratio of said alcohol to said ethoxylated polypropylene glycol being between about one to three and about four to one, said ethoxylated polypropylene glycol being based on polypropylene glycol having an average molecular weight of from about 900 to about 3500, and said ethoxylated polypropylene glycol having an average polyoxyethylene portion equal to from about six to about forty percent of the total average molecular weight of the molecules.

3,162,602

SUPER-POLYESTER LUBRICANT COMPOSITION

Edwin C. Knowles, Poughkeepsie, and William M. Sweeney, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 28, 1961, Ser. No. 92,160
7 Claims. (Cl. 252—47)

1. A synthetic lubricant composition comprising between about 80 and 99.9 wt. percent of di-2-ethylhexyl sebacate and between about 0.1 and 20 wt. percent of a linear polymeric superpolyester of azelaic acid and 2-methyl-2-ethyl-1,3-propanediol having an average molecular weight of between about 4000 and 50,000.

4. A composition in accordance with claim 1 also comprising about 0.1 to 5 wt. percent phenothiazine.

3,162,603

METHOD OF GROWING IRIDIUM SUBSTITUTED SINGLE CRYSTAL USING BISMUTH OXIDE FLUX

Jack A. Kohn, New Shrewsbury, Robert O. Savage, Jr., Neptune City, and Arthur Tauber, Elberon, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 1, 1963, Ser. No. 256,221
4 Claims. (Cl. 252—62.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of growing single crystals of the general formula $BaFe_{12-2x}(Ir_xMe_x)O_{19}$ where Me is a divalent metal selected from the group consisting of cobalt, nickel, magnesium, manganese, iron, zinc, and copper and where x is a number from 0.16 to 0.6 said method comprising (1) mixing (*a*) ferric oxide, (*b*) barium oxide, (*c*) an oxide of a divalent metal taken from the group consisting of cobalt, nickel, magnesium, manganese, iron, zinc, and copper, (*d*) iridium and (*e*) bismuth oxide, (2) heating the mixture in a metallic crucible selected from the group consisting of platinum and iridium between 1200 and 1300° C., (3) slowly cooling the melt 1 to 4° C. per hour to 950° C., and (4) removing the crystals from the crucible by leaching with 10–20 percent by volume nitric acid.

3,162,604

DRY CLEANING SOLVENT COMPOSITIONS

Edwin B. Michaels, Stamford, Conn., assignor to Stamford Chemical Industries, Inc., Stamford, Conn., a corporation of Delaware

No Drawing. Filed May 10, 1960, Ser. No. 28,021
6 Claims. (Cl. 252—171)

1. An improved drycleaning solvent composition which consists essentially of a major amount of a drycleaning solvent and a minor amount in the range from about 0.2% to about 4.0% by weight of substantially neutral magnesium salts of a member selected from the group consisting of (*a*) phosphoric acid esters of oxyethylated higher alkyl phenols and (*b*) phosphoric acid esters of oxyethylated higher aliphatic monohydric alcohols, said oxyethylated esters containing from about 1 to about 15 oxyethyl groups.

3,162,605

PROCESS FOR PREPARING A THORIA AQUASOL

Paul C. Yates, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 26, 1962, Ser. No. 169,136
3 Claims. (Cl. 252—301.1)

1. In a process for producing a thoria aquasol the steps comprising (1) calcining a thermally unstable oxygen-containing thorium compound selected from the group consisting of the oxalate, nitrate, hydroxide, basic oxalate and basic nitrate at a temperature in the range of from 400 to 1100° C. until it is decomposed to thoria, (2) mixing the so-obtained thoria, in powder form, with an aqueous solution of a thorium salt of a monobasic acid, said salt being selected from the group consisting of the chloride, perchlorate, bromide, bromate, iodide, iodate, and nitrate, the molar ratio of thorium salt to thoria being in the range of $3\times10^{-4}A$ to $20\times10^{-4}A$, where A is the surface area of the thoria in square meters per gram as calculated from the crystallite dimensions determined by X-ray line broadening, and (3) heating the mixture to a temperature in the range of from 50 to 100° C., at a pH in the range from 2 to 4, whereby the thoria is peptized to form a sol in the aqueous medium.

3,162,606

PREPARATION OF SUPPORTED NICKEL CATALYSTS

Albert P. Giraitis, Vello Norman, and Thomas P. Whaley, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 31, 1960, Ser. No. 53,027
10 Claims. (Cl. 252—466)

1. A process for the preparation of a nickel catalyst which comprises heating alumina to a temperature of 300° C. at a pressure of 2 mm. of mercury and thereupon contacting cyclopentadienyl nickel nitrosyl with said alumina, said alumina having a surface area of about 140 square meters per gram.

3,162,607

PRODUCTION OF POROUS REFRACTORY OXIDE MATERIALS

Bernard Whiting Burbidge and Peter Thomas White, both of Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a joint-stock corporation of Great Britain

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,470
Claims priority, application Great Britain, Mar. 23, 1961, 10,604/61
9 Claims. (Cl. 252—477)

1. A process for preparing a refractory oxide catalyst support having an interlacing network of pores comprising incorporating water-insoluble organic fibres having a ratio of length to width of at least 3 into and throughout a catalyst support during its preparation, and thereafter removing the fibres from the formed support, to produce a catalyst support having an interlacing network of pores throughout.

3,162,608

ODOR IMPROVEMENT OF RESIN BEADS MADE THROUGH THE SULFONIUM SALT PROCESS

Leonard A. Mattano, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,328
2 Claims. (Cl. 260—2.1)

1. A method for removing offensive odors from ion exchange resins having a malodor due to the presence therein of offensive sulfur compounds of the group consisting of dialkyl sulfides, di(hydroxyalkyl)sulfides, alkyl hydroxyalkyl sulfides and poly(vinylbenzyl sulfonium)halide, wherein the alkyl groups contain between 1 and 4 carbon atoms, and hydroxyalkyl groups contain between 2 and 4 carbon atoms and halide is a member of the group consisting of chloride and bromide, as impurities incidental to the preparation of ion exchange resins which are heat reaction products of a poly(vinylbenzyl sulfonium) anion exchange resin having sulfonium group substituents which give rise to the malodorous sulfur compounds and a member of the group consisting of alkali metal sulfites; alkali metal salts of aminocarboxylic acids; alkali metal salts of aminoalkane sulfonates; alkali metal salts of aminoaryl sulfonates; alkali metal salts of aminoalkane phosphonates; alkali metal salts of mercaptides having substituent groups of the group consisting of $—CO_2^-$, $—PO_3^=$ and $—SO_3^-$; polyethylene polyamines having up to 3 ethylene groups; primary aliphatic monoamines; secondary aliphatic monoamines; and tertiary aliphatic monoamines; by treating said malodorous resin in particulate form in water at a temperature between about 20° and about 90° C. with about 1/10 to about 20 moles of dilute aqueous oxidant of the the group consisting of hydrogen peroxide and alkali metal and ammonium hypochlorites per mole of said ion exchange resin until a test sample of the resin after water washing no longer has an offensive odor.

3,162,609

SELF-EXTINGUISHING URETHANE POLYMER COMPOSITIONS

Jacob Eichhorn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 31, 1960, Ser. No. 32,619
23 Claims. (Cl. 260—2.5)

7. A self-extinguishing foam comprising a normally flammable polyurethane resin in intimate admixture with from 2 to 12 percent based on the weight of the resin of an inorganic compound selected from the group consisting of Sb_2O_3, As_2O_3, As_2O_5, P_2O_5, $SbCl_3$, $SbBr_3$, SbI_3, SbOCl, and mixtures thereof, and from 5 to 15 percent based on the weight of the resin of ammonium bromide.

3,162,610

ADHESIVES

Carlos M. Samour, Wellesley Hills, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 13, 1961, Ser. No. 95,038
13 Claims. (Cl. 260—4)

13. A pressure-sensitive adhesive comprising: a rubbery elastomeric component consisting essentially of a cis-isoprenoid rubbery elastomer; a neutral tackifier resin; a diorgano-hydrogenphosphonate having the formula $(RO)_2P(O)H$ wherein R is selected from the groups consisting of alkyl, aryl, alkaryl and aralkyl groups; and an antioxidant selected from the group consisting of alkyl substituted phenols and secondary amines.

3,162,611

PRINTING INK

Arleen S. Varron and Paul D. Whyzmuzis, Jamaica, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,285
25 Claims. (Cl. 260—4)

1. A novel ink comprising pigment dispersed in a vehicle comprising (A) a dispersion of a particulate interpolymer of (1) about 35–60 parts by weight of an unsaturated ester taken from the group consisting of straight-chain and branched-chain saturated aliphatic alcohol esters of acrylic and methacrylic acid containing a total of about 5–20 carbon atoms in the alcohol radical of which about 5–14 carbon atoms comprise the longest continuous chain thereof, (2) about 3–10 parts by weight of an unsaturated nitrile taken from the group consisting of acrylonitrile and methacrylonitrile, (3) about 2–5 parts by weight of an unsaturated monocarboxylic acid taken from the group consisting of acrylic acid, methacrylic acid, cinnamic acid, atropic acid and crotonic acid and, correspondingly, (4) about 60–25 parts by weight of a monovinylidene aromatic hydrocarbon, the particles of said interpolymer having an average diameter of about 0.1 to 0.5 micron and (B) a dispersion of a wax-like material selected from the group consisting of polyethylene having a maximum molecular weight of about 40,000, polyethylene glycol having a maximum molecular weight of 20,000 and polyethylene glycol distearate in a solution of (C) a resin selected from the group consisting of limed rosin and cyclized rubber in (D) a volatile hydrocarbon solvent.

3. The ink of claim 1 wherein said interpolymer comprises (1) about 35–45 parts of decyl acrylate, (2) about 3–10 parts of acrylonitrile, (3) about 2–5 parts of methacrylic acid, and, correspondingly, (4) about 60–40 parts of styrene, the interpolymer particles in said latex having an average diameter of about 0.1 to 0.5 micron.

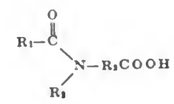
3,162,612

ACYL AMINO CARBOXYLIC ACIDS AS PROCESSING AIDS FOR SYNTHETIC RUBBER-LIKE POLYMERS

William R. Peterson and Ralph E. McNay, Houston, Tex., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,283
18 Claims. (Cl. 260—31.2)

1. In an emulsion polymerization process for the preparation of a synthetic rubber-like butadiene polymer the improvement which comprises: incorporating in said polymer as a processing aid an effective amount of an amino acid compound characterized by the structural formula



wherein R_1 is selected from monovalent aliphatic hydrocarbon radicals and aromatic hydrocarbon radicals, R_2 is selected from hydrogen, monovalent aliphatic hydrocarbon radicals and aromatic hydrocarbon radicals, these R_1 and R_2 radicals each containing up to about 20 carbon atoms, and R_3 is a divalent aliphatic hydrocarbon radical containing from 1 to about 6 carbon atoms.

3,162,613

SELF-EXTINGUISHING COMPOSITIONS OF ALKENYL AROMATIC/HALOPHENYL ACRYLATE AND METHACRYLATE COPOLYMERS WITH TRIS(HALOALKYL)PHOSPHATE COMPOUNDS INCORPORATED THEREIN

William F. Tousignant, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1961, Ser. No. 149,530
1 Claim. (Cl. 260—45.7)

A non-flammable thermoplastic polymeric composition comprising an intimate admixture of from about 1 to about 2 percent by weight of tris(2,3-dibromopropyl) phosphate and from about 99 to 98 percent by weight of a copolymer of from about 14 to 17 percent by weight of 2,4,6-tribromophenyl methacrylate and from 86 to 83 percent by weight of styrene.

3,162,614
PROCESS FOR MAKING BENZENE-SOLUBLE PHENYL SILSESQUIOXANE

Arthur Katchman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,287
4 Claims. (Cl. 260—46.5)

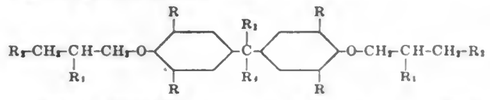
1. The process for making a benzene-soluble phenyl silsesquioxane having an intrinsic viscosity in benzene of at least 0.4 deciliter per gram when measured at 25° C. when comprises (1) heating preformed octaphenylsilsesquioxane with an alkaline rearrangement and condensation catalyst until a phenylpolysiloxane prepolymer having an intrinsic viscosity of from about 0.01 to 0.35 is obtained, (2) isolating the phenylpolysiloxane prepolymer, and (3) heating the formed phenylpolysiloxane prepolymer at elevated temperatures in a solvent for the prepolymer in the presence of an alkaline rearrangement and condensation catalyst for a time sufficient to give the above-mentioned benzene-soluble phenyl silsesquioxane.

3,162,615
POLYESTERS FROM CYCLIC POLYHALOALKANE POLYOLS AND UNSATURATED DICARBOXYLIC ACIDS

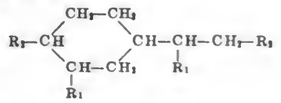
Bart J. Bremmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 3, 1961, Ser. No. 79,989
8 Claims. (Cl. 260—47)

1. A resinous polyester comprising the reaction product of substantially chemically equivalent proportions of (A) a cyclic polyhaloalkane polyol selected from the group consisting of (1) aromatic polyhaloalkane polyols having the general formula:



wherein R represents a member of the group consisting of H, Cl and Br, R_1 is a member of the group consisting of chlorine and bromine and R_2 is OH, and R_3 and R_4 each represents a member of the group consisting of H and lower alkyl radicals containing from 1 to 4 carbon atoms, and (2) cyclic aliphatic polyhaloalkane polyols having the general formula:



wherein R_1 is a member of the group consisting of chlorine and bromine and R_2 is OH, and (B) an unsaturated dicarboxylic acid compound selected from the group consisting of maleic acid, fumaric acid, itaconic acid, citraconic acid, maleic anhydride, itaconic anhydride and citraconic anhydride.

3,162,616
ESTERIFICATION PROCESS

Bernard A. Dombrow and Gerald Fesman, Teaneck, N.J., assignors to Nopco Chemical Company, Harrison, N.J., a corporation of New Jersey

No Drawing. Filed June 10, 1959, Ser. No. 819,225
10 Claims. (Cl. 260—75)

1. A process for preparing polyesters having acid numbers less than about 5 in relatively short periods of time, said polyesters being free from discoloration, comprising the steps of directly esterifying at least one organic aliphatic hydrocarbon polyhydric alcohol with at least one member of the group consisting of organic hydrocarbon polycarboxylic acids and anhydrides thereof at a temperature below about 220° C. in the presence of catalytic amounts of stannous compounds having the structure

$$Sn(OOCR)_2$$

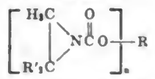
wherein R is selected from the group consisting of saturated and unsaturated aliphatic hydrocarbon substituents having from about 7 to about 17 carbon atoms.

3,162,617
POLYIMINE-POLYFUNCTIONAL AMINE COPOLYMERS

George H. Smith, Ramsey, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Nov. 3, 1959, Ser. No. 850,541
15 Claims. (Cl. 260—77.5)

1. A normally solid interpolymer of
(1) a substantially liquid polyfunctional amine having at least two amine-attached hydrogen atoms, said polyfunctional amine being selected from the group consisting of aliphatic polyamines, aromatic polyamines, araliphatic polyamines, acyclic polyamines and amides of aliphatic fatty acids, and
(2) a compound of the formula



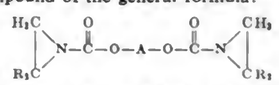
wherein R′ is a member of the group consisting of hydrogen and a lower alkyl radical, *n* is an integer from 2 to 3, and R is a *n*-valent organic radical selected from the group consisting of aliphatic, aromatic and alicyclic radicals.

3,162,618
POLY-1,2-ALKYLENE OXAGLYCOL CARBAMATE AND POLYMERS THEREOF

George H. Smith, Ramsey, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Nov. 3, 1959, Ser. No. 850,542
11 Claims. (Cl. 260—77.5)

1. A compound of the general formula:



wherein A is the bivalent radical of a polyoxyalkylene glycol and R is selected from the group consisting of hydrogen and a lower alkyl group.

3,162,619
NEW POLYAMIDES FROM MALIDE AND DIAMINES

John L. Lang, Murrysville, Pa., and Thomas E. Durocher, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 14, 1961, Ser. No. 116,964
7 Claims. (Cl. 260—78)

1. A synthetic linear condensation polymer comprising the polyamide reaction product of malide with a diamine.

3,162,620
ETHYLENE POLYMERS PREPARED IN THE FORM OF A COHERENT FILM AT A QUIESCENT LIQUID CATALYST SURFACE

Edward K. Gladding, New Castle, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 4, 1961, Ser. No. 107,655
12 Claims. (Cl. 260—80.5)

1. In the process of forming a polymeric product selected from the group consisting of polyethylene and a copolymer of ethylene and at least one other copolymerizable monomer, in the presence of a coordination catalyst, the improvement comprising forming said polymeric product as a coherent film at a quiescent liquid surface of a liquid reaction medium containing said coordination catalyst by passing the gaseous monomer reactants over said liquid surface, said polymeric product being substantially insoluble in said liquid reaction medium.

3,162,621
PROCESS OF POLYMERIZING ALKENES EMPLOYING ORGANOMETALLIC CATALYSTS AND HYDROCARBON SOLVENTS

Eduard Enk, Gottfried Piekarski, and Ernst Wohlfarth, all of Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany

No Drawing. Filed Sept. 20, 1960, Ser. No. 57,137
Claims priority, application Germany Sept. 24, 1961
4 Claims. (Cl. 260—82.5)

1 A method of polymerizing alkenes by contacting the alkene with a catalyst consisting essentially of an organometallic compound of the general formula $[MM']R_n$ where M is an alkaline earth metal, M′ is zinc, each R is an alkyl radical, and *n* is a positive integer greater than 2 and less than 5, in the presence of a solvent selected from the group consisting of saturated aliphatic hydrocarbons, and saturated cycloaliphatic hydrocarbons.

4. The method of claim 1 wherein the polymerization is carried forward in the presence of an organosilicon compound selected from the group consisting of linear diorganosiloxane polymers, cyclic diorganosiloxane polymers, and organosilicon compounds containing incarcerated hetero atoms selected from the group consisting of Al, Ge and Sn, the organic substituents in said organosilicon compound being selected from the group consisting of alkyl and aryl radicals.

3,162,622
TRIFLUOROMETHYL VINYL ETHER AND ITS POLYMERS

Paul E. Aldrich, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 23, 1961, Ser. No. 147,080
16 Claims. (Cl. 260—87.5)

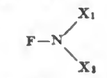
1. Trifluoromethyl vinyl ether.
2. A homopolymer trifluoromethyl vinyl ether.
3. A copolymer of trifluoromethyl vinyl ether and at least one member of the group consisting of polymerizable olefins and haloolefins, said copolymer containing at least 5% by weight of recurring units derived from trifluoromethyl vinyl ether.

3,162,623
CROSSLINKING OF POLYMERS WITH NITROGEN FLUORIDES

Theodore L. Cairns and Charles S. Cleaver, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,235
17 Claims. (Cl. 260—87.7)

1. A process for modifying a polymer essentially free of monomer selected from the class consisting of polyethylene, polypropylene, copolymers of ethylene and carbon monoxide, copolymers of ethylene and vinyl monomers, polyvinyl acetate, polyvinyl alcohol, polyvinyl fluoride, polyacrylonitrile, copolymers of acrylonitrile and vinyl monomers, vinylidene fluoride/hexafluoropropylene copolymers, vinylidene fluoride/hexafluoropropylene/tetrafluoroethylene terpolymers, and polytetramethylene ether glycol/4,4′-diisocyanatodiphenylmethane/1,4 diaminopiperazine terpolymers, which comprises crosslinking it by treating said polymer with a nitrogen fluoride selected from the class consisting of dinitrogen difluoride, dinitrogen tetrafluoride and nitrogen fluorides of the formula



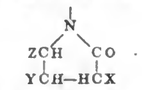
wherein X_1 and X_2 are selected from the class consisting, when taken separately, of fluorine and monovalent lower perfluorocarbyl radicals and, when joined together, of divalent lower perfluorocarbyl radicals.

3,162,624
WATER-INSOLUBLE PYRROLIDINONE RESINS AND METHOD OF PREPARATION

Carl Moore and William F. Tousignant, both of Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,215
5 Claims. (Cl. 260—88.1)

4. A resinous polymeric 1-(ar-vinylbenzyl)-2-pyrrolidinone crosslinked with 0.9 to 5 mole percent of a crosslinking agent having two vinylidene groups, the 2-pyrrolidinone moiety having the formula



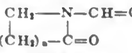
wherein X, Y and Z individually are selected from the group consisting of hydrogen and 1 to 4 carbon alkyl groups.

3,162,625
NOVEL INITIATORS FOR N-VINYL AMIDE POLYMERIZATION

Benjamin Joseph Luberoff, Monsey, N.Y., and William D. Gersumky, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Jan. 5, 1961, Ser. No. 80,739
12 Claims. (Cl. 260—88.3)

1. A method of homopolymerizing cyclic N-vinyl amides having the following formula



wherein *n* is an integer of from 2 to 4 inclusive which comprises contacting said amide with a catalyst selected from the class of compounds consisting of mercuric chloride, mercuric iodide, mercuric bromide, bismuth trichloride, bismuth triiodide, bismuth tribromide, antimony trichloride, mercuric nitrate, and mercuric sulfate and at a temperature of from about 0 to 100° C.

3,162,626
PROCESS FOR THE PREPARATION OF HIGH MOLECULAR WEIGHT POLYVINYL ALCOHOLS

Jürgen Smidt and Alex Sabel, Munich, Germany, assignors to Consortium für Elektrochemische Industrie G.m.b.H., Munich, Germany, a corporation of Germany

No Drawing. Filed Nov. 7, 1961, Ser. No. 150,638
Claims priority, application Germany Nov. 21, 1960
5 Claims. (Cl. 260—91.3)

1. The process of preparing high molecular weight polyvinyl alcohol having a viscosity of more than 120 centipoises in a 4% aqueous solution at 20° C. which comprises the steps of suspending vinyl acetate in water with the aid of a suspending agent, adding from 0.05×10^{-3} to 5.0×10^{-3} mols per mol of vinyl acetate of a water soluble bisulfite, heating the aqueous suspension to a temperature between 20° C. and 120° C., adding thereto an aqueous solution of from 0.01×10^{-3} to 2.0×10^{-3} mols per mol of vinyl acetate of a water soluble bromate while maintaining the reaction temperature be-

tween 20° C. and 120° C. for a time sufficient to effect substantially complete polymerization, separating the polyvinyl acetate, dissolving said polyvinyl acetate in a lower alkanol, refluxing said solution in the presence of an esterification catalyst selected from the group consisting of alkali metal lower alkanolates and strong mineral acids, and recovering said polyvinyl alcohol.

3,162,627

PROCESS FOR THE SEPARATION AND PURIFICATION OF N-ALKANES FROM HYDROCARBON MIXTURES

James L. Callahan, Bedford, and Joseph J. Szabo, Chagrin Falls, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 29, 1960, Ser. No. 79,224
3 Claims. (Cl. 260—96.5)

1. A process for separating urea adductable n-alkanes from a mixture of hydrocarbons by urea adduction using a single 3-phase columnar processing zone comprising a dense solvent hydrocarbon mixture phase, an intermediate urea solution phase, and an upper n-alkane phase, which process comprises the steps of introducing into said lower phase a mixture of hydrocarbons dissolved in a dense solvent selected from the group consisting of carbon tetrachloride, chloroform, and tetrachloroethylene, pumping the urea solution from the intermediate phase into the lower phase, dispersing the urea solution as droplets through the dense solvent-hydrocarbon mixture, whereby the n-alkanes are extracted by urea adduction, forming the urea adduct slurry that rises into the urea solution phase, decomposing continuously the adduct by heat in the urea solution phase to free the n-alkanes and drawing the n-alkanes off as the upper third phase.

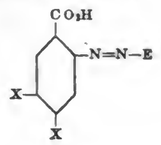
3,162,628

METAL COMPLEX MONOAZO TRIAZINE DYESTUFFS

Alistair Howard Berrie and Cyril Morris, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1960, Ser. No. 73,226
Claims priority, application Great Britain, Dec. 21, 1959, 43,327/59
4 Claims. (Cl. 260—146)

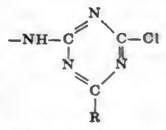
1. A metal complex compound selected from the class consisting of 1:2-chromium and 1:2-cobalt complexes of monoazo compounds of the formula:



wherein

E is the radical of a coupling component having a hydroxyl group in ortho position to the azo group and selected from the class consisting of aminonaphthol disulphonic acids and 7-sulfoanilino-1-naphthol-3-sulphonic acids;

one X is hydrogen, and the other X is a group of the formula:



in which R stands for a member of the group consisting of chlorine, amino, and sulfophenylamino.

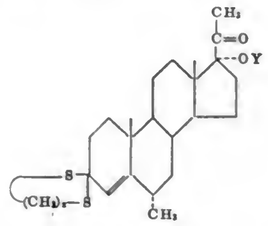
3,162,629

3-ETHYLENE MERCAPTOLE DERIVATIVES OF 6-METHYL PROGESTERONE

Irving Scheer, Somerville, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Filed June 6, 1962, Ser. No. 200,347
12 Claims. (Cl. 260—239.5)

12. A compound having the structure



in which x is an integer larger than one and smaller than four, and Y is a radical selected from the group consisting of hydrogen and alkanoyl radicals.

3,162,630

21-FLUORO-17-METHYL-11-OXYGENATED STEROIDS

Peter F. Morand and David J. Marshall, Montreal, Quebec, and Romano Deghenghi, Westmount, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 11, 1963, Ser. No. 286,920
6 Claims. (Cl. 260—239.55)

6. 9β,11β-oxido-17α-methyl - 21-fluoropregna-1,4-diene-3,20-dione.

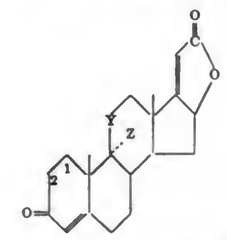
3,162,631

16β - HYDROXY - 21 - CARBOXYLIC ACID γ - LACTONES OF THE PREGNANE SERIES AND PROCESS FOR THE PREPARATION THEREOF

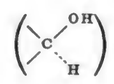
John E. Pike, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,339
40 Claims. (Cl. 260—239.57)

1. A compound of the formula:



wherein the 1,2-carbon atom linkage is selected from the group consisting of single and double bond linkages, Y is selected from the group consisting of methylene (>CH_2), β-hydroxymethylene



and carbonyl (>C=O), Z is selected from the group consisting of hydrogen and fluorine, and Y and Z can together constitute a 9(11)-double bond.

3,162,632

PREPARATION OF CYANURIC FLUORIDES

Franciszek Olstowski, Freeport, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 17, 1962, Ser. No. 210,543
5 Claims. (Cl. 260—248)

1. A process for preparing cyanuric fluorides which comprises; reacting at a temperature of from about 50 to about 250° C. cyanuric chloride with an alkali metal fluosilicate in the presence of a fluorosilicate decomposition agent selected from the group consisting of substantially anhydrous $CrCl_3$, $SbCl_5$, $FeCl_3$ and HCl, the molar ratio of said alkali metal fluosilicate to said cyanuric chloride ranging from about 0.1 to about 10 and the amount of said fluorosilicate decomposition agent ranging from about 1 to about 45 weight percent of the total amount of the reaction mass.

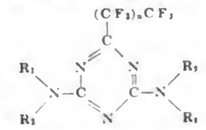
3,162,633

PERFLUOROGUANAMINES

John T. Shaw, Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

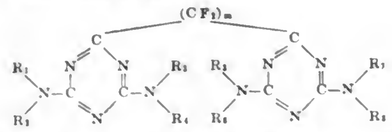
No Drawing. Original application Dec. 24, 1958, Ser. No. 782,640. Divided and this application May 3, 1962, Ser. No. 192,090
8 Claims. (Cl. 260—249.9)

1. A guanamine having the formula



characterized by having at least 2 but not more than 8 moles of combined formaldehyde as —CH_2OR_9 groups which are defined hereinafter, wherein n is from 0 to 13 inclusive and wherein at least two of the substituents R_1–R_4 is —CH_2OR_9 where R_9 is selected from the group consisting of H and lower alkyl containing from 1 to 4 carbon atoms and wherein the remaining substituents in the R_1–R_4 group are selected from the group consisting of H, alkyl from 1–18 carbon atoms, cyclohexyl, phenyl, chloro phenyl and —CH_2OR_9.

2. A guanamine having the formula



characterized by having at least 2 but not more than 8 moles of combined formaldehyde as —CH_2OR_9 groups which are defined hereinafter, wherein m is from 1 to 8 inclusive and wherein at least two of the substituents R_1–R_8 is —CH_2OR_9 where R_9 is selected from the group consisting of H and lower alkyl containing from 1 to 4 carbon atoms and wherein the remaining substituents in the R_1–R_8 group are selected from the group consisting of H, alkyl from 1–18 carbon atoms cyclohexyl, phenyl, chloro phenyl and —CH_2OR_9.

3,162,634

2-METHYL-3-(2'-METHYL-3'-CHLORPHENYL)-QUINAZOLONE-(4)

Josef Klosa, 13 Janickestrasse, Berlin-Zehlendorf, Germany

No Drawing. Filed Oct. 13, 1961, Ser. No. 144,834
3 Claims. (Cl. 260—251)

1. A compound selected from the group consisting of 2-methyl-3-(2'-methyl-3' - chlorphenyl) - quinazolone-(4) and the non toxic acceptable acid addition salts of 2-methyl-3-(2'-methyl-3'-chlorphenyl)-quinazolone-(4).

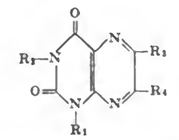
3,162,635

1,2,3,4-TETRAHYDRO-2,4-PTERIDINEDIONES AND INTERMEDIATES

Elmer F. Schroeder, Chicago, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,845
20 Claims. (Cl. 260—251.5)

1. A compound of the structural formula



wherein R_1 is selected from the group consisting of lower alkenyl and

—(lower alkylene)-N(lower alkyl)$_2$

radicals, R_2 is selected from the group consisting of lower alkyl, hydroxy(lower alkyl), and dihydroxy(lower alkyl) radicals, R_3 is a member of the class consisting of hydrogen, lower alkyl, phenyl, and furyl radicals, and R_4 is a member of the class consisting of hydrogen, lower alkyl, phenyl, furyl, and hydroxy radicals.

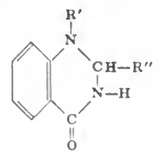
3,162,636

1-ALKYL-2-HETERO-1,2,3,4-TETRAHYDRO-QUINAZOLINE-4-ONES

Harvey Gurien, Newark, N.J., and Thomas P. Gordon, Carnegie, Pa., assignors to S. B. Penick & Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,294
4 Claims. (Cl. 260—251)

1. A compound of the formula:



where R' is lower alkyl and R'' is a heterocyclic radical chosen from the group consisting of furyl, indolyl and thienyl.

3. 1-n-propyl-2(2-furyl)-1,2,3,4-tetrahydroquinazoline-4-one.

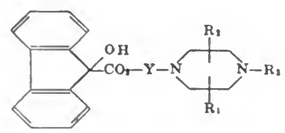
3,162,637

PIPERAZINOALKYL ESTERS OF 9-HYDROXY-FLUORENE-9-CARBOXYLIC ACID

John H. Biel, Milwaukee, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware

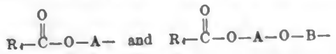
No Drawing. Filed Mar. 14, 1960, Ser. No. 14,502
7 Claims. (Cl. 260—268)

1. A member of the group consisting of compounds of the formula



and nontoxic acid addition salts thereof, wherein Y is a lower alkylene group, R_1 and R_2 are members of the

group consisting of hydrogen and lower alkyl groups, and R_3 is a member of the group consisting of lower alkyl, phenyl-lower alkyl, hydroxy-lower alkyl, hydroxyl-lower alkoxy-lower alkyl, benzyloxy-lower alkyl, benzyloxy-lower alkoxy-lower alkyl and groups of the formulas



wherein R_4 is lower alkyl, A is lower alkylene and B is lower alkylene.

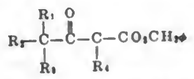
3,162,638

PROCESS FOR PREPARING DEHYDROISOCYCLOHEXIMIDES

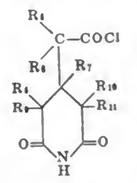
Francis Johnson, Newton Lower Falls, and Arthur A. Carlson, Framingham, Mass., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 22, 1962, Ser. No. 196,617
14 Claims. (Cl. 260—281)

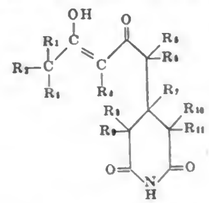
1. The process for preparing 3-glutarimidyl derivatives comprising reacting a benzyl β-keto-ester having the formula:



with a Grignard reagent to form a salt of said benzyl ester, acylating said salt with a 3-glutarimidyl acetyl chloride having the formula:



and then reducing and decarboxylating the product of the acylation to obtain a compound having the formula



wherein R_1 to R_{12} are selected from the class consisting of hydrogen, lower alkyl, monocyclicaryl, loweralkoxy, monocyclicaryloxy, diloweralkylamino, and halogen.

3,162,639

6-DESOXY-14-HYDROXY-DIHYDROMORPHINE DERIVATIVES

Jack Fishman, Forest Hills, N.Y., assignor to Mozes Juda Lewenstein, Kew Gardens, N.Y.

No Drawing. Filed Jan. 13, 1960, Ser. No. 2,121
7 Claims. (Cl. 260—285)

1. A morphine derivative selected from the group consisting of 6-methylene-6-desoxy-14-hydroxydihydromorphine; 6-methylene-6-desoxy-14-hydroxydihydrocodeine; 6-methylene - 6 - desoxy - 14 - hydroxy - methoxymethyldihydromorphine; 6-methyl-6-desoxy-14-hydroxydihydromorphine; 6-methyl-6-desoxy-14-hydroxydihydrocodeine; and salts of these morphine derivatives with a therapeutically applicable acid.

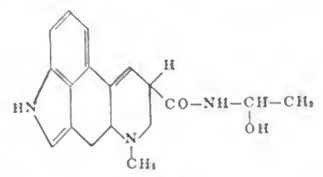
3,162,640

ALKALOID DERIVATIVES OF LYSERGIC ACIDS

Ernst Boris Chain, Cesare Bonino, and Antonio Tonolo, Rome, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

Original application Dec. 7, 1960, Ser. No. 74,392, now Patent No. 3,060,104, dated Oct. 23, 1962. Divided and this application Jan. 10, 1962, Ser. No. 169,989
Claims priority, application Italy July 19, 1960
2 Claims. (Cl. 260—285.5)

1. The derivative of D-lysergic acid having the formula:



3,162,641

CHARGE-TRANSFER COMPOUNDS OF 7,7,8,8-TETRACYANO-p-QUINODIMETHAN AND C-HYDROCARBYL SUBSTITUTED 7,7,8,8-TETRACYANO-p-QUINODIMETHANS WITH LEWIS BASES

Donald S. Acker, Waynesboro, Va., and Dale C. Blomstrom, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 23, 1962, Ser. No. 211,896
15 Claims. (Cl. 260—286)

1. A compound of the formula

$$(M^{+n})_x(TCNQ)_y^{-nx}$$

wherein TCNQ represents a member of the group consisting of 7,7,8,8-tetracyanoquinodimethan and C-alkyl-7,7,8,8-tetracyanoquinodimethan, each alkyl of said C-alkyl-7,7,8,8-tetracyanoquinodimethan containing 1–8 carbons, n is the formal positive charge on cation M, x is the number of cation species present, $-nx$ is the total negative charge on the TCNQ moieties, and y is the total number of TCNQ moieties present.

6. A compound of the formula

$$M^{+n}(TCNQ)^{-})_n(TCNQ^{\cdot})_m$$

wherein TCNQ represents 7,7,8,8-tetracyanoquinodimethan, M^{+n} is a cation of valence n, m and n are numbers of 1–6, and the symbols $(^-)$, $(\cdot)$, and $(^-)$ represent, respectively, a negative ionic charge, an electron and a netural species.

14. The compound of claim 6 wherein TCNQ is 7,7,8,8-tetracyanoquinodimethan, M is quinolinium, n is 1 and m is 1.

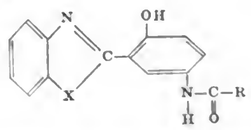
3,162,642

FLUORESCENT PIGMENTS

Edward A. McCafferty, Cincinnati, Ohio, assignor to The National Marking Machine Company, a corporation

No Drawing. Filed July 15, 1960, Ser. No. 42,959
13 Claims. (Cl. 260—304)

1. A normally colorless compound which fluoresces yellow to orange in ultraviolet violet and is characterized by the formula:



wherein X is selected from the group consisting of divalent

oxygen and divalent sulfur and R is selected from the group consisting of

amino,
alkylamino,
arylamino,
diarylamino,
methoxyarylamino and
chloroarylamino,

wherein all of said aryl groups are hydrocarbon groups of 1 to 2 rings and said alkyl portion of said alkylamino group contains from 1 to 8 carbon atoms.

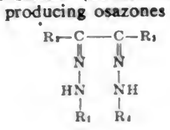
3,162,643

PROCESS FOR THE PRODUCTION OF OSAZONES

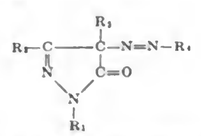
Hans Schellenberger, Leverkusen, Willibald Pelz, Opladen, Ottmar Wahl, Baden-Baden, and Walter Puschel, Cologne-Stammheim, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 13, 1960, Ser. No. 35,457
Claims priority, application Germany June 11, 1959
1 Claim. (Cl. 260—305)

A process for producing osazones having the formula



wherein R_1 and R_4 are selected from the group consisting of phenyl, naphthyl, benzthiazolyl and phenyl substituted by at least one of the following: sulfo, alkoxy, phenoxy, carboxyl, cyano, phenyl azo, alkyl, sulfoalkyl, phenyl sulfonyl and amino; R_2 and R_3 are selected from the group consisting of alkyl containing not more than 18 carbon atoms, cyanoethyl, phenyl and naphthyl, said process comprising the step of treating a 4-azopyrazolone having the formula



in which R_1, R_2, R_3 and R_4 are respectively identical to the corresponding groups in the desired osazone, with a strong base at a temperature sufficiently high to split the pyrazolone ring and produce the osazone.

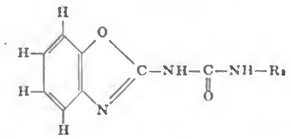
3,162,644

N-ALKYL-2-BENZOXAZOLYL UREA COMPOUNDS

Alfred Englisch, Opladen-Lutzenkirchen, Konrad Koch, Dusseldorf-Benrath, Rolf Zimmermann, Wiesbaden-Biebrich, and Mario Reiser, Wiesbaden, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed July 11, 1962, Ser. No. 209,213
Claims priority, application Germany, July 14, 1961, C 24,612
3 Claims. (Cl. 260—307)

1. A compound of the formula



wherein R_5 is alkyl of 1 to 4 carbon atoms.

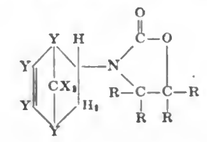
3,162,645

CERTAIN 3-(BICYCLO[2.2.1]HEPT-5-EN-2-YL)-2-OXAZOLIDINONES

Carleton W. Roberts, Midland, and Daniel H. Haigh, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,805
5 Claims. (Cl. 260—307)

1. Compound of the formula



wherein Y represents a member of the group consisting of hydrogen and halogen of atomic weight less than 50, Y represents halogen of atomic weight of 25 to 100, and R represents a member of the group consisting of hydrogen, lower alkyl and phenyl, wherein lower alkyl is defined as alkyl of from 1 to 4, inclusive, carbon atoms.

3,162,646

SPIROHYDANTOIN DERIVATIVE

Martin A. Davis and Ferenc Herr, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,004
1 Claim. (Cl. 260—309.5)

Spiro{imidazolidine - 4,5' - dibenzo[a,d][1,4]cycloöctadiene}-2,5-dione.

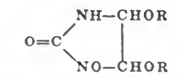
3,162,647

4,5-DIALKENYLOXY-2-IMIDAZOLIDINONES AND METHOD OF PREPARING SAME

Takenari Nakagome, Nishinomiya-shi, Junki Katsube, Abeno-ku, Osaka, and Takashi Seki and Syunzi Aono, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

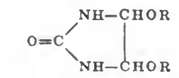
No Drawing. Filed July 16, 1962, Ser. No. 210,182
9 Claims. (Cl. 260—309.7)

1. 4,5-dialkenyloxy-2-imidazolidinone represented by the formula



wherein R represents alkenyl of from 3 to 6 carbon atoms.

8. A method of preparing 4,5-dialkenyloxy-2-imidazolidinone, represented by the formula



wherein R represents alkenyl of from 3 to 6 carbon atoms which comprises heating 4,5-dihydroxy-2-imidazolidinone with an unsaturated aliphatic alcohol represented by the formula ROH, wherein R is same as above, in the presence of a solid dehydrating agent selected from the group consisting of zinc chloride, anhydrous copper sulfate, and anhydrous magnesium sulfate.

3,162,648

ALPHA-METHYL-ALPHA-PHENYL BETA-ETHYLSUCCINIMIDE

Charles A. Miller, Detroit, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,565
1 Claim. (Cl. 260—326.5)

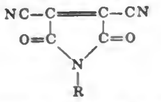
α-Methyl-α-phenyl-β-ethylsuccinimide.

3,162,649
3,4-DICYANO-2,5-DIKETOPYRROLINE AND ITS N-ALKYL DERIVATIVES

Edward G. Howard, Jr., Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,713
6 Claims. (Cl. 260—326.5)

1. A compound of the formula



wherein R is a member selected from the group consisting of hydrogen and lower alkyl.

3,162,650
PRODUCTION OF 2,4-DICYANOTHIOPHENE

Adriaan Bantjes, Wilmington, Del., assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 27, 1961, Ser. No. 140,989
Claims priority, application Canada Dec. 2, 1960
3 Claims. (Cl. 260—329)

1. The method which comprises heating a mixture of acrylonitrile and elemental sulphur in an inert atmosphere to a temperature of at least about 160° C., separating the products obtained, and recovering 2,4-dicyanothiophene.

3,162,651
THIENYLALKYL ESTERS OF 3-SULPHAMYL-4-CHLOROBENZOIC ACID

Ernst Jucker, Binningen, Basel-Land, and Adolf J. Lindenmann, Basel, Switzerland, assignors, by mesne assignments, to Fidelity Union Trust Company, executive trustee under Sandoz Trust of May 4, 1955

No Drawing. Original application May 8, 1961, Ser. No. 108,308, now Patent No. 3,119,843, dated Jan. 28, 1964. Divided and this application Apr. 30, 1962, Ser. No. 191,268
2 Claims. (Cl. 260—332.2)

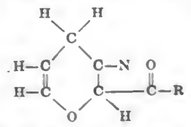
2. 3-sulphamyl-4-chlorobenzoic acid thienyl-(2')-methyl ester.

3,162,652
SELECTIVE REDUCTION PROCESS

George A. Boswell, Newark, Del., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1962, Ser. No. 199,583
6 Claims. (Cl. 260—345.1)

1. A method of reducing the carbonyl group of a carbonyl-substituted pyran of the formula



wherein R represents a member of the group consisting of hydrogen, alkyl, and alkoxy of from 1 to 20 carbon atoms, aryl and aryloxy of from 6 to 30 carbon atoms, alkenyl of from 2 to 20 carbon atoms, and alicyclic having 3 to 9 ring carbon atoms and a total of 3 to 30 carbon atoms, which comprises reacting said pyran with hydrogen in the presence of an ammonia compound of the group consisting of ammonia, amines of the formula



wherein each R' is independently selected from the group consisting of hydrogen, alkyl of from 1 to 12 carbon atoms, aryl of from 6 to 15 carbon atoms, cycloaliphatic groups of from 3 to 9 carbon atoms, and alkenyl of from 2 to 12 carbon atoms, and mixtures of ammonia and said amines, using about 1 to about 40 moles of said ammonia compound per mole of said pyran and a pressure of about 600 to about 2000 p.s.i.g. to effect conversion of the carbonyl group of said pyran to carbinol without substantial saturation of the ethylenic double bond of the pyran ring.

6. A method of converting 3,4-dihydro-1,2-pyran-2-carboxaldehyde to the corresponding 3,4-dihydro-1,2-pyran-2-methylamine which comprises reacting said 3,4-dihydro-1,2-pyran-2-carboxaldehyde with hydrogen in the presence of a nickel hydrogenation catalyst and from 1 to 10 moles of ammonia per mole of carboxaldehyde under a pressure of 200 to 600 p.s.i.g. and at a temperature of 60° to 100° C. to substantially suppress the reduction of the ethylenic double bond of the pyran ring.

3,162,653
4-HALO-2-BUTYNYL ETHERS

Joe W. Pullen, Overland Park, and Thomas R. Hopkins, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 17, 1960, Ser. No. 15,535
7 Claims. (Cl. 260—347.8)

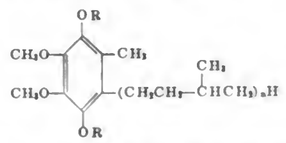
6. 4-chloro-2-butynyl furfuryl ether.

3,162,654
TETRA-SUBSTITUTED BENZOQUINONES AND DERIVATIVES OF THE SAME

Frederick L. Crane, Robert L. Lester, and David E. Green, Madison, Wis., assignors to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

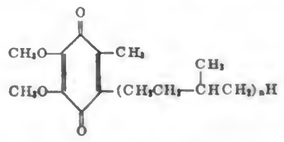
Filed Sept. 3, 1958, Ser. No. 758,838
5 Claims. (Cl. 260—396)

1. A product represented by the formula:



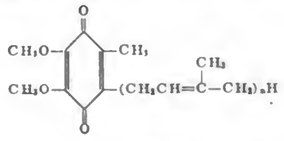
where n=6–10, and R is selected from the group consisting of hydrogen and lower alkanoyl groups.

2. A product represented by the formula:



where n=6–10.

3. A process of preparing a tetra-substituted benzoquinone of the formula:



where n=6–10, which comprises saponifying materials with high respiratory rates selected from the group consisting of beef heart tissue including beef heart mitochondria, *Azotobacter vinelandii*, Torula and baker's yeast, in an aqueous ethanolic reaction mixture containing alkali metal hydroxide and pyrogallol, extracting the saponified mixture with a solvent selected from the group consisting of heptane and isooctane and recovering the tetra-substituted benzoquinone in the resulting extract.

3,162,655
SYNTHESIS OF EQUILIN

Jehan F. Bagli, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,240
6 Claims. (Cl. 260—397.4)

6. 19-hydroxyandrosta-4,7-diene-3,17-dione.

3,162,656
6-DEHYDRO-17α-ETHINYL-ESTROGENS

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Aug. 23, 1960, Ser. No. 51,257
Claims priority, application Mexico, July 10, 1956, 45,202, 45,203
2 Claims. (Cl. 260—397.5)

1. 4-methyl-17α-ethinyl-6-dehydro-estradiol.
2. 1,4-dimethyl-17α-ethinyl-6-dehydro-estradiol.

3,162,657
PRODUCTION OF ALPHA-SULFOALKANOIC ACIDS

Norman D. Gordon, Chicago, and Elliot N. Schubert, Skokie, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 25, 1962, Ser. No. 212,447
7 Claims. (Cl. 260—400)

1. A process for the production of alpha-sulfoalkanoic acid, comprising heating and reacting under substantially anhydrous conditions a substantially saturated fatty acid containing 8 to 22 carbon atoms with a strong sulfonating agent in the presence of an inert chlorinated hydrocarbon liquid solvent by adding the sulfonating agent slowly so that during the major part of addition there is no excess of the sulfonating agent above that required by the stoichiometry of the reaction, said solvent being miscible with said fatty acid and sulfonating agent, holding the reaction mixture for a length of time sufficient to complete the sulfonation reaction, and cooling in the range of about 40° to 80° F. the reaction mixture containing the sulfonic acid product and byproducts in the presence of a second inert liquid hydrocarbon solvent, which is a solvent for said byproducts but not for said sulfonic acid product, to precipitate alpha-sulfoalkanoic acid.

3,162,658
PROCESS FOR CATALYTIC ISOMERIZATION OF COMPOUNDS OF UNCONJUGATED POLYETHENOID ACIDS

Josef Baltes, Hamburg, and Otto Wechmann and Friedrich Weghorst, Hamburg-Harburg, Germany, assignors to Harburger Fettchemie Brinckman & Mergell G.m.b.H., Hamburg-Harburg, Germany

No Drawing. Filed Nov. 21, 1960, Ser. No. 70,412
Claims priority, application Germany, Dec. 2, 1959, H 38,039; Apr. 16, 1960, H 39,186
14 Claims. (Cl. 260—405.6)

1. A process for the catalytic isomerization of unconjugated polyethenoid fatty acid compounds to conjugated isomers thereof, by treatment of the starting material selected from the group consisting of unconjugated polyethenoid fatty acid esters of monohydric alcohols, said alcohols being hydrocarbyl alcohols having 1 to 18 carbon atoms; and unconjugated polyethenoid fatty acid amides from hydrocarbyl mono and polyamines, consisting essentially of treatment of the starting material consisting essentially of one of these compounds with 0.05–5.0% by weight of a catalyst selected from the group consisting of alkali metal hydrocarbyl alcoholates and alkali metal amides at a temperature between 60° C. and 180° C.

3,162,659
TRANS-9-OXODEC-2-ENOIC ACID

Robert Kenneth Callow, London, Colin Gasking Butler, Harpenden, and Norah Christine Johnston, London, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Nov. 25, 1960, Ser. No. 71,597
Claims priority, application Great Britain Nov. 27, 1959
1 Claim. (Cl. 260—413)

As a product of manufacture, the compound trans-9-oxodec-2-enoic acid.

3,162,660
PROCESS FOR PREPARATION OF METAL ACYLATES

Philip H. Crayton, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 26, 1962, Ser. No. 175,784
11 Claims. (Cl. 260—414)

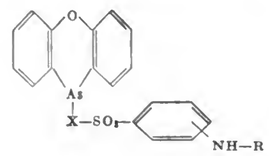
1. A process for preparation of metal acylates which comprises reacting, in a non-polar organic solvent, a metal halide selected from the group consisting of trivalent-titanium chloride, trivalent-vanadium chloride, tetravalent-vanadium chloride, tetravalent-tin chloride, and tetravalent-zirconium chloride with an organic acid having from 4 to 18 carbon atoms and selected from the group consisting of a monocarboxylic alkanoic acid, benzoic acid, and phthalic acid, and with anhydrous ammonia at elevated temperatures, but below the thermal decomposition temperature of the resulting reaction product and while maintaining an essentially inert atmosphere in the reaction vessel, and thereafter recovering the metal acylates from the reaction product.

3,162,661
S - (10 - PHENOXARSINYL) ALKANOYL-AMIDOBENZENE SULFONATES AND THIOSULFONATES

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,907
6 Claims. (Cl. 260—440)

1. The compounds corresponding to the formula:



wherein R represents loweralkanoyl and X represents a member of the group consisting of oxygen and sulfur.

3,162,662
PREPARATION OF LINEAR CHLOROSILOXANES FROM CYCLOTRISILOXANES

Paul L. Brown, Saginaw, and James Franklin Hyde, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Apr. 19, 1961, Ser. No. 103,978
3 Claims. (Cl. 260—448.2)

1. The method which comprises interacting a mixture which consists essentially of a cyclotrisiloxane A of the

formula $(R_2SiO)_3$ in which each R is a substituent independently selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals, halogenoaromatic monovalent hydrocarbon radicals, fluoroaliphatic monovalent hydrocarbon radicals and cyanoalkyl radicals and an organosilicon compound B containing from one silicon-bonded halogen atom per molecule to four silicon-bonded halogen atoms per silicon atom, any remaining silicon valences being satisfied by substituents selected from the group consisting of silicon-bonded oxygen atoms and the R substituents set forth above, whereby the cyclotrisiloxane A forms a linear siloxane polymer having attached to one terminal silicon atom a halogen atom from B and having attached to the other terminal silicon atom through a siloxane linkage the silicon atom of B from which the halogen atom separated.

3. $Cl_3Si[OSi(C_6H_5)(CH_3)]_3Cl$.

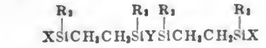
3,162,663

SILETHYLENESILARYLENES AND SILOXANE DERIVATIVES THEREOF

Henry Nelson Beck, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

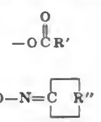
No Drawing. Filed Jan. 10, 1963, Ser. No. 250,470
14 Claims. (Cl. 260—448.2)

1. A composition of the formula

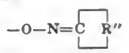


wherein

X is selected from the group consisting of halogen atoms and radicals of the formula —OR',



—ON=CR'$_2$ and



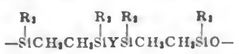
R' is selected from the group consisting of hydrogen and monovalent hydrocarbon radicals,

R'' is a divalent hydrocarbon radical,

Y is divalent and selected from the group consisting of p-phenylene, 4,4'-biphenylene, 4,4'-diphenylene ether, p-xylylene, and 4,4'-dimethylenediphenyl ether radicals, and each

R is a monovalent hydrocarbon radical free of aliphatic unsaturation.

10. A siloxane of the unit formula



wherein Y is divalent and selected from the group consisting of p-phenylene, 4,4'-biphenylene, 4,4'-diphenylene ether, p-xylylene, and 4,4'-dimethylenediphenyl ether radicals, and R is a monovalent hydrocarbon radical free of aliphatic unsaturation.

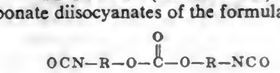
3,162,664

CARBONATE DIISOCYANATES

Thomas K. Brotherton, South Charleston, and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,866
21 Claims. (Cl. 260—463)

1. Carbonate diisocyanates of the formula:



wherein R represents a divalent hydrocarbon radical of from 2 to 12 carbon atoms.

3,162,665

HALOALLYL METHANETHIOSULFONATES

Karoly Szabo, Yonkers, N.Y., and Thomas B. Williamson, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,049
5 Claims. (Cl. 260—453)

1. A haloallyl methanethiosulfonate having the following formula:

$$CXY{=}CZ{-}CH_2{-}S{-}SO_2{-}CH_3$$

wherein X, Y and Z are selected from the class consisting of hydrogen, chlorine and bromine, at least one of said X, Y and Z always being chlorine or bromine.

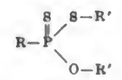
3,162,666

O-ARYL S-ARYL PHOSPHORAMIDODITHIOATES

Kenneth C. Kauer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,624
7 Claims. (Cl. 260—461)

1. The compound corresponding to the formula



wherein R represents a member of the group consisting of amino and loweralkylamino, and each R' represents a member of the group consisting of phenyl and substituted phenyl in which the substituents are selected from the group consisting of bromo, chloro, loweralkoxy, loweralkyl and loweralkylthio.

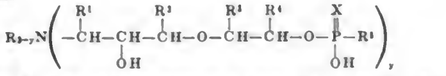
3,162,667

HYDROCARBONTHIOPHOSPHONOXYHYDROXYOXAALKYLHYDROCARBYLAMINE

David D. Reed, Glenham, and James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

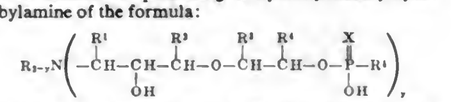
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,600
10 Claims. (Cl. 260—461)

1. A hydroxyoxaalkylhydrocarbylamine of the formula:

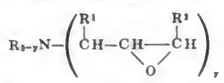


where R is an organic member of not more than 20 carbons selected from the group consisting of alkyl, phenyl, alkylphenyl, and phenylalkyl, R^1, R^2, R^3 and R^4 are selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, R^5 is hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, X is chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen and y is an integer from 1 to 2, inclusively.

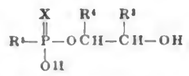
6. A method of producing a hydroxyoxaalkylhydrocarbylamine of the formula:



where R is an organic member of not more than 20 carbons selected from the group consisting of alkyl, phenyl, alkylphenyl and phenylalkyl, R^1, R^2, R^3 and R^4 are selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen, R^5 is hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, and y is a whole integer from 1 to 2, inclusively, comprising reacting an epoxyamine compound of the formula:



with a hydroxyalkyl hydrocarbonthiophosphonate of the formula:



where R^1, R^3, R^3, R^4, R^5, X and y are as heretofore defined, at a temperature of between about 25 and 150° C. and at a mole ratio of said amine to said thiophosphonate reactant between about 0.1:1 and 5:1.

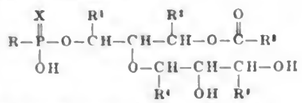
3,162,668

HYDROCARBONTHIO-PHOSPHONOXYDIHYDROXYALKOXYALKYL ALKENOATES

David D. Reed, Glenham, and James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

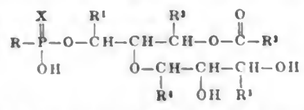
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,647
6 Claims. (Cl. 260—461)

1. Hydrocarbonthiophosphonoxydihydroxyalkoxyalkyl alkenoate of the formula:

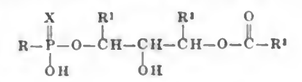


where R is a monovalent hydrocarbon derived from aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1, R^2, R^4 and R^5 are members selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons. R^3 is alkenyl of from 2 to 20 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen.

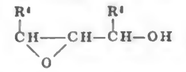
4. A method of preparing a hydrocarbonthiophosphonoxydihydroxyalkoxyalkyl alkenoate of the formula:



where R is a monovalent hydrocarbon derived from aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1, R^2, R^4 and R^5 are members selected from the group consisting of hydrogen and alkyl, R^3 is alkenyl of from 2 to 20 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen comprising contacting a hydrocarbonthiophosphonoxyhydroxyalkyl alkenoate of the formula:



with a hydroxyepoxyalkane of the formula:



in the presence of catalyst selected from the group consisting of $BF_3{\cdot}C_2H_5OC_2H_5$, BF_3, HF, $AlCl_3$, $SnCl_4$, $TiCl_4$, $ZnCl_4$, H_2SO_4, H_3PO_4, CCl_3CO_2H, and CF_3CO_2H at a temperature between about 50 and 150° C. in a mole ratio of epoxyalkane to alkenoate reactant to catalyst of between about 0.5:1:0.01 and 2:1:0.1.

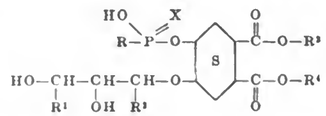
3,162,669

DIALKYL 4-HYDROCARBONTHIOPHOSPHONOXY-5-DIHYDROXYALKOXYHEXAHYDROPHTHALATES

David D. Reed, Glenham, and James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

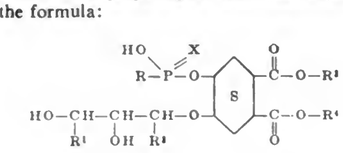
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,648
4 Claims. (Cl. 260—461)

1. An alkoxyhexahydrophthalate derivative of the formula:

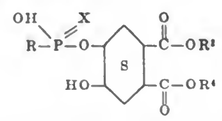


wherein R is hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1 and R^2 are members selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 and R^4 are alkyl of from 1 to 20 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen.

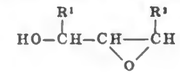
3. A method of preparing an alkoxyhexahydrophthalate of the formula:



where R is hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1 and R^2 are members selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 and R^4 are alkyl of from 1 to 20 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen, comprising contacting a hexahydrophthalate of the formula:



with a hydroxyepoxyalkane of the formula:



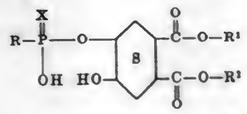
in the presence of a catalyst selected from the group consisting of $BF_3{\cdot}C_2H_5OC_2H_5$, BF_3, HF, $AlCl_3$, $SnCl_4$, $TiCl_4$, $ZnCl_2$, H_2SO_4, H_3Po_4, CCl_3CO_2H, CF_3CO_2H, Na, and C_2H_5OK at a temperature of between about 50 and 150° C. in a mole ratio of hexahydrophthalate reactant to epoxyalkane reactant to catalyst of between about 1:1:0.001 and 1:5:0.1.

3,162,670
DIALKYL HYDROCARBONTHIOPHOSPHONOXY-HYDROXYHEXAHYDROPHTHALATE

James M. Petersen, Fishkill, and David D. Reed, Glenham, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

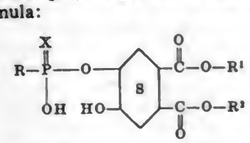
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,650
4 Claims. (Cl. 260—461)

1. A hydroxyhexahydrophthalate derivative of the formula:



where R is a hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1 and R^2 are alkyl of from 1 to 20 carbons, and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen.

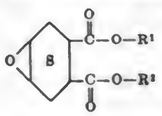
3. A method of preparing a hydroxyhexahydrophthalate of the formula:



where R is a hydrocarbyl derived from an aliphatic polyolefin having a molecular weight between 250 and 50,000, R^1 and R^2 are alkyl of from 1 to 20 carbons, and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen comprising contacting a thiophosphonic acid of the formula:



with a dialkyl epoxyhexahydrophthalate of the formula:



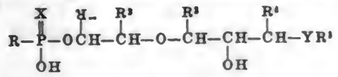
where R^1-R^2, and X are as heretofore defined, at a temperature between about 25 and 150° C. in a mole ratio of said thiophosphonic acid to hydrophthalate reactant of between 0.1:1 and 2:1.

3,162,671
HYDROCARBYLCHALCAHYDROXYOXAHEXYL HYDROCARBONTHIOPHOSPHONATES

James M. Petersen, Fishkill, and David D. Reed, Glenham, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

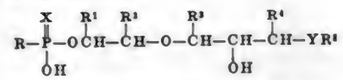
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,652
14 Claims. (Cl. 260—461)

1. Hydroxyoxahexyl thiophosphonate of the formula:

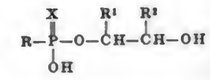


where R is a monovalent hydrocarbon derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, R^1, R^2, R^3, and R^4 are selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, R^5 is amonovalent organic member of 1 to 20 carbons selected from the group consisting of alkyl, alkenyl, phenyl, haloaryl phenylalkyl and alkylphenyl, X is selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen and Y is selected from the group consisting of sulfur and oxygen.

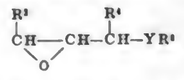
8. A method of preparing hydroxyoxahexyl thiophosphonate of the formula:



wherein R is a monovalent hydrocarbon derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, R^1, R^3, R^3 and R^4 are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^5 is a member selected from the group consisting of alkyl, phenyl, alkylphenyl, phenylalkyl, allyl, alkenyl, and haloaryl of from 1 to 20 carbons, X is selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen and Y is a chalcogen selected from the group consisting of sulfur and oxygen, comprising contacting hydroxyalkyl hydrocarbonthiophosphonate of the formula:



with a hydrocarbylchalcaepoxyalkane of the formula:



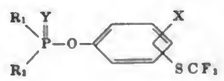
where R, R^1, R^2, R^3, R^4, R^5, X and Y are as heretofore defined in the presence of an acid catalyst selected from the group consisting of ($BF_3 \cdot C_2H_5OC_2H_5$), BF_3, HF, $AlCl_3$, $SnCl_4$, $TiCl_4$, H_2SO_4, H_3PO_4, and CCl_3CO_2H, and at a temperature between 25 and 175° C., the mole ratio of epoxyalkane compound to thiophosphonate reactant to catalyst being between about 0.5:1:0.001 and 5:1:0.1.

3,162,672
O - TRIFLUOROMETHYLMERCAPTOPHENYL ESTERS OF PENTAVALENT PHOSPHORUS ACIDS

Hans Richert, Leverkusen, Gerhard Schrader, Wuppertal-Cronenberg, and Heinz Jonas, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,246
Claims priority, application Germany Nov. 22, 1961
6 Claims. (Cl. 260—461)

1. A compound of the formula



in which

R_1 stands for a member selected from the group consisting of lower alkyl and lower alkoxy and R_2 stands for lower alkoxy;

X stands for a member selected from the group consisting of hydrogen, chlorine, and lower alkyl; and

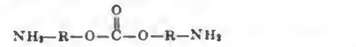
Y stands for a member selected from the group consisting of oxygen and sulfur.

3,162,673
BIS(AMINOALIPHATIC)CARBONATES AND PROCESS FOR PREPARATION

Thomas K. Brotherton, South Charleston, and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,865
7 Claims. (Cl. 260—463)

1. Carbonate diamine of the formula:



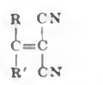
wherein R is a member selected from the group consisting of alkylene, alkenylene and alkynylene of from 2 to 12 carbon atoms.

3,162,674
HYDROXY[DI(POLYFLUOROHALOALKYL)]METHYLMALONONITRILES, THEIR PREPARATION, AND 1,1-DI(POLYFLUOROHALOALKYL)-2,2-DICYANOETHYLENES MADE THEREFROM

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 7, 1962, Ser. No. 200,645
9 Claims. (Cl. 260—464)

1. 1,1-di(polyfluorohaloalkyl) - 2,2 - dicyanoethylenes having the formula



wherein R and R′ are selected, individually, from the group consisting of ω-hydroperfluoroalkyl and ω-haloperfluoroalkyl of up to 18 carbons and, jointly, of perfluoroalkylene of between 3 and 5 carbons.

4. Hydroxy[di(polyfluorohaloalkyl)]methylmalononitriles having the formula



wherein R and R′ are selected, individually, from the group consisting of ω-hydroperfluoroalkyl and ω-haloperfluoroalkyl of up to 18 carbons and, jointly, of perfluoroalkylene of between 3 and 5 carbons.

3,162,675
PROCESS FOR MAKING NITROAROMATIC NITRILES

George Andrew Olah and Stephen Joseph Kuhn, both of Sarnia, Ontario, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 19, 1961, Ser. No. 139,073
7 Claims. (Cl. 260—465)

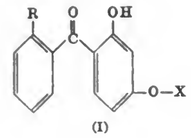
1. A process for making dinitroaromatic nitriles which comprises reacting an aromatic carbocyclic nitrile with a stable nitronium salt selected from the group consisting of NO_2BF_4, NO_2PF_6, NO_2SbF_6, NO_2SbCl_6, $(NO_2)_2SiF_6$, NO_2AsF_6, and NO_2ClO_4.

3,162,676
ETHYLENICALLY UNSATURATED DERIVATIVES OF 2,4-DIHYDROXYBENZOPHENONE

Albert I. Goldberg, Berkeley Heights, N.J., and Martin Skoultchi and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

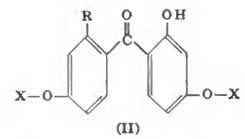
No Drawing. Filed June 18, 1962, Ser. No. 202,983
6 Claims. (Cl. 260—486)

1. An ethylenically unsaturated derivative of 2,4-dihydroxybenzophenone selected from the group consisting of



(I)

and



(II)

wherein X is an ethylenically unsaturated radical selected from the group consisting of acryloxy beta-hydroxypropyl acrylate and methacryloxy beta-hydroxypropyl methacrylate radicals and wherein R represents a radical selected from the class consisting of hydrogen and hydroxy radicals.

3,162,677
PURIFICATION OF GLYCOL ESTERS

Lee H. Horsley and David P. Sheetz, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 20, 1962, Ser. No. 203,715
4 Claims. (Cl. 260—486)

1. A process for purifying a glycol monoester having the formula

$$C_nH_{2n-1}CO_2C_xH_{2x}OH$$

wherein n and x are integers from 2 to 4 and containing as an impurity a small amount of the corresponding glycol diester, which process comprises intimately contacting said monoester in aqueous solution with an organic solvent characterized by

(1) a dielectric constant of 1.8–5,

(2) a solubility parameter δ at 25° C. which satisfies the formula

$$\delta = A - \frac{+nx}{2}$$

wherein x and n are as defined above and A is a number from 10 to 11.5,

(3) being selected from the group consisting of normally liquid aliphatic, cycloaliphatic, and aromatic hydrocarbons, their normally liquid chlorinated derivatives, and mixtures thereof,

thereby extracting from said monoester at least a substantial portion of the diester impurity, and separating the thereby purified aqueous monoester solution.

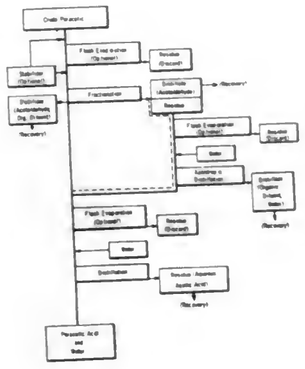
3,162,678
AQUEOUS PERACETIC ACID RECOVERY

Ernest R. Hayes, Shawinigan South, Quebec, Canada, assignor to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Oct. 23, 1961, Ser. No. 146,709
10 Claims. (Cl. 260—502)

1. A process for the recovery of a concentrated aqueous solution of peracetic acid from a crude mixture containing acetaldehyde, peracetic acid, acetic acid, extraneous organic peroxide material, and a nonreactive organic liquid diluent satisfying at least one of the following two conditions: (*a*) having a boiling point at atmospheric pressure between 40° C. and 110° C. and (*b*) forming with water a binary azeotrope of boiling point between 40° C. and 110° C. at atmospheric pressure, said process consisting essentially of (1) separating acetaldehyde and the

nonreactive organic liquid diluent as distillate from a residue of peracetic acid, acetic acid, and the organic peroxide material by vacuum fractional distillation, (2) adding water to the residue in an amount to provide a mole ratio of water to peracetic acid of from 2.0 to 8.5, (3) fractionally distilling said aqueous residue under vacuum whereby at least part of the organic peroxide material



present in the mixture is hydrolyzed, and (4) recovering a concentrated aqueous solution of peracetic acid substantially free of acetic acid as distillate and aqueous acetic acid as residue, said process being carried out at an absolute pressure below 200 mm. Hg.

3,162,679

PRODUCTION OF A TETRAHYDROPHTHALIC ACID AND SALTS THEREOF

Paul N. Rylander, Newark, and Nicholas F. Rakonza, Carteret, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,884
12 Claims. (Cl. 260—514)

1. A process for the production of a tetrahydro compound of the group consisting of tetrahydroterephthalic acid, tetrahydroisophthalic acid, and alkali salts thereof, which comprises hydrogenating a phthalic acid of the group consisting of terephthalic acid and isophthalic acid which has been at least partially converted to the monoalkali salt of the acid by reaction with an alkali in the molar ratio range of about 0.005–1:1 of alkali to acid respectively, in the presence of a ruthenium catalyst at a temperature in the range of from about 50° C.–250° C. and a pressure in the range of from about 300–15,000 p.s.i.g., and continuing the hydrogenating until the tetrahydro compound is formed as indicated by a cessation of the hydrogenation reaction.

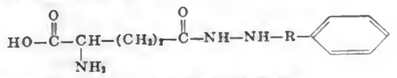
3,162,680

1-(5-GLUTAMYL)-2-(PHENYL)-LOWER ALKYL HYDRAZINES

John H. Biel, Milwaukee, Wis., assignor, by mesne assignments, to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Dec. 19, 1958, Ser. No. 781,422
4 Claims. (Cl. 260—518)

1. A compound of the formula



wherein R is a lower alkylene radical.

3,162,681

o-BIS - (2 - CHLOROETHYL) - AMINOPHENYLALANINE AND METHOD OF PREPARING SAME

Thomas Anthony Connors, London, and Walter Charles Joseph Ross, Sunbury-on-Thames, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed Mar. 24, 1961, Ser. No. 98,009
Claims priority, application Great Britain, Apr. 4, 1960, 11,874/60
5 Claims. (Cl. 260—518)

1. o-Bis-(2-chloroethyl)-aminophenylalanine.

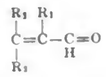
3,162,682

DISPROPORTIONATION REACTION OF ALPHA, BETA - ETHYLENICALLY UNSATURATED ALDEHYDES IN THE PRESENCE OF A SILVER CATALYST

Adolph C. Shotts, Maplewood, and Bonnie M. Lloyd, Lake Charles, La., assignors, by mesne assignments, to Cities Service Research and Development Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 28, 1959, Ser. No. 862,057
9 Claims. (Cl. 260—523)

1. In a process of producing an α,β-unsaturated alcohol and an α,β-unsaturated acid by disproportionating the α,β-unsaturated aldehyde corresponding thereto, said aldehyde having the formula,



wherein R_1, R_2 and R_3 are members selected from the group consisting of hydrogen, lower alkyl, phenyl, benzyl and cyclohexyl, the improvement of effecting said disproportionation in an aqueous alkaline reaction mixture consisting essentially of the said α,β-unsaturated aldehyde, a finely divided metallic silver catalyst, and an aqueous alkaline reaction media, said finely divided metallic silver catalyst being present in a concentration of from about one per cent to about thirty per cent by weight of the total reaction mixture, said aqueous alkaline reaction media having a maintained concentration of a free base, selected from the group consisting of an alkali metal hydroxide and an alkaline earth hydroxide, of not greater than about ten per cent by weight of the total reaction mixture, and said disproportionation being effected at a reaction temperature of from about 0° C. to about 100° C.

3,162,683

LIQUID PHASE OXIDATION OF ALKYL-SUBSTITUTED AROMATICS

Jennings H. Jones and Merrell R. Fenske, State College, Pa., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 23, 1959, Ser. No. 822,208
14 Claims. (Cl. 260—524)

1. A process for making oxygenated aromatic compounds which comprises reacting a polyalkyl substituted benzene with molecular oxygen in the liquid phase in the presence of a catalytic amount of a heavy metal salt, said metal being selected from Groups VIB, VIIB and VIII of the Periodic Chart, an aliphatic perhalogenated acid having a formula selected from the group consisting of:

$$(a)\ X_3C(CX_2)_nCOOH$$

and

$$(b)\ HOOC(CX_2)_nCOOH$$

wherein n is 1 to 8 and X is selected from the group consisting of fluorine atoms and a mixture of fluorine and chlorine atoms, and a lower aliphatic acid selected from the group consisting of acetic, propionic, and butyric

acids at temperatures of about 75 to 200° C. under pressures of 0 to 200 p.s.i.g. for up to 50 hours, said aliphatic perhalogenated acid and said alkyl substituted aromatic compound being present in a weight ratio of about 0.1 to 0.4:1 and said lower aliphatic acid and said alkyl substituted aromatic compound being present in a weight ratio of about 2 to 10:1, and recovering a reaction product containing an oxygenated aromatic compound.

11. A process for making aromatic carboxylic acids which comprises reacting dialkylbenzene with molecular oxygen at temperatures of 110 to 150° C. and under pressures of atmospheric to 200 p.s.i.g. in the presence of catalytic amount of a cobalt salt about 2 to 10 parts by weight of acetic acid and 0.1 to 0.4 parts by weight of a perhalogenated acid per part by weight of dialkylbenzene, the said perhalogenated acid having a formula selected from the group consisting of:

$$(a)\ X_3C(CX_2)_nCOOH$$

and

$$(b)\ HOOC(CX_2)_nCOOH,$$

wherein n is 1 to 8 and X is selected from the group consisting of fluorine atoms and a mixture of fluorine and chlorine atoms, maintaining said temperatures and pressures for a sufficient time to substantially convert said dialkylbenzene to aromatic carboxylic acids.

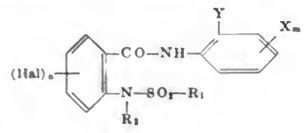
3,162,684

NEW AMINOBENZOIC ACID DERIVATIVES AND COMPOSITIONS CONTAINING SAME

Wilhelm Ernst Frick, Pfeffingen, Basel-Land, and Walter Stammbach, Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,976
Claims priority, application Switzerland, Dec. 24, 1957 54,113
11 Claims. (Cl. 260—556)

1. A compound of the formula



wherein

R_1 is lower alkyl,
R_2 represents a member selected from the group consisting of hydrogen and lower alkyl,
X in each occurrence represents a member selected from the group consisting of chlorine, bromine and trifluoromethyl,
m is an integer from 1 to 4,
Y represents a member selected from the group consisting of hydrogen, methyl, lower alkoxy, chlorophenoxy and chlorophenylmercapto,
Hal represents an atom selected from the group consisting of chlorine and bromine,
n is an integer from 1 to 3, and the total sum of $m+n$ is at least 3 and at most 7.

3,162,685

N-METHYL-5-CYCLOHEXYLSALICYLAMIDE

John A. Faust and Melville Sahyun, Santa Barbara, Calif.; said Faust assignor to said Sahyun, doing business as Sahyun Laboratories, Santa Barbara, Calif.

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,626
1 Claim. (Cl. 260—559)

N-methyl-5-cyclohexylsalicylamide.

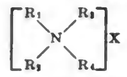
3,162,686

PREPARATION OF LOWER TETRAALKYL QUATERNARY AMMONIUM NITRATES

Guy H. Harris, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 26, 1959, Ser. No. 795,867
5 Claims. (Cl. 260—567.6)

1. A process for the preparation of a lower tetraalkyl quaternary ammonium nitrate, which comprises intermixing a tetraalkyl quaternary ammonium halide having a total of 7 carbon atoms and the general formula:



where R_1, R_2, R_3, and R_4 represent an alkyl radical having from 1 to 4 carbon atoms and X represents a halogen selected from the group consisting of chlorine and bromine with nitric acid in the presence of an unsubstituted branched-chain alkanol having from 4 to 6 carbon atoms to react the tetraalkyl quaternary ammonium halide with the nitric acid thereby to directly precipitate said lower tetraalkyl quaternary ammonium nitrate in the reaction mixture, and recovering the so-precipitated tetraalkyl quaternary ammonium nitrate formed from the reaction mass.

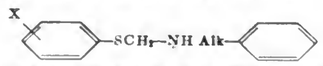
3,162,687

N-(ARYLTHIOALKYL)ARALKYLAMINES

Robert C. Tweit, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 13, 1959, Ser. No. 826,482
4 Claims. (Cl. 260—570.5)

1. A compound of the structural formula



wherein X is a halogen and Alk is a lower alkylene radical.

3,162,688

PRODUCING NONCORROSIVE MERCAPTAN PRODUCT

Thomas A. Thigpen, Jr., and James K. Warkentin, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,477
9 Claims. (Cl. 260—609)

9. A method of purification comprising providing an alkyl mercaptan having up to a total of 16 carbon atoms and which will, upon storage, form a mercapto-metallic precipitate, treating said mercaptan with a non-oxidizing, strong, concentrated mineral acid to dehydrate said mercaptan, reduce the pH thereof to about 1 and form an acid phase and a mercaptan phase to thereby remove said mercapto-metallic precipitate and prevent the formation of more of said mercapto-metallic precipitate and recovering the purified mercaptan.

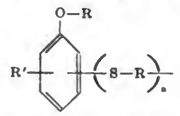
3,162,689

POLYCHALKOGEN ETHERS

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,519
3 Claims. (Cl. 260—609)

1. A compound corresponding to the formula



wherein each R independently represents a member of

the group consisting of cycloalkyl of from 5 to 6, both inclusive, carbon atoms and alkyl containing from 1 to 24, inclusive, carbon atoms, R' represents alkyl of from 1 to 4 inclusive, carbon atoms, and *n* is an integer from 1 to 4, inclusive.

3,162,690

METHOD OF PURIFYING CRUDE p,p'-ISOPROPYLIDENE DIPHENOL

Alfred Marx, Hans Wille, Ludwig Rappen, and Hans Gautzsch, all of Duisburg-Meiderich, Germany, assignors to Gesellschaft fuer Teerverwertung m.b.H., Duisburg-Meiderich, Germany, a corporation of Germany

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,863
Claims priority, application Germany, Dec. 29, 1959, G 28,709
13 Claims. (Cl. 260—619)

1. In a method of purifying crude p,p'-isopropylidene diphenol, the steps which comprise heating said crude product in the presence of a cresol selected from the group consisting of m-cresol, p-cresol, and mixtures containing same, said cresol being present in an amount in excess of the molar equivalent of said p,p'-isopropylidene diphenol until a substantially liquid mixture is obtained; cooling said mixture until the cresol addition compound of p,p'-isopropylidene diphenol precipitates from said mixture, separating the precipitated addition compound from the remainder of said mixture, and heating and subjecting said addition product to fractional distillation in a vacuum so as to split up and to separate substantially pure p,p'-isopropylidene diphenol from said cresol.

3,162,691

PROCESS FOR THE MANUFACTURE OF β-NITROETHANOL

Cyril Grob, Basel, and Erwin F. Jenny, Riehen, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Mar. 14, 1960, Ser. No. 14,532
Claims priority, application Switzerland, Mar. 26, 1959, 71,328
6 Claims. (Cl. 260—638)

1. In the process of manufacturing β-nitroethanol by reacting nitromethane with a member selected from the group consisting of formaldehyde and a substance yielding formaldehyde, in the presence of a basic condensing reagent selected from the group consisting of alkaline earth metal oxide, alkaline earth metal hydroxide, alkaline earth metal alcoholate, alkaline earth metal carbonate, alkali metal carbonate, ammonium hydroxide and quaternary ammonium base, and in the absence of a substantial amount of water, and treating the reaction mixture with an acidic reagent selected from the group consisting of acetic, citric, phosphoric, hydrochloric, sulfuric, calcium bicarbonate and sodium bisulfate, the steps of using at least 9000 molar equivalents of acid-free nitromethane per one molar equivalent of the basic condensing reagent, carrying out the reaction between 0° and 50°, and acidifying the reaction mixture with from 3 to 6.5 molar equivalents of the acidic reagent per one molar equivalent of the basic condensing reagent.

3,162,692

PROCESS FOR PREPARING TRIFLUORONITROSOALKANE

George H. Crawford, Jr., White Bear Lake, and David E. Rice, Minneapolis, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Apr. 23, 1963, Ser. No. 275,060
3 Claims. (Cl. 260—647)

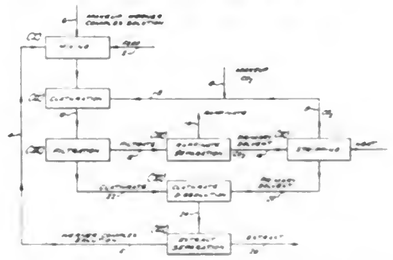
1. A process for decarboxylating a fluorinated acyl nitrite which comprises introducing fluorinated acyl nitrite into a reaction zone which is at the pyrolysis temperature of the nitrite containing a fluorocarbon solvent having a boiling point below the boiling point of the fluorinated acyl nitrite, maintaining a pressure in the reaction zone sufficient to maintain the fluorinated acyl nitrite in the liquid phase but such as to permit refluxing or boiling of the fluorocarbon solvent and continuously removing vaporous fluorinated nitrosoalkane as a product of the process from the reaction zone.

3,162,693

CLATHRATION METHOD

William D. Schaeffer, Pomona, and Homer E. Rea, Jr., Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed July 31, 1961, Ser. No. 128,029
20 Claims. (Cl. 260—674)



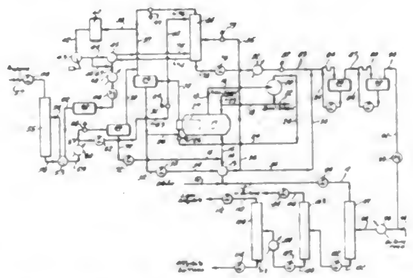
2. A method for resolving a feed mixture of organic compounds differing in molecular configuration comprising: (1) forming a solution of a Werner complex in a primary solvent comprising an aqueous solution of a nitrogen base of sufficient strength to form a bicarbonate upon contact with carbon dioxide in the presence of water; (2) effecting intimate contact of said solution with said feed mixture; and (3) bringing the Werner complex constituents in solution into contact with carbon dioxide to effect precipitation of a solid clathrate of at least one component of said feed mixture with said Werner complex.

3,162,694

ALKYLATION PROCESS WITH ASSISTED DEISOBUTANIZING

David K. Beavon, Darien, Conn., assignor to Texaco Inc., a corporation of Delaware

Filed June 12, 1958, Ser. No. 741,663
13 Claims. (Cl. 260—683.62)



1. In a catalytic alkylation process wherein isobutane in molar excess and an olefin-based alkylatable material containing propane are reacted in liquid phase in the presence of an alkylation catalyst in an alkylation zone under alkylation conditions, said alkylation zone is refrigerated by the evaporation of low boiling hydrocarbon including isobutane and propane, and additional isobutane

is recovered from the remaining liquid hydrocarbon phase containing alkylate product, the improvement which comprises: withdrawing the evaporated low boiling hydrocarbons including isobutane and propane to a compression zone, therein compressing said evaporated low boiling hydrocarbons to a pressure sufficient for permitting their total condensing at a temperature between about 100 and about 250° F., fractionally distilling a stream of said remaining liquid hydrocarbon phase into an overhead distillate enriched in isobutane and a liquid bottoms fraction containing alkylate product in a first fractional distillation zone, said liquid bottoms fraction being deisobutanized and enriched in normal butane by the fractional distillation, supplying at least a portion of the heat for the deisobutanizing fractional distillation of said remaining liquid hydrocarbon phase by indirect heat exchange between distilland resulting from said deisobutanizing fractional distillation and said compressed evaporated low boiling hydrocarbons, totally condensing said compressed hydrocarbon vapors after said indirect heat exchange with said distilland forming a condensate, fractionally distilling said condensate into an overhead distillate of propane and an isobutane-rich liquid residue in a second fractional distillation zone, cooling said liquid isobutane-rich residue, passing at least a part of said cooled liquid isobutane-rich residue as reflux to said first fractional distillation zone, and recovering alkylate product from the bottoms product of said deisobutanizing fractional distillation.

3,162,695

BLENDS OF POLYCARBONATES WITH BUTADIENE-STYRENE, METHYL METHACRYLATE, STYRENE GRAFT COPOLYMER

Thomas S. Grabowski, Vienna, W. Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 26, 1961, Ser. No. 119,293
4 Claims. (Cl. 260—873)

1. A composition comprising a blend of (*a*) the polycarbonate of a di-(monohydroxyphenyl)-substituted aliphatic hydrocarbon with phosgene and (*b*) a graft copolymer of (1) a butadiene-vinyl aromatic hydrocarbon copolymer and (2) a mixture of an alkyl acrylate and a vinyl aromatic hydrocarbon.

3,162,696

INTERPOLYMERIZED COMPOSITIONS COMPRISING ALKENYL AROMATIC MONOMERS AND ELASTOMERIC ETHYLENE COPOLYMERS

Robert L. Zimmerman and Giffin D. Jones, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 8, 1958, Ser. No. 759,417
6 Claims. (Cl. 260—878)

6. Composition comprising a member of the group consisting of (A) graft copolymer-containing composition of (1) between about 80 and 99 weight percent, based on the weight of the composition, of the polymerization product of a monomer comprising an alkenyl aromatic monomer of the formula:

$$CH_2{=}CGAr$$

in which G is selected from the group consisting of hydrogen and methyl and Ar is an aromatic radical of from 6 to 10 carbon atoms, said monomer being interpolymerized with (2) between about 1 and 20 weight percent, based on the weight of the composition, of an already-formed, elastomeric copolymer of ethylene and the divinyl ether of diethylene glycol; (B) graft copolymer-containing composition of (1) between 80 and 99 weight percent, based on the weight of the composition, of the polymerization product of a monomer comprising an alkenyl aromatic monomer of the formula

$$CH_2{=}CGAr$$

in which G is selected from the group consisting of hydrogen and methyl and Ar is an aromatic radical of from 6 to 10 carbon atoms, said monomer being interpolymerized with (2) between about 1 and 20 weight percent, based on the weight of the composition, of an already-formed elastomeric terpolymer of ethylene, the divinyl ether of diethylene glycol and vinyl acetate; and (C) graft copolymer-containing composition of (1) between about 80 and 99 weight percent, based on the weight of the composition of the polymerization product of a monomeric constituent consisting of a mixture of styrene and between about 35 and 45 mole percent of acrylonitrile, based on the constitution of said monomeric constituent, said monomeric constituent being interpolymerized with (2) between about 1 and 20 weight percent, based on the weight of the composition, of an already-formed, elastomeric ethylene copolymer substrate selected from the group of elastomeric ethylene copolymers consisting of (*a*) elastomeric copolymers of ethylene and between about 15 and 75 weight percent, based on the weight of the copolymer, of another non-aromatic hydrocarbon terminally-unsaturated monoolefin of from 3 to 6 carbon atoms, (*b*) elastomeric copolymers of ethylene and between about 2 and 40 mole percent, based on the weight of the copolymer, of a vinyl ester of the structure:

$$CH_2{=}CH\overset{O}{\overset{\|}{O}}CX$$

in which X is selected from the group consisting of hydrogen, alkyl groups of from 1 to 8 carbon atoms and aryl groups of from 6 to 8 carbon atoms; (c) elastomeric copolymers of ethylene and between about 2 and 40 weight percent, based on the weight of the copolymer, of a vinyl ether of the structure:

$$CH_2{=}CHOZ$$

wherein Z is selected from the group consisting of vinyl, alkyl groups of from 1 to 8 carbon atoms, aryl groups of from 6 to 8 carbon atoms, alkylene groups of from 2 to 8 carbon atoms, mono- and divalent hydrocarbon aliphatic groups of from 2 to 10 carbon atoms, and mono- and divalent ether-containing aliphatic groups of from 2 to 10 carbon atoms; (*d*) elastomeric copolymers of ethylene and between about 2 and 40 weight percent, based on the weight of the copolymer, of mixtures of said vinyl esters and said vinyl ethers.

3,162,697

DRAFT COPOLYMER OF A MIXTURE OF ALKYL ACRYLATES ON POLYPROPYLENE AND PROCESS OF PREPARATION

Peter J. Canterino, Clifton, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 10, 1961, Ser. No. 101,642
13 Claims. (Cl. 260—878)

1. Process for modifying solid polypropylene which is in a form having a high surface area which comprises polymerizing a mixture of polymerizable monomers thereon, and recovering said modified polypropylene, said monomers being alkyl acrylates having from 1 to 4, inclusive, carbon atoms in the alkyl groups and being present in the mixture to the extent of at least 10 weight percent of each monomer.

3,162,698

THERMOPLASTIC COMPOSITIONS HAVING IMPROVED STRESS CRACKING PROPERTIES

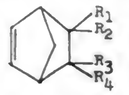
Bernard O. Baum, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 19, 1962, Ser. No. 203,472
9 Claims. (Cl. 260—897)

1. A composition exhibiting improved stress crack resistance wherein from about 70 percent by weight to about

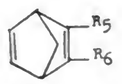
99 percent by weight of a high polymer of a monoolefin containing from two to ten carbon atoms inclusive having a melt index of less than about 1,000 decigrams per minute measured in accordance with ASTM 1238–57T at a temperature of about 190° C. and a pressure of about 44 pounds per square inch is in intimate admixture with from about 1 percent by weight to about 30 percent by weight of a copolymer of ethylene with a comonomer selected from the group consisting of

(A) a bicycloheptene monomer having the structural formula



wherein R_1 and R_3 are members selected from the group consisting of hydrogen and lower alkyl groups having from 1 to 4 carbon atoms inclusive and R_2 and R_4 are members selected from the group consisting of hydrogen, lower alkyl radicals having from 1 to 4 carbon atoms inclusive and aryl radicals, and

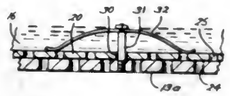
(B) a bicycloheptadiene monomer having the structural formula



wherein R_5 and R_6 are members selected from the group consisting of hydrogen, lower alkyl radicals having from 1 to 4 carbon atoms inclusive, and aryl radicals; and

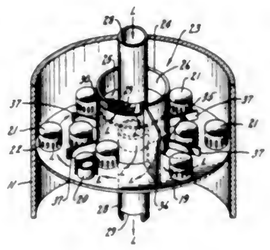
(C) mixtures of (A) and (B), said ethylene/bicycloheptene and ethylene/bicycloheptadiene copolymers having a melt index of less than about 1,000 decigrams per minute measured in accordance with ASTM 1238–57T at a temperature of about 190° C. and a pressure of about 44 pounds per square inch and comprising from about 70 percent by weight to about 99 percent by weight combined ethylene and from about 1 percent by weight to about 30 percent by weight of the combined comonomer.

3,162,699
VAPOR LIQUID CONTACTING APPARATUS
Robert B. Sivyer, 1314 Bentel Drive, Houston, Tex.
Filed Feb. 13, 1961, Ser. No. 89,062
7 Claims. (Cl. 261—114)



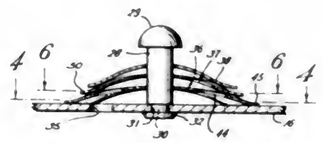
2. A tray assembly for vapor-liquid contacting apparatus comprising: a lower, rigid base plate and a plurality of juxtaposed, upper valve plates superimposed on said base plate, means mounting said upper valve plates on said base plate section for vertical movement, said base plate having a first plurality of lower flow ports respectively spaced laterally from one another thereby forming lower open and solid areas, each of said valve plates having a second plurality of upper flow ports respectively spaced laterally from one another thereby forming upper open and solid areas, said upper open areas being disposed above lower solid areas and said upper solid areas being disposed above lower open areas so that the upper flow ports in the valve plates do not overlap the lower flow ports in the base plate and said solid areas of said valve plates are sized to provide substantial baffling areas.

3,162,700
CONTACTOR FOR TREATING FLUIDS
Jeffery D. Irons, Tulsa, Okla., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed May 23, 1961, Ser. No. 112,104
4 Claims. (Cl. 261—114)



1. An assembly for defining a contact zone in a countercurrent contactor comprising a contactor tray, a hub mounted on said tray on the central axis thereof, horizontally disposed partition means in said hub defining a liquid inlet chamber above said partition means and a liquid outlet chamber below said partition means in axial alignment with said inlet chamber, liquid downcomer means extending into said inlet chamber, liquid downcomer means extending out of said outlet chamber, a liquid inlet means in said inlet chamber for depositing liquid on said tray adjacent said hub and a liquid outlet means in said outlet chamber for receiving liquid from said tray, said inlet means and said outlet means being angularly displaced about said axis, a relatively large liquid dam mounted on said tray and extending between said hub and the periphery of said tray, said relatively large liquid dam adapted to prevent liquid communication between said inlet means and said outlet means in one direction around said hub, a relatively small liquid dam mounted on said tray, said relatively small liquid dam extending into engagement with said hub in spaced relationship with said large liquid dam, said small liquid dam adapted to force the bulk of the descending liquid to seek a path near the periphery of said tray in passing between said inlet means and said outlet means.

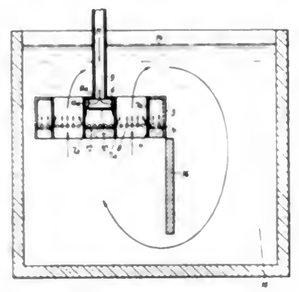
3,162,701
BUBBLE TRAY
William E. Joor II, Houston, Tex., assignor to Wyatt Industries, Inc., Houston, Tex., a corporation of Texas
Filed June 7, 1961, Ser. No. 115,577
1 Claim. (Cl. 261—114)



Gas and liquid contact apparatus comprising a tray for supporting a body of liquid and having an orificed portion, at least three inverted dish-shaped disks stacked on said portion and with axially aligned apertures therethrough, a guide stem rigid with and projecting upwardly from said tray through said apertures and slidably receiving said disks, and valve stop means on said stem spaced above the uppermost of said disks in its rest position,

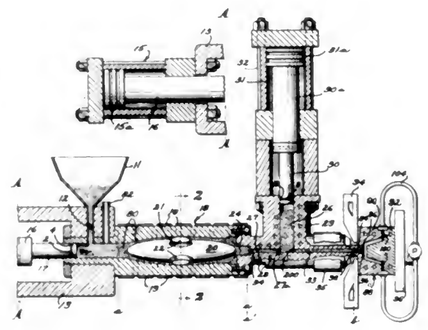
said disks being of decreasing diameters and increasing curvatures in ascending order with the lowermost of said disks having a peripheral flange for resting on said tray, the lower ones of said disks being radially fluted so as to form restricted lateral ducts between adjacent disks and having orifices whereby gases may ascend through said tray portion and said orifices and pass laterally between said disks into the liquid on said tray, the uppermost of said disks being imperforate for confining ascending gases to said ducts, said disks being progressively liftable in descending order, as the pressure differential across said tray increases, for increasing the effective sizes of said lateral ducts.

3,162,702
AERATOR FOR SEWAGE PURIFICATION OR THE LIKE
André Yonner, Zollikon, Switzerland, assignor to L. von Roll A.G., Zurich, Switzerland, a corporation of Switzerland
Filed Oct. 20, 1961, Ser. No. 146,534
6 Claims. (Cl. 261—123)



1. In a sewage purification system, the combination of:
a tank for containing a medium to undergo purification;
an aerator disposed within said tank;
said aerator including container means provided with top, side and end walls;
said side and end walls having spaced apertures therein;
said top wall having a plurality of discrete shaped openings therein between said side walls and end walls;
each of said openings being surrounded by substantially vertical walls which depend from said top wall and thus form an aeration unit having aligned upper and lower openings therein;
said aeration unit walls having holes therein;
said aeration units being spaced inwardly from said side walls to define first flow ducts extending between said end walls;
said aeration units also being spaced inwardly from said end walls to define second flow ducts extending between said side walls;
said first and second flow ducts intersecting one another;
said flow ducts having a closed upper end formed by said top wall and an open lower end to permit said medium to enter thereinto; and
means for supplying a quantity of air into at least one of said flow ducts to force the medium therein downwardly below said holes whereby air may move freely through said flowducts and exhaust through said apertures and holes thereby circulating through and purifying said medium;
said container means having a cross-sectional area no more than one-half the cross-sectional area of said tank;
said aerator being offset within one-half of said tank to leave an unoccupied portion within said tank whereby said exhausting air will rise through said aeration units and move downward into the unoccupied portion.

3,162,703
INJECTION MOLDING OF FOAM MATERIALS
Thomas H. Eyles, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 6, 1960, Ser. No. 74,080
2 Claims. (Cl. 264—51)



1. A method for injection molding a porous, multi-cellular, solidified foam-like formed structure from a formable thermoplastic resin having a foaming agent incorporated therein; said method comprising: charging the resin through a port into the chamber of a ram type injection molding machine; heating said resin in a first zone of said chamber to a temperature below that temperature at which the resin will foam at atmospheric pressure; actuating a ram of the injection molding machine to seal off the charging port and to force at least a portion of said resin to pass into a second zone of said chamber without expansion of said foaming agent; sealing said second zone from said first zone; heating said composition in said second zone to such temperature that it assumes the physical state of a mobile gel, while at the same time maintaining said composition under such pressure as to prevent expansion of said gel; and causing said gel to expand into a vented mold thereby forming a porous multi-cellular, solidified foam-like structure.

3,162,704
MOLDING OF EXPANDABLE PLASTIC PELLETS
Gino L. Attanasio, Nice, France, and Frank H. Lambert, Pompton Lakes, N.J., assignors to Champlain-Zapata Plastics Machinery, Inc., Roseland, N.J.
Filed Sept. 22, 1961, Ser. No. 139,933
14 Claims. (Cl. 264—53)

1. A method of foam molding expandable plastic pellets which have previously been charged with a foaming agent, which method utilizes a mold and a small chamber located immediately adjacent and in valved connection with the mold, said method comprising

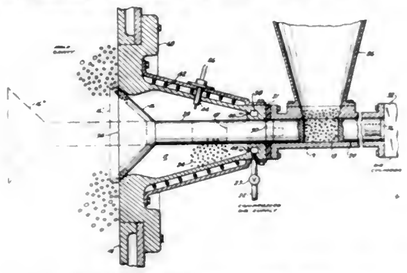
(*a*) measuring a desired small quantity of the pellets which when expanded will fill the mold,

(*b*) placing this measured quantity of pellets in the chamber,

(*c*) heating the chamber and pellets therein to a predetermined temperature sufficient to normally cause the pellets to expand but not sufficient to cause the pellets to fuse together while

(*d*) preventing expansion of the pellets despite their raised temperature by applying air to the chamber under a pressure at least as great as the expansion pressure of the pellets,

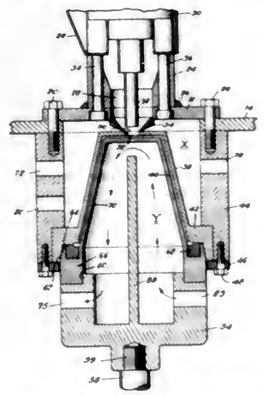
(*e*) keeping the mold at a very low pressure,



(*f*) transferring the heated pellets from the chamber into the mold by opening a valve between the chamber and the mold to permit the pellets to rush abruptly into the mold where they expand and fill and take the shape of the mold, and

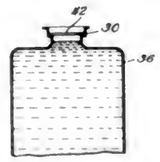
(*g*) further heating the pellets to fuse the same together.

3,162,705
METHOD FOR MAKING PLASTIC CONTAINERS
Robert E. Smucker and James M. Harrison, Fort Worth, Tex., assignors to Crown Machine and Tool Company, Fort Worth, Tex., a corporation of Texas
Filed Oct. 30, 1956, Ser. No. 619,259
1 Claim. (Cl. 264—53)



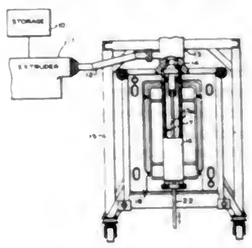
A method of forming a cup shaped article having a relatively thin wall section from light weight, low density, finely divided beads of a foamable plastic material, such as polystyrene beads containing a foaming agent, such as butane or the like, including the steps of defining a cup shaped molding cavity with a thin wall section, supplying the relatively light weight, finely divided beads freely and on a demand fill basis to the bottom of the cup, applying an air pressure differential, through the full 360 degree circumferential extent of the cup cavity, and in a direction from the bottom of the cup to the top so that the beads will be accelerated into the cavity and will move into the most remote portions of the cup cavity from the point of initial supply, closing the point of initial supply of the cup cavity, and thereafter heating the beads in the cavity to their full foaming temperature to thereby cause the beads to individually unite, one with the other, and to glaze the outer surface of the thus formed article due to the internal pressure developed in the expanding beads.

3,162,706
METHOD OF MAKING AND FILLING BLOWN PLASTIC BOTTLES
Grant W. Cheney, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 13, 1960, Ser. No. 21,941
4 Claims. (Cl. 264—97)



1. In a method for blow molding a thermoplastic bottle, filling the blown bottle with a product, and capping the filled bottle, which method includes the steps of, injecting a quantity of molten plastic material into a molding die to form a bottle neck portion, injecting additional molten plastic material into the die and through the molten neck portion to form a parison integral with said neck portion, applying a pressure differential to the parison to produce a change in shape thereof, filling the molded bottle with the product, capping the filled bottle, and removing the capped bottle from the molding die.

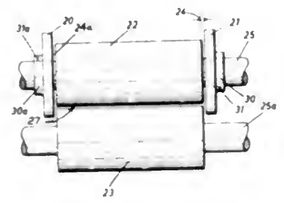
3,162,707
BLOW MOLDING MEANS
John N. Scott, Jr., and Doyle L. Alexander, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 5, 1962, Ser. No. 177,415
6 Claims. (Cl. 264—98)



6. A method for the simultaneous fabrication of two blow molded open faced articles from a single parison of molding material comprising: loading molten molding material into an accumulation zone; extruding said material therefrom in the form of a parison; stretching said parison into a continuous web of generally rectangular cross-section; severing the extruded portion of said parison; and forcing the faces of said web having the longer cross-sectional dimension to fill and freeze into opposing cavities of a mold half positioned on each side of said web and parallel to said faces.

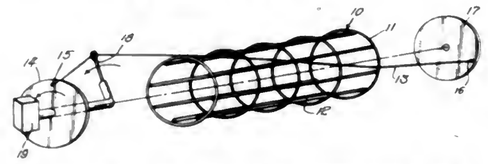
3,162,708
METHOD FOR COMPACTING METAL POWDER
John A. H. Lund, Vancouver, British Columbia, and Vilnis Silins, Edmonton, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada
Filed June 21, 1961, Ser. No. 118,732
2 Claims. (Cl. 264—111)

1. The method of compacting metal powder into elongated strips which comprises feeding finely divided metal particles to a roll gap defined between two rotatable rolls of a roll compacting unit, confining the metal powder at the ends of the roll gap by means of circular flanges adjustably mounted on a roll shaft at each end of the rolls adjacent to but in spaced relation to the opposing



faces of the rolls leaving spaces therebetween, compacting the longitudinal edges of the strip on yielding surfaces at the ends of the rolls formed of particles forced into said spaces and thereby forming lines of weakness between the main body of said strip and the longitudinal edges thereof, and discharging the compacted strip from the roll gap.

3,162,709
METHOD OF FORMING PRESTRESSED TUBULAR STRUCTURES
Alfred Davidson, % American Form & Equipment Co., 30 W. Washington St., Chicago, Ill.
Filed July 31, 1961, Ser. No. 127,911
10 Claims. (Cl. 264—228)



1. The method of forming a prestressed tubular structure comprising the steps of: forming a tubular lattice-cage of high creep material; helically disposing elongated members formed of a low creep material coaxially on the lattice-cage; applying a longitudinal tension stress to the elongated members; molding a tubular body with the lattice-cage and members disposed therein; maintaining said stress while the body sets; discontinuing application of said stress to cause said members to apply a compressive stress in the set body; and maintaining the structure to permit said compressive stress to cause the lattice-cage to creep and thereby distribute the compressive stress substantially uniformly throughout the tubular structure.

ELECTRICAL

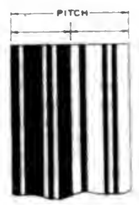
3,162,710
INDUCTION FURNACE WITH REMOVABLE CRUCIBLE
Donald Jay Anderson, 285 Rhoads Ave., Haddonfield, N.J.
Filed July 24, 1962, Ser. No. 212,065
8 Claims. (Cl. 13—27)



1. In an induction furnace, an electrical coil adapted to impart flux to the furnace, support structure for the said coils, a crucible within the coil comprising, a cylindrical laminated metallic wrap formed of a spirally wound sheet, electrical insulation between turns of the spiral, and a refractory within the wrap.

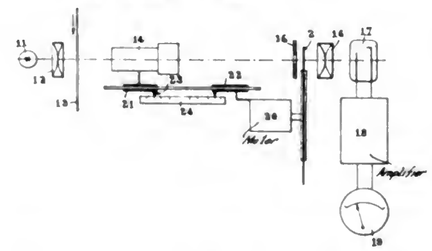
3,162,711
MOIRE FRINGE CONSTRUCTIONS INCLUDING A REPEATING IRREGULAR PATTERN
Richard J. Pegis, Hilton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 5, 1961, Ser. No. 108,162
6 Claims. (Cl. 88—1)

1. A moire fringe device comprising a pair of superimposed line grids each having parallel variable width dark lines and clear intervals, and means supporting said grids in superimposed predetermined orientation with their respective grid lines at a relatively small inclination to each other and movable relative to each other



in a direction substantially normal to the grid lines of one of the line grids, each of said grids including a repeating irregular pattern of the lines and the intervals.

3,162,712
OPTICAL DEVICE FOR MEASURING THE WIDTH OR DIAMETER OF FIXED OR MOVABLE TAPES, WIRES, TUBES, BARS AND THE LIKE
Oscar Henri Ingber, 15 Boulevard du General Koenig, Neuilly-sur-Seine, France
Filed May 31, 1960, Ser. No. 32,643
20 Claims. (Cl. 88—14)



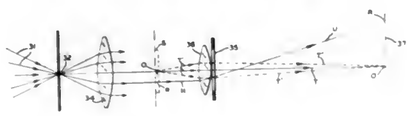
1. An apparatus for measuring the transverse dimension of an object such as a wire, cable, tube or tape, which comprises an emitter of radiant flux, a diaphragm limiting said flux, a photoelectric receiver of the radiant flux passing through the field occupied by said object and through said diaphragm, a modulating member located in the flux path from said source to said photoelectric receiver, said modu-

lating member comprising a surface also receiving said radiant flux, said surface comprising a series of contiguous zones which are alternately opaque and transparent to said flux and are bounded by sharp lines of demarcation between successive zones, said series of zones having selected pitch measured between corresponding boundary lines of like zones, an optical system projecting an image of said object on said surface of said modulating member so that said image and said surface lie in conjugate optical planes with the transverse dimension of said image extending crosswise of said zones, means for producing relative periodic movement between said image and said modulating member during a scanning cycle, said movement being in a direction crosswise of said zones, said modulating means and optical system cooperating with one another to vary the relation between the pitch of said zones and the width of said image to cause the width of said image to be approximately equal to the pitch of a zone, said photoelectric receiver sensing the radiation passing through said diaphragm and past said object and modulating member to produce a photoelectric signal corresponding to the radiation received by said receiver, said signal passing through a point of minimum change when the pitch of said zone is approximately equal to the width of said image, an electrical circuit including said photoelectric receiver and means for measuring said photoelectric signal and means to indicate the point at which said approximate equalization of the pitch of said zone and image width occurs and thereby indicate the value of said transverse dimension of said object.

3,162,713
INTERFERENCE MICROSCOPE

Charles J. Koester, South Woodstock, Conn., and Harold Osterberg, Sturbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed May 25, 1962, Ser. No. 201,232
9 Claims. (Cl. 88—39)

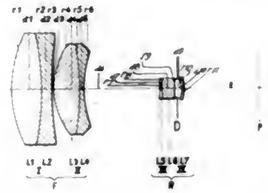


1. An interference microscope optical system comprising, in combination, an objective and a condenser disposed in longitudinally spaced optically aligned relation to each other at opposite sides of a predetermined object plane in said system, said objective being positioned so as to focus upon an object field at said object plane and to form an image of said object field at an image plane of said objective in predetermined spaced conjugate relation thereto, an opaque diaphragm disposed in said optical system substantially at a transverse plane containing the first principal focus of said condenser, a relatively small narrow slit formed in said diaphragm and disposed in optical alignment with said condenser so that said slit and said condenser will jointly serve to direct a beam of substantially parallel coherent light from all points in said slit toward all parts of said object field and said objective when said slit is illuminated by light from a conventional microscope light source aligned therewith, said beam of coherent light at said object plane being of sufficient size to illuminate a first specimen area of predetermined size and a second reference area of similar size in said object field in laterally spaced relation to each other, said objective being arranged to direct image-forming light rays from said first and second laterally spaced areas along separate paths toward spaced locations in said image plane, light beam directing and combining means optically disposed in said system so as to receive said image-forming light rays, said light beam directing and combining means including a plurality of light-reflecting members and a light-combining member, at least one of which light-reflecting members is disposed in each of said paths of said image-forming light rays respectively, and positioned so as to direct the light rays of said two paths toward said light-combining member, said light-combining member being positioned so as to receive light rays of both paths and having such optical and physical characteristics as to direct such light rays of both paths in superimposed relation with each other along a common path, an eye lens disposed in said common path and optically aligned with said system so as to focus upon said image plane, said plurality of light-reflecting members and said light-combining members being so controlled that the difference between the number of reflecting surfaces for the light rays of one of said spaced paths relative to the number of reflecting surfaces of the light rays of the other of said spaced paths will in no instance provide an odd number of reflections, and path length varying means for varying the optical length of one of said spaced paths relative to the other, whereby an image of said specimen at said object plane will be provided at said eye lens and the optical characteristics thereof may be altered relative to its surround by adjustment of said path length varying means.

3,162,714
TELEPHOTO OBJECTIVE

Wolfram Albrecht, Kreuznach, Rhineland, and Werner Wagner, Odernheim (Glan), Germany, assignors to Jos. Schneider & Co., Kreuznach, Rhineland, Germany, a corporation of Germany

Filed Oct. 21, 1960, Ser. No. 64,194
Claims priority, application Germany Oct. 22, 1959
9 Claims. (Cl. 88—57)



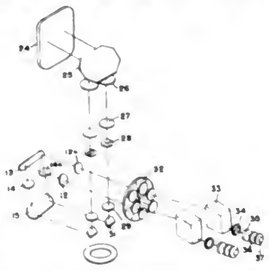
1. An optical telephoto objective system of overall focal length f, comprising four air-spaced lens members including a first, a second, a third and a fourth member of individual focal lengths f_I, f_{II}, f_{III} and f_{IV}, respectively, said first and second members being in the shape of positive menisci and constituting a front component, said menisci turning their convex surfaces toward the object side of the system, said third and fourth members being negatively refracting and constituting a rear component separated from said front component by a large air space whose length is of the order of the total axial length of said first component but less than 1.25 times said total axial length, the latter being less than substantially 25% of said overall focal length, said third and fourth members each turning a concave outer surface toward said front component, the radius of the convex surface of said first member being less than twice the radius of the convex surface of the second member but greater than substantially 0.3 times said overall focal length, said overall focal length and said individual focal lengths satisfying the relationships

$$1.5f>f_I>f_{II}>0.08f \text{ and } f>-f_{III}\geq-f_{IV}>0.4f$$

3,162,715
MECHANISM FOR CHANGING MAGNIFICATION OF A BINOCULAR PERISCOPE

Wright H. Scidmore, Langhorne, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 2, 1961, Ser. No. 142,449
5 Claims. (Cl. 88—72)
(Granted under Title 35, U.S. Code (1952), sec. 266)

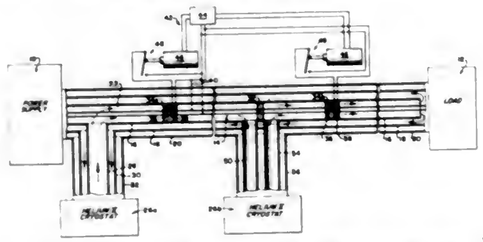


4. In a hermetically sealed binocular theodolite having a periscopic optical system, means for internally varying the magnification thereof comprising a pair of folded lens erecting systems having parallel incident and emerging optical axes, said lens erecting systems being fixedly mounted on a shaft rotatable about an axis parallel to said incident and emerging optical axes, and external means cooperating with said shaft for producing rotation thereof, whereby rotation of said shaft 180° represents essentially a translation of the folded lens erecting systems along their optical axes to their conjugate positions effecting a change in magnification from M to $1/M$ power.

3,162,716
SUPER CONDUCTOR-POWER TRANSMISSION SYSTEM

Alexander Silver, Tarzana, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 15, 1962, Ser. No. 230,375
6 Claims. (Cl. 174—15)

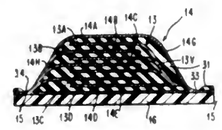


3. An electrical power transmission system comprising:
a first conduit closed at its ends;
a second conduit within and spaced from said first conduit to define an annular flow passage about and communicating at one end with one end of the passage in said second conduit;
a refrigeration unit having an outlet communicating with the other end of said second mentioned passage and an inlet communicating with the adjacent end of said first mentioned passage;
means for recirculating a refrigerant from said refrigeration unit, through said second mentioned passage toward said one end of the latter passage and then back to said unit through said first mentioned passage; and
an electrical transmission line separate from and extending centrally through said second conduit.

3,162,717
COMPACT TRANSMISSION LINE CONSISTING OF INTERLEAVED CONDUCTOR STRIPS AND SHIELD STRIPS

John J. Lentz, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 20, 1962, Ser. No. 181,125
3 Claims. (Cl. 174—36)

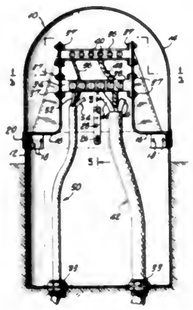


1. A superconducting transmission line comprising
a superconducting conductor comprising a first plurality of superconducting strips,
a superconducting shield comprising a second plurality of superconducting strips which are connected along the length of said line, said second plurality of strips being interleaved with said first plurality of strips, and
electrical insulating material between the interleaved portions of said strips,
said superconducting shield completely enclosing said first plurality of strips.

3,162,718
JUNCTION UNIT FOR UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEMS

Alfred B. Gunthel, Jr., Sea Cliff, N.Y., assignor to Dossert Manufacturing Corp., Brooklyn, N.Y., a corporation of New York

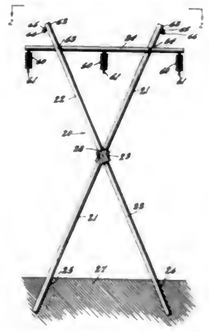
Filed Oct. 15, 1962, Ser. No. 230,523
3 Claims. (Cl. 174—38)



1. A junction unit for underground electrical distribution systems, comprising a hollow casing of electrically non-conductive material adapted to extend into the ground and having an open top end, said hollow casing having a wall formed with a plurality of openings passing therethrough, a pair of electrically non-conductive brackets fixedly carried by said casing adjacent said open top thereof and extending upwardly beyond said open top of said casing and defining a predetermined space between themselves, a plurality of elongated buses spaced from each other and extending across said space between said brackets, said buses being respectively fixed at their ends to said brackets and being supported exclusively by said brackets and also reinforcing said brackets by lending rigidity thereto, means carried by each of said buses for electrically connecting thereto a plurality of electrical conductors which extend into said hollow casing through said openings thereof, and a hollow cover made of electrically non-conductive material and having an open bot-

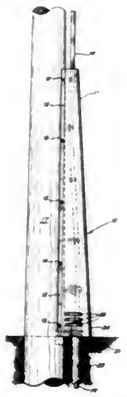
tom end engaging said open top end of said casing, said brackets and buses being situated in the interior of said cover when the latter is mounted on said casing.

3,162,719
X-FRAME TRANSMISSION LINE STRUCTURE
Richard A. Mulford, 1231 Wisteria Drive, Malvern, Pa.
Filed July 30, 1962, Ser. No. 213,848
5 Claims. (Cl. 174—45)



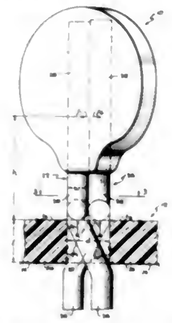
2. A transmission line tower, comprising a pair of poles arranged in the form of an X, a lashing clamp holding the poles in an abutting relationship at the crossing of the X, and a horizontal crossarm connected to the poles adjacent to the top of the X, the respective poles engaging opposite sides of said crossarm, said lashing clamp having capacity for permitting limited relative translational movement of the poles at their abutment, said lashing clamp comprising two similar elements, each of said elements having a wrap which partially surrounds a respective pole leaving one side of the pole exposed, said elements being bolted together.

3,162,720
VENTED POLE RISER SHIELD
Davis M. Phillips, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,081
1 Claim. (Cl. 174—45)



In combination with a pole, a rigid footing adjoining said pole with a conductor carrying conduit extending therethrough and an insulated conductor extending from said conduit vertically adjacent the surface of such pole, a pole riser shield comprising: an upwardly tapering one piece trough shaped member formed of sheet material and having marginal flanges along the longitudinal edges thereof to accommodate fastening devices with which said member is secured to said pole to thereby define a passageway with said pole surrounding said conductor, said member having a lower edge surface abutting said footing and cooperating with the surface of said pole to surround said conduit vertically extending portion, said passageway being of substantially greater cross section than said conductor throughout the length of said trough, louvers struck from the material of said member to form downwardly facing openings in a lower portion of said member affording vent means whereby an air path is provided for convective cooling of said conductor in said passageway and a perforate covering secured to the interior surface of said member and overlying said louver openings.

3,162,721
COMPONENT LEAD-LOCKING ARRANGEMENT
Charles C. Rayburn, Alexandria, Va., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed July 26, 1960, Ser. No. 45,421
9 Claims. (Cl. 174—68.5)

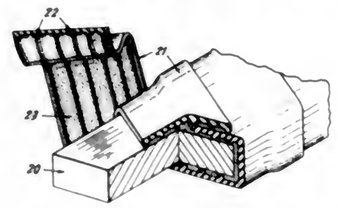


1. The combination of a printed circuit board panel, said panel having a top and bottom surface one of which has an electric circuit printed thereon and a pair of spaced bores formed therethrough of substantially the same predetermined diameter, said spaced bores being arranged to be adjacent to different portions of said electric circuit, and a component having a pair of terminal substantially constant diameter wires electrically and physically attached thereto in generally depending relation, said terminal wires each having a first portion adjacent said component which are spaced apart a greater dimension than the dimension between the centers of said bores, each of said terminal wires having a second portion connected to said first portion and extending generally toward each other, an entering end portion spaced from said second portion, and an offset intermediate portion connecting said entering end and second portions, said intermediate portion having a cross-sectional dimension less than said predetermined diameter and being configured to engage the margins of said aperture at spaced points adjacent the top and bottom surfaces of said panel to impart stability in mounting said component prior to soldering thereof.

3,162,722
ELECTRIC TAPE INSULATION AND ITS APPLICATION TO CONDUCTOR
Donald M. Bartos, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Mar. 4, 1964, Ser. No. 354,494
10 Claims. (Cl. 174—110)

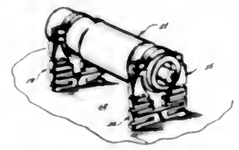
1. An insulated electric conductor comprising a conductor, a cured tack-free silicone rubber tape at least

one surface of which is rough, said rough surface facing the conductor, said tape being tension wrapped with lapping around the conductor, the interstices between the laps of tape and between the tape and the conductor be-



ing filled with a cured diorganopolysiloxane containing a metallic oxide filler, whereby the dielectric strength of the resulting void-free insulation is at least 225 volts per mil of insulation thickness.

3,162,723
SHOCK MOUNTING FOR HIGH VOLTAGE TUBES
Frank McCurtain, 1835 S. Bonnie Brae, Los Angeles 6, Calif., assignor of one-half to Zack E. Gibbs, San Marino, Calif.
Filed Sept. 5, 1961, Ser. No. 135,871
13 Claims. (Cl. 174—138)



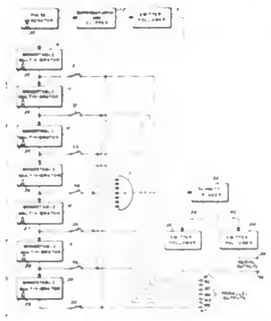
1. An insulating mount for high voltage electronic tubes comprising: a first set of superposed parallel arms; means joining alternate ends of said arms into a substantially zigzag configuration to form a supporting leg; a second set of superposed parallel arms; means joining alternate ends of said second set of arms into a substantially zigzag configuration to form a second supporting leg, said legs being formed of electrical insulating material; means mounting said supporting legs at one end in edgewise spaced relation; and supporting means for an electronic tube extending between and interconnecting the free ends of said legs to provide a strong mechanical construction and edgewise intersupport between the legs at their free ends.

3,162,724
SYSTEM FOR TRANSMISSION OF BINARY INFORMATION AT TWICE THE NORMAL RATE
Otmar E. Ringelhaan, Oceanport, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 3, 1961, Ser. No. 121,792
17 Claims. (Cl. 178—68)
(Granted under Title 35, U.S. Code (1952), sec. 266)



17. In a pulse communication system comprising:
a transmitter terminal, a channel having a predetermined operating bandwidth for binary signals,
and a receiver terminal,
the method of communication comprising:
providing a binary signal clocked at intervals corresponding to double the bandwidth suitable for transmission over said channel in binary form;
converting said signal by delaying substantially one interval and combining with said signal undelayed, both in like polarity, thus forming a three level signal of biternary form for transmittal over said channel;
and reconverting said biternary signal to a second two level signal of binary form, the binary derivative of said first binary form, one level corresponding to both extreme levels and the other to the median level of said biternary form, whereby an input binary signal at the transmitter terminal is reproduced in a corresponding binary form at the receiver terminal over a channel of only half the bandwidth required for binary transmission, and with only nominal conversion.

3,162,725
CHARACTER GENERATOR
William M. Oleson, 2234 Guy St., San Diego 3, Calif.
Filed Jan. 23, 1962, Ser. No. 168,291
2 Claims. (Cl. 178—79)
(Granted under Title 35, U.S. Code (1952), sec. 266)

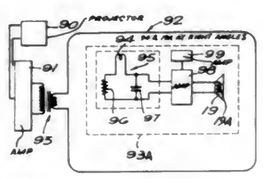


1. In combination in a system for repetitiously generating a character of n binary bits, where n is any positive integer,
a clock pulse generator, said generator being operable at the frequency of the desired character repetition rate,
a series of n cascaded monostable multivibrators, each multivibrator being responsive to the trailing edge of the pulse of the preceding multivibrator of the series, the sum of the durations of the unstable states of the n multivibrators being substantially equal to a pulse interval of said clock generator,
an ouput circuit coupled to each monostable multivibrator, a plurality of single pole single throw switches, said switches being coupled, respectively, in said output circuits,
a plurality of output terminals connected, respectively, through said switches to said multivibrator output circuits for repetitively producing in parallel the n bits of said character, and
an OR gate with n inputs, said inputs being coupled, respectively, in multiple with said output terminals for repetitively producing serially the n bits of said character.

3,162,726
AUDIO SYSTEMS FOR DRIVE-IN THEATRES
Harold William Rosenberg, 217–B Fowler St., Jasper Lowe Jeung, 109 H St., and Hadyn L. Smith, 203–B Wasp Road, all of China Lake, Calif.; said Jeung and said Smith assignors of eighteen and one-third percent each to said Rosenberg
Filed July 14, 1958, Ser. No. 748,218
5 Claims. (Cl. 179—1)

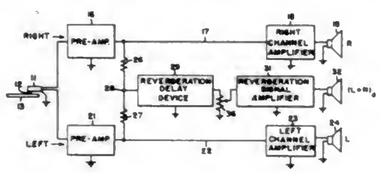
1. In a drive-in theatre in which a plurality of automobiles is parked on an extended surface area, the com-

bination comprising a plurality of extended audio frequency inductive loops which are disposed below and encompass different portions of said surface area to encompass said plurality of automobiles in said theatre, a source of audio frequency only connected to each one



of said loops to produce current of audio frequency therein, audio signal receiving means on each automobile in said theatre comprising an audio frequency inductive loop cooperating magnetically with a corresponding one of said audio frequency loops to transfer signals of audio frequency therebetween.

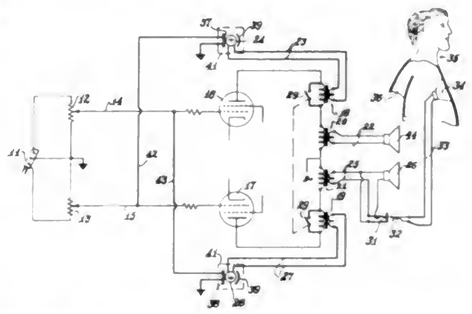
3,162,727
STEREOPHONIC REVERBERATION SYSTEM
Knut Schjonneberg, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 25, 1961, Ser. No. 134,017
7 Claims. (Cl. 179—1)



1. A reverberation arrangement for a stereophonic system having at least two stereophonic signal channels connected to at least two stereophonic loudspeakers for producing stereophonic sound waves at a listening area, said arrangement comprising means providing a sum signal of the signals of at least two of said channels, signal reverberation delay means connected to receive said sum signal and adapted to delay said sum signal, and a loudspeaker system other than said stereophonic loudspeakers connected to receive the delayed sum signal and adapted to produce the said delayed sum signal in the form of reverberated sound waves at said listening area simultaneously with said stereophonic sound waves.

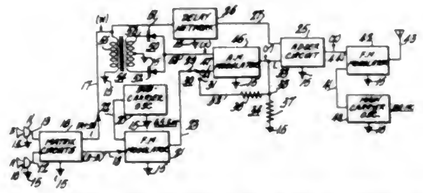
3,162,728
STEREO-SOUND REPRODUCING DEVICE
Robert E. Pfister, 1170 Logan Ave., Elgin, Ill.
Filed Nov. 2, 1962, Ser. No. 234,965
1 Claim. (Cl. 179—1)

In a stereo-record player of the type including a dual audio frequency signal amplification system, an audio frequency amplifier in each system, a pair of audio frequency transformers connected in series to the output of each audio frequency amplifier speakers, one connected to the output of one transformer of each pair of transformers, a photo-cell connected to the input circuit to the audio frequency amplifier in one amplification system, a light source for said photo-cell connected to the secondary of the other audio frequency transformer in the pair of transformers in the other amplification system effective when the speaker in said other amplification system is active to attenuate signal input to the first named audio frequency amplifier, and switches in the circuits to



said light sources operative to shunt the respective transformers to render the respective light source ineffective.

3,162,729
MODULATION SYSTEM FOR MULTIPLEX FREQUENCY - MODULATION SIGNAL TRANSMITTER
Francis R. Holt, Willow Grove, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 14, 1960, Ser. No. 69,069
11 Claims. (Cl. 179—15)

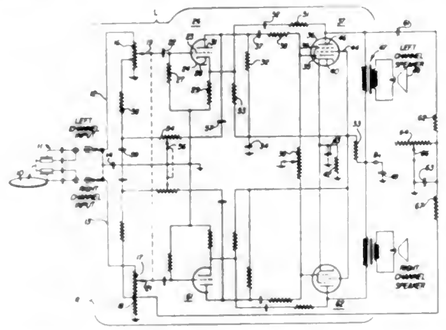


1. In a multiplex-frequency-modulation signal transmitter, the combination with a main-channel modulating signal circuit and a subcarrier signal circuit both connected in common with a modulator circuit for a main carrier wave, of amplitude-modulator means connected with said subcarrier signal circuit for amplitude modulating the signal flow therethrough in response to an applied modulating signal, means for deriving said modulating signal from said main-channel modulating signal circuit as a function of signal amplitude variation therein, and means for applying said derived modulating signal to said amplitude-modulator means.

3,162,730
STEREOPHONIC AMPLIFIER CIRCUIT PROVIDING IMPROVED LOW FREQUENCY RESPONSE
George Edwin Owen, Jr., Melrose Park, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 833,098, Aug. 11, 1959. This application Dec. 20, 1961, Ser. No. 161,345
5 Claims. (Cl. 179—100.4)

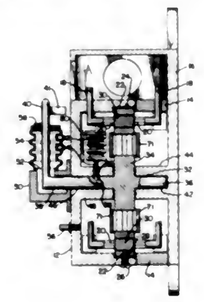
1. Stereophonic signal reproducing apparatus including in combination, first and second amplifying means having respective input and output circuits, means for applying stereophonic signals respectively to said input circuits of said first and second amplifying means, first and second sound reproducing means directly connected to said output circuits of said first and second amplifying means respectively for audibly reproducing the stereophonic signals, low pass filter means coupled from said output circuit of said first amplifying means to said input circuit of

said second amplifying means, thereby increasing the low frequency output level of said apparatus beyond the re-



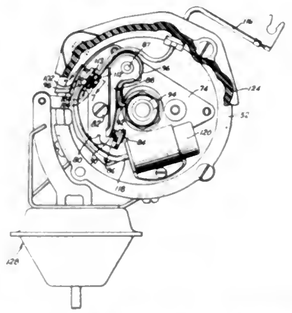
production provided by the frequency response characteristic of said first and second amplifying means.

3,162,731
EXPLOSION PROOF SWITCH
Magnus V. Braunagel, Littleton, Colo., assignor, by mesne assignments, to Small Business Administration, an agency of the United States Government
Filed Feb. 11, 1963, Ser. No. 269,230
14 Claims. (Cl. 200—11)



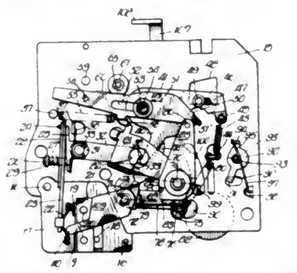
1. An electrical switch comprising: a support; a plurality of electrical conductors fixedly carried by said support and having contact faces for conducting engagement by a contact member to complete a circuit; a rotor mounted for rotation about its axis on said support for movement between two extreme positions of contact and non-contact and provided with a contact member for engagement with said contact faces in one of said extreme positions; an actuator mounted on said support for rotation about an axis substantially coincident with that of said rotor and movable between two extreme positions angularly opposed to those of said rotor; and an expansible force unit having its ends attached to said actuator and said rotor at selected points angularly spaced about said axis of rotation when said actuator and rotor are in their opposed extreme positions, its force axis passing through said ends and having angular force components urging said actuator and rotor to their opposed extreme positions; said actuator being movable through a sufficient angle to carry its point of attachment angularly beyond the rotor's point of attachment and reverse the angular direction of application of the force components; expansion of the force unit urging said actuator and said rotor to their alternate opposed extreme positions.

3,162,732
SPRING SUPPORT FOR IGNITION DISTRIBUTOR BREAKER CONTACT APPARATUS
Clarence L. Julian, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 26, 1960, Ser. No. 65,069
6 Claims. (Cl. 200—30)



1. A contact set for a distributor comprising, a plate member, said plate member having first and second upstanding flanges, a breaker contact carried by said first flange, a breaker lever pivotally mounted with respect to said plate member and carrying another breaker contact that cooperates with the breaker contact carried by said first flange, a spring connected with said breaker lever, an opening in said second flange, a support member formed of insulating material having means passing through said opening and engaging said second flange member for holding said support member in place with respect to said second flange member, said support member having a cylindrical projecting portion that is received in a slot formed in said spring member, said support member further having a section from which said cylindrical portion extends, and a plurality of shoulders extending respectively from the corners of the said section.

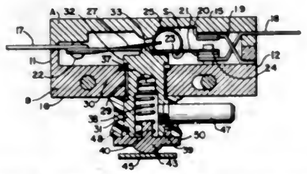
3,162,733
COIN CONTROLLED TIME SWITCH WITH RESET CAM
Alfred W. Gardes, Wilmette, and Julius R. Rosenski, Chicago, Ill., assignors to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1962, Ser. No. 232,751
5 Claims. (Cl. 200—35)



1. A coin controlled time switch mechanism comprising, support means, switch contacts mounted on said support means and normally biased to one position, a latch arm movably mounted on said support means and connected to said switch contacts, a switch control lever movably mounted on said support means and having a latch finger adjacent said latch arm for latching engagement with said latch arm to hold said switch contacts in an alternate position and biased toward such latching en-

gagement, a time off cam movably mounted on said support means and movable from an initial position to a second position, means on said time off cam and said switch control lever connecting said time off cam in said second position to said switch control lever to cause it to move said latch finger out of latching engagement with said latch arm whereupon said switch contacts are moved to said one position, drive means mounted on said support means, means interconnecting said drive means and said time off cam to cause it to move from said initial position to said second position during a predetermined time interval, a coin operated setting lever movably mounted on said support means, a switch setting pawl movably mounted on said support means, means interconnecting said switch setting pawl and coin operated setting lever for engaging said latch arm to move it into latching engagement with said latch finger and to return said switch contacts to said alternate position, a wipe off lever movably mounted on said support means to cooperate with said time off cam, means interconnecting said wipe off lever and said coin operated lever for interrupting the connection between said drive means and said time off cam, and means connected to said time off cam for biasing said time off cam to said initial position on interruption of said connection.

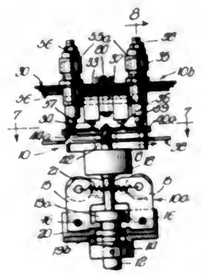
3,162,734
COMBINATION DISCHARGE VALVE AND SWITCH ASSEMBLY
Geoffrey A. Mansell, San Juan Capistrano, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,667
11 Claims. (Cl. 200—61.86)



1. Control means for an electro-pneumatic machine comprising a housing, a snap action electric switch in said housing, said housing having a switch actuator in a wall thereof, said actuator being formed with a bore portion opening at one end thereof and a side outlet opening from the bore portion, a valve seat defining the open bore end of said actuator, a valve for engagement with said seat, and movable valve actuator means engaged with said valve.

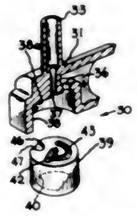
3,162,735
CENTRIFUGAL CONTROL HAVING A PIVOTALLY MOUNTED PRESSURE PLATE MOUNTING A PLURALITY OF PIVOT PLATE SWITCH ACTUATORS
William J. Williams, 2800 Blackhawk Road, Wilmette, Ill.
Filed Oct. 24, 1961, Ser. No. 147,333
8 Claims. (Cl. 200—80)

7. A speed responsive multiple switch mechanism including a rotatable shaft, an axially movable extension means on said shaft, the axial movement of which depends upon the speed of rotation of said shaft, a pressure plate pivotally mounted at one point on the end of said extension means, three pivot plates in triangular formation, each pivot plate being supported at its middle on said pressure plate for axial and pivotal movement therewith, a pressure regulated yieldably mounted pivot contacting each end of each pivot plate, a pair of electric switches closely spaced above each pivot plate for actuation thereby, said pressure plate and said pivot plates being given movements with the axial movement of said extension means whereby each pivot plate progressively



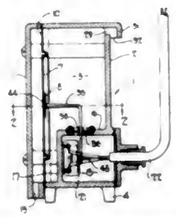
will be tilted in one direction to close one switch and then will be tilted in the opposite direction to close the second switch whereby consecutive operation of the switches will occur.

3,162,736
FLUID FLOW RESPONSIVE TIMING MECHANISM
Eugene L. Turner, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 10,734, Feb. 24, 1960. This application Oct. 3, 1962, Ser. No. 228,788
1 Claim. (Cl. 200—81.9)



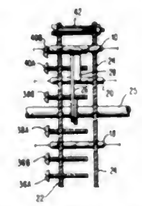
In a slide projector, a gas flow responsive timing mechanism including the combination of means supplying a relatively constant gas flow, a valve comprising a housing and a variable positionable valve spool, said housing including an inlet operatively connected to said gas supplying means and disposed in the path of a flowing gas, an outlet for the gas and a shaped portion for receiving said valve spool, said valve spool including a cylindrical portion, a relatively flat portion and means defining a by-pass groove in said flat portion and being effective in one position in said valve spool for directly connecting said inlet and outlet whereby the time required for the gas pressure in said outlet to reach a predetermined value is a minimum, said valve spool including means defining a single elongate groove connected at one end to the by-pass groove and positionable in other positions of said valve spool so as to increasingly vary the effective length of flow path between said inlet and said outlet whereby the time required for the gas pressure in said outlet to reach the predetermined value is progressively greater as the effective length of the flow path between said inlet and said outlet increases, and said valve spool also including means defining a bleed-off groove on one side of said flat portion and extending along one side of said cylindrical portion and being effective in a different position of said flow control means for bleeding-off the gas from said inlet while said outlet is disconnected from said inlet, a bellows operatively connected to said outlet and a time control switch actuated by said bellows when the predetermined value is reached.

3,162,737
BREATHERLESS PRESSURE RESPONSIVE LIQUID LEVEL CONTROL
Fred E. Tutthill, Grafton, Ohio, assignor to Kemco Pump Division of The American Crucible Products Company, Lorain, Ohio, a corporation of Ohio
Filed Apr. 16, 1962, Ser. No. 187,555
9 Claims. (Cl. 200—83)



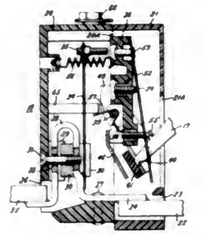
1. A breatherless pressure responsive control for submersible pumps and the like, said control comprising a housing defining a chamber, a pressure responsive diaphragm forming a part of one wall of said first chamber, a skirt overlying said diaphragm and having an open mouth for entrapping air and communicating the hydrostatic pressure at said mouth to said diaphragm, a second chamber within said housing, a normally open switch disposed in said second chamber and having an operating button, an aperture in the wall of said second chamber, a lever extending through said aperture and between said diaphragm and said switch button and transmitting force and motion between said diaphragm and switch button, a pivot for said lever at said aperture, means sealing said aperture about said lever, said diaphragm responding to the hydrostatic pressure of a predetermined first liquid to depress said button and close said switch, said switch opening when the pressure acting on said diaphragm is reduced to a predetermined amount less than the pressure necessary to have caused said response of said diaphragm, said second chamber being sealed, and a vent in said first chamber at least as high as said first predetermined liquid level.

3,162,738
MAGNETICALLY ACTUATED SWITCHING DEVICE
Paul Abramson, Yorktown Heights, and Henry C. Fox, Stormville, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,315
1 Claim. (Cl. 200—87)



A commutative switching device, comprising:
(*a*) a plurality of magnetically actuable reed switches mounted equidistantly from a central axis in a common plane, each switch having its reeds aligned along a different radial line;
(*b*) an arm journalled for rotation about said central axis in a plane spaced from the common plane of said switches;
(*c*) a horseshoe permanent magnet mounted on the said arm with its pole pieces facing the plane of said switches and radially aligned on the said arm at a distance equal to the distance of said switches from said axis, whereby the magnet will magnetically coact with each switch in succession when said arm is rotated;
(*d*) and a pair of threaded magnetic shunt members straddling each of said switches, the said shunt members being mounted in threaded fasteners in the plane of the said switches with their axes aligned along radial lines, whereby radial adjustment of the position of the respective shunts of each pair of shunts permits separate control over the closing and opening of the reeds of each switch with respect to the angular position of the said arm.

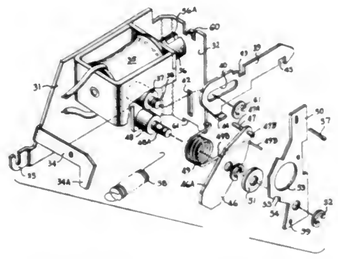
3,162,739
ELECTRIC CIRCUIT BREAKER WITH IMPROVED TRIP MEANS
Keith W. Klein, Simsbury, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York
Filed June 25, 1962, Ser. No. 204,730
8 Claims. (Cl. 200—88)



1. An electric circuit breaker comprising:
(*a*) an insulating casing,
(*b*) at least two relatively movable contacts in said casing,
(*c*) operating mechanism in said casing for operating said relatively movable contacts between open and closed circuit condition, said operating mechanism including a member releasable to cause automatic opening of said contacts,
(*d*) a primary trip member in said casing movable to cause release of said releasable member,
(*e*) a first trip member disposed and arranged to be moved into engagement with said primary trip member,
(*f*) thermal current responsive means in said casing responsive to thermal effects of current through said contacts said thermal current responsive means causing tripping movement of said first trip member upon the occurrence of predetermined current conditions,
(*g*) biasing means biasing said first trip member against movement in said tripping direction,
(*h*) a second trip member in said casing disposed and arranged to be moved into engagement with said primary trip member independently of said first trip member,
(*i*) magnetically operable current responsive means in said casing responsive to current conditions through said contacts for causing tripping movement of said second trip member,
(*j*) biasing means biasing said second trip member against movement in said tripping direction, and

(*k*) said first trip member biasing means being substantially stronger than said second trip member biasing means.

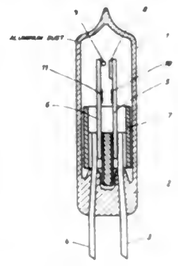
3,162,740
CIRCUIT BREAKER WITH LATCHING TYPE AUXILIARY TRIPPING MEANS
Keith W. Klein, Simsbury, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York
Filed Nov. 9, 1962, Ser. No. 236,601
7 Claims. (Cl. 200—106)



1. For use with an electric circuit breaker including at least one pair of relatively movable contacts, operating mechanism for operating said movable contacts between open and closed circuit positions and trip means including a trip member movable to cause automatic opening of said contacts, an automatic tripping device comprising:
(*a*) a support,
(*b*) a solenoid supported on said support and including a reciprocally operable actuator,
(*c*) a tripping plunger slidably supported on said support,
(*d*) first biasing means carried by said support and biasing said tripping plunger in a tripping direction to engage and operate said circuit breaker trip member,
(*e*) a latch member pivotally supported on said support and including a portion releasably holding said tripping plunger,
(*f*) means connecting said latch member to said solenoid actuator,
(*g*) second biasing means carried by said support and biasing said latch member in releasing direction,
(*h*) said solenoid when energized serving to hold said solenoid actuator in retracted position to retain said latch member in latching position and,
(*i*) a resetting lever pivotally supported on said support and including means for engaging said tripping plunger to return said tripping plunger to latched position when said resetting lever is moved in a predetermined resetting direction.

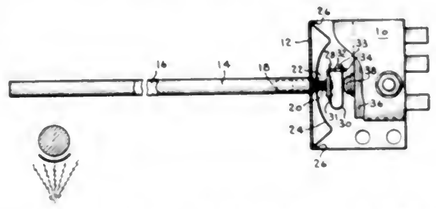
3,162,741
OVERVOLTAGE ARRESTOR HAVING A LIGHT DISPERSION OF FINE METALLIC DUST ON ITS INSIDE WALLS
Bo Gustav August Lindgren, Johanneshov, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 1, 1961, Ser. No. 92,570
Claims priority, application Sweden Mar. 11, 1960
5 Claims. (Cl. 200—113.5)

1. An overvoltage arrestor comprising a sealed glass tube, two lead-in wires sealed through the base of the tube, two bimetal contact strips extending from the lead-in wires substantially in parallel relationship inside the tube, a gaseous filling in said tube, and a light dispersion of a fine metal dust loosely adhering to the inside walls of the



tube to form a multitude of small air gaps between the dust particles.

3,162,742
THERMALLY ACTUATED ARCUATE STRIP TYPE CONTROL DEVICE
Reno L. Vicenzi and John A. Kleinheinz, Riverside, Calif., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,573
7 Claims. (Cl. 200—137)



1. A control device adapted to respond to a flame or variation in temperature comprising, in combination, a frame, a switch supported on said frame, a rod fixed to said frame, a strip connected at one end to said rod and extending longitudinally of and in spaced relation to said rod, said strip being generally arcuate in transverse cross section and uniformly spaced from said rod in any transverse plane through said rod and strip along the longitudinal extensions thereof, said strip arranged exteriorly of and with its edges extending toward said rod, and means connected to the free end of said strip and engaging said switch for transmitting motion of said strip to said switch for actuation thereof.

3,162,743
THERMALLY ACTUATED SWITCH COMPENSATED FOR AMBIENT TEMPERATURE VARIATIONS
Oran T. McIlvaine, St. Charles, Ill.; The St. Charles National Bank, administrator of said Oran T. McIlvaine, deceased, assignor to Nettie R. McIlvaine, St. Charles, Ill.
Filed Sept. 19, 1961, Ser. No. 139,130
5 Claims. (Cl. 200—138)

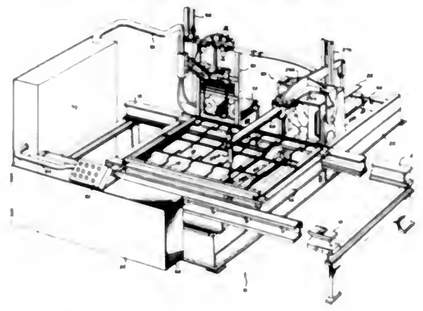
1. A radiation responsive switch comprising a base, a bimetallic strip mounted on the base, a bracket mounted on the base, a contact strip pivotally mounted on the bracket to swing toward and away from the bimetallic strip, frictional retention means permitting pivotal movement of the contact strip in response to an applied force and retaining said contact strip substantially in the position to which it is displaced after the removal of such force, linkage means between said strips limiting the

distance of separation therebetween, means for absorbing radiation and converting it to heat, and means for con-



ducting said heat to the bimetallic strip to expand the bimetallic strip to engage the contact strip.

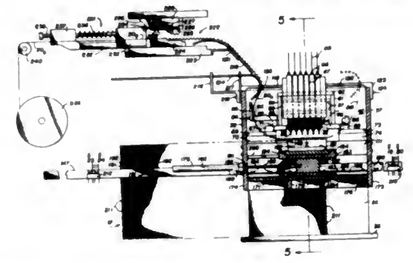
3,162,744
AUTOMATIC WELDING APPARATUS
Lewis J. Stern and Francis W. Frey, Adrian, Mich., assignors to Stubnitz Greene Corporation, Adrian, Mich., a corporation of Michigan
Filed Sept. 26, 1961, Ser. No. 140,884
12 Claims. (Cl. 219—80)



1. Automatic welding apparatus comprising, in combination, a first frame member, a first carriage movably mounted upon said frame member, a second carriage movably mounted upon a second frame member for movement in a direction transverse to the direction of movement of said first carriage, means mounting an article to be welded upon said first carriage, a welder mounted upon said second carriage having welding members selectively engageable with the article to be welded and control means operatively associated with said first and second carriages automatically positioning said first and second carriages relative to each other during each operation of the welder.

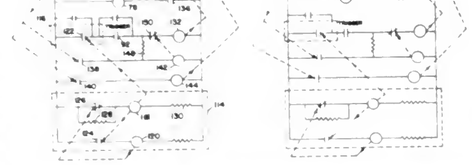
3,162,745
METHOD AND APPARATUS FOR FABRICATING HONEYCOMB CORE
Fred H. Rohr, San Diego, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed Feb. 12, 1963, Ser. No. 265,309
12 Claims. (Cl. 219—83)

4. The shuttling method of fabricating honeycomb core of unlimited length from a continuous corrugated metallic ribbon tethered thereto and while supported alternately on retractable and internesting electrode and indexing pins which comprises the steps of withdrawing the electrode pins and shuttling the core by and with the indexing pins selectively to either side of the electrode pins thereby to draw a section of the tethered ribbon over the core and into positions of alignment and abutment of the lower nodes thereof with corresponding upper nodes of the upper ribbon layer of the core, returning the electrode and indexing pins into mutual internesting relation and with the electrode pins in supporting relation to said aligned and abutting nodes and with said indexing pins disposed in aligned and supporting relation beneath the



upper nodes of said drawn section of the tethered ribbon, passing welding current through said aligned and abutting nodes thereby to bond said drawn ribbon section to the core, and repeating said steps until an end of the core is reached and the ribbon is tethered at said end of the core.

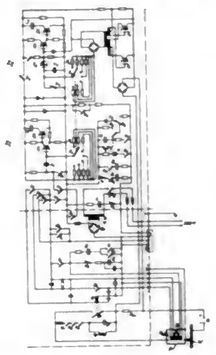
3,162,746
STUD WELDING DEVICES
Ralph K. Ritter, Moorestown, and Lawrence P. English, Haddon Heights, N.J., assignors to KSM Products Inc., Moorestown, N.J., a corporation of New Jersey
Filed Apr. 5, 1961, Ser. No. 100,907
2 Claims. (Cl. 219—98)



1. Welding apparatus comprising a direct current power source and a plurality of stud welding stations, said power source supplying a substantially predetermined relatively high voltage to said stud welding stations when said stud welding stations are not in operation and supplying a substantially predetermined relatively low voltage to said welding stations when one of said stud welding stations is in operation, each of said stud welding stations including a stud welding gun having a reciprocable stud holder for carrying a stud, a spring arrangement for biasing said stud outwardly with respect to said stud welding gun toward a workpiece, a solenoid for withdrawing said stud holder inwardly with respect to said stud welding gun away from said workpiece, a first path constituting a voltage sensitive interlock including a voltage sensitive relay coil and a normally open switch in series across said power source, a second path constituting a buffer interlock including a normally closed switch, a relay coil and a resistor in series across said power source and a resistor connected in parallel across said normally closed switch of said second path, a third path constituting a stud welding current flow control including a normally open switch and a relay coil in series across said power source, and stud welding gun operating means including a manually engageable trigger that

initiates energizing said solenoid, generating a pilot arc between said stud and said workpiece, and actuating said stud welding current flow control and deenergizing said solenoid in order to plunge said stud toward said workpiece, said relay coil of said buffer interlock of said second path preventing operation of said stud welding gun operating means when said voltage is relatively low and permitting operation of said stud welding gun operating means when said voltage is relatively high.

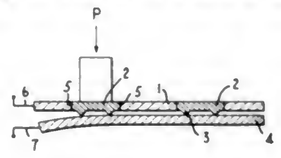
3,162,747
CONTROL AND REGULATING SYSTEM FOR ARC-WELDING EQUIPMENT, MORE PARTICULARLY STUD WELDING WITH POWER REGULATION
Hermann Netzsch, Grosshesselohe, near Munich, Germany, assignor to Crompton Parkinson Limited, London, England
Filed Feb. 19, 1962, Ser. No. 173,967
Claims priority, application Germany Feb. 21, 1961
12 Claims. (Cl. 219—98)



1. Apparatus for welding together, a first, metallic bolt member and a second, metallic work piece member which comprises, means for holding said first and second members in spaced apart relation during a first welding stage, means for applying an electrical voltage between said two spaced apart members, means for measuring current flow through said applying means, means for deriving a voltage proportional to said current flow, a first time stage connected in circuit with said deriving means for integrating said proportional voltage, means for adjusting the time constant of said time stage in relation to the weld to be accomplished, a voltage responsive element responsive to signals generated in said time stage for interrupting current flow through said applying means, and a second time stage being responsive to a predetermined value of current which will produce an unsatisfactory weld for a given time constant of said first time stage for producing a control signal, and indicating means driven by said control signal.

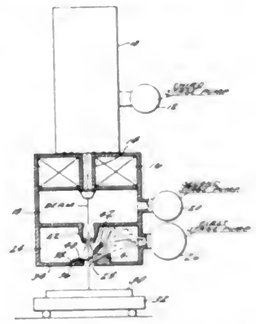
3,162,748
METHOD FOR PRODUCING DIALS CARRYING PROJECTING SYMBOLS
André Vogt, 63 Rue Jacob Brandt, La Chaux-de-Fonds, Switzerland
Filed Nov. 6, 1961, Ser. No. 150,204
Claims priority, application Switzerland, Nov. 9, 1960, 12,509/60
5 Claims. (Cl. 219—117)

1. A method for welding a symbol on a finished electrically conductive dial, the steps consisting in cutting the symbols out of a strip of metal, providing on the rear sides of the symbols narrow projections, faceting the front side of the symbols, positioning the strip carrying the symbols in their original location with reference thereto to make a symbol register with the location to be occupied by said symbol on the dial, feeding electric current through the strip into the edge of the last-mentioned symbol through the latter and its projections, said current



passing out through the dial, urging elastically said symbol against the dial during the welding, and consequent melting of the projections, and removing the strip while leaving the symbol in position on the dial.

3,162,749
JET VALVE PRESSURE STAGING DEVICE
Aldo A. Peracchio, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,315
8 Claims. (Cl. 219—121)

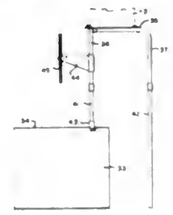


1. Apparatus for working materials with a beam of charged particles comprising:
a first chamber having a beam exit aperture,
means positioned in said first chamber for generating a beam of charged particles,
means for evacuating said first chamber,
means supporting a workpiece outside of said evacuated first chamber in a gaseous atmosphere,
means positioned adjacent the aperture in said first chamber for permitting passage of the beam from said first chamber to the workpiece region without material attenuation, and
means positioned between the termination of said passage permitting means and said workpiece for inducing a flow deflection away from the beam axis of the stream of gas which tends to flow into the evacuated first chamber from the region of the workpiece.

3,162,750
PORTABLE WELDING APPARATUS
Hubert J. Anderson, Pewaukee, Wis., assignor to Automatic Welding Company, Waukesha, Wis., a corporation of Wisconsin
Original application Jan. 28, 1963, Ser. No. 254,381. Divided and this application Feb. 26, 1964, Ser. No. 347,402
10 Claims. (Cl. 219—130)

1. A portable welding apparatus comprising a receptacle for welding wire, the receptacle having a rim, a

mounting structure supported at least partially by the rim of the receptacle and wire feed means in the mounting

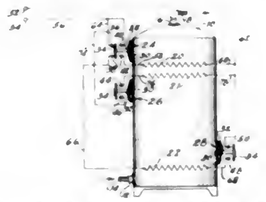


structure to feed toward a welding zone wire from the receptacle.

3,162,751
WELDING ELECTRODE
Lawrence Robbins, 626 Lockwood Drive, Vallejo, Calif.
No Drawing. Filed Sept. 24, 1962, Ser. No. 225,836
14 Claims. (Cl. 219—137)

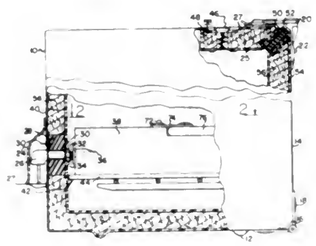
1. A method of welding a low alloy, high yield, notch tough steel containing by weight, about 0.40% maximum carbon, about 0.10% to 2.00% manganese, about 0.04% maximum phosphorus, about 0.045% maximum sulphur, about 0.12% to 0.70% silicon, about 0.04% to 2.50% chromium, about 0.05% to 4.5% nickel, about 0.13% to 0.70% molybdenum and the remainder substantially iron, said method comprising: rooting an electric welding arc to said work piece and feeding a welding wire to said arc, said wire containing, by weight, about 0.06% maximum carbon, about 0.008% maximum phosphorus, about 0.012% maximum sulphur, about 0.40% maximum silicon, about 1.00% to 2.50% manganese, about 1.30% to 3.75% nickel, about 1.50% maximum chromium, about 1.25% maximum molybdenum, about 0.003% to 0.10% titanium, about 0.003% to 0.10% zirconium and about 0.003% to 0.10% aluminum, the remainder being substantially iron; blanketing said arc and the consuming end of the electrode whereby to exclude air and advancing said electrode to maintain the arc as electrode material is transferred from the electrode to said metal.

3,162,752
WATER HEATER AND CONTROL THEREFOR
Howard R. Kinsella, Jr., Affton, Mo., assignor to White-Rodgers Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 24, 1962, Ser. No. 225,606
1 Claim. (Cl. 219—320)



In a water heating tank having a first upper electrical resistance heater positioned to heat water in the upper portion of the tank and circuit connections for the energization thereof completed through one side of an upper double throw thermostatic switching device when it moves to one throw position in response to a decrease in water temperature in the upper portion of the tank, and a second lower electrical resistance heater positioned to heat water in the lower portion of the tank and circuit connections for the energization thereof completed through a lower single throw thermostatic switching device when it closes in response to a decrease in temperature in the lower portion of the tank and through the other side of said double-throw device when it moves to its other throw position in response to a temperature rise, whereby either may operate to restore the water temperature in its respective portion of the tank but concurrent operation of the heaters is prevented; the improvement which consists in the provision of a third electrical resistance heater positioned to heat water in the upper portion of the tank and circuit connections for the energization thereof independently of said upper double throw thermostatic switching device and said lower single throw thermostatic switching device, and said circuit connections for said third heater including a second single throw thermostatic switching device responsive to the water tempertaure in the upper portion of the tank and calibrated to close at a temperature substantially below that which effects the movement of said upper double throw thermostatic switching device to its said one position and to reopen upon temperature rise at a point below that which results in the movement of said double throw switching device to its said other position, and said first, second, and third heaters being electrically connected in parallel with each other across an electrical power source.

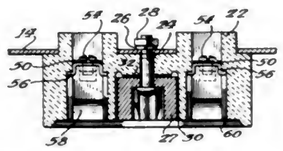
3,162,753
OVEN AND MEANS FOR HEATING THE INTERIOR THEREOF
Ellis V. Boyer, Phoenix, Ariz., assignor to Sherrye Boyer, Phoenix, Ariz.
Filed May 29, 1961, Ser. No. 113,164
7 Claims. (Cl. 219—399)



1. In an oven and means for heating the interior thereof, the combination of: an oven enclosure having inner side walls; a soapstone heat retaining means comprising a plurality of adjacent portions removably disposed in said enclosure; a resistance heating element between said adjacent portions of said heat retaining means; electrical conductor means coupled to and insulated from said enclosure and extending from the exterior to the interior thereof; and male connector means projecting inwardly from the inner side wall of said enclosure; insulation means holding said male connector means rigidly and in fixed position; and female connector means adapted to receive said male connector means; said female connector means being wholly recessed in said heat retaining means and connected with said heating element therein, said male connector means being electrically connected to said electrical conductor means, said enclosure having an access opening therein and an access door movable relative thereto and providing access into said enclosure, said oven enclosure having said opening in a side wall thereof opposite to said inner side wall from which said male connectors project, said access door closing said opening in said opposite side wall, said access door operable to permit removal of said heating element axially of said male connector means and through said opening and to thereby permit removal of said heating

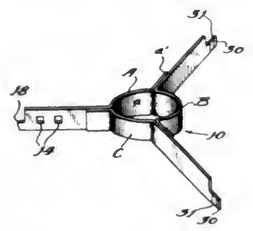
element, said heat retaining member and concurrent disconnection of said heating element relative to said male connector means.

3,162,754
PLUG-IN OVEN UNITS
Joseph J. Jasionowski, Niles, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Aug. 10, 1962, Ser. No. 216,173
1 Claim. (Cl. 219—403)



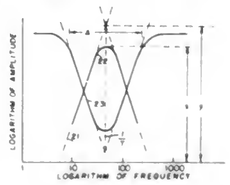
The combination of an electrical heating element for an oven and means providing a mounting therefor to the wall of said oven comprising: a sheathed electric heating element having two juxtapositioned end portions, a contact secured to each end portion, a ferrous metal plate member secured to said end portions, an insulating block mounted in the wall of the oven, a second pair of electrical contacts mounted in said block and spaced apart a distance equal to the spacing of the first mentioned contacts, and a magnet mounted in said block between the last mentioned pair of contacts and adapted magnetically to hold said plate against said wall to maintain the heating element in position in the oven, said heating element being pivotable to bring the upper edge of said plate against the wall to lever the same away from the magnet to break the magnetic retention of the plate against the magnet to permit easy withdrawal of the heating element.

3,162,755
ADJUSTABLE HEATING ELEMENT SUPPORTS
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed June 5, 1962, Ser. No. 200,102
2 Claims. (Cl. 219—526)



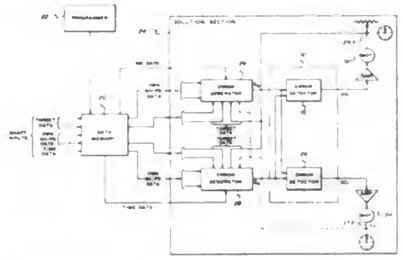
1. A spider for mounting an electric heating element on an electric range having an opening therein to receive said element, comprising: a member having a plurality of radially extending legs, said member having a central portion adapted to be positioned in supporting relationship under the center of said heating element, said member possessing sufficient rigidity and strength to support said element and a cooking vessel placed thereon, the outer extremity of at least two of said legs being provided with outwardly extending strips integral with the legs and having a height substantially less than the height of the legs, said strips being of less rigidity and strength than the remainder of said legs and being readily bendable whereby to adjust the radial extent of said legs to accommodate openings of different size.

3,162,756
SEISMIC FREQUENCY BAND RESTORATION
Philip L. Lawrence, Dallas, Tex., assignor, by mesne assignments, to Socony Mobil Oil Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 19, 1959, Ser. No. 787,645
3 Claims. (Cl. 235—183)



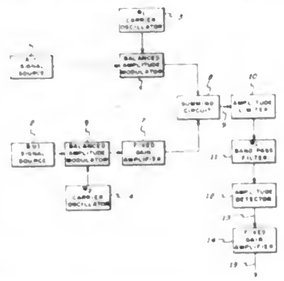
1. In seismic exploration where a seismic filter which includes earth travel paths serves to limit frequency components of a seismic signal to a known passband, the combination which comprises means for generating integral functions of said signal in number proportional to the slope of the low frequency side of said passband, means for generating derivative functions of said signal in number proportional to the slope of the high frequency side of said passband, means for generating an output signal representative of the sum of said signal, said integral functions, and said derivative functions, and means for recording said output signal.

3,162,757
COMPUTER TO ANALYZE TARGET MOVEMENT
Saul Zaklad, Westbury, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 20, 1960, Ser. No. 44,228
12 Claims. (Cl. 235—187)



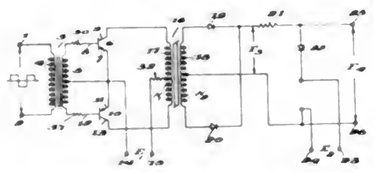
1. Apparatus for computing target speed S_t and course C_t from target and own ship data taken at different times, said apparatus comprising first error generating means responsive to the receipt of signals representing known target and own ship parameters and of signals representing S_t and C_t values for generating an output error signal E_a representing the total error due to incorrect input values of S_t and C_t as related to said second set of known error generating means responsive to said S_t and C_t signals and to signals representing a second set of known target and own ship parameters for generating an output signal E_a representing the total error due to incorect input values of S_t and C_t and related to said second set of known parameters, means responsive to said E_b and E_a signals for producing separate dS_t and dC_t signals respectively representing the errors due to incorrect S_t and C_t input values supplied to both said error generating means, first and second motor means responsive respectively to said dS_t and dC_t signals, means responsive to said first motor means for supplying signals representing S_t values to both said error generating means, and means responsive to said second motor means for supplying signals representing C_t values to both said error generating means.

3,162,758
SYSTEM FOR DETERMINING THE QUOTIENT OF TWO AMPLITUDE MODULATED SIGNALS
Susan K. Kamen, Jamaica Estates, and William L. Rubin, Whitestone, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Feb. 27, 1961, Ser. No. 91,973
7 Claims. (Cl. 235—196)



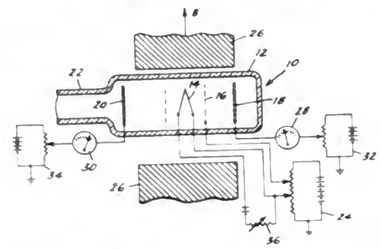
1. A system for determining the quotient of a divisor quantity and a dividend quantity, said divisor quantity being represented by a first amplitude modulated signal of a first carrier frequency and said dividend quantity being represented by a second amplitude modulated signal of a second carrier frequency, the amplitude of said first signal being greater than the amplitude of said second signal, said system comprising means for summing said first and second signals, an amplitude limiter coupled to the output of said last-named means, and a bandpass filter coupled to the output of said limiter, the pass band of said filter being centered on said second carrier frequency.

3,162,759
ANALOGUE DIVIDER CIRCUIT
David A. Robinson, Fort Lauderdale, Fla., assignor to Airpax Electronics Incorporated, Fort Lauderdale, Fla., a corporation of Maryland
Filed Aug. 10, 1961, Ser. No. 130,694
3 Claims. (Cl. 235—196)



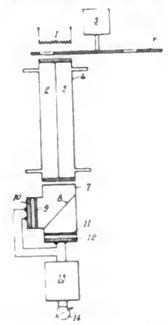
1. An analogue computing circuit comprising a core material having a substantially rectangular hysteresis characteristic, first and second mutually inductive windings wound thereon, amplifier means connected across said first winding, a carrier voltage source connected across the input of said amplifier means, a first voltage source connected between an intermediate point of said first winding and said amplifier means, clamping means connected at the output of the circuit, and a second voltage source connected in series with said clamping means to provide a pulsed output wherein each pulse has a height equal to the amplitude of said second voltage source and a width inversely proportional to the amplitude of said first voltage source.

3,162,760
MAGNETRON TYPE MASS SPECTROMETER
Wallace S. Kreisman, Malden, Mass., assignor to Geophysics Corporation of America, Bedford, Mass., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,691
19 Claims. (Cl. 250—41.9)



7. A magnetron mass spectrometer comprising a source of ion particles, two collectors disposed about said source, each of said collectors having an inner surface all points on which are equidistant from said ion source, one of said collectors being spaced farther from said source than the other, means for accelerating said ion particles from said source radially toward said collector, means for balancing currents to each of said collectors due to ions of greater than a given mass, and means for detecting ion currents due to ions of said given mass to the collector closer to said source.

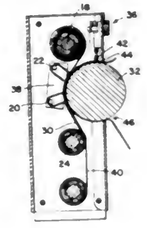
3,162,761
APPARATUS FOR ANALYZING A MIXTURE OF SUBSTANCES BY SELECTIVE ABSORPTION OF INFRARED RADIATION
Karl Luft, Essen-Kray, Germany, assignor to Office National d'Etudes et de Recherches Aeronautiques O.N.E.R.A., Chatillon-sous-Bagneux, France, an organized body of France
Filed May 29, 1961, Ser. No. 113,467
Claims priority, application Germany, June 3, 1960, B 58,110
4 Claims. (Cl. 250—43.5)



1. An apparatus for analyzing a mixture of substances to measure the relative amount, in said mixture, of a given component thereof capable of selectively absorbing rays of wavelengths belonging to a given range of wavelengths, which apparatus comprises, in combination, a measurement cell arranged to contain the mixture to be analyzed, a reference cell arranged to contain a reference substance, means for forming two substantially identical ray beams, one of said beams being called measurement beam and the other one reference beam, a detector device located in fixed position with respect to said cells, means for passing the measurement beam intermittently for first recurrent time periods through said measurement cell and

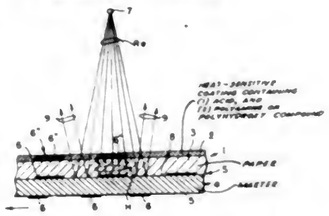
onto said detector device, means for passing the reference beam intermittently through said reference cell and onto said detector device during second recurrent time periods corresponding to the intervals between said first recurrent time periods, said detector device comprising two distinct detector elements for producing signals in response to the action of rays thereon, the first of said detector elements selectively sensitive to rays of wavelengths corresponding to the maximum of absorption by said component in said range of wavelengths, said maximum absorption rays forming a first partial radiation of said beams, the second of said detector elements being sensitive to the rays of a second partial radiation of said beams comprising rays of wavelengths different from those of said maximum absorption rays, means for applying the first and second partial radiations of said measurement beam to said first and second detector elements, respectively, for said first recurrent time periods, means for applying the first and second partial radiation of said reference beam to said first and second detector elements, respectively, for said second recurrent time periods, and means operatively connected with both of said detector elements for comparing the value of the signal delivered by said first detector element relatively to the value of the signal delivered simultaneously by said second detector element, during the first recurrence periods, with the value of the signal delivered by said first detector element relatively to the value of the signal delivered simultaneously by said second detector element, during the second recurrence periods.

3,162,762
COPYING APPARATUS AND METHOD
Robert B. Russell, 248 Park St., Newton 58, Mass.
Filed Sept. 16, 1960, Ser. No. 56,482
3 Claims. (Cl. 250—65)



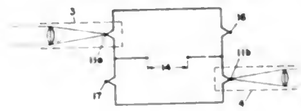
1. Apparatus for radiant energy copying having in combination; a base; a transfer sheet supply roll mounted for rotation on said base; a transfer sheet take-up roll mounted for rotation on said base; drive means for said take-up roll and braking means for said supply roll whereby transfer sheet fed from said supply roll to said take-up roll is tensioned between the two; a printing station substantially between said supply and take-up rolls; a print roll mounted for rotation on said base at said printing station whereby said transfer sheet is tensioned over said printing roll at said station; means for supplying and feeding a copy sheet between said print roll and said tensioned transfer sheet; a radiation source at said printing station directed at said transfer sheet and the transfer sheet take-up roll positioned with relation to said print roll and said radiation source in relation to the diameter of said take-up roll and print rolls so that, as the transfer sheet builds up on said take-up roll and the circumference thereof is effectively increased, the distance between said radiation source and the point of separation of said transfer and copy sheets remains substantially directly proportional to said circumference increase; whereby said drive means for said take-up roll may be a constant speed motor.

3,162,763
THERMOGRAPHIC REPRODUCTION PAPER, METHOD OF MAKING AND METHOD OF USING
George C. Huett, Hartwell L. Briggs, and Cornelius B. Lawyer, Chicago, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,347
7 Claims. (Cl. 250—65)



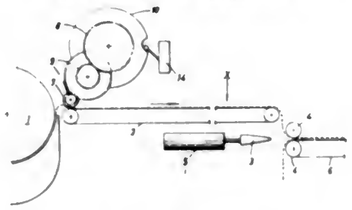
1. A process for graphically reproducing an original which comprises: placing an original having preferentially radiation absorbing areas in contact with a cellulosic paper base coated with a visibly heat-sensitive composition, said composition comprising (1) an organic acid, said acid having a dissociation constant varying from that of citric acid to that of metabenzene disulfonic acid, and (2) an organic compound selected from the group consisting of hydroquinone, resorcinol, catechol, phloroglucinol, pyrogallol, hydroanthaquinone, a naphthol, ortho-, meta-, and para-phenylene diamine, and benzidine, and irradiating said original with heat producing radiations to increase the temperature of the supported layer in the areas of said supported layer registering with said radiation absorbing areas to a temperature of from about 240° F. to about 360° F., whereby a reaction occurs in said radiation absorbing areas and said original is visibly reproduced.

3,162,764
SPACE VEHICLE ATTITUDE CONTROL
Robert P. Haviland, Radnor, Pa., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,154
7 Claims. (Cl. 250—83.3)



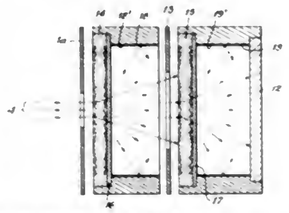
3. In an attitude control system for a satellite adapted to orbit a parent body, a plurality of heat sensory means, each of said sensory means being comprised of transducer means for producing an electrical signal which is a function of the radiant energy incident upon it, and focusing means fixedly mounted on said satellite for continuously focusing all the incident thermal radiation within a given field of view passing through the focusing means upon the transducer means, each of said heat sensory means adapted to be fixedly mounted on the satellite in a predetermined relationship with respect to the satellite so that when the satellite has the desired attitude with respect to its parent body, substantially different portions of the parent body and sky are within the field of view of each of the heat sensory means and the voltages produced by the transducer means of each of the sensory means have substantially equal values, circuit means to which the output voltages of the transducer means of each of the heat sensory means are applied for producing error signals which are a function of the deviation of the attitude of the satellite from said predetermined attitude with respect to its parent body.

3,162,765
LENGTH MEASURING DEVICE FOR AUTOMATIC FOLDERS
William Broadbent Gordon Cran, Denby Dale, near Huddersfield, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, Yorkshire, England
Filed Apr. 10, 1962, Ser. No. 186,450
Claims priority, application Great Britain, Apr. 11, 1961, 12,937/61; Feb. 14, 1962, 5,596/62
16 Claims. (Cl. 250—223)



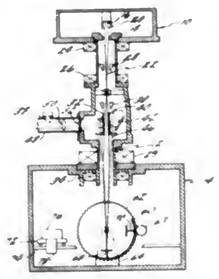
1. A proportional length measuring device for monitoring the progress of articles travelling in open form along a given path and each of which changes from a first speed to a second speed during its monitored progress comprising a controller adapted to initiate a signal when it is moved through a given amplitude of movement, rotatable means in the path of the article adapted to be engaged and driven by the article and to drive the controller through an initial portion of said given amplitude at a speed in prescribed ratio to the speed of the article and means to drive the controller at a speed in given ratio, higher than said prescribed ratio, to the second speed of the article immediately after the trailing end of the article moves out of contact with said rotatable means and until the controller completes its movement through the remainder of said given amplitude to achieve the result that irrespective of the length of the article the signal is initiated by the controller when a point on the article in advance of its trailing end by a distance equal to a fraction of its length represented by said prescribed ratio divided by said given ratio reaches a point in the path of the article beyond said rotatable means by a distance equal to said amplitude of the controller divided by said given ratio.

3,162,766
PHOTOELECTRIC RECEIVER WITH SUPPLEMENTARY IRIS DIAPHRAGM
Martin Ploke, Preetz, Holstein, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Jan. 23, 1961, Ser. No. 84,392
Claims priority, application Germany, Jan. 30, 1960, Z 7,788
12 Claims. (Cl. 250—229)



1. The combination with a photoelectric receiver, of a supplementary iris diaphragm, and a light diffusion means arranged between said photoelectric receiver and said iris diaphragm, said light diffusion means comprising a lens which is provided adjacent its axis with concentrically arranged conical constrictions which cause light beams passing parallel to the axis through said lens to illuminate the entire surface of said receiver within a ring-shaped area on said photoelectric receiver and the light rays in the outer zone of the iris diaphragm to be deflected toward the photo-electric receiver in the direction of the optical axis, the area within the ring-shaped area being uniformly illuminated by a pattern of ring-shaped illuminated zones of small and large diameters on different radii.

3,162,767
METHOD FOR NONDESTRUCTIVE TESTING BY USING A DEFOCUSSED ELECTRON BEAM
Robert A. Di Curcio, Windsor, and Willard F. Stillwell, Jr., Thompsonville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 220,987
2 Claims. (Cl. 250—49.5)



1. A method for the nondestructive testing of electronic circuit components which have been fabricated by the deposition of at least one film of conductive or semiconductive material on the surface or surfaces of a nonconductive substrate comprising:

generating a beam of electrons,

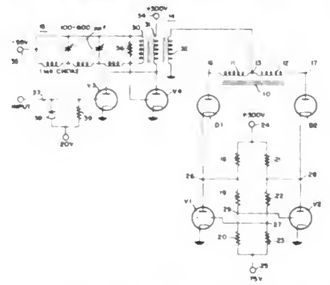
placing the component to be tested generally in the path of the beam,

adjusting the power density of the beam to a value which will cause the substrate material to fluoresce,

deflecting the beam across the surface of the component, and

observing the fluorescence emanating from the component during the deflection whereby defects in the film will be readily apparent.

3,162,768
MAGNETIC CORE DECA-FLIP
Tenny Lode, St. Paul, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 3, 1954, Ser. No. 427,216
29 Claims. (Cl. 307—88)



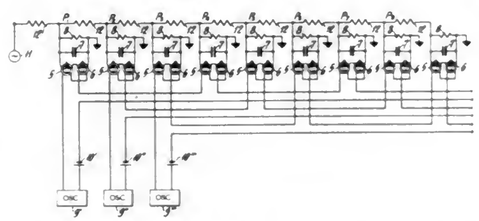
25. A counter circuit comprising a translating means producing an output in response to an input thereto, a source of input pulses to be counted, variable impedance

means coupling said source of pulses to the input of said translating means, said impedance means comprising a core of magnetic material having a coil thereon, one end of said coil being coupled to said source and the other end of said coil being coupled to the input of said translating means, potential clamp means coupled to said other end of said coil for normally maintaining said other end of said coil and the input of said translating means at a predetermined potential, the saturation state of said core being changed in response to applications of a predetermined number of pulses from said source to said coil for changing the impedance of said coil from a high impedance value to a low impedance value, whereby a pulse from said source passes via said coil when the impedance of said coil changes to said low value thereby to change the input potential of said translating means from said clamped predetermined potential.

3,162,769
DATA-TRANSFER GATES

Hiroshi Yamada, Tokyo, Japan, assignor to Fuji Toushinki Seizo Kabushiki Kaisha, Kawasaki, Japan, a company of Japan

Filed Dec. 30, 1960, Ser. No. 79,827
Claims priority, application Japan, Oct. 22, 1955, 30/27,776; Nov. 2, 1955, 30/28,787
12 Claims. (Cl. 307—88)

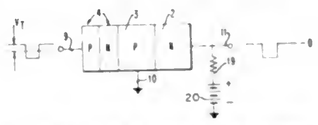


1. In a data-transfer gate arrangement in combination, an output parametrically excited resonator, at least a first and second stage of gating parametrically excited resonators in cascade, said first stage comprising a plurality of said resonators and said second stage comprising at least one parametrically excited resonator connected in cascade with said output resonator, means connecting resonators in said first stage connected to said second stage resonators in parallel, each of said resonators comprising an output resonant circuit having a resonance frequency f and having means for varying the resonance frequency of said output resonant circuit, an exciting circuit for applying an exciting current of frequency $2f$, means coupling said exciting circuit to each of said output resonant circuits through said means for varying the resonance frequency to generate an oscillation having a frequency f corresponding to a ½ subharmonic of said exciting frequency $2f$ and having one of two different phases which are displaced by 180 degrees from each other and representative respectively, of binary conditions "0" and "1," for each resonator in said first stage means for applying two control signals of frequency f directly to said output resonant circuit, for each resonator in the first stage means for applying a binary-coded information input signal of frequency f directly to said resonant circuit thereof, said control signals and information signal having one of said two different phases displaced by 180 degrees, said means for applying said two control signals and said information signal comprising an odd number of means for each resonator for applying said control and information signals in parallel in preselected combinations of said two different phases to cause the phase of said ½ subharmonic oscillation of frequency f in said second stage resonator to be controlled by the phase of the majority of said control signals and said information signal when said ½ subharmonic oscillation is restarted after interruption, means for selectively applying an exciting current having a frequency $2f$ to said means for varying the resonant frequency of each one of said gating resonators and said output resonator to effect selective transmission of the binary information from a selected one of said information inputs of a selected one of said gating resonators of said first stage to said output parametrically excited resonator by selectively applying an exciting current to said gating resonators connected to said output resonator thereby controlling the oscillation phase of said one gating resonator slightly after said selective application of an exciting current to said one gating resonator to control the oscillation phase of said gating resonator receptive of a binary-coded information input to be transmitted, and means coupling the gating resonator of said second stage to said output parametrically excited resonator for applying the ½ subharmonic oscillation f of the gating resonators to said outut parametrically excited resonator as the phase control signal thereof.

3,162,770
TRANSISTOR STRUCTURE

Richard F. Rutz, Fishkill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application June 6, 1957, Ser. No. 664,130, now Patent No. 2,989,426, dated June 20, 1961. Divided and this application Sept. 26, 1958, Ser. No. 763,542
7 Claims. (Cl. 307—88.5)

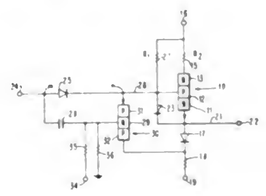


2. A transistor characterized by: an emitter connection having first and second regions forming a PN junction with the base region of said transistor and of opposite conductivity type semiconductor material joined at a PN junction, said first region being of a conductivity type opposite to the conductivity of the base region of said transistor and means for applying a reverse bias to said last mentioned PN junction coupled between said second region and said base region.

3,162,771
HIGH SPEED TRANSISTOR AMPLIFYING SWITCH HAVING ISOLATING AND SECOND TRANSISTOR TURN-OFF MEANS

Manfred Hilsenrath, Hyde Park, and Robert C. Paulsen, Rabbit Trail, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 16, 1961, Ser. No. 117,597
4 Claims. (Cl. 307—88.5)

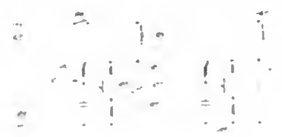


1. A signal amplifying switch comprising a transistor having base, collector and emitter electrodes with a signal output terminal being connected to said emitter electrode, first and second potential sources, an impedance connected between said collector electrode and said first potential source, an impedance connected between said emitter electrode and said second potential source, a tunnel diode connected in a forward direction between said base and emitter electrodes, means biasing said transistor to a normal low conductive state and said tunnel diode to a stable low voltage high current stable state, input signal means including an isolation circuit for applying an input signal which swings from a first level to some predetermined second level to said tunnel diode to switch it to a stable low current high voltage state and effect a corresponding switching of said transistor to a high conductive state, said switching being effective through the base emitter circuit of said transistor to render said isolation circuit operative to disconnect said input signal means from said tunnel diode and permit said diode to determine the final level of the output signal at a level of greater magnitude than said predetermined level of said input signal, and a second transistor circuit means responsive to the restoration of said input signal from said predetermined level back to its first level to restore said tunnel diode from its low current high voltage state to its high current low voltage state and effect a corresponding restoration switching of said first transistor.

3,162,772
ELECTRONIC SEQUENCE TIMER

Charles E. Smith, Jr., 26 Beach St., North Providence, R.I.

Filed June 20, 1961, Ser. No. 118,462
5 Claims. (Cl. 307—88.5)



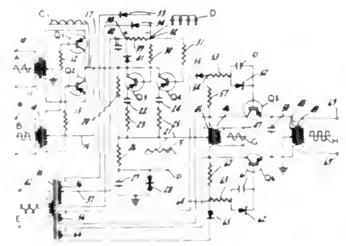
1. An electronic sequence timer comprising a source of direct current having a positive and negative line, a switch in the positive line, a work load and a silicon controlled rectifier connected in series between said positive and negative lines, and a pulse discharge circuit across the anode-cathode of said rectifier for producing a positive pulse at the gate of said rectifier after a predetermined interval of time causing it to fire and allow the current to flow through the load, and a second sequence timing device connected to said positive line, the negative line of said second timing device being connected to the anode of said rectifier of said first timing device, whereby said second timing device will not time out until said first device has timed out.

3,162,773
TRANSISTORIZED LINEAR ALTERNATING CURRENT SERVO COMPENSATOR AND QUADRATURE REJECTOR

Arnolds Jansons, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 5, 1961, Ser. No. 136,114
11 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A linear alternating current servo compensator and quadrature rejector circuit utilizing electronic controlled devices for alternating current servo systems comprising: a first error signal input adapted to be produced by a servomotor of a servo system; means demodulating said error signal; a servo compensating network with switching means therein coupled to said demodulating means to receive said demodulated error signals, said switching means being coupled to connect and disconnect servo compensating network elements to produce compensated servo error signal output; a second signal input adapted to

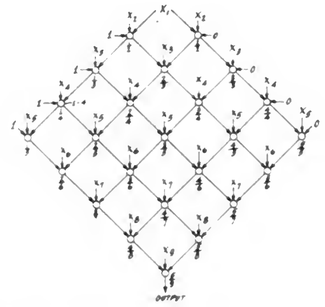


be produced by a tachometer of the servo system; means combining said compensated error signal output of said compensating network with said second signal input to produce a servo control signal; and means to key modulate the servo control signal to obtain an alternating signal with the phase determined by the polarity of the servo control signal whereby said output signal is effective and adaptive to drive a servomotor of the servo system in a direction to reduce said error signal to zero.

3,162,774
NETWORK FOR OBTAINING A THRESHOLD FUNCTION UTILIZING MAJORITY GATES IN AN ARRAY

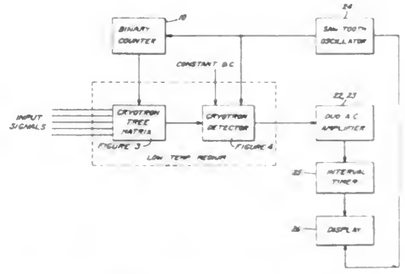
Robert O. Winder, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,873
6 Claims. (Cl. 307—88.5)



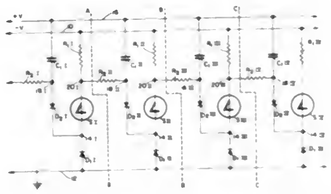
1. A network for performing a t out of n threshold function comprising a plurality of interconnected m input majority gates, means for applying input signals indicative of input variables to said gates; means for applying fixed inputs indicative of the binary bit "one" to some of said gates; means for applying fixed inputs indicative of the binary bit "zero" to some of said gates; and means for deriving an output from one of said gates indicative of the presence of t out of n inputs to said network, where t and n are integers, and m is an odd integer.

3,162,775
SCANNING DEVICE EMPLOYING CRYOTRON BRIDGES CONNECTED IN FREE-MATRIX FOR MEASURING MAGNITUDES OF SELECTED INPUT SIGNALS
James B. McFerran, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 31, 1962, Ser. No. 198,827
16 Claims. (Cl. 307—88.5)



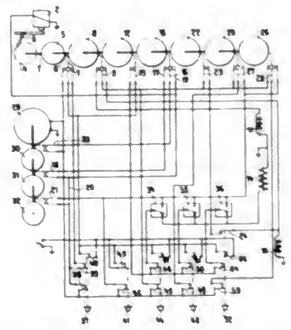
1. A cryogenic switching circuit comprising,
means for supplying intermittent electrical signals,
a plurality of cryotrons, each cryotron comprising a gate element and associated control element, said plurality of cryotrons arranged in at least one bridge circuit comprised of four cryotrons each,
selected ones of said control elements being simultaneously responsive to one of the intermittent electrical signals,
means for supplying the gate elements with a plurality of electrical input signals,
and means for switching selected ones of the input signals to an output circuit at a predetermined time.

3,162,776
SHIFT REGISTER
Albrecht Gerlach, Freiburg im Breisgau, and Karl-Heinz Wilke, Balingen, Germany, assignors to Clevite Corporation, a corporation of Ohio
Filed June 1, 1962, Ser. No. 199,481
Claims priority, application Germany, June 2, 1961, J 20,016
7 Claims. (Cl. 307—88.5)



1. A circuit arrangement for a shift register comprising:
a plurality of current paths connected in parallel between a potential source and return, each of said current paths containing resistive impedance means, a bistable switching element having a Thyratron characteristic, and an asymmetrical impedance means connected in series in the stated sequence between said potential source and return;
circuit means coupling said current paths in cascade;
means for simultaneously, momentarily rendering the respective bistable elements of all said current paths non-conductive;
means for applying a pulse adapted to bias the bistable elements to conduction; and means for rendering the last said means effective only upon the bistable elements in current paths immediately succeeding in a predetermined directional sequence, current paths which were conducting prior to operation of the first said means for rendering the bistable elements of all said current paths non-conductive.

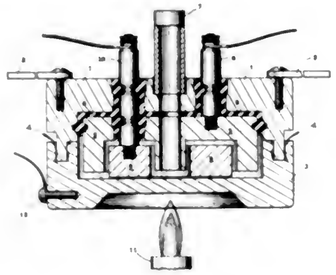
3,162,777
PROGRAM-TIMING DEVICE
Artur Weber, Muri, Bern, and André Rufer, Murten, Switzerland, assignors to Saia A.G., Murten, Switzerland
Filed Jan. 26, 1961, Ser. No. 85,127
8 Claims. (Cl. 307—141.4)



1. A program-timing device, comprising a cam shaft, a number of cam discs on said cam shaft for actuating individually associated control switches, parts of a machine to be controlled by the said control switches, a step gear operable by a step solenoid for stepwise rotation of the said cam shaft, a timing motor driving cam means, first, second and third pulse contacts operable by said cam means at a low, medium and high operating frequency respectively, hand-operable selector switches each individually associated with one predetermined type of program, selector switches operable by the said cam shaft and individually associated with the said hand-operable selector switches, selector circuits comprising hand-operable selector switches, selector switches operable by the cam shaft and the said pulse switches, the pulse switches being selectively and individually interconnected with the said step solenoid in accordance with the position of the said selector switches operable by hand or by the said cam shaft, for advancing the said cam shaft at a low, medium or high speed in accordance with the operating frequency of the said first, second or third pulse switch operably connected to the step solenoid.

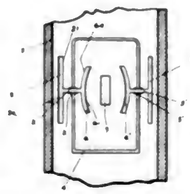
3,162,778
ELECTRIC THERMAL GENERATOR
Lyndon A. Durant, Chicago, Ill., assignor to United Music Corporation, Chicago, Ill., a corporation of Illinois
Filed July 3, 1961, Ser. No. 121,753
1 Claim. (Cl. 310—4)

A thermal electric generator comprising a cup shaped emissive element, a cup shaped body member hermetically sealed by an open end edge thereof to an open end edge of said emissive element, said cups forming a cylindrical internal cavity, a refractory ceramic sealing means, a cylindrical control element having an open torus channel in the lower end thereof positioned and insulated and hermetically sealed in said body by said ceramic means in equi-spaced relation to said emissive element, a terminal means fixed to said control element and projecting through the body member and hermetically sealed in and insulated from said body member by said ceramic means, a second terminal means, a torus ring collector element positioned in uniform coaxial spaced relation in said channel by said second terminal means with the latter projecting through said control element and said body



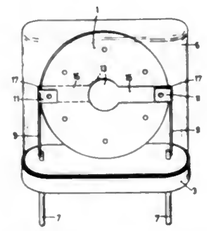
member and hermetically sealed to and insulated therefrom by said ceramic means with the lower planar surface thereof in close proximity with the inner planar surface of said emissive element, a passageway extending through said control element and said body terminating in a conduit hermetically sealed in said body for evacuating said cavity.

3,162,779
TEMPERATURE CONTROLLED ENCLOSURE FOR A PIEZO-ELECTRIC DEVICE
Leon Berman, Asnieres, France, assignor to Compagnie Industrielle des Telephones, Paris, France
Filed June 8, 1961, Ser. No. 115,732
Claims priority, application France June 17, 1960
14 Claims. (Cl. 310—8.9)



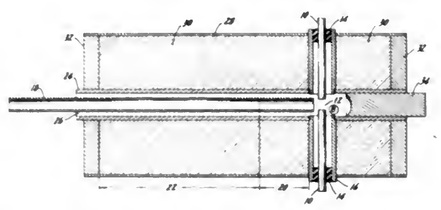
1. An arrangement for establishing relatively quickly a temperature equilibrium for a temperature controlled piezo-electric crystal, comprising:
enclosure means;
piezo-electric crystal means within said first-mentioned enclosure means;
and heat transfer means facilitating the heat transfer between said crystal means and the external heat source to accelerate the establishment of the temperature equilibrium of said crystal means including heat-conductive means extending through said first-mentioned enclosure means, relatively large-surface heat-absorption means on the outside of said first-mentioned enclosure means and connected in heat-conductive relationship with said heat-conductive means for absorbing heat, and relatively large-surfaced heat-radiation means on the inside of said first-mentioned enclosure means and connected in heat-conductive relationship with said heat-conductive means for transferring the heat absorbed by said heat-absorption means and conducted by way of said heat-conductive means to said crystal means exclusively by radiation from said heat-radiation means.

3,162,780
PIEZO-ELECTRICAL QUARTZ CRYSTAL IN EVACUATED GLASS HOUSINGS
Johannes Josephus van Dalen and Jan Kunnen, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,630
Claims priority, application Germany Apr. 10, 1961
3 Claims. (Cl. 310—8.9)



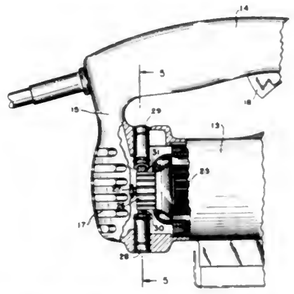
1. A piezo-electric quartz crystal in an evacuated housing including a base provided with insulated contact pins, a glass hood sealed to said base, said housing being annealed to prevent cracking of said glass hood comprising; a plurality of supply conductors, each welded by one end to one of the contact pins, the free end of each conductor being provided with holding means for holding said crystal in place, and a conductive cement being provided between said holding means and said crystal for mechanical securing and electrical connecting said crystal to said supply conductors, said conductive cement being constituted of water glass with 2–5% by weight of water and 25–90% by weight of metal powder.

3,162,781
MAGNETOHYDRODYNAMIC GENERATOR
Sterling Beckwith and Don B. Smith, both of P.O. Box 752, Lake Forest, Ill.
Filed Mar. 22, 1961, Ser. No. 97,660
22 Claims. (Cl. 310—11)



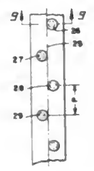
1. In a magnetohydrodynamic generator, means for forming a magnetic field, spaced electrodes positioned in said magnetic field, a source of combustible gas, a combustion zone adjacent said magnetic field for heating said gas to a temperature sufficient to ionize it, a preheat zone adjacent said combustion zone, and a defined passage formed of a carbon material for directing said combustible gas through said preheat zone, combustion zone and to said magnetic field whereby the ionized conducting gas passing through the magnetic field produces a voltage at said electrodes, exhaust gas from said combustion zone flowing in a direction opposite that of the conducting gas along said defined passage past said preheat zone.

3,162,782
OFFSET AXIS BRUSH HOLDER SPLIT HOUSING MOTOR
Walter M. Downs, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Apr. 21, 1961, Ser. No. 104,759
7 Claims. (Cl. 310—50)



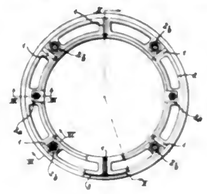
1. In a portable electrically-operated device, the combination which comprises a motor having a commutator, a motor housing including a pair of complementary mating halves having interior surfaces joining in a common plane, an overhead handle extending approximately parallel to said motor housing and above said commutator, a pair of brush holder supports in said motor housing comprising a lower support having an axis lying in the common plane of said mating halves and a top support having an axis inclined by an angle not exceeding 45° with respect to the common plane, and brushes within each of said supports, each of said brushes having an interior commutator-engaging face with said faces being diametrically opposite from each other and parallel to each other.

3,162,783
ARMATURE FOR EDDY CURRENT MAGNETIC DRIVES
Igor V. Zozulin, Vancouver, British Columbia, Canada, assignor to Tormag Transmissions Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Aug. 29, 1960, Ser. No. 52,663
7 Claims. (Cl. 310—105)



1. An eddy current magnetic drive having as mutually cooperating elements a magnetic rotor and an armature rotor, to comprise in combination:
(a) a magnetic rotor to which is secured a row of permanent magnets each having two pole faces and an air gap therebetween,
(b) a bimetallic armature rotor to comprise,
(i) an element of soft magnetic material
(ii) secured in contact therewith an element of non-magnetic material of high electrical conductivity having a surface in close spaced relationship to the pole faces aforesaid to cooperate therewith,
(c) holes in the element (a) (ii), inserts of soft magnetic material to fill said holes,
(i) said holes and inserts of truncated conical form the larger ends of which are closer to the cooperating pole faces aforesaid.

3,162,784
ROTARY ELECTRIC MACHINES
René Georges Charlin, 20 Blvd. des Tchecoslovaques, Lyon, France
Filed Apr. 17, 1961, Ser. No. 103,463
4 Claims. (Cl. 310—258)



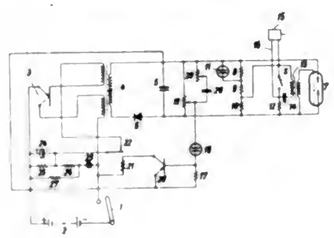
1. A stator frame for a rotary electric machine having at least one rotor, comprising a stator formed of a stack of laminae; a plurality of longitudinal bars disposed about a common axis in parallel relation thereto to form a substantially cylindrical cage-like assembly, each of said bars having an inner side and an outer side and a first and a second end, the first ends of said bars forming a first end for said cage-like assembly and the second end of said bars forming a second end for said assembly, and the inner side of said bars comprising a portion adjacent to the first end of said assembly and situated at a distance from said common axis equal to the outer radius of said stator in order that same may be slidably received through the first end of said assembly; first and second annular end members made of cast metal in which the first and second ends of said bars are respectively embedded, the inner diameter of said first annular end member being at least equal to the outer diameter of said stator to permit passage thereof; an outer sheet-iron sleeve disposed on the outer sides of said bars and welded thereto to form therewith and with said first and second annular end members a substantially rigid tubular unit enclosing said stator; means to prevent said stator from rotating within said tubular unit; and means to removably retain said stator longitudinally within said tubular unit.

3,162,785
PROJECTION LAMP
Robert F. Scoledge, Danvers, and Robert M. Shimer, Jr., Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 22, 1960, Ser. No. 24,101
5 Claims. (Cl. 313—113)



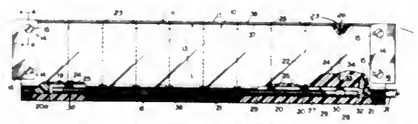
3. An incandescent projector lamp comprising an incandescible coiled tungsten filament, an interference filter in back of and in reflecting relationship to said filament to reflect visible light and transmit infra-red radiation, said filter having a plurality of alternate layers of zinc sulfide and magnesium fluoride, an enclosing light-transmitting envelope around said element and said reflector to seal said filament and said reflector from the external atmosphere and in fixed alignment with each other, and a filling in said envelope of gas inert with respect to said filament, said reflector being in position to reflect visible light through a forward portion of said envelope.

3,162,786
CIRCUIT ARRANGEMENTS OF ELECTRONIC FLASH UNITS FOR PHOTOGRAPHIC PURPOSES
Paul Kapteyn, Berlin-Lichterfelde-Ost, Germany, assignor to Loewe Opta AG, Berlin, Germany, a company of Germany
Filed July 3, 1961, Ser. No. 123,937
Claims priority, application Germany, July 9, 1960, L 36,537
3 Claims. (Cl. 315—241)



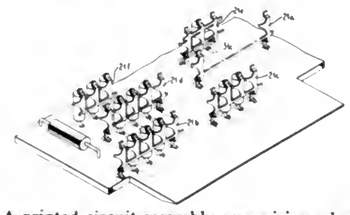
1. Electronic flash apparatus for photographic purposes, comprising: a low voltage battery, a voltage transformer having a low voltage primary winding and a high voltage secondary winding, first-circuit means including an oscillating transistor and connecting said low voltage battery to said low voltage primary to cause said primary winding to induce a high voltage in said secondary winding, an electrically operated current interrupting device for periodically interrupting the circuit connection of said oscillating transistor, said electrically operated current interrupting device being a relay connected to said battery so as to be energized thereby, a storage condenser, second-circuit means connecting said storage condenser to the secondary winding of said transformer, a flash lamp, further circuit means connecting said flash lamp to said storage condenser, means for causing said flash lamp to fire and said condenser to discharge through said lamp to thereby produce a flash of light, an amplifier having an input and an output circuit means connecting the input of the amplifier to said condenser, said current interrupting relay having an energizing winding and a contact element movable from a first to a second position upon energization of said winding, and means for connecting said battery and the output of said amplifier in series with said relay winding so as to energize the output of said amplifier from said battery, a control circuit for controlling said input circuit means dependent on said storage condenser's potential, and a potentiometer resistance connected in parallel to said storage condenser, said control circuit consisting of the series connection of a glow lamp and the biasing resistance of the input of said amplifier connected between the tap of said potentiometer resistance and the input of said amplifier, and further consisting of a series connection of a resistance and a condenser, which both are lying in parallel to said series connection of said glow lamp and said biasing resistance, so that the latter is energized as soon as the voltage of said storage condenser is sufficient to fire said glow lamp, thus affecting the output circuit means of said amplifier including said relay energizing winding, so that current is flowing through the energizing winding of said relay and said contact element is moved to a second position so as to interrupt the circuit connection of said oscillating transistor of said first-circuit means.

3,162,787
STATIC NEUTRALIZERS
Frank E. Hanscom, 21 Simmons Road, South Portland, Maine, and George E. Harrington, 156 Prospect St., Portland, Maine
Filed Dec. 30, 1959, Ser. No. 862,941
9 Claims. (Cl. 317—2)



9. In a device for neutralizing static charges, a bar of transparent material that is a non-conductor of electricity and which includes at least one attaching member of electrically conductive stock and front edge to be disposed in the area in which charges are to be neutralized, said bar comprising a pair of interconnected sections, an insulated conductor secured to said bar, one holder section having point receiving grooves closed by the other section to establish a series of passages effecting communication between said conductor and said edge, said passages flaring at said edge, a discharge element extending through each passage, said conductor including induction sleeve means with which the element is in contact, said bar sections each having a groove extending lengthwise of their outer faces approximately in parallel with said edge, a transverse bore interconnecting said grooves adjacent each end of said bar and a ground wire in each passage and extending through said bores and a screw extending transversely through said bar into contact with said member, said screw anchoring the ends of said wire.

3,162,788
ELECTRONIC PACKAGING DEVICE
Leslie J. Allen, Wappingers Falls, and Edward J. Lorenz and William J. Richardson, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 20, 1960, Ser. No. 77,200
17 Claims. (Cl. 317—101)

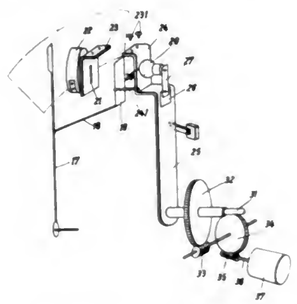


1. A printed circuit assembly comprising a board of insulating material bearing conductive circuit lines, a row of components standing on end and with the bodies thereof arranged side by side on said board, said components each having extending lead wires on ends, some of said lead wires being electrically connected to said circuit lines, and a common strip formed with regularly spaced flexible clips for receiving and holding said component bodies in said standing on end position and in alignment with said circuit lines to be connected thereto.

3,162,789
AMPLIFYING DEVICE
Robert Roy Schlaich, Robert Bosch-Strasse 103, Stuttgart, Germany
Filed Apr. 17, 1961, Ser. No. 103,585
Claims priority, application Germany, Apr. 22, 1960, Sch 27,784
16 Claims. (Cl. 317—124)

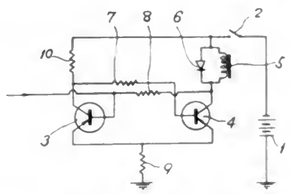
1. In a device for amplifying a measured value of a magnitude as represented by the position of an indica-

tor, for actuating an actual value switching member of a control device, the adjusting forces of the actual value switching member being supplied by a servomotor controlled by the indicator, the improvement comprising: electrical control means, a mechanical follow-up assembly periodically moved by the servomotor for following the position of the indicator by moving between two positions, one substantially at the position of the indicator



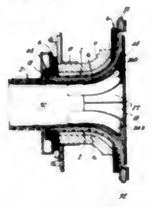
and the other to one side thereof by the electrical control means arranged at this follow-up assembly, the electric control means controlling the servomotor and being controlled by a shielding element mechanically connected with the indicator, thereby starting change-over impulses for changing the direction of rotation of the servomotor, and the measured value, amplified for starting a switching operation, being picked up from the mechanical follow-up assembly.

3,162,790
TRANSISTOR RELAY CIRCUIT
Hisato Wakamatsu, 1–2 Tado, Koshido, Sanagecho, Nishikamo-gun, Aichi-ken, Japan
Filed Dec. 21, 1960, Ser. No. 77,332
Claims priority, application Japan, Mar. 10, 1960, 35/7,417/60
1 Claim. (Cl. 317—148.5)



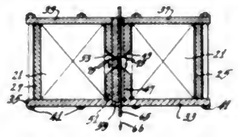
A transistorized multi-vibrator relay circuit comprising, in combination, first and second transistors; a first resistor in series in the collector circuit of said first transistor; an inductive relay coil in series in the collector circuit of said second transistor; a pair of second resistors each connecting the collector of a respective transistor to the base of the other transistor; means, including a normally open switch, connecting said first resistor and said relay coil in common to one terminal of a potential source; means connecting the two emitters in common to the other terminal of said source; circuit means connected to the base of said first transistor for selectively applying thereto a signal of a preselected polarity with respect to ground; said starting switch, when closed, connecting said first resistor and said relay coil in common to said one terminal whereby biasing potential will be supplied substantially immediately to the base of said second transistor through said first resistor and the respective second resistor connected in series between said first resistor and the base of said second transistor, and application of bias to the base of said first transistor will be delayed due to the inductive reactance of said relay coil in series with the respective second transistor with the base of said first transistor, so that said first transistor will become conductive substantially immediately; the time constant derived from the inductance of said relay coil and the value of the said second resistor connected in series with the base of said first transistor being greater than the operating time of said second transistor so that, upon said second transistor becoming conductive, said first transistor is blocked and the relay circuit acts as a monostable multivibrator; said circuit means, when the input signal thereto has a positive polarity with respect to ground, blocking said first transistor and maintaining conductivity of said second transistor and, when the signal applied thereto has a negative polarity with respect to ground, triggering said first transistor to be conductive and blocking said second transistor; whereby said inductive relay coil will be energized when the signal applied to said circuit means has said relatively positive polarity and will be de-energized when the signal applied to said circuit means has a relatively negative polarity, so that said relay circuit will act as a bistable multi-vibrator.

3,162,791
WIDTH CONTROLLING MEANS FOR CATHODE RAY TUBE DISPLAYS
Ernest Gostyn, Longmeadow, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Feb. 5, 1963, Ser. No. 256,459
16 Claims. (Cl. 317—200)



1. In a cathode ray tube deflection assembly, a deflection winding comprising substantially axially extending conductor lengths connected by end turns, said axially extending lengths being formed into two coils, the butt sections defined by said axially extending winding lengths being separated by windows, and a pair of substantially diametrically opposed segments formed of high permeability magnetic material, each circumferentially and radially located substantially completely within a different one of said butt sections and extending along said butt sections substantially adjacent said windows.

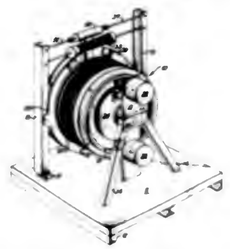
3,162,792
APPARATUS FOR MANUFACTURING MAGNETIC RECORDING TAPE
Reginald A. Hackley, Princeton, and David F. Martin, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 25, 1960, Ser. No. 17,516
13 Claims. (Cl. 317—203)



1. Electrical apparatus for orienting magnetic particles in magnetic recording tape during the manufacture thereof

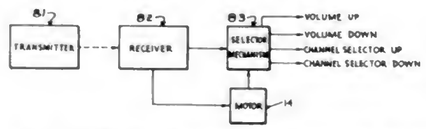
comprising a coil of wire having a longitudinal axis therethrough; a core in said coil, said core being split and spaced apart into two confronting portions on each side of said longitudinal axis, each of said portions being further split in a direction transverse to said axis into two pieces and spaced to provide a gap of a predetermined distance, said gaps being opposed to one another; and a closed magnetic flux path connected to each of said portions.

3,162,793
PLURAL MOTOR EXTERNALLY GEARED ELEVATOR DRIVE WITH LOAD SHARING AND FRICTION BRAKING
George S. Mason, S. Main St. Ext., R.R. 2, Jamestown, N.Y.
Filed June 29, 1961, Ser. No. 120,618
7 Claims. (Cl. 318—8)



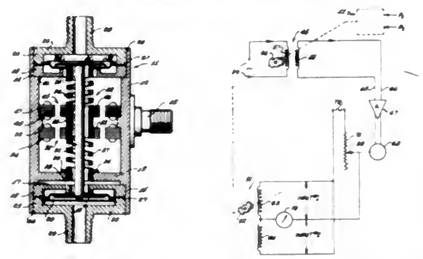
1. An elevator machine which comprises a framework, an axle mounted substantially horizontally on said framework, a reel unit rotatably carried by said axle, a ring gear circumscribing said axle included in said reel unit, a plurality of reversible electric drive motors including drive shafts mounted on said framework, a source of electric power to said motors, compounding connection means for equally loading said motors, a drive gear directly connected to the drive shafts of each of said motors meshing with said ring gear, a brake pulley portion of said reel unit, a pair of brake shoes proximate to said brake pulley portion, a source of direct current, a pair of coils longitudinally relative to each other and carrying said direct current, opposing cores embraced by each of said coils which repulse each other when direct current flows through said coils, means interconnecting said cores and said brake shoes to hold said brake shoes from said brake pulley portion when said cores are repulsing each other, resilient means interconnecting said brake shoes and urging same into contact with said brake pulley portion, and switch means for interruption of said direct current and said electric power for reversing said electric motors whereby when said switch is disengaged said motors are de-energized and said brake shoes contact said brake pulley portion which acts to brake said reel unit.

3,162,794
INTERMITTENT ELECTRIC MOTOR DRIVE SYSTEM WITH DELAYED CONNECTION TO LOAD
Ranald O. Whitaker, 3145 N. Delaware, Indianapolis, Ind.
Filed Sept. 20, 1961, Ser. No. 140,177
5 Claims. (Cl. 318—16)



1. In a remote control system for a television receiver, a tuner having a means adapted to be driven to change channels, a selector system including a motor having an output shaft, and a stationary electromagnet, said selector system being responsive to a signal for driving said motor and energizing said electromagnet, connector means having an armature in operative relation with said electromagnet and a catch adapted to drivingly engage said means to be driven, said connector means being connected to said motor output shaft for rotation therewith and normally adapted to assume an inoperative position, and stationary means arranged in the path of rotation of said connector means for engaging and moving said connector means to its operative position, said last-named means being positioned to engage said connector means at a point in the rotation of said connector means approximately one-half revolution of said motor prior to the engagement of said catch with said means to be driven, the energization of said electromagnet retaining said connector means in said operative position to drive said tuner upon energization of said electromagnet.

3,162,795
POSITIONING SYSTEM EMPLOYING A TRANSDUCING DEVICE HAVING AN INTEGRAL TORQUE GENERATOR
George S. Cherniak, Eau Gallie, Fla.
(522 Andros Lane, Indian Harbor Beach, Fla.)
Filed Jan. 11, 1962, Ser. No. 165,509
9 Claims. (Cl. 318—32)

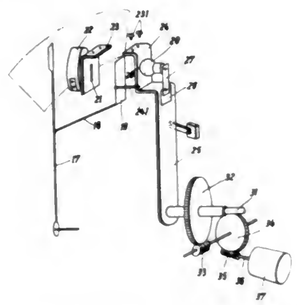


1. A transducing device comprising: a helical spring member mounted for relative axial movement between its ends with a part thereof restrained against rotative movement; a movable element for effecting relative axial movement between the ends of said spring member; an electrical signal generator having a stationary part, and a rotary part mounted on another part of said spring member; a torque generator having a stationary part, and a rotary part mounted on said other part of said spring member; and a circuit electrically coupling said torque generator to said signal generator to oppose rotation thereof.

3,162,796
ELECTROMAGNETIC LINEAR MOTOR
Franz Schreiber and Hermann Kumpf, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed July 27, 1961, Ser. No. 127,374
Claims priority, application Germany, Aug. 4, 1960, S 69,776
17 Claims. (Cl. 318—135)

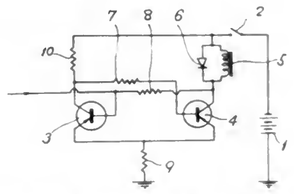
1. Electromagnetic apparatus for moving a rod structure within a housing by magnetic force applied from the outside, comprising a tubular housing and a rod structure longitudinally displaceable therein, a number of electromagnets adjacent to each other along said housing at the outside thereof and having magnet poles of alternately different polarity following each other at substantially uniform distances at said housing, said rod structure forming a longitudinal rack of teeth consisting of

tor, for actuating an actual value switching member of a control device, the adjusting forces of the actual value switching member being supplied by a servomotor controlled by the indicator, the improvement comprising: electrical control means, a mechanical follow-up assembly periodically moved by the servomotor for following the position of the indicator by moving between two positions, one substantially at the position of the indicator



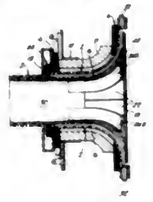
and the other to one side thereof by the electrical control means arranged at this follow-up assembly, the electric control means controlling the servomotor and being controlled by a shielding element mechanically connected with the indicator, thereby starting change-over impulses for changing the direction of rotation of the servomotor, and the measured value, amplified for starting a switching operation, being picked up from the mechanical follow-up assembly.

3,162,790
TRANSISTOR RELAY CIRCUIT
Hisato Wakamatsu, 1–2 Tado, Koshido, Sanagecho, Nishikamo-gun, Aichi-ken, Japan
Filed Dec. 21, 1960, Ser. No. 77,332
Claims priority, application Japan, Mar. 10, 1960, 35/7,417/60
1 Claim. (Cl. 317—148.5)



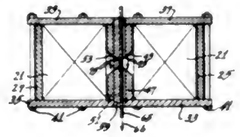
A transistorized multi-vibrator relay circuit comprising, in combination, first and second transistors; a first resistor in series in the collector circuit of said first transistor; an inductive relay coil in series in the collector circuit of said second transistor; a pair of second resistors each connecting the collector of a respective transistor to the base of the other transistor; means, including a normally open switch, connecting said first resistor and said relay coil in common to one terminal of a potential source; means connecting the two emitters in common to the other terminal of said source; circuit means connected to the base of said first transistor for selectively applying thereto a signal of a preselected polarity with respect to ground; said starting switch, when closed, connecting said first resistor and said relay coil in common to said one terminal whereby biasing potential will be supplied substantially immediately to the base of said second transistor through said first resistor and the respective second resistor connected in series between said first resistor and the base of said second transistor, and application of bias to the base of said first transistor will be delayed due to the inductive reactance of said relay coil in series with the respective second transistor with the base of said first transistor, so that said first transistor will become conductive substantially immediately; the time constant derived from the inductance of said relay coil and the value of the said second resistor connected in series with the base of said first transistor being greater than the operating time of said second transistor so that, upon said second transistor becoming conductive, said first transistor is blocked and the relay circuit acts as a monostable multivibrator; said circuit means, when the input signal thereto has a positive polarity with respect to ground, blocking said first transistor and maintaining conductivity of said second transistor and, when the signal applied thereto has a negative polarity with respect to ground, triggering said first transistor to be conductive and blocking said second transistor; whereby said inductive relay coil will be energized when the signal applied to said circuit means has said relatively positive polarity and will be de-energized when the signal applied to said circuit means has a relatively negative polarity, so that said relay circuit will act as a bistable multi-vibrator.

3,162,791
WIDTH CONTROLLING MEANS FOR CATHODE RAY TUBE DISPLAYS
Ernest Gostyn, Longmeadow, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Feb. 5, 1963, Ser. No. 256,459
16 Claims. (Cl. 317—200)



1. In a cathode ray tube deflection assembly, a deflection winding comprising substantially axially extending conductor lengths connected by end turns, said axially extending lengths being formed into two coils, the butt sections defined by said axially extending winding lengths being separated by windows, and a pair of substantially diametrically opposed segments formed of high permeability magnetic material, each circumferentially and radially located substantially completely within a different one of said butt sections and extending along said butt sections substantially adjacent said windows.

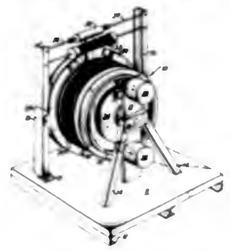
3,162,792
APPARATUS FOR MANUFACTURING MAGNETIC RECORDING TAPE
Reginald A. Hackley, Princeton, and David F. Martin, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 25, 1960, Ser. No. 17,516
13 Claims. (Cl. 317—203)



1. Electrical apparatus for orienting magnetic particles in magnetic recording tape during the manufacture thereof

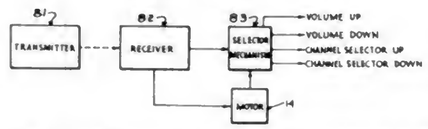
comprising a coil of wire having a longitudinal axis therethrough; a core in said coil, said core being split and spaced apart into two confronting portions on each side of said longitudinal axis, each of said portions being further split in a direction transverse to said axis into two pieces and spaced to provide a gap of a predetermined distance, said gaps being opposed to one another; and a closed magnetic flux path connected to each of said portions.

3,162,793
PLURAL MOTOR EXTERNALLY GEARED ELEVATOR DRIVE WITH LOAD SHARING AND FRICTION BRAKING
George S. Mason, S. Main St. Ext., R.R. 2, Jamestown, N.Y.
Filed June 29, 1961, Ser. No. 120,618
7 Claims. (Cl. 318—8)



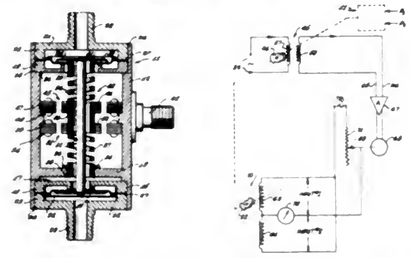
1. An elevator machine which comprises a framework, an axle mounted substantially horizontally on said framework, a reel unit rotatably carried by said axle, a ring gear circumscribing said axle included in said reel unit, a plurality of reversible electric drive motors including drive shafts mounted on said framework, a source of electric power to said motors, compounding connection means for equally loading said motors, a drive gear directly connected to the drive shafts of each of said motors meshing with said ring gear, a brake pulley portion of said reel unit, a pair of brake shoes proximate to said brake pulley portion, a source of direct current, a pair of coils longitudinally relative to each other and carrying said direct current, opposing cores embraced by each of said coils which repulse each other when direct current flows through said coils, means interconnecting said cores and said brake shoes to hold said brake shoes from said brake pulley portion when said cores are repulsing each other, resilient means interconnecting said brake shoes and urging same into contact with said brake pulley portion, and switch means for interruption of said direct current and said electric power for reversing said electric motors whereby when said switch is disengaged said motors are de-energized and said brake shoes contact said brake pulley portion which acts to brake said reel unit.

3,162,794
INTERMITTENT ELECTRIC MOTOR DRIVE SYSTEM WITH DELAYED CONNECTION TO LOAD
Ranald O. Whitaker, 3145 N. Delaware, Indianapolis, Ind.
Filed Sept. 20, 1961, Ser. No. 140,177
5 Claims. (Cl. 318—16)



1. In a remote control system for a television receiver, a tuner having a means adapted to be driven to change channels, a selector system including a motor having an output shaft, and a stationary electromagnet, said selector system being responsive to a signal for driving said motor and energizing said electromagnet, connector means having an armature in operative relation with said electromagnet and a catch adapted to drivingly engage said means to be driven, said connector means being connected to said motor output shaft for rotation therewith and normally adapted to assume an inoperative position, and stationary means arranged in the path of rotation of said connector means for engaging and moving said connector means to its operative position, said last-named means being positioned to engage said connector means at a point in the rotation of said connector means approximately one-half revolution of said motor prior to the engagement of said catch with said means to be driven, the energization of said electromagnet retaining said connector means in said operative position to drive said tuner upon energization of said electromagnet.

3,162,795
POSITIONING SYSTEM EMPLOYING A TRANSDUCING DEVICE HAVING AN INTEGRAL TORQUE GENERATOR
George S. Cherniak, Eau Gallie, Fla.
(522 Andros Lane, Indian Harbor Beach, Fla.)
Filed Jan. 11, 1962, Ser. No. 165,509
9 Claims. (Cl. 318—32)

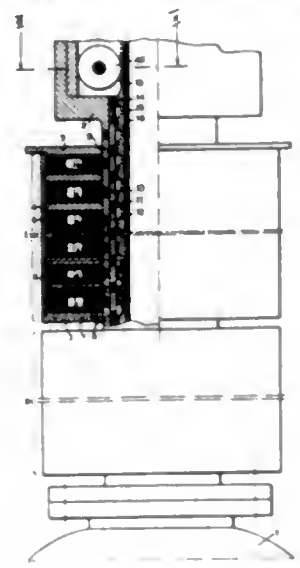


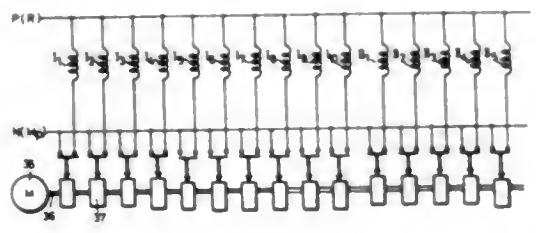
1. A transducing device comprising: a helical spring member mounted for relative axial movement between its ends with a part thereof restrained against rotative movement; a movable element for effecting relative axial movement between the ends of said spring member; an electrical signal generator having a stationary part, and a rotary part mounted on another part of said spring member; a torque generator having a stationary part, and a rotary part mounted on said other part of said spring member; and a circuit electrically coupling said torque generator to said signal generator to oppose rotation thereof.

3,162,796
ELECTROMAGNETIC LINEAR MOTOR
Franz Schreiber and Hermann Kumpf, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed July 27, 1961, Ser. No. 127,374
Claims priority, application Germany, Aug. 4, 1960, S 69,776
17 Claims. (Cl. 318—135)

1. Electromagnetic apparatus for moving a rod structure within a housing by magnetic force applied from the outside, comprising a tubular housing and a rod structure longitudinally displaceable therein, a number of electromagnets adjacent to each other along said housing at the outside thereof and having magnet poles of alternately different polarity following each other at substantially uniform distances at said housing, said rod structure forming a longitudinal rack of teeth consisting of

magnetizable material and located near said magnet poles so that respective rack portions form armatures for said respective magnets, the number of said teeth along a given length of said rack being different from the number of poles along said same length other than by an integral ratio and in accordance with a given vernier ratio, whereby sequential energization of said magnets causes progressive displacement of said rod structure.





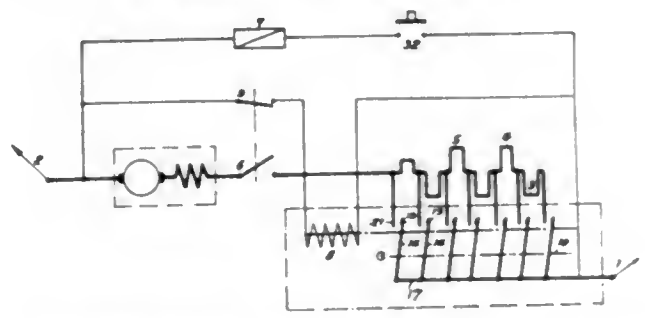
4. In electromagnetic apparatus according to claim 1, said number of electromagnets comprising a plurality of groups, current supply means, and a sequential control device having respective switch means electrically connecting said respective electromagnets of each group to said current supply means and having a given time sequence of connection with overlapping connecting periods of each two successively energized magnets, so that a given plurality of said magnets in each group are energized at any time during progressive displacement of said structure.

3,162,797

STARTING DEVICES FOR ELECTRIC MOTORS

Jean Blanchard, Paris, France, and Florimond Douchet, 41 Rue Henri Vasseur, Argenteuil, France; said Blanchard assignor to Vehicules et Travaux VETRA, Paris, France, a French company

Filed Jan. 9, 1961, Ser. No. 81,602
Claims priority, application France, Jan. 20, 1960, 816,161, Patent 1,255,034
5 Claims. (Cl. 318—278)



1. A starting device for an electric motor having a plurality of starting resistances, comprising:

a switch having a first set of contacts connected, respectively, to the starting resistances, said switch having a second set of contacts, each contact of the second set being adapted for engagement with one of the contacts of the first set;

spring means for urging the contacts of said second set into engagement with the contacts of said first set;

cam means rotatable in one direction for holding the contacts of said second set away from the contacts of said first set against the urging of said spring means, said cam means having a sharply broken profile for permitting the contacts of the second set to move quickly into contact with the contacts of the first set under the urging of said spring means, said profile preventing reverse rotation of said cam means;

selectively operable push means for moving the contacts of said second set away from the contacts of said first set and out of contact with said cam means so that said cam means can be returned to a starting position;

an electrically operated device connected for effecting operation of said push means;

a circuit breaker connected in series with said motor for controlling the supply of electrical energy thereto; and

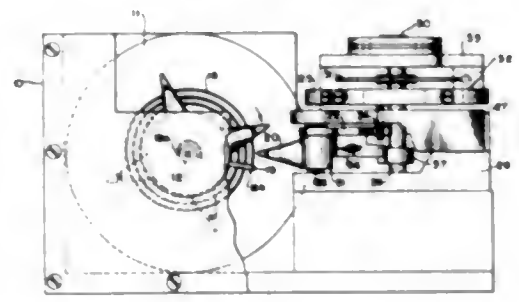
a switch responsive to operation of said circuit breaker and connected to said electrically operated device so that said electrical operated device is energized to effect movement of the second set of contacts away from the first set of contacts and away from the cam means when the supply of electrical energy to the motor is interrupted by said circuit breaker.

3,162,798

OSCILLATING MAGNET TO GOVERN MOTOR SPEED

Arthur W. Haydon, Milford, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware

Filed Sept. 6, 1962, Ser. No. 221,744
12 Claims. (Cl. 318—302)



1. A governor for an electric motor tending to operate at a speed above a predetermined desired speed comprising

(*a*) a constant speed reference device having a natural frequency substantially corresponding to said predetermined desired speed,

(*b*) an oscillating governing element periodically influenced by said constant speed device, the period of said element being regulated by said constant speed device,

(*c*) said governing element having an active portion of a predetermined magnetic polarity,

(*d*) said active portion having a predetermined path of oscillation,

(*e*) a star wheel having a plurality of projecting spokes magnetized to said predetermined polarity, thereby creating a mutual magnetic repulsion between ends of said spokes and said cone, and

(*f*) a coiled hairspring fixed at one of its ends to the motor shaft and at its other end to said star wheel, forming a flexible mechanical coupling of said wheel with said motor,

(*g*) said star wheel being adapted to be rotated by said motor whereby its revolving spokes define a predetermined orbital path,

(*h*) said orbital path being intersected by said path of oscillation,

(*i*) said governing element being periodically moved in absence of mechanical contact into and out of said orbital path by the combined influences of the constant speed device and the magnetic repulsion between said star wheel spokes and said cone,

(*j*) said cone, when in said orbital path, impeding the rotation of said spokes and thereby periodically decelerating said star wheel to an instantaneous speed less than the desired predetermined speed,

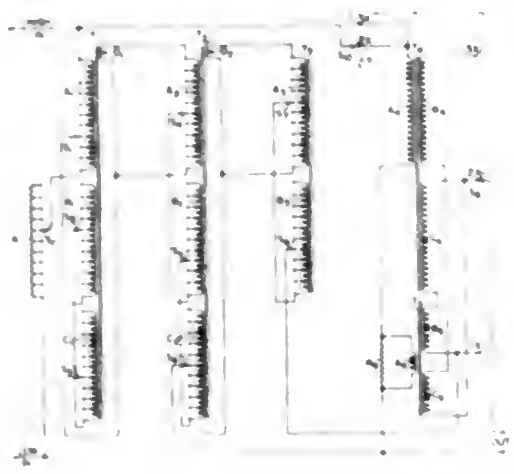
(*k*) whereby the average speeds of said motor and said constant speed device are maintained in corresponding relation.

3,162,799

VARIABLE RATIO TRANSFORMER

Marion L. Roberts, Portland, Oreg., assignor to Osborne Electronic Corporation, Portland, Oreg., a corporation of Oregon

Filed Jan. 30, 1961, Ser. No. 85,744
8 Claims. (Cl. 323—45)



8. A precision electrical transformer apparatus comprising:

a plurality of voltage step down transformers each having a core of magnetic material, primary windings on said core and a plurality of secondary windings on said core,

a first compensation impedance connected in series with the primary windings of the first of said step down transformers,

a first switch connected between said primary windings and first secondary windings of said first transformer to divide said primary windings into a plurality of equal voltage steps,

a second switch connected between said first secondary windings and other secondary windings on said first transformer to divide said first secondary windings into a plurality of equal voltage steps,

a third switch connected between said primary windings and said first compensation impedance to divide said first compensation impedance into a plurality of steps and to connect it in series with said first secondary windings so that the effective open-circuit output voltage of each step of said first secondary windings is equal to the sum of the voltage induced in each step of said first secondary windings by the varying magnetic flux in said core plus the voltage drop developed across each step of said first compensation impedance by the electrical current flowing in said primary windings, each of the remaining windings of said first transformer and the remaining step down transformers being connected in series by switches which divide each of them into a plurality of equal voltage steps in order to add the output voltages of said remaining windings and obtain an output voltage having a high degree of precision,

a voltage step up transformer with its primary windings connected in parallel with the pirmary windings and first compensation impedance of said first step down transformer, and having its secondary windings connected in series with the output of the step down transformers so their output voltages are added thereby,

a second compensation impedance connected in series with the primary windings of said step up transformer, and

a compensation transformer connected with its primary windings in parallel with said second compensation impedance and its secondary windings in series with the secondary windings of said step up transformer in order to correct for the impedance voltage drop in the primary windings of said step up transformer, and

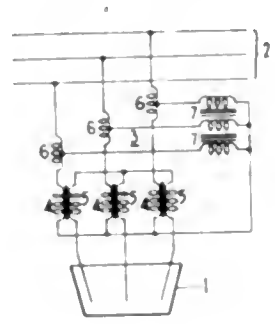
a switch means connected to the secondary winding of said step up transformer to change the ratio of the voltage output to the voltage input of said step up transformer.

3,162,800

ELECTRIC SUPPLY ARRANGEMENTS

Erich Siegfried Friedlander, Sutton Coldfield, and Kenneth Charles Parton, Handsworth, England, assignors to The General Electric Company Limited, London, England, a British company

Filed Sept. 8, 1961, Ser. No. 136,906
Claims priority, application Great Britain, Sept. 9, 1960, 31,150/60
5 Claims. (Cl. 323—60)



1. In an electric supply arrangement in which a load circuit including a fluctuating load is fed from an electric supply network; means for reducing voltage flicker on the supply network arising from load fluctuations, said means comprising:

(*a*) a shunt circuit essentially comprising saturable reactor means, and means connecting the reactor means in parallel with the load circuit,

(*b*) inductor means, said inductor means constituting a first inductor section and a second inductor section,

(*c*) circuit means connecting the saturable reactor means of said shunt circuit to the supply network through said first inductor section, and

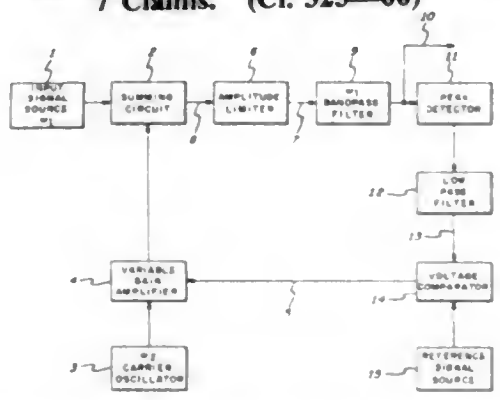
(*d*) circuit means connecting the load circuit to the supply network through at least said second inductor section,

the relationship between the first and second inductor sections being such as to cause voltage variations across the saturable reactor means to follow load current variations without delay for causing said load current variations to be absorbed by the reactor means.

3,162,801
AUTOMATIC GAIN CONTROL SYSTEM USING SIGNAL SUPPRESSION

Stanley E. Bogotch, Forest Hills, and Charles E. Cook, Farmingdale, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Apr. 20, 1961, Ser. No. 104,372
7 Claims. (Cl. 323—66)

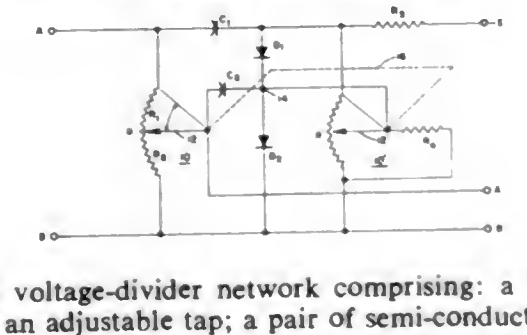


1. An automatic gain control system for regulating the gain of an input signal having a first carrier frequency, said system comprising a controllable source of variable amplitude signal having a second carrier frequency, the amplitude of said variable amplitude signal being greater than the amplitude of said input signal, a signal processing circuit having a signal transfer characteristic such that the amplitudes of signals at the output of said circuit increase nonlinearly toward a maximum limiting value in response to signals of increasing amplitude applied to the input of said circuit, means for applying said signals having said first and second carrier frequencies to said input of said circuit, a bandpass filter coupled to said output of said circuit, said filter passing signals having said first carrier frequency and rejecting signals having said second carrier frequency, a source of reference signal, means including demodulating means connected to the output of said filter and to said source of reference signals for producing an error signal representing the difference between the amplitudes of the signals passed by said filter and said reference signal, and means for applying said error signal to said controllable source for varying the amplitude of said signal having said second carrier frequency.

3,162,802
VOLTAGE DIVIDER

Bernhard Dietrich, Freiburg Im Breisgau, Germany, assignor to Clevite Corporation, a corporation of Ohio

Filed Jan. 25, 1963, Ser. No. 253,909
Claims priority, application Germany, Mar. 15, 1962, J 21,448
3 Claims. (Cl. 323—79)

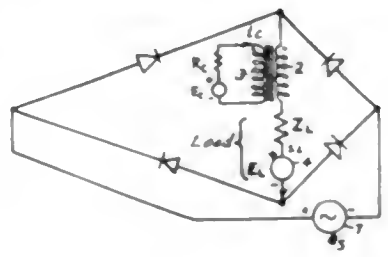


1. A voltage-divider network comprising: a resistance having an adjustable tap; a pair of semi-conductor diodes arranged in series with the cathode of one connected to the anode of the other, the cathode of said other diode being connected to one end of said resistance; a capacitor coupling the anode of said one diode to the other end of said resistance; a second capacitor coupling said adjustable tap to a point of common potential between said diodes; a second resistance having a second adjustable tap, said second resistance having one end connected to the anode of said one diode; means electrically connecting said second adjustable tap to the other end of said second resistance and to said point of common potential; and means mechanically linking said adjustable taps for conjoint movement.

3,162,803
MAGNETIC AMPLIFIER FOR ACTIVE DIRECT CURRENT LOADS

Enrico Levi, New York, N.Y., assignor to Polytechnic Institute of Brooklyn, Brooklyn, N.Y., a corporation of New York

Filed May 25, 1959, Ser. No. 815,343
3 Claims. (Cl. 323—89)

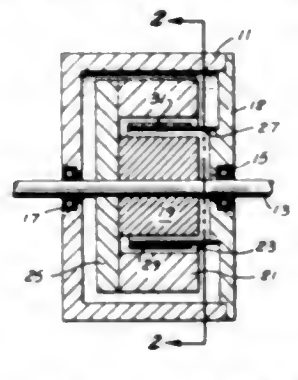


1. An electric control system comprising a load circuit, a source of alternating voltage, a full-wave rectifier connecting said source to said load circuit and energizing said circuit with full-wave rectified alternating voltage, means in said load circuit establishing a unidirectional voltage in opposition to said source and of a value smaller than the peak value of said source, a saturable reactor having a gate winding connected in series with said load circuit and said rectifier, a control winding on said reactor, and a source of control voltage connected to energize said control winding in a direction opposing the flux change established in said reactor by the voltage applied to said gate winding.

3,162,804
TRANSLATING INSTRUMENT EMPLOYING HALL-EFFECT DEVICE

Thomas W. Parsons, Brooklyn, N.Y., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware

Filed Sept. 15, 1961, Ser. No. 138,339
6 Claims. (Cl. 323—94)



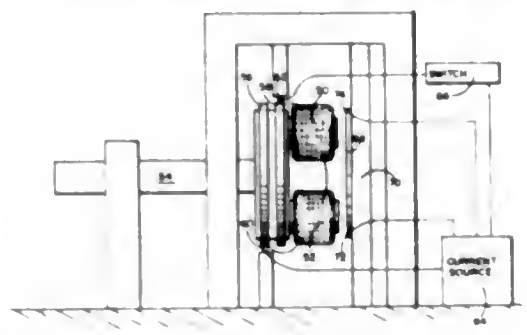
1. Rotary electromechanical apparatus comprising:
a shaft;
means mounting said shaft for rotation about its longitudinal axis;
a magnetic flux-source member of circular configuration having its poles on diametrically opposite sides and a member of low magnetic reluctance of circular configuration mounted on said shaft for conjoint rotation therewith, said members having confronting parallel surfaces defining therebetween an annular air gap symmetrically disposed about said shaft;
a Hall effect generator; and
means fixedly supporting said Hall effect generator in said air gap transversely of the flux field therein, whereby the Hall effect voltage drop across said Hall effect generator varies sinusoidally with the rotation of said members of circular configuration.

3,162,805

FUNCTION GENERATOR

Stanley D. Robertson, La Mirada, Calif., assignor to North American Aviation, Inc.

Filed Sept. 29, 1961, Ser. No. 141,901
15 Claims. (Cl. 323—94)



12. The combination comprising

a first film of magnetic material capable of having an internal magnetization in the plane of said film;

means for causing a flow of electric current in the plane of said first film from one edge to another edge of said film, said current flow through said first film having a given direction;

a second film of magnetic material capable of having an internal magnetization in the plane of said film;

means for causing a flow of electric current in the plane of said second film from one edge to another edge of said film, said current flow through said second film having a direction different from the direction of current flow through said first film;

means for producing a magnetic field in the planes of said films;

means for rotating said magnetic-field-producing means and causing simultaneous rotation of said internal magnetization of said first and second films to produce a planar Hall-effect voltage of different phase in the planes of said separate films; and

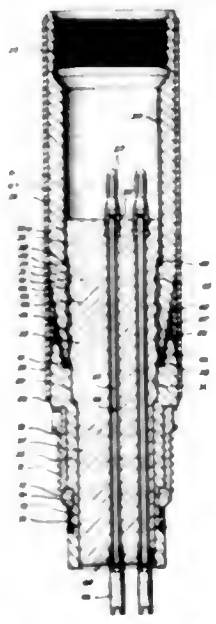
output terminal means on each film for obtaining said planar Hall-effect voltages.

3,162,806

BORE LOGGING APPARATUS INCLUDING CONDUCTIVE HOUSINGS, MECHANICALLY COUPLED BY AN ELECTRICALLY INSULATING BINDING AGENT

Ulrich E. Voetter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 31, 1959, Ser. No. 837,166
12 Claims. (Cl. 324—10)



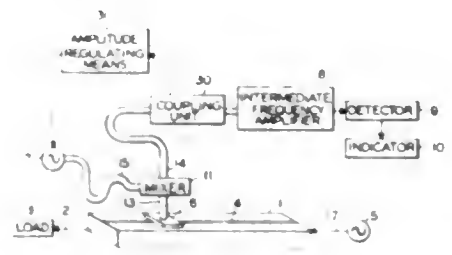
4. A coupling for electrically insulating portions of a borehole apparatus from one another comprising: first and second tubular housings arranged in an end-to-end relationship, the adjacent ends of said housings having tapered portions arranged so that the extremities of the housings overlap and a first annular space is formed therebetween; an insert member coupled to one of said housings and having portions extending into the other housing, said extended portions being spaced relative to said other housing to form a second annular space; and moisture-free aluminum oxide received in said annular spaces mechanically bonding said housings to one another.

3,162,807

HIGH FREQUENCY MEASURING SYSTEM INCLUDING AUTOMATIC OSCILLATOR AMPLITUDE CONTROL MEANS

Andrew Alford, Winchester, Mass.
(299 Atlantic Ave., Boston 9, Mass.)

Filed June 21, 1960, Ser. No. 37,728
8 Claims. (Cl. 324—58)



7. In a high frequency measuring system for providing an indication of the field strength at a number of points differently spaced with respect to a source of a local oscillator signal having an assembly including a probe coupled to a closely adjacent crystal mixer with a flexible waveguide coupling said local oscillator signal from said source to an input of said mixer whereby said mixer provides an output signal having a D.-C. component representative of said local oscillator signal amplitude and an A.-C. component representative of the field strength at said probe, said system having indicating means responsive to said second component, the improvement of means responsive to said D.-C. component for maintaining the local oscillator signal substantially constant at said mixer input and for maintaining said A.-C. component accurately representative of the field strength of said probe.

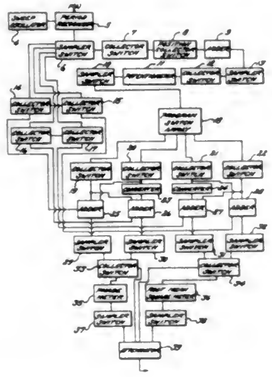
3,162,808

WAVE FORM ANALYZING METHOD FOR ESTABLISHING FOURIER COEFFICIENTS

Kurt H. Haase, Watertown, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

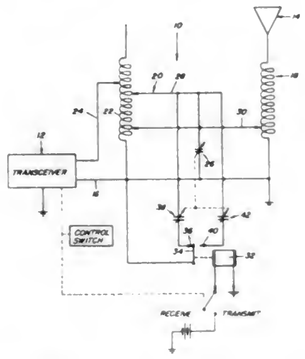
Original application Sept. 18, 1959, Ser. No. 840,981. Divided and this application Nov. 18, 1960, Ser. No. 70,359
6 Claims. (Cl. 324—77)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of performing a Fourier analysis comprising the steps of establishing one complete period of the non-sinusoidal function to be analyzed, measuring amplitude values of said period at a plurality of intervals equally spaced in time, grouping said amplitude values according to their common harmonic orders, deriving first and second real number factors, and multiplying said groups by said first and second real number factors, said first real



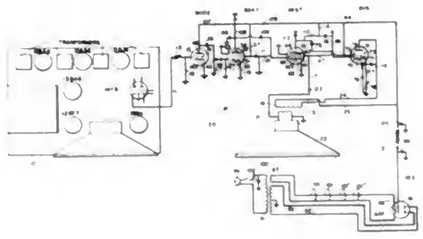
number factor being a function of the number of Fourier coefficients desired, and said second real number factor being a function of the number of amplitude values taken.

3,162,809
ANTENNA TUNER CIRCUIT FOR RADIO TRANSCEIVER
Ferdinand M. Yax, % Frenchy Radio Mfg. Co., 164 W. Parker St., Scranton, Pa.
Filed July 25, 1962, Ser. No. 212,371
8 Claims. (Cl. 325—25)



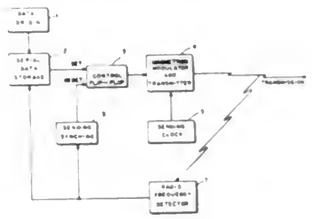
8. In combination with a parallel resonant circuit including an inductor having different portions respectively connected to a signal converting device, an antenna device and a tuning capacitor, means for modifying the impedance established for the resonant circuit by the tuning capacitor comprising, a pair of trimmer capacitors, means alternatively connecting said trimmer capacitors to the inductor in parallel with the tuning capacitor, and means for adjusting the capacitance of each of said capacitors to receive or transmit radiant energy through the antenna device at a plurality of different frequencies, the capacitance of the tuning capacitor for the different frequencies lying between values at which the impedance of the resonant circuit is suitable for either receiving or transmitting operation and said trimmer capacitors respectively establishing equivalent capacitance values with the tuning capacitor for optimum receiving or transmitting operation of the resonant circuit at said different frequencies.

3,162,810
STEREOPHONIC REPRODUCTION METHOD AND APPARATUS
Robert Nykl, 3578 E. Washington Ave., Madison, Wis.
Filed Apr. 23, 1962, Ser. No. 189,533
4 Claims. (Cl. 325—36)



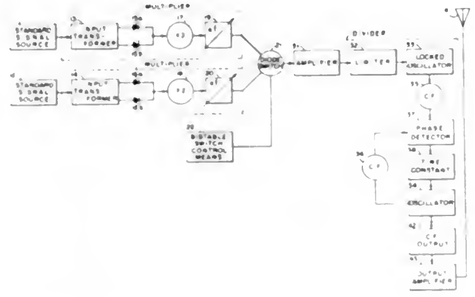
1. Audio reproduction apparatus comprising in combination at least one resonant frequency broadcast receiver, said receiver comprising resonant frequency and intermediate frequency amplification stages, at least two audio frequency amplifiers and at least two electro mechanical transducers, one of said audio frequency amplifiers comprising biasable means for limiting supply of electrons in amplification gain means thereof, means for passing only higher frequency input, regenerative feedback coupling between said one audio frequency amplifier and one of said transducers, the other of said audio frequency amplifiers and the other of said transducers being connected without regenerative feedback, said audio frequency amplifiers being connected to said receiver to provide plural output channels.

3,162,811
MAGNETRON TRANSMITTER ERROR DETECTION AND CORRECTION SYSTEM
Elmer F. Clune, Tonawanda, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 17, 1962, Ser. No. 231,308
4 Claims. (Cl. 325—121)



1. In a non-synchronized serial data link employing a pulsed magnetron, a transmitter system comprising: a transmitter; serial data storage means; detector means to detect the output of said transmitter; and means connecting said storage means to said transmitter for advancing data from said storage means upon detection by said detector means of a full power pulse emitted by said transmitter so that the effect of magnetron misfire is eliminated.

3,162,812
NARROW BAND FSK SYSTEM EMPLOYING STABILIZED FREQUENCY CONTROL
Robert R. Stone, Jr., Rosecroft Park, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1962, Ser. No. 220,924
1 Claim. (Cl. 325—163)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A frequency shift keyer for VLF communication, comprising:

a first full wave rectifier;

a first transformer to receive and couple a signal source to said first full wave rectifier;

a first constant factor frequency multiplier connected to and receiving the output from said first full wave rectifier and multiplying this received signal by a preselected factor;

first tuned circuit means connected to said first constant factor frequency multiplier to convert the rectified signal received from said multiplier into a sine wave of the frequency determined by said multiplier;

a second full wave rectifier;

a second transformer to receive and couple a signal source to said second full wave rectifier;

a second constant factor frequency multiplier connected to and receiving the output from said second full wave rectifier and multiplying this received signal by a preselected factor;

second tuned circuit means connected to said second constant factor frequency multiplier to convert the rectified signal received from said multiplier into a sine wave of the frequency determined by said multiplier;

a diode switch;

switch control means connected to said diode switch to activate same in response to an external switching signal,

said diode switch connected to and alternately switching the output signals from said first and second tuned circuit means;

a locked oscillator coupled to said diode switch and dividing the frequency of the signals alternately received therefrom by a factor preselected such that the frequency of these signals is reduced to that of the signals received by said first and second transformers;

limiter means connected to and controlling the amplitude of the signals supplied to said locked oscillator;

amplifier means coupling the alternately gated signals from said diode switch to said limiter means;

a phase detector connected to said locked oscillator to receive the alternate signal outputs therefrom as a first input;

an oscillator connected to said phase detector to provide a second input thereto,

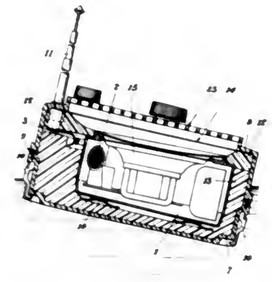
said phase detector producing a correction signal proportional to the phase difference between said first and second input signals thereto;

time constant means coupling said phase detector to said oscillator,

said time constant means controlling the rate at which said correction signal is applied to said oscillator,

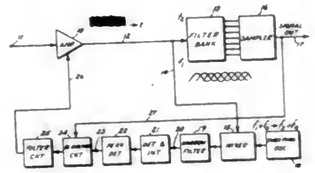
whereby the transients caused by the instantaneous lock-in of said locked oscillator are eliminated by the rate-controlled lock-in of said oscillator.

3,162,813
RADIO RECEIVING APPARATUS WITH A TIGHTLY SEALED FLOATING CASING
Arnaldo Piccinini, 286 Via di Tor Cerrara, Rome, Italy
Filed Sept. 7, 1962, Ser. No. 221,979
Claims priority, application Italy, Sept. 18, 1961, 16,828/61; Apr. 18, 1962, 7,571/62
2 Claims. (Cl. 325—361)



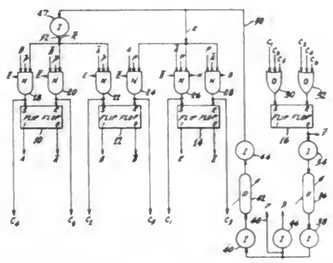
1. A floating detachable water-tight casing for portable radio sets having conventional loudspeaker, antenna, tuning scale and control knobs, comprising in combination a lower portion, an upper portion, a rubber packing between said lower and upper portion, hooks arranged at opposite sides of said casing for sealingly connecting said portions with one another, an inner lining arranged within said casing and having a recess for receiving a radio set, a first control means sealingly arranged on said upper portion for engaging one of the control knobs of said radio set, a second control means sealingly arranged on said upper portion for engaging the other control knob of the radio set within said casing, a sound transmitting waterproof membrane rigidly fixed to said upper portion above the loudspeaker of said radio set, a grate provided on said upper portion above said membrane for allowing propagation of sound through said membrane, an antenna sealingly fixed to said upper portion of said casing and operatively connected with the antenna of said radio set, said recess receiving said radio set being provided eccentrically to the geometrical center of said casing to shift the center of gravity of said casing with said radio set towards the side opposite to said casing antenna for raising the last above the water level, spring means being provided on the bottom of said recess for pushing the control knobs of the radio set into operative engagement with said first and second control means respectively, and a transparent zone being provided on said upper portion of said casing for observing the tuning scale of the radio set.

3,162,814
FREQUENCY BASE AGC
Marvin D. Aasen, Glen Burnie, and George R. Hetrick, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 12, 1960, Ser. No. 8,470
8 Claims. (Cl. 325—478)



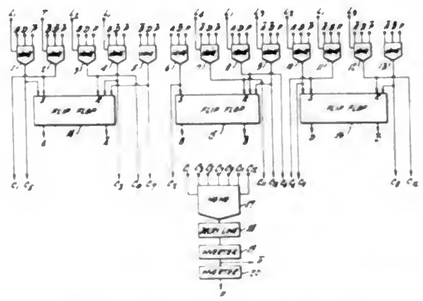
1. In a circuit combination of a high gain amplifier and a sampled filter bank for amplifying and filtering applied noise and intelligence signals, the invention which comprises: means mixing the amplifier output with sweeping frequency oscillations and narrow band filtering the mixed frequencies to produce a frequency signal, the amplitude of which is proportional to the noise signal frequency strength; circuit means converting said frequency signal to a smooth direct-current signal and applying same to said amplifier as a control voltage, said control voltage being of a polarity to inversely control the gain thereof; and a blanking circuit in said circuit means coupled to the output of said sampled filter bank for blanking out said direct-current signal to said amplifier upon the occurrence of signal intelligence at said sampled filter circuit output whereby intelligence signals are amplified and noise signals are suppressed to a constant background level to provide a high signal-to-noise ratio.

3,162,815
SEQUENTIAL PULSE GENERATOR EMPLOYING FIRST AND SECOND DELAY MEANS CONTROLLING PULSE DURATION AND SPACING, RESPECTIVELY
Harry Mogensen, Levittown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,732
13 Claims. (Cl. 328—62)



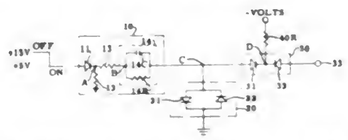
1. In a circuit for generating a plurality of spaced pulses, each appearing on a separate output line; a first delay means coupled to all of said lines, for controlling the pulse duration; and a second delay means coupled to all of said lines for controlling the spacing between pulses.

3,162,816
GENERATOR OF DIFFERENT PATTERNS OF TIME-SEQUENTIAL PULSES
Laszlo L. Rakoczi, Merchantville, N.J., and Lino M. Paoletti, Philadelphia, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 27, 1961, Ser. No. 85,265
6 Claims. (Cl. 328—63)



1. In a pulse generator, a plurality of multiple input logic gates, each gate for producing an output pulse in response to a given pattern of input signals applied to said gate; a plurality of flip-flops, each with a set and reset input terminal and zero and one output terminals; a connection from the output of each gate to one of the set and reset input terminals of a flip-flop, and input connections to each gate from output terminals only of flip-flops other than the one to which its output is connected, each gate receiving not more than one input from each flip-flop; circuit means connected to receive the outputs of at least some of said gates for applying an enabling signal to other of said gates; and means for applying different patterns of a plurality of control signals to a group of said multiple input logic gates for producing different groups of time sequential output pulses from said generator.

3,162,817
CURRENT SWITCHING CIRCUITS
Robert M. MacIntyre, Gardena, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 13, 1958, Ser. No. 754,803
2 Claims. (Cl. 328—91)



2. In combination, a switch having an input terminal with a reference potential applied thereto, an output terminal, and a control terminal such that when a first bias potential is applied to said control terminal, a current is driven through said output terminal and when a second bias potential is applied to said control terminal, said current is diverted through said control terminal;

a source of bivalued control signals;

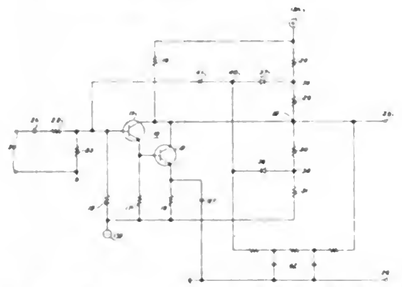
a first network including biasing means connected to said source of control signals and responsive to first and second values of said bivalued control signal for respectively passing first and second currents in opposite directions therethrough for periods whose durations substantially correspond to the durations of the different valued portions of said bivalued signals;

a second passive network connected in series with said first network remote from said control signal source including means establishing said first and second bias potentials at the junction between said first and second networks corresponding respectively to said first and second currents; and

means connecting said control terminal to said junction for operating said switch in accordance with said first and second bias potentials;

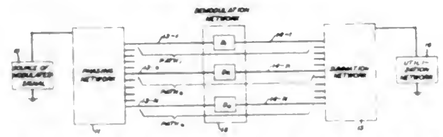
said biasing means in said first network comprising a low impedance source for establishing a current flow in one direction when the bivalued control signal is at one level and for permitting the flow of current in the opposite direction when the level of the control signal exceeds that of said low impedance source.

3,162,818
SYMMETRICALLY LIMITING AMPLIFIER WITH FEEDBACK PATHS RESPONSIVE TO INSTANTANEOUS AND AVERAGE SIGNAL VARIATIONS
Orlando J. Murphy, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 11, 1961, Ser. No. 138,221
5 Claims. (Cl. 328—169)



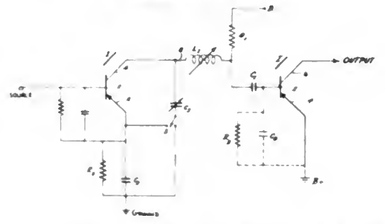
1. A limiting amplifier circuit comprising an amplifier having input and output connections, a negative feedback circuit coupling signals from said output connections back to said input connections, said feedback circuit comprising in at least a portion thereof two parallel conduction paths, means in series in a first one of said conduction paths transmitting only the direct-current component of said signals and slow variations thereof, means in a second one of said paths transmitting both signal amplitude variations and said direct-current component, and signal amplitude limiting means connected in said second path to be biased for limiting operation by the voltage difference between signals at the input of said second path and the output of said first path.

3,162,819
POLYPHASE DEMODULATION
William T. Wintringham, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 27, 1960, Ser. No. 38,791
16 Claims. (Cl. 329—145)



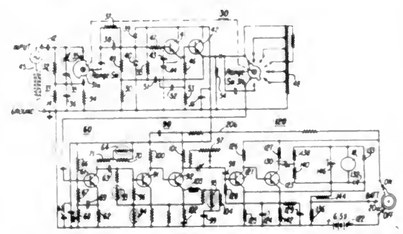
4. Apparatus for processing a carrier signal that has been modulated by an information signal which comprises means for developing from the modulated carrier signal a polyphase carrier signal whose phase-shifted constituent signals appear on respective ones of a plurality of paths greater than two, means in each of said paths for demodulating the phase-shifted constituent signal appearing thereon, and means for combining the demodulated constituent signals to recover the information signal.

3,162,820
TRANSISTOR INTER-STAGE COUPLING CIRCUIT
Irving Horowitz, Eatontown, N.J., assignor to Blonder Tongue Electronics, Eatontown, N.J., a corporation of New Jersey
Filed Dec. 18, 1959, Ser. No. 860,482
9 Claims. (Cl. 330—21)



1. A transistor amplifier for amplifying a wide band of signal frequencies having, in combination, a source of signals, a transistor amplifier stage the input-circuit impedance of which is unmatched to the output-circuit impedance of the source and is substantially capacitive at a predetermined signal frequency in the upper range of said band, a series inductance connected between and coupling the said output and input circuits, capacitance connected across the source, the said inductance being tuned with respect to the said capacitance and the inherent input capacitance of the transistor amplifier stage to peak the said coupling at the said predetermined upper-range signal frequency, and the said capacitance being adjusted to a value different from the said input capacitance to adjust the impedance-transformation ratio between the said output and input circuits to a desired value, the said inductance having a terminal connected by series coupling capacitance to the said input circuit and also connected to a resistive bias connection to enable broadband coupling in the lower range of the said band substantially independent of the tuned peaking of the said inductance.

3,162,821
ELECTRONIC CIRCUIT
Robert D. Mohler, Glen Ellyn, Reid H. Curtis, Lombard, and John J. Williams, Chicago, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 16, 1960, Ser. No. 15,331
7 Claims. (Cl. 330—40)



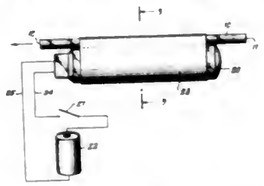
1. An input circuit for an electrical measuring instrument including in combination, a transistor having base, emitter and collector electrodes, means for applying in-

put signals between said base electrode and a reference point and including a resistor having a first terminal connected to said base electrode for limiting the current thereto and a second terminal, a bypass capacitor coupled across said resistor, further circuit means coupled to said collector and emitter electrodes for deriving output signals from said transistor and including voltage supply means coupled to said transistor for energizing the same, and overvoltage protection means including a first diode coupled between said collector electrode and said second terminal and a second diode coupled between said second terminal and the reference point, said first and second diodes being poled to be reverse biased by said voltage supply means whereby said diodes conduct upon application thereto of a signal voltage from said input circuit means which exceeds the voltage of said voltage supply means.

3,162,822
LASER PUMPING WITH PHOTOGRAPHIC FLASH BULB

Robert B. Tackaberry, Tonawanda, N.Y., assignor to American Optical Company, Southbridge, Mass., a voluntary association

Filed July 9, 1962, Ser. No. 208,469
6 Claims. (Cl. 331—94.5)

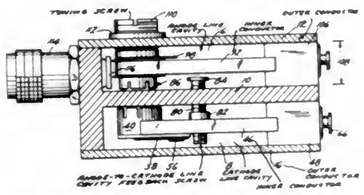


1. A laser structure comprising, in combination, means providing a resonant wave-energy propagation path, said means including an active laser element fabricated of neodymium-doped glass through which said path extends, said means further providing wave-energy reflective termination at each end of said propagation path; and a photographic flash bulb providing a source of pumping energy for said laser element and positioned to emit light into said laser element to establish a laserable inversion of energy states therein; said flash bulb including a gas-tight pressure retaining transparent envelope containing an oxidizing atmosphere and a highly combustible metal having a large surface area to volume ratio for rapid combustion characteristics at elevated temperature.

3,162,823
MINIATURE TRIODE OSCILLATOR FOR HIGH FREQUENCY OPERATION

Charles A. Beaty, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.

Filed Aug. 29, 1961, Ser. No. 134,724
7 Claims. (Cl. 331—97)

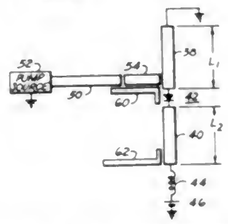


1. A high frequency oscillator comprising a tube having a cathode, a grid, and an anode, a first coaxial line having an inner and an outer conductor, means coupling the inner conductor of said first coaxial line to said cathode, the inner conductor of said first coaxial line having a portion of reduced cross section formed by two spaced parallel arms, a second coaxial line having an inner and an outer conductor, means coupling said inner conductor of said second coaxial line to said anode, said first and second coaxial lines being substantially parallel and positioned in side-by-side relationship, and having a length of approximately one quarter wave length, and housing means surrounding both of said coaxial lines and forming said outer conductors of both coaxial lines.

3,162,824
RESONATOR WITH INTERMEDIATE DIODE OSCILLATOR OR AMPLIFIER

Gerald Bernard Herzog, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 27, 1960, Ser. No. 45,728
5 Claims. (Cl. 331—107)

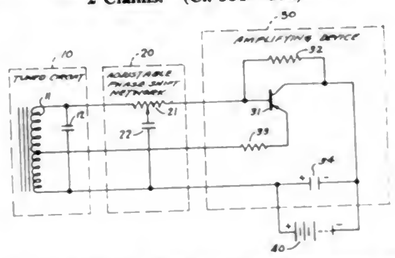


1. The combination comprising: two sections of transmission line, one of said sections being shortened at one end, and an element of electrically variable capacitance connected between and in series with said sections, the lengths of said sections being such that, together with the capacitance of said element, said combination is electrically a quarter wavelength at a first frequency f and three-quarters of a wavelength at a second frequency $2f$.

3,162,825
LC OSCILLATOR WITH PHASE SHIFTING FREQUENCY CONTROLS

Edward J. Henley, 140 Vinton Circle, Fanwood, N.J.

Filed Sept. 9, 1960, Ser. No. 54,886
2 Claims. (Cl. 331—108)

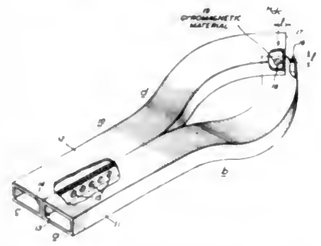


1. In an electronic oscillator, a parallel tuned inductance capacitance circuit, a first resistor, a second resistor, and a source of potential, all connected in series, a transistor having a base electrode, emitter electrode, and collector electrode, said base electrode being connected intermediate said first and second resistors, said collector electrode being connected to one side of said source of potential, said emitter electrode being connected to a tap on said tuned circuit, a shunt capacitor having one end variably positioned along said first resistor and the other end connected to the other side of said source of potential, said first resistor and said shunt capacitor forming a variable phase shifting network for varying the frequency of said oscillator.

3,162,826
NONRECIPROCAL WAVE TRANSMISSION DEVICES

Rudolf S. Engelbrecht, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 25, 1961, Ser. No. 105,510
14 Claims. (Cl. 333—1.1)

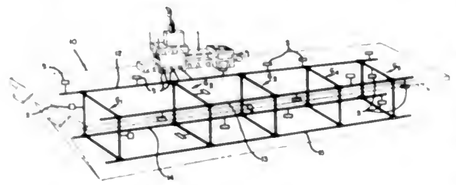


1. A nonreciprocal electromagnetic wave device comprising a four arm power dividing network, said network having the arms thereof arranged in pairs with the arms comprising each pair being conjugate to each other and in coupling relationship to the arms of the other of said pairs, said network being of the directional coupler type introducing a ninety degree time phase difference between wave energy coupled to either pair of conjugate arms from the arms of said other pair of conjugate arms, one arm of one of said pairs of arms crossing the other arm of said one pair at right angles in a region along their respective lengths, an element of magnetically polarized gyromagnetic material disposed between, and electromagnetically coupled to, said crossed arms, and means for terminating both of said crossed arms with a short circuit.

3,162,827
MULTIPATH COMMUNICATION SYSTEM UTILIZING REDUNDANT MESH NETWORK WITH MEANS AUTOMATICALLY DISCONNECTING FAULTY BRANCHES

Elmer Dean Border, Salinas, and Robert A. Pfenning, Pebble Beach, Calif., assignors, by mesne assignments, to Straza Industries, Inc., El Cajon, Calif., a corporation of California

Filed July 24, 1961, Ser. No. 126,185
2 Claims. (Cl. 333—2)

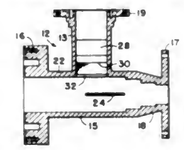


1. A communications system comprising a plurality of spaced terminal stations for transmitting and receiving data at data-transmitting frequencies, a longitudinally and transversely connected network of conductors providing a pluraiity of transmission paths between the stations, disconnects adjacent the junctures of the network in the portions of the network between the junctures responsive to a direct current for disconnecting the portions of the network in which the disconnects are located in the event that a fault occurs therein, and means for supplying the network with said direct current.

3,162,828
CROSS-LINEAR POLARIZATION SYSTEM

Raymond F. Schmidt, Buffalo, N.Y., and Leonard A. Brueneman, St. Bernard, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Mar. 2, 1961, Ser. No. 92,952
2 Claims. (Cl. 333—6)



1. An orthogonal mode transducer comprising an essentially square waveguide capable of supporting first and second modes of energy wherein the electric fields thereof are orthogonally disposed with respect to each other;

a first rectangular waveguide disposed in substantial axial alignment with said essentially square waveguide; a second rectangular waveguide coupled to said essentially square waveguide substantially normally to the axis thereof by means of a rectangular aperture opening into said essentially square waveguide, said aperture having the longest dimension thereof parallel to the axis of said essentially square waveguide whereby only energy in the first of said modes will be coupled into said second rectangular waveguide, the broad walls and the narrow walls of said second rectangular waveguide being disposed substantially normal to the broad walls and the narrow walls of said first rectangular waveguide, respectively;

a transition section disposed between said first rectangular waveguide and said essentially square waveguide for coupling said essentially square waveguide to said first rectangular waveguide, said transition section including successively stepped portions effective to vary one of the transverse dimensions of said section between those of said essentially square waveguide and of said first rectangular waveguide whereby energy in the second of said modes will be coupled between said essentially square waveguide and said first rectangular waveguide; and

a septum disposed in said essentially square waveguide aft of said second waveguide and entirely within the undiminished cross section of said essentially square waveguide adjacent said transition section to prevent energy in said first mode from entering said first waveguide.

3,162,829
FERROMAGNETIC POT-CORE ASSEMBLIES

Ronald Gordon Wildy, Redhill, and Eric Charles Snelling, Haywards Heath, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 12, 1959, Ser. No. 852,557
Claims priority, application Great Britain Nov. 14, 1958
5 Claims. (Cl. 336—83)

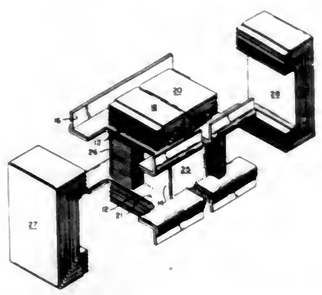
1. A ferromagnetic pot core assembly comprising a tubular housing member having a plurality of inwardly directed longitudinal ribs and an inwardly turned edge at one end thereof, a terminal plate supported on said edge and closing said one end of said housing member, a plurality of pot core parts include core halves within said housing, each said core half having a plurality of keyways for receiving said longitudinal ribs to prevent relative rotational displacement of said pot core halves, a retainer plate having a central threaded bore secured within said housing at the other end of said member, means for securing said retainer plate, a resilient member intermediate said retainer plate and the adjacent pot core half, a threaded screw member within

said bore having a flange engaging said retainer plate for limiting relative inward movement of said rod, said rod engaging and stresssing said spring washer and said



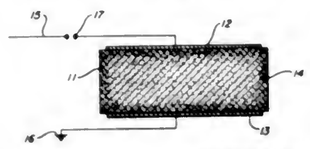
flange limiting the stress imposed on said washer whereby said pot core parts are assembled in alignment under predetermined pressure.

3,162,830
INDUCTOR BOBBIN
Albert Zack, Danvers, and Howard Stanton, Jr., Ipswich, Mass., assignors to Sylvania Electric Products, Inc., a corporation of Delaware
Filed Dec. 9, 1960, Ser. No. 74,960
8 Claims. (Cl. 336—208)



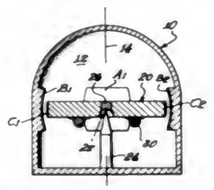
1. An inductor comprising a core composed of a plurality of laminations formed into a closed configuration and having a pair of openings therethrough, a portion of said laminations forming a central leg across said opening, at least one metallic bobbin surrounding said central leg and in intimate contact therewith, said bobbin including flanges extending outwardly and perpendicularly from the portion thereof surrounding said central leg, said central leg having end portions extending in a direction parallel to said flanges, insulating material disposed upon the outer surfaces of said central leg, said portion of said bobbin surrounding said central leg, and upon the inner surfaces of said flanges, and at least one coil wound about said central leg and said portion of said bobbin surrounding said central leg and contained by and substantially within said flanges.

3,162,831
ELECTRICAL VALVE RESISTOR
Donald L. Heath, Barberton, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Sept. 7, 1961, Ser. No. 136,673
7 Claims. (Cl. 338—21)



6. A non-linear resistor comprising a body constituted of a mass of carbide grains of the class consisting of silicon carbide, tungsten carbide and boron carbide, in which adjacent grains are in point contact throughout the block, and a ceramic bond is present over and between the grains and around said points of contact, said bond comprising aluminum phosphate and manganese silicide; and there are metallic terminals on the said body in electroconductive engagement with the grains thereof.

3,162,832
ELECTRICAL TRANSDUCER
Arthur Thornton Hubbard, Santa Barbara, Calif., assignor, by mesne assignments, to Swedlow Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 21, 1961, Ser. No. 161,046
5 Claims. (Cl. 338—85)

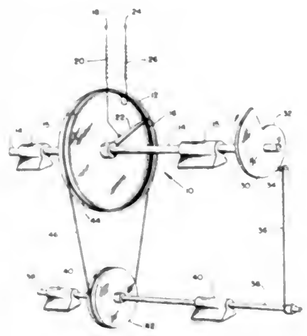


1. Pickoff means for an instrument having an output element movable in a fluid tight chamber,
said pickoff means comprising a liquid medium contained in the chamber and comprising an alcohol and an appreciable proportion of a homologous aldehyde,
mutually spaced cooperating electrode means mounted respectively on the element and in fixed relation to the chamber and exposed to the liquid, said electrode means having working surfaces of solid material capable of catalyzing the oxidation of said alcohol and the reduction of said aldehyde, and
circuit means connected to said electrode means for deriving an electrical signal responsive to movement of said element.

3,162,833
FUNCTION GENERATOR
Manuel A.-MacLain, Wickliffe, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,331
4 Claims. (Cl. 338—89)

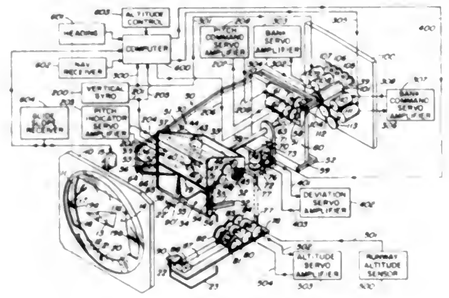
1. In a function generator, the combination comprising, a rotatable shaft, a housing rotatably mounted on said shaft for movement relative thereto, a slidewire resistance fixed to said housing for movement therewith, a contact arm fixed to said shaft for rotation therewith relative to said resistance element to vary the effective length of said resistance element between one end thereof and said contact arm, a cam having a surface defining a predetermined characteristic fixed to said shaft

for rotation therewith, a second rotatable shaft, an arm extending from said second shaft, a follower carried by said arm engaging said surface to effect angular dis-



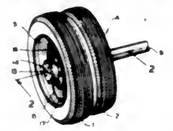
placement of said second shaft upon rotation of said cam, a driving pulley fixed to said second shaft and a driving cable for transmitting angular displacement of said driving pulley to said housing.

3,162,834
FLIGHT DIRECTOR AIRCRAFT INSTRUMENT
Horst M. Schweighofer and Harry M. Passman, both of Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed May 3, 1961, Ser. No. 107,425
19 Claims. (Cl. 340—27)



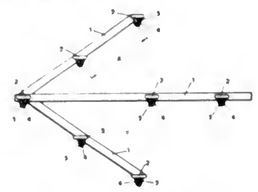
1. An aircraft attitude and command indicator instrument comprising a first horizon simulating indicator, an aircraft simulating reference rigidly affixed to and symmetrically disposed with respect to the longitudinal axis of said instrument, means for moving said first indicator with respect to said reference in accordance with pitch and bank attitudes of said aircraft, a second indicator member, said second indicator member being symmetrically and confiningly disposable about the transverse dimensions of said fixed reference, means for rotating said second indicator member about the longitudinal axis of said instrument in accordance with bank command signals, and means for displacing said second indicator member transversely of said instrument longitudinal axis in accordance with pitch command signals.

3,162,835
TIRE PRESSURE INDICATORS
Walter H. Dudar, Dallas, Tex., assignor to Tel-Air Corporation, Dallas, Tex., a corporation of Texas
Filed Jan. 29, 1962, Ser. No. 169,229
1 Claim. (Cl. 340—58)



In an air-pressure signaling system for pneumatic tires of a vehicle, said tires being mounted on a rotatable axle, said axle being mounted within an axle housing which system also includes a pressure sensing unit mounted on the end of said axle; conductor means providing an electrical connection from the moving wheel and sensing unit carried thereby to a stationary annunciator located in the vehicle, said conductor means consisting of an annular contact band adhesively secured to and electrically insulated from said axle, a flexible first conductor electrically connected at one end to the annular contact band and extending axially along the exterior surface of said axle, said first conductor being electrically connected at its other end to said sensing unit, tape means having an epoxy resin adhesive secured to said axle and said first conductor for retentively holding the first conductor on said axle, said axle housing having a radial bore, a dielectric sleeve mounted within said bore, a contact brush mounted within said sleeve and being in electrical contact with said contact band, an electrically conductive plug mounted with said sleeve for retaining said brush within said sleeve, spring means interposed between said plug and said brush for biasing said brush into contact with said band, and a second conductor connected to said brush and to said annunciator for maintaining a circuit therebetween.

3,162,836
TURN INDICATORS FOR SHIPS
Adrianus Vreugdenhil, 21 Thorbeckelaan, Velsen, Netherlands
Filed May 31, 1961, Ser. No. 113,772
Claims priority, application Netherlands, June 21, 1960, 252,861
2 Claims. (Cl. 340—73)



1. A turn indicator for a sea-going ship, comprising
a plurality of electric lamps,
a support structure having a first portion in the form of an arrow head,
a second horizontal shaft portion and
a third portion in the form of an opposite arrow head,
a plurality of individual lamp structures positioned along the said arrow head portions and the said shaft portion,
said lamp structures being mounted vertically downwardly on said support structure to predominantly emit light outward and downward,
at least one lamp structure mounted at the apex of each of said arrow heads,

said support structure being mounted on an upper structure of said ship,

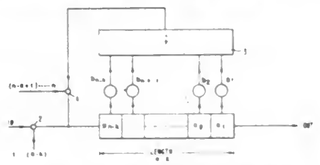
said electric lamp structures being spaced relative to each other by a distance of at least 50 centimeters up to 100 centimeters, in order to recognize said arrow at a distance of about 1700 meters at the said distance of said electric lamps of at least 50 centimeters and to recognize said arrow at a distance of about 3400 meters at the said distance of said electric lamps of at least 100 centimeters.

3,162,837

ERROR CORRECTING CODE DEVICE WITH MODULO-2 ADDER AND FEEDBACK MEANS

John E. Meggitt, Winchester, England, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 26, 1960, Ser. No. 65,126
Claims priority, application Great Britain Nov. 13, 1959
27 Claims. (Cl. 340—146.1)



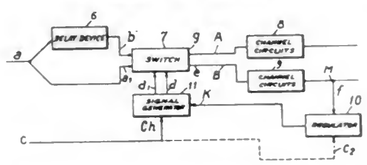
3. An encoder correcting data transmission device including a decoder for receiving transmitted binary data digits and binary check digits, said decoder comprising a shift register connected to receive both data digits and check digits serially, adding means connected to said shift register to develop a modulo two sum of digits appearing in selected stages of said shift register, detecting means responsive to successive values of said sum and the values of data digits received, and inverting means connected to receive the output of said shift register and to invert a digit output whenever said detecting means detects an error.

3,162,838

SYSTEMS FOR SWITCHING DEVICES FOR SEQUENTIALLY TRANSMITTED SIGNALS

Maurice Sauvanet, Levallois-Perret, France, assignor to Compagnie Francaise de Television, a corporation of France

Filed Sept. 19, 1962, Ser. No. 224,686
Claims priority, application France, Sept. 22, 1961, 873,895
6 Claims. (Cl. 340—147)



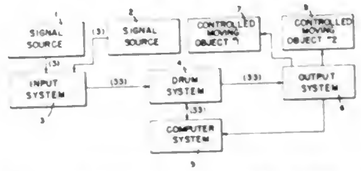
1. A switching controlling system for a switching system of the type comprising: a switching device, a switching signal generator system having n possible states, where n is an integer, said switching signal generator system being coupled to said switching device, and n output channels; said switching device having a first input for receiving sequences of n information signals E1, E2 . . . En, each of said information signals being applied thereto within time intervals having the same duration T and occurring with the frequency $1/nT$, each of said sequences further comprising at least one identification signal preceding one of said information signals; said switching device having $(n-1)$ other inputs for receiving said sequences respectively delayed by T, 2T . . . $(n-1)$T, and n outputs respectively coupled to said n output channels for feeding each of said output channels with a different one Ei of said information signals; said switching controlling system including means coupled to a selected one of said channels for collecting among the signals propagating in said selected channel a reference signal which is constituted by at least a predetermined portion of said identification signal, said reference signal appearing with the period T in said selected channel if said switching device operates correctly, and controlling means coupled to said collecting means and to said switching signal generator system for causing said signal generator system to be temporarily blocked in one of its states after said reference signal has failed to appear in said selected channel, and to be unblocked after said reference signal has again appeared in said selected channel.

3,162,839

CONTROL EQUIPMENT

Rudolph J. Cypser, Poughkeepsie, N.Y., Robert C. Hopkins, Los Angeles, Calif., Bennett Housman, Poughkeepsie, N.Y., Richard C. Jeffrey, Princeton, N.J., and Dan C. Ross, Wappingers Falls, N.Y., assignors, by mesne assignments, to Massachusetts Institute of Technology, a corporation of Massachusetts

Filed Sept. 26, 1956, Ser. No. 612,266
16 Claims. (Cl. 340—172.5)



1. In combination a source of data signals, a buffer storage system having a plurality of signal storage positions and means to produce signals indicating the empty and full status of said storage positions, a source of time signals continuously indicating the amount of elapsed time from a time reference, means responsive to signals from said buffer storage system indicating an empty status of a storage position for delivering data signals from said source of data signals and signals from said source of time signals to the empty storage positions and for changing its status signal from empty to full, a signal processing system, and means responsive to signals from said signal processing system and responsive to signals from said buffer storage system indicating full status to deliver said data signals and said time signals stored in said full register to said signal processing system.

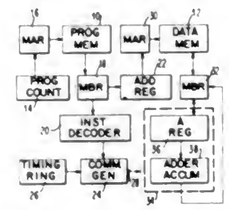
3,162,840

ELECTRONIC DATA PROCESSING MACHINE CONTROL

Carroll A. Andrews, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 6, 1960, Ser. No. 34,164
13 Claims. (Cl. 340—172.5)

1. In an electronic data processing machine operative to process binary coded data in a series of repetitive machine cycles in accordance with a stored program of instructions, each instruction including an operand portion represented by a plurality of binary signals, machine controlling apparatus including means to generate a predetermined series of timing signals in each said machine cycle, a command generator unit divided into two sections, said command generator unit being arranged to generate, in response to the application thereto of an instruction signal and a series of said timing signals, the command signals required for execution by said machine of that instruction, means to apply a first consecutive group of said predetermined timing signals to the first command generator section in each machine cycle, means to apply a second consecutive group of said predetermined series of timing signals to the second command generator section in each machine cycle, means responsive to a signal generated during said first group of signals to transfer a signal representing an instruction to said second command generator section, and means responsive to a signal generated during said second group of signals to transfer a signal representing a next instruction to be processed by said machine to said first command generator section.

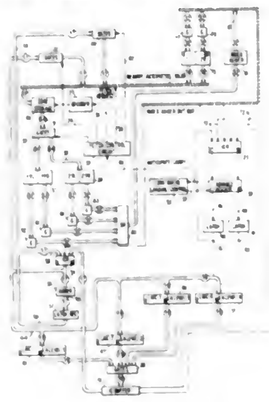


3,162,841

INSTRUCTION COUNTER SYSTEM

Charles R. Holleran, Ann Arbor, Mich., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 14, 1961, Ser. No. 152,306
10 Claims. (Cl. 340—172.5)



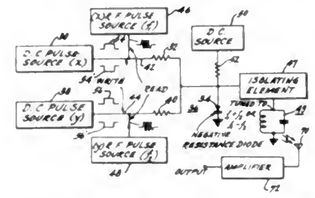
10. An instruction counter system for providing address identification of instruction signals fetched from an addressable storage device and providing the address of the recovery instruction in the event of interrupt comprising a register for storing a first count, an adder connected to said register for generating a second count, said second count being a predetermined increment higher than said first count, control means for modifying said first and second count to provide a plurality of counts identifying consecutive instruction addresses, means for interconnecting said register and adder in a configuration for continuous cyclic operation, a plurality of buffer storage devices, means storing an instruction and the address of the next instruction in each of said buffer storage devices, means responsive to the execution of each of said instructions for storing the address of next instruction and means transferring said last named instruction to said register for recovery purposes in the event of an interrupt.

3,162,842

MEMORY CIRCUITS EMPLOYING NEGATIVE RESISTANCE ELEMENTS

James C. Miller, Hamilton Square, N.J., and Lubomyr S. Onyshkevych, Cambridge, Mass., assignors to Radio Corporation of America, a corporation of Delaware

Filed Sept. 30, 1959, Ser. No. 843,563
8 Claims. (Cl. 340—173)



5. A memory plane comprising, in combination,

a plurality of negative resistance diodes, each having, in its operating range, a negative resistance region between two positive resistance operating regions, one positive resistance region exhibiting a resistance slope about the first operating point which is substantially more non-linear than the resistance slope about a second operating point exhibited in the other positive resistance region;

means for quiescently bistably biasing all diodes at one of said first and second operating points;

a plurality of x leads;

a like plurality of y leads, each diode being connected to one x lead and one y lead, and all diodes being connected to a different pair of said leads;

a circuit for reading information out of the diodes including means for concurrently applying a pulse modulated carrier frequency signal at carrier frequency f_1 to one of the x leads and a pulse modulated carrier frequency at carrier frequency f_2 to one of the y leads for causing the diode connected to said one x and said one y lead to produce a beat frequency signal which is of larger amplitude when the diode is at its first operating point than when it is at its second operating point; and

a circuit including a pick-up means which is common to all diodes for receiving energy at said beat frequency.

3,162,843

TRANSFER CIRCUITS USING SATURABLE MAGNETIC CORES

Kenneth William Cattermole and John Clifford Price, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y.

Filed Dec. 7, 1959, Ser. No. 857,880
Claims priority, application Great Britain, Jan. 8, 1959, 723/59
7 Claims. (Cl. 340—174)

1. An electric pulse distributor comprising:

a first plurality of similar cores of saturable ferromagnetic material having a substantially rectangular hysteresis loop;

a plurality of sequentially operated transfer circuits each comprising an amplifying means having an input winding linked to one of said cores and an output winding linked to an adjacent core on which is also linked the input winding of the adjacent transfer circuit;

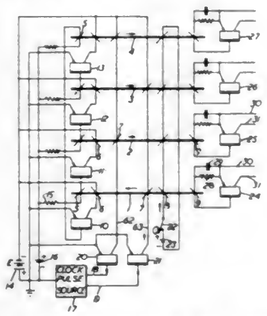
means for magnetizing one of said cores to assume a first, or set, condition, and for magnetizing the remaining cores to assume a second, or reset, condition;

a pulse source having a first output providing a first train of current pulses and a second output providing a second train of current pulses, said first and second train of pulses being interleaved in time;

a first trigger circuit having trigger windings including a series connection of said trigger windings linking alternate ones of said cores and a first switching means coupled between said first output of said pulse source and the first of said trigger windings of said alternate ones of said cores;

a second trigger circuit having trigger windings including a series connection of said trigger windings linking the remaining ones of said cores and a second switching means coupled between said second output of said pulse source and the first of said trigger windings of said remaining ones of said cores;

said first and second switching means alternately applying a current pulse to said trigger windings of said alternate ones of said cores and said trigger windings



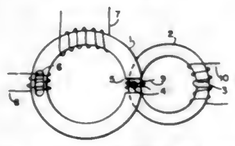
of said remaining windings of said cores for cyclically reversing the magnetic condition of only that core which has assumed the set condition;

said reversal including a pulse in the input winding of the transfer circuit connected to the last named core;

said induced pulse having a polarity such that a current pulse flows only in the output winding of said last named transfer circuit whereby the magnetic condition of said adjacent core is reversed from the reset condition and becomes the only core to assume the set condition preparatory to the application of the next current pulse; and

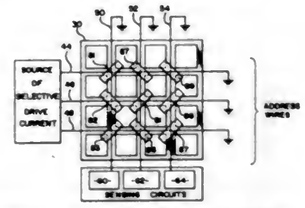
coil means coupled to each of said cores for deriving an output pulse therefrom as it is reversed to its set condition.

3,162,844
MAGNETIC MEMORY DEVICE FOR COMPARING DIGITAL INFORMATION
Nathan A. Moerman, Roslyn Heights, N.Y., assignor to Potter Instrument Co., Inc., Plainview, N.Y., a corporation of New York
Filed Oct. 5, 1959, Ser. No. 844,297
3 Claims. (Cl. 340—174)



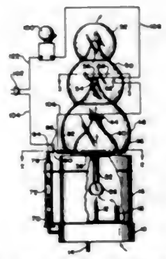
1. In an electro-magnetic system the combination of, a first magnetic circuit including a major portion of high retentivity material, a second magnetic circuit coupled to said first circuit and including a major portion of low retentivity material, a first control coil coupled to said first circuit, a second control coil coupled to said second circuit, a signal coil within the coupled portion of said two circuits and a resetting coil cross-coupled to said first magnetic circuit.

3,162,845
MAGNETIC INFORMATION-STORAGE DEVICE
Raymond Stuart-Williams, Pacific Palisades, Los Angeles, Calif., assignor, by mesne assignments, to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 11, 1960, Ser. No. 48,885
3 Claims. (Cl. 340—174)



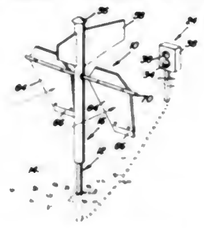
3. A magnetic storage device comprising a base of magnetic material, a rectangular grid of grooves on said surface, said grooves separating lands of material, a plurality of sensing wires a different one of which is in and extends along a different one of the grooves in said rectangular grid which are parallel to one another, a plurality of driving wires, a different one of which is in and extends along a different one of the grooves in said rectangular grid which are at right angles to the grooves wherein said sensing wires are disposed, said sensing and driving wires crossing each other substantially at right angles and being insulated from one another, and means for storing information in said magnetic storage device including a non-magnetic base comprising a card, said card having mounted on one side thereof a plurality of substantially rectangular slugs of magnetic material, one for each intersection of grooves in said magnetic material base, said slugs being disposed over said card with each slug diagonally bridging a different intersection of grooves for establishing a magnetic path thereacross when said card is applied to said magnetic material base whereby information storage occurs in accordance with the ones of the two diagonals intersecting an intersection of grooves which said magnetic material slugs bridge.

3,162,846
SMOKE AND HEAT OPERATED ELECTRICAL ALARM DEVICE
Sante Giudice, 400 N. Cedar St., Owosso, Mich.
Filed Feb. 20, 1961, Ser. No. 90,375
4 Claims. (Cl. 340—237)



2. A smoke or heat operated electrical alarm device comprising a chamber means having an outlet through which air is circulated, an electrical alarm circuit, means movably mounted adjacent said outlet for opening and closing said circuit, said movable means responsive to the pressure of the air passing through said outlet, a pilot light within said chamber whose heat causes air to circulate through said chamber and discharge through said outlet against said movable means, the velocity of the air creating a pressure which normally holds said means in open circuit position, inlet means for supplying air to said pilot light, means for reducing the amount of air flowing through said inlet to the point where air contaminated with smoke or otherwise deficient in oxygen causes said pilot light to be extinguished thereby reducing the velocity rate of discharge of air through said outlet to permit said movable means which is in an open circuit position to move to a closed-circuit position, said fuel line for said pilot light is supplied with a valve, means operatively associated with said valve for opening and closing said valve, said means being connected in said electrical alarm circuit and being responsive to the closure of said circuit upon said movable means moving into a closed-circuit position.

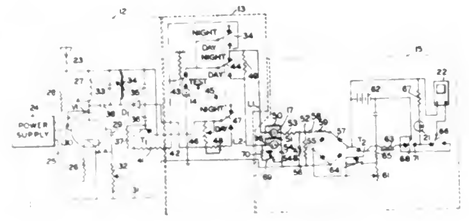
3,162,847
WIND VELOCITY ALARM
Chester A. Huffman, 2825 S. Main St., Elkhart, Ind.
Filed Dec. 20, 1960, Ser. No. 77,218
3 Claims. (Cl. 340—241)



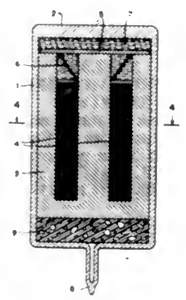
1. A wind velocity alarm comprising an upright standard, an elongated sleeve telescoped over the upper end of said standard and journalled on the latter for rotation about its longitudinal axis, said sleeve having a closed upper end, a horizontally disposed shaft extending transversely through and journalled in said sleeve, first wind responsive means carried by said sleeve and operative for orientating said sleeve relative to the direction of the wind and with said shaft extending transversely of the latter, second wind responsive means carried by said shaft outwardly of said sleeve and having at least one surface on which wind may impinge to effect rotation of said shaft, indicator means for indicating movement of said shaft, and an actuator connected to said shaft and disposed inwardly of said sleeve and operative in response to rotation of said shaft for effecting actuation of said indicator means, said second wind responsive means including at least one vane carried by an end of said shaft projecting outwardly of said sleeve, said vane extending along and generally transversely of said shaft, and means operatively connected to said shaft yieldingly urging the latter to a position of rotation with said vane substantially vertically disposed.

3,162,848
ELECTRICAL SYSTEM USEFUL FOR INTRUSION ALARM WITH SELECTIVE SENSITIVITY
Louis B. Mulvey, Newton, Mass.
(19 S. Main St., Cohasset, Mass.)
Filed Oct. 28, 1959, Ser. No. 849,274
5 Claims. (Cl. 340—258)

1. An alarm monitoring system comprising, means for sensing an alarm condition in a first location, control means at said first location for selectively determining the sensitivity of said sensing means, monitoring means remote from said first location for providing an indication of an alarm condition, a bistable device at the location of said monitoring means, a conductor in series with said bistable device normally direct coupling a direct potential from said control means to said monitoring means to maintain said bistable device in a normal state, said bistable device assuming an abnormal state upon interruption of said normal direct potential, and means responsive to a change in the state of said bistable device from said normal to said abnormal state for actuating said monitoring means to provide an indication of an alarm condition, said bistable device being a two terminal gas discharge tube having conductive and non-conductive states, a second conductor in series with a second two terminal gas discharge tube direct coupling said control means to said monitoring means, said means responsive to the change in state of said bistable device also responding to a change in the conductive state of said second gas discharge tube, said tubes being conductive during mutually exclusive time intervals.



3,162,849
TWO POSITION VISUAL DISPLAY INDICATOR
James M. Cunnien, Manchester, N.H., assignor to Honeywell Inc., a corporation of Delaware
Filed May 10, 1961, Ser. No. 109,060
1 Claim. (Cl. 340—373)

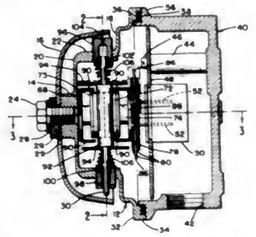


A low power indicator comprising a casing having a display portion, a brightly colored liquid in said casing, a magnetic member having a first position in which said liquid separates said member from said display portion and in which said liquid is visible through the latter, and a second position in which said member displaces said liquid from between said display portion and said member and precludes said liquid from being visible through said display portion, the specific gravity of said magnetic member being approximately the same as that of said liquid whereby said liquid buoys up said magnetic member and gives the latter the effect of no weight, means biasing said magnetic member into one of its said positions, and electromagnetic means operative when energized to move said magnetic member from one of its said positions to the other of its said positions.

3,162,850
ALTERNATING CURRENT BELL

Foster E. Weld, Newton Highlands, Mass., assignor, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,652
2 Claims. (Cl. 340—399)

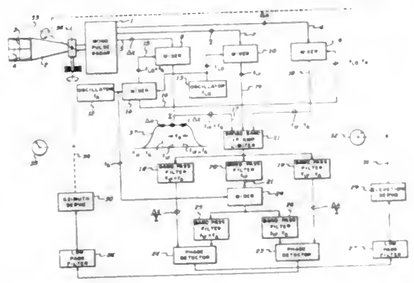


1. In an alternating current bell, in combination: a base; gong means mounted on said base; a striker rod resiliently mounted on said base for oscillatory movement for striking said gong, said striker rod having at least one plate secured thereto and movable therewith, said plate extending outwardly from said striker rod; magnetic circuit means mounted on said base for imparting said oscillatory movement to said striker rod, including an electromagnet, a permanent magnet, and two pole elements; each said pole element comprising a vertical element and at least one arm horizontally extending from an end thereof, said pole elements secured to said base with said horizontal arms in spaced apart and opposed relation to each other; said electromagnet and permanent magnet secured to said base and located substantially equally between said poles; opposed striker rod biasing spring means for urging said rod to a normal position with said plate spaced from said arms; whereby when said magnetic circuit means is energized by alternating current said striker rod means will oscillate and strike said gong at a frequency substantially below that of the alternating current applied to energize said magnetic circuit means.

3,162,851
SINGLE CHANNEL MONOPULSE RADAR RECEIVER

Susan K. Kamen, Jamaica Estates, and William L. Rubin, Whitestone, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Feb. 27, 1961, Ser. No. 91,930
11 Claims. (Cl. 343—16)

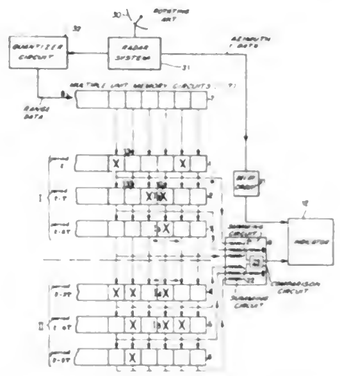


10. In a monopulse radar receiver having a positionable antenna, said receiver producing an azimuth error signal, elevation error signal and sum signal at different frequencies within a predetermined band of frequencies, apparatus comprising a limiter for passing said predetermined band of frequencies, said azimuth and elevation error signals and said sum signal being applied to said limiter, a plurality of bandpass filters connected to the output of said limiter, each filter passing a signal at a respective one of said different frequencies of said azimuth and elevation signals and said sum signal, and means connected to receive the signals passed by said filters for positioning said antenna in response thereto.

3,162,852
RADAR APPARATUS

Voldemar A. Altovsky and Pierre R. J. Mondon, Paris, France, assignors to Societe Nouvelle d'Electronique, Paris, France

Filed Feb. 25, 1959, Ser. No. 795,425
Claims priority, application, France, Mar. 4, 1958, 759,605
2 Claims. (Cl. 343—17.1)



1. Pulse radar apparatus comprising means for receiving echo pulses from a target and a directional movable antenna such that a target generally returns a plurality of echo pulses, means for quantizing an information characteristic of the echo pulses, a sequence of like memory circuits divided into two groups having equal numbers of memory circuits, each memory circuit having a plurality of elements representing different values, means for storing respective bits of the quantized information in respective elements of a first one of said sequence of memory circuits during each repetition period, analyzer circuit means for sensing during each repetition period homologous elements of the two groups of memory circuits and then shifting the information from any preceding memory circuit including said first one to the next succeeding one without changing the value of said information, and comparison means connected to all said memory circuits for producing an output signal in response to a symmetrical distribution of said bits on homologous elements of a like plurality of memory circuits in the two groups.

3,162,853
DIVERSITY RADAR INSTALLATIONS

Peter Bradsell, London, England, assignor to A. C. Cossor Limited, London, England, a British company

Filed Feb. 10, 1961, Ser. No. 88,499
Claims priority, application Great Britain, Feb. 10, 1960, 4,730/60
2 Claims. (Cl. 343—17.1)

1. A diversity radar installation comprising in combination:

an aerial;

two radar transmitters;

two radar receivers operatively associated respectively with said transmitters;

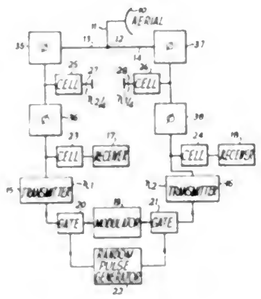
two transmit-receive cells operatively associated respectively with said receivers;

a junction;

a transmission line connected between said antenna and said junction;

a pair of branch transmission lines between said junction and said transmitters and associated receivers respectively;

means connected into each of said branch transmission lines including a blocking cell, a section of transmission line connected to said cell, short circuited at the end remote from said cell and being an odd number of quarter wave lengths of the wave length to which said transmitter and receiver in the other branch are tuned, each of said transmit-receive cells and said blocking cells being connected to be ionized whenever either transmitter is fired;



first phase-shifting means connected between said junction and each blocking cell to ensure that on reception of energy in one branch at the wave length of the receiver of the other branch such energy is reflected from the short-circuited section of transmission line in said one branch to said junction with a phase-shift of a whole number of cycles;

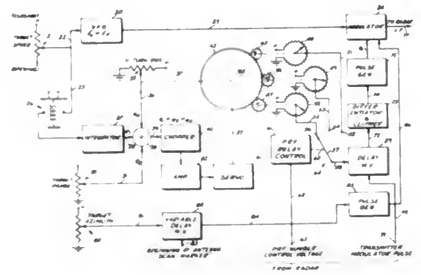
and second phase-shifting means connected in each said branch transmission line between said blocking cell and said transmitter, said first and second phase-shifting means serving in combination to provide that on the transmission of energy by the transmitter in one branch, power is reflected from the transmitter in the other branch to said junction with a phase-shift of a whole number of cycles.

3,162,854
TARGET SIMULATOR FOR PULSE DOPPLER RADAR

Robert R. Campbell, Towson, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 8, 1961, Ser. No. 108,680
14 Claims. (Cl. 343—17.7)

1. A target simulator circuit for pulse Doppler radar comprising: means producing variable frequency oscillations; means adjustable to vary an analog voltage representative of speed and direction of motion of a simulated target coupled to said variable frequency oscillator means to adjustably vary said oscillations; means coupled to said analog voltage to integrate same; means coupled to receive said integrated analog voltage and to receive an analog range voltage to produce a delay voltage in accordance with their sum; means coupled to receive transmitted pulses from a pulse Doppler radar and delay same in accordance with the amplitude of said delay voltage coupled thereto; and means amplitude modulating said frequency oscillations with said delayed transmitted

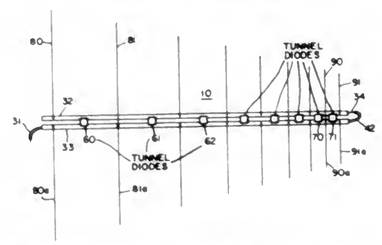


pulses whereby amplitude modulated signals are produced simulating a target object in range, speed, and direction of motion.

3,162,855
ANTENNA SYSTEM

John R. Copeland, William J. Robertson, Carlton H. Walter, and Charles H. Boehnker, Columbus, Ohio, assignors to Ohio State University Research Foundation

Filed Sept. 9, 1960, Ser. No. 54,891
2 Claims. (Cl. 343—100)



1. An antenna system comprising a plurality of elements, a structure defining the longitudinal axis of said elements having said elements supported thereon a predetermined distance apart, said spacing between said elements being logarithmic; a plurality of radio frequency amplifiers each including a tunnel diode mounted directly on said structure and having the same logarithmic spacing apart as that of said elements, and means for operatively connecting said amplifiers to said antenna system at their respective mounting joints.

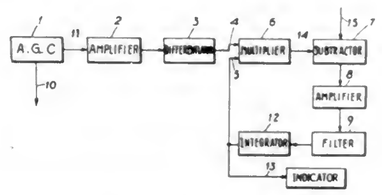
3,162,856
TIME TO GO INDICATOR

Guy Le Parquier and Henri Poinsard, Paris, France, assignors to C.S.F.-Compagnie Générale de Telegraphie Sans Fil, a corporation of France

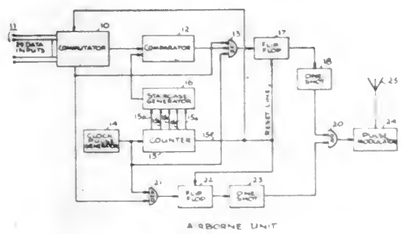
Filed Feb. 12, 1963, Ser. No. 258,064
Claims priority, application France, Feb. 14, 1962, 887,997, Patent 1,322,261
3 Claims. (Cl. 343—112)

1. In a receiver comprising automatic gain control means for maintaining substantially constant the output level of the received signals, an apparatus for measuring the ratio r/v, where r is the distance of a transmitting station to said receiver, and v the radial velocity of said transmitting station relatively to said receiver, said ap-

paratus comprising in series: means for deriving from said automatic gain control means a first signal which is a linear function of the gain expressed in decibels; a differentiator; and means for deriving from the output signal of said differentiator a signal whose value is the reciprocal of the value of said output signal.



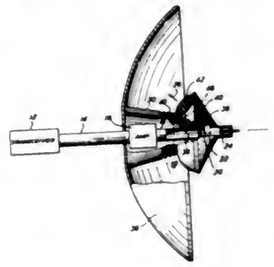
3,162,857
PULSE-POSITION MODULATION TELEMETRY SYSTEM
Ray W. Sanders, Los Angeles, Calif., assignor, by mesne assignments, to Space-General Corporation, Glendale, Calif., a corporation of California
Filed Mar. 14, 1960, Ser. No. 14,728
19 Claims. (Cl. 343—203)



1. A transmitter for radiating pulsed carrier signals representing analog signals applied thereto, said transmitter comprising: means for electrically marking off equal periods of time; means for generating a rising voltage on a repetitive basis; and means for radiating a pulsed carrier signal of fixed duration during each of said periods at a time following the start of each period when said analog signal equals the instantaneous value of said rising voltage that corresponds to the amplitude of the analog signal during that period, whereby the variations in the time spacing between the pulsed carrier signals corresponds to the amplitude variations of the analog signal.

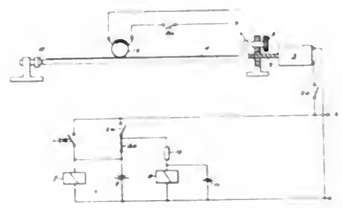
3,162,858
RING FOCUS ANTENNA FEED
Cassius C. Cutler, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 19, 1960, Ser. No. 76,943
4 Claims. (Cl. 343—753)

1. In an antenna system, a reflector and a feed element for radiating and intercepting electromagnetic signals to and from said reflector comprising a circular waveguide centered about an axis, a radial transmission line centered about and extending completely around said axis, an annular gap in the wall of said waveguide, an iris located in said waveguide and an adjustable piston terminating said waveguide, said iris and said piston being located with respect to said gap so as to couple said signal with annular uniformity between said radial transmission line and said waveguide, said radial transmission line having walls separated a distance of at least one-



half the wavelength of said signal, and said walls having annular quarter-wavelength deep corrugations centered about said axis.

3,162,859
MAGNETIZABLE MEMORY SYSTEM
Siegfried Paul and Alfons Hoppmann, Hannover, Germany, assignors to H. Wohlenberg, Kommanditgesellschaft, Hannover, Germany, a corporation of Germany
Filed July 1, 1960, Ser. No. 40,367
Claims priority, application Germany, Sept. 9, 1959, W 26,346; Sept. 29, 1959, W 26,473
12 Claims. (Cl. 346—74)



1. An actuating mechanism device for positioning a magnetizable memory element in a plurality of spaced positional relationships with respect to a reference point to correctly render the time relationship in a programmed sequence of operations controlled by pulsed magnetic memory impressions on said element, comprising a magnetic recording head, a magnetizable memory element, a positionally shiftable support for said element, means for shifting the position of said support, and means for effecting delayed energization of said recording head upon shift of position of said support.

3,162,860
LIGHT RADIATION SENSITIVE VARIABLE RESISTANCE DEVICE
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.
Filed Nov. 19, 1962, Ser. No. 238,359
10 Claims. (Cl. 346—74)

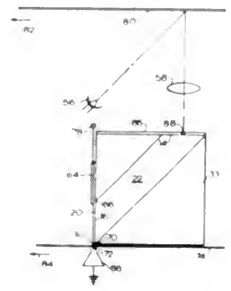
10. Means for utilization in a recording apparatus comprising:

(*a*) a longitudinally extending layer of photoconductor material having first and second ends and a predetermined electrical resistance, in its dark state, intermediate its first and second ends;

(*b*) means for presenting the influence of an electrical potential across a longitudinal dimension of said photoconductor in said dark state;

(*c*) means for supporting a record medium adjacent said second end;

(*d*) a first light conductor means for supporting said layer and for conducting light to said layer uniformly intermediate said first and second ends;



(*e*) said first light conductor means having a predetermined index of refraction, an elongated cross sectional dimension, a longitudinal dimension exceeding its cross sectional dimension, and presenting first and second end surfaces each having a lengthwise dimension greater than its width dimension running crosswise with respect to said longitudinal dimension;

(*f*) said layer being inteimately joined with said second end surface whereby said longitudinal dimension of said layer coincides with said lengthwise dimension of said second end surface and thereby disposed transversely of said longitudinal dimension;

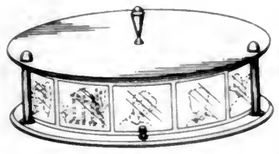
(*g*) aperture limiting means adjacent said first end surface for controlling the area dimesions of light admitted thereto;

(*h*) a second light conductor means having an index of refraction less than said predetermined index intimately joined with and surrounding said first light conductor means entirely extending from said first end surface to said second end surface for controlling the reflection of light from said aperture limiting means through said first light conductor means and the reflection of light to said layer for modifying said predetermined electrical resistance and extending the influence of said electrical potential to said record medium.

DESIGNS

DECEMBER 22, 1964

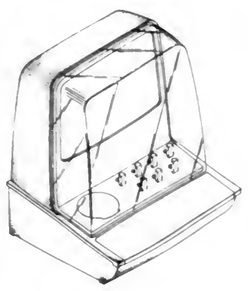
199,834
COMBINED ILLUMINABLE DISPLAY SIGN AND CLOCK
Virgil Smith, 837 S. Westgate, Los Angeles, Calif.
Filed Sept. 27, 1963, Ser. No. 76,755
Term of patent 14 years
(Cl. D1—12)



199,835
DRESS SHIELD
Wallace B. Tyrrell, Jr., Venice, Fla., assignor to Tyrrell Industries, Inc., Venice, Fla., a corporation of Florida
Filed Jan. 24, 1964, Ser. No. 78,347
Term of patent 14 years
(Cl. D3—26)



199,836
CASING FOR STORAGE OF AN ELECTRIC TOOTHBRUSH POWER UNIT AND BRUSHES THEREFOR
Joseph R. Mango, Midlothian, and Mario Giannola, Chicago, Ill., assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Aug. 5, 1963, Ser. No. 76,103
Term of patent 14 years
(Cl. D4—3)



199,837
FISH SCALER
Harold Hansen, R.F.D. 1, Box 128, Stafford Springs, Conn.
Filed June 3, 1963, Ser. No. 75,179
Term of patent 14 years
(Cl. D9—2)



199,838
MACHINE PAD
Nathan Hack, 537 San Vicente Blvd., Santa Monica, Calif.
Filed July 5, 1963, Ser. No. 75,671
Term of patent 14 years
(Cl. D9—6)

199,839
DOOR HANDLE OR SIMILAR ARTICLE
William Gordon Simpson, 15 Glemsford Drive, Harpenden, England
Filed Mar. 13, 1964, Ser. No. 78,993
Claims priority, application Great Britain Oct. 7, 1963
Term of patent 14 years
(Cl. D10—8)



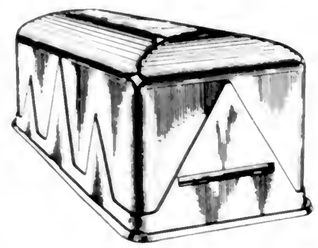
199,840
CLOTHESPIN
Americo Marola, 63 Highland Ave., Torrington, Conn.
Filed July 31, 1964, Ser. No. 81,105
Term of patent 14 years
(Cl. D17—6)



199,841
PICTURE HOOK OR SIMILAR ARTICLE
Joseph M. Margulis, % Jiffy Enterprises, Inc., 150 N. 13th St., Philadelphia, Pa.
Filed Dec. 4, 1962, Ser. No. 72,705
Term of patent 14 years
(Cl. D17—12)



199,842
BURIAL VAULT
Thomas J. Neumann and Darrell I. Burrell, both of P.O. Box 528, Perry, Okla.
Filed June 5, 1963, Ser. No. 75,236
Term of patent 7 years
(Cl. D19—1)



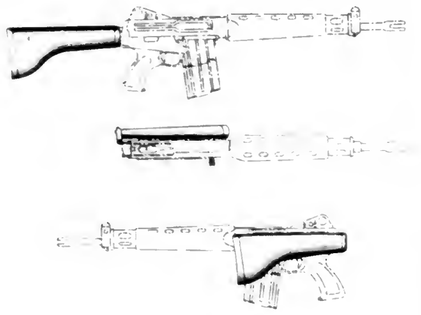
199,843
COMBINED MEMO BOARD AND TOWEL RACK
Lowell W. Bodenbach, 1000 Brice Road, Rockville, Md.
Filed May 31, 1963, Ser. No. 75,133
Term of patent 7 years
(Cl. D25—1)



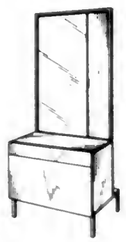
199,844
HERMETICALLY SEALED ELECTROMAGNETIC RELAY
Jack S. Hawkins, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 17, 1963, Ser. No. 76,617
Term of patent 14 years
(Cl. D26—13)



199,845
FIREARM HAVING A FOLDING BUTT STOCK
George C. Sullivan, 3085 Lake Hollywood Drive, Hollywood, Calif.
Filed Sept. 10, 1963, Ser. No. 76,546
Term of patent 14 years
(Cl. D30—1)



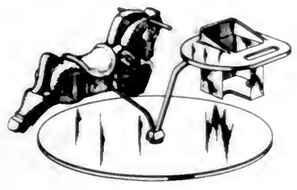
199,846
COMBINED DRESSER, CLOTHES SUPPORT AND SHOE RACK
William H. Armstrong, Birmingham, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 28, 1962, Ser. No. 71,479
Term of patent 14 years
(Cl. D33—6)



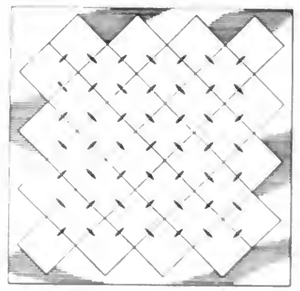
199,847
COMBINED FILING CABINET AND DRAFTING TABLE
Charles B. Ulrich, Jr., Lakewood, and Forest G. Stark, Jamestown, N.Y., assignors to Art Metal, Inc., Jamestown, N.Y.
Filed Nov. 12, 1963, Ser. No. 77,370
Term of patent 14 years
(Cl. D33—14)



199,848
ROCKING AND SWIVEL TOY
Carl L. Doerr, Long Beach, Calif., assignor to Doerr Enterprises, Inc., Long Beach, Calif.
Filed Apr. 17, 1962, Ser. No. 69,741
Term of patent 14 years
(Cl. D34—5)

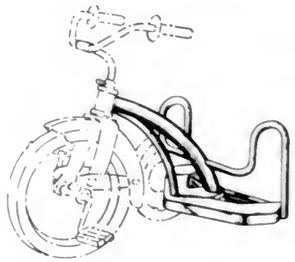


199,849
CHECKERBOARD
Milton Apel, 2018 Brummel St., Evanston, Ill., assignor of one-half to John I. Howe, Chicago, Ill.
Filed July 30, 1962, Ser. No. 71,077
Term of patent 14 years
(Cl. D34—5)



199,850
GOLF PUTTER HEAD
William C. Taylor, 400 S. Arlington Ave., Reno, Nev.
Filed July 29, 1964, Ser. No. 81,066
Term of patent 14 years
(Cl. D34—5)

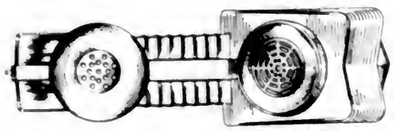
199,851
VELOCIPEDE
Raymond Boucher, Dothan, Ala.
Filed Oct. 22, 1963, Ser. No. 77,085
Term of patent 7 years
(Cl. D34—15)



199,852
AERIAL TOY
Kurt R. Johmann and Frank T. Johmann, both of 49 Hampton Drive, Berkeley Heights, N.J.
Filed Feb. 25, 1964, Ser. No. 78,776
Term of patent 14 years
(Cl. D34—15)



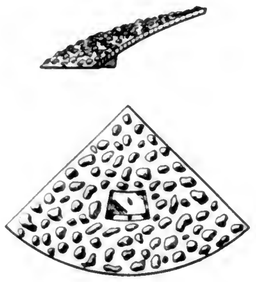
199,853
TOY WALKIE TALKIE
Felix Gilbert, New York, N.Y., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Apr. 23, 1964, Ser. No. 79,729
Term of patent 14 years
(Cl. D34—15)



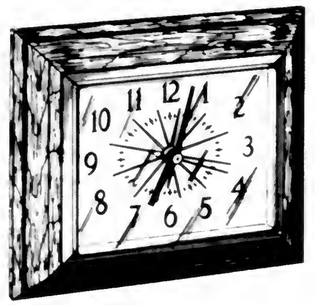
199,854
TAKE-APART TOY GUN OR THE LIKE
Roy F. Constan, Staten Island, N.Y., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed June 12, 1964, Ser. No. 80,379
Term of patent 14 years
(Cl. D34—15)



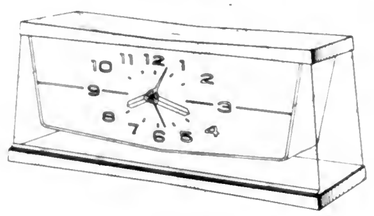
199,855
PLANTER OR SIMILAR ARTICLE
Clinton C. Sullivan, 1413 Lindsay Drive, Bakersfield, Calif.
Filed July 19, 1963, Ser. No. 75,875
Term of patent 14 years
(Cl. D35—3)



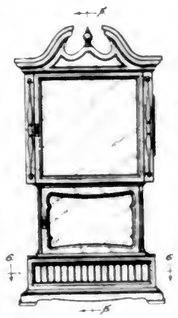
199,856
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, and Carl N. Johnson, Stratford, Conn., assignors to General Electric Company, a corporation of New York
Filed Jan. 27, 1964, Ser. No. 78,382
Term of patent 7 years
(Cl. D42—7)



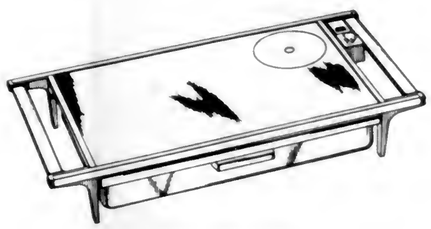
199,857
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1964, Ser. No. 80,615
Term of patent 14 years
(Cl. D42—7)



199,858
CLOCK CASING
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 2, 1964, Ser. No. 80,687
Term of patent 14 years
(Cl. D42—7)



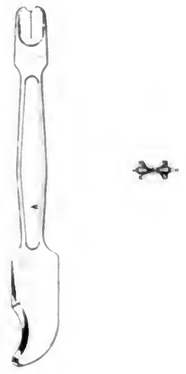
199,859
WARMING TRAY OR SIMILAR ARTICLE
Theodore G. Daher, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 24, 1964, Ser. No. 79,674
Term of patent 14 years
(Cl. D44—10)



199,860
HOLDER FOR KITCHEN COOKING UTENSILS OR THE LIKE
Irma L. Van Antwerp, 3295 Shady Side Drive, Grand Rapids, Mich.
Filed Apr. 20, 1964, Ser. No. 79,614
Term of patent 14 years
(Cl. D44—29)



199,861
COMBINED BOWL SCRAPER AND BEATER BLADE CLEANER
Lenore K. Eicher, 2215 Canyon Road, Arcadia, Calif., and Austin E. Elmore, South Pasadena, Calif.; said Elmore assignor to said Eicher
Filed May 22, 1964, Ser. No. 80,107
Term of patent 14 years
(Cl. D44—29)



199,862
HEIGHT GAGE
Walter L. Lowry, Bethel, Conn., assignor to Montgomery & Company, Inc., Chatham, N.J., a corporation of New Jersey
Filed Mar. 12, 1964, Ser. No. 78,982
Term of patent 14 years
(Cl. D52—6)



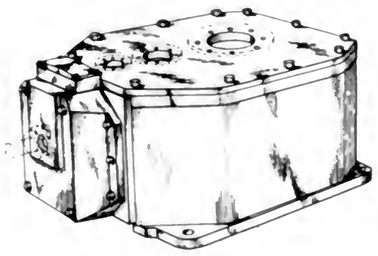
199,863
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Oct. 21, 1963, Ser. No. 77,047
Term of patent 14 years
(Cl. D54—12)



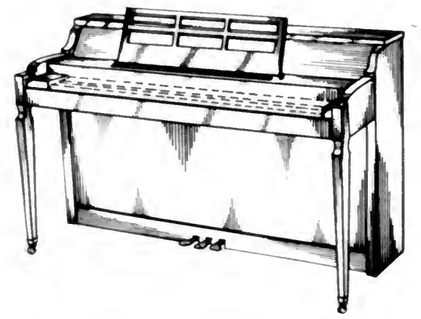
199,864
PAPER CUTTING MACHINE
Viktor Schreckengost, Cleveland, and Russell I. Haywood, Dayton, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 71,511
Term of patent 14 years
(Cl. D55—1)



199,865
SPEED REDUCER HOUSING OR SIMILAR ARTICLE
Edward J. Wellauer, Wauwatosa, and Raymond F. Pickel, West Allis, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 1, 1963, Ser. No. 74,224
Term of patent 14 years
(Cl. D55—1)



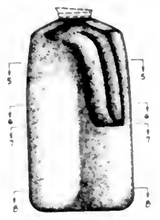
199,866
PIANO
Wilbur M. Day, Kenwood, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 23, 1963, Ser. No. 77,103
Term of patent 14 years
(Cl. D56—9)



199,867
JUG
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 15, 1964, Ser. No. 80,883
Term of patent 14 years
(Cl. D58—5)



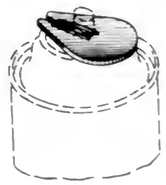
199,868
BOTTLE
Clarence A. Price and Richard L. Platte, Ann Arbor, Mich., assignors to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 13, 1963, Ser. No. 76,574
Term of patent 14 years
(Cl. D58—6)



199,869
BOTTLE
Bertrand N. Trombley, Bloomfield Hills, and Clara Virginia Eicholtz, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 79,602
Term of patent 14 years
(Cl. D58—8)



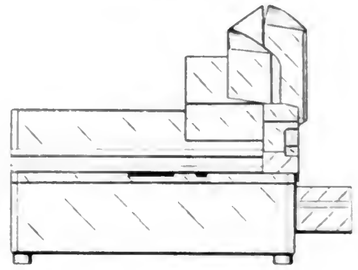
199,870
SAFETY LOCK FOR PRESSURIZED SPRAY CANS
Harold Osrow, Roslyn, N.Y., assignor to Osrow Products Company, Inc., Glen Cove, N.Y., a corporation of New York
Filed Oct. 22, 1963, Ser. No. 77,096
Term of patent 14 years
(Cl. D58—26)



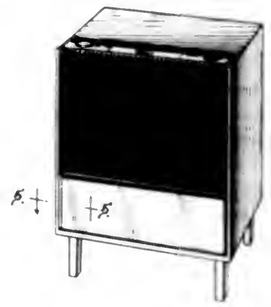
199,871
PORTABLE STAND FOR PROJECTORS OR THE LIKE
Richard W. Lanigan, 1525 N. Patton Ave., Arlington Heights, Ill.
Filed July 5, 1963, Ser. No. 75,669
Term of patent 14 years
(Cl. D61—1)



199,872
FILM TRANSPARENCY CUTTER-TACKER
Frederick G. Knowles, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 29, 1964, Ser. No. 80,633
Term of patent 14 years
(Cl. D61—1)



199,873
HUMIDIFIER
Jerold R. Peterson, Roselle, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 15, 1963, Ser. No. 75,812
Term of patent 14 years
(Cl. D62—4)



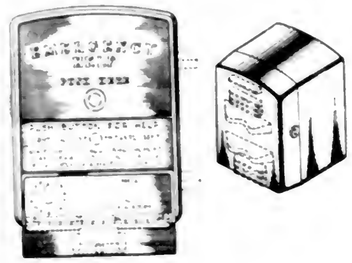
199,874
SUCTION PUMP
Henry de Forrest, 3604 Sunswept Drive, Studio City, Calif.
Filed Aug. 27, 1963, Ser. No. 76,371
Term of patent 14 years
(Cl. D65—1)



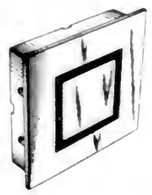
199,875
DOOR CHIME
Norman William Stevenson, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company
Filed Dec. 4, 1961, Ser. No. 67,779
Claims priority, application Great Britain June 2, 1961
Term of patent 14 years
(Cl. D72—1)



199,876
EMERGENCY CALL SYSTEM TRANSMITTER CASE OR SIMILAR ARTICLE
Joseph D. Portanova, Arcadia, and Donald D. Stellmacher, Los Angeles, Calif., assignors to Hoffman Electronics Corporation, a corporation of California
Filed June 28, 1962, Ser. No. 70,727
Term of patent 14 years
(Cl. D72—1)



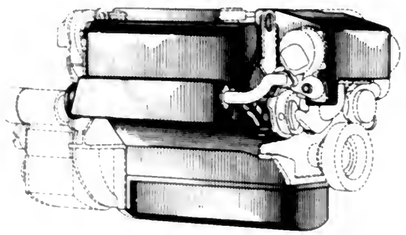
199,877
DOOR CHIME
Norman William Stevenson, Rainow, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company
Filed Apr. 30, 1963, Ser. No. 74,714
Claims priority, application Great Britain Dec. 7, 1962
Term of patent 14 years
(Cl. D72—1)



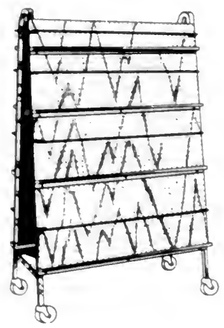
199,878
WHISTLE INDICATOR FOR FOOTBALL OFFICIALS AND THE LIKE
Charles T. Mulligan, 613 N. Howard St., Alexandria, Va.
Filed Feb. 4, 1964, Ser. No. 78,511
Term of patent 14 years
(Cl. D72—1)



199,879
MARINE ENGINE
Richard W. Paxson, Columbus, Ind., Robert E. Graf, Tenafly, N.J., and Ernest M. Bevilacqua, Wilton, and Eliot F. Noyes, New Canaan, Conn., assignors to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana
Filed July 17, 1963, Ser. No. 75,850
Term of patent 14 years
(Cl. D77—1)



199,880
MOBILE DISPLAY STAND OR SIMILAR ARTICLE
Lloyd E. Magers, Evanston, Ill., assignor, by mesne assignments, to Gaylord Bros., Inc., Syracuse, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 76,246
Term of patent 14 years
(Cl. D80—9)



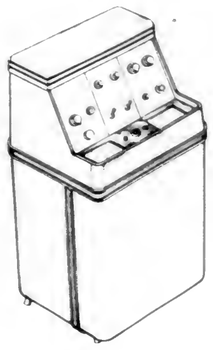
199,881
HOUSING FOR AN OIL BURNER PUMP
Otto Eckerle, 3 am Bergwald, Malsch, Kreis Karlsruhe, Germany
Filed Mar. 2, 1964, Ser. No. 78,847
Claims priority, application Germany Sept. 5, 1963
Term of patent 14 years
(Cl. D81—2)



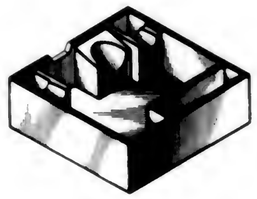
199,882
HYDRO-MASSAGE UNIT
Charles S. Benson, 11600 Montana Ave., West Los Angeles, Calif.
Filed Oct. 7, 1963, Ser. No. 76,888
Term of patent 14 years
(Cl. D83—1)



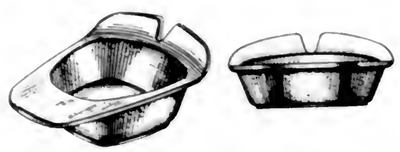
199,883
PORTABLE ELECTRONIC DEFIBRILLATOR
Walter S. Druz, Hinsdale, and Charles J. Wunder, Chicago, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 3, 1964, Ser. No. 80,264
Term of patent 14 years
(Cl. D83—1)



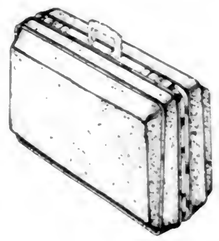
199,884
SMOKER'S ACCESSORY TRAY
William C. Wayman, 512 S. Oak Park Ave., Oak Park, Ill.
Filed Aug. 29, 1963, Ser. No. 76,390
Term of patent 14 years
(Cl. D85—2)



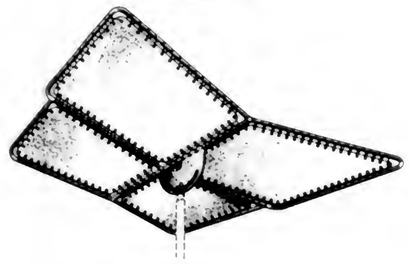
199,885
ASH TRAY
Frank J. Curran, 3250 N. Highland, Downers Grove, Ill.
Filed Apr. 22, 1964, Ser. No. 79,649
Term of patent 14 years
(Cl. D85—2)



199,886
CARRYING CASE
Robert Louis Deschamps, near West Chicago, and Raymond A. Massaccesi, Chicago, Ill., assignors to Shure Brothers, Incorporated, a corporation of Illinois
Filed Sept. 18, 1963, Ser. No. 76,627
Term of patent 14 years
(Cl. D87—5)



199,887
SUN SHADE
Alex Mermelstein, 339 S. Detroit St., Los Angeles 36, Calif.
Filed Feb. 17, 1964, Ser. No. 78,658
Term of patent 14 years
(Cl. D88—3)



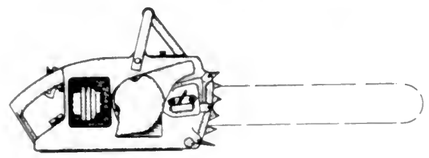
199,888
BLENDER
Henry A. Dewenter, 1477 Old Mill Road, San Marino, Calif.
Filed Apr. 28, 1964, Ser. No. 79,723
Term of patent 14 years
(Cl. D89—1)



199,889
TIRE
James F. Newman, St. Clair Shores, and John W. Taylor, Grosse Pointe Farms, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 24, 1964, Ser. No. 79,692
Term of patent 14 years
(Cl. D90—20)



199,890
CHAIN SAW
Richard K. Whitehead, Sr., Richard K. Whitehead, Jr., and William W. Tubesing, all of 1202 Zonolite Road NE., Atlanta, Ga.
Filed Mar. 21, 1963, Ser. No. 74,128
Term of patent 14 years
(Cl. D93—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22ND DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Armstrong, James F. Re. 25,701.

Armstrong, James F., to ACF Industries, Inc. Injection carburetion. Re. 25,701, 12–22–64, Cl. 123—119.

De Blasi, Charles P. Hydraulic system and apparatus for dump trucks vehicles. Re. 25,702, 12–22–64, Cl. 37—41.

Martorelli, Frank. Dispenser tap. Re. 25,703, 12–22–64, Cl. 222—517.

North American Aviation, Inc.: *See*—
Van Pappelendam, Carl A. Re. 25,704.

Van Pappelendam, Carl A., to North American Aviation, Inc. Method of fabricating structural sandwiches. Re. 25,704, 12–22–64, Cl. 29—455.

LIST OF DESIGN PATENTEES

Apel, Milton, ½ to J. I. Howe. Checkerboard. 199,849, 12–22–64, Cl. D34—5.

Armstrong, William H., to Borg-Warner Corp. Combined dresser clothes support and shoe rack. 199,846, 12–22–64, Cl. D33—6.

Art Metal, Inc.: *See*—
Ulrich, Charles B., Jr., and Stark. 199,847.

Baldwin, D. H., Co.: *See*—
Day, Wilbur M. 199,866.

Benson, Charles S. Hydro-massage unit. 199,882, 12–22–64, Cl. D83—1.

Bevilacqua, Ernest M.: *See*—
Paxson, Richard W., Graf, Bevilacqua, and Noyes. 199,879.

Bodenbach, Lowell W. Combined memo board and towel rack. 199,843, 12–22–64, Cl. D25—1.

Borg-Warner Corp.: *See*—
Armstrong, William H. 199,846.

Boucher, Raymond. Velocipede. 199,851, 12–22–64, Cl. D34—15.

Burrell, Darrell I.: *See*—
Neumann, Thomas J., and Burrell. 199,842.

Constan, Roy F., to De Luxe Reading Corp. Take-apart toy gun or the like. 199,854, 12–22–64, Cl. D34—15.

Cummins Engine Co., Inc.: *See*—
Paxson, Richard W., Graf, Bevilacqua, and Noyes. 199,879.

Curran, Frank J. Ash tray. 199,885, 12–22–64, Cl. D85—2.

Daher, Theodore G., to General Electric Co. Warming tray or similar article. 199,859, 12–22–64, Cl. D44—10.

Day, Wilbur M., to D. H. Baldwin Co. Piano. 199,866, 12–22–64, Cl. D56—9.

De Forrest, Henry. Suction pump. 199,874, 12–22–64, Cl. D65—1.

De Luxe Reading Corp.: *See*—
Constan, Roy F. 199,854.
Gilbert, Felix. 199,853.

Deschamps, Robert L., and R. A. Massaccesi, to Shure Bros., Inc. Carrying case. 199,886, 12–22–64, Cl. D87—5.

Dewenter, Henry A. Blender. 199,888, 12–22–64, Cl. D89—1.

Doerr Enterprises, Inc.: *See*—
Doerr, Carl L. 199,848.

Doerr, Carl L., to Doerr Enterprises, Inc. Rocking and swivel toy. 199,848, 12–22–64, Cl. D34—5.

Dow Chemical Co., The: *See*—
Trombley, Bertrand N., and Eicholtz. 199,869.

Drux, Walter S., and C. J. Wunder, to Zenith Radio Corp. Portable electronic defibrillator. 199,883, 12–22–64, Cl. D83—1.

Eastman Kodak Co.: *See*—
Knowles, Frederick G. 199,872.

Eckerle, Otto. Housing for an oil burner pump. 199,881, 12–22–64, Cl. D81—2.

Elcher, Lenore K., and A. E. Elmore; said Elmore assor. to said Elcher. Combined bowl scraper and beater blade cleaner. 199,861, 12–22–64, Cl. D44—29.

Eicholtz, Clara V.: *See*—
Trombley, Bertrand N., and Eicholtz. 199,869.

Elmore, Austin E.: *See*—
Elcher, Lenore K., and Elmore. 199,861.

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Wellauer, Edward J., and Pickel. 199,865.

Friedland, V. & E., Ltd.: *See*—
Stevenson, Norman W. 199,875.
Stevenson, Norman W. 199,877.

Gaylord Bros., Inc.: *See*—
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General Electric Co.: *See*—
Daher, Theodore G. 199,859.
Judson, William V., and Johnson. 199,856.

Giannola, Mario: *See*—
Nango, Joseph R., and Giannola. 199,836.

Gilbert, Felix, to De Luxe Reading Corp. Toy walkie talkie. 199,853, 12–22–64, Cl. D34—15.

Graf, Robert E.: *See*—
Paxson, Richard W., Graf, Bevilacqua, and Noyes. 199,879.

Hack, Nathan. Machine pad. 199,838, 12–22–64, Cl. D9—6.

Hansen, Harold. Fish scaler. 199,837, 12–22–64, Cl. D9—2.

Harris-Intertype Corp.: *See*—
Schreckengost, Viktor, and Haywood. 199,864.

Hawkins, Jack S., to Jennings Radio Mfg. Corp. Hermetically sealed electromagnetic relay. 199,844, 12–22–64, Cl. D26—13.

Haywood, Russell I.: *See*—
Schreckengost, Viktor, and Haywood. 199,864.

Hoffman Electronics Corp.: *See*—
Portanova, Joseph D., and Stellmacher. 199,876.

Hoover Ball and Bearing Co.: *See*—
Price, Clarence A., and Platte. 199,868.

Howe, John I.: *See*—
Apel, Milton. 199,849.

Jennings Radio Mfg. Corp.: *See*—
Hawkins, Jack S. 199,844.

Johmann, Frank T.: *See*—
Johmann, Kurt R. and F. T. 199,852.

Johmann, Kurt R. and F. T. Aerial toy. 199,852, 12–22–64, Cl. D34—15.

Johnson, Carl N.: *See*—
Judson, William V., and Johnson. 199,856.

Judson, William V., and C. N. Johnson, to General Electric Co. Clock or similar article. 199,856, 12–22–64, Cl. D42—7.

Knowles, Frederick G., to Eastman Kodak Co. Film transparency cutter-tacker. 199,872, 12–22–64, Cl. D61—1.

Lanigan, Richard W. Portable stand for projectors or the like. 199,871, 12–22–64, Cl. D61—1.

Lowry, Walter L., to Montgomery & Co., Inc. Height gage. 199,862, 12–22–64, Cl. D52—6.

Magers, Lloyd E., to Gaylord Bros., Inc. Mobile display stand or similar article. 199,880, 12–22–64, Cl. D80—9.

Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 199,863, 12–22–64, Cl. D54—12.

Mango, Joseph R., and M. Giannola, to Westinghouse Electric Corp. Casing for storage of an electric toothbrush power unit and brushes therefor. 199,836, 12–22–64, Cl. D4—3.

Margulis, Joseph M. Picture hook or similar article. 199,841, 12–22–64, Cl. D17—12.

Marola, Americo. Clothespin. 199,840, 12–22–64, Cl. D17—6.

Massaccesi, Raymond A.: *See*—
Deschamps, Robert L., and Massaccesi. 199,886.

McLeod, Charles A., to Sunbeam Corp. Clock. 199,857, 12–22–64, Cl. D42—7.

McLeod, Charles A., to Sunbeam Corp. Clock casing. 199,858, 12–22–64, Cl. D42—7.

Mermelstein, Alex S. Sun shade. 199,887, 12–22–64, Cl. D88—3.

Montgomery & Co., Inc.: *See*—
Lowry, Walter L. 199,862.

Mulligan, Charles T. Whistle indicator for football officials and the like. 199,878, 12–22–64, Cl. D72—1.

Neumann, Thomas J., and D. I. Burrell. Burial vault. 199,842, 12–22–64, Cl. D19—1.

Newman, James F., and J. W. Taylor, to United States Rubber Co. Tire. 199,889, 12–22–64, Cl. D90—20.

Noyes, Elliot F.: *See*—
Paxson, Richard W., Graf, Bevilacqua, and Noyes. 199,879.

Oneida Ltd.: *See*—
Manderfield, Ellen B. 199,863.

Osrow, Harold, to Osrow Products Co., Inc. Safety lock for pressurized spray cans. 199,870, 12–22–64, Cl. D58—26.

Osrow Products Co., Inc.: *See*—
Osrow, Harold. 199,870.

Owens-Illinois Glass Co.: *See*—
Roberts, Bruce L. 199,867.

Paxson, Richard W., R. E. Graf, E. M. Bevilacqua, and E. F. Noyes, to Cummins Engine Co., Inc. Marine engine. 199,879, 12–22–64, Cl. D77—1.

Peterson, Jerold R., to Sunbeam Corp. Humidifier. 199,873, 12–22–64, Cl. D62—4.

Pickel, Raymond F.: *See*—
Wellauer, Edward J., and Pickel. 199,865.

Platte, Richard L.: *See*—
Price, Clarence A., and Platte. 199,868.

Portanova, Joseph D., and D. D. Stellmacher, to Hoffman Electronics Corp. Emergency call system transmitter case or similar article. 199,876, 12–22–64, Cl. D72—1.

Price, Clarence A., and R. L. Platte, to Hoover Ball and Bearing Co. Bottle. 199,868, 12–22–64, Cl. D58—6.
Roberts, Bruce L., to Owens-Illinois Glass Co. Jug. 199,867, 12–22–64, Cl. D58—5.
Schreckengost, Viktor, and R. I. Haywood, to Harris-Intertype Corp. Paper cutting machine. 199,864, 12–22–64, Cl. D55—1.
Shure Bros., Inc.: *See*—
Deschamps, Robert L., and Massaccesi. 199,886.
Simpson, William G. Door handle or similar article. 199,839, 12–22–64, Cl. D10—8.
Smith, Virgil. Combined illuminable display sign and clock. 199,834, 12–22–64, Cl. D1—12.
Stark, Forest G.: *See*—
Ulrich, Charles B., Jr., and Stark. 199,847.
Stellmacher, Donald D.: *See*—
Portanova, Joseph D., and Stellmacher. 199,876.
Stevenson, Norman W., to V. & E. Friedland Ltd. Door chime. 199,875, 12–22–64, Cl. D72—1.
Stevenson, Norman W., to V. & E. Friedland Ltd. Door chime. 199,877, 12–22–64, Cl. D72—1.
Sullivan, Clinton C. Planter or similar article. 199,855, 12–22–64, Cl. D35—3.
Sullivan, George C. Firearm having a folding butt stock. 199,845, 12–22–64, Cl. D30—1.
Sunbeam Corp.: *See*—
McLeod, Charles A. 199,857.
McLeod, Charles A. 199,858.
Peterson, Jerold R. 199,873.
Taylor, John W.: *See*—
Newman, James F., and Taylor. 199,889.
Taylor, William C. Golf putter head. 199,850, 12–22–64, Cl. D34—5.
Trombley, Bertrand N., and C. V. Eicholtz, to The Dow Chemical Co. Bottle. 199,869, 12–22–64, Cl. D58—8.
Tubesing, William W.: *See*—
Whitehead, Richard K., Sr., R. K. Whitehead, Jr., and Tubesing. 199,890.
Tyrrell Industries, Inc.: *See*—
Tyrrell, Wallace B., Jr. 199,835.
Tyrrell, Wallace B., Jr., to Tyrrell Industries, Inc. Dress shield. 199,835, 12–22–64, Cl. D3—26.
Ulrich, Charles B., Jr., and F. G. Stark, to Art Metal, Inc. Combined filing cabinet and drafting table. 199,847, 12–22–64, Cl. D33—14.
United States Rubber Co.: *See*—
Newman, James F., and Taylor. 199,889.
Van Antwerp, Irma L. Holder for kitchen cooking utensils or the like. 199,860, 12–22–64, Cl. D44—29.
Wayman, William C. Smoker's accessory tray. 199,884, 12–22–64, Cl. D85—2.
Wellauer, Edward J., and R. F. Pickel, to The Falk Corp. Speed reducer housing or similar article. 199,865, 12–22–64.
Westinghouse Electric Corp.: *See*—
Mango, Joseph R., and Giannola. 199,836.
Whitehead, Richard K., Jr.: *See*—
Whitehead, Richard K., Sr., R. K. Whitehead, Jr., and Tubesing. 199,890.
Whitehead, Richard K., Sr., R. K. Whitehead, Jr., and W. W. Tubesing. Chain saw. 199,890, 12–22–64, Cl. D93—3.
Wunder, Charles J.: *See*—
Druz, Walter S., and Wunder. 199,883.
Zenith Radio Corp.: *See*—
Druz, Walter S., and Wunder. 199,883.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22ND DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Wahl, Frederick W. 3,162,501.
Aasen, Marvin D., and G. R. Hetrick, to United States of America, Navy. Frequency base AGC. 3,162,814, 12–22–64, Cl. 325—478.
Abild, Robert N., C. O. Broders, and H. S. Crim, to United Aircraft Corp. Rocket motor control system. 3,162,009, 12–22–64, Cl. 60—35.6.
Abramson, Paul, and H. C. Fox, to International Business Machines Corp. Magnetically actuated switching device. 3,162,738, 12–22–64, Cl. 200—87.
Accumulateurs Fixes et de Traction (Societe Anonyme), Societe des: *See*—
Jeannin, Robert A. A. 3,162,549.
Acker, Donald S., and D. C. Blomstrom, to E. I. du Pont de Nemours and Co. Charge-transfer compounds of 7,7,8,8-tetracyano-p-quinodimethan and c-hydrocarbyl substituted 7,7,8,8-tetracyano-p-quinodimethans with Lewis bases. 3,162,641, 12–22–64, Cl. 260—286.
Acme Steel Co.: *See*—
Culpepper, John W., Stahnke, and Winkler. 3,162,394.
Adams, Frederic H., and D. P. Wright, Jr., to American Cyanamid Co. Method of protecting plants and organic matter with substituted triazenes. 3,162,571, 12–22–64, Cl. 167—30.
Adamson, James M., to Cable Belt Ltd. Plate belt conveyors. 3,162,295, 12–22–64, Cl. 198—196.
Advertising Co., Inc.: *See*—
Newcomb, Harold and Schexnayder. 3,161,972.
Affolter, Auguste. Tool holder turret. 3,162,075, 12–22–64, Cl. 82—36.
Agfa Aktiengesellschaft: *See*—
Knorr, Roland, Kiper, and Fackler. 3,162,108.
Schellenberger, Hans, Pelz, Wahl, and Puschel. 3,162,643.
Aimes, Francis M. Devices including an openwork base frame for providing hanger support of writing implements. 3,162,313, 12–22–64, Cl. 211—60.
Air Reduction Co., Inc.: *See*—
Gardner, Frank H., and Codd. 3,162,192.
Air-Balance Corp.: *See*—
Van Court, Carl P., and Kinsman. 3,161,956.
Airpax Electronics Inc.: *See*—
Robinson, David A. 3,162,759.
Albertson, Robert V.: *See*—
Albertson, Victor N. and R. V. 3,162,048.
Albertson, Victor N. and R. V., to Minnesota Automotive, Inc. Pressure testing device. 3,162,048, 12–22–64, Cl. 73—420.
Albrecht, Wolfram, and W. Wagner, to Jos. Schneider & Co. Telephoto objective. 3,162,714, 12–22–64, Cl. 88—57.
Aldrich, Paul E., to E. I. du Pont de Nemours and Co. Trifluoromethyl vinyl ether and its polymers. 3,162,622, 12–22–64, Cl. 260—87.5.
Alexander, Doyle L.: *See*—
Scott, John N., Jr., and Alexander. 3,162,707.
Alford, Andrew. High frequency measuring system including automatic oscillator amplitude control means. 3,162,807, 12–22–64, Cl. 324—58.
Allegheny Ludlum Steel Corp.: *See*—
McLay, Alexander, and Weremeychik. 3,162,069.
Allen, Abbott, to United States of America, Atomic Energy Commission. Reactor and apparatus for control thereof. 3,162,578, 12–22–64, Cl. 176—36.
Allen, Howard G., and E. I. Fisher, to Bostitch, Inc. Fastener applying machine. 3,162,097, 12–22–64, Cl. 91—399.
Allen, Leslie J., E. J. Lorens, and W. J. Richardson, to International Business Machines Corp. Electronic packaging device. 3,162,788, 12–22–64, Cl. 317—101.
Allen-Stevens Corp.: *See*—
Crain, Philip. 3,161,923.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Wallin, Fritz. 3,162,321.
Alton Box Board Co.: *See*—
Swaim, Marvin W. 3,162,352.
Altovsky, Voldemar A., and P. R. J. Mondon, to Societe Nouvelle d'Electronique. Radar apparatus. 3,162,852, 12–22–64, Cl. 343—17.1.
Alvarez-Calderson, Alberto. Stability and control system and apparatus for aircraft. 3,162,402, 12–22–64, Cl. 244—42.
Amarillas, Lorenzo. Adjustable support. 3,162,416, 12–22–64, Cl. 248—244.
Amato, John, to Clermont Machine Co., Inc. Macaroni radial feed machine. 3,162,147, 12–22–64, Cl. 107—14.
American Air Filter Co., Inc.: *See*—
Gaines, William C., Jr. 3,162,209.
American Can Co.: *See*—
Rein, Arnold R., and Wendricks. 3,162,100.
Taylor, William E. 3,162,347.
American Cyanamid Co.: *See*—
Adams, Frederic H., and Wright. 3,162,571.
Blanchard, Thomas R. 3,162,049.
Luberoff, Benjamin J., and Gersumky. 3,162,625.
Shaw, John T. 3,162,633.
American Home Products Corp.: *See*—
Bagli, Jehan F. 3,162,655.
Davis, Martin A., and Herr. 3,162,646.
Morand, Peter F., Marshall, and Deghenghi. 3,162,630.
American Machine & Foundry Co.: *See*—
Dearsley, George. 3,162,545.
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American Motors Corp.: *See*—
Demas, Louis, and Tesch. 3,162,270.
American Optical Co.: *See*—
Baxinet, Wilfred P., Jr. 3,162,214.
Koester, Charles J., and Osterberg. 3,162,713.
Tackaberry, Robert B. 3,162,822.
American Radiator & Standard Sanitary Corp.: *See*—
Huston, William D. 3,162,375.
Kogan, Henry W., Budde, and Wisniewski. 3,162,335.
Ragland, Benjamin, and Patterson. 3,162,364.
Ametek, Inc.: *See*—
Morgan, Jack, and Zuck. 3,162,173.
Ampex Corp.: *See*—
Miller, Armin, and Goodrich. 3,162,565.
Stuart-Williams, Raymond. 3,162,845.
Amsco Packaging Machinery, Inc.: *See*—
Sylvester, John D., and Cignoli. 3,162,353.
Amsted Industries Inc.: *See*—
Farekas, Stephen E. 3,162,059.
Farekas, Stephen E. 3,162,073.
Andersen, Clifford W., to The Wurlitzer Co. Symmetrical bridle wire. 3,162,082, 12–22–64, Cl. 84—240.
Anderson, Arvin D., and R. A. Sanford, to Sinclair Research, Inc. Pretreatment and cracking of residual oils. 3,162,506, 12–22–64, Cl. 208—89.
Anderson, Donald J. Induction furnace with removable crucible. 3,162,710, 12–22–64, Cl. 13—27.
Anderson, Hubert J., to Automatic Welding Co. Portable welding apparatus. 3,162,750, 12–22–64, Cl. 219—130.
Anderson, John E., and I. W. Metzger, to Honeywell Inc. Pendulous gyroscopic accelerometers. 3,162,052, 12–22–64, Cl. 73—504.
Anderson, Mary A. Baby carriers. 3,162,343, 12–22–64, Cl. 224—6.
Anderson, Paul L., and J. A. Zagusta, to Rogers Corp. Method of making a printed circuit. 3,161,945, 12–22–64, Cl. 29—155.5.
Andrews, Carroll A., to International Business Machines Corporation. Electronic data processing machine control. 3,162,840, 12–22–64, Cl. 340—172.5.
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Theenhausen, Heinrich, and Siebrasse. 3,162,156.
Anthony, Myron L., to Scully-Anthony Corp. Automatic tool handling apparatus. 3,161,951, 12–22–64, Cl. 29—568.
Anthony, Silvio V. Caster. 3,161,907, 12–22–64, Cl. 16—18.
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Nakagomi, Takenari, Katsube, Seki, and Aono. 3,162,647.
Apri, Eduard V.: *See*—
Apri, Leida M., and Apri. 3,162,202.
Apri, Leida M. and E. V., to Rexall Drug and Chemical Co. Apparatus for opening a bobby pin. 3,162,202, 12–22–64, Cl. 132—1.
Arenco Aktiebolag: *See*—
Jansson, Ragnar, and Lilja. 3,162,200.
Argiro, Nicholas T. Hammer operated registration device for amusement centers. 3,162,440, 12–22–64, Cl. 272—76.
Arisawa, Kazuo, to Fuji Boiler Co., Ltd. Steam generating device. 3,162,180, 12–22–64, Cl. 122—451.
Armour and Co.: *See*—
Gordon, Norman D., and Schubert. 3,162,657.
Armstrong, William H., to Borg-Warner Corp. Overbed table. 3,162,150, 12–22–64, Cl. 108—147.
Arnel Industries, Inc.: *See*—
Gregory, Joseph J. 3,162,329.
Arvin Industries, Inc.: *See*—
Brighton, John G., and Fisher. 3,162,361.
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Arvintz, Abraham A., and Arvins. 3,162,358.
Arvintz, Abraham A., and N. A. Arvins. Draft inducers. 3,162,358, 12–22–64, Cl. 230—117.
Ashland Oil & Refining Co.: *See*—
Peterson, William R., and McNay. 3,162,612.
Atlantic Research Corp.: *See*—
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Choate, William C., Atlas, and Wilson. 3,162,368.
Atlas Pacific Engineering Co.: *See*—
Loveland, Malcolm W. 3,162,223.
Loveland, Malcolm W. 3,162,224.
Loveland, Malcolm W. 3,162,225.
Loveland, Malcolm W. 3,162,293.
Attanasio, Gino L., and F. H. Lambert, to Champlain-Zapata Plastics Machinery, Inc. Molding of expandable plastic pellets. 3,162,704, 12–22–64, Cl. 264—53.
Automatic Voting Machine Corp.: *See*—
Jazbutis, Anatolijus. 3,162,362.

Automatic Welding Co.: *See*—
Anderson, Hubert J. 3,162,750.

Avco Corp.: *See*—
Schmidt, Raymond F., and Brueneman. 3,162,828.

Ayers, Buell O., to Phillips Petroleum Co. Spinning band chromatographic column with falling film. 3,162,036, 12–22–64, Cl. 73—23.1.

Azoplate Corp.: *See*—
Hoegl, Helmut, and Neugebauer. 3,162,532.

Azzolari, Guido, to Societe Anonyme Fabrique National d'Armes de Guerre. Device for effecting the narrowing in knitting machines and such like. 3,162,027, 12–22–64, Cl. 66—48.

B & W Inc.: *See*—
Wright, Kenneth A. 3,162,246.

Babacz, Lewis J., to Telefilex Inc. Cable storage and drive mechanism. 3,162,425, 12–22–64, Cl. 254—175.7.

Babunovic, Momir, and J. C. Goessmann, to Barry-Wehmiller Machinery Co. Apparatus for removing labels from bottle washers. 3,162,204, 12–22–64, Cl. 134—74.

Badali, Joseph A., to Olin Mathieson Chemical Corp. Gun sight. 3,161,960, 12–22–64, Cl. 33—56.

Bagli, Jehan F., to American Home Products Corp. Synthesis of equilin. 3,162,655, 12–22–64, Cl. 260—397.4.

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MacLain, Manuel A. 3,162,833.

Bailey, Ned D.: *See*—
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Bakken, Joseph E. Billfold. 3,162,227, 12–22–64, Cl. 150—35.

Balash, Donald J., to The Dow Chemical Co. Core winding start device. 3,162,388, 12–22–64, Cl. 242—19.

Baltes, Josef, O. Wechmann, and F. Weghorst, to Harburger Fettchemie Brinckman & Mergell G.m.b.H. Process for catalytic isomerization of compounds of unconjugated polyethenoid acids. 3,162,658, 12–22–64, Cl. 260—405.6.

Balz, Gunther W., to Roto-Finish Co. Finishing apparatus and method. 3,161,998, 12–22–64, Cl. 51—163.

Balz, Gunther W. Finishing and polishing method. 3,161,997, 12–22–64, Cl. 51—316.

Bandy, Kenneth, L., and E. H. Rohrer, to The McKay Machine Co. Apparatus for cutting metal strip into sheets. 3,162,079, 12–22–64, Cl. 83—287.

Bantjes, Adriaan, to E. I. du Pont de Nemours and Co. Production of 2,4-dicyanothiophene. 3,162,650, 12–22–64, Cl. 260—329.

Banville, Roger O.: *See*—
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Barth, Heinz A., to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Method for heat treating welded metal plates. 3,162,555, 12–22–64, Cl. 148—145.

Bartos, Donald M., to Dow Corning Corp. Electric tape insulation and its application to conductor. 3,162,722, 12–22–64, Cl. 174—110.

Barusch, Edward J. Combination line penetrating valve device. 3,162,211, 12–22–64, Cl. 137—318.

Bassinger, Ross. Enclosed case mud percussion tool. 3,162,251, 12–22–64, Cl. 173—73.

Bath Iron Works Corp.: *See*—
Danyluke, Ostap. 3,162,382.
Danyluke, Ostap. 3,162,386.

Batti, Mario A., to Miles Laboratories, Inc. Process for the production of itaconic acid. 3,162,582, 12–22–64, Cl. 195—36.

Battista, Orlando A., to FMC Corp. Method of coloring foods and other materials and the resulting product. 3,162,541, 12–22–64, Cl. 106—165.

Bau, Robert G. Cosmetic stick container. 3,162,304, 12–22–64, Cl. 206—56.

Bauer, Philipp J., to Illinois Tool Works Inc. Container side wall printing apparatus. 3,162,115, 12–22–64, Cl. 101—39.

Baum, Bernard O., to Union Carbide Corp. Thermoplastic compositions having improved stress cracking properties. 3,162,698. 12–22–64, Cl. 260—897.

Bauman, Ralph M. Portable urine specimen collecting device. 3,161,891, 12–22–64, Cl. 4—110.

Bausch & Lomb Inc.: *See*—
Matthew, Morton P. 3,162,058.
Pegis, Richard J. 3,162,711.
Turner, Eugene L. 3,162,736.

Baxter, Joseph, Jr., to The Black-Clawson Co. Paper making pulp refiner. 3,162,385, 12–22–64, Cl. 241—163.

Bazinet, Wilfred P., Jr., to American Optical Co. Flexible tubular structures. 3,162,214, 12–22–64, Cl. 138—120.

Beam, Harry L.: *See*—
Riley, Robert H., Jr., and Beam. 3,161,954.

Beaty, Charles A., to Trak Microwave Corp. Miniature triode oscillator for high frequency operation. 3,162,823, 12–22–64, Cl. 331—97.

Beaver Tool & Engineering Corp.: *See*—
Iacco, Albert A. 3,162,457.

Beavon, David K., to Texaco Inc. Alkylation process with assisted deisobutanizing. 3,162,694, 12–22–64, Cl. 260—683.62.

Bebco Experimental & Mfg. Co.: *See*—
Jackson, Elmer W., Jr. 3,162,477.

Becher, Harold, and C. B. Hatfield, to Strato-Missiles, Inc. Positive displacement pump. 3,162,359, 12–22–64, Cl. 230—149.

Bechtold, Max F., to E. I. du Pont de Nemours and Co. Composition containing iron, molybdenum, silicon and selected low-melting metals. 3,161,948, 12–22–64, Cl. 29—182.5.

Beck, Henry N., to Dow Corning Corp. Silethylenesilarylenes and siloxane derivatives thereof. 3,162,663, 12–22–64, Cl. 260—448.2.

Becker, Bernard B., to Lewis-Shepard Co. Mechanism for extending and retracting a load supporting member on an industrial truck. 3,162,317, 12–22–64, Cl. 214—731.

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Rongved, Leif, and Yu. 3,162,396.
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Brown, Arthur K. J. 3,162,263.
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Betx, John. Adjustable trouser waist. 3,161,890, 12–22–64, Cl. 2—237.

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Downs, Walter M. 3,162,782.
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Bloomfield, Allan A., J. A. Carter, G. H. Jones, J. Saunders, and J. G. Searle, to British Nylon Spinners Ltd. Spinnerets for producing heterofilaments. 3,161,914, 12–22–64, Cl. 18—8.

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Montgomery, Byron D., and Gatewood. 3,162,284.
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Brien, Edith. Salvage system. 3,162,165, 12–22–64, Cl. 114—54.

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Choate, William C., J. D. Atlas, and J. A. Wilson, to Esso Research and Engineering Co. Sonic energy transducer. 3,162,368, 12–22–64, Cl. 239—102.

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Claywell, Jack W., and C. J. Pavlak, to Preway, Inc. Gas burner utilizing air above atmospheric pressure. 3,162,238, 12–22–64, Cl. 158—99.

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Davis, Martin A., and F. Herr, to American Home Products Corp. Spirohydantoin derivative. 3,162,646, 12–22–64, Cl. 260—309.5.

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Ganz, Daniel M., to Darrol Co. Adjustable display device. 3,162,148, 12–22–64, Cl. 108—10.

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Gilbertson, John E. Sanitary dispenser for cartridges holding fluid medicants. 3,162,322, 12–22–64, Cl. 221—135.

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Gludice, Sante. Smoke and heat operated electrical alarm device. 3,162,846, 12–22–64, Cl. 340—237.

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Glass, Fred T., to Roberts Co. Stop motion for twisting frame or the like. 3,162,005, 12–22–64, Cl. 57—84.

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Graham, Phillip. Flexible panel form for thin shells. 3,161,938, 12–22–64, Cl. 25—121.

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Gratzmuller, Jean L. Device for cooling internal combustion motors. 3,162,183, 12–22–64, Cl. 123—41.08.

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Gregory, Joseph J., to Arnel Industries, Inc. Valve protecting cap for aerosol-type containers. 3,162,329, 12–22–64, Cl. 222—182.

Gremigni, Giuseppe, to Francaise Eternit Societe Anonyme. Machine for injection molding hollow articles from a moist mixture of fibers and hydraulic binder. 3,161,934, 12–22–64, Cl. 25—30.

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Gurton, Owen A., and A. M. Yuill, to Imperial Chemical Industries Ltd. Self-pressurizing detonators. 3,162,122, 12–22–64, Cl. 102—28.

Gustin, Daniel S., to Sylvania Electric Products Inc. Fabrication of incadescent lamps. 3,162,499, 12–22–64, Cl. 316—24.

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Hastings, Warren S. Sign mounting means for a vehicle bumper. 3,161,973, 12–22–64, Cl. 40—129.

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Hayes, Ernest R., to Shawinigan Chemicals Ltd. Aqueous peracetic acid recovery. 3,162,678, 12–22–64, Cl. 260—502.

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Herzog, Gerald B., to Radio Corp. of America. Resonator with intermediate diode oscillator or amplifier. 3,162,824, 12–22–64, Cl. 331—107.

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Aasen, Marvin D., and Hetrick. 3,162,814.

Hewitt, Harlan D. Automobile construction for safely decelerating passengers upon high speed impact. 3,162,479, 12–22–64, Cl. 296—35.

Hewit, William D.: *See*—
Thompson, Theodore F. 3,162,139.

Hexdall, Andrew M. Bar hanger. 3,162,413, 12–22–64, Cl. 248—71.

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Hitch, Robert A., Bertolini, and Smith. 3,162,320.

Hill, Penny. Float for babies or young children. 3,161,897, 12–22–64, Cl. 9—347.

Hilsenrath, Manfred, and R. C. Paulsen, to International Business Machines Corp. High speed transistor amplifying switch having isolating and second transistor turn-off means. 3,162,771, 12–22–64, Cl. 307—88.5.

Hinze, Otto, to Hico Corp. of America. Falsework girder. 3,162,280, 12–22–64, Cl. 189—37.

Hitachi, Ltd.: *See*—
Doi, Toshio. 3,162,529.

Hitch, Robert A., W. A. Bertolini, and C. O. Smith, to Highway Trailer Industries, Inc. Body member connecting mechanism. 3,162,320, 12–22–64, Cl. 220—23.4.

Hobson, Lawrence M., to Dor-File Mfg. Co. Rack for shelf brackets. 3,162,312, 12–22–64, Cl. 211—59.

Hoegl, Helmut, and W. Neugebauer, to Azoplate Corp. Photoconductive layers for electrophotographic purposes. 3,162,532, 12–22–64, Cl. 96—1.

Hogg, William J., and B. Cates, to Patchogue-Plymouth Corp. Automatic scavenger for paper yarn machine. 3,162,004, 12–22–64, Cl. 57—31.

Hoke, Walter M., to The Boeing Co. Air vehicle carriage gear assembly. 3,162,403, 12–22–64, Cl. 244—100.

Hokunoki Co. Ltd.: *See*—
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Holland, James G.: *See*—
Cobi, Walter H. 3,162,252.

Holleran, Charles R., to International Business Machines Corp. Instruction counter system. 3,162,841, 12–22–64, Cl. 340—172.5.

Holmes, Trent H.: *See*—
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Holt, Francis R., to Radio Corp. of America. Modulation system for multiplex frequency-modulation signal transmitter. 3,162,729, 12–22–64, Cl. 179—15.

Holt, Ira T., and H. E. Widdows, to United States of America, Atomic Energy Commission. Ram air inflated flotation bag. 3,161,896, 12–22–64, Cl. 9—8.

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Honeywell Inc.: *See*—
Anderson, John E., and Metzger. 3,162,052.
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Hoots, James M.: *See*—
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Hopkins, Thomas R.: *See*—
Pullen, Joe W., and Hopkins. 3,162,653.

Hoppmann, Alfons: *See*—
Paul, Siegfried, and Hoppmann. 3,162,859.

Hopwood, Thomas, to Hawker Siddeley Aviation Ltd. Aircraft and lift devices therefor. 3,162,401, 12–22–64, Cl. 244—42.

Horan, John J. Propulsion means for watercraft. 3,162,181, 12–22–64, Cl. 123—41.01.

Horlen, Anders R., to Regulator A.G. Combined distribution valve and pump. 3,162,128, 12–22–64, Cl. 103—2.

Hornschuch, Hanns, and J. R. Webb, to Ingersoll-Rand Co. Vacuum cleaning head. 3,161,900, 12–22–64, Cl. 15—345.

Horowitz, Irving, to Blonder Tongue Electronics. Transistor inter-stage coupling circuit. 3,162,820, 12–22–64, Cl. 330—21.

Horsley, Lee H., and D. P. Sheetz, to The Dow Chemical Co. Purification of glycol esters. 3,162,677, 12–22–64, Cl. 260—486.

Houghton, Norman F., to Philco Corp. Forming apparatus. 3,161,916, 12–22–64, Cl. 18—19.

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Houser, Roy W., to Robertshaw Controls Co. Pneumatic dispenser. 3,162,324, 12–22–64, Cl. 222—18.

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Howard, Edward G., Jr., to E. I. du Pont de Nemours and Co. 3,4-dicyano-2,5-diketopyrroline and its N-alkyl derivatives. 3,162,649, 12–22–64, Cl. 260—326.5.

Howard, George C., and C. R. Fast, to Pan American Petroleum Corp. Apparatus for lining casing. 3,162,245, 12–22–64, Cl. 166—63.

Howard, Robert C.: *See*—
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Conow, Arthur W., and Howard. 3,162,046.

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Westcott, Horace C., and Ryde. 3,162,391.

Hubbard, Arthur T., to Swedlow Inc. Electrical transducer. 3,162,832, 12–22–64, Cl. 338—85.

Huett, George C., H. L. Briggs, and C. B. Lawyer, to Eugene Dietzgen Co. Thermographic reproduction paper, method of making and method of using. 3,162,763, 12–22–64, Cl. 250—65.

Huffman, Chester A. Wind velocity alarm. 3,162,847, 12–22–64, Cl. 340—241.

Hughes, Alvin W. Sausage stuffing machine. 3,161,910, 12–22–64, Cl. 17—39.

Hughes Tool Co.: *See*—
Hall, Leland V. 3,162,432.

Humphries, John B., to The Excelsior Hardware Co. Double action latch. 3,162,034, 12–22–64, Cl. 70—70.

Hupp Corp.: *See*—
La Pointe, Joseph L. 3,162,429.
Ravich, Leonard E. 3,162,556.
Wilkerson, Rufus. 3,162,430.

Hurst, Robert E., to The Dow Chemical Co. Method of measuring permeability of fractured subterranean formations. 3,162,037, 12–22–64, Cl. 73—38.

Huston, William D., to American Radiator & Standard Sanitary Corp. Instrument illuminating means. 3,162,375, 12–22–64, Cl. 240—8.16.

Hutchins, Peter D. T., and P. T. Stainforth, to Imperial Chemical Industries Ltd. Transportable container. 3,162,331, 12–22–64, Cl. 222—184.

Hyde, James F.: *See*—
Brown, Paul L., and Hyde. 3,162,662.

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Iacco, Albert A., to Beaver Tool & Engineering Corp. Axially adjustable cutting tool. 3,162,457, 12-22-64, Cl. 279—91.

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Woolslayer, Homer J., Jenkins, and Iddings. 3,162,464.

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Illinois Tool Works, Inc.: *See*—
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Imac Corp.: *See*—
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Dickson, Francis A., and Stainforth. 3,162,330.
Gurton, Owen A., and Yuill. 3,162,122.
Hutchins, Peter D. T., and Stainforth. 3,162,331.
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McArthur, William, and Marchant. 3,162,599.

Imperial Chemical Industries of Australia: *See*—
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Indelicato, Vincent. Spray device. 3,162,194, 12-22-64, Cl. 128—261.

Industrial Electronic Hardware Corp.: *See*—
Pittman, Robert B. 3,162,500.

Industrial Tectronics, Inc.: *See*—
Hanau, Heinz. 3,162,493.

Ingber, Oscar H. Optical device for measuring the width or diameter of fixed or movable tapes, wires, tubes, bars and the like. 3,162,712, 12-22-64, Cl. 88—14.

Ingersoll-Rand Co.: *See*—
Hornschuch, Hanns, and Webb. 3,161,900.

Ingold, Hans Arrangement for storing objects in movable receptacles. 3,162,144, 12-22-64, Cl. 104—162.

Instant Fold Products, Inc.: *See*—
Silver, Julian. 3,161,887.

Interchemical Corp.: *See*—
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International Business Machines Corp.: *See*—
Abramson, Paul, and Fox. 3,162,738.
Allen, Leslie J., Lorenz, and Richardson. 3,162,788.
Andrews, Carroll A. 3,162,840.
Birkenbeil, Hans J. 3,161,946.
Brock, Geoffrey E., and Silvey. 3,162,557.
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International Paper Co.: *See*—
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International Register Co.: *See*—
Gardes, Alfred W., and Rosenski. 3,162,733.

International Standard Electric Corp.: *See*—
Cattermole, Kenneth W., and Price. 3,162,843.

Irons, Jeffery D., to Union Tank Car Co. Flame arrestor burner. 3,162,239, 12-22-64, Cl. 158—112.

Irons, Jeffery D., to Union Tank Car Co. Contactor for treating fluids. 3,162,700, 12-22-64, Cl. 261—114.

Irving Air Chute Co., Inc.: *See*—
Pragnell, John J. M. 3,162,485.

Irving, Keith. Permanent wick structure. 3,162,030, 12-22-64, Cl. 67—70.

Izquierdo, Federico de los Santos, and R. D. Gomez. Grinding mills. 3,162,383, 12-22-64, Cl. 241—54.

Jackson, Elmer W., Jr., to Bebco Experimental & Mfg. Co. Camp trailer. 3,162,477, 12-22-64, Cl. 296—23.

Jackson, James A. and Walter L. Self-propelled dart. 3,162,444, 12-22-64, Cl. 273—106.5.

Jackson, Walter L.: *See*—
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Jackson, Wilbur F., and J. W. Wright, to Robertshaw Controls Co. Thermally actuated valve. 3,162,366, 12-22-64, Cl. 236—48.

Jacoby, William F., to American Machine & Foundry Co. Bicycle chain guard. 3,162,062, 12-22-64, Cl. 74—611.

James, Rudy A. Purse seining method and apparatus. 3,161,980, 12-22-64, Cl. 43—4.5.

Jandasek, Vladimir J., to Ford Motor Co. Plural turbine hydrokinetic torque converter. 3,162,016, 12-22-64, Cl. 60—54.

Jansons, Arnolds, to United States of America, Navy. Transistorized linear alternating current servo compensator and quadrature rejector. 3,162,773, 12-22-64, Cl. 307—88.5.

Jansson, Ragnar, and L. E. Lilja, to Arenco Aktiebolag. Tobacco foil and a process for its production. 3,162,200, 12-22-64, Cl. 131—17.

Jarman-Williamson Co.: *See*—
Krell, Herbert L. 3,162,461.

Jarvis, Jay P., and E. S. Vartanian, to Olin Mathieson Chemical Corp. Breech block locking bolt for a gun. 3,161,977, 12-22-64, Cl. 42—21.

Jasionowski, Joseph J., to Ferro Corp. Plug-in oven units. 3,162,754, 12-22-64, Cl. 219—403.

Jazbutis, Anatolijus, to Automatic Voting Machine Corp. Voting machine and system. 3,162,362, 12-22-64, Cl. 235—54.

Jeannin, Robert A. A., to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Process for manufacturing electrodes for primary and secondary cells and cells produced therewith. 3,162,549, 12-22-64, Cl. 136—175.

Jefferys, Albert G., to Molins Machine Co. Ltd. Apparatus for applying patches of adhesive to blanks in automatic machines. 3,162,546, 12-22-64, Cl. 118—212.

Jeffrey, Richard C.: *See*—
Cypser, Rudolph J., Hopkins, Housman, Jeffrey, and Ross. 3,162,839.

Jenkins, Cecil: *See*—
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Jenny, Erwin F.: *See*—
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Jet Research Center, Inc.: *See*—
Zabel, Norman R., and Brink. 3,161,958.

Jeung, Jasper L.: *See*—
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John, Heinz, to Maschinenfabrik Benninger A.-G. Method of uniting warps. 3,161,941, 12-22-64, Cl. 28—72.5.

Johnson, Francis, and A. A. Carlson, to The Dow Chemical Co. Process for preparing dehydroisocycloheximides. 3,162,638, 12-22-64, Cl. 260—281.

Johnson & Johnson: *See*—
Zackheim, Eli A. 3,162,306.

Johnson, Kenneth R., C. J. Beert, R. G. Nutting, K. K. Christensen, and R. C. Wagner, to Bartelt Engineering Co., Inc. Dispensing mechanism. 3,162,219, 12-22-64, Cl. 141—135.

Johnston, Norah C.: *See*—
Callow, Ronert K., Butler, and Johnston. 3,162,659.

Jonas, Heinz: *See*—
Richert, Hans, Schrader, and Jonas. 3,162,672.

Jones, Geoffrey H.: *See*—
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Jones, Giffin D.: *See*—
Zimmerman, Robert L., and Jones. 3,162,696.

Jones, Jennings H., and M. R. Fenske, to Esso Research and Engineering Co. Liquid phase oxidation of alkyl-substituted aromatics. 3,162,683, 12-22-64, Cl. 260—524.

Jones, Loyd W., to Pan American Petroleum Corp. Paraffin removal and prevention. 3,162,601, 12-22-64, Cl. 252—8.3.

Jones, R. A., & Co., Inc.: *See*—
Dieter, Julian A. 3,162,294.

Jones, William C., to The Chemical Corp. Method of controlling chromate conversion coating baths. 3,162,207, 12-22-64, Cl. 137—5.

Jonker Business Machines, Inc.: *See*—
Jonker, Frederick. 3,162,468.

Jonker, Frederick, to Jonker Business Machines, Inc. Integration of superimposable cards. 3,162,468, 12-22-64, Cl. 281—43.

Joor, William E., II, to Wyatt Industries, Inc. Bubble tray. 3,162,701, 12-22-64, Cl. 261—114.

Joy Mfg. Co.: *See*—
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Jucker, Ernst, and A. J. Lindenmann, to Fidelity Union Trust Co. Thienylalkyl esters of 3-sulphamyl-4-chlorobenzoic acid. 3,162,651, 12-22-64, Cl. 260—332.2.

Julian, Clarence L., to General Motors Corp. Spring support for ignition distributor breaker contact apparatus. 3,162,732, 12-22-64, Cl. 200—30.

Juneau, Lindsey P. Electro-mechanical tampers. 3,162,102, 12-22-64, Cl. 94—49.

Junker, Arnold E., ½ to H. W. Friedman. Air-borne auto gyro toy. 3,161,988, 12-22-64, Cl. 46—75.

K-F Products, Inc.: *See*—
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KSM Products Inc.: *See*—
Ritter, Ralph K., and English. 3,162,746.

Kach, Peter H. Tool clearance overlay. 3,161,957, 12-22-64, Cl. 33—1.

Kaiser, Paul: *See*—
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Kamen, Susan K., and W. L. Rubin, to Sperry Rand Corp. System for determining the quotient of two amplitude modulated signals. 3,162,758, 12-22-64, Cl. 235—196.

Kamen, Susan K., and W. L. Rubin, to Sperry Rand Corp. Single channel monopulse radar receiver. 3,162,851, 12-22-64, Cl. 343—16.

Kaplan, Arnold J.: *See*—
Kaye, Milton S., and Kaplan. 3,161,889.

Kapteyn, Paul, to Loewe Opta A.G. Circuit arrangements of electronic flash units for photographic purposes. 3,162,786, 12-22-64, Cl. 315—241

Karlik, Laddie. Universal exerciser. 3,162,441, 12-22-64, Cl. 272—80.

Karlik, Laddie. Universal exerciser. 3,162,442, 12-22-64, Cl. 272—80.

Katchman, Arthur, to General Electric Co. Process for making benzene-soluble phenyl silsesquioxane. 3,162,614, 12-22-64, Cl. 260—46.5

Katsube, Junki: *See*—
Nakagome, Takenari, Katsube, Seki, and Aono. 3,162,647.

Katz, Alex J., to Super Sagless Spring Corp. Reclining furniture and reclining mechanism therefor. 3,162,482, 12-22-64, Cl. 297—85.

Katz, Isadore H. Thermal insulating blanket for concrete curing. 3,162,566, 12-22-64, Cl. 161—43.

Kauer, Kenneth C., to The Dow Chemical Co. O-aryl S-aryl phosphoramidodithioates. 3,162,666, 12-22-64, Cl. 260—461.

Kaufmann Awning Corp.: *See*—
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Kaufmann, Ernst, to Gebrueder Buehler. Method for producing alimentary paste foods from starchy flours of low protein content. 3,162,536, 12-22-64, Cl. 99—85.

Kaye, Milton S., and A. J. Kaplan. Ventilated cap. 3,161,889, 12-22-64, Cl. 2—209.4.

Kehl, Elisabeth K.: *See*—
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Keller, Martin, to K-F Products, Inc. Attachment for milling machines. 3,162,091, 12-22-64, Cl. 90—17.

Kelly, Norman A., to Crystal Preforming and Packaging, Inc. Container closure construction. 3,162,349, 12-22-64, Cl. 229—17.

Kemco Pump Division of the American Crucible Products Co.: *See*—
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Kendall Co., The: *See*—
Samour, Carlos M. 3,162,610.

Kendall, Earl W., to Rohr Corp. Secondary deoxidiser for aluminum and its alloys. 3,162,547, 12-22-64, Cl. 134—3.

Kennedy, Edwin K., and W. F. Schofield, to Pratt & Whitney Co., Inc. Multiple adjustable tool holder. 3,162,074, 12-22-64, Cl. 82—24.

Kent, Thomas B., to Imperial Chemical Industries Ltd. Sample injection for analysis. 3,162,035, 12-22-64, Cl. 73—23.1.

Kimberly-Clark Corp.: *See*—
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Kimbrough, Lud H., Jr., to Ideal Fishing Float Co., Inc. Hang-up display device with pilfer proof slide cover box. 3,162,309, 12-22-64, Cl. 206—80.

King-Seeley Thermos Co.: *See*—
Relph, James M., and Minkler. 3,162,022.

Kinsella Howard R., Jr., to White-Rodgers Co. Water heater and control therefor. 3,162,752, 12-22-64, Cl. 219—320.

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Kiper, Gerd: *See*—
Knorr, Roland, Kiper, and Fackler. 3,162,108.

Kirk, Chester E.: *See*—
Raab, Owen E., and Kirk. 3,162,220.

Kirsten, Paul A. Cutter head for cylinder type flakers. 3,162,222, 12-22-64, Cl. 144—172.

Kleffman, Mildred. Furniture-ensemble retaining device. 3,162,484, 12-22-64, Cl. 297—248.

Klein, Keith W., and D. B. Powell, to General Electric Co. Electric circuit breaker with improved trip means. 3,162,739, 12-22-64, Cl. 200—88.

Klein, Keith W., and D. B. Powell, to General Electric Co. Circuit breaker with latching type auxillary tripping means. 3,162,740, 12-22-64, Cl. 200—106.

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Vicenzi, Reno L., and Kleinheinz. 3,162,742.

Kline, Leo, and T. F. Sugihara, to United States of America, Agriculture. Drying of yolk-containing egg liquid. 3,162,540, 12-22-64, Cl. 99—210.

Kling, Nelson G., to Technicon Instruments Corp. Pump. 3,162,132, 12-22-64, Cl. 103—50.

Klockner-Humboldt-Deutz Aktiengesellschaft: *See*—
Müller, Franz, Deussner, and Brachthäuser. 3,162,431.

Klosa, Josef. 2-methyl-3-(2'-methyl-3'-chlorophenyl)-quinazolone-(4). 3,162,634, 12-22-64, Cl. 260—251.

Kluge, Hazel E.: *See*—
Petersen, James M., Reed, and Kluge. 3,162,670.
Petersen, James M., Reed, and Kluge. 3,162,671.
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Reed, David D., Petersen, and Kluge. 3,162,668.
Reed, David D., Petersen, and Kluge. 3,162,669.

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Reed, David D., Petersen, and Kluge. 3,162,669.

Klusmire, Galen J., to The Dow Chemical Co. Packaging. 3,161,999, 12-22-64, Cl. 53—30.

Knight, John P. Ink transfer. 3,162,290, 12-22-64, Cl. 197—151.

Knippel, Willis H., and W. R. Shaver, to Pullman Inc. Compartmentizer suspension and operating arrangement. 3,162,146, 12-22-64, Cl. 105—376.

Knoblock, John E., to Ford Motor Co. Valve stem oil seal. 3,162,185, 12-22-64, Cl. 123—188.

Knorr, Roland, G. Kiper, and F. Fackler, to Agfa Aktiengesellschaft. Photographic flash synchronizing assembly. 3,162,108, 12-22-64, Cl. 95—11.5.

Knowles, Edwin C., and W. M. Sweeney, to Texaco Inc. Super-polyester lubricant composition. 3,162,602, 12-22-64, Cl. 252—47.

Knudson, Russell A., and N. D. Bailey. Means for cleaning dairy barn vacuum lines. 3,162,427, 12-22-64, Cl. 259—4.

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Koester, Charles J., and H. Osterberg, to American Optical Co Interference microscope. 3,162,718, 12-22-64, Cl. 88—39.

Kogan, Henry W., J. C. Budde, and A. J. Wisniewski, to American Radiator & Standard Sanitary Corp. Adjustable liquid dispenser. 3,162,335, 12-22-64, Cl. 222—212.

Kohn, Jack A., R. O. Savage, Jr., and A. Tauber, to United States of America, Army. Method of growing iridium substituted single crystal using bismuth oxide flux. 3,162,608, 12-22-64, Cl. 252—62.5.

Kohner Bros., Inc.: *See*—
Stuhlmann, Albert, and Kohner. 3,161,986.

Kohner, Frank: *See*—
Stuhlmann, Albert, and Kohner. 3,161,986.

Kolb, Erich, and K. Groetzner, to Robert Bosch, G.m.b.H. Wiper assembly for windshields or the like. 3,161,901, 12-22-64, Cl. 15—250.02.

Kolkau, Richard R.: *See*—
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Komatsu, Eiichi: *See*—
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Konrad, Eugene W., to Ford Motor Co. Gearing with fluid pressure operated friction clutch. 3,162,063, 12-22-64, Cl. 74—763.

Koons, Charles W., to The New York Air Brake Co. Fluid distribution system. 3,162,095, 12-22-64, Cl. 91—414.

Koons, Theodore R., and C. B. Pittinger, to The Black and Decker Mfg. Co. Hole saw. 3,162,067, 12-22-64, Cl. 77—69.

Köppen, Heinz, and W. Günther, to Zeiss Ikon Aktiengesellschaft. Photographic camera provided with an automatic flash exposure mechanism. 3,162,111, 12-22-64, Cl. 95—64.

Koppers Co., Inc.: *See*—
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Koranda, Clarence J., and W. E. Fritz, to Enterprise Railway Equipment Co. Hopper outlet construction. 3,162,490, 12-22-64, Cl. 302—52.

Körner, Lothar: *See*—
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Kraska, Milton A., and G. P. Gaullen, to Ford Motor Co. Glass run guide. 3,162,281, 12-22-64, Cl. 189—72.

Krauss, Robert E., and V. Georgeff, to Danly Machine Specialties, Inc. Die cushion locking and pull down cylinder. 3,162,139, 12-22-64, Cl. 113—45.

Kraven, Max, to Cooper, Tinsley Laboratories, Inc. Method of sealing two-piece gelatin capsules. 3,162,000, 12-22-64, Cl. 53—37.

Kreisman, Wallace S., to Geophysics Corporation of America. Magnetron type mass spectrometer. 3,162,760, 12-22-64, Cl. 250—41.9.

Krell, Herbert L., to Jarman-Williamson Co. Golf player's rest. 3,162,461, 12-22-64, Cl. 280—47.19.

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McCafferty, Edward A., to The National Marking Machine Co. Fluorescent pigments. 3,162,642, 12–22–64, Cl. 260—304.

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Meinecke, Erich. Boring apparatus for removing undisturbed test samples of soil. 3,162,256, 12–22–64, Cl. 175—252.

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Cohn, Morris I., and Perdue. 3,162,380.
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Mogensen, Harry, to Radio Corp. of America. Sequential pulse generator employing first and second delay means controlling pulse duration and spacing, respectively. 3,162,815, 12–22–64, Cl. 328—62.

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Montgomery, Joseph H. Portable aggregate screening and transporting apparatus. 3,162,600, 12–22–64, Cl. 209—259.

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Moore, Carl, and W. F. Tousignant, to The Dow Chemical Co. Water-insoluble pyrrolidinone resins and method of preparation. 3,162,624, 12–22–64, Cl. 260—88.1.

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Morgan, Ruth M., ½ to Agnes Wagoner. Convenience cabinet unit. 3,162,496, 12–22–64, Cl. 312—228.

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Mullins, John A., and A. C. Maguire, to Rolls-Royce Ltd. Deflecting jet discharge nozzles for jet propulsion engines. 3,162,011, 12–22–64, Cl. 60—35.55.

Mulvey, Louis B. Electrical system useful for intrusion alarm with selective sensitivity. 3,162,848, 12–22–64, Cl. 340—258.

Munschauer, Frederick E., Jr., and G. H. Trautman, Jr., to Niagara Machine & Tool Works. Multiple depth control for power press brakes. 3,162,232, 12–22–64, Cl. 153—21.

Murphy, Donald D., to Joy Mfg. Co. Conveyor. 3,162,298, 12–22–64, Cl. 198—137.

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Nakagome, Takenari, J. Katsube, T. Seki, and S. Aono, to Sumitomo Chemical Co., Ltd. 4,5-dialenyloxy-2-imidazolidinones and method of preparing same. 3,162,647, 12–22–64, Cl. 260—309.7.

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Petersen, James M., Reed, and Kluge. 3,162,671.
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Swett, James B., to Rexall Drug and Chemical Co. Holder for sheet material and the like. 3,161,929, 12–22–64, Cl. 24—73.

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Tallaksen, Robert R. Adjustable grill unit. 3,162,113, 12–22–64, Cl. 99—446.

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Tel-Air Corp.: *See*—
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Theodorou, Ignatius E. Hair clipper attachment. 3,161,953, 12–22–64, Cl. 30—202.

Thiel, Alfons W. Apparatus for the production of thin-walled plastic articles. 3,161,915, 12–22–64, Cl. 18—19.

Thigpen, Thomas A., Jr., and J. K. Warkentin, to Phillips Petroleum Co. Producing noncorrosive mercaptan product. 3,162,688, 12–22–64, Cl. 260—609.

Thomas, Alan H., W. S. Briggs, and D. S. Henderson, to W. R. Grace & Co. Lead removal device. 3,162,518, 12–22–64, Cl. 55—316.

Thomas, Harold A., and C. E. Clifford, to General Dynamics Corp. Rod drive system for use with negative temperature coefficient reactor. 3,162,579, 12–22–64, Cl. 176—36.

Thomas, Richard O., J. V. Duffy, and W. D. Stewart, to Atlantic Research Corp. Polyamide based solid propellants. 3,162,559, 12–22–64, Cl. 149—19.

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Toby, Max E. and D. J., to Toby Enterprises. Slicing machine feed apparatus. 3,162,226, 12–22–64, Cl. 146—95.

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Triolo, Louis. Phonograph record envelope. 3,162,356, 12–22–64, Cl. 229—68.

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Trotman, Herbert H., to Phillips Petroleum Co. Hinged and marginally stiffened under-body ventilating pad. 3,162,488, 12–22–64, Cl. 297—453.

Trotman, Herbert H., to Phillips Petroleum Co. Forced air under-body ventilating pad devices. 3,162,489, 12–22–64, Cl. 297—453.

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Turner, Charles F., to Olin Mathieson Chemical Corp. Liquid propellant cartridge. 3,162,123, 12–22–64, Cl. 102—39.

Turner, Eugene L., to Bausch & Lomb Inc. Fluid flow responsive timing mechanism. 3,162,736, 12–22–64, Cl. 200—81.9.

Tutthill, Fred E., to Kemco Pump Division of the American Crucible Products Co. Breatherless pressure responsive liquid level control. 3,162,737, 12–22–64, Cl. 200—83.

Tweit, Robert C., to G. D. Searle & Co. N-(arylthioalkyl)-aralkylamines. 3,162,687, 12–22–64, Cl. 260—570.5.

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Van Dalen, Johannes J., and J. Kunnen, to North American Philips Co., Inc. Piezo-electrical quartz crystal in evacuated glass housings. 3,162,780, 12–22–64, Cl. 310—8.9.
Van der Lely, Piet, to North American Philips Co., Inc. Gramophone comprising a turntable. 3,162,448, 12–22–64, Cl. 274—10.
Van Haaften, Egbert, to Bulova Watch Co., Inc. Tuning fork for electronic timepiece. 3,162,006, 12–22–64, Cl. 58—23.
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Verbeek, Hendrik J., to North American Philips Co., Inc. Arrangement for separating in a solid state constituents from a gas mixture. 3,162,517, 12–22–64, Cl. 55—269.
Verbeek, Leo H., to North American Philips Co., Inc. Electric lamp base construction. 3,162,502, 12–22–64, Cl. 339—144.
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Viard, Marcel. Sprayer having a reservoir with a spray head mounted tightly thereon. 3,162,372, 12–22–64, Cl. 239—354.
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Vicenzi, Reno L., and J. A. Kleinheinz, to Controls Co. of America. Thermally actuated arcuate strip type control device. 3,162,742, 12–22–64, Cl. 200—137.
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Voetter, Ulrich E., to Schlumberger Well Surveying Corp. Bore logging apparatus including conductive housings, mechanically coupled by an electrically insulating binding agent. 3,162,806, 12–22–64, Cl. 324—10.
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Von Elsenhart-Rothe, Gunther, to Verinigte Filzfabriken AG. Collar linings on men's and ladies' garments. 3,161,888, 12–22–64, Cl. 2—98.
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Vosburg, John F. Apparatus for cutting rubber and the like. 3,162,090, 12–22–64, Cl. 90—11.
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Walkling, Ernest S., to Bristol Siddeley Engines, Ltd. Jacking system for gas bearings. 3,162,492, 12–22–64, Cl. 308—122.
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CLASSIFICATION OF PATENTS

ISSUED DECEMBER 22, 1964

NOTE.—First number, class; second number, subclass; third number, patent number

1 – 343	3,161,886	40 – 12	3,161,972	74 – 84	3,162,055	103 – 38	3,162,131	141 – 27	3,162,217	182 – 182	3,162,266
2 – 88	3,161,887	129	3,161,973	86	3,162,056	50	3,162,132	72	3,162,218	184 – 5	3,162,267
98	3,161,888	130	3,161,974	243	3,162,057	52	3,162,133	135	3,162,219		3,162,268
209.4	3,161,889	152	3,161,975	354	3,162,058	53	3,162,134	143 – 174	3,162,220	6	3,162,269
237	3,161,890	42 – 5	3,161,976	371	3,162,059	103	3,162,135	144 – 134	3,162,221	188 – 2	3,162,270
4 – 110	3,161,891	21	3,161,977	523	3,162,060	111	3,162,136	172	3,162,222	73	3,162,271
5 – 5	3,161,892	25	3,161,978	606	3,162,061	120	3,162,137	146 – 27	3,162,223		3,162,272
120	3,161,893	79	3,161,979	611	3,162,062	126	3,162,138	28	3,162,224	78	3,162,273
296	3,161,894	43 – 4.5	3,161,980	763	3,162,063	130	3,162,139	52	3,162,225	90	3,162,274
9 – 1	3,161,895	9	3,161,981	822	3,162,064	131	3,162,140	95	3,162,226	129	3,162,275
8	3,161,896	43.1	3,161,982	75 – 65	3,162,526	136	3,162,141	148 – 6.14	3,162,550	152	3,162,276
347	3,161,897	44.9	3,161,983	122.5	3,162,527	162	3,162,142	24	3,162,551	189 – 1	3,162,277
12 – 1	3,161,898	85	3,161,984	122.7	3,162,528	179	3,162,143	32	3,162,552		3,162,278
13 – 27	3,162,710	129	3,161,985	153	3,162,529	104 – 162	3,162,144	112	3,162,553	36.5	3,162,279
15 – 23	3,161,899	46 – 31	3,161,986	214	3,162,530	105 – 355	3,162,145	113	3,162,554	37	3,162,280
250.02	3,161,901	40	3,161,987	226	3,162,531	376	3,162,146	145	3,162,555	72	3,162,281
250.34	3,161,902	75	3,161,988	76 – 104	3,162,065	106 – 165	3,162,541	174	3,162,556	76	3,162,282
345	3,161,900	47 – 37	3,161,989	77 – 62	3,162,066	200	3,162,542	191	3,162,557	192 – 34	3,162,283
506	3,161,903	50 – 100	3,161,990	69	3,162,067	107 – 14	3,162,147	149 – 2	3,162,558	69	3,162,284
528	3,161,904	51 – 9	3,161,991	78 – 82	3,162,068	108 – 10	3,162,148	19	3,162,559	84	3,162,285
567	3,161,905	34	3,161,992	80 – 32	3,162,069	79	3,162,149	150 – 35	3,162,227	89	3,162,286
16 – 2	3,161,906	163	3,161,993	56	3,162,070	147	3,162,150	151 – 41.72	3,162,228	194 – 85	3,162,287
18	3,161,907	176	3,161,994	81 – 54	3,162,071	110 – 99	3,162,151	152 – 209	3,162,229	195 – 36	3,162,582
52	3,161,908	209	3,161,995	55	3,162,072	111 – 7	3,162,152	370	3,162,230	197 – 42	3,162,288
70	3,161,909	281	3,161,996	82 – 23	3,162,073	51	3,162,153	153 – 2	3,162,231	65	3,162,289
17 – 39	3,161,910	316	3,161,997	24	3,162,074	112 – 2	3,162,154	21	3,162,232	151	3,162,290
18 – 5	3,161,911	53 – 7	3,161,998	36	3,162,075	79	3,162,155	156 – 361	3,162,560	198 – 30	3,162,291
6	3,161,912	30	3,161,999	83 – 99	3,162,077	158	3,162,156	380	3,162,561	33	3,162,292
8	3,161,913	37	3,162,000	122	3,162,076	176	3,162,157	406	3,162,562		3,162,293
	3,161,914	124	3,162,001	191	3,162,078	207	3,162,158	411	3,162,563	34	3,162,294
19	3,161,915	363	3,162,002	287	3,162,079	113 – 45	3,162,159	498	3,162,564	41	3,162,296
	3,161,916	55 – 19	3,162,513	355	3,162,080	102	3,162,160	506	3,162,565	110	3,162,297
34.1	3,161,917	31	3,162,514	456	3,162,081	133	3,162,161	157 – 13	3,162,233	137	3,162,298
42	3,161,918	32	3,162,515	84 – 240	3,162,082	114 – 20	3,162,163	158 – 28	3,162,234	158	3,162,299
47	3,161,919	98	3,162,516	313	3,162,083		3,162,164	36.3	3,162,235	196	3,162,295
19 – .51	3,161,920	269	3,162,517	85 – 8.8	3,162,084	23	3,162,162	99	3,162,236	211	3,162,300
234	3,161,921	316	3,162,518	63	3,162,085	54	3,162,165		3,162,237	200 – 11	3,162,731
20 – 15	3,161,922	56 – 19	3,162,003	82	3,162,086	66.5	3,162,166		3,162,238	30	3,162,732
52	3,161,923	57 – 31	3,162,004	86 – 10	3,162,087		3,162,167	112	3,162,239	35	3,162,733
57.5	3,161,924	84	3,162,005	88 – 1	3,162,711	72	3,162,168	161 – 43	3,162,566	61.86	3,162,734
69	3,161,925	58 – 23	3,162,006	14	3,162,712		3,162,169	162 – 348	3,162,567	80	3,162,735
74	3,161,926	63	3,162,007	39	3,162,713	238	3,162,170	358	3,162,568	81.9	3,162,736
22 – 89	3,161,927	126	3,162,008	57	3,162,714	115 – .5	3,162,171	165 – 1	3,162,240	83	3,162,737
116	3,161,928	60 – 35.55	3,162,011	72	3,162,715	116 – 115	3,162,172	9	3,162,241	87	3,162,738
23 – 1	3,162,506	35.6	3,162,009	89 – 1.7	3,162,088	129	3,162,173	32	3,162,242	88	3,162,739
	3,162,507		3,162,010	90 – 10	3,162,089	135	3,162,174	55	3,162,243	106	3,162,740
14	3,162,508	39.66	3,162,012	11	3,162,090	117 – 76	3,162,543	184	3,162,244	113.5	3,162,741
14.5	3,162,509	39.82	3,162,013	17	3,162,091	118 – 125	3,162,544	166 – 63	3,162,245	137	3,162,742
267	3,162,510	51	3,162,014	91 – 26	3,162,092	203	3,162,545	173	3,162,246	138	3,162,743
24 – 73	3,161,929	54	3,162,015	306	3,162,093	212	3,162,546	167 – 16	3,162,569	202 – 33	3,162,583
123	3,161,930		3,162,016	335	3,162,094	119 – 1	3,162,175	22	3,162,570	248	3,162,584
200	3,161,931	54.5	3,162,017	399	3,162,097	120 – 42.4	3,162,176	30	3,162,571	204 – 1	3,162,585
203	3,161,932	54.6	3,162,018	414	3,162,095	122 – 32	3,162,177	38.7	3,162,572	49	3,162,586
205.1	3,161,933	62 – 23	3,162,519	421	3,162,096	95	3,162,178	53	3,162,573	92	3,162,587
25 – 30	3,161,934	67	3,162,019	92 – 13	3,162,098	406	3,162,179		3,162,574	141	3,162,588
37	3,161,935	240	3,162,020	93 – 37	3,162,099	451	3,162,180	53.2	3,162,575	143	3,162,589
39	3,161,936	292	3,162,021	55.1	3,162,100	123 – 41.01	3,162,181	58	3,162,576	154	3,162,591
119	3,161,937	320	3,162,022	94 – 23	3,162,101	41.08	3,162,182	172 – 7	3,162,247	158	3,162,590
121	3,161,938	455	3,162,023	49	3,162,102		3,162,183	66	3,162,248	186	3,162,592
131	3,161,939	64 – 8	3,162,024	95 – 1	3,162,103	117	3,162,184	173 – 7	3,162,249	206 – 42	3,162,301
28 – 19	3,161,940	21	3,162,025	1.7	3,162,104	119	RE.25,701	12	3,162,250	46	3,162,302
72.5	3,161,941		3,162,026	4.5	3,162,105	188	3,162,185	73	3,162,251		3,162,303
29 – 2.12	3,161,942	65 – 104	3,162,520	11	3,162,106	125 – 11	3,162,186	91	3,162,252	56	3,162,304
6.2	3,161,943	106	3,162,521		3,162,107	15	3,162,187	147	3,162,253	57	3,162,305
33	3,161,944	225	3,162,522	11.5	3,162,108	126 – 140	3,162,188	148	3,162,254	63.2	3,162,306
155.5	3,161,945	289	3,162,523		3,162,109	270	3,162,189	174 – 15	3,162,716	63.3	3,162,307
	3,161,946	290	3,162,524	44	3,162,110	128 – 6	3,162,190	36	3,162,717	65	3,162,308
155.54	3,161,947	66 – 48	3,162,027	64	3,162,111	15	3,162,191	38	3,162,718	80	3,162,309
182.5	3,161,948	151	3,162,028	96 – 1	3,162,532	188	3,162,192	45	3,162,719	207 – 10	3,162,310
	3,161,949	172	3,162,029	6	3,162,533	227	3,162,193		3,162,720	208 – 53	3,162,593
192	3,162,511	67 – 70	3,162,030	66	3,162,534	261	3,162,194	68.5	3,162,721	57	3,162,594
199	3,162,512	68 – 5	3,162,031	98 – 2	3,162,112	276	3,162,195	110	3,162,722	87	3,162,595
455	RE.25,704	18	3,162,032	99 – 80	3,162,535	287	3,162,196	138	3,162,723	89	3,162,596
471.5	3,161,950	22	3,162,033	85	3,162,536	519	3,162,197	175 – 213	3,162,255	216	3,162,597
568	3,161,951	70 – 70	3,162,034	113	3,162,537	129 – 24	3,162,198	252	3,162,256	254	3,162,598
30 – 4	3,161,952	71 – 2.7	3,162,525	148	3,162,538	131 – 9	3,162,199	403	3,162,257	255	3,162,599
202	3,161,953	73 – 23.1	3,162,035	171	3,162,539	17	3,162,200	176 – 21	3,162,577	209 – 259	3,162,600
224	3,161,954		3,162,036	210	3,162,540	186	3,162,201	36	3,162,578	211 – 34	3,162,311
225	3,161,955	38	3,162,037	446	3,162,113	132 – 1	3,162,202		3,162,579	59	3,162,312
32 – 19	3,161,956	59	3,162,038	100 – 37	3,162,114	5	3,162,203	39	3,162,580	60	3,162,313
33 – 1	3,161,957	67.1	3,162,039	101 – 39	3,162,115	134 – 3	3,162,547	59	3,162,581	124	3,162,314
20	3,161,958	104	3,162,040	128.1	3,162,116	74	3,162,204	177 – 1	3,162,258	214 – 1.1	3,162,315
54	3,161,959	136	3,162,041	219	3,162,117	180	3,162,205	230	3,162,259	2	3,162,316
56	3,161,960	155	3,162,042		3,162,118	135 – 7.1	3,162,206	178 – 68	3,162,724	731	3,162,317
169	3,161,962	178	3,162,043	102 – 18	3,162,119	136 – 90	3,162,548	79	3,162,725	215 – 11	3,162,318
172	3,161,963	312	3,162,044		3,162,120	175	3,162,549	179 – 1	3,162,726	74	3,162,319
174	3,161,961	355	3,162,045	24	3,162,121	137 – 5	3,162,207		3,162,727	219 – 80	3,162,744
180	3,161,964	362	3,162,046	28	3,162,122	183	3,162,208		3,162,728	83	3,162,745
203	3,161,965	407	3,162,047	39	3,162,123	190	3,162,209	15	3,162,729	98	3,162,746
215	3,161,966	420	3,162,048	42	3,162,124	218	3,162,210	100.4	3,162,730		3,162,747
35 – 5	3,161,967	421	3,162,049	43	3,162,125	318	3,162,211	180 – 7	3,162,260	117	3,162,748
12	3,161,968	422	3,162,050	78	3,162,126	625.6	3,162,212	26	3,162,261	121	3,162,749
35	3,161,969	431	3,162,051	85	3,162,127	138 – 30	3,162,213	43	3,162,262	130	3,162,750
36 – 43	3,161,970	504	3,162,052	103 – 2	3,162,128	120	3,162,214	79.2	3,162,263	137	3,162,751
37 – 41	RE.25,702	74 – 5.7	3,162,053		3,162,129	139 – 91	3,162,215	181 – 36	3,162,264	320	3,162,752
38 – 77	3,161,971	10.6	3,162,054	6	3,162,130	374	3,162,216	51	3,162,265	399	3,162,753

219 – 403	3,162,754	241 – 40	3,162,381	260 – 31.2	3,162,612	260 – 514	3,162,679	280 – 124	3,162,465	323 – 60	3,162,800
526	3,162,755	53	3,162,382	45.7	3,162,613	518	3,162,680		3,162,466	66	3,162,801
220 – 23.4	3,162,320	54	3,162,383	46.5	3,162,614		3,162,681	281 – 6	3,162,467	79	3,162,802
46	3,162,321	90	3,162,384	47	3,162,615	523	3,162,682	43	3,162,468	89	3,162,803
221 – 135	3,162,322	163	3,162,385	75	3,162,616	524	3,162,683	285 – 5	3,162,469	94	3,162,804
222 – 1	3,162,323	275	3,162,386	77.5	3,162,617	556	3,162,684	86	3,162,470		3,162,805
18	3,162,324	290	3,162,387		3,162,618	559	3,162,685	287 – 87	3,162,471	324 – 10	3,162,806
55	3,162,325	242 – 19	3,162,388	78	3,162,619	567.6	3,162,686	292 – 114	3,162,472	58	3,162,807
	3,162,326	55.12	3,162,389	80.5	3,162,620	570.5	3,162,687	294 – 5.5	3,162,473	77	3,162,808
143	3,162,327	55.54	3,162,390	82.5	3,162,621	609	3,162,688	16	3,162,474	325 – 25	3,162,809
176	3,162,328	56.2	3,162,391	87.5	3,162,622		3,162,689	26	3,162,475	36	3,162,810
182	3,162,329	66	3,162,392	87.7	3,162,623	619	3,162,690	101	3,162,476	121	3,162,811
183	3,162,330		3,162,393	88.1	3,162,624	638	3,162,691	296 – 23	3,162,477	163	3,162,812
184	3,162,331	78.6	3,162,394	88.3	3,162,625	647	3,162,692	28	3,162,478	361	3,162,813
193	3,162,332	86.5	3,162,395	91.3	3,162,626	674	3,162,693	35	3,162,479	478	3,162,814
207	3,162,333	244 – 1	3,162,396	96.5	3,162,627	683.62	3,162,694	57	3,162,480	328 – 62	3,162,815
	3,162,334	12	3,162,397	146	3,162,628	873	3,162,695	297 – 65	3,162,481	63	3,162,816
212	3,162,335	14	3,162,398	239.5	3,162,629	878	3,162,696	85	3,162,482	91	3,162,817
309	3,162,336		3,162,399	239.55	3,162,630		3,162,697	89	3,162,483	169	3,162,818
327	3,162,337	17.11	3,162,400	239.57	3,162,631	897	3,162,698	248	3,162,484	329 – 145	3,162,819
484	3,162,338	42	3,162,401	248	3,162,632	261 – 114	3,162,699	389	3,162,485	330 – 21	3,162,820
517	RE.25,703		3,162,402	249.9	3,162,633		3,162,700	439	3,162,486	40	3,162,821
541	3,162,339	100	3,162,403	251	3,162,634		3,162,701	453	3,162,487	331 – 94.5	3,162,822
559	3,162,340	114	3,162,404		3,162,636	123	3,162,702		3,162,488	97	3,162,823
223 – 87	3,162,341	246 – 2	3,162,405	251.5	3,162,635	263 – 6	3,162,429		3,162,489	107	3,162,824
88	3,162,342	248 – 20	3,162,406	268	3,162,637		3,162,430	302 – 52	3,162,490	108	3,162,825
224 – 6	3,162,343	40	3,162,407	281	3,162,638	32	3,162,431	303 – 6	3,162,491	333 – 1.1	3,162,826
48	3,162,344		3,162,408	285	3,162,639	264 – 51	3,162,703	307 – 88	3,162,768	2	3,162,827
226 – 95	3,162,345	41	3,162,409	285.5	3,162,640	53	3,162,704		3,162,769	6	3,162,828
229 – 4.5	3,162,346	46	3,162,410	286	3,162,641		3,162,705	88.5	3,162,770	336 – 83	3,162,829
	3,162,347	56	3,162,411	304	3,162,642	97	3,162,706		3,162,771	208	3,162,830
5.6	3,162,348		3,162,412	305	3,162,643	98	3,162,707		3,162,772	338 – 21	3,162,831
17	3,162,349	71	3,162,413	307	3,162,644	111	3,162,708		3,162,773	85	3,162,832
34	3,162,350	101	3,162,414		3,162,645	228	3,162,709		3,162,774	89	3,162,833
37	3,162,351	117.6	3,162,415	309.5	3,162,646	267 – 34	3,162,432		3,162,775	339 – 18	3,162,500
51	3,162,352	244	3,162,416	309.7	3,162,647	65	3,162,433		3,162,776	98	3,162,501
53	3,162,353	345.1	3,162,417	326.5	3,162,648	270 – 57	3,162,434	141.4	3,162,777	144	3,162,502
62.5	3,162,354	354	3,162,418		3,162,649	271 – 2	3,162,435	308 – 122	3,162,492	258	3,162,503
68	3,162,355	361	3,162,419	329	3,162,650	64	3,162,436	201	3,162,493	340 – 27	3,162,834
	3,162,356	373	3,162,420	332.2	3,162,651	68	3,162,437	310 – 4	3,162,778	58	3,162,835
230 – 56	3,162,357	250 – 41.9	3,162,760	345.1	3,162,652	71	3,162,438	8.9	3,162,779	73	3,162,836
117	3,162,358	43.5	3,162,761	347.8	3,162,653		3,162,439		3,162,780	146.1	3,162,837
149	3,162,359	49.5	3,162,767	396	3,162,654	272 – 76	3,162,440	11	3,162,781	147	3,162,838
206	3,162,360	65	3,162,762	397.4	3,162,655	80	3,162,441	50	3,162,782	172.5	3,162,839
232 – 43.2	3,162,361		3,162,763	397.5	3,162,656		3,162,442	105	3,162,783		3,162,840
235 – 54	3,162,362	83.3	3,162,764	400	3,162,657	273 – 73	3,162,443	258	3,162,784		3,162,841
70	3,162,363	223	3,162,765	405.6	3,162,658	106.5	3,162,444	312 – 35	3,162,494	173	3,162,842
89	3,162,364	229	3,162,766	413	3,162,659	274 – 1	3,162,445	223	3,162,495	174	3,162,843
183	3,162,756	252 – 8.3	3,162,601	414	3,162,660	9	3,162,446	228	3,162,496		3,162,844
187	3,162,757	47	3,162,602	440	3,162,661		3,162,447	248	3,162,497		3,162,845
196	3,162,758	62.5	3,162,603	448.2	3,162,662	10	3,162,448	323	3,162,498	237	3,162,846
	3,162,759	171	3,162,604		3,162,663		3,162,449	313 – 113	3,162,785	241	3,162,847
200	3,162,365	301.1	3,162,605	453	3,162,664	23	3,162,450	315 – 241	3,162,786	258	3,162,848
236 – 48	3,162,366	466	3,162,606		3,162,665	277 – 53	3,162,451	316 – 24	3,162,499	373	3,162,849
239 – 19	3,162,367	477	3,162,607	461	3,162,666	86	3,162,452	317 – 2	3,162,787	399	3,162,850
102	3,162,368	253 – 52	3,162,421		3,162,667	105	3,162,453	101	3,162,788	343 – 16	3,162,851
150	3,162,369	148	3,162,422		3,162,668		3,162,454	124	3,162,789	17.1	3,162,852
304	3,162,370	254 – 28	3,162,423		3,162,669		3,162,455	148.5	3,162,790		3,162,853
327	3,162,371	172	3,162,424		3,162,670	136	3,162,456	200	3,162,791	17.7	3,162,854
354	3,162,372	175.7	3,162,425		3,162,671	279 – 91	3,162,457	203	3,162,792	100	3,162,855
240 – 1.2	3,162,373	259 – 1	3,162,426		3,162,672	280 – 11.12	3,162,458	318 – 8	3,162,793	112	3,162,856
2.13	3,162,374	4	3,162,427	463	3,162,673	34	3,162,459	16	3,162,794	203	3,162,857
8.16	3,162,375	9	3,162,428	464	3,162,674	36	3,162,460	32	3,162,795	753	3,162,858
10.66	3,162,376	260 – 2.1	3,162,608	465	3,162,675	47.19	3,162,461	135	3,162,796	346 – 23	3,162,504
36	3,162,377	2.5	3,162,609	486	3,162,676	47.35	3,162,462	278	3,162,797	33	3,162,505
44.2	3,162,378	4	3,162,610		3,162,677	104.5	3,162,463	302	3,162,798	74	3,162,859
241 – 4	3,162,379		3,162,611	502	3,162,678		3,162,464	323 – 45	3,162,799		3,162,860
	3,162,380										

CLASSIFICATION OF DESIGNS

D 1 – 12	199,834	D26 – 13	199,844	D34 – 15	199,854	D55 – 1	199,864	D62 – 4	199,873	D83 – 1	199,882
D 3 – 26	199,835	D30 – 1	199,845	D35 – 3	199,855		199,865	D65 – 1	199,874		199,883
D 4 – 3	199,836	D33 – 6	199,846	D42 – 7	199,856	D56 – 9	199,866	D72 – 1	199,875	D85 – 2	199,884
D 9 – 2	199,837	14	199,847		199,857	D58 – 5	199,867		199,876		199,885
6	199,838	D34 – 5	199,848		199,858	6	199,868		199,877	D87 – 5	199,886
D10 – 8	199,839		199,849	D44 – 10	199,859	8	199,869		199,878	D88 – 3	199,887
D17 – 6	199,840		199,850	29	199,860	26	199,870	D77 – 1	199,879	D89 – 1	199,888
12	199,841	15	199,851		199,861	D61 – 1	199,871	D80 – 9	199,880	D90 – 20	199,889
D19 – 1	199,842		199,852	D52 – 6	199,862		199,872	D81 – 2	199,881	D93 – 3	199,890
D25 – 1	199,843		199,853	D54 – 12	199,863						

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 22, 1964 Volume 809 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 77,810 (ROGERS AND DESIGN), International Silver Company, Silver-plated flatware and hollowware; **Reg. No. 147,780** (ROGERS & BRO. AND DESIGN), same, Silver-plated flat-ware—namely, forks, spoons, ladles, and knives; **Reg. No. 329,753** (WM. ROGERS MFG. CO.), same, Silver-plated flat-ware for table use and the like; **Reg. No. 329,754** (WM. ROGERS & SON), same; **Reg. No. 329,755** (WM. ROGERS AND DESIGN), same; **Reg. No. 329,756** (ROGERS CUTLERY CO.), same; **Reg. No. 329,757** (1865 WM. ROGERS MFG. CO.), same; **Reg. No. 329,758** (1847 ROGERS BROS.), same; **Reg. No. 330,606** (ROGERS NICKEL SILVER), same, Unplated base alloy tableware—namely, spoons, knives, and forks; **Reg. No. 385,300** (1847 ROGERS BROS. STERLING), same, Sterling silver flat-ware and hollow-ware for table use and the like; **Reg. No. 438,217** (ROGERS AND DESIGN), same, Silver polish; **Reg. No. 438,858** (WM. ROGERS & SON AND DESIGN), same, Silver-plated hollow-ware; **Reg. No. 503,060** (WM. ROGERS AND DESIGN), same; **Reg. No. 503,061** (1847 ROGERS BROS.), same; **Reg. No. 734,886**, same, Stainless steel flatware—namely, knives, forks and spoons; **Reg. No. 758,067** (WM. ROGERS & SON), same, **filed** Aug. 17, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–840, *The International Silver Co.* v. *Roger Chromeware, Inc. et al.*

Reg. No. 147,780. (See Reg. No. 77,810.)

Reg. No. 148,819 (DU PONT), E. I. du Pont de Nemours & Company, Dyestuffs, **filed** Aug. 21, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1434, *E. I. du Pont de Nemours & Company* v. *United Coatings, Inc. et al.*

Reg. No. 155,996 (ACCO), F. J. Kline, Paper fasteners, covers and folders for binding and holding papers together, desk files, clip files, and stenographic book holders; **Reg. No. 155,997**, same, Paper fasteners, paper clips, folders for binding and holding papers together, desk files, clip files, covers and stenographic book holders; **Reg. No. 354,612** ('L'), Acco Products, Inc., Fasteners and fastener bases for binding loose papers together; **Reg. No. 629,105** (ACCOBIND), same, Folders for binding and holding papers together; **Reg. No. 725,684** (ACCO), Natser Corporation, doing business as Acco Products, Paper fasteners and fastener bases for binding papers together, loose-leaf binders with and without fasteners, notebooks, post binders, etc., **filed** Dec. 6, 1963, D.C.N.J. (Trenton), Doc. 1034–63, *Acco Products* v. *Ajax Fibre-Envelope Corporation*. Consent decree; trademarks held valid Aug. 27, 1964.

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15, 327
Date of oldest new application	Mar. 23, 1964
Date of oldest amended application	Mar. 10, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	4–1–64	4–6–64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3–23–64	3–10–64
Renewals (All Classes)	10–9–64	10–27–64
Sec. 12 (c) Publications (All Classes)	10–15–64	

Applications filed during the month of October 1964—2,218

Registrations Issued—341—No. 781,881 to No. 782,221
Renewals Issued—50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

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Reg. No. 155,997. (See Reg. No. 155,996.)

Reg. No. 272,878 (FORTUNE AND DESIGN), Time-Fortune Corporation, Monthly magazine; **Reg. No. 565,068** (FORTUNE), Time, Incorporated, same; **Reg. No. 634,606**, same, **filed** Aug. 6, 1964, D.C.N.J. (Newark), Doc. 730–64, *Time, Incorporated* v. *Bruce Roberts Co.* Consent judgment for injunction Nov. 9, 1964.

Reg. No. 329,753. (See Reg. No. 77,810.)

Reg. No. 329,754. (See Reg. No. 77,810.)

Reg. No. 329,755. (See Reg. No. 77,810.)

Reg. No. 329,756. (See Reg. No. 77,810.)

Reg. No. 329,757. (See Reg. No. 77,810.)

Reg. No. 329,758. (See Reg. No. 77,810.)

Reg. No. 330,606. (See Reg. No. 77,810.)

Reg. No. 344,958 (ROTO-ROOTER), Roto-Rooter Corporation, Sewer and drain cleaning machines; **Reg. No. 597,721**, same, Municipal, industrial, and domestic sewer, drain, and pipe cleaning service, **filed** Feb. 13, 1964, D.C., W.D. Okla. (Oklahoma City), Doc. 64–59, *Roto-Rooter Corporation* v. *L. K. Flanagan*. Trademarks held infringed; defendant enjoined (notice Aug. 17, 1964).

Reg. No. 354,612. (See Reg. No. 155,996.)

Reg. No. 385,300. (See Reg. No. 77,810.)

Reg. No. 389,794 (GOLDEN DIPT), Meletio Sea Food Co., Food preparation, for ready-mixed breading for pan frying; **Reg. No. 681,590**, same, Meletio Company, Batter mix for coating foods preparatory to cooking, seasoned milled grain mixture for combining with ground meats, etc. in preparing loafs, patties and the like, tartar sauce and cocktail sauce; **Reg. No. 761,430** ("GOLDEN LOCK"), Golden-Dipt-Meletio Corporation, Breading mix, **filed** Mar. 6, 1964, D.C. Kans. (Wichita), Doc. W–3107, *Golden-Dipt-Meletio Company* v. *Arnholz Coffee & Supply Co.* Final judgment; trademarks held valid and infringed; defendant enjoined Aug. 3, 1964.

Reg. No. 438,217. (See Reg. No. 77,810.)

Reg. No. 438,838. (See Reg. No. 77,810.)

Reg. No. 503,060. (See Reg. No. 77,810.)

Reg. No. 503,061. (See Reg. No. 77,810.)

Reg. No. 511,927 (SIGNET), The New American Library of World Literature, Inc., Books containing printed literary and artistic works; **Reg. No. 527,266** (N.A.L. SIGNET BOOKS AND DESIGN), same; **Reg. No. 565,076** (SIGNET DOUBLE VOLUME AND DESIGN), same, Books; **Reg. No. 565,077** (SIGNET GIANT AND DESIGN), same; **Reg. No. 586,593** (TRIPLE VOLUME SIGNET AND DESIGN), same; **Reg. No. 586,763** (SIGNET BOOKS AND DESIGN), same; **Reg. No. 609,123** (SIGNET KEY BOOKS AND DESIGN), same; **Reg. No. 607,844** (SIGNET CLASSIC AND DESIGN), same, **filed** Aug. 7, 1964, D.C., S.D.N.Y., Doc. 64/2459, *The New American Library of World Literature, Inc.* v. *Universal Publishing & Distributing Corp.*

Reg. No. 527,266. (See Reg. No. 511,927.)

Reg. No. 539,928 (CASTOMATIC), American Smelting and Refining Company, White metals, zinc-base alloys, anti-friction metal, babbitt, etc., **filed** Aug. 5, 1964, D.C. Nebr. (Omaha), Doc. 02107, *American Smelting and Refining Company* v. *Morton Engineering, Inc.*

Reg. No. 543,116 (PHISOHEX), Winthrop-Stearns, Inc., Antibacterial and disinfectant preparation for treatment of and use on the skin and mucous membranes; **Reg. No. 562,187**, same, Emollient, sudsing, antibacterial detergent containing hexachlorophene and put up in cream form for use on the skin and mucous membranes, **filed** Aug. 5, 1964, D.C.N.J. (Newark), Doc. 724–64, *Sterling Drug Inc.* v. *E. J. Korvette, Inc.*

Reg. No. 562,187. (See Reg. No. 543,116.)

Reg. No. 565,076. (See Reg. No. 511,927.)

Reg. No. 565,077. (See Reg. No. 511,927.)

Reg. No. 565,068. (See Reg. No. 272,878.)

Reg. No. 586,593. (See Reg. No. 511,927.)

Reg. No. 586,763. (See Reg. No. 511,927.)

Reg. No. 597,721. (See Reg. No. 344,958.)

Reg. No. 609,123. (See Reg. No. 511,927.)

Reg. No. 621,594 (WACO), Waco Manufacturing Company, doing business as Waco Manufacturing Co., Grandstands, bleachers, shores, concrete forms and accessories sold therewith, **filed** Dec. 27, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–1658 WB, *Waco-Porter Corporation* v. *Tubular Structures Corp. of America et al.* Stipulation and order of dismissal of claims and counterclaims; consent judgment enjoining defendant Aug. 6, 1964.

Reg. No. 629,105. (See Reg. No. 155,996.)

Reg. No. 634,606. (See Reg. No. 272,878.)

Reg. No. 655,102 (YOUR INDEPENDENT INSURANCE AGENT "SERVES YOU FIRST" AND DESIGN), National Association of Insurance Agents, Services as insurance agents; **Reg. No. 724,339** (YOUR INDEPENDENT INSURANCE AGENT SERVES YOU FIRST), same, **filed** Oct. 22, 1963, D.C. Conn. (New Haven), Doc. 10099, *National Association of Insurance Agents, Inc.* v. *Advertising Service for Insurance Agents, Inc. et al.* Defendants enjoined (notice Aug. 5, 1964).

Reg. No. 656,070 (AIR-DRECO), James B. Gibbens, Hydraulic power unit assemblies for installing other than on vehicles and mobile equipment, such assemblies each including a hydraulic pump, an electric motor driving the pump, and a hydraulic fluid reservoir, all inter-connected in a closed hydraulic power system, **filed** Aug. 12, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–415, *James B. Gibbens* v. *Air-Dreco, Inc. et al.* Complaint dismissed without prejudice Nov. 6, 1964.

Reg. No. 681,590. (See Reg. No. 389,794.)

Reg. No. 607,844. (See Reg. No. 511,927.)

Reg. No. 700,060 (SNAP TAB), Mabs, Inc., doing business as Lancer of California, Outer shirts having a tab collar construction, **filed** Aug. 26, 1964, D.C., S.D.N.Y., Doc. 64/2641, *Piedmont Shirt Company* v. *Snap-Tab Corp.*

Reg. No. 712,115 (LIGHTOMATIC), Camera Specialty Company, Inc., Cameras, **filed** June 4, 1963, D.C., S.D.N.Y., Doc. 63/1638, *Camera Specialty Company, Inc.* v. *Kine Camera Company, Inc.* Stipulation and order of dismissal Aug. 3, 1964.

Reg. No. 712,636 (MISS TEEN-AGE AMERICA), Teen America Associates, Promotion of education through the granting of scholarships, the recipients being girls of high school age and determined by local, state and national contests involving beauty, talent, and charm, **filed** Aug. 19, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C–316(2), *Teen America Associates, Inc.* v. *Miss America Teen-Ager, Inc. et al.*

Reg. No. 724,339. (See Reg. No. 655,102.)

Reg. No. 734,880. (See Reg. No. 77,810.)

Reg. No. 735,664. (See Reg. No. 155,996.)

Reg. No. 758,067. (See Reg. No. 77,810.)

Reg. No. 761,430. (See Reg. No. 389,794.)

Providing Copies of Cited References to Applicants

Effective January 4, 1965, the Patent Office will offer a new service which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications. The following procedures apply to this new service:

1. An authorization letter requesting this service must be filed for each application for which this service is desired. The authorization letter may be filed initially upon the filing of a new application or it may be filed for a pending application indicating the serial number of the application. Blanket authorizations for a number of applications in a single authorizing letter will not be accepted.

2. The authorizing letter should indicate the applicant's (or his representative's) deposit account number and the number of copies of cited references desired.

3. All references cited *after* the receipt of the authorizing letter will be mailed, in the quantity indicated, to the addressee of record in the application. References will not be mailed to any other address.

4. All references cited in a single office action will be mailed together, generally within two weeks after the mailing of the action. This mailing will include a copy of the first page of the office action identifying the references and the application.

5. Monthly charges will appear on deposit account billings which will include an additional copy of the first page of the office action indicating the charges incurred. Such charges will be at the current published prices for patents, designs and the reproduction of document pages.

C. A. KALK,
Director of Administration.

November 9, 1964.

Discontinuance of Deposit Account Services for Sale of Patent Copies

Effective **February 1, 1965**, the Patent Office will no longer accept Deposit Account orders for U.S. patent, design, or trademark copies except for the following services: (1) automatic dissemination of cited references announced in the December 1, 1964, issue of the OFFICIAL GAZETTE, (2) class orders, and (3) subscription orders.

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C. A. KALK,
Director of Administration.

November 9, 1964.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 183,597. Jett and Company, Norfolk, Va. Filed Dec. 26, 1963.

JETCO

Class 12—Construction Materials

For Fabricated Products—Namely, Lintels, Steel Columns and Posts, Dampers, Window and Door Frames.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Wire Products—Namely, Nails, Barbed Wire, Fence and Reinforcing Mesh; Tubing—Namely, Gas and Water Pipe, Well Casing; and Aluminum Products—Namely, Chain, Strapping, and Anchor Bolts for Garden Tools.

First use Jan. 1, 1958.

SN 187,155. Rokona Textilgesellschaft m.b.H., Tubingen (Neckar), Germany. Filed Feb. 20, 1964.

batistalon

Owner of German Reg. No. 769,991, dated Jan. 31, 1963.

Class 39—Clothing

For Underwear.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Bed Sheets, Pillow Cases, Bed Spreads and Casings for Feather Beds.

SN 187,297. Helen Liebert, Inc., New York, N.Y. Filed Feb. 24, 1964.

MY BOY

Class 51—Cosmetics and Toilet Preparations

For Boys' Toiletries—Namely, Cowlick Dressing, Hair Dressing and After Shower Lotion.

Class 52—Detergents and Soaps

For Shampoo.

First use Apr. 23, 1959.

SN 187,639. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Feb. 25, 1964.

BAYTEX

Priority claimed under Sec. 44(d) on German application filed Sept. 17, 1963; Reg. No. 781,353, dated Dec. 12, 1963. Owner of U.S. Reg. No. 711,992.

Class 1—Raw or Partly Prepared Materials

For Textile Fibers.

Class 43—Thread and Yarn

For Threads and Yarns.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 180,977. Vitaform Limited, Middleton, Manchester, England. Filed Nov. 12, 1963.

VITAFOAM

Owner of British Reg. Nos. 681,374, dated July 28, 1949, and 692,296, dated Sept. 15, 1950.

For Pillows, Cushions and Upholstery Parts of Furniture: Furniture; Underlays for Carpets; Webbing and Members (Made of Rubber or like Materials) for Supporting Cushions, Upholstery and the Like in Furniture and Vehicle Seating and for Luggage and Like Load-Carrying Means; Rubber and Plastic Materials for Use as Stuffing for Upholstery and the Like.

SN 187,345. The Sexauer Company, Brookings, S. Dak. Filed Feb. 24, 1964.

RIVIERA

For Alfalfa Seeds.
First use on or about Jan. 20, 1964.

SN 190,875. Celanese Corporation of America, New York, N.Y. Filed Apr. 13, 1964.

CELANESE

Owner of Reg. Nos. 178,422 and 752,286.
For Fibers.
First use 1922.

SN 192,788. Cabot Corporation, Boston, Mass. Filed May 6, 1964.

X-59

Owner of Reg. No. 749,594.
For Silicon.
First use May 29, 1962.

SN 192,870. Diamond Alkali Company, Cleveland, Ohio. Filed May 5, 1964.

DALVOR

For Fluorocarbon Resin.
First use Apr. 30, 1964.

SN 194,711. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 2, 1964.

NOMELLE

For Man Made Fibers and Filaments for Generalized Use in the Industrial Arts.
First use Apr. 16, 1964.

Class 2—Receptades

SN 173,038. Pak-Well Paper Products Company, Milwaukie, Oreg. Filed July 15, 1963.

POP-PAK

For Packaged Decorative Gift Boxes Sold in the Form of a Kit.
First use Mar. 11, 1963.

SN 202,906. Bestpak, Inc., Natick, Mass. Filed Sept. 29, 1964.

MICRO-VENT

For Packing Products—Namely, Trays for Bakery Products.
First use June 18, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 179,813. Mrs. Frances M. Rice, St. Paul, Minn. Filed Oct. 25, 1963.

JET-SAC

For Garment Bag for Use as a Luggage Accessory.
First use Oct. 8, 1963.

SN 185,102. Atlantic Products Corporation, Trenton, N.J. Filed Jan. 22, 1964.

Queen's Rifles

For Hand Luggage.
First use July 31, 1963.

Class 4—Abrasives and Polishing Materials

SN 172,000. Robert M. McMath, d.b.a. Wifesaver Products Company, New York, N.Y. Filed June 27, 1963.

WIFE SAVER

For Combination Polish-Cleaners—Polish and Cleaners for Furniture, Silver, China, Glass, Windows, Walls, Woodwork, and Kitchen Ware.
First use Sept. 25, 1962.
Subj. to Intf. with SN 197,041.

SN 193,864. DeMert & Dougherty, Inc., Chicago, Ill. Filed May 20, 1964.

SATIN GLO

For Pressurized Cleaning and Polishing Wax for Dusting, Cleaning, and Waxing.
First use on or about Apr. 30, 1964.

Class 6—Chemicals and Chemical Compositions

SN 164,413. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Brüning, Frankfurt am Main, Germany. Filed Mar. 7, 1963.

»HOECHST«

Owner of German Reg. No. 755,543, dated Nov. 28, 1961, and U.S. Reg. Nos. 542,319, 746,155, and others.
For Wax.

SN 164,726. Imperial Chemical Industries Limited, Millbank, London, England. Filed Mar. 15, 1963.

SOLEDON

Owner of British Reg. Nos. 453,899 and 700,598, dated Nov. 24, 1924 and Aug. 17, 1951, respectively.
For Dyes and Dyestuffs.

SN 166,856. Imperial Chemical Industries Limited, Millbank, London England. Filed Mar. 15, 1963.

WAXOLINE

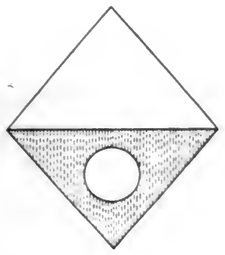
Owner of British Reg. No. 516,273, dated Sept. 23, 1930.
For Dyes (Not for Toilet Purposes.)

SN 177,166. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Sept. 17, 1963.

CELLIT

Owner of Germany Reg. No. 722,394, dated Feb. 20, 1959.
For Organic Cellulose Esters Used in Various Industrial Arts.

SN 177,770. Comark Corporation, Ithaca, N.Y. Filed Sept. 26, 1963.



The drawing is lined for the color violet.
For Insecticidal Dust for Agricultural and Horticultural Use.
First use July 1, 1963.

SN 189,034. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Mar. 19, 1964.

ATPOL

For Polyhydric Polyethers.
First use Feb. 26, 1964.

SN 189,314. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

KELEX

Owner of Reg. No. 590,711.
For Disinfectant-Deodorant for Embalming.
First use June 10, 1960.

SN 190,347. Diamond Alkali Company, Cleveland, Ohio. Filed Apr. 6, 1964.

DION

Owner of Reg. Nos. 635,391, 723,100, and others.
For Hardeners for Epoxy Resins.
First use July 20, 1955.

SN 190,717. The Great Western Sugar Company, Denver, Colo. Filed Apr. 9, 1964.

PRE-BETA-1

For Herbicide for the Selective Control of Certain Weeds in Sugar Beets.
First use on or about Mar. 22, 1964.

SN 192,858. U.S. Industries, Inc., New York, N.Y. Filed May 6, 1964.

BRASMENTOL

For Menthol.
First use Mar. 26, 1962.

SN 194,087. United States Rubber Company, New York, N.Y. Filed May 22, 1964.

FALODIN

Owner of Reg. No. 737,383.
For Herbicide.
First use Apr. 17, 1964.

SN 196,198. Roberts and Porter, Inc., Chicago, Ill. Filed June 22, 1964.

HICKI-PIC

For Compound for Use on Ink Form Roller of Offset Printing Press.
First use Aug. 13, 1963.

SN 196,918. Swift & Company, Chicago, Ill. Filed July 1, 1964.

CI-PONA

For Insecticides.
First use on or about May 1, 1964.

Class 7 — Cordage

SN 197,795. Twi-Ro-Pa Mills Agency, Inc., New Orleans, La. Filed July 13, 1964.

UNCLE SAM

For Baler Twine.
First use Mar. 4, 1964.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 197,423. Peterson's Ltd., Inc., New York, N.Y. Filed July 8, 1964.

ROYAL DANISH

The word "Danish" is disclaimed apart from the mark as shown without any waiver of common law rights.
For Smoking Pipes.
First use May 26, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 189,965. Universal Match Corporation, St. Louis, Mo. Filed Mar. 30, 1964.

foilite

For Match Books.
First use Mar. 9, 1964.

SN 190,334. Catron of Carmel, Inc., Carmel Valley, Calif. Filed Apr. 6, 1964.

CATRON

For Shotgun Shells.
First use May 22, 1963.

Class 10 — Fertilizers

SN 185,192. California Chemical Company, San Francisco, Calif. Filed Jan. 23, 1964.

GREENOL

Owner of Reg. No. 353,628.
For Compounds Which Influence Specific Physiological Processes in Plants and Plant Auxins.
First use Dec. 18, 1963.

SN 189,972. American Agricultural Chemical Company, New York, N.Y. Filed Mar. 31, 1964.

agri-K_2O

No registration rights are claimed for "K_2O" apart from the mark as shown. Owner of Reg. Nos. 170,622, 754,426, and others.
For Muriate of Potash for Use as a Fertilizer.
First use Aug. 13, 1963.

Class 12 — Construction Materials

SN 167,095. Amerada Glass Corp., Chicago, Ill. Filed Apr. 19, 1963.

ACOUSTA-PANE

For Multiple Pane Glass Sheet Glazing Units for Buildings, Display Windows, Display Cases, Partitions, and the Like Having the Characteristic of Resisting the Passage of Sound Waves Therethrough.
First use May 1961.

SN 168,475. Bolardi Tile Manufacturing Corp., Cleveland, Ohio. Filed May 9, 1963.

PAVÉ

For Compressed Cement, Marble and Quartz Aggregate Tile for Floors and Walls.
First use Oct. 30, 1958.

SN 169,335. Aluma-Sash, Inc., Moline, Ill. Filed May 20, 1963.

REPLASA-PANAL

For Window Sashes.
First use Apr. 24, 1963.

SN 171,022. Lyons Distributing, Inc., Dallas, Tex. Filed June 14, 1963.

MODERN
MORTAR-MASTIC

For Dry-Mix Compound for Setting Dry Ceramic Tile.
First use Apr. 1, 1957.

SN 171,181. Rub Kor America, Waltham, Mass. Filed June 17, 1963.

RUB KOR

For Rubber-Cork Mixture To Be Used in Bituminous Concrete.
First use May 17, 1961.

SN 175,283. Interchemical Corporation, St. Louis, Mo. Filed Aug. 19, 1963.

TILT-CRETE

Owner of Reg. No. 657,311.
For Liquid Membrane-Type Compound for Use as a Curing Agent for Concrete Slabs.
First use Sept. 24, 1954.

SN 176,491. Carthage Mills Incorporated, Cincinnati, Ohio. Filed Sept. 9, 1963.

POLY-FILTER X

Owner of Reg. Nos. 700,786, 700,787, and 754,496.
For Woven Polypropylene Filter Sheet for Erosion Control and Hydraulic Filtration.
First use May 27, 1963.

SN 176,885. Carolina Narrow Fabric Company, Winston-Salem, N.C. Filed Sept. 13, 1963.

FORM-I-GLAS

For Fibrous Glass Insulation Tape Sold in Various Widths.
First use Feb. 20, 1963.

SN 177,001. Clayburn-Harbison Ltd., Vancouver, British Columbia, Canada. Filed Sept. 16, 1963.

GIANT

For Fired Clay Brick.
First use on about July 5, 1963; in commerce on about July 14, 1963.

SN 178,148. Tibbals Flooring Company, Oneida, Tenn. Filed Oct. 1, 1963.

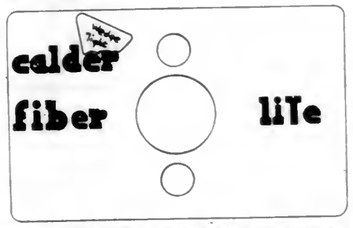


No claim is made to exclusive right to use of the term "Wood," nor to the phonetic variants of the notation "Flor-Tile," nor the representation of wood flooring, per se, apart from the mark as shown. Owner of Reg. Nos. 664,613 and 732,899.

For Wood Flooring.

First use at least as early as Jan. 18, 1960; at least as early as April 1959 in a different form.

SN 178,412. Calder Manufacturing Company, Lancaster, Pa. Filed Oct. 7, 1963.



No claim is made to the word "Fiber" apart from the mark as shown. Owner of Reg. No. 565,404.

For Fiberglass Aluminum Overhead Garage Doors.

First use Aug. 8, 1963; Sept. 30, 1948, as to the marks "Calder" and "Wedge Tight."

SN 178,555. Lytag Limited, Mill Hill, London, England. Filed Oct. 8, 1963.

LYTAG

Owner of British Reg. No. 741,293, dated Apr. 13, 1955.

For Lightweight Aggregates, Being Non-Metallic Building Materials.

SN 178,585. Butler Manufacturing Company, Kansas City, Mo. Filed Oct. 9, 1963.

F-103

For Insulated Metal Panels for Buildings and the Like.

First use Sept. 25, 1963.

SN 178,807. Johns-Manville Corporation, New York, N.Y. Filed Oct. 11, 1963.

TOPGARD

For Asphaltic Base Roof Coating, for Use Especially in Built-Up Roofs and Waterproofing Systems.

First use on or about Aug. 13, 1963.

SN 179,235. Johns-Manville Corporation, New York, N.Y. Filed Oct. 17, 1963.

METAL-LOK

For Fiber Glass Pipe Insulation.

First use May 21, 1963.

SN 179,499. Weyerhaeuser Company, Tacoma, Wash. Filed Oct. 21, 1963.



The mark consists of a black disc or circle appearing on the edge of the door.

For Wooden Doors.

First use Aug. 11, 1958.

SN 179,697. Cold Mix Corp., White Plains, N.Y. Filed Oct. 24, 1963.

LEVELRIDE

For Asbestos Asphalt Road Surfacing Mix.

First use August 1963.

SN 180,418. Macmillan Ring-Free Oil Co., Inc., New York, N.Y. Filed Nov. 4, 1963.

"SOILOK"

For Asphalt Impregnated Waterproof Jute Matting Used in the Prevention of Soil Erosion.

First use Oct. 3, 1963.

SN 180,582. Johns-Manville Corporation, New York, N.Y. Filed Nov. 6, 1963.

DECRO-COAT

For Roof Coating Supplied in a Dry Powder Form for Mixing With Water Prior to Application, and a Liquid Primer Material for Use as a Bonding Primer Between Said Roof Coating and Asphalt or Bitumen Roof Surfaces.

First use at least on or about June 5, 1962.

SN 181,151. Johns-Manville Corporation, New York, N.Y. Filed Nov. 14, 1963.

DURABORD

Owner of Reg. No. 217,142.

For Fiberboard Exterior Siding Materials, Particularly Clapboard and Panels.

First use at least on or about Nov. 23, 1962.

SN 184,692. Burnham Corporation, Irvington-on-Hudson, N.Y. Filed Jan. 16, 1964.



Reserving all common law rights, applicant disclaims exclusive right to the words "Greenhouse," "Outstanding Achievement," and "Greenhouse Engineering," as well as the representation of the greenhouse apart from the mark as shown.

For Prefabricated Greenhouses.

First use June 21, 1963.

SN 184,699. The Philip Carey Manufacturing Company, Cincinnati, Ohio. Filed Jan. 16, 1964.

CAREY-TRED

The word "Tred" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 536,421, 585,597, and others.

For Granule Surfaced Laminated Asphaltic Sheet Material for Use as a Walkway on Roofs.

First use Dec. 17, 1963.

SN 185,680. Johns-Manville Corporation, New York, N.Y. Filed Jan. 30, 1964.

MOBIL R

For Thermal Insulation, for Mobile Homes.

First use May 17, 1962.

SN 186,957. Johns-Manville Corporation, New York, N.Y. Filed Feb. 18, 1964.

STA-FIT

For Mineral Fiber Thermal Insulation.

First use at least on or about May 29, 1963.

SN 188,856. Etiwanda Steel Producers, Inc., Etiwanda, Calif. Filed Mar. 17, 1964.

WESTERN 7

For Concrete Reinforcement Steel—Namely, Continuous, Level Wound, Descaled, Coiled Hot-Rolled Rod Bundles.

First use May 24, 1962.

SN 189,072. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Mar. 19, 1964.

UFALA

Owner of Reg. Nos. 321,533, 764,917, and others.

For Construction Materials—Namely, Refractory Brick.

First use Jan. 9, 1964.

SN 189,758. Alprodco Gate Manufacturing Company, Dublin, Ga. Filed Mar. 27, 1964.



Without relinquishing any common law rights therein, applicant hereby disclaims the right to exclusive appropriation of the word "Gate" apart from the the other features of the mark as shown.

For Gates, Particularly Farm Gates.

First use Nov. 4, 1963.

SN 189,768. City Asphalt and Paving Company, d.b.a. Extendit Division, Youngstown, Ohio. Filed Mar. 27, 1964.

X-10

For Pavement Sealer for Blacktop Driveways, Parking Areas, Tennis Courts, and the Like.

First use Jan. 20, 1964.

SN 192,016. Electrovert Ltd., Montreal, Quebec, Canada. Filed Apr. 27, 1964.

RODOJOINT

Owner of Canadian Reg. No. 111,717, dated Sept. 26, 1958; and U.S. Reg. Nos. 687,779 and 691,129.

For Plastic Jointing and Waterstopping Material in Strip Form.

SN 192,017. Electrovert Ltd., Montreal, Quebec, Canada. Filed Apr. 27, 1964.

RODOSEAL

Owner of Canadian Reg. No. 111,718, dated Sept. 26, 1958; and U.S. Reg. Nos. 687,779 and 691,129.

For Plastic Jointing, Packing and Waterstopping Material in Strip Form.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 183,267. International Protected Metals, Inc., South Plainfield, N.J. Filed Dec. 19, 1963.

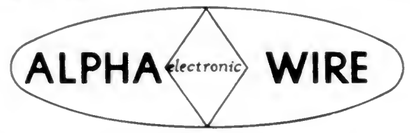


The mark comprises the letters "IPM" and an arbitrary assembly having no particular meaning.

For Plastic-Coated Metal Pipe.

First use Nov. 26, 1963.

SN 184,337. Alpha Wire Corporation, New York, N.Y. Filed Jan. 10, 1964.



Applicant disclaims the words "Electronic Wire" apart from the mark as shown. Owner of Reg. Nos. 667,338 and 646,410.

For Rope Whips.

First use February 1962.

SN 189,104. Queen Manufacturing Co., Inc., Chicago, Ill. Filed Mar. 19, 1964.

THE SKIRT SERVER

For Tier Skirt Hanger for Gripping Several Skirts.

First use February 1949.

SN 195,122. Lockspike Limited, London, England. Filed June 8, 1964.

PANDROL

Owner of British Reg. No. 774,938, dated Mar. 3, 1958.

For Metal Clips for Fastening Rails to Railway Tracks.

SN 196,413. American Brake Shoe Company, New York, N.Y. Filed June 25, 1964.

DENISON

Owner of Reg. Nos. 569,483, 729,372, and others.
For Flow, Sequence Control, and Pressure Reducing Valves, and Parts Therefor.
First use December 1947.

SN 197,431. Rusco Industries, Inc., Bedford Heights, Ohio. Filed July 8, 1964.

RUG RUNNERS

For Casters.
First use Jan. 15, 1957.

SN 197,526. Alon Manufacturing Company, Inc., Philadelphia, Pa. Filed July 10, 1964.

Coronet

For Toilet Seats.
First use Nov. 18, 1959.

SN 197,877. Crane Co., New York, N.Y. Filed July 15, 1964.

MANOR

For Faucets, Bibbs, Plumbing Waste Fixtures, Flush Valves, Mixing Valves, Ball Cocks, and Supply Valves; Lavatory and Sink Traps, Bath Tubs, Showers, Closets, Urinals, Lavatories, Sinks, Flush Tanks, Fountains, and Bathroom Trimmings—Namely, Medicine Cabinets, Clothes Hooks, Shelves, Towel Bars, and Holders for Tumblers and Soap.
First use Apr. 20, 1964.

SN 198,168. The Hale Company, Tulsa, Okla. Filed July 20, 1964.

CROWN-SEAL

For Valve Seats.
First use July 11, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 192,235. Universal Molding Company, Lynwood, Calif. Filed Apr. 28, 1964.

BULLSEYE

For Apertured or Cutout Metal Strips Wherein the Apertures or Cutouts Have Hardened Margins for Use on Trailer Moldings, Trailer Strips, Counter Edges for Kitchen Shelving and for Edging on Boats.
First use Feb. 7, 1964.

SN 201,630. Vanadium-Alloys Steel Company, Latrobe, Pa. Filed Sept. 10, 1964.

REDI-SCRIBE

For Tool Steel in All Forms, Including Billets, Bars, Rods, Sheets, Wire, Forgings, and Special Shapes, for Use in Both Structural and Tooling Applications.
First use Aug. 24, 1964.

SN 201,698. Kroulee Corporation, New York, N.Y. Filed Sept. 11, 1964.

UNIRAP

For Aluminum Foil Used in the Wrapping of Candy.
First use in or about June 1956.

Class 15—Oils and Greases

SN 197,900. Pennzoil Company, Oil City, Pa. Filed July 15, 1964.

OILDEEZ

Owner of Reg. No. 716,735.
For Lubricating Oil.
First use Mar. 16, 1939.

SN 199,754. Nationwide Industries, Inc., Philadelphia, Pa. Filed Aug. 12, 1964.

MR. MOTOR

For Motor Oil Viscosity Increasing Additive.
First use July 29, 1964.

SN 200,880. Tri-Par Oil Company, Saukville, Wis. Filed Aug. 28, 1964.

TRI-PAR

For High Test Gasoline, Fuel, and Motor Oils.
First use July 16, 1932.

SN 201,238. Southwestern Petroleum Corporation, Fort Worth, Tex. Filed Sept. 3, 1964.

SWEPCO

For Lubricating Oils and Greases.
First use Aug. 19, 1964.

Class 16—Protective and Decorative Coatings

SN 179,787. General Mills, Inc., Minneapolis, Minn. Filed Oct. 25, 1963.

TALINA

For Resinous Protective Coating Composition.
First use Sept. 6, 1963.

SN 188,712. Bel-Rich Corp., Deerfield, Ill. Filed Mar. 16, 1964.

PVK

For Plastic Veneer Coating for All Interior Concrete, Masonry, and Drywall Surfaces.
First use Sept. 2, 1963.

SN 189,067. The General Tire & Rubber Company, Akron, Ohio. Filed Mar. 19, 1964.

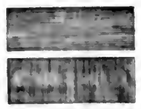
GENERAL TIRE

Owner of Reg. Nos. 766,526 and 769,757.
For Latices and Dispersions of Styrene-Butadiene and Polyvinyl Chloride Resins Used in the Manufacture of Paints and Protective Coatings in the Nature of Paint.
First use April 1963.

Class 17—Tobacco Products

SN 147,840. Philip Morris Incorporated, New York, N.Y. Filed June 27, 1962.

Commander



The drawing is lined for blue and red. The mark may be used in other colors, but the colors blue and red are claimed as features of the mark. Owner of Reg. Nos. 337,882 and 695,940.
For Cigarettes.
First use June 22, 1962.

SN 182,570. The Bloch Brothers Tobacco Co., d.b.a. Mail Pouch Tobacco Co., Wheeling, W. Va. Filed Dec. 9, 1963.

VERMONT MAPLE

No registration rights are claimed to the word "Maple" apart from the mark as shown.
For Smoking Tobacco.
First use 1950.

SN 182,719. General Cigar Co., Inc., New York, N.Y. Filed Dec. 10, 1963.

ARANGO Y ARANGO

For Cigars.
First use on or about Oct. 22, 1922.

SN 187,078. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. Filed Feb. 20, 1964.

ETHNOS

The mark "Ethnos" is a Greek word that means "nation." The drawing is lined for the color gold, but color is not claimed as a feature of the mark. Owner of Greek Reg. No. 16,410, dated Apr. 10, 1946.
For Cigarettes.

SN 187,080. Cigarette Manufacturing Company, "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. Filed Feb. 20, 1964.

DELOS

The drawing is lined for gold, but color is not claimed as a feature of the mark. Owner of Greek Reg. No. 27,242, dated Feb. 13, 1958.
For Cigarettes.

SN 187,083. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. Filed Feb. 20, 1964.

DELPHI

The mark "Delphi" stands for the locality in ancient Greece at which was the seat of the famous Delphic oracle. Owner of Greek Reg. No. 27,096, dated Dec. 17, 1957.
For Cigarettes and Filters Sold With Cigarettes.

SN 198,137. DWG Cigar Corporation, Detroit, Mich. Filed July 20, 1964.

SURF

For All Tobacco Cigaritos.
First use June 29, 1964.

SN 198,341. Wally Frank, Ltd., New York, N.Y. Filed July 22, 1964.

BEEFEATER

For Tobacco Products—Namely, Pipe Tobacco.
First use on or about Apr. 29, 1964.

SN 199,080. Malone & Hyde, Inc., Memphis, Tenn. Filed Aug. 3, 1964.

Hyde Park

For Cigarettes.
First use Apr. 18, 1963.

SN 199,235. Sullana A.G., Zurich, Switzerland. Filed Aug. 4, 1964.

SULLANA

For Cigarettes.
First use 1929; in commerce 1933.

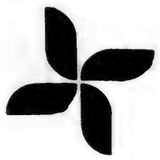
Class 18—Medicines and Pharmaceutical Preparations

SN 183,803. Southwestern Drug Corporation, d.b.a. Brooke Laboratories, Dallas, Tex. Filed Dec. 30, 1963.

PROMATE

For Tranquilizers.
First use Nov. 26, 1963.

SN 197,411. Mayo-Reese Company, Inc., New York, N.Y. Filed July 8, 1964.



MEDACTON

For Medicated Skin Lotion.
First use July 25, 1963.

SN 198,386. The Upjohn Company, Kalamazoo, Mich. Filed July 22, 1964.

CYCLOVERA

For Estrogenic Preparation To Eliminate the Menopause Process.
First use Apr. 24, 1964.

SN 198,457. The Central Pharmacal Company, Seymour, Ind. Filed July 24, 1964.

COSYN

For Medical Preparations—Namely, Preparation for Bronchial Asthma, and the Like Disorders.
First use July 16, 1964.

SN 198,458. The Central Pharmacal Company, Seymour, Ind. Filed July 24, 1964.

CENAC

For Lotion for Topical Use in the Treatment of Acne, and the Like Disorders.
First use Feb. 21, 1961.

SN 198,467. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 24, 1964.



For Antiviral Drugs.
First use Mar. 17, 1964.

SN 198,585. The Pfeiffer Co., St. Louis, Mo. Filed July 27, 1964.

KODANE

For Preparation for Coughs and Colds.
First use July 16, 1964.

SN 198,752. Marion Laboratories, Inc., Kansas City, Mo. Filed July 29, 1964.

OS-CAL FORTE

Owner of Reg. Nos. 591,577, 684,335, and others.
For Vitamin Supplement.
First use May 26, 1964.

SN 199,029. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 3, 1964.

ADAPTRON

For Psychopharmacologic Agent.
First use on or about Mar. 15, 1962.

Class 20 — Linoleum and Oiled Cloth

SN 158,950. Armstrong Cork Company, Lancaster, Pa. Filed Dec. 12, 1962.

ROTO-FI

For Resilient Hard Surface Type Covering for Floors, Walls, and Other Surfaces With Roto-Gravure Printed Designs.
First use Nov. 21, 1962.

SN 180,265. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Nov. 1, 1963.

Amtico

FIRE 'N ICE

Owner of Reg. Nos. 385,013 and 773,995.
For Vinyl Flooring.
First use Oct. 14, 1963.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 85,021. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.

For Radio Receivers, Television Receivers, Magnetic Recorders, Wireless Communication Apparatus, Wire and Wireless Telephone Apparatus (Including Interphones), Electric Public Address Systems, Radio-Phonographs, Parts and Accessories of the Above-Mentioned Articles Including Speakers, Microphones, Condensers, Resistors, Vacuum Tubes, Cathode Ray Tubes, Transformers, Pick-Ups, Phono-Motors, Recording Tapes, Transistors, and Diodes; Dry Cells, Wet Cells, Batteries, Carbon Earthing Rods, Arc Air Gouging Carbons; Electric Lamps, Fluorescent Lamps, Infra-Red Ray Lamps, Lighting Equipment, Dynamo Lamps, Dry Cell Lamp Cases, Signal Lamps, Head Lamps; Electric Fans, Electric Mixers and Blenders, Electric Vacuum Cleaners, Electric Water Coolers, Motors (Excluding Electric Sewing Machine Motors), Electric Pumps, Electric Pencil-Sharpeners, Parts and Accessories of the Above-Mentioned Articles; Electric Heating Plates, Electric Irons, Electric Water Heaters, Electric Ranges, Electric Toasters, Electric Percolators, Electric Stoves, Electric Foot-Warmers, Electric Rice-Boilers, Electric Soldering Irons, Electric Bed Sheets, Electric Cushions and Blankets, Electric Bakers, Electric Alarm Systems, Switches, Distributing Boards, Sockets, and Other Wiring Devices; Electric Insulation Materials and Wires.

SN 171,231. The Carbone Corporation, Boonton, N.J. Filed June 18, 1963.

KLEEN-ARC

For Copper Coated Graphite Electrodes for Use in Cleaning Metal Castings and Removing Excess Metal and Slag From Welds.
First use May 29, 1963.

SN 177,560. Standard Research and Development Company, Charlotte, N.C. Filed Sept. 23, 1963.

ACCRA CHROME

The word "Chrome" is disclaimed apart from the mark as a whole.
For Apparatus for Electroplating With Chromium.
First use Apr. 1, 1963.

SN 179,683. AMP Incorporated, Harrisburg, Pa. Filed Oct. 24, 1963.

MATE-N-LOK

For Electrical Connectors.
First use Oct. 18, 1963.

SN 180,328. Skil Corporation, Chicago, Ill. Filed Nov. 1, 1963.

SKIL

Owner of Reg. No. 198,104.
For Electrically Driven Tools and Accessories or Attachments Therefor, Power-Driven Screwdrivers, Nut Runners and Impact Wrenches and Accessories Therefor Including Sockets, Bits, Finders, and Shanks; Power Drills and Accessories Therefor Including Bits, Arbors, Chucks, Keys, Bench Stands, Carrying Cases, Wood Augers, Angle Attachments, Wire Brushes, Hole Saws, Rods and Rasps, Collet Adapters and Tool Attachments for Power Drills Including Circular and Jig Saws, Sanders, Bench Grinders, Grass Shears and Hedge Trimmers; Power Shears and Accessories Therefor Including Blades and Sharpening Fixtures; Power-Driven Saws and Accessories Therefor Including Saw Tables, Blades, Carrying Cases, Dado Sets, Rip Guides, Cut-Off Wheels, Water Feed Attachments; Power-Driven Hammers Including Rotary-Hammers and Accessories Therefor Including Star Drills, Bull Points, Chisels, Scaling Tools, Bushing Tools, Chucks, Dust Shields, and Carrying Cases; Planes and Accessories Therefor Including Bench Stands, Carrying Cases and Replacement Blades; Polishers and Polishing Pads Therefor; Portable Grinders and Accessories Therefor Including Grinding Wheels, Wire Brushes and Tuckpointing Wheels; Bench Grinders and Accessories Therefor Including Eye Shields, Pedestal Stands, Grinding Wheels and Brushes; Belt Sanders and Accessories Therefor Including Sanding Belts and Dust Pick-Up Kits; Disc Sanders and Accessories Therefor Including Sanding Discs, Wire Brushes, Backing Pads and Guards; Reciprocating and Orbital Sanders and Accessories Therefor Including Sanding Sheeets and Pads; Extension Cords and Connectors; Grass Shears and Extension Handles Therefor; Hedge Trimmers; Routers and Accessories Used Therewith Including Hinge-Butt Templates, Corner Chisels, Trimming Attachments, Guides, Bits and Sharpening Attachments; and Power Nibblers.
First use Feb. 23, 1945, on disc sanders.

SN 180,329. Skil Corporation, Chicago, Ill. Filed Nov. 1, 1963.

SKIL

Owner of Reg. No. 198,104.
For Electrically Driven Tools and Accessories or Attachments Therefor, Power-Driven Screwdrivers, Nut Runners and Impact Wrenches and Accessories Therefor Including Sockets, Bits, Finders, and Shanks; Power Drills and Accessories Therefor Including Bits, Arbors, Chucks, Keys, Bench Stands, Carrying Cases, Wood Augers, Angle Attachments, Wire Brushes, Hole Saws, Rods and Rasps, Collet Adapters and Tool Attachments for Power Drills Including Circular and Jig Saws, Sanders, Bench Grinders, Grass Shears and Hedge Trimmers; Power Shears and Accessories Therefor Including Blades and Sharpening Fixtures; Power-Driven Saws and Accessories Therefor Including Saw Tables, Blades, Carrying Cases, Dado Sets, Rip Guides, Cut-Off Wheels, Water Feed Attachments; Power-Driven Hammers Including Rotary-Hammers and Accessories Therefor Including Star Drills, Bull Points, Chisels, Scaling Tools, Bushing Tools, Chucks, Dust Shields, and Carrying Cases; Planes and Accessories Therefor Including Bench Stands, Carrying Cases and Replacement Blades; Polishers and Polishing Pads Therefor; Portable Grinders and Accessories Therefor Including Grinding Wheels, Wire Brushes and Tuckpointing Wheels; Bench Grinders and Accessories Therefor Including Eye Shields, Pedestal Stands, Grinding Wheels and Brushes; Belt Sanders and Accessories Therefor Including Sanding Belts and Dust Pick-Up Kits; Disc Sanders and Accessories Therefor Including Sanding Discs, Wire Brushes, Backing Pads and Guards; Reciprocating and Orbital Sanders and Accessories Therefor Including Sanding Sheeets and Pads; Extension Cords and Connectors; Grass Shears and Extension Handles Therefor; Hedge Trimmers; Routers and Accessories Used Therewith Including Hinge-Butt Templates, Corner Chisels, Trimming Attachments, Guides, Bits and Sharpening Attachments; and Power Nibblers.
First use on or about Jan. 1, 1950, on circular saws.

SN 182,857. Audel, Inc., Chicago, Ill. Filed Dec. 12, 1963.

AUDEL

For Acoustic Electronic and Electroacoustic Devices and Parts Thereof—Namely, Transmitters, Amplifiers, Receivers, Signal Instruments, Resistors, and Transistors.
First use Apr. 29, 1963.

SN 183,848. Malco Manufacturing Company, Inc., Chicago, Ill. Filed Dec. 31, 1963.

MINI-WASP

For Electrical Connectors.
First use April 1963.

SN 184,588. Stevens-Arnold Inc., Boston, Mass. Filed Jan. 14, 1964.

BLACO

For Ground Clamps.
First use 1904.

SN 184,728. Kuhlman Electric Co., Birmingham, Mich. Filed Jan. 16, 1964.

KUHLMAN

For Electric Transformers.
First use 1920.

SN 185,624. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Jan. 29, 1964.

DART

For Electric Hedge Trimmer.
First use Oct. 1, 1963.

SN 190,195. Model Products Co., Quakertown, Pa. Filed Apr. 2, 1964.

THE CORDLESS CHEF

Exclusive rights to registration of the word "Cordless" is disclaimed apart from the mark as shown.
For Portable Battery Operated Rotary Barbecue Appliances.
First use Jan. 17, 1964.

SN 192,812. F. & B. Mfg. Co., Chicago, Ill. Filed May 6, 1964.



For Electric Circuit Devices—Namely, Relays for Operating Industrial Machinery, and Motors Therefor.
First use in or about July 1958.

SN 193,394. Flo-Tronics, Inc., d.b.a. Northern Signal Co., Minneapolis, Minn. Filed May 13, 1964.

BLITZER

For Electric Fence Chargers.
First use Jan. 1, 1959.

SN 193,439. B & B Engineering Corporation, Norwood, La. Filed May 14, 1964.

TITEWAD

For Junction Boxes, Cable Terminations, Electrical Grounding Devices, and Seals for Conduits and Raceways.
First use Apr. 4, 1962, on electrical grounding devices.

SN 193,463. General Cable Corporation, New York, N.Y. Filed May 14, 1964.

QUALFOAM

For Insulated Electrical Wires and Cables.
First use Nov. 27, 1963.

SN 193,866. Fairchild Recording Equipment Corporation, Long Island City, N.Y. Filed May 20, 1964.

AUTO-TEN

For Attenuators and Parts Thereof.
First use Mar. 6, 1962.

SN 197,088. Continental Motors Corporation, Muskegon, Mich. Filed July 6, 1964.

Continental

Owner of Reg. Nos. 118,628, 537,624, and others.
For Electrical Accessory Components of Internal Combustion Engines—Namely, Ignition System Parts, Spark Plugs, Magnetos, Alternators, Generators, and Starter Motors.
First use June 5, 1964.

SN 197,090. Continental Motors Corporation, Muskegon, Mich. Filed July 6, 1964.



Owner of Reg. Nos. 233,517, 539,240, and others.
For Electrical Accessory Components of Internal Combustion Engines—Namely, Ignition System Parts, Spark Plugs, Magnetos, Alternators, Generators, and Starter Motors.
First use June 5, 1964.

SN 197,107. Flipper-Lite Co., Winters, Calif. Filed July 6, 1964.



The mark is lined for the color red, but color is not an essential feature of the mark.
For Emergency Signal Light System for Automobiles.
First use June 15, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 163,216. The Barr Rubber Products Co., Sandusky, Ohio. Filed Feb. 21, 1963.

RAND

For Sporting Goods—Namely, Basketballs, Footballs, Tether Balls, Volley Balls, and Soccer Balls.
First use Aug. 9, 1961.

SN 171,882. Ben Ichiyasu, Los Angeles, Calif. Filed Apr. 17, 1964.

PERMA-NET

For Fish Netting Used for Fishing.
First use Mar. 14, 1963.

SN 173,973. Shur-Fit Corporation, Berkeley, Calif. Filed July 29, 1963.

SHUR-FIT

Owner of Reg. No. 673,145.
For Mouth Protectors Adapated for Use by Individuals Engaged in Contact Sports or Other Pursuits To Prevent Injury to the Teeth, Lips or Other Regions of the Mouth.
First use Aug. 20, 1957.

SN 185,799. Mattel, Inc., Hawthorne, Calif. Filed Jan. 31, 1964.

BABY PATTABURP

No claim of exclusive right in the word "Baby" for dolls, apart from the mark, is made.
For Doll.
First use Jan. 9, 1964.

SN 185,902. Kats Drug Company, Kansas City, Mo. Filed Feb. 3, 1964.



The drawing is lined for blue, yellow, and gold.
For Athletic and Sporting Equipment Including: Fishing Lures, Fishing Hooks, Fishing Snap Swivels, Fishing Lines, Tackle Boxes, Sinkers, Fishing Rods, Minnow Pails, Footballs, Basketballs, Golfballs, Tennis Balls, Table Tennis Balls, Tennis Rackets, Sleeping Bags and Baseball Gloves.
First use at least as early as Mar. 14, 1962.

SN 187,967. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.

Laurentian

For Ice Skate Blades.
First use Oct. 7, 1955; in commerce Oct. 7, 1955.

SN 187,968. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.



For Ice Skate Blades.
First use Jan. 8, 1957; in commerce Jan. 8, 1957.

SN 187,969. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.

Mt Royal

For Ice Skate Blades.
First use Feb. 20, 1959; in commerce Feb. 20, 1959.

SN 187,970. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.

Mt Royal Pro

For Ice Skate Blades.
First use Feb. 20, 1959; in commerce Feb. 20, 1959.

SN 188,051. The Kulka Associates, Inc., New York, N.Y. Filed Feb. 28, 1964.

MAGIC FACES

The term "Faces" is disclaimed apart from the mark as used.
For Special Chemically Coated Coupons for Use in Playing a Promotional or Contest Game.
First use Nov. 14, 1963.

SN 188,129. Momoi Company, Inc., Long Beach, Calif. Filed Mar. 6, 1964.

MOMOI HI-TEST BRAND

"Momoi" is the phonetic English spelling of a Japanese word, the meaning of the Japanese word being "water well the peach." Applicant disclaims the words "Hi-Test Brand" apart from the mark shown.
For Fishnetting, Said Fishnetting Being Especially Fabricated in Such Configuration and of Such Material as To Be Particularly Intended for Fabrication Into Fish Nets.
First use Feb. 16, 1956.

SN 188,591. Virginia Theofil, Ann Arbor, Mich. Filed Mar. 12, 1964.

MULTICARDX

For Equipment Sold as a Unit for Playing a Multiplication Game.
First use Jan. 16, 1964.

SN 189,379. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 23, 1964.

TILT SCORE

For Apparatus Comprising a Labyrinth Teeter Board, a Scoring Wheel and Marbles for Playing a Parlor Game.
First use Feb. 1, 1964.

SN 189,380. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 23, 1964.

GUESS 'N BEE

For Apparatus Comprising a Slate-Like Board With Scoring Dial and Slideway for Alphabet Cards for Playing a Word Game.
First use Feb. 1, 1964.

SN 189,469. Robert S. Hartpence, Billings, Mont. Filed Mar. 24, 1964.

BIG SKY

For Equipment Sold as a Unit for Playing a Board Game.
First use Mar. 9, 1964.

SN 190,057. George L. Black, Buffalo, N.Y. Filed Apr. 1, 1964.

SOLI-T-ARY

For Combination Equipment Kit for Playing Various Type Board Games.
First use Mar. 19, 1964.

SN 190,813. Manson Metal Sales, Inc., Reading, Pa. Filed Apr. 10, 1964.

YOUNG MR. MUSCLES

For Barbells.
First use Oct. 28, 1963.

SN 191,039. Deluxe Reading Corporation, Elizabeth, N.J. Filed Apr. 14, 1964.

JOHNNY SEVEN O.M.A.

For Toy Guns.
First use Mar. 30, 1964.

SN 191,502. Dewey O. Broberg, Jr., d.b.a. Du-Bro Products Co., Niles, Ill. Filed Apr. 20, 1964.

KWIK-LINK

For Control Yoke Assemblies for Toys.
First use Jan. 20, 1962.

SN 191,875. John P. O'Brien, Chicago, Ill. Filed Apr. 23, 1964.

SWING MASTER

For Golfing Aid Comprising a Wedge Construction Adapted To Be Attached to the Sole of a Golf Shoe To Thereby Assist in the Development of a Proper Golf Swing.
First use at least as early as March 1964.

SN 191,999. The Avalon Hill Company, Baltimore, Md. Filed Apr. 27, 1964.

AFRIKA KORPS

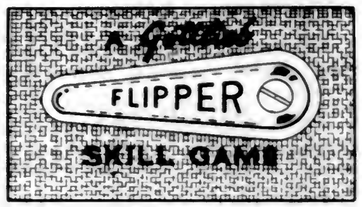
For Equipment Sold as a Unit for Playing a Board Game.
First use Feb. 4, 1964.

SN 196,274. D. Gottlieb & Co., Inc., Chicago, Ill. Filed June 23, 1964.

D. Gottlieb & Co.

For Coin-Operated Amusement Games.
First use Jan. 10, 1942.

SN 196,275. D. Gottlieb & Co., Chicago, Ill. Filed June 23, 1964.



No claim of exclusive right is made to "Skill Game" for the goods recited. The drawing is lined for yellow, but color is not claimed as a feature of the mark.
For Coin-Operated Amusement Games.
First use Aug. 10, 1960.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 85,025. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Electric Shavers and Air Compressors.

SN 157,498. Hammond Machinery Builders, Inc., Kalamazoo, Mich. Filed Nov. 19, 1962.

THINTYPE

For Sawing and Trimming Machines for the Printing Trades.
First use Oct. 23, 1962.

SN 161,342. Hammond Machinery Builders, Inc., Kalamazoo, Mich. Filed Jan. 24, 1963.

HAMMOND DRY PEEN

For Shot Peening Machines.
First use Jan. 2, 1963.

SN 174,447. Silverson Machines Ltd., London, England Filed Aug. 5, 1963.

SILVERSON

Owner of British Reg. No. B790,093, dated Apr. 24, 1959.
For Air Compressors, Air Condensers, and Mixing and Milling Machines.

SN 179,007. The Woodman Company, Inc., Decatur, Ga. Filed Oct. 14, 1963.

PROFIT-MAKER

For Packaging Machine.
First use Aug. 12, 1963.

SN 179,868. Closure Corporation, Linden, N.J. Filed Oct. 28, 1963.

CLOSURE

For Packaging Machinery—Namely, Machinery for Folding Top Inner and Outer Flaps and Outer Flaps and Applying Sealing Strips to Containers.
First use Apr. 22, 1963.

SN 180,088. Grand Automotive Products, Inc., Chicago, Ill. Filed Oct. 30, 1963.

SCOTTY

For Mufflers and Automobile Exhaust Systems.
First use Nov. 8, 1962.

SN 180,111. Mullins Manufacturing Corporation, Salem, Ohio. Filed Oct. 30, 1963.

LEHMANN

For Machinery for Chocolate Processing, Cocoa Liquor Mills, Millstone Dressing Machines, Emulsifiers, Paste Mixers, Screening Machines, Ink and Paint Machinery and Various Assorted Calenders and Mills for Grinding, Pulverizing and Processing Various Ingredients.
First use in or about March 1961.

SN 180,969. Standard Pneumatic Motor Company, Whittier, Calif. Filed Nov. 12, 1963.

TORQUE-PEAK

For Torque Release Clutch.
First use June 20, 1963.

SN 187,228. Alloy Brass Foundry, Inc., Los Angeles, Calif. Filed Feb. 24, 1964.

DYNAMIC

For Swimming Pool Vacuum Cleaner Fittings
First use on or about Dec. 11, 1962.

SN 188,989. Metal Bellows Corporation, Sharon, Mass. Filed Mar. 18, 1964.

TORQALIGN

For Flexible Couplings.
First use Jan. 2, 1964.

SN 190,749. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Apr. 9, 1964.

CHUCKTUFT

For Power-Driven Industrial Brushes.
First use at least as early as Dec. 16, 1963.

SN 191,147. Ekco Products Company, Chicago, Ill. Filed Apr. 15, 1964.

PRUDENTIAL

Owner of Reg. Nos. 658,765, 659,508, and 752,782.
For Cutlery and Tableware—Namely, Knives, Forks, and Spoons.
First use on or about Mar. 1, 1963.

SN 191,535. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Apr. 20, 1964.

AUTO-ETCHER

For Pre-Etching Machines.
First use Oct. 27, 1963.

SN 194,684. The U.S. Baird Corporation, Stratford, Conn. Filed June 1, 1964.

MULTI-SLIDE

Owner of Reg. Nos. 524,268 and 719,963.
For Machines Used in Punching, Bending and Forming Various Articles of Metal.
First use on or about Nov. 28, 1930.

SN 195,654. Continental Drill Corporation, Inc., Chicago, Ill. Filed June 15, 1964.

STAN-DEX

For Receptacles Containing Twist Drills, Masonry Drills, Boring Bits, and Related Drill Products.
First use Nov. 14, 1963.

SN 196,080. Torrington Gesellschaft mit beschränkter Haftung, Wurselen, Bezirk Aachen, Germany. Filed June 19, 1964.

METWAR

Owner of German Reg. No. 430,296, dated Mar. 10, 1931.
For Sewing Machine Needles.

SN 196,217. Archie P. Wilder, d.b.a. Wilder Saw Works, Fresno, Calif. Filed June 22, 1964.

WILD-CUT

For Carbon Tipped Circular Saw Blades for Power Saws Including Heavy Duty Rip Saw Blades, Planar Saw Blades, Combination Saw Blades, and Plastic and Metal Saw Blades.
First use Oct. 1, 1963.

SN 196,561. Roller Bearing Company of America, West Trenton, N.J. Filed June 26, 1964.

PLANELIGN

Owner of Reg. No. 591,094.
For Roller Bearings.
First use Mar. 9, 1964.

SN 197,448. Union Carbide Corporation, New York, N.Y. Filed July 8, 1964.

VISTEN

Owner of Reg. Nos. 502,256 and 525,848.
For Packaging Machines and Parts Thereof.
First use on or about Nov. 12, 1963.

SN 197,580. Hewitt-Robins Incorporated, Passaic, N.J. Filed July 10, 1964.

TWINDEX

For Vibrating Screens.
First use on or about Feb. 24, 1964.

SN 197,589. Samuel M. Langston Company, Camden, N.J. Filed July 10, 1964.

PRINTMASTER

For Machines That Print and Slot Corrugated Boxes and for Paper Mill Equipment.
First use June 1, 1964.

SN 198,818. The Black and Decker Manufacturing Company, Towson, Md. Filed July 30, 1964.

SAWCAT

For Power-Operated Saws, Kits, and Accessories Therefor.
First use Apr. 1, 1964.

SN 199,948. Apsco Products, Inc., Rockford, Ill. Filed Aug. 17, 1964.

Apsco matic

Owner of Reg. Nos. 522,280 and 556,527.
For Electrical Pencil Sharpeners.
First use July 9, 1964.

SN 200,209. Southern Plating Company, Anniston, Ala. Filed Aug. 19, 1964.

TRU TRAC

For Knurled Metallic Rolls for Use in Industrial Machinery.
First use July 31, 1964.

SN 200,363. Mark Cross Company, Ltd., New York, N.Y. Filed Aug. 21, 1964.

CROSS

For Razors, Scissors, Pocket-Knives, and Knives Made of Base Metal for Table and Domestic Use.
First use on or about Jan. 1, 1892.

SN 200,475. J. C. Penney Company, New York, N.Y. Filed Aug. 24, 1964.

CONCORD

For Typewriters.
First use Apr. 10, 1964.

SN 200,476. J. C. Penney Company, New York, N.Y. Filed Aug. 24, 1964.

CARAVELLE

For Typewriters.
First use Apr. 10, 1964.

SN 200,477. J. C. Penney Company, New York, N.Y. Filed Aug. 24, 1964.

JAYVEE

For Typewriters.
First use Apr. 10, 1964.

SN 200,478. J. C. Penney Company, New York, N.Y. Filed Aug. 24, 1964.

PENNCREST

Owner of Reg. No. 763,821 and others.
For Typewriters.
First use Apr. 10, 1964.

SN 200,905. Bostitch, Inc., East Greenwich, R.I. Filed Aug. 31, 1964.

B5

Owner of Reg. Nos. 588,798 and 590,029.
For Wire Stitching and Stapling Machines and Parts Thereof.
First use June 1, 1937.

Class 24 — Laundry Appliances and Machines

SN 85,023. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Electric Washing Machines.

SN 185,151. National Cooperatives, Inc., Albert Lea, Minn. Filed Jan. 22, 1964.

Capri

Owner of Reg. Nos. 663,131, 732,496, and others.
For Household Appliances—Namely, Clothes Washers and Dryers, and Parts.
First use at least as early as Mar. 22, 1957.

SN 201,716. McGraw-Edison Company, Milwaukee, Wis. Filed Sept. 11, 1964.

QUEENS-AID

For Ironing Tables and Pad and Cover Sets Therefor, Laundry Carts, Laundry Sorting Hampers, and Clothes Caddies.
First use May 28, 1964.

Class 26 — Measuring and Scientific Appliances

SN 85,027. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Electric Testers, Electric Measuring Apparatus, Photo Flash Lamps, Movie Projector Arc Carbon Rods, Voltage Balancers, and Time Switches.

SN 168,998. Alco Electronic Products Inc., Lawrence, Mass. Filed May 16, 1963.

ALCO

For Electrical and Electronic Apparatus for Measuring and Testing—Namely, Miniature Meters, Oscillators, and Testers.
First use Dec. 31, 1949.

SN 182,518. Vita-Pakt Citrus Products Co., Covina, Calif. Filed Dec. 6, 1963.

AUTOMIZER

For Automatically Timed Dispensers for an Insecticide.
First use Oct. 25, 1963.

SN 183,624. Qualite Laboratories Inc., Boston, Mass. Filed Dec. 26, 1963.

PLASS

For Precision and Ophthalmic Lenses.
First use Oct. 29, 1963.

SN 190,672. Univis, Inc., Fort Lauderdale, Fla. Filed Apr. 8, 1964.



For Ophthalmic Lenses, Frames, Mountings, and Parts Thereof.
First use Mar. 3, 1964.

SN 191,845. Dynacolor Corporation, Rochester, N.Y. Filed Apr. 23, 1964.

DYNAPAN

Owner of Reg. Nos. 610,661, 721,935, and others.
For Photographic Film.
First use Mar. 20, 1964.

SN 193,845. Harold E. Brower, d.b.a. Electrochem Co., Olympia, Wash. Filed May 20, 1964.

AUTO-SCAN

For Automatic Voltage Scanning Polarograph.
First use Nov. 5, 1963.

SN 193,915. American Seating Company, Grand Rapids, Mich. Filed May 21, 1964.

CHANCELLOR

For Electronic Training Center Employing Phonograph and Recording Tape Means, Acoustic Transmitters and Booths for Students, etc.
First use in or before June 1962.

SN 193,927. The Budd Company, Philadelphia, Pa. Filed May 21, 1964.

FINELINE

For Resistance Strain Gages.
First use at least as early as Apr. 28, 1963.

SN 196,394. Radiant Manufacturing Corporation, Morton Grove, Ill. Filed June 24, 1964.

AUTOMASTER

For Portable Projection Screen.
First use July 1963.

SN 196,613. Cameron Iron Works, Inc., Houston, Tex. Filed June 29, 1964.

Cameron

Owner of Reg. No. 560,168.
For Pressure Gauges.
First use 1954.

Class 27 — Horological Instruments

SN 201,757. Sunbeam Corporation, Chicago, Ill. Filed Sept. 11, 1964.

SKYLARK

For Clocks and Parts Thereof.
First use Sept. 4, 1964.

SN 202,328. Sunbeam Corporation, Chicago, Ill. Filed Sept. 21, 1964.

GRANDEUR

For Clocks.
First use Aug. 31, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 183,988. Raimond Silver Manufacturing Company, Inc., Cambridge, Mass. Filed Jan. 3, 1964.

LEA

For Precious Metal and Precious Metal Plated Eating Utensils and Ornamental Jewelry.
First use May 1, 1961.

Class 29 — Brooms, Brushes, and Dusters

SN 201,758. Sunbeam Corporation, Chicago, Ill. Filed Sept. 11, 1964.

SKYLARK

For Toothbrushes and Electric Toothbrushes and Parts Thereof.
First use July 28, 1964.

Class 31 — Filters and Refrigerators

SN 85,022. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Electric Ice Cream Freezers, and Electric Refrigerators.

SN 181,164. Marvel Engineering Company, Chicago, Ill. Filed Nov. 14, 1963.

SYNCLINAL

For Filters for Use on Hydraulic Power, Low Pressure Circulating and Water Systems.
First use Oct. 22, 1963.

SN 181,165. Marvel Engineering Company, Chicago, Ill. Filed Nov. 14, 1963.

MARVEL

For Filters for Use on Hydraulic Power, Low Pressure Circulating and Water Systems.
First use Oct. 22, 1963.

SN 181,166. Marvel Engineering Company, Chicago, Ill. Filed Nov. 14, 1963.



For Filters for Use on Hydraulic Power, Low Pressure Circulating and Water Systems.
First use Oct. 22, 1963.

SN 185,152. National Cooperatives, Inc., Albert Lea, Minn. Filed Jan. 22, 1964.

Capri

Owner of Reg. Nos. 663,131, 732,496, and others.
For Household Appliances—Namely, Freezers, Refrigerators, and Freezer-Refrigerators, Water Softeners, Water Filters and Combination Water Softener-Filters and Parts.
First use as early as Jan. 7, 1957.

Class 32 — Furniture and Upholstery

SN 194,690. Zero Cold, Inc., Anaheim, Calif. Filed June 1, 1964.

SCADS

For Display, Merchandising, and Storage Fixtures for Food Stuffs.
First use Jan. 23, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 85,024. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Electric Room Coolers.

SN 185,153. National Cooperatives, Inc., Albert Lea, Minn. Filed Jan. 22, 1964.

Capri

Owner of Reg. Nos. 663,131, 732,496, and others.
For Household Appliances—Namely, Ranges, Water Heaters, Space Heaters, and Parts.
First use at least as early as Aug. 17, 1960, on ranges.

SN 201,759. Sunbeam Corporation, Chicago, Ill. Filed Sept. 11, 1964.

SKYLARK

For Humidifiers and Parts Thereof.
First use Aug. 18, 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 195,797. Minnesota Rubber Company, Minneapolis, Minn. Filed June 16, 1964.

MINTHANE

For Sealing Rings.
First use Feb. 21, 1964.

SN 195,798. Minnesota Rubber Company, Minneapolis, Minn. Filed June 16, 1964.

XSEL

For Elastomer Sealing Rings.
First use Apr. 3, 1964.

Class 36 — Musical Instruments and Supplies

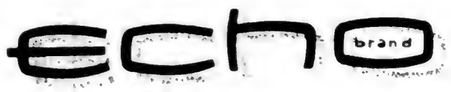
SN 191,530. The Elektra Corporation, New York, N.Y. Filed Apr. 20, 1964.



For Phonograph Records and Prerecorded Tapes.
First use Mar. 13, 1964.

Class 37 — Paper and Stationery

SN 159,947. Ilemis Bro. Bag Company, Minneapolis, Minn. Filed Dec. 31, 1962.



Applicant makes no claim to the word "Brand," apart from the mark as shown.
For Thermal Copy Paper.
First use Nov. 27, 1962.

SN 164,338. Food Fair Stores, Inc., Philadelphia, Pa. Filed Mar. 11, 1963.

fyne-wrap

Applicant disclaims the word "Wrap" apart from the mark as a whole. Owner of Reg. Nos. 590,938 and 735,048.
For Aluminum Foil, Freezer Paper, and Wax Paper.
First use Feb. 5, 1963.

SN 165,180. Wilma Stahl, d.b.a. G. A. Stahl Co., Philadelphia, Pa. Filed Mar. 21, 1963.

VELVELEEN

For Velour-Suede Finish Incorporated in Decorative Paper.
First use 1925.

SN 176,855. Diamond National Corporation, New York, N.Y. Filed Sept. 10, 1963.



For Paper Candy Sticks and Paperboard for Wrapping and Packaging.
First use July 1960.

SN 190,198. Paper Service Company, Inc., Holyoke, Mass. Filed Apr. 2, 1964.



For Writing Tablets, Composition Books, Stenographic Books, and Theme Tablets.
First use September 1962.

SN 191,379. Georgia-Pacific Corporation, Portland, Oreg. Filed Apr. 17, 1964.

SOFTEX

Owner of Reg. Nos. 205,899 and 593,005.
For Paper Products—Namely, Facial Tissue and Napkins.
First use Feb. 5, 1963, on Napkins.

SN 192,771. Tomahawk Paper Company, Inc., Tomahawk, Wis. Filed May 5, 1964.

TOMCO

For Toilet Tissue, Household Toweling, and Napkins.
First use Dec. 2, 1963.

SN 197,641. Weyerhaeuser Company, Tacoma, Wash. Filed July 10, 1964.

RESISTEX

For Paperboard.
First use Nov. 6, 1963.

SN 197,824. Diamond National Corporation, New York, N.Y. Filed July 14, 1964.

ECONOCLAY

For Clay Coated Paperboard.
First use May 6, 1964.

SN 197,932. Ben N. Yasutomo, d.b.a. Yasutomo & Co., San Francisco, Calif. Filed July 15, 1964.

PENTEL

For Marking Pens.
First use May 8, 1963.

SN 201,003. Binney & Smith Inc., New York, N.Y. Filed Sept. 1, 1964.

ARTISTA

Owner of Reg. Nos. 165,139, 750,773, and others.
For Oil Pastel Crayons.
First use July 24, 1964.

Class 38 — Prints and Publications

SN 128,588. Racing Pictorials, Inc., Indianapolis, Ind. Filed Sept. 25, 1961.

RACING PICTORIAL

For Magazine.
First use August 1959.

SN 173,471. Le Cordon Bleu S.A.R.L., Paris, France. Filed July 22, 1963.

LE CORDON BLEU

Priority claimed under Sec. 44(d) on French Reg. No. 512,537, dated Apr. 5, 1963 (Seine); Natl. Inst. No. 202,880. "Le Cordon Bleu" is translated as "the blue ribbon."
For Magazines Relating to Culinary, Gastronomic, and Oenologic Matters.

SN 182,535. Colorcraft Laboratories, Inc., Hialeah, Fla. Filed Dec. 6, 1963.

COLORIFIC PRINTS

The lining in the mark represents the colors red, green, blue, orange, and yellow. Applicant disclaims any rights to the word "Prints."
For Prints and/or Negative Film.
First use Aug. 19, 1963.

SN 185,860. Brief Pub, Inc., New York, N.Y. Filed Feb. 3, 1964.

automotive
AFTERMARKET

For Magazine Published Bimonthly.
First use Jan. 17, 1964.

SN 188,264. Original Greeting Cards, Inc., Rochester, N.Y. Filed Mar. 9, 1964.



The word "Original" is disclaimed apart from the mark as shown.
For Greeting Cards.
First use Feb. 28, 1964.

SN 188,931. Unevangelized Fields Mission, Bala-Cynwyd, Pa. Filed Mar. 17, 1964.

LIFELINE

For Magazine.
First use Jan. 15, 1964.

SN 189,545. Building Research Institute, Inc., Washington, D.C. Filed Mar. 25, 1964.

BRI

For Magazine.
First use January 1964.

SN 191,869. National Association of Electrical Distributors, New York, N.Y. Filed Apr. 23, 1964.

THE ELECTRICAL DISTRIBUTOR

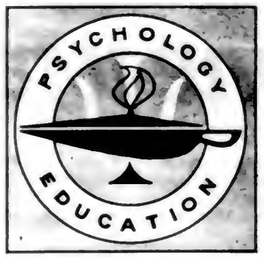
For Trade Journal.
First use Apr. 8, 1964.

SN 191,885. Sahara-Nevada Corporation, Las Vegas, Nev. Filed Apr. 23, 1964.

THE SAHARAN

For Publicity Magazine Devoted to Matters of Interest to Applicant's Guests.
First use Jan. 1, 1960.

SN 192,404. Journal of School Psychology, Inc., Columbus, Ohio. Filed Apr. 30, 1964.



Applicant does not claim exclusive rights to the symbols or the words "Psychology" and "Education." Applicant is applying for exclusive rights to the mark as a whole.
For Magazine.
First use Mar. 25, 1964.

SN 192,496. Missouri Historical Society, St. Louis, Mo. Filed May 1, 1964.



For Souvenir Packets of Printed Material, Printed Souvenir Items Such as Pictures and Historical Documents, Historical Picture Cards and Historical Booklets.
First use Mar. 29, 1964.

SN 192,925. Merrill Company Publishers, Chicago, Ill. Filed May 7, 1964.



For Books.
First use Jan. 17, 1946.

SN 194,003. United Newspapers Magazine Corporation, New York, N.Y. Filed May 21, 1964.

This Week
MAGAZINE SPECIAL FAMILY LIVING EDITION

No claim is made to the words "Magazine . . . Special Family Living Edition," separate and apart from the mark as shown. Owner of Reg. Nos. 534,217 and 720,021.
For Syndicated Magazine or Newspaper Supplement.
First use Apr. 26, 1964.

SN 196,066. Robinson Tag & Label Company, Inc., New York, N.Y. Filed June 19, 1964.

SATPOS

For Printed Tags and Labels.
First use May 28, 1964.

Class 39 — Clothing

SN 125,609. The Lovable Company, Atlanta, Ga., by change of name from The Lovable Brassiere Co., Atlanta, Ga. Filed Aug. 8, 1961.

SWEETHEART

For Brassieres.
First use Aug. 26, 1958.

SN 178,448. Hamilton Shoe Company, St. Louis, Mo. Filed Oct. 7, 1963.

HI TIDE

For Women's and Misses' Shoes.
First use April 1962.

SN 180,283. Lane Bryant, Inc., New York, N.Y. Filed Nov. 1, 1963.

Rite Form

For Corsets.
First use July 1916.

SN 184,585. Oxford Manufacturing Co., Inc., Greenville, S.C. Filed Jan. 14, 1964.

Girl Talk

For Girls' Blouses.
First use Jan. 3, 1964.

SN 185,478. Alfreton Knitting Mills Limited, Alfreton, England. Filed Jan. 28, 1964.

DALCANIZED

Owner of British Reg. Nos. 846,360 and 846,361, both dated Mar. 13, 1963.
For Men's, Women's, and Children's Knitted Outerwear Made From Wool, Cotton and Synthetic Fibers, and Combinations Thereof, and Men's, Women's, and Children's Outerwear Treated So as To Facilitate Machine Washability—Namely, Jumpers, Cardigans, Sweater Sets, Sweaters, Skirts, and Bathing Suits.

SN 187,206. Palm Beach Company, Portland, Maine. Filed Feb. 21, 1964.

SMOOTHWEAVE

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Nov. 11, 1963.

SN 187,209. Palm Beach Company, Portland, Maine. Filed Feb. 21, 1964.

SHARKWEAVE

For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Nov. 11, 1963.

SN 187,343. Shoo-Zees Manufacturing Company, Higginsport, Ohio. Filed Feb. 24, 1964.

SHOO-ZEES

For Children's Shoes.
First use Mar. 1, 1951.

SN 190,500. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Apr. 7, 1964.

SQAWHEGANS

Owner of Reg. No. 739,063.
For Shoes.
First use Mar. 19, 1964.

SN 192,735. Manchester Hosiery Mills, Manchester, N.H. Filed May 5, 1964.

Ankle-ons

For Hosiery.
First use Feb. 7, 1964.

SN 193,023. Maywood Industries, Newport Beach, Calif. Filed May 8, 1964.

AIR-O-PED

For Insoles.
First use on or about Feb. 10, 1964.

SN 193,148. Fownes Brothers & Co., Incorporated, New York, N.Y. Filed May 11, 1964.

SPATABOUTS

For Stockings and Spats.
First use Apr. 1, 1964.

SN 193,249. F. W. Woolworth Co., New York, N.Y. Filed May 11, 1964.

YOUR SYMBOL OF QUALITY
Primstyle

The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 665,430, 767,346, and 768,234.
For Women's Girdles, Garter Belts, Underwear Vests, Hosiery, Sleep Wear, Sweaters, Blouses, Gloves, Headwear; and Women's and Children's Stretch Tights.
First use Apr. 1, 1960, on sleep wear.

SN 193,383. Johnson & Johnson, d.b.a. Personal Products Company, New Brunswick, N.J. Filed May 13, 1964.

MODESS

Owner of Reg. Nos. 215,220, 723,159, and others.
For Panties.
First use Apr. 4, 1964.

SN 195,719. Salant & Salant, Inc., New York, N.Y. Filed June 15, 1964.

SHOREHAVEN

For Shirts, Pants and Jackets for Men, Boys, and Children.
First use Mar. 11, 1964.

SN 195,720. Salant & Salant, Inc., New York, N.Y. Filed June 15, 1964.

SOUR DOUGH

For Shirts, Pants and Jackets for Men, Boys, and Children.
First use Feb. 26, 1964.

SN 195,739. T.P. Industries, Inc., New York, N.Y. Filed June 15, 1964.

PAGE ONE

For Women's Dresses.
First use Mar. 5, 1964.

SN 195,934. Ellson of California, Los Angeles, Calif. Filed June 18, 1964.

MARSINA

For Ladies' and Misses' Knitted Outerwear—Namely, Sweaters, Capri Pants, and Suits.
First use Oct. 5, 1961.

SN 196,047. Kayser-Roth Corporation, New York, N.Y. Filed June 19, 1964.

YOUNG IDEAS

For Ladies' Lingerie and Robes.
First use Nov. 30, 1963.

SN 196,128. The Enro Shirt Company, Inc., Louisville, Ky. Filed June 22, 1964.

WIDE-TRACK

For Men's and Ladies' Shirts, Pajamas, and Sport Shirts.
First use Mar. 15, 1964.

SN 196,186. O'Bryan Bros., Inc., Chicago, Ill. Filed June 22, 1964.

LORRAINE

For Women's and Children's Undergarments and Night Clothing—Namely, Panties, Slips, Nightgowns, Pajamas, Dressing Robes, and Bed Jackets.
First use 1925.

SN 196,239. Arthur Originals, Inc., Boston, Mass. Filed June 23, 1964.

The Pak-N-Travel

For Women's and Misses' Dresses.
First use Mar. 4, 1963.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 181,132. Crompton & Knowles-Malimo, Inc., Worcester, Mass. Filed Nov. 14, 1963.

MALIMO

For Textile Fabrics in the Piece Having the Characteristics of Knit Goods—Namely, Cotton, Rayon, and Synthetic Broad Goods, Including Sheeting and Print Cloth.
First use Mar. 2, 1963.

SN 190,925. Hicks and Otis Prints, Incorporated, Norwalk, Conn. Filed Apr. 13, 1964.

CHEM-QUILT

For Sheet Fabric, Specifically Textile Fabric Combined to Plastic Foam and Plastic Sheet Material Combined to Plastic Foam, the Uses for Which, Among Others, Are in Making Bedspreads, Mattress Pads, and Other Household Furnishings, and in Wearing Apparel.
First use Feb. 28, 1964.

SN 194,826. Mosse, Incorporated, New York, N.Y. Filed June 3, 1964.

MOSSE

For Sheets, Pillow Cases, Mattress Pads, Blanket Covers, Blankets, Quilts, Bath Towels, Kitchen Towels, Shower Curtains, Table Linens, Handkerchiefs, Napkins, Tablecloths, Dusting and Polishing Cloths, Lid and Seat Covers, Wash Cloths, and Doilies.
First use 1916.

SN 195,111. The Kendall Company, Walpole, Mass. Filed June 8, 1964.

SORBANT

Owner of Reg. Nos. 297,452, 297,453, and 686,000.
For Towels.
First use Dec. 10, 1957.

SN 195,570. United Merchants and Manufacturers, Inc., New York, N.Y. Filed June 12, 1964

SWISSDOWN

For Piece Goods of Cotton, Rayon and/or Silk, or Combinations Thereof.
First use on or about July 10, 1942.

SN 196,107. Burlington Industries, Inc., New York, N.Y. Filed June 22, 1964.

TRIC O' TREAT

For Textile Fabrics in the Piece Suitable for Lingerie, Blouses, Slips, Nightgowns, Bed Jackets, and Other Like Items of Women's Wearing Apparel.
First use Nov. 24, 1953.

SN 196,133. Fieldcrest Mills, Inc., Spray, N.C. Filed June 22, 1964.

Estella

For Textile Rugs and Carpeting.
First use June 12, 1964.

SN 190,876. Celanese Corporation of America, New York, N.Y. Filed Apr. 13, 1964.

CELANESE

Owner of Reg. Nos. 178,422 and 752,286.
For Yarns.
First use 1922.

SN 194,712. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 2, 1964.

NOMELLE

For Yarns and Threads of Man-Made Fibers.
First use Apr. 16, 1964.

SN 194,827. Northern Yarn Mills, Newark, N.J. Filed June 3, 1964.

COTEXTURED

For Textured and/or Crimped Synthetic Yarns.
First use on or about Apr. 1, 1964.

SN 195,051. The American Thread Company, New York, N.Y. Filed June 8, 1964.

VVV

For Thread and Yarn.
First use April 1938.

Class 44 — Dental, Medical, and Surgical Appliances

SN 85,026. Matsushita Denki Sangyo Kabushiki Kaisha, Kitakawachi-gun, Osaka, Japan. Filed Nov. 10, 1959.

THREEPINES

Priority claimed under Sec. 44(d) on Japanese application filed May 19, 1959; Reg. No. 646,356, dated July 3, 1964.
For Germicidal Lamps, and Electric Medical Apparatus Including Vibrators, Hearing Aids, and X-Ray Systems.

SN 174,171. Helene Curtis Industries, Inc., Chicago, Ill. Filed Aug. 1, 1963.

KOOL DRI

For Electrically Operated Hair Dryer.
First use on or about May 14, 1963.

SN 182,904. Tecniband, Inc., Los Angeles, Calif. Filed Dec. 12, 1963.

INVISAKOTE

For Epoxy Resin Base Coating for Orthodontist and Dental Braces and an Epoxy Resin Base Coating for Dental Appliances Such as Arch Wires, Retainer Wires, Stainless Steel Crowns, Exposed Portions of Metal in Bridge Work, and the Like.
First use Sept. 19, 1963.

SN 185,672. Hamilton O. Hazel, d.b.a. Air-O-Med Company, Sarasota, Fla. Filed Jan. 30, 1964.

AIR-O-MED

For Dispenser for Distributing Minor Amounts of Solids of Small Particle Size Into the Air for the Treatment and Prevention of Body Disorders.
First use Nov. 19, 1962.

SN 189,354. Parkell Products Inc., Long Island City, N.Y. Filed Mar. 23, 1964.

PARKELL

For Dental Equipment and Oral Surgical Instruments Used in Dentistry.
First use June 1949.

SN 189,356. Parkell Products Inc., Long Island City, N.Y. Filed Mar. 23, 1964.

PARKELL

For Dental Equipment and Oral Surgical Instruments Used in Dentistry.
First use June 1949.

SN 192,318. Picker International Corp., White Plains, N.Y. Filed Apr. 29, 1964.

ELECTROGRAPH

For Recording Paper for Electrocardiograph Machines.
First use on or about Apr. 1, 1964.

SN 193,250. F. W. Woolworth Co., New York, N.Y. Filed May 11, 1964.

YOUR SYMBOL OF QUALITY
Primstyle

The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 665,430 and 768,234.
For Sanitary Belts.
First use Jan. 14, 1963.

Class 45—Soft Drinks and Carbonated Waters

SN 192,999. Davis Bottling Company, Harrisburg, Pa. Filed May 8, 1964.

Cola-De-Lite

For Soft Drink.
First use May 1, 1963.

Class 46—Foods and Ingredients of Foods

SN 143,735. Griffin & Brand, Inc., McAllen, Tex. Filed May 3, 1962.

TROPHY

For Fresh Vegetables and Fruits.
First use 1950.

SN 149,934. Hy-Dri Corporation, Chicago, Ill. Filed July 27, 1962.

HY-DRI

For Garlic and Onion Purees and Powders.
First use May 4, 1961.

SN 160,218. Pearson Candy Company, St. Paul, Minn. Filed Jan. 4, 1963.

Sperry

Owner of Reg. No. 684,165.
For Candies.
First use July 1962.

SN 162,646. Leaf Brands, Inc., Chicago, Ill. Filed Feb. 13, 1963.

HOT DOG!

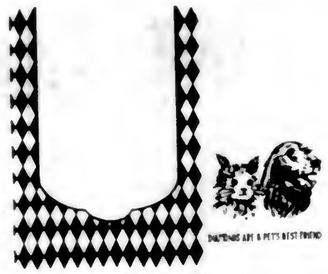
For Bubble Gum.
First use about 1947.

SN 163,266. The Pillsbury Company, Minneapolis, Minn. Filed Feb. 21, 1963.



For Edible Artificial Sweetener for Human Use and Also for Use in Animal Feeds.
First use June 29, 1962.

SN 170,644. Kal Kan Foods, Inc., Los Angeles, Calif. Filed June 10, 1963.



Owner of Reg. Nos. 763,629 and 764,781.
For Canned Food for Dogs and Cats.
First use May 5, 1963.

SN 173,097. Consolidated Foods, Inc., Nashua, N.H. Filed July 16, 1963.

ELEGANT

Owner of Reg. No. 537,516.
For Frozen Vegetables, Frozen Fruits, Frozen Berries, Frozen Fruit Juices, and Frozen Fish.
First use December 1950.

SN 173,132. Robert L. Roush, d.b.a. Roush Bakery Products, Sacramento, Calif. Filed July 16, 1963.



The showing of the bread per se and all wording except "Hillbilly" and "Granny's" are disclaimed apart from the mark shown.
For Bread.
First use Feb. 1, 1963.

SN 177,617. Educator Biscuit Company, Incorporated, Lowell, Mass. Filed Sept. 24, 1963.

CRAX

For Crackers.
First use Mar. 20, 1934.

SN 177,671. Whittier's-Indian River, Indian River, Mich. Filed Sept. 24, 1963.



For Pancake Mix.
First use on or about June 20, 1963.

SN 178,726. Penn-Eastern Mushroom Corporation, Avondale, Pa. Filed Oct. 10, 1963.

PENN-E-PAK

For Fresh Mushrooms.
First use Oct. 1, 1963.

SN 180,839. Central Retailer-Owned Grocers, Inc., Northlake, Ill. Filed Nov. 12, 1963.

shurfresh

Owner of Reg. Nos. 663,880 and 686,418.
For Milk, Cream, Cheese, Ice Cream, Oleomargarine, Cheese Spread, Dry Milk Powder, Refrigerated Ready To Bake Biscuits, Salad Oil, Crackers, Cookies, and Candy.
First use July 1963.

SN 182,174. Graffigna Fruit Co., d.b.a. John Graffigna, Lodi, Calif. Filed Dec. 2, 1963.

PROGRESS

For Fresh Grapes, Fresh Deciduous Fruits.
First use Aug. 31, 1936.

SN 182,177. J. Heinrich Weseloh, Winsen (Luhe), Germany. Filed Dec. 2, 1963.

WINSENIA

Owner of German Reg. No. 617,735, dated Mar. 11, 1952.
For Canned Meats and Fish; Meat Extracts; Canned Fruits, Fruit Juices, and Vegetables; Meat, Fish, Fruit and Vegetable Jellies; Coffee and Coffee Substitutes; Tea; Sugar; Syrup; Honey; Flour; Hors d'Oeuvres; Pastries; Spices; Canned Gravies; Vinegar; Mustard; Salt; Cocoa; Chocolate; Candies; Confectioneries in the Form of Bakery Products; Yeast; and Baking Powder; Fresh Fruit; and Fresh Vegetables.

SN 182,511. Star-Kist Foods, Inc., d.b.a. The Halfhill Company, Terminal Island, Calif. Filed Dec. 6, 1963.



The stippling on the drawing represents shading only and is not an indication of any color.
For Canned Fish.
First use Apr. 6, 1962.

SN 182,515. Swift & Company, Chicago, Ill. Filed Dec. 6, 1963.

JUBILEE

Owner of Reg. No. 637,521.
For Fresh Frozen Poultry.
First use on or about Sept. 13, 1956.
Subj. to Intf. with SN 198,163.

SN 183,086. Nassin Mishaan & Co., S.C., Guatemala City, Guatemala. Filed Dec. 16, 1963.

SPACE BOY

For Chewing Gum.
First use Aug. 2, 1963; in commerce Aug. 2, 1963.

SN 184,587. Don Rudolph Enterprises, Inc., Denver, Colo. Filed Jan. 14, 1964.

THUMB SUCKER

Applicant disclaims the word "Sucker" apart from the mark as shown.
For Candy and Syrup-Filled Wax-Container Confections.
First use on or about Oct. 10, 1963.

SN 184,591. Wellworth Pickle Co., Paterson, N.J. Filed Jan. 14, 1964.

CLERMONT

For Vegetable Salad Packed in Glass Containers.
First use July 23, 1963.

SN 187,344. The Seward Family, Inc., Rutland, Vt. Filed Feb. 24, 1964.



For Cheeses, Maple Syrup, Strained and Creamed Honey.
First use Oct. 1, 1959.

SN 188,906. Nishimoto Trading Co., Ltd., of Hawaii, d.b.a. Nishimoto Trading Co. Ltd., Honolulu, Hawaii. Filed Mar. 17, 1964.

Lucky Rose

For Canned Crabmeat, Vegetables and Fruit.
First use 1950.

SN 189,959. Stilwell Canning Company, Inc., Stilwell, Okla. Filed Mar. 30, 1964.

Perry Lou

The drawing is lined for blue.
For Canned Fruit and Vegetables.
First use May 10, 1946.

SN 189,961. Stilwell Canning Company, Inc., Stilwell, Okla. Filed Mar. 30, 1964.

CAN-D-PAK

The drawing is lined for red.
For Canned Fruit and Vegetables.
First use Mar. 3, 1955.

SN 190,529. United States Baking Company, Inc., Terre Haute, Ind., by change of name from Miller-Parrott Baking Company, Inc., Terre Haute, Ind. Filed Apr. 7, 1964.

MILLER

For Bakery Products—Namely, Cookies, and Crackers.
First use in or about 1905.

SN 191,048. Giant Distributing Co., Oakland, Calif. Filed Apr. 14, 1964.

SQUEALIES
DIXIE BRAND

For Meat Products— Namely, Fried Pork Skins.
First use Sept. 21, 1948.

SN 192,709. Freiria & Co., Inc., San Juan, Puerto Rico. Filed May 5, 1964.

BOHIO

An English translation of the word "Bohio" is "a native hut."
For Canned Vegetables, Canned Fruits, Canned Sea-Food, and Canned Tomato Sauce, Soya Bean Oil, Corn Oil, Lard, Canned Meat, Canned Fruit Juices and Nectars, Oleomargarine, Crackers and Biscuits, Soups, and Vinegar.
First use Dec. 22, 1956.

SN 193,180. Kellogg Company, Battle Creek, Mich. Filed May 11, 1964.

Froot Loops

Applicant disclaims the word "Froot" apart from the mark as shown. Owner of Reg. No. 761,704.
For Cereal Breakfast Foods.
First use July 24, 1963.

SN 193,275. Holland House Brands, Inc., Woodside, N.Y. Filed May 12, 1964.

RITE-LEM

For Powdered Base, Containing Lemon Juice in Combination With Other Ingredients, for Use as a Lemon Juice Substitute.
First use July 10, 1963.

SN 195,003. McCormick & Company, Incorporated, Baltimore, Md. Filed June 5, 1964.

FRUIT GARD

For Edible Anti-Oxidant Material Adapted To Be Used To Keep Fresh Fruit From Turning Brown.
First use May 19, 1964.

SN 197,079. H. C. Christians Co., Chicago, Ill. Filed July 6, 1964.

HOLLYBROOK

For Butter.
First use Aug. 1, 1923.

SN 199,055. Good Humor Corporation, Englewood Cliffs, N.J. Filed Aug. 3, 1964.

GOOD HUMOR FUN VALLEY

Owner of Reg. Nos. 126,923, 553,085, and others.
For Confections Consisting of Ice Cream and Cake on a Stick.
First use July 6, 1964.

Class 50—Merchandise Not Otherwise Classified

SN 185,095. Ace Lite Step Co., Inc., Chicago, Ill. Filed Jan. 22, 1964.

KORALITE

For Mats and Pads for Use on Surfaces To Protect Said Surfaces and Cushion Shocks.
First use 1953.

Class 51—Cosmetics and Toilet Preparations

SN 145,022. Antonio Puig y Cia, Barcelona, Spain. Filed May 21, 1962.

GITANA

The word "Gitana" means "gypsy." Owner of Spanish Reg. No. 91,509, dated July 15, 1961.
For Cosmetical and Perfumery Lotions, Having no Medicinal Properties.

SN 157,363. J. C. & J. Field Limited, London, England. Filed Oct. 2, 1963.

FIELDS OF BOND STREET

No claim is made to the words "Of Bond Street" apart from the mark as shown. Owner of British Reg. No. 805,594, dated May 10, 1960.
For Lavender Water; Non-Medicated Toilet Preparations—Namely, Bubble Bath Preparations, Bath Cubes, Talcum Powders, Dusting Powders, Perfumes, Colognes, Perfumed Sticks (Solidified), Bath Oils, Shampoos, Preparations for the Hair, Face Powders, Shaving Powder Sticks, Pre-Shave and After-Shave Lotions in Tubes and/or Jars, and Personal Deodorants in Spray, Stick or Roll-On Form.

SN 165,023. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Mar. 20, 1963.

LIFE-LINE

For Professional Cold Permanent Waving Compositions.
First use Feb. 27, 1963.

SN 173,011. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed July 15, 1963.

KELMETICS

Owner of Reg. Nos. 590,712 and 602,009.
For Cosmetics—Namely, Powder Used in Embalming.
First use Feb. 1, 1940.

SN 183,465. The Silicote Corporation, Oshkosh, Wis. Filed Dec. 23, 1963.

SUN n BUG

For Silicone Preparation for Protecting the Skin Against Sunburn and for Repelling Insects.
First use Jan. 3, 1956.

SN 192,356. Carter Products, Inc., New York, N.Y. Filed Apr. 30, 1964.

RISE

Owner of Reg. No. 538,626.
For After Shave Preparation.
First use Mar. 6, 1964.

SN 193,579. Rejuvia Beauty Laboratories, Inc., New York, N.Y. Filed May 15, 1964.

MEDAL-PLAY

For Cologne and After Shave Lotion.
First use Apr. 21, 1964.

SN 193,580. Rejuvia Beauty Laboratories, Inc., New York, N.Y. Filed May 15, 1964.

MATCH-PLAY

For Cologne and After Shave Lotion.
First use Apr. 21, 1964.

SN 193,636. Dep Corporation, d.b.a. Regent-Artistic Company, Los Angeles, Calif. Filed May 18, 1964.

NEUTRAFIL

For Hair Conditioning Preparation.
First use Oct. 6, 1959.

SN 193,693. Betty Osborne, d.b.a. Parfums Tycoon Ltd., Chicago, Ill. Filed May 18, 1964.

TYCOON

For Eau de Cologne.
First use July 12, 1963.

SN 193,849. Clairol Incorporated, New York, N.Y. Filed May 20, 1964.

CLAIROL

Owner of Reg. Nos. 302,399, 624,182, and others.
For Face Powder.
First use Apr. 30, 1964.

SN 193,852. Colgate-Palmolive Company, New York, N.Y. Filed May 20, 1964.

TRUST

Owner of Reg. No. 577,695.
For Dentifrice.
First use May 7, 1964.

SN 193,853. Colgate-Palmolive Company, New York, N.Y. Filed May 20, 1964.

SUMMIT

For Dentifrice.
First use May 7, 1964.

SN 193,854. Colgate-Palmolive Company, New York, N.Y. Filed May 20, 1964.

PEAK

For Dentifrice.
First use May 7, 1964.

SN 193,855. Colgate-Palmolive Company, New York, N.Y. Filed May 20, 1964.

LANCE

For Dentifrice.
First use May 7, 1964.

Class 52 — Detergents and Soaps

SN 192,445. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Apr. 30, 1964.

ELMAC

For Cleaning Composition Especially for Food Plants.
First use Mar. 19, 1964.

SN 192,827. Humble Oil & Refining Company, Houston, Tex. Filed May 6, 1964.

BRYMUL

Owner of Reg. No. 315,952.
For Emulsifiable Solvents for Cleansing.
First use July 1948.

SN 197,041. Preferred Chemical Products, Inc., Chicago, Ill. Filed July 3, 1964.

WIFE SAVERS

For Household Detergent.
First use on or about Dec. 15, 1962.
Subj. to Intf. with SN 172,000.

SERVICE MARKS

Class 100 — Miscellaneous

SN 138,710. M. Iacocca Giacco, d.b.a. Youth Hall of Fame, Allentown, Pa. Filed Feb. 27, 1962.

YOUTH HALL OF FAME

For Promoting the Interest of Youth in Sports by Awarding Sculptured Bust of Leading Sports Figures to Outstanding Youth in Sports, Said Awards Being Sculptured and Presented by the Applicant Herein.
First use 1955.

SN 180,454. Sizzlers, Inc., Alhambra, Calif. Filed Nov. 4, 1963.

SIZZLER

For Restaurant Services.
First use Jan. 26, 1957.
Subj. to Intf. with SN 167,230 and SN 167,231

SN 186,746. J. J. Newberry Co., New York, N.Y. Filed Feb. 14, 1964.

WM TALLY HOUSE

"Wm Tally House" identifies William F. Tally, whose consent is of record.
For Restaurant Services.
First use Dec. 16, 1961.

Class 101 — Advertising and Business

SN 137,798. Ronald R. Richman, d.b.a. A Ringbrings, Delivery Service Consultants, Indianapolis, Ind. Filed Feb. 12, 1962.

A RINGBRINGS

For Retail Delivery Service and Advice and Consultation Re: Establishment and Maintenance of Retail Delivery Service.
First use Nov. 15, 1961.

SN 166,831. Rufus Edward Parker, d.b.a. Eddie Parker Sales, Dallas, Tex. Filed Apr. 16, 1963.

GIZMO

For Planning and Designing Advice and Consultation in the Operation of Gift Shops for Others.
First use Nov. 1, 1961.

Class 102 — Insurance and Financial

SN 121,056. American Heritage Life Insurance Company, Jacksonville, Fla. Filed May 31, 1961.

AMERICAN HERITAGE

For Underwriting Life and Disability Insurance.
First use in or about September 1956.

SN 188,822. University Life Insurance Company of America, Indianapolis, Ind. Filed Mar. 16, 1964.

UL

For Underwriting Insurance.
First use September 1960.

SN 190,135. Whithers, Price and Co., Inc., Charlotte, N.C. Filed Apr. 1, 1964.

THE GOLD COIN PLAN

No claim is made to the words "The" and "Plan" apart from the mark as shown.
For Investment Services Including the Collection and Investment of Funds in Selected Stocks or Investment Trusts.
First use Jan. 29, 1964.

SN 192,458. American Heritage Life Insurance Company, Jacksonville, Fla. Filed May 1, 1964.

HERITAGE

For Planning and Underwriting Life Insurance.
First use July 1957.

Class 103 — Construction and Repair

SN 106,322. The Fuel Econ-O-Mizer Company, Miami, Fla. Filed Oct. 13, 1960.

FUEL ECON-O-MIZER

The word "Fuel" is disclaimed apart from the mark as shown.
For Installation, Repair and Maintenance of Oil Burner Systems.
First use Sept. 1, 1949.

SN 141,309. Jayhawk Marine, Inc., Parsons, Kans. Filed Apr. 2, 1962.

JAYHAWK

For Servicing and Maintenance of Boat Marinas and the Installation of Special Equipment Therefor.
First use July 1959.

SN 151,403. The Electric Auto-Lite Company, Toledo, Ohio. Filed Aug. 17, 1962.

TUNE-UP TOWN

The applicant without relinquishing any common-law right disclaims the use of the word "Tune-Up" apart from the mark as shown.
For Inspection, Testing and Adjusting Services for Engines Used With Self-Propelled Vehicles; Supplying Technical Information and Training in the Theory, Symptoms, Diagnosis, Test, Adjustment Procedures and Check Lists for Servicing Electrical and Fuel Systems of Automotive Engines.
First use on or about Apr. 5, 1962.

SN 174,167. Cardinal Petroleum Company, Billings, Mont. Filed Aug. 1, 1963.

CARDINAL

The drawing is lined for red.
For Oil Well Drilling Operations for Others.
First use on or about Aug. 1, 1962; on or about Aug. 19, 1952, as to "Cardinal."

SN 199,070. Julian E. Johnson Contracting Company, Inc., Jacksonville, Fla. Filed Aug. 3, 1964.

ARTISTRY IN ASPHALT

For Construction and Repair—Namely, the Surfacing and Resurfacing of Driveways, Streets, Parking Areas and the Like.
First use Aug. 12, 1962.

Class 104 — Communication

SN 189,728. RKO General, Inc., New York, N.Y. Filed Mar. 26, 1964.

RKO GENERAL

The drawing is lined for the color red, but the mark is not limited to such color. Owner of Reg. Nos. 676,348 and 677,000.
For Radio and Television Broadcasting Services.
First use Sept. 1, 1962.

Class 107 — Education and Entertainment

SN 179,300. Le Cordon Bleu S.A.R.L., Paris, France. Filed Sept. 18, 1963.

LE CORDON BLEU

Priority claimed under Sec. 44(d) on French Reg. No. 512,537, dated Apr. 5, 1963 (Seine); Natl. Inst. No. 202,880. The mark is translated as "the blue ribbon."
For Educational Services—Namely, Courses and Lectures in Cooking and Oenology.

SN 187,450. Warren E. Getzinger, d.b.a. Michael Warren, Hamden, Conn. Filed Feb. 25, 1964.

THE FRIENDS OF MR. GOOBER

For Title of a Television Program for Children.
First use November 1962.

SN 189,987. The Dispatch Printing Company, d.b.a. WBNS-TV, Columbus, Ohio. Filed Mar. 31, 1964.

QUICK AS A WINK

For Title of a Television Quiz Show.
First use Feb. 24, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

781,881. SOLPOLEN. Societá Elettrica ed Elettrochimica del Caffaro S.p.A. SN 178,829. Pub. 10–6–64. Filed 10–11–63.

781,882. POLIDENE. Scott Bader & Company Limited. SN 180,327. Pub. 10–6–64. Filed 11–1–63.

781,883. DESIGN OF LABEL WITH A MAN. Monrovia Nursery Co. SN 185,430. Pub. 10–6–64. Filed 1–27–64.

781,884. ORNAL. Rohm & Haas Company. SN 186,766. Pub. 10–6–64. Filed 2–14–64.

781,885. TROLUMEN. The Standard Oil Company. SN 186,902. Pub. 10–6–64. Filed 2–17–64.

781,886. BETALUX. Westlake Plastics Company. SN 186,984. Pub. 10–6–64. Filed 2–18–64.

781,887. DIELUX. Westlake Plastics Company. SN 186,985. Pub. 10–6–64. Filed 2–18–64.

781,888. ROLLAPEX. Apex Coated Fabrics Co. Inc. SN 186,994. Pub. 10–6–64. Filed 2–19–64.

781,889. DURADENE. The Firestone Tire & Rubber Company. SN 187,100. Pub. 10–6–64. Filed 2–20–64.

781,890. DINALUX. Kay Line Inc. SN 187,114. Pub. 10–6–64. Filed 2–20–64.

Class 2 — Receptades

781,891. GRANU-TAINER. The B. F. Goodrich Company, assignee of Granu-Flow Equipment, Ltd. SN 162,941. Pub. 10–6–64. Filed 2–18–63.

781,892. DELTA AND DESIGN. Container Service Co. of N.J. SN 166,890. Pub. 10–6–64. Filed 4–17–63.

781,893. HIDE-A-BRUSH. Ox Fibre Brush Company, Inc. SN 176,942. Pub. 10–6–64. Filed 9–13–63.

781,894. BUTLER WITH A TRAY (DESIGN). Owens-Illinois Glass Company. SN 184,501. Pub. 10–6–64. Filed 1–13–64.

781,895. SROFE VUE-LOX AND DESIGN. Jesse Srofe. SN 185,249. Pub. 10–6–64. Filed 1–23–64.

781,896. MONSANTO M. Monsanto Company. SN 192,065. Pub. 10–6–64. Filed 4–27–64.

781,897. DOW AND DESIGN. The Dow Chemical Company. SN 192,690. Pub. 10–6–64. Filed 5–5–64.

781,898. FIBRO-FUSION. The Greif Bros. Cooperage Corporation. SN 192,820. Pub. 10–6–64. Filed 5–6–64.

781,899. FP AND DESIGN. Inland Container Corporation. SN 193,377. Pub. 10–6–64. Filed 5–13–64.

781,900. FASTIDIA. Lion Packaging Products Co., Inc. SN 193,558. Pub. 10–6–64. Filed 5–15–64.

781,901. GRABBIES. Primrose Packaging Co., Inc. SN 194,236. Pub. 10–6–64. Filed 5–25–64.

Class 4 — Abrasives and Polishing Materials

781,902. DORAY. Douglas R. Allen Corporation, d.b.a. Douglas R. Allen Corp. SN 189,243. Pub. 10–6–64. Filed 3–23–64.

781,903. ARMO FLEX. Armour and Company, d.b.a. Armour Coated Products and Adhesives Company. SN 190,231. Pub. 10–6–64. Filed 4–3–64.

781,904. ARMO STROKE. Armour and Company, d.b.a. Armour Coated Products and Adhesives Company. SN 190,232. Pub. 10–6–64. Filed 4–3–64.

781,905. MICRO-BRITE. Armour and Company, d.b.a. Armour Coated Products and Adhesives Company. SN 190,233. Pub. 10–6–64. Filed 4–3–64.

Class 6 — Chemicals and Chemical Compositions

781,906. KROMAD AND FLAG DESIGN. Mallinckrodt Chemical Works. SN 152,811. Pub. 10–6–64. Filed 9–10–62.

781,907. FRAY GARD AND DESIGN. K. F. Stewart, d.b.a. Elkay Company. SN 172,256. Pub. 6–16–64. Filed 7–1–63.

781,908. REN AND DESIGN. Ren Plastics, Inc. SN 174,912. Pub. 10–6–64. Filed 8–12–63.

781,909. TCBA. Dover Chemical Corporation. SN 174,944. Pub. 7–21–64. Filed 8–13–63.

781,910. AMICHROME. Etablissements Kuhlmann. SN 175,891. Pub. 10–6–64. Filed 8–26–63.

781,911. KOPROLENE. Koppers Company, Inc. SN 176,450. Pub. 10–6–64. Filed 9–6–63.

781,912. MIL-PLATE. Milwhite Mud Sales Company. SN 180,108. Pub. 10–6–64. Filed 10–30–63.

781,913. GAFSTAT. General Aniline & Film Corporation. SN 180,392. Pub. 10–6–64. Filed 11–4–63.

781,914. N AND DESIGN. Nease Chemical Company, Inc. SN 181,051. Pub. 8–4–64. Filed 11–13–63.

781,915. ARANOX. United States Rubber Company. SN 181,715. Pub. 10–6–64. Filed 11–21–63.

781,916. BAYGON. Chemagro Corporation. SN 183,312. Pub. 10–6–64. Filed 12–20–63.

781,917. MASHASE. Chas. Pfizer & Co., Inc. SN 183,512. Pub. 10–6–64. Filed 12–24–63.

781,918. DIOXITOL. Shell Oil Company. SN 183,860. Pub. 10–6–64. Filed 12–31–63.

781,919. K-LITH. Klondex Incorporated. SN 185,044. Pub. 10–6–64. Filed 1–21–64.

781,920. CANE-CAL. Pittsburgh Activated Carbon Company, by change of name from Pittsburgh Chemical Company. SN 187,959. Pub. 9–22–64. Filed 3–4–64.

781,921. EDENOR. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 188,005. Pub. 10–6–64. Filed 3–5–64.

781,922. RETORT AND DIAMOND DESIGN. Diamond Alkali Company. SN 189,054. Pub. 10–6–64. Filed 3–19–64.

Class 8 — Smokers' Artides, Not Including Tobacco Products

781,923. PERFECTION. The Casco Products Corporation. SN 190,153. Pub. 10–6–64. Filed 4–2–64.

781,924. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,123. Pub. 10–6–64. Filed 5–11–64.

Class 11 — Inks and Inking Materials

781,925. CHERRY RIVER. Holland-Suco Color Company, assignee of Standard Ultramarine & Color Co. SN 193,819. Pub. 9–22–64. Filed 5–19–64.

Class 12 — Construction Materials

781,926. SPARTINTS. United States Ceramic Tile Company. SN 139,700. Pub. 10–6–64. Filed 3–12–62

781,927. SPACE WHITE. Ultrasonic Laboratories, Inc. SN 144,023. Pub. 10–6–64. Filed 5–7–62.

781,928. GUNN ETC. AND DESIGN. Forest Products Company of East Longmeadow, Inc. SN 171,001. Pub. 10–6–64. Filed 6–14–63.

781,929. PAN-L-ROC AND DESIGN. Pan-L-Roc Corporation. SN 173,590. Pub. 10–6–64. Filed 7–23–63.

781,930. POLYKON. Koppers Company, Inc. SN 174,509. Pub. 10–6–64. Filed 8–6–63.

781,931. ACOUSTI SEAL. New Castle Products, Inc. SN 175,670. Pub. 10–6–64. Filed 8–23–63.

781,932. MICA. Marble Import Company of America, Inc. SN 177,903. Pub. 10–6–64. Filed 9–27–63.

781,933. SPARTAN PREGROUT AND DESIGN. United States Ceramic Tile Company. SN 178,381. Pub. 10–6–64. Filed 10–4–63.

781,934. CREZBOND AND DESIGN. Crown Zellerbach Corporation. SN 180,186. Pub. 10–6–64. Filed 10–31–63.

781,935. EL REY. The Celotex Company, assignee of The Celotex Corporation. SN 181,012. Pub. 9–29–64. Filed 11–14–63.

781,936. BI ROCK. Formulate Development Research Corp. SN 183,538. Pub. 10–6–64. Filed 12–23–63.

781,937. CERTIFIED KILNDRIED CONTOURKORE BELCOBALSA AND DESIGN. Balsa Ecuador Lumber Corporation. SN 184,342. Pub. 10–6–64. Filed 1–10–64.

781,938. ROMAC. Robert Macomber. SN 188,892. Pub. 10–6–46. Filed 3–17–64.

781,939. MONSANTO M. Monsanto Company. SN 192,307. Pub. 10–6–64. Filed 4–29–64.

781,940. MONSANTO. Monsanto Company. SN 192,308. Pub. 10–6–64. Filed 4–29–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

781,941. STRONG. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation, d.b.a. Strong, Carlisle & Hammond. SN 162,390. Pub. 8–25–64. Filed 2–8–63.

781,942. FASTITE. Continental Screw Company. SN 172,875. Pub. 9–1–64. Filed 7–12–63.

781,943. NYLSLIDES. Hardware Designers Inc. SN 178,350. Pub. 10–6–64. Filed 10–4–63.

781,944. METAL MAN (DESIGN). Punta Alegre Commodities Corporation, d.b.a. Pacific Metals Company. MULTIPLE CLASS (Classes 13, 14, 31, and 34). SN 180,117. Pub. 10–6–64. Filed 10–30–63.

781,945. SSP. SSP Fittings Corp. SN 185,942. Pub. 10–6–64. Filed 2–3–64.

781,946. DIMINUFLO. ITT Bell & Gossett Inc. SN 189,704. Pub. 10–6–64. Filed 3–26–64.

781,947. THERMO-JET. International Basic Economy Corporation. SN 189,779. Pub. 10–6–64. Filed 3–27–64.

781,948. UNIJET. Spraying Systems Co. SN 191,087. Pub. 10–6–64. Filed 4–14–64.

781,949. CP. Chandler Products Corporation. SN 191,130. Pub. 10–6–64. Filed 4–15–64.

781,950. DIX-LOCK. Dixon Valve & Coupling Company. SN 191,141. Pub. 10–6–64. Filed 4–15–64.

781,951. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,124. Pub. 10–6–64. Filed 5–11–64.

Class 14 — Metals and Metal Castings and Forgings

781,944. (See Class 13 for this trademark.)

781,952. COLORSTRIP. Marwais Steel Company. SN 177,072. Pub. 10–6–64. Filed 9–16–63.

781,953. NPM. Norwalk Powdered Metals, Inc. SN 191,874. Pub. 10–6–64. Filed 4–23–64.

781,954. NITREX. The Carpenter Steel Company. SN 192,354. Pub. 10–6–64. Filed 4–30–64.

781,955. ANCOLOY. Hoeganaes Sponge Iron Corporation. SN 192,722. Pub. 10–6–64. Filed 5–5–64.

Class 15 — Oils and Greases

781,956. SPEEDOL. Thrifty Drug Stores Co., Inc. SN 178,992. Pub. 10–6–64. Filed 10–14–63.

781,957. ASTRADYNE. Dynastra, Inc. SN 179,700. Pub. 10–6–64. Filed 10–24–63.

781,958. DRIV-MATIC. Hess Oil & Chemical Corporation. SN 179,714. Pub. 10–6–64. Filed 10–24–63.

781,959. SUNGRIND. Sun Oil Company. SN 180,784. Pub. 10–6–64. Filed 11–8–63.

781,960. CALOIL. Standard Oil Company of California. SN 190,655. Pub. 10–6–64. Filed 4–8–64.

781,961. SUNTHENE. Sun Oil Company. SN 193,731. Pub. 10–6–64. Filed 5–18–64.

Class 17 — Tobacco Products

781,962. LORD MACAULAY. Bayuk Cigars Incorporated. SN 183,021. Pub. 10–6–64. Filed 12–16–63.

781,963. SAM HOUSTON. Bayuk Cigars Incorporated. SN 183,022. Pub. 10–6–64. Filed 12–16–63.

781,964. SPRUCE. Wally Frank, Ltd. SN 188,531. Pub. 10–6–64. Filed 3–12–64.

781,965. OMEGA. P. Lorillard Company. SN 190,190. Pub. 10–6–64. Filed 4–2–64.

781,966. MILD-O-MATIC. Bayuk Cigars Incorporated. SN 190,694. Pub. 10–6–64. Filed 4–9–64.

Class 18 — Medicines and Pharmaceutical Preparations

781,967. VIRON. Lincoln Laboratories, Inc. SN 75,326. Pub. 6–19–62. Filed 6–8–59.

781,968. COGESIC. Mead Johnson & Company. SN 184,475. Pub. 7–21–64. Filed 1–13–64.

781,969. THE DRINKER'S FRIEND. Mara Lab, Inc. SN 190,092. Pub. 10–6–64. Filed 4–1–64.

781,970. HANDS OFF. American Home Products Corporation. SN 190,575. Pub. 10–6–64. Filed 4–8–64.

781,971. TIHIST. Vita Elixir Company, Inc. SN 191,986. Pub. 10–6–64. Filed 4–23–64.

781,972. DRAPERS. The Wander Company. SN 192,110. Pub. 10–6–64. Filed 4–27–64.

781,973. AROMIST. Carter Products, Inc. SN 192,355. Pub. 10–6–64. Filed 4–30–64.

Class 19 — Vehicles

781,974. RIGHT. John C. Connell, d.b.a. Right Products. SN 184,400. Pub. 10–6–64. Filed 1–10–64.

781,975. EQUI-QUAD. Michigan Wheel Company. SN 190,951. Pub. 10-6-64. Filed 4-13-64.

781,976. DYNA-QUAD. Michigan Wheel Company. SN 190,952. Pub. 10-6-64. Filed 4-13-64.

781,977. CLUB CAR. Stevens Appliance Truck Company. SN 191,327. Pub. 10-6-64. Filed 4-16-64.

781,978. VIN-L-LIFE. Globe Rubber Products Corp. SN 191,383. Pub. 10-6-64. Filed 4-17-64.

Class 21 — Electrical Apparatus, Machines, and Supplies

781,979. MISCELLANEOUS DESIGN. Dowsmith Inc. SN 156,280. Pub. 10-6-64. Filed 10-31-62.

781,980. TEMPOMATE. D. H. Baldwin Company, by change of name from The Baldwin Piano Company. SN 157,190. Pub. 10-6-64. Filed 11-14-62.

781,981. EECOSWITCH. Electronic Engineering Company of California. SN 164,708. Pub. 8-25-64. Filed 3-15-63.

781,982. VIVA. Whirlpool Corporation. SN 164,926. Pub. 10-6-64. Filed 3-18-63.

781,983. SCRU-TITE. Myers Electric Products, Inc. SN 165,449. Pub. 10-6-64. Filed 3-26-63.

781,984. O.M.G.S. North American Foreign Trading Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 170,416. Pub. 10-6-64. Filed 6-5-63.

781,985. PAPERMATIC. Hill-Shaw Company. SN 175,280. Pub. 10-6-64. Filed 8-19-63.

781,986. HUBLOC. Andrew Corporation. SN 178,246. Pub. 10-6-64. Filed 10-3-63.

781,987. WIRETRON. Toko Kabushiki Kaisha, d.b.a. Toko Inc., by change of name from Kabushiki Kaisha Toko Radio Coil Kenkyusho, d.b.a. Toko Radio Coil Laboratories, Ltd. MULTIPLE CLASS (Classes 21 and 26). SN 179,798. Pub. 10-6-64. Filed 11-25-63.

781,988. MULTISONIC. Multisonic Corporation. SN 184,394. Pub. 10-6-64. Filed 1-10-64.

781,989. SHOK BATON. Shok Baton Company, d.b.a. Shok Baton Co., Inc. SN 184,978. Pub. 10-6-64. Filed 1-20-64.

781,990. LECTRO MAC AND DESIGN. Embart Corporation, by merger and change of name from The American Hardware Corporation. SN 185,183. Pub. 10-6-64. Filed 1-23-64.

781,991. SAFETYMATIC AND DESIGN. Embart Corporation, by merger and change of name from The American Hardware Corporation. SN 185,184. Pub. 10-6-64. Filed 1-23-64.

781,992. DATUM. Industrionics Controls, Inc. SN 185,838. Pub. 10-6-64. Filed 1-31-64.

781,993. PARAMETRICS. Parametrics. SN 186,889. Pub. 10-6-64. Filed 2-17-64.

781,994. HUSH. Waste King Corporation. SN 187,057. Pub. 10-6-64. Filed 2-19-64.

781,995. MARK-A-LINE. Communications Mfg. Co. SN 187,249. Pub. 10-6-64. Filed 2-24-64.

781,996. ELFIN. Dare Products, Incorporated. SN 187,258. Pub. 10-6-64. Filed 2-24-64.

781,997. LIGHT COMMAND. Thomas Industries Inc. SN 187,360. Pub. 10-6-64. Filed 2-24-64.

781,998. SPIRAL. Rotron Manufacturing Company, Inc. SN 187,375. Pub. 10-6-64. Filed 2-24-64.

781,999. SOLENARC. Etablissements Merlin & Gerin S.A. SN 187,706. Pub. 10-6-64. Filed 2-20-64.

782,000. DICTACOIL. Dictaphone Corporation. SN 188,086. Pub. 10-6-64. Filed 3-6-64.

782,001. JFD. JFD Electronics Corporation. SN 188,637. Pub. 10-6-64. Filed 3-13-64.

782,002. FPE AND DESIGN. Federal Pacific Electric Company. SN 192,023. Pub. 10-6-64. Filed 4-27-64.

782,003. FEDERAL PACIFIC. Federal Pacific Electric Company. SN 192,026. Pub. 10-6-64. Filed 4-27-64.

782,004. "CHEATHAM SWITCH." Cheatham Electric Switching Device Co., Incorporated. SN 193,628. Pub. 10-6-64. Filed 5-18-64.

Class 22 — Games, Toys, and Sporting Goods

782,005. FLOATHIGLO. Float-Hi Balsa Float Company. SN 170,461. Pub. 10-6-64. Filed 6-6-63.

782,006. PLUG-TOTE. Jerome Z. Kunze. SN 174,193. Pub. 10-6-64. Filed 8-1-63.

782,007. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,688. Pub. 10-6-64. Filed 8-8-63.

782,008. TOLTEC ETC. AND DESIGN. Edmond B. Szekely. SN 174,992. Pub. 10-6-64. Filed 8-13-63.

782,009. EI. Eldon Industries, Inc. SN 182,257. Pub. 10-6-64. Filed 12-3-63.

782,010. JET BOUNCER. The National Latex Products Company. SN 182,435. Pub. 10-6-64. Filed 12-5-63.

782,011. BOB-O-LINK ETC. AND DESIGN. Withington. SN 182,521. Pub. 10-6-64. Filed 12-6-63.

782,012. STYLIZED LETTER V. Ruth D. Brooks. SN 183,005. Pub. 10-6-64. Filed 12-6-63.

782,013. SKEETER. Albert C. Phy & Sons, Inc. SN 185,314. Pub. 10-6-64. Filed 1-24-64.

782,014. RWE LOVE MEES AND DESIGN. Richard Wynn Enterprises, Inc. SN 185,473. Pub. 10-6-64. Filed 1-27-64.

782,015. BAND-IT. Ardson, Inc. SN 186,220. Pub. 10-6-64. Filed 2-7-64.

782,016. 3M. Minnesota Mining and Manufacturing Company. SN 187,126. Pub. 10-6-64. Filed 2-20-64.

782,017. ACQUIRE. Minnesota Mining and Manufacturing Company. SN 187,127. Pub. 10-6-64. Filed 2-20-64.

782,018. "SUGAR DARLIN." Alexander Doll Company, Inc., d.b.a. Madame Alexander. SN 187,709. Pub. 10-6-64 Filed 3-2-64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

782,019. STERLING. Sterling Automotive Manufacturing Co. SN 138,060. Pub. 10-6-64. Filed 2-15-62.

782,020. FASHION FLAIR IN KITCHEN WARE. Imperial Knife Associated Companies, Inc. SN 160,543. Pub. 8-18-64. Filed 1-11-63.

782,021. CCII. Compact Industries, Inc. SN 167,871. Pub. 10-6-64. Filed 5-1-63.

782,022. HYDRAUTORQUE. Aktiebolaget Gotaverken. SN 172,133. Pub. 10-6-64. Filed 6-20-63.

782,023. KENITE. Raritan Technical Products Co. SN 172,522. Pub. 10-6-64. Filed 7-5-63.

782,024. TWIN-PULL. Alton E. Immel. SN 173,462. Pub. 10-6-64. Filed 7-22-63.

782,025. ETIQUETTE. Frank Hillary, Inc. SN 174,958. Pub. 10-6-64. Filed 8-13-63.

782,026. REYNOLDS. Reynolds Research and Manufacturing Corporation. SN 174,979. Pub. 10-6-64. Filed 8-13-63.

782,027. WINSTON AND DESIGN. Modern Sewing Machine Co., Inc. SN 177,076. Pub. 10-6-64. Filed 9-16-63.

782,028. FRINGS. Heinrich Frings Kommanditgesellschaft. SN 177,257. Pub. 10-6-64. Filed 9-18-63.

782,029. CIRCUITROL. Mead Specialties Company, Inc. SN 177,646. Pub. 10-6-64. Filed 9-24-63.

782,030. DYNALINE. Mead Specialties Company, Inc. SN 177,647. Pub. 10-6-64. Filed 9-24-63.

782,031. MICRO-LINE. Mead Specialties Company, Inc. SN 177,648. Pub. 10-6-64. Filed 9-24-63.

782,032. AR AND DESIGN. Adams Rite Manufacturing Company. SN 181,598. Pub. 10-6-64. Filed 11-21-63.

782,033. TRANS SWING AND DESIGN. Hill-Rockford Co. SN 181,640. Pub. 10-6-64. Filed 11-21-63.

782,034. POULAN AND DESIGN. Beaird-Poulan Inc. SN 181,844. Pub. 10-6-64. Filed 11-26-63.

782,035. TOW-MITE. Northwestern Motor Company. SN 183,218. Pub. 10-6-64. Filed 12-18-63.

782,036. TYLER AND DESIGN. Tyler Manufacturing Company, Inc. SN 183,296. Pub. 10-6-64. Filed 12-19-63.

782,037. WRITE-A-SIGN. The Morgan Sign Machine Co. SN 183,440. Pub. 10-6-64. Filed 12-23-63.

782,038. TRANSPACOMAT. Hamac-Hansella Aktiengesellschaft. SN 184,374. Pub. 10-6-64. Filed 1-10-64.

782,039. SNOW SHARK. Dura Corporation. SN 185,026. Pub. 10-6-64. Filed 1-21-64.

782,040. PARAGON. Van Brode Milling Co., Inc. SN 185,171. Pub. 7-14-64. Filed 1-22-64.

782,041. MIDAS. Midas, Inc. SN 188,559. Pub. 10-6-64 Filed 3-12-64.

782,042. GRUNDFOSS. Grundfoss Bjerringbro Pumpefabrik A/S. SN 189,170. Pub. 10-6-64. Filed 3-20-64

782,043. WAW AND DESIGN. W. A. Whitney Manufacturing Company. SN 189,409. Pub. 10-6-64. Filed 3-23-64.

782,044. ELECTRODRILL. Reda Pump Company. SN 189,621. Pub. 10-6-64. Filed 3-25-64.

782,045. COLUMBIA-MATIC "8." American International Tool Corporation. SN 190,578. Pub. 10-6-64. Filed 4-8-64.

782,046. CHAMP PAK. Champion Manufacturing Company SN 192,679. Pub. 10-6-64. Filed 5-5-64.

782,047. HIS AND HERS. Hurst-Campbell, Inc. SN 193,014. Pub. 10-6-64. Filed 5-8-64.

782,048. CHEM-N-SOIL. Lilliston Implement Company SN 193,185. Pub. 10-6-64. Filed 5-11-64.

782,049. GOLDEN 500. Wesco Products Company. SN 193,519. Pub. 10-6-64. Filed 5-14-64.

782,050. NEWS KING AND DESIGN. Fairchild Camera and Instrument Corporation. SN 193,542 Pub 10-6-64 Filed 5-15-64.

782,051. FOG-AIRE. Pioneers, Incorporated SN 193,574 Pub. 10-6-64. Filed 5-15-64.

782,052. SNUGIT. Machine Products Corporation. SN 193,799. Pub. 10-6-64. Filed 5-19-64.

782,053. E-Z SWING AND DESIGN. Vaughan & Bushnell Mfg. Co. SN 193,829. Pub. 10-6-64. Filed 5-19-64.

782,054. EQUI-AIR. D. W. Zimmerman Mfg., Inc. SN 193,832. Pub 10-6-64. Filed 5-19-64.

782,055. GENERAL GRAPHIC. Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Company. SN 194,106. Pub. 10-6-64. Filed 5-20-64.

782,056. MOTION-MAKERS. The S-P Manufacturing Corporation. SN 194,241. Pub. 10-6-64. Filed 5-25-64.

Class 24 — Laundry Appliances and Machines

782,057. VIVA. Whirlpool Corporation. SN 164,928. Pub. 10-6-64. Filed 3-18-63.

782,058. CLOTHES-MINDER. The Ironers Company, d.b.a. Surety Company. SN 191,392. Pub. 10-6-64. Filed 4-17-64.

782,059. FABRICOLOR. Borg-Warner Corporation. SN 191,904. Pub. 10-6-64. Filed 4-24-64.

Class 25 — Locks and Safes

782,060. MULTI-GRIP. H. Greenwald Company. SN 187,866. Pub. 10-6-64. Filed 3-3-64.

Class 26 — Measuring and Scientific Appliances

781,987. (See Class 21 for this trademark.)

782,061. STROMBERG-CARLSON. General Dynamics Corporation. SN 930,066. Pub. 10-6-64. Filed 3-17-60.

782,062. UNIKIT. Shandon Scientific Company Limited. SN 148,758. Pub. 7-7-64. Filed 7-10-62.

782,063. MEDIOVAC. Societe Generale du Vide (Sogev). SN 148,851. Pub. 5-12-64. Filed 7-11-62.

782,064. SOILTEST. Soiltest, Inc. SN 159,785. Pub. 8-18-64. Filed 12-26-62.

782,065. EDC USTER. Zellweger Ltd. SN 175,352. Pub. 10-6-64. Filed 8-19-63.

782,066. MMM AND DESIGN. Manning, Maxwell & Moore, Incorporated. SN 183,690. Pub. 10-6-64. Filed 12-27-63.

782,067. FPE AND DESIGN. Federal Pacific Electric Company. SN 192,024. Pub. 10-6-64. Filed 4-27-64.

782,068. FEDERAL PACIFIC. Federal Pacific Electric Company. SN 192,027. Pub. 10-6-64. Filed 4-27-64.

Class 27 — Horological Instruments

782,069. LEGANT. Montgomery Ward & Co., Incorporated. SN 160,650. Pub. 10-6-64. Filed 1-14-63.

782,070. ISOTRONIC. General Time Corporation. SN 179,532. Pub. 10-6-64. Filed 10-22-63.

782,071. WILSON. Wilson Sporting Goods Co. SN 186,302. Pub. 10-6-64. Filed 2-7-64.

Class 29 — Brooms, Brushes, and Dusters

782,072. KOTO-MATIC. Crofton Plastics, Inc. SN 192,573. Pub. 10-6-64. Filed 5-4-64.

782,073. RAYNIT. EZ Paintr Corporation. SN 192,906. Pub. 10-6-64. Filed 5-7-64.

Class 30 — Crockery, Earthenware, and Porcelain

782,074. FORM. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 147,508. Pub. 10-6-64. Filed 6-22-62.

Class 31 — Filters and Refrigerators

781,944. (See Class 13 for this trademark.)

782,075. APEX AND DESIGN. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation. SN 158,033. Pub. 9-22-64. Filed 11-27-62.

782,076. VIVA. Whirlpool Corporation. SN 164,929. Pub. 10-6-64. Filed 3-18-63.

782,077. HOT ROD. McQuay, Inc. SN 191,196. Pub. 10-6-64. Filed 4-15-64.

Class 32 — Furniture and Upholstery

782,078. 9100 LINE AND DESIGN. Art Metal, Inc. SN 180,994. Pub. 10-6-64. Filed 11-13-63.

Class 33 — Glassware

782,079. PD MEDICAMENTA VERA AND DESIGN. Parke, Davis & Company. SN 154,760. Pub. 10–6–64. Filed 10–8–62.

Class 34 — Heating, Lighting, and Ventilating Apparatus

781,944. (See Class 13 for this trademark.)

782,080. ECONO-AIRE. Steelite Buildings, Inc. SN 157,165. Pub. 10–6–64. Filed 11–13–62.

782,081. CHROMALOX HOTEMP AND DESIGN. Edwin L. Wiegand Company. SN 184,998. Pub. 10–6–64. Filed 1–20–64.

782,082. FUSION AND DESIGN. Fusion Incorporated. SN 187,222. Pub. 10–6–64. Filed 1–22–64.

782,083. HUMIDI-KLEAR. Modern Water Equipment Company. SN 191,200. Pub. 10–6–64 Filed 4–15–64.

782,084. YK. Mullins Manufacturing Corporation SN 191,308. Pub. 10–6–64. Filed 4–16–64.

782,085. THERMCO AND DESIGN. Thermco Products Company. SN 191,331. Pub. 10–6–64. Filed 4–16–64.

782,086. FPE AND DESIGN. Federal Pacific Electric Company. SN 192,025. Pub. 10–6–64. Filed 4–27–64.

782,087. FEDERAL PACIFIC. Federal Pacific Electric Company. SN 192,028. Pub. 10–6–64. Filed 4–27–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

782,088. XTRA-TRAC. The Goodyear Tire & Rubber Company. SN 188,096. Pub. 8–18–64. Filed 3–6–64.

782,089. MQ. McQuay-Norris Manufacturing Company. SN 190,193. Pub. 10–6–64. Filed 4–2–64.

Class 36 — Musical Instruments and Supplies

781,984. (See Class 21 for this trademark.)

782,090. CUSHION LOCK. Stephen George. SN 151,749. Pub. 10–6–64. Filed 8–23–62.

782,091. TEMPO-TUNER. John R. Anderson, d.b.a. Electronic Research Products Associates. SN 173,881. Pub. 10–6–64. Filed 7–29–63.

782,092. GOOD NEWS RECORDINGS. Good News Broadcasting Association. SN 177,982. Pub. 10–6–64. Filed 9–30–63.

782,093. MONARCH. Roxy DeCarlo, d.b.a. Monarch Accordion Studios. SN 191,842. Pub. 10–6–64. Filed 4–24–64.

Class 37 — Paper and Stationery

782,094. SURFACE DESIGN. Hammermill Paper Company. SN 144,719. Pub. 6–30–64. Filed 5–16–62.

782,095. MAGNOLIA. Mississippi Industrial Land and Timber Corporation. SN 170,324. Pub. 10–6–64. Filed 6–4–63.

782,096. HOFFMASTER. Hoffmaster Company, Inc. SN 184,470. Pub. 10–6–64. Filed 1–13–64.

782,097. RED CROFT. A.P.W. Products Company, Inc. SN 186,500. Pub. 10–6–64. Filed 2–12–64.

782,098. WRAPKINS. The Crystal Tissue Company. SN 186,699. Pub. 10–6–64. Filed 2–14–64.

782,099. NEWCREST AND DESIGN. J. J. Newberry Co. SN 186,884. Pub. 10–6–64. Filed 2–17–64.

782,100. NAMES 'N DATES. Westab Inc., by change of name from Western Tablet & Stationery Corporation. SN 186,918. Pub. 10–6–64. Filed 2–17–64.

782,101. ZEROMASTER OFFSET. Millen Industries, Inc. SN 186,988. Pub. 10–6–64. Filed 2–18–64.

782,102. COLOR-ALERT. Hollister Incorporated. SN 187,194. Pub. 10–6–64. Filed 2–21–64.

782,103. ONE TO FIVE. Precision Papers, Inc. SN 187,796. Pub. 10–6–64. Filed 3–2–64.

782,104. BOUNDFLEX. Walton Printing Corporation. SN 187,834. Pub. 10–6–64. Filed 3–2–64.

Class 38 — Prints and Publications

782,105. UNICOM. National Lumber Manufacturers Association. SN 144,754. Pub. 10–6–64. Filed 5–16–62.

782,106. PUNDIT. Pundit Publishing Company. SN 163,660. Pub. 10–6–64. Filed 2–28–63.

782,107. GROTESQUE HUMAN FIGURE. CBS Films, Inc. SN 168,290. Pub. 10–6–64. Filed 5–7–63.

782,108. ASSEMBLY & FASTENER ENGINEERING. Hitchcock Publishing Company. SN 176,091. Pub. 10–6–64. Filed 8–30–63.

782,109. NEW YORK JOURNAL AMERICAN. Hearst Consolidated Publications, Inc. SN 183,263 Pub. 10–6–64 Filed 12–19–63.

782,110. LAKELAND BOATING. Lakeland Boating, Inc SN 183,605. Pub. 10–6–64. Filed 12–26–63.

782,111. PRIM-PAK. McGraw-Hill, Inc., by change of name from and assignment of McGraw-Hill Book Company, Inc SN 186,180. Pub. 9–22–64. Filed 2–6–64.

Class 39 — Clothing

782,112. CREATED BY XTAZY OF ITALY AND DESIGN Maria Xtazy. SN 149,691. Pub. 10–6–64. Filed 7–24–62.

782,113. DF AND DESIGN. Devaux Fils. SN 152,213 Pub. 10–6–64. Filed 8–30–62.

782,114. TOP PRO. Rockford Textile Mills, Inc. SN 157,559. Pub. 10–6–64. Filed 11–19–62.

782,115. PERMAKNIT. L & L Manufacturing, Inc. SN 169,737. Pub. 2–25–64. Filed 5–27–63.

782,116. PRO-SOLE. Hanes-Millis Sales Corporation. SN 170,314. Pub. 10–6–64. Filed 6–4–63.

782,117. LADY STYLE AND PORTRAIT. Style Footwear Co. Inc. SN 172,017. Pub. 10–6–64. Filed 6–27–63.

782,118. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,691. Pub. 10–6–64. Filed 8–8–63.

782,119. FROST & FROST. Hughes & Hatcher, Inc. SN 176,920. Pub. 10–6–64. Filed 9–13–63.

782,120. QWIK LASER. Chippewa Shoe Co SN 177,966 Pub. 10–6–64. Filed 9–30–63.

782,121. YOUNG MANNER. The Neusteter Co. SN 178,956. Pub. 10–6–64 Filed 10–14–63.

782,122. VELVO. Texon, Inc., assignee of Prime Manufacturing Company SN 181,175. Pub. 10–6–64 Filed 11–14–63.

782,123. ROGER STUART. Columbia Clothing Corp. SN 182,470. Pub. 10–6–64. Filed 12–6–63.

782,124. CASA D'ITALIA. Casa D'Italia, Ltd. SN 185,020 Pub. 10–6–64. Filed 1–21–64.

782,125. LORD RAGLAN. Wales Manufacturing Company SN 186,035. Pub. 10–6–64. Filed 2–4–64.

782,126. RESTFEEL. Victor Gloves Inc. SN 186,130. Pub. 10–6–64. Filed 2–5–64.

782,127. ZESTFEEL. Victor Gloves Inc. SN 186,131. Pub. 10–6–64. Filed 2–5–64.

782,128. JOYFEEL. Victor Gloves Inc. SN 186,132. Pub. 10–6–64. Filed 2–5–64.

782,129. STERCANIZED FINISH. E. R. Moore Company SN 186,629. Pub. 10–6–64. Filed 2–13–64.

782,130. JACK WINTER. Jack Winter Inc. SN 186,666. Pub. 10–6–64 Filed 2–13–64.

782,131. NEWCREST. J. J. Newberry Co. SN 186,886. Pub. 10–6–64 Filed 2–17–64.

782,132. PRIVATE STOCK. Brockton Footwear, Inc SN 187,071. Pub. 10–6–64. Filed 2–20–64.

782,133. REAR GUARD. Kayser-Roth Corporation SN 189,596. Pub. 10–6–64 Filed 3–25–64.

782,134. SNUG-A-BUGS. Jacob Boltz Knitting Mill, Inc. SN 189,764. Pub. 10–6–64. Filed 3–27–64.

782,135. WOLVERINE AND DESIGN. Wolverine Shoe and Tanning Corporation. SN 190,136. Pub. 10–6–64 Filed 4–1–64.

782,136. LADY STYLE AND DESIGN. Style Footwear Co., Inc. SN 191,329. Pub. 10–6–64. Filed 4–16–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

782,137. PERMAKNIT. L & L Manufacturing, Inc SN 169,738. Pub. 2–25–64. Filed 5–27–63.

782,138. GLO LITE. John Boyle and Company, Incorporated SN 183,731. Pub. 10–6–64 Filed 12–30–63.

782,139. KLEEN STEP. Collins & Aikman Corporation SN 188,002. Pub. 10–6–64. Filed 3–5–64.

782,140. Altesse. Fieldcrest Mills, Inc. SN 188,349 Pub. 10–6–64. Filed 3–10–64.

782,141. THE QUARTERLY COLLECTION. Fieldcrest Mills, Inc. SN 188,529. Pub. 10–6–64. Filed 3–12–64.

782,142. BURL CREST. Burlington Industries Inc SN 189,045. Pub. 10–6–64. Filed 3–19–64.

782,143. SKINFIT. Gilbert Freeman Fabrics Corporation SN 189,161. Pub. 10–6–64. Filed 3–20–64.

782,144. KINGSONIA. John King & Son, Limited SN 189,178. Pub. 10–6–64 Filed 3–20–64.

782,145. STEVENS MOHAWK. J. P. Stevens & Co., Inc. SN 189,217. Pub. 10–6–64. Filed 3–20–64.

Class 43 — Thread and Yarn

782,146. POLYCORD. Chatillon Società Anonima Italiana per le Fibre Tessili Artificiali S.p.A. SN 181,013. Pub. 10–6–64. Filed 11–13–63.

Class 44 — Dental, Medical, and Surgical Appliances

782,147. DROPSIN. Henry Sheldon, d.b.a. Arrow Dental Products. SN 139,341. Pub. 10–6–64. Filed 3–7–62.

782,148. MICROFORM. Howe Sound Company SN 180,887. Pub. 10–6–64. Filed 11–12–63.

782,149. SCOPETTES. Fuller Pharmaceutical Company SN 187,274. Pub. 7–21–64. Filed 2–24–64.

782,150. ECO. Eisele & Company, Inc., assignee of Eisele & Company. SN 188,623. Pub. 10–6–64. Filed 3–13–64.

782,151. IMMOBIL-AIR. The Kendall Company. SN 190,810. Pub. 10–6–64. Filed 4–10–64.

782,152. CLIFTAC. Cliftac Corporation. SN 191,507 Pub. 10–6–64. Filed 4–20–64.

782,153. SURGI-THIN. The B. F. Goodrich Company. SN 191,925. Pub. 10–6–64. Filed 4–24–64.

782,154. SURGISEAL. The B. F. Goodrich Company. SN 191,926. Pub. 10–6–64. Filed 4–24–64.

Class 45 — Soft Drinks and Carbonated Waters

782,155. BIG "D." Big D Foods Co. SN 134,601. Pub. 12–4–62. Filed 12–26–61.

782,156. SOUTHLAND. Jeptha F. Futrell, Jr., d.b.a. Southland-Sundrop Bottling Company. SN 169,246. Pub. 10–6–64. Filed 5–20–63.

782,157. SUN DROP DIET AND DESIGN. Sun Drop Sales Corporation of America. SN 180,039. Pub. 10–6–64. Filed 10–29–63.

Class 46 — Foods and Ingredients of Foods

782,158. BIG "D." Big D Foods Co. SN 134,602. Pub. 12–4–62. Filed 12–26–61.

782,159. WW WITHIN A CIRCLE. Walter and Walter Chocolate Company, Inc. SN 153,439. Pub. 10–6–64. Filed 9–18–62.

782,160. MOOKAY. Robert A. Johnston Company. SN 162,163. Pub. 8–6–63. Filed 2–6–63.

782,161. MOTHER-IN-LAW. Mary Stuck. SN 170,234. Pub. 10–6–64. Filed 6–3–63.

782,162. DARI KOTE. Milk Specialties, Inc. SN 171,904. Pub. 10–6–64. Filed 6–26–63.

782,163. ROUND ROBIN AND DESIGN. Dayco Food Service, Inc SN 175,635. Pub. 10–6–64. Filed 8–23–63.

782,164. BLEND RITE. Whip-Rite Products, Corp. SN 179,572 Pub. 10–6–64. Filed 10–22–63.

782,165. THIS IS IT! Harold Krasner, d.b.a. Mr. Twister Pretzels SN 182,091. Pub. 10–6–64 Filed 11–29–63.

782,166. BRISK. General Mills, Inc. SN 184,056. Pub. 6–9–64. Filed 1–6–64.

782,167. JUST BORN. Just Born, Inc. SN 184,241. Pub. 10–6–64. Filed 1–8–64

782,168. RECO READI AND DESIGN. Neptunalia Seafood Company SN 187,510. Pub. 10–6–64. Filed 2–26–64.

782,169. COUNTRY BEST. Agway, Inc., assignee of Eastern States Farmers' Exchange, Incorporated. SN 190,601. Pub. 9–1–64. Filed 4–8–64.

Class 48 — Malt Beverages and Liquors

782,170. HOPCON. White, Tomkins & Courage Limited. SN 184,771. Pub. 10–6–64 Filed 1–16–64

Class 49 — Distilled Alcoholic Liquors

782,171. EL COQUI. Puerto Rico Distillers, Inc., assignee of Rourico Corporation. SN 186,120. Pub. 10–6–64. Filed 2–5–64

782,172. SEAGERS AND DESIGN. Seager, Evans & Co., Limited. SN 187,524. Pub. 10–6–64. Filed 2–26–64

782,173. ROYAL ROBE. Schenley Distillers, Inc. SN 187,891 Pub. 10–6–64 Filed 3–3–64.

Class 50 — Merchandise Not Otherwise Classified

782,174. KRAISSL SPECIGLOBE. Kraissl Associates. SN 179,048. Pub. 10–6–64. Filed 10–15–63.

782,175. KRAISSL MAGNIMOUNT. Kraissl Associates. SN 179,049. Pub. 10–6–64. Filed 10–15–63.

782,176. IDEALFLOR IPFSA. Ideal Plástica Flor, S.A. SN 190,265. Pub. 10–6–64. Filed 4–3–64.

782,177. ZIP-CHANGE. Valley Neon Company. SN 193,723. Pub. 10–6–64. Filed 5–18–64.

782,178. TRANS-A-DYE. Chron-O-Dye Incorporated. SN 197,363. Pub. 10–6–64. Filed 7–8–64.

782,179. STYRO-HANG. Smith-Lerner Industries, Inc. SN 197,852. Pub. 10–6–64. Filed 7–14–64.

Class 51 — Cosmetics and Toilet Preparations

782,180. CHEMTRONIC. Maradel Products, Inc. SN 158,636. Pub. 10–6–64. Filed 12–6–62.

782,181. LITTLE MISS PIXIE. Lander Co. Inc., d.b.a. Lander. SN 159,165. Pub. 10–6–64. Filed 12–14–62.

782,182. NATURA-DENT. Paul A. Boczar, d.b.a. The Ar-Dent Co. SN 184,689. Pub. 10–6–64. Filed 1–16–64.

782,183. ARAMIS. Estee Lauder, Inc. SN 184,709. Pub. 8–18–64. Filed 1–16–64.

782,184. SHEER GLORY. Alberto-Culver Company. SN 184,864. Pub. 10–6–64. Filed 1–15–64.

782,185. SEALSKIN. Rose E. Miller, d.b.a. Cadet Laboratories. SN 187,201. Pub. 10–6–64. Filed 2–21–64.

782,186. GREAT ZEETH'S. Alberto-Culver Company. SN 192,247. Pub. 10–6–64. Filed 4–29–64.

782,187. SEBUCARE. Foster-Milburn Company. SN 195,217. Pub. 10–6–64. Filed 6–9–64.

Class 52 — Detergents and Soaps

782,188. C AND DESIGN. Culligan, Inc. SN 178,785. Pub. 10–6–64. Filed 10–11–63.

782,189. LAB-GLO. Sep-Ko Chemicals, Inc., assignee of Monarch Chemicals, Inc. SN 187,596. Pub. 10–6–64. Filed 2–27–64.

782,190. VIZ-U-AID. Alton Seth Avery, d.b.a. Viz-U-Aid Co. SN 187,644. Pub. 10–6–64. Filed 2–28–64.

782,191. JIFOAM. Shelco Inc. SN 188,147. Pub. 10–6–64. Filed 3–6–64.

782,192. PETAL. Colgate-Palmolive Company. SN 188,201. Pub. 10–6–64. Filed 3–9–64.

782,193. DAXAN. Diamond Alkali Company. SN 188,207. Pub. 10–6–64. Filed 3–9–64.

782,194. SOILAX. Economics Laboratory, Inc. SN 188,216. Pub. 10–6–64. Filed 3–9–64.

782,195. QUINTET. The Middletown Co. SN 188,257. Pub. 10–6–64. Filed 3–9–64.

782,196. DORAY. Douglas R. Allen Corporation, d.b.a. Douglas R. Allen Corp. SN 189,245. Pub. 10–6–64. Filed 3–23–64.

Service Marks

Class 102 — Insurance and Financial

782,197. "WE'D LIKE TO BE YOUR BANKER." Akron Dime Bank. SN 151,186. Pub. 10–6–64. Filed 8–15–62.

782,198. THE MAN IN RED. Sub Tropical Opportune Properties, Inc., d.b.a. STOP, Inc. SN 152,099. Pub. 10–6–64. Filed 8–28–62.

782,199. T AND DESIGN. The Travelers Insurance Company. SN 178,060. Pub. 10–6–64. Filed 9–30–63.

Class 105 — Transportation and Storage

782,200. SERVICAR AND DESIGN. Servicar of America, Inc. SN 179,470. Pub. 10–6–64. Filed 10–21–63.

Class 106 — Material Treatment

782,201. N AND DESIGN. Nease Chemical Company, Inc. SN 181,050. Pub. 8–4–64. Filed 11–13–63.

Class 107 — Education and Entertainment

782,202. OPERATION AMERICA. Ernest E. Eller, d.b.a. Operation America. SN 123,630. Pub. 10–6–64. Filed 7–10–61.

782,203. THE MAJORS. William Fox, d.b.a. Bill Fox Management. SN 164,518. Pub. 10–6–64. Filed 3–13–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

782,204. The Solarine Company, Baltimore, Md. SN 184,979. Filed P.R. 1–20–64; Am. S.R. 9–2–64.

SPRAY 'N BUFF

For Combined Cleaner and Polish for Use on Vinyl, Asphalt, Linoleum, Vinyl Asbestos, Terrazzo, Rubber and Other Resilient Floor Coverings.
First use June 20, 1962.

Class 6 — Chemicals and Chemical Compositions

782,205. The Marbelle Corporation, Memphis, Tenn. SN 161,534. Filed P.R. 1–28–63; Am. S.R. 9–14–64.

MARBELLE

For Chemical Agents for Providing Hardening, Elasticizing, and Water-Proofing Properties to Mixtures of Aggregates and Cement for Making Composition Tile Flooring, Composition Block Facings, and Other Similar Products; Preservative Sealers of a Chemical Nature Applied to the Surface of Composition Tile Flooring, Composition Block Facings, and Other Similar Products for Providing Preserving and Water-Proofing Properties Thereto.
First use Sept. 25, 1959.

Class 12 — Construction Materials

782,206. Rinshed-Mason Company, Detroit, Mich. SN 141,652. Filed P.R. 4–5–62; Am. S.R. 9–23–64.

POLY-MASTIC

For Plastic Filler To Fill the Uneven Surfaces of Metal Objects Such as Automobile Bodies.
First use Mar. 20, 1962.

782,207. General Capsule Corporation, Detroit, Mich. SN 172,385. Filed P.R. 7–3–63; Am. S.R. 9–16–64.

REVERSA-DOR

For Combination and Screen Doors.
First use at least as early as June 1963.

782,208. Rafters, Inc., Olivia, Minn. SN 176,028. Filed P.R. 8–29–63; Am. S.R. 7–27–64.

STRAIT-WALL

For Wooden Building Frames.
First use July 23, 1963.

782,209. AFCO Corporation, Alexandria, La. SN 177,742. Filed P.R. 9–26–63; Am. S.R. 10–14–64.

PLASTI-CLAD

For Chalkboard Having A Prefinished Writing Surface.
First use at least as early as August 1960.

Class 14 — Metals and Metal Castings and Forgings

782,210. Texas Instruments Incorporated, Dallas, Tex. SN 147,864. Filed P.R. 6–27–62; Am. S.R. 9–28–64.

MULTILAYER

For Laminated Metals, Including Thermostatic Metals, in Sheet, Strip, Foil, Bar, Rod, Tube and Wire Form and Parts and Assemblies Made Therefrom.
First use on or before May 18, 1961.

Class 16 — Protective and Decorative Coatings

782,211. Paper Novelty Manufacturing Company, Stamford, Conn. SN 175,785. Filed P.R. 8–26–63; Am. S.R. 10–9–64.

FROST SPRAY

For Spray Preparation for Creating Frost-Like Crystal Patterns on Glass Surfaces.
First use Aug. 5, 1963.

782,212. Strathmore Products, Inc., Syracuse, N.Y. SN 181,424. Filed P.R. 11–18–63; Am. S.R. 10–19–64.

PEEL-A-STRIP

For Spray Booth Coating.
First use May 29, 1959.

Class 21 — Electrical Apparatus, Machines, and Supplies

782,213. AMP Incorporated, Harrisburg, Pa. SN 164,104. Filed P.R. 3–7–63; Am. S.R. 10–23–64.

DUALATCH

For Electrical Connectors.
First use Feb. 25, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

782,214. Seitz Werke G.m.b.H., Bad Kreuznach, Rhineland, Germany. SN 191,467. Filed P.R. 4–7–64; Am. S.R. 10–9–64.

Seitz

Owner of German Reg. No. 659,106, dated June 24, 1954. Applicant's related company owns U.S. Reg. Nos. 770,123 and 770,924.
For Machines and Devices for Cellarages, Breweries and Dairies—Namely, Machines for Cleaning, Filling, Sealing, Sterilizing and Label Application, Packing and Unpacking Machines and Transport Devices Necessary Thereto and Pumps.

Class 27 — Horological Instruments

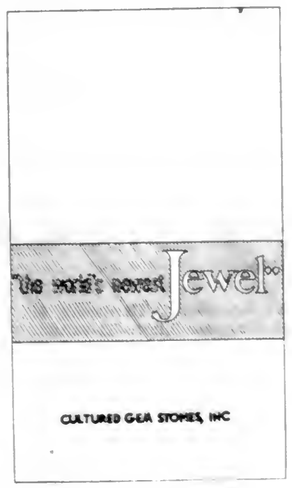
782,215. Bulova Watch Company, Inc., Flushing, N.Y. SN 178,100. Filed P.R. 10–1–63; Am. S.R. 10–20–64.

TIME N'DATE

For Watches.
First use Aug. 22, 1963.

Class 28 — Jewelry and Precious-Metal Ware

782,216. Cultured Gem Stones Inc., New York, N.Y. SN 151,640. Filed P.R. 8–21–62; Am. S. R. 3–20–64.



The drawing is lined for the color green, but no claim is made to the color per se.

For Gems.

First use June 1962.

Class 39 — Clothing

782,217. Richard Paul, Inc., Wilmington, Del. SN 148,073. Filed P.R. 6–29–62; Am. S.R. 10–27–64.

SHU-HI

For Women's Foot Socks.

First use on or about May 4, 1962.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

782,218. L. Myers Company, San Francisco, Calif. SN 162,476. Filed P.R. 2–11–63; Am. S.R. 10–2–64.

BEAUMONT

For Bed Blankets, Bed Spreads, Mattress Protectors, Sheets, Pillows and Towels and Washcloths.

First use May 15, 1959.

782,219. Dormeuil Freres Societe Anonyme, Paris, France SN 170,014. Filed P.R. 5–27–63; Am. S.R. 10–1–64.

DORMEUIL

Owner of French Reg. No. 445,158, dated July 29, 1954 (Paris); Natl. Inst. No. 40,797.

For Textile Piece Goods for Use in Making Outer Clothing—Namely, Suits, Coats, Jackets, Trousers, and the Like for Men, Women, and Children

Class 44 — Dental, Medical, and Surgical Appliances

782,220. John F. Greer Company, Oakland, Calif SN 153,759. Filed P.R. 9–24–62; Am. S.R. 11–2–64.

GREER COLOSTOMY COMPACT

For Kits Containing an Assembly of Various Surgical Appliances and Parts for Use in Effecting Irrigation of the Colostomy.

First use 1949.

Class 46 — Foods and Ingredients of Foods

782,221. T. C. Slaughter Company, Inc., Reedville, Va. SN 182,669. Filed P.R. 12–9–63; Am. S.R. 9–3–64.



For Canned Herring and Herring Roe.

First use Apr. 1, 1942.

TRADEMARK REGISTRATIONS RENEWED

186,657. TRUE FORM. Cl. 39. 7–22–24.
186,845. DANISH PRIDE AND DESIGN. Cl. 46. 7–22–24.
187,715. HOUSE OF LORDS. Cl. 8. 8–12–24.
189,399. CELANESE. Cl. 6. 9–16–24.
190,593. OLD FORGE. Cl. 23. 10–14–24.
192,011. AIRLITE. Cl. 44. 11–25–24.
192,012. DESIGN REPRESENTATION OF A GIRL PLACING AN ARCH SUPPORT IN SHOE. Cl. 44. 11–25–24.
192,076. SOLVEX. Cl. 18. 11–25–24.
192,520. KORRECTO. Cl. 44. 12–9–24.
192,806. FERN. Cl. 46. 12–9–24.
193,005. CINDERELLA HAT AND DESIGN. Cl. 39. 12–16–24.
193,837. TRIPLEX. Cl. 4. 1–6–25.
193,915. CADALYTE. Cl. 6. 1–13–25.
193,940. DOT AND DESIGN. Cl. 46. 1–13–25.
194,022. LEIGH AND DESIGN. Cl. 51. 1–13–25.
194,369. JERMYNA. Cl. 42. 1–20–25.
195,296. PACEMAKER. Cl. 39. 2–24–25.
195,318. TRICONESE. Cl. 39. 2–24–25.
195,698. JASMEENA. Cl. 42. 3–3–25.
195,699. JO SEENA. Cl. 42. 3–3–25.
195,700. KASHORETTA. Cl. 42. 3–3–25.

195,702. KASHERADA. Cl. 42. 3–3–25
195,704. JASMINA. Cl. 42. 3–3–25.
195,873. DUOFOLD. Cl. 39. 3–3–25.
196,843. CO-RE-GA. Cl. 51. 3–31–25.
407,920. AER-NU. Cl. 6. 7–4–44.
408,316. POWERCLAD. Cl. 21. 8–1–44.
409,072. THREE LITTLE BOTTLES THAT BUILT THE PLANT AND DESIGN. Cl. 6. 9–12–44
409,660. SPORTSMAN SHAVING BOWL-ER. Cl. 51. 10–17–44.
409,702. AGICHAR. Cl. 1. 10–17–44.
409,815. GATES TEX-HIDE. Cl. 23. 10–24–44.
409,985. SYMMETRICUT. Cl. 36. 10–31–44.
410,067. DARASEAL. Cl. 12. 11–7–44.
410,079. CHEMTEST AND DESIGN. Cl. 18. 11–7–44
410,140. KLIKLOK. Cl. 2. 11–7–44.
410,358. DI-PRO. Cl. 18. 11–21–44.
410,617. OROLOY. Cl. 14. 12–5–44.
410,924. METROS. Cl. 18. 12–26–44.
411,064. SEA TONES. Cl. 42. 1–2–45.
411,277. KING OF COLOR. Cl. 46. 1–9–45.
411,278. PEMCO MIRAC. Cl. 1. 1–9–45.
411,460. G. Cl. 1. 1–16–45.
411,564. BONAFIDE HERBERT LININGS. Cl. 42. 1–23–45.
411,663. NOURIC. Cl. 46. 1–30–45.
411,692. OROLOY. Cl. 23. 1–30–45.
411,870. TRITON SHADES. Cl. 42. 2–6–45.
412,085. VIKING GLASS. Cl. 33. 2–20–45.
412,104. PLASTIGRAN. Cl. 12. 2–20–45.
412,693. PLASTI-COOL. Cl. 44. 3–20–45.
413,010. PROTAMONE. Cl. 18. 4–3–45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

259,480. TIPLETS. Cl. 46. 7–30–29.
290,049. LAURA SCUDDER'S AND REPRESENTATION OF A SHIP. Cl. 46. 12–22–31.
357,559. BUDGET HOME. Cl. 42. 6 7–38.
358,050. CHRYSA. Cl. 6. 6–28–38.
378,978. SAILOR BOY AND DESIGN. Cl. 46. 6–25–40
409,890. FAUCEHOT HEATER CO. Cl. 34. 10–31–44.

The following registrations issued Nov. 4, 1958

669,128. HICKORY DICKORY. Cl. 1.
669,130. LITTEREX. Cl. 2.
669,136. SALES CHARGER. Cl. 3.
669,137. "7-11." Cl. 3.
669,138. LOOKING GLASS SHINE. Cl. 4
669,142. ANCHOR AND DESIGN. Cl. 5
669,143. HUVINAC. Cl. 5.
669,144. UNARCO. Cl. 5.
669,146. SQUEEZ-A-STITCH. Cl. 5
669,148. SPECTRA-BOND. Cl. 5.
669,152. OXYDIAMINE. Cl. 6.
669,154. ZAMBESI. Cl. 6.
669,160. BLACKHAWK AND DESIGN. Cl. 7
669,162. SOURDOUGH. Cl. 9.
669,163. SUPER SPITFIRE. Cl. 9
669,166. COLOMASTER. Cl. 11.
669,168. Z-STONE. Cl. 12.
669,169. FUTUREWALL. Cl. 12.
669,172. PROBE AND DROGUE AND DESIGN. Cl. 13.
669,174. CUPL-O. Cl. 13.
669,183. H AND DESIGN. Cl. 14.
669,185. HO-4. Cl. 15.
669,189. MAGIC. Cl. 16.
669,190. GRIPEX. Cl. 16.
669,195. OLIPRELON. Cl. 18.
669,201. REL-KA-SOL. Cl. 18.
669,203. SPARCRAFT. Cl. 19.
669,204. ALBRIGHT AND DESIGN. Cl. 19.
669,206. KIDDIE AUTO RIDE. Cl. 19.
669,208. RW AND DESIGN. Cl. 21.
669,209. DESIGN OF LINKED DIAMOND. Cl. 21.
669,211. BIFF-BURGER. Cl. 21.
669,213. RAFI AND DESIGN. Cl. 21.
669,215. DESIGN OF STAR AND CIRCLE. Cl. 22.
669,216. FLORASTIK. Cl. 22.
669,217. MARK II. Cl. 22.
669,218. PROBE AND DROGUE AND DESIGN. Cl. 23.
669,219. HYDRA-NITE ETC. AND DESIGN. Cl. 23.
669,220. WHITIN BI-COIL ETC. AND DESIGN. Cl. 23
669,221. ECLIPSE. Cl. 23.
669,245. PEEL-O-MATIC. Cl. 23.
669,251. DENS-O-LITH. Cl. 26.
669,258. SENTINEL. Cl. 26.
669,260. I AND DESIGN OF HUMAN EYE. Cl. 26.
669,265. OROFILM. Cl. 26.
669,266. STEAK-CHEF. Cl. 26.
669,267. LADY MADISON. Cl. 26.
669,268. JUNIOR MADISON. Cl. 26.
669,271. MINIBIT. Cl. 26.
669,272. PRINTACHROME. Cl. 26.
669,279. A-M AND DESIGN. Cl. 29.
669,282. SUNNYAIRE AND DESIGN. Cl. 34.
669,286. TRANSITONE. Cl. 34.
669,289. EDSEL. Cl. 36.
669,303. CORROSIONOMICS. Cl. 38.
669,312. SYLLABUS. Cl. 38.
669,313. PICKWICK 20TH CENTURY. Cl. 39.
669,314. NORAK. Cl. 39.
669,315. SKORT. Cl. 39.
669,316. GALLENKAMP'S STRAPPER. Cl. 39.
669,329. SHOWER 'N SHAVE. Cl. 39.
669,331. JOHN PALMER. Cl. 39.
669,338. SATINTONE. Cl. 42.
669,343. SEAFOAM. Cl. 42.
669,344. WASH-N-WALK. Cl. 42.
669,345. CUDDLE GLO. Cl. 42.
669,357. PRIDE OF THE VALLEY ETC. AND DESIGN. Cl. 46.
669,360. SAHADI'S. Cl. 46.
669,363. DAVIS OLD FASHIONED ETC. AND DESIGN. Cl. 46.
669,366. DAVIES PERFECTION BRAND AND DESIGN. Cl. 46.
669,367. FRY SPRED. Cl. 46.
669,269. LORD MADISON. Cl. 26.
669,384. SEMCO PINK CHAMPAGNE. Cl. 51
669,387. BYOXIDE. Cl. 51.
669,397. SUPERSOFT. Cl. 51.
669,399. TIULAK. Cl. 51.
669,403. NO FUSS. Cl. 51.
669,411. DUN-KWIK. Cl. 52.
669,412. RUVAT. Cl. 52.
669,413. BLUE FLAME KITCHENS AND DESIGN. Cl. 101.
669,415. LUCKY. Cl. 101.
669,417. LLANO AND DESIGN. Cl. 103.
669,418. LLANO. Cl. 103.
669,419. SPECTOR MID-STATES AND DESIGN. Cl. 105.
669,424. STAFFORD. Cl. 2.
669,425. SURE LOCK. Cl. 2.
669,426. CASUAL. Cl. 3.
669,427. BALE KING ETC. AND DESIGN. Cl. 7.
669,434. FITWELL. Cl. 39.
669,436. MILK BOTTLE CAP WITH CHAIN MESH IMPRINTED THEREON. Cl. 46.
669,437. FISH-PAK. Cl. 46.
669,440. PLATE O'BARK. Cl. 46.

Section 18

410,769. LA QUINTA. Cl. 49. 12–19–44.
748,423. CHALLENGER. Cl. 26. 4–23–63.
763,830. MIDO. Cl. 21. 1–28–64.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

183,750. BERGENTHALER. Cl. 46. 5–6–24. Brookshire Cheese Co. The Borden Company, New York, N.Y. Amended: In the statement, column 1, lines 10 through 12 are deleted, and the drawing is amended to appear:

BERGENTHALER

183,751. BRE-DENZER. Cl. 46. 5–6–24. Brookshire Cheese Co. The Borden Company, New York, N.Y. Amended: In the statement, column 1, lines 10 through 12 are deleted, and the drawing is amended to appear:

BRE-DENZER

408,102. RANSOM. Cl. 51. 7–18–44. Lentheric, Incorporated. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 7 and 8, "perfumes," is deleted and in lines 8 and 9, "and cosmetic creams" is deleted.

409,061. FIREBALL. Cl. 46. 9–12–44. International Milling Company, d.b.a. Commercial Flour Mills. International Milling Company Inc., Minneapolis, Minn. Amended: In the statement, column 1, lines 14 and 15, "The drawing is lined to indicate the color blue." is deleted, and the drawing is amended to appear:

FIREBALL

591,366. CONTINENTE BRAND. Cl. 46. 6–15–54. Giovanni Continente, doing business under the name and style of G. Continente. Rosa Continente, Oakley, Calif. Amended: In the statement, column 2, line 2, before "apricots" *and* is inserted and "plums, nectraines, and other stone-fruit" is deleted.

633,192. MARTIN. Cl. 35. 8–21–56. J. Walter Martin, doing business as Martin Tire & Supply Company. Martin Tire & Supply, Inc., Witchita, Kans. Amended: In the statement, column 2, line 1, after "tires" , *namely, recapped, retreaded, and used tires, and new truck and heavy duty service tires* is inserted.

663,235. COUNTRY CLUB AND DESIGN. Cl. 48. 6–17–58. M. K. Goetz Brewing Company. Pearl Brewing Company, San Antonio, Tex. Amended: In the statement, column 2, lines 3 and 4 are deleted, in line 6, after "32,494" *315,874* is inserted, and the drawing is amended to appear:



683,750. STAR CRUST. Cl. 46. 8–18–59. Gladiola Biscuit Co. Faut Milling Company, Sherman, Tex. Corrected: In the statement, column 2, line 1, "eat" should be deleted and *bake* should be inserted.

691,712. "DEE-CEE." Cl. 39. 1–19–60. Washington Manufacturing Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

773,580. S AND DESIGN. Cl. 23. 7–21–64. Schloemann Aktiengesellschaft, Duseldorf, Germany. Corrected: In the statement, column 1, line 2, "Schloemannhaus" should be deleted and *Schloemanhaus* should be inserted.

778,373. MYCOZYME. Cl. 6. 10–13–64. Chas. Pfizer & Co., Inc., New York, N.Y. Corrected: In the statement, column 2, line 1, after "preparation" *for* should be inserted.

778,762. DECORATOR'S COLLECTION. Cl. 34. 10–20–64. Trade-Wind Motorfans, Inc., Pico Rivera, Calif. Corrected: In the statement, column 2, line 2, "1953" should be deleted and *1963* should be inserted.

779,428. BRYANT. Cl. 26. 11–3–64. Ex-Cell-O Corporation, Detroit, Mich. Corrected: In the statement, column 1, line 1 is deleted and *Ex-Cell-O Corporation (Michigan corporation)* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

127,176. CASCO. Cl. 18. The Casco Company. 10–21–19. New Cert. Sec. 7(c) to George A. Murray, Marion, Ill.

585,522. POLY-TREAT. Cl. 1. Extruders, Inc. 2–9–54. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

611,952. PARROT DESIGN. Cl. 1. Extruders, Inc. 9–13–55. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

661,488. FILM-GARD. Cl. 1. Extruders, Inc. 5–13–58. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

662,387. POLYFILM. Cl. 1. Extruders, Inc. 6–3–58. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

706,940. ECONOMY BLINDSTITCH. Cl. 23. American Blindstitch Machine Corporation. 11–8–60. New Cert. Sec. 7(c) to The Singer Company, New York, N.Y.

752,191. PENSIVE. Cl. 39. Burlington Industries, Inc 7–2–63. New Cert. Sec. 7(c) to Aldens Shoppers World, Inc., Chicago, Ill.

773,350. SILVER SONIC. Cl. 52. Winfield Brooks Company, Inc. 7–14–64. New Cert. Sec. 7(c) to Shelco, Inc., Needham, Mass.

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General Aniline & Film Corp., New York, N.Y. 781,913, pub. 10–6–64. Cl. 6.
General Capsule Corp., Detroit, Mich. 782,207. Cl. 12.
General Dynamics Corp., Rochester, N.Y. 782,061, pub. 10–6–64. Cl. 26.
General Mills, Inc., Minneapolis, Minn. 782,166, pub. 6–9–64. Cl. 46.
General Time Corp., New York, N.Y. 782,070, pub. 10–6–64. Cl. 27.
Generale du Vide (SOGEV), Societe, Paris, France. 782,063, pub. 5–12–64. Cl. 26.
George, P. D., Co., The, St. Louis, Mo. 669,190, canc. Cl. 16.
George, Stephen, Bronx, N.Y. 782,090, pub. 10–6–64. Cl. 36.
Gladiola Biscuit Co. Fant Milling Co., Sherman, Tex. 683,750, cor. Cl. 46.
Glidden Co., The: *See*—
Pemco Corp.
Globe Roofing Products Co., Inc., Chicago, Ill. 412,104, ren. 12–22–64. Cl. 12.
Globe Rubber Products Corp., Philadelphia, Pa. 781,978, pub. 10–6–64. Cl. 19.
Goetz, M. K., Brewing Co. Pearl Brewing Co., San Antonio, Tex. 663,235. Am. 7(d). Cl. 48.
Good News Broadcasting Association, Lincoln, Nebr. 782,092, pub. 10–6–64. Cl. 36.
Goodrich, B. F., Co., The, Akron, Ohio, from Granu-Flow Equipment, Ltd., Seattle, Wash. 781,891. pub. 10–6–64 Cl. 2
Goodrich, B. F., Co., The, Akron, Ohio. 782,153–4. pub. 10–6–64. Cl. 44.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 782,088, pub. 8–18–64. Cl. 35.
Gordon, Samuel, to Lane Ltd., New York, N.Y. 187,715, ren 12–22–64. Cl. 8.
Grace, W. R., & Co.: *See*—
Dewey and Almy Chemical Co.
Granu Flow Equipment, Ltd.: *See*—
Goodrich, B. F., Co., The.
Grasselli Chemical Co., The, Cleveland, Ohio, to E. I. du Pont de Nemours and Co., Wilmington, Del. 193,915, ren. 12–22–64. Cl. 6.
Greer, John F., Co., Oakland, Calif. 782,220. Cl. 44.
Green Mfg. Co., The, Bowling Green, Ohio. 669,219, canc Cl. 23.
Greenwald, H., Co., Brooklyn, N.Y. 782,060, pub. 10–6–64. Cl. 5.
Greif Bros. Cooperage Corp., The, Delaware, Ohio. 781,898, pub. 10–6–64. Cl. 2.
Grundfoss Bjerringbro Pumpefabrik A/S, Bjerringbro, Denmark. 782,042, pub. 10–6–64 Cl. 23
Guytom Laboratories: *See*—
Amodeo, Guy T.
Hagmann, Foster M.: *See*—
Del Fi Records, Inc.
Hamac-Hansella Aktiengesellschaft, Viersen, Rhineland, Germany. 782,038, pub. 10–6–64. Cl. 23.
Hammermill Paper Co., Erie, Pa. 72,094, pub. 6–30–64. Cl. 37.
Hanes-Millis Sales Corp., High Point, N.C. 782,116, pub. 10–6–64. Cl. 39.
Hanson-Van Winkle-Munning Co.: *See*—
Munning, A. P., & Co.
Hardware Designers Inc., Mamaroneck, N.Y. 781,943, pub. 10–6–64. Cl. 13.
Hartford Electric Steel Corp., The, Hartford, Conn. 669,183, canc. Cl. 14.
Hartmann Luggage Co., Racine, Wis. 669,426, canc. Cl. 3.
Hearst Consolidated Publications, Inc., New York, N.Y. 782,109, pub. 10–6–64. Cl. 38.
Herbert Mfg. Co., to Herbert Mfg. Co., Inc., New York, N.Y. 411,564, ren. 12–22–64. Cl. 42.
Herbert Mfg. Co., Inc.: *See*—
Herbert Mfg. Co.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 781,958, pub. 10–6–64. Cl. 15.
Heyden Newport Chemical Corp.: *See*—
Nnodex Products Co. Inc.
Hickory Dickory Bar-B-Q Chips Co., Miami, Okla. 669,128, canc. Cl. 1.
Hillary, Frank, Inc., Philadelphia, Pa. 782,025, pub 10–6–64. Cl. 23.
Hill-Rockford Co., Rockford, Ill. 782,033, pub. 10–6–64. Cl. 23.
Hill-Shaw Co., Chicago, Ill. 781,985, pub. 10–6–64. Cl. 21.
Hitchcock Publishing Co., Wheaton, Ill. 782,108, pub. 10–6–64. Cl. 38.
Hoeganaes Sponge Iron Corp., New York, N.Y. 781,955, pub. 10–6–64. Cl. 14.
Hoffmaster Co., Inc., Oshkosh, Wis. 782,096, pub. 10–6–64. Cl. 37.
Holland-Suco Color Co., Holland, Mich., from Standard Ultramarine & Color Co., Huntington, W. Va. 781,925, pub. 9–22–64. Cl. 11.
Hollister Inc., Chicago, Ill. 782,102, pub. 10–6–64. Cl. 37.
Household Products Inc., Stamford, Conn., to Cajon Corp., Glen Head, N.Y. 407,920, ren. 12–22–64. Cl. 6.
Household Research Corp., Cambridge, Mass. 669,146, canc. Cl. 5.
Howe Sound Co., New York, N.Y. 782,148, pub. 10–6–64. Cl. 44.
Hudnut, Richard: *See*—
Moore, John Hudson, Inc.
Hughes & Hatcher, Inc., Detroit, Mich. 782,119, pub. 10–6–64. Cl. 39.
Hukill Chemical Corp., Cleveland, Ohio. 669,143, canc. Cl. 5.
Hurst-Campbell, Inc., Glenside, Pa. 728,047, pub. 10–6–64. Cl. 23.
Hycrest Farms: *See*—
Sawyer, Lester T.
I Glass Optical Co.: *See*—
Wexler, Oscar S.
Ideax Corp., New York, N.Y. 669,265, canc. Cl. 26.
Ideal Plastica Flor, S.A., Barcelona, Spain. 782,176, pub. 10–6–64. Cl. 50.
Immel, Alton E., Auburn, Ind. 782,024, pub. 10–6–64. Cl. 23.
Imperial Knife Associated Companies, Inc., Providence, R.I. 782,020, pub. 8–18–64. Cl. 23.
Industrionics Controls, Inc., New York, N.Y. 781,992, pub. 10–6–64. Cl. 21.
Inland Container Corp., Indianapolis, Ind. 781,899, pub. 10–6–64. Cl. 2.
International Basic Economy Corp., Cleveland, Ohio. 781,947, pub. 10–6–64. Cl. 13.
International Milling Co., d.b.a. Commercial Flour Mills, International Milling Co. Inc., Minneapolis, Minn. 409,061. Am. 7(d). Cl. 46.
International Milling Co. Inc.: *See*—
International Milling Co.
International Shoe Co., St. Louis, Mo. 195,296, ren. 12–22–64. Cl. 39.
Itt Bell & Gossett Inc., Morton Grove, Ill. 781,946, pub. 10–6–64 Cl. 13
Israel, Philip, d.b.a. Southwest Equipment Co., Houston, Tex. 669,174, canc. Cl. 13.
Ironcrete Co., The, d.b.a. Surety Co., Philadelphia, Pa. 782,058, pub. 10–6–64. Cl. 24.
JFD Electronics Corp., Brooklyn, N.Y. 782,001, pub. 10–6–64. Cl. 21.
Janszen Co., The: *See*—
Janszen Grocery, The
Janszen Grocery Co., The, to The Janszen Co., Cincinnati, Ohio. 193,940, ren. 12–22–64. Cl. 46.
Johnston, Robert A., Co., Milwaukee, Wis. 782,160, pub. 8–6–63. Cl. 46.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 195,318, ren. 12–22–64. Cl. 39.
Just Born, Inc., Bethlehem, Pa. 782,167, pub. 10–6–64. Cl. 46.
Kabushiki Kaisha Toko Radio Coil Kenkyusho: *See*—
Toko Kabushiki Kaisha.
Kaplan, Joseph A., & Sons, Inc., New York, N.Y. 669,343–4, canc. Cl. 42
Katz Drug Co., to Chemtest Products, Inc., Kansas City, Mo. 410,079, ren. 12–22–64. Cl. 18.
Kay Line Inc., Trenton, N.J. 781,890, pub. 10–6–64. Cl. 1.
Kayser-Roth Corp.: *See*—
Kayser, Julius, & Co.
Kayser-Roth Corp., New York, N.Y. 782,133, pub. 10–6–64. Cl. 39.
Kendall Co., The, Boston, Mass. 782,151, pub. 10–6–64. Cl. 44.
Kensington Steel Co., to Poor & Co., Chicago, Ill. 410,617, ren. 12–22–64. Cl. 14.
Kensington Steel Co., to Poor & Co., Chicago, Ill. 411,692, ren. 12–22–64. Cl. 23.
King, John, & Son, Ltd., Glasgow, Scotland. 782,144, pub. 10–6–64. Cl. 42.
Klemson Co., Chicago, Ill. 669,437, canc. Cl. 46.
Klondex Inc., Rochester, N.Y. 781,919, pub. 10–6–64. Cl. 6.
Knomark Mfg. Co., Inc., Brooklyn, N.Y. 669,138, canc. Cl. 4.
Koppers Co., Inc., Pittsburgh, Pa. 781,911, pub. 10–6–64. Cl. 6.
Koppers Co., Inc., Pittsburgh, Pa. 781,930, pub. 10–6–64. Cl. 12.
Kraissl Associates, North Hackensack, N.J. 782,174–5, pub. 10–6–64. Cl. 50.
Krasner, Harold, d.b.a. Mr. Twister Pretzels, North White Plains, N.Y. 782,165, pub. 10–6–64. Cl. 46.
Kunze, Jerome Z., Glen Cove, N.Y. 782,006, pub. 10–6–64. Cl. 22.
L & L Mfg., Inc., North Wilkesboro, N.C. 782,115, pub. 2–25–64. Cl. 39.
L & L Mfg., Inc., North Wilkesboro, N.C. 782,137, pub. 2–25–64. Cl. 42.
Lady Carlton Coat Co., Inc., Stamford, Conn. 669,345, canc. Cl. 42.
Lakeland Boating, Inc., Ann Arbor, Mich. 782,110, pub. 10–6–64. Cl. 38.
Lander: *See*—
Lander Co. Inc.

Lander Co. Inc., d.b.a. Lander, New York, N.Y. 782,181, pub. 10–6–64. Cl. 51.
Lauder, Estee, Inc., New York, N.Y. 782,183, pub. 8–18–64. Cl. 51.
Lane Ltd.: *See*—
Gordon, Samuel.
Leigh, Chemist, Inc., New York, N.Y., to Shulton, Inc., Clifton, N.J. 194,022, ren. 12–22–64. Cl. 51.
Lenel Perfumes, Dallas, Tex. 669,397, canc. Cl. 51.
Lentheric, Inc. Helene Curtis Industries, Inc., Chicago, Ill. 408,102. Am. 7(d). Cl. 51.
Lilliston Implement Co., Albany, Ga. 782,048, pub. 10–6–64. Cl. 23.
Lincoln Laboratories, Inc., Decatur, Ill. 781,967, pub. 6–19–62. Cl. 18.
Lion Packaging Products Co., Inc., Hicksville, N.Y. 781,900, pub. 10–6–64. Cl. 2.
Litterex Co., Long Beach, Calif. 669,130, canc. Cl. 2.
Llano Drilling Co., Midland, Tex. 669,417, canc. Cl. 103.
Llano Drilling Co., Midland, Tex. 669,418, canc. Cl. 103.
Lorillard, P., Co., New York, N.Y. 781,965, pub. 10–6–64. Cl. 17.
Ludwig, Oskar R., and Anthony Pezone, Middle Village, N.Y. 669,169, ren. 12–22–64. Cl. 12.
Machine Products Corp., Detroit, Mich. 782,052, pub. 10–6–64. Cl. 23.
Macomber, Robert, Cape Coral, Fla. 781,938, pub. 10–6–64. Cl. 12.
Makegood Mfg. Co. Inc., New York, N.Y. 669,313, canc. Cl. 39.
Mallinckrodt Chemical Works, St. Louis, Mo. 781,906, pub. 10–6–64. Cl. 6.
Manning, Maxwell & Moore, Inc., Stratford, Conn. 782,066, pub. 10–6–64. Cl. 26.
Mara Lab, Inc., Washington, D.C. 781,969, pub. 10–6–64. Cl. 18.
Maradel Products, Inc., New York, N.Y. 782,180, pub. 10–6–64. Cl. 51.
Marbelle Corp., The, Memphis, Tenn. 782,205. Cl. 6.
Marble Import Co. of America, Inc., Bridgeport, Conn. 781,932, pub. 10–6–64. Cl. 12.
Marco Importing Co., Chicago, Ill. 410,769, canc. Cl. 49.
Martin, J. Walter, d.b.a. Martin Tire & Supply Co. Martin Tire & Supply, Inc., Wichita, Kans. 633,192. Am. 7(d). Cl. 35.
Martin Tire & Supply Co.: *See*—
Martin, J. Walter.
Marwais Steel Co., Los Angeles, Calif. 781,952, pub. 10–6–64. Cl. 14.
McGraw-Hill Book Co., Inc.: *See*—
McGraw-Hill, Inc.
McGraw-Hill, Inc., from McGraw-Hill Book Co., Inc., New York, N.Y. 782,111, pub. 9–22–64. Cl. 38.
McLeansboro Twine Co.: *See*—
Atkinson, Sam.
McQuay, Inc., Minneapolis, Minn. 782,077, pub. 10–6–64. Cl. 31.
McQuay-Norris Mfg. Co., St. Louis, Mo. 782,089, pub. 10–6–64. Cl. 35.
Mead Johnson & Co., Evansville, Ind. 781,968, pub. 7–21–64. Cl. 18.
Mead Specialties Co., Inc., Chicago, Ill. 782,029–31, pub. 10–6–64. Cl. 23.
Mercury Stamp Co.: *See*—
Reespondek, John E.
Michigan Wheel Co., Grand Rapids, Mich. 781,975–6, pub. 10–6–64. Cl. 19.
Midas, Inc., Chicago, Ill. 782,041, pub. 10–6–64. Cl. 23.
Middletown Co., The, Chicago, Ill. 782,195, pub. 10–6–64. Cl. 52.
Milk Specialties, Inc., Dundee, Ill. 782,162, pub. 10–6–64. Cl. 46.
Millen Industries, Inc., New York, N.Y. 782,101, pub. 10–6–64. Cl. 37.
Miller Fruit Co., to Miller Fruit Co., Healdsburg, Calif. 411,277, ren. 12–22–64. Cl. 46.
Miller, Rose E., d.b.a. Cadet Laboratories, Worcester, Mass. 782,185, pub. 10–6–64. Cl. 51.
Milwhite Mud Sales Co., Houston, Tex. 781,912, pub. 10–6–64. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 782,016–17, pub. 10–6–64. Cl. 22.
Mississippi Industrial Land and Timber Corp., Jackson, Miss. 782,095, pub. 10–6–64. Cl. 37.
Mr. Twister Pretzels: *See*—
Krasner, Harold.
Mitsubishi Shoji Kaisha, Ltd., Corp., Chiyoda-ku, Tokyo, Japan. 782,007, pub. 10–6–64. Cl. 22.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 782,118, pub. 10–6–64. Cl. 39.
Modern Sewing Machine Co., Inc., Valley Stream, N.Y. 782,027, pub. 10–6–64. Cl. 23.
Modern Water Equipment Co., Freeport, Ill. 782,083, pub. 10–6–64. Cl. 34.
Monarch Accordion Studios: *See*—
De Carlo, Roxy.
Monarch Chemicals, Inc.: *See*—
Sep-Ko Chemicald, Inc.
Monrovia Nursery Co., Azusa, Calif. 781,883, pub. 10–6–64. Cl. 1.
Monsanto Co., St. Louis, Mo. 781,896, pub. 10–6–64. Cl. 2.
Monsanto Co., St. Louis, Mo. 781,939–40, pub. 10–6–64. Cl. 12.
Montgomery Ward & Co., Inc., Chicago, Ill. 782,069, pub. 10–6–64. Cl. 27.
Moore, E. R., Co., Chicago, Ill. 782,129, pub. 10–6–64. Cl. 39.
Moore, John Hudson, Inc., New York, N.Y., to Richard Hudnut, Morris Plains, N.J. 409,660, ren. 12–22–64. Cl. 51.
Morgan Sign Machine Co., The, Chicago, Ill. 782,037, pub. 10–6–64. Cl. 23.
Mullins Mfg. Corp., Salem, Ohio. 782,084, pub. 10–6–64. Cl. 34.
Multisonic Corp., Westbury, N.Y. 781,988, pub. 10–6–64 Cl. 21.
Munning, A. P., & Co., New York, N.Y., to Hanson-Van Winkle-Munning Co., Matawan, N.J. 193,837, ren. 12–22–64 Cl. 4.
Murray, George A.: *See* —
Casco Co., The.
Myers Electric Products, Inc., Los Angeles, Calif. 781,983, pub. 10–6–64. Cl. 21.
Myers, L., Co., San Francisco, Calif. 782,218. Cl. 42.
National Latex Products Co., The, Ashland, Ohio. 782,010, pub. 10–6–64. Cl. 22.
National Lumber Manufacturers Association, Washington, D.C. 782,105, pub. 10–6–64. Cl. 38.
National Mineral Co., The, to Helene Curtis Industries, Inc., Chicago, Ill. 412,693, ren. 12–22–64. Cl. 44.
Nease Chemical Co., Inc., State College, Pa. 781,914, pub. 8–4–64. Cl. 6.
Nease Chemical Co., Inc., State College, Pa. 782,201, pub. 8–4–64. Cl. 106.
Neptunalia Seafood Co., Thunderbolt, Ga. 782,168, pub. 10–6–64. Cl. 46.
Neusteter Co., The, Denver, Colo. 782,121, pub. 10–6–64. Cl. 39.
New Castle Products, Inc., New Castle, Ind. 781,931, pub 10–6–64. Cl. 12.
New Martinsville Glass Co., to Viking Glass Co., New Martinsville, W. Va. 412,085, ren. 12–22–64. Cl. 33.
Newberry, J. J., Co., New York, N.Y. 782,099, pub. 10–6–64. Cl. 37.
Newberry, J. J., Co., New York, N.Y. 782,131, pub. 10–6–64. Cl. 39.
North American Foreign Trading Corp., New York, N.Y. 781,984, pub. 10–6–64. Multiple Class (Classes 21 and 36)
North Star Industries, Inc., Hopkins, Minn. 669,215, canc. Cl. 22.
Northwestern Motor Co., Eau Claire, Wis. 782,035, pub. 10–6–64. Cl. 23.
Norwalk Powdered Metals, Inc., Norwalk, Conn. 781,953, pub. 10–6–64. Cl. 14.
Norwegian-American Knitting Mills, Inc., Bennington, Vt 669,314, canc. Cl. 39.
Nuodex Products Co. Inc., Elizabeth, N.J., to Heyden Newport Chemical Corp., New York, N.Y. 409,072, ren 12–22–64. Cl. 6.
Ogden, Betti Y., Clearwater, Fla 669,312, canc. Cl. 38.
Operation America: *See*—
Eller, Ernest E.
Organic Development Corp., Garden Grove, Calif. 669,148, canc. Cl. 5.
Organon Inc.: *See*—
Roche-Organon, Inc.
Owens-Illinois Glass Co., Toledo, Ohio. 781,894, pub. 10–6–64. Cl. 2.
Oz Fibre Brush Co., Inc., Frederick, Md. 781,893, pub. 10–6–64. Cl. 2.
Pacific Metals Co.: *See*—
Punta Alegre Commodities Corp.
Pan-L-Roc Corp., Chicago, Ill. 781,929, pub. 10–6–64. Cl. 12
Paper Novelty Mfg. Co., Stamford, Conn. 782,211. Cl. 16
Parametrics, Costa Mesa, Calif. 781,993, pub. 10–6–64. Cl. 21.
Parke, Davis & Co., Detroit, Mich. 782,079, pub. 10–6–64 Cl. 33.
Paul, Richard, Inc., Wilmington, Del. 782,217. Cl. 39
Pearl Brewing Co.: *See*—
Goetz, M. K., Brewing Co.
Pelican Products: *See*—
Behrman, Edward H.
Pellissard, Pierre, Casablanca, Morocco. 669,399, canc. Cl. 51
Pemco Corp., Baltimore, Md., to The Glidden Co., Cleveland, Ohio. 411,278, ren. 12–22–64 Cl. 1
Pet Milk Co.: *See*—
Danish Pride Milk Products Co.
Pezone, Anthony: *See*—
Ludwig, Oskar R.
Pfizer, Chas., & Co., Inc., New York, N.Y. 778,373, cor. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 781,917, pub. 10–6–64. Cl. 6.
Philco and Corp., Philadelphia, Pa. 669,286, canc. Cl. 34.
Phy, Albert C., & Sons, Inc., Willow Grove, Pa. 782,013, pub. 10–6–64. Cl. 22.
Pioneers, Inc., Oakland, Calif. 782,051, pub. 10–6–64. Cl. 23.
Pittsburgh Activated Carbon Co., from Pittsburgh Chemical Co., Pittsburgh, Pa. 781,920, pub. 9–22–64. Cl. 6.
Pittsburgh Chemical Co.: *See*—
Pittsburgh Activated Carbon Co.
Poor & Co.: *See*—
Kensington Steel Co.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 748,423, canc. Cl. 26.
Precision Papers, Inc., Brooklyn, N.Y. 782,103, pub. 10–6–64. Cl. 37.
Prime Mfg. Co.: *See*—
Texon, Inc.
Primrose Packaging Co., Inc., Westbury, N.Y. 781,901, pub. 10–6–64. Cl. 2.
Puerto Rico Distillers, Inc., Arecibo, Puerto Rico, from Ronrico Corp., San Juan, Puerto Rico. 782,171, pub. 10–6–64. Cl. 49.
Pundit Publishing Co., Wilton, Conn. 782,106, pub. 10–6–64. Cl. 38.
Punta Alegre Commodities Corp., d.b.a. Pacific Metals Co., San Francisco, Calif. 781,944, pub. 10–6–64. Multiple Class (Classes 13, 14, 31, and 34).
Quality Tools Corp., New Wilmington, Pa. 190,593, ren. 12–22–64. Cl. 23.

"Rafi" Raimund Finsterholzl Elektrotechnische Spezialfabrik O.H.G., Ravensburg, Germany. 669,213, canc. Cl. 21.
Rafters, Inc., Olivia, Minn. 782,208. Cl. 12.
Ramo-Wooldridge Corp., The, Los Angeles, Calif. 669,208–9, canc. Cl. 21.
Raritan Technical Products Co., Raritan, N.J. 782,023, pub. 10–6–64. Cl. 23.
Reda Pump Co., Bartlesville, Okla. 782,044, pub. 10–6–64. Cl. 23.
Redfield Gunsight Co., Denver, Colo. 669,162, canc. Cl. 9.
Rei-Ka-Sol Chemical Co., Jenkintown, Pa. 669,201, canc. Cl. 18.
Ren Plastics, Inc., Lansing, Mich. 781,908, pub. 10–6–64. Cl. 6.
Respondek, John E., d.b.a. Mercury Stamp Co., Detroit, Mich. 669,415, canc. Cl. 101.
Reynolds Research and Mfg. Corp., McAllen, Tex. 782,026, pub. 10–6–64. Cl. 23.
Right Products: *See*—
Connell, John C.
Rinshed-Mason Co., Detroit, Mich. 782,206. Cl. 12.
Roche-Organon, Inc., Nutley, N.J., to Organon Inc., West Orange, N.J. 410,358, ren. 12–22–64. Cl. 18.
Roche-Organon, Inc., Nutley, N.J., to Organon Inc., West Orange, N.J. 410,024, ren. 12–22–64. Cl. 18.
Rockford Textile Mills, Inc., McMinnville, Tenn. 782,114, pub. 10–6–64. Cl. 39.
Rohm & Haas Co., Philadelphia, Pa. 781,884, pub. 10–6–64. Cl. 1.
Ronrico Corp.: *See*—
Puerto Rico Distillers, Inc.
Rosen, Jules S., d.b.a. United Artist Materials Co., New York, N.Y. 669,144, canc. Cl. 5.
Roth, David Z., & Co.: *See*—
Roth, David Z.
Roth, David Z., d.b.a. David Z. Roth & Co., Clifton, N.J. 669,251, canc. Cl. 26.
Rotron Mfg. Co., Inc., Woodstock, N.Y. 781,998, pub. 10–6–64. Cl. 21.
S-P Mfg. Corp., The, Solon, Ohio. 782,056, pub. 10–6–64. Cl. 23.
SSP Fittings Corp., Bedford, Ohio. 781,945, pub. 10–6–64. Cl. 13.
STOP, Inc.: *See*—
Sub Tropical Opportune Properties, Inc.
Sahadi, A., & Co., Inc., New York, N.Y. 669,360, canc. Cl. 46.
Sawyer, Lester T., d.b.a. Hycrest Farms, Sterling, Mass. 669,436, canc. Cl. 46.
Schenley Distillers, Inc., New York, N.Y. 782,173, pub. 10–6–64. Cl. 49.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,011–2, ren. 12–22–64. Cl. 44.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,076, ren. 12–22–64. Cl. 18.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,520, ren. 12–22–64. Cl. 44.
Schloemann Aktiengesellschaft, Dusseldorf, Germany. 773,580, cor. Cl. 28.
Schulte, Joseph H., d.b.a. Blue Flame Kitchens, Los Angeles, Calif. 669,413, canc. Cl. 101.
Scott Thermo-Meter Corp., Rochester, N.Y. 669,266, canc. Cl. 26.
Scudder Food Products Inc., Los Angeles, Calif. 290,049, canc. Cl. 46.
Seager, Evans & Co., Ltd., London, England. 782,172, pub. 10–6–64. Cl. 49.
Sears, Roebuck and Co., Chicago, Ill. 357,559, canc. Cl. 42.
Seltz Werke G.m.b.H., (Rheinl), Germany. 782,214. Cl. 23.
Sentinel Products Corp., Temple, Tex. 669,258, canc. Cl. 26.
Sep-Ko Chemicals, Inc., from Monarch Chemicals, Inc., Minneapolis, Minn. 782,189, pub. 10–6–64. Cl. 52.
Servicar of America, Inc., Minneapolis, Minn. 782,200, pub. 10–6–64. Cl. 105.
Shandon Scientific Co., Ltd., London, England. 782,062, pub. 7–7–64. Cl. 26.
Shelco, Inc.: *See*—
Brooks, Winfield, Co., Inc.
Shelco Inc., Needham, Mass. 782,191, pub. 10–6–64. Cl. 52.
Sheldon, Henry, d.b.a. Arrow Dental Products, Detroit, Mich. 782,147, pub. 10–6–64. Cl. 44.
Shell Oil Co., Wilmington, Del. 781,918, pub. 10–6–64. Cl. 6.
Shenango Ceramics, Inc., from Shenango China, Inc., New Castle, Pa. 782,074, pub. 10–6–64. Cl. 30.
Shenango China, Inc.: *See*—
Shenango Ceramics, Inc.
Shok Baton Co., d.b.a. Shok Baton Co., Inc., Minneapolis, Minn. 781,989, pub. 10–6–64. Cl. 21.
Shok Baton Co., Inc.: *See*—
Shok Baton Co.
Shulton, Inc.: *See*—
Leigh, Chemist, Inc.
Singer Co., The: *See*—
American Blindstitch Machine Corp.
Slaughter, T. C., Co., Inc., Reedville, Va. 782,221. Cl. 46.
Smith, H. P., Co., Inc., Rogers, Ark. 669,427, canc. Cl. 7.
Smith-Lerner Industries, Inc., Phoenix, Ariz. 782,179, pub. 10–6–64. Cl. 50.
Solitest, Inc., Chicago, Ill. 782,064, pub. 8–18–64. Cl. 26.
Solarine Co., The, Baltimore, Md. 782,204. Cl. 4.
Southland-Sundron Bottling Co.: *See*—
Futrell, Jeptha F., Jr.
Southwest Equipment Co.: *See*—
Israel, Philip.
Spartan Aircraft Co., Tulsa, Okla. 669,203, canc. Cl. 19.
Spatz, Delmar G., d.b.a. DMA, Chicago, Ill. 669,136, canc. Cl. 3.
Spector Freight System, Inc., Chicago, Ill. 669,419, canc. Cl. 105.
Spraying Systems Co., Bellwood, Ill. 781,948, pub. 10–6–64. Cl. 13.
Srofe, Jesse, Cincinnati, Ohio. 781,895, pub. 10–6–64. Cl. 2.
Standard Merchandising Co., Inc., Hillside, N.J. 669,384, canc. Cl. 51.
Standard Oil Co., The, Cleveland, Ohio. 781,885, pub. 10–6–64. Cl. 1.
Standard Oil Co. of California, San Francisco, Calif. 781,960, pub. 10–6–64. Cl. 15.
Standard Ultramarine & Color Co.: *See*—
Holland-Suco Color Co.
Steelite Buildings, Inc., Pittsburgh, Pa. 782,080, pub. 10–6–64. Cl. 34.
Sterling Automotive Mfg. Co., Elk Grove Village, Ill. 782,019, pub. 10–6–64. Cl. 23.
Stevens Appliance Truck Co., Augusta, Ga. 781,977, pub. 10–6–64. Cl. 19.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffman Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 782,145, pub. 10–6–64. Cl. 42.
Steward Co., The: *See*—
Steward Printers and Lithographers Equipment Co.
Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Co., Los Angeles, Calif. 782,055, pub. 10–6–64. Cl. 23.
Stewart, K. F., d.b.a. Elkay Co., Mount Vernon, Ill. 781,907, pub. 6–16–64. Cl. 6.
Strathmore Products, Inc., Syracuse, N.Y. 782,212. Cl. 16.
Stuck, Mary, Chicago, Ill. 782,161, pub. 10–6–64. Cl. 46.
Style Footwear Co. Inc., South Norwalk, Conn. 782,117, pub. 10–6–64. Cl. 39.
Style Footwear Co., Inc., Norwalk, Conn. 782,136, pub. 10–6–64. Cl. 39.
Sub Tropical Opportune Properties, Inc., d.b.a. STOP, Inc., Fort Pierce, Fla. 782,198, pub. 10–6–64. Cl. 102.
Sullivan, Carol B., New York, N.Y. 669,137, canc. Cl. 3.
Sun Drop Sales Corp. of America, St. Louis, Mo. 782,157, pub. 10–6–64. Cl. 45.
Sun Oil Co., Philadelphia, Pa. 781,959, pub. 10–6–64. Cl. 15.
Sun Oil Co., Philadelphia, Pa. 781,961, pub. 10–6–64. Cl. 15.
Surety Co.: *See*—
Tronces Co., The.
Szekely, Edmond B., San Diego, Calif. 782,008, pub. 10–6–64. Cl. 22.
Tetley, Joseph, & Co., Inc., New York, N.Y. 259,480, canc. Cl. 46.
Texas Instruments Inc., Dallas, Tex. 782,210. Cl. 14.
Texon, Inc., South Hadley Falls, from Prime Mfg. Co., Lynn, Mass. 782,122, pub. 10–6–64. Cl. 39.
Thermco Products Co., Garden Grove, Calif. 782,085, pub. 10–6–64. Cl. 34.
Thomas Industries Inc., Louisville, Ky. 781,997, pub. 10–6–64. Cl. 21.
Thrifty Drug Stores Co., Inc., Los Angeles, Calif. 781,956, pub. 10–6–64. Cl. 15.
Toko, Inc.: *See*—
Toko Kabushiki Kaisha.
Toko Kabushiki Kaisha, d.b.a. Toko Inc., from Kabushiki Kaisha Toko Radio Coil Kenkyusho, d.b.a. Toko Radio Coil Laboratories, Ltd., Ota-ku, Tokyo-to, Japan. 781,897, pub. 10–6–64. Multiple Class (Classes 21 and 26).
Toko Radio Coil Laboratories, Ltd.: *See*—
Toko Kabushiki Kaisha.
Tovatt, V. J., Co., Lynwood, Calif. 669,163, canc. Cl. 9.
Tradewind Motorfans, Inc., Pico Rivera, Calif. 778,762, cor. Cl. 34.
Travelers Insurance Co., The, Hartford, Conn. 782,199, pub. 10–6–64. Cl. 102.
True Form Corset Co., Philadelphia, to True Form Foundations, Inc., Darby, Pa. 186,657, ren. 12–22–64. Cl. 39.
True Form Foundations, Inc.: *See*—
True Form Corset Co.
Tyler Mfg. Co., Inc., Benson, Minn. 782,036, pub. 10–6–64. Cl. 23.
Ultrasonic Laboratories, Inc., Rahway, N.J. 781,927, pub. 10–6–64. Cl. 12.
United Artist Materials Co.: *See*—
Rosen, Jules S.
United States Ceramic Tile Co., Canton, Ohio. 781,926, pub. 10–6–64. Cl. 12.
United States Ceramic Tile Co., Canton, Ohio. 781,933, pub. 10–6–64. Cl. 12.
United States Rubber Co., New York, N.Y. 781,915, pub. 10–6–64. Cl. 6.
Valley Neon Co., Yakima, Wash. 782,177, pub. 10–6–64. Cl. 50.
Van Brode Milling Co., Inc., Clinton, Mass. 782,040, pub. 7–14–64. Cl. 23.
Van Horne-Kaestner Leather Co., Milwaukee, Wis. 669,434, canc. Cl. 39.
Vaughan & Bushnell Mfg. Co., Chicago, Ill. 782,053, pub. 10–6–64. Cl. 23.
Vermiculite Mfg. Co., Seattle, Wash. 669,168, canc. Cl. 12.
Victor Gloves Inc., New York, N.Y. 782,126–8, pub. 10–6–64. Cl. 39.
Viking Glass Co.: *See*—
New Martinsville Glass Co.
Vita Elixir Co., Inc., Atlanta, Ga. 781,971, pub. 10–6–64. Cl. 18.
Viz-U-Aid Co.: *See*—
Avery, Alton S.
Wales Mfg. Co., Boston, Mass. 782,125, pub. 10–6–64. Cl. 39.
Walter and Walter Chocolate Co., Inc., White Sulphur Springs, W. Va. 782,159, pub. 10–6–64. Cl. 46.
Walton Printing Corp., Whittier, Calif. 782,104, pub. 10–6–64. Cl. 37.

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Wander Co., The, Chicago, Ill. 781,972, pub. 10–6–64. Cl. 18.
Washington Mfg. Co., Nashville, Tenn. 691,712, cor. Cl. 39.
Waste King Corp., Los Angeles, Calif. 781,994, pub. 10–6–64. Cl. 21.
Watson, Andrew C., d.b.a. Bathurst Products, Toronto, Ontario, Canada. 669,216, canc. Cl. 22.
Wesco Products Co., Chicago, Ill. 782,049, pub. 10–6–64. Cl. 23.
Westab Inc., from Western Tablet & Stationery Corp., Dayton, Ohio. 782,100, pub. 10–6–64. Cl. 37.
Western Tablet & Stationery Corp.: *See*—
Westab Inc.
Westlake Plastics Co., Lenni Mills, Pa. 781,886–7, pub. 10–6–64. Cl. 1.
Wexler, Oscar S., d.b.a. I Glass Optical Co., Toledo, Ohio. 669,260, canc. Cl. 26.
Whip-Rite Products, Corp., Brooklyn, N.Y. 782,164, pub. 10–6–64. Cl. 46.
Whirlpool Corp., Benton Harbor, Mich. 781,982, pub. 10–6–64. Cl. 21.
Whirlpool Corp., Benton Harbor, Mich. 782,057, pub. 10–6–64. Cl. 24.
Whirlpool Corp., Benton Harbor, Mich. 782,076, pub. 10–6–64. Cl. 31.
White Consolidated Industries, Inc., from White Sewing Machine Corp., Lakewood, Ohio. 781,941, pub. 8–25–64. Cl. 13.
White Consolidated Industries, Inc., from White Sewing Machine Corp., Lakewood, Ohio. 782,075, pub. 9–22–64. Cl. 31.
White Sewing Machine Corp.: *See*—
White Consolidated Industries, Inc.
White, Tomkins & Courage Ltd., London, England. 782,170, pub. 10–6–64. Cl. 48.
Whitin Machine Works, Whitinsville, Mass. 669,220, canc. Cl. 23.
Whit-mor Mfg. Co., Inc., Brooklyn, N.Y. 669,424, canc. Cl. 2.
Whitney, W. A., Mfg. Co., Rockford, Ill. 782,043, pub. 10–6–64. Cl. 23.
Wiegand, Edwin L., Co., Pittsburgh, Pa. 782,081, pub. 10–6–64. Cl. 34.
Wilson Sporting Goods Co., River Grove, Ill. 782,071, pub. 10–6–64. Cl. 27.
Winter, Jack, Inc., Milwaukee, Wis. 782,130, pub. 10–6–64. Cl. 39.
Withington, West Minot, Maine. 782,011, pub. 10–6–64. Cl. 22.
Wolverine Shoe and Tanning Corp., Rockford, Mich. 782,135, pub. 10–6–64. Cl. 39.
Woolworth, F. W., Co., New York, N.Y. 669,267–9, canc. Cl. 26.
Wyandotte Chemicals Corp., Wyandotte, Mich. 669,412, canc. Cl. 52.
Wynn, Richard, Enterprises, Inc., Knoxville, Tenn. 782,014, pub. 10–6–64. Cl. 22.
Xtazy, Maria, Chicago, Ill. 782,112, pub. 10–6–64. Cl. 39.
Young's Candy Co., Williamsport, Pa. 669,440, canc. Cl. 46.
Zellweger Ltd., Uster, Switzerland. 782,065, pub. 10–6–64. Cl. 26.
Zimmerman, E. W., Mfg., Inc., Toledo, Ohio. 782,054, pub. 10–6–64. Cl. 23.

U.S. GOVERNMENT PRINTING OFFICE: 0——1964

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 29, 1964 Volume 809 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1964

Examiner affirmed	241
Examiner affirmed in part	36
Examiner reversed	87
Total	364

Re Meeting on Proposed New Interference Practice

Pending further consideration of proposed changes in the interference practice, the public hearing scheduled for January 12, 1965 (808 O.G. 381) is hereby canceled.

EDWARD J. BRENNER,
Commissioner.

Dec. 9, 1964.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Interferences

The following amended rules are adopted. The text of these rules, except in certain particulars, was published in the Federal Register of July 9, 1964 (29 F.R. 9398), and all persons who desired to were invited to submit written data, views, argument or suggestions, or to attend the hearing held on September 1, 1964, in connection therewith. The rules are being adopted after full and careful consideration of all the material submitted. The departures from the published text meet the views expressed in the material.

The time and manner of taking effect is as follows:

The amended rules shall take effect January 1, 1965, and shall apply only to interferences proposed for declaration after that date. In all other cases, the rules prior to amendment shall apply.

Section 1.204(b) of Title 37 CFR (Patent Rule 204) is amended and new paragraph (c) is added, as follows:

§ 1.204 *Interference with a patent; affidavit by junior party.*

• • • • •

(b) When the effective filing date of an applicant is three months or less subsequent to the effective filing date of a patentee, the applicant, before the interference will be declared, shall file an affidavit that he made the invention in controversy in this country before the effective filing date of the patentee, or that his acts in this country with respect to the invention were sufficient to establish priority of invention relative to the effective filing date of the patentee.

(c) When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee, the applicant, before the interference will be declared, shall file two copies of affidavits by himself and by one or more corroborating witnesses, supported by documentary evidence if available, setting out a factual description of acts and circumstances which would prima facie entitle him to an award of priority relative to the effective filing date of the patentee, and accompanied by an explanation of the basis on which he believes that the facts set forth would overcome the effective filing date of the patentee. Upon a showing of sufficient cause, an affidavit on information and belief as to the expected testimony of a witness whose testimony is necessary to overcome the filing date of the patentee may be accepted in lieu of an affidavit by such witness. If the examiner finds the case to be otherwise in condition for the declaration of an interference he will consider this material only to the extent of determining whether a date prior to the effective filing date of the patentee is alleged, and if so, the interference will be declared.

Section 1.226 is amended to read as follows:

§ 1.226 *Notice and access to applications.*

(a) After the preliminary statements have been received and approved, or the time for filing them has expired, the parties will be notified, and given the serial numbers and filing dates of the applications of each adverse party, including any applications which the parties may be entitled to inspect, and the parties will be permitted to see or obtain copies of each other's applications, except copies of affidavits filed under §§ 1.131, 1.202 and 1.204 which shall be and remain sealed until preliminary statements are opened under § 1.227, except as provided in § 1.228 regarding affidavits under § 1.204(c). The preliminary statements will be resealed by an examiner of interferences and shall not be revealed to the opposing parties except as provided in § 1.227.

(b) The notices will also ordinarily specify the motion period (§ 1.231) and may also include an order to show cause (§§ 1.225 and 1.228).

Section 1.228, is added, reading as follows:

§ 1.228 *Summary judgment.*

When an interference has been declared on the basis of a showing under § 1.204(c), such showing will be examined by a Board of Patent Interferences. If the Board considers that the facts set out in the showing provide sufficient basis for overcoming the effective filing date of the patentee, the interference will proceed in the normal manner as provided by these rules; otherwise an order shall be entered after the preliminary statements have been received and approved or the time for filing them has expired (§ 1.226), pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be

New Applications Received During October 1964

Patents	7,287
Designs	453
Plant Patents	15
Reissues	16
Total	7,771

Issue—December 29, 1964

Patents	1004	No. 3,162,861 to No. 3,163,864, incl.
Designs	64	No. 199,891 to No. 199,954, incl.
Reissues	2	No. 25,705 to No. 25,706, incl.
Total	1070	

rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than thirty days, unless cause be shown why such action should not be taken. Any response made during the specified period will be considered by the Board without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing justifying their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one of the copies of the showing under § 1.204(c) and will be allowed thirty days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter.

Section 1.261 is amended to read as follows:

§ 1.261 *Termination of interference.*

An interference will be terminated by judgment of priority after final hearing (§§ 1.251 to 1.259), or by judgment on the record as provided by § 1.225 or § 1.252, or by summary judgment because of an insufficient showing under § 1.204(c) as provided by § 1.228, or by dissolution as provided by § 1.232 or § 1.237, or as otherwise provided.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: November 13, 1964.

WILLIAM W. EATON,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 64-12090; Filed, Nov. 25, 1964; 8:47 a.m.]

Published in 29 F.R. 15866, 15867, Nov. 26, 1964

Classification Data Available in Magnetic Tape

Magnetic tape containing current classification data for a selected group of patents is offered for sale by the Patent Office. Nearly 570,000 patents which presently comprise the below listed classes are recorded in this file. Entries consisting of the patent number and the class and subclass in which these patents are classified "original" are arranged in patent number order. Parties having a possible interest in this tape file are invited to make inquiry concerning it. The terms and cost of obtaining a copy will be furnished on request. As the offering of this file is partially experimental to ascertain public interest, the response will be taken into consideration in determining whether to extend the scope of the file to patents in other fields and to include cross-reference information.

CLASSIFICATION DATA IN MAGNETIC TAPE

Class No.	Title	No. of Patents
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	7,321
18	Plastics	9,583
21	Preserving, Disinfecting and Sterilising	2,030
23	Chemistry	23,246
29	Metal working	26,429
31	Dairy	1,736
34	Drying and Gas or Vapor Contact With Solids	8,920
44	Fuel and Igniting Devices	3,873
48	Gas, Heating and Illuminating	8,214
51	Abrading	23,733
55	Gas Separation	9,516
62	Refrigeration	20,022
65	Glass Manufacturing	9,089
71	Chemistry, Fertilisers	2,645
75	Metallurgy	14,590
94	Roads and Pavements	5,732
96	Photographic Chemistry, Processes and Materials	5,850
99	Foods and Beverages	22,696
106	Compositions, Coating or Plastics	19,736
117	Coating: Processes and Miscellaneous Products	16,231
118	Coating Apparatus	9,542
127	Sugar, Starch and Carbohydrates	2,420
131	Tobacco	9,108
134	Cleaning and Liquid Contact With Solids	5,204
136	Batteries	8,054
146	Vegetable and Meat Cutters and Comminutors	13,038
148	Metal Treatment	6,194
149	Explosive and Thermic Compositions or Charges	2,318
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	12,835
159	Concentrating Evaporators	2,483
161	Stock Material and Miscellaneous Articles	7,839
162	Paper Making and Fiber Liberation	7,832
167	Medicines, Poisons and Cosmetics	10,782
176	Nuclear Reactions and Systems	925
195	Chemistry, Fermentation	2,818
196	Mineral Oils: Apparatus	1,654
202	Distillation	7,468
204	Chemistry, Electrical and Wave Energy	12,628
208	Mineral Oils: Processes and Products	12,590
209	Classifying, Separating, and Assorting Solids	21,202
210	Liquid Purification or Separation	17,296
233	Centrifugal-Bowel Separators	2,039
252	Compositions	19,351
260	Chemistry, Carbon Compounds	95,832
261	Gas and Liquid Contact Apparatus	12,060
263	Heating	8,896
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	11,450
266	Metallurgical Apparatus	4,455

Adjudicated Patents

(D.C. Calif.) Hazzard Patent No. 2,913,023 (143—135), for links in chain saws for sawing wood, *Held* invalid. *McCulloch Motors Corp.* v. *Oregon Saw Chain Corp.*, 234 F. Supp. 256; — USPQ —.

(D.C. Calif.) Gundmundsen Patent No. 2,924,110 (74—245), for links in a saw chain, *Held* invalid. *Id.*

(D.C. Calif.) Gundmundsen Patent No. 2,923,329 (143—135), for a wood sawing chain, *Held* not infringed. *Id.*

(D.C. Ga.) Varga Patent No. 3,003,195 (38—48), for method and apparatus for treatment of cotton fibres. Claims 1 to 3 *Held* invalid and not infringed. *Carding Specialists (Canada) Limited* v. *Lummus Cotton Gin Co.*, 234 F. Supp. 444; 142 USPQ 454.

Netherlands Printed Specifications

The Scientific Library is now receiving three copies of specifications of Netherlands patent applications, printed under a system inaugurated in January 1964. One copy will be distributed to the Examining Groups and placed in the search files.

These printed specifications (actually reproductions of the typewritten originals with a heading) can be used as printed publications under 35 U.S.C. 102(a) and (b). These references should be cited in the same manner as patents, except that the application number and date of publication are used and they are to be identified as Netherlands *applications*.

Significant data appearing on the first page:

Octrooiaanvrage No.	Application No.
Datum van ter inzagelegging	Date of Publication
Aanvrager	Applicant
Ingeroepen recht van voorang	Priority date claimed*

There will be another printing of the specification when and if a patent is issued, but in view of the fact that an earlier printed publication is already available, distribution of Netherlands patent specifications for incorporation in the search files will be discontinued.

Background

The publication of Netherlands specifications reflects a far-reaching change in their examination system which became effective, by statute, on January 1, 1964. It is sometimes referred to as a "deferred" examination system. Unless the application is withdrawn (abandoned), publication automatically takes place. Unless earlier requested by applicant, publication is as soon as practicable eighteen months from the priority date claimed or, if no foreign priority is claimed, from the filing date. The new procedure is being applied also to applications pending on January 1, 1964, which had not gone beyond a certain stage in the prosecution.

*If the priority application should be a U.S. ("Ver. St. v. Amerika") application, the Serial No. of said application appearing along with the U.S. filing date makes it simple to locate the U.S. application in order (1) to understand the disclosure of the Netherlands application or (2) more importantly to determine if the U.S. application has issued as a patent.

Under the new system applications are published without any action on the merits; i.e., no search of the prior art nor action by the Examiner. During a period of seven years from the filing date, the applicant is at liberty to request (upon payment of a fee) what corresponds to a first action; that is, a citation of the prior art which may be found by the Examiner but without applying this art to the claims. After the applicant has considered this prior art, he may, upon payment of another fee, request a continuation of the prosecution. There has been no change in the examination procedure other than the deferring of the examination in the manner indicated. An interesting feature is that, during the period after publication when the application is open to a request by the applicant for the first action or the complete prosecution, any other person may pay the fee and make the request. Such a person does not become a party to the prosecution. (There is an opposition period later if the application is found allowable.)

During the seven year period, certain other fees are payable to keep the application pending. At the end of the period, if the examination has not been requested, the application becomes abandoned. During the period, any member of the public may submit prior art (without requesting any examination) which is placed in the file. Such papers, as well as the results of the first action, if one is made, are available to the public.

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

Dec. 2, 1964.

Patents Available for Licensing or Sale

3,141,759. Process for the Production of Fertilizers From Town Refuse and Black Liquor. Compagnie Electro-Chimique du Centre, Paris, France. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,146,576. Method of Making Hollow Flexible Shafting. Walter Wezel, Wurttemberg, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,157,905. Closure Assembly With Movable Fluid Applicator. Carol L. Levy, 111 Robert Lane, Wilmington, Del.

The following 5 patents are offered by Ionics, Inc., 152 6th St., Cambridge, Mass., 02142.

2,736,635. Method of Producing Sulfite Cooking Liquors and Recovering Valuable Constituents Therefrom.

2,736,637. Water Hardness Measurement-Method and Apparatus.

2,752,306. Production of Drinking Water.

2,778,714. Method for Recovering Base Ions From Waste Sulfite Liquor and Producing Sulfite Cooking Liquor.

2,785,955. Method for Recovering Base Ions From Waste Sulfite Liquor and Producing Sulfite Cooking Liquor.

Great Western Drilling Company is prepared to grant non-exclusive licenses under the following patent to responsible parties on uniform reasonable terms.

Applications for license under the following patent may be addressed to: Great Western Drilling Company, Box 1659, Midland, Tex.

3,150,085. Method of Drilling a Well Through a Subsurface Formation Employing an Oil-In-Water Emulsion Drilling Fluid.

General Electric Company is prepared to grant non-exclusive licenses under the following 12 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 7 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

2,492,350. Tap Changing System.

2,599,272. Fast-Acting Switching Device.

2,878,333. Controlled Speed Tap Changing Mechanism.

2,912,480. High Voltage Bushing.

2,922,972. Five Leg Core for Large Transformers.

2,929,672. Voltage Recording Device.

2,930,841. Sealing Arrangement for Electrical Insulating Bushings.

Applications for license under the following 5 patents may be addressed to: General Electric Company, Component Products Division, 1625 Broadway, Fort Wayne, Ind., Att: Patent Counsel.

3,042,556. Process for Treating Steel.

3,088,044. Subsynchronous Timing Motor.

3,138,412. Bearing Assembly.

3,142,730. Timer Switching Mechanism With Multi-Step One-Piece Cam.

3,143,619. Radiation Sensitive Thermally Responsive Switch.

Patents Withdrawn From Register

General Electric Company hereby withdraws the following 2 patents from the Register of Patents Available for Licensing or Sale. These patents were listed as being available in the OFFICIAL GAZETTE as indicated below:

2,513,958. Electric Insulating Bushing and Glass Therefor. July 31, 1951.

2,521,498. Door Latch and Interlock. Jan. 9, 1951.

2,658,094. Combined Electrode and Skimmer for Electric Glass Melting Furnaces. Mar. 28, 1958.

Information Re Application Status

In view of the relatively long pendency of patent applications at the present time, the final disposition of which may, in some cases, be of substantial importance to the public in general or, at least, to persons other than the applicants, it has been decided effective immediately to advise any person who makes written request for information as to the status of a United States application referred to by number in a foreign patent, which patent is identified in the request, whether the application is pending, abandoned or patented and, if patented, what the patent number is. The former practice of giving similar information with respect to an application referred to by number in a United States patent (Manual of Patent Examining Procedure, section 102) will be continued.

EDWARD J. BRENNER,
Dec. 11, 1964. *Commissioner of Patents.*

PATENT EXAMINING CORPS

H. B. WHITMORE, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 1, 1964

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	5- 4-56
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	11-30-62	6- 1-54
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.. Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	12- 5-55
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	2-26-60
COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	3-11-57
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-16-62	4- 9-56
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	9-24-57
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	8- 1-60
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	1-28-54
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	7-17-58
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	6-13-58
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	4- 5-56
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 1-62	5-18-55
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring.	9-12-62	1- 2-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous.	12- 6-62	11-22-57

Total number of pending applications (excluding Designs)	210,072
Total number of Design applications pending	5,779
Total number of applications awaiting action (excluding Designs)	136,426
Total number of Design applications awaiting action	2,506
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	Jan. 28, 1954

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1964, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents	Numbers 2,431,670 to 2,433,823, inclusive
Plant Patents	Numbers 768 to 773, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10- 3-62	12-23-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	4-11-63	5- 5-60
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	11- 2-62	3-14-58
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	1-22-63	9- 3-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	11-28-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	12-14-59
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4-19-63	5-25-59
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4-15-63	5-19-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	5-31-63	2- 2-60
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	3-29-57
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	7-23-57
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	1-31-63	3- 1-57
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	2-26-63	10- 6-58
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3- 4-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	2- 7-63	1-26-56
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	7-25-60
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	2- 5-64	6-13-63

DECISIONS IN PATENT AND TRADEMARK CASES

United States Court of Appeals
District of Columbia Circuit

HAZELTINE RESEARCH, INC., ET AL. v. DAVID L. LADD, COMMISSIONER OF PATENTS

No. 18,563. Decided November 25, 1964

[— U.S.App.D.C. —; — F.2d —; — USPQ —]

1. PATENTABILITY—REFERENCE—35 U.S.C. 103.
On the questions whether "a copending patent is part of the 'prior art' within the meaning of that term as used in 35 U.S.C. § 103, and whether a copending patent is a bar to a patent application only if it actually describes the invention for which patent is sought," and with reference to the opinion of the District Court dismissing a complaint by appellants for a judgment authorizing the grant of a patent, *Held* that "We are in agreement with the opinion of the District Court."

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Edward A. Ruestow, with whom *George R. Jones* was on the brief, for appellants.

Clarence W. Moore (*S. William Cochran* of counsel) for appellee.

Before BASTIAN, WRIGHT and MCGOWAN, *Circuit Judges*.

PER CURIAM:

The question involved in this case is whether a copending patent is part of the "prior art" within the meaning of that term as used in 35 U.S.C. § 103, and whether a copending patent is a bar to a patent application only if it actually describes the invention for which patent is sought.

Having been unsuccessful in the Patent Office in their application for patent, appellants [plaintiffs] filed suit in the District Court to obtain a judgment authorizing appellee [defendant], Commissioner of Patents, to issue the patent applied for by them. The District Court, after a full hearing, rendered an opinion finding for appellee and against appellants, and dismissing the complaint. *Haleztine Research, Inc.* v. *Ladd*, 226 F. Supp. 459 (D.D.C. 1964).

[1] We are in agreement with the opinion of the District Court. Accordingly, it follows that the judgment of the District Court must be and is affirmed.

U.S. Court of Customs and Patent Appeals

IN RE EVERETT F. GUSTAFSON

No. 7204. Decided May 21, 1964

[— CCPA —; 331 F.2d 905; — USPQ —]

1. PATENTABILITY—AGGREGATION—COMBINATION—*In re Worrest* CONSTRUED.
"Whatever meaning may be attributed to 'aggregation,' it has become a term of art in patent law to connote something which is *not* patentable. In parallel or opposition to it is the word 'combination' which connotes something which either is deemed to *be* or which *may* be patentable, depending on the tribunal using the term. *Worrest* recognized *un*patentable 'combinations' as being those combinations which did not display 'the exercise of invention,' preferring, however, not to call them aggregations."

2. SAME—SAME—SAME—STATUTORY TEST OF INVENTION—35 U.S.C. 103.

"The test of the presence or absence of 'invention,' and along with it the subsidiary question of whether a device or process was or was not an 'aggregation,' or a 'combination,' or an 'unpatentable combination' for want of 'invention,' was replaced by the *statutory test* of 35 U.S.C. 103."

3. SAME—STATUTORY BASIS FOR REJECTION—35 U.S.C. 112.

"When claims have not been rejected for want of novelty or utility, the principal remaining questions are whether they define subject matter which would not have been obvious, at the time the invention was made, to one of ordinary skill in the art, and whether they define it in such manner as to comply with 35 U.S.C. 112."

4. REJECTION—GROUNDS—AGGREGATION—AGGREGATION NOT A CLEAR REJECTION—35 U.S.C. 132 AND RULE 104(b).

"The only rejection specifically made here is that the claims are 'aggregative.' * * * this is not such a clear rejection as an applicant is entitled to within the spirit of 35 U.S.C. 132 and under Patent Office Rule 104(b)."

5. SAME—SAME—SAME—APPELLANT ENTITLED TO KNOW STATUTORY BASIS FOR REJECTION.

Upon reversing a rejection "as being for an aggregation," no prior art being relied on, and remanding for further proceedings, *Held* that "* * * the legal issues herein do not appear to have been properly and definitively developed, one reason for this being that the rejection was not made under the existing statutes but, rather, under older concepts and terminology less concise and certainly more ambiguous than the statute"; that "Appellant was entitled to know whether his claims were rejected under section 101, or 103, or 112"; that "There remain the possibilities that the claims do not define the invention claimed at with the particularity required by section 112, that what the claims do define is obvious"; and that "Possibly there is relevant prior art."

APPEAL from the Patent Office. Serial No. 810,432.

REVERSED AND REMANDED.

Marshall A. Burmeister for appellant.

Clarence W. Moore (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1–8 of application Serial No. 810,432, filed May 1, 1959, for Device for Storing and Displaying Cards. No claims are allowed.

This is an unusual case. The Examiner cited no prior art references. He rejected all claims as "aggregative." The Board, after considering at length appellant's arguments based on alleged claim limitations, affirmed this rejection "on the basis of the scope of the claims." At the very end of its opinion it appended a footnote noting that the Examiner had cited no reference and saying that in the absence of references it "is difficult to determine the ultimate question of patentability." The Board then called attention to four references evidently found as a result of its own search. The Board, however, did not overtly rely on any of the references. Appellant requested reconsideration, noting the deficiencies of the references, which are not included in the record before us, and properly so since they were not relied on, asking reconsideration by the Board of its decision "and modification thereof to advise the applicant of subject matter patentable in accordance with the record of prior art before the Board." Appellant there argued particularly the patentability

of claims 4 and 8. (All claims are appended to this opinion as an appendix.)

In its second opinion, on the petition, the Board denied the petition but in doing so, at least as to claim 4, said that that claim "does not define the invention with the particularity required by paragraph 2 of section 112." With respect to claim 8, the Board adhered to its previous decision that it defined nothing patentable, adding that it was not convinced that the claim "defines more than a convenient and *obvious* location of elements in space which otherwise would be wasted." [Our emphasis.]

Appellant's brief states that the rejection on appeal is "on the ground of aggregation in the sense of an unpatentable combination as defined in *In re Worrest*," 40 CCPA 804, 201 F.2d 930, 96 USPQ 381, and with this the Solicitor agrees. Appellant further states that "A rejection on aggregation in the sense of unpatentable combination is essentially a rejection on obviousness," citing *In re Troiel*, 47 CCPA 795, 274 F.2d 944, 124 USPQ 502, and *In re Carter*, 41 CCPA 851, 212 F.2d 189, 101 USPQ 290. The Solicitor does not agree that this is necessarily so, saying that the aggregation rejection can be said to be based on 35 U.S.C. 101, "since such a combination is not an invention which can be patented," and that furthermore section 112 is involved as is evident from the Board's discussion, citing *In re Wright*, 45 CCPA 1005, 256 F.2d 583, 118 USPQ 287.

As is not unusual, we thus start off with considerable confusion as to just what is the legal basis of the rejection. With the Examiner it was merely "aggregation"; with the Board it was aggregation with mention, only after petition for rehearing, of 35 U.S.C. 112; with the Solicitor it is in part a rejection for obviousness (which of course involved 35 U.S.C. 103), in part a rejection based on 35 U.S.C. 101, and 35 U.S.C. 112 is "involved." The only rejection we are asked by him to affirm, however, is that "holding the appealed claims unpatentable on the ground of aggregation."

We shall return to a consideration of the basis of the rejection after a consideration of the facts on which, of course, all else depends.

What appellant discloses as his invention is a device for filing business calling cards. Admittedly an old type of rotary file is employed. This file has a rectangular base and four flat walls forming a rectangular box open at its top. Centrally of the two side walls near their tops a shaft is journaled and provided exteriorly of the box with turning knobs. Inside the walls a half-cylindrical cover with closed sides and a forward lip is rotatably mounted on the shaft. When closed, the lip rests on the front wall and when open the lip rests on the back wall. The card-holding part of the filing device consists of a cylindrical spindle fixed on the shaft and provided between its ends with a disc which extends radially outward, its periphery being in the form of a circular rib. If a card is provided with a keyhole-shaped opening which extends to one edge, it can be mounted on the disc with the rib in the larger part of the hole, the slot extending therefrom accommodating the disc. Turning the knob brings the cards on the spindle into view as desired.

What appellant did in making his invention was to add to the old file a punch with which to make openings of the necessary shape in calling cards received, of course, in an unpunched condition. While

2. SAME—SAME—SAME—STATUTORY TEST OF INVENTION—35 U.S.C. 103.

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REVERSED AND REMANDED.

Marshall A. Burmeister for appellant.

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What appellant did in making his invention was to add to the old file a punch with which to make openings of the necessary shape in calling cards received, of course, in an unpunched condition. While

admitting that there is no novelty merely in punching suitable holes in cards for mounting them on a file such as that described, appellant argues that the punch disclosed by him possesses novelty, considering the manner in which the punch is constructed *and integrated with the filing device*. Novelty is not questioned, nor utility.

It will be appreciated that when the half-cylindrical cover of the file is open it occupies most of the space within the housing, leaving only the front and rear lower corner portions of the rectangular housing empty. Appellant builds the punch into the "waste-space" of the front corner portion. Molding some ribs on the base of the housing, he mounts a punch thereon and makes a hole in the base through which punchings can drop. The punch is a simple device consisting of a flat base plate to which an overhead arm is pivoted, a spring urging the arm upwardly. The arm carries a die to punch a hole of proper shape and the die cooperates with an opening in the plate. The arm is longer than the plate and protrudes from the front wall of the housing through a vertical slot. In line with the punch base plate the front housing wall also has a horizontal slot, into which the vertical slot opens, through which cards to be punched can be inserted. Two pins on the punch plate act as stops, determining the degree of permissible insertion.

Certain features are of importance to appellant's inventive concept, beyond the bare idea of locating the punch in the waste space in the front of the housing. The ribbed disc on the spindle which holds the cards is centered on the spindle. The punch dies are centered on the punch and the punch is centered in the housing. The slot through which cards are placed in punching position is no wider than the space available inside the file between the side walls of the cover, which is the length of the spindle. Therefore, a card which will go through the slot will necessarily fit in the file; either end of the horizontal slot can be used as an edge guide in punching the card or the card can be centered in the slot, which will center the punched hole and center the card when it is placed on the spindle. By thus building the punch into the slotted housing, the housing thus becomes an integral part of the punching device and at the same time, in its card-guiding function, the housing enables the cards to be punched in the proper location for positioning on the spindle of the filing device, all of which is, no doubt, in the words of *In re Worrest*, supra, a matter of "inherent correlation, or cooperation, or coordination of elements which mutually contribute to a common purpose or result, other than mere convenience due to juxtaposition or collection of the units in a common setting."

Our description, just given, of the important features is what we are able to comprehend from the specification, *not necessarily structure adequately defined in the appealed claims*. We note that one of appellant's main points about correlation, cooperation, and coordination in his device assumes an alinement between his punch and the spindle disc which holds the punched cards.

In discussing and affirming the rejection for "aggregation," the Board put its finger on the gist of the problem developed by the opposing arguments of the Examiner and the applicant in these words (our emphasis):

> While appellant has *disclosed* a device having the attributes listed above, it is important that the *claims* should include the features, characteristics and relationships which produce the alleged results.

In answer to appellant's arguments that his claims did define a combination producing new and unexpected results, including utilization of the housing as a guide for the punch, which also excluded cards too big for the file and assured the punching of the hole in the right place for use in the file, the Board concluded that the *claims were defective*, in defining what appellant argued they defined, *in failing adequately to limit the location or relative size of the slot or point out the alinement necessary between punch and spindle disc*. "On the basis of the *scope* of the claims" (our emphasis), the Board therefore affirmed the rejection of the claims as "aggregative" or "for an aggregation." They were definitely *not* rejected for failing to define the invention as required by section 112.

Much reliance in this case is placed on what this court said in 1953 in *In re Worrest*, a case argued before the effective date of the Patent Act of 1953 and giving no recognition to the existence of that act. The opinion therein is something of a classic on the subject of what did or did not constitute "aggregation," referred to as the "doctrine of aggregation." The opinion begins by saying "the question of what constitutes an aggregation in the patent law has been a troublesome one" and refers to the view of the late Judge Learned Hand in *Sachs v. Hartford*, 47 F.2d 743 (1931), that he was unable to attach a definite meaning to the term. The opinion says further that a large number of cases had been reviewed and were found to be in conflict. The term "aggregation" was found to have been used in two different ways: (1) to refer to a device having two or more unrelated, independent units or elements, each of which performs separately, uninfluenced by and indifferent to the action of the other unit or units; (2) to refer to devices which appear to be a combination of two or more units coacting or cooperating in the full sense of the term, but which the court regarded as "not displaying the exercise of invention" because no new or unexpected result was produced by the combination. In the face of the situation as thus analyzed, the court concluded that meaning (1) seemed to it to be "the correct use of the term."

At this date it is difficult to see why either meaning should have been selected as "correct," since both had long been in current use, except on the basis of an assumption that the selection would have a decisive effect on the issue before the court, which, indeed, it did have. Adopting the first meaning and finding that in the device before it there *was* "correlation or coordination resulting in the achievement of a single or common purpose" the court reversed the rejection of the claims as drawn to an aggregation, whatever the Patent Office may have meant by that term as used in making the rejection.

[1] Whatever meaning may be attributed to "aggregation," it has become a term of art in patent law to connote something which is *not* patentable. In parallel or opposition to it is the word "combination" which connotes something which either is deemed to *be* or which *may* be patentable, depending on the tribunal using the term. *Worrest* recognized *un*patentable "combinations" as being those combinations which did not display "the exercise of invention," preferring,

however, not to call them aggregations. The term appears to have got into the law about 1873 in *Hailes* v. *Van Wormer*, 87 U.S. (20 Wall.) 353. See Curtis on Patents § 111c (4th ed. 1873); Walker on Patents § 32 (1st ed. 1883), § 70 (6th ed. 1929), § 42 (Deller ed. 1937); Merwin, Patentability of Inventions § 20 (1883). Compare Robinson on Patents § 154 (1890). As these texts show, from the earliest time aggregation has been but one aspect of the problem of what constitutes "invention." *Merwin* explains how it was regarded very concisely in section 115, the second in his chapter entitled "Combination." He said (our emphasis):

> When we come to consider the nature of a patentable combination, we find it very difficult to obtain a definition which will fit all cases. It is commonly said that *a combination, as distinguished from an aggregation, is patentable.* The one is a union, the other an assemblage, of elements. Co-action is the badge of the first; mere juxtaposition is the badge of the other.
>
> For instance, in *Reckendorfer* v. *Faber* [92 U.S. 347 (1875)], a leading case, the patentee had joined together a lead-pencil and a rubber-eraser by making a groove in one end of the pencil for about a quarter of its length, and glueing the rubber therein. The court held that this was a *mere aggregation.*

In the latter case the Supreme Court majority said, "This, however, is not invention within the patent law" and held the patent invalid for want of "invention." (Three justices dissented.) Thus did the doctrine continue down through the years. Toulmin in his Invention and the Law § 57, entitled "Aggregation" (1936), said:

> Aggregation is the antithesis of combination, in the subject of invention. A combination is invention because the result of the combination is greater than or different from the sum of the results of the independent parts or independent steps of a process. On the other hand, aggregation is an association of parts or steps of a process in which the ultimate result is no more than the sum of the results of the several parts if used in some other association or independently one of the other.

While we have recently deprecated thinking along similar lines about what makes a combination patentable, *In re Menough*, 51 CCPA 741, 323 F.2d 1011, 139 USPQ 278, we quote this passage to show typical usage of the "aggregation-combination" terminology. See also Rivise and Caesar, Patentability and Validity § 127 (1936):

> If the elements do not coact in a *patentable* manner, their union is said to be "an aggregation," or a mere collocation of elements as opposed to "a combination." [Emphasis ours.]

The courts have had plenty of difficulty with these concepts, as much, almost, as with the broader problem of what constitutes "invention." The Circuit Court of Appeals for the Tenth Circuit found intellectual aid in thinking, by way of analogy, of a football team as a "combination" and a track team as an "aggregation." The former worked to a common end, to advance the ball, while the latter, though working in common to amass points for alma mater, did so without "the vital spark of co-operation or co-ordination." *Skinner Bros. Belting Co.* v. *Oil Well Improvements Co.*, 12 USPQ 61 (1931).

On January 1, 1953, all of this mental anguish ceased to be necessary. [2] The test of the presence or absence of "invention," and along with it the subsidiary question of whether a device or process was or was not an "aggregation," or a "combination," or an "unpatentable combination" for want of "invention," was replaced by the *statutory test* of 35 U.S.C. 103.

[3] When claims have not been rejected for want of novelty or utility, the principal remaining questions are whether they define

subject matter which would not have been obvious, at the time the invention was made, to one of ordinary skill in the art, and whether they define it in such manner as to comply with 35 U.S.C. 112.

[4] The only rejection specifically made here is that the claims are "aggregative." As is manifest from the Solicitor's brief, this is not such a clear rejection as an applicant is entitled to within the spirit of 35 U.S.C. 132 and under Patent Office Rule 104(b). That brief makes the following statements about the rejection:

> There is agreement that the appealed claims stand rejected on the ground of aggregation in the sense of unpatentable combination as defined in the *Worrest* decision * * *. However, it is not agreed that such a rejection *is* (*necessarily*) essentially a rejection on obviousness * * *. The rejection on aggregation in the sense of unpatentable combination can be said to be based upon 35 U.S.C. 101, since such a combination is not an invention which can be patented * * *. Furthermore, it would appear evident from the Board's discussion * * * of the deficiencies in some of the claims, particularly claim 4, that Section 112 is involved * * *.
>
> Appellant has not responded to the Board's holding * * * that the claims are deficient relating to the position of the punch * * *. It is evident that the claims do not contain a recitation of structure to provide specific alignment of the punch with the disc portion. Thus, though the elements are recited, there is no limitation adequately setting forth their relationship which is vital to their performing as alleged, and to their patentability. The essential relationship of cooperation being missing, the claims must fall as merely reciting an unpatentable aggregation * * *.
>
> The aggregation rejection in this case may also be considered as a rejection on obviousness, as indicated by the Board's treatment of claim 8 * * *. However, the Board did not cite references on the issue of obviousness but relied on common knowledge * * *. * * * It is submitted that the advantages argued by appellant * * * result merely from the use of mechanical skill in juxtaposing separate old elements, or from an obvious combination of such old elements.

In view of the varying interpretations and applications which the Solicitor has put on the single rejection, we consider this rejection based on "aggregation" to be bad for indefiniteness.

By the time the Patent Office position has been elucidated in the second opinion of the Board, and with the benefit of the briefs and arguments in this case, it becomes reasonably clear to us that the real objection to the claims here, never clearly stated or used as a ground of rejection, is that the claims fail to define the invention disclosed by appellant with sufficient particularity and distinctness to comply with the second paragraph of section 112. This was hinted at by the Board and the particular defects in the claims were to some extent indicated.

It does not appear ever to have been the considered opinion of the Examiner or of the Board that the disclosed *invention* is an unpatentable aggregation (or combination) of elements (note our quotation from the Board's opinion above) but only that the *claims* are bad as "aggregative," whatever that may mean, *because* they lack certain necessary limitations in order properly to define the disclosed invention. Appellant has been claiming *at* his disclosed invention all along but we doubt that it has ever been made clear to him just where he has failed to comply with the law.[1]

This case presents a situation similar to that before this court in

[1] We of course appreciate that the Examiner, and perhaps the Board, by assuming a particular meaning for the terms "aggregative" and "aggregation" may have had a definite ground of rejection in *their* minds. But considering the obvious fact that the terms are sufficiently ambiguous to have all of the meanings ascribed to them in the Solicitor's brief, it cannot be assumed that that meaning was *communicated* to the appellant.

In re Worrest in which, with respect to certain claims, the court said:

> In view of the foregoing, we think the Board erred in affirming the rejection of claims 7–9 as drawn to an aggregation. However, the record does not in any way indicate whether the Patent Office tribunals have considered various other pertinent questions with respect to claims 7–9. Firstly, it is not clear whether they regarded the subject matter of the claims inventive over the prior art, or within the realm of mechanical skill. Moreover, assuming the office tribunals regarded the physical embodiment as inventive, it is essential that the claims adequately recite the features upon which appellant predicates patentability. * * * It is also essential that the claims not be objectionably indefinite or functional. * * * we think that, in view of the present state of the record, the only proper procedure is to remand the case to the Patent Office as to claims 7, 8, and 9, for further proceedings not inconsistent with the foregoing opinion.

For similar reasons apparent in this case, we think we should follow the same procedure here and remand so that the Patent Office can properly state the true ground of rejection, including the statutory basis thereof, and appellant can have a proper opportunity to meet them if he can.

We are further persuaded that this is the proper course by a recent address by the new Commissioner of Patents to the Patent Office professional staff on April 6, 1964, wherein he said (p. 2 of the copies distributed [2]):

> The main operations of the Patent Office are, of course, the examination of patent applications and *the granting of patents on patentable inventions*. Promptness of examination is an important element of our work. Further, in addition to our responsibility of protecting the public by refusing to grant patents on *unpatentable inventions*, we should also make it our job to *assist the inventor or his attorney in a positive manner to arrive at proper claims covering his invention where the invention is patentable, and I wish to request that we give greater emphasis in the future towards fulfilling this key function.* [Our emphasis.]

It has not appeared in this case that the disclosed invention is unpatentable. Another interesting fact in the case is that the application was filed May 1, 1959, and the final rejection is dated December 16, 1959. [5] While it is encouraging to see such speed, the legal issues herein do not appear to have been properly and definitively developed, one reason for this being that the rejection was not made under the existing statutes but, rather, under older concepts and terminology less concise and certainly more ambiguous than the statute. Appellant was entitled to know whether his claims were rejected under section 101, or 103, or 112. Admittedly he was given a rejection which the Solicitor says could be based on any or all of those sections but not told this until the Solicitor filed his brief in this court. Even now we are unable to see what bearing section 101 has on the question. There remain the possibilities that the claims do not define the invention claimed at with the particularity required by section 112, that what the claims do define is obvious, and that the invention sought to be claimed is obvious. Possibly there is relevant prior art.

The decision of the Board affirming the sole rejection of the claims "as being for an aggregation" is reversed and the case is remanded for further proceedings consistent with this opinion.

REVERSED AND REMANDED.

[2] The quoted portion was repeated in an address on April 16, 1964, to a joint meeting of the Philadelphia and American Patent Law Association at Philadelphia.

APPENDIX

Claims

1. A device for storing and displaying cards comprising a housing having a rectangular base and four walls extending normally from the edges of the base, the first of said walls having an elongated slot therein parallel and adjacent to the base to permit a card to be inserted into the housing, the second and third walls of the housing being on opposite sides of the base and having openings therein on an axis parallel to the base and first wall, a spindle journaled within the openings of the second and third walls, said spindle having a cylindrical portion between the second and third walls and a disc portion disposed coaxially thereabout provided with a peripheral protruding coaxial ring portion, a knob exterior to the housing mounted on one end of the spindle, and a punch mounted to the base adjacent to the slot in the first wall including a plate mounted to the base of the housing provided with an elongated aperture therethrough normal to the first wall, said aperture having a width less than the thickness of the disc portion of the spindle and having an enlarged circular portion at the end thereof adjacent to the first wall with a diameter at least equal to the diameter of the ring portion of the disc portion of the spindle, and an arm pivotally mounted to the plate on the side of the aperture opposite the first wall of the housing and having a mechanical linkage extending exterior to the housing, said arm having a protruding punch portion aligned with the aperture in the plate and conforming to the shape of the aperture, whereby a card may be inserted into the slot in the first wall of the housing, the mechanical linkage actuated to punch the card, and the card removed and mounted on the spindle by disposing the aperture punched in the card by the punch about the disc portion of the spindle.

2. A device for storing and displaying cards comprising the elements of claim 1 wherein the punch is provided with means to limit the distance a card can be inserted into the slot of the first wall of the housing, said means having a surface located on a plane parallel to the first wall located on the opposite side of the circular portion of the aperture from the first wall and spaced from the circular portion by a distance less than the distance between the ring portion of the disc portion of the spindle and the cylindrical portion of the spindle.

3. A device for storing and displaying cards comprising the elements of claim 2 wherein the means to limit the distance a card can be inserted into the slot comprises a pair of spaced pins mounted normally to the plate on the plane spaced from the circular portion of the aperture by a distance less than the distance between the ring portion of the disc portion of the spindle and the cylindrical portion of the spindle.

4. A device for storing and displaying cards comprising the elements of claim 2 wherein the slot of the first wall of the housing is shorter than the length of the spindle and the punch confronts approximately the center of the slot.

5. A device for storing and displaying cards comprising the elements of claim 1 wherein the base of the housing is provided with an opening confronting the aperture in the plate of the punch.

6. A device for storing and displaying cards comprising the elements of claim 1 wherein the first wall of the housing is provided with an opening in the first wall, and the mechanical linkage of the arm comprises an elongated extension portion of the arm extending through the opening to the exterior of the housing.

7. A device for storing and displaying cards comprising the elements of claim 6 wherein the opening is rectangular in shape and extends from the central portion of the slot away from the base.

8. A device for storing and displaying cards comprising the elements of claim 1 in combination with a cover having a pair of generally semicircular parallel walls journaled about the spindle within the second and third walls, said cover having an arcuate portion secured to the periphery of the walls and a flange at one end extending outwardly therefrom, said flange abutting the first wall when the cover is closed and abutting the fourth wall when the cover is open, said cover rotating in opening to the interior of the housing, and the punch being totally contained between the first wall and the cover when the cover is in the open position.

U.S. Court of Customs and Patent Appeals

IN RE NORMAN W. MELOTT

No. 7190. Decided May 21, 1964

[— CCPA —; 331 F.2d 817; — USPQ —]

1. PATENTABILITY—REFERENCES—CUMULATIVE REFERENCE.

"As we have above noted, the Board in sustaining the Examiner's rejection of claims 2 to 9 on Pontius interpreted the Effenberger reference as cumulative 'as an example of a barbed rod.' We take it, therefore, that the Effenberger reference is before us for whatever it may be worth in relation to the issue of obviousness."

2. SAME—EVIDENCE—ALLOWANCE OF OTHER CLAIMS IRRELEVANT—*In re Wright* CONSTRUED.

"*In re Wright* * * *. This court stated that the Board's reasons for allowing other claims before it are irrelevant and that the court's only concern was 'whether the appealed *rejected* claims have been properly acted upon by the Board * * *.'"

3. SAME—EVIDENCE—REJECTED CLAIMS PREVIOUSLY HELD ALLOWABLE.

Upon reviewing the rejection of claims 2 to 9 over Pontius, Effenberger being considered cumulative, claim 5 over Breitenbach, and claims 10 and 11 over Breitenbach in view of Hein, *Held* that "We find not persuasive appellant's argument predicated on the basis that all of the claims were at one time or another held allowable by the Examiner over Pontius and Breitenbach thus reflecting doubt as to allowability which should be resolved in appellant's favor"; that "We find no reference of doubt in the decision of the Board affirming the Examiner's rejection of the appealed claims"; that "It is that decision which is before us for review"; and that "Our jurisdiction extends to and embraces none other than the adverse decision from which appellant has prosecuted this appeal."

4. SAME—PARTICULAR SUBJECT MATTER—"ASPIRATING SYRINGE."

The decision of the Board of Appeals refusing certain claims in an application entitled "Aspirating Syringe" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 568,873.

AFFIRMED.

Charles R. Fay, Dean Laurence (*Munson H. Lane*, of counsel) for appellant.

Clarence W. Moore (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Melott appeals from the decision of the Board of Appeals affirming the Examiner's rejection of claims 2 to 11, inclusive, in appellant's application[1] for "Aspirating Syringe." The Board reversed the Examiner's rejection of claims 12, 13 and 14.

Claim 2 is reproduced as illustrative:

An aspirating syringe for use with a cartridge having a piston cork, said syringe comprising a barrel for reception of the ampoule or cartridge, a needle at one end of the barrel, means for puncturing the cartridge for leading the contents thereof to the needle, a retractible syringe plunger rod, a head at the other end of the barrel and slidably containing the plunger rod, the rod extending into the barrel, and piercing means on the plunger rod at its inner end for connection thereof with the cartridge plunger cork, said piercing means being relatively sharp and capable of piercing the cartridge plunger cork by a straight in-line push on the plunger rod.

[1] Serial No. 568,873, filed March 1, 1956.

The drawing portrays the following:

FIG 1

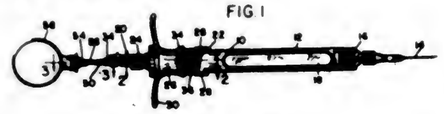


FIG 2

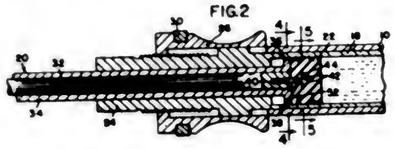


FIG 3

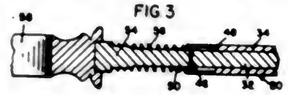
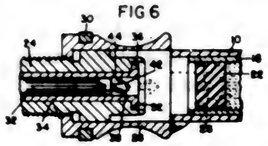


FIG 6



The claimed invention relates to a cartridge-type syringe having a plunger rod 32 with a retractable spearpoint lead 38 at the inner end thereof for piercing the piston cork 22 of the cartridge or ampoule affixing the plunger rod to the cork, thus converting the syringe into an aspirating as well as an inspirating means. In use of the device the locking sleeve 24 is backed off; the head 26, attached by hinge means, is pivoted to one side and the cartridge is inserted in the barrel. The head is then repositioned, the rod 20 is moved forwardly so as to engage the flange 36 with the exterior surface of the cartridge cork. Forward pressure on the plunger rod 20 results in piercing cork 22 by spearpoint 38 until is becomes completely embedded therein as shown in FIG. 2. Disposal of the cartridge is accomplished by retraction of rod 32 by pull-on finger piece 58 thus bringing the spearhead back in housed position in the sleeve as shown in FIG. 6. This action dislodges the spearpoint from the cork 22, allowing the entire cartridge to be disposed of, and readies the barrel for insertion of new cartridges. It is asserted that the spearpoint is more easily withdrawn from the cork due to the sharp edges 44 on the barbs 42. The spearpoint may be made integral with rod 32 or separable and replaceable by means of screw-threads such as shown at 40 in FIG. 2. The outer end of rod 32 is provided with an enlargement 54 serving as a guide and abutment for a coil spring 56 which functions to maintain the spearpoint in retracted housed position when not in use.

The references relied on by the Board are:

Effenberger, 773,857, November 1, 1904.
Pontius, 2,693,804, November 9, 1954.
Breitenbach, 2,789,559, April 23, 1957.
Hein, 2,833,280, May 6, 1958.

Effenberger shows a pointed spear-like barb for straight-line piercing engagement with a bottle cork for removal of the cork from the bottle.

Pontius shows a syringe plunger rod comprising an inner rod slid-

able in an outer sleeve and having three pointed barb-like prongs for locking engagement with a syringe piston cork. The outer sleeve is designed to abut the cork to facilitate removal of same from the prongs.

Breitenbach shows an aspirating and injecting syringe with a plunger rod comprising an inner rod slidable in an outer sleeve having prongs horn-shaped with the points curved inwardly for engaging a syringe piston cork. The prongs engage the cork by simultaneous forward pressure and twisting motion of the inner rod.

Hein shows a spring between an inner rod and outer sleeve of a plunger rod. The spring functions to hold the inner rod and outer sleeve in engagement with a syringe piston.

Claims 2–14 were rejected by the Examiner as unpatentable over either Pontius or Breitenbach "in view of the well known use of barb prong connecting means for engaging stoppers as typified by Effenberger," stating that the claims differed from the references "only in the particular type of plunger-piston connector employed on the end of the inner plunger rod." With respect to claims 10–11 the Examiner regarded as conventional the resilient means of Hein normally retracting the inner rod and piston cork connector within the outer sleeve.

The Board held that claims 2 to 9 do not patentably distinguish over Pontius. It interpreted Effenberger as cumulative, pointing to it, however, as an example of a barbed rod. It held that claim 5 was anticipated by Breitenbach since the claws of that reference are integral with the plunger rod and the claim does not preclude the rotary motion of the rod of the reference: that claim 7, absent its use provisions, recited a mere plunger rod not distinguishable from that shown in Effenberger and that recitation in claims 10 and 11 of resilient means to retract the piercing means within the plunger rod avoids Breitenbach in this respect *only* but Hein discloses and clearly teaches the addition of such means to Breitenbach for the same purpose in the same kind of device.

Appellant relies strongly on the Board's evaluation of the Effenberger reference in its reversal of the Examiner as to claims 12, 13 and 14. In this connection the Board said:

> Effenberger relates to a bottle cork having a permanently embedded, barbed rod with a handle for extraction of the cork from a bottle. The patentee explains in line 24 of page 1 that the extractor "when applied cannot be pulled from its connected and operative relation with the body of the cork." He thus teaches a connection and operation directly opposed to that of appellant, Pontius or Breitenbach. In combining references patentability cannot be negatived merely by selecting from the prior art those features which can be synthesized into an anticipation once it is known what features should be selected. The Effenberger device thus fails to supply the necessary feature which Pontius or Breitenbach alone does not possess, that is, the teaching of the deficiency and how to solve it.

From this premise, counsel for appellant argues that the Board has thus rendered the Effenberger patent of no effect as a combining reference and restricted the references depended upon to: Pontius alone as to claims 2 to 9; Breitenbach alone as to claim 5; Effenberger alone as to claim 7; and Breitenbach in view of Hein as to claims 10 and 11.

[1] As we have above noted, the Board in sustaining the Examiner's rejection of claims 2 to 9 on Pontius interpreted the Effenberger reference as cumulative "as an example of a barbed rod."

We take it, therefore, that the Effenberger reference is before us for whatever it may be worth in relation to the issue of obviousness. [2] In *In re Wright*, 45 CCPA 1005, 246 F.2d 583, 118 USPQ 287, appellant asserted a position similar to that advanced here. This court stated that the Board's reasons for allowing other claims before it are irrelevant and that the court's only concern was "whether the appealed *rejected* claims have been properly acted upon by the Board * * *."

Appellant contends that the entire theory and operation of Pontius differ completely from his disclosure in that the reference shows claws in a grasping action on the cartridge cork as distinguished from appellant's spearpoint, sharp on its forward edges, with a piercing function that will not tear the cork as in a claw-like means.

Appellant's claims present his "piercing means" in varying ways. In claim 3 it includes "a shoulder to be embedded in" the cork. In claim 5 it is a "fixed pointed barb." In claim 9 the piercing means is extractable from the cork by "an element associated with the plunger rod." Claims 7 and 8 specifically claim the plunger rod.

It is clearly obvious that Effenberger discloses one example of a commonly known spearpointed barb or rod with a forward end point of penetrating sharpness, with opposite shoulders designed to resist rearward pull. It is equally obvious that it would be but a simple expedient to sharpen and condition the points of the oppositely facing shoulders to reduce to a desired degree the resistance to rearward pull.

Effenberger discloses a spearpoint for engaging a cork which is not intended to be easily extracted from the cork. When the spearpoint is extracted, relatively great effort is required and the cork is likely to be damaged. So, too, appellant's spearpoint will probably damage the cork when removed. The Pontius device permits easier removal of the barbs or claws from the cork because they do not penetrate the cork to the extent that they resist removal. Breitenbach discloses a corkscrew type of engagement which would destroy the cork if pulled straight back, but which can be relatively easily removed by a twisting motion, the reverse of the twist for engaging the cork. Whether one uses the relatively complex cammed claw arrangement of Pontius or the corkscrew-like means of Breitenbach, on the one hand, or the simpler spearpoint cork engaging device of Effenberger, on the other, is simply an obvious matter of choice in view of the references.

We are inclined to agree with the Board that the "Pontius rectilinear movement of the plunger rod moving forwardly and rearwardly the attached pointed member which has a rearward surface or shoulder resisting withdrawal anticipates the recitations in the claims of these features." Pontius further discloses that the claw is fixedly attached in the sense that it is not separated from the plunger rod, thus corresponding to the fixed barb recitation of claim 5.

We are unable, in the light of the reference with the well known example of the function and adaptability of a spearpoint barb as depicted in Effenberger, to ascribe error to the conclusion of the Board, with reference to claims 2 to 9, that:

> Since barbs are commonly used on such elements as spears, harpoons and nails to resist withdrawal, it would be obvious to a person having ordinary skill in the art to place a barb on the Pontius pointed elements for the conventional purpose.

With further reference to appellant's argument relating to the alleged distinctive characteristics and function of the sharpness of his piercing means, it is noted that claim 2 embraces such means broadly and as being "relatively sharp." We do not see that such piercing means so alleged excludes the claws of Pontius. We agree with the Board that in the absence of a particularly defined structure these characteristics so generally stated merely express a relative condition. It is noted that Pontius uses the word "penetrate"; Breitenbach uses the expression "penetrate into the piston stopper," while Effenberger refers to "piercing end * * * with barbs in the manner of an arrowhead." Certainly these references disclose "piercing means" sharp enough to pierce or penetrate.

Appellant argues that the Board should have allowed claims 4 to 9, inclusive, along with allowed claims 12, 13 and 14 since the former are substantially the equivalents of the latter.

Aside from the fact that the allowed claims are not before us, the relevancy of appellant's argument as to our taking cognizance of the asserted equivalency of the claims is fully answered by this court in *In re Margaroli et al.*, 50 CCPA 1400, 318 F.2d 348, 138 USPQ 158, where the same argument was made:

> In their brief, appellants seem to place particular emphasis on a comparison of the appealed claims with the allowed claims * * *. We think the decisions of this court clearly show that any argument for patentability of the appealed claims on the basis of similarities to the allowed claims are lacking in any significance to the issue here.

[3] We find not persuasive appellant's argument predicated on the basis that all of the claims were at one time or another held allowable by the Examiner over Pontius and Breitenbach thus reflecting doubt as to allowability which should be resolved in appellant's favor.

We find no inference of doubt in the decision of the Board affirming the Examiner's rejection of the appealed claims. It is that decision which is before us for review. Our jurisdiction extends to and embraces none other than the adverse decision from which appellant has prosecuted this appeal. *In re Fischer*, 18 CCPA 1076, 47 F.2d 794, 8 USPQ 481; *In re Boileau*, 35 CCPA 1248, 168 F.2d 753, 78 USPQ 146; *In re Atwood*, 46 CCPA 901, 267 F.2d 954, 122 USPQ 378.

As we have noted, claims 10 and 11 recite resilient means to normally retract the piercing means and plunger rod within the outer sleeve. The Board found that only in this respect did the recitation avoid the Breitenbach reference. The Board noted that Hein discloses a spring for the "same purpose in the same kind of device" and thus "clearly teaches the addition of such means to Breitenbach."

Appellant contends that since Hein has no piercing means and the claws of Breitenbach "are believed not to be piercing means," the references are not properly combinable to anticipate claims 10 and 11. As we have pointed out, the claws of Breitenbach function to "penetrate into the piston stopper." It would therefore seem obvious to one of ordinary skill to provide Breitenbach with a spring, such as disclosed by Hein, for the purpose recited in the claims.

A thorough review of the claims on appeal in the light of the cited references and with due consideration of the arguments of counsel, fails to convince us of reversible error on the part of the Board in holding that it would be obvious to one skilled in the art having the references before him to produce the subject matter of the claimed invention.

[4] The decision of the Board of Appeals is affirmed.

AFFIRMED.

RICH, *J.*, with whom SMITH, *J.*, joins, dissenting in part:

The invention here sought to be patented is described in the specification as an improvement in a known type of syringe. The improvement is in the use of a "retractible barbed or spearpoint head" on the old inner plunger rod which will hook into the "piston cork" of the disposable ampoule or cartridge, "converting the conventional disposable cartridge into an *aspirating* cartridge" (my emphasis) by which it is meant that the piston cork can be pulled back as well as pushed forward.

The cited references show that others had addressed themselves to the same problem or desideratum and had devised means by which the cork could be retracted by the syringe plunger. Pontius did it with a complex and expensive three-jaw and cam arrangement wherein three jaws are propelled out of the plunger head on curved paths toward the axis of the cork. "When these claw-like hooks are moved forward, their tips meet above the center of the plunger head." Breitenbach has a head with two short claws acting like corkscrews and requiring a twisting movement of the plunger rod to engage it with the cork. Hein has an entirely different system involving the use of a specially formed cork with a cylindrical collar on it and is not relied on for its cork-engaging structure. Effenberger does not relate to syringes at all.

The patentable subject matter disclosed in appellant's application as the one improvement appellant says he invented is the use of the barbed or spearpoint head to hook onto the cork. The Patent Office has found that a patentable invention is disclosed by the allowance of claims 12, 13, and 14. Insofar as the appealed claims are directed to the same improvement and so define it as to distinguish it from the references they, too, should be allowed.

It appears to me that appellant has devised a very simple, effective, easily operated aspirating connection which is not shown in the references relied on. The Patent Office position is that it would have been obvious to those skilled in the syringe art to *modify* the syringe structures of Pontius and Breitenbach by using a spearpoint connection such as that which it belatedly found in the 1904 patent to Effenberger by which a ring is *permanently* attached to a bottle cork to serve as a handle. Yet neither of the other syringe reference patentees, who filed in 1953 and 1955, found it obvious to use a barbed or spearpoint head. We hardly need look to Effenberger on this issue of obviousness considering the fact, of which we take judicial notice because it is such common knowledge, that barbed fish-hooks and spearpoints (of the type commonly depicted throughout modern times on Wrigley's gum wrappers) are older than the Christian era. If it was so obvious to use such a point, why did Pontius and Breitenbach go to such pains to devise more complex devices?

I am therefore of the view that it was not obvious to use a barbed or spearpoint head, according to appellant's invention, and that any claim which is limited to such a point is patentable. I find claim 2 is not so limited since it calls merely for piercing means capable of

piercing the cork by a straight-line push *on the plunger*. Pontius meets this, though his jaws travel in curved paths.

Claim 3, however, calls for piercing means including a shoulder to be imbedded, which is a barb or spearpoint feature. Claim 4 is similarly limited and adds that the shoulder, while *resisting* extraction, will permit it. Claim 5 specifies "a fixed pointed barb" to be embedded in the cork. Claim 6 depends from 4 and adds that there is a *pair* of shoulders.

Claim 8 does not define the invention described since it calls only for a "penetrating point."

Claim 9 specifies "barbed piercing means * * * for connection * * * with the cartridge cork" and uses further language implying that it is withdrawable by a straight pull of sufficient force greater than that required for aspiration.

Claims 10 and 11 are like claim 2 in calling for "piercing means" broadly. Another feature of the disclosed structure is here relied on, namely a spring retracting the plunger, which I find is old in Hein, which is all Hein is cited for, and these claims do not define patentable subject matter.

Claim 12 stands allowed. It reads:

12. An aspirating syringe comprising a generally cylindrical magazine, a plunger reciprocable longitudinally within said magazine, and a substantially *flat aspirator hook* rigidly fixed to the forward end of said plunger: said magazine being adapted to receive therein a cylindrical ampoule having a piston stopper slidable forwardly therein to expel a medicament therefrom and retractible to afford aspiration, *said hook having substantially similar opposite side faces approximately parallel to the line of reciprocal movement* of the plunger; said *hook* being adapted to become embedded in said stopper without turning relatively thereto, and *having a portion opposing its withdrawal from said stopper* upon a retraction stroke of the plunger. [Emphasis added.]

It shows, I think, that the specific hook shown in the drawings in the form of a flat-sided spear, even with one of the two shoulders omitted, is regarded as patentable invention by the Patent Office. While we are not bound by that decision, the unanimous decision of the three men on the Board, reversing the Examiner's rejection of claims 12, 13, and 14, is certainly entitled to some weight. I think it is our proper function to try to promote some degree of consistency in patentability decisions and to reverse the rejection of claims limited to substantially the same subject matter as allowed claims where we do not disagree with such allowance. There is nothing in the flatness of the hook as recited in claims 12–14 to distinguish from the references since Effenberger's spear is just as flat as appellant's. If these claims define unobvious subject matter, so do several others, and I think they do.

I cannot agree with the reasons on which the Board based its affirmance of the rejection on Pontius and Breitenbach. In the portion quoted by the majority, the Board expressed the view that the "rearward surface" of the Pontius jaws "anticipates" the use of a barb or spearhead having shoulders for the reason that it resists withdrawal. This is merely saying that it anticipates because it accomplishes a similar result. We have recently had occasion to point out that this is legally bad reasoning. *In re Scott*, 51 CCPA 747, 323 F.2d 1016, 139 USPQ 297; *In re Flint*, 51 CCPA —, — F.2d —, 141 USPQ 299. Structure is here being claimed and the structures are not the same.

The Board further opined that since barbs are so common, it would be obvious "to place a barb on the Pontius pointed elements for the conventional purpose." I think this is an absurd suggestion for several reasons. The Pontius structure, being in the nature of claws or talons gripping toward the center of the cork, need no barbs to perform their function. The use of barbs would make retraction of those talons extremely difficult, if not impossible, with his camming mechanism and would very likely render the device inoperative. The "corks" here are made of rubber or the like. Finally, even if barbs were placed on Pontius' elements, appellant's structure would not be produced.

Finally, I think the Board's reasoning with respect to the obviousness of employing barbs is entirely inconsistent when one compares what was said in rejecting claims 2–9 and in allowing claims 12–14. Choosing between the statements, the only one which makes sense and is in accord with the law is the latter, which reads:

In combining references [including common knowledge] patentability cannot be negatived merely by selecting from the prior art those features which can be synthesized into an anticipation once it is known what features should be selected. The Effenberger device thus fails to supply the necessary feature which Pontius or Breitenbach alone does not possess, that is, the teaching of the deficiency and how to solve it.

That reasoning must be applied uniformly to all claims appealed.

I would reverse as to claims 3, 4, 5, 6, 7, and affirm as to claims 2, 8, 9, 10 and 11.

U.S. Court of Customs and Patent Appeals

IN RE ARTHUR MEADER AND OTTO ALBRECHT

No. 7227. Decided November 5, 1964

[— CCPA —: — F.2d —; — USPQ —]

1. PATENTABILITY—COMPOUND—INHERENT PROPERTY.

"Appellants' claims 22 and 23 additionally describe the copolymer product with the phrase 'which forms a stable dispersion in water.' Even taking this phrase as a limitation describing a property, we must conclude that Barney's polymer is inherently one which has that property in the same sense as appellants' claimed polymer, since the (*a*) and (*b*) components are used in the same proportions as in Barney. This being so, the recitation of that property does not distinguish the claims over Barney. The property is at best merely a newly discovered one, and we do not regard this as sufficient to distinguish over a reference silent as to that property."

2. SAME—COMPOSITION—OBVIOUSNESS—AQUEOUS DISPERSION OF POLYMER.

"* * * appellants are not claiming the polymer but 'A liquid composition * * * which comprises a stable aqueous dispersion' of the polymer. Both the Examiner and the Board, in lumping the claims together, seem to consider that because a dispersion could be made from the polymer, whether due to an inherent property, or by grinding, emulsification or whatever, it would be obvious to do it. We do not agree. Barney is concerned with his polymers as fibers, not as dressings for textile fibers. He nowhere suggests his polymers as a component of a composition with such utility. Barney alone is insufficient to teach that it would be obvious to make a dressing composition as claimed. Although it may be possible to produce such a composition only with the aid of other unclaimed agents, we again must note we do not have any such rejection before us."

3. SAME—COMPOUND—POLYMERS—OBVIOUSNESS—RELATED SUBSTITUENTS.

"Claim 10 is specific to a terpolymer which differs in two respects from those shown in Barney. The first difference is that one of the (*b*) component monomers is butyl acrylate while Barney shows most specifically methyl acrylate. Lacking a showing of any criticality, and falling within the Barney teaching of 'acrylyl' compounds and the related member methyl acrylate, we see no distinction in this component that would not be obvious to one of ordinary skill in the polymer art."

4. SAME—SAME—SAME—SAME—CARBOXAMIDOMETHYL RADICAL UNOBVIOUS FROM ALKYL RADICALS ON TERPOLYMERS IN THE PRIOR ART.

"Appellants urge as the major distinction in this claim the fact that the R substituent of the quaternized nitrogen of the (*a*) component is a 'carboxamidomethyl' radical, —CH_2CONH_2, whereas Barney shows alkyl radicals up to C_4 in that position. The Board stated: '* * * We are of the opinion that the quaternary ammonium compounds disclosed by Barney and the specific quaternary ammonium compound recited in appealed claim 10 are sufficiently similar to warrant a holding that the use of the latter involves nothing unobvious in view of the disclosure of the former.' We do not agree with what we understand to be the position of the Board. The Board fails to point out in what way the reference compound is 'similar' to that claimed, and it thus is not clear how it can be regarded as 'sufficiently' similar to make it obvious to one of ordinary skill in this art."

5. SAME—PARTICULAR SUBJECT MATTER—"NEW COPOLYMERIZATION PRODUCTS."

The decision of the Board of Appeals, refusing four claims in an application entitled "New Copolymerization Products" as unpatentable over the prior art, is reversed as to two claims and affirmed as to the other claims.

APPEAL from the Patent Office. Serial No. 566,017.

MODIFIED.

James F. Davis (*A. Ponak*, of counsel) for appellants.

Clarence W. Moore (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

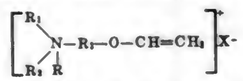
Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

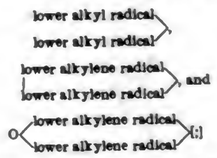
This appeal is from a decision of the Board of Appeals affirming the Examiner's rejection of claims 10, 22, 23 and 24 of application Serial No. 566,017, filed December 28, 1955, for "New Copolymerization Products." No claims have been allowed.

Claim 22 is illustrative:

22. A copolymerization product, which forms a stable dispersion in water, of (*a*) a quaternary mono-vinyl ether which corresponds to the formula:



wherein R is a radical selected from the group consisting of lower alkyl radical, glycidyl radical and carboxamidomethyl radical; R_1 and R_2 taken together from a member selected from the froup consisting of



R_3 is a lower alkylene radical in which two carbon atoms are linked to each other; and X is an anion; said quaternary vinyl ether being present in an amount sufficient to make said copolymerization product water-dispersible and

(*b*) at least one other monoethylenically unsaturated polymerizable compound.

It is evident that the co- and terpolymers claimed are formed from two monomeric components, (*a*) a quaternary mono-vinyl ether in which the quaternized nitrogen has various substituents, and (*b*) various other monomers containing a vinyl group.

Claim 23 differs from claim 22 in specifying the component (*b*) monomers as selected from acrylic acid esters and amides.

Claim 24 differs from claim 22 in calling for "A liquid composition suitable for the dressing of textiles which comprises a stable aqueous dispersion of a copolymerization product of" the monomers (*a*) and (*b*).

Claim 10 is drawn to a specific terpolymer in which the R group of the quaternized nitrogen is CH_2CONH_2 (carboxamidomethyl), and the (*b*) component monomers are butyl acrylate and styrol (styrene).

By various combinations of the monomeric components, different polymer products are obtainable in the form of granules, syrupy liquids or solutions, emulsions and dispersions. The different products are disclosed as having various uses, e.g. for fibers, as adhesives and lacquers, and for coatings or dressings on textiles. The claims in issue are directed in particular to polymers[1] for this latter utility. Textiles coated with a dispersion of these polymers have increased water-repellency and improved dye-fastness. Mat effects on polyamide fibers are obtained by the use of dispersions of the claimed polymers as dressings.

The single reference is

Barney, 2,764,578, September 25, 1956.[2]

Barney, from title to claims, is generally directed to co- and terpolymers similar to appellants. In *particular* the reference is directed to copolymers of the quaternary vinyl ether with acrylonitrile to form "objects such as fibers which have excellent strength and water resistance with improved dye absorption properties particularly with acid dyes." Barney's quaternary vinyl ethers are somewhat less sophisticated than those of appellants, the essential difference being that the R substituent (in claim 22 reproduced above) is an alkyl radical "of up to four carbons." The difference in R substituent is pertinent only in the discussion of claim 10 below. Particularly useful are β-vinyloxyethyltrialkylammonium salts.

The Barney (*a*) quaternary vinyl ethers as *homopolymers* are stated to be of too low a molecular weight to be satisfactory for "most plastic applications and particularly films and fibers * * *." The quaternary monomers thus were copolymerized "with at least an equimolar proportion of another polymerizable vinylidene compound * * *." The resulting copolymers have a molecular weight of "at least 10,000 and are suitable for plastic applications, including films and fibers." The (*b*) comonomers used are "acrylyl and methacrylyl compounds, e.g. acrylonitrile, methyl acrylate, methacrylic esters and methacrylamide * * * other vinyl derivatives such as styrene * * *."

Concerning the amount of monomeric compounds, Barney teaches:

Usually the amount of the quaternary vinyloxyalkyltrialkyl ammonium compound present in the polymer is proportional to the amount employed in the polymerization. The amount of quaternary employed is at least 1% and the amount present in the polymer including copolymer is at least 1% and generally at least 2%.

Particularly important are the copolymers with acrylonitrile, the acrylonitrile being present in major amount, i.e., to the extent of at least 85%, on a weight

[1] The word "polymers" is used indiscriminately throughout and includes co- or terpolymers where appropriate, there being no necessity for a distinction between them in this appeal.

[2] Filed April 18, 1952. A contention that Barney is not a proper reference because copending with the present application has been withdrawn by appellant in view of *In re Horry*, 51 CCPA 1541, 333 F.2d 920, 142 USPQ 164.

basis. In general the most suitable combination of dyeing properties and physical properties of the oriented product is achieved when 1% to 15% of the vinyloxyalkyltrialkylammonium comonomer unit is present in the polymer. Preferably the amount of quaternary monomer is 2% to 10%.

All the claims were rejected as "unpatentable over the Barney patent," it being pointed out that the monomer components of Barney fall within the claim definitions for the (*a*) and (*b*) components. In considering the rejection of the claims, we find they fall naturally into two groups, the first being the broader claims 22, 23 and 24. Claim 10, because additional reasons for rejection over Barney were given, will be discussed separately.

Claims 22, 23 and 24

The central issue in this case concerns a limitation in all the claims indicating the amount of quaternary vinyl ether present in the polymer:

* * * said quaternary vinyl ether being present in an amount sufficient to make said copolymerization product water dispersible * * *.

About this limitation the Examiner's answer states:

This limitation is not seen to render the claims patentable since it is functional at the exact point of alleged novelty over Barney. * * * It may also be pointed out that the compositions of Barney would inherently be water dispersible in the same sense that applicants' compositions are water dispersible, since substantially the same component may be used in the same proportions.

Appellants, in a reply brief submitted to the Board, took this as a new ground of rejection under 35 U.S.C. 112. The Examiner's reply on remand to him by the Board states:

The claims, however, have not been rejected as indefinite, but are under rejection as unpatentable over Barney. As explained in the Examiner's answer, the functional limitation here under discussion is not sufficient to distinguish the instant claims from the very closely related products of Barney.

In affirming the Examiner, the Board stated:

We do not believe that claims should be allowed when the alleged distinction over the art, namely, the amount of quaternary ammonium compound used is functionally defined, and appellants have not successfully rebutted the Examiner's statement that the amount of quaternary ammonium compound used in Barney's example in column 2 corresponds to that disclosed in appellants' Example 12.

Both appellants and the Solicitor now agree that the rejection is under 35 U.S.C. 103 whether that limitation is termed "functional" or not, and thus we shall take it as being under section 103.

Since the (*a*) and (*b*) components of the claims encompass the corresponding components disclosed in Barney, we agree that the patentability of the claims rests upon the limitation as to amount of quaternary vinyl ether monomer. We accept arguendo the contention of appellants that the relationship between water dispersibility and amount of quaternary monomer is established, and that it would be a mere matter of routine skill to determine *specific* amounts of the quaternary monomer to be used in each case. Nevertheless, when we look to the teachings and examples in appellants' specification we see that the amounts are not so different from those in Barney as to result in a patentability distinguishable polymer. At the Solicitor's suggestion, we note that Barney's Example 1–B has an (*a*) to (*b*) ratio of 1:9 (quaternary monomer to acrylonitrile), while appellants' Examples 3–5, directed to the water-dispersible polymer, show the same ratio.

Further, among the broad teachings in appellants' specification we find no discussion of the range of amounts which may be used to produce this water-dispersible species of polymer as distinct from the wide variety of types disclosed as resulting from the combination of the (*a*) and (*b*) components. Indeed, the property of water-dispersibility is not discussed, much less related to the use of quaternary component. Contrasted to this is Barney who teaches, "The amount of quaternary employed is at least 1% * * * most suitable combination * * * when 1% to 15% * * * is present in the polymer. Preferably the amount of quaternary monomer is 2% to 10%."[3] Clearly then, the amount limitation does not distinguish any of the claims over Barney.

[1] Appellants' claims 22 and 23 additionally describe the copolymer product with the phrase "which forms a stable dispersion in water." Even taking this phrase as a limitation describing a property, we must conclude that Barney's polymer is inherently one which has that property in the same sense as appellants' claimed polymer, since the (*a*) and (*b*) components are used in the same proportions as in Barney. This being so, the recitation of that property does not distinguish the claims over Barney.[4] The property is at best merely a newly discovered one, and we do not regard this as sufficient to distinguish over a reference silent as to that property. Therefore, we affirm the Board as to claims 22 and 23.

[2] Although what we have said concerning the central issue, the amount limitation, applies equally to claim 24, we do not agree that the result is the same because appellants are not claiming the polymer but "A liquid composition * * * which comprises a stable aqueous dispersion"[5] of the polymer. Both the Examiner and the Board, in lumping the claims together, seem to consider that because a dispersion could be made from the polymer, whether due to an inherent property, or by grinding, emulsification or whatever, it would be obvious to do it. We do not agree. Barney is concerned with his polymers as fibers, not as dressings for textile fibers. He nowhere suggests his polymer as a component of a composition with such utility. Barney alone is insufficient to teach that it would be obvious to make a dressing composition as claimed. Although it may be possible to produce such a composition only with the aid of other unclaimed agents, we again must note we do not have any such rejection before us. We therefore reverse the rejection of claim 24.

Claim 10

[3] Claim 10 is specific to a terpolymer which differs in two respects from those shown in Barney. The first difference is that one of the (*b*) component monomers is butyl acrylate while Barney shows most specifically methyl acrylate.[6] Lacking a showing of any criticality, and falling within the Barney teaching of "acrylyl" compounds and the related member methyl acrylate, we see no distinction in this component that would not be obvious to one of ordinary skill in the polymer art.

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[3] The full quotation has been set out in the introductory part of the opinion.

[4] Because we agree that the Patent Office has shown a prima facie case of inherency by pointing to the close similarity in proportions of substantially the same components, we need not consider the Examiner's argument that: In addition, the art of preparing aqueous dispersions has advanced to the state where any substance not destroyed by water is dispersible therein by suitable methods such as grinding to colloidal size or through the use of surfactants or other dispersing agents.

[5] The asterisks represent the phrase "suitable for the dressing of textiles" which we consider to be merely a statement of intended use and of no patentable significance here.

[6] We do not see this case turns on the question of homology.

[4] Appellants urge as the major distinction in this claim the fact that the R substituent of the quaternized nitrogen of the (*a*) component is a "carboxamidomethyl" radical, $—CH_2CONH_2$, whereas Barney shows alkyl radicals up to C_4 in that position.

The Board stated:

> • • • We are of the opinion that the quaternary ammonium compounds disclosed by Barney and the specific quaternary ammonium compound recited in appealed claim 10 are sufficiently similar to warrant a holding that the use of the latter involves nothing unobvious in view of the disclosure of the former.

We do not agree with what we understand to be the position of the Board. The Board fails to point out in what way the reference compound is "similar" to that claimed, and it thus is not clear how it can be regarded as "sufficiently" similar to make it obvious to one of ordinary skill in this art.

Barney, the only art in the record before us, does not teach us that it would be obvious to substitute a carboxamidomethyl radical, as required by claim 10, for alkyl. Barney lists only alkyl radicals derived from alkyl-containing quaternizing agents. While Barney's list is only descriptive and not limiting, it does not contain any suggestion that another *type* of group may be substituted. We therefore reverse the rejection of claim 10.

[5] The rejection of claims 22 and 23 is affirmed, and that of claims 10 and 24 is reversed.

MODIFIED.

U.S. Court of Customs and Patent Appeals

IN RE ALFRED R. CONTI AND DANIEL J. MENTER

No. 7222. Decided November 5, 1964

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—COMBINATION—COMBINATION OF OLD ELEMENTS.

   "It is clearly manifest that appellants' construction consists of a combination of elements known to the art involved here without a manifestation of any unusual or surprising consequences."

2. SAME—SAME—SAME.

   "Appellants advance the proposition that 'in order to sustain a finding of "obviousness" in the case of a *combination* of references relied on, that at least one of the references suggest or hint at a desirability or feasibility of combining a feature or features shown therein with a feature or features of another reference, though even not necessarily showing *how* this is to be done in a structural way.' We think that the structures shown in the references when contemplated by one of ordinary skill in the art would, in themselves, suggest or hint at the combination of old features here claimed."

3. SAME—PARTICULAR SUBJECT MATTER—"CUTTING TOOL."

   The decision of the Board of Appeals, refusing certain claims in an application entitled "Cutting Tool" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 646,897.

AFFIRMED.

Franklin E. Quale (*Whittemore, Hulbert & Belknap, George A. Degnan*, of counsel) for appellant.

Clarence W. Moore (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

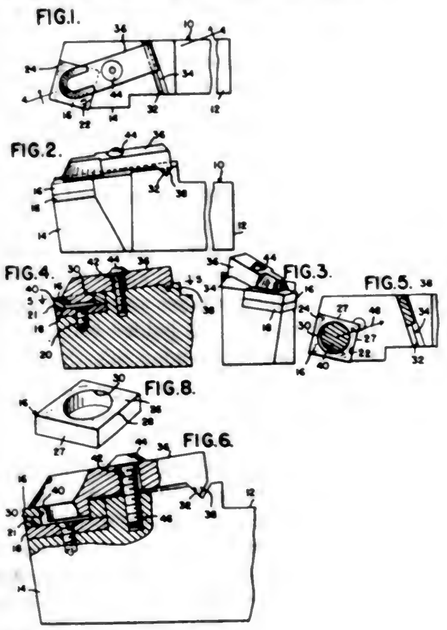
This is an appeal from the decision of the Board of Appeals affirming the Examiner's rejection of appellants' claims 35 and 36 as unpatentable over prior art. No other claims remain in appellants' application [1] entitled "Cutting Tool."

Appellants state in their brief that claim 35 is the only claim to be dealt with inasmuch as "Claim 36 depends therefrom, and simply defines certain cam and clamp structure more specifically than Claim 35."

Claim 35 reads as follows:

> In a cutting tool, a body provided with a flat support surface and fixed locator portions extending transversely of said support surface and disposed in intersecting planes transverse of said surface, a cutting tip of polygonal outline having like flat, parallel side surfaces one of which rests on said flat support surface, said tip having a recess within the polygonal outline thereof providing a further surface extending transversely of said support surface, and also having more than two accurately formed locating edge surfaces defining its polygonal outline, pairs of which surfaces intersect a side surface of the tip in cutting edges, said tip being indexable in a plane paralleling said side surfaces to selectively present different intersecting edge surfaces in an operative cutting relation of the cutting edges thereof to said supportng surface, and tip positioning and clamping means movably mounted by said body, comprising a member extending into said recess for operating engagement with said further surface upon movement of said member in a direction paralleling said support surface, means movably carried by said body to so move and positively engage said member against said further surface in a direction having components toward said respective locator portions sufficient to bring a pair of said tip edge surfaces into rigid locating and locking engagement with said locator portions, said last named means then maintaining said member in a position in which said tip is rigidly clamped between said locator portions and said further surface of said recess, and clamp means for clamping said tip against said flat support surface with said edge surfaces so engaged rigidly against said locator portions of the body.

Appellants' elected species are disclosed in the embodiment of FIGURES 1 through 6 and 8, reproduced below:



[1] Serial No. 646,897, filed March 18, 1957.

As will be seen from the above drawings, the body 10 of the holder is adapted to be rigidly mounted to the usual machine tool post. The forward portion of the body 14 is formed to provide a generally horizontal surface bounded at its rear by a pair of upright surfaces 22 and 24 ("locator portions") which are in intersecting planes transverse of (shown as perpendicular to) the upper surface of a pad element 18 secured to the horizontal surface. Upper surface 21 of element 18 may be considered as the "flat supported surface" of the claim. Cutting tip 16 rests on surface 21 and is clamped thereagainst after being chucked rigidly against locators 22, 24. The tip is in the form of a polygon (shown as a square) having like parallel and flat upper and lower surfaces intersected by four upper right edge surfaces 27 defining the polygonal outline. The intersection of edges 27 with the upper and lower surfaces 26 provides the cutting edges 28 of the tips, which in effect number eight, since the tip is reversible on its support.

The angle intersection of the locator surfaces 22, 24 of body 10 with one another is the same as that of the intersecting edge surfaces 27 on body 10.

The tip 16 is formed to provide a circular hole located within and spaced from the edge surfaces 27. Upper clamp member 36 is provided with an integral, downwardly extending projection 40 at its forward portion. Projection 40 is adapted to enter downwardly in hole 30 and the bottom portion of the clamp surrounding projection 40 will ultimately drive the tip downwardly onto support surface 21 in finally clamping the tip in place.

Clamp 36 is provided at its rear with wedge or cam portion 38 for engagement with inclined surface 32 on the holder body 10. Upon tightening screw 44 the resultant camming action draws projection 40 rearwardly into engagement with the upright wall provided by recess 30 (this wall being the "further surface" of the claim), moving in a direction which represents the resultant of components toward the respective locator portions 22 and 24, i.e., on a diagonal across opposite corners of tip 16. This movement ends in a rigid horizontal trapping of the insert to the holder 10 under a three-jaw chucking grip, i.e., between clamp projection 40 within recess 30 and the two outer zones of engagement of locator portions 22, 24 with the tip. Fully tightening screw 44 secures final downward clamping of tip 16 in place.

Appellants state that tip shift cannot take place because the tip is positively pulled back and clamped down and when loosened, indexed and reclamped, the tip unfailingly takes an exactly same position of the new cutting edge relative to the holder body, being positively locked against lateral displacement under side thrust in machining.

The references relied on below are:

Fors, 1,396,180, November 8, 1921.
McKenna et al., 2,598,581, May 27, 1952.
Thompson et al., 2,645,003, July 14, 1953.
Kralowetz, 2,664,617, January 5, 1954.
British patent, 320,809, October 24, 1929.
British patent, 350,706, June 18, 1931.
Bulletin 552–M, published by Wesson Company, April 25, 1955.
Kennametal Cemented Carbide Products, Catalog N. 49.

Fors discloses a drawback clamp for securing a cutting bit to a base.

By tightening a nut the rear inclined surface of the clamp follows a base cam surface and draws the clamp rearwardly. A forward lug integral to the clamp engages the rear surface of a groove in the bit and forces the bit back against a substantially vertical base surface. The lug will exert a downward force on the base of the groove causing the bit to seat firmly on the base surface. This surface is provided with a longitudinally extending key which enters a corresponding keyway in the cutting bit. The application states: "As a result of the construction described, it will appear that the cutting bit is positively held in all directions by the clamping action and that therefore the results secured are the same to all intents and purposes as though the entire tool were made of expensive high speed steel."

McKenna et al. disclose a structure with a carbide throwaway cutting tip. The tip is shown having parallel top and bottom surfaces with polygonal boundaries at their intersections with pyramidal side surfaces. The bit is provided with a countersunk axial hole which receives a screw bolt to secure the tip to the shank. The tip is indexable about the bolt and is backed by a tool shank shoulder along one of its edges. The specification states "that the cutting element is screwed or bolted to the shank, and kept from turning by a vertical surface or shoulder on the shank which is of such conformation and position that it accurately directs the cutting element to a selected one of its plurality of positions." It is further stated that: "By turning the stud and the socket nut in opposite directions, the stud will be drawn downwardly and will draw the cutting bit downwardly against the cutting element receiving surface, as well as rearwardly against the abutment edge."

The Kennametal publication shows replaceable and indexable carbide cutting tips secured to shanks by central cap screws, the shank having two angularly disposed shoulders for locating engagement with adjacent sides of a polygonal tip.

Bulletin No. 552–M discloses various replaceable carbide tips and securing clamping means in an anvil locator on a tool shank. One anvil locator shows a forward tip receiving recess similar to that of Kennametal and appellants' as will be seen by reference to appellants' surfaces 21, 22 and 24. In the Bulletin a chip-breaking clamp is employed for securing the tip in position on the anvil locator. The lock screw does not pass through the tip. It is stated that this embodiment permits easy and rapid insert indexing or changing regardless of holder position. "Adjustments are made without removing clamp."

British Patent 320,809 discloses indexable cutting tips which are held in place on the shank by a tapered wedging pin. The head of the pin forces the tip against a shoulder on the shank. A portion of the tip near the base thereof wedges under an undercut inclined portion of the shoulder, thus securing the tip both laterally and axially.

British Patent 350,706 discloses a rotatable eccentric pin instead of the tapered wedging pin of British 320,809. The throw of the eccentric is normal to a single shoulder. The locking concept, however, is similar to British–809 with an additional fixture present. The specification states (numerals omitted):

A recess is formed in the holder and is bounded on one side by the undercut shoulder and on the opposite side by a second shoulder or wall which is inclined to the shoulder so that the recess is of a wedge shape, narrowing in the

direction in which the cutting pressure is applied. The extension of the cutter is provided with a projecting portion fitting the recess. It will be appreciated that when the wedging pin is turned to apply the locking pressure there will be a slight sliding movement of the cutter along the shoulder. When the wedging pin is inserted through the holder as shown in FIGURES 6 and 7 it is therefore turned in the sense indicated by the arrow shown in FIGURES 6 and 8 in order that exertion of the locking pressure shall also wedge the projecting portion into the recess, thereby effectually relieving the wedging pin of any shearing stress.

Thompson et al. disclose use of cutter buttons, either circular or polygonal. The buttons are indexable and reversible and are held by bolts which pass through center holes in the buttons and are threaded into the cutter base. The Examiner stated that: "Since Kralowetz and Thompson are cumulative in their showing of reversible and indexable cutter tips mounted in conforming seats specific application will be confined to the Bulletin for simplicity."

The Examiner rejected the claims as unpatentable over Fors in view of Bulletin 552–M in contemplation of 35 U.S.C. 103. With reference to the Bulletin clamp, the Examiner reasoned that to make this clamp a draw clamp as taught by Fors would not constitute patentable invention but mere utilization of the teachings of Fors in an obvious manner and that the use of a "square indexable tip in Fors by fashioning the recess as taught by the Bulletin constitutes the mere modification of Fors in accordance with the teachings of the art."

The Board reversed the Examiner's rejection on indefiniteness but sustained the rejection on prior art. The Board stated that while Fors alone does not disclose a relating of positioning faces and outline forming locating edge surfaces of the type stated in claim 35, it got a different view of the claimed subject matter when considering the combined references. The Board further stated and held that:

We appreciate that no single reference displays the positioning of a tool on a support surface by holding means creating forces against two positioning surfaces in the manner claimed. The art, however, as represented by Bulletin 552M does indicate that replaceable and indexable cutters have been placed in position on a support surface and urged into the angular fork provided by two positioning surfaces as a means of repeating a positioning of a cutter tool. When Fors further illustrates to the art the simple expedient of urging a replaceable tool tip into a fixed position along a support face and against at least one positioning face, it appears to us that persons of ordinary skill in the art would find it obvious to employ such force producing practices in connection with cutter elements having two positioning faces. Pressure in a manner to have components against two faces is an old principle in using the cutters of Bulletin 552M. To substitute the mechanical forces of Fors requires substitution of his draw clamp and provision on the cutter of an engageable recess. To employ the square cutter of Bulletin 552M * * * in a clamp combination such as suggested in Fors would require grooving the upper face in a diagonal manner or otherwise providing a surface for engagement by the clamp. That replaceable tools can have such surfaces is taught by Fors; and that indexable bits can have interior surfaces associated with connecting devices is further present in references such as Thompson et al., Kralowetz, McKenna et al. and the British patents. While the formation of the Bulletin 552M cutter with a diagonal recess may take out of consideration two of the four cutter corners available, it is noted that claim 35 does not distinguish over the resulting cutter.

Appellants point out that indexable tips of polygonal edge outline, such as the claimed invention is especially concerned with, came into extensive use in 1951 and that it was the practice of the machinist in the use of this type of tip to hold the tip in place by thumb pressure in order to properly position the tip with an edge or a pair of intersecting upright edges against one or more upright abutment surfaces on the holder. This procedure, according to appellants, gave no assurance that a lessened or released thumb pressure would not permit the tip to shift on the supporting surface relative to the abutment surface or surfaces before the clamp was tightened, thus resulting in inaccurate or variable clamping on the holder during the process of indexing or replacing the tip. The result under the pressure of operation was to shift the tip out of an exactly pre-located position on the holder body causing a loss of precise cutting uniformity.

Appellants assert that they were the first to determine the causes of the loss of precision and lack of uniformity in tip cutting operations and that their claimed invention eliminates these causes by providing means to exert a positive, rigid chucking and trapping action on the tip at three points, forcing the tip against accurately positioned locator surfaces in the direction of the tip's own plane, prior to rigidly clamping the tip down on the holder body.

It would seem axiomatic that accurate, secure and maintainable positioning of an indexable tip would be of prime and constant concern to those who operate tip cutting devices. In this respect we note that the Bulletin 552–M tip holder constructions are asserted as affording "positive insert location—always on center" and that they are designed to obviate the stress of the variable angular pressures to which such tips are subjected in use.

As hereinabove noted, the essence of appellants' claimed invention is the supplanting of thumb positioning by providing backing support to eliminate turning or canting during operation. It seems apparent that this facility is achieved by the McKenna et al. stud and backing shoulder. Assuming precise machining of the McKenna tip and backing element, the round seat for the stud head and synchronization of the stud aperture in the tip with that of the base, thumb pressure is clearly obviated and tendency to cant or turn eliminated. The same attributes may fairly be applied to Kennametal's similar construction for securing polygonal tips. Instead of employing only one locating shoulder, as in McKenna et al., Kennametal discloses two shoulders for locating engagement with adjacent sides of the tip. Then, too, Fors teaches accurate positioning of a replaceable tip against canting by the use of a draw clamp.

With reference to providing means to eliminate the necessity of thumb positioning and means for backing support to prevent turning or canting, we consider apt the observation of the Solicitor that "Rather than blazing a new trail, appellants appear to have merely followed an already well blazed trail."

It seems apparent to us that if one desired the advantages of tip positioning and stabilization and facility of indexing as shown in McKenna et al. and Bulletin 552–M, it would be reasonable to expect him to attempt to secure such advantages in a unitary construction.

We find ourselves in agreement with the Solicitor that it would appear obvious to one of ordinary skill in the art to use the angled positioning shoulders in the anvil locator of Bulletin 552–M with means to draw back on an internal point in the tip against the shoulders as in McKenna et al. and Kennametal. Such means compatible with retention of the simple external clamping of the Bulletin 552–M constructions affording easy indexing, are obviously afforded and suggested by adoption of the draw clamp teaching of Fors. Such would integrate the desired means with the type of clamping already present in the Bulletin 552–M disclosures.

Appellants lay stress on "a positive, three-jawed, internal and external initial trapping of the insert in the holder, as between the surface of recess 30 and the respective locator portions 22, 24." It seems apparent that such a result inherently follows from the proposed modification of the clamp in the Bulletin 552–M construction where, as pointed out by the Solicitor, the clamping screw is adjacent the cleft between locator surfaces and would not readily permit draw by a Fors type clamp parallel to either locator surface. Furthermore, it is noted that three point entrapment of cutting bits is old in the art, as disclosed by British Patent No. 350,706.

[1] It is clearly manifest that appellants' construction consists of a combination of elements known to the art involved here without a manifestation of any unusual or surprising consequences.

In *In re McCabe*, 48 CCPA 881, 287 F.2d 921, 129 USPQ 149, this court expressed agreement with the statement of the Solicitor that:

> There is no surprising consequence or new and additional function attributable to the fact of combination. It is well settled that arrangements of old elements so functioning are presumed obvious to one skilled in the art. *In re Wagner*, 32 CCPA 1088, 1092, 149 F.2d 939, 941 (1945); *In re Smith*, 34 CCPA 1007, 1012, 161 F.2d 274, 278 (1947); *In re Crawford*, 45 CCPA 750, 754, 250 F.2d 370, 373 (1957); *In re Attwood*, 45 CCPA 824, 828, 253 F.2d 234, 237 (1958).

[2] Appellants advance the proposition that "in order to sustain a finding of 'obviousness' in the case of a *combination* of references relied on, that at least one of the references suggest or hint at a desirability or feasibility of combining a feature or features shown therein with a feature or features of another reference, though even not necessarily showing *how* this is to be done in a structural way." We think that the structures shown in the references when contemplated by one of ordinary skill in the art would, in themselves, suggest or hint at the combination of old features here claimed.

We find no reversible error in the decision of the Board holding "that persons of ordinary skill in the art working with the knowledge of cutter structures and practices available at the time of appellants' entry into the field would have found it obvious to apply the traction clamp tool holder principle of Fors in connection with the positioned tool structure of Bulletin 552–M."

[3] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE STEPHANE DUFAURE DE LAJARTE

No. 7237. Decided November 5, 1964

[— CCPA —: — F.2d —: —— USPQ —]

1. PATENTABILITY—EVIDENCE—COMPARATIVE TEST NOT REQUIRED WITH REFERENCE PATENT THAT DOES NOT SUGGEST DESIRED PROPERTY.

> "In the total absence of evidence in the record to indicate that the amber glass disclosed by Lyle [reference patent] would be expected to have desirable electrical insulating properties, we can find no justification for placing the burden on applicant to conduct experiments to determine the insulating properties of the colored glass disclosed by Lyle. Although there are only very slight differences between the Lyle composition and that sought to be patented, we cannot assume that these small differences are incapable of causing a difference in properties. Appellant, in showing that his glass has basic and novel properties (at least as far as the record is concerned), would appear to have met his burden."

2. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—35 U.S.C. 112.

> "We agree with the Solicitor that there is little support in the record for the range. In fact, as the Solicitor has pointed out, there is no evidence in the record that the application as originally filed specifically contained the 1 to 4% limitation. This attack, however, appears to be directed to the sufficiency of the disclosure. Since no rejection under 35 U.S.C. 112 was made by the Examiner, that issue is not now before us."

3. PATENTABILITY—COMPOSITION—ANTICIPATION.

> "The claimed composition contains 1 to 4% K_2O, no sulfur, no carbon, and possesses insulating properties which, as far as the record indicates, have never been known in the prior art. The Lyle reference composition contains a small amount but likely less than 1% K_2O plus sulfur and carbon as essential components. It is an amber colored glass with no electrical insulating properties disclosed. In view of these many differences, we hold that the Lyle composition does not anticipate appellant's claims."

4. SAME—OBVIOUSNESS—35 U.S.C. 103.

> "We do not feel that a rejection based upon the premise that the differences between appellant's glass and the Lyle glass are obvious can be sustained. Admittedly, the differences are small, but Lyle is devoid of any suggestion of a glass embodying these differences. The Examiner has failed to suggest any reason for omitting carbon and sulfur from the Lyle glass. If one were making a colorless glass free of carbon and sulfur, there would be little reason for using the Lyle formula since it was primarily designed to enhance color stability. In the absence of any showing why it would be obvious to modify Lyle's glass, a '103 rejection' must be reversed."

5. SAME—PARTICULAR SUBJECT MATTER—"GLASS COMPOSITION."

> The decision of the Board of Appeals, refusing certain claims in an application entitled "Glass Compositions" as unpatentable over the prior art, is revised.

APPEAL from the Patent Office. Serial No. 669,956.

REVERSED.

John L. Seymour, Bauer and Seymour, for appellant.

Clarence W. Moore (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Stephane Dufaure De Lajarte appeals from a decision of the Board of Appeals affirming the Examiner's rejection of all of the claims in appellant's application [1] for a glass composition.

The rejected claims 5 and 11 read as follows:

> 5. Electrically insulating glass having a composition consisting essentially of the following constituents in percent by weight

SiO_2	66.8
B_2O_3	—
Al_2O_3	3.0
Fe_2O_3	1.6
MnO	0.6
CaO	9
MgO	4
BaO	3
Na_2O	8
K_2O	4

> said glass having resistance to perforation equivalent to at least about 36 K.V. in a plate 500 x 500 x 7 mm., at 200° C., under 50 cycle alternating current.

[1] Serial No. 669,956, filed July 5, 1957, for "Glass Compositions."

11. Electrically resistant glass, in particular for glass insulators, having a resistance to perforation equivalent to at least about 20 K.V. in a plate 500 x 500 x 7 mm. at 200° C., under sine wave current of 50 periods, and having a composition consisting essentially of

$SiO_2+Al_2O_3$, wt. percent (of which Al_2O_3 is always present and is lower than 8%).	68–75
Na_2O+K_2O, percent (of which K_2O is 1–4% and Na_2O is not over 11% when Al_2O_3 is less than 4% and Na_2O is not over 13% when Al_2O_3 is greater than 4%).	12–15
Members from the group consisting of CaO, MgO, and BaO, percent (of which CaO and BaO are present and CaO is in the range—7–12%).	12–16
Metal oxides of the type of B_2O_3, Fe_2O_3, ZrO_2, TiO_2, PbO, MnO, ZnO+fluorine compounds, percent	0–5

Appellant indicates that the intended use of his glass is as an electrical insulator. Glass suitable for such use must have high resistance to perforation by high-voltage electric current, particularly when the glass is hot. Appellant states that insulator glass must also maintain its resistivity at high temperatures, have good chemical durability under conditions of use and be free of devitrified or crystalline particles. He alleges that a glass having all of the desired properties can be obtained by making a glass having the composition set forth in the claims. It can be seen from claim 11 that a rather intricate relationship between components is specified. For example, the amount of Al_2O_3 present must be below 8% but not until the exact amount of Al_2O_3 is determined, can the limits on SiO_2 and Na_2O be set. The amount of K_2O may vary from 1 to 4% but the permissible range of K_2O is not determined until the amount of Na_2O is established.

In his application, appellant compares what is described as "a prior art glass of a standard composition for electrical insulators" with glasses which conform to the composition set forth in the claims. The prior art glass contains 69% SiO_2, 1.5% Al_2O_3, 14.5% Na_2O, 0.3% K_2O, 11.3% CaO, 1.5% MgO, 1.3% Fe_2O_3, and 0.6% MnO. It can be seen that this composition varies from that set forth in claim 11 in containing more than 11% Na_2O and less than 1% K_2O. The prior art glass had a resistance to perforation of 14 K.V. in a plate 500 x 500 x 7 mm., at 200° C., under 50 cycle alternating current. The three glasses having compositions according to the claims have resistances of 24.5 K.V., 31 K.V., and 36 K.V.

The sole reference is:

Lyle, 2,443,142, June 8, 1948.

The stated object of Lyle is to produce an amber glass of pleasing color and good chemical durability. Amber color is obtained by the addition of carbon and sulfur. Lyle states that:

> Prior amber glass of the reduced or carbon-sulfur type is notoriously unstable and such stability as is attained is often transitory. This is to be expected from the combustibility of the basic coloring materials, carbon and sulfur. Consequently, such glass, which is properly colored when partially melted, may lose color and may blister and foam as melting and fining proceeds and may become unfit for use if held very long at high temperatures.

To solve this problem, Lyle uses a composition having the following relation: $S-2N=K$, where S is the weight percentage of silica, N is the weight percentage of alkali and K is a constant ranging from 45 to 60. In Table I Lyle sets forth several examples of his amber glass including the following composition:

A:	Percent
SiO_2	70.0
Al_2O_3	3.5
CaO	7.3
MgO	5.2
BaO	1.0
Na_2O, K_2O	12.0
CaF_2	1.0
Fe_2O_3	0.041

The above glass was made from a batch having the following composition:

A:	Percent
Sand	200.0
Soda ash	55.3
Raw dolomite	79.8
Nepheline syenite	48.8
Barytes	5.0
Fluorspar	3.5
Powdered charcoal	1.0

Lyle states that the percentages of sulfur and carbon were omitted from Table I and that sulfur in A was supplied by barytes in the batch.

The Examiner, in his letter of May 8, 1958, stated that Lyle "teaches a glass composition consisting essentially of the same oxides and proportions as claimed by applicant, note Table I, composition A * * *." The Examiner contended in the final rejection of November 18, 1959 and in his answer that the claims were directly readable on the composition of Lyle. This language would seem to indicate that the statutory basis of the rejection is 35 U.S.C. 102. The Board, however, talked about critical difference which could indicate 103. The Solicitor, at oral argument, declared that he did not know what the ground of rejection was and refused to rely upon either 35 U.S.C. 102 or 103 alone. Apparently, then, both sections must be considered.

The Examiner's intended rejection was apparently a "102 rejection," despite the actual differences which exist between Lyle and the claimed composition. In the Examiner's answer, the 1% K_2O limitation of the claims was treated as follows:

> The composition of Lyle would include the proportional limitation relationship of K_2O and Na_2O as recited in appellant's claim since it is noted in Table II, Composition A, that nepheline syenite is employed as the raw batch constituent for supplying K_2O in the final glass composition A, Table I. In the analysis of nepheline syenite, K_2O is present in amounts of more than 5%.
>
> Therefore, in Lyle's composition, since .05 of the combined Na_2O and K_2O total is K_2O, the amount of K_2O is calculated to be about 1 percent of the total glass composition, thus falling within the range limitation of K_2O (1–4%) recited in appellant's claims.

The fact that Lyle contains sulfur and carbon in addition to the components specified by the claims was not commented upon by the Examiner.

The Board of Appeals affirmed the Examiner but admitted that Lyle did not necessarily disclose a glass containing 1% K_2O in stating:

> We note that Lyle discloses, particularly in Example A (table II in column 3), that a substantial amount of nepheline syenite is employed in preparing the glass. Although it cannot be regarded as certain as to exactly how much potassium is introduced into the glass composition thereby, there does not appear to be any doubt that the glass composition includes potassium. We find no evidence that there is any critical difference between the amount of potassium in the glass compositions of Lyle and the minimum of 1% specified in claim 11.

The Board, as did the Examiner, failed to comment upon the sulfur

present in Lyle's composition. With regard to carbon, the Board stated:

> Lyle discloses that a very small amount of carbon, less than ½ of 1%, is employed in the preparation of his glass composition A. In our opinion, it would not be expected that the presence of this small amount of carbon would substantially alter the electrical resistance of the glass composition. Claim 11 which recites "consisting essentially" the named ingredients does not exclude small amounts of other materials which do not change the essential character of the composition. In our opinion, it must also be considered that some of the charcoal employed by Lyle may be lost due to atmospheric oxidation during the preparation of the final glass. In the absence of a factual showing of a critical difference in the electrical resistance of appellant's glass composition as compared to that of the compositions taught by Lyle, we are of the view that claim 11 does not patentably distinguish from the reference.

Appellant contends that his claims are not anticipated by the Lyle reference because (1) Lyle's composition contains sulfur and carbon which are excluded from appellant's composition by the words "consisting essentially of" and (2) Lyle's composition does not meet the 1% K_2O limitation recited in appellant's claims. We will first consider the carbon and sulfur question. Appellant and the Solicitor agree that the issue is whether the introduction of sulfur and carbon would materially change the characteristics of appellant's insulating glass. The Solicitor would put the burden of showing a material change on the appellant. The effect of "consisting essentially of" was considered in *In re Janakirama-Rao*, 50 CCPA 1312, 317 F.2d 951, 137 USPQ 893, where, as in the present case, the claims were directed to a glass composition and the reference contained some modifying components in addition to those claimed by appellant. The court found that appellant's glass had no basic or novel characteristics and thus did not distinguish over the reference. Thus, here appellant has the burden of showing the basic or novel characteristics of his insulating glass. He has met this burden by pointing out in his specification and claims the great increase in resistance to perforation resulting from his composition.

The Board of Appeals and the Solicitor contend that appellant has furnished no evidence that a critical difference in appellant's emphasized characteristics would result from the introduction of small amounts of Lyle's coloring agents, charcoal and sulfur. It is not clear what evidence they would require. The Solicitor has noted that an affidavit which the Board did not consider contains nothing significant on this issue. It may be implied that the Patent Office would require appellant to duplicate the Lyle glass and compare its resistance to perforation with that of appellant's glass.

[1] In the total absence of evidence in the record to indicate that the amber glass disclosed by Lyle would be expected to have desirable electrical insulating properties, we can find no justification for placing the burden on applicant to conduct experiments to determine the insulating properties of the colored glass disclosed by Lyle. Although there are only very slight differences between the Lyle composition and that sought to be patented, we cannot assume that these small differences are incapable of causing a difference in properties. Appellant, in showing that his glass has basic and novel properties (at least as far as the record is concerned), would appear to have met his burden.

Another difference between appellant's glass and the Lyle glass is the K_2O content Claim 11 calls for 1 to 4% K_2O. Lyle uses nepheline syenite, a K_2O-containing rock, in forming his glass. The amount of K_2O in the nepheline syenite apparently may vary greatly and thus it is impossible to say just how much K_2O is present in the Lyle composition. Appellant contends that at least one type of nepheline syenite will introduce only 0.6% K_2O into the composition. The Solicitor apparently concedes that the amount of K_2O is uncertain. His position is, however, that even 0.6% is enough to meet the claims because there is no proof that the range of 1 to 4% is critical. There is no indication in the record that the Examiner ever questioned the criticality of the range. The question was apparently first raised by the Board. After the Board's decision, appellant filed an affidavit attempting to establish the criticality of the 1–4% range. The Board refused to consider the affidavit on the basis that no new rejection had been made and that the affidavit was not filed in time. The appellant does not dispute that ruling here.

In support of his position that in order for a claimed range to be critical the range must be disclosed as being critical, the Solicitor cites *In re Bourdon*, 44 CCPA 740, 240 F.2d 358, 112 USPQ 323; *In re Selmi et al.*, 33 CCPA 1187, 156 F.2d 96, 70 USPQ 197; *In re Britton*, 28 CCPA 726, 115 F.2d 249, 47 USPQ 265; *In re Honnig*, 39 CCPA 740, 193 F.2d 191, 92 USPQ 135; *In re Shoemaker*, 23 CCPA 1033, 83 F.2d 288, 29 USPQ 209; and *In re Greider*, 29 CCPA 1079, 129 F.2d 568, 54 USPQ 139. In *Bourdon*, *Britton* and *Shoemaker*, the issue was obviousness. Since the issue here is anticipation under 35 U.S.C. 102, we do not feel that the language of those cases is applicable. In *Selmi* the claimed ranges of components in an alloy steel actually fell within the ranges of components of a prior art steel. This case is different because the claimed range actually differs from the prior art range. In *Greider* and *Honnig*, the prior art showed a product similar to that claimed and having the same alleged properties. In both cases, the court refused to attach any significance to a claimed range without a showing that the range caused an improvement over the prior art product. We do not have that situation here because there is no indication that the glass composition of Lyle has desirable electrical insulating properties. Thus, we do not feel that the cases relied on by the Solicitor permit us to disregard the 1 to 4% limitation as immaterial.

[2] We agree with the Solicitor that there is little support in the record for the range. In fact, as the Solicitor has pointed out, there is no evidence in the record that the application as originally filed specifically contained the 1 to 4% limitation. This attack, however, appears to be directed to the sufficiency of the disclosure. Since no rejection under 35 U.S.C. 112 was made by the Examiner, that issue is not now before us.

[3] The claimed composition contains 1 to 4% K_2O, no sulfur, no carbon, and possesses insulating properties which, as far as the record indicates, have never been known in the prior art. The Lyle reference composition contains a small amount but likely less than 1% K_2O plus sulfur and carbon as essential components. It is an amber colored glass with no electrical insulating properties disclosed. In view of these many differences, we hold that the Lyle composition does not anticipate appellant's claims.

[4] We do not feel that a rejection based upon the premise that the differences between appellant's glass and the Lyle glass are obvious can be sustained. Admittedly, the differences are small, but Lyle

is devoid of any suggestion of a glass embodying these differences. The Examiner has failed to suggest any reason for omitting carbon and sulfur from the Lyle glass. If one were making a colorless glass free of carbon and sulfur, there would be little reason for using the Lyle formula since it was primarily designed to enhance color stability. In the absence of any showing why it would be obvious to modify Lyle's glass, a "103 rejection" must be reversed.

Our discussion has been directed primarily to claim 11, but the reasoning applies also to claim 5 which is narrower than claim 11 and which the Board treated as not patentably distinct from claim 11.

[5] The decision of the Board of Appeals is thus reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

THE JOSEPH & FEISS COMPANY v. JOSEPH KANNER HAT CO., INC.

No. 7224. Decided November 12, 1964

[— CCPA —: —F.2d —; — USPQ —]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—FINDINGS OF LOWER TRIBUNAL ACCEPTED UNLESS CLEARLY ERRONEOUS—TRADEMARK.

"Factual findings of a lower tribunal are normally accepted unless clearly erroneous."

APPEAL from the Patent Office. Opposition No. 39,946, Cancellation No. 7,690.

AFFIRMED.

Albert L. Ely, Jr., for appellant.

Judah B. Felshin, Stanley I. Rosen, Felshin & Rosen, for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK

MARTIN, *J.*, delivered the opinion of the court.

This appeal requires us to determine which of the parties has superior rights in its mark. Since both parties concede that the marks and goods are so related that confusion is likely, the only remaining question is one of priority of trademark use.

In 1943 Kanner-Wald Inc., a corporate predecessor of appellee Joseph Kanner Hat Company (hereinafter Kanner), obtained trademark Registration No. 403,460 for HENLEY CLUB for men's hats, claiming use since early 1939. In 1951 appellee republished HENLEY CLUB under section 12 of the Trademark Act of 1946, disclaiming the word "Henley" apart from the mark.

On July 25, 1956, The Joseph & Feiss Company (hereinafter J & F), appellant herein, filed application Serial No. 12,813 for registration of HENLEY HOUSE for men's clothing, claiming use since June 29 of that year. On December 3, 1957, that application matured into Registration No. 655,275.

During the interim between J & F's filing and registration dates, however, Kanner's registration of HENLEY CLUB was canceled pursuant to section 8 of the Act. Kanner then filed, on April 21, 1959, application Serial No. 71,956 for registration of HENLEY for men's hats, claiming, as did its predecessor, use since 1939. J & F subsequently filed a notice of opposition to this application, and Kanner countered with a petition for cancellation of J & F's HENLEY HOUSE registration. The Trademark Trial and Appeal Board, in consolidated proceedings, dismissed appellant's opposition and ordered

cancellation of the HENLEY HOUSE registration (reported at 136 USPQ 91). This appeal followed.

It is not challenged that J & F's proofs are sufficient to show continued and widespread use of its mark HENLEY HOUSE since June 29, 1956. As noted above, the determination of the question here thus turns on the effect of the evidence introduced on behalf of Kanner on the question of use of HENLEY CLUB and HENLEY. The Board described that evidence in its initial opinion as follows:

> Joseph Kanner Hat Co., Inc. (hereinafter referred to as Kanner) is a manufacturer of men's hats. Kanner's vice-president, who has, since 1948, been full-time with the company, a family business headed by his father, testified that prior to 1949 Kanner used "HENLEY CLUB" as a mark for men's hats and that since 1949, Kanner has sold hats under the mark "HENLEY." Kanner, presently (testimony was taken on March 7, 1962), sells to but two customers, one of which operates a chain of men's shops, comprising five stores.
>
> The president of the chain operator dealing in Kanner's hats testified that his concern has been purchasing hats from Kanner under either "HENLEY CLUB" or "HENLEY" for approximately twenty-five years; that presently the hats bear the mark "HENLEY"; and that quite a number of years ago, it was "HENLEY CLUB." This witness was not definite as to when "HENLEY" superseded "HENLEY CLUB."
>
> Kanner's third witness, its general manager in charge of production and buying who has been with Kanner and its predecessors for thirty-four years, testified that "HENLEY" supplanted "HENLEY CLUB" a "good many years ago" and that "HENLEY" was used as the mark in January 1956 and that Kanner is still selling "HENLEY" hats.
>
> A number of invoices from a lining manufacturer were introduced into evidence, apparently to show purchases by Kanner of linings bearing the designation "HENLEY" as of a date prior to June 1956. There is an inconsistency in that these invoices identify the linings purchased at the various times designated therein by "HENLEY" and "HENLEY CLUB," notwithstanding testimony that the latter was not used after 1949. A similar inconsistency appeared in other invoices and records placed into evidence by Kanner. The explanation given by the officials who testified, is that the use of the term "HENLEY CLUB" was used because of force of habit but that actually the linings of the hats bore the mark "HENLEY."

We find no manifest error in that analysis.

While portions of the testimony relating to appellee's use of its mark are neither clear nor precise, we believe the record as a whole fairly supports the factual determinations made by the Board. [1] Factual findings of a lower tribunal are normally accepted unless clearly erroneous. *Ranney* v. *Bridges*, 38 CCPA 1044, 1056, 188 F.2d 588, 596, 89 USPQ 419, 427.

Accordingly we must agree with the Board wherein it stated:

> That Kanner is using the mark "HENLEY" is evident even from J & F's record. When Kanner began its use of "HENLEY" is in dispute. Kanner contends its record clearly shows its use of "HENLEY" since a date prior to June 29, 1956. • • • That these marks have been used interchangeably in such documents is apparent but it is clear from the testimony of the retailer of Kanner's hats that they were never used concurrently, rather "HENLEY" superseded "HENLEY CLUB" without any hiatus period between their use. The oral testimony, however, is sufficient to show that Kanner's use of "HENLEY" as part of "HENLEY CLUB" and per se preceded J & F's use of "HENLEY HOUSE" and that such use has been continuous. Kanner's rights in "HENLEY" are superior to J & F's rights in "HENLEY HOUSE."

Coming now to appellant's contention that the mark HENLEY is unregistrable because it is both a geographically descriptive word and a surname, we believe that the Board did not err in declining to rule on that contention. It relates to a matter having no relevancy to the present proceedings which involve the question of whether appellee has superior rights in HENLEY as found by the Board.

In re Myers, 40 CCPA 747, 201 F.2d 379, 96 USPQ 238, cited by appellant does not support appellant's position.

In view of the above the decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

HAMMERMILL PAPER COMPANY *v.* GULF STATES PAPER CORPORATION

No. 7181. Decided November 5, 1964

[— CCPA —; — F.2d —; — USPQ —]

1. TRADEMARK—CONFUSING SIMILARITY—"E-Z PAK" AND "E-Z CARI" FOR PAPER BAGS AND "HAMMERMILL E-Z CARRY PAK" AND "E-Z PAPER PAK" FOR PAPER BOXES.

On the issue of "likelihood of confusion as between Gulf States' admittedly prior marks 'E-Z PAK' and 'E-Z CARI' for paper bags * * * and appellant's 'HAMMERMILL E-Z CARRY PAK' and 'E-Z PAPER PAK,' used on carrying cases or boxes for so-called 'fine' paper such as typewriter or duplicator paper," *Held* that "The Board thought confusion would be likely and, for the reasons sufficiently stated in the Board's opinion, which both parties conceded at oral argument to be factually accurate, so do we."

2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—TRADEMARKS—RIGHT TO USE TRADEMARKS NOT BEFORE THE COURT.

"In answer to appellant's arguments that 'it will suffer irreparable damage if it is divested of its trade-marks' and that 'Hammermill will suffer irreparable damage if its trade-marks are cancelled' we point out that this proceeding has nothing to do with divestiture or cancellation *of trademarks*. We are concerned only with a refusal to *register* a mark and the cancellation of a *registration*. Appellant's right to use it is not before us."

APPEAL from the Patent Office. Cancellation Proceedings No. 7,591, Opposition Nos. 40,385, 40,863, and 40,866.

AFFIRMED.

Charles L. Lovercheck for appellant.

Raphael Semmes (*G. Mallet Prevots* of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*, designated to participate in place of Chief Judge WORLEY RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board of the United States Patent Office, 135 USPQ 456, adhered to after a petition for reconsideration, in which the Board sustained an opposition by Gulf States to registration of "HAMMERMILL E-Z CARRY PAK," Ser. No. 71,667, filed April 16, 1959; dismissed oppositions by Hammermill to the registration by Gulf States of "E-Z DUPLICATOR," Ser. No. 99,212, filed June 17, 1960, and "E-Z MIMEOGRAPH," Ser. No. 99,211, filed June 17, 1960; and sustained a petition by Gulf States to cancel Hammermill's registration of "E-Z PAPER PAK" on the Supplemental Register, Reg. No. 698,743, granted May 31, 1960. These proceedings were all consolidated and tried and appealed as one.

Hammermill appeals from the granting of the petition in Cancellation No. 7,591 and from the sustaining of Gulf States' Opposition No. 40,385. It expressly waived its appeal from the decision dismissing its two oppositions, Nos. 40,863 and 40,866.

[1] The nub of the issue, as we glean it from the 75 pages of briefs, is likelihood of confusion as between Gulf States' admittedly prior marks "E-Z PAK" and "E-Z CARI" for paper bags, registered respectively as Reg. No. 625,877, April 24, 1956, and Reg. No. 629,101, June 19, 1956, and appellant's "HAMMERMILL E-Z CARRY PAK" and "E-Z PAPER PAK," used on carrying cases or boxes for so-called "fine" paper such as typewriter or duplicator paper.

The Board thought confusion would be likely and, for the reasons sufficiently stated in the Board's opinion, which both parties conceded at oral argument to be factually accurate, so do we.

[2] In answer to appellant's arguments that "it will suffer irreparable damage if it is divested of its trade-marks" and that "Hammermill will suffer irreparable damage if its trade-marks are cancelled" we point out that this proceeding has nothing to do with divestiture or cancellation *of trademarks*. We are concerned only with a refusal to *register* a mark and the cancellation of a *registration*. Appellant's right to use it is not before us.

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,733,902, B. C. Phillips, CHARGE FORMING DEVICE, filed C.C.A., 6th Cir., Doc. 15,439, *The Tillotson Manufacturing Company* v. *Textron, Inc., Homelite, a division of Textron, Inc.* Plaintiff appealed from judgment of District Court holding claims 1 and 2 of Patent No. 2,733,902 invalid. Judgment of District Court affirmed Nov. 6, 1964.

2,817,392, M. I. Thomas, WEB FASTENING; **2,974,721**, same, FASTENING FOR INHERENTLY SLIPPERY FABRIC ON TUBULAR METAL FURNITURE, filed July 27, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–774. *Morton I. Thomas* v. *Hyman Kramer*.

2,833,451, W. A. Sherbondy, CAULKING GUN AND CARTRIDGE THEREFOR, filed Oct. 7, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–659, *William A. Sherbondy* v. *Acme Paper Tube Co.* Same, Doc. C64–660, *William A. Sherbondy* v. *R.C. Can Company*.

2,841,372, B. C. Phillips, APPARATUS FOR DELIVERING COMBUSTIBLE MIXTURE TO AN INTERNAL COMBUSTION ENGINE, filed C.C.A., 6th Cir., Doc. 15,440, *The Tillotson Manufacturing Company* v. *Textron, Inc., Homelite, a division of Textron, Inc.* Defendant appealed from judgment of District Court holding claims 4 to 7, 9 to 12, and 14 to 17 of Patent No. 2,841,372 valid and infringed. Judgment of District Court affirmed Nov. 6, 1964.

2,877,682, Barry and Tuozzo, HOLLOW RIVET HAVING TWO INTERNAL SHOULDERS, filed July 21, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1010–EC, *South Chester Corporation* v. *Olympic Screw & Rivet Corp.*

2,897,568, H. L. Hoke, CONDUIT CLAMP, filed Aug. 21, 1959, D.C., E.D. Tex. (Tyler), Doc. 2710, *Dresser Industries, Inc.* v. *Smith-Blair, Inc.* Order of dismissal with prejudice to the plaintiff (notice July 21, 1964).

2,912,049, H. S. Kuyper, FOLDING DOOR WITH FLEXIBLE HINGE STRIPS, filed Aug. 1, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1486, *Rolscreen Company* v. *Burton Bruckman & Company, Inc.* Stipulation dismissing cause July 15, 1964.

2,913,031, T. L. McKay et al., SELF-LOCKING SCREW THREADED FASTENER MEMBER HAVING AN ELONGATED RESILIENT INSERT; **2,956,293**, same, METHOD OF AND APPARATUS FOR FABRICATING SELF-LOCKING THREADED FASTENING MEMBERS, filed July 21, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,002, *Long-Lok Corporation* v. *The Buckley-Nylok Corporation*.

2,946,085, J. J. Hussey, SAFETY RAIL FOR BATHTUBS, filed July 10, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–475, *Frohock-Stewart, Incorporated* v. *Reed-Cromes Corporation*.

2,947,239, J. V. Burgess, VENTILATION CONTROL SYSTEM, filed July 16, 1964, D.C. W. Va. (Charleston), Doc. 3071, *James V. Burgess* v. *R. J. Stern Company*.

2,954,994, R. T. Beers, SOCKET RETAINER FOR ROTARY POWER TOOLS; **2,990,189**, same; DOCKET CONNECTING MEANS FOR A ROTARY IMPACT TOOL; **3,073,192**, same, SPLINED SOCKET MEMBER FOR WRENCHES, filed Mar. 5, 1963, D.C., S.D. Tex. (Houston), Doc. 63–H–138, *Chicago Pneumatic Tool Company* v. *Reed Roller Bit Company*. Stipulation of dismissal (notice July 2, 1964).

2,956,293. (See 2,913,031.)

2,965,867, J. H. Greig, PHOTOSENSITIVE ELEMENT, filed Sept. 27, 1962, D.C., S.D.N.Y., Doc. 62/3281, *Clairex Corp.* v. *Photocell Corp. et al.* Stipulation and order of discontinuance with prejudice as to defendants Int'l Electronics Corp., Benjamin B. Grossman, Eugene J. Porto, Irwin Friedman, Mortimer Grossman, Hyman Grossman, Morris Silver, Irwin M. Cymrot, Martin C. Barell, Herbert Le Vine, and Int'l Electronics Sales Corp.; consent judgment as to defendant Photocell Corp.; said defendant enjoined May 3, 1964. Action dismissed July 22, 1964.

2,974,721. (See 2,817,392.)

2,982,322, J. K. Seltz, CARD-CARRYING CASE OR POCKET SECRETARY, filed May 2, 1962, D.C., S.D.N.Y., Doc. 62/1682, *Bri-Son Company, Inc.* v. *Ambassador Leather Goods et al.* Consent judgment; defendants enjoined July 29, 1964.

2,984,725, Hubbell and Carlson, WEATHERPROOF PLATE FOR PRESSURE-OPERATED SWITCH, filed July 27, 1964, D.C., W.D. Pa. (Pittsburgh), Doc. 64–768, *Harvey Hubbell, Incorporated* v. *Joy Manufacturing Company*.

2,990,189. (See 2,954,994.)

2,992,598, A. Einfalt, TOY SWITCHBACK OR SCENIC RAILWAYS, filed June 19, 1963, D.C., S.D.N.Y., Doc. 63/1823, *Gebruder Einfalt* v. *Gragstan Corp.* Consent judgment; defendant enjoined July 1, 1964.

2,993,631, A. Pasin, FIBERBOARD CONTAINER, filed July 17, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–497, *Radio Steel & Mfg. Co.* v. *Modern Tool and Die Co.*

2,995,087, Edney and McGee, BLASTING PLUG, filed Apr. 17, 1962, D.C., S.D. Ind. (Evansville), Doc. EV62–C–36, *Robert E. Edney* v. *Austin Powder Company*. Claim 1 of U.S. Patent 2,995,087 held valid; injunction issued restraining defendant from infringement of said patent; count II of plaintiff's complaint dismissed with prejudice; defendant's counterclaim dismissed with prejudice July 24, 1964.

2,996,723, T. D. Ainslie, EXTENSIBLE COLLAR NECKBAND, **filed** July 6, 1964, D.C., S.D.N.Y., Doc. 64–2101, *Phillips Van Heusen Corp.* v. *Steve Matson Products, Inc.*

3,008,544, S. Krizman, LUBRICATING SYSTEM, **filed** Feb. 13, 1963, D.C., E.D. Mich. (Detroit), Doc. 23529, *Krizman Manufacturing Co., Inc.* v. *Perfection Automotive Products Corp.* Stipulation and order dismissing complaint and counterclaim July 13, 1964.

3,010,179, W. Thal, METHOD OF TREATING PILE FABRICS, **filed** Apr. 5, 1962, D.C., S.D.N.Y., Doc. 62/1385, *Alamac Knitting Mills, Inc.* v. *New York Blending Corp. et al.* Stipulation of dismissal with prejudice July 30, 1964.

3,015,176, D. A. Freeman, SMOOTH SURFACE PRESS PLATE, **filed** July 15, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–956 WB, *Bishop Freeman Co.* v. *Jacobson Products Co. et al.* Cause dismissed Nov. 2, 1964.

3,033,245, Schreter and Turpin, TAR PUMP SYSTEM, **filed** July 1, 1964, D.C., W.D. Tex. (San Antonio), Doc. 3438, *Aeroil Products Company, Inc.* v. *Blackwell Burner Company.*

3,036,945, D. W. Souza, EMBOSSABLE PLASTIC ASSEMBLY; **3,133,495**, H. T. De Man, APPARATUS AND METHOD FOR CUTTING TAPES AND REMOVING THE LINER THEREFROM, **filed** July 30, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42659, *Dymo Industries, Inc.* v. *Garchime Corp.*

3,043,361, C. L. Kelso, PIPE WALL SUPPORTING MECHANISM; **3,109,477**, Avera and Cunningham, MANDREL FOR PIPE BENDING MACHINES, **filed** July 7, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–320, *Crose-United Corporation* v. *Crutcher-Rolfs-Cummings, Inc.*

3,044,798, T. C. Gerner, REPLACEMENT UNIT FOR IDLER ARM BRACKET, **filed** July 13, 1964, D.C., W.D. Okla. (Oklahoma City), Doc. 64–306, *Theodore C. Gerner* v. *Warehouse Service, Inc. et al.*

3,060,092, A. Nobile, 17α-ALKYL-1-DEHYDRO-TESTOSTERONE, **filed** Oct. 4, 1963, D.C.N.J. (Newark), Doc. 812–63, *Schering Corporation* v. *Ciba Corporation.* Stipulation of dismissal July 22, 1964.

3,070,355, J. R. Wyatt, FAIRLEAD FOR USE IN GUIDING CABLE, **filed** July 7, 1964, D.C., W.D. Wash. (Seattle), Doc. 6217, *Eugene Wyatt* v. *Todd Shipyards Corporation.*

3,073,192. (See 2,954,994.)

3,074,100, A. Duerksen, PRESS FOR PORTABLE TIRE RETREADING MOLDS, **filed** Nov. 19, 1963, D.C., N.D. Calif. (San Francisco), Doc. 41928, *Super Mold Corporation of California* v. *Bacon American Corporation.* Consent judgment for plaintiff; patent held valid July 14, 1964.

3,083,836, R. T. Bussemer, FREEZER RACK, **filed** July 1, 1963, D.C., S.D.N.Y., Doc. 63/1949, *Richard T. Bussemer et al.* v. *Artwire Creations, Inc.* Judgment for defendant; claim 3 of Patent 3,083,836 held invalid; plaintiffs cross-motion for summary judgment denied; complaint dismissed July 1, 1964.

3,086,206, H. Greenberg, END FIRE PLANAR DIPOLE ARRAY WITH LINE TRANSPOSITION BETWEEN DIPOLES AND IMPEDANCE INCREASE TOWARDS FEED, **filed** July 24, 1964, D.C., S.D.N.Y., Doc. 64/2297, *Channel Master Corporation* v. *RMS Electronics, Inc.*

3,109,477. (See 3,043,361.)

3,109,537, D. C. Larkin, REFUSE CONTAINER FOR MOTOR VEHICLE BODY, **filed** July 23, 1964, D.C., E.D. Mich. (Detroit), Doc. 25588, *Daniel C. Larkin et al.* v. *Frederick A. Rosenthal.*

3,111,342, M. O. De Vos, CHILD'S CAR SEAT, **filed** July 2, 1964, D.C., S.D.N.Y., Doc. 64/2059, *Grow-Rite Corporation* v. *S. & C. Supply Co., Inc.*

3,113,902, W. O. Dismuke, APPARATUS FOR VULCANIZING ORNAMENTAL TRIM ON TIRE WALLS, **filed** July 22, 1964, D.C., W.D.N.C. (Charlotte), Doc. 1919, *P & D Corporation et al.* v. *Retreading Equipment Company.*

3,114,812, R. W. Levinn, DUAL ACTION THERMOSTAT HAVING PLURAL ADJUSTMENT MEANS, **filed** July 1, 1964, D.C., N.D. Ohio (Toledo), Doc. C64–102, *American Thermostat Corporation* v. *Norwalk Thermostat Company.*

3,118,531, A. Rutkovsky et al., CONVEYOR FOR SELECTIVE DISPATCHING OF ARTICLES, **filed** July 2, 1964, D.C. Dist. of Columbia, Doc. 1582–64, *Railex Corporation* v. *Dick Frahm Associates.* Cause dismissed Aug. 4, 1964. **Same, filed** Aug. 10, 1964, D.C. Dist. of Columbia, Doc. 1879–64, *Railex Corporation* v. *Richard O. Frahm.* **Same, filed** Aug. 20, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–847, *Railex Corporation* v. *Delta Cleaners Equipment Corp. et al.* **Same, filed** Oct. 5, 1964, D.C., N.D. Ga. (Atlanta), Doc. 9145, *Railex Corporation* v. *The Speed Check Co., Inc.*

3,119,691, V. D. Ludington et al., NOVEL FARINACEOUS ANIMAL FOOD, **filed** July 10, 1964, D.C., W.D. Mich. (Grand Rapids), Doc. 4825, *General Foods Corporation* v. *Ralston Purina Company.* **Same, filed** Oct. 28, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1829, *General Foods Corporation* v. *Perk Foods Co.*

3,120,848, G. R. Seperack, BRASSIERE, **filed** May 18, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–507, *The Warner Bros. Co.* v. *Cherie Brassiere Co., Inc.* **Same, filed** May 18, 1964, D.C., S.D.N.Y., Doc. 64/1533, *The Warner Brothers Co.* v. *The Biflex Corp. et al.* Stipulation and order of dismissal without prejudice Oct. 2, 1964. **Same, filed** June 5, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–611, *The Warner Brothers Co.* v. *Bestform Foundations, Inc.*

3,121,006, Middleton and Reynolds, PHOTO-ACTIVE MEMBER FOR XEROGRAPHY, **filed** Feb. 11, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c259, *Xerox Corporation* v. *SCM Corporation.* Stipulation dismissing cause without prejudice Apr. 16, 1964.

3,122,679, E. J. Kislan, TRANSISTOR MOUNTING PAD, **filed** July 23, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1028, *The Milton Ross Metals Co.* v. *Martin Stern et al.*

3,122,684, R. I. Genin, MAGNETIZED GAME BOARD CONFIGURATIONS, **filed** Feb. 26, 1964, D.C., N.D. Ill (Chicago), Doc. 64c335, *Child Guidance Toys, Inc.* v. *Playskool Manufacturing Co.* Final consent judgment in favor of plaintiff; patent held valid and infringed; defendant enjoined June 23, 1964.

3,123,978, F. L. Pruyn, H-BEAM PILE CUTTER AND COMBINATION WITH H-BEAM PILE, **filed** July 13, 1964, D.C., S.D.N.Y., Doc. 64/2161, *Associated Pipe & Fitting Company, Inc. et ano.* v. *Belgian Line, Inc. et ano.*

3,126,375, H. J. Ringold, CYCLE KETALS OF 6–HALO CORTICOIDS, **filed** July 31, 1964, D.C. Del. (Wilmington), Doc. 2893, *Syntex Corporation* v. *Olin Mathieson Chemical Corporation.*

3,129,860, J. A. Foster, CLOSURE CONSTRUCTION FOR SIFTING CONTAINER, **filed** July 30, 1964, D.C.N.J. (Trenton, Doc. 711–64, *J. L. Clark Manufacturing Co.* v. *American Can Company.*

3,133,495. (See 3,036,945.)

3,136,834, A. Lorenz, APPARATUS FOR CONTINUOUSLY DEGASSING MOLTEN METALS BY EVACUATION, **filed** July 8, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 36123, *Pennsalt Chemicals Corp.* v. *Draco Corp.*

3,138,250, F. H. Burgess, REEL CASE, **filed** July 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1140, *Data Packaging Corp.* v. *Amerline Corporation.*

Re. 24,230, F. S. Pearne, PORTABLE LIFT, **filed** Sept. 10, 1957, Ct. Cls. Doc. 433/57, *Regent Jack Mfg. Co., Inc.* v. *The United States.* Commissioner's action in denying the plaintiff's motion to extend the area of discovery is hereby approved Oct. 16, 1964. **Same, filed** Aug. 1, 1962, Ct. Cls., Doc. 259/62, *Regent Jack Mfg. Co., Inc.* v. *The United States.* Decree as above.

Re. 24,338, C. S. Allen, PLASTIC SPOUT FOR LIQUID CONTAINERS, **filed** July 1, 1964, D.C., W.D. Pa. (Erie), Doc. 1110, *West Penn Closure Corporation* v. *Zippo Manufacturing Company.*

Re. 25,412 (of 2,989,718), M. E. Bourns, ELECTRICAL RESISTOR; **Re. 25,510** (of 2,952,825), same, **filed** July 15, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–953–S, *Bourns, Inc. et al.* v. *Techno-Components.*

Re. 25,510. (See Re. 25,412.)

Des. 198,578, H. Goodman, CHIMNEY SHADE FOR ELECTRICAL LAMPS, **filed** Aug. 12, 1963, D.C., S.D.N.Y., Doc. 63/2417, *Bruce Laurie Co., Inc.* v. *Clarolite, Inc. et al.* Stipulation and order of discontinuance July 28, 1964.

REISSUES

DECEMBER 29, 1964

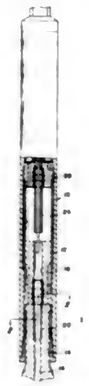
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,705
VALVING ARRANGEMENT FOR ROCK DRILLS

Erwin S. Oelke, Easton, Pa., and Ewald H. Kurt, Phillipsburg, N.J., by Ingersoll-Rand Company, a corporation of New Jersey

Original No. 3,078,827, dated Feb. 26, 1963, Ser. No. 92,023, Feb. 27, 1961. Application for reissue Mar. 5, 1964, Ser. No. 360,788

17 Claims. (Cl. 173—73)



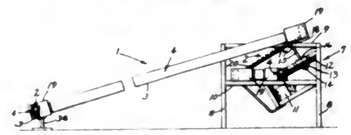
13. A movable cutting implement for a rock drilling device provided with a fluid passage therethrough, said passage having an end portion which is diametrically enlarged relative to the remainder of said passage and forming a first shoulder located in said passage at the junction of said diametrically enlarged end portion and the remainder of said passage, a conduit having one end portion disposed in the diametrically enlarged end portion of said passage and extending exteriorly of said implement to conduct fluid, resilient means positioned between the inner periphery of said passage and the outer periphery of said end portion of said conduit to resiliently transmit motion from said implement to said conduit whenever said implement is moved, said resilient means being a sleeve surrounding said one end portion of said conduit to support said conduit in spaced relationship to said implement and engaging said first shoulder to prevent said sleeve from moving farther into said implement, and said one end portion of said conduit being expanded toward the inner periphery of said passage to prevent withdrawal of the conduit from said passage.

25,706
EGG COLLECTING DEVICE

Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota

Original No. 3,042,184, dated July 3, 1962, Ser. No. 39,612, June 29, 1960. Application for reissue Apr. 9, 1963, Ser. No. 272,823

7 Claims. (Cl. 198—131)



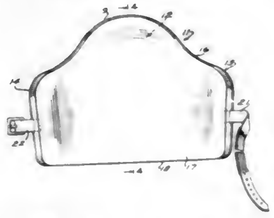
1. Egg collection trays formed from a flexible plastic material for use with an endless flexible egg collection conveyor, said trays each comprising a generally elongated base portion, means associated with said base portion for detachably securing said tray to said conveyor, a cross-sectionally reduced area defined by said base portion of said tray for cushioning the reception of an egg, and a plurality of upstanding [barrier] *finger* elements integrally formed with said base portion so as to selectively cradle an egg received therein.

PATENTS

GRANTED DECEMBER 29, 1964

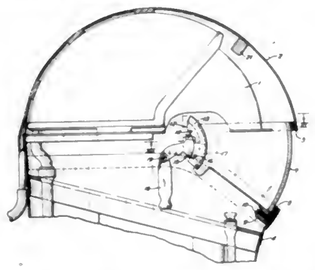
GENERAL AND MECHANICAL

3,162,861
BATTER'S CHEST PROTECTOR
Donald E. Gustafson, 43106 Nielson Court Mission, San Jose District, Fremont, Calif.
Filed June 10, 1963, Ser. No. 286,722
1 Claim. (Cl. 2—2)



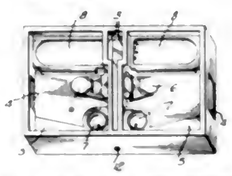
A protector of the character described comprising an outer sheet of shock distributing and form retaining material of generally rigid characteristics having a generally concavo-convex cross-section, said sheet including a central portion adapted to overlie the chest and diaphragm regions of the wearer, said central portion having an arcuate upper edge with a maximum height at the central portion thereof, a pair of side portions formed integrally with and extending rearwardly from opposite sides of said central portion and terminating in rear edge portions of substantial height, each of said side portions having an upper edge merging with the upper edge of said central portion and being of substantially lesser height than said central portion, said side portions adapted to overlie the side rib cage regions of the wearer below the armpits, said portions having a common lower edge adapted to be positioned above the waist of the wearer, a shock absorbing sheet of flexible resilient foam material secured to the inner surface of said outer sheet and substantially coextensive therewith, and strap means secured to said protector for retaining the same in position on the wearer.

3,162,862
PROTECTIVE HEADGEAR VIZOR MECHANISM
John C. Miller, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 27, 1963, Ser. No. 290,963
5 Claims. (Cl. 2—6)



1. In protective headgear, a helmet shell for enclosing the head and having a downwardly extending front portion provided with an open window, a sealing gasket secured to the inner surface of the shell around said window, a horizontally curved transparent vizor in the shell adapted to engage said gasket around the window and having rearwardly extending end portions, track members inside the shell secured thereto at opposite sides of said window and provided with forwardly opening vertical guide slots slidingly receiving said end portions of the vizor to permit upward and forward and backward movement thereof, and manually operable means mounted in the shell behind the lowered vizor for engaging its ends and sliding them forward in said slots to force the visor forward into sealing engagement with said gasket.

3,162,863
PREFABRICATED BATHROOMS AND PREFABRICATED RESTROOMS
Albert L. Wokas, 22245 Thorofare Road, Grosse Ile, Mich.
Filed Sept. 26, 1962, Ser. No. 226,214
6 Claims. (Cl. 4—2)

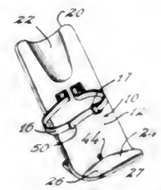


1. A portable prefabricated restroom structure to provide two restrooms and adapted for insertion in a building to form a part thereof comprising a unitary, self-sustaining, rigid floor having sufficient strength to support the structure as a unit situated apart from a building into which it will be installed, a central wall rigidly secured to and across the floor to divide the floor into two areas forming two floors for said two restrooms, said central wall being hollow, restroom fixtures mounted on said wall, plumbing elements for the restroom fixtures including a waste pipe located inside said hollow central wall, all of said plumbing elements being mounted on and supported by said central wall, said floor being separate from and unconnected to said plumbing elements except through said central wall and said waste pipe in its entirety being located above said floor, said floor and central wall providing an inverted T-shaped portable load carrying framework for said two restrooms.

3,162,864
INFANT BATHING SUPPORT
Alfred J. Ouellette, 680 Montcalm Place, St. Paul, Minn.
Filed Jan. 8, 1962, Ser. No. 164,737
8 Claims. (Cl. 4—185)

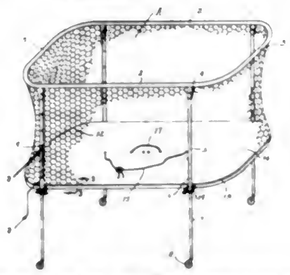
1. An infant bathing support having an elongated body portion adapted to accommodate in a generally reclining position the body of an infant, strap means secured to said body portion intermediate the ends of said body portion, said strap means including individually adjustable loops extending upwardly and downwardly therefrom to adjustably encircle the body of a baby and the forearm of the attendant, said elongated body portion including an aperture therethrough intermediate the ends thereof,

reinforcing means secured to said body and bridging said aperture, said last named means having spaced apertures



therein, said strap means threaded through said spaced apertures.

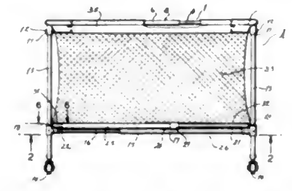
3,162,865
NURSERY UNIT
John Burton Tigrett, Jackson, Tenn., assignor to Tigrett Industries, Inc., Jackson, Tenn., a corporation of Delaware
Filed July 17, 1961, Ser. No. 124,668
2 Claims. (Cl. 5—3)



1. An article of infant furniture comprising a top frame member, a base plate, a flexible netting having a general tubular form suspended from said top frame member, and extending downwardly for receiving the said base plate and presenting same in normal planar relation to the axis of said tubular netting, said netting at its lower and extending inwardly beneath said base plate, drawstrings engaged to the lower end edge of said netting beneath said base plate, said base plate having a pair of spaced openings, said drawstrings being threaded upwardly through said openings in said base plate and being mutually fixedly engaged above said base plate for providing a grip for convenient manipulation for said netting to elevate said base plate by upward pulling on said grip, a bottom frame member in planar parallel relation to said top frame member and disposed below said base plate for support thereof, legs engaged at their upper ends to said top frame member and extending downwardly therefrom, and means for engaging said bottom frame member to said legs.

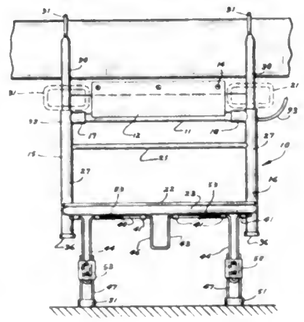
3,162,866
EXPANSIBLE NURSERY UNIT
John Burton Tigrett and James L. Cupples, Jackson, Tenn., assignors to Tigrett Industries, Inc., Jackson, Tenn., a corporation of Tennessee
Filed Aug. 19, 1963, Ser. No. 303,071
6 Claims. (Cl. 5—98)

1. An expansible playpen comprising a top frame member, a bottom frame member, each of said top and bottom frame members comprising a pair of co-operating U-shaped sections adapted for mutual extension and contraction, a flat base plate mounted on one of the U-shaped sections of the bottom frame member, an upper plate disposed overlyingly of, and upon, said base plate said upper plate being free on its sides and inner transverse end and being secured in its outer transverse portion to the other of the U-shaped sections of said bottom frame member whereby upon mutual extension of said frame members,



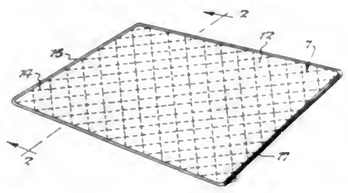
the upper plate will slide relatively over the base plate for providing an extension to said base plate for accommodating the extended condition of the playpen.

3,162,867
AUTOMATIC STEP FOR BEDS
Stuart B. Hoffman, 1641 Scheffer Ave., St. Paul 16, Minn.
Filed Nov. 14, 1962, Ser. No. 237,487
13 Claims. (Cl. 5—317)



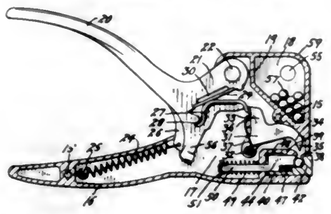
1. A step for a bed having a bed frame, said step comprising:
- a support member mounted on said bed frame,
- a pair of spaced apart side frames pivotally mounted to said support member,
- a step plate attached between said side frames, said side frames and said plate forming a step frame assembly and being movable between a first position wherein said step plate is substantially horizontal and extends outwardly beyond the edges of said bed frame to a second position wherein said step frame assembly is beneath said bed frame,
- first bias means urging said step frame assembly toward said first position,
- first manually releasable latch means for holding said step frame assembly in said second position,
- a tubular guide attached to at least one of said side frames,
- a support handle member slidably mounted within said tubular member, said handle member being movable between an extended working position and a retracted position,
- second bias means urging said support handle member toward said extended working position,
- second manually releasable latch means for holding said handle in said extended position,
- third releasable latch means for holding said step frame assembly in said first position, and
- third actuator means for releasing said third releasable latch means when said handle is moved to said retracted position against action of said second bias means.

3,162,868
BED PILLOW PROTECTOR
Helen A. Cramer, 215 Puritan Road, Tonawanda, N.Y.
Filed Oct. 10, 1962, Ser. No. 229,592
1 Claim. (Cl. 5—339)



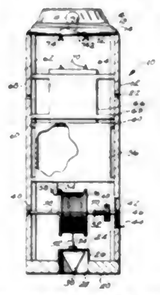
A bed pillow protector for insertion between a pillow and a pillowcase, said protector comprising two composite panels sewn together along the greater portion of their peripheries and unsecured at a peripheral part of sufficient size to form an opening to permit a pillow to be protected to pass into and out of the space between said panels, each panel comprising a layer of padding of unwoven fibers of absorptive material, woven layers of sheet material on opposite faces of said padding, said woven layers being stitched together at their edges and having cross stitching between said edges to hold said padding against shifting between said woven layers, and closure means for closing said opening.

3,162,869
SHOT SPLITTING AND APPLYING TOOL FOR FISHERMEN
Morley V. Friedell, Wheat Ridge, Colo., assignor to Clark-Feather Manufacturing Co., Fort Morgan, Colo., a corporation of Colorado
Filed May 10, 1963, Ser. No. 279,501
5 Claims. (Cl. 7—5.4)



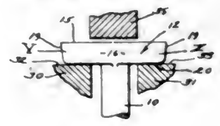
1. A shot splitting and applying tool for fisherman comprising; a hollow body member, a lower handle formed on said body member, an upper handle pivotally mounted in said body member and extending readwardly therefrom and forming with said lower handle a pair of grips, a slide chamber in said body member opening to the front of the latter, a slide box slidable within said slide chamber and projectable through the front opening thereof, an anvil block closing the front of said box, a plunger slidable in said box rearwardly of said anvil block, spring means urging said plunger rearwardly from said anvil block to receive a shot therebetween, second spring means urging said slide box rearwardly in said slide chamber, stop means limiting the forward movement of said slide box, a rocking member pivotally mounted in said body member in the plane of and vertically over said slide chamber, an upper lever arm extending upwardly from said rocking member, a forward lever arm extending forwardly from said rocking member, a knife edge formed on the forward extremity of said forward lever arm positioned over a shot resting in said slide box between said plunger and said anvil block, and means actuated by movement of said upper handle for initially forcing said forward lever arm downwardly to cause said knife edge to split said shot, further movement of said upper handle moving said forward lever arm upwardly away from said shot and forcing said slide box forwardly against said stop means to project said slide box forwardly of said housing, and continued handle movement forcing said plunger forwardly toward said anvil block to compress said shot and close the split therein.

3,162,870
ANCHOR LIGHT
James W. Laird, P.O. Box 963, Kountze, Tex.
Filed Dec. 11, 1963, Ser. No. 329,830
5 Claims. (Cl. 9—8)



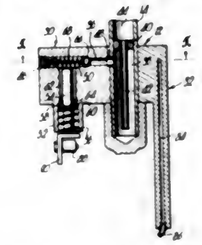
1. An anchor light comprising, in combination, a hollow case, an anchor and reel carried within said case providing means for anchoring said anchor light in water, a hand crank and clutch carried within said case providing outlet means for said anchor and retrieving means therefor, a float carried within said case providing release of said reel and simultaneous raising of a battery to make electrical contact with a lamp carried by said case, means for vertical movement of said float between lower and upper position within said case whereby said reel is released and said battery operates in response to said float movement, a hollow, colored lens secured to the top end wall of said case, said lens receiving said lamp which emits light when in operation by automatic means, and said anchor light is dropped into a large body of water, the lower end wall of said case having an opening receiving an anchor and an anchor cage secured within said case to said end wall over said opening and being provided with a plurality of openings for receiving water into said case, said case being provided with a plurality of spaced apart openings for further receiving water within said case to operate the components automatically.

3,162,871
METHOD OF MAKING A STICK OF T-HEADED FINISH NAILS
Richard E. Powers, Monterey Park, Calif., assignor to Powers Wire Products Company, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 15, 1960, Ser. No. 49,551
3 Claims. (Cl. 10—54)



1. The method of making a stick comprising a plurality of finish-nails with slightly enlarged heads and including, initially forming a nail body having an elongate cylindrical shank pointed at its terminal end and with a straight sided transversely disposed head of substantial extent at its other end and with flat parallel sides substantially tangent to the shank, arranging the nail bodies with the sides of the extended heads engaged one with the other, securing said bodies together to form a straight stick, and then removing both opposite end portions of each head by severance in planes offset beyond the diameter of the shank in order to reduce the heads in size.

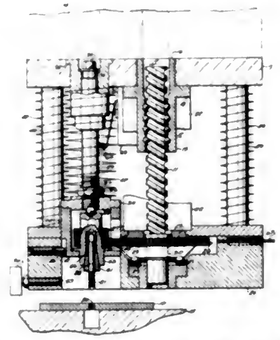
3,162,872
AUTOMATIC OILER FOR MANUALLY ACTUATED PIPE THREADING TOOL
Roger A. Adelman, 6623 Wabash, Kansas City, Mo.
Filed Jan. 2, 1962, Ser. No. 163,578
6 Claims. (Cl. 10—126)



1. An oiler attachment for manully operated pipe threading machines having a cutting head and a chuck, said attachment comprising: a hollow handle defining a chamber; a wall dividing said chamber into a first oil supply reservoir at one end of the handle and a second oil supply reservoir at the other end of the handle, there being a tube placing said reservoirs in communication; said tube being positioned in the secondary reservoir in such a manner as to prevent the passage from the secondary reservoir into the first reservoir of a major portion of the oil previously delivered into said secondary reservoir; an oiler body secured to said handle, said body having passagaways formed therein and in communication with said secondary oil reservoir, there being an aperture formed in said body and in communication with said passageway; a piston disposed within said aperture and extending outwardly from said body; a rider roller carried by the outwardly extending end of said piston; a cam carried by said cutting head, said cam being in engagement with said rider roller whereby upon operation of the machine the piston is actuated to pump oil from said secondary reservoir to its point of delivery.

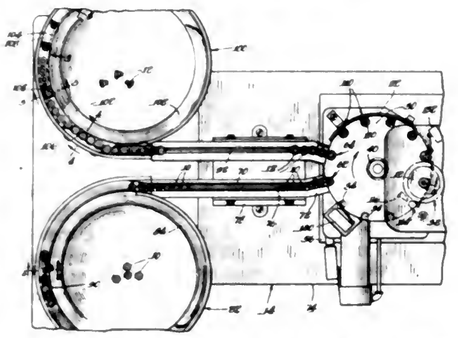
3,162,873
PRESS OPERATED TAPPING APPARATUS
Joachim H. Ohme, East Orange, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 25, 1962, Ser. No. 190,026
4 Claims. (Cl. 10—129)

1. An apparatus for forming threads in parts comprising:
- a reciprocatory upper die shoe having a holder mounted thereon,
- a lower die shoe for supporting a part to be threaded,
- a ball screw assembly mounted on the holder having an aperture extending therethrough,
- a tapping head,
- a helically grooved cylindrical element having an upper portion riding in the aperture of the ball screw assembly, said element being rotatably driven by the assembly upon contact of the tapping head with the part,
- a first gear mounted to the lower portion of the helically grooved element,
- bearing means in the tapping head having the geared end of the grooved element journaled therein,
- a guide rod slidably mounted in the holder at one end,
- a housing slidably mounted within the tapping head and having the other end of the guide rod connected thereto,
- a rotatable member journaled within said housing and having a threaded internal aperture,
- a second gear mounted on said rotatable member and adapted to be driven by the first gear, said second gear



having a wider tooth surface than the first gear to maintain engagement during reciprocatory movement of the housing,
- a tap for engaging and forming threads in the part, means for mounting the tap within the threaded aperture of the rotatable member, and
- resilient means disposed about the guide rod between the holder and the housing for loading the tap.

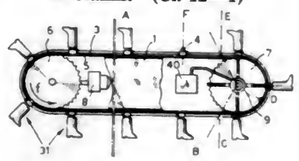
3,162,874
ASSEMBLY MACHINE
Paul Autio, Elgin, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Nov. 28, 1960, Ser. No. 72,207
2 Claims. (Cl. 10—155)



1. In a machine for assembling and fixing together nuts and washer elements, the combination of a single rotary dial defining a plurality of circumferentially spaced receivers having radially outward extremities which open radially outward through the periphery of the dial, nut feeding means extending to a nut loading station into which successive ones of said receivers are moved by rotation of said dial, said nut feeding means including means for physically urging and guiding nuts to move substantially horizontally toward the periphery of said dial at a nut loading level with respect to said dial to move substantially horizontally into successive receivers in said nut loading station through the radially open

outer extremities of the receivers, washer element feeding means extending to a washer element loading station into which the receivers are moved in succession by rotation of said dial, said washer element feeding means including means for physically urging and guiding washer elements to move substantially horizontally toward the periphery of said dial at a washer element loading level with respect to said dial which is located above said nut loading level with respect to said dial whereby the washer elements are moved substantially horizontally through the radially open outer extremities of successive receivers into an overlying concentric relation to nuts disposed in receivers in said washer element loading station, swaging means positioned at a fastening station into which said receivers are moved from said washer element loading station successively by rotation of said dial, arcuate retaining means closely embracing the periphery of said dial between said washer element loading station and said fastening station to prevent dislodgment of stacked nuts and washer elements from receivers moving to said fastening station, sensing switch means positioned between said washer element loading station and said fastening station to sense the absence of properly stacked nuts and washer elements in receivers moving to said fastening station, said swaging means operating under the control of said sensing switch and in synchronization with said dial to fasten together stacked nuts and washer elements in successive receivers moved into said fastening station, means defining between said fastening station and said nut loading station an unloading station in which said receivers are unloaded, and a control switch positioned to sense and respond to the presence of nuts or washer elements in receivers moving from said unloading station to said nut loading station.

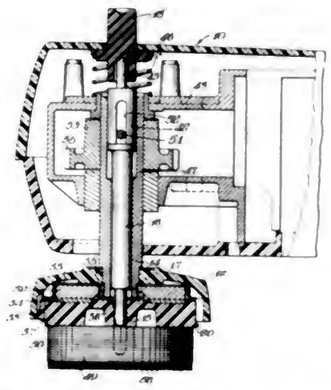
3,162,875
APPARATUS FOR MANUFACTURING RUBBER BOOTS
Armando Silombra, 28 Via Verolengo, Turin, Italy
Original application July 10, 1961, Ser. No. 122,779. Divided and this application May 24, 1963, Ser. No. 283,051
Claims priority, application Italy, Aug. 12, 1960, 663,112
2 Claims. (Cl. 12—1)



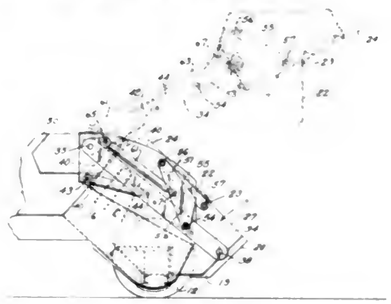
1. In an apparatus for manufacturing rubber boots, a plurality of hollow perforated lasts, an endless conveyor having a reversing loop, a plurality of uniformly spaced last supporting jacks fastened on said conveyor, an air passageway in each of said jacks, means for detachably connecting the last cavities to said passageways, a suction pump and distributing means for detachably connecting said pump to said passageway on at least one of said jacks.

3,162,876
COUPLING ARRANGEMENT FOR POLISHING MACHINE
Louis V. Aronson II, Far Hills, N.J., Ernest S. Erickson, Wilmington, Del., and Seymour Rappoport, Rumson, N.J., assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Dec. 14, 1962, Ser. No. 244,784
8 Claims. (Cl. 15—28)

1. A coupling means for conveniently attaching and detaching interchangeable implements upon a rotating shaft of a polishing machine comprising a concentric stem mounted within said shaft, reciprocating means mounting said stem to move its lower end in and out of the bottom of said shaft, a flange mounted upon the lower end of said shaft, cooperating magnetic elements upon the bottom of said flange and the tops of said implements for maintaining said implements in contact with said flange, mutually engageable projections upon the peripheries of said implements and said flange for transmitting the rotation of said stem to said implement when each of them is magnetically held in contact with said flange, a central axially disposed hole in the tops of said implements, and said stem being extendable below said flange for insertion into said holes for axially aligning said cooperating magnetic elements to engage each other and for applying an axial force against said implements for disengaging them when said stem is forcefully extended outwardly.

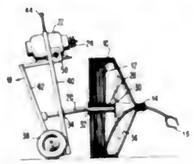


3,162,877
STREET SWEEPER DIRT BOX ASSEMBLY
Robert F. Schmidt, Elgin, Henry A. Leidecker, Wheaton, and Donald G. Kirk, Elgin, Ill., assignors to Elgin Sweeper Company, Elgin, Ill., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,699
20 Claims. (Cl. 15—83)



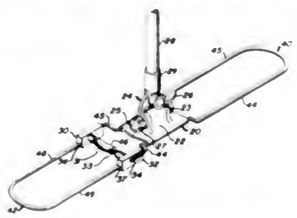
6. A street sweeper comprising,
a body having a body opening for a dirt hopper,
a dirt hopper provided with a sweepings inlet mounted in said body opening,
a scoop provided on said dirt hopper adjacent said sweepings inlet,
means joining said dirt hopper with said body for elevating said dirt hopper,
means for directing sweepings into said sweepings inlet, and
means for moving said dirt hopper in an arc to position said scoop at ground level enabling the dirt hopper to be used as a front end loader.

3,162,878
PIPE CLEANING MACHINE
Michael Agostino, 711 Magenta St., Bronx, N.Y.
Filed Oct. 10, 1963, Ser. No. 315,153
6 Claims. (Cl. 15—104.3)



1. A pipe cleaning machine comprising a rotatable drum including a hollow hub member extending into one axial end of said drum along the axis thereof, a carriage having an outwardly extending supporting shaft arranged for insertion into said hub member to provide a single bearing for said drum, said drum being arranged for the storage of a resilient cleaning cable in coils therein, a motor mounted on said carriage in alignment with the outer surface of said drum when said drum is supported upon said shaft, a pulley mounted on the shaft of said motor and arranged to receive a belt extending around said drum for the rotation thereof, the structure of said carriage exclusive of said motor and said shaft being limited to the space beyond the axial end of said drum at said hub.

3,162,879
MOP WING CONSTRUCTION
Elbert D. Smyth, R.F.D. 1, Hebron, Ohio
Filed Aug. 7, 1963, Ser. No. 300,529
8 Claims. (Cl. 15—147)



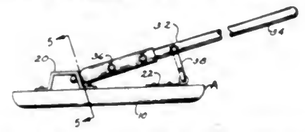
1. A holder for a pocketed mop comprising a frame means adapted to be attached to a handle; including an elongated hinging means provided with longitudinal slots in the outer surfaces thereof and transverse holes communicating with said slots; a first wing having legs removeably mounted in said longitudinal slots of said hinging means, said legs having end portions inturned through said transverse holes of said hinging means, said hinging means being slideable and rotatable upon said inturned end portions; and a second resilient, inward yielding wing having legs connected to said hinging means, the application of lateral, inward pressure on said legs of said second wing serving to remove said legs of said first wing from said longitudinal slots allowing said second wing to be rotated about the inturned end portions of said first wing.

3,162,880
FEATHER DUSTER
Louis Francis, 650 NE. 64th St., Miami 38, Fla.
Filed Sept. 25, 1963, Ser. No. 311,484
1 Claim. (Cl. 15—234)



In a feather duster the combination comprising,
(1) an elongated handle member,
(2) a cluster of feathers extending away from near one end of the handle member,
(3) said cluster including a first center circle of relatively soft feathers, such as ostrich feathers,
(4) a second closely adjacent surrounding circle of relatively stiff feathers, such as turkey feathers,
(5) a third closely adjacent outer circle of relatively soft feathers of the type first recited,
(6) all of said feathers being of substantially the same length,
(7) a flared shape ferrule clampingly surrounding the inner ends of the feathers,
(8) and means securing the ferrule to near said one end of said handle,
(9) whereby the feather ends are held therein.

3,162,881
ADJUSTABLE BULL FLOAT
Walter G. Negwer, 49 Airport Road, Ferguson, Mo.
Filed Aug. 19, 1963, Ser. No. 302,914
5 Claims. (Cl. 15—235.8)

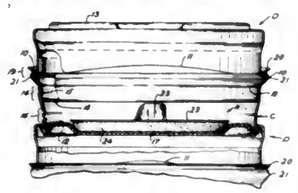


1. A bull float comprising a float member, first and second brackets secured to said float member, a handle pivotally and rotationally secured to said first bracket, and an arcuate control member secured to said handle and movably secured to said second bracket, said control member being rotatable with the handle and contoured to coact with the second bracket for selectively urging said handle toward and away from said second bracket as said handle is rotated with respect to said first bracket.

3,162,882
MERCHANDISING PACKAGE
Clyde M. Womer, Suffern, N.Y., assignor to Knomark, Inc., Brooklyn, N.Y., a corporation of New York
Filed Aug. 19, 1963, Ser. No. 302,779
4 Claims. (Cl. 15—258)

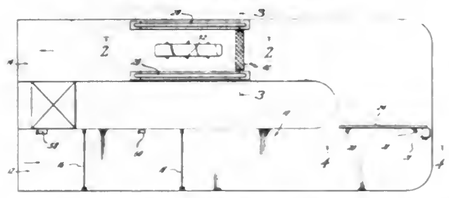
3. A merchandising package for shoe polish, or the like, comprising a circular box for receiving a supply of consumable substance, said box having a tiltable lid thereon which is opened by localized manual squeezing pressure applied at a portion of its edge, said box having a bottom wall and a side wall provided with a peripheral bead which is engaged by bottom edge portions of the lid, a dauber for use in applying the box contents, and a circular shell of transparent readily frangible acetate having a wall thickness of substantially .075" and

including a bottom wall spaced from the bottom wall of the box, said dauber being disposed between said bottom walls, and a lateral wall arranged with its upper edge portion embracing said bead on the box, whereby



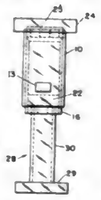
when lid opening pressure is applied while the shell is in operative dauber enclosing position on the box, portions of the shell will be impaired and so reveal tampering.

3,162,883
UNATTENDED AUTOMOBILE WASHING AND CLEANING APPARATUS
Louis A. Culver, 1119 W. 26th St., Houston, Tex.
Filed Oct. 1, 1962, Ser. No. 227,443
1 Claim. (Cl. 15—302)



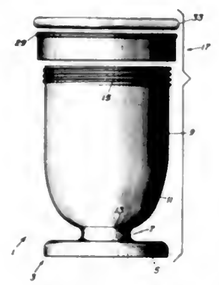
In an automobile cleaning station a driveway along which an automobile may be driven, a first gate for opening and closing one end of the driveway, a second gate for opening and closing the driveway at a location spaced longitudinally from the first gate, a main electrical circuit, electrically operable cleaning equipment located at separate locations along the driveway and connected into said main circuit, electrical means for opening and closing each gate, an opening and closing circuit for each electrical means connected into said main circuit, means for closing each of said opening and closing circuits, means for closing the main circuit upon closing of the opening circuit of said first gate, means for opening the main circuit when the main circuit has been closed for a predetermined time and means for maintaining the opening circuit of said second gate in an open condition when said first gate is out of closed position.

3,162,884
UNIVERSAL BUTTER DISPENSER
Ronald Bordwine, 1207 17th St., Rock Island, Ill., and Richard Wojcinski, 624 10th St., Moline, Ill.
Filed Sept. 9, 1963, Ser. No. 307,632
19 Claims. (Cl. 15—514)



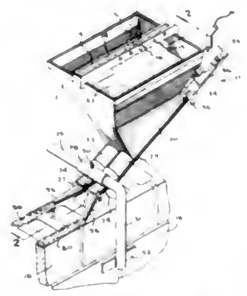
1. A food dispenser comprising an inner casing forming an elongated chamber having a substantially rectangular cross-section throughout its length open at both ends, an outer casing also forming an elongated chamber open at both ends, having a substantially rectangular cross-section throughout its length, said inner casing telescoping within said outer casing, and a plunger for said inner casing chamber.

3,162,885
APPLICATOR
Troy B. Tanner, 607 Mobile St., Mobile, Ala.
Filed Mar. 21, 1963, Ser. No. 266,839
3 Claims. (Cl. 15—541)



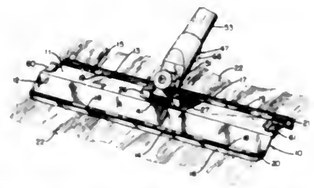
1. A generally cylindrical applicator for applying viscous substances to the hair, including a substance containing body open at one end and having a dispensing head removably connected to said body and extending over the open end, the open end of said body being of substantially the same diameter as the diameter of said substance containing body and comprising both a filling and dispensing end for the substance containing body, a hollow squeezable portion at the other end of said body, and means closing the other end of said body, said means including a neck fixed at one end to said squeezable portion and having a base on the other end.

3,162,886
MORTAR APPLICATOR
James Roy Wise, Bowmansville, Pa.
Filed Apr. 26, 1963, Ser. No. 275,850
5 Claims. (Cl. 15—547)



1. An apparatus for simultaneously depositing layers of mortar on opposite top marginal portions of cement blocks of a wall structure comprising a hopper adapted to be supported above and moved along a course of cement blocks on said wall structure, said hopper being provided with a pair of outlet nozzles spaced to deposit material from the hopper on opposite marginal portions of the cement blocks, means to adjust the spacing between the outlet nozzles in accordance with the desired spacing of the layers of material to be deposited from the hopper, and respective feed augers in the outlet nozzles.

3,162,887
FLOOR CLEANING DEVICE, MOP AND MOP HOLDER
Zolly Carleton Van Schwartz, Denver, Colo., assignor to Majestic Wax Company, Denver, Colo., a corporation of Colorado
Filed Sept. 16, 1963, Ser. No. 308,948
3 Claims. (Cl. 15—561)



3. A floor mop comprising an elongate body member having a top portion and generally diverging downwardly extending side portions producing a generally trapezoid cross-sectional configuration, elongate horizontal bottom portions forming extensions of said side portions of the body member provided with spaced holes, vertical flange portions formed around said bottom portions forming enclosures therearound for the introduction of liquid compositions for flow through said spaced holes, an elongate holding member having a top portion and generally diverging downwardly extending side portions producing a generally trapezoid cross-sectional configuration generally conforming with the corresponding configuration of the body member, a mop fabric element disposed beneath the body member and extending outwardly of said body and holding member, a resilient hook means fixed to one end of the holding member for engagement with one end of the body member, a resilient clamp means fixed to the other end of the holding member for engagement with the other end of the body member, dimple means formed on the top portion of the holding member for gripping and clamping the mop fabric element under pressure of the resilient hook and clamp means between the body and holding members, trunnion means mounted on the top portion of the body member, axle means mounted in bearing elements of the trunnion means for rotation therein in a vertical plane, bearing hole means connected with the axle means, journal means mounted in the bearing hole means, and mop handle socket means connected to the journal means for rotation both in a vertical plane and in radial planes passing through the axis of the axle means.

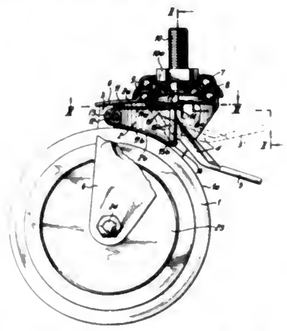
3,162,888
LOCK TYPE CASTER
Günter Möbus, Remscheid, Germany, assignor to Firm Tente-Rollen Gesellschaft mit beschränkter Haftung & Companie, Tente, Rhineland, Germany, a company of Germany
Filed June 14, 1962, Ser. No. 202,443
Claims priority, application Germany, Sept. 28, 1961, T 20,850
8 Claims. (Cl. 16—35)

1. In a caster comprising a wheel, a fork on which the wheel is rotatably mounted, said fork and a peripheral portion of the wheel disposed therein defining a cavity, a mounting connector for mounting the caster on a device to be outfitted therewith, said fork being pivotally mounted on the mounting connector, the improvement which comprises a locking device for locking the wheel with respect to rotation in the fork and with respect to pivot movement on the mounting connector, said locking device comprising:

(*a*) a resiliently expansible wedge-shaped pawl including a lower leaf spring arm and an upper leaf spring arm,

(*b*) said pawl being mounted in said cavity at its apex with its lower leaf spring end disposed adjacent the wheel and its upper leaf spring arm disposed adjacent said mounting connector,

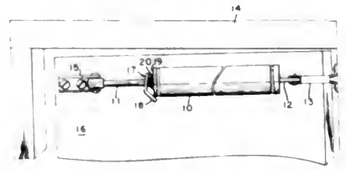
(*c*) a toggle for moving the leaf spring arms between



an unlocked position in which the leaf spring arms are retracted and a locked position in which said arms are forced apart with the lower leaf spring arm pressed against the wheel locking it as aforesaid,

(*d*) a pivot lock for locking against said pivot movement, including a first lock member mounted on said mounting connector and a second locking member mounted on said upper leaf spring arm for locking engagement with the first pivot lock member upon movement of the toggle to said locked position thereof.

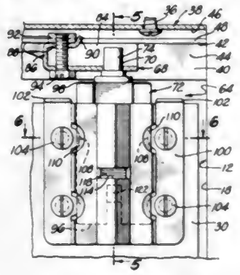
3,162,889
DOOR CLOSER CLIP
Robert J. Runnels, Grand Rapids, Mich., assignor to Dexter Industries, Inc., Grand Rapids, Mich.
Filed Apr. 5, 1963, Ser. No. 270,911
3 Claims. (Cl. 16—66)



1. In combination with a door closer having a cylinder member and a piston rod mounted for reciprocation through an end of said cylinder member, biasing means operative to retract said piston rod within said cylinder member, and a holding clip slidably mounted on said piston rod and engageable with said cylinder member eccentrically to induce rotation of said clip with respect to said rod to jam said clip at a selected position to prevent retraction of said piston rod,

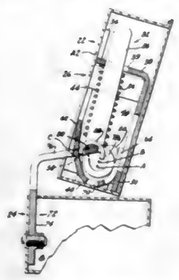
a releasing device comprising an axially compressible washer surrounding said shaft and interposed between said clip and the end of said cylinder member for transmission of axial forces from the end of said cylinder member to said clip at a central portion thereof, said spring washer being compressible to the point of the engagement of said clip with said cylinder member without equalling or exceeding the effect of said biasing means.

3,162,890
SURFACE MOUNTED FOLDING DOOR HARDWARE
Robert Brydolf, Pasadena, and Council A. Tucker, Glendale, Calif., assignors to Acme Appliance Manufacturing Company, Monrovia, Calif., a corporation of California
Filed Jan. 23, 1961, Ser. No. 84,092
8 Claims. (Cl. 16—129)



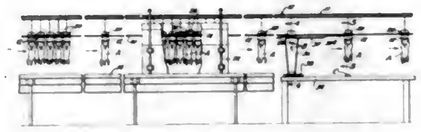
1. In a hardware assembly to be mounted on a rear surface of a door of a folding door assembly, the combination of: a mounting plate having a front side seatable against said rear surface of said door, said front side of said mounting plate having a vertical, forwardly facing, first channel therein which extends substantially the entire distance between the upper and lower ends thereof, said first channel having a rear wall provided therein with a vertical, forwardly facing, second channel which is vertically substantially coextensive with said first channel, said second channel having at least one wall; a pivot member disposed in and movable vertically in said first channel, said pivot member having a vertical pivot element thereon at one end thereof; and vertically extensible and contractible positioning means in said second channel rearwardly of said pivot member and engaging said mounting plate and said pivot member for varying the position of said pivot member vertically relative to said mounting plate, said positioning means having a lower end seated against a portion of said wall of said second channel and having an upper end seated against an element on said pivot member in alignment with said second channel.

3,162,891
HINGES
Carl P. Pepper, Lima, Peru, assignor to Leonard Oboler, Lima, Peru
Filed May 17, 1962, Ser. No. 195,452
8 Claims. (Cl. 16—190)



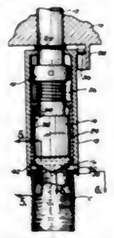
3. A hinge including a hinge body having a semi-cylindrical bearing surface socket and having an apertured endwall opposite said socket, the longitudinal axis of said socket bearing surface defining a first pivotal axis of said hinge, a hinge bracket including a pair of spaced arms, a bar member spanning said arms adjacent one end thereof, said arm ends each having a bearing surface configuration complementary to said socket bearing surface, said socket and said bracket having engageable portions providing a second pivotal axis for said hinge whereby said hinge body is movable relative to said hinge bracket about said first pivotal axis and said second pivotal axis in sequence.

3,162,892
FOWL PROCESSING APPARATUS
Gaston Meredith Fox, Albany, Ga., assignor, by mesne assignments, to Equity Financial Corporation, a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,908
3 Claims. (Cl. 17—11)



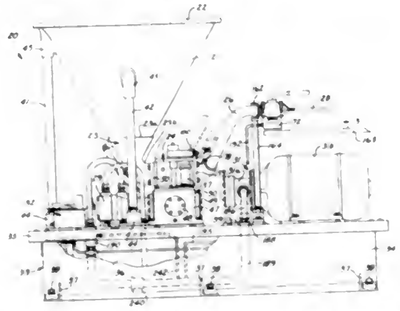
1. Fowl processing apparatus comprising an overhead conveyor movable along a path of travel, a plurality of longitudinally spaced apart fowl supporting shackles dependingly supported from said conveyor, upwardly open receptacles, for receiving severed portions of fowls, said shackles each having a pair of laterally outwardly extending arms having their outer ends connected to a receptacle and providing a horizontal pivot support for the receptacle and having an abutment for arresting the receptacle in an upright position against the shackle, means located along the path of travel of and engageable by the moving receptacles for tilting said receptacles outwardly and downwardly for discharging their contents at a predetermined station along the path of travel, separate means located downstream of said tilting means and positioned along the path of travel and engageable by said tilted receptacles for reversely tilting said receptacles to an upright position, and longitudinally extending guide means positioned to engage said shackles at the side opposite the receptacles for maintaining said receptacles in oriented relation during their travel along a portion of the length of the conveyor.

3,162,893
CASING END CLOSER
Ray T. Townsend, Des Moines, Iowa, assignor to Townsend Engineering Company, Des Moines, Iowa, a corporation of Iowa
Filed July 12, 1963, Ser. No. 294,620
9 Claims. (Cl. 17—34)



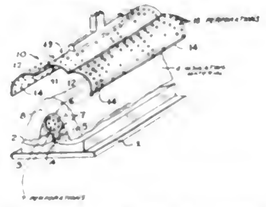
1. In a casing end closer, a non-rotating, sleeve-like casing holder, a rotating twisting member therein, and means on one end of said twisting member to engage the end of a casing and twist the marginal end thereof with said twisting member and relative to the remaining portion of the casing when said remaining portion is held against rotation by said casing closer.

3,162,894
STUFFING APPARATUS FOR VISCOUS MATERIALS
Kenneth A. Hutchins, Fort Wayne, Ind., Bertie S. Harrington, Sr., Chattanooga, Tenn., Floyd M. Adkins, Chicago, Ill., and Ralph W. Illsley, Harbor Bluffs, Largo, Fla., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 110,284, Mar. 6, 1961. This application Feb. 3, 1964, Ser. No. 341,972
19 Claims. (Cl. 17—35)



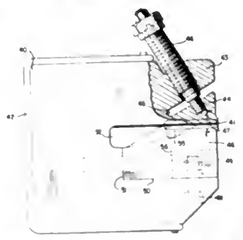
1. In a continuous feeding apparatus for viscous materials such as meat and meat products, the combination which comprises means defining an inlet chamber containing the materials, pump means communicating with the chamber, a plurality of outlet means connected to receive material delivered by said pump means, each outlet means including valve means for opening and closing its outlet means to control the flow of material therefrom, and means controlled by all of said valve means for automatically controlling the operation of the pump means to deliver material at a predetermined flow rate from said chamber when all of said outlet means are open and to automatically reduce the flow rate of material delivered by said pump means to a value less than said predetermined flow rate when only a portion of the outlet means are opened.

3,162,895
PIPE INSULATION
Walter G. Pusch, New Brunswick, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 9, 1958, Ser. No. 779,197
5 Claims. (Cl. 18—5)



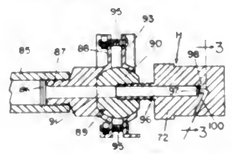
1. Apparatus for forming pipe insulation comprising a pair of guides having arcuate surfaces formed therein, a mandrel, means for supporting said mandrel between said guides and above said guides so that a felt of insulating material may be deposited on said mandrel with the free edges of said felt adjacent said arcuate surfaces, said mandrel forming the male die of a mold, a female die, said female die having a central section and flanking said central section and pivotally secured thereto a pair of side portions having outer edges, each of said arcuate surfaces having a radius of curvature defined by the path described by the outer edges of said pivoted portions, means for moving said female die toward said mandrel to compress a central portion of said felt positioned therebetween, and means for actuating said side portions of said female die so that said side portions will move the remainder of said felt of insulating material around said mandrel, said outer edges of said side portions being substantially in contact with the adjacent portion of said arcuate surfaces of said guides during said movement.

3,162,896
EXTRUSION DIE
William A. Seubert, Trenton, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 9, 1962, Ser. No. 185,924
3 Claims. (Cl. 18—12)



1. An extrusion die having a unitary die body, a feed inlet into said die body thru which plastic material enters, a die orifice from which plastic material is extruded, an upper die lip member, a removable lower die lip member, a distributor channel in communication with said feed inlet into which plastic material enters from said feed inlet and from which plastic material is discharged, the cross-sectional area of said distributor channel progressively decreasing from said feed inlet to the extremities thereof, a passageway in communication with said distributor channel defined between the land of said upper die lip member and the land of said removable lower die lip member, said passageway forming at its tip the die orifice of said extrusion die, said upper die lip member being an integral part of said unitary die body and flexibly adjustable with respect to said removable lower die lip member to regulate the dimensions of said die orifice, said removable lower die lip member extending into and supported along its base by said unitary die body and in conjunction with the interior walls of said unitary die body, defining said distributor channel.

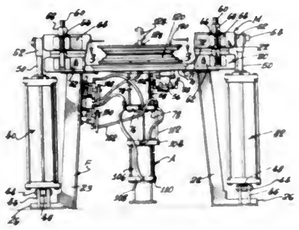
3,162,897
LIQUID FILM EXTRUDING HEAD
Marvin E. Wallis, 1643 Woodland Drive, San Luis Obispo, Calif.
Original application Dec. 14, 1961, Ser. No. 159,355. Divided and this application Dec. 13, 1962, Ser. No. 244,311
6 Claims. (Cl. 18—12)



1. A head for extruding a high viscosity thermoplastic resinous material introduced thereinto under pressure into a film, comprising a body having a cross-sectional shape symmetrical about a plane of symmetry and having a bore with an axis lying in said plane and extending at one end to an opening for receiving said material, said

body having a slot disposed normal to said plane and extending through the body on both sides thereof to form a discharge orifice, the slot having walls making angles substantially less than 90° with the axis of the bore, the distance through the slot from the bore to the orifice being greater at said plane of symmetry and decreasing on each side thereof as the distance from said plane increases.

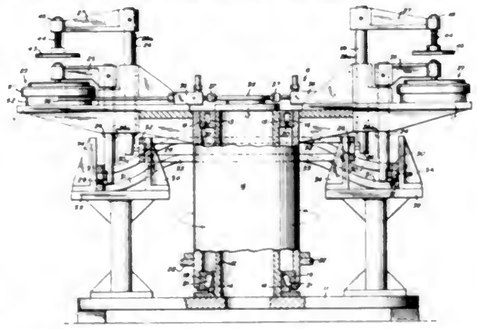
3,162,898
APPARATUS FOR USE IN RETREADING TIRES
Louis T. Fike, Los Angeles, Calif., assignor, by mesne assignments, to Super Mold Corporation of California, Lodi, Calif., a corporation of California
Filed Oct. 29, 1959, Ser. No. 849,550
12 Claims. (Cl. 18—18)



1. Tire casing retreading apparatus, comprising:
a frame;
a full capping type mold on said frame, said mold being formed with a cavity that receives a tire to be retreaded over its outer periphery and outer side walls;
a lower bead wheel coaxial with said cavity and engageable with the lower side of said tire casing;
first support means secured to said lower bead wheel;
first power-operated means on said frame secured to said first support means and operable to urge said lower bead wheel vertically in both directions relative to said mold cavity under power;
an upper bead wheel coaxial with said cavity and engageable with the upper side of said tire casing with said bead wheels when disposed in close vertical proximity effecting the reduction in diameter of said tire casing to less than the diameter of said mold cavity;
second support means;
readily detachable connection means between said upper bead wheel and said second support means;
and second power-operated means carried by said frame secured to said second support means and operable to urge said upper bead wheel vertically in both directions relative to said mold cavity under power either concurrently with or independently of said lower bead wheel.

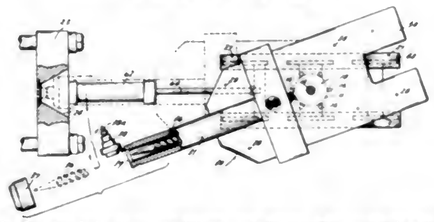
3,162,899
SYSTEM FOR THE MANUFACTURE OF DIAPHRAGMS
Charles Vernon Watson, Buena Vista, Va., assignor to Reeves Brothers, Inc., New York, N.Y., a corporation of New York
Filed Apr. 6, 1961, Ser. No. 101,172
7 Claims. (Cl. 18—19)

1. A system for the precision molding of diaphragms from a sheet of curable, yieldable, impermeable diaphragm membrane material, comprising a turret rotatable on a vertical axis, means for rotating said turret, a plurality of suction molds peripherally mounted on said turret, each suction mold having an upward mold face defining the shape of said diaphragm, said mold face being adapted to receive said sheet superimposed thereon, and said mold having conduit means for transmitting downward suction to various points on said face; a plurality of releasable clamping means, each of said suction molds being associated with one of said clamping means, each of said clamping means being positioned above its associated suction mold including means for moving said clamping means to a lowered position wherein it cooperates with portions of the face of its associated suction mold to releasably seal said sheet over said face at a predetermined station, said clamping means having a clamping surface for contacting said sheet and pressing same into sealing contact with said portions of said face, said clamping surface having substantially the



same shape as said portions of said face; means for resiliently urging said clamping means when in its lowered position toward said face so as to resiliently urge a sheet overlying said face into sealing contact therewith and permit movement of said sheet disposed between said face and said clamping means; means for applying vacuum to said mold face through said conduit means when said mold reaches a subsequent predetermined station of turret rotation to hold said sheet in conformance with said mold face to form said diaphragm; means for releasing said vacuum and for releasing said clamping means at a still subsequent predetermined station after the diaphragm has been cured; and means for heating said mold to a temperature sufficient to cure said sheet.

3,162,900
EXTRUDER LIFTING AND ROTATING DEVICE
Donald A. Huelskamp, Mount Gilead, Ohio, assignor to Kochring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 20, 1962, Ser. No. 203,961
7 Claims. (Cl. 18—30)



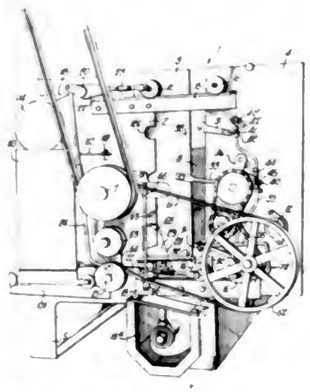
2. In an injection molding machine, the combination of an injector, a base for supporting said injector, a sled disposed between said base and said injector adapted for limited movement on said base, a releasable table portion on said sled for supporting said injector, means disposed on said sled selectively operable to lift said table from said sled when the same is released, said table being supported for rotation with respect to said sled when so released, and antifriction means between said sled and said table and in bearing relation with said table, whereby said table is rotatable on said antifriction means for servicing of said injector.

3,162,901
DEVICE FOR PROTECTING TIRE CASINGS FROM THE HINGES OF COLLAPSIBLE RIMS
Elmer W. Robertson, Oakland, Calif., assignor to Elrick Industries, Inc., Oakland, Calif., a corporation of California
Filed May 14, 1962, Ser. No. 194,592
2 Claims. (Cl. 18—45)



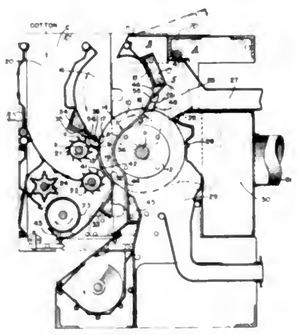
1. In a collapsible sectional curing rim for tire casings in curing molds,
(*a*) a plurality of circumferential rim sections complementing each other end to end into a circular rim,
(*b*) coacting hinge means on adjacent ends of adjacent sections including a pivot pin hingedly connecting said hinge means,
(c) a tire bead guide projecting from one of said hinge means radially inwardly of the respective rim section and beyond said hinge means and said pivot pin for spacing the tire bead from said hinge means and said pivot pin.

3,162,902
COTTON GIN WITH SLIDABLY MOUNTED BREASTS
Jeffrey John Wallace, Amite, La., assignor, by mesne assignments, to John T. Gordin, J. R. Gillian, Geo. Garrison Potts, jointly, all of Dallas, Tex.
Filed Feb. 21, 1961, Ser. No. 90,802
16 Claims. (Cl. 19—59)



1. Cotton gin comprising a fixed component including a saw cylinder, having laterally spaced fixed plates forming the sides of said component, upper and lower pairs of track bars extending forwardly from said fixed component, the track bars of at least one pair being fixed to the respective sides of said component, and the track bars of each pair having parallel guiding faces, ginning and hulling breasts each including laterally spaced side plates, the side plates of the respective breasts being independently slidably supported upon the guiding faces of said track bars, said guiding faces being rectilinear throughout the range of sliding movement of said breasts, the side plates of said fixed component and of said breasts being serially contiguous when said breasts are in operative position with respect to the saw cylinder, latches for holding said breasts together whereby they are movable as a unit along said track bars, means for separating said breasts from said fixed component and means for separating said hulling breast from said ginning breast, said latter means, so constructed as, in cooperation with said guiding faces, to translate said side plates untilted, from closed to open position, comprising connecting links between the side plates of said breasts pivotally connected to the side plates of one breast, crank arms carried by the side plates of the other breast to which the opposite ends of said connecting links are connected, a hand lever operatively connected to said crank arms, means connecting said latches for simultaneously moving all of them to latched or unlatched position, when actuated, and means operatively related to said latch moving means and movable responsive to the initial movement of said lever from its extreme position in either direction, for alternatively unlatching said breasts prior to the breast opening movement of said connecting means and latching them at the end of the breast closing movement of said rods.

3,162,903
COTTON GIN WITH NOVEL HULLING AND GINNING RIB CONSTRUCTION
Jeffrey John Wallace, Amite, La., assignor, by mesne assignments, to John T. Gordin, J. R. Gillian, Geo. Garrison Potts, jointly, all of Dallas, Tex.
Filed June 2, 1961, Ser. No. 116,654
10 Claims. (Cl. 19—59)



1. In a cotton gin having a roll box, a saw cylinder having saws and a ginning front constituted by a system of ginning ribs in operative relation to said saw cylinder, said ribs each comprising a lower, an intermediate and an upper component, the lower components being in secured relation to a lower gin rail, the saws of said saw cylinder passing through said roll box and between said lower components below the upper ends of the latter defining a ginning area across said front extending upward from the points of intersection of the upper arcs of said saws with said front an adequate distance to enable said lower components to perform the full seed separating function of the ribs when the gin is being fed at full capacity, the saws of said cylinder having a diameter greater than the recognized conventional maximum of twelve and one half inches, when the saw cylinder is run at the same r.p.m. as the conventional maximum

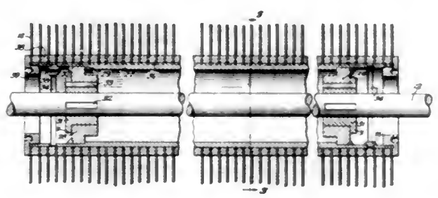
r.p.m. for twelve and one half inch saws, the peripheral speed is greater, thereby increasing the capacity of the gin and inherently resulting in the centrifugal throwing off of considerable lint at the ginning area immediately back of said lower components, the upper components being in secured relation to an upper gin rail and in spaced relation to said lower components forming an opening across the gin communicating with the roll box above the ends of said lower components and with a mote chamber above said saws at the back of said lower components, said opening functioning as an avenue of return for lint and attached debris carried through the lower components by the saws and robbed back by seed that remain attached to said lint and which are retained in the roll, moving upward therewith, said intermediate components each comprising a member of sheet form, of uniform thickness and having planiform opposite sides, in rigidly connected relation to the corresponding upper and lower components at the back of the components, positioned with its planiform sides parallel to the planes of the saws and intersecting said opening, said intermediate components being of such length as to be interleaved by the saws and being of sufficient width depthwise to maintain separate the lint being robbed back from the respective saws, thereby preventing cross entanglement of lint being robbed back from adjacent saws, thus maintaining orderly flow paths between said intermediate components for the entrainment of the centrifugally thrown lint with the robbed back cotton moving toward said opening.

3,162,904
SAW CYLINDERS OF COTTON GINS

Jeffrey John Wallace, Amite, La., assignor, by mesne assignments, to John T. Gordin, J. R. Gillian, Geo. Garrison Potts, jointly, all of Dallas, Tex.

Original application Feb. 21, 1961, Ser. No. 90,802. Divided and this application Nov. 20, 1962, Ser. No. 239,011

5 Claims. (Cl. 19—63)



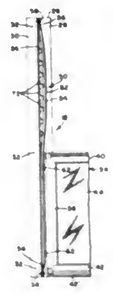
1. In a cotton gin, a saw cylinder comprising a hollow cylindrical drum having a longitudinal keyway in its outer face, a series of saws and spacers in contiguous alternate arrangement mounted on said drum substantially from end to end, the saws being formed with tongues extending into and slidably fitting said keyway, ring-nuts at the ends of said drum having threaded portions screwed to the interior face of said drum and flanged portions in clamped relation to said series of saws and spacers, annular headers fitted within said drum in spaced relation to each other inset from the ends thereof and secured thereto, a drive shaft extending coaxially through said drum with clearance between said shaft and drum, bushings within said headers keyed to said headers and to said drive shaft, fixing said saw cylinder to said drive shaft, the portion of the wall of said drum that spans the space between said headers being of greater thickness than the contiguous end portions, shoulders being defined between the adjacent portions, said headers abutting said shoulders and being fixed in abutting position.

3,162,905
CONTROL AND GUIDE MEANS FOR SLIDING PANELS AND THE LIKE

Russell J. Erickson, 1001 N. East St., Kewanee, Ill.

Filed July 3, 1963, Ser. No. 292,687

11 Claims. (Cl. 20—52)



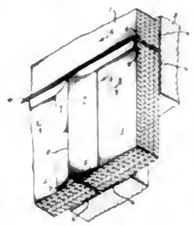
1. Closure structure, comprising a pair of elongated parallel stiff channels spaced apart and having their open sides facing eacn other, a rectangular panel having opposite stiles and opposite rails and carried via its stiles in the channels for selective positioning lengthwise of said channels, the distance between the rails being less than the length of said channels, a pair of channel-mounted and received control means, each disposed wholly within a channel for frictionally retaining the panel in selected positions, each means including an elongated flexible strip of hard-surfaced ribbon-like material extending lengthwise of its channel for a length greater than that of the associated stile and interposed between said stile and the bight of said channel and in spaced relation to said bight and confined laterally by the flanges of said channel, means connecting the strip at only its opposite ends to the channel to enable bowing of the strip toward the associated stile, and a member of resilient compressible and expansible non-metallic material substantially coextensive in length with said strip and interposed between said strip and the bight of the channel and comprising the sole means for pressing said strip into frictional engagement with the stile throughout the length of said stile and for causing the strip beyond the length of the stile to bulge into the path of at least one of the rails and the junction of such rail with said stile.

3,162,906
SEPARATING STRIPS FOR WALL JOINTS

Robert E. Dudley, Bellevue, Wash., assignor to Tracey, Cook, Brunstrom & Dudley, Seattle, Wash., a partnership

Filed Apr. 5, 1961, Ser. No. 100,974

3 Claims. (Cl. 20—74)



1. In a panelled wall surface, intersecting horizontal and vertical wall joints, each comprising a unitary separating strip of pliable plastic material including a web

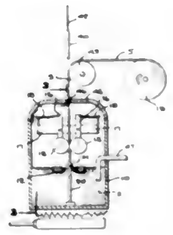
and a pair of inner flanges extending oppositely in coplanar relationship from the inner edge portion of said web, panels having adjacent edge portions substantially abutting the opposite sides of said separating strip webs, respectively, and respectively engaging the oppositely extending portions of said inner flanges of said strips and thereby holding said strips in place, the separating strip in a vertical joint further including a crested flange having oppositely extending flange portions with their edge portions engaging the outer surfaces of adjacent panel edge portions, respectively, and their root portions spaced outwardly from such outer surfaces of the panel edge portions and the separating strip in an intersecting horizontal joint including a drip flange projecting outward and downward from the outer edge portion of the web of such strip, said drip flange being disposed adjacent to and overlying the crested flange of a separating strip in a vertical joint immediately beneath such horizontal separating strip with the edge portion of said drip flange spaced outwardly from the portion of the outer panel surface underlying said drip flange.

3,162,907
APPARATUS FOR THE PRODUCTION OF LAMINATE STRIP

Curtis E. Maier, Chicago, and Robert M. Brick, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Apr. 4, 1961, Ser. No. 100,544

12 Claims. (Cl. 22—57.2)



1. An apparatus for forming a metal strip having a longitudinal internal channel comprising means for providing a bath of molten metal, a float on said bath having a slit greater in width than the desired thickness of the strip, a core mounted in said bath means and extending upward through the slit in spaced relation to the lips thereof, and means above the bath for controlling upward movement of the strip and including cooling rolls for engaging opposite surfaces of the ascending strip and effective to establish a temperature gradient from the bath past a liquidus:solidus zone located between the bath and the cooling rolls.

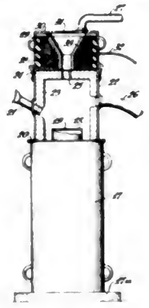
3,162,908
APPARATUS FOR APPLYING VACUUM AND SUPER-SONIC VIBRATIONS IN CASTING STEELS

Noel De Luca, Pittsburgh, Pa. (P.O. Drawer 1400, Hollywood, Fla.), assignor of thirty percent to William J. Ruano, Pittsburgh, Pa.

Filed Aug. 2, 1956, Ser. No. 601,822

8 Claims. (Cl. 22—73)

1. Apparatus for processing steel while in molten condition in an ingot mold, comprising a cover for placement on said ingot mold, said cover including a transducer enclosed in said cover and energized by a radio frequency generator for producing ultra-sonic sound vibrations above 15,000 cycles per second, and an opening in said



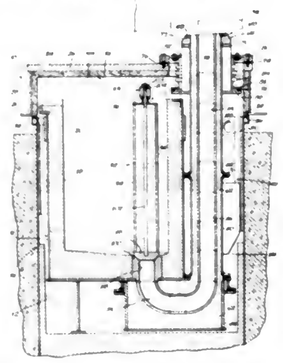
transducer through which molten steel may be poured while its stream is being subjected to said vibrations.

3,162,909
APPARATUS FOR PRESSURE POURING ARTICLES

Edmund Quincy Sylvester, Shaker Heights, Ohio (% Griffin Wheel Co., 445 N. Sacramento Blvd., Chicago 12, Ill.)

Filed Oct. 25, 1961, Ser. No. 147,631

4 Claims. (Cl. 22—82)



1. A sealing arrangement for an internally pressurized outer container adapted to receive therein a ladle structure having an externally formed and upwardly projecting pouring tube, comprising a cover member detachably secured to said outer container, an aperture formed within said cover member for the reception therethrough of said pouring tube, a flange portion formed on and about said pouring tube, and pressure responsive sealing means responsive to the pressure within said outer container extending axially of and about said pouring tube for effecting a seal between said flange and said cover member.

3,162,910
APPARATUS FOR SHAKING OUT FOUNDRY FLASKS

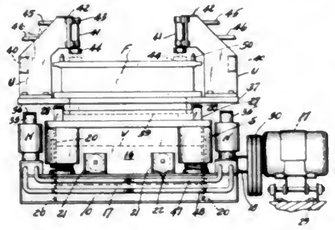
George W. Behnke, Russell G. Westcott, and Jackson A. Richmond, Durand, Mich., assignors to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan

Filed June 26, 1961, Ser. No. 119,722

6 Claims. (Cl. 22—95.7)

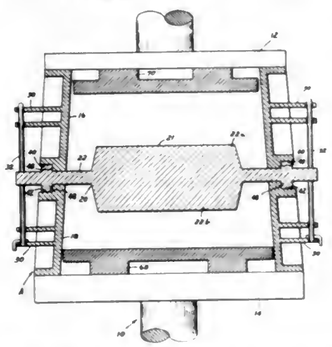
1. A molding flask shakeout unit comprising, stationary, rigid frame means, a deck plate supported for vibratory movement thereon; a vibratory mechanism connected with said deck plate for vibrating the deck plate;

a flask receiving plate mounted to overlie said deck plate and on which a molding flask is to be received; means mounted by said frame means for supporting said flask receiving plate above said deck plate in position to receive a flask; said means being operable for moving said flask receiving plate onto and moving it out of engagement



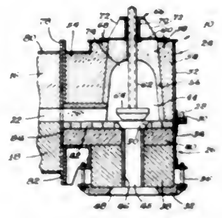
with said deck plate, centrally disposed, aligned discharge openings provided in the deck plate and flask receiving plate respectively and telescopically engageable rims surrounding each opening to maintain said openings in substantially vertical alignment when the flask receiving plate is raised and lowered.

3,162,911
APPARATUS FOR MAKING SAND MOLDS FOR CASTINGS
Russell J. Hines, Bay Village, Ohio, assignor to The Hines Flask Company, Cleveland, Ohio, a corporation of Ohio
Filed July 17, 1961, Ser. No. 125,045
5 Claims. (Cl. 22—101)



1. An assembly for sand molds, including an upper flask section, a lower flask section, and a match pattern plate disposed between said flask sections in the assembled stacked position of said flask sections for molding operations, each of said flask sections having a pair of oppositely disposed side walls and a pair of oppositely disposed end walls interconnected at their respective corners to define an enclosed generally rectangular boundary open at the top and bottom thereof, and retaining means projecting from the upper and lower surfaces of said match plate adjacent all marginal boundaries thereof coacting with complementary retaining means on each of said side and end walls of said flask sections for aligning said flask sections and match plate and for increasing the resistance to deformation of said walls during molding operations, said retaining means projecting from the match plate comprising elongated generally horizontally extending lugs, each of which defines a vertical generally planar abutment portion extending continuously along a major portion of the associated boundary of said match plate, said retaining means on each of the side and end walls of said flask sections comprising generally horizontally extending recesses, each of which defines a complementary vertical shoulder portion extending lengthwise continuously along a major portion of the associated wall of the respective flask section for abutting coaction with the corresponding abutment portion on said match plate.

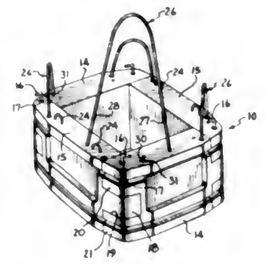
3,162,912
MOLD SHUT-OFF AND RISER ARRANGEMENT
Edmund Quincy Sylvester, Shaker Heights, Ohio (% Griffin Wheel Co., 445 N. Sacramento Blvd., Chicago 12, Ill.)
Filed Oct. 6, 1961, Ser. No. 143,416
6 Claims. (Cl. 22—134)



4. A mold structure comprising, in combination, a mold assembly including separable cope and drag defining therebetween a cavity shaped for forming the desired molded article and having a lateral opening through the assembly, and a pouring-gate-riser assembly including separable upper and lower sub-assemblies detachably mounted to the cope and drag respectively in position laterally of the mold assembly, said upper sub-assembly and cope together being separable as a connected unit from said lower sub-assembly and drag which together also form a connected unit, the pouring-gate-riser assembly having a bottom pouring conduit, and also having a riser communicating with and rising from said pouring conduit to a height above said cavity, and further having a passageway communicating between the lower portion of the riser and the cavity through said lateral opening, said lower sub-assembly having a bounding portion defining the lower limit of said cavity and passageway, and stopper means operably mounted in the pouring-gate-riser assembly for shutting off said pouring conduit and including at least a control portion extending to the exterior of the mold structure.

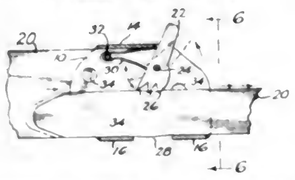
3,162,913
HOT TOP FOR THE CASTING OF MOLTEN METALS
George R. Witt, Avon Lake, Ohio, assignor to Foseco International Limited, Birmingham, England, a company of Great Britain
Filed Jan. 29, 1962, Ser. No. 169,216
3 Claims. (Cl. 22—147)

1. For use in an ingot mold, a hot top comprising four slabs arranged to form a sleeve, the abutting ends of adjoining pairs of said slabs including interlocking tongues, said slabs being provided with longitudinal apertures extending downwardly through substantially the entire length of said slabs adjacent each abutting end thereof, and spring-tensioned spreader means having a pair of outwardly biased legs fitted within the opposed apertures at the abutting ends of each adjoining pair of said slabs for urging said slabs apart, the legs of said spreader means extending downwardly through substantially the entire length of said slabs so as to urge the lowermost portions of said slabs apart whereby when



said hot top is inserted in the mold at least the lowermost portions of said slabs are forced tightly against the mold walls.

3,162,914
SELF-LOCKING BUCKLE
John V. H. Ireland, P.O. Box 5724, Mountain View, Alaska
Filed Apr. 24, 1962, Ser. No. 189,756
1 Claim. (Cl. 24—170)



A belt buckle comprising a frame having a longitudinal opening defining infeed and outfeed ends for the passage of a belt therethrough, the frame including side walls spaced apart slightly greater than the thickness of the belt to support the latter against widthwise collapsing and a base wall for engagement by one longitudinal edge of the belt, lever means having a belt engaging end substantially the same width as said longitudinal opening between the side walls, pivot means mounting the lever means on the frame for pivotal movement of the belt engaging end between said side walls between an inoperative retracted position and an operative locking position spaced from the base wall a distance less than the width of the belt for engaging the latter on its edge opposite the edge engaging the base wall, the belt engaging end being spaced farther from the base wall and infeed end of the frame opening in the retracted position than in the locking position, the base wall being apertured in the area opposite the operative position of the belt engaging end of the lever means, whereby the registering portion of the belt edge is forced into said aperture by the lever means in said operative position, resilient means urging the lever means to said operative position, and abutment means on the frame arranged to intercept the path of movement of the lever means for limiting movement of the belt engaging end of the lever means in the operative direction.

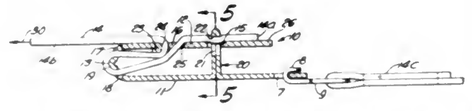
3,162,915
BUCKLES FOR SAFETY BELTS
Herbert Olof Rosenberg, Vikstensvagen 41, Johannesbov, Sweden
Filed Mar. 28, 1962, Ser. No. 183,170
Claims priority, application Sweden, Mar. 30, 1961, 3,430/61
3 Claims. (Cl. 24—196)

1. A buckle for an adjustable length belt, wherein the buckle has a member of frame shape which is provided with an aperture and a bar in said aperture, said bar being supported by said buckle member for displacement in said aperture in a direction of pull of the belt to clamp the belt against the frame bounding said aperture, a curved clamping strip adapted for contacting said bar, said belt having portions in face-to-face relation outside said aperture and a loop passing around the bar and the



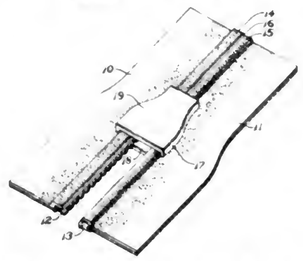
clamping strip for holding said strip in contact with the bar, said bar having opposite ends, said clamping strip extending beyond the ends of the bar to define finger grips, said strip being engageable at said finger grips to be displaced away from said bar to increase the size of said loop of the belt to permit adjustment of the length of belt.

3,162,916
BUCKLE
John E. McHugh, Jr., 4322 Hayvenhurst Ave., Encino, Calif.
Filed Jan. 20, 1964, Ser. No. 338,872
12 Claims. (Cl. 24—198)



1. In a buckle for use with a flexible flat webbing, comprising: resiliently joined and spaced base and top portions extending longitudinally, there being a lateral slot in said top portion, a clamping element on said base portion extending laterally across and upwardly through said lateral slot, there being a lateral slot in said clamping element, there being a second lateral slot in said top portion, there being a pair of spaced lateral slots spaced from said clamping element in the direction of and below said second lateral slot, and said top portion biased away from said base portion for engaging and gripping webbing passing longitudinally through said clamping element slot above said top portion with the webbing passing down through said second lateral slot, out and back in through the said pair of space slots, and out through said second lateral slot.

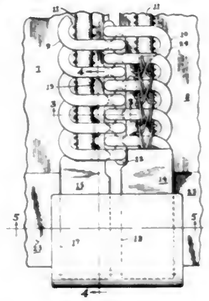
3,162,917
SEALING CLOSURE
Herbert Q. Bair, Tallmadge, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 9, 1962, Ser. No. 186,249
3 Claims. (Cl. 24—205.1)



1. In a sealing closure for uniting in sealing relationship margins of a flexible material wherein the said clo-

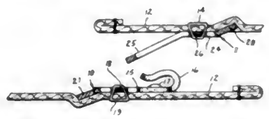
sure comprises an opposed series of spaced apart interlocking fastener elements attached to said margins, a pair of flexible sealing lips of elastomeric material attached to said margins and adapted to extend in overlapping engagement with each other over one face of the said elements when the latter are engaged, and a slider comprising a pair of plate-like portions in contact, respectively, with said fastener elements and said lips, the improvement which comprises the elastomeric material in the area of contact with said slider being chlorinated while the interengaging portions of said lips are unchlorinated.

3,162,918
FASTENER END TERMINAL
John E. Burbank, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 13, 1964, Ser. No. 344,567
5 Claims. (Cl. 24—205.11)



1. In a zipper fastener, a fabric stringer, interengaging means of the coil filament type carried by the stringer and presenting a series of loops, each with an open portion having a head extending beyond the edge of the fabric stringer, said series of loops terminating short of the end of said stringer, and a terminal member of molded plastic material having a body portion molded around the edge of said stringer immediately below said series of loops and a flexible finger integral with said body portion extending along the edge of said stringer through said open portions of a plurality of the loops, said finger having transversely extending bumps engaging between said plurality of loops.

3,162,919
HOOK AND EYE FASTENER
William S. Shee, Woodbridge, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed June 12, 1962, Ser. No. 202,006
2 Claims. (Cl. 24—226)



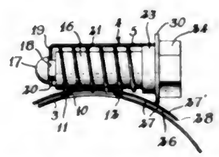
1. A garment fastener comprising complementary hook-and-eye members
(*a*) said hook member comprising a flat base having a hooked loop extending from one end thereof and an outwardly biased lug projecting from the opposite end thereof;
(*b*) said eye member comprising a flat base having an eye loop biased outwardly from one end of said base and a lug projecting from said base opposite from said eye loop and also biased inwardly from said base oppositely from the bias of said eye loop; and
(*c*) each of said bases having a transversely extending cross bar located nearer to the end having one of said lugs than to the opposite end around which stitching may be placed to secure the hook or eye member to a garment.

3,162,920
REMOVABLE GROMMET ATTACHMENT STRUCTURE FOR SHEET COVERS
William J. Durham, Chicago, Ill., assignor to Charles Schwartz & Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 30, 1963, Ser. No. 305,588
3 Claims. (Cl. 24—265)



2. A removable grommet attachment device for flexible sheet covers comprising at least one relatively wide, elongate length of water-proof, flexible material, said material having a pair of ply portions of equal length and width forming a pair of matching free ends defining a bifurcated end portion and a closed opposite end portion, a grommet secured to said band through both of said ply portions at a location closer to said opposite end portion than to said bifurcated end portion, said bifurcated end portion having a coating of pressure sensitive adhesive formed upon inner working surfaces of said ply portions to removably secure the marginal edge of a sheet cover between said inner facing working surfaces in a sandwich with the grommet spaced outwardly from said edge, wherein the area of purchase of the ply portions upon the sheet cover is greater than the area of that portion of the device which extends outwardly from the marginal edge of the sheet cover, and said inner facing surfaces are normally separated by a covering strip which has end portions adapted to be peeled away therefrom to expose the said coating there underlying for securement thereof to the said marginal edge.

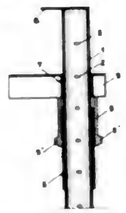
3,162,921
ADJUSTABLE CLAMP
Maynard H. Cheris, Skokie, Ill., assignor to Sterling Automotive Manufacturing Company, Elk Grove Village, Ill., a corporation of Illinois
Filed Apr. 9, 1963, Ser. No. 271,620
2 Claims. (Cl. 24—274)



2. A hose clamp screw assembly comprising a hose band having an overlapping one end, angularly arranged parallel slots in said overlapping one end, a housing having a transverse entirely open end and an opposite transverse walled end secured to the other end of the band, said walled end having a notch, a screw rotatably journalled in said notch and mounted partially within the housing and being one the radially outermost side of the band with the longitudinal axis of the screw extending in a direction generally longitudinally of the band, said

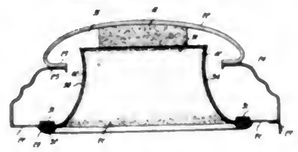
screw having threads pitched so as to cooperate with said angularly arranged slots in the overlapping end of said band for tightening same, said screw having a fixed annular flange exterior of the housing abutting sides of the housing on said open end thereof, said annular flange having an edge presented toward said overlapping one end of the band and lying substantially in a plane which is at a right angle to the longitudinal axis of the screw, said edge being of substantially the same thickness as the width of said slots and normally abuttingly contacting said overlapping one end of the band so as to ride along the edges of said slots to cooperate with said screw to facilitate drawing of said overlapping one end through said housing.

3,162,922
TUBULAR METAL STAY FOR MOLDS
Louis Alziari, 25 Boulevard Carabacel, Nice, Alpes-Maritimes, France
Filed July 2, 1962, Ser. No. 206,843
Claims priority, application France, July 7, 1961, 6,892, Patent 1,294,479
7 Claims. (Cl. 25—131.5)



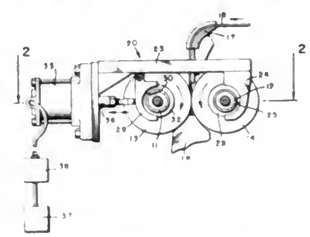
1. In an arrangement for staying a structure at two different levels, the combination of a tubular vertical metal stay the upper end of which is adapted to engage one level of the structure, said stay being provided in its lower section with vertically spaced openings, a horizontal metal cross-member mounted to slide freely on the stay in a vertical direction to engage the other level of the structure, a sleeve surrounding the stay underneath the cross-member and independently thereof, a pin releasably engaging a selected opening in the lower section of the stay to hold the sleeve in a corresponding position, and an intermediate member interconnecting the sleeve with the cross-member and including means for progressively adjusting the relative vertical spacing between the sleeve and the cross-member.

3,162,923
CASKET TOP AND INTERIOR UNIT THEREFOR
Arthur L. Kaeser, Springfield, Ohio, assignor to The Springfield Metallic Casket Co., Inc., Springfield, Ohio, a corporation of Ohio
Filed June 13, 1960, Ser. No. 35,576
9 Claims. (Cl. 27—19)



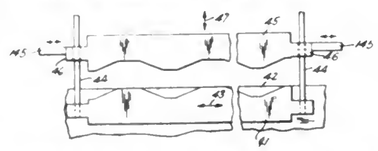
4. A casket top having: a peripheral base containing substantially rigid inwardly directed flanged edges with hinge means for connection to a main body portion; a central shell extending upwardly from the outer side of said base; an interior unit comprising a removable decorative interior panel unit, said base and said interior unit forming a substantially hollow region therebetween, said removable decorative interior panel unit consisting of a decorative sheet of unitary construction, said sheet being formed of a flexible resilient material and having peripheral edges; and retaining means forming a joint between said casket top and said interior unit, said retaining means including a first gripping channel engaging and supporting said flanged edges, and a second gripping channel engaging and supporting said peripheral edges, one of said channels being of such size and shape as to provide a semi-permanent union with its associated edges and the other said channel being of such size and shape as to provide a nonsemi-permanent union with its associated edges, whereby said interior unit may be readily manually disassembled from said casket top.

3,162,924
TEXTILE CRIMPING DEVICE
James P. Richeson, Decatur, Ala., assignor to Monsanto Company, a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,821
4 Claims. (Cl. 28—1)



1. In a tow crimping apparatus having a pair of crimping rolls mounted on parallel drive shafts, a shaft supporting device comprising a bracket, a first arm secured to one end of the bracket and adapted to support one of said shafts, a second arm movably connected to the bracket for supporting the other shaft, said arms being positioned in facing relationship with the shafts therebetween, and means engaging the movable arm for urging said movable arm toward said fixed arm to prevent movement of the shafts away from each other when a bundle of filaments is passed between the rolls.

3,162,925
APPARATUS FOR PRODUCING EXPANDED METAL
Robert M. Felsenthal, 48 Vine Road, Larchmont, N.Y.
Filed Apr. 24, 1962, Ser. No. 189,839
3 Claims. (Cl. 29—6.2)



1. In apparatus for producing an expanded metal sheet in which successive staggered rows of pendant sheared-out strands are linked together by connecting bridges:
(*a*) a shear plate and a serrated punch reciprocable in shearing relation to each other,
(*b*) means for causing stepwise advancement of the sheet to be treated, to bring successive areas into overhanging relation to the shear plate and thus subject them to the shearing action of said punch,
(*c*) means for moving the punch laterally to effect a relative back-and-forth lateral shift of punch and sheet between shearing operations,

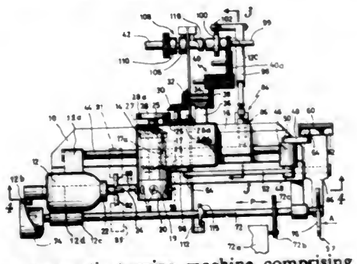
(*d*) means for supporting the overhanging area during each shearing operation in the regions between the serrations of the punch so as to counteract the tendency of the punch to pull the connecting bridges out of the plane of the sheet,

said means comprising a comb directly adjacent and in contact with the shear plate and directly beneath the overhanging sheet area, said comb having serrations facing toward and in complementary alignment with those of the punch, the peak of each comb serration lying substantially at the level of the shearing edge of said plate, and

(*e*) means for effecting relative lateral shifts of comb and sheet with respect to each other to establish said complementary alignment during each shearing cycle,

said means comprising a mechanism interengaging said punch and comb so that lateral movements of the punch are automatically transmitted to the comb.

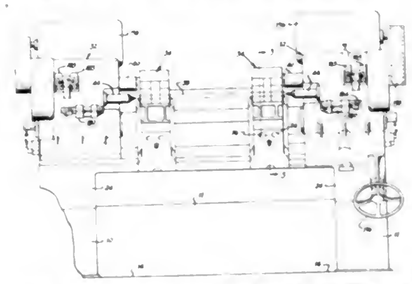
3,162,926
LATHE CONSTRUCTION
Karl Schwendenwein, Paracelsiusstrasse 48, Esslingen (Neckar), Germany
Filed July 10, 1962, Ser. No. 208,787
Claims priority, application Germany July 13, 1961
8 Claims. (Cl. 29—44)



1. An automatic turning machine comprising a head stock for holding work pieces, means for supporting said head stock for longitudinal displaceable movement, a turret slide, means supporting said turret slide for longitudinal movement, a connecting rod connected to said head stock, said turret slide having a rotatable turret head adapted to carry a plurality of tool pieces thereon, said rotatable head being rotatable to position a tool piece thereon in an operative working position, a lever mechanism connected to said connecting rod and including means for rotating said turret head, control means for said lever means, and clamping means connected to said lever mechanism effective to clamp said connecting rod during rotation of said turret head.

3,162,927
CUTTING MACHINE
Robert W. Parker, Howell, Mich., assignor to The Parker Engineering & Research Co., Howell, Mich.
Filed Mar. 13, 1961, Ser. No. 95,390
12 Claims. (Cl. 29—51)

12. A cutting machine comprising a pair of floor-engaging pedestal structures and a horizontal guideway structure extending therebetween; said guideway structure being tilted on its side at an angle to the horizontal; a first table structure slidably resisting on the guideway structure; an upwardly movable clamping shoe carried by the table structure adjacent the underside of the guideway structure; said clamping shoe having two diverging clamp surfaces for acting on the guideway structure to simultaneously preclude shift of the table structure in both vertical and horizontal directions; said table structure comprising a base portion and two generally upwardly extending arms cooperating therewith to define a rigid housing of U-shaped configuration; inclined guide bars extending between said arms; stock-clamping jaws slidably carried on the guide bars for movement toward and away from one another; a second table structure slidably carried on the aforementioned guideway structure; a horizontal shaft affixed to the second table structure and having thrust surfaces at its opposite ends; a cutter head having thrust bearings mating with the shaft thrust surfaces for thereby oscillatably mounting the cutter head on the second table structure; one of said bearings being slidably keyed on a portion of the head for movement parallel to the shaft axis; pressure means maintaining an axial pressure on said one bearing to thereby prevent axial play of the head on the shaft; a rotary mill carried on the head and operable during oscillating movements thereof to form a precision surface on the stock clamped in the aforementioned jaws; a rotary drill carried on the head; first power means in driving connection with the drill and mill to effect rotation thereof; second power means

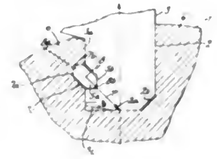


operatively connected with the head to oscillate it around the shaft axis whereby to cause the mill to form a precision surface on the stock and then position the head in a location wherein the drill is aligned with the formed precision surface; third power means operatively connected with the drill to advance it into the stock and then retract it therefrom; means for controlling operation of the power means including two relatively movable stop mechanisms, fluid pressure duct means discharging through one of the stop mechanisms into the space between the elements so that movement of the stop mechanisms together causes the fluid pressure flow to be throttled, and control mechanism for the second power means triggered by throttling of the fluid pressure flow; one of said stop mechanisms comprising a stop element, mount structure, and retainer element; said stop element being threaded into the mount structure, and the retainer element being also threaded into the mount structure to apply a locking pressure onto the stop element; the separate threaded engagements of the stop element and retainer element with the mount structure being such that end thrust on the stop element is ineffective to disturb the connection between the retainer element and mount structure.

3,162,928
MACHINE TOOL CUTTER AND PROCESS FOR ASSEMBLING THE SAME
Otto Kruse, Schwarzenbek, Germany, assignor to Firma Wilhelm Fette, Schwarzenbek, Germany
Filed Oct. 8, 1962, Ser. No. 228,826
Claims priority, application Germany, Oct. 12, 1961, F 35,122
5 Claims. (Cl. 29—105)

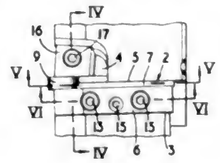
3. A machine tool cutter comprising, in combination, a cutter body formed at its exterior with a plurality of axial slots and a plurality of cutting blades respectively having legs located in said slots, said legs of said cutting blades respectively having free end portions which have

a snug, sliding fit in said slots and, next to said end portions, base portions which have a press fit in said slots, said blades having at said legs thereof, respectively, front faces which lead in the direction of rotation of the cutter and rear faces which trail in the direction of rotation of the cutter, and said cutter body respectively having front slot faces engaging said front faces of said blade legs and rear slot faces respectively engaging said rear faces of said blade legs, said cutter body being formed at said front slot faces thereof with axial grooves of substantially V-shaped configuration and said blade legs being respectively formed at said front faces thereof with axial grooves also of substantially V-shaped configuration and the V-shaped grooves of said cutter body respectively



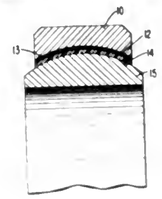
communicating with the V-shaped grooves of said blade legs to form axially extending cavities therewith, said V-shaped grooves of said blade legs being located closer to the central axis of rotation of the cutter body than the V-shaped grooves formed in the front slot faces of said cutter body; and a plurality of keys located in said cavities and pressing against the faces of said V-shaped grooves for further securing said cutting blades in the slots of said cutter body, said keys respectively having substantially V-shaped portions received in said V-shaped grooves of said body and blades and the edges of said V-shaped portions of said keys being rounded so that the keys do not extend into the corners of said V-shaped grooves and press securely against the faces of said V-shaped grooves.

3,162,929
MILLING CUTTERS
Arthur Leonard Horne, Streetly, and Clifford Douglas Johnson, Tenbury Wells, England, assignors to Richard Lloyd Limited, Tyburn, Birmingham, England, a British company
Filed May 21, 1963, Ser. No. 281,996
Claims priority, application Great Britain May 29, 1962
4 Claims. (Cl. 29—105)



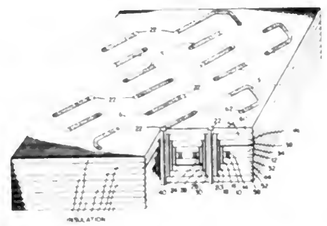
1. A milling cutter comprising a circular body having transverse slots in its peripheral portion, in combination with a slidable tip-locating bar disposed in each slot adjacent one side thereof, a main wedge disposed between said bar and the other side of the slot, screw means for operating the said main wedge to fix the bar in position, a throw-away or expendible cutter tip disposed adjacent a face of said main wedge and engaged by an end of the tip-locating bar, and an auxiliary wedge disposed in the slot and being operable upon the cutter tip to clamp the same against a face of the main wedge.

3,162,930
METHOD OF MAKING ANTIFRICTION BEARINGS
Leonard A. Litsky, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Original application Apr. 11, 1961, Ser. No. 102,230. Divided and this application Sept. 17, 1963, Ser. No. 309,513
3 Claims. (Cl. 29—149.5)



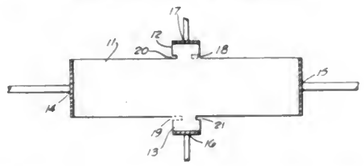
1. A method of producing an antifriction bearing having an outer ring and an antifriction liner bonded therein, comprising the steps of coating the inner surface of said outer ring with a metallic material of relatively low melting temperature, placing the antifriction liner within the outer ring, heating the assembled ring and liner to a temperature sufficiently high to cause said metallic coating to flow and bond with the antifriction liner, removing said heat before damaging said antifriction liner, and assembling an inner ring within said liner and outer ring.

3,162,931
METHOD OF FABRICATING MAGNETIC CORE ARRAYS
Eugene Gessner, Towson, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Application Aug. 6, 1958, Ser. No. 753,860, now Patent No. 3,064,334, dated Nov. 20, 1962, which is a division of application Ser. No. 633,370, Jan 9, 1957, now Patent No. 2,910,675. Divided and this application Aug. 18, 1960, Ser. No. 56,082
3 Claims. (Cl. 29—155.5)



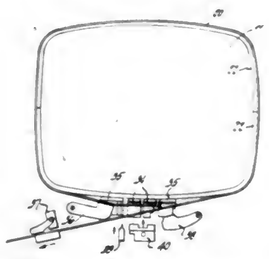
1. The method of fabricating a magnetic core array having magnetic cores with the conductors in each core coupled to those in other cores by connecting circuits, comprising the steps of forming a plurality of openings in a sheet of material, depositing a magnetic core having an aperture therein in each of said openings, placing a plug having coaxial coextensive concentric conductors insulated from each other in each core aperture, said concentric conductors having their ends exposed and uninsulated, depositing insulating material on portions of the ends of the concentric conductors and on portions of the cores to isolate each connecting circuit of core linking conductors from other core linking conductors and from said cores, and forming conductive patterns over the sheet and over said insulated areas to connect the ends of said concentric conductors in series linking groups.

3,162,932
PROCESS OF MAKING A HALL CRYSTAL
Charles Wood, Ridgewood, George F. Schroeder, Pines Lake, Wayne Township, and Oscar Tischler, West Caldwell, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Oct. 21, 1960, Ser. No. 64,174
2 Claims. (Cl. 29—155.5)



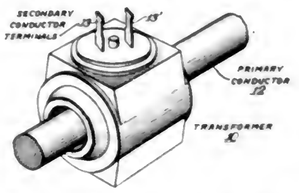
1. The process of making a Hall crystal which will provide a zero Hall voltage output in the absence of a magnetic field, comprising:
providing a Hall crystal of cruciform configuration made up of a rectangular portion having driving current electrodes on its ends, having respective transverse wing portions at substantially the midpoints of the longitudinally-extending side edges of the rectangular portion, and having respective Hall voltage output electrodes on the wing portions;
connecting the output electrodes to a voltmeter;
producing a control current between said current electrodes and, if the voltmeter reading is not substantially at null, cutting said crystal, at the juncture of one of said wing portions and the rectangular portion, along a line parallel to the longitudinal axis of said rectangular portion and continuing said cutting so long as it tends to move the voltmeter reading toward null.

3,162,933
METHOD OF PROCESSING CATHODE RAY TUBES
Alan M. Trax and James J. Monagle, Marion, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,619
3 Claims. (Cl. 29—155.5)



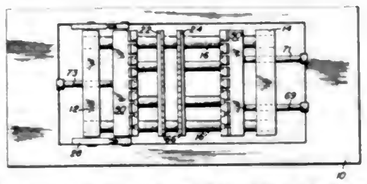
1. In the method of rendering a cathode ray tube implosion resistant by applying a metal band therearound, the steps of:
(*a*) heating a metal strap,
(*b*) wrapping said strap around said tube and lapping the ends of said strap over each other,
(*c*) mechanically tensioning said heated strap to custom size it to said tube,
(*d*) welding the ends of said heated strap together at said lap to form a continuous band around said tube, and
(*e*) cooling said band to shrink it and thereby further tension it around said tube.

3,162,934
METHOD OF PRODUCING AN ENCAPSULATED CORE ASSEMBLY
Chester E. Moyers, Williamsville, Ill., assignor to Sangamo Electric Co., Springfield, Ill., a corporation of Delaware
Filed Jan. 18, 1961, Ser. No. 83,533
5 Claims. (Cl. 29—155.57)



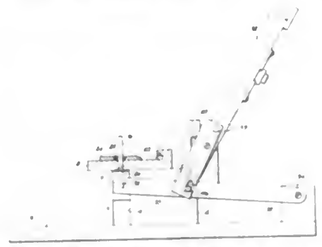
1. The method of producing an encapsulated core assembly for an instrument transformer wherein a straight length of the primary conductor passes through the core assembly to function as the primary element of the instrument transformer, said method comprising the following steps: shaping a metallic core assembly in the form of a hollow cylinder having a central bore therethrough, through which bore the straight length of primary conductor is adapted to pass, inserting a tubular elastic sealing member through said central bore, said tubular elastic sealing member having a normal length in excess of twice the length of said core assembly and being placed in said core assembly to have its opposite end portions initially project approximately equal distances beyond the opposite ends of said core assembly folding one of said end portions back upon itself and stretching said one end portion elastically outwardly to cover one portion of said core assembly, folding the other of said end portions back upon itself and stretching said other end portion elastically outwardly to cover the remainder of said core assembly, causing said other end portion to overlap at least part of said one end portion, and thereafter encapsulating the enclosed core assembly to provide a reenforced unit, the elasticity of said tubular sealing member causing the first and second end portions to contract inwardly for permanently establishing a snug elastic contact directly with the external and internal surfaces of said core assembly so as to prevent the encapsulating material from contacting said metallic core assembly, said elastic sealing member also forming a layer of elastic cushioning material over said external and internal surfaces of the core assembly to elastically absorb some of the compression pressures arising during the encapsulating operation.

3,162,935
CAPPING MECHANISM
Joseph N. Ianuzzi, Bradford, and Ernest J. Bryner, Custer City, Pa., assignors to Sigma Engineering Service, Inc., Custer City, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1961, Ser. No. 156,650
17 Claims. (Cl. 29—203)



1. A capping device for placing caps on both ends of elongate bodies, comprising:
means for loosely supporting the intermediate portions of a plurality of such bodies in parallelism in a horizontal plane;
one piece multiple cavity die means disposed near each end of said supporting means for holding caps for said bodies and arranged so two corresponding cavities of the die means are axially aligned with each body to be supported, each die means having a slot through the top in alignment with each cavity for accommodating caps having leads projecting therefrom; and
means for moving said die means relatively toward and away from each other with the supporting means therebetween to thereby place caps in said cavities onto each end of the bodies.

3,162,936
FIXTURE FOR ASSEMBLING ELECTRICAL COMPONENTS
George W. Soderman, Alpine, N.J., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,461
5 Claims. (Cl. 29—203)



1. A fixture for assembling apertured components of spring units to an apertured mounting bar by means of screws and nuts comprising:
a holder having apertures for nuts spaced according to spacing of the apertures in the mounting bar,
an apertured nest for the mounting bar and groups of the components of the spring units,
locating pins for the apertures of the nest,
a holder for locating pins supported for movement between starting and assembling positions to respectively position the locating pins out of and into their assembling positions,
a cover supported for movement between an open position away from the nest and a closed position adjacent to the nest,
members carried by the cover to traverse the groups of components to force the components of the groups compactly against the mounting bar, and
a member carried by the cover having screw guiding apertures therein aligned with the apertures of the groups of components and the nuts.

3,162,937
TILE ASSEMBLING APPARATUS
Malcolm A. Schweiker, Worcester, Pa., assignor to American Encaustic Tiling Company, Inc., Lansdale, Pa., a corporation of New York
Filed Dec. 20, 1962, Ser. No. 246,081
12 Claims. (Cl. 29—211)



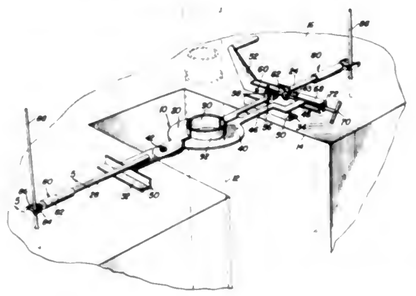
1. Tile assembling apparatus for forming selectable mosaic patterns of a plurality of types of tile in the pockets of a partitioned board having a plurality of longitudinal and a plurality of transverse rows of tile receiving pockets, comprising in combination, guiding conveyor means for moving partitioned tile boards along continuously in a lineal direction parallel to the longitudinal rows of pockets, a plurality of tile supplying and feeding units located at longitudinally spaced stations along the path of movement of said continuously moving boards, the tile supply and feeding unit at one of said stations being arranged to supply tiles to one group of alternate longitudinal rows on a board, and the tile supply and feeding unit at another one of said stations being arranged to supply tiles to the other group of alternate longitudinal rows on a board, each of said units including mounting means providing lateral shift to supply tiles to either alternate group of longitudinal rows on a board without changing the lineal travel of the board on the conveyor.

3,162,938
SPACER APPLYING TOOL
William N. Koeller, Birmingham, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 29, 1961, Ser. No. 155,775
6 Claims. (Cl. 29—227)



1. For use with a sandwich-like structure comprising a pair of spaced laminae having coaxial openings therethrough, a tool for inserting a spring-like spacer coaxially with the openings and in between the spaced laminae comprising an elongated shaft having a handle at one end and a reduced diameter portion extending axially from that end of said shaft opposite from said one end and defining a generally flat, continuous shoulder for engaging the peripheral surface of the openings.

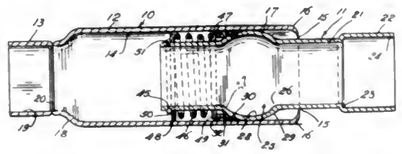
3,162,939
BREAK-OUT BAR FOR DRILLING RIGS
Travis R. Wendell, P.O. Box 668, Rockport, Tex.
Filed Feb. 6, 1962, Ser. No. 171,461
12 Claims. (Cl. 29—283)



3. A break-out tool for pipe strings comprising a bar having an arcuate, laterally bowed mid-portion defining a fixed jaw, arms projecting in substantial alinement with

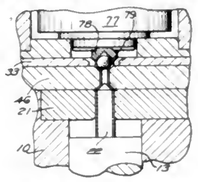
each other from the opposite ends of said mid-portion, an arcuate movable jaw complementary to and cooperating with said fixed jaw for clamping a pipe therebetween, a pivot connecting said movable jaw at one end thereof to said bar for swinging movement towards and from the latter, a handle rigidly attached to and projecting from the other end of said movable jaw and lying in spaced relation to said bar at one side thereof, locking means embracing said handle and pivotally connected to the adjacent arm of said bar and movable between locking and releasing positions for releasably retaining said jaws in clamping engagement upon a pipe, said locking means comprising a lever, a link pivoted to said lever and extending transversely of said handle and bar, a clip pivoted to said link and embracing said handle, said lever having a bifurcated portion by which it is pivoted to and receives therein one end of said link.

3,162,940
METHODS OF MAKING CONDUIT EXPANSION JOINTS
Henry S. Kuhn, Park Ridge, Ill., assignor to Rotherm Engineering Company, Inc., Chicago, Ill., a corporation of Illinois
Filed July 10, 1963, Ser. No. 294,120
7 Claims. (Cl. 29—421)



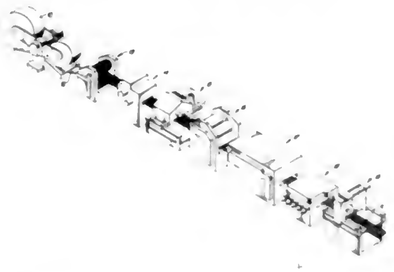
1. The method of making a sheet metal conduit expansion joint, which comprises, forming a split die having a cylindrical bore in one end for receiving a hydraulic plunger, said bore communicating with a first concentric cylindrical bore, which extends to a second concentric partially spherical bore, which etxends to a third concentric cylindrical bore of the same size as the first bore, said die being closed at the end of said third bore, placing a cylindrical copper tube in said three bores of said die and closing the die, placing a filling of resilient rubber of cylindrical shape, smaller in diameter than the first and third bores, in said three bores, and exerting a hydraulic pressure on said hydraulic plunger, which acts on said resilient rubber in said bores, expanding the rubber inside said copper tube to fill the three bores of the tube and die, and forming a ball formation in said copper tube filling said die, releasing the pressure on said plunger, and opening said die to remove the expanded ball sleeve from the die.

3,162,941
METHOD OF MAKING BALL POINT WRITING INSTRUMENT
Donald H. Young, East Greenwich, R.I., assignor to A. T. Cross Company, a corporation of Rhode Island
Filed Jan. 4, 1963, Ser. No. 249,368
8 Claims. (Cl. 29—441)



1. In the process of making a ball point writing unit, shaping a tube of stock by bending the same at an area spaced from one end at a plurality of circumferentially spaced locations to form a section with axially extending ribs having ball engaging abutments at one end, positioning a ball of a material harder than the tube on said abutments and driving the ball axially of the tube to indent said abutments and form a ball seat therein, and then bending inwardly the end portion of the tube over the ball to hold the same on the seat.

3,162,942
PROCESS AND APPARATUS FOR PRODUCING CELLULAR MATERIAL
Charles W. Christman, Los Angeles, Calif., assignor to Formacel, Inc., Los Angeles, Calif., a corporation of California
Filed June 27, 1960, Ser. No. 39,110
8 Claims. (Cl. 29—455)



1. The continuous process of manufacturing cellular cored material, which comprises: advancing flat stock material; progressively cutting longitudinally spaced sets of slits in the material so that the slits of successive sets are transversely staggered; progressively forming the material into fluted or channeled configuration to provide crests and troughs extending across the material; correlating the slitting and forming so that alternate sets of slits extend across the troughs and the other alternate sets of slits extend across the crests thereby forming corresponding sets of longitudinally extending bending axes along the crests and troughs respectively; progressively deflecting one set of longitudinally extending bending axes relative to the other set of longitudinally extending bending axes so that the material assumes a transversely sinuous form; and then progressively squeezing the material in a lateral direction to complete an accordion folding thereof.

3,162,943
METHOD OF MAKING WIRE OF SUPERCONDUCTIVE MATERIALS
James Wong, Albany, Oreg., assignor to Wah Chang Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed July 27, 1961, Ser. No. 127,136
1 Claim. (Cl. 29—552.2)

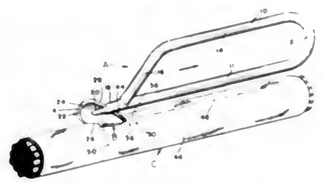
The method of making wire of a superconductive alloy consisting essentially of about 75 atomic percent columbium and about 25 atomic percent zirconium, comprising forming the alloy into an elongated casting, having a cross sectional diameter not substantially exceeding one inch, enclosing the casting in a sheath of metal capable of confining the casting under compressive constrainment, mechanically reducing the cross section of the alloy at a temperature of about 800° F. and by at least about fifty percent while confining the alloy in the sheath for at least an initial portion of said reduction, removing the sheath, and cold drawing the reduced alloy to wire form.

3,162,944
CLOSE GRIP SAFETY RAZOR
Sam M. Baseel, 6205 Loughborough Ave., St. Louis, Mo.
Filed Aug. 9, 1962, Ser. No. 215,902
6 Claims. (Cl. 30—60.5)



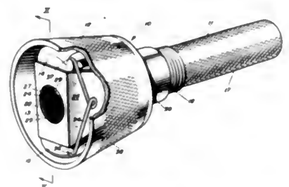
1. In combination in a safety razor comprising a blade support structure with spaced side elements for engaging the spaced margins of a separable blade,
a cap structure with spaced side elements overlying said support side elements,
means for drawing said support structure and cap structure toward each other to clamp the margins of a blade between said elements,
a flat surface finger piece provided with a pivot extending along one edge of the finger piece and journaled on one of said structures substantially intermediate the side elements of the latter,
said finger piece being movable about said pivot to a position over and in contact with either side element of said cap structure and projecting beyond the adjacent cutting edge of a blade to accommodate gripping of an upper face of the finger piece and the lower face of the support structure between opposed fingers and thumb of a user, respectively, but leaving the opposite cutting edge of the blade projecting away from the opposite side elements of the support structure and cap structure for shaving, said finger piece being reversible on said pivot to provide for use of either cutting edge of the blade.

3,162,945
STRIPPER FOR WIRE CABLE COVERING
Richard C. Stabs, 4421 Norton Road, Duluth, Minn.
Filed Apr. 30, 1963, Ser. No. 276,868
1 Claim. (Cl. 30—91)



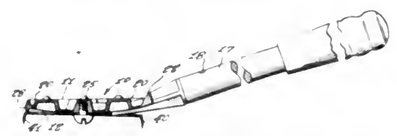
In a device for stripping the covering of a wire cable the combination of, a handle having a base portion, a thin flat cutting blade, said cutting blade having an arcuate cutting edge formed on the forward end thereof, said arcuate cutting edge terminating in converging front and rear side edges, said rear edge having a sharpened portion, a shoe member secured to said blade at the point of conversion of said side edges, said blade being secured to said handle base portion with said rear side sharpened portion diverging rearwardly of the base portion from the point of securement therewith at less than ninety degrees thereto, the longitudinal axis of said shoe being parallel to the longitudinal axis of said base portion with the shoe spaced from said base portion whereby said sharpened rear edge portion of said blade can be drawn against the covering of a cable to cut the same with said shoe positioned beneath the covering.

3,162,946
TUBE CUTTER
William H. Martindale, Northboro, Mass., assignor to Standard Fittings Company, Framingham, Mass., a corporation of Massachusetts
Filed Mar. 26, 1963, Ser. No. 268,176
3 Claims. (Cl. 30—101)



1. A tube cutter, comprising
(*a*) an elongated handle having a longitudinal bore capable of receiving the tube to be cut,
(*b*) a shell having a threaded bore which is threadedly engaged with the handle for movement therealong and having a conical inner surface coaxial of the threaded bore, the said inner surface formed by a counterbore opening away from the said threaded bore and having its larger end away from the threaded bore, and
(*c*) a cutter assembly mounted in the shell and engaging the conical inner surface for movement transversely of the axis of the handle bore as the shell is moved along the handle.

3,162,947
FOUR EDGE HAND SCRAPER
Donald Gringer, Bronx, N.Y., assignor to Allway Mfg. Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,657
6 Claims. (Cl. 30—171)

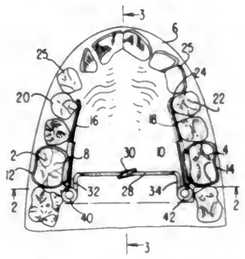


1. A hand scraper of the character described, comprising, a flat substantially square blade support having a top planar scraper blade seating surface and a bottom scraper blade seating surface, said blade support having parallel sides, a front side normal to said parallel sides and an elongated rear side, means securing a handle to said elongated rear side such as to dispose said handle at an angle relative to the plane of said top seating surface, a scraper blade having a substantially square flat body portion provided on one face thereof with a pair of opposed upwardly extending parallel scraping edges along one pair of opposed edges of said body portion and another pair of opposed downwardly extending parallel scraping edges along the other pair of opposed edges of said body portion, the distance between said scraping edges of each pair corresponding substantially to the width of said blade support such that when said scraping blade is selectively seated on either the top or bottom seating surface of the blade support, one of said pairs of scraping edges will be disposed in abutting engagement with the parallel sides of said blade support, and means detachably securing said scraper blade to said blade support.

3,162,948
ORTHODONTIC DEVICE FOR SPREADING OR CONTRACTING THE DENTAL ARCH

Warren E. Gerber, 64 Old Orchard Road, Skokie, Ill.

Filed May 4, 1962, Ser. No. 192,375
5 Claims. (Cl. 32—14)

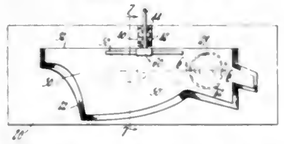


1. A dental arch spreading orthodontic device comprising a pair of mounting bands for securement to the rear molars of a patient, a pair of tubes secured to the bands, a pair of bendable wires to extend forwardly of the mouth and secured to corresponding ends of the tubes, and arch spreading expanding spring means having end portions telescopically associated with the other corresponding ends of the tubes for ready disassembly, adjustment and reassembly.

3,162,949
APPARATUS FOR TRIMMING A PART FOR A KNITTED GARMENT

Estephan Der Estephanian, Worcester, Mass., assignor to Estebar, Inc., Manchester, N.H., a corporation of New Hampshire

Filed June 20, 1962, Ser. No. 203,841
2 Claims. (Cl. 33—11)



1. Apparatus for use in trimming parts of women's garments having three-dimensional bulges for breast cups, comprising a table with an oval recess adapted to receive such bulge, a disk having a shape similar to that of the recess but slightly smaller and adapted to be inserted in said recess flush with the top surface of the table after a garment part has been placed in position on the table with a bulging portion extending into said recess, a template adapted to overlie a garment part on the table, and clamping means mounted on the table and operable to press said template down.

3,162,950
METHOD AND MEANS FOR TRAILER AXLE ALIGNMENT

Paul G. Hykes, Grosse Pointe, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 21, 1961, Ser. No. 160,977
5 Claims. (Cl. 33—46)

1. The method of aligning a misaligned through-axle of an axle assembly of a towed trailer of the type having adjustment means on the axle assembly and a king pin towing device comprising the steps of:

establishing on the axle a physical mark at a center point of said through-axle,

affixing a mounting bracket to said through-axle located on said center point of said through-axle,

providing a locater surface on said mounting bracket,

attaching an optical device to said locater surface on said mounting bracket, said optical device providing an optical line which is directly attached to and perpendicular to the axis of said through-axle and which intersects said center point of said through-axle,

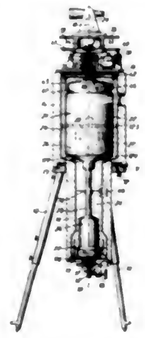


and adjusting said adjustment means on the axle assembly to move said optical line to a point of intersection with the center of said king pin of said trailer, thus establishing the alignment of said through-axle independent of the alignment of the wheels or the center line of the trailer.

3,162,951
STATIONARY GYROSCOPIC COMPASS

Johannes Hintze, Kiel, and Hans Ehrich, Kiel-Schulensee, Germany, assignors to Anschutz & Co., G.m.b.H., Kiel-Wik, Germany, a German company

Filed Mar. 23, 1960, Ser. No. 17,094
Claims priority, application Germany, Mar. 31, 1959, A 31,716
11 Claims. (Cl. 33—72)



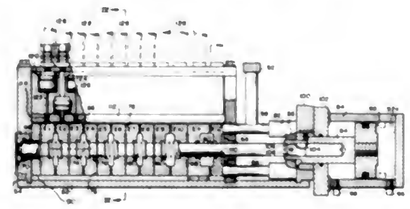
1. Stationary gyroscopic compass comprising a container, a liquid filling said container, a float in said liquid, means mounted on at least one of the elements formed by said container and said float for exerting a force on said float maintaining the floating condition thereof, a gyroscope carried by said float with its axis of rotation in horizontal position, said container and said float having a shape affording freedom for relative rotation about a vertical axis and the center of gravity of said float and the elements carried thereby including said gyroscope being located a substantial distance below the center of buoyancy of said float, a theodolite mounted on said container for rotation about said vertical axis, sensing means connected with said theodolite for sensing the angular position of said theodolite relative to said float with respect to said vertical axis, said first-named means including a flexible elongated vertical suspension member disposed above said float and having its lower end fixed to said float and its upper end to said theodolite, a follow-up motor connected with said container and to said theodolite for producing relative rotation thereof about said vertical axis, control means connected to said sensing means and to said motor for causing the latter to impart follow-up rotation to said theodolite relative to said float keeping said suspension member in relaxed condition, and damping means on said float to dampen rotary oscillations

thereof about said vertical axis, the spin of said gyroscope being so correlated to the weight of said float and of the elements carried thereby, to said buoyancy, to said distance and to the damping force exerted by said damping means as to result in a period of said oscillations amounting to a few minutes and in a reduction of the amplitude of said oscillations to substantially zero within a period of the order of ten minutes.

3,162,952
ROTARY DIFFERENCE GAGE

Rudolph R. Hegmon, State College, Pa., assignor to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1962, Ser. No. 220,404
14 Claims. (Cl. 33—125)

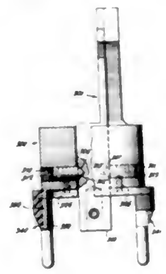


1. A difference gage for positioning an adjustable stopping device, comprising a stack of consecutive binary sets of rotary gage elements for connection to such stopping device in a series arrangement therewith, said elements comprising one-piece, thin disks having one thin peripheral portion and one thinner portion of which the difference is a predetermined small decimal fraction, and automatic means rotatably supporting and automatically operating the gage elements into relatively peripherally aligned positions of rotation to aggregate a gage reading of the desired magnitude in establishing the position of the adjustable stopping device, said disks each having an integral hub, the outside diameter of said disks being no more than approximately 1⅛" and the thickest portion of any disk being in a ratio of no more than approximately 0.77 to 1.00 relative to the diameter of that disk.

3,162,953
INTERNAL BORE MEASURING APPARATUS

Edward Porter, 4221 Woodlake Drive, Fort Worth, Tex.

Filed Feb. 16, 1962, Ser. No. 178,521
5 Claims. (Cl. 33—174)

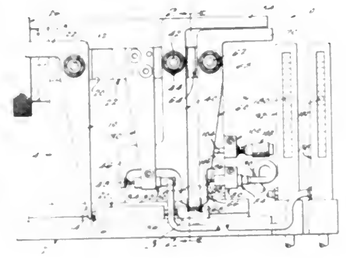


1. Internal bore measuring apparatus including a body means, said body means having a scale formed thereon, said body means also having a slot formed therethrough, an arm member disposed within said slot and supported by said body means for pivotal movement relative thereto, said arm having a portion for cooperation with the scale of the body means for indicating the relative angular position of the arm with respect to the body means, means at the lower portion of the arm for removably attaching a plug gauge means thereto, and a plug gauge means adapted to be secured to the lower portion of said arm, said plug gauge means having a precise outer dimension for accurately checking the internal dimension of a bore to be measured, a pair of plates detachably secured to the body means and defining slot means, and a pair of separate and independent support portions, each of said support portions including depending means for engaging a supporting surface adjacent a bore to be measured, said support portions being adjustably mounted within said slot means.

3,162,954
SPACING GAUGE

Earl G. Goehle, Grosse Pointe Shores, Mich., assignor, by mesne assignments, to Gay-Lee Company, a corporation of Michigan

Filed Aug. 23, 1962, Ser. No. 219,064
1 Claim. (Cl. 33—148)



A gauge for measuring the spacing between points on a workpiece comprising

a pivoted index arm having a workpiece engaging blade,

a pressure arm for biasing the workpiece towards said index arm,

means restraining movement of said index arm under the bias of said pressure arm,

means for indicating the rotative position of said index arm,

a pivoted gauge arm extending generally parallel to said index arm having a workpiece engaging blade,

means for indicating the rotative position of said gauge arm, and

means for moving the pivotal axis of said gauge arm relative to the pivotal axis of said index arm.

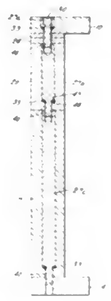
3,162,955
GAGE BLOCK ASSEMBLY FASTENING DEVICES

Henry O. Egli, Riverside Drive, Sidney, N.Y.

Filed Apr. 4, 1961, Ser. No. 100,671
12 Claims. (Cl. 33—168)

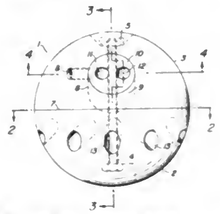
1. In a gage block assembly, a plurality of gage blocks, means for joining said gage blocks comprising fastening means including a fastening element extending between individual ones of said blocks and effecting a compressive stress, and a compressible washer, intermediate the length

of said gage block assembly, in resilient force transmission relationship between said element and at least one



of said blocks for resiliently transmitting compressive stress from said element thereto.

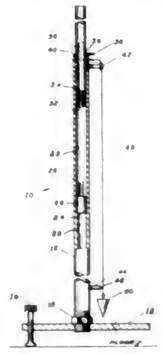
3,162,956
BOWLING FITTING BALL
Fred P. Ayre, Jr., 321 E. Fairview St., Bethlehem, Pa.
Filed Mar. 29, 1962, Ser. No. 183,435
3 Claims. (Cl. 33—174)



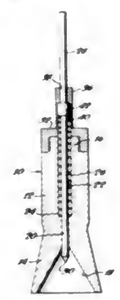
1. A bowling fitting ball comprising
(*a*) a pair of hemi-spherical segments removably secured to form a ball,
(*b*) said segments being rotatable with respect to each other about an axis extending through the center of, and perpendicular to, the interface,
(*c*) a thumb hole in one of said segments,
(*d*) said thumb hole, as measured in a plane at right angles to the interface and bisecting the thumb hole at the surface of the ball, having a small amount of lateral pitch and having no vertical pitch,
(*e*) a radially directed opening of circular cross-section in the other of said segments,
(*f*) a matching plug rotatably mounted in said opening, and
(*g*) at least one finger hole in said plug.

3,162,957
APPARATUS FOR APPLYING MARKS TO ELEVATED SURFACES
Edward D. O'Connell and Kathryn M. O'Connell, both of 6109 Castor Ave., Philadelphia, Pa.
Filed Oct. 1, 1962, Ser. No. 227,318
6 Claims. (Cl. 33—189)

1. In combination, a tool for projecting a point onto an elevated surface such as a ceiling corresponding to a predetermined point on a floor, comprising a first straight tubular member open at the upper end thereof, means supporting said first straight tubular member in a vertical position, a firing pin supported by said first straight tubular member internally thereof, a second straight tubular member slidably movable in said first straight tubular member, said second straight tubular member being open at both the opposite ends thereof, a cartridge including a charge of explosive propellant and a pellet, said cartridge being supported in the lower open end of said second straight tubular member with said pellet being directed toward the open upper end of said second straight tubular member, a disintegratable fuse means supporting said second straight tubular member in a pre-firing position in which the lower end of said second straight tubular member with said cartridge therein is positioned in vertically spaced relation above said firing pin, said fuse means upon disintegration thereof permitting said second straight tubular member to drop through said first straight tubular member to cause said cartridge to strike said firing pin to explode said propellant and to cause said pellet to be ejected through and entirely beyond said second straight tubular member and into engagement with said elevated surface, and means carried by said tool for adjusting said first straight tubular member to a vertical position upon detection of any departure therefrom.

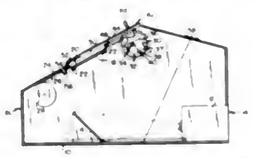


3,162,958
CENTER FINDER
Don R. Miehls, Albuquerque, N. Mex. (1001 Pate St., Carlsbad, N. Mex.)
Filed Oct. 26, 1961, Ser. No. 147,981
1 Claim. (Cl. 33—191)



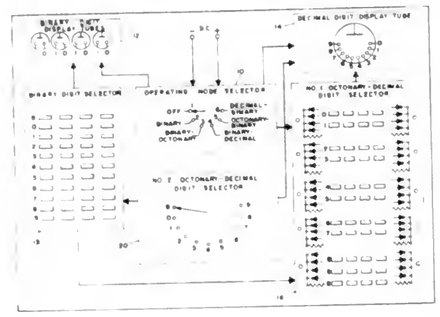
A tool for finding and marking the center of a round elongate piece of work, comprising an elongate body having a lower end and having a conical recess in said end for receiving a piece of work, an axial bore in the lower end portion of the body and opening into the recess through the apex of the latter, the diameter of the recess at the apex thereof and of the bore being the same, a counter bore of larger diameter than said first bore in and extending axially of the body and communicating with the upper end of the first bore, a cap removably secured to the top end of said body and having a knurled outer surface coextensive with the surface of the body and forming a longitudinal extension of the body, the cap being formed with a longitudinal extension of reduced outside diameter, the said longitudinal extension of the cap having an axial bore in the upper end portion thereof of the same diameter as said first bore and opening at its lower end into a counter bore which extends through the cap and is of the same diameter as and is aligned with the first counter bore, a center punch shaft having thereon and intermediate its ends a cylindrical enlarged portion and having a pointed lower end, said cylindrical enlarged portion being formed and positioned for snug sliding movement in said aligned counter bores, said shaft having the portion thereof above said cylindrical enlarged portion snugly slidably positioned in and projecting beyond the upper end of the bore in said cap extension, the shaft having the portion thereof below said cylindrical enlarged portion extending through and snugly slidably positioned in the first bore and having said pointed end projecting into the apex portion of the recess when said cylindrical enlarged portion is at its uppermost position in the first mentioned counter bore, and a compression coil spring encircling said shaft below said cylindrical enlarged portion thereof and engaged at one end against the lower end of said cylindrical enlarged portion and supported at its other end in the first mentioned counter bore upon the bottom of the latter and urging upward movement of the shaft away from the recess, the first mentioned axial bore being of substantially greater length than the second mentioned axial bore, the shaft in its engagement in said first and second mentioned bores and the intermediately positioned cylindrical enlarged portion of the shaft in its engagement in the counter bores cooperating to maintain the shaft at all times in exact alignment with the axis of said conical recess, in the use of the tool.

3,162,959
LIGHT TRANSMISSION INTELLIGENCE DISPLAYING AND RESPONSE RECORDING MACHINE
Myron Woolman, 2306 38th St. NW., Washington 7, D.C.
Filed Dec. 2, 1960, Ser. No. 73,296
41 Claims. (Cl. 35—9)



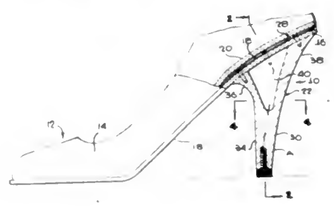
1. A recording machine for allowing a respondent to record responses to presented intelligence, said machine comprising a nonrotatable housing with an opening therein, a light transmission means covering said opening, light propagation means within said housing for propagating light through said light transmission means, said housing opening restricting the light transmitted to a small proportional area of said housing, a recordation web for allowing a respondent to record responses thereon, said recordation web positioned to receive light from said propagation means, an intelligence presenting web positioned in the beam from said light propagation means, said propagation means providing for transmission of intelligence from said intelligence web and providing for transmission of said recorded responses from said recordation web to provide for viewing by a respondent, and control means for controlling the presentation of a portion of said presented intelligence independently of variation of said light propagation means, said control means operable independently of movement of said intelligence presenting web with respect to said light propagatian means, whereby a respondent may view said presented intelligence and said recorded responses within the images of one another.

3,162,960
DIGITAL COMPUTER THEORY TRAINING MACHINE
Frank G. Elmlinger, San Diego, Calif., assignor to Sherry Griswold Foundation, doing business as Electronic Technical Institute
Filed Sept. 10, 1962, Ser. No. 222,605
7 Claims. (Cl. 35—30)



1. In a training device for conversion of numbers from one system to another in the binary, octonary, and decimal number systems, the combination comprising:
first display means for visual display of digits in the binary number system;
second display means for visual display of digits in the octonary and decimal number systems;
first switching means for providing a plurality of operating modes and connecting a D.C. source to said first and second display means;
second switching means for selecting the combination of digits displayed by said first display means;
third and fourth switching means for selecting the digit displayed by said second display means; and
voltage measuring means for said third switching means.

3,162,961
SHOE AND HEEL ASSEMBLY
Jess R. Milligan, New York, N.Y. (104—40 Queens Blvd., Forest Hills 75, N.Y.)
Filed June 25, 1963, Ser. No. 290,445
2 Claims. (Cl. 36—2.5)



1. An aluminum, or the like, ladies' shoe heel having a removable and replaceable lift,
the upper portion of the heel which is approximately one-half the length of the heel being hollow and having a substantially centrally disposed opening therein leading into said hollow portion defined by a relatively narrow heel mounting rim,
the lower portion of the heel being gradually reduced in cross-sectional thickness with respect to the upper

portion thereof and comprising approximately one-half of the length of the heel, a threaded bore centrally in and axially of the bottom portion of the heel and with the remainder of the bottom portion thereof being solid,

a removable and replaceable lift, said lift including an outer wear portion and a threaded stud for removable engagement in said threaded bore,

an attaching plate in the form and of substantially the dimensions of the said heel mounting rim and said plate having a central opening of substantially the same size as the said opening in the heel,

the attaching plate being positionable on the inner side of the heel part of the outer sole of the shoe that extends over the opening in the heel and the rim thereof and said plate and the opening therein being in alignment with the rim and the opening in the heel, an inner sole of the shoe to extend over the attaching plate,

interengaging means for securing the heel to the shoe and which means is adapted to extend from the attaching plate through the subjacent outer sole to the rim on the upper end of the heel for thus permanently securing the heel to the shoe,

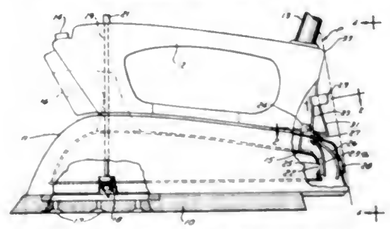
and the heel as attached to a shoe will, due to the downward pressure of a wearer's heel in the shoe, allow that portion of the inner sole and a subjacent portion of the outer sole to be flexed slightly into the aligned openings in said attaching plate and in the heel and provide for a greater comfort to the wearer.

3,162,962
BINDER STRIP FOR SHOE UPPERS
Maurice C. Simons, Swampscott, and Samuel Huberman, Marblehead, Mass., assignors to Bennett Products Company, Lynn, Mass., a corporation of Massachusetts
Filed May 15, 1963, Ser. No. 280,642
5 Claims. (Cl. 36—51)



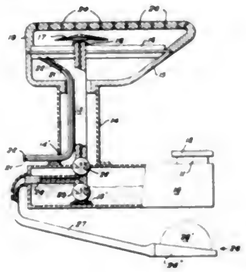
1. A shoe upper having folded over at least a portion of the upper edge thereof and secured to the upper in such position a combined binder and elastic strip, said combined strip comprising a length of elastic material enclosed and secured in a strip of non-elastic binder material, said binder material strip extending widthwise from one side edge thereof around said length of elastic material back to a position opposite said one side edge to substantially cover said length of elastic material and then past said one side edge into a tail portion, the part of said binder material strip around said length of elastic material being gathered in a longitudinal direction to permit longitudinal elongation thereof with the length of elastic material within it, said tail portion of said binder material strip being ungathered, said combined elastic and binder strip being folded over said upper edge with the length of elastic material and the gathered portion of the binder strip covering the same lying along the outside of the shoe upper embraced by said combined strip and with the ungathered tail portion lying along the inside of the shoe upper embraced by said combined strip.

3,162,963
STEAM IRON
Robert S. Knapp, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,776
10 Claims. (Cl. 38—77)



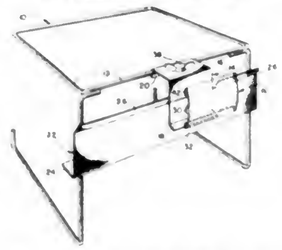
1. A steam iron of the type adapted to be rested on end with the sole plate upright, said steam iron comprising an elongated sole plate, rest means connected to said sole plate for resting the iron on end with the sole plate upright, a water storage tank separate from said rest means carried by the sole plate, said tank being adapted to have a water supply selectively introduced thereinto, the tank having a drain opening therein, a selective actuatable movable closure for the drain opening, and said drain opening being located on said tank to be at substantially the lowest point of said tank when the iron is rested on end, so as to selectively effect substantially complete drainage of said tank, when the iron is in a normal on end rest position with the sole plate disposed in upright attitude.

3,162,964
PORTABLE STEAM PUFF IRONS
Roy L. McIntyre, Lake Grove, Oreg. (Rte. 1, Box 640, West Linn, Oreg.)
Filed May 24, 1962, Ser. No. 197,335
10 Claims. (Cl. 38—99)



1. A portable, steam puff iron consisting of: a base tank; a water supply pipe with a pick-up end and a discharge end, having its pick-up end disposed within said tank; a water feed line intersecting said water supply pipe at a point within said tank; an intake check valve disposed in said water supply pipe between the pick-up end thereof and the water feed line intersection; an outlet check valve disposed in said water supply pipe between its discharge end and said water feed line intersection; a water distributor disposed at the discharge end of said water supply pipe; a puff iron head, provided with a plurality of steam vent holes through the upper portion thereof, encasing said water distributor; an electrical heating element, encircling said water supply pipe below said water distributor, disposed within said puff iron head; a standard secured on said base tank supporting said puff iron head and encasing said water supply pipe; and means providing alternate suction and pressure to the end of said water feed line opposite from the end intersecting with said water supply pipe, thereby drawing water from said base tank through said intake check valve and passing it through said outlet check valve and the discharge end of said water supply pipe.

3,162,965
DISPLAY HOLDER
Robert R. Snediker, Winnetka, Ill., assignor to Chicago Show Printing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 15, 1962, Ser. No. 166,092
5 Claims. (Cl. 40—10)



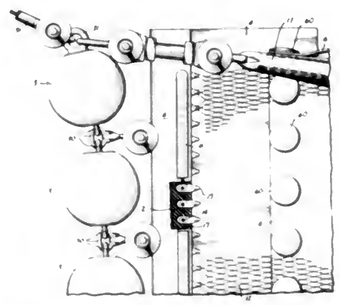
1. A display holding device adapted to removably carry a display means comprising first and second brackets, outwardly extending engaging means formed in one end of said first bracket, an inwardly extending flange formed in the other end of said bracket, a pair of outwardly extending engaging means formed in one end of said second bracket, said pair being spaced apart a distance at least equal to the width of said first bracket, an inwardly extending flange formed in the other end of said second bracket, a slot formed in said second bracket, means movably located within said slot securing said brackets together, and means operatively associated with said flanges for moving said brackets relative to each other.

3,162,966
HANDGUN STABILIZER
Gregory M. La Coss, Falls Church, Va., assignor to La Coss Corporation, Falls Church, Va.
Filed Oct. 25, 1962, Ser. No. 232,981
2 Claims. (Cl. 42—72)



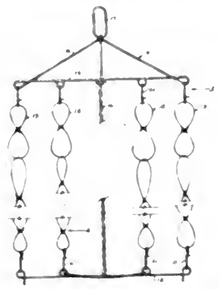
1. A device for stabilizing a handgun of the type having a butt to two opposed lateral sides of which are secured hand grips, by restricting relative movement between the hand, wrist and forearm of the handgun user, said device comprising: a pair of relatively thin stabilizer plates each configured to be received and secured between the handgun butt and one of said handgrips; means defining an elongated socket secured to each stabilizer plate at the lower extent thereof for positioning subjacent the handgun butt; means defining a rearwardly facing opening into said socket; and a stabilizer element including an upwardly concavely curved cradle portion adapted to receive, vertically support, and laterally confine the forearm of the handgun user, and an elongated connecting portion, said connecting portion being secured at a first end thereof to said cradle portion and having securement means at a second end thereof received in said elongated sockets.

3,162,967
TRAWL NET SUSPENSION
Frank J. Luketa, 5567 Greenwood Ave., Seattle 3, Wash.
Filed Jan. 17, 1963, Ser. No. 252,089
9 Claims. (Cl. 43—9)



7. In combination with the forward edge of a bottom mesh panel of a trawl net, a suspension bar ahead of such edge and formed with sockets along its rear edge, sweep lines connected to said suspension bar to drag the same forwardly, clevises straddling meshes across the panel's forward edge at frequent intervals, the free ends of said clevises being received in said sockets, bolts passed through from the upper surface of the suspension bar and through the free ends of the clevises within their sockets, and nuts at the opposite lower surface of the suspension bar receiving and retaining said bolts.

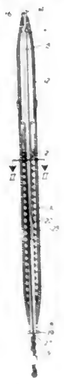
3,162,968
BAIT CATCHING RINGS
Albert Lorenzo, 3031 Virginia St., Miami, Fla.
Filed Jan. 25, 1962, Ser. No. 168,772
3 Claims. (Cl. 43—10)



1. In a device for snaring fish for bait, a frame defining upper and lower, normally horizontal, rigid, vertically-spaced spreader bars, a plurality of chains, each said chain comprising a single strand formed by a multiplicity of sequentially and directly interengaging oval-shaped open-loop links, each link being adapted to receive and ensnare a fish therein, first connector means attaching the upper link of each said chain in spaced relation to and along said upper bar, and second connector means attaching the lower link of each said chain in spaced relation to and along said lower spreader bar, all said chains being held by said spreader bars in discrete spaced substan-

tially parallel relation, and means carried by said upper bar centrally thereof, to connect the same with a fishing line.

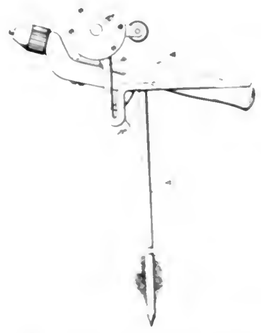
3,162,969
FISH CATCHER
Charles W. Knott, Santa Barbara, Calif., assignor to Thomas P. Hart and Napoleon M. Shalhoob, Jr., both of Santa Barbara, Calif.
Filed June 10, 1963, Ser. No. 286,736
5 Claims. (Cl. 43—15)



1. A fish catcher wherein one end is connected to a fish line controlled by a fisherman and the other end is connected to a fishhook comprising; an elongated shell; means on one end for connecting to a fishline; a tube reciprocable in and out the other end of the shell from an extended cocked position to a telescoped released position, said tube having an inner end; spring means urging said tube into said shell; a resilient latch wire secured to the shell and having an intermediate bent portion and having a free end disposed inside the shell and lengthwise of the shell, and said free end positioned to normally engage the inner end of the tube when the tube is in cocked position; a latch release reciprocable inside said shell and surrounding said latch wire and to engage the bent portion of said latch wire to force the free end to a position aligned with the inside of said tube; and means for connecting the latch release to a fishhook; whereby a pull on the fish hook will cause said latch release to disengage the free end of said latch wire from the inner end of the tube to permit the spring means to impact the tube against the latch release to jerk the fish hook.

3,162,970
FISHING ROD HOLDER
Lyle D. Gould, 1732 Brown Ave., Galesburg, Ill.
Filed July 24, 1963, Ser. No. 297,430
1 Claim. (Cl. 43—21.2)

A fishing rod holder comprising a horizontally disposed U-shaped element, the bight thereof being adapted to overlie the free end portion of the handle of a fishing rod with the handle extending between the legs of said element, an extension projecting from the free end of each of said legs, said extensions having inwardly turned portions contiguous to said legs and straight spaced parallel portions remote from said legs, each of said extensions having a vertically depending portion merging at its upper end with the free end of the adjacent straight portion and having an upwardly turned end portion adapted to straddle the handle and merging at its lower end with the free end of said depending portion, the upper end of each of said end portions being spaced above said U-shaped element for engaging a fishing line reel, a cross bar extending between and secured to said extension parallel portions, and support means depending from said



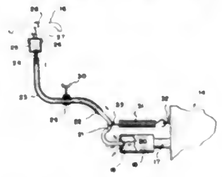
cross bar, said cross bar being adapted to engage the portion of a fishing rod adjacent the handle thereof when said handle is disposed between the legs of said element.

3,162,971
SINKING ARTIFICIAL LURE
Joe L. Gilliam, 114 E. Ross St., Tampa, Fla.
Continuation of application Ser. No. 170,050, Jan. 31, 1962. This application July 25, 1963, Ser. No. 299,449
1 Claim. (Cl. 43—42.3)



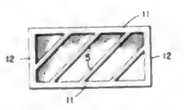
A sinking artificial lure including, an elongated body portion constructed from molded rubber and the like, said body portion having a substantially flat upper surface tapering inwardly toward the rear, sides tapering slightly inwardly, downwardly and rearwardly and a convex lower portion curving upwardly toward the rear, a terminus of said body portion formed by said lower portion curving upwardly toward the rear joined with the side portions which taper slightly inwardly, downwardly and rearwardly and joined with the flat upper surface which tapers inwardly toward the rear, a concave substantially circular front plate attached to the front of said body portion, the top of said front plate being in substantial alignment with the upper surface of said body portion, said front plate extending marginally of said body portion and for a substantial distance below the lower portion of said body portion, the edge of said front plate being substantially at right angles with said upper surface of said body portion, a pair of flexible diverging substantially flat wing-like members originating at the upper surface of said terminus integrally with the body, said wing-like members tapering downwardly and outwardly of the body toward the rear, and means carried by said body portion for attaching hook means adjacent the lower surface of said terminus and for attaching a line adjacent the top of said front plate, whereby side to side movement of the lure is effected by the marginal portions of the front plate, and whereby sinking movement is effected by the portion of the front plate extending below the body stabilized by the wing-like members tapering downwardly toward the rear when the lure is moved in the water.

3,162,972
FOGGER ATTACHMENT FOR GAS POWER MOWERS
Kenneth Ralph McCurley, 9191 Tan Bay, Union Lake, Mich.
Filed Sept. 25, 1963, Ser. No. 311,548
1 Claim. (Cl. 43—129)



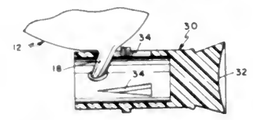
In a gas power mower having a bifurcated handle, an internal combustion engine and an exhaust pipe; the improvement comprising: a muffler connected to the exhaust pipe, extending laterally and having an apertured outlet; a container removably suspended from the handle adapted to store a quantity of liquid bug killer, and having an outlet fitting; a flexible hose at one end joined to said fitting and being open at its other end; a manually operated clamp on said hose intermediate its ends adjustably and compressively engaging said hose for regulating the flow of liquid therethrough; a metallic S shaped conduit at one end joined to the open end of said hose and and at its other end loosely projected into the muffler outlet for delivering drops of bug killer liquid to the interior of the muffler and in a direction opposing the flow of exhaust; a coiled spring at one end anchored to said base and at its other end retainingly engaging said conduit intermediate its ends, flexibly holding said outlet end loosely within the muffler outlet; a cross brace on the handle, the suspension of said container including a hook connected thereto and depending from said cross brace; the metered liquid instantaneously vaporizing on contact with the muffler and hot exhaust gases for delivering with said exhaust gases a cloud of bug killer through the muffler outlet to the immediately surrounding area.

3,162,973
TOY BUILDING ELEMENT
Godtfred Kirk Christiansen, Billund, Denmark, assignor to Interlego A.G., Zug, Switzerland, a corporation of Switzerland
Filed June 27, 1961, Ser. No. 119,885
Claims priority, application Denmark, July 6, 1960, 2,645/60
1 Claim. (Cl. 46—25)



A toy building element having an interior space defined by side and end walls, diagonal integral partitions disposed at 45° to said walls and subdividing said space, each partition being connected at each end to a different one of said walls, at least two of said partitions being connected at one end to opposite end walls and at the other to opposite side walls, an integral top overlying said space, at least two transverse pairs of integral studs extending from the surface of said top opposite to the surface facing the interior space, the space between the studs of each transverse pair being free of projections, the number of mutually parallel partitions being equal to the number of said transverse pairs of studs, the studs of a transverse pair being spaced apart in a plane parallel to an end wall and so disposed that a projection thereof into said internal space would engage in clamping relation opposite sides of the same partition at points spaced apart along the length of that partition, each transverse pair when projected so engaging at least one partition which is not so engaged by another transverse pair of said studs whereby when the studs of a transverse pair of a like element engage at least one of said partitions, a clamping effect results which tends to distort the partition in a manner tending to reduce its overall length thereby to pull inwardly the walls to which the partition is connected.

3,162,974
ONE-PIECE BALLOON VALVE AND HOLDER
James A. Jackson, 1051 Washington Heights Place, and Walter L. Jackson, 1069 Washington Heights Place, both of El Cajon, Calif.
Filed Nov. 20, 1961, Ser. No. 153,613
1 Claim. (Cl. 46—32)

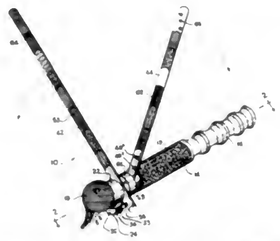


A device for sealing and holding inflatable objects comprising:

a cylinder having an axial bore partway therethrough, the unbored portion of said cylinder terminating in a suction cup; and

a plurality of tapered passageways interconnecting said bore and the outer surface of said cylinder, said passageways positioned with their larger ends toward said suction cup, and their apexes toward the bored end of said cylinder, whereby inflated objects may have their necks pinched in said tapered passageway to seal them, and said suction cup may be attached to suitable surfaces to support the inflated objects.

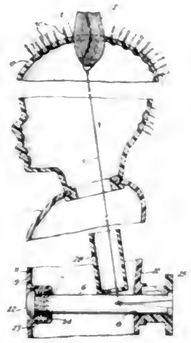
3,162,975
BIRD SIMULATING WHIRLING SOUNDING TOY
Frank M. Amato, 1567 Remsen Ave., Brooklyn 36, N.Y.
Filed Oct. 16, 1962, Ser. No. 230,825
2 Claims. (Cl. 46—118)



1. A spinner toy simulating a bird in flight, comprising a generally cylindrical body with a handle, a shaft having one end removably inserted in the body axially thereof, a pair of long rods each rotatably engaged near one end thereof on the other end of said shaft, spacer means spacing the rods axially on said shaft, and a head secured on the other end of the shaft, said head simulating in form the head of a bird, and said rods simulating flapping wings of a bird in flight when the rods are rotated in opposite directions while the handle is oscillated laterally, each of said rods having a plurality of longitudinal sections coated with differently colored luminous paint to heighten the similarity of the rods to wings of a bird as the rods rotate, one of said rods having a plurality of axially spaced holes

at said one end thereof for adjustably positioning said one rod on said shaft, each of the rods having holes near the other ends thereof for emitting whistling sounds as the rods rotate, a corrugated sound emitting device secured to said head, and a striker member secured to said one end of the other rod, said striker member being disposed to engage the corrugations of said sound emitting device intermittently as said other rod rotates for producing sounds simulating bird calls.

3,162,976
DOLL, TOY FIGURE AND THE LIKE WITH AN ADJUSTABLE LOCK OF HAIR
Herbert R. Beebe, Richmond Hill, and Bernard Suchowski, Howard Beach, N.Y., assignors to American Character, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 26, 1963, Ser. No. 290,843
7 Claims. (Cl. 46—172)



5. A doll having a hollow head and body, the head having an opening in the top thereof, a long lock of hair having a portion protruding through the opening of said doll head and a portion extending internally of said doll head, said lock of hair having a length sufficient for permitting withdrawing the same through and from and retracting the same into and through the doll head to adjustably vary the protruding length of the lock of hair, and means in said doll body to adjustably vary the protruding length of the lock of hair, said means having a manually operable part protruding from said doll body and a part connected to the internally extending portion of said lock of hair, said means being manually operable by said doll protruding part for causing said lock connected part to pull and retract said lock of hair into and through the doll head for shortening the protruding portion of said lock of hair, said means permitting the protruding portion of said lock of hair to be manually pulled outwardly through the doll head opening to lengthen the said protruding portion of the lock of hair.

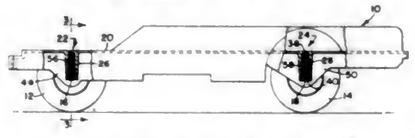
3,162,977
ANIMATED CLOWN BOARD
Henry R. Ellscher, 322 Charing Cross Road, Elk Grove Village, Ill.
Filed Jan. 31, 1963, Ser. No. 255,311
1 Claim. (Cl. 46—189)

In a toy of the class described, comprising, in combination, a pyramidal housing provided with the face of a clown embossed in colors thereupon, a sound effect device within said housing, said device having an operating shaft provided with a knob, a hub secured to said shaft and being rotated by said knob, a flat spring held to said hub, upright studs in said device and spaced from the shaft a distance slightly less than the spacing of the spring from said shaft, the ends of said flat spring con-



tacting said studs and the rotation of said spring by said shaft producing a grinding sound effect.

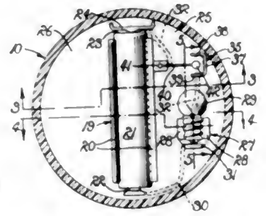
3,162,978
TOY VEHICLE WITH COIL SPRING SUSPENSION
Bernard E. Balthazor, Moline, Ill., assignor to Buddy L Corporation, East Moline, Ill.
Filed Apr. 5, 1963, Ser. No. 270,867
6 Claims. (Cl. 46—221)



5. A toy vehicle, comprising: a fore-and-aft base structure having front and rear ends, opposite sides, a top and a bottom, each of said sides including a wheel housing having an inner depending wall; an axle mount adjacent to one end and including a pair of transversely spaced and alined generally upright housings affixed to said structure respectively inwardly of said inner walls, each upright housing being open at its bottom and having abutment means at its top and each upright housing further having a pair of vertically elongated slots in transverse alinement and opening at the bottom of said housing; a transverse axle received in the slots of the upright housings, said axle being movable vertically in its slots relative to said structure and upright housings and projecting at opposite ends laterally beyond its upright housings; wheels respectively on said axle ends and respectively in said wheel housings; a pair of axle limit means separate from said upright housings and included respectively in said inner walls and each having a lower stop portion generally at the bottoms of the upright housings and engaging the associated axle from below to confine said axle from downward escape from the bottoms of the slots while permitting the aforesaid limited vertical movement of the axles relative to said structure; and a plurality of yielding resilient means, one housed in each upright housing and acting downwardly on the axle and reacting upwardly on the abutment means to bias the axle downwardly and permitting said axle to move upwardly.

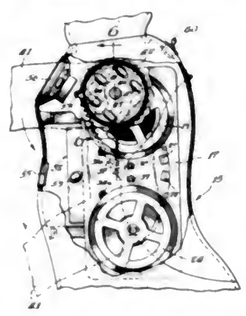
3,162,979
ILLUMINATED AERIAL TOP
Mike M. Garoogian, 146 S. Woodrow, Fresno, Calif.
Filed Aug. 13, 1962, Ser. No. 216,386
3 Claims. (Cl. 46—228)

1. In a "Yo-yo" having a pair of hollow body members mounted in axially spaced relation on an axle, and a string windable about the axle for controlled throwing of the "Yo-yo" and rotation of the body members incident to winding and unwinding of said string on the axle, an electrical system borne by each of said body members including a current source providing contact poles of opposite polarity, a light radiating member providing contact posts of opposite polarity, means connecting the contact poles of said current source with the similar polarity



contact posts of the light radiating member, and resiliently flexible means in one of said connecting means disposed eccentrically of said axle and in acute angular relation to a radial plane passing therethrough from the axle interrupting current flow when the body members are at rest and upon being thrown said flexible means being responsive to acceleration and centrifugal forces successively to connect said light radiating member to said current source to illuminate the radiating member.

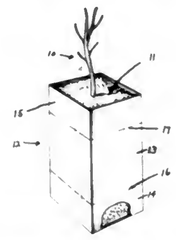
3,162,980
TALKING DOLL AND THE LIKE
Werner F. Hellman, 4417 N. Malden Ave., Chicago, Ill.
Filed July 6, 1961, Ser. No. 122,346
4 Claims. (Cl. 46—232)



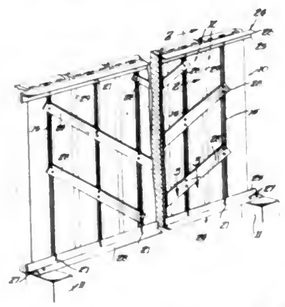
2. In combination with a doll body having at least one movable body appendage, tape recording and playback apparatus mounted in said body, mercury switch means mounted in said body and on said appendage and in electrical circuit with said apparatus, the switch means on said appendage being revolvable about the axis of movement of said appendage, said switch means being rendered effective or ineffective in accordance with changes in the positioning of said body and said appendage to selectively render said apparatus effective for recording and ineffective for play-back or effective for playback and ineffective for recording.

3,162,981
METHOD AND MEANS FOR TRANSPLANTING
Leon M. Miller, Rte. 5, Tyler, Tex.
Filed July 14, 1961, Ser. No. 124,120
2 Claims. (Cl. 47—58)

1. Method of transplanting living plants comprising the steps of forming a generally tubular earth mass of the soil associated with the root structure of the plant, closely enclosing substantially the entire mass of earth with substantially impervious sheet wrapping material for shipment, removing a portion of said wrapping material prior to transplanting to expose a substantial portion of the side wall of the earth mass, and retaining a portion of the wrapping material in place to encircle a medial portion of the tubular earth mass for partial support.

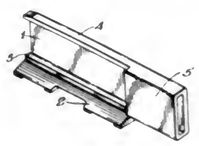


3,162,982
LOAD BEARING MULTIPLE PANEL UNIT
Clarence B. Monk, Jr., 1034 Heather Road, Batavia, Ill.
Filed Feb. 9, 1959, Ser. No. 791,994
6 Claims. (Cl. 50—368)



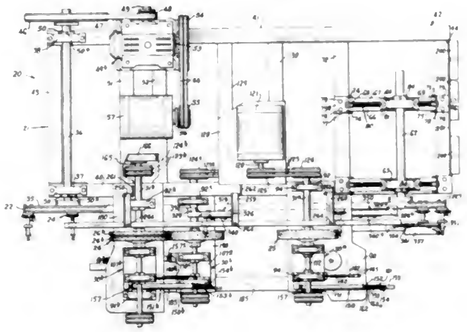
4. A load bearing construction unit of flat generally rectangular shape adapted for use in a vertical position and having top and bottom edges, said unit comprising, in combination, a row of separately formed elongated flat rectangular panels arranged side by side and parallel to each other in a common plane with adjacent side edges of adjacent panels disposed vertically and closely adjacent each other, a bonding material securing said adjacent side edges of adjacent panels to each other to form a rigid wall assemoly, each of said panels having front and rear faces and an elongated metal reinforcing member embedded in the panel so as to extend substantially the full length thereof between said faces and to be accessible from the rear face, a plurality of elongated flat reinforcing bars extending diagonally across said rear faces of adjacent panels so as to converge downwardly from the side edges of said unit to provide a resistance to racking forces, fastening elements spaced along each of said bars and interlocking with the bar and said reinforcing members of adjacent panels to secure the latter and the bar rigidly together, and attaching means secured to said reinforcing members and adapted to be fastened to building structures to be supported by the unit, said panels, bonding material, bars, and fastening elements forming a self-contained load bearing wall unit transportable as a unit from place to place.

3,162,983
PARTIALLY HOODED VANE FOR ABRASIVE BLASTING WHEELS
Edward L. Hartman, Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed July 10, 1963, Ser. No. 293,951
2 Claims. (Cl. 51—9)



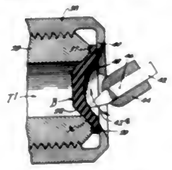
1. An abrasive carrying vane for use in a rotatable abrasive blast wheel comprising a flat abrasive propelling surface extending longitudinally of the vane, a mounting along the bottom of the vane for anchoring the vane in the rotatable blast wheel, and a hooded portion of the vane at the tip end thereof extending over the flat surface carrying the abrasive to form the completely enclosed channel at the outer end of the vane.

3,162,984
BUFFING OR POLISHING MACHINES
John B. Sewell, 1140 Haymarket St., Dallas, Tex.
Filed Aug. 22, 1962, Ser. No. 218,745
12 Claims. (Cl. 51—76)



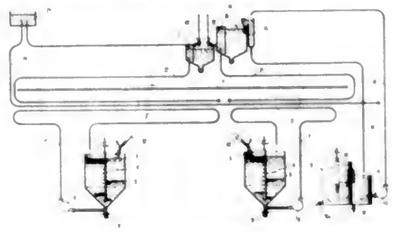
1. A buffing machine including: means for carrying objects to be polished in a predetermined path; a plurality of buffer means disposed in spaced relationship along said predetermined path and engageable with objects carried by said carrying means, each of said buffer means being mounted for rotation about a first axis perpendicular to the path of movement of objects moved therepast by said carrying means and for movement out of predetermined path about a second axis spaced from and parallel to said first axis; means biasing said buffer means against movement about said second axis out of said path of movement; and means cooperable with said carrying means for varying the attitude of each object at predetermined locations along said predetermined path for causing different areas of said objects to be engaged and polished by different ones of said buffer means, each object being held against movement relative to said carrying means during its engagement with each of said buffer means.

3,162,985
APPARATUS FOR PRODUCING CONTACT LENSES
Henry J. Kratt, Tulsa, Okla., assignor to The Plastic Contact Lens Company, Chicago, Ill., a corporation of Illinois
Original application Apr. 25, 1960, Ser. No. 24,473, now Patent No. 3,100,955, dated Aug. 20, 1963. Divided and this application Oct. 18, 1962, Ser. No. 231,476
4 Claims. (Cl. 51—217)



1. Apparatus for partially producing contact lenses comprising a lens blank holding tool having a cone seat for a lens blank that has a cone-shaped portion, and an inturned continuous flange normal to the axis of said tool and movable axially thereof to engage an orienting flange of the lens blank, said cone seat and said inturned continuous flange cooperating with said cone-shaped portion and said orienting flange respectively to hold the lens blank axis true to the axis of rotation of said tool while a spherical curve is formed on one side of the lens blank.

3,162,986
METHOD AND APPARATUS FOR FEEDING ABRASIVES
Luigi Olivieri, Pisa, Italy, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Jan. 18, 1963, Ser. No. 252,374
Claims priority, application France Feb. 6, 1962
15 Claims. (Cl. 51—263)



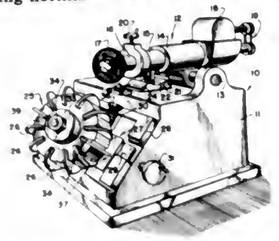
1. An apparatus for feeding an abrasive mixture to glass polishing tools comprising means to maintain a predetermined amount of levigated material in a first container, means to maintain a predetermined amount of iron sulfate solution in a second container, means to discharge levigated material from said first container, means to discharge the iron sulfate solution from said second container and means adjacent said polishing tool for receiving and mixing the discharge from said first and second containers and for feeding the said mixture to the polishing tool.

3,162,987
METHOD OF RESHARPENING CUTTER BLADES HAVING A CONTOURED CUTTING EDGE
Albert W. Cronin, Corning, and Truman R. McDonald, Campbell, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 2, 1962, Ser. No. 234,930
4 Claims. (Cl. 51—288)

1. A method of resharpening a cutter blade having a substantially parabolic shaped cutting edge and a longitudinal axis comprising the steps of

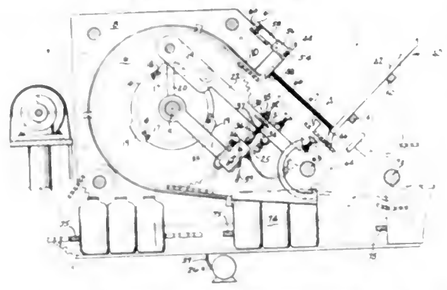
(*a*) reciprocating and simultaneously rotating a grinding wheel and

(*b*) feeding the cutting blade with the longitudinal axis of the blade at an acute angle with respect to a line projecting normal to the mean path of reciprocation



of the grinding wheel so that the blade intermittently engages the cutting face of the grinding wheel substantially normal to the latter as the grinding wheel reciprocates.

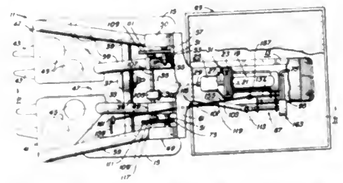
3,162,988
BLANK APPLYING APPARATUS
Earle C. Sherman, Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Oct. 1, 1962, Ser. No. 227,246
4 Claims. (Cl. 53—48)



1. Blank applying apparatus comprising, a pair of laterally spaced chains, sprocket means mounting said chains for continuous movement in laterally spaced vertical planes, hopper means mounted above said chains, vacuum arms positioned between said chains, means mounting said vacuum arms for pivotal movement toward and away from said hopper to selectively deliver blanks from said hopper onto said chains, vacuum cups mounted on said vacuum arms, valve means and conduit means connecting said vacuum cups to a vacuum source, control means mounted on said vacuum arms adapted to interrupt the vacuum flow when said vacuum arms are moved away from said hopper, a cam mounted on said sprocket means adapted to engage a cam follower on one of said vacuum arms to move said vacuum arms toward and away from said hopper as the sprocket and cam means rotate, and guide means mounted adjacent said laterally spaced chains to guide a wrapper blank positioned on said chains in a path about the periphery of said chains from a position above the chains to a position below the chains wherein the blank is inverted and operatively applied to a group of objects moving in a linear path below said chains and at a location directly below said hopper.

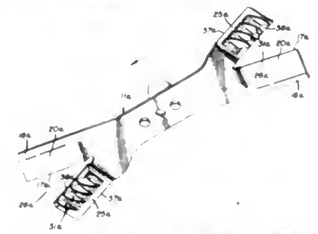
3,162,989
COTTON PICKER DRIVING APPARATUS
Wilbur S. Wheeler, Rte. 1, Essex, Mo.
Filed Mar. 20, 1963, Ser. No. 266,625
6 Claims. (Cl. 56—14)

1. In the driving apparatus of a cotton picker, an engine having a crankshaft and including a fly wheel fixedly attached to one end of said crankshaft, a transmission having an input shaft and an output shaft and including means manually selectable for changing the ratio of the speeds of said input and output shafts, a friction clutch mounted between said engine and said transmission disengagingly coupling said fly wheel and said input shaft, two ground engaging wheels, a first drive train including means interconnecting said wheels and said output shaft for traveling movement of the cotton picker along the ground, a cotton picking unit for removing the cotton from the cotton plants, a second drive train interconnecting said picking unit and said output shaft for the operation of said cotton picking unit, at least one fan and conduit means for conveying the cotton from said cotton picking unit to a remote place therefrom, a countershaft disposed laterally



of said engine and parallel with said crankshaft thereof, a first pulley fixedly attached to said crankshaft at the end opposite from said fly wheel, a second pulley fixedly attached to said countershaft, belt means around said first and second pulleys, a frame, bearing means mounted on said frame rotatably receiving said countershaft, support means rigidly connected to said engine, means pivotally mounting said frame on said support means for movement of said countershaft outwardly and inwardly relative to said crankshaft to respectively tighten and loosen said belt means around said first and second pulleys, a third drive train interconnecting said fan and said countershaft, and control means for manually effecting said outward and inward movement of said countershaft for engagement and disengagement of said fan with said engine.

3,162,990
SAFETY-TYPE, ROTARY VEGETATION CUTTING BLADE
Harry R. Cook, 2231 Inchcliff Road, Columbus, Ohio
Filed Aug. 1, 1963, Ser. No. 299,388
5 Claims. (Cl. 56—295)



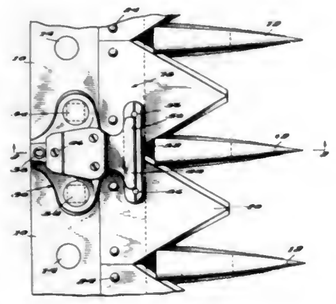
1. A safety-type, rotary, vegetation cutter comprising an elongated, bar-type blade means having a centrally disposed axis of rotation and terminating at each end thereof in a pair of acutely angularly divergent arms defining therebetween an outwardly opening, generally V-shaped slot, at least one of said arms having a leading cutting edge defining one side of said slot and arranged in slightly vertically offset, rotationally trailing relation to the other of said arms, each of said arms being formed with an upturned trailing edge portion; and a plurality of relatively spaced apart guard fingers carried by the other of said arms in rotational advance of the cutting edge of said one arm, said guard fingers extending sub-

stantially perpendicularly through the plane of rotation of said cutting edge and being operable upon rotation of said blade means to deflect relatively large size objects out of the path of rotation of said cutting edge while permitting relatively smaller size vegetation to enter between said guard fingers into the path of rotation of said cutting edge.

3,162,991
CUTTING APPARATUS

Richard C. Maxant, Ayer, Mass., assignor to H. & R. Manufacturing Co., Ayer, Mass., a sole proprietorship of Richard C. Maxant

Filed Jan. 9, 1963, Ser. No. 250,435
2 Claims. (Cl. 56—305)



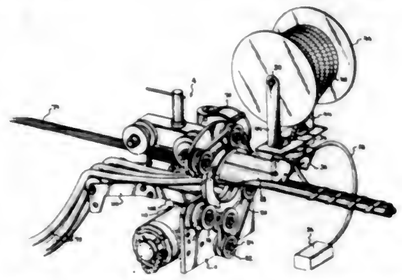
1. A device for use in mounting a movable blade with respect to a stationary member, said device comprising a block adapted to be mounted on a stationary member, an elongated spring having one end fixed on the block and a tongue portion on the other end of the spring, a protrusion on the block extending from the surface thereof into abutting relation with the stationary member and about which the block can pivot relative to said stationary member, screw means on the block opposite from the spring tongue portion for pivotally adjusting the block with respect to the stationary member on which the block is adapted to be mounted, and bearing means having a flat surface adapted to contact a blade in face-to-face engagement and having a slot opposite said surface, said tongue portion of the spring fitting loosely into said slot to allow pivotal movement between the tongue portion and the bearing means.

3,162,992
CABLE INSTALLING AND WRAPPING APPARATUS

Thomas C. Davis, Dallas, and Jack W. Willis, Irving, Tex., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Dec. 20, 1962, Ser. No. 246,115
3 Claims. (Cl. 57—10)

1. A device for applying helical ribbon wrapping material to a cable comprising, a carriage, a drive roll on said carriage and means for pressing said cable against said drive roll, variable speed drive means for rotating said drive roll thereby to propel said carriage along said cable, a support ring, a plurality of support rolls on said carriage, said support rolls having flanges on their ends and being spaced in surrounding relationship to said ring with said flanges overlapping said ring thereby to hold said ring on said carriage, variable speed rotating means for rotating said support ring, a supply of helical ribbon wrapping material mounted on said support ring, and means mounted on said ring for guiding and unraveling

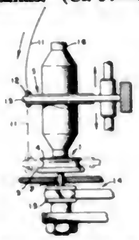


said wrapping material as said carriage moves along said cable whereby said material is continuously applied to said cable.

3,162,993
YARN WASTE SPOOL

John M. Green, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware

Filed Jan. 21, 1963, Ser. No. 252,927
11 Claims. (Cl. 57—34)

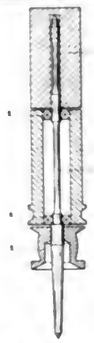


1. A yarn holding spool comprising,
(*a*) a ring-like body having a frusto-conical outer face,
(*b*) springy flange means arranged adjacent to the reduced end of said outer face,
(*c*) flange means formed adjacent to the larger diameter end of said outer face,
(*d*) means defining a slot in said outer face.

3,162,994
SPINNING-SPINDLE

Hendrik Glastra, 25 Van 't Hoffiaan, Enschede, Netherlands

Filed June 26, 1962, Ser. No. 205,365
Claims priority, application Netherlands, July 13, 1961, 267,072
2 Claims. (Cl. 57—130)



2. A spinning spindle comprising two coaxial parts of which one is an upper cylindrical part connected to a shaft, and the other is a lower cylindrical part freely rotatable on the shaft.

3,162,995
METHOD OF PROCESSING MONOFILAMENT YARN

Marvin H. Comer and Carl W. Thomas, both of Burlington, N.C., assignors, by mesne assignments, to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Filed Sept. 11, 1961, Ser. No. 137,382
9 Claims. (Cl. 57—157)

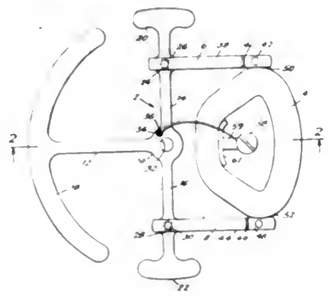


1. A method of processing a monofilament thermoplastic yarn to produce a plurality of small closely spaced, substantially uniform, spring-like helical coils therein, the rotational direction of said coils periodically reversing along the length of the yarn to balance the overall torque of the yarn and provide a stretchable yarn suitable for single-feed knitting of hosiery and the like, said method comprising the steps of:
(*a*) drawing together first and second only monofilament yarns from separate yarn supply sources,
(*b*) joining the separate yarns together,
(*c*) false twisting the joined together yarns with about 85 to 126 turns of false twist in one direction while heat-setting the yarns,
(*d*) subsequently false twisting the yarns a second time in the opposite direction while reducing the number of turns imparted by substantially one-third of the number of turns imparted in the first false twisting step and while heating the yarns in the second false twisting operation at a temperature lower than in the first false twisting operation,
(*e*) separating the two yarns, and
(*f*) taking up the separated yarns on separate bobbins.

3,162,996
BALANCE WHEEL

Louis G. Brethauer, Landisville, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Oct. 25, 1961, Ser. No. 147,616
4 Claims. (Cl. 58—28)

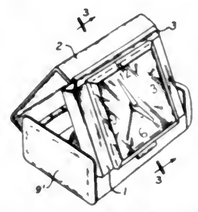


1. In a battery operated electric watch, a balance staff, said balance staff being provided with a seat, an integral balance wheel formed of a unitary piece of metal, said balance wheel having a central hub portion, said hub portion having an aperture therein for receiving said staff until said hub portion rests on said seat, a first arm extending radially outward from said hub portion, a first arcuate rim section free from tapped holes carried by said first arm, a second arm extending radially outward from said hub portion approximately perpendicular to said first arm, said second arm having a widened portion intermediate the ends thereof, a second arcuate rim section free from tapped holes carried by said second arm, said second rim section having a radius of curvature equal to said first rim section and an arcuate dimension less than said first rim section, a third arm extending radially outward from said hub portion in a direction substantially opposite to said second arm, said third arm having a widened portion intermediate the ends thereof, a third arcuate rim section free of tapped holes carried by said third arm, said first, second and third arcuate rim sections being spaced from each other about the periphery of said balance wheel, said third rim section being symmetrical with said second rim section, a coil, means for mounting said coil on said balance wheel, said mounting means comprising first and second attachments having offset portions, said first attachment having one end connected with said widened portion of said second arm, and the offset portion connected to the coil, said second attachment having one end connected to said widened portion of said third arm and the offset portion connected to said coil, said coil and coil mounting means being balanced solely by said arms and said rim sections.

3,162,997
HOUSING FOR TRAVELING CLOCKS

Karl Otto Schmidt, Idar-Oberstein, Germany, assignor to Gebrüder Schmidt Metallwarenfabrik, Idar-Oberstein, Germany, a corporation of Germany

Filed Jan. 28, 1963, Ser. No. 254,063
Claims priority, application Germany, Jan. 27, 1962, 30,895
3 Claims. (Cl. 58—56)



1. A housing for traveling clocks comprising
an integral, inner form part of synthetic material having a bottom wall, a front wall, a rear wall and two oppositely disposed side walls of a greater height than that of said front and rear walls,
a bottom member having upwardly extending front and rear walls pretensioned toward each other of a height substantially identical with that of the front and rear walls of said inner form part and surrounding said bottom wall and said front and rear walls of said inner form part,
a first hinge secured to the top of said front wall of said bottom member,
a second hinge secured to the top of said rear wall of said bottom member,
said integral, inner form part being received in and retained by said bottom member by said pretensioned front and rear walls thereof,
a carrying plate adapted to receive a clock and hingedly connected to said first hinge of said bottom member,
a cover having a top wall and integral front and rear walls and being hingedly connected to said second hinge of said bottom member and following sub-

stantially the top edge and the front and rear edges of said walls of said inner form part,

means disposed on the bottom of the front wall of said cover and at the rear of said carrying plate for reposition, and

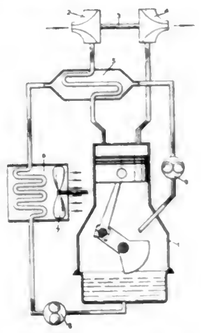
means for opening said housing.

3,162,998

SUPERCHARGED INTERNAL COMBUSTION ENGINES

David Eyre Williams, % Bristol Siddeley Engines Ltd., Coventry, England

Filed Feb. 7, 1964, Ser. No. 343,378
Claims priority, application Great Britain, Mar. 1, 1963, 8,219/63
5 Claims. (Cl. 60—13)



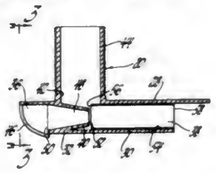
1. A power plant comprising an internal combustion engine; a supercharger compressor therefor; an intercooler connected between the outlet of the supercharger compressor and the inlet manifold of the engine; an oil cooler connected in a series circuit with the intercooler and the engine, and means for circulating lubricating oil through the said circuit, whereby lubricating oil is removed from the engine, is cooled in the oil cooler, is passed through the intercooler as the coolant medium therefor and is then returned to the engine for lubrication of the parts of the latter.

3,162,999

ENGINE EXHAUST SCAVENGING DEVICE

Lysle I. Benjamen, 2099 E. Maple, Birmingham, Mich.

Filed May 16, 1962, Ser. No. 195,144
8 Claims. (Cl. 60—32)



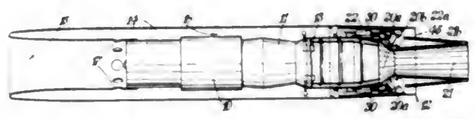
1. An exhaust scavenging device adapted to be mounted within a fluid through which a craft is propelled and connected to the exhaust of the engine thereof, said device comprising a housing having an exhaust chamber interiorly thereof, exhaust inlet means communicating with said chamber, and a row of axially tapered venturi nozzles each having an inlet opening communicating with the exterior of said housing at one end thereof and a smaller axially spaced and aligned outlet opening communicating with said exhaust chamber, the mean areas of said respective venturi nozzles decreasing from a nozzle substantially in the center of the row thereof toward each end thereof, and a row of diffuser nozzles each having an inlet opening communicating with said exhaust chamber and an axially spaced and aligned outlet opening communicating with the exterior of said housing at the other end thereof, said diffuser nozzles being respectively axially aligned with said venturi nozzles whereby fluid flowing through said venturi nozzles creates a vacuum in said exhaust chamber to draw exhaust gases from said exhaust inlet means for discharge through said diffuser nozzles.

3,163,000

JET PROPULSION NOZZLE ARRANGEMENTS

Frederick William Walton Morley, Castle Donington, Leicestershire, Gordon Cyril May, Allestree Park, Derby, and Norman Arthur Kerridge, Alvaston, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Nov. 24, 1961, Ser. No. 154,769
Claims priority, application Great Britain, Nov. 28, 1960, 40,867/60
10 Claims. (Cl. 60—35.6)



1. A jet propulsion nozzle arrangement for aircraft comprising a plurality of upstream flaps which are pivotally supported adjacent thier upstream ends and together form a convergent nozzle section of variable convergence, a corresponding plurality of downstream flaps which are pivotally mounted by their upstream ends on the downstream ends of the upstream flaps and define therewith a gap, the downstream flaps having inner walls which together define a divergent nozzle section downstream of the convergent nozzle section, the downstream flaps further having outer walls, fairing structure spaced outwardly from the upstream flaps and having a trailing edge disposed adjacent the upstream ends of the outer walls of the downstream flaps, means to effect swinging of the flaps between a first position in which the area of a throat defined by the downstream ends of the upstream flaps is a minimum and in which the upstream ends of the outer walls of the downstream flaps are spaced inwards from the trailing edge of the fairing structure to define a space therewith, and a second position in which the throat area is greater and the outer walls of the downstream flaps constitute downstream continuations of the fairing structure, and means to supply air to said space and said gap, the air supplied to said space flowing along said outer walls to atmosphere and the air supplied to said gap flowing along said inner walls to cool them.

3,163,001

RECIPROCATING PISTON PULSE JET ENGINE

Joseph P. Reilly, 300 Elmhurst St., Apt. 2, Hayward, Calif.

Filed Apr. 22, 1963, Ser. No. 274,542
7 Claims. (Cl. 60—35.6)

1. In a jet pulse engine:

(*a*) a cylinder;

(*b*) a piston slidably mounted in said cylinder;

(*c*) a cylinder head for said cylinder and having a firing compartment therein with an outlet communicating with a jet nozzle;

(*d*) a disc valve slidable in said cylinder and disposed between said piston and said cylinder head;

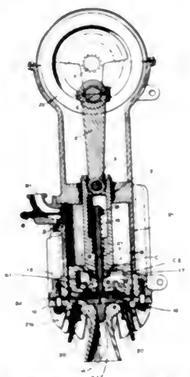
(*e*) said disc valve having a plug adapted to close the outlet between said firing compartment and said jet nozzle when said disc valve is at one end of its stroke;

(*f*) means for feeding a combustible mixture into the cylinder and between said piston and said disc valve for moving said valve in advance of said piston while said piston is moving toward said cylinder head;

(*g*) means for moving said piston toward said cylinder head;

(*h*) a bypass for conveying the combustible mixture from said cylinder into said firing chamber;

(*i*) said disc valve cooperating with said cylinder and piston for retaining the combustible mixture in said cylinder and between said piston and said valve during the movement of said piston and valve toward the firing chamber and until said plug closes the outlet to said jet nozzle and said valve is temporarily brought to a stop;



(*j*) said valve when in temporary stopped position and said plug closing said outlet, uncovering said bypass and permitting the further movement of said piston toward said cylinder head to compress the combustible mixture and force it from the cylinder, through the bypass, and into the firing chamber; and

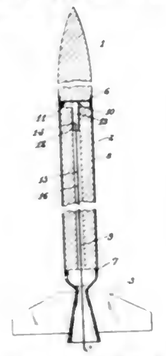
(*k*) means for igniting the compressed combustible mixture in the firing chamber when said piston completes its movement toward said cylinder head and is brought into a close position to said valve.

3,163,002

PLASTIC ROCKET TUBE

Alexander Ewing Crawford Denovan, 2 Dovercourt Gardens, Stanmore, England; Dennis James Hodgson, 12 Anthony Close, Oxhey, England; and Henry Kremer, 35 Stormont Road, Highgate, London, England

Filed Sept. 4, 1953, Ser. No. 378,516
Claims priority, application Great Britain, Sept. 8, 1952, 22,567/52
6 Claims. (Cl. 60—35.6)



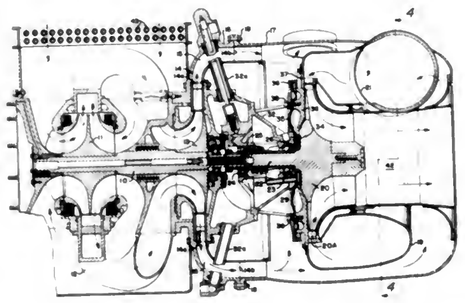
1. A rocket tube having high tensile properties which tube is made of a thermosetting plastic having an affinity for glass fiber and having glass fibers incorporated therein as a reinforcing agent, said tube being cylindrical and having a constricted throat at one end thereof lined with a heat resisting plastic.

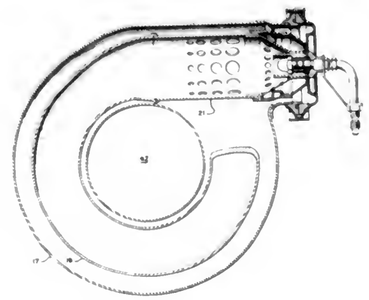
3,163,003

GAS TURBINE COMPRESSOR

Carlton H. Paul, Scottsdale, Ariz., and Homer J. Wood, Sherman Oaks, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Original application Oct. 25, 1954, Ser. No. 464,276, now Patent No. 3,014,694, dated Dec. 26, 1961. Divided and this application Feb. 27, 1961, Ser. No. 91,951
7 Claims. (Cl. 60—39.36)



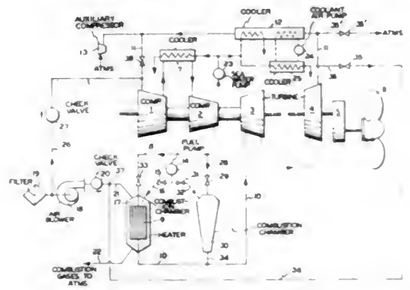


1. A gas turbine comprising: a centrifugal compressor wheel; a centripetal turbine wheel coupled with said compressor wheel to impart rotary motion thereto; diffuser means having a pair of walls spaced to provide an annular passage extending radially from the periphery of said compressor wheel and terminating in an axially extending outlet; an annular gas entry chamber disposed in a plane normal to the axis of rotation of said compressor and turbine wheels and having an annular radially inwardly directed gas nozzle means registering with the periphery of said turbine wheel to direct gases thereto; a combustor having a perforated outlet tube connected and communicating substantially tangentially with said gas entry chamber; and a casing surrounding the outlet of said diffuser, said gas entry chamber, and said combustor, said casing serving as a means for conducting compressed fluid from the diffuser outlet to the combustor inlet.

3,163,004
DUAL-CIRCUIT THERMAL POWER PLANT

Werner Spillmann, Kilchberg, and Hansulrich Frutschi, Zurich, Switzerland, assignors to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland

Filed Nov. 18, 1963, Ser. No. 324,314
Claims priority, application Switzerland, Dec. 6, 1962, 14,321/62
6 Claims. (Cl. 60—39.75)



1. A thermal power plant operating with a gaseous working medium comprising compressing means in which said working medium is compressed from an initial pressure to a higher pressure; heating means in which the so-compressed working medium is brought to a higher temperature; and turbine means in which the so-heated compressed working medium is allowed to expand while doing work; said heating means comprising a heater having heat exchange walls through which the working medium may receive heat from the exterior and a combustion chamber in which fuel may be burnt in the working medium; a flow connection between the outlet of said compressing means and the inlet of the turbine means; said flow connection having two branches, one for leading the compressed working medium through said heater and the other for leading the compressed working medium through said combustion chamber; a flow connection including a cooler leading from the outlet of the turbine means to the inlet of the compressing means; a flow connection between the outlet of the turbine means and the atmosphere; a flow connection between the inlet of the compressing means and the atmosphere; and valve means in said flow connections allowing selectively to operate the plant with one of the following circuits:

(*a*) an open circuit in which the inlet of the compressing means and the outlet of the turbine means are connected to the atmosphere and the compressed working medium flows through the combustion chamber, and

(*b*) a closed circuit in which the expanded working medium flows from the outlet of the turbine means through said cooler to the inlet of the compressing means and the compressed working medium flows through said heater; and means for raising the inlet pressure of the compressing means above atmospheric pressure when the plant is operated with the closed circuit.

3,163,005
APPARATUS FOR USE ON FLOATING DRILLING PLATFORMS

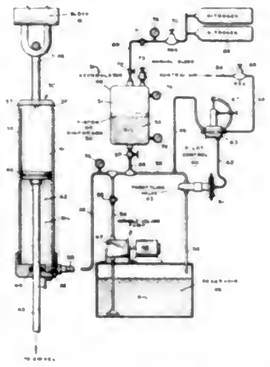
John A. Reed II, Los Alamitos, Calif., assignor, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,445
1 Claim. (Cl. 60—51)

Apparatus for maintaining substantially constant tension on well equipment such as drill pipe and the like suspended in a well bore from suspension apparatus mounted on a floating offshore structure comprising:

an elongated cylinder and a piston slidably arranged in said cylinder interposed between said suspension apparatus and said well equipment;

means for providing constant liquid pressure to said cylinder to maintain substantially constant tension on said well equipment including an accumulator comprising a chamber having a movable, pressure responsive member dividing said accumulator into first and second chambers, means for supplying gas under pressure to said accumulator first chamber, said accumulator second chamber containing liquid in fluid communication with said cylinder; means for



increasing the gas pressure in said accumulator first chamber as the well bore is deepened to maintain constant sensitivity of said apparatus; said accumulator first chamber being provided with a gas-relief valve for reducing fluid pressure in said accumulator second chamber;

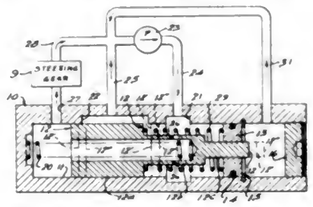
a liquid reservoir; and

a constant speed, variable volume pump for supplying said cylinder with liquid at a constant selected pressure, said reservoir liquid being in fluid communication via said pump with said accumulator second chamber, and means responsive to increased liquid pressure in said cylinder for releasing liquid to said reservoir from said cylinder and also from said accumulator second chamber.

3,163,006
FLOW CONTROL DEVICE

Christopher Nuss, Roseville, and Thomas A. Unckrich, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Jan. 24, 1964, Ser. No. 340,007
7 Claims. (Cl. 60—52)

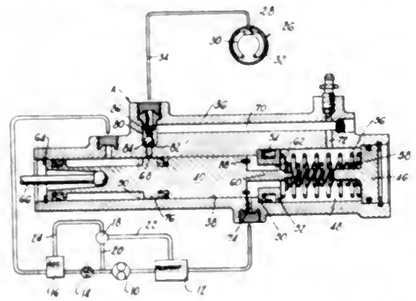


1. In a flow control device, an inlet port, a restricted metering port in communication with said inlet port for discharging metered fluid therefrom at reduced pressure to a downstream side of said port, a bypass port, valve means cooperable with said ports and shiftable to a closed position for closing said bypass port to both said inlet and metering ports, said valve means being shiftable in one direction from said closed position to an open position for closing said bypass port to said downstream side of said metering port and for opening said bypass port to said inlet port, said valve means being shiftable in the direction opposite said one direction from said closed position to a relief position for opening said bypass port to said downstream side of said metering port and for closing said bypass port to said inlet port, said valve means having first and second effective areas arranged in opposition to each other and adapted to be exposed to fluid pressure to cause shifting of said valve means in said one direction and the opposite respectively, and means for connecting said inlet port and the downstream side of said metering port to said first and second areas respectively, said first area being smaller than said second area.

3,163,007
POWER BRAKE CONTROL VALVE

John D. Scott, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Continuation of application Ser. No. 156,115, Nov. 30, 1961. This application Jan. 4, 1963, Ser. No. 249,523
3 Claims. (Cl. 60—54.5)



1. In a fluid pressure device: a housing having a forwardly and rearwardly extending fluid pressure chamber; a piston in said chamber; stop means preventing rearward movement of said piston beyond a retracted position; said housing having an exhaust port communicating with said chamber adjacent said piston; a control member having a normal position in said chamber rearwardly of said piston; said control member when in said normal position establishing communication between said exhaust port and said chamber forwardly of said piston, and closing off communication upon forward motion from said normal position, and thereafter moving said piston out of engagement with said stop means; said housing also having a pressure supply port, and a control port communicated by a passage with said chamber forwardly of said piston; and valve means which communicates said pressure port with said chamber forwardly of said piston upon forward movement of said control member after said piston moves out of engagement with said stop means.

3,163,008
HYDRAULIC DRIVE SYSTEM

Elmer K. Hansen, 126 Cecilia, Sioux City, Iowa

Filed Apr. 9, 1963, Ser. No. 271,627
2 Claims. (Cl. 60—97)

1. A power transfer system for a vehicle having an engine and a plurality of drive wheels comprising:

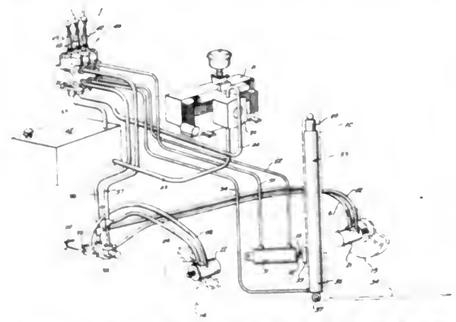
(*a*) reservoir means for storing fluid,

(*b*) pump means drivably connected to said engine and connected in direct fluid communication with said reservoir means, said pump means being operable to withdraw fluid from said reservoir means to discharge a supply of fluid under pressure,

(*c*) separate motor means connected to each of said drive wheels for transmitting torque thereto,

(*d*) conduit means for directing the supply of fluid under pressure to said motor means,

(*e*) first valve means interposed in said conduit means and connected in a fluid conducting relation with said reservoir means, said first valve means being selectively operable to stop the flow of fluid to said motor means to terminate the torque transferred to said drive wheels, or to reverse the flow of fluid to said



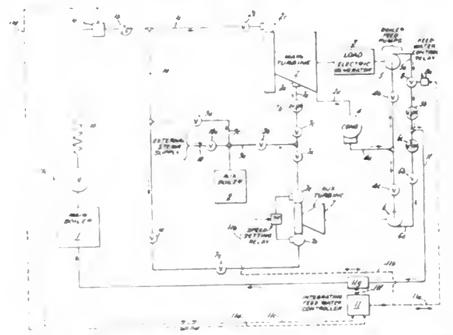
motor means thereby changing the sense of the torque applied to said motor means, and to discharge fluid from said motor means to said reservoir, and

(*f*) second valve means connected in a fluid conducting relation with said motor means, said second valve means having a manually operated actuating member movable to a first position connected to said first valve means for receiving fluid therefrom and selectively operable to direct a parallel flow of fluid to said motor means to produce a slow speed and high torque drive output and movable to a second position to direct a series flow of fluid to said motor means to produce a high speed and low torque drive output.

3,163,009
BOILER FEED PUMP ARRANGEMENT FOR STEAM TURBINE POWERPLANT

Andrew W. Rankin, Leominster, Mass., assignor to General Electric Company, a corporation of New York

Filed Aug. 29, 1963, Ser. No. 305,249
6 Claims. (Cl. 60—107)



1. In a steam turbine powerplant including a turbine connected to drive a load device and supplied with steam from a boiler, the combination of:

a first boiler feed pump driven at substantially constant

speed and connected to supply to the boiler up to a preselected fraction of the feedwater required at full load,

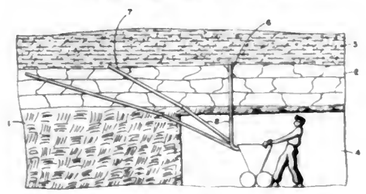
feedwater valve means for regulating the flow to the boiler from the first pump,

a second boiler feed pump connected to supply to the boiler the balance of the feedwater required at full load,

a variable speed prime mover connected to drive said second pump,

and feedwater control means connected to control the speed of the variable speed prime mover when the demand for feedwater is above said preselected fraction of full load value and to regulate said feedwater valve means when the demand for feedwater is below said preselected fraction.

3,163,010
MINE ROOF STABILIZATION DETECTION
Joseph Emmett Carpenter, Thatcher, Ariz., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Apr. 12, 1963, Ser. No. 295,258
1 Claim. (Cl. 61—36)



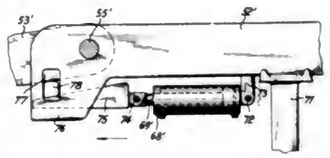
A method of stabilizing underground rock formations which form mine roofs and confirming the stabilization of said rock formation by fluorescent inspection which comprises: drilling a hole into a rock formation having zones of weakness and which is subject to failure in tension as well as shear, injecting under pressure into said hole and through said hole into the rock formation a formation adhesive resin which is liquid and self-curing at ambient temperatures, and which is selected from the group consisting of solutions of linear polyesters in liquid monomeric unsaturated polymerizable compounds containing an alpha-beta ethylenic linkage, said solutions also containing a peroxide type catalyst, a cobalt promoter and a fluorescent tracer, whereby said resin flows into and fills said zones of weakness and cures in position, thereby adhesively uniting said formation at the zones of weakness, and stabilizing said rock formation against roof falls, cutting through the stabilized underground formation, and illuminating the new formation surfaces with ultraviolet light and inspecting for the fluorescent dyed polyester resin, thereby confirming the present of the polyester resin in the formation.

3,163,011
CONNECTION FOR LAGGING IRONS
Karl M. Groetschel, 3–5 Shutzenbah, Bochum, Westphalia, Germany
Filed Nov. 14, 1960, Ser. No. 68,810
4 Claims. (Cl. 61—45)

1. In a lagging iron construction including a first beam element to be forepoled;

a second beam element previously supported, said beam elements being pivotally connected together at their end portions;

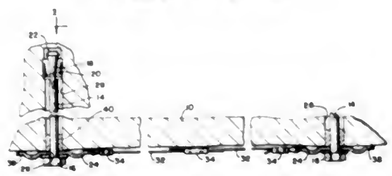
a movable locking member having a projection providing an inclined camming surface thereon, said locking member being slidably supported by one of said beam elements and the inclined camming surface of said projection engaging an abutting surface on the other of said beam elements whereby movement of said locking member relative to said first beam element and said second beam element causes the inclined camming surface of said projection to cam against the abutting surface on the other of said



beam elements to effectively cause the first beam element to be rotated relative to said second beam element and raised into operative position;

and fluid pressure actuated means to effect sliding movement of said locking member relative to said first beam element and said second beam element.

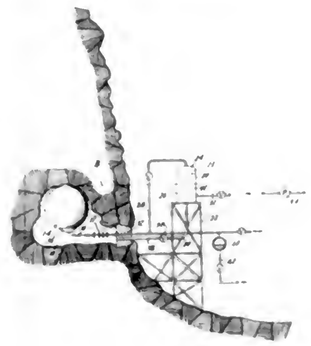
3,163,012
MINE ROOF BOLT INSTALLATION
Joseph B. Dempsey, 910 Colgate Road, Marietta, Ohio
Filed Jan. 18, 1961, Ser. No. 83,539
5 Claims. (Cl. 61—45)



1. A mine roof installation comprising a plurality of mine roof bolt assemblies, each of said assemblies including an elongated bolt extending upwardly into a vertical hole formed in the mine roof, anchoring means on the upper end of said bolt expanded into engagement with the hole, a washer plate having an opening receiving the lower end of said bolt, head means on the lower end of said bolt engaging said washer plate and applying a force thereto urging the same into engagement with the roof adjacent said hole, at least two of said assemblies having elongated relatively thin strap means secured thereto at a position adjacent to and below the roof, each of said strap means including a free end, and means securing the free ends of two of said strap means in overlapping relation with the associated strap means tensioned between the associated assemblies in a position of support beneath the roof.

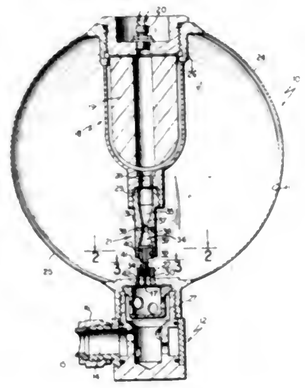
3,163,013
STORAGE OF LOW PRESSURE GASES
George R. Webster, Princeton, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,881
4 Claims. (Cl. 62—45)

1. Method for storing large quantities of a liquefiable gas in liquid phase and over prolonged periods of time which comprises providing a closed subterranean cavity defined by walls adapted to withstand a pressure exceeding the vaporization pressure of the gas to be stored, a portion of said cavity being occupied by a pressurizing fluid, providing said cavity with a flexible wall container holding a quantity of the gas to be stored at a sufficient pressure to maintain said gas in the liquid phase at the ambient temperature of the pressurizing fluid, communicating said container and said cavity respectively with a plenum having a pressurizing fluid containing chamber to determine the pressure differential therebetween, automatically maintaining the system in equilibrium with pressurizing fluid from said chamber in response to changes in said pressure differential, and supplying pressurizing fluid from an ex-



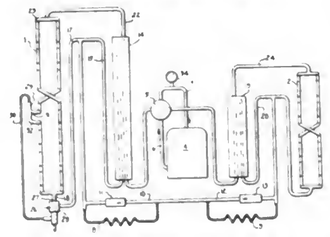
ternal source thereof to said cavity to maintain a pressure at least greater than the vaporization pressure of the gas at the ambient temperature within the cavity when there is not sufficient pressurizing fluid in said chamber.

3,163,014
APPARATUS FOR GENERATING GASEOUS MIXTURES
William F. Wismar, Union, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed May 7, 1963, Ser. No. 278,637
8 Claims. (Cl. 62—48)



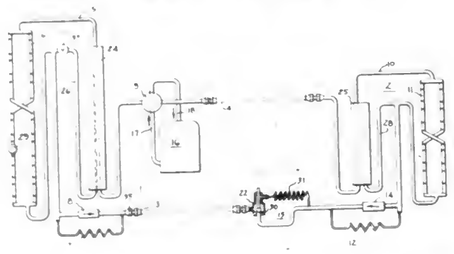
1. Apparatus for producing a mixture of gases under pressure comprising a container confining a refrigerant under pressure having an outlet at its lower end; a closure sealing said outlet constructed and arranged to rupture in response to a predetermined pressure within said container; a source of hot combustion gases at the opposite end of said container including depending nozzle means having an outlet bore facing said closure; and a plug slidably mounted in said bore having a lower end engaging said closure to retain said plug in said bore and close the same until said closure is ruptured.

3,163,015
REFRIGERATION SYSTEM INCLUDING CHARGE CHECKING MEANS
Warren A. Spofford, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed May 29, 1963, Ser. No. 284,153
9 Claims. (Cl. 62—129)



1. In a refrigeration system including a compressor, a first component adapted to be operated as a condenser, and a second component adapted to be operated as an evaporator connected in closed series flow connections; means for determining the refrigerant charge in said system comprising valve means in said system between said components for stopping the normal flow of refrigerant from said first component to said second component so that while said compressor is operating substantially all of the refrigerant charge in said system will collect as a liquid in said first component ahead of said valve means, and means for determining whether the charge of refrigerant in said system is proper for normal operation thereof comprising a restrictive flow means bypassing said valve means and having its inlet connected to said first component at a point such that the portion of said first component between said point and said valve means has a volume representing the proper charge of refrigerant for said system, and means in said system for indicating flow of liquid refrigerant through said restrictive flow means.

3,163,016
SPLIT REFRIGERATION SYSTEM INCLUDING CHARGE MEASURING MEANS
Edwin C. Kennedy, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed May 29, 1963, Ser. No. 284,154
2 Claims. (Cl. 62—129)



1. A reversible refrigeration system comprising a first unit and a second unit adapted for field connection to a pair of refrigerant lines of lengths determined by the installation to provide a closed refrigerant circuit;

said first unit including a circuit component comprising a conduit, a heat exchanger and a refrigerant flow control means connected in series, and a charge modifying means comprising a dead-end receptacle in heat exchange relationship with said conduit and having a two-way flow connection to said component between said heat exchanger and said flow control means,

said flow control means being operable to restrict the flow of refrigerant when the flow of refrigerant is in a direction from said flow control means to said heat exchanger;

said second unit including a circuit component including a heat exchanger, refrigerant flow control means and charge determining means connected in series, said flow control means operable to restrict the flow of refrigerant when the refrigerant flow is in a direction from said flow control means to said heat exchanger;

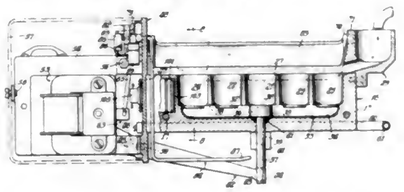
means including a compressor and reversing valve means for reversibly connecting said compressor to said heat exchangers for effecting flow of refrigerant through said circuit in either direction whereby said reversible refrigerating system may be operated on a cooling cycle in which one unit functions as a heating unit or on a heating cycle in which said one unit functions as a cooling unit;

said flow control means of said first unit being connected by one of said refrigerant lines to said charge determining means;

said charge determining means comprising flow restricting means and means for rendering said flow restricting means operable to restrict the flow of refrigerant from said first unit component to said second unit component so that with said compressor operating to discharge refrigerant to said first unit heat exchanger substantially all of the refrigerant charge in said system will collect as a liquid in said one refrigerant line and in said first unit heat exchanger;

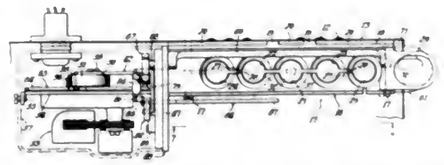
said first unit component including liquid level indicating means spaced from the connection thereof to said one refrigerant line a distance such that the volume of the portion of said first unit component between said indicating means and said connection is a measure of the preferred charge of liquid refrigerant for the system exclusive of said refrigerant lines, said two-way flow connection including a normally open valve adapted to be closed during the time the charge in said system is being measured to prevent liquid refrigerant from entering said first unit receptacle.

3,163,017
ICE CUBE MAKER HAVING BIN CONTROL
Clyde F. Baker, Muskegon Heights, and Romeo Bougie and Lyle F. Shaw, Muskegon, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 24, 1961, Ser. No. 126,195
14 Claims. (Cl. 62—137)



8. In an ice making machine, a freezer mold provided with an ice piece-forming cavity therein; a member extending into said cavity and closing the bottom of said cavity and being reciprocable in said cavity; a support; means for reciprocating said member to raise the ice piece above the top of said mold and to return said member to its cavity bottom-closing position including a lever pivotally connected to said support and to said member; a receptacle for ice pieces; means for effecting movement of said raised ice piece from the top of said mold into said receptacle; a feeler element pivotally connected to said support and normally positioned above said receptacle and rotatable to one side of said receptacle prior to movement of said ice piece into said receptacle; cam means connected to and continuously operative on said lever, said cam means being also connected to said feeler element, said cam means being operable to move said member to raise said ice piece to the top of said mold for movement of said ice piece into said receptacle, and for rotating said feeler element to one side of said receptacle; means operative for actuating said cam means; and means for rendering said cam-actuating means inoperable to move said feeler element including means connecting said cam means to said feeler element when said feeler element is disposed at the side of said receptacle and movement of said feeler element to its normal position over said receptacle is impeded by the ice pieces in said receptacle.

3,163,018
CUBE TYPE ICE MAKER HAVING ELECTRIC HEATER AND CAM EJECTOR
Lyle F. Shaw, Muskegon, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 21, 1961, Ser. No. 132,938
5 Claims. (Cl. 62—137)

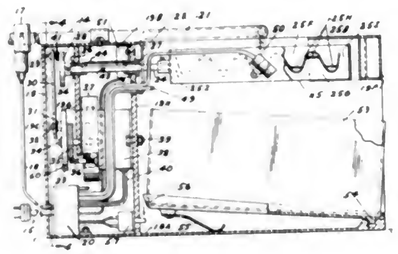


1. In a control arrangement for an automatic ice maker having successive operations including a first operation for forming ice-pieces in a mold, a second operation for heating the mold for loosening the ice pieces in the mold, a third operation for harvesting ice pieces in the mold, and a fourth operation for introducing fluid into the mold while heating said mold to prevent freezing of the fluid, and including a mold for receiving fluid; means for freezing the fluid in said mold to provide ice-pieces in said mold during said first operation; electrically-energizable heating means for heating said mold during said second and fourth operations; mechanical means, including a rotatable cam, operative to eject the ice pieces from the mold, and including a member operable by said cam for applying force to said ice-piece to harvest the ice-pieces from the mold, during the third operation; electrically-energizable power means for rotating said cam to operate said member; thermostatically-operated means responsive to an ice-piece freezing temperature to control energization of said heating means and power means during said second and third operations; means for supplying fluid to said mold during said fourth operation and including a valve, and electrically-energizable means for opening said valve; and first and second circuits in parallel relation and alternately establishable for continuously energizing both said heating means and said power means during said second, third, and fourth operations.

3,163,019
UNITARY AUTOMATIC ICE CUBE MACHINE
Henry J. Hall, 18912 Mapleview, Detroit, Mich.
Filed Oct. 11, 1962, Ser. No. 229,944
4 Claims. (Cl. 62—137)

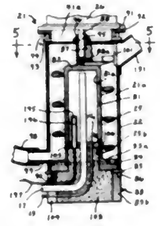
1. In a self contained self supported ice making machine including a water supply and a power supply, the combination of a portable, non-conductive housing, power

means supported by said housing, said power means including an electric motor and gear train, driven by said motor, a rotatable shaft driven by said power means, through said gear train, a tray supported for rotation with said shaft, said tray being a rectangular member having an undulating partition dividing it into upper and lower sections, each section having a plurality of compartments, the compartments of one section being staggered with respect to the compartments of the other section and all compartments being separated from one another by common partition walls, and temperature responsive means on said tray for controlling said power



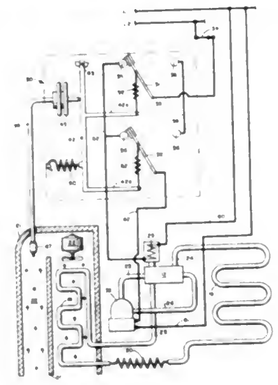
means, the said shaft having a wheel at the end, opposite said tray, said wheel having an eccentric pin secured to a slotted arm, which in turn is connected to a larger wheel by means of a pin which is received in the slot of said arm, said larger wheel being driven by said gear train and said motor, whereby to rotate said tray clockwise and counterclockwise, said housing containing means for directing air equally over, around and under said tray, a blower for moving the air, and temperature responsive means for controlling said blower.

3,163,020
AUGER TYPE LIQUID FREEZING APPARATUS
Anthony J. Ross, 116 Myrtle Ave., Elmhurst, Ill.
Original application Apr. 27, 1959, Ser. No. 809,285. Divided and this application Jan. 17, 1964, Ser. No. 338,341
20 Claims. (Cl. 62—138)



19. An apparatus for freezing liquids comprising, a chilling wall, means defining a refrigerant chamber at one side of said chilling wall, means defining a liquid storage chamber at the other side of said chilling wall, means including a motor driven compressor for passing refrigerant through said refrigerant chamber to freeze a layer of liquid on said wall, motor driven ice removing means for removing liquid which solidifies on said chilling wall, means responsive to the accumulation of an excessive layer of frozen liquid on said wall for shutting off the apparatus, and means including a heater immersed in the refrigerant in said refrigerant chamber for heating the refrigerant therein when the apparatus is shut off.

3,163,021
THERMOSTATIC CONTROL CIRCUIT FOR REVERSIBLE HEAT PUMPS
John Liebermann, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Aug. 14, 1963, Ser. No. 302,135
2 Claims. (Cl. 62—160)



1. In a reversible heat pump system for heating and cooling a space to be tempered,

(*a*) refrigerant circulating means driven by an electric motor,

(*b*) a reversing valve actuable to a first position for conditioning said system to effect heating of said space, and actuable to a second position for conditioning said system to effect cooling of said space,

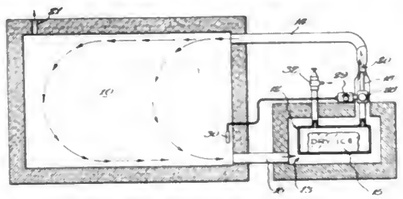
(*c*) an electrical solenoid connected to said valve, said solenoid being operative upon energization to effect actuation of said valve from one of said positions to the other of said positions and upon deenergization to effect actuation of said valve from the other of said positions to said one position,

(*d*) thermally responsive power means comprising means for sensing temperature changes effected by said heating and cooling,

(*e*) first switch means actuable by said power means and comprising a first contact electrically connected through said solenoid to one side of a source of electric power, a second contact, and a third contact electrically connected to the other side of said source, said third contact being alternatively engageable with said first and second contacts upon sensing of first and second temperatures, respectively, said first and second temperatures having a first predetermined differential therebetween,

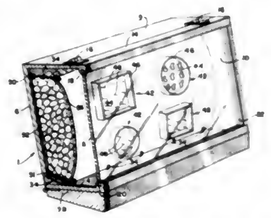
and (*f*) second switch means actuable by said power means and comprising a fourth contact electrically connected through said solenoid to said one side of said source, a fifth contact electrically connected to said second contact, and a sixth contact electrically connected through said electric motor to said one side of said source, said sixth contact being alternatively engageable with said fourth and fifth contacts upon sensing of third and fourth temperatures, respectively, said third and fourth temperatures having a second differential narrower than said first differential, and said third and fourth temperatures being between said first and second temperatures.

3,163,022
REFRIGERATION SYSTEM EMPLOYING EXPENDABLE REFRIGERANT
Fred W. Hottenroth, Palos Verdes Peninsula, Calif., assignor to Z. Z. Corp., Compton, Calif., a corporation of California
Filed Jan. 21, 1963, Ser. No. 252,686
9 Claims. (Cl. 62—168)



1. In a refrigeration system, a compartment to be cooled, an expendable refrigerant compartment, a circulation compartment surrounding said expendable refrigerant compartment and in heat exchange relation thereto, a supply conduit from said circulation compartment to said cooled compartment, a return conduit from said cooled compartment to said circulation compartment, aspirator means in the conduit system for circulating gas from said return conduit through said circulation compartment and said supply conduit to said compartment to be cooled, said aspirator means being actuated by gas discharged from said expendable refrigerant compartment, and a vent for excess gas from the circulation system.

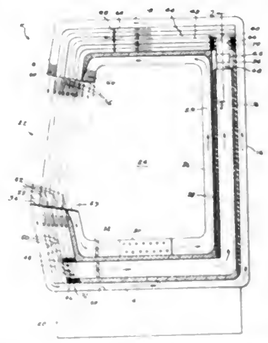
3,163,023
DISPLAY CASE
Morton Parker, 2385 Barker Ave., Bronx, N.Y.
Filed Sept. 3, 1963, Ser. No. 306,204
6 Claims. (Cl. 62—246)



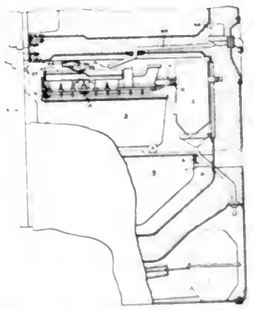
5. A merchandise display case comprised of a hollow cabinet, an ice-retaining baffle within said cabinet, said baffle having at least one passage disposed therethrough, at least one merchandise supporting tray, and tray supporting means, said tray supporting means being adapted to pass through said at least one passage, said cabinet having top, bottom, front, rear and side walls, said ice-retaining baffle being resiliently and removably secured to said rear wall in spaced, superposed relation with respect thereto, said tray supporting means being adapted to support said tray contiguously against said baffle, said baffle being intermediate said tray and said rear wall, said rear wall, tray and baffle being substantially vertically disposed.

3,163,024
REFRIGERATED CABINET STRUCTURE
Sterling Beckwith, Lake Forest, and Robert Vogel, Deerfield, Ill., assignors to Dual Jet Refrigeration Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1962, Ser. No. 247,181
16 Claims. (Cl. 62—256)

1. In a refrigerated cabinet of the type which defines an access opening in one wall communicating an otherwise enclosed space with the ambient atmosphere, and which is provided with a plurality of gas inlets and a plurality of gas nozzles, said inlets and nozzles extending in side-by-side relationship across opposite edges of said access opening, passages communicating said inlets and nozzles, means for circulating gas through said passages, and refrigeration means adapted to refrigerate the gaseous stream in at least one of said passages, the improvement wherein said passages include channels each communicating with one of said inlets and nozzles, each of said channels extending transversely across said cabinet and being situated in a plurality of levels with the first level located adjacent the inner wall of said cabinet and the remaining levels being located outwardly thereof, said channels being adapted to handle gas passing between the respective nozzles and inlets, and a plurality of conduits communicating with at least some of said channels and connecting the panels for respective inlets and outlets, said conduits being situated in side-by-side relationship in a row which extends transversely across said cabinet.

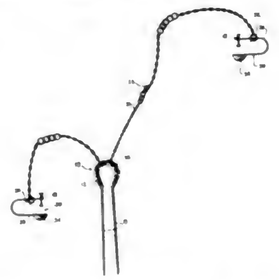


3,163,025
SEMI-AUTOMATIC ICE MAKER
John A. Dahlgren, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 24, 1962, Ser. No. 220,123
3 Claims. (Cl. 62—177)



1. An ice maker for a freezer compartment comprising:
a shelf and means for supporing said shelf within said compartment for movement horizontally between a first position and a second position;
a freezing tray pivotally supported along one edge on said shelf,
means including a weight actuated device for supporting the other edge of said tray on said support means for movement of said other edge from an upper position when said tray is empty to a lower position when said tray is filled with water,
said weight actuated device comprising spring means biasing said other edge of said tray to its upper position and magnetic means for releasably holding said other edge of said tray in its upper position,
said magnetic means and said spring means permitting movement of said tray to its lower position when filled with water,
water supply means including a normally closed solenoid operated valve and an outlet arranged above said tray when said shelf is in its first position, and
valve control means for controlling said valve comprising a normally open switch having an actuating arm mounted in fixed vertical relation with said shelf in a position above said other tray edge when said shelf is in its first position for opening said valve only when said shelf is in its first position and said tray is in its upper position.

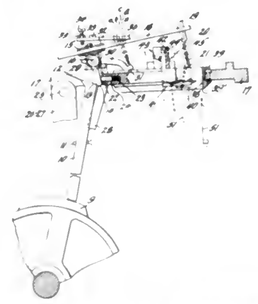
3,163,026
EARRING GUARD CHAIN AND MEANS FOR SECUREMENT TO THE HAIR
John M. Kenny, 4708 Park Ave., Weehawken, N.J.
Filed Nov. 21, 1962, Ser. No. 239,217
3 Claims. (Cl. 63—14)



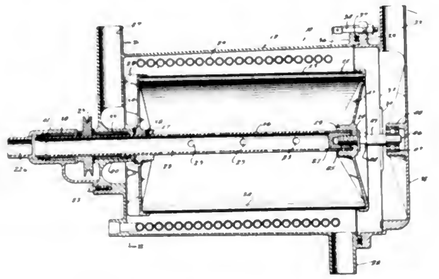
1. A safety guard for earrings or the like, comprising a chain of large and small links, spring means at opposite ends of the chain for detachably engaging two earrings respectively, a generally U-shaped hairpin, and a clasp on the bight of said hairpin detachably engaged with said chain, said clasp having a springy body secured at one edge to said bight the opposite edge of the body being unattached, said body having a rounded finger at its said opposite edge contacting the bight of the hairpin, said body being arched outwardly of the bight of the hairpin to define a passage between said hairpin and body, said chain being disposed in and extending through said passage, said passage having a width between opposite edges of the clasp body which width is greater than the maximum width of each of said links for freely passing the chain through the passage, said finger constituting means insertible through each of the large links.

3,163,027
THREAD GUIDING DEVICE FOR HOSIERY AND SIMILAR MACHINES
Guido Azzolari, Brignano d'Adda, Bergamo, Italy, assignor to Fabrique National d'Armes de Guerre, Societe Anonyme, Herstal, near Liege, Belgium
Filed Dec. 29, 1960, Ser. No. 79,212
Claims priority, application Italy, Jan. 5, 1960, 139/60; Dec. 12, 1960, 21,304/60
3 Claims. (Cl. 66—138)

1. Thread guiding device for knitting machines comprising a plurality of needles, a plurality of individual mechanisms for changing the position of each thread used to obtain the desired article in said machine, means for actuating each individual mechanism to enable the guiding of the thread to a point where the latter can be grasped by the needles which are operated to that end, a slotted disc common to all of said individual mechanisms to appropriately maintain the threads out of reach of the needles, the individual mechanisms for each thread being divided into two groups, one group for controlling all the threads of the main feed, and the other group for controlling the remaining threads, the second-mentioned group having each oscillating mechanism mainly consisting of a cam, an element for transmitting the movements resulting from the shape of the cam, an arm which is solidly fixed to a rocker freely fitted over a shaft which is common to all the oscillating mechanisms of the thread guiding device, and the rocker carrying an arm at the end of which is fixed a guiding element constituting the thread guide proper and being on the one hand subjected to the permanent pull of an elastic element towards its working position and on the other hand to the drive of the cam device towards its position of rest.

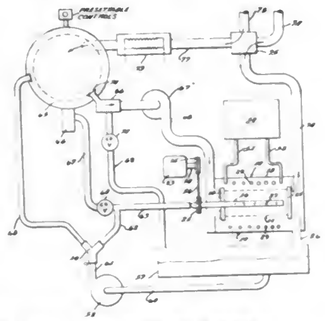


3,163,028
AUTOMATIC DRY CLEANING MACHINE AND COMBINED FLUID FILTER AND VAPOR CONDENSER
Laddie A. De Pas, Sodus, Raymond W. Spiegel, Stevensville, and Gordon J. Krolzick, St. Joseph, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 169,059
16 Claims. (Cl. 68—12)



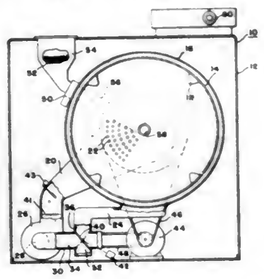
1. A combination fluid filter and vapor condenser comprising,
a housing,
rotatable drum means positioned in said housing and including peripheral filter wall means,
means for introducing fluid to be filtered into said drum means interiorly of said peripheral filter wall means,
means for rotating said drum means to effect the filtration of said fluid through said peripheral filter wall means by centrifugal force,

means for introducing fluid vapors into said housing, and condenser means formed around said drum means within said housing and spaced from said drum means for condensing said fluid vapors.



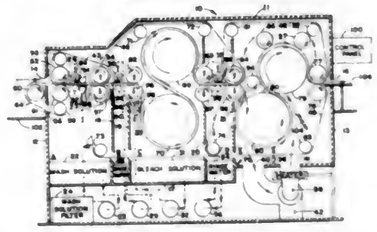
11. In a vacuum-extraction dry cleaner,
vacuum means for leading off solvent and solvent vapors from clothes,
a drum having an external foraminous wall and an internal filter thereagainst,
means for rotating the drum,
means for introducing liquid to be filtered including solvent into the drum,
condenser means around the drum in spaced relation thereto and including outlet means for condensed solvent,
and a conduit communicating the vacuum means with the area between the drum and the condenser means whereby solvent may be condensed and released to said outlet.

3,163,029
CLOTHES CONDITIONING APPARATUS
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,383
3 Claims. (Cl. 68—12)



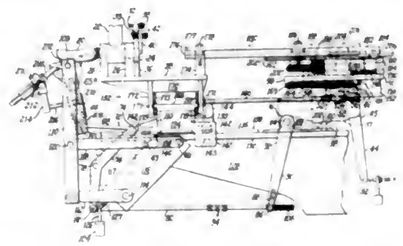
2. A clothes dry cleaner and conditioner comprising, a drum rotatable for tumbling said clothes, means operable to rotate said drum, means providing an air duct system incorporating said drum, means operable for circulating air through said air duct system, heating means operable for increasing the temperature of said circulating air, means for operating said heating means, said circulating means and said drum rotating means in a clothes dry cleaning and conditioning cycle, means for selectively supplying a quantity of solvent capsules to said drum for use in said dry cleaning cycle whereby the tumbling of said clothes and the increased temperature of said air cause the solvent capsules to rupture and the solvent to be dispersed through said clothes for cleaning the clothes by dissolving and vaporizing certain types of soil from said clothes while other types of soil are entrained in said circulating air, and means for discharging the resultant vapor and entrained soil from said air duct system.

3,163,030
WASHING APPARATUS
Harmon H. Woodworth, Jr., Palo Alto, Calif., assignor, by mesne assignments, to Jet Stream Products, Inc., Reno, Nev., a corporation of Nevada
Filed May 7, 1962, Ser. No. 192,892
3 Claims. (Cl. 68—205)



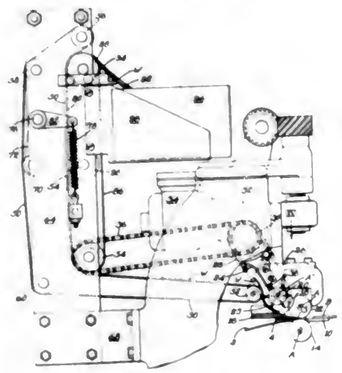
1. Washing apparatus comprising jet stream forming means having at least one jet opening and adapted to provide a jet stream of washing fluid emanating from said opening at a velocity of at least about 360 inches per second, rotatable roller means providing a barrier surface in spaced-apart and facing relation to said jet opening, and movable supporting means for the material to be washed, said movable supporting means being adapted to move said material along a path extending between said barrier surface and said jet opening and at a velocity of at least about 25 feet per minute, said rotatable roller means being positioned adjacent to and in supporting relationship to said movable supporting means.

3,163,031
SHOE BOTTOM ROUGHING MACHINES
Thomas Aubrey Kestell, Leicester, England, assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 20, 1962, Ser. No. 203,904
Claims priority, application Great Britain June 28, 1961
28 Claims. (Cl. 69—6.5)



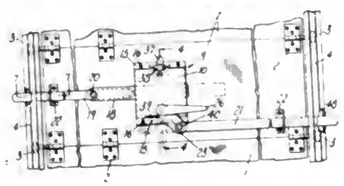
1. A machine for operating on the margin of a shoe bottom comprising means for supporting a shoe on a last with its bottom facing upwardly, a power driven rotary tool, a carriage supporting the tool for operative engagement with the shoe bottom, first means for moving the carriage substantially lengthwise of the heel-toe axis of the shoe, second means for moving the carriage transversely of the heel-toe axis of the shoe, said first and second moving means cooperating to produce continuous peripheral movement of the tool on the margin of the shoe bottom in a path conforming to the outline of the shoe.

3,163,032
FLEXIBLE SHEET HANDLING MECHANISMS
Charles F. Fitzgerald, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed July 9, 1963, Ser. No. 293,774
11 Claims. (Cl. 69—10)



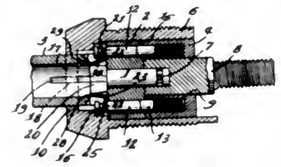
1. In a machine for processing flexible sheet material such as leather and the like which has an operating tool and primary work feeding means located in advance of the tool, the improvement comprising a puller roll located closely behind said tool and having radially disposed flexible fins which are engageable with a workpiece as it leaves the tool, and means for rotating the roll with the peripheral speed of the fins slightly in excess of the speed of the primary work feeding means.

3,163,033
LOCK AND LATCH MEANS FOR UPWARDLY ACTING DOORS AND THE LIKE
Nesbit A. Boyles, Hartford City, Ind., assignor to Overhead Door Corporation, Hartford City, Ind.
Filed Aug. 30, 1963, Ser. No. 305,446
9 Claims. (Cl. 70—100)



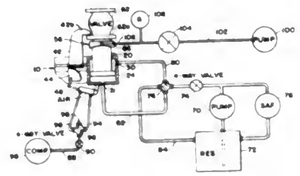
5. The combination with a door and tracks therefor, of a latch and lock means comprising a first bolt member and a second bolt member slidably mounted on the inner side of the door transversely thereof, a spring actuated bolt coupling and actuating member pivotally mounted on the inner side of the door, said bolt members being operatively connected to said coupling and actuating member on the opposite sides of its pivot, a spindle operatively connected to said bolt coupling and actuating member disposed through the door and provided with handpieces on its inner and outer ends, said bolt coupling member having a detent, a manually releasable spring actuated catch for said coupling member mounted on the inner side of the door to coact with said detent on said bolt coupling member, and a key actuated lock mounted on said door to be actuated from the outer side thereof and provided with an inwardly projecting spindle operatively connected to said catch, said tracks being provided with keepers for said bolt members.

3,163,034
TUMBLER LOCK
Harry F. George, Park Ridge, Ill. (919 N. Michigan Ave., Chicago 11, Ill.)
Filed Sept. 17, 1962, Ser. No. 223,914
12 Claims. (Cl. 70—419)



6. A key-operated tumbler lock, comprising:
a rotatable shaft;
a pin block fixed to rotate with said shaft;
a plurality of tumbler pins longitudinally slidable in said pin block;
a barrel;
a shell fixed to the barrel;
a plurality of tumbler pins longitudinally slidable in said barrel;
spring means for normally urging said tumbler pins to move toward the key end of the lock;
some of the tumbler pins in the pin block having a circumferential groove;
and a pin-lock-device between said shaft and said grooves for enabling longitudinal movement of the tumbler pins to breaking position when the key is being inserted into the lock, and locking the grooved tumbler pins against being pushed inwardly to breaking position when the key is out of the lock, the pin-lock-device being made of thin resilient flexible material having an angularly positioned base and hub.

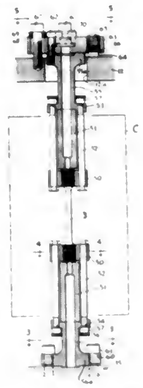
3,163,035
APPARATUS FOR PRESSURE TESTING FITTINGS
Ora A. Kinzie and Hubert J. Watts, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 23, 1961, Ser. No. 91,019
1 Claim. (Cl. 73—49.8)



Apparatus for pressure testing flanged valves and the like comprising:
(*a*) a frame member having a top and sides;
(*b*) a first fluid motor means rigidly mounted transverse to the top of said frame, said motor including a cylinder member having a piston therein, said piston having a convex upper surface;
(*c*) a disc-shaped valve seat member having a concaved underside mounted on said piston and adapted to fit the upper convex surface of said piston;
(*d*) a plurality of L shaped valve clamping means slidably mounted on said frame and adapted to engage the flange portion of said valves;
(*e*) rack gear means mounted on said clamping means;
(*f*) sector gear means pivotally mounted on said frame member and adapted to engage said rack gear teeth whereby rotation of said sector gear means when rotated will urge said clamping means into or out of engagement with the flange of said valve;

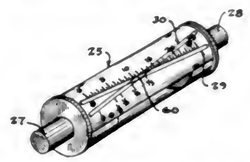
(*g*) a plurality of second fluid motor means pivotally mounted between said frame and said gear sectors;
(*h*) fluid means connecting each of said plurality of second motor means wherein application of fluid will rotate said sector gears;
(*i*) a second fluid means connecting to said first fluid motor for pressure sealing said valve; and
(*j*) a third fluid means applied through said disc-shaped valve seat member for applying testing pressure to said valve.

3,163,036
SPECIMEN GRIP ASSEMBLY
Benjamin J. Lazan, St. Paul, Minn., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1961, Ser. No. 82,358
13 Claims. (Cl. 73—103)



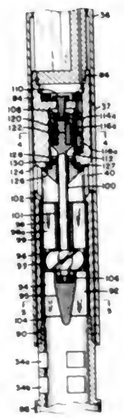
8. A specimen grip assembly, including specimen holders adapted to be secured to the ends of a specimen, means for securing said holders in rigid axial alignment to supports, a bubble level carried by the upper holder, and means associated with the bubble level for indicating a true level position and the actual bubble position indicative of actual specimen alignment when the assembly is secured at the bottom end whereby said holders may be rigidly fixed to said supports while maintaining said actual bubble position.

3,163,037
DYNAMIC TORQUE METER
James S. Kawabata, 4317 N. Hermitage, Chicago, Ill.
Filed Oct. 25, 1961, Ser. No. 147,499
10 Claims. (Cl. 73—136)



6. In a dynamic torque meter, a torsion responsive unit comprising a pair of aligned shafts and torsion spring means connecting said shafts, a pair of scale plates of identical arcuate cross section disposed on opposite sides of the axis of the unit and centered on such axis, means securing one end of one scale plate to one shaft and means securing the other end of the other scale plate to the other shaft, and scale means on the respective scale plates for cooperation under a stroboscopic light flashing at 180° intervals of the rotative movement of said shafts to form a composite image constituting a measurement of the effective torque between said shafts, said scale means comprising indicating lines on the respective plates disposed to slope in opposite directions and at equal angles relative to said axis, and scale markings on one of the plates along the related indicating line.

3,163,038
BOREHOLE FLOWMETER
Harvey L. Bryant, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed May 4, 1960, Ser. No. 26,793
6 Claims. (Cl. 73—155)

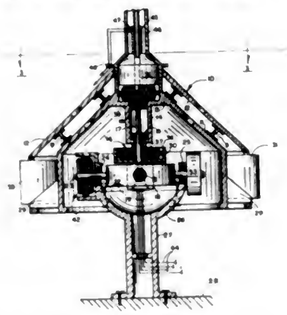


6. A well logging tool for operation in the bore of a well which comprises in combination:
a housing member adapted for vertical movement within said bore and having a passageway for the flow of fluid therethrough;
a fluid diverter supported at the lower end of said housing for directing substantially all the flow of fluid in the well bore through said passageway;
a spinner section in the passageway of said housing, the rotation of said spinner section being responsive to the diverted fluid flowing through said passageway;
a bypass port means in said housing member establishing fluid communication between the exterior of said housing above said diverter and said passageway below said spinner section but above said diverter;
valve means carried by said housing member for opening and closing said bypass port means; and
means operable from the surface for actuating said valve means whereby a known proportion of the flow of fluid within said passageway is diverted through said port means and bypassed around said spinner section.

3,163,039
INERTIAL NAVIGATOR PLATFORM
Harry Newman, Bellflower, and John M. Slater, Fullerton, Calif., assignors to North American Aviation, Inc.
Filed Dec. 19, 1960, Ser. No. 76,617
9 Claims. (Cl. 73—178)

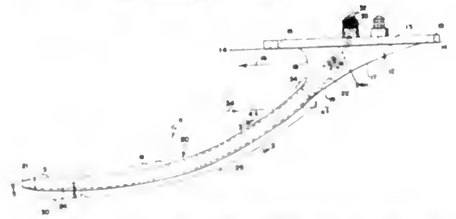
2. A stable platform comprising an elongated support having a yoke at one end thereof and adapted to be secured to a base at the other end thereof, an outer gimbal member journaled in said yoke, an inner gimbal journaled in said outer gimbal, a shaft fixed to said inner gimbal, a stable element of substantially conical shell

configuration journaled on said shaft, said stable element extending about and substantially enclosing said shaft and



gimbals, and a number of inertial instruments mounted on said stable element.

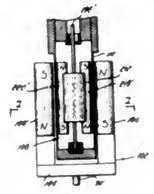
3,163,040
DE-ICED PITOT STATIC TUBE
Frank D. Werner, Minneapolis, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 4, 1962, Ser. No. 164,280
13 Claims. (Cl. 73—212)



1. A Pitot tube apparatus comprising a base plate adapted to be mounted on a portion of the aircraft along which the relative wind moves, a tube fastened to the plate so as to extend therefrom at an angle less than ninety degrees and towards the direction of the relative wind, the end portion of said tube being bent so as to be approximately parallel to the relative wind and containing suitable pressure openings, said tube being of uniform cross-section from the base to the end portion, and an elongated insulated electric resistance heater wire having a protective sheath throughout its length, said heater including the sheath being formed as a helical coil with the turns separated, said helical coil being positioned within the tube and extending from the open end towards the base, a fluid pressure connector on the base and extending to said tube and an electrical connector on the base and connected to the electrical heater wire.

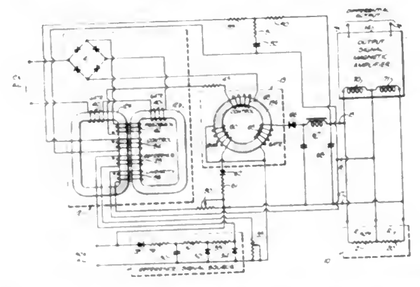
3,163,041
METER DRIVE
Henning Karlby and Winston F. Z. Lee, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1957, Ser. No. 634,662
13 Claims. (Cl. 73—231)

1. In coupling assembly, a pair of coaxially rotatably mounted members and means for establishing a magnetic coupling torque effective to drive couple said members together consisting of only a pair of first uniformly circumferentially spaced similarly axially polarized permanent magnets mounted for rotation with one of said members in a longitudinally aligned annular path, and a pair of second axially polarized uniformly circumferentially spaced permanent magnets polarized similarly relative to said first magnets and mounted for rotation



with the other of said members about a longitudinally aligned annular path concentrically within the annular path of said first magnets.

3,163,042
RESISTANCE THERMOMETER SYSTEM
George A. O'Sullivan, Danbury, Conn., assignor, by mesne assignments, to Consolidated Controls Corporation, a corporation of New Mexico
Filed Dec. 8, 1958, Ser. No. 778,990
19 Claims. (Cl. 73—362)

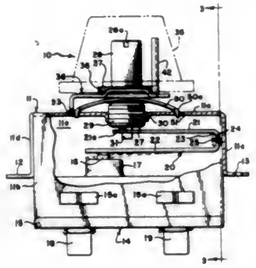


10. A resistance thermometer system for developing an electrical output signal proportional to the average of several temperatures, comprising first and second temperature measuring units, each of said units including a first resistance element having a resistivity which varies with temperature connected in series with a second resistance element having the same resistance as said first element at a predetermined temperature and having a substantially zero coefficient of resistivity, means connecting both said measuring units to a source of power, means for deriving a control signal from the second resistance element of one of said measuring units, a stable reference source, means jointly controlled by a signal from said stable reference source and said control signal for controlling said source of power so that the voltage developed across said one second resistance element remains substantially constant, and means for deriving an output signal from both said measuring units which is proportional to the average of the temperatures to which said first elements of said units are subjected.

3,163,043
THERMALLY RESPONSIVE CONTROL APPARATUS
Harold F. Snider, Goshen, Ind., assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Oct. 19, 1961, Ser. No. 146,236
2 Claims. (Cl. 73—363.5)

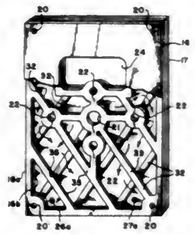
2. In a control device having a frame and a rotatable control shaft extending from said frame to change control characteristics of said device,

(*a*) a flange on said shaft, said flange being spaced from said frame and having a series of radially extending teeth on the periphery thereof,
(*b*) a drive plate disposed between said flange and said frame in encircling relation to said shaft and rotatable with respect to said frame about the axis of said shaft,
(*c*) said plate having a pair of deformable parallel metal strips lying in the plane of said flange on diametrically opposite sides thereof, said deformable



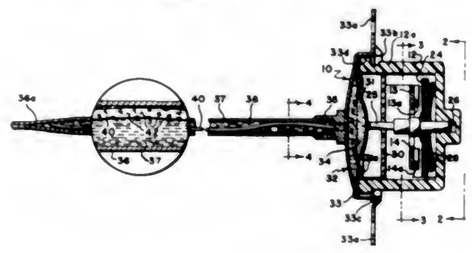
strips having teeth directed inwardly toward the teeth of said flange,
(*d*) said teeth on said strips being clear of said teeth on said flange to permit rotation of said shaft with respect to said drive plate to establish a desired positional relationship therebetween, and
(*e*) said strips being deformable by lateral forces toward one another to bring the teeth thereon into meshing engagement with the teeth of said flange, whereby rotation of said plate will effect rotation of said shaft while maintaining said relation therebetween.

3,163,044
THERMAL SENSING ELEMENT
Arthur A. Lutsky, Newark, N.J., assignor to The Wilcolator Company, Elizabeth, N.J., a corporation of New Jersey
Filed Oct. 23, 1961, Ser. No. 146,794
12 Claims. (Cl. 73—368)



4. A thermal sensing element comprising a plurality of parallel extending superimposed plate members including two end plate members and defining a cavity for fluid, said plate members each presenting surface areas in contiguous bonded relation with surface areas of another of said plate members, said surface areas all lying in planes parallel with said plate members, a portion of said surface areas being disposed along the edges of said plate members and surrounding said cavity, and portions of said surface areas providing interconnection of said end plate members within said cavity, portions of each of said plate members defining openings which are aligned to provide a control shaft opening through the sensing element, said control shaft opening being disposed between portions of the cavity defined by the plate members, and a passageway defined in one plate member to provide communication with said cavity.

3,163,045
THERMALLY RESPONSIVE POWER MEANS
Benedictus K. Kaveckas, Roselle, N.J., and Estel C. Raney, Fort Lauderdale, Fla., assignors to The Wilcolator Company, Elizabeth, N.J., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,843
27 Claims. (Cl. 73—368.2)

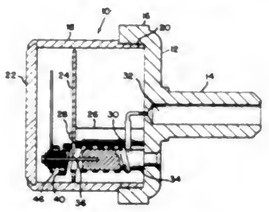


1. A thermally responsive power means comprising:
(*a*) an expansible hollow element,
(*b*) a volatile liquid in said element, and
(*c*) a material in said element having a non-wettable surface in contact with said liquid.

ERRATUM

For Class 73—406 see:
Patent No. 3,163,529

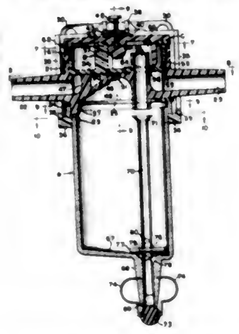
3,163,046
PRESSURE GAUGE
William D. Huston, 98 Dansbury Circle S., Rochester, N.Y.
Filed Oct. 31, 1962, Ser. No. 235,905
17 Claims. (Cl. 73—418)



1. A pressure gauge comprising
(*a*) a casing having a bore for connection to a source of pressure,
(*b*) a Bourdon tube mounted in said casing and having a plurality of helical convolutions, said tube being closed at one end and open at its other end, the open end of said tube communicating with said bore,
(*c*) a graduated dial mounted in said casing,
(*d*) a member adjustably threaded on said tube convolutions adjacent the closed end of the tube and rotatable with the tube in response to the expansion or contraction of said convolutions,
(*e*) a bushing rigidly attached to said member and having an axially extending opening therein,
(*f*) a rod disposed coaxially in said tube and extending into said opening to retain said tube against lateral deflection, and

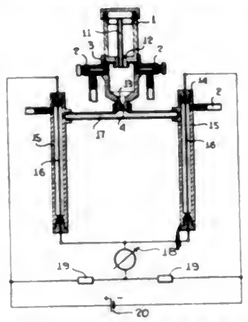
(*g*) a pointer connected to said bushing and rotatable therewith to read against the graduations on said dial in accordance with the pressure in said tube.

3,163,047
FLUID MEASURING APPARATUS
Burton K. Jaquith, Fort Lauderdale, Fla., assignor to Technical Industries, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed July 1, 1963, Ser. No. 292,014
14 Claims. (Cl. 73—422)



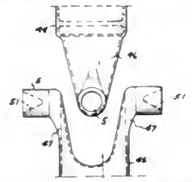
1. In an apparatus of the kind described, the combination with a collecting cup surmounted by a chambered head having oppositely disposed inlet and outlet openings in communication with a conduit system, of a floor in the form of an upwardly rising cone extending continuously within the head between its peripheral walls with the floor base disposed at an elevation below the inlet and outlet openings, the floor being provided therethrough with an apical orifice into which only a predetermined amount of a fluid stream passing through the head is gravity-deflected to drop into the collecting cup therebelow.

3,163,048
ACCELEROMETER
Gerhard Siegmund, Bingen-Kempton, and Josef Schaberger, Bingen (Rhine), Germany, assignors to Jos. Schaberger & Co. G.m.b.H., Gau-Algesheim (Rhine), Germany
Filed Apr. 11, 1960, Ser. No. 21,558
3 Claims. (Cl. 73—516)



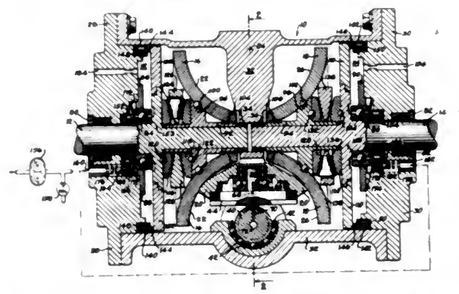
1. A system for measuring transverse accelerative forces, comprising a source of a stream of electrically conductive liquid, means dividing said stream of conductive fluid into plural sub-streams conveying relative quantities of said fluid per unit of time which are representative of said accelerative forces, and means comprising an electrical bridge circuit responsive to the impedance of said liquid for comparing said relative quantities, wherein said means for dividing includes plural channels extending in directions extending transversely of said stream.

3,163,049
MOTION CONVERTING MEANS
John Pike Treen, Sunwood Farm, Adversane, near Billingshurt, Sussex, England
Filed May 31, 1962, Ser. No. 199,085
Claims priority, application Great Britain, June 12, 1961, 21,189/61
4 Claims. (Cl. 74—50)



1. Means for converting reciprocating motion into rotary motion and vice versa, said means comprising two reciprocating piston members moving towards and away from each other during operation, each reciprocating piston member having two axially extending legs spaced diametrically apart with respect to the axis of the reciprocating piston member and such that when the two reciprocating piston members move together, to a bottom dead center position, the legs on one reciprocating piston member nest within the legs of the other reciprocating piston member, each leg carrying a trunnion beam that extends radially outwards with respect to the axis of reciprocation of the piston members, a crank throw for each trunnion beam, each crank throw being rotatable about an axis normal to the axis of reciprocation of the two piston members, and each trunnion beam being slidable with respect to and universally articulated with its associated crank throw so that as the two piston members move towards and away from each other they cause the four crank throws to rotate about said axes normal to the axis of reciprocation of the two piston members, the two piston members being oscillatable about their axis of reciprocation.

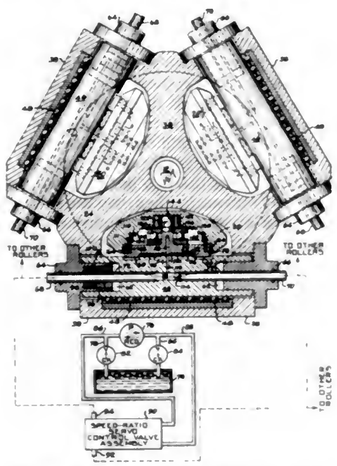
3,163,050
TOROIDAL TRANSMISSION BEARING MEANS
Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic, Inc., a corporation of New York
Filed June 19, 1963, Ser. No. 289,019
10 Claims. (Cl. 74—200)



1. A variable speed-ratio transmission comprising:
(*a*) a housing including a pair of end walls;
(*b*) an input shaft and an output shaft co-axially supported in said housing;

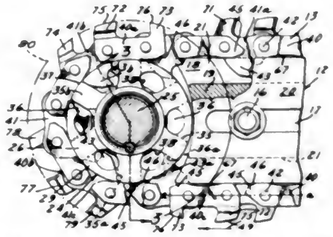
(*c*) co-axial input and output toroidal members having facing toric surfaces respectively supported on said input shaft and said output shaft;
(*d*) a plurality of circumferentially-spaced rollers disposed between and in driving contact with said surfaces for transmitting torque from the input member to the output member;
(*e*) support means for each roller including a pivot shaft supporting each said roller for speed-ratio changing pivotal movement across said toric surfaces for varying the speed of said output member relative to the speed of said input members;
(*f*) means for loading the toroidal members axially against the rollers with a force which increases and decreases with transmission torque load;
(*g*) fluid thrust bearing means between each toroidal member and its adjacent end wall for transmitting at least a major portion of said axial loads to the end walls; and
(*h*) means automatically responsive to increases and decreases in the axial loading of the toroidal members against the rollers for increasing and decreasing the pressure in said fluid thrust bearing.

3,163,051
ROLLER CONSTRUCTION FOR TOROIDAL TRANSMISSIONS
Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic, Inc., a corporation of New York
Filed June 19, 1963, Ser. No. 289,022
9 Claims. (Cl. 74—200)



1. A variable speed-ratio transmission comprising:
(*a*) co-axial input and output members having facing toric surfaces;
(*b*) a plurality of circumferentially-spaced rollers disposed between said surfaces and in driving contact with said surfaces for transmitting torque from the input member to the output member;
(*c*) a spindle for each roller on which the roller is journaled for rotation about the spindle axis;
(*d*) bearing means supporting each roller on its spindle and including means providing an annular bearing space for receiving a fluid under pressure to provide a fluid thrust bearing between the roller and one end of its spindle;
(*e*) support means for each roller and spindle including a pivot shaft and from which the spindle extends at right angles inwardly toward the transmission axis with said spindle thrust bearing end being disposed adjacent to the pivot shaft, said pivot shafts being supported for pivotal movement for speed-ratio changing movement of their rollers across said toric surfaces and being supported for translational movement along their respective axes for initiating said speed-ratio changing pivotal movement of said rollers;
(*f*) means for supplying a control fluid under pressure for applying a control force against each of said pivot shafts in opposition to the traction forces exerted by toric surfaces on the rollers for controlling the speed-ratio position of said rollers;
(*g*) and means for supplying a fluid under pressure derived from said control fluid to said thrust bearing space of each roller for urging the rollers along their respective spindles into driving contact with said toric surfaces.

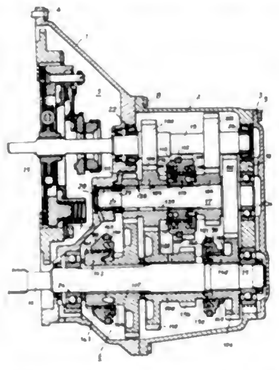
3,163,052
DRIVE MECHANISM FOR CHAIN SAW
John W. Oehrli, Pacific Palisades, and Jay R. Bailey, Palos Verdes Estates, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Apr. 23, 1962, Ser. No. 189,392
14 Claims. (Cl. 74—229)



8. In a chain saw of the type having an endless saw chain driven by sprocket wheel means, said chain having side links and center links alternately connected by hinge means, projections extending inwardly from first consecutive links engaging sprocket teeth on said wheel means, the improvement comprisng:
(*a*) disc means on said sprocket wheel means extending radially circumferentially adjacent and laterally outwardly of the space between said teeth,
(*b*) said disc means and said sprocket wheel means being axially aligned;
(*c*) means on said first links for engaging the outer circumferential surfaces of the sprocket teeth for limiting the in-and-out movement of the chain as it approaches and engages said sprocket wheel means;
(*d*) second consecutive links having an inwardly facing longitudinally arced transverse surface for riding on said disc means;
(*e*) and means on said second links for engaging the outer circumferential surfaces of the disc means for limiting the in-and-out movement of the chain as it approaches and engages said sprocket wheel means.

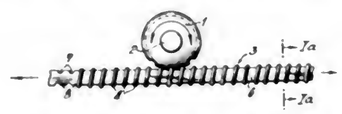
3,163,053
TRANSMISSION MECHANISMS, NOTABLY FOR VEHICLES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Seine, France
Filed Jan. 8, 1962, Ser. No. 164,918
Claims priority, application France, Jan. 20, 1961, 850,361
10 Claims. (Cl. 74—359)

1. A change-speed mechanism providing four forward speeds and reverse, which comprises an input shaft, an output shaft parallelly disposed in relation to said input shaft, an intermediate shaft, parallel to said input and output shafts, two gears solid with said input shaft, a first-speed pinion and a second-speed pinion rotating freely and juxtaposed on said output shaft, a first and a second synchronizing device, disposed on either side of said first-speed and second speed pinions respectively and adapted selectively to lock either of these two pinions on said output shaft, another pinion solid with said output shaft, another gear fast with said intermediate shaft and in meshing engagement with said other pinion, a third-speed pinion having two parallel sets of teeth and a fourth-speed pinion both mounted for free rotation on said intermediate shaft, one of the two sets of teeth of said third-speed pinion being in meshing engagement with said



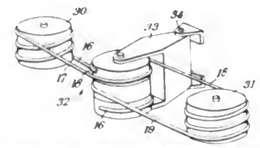
first-speed free-rotating pinion, the other set of teeth meshing on the one hand with one of said gears fast with said input shaft and on the other hand with said second-speed free-rotating pinion, said fourth-speed free rotating pinion meshing with the other gear fast with said input shaft, another synchronizing device disposed between said third and fourth-speed pinions for selectively locking either of said last-named pinions with said intermediate shaft, a reverse sliding pinion mounted on a separate arbor and adapted to be brought into meshing engagement both with a set of teeth of said synchronizing device of said intermediate shaft and with another set of teeth of said second-speed pinion, and a fork-type control device operatively connected to and for actuating said synchronizing devices and said reverse sliding pinion, to obtain four forward speeds and one reverse drive.

3,163,054
DRIVING DEVICE FOR SLIDING WINDOWS
Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany
Filed Dec. 5, 1961, Ser. No. 157,095
Claims priority, application Germany, Dec. 9, 1960, G 31,122; Oct. 14, 1961, G 33,350
13 Claims. (Cl. 74—422)



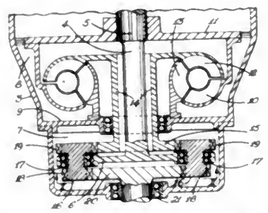
1. A drive-transmission device comprising a toothed wheel, a hollow rack engaging with said wheel and constituted by a flexible, substantially helical coil, having uniformly spaced convolutions, a supporting element occupying less than three quarters of the inner cross-sectional area of said coil, portions of said supporting element constituting connecting means between said coil and said supporting element, thereby preventing relative movement of said coil and said supporting element in radial and longitudinal directions, and guide means extending away from the neighborhood of said wheel in an axial direction of said coil and having the latter extending therein in guided relationship.

3,163,055
POWER-TRANSMISSION SYSTEMS
Herbert Jeffree, Bridge Close, Byfleet, Surrey, England, assignor to Vickers-Armstrongs (Aircraft) Limited, London, England, a British company
Filed July 26, 1961, Ser. No. 127,027
10 Claims. (Cl. 74—501.5)



1. A mechanical power-transmission system, including an actuator connected to a remote slave member by two alternative channels capable of transmitting only tensional forces, said channels being interrupted by a compensator dividing each channel into an input section and an output section, said compensator comprising two members, each having two spaced attachment points and arranged for relative rotation about a common pivot axis situated intermediate the attachment points of both members, said common pivot axes having a component of freedom of motion along the direction of said tension members, one attachment point of each said member being connected to one of said input sections and the other attachment point being connected to one of said output sections, and means operatively connected with said compensator for resiliently restraining said members to partake of relative angular movement about said pivot axis whereby tension is constantly exerted in both input and output sections of each channel.

3,163,056
TORQUE AND SPEED CONTROL UNITS
William J. Clarke, "Roseways," Tyrwhitt Ave., Johannesburg, Transvaal, Republic of South Africa
Filed Oct. 25, 1962, Ser. No. 233,086
Claims priority, Republic of South Africa, Nov. 10, 1961, R 61/2,348
3 Claims. (Cl. 74—677)



1. A torque and speed control unit including a casing, a power input shaft in the casing, a planet gear wheel carrier fast with an end of the input shaft in the casing, a plurality of planet wheels rotatably mounted on the carrier about axes parallel to the input shaft, the axes being disposed at the same radius struck from the centre of the carrier, a torque converter co-axial with the input shaft and located on the input shaft side of the carrier,

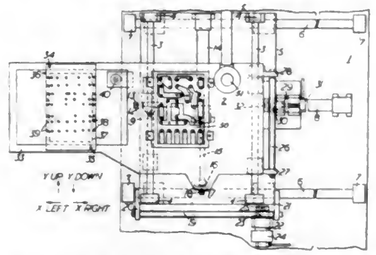
the converter comprising an annular pump element, a mating annular turbine element and a mating annular reactor element, means coupling the converter pump to the input shaft, an annular cage surrounding the shaft and fast with the turbine element, a first sun wheel fast with the cage, co-axial therewith and meshing with the planet wheels on the input shaft side of the carrier, and a second sun wheel meshing with the planet wheels on the opposite side of the carrier, journalled in the casing coaxially with the input shaft and adapted for coupling to a driven element, the meshing zones of the planet wheels being of different diameters and the arrangement being one in which the torque converter is in a chamber in the casing sealed from the carrier and the sun wheels.

3,163,057

DRILLING MACHINE WITH A TEMPLATE CONTROLLED WORK POSITIONING AND SPINDLE ACTUATING MEANS

Robert Main Drummond, Cheadle, and John Manners-Smith, Manchester, England, assignors to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland

Filed July 10, 1961, Ser. No. 122,729
Claims priority, application Great Britain, July 15, 1960, 24,668/60
10 Claims. (Cl. 77—32.2)



1. A system for automatically and sequentially locating a member in a pre-determined series of positions with respect to an operational head, said positions being selected from a plurality of positions arranged in a matrix of rows and columns, a template containing a pattern of holes arranged in a matrix of rows and columns corresponding to said pre-determined positions, hole sensing means, means for causing relative movement between said template and said hole sensing means such that said matrix is scanned row by row, said hole sensing means being operative to produce a control signal whenever a hole of said pattern is sensed, means for causing relative movement between said member and said operational head in synchronism with the movement between said template and said hole sensing means, first and second locating means for positively locating said member relative to said operational head in positions corresponding to said rows and columns, respectively, of said matrix, and means for utilizing the control signals derived from said hole sensing means to stop said movements, actuate said second locating means, actuate said operational head, release said second locating means and then re-start movements.

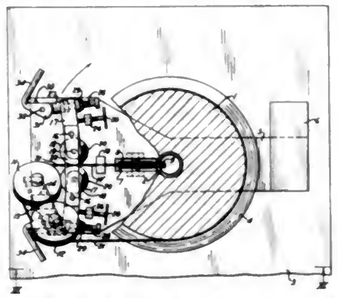
3,163,058

APPARATUS FOR CONTINUOUSLY DRAWING, KNURLING AND COILING TRAVELLING WIRE

Everett C. Hunter, Belle Vernon, Pa., assignor to Pittsburgh Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1963, Ser. No. 261,734
5 Claims. (Cl. 80—4)

1. Apparatus for continuously drawing and knurling and coiling travelling wire, comprising a dead block, a sweep arm mounted at one end of the dead block and spaced axially therefrom, the arm being disposed radially of the dead block and projecting radially beyond it, means for continuously rotating the arm on the axis of the dead block, means near the axis of rotation of the arm for guiding a travelling wire to the side of the arm next to the dead block, a wire-drawing die mounted on said side of the arm for receiving a wire from said guiding means and reducing its diameter, a pair of laterally spaced rolls at said side of the arm parallel thereto and spaced outwardly along the arm relative to the die, the rolls being provided with circumferentially spaced radial projections and being positioned to form a pass for a reduced wire from the die, a pair of bars adjoining the rolls and parallel to the sweep arm, the bars being inclined to each other and each having an inner end pivotally supporting one of said rolls,



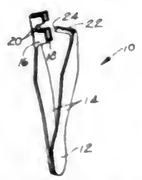
the bars extending laterally away from each other and outward along the sweep arm, means between the rolls and the outer ends of the bars pivotally connecting the bars to said arm on parallel axes, stops on the sweep arm limiting movement of the outer ends of the bars away from the outer end of the arm, and sheaves means supported by the outer end of the sweep arm in a position for guiding the wire from said roll pass to the adjacent end of the dead block, rotation of said sweep arm while a portion of the wire is wrapped tightly around the dead block serving to coil the following portion of the wire around the dead block as said sheave means pull the wire from said rolls, and said bar-pivoting means being located outwardly along the sweep arm from the roll axes to permit the wire to pull the rolls toward each other into rolling engagement with the wire to form knurls thereon.

3,163,059

SWIVEL PIN OPENER AND CLOSER AND HOOK HOLDER

Philip Tempel, Marion, S. Dak.

Filed Aug. 28, 1962, Ser. No. 220,093
1 Claim. (Cl. 81—3)



A combination swivel pin opener and fish hook closer comprising:

(*a*) first and second spring arms joined at one end;

(*b*) a channel member at the other end of the first arm providing a bottom wall and a pair of parallel walls projecting toward the second arm having a spacing therebetween for the reception of the eye of a fish hook,

(*c*) the free edges of said parallel walls remote from said bottom wall being provided with aligned parallel notches each having spaced parallel sides so that a swivel pin can be placed therein, and

(*d*) a pressure member on said second spring arm of a thickness to fit between said parallel walls and longitudinally registrable with said parallel notches,

(*e*) said pressure member having a notch extending transversely thereacross,

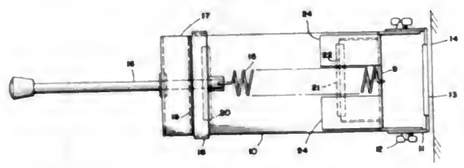
(*f*) whereby said pressure member can engage one side portion of a swivel pin when an opposite side portion is placed in said aligned notches to open said pin when sufficient force is applied to said pressure member, and said pressure member can engage one side of the eye of a fish hook to urge the other side thereof against said bottom wall to a clamp said eye and thus facilitate the baiting of the hook, said parallel walls preventing tilting of said hook eye to either side.

3,163,060

DEVICE FOR OPENING CONTAINERS

Horton Hampton Loughry, Chesterland, and Osborne C. Dodson, Jr., Chagrin Falls, Ohio, assignors to Loughborne Inc., Chesterland, Ohio, a corporation of Ohio

Filed Sept. 7, 1962, Ser. No. 222,041
1 Claim. (Cl. 81—3.3)



A device for opening containers comprising, a rectangular base support, said base support having one end upturned at a right angle and having an opening in said upturned end for sliding movement of a rod serving as a handle, a member secured at right angles to the other end of said base support and extending above and below said support, a downwardly depending yoke positioned about said base support for sliding movement therealong, said handle attached to said sliding yoke for manual actuation thereof, serrated blades for seizing tops of containers mounted in opposition to each other one on the lower end of the base secured member and the other on the yoke, a tension spring joining said handle with the upper section of the base secured member urging said serrated blades toward each other, and a bracket adapted for wall mounting being pivotally attached to said base.

3,163,061

DEVICE FOR CONTROL OF CUTTING SPEED OF MACHINE TOOLS

Oscar L. Rader, Portage Township, Kalamazoo County, Mich., assignor to Atlas Press Company, Kalamazoo, Mich., a corporation of Michigan

Filed Aug. 2, 1962, Ser. No. 214,303
9 Claims. (Cl. 82—2)

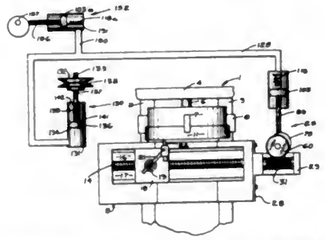
2. In a machine tool the combination comprising: a rotatable spindle;

tool feeding means;

means including variable ratio drive means connected to said spindle for driving said spindle and pressure responsive means for controlling the ratio of said drive means;

a conduit connected to said pressure responsive means and a substantially incompressible fluid filling said conduit;

pressure imposing means connected to said conduit and variable in volume by movement of said tool feeding means for exerting a pressure upon said fluid to displace same in said conduit;



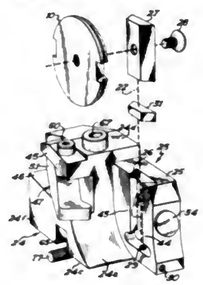
whereby movement of said tool feeding means effects a corresponding change in the rotational speed of said spindle.

3,163,062

TOOL HOLDERS

Rodney D. Schultz, Brooklyn Center, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed July 25, 1962, Ser. No. 212,332
8 Claims. (Cl. 82—36)



1. A tool holder comprising: a body member having a dovetail slot formed therein and adapted to receive a tool carrying dovetail block, an elongated opening in said body member and extending in a transverse direction to said dovetail slot, a portion of said opening being coextensive with a portion of said dovetail slot; an elongated clamping member having a dovetail slot formed on one side thereof, said clamping member being mounted in said opening in a position so that the dovetail slots in said body member and said clamping member are substantially coextensive; means for axially moving said clamping member in said opening to clamp the dovetail block in said dovetail slot; a clamp lever pivotally mounted on said body member and movable between first and second positions with respect thereto and being adapted to forceably engage a non-cutting portion of a tool held by the dovetail block to prevent movement of the tool with respect to the holder when said clamp lever is in one of said positions; and means for selectively locking said clamp lever in said one of said positions.

3,163,063

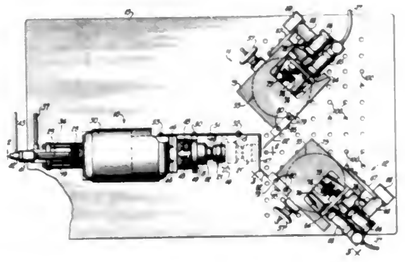
WORKPIECE TRIMMING DEVICE

John E. Corrigan, Evanston, Ill., assignor to Chicago Rawhide Mfg. Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 19, 1962, Ser. No. 224,732
11 Claims. (Cl. 82—101)

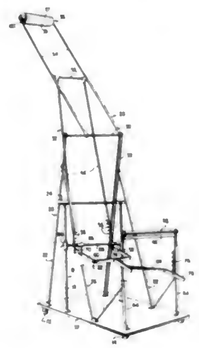
1. A trimming device comprising a workpiece holder, means mounting said holder for reciprocation along a

first axis, a pair of workpiece trimming means each including projecting knives, means mounting each of said knives for reciprocation along separate axes, said holder and trimming means being arranged relative to one another to provide for mutual converging operation therebetween with said knives contacting a workpiece on said



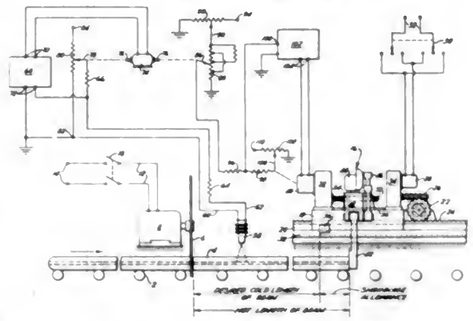
holder during simultaneous outward movement of said knives and holder along their respective axes of reciprocation, each of said axes being angularly offset relative to the remaining axes, and operating means common to said holder and knives to provide said simultaneous outward movement.

3,163,064
APPARATUS FOR PERFORATING ACOUSTICAL PLASTER CEILINGS
Charles M. Blackmon, 1312 30th St. NW., Washington, D.C.
Filed July 3, 1961, Ser. No. 121,661
9 Claims. (Cl. 83—1)



1. Apparatus for restoring the sound absorbing capacity to a plaster ceiling including an outer, coated, acoustic plaster layer comprising: a rotatable element adapted to frictionally engage the surface of said ceiling and rotate thereon, perforating means carried by said element and adapted to penetrate the surface of said coated acoustic plaster layer to expose an area of raw acoustic material, mechanically adjustable means for forcing said element against said ceiling, means for resiliently biasing said element against said ceiling to cause said perforating means only to enter said plaster, and means for moving said rotatable element across said ceiling under pressure to renew the acoustic receptivity of said acoustic plaster layer.

3,163,065
APPARATUS FOR AUTOMATICALLY ADJUSTING THE STOP OF A HOT-METAL CUTTING MACHINE
Robert W. Kolodgy, Pittsburgh, and William L. Roberts, Murrysville, Pa., assignors to United States Steel Corporation, a corporation of New Jersey
Filed June 30, 1961, Ser. No. 121,426
2 Claims. (Cl. 83—72)

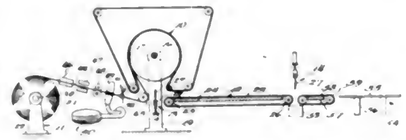


1. Apparatus for cutting an elongated metal workpiece into two or more pieces of predetermined length at ambient temperature when said workpiece is at an elevated temperature which comprises a conveyor having an entrance end and an exit end adapted to move said workpiece in a lengthwise direction from said entrance end to said exit end, a hot-metal cutting saw disposed adjacent said conveyor intermediate the ends thereof, said saw being operative in the path of said workpiece to effect cutting thereof, a hot-metal cutting-machine stop disposed above said conveyor adjacent the exit end thereof, said stop having a body base mounted for movement along a trackway above and parallel with said conveyor, a carriage movable along said base, a bumper attached to said carriage and normally extending into the path of said workpiece on said coveyor, means for moving said bumper into and out of the path of said workpiece, power-actuated means for moving said carriage along said body base, a reversible motor connected with said power-actuated means for actuating the same, a temperature-sensing element disposed adjacent the path of said workpiece intermediate said saw and said stop, means connected with said temperature-sensing element for receiving an electrical signal from said element, means for modifying said signal in accordance with the anticipated percent of longitudinal shrinkage of said workpiece as it cools from elevated temperature to ambient temperature, means for developing a voltage which is a function of said shrinkage, and means for applying said voltage to said reversible motor whereby pieces having the predetermined length at ambient temperature are obtained regardless of the temperature of the workpiece at the time the cut is made.

3,163,066
PAPERMAKING MACHINE
Delton C. Beaulieu, Neenah, and Richard W. Martinek, Appleton, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Oct. 1, 1959, Ser. No. 843,661
6 Claims. (Cl. 83—91)

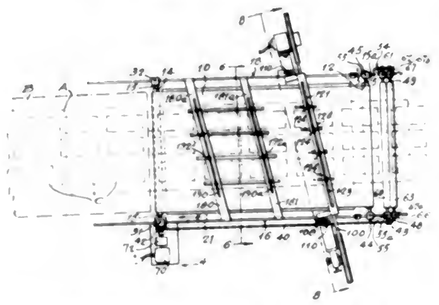
3. In a machine for forming a pile of sheets from webbing of sheet material, the combination of a movable webbing support means having a circumference on which the webbing may be wound as a multi-thickness loop with a substantially horizontal axis as the support means is moved, a knife movably mounted so that it may cut through said multi-thickness loop on the under side of

said support means for severing the webbing transversely thereof to form a plurality of webbing sheets disposed about said support means, and an endless belt extending about a portion of the circumference of said support means and at least from above said axis on the top of said support means to a side of the support means at a level below



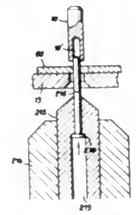
said axis and providing a gap on the bottom of said support means uncovered by said belt, whereby the belt may be effective to hold the sheets on the support means as a slab as the sheets are unwound from the support means to position the sheets as a pile below the support means with movement of the support means.

3,163,067
ARTICLE SEPARATING APPARATUS
Carlo Caprioli, Montreal, Quebec, Canada, assignor to Plastic Packaging Products Limited, Montreal, Quebec, Canada
Filed Sept. 17, 1962, Ser. No. 224,061
1 Claim. (Cl. 83—201)



A cutting apparatus adapted to separate in sequence a plurality of articles moulded in spaced apart relationship from a common material sheet; said apparatus comprising, a supporting frame, a sheet conveying means including an endless conveyoor belt mounted on said frame and adapted to convey said material sheet along a straight line path with said moulded articles extending outwardly therefrom, an endless cutting blade mounted on said supporting frame with an effective run above and transversely of the path of said conveyor belt and a return run beneath said conveyor belt, an elongated supporting frame mounted on said main supporting frame so as to span said conveyor belt upper surface, a plurality of shafts mounted for vertical adjustment and in spaced relationship along the length of said elongated frame and a blade guiding member mounted on each of said shafts including a blade receiving recess adapted to slidably receive said cutting blade for guiding alignment relative to said conveyor belt upper surface, each of said blade guiding members including an upper portion fixedly mounted on said adjustable shaft and a lower portion resiliently connected to said upper portion, said guiding member lower portion containing said blade receiving recess, and a pressure member mounted on each of said members lower portions beneath said blade receiving recess and being adapted to resiliently bear against said material sheet as it passes beneath said cutting blade, whereby the spacing between the effective run of said cutting blade and the upper surface of said conveyor belt can be varied to separate said moulded articles from said sheet along a horizontal plane at any desired height from said material sheet.

3,163,068
PUNCH GUIDE FOR NIBBLING MACHINE
Berthold Leibinger, Stuttgart-Weilimdorf, Germany, assignor to Messrs. Trumpf & Co., Stuttgart-Weilimdorf, Germany
Original application Oct. 29, 1958, Ser. No. 770,461, now Patent No. 3,058,380, dated Oct. 16, 1962. Divided and this application Jan. 12, 1961, Ser. No. 82,199
Claims priority, application Germany, Dec. 6, 1957, T 14,490; July 19, 1958, T 15,410; July 24, 1958, T 15,422
5 Claims. (Cl. 83—237)

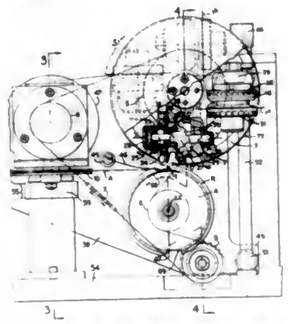


1. In a punch press, in combination, a die formed with an opening passing therethrough; a punch having a rest position to one side of said die and being axially reciprocable into and out of said opening and having an end portion adapted to extend into said die during cutting of a work sheet fed between punch and die, said punch being formed in said end portion thereof with an axial bore extending from the end face of said punch located at the termination of said end portion thereof; an elongated guide pin extending slidably into said bore of said punch for guiding the latter during reciprocation thereof; and support means spaced from the other side of said die and supporting said guide pin for movement between an operating position where it extends into said bore of said punch to guide the latter during its reciprocation and to limit feeding of the work sheet and an idle position where it is spaced sufficiently from said punch and die on the side of said die opposite from said punch to be out of the way of material cut by said punch so that the material can freely fall to permit punching of a starting hole in said work sheet.

3,163,069
CROPPING MACHINE
Achille Edmon, Satrouville, France, assignor to Societe de Constructions Mecaniques et Aeronautiques de la Mayenne, Paris, France, a French body corporate
Filed Aug. 8, 1961, Ser. No. 130,041
Claims priority, application France, Nov. 26, 1960, 845,148
5 Claims. (Cl. 83—303)

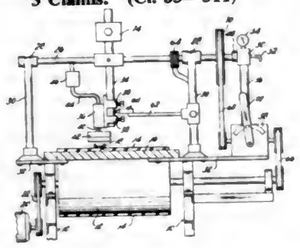
1. A cropping machine for cropping bars and the like fed with a continuous movement of translation, comprising a stand, a rotor having an axis and mounted on said stand for rotation about said axis, a number of cutting units carried by said rotor; each of said units comprising a rotary saw lying in a plane offset from said axis and individual separately fed driving means for driving said saw about an axis orthogonal to said motor axis; a rotary guide having an annular guide face rotatable about an axis parallel with said rotor axis but offset with respect to said rotor axis to be in alignment with each of said saws when the latter are in position to crop the bar, means for engaging and advancing bar for being

driven thereby and including a rotatable roller frictionally driven by the bar to be cropped and operatively connected to said rotor and said rotary guide to drive the same in synchronism about their respective axes, said guide having recesses formed in the peripbery thereof for receiving the cutting parts of the saws in cycles, the geometric cylinder described by the cutting part of the



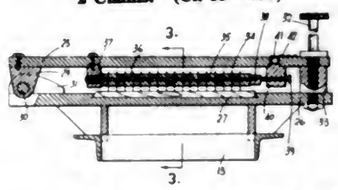
saws in the rotation of the latter about the axis of rotation of the rotor intersecting the annular guide face, whereby each time the cutting part of the saws, in the rotation of the latter about the rotor axis, moves into said peripheral recesses, it crops off a section of the bar, whose length depends on the extent to which the rotatable roller is driven by the bar.

3,163,070
INTERRELATED WEB FEED AND TOOL DRIVE MEANS
Carl E. Bell, Rte. 1, Box 258, Garrettsville, Ohio
Filed Mar. 29, 1963, Ser. No. 269,041
3 Claims. (Cl. 83—311)



1. The combination in apparatus for marking or cutting continuous lengths of rubber-like materials of an endless conveyor adapted to receive and carry the material, means for driving the conveyor, a shaft, means journalling the shaft transversely of the conveyor in a position above the conveyor and spaced from the end of the conveyor receiveing the material, drive means connecting the shaft and the means for driving the conveyor to rotate the shaft, adjustable means in said drive means for selectively changing the relative rate of rotation of the shaft and the speed of the conveyor, bracket means extending radially from the shaft towards the conveyor, air cylinder means fixed to the bracket means and having piston rod means extending towards the conveyor, cutter means carried by the piston rod means, means for supplying air to the air cylinder means, means for controllably regulating the pressure of the air supplied to the air cylinder means, a solenoid operated valve in the means for supplying air, a microswitch for controlling the operation of the solenoid operated valve, means for adjustably mounting the switch so it is controllably operated at a selected predetermined relation to the material upon each rotation of the shaft to thereby cause the cutter means to move against the material on the conveyor to cut or mark it, means on the shaft for adjustably counterbalancing the weight of the bracket means, the air cylinder means, and the cutter means, and means for adjusting the length of the stroke of the cutter means towards the material.

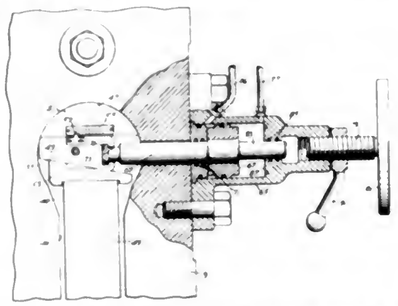
3,163,071
VENEER SLITTING APPARATUS
Lars Waldemar Bergstrand, 53 Livingstone Ave., Pymble, New South Wales, Australia
Filed May 23, 1962, Ser. No. 197,020
Claims priority, application Australia, June 29, 1961, 6,396/61
2 Claims. (Cl. 83—433)



1. Veneer slitting apparatus comprising a frame member, veneer sheet guide means supported by said frame member, a cutting device supported by said frame member, a cooperating driven roll pair supported by said frame member for propelling the veneer sheet from the guide means into engagement with and through a cutting device where it is cut into longitudinal strips, a further cooperating driven roll pair supported by said frame member, said further roll pair engaging the cut veneer strips to assist the first-mentioned roll pair in propelling the veneer sheet through the cutting device, said veneer guide means including a pair of rolls, one of which has its axis of rotation horizontal and substantially normal to the direction of travel of the veneer sheet, said roll of the guide means having a cooperating idler roll of shorter length and positioned above it with its axis of rotation horizontal and inclined to the axis of rotation of said guide means roll and located in a horizontal plane for urging the veneer sheet towards one side of the frame member with respect to the direction of travel of the veneer sheet and a guide bar for engagement with the veneer sheet displaced by said idler roll for maintaining it in a direction of travel parallel to the edge of the veneer sheet in contact with the guide bar, said cutting device including a mounting member releasably secured to said frame member, a first member secured to the mounting member, a second member detachably secured to said mounting member, said mounting member being positioned across the direction of travel of the veneer sheet with the first and second members respectively positioned on either side thereof, a securing element extending from and attached to said first element, a plurality of blades with spacers therebetween mounted on said securing element, a clamping member positioned on the free end of the securing element and a bolt threaded in said second element for engaging the end of the adjacent spacer for urging the spacers and blades together on said securing element.

3,163,072
KNIFE ADJUSTMENT CONTROL MEANS FOR A SHEAR MACHINE
Eugene W. Pearson, Orinda, and Rolland A. Richardson, Alameda, Calif., assignors to Pacific Industrial Manufacturing Co., a corporation of California
Filed June 6, 1960, Ser. No. 34,005
3 Claims. (Cl. 83—639)

1. In a shear machine or the like involving a vertically movable knife cooperating with a substantially horizontal fixed knife of substantial length, a horizontal work table provided with an upper work surface substantially flush with the upper surface of said fixed knife, a hydraulic circuit including a power source, for operating components of said machine, and means for adjustably supporting said work table and fixed knife, including a machine frame having side walls extending to the front of said machine and terminating in lower front edges inclined at an angle to the vertical, a front wall spanning said inclined edges and slidably supported thereon, said front wall carrying said table and fixed knife, and wedge means at each end of said front wall including a movable



wedge for slidably adjusting the proximate end of said front wall along the associate inclined edge; a two-way piston drive connection to each of said wedges, each of said drive connections including a cylinder affixed to one of said walls at a point adjacent a wedge to be actuated, a piston in said cylinder having a connecting rod extending from one end of said cylinder and connected to said wedge, a flow connection to said cylinder to either side of said piston, and means for interrupting said hydraulic circuit and selectively connecting said power source to either of said two-way piston drive connections and for either direction of movement of the piston therein.

3,163,073
ELECTRIC GUITAR
John F. Elmore, 400 E. 1st St., Newberg, Oreg.
Filed Oct. 9, 1961, Ser. No. 143,929
3 Claims. (Cl. 84—312)



1. In a guitar or like stringed instrument,
a horizontally extending sounding board,
a plurality of parallel tensioned strings extending along said board,
means anchoring said strings at one end of said board,
and means for varying the tone of one of said strings connected to such string at the opposite end of said board, said last mentioned means comprising,
an arm mounted for rotation about a horizontal axis,
means connecting said one string to said arm,
a stop member engaging said arm to hold the same against rotation under the tension of the attached string,
means to adjust the tension of said string when said arm is in engagement with said stop so as to tune said string to its normal tone,
a foot pedal mounted beneath said board for engagement by the foot of the player of said instrument, said pedal being mounted at one end thereof for rotation about a horizontal axis,
means connecting said pedal to said arm to cause said arm to rotate from said stop member when said pedal is depressed,
means associated with said arm to arrest rotation thereof by movement of said foot pedal when the tone of the string connected to said arm has been raised by one half tone,
a supplemental pedal mounted on the free end of said foot pedal for rotation about a horizontal axis, said supplemental pedal adapted to be actuated by horizontal movement of the player's foot operating said foot pedal,
means connecting said supplemental pedal to said arm to cause said arm to rotate in the direction away from said stop member when said supplemental pedal is actuated,
and means associated with said arm to arrest rotation thereof by movement of the corresponding supplemental pedal when the tone of the string connected to said arm has been raised by one full tone from its normal tone.

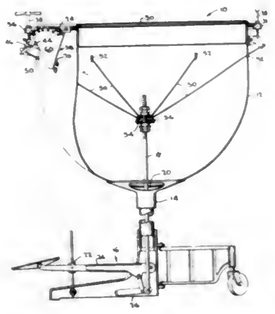
3,163,074
MUSICAL WIND INSTRUMENT REGISTER MECHANISM
Leon Leblanc, Paris, France, assignor to G. Leblanc Corporation, Kenosha, Wis., a corporation of Wisconsin
Filed Apr. 17, 1964, Ser. No. 360,693
6 Claims. (Cl. 84—382)



1. In a musical wind instrument such as a contrabass and contra-alto clarinet, the combination comprising a tubular body having a register hole, a Bb hole and at least one other tone hole therein, a first hinge rod, a second hinge rod, a third hinge rod, means mounting said hinge rods in alignment from said body for independent pivotal movement, a left thumb key, means mounting said left thumb key on said first hinge rod near the lower end thereof, hole closure means for said other tone hole, means mounting said other hole closure means on said first hinge rods spaced from said thumb key longitudinally of said instrument and movable between hole closing and hole open positions upon pivoting of said first hinge rod in response to manipulation of said thumb key, Bb tone hole closure means, means mounting said Bb tone hole closure means on said second hinge rod and movable between Bb tone hole closing and hole

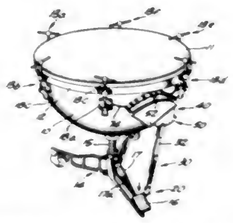
open position upon pivoting of said second hinge rod, spring means tending to move said B♭ tone hole closure member to hole open position, an arm extending from said second hinge rod, in the vicinity of said B♭ tone hole closure means, one-way force transmitting means acting between said first and second hinge rods to prevent said B♭ tone hole closure means from moving into hole open position when said thumb key is depressed, register hold closure means, means mounting said register hole closing means on said third hinge rod for movement between register hole closing and hole open position, spring means tending to move said register hole closure means to hole open position, an arm on said third hinge rod similar to and extending parallel and adjacent to the arm on the second hinge rod, one-way drive means acting between said first hinge rod and said third hinge rod and effective to prevent said register hole closure member from moving to hole open position when said thumb key is raised, relatively strong spring means acting on said thumb key to maintain said thumb key raised except when manually depressed as by thumb pressure, a fourth hinge rod, a fifth hinge rod, means mounting said fourth and fifth hinge rods from said instrument body in alignment with one another but laterally spaced from said first, second and third hinge rods, a left thumb spatula, means mounting said left thumb spatula from said fourth hinge rod in close proximity to said left thumb key, relatively strong spring means acting to maintain said thumb spatula raised except when manually depressed by thumb pressure, an arm on said fifth hinge rod overlying both of the second and third hinge rod arms, and effective to hold both of the second and third hinge rod arms down except when said left thumb spatula is manually depressed as by the left thumb, whereby depression of said left thumb key alone results in closure of said other tone hole, depression of said left thumb spatula alone results in opening of said B♭ tone hole, and simultaneous depression of said left thumb key and said left thumb spatula results in opening of said register hole.

3,163,075
TUNING GAGE FOR DRUMS
Frank M. Toperzer, Jr., 7106 Clarden Road, Bethesda 14, Md.
Filed Dec. 7, 1962, Ser. No. 242,994
9 Claims. (Cl. 84—419)



1. A tone indicating attachment for use on an adjustable drum head ring for tensioning a drum head, comprising in combination pivotal lever means manually movable to cause drum head ring movement, said pivotal lever means comprising at least one vertically pivotal bell crank element, a sector plate having an upper, arcuate edge, note-indicia means on the upper arcuate edge of said sector plate, an indicator lever pivotally mounted on said sector plate and including an indicating portion aligned with the note-indicia means on the upper edge thereof, the improvement comprising force transmitting means connected between said bell crank element and said indicator lever for moving the same in relation to the movement of said pivotal bell crank element, said bell crank element including thereon independently-adjustable lever means, said independently-adjustable lever means being connected between said bell crank element and said force transmitting means for adjusting said indicator lever with respect to said sector plate edge independently of movement of said bell crank element.

3,163,076
ADJUSTABLE TUNING INDICATOR FOR PEDAL-TUNED KETTLEDRUMS
Charles L. White, 922 S. Kingsley Drive, Los Angeles, Calif.
Filed Oct. 29, 1963, Ser. No. 319,789
5 Claims. (Cl. 84—419)

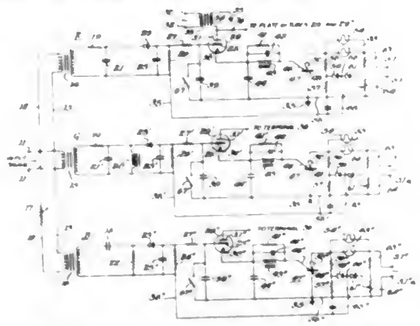


1. An adjustable tuning indicator for kettledrums of the type having a vertically movable pedal for tuning the pitch of the drum head, comprising:
- mounting means for a keyboard and pointer removably attached to the side of the kettle, above the pedal;
- a keyboard supported from said mounting means;
- a pointer having its lower end pivotally supported from said mounting means beneath said keyboard, and its upper end adapted to move along said keyboard;
- adjustable note indicating means on said keyboard for indicating the drum head pitch corresponding to various positions of said pointer;
- a laterally projecting lever arm attached to said pointer;
- and a substantially vertically disposed control arm having its lower end coupled by means of a universal joint to the pedal, and its upper end pivotally coupled to said lever arm;
- said control arm being of adjustable length, and said lever arm being adapted for connection of said control arm thereto at any selected one of a plurality of radius distances from the pivotal mounting of said pointer.

3,163,077
COLOR DISPLAY APPARATUS
Clifford A. Shank, Santa Monica, Calif., assignor to Shafford Electronics & Development Corporation, Santa Monica, Calif., a corporation of California
Filed Oct. 23, 1961, Ser. No. 146,860
4 Claims. (Cl. 84—464)

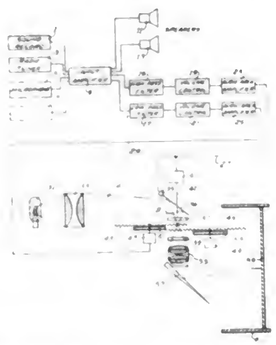
1. Display apparatus for simulating in color a wide frequency range of audible effects originating with a preselected signal source comprising a plurality of signal responsive channels and selector circuits adapted to be supplied with the source signals for segregating discrete signal frequency ranges of the source signals into separate signal channels, a device for producing light in a selected color associated with and responsive to the signals in each separate channel, each of the colors of light produced being different and each light color being related to and generally proportional in frequency to the frequency selection of the selector circuits, a detector in each channel for

detecting the selected signals, a gating device responsive to the detected signals for controlling the illumination of the light source, a thermionic device responsive to the detected signals and connected for controlling the gating device, means to supply said device with operating potential from an alternating current source to limit current flow therethrough to selected cyclic periods and thereby normally to similarly control the gating device, a filter



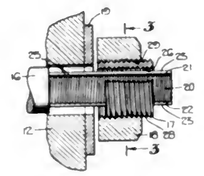
and phase shift circuit connected between the thermionic device output and the gating device for determining the gate operating period and for phase control thereof, a voltage divider responsive to current flow through the gating device for establishing the level of feed-back voltage, storage means to integrate feed-back voltage thereby to provide dynamic modulation from any gating output, and feed-back means to control the gating device and for establishing a static threshold light level.

3,163,078
APPARATUS FOR VISUAL INTERPRETATIONS OF ELECTRICAL CURRENTS
Stanley B. Elliott, 7125 Conelly Blvd., Walton Hills, Bedford, Ohio
Filed Oct. 3, 1963, Ser. No. 313,502
19 Claims. (Cl. 84—464)



1. In apparatus for visually interpreting electric signal currents comprising a source of electric signal currents, means for deriving at least one control signal representative of said signal currents, a light source, a polarizer element in light intercepting position with respect to said light source effective to polarize light emanating therefrom, an analyzer element for receiving light from said polarizer element, means actuatable by and responsive to the magnitude of said control signal to proportionately vary the position of the polarizing axis of said polarizer element with respect to said light source and effect a consequent change in its polarizing response to said light source between its zero and maximum light emergence positions, birefringent means positioned to intercept the light emanting from said polarizer element effective to provide retardation thereof, said birefringent means being also actuatable by and responsive to the magnitude of said control signal to proportionately alter its position and effect a consequent change in its retardation response to said polarized light.

3,163,079
FAST ACTION SELF LOCKING THREADED CONNECTOR WITH RIGHT AND LEFT HAND THREADS
Arthur R. Schertz, Taft, Calif., assignor to S & S Research & Development, Inc., a corporation of Texas
Filed Apr. 5, 1963, Ser. No. 271,018
12 Claims. (Cl. 85—1)

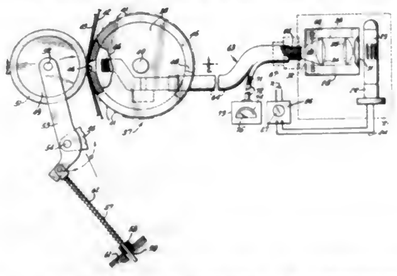


2. A fast action threaded connector utilizing inner and outer threaded members and an intervening threaded sleeve having inner and outer threads adapted to mate with the threads respectively of said inner and outer threaded members, one pair of said mating threads being left hand and the other pair of mating threads being right hand, and one of said pairs of mating threads on one of said members and said sleeve being cut away to the roots thereof on said member and said sleeve a circumferential distance at least equal to the remaining thread portions on said member and said sleeve along a plurality of circumferentially spaced strips extending axially of said member and said sleeve whereby said sleeve is freely movable axially of said one member when the threads of the latter are aligned with the cut away strips of said sleeve; stop means at the trailing ends of the partial threads of said one member and said sleeve engageable with the leading ends of the partial threads of the other of said sleeve and said one member to prevent further relative rotary movement between said sleeve and said one member after said threads have become fully meshed and such engagement has taken place; said sleeve being slit in a thin walled section thereof to provide a tang deflected slightly in a radial direction to project relative to the surface of the sleeve having the full threads thereon into engagement with the mating thread surface of the other member having the full threads thereon to engage the threads mating therewith with frictional drag and in an amount related to the deflection of said tang, the free end of said tang being formed to slidably engage the mating threads of said other threaded member having the thread surface thereon which is not cut away.

3,163,080
FIBER OPTICS FILM PRINTING SYSTEMS
Arthur J. Miller, Haworth, N.J., assignor to Du Art Film Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Oct. 17, 1961, Ser. No. 145,686
21 Claims. (Cl. 88—24)

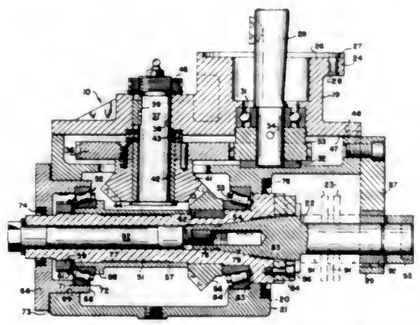
1. Film printing system comprising a film printing apparatus, a film printing location in said apparatus, a light source spaced apart and mechanically isolated from said apparatus, and means for providing uniform illumi-

nation at said film printing location comprising a flexible incoherent bundle of optical fibers connected between said



light source and said apparatus for transmitting light from said source to said film printing location.

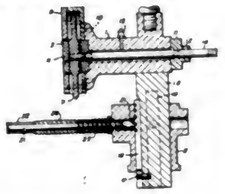
3,163,081
RIGHT ANGLE MILLING HEAD
Stanley E. Vickers, Columbus, Ohio, assignor to Vickers Machine & Tool, Inc., Columbus, Ohio, a corporation of Ohio
Filed Sept. 13, 1962, Ser. No. 223,458
3 Claims. (Cl. 90—11)



1. A milling head attachment comprising a housing, a mounting pad on said housing, an input shaft journaled on said housing within said pad adapted to be coupled to and rotated by a power source, a pinion gear on said input shaft within said housing, a driven gear of larger diameter than said pinion gear journaled on said housing and meshing with said pinion gear, a tool spindle, spaced tapered roller bearings mounting said spindle in said housing for rotation about an axis at right angles to said input shaft, a first bevel gear rotated by said driven gear, a second bevel gear on said spindle between said roller bearings meshing with said first bevel gear, a tool arbor removably mounted on said spindle extending at one end out of said housing, a removable bearing support on said housing supporting said one end, said arbor being adapted to support milling cutters between said bearing support and the adjacent roller bearing.

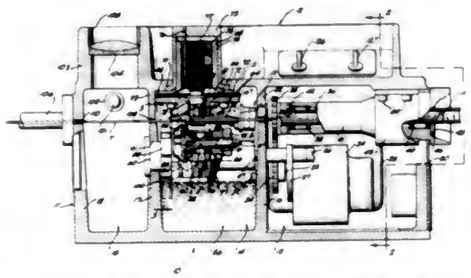
3,163,082
PIPE AND CONDUIT THREADING MACHINE
Edward Denton Key, New Smyrna Beach, Fla., assignor, by mesne assignments, to Products, Inc., Daytona Beach, Fla., a corporation of Florida
Filed Mar. 7, 1962, Ser. No. 178,010
3 Claims. (Cl. 90—11.58)

1. A machine for milling a thread on a pipe comprising an elongated tubular frame, a drive shaft having an intermediate portion rotatably supported by said frame and having a first end adapted for connection to a portable rotatable power source and a second cutting end, a rotatable cutter having a plurality of single powered blades supported on said cutting end having their peripheral cutting points defining a circle whose plane is normal to said drive shaft, a collar slidable along said tubular frame toward and away from said shaft, a guide screw supported by said collar parallel to said shaft, adjustable securing means affixing said collar to said frame such that



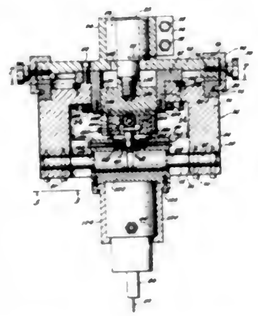
said guide screw is spaced from said circle a distance slightly less than the outside radius of said pipe, a guide mandrel in one end of said pipe having a threaded aperture therethrough and having a central axis concentric with the axes of said guide screw and said pipe, the interior threads of said threaded aperture mating with the exterior threads of said guide screw, a handle for rotating said frame about the axis of said guide screw such that said guide screw is threaded into said mandrel.

3,163,083
TUBE FINNING APPARATUS
Arthur S. Chapman, Hawthorne, and Ralph E. Hendrickson, Glendale, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 29, 1960, Ser. No. 59,452
2 Claims. (Cl. 90—11.62)



1. An apparatus for cutting helical fins on tubing comprising:
a housing;
an elongated support adjustably carried by said housing and having a longitudinal passage for said tubing;
tubing engaging means carried by said housing for engaging and rotating said tubing within said support;
freely rotatable roller means carried by said housing and positioned intermediate said tubing support and said tubing engaging means, said roller means having a sharp periphery adapted to engage said tubing and an axis adjustably positioned at a slight angle relative to an axis of said tubing for advancing said tubing through said tubing support whereby said angle determines the rate of advancement of said tubing and the width of said fins;
a splitting saw carried by said housing and engaging and cutting said tubing closely adjacent an end of said tubing support remote from said roller means whereby the width of said saw determines the spacing between said fins;
adjustable means carried by said housing for movably mounting said elongated support to move said longitudinal passage of said support substantially radially of said saw and independently of said roller means to control the radial length of said fins; and
a motor for driving said tubing engaging means and said splitting saw.

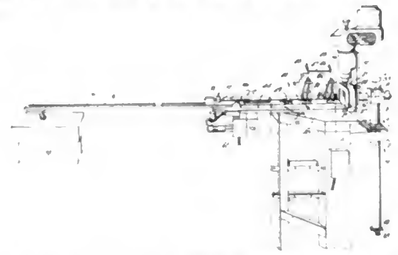
3,163,084
SLOT-CUTTING ACCESSORY FOR MACHINE TOOLS
Leo G. Hobart, 4045 W. Imperial Highway, Inglewood, Calif.
Filed Oct. 16, 1961, Ser. No. 145,177
12 Claims. (Cl. 90—15)



1. An accessory in the form of a slot-cutting mechanism for use on a machine tool having a power driven rotary member journalled in fixed structure, comprising: a guide structure adapted for fixed attachment to said fixed structure and having linear guide means rotatably mounted thereon for angular adjustment in various directions about the axis of said driven member; a carriage mounted on said guide structure for movement along said linear guide means in moving engagement therewith; an auxiliary rotary member carried by said carriage with its axis parallel with the axis of said driven member of the machine tool and adapted to hold a rotary cutting tool; auxiliary power means on said carriage to actuate said auxiliary rotary member; and a scotch yoke mechanism to operatively connect with said driven rotary member of the machine tool for actuation by rotation of the driven member to reciprocate said carriage along said linear guide means.

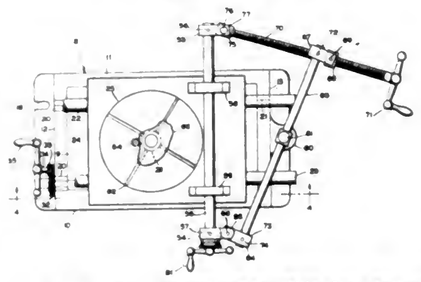
3,163,085
ARTICLE END CUTTING MACHINE
Eugene M. Wishing, Elkins Park, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 25, 1962, Ser. No. 212,266
11 Claims. (Cl. 90—17)

7. A tube end cutting machine comprising a circular cutting means; feed means adapted to feed the first end of a tube into engagement with said cutting means, whereby a radius is cut in said first end of an angle corresponding to the intersection of said cutting means and said first end; means adjusting the angular relationship between said cutting means and said feeding means to vary the angular intersection of said first end and said cutting means, a second end of said tube operatively engaging a rear stop; said rear stop rotatively positioning said first tube end about the longitudinal axis of said



tube in a predetermined angular relationship with respect to a radius cut in said second tube end.

3,163,086
SINE BAR CONTROLLED ROTARY WORK TABLE FOR CAM CUTTING AND LAYOUT
Edward G. Earle, R.D., Highland Mills, N.Y.
Filed Jan. 16, 1963, Ser. No. 251,982
15 Claims. (Cl. 90—20)

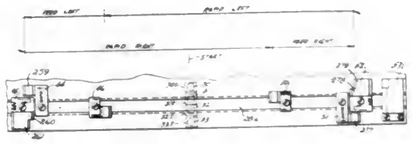


1. A sine bar controlled work table for cam cutting and/or layout, including a support, a supporting member mounted upon the support for movement in two opposite directions, a work table rotatably mounted upon the supporting member, a swiveling bearing member pivotally mounted at one end of the path of movement of said supporting member, means for rotating the work table, a sine bar extending slidably through the bearing member, and articulated means interconnecting two spaced apart portions upon the sine bar and the supporting member, bearing means being fixed upon the supporting member and an elongated member extending slidably through the bearing means transversely to the path of movement of said supporting member and connected to the ends of the sine bar, one end of the sine bar being pivotally connected to one end of the elongated member and a nut pivotally mounted on the other end of the sine bar with an adjusting feed screw extending through said nut and having an end bearing for the other end of said elongated member pivotally connected to the latter and said feed screw, the feed screw having an outer free end provided with a handle for rotating it.

3,163,087
MACHINE TOOL CONTROL SYSTEM
John E. Crowe and John G. Osburn, Milwaukee, Richard E. Stobbe, West Allis, and George R. F. Weber and Frank Zankl, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Dec. 7, 1959, Ser. No. 857,767
21 Claims. (Cl. 90—21)

2. In a machine tool control mechanism, a movable support, a plurality of switches carried in operative prox-

imity to said support in a manner to be actuated in predetermined binary code fashion, a plurality of first switch actuating dogs adjustably secured to said support in a manner to actuate said switches individually during support movement, a plurality of second dogs secured to said supports to respectively actuate a plurality of



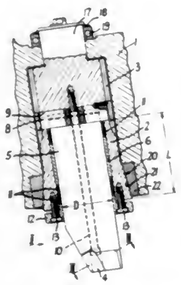
said switches in predetermined binary code fashion during support movement, and a power driven selectively reversible rate change mechanism including a source of power operatively connected to be actuated by coded operation of said switches for automatically changing the rate and direction of movement of said support.

3,163,088

TOOL MOUNTING ARRANGEMENT FOR FORWARD AND REARWARD PLANING

Heinz Lange, Birkenfeld, Germany, assignor to Werkzeugmaschinenfabrik Adolf Waldrich, a corporation of Germany

Filed Apr. 8, 1963, Ser. No. 271,142
Claims priority, application Germany, Apr. 9, 1962, W 32,002
12 Claims. (Cl. 90—53)



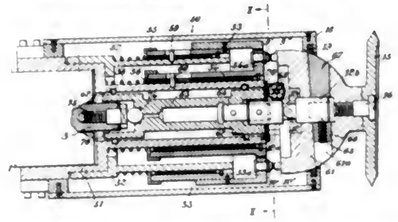
1. A tool mounting arrangement, particularly for a planing machine which cuts on both forward and reverse strokes, comprising: a tool holder; a tool head movably mounted in the tool holder, said tool head having a cylindrical opening therein; a tool having a cylindrical steel shank and also having a pair of cutting tips at its lower end, said shank extending upwardly into said cylindrical opening in said tool head; conical clamping spring rings arranged around the periphery of the tool shank and disposed within said cylindrical opening; and a clamping ring mounted on the lower end of said tool head for movemet in a direction axially of said cylindrical opening, said clamping ring being engageable with said conical clamping spring rings so that axial movement of said clamping ring moves said conical clamping spring rings into or out of clamping engagement with said tool head and said shank.

3,163,089

TRACER FOR COPYING THREE-DIMENSIONAL SURFACES

Erich Hubert Hermanns, Rheydt, Ekkehard von der Linde, Rheydt-Odenkirchen, and Ewald Weber, Rheydt, Germany, assignors to Maschinenfabrik Froriep G.m.b.H., Rheydt, Germany, a firm

Filed Aug. 14, 1961, Ser. No. 131,258
Claims priority, application Germany Aug. 30, 1960
8 Claims. (Cl. 90—62)



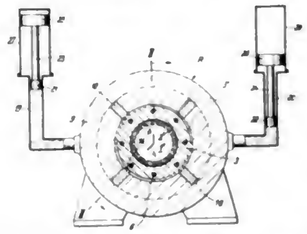
1. A tracer for copying three-dimensional surfaces, particularly the surfaces of Kaplan turbine blades, water and air propellers and the like, said tracer comprising in combination with a main tracer; an auxiliary tracer comprising a carrier having a portion mounted upon said main tracer, two coaxial sleeves movable relatively to the first-mentioned portion, resilient means engaging said sleeves and an operating member enclosed by said sleeves, a tracer plate adapted to engage the surface being traced and extending at an incline to the tracer axis, another carrier, means removably connecting said tracer plate to the second-mentioned carrier, means swingably connecting the second-mentioned carrier with said operating member, said coaxial sleeves having alined end surfaces, the second-mentioned carrier having an end surface located opposite said alined surfaces, and pairs of controlling contacts, the contacts of each pair being located opposite each other upon one of said alined surfaces and the end surface of the second-mentioned carrier respectively and being adapted to engage during the swinging movements of the second-mentioned carrier.

3,163,090

HYDROSTATIC CONVERTER

Hans Joachim Conrad, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany

Filed Dec. 20, 1962, Ser. No. 246,661
Claims priority, application Germany Dec. 23, 1961
7 Claims. (Cl. 91—126)



1. In a hydrostatic converter for converting a reciprocatory movement into a rotary movement: a housing having a first and a second opening for respective connection with fluid conveying conduit means, a rotary body rotatable in said housing and provided with a circumferentially extending passage having curved and substantially equidistant side walls, a portion of said housing extending into said passage and together with

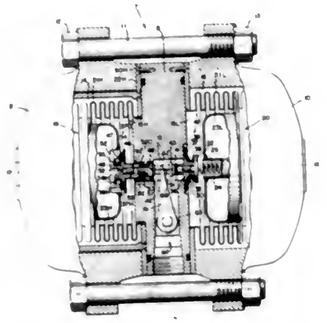
other housing parts and said side walls and other parts of said rotary body confining chamber means located on opposite sides of said housing portion, partition means slidably mounted in said housing portion and spaced from each other in circumferential direction of said rotary body while being slidable in axial direction of said rotary body to thereby divide said chamber means into a plurality of chambers, a first group of passage means arranged in said housing and connected on one hand with said first opening and on the other hand with every other chamber on said opposite sides of said housing portion, a second group of passage means arranged in said housing and connected on one hand to said second opening and on the other hand to chambers respectively arranged between every other chamber, sealing means respectively carried by the end portions of said partition means and movable independently thereof and relative to the respective partition means carrying the same, yieldable means acting on said sealing means for continuously holding said sealing means in sealing engagement with the respective adjacent portion of the side walls of said rotary body, and means operatively interconnecting said rotary body and said partition means and operable to impart upon said partition means a reciprocatory sliding movement relative to said sealing means in conformity with the curvature on said side walls in response to a rotary movement of said rotary body relative to said housing.

3,163,091

MEASURING APPARATUS

David G. Grier, Trevose, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Sept. 18, 1962, Ser. No. 224,298
4 Claims. (Cl. 92—1)



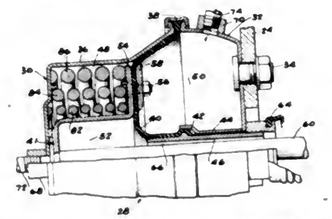
1. In a device responsive to the difference between two pressures, a rigid case having a hollow interior, a first thin-walled metallic bellows having a movable portion dividing the interior of said case into a chamber connected to one of said pressures and an intermediate chamber, a second thin-walled metallic bellows having a movable portion dividing said intermediate chamber from a chamber connected to the other of said pressures, said intermediate chamber being adapted to contain a substantially incompressible fill liquid in it, a rod connected to at least one of said bellows and movable in response to said bellows, and a pair of sealing valves mounted on said rod and each having a flexible disc-shaped portion extending from said rod at an angle to a wall of said case and adapted to yieldingly engage the wall of said case so as to prevent passage of said fluid between portions of said intermediate chamber in one direction but to allow passage of fluid between said portions of said intermediate chamber in the other direction.

3,163,092

BRAKE OPERATING STRUCTURE

Lloyd D. Masser, Muskegon, Mich., assignor to Neway Equipment Company, Muskegon, Mich., a corporation of Michigan

Filed Oct. 28, 1960, Ser. No. 65,839
4 Claims. (Cl. 92—94)



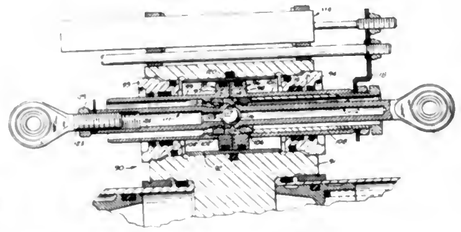
1. Brake operating structure comprising, a fluid pressure motor having means forming a cylinder, a piston therein, and a sealed chamber on one side of said piston, a thrust rod connected to said piston and extending out of said cylinder for operative connection to vehicle brake applying means, the other side of said piston in the vicinity of said thrust rod being exposed to atmospheric pressure, means providing another sealed chamber surrounding said thrust rod so that the effective area of said piston exposed to said other chamber is smaller than the effective area of said piston exposed to the first mentioned chamber, said piston being operative responsive to introduction of pressure from a source into both of said chambers to exert brake applying force on said thrust rod, a spring engaging an end wall of said cylinder and said piston, said spring being stressed to urge said piston in a direction for applying braking force to said thrust rod, said piston being operative responsive to introduction of fluid under pressure into said other chamber and relief of pressure in the first mentioned chamber to relieve braking force on said thrust rod against the action of said spring, said spring being operable responsive to lowering of fluid pressure in both of said chambers to exert brake applying force on said thrust rod.

3,163,093

HYDRAULIC ACTUATOR FITTED WITH PIVOTED JOINT

Stanley J. Gut, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Sept. 19, 1960, Ser. No. 56,890
2 Claims. (Cl. 92—113)



1. A hydraulic actuator comprising:
a fixedly-mounted cylinder;
a hollow double-acting piston disposed in said cylinder for longitudinal displacement relative thereto, said piston including a cylindrical body portion having oppositely-extending coaxial tubular piston rods of substantially smaller diameter;
an annular internal shoulder in said piston proximate the juncture of said body portion and one of said tubular piston rods;

a first annular bearing member in said piston having one face seated against said shoulder and, on the other face, a concentric internal spherical bearing surface;

first and second thrust links extending respectively through said one and the other of said piston rods terminating, at their inner ends, in confronting cup-shaped portions each having inner and outer spherical bearing surfaces, the inner surfaces coacting to define a spherical bearing socket;

a bearing sphere disposed within said socket;

a second annular bearing member in said piston displaced longitudinally from said one annular bearing member in the direction said other piston rod and having on its inner face a concentric internal spherical bearing surface, the bearing surfaces of said first and second bearing members being complementary to, and adapted for bearing engagement with, the outer spherical bearing surfaces of the respective cup-shaped portions of said thrust links;

and means for adjustably establishing and maintaining a predetermined longitudinal spacing between said first and second annular bearing members whereby the bearing surfaces of the annular bearing members engage the outer bearing surfaces of the cup-shaped thrust-link portions and the inner bearing surfaces of the cup-shaped portions engage said sphere, all of said spherical bearing surfaces thus engaged having substantially a common center of curvature at the center of said sphere.

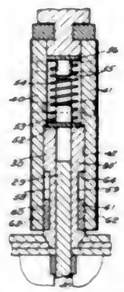
3,163,094
PISTON ASSEMBLY AND PROCESS FOR ASSEMBLING THE SAME
Josef Riedhammer and Herbert Träger, Horb (Neckar), Germany, assignors to Stahlwerke Brueninghaus G.m.b.H., Westhofen, Germany
Filed Dec. 31, 1963, Ser. No. 334,850
17 Claims. (Cl. 92—208)



1. A piston assembly comprising a trunk type piston including a skirt having an open end and a transversely extending wall provided in and spaced from the open end of said skirt, said wall having an axially extending aperture; a connecting rod extending through the open end of and into said skirt and having an end portion adjacent to said wall; and deformable one-piece coupling means including a first section received in said skirt at one side of said wall and coupled to the end portion of said connecting rod, a second section received in said aperture, and a third section located at the other side of said wall, the transverse dimensions of said first and third sections as seen in the radial direction of said piston being greater than the transverse dimensions of said aperture whereby said coupling means is anchored in said wall and simultaneously couples said connecting rod to said piston.

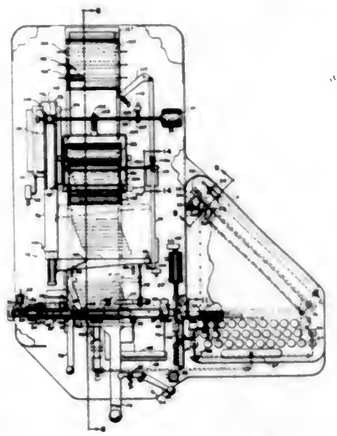
3,163,095
SLOTTING TOOL
Lloyd Alan Sheeran, Cranston, R.I., assignor to Rite-Size Corrugated Machinery Co., a corporation of Rhode Island
Filed Oct. 9, 1962, Ser. No. 229,452
2 Claims. (Cl. 93—58.3)

2. A slotting and creasing tool for use in a box blank forming machine comprising a casing have opposite interior walls, a pair of spaced creaser bars having portions located exteriorly of said casing and other portions contiguous with said walls, said creaser bars having nose portions extending below the lower edge of the casing, a slotting member fastened in said casing and having a cutting portion projecting below said casing, said slotting member being received between portions of said spaced creaser



bars, said creaser bars being arranged to slide in said casing perpendicular to the lower edge thereof, resilient biasing means urging said creaser bars outwardly of said casing and stop means associated with said casing engageable with said creaser bars whereby movement of said bars inwardly of said casing is arrested.

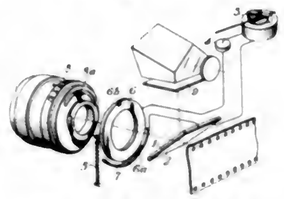
3,163,096
TYPOGRAPHIC METHOD AND APPARATUS
Arless B. Noble, Berkeley, Calif.
(202 W. 35th St., Shawnee, Okla.)
Filed Dec. 21, 1960, Ser. No. 77,309
6 Claims. (Cl. 95—4.5)



1. A method of composing print using temporary print storage elements, comprising forming word images on a plurality of separate storage elements arranged in successive parallel relationship in order of occurrence of the respective words, with each word image commencing substantia"y immediately to the right of the word image preceding it in a progression equalling the desired line composition length less a deficiency, justifying such line composition of word images by displacing the end word image element to index the word image thereon to the line-end point and displacing the succeeding elements by progressively lesser amounts so as to space out the word images in the line being composed, and photographically

transferring such justified line composition of word images successively onto a permanent retaining medium in direct alignment thereon to form a justified printing line.

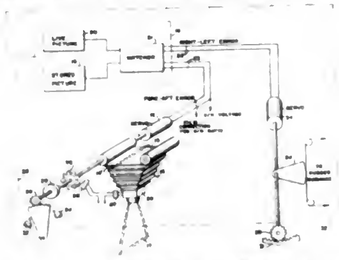
3,163,097
EXPOSURE METERING DEVICE BUILT INTO SINGLE LENS REFLEX CAMERA
Kenichi Zenyoji, Kozo Utsumi, and Suminosuke Kawase, all of Tokyo, Japan, assignors to Tokyo Kogaku Kikai Kabushiki-Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 12, 1961, Ser. No. 158,688
Claims priority, application Japan, Dec. 15, 1960, 35/49,398
5 Claims. (Cl. 95—10)



1. In a single lens reflex camera, in combination, viewfinder means; an objective; flat, semi-transparent reflector means positioned behind said objective and directing light rays passing therethrough to said viewfinder means to provide in the viewfinder an image of the subject which is to be photographed, said reflector means having a front face directed toward the objective and viewfinder means and a rear face directed toward the focal plane to the rear of said reflector means; a layer of photo-conductive material carried by and covering the rear face of said reflector means so that light passing through the reflector means influences the resistance of said layer; an electrical circuit in which said layer is connected; a battery and meter connected in said circuit, so that while the subject is viewed in the viewfinder means the light passing through the objective is measured; a variable resistor located in said circuit; and preselecting means for preselecting a diaphragm setting, said preselecting means being operatively connected to said variable resistor for adjusting the latter according to the selected diaphragm aperture, whereby the meter will indicate the correct exposure for the selected diaphragm aperture without a closing of the aperture to this selected aperture opening.

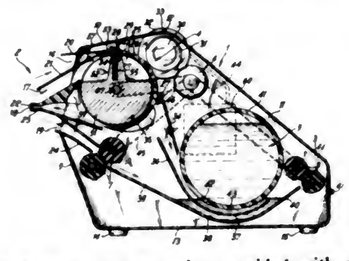
3,163,098
VELOCITY-ALTITUDE RATIO COMPUTER AND CAMERA CONTROL APPARATUS
Friend H. Kierstead, Jr., Cuyahoga Falls, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Mar. 8, 1961, Ser. No. 94,370
11 Claims. (Cl. 95—12.5)

1. The combination in a vehicle of apparatus for producing a voltage proportional to the forward velocity of the vehicle divided by the height of the vehicle above the terrain over which it is passing and including means for producing in the vehicle information of a specific area of the terrain over which the vehicle is passing, means for storing an initial image of said information to provide reference information, means for continuously changing the means for producing information as the vehicle continues in its movement so that the specific area of terrain viewed is substantially the same as was viewed when the information was stored, means for comparing said reference information with the continuously produced information, means responsive to the means for changing the specific area of terrain viewed to produce a voltage which is a function of vehicle velocity divided by vehicle height above the terrain, and means for effecting



an automatic and repetitive operation of the recited means as the vehicle continues in its movement.

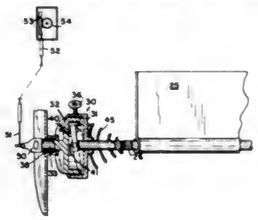
3,163,099
DEVICE FOR PRODUCING COPIES
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG., Hamburg, Germany
Filed Aug. 31, 1960, Ser. No. 53,161
Claims priority, application Germany Sept. 9, 1959
7 Claims. (Cl. 95—75)



1. In a photocopying device provided with a pair of adjoining inlet channels for a pair of juxtaposed sheets including an original and a copy sheet, exposure means including a source of light for producing an image of said original on said copy sheet, and separate guide channels for the original and the copy sheet beyond said exposure means, the combination therewith of a rotatable feed member with a periphery moving in a closed path past said light source, said feed member being divided into two transversely spaced portions; drive means for rotating said feed member; a sheet-separating element disposed between said portions and provided with movable supporting means independent of said feed member for orbital movement along said path, said element comprising an erectile tongue with a trailing free end and with another end pivoted to said supporting means for swinging motion in the plane of rotation; biasing means coupled with said element for urging said free end into a partially erected position; loading means on said supporting means tending to maintain said tongue in a starting position adjacent said inlet channels for interposition of the partially erected tongue between said original and said copy sheet upon an advance of said sheets toward said feed member; stationary first guide means of light-transmissive material disposed adjacent said path in a region extending from said starting position to said light source for holding said tongue depressed while maintaining said sheets in contact with said feed member for movement of said sheets past said exposure means, such movement causing entrainment of said tongue by a sheet bearing upon the pivoted end thereof; and stationary second guide means disposed adjacent said path beyond said first guide means and spaced therefrom by a peripheral gap for limiting the erection of said tongue in its motion past said

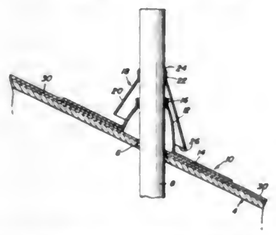
gap whereby a sheet positioned outwardly of said tongue is ejected through said gap while a sheet positioned inwardly of said tongue is advanced between said feed member and said second guide means, one of said guide channels starting at said gap for receiving the ejected sheet, the other guide channel starting beyond said second guide means for receiving said inwardly positioned sheet upon further erection of said tongue.

3,163,100
CONTROL FOR AN AIR DISTRIBUTION SYSTEM
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 18, 1962, Ser. No. 167,106
4 Claims. (Cl. 98—39)



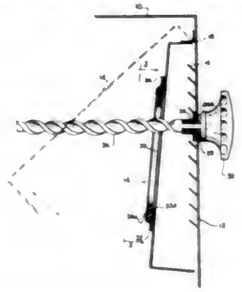
1. An adjustable air discharge register comprising an outlet grill adapted for arrangement in an area to which air is to be supplied, a damper movably positioned behind said grill to control the flow of air therethrough, a mounting supporting said damper for selective positioning to control air flow through said grill, means to position said damper, said positioning means being yieldable in response to pressure conditions of the air adjacent the damper, and a control assembly coupled to said positioning means to permit selective movement of said damper, said mounting including a damper shaft and the positioning means including control shaft means and yieldable spring clutch means between the damper shaft and the control shaft.

3,163,101
VENT FLASHING CAP
Anthony A. Caparreill, 20 Hillscrest Road, Plainville, Conn.
Filed Mar. 26, 1963, Ser. No. 268,131
3 Claims. (Cl. 98—46)



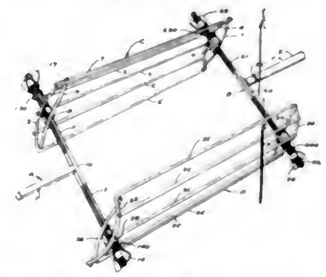
1. In combination, an inclined roof having a circular vertical opening therein, a cylindrical vent stack extending through the opening in spaced concentric relation to the wall thereof, a flashing unit including a generally bulbous, vertical sleeve encircling the stack in spaced relation thereto and further including an integral, inclined base flange on its lower end secured on the roof around the opening, a cap mounted on the stack over the sleeve, said cap comprising a generally frusto-conical hood encircling the sleeve and having its lower end spaced from the base flange, said cap further comprising a single piece of easily cut and pliable sheet metal whereby said lower end of the hood may be readily cut to parallel the roof, said cap still further comprising an integral, upstanding cylindrical neck on its upper end snugly receiving therethrough and hugging the stack and conforming to the curvature thereof, and solder affixing the neck to the stack and sealing the joint therebetween.

3,163,102
DAMPER CONTROL MECHANISM
Anthony Fraga, Brooklyn, N.Y., assignor to Slant/Fin Radiator Corporation, Richmond Hill, N.Y., a corporation of New York
Filed Dec. 20, 1962, Ser. No. 246,114
7 Claims. (Cl. 98—106)



1. In combination an enclosure having a front panel having an apertured area, a damper hinged to the rear of said panel adapted to cover said apertured area and operable through an angle between open and closed limits, a damper control rod having opposite wide surfaces bounded by helical longitudinal edges, means supporting said rod for rotation about a fixed axis, said supporting means being carried by said front panel, said means also constraining the rod against axial shift relative to said front panel, and a member of tough and resilient plastic material fixed to said damper and formed with an elongated slot generally perpendicular to the axis of the hinged damper, the slot in said plastic member receiving said damper control rod and the edges of the slot gripping said opposite wide surfaces of the control rod, and means to rotate said control rod.

3,163,103
ROTISSERIE
Allen A. Shoup, Janesville, Wis.
(% Shoup Engineering Corp., East Troy, Wis.)
Filed Oct. 22, 1962, Ser. No. 231,942
1 Claim. (Cl. 99—427)

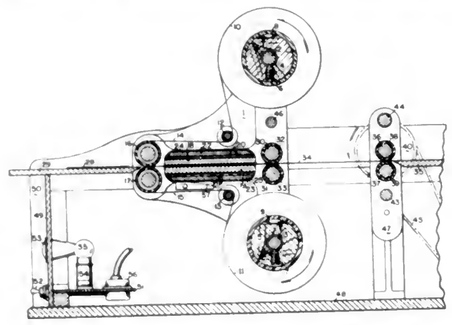


A rotisserie device comprising:
a forward T-shaped end member having a stem element of polygonal cross-section and a cross element, the cross element having a first portion on one side of said stem element and a second portion on the other side of said stem element;
a rearward T-shaped end member having a cylindrical stem element and a cross element, the cross element having a first portion on one side of said stem element and a second portion on the other side of said stem element;
said end members being spaced apart, the stem elements thereof being in axial alignment and projecting away from each other, and the cross elements thereof being parallel to each other and being of polygonal cross-section and threaded, and each cross element portion being of equal length;
first and second perforate semi-tubular clamp members extending longitudinally parallel to the axis of said stem elements and each having at each end thereof a sleeve of polygonal cross-section matching that of said cross elements for slidably receiving a portion of one of said cross elements to permit sliding movement therethrough but prevent rotation therein, said first clamp member mounted on said first portions of said cross elements for movement inward and outward thereon, said second clamp member mounted on said second portions of said cross elements for movement inward and outward thereon, each of said cross element portions having threaded thereon outwardly of said clamp members a nut for positioning and retaining said clamp members thereon;
a rack supporting said stem elements to permit rotation of said end members and clamp members as a unit about the axis of said stem elements, said rack having a grid disposed in a horizontal plane below said clamp members and between said end members, the sides of said grid being parallel to said stem elements;
said rack having a plurality of vertically aligned support journals for each of said stem elements, the support journals for said cylindrical stem element of said rearward end member being formed by a series of inclined slots in a vertical bracket plate and being aligned above the midpoint between the sides of said grid, the lowermost one of said support journals being disposed above said grid midway between the sides thereof at a distance from each side of slightly more than the length of a cross element portion;
said cylindrical stem element of said rearward end member having an annular groove therein for receiving said bracket plate when said cylindrical stem element is journaled in one of said slots;
and said cross element portions each being of a length slightly less than the distance from said lowermost journal to the sides of said grid and of a length nearly one-half the perpendicular distance across the sides of said grid.

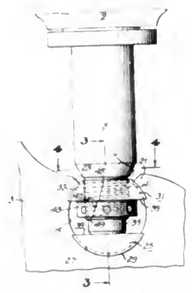
3,163,104
METHOD AND MEANS FOR CONTINUOUS PLASTIC LAMINATION
Clarence L. Lapham, La Canada, Calif., assignor to Plasticmaster Corporation, Los Angeles, Calif., a corporation of California
Filed June 21, 1960, Ser. No. 37,608
2 Claims. (Cl. 100—38)

1. The method of continuously laminating stiff planar articles which comprises the steps of:
(*a*) forming a laminatable assembly by bringing together two webs of thermoplastic material with cards therebetween and spaced longitudinally therealong,
(*b*) subsequently simultaneously heating both sides of said laminatable assembly including the said cards,
(*c*) subsequent to said heating, welding said laminatable assembly by progressively applying pressure to the said laminatable assembly while it is heated,

(*d*) relatively slowly and forceably cooling the laminated assembly subsequent to said welding, and
(*e*) maintaining longitudinal tension upon said laminated assembly with said laminated assembly in an unsupported planar configuration during said cooling step.



3,163,105
PIVOTAL DRIVE CONNECTION
Eugene W. Pearson, Orinda, Calif., assignor to Pacific Industrial Manufacturing Co., a corporation of California
Filed June 11, 1962, Ser. No. 201,618
5 Claims. (Cl. 100—214)

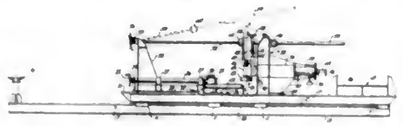


5. A pivotal drive connection for a ram comprising
a ram having a substantially circular throat-like opening therethrough adjacent each upper corner thereof, to form a horn at each corner and an opposing protuberance,
a drive assembly for each end of said ram,
each said drive assembly including a drive rod for drive coupling with said ram,
and means including said horn being stressed to constitute a spring for maintaining said drive rod in positive pressure relationship with said ram during cycling of said rod.

3,163,106
STRUCTURAL MILL MARKER
Eugene W. Failor, Sebring, Ohio, assignor to The Morgan Engineering Co., Alliance, Ohio, a corporation of Ohio
Filed Mar. 13, 1963, Ser. No. 264,873
5 Claims. (Cl. 101—6)

1. A marking machine for impressing marks into a longitudinal surface of a steel shape moving along its longitudinal axis, said marking machine having a first carriage and comprising, a marking wheel rotatable about an axis and having a peripheral edge surface and raised characters mounted on said surface, marking wheel actuating means for rapidly moving said peripheral edge sur-

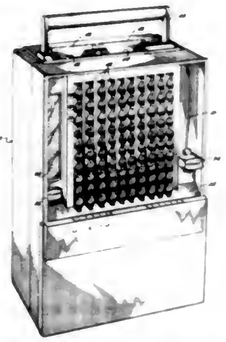
face of the marking wheel to and from contact with said surface to be marked, means on said first carriage for supporting said shape and restraining said shape from downward motion while being marked, means to restrain said shape from lateral motion while being marked, means for supporting and holding said peripheral edge surface of the marking wheel parallel to the surface of said shape where it is to contact and mark said surface, said last named means comprising a frame, a slidable beam supported on said frame and slidable substantially toward or away from the surface of said shape to be marked and operably connected to said marking wheel actuating means at one end, a slidable second carriage mounted on the other end of said slidable beam and carrying the said marking wheel and being slidable in a direction parallel to the surface of said shape to be marked, and means to slide said second carriage in said direction and to hold said second carriage stationary relative to said movable beam while the said steel shape is being marked.



3,163,107
DATA REGISTER WITH PLURAL RECORDING MEANS

Kunio A. Sumida, Los Angeles, and Robert C. Sadler, Culver City, Calif., assignors, by mesne assignments, to Biagio F. Ambrosio, Tarzana, Calif.

Filed Aug. 22, 1961, Ser. No. 133,122
37 Claims. (Cl. 101—90)

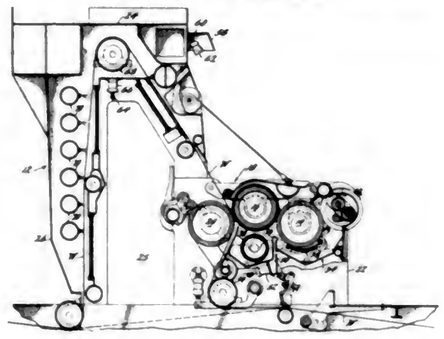


1. In a register for recording data on record means from an input code member insertable into the register, the combination of: means operatively coupled to said record means for extending said record means along a printing zone to receive data at the zone; a plurality of code members movable from normal starting positions along predetermined paths across the printing zone transversely thereof, said code members having spaced code writing elements thereon for selective positioning at the writing zone; means operatively coupled to said code members for traversing said printing zone to apply the selected writing elements in the printing zone to said record means to obtain a recording on the record means of the information on the selected writing elements in the printing zone; means for receiving the input code member; and means operatively coupled to said applying means and to said receiving means for preventing the applying means from applying the selected writing elements in the printing zone to said record means until the proper application of the input code member to the receiving means.

3,163,108
FIRE PROTECTION SYSTEM FOR ROTARY PRINTING PRESS

Clarence L. Hornberger and Edward W. Stanley, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 134,712, Aug. 29, 1961. This application June 25, 1963, Ser. No. 290,901
9 Claims. (Cl. 101—154)

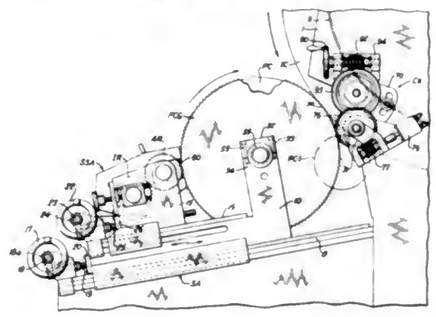


1. In a printing press including an enclosed press section, a plurality of cylinders mounted in said press section, at least two reservoirs for liquid in said press section below said cylinders, each said reservoir having an upstanding wall portion, the said wall portions defining therebetween a plenum chamber, a CO_2 gas fire extinguishing system in said press section including at least one CO_2 nozzle in operative communication with said plenum chamber operable to discharge gas upwardly through said chamber and means at the upper end of said chamber to deflect CO_2 gas over the liquid in said reservoirs.

3,163,109
INTERCHANGEABLE GEAR DRIVE MEANS FOR ROTARY PRINTING MECHANISM

Walter R. Stelling, Jr., Wauwatosa, Wis., assignor to Faustel, Inc., Butler, Wis., a corporation of Wisconsin

Filed Jan. 21, 1963, Ser. No. 252,749
7 Claims. (Cl. 101—219)

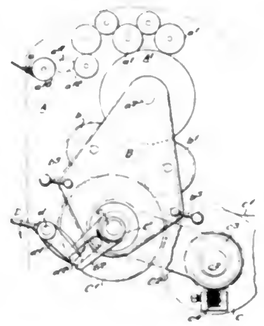


1. Rotary printing press mechanism of the type having a main frame and an impression cylinder rotatably mounted in said main frame and a bull gear secured therewith, and a plate cylinder shiftably mounted for engagement with said impression cylinder and having a shaft extending from each end, the improvement comprising, a removable gear selectively fixable on one end of said shaft or the other and having a number of teeth corresponding to the repeat length of said plate cylinder, at least one interchangeable gear adapted to be removably fixed on said one end of said shaft and having a number of teeth different from the repeat length of said plate cylinder, an Anilox roll engageable with and of a diameter which matches said plate cylinder, gear means on said Anilox roll, and means for removably mounting said gear means at either end of said Anilox roll for meshing with said removable gear when the latter is fixed on either end of said shaft, a first gear mounted on said main frame and in constant mesh with said bull gear, and a second gear swingably mounted on said frame about the center of said first gear and in constant mesh therewith, said second gear being swingably adjustable for engagement with that gear which is removably fixed on said one end of said plate cylinder shaft.

3,163,110
INTERRUPTER FOR ROTARY PRINTING MACHINES

Frank Sydney Thompson, Cheadle Hulme, England, assignor to T. C. Thompson & Son Limited, Manchester, England, a corporation of Great Britain

Filed Sept. 20, 1962, Ser. No. 225,106
Claims priority, application Great Britain Sept. 21, 1961
1 Claim. (Cl. 101—247)

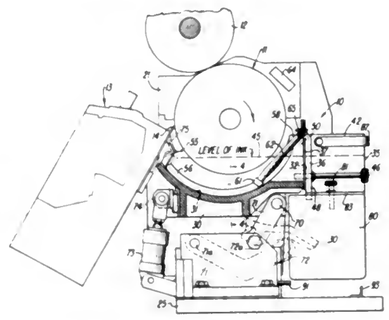


A rotary printing machine comprising a support, an impression cylinder mounted for rotation about its axis on said support, an inking drum mounted for rotation on its axis on said support, a frame pivoted on said support for displacement about the axis of said inking drum, a plate cylinder adapted to have a printing surface thereon provided with oppositely extending concentric shafts extending rotatably through said frame, spaced rigid arms each rockably mounted on said support at one end and pivotally mounting said shafts at the other end, the rockable mounting of said one end of said arms being eccentric to the axis of said impression cylinder and said plate cylinder in printing position being disposed in printing engagement with said impression cylinder to define a nip through which pass the sheets to be printed, means for adjusting said eccentric mounting to vary the printing engagement pressure between the impression and plate cylinders, a plurality of inking rollers mounted for rotation on said frame about their axes and normally having peripheral ink transfer contact with both said inking drum and said plate cylinder, and cooperating means on said frame and said arms adjustable for swinging said frame about the axis of said inking drum for displacing said plate cylinder out of printing engagement with said impression cylinder while maintaining said inking rollers in engagement with both said inking drum and said plate cylinder.

3,163,111
INK FOUNTAIN

Dennis H. Knowles, La Grange Park, Louis S. Tyma, Jr., Hinsdale, and Frank J. Doyle, Bellwood, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed Sept. 5, 1961, Ser. No. 135,875
9 Claims. (Cl. 101—350)



1. In a press inking arrangement having a journalled fountain roller, the combination comprising, an arcuate surfaced bottom member shiftably mounted beneath said fountain roller with said surface underlying said roller, a pair of side walls mounted to define, together with said bottom member, a shallow ink reservoir having an open front, a wiper blade in fluid sealing engagement across said member between said walls, said wiper blade being slidably mounted on said member for sweeping movement over said surface toward said open front, means for shifting said member toward said roller so that the axes of said surface and said roller substantially coincide and said blade contacts said roller, a pan unit in contact with said bottom member across said open front so as to complete said reservoir whereby said roller can be rotated in a supply of ink in said reservoir, means for releasably supporting said pan unit so that the unit can be moved out of contact with said member in order to drain the ink from said reservoir through said open front, and means for drawing said wiper blade over said surface toward said open front and around a portion of said roller when said member has been shifted.

3,163,112
WELL PERFORATING

John W. Rhea, Monahans, Tex., assignor, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Filed Aug. 2, 1962, Ser. No. 214,387
1 Claim. (Cl. 102—20)

In a well perforating gun comprising an elongated explosive charge support means, at least one shaped, explosive-jet perforating charge affixed to said support means for perforating in a direction away from the longitudinal axis of said support means, and means connected to said explosive charges for detonating said at least one charge, the improvement comprising:

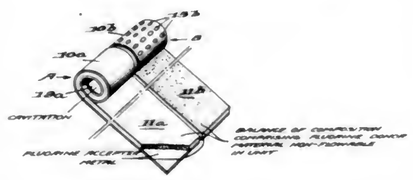
a piston cylinder affixed to said support means, pistons at both ends of said cylinder and in sliding, sealing engagement with the cylinder wall, and annular flanges having a central opening therein at each end of said cylinder for limiting outward movement of

said pistons, port means for exposing said pistons to well fluid, said cylinder being filled with gas at sub-



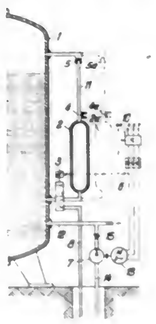
stantially the hydrostatic pressure of fluids in the well at the level thereof to be perforated.

3,163,113
HIGH ENERGY FUEL UNITS AND ASSEMBLIES
Pauls Davis, Mount Clemens, Mich., and Oliver W. Burke, Jr., 1238 Berkshire Road, Grosse Pointe Park, Mich.; said Davis assignor to said Burke
Filed Jan. 12, 1959, Ser. No. 786,382
14 Claims. (Cl. 102—98)



1. A high energy fuel unit, said fuel unit
(*a*) employing as its principal exothermal reactants metal material, fluorine material, and oxygen material,
(*b*) said metal material being present in said unit in at least substantial part in the form of structural reinforcing metal,
(*c*) said structural reinforcing metal being selected from the class consisting of beryllium, magnesium, aluminum, titanium, combinations of two or more thereof, and alloys of any of the foregoing with at least one other metal,
(*d*) said fluorine material being of the class of organic compounds containing carbon and constituent material selected from the group consisting of the halogens, hydrogen, nitrogen, oxygen and combinations thereof, with the limitation that said constituent material comprises fluorine atoms,
(*e*) said fluorine material being present in said unit in an amount such that its halogen content is at least essentially stoichiometrically equivalent to said structural reinforcing metal, and
(*f*) said oxygen material being present in said unit in the form of per-oxy-acid salt of an inorganic acid for supplying oxygen for reacting with oxidizable residues of said fluorine material.

3,163,114
DEVICE FOR THE AUTOMATIC CONTROL OF THE VOLUME OF THE AIR CUSHION IN THE PRESSURE TANK OF WATER SUPPLY SYSTEMS
Otto Kracht, Werdohl, Germany, assignor to Kracht Pumpen- und Motorenfabrik K.G., Werdohl, Germany
Filed Mar. 28, 1962, Ser. No. 183,094
Claims priority, application Germany Mar. 29, 1961
7 Claims. (Cl. 103—6)

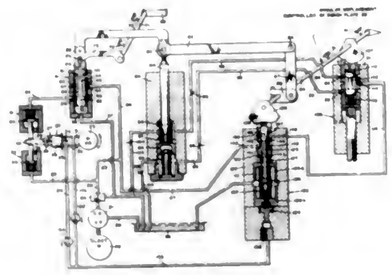


1. A water supply system comprising a pressure tank, at least one regulator tank parallel with said pressure tank, a water flow connection between said pressure tank and the lower end of said regulator tank, an air flow connection between said pressure tank and the upper end of said regulator tank, a check valve in said air flow connection allowing flow of air from said regulator tank into said pressure tank and precluding at all times flow of air from said pressure tank into said regulator tank, an inwardly opening check valve arranged in said air flow connection between said first check valve and the upper end of said regulator tank for admitting air from the atmosphere into said regulator tank when the air pressure is said regulator tank drops below atmospheric pressure, a discharge pipe for said regulator tank, an electromagnetically actuated three-way valve in said water flow connection and further connected to said discharge pipe, said valve opening said water flow connection and shutting off said discharge pipe in one position and shutting off said water flow connection and opening a connection between said regulator tank and said discharge pipe in its other position, a pump delivering water directly into said pressure tank, a motor driving said pump, and electrically operated means actuating said three-way valve.

3,163,115
HORSEPOWER LIMITING DEVICES
Darby B. Neff, Worthington, and Donald F. Rader, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1960, Ser. No. 13,470
15 Claims. (Cl. 103—38)

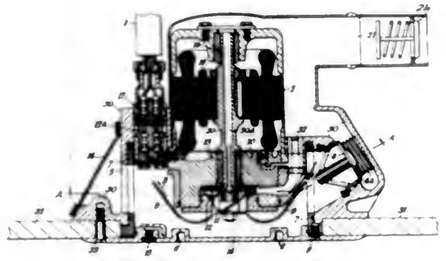
1. A horsepower limiting apparatus including means through which fluid passes and the volumetric capacity of which may be varied; means for varying the volumetric capacity of said first named means; motor means for adjusting said volumetric capacity varying means; motor control means connected to control the operation of said motor means; a volume control means movable to different positions by an independent force and operative to control said motor control means, said motor control means being so constructed that the force required to move said volume control means throughout its control range under all operating conditions remains constant; a

motor having a piston controlled in its position in response to the pressure of the fluid passing through said first named means and by the volume of the fluid passing



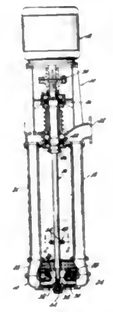
through the first named means; and means dependent for its position at least partly upon the position of said piston for controlling said motor control means.

3,163,116
PUMPS
William Donald McCourty, Wolverhampton, Eric Williams, Codsall, and Ivor Byron Cripps, Elston, Wolverhampton, England, assignors to H. M. Hobson Limited, London, England, a company of Great Britain
Filed Aug. 23, 1961, Ser. No. 133,357
2 Claims. (Cl. 103—87)



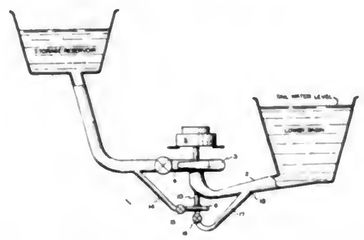
1. A booster pump adapted to be submerged in the liquid which is to be pumped thereby, comprising, an impeller, an elongated hollow shaft fixed to said impeller and having a hollow interior communicating with a central portion of said impeller, said elongated hollow shaft having an open end distant from said impeller, a pair of bearings supporting said shaft for rotation and respectively located adjacent ends thereof, the bearing which is nearest to said impeller also communicating with said central portion of said impeller and the bearing which is distant from said impeller communicating with the open end of said shaft which is distant from said impeller, said shaft being hollow along its entire length and the ends of said bearings which are most distant from each other communicating with each other through said shaft and also communicating with the central portion of the impeller, a casing carrying said bearings and having an interior communicating with the ends of said bearings which are nearest to each other and which are directed toward the interior of said casing, discharge passage means communicating with said impeller to receive liquid therefrom, and a conduit passing through said casing from said discharge passage means to the interior of said casing, whereby the interior of said casing and thus the ends of said bearings which are nearest to each other are at the pressure of the liquid which is pumped by said impeller while the ends of said bearings which are most distant from each other are at the pressure of the central portion of said impeller so that the liquid delivered by said impeller to said discharge passage means will flow in part through said conduit into said casing to fill the latter and be forced through said bearings, from the ends thereof which are nearest to each other to the ends thereof which are most distant from each other, along the hollow interior of said shaft from the bearing which is most distant from said impeller and directly from the bearing which is nearest to said impeller to the central portion of said impeller to again be pumped thereby into said discharge passage means, so that even after the liquid level is so low that the impeller stops pumping liquid beyond said discharge passage means, liquid will nevertheless be continuously circulated from said impeller into said discharge passage means and from the latter through said conduit into said casing and through said bearings back to said impeller, as long as the pump continues to operate, a check valve located in said conduit to prevent liquid from flowing from the interior of said casing back through said conduit to said discharge passage means, and a second check valve in said discharge passage means to prevent liquid at less than a given pressure from passing through said second check valve along said discharge passage means beyond the location of said second check valve.

3,163,117
VARIABLE SPEED CANTILEVERED SHAFT PUMPS
Walter D. Haentjens, R.D. 1, Sugarloaf, Pa.
Filed Jan. 4, 1963, Ser. No. 249,455
7 Claims. (Cl. 103—87)



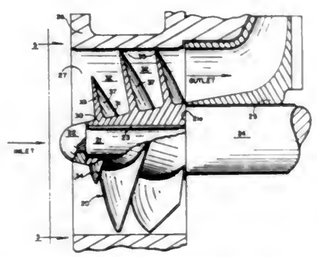
3. In a vertically cantilevered pump unit, the combination of a motor, a rotatable balanced shaft fixedly secured to the motor and extending vertically downwardly therefrom, an impeller fixedly secured to the shaft at the downward end thereof, a pump assembly surrounding the impeller, at least one discharge pipe attached to the pump assembly and extending vertically upwardly therefrom, a discharge chamber containing the upper end of the discharge pipe, said discharge chamber and discharge pipe supporting the pump assembly, a weight means, and means securing said weight means to the pump shaft at any one of a plurality of positions along the axis of said pump shaft, whereby changing the position of said weight along the axis of said pump shaft changes the inherent resonant frequency of the shaft.

3,163,118
STARTING UP A STORAGE PUMP OR PUMP-TURBINE
Kurt Baumann, Ravensburg, Wurttemberg, Germany, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed June 11, 1963, Ser. No. 286,969
Claims priority, application Switzerland, July 20, 1962, 8,734/62
11 Claims. (Cl. 103—87)



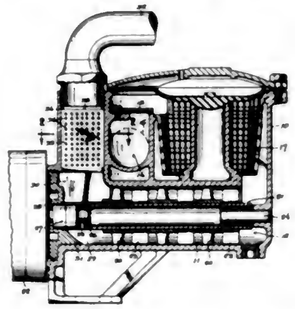
1. In combination a pump storage station including a water storage reservoir, a water basin at a lower elevation than the storage reservoir, a pump located below the minimum water level in the basin and arranged to transfer water from the basin to the storage reservoir, and a synchronous electrical machine adapted to drive the pump; a starting turbine of the Francis type connected in driving relation with the pump; and means defining a flow path leading from the storage reservoir to the basin through the Francis turbine.

3,163,119
INDUCER
Merle C. Huppert and John R. Parker, Woodland Hills, Calif., assignors to North American Aviation, Inc.
Filed July 3, 1961, Ser. No. 121,425
8 Claims. (Cl. 103—89)



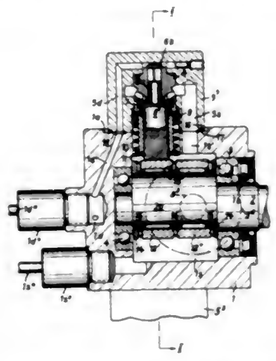
1. An inducer comprising a blade support means having a peripheral surface and mountable upon a drive shaft for rotation therewith, means forming a housing fluid passage concentrically and substantially coextensively surrounding said blade support means, said support means constructed to continuously decrease the fluid passage area from an inlet region to an outlet region thereof, blade means fixed to said support means and disposed helically about same in a substantially normal relation to said peripheral surface and canted forwardly of the drive shaft axis and with a continuously increasing blade angle and blade lead whereby inducer performance is enhanced.

3,163,120
SELF-PRIMING AXIAL-FLOW PUMP
John A. Richards, Seattle, Wash., assignor to Cascade Manufacturing Company, Portland, Oreg., a corporation of Oregon
Filed May 18, 1962, Ser. No. 196,577
7 Claims. (Cl. 103—113)



1. In combination with the rotary impeller of an axial-flow pump, and a casing housing said impeller formed so that a body of the liquid to be pumped is at all times available to the impeller as a prime for the pump: a stationary diverter contained within the casing in a discharge passage travelled by pumped liquid as the latter initially leaves the discharge end of the impeller and formed so as to (1) interrupt impeller-induced centrifugal motion of a fluid composed of said priming liquid mixed with air drawn by the impeller from the suction side of the pump and (2) lead said mixture to a zone relatively free of impeller-induced turbulence occupying a level no lower than the discharge end of the impeller and from which the contained air is free to escape by ascension.

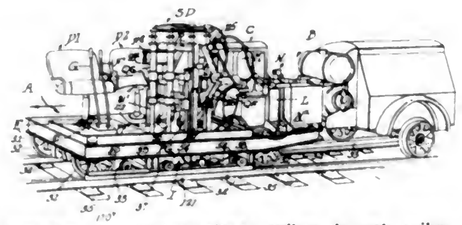
3,163,121
PISTON PUMPS
Werner Künzler, Munich, and Karl Knauer, Gauting, near Munich, Germany, assignors to Motorenfabrik Hatz G.m.b.H., Ruhstorf, near Passau, Germany, a company of Germany
Filed Feb. 12, 1962, Ser. No. 172,685
Claims priority, application Germany, Feb. 27, 1961, M 48,194
11 Claims. (Cl. 103—174)



1. A piston pump which includes, in combination, a pump housing, a rotary drive shaft enclosed by said housing, a sole eccentric provided on said drive shaft, a plurality of pump units spaced about and secured to the periphery of said housing, said units extending radially

with respect to the axis of said shaft, a delivery piston enclosed by and arranged to reciprocate in each of said pump units, at least two intermediate rings embracing and arranged side by side on said sole eccentric, through the medium of which the delivery pistons are successively driven from the eccentric, said pump units being arranged in pairs relatively offset along the axis of the drive shaft and circumferentially offset with respect to the drive shaft, each pair comprising only two units being diametrically opposite to one another, and the side by side arrangement of said intermediate rings being such that each of them has bearing thereon only the delivery pistons of one such pair of pump units.

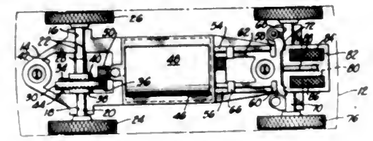
3,163,122
APPARATUS FOR SETTING AND DRIVING RAILROAD SPIKES
Charles D. Johnson, Fairmont, Minn., assignor to Fairmont Railway Motors, Inc., Fairmont, Minn., a corporation of Minnesota
Filed Mar. 6, 1961, Ser. No. 93,481
1 Claim. (Cl. 104—17)



Apparatus for driving railway spikes through spike-receiving holes in tie plates and into the underlying tie, comprising in combination a wheeled vehicle having a frame and being adapted to movement along the rails, a sub-frame supported from the vehicle frame and mounted for movement longitudinally of the vehicle frame for the field and gauge sides of the rail, spike-locating means carried by said sub-frame and adjustably positionable on said sub-frame relative to a tie plate, means for moving said sub-frame longitudinally of the vehicle frame, means for delivering spikes to said spike-locating means with the lip portions of the spikes overlying base portions of the rail, the spike-delivering means delivering spikes to the field and gauge sides of the rail and having means for conveying spikes for one side of rail from a position on the other side of the rail; support means supportably engaging opposed portions of said conveying means and supportably mounted on said sub-frame; the conveying means including means for reversing the disposition of the spike lips relative to the underlying rail traversed in the course of being conveyed; and means for driving the spikes downwardly with the shanks of the spikes extending through the underlying spike-receiving holes in the tie plate on the field and gauge sides and into the tie thereunder; the spike driving means being supportably and adjustably positionable on said sub-frame relative to said spike-locating means.

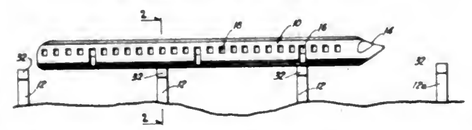
3,163,123
ROAD RACE CAR STRUCTURE
Alfred A. Ziroli, % Norman Dreyfuss, Eldon Industries, Inc., 1475 E. El Segundo Blvd., Hawthorne, Calif.
Filed June 24, 1963, Ser. No. 298,511
(Filed under Rule 47(b) and 35 U.S.C. 118)
20 Claims. (Cl. 104—60)

1. A structure for use in a road race car, said structure including:
a chassis, a rear axle mounted in said chassis;
a frame mounted on said chassis, a front axle mounted in said frame, said frame being adjustable with respect to said chassis so that the dimension between said front axle and said rear axle is adjustable;
a motor mounted on said chassis, said motor carrying a drive pinion;
a gear irrotatably mounted on said rear axle to drive said rear axle, said gear engaging with said drive



pinion, said gear having a first face of gear teeth and a second face of gear teeth, said first face and said second face of gear teeth having different numbers of teeth thereon, either one of said gear tooth faces being selectively engageable with said drive pinion to selectively establish different gear train ratios, so that the gear train ratio can be chosen in accordance with the dimension between said axles.

3,163,124
SPAN CAR
Hubert L. Hendrix, 1108 S. Rockford, Tulsa, Okla.
Substituted for abandoned application Ser. No. 139,586, Sept. 19, 1961. This application Nov. 2, 1962, Ser. No. 234,971
6 Claims. (Cl. 104—135)

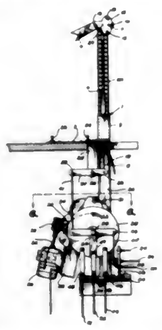


6. A transit system comprising an elongated independently movable vehicle, a plurality of individual pier members longitudinally spaced along the transit system to determine a path of travel for the vehicle, transversely extending cradle means provided on the upper portion of each pier for supporting the vehicle, said vehicle being of a length sufficient to assure that the vehicle will be supported by at least two of said cradle means at all times, a plurality of spaced support wheels journalled in each cradle means, spaced substantially flat elongated runner members provided on the vehicle for engaging the wheels to assure a smooth movement for the vehicle during travel, and guide means cooperating between the vehicle and the cradle means for maintaining the vehicle in proper alignment with the cradle means and piers during travel, said guide means comprising a centrally disposed elongated channel member secured to the under surface of the vehicle and extending substantially throughout the length thereof, a pair of spaced roller members journalled on the cradle means and having the planes thereof at substantially right angles to the planes of the wheels for engaging the opposite sides of the channel member for guiding the vehicle throughout the path of travel along the spaced piers.

3,163,125
SEMAPHORE FOR ELECTRIC TOY TRAINS
Howard E. Jenks, 3338 N. 62nd Drive, Phoenix, Ariz.
Filed June 20, 1960, Ser. No. 37,212
3 Claims. (Cl. 104—149)

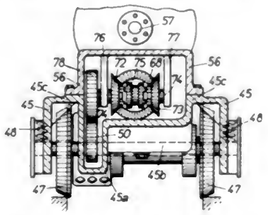
1. Control apparatus for model railroads of the type receiving motive power through electrically energized track sections comprising: a mounting structure, a semaphore pivotally mounted on said structure, a reversible

motor associated with said structure, a shaft operably connected to said motor for rotation in opposite directions in response to the reversed rotation thereof, a limit switch member on said shaft and rotatable in opposite directions therewith, said limit switch member having an electrically conductive portion and an electrically insulating portion thereof, said motor being electrically connected in series through said limit switch member conductive portion, a plurality of electrically conductive fingers fixed with respect to said structure and slidably bearing against said limit switch member for selectively directing electrical power through said conductive portion to said motor, said fingers respectively being electrically insulated from



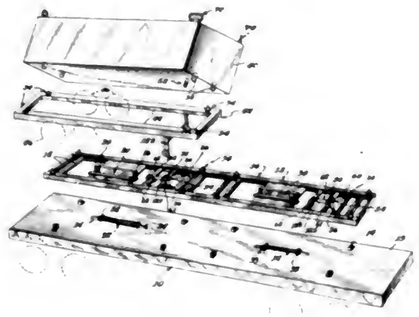
said motor when contacting said limit switch member on said insulating portion, electrical power sources of opposite polarity selectively connected to said motor respectively through said fingers for selectively reversing the rotation of said motor during selective completion of circuits through said fingers, means operably connected between said limit switch member and said semaphore for pivoting said semaphore into various signalling positions in response to position changes of said limit switch member, and an auxiliary switch operably connected to said limit switch member and electrically connected to a selected track section for altering the electrical power directed to said selected track section simultaneously with the pivoting of said semaphore to a changed position.

3,163,126
INTERNAL COMBUSTION ENGINE DRIVEN RAIL VEHICLE
Fritz Kugel and Manfred Schrag, Heidenheim (Brenz), Germany, assignors to Voith-Getriebe KG., Heidenheim (Brenz), Germany
Filed Feb. 7, 1962, Ser. No. 171,743
Claims priority, application Germany, Feb. 11, 1961, V 20,138
10 Claims. (Cl. 105—96.2)



1. An internal combustion engine operable self-propelled rail vehicle, which comprises in combination: drive wheel sets arranged adjacent to each other, each of said drive wheel sets including axle means and drive transmitting means, fluid flow transmission means having a variable transmission ratio and being interposed between and drivingly connected to said drive wheel sets, said fluid flow transmission means including input means and fluid flow circuit means and fluid pump means, said fluid flow transmission means and said drive transmitting means forming a structural unit with each other, spring means supported by said axle means, said structural unit including a sectional housing having a lower housing section supported by said spring means and an upper housing section supported on and detachably connected to said lower housing section, said upper housing section having supporting and bearing means supporting said input means and said fluid flow transmission means and said fluid pump means and a gear transmission arranged behind said fluid flow transmission means when looking in the direction of the power flow from said input means to said fluid flow transmission means, at least one element of said gear transmission being journalled in said lower housing section and being disconnectable from said fluid flow transmission means in said upper housing section by upward movement of said upper housing section and said fluid flow transmission means from said lower housing section.

3,163,127
CUSHION CONTAINER SUPPORT PLATFORM FOR RAILROAD FLATCARS
Jack E. Gutridge, Dyer, Ind., and Jack W. Borger, Calumet City, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 15, 1960, Ser. No. 36,222
9 Claims. (Cl. 105—368)



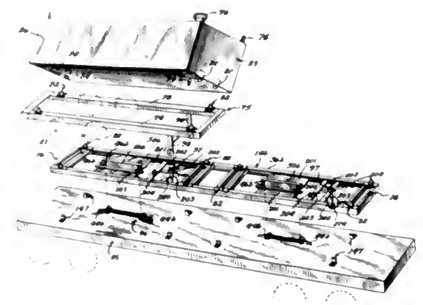
1. Apparatus for handling freight comprising a railroad car body, a carriage positioned on said body, means for mounting said carriage on said bed for movement longitudinally of said body, said carriage comprising a forward section, a center section, and a rearward section, said sections comprising spaced sills joined together by cross ties to have a highway vehicle chassis longitudinal frame member spacing, with said sills of said center section being aligned with and joined to the respective sills of said forward and rearward sections respectively, a cushioning assembly carried by said forward section adjacent the rearward end thereof and including a pair of cushioning devices spaced laterally of the car body and interposed between said forward section and the car body, a cushioning assembly carried by said rearward section adjacent the forward end thereof and including a pair of cushioning devices spaced laterally of the car body and interposed between said rearward section and the car body, said cushioning assemblies each comprising a pair of spaced cross tie members fixed between said sills of the respective forward and rearward sections and extending transversely of the car body, two pairs of longitudinally extending abutment members with one of said pairs of said abutment members being positioned adjacent and parallel to each of said sills of the respective forward and rearward sections and between said cross tie members thereof with the abutment members of the respective pairs of abutment members being aligned longitudinally of the car body and having like ends abutting said cross ties respectively, which like ends of each pair of abutment members project away from each other, said cushioning devices being respectively interposed between the other ends of said abutment members of the respective pairs of abutment members, and a pair of spaced stop members operatively associated with each of said cushioning devices, said stop members of each pair of stop members, respectively, being fixed with respect to the car body and engaging opposite ends of the respective cushioning devices.

3,163,128
MULTI-PURPOSE RAILWAY CARS OF THE PIGGY-BACK TYPE INCORPORATING IMPROVED HAND BRAKE MECHANISMS
Samuel H. Enochian, Thornton, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Aug. 23, 1963, Ser. No. 304,092
11 Claims. (Cl. 105—368)



1. A railway car especially adapted to transport simultaneously two road semi-trailers and comprising an elongated longitudinally extending frame having a length between the opposite ends thereof in excess of about 85 feet, a pair of wheeled trucks respectively supporting the opposite end of said frame, a pair of brake mechanisms respectively incorporated in said trucks, brake rigging carried by said frame for simultaneously controlling said brake mechanisms, a pair of elongated longitudinally extending and laterally spaced-apart treadways respectively carried by the opposite sides of said frame and adapted respectively to support the laterally spaced-apart road wheels of each of two road semi-trailers mounted in tandem relation on top of said frame, the longitudinal distance between the opposite ends of each of said treadways being at least about 85 feet and the lateral distance between the opposite outer sides of said treadways being at least about 100 inches, hand brake mechanism carried by one side of said frame adjacent to one end thereof and disposed below the adjacent one of said treadways and positioned laterally inwardly of the adjacent outer side of said one treadway, said hand brake mechanism including a manually operable hand wheel projecting laterally outwardly therefrom and positioned closely adjacent to and laterally outwardly of the outer side of said one treadway, whereby said hand wheel may be readily operated by a brakeman either from a position on top of said one treadway or from a position on the ground, and an operative connection between said hand brake mechanism and said brake rigging, said hand wheel being arranged so that the top thereof does not project upwardly any substantial distance above the top of said one treadway, whereby said hand wheel is in a non-interfering position with respect to loading and unloading operations of the road semi-trailers with respect to the top of said frame, all of the elements of said car and all of the parts carried by said frame and including said hand wheel being arranged laterally inwardly so that no one of them projects beyond the A.A.R. clearance line for said car.

3,163,129
SKELETON CAR WITH LONG TRAVEL CUSHIONING CHARACTERISTICS FOR TRANSPORTING FREIGHT CONTAINERS
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 21,331, Apr. 11, 1960. This application Apr. 1, 1964, Ser. No. 356,392
24 Claims. (Cl. 105—368)

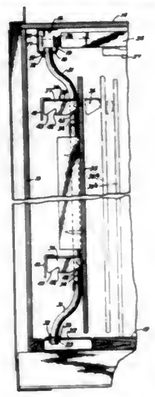


12. Apparatus for handling freight comprising a railroad car body including a deck having a width sufficient to support highway vehicle chassis, a rack carried by said body, means for mounting said rack on said deck for movement longitudinally of said body, said rack being substantially centered along the longitudinal axis of said car body and comprising spaced sills extending longitudinally of said body and joined together by spaced cross ties to have a highway vehicle chassis longitudinal frame member spacing, spaced bracket means spaced longitudinally of said rack for releasably mounting a freight container on said rack by seating same solely on said rack sills, said bracket means being mounted on said sills and a cushioning device operatively interposed between said car body and said rack, said car body carrying fifth wheel stand means for securing highway vehicle chassis thereto, whereby, both freight containers and highway vehicle chassis may be carried by said body, with the containers resting on said rack and the chassis being secured to the body by said stand means and having its wheels disposed on either side of said sills.

3,163,130
RAILWAY CAR SIDE FILLER
John S. Lundvall, Park Ridge, Ill., assignor to Unarco Industries, Inc., a corporation of Illinois
Filed Mar. 5, 1962, Ser. No. 177,671
3 Claims. (Cl. 105—369)

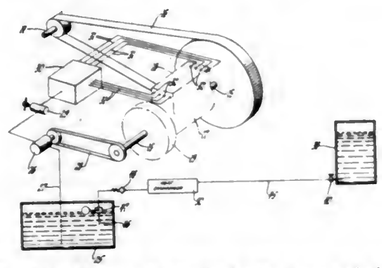
1. In a railway car having spaced side walls, a roof and a floor, tracks in the car adjacent to the junctures of the roof and side walls, means movable on the tracks for supporting lading separating doors in the car, the tracks including horizontal surfaces formed with spaced latching openings to receive latching pins on the lading separating doors, latching strips in the floor of the car adjacent to the side walls formed with spaced latching openings therein, a framework including vertically extending rods connected by horizontally extending beams, the ends of the rods fitting removably into latching openings in the track and latching strip adjacent to one side wall of the car to mount the framework in the car, a

vertical panel parallel to and spaced from said one side wall, and means adjustably connecting the panel to the



framework for adjustment toward and away from said one sidewall.

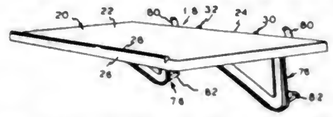
3,163,131
FLUID SUPPLYING ARRANGEMENT FOR WAFERING MACHINES
Vernon J. Lundell, Cherokee, Iowa, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles
Filed Aug. 31, 1962, Ser. No. 220,789
3 Claims. (Cl. 107—14)



1. The combination of a mobile forage crop wafering machine having a fluid system including a supply tank for adding fluid to the crop material wafers being formed by the machine and a wagon for receiving the wafers from said machine, said wagon having an auxiliary fluid tank disposed at a higher elevation than said supply tank, a releasable fluid conveying connection between said auxiliary tank and said fluid system to supply fluid thereto, said connection including a level control valve for metering fluid from said auxiliary tank to said supply tank.

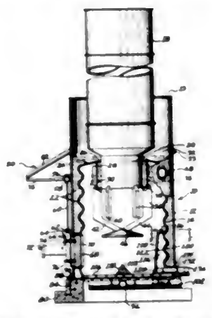
3,163,132
SUPPORT ASSEMBLY FOR A PERFORATED BOARD
John F. Nelson, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 3, 1963, Ser. No. 249,281
13 Claims. (Cl. 108—152)

1. An assembly for quick attachable connection to a perforated support panel comprising a shelf member having a substantially planar top surface and front and an oppositely disposed panel engaging surface, hook means integral with said shelf member and insertable in an aperture of said perforated support panel to engage a rear surface thereof, brace means formed of substantially the same material as said shelf member and engageable with the underside thereof, said brace means having hook means for insertion with an aperture of the panel support member, said brace means further having interlock



means for quick interlocking attachment to said shelf member, said shelf member and said brace means, when attached without additional fastening means to said panel, providing a stable shelf assembly.

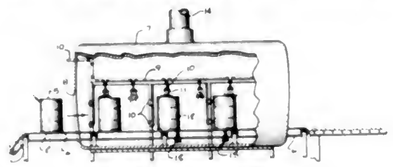
3,163,133
INCINERATOR
William T. S. Montgomery, Jacksonville, Fla., assignor to Jacksonville Blow Pipe Company, Jacksonville, Fla., a corporation of Florida
Filed June 29, 1960, Ser. No. 39,503
14 Claims. (Cl. 110—18)



9. An incinerator for burning particles of combustible material comprising: a combustion chamber having spaced cylindrical inner and outer vertical side walls defining a water jacket; a top wall for said chamber having an outlet therein substantially concentric with said side walls; a bottom wall having a plurality of spaced openings; means for introducing the particles and air for combustion into said chamber tangential to said inner side wall; said inner side wall being formed with a plurality of horizontal corrugations located below said means for introducing the particles and air for combustion into said chamber so that particles carried by a stream of air entering said chamber tend to be retained in suspension in said corrugations for substantial periods before falling under the influence of gravity to said bottom wall; and means for connecting a forced draft air supply to said chamber through said openings in said bottom wall.

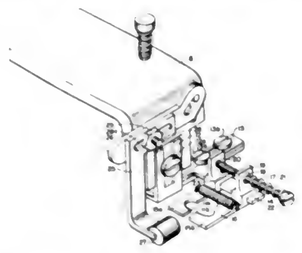
3,163,134
METHOD OF BURNING OUT BARRELS
Herbert W. Stratford, deceased, late of Leawood, Kans., by Clarence H. Dicus, administrator, 1001 Dwight Bldg., Kansas City, Mo.
Filed Nov. 4, 1963, Ser. No. 321,368
3 Claims. (Cl. 110—18)

2. The method of treating empty barrels and the like, said barrels being of the type having a bung hole for access thereinto and containing a residue on the interior which produces combustible vapors upon heating, said method comprising the steps of; placing the barrel in a position wherein the bung hole is generally uppermost and open, inserting a quantity of solidified carbon dioxide through the bung hole sufficient to upwardly displace out the bung hole substantially all atmospheric gases contained in the barrel upon sublimation thereof, inverting the barrel containing the carbon dioxide but permitting free gas flow downwardly through the bung hole and directing flames



against the exterior surface of the barrel for heating the interior surface thereof to a temperature which chars said residue before substantial re-entry of atmospheric gases into the barrel.

3,163,135
ADJUSTABLE SHANK BUTTON HOLDER ATTACHMENT
Adolph Krell, 13727 Moccasin St., La Puente, Calif.
Filed Aug. 25, 1961, Ser. No. 133,932
4 Claims. (Cl. 112—114)

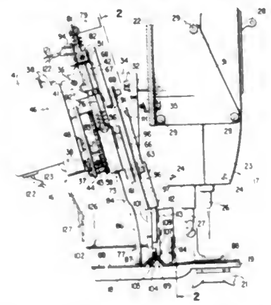


1. A shank button holder which comprises a foot which is adapted to be mounted on a supporting arm of a sewing machine, a pair of parallel jaws adapted to receive the shank of a shank button, means slidably mounting said jaws on said foot, means associated with one of said jaws adapted to prevent displacement of said one jaw on said foot and a plurality of parallel spring means aligned perpendicularly to each of said jaws adapted to urge said jaws together while maintaining said jaws in parallel alignment.

3,163,136
TRIMMING DEVICE FOR SEWING MACHINE
Charles G. Pickett, Dover, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed Sept. 10, 1962, Ser. No. 222,421
5 Claims. (Cl. 112—130)

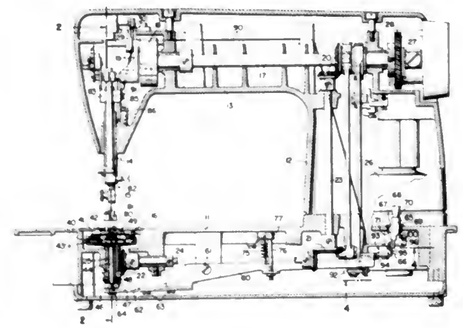
1. In combination with a sewing machine having a frame including a work support, stitch-forming instrumentalities and work feeding mechanism for advancing work past said stitch-forming instrumentalities: a work trimming device mounted on said sewing machine frame and adapted to sever work at a location rearwardly of said stitch-forming instrumentalities when viewed in the normal direction of the feed of the work, said work trimming device including scissors means supported for work cutting movement and for bodily movement relatively to said work, actuating means for imparting both work cutting movement and bodily movement to said work trimming device, a movable work engaging member operable to contact and thereby interrupt the advance of a portion of the work being moved by the work feeding

mechanism to form a loop therein so as to position the work for severance by the scissors means, and means to



move said work engaging member in proper time relation with respect to the movements of said work trimming device.

3,163,137
THREAD REPLENISHING MECHANISM FOR LOCK STITCH SEWING MACHINES
William J. Edwards, Denville, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed May 14, 1963, Ser. No. 280,388
6 Claims. (Cl. 112—181)

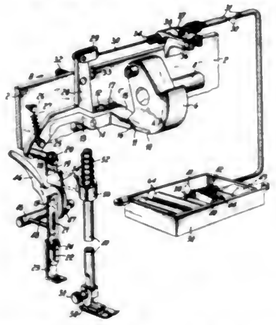


1. In a sewing machine having a frame, a thread carrying needle and a circularly moving loop taker carried in said frame and operatively connected for interrelated movements as are required for the formation of lock stitches, a thread carrying bobbin journaled in said loop taker and a bobbin winding member interlocked for circular movement with said loop taker and shiftable relatively to said loop taker into and out of a position effective to wind thread from said thread carrying needle onto said bobbin, mechanism for controlling the winding of thread on said bobbin comprising a lever fulcrumed in said sewing machine frame, bearing means on said circularly moving bobbin winding member and on said lever constraining said bobbin winding member for axial movement in response to turning movement of said lever about said fulcrum, interengaging stop means on said lever and on said sewing machine frame limiting turning movement of said lever in that direction shifting said bobbin winding member out of engagement with said bobbin, spring means biasing said lever toward engagement of said stop means, and a push rod secured to said lever within said sewing machine frame and extending outwardly through a clearance aperture in said sewing machine frame for operator influenced turning of said lever in opposition to said spring means.

3,163,138
NEEDLE POSITIONING APPARATUS FOR POWER-DRIVEN SEWING MACHINES

Emerich Schenkengel, Kaiserslautern, Pfalz, Germany, assignor to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany, a corporation of Germany

Filed Apr. 30, 1963, Ser. No. 276,889
Claims priority, application Germany, May 2, 1962, P 29,302
12 Claims. (Cl. 112—219)



1. In combination with a power-driven sewing machine having a drive shaft, a reciprocating needle operably coupled with said shaft, an electric motor to drive said shaft having a main operating circuit, control means to open and close said circuit to start and stop said motor for the carrying out of a sewing operation, and a work presser clamp having actuating means to operate the same between a first work-engaging position and a second predetermined position of disengagement from the work; of needle positioning apparatus comprising an auxiliary operating circuit for said motor, to operate said motor at reduced speed compared with its normal operating speed, a first stop member carried by and rotating with said shaft, a second adjustable stop member, resilient means to normally urge said second stop member to a position of retraction from the path of rotation of said first stop member, an electrical switch in said auxiliary circuit, and common operating means effective in response to the operation of said presser clamp to an auxiliary position beyond said predetermined position, to advance said second stop member into the path of said first stop member against the action of said resilient means and to close said circuit and start said motor at reduced speed, whereby to arrest said shaft rotating at said reduced speed in a predetermined needle position by said first stop member engaging said second stop member.

3,163,139
METHOD FOR SEWING A WAIST BAND OR THE LIKE ONTO A GARMENT

Kristen Hedegaard, Gentofte, Denmark, assignor to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany

Filed Oct. 10, 1962, Ser. No. 229,667
Claims priority, application Germany, Oct. 14, 1961, P 28,041
1 Claim. (Cl. 112—262)

Method for sewing a waist band comprising a band strip and a lining strip onto a garment with the seams disposed inside the band, said method comprising the steps of partly sewing together on a straight stitch sewing machine abutting forward edges of the band strip and of the lining strip transversely of the longitudinal extent of said band and said lining strip, manually turning over a length of the band strip to form a band extension and a free band strip portion having an upper edge and a lower edge, sewing together the lateral edges of the band extension thus formed on a double needle post sewing machine having an aperture for the passage of material between the stitch forming tools on the posts, placing the upper edge of a garment and the upper edge of the lining strip below the free band strip portion, said edges of the garment and the lining strip facing away from each other and being in alignment with the respective edges of the band strip, sewing simultaneously with the double needle post sewing machine the lower edge of

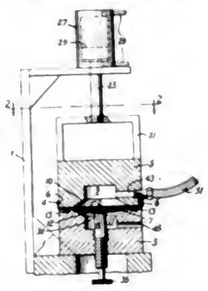


the band strip onto the upper edge of the garment with one needle and the upper edge of the band strip onto the upper edge of a lining strip with the other needle, then turning said band extension inside out, folding the lining strip over the sewn component edge parts of garment, lining strip and band strip, and then sewing the lining strip on a straight stitch sewing machine onto the garment with a seam in the fold between the band strip and the garment.

3,163,140
MANUFACTURE OF SNAP-ACTING DEVICES

Henry David Epstein, Cambridge, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 23, 1961, Ser. No. 133,376
1 Claim. (Cl. 113—44)

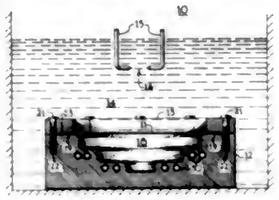


Apparatus for deforming perforated plates to form snap-acting members and for stabilizing and testing formed plates in the same apparatus; comprising a holder having a hollow portion formed with a margin for support of the edge portions of a plate to exteriorly expose either face thereof, a second hollow holder, a flexible diaphragm enclosing the hollow portion of said second holder, liquid filling in said hollow portion of the second holder held in place by said diaphragm, means for forcing said holders together to place the diaphragm adjacent the exposed face of a plate supported on said margin, peripheral sealing means surrounding the plate when the holders are forced together, means for applying and releasing pressure to and from said liquid when the holders are together to bulge the diaphragm and push an area of the plate into the hollow portion of the first holder to deform the plate within its margin, and a rigid central stop in the hollow portion of the first holder engageable only by a central portion of the plate when the plate is sufficiently deformed into the last-named hollow portion.

3,163,141
METAL FORMING

Richard H. Wesley, Fort Worth, and Donald W. Cole, Weatherford, Tex., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Continuation of application Ser. No. 815,380, May 25, 1959. This application July 15, 1963, Ser. No. 294,995
1 Claim. (Cl. 113—44)

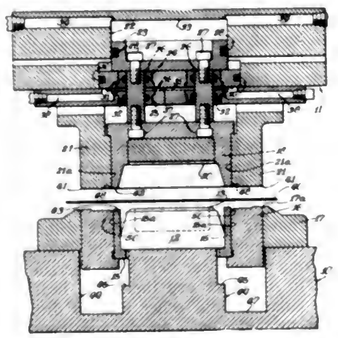


A metal forming device comprising an open-topped liquid container, a liquid contained within said container, a concave die immersed in said liquid in said container, means for securng a sheet metal workpiece to said die, said means including a draw ring shaped to conform to the upper edge of said die and the periphery of said sheet metal workpiece, a plurality of studs in peripherally distributed apertures in said draw ring cooperating with tapped apertures in the upper edge of said die, hot fluid passages in said die to heat said die and said workpiece, high energy spark producing means including a source of alternating current, a variable voltage autotransformer connected to said source of alternating current, a voltage step-up transformer having a low voltage primary winding connected to said autotransformer and a high voltage secondary winding, a full-wave rectifier connected to said high-voltage secondary winding, a plurality of capacitors, a switch connected to each of said capacitors for connecting selected capacitors in parallel, a charging switch connected to said full-wave rectifier for connecting said selected capacitors to said rectifier, a pair of electrodes defining a spark gap immersed in said liquid adjacent said workpiece, a discharger switch connected to said selected capacitors and to said electrodes to discharge said selected capacitors through said spark gap and generate a shock wave in said liquid.

3,163,142
DIE ASSEMBLY

Fred W. Buhrke, 249 E. Prospect Ave., Mount Prospect, Ill.

Filed June 30, 1961, Ser. No. 121,003
5 Claims. (Cl. 113—45)



1. An apparatus of the character described for forming sheet material for use with a press having a ram and bed including, a punch shoe secured to the ram for movement therewith toward and away from said bed, an upper punch engaged with and capable of movement relative to said shoe, said upper punch having a pressure surface for gripping the material, an upper curl ring mounted on said punch shoe and circumscribing said punch, said curl ring having a pressure surface for gripping the material, a die base mounted on said bed and having a lower punch adapted for cooperating with said upper punch to form the material therebetween, an inner draw ring circumscribing the lower punch and adapted for limited vertical movement relative thereto, said draw ring having a first pressure surface adapted to cooperate with the pressure surface on said upper punch for gripping the material therebetween before, and during the forming operation and having a second pressure surface adapted to cooperate with the pressure surface on said upper curl ring for gripping the material therebetween after the forming operation, a first slide associated with said upper punch and capable of limited movement relative to said ram, said first slide adapted to selectively transmit downward force to said upper punch, a chamber communicating with said first slide, means for delivering substantially constant air pressure into said chamber whereby a force is transmitted to the upper punch through said first slide effectively parallel to the direction of movement thereof as the ram moves toward the bed, said movement effecting the initial forming of the material between the upper and lower punches, said pressure surfaces on said draw ring and upper punch positively gripping the material before and during the initial forming thereof as the draw ring is urged by the upper punch to move relative to the lower punch, and means for maintaining the positive gripping of the material between the second pressure surface on said draw ring and the pressure surface on said upper curl ring during the final forming stage, said means including a second slide adapted for limited movement relative to the first slide and capable of selectively supporting same, an air space communicating with said second slide, means for introducing increasing air pressure into said space to exert force on the second slide as the ram nears the bottom of its stroke, whereby the magnitude of the force on said second slide is greater than and opposed to the force on said upper punch thereby separating said upper punch and said lower punch while maintaining the positive gripping of the material between said pressure surfaces during the final forming thereof as the ram withdraws, whereby the material is protected from damage or wrinkling due to excessive force.

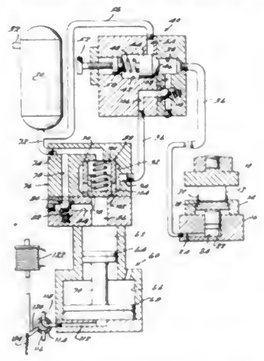
3,163,143
HYDRAULIC CUSHIONS FOR DIE PADS OF RAM TYPE PRESSES

Floyd M. Williamson, Detroit, Mich., assignor, by mesne assignments, to National Bank of Detroit, Detroit, Mich., a national banking association

Filed Apr. 27, 1962, Ser. No. 190,542
15 Claims. (Cl. 113—45)

1. In a press having a movable pressure pad arranged so as to be moved in one direction upon closing of the press and a hydraulic cushion reacting against said pad to resist such movement of said pad and to effect return movement of the pad upon opening of the press, said hydraulic cushion including a cylinder and a piston therein arranged to react against said pad, a control system for controlling return movement of said pad comprising a tank separate from said cylinder and containing hydraulic fluid under regulated pressure, a hydraulic fluid connection between said tank and one end of said cylinder through which hydraulic fluid from said tank is supplied to said cylinder, said connection including a valve having a spring biasing said valve to its closed position so as to prevent fluid flow from said tank to said cylinder when said valve is closed, means connecting the opposite sides of said valve to said tank so that both sides of said valve

are exposed to the pressure of the hydraulic fluid in said tank, control means connected to said valve and actuated by the press after the press begins to open for opening said valve to allow hydraulic fluid to flow through said connection to said cylinder to effect return movement of said pad, a fluid return line through which hydraulic fluid displaced from said one end of said cylinder

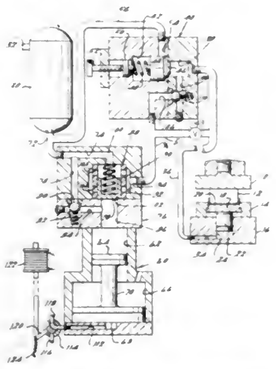


upon closing of the press is returned to said tank, and a pressure relief valve in said return line providing resistance substantially higher than tank pressure to the return flow of such displaced fluid so as to resist movement of said die pad in said one direction and adapted to open when the pressure in said cylinder exceeds a predetermined pressure.

3,163,144
HYDRAULIC CUSHIONS FOR DIES OF RAM TYPE PRESSES

Floyd M. Williamson, Detroit, Mich., assignor, by mesne assignments, to National Bank of Detroit, Detroit, Mich., a national banking association

Filed Oct. 17, 1962, Ser. No. 231,131
9 Claims. (Cl. 113—45)

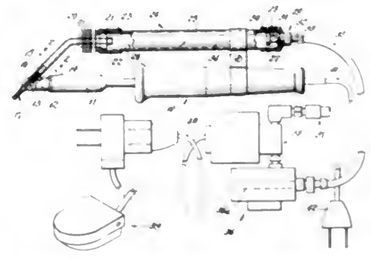


1. In a mechanical press having a movable pressure pad engaged by the work so as to be retracted upon closing of the press ram, a hydraulic cushion including a cylinder and piston disposed to react against said pad to resist such movement and to effect return movement of the pad to its extended position upon opening of the press, a pressure tank separate from said cylinder and containing hydraulic fluid under relatively low pressure, a booster cylinder and piston separate from said tank, unidirectional flow hydraulic fluid connections between said tank and booster cylinder and one end of said hydraulic cushion cylinder through which hydraulic fluid is free to flow under tank pressure from said tank to said cylinders when said booster is inactive whereby tank pressure is transmitted to said piston for biasing it and said pad toward their extended position and said booster cylinder is charged with hydraulic fluid under tank pressure, a hydraulic fluid flow connection between said booster cylinder and said one end of said hydraulic cushion cylinder, a control valve for connecting said booster to a source of pressure fluid which upon opening of said valve actuates said booster piston in a direction to discharge hydraulic fluid from said booster cylinder to substantially increase the pressure of the hydraulic fluid in said hydraulic cushion cylinder to effect return movement of said piston and pad to their extended position, control means for said valve actuated by the press for opening said valve to effect actuation of said booster piston at a predetermined time during the opening portion of each cycle of the press, said booster being inactive during the cycling of the press except when actuated under the control of said control valve and control means, a normally open valve in the hydraulic connection through which hydraulic fluid is free to flow from said tank to said cushion cylinder when said booster is inactive, said normally open valve being arranged to be closed by hydraulic fluid discharged by and upon actuation of said booster piston, a fluid return line from said one end of said hydraulic cushion cylinder to said tank through which hydraulic fluid displaced from said hydraulic cushion cylinder is returned to said tank due to retraction of said die pad upon closing of the press ram, and a normally closed pressure relief valve in said return line providing a predetermined resistance higher than tank pressure to return flow of such displaced fluid and retraction of said die pad and adapted to open when the pressure in said hydraulic cushion cylinder exceeds a predetermined pressure.

3,163,145
SOLDER REMOVING TOOL

Raymond A. Duhaime, Shelton, and Clifford S. Lasto, Orange, Conn., assignors to Air-Vac Engineering Company, Incorporated, Milford, Conn., a corporation of Connecticut

Filed Sept. 10, 1963, Ser. No. 307,925
4 Claims. (Cl. 113—59)

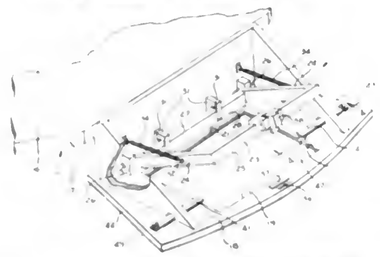


1. A solder removing device comprising a handle carrying a heater means provided with a heat transmitting portion having a bore therein, a copper tube, a removable tubular copper tip inserted at one end of said tube, said tube and tip having portions disposed within the bore of said heat transmitting portion to be heated thereby, said tube having a stainless steel liner therein extending from the tip to the other end thereof, a heat dissipator on the tube adjacent said other end to dissipate heat transmitted along said tube, a tubular heat resistant transparent tube having a smooth bore removably connected to said other end and forming a solder receiving receptacle, means mounting said receptacle on said handle, a source of suction connected to the other end of the receptacle, and control means for selectively controlling the source of suction to apply said suction to the receptacle to withdraw any solder softened by the heated tip through the lined tube and heat dissipator to deposit it in said receptacle.

3,163,146
APPARATUS FOR CLAMPING AN ARTICLE

Lawrence R. Hagner, Cicero, and Russell J. Horn, Chicago, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 12, 1962, Ser. No. 165,821
8 Claims. (Cl. 113—126)



8. In combination with a horizontal, polygonal rotary conveyor for carrying flat rectangular printed wiring boards sequentially over a solder fountain to tin the printed wiring pattern and electrically connect the components thereon; a clamp depending from each side of the conveyor for holding a printed wiring board horizontally with its under surface exposed to the solder fountain as the conveyor is rotated, which comprises:

a base horizontally disposed below the conveyor and having a rectangular recess extending vertically therethrough with inwardly extending shoulders formed at the bottom of the recess for receiving and supporting the printed wiring board by all four of its edges, said base being so constructed and arranged that

(1) the leading and trailing edges thereof in the direction of conveyor rotation are radial with respect to the center of rotation so that the solder wave which is also radially disposed will be entered and departed from concurrently by all points on the leading and trailing edges respectively,

(2) the bottom of the base is coated with heat insulating material to prevent conduction of heat from the solder wave, and

(3) the shoulders are no more than one-eighth of an inch in thickness from the bottom surface of the asbestos coating so as to permit the solder wave to reach up into the cavity defined by the under surface of the board and the shoulders;

a three-sided frame mounted near the ends of its sides to said base for pivoting movement toward and away from the recess such that a depending foot extending around the entire periphery of said frame facing the recess enters the recess and clamps three of the four edges of the board against the corresponding shoulders when said frame is pivoted downward to a closed position;

an independent bar member mounted on said base between the sides of said frame for constrained vertical movement toward and away from the remaining, rearmost shoulder in the recess;

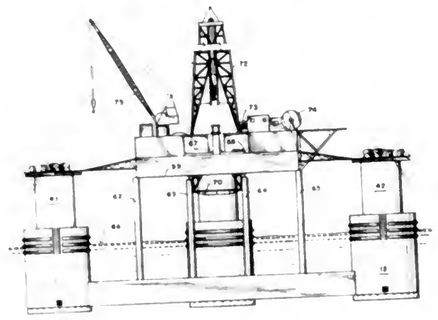
means for coupling said bar member to the sides of said frame so that pivoting movement of said frame to the closed position causes vertical movement of said bar member into the recess to a closed position where said bar member clamps the remaining edge of the board against the remaining, rearmost shoulder; and

releasable means for latching said frame at its forward edge to said base when said frame is pivoted to the closed position to clamp the board firmly by all four of its edges.

3,163,147
FLOATING DRILLING PLATFORM

Bruce G. Collipp, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 22, 1961, Ser. No. 111,847
5 Claims. (Cl. 114—.5)



1. A semi-submersible floating platform for carrying out well operations at offshore locations when in a floating position, said platform comprising a hull having a plurality of vertically-extending stabilizing columns, rigid cross-bracing hull members laterally extending between said stabilizing columns and interconnecting said hull members in a triangular configuration, operational platform means supported by said stabilizing columns, each of said hull stabilizing columns at the angles of said triangular configuration containing floodable buoyancy tank means at least in the lower part thereof, pump means and valve means and conduit means carried by said drilling platform and being in communication between the buoyancy tank means of said stabilizing columns and the water outside the hull for selectively flooding said buoyancy tank means and pumping water therefrom, said tanks being flooded an amount sufficient to lower the hull in a body of water to the semi-submerged position taken during drilling operations, each of said buoyancy tank means in the lower part of said stabilizing columns being filled substantially to the level of said body of water when the hull is in the semi-submerged floating position.

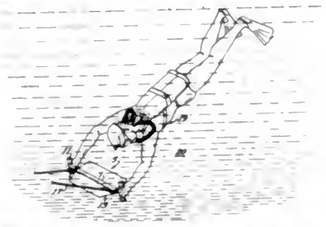
3,163,148
DIVING PLANE

Howard C. Duren, 1127 W. Montana Ave., Robert F. Duren, 857 Albion Ave., and Ronald F. Kastron, 1254 Dayton Ave., all of St. Paul, Minn.

Filed May 6, 1963, Ser. No. 278,342
1 Claim. (Cl. 114—16)

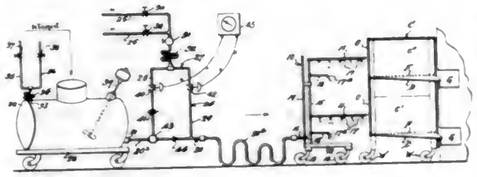
A manually manipulated diving plane for towing by powered means, comprising in combination, a relatively thin flat rectangular plane member, a mounting bar rigidly secured to said plane member and rigidly secured thereto substantially at the transverse center of said plane member, said mounting bar at the respective outer end portions thereof being longitudinally extended outwardly of the outer edge portions of the plane member, a pair of hand grips having safety tips formed integral with the outer end portion of the mounting bar affording means whereby the diving plane is manually held and manipulated about the longitudinal axis of the mounting bar,

said hand grips being mounted at right angles to the horizontal plane of the said plane member, a pair of opposed fixed sheaves angularly mounted on the said mounting bar adjacent the said outer edge portions of the plane member, said sheaves affording a mounting station for



the opposed end portions of a tow rope, said end portions of the tow rope being provided with thimbles to form an eye having engagement with the sheaves to thus provide a pivotal connection between the diving plane and its powered towing means.

3,163,149
MOBILE WASHER FOR LABORATORY ANIMAL CAGES
Lee R. Ivey, 11 Dehart St., Morristown, N.J.
Filed Mar. 4, 1963, Ser. No. 262,539
5 Claims. (Cl. 119—15)



5. Apparatus for cleaning animal cages of the type comprising a plurality of animal compartments arranged successively in a vertical direction, each compartment having an access opening in a front portion thereof and a drainage opening in a rear portion thereof, said apparatus comprising:

a vertical main pipe for transmitting cleaning fluid;

a plurality of branch pipes each connected to the main pipe;

each branch pipe comprising a plurality of parallel first segments each of which includes a plurality of first nozzles for directing cleaning fluid in a downward direction;

a plurality of auxiliary branch pipes each of which is located immediately beneath a corresponding branch pipe;

each of said auxiliary branch pipes having a second segment which is transverse to the first segments of the branch pipes;

each of said branch pipes and its corresponding auxiliary branch pipe being of a height suitable for insertion into one of the access openings of a compartment of an animal cage;

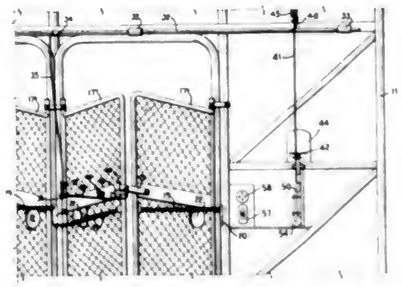
all of the branch pipes being joined to the main pipe for simultaneous insertion into all of the compartments of one animal cage;

a plurality of nozzles on each second segment of each auxiliary branch pipe for directing cleaning fluid downwardly and rearwardly toward the drainage opening of the compartment into which it is adapted to extend;

a source of cleaning fluid;

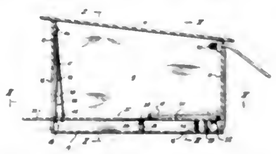
and flexible transmitting means for transmitting cleaning fluid from the source to the main pipe.

3,163,150
RACE STARTING STALLS
David L. Sims and Anthony M. Sims, both of Mannum Road, Murray Bridge, South Australia, Australia
Filed Oct. 16, 1962, Ser. No. 232,333
3 Claims. (Cl. 119—15.5)



1. Improvements to race starting devices comprising a frame, a series of stalls in the frame, a pair of gates closing each stall, the gates of each pair being hinged along remote vertical edges to the frame, a latch rod hinged intermediate its ends on one of the gates of each pair, an apertured plate on the second gate releasably retained by a first end of the latch rod, a pin extending from the swinging end of the first said gate disposed through an aperture in said plate when the gates are closed, springs between the gates and the frame operable to open the gates upon release of the latches, a latch release bar journalled in bearings on the frame and extending along the frame above the stalls, arms extending on the latch release bar extending outwardly therefrom, a tension link engaging the second end of each latch rod at its lower end and said latch release bar arm at its upper end, release means on the frame, magnetic means on the frame coupled to the release means to control the same and a spring between the latch release bar and the frame, whereby upon release of the release means by the magnetic means, said latch release bar is rocked in its bearings by its spring and simultaneously disengages all latches.

3,163,151
ANIMAL SHELTER
Michael M. Bostwick, 5309 Spring Arbor Road, Jackson, Mich.
Filed Sept. 9, 1963, Ser. No. 307,673
4 Claims. (Cl. 119—19)



1. An animal shelter comprising, in combination,

(*a*) a shelter house having a floor area,

(*b*) an entrance and exit opening defined in said shelter house,

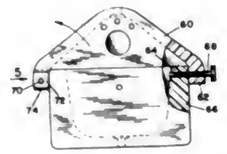
(*c*) a door movably mounted on said house adapted to selectively seal and unseal said opening,

(*d*) a floor defined within said shelter house extending over the floor area, said floor including a portion extending exteriorly of said house through said opening a sufficient distance to permit exterior access to said floor to permit operation thereof,

(*e*) means pivotally supporting said floor at a location remote from said door for pivotal movement between first and second positions under the influence of the weight of an animal imposed on the floor at predetermined locations, and

(*f*) door actuating means interconnecting said door and floor whereby the weight of said door biases said floor upwardly toward said first position to normally close said door and weight imposed upon said floor adjacent said door tends to open said door.

3,163,152
BIRDHOUSE
Alton H. Stone, Westboro, Mass.
(P.O. Box 96, Peterboro, N.H.)
Original application Oct. 5, 1960, Ser. No. 60,695, now Patent No. 3,087,460, dated Apr. 30, 1963. Divided and this application Mar. 7, 1963, Ser. No. 263,452
1 Claim. (Cl. 119—23)



A birdhouse comprising in combination, a body section and a complemental roof section both formed from light weight, waterproof, heat insulating material, said body section including first and second side walls and a pair of end walls, a hinge block provided integrally on the outer surface of the first side wall of said body section adjacent the top edge thereof, said roof section including an inverted V-shaped roof portion and a pair of end walls having lower edges resting on upper edges of the end walls of said body section when the roof section is positioned on the body section, a hinge ear provided integrally at one side edge of said roof portion and extending downwardly therefrom below the plane of the lower edges of the roof section end walls in juxtaposition to said hinge block, a hinge pin traversing said hinge block and said hinge ear whereby to hingedly connect said roof section to said first side wall of said body section and permit the roof section to be swung upwardly about said hinge pin to expose the interior of the body section, at least one end wall of the roof section being provided with an entrance opening, and means for releasably locking the roof section in a closed position on the body section, said means comprising a depending lip provided integrally at the other side edge of said roof portion and extending downwardly therefrom in externally overlapping relation to the upper edge portion of the second side wall of said body section, said lip and said second side wall being provided with registering apertures, and a locking pin removably positioned in said apertures.

3,163,153
WASTE HEAT RECOVERY APPARATUS WITH INTEGRAL FIRED HEATER
John J. Griffin, Huntington, N.Y., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,913
1 Claim. (Cl. 122—7)

An apparatus comprising

a vertical setting which defines a chamber,

a substantially horizontal deck in the chamber describing an upper moderate temperature zone and a lower radiant zone therein,

a source of waste heat gas,

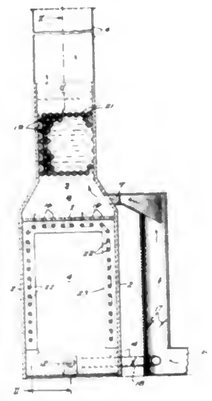
means for communicating the moderate temperature zone with said source and also the bottom of the radiant zone with said source,

exhaust means communicating with the moderate temperature zone to remove gases therefrom,

burner means operatively associated with the radiant zone to maintain combustion therein at a higher temperature than that of the waste heat gas,

the deck comprising a refractory, said refractory deck defining a plurality of restricted orifices spaced thereover and communicating the radiant zone with the moderate temperature zone,

the refractory shielding the moderate temperature zone from radiant heat,



means for establishing a pressure gradient across the orifices from the radiant zone to the moderate temperature zone so that combustion gases exit from the radiant zone via the moderate temperature zone and the exhaust means,

at least one preheat tube mounted in the moderate temperature zone,

means for passing a process fluid through the preheat tube for non-contact heat exchange with the waste heat gas and the combustion gases therein,

at least one high heat tube mounted in the radiant zone,

means for passing the process fluid through the high heat tube for non-contact heat exchange with the combustion gases therein,

the high heat tube connected serially downstream of the preheat tube,

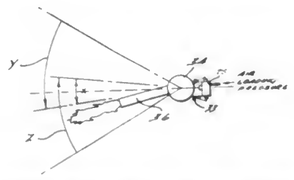
the moderate temperature zone having a lower portion and an upper portion, the preheat tube mounted in the upper portion, the waste heat gas being introduced into the lower portion, the lower portion comprising a mixing chamber for the flow of gases from the radiant zone and the waste heat gas,

the exhaust means being above the upper portion.

3,163,154
BLOWER-TYPE CLEANING FOR HEAT EXCHANGING APPARATUS
William F. Cantieri and John R. Thayer, Lancaster, Ohio, assignors to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Original application Jan. 10, 1961, Ser. No. 81,853. Divided and this application Aug. 14, 1963, Ser. No. 305,915
2 Claims. (Cl. 122—392)

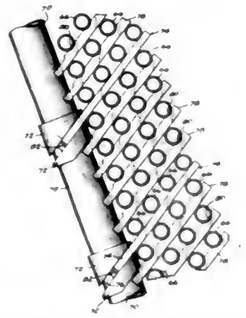
1. In a heat exchanging apparatus having a soot blower for cleaning the heat absorption surface thereof and incorporating a control system providing for remote ac-

tuation thereof, the combination including a slag sensing device comprising a differential temperature indicating means for sensing the temperature at the heat absorption surface and at a point spaced outwardly therefrom, and differential temperature amplifying means connected to



said differential temperature indicating means for energizing the control means causing operation of the soot blower when the temperature differential decreases to a predetermined level as occasioned by the accumulation of slag and the like on the heat absorption surface.

3,163,155
TUBE SUPPORT ARRANGEMENT
Leonard James Culver, Purley, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed June 8, 1962, Ser. No. 201,150
5 Claims. (Cl. 122—510)

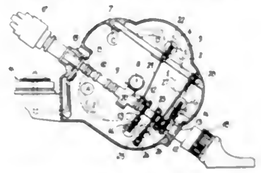


2. An arrangement for supporting a plurality of spaced rows of superheater tubes in a boiler which includes a bank of upwardly extending water tubes having selected support tubes therein, comprising:

cylindrical collars secured at intervals along the length of said selected support tubes, said cylindrical collars each tightly encompassing a single selected support tube and having approximately semicircular slots therein, and

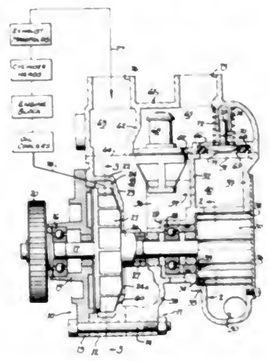
finger-like support elements each having a Y-shaped yoke portion removably seated in said slots at an angle relative to said selected support tubes for supporting rows of superheater tubes, said Y-shaped yoke portion being semicircular in shape with approximately the same dimensions as said slot whereby the ends of said slots prevent rotation of said finger-like support elements about the selected support tubes in a plane substantially parallel to the longitudinal axis of said superheater tubes, said slots in said collars being disposed so that the slot is upwardly oriented whereby said support elements are retained in place at least partly by force of gravity.

3,163,156
VALVE TIMING-GEAR OF ROTARY ENGINES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France
Filed June 26, 1961, Ser. No. 119,670
Claims priority, application France, Aug. 26, 1960, 836,838
4 Claims. (Cl. 123—8)



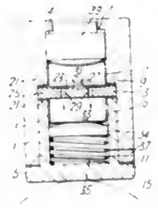
1. Improvements in the timing-gear of rotary explosion engines of the kind having a rotor with teeth rotating eccentrically in a toothed stator, comprising a cylinder head, lateral chambers in the head, a driving shaft, valves arranged in said chambers parallel to the axis of said driving shaft, a single cam-shaft having a plurality of cans affixed thereto, disposed perpendicular to the axis of the driving shaft, means driving said cam-shaft, control elements for the valves located at different distances from the cam-shaft and means of different lengths and forms acting on said control elements and actuated by the cams.

3,163,157
APPARATUS FOR COOLING AN INTERNAL COMBUSTION ENGINE
Calvin C. Connell, Bloomfield Hills, Mich., assignor to Crusader Marine Corporation, Warren, Mich., a corporation of Michigan
Filed Sept. 26, 1963, Ser. No. 311,808
11 Claims. (Cl. 123—41.09)



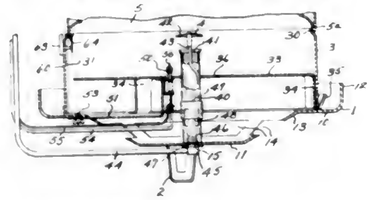
1. In an apparatus for supplying liquid coolant to the cooling system of an internal combustion engine, a dual pump arrangement comprising a centrifugal pump, a positive displacement pump, means for driving said pumps, means defining a recirculatory flow path through which the output of said centrifugal pump is normally circulated to cool said engine, said flow path successively including the engine oil coolers, engine block, cylinder heads and exhaust manifolds, thermostatic means located in said flow path between said manifolds and the intake of said centrifugal pump and responsive to the temperature of said coolant flowing from said exhaust manifolds for diverting the coolant from said recirculatory flow path when the temperature of said coolant exceeds a predetermined temperature, and means directly responsive to the diversion of coolant by said thermostatic means for utilizing the output of said positive displacement pump to cool said coolant.

3,163,158
HYDRAULIC LASH ADJUSTING DEVICE
Derek B. Green, Four Oaks, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 2, 1964, Ser. No. 356,757
7 Claims. (Cl. 123—90)



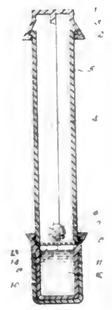
1. An internal combustion engine comprising a camshaft and a valve train for transmitting motion from said camshaft to an engine poppet valve, said valve train including a sealed hydraulic lash adjusting device comprising a body member, a plunger supported for reciprocation by said body member, a disc contained within said body member, a first cup-shaped member supported within said body member on one side of said disc to define a first fluid chamber therewith, a second cup-shaped member contained within said body member on the other side of said disc to define a second fluid chamber therewith, each of said cup-shaped members having axially spaced flexible walls extending transversely to the longitudinal axis of said body member, means providing fluid communication between said fluid chambers, said plunger being in engagement with the flexible wall of said first cup-shaped member, a spring-biased member in engagement with the flexible wall of said second cup-shaped member for deforming said flexible wall to decrease the volume in said second fluid chamber and urge liquid into said first fluid chamber for deforming the flexible wall of said first cup-shaped member to urge said plunger in a first axial direction relative to said body member, and check valve means for resisting liquid flow from said first fluid chamber to said second fluid chamber upon deformation of the flexible wall of said first cup-shaped member by movement of said plunger in a second axial direction relative to said body member.

3,163,159
WATER HEATER TANK SUPPORT
Arnold L. Buehl, Cleveland, and Ernest Wenczl, Parma, Ohio, assignors to Mor-Flo Industries, Inc., a corporation of Ohio
Filed Mar. 7, 1961, Ser. No. 93,983
10 Claims. (Cl. 126—363)



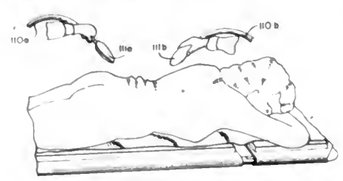
1. In a water heater, a base having an upwardly projecting heating element; said base having apertures therein affording a flow of air to said heating element; a skirt member disposed upon said base and providing means for engaging and supporting a tank; said skirt member defining a combustion chamber substantially surrounding the upper end of said heating element; legs having portions projecting upwardly through openings in said base at spaced intervals around said skirt; said legs having means supporting said base; the upwardly projecting portions of said legs being secured to said skirt member.

3,163,160
DISPOSABLE SWAB AND CULTURE MEDIUM DEVICE
Milton J. Cohen, 7111 Connecticut Ave., Chevy Chase, Md.
Filed Nov. 15, 1962, Ser. No. 237,797
3 Claims. (Cl. 128—2)



1. The combination consisting of a disposable sample swab and culture medium device, comprising a tubular container open at both ends, a cover at one end, means for removably securing said cover to said one end, an applicator rod, a sterile swab attached to said rod whereby said swab is held suspended within said container when said cover is secured in place, a flexible receptacle, means for securing said receptacle at the other end of said container, a slitted self-sealing valve secured adjacent said other end and separating the interior of said receptacle from the interior of said container, and a liquid culture medium disposed within said receptacle, whereby said swab and cover can be removed from said container for application of a sample to said swab, and whereby said swab and cover can be thereafter resecured to said container, said culture medium can be forced through said slit by collapsing the walls of said receptacle, and whereby said combination can be discarded when bacterial growth within the device is completed.

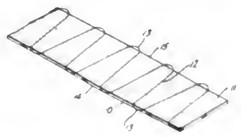
3,163,161
TRAVELING WAVE AIR MASSAGING METHOD
Jacques Courtin, 7 Rue Guenegaud, Paris, France
Filed Aug. 2, 1962, Ser. No. 214,236
25 Claims. (Cl. 128—38)



15. A method of massaging a human body with air, comprising the steps of compressing air in high volumes at low pressures for effective air massage by the production of deep ridges in the skin and flesh of a human body

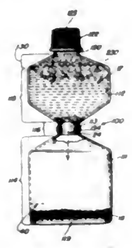
being massaged, applying air in high volumes at low pressures at an acute angle to the surface of a human body being massaged, controlling the volume, pressure and angle of air flow upon the body surface within value limits which produce deep ridges in the skin and flesh of the body being massaged, the respective values being such that the volume of air flow in cubic feet per minute exceeds the air pressure in pounds per square inch at the area of application to the body being massaged.

3,163,162
SURGICAL TAPE
Mark T. Basseches, 18 Old Farm Road S., Pleasantville, N.Y.
Filed Mar. 1, 1963, Ser. No. 262,165
7 Claims. (Cl. 128—156)



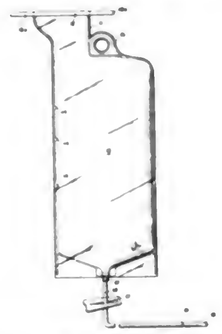
1. An adhesive tape or the like comprising a backing web, a pressure sensitive adhesive layer on one face of said web and an extended strand member releasably secured to said layer, said strand extending both longitudinally and transversely of said tape and including a plurality of spaced bight portions exposed at the side edges of said web, manual tension applied to said strand member being effective to release said strand from said layer.

3,163,163
ADMIXING VIAL OR CONTAINER
Edgar H. Wilburn, Rutherford, N.J., assignor to The Upjohn Company, Kalamazoo, Mich.
Filed Dec. 14, 1960, Ser. No. 75,830
7 Claims. (Cl. 128—272)



1. A container for storage of a liquid and another material miscible therewith segregated in separate chambers having a gated intercommunicating passage to permit admixture comprising, in combination, a substantially tubular body of flexible elastomer having a pair of end sections and an intervening mid-section, said mid-section being constricted with provision of a circular internal seat of a diameter substantially less than the internal diameters of said end sections to define on opposite sides of said seat tubular exterior side walls of a liquid chamber and an admixing chamber for containing material miscible with contents of said liquid chamber, an integral exterior end wall of like elastomer closing off one end of said body and the tubular side wall of the chamber thereat, an integral elongated neck extending coaxially from the other end of said body having an outlet bore and an external diameter appreciably less than the internal diameter of the adjacent end section with an intervening inwardly-extending crowned shoulder zone of the same flexible material connecting the tubular side wall of said end section to said neck and capable of axial inward flexure, a removable cap mounted in a relatively fixed inward position on said neck and closing off the bore of the latter with said cap and neck having cooperating abutting means preventing further relative inward motion of said cap, said cap constituting with said neck and said flexible crowned shoulder zone a portion of the exterior walls of the chamber provided by said adjacent end section, and a substantially cylindrical resilient gate plug of a diameter intermediate the diameter of said seat and the internal diameters of said chambers removably fitted in constricted condition within said seat temporarily isolating said chambers from each other, said liquid chamber containing a quantity of liquid appreciably greater than a predetermined cubic capacity of said chamber to which it may be reduced by inward flexure of at least one portion of the exterior walls of said liquid chamber to cause said gate plug to be expelled from said seat into said admixing chamber by hydraulic pressure when the exterior wall portion of said liquid chamber is flexed inwardly.

3,163,164
FLEXIBLE SYRINGE UNIT
Leonard F. Waldman, Jr., Niles, Ill., assignor to Baxter Laboratories, Inc.
Filed Oct. 4, 1961, Ser. No. 142,890
2 Claims. (Cl. 128—227)



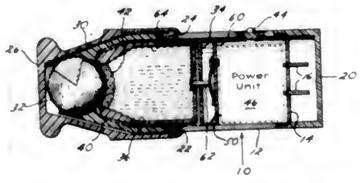
1. An improved enema syringe unit comprising a flexible, collapsible, lay-flat bag formed by sealing two sheets of plastic along edges thereof to form side seals, a top seal provided with a centrally located hanger means, said hanger means being centrally located in the top seal at the junction of the two sheets of plastic thereby equalizing the pressure exerted upon said two sheets by the fluid contents of said bag when it is filled, and a bottom seal, said bottom seal being interrupted to form an outlet and said top seal being interrupted to form an inlet, said inlet being an outwardly extending elongated sleeve-like member located adjacent to one side seal of said bag, said inlet member being sufficiently elongated to allow it to be folded upon itself to form a fluid tight seal and being provided with means for securing it in said folded condition, said means comprising a malleable strip sealed to a top edge of said inlet, said strip being of greater length than the width of said inlet so that it can be folded inwardly to retain the inlet in a folded position, said bag being further provided with graduation marks for indicating the volume of the contents of said bag, and a flexible disposable plastic tube communicating at one end with the outlet of said bag, said tube being provided at the other end with an enema tip.

3,163,165
UTEROTUBE-CLOSING INSTRUMENT
Humio Isikawa, 23 2-chome, Kamijujo, Kita-ku, Tokyo-to, Japan
Filed Sept. 12, 1960, Ser. No. 55,441
3 Claims. (Cl. 128—303.17)



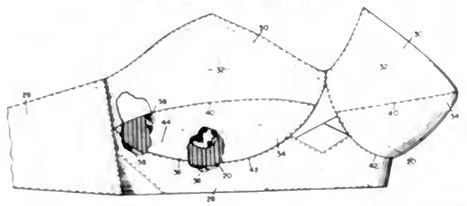
1. A uterotube-closing device for sterilization by cauterization of a uterine cornu comprising, a non-conductive tip member comprising a hemispherical, non-conductive, outer leading surface, a spark discharging main electrode comprising an arcuate electrode mounted peripherally of said hemispherical member to provide a conductive, arcuate outer contact surface for contacting an organ to be cauterized, said main electrode having a length greater than and a width less than the diameter of said hemispherical surface, means comprising a conductive metal tube on which said tip member is mounted at one end thereof to apply an electrical current to said main electrode to heat it to a selected temperature in dependence upon the area of said contact surface and the contour of said contact surface, means electrically connecting said metal tube and said main electrode without impairment of the non-conductiveness of said leading surface, said tip member having a larger transverse dimension than the diameter of said tube, means internally of said main electrode for sensing the temperature of said main electrode thereby to measure the cauterization temperature, means connected to the last-mentioned means for indicating the temperature sensed externally of said device when said device is in position for cauterization, an insulating sheath extending longitudinally of said metal tube and circumferentially of said tube, said sheath extending from said tip member in a direction away therefrom to insulate said tube from the uterine and vaginal tissue of a female during use of said device, said means to heat said main electrode comprising means to apply a high frequency current to said conductive metal tube, and a handle on said tube at an end opposite said tip member for manipulating said device.

3,163,166
IONTOPHORESIS APPARATUS
Joseph Henry Brant, Summit, and Joseph Francis Migliarese, Bound Brook, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Apr. 28, 1961, Ser. No. 106,294
6 Claims. (Cl. 128—405)



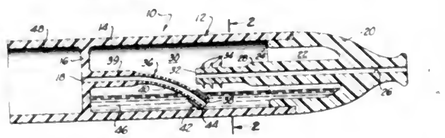
1. A hand-held iontophoresis apparatus comprising a casing, a chamber within said casing for retaining a fluid electrolyte, an opening in said casing, a spherical electrode disposed in said opening and protruding out of said casing, and means, insulated from said casing, for supplying electric current to said spherical electrode, said spherical electrode being free to rotate and being in communication with said chamber.

3,163,167
STIFFENING MATERIAL FOR BRASSIERES AND SIMILAR BODY CONFINING GARMENTS
John J. Chisholm, Worcester, Mass., assignor to David Clark Company Incorporated, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 3, 1963, Ser. No. 270,371
4 Claims. (Cl. 128—477)



1. An uplift brassiere comprising a body-encircling member and a pair of bust cups secured with relation thereto, each bust cup comprising an upper portion and a lower portion, the upper portion comprising essentially a single piece of flexible material, the lower portion comprising two layers of flexible material, the two layers of the lower portion of the bust cup being secured to the single piece of the upper portion of the bust cup along a line approximately midway between the top edge and the lower edge of the bust cup, and a stiffening element located adjacent the lower edge of the lower bust cup portion between the two layers thereof and being wholly concealed thereby, said stiffening element comprising a generally flat one-piece continuous thermoplastic sheet of lunar shape having a series of alternate parallel ribs and grooves along one side surface only thereof, the opposite surface being substantially smooth, said ribs being of uniform thickness and being substantially flat, said stiffening element being flexible on lines parallel to the ribs and providing a body-conforming member relatively stiff in a direction at right angles to the lengths of the ribs, said stiffening element extending substantially throughout the length of the lower edge of the lower portion of said bust cup and terminating short of the line of securement of the upper portion of the bust cup to the lower portion of the bust cup.

3,163,168
SMOKE PURIFYING DEVICES
Herbert C. Lytton, 2040 Vista Del Mar, Hollywood, Calif.
Filed Dec. 17, 1962, Ser. No. 245,186
1 Claim. (Cl. 131—173)



A smoke purifying device for use with cigarettes which comprises:

an elongated housing having a first end shaped as a mouthpiece and another end shaped so as to include a tubular portion adapted to hold a cigarette, means forming an elongated housing extending within the interior of said housing between said ends, said

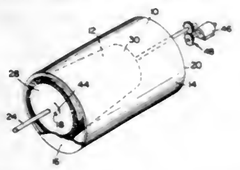
cavity being adapted to contain water, and passages extending through said ends into adjacent portions of said cavity;

a rigid tube integral with said first end extending from said first end into the central portion of said cavity. said rigid tube being in communication with the passage leading through said first end and having at least one baffle of flange like shape extending around its extremity within the interior of said cavity, said baffle having a substantially planar side facing said first end and at substantially right angles to said passage, said rigid tube having an interior dimension of less than about 0.100 inch in diameter, the extremity of said rigid tube being of a water repellent character;

a tube extending from said other end into the interior of said cavity, said tube being in communication with the passage extending through said other end, said tube being of unitary construction with said other end and being relatively inflexible adjacent said other end and relatively flexible towards its extremity, said tube being sufficiently long so that its extremity within said cavity is located alongside the extremity of said rigid tube within said cavity, said relatively flexible portion of said tube having an interior dimension of less than about 0.100 inch in diameter, the extremity of said tube within said cavity being of a water repellent character; and

a cylindrical weight positioned along the extremity of said flexible tube within said cavity and being secured to said flexible tube.

3,163,169
COIN FEEDER
Richard C. Rau, Mendon, Mass., assignor to Electronic Coin Processing Corp., New York, N.Y., a corporation of New York
Filed Aug. 27, 1962, Ser. No. 219,705
8 Claims. (Cl. 133—1)



8. A coin feeder comprising

a cylindrical housing with its axis oriented slightly inclined from the horizontal,

a tapered rotor disposed in the housing, with the rotor axis displaced from the axis of the housing,

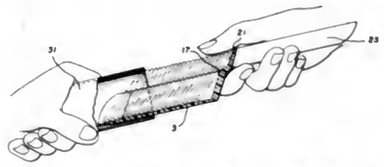
said rotor contacting the inner surface of the housing on one side of the thicker end of the rotor,

means for rotating the rotor in the housing about the rotor axis,

and an exit slot formed in the wall of the housing at the region of contact between the rotor and housing.

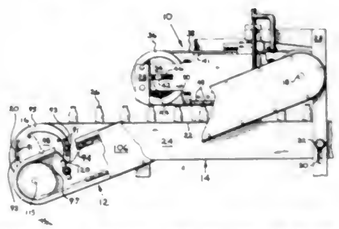
3,163,170
DEVICE FOR DISPENSING DISKS AND THE LIKE
Francis H. Gates, 582 Knowell Place, Costa Mesa, Calif.
Filed Oct. 5, 1960, Ser. No. 60,592
2 Claims. (Cl. 133—8)

1. A device for dispensing disks and the like, comprising a pair of open-topped troughs disposed end-to-end and inverted relative to each other and having closed ends adjacent each other and open ends opposite each other, and single wall means closing said closed ends of the troughs and having a portion closing one trough and a portion closing the other trough, said wall means providing at each closed end of each trough a flat surface that extends from the bottom of each trough upwardly and terminates in a horizontal edge spaced from the bottom of the trough a distance substantially less than the width of the inside of the trough, the side of each said wall portion opposite its associated trough providing an



abutment above the bottom of the trough other than its associated said trough a distance less than the width of the inside of said other trough and above said edge associated with said other trough and a short distance on the side of the plane of said flat surface of said other trough opposite the open end of said other trough.

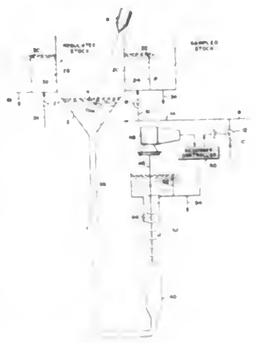
3,163,171
CONTAINER NECK WASHER
Olav Bjering and Alois F. Trendel, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 29, 1963, Ser. No. 298,142
6 Claims. (Cl. 134—104)



1. Apparatus for temporarily sealing container mouths comprising: a conveyor for moving upright containers along a predetermined path, said conveyor including a driven shaft; sealing means for sealing the mouths of said containers along a portion of said path, said means comprising a sealing belt reaved about at least two sheaves, one of which is driven; mounting means for supporting said sealing means above said conveyor including means for vertically adjusting said sealing means relative to said conveyor, said sealing means being in a fixed position relative to the length of said conveyor; a rotatable member; driven means operatively connecting for power transmission said driven sheave to said rotatable member; means operatively connecting for power transmission said rotatable member and said driven shaft; and means for mounting said rotatable member for rotation about its axis and rotation about said driven shaft whereby on vertical adjustment of said sealing means, said rotatable member will rotate about the axis of said driven shaft.

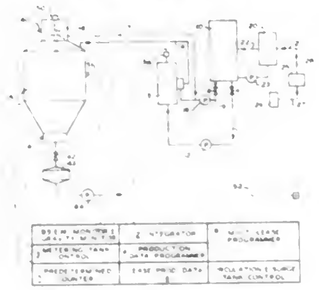
3,163,172
CONSISTENCY MEASURING AND CONTROL METHOD AND APPARATUS
William S. Buzzard, Jenkintown, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Feb. 1, 1962, Ser. No. 170,466
7 Claims. (Cl. 137—4)

4. The method comprising supplying to a mixing receptacle relatively proportioned flows of a fibrous suspension of low consistency and a similar fibrous suspension of known consistency greater than that of the first



mentioned suspension, and measuring the consistency of the resulting mixture.

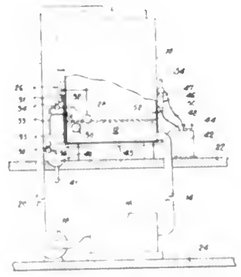
3,163,173
AUTOMATIC CHEMICAL INJECTION CONTROL
Louis E. Kuntz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,157
3 Claims. (Cl. 137—93)



1. Means for controlling the BS&W content of a fluid stream comprising BS&W detecting means for producing a voltage proportional to said BS&W content, means for producing electrical pulses at a rate proportional to said voltage, a stepping switch, gating means for connecting said stepping switch to said electrical pulses for a fixed period of time to cause said switch to advance a number of steps proportional to said BS&W content, a plurality of variable resistance elements, each of said elements being associated with a step of said switch and being connected in parallel to a source of electrical energy, a current to pressure transducer connected with said stepping switch whereby at each position of said switch said transducer is connected to said source of electrical energy through one of said variable resistance elements, fluid pressure actuated chemical injection means for injecting treating chemical into said fluid stream, means connecting said transducer with said injection means to control the rate of operation thereof proportional to the electrical energy supplied to said transducer through said resistance element thereby controlling the rate of chemical injection as a function of said BS&W content.

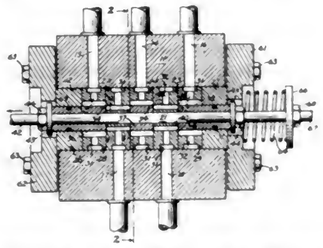
3. Means for controlling the BS&W content of a fluid stream comprising means for measuring the BS&W content of said stream and producing an electrical signal proportional thereto, a source of electrical energy, means for injecting a treating chemical into said fluid stream and means for varying the rate of injection of said chemical, a plurality of variable resistance elements connected in parallel circuits with said source of electrical energy and said means for varying the rate of injection of said chemical, and means for completing said parallel circuits respectively at various values of said BS&W content.

3,163,174
CHEMICAL ADDING DEVICES FOR WATER SYSTEMS
Frederick F. Pintz, Leonia, N.J., assignor to Heller Laboratories, Inc., Leonia, N.J., a corporation of New Jersey
Filed Mar. 31, 1961, Ser. No. 99,766
1 Claim. (Cl. 137—101.27)



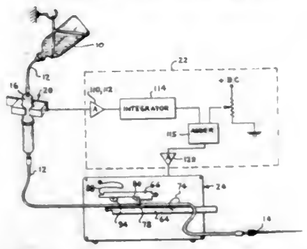
A chemical adding device for water systems comprising a tank, a chemical solution in the tank, a receptacle having a first opening and a second opening therein, valve and feed means having an input fitting, an output fitting and a ball valve, the valve and feed means being connected to the receptacle through the first opening therein, the output fitting being connected to the water system, pumping means connected between the tank and the input fitting, the second opening in the receptacle being in the bottom thereof, a hollow measuring rod inserted in the second opening in the receptacle and movable into and out of the receptacle, means for starting the pumping means when a first predetermined condition is reached in the water system such that the pressure operates the ball valve to open the passage between the tank and the receptacle to permit chemical solution from the tank to be pumped into the receptacle and at the same time the ball valve closes the passage between the receptacle and the output fitting, overflow means connected between the lower end of the hollow measuring rod and the tank such that all the chemical solution in the receptacle which rises above the top of the hollow measuring rod is returned to the tank through the hollow measuring rod and the overflow means, means for stopping the pumping means when a second predetermined condition is reached in the water system such that the ball valve closes the passage between the tank and the receptacle and opens the passage between the receptacle and the output fitting to deliver the chemical solution in the receptacle to the water system, the amount of chemical solution delivered to the water system being determined by the height of the hollow measuring rod within the receptacle and the frequency of the delivery of the chemical solution to the water system being determined by the frequency with which the predetermined amount of water is consumed in the water system so that the amount of chemical solution added to the water system is proportional to the amount of water consumed therein.

3,163,175
PRECISION ADJUSTABLE CONTROL VALVE ASSEMBLY
Eugene W. Pearson, Orinda, Calif., assignor to Pacific Industrial Manufacturing Co., a corporation of California
Filed May 22, 1961, Ser. No. 111,547
8 Claims. (Cl. 137—315)



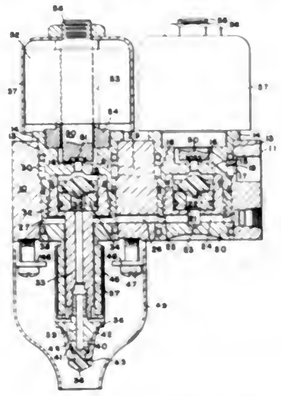
1. An adjustable servo control valve assembly comprising a valve body having a longitudinal passageway therethrough and a plurality of ports connecting with said passageway; a body sleeve assembly snugly fitting in said passageway, said body sleeve assembly including a pair of individual body sleeve valve sections separated by a body sleeve spacer section, said valve and spacer sections having flow communicating passages connecting said longitudinal passageway with said ports, and said spacer section having a modulus of elasticity less than that of said body sleeve valve sections; a spool assembly slidably disposed within said body sleeve assembly, said spool assembly including a pair of spool sleeve spacer sections and an intermediate spool valve section; said body sleeve spacer section being of a length slightly exceeding that of said spool sleeve valve section; and means for compressing said body spacer section sufficient to bring said body valve sections into critical edge-to-edge valving relationship with said spool valve section for one position of said spool assembly.

3,163,176
APPARATUS FOR SENSING AND CONTROLLING FLUID FLOW IN THE FORM OF DISCRETE FREE-FALLING DROPS
Chester A. Darling, Bristol, Conn., assignor to Barth Engineering and Manufacturing Company, Inc., Meriden, Conn., a corporation of Connecticut
Filed Mar. 14, 1962, Ser. No. 179,664
10 Claims. (Cl. 137—487.5)



8. In apparatus for sensing and controlling the drop rate of a fluid material, the combination comprising means defining a fluid flow channel having a vertically disposed chamber section, means for variably restricting the flow of fluid in said flow channel to produce free-falling drops in said chamber section, sensing means associated with said chamber section for producing electrical pulses at a rate directly proportional to the drop rate in said section, circuit means coupled to the sensing means for producing an output voltage which varies in accordance with the rate of receipt of the electrical pulses, and electromagnetic means responsive to said output voltage and operatively connected to said flow restrictor means for correctively varying the setting thereof for maintenance of a predetermined drop rate.

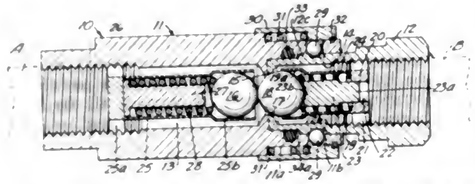
3,163,177
BEVERAGE MIXING AND DISPENSING FAUCET
Frank Welty, 4962 Lockwood Blvd., and Raymond D. Welty, 4307 Lake Road, both of Youngstown, Ohio
Filed Oct. 27, 1961, Ser. No. 148,275
11 Claims. (Cl. 137—607)



1. In a beverage mixing and dispensing faucet having a body member with inlet ports to receive carbonated water and flavoring syrup under pressure the improvement comprising:
(*a*) a pair of plug-like inserts removably secured in said body member and each having an inlet port communicating with one or the other of the inlet ports in said body member and each having an outlet port,
(*b*) a valve and a flow-control device mounted in series relation in each of said inserts and said flow-control devices being each of the kind operative to effect a uniform rate of flow regardless of variations in the source pressure of the fluid transmitted,
(*c*) means to provide an elongated restricted passage having an enlarged trap at the outlet end thereof for receiving carbonated water from the outlet port of one of said inserts to dissipate the source pressure of said water and to discharge the same from said trap under conditions of substantially free gravity flow,
(*d*) conduit means to conduct syrup from the outlet port of the other of said inserts to discharge in the path of the downwardly flowing carbonated water, and
(*e*) means to open and close said valves.

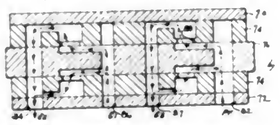
3,163,178
COUPLER FOR HYDRAULIC LINES
Paul E. Stratman, Minneapolis, Minn., assignor to Pioneer Hydraulics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 19, 1962, Ser. No. 238,548
8 Claims. (Cl. 137—614)

8. Coupling mechanism for releasably connecting and intercommunicating a pair of pressure-fluid conduit sections, having in combination
a pair of cooperating body members one connected with a source of pressure fluid and the other connected with a device to be powered by fluid pressure,
said body members having longitudinal bores and adapted to be moved substantially end-to-end, with relative inward longitudinal movement for coupling,
means for releasably interlocking said body members together in fully coupled position thereof,
the bores of said body members having opposed annular valve seats disposed in close coaxial spaced relation when said body members are fully coupled,
check valves in said bores each having a forward peripheral portion protrusible through its related valve seat, the relation of said protrusions with the spaced relation of said valve seats being such that abutment of said protruding valve portions occurs just prior to final inward longitudinal movement of said body members in coupling,



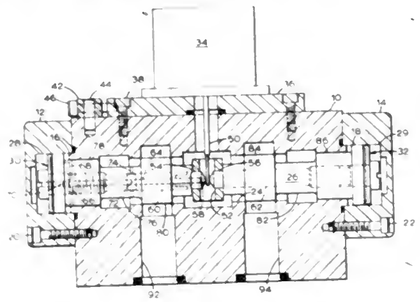
the valve in the pressure source body being retractable away from its associated seat a sufficient distance upon engagement of the protruding valve portion of the device-connected body when the valve of the device-connected body is maintained on its associated seat by the pressure within the device to allow the completion of the coupling and locking thereof,
stop means limiting the retraction of the valve of the device-connected body to a position where both valves in abutment are equally spaced from their respective seats,
and an imperforate hollow guide and shield member fixedly positioned within the bore of one of said body members, said guide and shield member having a rear end and an open front end positioned in close proximity to its associated valve seat and receiving and guiding an associated check valve therein, and shielding the associated valve against fluid pressure,
and resilient means within said shield urging said valve against its associated seat and held thereon regardless of the pressure exerted thereagainst.

3,163,179
VALVE STRUCTURE IN HIGH PERFORMANCE SERVO SYSTEM
Thor H. Ljunggren, deceased, late of Perkinsville, Vt., by Thelma L. Ljunggren, executrix, Rte. 1, Perkinsville, Vt.
Filed July 28, 1961, Ser. No. 130,220
4 Claims. (Cl. 137—625.21)



1. A valve for a high performance pressurized servo system, the valve comprising: at least one relatively fixed valve plate containing at least one channeled fluid passage therein for the flow of pressurized fluid therethrough, a rockable slide plate slidable against the fixed valve plate, the slidable valve plate having at least one aperture, the rockable slide plate movable upon command to control pressurized fluid flow through the passage for control purposes, means defining a port in the relatively fixed valve plate at the termination of the channeled fluid passage adjacent the aperture in the rockable slide plate to thereby control the flow of pressurized fluid, the port in the fixed valve plate opening adjacent the rockable slide plate and the aperture of the rockable slide plate adapted to cooperate with the port opening being of rectilinear shape in the direction of movement of the slide plate such that equal incremental movement of the rockable slide plate uncovers a corresponding linearly related equal increment of area of the port, means defining a rectilinear side edge on the port of the channeled fluid passage, the edge walls immediately behind the edge in the direction of fluid flow being relieved to provide a greater area than the port opening to diminish turbulence and so that diminished turbulence which does exist will act upon the relatively fixed valve plate thus preventing unstabilizing oscillatory forces from acting upon the rockable slide plate.

3,163,180
PLUNGER CONSTRUCTION FOR FLUID FLOW CONTROL VALVE
John C. Campbell, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 6, 1963, Ser. No. 278,000
6 Claims. (Cl. 137—625.62)

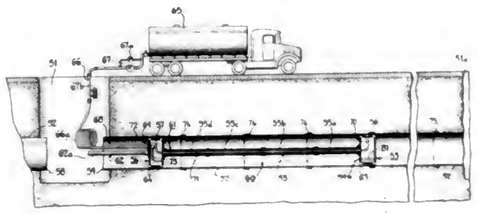


1. In a fluid flow control valve including a member having a bore therethrough defining axially aligned first and second bore chambers, the first chamber having a smaller diameter than the second chamber, a control plunger received in the bore comprising:
(*a*) a spool slidably received in the first chamber and extending into the second chamber,
(*b*) a ring slidably received in the second chamber and loosely received over said spool,
(*c*) a retaining member fixed on said spool in the second chamber and having
(1) A flat annular surface around the outer edge of one side thereof adapted to engage a side of said ring tightly and
(2) a recessed area radially inward from said flat annular surface on said one side thereof, and
(*d*) means to connect fluid under pressure to the side of said ring opposite said retaining member to move said ring into forceful engagement against said flat annular area, said recessed area being in communication with the side of said ring opposite the retaining member through said ring member and around said spool to produce a force reducing the force of contact at said flat annular surface thereby to render said ring relatively freely movable in a direction transverse to said spool to accommodate eccentricity between said chambers.

3,163,181
METHOD AND APPARATUS FOR SEALING JOINTS IN CONDUIT SYSTEMS

Constantine P. Xenis, Douglaston, and Julio Russo, Brooklyn, N.Y., assignors to Consolidated Edison Company of New York, Inc., New York, N.Y., a corporation of New York

Filed Oct. 2, 1957, Ser. No. 687,829
6 Claims. (Cl. 138—97)



1. A process for sealing small leaks in a main disposed to contain a flow of substantially anhydrous gas, comprising isolating a section of the main between fixed limits, removing the said gas from said section, flooding a sealing composition into the isolated section of the main to substantially fill the entire isolated section, said sealing composition being a liquid suspension of finely divided particles of polychloroprene, applying an external pressure on the sealing composition disposed in said isolated section to drive the sealing composition into the leaks and thereby to cause penetration of the leaks by the liquid and deposit of the particles in the leaks, maintaining said pressure until the leaks are sealed by the deposited particles, removing the remaining sealing composition from the main, and thereafter re-introducing a flow of substantially anhydrous gas therethrough.

3,163,182
PIPE COVERING AND METHOD OF APPLYING SAME

Kiyoshi Sandow and Stanton U. McGary, Houston, Tex., assignors to Plasteco, Inc., Houston, Tex., a corporation of Texas

Filed Apr. 24, 1961, Ser. No. 105,053
9 Claims. (Cl. 138—144)

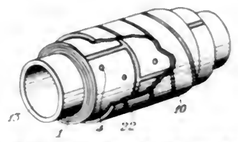


6. In combination with a pipe, a covering upon the outer surface thereof comprising a coating upon the pipe substantially devoid of metallic content and including a thermoplastic adhesive, said covering also comprising a thermoplastic resin film which is very slow burning, said film covering said adhesive and said pipe in substantially abutting wraps with there being overwrapping and overwrapped margins of film adjacent the line of substantial abutment, said adhesive adhering to the pipe and cohering with the film to cement the film to the pipe, said adhesive also being interposed between the overwrapping and overwrapped margins of the film and cohering with said margins to bond said margins together.

3,163,183
MULTI-LAYER PIPES

Hideo Sagara, Hiroshima, Japan, assignor to Mitsubishi Shipbuilding & Engineering Co., Ltd., Tokyo, Japan, a company of Japan

Filed May 16, 1961, Ser. No. 110,428
Claims priority, application Japan, May 17, 1960, 35/24,139; Oct. 7, 1960, 35/40,535; Apr. 18, 1961, 36/13,470
10 Claims. (Cl. 138—144)



1. A multi-layer pipe for fluids under pressure comprising a single strip spirally wound in the form of a coil, each layer of said coil being in intimate contact with the adjacent layer, means for fixing the outside diameter and the inside diameter of said coil, and a plurality of fluid-escaping openings extending through all the layers of the pipe except the innermost layer thereof.

3,163,184
GRIPPER SHUTTLE

Jean Victor Cherpin, 17 Rue Clemenceau, Cours, Rhone, France

Filed Feb. 7, 1962, Ser. No. 171,643
Claims priority, application France, Feb. 10, 1961, 41,215
15 Claims. (Cl. 139—125)

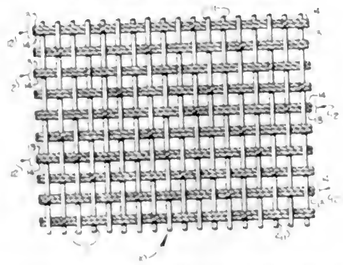


1. In a loom, the combination of stationary inserting means for weft thread, said means being provided with an opening for passage of said thread therethrough, a shuttle provided with a longitudinal opening, the shuttle being adapted for being moved across the loom between end positions, the loom forming a shed along the path of the shuttle, a spindle extending adjacent said opening and rigidly secured inside the shuttle, a clamping arm pivotally supported on said spindle and adapted to be contacted by the inserting means when the shuttle is at an end position thereof, two jaws pivotally supported on said spindle for pivoting respectively in unison with the clamping arm to clamp between said jaws the thread carried by the inserting means, a latch supported in the shuttle for engaging the clamping arm upon actuation of the latter by the inserting means to hold the clamping arm, means on the loom supported in stationary relation for releasing the latch, a stationary knife extending between the fabric being woven and the inserting means, said knife including a hook adapted to engage the weft thread and to cut the same only after engagement of said thread by the shuttle.

3,163,185
DIMENSIONALLY STABLE, DIRECTIONALLY STIFF WOVEN FABRIC

Leonard A. Stanley, Camden, S.C., and Eleanor Marples, Trenton, N.J., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Sept. 28, 1962, Ser. No. 226,942
5 Claims. (Cl. 139—420)

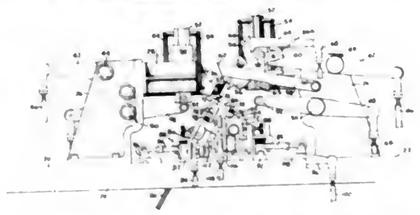


4. A woven fabric adapted for treatment to provide substantially greater stiffness in one direction than in the other comprising sets of warp and filling yarns interwoven with each other, one of said sets consisting mainly of regenerated cellulose yarns of the non-cross-linked, high wet modulus type reactive to fusing treatment by a zinc chloride solution of about 62% to 66% concentration and having good dimensional stability in fused state, and other of said sets consisting mainly of cotton yarns non-reactive to fusing treatment by a zinc chloride solution of said about 62% to 66% concentration.

3,163,186
FILAMENT FORMING APPARATUS

Philip F. Lynn, Lynnfield, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 13, 1961, Ser. No. 89,031
13 Claims. (Cl. 140—71.5)

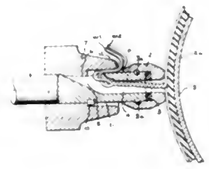


1. In apparatus for shaping a length of filament coil into a lamp filament having a plurality of segments connected by loops, the combination of: a coil holder, a parting knife and a bending knife, said coil holder and said parting knife being disposed adjacent to and substantially parallel to one another along their respective longitudinal axes, and said bending knife being disposed beneath and substantially perpendicular to said longitudinal axes of said coil holder and said parting knife; means for gripping in said coil holder said length of filament coil near one end thereof; means for advancing said parting knife to a position between adjacent turns of the filament coil in said coil holder; means for advancing said bending knife into a position between turns of said filament coil adjacent to said parting knife whereby a single turn of said filament coil is disposed between said knives; means for reciprocating said bending knife laterally with respect to said parting knife while so disposed whereby the said single turn of said filament coil is stretched to define an elongated loop during the forward movement of said reciprocating stroke of said bending knife; and means for rotating said bending knife about its own longitudinal axis and through about 180 degrees whereby the free portion of the filament coil is displaced to a position substantially parallel to the portion gripped by said coil holder, the return movement of said reciprocating stroke of said bending knife being effected during about the first 90 degrees of rotation of said bending knife about its own longitudinal axis.

3,163,187
TOOL FOR TIGHTENING WIRES AND BREAKING THE ENDS THEREOF

Joseph R. MacIntosh, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed June 1, 1962, Ser. No. 199,472
5 Claims. (Cl. 140—93.6)



1. A tool for tying together wire ends by twisting and breaking them comprising:

(*a*) an elongated member of rigid material having a substantially axial unobstructed passage formed therein from one end thereof for a predetermined distance,

(*b*) said member having a second passage formed therein at an obtuse angle to said first passage,

(*c*) said second passage having one end connecting with said first passage at the end thereof remote from said one end of said member, and

(*d*) said second passage having its other end opening out onto the periphery of said elongated member intermediate the ends thereof;

(*e*) and movable means connected to said elongated member so as to be movable relative thereto,

(*f*) said movable means having a first position in which it permits unobstructed egress from said other end of said second passage of wire ends inserted into said one member end,

(*g*) said movable means having a second position in which it engages wire ends extending from said other end of said second passage so as to prevent their being pulled back into said second passage; and

(*h*) said elongated member being formed so as to be rotatable by an external agency whereby, upon rotation, wires extending through said passages and engaged by said movable means are twisted together and break from metal fatigue intermediate the ends of the twisted part.

3,163,188
MATERIAL HOLDER AND DISPENSER

William Morris, 297 Park St., West Haven, Conn.

Filed Aug. 1, 1962, Ser. No. 214,036
8 Claims. (Cl. 141—369)

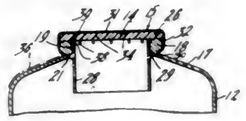
1. In a dispenser for material in granular or liquid form comprising a refillable casing having an opening defined in the bottom thereof, a valve for closing said opening, said valve comprising a sealing portion and a stem portion, means in said casing biasing said stem downwardly to cause said sealing portion to close said opening; means on said valve extending through said opening and carrying a first magnetic member thereon,

and a material receiving cup having a stem extending from the bottom thereof mounting a second magnetic member thereon whereby said cup is releasably magnetically supported from said valve and said cup may be filled with



material from said dispenser by urging said cup upwardly to cause said stem in said cup to move said valve against said biasing means, said cup being detachable from said connection with said valve to allow utilization of the dispensed material in said cup.

3,163,189
CONTAINER
James William Fitzsimmons, East Rockaway, N.Y., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed July 31, 1961, Ser. No. 128,182
2 Claims. (Cl. 141—381)



1. A flexible and resilient closure member for a container having a dispensing mouth, a bead surrounding the mouth, and an internal shoulder adjacent the mouth, said closure member comprising:

a sealing gasket portion adapted to extend over the container mouth and to be disposed in sealing engagement with the container bead,

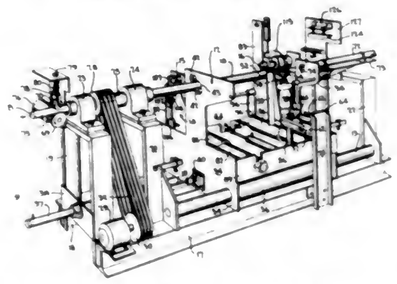
a skirt portion depending from said gasket portion and adapted to be disposed within the container mouth in engagement with the adjacent portions of the container,

said skirt portion and said gasket portion defining a measuring receptacle for a product within the container, and

a projection extending outwardly from said skirt portion and adapted to engage the internal container shoulder when said gasket portion is disposed in sealing engagement with the container bead to thereby retain said gasket portion in engagement with the bead,

said skirt portion having a plurality of vent holes formed therein and disposed closely adjacent said gasket portion, said vent holes being adapted to vent the interior of the container to the atmosphere when said closure member is positioned on the container and said gasket portion is lifted from the container bead.

3,163,190
SELF-ADJUSTING INDEXING MEANS FOR TUBULAR SAW MACHINE
Evander M. Ervin, Florence County, S.C., assignor to The Terrell Machine Company, Charlotte, N.C., a corporation of North Carolina
Filed May 31, 1963, Ser. No. 284,751
32 Claims. (Cl. 143—85)



1. A wood sawing machine comprising

(*a*) a stationary frame,

(*b*) a saw tube mounted for rotation about a fixed axis on said frame, said tube having axially presented saw teeth at one end,

(*c*) a carriage movable along said frame parallel to said axis,

(*d*) a work holder mounted on said carriage for rectilinear adjustment transversely to said axis,

(*e*) said work holder including means for rotatably supporting a workpiece for indexing movement about an indexing axis parallel to but displaced transversely from the rotational axis of the saw tube,

(*f*) indexing mechanism on said work holder including an indexing element rotatable about said indexing axis and adapted for rotary driving engagement with the workpiece to transmit indexing movement thereto,

(*g*) a driving element supported on said machine for movement through an operative stroke and a return stroke,

(*h*) a unidirectionally operative coupling interconnecting said driving element and indexing element to transmit rotary indexing movement to said indexing element on each operative stroke of said driving element,

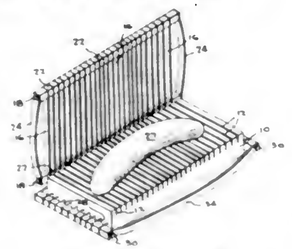
(*i*) and means for varying the length of said operative stroke of the driving element responsive to variations in the transverse position of said work holder.

3,163,191
SPECTROGRAPHIC ELECTRODE SHAPER
Ashley R. Corbin, 5390 W. 1st Ave., Denver, Colo.
Filed July 30, 1962, Ser. No. 213,452
3 Claims. (Cl. 144—46)



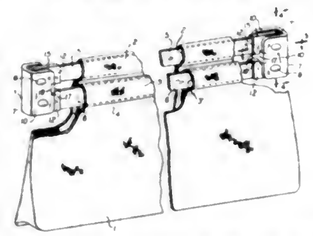
1. A spectographic electrode shaping tool for forming a socket in one extremity of an electrode rod and simultaneously forming an annular undercut in said rod adjacent said socket comprising: a rotatably mounted shank member having an axial bore; a drill bit slidably and axially mounted in said bore against which the extremity of said rod is compressed; key means causing said drill bit to rotate with said shank; a counter-bore in the upper extremity of said bore for receiving and guiding the extremity of said electrode rod concentrically against said bit; spring means resiliently urging said drill bit against the latter extremity of said rod; longitudinally extending lever slots formed in the sides of said shank member and communicating with said bore; a lever member pivotally mounted intermediate its extremities in each of said slots and having a centrifugal extremity adapted to swing outwardly under the influence of centrifugal force when said shank member is rotated; and a cutting extremity positioned to swing inwardly against said rod under the influence of the outward swing of said centrifugal extremity for forming said undercut therein.

3,163,192
FOOD SLICING MACHINE
Paul H. Lupoli, 78—27 90th Ave., Woodhaven 21, N.Y.
Filed Sept. 14, 1962, Ser. No. 223,661
8 Claims. (Cl. 146—5)



8. A reversible slicer, for foodstuffs or the like, comprising an elongate, rectangular block, with opposite, parallel faces, each having a series of parallel, channel grooves, the grooves in one face being parallel to the short dimension thereof, and the grooves in the other face being parallel to the long dimension thereof, and a pair of knife units, each hingedly connected to an edge of said block, and each having a series of equi-spaced, parallel knife blades, positioned and arranged to be received in the grooves in one of the respective, said faces, each knife unit comprising a connector means for the ends of said knife blades, and including spring means arranged to apply tension to said blades in a plane transverse thereto.

3,163,193
CLOSURE FOR BAGS, POUCHES AND THE LIKE
Alfred Edouard Lamarthe, Paris, France, assignor to John J. Treacy & Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 15, 1963, Ser. No. 316,392
4 Claims. (Cl. 150—10)



1. A closure for bags, pouches or the like comprising two spring blades disposed parallel to each other in superposed position, in the closing position of said closure, and in an end to end position, in the opening position of said closure, respectively,

a U-shaped member disposed at each end of said spring blades and having a base and two oppositely disposed leg members spaced apart from each other, the ends of said spring blades being received between said leg members,

pivot means for connecting the adjacent ends of said spring blades to said U-shaped member after being received between said leg members, and

a washer of friction reducing material disposed between the end portions of said spring blades and the inner faces of said leg members,

said base of said U-shaped member being spaced apart from the lateral end face of said spring blades in the opening position of said closure, in order to permit a turning of said spring blades into an inclined, locking position after passing the completely straight position of both said spring blades, and said base operating as a limiting means for movement of said spring blades into said inclined, locking position.

3,163,194
NURSING BOTTLE CONTAINER AND SUPPORT
Morris J. Berry and Louis Wells, both % Fashioncraft-Excello, 87 34th St., Brooklyn, N.Y.
Filed Apr. 18, 1963, Ser. No. 274,012
4 Claims. (Cl. 150—52)



1. A container for a nursing bottle comprising an elongated container having a pair of side walls and a bottom wall interposed therebetween, said walls being in substantially triangular relation with said bottom wall forming the base of said triangle, means defining an opening at the apex of said triangle for access to the interior of said container, said side and bottom walls having pliable heat sealing material, and a floating wall provided in said container in substantially spaced parallel relation with said bottom wall, said floating wall having a layer of resilient material which is adapted to restore the container to substantially its original shape after deformation, and means mounting said floating wall both for pivotal and lateral movement relative to said bottom wall.

3,163,195
LOCK NUT DEVICES
William Henry Croswell, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Feb. 15, 1962, Ser. No. 173,464
1 Claim. (Cl. 151—7)

A self locking nut and screw device comprising in combination:

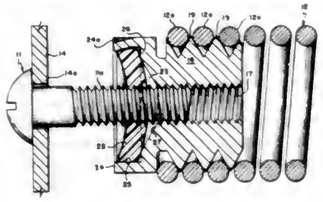
(*a*) a nut member having an internally threaded bore for receiving a screw and having an external thread means,

(*b*) said nut member having a recess in one end thereof defined in part by a cylindrical wall portion extending axially from a radially extending annular surface, said radially extending surface being substantially perpendicular to the nut axis, and a frusto-conical surface between the inner edge of said annu-

lar surface and the edge of said bore, said frusto-conical surface being inclined toward the other end of said nut,

(*c*) a flat, non-metallic resilient washer disposed against said annular surface and encircled by said cylindrical wall portion,

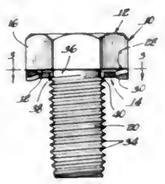
(*d*) said cylindrical wall having deformed portions engaging said resilient washer to secure said washer against rotation relative to said nut member, said washer having a central opening of smaller diameter



than the major diameter of said bore, said screw being threadedly received in said opening from said one end, and

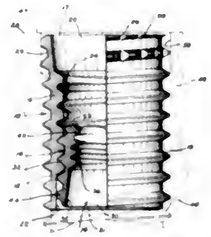
(*e*) the central portion of said washer being resiliently and angularly displaced from a relatively flat condition toward said frusto-conical wall by the application of axial force on said washer by said screw, said washer tending to return to said flat condition and exerting thereby a constrictive component of force on said screw.

3,163,196
PREASSEMBLED FASTENER UNIT WITH ELLIPTICAL THREADS
Walter M. Hanneman, Wheaton, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Apr. 3, 1961, Ser. No. 100,224
2 Claims. (Cl. 151—37)



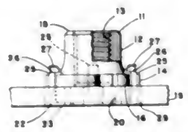
1. A preassembled fastener unit comprising a screw having means presenting a clamping surface and a shank portion extending axially from said clamping surface, and an annular washer telescopically associated with said shank portion and disposed adjacent said surface, said washer including means defining a substantially circular inner margin having a predetermined diameter, said shank portion including a smooth unthreaded substantially circular section adjacent said surface having a diameter substantially less than said predetermined diameter, and said shank including helical thread convolutions extending substantially continuously axially outwardly from said shank section substantially to and entering end of said shank, all of said helical thread convolutions having crests which are continuous and generally elliptical in cross sectional configuration, one of said thread convolutions immediately adjacent said shank section having a major crest axis substantially greater than said predetermined diameter and a minor crest axis less than said predetermined diameter for presenting diametrically opposite portions thereof for engagement beneath said margin of the washer for retaining the washer on said shank section.

3,163,197
TWO-PIECE INSERT
José Rosán, San Juan Capistrano, and Albert Jack La Torre, Santa Ana, Calif., assignors to Rosan Engineering Corporation, a corporation of California
Filed Jan. 9, 1961, Ser. No. 81,303
5 Claims. (Cl. 151—41.73)



1. An insert comprising a pair of interfitting tubular members, the outer of said members provided with a counterbore at each end thereof, said outer member being internally and externally threaded, the outer threads being adapted to engage an internally threaded bore in a parent body, one end of said outer member including external serrations adapted to penetrate the wall of the bore of the parent body to lock said member in the bore, the inner of said members being externally and internally threaded, the external threads of said inner member being in threaded engagement with the inner threads of the outer member, said inner member being provided with a counterbore and external locking projections at one end thereof adapted to engage the counterbore of the outer member opposite the outer member end which is provided with external serrations, said counterbored portion of said inner member being deformed into non-rotatable locking engagement relative to the outer member.

3,163,198
STUD RECEPTACLE ASSEMBLY
Victor F. Zahodiakin, River Road, Summit, N.J.
Filed July 30, 1962, Ser. No. 213,319
5 Claims. (Cl. 151—41.75)



1. A stud receptacle assembly comprising

(*a*) a stud receptacle mounted on one side of a structural member, both the receptacle and the structural member each having a transverse bore with the bores communicating with each other;

(*b*) a radial flange on the receptacle, the flange having a flat top surface lying in a plane generally perpendicular to the axis of the fore in the receptacle;

(*c*) the outer circumference of said flange comprising a plurality of radial cam surfaces spaced equally about the flange, each said cam surface having a predetermined progressive divergence circumferentially of the flange from minimum to maximum displacement from the axis;

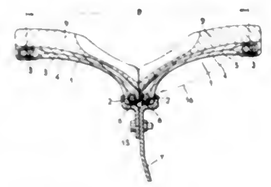
(*d*) a retainer clip including resiliently deformable upstanding legs mounted on the opposite side of the structural member from said receptacle and extending transversely thereof each through a different one of a plurality of second bores in said member and into resilient contact with a proximate cam surface thereat, each said second bore terminating at its end proximate to the cam surface at and transverse to the path of sweep of the diverging cam surface progressively across each said second bore as the cam surface rotates, each said second bore having a location and size accommodating radial flexing of the respective said upstanding leg throughout the path of sweep of said proximate cam surface across each said second bore;

(*e*) the resiliently deformable upstanding leg adapted to slidably and resiliently engage and follow the cam surface upon rotation of the receptacle and flange;

(*f*) a radial offset on the resiliently deformable legs generally parallel to the plane of the top surface of the flange and adapted to engage the same flatwise, thereby securing the receptacle against disengagement from the structural member; and

(*g*) said flange having grooves parallel to the receptacle axis interrupting the progressive circumferential divergence of each cam surface substantially at a position of maximum radial displacement from the axis of said cam surface, said grooves being simultaneously receptive of the respective upstanding legs as the flange is rotated and the cam surfaces all attain and pass position of maximum predetermined divergence in their contact with said legs.

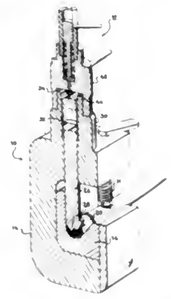
3,163,199
VEHICLE WHEEL
Nicholas Peter Sorrell Straussler, 5 Clarges St., London W.1, England
Filed Aug. 8, 1963, Ser. No. 300,801
Claims priority, application Great Britain, Aug. 16, 1962, 31,423/62; Feb. 5, 1963, 4,602/63
10 Claims. (Cl. 152—324)



1. A vehicle wheel comprising a rim and at least one non-pneumatic tire made from rubber-like material and having a bead clamped between substantially radially extending flanges provided on said rim, each said tire having a deep-dished carcass extending radially and axially away from said bead, the outer free edge portion of said carcass being stiffened by at least one spring ring member made from mechanically resistant material and capable of changing its form, under load, from circular to an oval which flattens most at the portion near the road surface, there being a substantial axial off-set between the portion of said carcass adjacent to the rim and said outer free edge portion including at least said one spring ring member.

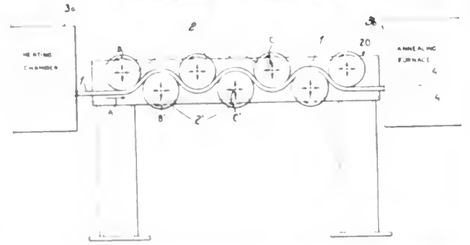
3,163,200
EXPLOSIVELY ACTUATED CRIMPING TOOL
William F. Broske, Camp Hill, Pa., and William E. Jaycox, Bel Air, Md., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 12, 1959, Ser. No. 786,415
3 Claims. (Cl. 153—1)

1. A device of the type described including a body member, a fixed die in said body member, a movable die in said body member which cooperates with the fixed die, means for actuating said movable die including a piston rod fixed to the movable die, a cartridge having a plastic chamber, one end of said chamber being closed, a plastic plug in said chamber, explosive powder in said chamber between the plug and the closed end of the chamber, said piston rod disposed in the open end of the plastic chamber and means for detonating said powder to drive the piston



rod within the chamber whereby the dies are brought into cooperative engagement.

3,163,201
PROCESS AND APPARATUS FOR PRODUCING CONDUCTIVE SHEET MATERIAL HAVING LOW POWER LOSSES
Theodor Schmidt and Jochen Wünning, Essen, Germany, assignors to Indugas, Gesellschaft für Industrielle Gasverwendung m.b.H., Essen, Germany, a corporation of Germany
Filed Feb. 6, 1961, Ser. No. 87,444
Claims priority, application Germany, Feb. 10, 1960, J 17,676
3 Claims. (Cl. 153—86)

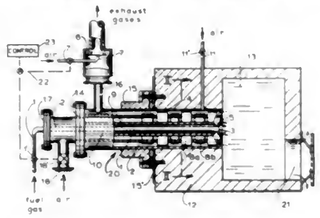


1. A process for reducing the electric power losses of a sheet-metal body, comprising the steps of heating said body to an elevated temperature, bending the heated body in an undulating pattern without substantial alteration of the dimensions thereof, straightening said body and annealing said body.

3,163,202
BURNER FOR INDUSTRIAL FURNACES AND THE LIKE
Theodor Schmidt, Essen, and Walter Litterscheidt, Kettwig (Ruhr), Germany, assignors to Indugas, Gesellschaft für Industrielle Gasverwendung m.b.H., Essen, Germany, a corporation of Germany
Filed July 13, 1961, Ser. No. 123,883
Claims priority, application Germany, July 19, 1960, J 18,460
3 Claims. (Cl. 158—7.5)

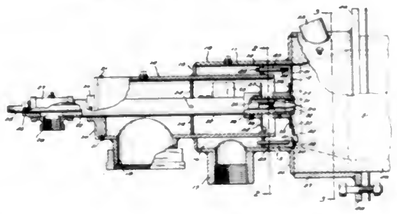
1. In a heating system, the combination with a combustion chamber provided with a wall of a burner traversing said wall and having a mouth opening into said chamber substantially at said wall, said burner comprising a set of coaxially nested tubes including a central tube for the admission of a fuel gas into said chamber, an intermediate tube for the admission of an oxygen-containing gas into said chamber and an outer tube for the removal of exhaust gases from said chamber, all of said tubes termi-

nating at said mouth, suction means connected with said outer tube at a location remote from said mouth and said chamber for drawing said exhaust gases therethrough, and thermally conductive means in at least said outer and intermediate tubes for facilitating heat exchange between said outer and said central and intermediate tubes, thereby effectively preheating said fuel and oxygen-containing



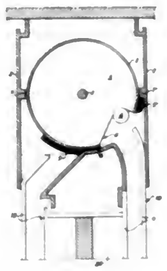
gases by the heat of said exhaust gases, said thermally conductive means comprising a set of fins passing through the interior of said intermediate tube and extending into said outer tube, and a tubular heat-conductive sheath coaxially surrounding said central tube over at least a major part of its length with peripheral clearance, said fins projecting outwardly from said sheath in heat-conducting relationship therewith.

3,163,203
LIQUID AND GASEOUS FUEL BURNER
Harry L. Ihlenfield, Parma, Ohio, assignor to Brown Fintube Company, Elyria, Ohio, a corporation of Ohio
Filed Dec. 6, 1961, Ser. No. 157,458
2 Claims. (Cl. 158—11)



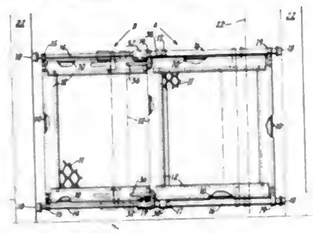
1. In a fluid fuel burner for selectively burning liquid or gaseous fuel, a first elongated conduit member having a front and a rear end; an outer housing surrounding the front portion of said first conduit member, said housing having a peripheral wall extending generally axially of said first conduit member beyond the front end thereof, said housing being closed at its rear portion by being joined to said first conduit member at a location such that the rear portion of said first conduit member projects rearwardly beyond said housing, said housing including an intermediate wall connecting said generally axially extending wall of said housing and the exterior of said first conduit member at a location forward of the rear portion of said housing and near the front end of said first conduit member to define a gaseous fuel chamber; means for supplying gaseous fuel to said chamber; a front wall closing the front of said housing to define, with said intermediate wall and the front portion of said first conduit member, a front chamber in said housing into which said first conduit member discharges, said front wall having therein a plurality of openings spaced around said front wall, said openings having associated therewith angularly disposed surfaces adapted to deflect gases discharging through said openings into a generally helical path extending away from said front wall; means defining a passageway providing a space at the side of said front wall opposite said front chamber, into which space gas is discharged from said openings in said front wall; a plurality of nozzle members having inlets opening through said intermediate wall into said gaseous fuel chamber and having outlets located in said front chamber near the openings in said front wall to discharge gaseous fuel so it can pass through said openings directly into said space in said passageway; a second conduit member extending from beyond the rear end of said first conduit member, through said first conduit member, and through said front chamber, the front end of said second conduit member discharging through said front wall; a liquid fuel nozzle disposed adjacent the front end of said second conduit member; means for supplying liquid fuel to said nozzle; means for supplying air to said first conduit member through the portion thereof projecting rearwardly beyond the rear portion of said housing; and a metering member mounted on said second conduit member within and near the front end of said first conduit member to control the flow of air from said first conduit member into said front chamber.

3,163,204
ROLLER BLIND MOUNTINGS
Dimitri Golde, Woluwe St. Pierre, Belgium, assignor to Le Chassis Metallique Belge "Chamebel" Societe Anonyme, Brussels, Belgium, a Belgian company
Filed Jan. 18, 1963, Ser. No. 252,358
Claims priority, application Belgium, Jan. 24, 1962, 488,967
5 Claims. (Cl. 160—26)



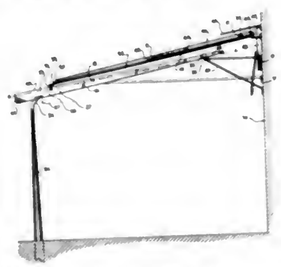
1. Roller blind apparatus for selectively blocking an opening, said apparatus comprising a frame mounted adjacent said opening, a sheath supported from said frame for rotation about a central axis, said sheath being hollow and adapted for accommodating a rolled-up roller blind, said sheath being provided with an axially extending opening through which the roller blind may pass when being rolled up and unrolled, guide means adjacent the opening defining first and second guides for the passage of the roller blind, means operatively connected to the sheath for rotating the same between first and second positions in which the opening in the sheath is in communication with a respective guide whereby the roller blind may be associated selectively with either of the guides, said guide means including a central guide member having opposite sides and being positioned relative to the sheath to define separate inlets for the guides, two projecting ribs on the sheath located to either side of the opening therein, and two abutments on the frame located on opposite sides of the opening, said ribs and abutments being operatively positioned relative to one another and to the sides of the central guide member to limit movement of the sheath between the first and second positions by causing in said first position to the sheath one of the ribs to be in contact with one of the abutments and the other of the ribs to be in contact with one of the sides of the guide member while in the second position of the sheath the other of the ribs is in contact with the other of the abutments and the said one rib is in contact with the other of the sides of the guide member.

3,163,205
ADJUSTABLE GATE
Robert Gottlieb, 30—20 78th St., Jackson Heights, N.Y.
Filed June 7, 1962, Ser. No. 200,879
3 Claims. (Cl. 160—216)



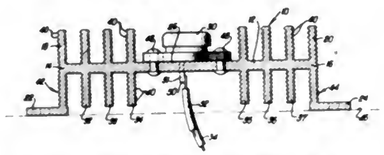
1. A gate of adjustable width adapted for press-fitted installation at any of a plurality of heights between opposing spaced vertical surfaces for obstructing passage therebetween comprising at least two separable gate sections each including panel means, means on the side edges of said sections for resiliently contacting said surfaces and upper and lower struts on one section slidably engaging cooperating upper and lower struts on said other section for guiding separation of said sections whereby the overall width of said gate may be adjusted to move said contacting means on each section into engagement with said surfaces, and means for adjustably positioning one cooperating pair of struts, the last said means comprising a rack on one of said struts, a pawl and toggle means carried by the cooperating strut on said other section, said toggle means including a pair of links movable to and from an in-line position for longitudinal displacement of said pawl, and means carried by said other strut and guiding said pawl into engagement with said rack as the links are moved toward the in-line position, said links then moving said struts outwardly one relative to the other as the links are moved into said in-line position.

3,163,206
CANOPY FOR OUTDOOR USE
Marc Rosen, 500 Atlanta Ave., Massapequa, N.Y.
Filed Apr. 3, 1961, Ser. No. 100,434
1 Claim. (Cl. 160—236)



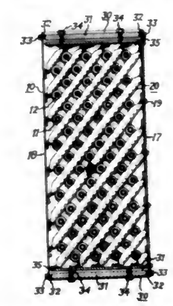
A slat for a canopy comprising an elongated member rectangular in cross section with inner and outer end portions, the outer end portion having flat parallel sides and tapering opposite edges terminating at said inner end portion, said inner end portion being generally rectangular in longitudinal and cross sections, with rectangular recessed portions formed in the opposite edges of said outer end portion.

3,163,207
HEAT DISSIPATING MOUNT FOR ELECTRIC COMPONENTS
Robert T. Schultz, 1250 N. Tressy Ave., Glendora, Calif.
Filed July 26, 1961, Ser. No. 127,005
1 Claim. (Cl. 165—68)



A lightweight heat dissipating mount for power transistors associated with a supporting chassis comprising as a figure of extrusion of aluminum a mounting panel lying substantially in a predetermined plane, said panel having a pair of oppositely disposed parallel longitudinal edges, a pair of supporting panels disposed in parallel planes substantially perpendicularly to said predetermined plane and affixed rigidly thermally conductively to said mounting panel on different ones of said pair of edges, said supporting panels extending to a chassis plane parallel to and spaced from said predetermined plane, mounting means disposed on said supporting panels along said chassis plane for supportably connecting said supporting panels to the supporting chassis, a transistor mounting portion on said mounting panel disposed centrally between said longitudinal edges, a plurality of heat dissipating panels mounted on said mounting panel on each side of said central mounting portion disposed substantially parallel to said supporting panels, and serrations formed in said mount disposed over substantially the entire area of said mounting and heat dissipating panels, said serrations being disposed parallel to the line of said extrusion and comprising ridges and troughs each formed with apexes of approximately ninety degrees and such that the surface of each of said heat panels is approximately forty percent greater than the area of its respective plan projection, said heat dissipating panels extending above said mounting panel and extending below said mounting panel at least nearly to said chassis plane.

3,163,208
BRACE FOR FINNED TUBES
Raymond Cuzzone and John R. Harvey, both of Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,743
8 Claims. (Cl. 165—69)



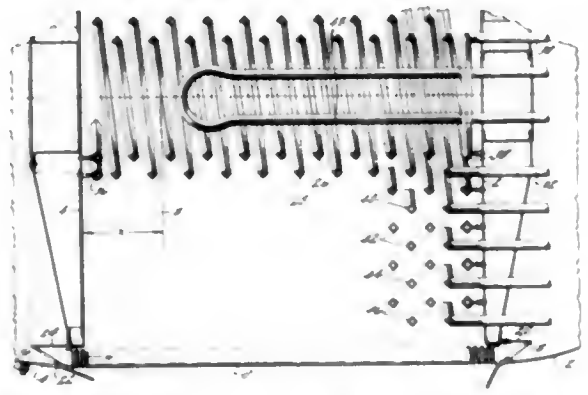
1. The combination comprising a plurality of tubes arranged in a plurality of rows, said tubes having fins extending outwardly therefrom, means secured to the ends of said tubes closing off the space therebetween, and a straight and stiff elongate assembly for inhibiting vibra-

tion of said tubes comprising a strip of resilient material, hard surfaced members protecting opposite faces of said resilient material from being cut by the fins, and a projection on a hard surfaced member extending out of the plane thereof, said vibration inhibiting assembly being firmly wedged between said rows of said tubes intermediate their ends and extending transversely of the tubes and in engagement with edges of said fins, said resilient material being compressed between said hard surfaced members by their wedging action against the tube fins, and said projection interlocking with a plurality of said fins to prevent movement of said assembly longitudinally of the tubes.

3,163,209
HEAT STORAGE UNIT

Byron H. Shinn, Bolton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 7, 1960, Ser. No. 34,588
10 Claims. (Cl. 165—83)

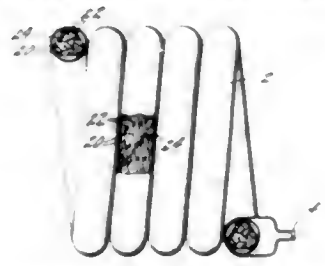


1. In a heat storage device the combination with an endwise expansible chamber having therein a heat receiving material which is alternately liquid or somewhat solid as more or less heat is stored therein, said chamber being defined by relatively movable end walls and an expansible side wall, an endwise expansible coil in said container for the circulation of fluid therethrough, said coil being attached to at least one of said end walls and being for at least a portion of its length of rectilinear cross section to move more readily through the heat receiving material, the opposite corners of the rectilinear cross section extending in a direction endwise of the chamber.

3,163,210
HEAT EXCHANGER

Rex A. Horrocks, Marlborough, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 27, 1960, Ser. No. 32,474
2 Claims. (Cl. 165—163)

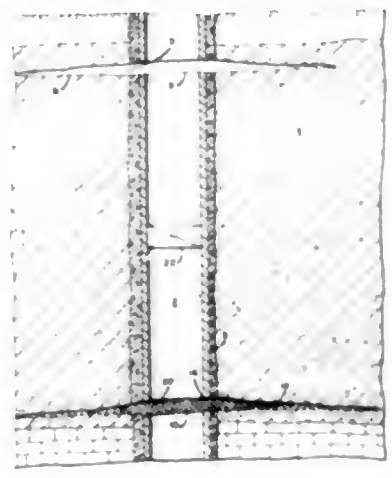


1. A heat exchanger including a plurality of parallel tubes spaced substantially uniformally from each other, spacers in the form of strips positioned among and in parallel relation to the tubes and with opposite edge of each strip in contact therewith to hold the tubes in spaced relation, each spacer being in the form of a helix coinciding substantially with the longitudinal center line of each strip, a header at the end of each set of tubes to which the spacers and tubes are attached, each of said tubes being in the form of a helix between the ends thereof, the axis of each tube helix being spaced from the center of each tube, and a surrounding elongated tank in which the assemblage of tubes and spacers is positioned, said tank and the helically arranged tubes and strips therein being arranged in a helical coil, the axis of which is external of the tank.

3,163,211
METHOD OF CONDUCTING RESERVOIR PILOT TESTS WITH A SINGLE WELL

Donald H. Henley, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed June 5, 1961, Ser. No. 114,987
14 Claims. (Cl. 166—4)



1. In a method for obtaining information on a hydrocarbon-containing formation traversed by a well prior to subjecting said formation to a procedure in which a fluid is to be injected into said formation, the improvement which comprises:

penetrating said formation at a level near the top thereof and at a level near the bottom of said formation,

placing a substantially fluid-tight barrier in said well between said penetrated levels,

injecting a test fluid into one of said levels,

permitting said fluid to be produced into said well via the other of said penetrated levels,

determining the time required for said injected test fluid to break through said formation and into said well,

recovering the fluids thus produced including said test fluid,

measuring the flow rate and pressure drop of the injected test fluid across said formation,

monitoring the composition and volume of said fluids produced into said well during said injection step; and thereafter, on the basis of the information thus obtained, injecting said fluid into said formation via a well (1) penetrating said formation and recovering hydrocarbon-containing fluids from a second well spaced apart from well (1) and, likewise, extending into said formation.

3,163,212
COMBINATION FRACTURING AND SECONDARY RECOVERY METHOD

George G. Bernard, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed June 1, 1960, Ser. No. 33,095
6 Claims. (Cl. 166—9)

1. In the production of oil from subterranean reservoirs by the injection of an aqueous flooding medium through an input well, and the recovery of oil through an output well, the improvement comprising the steps of

pumping an aqueous fluid containing a sufficient quantity of a water-soluble thickener, said thickener being stable under reservoir conditions, to increase the viscosity of said aqueous fluid to a value in the range of 10 to 1,500 centipoises, and sufficiently to permit fracturing of said formation, into a confined zone in said input well adjacent to said formation, applying to said aqueous fluid sufficient pressure to fracture said formation, and immediately thereafter injecting said aqueous flooding medium through said input well and into said formation.

3,163,213

WATERFLOODING METHOD OF SECONDARY RECOVERY USING LIQUID HYDROGEN SULPHIDE

George G. Bernard, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,163
4 Claims. (Cl. 166—9)

1. The method of recovering petroleum from subterranean reservoirs penetrated by an input well and a producing well comprising injecting through said input well into said reservoir 0.03 to 0.20 reservoir pore volume of liquid hydrogen sulfide, then injecting 0.03 to 0.20 reservoir pore volume of water-soluble oxygenated hydrocarbon, then injecting floodwater at a pressure in excess of the vapor pressure of hydrogen sulfide at reservoir temperature to drive said hydrogen sulfide and oxygenated hydrocarbon toward a producing well, and recovering petroleum from said producing well.

3,163,214

SOLVENT-WATERFLOOD OIL RECOVERY PROCESS

Albert K. Csaszar, Dundee, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,047
9 Claims. (Cl. 166—9)

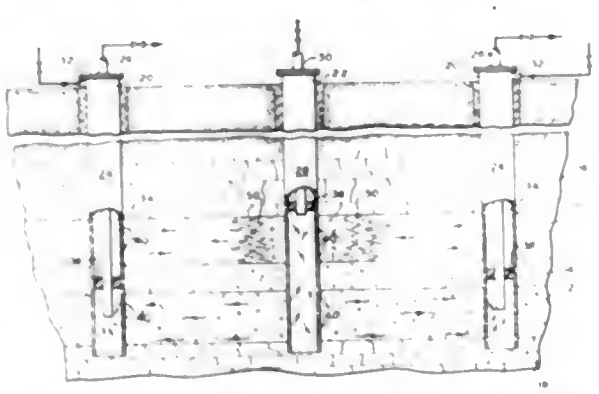
1. The method of recovering petroleum from subterranean reservoirs penetrated by an injection well and a producing well comprising first injecting through said injection well and into said formation 0.05 to 0.20 pore volume of a mixture of a soluble oil, having the ability to spontaneously emulsify with water when admixed therewith, and an inert, non-aqueous solvent therefor, said mixture having a viscosity approximating that of said petroleum, and then injecting floodwater to drive said mixture toward said producing well, and recovering petroleum from said producing well.

3,163,215

PRODUCING PLURAL SUBTERRANEAN STRATA BY IN SITU COMBUSTION AND FLUID DRIVE

Charles A. Stratton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 4, 1961, Ser. No. 156,620
5 Claims. (Cl. 166—10)



1. A process for producing hydrocarbons from an oil field including a first permeable stratum containing liquid oil of relatively low viscosity and a second permeable stratum containing liquid oil of relatively high viscosity, said first and second strata being separated by an impermeable barrier and penetrated by a pair of wells, which comprises the steps of:

(1) substantially partially depleting the oil from said first stratum by fluid drive to recover oil therefrom and render same more permeable;

(2) igniting the liquid oil along the vertical extent of said second stratum around one of said wells to establish a combustion zone coextensive vertically with stratum;

(3) driving the combustion zone of step (2) thru the second stratum by feeding combustion-supporting gas thereto thru the pores of the permeable stratum so as to sweep a full cross section of the stratum and produce a hot gaseous effluent in one of said wells comprising a substantial proportion of oil and combustion gases;

(4) passing at least a substantial proportion of the hot effluent of step (3) directly from said one well thru the partially depleted stratum of step (1) to the other well to produce additional oil from last said stratum; and

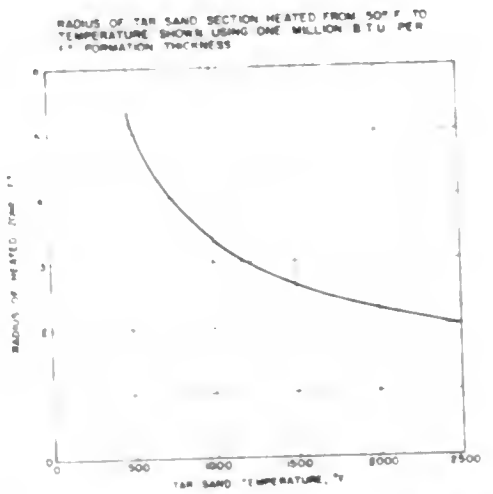
(5) recovering oil produced from both strata from last said other well.

3,163,216

USE OF WATER INJECTION FOR PROMOTING UNIFORM INITIATION OF UNDERGROUND COMBUSTION

Howard Grekel, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Dec. 15, 1961, Ser. No. 159,591
9 Claims. (Cl. 166—11)



2. In a process for conducting combustion in an underground carbonaceous deposit penetrated by a producing well and an injection well,

the improvement which comprises igniting said deposit immediately adjacent one of said wells whereby the temperature in the latter reaches a minimum level of about 1000° to about 1500° F., injecting an oxygen-containing gas into said deposit via said injection well to produce a pressure therein of at least about 260 p.s.i.g.,

injecting water into said one of said wells in an amount corresponding to from about 1 barrel per million B.t.u. of total heat at an initial formation temperature of about 1000° F. to about 2.5 barrels per million B.t.u. of total heat at the maximum temperature generated in said deposit up to the time of ignition,

thereafter effecting combustion in said deposit by introducing a combustion supporting gas down said injection well, and recovering fluid products from one of said wells.

3,163,217
METHOD AND APPARATUS FOR HANGING PIPE IN AN UNDERWATER WELL

John A. Haeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,470
14 Claims. (Cl. 166—14)

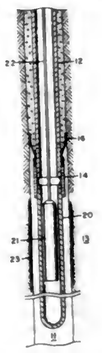


1. A method of installing a pipe section in a well and hanging it from a wellhead assembly, said method comprising the sequential steps of cutting off a pipe string in the well at a point below the landing surface of the wellhead assembly, withdrawing the top cut-off portion of the pipe string, running into the well an auxiliary pipe section, permanently hanging said auxiliary pipe section in said wellhead assembly with the lower portion of the auxiliary pipe section in telescopic relationship with the upper end of the remaining portion of the pipe string in the well, sealing off at a point between the pipe sections between the lower end of the auxiliary pipe section and the top of the pipe string, and anchoring the top of the remaining portion of said pipe string to the lower end of said auxiliary pipe section.

3,163,218
METHOD OF CONSOLIDATING A FORMATION USING A HEATER WITHIN A LINER WHICH IS THEREAFTER DESTROYED

Thomas O. Allen and John E. Ortloff, Tulsa, Okla., and Bertram T. Willman, Union, N.J., assignors to Jersey Production Research Company, a corporation of Delaware

Filed Mar. 14, 1960, Ser. No. 14,905
4 Claims. (Cl. 166—25)



1. A process for consolidating an unconsolidated subterranean formation surrounding a borehole which comprises installing an impermeable liner in said borehole to prevent fluid communication between the borehole and said unconsolidated formation, said liner being at least in part readily fusible at a temperature in excess of a predetermined coking temperature; lowering a wellbore heater into said liner adjacent said formation; heating oil in said formation to said coking temperature by means of said heater until sufficient coke to consolidate said formation in the immediate vicinity of said borehole has been formed; and thereafter increasing the temperature in said borehole by means of said heater to at least partially fuse said liner and thereby restore fluid communication between said borehole and said formation.

2. A process for consolidating an unconsolidated subterranean formation surrounding a borehole which comprises installing an impermeable liner in said borehole to prevent fluid communication between the borehole and said unconsolidated formation, said liner being at least in part readily soluble in a selected chemical reagent; lowering a wellbore heater into said liner adjacent said formation; heating oil in said formation by means of said heater until sufficient coke to consolidate said formation in the immediate vicinity of said borehole has been formed; and thereafter introducing said selected chemical reagent into said borehole in contact with said liner to at least partially dissolve said liner and thereby restore fluid communication between said borehole and said formation.

3,163,219
BORATE-GUM GEL BREAKERS

Reece E. Wyant, Thomas K. Perkins, and Thomas F. Moore, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

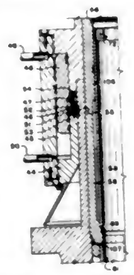
No Drawing. Filed June 22, 1961, Ser. No. 118,778
13 Claims. (Cl. 166—42)

4. A method for fracturing through a well bore a subsurface earth formation comprising preparing a borate-gum, water-base gel, adding thereto a delayed action gel breaker selected from the group consisting of sulfur, calcium sulfate and mixtures thereof in the amount and granular size necessary to break the gel after a predetermined time delay thereby forming a mixture of gel and gel breaker, injecting said mixture of gel and gel breaker into said well bore and applying sufficient pressure to said mixture to open a fracture in said earth formation and forcing said mixture into said fracture.

3,163,220
UNDERWATER WELL DRILLING APPARATUS AND METHOD

John A. Haeber and Lloyd G. Otteman, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 105,970
7 Claims. (Cl. 166—46)



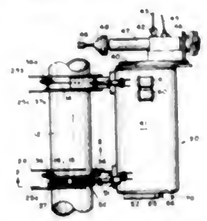
1. A drilling wellhead comprising a large-diameter well casing, a casinghead having a vertical bore therethrough

and being secured to the upper end of said large-diameter well casing, casing landing shoulder means formed on the inside wall of said casinghead, the vertical bore through said casinghead being unobstructed vertically above shoulder means, seating means formed on the inner wall of said casinghead, a tubular wear sleeve removably positioned within the casinghead bore, said wear sleeve being of a vertical length sufficient to be positioned adjacent the shoulder means of said casinghead when the sleeve is in its seated position on said seating means, and cooperating anti-rotation means carried by adjacent portions of said wear sleeve and said casinghead for engagement when the wear sleeve is seated in the casinghead, said anti-rotation means carried by said wear sleeve being fixedly secured thereto and withdrawable therewith on axial movement of said wear sleeve out of said casinghead

3,163,221
UNDERWATER MANIPULATOR FOR WELLS

Howard L. Shatto, Jr., Palos Verdes, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 3, 1961, Ser. No. 80,275
8 Claims. (Cl. 166—66.5)

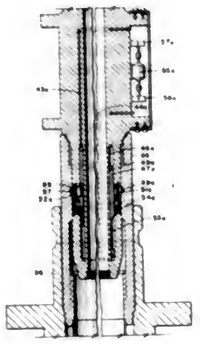


1. An underwater wellhead comprising a string of pipe extending into the formation underlying a body of water, the top of said pipe being above the formation and below the surface of the water, horizontally-positioned support track means carried outwardly on said pipe near but below the top thereof, and a gear drive ring secured to the outer surface of said pipe string and extending thereabout.

3,163,222
WELLHEAD APPARATUS

Kenneth W. Foster and John A. Haeber, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 105,068
6 Claims. (Cl. 166—66.5)

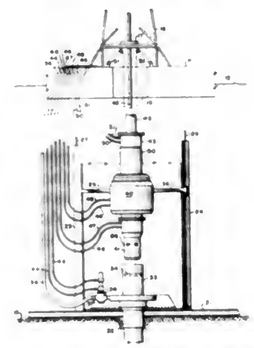


4. An underwater wellhead assembly mounted on a well casing extending downwardly into an earth formation covered by a body of water said wellhead assembly including a wellhead connector device having a housing removably secured to said assembly, chamber means in said housing, substantially fluidtight movable barrier means mounted in said chamber means, movable means carried by said housing and operatively-engaging said movable barrier means, pressure-fluid conduits through said housing to opposite sides of said movable barrier means, each of said conduits being in communication with the discharge port of one of a pair of pumps mounted on said housing, reversible electric motor means having a shaft connected to said two pumps and mounted on said housing adjacent said pumps, a pressure-fluid reservoir mounted on said housing, supply conduit means in communication between said reservoir and intake ports of said pumps, flow control valve means in said conduit means between said pumps and said movable barrier means and said reservoir, said valve means being arranged to put selectively one pump and the reservoir in communication with the conduits to opposite sides of the movable barrier means and then the other pump and the reservoir in communication with opposite and different sides of said movable barrier means, check valves in said conduits from said pumps, hydraulically-operated valve actuator means in pressure communication with both of said pumps and being operatively connected to said flow control valve means, power leads to said motor means extending to above the surface of the body of water, and reversing switching means in said power leads at a point above said body of water.

3,163,223
WELLHEAD CONNECTOR

Richard J. Bauer, Westport, Conn., John A. Haeber and Lloyd G. Otteman, Houston, Tex., and Raymond F. Perner, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

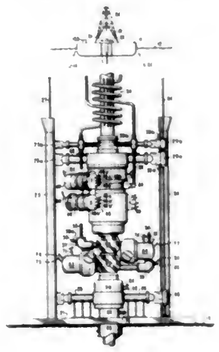
Filed July 26, 1961, Ser. No. 127,054
4 Claims. (Cl. 166—66.5)



1. An apparatus for facilitating underwater wellhead operations which in assembly compirses a vertically projecting tubular well member, a blowout preventer adapted to be mounted on the upper end of said tubular well member, a blowout preventer lock-down apparatus secured to at least one end of said blowout preventer coaxial therewith, said lock-down apparatus comprising a cylindrical body member having an axial bore therethrough and being of a size to fit into the open upper end of said vertically projecting tubular well member, outwardly extending shoulder means formed on the outside of said body member, said shoulder means having a diameter greater than that of at least a portion of the bore of said tubular well member in which it fits, locking means movably carried by said body member and being bodily

movable outwardly thereof so that a portion of said locking means projects beyond the surface of said body member toward and into contact with seating groove means in the inner surface of said well member, annular seal means carried outwardly on said body member adapted to form a fluidtight seal with a surrounding well member, and actuating means carried by said body member for operatively engaging said locking means, said actuating means being movable with respect to said body member in response to fluid pressure application thereto to move said locking means outwardly of said body member into locking position with a surrounding well member thereby preventing separation of said body member and said well member, said apparatus containing pressure fluid port means in fluid communication on one end with the actuating means in said body member with the other end extending through the wall of said body member and adapted to communicate with a source of pressure fluid.

3,163,224
UNDERWATER WELL DRILLING APPARATUS
John A. Haeber and Kenneth W. Foster, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,112
3 Claims. (Cl. 166—66.5)



1. Underwater well driving apparatus comprising a drilling vessel on the surface of the water, an underwater well assembly secured to the ocean floor and having upwardly-extending tubular member, and an underwater drilling and work-over assembly having a vertical bore therethrough and adapted to be mounted on said upwardly-extending tubular member of said underwater well assembly, said drilling and work-over assembly comprising

a marine conductor equipped at its lower end with a wellhead connector device having a vertical bore therethrough and having hydraulically-actuatable latching means, said connector device being of a size to fit with a tubular member of said well assembly,

blowout preventer means having hydraulically-actuatable rams and being fixedly mounted above said wellhead connector device and having a bore therethrough in axial alignment with the bore of said connector device,

electro-hydraulic operator means carried by said drilling and workover assembly and operatively connected to said rams of said blowout preventer means and said latching means of said wellhead connector device,

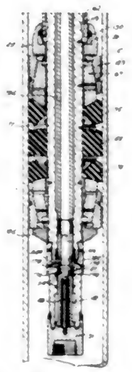
current-transmitting cable means connected to said electrically-actuated operator means and extending upwardly to a vessel at the surface of the water,

circuit means on said vessel and connected to said cable means for selectively actuating said operator means,

manifold means mounted on the outside of said underwater drilling and workover assembly, and

hydraulic-fluid conduit means connecting each of said operator means to said manifold means.

3,163,225
WELL PACKERS
Lee E. Perkins, Lafayette, La., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 15, 1961, Ser. No. 89,438
14 Claims. (Cl. 166—123)



1. A packer including: a mandrel; anchoring and sealing means carried by said mandrel and movable to expanded positions to anchor the packer in a flow conductor and seal between the mandrel and the flow conductor, said mandrel having a longitudinal flow passage therein closed at its lower end and a port providing communication between the flow passage and the exterior of the mandrel below said anchoring and sealing means; elongate cylindrical valve means in said flow passage of said mandrel for closing said port movable between a lower open position and an upper closed position; internal annular seal means carried in the bore of the mandrel above and below said port means for sealing between the external cylindrical surface of said valve means and said mandrel; said cylindrical means being movable longitudinally in said seal means; means biasing said valve towards said upper closed position, said valve means having means providing fluid communication from the flow passage above said seal means and said valve means to below said seal means whereby fluid pressure in the flow passage of the mandrel above the valve means may be conducted through the valve means to opposite ends thereof above and below the internal seal means in the mandrel so that the forces of the fluid pressure in the flow passage acting on the valve means are equalized and do not tend to move said valve means from said upper closed position to said lower open position; and internal seal means mounted in the longitudinal flow passage of said mandrel spaced longitudinally above the upper seal means adjacent said port means.

3,163,226
SAND REMOVAL FROM WELLS
Edward B. Lagucki, Jackson, Miss., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 14, 1960, Ser. No. 69,189
2 Claims. (Cl. 166—155)

1. A sand removal well tool adapted to be pumped down a small-diameter pipe string within a well, said

string of pipe having a lower open end and stop means positioned therein to prevent the passage of a well tool therethrough, said well tool comprising a body member having an axial bore therethrough, said body member being of a diameter small enough to pass through the small-diameter pipe string in the well and be stopped by said stop means of said pipe string, a pumpable tool carrier adapted to be connected and disconnected to the top of said body member by applying pressure fluid pumped through said pipe string, longitudinal fluid passage means through said tool carrier in communication with the axial



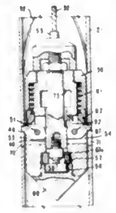
bore of said body member, unidirectional valve means in said passage means preventing fluid from being pumped upwardly through the tool carrier as it is being pumped upwardly out of the well, first retractable latching means carried by said tool carrier for connecting to said body member near the top thereof, second retractable latching means carried by said body member for connecting to the pipe string near the lower end, an elongated section of flexible hose secured to the lower end of said body member and in fluid communication with the axial bore thereof, and valve means secured to and normally closing the lower end of said hose during pumping-in operations.

3,163,227
WELL PERFORATION CLEANING TOOL
Verdie H. Caldwell, 1004 Woodrow Ave., Oildale, Calif.
Filed Sept. 11, 1961, Ser. No. 137,123
4 Claims. (Cl. 166—162)



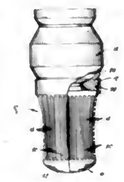
1. A tool for cleaning perforations in a well liner and including, an elongate body for insertion into and through said well liner, and perforation cleaning means comprising a belly spring anchored to the body and a star shaped wheel carried on a pin by said spring and having points to enter into the perforations, said spring comprising inner and outer leaves anchored at the ends of the spring and in flat adjacent engagement throughout their lengths and each slotted to pass the wheel, and one leaf with a bearing opposed to the other leaf in order to support and position the pin carrying the wheel.

3,163,228
CABLE LATCHING DEVICE
William J. Hayes, Torrance, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,430
3 Claims. (Cl. 166—214)



1. Apparatus for latching a cable to a base element having latching shoulder means formed thereon, said apparatus comprising a body member having lateral recesses therein, latching means carried by said body member in said recesses and mounted for lateral extension therefrom, actuating means carried by said body member and in engagement with said latching means for moving said latching means to an operative position, a mandrel longitudinally mounted in said body member adjacent said latching means with one end of said mandrel extending outside said body member, a portion of said mandrel forming a blocking surface normally bearing against said latching means when said latching means are in extended or latching position, said latching means being retractable into said recesses when said blocking surfaces are out of contact with said latching means, means for securing a cable to the end of said mandrel extending outside said body member, said mandrel having a shearable portion reduced in size to shear under a load less than the shear strength of a cable attached to the mandrel, said shearable portion permitting movement of said mandrel on parting of said shearable mandrel portion to a position where the blocking surface thereof is withdrawn from its normal position adjacent said latching means, and means normally fixedly securing the other end of said mandrel to said body member.

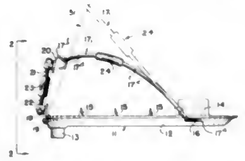
3,163,229
PLASTIC SCREEN FOR WATER WELL FOOT VALVES
Clifford A. Salisbury, Box 716, Tonkawa, Okla.
Filed June 25, 1962, Ser. No. 204,782
6 Claims. (Cl. 166—234)



1. A screen for a foot valve having a tubular body with a fluid passageway therethrough, the screen comprising a generally cup shaped, axially collapsible body of

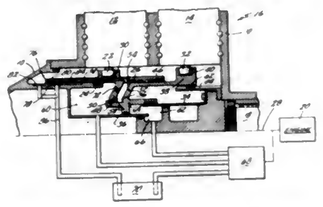
resilient plastic material having an annular rim portion sized to fit tightly over the end of the tubular body; a plurality of flexible ribs connected at one of the ends thereof to the rim portion, the unflexed ribs extending in a generally parallel relationship and being spaced apart to form elongated slots between adjacent ribs, and a circular, convexly curved cap portion connected to the other of the ends of the ribs, the ribs being connected to the periphery of the cap portion.

3,163,230
HORSE SHOE
Jens Juul Christensen, 350 Grand Blvd., Bedford, Ohio
Filed Jan. 25, 1962, Ser. No. 168,630
8 Claims. (Cl. 168—22)



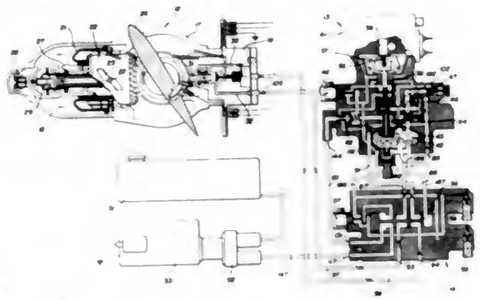
5. A shoe for a horse's hoof comprising the combination of a base plate adapted to engage and support the base of the hoof, a resiliently yieldable loop member of relatively non-elongatable spring material formed in a U-shape and biased to assume a relatively flat plane of the said U upon the ends of the loop member being secured to spaced rearward portions of the base plate, anchoring means anchoring the opposite ends of the loop member to the said rearward portions of the base plate, and securing means for securing the bight of the loop member to the forward portion of said base plate to flex the loop over the sloping side wall of the hoof on opposite sides thereof, said loop member being dimensioned to engage the sloping side above the base of the hoof at locations intermediate the bight and the ends of the loop member, the engaged side wall at said locations providing fulcrum support for the loop member, the resiliency of the loop member biased toward said flat plane and the fulcrum support at said locations urging the said base plate at said forward portion and said spaced rearward portions thereof against the base of said hoof.

3,163,231
TWO-PART PITCH CHANGING MECHANISM
Philip E. Barnes, North Granby, and Seppo J. Vlikinsalo, Thompsonville, Conn., and Richard B. Pitbladdo, Horseheads, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,641
23 Claims. (Cl. 170—135.24)



1. In combination with a propeller having two axially spaced blade parts mounted in the same hub, a first hydraulically actuated piston, pitch changing mechanism connecting said piston with one of said parts, a second hydraulically actuated piston, pitch changing mechanism connecting said second piston with the other blade part, a cylinder in said first piston receiving said second piston, stops limiting movement of said second piston in said cylinder, and valve mechanism controlled by said first piston, controlling hydraulic fluid in said cylinder.

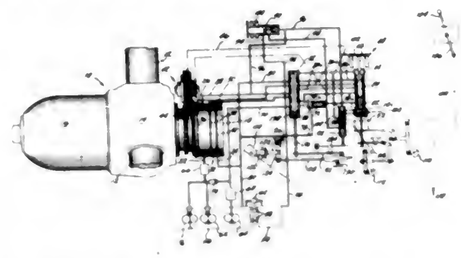
3,163,232
HYDRAULIC PROPELLER SYSTEM
Eugene L. Grindle, San Mateo, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 18, 1957, Ser. No. 672,630
4 Claims. (Cl. 170—160.2)



1. In a hydraulic propeller system, a variable pitch propeller having hydraulic operating means for adjusting the pitch of the blades of the propeller, a hydraulic governor having a body having a lower section and an upper section valving in the said upper section, said valving serving to control the application of hydraulic fluid to said operating means, said governor having flyweights being located in said upper section and being adjustable to adjust the speed of rotation of the propeller by conditioning of said valving, a first and second source of hydraulic fluid under pressure, means for applying fluid from said first source to condition said valving to cause the application of fluid from said first source to said operating means to effect feathering of the propeller, and additional means in said lower section for effecting feathering of the propeller independently of conditioning of the valving, said last named means comprising fluid passage means in said lower section connected to said operating means, a shuttle valve slidably mounted in a bore formed in said lower section for axial movement between first and second positions to control fluid flow through said fluid passage means, means yieldably urging said shuttle valve to its first position, means for applying fluid from said source to said shuttle valve to move said shuttle valve from its first to its second position against the force of the yieldable means, additional fluid passage means in said lower section connected to second source of fluid under pressure, said shuttle valve in said second position permitting intercommunication between said first named fluid passage and said additional fluid passage to cause the application of fluid from said second source to said operating means to effect feathering of the propeller.

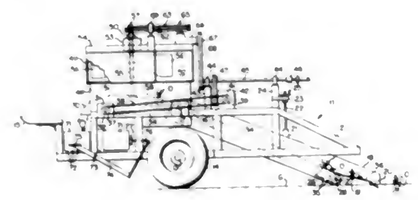
3,163,233
AERONAUTICAL PROPELLER HAVING SAFETY MEANS FOR PROPELLER FEATHERING
Raymond P. Lambeck, St. Petersburg, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 29, 1956, Ser. No. 625,045
9 Claims. (Cl. 170—160.31)

1. In an aeronautical propeller of the type having a pitch changing mechanism which is operable in response to fluid pressure to effect a blade angle change through high pitch into a feathered position, the combination comprising a source of fluid under pressure, an inlet conduit connected with the pitch changing mechanism, feather control means connected between the source and the conduit including a feathering valve movable to one position to effect direct communication therebetween at said feathering valve and also including a valve actuating chamber, mechanical valve moving mechanism connected with the valve and normally operable to move the same to the said



one position, and safety means for moving the feathering valve to its said one position in the event the mechanical mechanism cannot do so, said safety means comprising conduit means interconnecting said source and the valve actuating chamber and a normally closed actuating valve disposed in the conduit means, means for connecting the actuating valve with the mechanical valve moving mechanism and said actuating valve being operable thereby to open said conduit means whereby to introduce fluid under pressure to the actuating chamber to urge the feathering valve to its said one position.

3,163,234
ONION HARVESTER
Emanuel F. Boyer, Barre Center, N.Y.
(R.D. 2, Albion, N.Y.)
Filed Aug. 14, 1963, Ser. No. 302,163
2 Claims. (Cl. 171—17)



1. A machine for harvesting and topping onions, comprising

(*a*) a carriage adapted to be advanced along a row of onions,

(*b*) a housing mounted on said carriage adjacent the rear thereof,

(*c*) a tool mounted on said carriage adjacent the forward end thereof for uprooting onions during the advance of the carriage,

(*d*) a conveyor extending rearwardly from said tool and through said housing to transport uprooted onions rearwardly from said tool to a discharge point at the rear of said carriage,

(*e*) a suction fan for creating a vacuum in said housing above said conveyor to draw air upwardly through said conveyor and into an opening in the bottom of said housing,

(*f*) said fan comprising a rotary, hollow fan shaft rotatably mounted at its upper end in the top of said housing, and having a plurality of fan blades projecting radially therefrom adjacent its lower end,

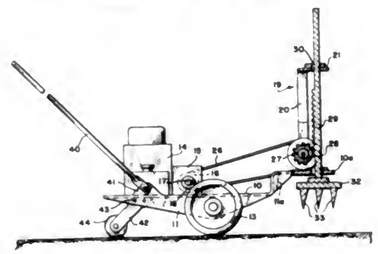
(*g*) a second rotary shaft rotatably mounted adjacent its upper end in the top of said housing and extending through the bore of said fan shaft to rotate therein,

(*h*) a cutter blade secured intermediate its ends to the lower end of said second shaft to rotate therewith in said housing beneath said fan and above said conveyor and,

(*i*) means for simultaneously rotating said fan shaft and said second shaft at different speeds, respectively whereby the air drawn upwardly by said fan causes the tops of the onions on said conveyor to be lifted into engagement with said cutter blade to be severed thereby,

(*j*) said housing having in one side thereof an exhaust port through which the severed tops of said onions are discharged by force of said fan.

3,163,235
SOD SPIKING MACHINE
John C. Ray, 1302 Lafayette Bldg., Detroit 26, Mich.
Filed Oct. 30, 1962, Ser. No. 234,101
2 Claims. (Cl. 172—21)



1. In a sod spiking machine in combination:

(*a*) a wheeled platform,

(*b*) a vertically moveable rack having teeth at one end of said platform,

(*c*) a horizontal member secured to the lower end of the rack, the member being equipped with a plurality of spikes extending downwardly therefrom,

(*d*) a horizontal shaft adjoining the rack, said shaft being mounted on the platform for rotation about its axis,

(*e*) a gear wheel axially mounted on the shaft for rotation therewith, said wheel being devoid of teeth along a portion of its periphery but being adapted in the course of its rotation to mesh its teeth with those of said rack,

(*f*) a horizontal frame spaced from and supported by said platform, said platform having an aperture therethrough for slidably receiving and guiding said rack,

(*g*) spring retaining rod means mounted on said platform and extending upwardly to said horizontal frame,

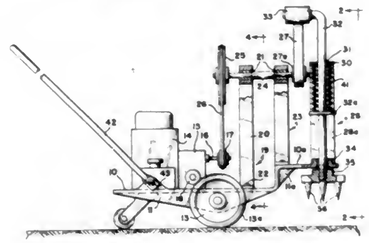
(*h*) spring compression means on said rack intermediate the ends thereof, said spring compression means being slideable on said rod means,

(*i*) primary spring means on said rod means above said spring compression means and adapted to be compressed thereby against said horizontal frame in response to upward movement of said rack, said spring means serving to thrust the rack downwardly on its disengagement with the teeth of the gear wheel to force said spikes into the sod,

(*j*) secondary spring means on said rod means below said spring compression means and adapted to be compressed thereby against said platform in response to the final stage of the downward movement of said rack, said secondary spring means serving to impart, on recoil, sufficient upward movement of the rack to disengage said spikes from the sod, and

(*k*) means to drive the horizontal shaft.

3,163,236
SOIL SPIKING MACHINE
John C. Ray, 1302 Lafayette Bldg., Detroit, Mich.
Filed Oct. 30, 1962, Ser. No. 234,104
2 Claims. (Cl. 172—21)



1. In a soil spiking machine in combination:

(*a*) a horizontal platform supported by ground wheels,

(*b*) a horizontal shaft mounted for rotation upon the platform above the level thereof.

(*c*) a cam axially secured to said shaft for rotation therewith, a part of the periphery of the cam being defined by an approximately radial line extending from a point at its extreme radius to the hub of said cam,

(*d*) a vertically disposed rod adjoining said cam and including an extension at the top thereof disposed at right angles to the plane of rotation of said cam, said extension having a roller thereon for engagement from above with the edge face of said cam,

(*e*) a stationary standard on the platform extending upwardly therefrom including a horizontal cross member having an aperture therein,

(*f*) a bearing within said platform in vertical alignment with said aperture to permit movement of said rod through said aperture and through said bearing,

(*g*) a horizontal member secured to the lower end of said rod, said member being equipped with a plurality of soil spikes extending downwardly therefrom,

(*h*) primary coil spring means surrounding said rod and having one end thereof bearing against said cross member,

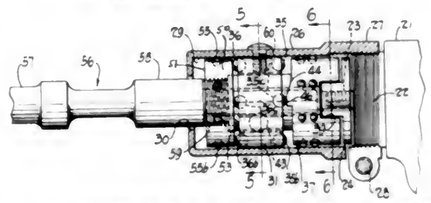
(*i*) spring compression means fixedly mounted on said rod in contact with the other end of said spring means and adapted to compress said spring means in response to upward movement of said rod, said primary spring means serving to thrust the rack downwardly when the radial line of the cam passes under said roller to force said spikes into the soil,

(*j*) secondary spring means supported on said platform,

(*k*) secondary spring compression means extending upwardly from the horizontal elongated member and adapted to compress the secondary spring means upon downward movement of said rod, said secondary spring means being of sufficient size and resilience to impart, on recoil, sufficient upward movement of said rod to disengage said spikes from the soil, and

(*l*) means to drive the cam to rotate the same about the axis of said shaft.

3,163,237
IMPACT DRILL
Charles Fulop, 131 Skyview Drive, Seven Hills Village, Ohio
Filed Oct. 21, 1963, Ser. No. 317,577
6 Claims. (Cl. 173—109)



1. In combination with a drill bit of the type having a cylindrical shoulder abutting a shank, of smaller diameter than the shoulder, and of non-circular cross-section, a rotary hammer device, comprising, a housing having a bore therethrough; a cylindrical bearing block immovably mounted within the housing bore, intermediate the ends thereof, the block having annular end faces and an axial bore therethrough; a two headed plunger mounted in the housing for rotary and axial movement, the plunger having a cylindrical hammer head at its forward end and a cylindrical clutch head at its rear end, spaced apart a distance greater than the width of the bearing block and joined through a shaft portion of reduced diameter, journaled in the bearing block, with the heads positioned on opposite sides thereof; each of the heads having an annular cam surface faced toward the adjacent bearing block annular end face, the plunger also having an axial bore therethrough adapted to receive and hold the non-circular drill shank in freely slidable but non-rotatable engagement; slidable coupling means on the clutch head for connecting the plunger to a rotary driving member mounted on the housing and held against axial movement; the hammer head having an annular striker face at the forward end thereof surrounding the plunger bore, and adapted to seat against the cylindrical shoulder of the drill shank positioned in the plunger bore; co-operating cam means on said plunger and bearing block for imparting reciprocating axial movement to the plunger when the plunger is rotated in the housing, said co-operating cam means comprising a plurality of circularly arranged stationary camming portions on both annular end faces of the bearing block and a plurality of co-operating circularly arranged camming portions on the hammer and clutch head surfaces faced toward their respective bearing block end faces, the camming portions on the hammer head being displaced circumferentially relative to those on the clutch head, whereby, upon rotation, the plunger hammer head is moved axially between a first, retracted position wherein the hammer head is proximate the bearing block when the camming surfaces on the clutch head and bearing block are engaged, and a second, advanced, position wherein the hammer head is spaced forwardly of and away from the bearing block, when the camming surfaces on the hammer head and bearing block are engaged, to impact freely against the drill bit collar.

3,163,238
UNDERWATER WELL DRILLING METHOD AND APPARATUS
Raymond A. Malott, Fullerton, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,938
10 Claims. (Cl. 175—5)

1. A method of drilling an underwater well from a vessel on the surface of a body of water, said method comprising

(*a*) lowering from the vessel into contact with the formation beneath the body of water a drill string including a bit on the lower end thereof with a vertical opening therein,

(*b*) forming a hole in said formation with said drill string,

(*c*) lowering rod means through said drill string of a size to pass out the lower end thereof and out the opening in the bit with the exception of the upper end of the rod means being of a size to hang up on the lower end of the drill string, and

(*d*) withdrawing the drill string and bit from the drilled hole and back to the vessel while at least the lower end of the rod means is contained in the hole.

7. Apparatus for drilling an underwater well from a floating vessel, said apparatus comprising,

(*a*) a drilling vessel floating on the surface of a body of water,



(*b*) means positioning said vessel in a relatively fixed manner,

(*c*) a pipe string extending downwardly from said vessel,

(*d*) a drill bit at the lower end of said pipe string for drilling a hole in the earth formation below said body of water, said bit having a vertical opening therethrough,

(*e*) elongated rod means adapted to be positioned in said pipe string, the lower end and major length of said rod means having cross-sectional measurements less than that of the opening in the bit so as to fall therethrough, the length of the rod means extendible downwardly through the bit being greater than the depth of water in which the vessel is positioned, and

(*f*) stop means carried near the upper end of the rod means, said stop means being wider than the vertical opening in the bit.

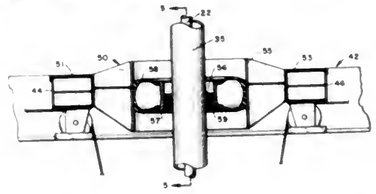
3,163,239
MARINE CONDUCTOR AND PIPE SUPPORT FOR DRILLING UNDERWATER WELLS
Douwe de Vries and Ronald L. Geer, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,692
5 Claims. (Cl. 175—7)

1. Apparatus for providing horizontal support to a non-vertical section of drill pipe extending from a floating drilling base at the surface of a body of water and through a wellhead assembly positioned below the surface of said body of water, said apparatus comprising

a wellhead assembly positioned below a body of water and anchored to the floor of said body of water,

a floating drilling base at the surface of the body of water normally positioned over said wellhead assembly, said base having a vertical opening through at least a portion thereof,

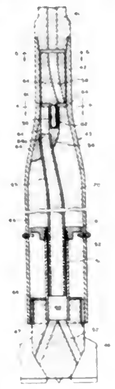
a drill pipe string depending from said floating drilling base and extending downwardly through said vertical opening in said base and through said water and said wellhead assembly,



a marine conductor pipe surrounding said drill pipe string and secured at the lower end to said wellhead assembly and extending upwardly to the drilling base, the upper end of the conductor pipe being arranged for limited movement relative to said drilling base in the vertical opening thereof, and

resilient horizontal displacement pipe support means carried by said marine conductor pipe on the outer surface thereof and near the upper end thereof within the vertical opening of said floating drilling base and in engagement at all times during operations with at least a portion of the drilling base forming the vertical opening thereof.

3,163,240
SONIC EARTH BORING DRILL WITH ELASTIC FLUID RESONATOR
Albert G. Bodine, Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Sept. 21, 1960, Ser. No. 57,520
16 Claims. (Cl. 175—56)

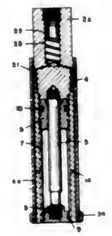


11. In a sonic drill, the combination: a chamber constructed and arranged so as to contain an elastic fluid body having a resonant oscillation frequency and separated oscillation regions, one comprising a flow passage of predominantly velocity oscillation and one comprising a cavity of predominantly pressure oscillation, a source of pressure fluid coupled to said chamber, fluid flow directing means operable at said resonant frequency for intermittently directing fluid from said source of pressure fluid to said velocity oscillation region of said fluid body, whereby to subject said velocity oscillation region of said fluid body to intermittent fluid pulses, and a vibratory bit acoustically coupled to said pressure oscillation region of said fluid body and arranged so as to vibrate in response thereto.

3,163,241
CORE SAMPLE TAKING

Edwin E. Daigle and Jacob C. Richardson, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 20, 1961, Ser. No. 160,876
1 Claim. (Cl. 175—237)

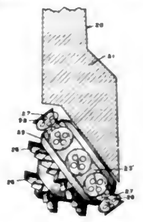


In an apparatus for taking earth cores at the bottom of a well by downward-driving hydraulic means, a tubular main casing having a closed upper end, a movable piston slidably mounted within said main casing, a tubular core barrel secured to and extending downwardly from said piston and extendible below the lower end of said main casing, a vertical shaft having an axial passageway therein and attached fixedly at one end within said main casing to the closed upper end thereof, a fixed piston secured to the other end of said vertical shaft within said main casing in sealing engagement with the inner wall of the tubular core barrel, an outer casing concentrically mounted in fixed radially-spaced relationship with said main casing and secured thereto whereby an annular downwardly-directed fluid flow channel is formed between said main and outer casings, said closed upper end of said main casing having therethrough in communication between the space above the main casing first fluid passageway means in communication with the annular flow channel between said casings and second fluid passageway means in communication with the interior of the main casing above said movable piston and third fluid passageway means in communication through said axial passageway in said vertical shaft with the space between said fixed and movable pistons, and valve means carried in said first and second fluid passageways for selectively closing one of said passageways.

3,163,242
DRILL BIT

John W. Graham and Leon H. Robinson, Jr., Houston, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Original application May 13, 1959, Ser. No. 812,864, now Patent No. 3,078,934, dated Feb. 26, 1963. Divided and this application May 25, 1962, Ser. No. 197,674
6 Claims. (Cl. 175—331)

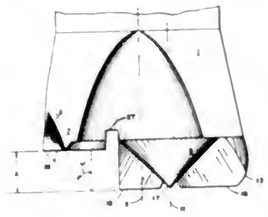


1. A drill bit for drilling a well which comprises a body member, at least one drilling member carried on the free end of said body member for contacting an earth formation, said drilling member extending outwardly from said body member and being formed to provide a plurality of obstruction-free, open-ended passageways which extend through at least a portion of said drilling member, the drilling member being formed for contacting said earth formation simultaneously under sufficient confining pressure at a plurality of points peripherally of the lower end of a plurality of said passageways in drilling of said well, with the upper end of each of said passageways discharging into said well free of contact with said earth formation whereby a portion of said earth formation is extruded into and passes through said plurality of passageways simultaneously in contact with said earth formation.

3,163,243
UNDERDRILLING BIT

James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1960, Ser. No. 79,739
7 Claims. (Cl. 175—389)

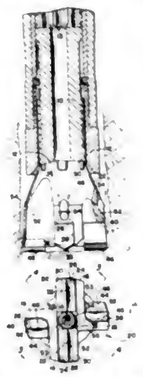


1. An improved rotary percussion bit for drilling boreholes in the earth comprising a main bit body, rotary pilot drilling means on the bottom of said bit body whose cross section is smaller than said bit body, whose central axis is offset from the central axis of said bit body and which terminates in a generally flat, horizontal surface, a noncutting surface formed on the lower end at the side of said rotary pilot drilling means furthest from said axis of said bit body, said noncutting surface sloping inwardly toward the axis of the bit body and forwardly with respect to the direction of penetration of said bit and adapted to force said rotary pilot drilling means inwardly toward said axis of said bit body, at least one first rotary percussive cutting means located on that half of said pilot drilling means nearest the central axis of said bit body extending from adjacent the axis of said pilot means to the inner edge of the said pilot means and adapted to cut a cylindrical pilot hole with substantially vertical sides whose circumference accommodates the outer most extension of said noncutting surface when said axis of said rotary pilot drilling means coincides with the central axis of said borehole, at least one second rotary percussive cutting means located on that half of said pilot drilling means furthest from the central axis of said bit body, third rotary percussive cutting means on the bottom surface of said bit body above said rotary pilot drilling means and having at least one cutting edge adapted to cut an annular section of the earth immediately surrounding said pilot hole and trailing said pilot hole with respect to the direction of penetration of said bit, and said first and second percussive cutting means on said pilot drilling means leads said third percussive cutting means on said main bit body by a distance between 0.15 and 1.25 times the maximum width of said bit body.

3,163,244
ROCK DRILL BIT HAVING NON-ALIGNED CUTTING MEMBERS

Robert D. Zimmerman, Andover, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed May 19, 1961, Ser. No. 111,315
5 Claims. (Cl. 175—398)

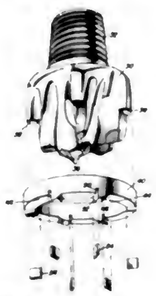


1. A rock drill bit comprising a body portion, a plurality of wings extending axially and laterally therefrom, each wing having an open groove formed in its end and having a bottoming face and a single side face, one pair of said wings being arranged with their grooves in alignment with each other and the other pair of said wings being arranged with their grooves off-set and parallel with respect to each other and perpendicular to the first said pair of wings, and a hard metal insert secured in each such groove, each insert having a cutting edge forwardly extending with respect to the body portion and an exposed lateral end and a bare side face, the inserts in said aligned grooves being longer than the inserts in said off-set grooves.

3,163,245
INSERT TYPE DRILL BIT

Raymond D. York, San Angelo, Tex., assignor to Walton Hale, El Paso, Tex.

Filed Sept. 12, 1961, Ser. No. 137,659
6 Claims. (Cl. 175—408)

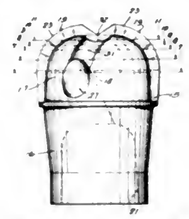


1. A drill bit construction comprising a drill body having a lower end provided with a plurality of axially and radially extending wings with pilot teeth projecting downwardly therefrom, peripherally extending shoulder means on said wings surrounding and recessed into the radially outward portions of said wings, said shoulder means including planar horizontal and depending vertical convex surfaces, annular means comprising a ring having flat top and bottom surfaces and cylindrical outer and inner surfaces, said ring top and inner surfaces being respectively seated upon and secured to said shoulder means horizontal and vertical surfaces, said ring inner surface being spaced from some of said pilot teeth and thereby providing fluid flow passages between said ring and said body, insert elements comprising drill teeth secured to and projecting downwardly from said ring bottom surface.

3,163,246
ROCK DRILL BIT

Milton Vagins, Worthington, and Ralph Simon, Columbus, Ohio, assignors, by mesne assignments, to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Apr. 18, 1963, Ser. No. 273,930
6 Claims. (Cl. 175—410)

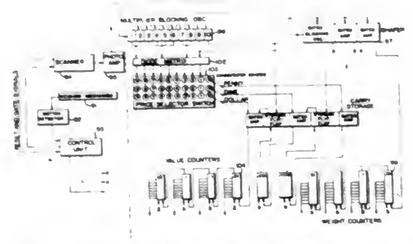


6. A rotary-percussion rock drill bit comprising a unitary body having a shank portion terminating at one end in a hemispheroidal head provided with a groove diametrically traversing the head from the apex thereof to the region of its greatest circumference in a plane lying parallel with the bit axis, and a pair of end-abutting cutting elements formed of a material possessing high impact strength secured within said groove and having impact portions extending from the groove to provide oppositely directed wings having outer cutting edges and each curved in the plane which includes the axis of the bit so as to follow the contour of the head, the abutting ends of said cutting elements being tapered toward each other and toward the apex of said head to provide a transverse recess.

3,163,247
CONDITION RESPONSIVE APPARATUS

Robert E. Bell and Donald B. Kendall, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio

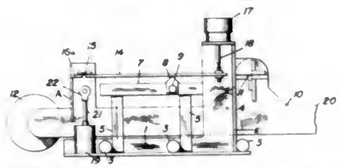
Filed Feb. 28, 1961, Ser. No. 92,233
5 Claims. (Cl. 177—3)



1. In a system for weighing, computing and printing a record of the weight and value of each of a plurality of successively weighted loads, the combination of a scale including a weighing mechanism adapted to be deflected away from a zero reference position in proportion to the weight of a load applied to the scale to a balance

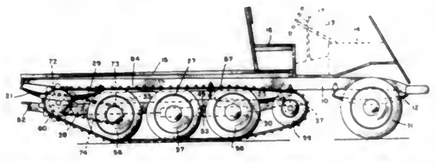
position corresponding to said load; computer means for computing and storing the value of each weighed load; means for measuring said deflection and transmitting said measurement to said computer; means responsive to the establishment of said balance position for initiating the operation of said measuring and transmitting means; readout means for storing said value from said computer storage including printing means for printing a record of said value; and circuit means responsive to the printing of a record operative to actuate indicating means until said printed record is taken.

3,163,248
WEIGHING MACHINE
John Churchill Farquhar, Felixstowe, Suffolk, England, assignor to Fisons Fertilizers Limited, Felixstowe, Suffolk, England, a British company
Filed Jan. 27, 1961, Ser. No. 85,396
Claims priority, application Great Britain, Jan. 28, 1960, 3,038/60
7 Claims. (Cl. 177—132)



1. A weighing machine adapted to measure continuously the load on a given length of conveyor belt, said machine comprising a supporting structure, a fulcrum attached to said supporting structure, a flexible lever pivoted about said fulcrum, a transducer on said supporting structure, means extending between the presure transducer and one end of said flexible lever and contacted at all times by said one end, a pivot attached to said supporting structure, a main frame balanced about said pivot, a hinge connecting the other end of said flexible lever to said main frame, a dashpot connected between said main frame and said supporting structure and an idler roller mounted on one end of said main frame, said idler roller being adapted to bear against the underside of said conveyor belt and said dashpot and said idler roller being on the same side of the pivot as the hinge between the flexible lever and the main frame.

3,163,249
DETACHABLE POWERED ENDLESS-TREAD UNIT FOR VEHICLES
Michael Ledohowski, Poplarfield, Manitoba, Canada
Filed Oct. 15, 1962, Ser. No. 230,612
4 Claims. (Cl. 180—9.2)



1. In combination with a vehicle chassis, having a pair of front steerable wheels; an operating unit therefor, comprising: a framework underlying the rear portion of said chassis; spring means between each end of said framework and said chassis for resiliently supporting said chassis therefrom; a pair of balancing bars, each centrally and pivotally mounted on one side of said framework; four ground wheels, each rotatably supporting one of the ends of said balancing bars; a pair of further ground wheels rotatably supporting said framework, one on each side thereof, and in spaced tandem relation behind said first mentioned ground wheels; a pair of elevated idler wheels, each mounted for adjustable end-sliding movement on one of the front corners of said framework; a pair of sprockets, each rotatably mounted on a side of said framework, adjacent one of the rear corners thereof; said idler wheels and said sprockets in alignment with said ground wheels, on each side of said framework; a movable tread encircling said wheels and sprocket on each side of said framework; said treads each comprising a pair of spaced endless belts which straddle their respective wheels and sprocket, with cross bars connecting said belt-pairs at spaced intervals therealong to form racks for meshing with said sprockets and provide tracks for said ground wheels to travel on; means for locking said idler wheels in tread-tightened positions on said framework; and means on said chassis for driving said sprockets through a differential transmission.

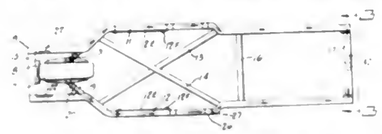
3,163,250
NARROW AISLE MATERIAL HANDLING TRUCK
Christian D. Gibson, Greene, N.Y., assignor to The Raymond Corporation, Greene, N.Y., a corporation of New York
Filed June 9, 1960, Ser. No. 34,982
6 Claims. (Cl. 180—43)



1. A power-driven steerable materials-handling truck, comprising, in combination: a base frame; a pair of front supporting wheels; a pair of rear steering and driving motor wheel assemblies each located at an opposite rear corner of said frame; and an operator platform adapted to accommodate a standing operator located above one of said motor wheel assemblies, each of said motor wheel assemblies comprising a frame including a hollow vertical stem portion journalled in bearings at its upper end for rotation about a vertical axis to steer said drive wheel, a mounting plate portion offset therefrom in a vertical plane and a hub portion extending horizontally from said plate portion toward said vertical axis; a drive wheel supported on said hub portion substantially on said vertical axis; motive means mounted on said mounting plate on the side opposite from said drive wheel; and energization lines connected to operate said motive means passing through said hollow vertical stem near said axis, thereby to minimize flexing of said energization lines as said stem is turned for steering.

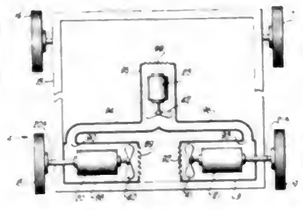
3,163,251
COMBINED FRAME AND EXHAUST SYSTEM FOR MOTOR VEHICLE
John H. Rees, 1410 Iroquois, Detroit 14, Mich.
Filed Aug. 8, 1962, Ser. No. 215,693
10 Claims. (Cl. 180—64)

2. In an automotive vehicle, having a box section frame, and an internal combustion engine, including a fan, the combination of an exhaust system for said engine housed substantially within the confines of said box section frame, the interior of said frame communicating with the interior of said engine through a manifold, there being a fresh air port in said frame, in communication with the interior of said frame near the leading end of said frame, and ahead of the place of communication of said manifold with the interior of said frame, whereby fresh air enter-



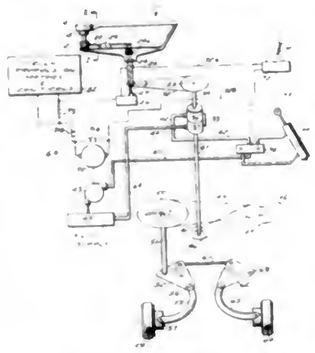
ing the interior of said frame through said port, passes rearwardly on the interior of said frame and mixes with the exhaust gases entering said frame whereby to cool and dilute said gases.

3,163,252
ELECTRIC MOTOR CONTROL
Ludvik J. Koci, Hinsdale, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 22, 1961, Ser. No. 133,093
8 Claims. (Cl. 180—65)



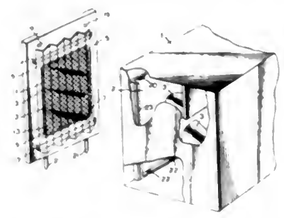
1. An electrically driven vehicle comprising a traction wheel, an electric traction motor drivingly connected to said traction wheel, a storage battery source of electric energy mounted on said vehicle, circuit means interconnecting said source and said motor, a control motor connected in series with said traction motor, a fan driven by said control motor, and means for utilizing said fan to cool said traction motor.

3,163,253
MATERIALS HANDLING TRUCK
Christian D. Gibson and Orville E. Smith, Greene, N.Y., assignors to The Raymond Corporation, Greene, N.Y., a corporation of New York
Continuation of application Ser. No. 35,021, June 9, 1960. This application July 9, 1962, Ser. No. 210,873
9 Claims. (Cl. 180—79.2)



1. A battery-powered materials handling truck having a power-assist steering arrangement, comprising in combination: a materials handling truck having at least one electric propulsion motor and a battery, said propulsion motor being connectable to said battery to propel said truck; a steering wheel located at an operator's position on said truck and rotatable by an operator to steer said truck; a hydraulic torque amplifier mechanically connected to said steering wheel so that torque applied to said steering wheel is applied as an input torque to said torque amplifier; linkage means mechanically connecting output torque from said torque amplifier to steer at least one dirigible wheel of said truck; a second electric motor electrically connected to be powered by said battery; a hydraulic pump connected to be driven by said second electric motor to provide hydraulic operating pressure for said torque amplifier; and a switch operable upon actuation by said operator to control said second electric motor.

3,163,254
DEMOUNTABLE CURTAINED GRILL FOR ACOUSTIC LOUDSPEAKER ENCLOSURE AND THE LIKE
Hermon H. Scott, Grasshopper Lane, Lincoln, Mass.
Filed Nov. 12, 1963, Ser. No. 322,963
3 Claims. (Cl. 181—31)

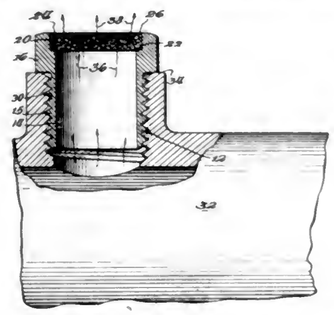


1. A demountable curtained grill for covering an opening in an acoustic loudspeaker enclosure and the like having, in combination, a grill for the said enclosure normally vibratory in response to acoustic energy directed thereupon, a frame provided with an aperture in which the grill is mounted, resilient stripping means fitted about the aperture and clamping the peripheral portions of the grill against the frame to damp vibrations of the grill caused by acoustic energy directed thereupon, curtain-supporting strips carried by opposite rear-surface edge portions of the frame and spaced therefrom with substantially acoustically transparent curtain material interposed in the space between the strips and frame to muffle vibrations of the strips, and mounting means comprising cooperating projections and receptacles carried by the frame and the enclosure for accurately mounting and demounting the grill-and-curtain-carrying frame upon and from the said opening, respectively, the projections being tightly fitted within the receptacles to prevent vibration of the frame in response to acoustic energy directed thereupon.

3,163,255
EXHAUST VALVE SILENCER WITH SINTERED METAL SILENCING DISC
Seymour F. Stryker, Evanston, Ill., assignor to Air-Mite Devices, Inc., Chicago, Ill.
Filed Apr. 4, 1963, Ser. No. 270,697
4 Claims. (Cl. 181—50)

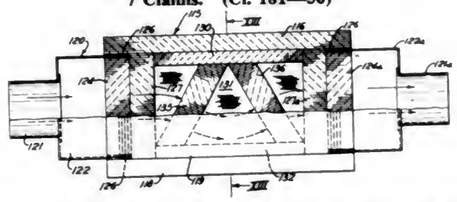
4. A gas silencer device for installation on the exhaust port of an exhaust valve of the character described comprising, a nipple having a central bore therethrough, said nipple having a head formation at one end thereof, said

head having a recessed seat in an end face thereof, and a compacted sintered metal disc cooperatively engaged in



said recess across said bore and substantially flush with said end face.

3,163,256
MUFFLER WITH CERAMIC HONEYCOMB BAFFLE
John G. Lanning, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 6, 1962, Ser. No. 200,472
7 Claims. (Cl. 181—56)



1. A muffler for deadening the sound of gases from an internal combustion engine comprising a casing, an inlet conduit to the casing, an outlet conduit from the casing, and gas flow resistive means in the casing member intermediate the inlet and outlet conduits and consisting of at least one thin walled ceramic honeycomb having a pair of opposed surfaces and a plurality of unobstructed gas passages extending between those surfaces, the gas passages being defined by ceramic walls up to 0.015 inch thick, the cross-sectional area of each gas passage being up to 0.010 square inch and the total free cross-sectional area of the honeycomb measured in a plane perpendicular to the axes of the gas passages being at least 50 percent of the total cross-sectional area.

3,163,257
TRACK LUBRICATOR
James B. McWilliams, Pittsburgh, Pa., assignor to Railway Maintenance Corporation, Pittsburgh, Pa., a corporation of Pennsylvania, and Poor & Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 26, 1962, Ser. No. 168,986
3 Claims. (Cl. 184—3)

1. In a railway track including a field side rail, the combination comprising,

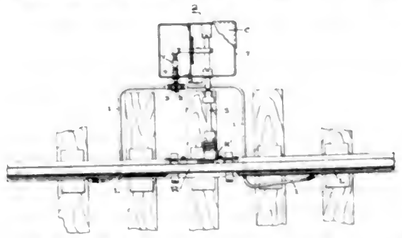
a track affixed grease distributor mounted on said rail,

a ramp lever at the field side of the rail and adjustable with respect to the head thereof,

a top-covered grease supply tank, a pump with suction in the tank bottom and actuated by impulses from the ramp lever,

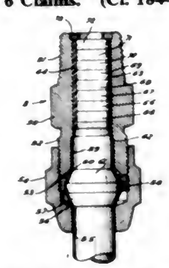
a pressure conduit connecting the pump with the grease distributor,

and an adjustably settable relief valve calibrated in terms of temperature and within and adjacent the top of the tank and communicating by an upwardly receiving inlet with the pressure conduit and dis-



charging by a vertically oriented outlet downwardly with undiminished velocity upon the tank contents; to thereby return surplus grease to the supply tank at a given setting of the ramp lever.

3,163,258
LUBRICATION
Thomas R. Thomas, New York, N.Y., assignor to Auto Research Corporation, Boonton, N.J., a corporation of Delaware
Filed Sept. 21, 1959, Ser. No. 841,293
6 Claims. (Cl. 184—7)

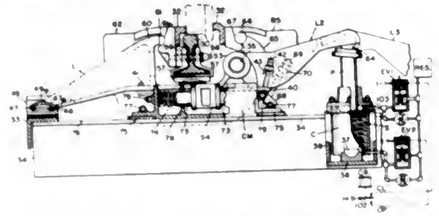


6. In a mist distributing system of the type having a central source feeding a suspension of fine oil particles in air into a branched distributing system having passageways leading to spaced and distributed bearings to be lubricated, an outlet solidification and condensation fitting to proportion and measure the amount of lubricant fed to each bearing to transmit the lubricant in the form of droplets to each respective bearing comprising a threaded elongated body with a threaded end portion and a central passageway therethrough from the inlet to the outlet, a sintered porous bronze metal cylindrical unit, having a diameter substantially the same as said passageway blocking said central passageway and means sealing the space between the unit and the passageway to prevent the particles from by-passing the unit, said unit serving to convert the fine oil particles to droplets and remove them from the air and the mist, said mist carrying particles varying from 12.5 to 50 microns and said unit having passageways which are less in size than the micron size of the mist.

3,163,259
AUTOMATIC CAR RETARDER
Ned C. L. Brown, Scottsville, N.Y., assignor to General Signal Corporation, a corporation of New York
Original application Sept. 17, 1958, Ser. No. 761,533. Divided and this application Sept. 12, 1962, Ser. No. 223,095
9 Claims. (Cl. 188—62)

1. A car retarder having a plurality of car retarder sections disposed end to end in a stretch of railway track,

each of several of the car retarder sections comprising, a section of track rail, inside and outside shoe beams disposed along the inside and outside of the track rail respectively, said outside shoe beam being secured to the track rail, an outside lever engaging one end of the outside shoe beam and disposed normal to the track rail, said outside lever being adapted to bear on a fixed support outside of the track rail at one end and extending beneath the rail and terminating in a journal at the other end, an inside lever disposed normal to the track rail, said inside lever having one of its ends pivotally secured on said



journal and the other end adapted to bear on an elevationally adjustable support, and a crank also pivoted on said journal having one end adjustably secured to said inside lever so as to adjust for wear of the shoe beams and having its other end operably connected to the inside shoe beam, whereby braking pressure is applicable to the rims of a railway car wheel in passing through the retarder in accordance with the weight of the car and adjustment for shoe wear is provided by adjusting the rotation of said crank around said journal relative to said inside lever.

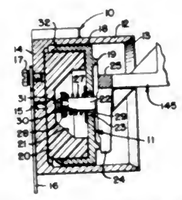
3,163,260
RETARDER MECHANISM FOR CONVEYOR SYSTEMS
Marshall I. Brenner, Detroit, Mich., assignor to Anchor Steel and Conveyor Company, Dearborn, Mich., a corporation of Michigan
Filed Apr. 26, 1960, Ser. No. 24,712
7 Claims. (Cl. 188—85)



1. In a gravity fed conveyor system including a track with a wheeled trolley thereon, a retarder mechanism for controlling the velocity of movement of the trolley along the track comprising a brake shoe pivotally supported at two spaced points for movement in translation toward and away from said track and frictionally engageable with the trolley upon movement toward the track, a bellcrank supported for rotation by said track and pivotally engaged with said brake shoe and a free end of a connecting rod, a cam journaled in the other end of said connecting rod, and a drive shaft extending eccentrically through said cam whereby rotation of said drive shaft effects reciprocation of said connecting rod, bellcrank and brake shoe thereby to effect intermittent engagement and disengagement of said brake shoe with said trolley.

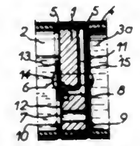
3,163,261
CARRIAGE DECELERATING MECHANISM FOR TELEGRAPH PAGE PRINTERS
Gordon Sim, Northbrook, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,549
5 Claims. (Cl. 188—94)

1. A decelerating mechanism for dampening the return shock between a pair of relatively movable elements that are moved apart under power and returned under spring pressure, comprising a dashpot plunger member on one of said elements and a dashpot cylinder member on the other of said elements, cooperative tapered surfaces on said dashpot members for camming said members into axial alignment with respect to each other, means for fixing one of said members on one of said elements, and friction



means on the other of said elements tending to hold the other of said members in any adjusted position on the other element to which said other member is moved by the elements being returned under spring pressure to move the dashpot plunger member into the dashpot cylinder member whereby the cooperating tapered surfaces on said members will cam the other of said members into substantially axial alignment with said one member.

3,163,262
HYDRAULIC TELESCOPIC SHOCK ABSORBERS
Fernand Stanislas Allinquant, 53 Ave. Le Notre, Sceaux, Seine, France
Filed Oct. 31, 1962, Ser. No. 234,465
Claims priority, application France, Nov. 7, 1961, 878,218
2 Claims. (Cl. 188—100)

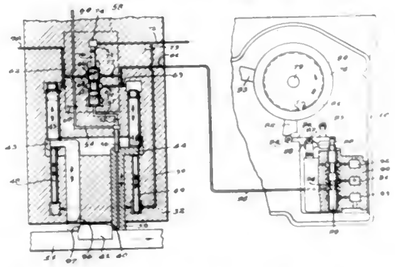


1. A hydraulic telescopic shock absorber whose main axis extends at least substantially horizontally comprising a working chamber and a piston, said piston being arranged movably in said working chamber, a reservoir, a liquid partially filling the lower part of said reservoir and a compressed gas filling partially the upper part of said reservoir not filled by said liquid, a partition separating said reservoir and said working chamber, said partition provided with a first and a second series of bores, first check valve means for said first series of bores and second check valve means for said second series of bores, said first check valve means permitting flow from the working chamber into the reservoir when the piston moves toward said partition, said second check valve means permitting flow from the reservoir to the working chamber when the piston moves away from said partition, said first series of bores controlled by said first check valve means being open at the top of said working chamber, whereby gas that may have entered the working chamber and may be emulsified is enabled to return to the reservoir and to be replaced by liquid, said first series of bores comprising holes extending through said partition and substantially vertical grooves forming continuations of said holes and being hollowed out in the face of the partition defining the working chamber, said grooves being covered in an area adjacent the axis of the shock absorber by said second check valve means.

3,163,263
TURRET LOCKING MECHANISM

George W. Irwin, Holland, Ohio, and Eustace H. Mumford, Ottawa Lake, Mich., assignors to Owens-Illinois Glass Company, a corporation of Ohio

Filed Dec. 23, 1960, Ser. No. 77,900
13 Claims. (Cl. 188—151)

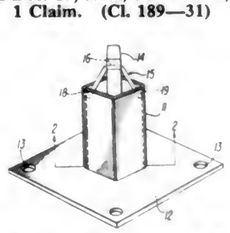


1. In a glass forming machine of the type having an indexing turret, a turret registering and locking device comprising a stop-block carried by said turret, a housing for supporting said turret, means carried by said housing and movable into and out of the path of movement of said stop block for sensing the approach of said stop-block to a predetermined position, a locking member shiftable into engagement with said stop block, means responsive to movement of said stop block into close proximity to said sensing means, for shifting said locking member, whereby said turret is locked in said predetermined position.

3,163,264
JOINT FOR SECURING STRUCTURAL MEMBERS

Louis Gondry, 215 W. 14th St., Danville, Ill.

Filed Dec. 13, 1960, Ser. No. 75,511
1 Claim. (Cl. 189—31)

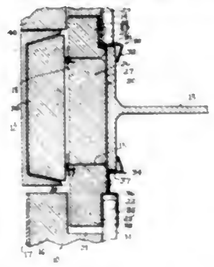


A joint for securing a pair of interfitting structural members in rigid assembly relation, said joint comprising, in combination, a first structural member of hollow tubular form with a polygonal cross section defining pairs of diagonally opposed corners, an anchoring plate, means for rigidly securing said anchoring plate to an appropriate support, a lug rigidly fixed to said anchoring plate and projecting outwardly therefrom, said lug and said anchoring plate together defining a second structural member, said lug and said first structural member being dimensioned and adapted to interfit telescopically with substantially free slidable movement and with said lug disposed along one diagonal of the cross section of said first structural member, a resilient locking element mounted on said lug and projecting transversely therefrom, said locking element being disposed along another diagonal of the cross section of said first structural member and having an overall length substantially greater than the length of said other diagonal, said locking element having end portions adapted to deflect toward said anchoring plate and to slidably engage the inner surface of said first structural member as the latter is slid telescopically over said lug toward said anchoring plate, said end portions of said locking element being constrained against pivotal movement and being adapted to bite into the inner surface of said first structural member upon application of an axial pulling force tending to separate said first structrual member from said lug and said anchoring plate, whereby separation of said structural members is precluded.

3,163,265
INSULATING PANELS FOR BOILERS AND THE LIKE

William Waite, Chicago, Ill., assignor to Transco Inc., Chicago, Ill., a corporation of Delaware

Filed Apr. 1, 1963, Ser. No. 269,673
6 Claims. (Cl. 189—34)



1. The combination with a boiler having an insulated wall normally disposed in spaced confronting relation thereto, comprising;

(*a*) a plurality of vertically superimposed series of insulating panels,

(*b*) each panel being formed of fibrous material with the panels on each series surrounding the boiler's circumference in contiguous relationship to one another,

(*c*) a plurality of insulating bands extending horizontally around and in spaced relation to the boiler's circumference and covering the junctures between adjacent series of insulating panels,

(*d*) an expandable joint between one edge of each of said bands and a confronting edge of each of said panels,

(*e*) and a fixed connection between the other edge of each of said bands and the opposite confronting edge of each of said panels,

(*f*) said expandable joint comprising a socket provided by said one edge of each of said bands, and

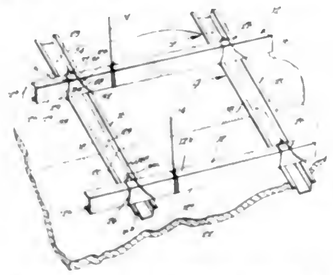
(*g*) an insert finger provided by said confronting edge of each of said panels for insertion into said socket.

3,163,266
SUSPENDED CEILING CONSTRUCTION AND CLIP THEREFOR

Nels Nelsson, Des Plaines, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 23, 1961, Ser. No. 84,391
3 Claims. (Cl. 189—35)

1. In a ceiling construction having a plurality of elongate parallel primary support members and a plurality of parallel cross members disposed below and in transverse juxtaposed position with respect to said primary support members, each of said cross members having a substantially flat base and latching formations spaced from said base and extending laterally outward on either side thereof; the combination with said primary support members and cross members of an improved clip for joining said members together, said clip having a pair of downwardly extending angularly divergent substantially coplanar resilient legs, and an intermediate latch portion extending substantially normal to said legs, each leg having a hook formation extending inwardly toward the opposite leg and having an upwardly extending portion defining an end limit of the clip, the distance between said end limits and said latch portion being no greater than the vertical dimension of one of said primary support members when the clip is unstressed, each leg being bowed between said



latch portion and said hook formation, said latch portion having its distal end bent angularly in the general direction of said legs and then angularly flared in the opposite direction, whereby said latch portion may resiliently lock over the top of one of said primary support members, and said hook formations may engage and support the latching formations of said cross member.

3,163,267
TEMPORARY SUPPORTS FOR CONCRETE FLOORS

Louis Alziari, 25 Blvd. Carabacel, Nice, France

Original application Feb. 11, 1960, Ser. No. 8,077. Divided and this application Apr. 5, 1962, Ser. No. 185,410
Claims priority, application France, Feb. 13, 1959, 6,394, Patent 1,216,705
5 Claims. (Cl. 189—37)



1. A metallic beam assembly for temporarily carrying elements of a composite concrete floor, comprising a pair of metallic beams, one said beam being hollow and the other said beam sliding within said one beam, said one beam having a top member terminating downwardly in an under surface, said other beam having a top surface spaced a substantial distance below said under surface thereby to support a first plank on said top surface with the plank extending transversely of the beam assembly, said beam assembly having means defining an upwardly opening recess spaced a substantial distance from said other beam, the bottom of said recess being at about the same level as said top surface thereby to support a second plank on said bottom in parallelism to said first plank.

3,163,268
WHEEL-EQUIPPED SUITCASE

Charles Leavell, 206 S. Fairfield Ave., Lombard, Ill.

Filed Aug. 23, 1962, Ser. No. 220,591
10 Claims. (Cl. 190—18)

1. In combination, a suitcase or the like comprising a pair of cooperative casing sections defining an article-receiving compartment therein and being related to each other for selective opening and closing movements to provide access to such compartment, said suitcase having a pair of transversely spaced side walls, a pair of longitudinally spaced end walls respectively secured to said side walls, and a top wall and a bottom wall each secured to said side and end walls, said bottom wall and at least one of said end walls along the juncture common thereto having an arcuate configuration adjacent each of said side walls defining rounded corner portions thereat having the same radii of curvature, a pair of wheels respectively located adjacent said rounded corner portions in substantially parallel relation with the respectively associated side walls and in close proximity thereto, and a pair of axle structures respectively supported adjacent said rounded corner portions by said casing sections and being constrained against displacements with respect thereto, said axle structures being transversely oriented and defining a

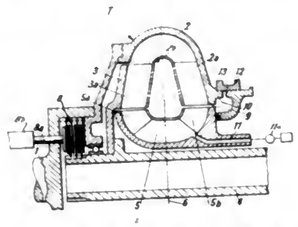


condition of axial alignment approximately coincident with a transversely extending line defined by the origins of the radii of curvature of said rounded corner portions when said casing sections are in the closed position thereof, said wheels being respectively mounted upon said axle structures for rotation about the axes thereof and each wheel having a radius essentially equal to the radius of curvature of the associated corner portion to provide the wheel with a restricted circumferential surface area extending radially outwardly only very slightly beyond the dimensional limits of the associated corner portion for rollingly supporting said suitcase but without substantial interference with normal handling and storage thereof.

3,163,269
TORQUE CONVERTER WITH SYMMETRICAL BLADING, MECHANICAL CLUTCH, AND MEANS TO FILL AND PARTIALLY EMPTY THE WORKING CHAMBER

Fritz Kugel, Heidenheim (Brenz), Germany, assignor to J. M. Voith G.m.b.H., Heidenheim (Brenz), Germany

Filed Aug. 15, 1960, Ser. No. 49,753
Claims priority, application Germany Aug. 29, 1959
9 Claims. (Cl. 192—3.2)



1. In combination: a fluid torque converter having a bladed primary part for driving connection with a power input shaft, a bladed secondary part, and a bladed guide wheel; said primary and secondary parts and said guide wheel confining with each other the working chamber of said converter; the radially inner edges of the blades of the primary and secondary parts and the radially outer edges of the blades of said guide wheel part extending axially of the converter, said primary and secondary parts

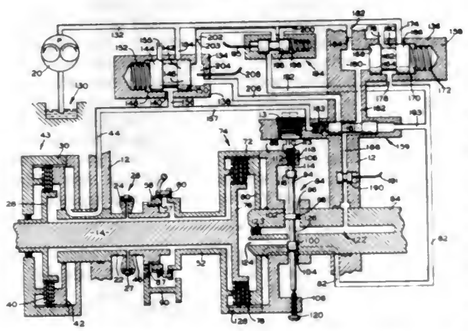
on one hand and said guide wheel on the other hand being spaced radially and thereby confining annularly extending gap means with each other; annular channel means carried by one of said parts outside said gap means and communicating therewith, discharge conduit means communicating with said channel means; an output shaft drivingly connected to said secondary part; mechanical clutch means interposed between said primary part and said output shaft and operable selectively to establish and to interrupt mechanical driving connection between said primary part and said output shaft; the entire blading of said primary and secondary parts being located radially outside the entire blading of said guide wheel; means for selectively filling said working chamber when said clutch is disengaged and there is relative rotation between said primary part and said secondary part, and means for controlling said discharge conduit means for emptying said working chamber up to the outer diameter of the blading of said guide wheel when said clutch is engaged and the primary part and secondary part are locked together.

3,163,270

MULTIPLE FLUID CLUTCHES, TORQUE CONVERTER WITH HYDRAULIC CONTROL SYSTEM

Edward W. Zingsheim, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia

Filed Aug. 10, 1961, Ser. No. 130,577
9 Claims. (Cl. 192—3.2)



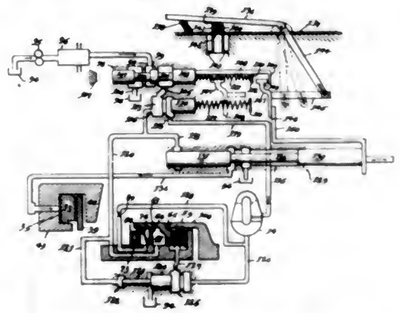
4. A transmission for transmitting power from an input shaft to an output shaft comprising a hydrodynamic torque converter power train, and a mechanical power train for alternatively transmitting power between said shafts, a first fluid operated clutch in said mechanical power train operative when engaged to transmit power through said mechanical power train, a second fluid operated clutch in said converter power train operative when engaged to effect the transmission of power through said converter power train, a fluid circuit, a first valve in said fluid circuit and operatively connected to said first clutch means for controlling the operation thereof, a second valve in said fluid circuit and operatively connected to said second clutch for controlling the operation thereof, control fluid lines in said fluid circuit for controlling the operation of said first and second valves, speed responsive means operated by the output shaft for controlling fluid flow in said control fluid lines, said second valve being controlled by said first valve, and means including a third fluid operated valve controlled by both said first and second valves and being operative when said first clutch is engaged and upon engagement of said second clutch to operate said first valve and effect disengagement of said first clutch whereby said second clutch is engaged before the other is disengaged.

3,163,271

TORQUE CONVERTER, LOCK UP CLUTCH, MASTER CLUTCH AND OPERATOR CONTROL TO PROVIDE CUSHION ENGAGEMENT

Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin

Original application Aug. 3, 1961, Ser. No. 129,038. Divided and this application Feb. 26, 1963, Ser. No. 261,024
7 Claims. (Cl. 192—3.2)



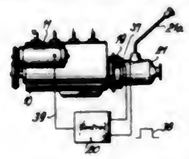
1. A power transmission comprising a hydraulic torque converter an oil actuated friction plate clutch providing a connection between a load and the converter output, a pressure liquid source, a first pressure regulating valve communicating with the source, first and second oil circuit means providing outlets of the first pressure regulating valve, the first circuit means including the converter and discharging over the clutch plates for cooling thereof and the second circuit means supplying engaging pressure to the clutch, a second pressure regulating valve having one end subjected to pressure from the second circuit means and its opposite end exposed to oil flow in the first circuit means on the discharge side of the converter, and operator controlled means for varying the position of the first pressure regulating valve to determine the application of selected pressures to the clutch including the maximum engaging pressure, the second pressure regulating valve being arranged to establish in the converter a basic pressure lower than and when the maximum pressure is applied to the clutch.

3,163,272

CONTROL ARRANGEMENT FOR ELECTROMAGNETIC CLUTCH

Guenther Baumann, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed July 25, 1962, Ser. No. 212,168
Claims priority, application Germany, July 28, 1961, B 63,441
18 Claims. (Cl. 192—84)



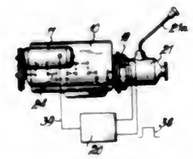
1. In an electromagnetic clutch arrangement, in combination, a source of electric energy; electric pulse generator means for furnishing electric control pulses at a variable frequency; electric oscillator means energizable by said source and having input means for being supplied with said control pulses and furnishing in accordance therewith energizing pulses of predetermined duration to the electromagnetic clutch arrangement for energizing the latter; and electronic storage means cooperating with said oscillator means and having input means connected in parallel with said input means of said oscillator means, for storing any particular one of said control pulses applied to said input means during one of said energizing pulses of predetermined duration and therefore incapable of causing the production of a corresponding subsequent energizing pulse, and for terminating the application of the respective energizing pulse to the electromagnetic clutch arrangement at the moment of the application of said particular control pulse and for causing said oscillator means to furnish to said electromagnetic clutch arrangement a further energizing pulse a predetermined amount of time after the termination of the preceding energizing pulse.

3,163,273

IMPULSE CONTROL ARRANGEMENT FOR ELECTROMAGNETIC CLUTCHES

Guenther Maier, Gerlingen, Kreis Leonberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Aug. 2, 1962, Ser. No. 214,394
Claims priority, application Germany, Aug. 3, 1961, B 63,505
8 Claims. (Cl. 192—84)



1. In an electromagnetic clutch arrangement, in combination, a source of electric energy; electric pulse generator means for furnishing electric control pulses at a variable frequency; pulse former means having input means for being supplied with said control pulses and furnishing in response to each control pulse a double pulse composed of a first and a second pulse portion having respectively opposite polarities and being spaced from each other by a predetermined interval; and electric oscillator means energized by said source and controllable by said double pulses furnished by said pulse former means, said oscillator means furnishing energizing pulses to the electromagnetic clutch arrangement for energizing the latter, each of said energizing pulses being started upon application of one of said second pulse portions and having a predetermined normal duration as long as the sequence of said control pulses has a frequency below a selected frequency corresponding to the upper limit of a predetermined low range of frequencies, each of said energizing pulses being however terminated with a reduced duration by the application of one of said first pulse portions when at frequencies above said low range of frequencies such first pulse portion occurs before the end of said normal duration of an energizing pulse, the interval between consecutive energizing pulses being in this case determined by said predetermined interval between said first and second portions of said double pulses.

3,163,274

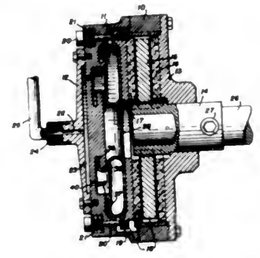
FLUID ACTUATOR FOR CLUTCH OR BRAKE

Hulie E. Bowerman, P.O. Drawer 152, Arlington, Tex., and Charles P. Warman, Jr., Box 1150, Wichita Falls, Tex.

Filed Dec. 26, 1962, Ser. No. 247,062
3 Claims. (Cl. 192—88)

1. In a device for applying and relieving torque forces wherein said device includes a body having an inner circular portion and a pressure plate spaced therefrom, said pressure plate being mounted for parallel movement relative to said circular portion.

inner and other outwardly directed flanges on said circular portion, both said flanges being concentric about the center of said body.



a diaphragm type actuator between said body and said pressure plate, said actuator being of flexible material in the form of a ring and having inner and outer walls therearound, and

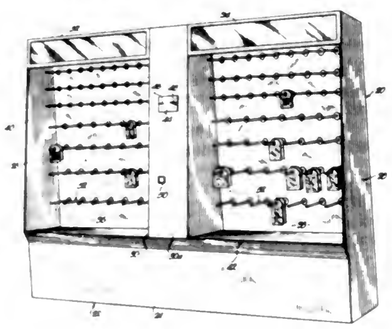
inwardly directed flanged beads around said walls on the perimeters thereof opposite said pressure plate, said beads being of a size to engage said flange on said body.

3,163,275

COIN ACTUATED MERCHANDISING APPARATUS

Boley A. Andrews, Mission, Kans., and Le Roy D. Gore, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Dec. 26, 1961, Ser. No. 161,958
27 Claims. (Cl. 194—2)



1. A vending machine comprising:

(*a*) a frame;

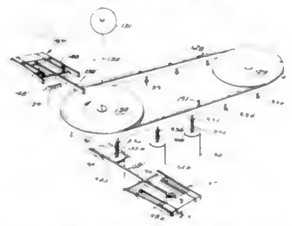
(*b*) a plurality of elongated article-receiving posts carried by the frame, each having an outer free end and each positioned to receive a number of articles arranged to be grasped and manually removed from said free end thereof in successive order;

(*c*) releasable article-retainer means on said outer free end of each of the posts for preventing manual removal of an article from a corresponding post, until after release of a respective retainer means, each retainer means being separately releasable and permitting grasping and removal of a single article only from respective posts;

(*d*) coin-operable means adapted to receive coins therein; and

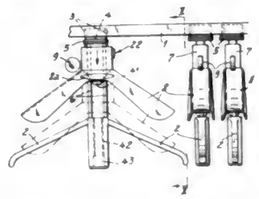
(*e*) control means operably coupled to said coin-operable means and the releasable retainer means for permitting only one of the plurality of retainers means to be released at a time and only after deposit of proper coinage in the coin-operable means.

3,163,276
VENDING MACHINES
Robert B. McLaughlin, 501 Greer Road, Palo Alto, Calif.
Filed Jan. 29, 1962, Ser. No. 169,364
15 Claims. (Cl. 194—7)



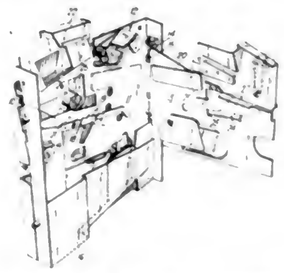
1. In a vending machine for dispensing merchandise items, a receiver for pay elements, pay elements adapted for placement into the receiver, a normally open electric circuit having spaced conductors disposed within the receiver and adapted to become momentarily connected by insertion of a pay element into the receiver, thereby closing the electric circuit, heat-severable retaining elements for each of said items, and means in and controlled by said electric circuit for causing the energizing of a heating element adjacent to said retaining elements so as to sever the latter, thereby causing said severed retaining elements to relinquish items for delivery upon insertion of a pay element into the receiver.

3,163,277
CLOAK-ROOM STAND WITH LOCKABLE GARMENT HANGERS
Hans Naef, Zurich, Switzerland, assignor, by mesne assignments, to Etablissement Disigard Prasidal-Anstalt, Vaduz, Liechtenstein
Filed Dec. 18, 1961, Ser. No. 160,058
Claims priority, application Switzerland Dec. 17, 1960
11 Claims. (Cl. 194—67)



1. In a lockable garment hanger, in combination, a garment-support member and a clamping member for securing a garment against said garment support member; guide means substantially rigid with one of said members and forming a path for displacement of the other of said members toward and away from said one of said members, said guide means being provided with locking formations spaced therealong in the direction of displacement of said other member; locking means on said other member cooperating with said formations for securing said other member relative to said one of said members along said guide means, said locking means including a lock casing provided with a passage for a key to be inserted therein, a locking element shiftable in said casing toward and away from said formations for selective engagement therewith, and shifting means in the path of a key inserted in said passage for operating said element; and detent means in said casing for restricting the withdrawal of said key from said passage, said key having an opening, said detent means including a slide displaceable in said casing parallel to the direction of insertion of said key adjacent the latter, a spring-loaded detent pin mounted in said slide and biased into engagement with said key for entry into said opening upon insertion of said key into said casing through said passage thereby interconnecting said key and said slide for entrainment of the latter by said key, and abutment means for limiting displacement of said slide.

3,163,278
COIN SELECTING AND TESTING MECHANISM
Wilfred Arthur Rounsivell, Thornton Heath, Surrey, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed Nov. 5, 1962, Ser. No. 235,255
6 Claims. (Cl. 194—97)



1. A coin testing and selecting mechanism for regular polygonal coins having an even number of sides in excess of six including a first lower rack having upwardly extending teeth and a second upper rack having downwardly extending teeth adapted to lie, during the testing disposition, in parallel one above the other in a substantially vertical plane so as to form a runway therebetween for the coins, along which a correct coin may pass by pivoting about the points of contact between its flats and the tooth tips of the first lower rack, the racks being spaced apart (as measured between the respective tooth tip lines) a distance substantially equal to the diameter of a circle tangential to the perimetrical flats of the coin under test, the pitch of the teeth on each rack being substantially equal to the length of one of the perimetrical flats of the coin, and the teeth of one rack being staggered in relation to those of the other to locate the teeth in one opposite the spaces between teeth on the other.

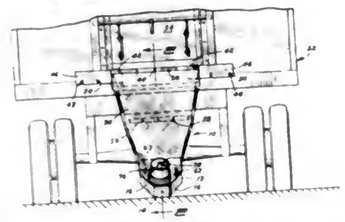
3,163,279
FRACTIONAL LINE SPACE TYPEWRITER MECHANISM
Edward G. Hoysak, Syracuse, N.Y., assignor to SCM Corporation, a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,508
11 Claims. (Cl. 197—114)



1. In a typewriter, a platen line space mechanism embodying:
a platen mounted rotatable ratchet,

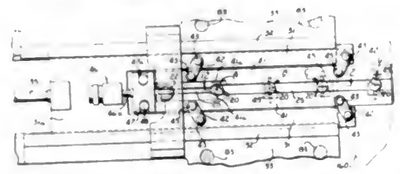
a coaxially pivoted cooperating selectively variable return stroke ratchet advancing pawl means including a pivotally mounted pawl,
stop means mounted for pivotal movement about the ratchet rotation axis for varying the amplitude of the pawl return stroke,
means for positively retaining said stop means in its selected position, and
an actuator connected to said stop means and said retaining means, and means mounting said actuator for movement in a first path to effect engaging and disengaging movements of said retaining means and for movement in a second path to move said stop means while said retaining means is disengaged.

3,163,280
GRAIN AUGER BAG ATTACHMENT
Earl W. Haugland, Hampden, N. Dak.
Filed Apr. 11, 1963, Ser. No. 272,454
8 Claims. (Cl. 198—1)



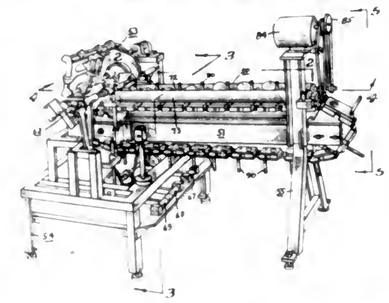
1. A bag attachment for grain augers comprising:
(*a*) a trough structure having a bottom wall, upwardly directed side walls and an end wall,
(*b*) said trough structure being open at the top and the other end thereof,
(*c*) said bottom wall projecting beyond said side walls and thus beyond said open end;
(*d*) resilient means integrally carried on the projecting portion of said bottom wall for receiving therebetween the lower portion of the casing of a grain auger,
(*e*) said resilient means being capable of being flexed into engagement with said auger casing independently of said side walls, and
(*f*) a fabric chute having its lower end attached to the upper end of said side and end walls and having its upper end adapted to be attached to a raised source of granular material.

3,163,281
METHOD AND APPARATUS FOR HANDLING ARTICLES
John W. Rieck, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed Aug. 21, 1961, Ser. No. 132,874
7 Claims. (Cl. 198—33)



1. The method of arranging a disc-like part in a desired angular orientation about its principal axis, in which orientation an aperture in the part lies in a desired direction from its axis, the part having a central, generally rectangular opening therein, which method comprises utilizing a spindle of generally rectangular cross-section and receivable in the opening to rotate the part about its axis to an angular orientation wherein the aperture in the part lies in either of two opposed directions from the axis, one of which directions is the desired direction, detecting the angular orientation of the part, and rotating the part through an angle of 180° in the event the part is detected as not being in the desired angular orientation.

3,163,282
APPARATUS FOR AND METHOD OF FEEDING APPLES FOR CORING AND PEELING THEREOF
Robert C. Shropshire, Vineland, Hubert C. Stollenwerk, Egg Harbor, Wayne Sampson, Lower Bank, and Hubert F. Stollenwerk, Egg Harbor, N.J., assignors to Shropshire, Sampson & Stollenwerk, Inc., Egg Harbor, N.J., a corporation of New Jersey
Filed Jan. 30, 1963, Ser. No. 255,121
22 Claims. (Cl. 198—33)

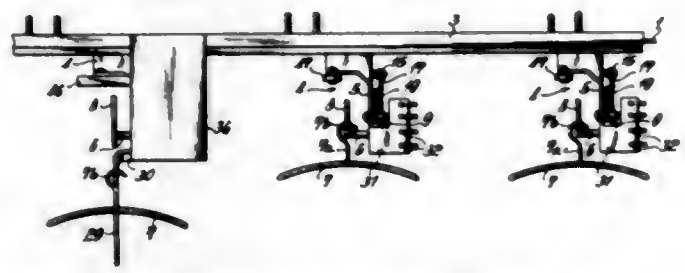


1. An orienting conveyor device having an input end into which randomly oriented apples from a supply source are loaded and an output end at which apples are delivered in a particularly oriented position, comprising in combination, an orienting device adapted to be supplied with randomly oriented apples including aperture defining means which define an aperture of such size and shape that an apple may pass by gravity downward therethrough only when oriented in the desired position and also including apple turning means effective to rotate each apple into the said desired position, a conveying device disposed beneath the aperture formed by said aperture defining means of said orienting device including carrier means for receiving and holding in proper position all of the apples passing downward thereto through the said aperture and drive means coupled to said carrier means for moving the latter to the output end of the orienting conveyor device.

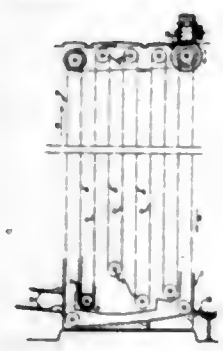
3,163,283
CONVEYORS
Erich Kuwertz, Kaiserslautern, Pfalz, Germany, assignor to G. M. Pfaff Aktiengesellschaft, Kaiserslautern, Pfalz, Germany, a German company
Filed Feb. 18, 1963, Ser. No. 259,792
Claims priority, application Germany, Feb. 19, 1962, P 28,821
4 Claims. (Cl. 198—38)

1. A conveyor system for work carriers having a suspension member, said conveyor system comprising a conveyor element, means for movably supporting said element, carriages supported on said conveyor element, and a plurality of delivery stations, each having a stationary guide rail and a receiving bar for said carriers disposed at predetermined positions along said conveyor element, each of said carriages having a V-shaped supporting member presenting two freely extending arms, a spindle

extending longitudinally of the plane of symmetry of said conveyor element and supporting said V-shaped member at the center thereof intermediate said arms for pivotal movement at a predetermined delivery station in the direction of said delivery station, said stationary guide rails being disposed optionally on either side of said conveyor within the range of pivotal swing of said supporting members and extending parallel to the path of said conveyor.



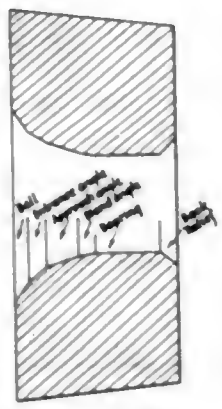
3,163,284
ARTICLE SUPPORT FOR CONVEYOR
Johannes Bernardus van der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands, a limited-liability company of the Netherlands
Filed Aug. 23, 1962, Ser. No. 219,009
Claims priority, application Netherlands, Aug. 23, 1961, 268,526
11 Claims. (Cl. 198—152)



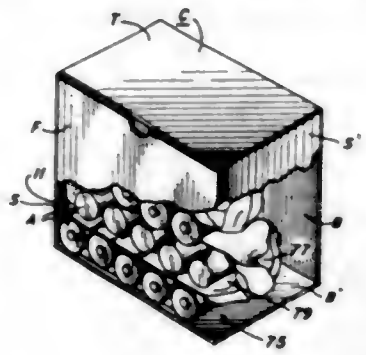
1. A device for treatment of packaged products comprising conveyor means including an endless conveyor which is advanced along a track having parallel paths and wherein the conveyor advances in opposite directions in alternating paths, supports for said packaged products, said supports each comprising a pair of opposite side walls of V shape facing in opposite directions, said side walls defining included angles which are obtuse, said supports each further comprising a flat portion connecting said side walls together to define a substantially U-shape for the support, and means securing the supports to the conveyors for advancement therewith, with the side walls of the supports extending transversely with respect to the direction of advancement of the conveyor.

3,163,285
PROCESS AND APPARATUS FOR THE PRODUCTION OF IMPROVED STEEL TUBING
Elliot S. Nachtman, Oak Park, Ill., assignor to La Salle Steel Company, Hammond, Ind., a corporation of Delaware
Filed Dec. 7, 1960, Ser. No. 74,314
1 Claim. (Cl. 205—8)

In a method of drawing tubular products wherein a mandrel is operatively associated with a die to effect reduction in the wall thickness of the tubes being drawn, the improvement comprising providing a die member having an inlet and an outlet portion and a bearing portion, the inner diameter of said die member at said bearing portion decreasing progressively toward said outlet portion in a manner such that a line intersecting the axis of said die and lying parallel to the inner surface of said bearing portion forms an angle within the range of 0° 45′ to 1° 30′, and advancing the tubular product through said die to effect reduction in the cross sectional area during passage through the bearing.



3,163,286
MEANS FOR HANDLING AND METHOD OF PACKAGING SHOTGUN SHELLS AND THE LIKE
John N. Covington, Jr., Box 177, Coffeeville, Miss.
Filed Jan. 25, 1963, Ser. No. 253,942
5 Claims. (Cl. 206—3)

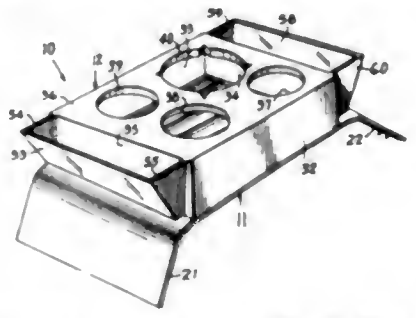


1. The combination with a box container and ammunition having head portions, of a substantially thin plastic band linking said ammunition and comprising a body having substantially uniform width and a plurality of casing means transversely disposed in a plurality of groups along one side of said body and joined thereto, said plurality of casing means holding a like plurality of said ammunition with said head portions of said ammunition being disposed in one direction relative to and adjacent one edge of said body of said band, said ammunition being juxtaposedly packaged in said box container in alternatingly disposed parallel rows of ammunition and with the ammunition of each of said plurality of groups of said casing means comprising one of said parallel rows of ammunition with the head portions of the ammunition of each row being disposed in one direction relative to said box container and with the head portions of the ammunition of the adjacent row being disposed in the opposite direction and with said body of said band being continuous and being twisted between each of said plurality of groups.

3,163,287
TRAYS
Benjamin G. Barnett, 4407 Brookview, Dallas, Tex.
Filed June 27, 1963, Ser. No. 291,070
11 Claims. (Cl. 206—19.5)

1. A tray including: a substantially rectangular flat base having an intermediate portion and end portions extending in opposite directions from opposite ends of said intermediate portion, said intermediate portion having an upwardly opening drip recess and support means for holding articles above said drip recess; a retainer plate

spaced above and disposed parallel to said intermediate base portion and having a plurality of apertures through

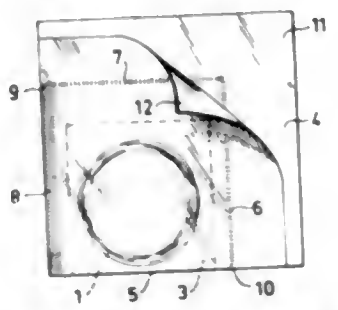


which articles may extend and rest on said intermediate portion.

3,163,288
PACKAGE

Mauritz Ingemar Arvidsson, Goteborg, Sweden, assignor to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden

Filed Feb. 5, 1963, Ser. No. 256,464
Claims priority, application Sweden Feb. 9, 1962
1 Claim. (Cl. 206—63.3)



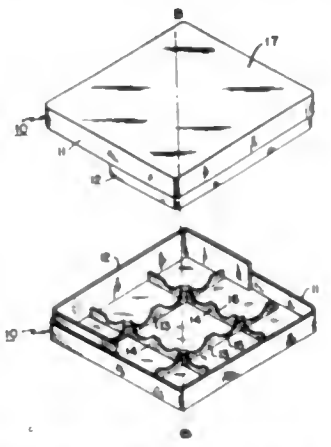
A package comprising a rectangular web of thermoplastic material having short ends and substantially longer sides and folded along a fold line parallel to said short ends to form package walls, a heat seal formed along one of said longer sides of the web and connecting said walls, said first seal extending from the fold line to a first point spaced a substantial distance from the ends of said web, a second heat seal formed between and connecting said walls and extending parallel to said first seal from the fold line to a second point located at the same distance from the web ends as said first point, said second seal being spaced a substantial distance from the other of said longer sides of said web, a third heat seal extending from said first point to said second point and parallel to the fold line of said web, and a reinforcing spot heat seal in the region of said first point providing considerable resistance against tearing apart of the walls, whereby the package may be partially opened to the extent that the first heat seal and the fold line remain intact and a triangular portion defined by a diagonal line across said package walls from said first point to the intersection of said second seal and the fold line provides a receptacle retaining an object therein after the package has been partially opened.

3,163,289
PACKAGE

Harry P. Laffkas, Addison, and Thomas H. Ward, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 10, 1962, Ser. No. 222,269
3 Claims. (Cl. 206—65)

1. A package comprising two identical telescoping parts, each of said parts comprising a bottom and a side wall, each of said side walls terminating in substantially identical mating edges, each said mating edge being symmetric about a line passing through said edge, each of said side walls having a flange contiguous thereto and extending outwardly away from said bottom, said flange of each said part telescoping with said side wall of the other said part, and within each said part two sets of ribs, each of said sets comprising at least two parallel ribs having article-supporting depressions therein, the ribs of one

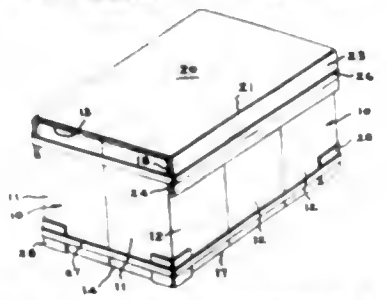


set being respectively perpendicular to the ribs of the other set, said depressions of each set of ribs being substantially identical to the remaining depressions of the same set but different from those of the other set.

3,163,290
MULTIPLE SHIPPING CONTAINER

William M. Shive, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Dec. 4, 1962, Ser. No. 242,317
5 Claims. (Cl. 206—65)



4. A shipping container comprising a grouping of at least two individual cartons, each individual carton having a top flap folded down along its side wall opposite the other individual carton, a lid positioned over the tops of the individual cartons and including a down-turned double flap member along two of its opposite sides, each double flap member extending down and behind said top flap of the carton to be interlocked therewith, and means securing the down-turned flap members to the side walls of said individual cartons to form a top lifting flange at the opposite sides of the large container unit.

3,163,291
TWIN READER TOOL IDENTIFYING APPARATUS

William C. Gleisner, Jr., Sussex, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin

Filed Oct. 1, 1962, Ser. No. 227,464
25 Claims. (Cl. 211—1.5)

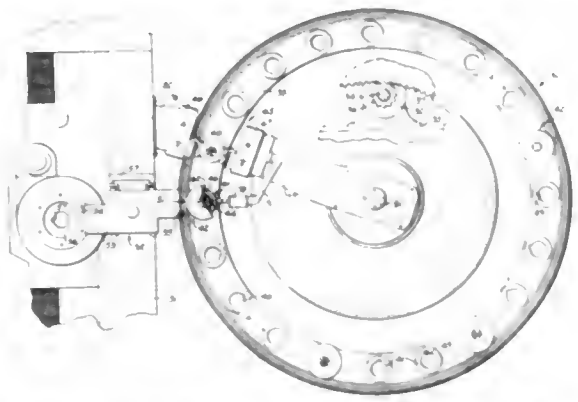
1. In a tool identifying and selection mechanism for identifying a desired tool from a group of tools for location at a tool ready station positioned in spaced apart relationship to a tool identifying station;

a tool storage member carrying the group of tools and being movably supported for moving the tools successively through the tool identifying station and the tool ready station;

a source of power connected to drive said storage member in its path of travel;

a plurality of designation elements actuatable in different combinations to designate the number of the tool to be located at the tool ready station;

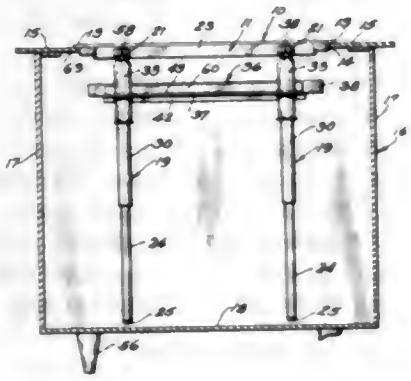
a plurality of electrical control elements positioned at the identifying station for actuation in different combinations, said designation elements and said control elements being connected to indicate the desired tool to be located at the ready station when said control elements are actuated in the combination which coincides with the combination of actuated designation elements;



a plurality of coded identifier members arranged in code fashion associated with each tool to identify the individual tools and operable to actuate said control elements as the tools move past said control elements in the identifying station; and,

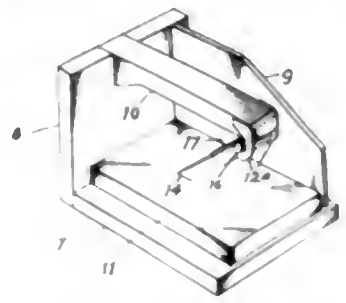
a stop element positioned at the tool ready station for actuation by the indicated desired tool and conditioned to be operable in combination with the proper predetermined tool identifying operation of said control elements to terminate the movement of said storage member with the desired tool located at the tool ready station.

3,163,292
ELEVATOR ARTICLE-SUPPORTING APPARATUS
Robert J. Shelley, 7009 SW. 62nd Court, Miami, Fla.
Filed Mar. 15, 1963, Ser. No. 266,145
5 Claims. (Cl. 211—49)



1. An elevator article-supporting apparatus for supporting a stack of trays, cups, glasses, dishes, bowls, utensils, or the like, in a restaurant, cafeteria, hospital, or like place, comprising, in combination, a cabinet including a counter top having an opening formed therein and having a marginal edge portion surrounding and defining said opening, a supporting frame structure coextensive with the said opening in said counter top and including a marginal flange portion extending over and resting upon the said marginal edge portion of said counter top defining said opening therein, a plurality of elevator units each including a vertically extending inner tubular guide membor or standard having an upper end portion, a tubular outer load-carrying sleeve member slidably mounted on the said tubular guide member or standard, compression spring means arranged in concentric relation between the said inner tubular guide member or standard and the said tubular outer load-carrying sleeve member and normally urging the latter into an elevated or raised position toward the said supporting frame structure, means for attaching the said upper end portions of the said inner tubular guide members or standards of said elevator units to said supporting frame structure, and an article-supporting unit removably mounted on the said tubular outer load-carrying sleeve members of said elevator units and disposed below the said supporting frame structure and normally urged by the said yieldable compression spring means to maintain the said article-supporting unit and a stack of articles thereon at a uniform elevated or raised position relative to the said supporting frame structure and the said counter top.

3,163,293
DEVICE FOR HOLDING STACKED SHEET MATERIAL
Irvin C. Poskin, 1828½ S. Robertson Blvd., Los Angeles, Calif.
Filed Apr. 19, 1963, Ser. No. 274,109
3 Claims. (Cl. 211—51)

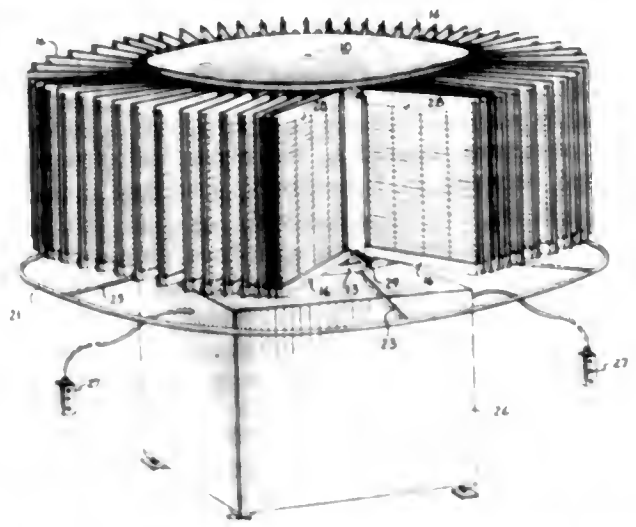


1. A device of the kind described comprising, prior to complete assembling of its parts, a baseboard having a front and a rear end portion, a mounting arm, means upstanding from said baseboard and supporting said mounting arm considerably thereabove in rear to front extending position, hook means carried by the front end portion of said mounting arm and pointing upwardly and rearwardly in a slightly spaced relation to the under side of said mounting arm, a clamping arm having an end portion engageable with said hook means, said clamping arm having, extending along one of its sides, an elongated pocket the mouth of which is slightly spaced away from the aforesaid end portion of the clamping arm, and an elongated spring consisting of two limbs angularly related to each other, one limb of said spring being insertable into said pocket so that, when said clamping arm is put into its operative position the other limb thereof engages the under side of said mounting arm, so that the spring both maintains the clamping arm in engagement with said hook means and causes it to press upon said baseboard or material overlying it, all portions of the spring being in a downwardly or rearwardly spaced relation to the axis about which the clamping arm swings.

3,163,294
RECORD FILING DEVICE
Hugh C. Barr, Staunton, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,051
3 Claims. (Cl. 211—58)

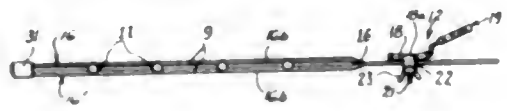
1. A record filing device comprising a supporting stand including a vertically disposed axial shaft, a vertically spaced pair of discs mounted for rotation about said shaft, a plurality of vertically extending record panels disposed edgewise between said discs on pivot means carried by said panels and engaged on said discs adjacent their outer peripheral edges on a uniform radius and in angularly spaced relationship to each other, and stop means disposed between each of said panels for limiting their pivotal movement and to prevent abutment of ad-

jacent panels against each other, comprising an arm pivoted intermediate its length on at least one of said



discs on a greater radius from said axial shaft than that on which the panels are pivoted.

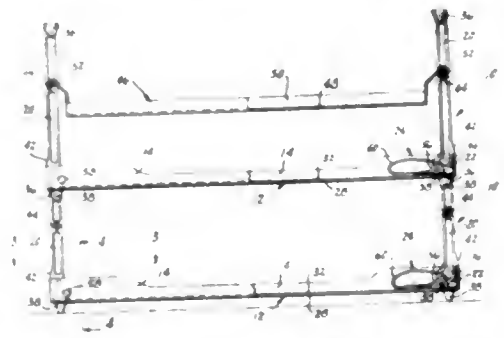
3,163,295
BATHROOM DRYING RACK
Martin L. Standard, 1355 W. 12th Ave., Vancouver, British Columbia, Canada
Filed May 3, 1962, Ser. No. 192,150
6 Claims. (Cl. 211—86)



1. A drying rack adapted to be installed in a bathroom in an out-of-the-way position extending across the bath tub from the shower-curtain rod at one side of the tub to the bathroom wall as the opposite side of the tub, said drying rack including a central member having a longitudinally extending slot at one end and provided, between the slotted end and its opposite end, with laterally projecting rigid garment supporting members substantially coplanar with said central member and adapted, in the applied position of the drying rack, to support wet articles above the tub so that the drippage from the wet articles will fall into the tub, and a clamping member adjustable along the slotted end of said central member, said clamping member and the slotted end of said central member being respectively disposed to engage top and bottom surfaces of the shower-curtain rod and to be clamped against said rod by a clamping bolt passing through the slotted end of said central member and through said clamping member.

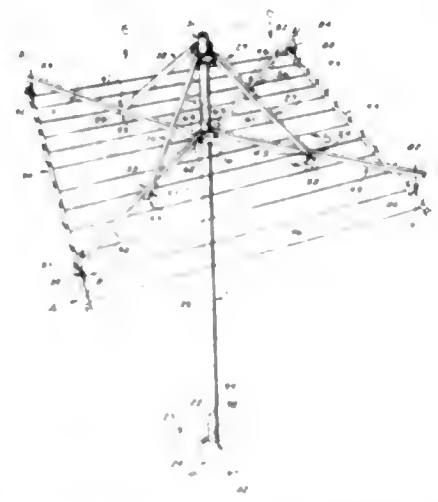
3,163,296
COLLAPSIBLE RACK
Paul Hohnstein, 1014 E. 3rd St., Hastings, Nebr.
Filed June 4, 1963, Ser. No. 285,434
7 Claims. (Cl. 211—126)

1. A collapsible rack comprising a substantially rectangular tray having upstanding peripheral side and end walk, carriers disposed substantially parallel to each of said end walls, each carrier including a pair of legs with upper and lower ends, hinge means foldably securing said lower end of each leg adjacent one of the corners of said tray, each of said legs being movable between an opened relationship wherein said leg is disposed substantially perpendicularly to said tray and a collapsed relationship wherein said leg is disposed inwardly of said peripheral walls and substantially parallel to said tray, each of said hinge means including a pin means extending parallel to said end walls and pivotally supporting one of said legs, and a snap-over-center spring means normally biasing said leg away from a position intermediate said opened and collapsed relationships, each of said spring means being substantially U-shaped and having a lower arm, an upper arm, a free end on each of said arms, and a bight portion connecting the other ends of each of said arms, each of said legs having a portion disposed above said pin means when said leg is in said opened relationship and below said pin means when said leg is in said



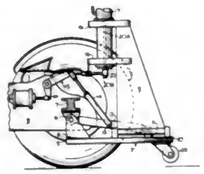
collapsed relationship, the free ends of said lower arms of said spring means being secured to said tray below each of said pin means, and the free ends of said upper arms of said spring means being secured to said last-mentioned portions of said legs, whereby said upper arms of said spring means are flexed to a position of maximum tension when said legs are moved to a position intermediate said opened and collapsed relationships.

3,163,297
COLLAPSIBLE CLOTHES DRYER
Robert D. Raynor, 7810 Corbin, Reseda, Calif.
Filed Aug. 27, 1962, Ser. No. 219,398
7 Claims. (Cl. 211—178)



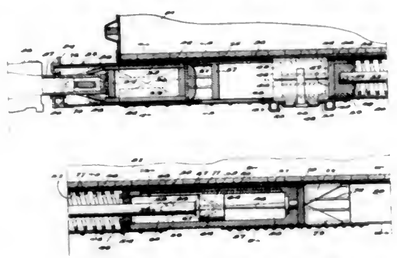
1. An extensible and collapsible clothes hanging rack, comprising: a central support standard, adapted to be mounted in a vertical position, two pairs of elongated rigid fulcrum members pivotally connected at their inner ends to opposite sides of said support standard at a fixed position near its upper end, two pairs of elongated lever members positioned on opposite sides of said support standard and pivotally connected at fixed positions intermediate their ends to the outer ends of said fulcrum members, upper and lower collar means independently slidable vertically on said support standard and pivotally connected to the inner ends of said lever members, and a pair of tensile member support bars positioned on opposite sides of said support standard adapted to support a plurality of flexible tensile clothes hanging members suspended therebetween and universally connected near their respective ends to the outer ends of said lever members.

3,163,298
DETACHABLE SELF-COUNTERBALANCED TRACTOR POWERED CRANE
Sydney Alfred Wyld, Turramurra, New South Wales, Australia, assignor to Construction Equipment Co. Pty. Limited, Auburn, New South Wales, Australia
Filed Mar. 5, 1963, Ser. No. 262,964
Claims priority, application Australia, Mar. 9, 1962, 15,210/62
5 Claims. (Cl. 212—49)



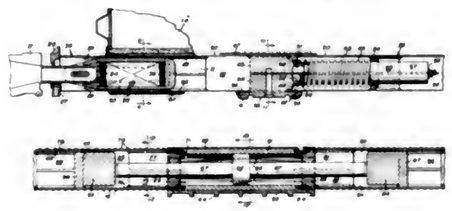
1. A mobile crane unit adapted for detachable connection to and stabilized operation with a powered tractor, the latter having a rear axle and a hydraulic pressure system including a hydraulic power take-off outlet, comprising: a platform, a standard erected on said platform and rotatably supporting a vertical stem attached to one end of an arm which extends radially and downwardly to an axle rotatably mounting a pair of spaced road wheels, a jib pivotally attached to said arm, a hydraulic ram for selectively raising and lowering said jib, conduit means connecting said ram with said hydraulic system, hangers rigidly affixed to and depending from said rear axle, said platform having normally upwardly extending spaced brackets rigidly affixed to one marginal edge thereof, each of said brackets being pivotally removably connected to said hangers, a stabilizing linkage coacting with said platform to the rear of said axle and with said tractor forward of said axle and including hydraulic means.

3,163,299
IMPACT ENERGY ABSORBING MECHANISM FOR RAILWAY VEHICLES
James C. Settles, Columbus, Ohio, assignor to The Buckeye Steel Castings Company, Columbus, Ohio
Filed Jan. 24, 1958, Ser. No. 710,967
18 Claims. (Cl. 213—8)



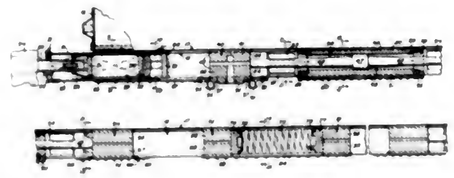
1. A mechanism for absorbing the energy of an impact applied to the coupler of a railway vehicle having a body comprising, a center sill structure extending longitudinally of said body and secured thereto, an auxiliary sill structure including transversely spaced members extending lengthwise within said center sill structure and throughout the length of the vehicle body and projecting beyond the ends thereof in the neutral position of the auxiliary sill structure, a coupler and a stem extending into a first end of the auxiliary sill structure, a second coupler and a stem extending into the second end of the auxiliary sill structure, a first center post structure secured to the center sill structure and positioned between said members, a cylinder arranged with its axis longitudinally of said vehicle body and positioned between said members, liquid within said cylinder, a piston mounted for movements within said cylinder, stop means secured to the center sill structure extending between said members and positioned to engage said cylinder, a piston rod carried by said piston extending from the cylinder with its free end in abutting relationship with said center post structure, a second center post structure secured to the center sill structure and positioned between said members, a second cylinder arranged with its axis longitudinally of said vehicle body and positioned between said members, liquid within the second cylinder, a second piston mounted for movements within the second cylinder, stop means secured to said center sill structure extending between said members and positioned to engage the second cylinder, means coupling the respective stems to the auxiliary sill structure to move the auxiliary sill structure longitudinally relative to the center sill structure upon application of an impact to either or both couplers, a piston rod carried by the second piston extending from the second cylinder with its free end in abutting relationship with the second center post structure, means including lugs carried by the auxiliary sill structure for moving the first piston relative to the first cylinder during relative movement of the auxiliary sill structure and the center sill structure, means including lugs carried by the auxiliary sill structure for moving the second cylinder relative to the second piston upon relative movement of the auxiliary sill structure relative to the center sill structure, lugs carried by said auxiliary sill structure in abutting relationship with the first cylinder, means including lugs carried by the auxiliary sill structure for moving the second piston relative to the second cylinder during opposite relative movement of the auxiliary sill structure and center sill structure, and means metering movement of the liquid within each cylinder during relative movement of the respective piston and cylinder.

3,163,300
IMPACT ENERGY ABSORBING MECHANISM FOR RAILWAY VEHICLES
James C. Settles, Columbus, Ohio, assignor to The Buckeye Steel Castings Company, Columbus, Ohio
Filed Mar. 31, 1958, Ser. No. 725,352
29 Claims. (Cl. 213—8)



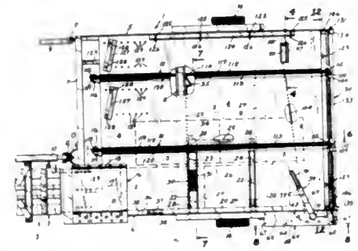
12. A mechanism for absorbing the energy of an impact applied to a coupler of a railway vehicle comprising, a railway vehicle body, a center sill structure extending longitudinally of said body and secured thereto, an auxiliary sill structure extending longitudinally within said center sill structure and arranged for lengthwise movements with respect to the center sill structure, resilient means maintaining said auxiliary sill structure in a neutral position with respect to the center sill structure, a coupler and a draft rigging arranged within each end of the auxiliary structure, means connecting each draft rigging to said auxiliary sill structure, a cylinder mounted within the mid-portion of the center sill structure, means including sets of transversely spaced block elements secured to said center sill structure engaging respective ends of the cylinder maintaining it in a fixed position with respect to the center sill structure, a piston mounted for movements within the cylinder and having a central position therein in the neutral position of the auxiliary sill structure, a piston rod carried by the piston extending beyond both ends of the cylinder, liquid substantially filling said cylinder, abutment members carried by the auxiliary sill structure each spaced from one set of said block elements in the neutral position of the auxiliary sill structure, a projection carried by each abutment member engaging an associated end of said piston rod in the neutral position of the auxiliary sill structure, said projection having transverse dimensions less than the space between the associated block elements, and said cylinder having a metering groove therein through which said liquid is forced upon relative movements of the piston and cylinder.

3,163,301
IMPACT ENERGY ABSORBING MECHANISM FOR RAILWAY VEHICLES
James C. Settles, Columbus, Ohio, assignor to The Buckeye Steel Castings Company, Columbus, Ohio
Filed June 9, 1958, Ser. No. 740,785
12 Claims. (Cl. 213—8)



3. A mechanism for absorbing the energy of an impact applied to a coupler of a railway vehicle comprising, a vehicle body, a center sill structure extending longitudinally of said body and secured thereto, an auxiliary sill structure extending lengthwise within said center sill structure arranged for movements longitudinally relative to said center sill structure, a coupler and a draft rigging carried by each end portion of said auxiliary sill structure, means coupling said draft riggings to said auxiliary sill structure for moving the auxiliary sill structure relative to said center sill structure upon application of an impact to either coupler, a double acting hydraulic device including a cylinder with a piston therein mounted within said auxiliary sill structure, a piston rod extending through opposite ends of said cylinder, a center post structure carried by said center sill structure in abutting relationship with one end of said piston rod, stop means carried by the center sill structure in abutting relationship with the other end of said piston rod, means carried by the auxiliary sill structure preventing longitudinal movements of said cylinder relative to the auxiliary sill structure, another double acting hydraulic device including a second cylinder with a piston therein mounted within the auxiliary sill structure, a second piston rod extending through opposite ends of the second cylinder, a center post structure carried by said center sill structure in abutting relationship with one end of the second piston rod, stop means carried by the center sill structure in abutting relationship with the other end of the second piston rod, means carried by the auxiliary sill structure preventing longitudinal movements of the second cylinder relative to the auxiliary sill structure, liquid within said cylinders, and means for controlling the flow of the liquid from one side of each piston to the other to cushion movements of the auxiliary sill structure relative to the center sill structure.

3,163,302
HAY BALE ACCUMULATOR
Clifford W. Pridgeon, Chinook, Mont., assignor to Daffin Company, Hopkins, Minn., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,218
11 Claims. (Cl. 214—6)



1. For use with mobile hay baling machines of the type involving a rearwardly directed discharge portion for rearward delivery of bales elongated in a direction parallel to the direction of movement of the baling machine,

(*a*) a generally horizontally disposed hay bale accumulator platform,

(*b*) means connecting said platform to the rear end portion of a baling machine for common traveling movements therewith,

(*c*) a portion of said platform being disposed rearwardly of the discharge portion of said baling machine and having guiding means for the endwise reception of said bales therefrom in horizontally disposed end-to-end relationship,

(*d*) end-to-end bale transfer means of greater length than one bale for shifting a plurality of said bales in said end-to-end relationship on said platform in a lateral direction transversely of delivery movement thereof from said baling machine a distance at least equal to the width of one of said bales,

(*e*) control means disposed in the path of bales delivered on said platform including a bale end sensing element responsive to predetermined end-to-end movement of two rearwardly delivered bales on said platform for controlling simultaneous lateral movement thereof,

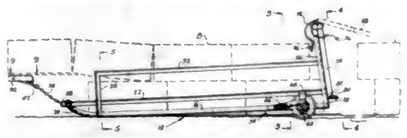
(*f*) plural bale end engaging impeller means carried by said platform,

(*g*) and means operative responsive to accumulation of a predetermined number and order of bales on said platform for imparting movements to said impeller element relative to said platform to cause said impeller element to engage and discharge said predetermined order of bales to the ground rearwardly of said platform and at a speed at least equal to the speed of forward travel of said platform, whereby to insure and preserve the order formation of the bales established on the platform when deposited on the ground.

3,163,303
AUTOMATIC BALE STACKER
Fred I. Schlake, Jr., Big Springs, Nebr.
Filed May 28, 1962, Ser. No. 198,027
4 Claims. (Cl. 214—6)

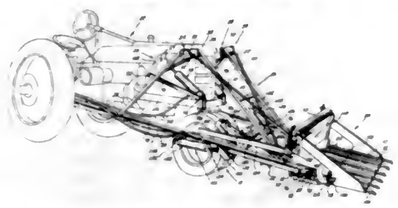
1. A bale stacker comprising an elongated frame having a forward end and a rearward end, means on the forward end of said frame for attachment of said frame to a rear delivery hay baler, ground engaging wheels on the rearward end of said frame, said frame including spaced apart longitudinally extending support members adapted to receive thereon successively delivered bales of hay from the hay baler, each of said bales when on said support members engaging the stubble on the ground be-

tween said support members and being carried rearwardly of said frame by said stubble, a pair of spaced apart longitudinally extending frame members each disposed at a height greater than the height of a single bale when on said support members and less than the height of two bales stacked one on the other, said frame members being adapted to maintain on a first row of bales received from the baler a second row of bales in stacked relation, a pair of spaced upright bars rising from the rearward end of said frame, the upper ends of said bars being spaced above said frame members, a gate extending in an upward direction adjacent and rearwardly of said bars, means connecting the upper end of said gate to said bars for swinging movement of said gate from the upper



direction position to a substantially horizontal position projecting rearwardly of said frame, an upstanding lever disposed adjacent to and below the upper end of said gate on the side of said gate contiguous to said frame members, said lever having the upper end thereof secured to said gate and having the portion adjacent the lower end in the path of movement of the upper bale in a stack of two bales when on said support members, said upper bale being operable upon delivery of a further bale to the stack to engage said lever and effect swinging movement of said gate to the horizontal position and with forward movement of said frame remain on the ground surface in the stacked condition with said gate passing over said stack and by the force of gravity returning to the upward direction position.

3,163,304
SCOOP AND LOADER ATTACHMENT FOR TRACTORS
Joseph Kohorst and Vernon Joseph Kohorst, both of Rte. 1, Arcadia, Iowa
Original application Feb. 20, 1959, Ser. No. 794,655, now Patent No. 3,079,021, dated Feb. 26, 1963. Divided and this application Jan. 23, 1962, Ser. No. 173,608
4 Claims. (Cl. 214—140)



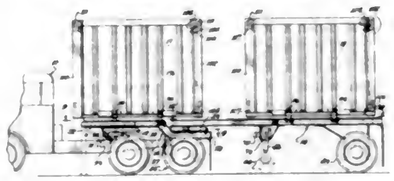
1. In combination with a tractor having a pair of lifting beams pivotally connected to respective opposite sides of said tractor at the rear thereof, said beams carrying a scoop assembly on one end, a means for raising and lowering said beams, comprising an elevated support on said beams, a scissor type hoist including a pair of lifting arms pivotally secured together at one end so as to extend in a direction opposite to said scoop relative to the longitudinal axis of said tractor, the other end of one arm pivotally secured to said support, the other end of the other arm pivotally secured at the forward end of said tractor in vertical alignment over the front axle, a hydraulic jack pivotally connected at one end to the forward end of said tractor and at the other end pivotally connectible to selective spaced points on one of said arms, said jack designed to connect to a source of hydraulic power on said tractor, and the operation of said jack causing said hoist to move upwardly and rearwardly in a corresponding direction to that of the scoop.

3,163,305
ARROW TRUENESS TESTER
Lon Stanton, Lake Ozark, Mo.
Filed Dec. 23, 1960, Ser. No. 77,890
3 Claims. (Cl. 214—340)



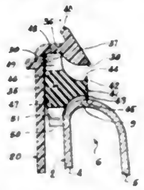
1. In apparatus for testing the trueness of an elongated shaft having a tip at one end thereof composed of a magnetic substance:
a pair of horizontally spaced supports;
a cradle for receiving said shaft comprising a pair of discs mounted on each of said supports respectively for rotation relative to the latter about parallel, horizontally spaced axes, the peripheral edges of each pair of discs being disposed in positions adapted to support there-between a corresponding end of said shaft and to impart rotation to the latter about the longitudinal axis thereof when the discs are rotated;
power-operated means operably coupled to one of said pair of discs for rotating the latter;
a magnet; and
means rigidly mounting the magnet on one of said supports in alignment with the longitudinal axis of said shaft, when the latter is received by the cradle, and in disposition to magnetically attract said tip toward the magnet and urge the shaft downwardly against said edges of the discs, whereby to maintain said shaft in a fixed longitudinal and transverse position relative to said supports during rotation thereof by the discs.

3,163,306
MULTIPLE UNIT TRAILERS AND CONTAINERS
Walter Bennett, San Marino, Stephen Barker, Temple City, and Percival M. Heinmiller, Pasadena, Calif., assignors to Utility Trailer Manufacturing Company, City of Industry, Calif., a corporation of California
Filed May 17, 1961, Ser. No. 110,755
23 Claims. (Cl. 214—515)



1. The combination of a plurality of longitudinally juxtaposed semi-trailer units, each unit having a forward fifth wheel element adapted to cooperate for towing with a fifth wheel element of a towing vehicle, and each unit having a permanent rear running gear,
the rear part of a forward one of said units and the forward part of a rearward one of said units having integrated rigid portions formed for longitudinal overlapping inter-fitting by relative longitudinal movement, to rigidly join the two units to form an effective single unit rigid in both vertical and horizontal planes,
and the rear part of the forward one of said units carrying a fifth wheel element with which the fifth wheel element of the rearward unit is adapted to cooperate.

3,163,307
VACUUM BOTTLE HAVING RESILIENTLY COMPRESSIBLE GASKET
Carl Bramming, Palm Desert, Calif., assignor to Aladdin Industries, Incorporated, Nashville, Tenn., a corporation of Illinois
Filed Nov. 14, 1962, Ser. No. 237,694
6 Claims. (Cl. 215—13)



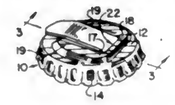
1. For use in a thermos bottle between a glass vacuum-insulated filler, having an upper end portion with a mouth therein, and a protective jacket around said filler and having an inwardly projecting annular flange on the upper end of said jacket: an annular gasket of rubbery material and adapted to be compressed between the upper end portion of said filler and said flange on said jacket, said gasket comprising an inner annular portion with a downwardly projecting flexible sealing lip for engaging the upper end of said filler and an upwardly projecting flexible sealing lip for engaging said flange on said jacket, and an outer annular portion on said gasket and having a plurality of upwardly projecting teeth spaced around said gasket and adapted to be engaged by said flange, said teeth having notches therebetween, said teeth and said notches rendering said gasket compressible between said flange and said upper end portion of said filler to provide for resilient downward force on said filler.

3,163,308
BOTTLE OR CONTAINER SEAL AND CLOSURE
Morley V. Friedell, Wheat Ridge, Colo., assignor, by direct and mesne assignments, of thirty-three and one-third percent to Lucille B. Hamm, thirty percent to Bob E. Hamm, and thirty percent to William B. Burch, all of Lakewood, Colo., and six and two-thirds percent to Doyle D. Hendrickson, Katherine M. Hendrickson, Keith C. Moskau, and Hattie N. Moskau
Filed Dec. 17, 1962, Ser. No. 245,139
4 Claims. (Cl. 215—46)



1. A container seal and closure of the type described which comprises a cap portion, a tang portion integral with the cap portion and extending outwardly from the periphery thereof, a shear line formed in the cap portion on each side of the tang portion and forming a continuation of the outline thereof into the cap portion, a bend line extending inwardly of the cap portion from the inner end of each of the shear lines respectively, said bend lines extending toward each other and joining at a common point, a bend line extending inwardly of the cap portion from the common point and substantially across the same, and a seal portion extending around the periphery of the cap portion from one side of the tang portion to the other.

3,163,309
COMBINED BOTTLE CLOSURE AND OPENING MEANS THEREFOR
Robert E. Siddens, 417 Lincoln Road, Rockville, Ind., and Matthew J. Sherock, 32190 5 Mile Road, Livonia, Mich.
Filed Oct. 1, 1963, Ser. No. 312,908
10 Claims. (Cl. 215—46)



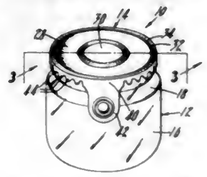
1. A combined bottle closure and opening means therefor comprising
a cap member including a top wall and a depending corrugated skirt adapted to engage about the open top of a bottle,
said top wall having a chordally extending slot having an outer edge and an inner edge therein,
a T-shaped lever having a leg and a crosshead,
said crosshead having an outer edge and two inner edges,
said lever being positioned with said leg etxending through said slot and overlying said top wall,
and with said crosshead underlying said top wall between said slot and the adjacent portion of said corrugated skirt,
said crosshead having a length sufficient for its ends to overlie the top wall of the bottle closed by said cap member both in the normal closed position and throughout substantially the entire range of rotation of the lever,
and having a width such that said two inner edges lie along a line substantially inwardly of the outer edge of said slot such that upon lifting the outer end of said lever upwardly to rotate said crosshead said two inner edges will pivot upwardly against the underside of said cap member top wall at areas lying on said line extending substantially inwardly of the outer edge of said slot to deform said top wall along said line and provide a pivot point for said crosshead, and rotate the opposite edge of said crosshead downwardly to bear effectively against the top wall of the bottle and lift the cap member out of closing relation thereto,
and bottle sealing means fitting within said cap member beneath said lever and lying between said lever and the bottle top when said cap member is in bottle closing position.

3,163,310
CONTAINER
Edward Leroy Blakslee, Crystal Lake, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 31, 1963, Ser. No. 334,848
9 Claims. (Cl. 215—46)

1. An easily removable end closure of an easily deformable metal for a container of the type having a dispensing mouth and an annular bead surrounding the dispensing mouth, comprising:
a central panel,
a countersink wall extending upwardly from the periphery of said central panel,
said central panel and said countersink wall being adapted to be received within the container mouth,
an upper portion extending outwardly from said countersink wall,

a sealing gasket disposed on the undersurface of said upper portion and adapted to be compressed between said upper portion and the container bead,

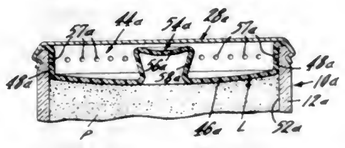
an annular skirt depending from said upper portion and adapted to extend over the container bead when the end closure is positioned on the container,



said annular skirt comprising a plurality of spaced depending tabs adapted to be deformed inwardly to tightly engage the lower portion of the container bead to provide an anchorage for the end closure when it is positioned on the container, and,

a depending pull tongue formed integral with said annular skirt to facilitate removal and handling of the end closure.

3,163,311
CONTAINER
Robert Cornelius Stolk, Fairfield, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 10, 1963, Ser. No. 329,445
9 Claims. (Cl. 215—83)



1. A container for hermetically sealing a product under vacuum, comprising:

a generally cylindrical container body having an open end,

an annular bead on said container body adjacent said open end thereof, and

a flexible and resilient sealing element disposed within said body end and comprising:

a laterally extending central portion disposed below said open body end,

a countersink wall extending upwardly from said central portion and in sealing engagement with the adjacent interior surface of said container body,

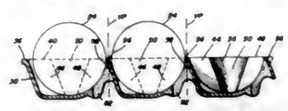
a flange extending laterally outwardly from said countersink wall and in engagement with the upper portion of said annular bead,

means in said sealing element for venting the vacuum in said container body, and

a gripping portion extending upwardly from said central portion to facilitate removal of said sealing element from said container body and reclosing of said container body with said sealing element.

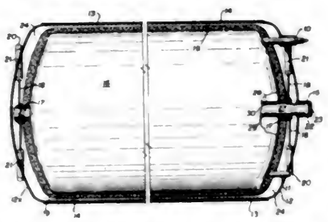
3,163,312
PACKING FOR FRAGILE ARTICLES
Charles J. Chaplin, Stamford, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,359
14 Claims. (Cl. 217—26.5)

1. A unitary packing of molded pulp material for separating and protecting the ends of a plurality of elongated fragile articles comprising a sheet having a plurality of elongated, article-receiving pockets having a top margin; the improvement comprising separator rib means disposed between and adjacent elongated article-receiving pockets, said separator means including an elongated sad-



dle portion disposed below said top margin and a plurality of longitudinally spaced elements projecting from one side of a vertical plane extending through said saddle portion; and intersecting said vertical plane below said top margin and terminating above said saddle portion.

3,163,313
MOBILE DEWAR ASSEMBLY FOR TRANSPORT OF CRYOGENIC FLUIDS
Martin M. Reynolds and Clair D. Holben, Denver, Colo., assignors to Cryogenic Engineering Company, Denver, Colo., a corporation of Colorado
Filed Dec. 17, 1962, Ser. No. 244,987
10 Claims. (Cl. 220—15)

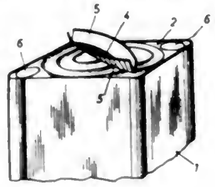


1. A Dewar assembly for storage of cryogenic fluids, comprising an elongated container for cryogenic fluids adapted to be secured in a horizontal position and comprising an outer load-carrying member, including a shell of thin metal and a tubular corrugated body of thin metal secured to a surface of the shell for structural support of said outer member, rigid heads in hermetically sealed relation to the outer member closing its ends and providing structural support therefor, tank-supporting means on the interior of said heads, a storage tank for cryogenic fluid suspended by said means connecting with each end of the tank in spaced and proximate relation to said heads and the load-carrying member, a heat-insulating material enclosing the tank and maintained in spaced relation to the heads and the outer member to provide a gas-evacuated space, and means extending into the tank from outside the body for selective passage of cryogenic fluid in and out of the tank.

3,163,314
CONTAINERS AND METHOD AND APPARATUS FOR CLOSING SAME
Alfons Mauser, Goltsteinstrasse 230, Cologne-Bayenthal, Germany
Filed Apr. 18, 1963, Ser. No. 274,031
Claims priority, application Germany Oct. 3, 1962
11 Claims. (Cl. 220—24)

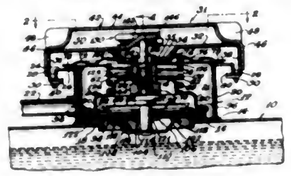
1. A container having top, bottom and side walls, said top wall prior to filling of said container having a convex shape and having an elongated filling slot of oval formation defined by opposed upstanding diverging flanges providing a funnel of oval formation, said top wall after filling of said container being constructed to be pressed downwardly to a concave shape with the edges of said flanges contacting in a substantially straight line and to be

sealed together to close said container and with the upper edges of said flanges projecting above the upper edge of



the side wall of said container a distance not greater than one-half the height of said flanges.

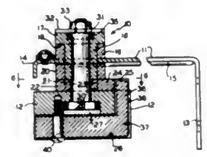
3,163,315
RADIATOR CAP WITH PRESSURE RELEASE
Michael J. Wilson, Chicago, Ill., assignor to Wayne Metalcraft Company, Chicago, Ill., a corporation of Illinois
Filed May 27, 1963, Ser. No. 283,286
5 Claims. (Cl. 220—44)



1. A cap for an automotive vehicle radiator having a spout which includes a lower seat and a vent positioned above said lower seat, said cap comprising, in combination: a support member, a cover secured to said support member and having a central portion of said cover spaced from said support member to define a chamber therebetween, said cover having an ear projecting from one side for assisting in gripping said cap and also having a transverse slot positioned opposite said ear member, means for securing said support member to said spout, means for sealing the lower seat of said spout, a relief valve positioned centrally of said sealing means, means for opening said relief valve, and cam means pivotally carried by said support member, said cam means including an elongated arm extending through said chamber and having a movable end extending through the slot in said over and also having a cam portion positioned in said chamber in operating alignment with the upper end of said opening means, whereby the pressure in said radiator is relieved through said relief valve into the vent in said spout in response to the downward movement of said opening means against said relief valve upon pivoting said arm.

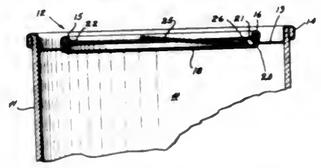
3,163,316
TEAR-STRIP CAN OPENER
Arnold E. Sandness, 130 Rufus Circle, Syracuse, N.Y.
Filed May 22, 1963, Ser. No. 282,249
4 Claims. (Cl. 220—52)

1. A device for opening metal containers having tabbed tear-strip closures, comprising: a frame, a sleeve journalled in said frame, a winding roller rotatable independently of said sleeve, a shaft coaxially mounted in said sleeve for securing the roller on said frame, a gripping lever pivotally connected to said roller and extending substantially diametrically across the roller, a chordally extending jaw surface on said roller terminating at the periphery thereof, said lever having at one end a jaw surface opposed to and confronting said roller jaw surface, said roller having an axially extending groove therein diametrically opposite said jaw surfaces, the other end of said lever having an axially projecting extension lying in said groove and being free for side to side movement in the groove, means for rotating said sleeve, and a collar connected to said sleeve for rotation therewith, said collar engaging said lever extension for first swinging said lever jaw surface toward said roller jaw surface



to grip the tabbed end of the strip therebetween and for then rotating said roller to wind the strip about the roller, the pivotal connection of said lever to the roller being nearer to the jaw surface end of the lever than the extension bearing end, whereby the tabbed end of the strip is gripped with greater pressure than the rotational pressure on the roller while the strip is torn from the container.

3,163,317
BREAK-AWAY TYPE CLOSURE FOR A CONTAINER
Vincent G. Biedenstein, Overland, Peter J. Ditto, St. Ann, and Harry H. Ellerbrock, Woodson Terrace, Mo., assignors to R.C. Can Company, Overland, Mo., a corporation of Missouri
Filed Sept. 24, 1962, Ser. No. 225,454
6 Claims. (Cl. 220—54)



1. In a closure for a container having an open end with said closure secured permanently to said open end by means forming a liquid tight joint, and a flexible plastic break-away cover part defined by a means forming a line of weakness in the material of said closure surrounding said cover part, the improvement comprising,

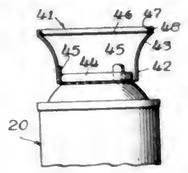
(1) a flexible finger operated pull tab of plastic material located on the outside of said cover part having one end secured to said cover part adjacent to a portion of said line of weakness and its free end projecting across said cover part away from said portion toward another portion of said line of weakness, and

(2) means at the secured end of said flexible pull tab operative when said pull tab is grasped between the fingers of the user and its free end lifted away from the outside of said cover part to create a force acting on said cover part in the opposite direction to produce initial fracture in said closure at said portion of said line of weakness.

3,163,318
FLARED CONTAINER CAP
Walter R. Frank, Elmhurst, Ill., assignor to W. R. Frank Packaging Engineers, Inc., a corporation of Illinois
Filed Aug. 17, 1962, Ser. No. 217,615
5 Claims. (Cl. 220—60)

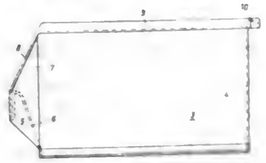
1. A two-piece container cap which comprises: (1) an outwardly and upwardly flared side wall, said side wall

being of substantially uniform thickness throughout; (2) a top member forming a snap fit with the upper portion



of said wall; and (3) means carried by said side wall for securing the cap to the container with which it is used.

3,163,319
STACKABLE BOX OF SYNTHETIC MATERIAL
Alfons Mauser, Cologne-Ehrenfeld, Germany, assignor to Mauser Kommandit-Gesellschaft, Cologne-Ehrenfeld, Germany
Filed Sept. 22, 1961, Ser. No. 139,914
Claims priority, application Germany Sept. 24, 1960
8 Claims. (Cl. 220—97)



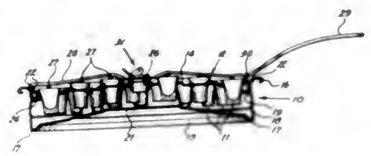
1. A stackable box of synthetic material comprising a bottom, two side walls, a rear wall and a front wall having side edges, said front wall being inclined outwardly from the bottom and terminating in a free edge located at a point approximately one-half the height of the box for providing a viewing and access opening at the front of the box when a plurality of similar boxes are arranged in a vertical stack, handle means extending downwardly from the free edge of said front wall and having side edges, each side wall having a generally trapezium-shaped portion viewed in side elevation extending beyond said front wall and enclosing therebetween said handle means, said trapezium-shaped portions defining in the zone of said opening an angle slightly inclined toward the longitudinal center line of the box and being joined to the side edges of the front wall and handle means, the free edges of said trapezium-shaped portions being provided with reinforcing means extending outwardly at a right angle thereto for stabilizing such portions, and means on the top edges of said side and rear walls defining a stacking rim for the lateral guidance of a superposed similar box.

3,163,320
COMMUNION GLASS WASHER
Ellis E. Monk, 2540 E. University, Des Moines, Iowa
Filed Sept. 10, 1962, Ser. No. 222,598
6 Claims. (Cl. 220—102)

1. An apparatus for supporting a plurality of tapering glasses comprising:

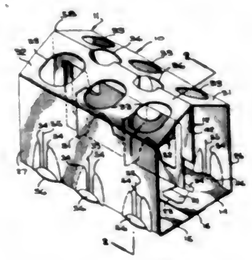
(*a*) plate means having a plurality of spaced holes and an upwardly extending peripheral bead, each hole being adapted to engage a portion of a glass to limit the movement of the glass to one direction,

(*b*) open frame means positioned over the plate means to retain the glasses in the plate means by limiting the movement of said glasses in said one direction, said frame means having a peripheral member adapted to engage the peripheral bead of the plate means, and



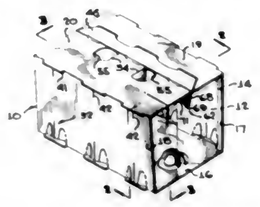
(*c*) lock means secured to a portion of the frame means and extending toward the plate means for releasably connecting the frame means with the plate means and holding the peripheral member of the frame means in engagement with the peripheral bead of the plate means so that the plate means, frame means, and glasses can be handled as a unit, said lock means having an expansible and contractible diameter means which coacts with at least one of said holes in the plate means to attach the frame means to the plate means.

3,163,321
CARRIER FOR BOTTLES HAVING INTEGRAL DIVIDER
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 22, 1961, Ser. No. 97,545
9 Claims. (Cl. 220—113)



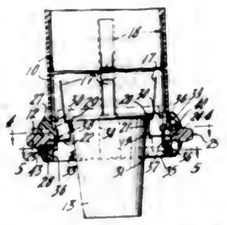
1. A one-piece carrier for holding botiles and like containers in rows, said carrier comprising a pair of spaced side walls and connecting walls extending between and connected to respective edges of said side walls, one of said connecting walls being formed of two wall panels disposed substantially in edge-to-edge relation and having a longitudinally extending separator panel extending from therebetween into the interior of the carrier for positioning between rows of containers, and a plurality of transversely extending separator panels struck from said longitudinally extending separator panel and freely projecting to opposite sides thereof for positioning between adjacent containers in the rows of containers, each transversely extending separator panel extending through and projecting generally equi-distant to opposite sides of said longitudinally extending separator panel, each of said transversely extending separator panels having a generally zig-zag end whereby the combined over-all lengths of said transversely extending separator panels being greater than the length of that portion of said longitudinally extending separator from which said transversely extending separators are formed.

3,163,322
CARRIER FOR SINGLE CHIME ALUMINUM CANS
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 5, 1963, Ser. No. 270,838
11 Claims. (Cl. 220—115)



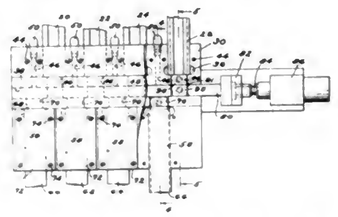
1. A carrier for single-chime containers comprising overlapped and interlocked panels including an inner panel and an outer panel; said outer panel having a plurality of transversely spaced locking means attached thereto along an interrupted fold line, and a pair of transversely spaced finger holes in said outer panel; said inner panel having a plurality of transversely spaced openings in longitudinal alignment with and receiving said locking means therein, a center-divider attached to said inner panel along an interrupted fold line, a pair of cut-outs in said center-divider disposed in alignment with said finger holes and separating said center-divider into a plurality of spacer members; each spacer member including a first side and a second side joined together along a transverse fold line, a chime-receiving opening in each said first side and second side for engaging the chimes on adjacent containers, and said first side and second side being disposed to separate the adjacent containers.

3,163,323
ADJUSTABLE CUP DISPENSER
Herbert Charles Behrens and Wayne Malcolm Mack, Easton, Pa., and Charles Lewis Metzler, Alpine, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 27, 1962, Ser. No. 205,719
10 Claims. (Cl. 221—4)



1. A cup dispenser for accommodating cups of various diameters to be dispensed individually from a nested stack, comprising a magazine having a discharge opening in one end thereof, a plurality of circumferentially spaced spring fingers having one end fixed within said magazine with said fingers extending longitudinally toward the discharge opening, said fingers being deformed inwardly toward the center of the magazine adjacent said discharge end to define cup-engaging jaws adapted to support the terminal cup in said stack, said cup-engaging jaws terminating in outwardly extending radial control arms formed by the ends of said fingers and an adjustable member mounted on said magazine at said discharge opening, said member having inwardly projecting cam surfaces which forcibly engage against said control arms and coact therewith upon selective adjustment of said member to control the operative position of said jaws within said magazine to thus selectively permit said jaws to accommodate cups of varying diameters.

3,163,324
PNEUMATIC NUT ELEVATOR
Fritz J. Lupo, Southfield, Mich., assignor to Feedmatic-Detroit, Inc., Southfield, Mich., a corporation of Michigan
Filed Dec. 18, 1961, Ser. No. 160,209
5 Claims. (Cl. 221—68)



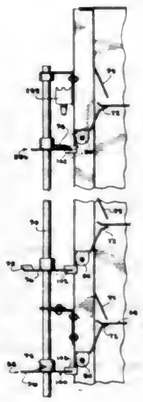
5. A device for feeding small fungible parts comprising: an orienting device, a plurality of gravity-feed tracks leading initially downwardly from said orienting device each adapted to receive oriented parts from said device and to slidably guide the parts in each of said tracks in a single column of said parts to an outlet of each track, a housing having a plurality of parallel inlets connected one to each of the outlets of the tracks to receive individual parts from the respective gravity-feed tracks, a guideway in said housing extending transversely to said inlets with said inlets opening to said guideway, said housing further having a plurality of part outlets one for each of said inlets laterally spaced from and extending parallel to said inlets and opening to one side of said guideway, a plurality of pneumatic feed tracks one connected to each of said part outlets, said housing also having a plurality of nozzle ports one for each of said outlets opening to the side of said guideway opposite said one side thereof in alignment with the associated outlet, a shuttle bar reciprocable in said guide way and having a plurality of slots one for each of said inlets and outlets extending through said bar parallel to said inlets and outlets and adapted to receive a part from the associated inlet and shiftable to move said parts into alignment with the associated outlets and nozzle ports, said shuttle bar slidably engaging the succeeding parts of the part column disposed in said inlets to support the same when the shuttle bar is shifted to move said slots out of registry with said inlets, a source of fluid under pressure and means to connect said source to said nozzle ports to cause fluid propulsion of said parts from said slots of said shuttle bar through said outlets into said associated feed tracks when said slots register with said outlets.

3,163,325
VENDING MACHINE FOR GROCERIES, BREAD OR THE LIKE AND HAVING A PLURALITY OF SELECTIVELY OPERABLE COLUMNS OF SWING SHELVES
Emery Mihalek, Country Club Hills, Ill., assignor to Hershey Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 23, 1962, Ser. No. 218,900
8 Claims. (Cl. 221—90)

1. In a vending machine,

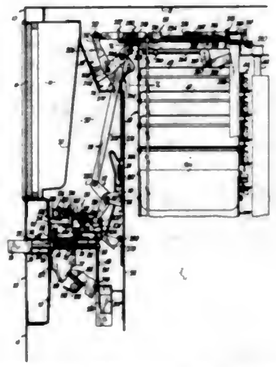
the combination comprising means forming a plurality of vertical chutes,

a plurality of shelves swingably mounted in said chutes and dividing said chutes into a plurality of pigeonhole openings for receiving articles to be dispensed by the machine,
a plurality of latches for holding said shelves in horizontal positions,
a plurality of cams for moving said latches out of engagement with the corresponding shelves to provide for downward swinging movement of the shelves under the weight of the articles,
means accessible to the purchaser for receiving the articles dispensed from said chutes,
a plurality of shafts for supporting said cams,
one of said shafts being provided adjacent each of said chutes,
the cams for operating the latches of each chute being mounted on the corresponding shaft,
the cams on each shaft being staggered around the shaft for successively releasing the latches of each chute from bottom to top,
a plurality of ratchet wheels mounted on said respective shafts,



a plurality of pawl members for advancing said respective ratchet wheels step by step,
a vending motor,
coin controlled means for operating said vending motor through one revolution,
a reciprocable slide member,
a linkage connecting said motor to said slide member for reciprocating said slide member in response to the rotation of said motor,
a plurality of control members swingably mounted on said slide member,
each of said control members having a flange thereon for operating one of said pawl members in response to reciprocation of said slide member,
each of said control members being swingable between an actuated position in which said flange is in an operative relation to the corresponding pawl member and an unactuated position in which said flange is out of operative relation to said pawl member,
each control member having means biasing said control member toward its unactuated position,
a plurality of solenoids for moving said control members to said actuated positions,
and a manually operable selector switch for selecting one of said solenoids for actuation by said coin controlled means.

3,163,326
PUSH BUTTON APPARATUS FOR OPERATING ARTICLE RELEASE MECHANISM OF VENDING MACHINE
Eugene R. Sabin, Mission, and William J. Van Wye, Overland Park, Kans., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Sept. 26, 1963, Ser. No. 311,725
19 Claims. (Cl. 221—90)

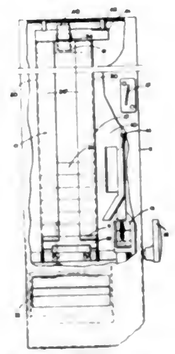


1. In a vending machine provided with a series of successively releasable product supports operable by a control member, the combination with said control member of:
manually operable, shiftable selector means;
locking mechanism for said selector means releasable only after appropriate deposit for a product;
slide means between said selector means and said control member reciprocable to operate the latter upon release of said mechanism and in response to actuation of said selector means; and
latch means for engaging said slide means to prevent completion of reciprocation and hence delay of release of a product support until said selector means has been disengaged from the slide means to render the selector means ineffective for a successive normal operation without additional deposit and for preventing transmission of impact force to the control member whereby successive fraudulent operation of the latter is precluded.

3,163,327
COIN VENDING MACHINE
Stewart A. Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed July 9, 1962, Ser. No. 208,229
6 Claims. (Cl. 221—114)

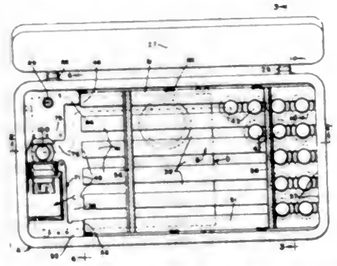
1. A coin vending machine comprising a casing, a magazine mounted in said casing, the magazine being formed with guides defining a plurality of columns in which the articles to be delivered by the machine can be stacked, an article delivery mechanism and release mechanism operable in response to insertion of the correct coinage into the machine to release the article delivery mechanism and deliver the lowermost article from a column, and in which:
(*a*) the article delivery mechanism includes a rotatable spindle having spaced article ejector fingers and means to actuate said spindle,
(*b*) said magazine having means cooperating with said spindle to pivotally mount said magazine on said spindle,

(*c*) the magazine and casing are provided with cooperating means adapted to enable the magazine to



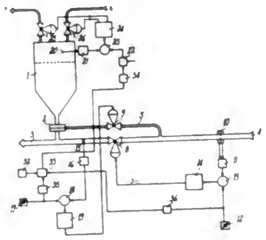
be supported in and moved between an operative position and a loading position.

3,163,328
COIN OPERATED SELECTIVE BOTTLE DISPENSERS
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Apr. 5, 1962, Ser. No. 185,309
2 Claims. (Cl. 221—133)



1. In a coin operated selective bottle dispenser comprising a case having end, front and rear walls, a bottle rack disposed in the upper part of the case and having a plurality of spaced guides parallel with said rear wall and forming slots for the reception of the upper ends of the bottles and along which the bottles may slide, a coin operated release mechanism adjacent one end wall for releasing the bottles one at a time from said rack, said coin operated release mechanism having a release chamber and means forming a trunk passageway communicating therewith, the combination of,
(*a*) said rack and release mechanism extending over the entire area within the walls of said case,
(*b*) said slots being open at both ends to provide an outlet for bottles at the one end of each slot communicating with said trunk passageway and in inlet for bottles at a corresponding end of each slot opposite said outlet,
(*c*) means carried by said case and supporting the rack for sliding movement in the direction of extent of said slots from a dispensing position to a filling position,
(*d*) said inlets extending substantially up to and being closed by one of the end walls of said case and said outlets being in communication with said trunk passageway when said rack is in its dispensing position,
(*e*) means carried by said release mechanism for restraining movement of said rack in the direction of movement thereof and maintaining said rack in dispensing position,
(*f*) means for detachably and removably supporting said release mechanism for removal from said case to accommodate movement of said rack to its filling position in which the ends of said guides at the inlets become positioned to form a space between said rack and the end wall adjacent said inlets of sufficient length to insert bottles therein and direct such bottles into the inlets of the slots in the rack from above and in which the end of the rack having the outlets occupies at least part of the space which the release mechanism occupied prior to removal.

3,163,329
METHOD FOR CONTROLLING THE FLOW OF SOLID PULVERULENT SUBSTANCES
Jean-Philippe Mornas, St. Etienne, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond, Firminy, St. Etienne, Jacob-Holtzer), Paris, France
Filed Sept. 10, 1962, Ser. No. 222,556
Claims priority, application France, Sept. 9, 1961, 872,793, Patent 1,325,617
1 Claim. (Cl. 222—1)



A method for controlling the flow rate of pulverulent material from a gas pressurized distributor therefor through a valve comprising a pneumatically variable orifice into a gas stream at an injection location comprising deriving a signal representing the pressure in the reservoir, deriving a second signal representing the pressure at the injection point, deriving a third signal representing the flow rate of gas at a second location upstream of the injection point, deriving a fourth signal representing the predetermined value of the difference between the pressure in said reservoir and the pressure at the injection point, the sum of said second, third and fourth signals constituting a control signal, comparing said first signal and said control signal, controlling the gas pressure in the reservoir as a result of said comparison, deriving a fifth signal representing a predetermined gas flow rate, deriving a sixth signal representing the actual flow rate at a location upstream of said second location, comparing said fifth and sixth signals, and controlling the flow rate at a location between said injection location and said second location in response to said second mentioned comparison.

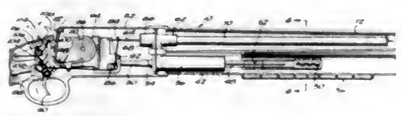
3,163,330
TOY WATER SHOOTING CAP RIFLE
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc.
Filed Mar. 2, 1962, Ser. No. 176,951
3 Claims. (Cl. 222—79)

2. In a toy rifle of the cap-firing type, having a housing with a stock, a tubular barrel, a pivotally mounted hammer on said housing, and a spring-urged trigger means to actuate said hammer, the improvement for shooting a stream of water out of the rifle barrel simultaneously with

the firing of a cap by actuation of said trigger means, said improvement comprising:

a chamber forming a water reservoir in said stock;

pump means in fluid communication with said chamber for withdrawing water therefrom;

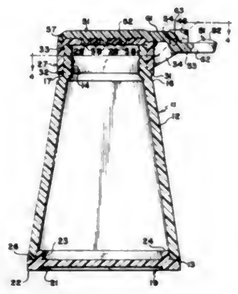


water storage means in fluid communication with said pump means and with said barrel for receiving water under pressure from said pump means;

closure means mounted in said water storage means for retaining water therein under pressure; and

rod means connecting said closure means to said trigger means for releasing water from said storage means into said barrel when said trigger means is actuated to fire said cap.

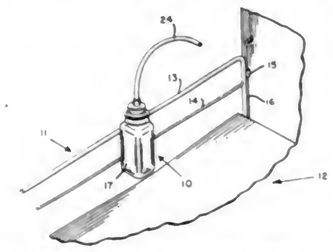
3,163,331
CONDIMENT HOLDER
Frank D. Wallberg, 542 E. 15th St., Hialeah, Fla.
Filed May 22, 1963, Ser. No. 282,458
7 Claims. (Cl. 222—151)



1. In a condiment holder structure including a vessel, a perforated cap normally disposed over an opening in said vessel, and a closure mounted to said cap for pivotal movement to and from a closed position relative to the cap; (*a*) in which said cap has a pair of parallel outwardly and upwardly projecting ears joined adjacent the distal ends thereof by a transverse resilient member; (*b*) in which the closure comprises a circular lid having a radially extending lever arm extending through an opening defined by said ears, member and said cap and projecting outwardly therefrom, and (*c*) means for detachably securing said lever arm between said ears for pivotal movement relative to a transverse axis parallel to said member.

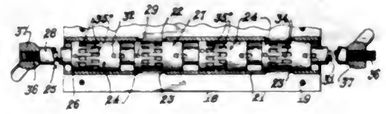
3,163,332
LIQUID DISPENSER
Milford J. Boyle, 180 Wainwright Place, and Joseph S. Zsiga, 144 Wainwright Place, both of Stratford, Conn.
Filed Mar. 20, 1963, Ser. No. 266,684
3 Claims. (Cl. 222—180)

1. A liquid dispenser adapted to be supported on the guard rail of a hospital bed or the like, comprising in combination an open top container having a throat portion of reduced diameter toward the interior of said dispenser; walls defining a groove along one side of said container and parallel with the longitudinal axis of said container, said groove having a dovetail cross section; a plurality of separate hook means having dovetail means adapted to mate with said dovetail groove; a removable cap for closing the open top of said container, said cap including a variable diameter portion adapted to mate with the throat portion of said dispenser; and relatively



long, flexible tube means extending through said cap from a point near the bottom of said container to a point substantially above said container.

3,163,333
VALVE MEANS FOR AGRICULTURAL FEEDERS AND SPREADERS
Harold L. Lindaberry, 913 Gleason Ave., Aurora, Ill.
Filed Jan. 4, 1962, Ser. No. 164,355
4 Claims. (Cl. 222—268)

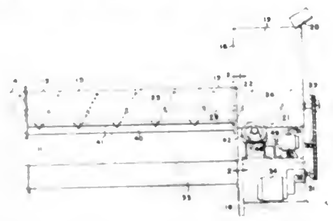


4. In a spreader for flowable material, a tubular housing having diametrically opposed openings in its side walls, a sleeve telescoped in said housing, a valve element arranged on said sleeve, said valve element comprising two parts opposed endwise one relative to the other, a series of circumferentially spaced teeth formed on opposed faces of said valve parts, the teeth of one part being telescoped into the spaces between the teeth of the other related part, means securing one of said parts to said sleeve, said sleeve having a longitudinal slot underlying the other valve part, a pin on said other valve part extending into said sleeve through said slot, a pusher bar within said sleeve in abutment at one end with said pin, and adjustable spring means in said sleeve operable to urge the bar against the pin to vary the degree of telescoping of said teeth, the spaces unoccupied by the teeth defining pockets to receive flowable material, and means to rotate said sleeve and the valve element thereon.

3,163,334
STOCK FEEDER
Allison W. Blanshine, Lititz, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 17, 1962, Ser. No. 223,999
5 Claims. (Cl. 222—412)

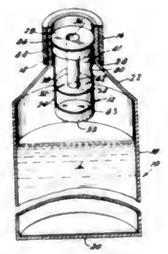
5. A feeder for stock animals comprising a supply hopper, an elongated container communicating with said hopper and extending generally horizontally therefrom for a substantial distance along the ground so that a plurality of stock animals may stand side by side at the container, said container having a substantially continuous longitudinal opening in a bottom portion thereof, which opening extends substantially the full length of the container, feed conveying means within said container and operative to receive material from said hopper and distribute it in a substantially continuous stream along said opening, a flexible band extendable to close said opening

and being retractable axially relative to the container to open the opening, a wind-up reel to retract said band



and on which the band is wound, and means for operating said reel.

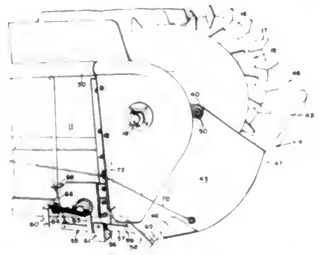
3,163,335
TILTABLE MEASURING DISPENSER
Story F. Chappell, 9 Knoll St., Riverside, Conn.
Filed Apr. 27, 1962, Ser. No. 190,602
7 Claims. (Cl. 222—455)



1. A dispensing device adapted to be used in combination with a container to dispense heavy viscous liquids from said container in predetermined amounts, said dispensing device comprising a casing having a top wall, sidewalls, and a bottom wall, a transverse partition extending across the casing and dividing said casing into upper and lower compartments, an opening in the top casing wall and an opening in the transverse partition, a longitudinally orientated conduit connecting said openings, an opening in the side of said conduit and an opening in the sidewall of said casing, the sidewall opening being above the conduit opening when the dispensing device is in an upright position, said container having a top opening with the dispensing device adapted to be positioned therein with said dispensing device sidewall opening being contained within said container and adjacent to said top opening in the container.

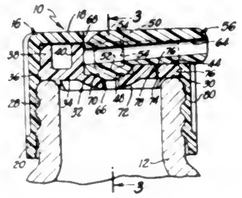
3,163,336
END GATE CLOSURE MECHANISM FOR A MATERIAL UNLOADER
Etlar A. Henningsen, Geneseo, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 242,020
5 Claims. (Cl. 222—505)

5. A gate assembly for use on the rear open end of a manure spreader, the spreader having a material carrying box with a front and opposed upright sides interconnected by a substantially level floor with a transverse edge at the rear open end, the invention comprising: alined transverse pivots on the sides above and rearwardly of the rear edge; a gate mounted on the pivots to swing by gravity between a closed position and an open position; an abutment on the gate; a latch element pivotally mounted for vertical movement on the box and having a portion thereon adapted to seat in a latching position behind the abutment when the gate is in its closed position, the latch element further having an inclined portion leading rearwardly from the aforesaid portion for engaging the abutment as the gate approaches its closed position to effect vertical movement of the latch element; means between the latch element



and box biasing the element toward its latching position; a latch control connected to the latch element and terminating forwardly of the box for releasing the latch from its latched position; and a gate control extending from the gate to the front of the box for effecting closure of the gate.

3,163,337
CLOSURE
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed Nov. 2, 1962, Ser. No. 235,092
12 Claims. (Cl. 222—534)



1. A closure which includes:

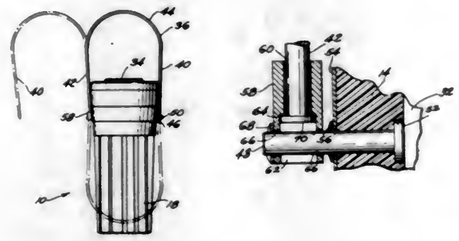
a cap member, a fitment member, and a spout member, said cap member including a top and a skirt dependent from the periphery of said top, attaching means formed on the interior of said skirt for attaching said skirt to a bottle neck, said cap member also including a top slot formed in said top, said top slot having ends,

said fitment member fitting within said skirt adjacent to said top and including a cavity aligned with said slot, a curved wall located opposite said top at one end of said top slot, said curved wall extending about an axis, an opening leading from a central area of said curved wall through said fitment member and side slots extending from said cavity in alignment with said axis, each of said side slots extends to the surface of said fitment member adjacent to said top,

said spout member including a cylindrical central portion, a spout extending from said central portion, a passage extending through said spout and said central portion, and aligned trunnions fitting within said side openings, said trunnions being engaged by said top of said cap member so as to rotatably hold said spout member against said fitment member, said spout member being capable of being rotated so as to place said passage in alignment with said open-

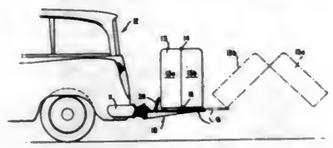
ing and normally fitting against said fitment member so as to form a seal with respect to said opening.

3,163,338
COMBINATION VEHICULAR AND PORTABLE INSULATED FOOD AND BEVERAGE CONTAINER
Marten Gottsegen, Chicago, Ill., assignor to Gotham Industries, Inc., Chicago, Ill., a corporation of New York
Filed Nov. 7, 1962, Ser. No. 236,088
11 Claims. (Cl. 224—42.01)



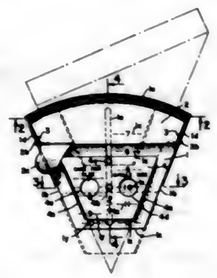
5. A combination vehicular and portable container comprising an insulated housing having a pair of opposed side walls, a pair of mounting bolts projecting outwardly from one of said side walls adjacent opposite ends thereof, a pivot joint mounted on each of said mounting bolts and being rotatable about a horizontal axis, a pair of substantially inverted U-shaped bent wire members having a pair of legs, one leg of each of said bent wire members being connected to one of said pivot joints and being rotatable therein about a substantially vertical axis, an eyelet integrally formed at the free end of the other leg of each of said bent wire members, and a second pair of mounting bolts projecting outwardly from the opposite of said side walls and in registry with said first pair of mounting bolts, said bent wire members being rotatable in said pivot joints from a first position wherein said bent wire members afford a pair of hangers for said container to a second position wherein said eyelets releasably engage said second pair of mounting bolts, said bent wire members in said second position being rotatable about said pairs of mounting bolts and cooperating to afford a carrying handle for said container.

3,163,339
FOLDING CARRY ARM FOR A VEHICLE
John M. Merchant, 1st Ave. E. at RR St., Mobridge, S. Dak.
Filed May 18, 1962, Ser. No. 195,733
10 Claims. (Cl. 224—42.03)



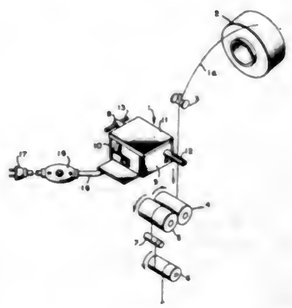
1. An article carrying device for a vehicle comprising in combination; a substantially horizontal stationary platform, an elongated movable plate pivoted adjacent one end thereof to said platform and moveable from a folded position overlying said platform to a position extending outwardly of and aligned with said platform, means to attach the article to be carried to said plate, and means to attach said platform rigidly to a vehicle frame.

3,163,340
PAPER DISK CUTTER
George E. Chisholm, 711 35th Ave. Court, Greeley, Colo.
Filed Aug. 12, 1963, Ser. No. 301,257
9 Claims. (Cl. 225—6)



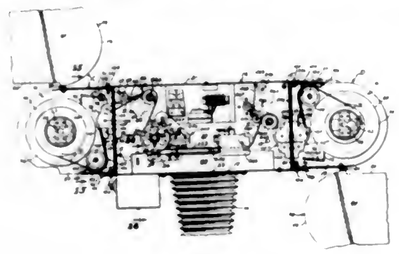
1. A paper disk cutter for forming substantially circular liners for the bottoms and sides of circular pans or the like from folded paper blanks, the sides of which blanks converge downwardly at their lower ends, comprising a base plate having an arcuate upper edge, a clamping plate pivotally mounted on said base plate and having an arcuate upper edge substantially conforming in extent and curvature with that of the base plate and adapted to clamp the upper portion of the folded blank therebetween; and a guide vertically adjustably mounted on the base plate and having downwardly converging sides adapted to engage the downwardly converging sides of the blank to limit the amount of entry of the blank between the base plate and clamping plate, whereby the upper portion of the blank may be readily torn off along the arcuate cutting edges of the base plate and clamping plate for forming a circular liner of diameter conforming with the setting of the guide.

3,163,341
YARN BREAKING DEVICE
Don E. Fisher and William H. Hills, Pensacola, Fla., and James R. Williams, Robertsdale, Ala., assignors to Monsanto Company, a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,561
10 Claims. (Cl. 225—100)



1. A yarn breaking device comprising:
(*a*) casing means,
(*b*) rotatable means supported intermediate its ends in said casing means and adapted to be cranked,
(*c*) yarn threading means formed in said rotatable means,
(*d*) torsion means mounted about said rotatable means and arranged to be stressed when said rotatable means is cranked in one direction for torquing said rotatable means,
(*e*) locking means on said rotatable means,
(*f*) control means operatively connected to said locking means for locking said rotatable means in its torqued position and for selectively releasing said rotatable means from the locked torqued position whereby said torsion means imparts rotation to said rotatable means in a reverse direction from said one direction for operatively wrapping and breaking a yarn normally traveling under tension and threaded through said yarn threading means.

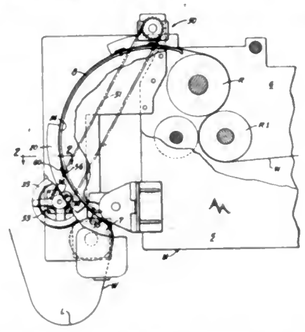
3,163,342
INTERMITTENT DRIVE UNIT FOR PHOTOGRAPHIC PRINTER MACHINE
Karl J. Kallenberg, Minneapolis, Minn., assignor to Pako Corporation, Minneapolis, Minn.
Original application Mar. 10, 1959, Ser. No. 798,503, now Patent No. 3,113,498, dated Dec. 10, 1963. Divided and this application Jan. 16, 1963, Ser. No. 251,854
8 Claims. (Cl. 226—141)



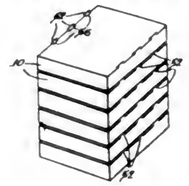
1. In a photographic printer machine including a casing, a supply roll for furnishing print paper to said printer, a print paper drive roller mounted in said casing for advancing said paper within the casing, continuously rotating power means, a slip clutch mechanism for coupling said power means to said paper drive roller, means normally engageable with said clutch mechanism to cause slippage thereof so that said paper drive roller remains stationary, means for disengaging said clutch engaging means from said clutch mechanism so that said paper drive roller is rotated to advance said paper, means responsive to the degree of rotation of said paper drive roller for inactivating said disengaging means after a predetermined rotation of said paper drive mechanism has taken place, and a second clutch mechnism for coupling said responsive means to said power means, said second clutch mechanism being operated into engagement by said disengaging means.

3,163,343
WEB GUIDE MEANS
Peter Zernov, Wauwatosa, Wis., assignor to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin
Filed Apr. 17, 1963, Ser. No. 273,648
4 Claims. (Cl. 226—199)

1. Paper web handling machinery comprising a curved apron over which a web of paper is fed, side guide walls above said support and laterally spaced apart for guiding said web therebetween by bearing against the edges of said web, said walls having an edge conforming to the surface contour of said apron and located closely adjacent thereto, and means positioned across said apron for raising said web slightly off said apron and preventing the web from running beneath said walls.



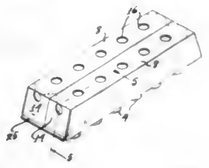
3,163,344
CONTAINER
Abraham L. Tunick, Rock Island, Ill., assignor to Chicken Delight, Inc., Rock Island, Ill., a corporation of Illinois
Filed Feb. 18, 1963, Ser. No. 259,279
1 Claim. (Cl. 229—16)



A ventilated stackable container for freshly cooked, ready-to-eat, carry-out foods such as pizza, comprising a unitary sheet of container material cut and folded to define spaced parallel top and bottom walls of the same size, spaced parallel side walls of the same size as each other and the same length as the top and bottom walls, spaced parallel opposite end walls of the same width as the top and bottom walls and the same height as said side walls, spacer tabs projecting upwardly from the side walls above the top wall, and vent openings in the top wall adjacent said tabs; said sheet including said bottom wall, a glue tab adjoining one side of said bottom wall, a first one of said side walls adjoining at one of its sides the opposite side of the bottom wall, continuous fold lines between said bottom wall and each of said glue tab and said first side wall integrally hinging the tab and side wall to the bottom wall, said top wall adjoining at one side the opposite side of said first side wall, the second one of said side walls adjoining the opposite side of said top wall, a plurality of spaced parallel U-shaped cuts in the top wall along the adjacent side of each of said side walls, said cuts at their ends terminating adjacent the side of the respective side wall, aligned fold lines between but not within the area defined by said cuts along the adjoining sides of said top wall and each of said side walls, said cuts and fold lines forming said vent openings in the top wall and said upwardly projecting spacer tabs integrated with said side walls upon relative folding of said side walls and said top wall along the latter fold lines, said top, bottom and side walls and said glue tab being foldable into tubular envelope form along said fold lines and being retained in such form by gluing the glue tab to said second side wall, a side fold end tab adjoining and integrally

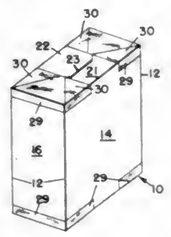
hinged by a fold line to each end of each of said side walls, said end walls respectively adjoining and being integrally hinged by a fold line to opposite ends of said top and bottom walls, and a tuck flap adjoining and integrally hinged by a fold line to each of said end walls, said side fold end tabs being foldable toward the interior of said envelope, said end walls being foldable over said side fold end tabs and said tuck flaps being insertable into said envelope to complete the container.

3,163,345
EGG CARTONS
Walter J. Schwertfeger, Englewood, N.J., assignor to Alton Box Board Company, Alton, Ill., a corporation of Illinois
Filed June 14, 1960, Ser. No. 36,072
1 Claim. (Cl. 229—29)



A retail package for eggs comprising an egg holding tray in which the tray is formed with a centrally located longitudinal row of hollow frusto-conical posts separating two rows of egg receiving pockets, each of said two rows of pockets having at its outer side a row of projections presenting outwardly directed and inverted generally U-shaped edges with abutting co-active and adhesive bonding to one side wall of a cover having a top wall and opposed side walls, the bottom of the package consisting of the tray only, a lower area of said tray lying below said side walls of the cover member.

3,163,346
HERMETICALLY SEALED CARTON
Lawrence R. Hintz, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Jan. 30, 1963, Ser. No. 254,970
6 Claims. (Cl. 229—37)



1. A sealed material containing carton comprising: a plurality of edge joined panels joined to provide circumferentially continuous front, back and side walls of said carton, said carton having a plurality of edge joined closure flaps integrally connected along fold lines to at least one end of said carton, said closure flaps providing circumferentially continuous band of flaps, an opposed pair of said closure flaps having diagonally disposed scored fold lines adjacent each end thereof defining gusset like triangular webs integrally connecting the ends of said opposed pair of closure flaps to the adjacent ends of the other opposed pair of closure flaps, whereby during the formation of a closure from said band of flaps one opposed pair can be folded outwardly to dispose all of said flaps substantially in the plane of the adjacent end of said carton, and a sealing sheet of flexible material covering said end of said carton and adhered to surfaces of said closure flaps exposed in said plane to seal said carton end, said outwardly folded flaps being inwardly folded in substantially coplanar disposition over said sealing sheet and over said inwardly disposed flaps and fastened in said coplanar disposition in the completed condition of said closure.

3,163,347
TIGHTLY SEALED CARTON BLANK
Kenneth D. Bixler, Huntington, N.Y., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,258
6 Claims. (Cl. 229—39)

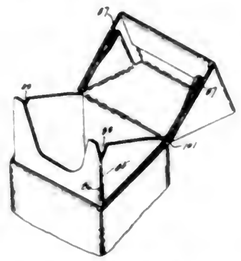


1. A carton blank forming a rectangular, glued end carton comprising a planar body member including pairs of alternately disposed side and end wall panels hingedly connected on mutually parallel fold lines, a transverse fold line normal to said mutually parallel fold lines and bordering one end of said side and end wall panels, said body member including pairs of alternately disposed closure panels hingedly connected at said transverse fold line and defined by cut-lines coinciding with certain of said mutually parallel fold lines at said transverse fold line for forming free side edges on said closure panels, one of said closure panels in alignment with one of said pairs side wall panels including a fragmentary, transverse fold line extending to free side edges thereof and parallel to said first mentioned transverse fold line and defining upper and lower panel segments therein, said upper panel segment including a pair of integral lock tabs spaced along said fragmentary fold line and defined by cut-lines originating at said fragmentary fold line, each of said pair of closure panels in alignment with said end wall panels including aperture portions, said aperture portions having a height substantially equal to the width of said lock tabs for receiving the same therein when the carton is closed, said aperture portions including one marginal edge normal to a plane passing through said fragmentary fold line.

3,163,348
BOXES
Alfred Schmermund, % Machinenfabrik Alfred Schmermund, Gevelsberg, Westphalia, Germany
Filed Mar. 21, 1960, Ser. No. 16,437
7 Claims. (Cl. 229—44)

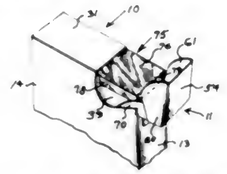
1. A box construction for receiving cigarettes or like articles comprising a body portion including front, rear, side and bottom walls and a chamber with an open top, the upper ends of said side walls of the body portion being provided with external vertical grooves inset from the normal plane thereof, a closure hingedly connected to the back wall of the body portion including top, side and front walls, and side walls which at the inner surfaces thereof are provided with inwardly projecting ridges, means adapted to snap into said grooves as the closure is being brought to about a finally shut position on said

box with a locking action in said grooves tending to urge the projecting means against the edges of said grooves to



prevent any accidental opening of the closure upon the body portion.

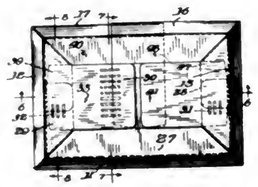
3,163,349
CIGARETTE BOX CONSTRUCTION
Stan M. Silver, 25 Central Park W., New York, N.Y.
Filed Mar. 1, 1963, Ser. No. 262,161
6 Claims. (Cl. 229—44)



1. In a container comprising a body having side walls, end walls, a bottom wall and a top wall open at one end thereof, the provision of a closure for said open portion of said top wall, said closure being adhered and pivoted to the end wall adjacent said open portion of said top wall, said body comprising a pair of end panels, pairs of side panels and a gluing strip interconnected by fold lines, bottom flap members connected by fold lines to the lower edges of said side and end panels, partial top flap members connected by fold lines to matching end portions of the upper edges of said side panels, a reinforcing back member connected by a fold line to the upper edge of an end panel remote from said partial top flap members, wing members connected by fold lines to each side of said reinforcing member, said side panels each provided with a cut away portion beneath an adjacent wing member, a relatively small strip interconnecting the lower outer corner of each wing with its adjacent side panel, and a hinge member formed in the upper end portion of said end panel immediately below said reinforcing back member, said hinge member being defined by a horizontal slit coextensive with the fold line interconnecting the back member and the adjacent end panel, a pair of downwardly directed slits extending from the ends of said horizontal slit, and a horizontal slit extending horizontally of the central portion of the base of the hinge.

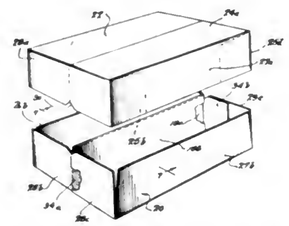
3,163,350
CARTON
Julius A. Zinn, 3900 W. North Ave., Stone Park, Ill.
Filed Mar. 5, 1962, Ser. No. 177,388
2 Claims. (Cl. 229—48)

1. An open ended carton of thin, foldable material having a front panel portion, side panel portions, and a rear wall portion composed of panels overlapped at their side edges and secured together throughout the length of the carton and having integrally formed flaps at the top thereof to form a bellows closure for the completed carton, and a bottom for the carton composed of a flap integral with the rear wall portion having tabs at each of its sides and turned inward to form a bottom portion for the carton, a flap integral with the front panel having a serrated area thereon, the serrations of which area extend longitudinally of the flap, the said flap having tabs at each of its ends having serrated areas thereon, the serrations of which extend transversely of the said tabs, the said flap and tabs being inwardly folded against the outer faces of flap and tabs on the rear



wall portion and glued thereto with the serrations on the bottom flap secured to the front wall panel overlying and extending across the edge of the overlapped outer panel of the rear wall portion and the serrations of the tabs on the bottom flap integral with the front panel overlapping and extending across the ends of the tabs on the sides of the bottom flaps integral with the rear wall portions and foldable flaps on each of the side panels being inwardly folded and secured to the outer face of the bottom flap integral with the front wall portion of the carton.

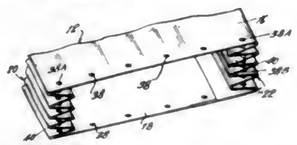
3,163,351
PACKAGE
Henry Borgardt, Chicago, Ill., assignor to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed May 31, 1961, Ser. No. 113,845
1 Claim. (Cl. 229—51)



A container comprising a receptacle defined by a rectangular base wall comprising two rectangular panels each including a portion thereof which is foldable upwardly in position to provide a two-ply intermediate wall extending between an opposing pair of side edges of said base wall and in parallel relation to the other pair of side edges of said base wall, the upper edges of said two plies being joined together along a line of perforations, a first pair of side walls extending upwardly from each of the opposing edges of said base wall, each of said side walls of said first pair having a line of perforations extending generally normal to said base and being located in alignment with said intermediate wall, a second pair of side walls extending upwardly from each of the other side edges of said base wall, and a lid overlying said receptacle but separate therefrom, said lid including an integral rectangular cover panel adapted to be disposed in parallel relation to said base and coextensive therewith, said cover panel including a fold line positioned so as to lie in the plane of said in-

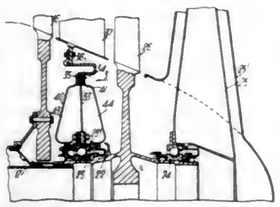
termediate wall and coextensive therewith, said fold line being such as to render said cover panel foldable along said line but capable of resisting separation along said line when in tension perpendicular to said line, side walls extending downwardly from each edge of said rectangular cover panel and in telescoping relation to said side walls of said receptacle, adjacent side walls of said lid being interconnected with one another, each of an opposing pair of said side walls adjacent opposite ends of said fold line of said cover panel being provided with a line of perforations disposed normal to said cover panel and positioned so as to constitute an extension of said fold line in said opposing side walls, each of said lines of perforation terminating in a notch in the lower edge of said side walls.

3,163,352
PAPER BAGS
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed May 7, 1962, Ser. No. 192,731
3 Claims. (Cl. 229—62)



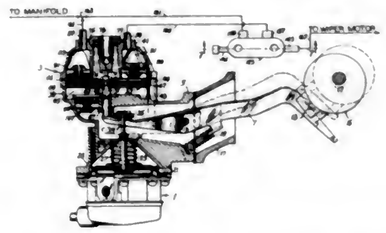
1. A bag having opposing upper and lower walls and pleated side walls extending therebetween to define a bellows tube, apertures being defined in said tube at at least one end thereof, a coating formed of adhesive material provided at the outer surface of each of said upper and lower walls at said end of said tube, said coatings extending into said apertures so as to fill said apertures with coalesced adhesive material, and a tape folded over said end of said tube and secured thereto by said coatings, said tape extending into said apertures from both said upper and lower walls and being secured together in spaced relation in said apertures by the adhesive material filling said apertures and interposed between the opposing portions of said tape which extend into said apertures and means provided for access into the interior of said bag.

3,163,353
THRUST BEARING FOR FLUID FLOW MACHINES
James Alexander Petrie, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Mar. 19, 1962, Ser. No. 180,720
Claims priority, application Great Britain, Apr. 5, 1961, 12,253/61
13 Claims. (Cl. 230—116)



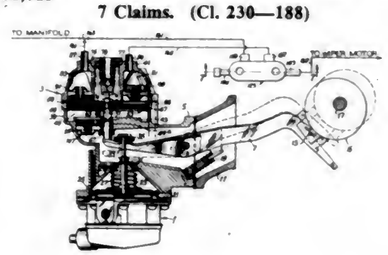
6. A gas turbine engine, comprising rotatable shafting, a turbine which is mounted on said shafting, a thrust bearing for said shafting, said thrust bearing being subjected to the thrust from said turbine, an annular spring diaphragm within which the thrust bearing is mounted, the diaphragm extending radially of the engine and being biased to oppose said thrust, means for subjecting the upstream and downstream sides of the diaphragm to a relatively low and a relatively high pressure, respectively, a shaft which is splined to said shafting, an auxiliarly compressor which is carried by said shaft, and means for leading the compressed air from the auxiliary compressor externally of the engine.

3,163,354
FUEL PUMP
Alfred C. Korte, Jennings, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Original application June 30, 1958, Ser. No. 745,358. Divided and this application Dec. 21, 1961, Ser. No. 161,098
4 Claims. (Cl. 230—172)



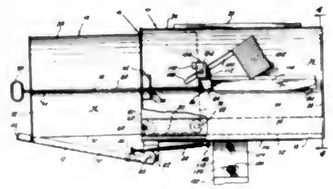
1. In a booster pump, the combination comprising a cylinder, a piston within said cylinder, said piston being formed of a pair of circular plates secured in face-to-face relation, one of said plates having a cylindrical flange and a rim extending radially from the flange, the other plate having a radially extending rim spaced from the first mentioned rim and defining a ring groove with the flange and rim of said one plate, and a piston ring of elastic material coaxially received in said ring groove, said piston ring having a sliding fit at its inner periphery on said cylindrical flange and extending at its outer periphery beyond said spaced rims to form an effective seal with the cylinder wall and with the surface of said cylindrical flange, said piston ring having an axial height less than the spacing between said rims so that said piston ring may move loosely therebetween.

3,163,355
FUEL PUMP
Alfred C. Korte, Jennings, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Original application June 30, 1958, Ser. No. 745,358. Divided and this application Dec. 21, 1961, Ser. No. 161,015
7 Claims. (Cl. 230—188)



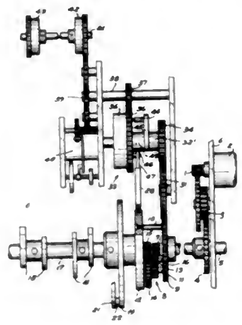
1. A vacuum booster pump comprising a cylinder, said cylinder comprising an annular wall defining a pumping chamber, an end wall at one end of said chamber having an opening connected to a source of oil vapor and a head at the other end of said chamber, a piston rod slidable in said opening in said end wall, a piston on said rod in the cylinder, said piston having a peripheral groove, a flat resilient packing ring in the groove, said ring having a sliding sealing fit on the interior of said cylinder and the bottom of the groove, and being free to slide in the groove, said rod having a sufficiently loose fit in said opening as to provide a restricted passage for entry of sufficient oil vapors to the cylinder for lubricating said piston without substantial air leakage, a spring reacting from the head against the piston adapted to drive the piston in the direction toward said end wall, said head having an inlet passage and an outlet passage, said end wall having an inlet passage and an outlet passage, each inlet passage having a check valve therein adapted to open in the direction toward the chamber, and each outlet passage having a check valve therein adapted to open in the direction away from the chamber.

3,163,356
RURAL MAIL BOX
George J. Joehnk, R.R. 1, Clinton, Iowa
Filed Aug. 7, 1963, Ser. No. 300,581
3 Claims. (Cl. 232—35)



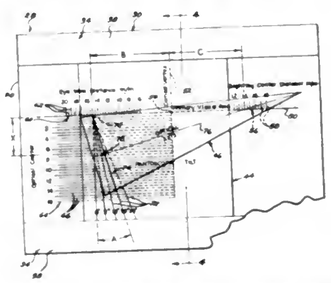
1. A rural mail box structure comprising:
an outer box open only on one end and provided with a longitudinal slot in one side,
means on said outer box for attachment to a support,
opposed track assemblies within said outer box and secured to the respective sides so as to be parallel with the bottom of said box,
an inner box open only on one end and correspondingly positioned relative to said outer box,
roller means on said inner box engaged with said respective track assemblies so that said inner box is telescopically extensible and retractable relative to said outer box,
bracket means on the closed end of said inner box,
a rod removably secured to said bracket means so that one end projects through said slot,
a pull rod connected at one end to the projecting end of said rod member and extending therefrom forwardly of the open ends of said boxes,
a bracket support on said outer box adjacent the open end thereof for said pull rod,
a door for the open end of said outer box hingedly secured at the bottom so as to open downwardly and outwardly,
spring means connecting said door to said outer box to normally urge it into closed position,
movement of said inner box outwardly under a pull on said pull rod effecting opening of said door,
said door automatically returning to closed position when said pull rod is pushed inwardly, and
stop means in said track assemblies to limit the movement of said inner box outwardly from said outer box.

3,163,357
CLOCKWORK DRIVE FOR TAXIMETERS
Heinz Kelch and Eduard Schuh, Villingen, Black Forest, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed June 11, 1962, Ser. No. 202,647
Claims priority, application Germany, June 9, 1961, K 43,950
15 Claims. (Cl. 235—30)



1. In a taximeter, in combination, a clockwork; a spring motor operatively connected to said clockwork for driving the same; a control shaft; an electric motor; transmission means including a control means having a first position connecting said electric motor to said control shaft for operating the same and having a second position connecting said electric motor to said spring motor for periodically tensioning the same, said transmission means including a differential drive transmitting the drive from said electric motor on the one hand to said control shaft and on the other hand to said spring motor; and means controlled by said spring motor for automatically shifting said transmission means to said second position when said spring motor has run down to a selected extent and to said first position when said spring motor has been wound up to a selected extent whereby a substantially constant spring torque drives said clockwork irrespective of the drive of said control shaft by said electric motor.

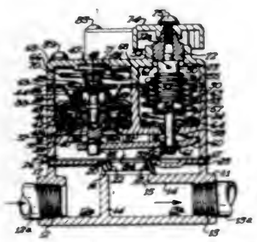
3,163,358
REFRACTIONISTS OPTICAL CENTER LOCATION DEVICE
Bernard Grolman, Worcester, Mass., assignor to American Optical Company, Southbridge, Mass., a corporation of Massachusetts
Filed Mar. 1, 1963, Ser. No. 262,139
2 Claims. (Cl. 235—89)



1. A device for facilitating determination of the optimum location for the optical center of an ophthalmic lens in the eyewire of a mounting in which said lens

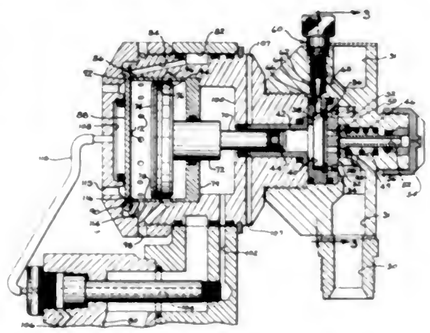
is to be supported for use before the eye, said device comprising a chart having a number of scales in prearranged positions thereon, said scales having indicia representing values respectively of distance from the sighting center of said eye to the corneal vertex thereof, distance from said corneal vertex to the plane of said eyewire and position of said optical center to be determined, a first member on said chart having lines thereon representative of different values of pantoscopic tilt of said mounting, said first member being adjustable relative to said chart in a plane parallel thereto for selectively positioning said lines in predetermined indicating relation to indicia on the scale which represents values of distance from said corneal vertex to the plane of said eyewire, a second member having right angularly related lines intersecting each other at a point thereon, said second member being adjustable relative to said first member in a plane parallel thereto for positioning one of its lines in coincidence with a selected one of said lines on said first member and with the other of its lines, at the same time, indicating a selected value of the scale which represents distance from the sighting center of said eye to the corneal vertex thereof whereby the point of intersection of said lines on said second member will indicate the optimum location for the optical center of said lens on the scale which represents values of position of said optical center.

3,163,359
THERMOSTATIC VALVE
Frederik J. Ages, Rolling Hills Estates, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed May 28, 1962, Ser. No. 197,941
1 Claim. (Cl. 236—48)



A thermostatic valve subassembly comprising a housing adapted to be mounted on a valve body having an inlet and an outlet and an apertured wall therebetween, said housing having a first recess in one side thereof adapted to communicate with the aperture in the wall of the valve body and second and third recesses in the opposite side thereof forming partition walls therebetween, a valve opening through the wall between the first and second recesses, a first valve seat in said second recess around said valve opening, a first cup-shaped valve slidable in said second recess and guidable by the wall of said recess and cooperable with said valve seat to control fluid flow therethrough, said first valve having a coaxial opening therein and formed to provide a second valve seat, sealing means between said first valve and the side walls of said second recess, a second valve cooperable with said second valve seat, first means biasing said first valve against said first valve seat, second means biasing said second valve against said second valve seat, motion transmitting means that is so arranged with respect to said first and second valves that it will first open said second valve and then said first valve as it is moved in a valve opening direction, a floating lever in said first recess and having a first portion positioned to actuate said motion transmitting means and a second portion positioned in abutting engagement with said housing as a pivot, power means located in said third recess and having an actuating stem in engagement with a third portion of said lever for actuating said lever, a single cover member secured to said housing over said second valve and bearing against said first and second biasing means and one end of said power means, a first passageway in said housing extending from said second recess and adapted to communicate with the inlet of the valve body, and a second passageway extending from the interior of said cover member over said second valve and adapted to communicate with said inlet.

3,163,360
AIRLESS SPRAY GUN UTILIZING LOW PRESSURE COATING MATERIAL SOURCE
Joseph H. McNinch, Jr., and Robert J. Della Flora, Toledo, Ohio, assignors to The De Vilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 246,979
12 Claims. (Cl. 239—124)



5. An airless spray gun comprising a spray gun body having a coating material cylinder, a coating material piston reciprocable in said cylinder, power means connected to said piston for reciprocating the same, coating material supply means communicating with said coating material cylinder, check valve means enabling the flow of coating material from said supply means into said coating material cylinder and blocking the flow of coating material in the reverse direction, an outlet port in said body communicating with said coating material cylinder, nozzle means connected with said outlet port, a pressure valve member between said outlet port and said nozzle means and controlling flow of coating material to said nozzle means, means urging said pressure valve member to a closed position, said urging means being yieldable to enable said pressure valve member to move to an open position when pressure of the coating material in said coating material cylinder rises above a predetermined amount, whereby coating material can flow to said nozzle means under high pressure, and means in said spray gun body to change the coating material output of said spray gun without changing the length of the stroke of said coating material piston.

3,163,361
MOBILE IRRIGATION SYSTEM
William H. Stout, 223 N. Jessup St., Portland, Oreg.
Filed Apr. 16, 1962, Ser. No. 187,726
6 Claims. (Cl. 239—212)

5. A teeterable mobile irrigation system with laterally extending irrigation booms comprising

an elongated fluid-carrying supply conduit,

plural support wheels for the conduit mounted on the conduit with the conduit passing through the centers of the wheels,

hollow boom structure for carrying irrigation water mounted on the conduit and in fluid communication with the conduit including boom portions projecting out laterally to opposite sides of the conduit,

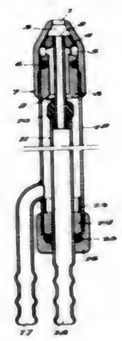
means rotatably mounting the boom structure on the conduit accommodating swinging of the boom structure about the longitudinal axis of the conduit,



said boom structure including a balanced pair of booms on either side of the conduit and connected thereto teeterable about the conduit and interconnected whereby when one teeters downwardly the other teeters upwardly,

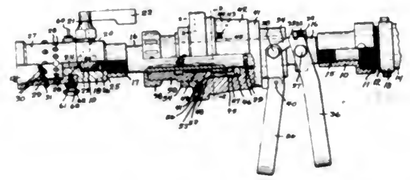
each boom of said pair including means adjacent its outer extremities for contacting the ground and providing support upon it being lowered toward the ground by teetering movement.

3,163,362
SPRAY DEVICE HAVING OUTER AND INTERIOR TUBULAR CONSTRUCTION
Max R. McFee, 306 Maple Ave., Springdale, Ark.
Filed Feb. 4, 1963, Ser. No. 255,790
3 Claims. (Cl. 239—401)



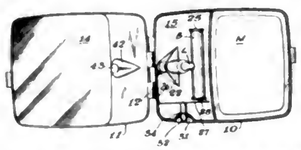
3. A spraying device comprising an outer tubular casing adapted to contain a medium to be sprayed, an interior tube extending lengthwise of said outer casing for the passage of low pressure compressed air, a packing gland encircling said interior tube and secured to said outer casing at one end thereof, a nozzle at the end of said outer casing distant from said packing gland, said nozzle having a discharge opening and a mixing chamber interiorly of said discharge opening, an intake pipe for admission of a medium to be sprayed leading to a space between said outer casing and said interior tube, and means within said outer casing for delivering a medium to be sprayed to a point within said mixing chamber, said means having a central bore therethrough through which said interior tube extends, said means having spirally extending grooves of double screw threads with not more than two pairs per inch located in the wall of said means next adjacent the outer wall of said interior tube thus forming ducts which deliver liquid into the mixing chamber with vortical motion but at no converging angle to the air flowing into said chamber from said interior tube so that both air and liquid blend smoothly in said mixing chamber and spray from the nozzle with little loss of initial velocity.

3,163,363
COMBINATION FOG, STRAIGHT STREAM, AND SPRAY NOZZLE
Ralph L. Travis, P.O. Box 118, Sidney, Iowa
Filed Dec. 10, 1962, Ser. No. 243,471
1 Claim. (Cl. 239—441)



A combination nozzle comprising a pipe, means for attaching a water carrying hose to said pipe, a further member receiving said pipe, said further member having a plurality of peripherally arranged longitudinally positioned openings, and having a channel communicating with said openings, said pipe having a plurality of peripherally arranged further openings adapted to communicate with said channel, a fog forming member having a tapered surface, said substantially cylindrical member having a further tapered surface, means for adjustably positioning said tapered surfaces with respect to each other, said fog forming member including a plurality of circumferentially spaced teeth, means for adjustably positioning said fog forming member, a water control member attached to said tube including a valve having a passage-way controlled by said valve, a cylindrical casing, means for attaching said cylindrical casing to said water control member, said cylindrical casing having a plurality of circumferentially spaced openings, and a plurality of radially positioned prongs, said prongs being bent outwardly, means for moving said pipe whereby said tube openings will communicate with said channel.

3,163,364
ILLUMINATED COMPACTS
Paul K. Ritter, 300 E. Pearl St., and Robert M. Pilditch, 2801 Garfield Ave., both of Bay City, Mich.
Filed Mar. 15, 1962, Ser. No. 179,961
1 Claim. (Cl. 240—6.45)



An illuminated compact comprising a base member having side walls and front and rear walls; an enclosed tray unit removably received in said base member at the rear thereof, said tray unit having an opening in its upper wall; an electrical circuit supported in said tray unit and including a battery, a manually operable switch and an electric bulb, said switch extending through an opening formed in one of the side walls of said base member for actuation externally thereof, said opening being recessed inwardly of said base member and said switch terminating withing the confines of the recess; means supporting said bulb in said tray unit at a forward, upward inclination, said bulb extending through the opening in the upper wall of said tray unit to a level beyond the side walls of said base member; a cover member; means hinging said cover member to said rear wall of said base member for swinging movement from a first position in which it closes said base member to a second position in which it opens said base member, said cover member

having an outwardly pressed portion that is inclined upwardly and forwardly to correspond substantially to the inclination of said bulb, said pressed portion terminating at its forward end in a wall that is apertured to receive and accommodate said bulb when said cover is in its said second position; and reflective means on the inner surface of said cover member forwardly of said pressed portion.

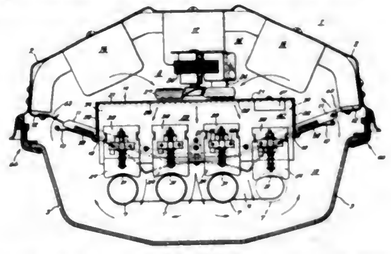
3,163,365
LANTERNS FOR STREET LIGHTING
Richard William Stevens, London, England, assignor to Thorn Electrical Industries Limited, London, England, a British company
Filed Mar. 21, 1961, Ser. No. 97,279
Claims priority, application Great Britain Mar. 23, 1960
1 Claim. (Cl. 240—25)



A lantern for street-lighting comprising: a lamp-holder adapted to support a tubular lamp with its axis generally horizontal; an opaque top canopy in the general form of an elongated inverted trough, mounted to be above and generally parallel to the lamp; two elongated refractor panels mounted below the canopy parallel to and on either side of the lamp and spaced apart and so formed that light from the lamp incident on their inwardly facing surfaces is deflected downwards by its passage through the panels, the panels being so disposed with respect to the lamp and the lower edge of the canopy that substantially no light from the lamp can emerge from the lantern at an angle of at least 90° to the downward vertical in a direction normal to the axis of the lamp; light-reflectors located on the inner surfaces of the side walls of the canopy and so disposed with respect to the lamp that a major portion of the light from the lamp which falls on the light-reflectors is reflected thereby to leave the lantern at an angle of less than 90° to the downward vertical; an elongated auxiliary reflector mounted above and generally parallel to the lamp and so disposed with respect to the lamp and the said light-reflectors that a major proportion of the light leaving the lamp in a direction above the horizontal is reflected to leave the lantern at an angle of less than 90° from the downward vertical; said reflectors and said refractor panels being so disposed relative to the position in which the lamp is supported by the lampholder that part of the light emitted by the lamp at angles of more than 75° to the downward vertical is deflected to leave the lantern at angles between 70 and 75° to the downward vertical, the intensity of the emergent light falling off rapidly at angles above 75°; said auxiliary reflector being of inverted channel form, the side portions of the channel being disposed to reflect light from the lamp onto the inwardly facing surfaces of the reflector panels and the central web portion of the channel serving to reflect light generally downwards without passing through the refractor panels.

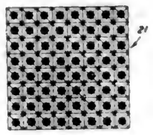
3,163,366
CONTROLLED COOLED GASEOUS DISCHARGE LUMINAIRE
Edward F. Schraith, San Diego, Calif., and Harold A. Van Dusen, Jr., South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 26, 1961, Ser. No. 119,476
15 Claims. (Cl. 240—51.11)

10. In combination, a metallic vapor lamp, a pair of thermoelectric elements having a first junction in contact with a portion of said lamp and a second junction spaced from said lamp, a source of electrical energy in circuit with said elements and being of such polarity to cause cooling at said first junction, thermostat means in heat exchange relation with said first junction and operative to



control the flow of electrical energy to said first junction in accordance with the temperature of said lamp portion, said thermostat means being thermally isolated from said second junction.

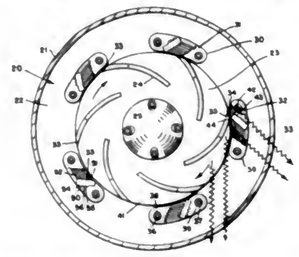
3,163,367
LIGHT DIFFUSER
Marcus Bodian, 2720 Monte Mar Terrace, Los Angeles, Calif.
Filed Aug. 10, 1959, Ser. No. 832,828
21 Claims. (Cl. 240—106)



13. A light diffusing plate characterized by having a sight pattern of many alternate light and dark geometric areas of relatively small size, comprising a sheet of light transmitting and refracting material one of whose surfaces is substantially planar and whose opposite surface has impressed therein a plurality of symmetrically-arranged side-by-side rectangular pyramids having adjoining bases, each of said pyramids having in its apex portion a pair of intersecting intaglio prism portions whose ridges formed by the intersection of opposed prism faces intersect symmetrically at right angles, the ridges of said prism portions being disposed intermediate in elevation between said pyramidal bases and the intersections of said prism faces with said pyramidal faces, the ridges of said pair of prism portions being parallel to said pyramid bases, the faces of said pyramid and of said prisms being disposed relative to the plane surface of said plate at an angle less than the cut-off angle for the material of said sheet.

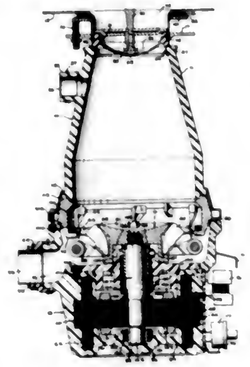
3,163,368
BOTTOM DRIVE PULPER WITH STATIONARY BLADES
Charles A. Johnson, Andover, Mass., assignor to John W. Bolton & Sons, Inc., Lawrence, Mass., a corporation of Massachusetts
Filed Dec. 18, 1961, Ser. No. 159,862
6 Claims. (Cl. 241—46)

1. In a pulper of the type having a tank, a material circulating impeller therein having vanes tangentially discharging material in an annular, disc-like, effluent, flow path and an annular series of spaced apart, stationary, blades mounted on said tank in said effluent flow path, the combination of a relatively, narrow inner flat face on each said blade extending normal to the tangential discharge of, and coextensive in height with, the vanes of said impeller for partially checking the flow of said material; a pair of relatively wide, side faces on each said blade, each extending tangentially in the direction of, and parallel to, the tangential discharge of said vanes and co-extensive in height therewith, and scrubbing



means on each said side face for disintegrating lumps and fibre bundles in material moving along each opposite side face of said blades.

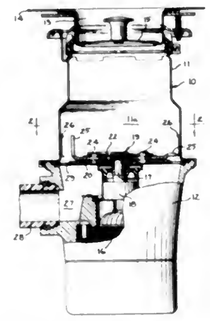
3,163,369
ENCAPSULATED MOTOR FOR WASTE DISPOSAL APPARATUS
Marcus P. Hogue, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed July 13, 1962, Ser. No. 209,663
9 Claims. (Cl. 241—46)



1. An electric motor comprising a wound stator and a rotor, a terminal board assembly having a grounding strap that is attached to the outside surface of the stator, the stator having winding leads and the grounding strap connected in the terminal board, the stator being encapsulated in a non-conducting resin which harden to form the housing for the motor, the terminal board being located in an outer wall of the housing so that electrical connections may be made to the terminal board.

5. In a food waste disposal apparatus, the combination of a vertically extending hopper means having a top access opening for receiving water and waste material, rotatable comminuting means adjacent to the lower end of said hopper means, and power means below and operatively connected to both said hopper means and comminuting means and operable to drive said comminuting means: the invention comprising, a power means in the form of an encapsulated induction motor having an annular stator and a rotatable rotor, a sealed printed circuit terminal board assembly having a grounding strap that is attached to the outer surface of the stator, the stator having winding leads that are terminated in the terminal board, the stator being encapsulated in a molding compound to form a non-magnetic motor housing having the general form of a large bucket with a bottom wall and a cylindrical side wall, the said bottom wall including a fixed bearing adjacent the center thereof for supporting the rotor concentrically with the inner diameter of the stator, the terminal board being sealed to prevent the compound from entering the terminal board during the molding operation, whereby the seal is broken after the molding operation for making electrical connections to the stator, the terminal board including means for receiving control components for the motor, the top portion of the motor housing being closed by a removable end bell where the end bell includes a shaft bearing for supporting and guiding the rotor, the upper portion of the molded motor housing being extended upwardly to form a sump beneath the comminuting means, the lower portion of the hopper being fastened to the upper portion of the motor housing to complete the assembly.

3,163,370
FOOD WASTE DISPOSER
Oliver R. Clark, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 31, 1963, Ser. No. 284,681
5 Claims. (Cl. 241—86)

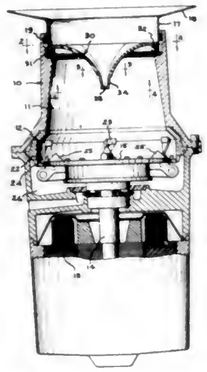


1. In a food waste disposer the combination comprising:
(*a*) a rotatable flywheel,
(*b*) means to rotate said flywheel at a normal operating speed of at least 6,000 r.p.m.,
(*c*) a stationary straining means disposed about the periphery of said flywheel and lying in a plane substantially parallel to said flywheel,
(*d*) said straining means including a plurality of slots opening toward said flywheel, and
(*e*) at least one serration in the peripheral surface of said flywheel to create a turbulence at the open ends of said slots to draw trapped material from said slots into cutting engagement with said serration.

3,163,371
SPLASH GUARD FOR FOOD WASTE DISPOSER
Albert L. Hardy, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Jan. 24, 1963, Ser. No. 253,690
4 Claims. (Cl. 241—100.5)

2. A splash guard of elastomeric material for use with a continuous feed waste disposer, said splash guard having a generally circular upper portion that is adapted to be mounted in the throat of a hopper of the disposer, the central portion of the splash guard being formed as a small diameter converging tubular shape that projects a substantial distance downwardly into the hopper, a plurality of radial slits formed in the splash guard from the tubular lower end to adjacent the periphery of the upper

portion to form resilient fingers which increase the ease of forcing food waste down through the splash guard but



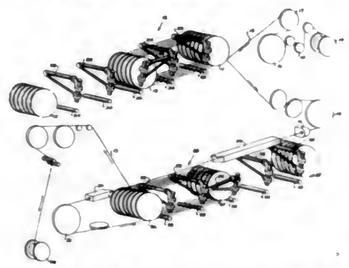
which resist the passage of food waste up from the hopper and out through the splash guard.

3,163,372

APPARATUS FOR CONTINUOUSLY MOVING A STRAND THROUGH AN EXTRUDER AT A CONSTANT SPEED

Lawrence Goldman and Herbert E. Weller, Buffalo, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 26, 1962, Ser. No. 233,289
3 Claims. (Cl. 242—47.08)



1. In an apparatus for maintaining a constant flow of a strand through an extruder at a constant predetermined line speed,

a first fixed sheave assembly having a shaft with a plurality of sheaves mounted adjacent one another for rotation on the shaft,

a first trackway adjacent the sheave assembly,

a first carriage carried by the first trackway for longitudinal displacement relative to said first sheave assembly and having a shaft parallel to the shaft of the assembly and a plurality of sheaves mounted adjacent one another for rotation on the shaft,

means for delivering the strand to the sheaves of the first assembly and the first carriage at a rate of speed variable from zero to a speed greater than the predetermined line speed,

means for pulling the strand from the sheaves of the assembly and carriage at the predetermined line speed,

means for exerting a constant force on said first carriage opposite and equal to the force exerted on said first carriage by the strand when the strand is delivered to the sheaves of the first assembly and first carriage at the predetermined line speed,

a second trackway,

a second fixed sheave assembly having a shaft extending transverse to the second trackway with a plurality of sheaves mounted adjacent one another for rotation on the shaft,

a second carriage carried by the second trackway for longitudinal displacement relative to said second sheave assembly and having a shaft parallel to the shaft of the second assembly and a plurality of sheaves mounted adjacent one another for rotation on the shaft,

means for delivering the strand to the sheaves of the second assembly and the second carriage at the predetermined line speed,

means for pulling the strand from the sheaves of the second assembly and second carriage at a rate of speed variable from zero to a speed greater than the predetermined line speed, and

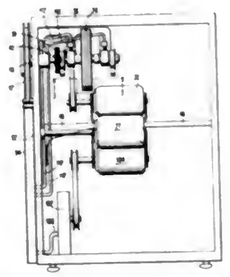
means for exerting a constant force on said second carriage opposite and equal to the force exerted on said second carriage by the strand when the strand is pulled from the sheaves of the second assembly and second carriage at the predetermined line speed.

3,163,373

BI-DIRECTIONAL REEL CLUTCH DRIVE

Daniel P. Darwin, Saratoga, and Donald K. Rex, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 11, 1962, Ser. No. 165,584
5 Claims. (Cl. 242—55.12)



1. In a tape drive comprising a reel, drive means and an evacuable tape column having a source of reduced pressure therein said record tape disposed relative to said tape column so that a loop is formed therein;

a plurality of pressure sensing means in said tape column;

a pneumatic clutch having a plurality of vacuum chambers;

means for connecting said pressure sensing means to said vacuum chambers;

said clutch selectively actuated to drive said reel in either direction according to the position of said record tape in said tape column relative to said sensing means.

3,163,374

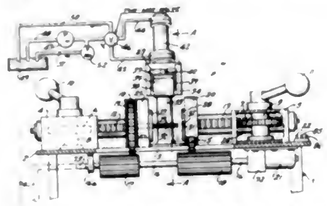
METHOD OF AND APPARATUS FOR THE MANUFACTURE OF CONDENSERS AND ELECTRODES FOR CELLS IN STORAGE BATTERIES AND THE LIKE

Lutz Horn and Fritz Philipp, Hagen, Westphalia, Germany, assignors to Varta Aktiengesellschaft

Filed Apr. 28, 1960, Ser. No. 25,367
3 Claims. (Cl. 242—56.1)

1. An apparatus for winding and assembling of condensers and electrodes which comprises, in combination, support means; a mandrel having an elongated slot open

at one end of said mandrel and adapted to receive the end of a strip; a first rotary guide member mounted on said support means and coaxial with said mandrel; a second rotary guide member coaxial with and spaced from said first guide member, said mandrel reciprocable through said first guide member and having its open end engageable with said second guide member; driving means adapted to rotate said mandrel and said guide members at the same speed for thereby winding said strip on said mandrel, said driving means comprising an electric motor mounted on said support means, a drive shaft parallel with said mandrel, infinitely variable transmission means drivingly connecting said motor with said shaft, a first and a second gear member mounted on and rotatable with said shaft, a first gear drivingly connected and reciprocable with said mandrel, said first gear in permanent mesh with said first gear member, and a second gear drivingly con-



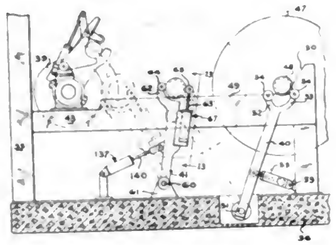
nected and reciprocable with said second guide member, said second gear in permanent mesh with said second gear member; rack and pinion means mounted on said support means for reciprocating the second guide member toward and away from said first guide member; a first and a second tensioning roller each having an axis of rotation parallel with the axis of said mandrel; means mounted on said support means for biasing said rollers in a direction toward said mandrel; and actuating means mounted on said support means and including rack and pinion means for advancing said mandrel axially in the direction toward said second guide member with its open end leading prior to a winding operation and for withdrawing said mandrel axially in the opposite direction with its open end trailing upon completion of a winding operation so that the wound strip will be removed from said mandrel with the aid of said open end thereof.

3,163,375

UNWIND ASSEMBLY FOR A PAPERMAKING MACHINE

Peter J. Link, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Sept. 24, 1962, Ser. No. 225,459
4 Claims. (Cl. 242—58.2)



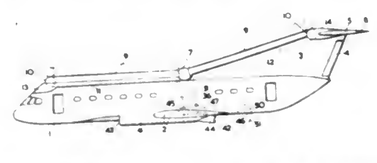
1. In a mechanism for supplying sheet material web sequentially from a plurality of rolls of the web, the combination of a rotatable drum, a pair of ways for supporting a roll of the web by means of a spindle extending through the web so that the roll may be in contact with the drum and remain in contact as the roll decreases in diameter with movement of the spindle toward the drum as the web is drawn off the roll and through the nip between the drum and roll and around the drum, motor means for urging the roll into forceful contact with said drum, means for retarding rotation of said drum to provide tension on the web being drawn from the supply mechanism, a pair of arms swingably and coaxially mounted about said drum and being bifurcated on their ends to engage the spindle whereby the roll may be moved in a circular path upwardly and about the drum and remain in contact with the drum on a depletion in size of the roll so that a replacement roll of web carried by a spindle extending through the roll and resting on said ways may be moved in contact with the drum in place of said first named roll, cam mechanism for raising said first named roll out of contact with said drum on a continued swinging movement on said arms so as to provide an unsupported length of web between said first named roll and said drum, and a knife assembly for severing the unsupported length of web from said first named roll so that a patch of adhesive on the end of the replacement roll may adhere to the end of the web as severed by said knife assembly from said first named roll for providing a continuous web from the supply mechanism.

3,163,376

CONVERTIBLE TYPE AIRCRAFT

Ivor Macaulay Davidson, Farnborough, England, assignor to Power Jets (Research and Development) Limited, London, England, a British company

Filed Apr. 2, 1962, Ser. No. 184,306
Claims priority, application Great Britain Apr. 12, 1961
2 Claims. (Cl. 244—7)



1. An aircraft comprising a fuselage, a fin mounted on top of the fuselage, wings capable of supporting the aircraft by aerodynamic lift thereon in forward flight, a two-bladed helicopter rotor including a rotor head and a pair of opposite rotor blades rigidly attached thereto at a fixed coning angle, means rotatably mounting the rotor head on top of the fuselage for rotation of the rotor about a forwardly inclined axis, the fuselage being formed with a longitudinal recess extending forwardly from the rotor head and the fin having an upwardly inclined edge extending, rearwardly from the rotor head and formed with a longitudinal recess, and means for moving the rotor bodily along its axis between an operative position in which it can rotate clear of the fuselage and fin and an inoperative position in which the blades lie one in each of said recesses.

3,163,377

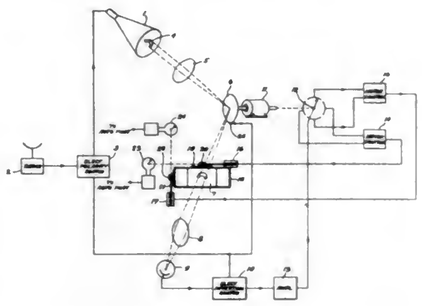
MAP MATCHING NAVIGATION CONTROL SYSTEM FOR AIRCRAFT

Richard L. Burtner, Canton, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware

Filed Aug. 17, 1951, Ser. No. 242,271
7 Claims. (Cl. 244—14)

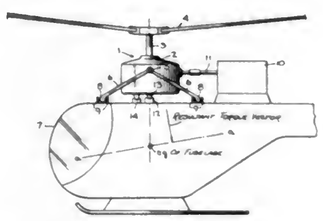
7. Automatic terrain recognition and navigation apparatus for aircraft or the like including means for producing a substantially continuous image of the terrain over which the aircraft is passing, a previously prepared map transparency of the terrain, means for superimposing the map and image, said map and image having substantially the same scale and orientation, means for

effecting a scanning movement between the image and map, switching means associated with said image producing means for periodically reversing the contrast of the image, means responsive to the light from said image transmitted through said map, means for periodically inverting the output signal of said light sensitive means,



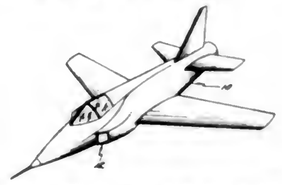
pulsing means for triggering said switching means and signal inverting means simultaneously, means for effecting relative repositioning movement between said map and image, and means responsive to the output signal of said signal inverting means for controlling said repositioning means to effect and maintain a match condition between said map and image.

3,163,378
ROTARY WING AIRCRAFT PYLON MOUNTING
Rodney W. Balke, Jan M. Drees, and Robert L. Lichten, Dallas, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware
Filed Aug. 27, 1963, Ser. No. 304,783
19 Claims. (Cl. 244—17.27)



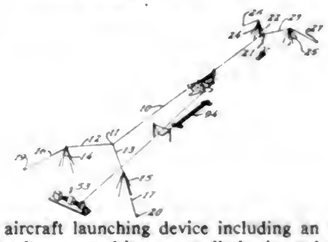
18. In a rotary wing aircraft having
a fuselage,
a power drive means,
a pylon extending from said fuselage comprising
a rotor, and
means for transmitting torque from said power drive means to said rotor, and
a pylon mounting for said pylon comprising
support means extending between said fuselage and pylon on laterally opposed sides thereof, said support means pivotally attached to the fuselage and pylon, and said pivotal attachments establishing a generally longitudinal axis of rotation displaced vertically with respect to the area defined by said pivotal attachments whereby, in a plane perpendicular to said axis, said pylon is restricted to rotation around said axis.

3,163,379
SUPERSONIC SCOOP INLET
George H. McLafferty, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 16, 1955, Ser. No. 528,643
6 Claims. (Cl. 244—53)



3. In a scoop inlet for receiving air of supersonic velocity and having a longitudinal axis, an air contacting surface converging downstream relative to the axis of air flow and forming a base air compression surface which is the inner wall of said inlet and being the first to contact the airstream, a pair of symmetrical surfaces located in planes transversely of said base surface and forming two side walls of said inlet, said surfaces also converging in a downstream direction relative to the axis of air flow, and a fourth non-converging wall cooperating with said pair of surfaces to form a complete inlet, said fourth wall having a leading edge which is spaced from said inner wall and on the opposite side of said axis and downstream of the leading edge of said inner wall.

3,163,380
AIRCRAFT LAUNCHING APPARATUS
James H. Brodie, 2258 Fairmount Ave., St. Paul, Minn.
Filed June 2, 1961, Ser. No. 114,514
12 Claims. (Cl. 244—63)

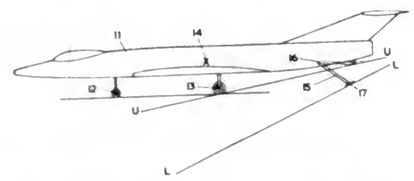


1. An aircraft launching device including an elevated runway track supported in a generally horizontal position, a trolley supported by said track for longitudinal movement thereon, an aircraft supporting means on said trolley and extending downwardly therefrom and releasably connected to said aircraft below the trolley, a catapult device at one end of said track and including a tow cable connected to said trolley, a retarder supported beneath said track adjoining said end of said track for movement generally parallel to said track, and a flexible connector connected to said retarder and including an upwardly extending loop in the path of movement of said trolley as it approaches said one end of said track, and means on said trolley engageable with said loop to actuate said retarder.

3,163,381
AIRCRAFT UNDERCARRIAGES
Werner Joseph Georg Pinsker, Bedford, England, assignor to National Research Development Corporation, London, England
Filed Nov. 24, 1961, Ser. No. 154,695
Claims priority, application Great Britain Nov. 28, 1960
5 Claims. (Cl. 244—100)

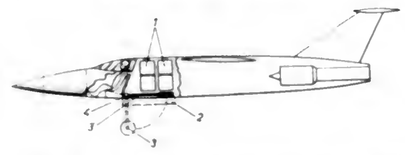
1. An aircraft having landing gear including nose undercarriage gear far forward of the center of gravity

of the aircraft amidships undercarriage gear close to and in rear of the center of gravity to support the aircraft on the ground, and impact absorber gear far aft of the



center of gravity to absorb the greater part of the landing impact energy before the amidships undercarriage gear contacts the ground each time the aircraft lands.

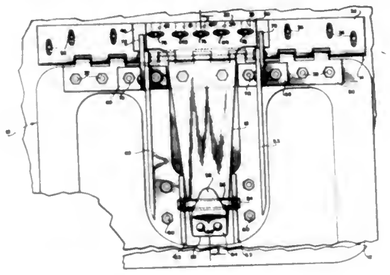
3,163,382
ARRANGEMENT OF RETRACTIBLE UNDERCARRIAGE AND VERTICAL TAKE-OFF
Willy Messerschmitt, Munich, Germany, assignor to Messerschmitt AG, Augsburg, Germany, a company of Germany
Filed Oct. 22, 1962, Ser. No. 232,027
8 Claims. (Cl. 244—102)



3. In a vertical take-off supersonic aircraft, in combination, a fuselage having a bottom formed with an opening; vertical take-off means located in said fuselage spaced from and above said bottom over said opening and adapted to discharge a downward stream of fluid through said opening; and an undercarriage mounted on said fuselage for movement between a retracted position located under said vertical take-off means and above said bottom over said opening, and an operative position located horizontally spaced from said vertical take-off means outside of said downward stream of fluid and underneath said bottom.

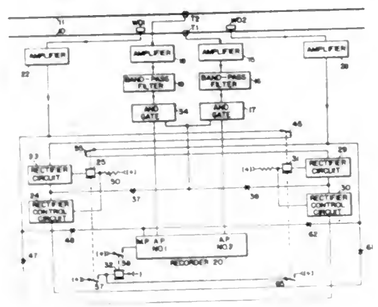
3,163,383
DUAL-PURPOSE DOOR FOR AIRCRAFT
Allen L. Starling, Los Angeles, Johnnie H. Mori, Pacoima, and Bernard V. McDermott, Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 18, 1963, Ser. No. 265,807
7 Claims. (Cl. 244—129)

1. In combination with the leading edge of an airplane wing, a dual-purpose door for controlling the pressure within said wing and permitting access to the interior of said wing comprising:
(*a*) a door member swingably mounted in an opening in said leading edge for controlling access to said wing and for relieving excess pressure from the interior of said wing; and
(*b*) resilient means having one end connected to said door member and another end connected to said leading edge for biasing said door member against the pressure within said wing a predetermined amount, said other end being releasable from said leading edge for freeing said door member to swing without restraint, said resilient means comprising a leaf spring having one end pivotally connected to said door member and another end clamped between first and second plates, said second plate being engageable with said leading edge and movable relative thereto



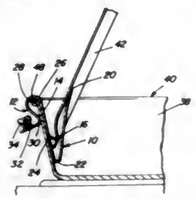
for releasably securing said other end to said leading edge.

3,163,384
DETECTION MEANS FOR IMPROPERLY LUBRICATED JOURNALS
Donald R. McCauley, Rochester, N.Y., assignor to General Signal Corporation
Filed Oct. 20, 1960, Ser. No. 63,880
1 Claim. (Cl. 246—169)



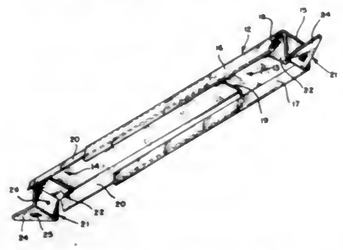
In a system for detecting improperly lubricated journals of railway car wheels on a passing train characterized by mechanical motions produced by the journal and bearing of the car wheel and coupled to the corresponding rail of a length of track through that car wheel, transducer means affixed to each rail of said length of track and acted on by the mechanical motions occurring in the corresponding rail to produce an electrical signal output characteristic thereof, a pair of wheel-actuated means each responsive to a car wheel travelling thereover for providing an output, one wheel-actuated means disposed on each side of said transducer means along one rail and spaced a distance apart less than the predetermined diameter of a car wheel, recording means responsive to each electrical signal produced by said tranducer means for providing an indication for the corresponding car wheel having an improperly lubricated journal, and gating means responsive to the output from a first of said pair of wheel-actuated means upon passage of a car wheel thereover for coupling control energy to said recording means to set such recording means into operation and further responsive to the output from a second of said pair of wheel-actuated means upon passage of that car wheel thereover for decoupling said control energy from said recording means to thereby stop operation of said recording means.

3,163,385
MULTIPURPOSE CLIP FOR KITCHEN UTENSILS
Frank Lazan, Jr., 2836 Herkimer, Baltimore, Md., assignor of one-third each to Edmund Rosiak, Morgantown, W. Va., and John L. Johnson, Baltimore, Md.
Filed May 24, 1962, Ser. No. 197,369
6 Claims. (Cl. 248—37.6)



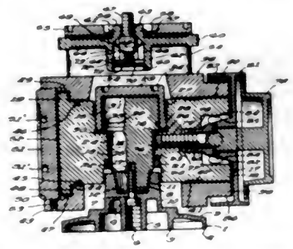
1. A multipurpose clip for attachment to a wall of kitchen utensils such as pots, pans, skillets and the like comprising: a support and holder for lids and implements such as forks, spoons, knives, food turners and the like, said holder being substantially V-shaped in edge elevation and embodying inner and outer upwardly diverging permanently spaced legs having a V-shaped crotch therebetween, the outer leg adapted to contact and reside firmly against the inner surface of the utensil wall, the inner leg having an accessible upper edge wholly exposed and capable of use as an egg breaker, the upper end of the outer leg having a resilient self-retained clasp adapted to releasably hook over the upper edge of said wall and bear against the outer surface of the utensil wall.

3,163,386
ADJUSTABLE DUCT HANGER
John D. Collins, Rte. 1, Sturgeon Bay, Wis., assignor of one-half to William H. Stephenson, Sturgeon Bay, Wis.
Filed May 16, 1963, Ser. No. 280,905
1 Claim. (Cl. 248—71)



In a mounting device for supporting a duct between and in longitudinal alignment with a pair of spaced-apart parallel wooden joists, said mounting device being carried by and between said joists to provide a transverse horizontal support element beneath said duct, and said device including a pair of telescopic sections which are adjustable lengthwise to correspond to the spacing between different pairs of joists, the improved structure comprising: a pair of elongated, rectilinear sections formed of light gauge metal, each of said sections having a flat top portion with downwardly outwardly inclined side flanges, the flanges on one of said sections being inclined at an angle slightly different from the angle of inclination of the flanges on the other section, the side flanges of one section having upturned marginal portions forming channels to frictionally longitudinally slidably receive the side flanges of the other section, the frictional engagement of said differently-angled, interfitting flanges permitting said sections to be yieldably maintained in a preset condition of telescopic adjustment; and a joist-penetrating deflectable prong on and projecting endwise from the outer end of each of said sections, said deflectable prongs normally being inclined upwardly and outwardly at an angle from the horizontal but being adapted to assume a substantially horizontal position when driven into said joists, and each of said prongs having an upstruck barb formed therein and adapted to prevent the withdrawal of said prongs when they are driven into joists.

3,163,387
CAMERA HEAD
Howard P. Thomas, Hollywood, Calif., assignor to T-A Mfg. Corp., Los Angeles, Calif., a corporation of California
Filed Aug. 21, 1962, Ser. No. 218,295
8 Claims. (Cl. 248—183)

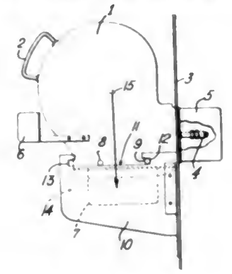


1. In a head for supporting a camera, a base, a vertical post mounted on said base, and having a bearing surface generated about a vertical axis, a horizontal axis spindle mounted on said bearing surface of said post for free rotation thereon; said spindle having a pair of bearing surfaces generated about a common, horizontal, axial line and disposed one each at each side of said post; a camera supporting yoke means having a portion disposed above said spindle on which a camera may be supported and further having a pair of arms depending from said supporting portion, each of said arms having bearing engagement with one each of said pair of bearing surfaces on said spindle, means disposed in the axial line of said spindle operable to lock said spindle against movement about said post, and other means also disposed in said axial line operable to lock said yoke means against movement about said spindle.

3,163,388
DETACHABLE BURNER MOUNTING
Henri Arnaud, Paris, France, assignor to Société Anonyme dite: "Societe des Bruleurs Thermex," Paris, France, a corporation of France
Filed May 15, 1962, Ser. No. 194,938
Claims priority, application France, Apr. 6, 1962, 893,642
10 Claims. (Cl. 248—201)

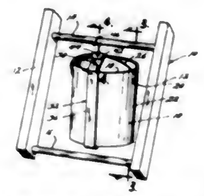
1. In a generator having an apertured wall for receiving the mouth of an externally positioned burner, the combination with said burner of a mounting therefor including support means adjacent said wall forming at least two substantially horizontal tracks, front and rear stop means rising from at least one of said tracks at locations relatively close to and relatively remote from said wall, respectively; front and rear roller means on said burner normally resting on said tracks for stably supporting said burner thereon, said front and rear stop means being more widely separated than said front and rear roller means and being respectively engageable by the later in an operative position in which the burner mouth projects through said wall and an inoperative position in which the burner mouth is withdrawn from said wall; and a formation on said support

means above said one of said tracks overlying only said rear roller means in said inoperative position while leaving said front roller means freely movable in an upward



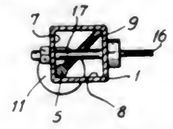
direction, thereby enabling pivotal movement of said burner on said rear roller means upon the latter contacting said rear stop means and said formation.

3,163,389
BRACKET FOR PAINT CONTAINERS AND THE LIKE
Argyle K. Thornburgh, Pleasantville, Iowa
Filed Aug. 23, 1963, Ser. No. 304,187
2 Claims. (Cl. 248—211)



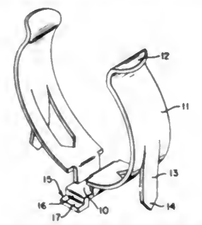
1. A bracket for paint containers and the like, comprising,
an elongated body member,
hook means on one end of said body member for receiving the flange on the lower perimeter of a paint container,
the upper portion of said body member being bent at an angle with respect to the lower portion of said body member,
the upper end of said body member terminating in a hook means adapted to receive a bail of a paint container,
and a slot in the hook means on the upper end of said body member.

3,163,390
LEVELLING INSTRUMENT
Kaj Nielsen, Skovkanten 9, Bagsvaerd, Denmark
Filed Mar. 13, 1961, Ser. No. 95,282
7 Claims. (Cl. 248—221)



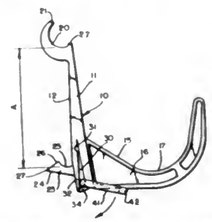
1. Support structure for a leveling instrument, the support structure comprising a hollow member including a plurality of planar walls defining corners for said member, a pin within the hollow member adapted for supporting a vessel of said leveling instrument, and means supporting the pin within the hollow member in contact with the walls at a corner of said member for adjustable movement of the pin lengthwise thereof, said means cooperating with the walls at another of said corners of said member to prevent rotation of the pin about an axis extending lengthwise through said pin.

3,163,391
CAPACITOR CLIP
James E. Adams, Toledo, Ohio, assignor to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed June 15, 1962, Ser. No. 203,129
2 Claims. (Cl. 248—223)



1. In combination, a mounting plate having inner and outer faces and having a single fastener-receiving opening, and a one-piece clip mounted in said plate at said opening, said clip comprising a base disposed transversely of the clip and having at opposite ends stepped feet extending through said opening and engaging the edge portion of the opening on the inner face of the plate, a pair of resilient flexible gripping members connected to the opposite sides of the base and extending therefrom outwardly away from said outer face of the mounting plate, said members having oppositely bowed portions to receive a supported element between them, and an approximately straight finger struck from each gripping member and the free end thereof extending downwardly for engagement with the outer face of the mounting plate, the structure being such that the gripping members are first flexed toward each other before the feet are engaged in the opening and after the gripping members are released the fingers impinge against the mounting plate for pressing the feet against the inner face of the mounting plate.

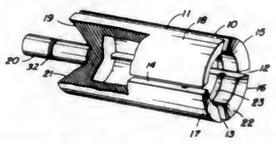
3,163,392
ARTICLE SUPPORT
William D. Husted, Wadsworth St., R.D., Middletown, Conn.
Filed Sept. 12, 1963, Ser. No. 308,576
24 Claims. (Cl. 248—223)



1. In combination with a perforated board having spaced openings therein, an article support including a substantially flat base including a resilient flexible portion seating against said board, a first projection extending into one of said openings, a second projection on said flexible portion extending into an adjacent opening, said second projection having a protuberance therein extending to-

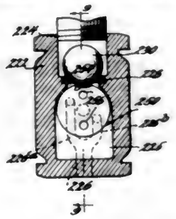
ward said first projection, said projections being of a length to extend interiorly through said board, and means associated with said base for moving said flexible portion and hence moving said second projection toward said first projection whereby said protuberance engages under the rim of its associated opening to clamp said base and hence said article support against said board.

3,163,393
COMPONENT HOLDER
Walter R. Strong, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 23, 1963, Ser. No. 332,604
14 Claims. (Cl. 248—223)



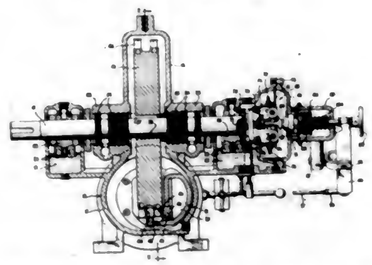
1. Component holder means mountable upon a mounting board and comprising:
receptacle means having cylindrical shaped side wall and closed at one end and open at the other end;
said cylindrically shaped side wall of said receptacle means comprised of arcuate segments separated one from the other by slots cut through said cylindrically shaped side wall and running axially along the length of said side wall and extending through the closed end of said receptacle means;
the outside surface of said closed end of said receptacle means being generally concave in shape;
and fastening means extending outwardly from said closed end and substantially along the axis of said receptacle means and constructed to secure said component holder means to said mounting board.

3,163,394
BALL VALVE
Roland W. Downin, 29 N. Main St., Port Deposit, Md.
Filed July 10, 1959, Ser. No. 826,192
4 Claims. (Cl. 251—120)



1. In a ball valve having a ball-retaining inlet chamber under the pressure of the liquid supply system when the valve is closed, a discharge chamber downstream of the inlet chamber, an annular seat having its principal plane substantially at right angles to the axis of fluid flow from the inlet chamber to the outlet chamber and forming the threshold between said chambers, a ball in said inlet chamber and adapted to rest upon said seat, the elements of said inlet chamber adjacent said seat being arranged to afford said ball substantially free movement in all directions within said chamber when said ball is unseated, a member in said discharge chamber for displacing said ball from its seat by contact therewith, said displacement member moving during the displacement action, with a tangential component with respect to the ball whereby the ball is caused to move off its seat with a sidewise as well as a retrogressive movement and an actuator for said displacing member and means for throttling the liquid flow, actuated by the ball displacing member, said means being principally operative during the initial opening and final closing of the valve.

3,163,395
ELASTIC FLUID TURBINE
Marc R. Griffel, Burlington, Iowa, assignor to Murray Iron Works Company, Burlington, Iowa, a corporation of Iowa
Filed Apr. 1, 1963, Ser. No. 269,268
16 Claims. (Cl. 253—39.1)

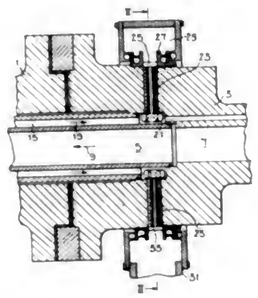


1. A turbine comprising a casing including an exhaust casing section defining a chamber and having opposite substantially identical end flanges and end openings, a turbine wheel disposed within the casing and having blades and projecting into said chamber, a shaft carrying said wheel and journaled upon the casing, shaft speed governor means carried by the casing and connected with said shaft and including linkage means exteriorly of the casing, a nozzle chest and nozzle block unit extending removably and bodily through one of said identical end openings and into said chamber near one side of said wheel so that the nozzles thereof may direct steam against the blades of the wheel for turning the latter, said unit having internal steam passage means opening through one end thereof, an exterior flange on said unit abutting the exterior face of one of said identical end flanges, a valve chest including a flange abutting said unit flange so that the latter is sandwiched between the valve chest flange and said one identical flange of the casing, bolt means detachably rigidly connecting all of said flanges in assembly, said valve chest having steam passage means and a valve seat, said last-named passage means communicating with said internal steam passage means, coaxial governor and trip valve elements within said valve chest on opposite sides of said seat, said seat common to said coaxial valve elements, telescopically interfitting stems one each secured to said governor and trip valve elements, said stems emerging from one side of said valve chest, and said stem of the governor valve element connected with said exterior linkage means.

3,163,396
MEANS FOR THE DISCHARGE OF LIQUID FROM ROTORS
Istvan Csillag, Sale, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed May 31, 1963, Ser. No. 284,559
Claims priority, application Great Britain, June 20, 1962, 23,783/62
7 Claims. (Cl. 253—39.15)

1. A rotor provided with means adapted to discharge liquid from the rotor and comprising:
(*a*) collecting chamber means arranged to rotate with the rotor;

(*b*) liquid flow passages in the rotor arranged to discharge into the collecting chamber;
(*c*) ports in the rotor and extending outwardly from the chamber means;
(*d*) a stationary receiving chamber surrounding the part of the rotor provided with the ports and arranged to receive liquid discharged from these ports when the rotor is stationary;
(*e*) means sealing the liquid in said receiving chamber and permitting air to enter into said chamber;



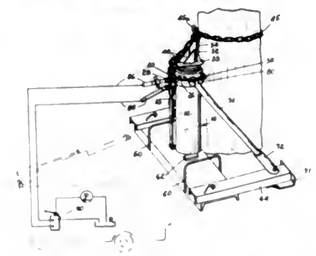
(*f*) a venturi nozzle having a convergent inlet section and a divergent outlet section and a throat connecting these two parts, the nozzle being disposed in at least one of said ports and arranged for the through flow of the liquid when the rotor is stationary;
(*g*) passage means in the rotor through which air can flow when the rotor is rotating at a sufficiently high speed to break the flow of liquid through the venturi nozzle so that the nozzle is able thereafter to act as an air inlet port for the radial inflow of air to the collecting chamber means, thereby to reduce the degree of vacuum in the said chamber means.

3,163,397
VANE CONSTRUCTION
Johannes Gassmann, Altbach, near Esslingen (Neckar), and Eugen S. Neher, Stuttgart-Oberturkheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 8, 1959, Ser. No. 785,600
Claims priority, application Germany Jan. 14, 1958
4 Claims. (Cl. 253—77)



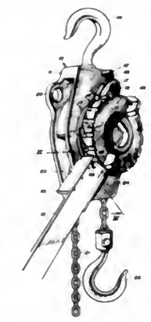
1. A vane construction for flow devices exposed to a relatively high temperature, especially for use as guide vanes in gas turbines, comprising an outer body portion made of ceramic material and forming the vane body, said ceramic body portion being provided with recess means, and metallic reinforcing insert means in said recess means for supporting thereon said ceramic body portion, said ceramic outer body portion having a structure adapting said body portion to withstand heat shocks, said structure comprising a plurality of lamina members having abutment surfaces abutting each other, said surfaces extending essentially transversely with respect to the longitudinal direction of said body portion said lamina members being emplaced over said metallic reinforcing insert means.

3,163,398
POLE PULLING JACK
George H. Eckels, Lakewood, Ohio, assignor, by mesne assignments, to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Apr. 16, 1962, Ser. No. 187,689
5 Claims. (Cl. 254—29)



1. A portable pole jack comprising a base assembly, a reciprocal fluid powered ram detachably mounted on said base assembly, means on said ram for interlocking coaction with a flexible member which is adapted to encircle a pole and grip the latter, for lifting the flexible member upwardly upon actuation of said ram, said base assembly comprising a generally U-shaped, in plan view, structure, strut means projecting upwardly from said U-shaped structure, and collar means pivotally mounted on said strut means for rotary movement with respect thereto about a generally horizontal axis through said strut means, said collar means encircling said ram and lug means depending from the ram cylinder into engagement with said base assembly and spacing the ram cylinder from the base assembly.

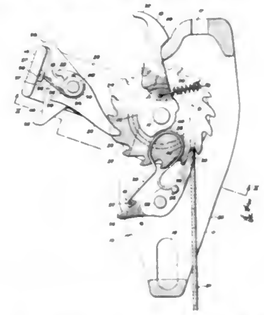
3,163,399
WINCH HOIST
George A. Skerry, Worcester, Mass., assignor to Lincoln Precision Machining Co., North Grafton, Mass., a corporation of Massachusetts
Filed Oct. 12, 1960, Ser. No. 108,964
18 Claims. (Cl. 254—167)



1. A winch hoist, comprising a main frame, a main shaft rotatably mounted on the frame, a ratchet wheel fixed to the main shaft, an actuating handle pivotally mounted on the main shaft, a locking pawl pivotally mounted on the main frame in position to engage and hold the ratchet wheel, an actuating pawl pivotally mounted on the actuating handle in position to engage and rotate the ratchet wheel, and cam means having a first portion adjustably mounted and movable on and movable with the ratchet wheel for engagement with the locking pawl and a second portion mounted on the frame for engagement with the actuating pawl, the cam means causing the ratchet wheel to be automatically rotated in equal

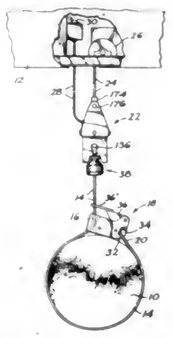
increments selected from a plurality of substantially different increments in lowering a load.

3,163,400
HOIST
George A. Skerry, Worcester, Mass., assignor to Lincoln Precision Machining Co., North Grafton, Mass., a corporation of Massachusetts
Filed Sept. 25, 1961, Ser. No. 140,511
6 Claims. (Cl. 254—167)



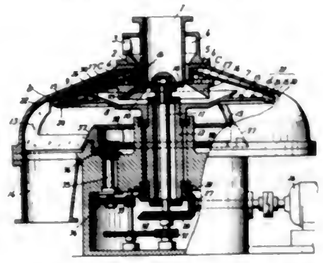
1. A hoist, comprising a main frame, a drum rotatably mounted on the frame, a ratchet wheel fixed to the drum, an actuating handle pivotally mounted on the main shaft, a locking pawl pivotally mounted on the main frame in position to engage and hold the ratchet wheel, a spring normally maintaining the locking pawl in engagement with the ratchet, an actuating pawl pivotally mounted on the actuating handle in position to engage and rotate the ratchet wheel, and a cam engaging the locking pawl spring for lifting the locking pawl during part of the letdown motion of said handle, thereby permitting the ratchet wheel to be automatically rotated selectively in increments of a fixed plurality of teeth in lowering a load.

3,163,401
APPARATUS FOR TRANSPORTING ARTICLES
Thomas L. Johnston and Gordon D. Miles, Portland, Oreg., assignors to Columbia Helicopters, Inc., Portland, Oreg., a corporation of Oregon
Filed July 16, 1962, Ser. No. 209,848
7 Claims. (Cl. 258—1.2)



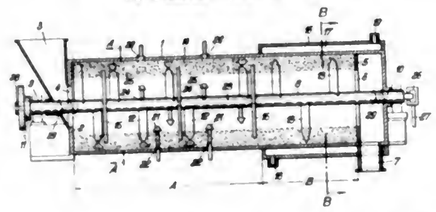
1. Article transporting apparatus comprising, in combination with a movable support, a choker cable having a loop at one end and adapted to be suspended at its opposite end downwardly from the movable support, a choker hook having relatively movable locking jaws for releasably securing the choker cable loop therebetween, the choker hook also having a cable guide opening freely receiving an intermediate portion of the suspended choker cable vertically therethrough, movable latch means on the choker hook operatively associated with a movable one of the locking jaws for releasably securing the latter in locking position, the latch means having a weight striker portion disposed above and adjacent the choker cable opening in the choker hook, a latch actuating weight member mounted slidably on the choker cable for engagement with the striker portion of the latch means, a weight release device suspended from the movable support and attached to the end of the choker cable opposite the loop and including holding means releasably securing the weight member thereto a spaced distance above the striker portion of the latch means, and control means for the holding means and operable to release the weight member from the holding means, the control means being positioned remotely from the choker hook.

3,163,402
APPARATUS FOR SUBSTANTIALLY INSTANTLY MIXING AND KNEADING VARIOUS MATERIALS
Hachiro Yamashita, 108 3-chome, Kitaurawamachi, Urawa, Japan
Filed Mar. 27, 1959, Ser. No. 802,452
Claims priority, application Japan, Mar. 31, 1958, 33/8,496
6 Claims. (Cl. 259—6)



5. In a mixer, in combination, a rotary dished member having an outer peripheral portion forming, substantially, part of a cone; a rotary ring coaxial with said dished member, the interior of said dished member being directed toward said ring and said ring having an annular face directed away from said dished member; feeding means having an inner portion communicating through said ring with said dished member and a separate outer portion out of communication with said inner portion and communicating with said annular face of said ring, so that a pair of materials to be mixed may be fed through said portions of said feeding means respectively to the interior of said dished member and to said annular face of said ring without contacting each other; an annular frusto-conical member coaxial with and surrounding said ring and having an inner face directed toward said dished member, said annular frusto-conical member being inclined oppositely to said peripheral portion of said dished member while being spaced therefrom and extending through a substantial distance beyond the same; means connecting said frusto-conical member to said ring for rotary movement therewith while placing said inner face of said frusto-conical member in communication with said annular face of said ring, whereby during rotation of said ring and members about their common axis a first material on said annular face of said ring will fly therefrom by centrifugal force onto said inner face of said frusto-conical member and move along said inner face outwardly beyond the periphery of said dished member, while a second material fed by said inner portion of said feeding means to said dished member will move by centrifugal force from the periphery thereof onto the inner face of said frusto-conical member to mix with the first material while both materials simultaneously move along the portion of said frusto-conical member which extends beyond said dished member toward the outer periphery of said frusto-conical member by centrifugal force; means for mechanically mixing said mixture of the first and second materials while both materials move along the portion of said frusto-conical member which extends beyond said dished member toward the outer periphery of said frusto-conical member; housing means encompassing said ring and dished member; and means for removing the mechanically mixed mixture of said first and second materials from said housing means.

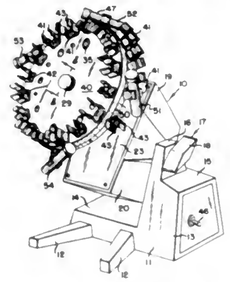
3,163,403
MIXING MACHINE
Kaspar Engels, Mannheim-Waldhof, Germany, assignor to Draiswerke G.m.b.H., Mannheim-Waldhof, Germany
Filed Jan. 13, 1961, Ser. No. 82,443
Claims priority, application Germany, Jan. 16, 1960, D 32,359; Dec. 8, 1960, D 34,898
10 Claims. (Cl. 259—9)



1. Mixing machine for the continuous mixing of different materials, primarily powdered substances, comprising a mixing drum extending substantially horizontally and having a rectilinear profile internally presenting a generally smooth, continuous peripheral surface, material receiving means at one end wall of said drum including means defining an intake aperture, material output means at the other end wall of said drum including means defining a discharge aperture and a substantially horizontal mixing shaft extending through said drum and having a driving means, said shaft including stirring arms extending at different positions longitudinally of said shaft and radially therefrom into proximity of said peripheral surface operative to impart centrifugal force to material in said drum to form a ring of material circumferentially of the inner wall of said drum and at least one disk rotatable with said shaft and projecting therefrom into said ring of material during mixing operations and defining a passage between the circumference thereof and said peripheral surface, said intake and said discharge apertures being disposed within the confines of the circular area encompassed by said ring of material, said end walls being substantially ring shaped and thus retaining the main part of said material near the circumference of said drum.

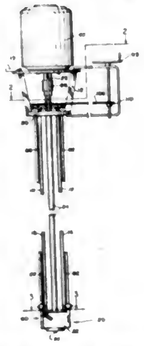
3,163,404
ROTARY APPARATUS FOR AGITATING FLUIDS
Harold D. Kraft, Flushing, and Jack A. Kraft, New Hyde Park, N.Y., assignors to Scientific Industries, Inc., Queens Village, N.Y., a corporation of Delaware
Filed Oct. 9, 1962, Ser. No. 229,371
8 Claims. (Cl. 259—57)

8. Apparatus for agitating fluid comprising a base means, trunnion means on said base means, a motor housing carried by said trunnion means for tilting at different angles thereabout, a motor shaft extending out of said housing, collar means on the outer end of shaft, circular head means having a central opening detachably mounted on said shaft adjacent said collar means for rotation by said shaft, detachable tube clips disposed around and radially outwardly of the circumference of said head for holding tubes thereon which contain fluid to be agitated,



clip adjusting means for said tube clips for positioning the clips in the same plane with and at an angle with respect to the plane of said head, and means for tilting the axis of said head at an angle with respect to the axis of said shaft at one time and for positioning the axis of said head coextensive with the axis of said shaft at another time.

3,163,405
HOMOGENIZER AND MIXER FOR LIQUIDS
Leslie L. Balassa, Creighton Lane, Scarborough, N.Y.
Continuation of abandoned application Ser. No. 227,515, Oct. 1, 1962. This application Jan. 4, 1963, Ser. No. 249,431
9 Claims. (Cl. 259—97)

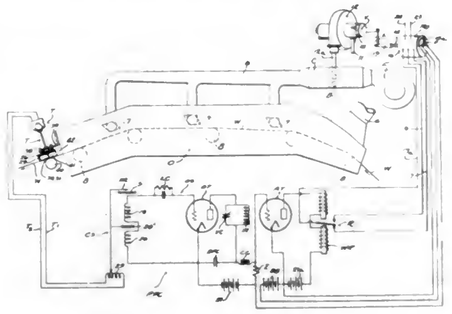


9. A mixing device for mixing material within a container comprising a mixing head for operation within a container, said mixing head comprising a stator shell and a rotor having a blade cooperatively positioned with respect to said stator shell, said stator shell having a plurality of pivotable sections, remote drive means for said rotor, a drive shaft connecting said drive means to said rotor and means for pivoting said sections of said stator shell relative to said rotor so that said mixer can be readily converted from closed to open turbine operation.

3,163,406
WEB TEMPERATURE CONTROL APPARATUS
Walter R. Stelling, Jr., Milwaukee, Wis., and Frederick H. Wittel, Cincinnati, Ohio, assignors to Faustel, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 15, 1961, Ser. No. 96,026
3 Claims. (Cl. 263—3)

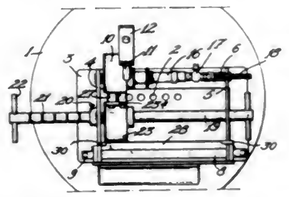
1. In a web dryinging oven having a burner for supplying heat to the web moving therethrough, and an ad-

justable valve for supplying variable amounts of fuel to said burner to thereby vary the heat delivered to said web, a web temperature control system comprising, sensing means for measuring the temperature of said web, adjustable means connected to said valve for adjustment thereof, first means for determining a deviation of temperature from a predetermined set point and generating a first control signal, second means responsive to such



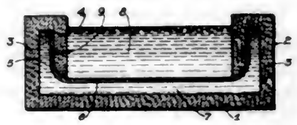
deviation to initiate turning of the adjustable means, third means responsive to the movement of the adjustable means so that the latter feeds back a position signal to balance the said control signal generated by the deviation determining means, and fourth means operatively connected to said third means to receive the position signal and to stop turning of the adjustable means at a fixed predetermined position as determined by the temperature deviation from the set point.

3,163,407
METHOD OF THREADING WIRES IN MUFFLES AND APPARATUS FOR PRACTICING SAME
Jean Raymond Guingand, Paris, France, assignor, by mesne assignments, to Societe Anonyme Heurtey, Paris, France
Filed June 20, 1961, Ser. No. 118,416
Claims priority, application France, June 30, 1960, 831,565, Patent 1,269,268
8 Claims. (Cl. 263—3)



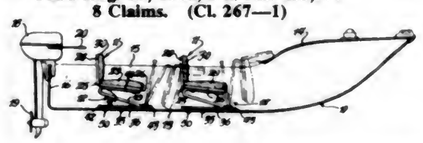
1. A process for simultaneously treating a plurality of wires by concurrently passing the wires through a treatment zone at a predetermined speed, the step of initially threading one of said wires, comprising mechanically engaging said one wire at an end thereof in selective fashion while avoiding the other wires, passing said one wire through said zone independently of the other wires at a speed greatly exceeding that of the other wires so that said one wire leaves said treatment zone with substantially unimpaired mechanical properties and reducing the speed of passage of said one wire through said treatment zone to that of the other wires when the one wire extends through said treatment zone.

3,163,408
FURNACE FOR WORKING PRODUCTS SUCH AS GLASS
Edgard Brichard, Jumet, Belgium, assignor to S. A. Glaverbel, Brussels, Belgium, a company of Belgium
Filed Dec. 12, 1961, Ser. No. 158,791
Claims priority, application Belgium, Dec. 14, 1960, 475,714, Patent 598,160
12 Claims. (Cl. 263—47)



1. A furnace tank adapted to retain molten glass being passed therethrough comprising an outer jacket of non-metallic refractory material and an inner jacket, each jacket having side and bottom walls in spaced relation to each other to provide a continuous cavity between said jackets adapted to be filled with non-circulating fused materials, said inner jacket having side walls of non-metallic refractory material and an overlapping bottom wall of thin metal that provides a fluid-tight seal to said cavity, said inner jacket bottom wall forming a diaphragm adapted to cover and be supported by said fused material.

3,163,409
TORSION BAR SEAT SUSPENSION
Peter R. Running, 15 Ward Road, North Tonawanda, N.Y., and Charles Whitney Buddo, 2 Blythdale Road, Toronto 2, Ontario, Canada
Filed Aug. 25, 1961, Ser. No. 133,999
8 Claims. (Cl. 267—1)

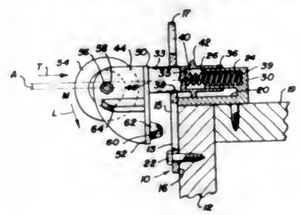


1. In a vehicle having a vehicle body member, a seat member arranged above said vehicle body member, and means supporting one side part of said seat member on said body members; the combination therewith of a torsion bar suspension for resiliently supporting the opposite side part of said seat member on said body member, comprising generally horizontal torsion bar, bearing means journalling said torsion bar on one of said members along a generally horizontal axis extending sidewise with reference to said seat member, a first generally horizontal arm fixed at one end to one end of said torsion bar and extending perpendicularly therefrom, a first means connecting and holding the opposite end of said first arm in immobile relation to one of of said members during normal use of the seat member, a second arm fixed at one end to the opposite end of said torsion bar and extending generally perpendicularly therefrom in the same general direction as, but at a vertical inclination with reference to said first arm, an extension fixed to the opposite end of said second arm, and a second means connecting and holding said extension in immobile relation to the other of said members.

3,163,410
ANTI-FRICTION BUFFER
Gordon J. Reid, Johnson Island, Swartz Bay Road, Sidney, British Columbia, Canada
Filed Apr. 30, 1963, Ser. No. 276,969
13 Claims. (Cl. 267—1)

1. An anti-friction buffer for use between relatively moving elements comprising a mounting base adapted to

be mounted on one of the said elements and having a substantially horizontal support shaft projecting outwardly therefrom, a hollow spindle member rotatably and slidably mounted on said support shaft, resilient means at the support shaft normally urging the spindle member to an outer position thereon, rolling bearing means carried at the outer end of the spindle member with its axis offset in relation to the spindle member axis, rolling bearing



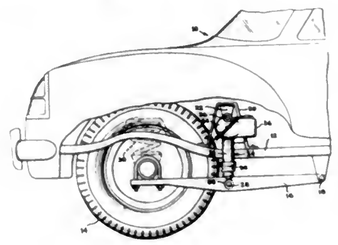
means carried by the spindle member radially outwardly from its axis at least as far as and on the same side of the spindle member axis as the roller axis, said rolling bearing means being adapted to engage said one element when a thrust is applied to the periphery of the roller by the other of the said elements to take the resultant thrust, while allowing the roller and spindle member to function as a caster.

3,163,411
AUXILIARY SPRING SUSPENSIONS
John E. Heckethorn, Dyersburg, Tenn., assignor, by mesne assignments, to Christian Marie Lucien Louis Bourcier de Carbon, Neuilly-sur-Seine, France
Filed Aug. 3, 1961, Ser. No. 129,155
9 Claims. (Cl. 267—8)



1. An augmented overload spring suspension for supporting the body of a motor vehicle from the wheel mounting adjacent each wheel thereof comprising, in combination, a main suspension spring and an auxiliary body supporting spring connected between said body and said wheel mounting; a pressurized shock absorber of the telescoping cylinder and piston type having a cylindrical casing containing a damping liquid and a piston disposed for reciprocation therein, a piston rod having one end fixed to the piston and the other end extended through a packed opening in one end of said casing, means for securing the remote ends of the cylindrical casing and the piston rod respectively to the body and the wheel mounting, a body of gas under pressure in the shock absorber casing exerting pressure on the damping fluid in opposition to the displacement of the latter by the entry of successive portions of the piston rod during the compression stroke; the two springs and the pressurized shock absorber all three acting in parallel to resiliently support the adjacent portion of the weight of the body of the vehicle from the wheel mounting, the spring rates and natural frequencies of the main suspension spring, the auxiliary supporting spring, and the resilient hydro-pneumatic shock absorber suspension member all being of different values, and the spring rates of the auxiliary spring and the shock absorber suspension member varying according to the degree of distortion of said elements under load.

3,163,412
SELF-LEVELING AND SELF-CONTAINED VEHICLE SUSPENSION STRUT
Leonard Troy, 5 Pen-Y-Bryn Drive, Scranton, Pa.
Filed Apr. 16, 1963, Ser. No. 273,350
9 Claims. (Cl. 267—15)

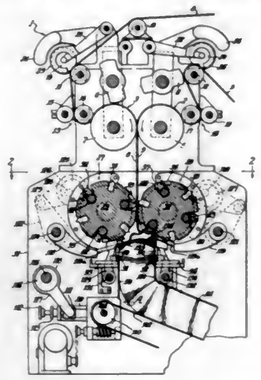


1. A leveling and suspension device for use between a vehicle chassis and a vertically oscillatable wheel support, comprising a cylinder communicating with a hollow head, said head including a flexible, impervious diaphragm defining opposed, variable-volume chambers, one of said chambers being compressible and said other chamber comprising liquid-containing chamber; a piston supported for axial movement in said cylinder and defining thereabove a variable-volume, shock-absorbing chamber communicating with said liquid-containing chamber and a lower pump chamber; and pump means in said cylinder connected to fluid reservoir means for pumping fluid into said shock-absorbing chamber and connected to and operated by relative movement of said piston with respect to said cylinder, said pump means comprising one-way valve means causing fluid to normally be directed only from said pump chamber toward said shock absorbing chamber due to said relative movement between said piston and cylinder, said pump means comprising an elongated tubular plunger including axially-separable inlet portions above said piston and normally closed during relative movement between said piston and cylinder, said axially-separable inlet portions separating to directly connect said shock absorbing chamber to said reservoir after a predetermined amount of relative axial separation between said piston and cylinder.

3,163,413
CAM CONTROLLED FOLDING MEANS FOR PAPERMAKING MACHINE
Paul G. Franke and Harold B. Pollard, New Milford, Conn., and Harold V. Rutkus, Fullerton, Calif., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,124
4 Claims. (Cl. 270—73)

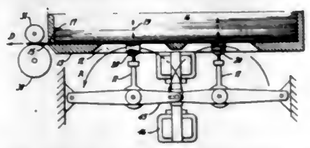
1. In a rotary folding machine, the combination of a pair of folding rolls mounted for rotation in opposite directions, means for feeding a web to be folded to said folding rolls, a pair of jaws and a tucker carried by each of said rolls, means for driving said rolls in such timed rotation that the tucker of each roll enters between the jaws of the other roll and is withdrawn therefrom as an incident to the rotation of the rolls, cam mechanism operative as an incident to the rotation of the rolls for causing the closing of the jaws of each of said rolls as the tucker of the other roll is withdrawn from between the jaws so that the jaws grip the web between them to form a web fold and for causing the opening of the jaws on a predetermined further rotation through a certain angle of the roll so as to release the web fold, power operable means effective to move said cam mechanism

for one of said rolls so that said angle for the roll may be changed while the machine is in operation, and means



for selectively actuating and deactuating said power operable means.

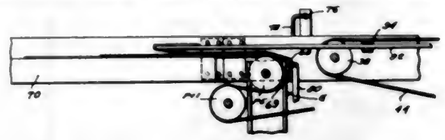
3,163,414
COMPUTER SYSTEMS
Hermann E. F. C. Lingenbrink, Hilltown, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 24, 1962, Ser. No. 168,385
2 Claims. (Cl. 271—27)



1. A high speed card feeder, comprising: an apertured magazine structure for holding a card stack; rotor means including a card contactor; apparatus for rotating said rotor means to effect rotation of said contactor along a path leading into and along an aperture of said magazine structure for intermittent engagement with board surfaces of cards in said card stack; aspirator nozzle means incorporated in and movable with said contactor, the axis of said nozzle means extending along said path; and duct means leading from within the nozzle means to a surface portion of the contactor, said nozzle means being constructed and arranged to maintain, without the use of valves and external sources of suction and merely by said rotation of the contactor with the aspirator nozzle means incorporated therein, atmospheric suction on said surface portion and thereby, intermittently, on surfaces of cards in said card stack, for engagement of successive front cards in said stack and removal thereof from said magazine.

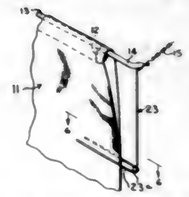
3,163,415
METHOD AND APPARATUS FOR FORMING AND CONVEYING STACKS OF DIAPERS
James F. Atchison, Philadelphia, Pa., and Robert F. Steed, Fuquay Springs, N.C., assignors to The Millville Manufacturing Co., Millville, N.J., a corporation of New Jersey
Filed Sept. 10, 1962, Ser. No. 222,546
5 Claims. (Cl. 271—68)

1. In a method of arranging sheets of material in stacked relationship upon one another in which successive sheets are delivered to conveyor means, engaging the front edge of each sheet at upper and lower sides thereof to maintain said front edges in flattened positions on the conveyor means, the steps which include advancing each of the sheets along a horizontal path of travel in spaced relation, turning a forward edge of each of said sheets into a vertically depending position, and then overturning successive sheets while gripped at two sides along re-



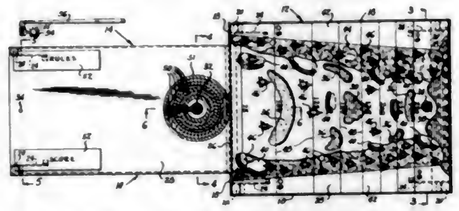
spective vertically depending portions thereby to arrange a plurality of sheets whose rearmost extremities are arranged in aligned vertically depending relationship to one another and also in superimposed registered relation to one another and periodically advancing the superimposed sheets while in stacked relation.

3,163,416
DEVICE FOR PREVENTING BILLOWING AND CREEPING OF A BOWLING PIN CLEANING CLOTH
Arthur Blacker, 200 Fir, Park Forest, Ill.
Filed Mar. 14, 1962, Ser. No. 179,612
5 Claims. (Cl. 273—54)



2. The combination with a bowling lane having a pin carrying carpet and a cusion bar at the pinspotting end thereof, a suspension bar suspended above said carpet rearwardly of the cushion bar, a sleeve-like pin wiper cloth telescoped over and suspended by said suspension bar and extending downwardly therefrom into the path of pins carried by said carpet, and downwardly and inwardly extending fingers connected to said suspension bar for surface engagement with the rearwardly disposed external face of said sleeve cloth to prevent billowing and creeping of said cloth.

3,163,417
MINIATURE GOLF GAME COMPRISING RELATIVELY FOLDABLE PLAYING SURFACE ELEMENTS
Anthony Caporuscio, 1120 Webster Ave., Utica, N.Y.
Filed Nov. 26, 1962, Ser. No. 239,954
6 Claims. (Cl. 273—87.2)



1. A golf game comprising a reduced scale golf ball, a reduced scale golf club, a miniature oblong putting green element having an elevated playing surface, and a miniature oblong golf course element having a substantially less elevated playing surface than said putting green playing surface, the said elements being in end to end contiguous arrangement,

said golf course element having a guard rail thereabout of a height such that the upper edge is substantially coplanar with the surface of said putting green element,

hinge means interconnecting the contiguous inner ends of the elements to allow said putting green element to be folded over said golf course element.

short leg means vertically supporting said elements with their horizontally oriented playing surfaces in spaced relationship to a general support surface,

a vertically extending tee secured centrally of and adjacent the outer end of said putting green element,

means defining a first cup and a series of concentric numerically valued circles located centrally of the inner end of the putting green element, the outermost circle of the series being adjacent said latter end of said putting green,

means defining a second cup adjacent the outer end of said golf course element, the latter cup being substantially aligned with said tee and said first cup,

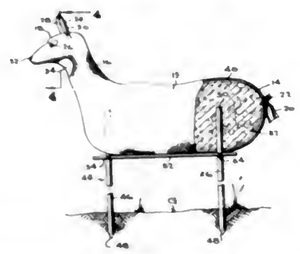
means defining a plurality of depressed obstacles and protuberant obstacles in the playing surface of the golf course element between its inner and outer ends,

lines extending longitudinally of said golf course element designating inner limits of longitudinal edge areas representing "out of bounds" zones and outer limits of longitudinal edge areas representing "in the rough" zones at each of the sides of the golf course element and leaving a central playing area therebetween, the width of said central area in a direction parallel to an end of the golf course element decreasing slightly as the second cup is approacbed from the inner end of the golf course element,

a plurality of numerically valued lines extending transversely from side to side of the golf course element, separating it into a plurality of areas of values identical with those of said circles on the putting green element,

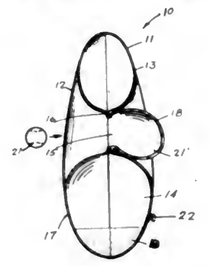
and means representing a water hole spaced from and partially encircling the second cup and extending substantially across the adjacent end of the golf course element.

3,163,418
SIMULATED ANIMAL TARGET FOR ARCHERS
Whedon Ray Myers, M & G Trailer Court, R.D. 2, York, Pa.
Filed Jan. 18, 1963, Ser. No. 252,421
2 Claims. (Cl. 273—102)



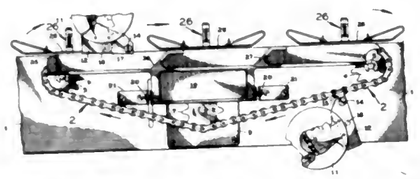
1. A simulated animal archery target comprising a flexible hollow envelope of open-work fabric material, a mass of comminuted material stuffed into the envelope and shaping the same to the contour of an animal, and a ground-supported frame secured to the envelope and spacing the same above the ground, said frame comprising a pair of spaced uprights having upper ends inserted upwardly through the material of the envelope into the stuffing and lower ends inserted into the ground, and a cross member extending between and secured to the uprights and supportably engaged with the underside of the stuffed envelope.

3,163,419
INFLATABLE POCKETED TARGET DEVICE
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J.
Filed July 13, 1964, Ser. No. 382,130
8 Claims. (Cl. 273—105)



1. Game apparatus comprising in combination an inflatable body, a missile adapted to be propelled at said body, means for retaining said body when inflated upright on a surface, a target portion of said device adapted for receiving and retaining an object propelled thereat, said target portion having opposed walls, a through opening in said target portion defined by a closed loop heat seal between said walls, and a receptacle for said missile disposed across said opening at the rear of said target portion and secured to said body.

3,163,420
ANIMATED MOVING TARGET
David H. Braun, Miami, Fla., assignor to All-Tech Industries Inc., Hialeah, Fla., a corporation of Florida
Filed July 16, 1962, Ser. No. 209,868
2 Claims. (Cl. 273—105.2)



1. A target device of the character described comprising an electric power driven conveyor adapted for travel in a fixed linear course when operated,

said course including an aiming zone of predetermined length,

a target means pivotally secured to said conveyor for travel therewith along said course and for rotation on said conveyor from an upright to a downward tripped position,

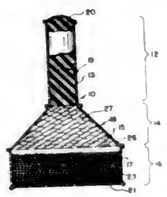
an electric operated control member adapted for movement from a normal position holding said target means thereon in upright position in said zone to a displaced position permitting said target means to gravitate to said tripped position when energized,

an electric switch means positioned to be engaged and held in operated position by said target means while the latter is moved through said zone,

a source of electric energy,

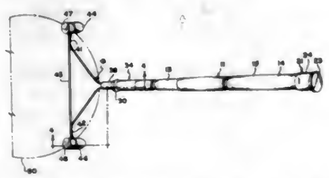
a manually operated electric circuit means connected to said source of energy and said control member and said switch means whereby the operation of said switch means by said target means will complete a circuit to said control member and momentarily energize same and trip said target means within said zone from said upright to said tripped position when said conveyor and said circuit means are operated.

3,163,421
GAME PROJECTILE WITH HANDLE AND SHIFTABLE CENTER OF GRAVITY
Rudolph W. Matyko, 134 Fairview, Chagrin Falls, Ohio
Filed Oct. 10, 1963, Ser. No. 315,177
13 Claims. (Cl. 273—106)



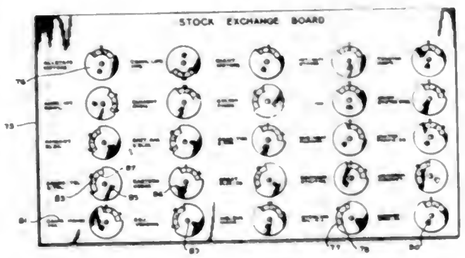
1. A toy projectile comprising:
(*a*) wall sections defining a container of generally tubular shape;
(*b*) a plurality of relatively movable weights being loosely disposed within the container and partly filling the container, said weights being freely movable within the container so that the center of gravity of said projectile shifts forwardly when it is thrown;
(*c*) a rod-like handle secured to said container, said handle and said container normally lying in a straight line, said handle having an outer surface sized and shaped to be readily grasped for manipulating and throwing the container with the weights movably disposed inside;
(*d*) the container being substantially larger than the handle so as to extend beyond the surfaces of the handle; and,
(*e*) at least outer portions of the wall sections being flexible and flexing readily to the forces of the weights movable within the container such that the flexible portions assume contours dictated by a combination of the outwardly directed forces of the movable weights engaging the inside surfaces of the wall sections and inwardly directed forces of any medium engaging the outside surfaces of the wall sections.

3,163,422
SHUFFLEBOARD CUE
Murray Swardlick, Briny Breezes Park, Lot E–13, Delray Beach, Fla.
Filed June 20, 1963, Ser. No. 289,213
16 Claims. (Cl. 273—129)



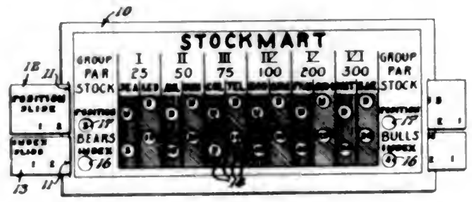
1. A shuffleboard cue adapted to be used alternatively in a first or a second attitude of use for propelling a puck over the surface of a gaming court comprising, a handle including a lower tubular portion and an upper tubular portion in telescopic engagement with one another, and a cue head fastened to said handle, said cue head comprising a bifurcated stem having distal points joined by a transverse member and puck-pushing elements mounted adjacent each juncture of the stem and transverse member, said puck-pushing elements extending from their respective mountings a first equal distance above the main plane of said stem and transverse member, and extending from their respective mountings a second equal distance below the main plane, the first distance being such that the distal surfaces of the elements above the main plane are adapted to slide upon the gaming court surface when used to propel the puck with the cue in one attitude of use, and the second distance being less than the first distance such that the distal surfaces of the elements below the main plane do not touch the gaming court when propelling the puck with the cue and in the other attitude of use and the elements push against the peripheral sides of the puck only.

3,163,423
STOCK EXCHANGE GAME
Gerald D. Jackson, 21 Dauntless Lane, Hartford, Conn.
Filed Mar. 26, 1962, Ser. No. 182,492
3 Claims. (Cl. 273—134)



1. A stock trading game, comprising a stock trading board having a series of marginal stock boxes designating different stocks and instruction boxes designating different play instructions relating to buying and selling of said stocks, playing pieces movable over the boxes on the trading board, a stock exchange board having a plurality of stock price scales corresponding in number and name to stock boxes on the stock trading board, each of said scales having a rotatable dial with a pointer indicating the current market price of the stock represented by the scale, a plurality of stacks of stock trading instruction cards disposable on the stock trading board for selection by the players during play, a plurality of cubical dice for determining changes in prices of stocks by the dials on said scales, each of said stock price scales being circular in form and divided into equal divisions, and a circular dividend payment scale located on said stock exchange board within each stock price scale, each of said dials having another pointer at the dividend payment scale in diametral alignment with the first-named pointer to indicate a dividend payment rate corresponding to each stock price, said stock trading board having a plurality of rectangles within the margin of the board for locating the respective stacks of cards thereon, one stack of said cards representing stock call options, another stack of said cards representing stock put options, and a third stack of said cards representing news flashes accompanied by stock trading instructions.

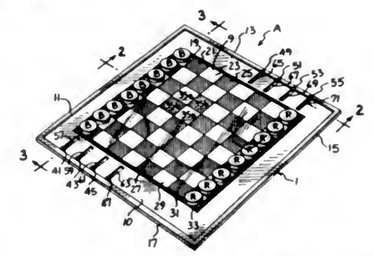
3,163,424
STOCK MARKET GAME
Richard S. Lindsey, 139 W. Gay St., West Chester, Pa.
Filed Feb. 6, 1962, Ser. No. 171,516
3 Claims. (Cl. 273—135)



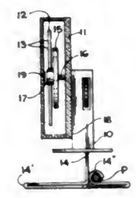
1. A game apparatus wherein a plurality of players simulate the trading of shares of corporate stock on a stock market, said apparatus comprising
a rectangular playing board having
a series of openings arranged in substantially vertical columns and arranged to form top and bottom pairs of transverse rows across the face of the playing board.
each vertical column of openings having indicia therewith identifying a particular company, the columns arranged in groups according to the par value of the stock of the particular company,
a slide position opening located adjacent each pair of rows of openings proximate the sides of the board;
two rectangular slides adapted for lateral movement behind the face of the playing board and positioned to be visible through the openings in said board,
the top slide having a series of indicia indicating either upward or downward movement of share prices, said indicia being visible in openings in the top transverse rows,
the bottom slide having a series of indicia indicating the amount of increase or decrease in share prices, said indicia being visible in the openings in the bottom transverse rows,
the indicia on both slides being greater in number than the number of openings in each transverse row,
each slide having a series of position numerals located adjacent the sides of the slides, said numerals positioned on the slides so as to appear in the slide position openings on the board; and
a pair of dice having numeral indicia on each face thereof, each die also having indicia associating said die with one of the two slides, the numeral on each die face corresponding to one of the position numerals on the associated slide whereby after the dice are rolled the slides are set in a certain position within the playing board with particular slide indicia visible through the openings in the face of the playing board according to the numeral indicia visible on the upward face of each die.

3,163,425
GAME BOARD HAVING CHANGEABLE PATTERN
Kenneth S. Caplan, 471 Park Ave., Elmhurst, Ill.
Filed May 16, 1962, Ser. No. 195,296
9 Claims. (Cl. 273—136)

3. A game board comprising a region having a plurality of members each having a pattern and together forming a predetermined game board pattern, a transparent member covering the pattern and forming a playing surface, and means for shifting one of the members relative to the other to change the game board pattern without moving the transparent member.

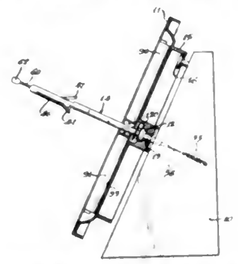


3,163,426
POWER TOY INCORPORATING A ROTATABLE DISC MEANS FOR PROVIDING AMUSEMENT
Max J. Ruderian, 545 Hanley, Los Angeles 49, Calif.
Filed Dec. 10, 1962, Ser. No. 243,515
3 Claims. (Cl. 273—142)



1. A power toy comprising, in combination: a casing; a disc means; power drive means within said casing connected to said disc means; an operating rack member extending from said casing and manually reciprocably movable into and out of said casing to operate said power drive means and thereby rotate said disc means said operating rack member terminating in a laterally bent portion defining in part a circular loop to receive an elongated object and thereby provide a stand for said toy; and means on said disc means for providing amusement upon spinning of said disc means.

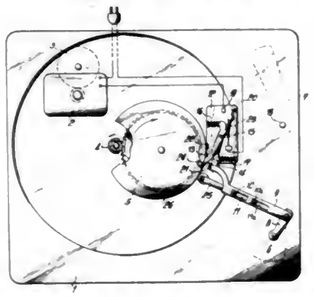
3,163,427
RECORD CHANGER
Ernest O. P. Tatter, Addison, Ill., assignor to Warwick Electronics, Inc., a corporation of Delaware
Filed Sept. 19, 1961, Ser. No. 139,289
17 Claims. (Cl. 274—10)



3. In a record changer, a record spindle having a record stack supporting shelf, means for shifting records successively off said shelf from the bottom of the record stack, and record stack stabilizing means on said spindle comprising, a plurality of slots in the spindle wall extending toward the upper end thereof from a point adja-

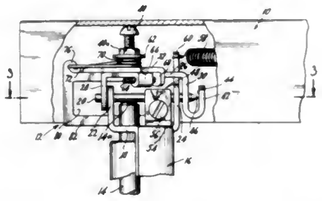
cent the shelf, a plurality of levers associated one with each of said slots, a movable block within the spindle to which each of said levers is pivotally connected adjacent an end thereof, resilient means for urging said levers outwardly of the spindle through said slots, and means for retracting the levers within the spindle for removal of records from the spindle.

3,163,428
RECORD CHANGERS CUT OUT DEVICE
Helmut Laufer, St. Georgen, Black Forest, Germany, assignor to Oskar Steidinger and Siegfried Steidinger, trading as the firm Gebrueder Steidinger, St. Georgen, Black Forest, Germany
Filed Oct. 13, 1961, Ser. No. 144,989
Claims priority, application Germany, Oct. 31, 1960, St 17,066
5 Claims. (Cl. 274—10)



1. In a phonograph, a turntable, a motor connected to rotate said turntable, a tone arm mounted for pivotal movement from a first off-record position, to a second playing position over a record on said turntable, a record changer including a cam driven by said turntable, a circuit for said motor including a switch normally spring-urged to open position, first and second levers, each said lever engaging said switch and individually pivotable from a first position permitting said switch to open, to a second position effecting closure of said switch, spring means urging said levers to second position, means fixed with said cam and responsive to movement thereof to predetermined position to periodically engage and pivot said first lever only, to move the same to first position against the urge of said spring means, and means operated by and in response to movement of said tone arm to first position, to pivot said second lever only to its said first position against the urge of said spring means.

3,163,429
TONE ARM MOUNTING ASSEMBLY
Frank T. Scalera, Maplewood, N.J., assignor, by mesne assignments, to General Electric Company, a corporation of New York
Filed Apr. 6, 1962, Ser. No. 185,696
11 Claims. (Cl. 274—23)

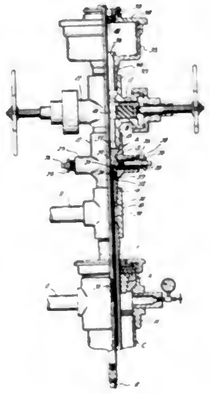


1. A pivotal mount for supporting a tone arm for rotational movement about a horizontal axis comprising a tone arm mounting bracket mounted for rotation about a vertical axis and having formed therein a pair of aligned pin-receiving openings, a pair of parallel depending ears extending downwardly from and secured to said tone arm at one end thereof, said depending ears having a pair of aligned pin-receiving openings formed therein aligned with the respective pin-receiving openings of said mounting bracket, a pivot pin interconnecting said depending ears and said mounting bracket and received within the said pin-receiving openings, said pin having one end of reduced diameter forming a bearing contact, a reference surface operatively engaged with said bearing contact and rigidly secured to one of said depending ears, said reference surface provided by an integral extension of one of said ears, clamp means for securing said pin to said mounting bracket, and biasing means between said mounting bracket and said tone arm for maintaining said engagement between said bearing contact and said reference surface.

ERRATUM

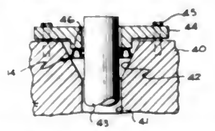
For Class 274—51.11 see:
Patent No. 3,163,366

3,163,430
STUFFING BOX ASSEMBLY FOR SUCKER ROD STRINGS
Lestan P. Normand, Beaumont, Tex., assignor to Gulf Coast Machine & Supply Company, Beaumont, Tex., a corporation of Texas
Filed Aug. 1, 1962, Ser. No. 214,023
4 Claims. (Cl. 277—19)



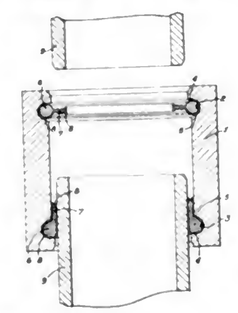
1. A stuffing box assembly for a pump rod string reciprocable in a well pipe, comprising, a tubular housing adapted to be coaxially mountable in said well pipe to form a part thereof, an annular seat in the bore of the housing, an elongate cylinder member disposed in the bore of the housing to extend coaxially into the bore of the well pipe between the rod string and said well pipe, said cylinder member extending downwardly below said seat and having its lower end free with respect to said rod string and said well pipe, an annular shoulder member about the upper end of said cylinder member disposable on said seat, an annular packing arranged to seal between said shoulder member and the bore wall of said housing, hold-down screws retractably mounted in the wall of said housing and cooperating with said shoulder member to releasably hold said shoulder member on said seat, a piston rod reciprocably disposed in the bore of said cylinder and connectible into the pump rod string, and seal means mounted in the exterior of said piston rod to slidably seal with the bore wall of said cylinder.

3,163,431
SEAL RING MEANS
Charles L. Tanner, 1641 Bedford St., Los Angeles 35, Calif.
Filed June 6, 1960, Ser. No. 34,261
6 Claims. (Cl. 277—206)



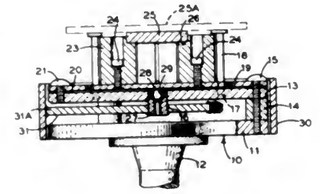
1. In combination, a first metal member presenting an annular surface, a second metal member presenting an annular surface spaced from and opposed to said first-mentioned annular surface, said annular surfaces being substantially rigid, a metal seal ring between said surfaces, said ring being characterized by an annular body of stiffly resilient spring metal so shaped as to be capable of being flexed and having an integral body of ductile metal over its peripheral portions in engagement with said annular surfaces, means cooperatively associated with at least one of said members flexing said ring body between said surfaces, said annular surfaces of said metal members and the ductile metal-covered portions of said seal ring being so shaped relative to each other that the annular areas of the ductile portions of the seal ring in contact with said annular surfaces are small and approach line contact whereby a relatively light loading of the body of the seal ring and resultant flexure thereof produces a high loading of said annular areas of the ductile portions of the seal ring contacting said annular surfaces.

3,163,432
COUPLINGS FOR PIPES
Nicolaas R. de Boer, Goor, Netherlands, assignor to Societe Anonyme Eternit, Kapelle-op-den-Bos, Belgium, a Belgian company
Filed Sept. 2, 1959, Ser. No. 837,731
Claims priority, application Belgium Sept. 11, 1958
2 Claims. (Cl. 277—209)



1. A coupling comprising a hollow sleeve element having a cylindrical bore of determinable diameter, said sleeve element having an end and an annular groove adjacent said end opening into said bore, a resilient sealing ring supported in said groove, said sealing ring comprising a toroidal portion in said groove and an annular web extending radially inwards from said toroidal portion, said annular web having an opening for accommodating therein in sealing relation a pipe adapted for enabling the flow of fluid at high pressure therethrough, the pipe having an outside diameter which is smaller than the inside diameter of the sleeve element and larger than the opening in the web, the annular web being deformed by said pipe to a position between the sleeve element and the pipe and being compressed throughout its length between the pipe and the sleeve element, a plurality of ribs on said annular web and extending normally therefrom with the web in undeflected position, the ribs being engaged against said sleeve element and pipe to be deformed thereby, the pressure of said fluid being effective to further compress said web between said pipe and sleeve element to strengthen the seal formed by said web between the pipe and sleeve element, a plurality of ribs on said toroidal portion extending radially outward therefrom, a portion of the latter said ribs being compressed against the sleeve element in said groove with said pipe inserted in said sleeve, the remainder of said ribs on the toroidal portion being compressed against said pipe, said ribs on the toroidal portion being further compressed by the pressure of the fluid in said pipe, said sleeve element at said groove having lateral sides, the side nearest the end of the sleeve being radially directed, the other side being inclined to form a radially divergent groove.

3,163,433
WORK HOLDING DEVICE
Louis Ross, New York, N.Y., assignor to Helen Ross, New York, N.Y.
Filed Oct. 2, 1962, Ser. No. 227,916
7 Claims. (Cl. 279—46)

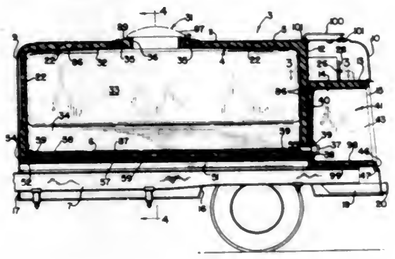


1. A self-contained diaphragm chuck comprising
(*a*) a base mounting plate,
(*b*) a flexible diaphragm fixedly mounted substantially parallel with and spaced from said mounting plate,
(*c*) diaphragm flexing screw means operatively disposed perpendicularly between said plate and said diaphragm and selectively movable toward and away from said diaphragm along a predetermined axis to effect and to maintain varying degrees of flexion therein,
(*d*) actuating means associated with said diaphragm flexing means and projecting perpendicularly from said axis, and adapted for rotation thereabout,
(*e*) a plurality of jaws arrayed in a predetermined pattern on said diaphragm and being controllably selectively expandable and retractable, respectively, with the variable flexion of said diaphragm away from and toward said mounting plate.

3,163,434
TRUCK TANK
Melvin W. Krueger, Madison, Wis., assignor to Dairy Equipment Company, Madison, Wis., a corporation of Wisconsin
Filed Mar. 14, 1961, Ser. No. 95,578
26 Claims. (Cl. 280—5)

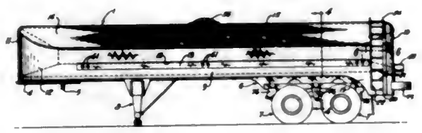
12. A truck tank construction, comprising an outer shell having a pair of end walls and a pair of side walls connected to the end walls and having a top wall and an

open bottom, a partition wall disposed transversely within the shell and dividing the interior of the shell into a forward chamber and a rear chamber, a tank disposed within the forward chamber and spaced from the walls of the shell and from said partition, a compartment unit disposed within the rear chamber and spaced from the walls of the shell and from the partition, said compartment unit defining at least one closed compartment, a side wall of said shell having a substantially vertical recess



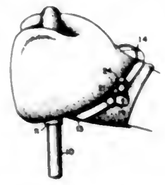
located rearwardly of said partition and laterally of the compartment unit with said recess including an offset surface disposed substantially parallel to said side wall, said offset surface spaced laterally from said compartment unit, a series of vertically spaced rungs secured to said side wall and extending across said recess, and a layer of foam plastic resin disposed between the shell and the tank, between the tank and the partition and between the compartment unit and the partition to provide a lightweight insulated structure.

3,163,435
TRANSPORT TANK
Melvin W. Krueger, Madison, and George B. Luhman, Jr., Monona Village, Wis., assignors to Dairy Equipment Company, Madison, Wis., a corporation of Wisconsin
Filed Dec. 11, 1961, Ser. No. 158,413
10 Claims. (Cl. 280—5)



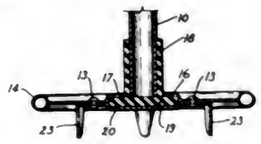
2. In a transport tank to be hauled by a tractor, an outer reinforced plastic shell including a pair of vertical side walls and a vertical end wall connecting the side walls together, a tank to contain a bulk material and including a pair of vertical side walls and a vertical end wall with said side walls and end wall of the tank being spaced inwardly of the corresponding walls of the shell, said tank including a substantially vertical diagonal wall connecting a side wall and the end wall to provide an area of increased space between said diagonal wall and the shell, a side wall of the shell having a vertical recess adjacent said end wall and disposed in alignment with said diagonal wall, and a series of rungs disposed across the recess in vertically spaced relation and located inwardly of the outer surface of the side walls of the shell, said recess permitting the shell to be built to the full width of the state vehicle code requirements to thereby provide a transport tank of a lower dimension and a lower center of gravity.

3,163,436
SAFETY RELEASE WRIST STRAP ASSEMBLY FOR A SKI POLE
Frank E. Shride, Rte. 1, Box 226, and Peter V. Spakowsky, Rte. 1, Box 240, both of Burton, Wash.
Filed Mar. 15, 1961, Ser. No. 95,894
6 Claims. (Cl. 280—11.37)



1. A safety release wrist strap assembly for a ski pole, including strap members of predetermined length, one end of each of said strap members being fixed to said pole, and complemental interengageable friction members fixed to the free terminals of said strap members, said friction members being disengaged upon the exertion of stress thereon.

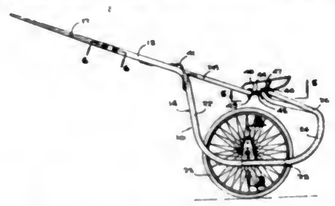
3,163,437
SKI POLE BASKETS
Phillip William Phillipson, 665 Cherry St., Denver 5, Colo.
Filed Sept. 28, 1962, Ser. No. 226,993
1 Claim. (Cl. 280—11.37)



A basket for a ski pole comprising: a circular basket plate having an axial opening; a bottom plate fixedly and concentrically mounted on the bottom of said basket plate; a relatively thick, flat, resilient, circular disc concentrically clamped between said basket plate and said bottom plate and closing said axial opening; a flexible, tubular ferrule integrally and concentrically formed on said circular disc and extending through said axial opening to receive the ski pole; a circular, cup-shaped, flat-bottomed socket concentrically indented downwardly in said bottom plate and containing and maintaining said circular disc in place; a similar, inverted, cup-shaped socket concentrically indented upwardly in said basket plate about said axial opening in which said circular disc is contained; and downwardly extending, snow-engaging fangs formed on and extending downwardly from said bottom plate.

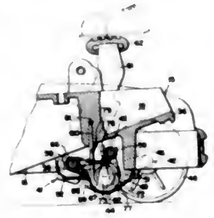
3,163,438
SULKY
Max D. Bliss, Jr., West Brattleboro, Vt. (R.F.D. 1, East Putney, Vt.)
Filed Aug. 14, 1961, Ser. No. 131,169
6 Claims. (Cl. 280—43)

1. A sulky comprising spaced shafts each including an arch extending rearwardly thereof, a cross brace extending rearwardly and inwardly of each arch, another arch forming a wheel cradle with each said first mentioned arch and having a cross brace extending generally parallel to each said first mentioned cross brace, wheel supports on said arches, axle means extending between said supports for carrying a wheel thereon, the inner ends of each pair of generally parallel cross braces spaced from each other, and seat means detachably connected to the inner ends of said cross braces, and means adjustably connecting said seat means to the inner ends of each pair



of generally parallel cross braces for securing said shafts together and adjusting the distance between said shafts.

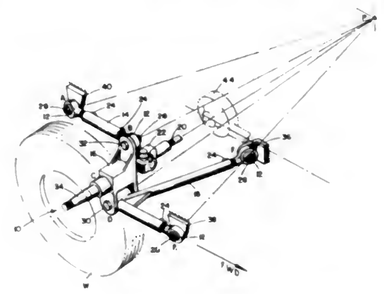
3,163,439
VACUUM CLEANER WITH NOZZLE HEIGHT ADJUSTING MECHANISM
Paul O. Huston, Bloomfield, and William T. Fleming, Boonton, N.J., assignors to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed July 5, 1963, Ser. No. 292,823
5 Claims. (Cl. 280—43.17)



1. A nozzle height adjusting mechanism for a vacuum cleaner of the type wherein the nozzle of the vacuum cleaner is raised by lowering the rear portion of the vacuum cleaner chassis and wherein the nozzle is lowered by raising the rear portion of the chassis, the said nozzle height adjusting mechanism comprising in combination a rear axle turnably mounted on a rear portion of said chassis, a central offset portion formed as part of said rear axle, offset arms and spindles formed at opposite ends of said axle, wheels carried by said spindles, spring means biasing said axle to turn said axle in a predetermined direction, a shaft turnable mounted on a rear portion of said chassis, spring means biasing said shaft to turn in a predetermined direction, a hook carried by said shaft and so located and arranged as to engage and hold the central offset portion of said rear axle, and means for turning said shaft to disengage the said hook from engagement with the central offset portion of said rear axle.

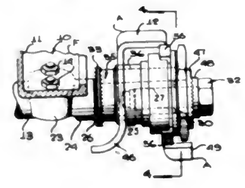
3,163,440
EXTENDED SWING RADIUS AUTOMOTIVE REAR AXLE SUSPENSION SYSTEM
Alfred S. Vall, 406 Stevenson Lane, Baltimore, Md.
Filed Oct. 3, 1962, Ser. No. 228,089
4 Claims. (Cl. 280—80)

3. A wheel suspension linkage system for a vehicle, comprising an upper link, a lower link consisting of a pair of angularly extending arms having a substantially common junction to form a rigid truss, a wheel carrier having upper carrier pivot means and lower means for forming a journal connection with said common junction of said truss, said upper link and one arm of said rigid truss extending in opposite directions and being of equal pivotal length, said upper link being pivotally joined to the upper end of said carrier by said upper carrier pivot means, upper, lower, and inwardly spaced pivot means for said vehicle, the oppositely extending end of said upper link and of said one arm of said rigid truss being secured to said vehicle by said upper and lower chassis pivot means, respectively, the opposite end of the other arm of said rigid truss extending to a point adjacent to the center line of said vehicle and being secured thereat by said inwardly spaced chassis pivot means, said journal connection of said common junction and the proximity of said other arm of said truss to said



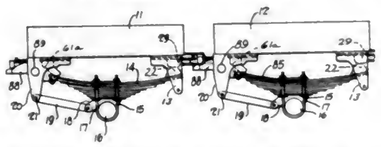
center line providing stiffness to the assembly of said upper and lower links to said wheel carrier and to said vehicle, with said upper carrier pivot means and the lower means of said wheel carrier each being rotatable about a first axis and a second axis, respectively, and with said first axis and said second axis each having a common focal point, whereby a wheel axle mounted on said carrier intermediate the ends thereof and having a wheel axis, said wheel axis of said wheel axle passes through said common focal point of said first axis and said second axis and moves only in a vertical plane which includes said common focal point.

3,163,441
ADJUSTABLE PIVOTAL WHEEL MOUNTING
Wilfred F. Traugott, P.O. Box 608, West Point, Va.; Bertha D. Traugott, executrix of estate of Wilfred F. Traugott, deceased
Filed May 2, 1962, Ser. No. 191,983
9 Claims. (Cl. 280—96.2)



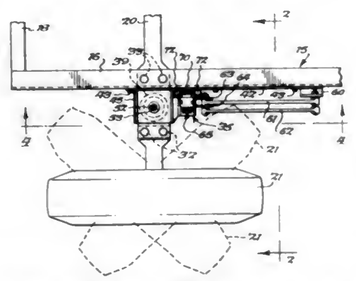
1. In combination with a vehicle frame, a pivot shaft secured to said frame, an eccentric adjustable bushing supported on the end of said pivot shaft, means for adjusting said adjusting bushing in a predetermined fixed relationship on said pivot shaft to change the eccentricity of said bushing, bearing means rotatably supported on said adjusting bushing, a control arm mounted upon said bearing means, and locking means for preventing relative rotation of said bearing means with respect to said control arm.

3,163,442
BOGIE SPRING EQUALIZING CONSTRUCTION
William A. Bertolini, Cincinnati, Ohio, assignor to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware
Continuation of application Ser. No. 73,712, Dec. 5, 1960. This application July 19, 1963, Ser. No. 296,163
15 Claims. (Cl. 280—104.5)



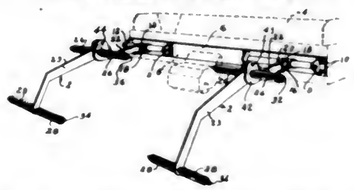
1. In trailer construction of the class described, in combination, a body, a first axle unit movably mounted beneath the body, a second axle unit similarly mounted, equalizing means carried by at least one of said units, spring means for each of said units, said equalizing means extending between adjacent ends of the spring means on each unit and having portions cooperable with said spring means to distribute the load therebetween, said equalizing means being operable when the axle units are in juxtaposition, and means rendering the equalizing means operative in response to relative movement between the axle units, said means rendering the equalizing means operative including block means carried by each of said axle units selectively engageable with the ends of each of the spring means to defeat equalization when the units are separated, and push frame means carried by the axle units to move the block means to effect equalization when the units are moved into juxtaposition.

3,163,443
VEHICLE SPRING SUSPENSION FOR FRONT STEERING AXLE
Albert F. Hickman, 8009 N. State St., Eden, N.Y.
Original application Feb. 23, 1961, Ser. No. 91,102, now Patent No. 3,111,335, dated Nov. 19, 1963. Divided and this application May 6, 1963, Ser. No. 278,044
5 Claims. (Cl. 280—124)



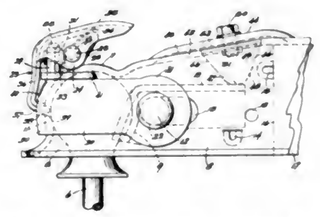
1. A vehicle spring suspension adapted to be interposed between a vehicle frame member and one end of an axle member having a rubber tired steering wheel journalled thereon to rotate about a generally horizontal axis and to be steered about a generally vertical axis, comprising a roller arranged to rotate with its axis extending generally horizontally and longitudinally of said frame, a vertical guide having rolling engagement with the periphery of said roller to restrain movement of said roller transversely of the frame, means mounting said roller on one of said members in the space between said frame member and steering wheel, a rubber block yieldingly mounting said vertical guide on the other of said members, said rubber block being positioned to yieldingly resist the pressure of said roller against said other of said members and to yieldingly restrain corresponding movement of said axle transversely of the frame member, a vertical helical compression spring having its lower end bearing against said end of said axle member and arranged in the space between said wheel and frame member and being behind the leading extremity of said steering wheel when said leading extremity is closest to the frame member and ahead of the trailing extremity of said steering wheel when said trailing extremity is closest to said frame member, a frame bracket secured to said frame member and projecting horizontally from the side thereof over said spring and supported thereby, and means restraining said axle member against horizontal movement longitudinally of said frame member.

3,163,444
DRAWBARS
John William Smith, 617 NW. 18th St., Oklahoma City, Okla.
Filed May 27, 1963, Ser. No. 283,200
8 Claims. (Cl. 280—492)



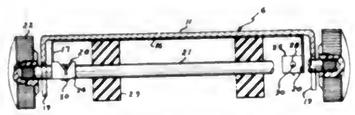
1. In an arrangement for towing a vehicle by a truck or the like having pneumatically tired wheels, the combination including a drawbar, a device pivotally attaching said drawbar to the vehicle to be towed, a roller mounted on the distal end of said drawbar adapted to engage the forward side of a wheel on the truck, and means secured to said drawbar and adapted to ride upon the wheel engaged by said roller for supporting said roller in such position that an imaginary line of pull taken from said device to the axis of said roller is below the axis of rotation of said wheel.

3,163,445
TRAILER COUPLINGS
Joseph R. Kirk and Edwin L. Allen, Rockford, Ill., and Agnar Johnson, deceased, late of Rockford, Ill., by Oliver Nelson, administrator, Rockford, Ill., assignors to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 2, 1961, Ser. No. 142,433
17 Claims. (Cl. 280—513)



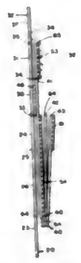
1. A ball and socket coupling comprising a ballhead element, a socket element open on one side, a bearing element movable in the open side of said socket element retaining and releasing the ballhead in the socket, said socket element including an elongated inverted channel portion on the open side having slots provided in the opposed side walls of the channel longitudinally thereof, a cross-pin extending through said slots and having the movable bearing element mounted directly and positively thereon inside the channel, a generally U-shaped yoke having the arms thereoef directly and positively connected to the ends of said pin for swinging movement to and from an operative position closely straddling the socket from the side thereof opposite the open side with the arms of the yoke holding the pin in one end of the slots with the bearing directly and positively retaining the ballhead in the socket and with the cross portion of the yoke abutting the socket on the diametrically opposite side from the bearing element, and latch means mounted on the yoke and operable through an opening provided in the cross portion thereof and under a registering abutment provided on the socket for releasably locking said yoke in this operative position.

3,163,446
STRIP FEED MECHANISM
Randall E. Muncy, 4575 W. National Road, Springfield, Ohio
Filed Aug. 14, 1962, Ser. No. 216,912
10 Claims. (Cl. 281—11)



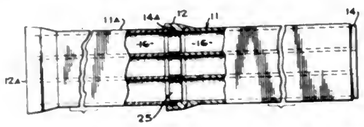
1. Strip feed mechanism comprising, means defining a strip guide surface, a drive shaft having friction drive means thereon, spring means connected with and mounting said shaft so as to resiliently hold said drive means in a predetermined relation to said strip guide surface and maintain a frictional engagement thereof to strip material passed therebetween.

3,163,447
MULTI-PANEL BLANK FORM ASSEMBLY
John William Seekins, North Tewksbury, Mass., assignor to Courier-Citizen Company, Lowell, Mass., a corporation of Massachusetts
Filed Apr. 9, 1962, Ser. No. 186,123
7 Claims. (Cl. 282—12)



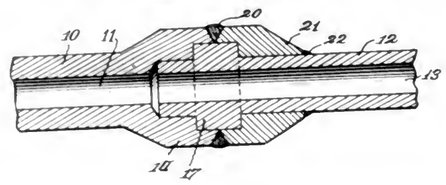
1. A vehicle registration application form comprising an elongated printed sheet free of transfer areas, said sheet having a first printed panel in the lower portion thereof and second, third and fourth printed panels in the upper portion thereof, said printed panels being joined by transverse lines of weakness and said second and fourth printed panels being inverted on the rear face of said sheet; and a unitary transfer assembly, said assembly including a main elongated transfer sheet underlying said first, second and third printed panels and having a second transfer area on the front face thereof in engagement with said inverted second printed panel and having first and third transfer areas on the rear face thereof opposite said first and third printed panels; an interleaf printed sheet free of transfer areas, said interleaf sheet having a fifth printed panel on the front face thereof underlying the first transfer area of said main transfer sheet, and a subsidiary transfer sheet underlying said interleaf printed sheet, said subsidiary transfer sheet having a fourth transfer area on the rear face thereof, said application form being roll foldable into a superposed pack for introduction into a typewriter with said second, third, fourth and fifth printed panels each overlaid by a transfer area of one of said transfer sheets for duplicating information typed on said first printed panel and said interleaf sheet being free of connection to said elongated printed sheet, but connected to said assembly along a perforated line whereby said interleaf sheet may be snapped out of said assembly without contact with said transfer areas.

3,163,448
CONDUIT JOINT AND SEAL MEMBER THEREFOR
Carl Franklin, Tempe, Ariz., assignor to American Pipe and Construction Co., South Gate, Calif., a corporation of Delaware
Filed Oct. 3, 1961, Ser. No. 142,544
3 Claims. (Cl. 285—137)



1. In a joint for concrete conduit sections, a first conduit section having a bell end, a second conduit section having a spigot end received in the bell end of said first conduit section, said sections having a plurality of ducts therethrough from end to end, the ducts of one conduit section being in alignment with the ducts of the other conduit section when the sections are assembled in end-to-end relation, and a resilient seal member between the adjacent end faces of said spigot and bell ends, said seal member including a thin, membrane-like planar body having a plurality of tubular sections extending to opposite sides thereof, said tubular sections registering with and projecting into the ducts in said conduit sections, said ducts being flared at their end portions and said tubular sections being externally tapered to fit said flared end portions of the ducts, the interior dimensions of said tubular sections substantially corresponding to the interior dimensions of the ducts inwardly of the flared end portions, said seal member having a peripheral flange provided with a sealing bead received between the exterior of said spigot end of said second conduit section and the interior of the bell end of the other conduit section.

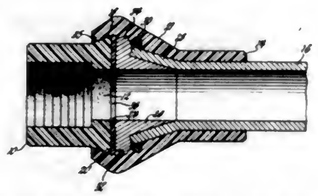
3,163,449
PIPE JOINT
Clifford M. Westfall, Peotone, Ill., assignor to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois
Filed June 20, 1961, Ser. No. 118,297
5 Claims. (Cl. 285—187)



1. A pipe joint comprising:
a first pipe;

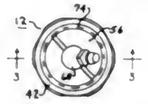
an enlarged portion at an end of said first pipe;
a first bore in said enlarged portion;
said first bore being in communication with and having an internal diameter greater than the interior of the first pipe;
a second bore in said enlarged portion, outwardly of said first bore;
said second bore being in communication with and having an internal diameter gerater than said first bore;
a second pipe;
a thrust member on said second pipe and set back from an adjacent first end portion of the second pipe, between said first end portion and an intermediate pipe portion;
said thrust member having an external diameter greater than the external diameter of the second pipe;
said first end portion of the second pipe being snugly received within said first bore of the enlarged portion on the first pipe;
one portion of said thrust member being snugly received within said second bore;
a collar having a pair of communicating bores, one of said bores having an internal diameter larger than the other bore;
said one bore snugly enveloping the unreceived other portion of said thrust member;
said other bore snugly enveloping said intermediate portion of the second pipe adjacent the thrust member;
said collar and said enlarged portion having mutually facing spaced surfaces;
and a weldment sealing the gap between said facing surfaces;
said first pipe, said enlarged portion, and said collar being composed of a first metallic material;
said second pipe and thrust member being composed of a second metallic material having a coefficient of expansion less than that of said first metallic material;
said first and second bores of the enlarged portion having internal diameters, at room temperature and in a disassembled condition, smaller than the external diameters of the second pipe's first end portion and thrust member respectively;
said one and other bores of said collar having internal diameters, at room temperature and in a disassembled condition, smaller than the external diameter of the second pipe's thrust member and intermediate portion respectively.

3,163,450
QUICK-DETACHABLE HYDRAULIC COUPLING
Harry E. Eirhart, Jr., 9951 Kinloch, Detroit 39, Mich.
Filed Sept. 14, 1962, Ser. No. 223,668
1 Claim. (Cl. 285—238)



A quick-detachable coupling device comprising in combination a member having a fluid passage therein, locking ridge means on the outside of the member defining a locking circle, a hollow elastic coupling having an open end surrounded by a continuous hollow generally circular locking surface inside the coupling adapted to expand and contract circumferentially, the locking surface when the elastic coupling is in repose sloping axially of the coupling and having a minimum diameter less than the maximum diameter of the locking circle, said minimum diameter being located on the same side of the maximum diameter of the locking surface as the open end so that the elastic coupling can be stretched to snap over the locking ridge means, a hollow flared surface on the inside of the coupling, a tube having an external flared surface fitting the first flared surface, a hollow circular wedge inside the tube holding the tube in sealing relation to the first flared surface, and means for holding the wedge in the tube, said last mentioned means including second locking ridge means defining a second locking circle on the outside of the wedge and a second locking surface on the inside of the coupling, the second locking surface when the elastic coupling is in repose sloping axially of the coupling and having a minimum diameter less than the maximum diameter of the second locking circle, and the minimum diameter of the second locking surface being located between the maximum diameter of the second locking surface and the open end so that the second locking surface can be snapped over the wedge and resiliently urges the wedge into the tube.

3,163,451
ROTATABLE STUD CONSTRUCTION
Steve Krizman, South Bend, Ind., assignor to Krizman Manufacturing Co., Inc., South Bend, Ind., a corporation of Indiana
Filed May 31, 1962, Ser. No. 198,933
2 Claims. (Cl. 287—93)



1. For use with a steering assembly having a center link with a socket means and an opening in the bottom of the socket means: a rotatable stud unit, comprising a cylindrical-shaped retainer adapted to seat in said socket means and having a bore therethrough and screw threads on the internal wall adjacent each end of said bore, an external flange near one end thereof for engaging said socket means near the top thereof, a bushing adapted to extend through the opening in the bottom of said socket means and threaded into the bore of said retainer and having a flange on the lower end for engaging the bottom of said socket means, a stud with a recess in the upper end extending through said bushing and downwardly therefrom for receiving a rod, a nut on the lower end of said stud for retaining said rod thereon, a flange on the upper end of said stud for seating on the upper end of said bushing, an adjustment plug threadedly received in the upper end of said retainer, a plurality of spacers between said stud and said plug, a coil spring in the recess in said stud engaging the adjacent spacer, and a lubricating fixture in said plug communicating with the bore in said retainer.

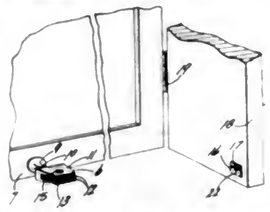
3,163,452
DOOR HOLDERS AND DOOR STOPS
Henry Knox Bryson, 11150 Navajo Drive N., St. Petersburg, Fla; Alfred B. Castle, Brookmont, Md. (4104 Maryland Drive, Washington 16, D.C.); and Milford A. Juten, Brookmont, Md. (4008 61st St., Washington 16, D.C.)
Filed Jan. 15, 1960, Ser. No. 6,584
11 Claims. (Cl. 292—75)

1. The combination with a door, a door stop element having a ridge and mounted on a support, a door holder element including a chassis, a detent movably mounted on said chassis projecting from said chassis and engageable with the ridge on said stop element, resilient means to project said detent, said detent being adapted to ride over the approach side of the ridge to the far side of the ridge, adjustable means on one of said elements co-



operating with the other of said elements to control the point of stoppage of the door whereby the detent may be caused to engage the far side of the ridge while preventing complete extension of the detent by said resilient means whereby kinetic energy of a moving door is stored in the resilient means reducing the shock on said stop element as the moving door comes to a stop.

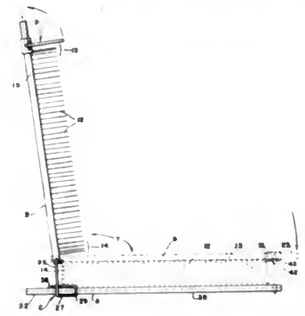
3,163,453
MAGNETIC DOOR STOP AND HOLDER
Floyd L. Stephens, R.F.D. 1, Monroe Center, Ill.
Filed Sept. 21, 1962, Ser. No. 225,193
3 Claims. (Cl. 292—251.5)



1. A magnetic door stop and holder comprising, in combination, a substantially horizontal rigid standard for mounting on a mopboard and having a horizontal fork of nonmagnetic material on its outer end with a vertical screw threaded therein adapted to serve as a pivot pin and be tightenable to restrict the fork opening, a pair of identical rectangular pole plates pivotally mounted in said fork on said pin with a rectangular pad of nonmetallic resilient material of approximately the same dimensions sandwiched therebetween and containing embedded magnetized metallic particles whereby said pad constitutes a permanent magnet and said plates act as pole-pieces for said magnet, said plates extending horizontally outwardly from said fork, and a vertical metallic armature plate for mounting on a door for surface to surface engagement with the edges of said plates to stop the door and hold it in open position.

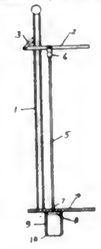
3,163,454
TOBACCO STICK
William A. Mish, Jr., P.O. Box 264, Washington, N.C.
Filed Aug. 14, 1963, Ser. No. 302,028
6 Claims. (Cl. 294—5.5)

1. A boltless knocked down tobacco stick including a plurality of prefabricated parts comprising a bar having a longitudinal row of elongated spikes, said bar having aligned sockets, one in each side thereof, adjacent to one end, another bar having a longitudinal groove in a surface thereof co-terminus the length of said bar, said groove serving to receive the free ends of said spikes in the first mentioned bar, a bar spacer and hinge frictionally mounted on said second mentioned bar, said hinge comprising a continuous loop of spring metal rod, said loop being a double-L formation with spaced vertical and horizontal legs, said vertical legs having aligned pivot projections at the ends and a reversed loop portion connected to and extending in a plane above said horizontal legs between said vertical legs, portions of the horizontal legs, the vertical legs and the reversed loop frictionally engaging the surfaces defining the top, bottom and sides of said second mentioned bar, and said



aligned pivot projections being engaged in aligned sockets of said first mentioned bar, and a latch means frictionally mounted on said first mentioned bar, said latch means being movable to a latching position to hold the spike ends in the groove of the second mentioned bar when the said plurality of prefabricated parts are assembled from a knocked down condition.

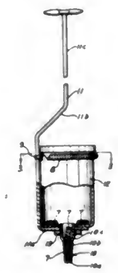
3,163,455
GRASS SODDING AND PLANTING TOOL
Dewey R. Tuggle, Sr., 112 N. 54th St., Birmingham, Ala.
Filed Aug. 6, 1962, Ser. No. 214,919
1 Claim. (Cl. 294—50.5)



A grass sodding and planting tool comprising:
(*a*) a vertically extending sleeve-like member having a relatively sharp lower edge disposed to penetrate ground,
(*b*) a relatively flat, transverse plate extending across the upper end of said sleeve-like member with the ends of said plate projecting beyond said sleeve-like member whereby at least one end of said plate-like member defines a foot engaging member for forcing said sleeve-like member into the ground,
(*c*) there being a vertical opening through said plate within the confines of said sleeve-like member,
(*d*) a first vertical rod extending through said opening,
(*e*) a piston-like member carried by the lower end of said first vertical rod and disposed for vertical movement within said sleeve-like member,
(*f*) a second vertical rod secured rigidly at its lower end to said transverse plate,
(*g*) there being a transverse, vertically extending slot through said second vertical rod intermediate the ends thereof,

(*h*) an elongated handle member having a portion adjacent one end thereof extending through said slot,
(*i*) means pivotally connecting the upper end of said first vertical rod to said handle member intermediate the ends of said handle member and in spaced relation to said second vertical rod, and
(*j*) means pivotally supporting said one end of said handle member in spaced relation to said second vertical rod and at the side of said second vertical rod which is opposite the first vertical rod connection whereby said handle member is disposed to reciprocate in said vertical slot to selectively raise and lower said piston.

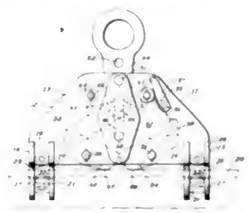
3,163,456
LAWN AERATOR
Liguori J. Schell, Jr., 3557 Ludgate Road, Shaker Heights, Ohio, and Michael J. Petti, 911 S. Green Road, South Euclid, Ohio
Filed Jan. 11, 1962, Ser. No. 165,506
1 Claim. (Cl. 294—50.7)



An aerating tool including a container having a bottom wall, said bottom wall having an aperture therein, a cutting member in said aperture fixed with respect to said container substantially in alignment with the center of gravity of said container and having a portion extending upwardly within said container and another portion extending downwardly below said container, said cutting member having a central bore therethrough to provide an upward passage into said container, said central bore diverging radially outwardly and upwardly towards the interior of said container, said aerating tool having an elongated handle with a part thereof extending upwardly along the side wall of the container, the upper part of said handle being bent inwardly to facilitate vertical suspension of the aerator, said handle having a portion extending along and in contact with the container bottom, this last mentioned portion having an orifice in registry with the aperture in the container bottom, said orifice being internally threaded, and said cutting member having external threads matching the internal threads in said orifice, and locking means for retaining said cutting member in said orifice.

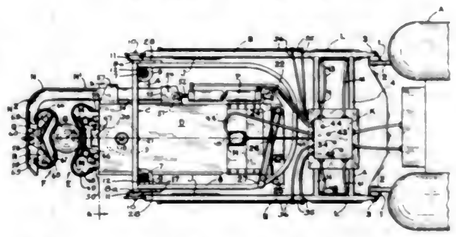
3,163,457
LIFTING CLAMPS
Robert C. Renfroe, Jacksonville, Fla., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida
Filed June 27, 1962, Ser. No. 205,655
15 Claims. (Cl. 294—67)

1. A lifting clamp which comprises a body defining a horizontal slot extending longitudinally through said body with open lips at the mouth of the slot to receive laterally into said slot one side only of a horizontal flange of a beam having a vertical web centrally disposed below said flange; said body including an upper body portion above said slot, a lower body portion below said slot and connecting means extending laterally around said slot opposite said open lips; said upper and lower body portions defining opposed jaw means above and below said slot respectively; at least one of said jaw means being movable to an open and closed position, the lower jaw means protruding above said lower body portion at a location adjacent the outer end of said lower body portion and adapted to grip the flange of a beam adjacent its web; a shackle mounted for vertical movement in said upper body portion, said shackle having a pivot at its lower end connected to said movable jaw means to apply a substantial



closing force to said jaw means when a vertical lifting force is applied to said shackle and to retain said closing force when said member is raised by said lifting force, and means restricting the movement of said shackle pivot to a vertical plane extending longitudinally relative to said body and passing substantially through said protruding lower jaw means so that said lifting force is applied in substantial vertical alignment with a beam web so that substantial canting thereof from the vertical is prevented when the clamp is applied to the flange of a beam.

3,163,458
TREE CLAMP WITH VIBRATORY MECHANISM AND FRAME
Richard W. Brandt, Jr., P.O. Box 253, Brownsville, Calif.
Filed Apr. 9, 1962, Ser. No. 186,258
10 Claims. (Cl. 294—88)

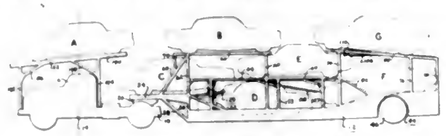


3. In a device of the type described:
(*a*) a jaw including a pair of plates;
(*b*) a universal joint for supporting each plate;
(*c*) a common support for both universal joints; and
(*d*) a flexible strip overlying said plates in floating engagement therewith and having its ends secured to said common support.

3,163,459
TRAILER FOR HAULING AUTOMOBILES
Emery A. Gyori and Lester J. Hammons, both of 4000 W. Sample St., South Bend, Ind.
Filed Apr. 13, 1961, Ser. No. 102,893
5 Claims. (Cl. 296—1)

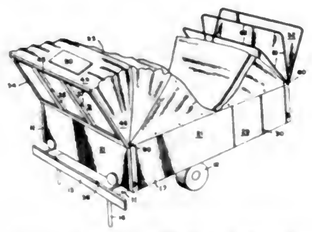
1. A trailer adapted to be towed by a tractor for hauling automobiles, comprising an elongated bed, a projection extending forwardly from and above said bed, an undercarriage for said bed near the rear end thereof, structural means rigidly connecting said projection to the forward end of said bed, a frame having two longitudinal

channel members pivoted to said structural means and extending rearwardly over said bed, means for raising and lowering said frame members to and from a horizontal position and supporting said frame members in their raised position, members forming a rigid structure over the forward end of said bed, longitudinal members on said rigid structure for receiving an automobile, members forming a rigid structure over the rearward end of said bed, a second mentioned frame having longitudinal members for receiving an automobile, a pair of levers on each side of said second mentioned frame, each lever



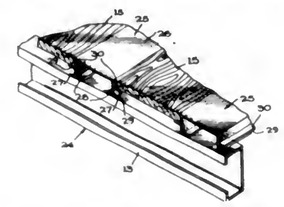
pivoted at one end to said frame and at the other end to the top portion of said rearward structure, members forming a rigid intermediate structure between and lower than said forward and rearward structures, a horizontal vertically movable frame associated with said intermediate structure and having longitudinal members for receiving an automobile, and a pair of levers on each side of said intermediate structure, each lever pivoted at one end to said intermediate frame and at the other end to the top portion of said intermediate structure for raising and lowering said movable frame in a substantially horizontal position.

3,163,460
CAMPING TRAILERS
Frederic L. Cox, Grifton, N.C.
Filed Sept. 9, 1963, Ser. No. 307,609
4 Claims. (Cl. 296—23)



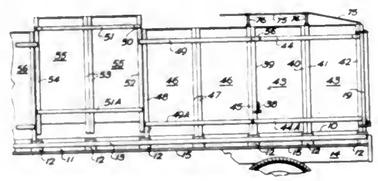
1. A camping trailer comprising a wheeled chassis, a body in the form of a rectangular box secured on said chassis, a pair of rigid bed panels, said panels being hinged respectively at one edge to the fore and aft upper edge of said body to swing 180° from a closed position overlying the body to a horizontal open position therebeyond, a flexible top having its ends connected respectively to the outer edge portions of said panels, a pair of U-shaped bows for each panel, the legs of each pair of bows being pivotally mounted adjacent the pivotal axis of their respective panel and their intermediate portions fastened to said top to move upwardly upon tensioning of said top, whereby upon swinging said panels to open position said top is raised above said body and bed panels, a rectangular tarpaulin for covering said body when the panels are folded in closed position, said tarpaulin having depending flaps for securement to said body, fastening means fixed to and extending along one edge portion of said tarpaulin, and complementary fastening means fixed to and extending along the intermediate side portion of the top for mating engagement with the fastening means of said tarpaulin, and support means for the outer edge portion of said tarpaulin when engaged with said top comprising brace rods disposable between said body and the outer edge portion of said tarpaulin.

3,163,461
FLOOR SUPPORT
Leonard Troy, 5 Pen-Y-Bryn Drive, Scranton, Pa.
Filed Dec. 8, 1961, Ser. No. 158,297
8 Claims. (Cl. 296—28)



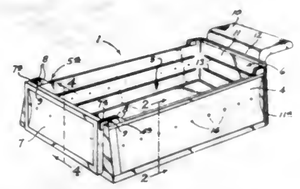
1. A truck bed comprising an elongated rectangular frame including lower transverse, longitudinally spaced, metal support members, a plurality of transversely spaced, mutually parallel, metal beams extending longitudinally of and the length of said frame intermediately between the frame sides and overlying and fixedly secured to said lower transverse support members, said beams having a relatively deep cross-section and including a horizontal web, the upper surface of said web comprising the load bearing surface of said truck bed, said beams including opposed, depending vertical side flanges terminating in lower mounting horizontal flanges resting on said transverse support members, said vertical side flanges including intermediate, upwardly facing seats extending the length of said beams, and relatively thin wooden planks resting on the seats of adjacent beams in generally co-planar relation with the upper surfaces of said webs for forming the remaining bearing surface of said truck bed.

3,163,462
TRAILER SIDE CONSTRUCTION
James T. Valesky, 1759 West Ave. NW., Warren, Ohio
Filed Nov. 14, 1962, Ser. No. 237,554
7 Claims. (Cl. 296—28)



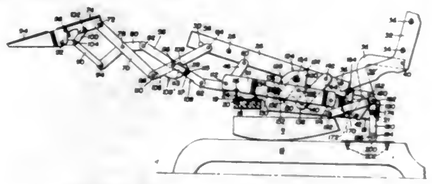
1. A trailer construction comprising a flatbed and wheel and axle means for supporting the same relative to a highway, said flatbed including edge frame members having a plurality of metal sockets positioned thereon in longitudinally spaced relation and a plurality of removable racks having socket engaging legs normally standing vertically therein, each of said racks comprising at least two vertical frame members the lower ends of which form said legs, a sheet metal section affixed thereto and on one side thereof above the lower ends thereof and a pair of vertically spaced horizontally disposed bars secured to said vertical frame members on the opposite side thereof with respect to said sheet metal section, at least one of each pair of said horizontal bars having a projecting horizontally offset end portion overlying the end of a horizontal bar on the adjacent rack.

3,163,463
DUMP BODY WITH RADIUS SIDE PLATES
Merrill D. Femrite, Portland, Oreg., assignor to Wentworth & Irwin, Inc., Portland, Oreg., a corporation of Oregon
Filed Feb. 7, 1964, Ser. No. 343,324
8 Claims. (Cl. 296—28)



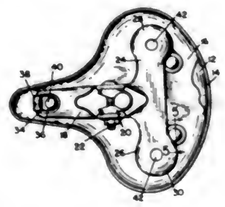
1. A metallic vehicle body, comprising a frame having side edges, a floor member, two upstanding elongated side wall members, and a front end wall member joining together the adjacent ends of the side wall members,
each of the side wall members including an upper rail member and a lower securing member joined to the frame member adjacent an edge of the floor member,
each side member comprising an inner plate member and an outer plate member,
the outer side plate member extending along a smoothly curved sweep from the upper rail member to the lower securing member, and lying in mating relationship with a companion outer plate member having a companion side wall member.

3,163,464
MECHANISM FOR RECLINER-ROCKER TYPE OF CHAIR
Leonard L. Martin, Ludlow, and Frank M. Re, Holyoke, Mass., assignors to Dual Manufacturing and Engineering Incorporated, Holyoke, Mass.
Filed Aug. 19, 1963, Ser. No. 302,962
4 Claims. (Cl. 297—85)



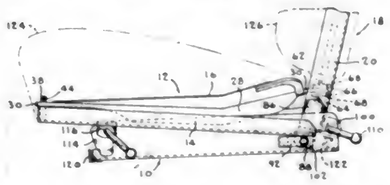
1. In a rocker-recliner chair inclusive of a rocker base and a chassis rockably mounted thereupon and a body-supporting sub-assembly including a back-rest and a seat pivotal relative to each other and to the chassis and with the body-supporting sub-assembly being shiftable between a primary upright sitting position and a multiplicity of secondary reclining positions, the improvement in position-attaining means comprising: a leg-supporting means, a linkage system for supporting the body-supporting sub-assembly in its shifting movements and for mounting said leg-supporting means relative to the body-supporting sub-assembly and for moving said leg-supporting means between retracted position adjacent the seat of the body-supporting sub-assembly and projected position forwardly thereof and distantly therefrom coordinately with the shifting movements of the body-supporting sub-assembly and including a rise bar pivotally interconnecting said leg-supporting means and the chassis and an elevator link pivotally interconnected to said rise bar and a stop means carried by said elevator link and rise bar and brake means carried by said rise bar for frictionally interengaging said elevator link and rise bar, said brake means cooperating with said elevator link and rise bar and stop means for effecting control of the shifting movements of the body-supporting sub-assembly, and means cooperant with said linkage system and including a roller link responsive to movement of said linkage system and a roller carried by said roller link and rollable into bearing contact upon the rocker base as the body-supporting sub-assembly is shifted relative to the chassis for effecting preclusion of the rocking of the chassis in any secondary position of the body-supporting sub-assembly.

3,163,465
CYCLE SADDLE
Martin J. Bird, Norwalk, Ohio, assignor to The Faulhaber Company, Monroeville, Ohio, a corporation of Ohio
Filed June 20, 1963, Ser. No. 289,217
3 Claims. (Cl. 297—209)



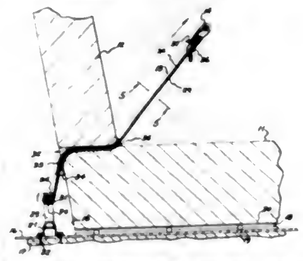
1. A cycle saddle including a saddle plate, a reach member thereon formed in substantially T-shape, having a forwardly extending portion clamped to said saddle plate and laterally extending rear portions having integral spring receiving cups formed at the outer ends thereof, coil springs extending from the cups to the plate, and means securing an end coil of each spring to a cup, said means comprising a plurality of tabs within each cup, said tabs being struck up from a central location in the bottom of each cup, said tabs extending outwardly away from each other in a general radial direction relative to its cup and the end coil of the responsive spring, and each tab embracing the end coil, the latter surrounding portions of the tabs, and means securing the other end coil of each spring to the plate.

3,163,466
SEAT STRUCTURE
Arthur O. Radke and William C. Oswald, Wauwatosa, and Joseph A. Champa, Milwaukee, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 13, 1963, Ser. No. 287,634
11 Claims. (Cl. 297—307)



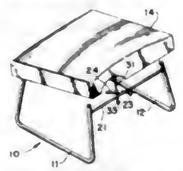
10. A vehicle seat comprising, a mounting member adapted to be fixed to the vehicle, a seat frame and a back frame both being connected to said mounting member for relative pivotal movement in respect to each other, a seat pan pivotally connected at its front end to said seat frame, a back pan slidably mounted in said back frame and pivotally connected at its bottom end to the back end of said seat pan, resilient means resisting the downward motion of said seat and back pans, and adjustment means operable to change the relative angular position between said seat and back frame members.

3,163,467
RETRACTABLE SAFETY BELT
Gordon P. Deneau, Birmingham, Mich., assignor to Charles A. Dean, Birmingham, Mich.
Filed June 7, 1962, Ser. No. 200,860
18 Claims. (Cl. 297—388)



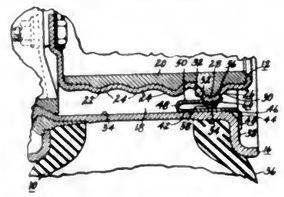
11. Self-retracting safety seat belting comprising an elongated flexible belt webbing, and an elongated self-retractable strip mounted along said webbing longitudinally of the latter, adjacent ends of said webbing and strip being attachable to a support to transfer tensile forces imposed on the other end of said webbing through the latter to said support independently of said strip.

3,163,468
ADJUSTABLE FOOTREST OR HASSOCK
Charles R. Koch, Richmond, Va., assignor to Crawford Manufacturing Co., Inc., Richmond, Va.
Filed Mar. 13, 1963, Ser. No. 264,898
3 Claims. (Cl. 297—439)



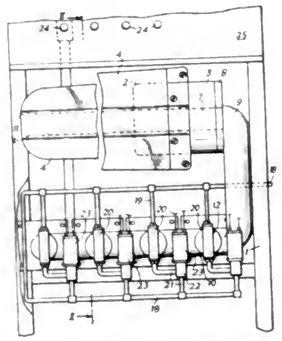
1. A footstool or hassock, comprising a base, an upper rest mounted on said base, said base having a relatively large floor-engaging portion, and means whereby at least a side of said upper rest may be adjusted relative to said base, said means including said base having a pair of substantially upright supporting members, a first bar extending between the upright supporting members and rotatably mounted thereon, a member extending outwardly from said bar and tending to move downwardly under the influence of gravity, said member having an opening therein, a second bar, said second bar pivotally mounted on said upper rest on the side adjacent to said first bar, a rod member rigidly connected to said second bar and extending transversely therefrom, said rod member passing through said opening in said outwardly extending member, the internal opening of said member and the diameter of said rod being such that said rod can be held in fixed position in said opening, said member under the influence of gravity tending to hold said rod against downward movement, said rod being liftable to release said connection.

3,163,469
BRAKE ANTI-SQUEAL MECHANISM
Taito E. Huhtala, Union Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 236,976
2 Claims. (Cl. 301—6)



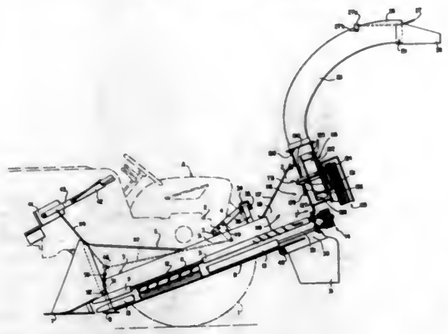
2. A brake anti-squeal assembly comprising in combination, a wheel including an annular brake drum having an outer surface and a friction inner surface and a rim secured to said wheel in annular spaced relation about said drum and having an inner surface spaced radially outward from said drum outer surface, and noise damping spring means resiliently engaging said drum outer surface and said wheel inner surface for damping brake squeal noises and secured between said surfaces only by the resilient engagement therewith, said spring means having a first section in surface area engagement with said rim and a second section resiliently joined with said first section and in line engagement with said drum providing a conductive heat block between said drum and said spring means.

3,163,470
PNEUMATIC DISTRIBUTING SYSTEM
Arthur Brewin, Bushby, and Desmond Chamberlain Masters, Leicester, England, assignors to N. Corah (St. Margaret) Limited, Leicester, England, a British company
Filed June 3, 1963, Ser. No. 284,872
Claims priority, application Great Britain, June 7, 1962, 22,020/62
6 Claims. (Cl. 302—28)



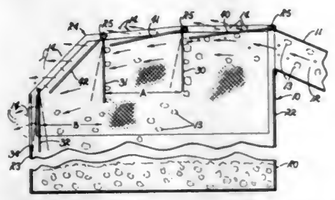
1. A system for the pneumatic despatch of light weight articles to arbitrarily-chosen destinations comprising an article holder, with an evacuation opening, a main distributing conduit communicating with said opening, a plurality of delivery conduits branched from said distributing conduit, a one-way valve in each of said delivery conduits, an air nozzle associated with each of said delivery conduits and disposed to discharge a compressed air impulse down this conduit in the direction of the delivery end thereof, and means for selectively operating said air nozzles.

3,163,471
APPARATUS FOR DELIVERING COTTON BOLLS OR LIKE MATERIAL AND BREAKING TRASH MIXED THEREWITH
John K. Williams, Waco, Tex., assignor to Central Texas Iron Works, Waco, Tex., a corporation of Texas
Filed Dec. 31, 1962, Ser. No. 248,652
10 Claims. (Cl. 302—37)



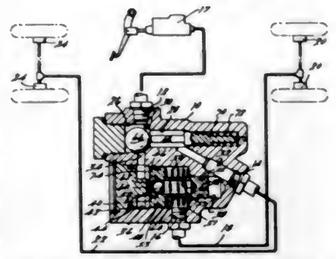
1. In apparatus for delivering cotton bolls or like material which may have trash material mixed therewith, means providing an air flow passage having an entrance end and a discharge end; a blower for moving an air stream and entrained material through said passage; a wall spanning said passage transversely to the movement of the air stream therein and having an air stream and entrained material flow opening; and a trash breaker mounted to rotate about an axis extending through said flow opening and having a central portion within said flow opening and outer portions respectively at the inlet and outlet sides of said flow opening, said outer portions extending over the portions of said wall adjacent to said flow opening at opposite sides of said wall.

3,163,472
MATERIAL SEPARATOR MECHANISM
Arthur Zeismer, 630 N. Irwin, Hanford, Calif.
Filed Oct. 23, 1961, Ser. No. 146,885
5 Claims. (Cl. 302—59)



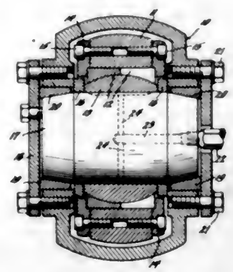
1. An apparatus for separating cotton or the like from an air stream comprising an air pervious receptacle having upper and lower portions, means for directing an air stream bearing cotton or the like substantially horizontally into the upper portion of the receptacle, and a plurality of groups of transversely spaced substantially straight rods having upper ends individually pivotally mounted in the upper portion of the housing for swinging movement longitudinally of the air stream and freely pendant lower ends, said rods being disposed when at rest in a substantially common plane normal to the air stream, said groups of such rods being arranged in spaced relation longitudinally of the air stream, the rods in successive groups longitudinally of the air stream being progressively more closely transversely spaced.

3,163,473
BRAKE PRESSURE PROPORTIONING DEVICE
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,970
11 Claims. (Cl. 303—6)



1. In a hydraulic brake system for a vehicle having first and second fluid pressure actuated braking means, a pressure proportioning control device adapted to be connected to a master cylinder or the like including piston means having a first fluid displacing portion operable to displace fluid to one of said fluid pressure actuated means and a second fluid displacing portion operable to displace fluid to the other of said fluid pressure actuated means separately from the fluid displaced by said first fluid displacing portion but simultaneously therewith, said first and second fluid displacing portions having dissimilar effective areas whereby a greater volume of fluid is displaced by one of said fluid displacing means than by the other said fluid displacing portions, a bypass for the direct flow of fluid to one of said fluid pressure actuated braking means past at least one of said fluid displacing portions and valve means for closing said bypass after predetermined initial brake application.

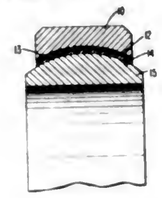
3,163,474
MUD PUMPS
John Hart Wilson, % Wilson Manufacturing Co., Inc., P.O. Box 1031, Wichita Falls, Tex.
Original application June 6, 1956, Ser. No. 589,752, now Patent No. 3,033,124, dated May 8, 1962. Divided and this application Sept. 7, 1961, Ser. No. 136,672
4 Claims. (Cl. 308—3)



1. In a crosshead construction, a body having slide surfaces formed on opposite sides thereof, said body having an opening formed in an end thereof which extends thereinto for a portion of the length thereof, an apertured connecting rod extending into said opening, a transverse opening formed through said body at right angles to said slide surfaces and said transverse opening being adapted to register with said aperture in said connecting rod when said connecting rod is fitted in place, a wrist pin passing through said transverse opening and being secured with

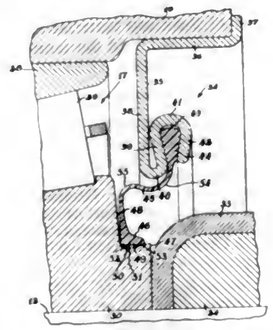
respect to said body, a parti-spherical bearing ring member fitted on said wrist pin, a pair of concave, complementary annular rings fitted within said aperture of said connecting rod, the concave portions of said pair of rings fitting in complementary relation with said parti-spherical bearing ring member, and means for retaining said pair of concave, annular ring members in close fitting, bearing relation with said parti-spherical ring member.

3,163,475
BEARING
Leonard A. Litsky, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation
Filed Apr. 11, 1961, Ser. No. 102,230
4 Claims. (Cl. 308—37)



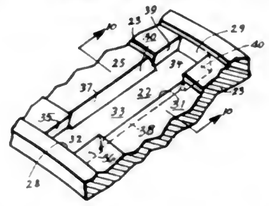
1. A bearing comprising an outer bearing ring, an inner bearing ring, a liner bonded to the inner surface of said outer bearing ring, said liner including a low friction fibrous material and a first metallic thread woven adjacent one surface thereof for bonding said liner to said outer bearing ring, said liner further including a second metallic thread interwoven between the surfaces of said fibrous material for providing a continuous electrical connection between said inner and outer bearing rings, and said inner bearing ring adapted to be positioned movably within said liner.

3,163,476
BEARING SEAL AND INSTALLATION
Robert McKinven, Jr., Detroit, Mich., assignor to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 13, 1962, Ser. No. 236,810
5 Claims. (Cl. 308—187.1)



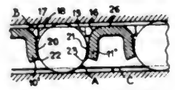
1. In a seal installation wherein a pair of members are mounted for rotation of at least one of said members relative to the other and bearing means are mounted between said members with respective races fixed thereto, the provision of a seal comprising a casing fixed in said installation relative to one of said members and separate from said races, a flexible diaphragm portion extending radially and axially from said casing and across adjacent ends of said races in endwise sealing relation relative to said bearing means, and an annular sealing portion formed integral with said diaphragm portion and spaced from said casing, said sealing portion being in running sealing engagement with an axially projecting end portion of the one of said races which is the farthest from the area of attachment of said casing in said installation, said diaphragm portion being flexed into axially spaced reversely curved arcuate areas at least tending toward partial reversing and overlapping thereof with the sealing portion thereof being axially offset from said casing and extending substantially radially into engagement with the end portion of said race, said sealing portion being expanded about the end portion of said race and retained thereon.

3,163,477
SELF CONTAINED CAGE FOR RETAINING BEARING ROLLERS
Heinrich Schmidt, Levittown, Pa., assignor to Roller Bearing Company of America, Trenton, N.J., a corporation of New Jersey
Filed May 2, 1962, Ser. No. 191,828
12 Claims. (Cl. 308—217)



1. A cage for retaining cylindrical rollers comprising limiting end walls and crossbars defining completely sectionalized side walls defining spaced, axially parallel windows for retaining the rollers, each of said side walls having at least two inclined wall sections extending throughout the depth of said crossbars which with respect to the entire opposed wall sections radially converge and diverge alternately along the lengths of said windows, each pair of opposed wall sections having their convergent ends spaced apart a distance less than the diameter of a roller so as to prevent the free passage of a roller therebetween and having their divergent ends spaced apart a distance greater than the diameter of a roller, said crossbars further defining inner and outer annular surfaces, said wall sections lying entirely within the inner and outer annular surfaces.

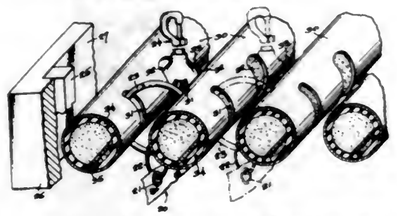
3,163,478
ROLLER OR NEEDLE THRUST-BEARINGS
Alfred Pitner, Paris, France, assignor to Societe Anonyme des Roulements a Aiguilles, Rueil-Malmaison, France, a French body corporate
Filed Mar. 28, 1961, Ser. No. 98,953
Claims priority, application France Apr. 14, 1960
4 Claims. (Cl. 308—235)



1. A thrust-bearing comprising a flat thrust-bearing cage comprising an annular stamping having a U-shaped cross-section open on one of the lateral sides of the cage and defined by inner and outer cylindrical sides and a plane bottom which is located on the opposite lateral side and is formed with radial openings having a generally rectangular shape, the opposite radial sides of each opening having edge portions in facing relation to each

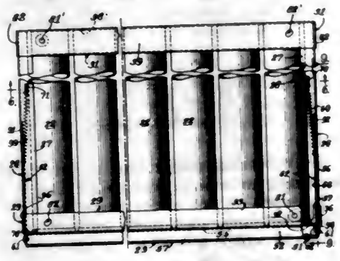
other and inwardly curved tongues in facing relation to each other, substantially cylindrical roller elements received in said openings with the axes of said roller elements arranged radially of said cage, the distance between said edge portions being smaller than the diameter of said roller elements, and the inwardly curved tongues having the shape of portions of concentric cylindrical surfaces to provide radial sockets for accommodating each individual roller element, the distance between the free edges of said tongues being smaller than the diameter of said roller elements, each said opening extending to the outer cylindrical side of said U-shaped cross-section of said cage whereby the outer ends of said roller elements are engageable with the inner face of said outer cylindrical side to restrict lengthwise displacement of said roller elements.

3,163,479
DECK LOCKER FOR SIGNAL FLAGS
Paul C. Vertrees, Tacoma, Wash., assignor to Tacoma Boatbuilding Co., Inc., Tacoma, Wash., a corporation of Washington
Filed Jan. 30, 1963, Ser. No. 255,020
11 Claims. (Cl. 312—234.1)



1. A deck locker for signal flags of the described character having a respective ring member attached to each of the opposite ends of the flag's hoist edge, comprising, in combination with said flags and an open-top box serving as a storage bin for the flags, at least two closely spaced paralleling hanger bars extending between two opposite walls of said box on approximately a common level elevated above the floor of the box and having the opposing faces each deeply notched at spaced intervals of the length on transverse vertical planes which coincide as between the two bars, said co-planar notches acting in complement to form stalls for said ring members, the stalls having a span at the top greater and a span at the bottom less than the outside diameter of the concerned ring member.

3,163,480
ROLL STORAGE MEANS
Egon R. Hoenle, Two Rivers, Wis., assignor to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed May 15, 1961, Ser. No. 110,039
11 Claims. (Cl. 312—319)



1. In a roll storage means having a housing with front and rear end portions and a plurality of elongated storage tubes mounted in parallel relation in said housing between said end portions and having access openings at the front end portion of the housing, the improvement comprising support means at the rear end portion of said housing in gripping engagement with the outer peripheries of said tubes adjacent the rear ends thereof for resisting axial withdrawal of the tubes from the front end portion of the housing, and door structure hingedly supported at the front end portion of said housing for movement between open and closed positions, said door structure when in open position having a portion thereof partially overlying the front ends of said tubes thereby further preventing axial withdrawal of said tubes from the front end portion of said housing through said openings.

3,163,481
CLASP FOR HOLDING AN ATTACHMENT PLUG TO AN ELECTRICAL OUTLET
Carmelo Salvador, 2926 Royal Palm Ave., Miami Beach, Fla.
Filed July 6, 1961, Ser. No. 122,182
1 Claim. (Cl. 339—75)



In combination, an electrical outlet including an apertured socket and a face plate apertured to receive and fit about said socket in substantially flush fixed relation therewith, a plug generally elliptical in transverse section and including spaced parallel prongs frictionally fitting the apertures in said socket, a unitary one-piece clasp of resilient material and comprising a central enlarged body portion and first and second arms integral with said body portion and extending in diametrically opposite directions from opposite sides thereof along a common axis, there being a generally ellipitical opening in said body portion and having its major and minor axes respectively normal to, and aligned with, said common axis, and first and second clips each unitarily attached to the distal end of a respective one of said arms, each said clip being hooked over and about a respective side edge of said face plate with said plug tightly fitting within said opening, said opening being enlargeable and distortable by a pull on and between said clips, to enable the plug to be inserted thereinto, release of said pull causing the natural resiliency of the clasp material to contract about said plug to firmly grip and hold the same with its prongs in said apertures of said socket.

3,163,482
CONNECTOR WITH WIRE INSULATION PENETRATION MEANS
Harvey Hubbell and Benjamin C. Webster, Southport, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 29, 1958, Ser. No. 731,843
2 Claims. (Cl. 339—97)



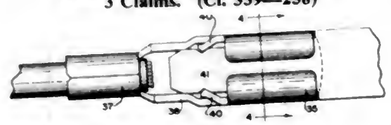
1. In an electric wiring device, an insulating body, an electrical contact mounted in said body, means for connecting a conductor wire to the contact comprising a bar consisting of a strip of sheet metal of uniform thickness, a pair of spaced lugs integral with and extending laterally from opposite side edges of said bar in the same direction and provided with aligned openings adapted for insertion of a conductor wire through them in a direction transversely of the lugs, said lugs converging toward each other as they extend away from said bar, the edges of the openings at the outer ends of the lugs facing the bar comprising knife edges adapted to cut through an insulation covering on a wire inserted through the openings in a direction transversely of the lugs and provide electrical contact with the wire, and a screw threaded in the bar between said lugs and extending in the same direction from the bar as the lugs with its free end located between the lugs in a position to engage the side of the wire on the opposite side from said knife edges and press it against said knife edges to effect said electrical contact with the wire and connect the wire to the bar and the first contact, said body defining recesses in which said lugs are seated to position and retain said lugs in proper position for operation.

3,163,483
TERMINAL BLOCK CONSTRUCTION
Clarence L. Lineberger, Chicago, Ill., assignor to Suttle Equipment Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 28, 1961, Ser. No. 155,285
1 Claim. (Cl. 339—97)



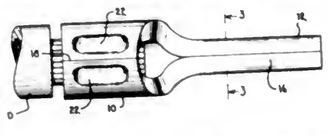
In a connection block assembly the combination comprising a base, a threaded stud mounted on said base, a plurality of nuts on said stud, each of said nuts having a top surface formed with radially extending ridges each having a well defined insulation-penetrating edge with the height of said ridges being slightly less than the thickness of the insulation to be penetrated, each of said nuts having a smooth under surface so that when an insulated lead wire is hooked around the stud above one of the nuts and acted upon by screwing down the nut above it, relative slippage takes place between the upper nut and the wire forcing the wire into insulation-penetrating engagement with at least four of the ridges for electrical and mechanical attachment of the wire to the stud.

3,163,484
ELECTRIC TERMINAL
William P. Herman and Joseph C. Collins, Providence, R.I., assignors, by mesne assignments, to North American Philips Company, Inc., a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,513
3 Claims. (Cl. 339—258)



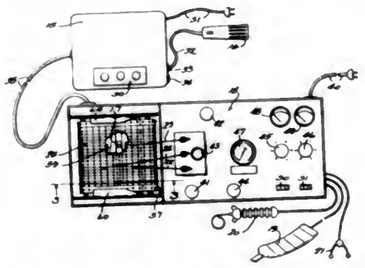
1. A female electric terminal for detachable electrical engagement with a flat male terminal having cut out portions at each side edge, comprising an elongated member having a generally rectangular contact portion at the front end with an upwardly facing bottom surface, the sides of said contact portion being bent inwardly toward each other to form a channel portion for receiving the male terminal, said inwardly bent sides having downwardly facing lower surfaces, at least a portion of said downwardly facing surfaces being spaced from said upwardly facing surface by a distance less than the thickness of said male terminal whereby said downwardly facing surfaces and said upwardly facing surface exert pressure on said male terminal from opposite sides, an intermediate portion extending integrally rearwardly from said contact portion and having a substantially flat bottom, vertical side walls and an open top, and an electrical cord connecting portion extending integrally from the rear of said intermediate portion, the side walls of said intermediate portion having integral means for engaging and interlocking with the cut out portions of a male terminal inserted in said channel portion, said means comprising spring fingers extending inwardly and rearwardly from the top edge of each of said side walls to exert pressure on said male terminal substantially perpendicularly to said side walls.

3,163,485
CONNECTOR PINS
Reinirus A. L. Kruitwagen, Westervoort, and Antonius B. Pasteuning, 's Hertogenbosch, Netherlands, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 6, 1961, Ser. No. 157,358
Claims priority, application Germany Dec. 8, 1960
3 Claims. (Cl. 339—272)



1. A connector pin having a ferrule for making a permanent attachment to an electric conductor and a pin part for making a releasable connection to a receptacle in a terminal block, the pin being integrally formed from a sheet metal blank and the pin part being formed from part of the blank folded into a substantially solid cylindrical form of uniform cross-section and having a diametral seam, the pin part having one side substantially flat and normal to the seam to receive a screw of the block and the diametrically opposite side rounded to match the curvature of the receptacle.

3,163,486
SYNCHRONIZED RECORDING DEVICE
Adam E. Tomes, Milwaukee, Wis., assignor to St. Luke's Hospital Research Foundation, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 10, 1963, Ser. No. 279,499
13 Claims. (Cl. 346—33)



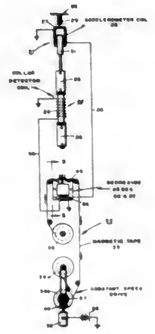
1. A synchronized recording device comprising, a sound recorder having a magnetic recording head connected thereto for recording audible sounds, a physiological response recording instrument equipped with at least

one device for receiving physiological responses and with at least one pen for recording such responses, a tape having one side thereof coated with a magnetic material and the other side devoid of such material, and means for feeding said tape between the magnetic recording head of said sound recorder and the recording pens of said instrument with the coated side thereof in contact with said head and the other side thereof in simultaneous contact with said pens, whereby the audible sounds and the physiological responses are both recorded on said tape in synchronized and chronological order.

3,163,487
SUBSURFACE RECORDING COLLAR LOCATOR

Henry M. Buck, Houston, Tex., assignor, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,930
4 Claims. (Cl. 346—33)



1. A self-contained, subsurface recording collar locator comprising:

a pipe collar sensing means adapted to generate signals when passing the pipe collars of a pipe string in which said pipe collar locator is suspended;

an accelerometer means adapted to generate signals when said collar locator movement is halted;

a recording medium for recording said sensing means signals and said accelerometer signals;

means for recording said sensing means signals on said recording medium;

means for recording said accelerometer signals on said recording medium; and

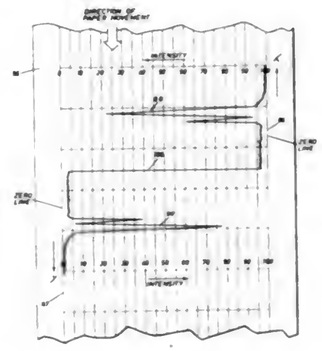
circuit means for transmitting said signals to their respective recording means.

3,163,488
RECORDER

Wilhelm W. B. Schumacher, Don Mills, Ontario, Canada, assignor to Ontario Research Foundation, Toronto, Ontario, Canada

Filed July 9, 1963, Ser. No. 293,665
12 Claims. (Cl. 346—33)

1. In a recorder comprising record means on which to record information, writing means for impressing information on said record means, driving means for driving said record means relative to said writing means, actuating means for actuating said writing means in accordance with an electrical information-containing signal to be recorded on said record means by said writing means, and means for supplying said electrical signal to said actuating means, said recorder being of the type wherein said writing means is actuable by said actuating means from a first reference position on said record means for electrical signals of one polarity supplied to said actuating means, the improvement comprising biasing means adapted to bias said writing means through a predetermined deflection away from said first reference position to a second reference position on said record means, and wherein said means for supplying said electrical signal to said actuating means include means for reversing the po-

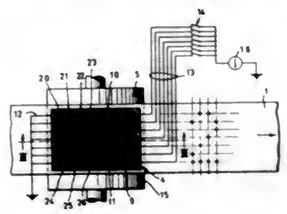


larity of said electrical signal supplied to said actuating means and for rendering said biasing means operative to bias said writing means when the polarity of said electrical signal supplied to said actuating means is reversed from said one polarity to the opposite polarity, said writing means being actuable by said actuating means from said second reference position for electrical signals of said opposite polarity supplied to said actuating means.

3,163,489
ELECTROTHERMAL PRINTING OR RECORDING APPARATUS

Jean Borne, Saint-Maur, Henri Dormont, Fontenay-sous-Bois, and Robert Goudin, Saint-Maur, France, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 9, 1962, Ser. No. 208,284
Claims priority, application France, July 11, 1961
10 Claims. (Cl. 346—76)

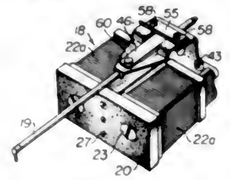


1. An electrothermal printing or recording apparatus including at least one series of writing heads adapted to be brought into point contact with a thermosensitive record carrier, each head being individually electrically energizable to heat the record carrier at the area of contact, each head comprising: two plates consisting of a material having good electrical and thermal conductivity, each of said plates having width, depth and length dimensions, said plates being spaced from each other, a thin short strip-shaped conductor electrically and thermally connected to said plates and bridging the space between them, the width of the strip-shaped conductor being equal to the depth of the plates.

3,163,490
MARKER FOR DIRECT WRITING RECORDER

Allan R. Thompson, Westlake, Ohio, assignor to Clevite Corporation, a corporation of Ohio

Filed Nov. 8, 1962, Ser. No. 236,295
6 Claims. (Cl. 346—139)

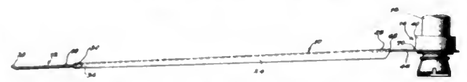


1. A marker for a direct writing recorder comprising a frame, a first core fabricated of ferromagnetic material and fixedly secured to the frame, a second core fabricated of ferromagnetic material and spaced from the first core and fixedly secured to the frame, a first coil positioned on the first core, a second coil positioned on the second core, a member movably mounted on the frame, resilient means carried by the member and in engagement with said member at least two spaced apart areas and exerting a given force against said member at each of said areas, a pen carried by the member, circuit means for connecting a source of electricity to the first and second coils, a first switch between the source of electricity and the first coil and when closed causing a magnetic field to be created about the first core which causes the member to move into contact with the first core resulting in movement of the pen in one direction and resulting in a force exerted by said member against said resilient means at one end thereof of sufficient magnitude to overcome said given force and cause said one end of said resilient means to move away from said second core, and causing straining of the resilient means to create a restoring force to return the member and the pen to a neutral position when the first switch is opened, and a second switch between the source of electricity and the second coil and when closed causing a magnetic field to be created about the second core which causes the member to move into contact with the second core resulting in movement of the pin in the opposite direction and resulting in a force exerted by said member against said resilient means at the other end thereof of sufficient magnitude to overcome said given force and cause said other end of said resilient means to move away from said first core, and causing straining of the resilient means to create a restoring force to return the member and the pen to a neutral position when the second switch is opened.

3,163,491
STYLUS

Franklin A. Daigler, Lockport, N.Y., assignor, by mesne assignments, to Esterline-Angus Instrument Company, Inc., Indianapolis, Ind., a corporation of Delaware

Filed Aug. 8, 1961, Ser. No. 130,178
1 Claim. (Cl. 346—140)



A stylus of the character described, comprising an adapter for securement to a pen motor shaft, said adapter having an enlarged upper end and a stepped portion of reduced diameter immediately thereadjacent providing a downwardly facing bearing annulus, a flexure plate having an aperture receiving said stepped portion and contacting said bearing annulus, said stepped portion being deformed to forcibly maintain said flexure plate in contact with said bearing annulus and thus rigidly join the adapter and flexure plate, said flexure plate having a portion projecting radially from the adapter, a rigid channel member joined to said portion of the flexure plate in spaced relation to said adapter, and a writing rod fixed to the free end of said channel member.

CHEMICAL

3,163,492
POLYPROPYLENE COMPOSITIONS OF IMPROVED DYEABILITY AND PROCESS OF DYEING

Walter W. Thomas, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 23, 1962, Ser. No. 211,859
13 Claims. (Cl. 8—55)

7. A process for improving the dyeability of stereoregular polypropylene filamentary material which comprises preparing an alloy of stereoregular polypropylene with from about 1% to about 25% by weight of said alloy of a copolymer of ethylene and an ethylenically unsaturated ester of a saturated fatty acid, forming the alloy into filamentary material, and dyeing the filamentary material.

3,163,493
PROCESS FOR DISINFECTING DRY CLEANING IN CONVENTIONAL SOLVENTS

Richard Hess, Kapellen, Moers, Germany, assignor to Firma Chemische Fabrik Stockhausen & Cie., Krefeld, a corporation

No Drawing. Filed Dec. 20, 1961, Ser. No. 160,956
Claims priority, application Germany Dec. 23, 1960
3 Claims. (Cl. 8—142)

1. A process for simultaneously disinfecting and dry cleaning soiled textile articles which comprises applying to said articles a cleaning and disinfecting substantially single phase medium comprising a dry cleaning solvent, a cleaning intensifier, substantially soluble in said dry cleaning solvent and soluble in water, having a water retention capability of at least 5% referred to said intensifier at 80% relative humidity, water in an amount sufficient to produce a 60–90% relative dry cleaning solvent humidity and a solution of formaldehyde in an organic solvent selected from the group consisting of isopropanol, n-propanol, dimethylformamide, isobutanol, secondary butanol, ethanol, n-butanol, and butyl glycol, said formaldehyde being present in a concentration effective for disinfecting, intimately contacting said articles with said cleaning and disinfecting medium whereby said articles are cleaned and all pathogenic organisms destroyed without the textile article being in any way deleteriously affected.

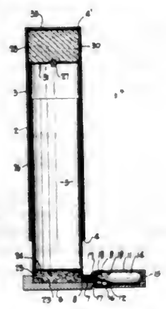
3,163,494
PROCESS OF STERILIZING

Saul Kaye, Evanston, Ill., assignor to Ben Venue Laboratories, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Original application June 25, 1957, Ser. No. 667,813, now Patent No. 2,965,936, dated Oct. 18, 1960. Divided and this application July 13, 1960, Ser. No. 42,567
1 Claim. (Cl. 21—58)

The process of sterilization comprising the steps of placing the material to be sterilized in a chamber, disposing a container of liquefied ethylene oxide sterilant in a receptacle disposed exteriorly of and having communication with said chamber, reducing the pressure within said chamber, releasing said ethylene oxide sterilant from said

container, evaporating said ethylene oxide sterilant, conducting said ethylene oxide sterilant vapors into said chamber and into contact with said material, and exposing said material to said ethylene oxide sterilant vapors to accomplish sterilization, purging said chamber of said



ethylene oxide sterilant vapors with air, passing said purged ethylene oxide sterilant vapors through activated carbon to adsorb the same, and slowly desorbing said ethylene oxide sterilant vapors into the surrounding atmosphere.

3,163,495

IN THE RECOVERY OF CHEMICALS FROM THE INCINERATION OF WASTE BLACK LIQUOR, THE METHOD OF ELIMINATING NOXIOUS COMPOUNDS ENTRAINED IN THE COMBUSTION GAS

John Eckert Greenawalt, Bronxville, N.Y. (135 E. 42nd St., New York, N.Y.); Joy S. Greenawalt, executrix of said John E. Greenawalt, deceased

Filed May 2, 1962, Ser. No. 191,871
8 Claims. (Cl. 23—48)

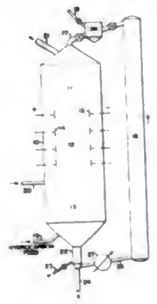
1. A process for recovering chemicals from black liquor containing sulphur in the form of a metallic sulfate together with other chemical compounds used in producing paper pulp which comprises, as a first step, burning the black liquor in a combustion chamber with air in an amount that produces a reducing atmosphere in said combustion chamber and thereby converting the metallic sulphate to sulphide form while maintaining the temperature and atmospheric conditions in said combustion chamber such as to burn out the organic combustible matter and to produce the unburned chemical matter in a molten condition, collecting the molten chemical product containing metallic sulfide thus produced and removing it together with said other chemical compounds in molten form from said combustion chamber, then, as a second step, passing the combustion gas stream produced in said combustion chamber and additional air through an oxidizing chamber in contact with highly heated refractory surfaces while maintaining an oxidizing atmosphere in the said oxidizing chamber at a temperature substantially higher than the temperature maintained in said combustion chamber and under oxidizing conditions which convert any metallic sulphur compounds entrained in said stream to metallic sulfate form and simultaneously destroying obnoxious fumes in said combustion gases by completely oxidizing the oxidizable constituents carried in said combustion gas stream from said combustion chamber while producing chemical product which was entrained in said gas stream in molten oxidized form, collecting said oxidized chemical product produced in said oxidizing chamber as a molten product, then passing said combustion gas stream through a steam boiler unit and therein utilizing the heat of said combustion gases to generate steam, and thereafter scrubbing the combustion gases with an aqueous solution and then dissipating the combustion gases stripped of noxious fumes into the ambient atmosphere.

3,163,496

HYDROCARBON CONVERSION PROCESS

Charles E. Jahnig, Rumson, Peter L. Silveston, Warren Township, Union County, and Charles W. Tyson, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 8, 1961, Ser. No. 94,309
4 Claims. (Cl. 23—212)



1. A method of converting hydrocarbons at high temperatures which comprises maintaining substantially inert solids in a reaction zone in the form of a dense turbulent fluidized solids bed, applying an electrical voltage across at least one portion of said fluidized solids bed, said voltage having a magnitude sufficient to cause heating of said fluidized solids due to their resistance to the flow of electrical current while being of insufficient magnitude to cause substantial spark discharges in said fluidized solids bed, maintaining a separate circulating stream of heat exchange solids passing through a gasiform product cooler and a hydrocarbon feed preheater in succession, contacting hydrocarbon feed with heat exchange solids in said hydrocarbon feed preheater to preheat said hydrocarbon feed, passing said preheated hydrocarbon feed through said reaction zone to heat said hydrocarbon feed above about 1800° F. to convert said hydrocarbon feed to gasiform product and coke which deposits on said inert solids, withdrawing hot gasiform product overhead and passing it through said gasiform product cooler to preheat said heat exchange solids and cool said gasiform product, circulating heated heat exchange solids from said gasiform product cooler to said hydrocarbon feed preheater to supply heat to said hydrocarbon feed and withdrawing coke solids from said reaction zone.

3,163,497

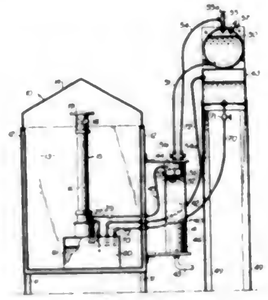
CORROSION TESTING APPARATUS

Thomas R. Gill, Pompano Beach, Fla., assignor to The G.S. Equipment Company

Filed Aug. 6, 1962, Ser. No. 215,158
17 Claims. (Cl. 23—253)

1. In a salt spray corrosion test apparatus including a test cabinet, an aspirator nozzle within said cabinet for producing a corrosive fog spray mist, test solution reservoir means connected to said nozzle, and a bubble tower connected to said nozzle for supplying saturated atomizing air, the improvement comprising automatic control means for controlling the level of test solution in said reservoir means and the level of water in said bubble tower, said control means including a source of test solution connected to said reservoir means, said source of test solution being responsive to a decrease in volume

of solution in said reservoir means, and a source of water connected to said bubble tower, said source of water



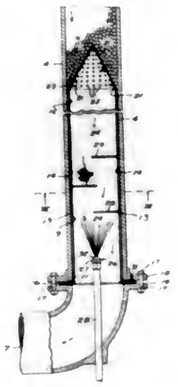
being responsive to a decrease in volume of water in said bubble tower.

3,163,498

QUENCH APPARATUS FOR REACTOR TUBE EXITS

Jerome R. Lisankie, Floral Park, and Peter von Wiesenthal, New York, N.Y., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Oct. 6, 1961, Ser. No. 143,496
3 Claims. (Cl. 23—288)



1. In combination
a tube defining a high temperature gas stream reaction zone and a quench zone;
a granular catalyst within the high temperature tube reaction zone;
a quench apparatus in said quench zone comprising a sleeve mounted in the tube defining an inner chamber within the tube;
the sleeve having an upper end, the upper end defining a catalyst support retaining the catalyst above said inner chamber and in the reaction zone;
the sleeve defining at least one inlet port to said inner chamber in flow communication with the tube reaction zone for admitting the hot gas stream from the reaction zone into the inner chamber;
outlet means for exhausting the gas stream from the inner chamber;
support means supporting the sleeve coaxially within the tube and in spaced relationship with the tube to define an annular region therebetween insulating the tube from the sleeve, the annular region being sufficiently small to prevent circulation of hot gases within the region, said support means closing at least one end of the annular region;
the sleeve being made of relatively thin material by comparison with the tube so that the sleeve may deform thereby relieving thermal stresses imposed by differences in temperature between the tube and the sleeve;
a spray nozzle arranged to direct cooling fluid into the chamber to cool the gas stream passing therethrough, the spray nozzle communicating in flow series with a source of cooling fluid;
the chamber and nozzle arranged so that the chamber confines the cooling fluid whereby the high temperature tube is not subjected to direct contact with the cooling fluid.

3,163,499

BRAZE CLAD COPPER AND METHOD OF PRODUCING SAME

Robert S. Bray, Wolcott, Conn., assignor to Chase Brass & Copper Co., Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Filed Dec. 1, 1960, Ser. No. 72,864
26 Claims. (Cl. 29—191.2)

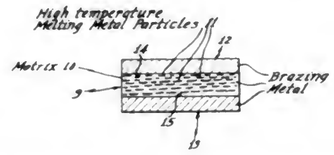
1. A clad article consisting essentially of a basis metal selected from the group consisting of copper, phosphorized copper, copper-zinc alloys having up to 15% zinc, dilute silver, zirconium and cadmium alloys of copper, and copper-nickel-phosphorus alloys having up to 1% nickel, said article having on its surface a cladding of cuprous metal in finely divided powder form, said powdered cuprous cladding having a phosphorus content of from 6% to 16%, and a polymerized methacrylate resin carrier in which said cladding metal is dispersed to provide on said basis metal a substantially uniform film of discrete, unfused particles of cladding metal adhered to the surface of said basis metal by said resin carrier.

3,163,500

SANDWICH COMPOSITE BRAZING ALLOY

Erich H. Konrad, Montclair, and Charles A. Currie, Madison, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Aug. 3, 1962, Ser. No. 214,705
9 Claims. (Cl. 29—194)

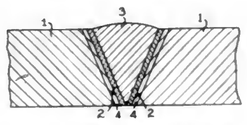


1. A sandwich composite brazing alloy comprising an intermediate portion including a plurality of laminar particles oriented in generally parallel planes of a high temperature-melting metal of the group consisting of nickel, iron and cobalt and their base metal alloys, and a brazing metal filling the spaces between the particles, the high temperature-melting metal being substantially insoluble in the brazing metal at the melting temperature of the brazing metal, an outer portion of brazing metal secured to a face of the intermediate portion, and another portion of brazing metal secured to an opposite face of the intermediate portion, the brazing metal melting at a substantially lower temperature than the high temperature-melting metal.

3,163,501
PROCESS FOR THE PRODUCTION OF WELDED SEAMS IN NIOBIUM AND VANADIUM STEELS, AND WELDED JOINTS PRODUCED THEREBY

Francois Zimmer, Uccle, Belgium, and Guy Faber, Rieden, Switzerland, assignors to Aktiengesellschaft, Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company, and to Bureau d'Etudes Industrielles Fernand Courtoy, Societe Anonyme, Brussels, Belgium, a joint-stock company

Filed Oct. 11, 1962, Ser. No. 229,922
Claims priority, application Switzerland Oct. 13, 1961
6 Claims. (Cl. 29—196.1)

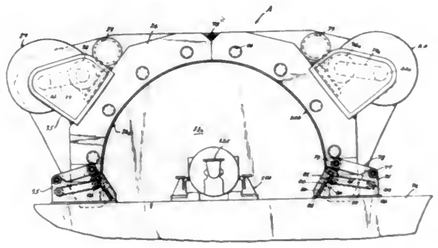


2. A welded joint of thick walled steel, selected from the group consisting of niobium containing austenitic and vanadium containing ferritic steels, said joint comprising a built-up layer of material free of niobium and vanadium respectively on the welded face of each steel part, said built-up layer having a maximum thickness of 2 mm. and a weld seam of the same material.

3,163,502
REMOVABLE HOOD FOR A DRYING CYLINDER

Edgar J. Justus and Loyal H. Hess, Beloit, Wis., assignors to Beloit Corporation, a corporation of Wisconsin

Filed Oct. 13, 1960, Ser. No. 62,433
2 Claims. (Cl. 34—114)



1. In a dryer particularly adapted to dry fibrous webs of paper and in combination with a rotatable drying cylinder having a fibrous web of paper wrapped thereabout,

(*a*) a supporting frame structure for said drying cylinder,

(*b*) a pair of individual hood sections mounted on said supporting frame structure in end-to-end relation and extending about a portion of the circumference of said drying cylinder,

(*c*) a transverse hinge pin hingedly connecting the adjacent ends of said hood sections together,

(*d*) said hood sections each having air impingement nozzles opening toward said drying cylinder and impinging air on the web traveling thereabout,

(*e*) and means supporting the free ends of said pivotally connected hood sections on said supporting frame structure and pivoting said hood sections away from said dryer drum about the axis of said transverse pivot pin comprising,

(*f*) individual screw jacks for supporting said hood sections on said supporting frame structure and having threaded extensible power members mounted on said supporting frame structure on opposite sides of said dryer drum and extensibly and retractibly movable with respect to said supporting frame structure,

(*g*) link members pivotally connected to said supporting frame structure at points spaced outwardly of the free ends of said hood sections for movement about axes parallel to the axis of said transverse hinge pin and spaced on opposite sides of said hinge pin, equal distances from the axis of said hinge pin,

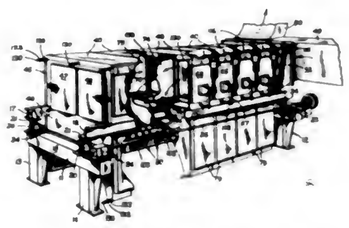
(*h*) pivot pins pivotally connecting said link members to said hood sections adjacent the free ends thereof,

(*i*) said threaded extensible power members having pivotal connection with said hood sections coaxial with the axes of said pivot pins connecting said link members to said hood sections and having sufficient travel to position the axes of said pivot pins upwardly beyond lines extending through the pivotal axis of said hinge pin and the axes of connection of said link members to said supporting frame structure, and thereby cooperate with the over-center positions of said link members to provide a self-locking structure locking said hood sections in elevated relation with respect to said drying cylinder.

3,163,503
DRYER CYLINDER WITH AN AIR IMPINGING HOOD

Robert R. McKellar, Kettering, Ohio (% The Black-Clawson Company, Air Systems Division, Hamilton, Ohio); John D. Lynch, % The Black-Clawson Company, Dilts Division, Fulton, N.Y; George R. Marsh, 10381 Valencia Road, Largo, Fla; Joseph W. Couture, % The Black-Clawson Company, Dilts Division, Fulton, N.Y.; and Frank Haynes, % The Black-Clawson Company, Paper Machine Division, Watertown, N.Y.

Filed Aug. 15, 1960, Ser. No. 49,599
8 Claims. (Cl. 34—122)



1. A dryer unit adapted for use with a plurality of similar units in contiguous relation to form a complete dryer for removing moisture from a moving web of paper, comprising an upper portion and a lower portion separated by a partition, an arcuately shaped nozzle assembly in said lower portion adapted to be positioned adjacent a segment of a dryer shell for removing moisture from a web on such shell and having a plurality of nozzles arranged to impinge heated air against the exposed surface of such web, said assembly further having means in said lower portion defining a plurality of openings for withdrawing moist air from adjacent the surface of the web, means in said lower portion defining a hot air plenum chamber connected to supply air to said nozzles and a return air chamber arranged to receive moist air from said openings, means in said upper portion forming a segment of a hot air supply duct and a segment of a moist air return duct, a first variable damper positioned in said partition between said supply duct segment and said plenum chamber to regulate the rate of air flow from said duct through said nozzles and a second variable damper connected for movement with said first damper and positioned in said partition between said return duct segment and said return air chamber to regulate the moist air return rate through said openings.

3,163,504
COMBINATION ANTI-ICING ADDITIVE FOR JET FUELS

Louis N. Calvino, Plainfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 15, 1961, Ser. No. 95,825
7 Claims. (Cl. 44—63)

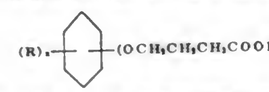
1. A liquid hydrocarbon fuel boiling in the range of about 250° F. to 750° F. containing an alkyl diol having 2 to 21 carbon atoms per molecule additive in sufficient quantity to provide anti-icing protection and in sufficient quantity to promote the formation of an aqueous haze when said fuel is contacted with water; said fuel also containing a minor amount sufficient to dehaze said fuel of an N-alkyl pyrrolidone.

3,163,505
INHIBITED DISTILLATE FUELS

Harry J. Andress, Jr., Pitman, and Paul Y. C. Gee, Woodbury, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,514
5 Claims. (Cl. 44—70)

1. As a new liquid composition, a petroleum distillate fraction boiling within the range of from about 75° F. to about 750° F. containing from about 0.5 to about 200 pounds, per thousand barrels of said fraction, of a substituted butyric acid derivative of the formula



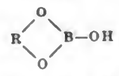
in which R is alkyl, x is a whole number of not more than 2 and n is a whole number of not more than 2.

3,163,506
PREPARATION OF ORGANIC MONOBORATE SALTS

Howard Steinberg, Fullerton, and Don L. Hunter, Long Beach, Calif., Maurice H. Pickard, Oakdale, N.Y., and Lowell L. Petterson, Whittier, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Original application Feb. 19, 1959, Ser. No. 794,229. Divided and this application Mar. 2, 1961, Ser. No. 92,784
3 Claims. (Cl. 44—76)

1. A motor gasoline to which has been added about 0.01 to about 1.5% by weight of a material selected from the group consisting of the alkali and alkaline earth metal salts of the glycol monoborates, said glycol monoborate having about a 1:1 mole ratio or boron to glycol and having the general formula



where R is an alkylene radical of 2–3 carbon atoms in length and containing from 2–10 carbon atoms, said salts having been so prepared that when employed in said range of percent by weight they are substantially entirely soluble in said gasoline.

3,163,507
GAS TURBINE FUELS

Hugo Stange, Niagara Falls, N.Y., assignor, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia

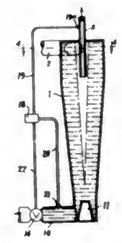
No Drawing. Filed Sept. 26, 1955, Ser. No. 536,778
5 Claims. (Cl. 44—74)

1. A composition of matter suitable for use as a fuel consisting essentially of a mixture of 75 to 30 weight percent of pentaborane-9 and 25 to 70 weight percent of at least one compound selected from the group consisting of toluene, ethylbenzene, styrene and N,N-dimethylaniline.

3,163,508
METHOD AND APPARATUS FOR SEPARATING GAS FROM LIQUID RICH FOAMS OR LIQUIDS CONTAINING ENTRAINED AIR

Norman Gordon Maxwell Tuck and George Herbert Tomlinson II, both of Cornwall, Ontario, Canada, assignors to Howard Smith Paper Mills Limited, Montreal, Quebec, Canada

Filed Feb. 2, 1961, Ser. No. 86,801
Claims priority, application Canada Sept. 7, 1960
12 Claims. (Cl. 55—46)

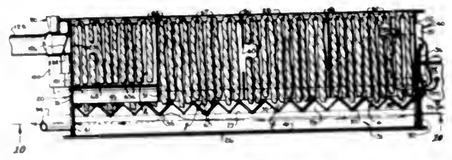


1. A method of separating entrained gas from liquids in foams comprising continuously tangentially injecting the liquid into a conical chamber of circular cross-section so as to develop a body of liquid rotating throughout the length of the chamber and surrounding a central liquid-free column which forms a a result of the centrifugal force, moving the liquid inwardly and downwardly by means of restraining walls while the entrained gas moves inwardly radially as a result of its improved buoyancy in the increased gravitational field, removing the gas from an axially located outlet at the top of the chamber, the gas being removed from the gas outlet free of liquid, and removing all the gas-free liquid at the lower end from a liquid outlet while maintaining a pressure at the liquid outlet higher than that of the gas outlet to prevent re-entrainment of separated gas in the liquid.

3,163,509
APPARATUS FOR PRODUCING GAS

James L. Hamilton, Box 3728, Charlotte, N.C., and Frank Joseph Nolan, 312 Filmore St., Hollywood, Fla.; said Nolan assignor of seventeen percent to Wilson H. Hamilton, St. Augustine, Fla.

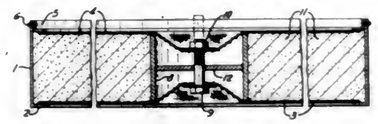
Filed Mar. 16, 1961, Ser. No. 96,196
8 Claims. (Cl. 55—234)



1. A gas producing apparatus for use with gas-cock-operated jet-type burners comprising an enclosure for containing a supply of liquid hydrocarbon in the bottom portion thereof, said enclosure having a gas outlet above the level of said supply and adapted to be connected to a gas-cock-operated burner, highly absorbent capillary members suspended above and having their lower portions immersed in said liquid hydrocarbon, means maintaining air at a gauge pressure of .867 to 3 ounces per square inch in said enclosure whereby the air flows very slowly past and absorbs hydrocarbon molecules from said

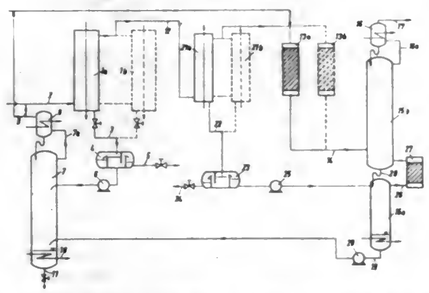
capillary members when the gas cock is opened, a plurality of bleached cotton rovings suspended between said capillary members and said outlet, said rovings being positioned in the path of the air flowing from said members to said outlet, said rovings being out of contact with said supply of liquid, and said rovings being approximately 1/40th the mass of said capillary members and having a capacity to remove molecules of hydrocarbon from the air only when the gas formed at said capillary members by the air and hydrocarbon molecules is above a predetermined range of specific gravity.

3,163,510
THIN FILTER FOR FLUIDS
James J. Summers, Bethel Park, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1962, Ser. No. 227,459
5 Claims. (Cl. 55—519)



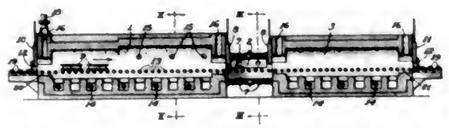
1. A fluid filter comprising a short tubular shell open at its opposite ends, a pair of axially spaced screens extending across the shell and rigidly connected at their edges thereto, a rigid cylindrical tubular spacer disposed between the central portions of the screens with its ends engaging their inner surfaces, tensioning means having a diameter smaller than the spacer and engaging said central portions, said means extending through the center of the spacer and drawing the central portions of the screens into the spacer to stretch flat and stiffen the surrounding areas of the screens between the spacer and shell, and filtering material filling the space between the flat areas of the screens.

3,163,511
WATER REMOVAL AND LOW TEMPERATURE SEPARATION OF HYDROCARBON MIXTURES
Gerhard Linde and Rudolf Becker, Munich-Solln, and Jörg Reyhing, Pullach, Germany, assignors to Gesellschaft für Linde's Eismaschinen Aktiengesellschaft Zweigniederlassung Hollriegelskreuth, Hollriegelskreuth, near Munich, Germany
Filed May 11, 1961, Ser. No. 109,343
Claims priority, application Germany May 12, 1960
5 Claims. (Cl. 62—18)



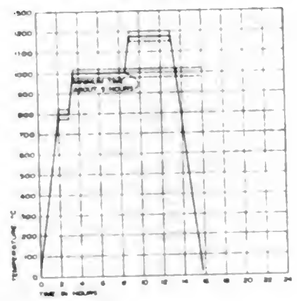
1. A process for separating water-containing hydrocarbon mixtures, which process comprises the steps of:
(1) cooling a crude gaseous water-containing hydrocarbon mixture in at least one preliminary cooling stage, and a final cooling stage, to obtain condensates containing hydrocarbons and undissolved water, and additionally a non-condensed portion of said gaseous mixture;
(2) separating the undissolved water from said condensates;
(3) rectifying the resultant condensate from the preliminary cooling stage in a first distillation zone under such temperature-pressure conditions that an overhead product of lower hydrocarbons and water is produced, said water being present in a concentration lower than the saturation concentration at the coldest point of the distillation zone, thereby preventing the formation of ice and hydrates within the column, and also that a bottoms product of C_3— and higher hydrocarbons is produced;
(4) recycling the overhead product from step (3) to the crude gas mixture;
(5) rectifying the condensate from the final cooling stage, and freed of any undissolved water, in the lower column of a double-fractionating column to produce a bottoms product of C_3— and higher hydrocarbons and an overhead product containing water and lower hydrocarbons, said column being operated under such pressure-temperature conditions as to maintain the concentration of water below the saturation point at the coldest part of the column, thereby avoiding any formation of ice and hydrates within said column;
(6) passing the bottoms product from step (5) to the first distillation zone wherein it is further rectified according to step (3)
(7) passing the overhead product from step (5) through an adsorbent-type dryer, thereby removing water;
(8) passing the resultant dried overhead vapor into the upper column of said double rectifying column;
(9) passing the non-condensed portion of said gaseous mixture (step (1)) through an adsorbent-type dryer, thereby removing water;
(10) passing the resultant dried non-condensed portion of said gaseous mixture into the upper column of said double-fractionating column; and
(11) rectifying both the dried overhead vapor and the dried non-condensed portion of the initial gaseous mixture in said upper column to produce a dry overhead fraction of C_{1-3} hydrocarbons, and a bottoms fraction which is passed to the top of the lower column and utilized as reflux liquid therefor.

3,163,512
METHOD OF MAKING CELLULAR GLASS BODIES
Frantisek Schill, 976 Labska Kotlina, Hradec Kralove, Czechoslovakia, and Frantisek Konarek, 6 Machova, Prague XII, Czechoslovakia
Filed Mar. 10, 1960, Ser. No. 14,137
Claims priority, application Czechoslovakia, May 28, 1957, 1,978/57
1 Claim. (Cl. 65—22)



In a method of sintering cellular glass bodies, the steps of mixing powdered glass containing sulfur trioxide in combined form with a carbonaceous material, sulfur trioxide being capable of reacting with said carbonaceous material to form a gas at a reaction temperature of 1470° to 1620° F., and said glass having a sintering temperature in the range of 930 to 1450° F.; heating the mixture obtained to said sintering temperature in a mold until said glass is substantially sintered; heating the sintered mixture to said reaction temperature, whereby the sintered glass is softened and a cellulated glass body is obtained; chilling the cellulated glass body from said reaction temperature to a chilling temperature of 750 to 930° F., said chilling temperature being substantially 150 to 200° F., below the annealing temperature of said glass, and holding it at said chilling temperature for a period of the order of ten minutes and sufficient to harden an outer shell layer of said cellular glass body while maintaining a core layer of said glass body substantially at said reaction temperature; and thereafter heating said glass body from said chilling temperature to a stabilizing temperature of 1150 to 1290° F., said stabilizing temperature being lower then said sintering temperature, but approximately 200° F. higher than the annealing temperature of said glass.

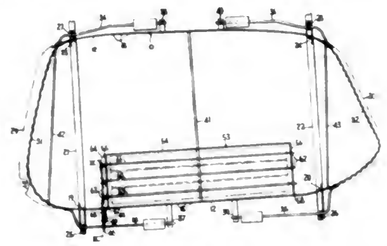
3,163,513
METHOD OF MAKING A SEMICRYSTALLINE CERAMIC BODY
Donald N. Brown, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 17, 1962, Ser. No. 231,298
4 Claims. (Cl. 65—33)



1. The method of heat treating a glass body consisting essentially of about 71% SiO_2, 2.5% Li_2O, 18% Al_2O_3, 4.5% TiO_2, 3% MgO and 1% ZnO by weight to convert it without substantial change of size and shape to a semicrystalline body having an average modulus of rupture, when abraded, of at least 19,000 p.s.i. and an extremely low linear thermal expansion coefficient, which comprises heating the glass body at a rate not over about 7° C. per minute to about 800° C., holding it at such temperature for about one hour, further heating it at a rate of not over about 7° C. per minute to 980°–1020– C. and holding it in such temperature range for at least about 5 hours, still further heating it at a rate of not over about 7° C. per minute to 1150°–1200° C. and holding it in such temperature range for about 4 hours, and thereafter cooling the body.

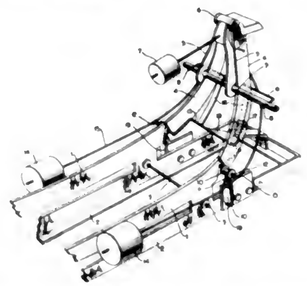
3,163,514
GLASS BENDING APPARATUS
James S. Golightly, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1960, Ser. No. 72,687
8 Claims. (Cl. 65—288)

1. A glass bending mold adapted to bend a glass sheet in a hot atmosphere and comprising an upper skeleton shaping surface conforming in elevation and outline to the shape of the bent glass sheet, said shaping surface enclosing a relatively flat area portion and a relatively curved area portion, a heat absorbing member comprising a plurality of Venetian blind louvers aligned with and spaced from said relatively flat area portion and positioned so as to face a surface of the glass sheet when supported on said shaping surface, means attached to said mold for pivotally supporting said louvers to said mold, and means operatively connected to said louvers



and said mold for rotating said louvers between a horizontal position substantially parallel to said relatively flat area portion and a vertical position substantially normal to said relatively flat area portion.

3,163,515
GLASS BENDING APPARATUS
Hubert Simons, Wurselen, near Aachen, Germany, assignor to Compagnie de Saint-Gobain, Paris, France
Filed Oct. 13, 1959, Ser. No. 846,190
Claims priority, application France Oct. 15, 1958
5 Claims. (Cl. 65—289)



2. Apparatus for bending sheet glass comprising an upwardly facing bending form having a fixed central portion and two end bending portions, the central and end portions of the form being concave upwardly, means mounting the two end portions so as to pivot upwardly with respect to said central portion from a position below a flat glass sheet supported on the central portion, means to bias said end portions upwardly when the sheet, disposed to overlie the central and end portions of the bending form, is heated to its softening temperature, presser means mounted so as to pivot downwardly with respect to said end portions from a position above a flat glass sheet supported on the central portion, and means to bias said presser means downwardly toward said end portions when said sheet is heated to its softening temperature.

3,163,516
METHOD OF CONTROLLING JOHNSON GRASS IN SUGARCANE
Edward D. Weil, Lewiston, N.Y., and John P. Stanford, Jackson, Miss., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Dec. 7, 1959, Ser. No. 857,525
1 Claim. (Cl. 71—2.6)

The method of controlling Johnson grass in sugarcane comprising applying to the locus to be treated one-half to

twenty pounds per acre of a compound selected from the group consisting of 2,3,6-trichlorophenylacetic acid, its sodium salt, amide and butoxyethyl ester.

3,163,517

METHOD OF PREPARING A SOIL CONDITIONING COMPOSITION FROM SUGAR CANE BAGASSE

Harry M. May, 1717 E. Northside Drive, Jackson, Miss., and Harry A. Nadler, Jr., Rte. 2, Box 117, Thibodaux, La.

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,032
7 Claims. (Cl. 71—26)

1. The method of preparing a soil conditioning composition from sugar cane bagasse which comprises:

(*a*) weathering bagasse having a moisture content of between about 60 percent by weight and 90 percent by weight in compacted outdoor piles for a period exceeding 70 days;

(*b*) dehydrating the weathered bagasse to a moisture content of between about 10 percent by weight and 40 percent by weight;

(*c*) classifying the dehydrated weathered bagasse to separate a portion of the bagasse having particles, substantially all of which will pass a No. 4 Tyler Standard Screen Sieve and be retained on a No. 35 Tyler Standard Screen Sieve; and

(*d*) adding inorganic, plant nutrient containing chemicals selected from the group consisting of nitrogenous compounds, phosphorus containing compounds, potassium containing compounds and mixtures of said compounds to said separated portion of the bagasse to adjust the chemical content thereof on a dry basis to about 98 percent by weight organic material, about 0.6 to 1.50 percent by weight nitrogen; about 0.30 to 1 percent by weight phosphorus pentoxide, and about 0.45 to about 1 percent by weight potash.

3,163,518

METHOD OF LIBERATING SILICA FROM IRON ORE

Raymond L. Cavanagh, Willowdale, Ontario, and Anthony J. Last, Rexdale, Ontario, Canada, assignors to Ontario Research Foundation

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,425
6 Claims. (Cl. 75—1)

1. The method of liberating silica from siliceous iron ore containing granular silica comprising the steps in combination of: comminuting said ore to particle sizes exposing surfaces of the silica grains therein and to about minus 65 mesh screen size; mixing said comminuted ore with sodium hydroxide in an amount between about 1 and about 14 percent by weight of said ore subjecting said mixture to a temperature between about 500° Fahrenheit and about 750° Fahrenheit at a low pressure between respectively about 100 pounds per square inch and normal atmospheric pressure; simultaneously adding water to take said sodium hydroxide into solution to cause thereby weakening of the grain boundaries of silica by chemical attack and to cause weakening of said grains and grain boundaries by thermal shattering due to physical forces arising from a difference in thermal coefficient of expansion of silica grains and other ore particles; thereafter cooling said mixture; agitating said cooled mixture to liberate the silica grains weakened at their grain boundaries from other particles of the ore; and separating said ore particles from said liberated silica grains.

3,163,519

PELLET OF IRON ORE AND FLUX, APPARATUS AND METHOD FOR MAKING SAME

Glenn M. Hanson, Wauwatosa, Wis., Robert D. Frans, Parma Heights, Ohio, and Glenn A. Helan and Eugene W. Price, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 5, 1961, Ser. No. 143,097
9 Claims. (Cl. 75—3)



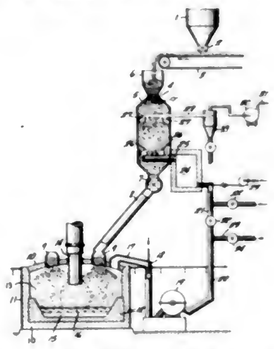
1. A green pellet of finely divided solid material comprising an inner core surrounded by an outer coating, said inner core comprising iron ore with an added portion of flux material, said coating being iron ore free of added flux material, and said flux material in said inner core being present in said core in the amount to flux said iron ore in said core and said coating.

3,163,520

PROCESS AND APPARATUS FOR PREHEATING AND PRE-REDUCTION OF CHARGE TO ELECTRIC FURNACE

Fredrik Christen Collin, Oslo, and Toralv Båsen, Vagsbygd, near Kristiansand, Norway, assignors to Elektrokemisk A/S, Oslo, Norway, a corporation of Norway

Filed Dec. 15, 1961, Ser. No. 159,635
Claims priority, application Norway Dec. 27, 1960
8 Claims. (Cl. 75—10)



1. The method of preheating a charge which generates combustible gas in an electric furnace of the type in which charge is fed into one end of an enclosed space which end is open and exposed to the atmosphere and in which the opposite end of said enclosed space is integrally connected to the electric furnace which comprises the steps of, withdrawing combustible gas from the furnace, burning the combustible gas in a zone located outside the enclosed space, introducing the hot burned combustible gas from the burning zone into the enclosed space, passing the hot burned combustible gas through a portion of said enclosed space in counter-current flow to the charge therein to establish a preheating zone in the enclosed space and preheat the charge, withdrawing the burned combustible gas from said enclosed space at a point below the open exposed end thereof, maintaining

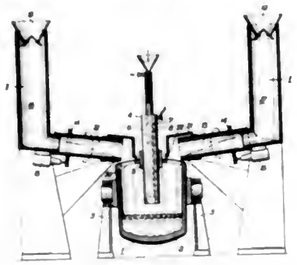
a cold layer of charge above the area of withdrawal of hot combustion gas and thereby protecting the charge being preheated in the preheating zone from atmospheric air, accumulating a body of charge in the portion of the enclosed space intermediate the furnace and the point of introduction of burned combustible gas to establish a gas seal intermediate the furnace and the preheating zone to prevent combustible gas generated in the furnace from entering the preheating zone, and feeding the preheated charge from the enclosed space into the furnace.

3,163,521

PROCESS AND APPARATUS FOR THE RECOVERY OF LIQUID IRON BY REACTING IRON OXIDE ORE

Rudolf Rinesch, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Filed July 30, 1962, Ser. No. 213,540
Claims priority, application Austria, Aug. 2, 1961, 5,982/61
6 Claims. (Cl. 75—11)



1. A method of producing liquid iron in a furnace having a combined gas production and melting zone and a reduction zone, comprising the steps of burning a carbonaceous material with an oxygen-containing gas in the gas production and melting zone, the amount of gas being insufficient for complete combustion of carbon in the carbonaceous material, to produce a gas having reducing properties, charging solid iron oxide ore into the reduction zone of the furnace, supplying the reducing gas from the gas production and melting zone directly to the reduction zone to reduce the iron oxide and form a reduction product, transferring the reduction product into the gas production and melting zone, and supplying heat to supplement the heat produced by combustion of the carbonaceous material to melt the reduction product in the gas production and melting zone.

3,163,522

METHOD FOR THE PRODUCTION OF STEEL

Rudolf Rinesch and Rudolf Lukesch, Linz, Austria, assignors to BOT Brassert Oxygen Technik AG., Zurich, Switzerland, a company of Switzerland

No Drawing. Filed June 19, 1962, Ser. No. 203,481
Claims priority, application Austria, June 22, 1961, A 4,855/61
3 Claims. (Cl. 75—52)

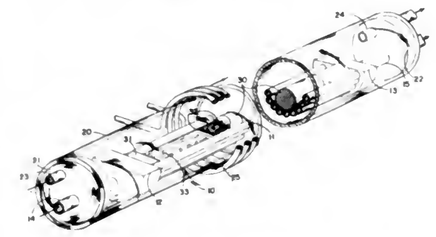
1. In a method of refining by top-blowing with oxygen a melt of crude iron containing oxidizable accompanying elements which generate heat upon oxidation, the step of simultaneously adding iron ore and carbonaceous substance to said melt while its temperature is less than 1500° C., the amount of the iron ore added being substantially enough to utilize the heat generated by the oxidation of said accompanying elements to melt the iron ore, and the amount of the carbonaceous substance added corresponding substantially stoichiometrically to the content of combined oxygen in the iron ore, thereby preventing delays in boiling.

3,163,523

METHOD OF PURIFYING GERMANIUM

John L. Porter, Lynn, and John D. Sciola, Beverly, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed June 27, 1962, Ser. No. 205,699
4 Claims. (Cl. 75—84)



1. The method of producing a body of purified germanium from particles of germanium intermixed with contaminants including the steps of thoroughly mixing the contaminated germanium particles and a fluxing material selected from the group consisting of the alkali metal hydroxides and the alkali metal salts of weak acids, compacting the mixture into pellets, placing the pellets in an elongated container, melting a zone of said pellets and moving the molten zone throughout the pellets along the length of the container in a non-oxidizing atmosphere to provide a continuous ingot of germanium and an adjacent layer of material comprising the insoluble product of reaction of the fluxing material and contaminants, and thereafter removing said layer from the ingot.

3,163,524

SELECTIVE STRIPPING OF ELECTROPLATED METALS

Mark Weisberg, Providence, R.I., and Florence P. Butler, Amherst, Mass., assignors, by mesne assignments, to Eltex Chemical Corporation, Providence, R.I., a corporation of Rhode Island

No Drawing. Filed Sept. 27, 1957, Ser. No. 686,577
7 Claims. (Cl. 75—103)

1. A composition for selectively dissolving nickel, cobalt, cadmium and alloys thereof deposited on a basis metal, which composition consists essentially of an ingredient selected from each of the following groups, (*a*) and (*b*);

(*a*) nitro-substituted aromatic compounds containing at least one NO_2 attached to a benzene ring, which benzene ring also carries a radical having a water-solubilizing effect on the nitro-substituted aromatic compound, and water-soluble nitro-substituted aliphatic compounds and those which have a water solubilizing group attached to the aliphatic chain, and

(*b*) water soluble ammonium salt,

the said composition being in the liquid phase, having a pH of about 7–11, containing at least 0.01 percent by weight of the combination of nitro-containing compound and ammonium salt, in a ratio of about 1 mol of nitro-radical to about 15 mols of ammonium salt, in which the ammonium salt is of an organic acid selected from the group consisting of nitrilotriacetic acid, ethylenediaminetetraacetic acid, and diethylenetriaminepentaacetic acid.

3,163,525
FERROUS ALLOYS AND ARTICLES MADE THEREFROM

Stewart G. Fletcher, Latrobe, and David P. Hughes, Ligonier Township, Westmoreland County, Pa., assignors to Latrobe Steel Company, a corporation of Pennsylvania

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,133
8 Claims. (Cl. 75—126)

1. An alloy adapted for forming metals at high temperatures comprising about 0.6% to about 0.8% carbon, about 2% to not more than 2.9% vanadium, less than about 2% manganese, about 3.0% to about 8.0% chromium, up to about 2% tungsten, about 0.50% to 3.0% molybdenum, up to about 2% silicon, up to about 3% nickel, up to about 0.25% sulphur and the balance substantially iron with residual impurities in ordinary amounts in which alloy the vanadium appears in amounts within the foregoing limits such that the

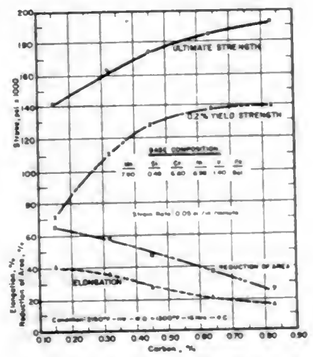
$$\text{carbon} - \frac{\text{vanadium} - 1}{4.2}$$

is within the limits of about 0.33% to about 0.50%.

3,163,526
AGE-HARDENABLE AUSTENITIC IRON BASE HIGH TEMPERATURE ALLOYS

Norman R. Harpster, Canonsburg, Pa., assignor to Universal-Cyclops Steel Corporation, Bridgeville, Pa., a corporation of Pennsylvania

Filed Mar. 6, 1963, Ser. No. 263,312
8 Claims. (Cl. 75—128)



1. An austenitic iron base alloy consisting essentially of carbon from about 0.35 to about 0.60%, manganese from about 8.0 to about 12.0%, silicon up to about 1.0% max., chromium from about 6.0 to about 10.0%, nickel from about 4.0 to about 8.0%, vanadium from about 1.1 to about 1.8%, sulphur up to about .03% max., phosphorus up to about .05% max., and the balance substantially all iron and incidental impurities, said alloy being characterized by good physical properties at both room temperature and elevated temperatures, low magnetic permeability, good hot and cold working characteristics and good age-hardenability.

3,163,527
COATING METAL ARTICLES BY POWDERED METALS

Samuel Storchheim, Forest Hills, N.Y., assignor, by mesne assignments, to Alloys Research & Manufacturing Corporation, a corporation of Delaware

Filed Oct. 4, 1960, Ser. No. 60,374
5 Claims. (Cl. 75—206)

1. A method for fabricating iron-based material into parts having a relatively high degree of corrosion-resistance, comprising the steps of heating iron-based material in particulate form at a relatively high temperature while exposing it to an oxidizing medium to encase the particles thereof with a protective coating formed by iron oxide, and subjecting the coated particles to pressure to partially rupture the iron-oxide coating on the particles and to consolidate the same into a body effectively constituted by a multi-cellular structure whose walls are formed by said coating and whose interconnecting cells are filled by said iron-based material.

3,163,528
METHOD FOR PRODUCING COPPER ARTICLES

Robert E. Cech, Madison, Wis., assignor to General Electric Company, a corporation of New York

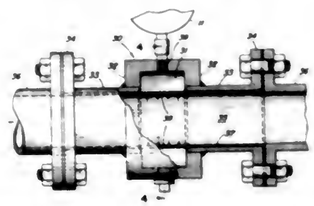
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,671
3 Claims. (Cl. 75—223)

1. A method for producing a coherent body of metallic copper comprising, impregnating the pores of a cellulosic, organic body having an interconnecting pore network with particulate copper chloride, and heating the impregnated organic body in a furnace in the presence of water vapor to a temperature sufficient to cause the carbon in the organic body to react with the water vapor and produce hydrogen and carbon monoxide and reduce the copper chloride to metallic copper.

3,163,529
FLUID PRESSURE MEASURING ELEMENT

Howard I. Jewett, Westfield, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 29, 1960, Ser. No. 25,768
3 Claims. (Cl. 73—406)



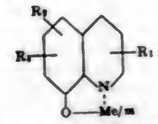
1. A unitary pressure measuring structure in combination with a conduit through which a fluid under pressure flows for continuously indicating fluid pressure in said conduit, said unitary structure comprising; a body member having an axial bore extending therethrough, an annular recess intersecting the wall of said axial bore, said annular recess being in a plane substantially at right angles to the longitudinal axis of said bore, fluid pressure responsive means compirsing a cylindrical resilient sleeve mounted in said bore, said resilient sleeve being constructed and arranged to span the intersection of said annular recess with said bore and to engage the walls of said bore at opposite sides of said intersection with a fluid tight seal thereby forming a sealed annular chamber within the wall of said body member, said annular chamber being sealed from the flow of fluid through said body member, an incompressible fluid filling said sealed annular chamber, a pressure measuring device, means constructed and arranged to connect said pressure measuring device to said body member, a passage in said body member arranged to intersect said sealed annular chamber, means constructed and arranged to connect said pressure measuring device with said passage whereby variations in the pressure of said incompressible fluid in said sealed annular chamber are transmitted to said pressure measuring device, and fluid conduits connected to said body member at opposite ends respectively of said bore, the internal diameter of said conduits being substantially equal to the internal diameter of said resilient sleeve, whereby the flow of fluid through said conduits and the said resilient sleeve of said body member is substantially laminar, said resilient sleeve being adapted to deflect in response to the pressure of the fluid flowing therethrough and thereby exert pressure on the incompressible fluid in said sealed annular chamber.

3,163,530
MATERIAL FOR ELECTROPHOTOGRAPHIC PURPOSES

Heinz Schlesinger, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Apr. 28, 1960, Ser. No. 25,229
Claims priority, application Germany May 5, 1959
38 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a dyestuff sensitizer and a compound having the formula



in which R_1, R_2, and R_3 are selected from the group consisting of hydrogen and non-ionogenic substituents, Me is a metal, and m is an integer equivalent to the valence of the metal.

3,163,531
PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHIC PURPOSES

Heinz Schlesinger, Wiesbaden, Germany, assignor to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed May 20, 1960, Ser. No. 30,429
Claims priority, application Germany June 11, 1959
22 Claims. (Cl. 96—1)

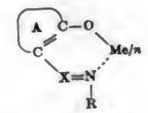
1. An electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising at least one compound selected from the group consisting of optical sensitizers and activators in admixture with the polymeric reaction product of at least one organic compound selected from the group consisting of aromatic and heterocyclic compounds having an amino group attached to a ring carbon atom, with an acrolein.

3,163,532
MATERIAL FOR ELECTROPHOTOGRAPHIC PURPOSES

Heinz Schlesinger, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1961, Ser. No. 135,747
Claims priority, application Germany Sept. 17, 1960
13 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a dyestuff sensitizer for the photoconductor and at least one organic compound containing metal atoms and at least one chelate ring, the compound having the formula

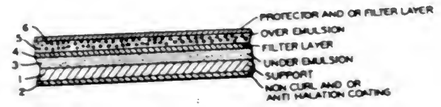


in which X is selected from the group consisting of nitrogen, CH and CO, R is selected from the group consisting of hydrogen, hydroxyl, an aryl group, and a linkage to a nitrogen atom forming part of a ring, A is selected from the group consisting of unsubstituted and non-ionizing group substituted aromatic mono- and polynuclear rings, Me is a polyvalent metal and n is an integer corresponding to the valence of the metal.

3,163,533
PHOTOGRAPHIC PROCESS AND COLOR FILM FOR USE THEREIN

Albert J. Derr, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 28, 1959, Ser. No. 862,253
2 Claims. (Cl. 96—74)



1. A photographic multilayer material suitable for photoreconnaissance purposes, comprising a suitable support provided on one side with an anti-halation layer and carrying on the side opposite said anti-halation layer in the following order the following layers: (1) a gelatin silver halide emulsion layer sensitive to red light having a wave length ranging from 600 to 700 millimicrons and containing a colorless color former capable of reacting with the oxidation products of a primary amino developing agent to form a cyan dye image, (2) a filter layer containing a magenta dye fast to diffusion and not capable of being discharged during processing, (3) a gelatin silver halide emulsion layer sensitive to green light having a wave length ranging from 500 to 600 millimicrons, and containing a color former fast to diffusion capable of reacting with the oxidation products of a primary aromatic amino developing agent to form a yellow dye image and (4) a top layer containing a yellow colorant capable of being removed during processing, the red-sensitive and the green-sensitive layers being the only silver halide emulsion layers present in the multilayer material.

3,163,534
LITHOGRAPHIC PLATE INCLUDING A HYDROPHILIC BARRIER LAYER COMPRISING A SILANE, AN ACRYLIC COMPOUND, AND AN ORGANIC METAL ESTER

Dolor N. Adams and Jack L. Sorkin, Cleveland Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 13, 1961, Ser. No. 95,041
28 Claims. (Cl. 96—75)

19. In a lithographic plate adapted for printing having a support member, image areas on the support member comprising the ink-attractive light-decomposed products of the lithographic sensitizer, and non-image areas; the improvement characterized by providing as said non-image areas the reaction product of a hydrolyzed metal ester having the formula, prior to hydrolization, $(R_1O)_4M$, wherein R_1 is a monovalent hydrocarbon radical selected from the group consisting of phenyl, tolyl, xylyl, and aliphatic radicals of 1 to 8 carbon atoms, and M is a metal selected from the group consisting of titanium, thorium, and zirconium; a vinyl tri-substituted silane having the formula CH_2CHSiR_3, wherein R is a monovalent substituent selected from the group consisting of methoxy, ethoxy, propoxy, butoxy, pentoxy, phenoxy, tolyloxy, xylyloxy, chlorine, fluorine, iodine, and bromine; and an acrylic compound selected from the group consisting

of acrylic acid, methacrylic acid, the ammonium, sodium, and potassium salts of said acids, acrylamide, and methyl acrylamide; at least said metal ester being reacted with the support member through hydrolyzed groups of the ester as well as with said silane, said acrylic compound being reacted through its vinyl groups with those in the reaction product of the hydrolyzed metal ester and the silane contributed by the latter reactant.

3,163,535

ALKALI-SOLUBLE RESINS WITH NON-COLLOIDAL SILICA FOR PRECOATING DIAZOTYPE MATERIALS

Douglas Straw, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,093
5 Claims. (Cl. 96—75)

1. Light-sensitive diazotype materials for producing positive prints from positive patterns comprising a base bearing a uniform coating of finely divided silica having a particle size ranging from 1 to 10 microns dispersed in a water-soluble salt of a water-soluble hydrolysis product of the copolymer of vinyl acetate and maleic anhydride, the ratio by weight of silica to copolymer ranging from 0.1 to 3.0, said coating having imbibed to the surface thereof, a light-sensitive diazonium compound and a coupling component.

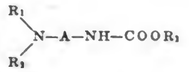
3,163,536

PHOTOGRAPHIC SILVER HALIDE EMULSION CONTAINING CARBAMATE ACCELERATOR

Fumihiko Nishio, Odawara-shi, Kanagawa-ken, and Yoshihide Hayakawa, Kosaiji, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, assignors to Fuji Photo Film Co., Ltd., Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, a corporation of Japan

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,454
Claims priority, application Japan, Dec. 26, 1961, 36/47,417
1 Claim. (Cl. 96—107)

A photographic emulsion of silver halide characterized in that the said emulsion contains at least one compound selected from the group consisting of N-[(dialkylamino) alkyl]carbamates represented by the following general formula:



wherein each of R_1, R_2 and R_3 represents an alkyl group containing not more than 4 carbon atoms, A represents alkylene group containing not more than 5 carbon atoms, and the total number of carbon atoms contained in R_1, R_2, R_3, and A is not less than 9, and the mineral acid salts of said carbamates.

3,163,537

BEER PRODUCTION WITH AMINE MODIFIED CLAYS

Raymond L. McAdam, San Anselmo, Richard G. Shaler, Jr., San Rafael, and Richard G. Shaler, San Anselmo, Calif., assignors to American Tansul Company, San Francisco, Calif.

No Drawing. Filed June 7, 1961, Ser. No. 115,328
6 Claims. (Cl. 99—48)

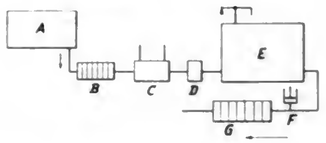
1. A method of treating beer after fermentation which comprises dispersing about 120–500 parts per million of a vinyl pyridine modified swelling gelling clay in the beer for a time sufficient to chill-proof the same, and then completing the processing of the beer.

3,163,538

METHOD FOR INCREASING THE ALBUMEN STABILITY OF BEER

Karl J. Raible, Munich, Germany, assignor to Aktiengesellschaft für Brauereiindustrie, Glarus, Basel, Switzerland

Filed Mar. 26, 1963, Ser. No. 268,046
Claims priority, application Germany, Apr. 5, 1962, A 39,883 IVa/6d; Switzerland, June 26, 1962, 7,553/62; Germany, Nov. 23, 1962, A 41,693
11 Claims. (Cl. 99—48)



1. A method of treating beer which comprises adding to said beer a finely ground silica gel in the state of a xerogel and thereafter filtering the suspension of said silica gel and said beer, said silica gel being selected from the group of silica gel species having an inner surface of 200–600 $m.^2/g.$, a pore volume of about 0.5–1.5 ml./g. and a pore diameter of about 40–180 Angstrom-units, said silica gel corresponds additionally at least to one of the following conditions:

(*a*) said silica gel is coarse-porous and has an inner surface of about 200–400 $m.^2/g.$, a pore volume of about 0.5–1.2 ml./g. and a pore diameter of about 60–150 Angstrom-units,

(*b*) the reaction of said silica gel extends from weakly acid to neutral in such a way that a 5% suspension in distilled water has a pH value of more than 4.0 and less than 8.0,

(*c*) said silica gel is ground to such an extent that at least 75% by weight pass through a screen of 325 mesh (sieve opening 0.044 mm.).

3,163,539

INSTANT TEA

William E. Barch, Stamford, Conn., assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1961, Ser. No. 136,444
11 Claims. (Cl. 99—77)

1. A method of rendering soluble in cold water constituents of tea leaf which are normally insoluble in cold water but soluble in hot water which comprises reacting a water dispersion thereof apart from the tea leaf with an alkali of the class consisting of sodium hydroxide, potassium hydroxide, and ammonium hydroxide at a temperature and for a time sufficient to solubilize the said tea constituents so that at least a portion thereof remains in solution when the pH of the dispersion is reduced to about 5.0 and the dispersion is cooled to 50° F., the amount of said alkali being equal to the amount required to raise the pH of the dispersion employed as starting material to at least about 8.5, and adding sufficient edible acidic material to the dispersion, to reduce its pH to about 4.0 to 7.0.

3,163,540

METHOD OF TENDERIZING MEAT

John M. Hogan, Orono, Maine, and Harry F. Bernholdt, Park Forest, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,381
9 Claims. (Cl. 99—107)

1. An improved method for preparing tender meat which comprises: introducing a proteolytic enzyme into

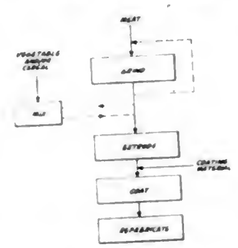
the vascular system of a living meat-bearing animal over a period of time approximating not more than about 3/5 of the time for one circulation cycle of said animal's circulatory system; and promptly slaughtering said animal before the enzyme is uniformly distributed throughout the animal body, whereby to obtain preferential enzyme distribution to muscle tissue and minimize concentration of enzyme in glandular tissue.

3,163,541

SYNTHETIC MEAT

Robert Mainhardt and Arthur T. Biehl, both of Walnut Creek, Calif., assignors to The Union Stock Yard and Transit Company of Chicago, Chicago, Ill., a corporation of Illinois

Filed Sept. 26, 1961, Ser. No. 140,829
5 Claims. (Cl. 99—108)



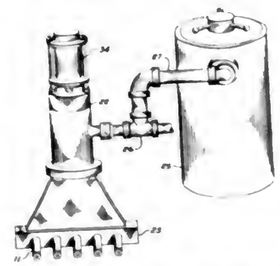
1. The process of upgrading meat comprising extruding the meat through a die in a series of fine parallel fibers, coating said individual fibers with an edible adhesive in an amount within the range of 0.05 to 5 percent by weight of the product, and compressing the extruded fibers in parallel alignment in a mold whereby there is produced a reconstituted meat having the characteristics of high quality steak.

3,163,542

CONTINUOUS MANUFACTURE OF MOLDED SAUSAGE PRODUCTS

Ogden A. Clemens, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 3, 1961, Ser. No. 100,063
15 Claims. (Cl. 99—109)



1. An improved method of manufacturing a sausage type food product from a comminuted mixture containing meat, said method comprising: pumping said mixture from a source at a relatively low pressure toward a mold cavity; forcing said mixture at above about 130 p.s.i.g. into said mold cavity said pressure of about 130 p.s.i.g. being applied at a location proximate said cavity; and rapidly heating said mixture within said cavity to set it up into a self-sustaining product.

3,163,543

PROCESS OF PRODUCING GELATIN PRODUCTS

William I. Gorfinkle, Brookline, Mass., assignor to J. O. Whitten Company, Inc.

No Drawing. Filed June 19, 1962, Ser. No. 203,437
4 Claims. (Cl. 99—134)

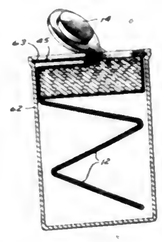
1. A process for producing gelatin products comprising preparing a mix of dough-like consistency by preparing a mixture consisting essentially of between 5% and 15% of water, between ½% and 2% of gelatin, and the remainder essentially sugar, and mixing until a homogeneous mass is formed, then working in dry nutritional gelatin in an amount between 25% and 60%, and then forming shaped gelatin products containing nutritional gelatin in substantially undissolved form; all percentages are by weight of the final product.

3,163,544

CONTAINER

Emery I. Valyi, 5200 Sycamore Ave., New York 71, N.Y.

Filed Mar. 6, 1962, Ser. No. 177,885
2 Claims. (Cl. 99—171)



2. A container having a top opening and a food package disposed in said container, said package comprising a top rim having depending therefrom a pliable collapsible bag section having a thickness substantially less than that of said rim and containing a food item, a top panel extending outwardly from said top rim and integral therewith, closing the opening of said container, a closure lid engaging said top rim closing the opening thereof, said closure lid being joined to said rim by a hinge tab, said bag section, rim, tab and lid being of one-piece molded construction, said package being adapted to fit through the top opening of said container and being substantially smaller in volume than said container, said bag section being adapted to be extended to conform to the interior of the container by filling said bag with a fluid.

3,163,545

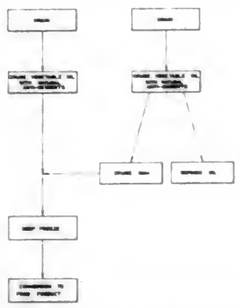
PRODUCING EDIBLE OIL FROM GRAIN

Wayne Martin, 19820 Battersea Blvd., Rocky River, Ohio

Filed Mar. 25, 1960, Ser. No. 17,556
7 Claims. (Cl. 99—192)

1. A substantially oxidation-free process of preparing an edible oil having substantially no oxygen present as part of a peroxide radical for use in the preparation of a food product, comprising the steps of extracting from a first charge of grain at a temperature below about 230° F. and in the absence of caustic refining an unctuous first yield containing a substantial portion of the polyunsaturated fatty acid materials in such grain, said temperature maintaining such materials in a substantially unoxidized state, said fatty acid materials having a chain length of ten to twenty carbon atoms and an iodine number of at least 115, extracting from a second charge of grain at a temperature below about 230° F. a second unctuous yield, separating from the second yield the anti-oxidants including crude gum, admixing such unctuous first yield

with such anti-oxidants to form the edible oil, and then freezing the admixture until needed for such use to maintain the admixture substantially free of said peroxide oxygen.



3,163,546
PROCESS FOR MAKING DEHYDRATED POTATOES

Morton Pader, West Englewood, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Apr. 25, 1961, Ser. No. 105,302
13 Claims. (Cl. 99—207)

1. In a process for producing dehydrated potatoes comprising the steps of cooking raw potatoes, mashing the cooked potatoes and drying the potatoes by applying a film thereof to a heated surface, the improvement comprising the steps of adding to the cooked potatoes, before drying, from 1 to 5% of a monoester of glycerine and a higher fatty acid, and improving the adherence of the potato film to the heated surface by adding from about 0.3% to about 16% of an edible protein to the cooked potatoes, said percentages being by weight based on the dry solids content of the cooked potatoes.

3,163,547
AQUEOUS POLISH COMPOSITION

Mel L. Vietor, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 24, 1961, Ser. No. 84,485
7 Claims. (Cl. 106—6)

1. In a polishing composition driable to a bright surface without requiring buffing which polishing composition includes a continuous aqueous phase, a dispersed nonvolatile water-insoluble solid film former, a small amount of the dispersing agent present in the aqueous phase in an amount sufficient to form a stable dispersion of the film former in the aqueous phase with this dispersion breaking down upon evaporation of the aqueous constituent of the phase to form a thin layer of the film former on a surface thereby depositing the film former in a smooth, bright, protective layer on said surface, the improvement which comprises including in said polished composition a leveling agent in an amount between about 0.0025 and about 1 percent by weight selected from at least one of the group consisting of a perfluorinated alkyl-substituted cyclohexane acid, perfluorinated cyclohexyl-alkane acid and a salt thereof different from said dispersing agent, said acid and salt being selected from the group consisting of sulfonic acid, carboxylic acid and phosphonic acid and the alkali metal salt, the ammonium salt and the alkaline earth metal salt of such acids.

3,163,548
CARBON PAPER INK CONTAINING AN ISOCYANATE MODIFIED, AMINE TREATED, OXIDIZED NON-BENZENOID HYDROCARBON WAX

Fred J. Stark, Jr., Kirkwood, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 22, 1961, Ser. No. 141,927
19 Claims. (Cl. 106—31)

14. A carbon paper ink containing a coloring material, a vehicle and a product obtained by

(A) oxidizing a non-benzenoid hydrocarbon wax having a melting point of about 120° F. to about 230° F. so as to yield an oxidized wax having an acid number of about 10 to about 60 and a saponification number of about 30 to about 150;

(B) reacting said so-oxidized wax with ammonia within the temperature range of at least 100° C.–300° C. to produce an ammonia-modified oxidized wax containing about 0.2 to 2.0% nitrogen by weight thereof;

(C) reacting said ammonia-modified oxidized wax with 1 to 10% by weight thereof of a diisocyanate wherein the isocyanato groups are the sole reacting groups.

3,163,549
PROCESS FOR PREPARING AN ADHESIVE

Willard L. Vollink, Battle Creek, Mich., and Kenneth R. Hunt, Kankakee, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed June 22, 1961, Ser. No. 118,776
9 Claims. (Cl. 106—124)

1. A process for the preparation of material adapted for use as an adhesive, comprising forming a carrier portion by commingling in an aqueous medium fine mesh flour having a starch fraction and a protein fraction with an enzyme which is substantially proteolytic and has little amylolytic activity, regulating the temperature and pH of the mixture so that the enzyme is proteolytically active, maintaining the mixture at said temperature and pH for a period of time sufficient to effect the breakdown of a substantial portion of the protein fraction of the flour, and thereafter increasing the temperature of the mixture at least to the gelatinization temperature of the starch fraction of the flour for a period of time sufficient to substantially completely gelatinize the starch fraction of the flour and form a viscous paste; separately preparing an ungelatinized starch portion; and then blending the carrier portion and the ungelatinized starch portion.

3,163,550
PRODUCTION OF COLOURED ARTIFICIAL THREADS

John Gurney Webb, Kenilworth, and Maurice Henry Priest, Exhall, Coventry, England, assignors to Courtaulds Limited, London, England, a British company

No Drawing. Filed Mar. 31, 1961, Ser. No. 99,698
Claims priority, application Great Britain, Apr. 7, 1960, 12,338/60; July 29, 1960, 26,428/60
7 Claims. (Cl. 106—165)

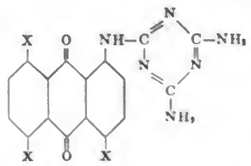
1. A process for the manufacture of coloured viscose rayon filaments, comprising the steps of condensing a reactive dyestuff containing a cyanuryl chloride residue having from 1 to 2 reactive chlorine atoms, with a polyhydric compound chosen from the group consisting of soluble starch and beta-cellulose to form a coloured substrate, adding the coloured substrate to a viscose to form a mixture and forming the mixture into filaments.

3,163,551
PROCESS FOR DYEING HIGH-MOLECULAR ORGANIC PRODUCTS WITH PIGMENT DYESTUFFS

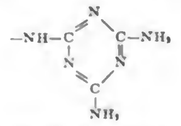
Max Staeuble and Kurt Weber, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,621
Claims priority, application Switzerland, May 6, 1959, 72,969; Mar. 25, 1960, 3,372/60
5 Claims. (Cl. 106—193)

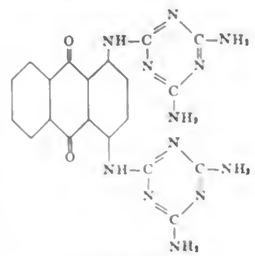
1. A high molecular organic material selected from the group consisting of cellulose, cellulose esters, casein, polymerization resins, condensation resins, and polyaddition resins having incorporated as pigment in a finely divided form a dyestuff of the formula



in which the symbols X represent members selected from the group consisting of hydrogen atoms, halogen atoms, hydroxyl- and benzoylamino groups and the group of the formula



5. Polyethylene having incorporated as pigment in a finely divided form the dyestuff of the formula



3,163,552
PROCESS FOR MAKING FIBROUS MATERIAL HYDROPHOBIC

Herbert Frotscher, Dusseldorf-Benrath, Germany, assignor to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

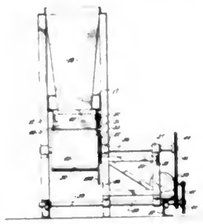
No Drawing. Filed Feb. 20, 1961, Ser. No. 90,239
Claims priority, application Germany, Feb. 27, 1960, B 56,852
15 Claims. (Cl. 106—287)

1. A composition for water proofing fibrous materials which comprises an aqueous mixture of 0.1 to 10% based on said fibrous materials, a reaction product of (1) a polyamine derivative containing lipophilic radicals wherein the sum of the carbon atoms in all lipophilic radicals is at least 12 carbon atoms, said polyamine derivative being selected from the group consisting of lower alkylene and arylene polyamines the nitrogen atoms of said polyamines being trivalent, said polyamines having more than two reactive hydrogen atoms attached to nitrogen atoms in the molecule and (2) epichlorohydrin.

3,163,553
PROCESS OF DIFFUSING METAL INTO THE SURFACE OF SHEET METAL

Maurice R. Commanday and George Martin, Los Angeles, Calif.; said Commanday assignor, by mesne assignments, to Chromizing Corporation, a corporation of Delaware

Filed Oct. 27, 1958, Ser. No. 781,824
(Filed under Rule 47(a) and 35 U.S.C. 116)
9 Claims. (Cl. 117—7)

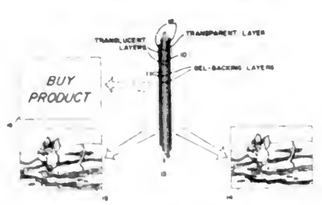


7. The process of diffusing into the surface of sheet metal a treating metal from a source contained in a comminuted treating mixture, that includes winding the sheet metal in a convolute roll, feeding, distributing and compacting said mixture between the roll convolutions as they are being wound to thus form a roll pack, and heating the pack to a temperature between about 1200° F.

3,163,554
PICTORIAL FILM AND PRESENTATION OF VISUAL IMPRESSIONS THEREFROM

Robert U. Gessler, Pittsburgh, Pa., assignor, by mesne assignments, to Harton S. Semple and Richard H. Semple, Jr., both of Pittsburgh, Pa.

Filed Apr. 17, 1959, Ser. No. 807,150
9 Claims. (Cl. 117—45)



1. A film for direct viewing alternatively by transmitted light and by reflected light comprising a transparent sheet having a translucent coating on each surface thereof and an image on one of said translucent coatings.

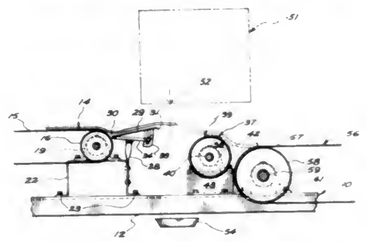
3,163,555
METHOD AND APPARATUS FOR COATING FLEXIBLE SHEET MATERIAL

Jack Heywood Brown, Beverly, Mass., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 11, 1961, Ser. No. 130,863
9 Claims. (Cl. 117—105.3)

1. An improved method for coating sheet-like items of flexible material, said method comprising: propelling a single thickness sheet of flexible material at a certain speed along a substantially horizontal given path in a given direction; upwardly inclining said path slightly at a location along said direction; supporting said sheet from its underside along said path at said location; discontinuing support of said sheet for a relatively short distance in said direction beyond said location; recommencing supporting said sheet beyond said distance, in said direction; and coating only the upper surface of said sheet by flowing

downwardly from above said sheet a substantially continuous vertical curtain of substance upon the upper surface of said sheet in the distance such sheet is unsupported.



3,163,556
PROCESS FOR THE PREVENTION OF ELECTROSTATIC CHARGES

Herbert Frotscher, Dusseldorf-Benrath, Germany, assignor to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Jan. 13, 1960, Ser. No. 2,103
Claims priority, application Germany Jan. 15, 1959
9 Claims. (Cl. 117—138.8)

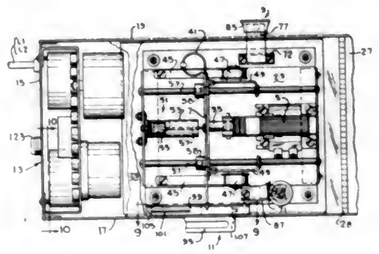
1. A process for preventing the formation and accumulation of electrostatic charges on synthetic materials subject to such charges which comprises impregnating said materials with an aqueous dispersion of at least one condensation product selected from the group consisting of (1) condensation product of (*a*) melamine, with (*b*) formaldehyde, and with (*c*) alkyleneoxide addition products of compounds selected from the group consisting of phenols, fatty alcohols, fatty acids, fatty acid amides, alkylamines and alkylolamines, said compounds containing from 1 to 30 carbon atoms and said alkylene oxide moiety having alkyl groups with two to three carbon atoms; (2) condensation product of (*a*) urea, with (*b*) glyoxal, and with (*c*) polyalkylene oxides having alkyl groups with two to three carbon atoms; and (3) condensation product of (*a*) urea, with (*b*) glyoxal, and with (*c*) alkylene oxide addition products of compounds selected from the group consisting of phenols, fatty alcohols, fatty acids, fatty acid amides, alkylamines and alkylolamines, said compounds containing from 1 to 30 carbon atoms, and subsequently drying said materials at a temperature of 60 to 150° C.

3,163,557
FINGERPRINTING APPARATUS

Eugene J. Brutten, Burl B. Gray, and Darrell E. Rose, Carbondale, and Robert J. Falk, Skokie, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois

Filed July 26, 1962, Ser. No. 212,550
4 Claims. (Cl. 118—11)

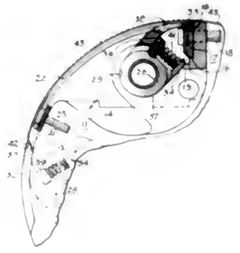
1. Apparatus for recording a fingerprint on a strip of film comprising a frame, a guide for positioning the palmar portion of a finger, a film carriage for carrying said film strip, track means connected to said frame and supporting said carriage, means biasing said carriage along said track means toward a fingerprinting position wherein said film strip is adjacent said guide, electrically operated means for opposing said biasing means adapted to move said carriage along said track means to a retracted position and to hold said carriage in its retracted position against said biasing means, said biasing means being adapted to exert a substantially constant biasing force on said carriage, means for energizing said electrically operated means, and timing means adapted first to deenergize said electrically operated means whereby said substantially constant-pressure biasing means moves said carriage along said track means toward said fingerprinting position, said timing means, a predetermined time after deenergizing said electrically operated means, reenergizing said electrically operated means whereby said carriage is returned to its retracted position.



3,163,558
COMBINED SHEET SUPPORT ROLL AND SHEET GRIPPER ASSEMBLY

Garland B. Keith, Kingsport, Tenn., assignor to Pid Corporation, Beverly Hills, Calif., a corporation of California

Filed Apr. 9, 1962, Ser. No. 185,987
6 Claims. (Cl. 118—503)

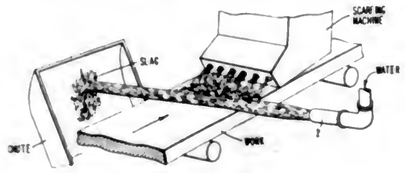


6. A combined sheet supporting roll and sheet gripper assembly, said roll comprising an elongated cylindrical body having a peripheral sheet supporting surface interrupted by a longitudinal extending recess having an inclined longitudinal extending sheet supporting edge disposed below the peripheral surface of said roll, said gripper assembly comprising finger means selectively movable into gripping engagement with said sheet supporting edge, support means disposed within said recess for supporting said finger means within said recess for movement between an open position where said finger means project beyond said recess and above the peripheral surface of said roll and a closed position where said finger means are completely within said recess and engage said sheet supporting edge, and actuating means disposed completely within said recess and cooperating with said support means for selectively biasing said finger means into said open and closed positions, and arcuately shaped guard means disposed transversely of the recess and extending between opposite longitudinal edges thereof and coincident with the outer surface of the roll so as to maintain a continuous peripheral sheet supporting surface on said roll.

3,163,559
WATER JET METHOD OF DESLAGGING A METAL SURFACE

Ivan P. Thompson, Hillside, and Edward H. Mousted, Garwood, N.J., assignors to Union Carbide Corporation, a corporation of New York

Original applications Nov. 12, 1957, Ser. No. 695,846, and Feb. 25, 1960, Ser. No. 11,947, now Patent No. 3,062,456, dated Nov. 6, 1962. Divided and this application Sept. 17, 1962, Ser. No. 224,188
1 Claim. (Cl. 134—34)

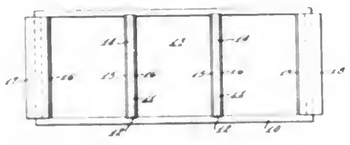


In the water jet method of deslagging a surface of a metal slab subsequent to said slab being thermally treated by impinging thereon an oxy-fuel-gas flow to form said slag, the improvement therewith which comprises, forming a flow of fluid under pressure through a conduit, forming said flow into a high pressure hollow stream having a substantially constant outer diameter and directing said constant diameter stream tangentially along said surface to contact the slag formed thereon while minimizing contact of the stream with the slab surface whereby said slag is carried from said surface.

3,163,560
NONTOXIC LIQUID FUEL CELL

Patrick G. Grimes and Joachim G. Seibold, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Mar. 20, 1961, Ser. No. 96,848
7 Claims. (Cl. 136—86)



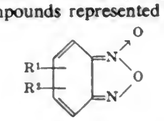
1. The process for the direct production of electrical energy from the oxidation of a fuel and the reduction of an oxidant in a fuel cell of the type having a fuel electrode and an oxidant electrode which are mounted in spaced apart relation to each other within a housing comprising applying a catalyst selected from the group consisting of platinum, palladium, iridium, rhodium, osmium and ruthenium to said fuel electrode; applying a catalyst selected from the group consisting of silver, cobalt, nickel and the oxides of silver, cobalt, nickel and iron to said oxidant electrode; mounting said fuel and oxidant electrodes within said housing in spaced apart relation to each other; and at least partially immersing the oxidant and fuel electrodes into a nontoxic unitary fuel-oxidant-electrolyte solution comprising by weight from 5 to about 20 percent glycerine, from about 0.1 to about 3 percent hydrogen peroxide, from about 3 to about 30 percent of a dissolved salt selected from the group consisting of the carbonates and bicarbonates of sodium and potassium, and the remainder being essentially water.

3,163,561
DRY CELL WITH BENZOFUROXAN COMPOUND DEPOLARIZER

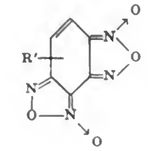
William B. Hardy, Bound Brook, and Richard A. Parent, Somerville, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Aug. 15, 1961, Ser. No. 131,661
8 Claims. (Cl. 136—137)

1. In a dry cell comprising in combination an anode of a highly electro-positive metal and a cathode composition comprising a mixture of carbon and a depolarizer compound, the improvement in which said depolarizer compound is selected from the group consisting of the benzofuroxan compounds represented by the formulae

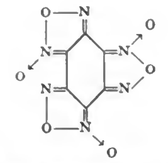


(I)



(II)

and



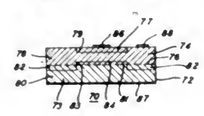
(III)

wherein R^1 and R^2 are selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, chloro and nitro radicals.

3,163,562
SEMICONDUCTOR DEVICE INCLUDING DIFFERING ENERGY BAND GAP MATERIALS

Ian M. Ross, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 10, 1961, Ser. No. 130,511
2 Claims. (Cl. 148—33.4)



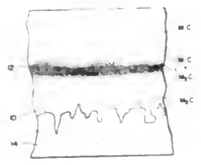
1. A semiconductor device comprising a substantially monocrystalline semiconductor wafer, said wafer including therein a first PN junction defined by the boundary between a first region of N-type conductivity material and a region of boron-doped P-type conductivity material, said PN junction having a substantially planar configuration except for a portion thereof of phosphorus diffused N-type conductivity material which projects into said region of P-type conductivity material, said projecting portion having a planar boundary substantially parallel to the rest of said first PN junction, a second PN junction defined by the boundary of said P-type conductivity region and a second N-type conductivity region, said second PN junction having a major planar surface substantially parallel to said first PN junction, a heterojunction defined by the boundary between two different semiconductor materials having differing energy gap, said heterojunction having a substantially planar configuration parallel to said PN junctions and intersecting and

passing through said projecting portion of said first PN junction so that parts of said projecting portion are on both sides of said heterojunction.

3,163,563
COMPOSITE BODY FORMED OF A TANTALUM ALLOY HAVING AN OUTER CARBURIZED SURFACE LAYER

Richard W. Douglass, Needham, and Maurice L. Torti, Jr., Boston, Mass., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed July 13, 1962, Ser. No. 209,563
5 Claims. (Cl. 148—34)



1. As an article of manufacture a composite body consisting of an inner ductile core formed of an alloy of a metal selected from the group consisting of tantalum, niobium and mixtures thereof with about 1 to 50% by weight of an alloying metal selected from the group consisting of titanium, zirconium, hafnium, vanadium, chromium, molybdenum, tungsten, and mixtures thereof and a hard, high-temperature-resistant, outer carburized layer, said outer carburized layer having several strata, the outer stratum consisting essentially of the monocarbides of the alloy constituents, said outer stratum being at least .001 inch thick and having the physical properties of the monocarbides, said outer stratum being in intimate contact with an intermediate stratum of mixed monocarbides and hemicarbides of the alloy constituents the percentage of hemicarbides increasing with depth, the interface between said outer carburized layer and said inner core being irregular and interlocking whereby crack propagation parallel to said outer layer is restricted.

3,163,564
METHOD FOR PRODUCING SILICON STEEL STRIPS HAVING CUBE-ON-FACE ORIENTATION

Satoru Taguchi, Akira Sakakura, and Takashi Yasunari, Yawata, Japan, assignors to Yawata Iron and Steel Co., Ltd., Tokyo, Japan

Filed July 9, 1962, Ser. No. 208,277
Claims priority, application Japan, Mar. 18, 1958, 33/7,092; Oct. 8, 1958, 33/28,745
2 Claims. (Cl. 148—111)

1. A process for producing double-oriented silicon steel sheet having (100)[001] crystal orientation and good magnetic properties in the final-rolling direction and the direction perpendicular thereto, which comprises

(*a*) pickling a hot-rolled silicon steel material consisting essentially of iron, from 2.5 to 4.0% by weight Si, and from 0.010 to 0.040% by weight Al, a substantial portion of said Al being in acid-soluble form which consists essentially of aluminum nitride,

(*b*) cold rolling said material in one direction at a reduction rate of from about 40 to 80%,

(*c*) cross cold rolling the resulting material in a direction at an angle from 90° to an angle deviating from 90° by less than ±15°, with the direction of said first cold rolling and at a reduction rate of from about 30 to 70%,

(*d*) annealing the resulting cross-rolled material for about one to four minutes at a temperature from 750 to 1000° C. to effect decarburization and primary recrystallization, and

(*e*) finally annealing the material for about 5 to 40 hours at a temperature of about 900° to 1300° C., thereby obtaining a double oriented silicon steel with (100)[001] type crystal orientation and outstanding magnetic properties in the aforesaid two directions.

3,163,565
PROCESS FOR PRODUCING A TOUGH STEEL FOR LOW TEMPERATURES

Kamekichi Wada, Yawata, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

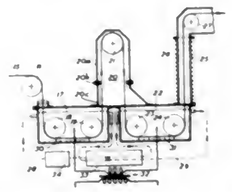
No Drawing. Filed June 19, 1962, Ser. No. 203,444
Claims priority, application Japan, June 22, 1961, 36/22,237
4 Claims. (Cl. 148—143)

1. A process for producing a tough steel for low temperature service comprising heating a low carbon steel containing 0.01 to 0.04 weight percent aluminum, 0.008 to 0.02 weight percent nitrogen and less than 0.14 weight percent carbon to a temperature above the A_3 transformation point, quickly cooling said steel at a cooling rate of from 5 to 50 degrees centigrade per second to a temperature below 600° C. whereby there is produced a fine ferrite structure in said steel and the liberated aluminum and nitrogen are in solid solution; reheating the cooled steel to a temperature of about 600 to 700° C. and cooling the steel whereby the aluminum and nitrogen are deposited in said steel as aluminum nitride.

3,163,566
CONTINUOUS HEAT TREATMENT OF ELONGATE METAL MATERIAL

Walter Norman Jenkins and Alan Gough Shakespeare, Swansea, Glamorgan, Wales, assignors to The British Iron and Steel Research Association, London, England

Filed Apr. 20, 1961, Ser. No. 104,342
Claims priority, application Great Britain, Apr. 28, 1960, 14,914/60; July 6, 1960, 23,630/60; Feb. 1, 1961, 3,786/61
12 Claims. (Cl. 148—150)



1. A continuous heat treatment process for moving elongate metal material which comprises passing the material in succession through first and second liquid heat transfer medium stations; circulating electrically conductive liquid metal heat transfer medium around a closed path including said first and second stations, the direction of circulation of the liquid medium through at least said second station being opposite to that of said material therethrough; heating that part of said material passing between said first and second stations by transformer action to induce a secondary current circulating around a closed electrical circuit including the material to be heated and the liquid medium at said first and second stations; and maintaining said liquid medium under, and the material to be heated within, a protective atmosphere.

3,163,567
PRODUCTION OF DISC-SHAPED NITROCELLULOSE

Charles E. Silk, Alton, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

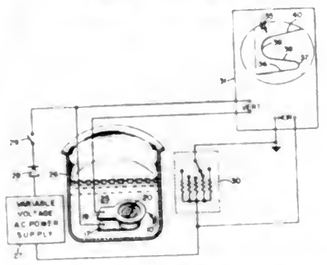
No Drawing. Filed Apr. 18, 1963, Ser. No. 273,820
17 Claims. (Cl. 149—2)

5. A process for preparing disc-like shaped particles of nitrocellulose which comprises dissolving water-wet nitrocellulose in a solvent therefore, adding to the resulting solution sufficient aqueous solution of a water soluble metal salt to provide a specific gravity reducing proportion of said metal salt, the total weight of water added to said solvent being up to about 30 percent by weight of the nitrocellulose, admixing these ingredients in sufficient proportions to yield a lacquer having a viscosity at 60° C. of between about 12 and about 100 seconds, pressing the lacquer through at least one orifice into an aqueous non-solvent medium, cutting disc-like shaped sections from the lacquer strands emerging from the orifice while the strand is in contact with the non-solvent medium to form a suspension of lacquer sections in the non-solvent medium, heating the resulting suspension to evaporate said solvent from said sections while retaining their disc-like shape, separating the resulting solid disc-like shaped particles of nitrocellulose from the suspension and heating the solid disc-like shaped nitrocellulose to dryness.

3,163,568
METHOD OF TREATING SEMICONDUCTOR DEVICES

Pierre J. Le Mieux, Watertown, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 15, 1961, Ser. No. 89,478
4 Claims. (Cl. 156—17)



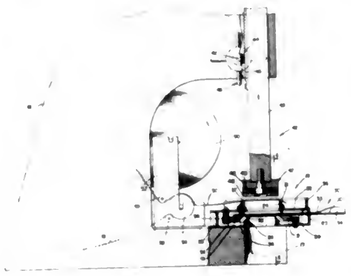
1. In the manufacture of a semiconductor device including a body of semiconductor material and an electrode having a conductivity type imparting material forming an alloyed rectifying connection thereto, the steps of immersing the exposed portion of the connection in a substantially non-conducting etching solution which is capable of dissolving the material of the body of semiconductor material at a rate which increases with an increase in temperature, passing an electrical current across the immersed connection sufficient to generate heat in the region of the connection and continuously monitoring the flow of electrical current, and stopping the flow of current when the flow of current attains a predetermined condition.

3,163,569
APPARATUS AND METHOD FOR MOUNTING ADHESIVE MATERIAL ON A CARD

Clinton F. Brundage, Mahwah, N.J., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 7, 1959, Ser. No. 857,569
11 Claims. (Cl. 156—108)

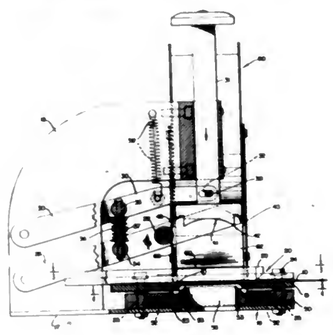
9. The method of producing a record card comprising the steps of positioning an apertured record card in spaced relationship to a sheet of adhesive material and aligning the card aperture with said sheet, applying a downward pressure to an entire surface of said sheet for moving said sheet to overlie the card aperture with the marginal edges of said sheet in contact with said card surrounding said aperture, continuing the downward pressure on the entire surface of said sheet by simultaneously moving said card and said sheet downwardly for pressing the marginal edges of said sheet into contact with the card surface surrounding the aperture and thereafter punching out the central portion of said sheet.



3,163,570
APPARATUS AND METHOD FOR MOUNTING ADHESIVE MATERIAL ON A CARD

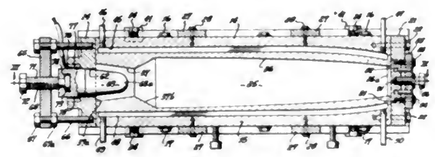
Clinton F. Brundage, Mahwah, N.J., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 7, 1959, Ser. No. 857,570
15 Claims. (Cl. 156—108)



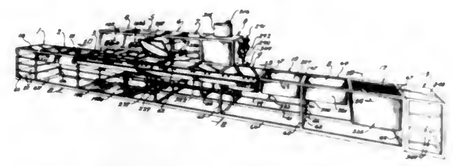
11. The method of severing a section from an endless strip of material and mounting the same on a card having an aperture therein comprising the steps of positioning the apertured portion of said card between oppositely mounted first and second die means, positioning a portion of said endless strip over said first die, severing a portion of said strip having a width and length generally larger than the width and length of the aperture in said card and mounting the same over said aperture, pressing two opposite edges of said severed portion to the surface of said card and simultaneously therewith cutting out the central portion of said severed portion and thereafter pressing the other two opposite edge portions of said severed portion onto the surface of said card.

3,163,571
METHOD OF AND APPARATUS FOR MAKING CORELESS, LAMINATED PROPELLERS
Edmond R. Doak, Los Angeles, Stacy G. Maxwell, Redondo Beach, and James B. Reichert, Los Angeles, Calif., assignors, by mesne assignments, to Edmond R. Doak, Los Angeles, Calif.
Filed Dec. 16, 1959, Ser. No. 860,026
15 Claims. (Cl. 156—222)



5. A method of making a lightweight, coreless, homogeneous propeller, comprising the steps of: applying sufficient external heat and pressure to completely enclosed layers of resin-impregnated material of diminishing shapes and sizes corresponding to the form of a finished propeller having a thin, tapered blade portion terminating in a tip end, a thick shank portion terminating in a hub end, and a neck portion connecting said shank and blade portions to liquefy the resin and cause the materials to assume the form of the finished propeller; applying sufficient internal heat and pressure to the hub end of said completely enclosed layers in the shank portion to force the liquefied resin in layers of material toward the thin, tapered blade portion while external heat and pressure are being applied; and curing said layers of material to form a strong, homogeneous propeller free of all stresses and strains.

3,163,572
SEMI-AUTOMATIC ETCHING MACHINE
Charles W. David, Rush, N.Y., assignor to Optical Gaging Products, Inc., Rochester, N.Y., a corporation of New York
Filed Apr. 19, 1961, Ser. No. 104,024
13 Claims. (Cl. 156—345)



1. In a semi-automatic etching machine for carrying out an etching process for color etching designs and written material in the surface of a sheet of plastic material, the combination, comprising: a frame; a plurality of work stations mounted on said frame; said work stations including, a station for loading, a station for cleaning the sheet of plastic material, a station for coating the sheet of plastic material with a wetting solution, at least one station for coating the sheet of plastic material with a light sensitive material, a station for mounting a master transparent design template on the coated sheet of plastic material and exposing the same to a light source, a station for developing out the unexposed coating covered by the master template, a station for applying a color etching formulation on the sheet of plastic material for etching and coloring the design of the master template in the sheet of plastic material, a station for viewing the etched sheet of plastic material, a station for washing off the light sensitive material, a station for rinsing the sheet of plastic material in a cleaning solution, and a station for drying the etched sheet of plastic material.

3,163,573
ARTIFICIAL TREE
Jack Brooks, 3724 Briar Rose Road, Memphis, Tenn.
Filed Apr. 11, 1961, Ser. No. 102,158
5 Claims. (Cl. 161—24)



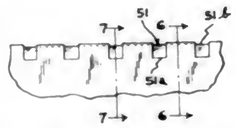
1. In an artificial tree, an upstanding trunk, said trunk comprising an outer tube and an inner tube inside of said outer tube and spaced therefrom, said inner and outer tubes being respectively provided with apertures, a plurality of branches each having an inner end, said branches being respectively removably received in selected ones of said apertures with each branch having its inner end extending through one of the apertures in said outer tube and through one of the apertures in said inner tube; each of said branches comprising a pair of halves, a foil removably received between said pair of halves, and means removably clamping said foil therebetween, said foil being shredded to provide a plurality of narrow strips extending outwardly from said pair of halves, protrusion means on one of said halves contacting some of said strips to hold some of said strips at various angles, and additional protrusion means on the other of said halves contacting other of said strips to hold other of said strips at various angles.

3,163,574
ARTIFICIAL CHRISTMAS TREES
Duncan Tong, Central Bldg., 3 Pedder St., Victoria, Hong Kong
Filed Nov. 14, 1962, Ser. No. 238,327
3 Claims. (Cl. 161—24)



1. A knock-down artificial Christmas tree simulating an evergreen pine tree having a plurality of branches of brown plastic material provided with posts for detachably mounting thereon clusters of pine leaves of green plastic material, each cluster being composed of a plurality of superposed rings with each ring having an apertured center adapted to frictionally engage one of said posts, a plurality of pine needle leaves molded integrally with each ring and extending from the periphery of each ring transversely to the plane thereof along substantially conical planes relative to the axis of said post, and the successive rings mounted on each post having the conical planes containing the pine needles decrease in angularity with respect to said axis.

3,163,575
DOCTOR BLADE FOR DIFFERENTIALLY CREPING SHEETS FROM A DRUM
Bernard D. Nobbe, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,737
3 Claims. (Cl. 162—281)



2. A doctor blade for creping flexible web from the surface of a drier drum and comprising a sheet material strip having a straight continuous longitudinal edge on one side of the strip adapted to contact the surface of the drier drum, said strip being provided with a plurality of spaced notches indented into the strip from the other side thereof and extending only partially through the strip to have base surfaces extending from said edge toward the middle of the strip, said base surfaces being flat in section longitudinally of the strip.

3,163,576
SUPPOSITORY BASE COMPRISING GLYCERIN AND A DIESTER OF POLYETHYLENE GLYCOL
Ruth N. Havemeyer, New Brunswick, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 12, 1961, Ser. No. 116,272
8 Claims. (Cl. 167—64)

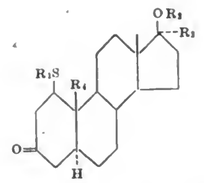
1. A suppository base which consists of from about 5 to about 7% of glycerin and a diester of polyethylene glycol of a molecular weight of about 4100 to about 6000, wherein the diester is derived from the group consisting of higher alkanoic acids and higher alkenoic acids of from 12 to 18 carbon atoms.

3,163,577
BENZYL ALCOHOL STABILIZED IODINE-ALKALI IODIDE SOLUTIONS
Eduard Imhoff, Eichstrasse 28, Neuenhof, Switzerland
No Drawing. Filed Aug. 10, 1961, Ser. No. 130,471
Claims priority, application Switzerland, Aug. 11, 1960, 9,144/60
15 Claims. (Cl. 167—70)

1. Process for the stabilization of aqueous solutions of iodine-alkali iodide comprising adding to such a solution a small amount of an organic compound selected from the group consisting of benzyl alcohol, benzene and nitrobenzene.

3,163,578
ALKYLTHIOSTEROIDS AND METHODS OF THEIR PREPARATION
Klaus Bruckner, Darmstadt-Eberstadt, and Karl-Heinz Bork, Griesheim, near Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany
No Drawing. Filed July 1, 1963, Ser. No. 292,091
Claims priority, application Germany, July 3, 1962, M 53,421
11 Claims. (Cl. 167—74)

1. Alkylthiosteroids of the formula



wherein

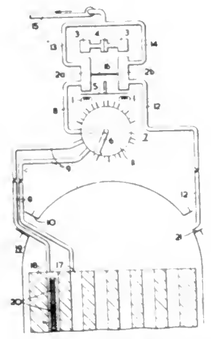
R_1 designates a member of the group consisting of methyl, ethyl, propyl and iso-propyl
R_2 designates a member of the group consisting of hydrogen and an acyl group having 1–10 carbon atoms
R_3 designates a member of the group consisting of hydrogen, methyl, and ethyl
R_4 designates a member of the group consisting of hydrogen and methyl.

11. A method of effecting increased anabolic activity in mammals which method comprises administering an effective amount of a compound of claim 1 and a pharmaceutically acceptable carrier.

3,163,579
METHOD FOR THE ENTRAPMENT OF CHOLINE SALTS
Albert T. Derivan, Dunellen, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 15, 1962, Ser. No. 173,366
5 Claims. (Cl. 167—82)

1. A composition of matter comprising a dry gel having a choline salt entrapped within said gel, said gel being selected from the group consisting of starches, starch conversion products, oxidized starches, thin boiling starches, starch derivatives, amylose, amylose derivatives, high amylose starches and high amylose starch derivatives.

3,163,580
FIRE DETECTION IN GRAPHITE MODERATED, CO_2 COOLED REACTOR
Robert D. Collins, Seascale, Cumberland, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Jan. 28, 1960, Ser. No. 5,144
3 Claims. (Cl. 176—19)



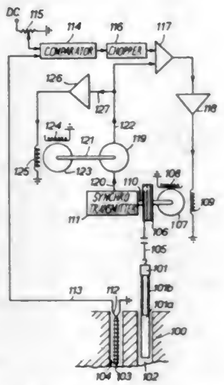
1. A method for detecting a fire in a carbon dioxide cooled reactor having a graphite moderator penetrated by channels charged with fuel elements, comprising collecting a first sample of coolant from the coolant stream emerging from a selected channel in said moderator, and collecting a second sample of coolant to be used as a comparison standard from a mixture of the coolant

emerging from substantially all of said channels, and comparing said first and second samples in a comparison type gas analyzer to detect the presence in the first sample of carbon monoxide caused by combustion.

3,163,581
APPARATUS FOR TRIMMING THE POSITION OF A CONTROL ROD

Ronald Hugh Campbell, Hale, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Nov. 1, 1960, Ser. No. 66,483
Claims priority, application Great Britain Nov. 9, 1959
1 Claim. (Cl. 176—24)

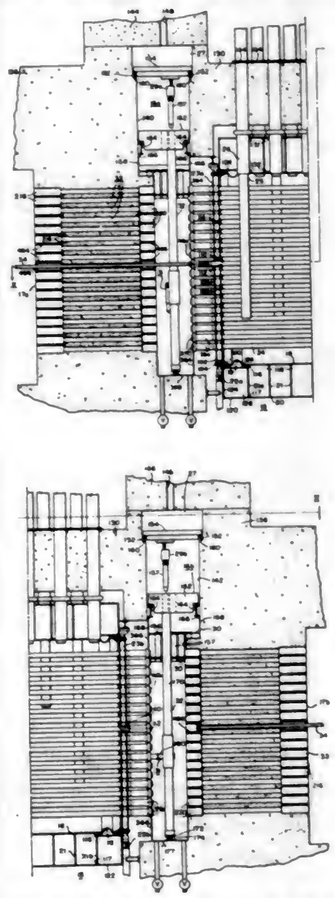


Apparatus for effecting automatic trimming control in a gas-cooled nuclear reactor and in combination with such a reactor comprising a reactor fuel temperature measuring device, comparator means for comparing the output of said temperature measuring device with a reference quantity to produce an input control signal, a control rod, a reactor control rod operating motor responsive to said input control signal to move the control rod in a direction to reduce said control signal, a first feedback loop comprising a generator to generate a first feedback signal responsive to the energization of said control rod operating motor and applied by said first loop from said control rod operating motor to a point of application of said input control signal to the reactor control rod operating motor, and a second feedback loop completed from said point of application of said first feedback signal to said generator to thereby reduce said first feedback signal toward zero at a rate slower than the rate of response of said control rod to said input control signal.

3,163,582
FUEL HANDLING MACHINERY FOR A NUCLEAR REACTOR

Peter J. Collins, Ancaster, Ontario, and Ronald M. Campbell, Burlington, Ontario, Canada, assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada

Filed Aug. 31, 1959, Ser. No. 837,092
Claims priority, application Canada, Aug. 30, 1958, 757,767
2 Claims. (Cl. 176—32)

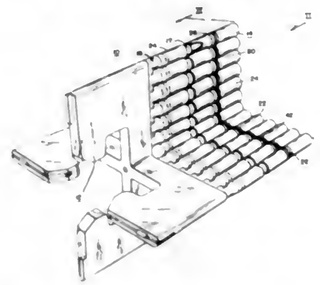


1. In a neutronic reactor system the combination comprising a generally tubular moderator tank, a pair of closure members joined to and closing the ends respectively of said tank, a plurality of pressure tubes having their ends extending through said closure members respectively and having their major proportions suspended thereby within said tank, means for enclosing and shielding a fueling pit adjacent each of said pressure tube ends, said enclosing and shielding means comprising a shielding wall spaced outwardly of said pressure tube ends and each of said closure members, said shielding walls each having a plurality of access channels extending therethrough in alignment with adjacent pressure tube ends, a fueling machine carrier mounted generally outwardly of each of the spaces between said closure members and said shielding walls respectively, a standard secured to each of said carriers and extending into said space in a direction transversely of the adjacent pressure tube ends, said standards being affixed to said carriers respectively for movement therewith transversely of said pressure tubes, a fuel element holder mounted on each of said standards for longitudinal movement relative thereto and capable of holding a fuel element, means for vertically loading a fuel element in one of said holders at positions removed from said pressure tubes, means for moving each of said carriers and its associated holder and standard to a position whereat each of said holders is adjacent a selected one of said pressure tubes, means for pivotally aligning each holder with said selected tube and its associated access channels, and manipulator means operable through each of said access channels for opening the ends of said selected tube and for moving the fuel element contained in said one holder into the open end of said selected tube and for displacing another fuel element in said selected pressure tube into the other of said holders, when so aligned.

3,163,583
FUEL FOLLOWER FOR A HETEROGENEOUS NUCLEAR REACTOR

Thomas F. Widmer, Monroeville, and Edward Paxson, Forest Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 6, 1960, Ser. No. 53,934
10 Claims. (Cl. 176—40)

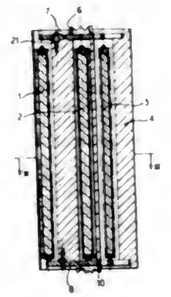


1. In a nuclear reactor, a follower for an elongated control rod employed therein, said follower comprising a plurality of elongated fuel elements forming a lateral envelope substantially conforming to that of said control rod, means for supporting said fuel elements relative to said control rod and relative to each other, said supporting means including a plurality of resilient elongated straps, said straps extending laterally of said fuel elements and being spaced along the length thereof, and said straps enabling differential longitudinal deformation of said fuel elements to preclude said follower from jamming against adjacent structure.

3,163,584
SUPPORT HOUSING FOR EXTERNALLY SUPPORTING FUEL ELEMENTS

Roland Roche, Clamart, and Bernard Vrillon, Vincennes, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 7, 1960, Ser. No. 13,187
Claims priority, application France, May 16, 1959, 789,460
3 Claims. (Cl. 176—41)

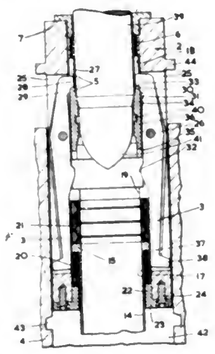


1. In a nuclear reactor, a fuel element assembly supporting structure containing fuel rods with a plurality of structures mounted in the duct of the nuclear reactor, a cylindrical block of low neutron flux absorption, a plurality of compartments in and parallel to the long axis of and opening through said block and a sheathed fuel rod in each of said comparments, the cross-sectional area of each of said compartments being greater than that of the associated fuel rod for passage of a cooling fluid therebetween.

3,163,585
FUEL ELEMENT SUPPORT STRUCTURE AND LATCHING MECHANISM

George Ralph Anthony Metcalfe, Newcastle-upon-Tyne, and Harold Alan Brown, Burton-on-Trent, England, assignors to the United Kingdom Atomic Energy Authority, London, England

Filed Aug. 11, 1961, Ser. No. 130,956
Claims priority, application Great Britain Aug. 11, 1960
1 Claim. (Cl. 176—87)



In a nuclear reactor: a support structure disposed horizontally above the reactor core and defining an aperture, a bore-defining body part disposed coaxially in said aperture, a pair of first spring means disposed in tandem in the bore of the body part, a flange member separating the spring means, a tubular member having a longitudinal axis and depending from the flange member, nuclear fuel disposed within the tubular member, a latch member pivotally mounted in the wall of the body part so as to pivot about an axis perpendicular to the axis of the tubular member, means defining a latch-holding recess in the wall of said aperture, a sleeve member slidably mounted in the bore of the body part, cam means on the sleeve member co-acting with the latch member so that axial movement of the latch member causes pivoting of the latch member into engaging and disengaging positions with said latch-holding recess and second spring means urging said sleeve member into a latch-engaging position.

3,163,586
METHOD FOR PREPARING 5'-NUCLEOTIDES

Yasunari Ishida, Ikeda, Kazuwo Motizuki and Minoru Uchida, Takarazuka, Koichiro Wakita, Gose, and Yoshio Nakao, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,956
Claims priority, application Japan, Dec. 13, 1960, 35/49,122
15 Claims. (Cl. 195—28)

1. In a process for producing a mixture of 5'-nucleotides by hydrolysis of a member selected from the group consisting of nucleic acids, oligonucleotides and mixtures thereof, as starting material, by bringing the said starting material into contact with an RNase produced by an RNase-producing microorganism, the improvement of effecting the hydrolysis after adding to the RNase-containing mixture from 0.1 to 10% by weight of phenolic compound selected from the group consisting of phenol and cresol, relative to the RNase-containing mixture.

2. In a process for producing a mixture of 5'-nucleo-

tides by hydrolysis of a member selected from the group consisting of nucleic acids, oligonucleotides and mixtures thereof, as starting material, by bringing the said starting material into contact with an RNase produced by an RNase-producing microorganism, the improvement of effecting the hydrolysis after adding to the RNase-containing mixture from 1 to 30% by weight of lower aliphatic alcohol having from 1 to 5 carbon atoms, relative to the RNase-containing mixture.

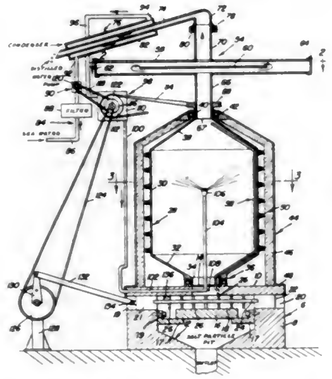
3. In the process for producing a mixture of 5'-nucleotides by hydrolysis of a member selected from the group consisting of nucleic acid, oligonucleotides and mixtures thereof, as starting material, by bringing the said starting material into contact with an RNase produced by an RNase-producing microorganism, the improvement wherein the RNase is produced by cultivating an RNase-producing microorganism in a culture medium containing from 0.0002 to 0.01 mole of a metal ion selected from the group consisting of iron, cobalt and nickel ions.

3,163,587

DISTILLATION APPARATUS FOR CONVERTING SALT WATER INTO FRESH WATER

William F. Champe, R.F.D. 1, Box 209, Culloden, W. Va.

Filed Dec. 13, 1960, Ser. No. 75,509
9 Claims. (Cl. 202—176)



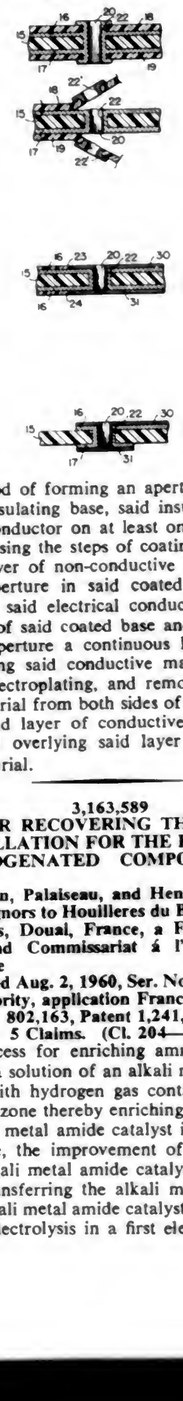
1. An apparatus for converting sea water into fresh water comprising: a base having a recess providing a solid material trapping pit, the central upper portion of said base having an opening registering with the pit, a baffle block fixed in said pit and underlying and spaced below said opening and of a length greater than the cross-section of said opening, a reciprocating shaft having pistons thereon slidingly mounted in bores provided therefor in the base in a plane between the top of the baffle block and bottom of said opening, an insulated housing supported on and rising above the top of the base, a heated scraper-equipped vaporizing drum confined in said housing, said drum having a truncated open bottom mounted for rotation atop the base, said truncated bottom being aligned with and serving to funnel and deliver salt particles to the opening for deposit in said pit, said shaft having vanes contacting and raking back and forth across the top of the baffle block for depositing gravitating salt particles in the pit, the upper end of the drum having a collar rotatable in bearing means at the top of the housing, a relatively stationary condenser, a rotary centrifugal salt particle separator head communicatively and rotatably connected with said drum and connected by flow means with said condenser, salt water supply means connected to said condenser, and a complemental flow means communicatively connected with and feeding and delivering salt water from said condenser to the interior of the drum for evaporation.

3,163,588

METHOD OF INTERCONNECTING PATHWAY PATTERNS OF PRINTED CIRCUIT PRODUCTS

Hubert L. Shortt and John B. Langton, Tarrytown, N.Y., assignors to Technograph Printed Electronics, Inc., Tarrytown, N.Y.

Filed Feb. 14, 1955, Ser. No. 487,916
12 Claims. (Cl. 204—16)



12. A method of forming an aperture with a metallic lining in an insulating base, said insulating base having an electrical conductor on at least one side thereof, said method comprising the steps of coating both sides of the base with a layer of non-conductive strippable material, forming an aperture in said coated base such that it passes through said electrical conductor, forming on at least one side of said coated base and on the inner surface of said aperture a continuous layer of conductive material, coating said conductive material with a layer of metal by electroplating, and removing said layers of strippable material from both sides of the base along with portions of said layer of conductive material and said layer of metal overlying said layer of non-conductive strippable material.

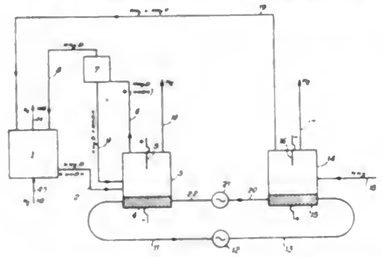
3,163,589

PROCESS FOR RECOVERING THE CATALYST IN AN INSTALLATION FOR THE ENRICHMENT OF A HYDROGENATED COMPOUND IN DEUTERIUM

Grégoire Dirian, Palaiseau, and Henri Sack, Le Raincy, France, assignors to Houilleres du Bassin du Nord et du Pas-de-Calais, Douai, France, a French public establishment, and Commissariat á l'Energie Atomique, Paris, France

Filed Aug. 2, 1960, Ser. No. 46,992
Claims priority, application France, Aug. 6, 1959, 802,163, Patent 1,241,260
5 Claims. (Cl. 204—59)

1. In a process for enriching ammonia in deuterium by contacting a solution of an alkali metal amide catalyst in ammonia with hydrogen gas containing deuterium in an enrichment zone thereby enriching both said ammonia and said alkali metal amide catalyst in deuterium by isotopic exchange, the improvement of removing the deuterium-rich alkali metal amide catalyst from said enrichment zone, transferring the alkali metal from said deuterium-rich alkali metal amide catalyst into an alkali metal amalgam by electrolysis in a first electrolyzer using said amalgam as a cathode, removing the alkali metal from said amalgam by electrolysis in a second electrolyzer in the presence of liquid ammonia of low deuterium content using the amalgam as an anode, forming alkali metal



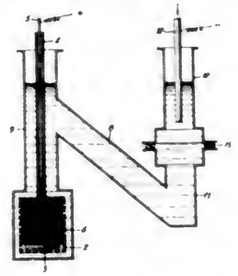
amide of low deuterium content from said ammonia of low deuterium content and said alkali metal and introducing said alkali metal amide of low deuterium content into said enrichment zone.

3,163,590

HYDROGENATION OF GROUPS III, IV AND V ELEMENTS

Lawrence M. Litz, Lakewood, and Stanley A. Ring, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 27, 1961, Ser. No. 105,925
12 Claims. (Cl. 204—61)



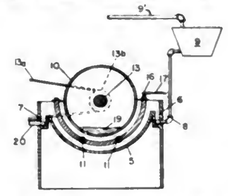
1. A process for the production of hydrogen-containing compounds of those elements of Groups III, IV and V of the Periodic Table which form stable hydrides, which process comprises electrolyzing in an electrolysis zone a non-oxidizing melt containing a halide of a metal selected from the group consisting of the alkali metals and the alkaline earth metals to produce said selected metal in elemental form; transporting the melt containing the metal to a hydriding zone introducing hydrogen into said hydriding zone; maintaining said melt and said metal in said hydriding zone at a temperature sufficient to cause a hydriding reaction to proceed between said metal and hydrogen but below that temperature at which the hydride decomposes, to transform said metal to its corresponding hydride and to form a solution of said hydride in said melt; transporting at least in part by thermal convection the hydride solution so formed from a relatively lower position in the hydriding zone to a relatively higher position in a hydrogenation zone; contacting said solution in said hydrogenation zone with a halogen-containing compound of said element selected from said Groups III, IV and V at a temperature above the freezing point of the melt but below the decomposition temperature of the desired product to form the desired hydrogenated compound of said element, and at a relatively lower temperature than in the hydriding zone.

3,163,591

METHOD OF AND MEANS FOR RECOVERING METALS FROM THEIR ORES

Ren W. Chambers, Rialto, Calif., assignor, by mesne assignments, to Temptron Corporation, Paducah, Ky., a corporation of Kentucky

Filed Oct. 20, 1961, Ser. No. 146,636
4 Claims. (Cl. 204—108)



1. In an apparatus for recovering the metallic content of ores, a liquid receiving tank, a closed cylinder cathode mounted for rotation about a longitudinal axis within said tank, an anode-forming element located within the tank and lying in spaced relation to the underside of said cylinder, an inlet trough extending along the tank at one side thereof, an outlet trough extending along the tank at the other side thereof, means for feeding a slurry of water and comminuted metal-bearing ore into the inlet trough, said slurry having a pH content to constitute it an electrolyte, said outlet trough being disposed at a lower level than the inlet trough, whereby a flow of the slurry in its passage from the inlet to the outlet trough is set up in a path below and transversely of the axis of rotation of the cylinder, and a body of mercury disposed in said cylinder and gravitationally maintained at a point opposite to the anode forming element.

4. The herein described electrolytic method of increasing the recovery rate of metals from their raw ores which consists of passing a slurry of water and comminuted raw ore between a hollow, closed rotative cathode and an anode throughout the rotation of the cathode, while gravitationally maintaining a body of flowable, highly conductive liquid metal within the closed, hollow rotative cathode and the anode throughout the rotation of said cathode.

3,163,592

PROCESS FOR ELECTROPHORETICALLY APPLYING A COATING OF PHOSPHOR

Arthur W. Dolan, Peabody, and James Theodosopoulos, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Sept. 1, 1960, Ser. No. 53,345
3 Claims. (Cl. 204—181)

1. The method of producing a coating of electroluminescent phosphor in glass in an electroluminescent device, said method comprising anaphoretically depositing the phosphor and a glass frit from a suspension thereof in a suitable liquid, and then heating the frit to embed the phosphor in said frit and fuse to the remainder of the device.

3,163,593

DESULFURIZATION OF HEAVY OILS

Alfred Bentley Webster, Wallasey, Norman James Herbert Small, Christleton, near Chester, and Richard Rigby, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,714
Claims priority, application Great Britain, Apr. 6, 1961, 12,373/61
7 Claims. (Cl. 208—240)

1. A process for reducing the sulfur content of a sulfur-containing heavy hydrocarbon oil, at least 50% by volume of said oil boils above 250° C., which comprises treating the oil with an oxidant to form compounds containing both oxygen and sulfur, said oxygen and sulfur

being chemically combined, heating the treated oil containing said compounds at a temperature from about 350° C. to about 450° C. under conditions to rupture the sulfur-carbon bond yielding volatile sulfur compounds, and recovering a heavy hydrocarbon oil of reduced sulfur content.

3,163,594
COLOR IMPROVEMENT OF HYDROCARBON OIL FRACTIONS

William Floyd Arey, Jr., Baton Rouge, and William Judson Mattox, East Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

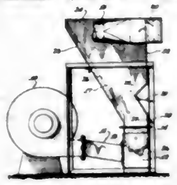
No Drawing. Filed Apr. 5, 1962, Ser. No. 185,193
25 Claims. (Cl. 208—264)

1. An improved means for enhancing the color properties of hydrocarbon fractions which comprises subjecting them to hydrotreating conditions at which substantially no hydrogen consumption or cracking occurs, said conditions including a temperature of 500° to 900° F., in the presence of a crystalline metallic alumino-silicate zeolite catalyst having an effective pore diameter of 4 to 15 Angstroms and containing a member of the group consisting of Group II–A metals and iron.

3,163,595
AIR WASHER FOR ASBESTOS FIBRE

Robert Andrew Denovan, Dalkeith, Ontario, Canada

Filed Nov. 29, 1961, Ser. No. 155,639
3 Claims. (Cl. 209—140)



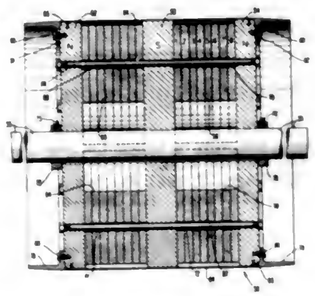
1. Apparatus for removing dust from asbestos fibre and the like comprising, asbestos fibre inlet means, asbestos fibre outlet means, a conveyor extending through the apparatus from said inlet means to said outlet means, a conveyor housing having a fibre supporting wall directly under the conveyor, said fibre supporting wall having a single row of apertures spaced along its length, walls extending upwards from said conveyor housing with a top closing member defining a separating chamber, air supply means for directing air upwards through the single row of apertures as jets of air, said separating chamber having a horizontal cross section that increases towards the top of the chamber to reduce the velocity of upward air flow and cause settling of heavier pieces of entrained material, one of the settling chamber forming walls parallel to the direction in which the conveyor extends being a sloping wall sloping inwards towards the bottom thereof for guiding settled material to the conveyor, inclined baffles on the sloping wall for guiding settled material in the direction of movement of the conveyor as it moves down the sloping wall, an air outlet at the top of the separating chamber, and air withdrawing means communicating with said air outlet.

3,163,596
PERMANENT MAGNETIC PULLEY

James J. Ferris, Upper Montclair, and Otto C. Mayer, Fair Lawn, N.J., assignors, by mesne assignments, to Eriez Manufacturing Company, Erie, Pa.

Filed May 21, 1962, Ser. No. 196,383
3 Claims. (Cl. 209—219)

1. A magnetic pulley comprising, in combination, a plurality of axially spaced, magnetically permeable, annular pole pieces alternately of opposite polarity, said pole pieces having major faces, a plurality of permanent magnets for magnetic induction of said pole pieces, each disposed intermediate two successive pole pieces, each magnet comprising a plurality of alike, circumferentially spaced, annular magnetic units mounted between said pole pieces, said magnetic units in each magnet having opposite major faces and arranged with said major faces in a face-to-face relationship in intimate contact, each magnetic unit having a greater diameter than thickness, endmost of said magnetic units in each magnet having major faces in intimate contact individually with major faces of individual ones of said pole pieces, said units having permanent magnetization in the same direction through the thickness dimension, said direction of magnetization corresponding to magnetization in a direction substantially normal to the opposite major faces defining said thickness dimension, and parallel to the axis of rotation



of said pulley, means mounting said pole pieces and magnetic units for rotation comprising a non-magnetic shaft fixed to said pole pieces extending axially through said pole pieces, said pole pieces and said magnetic units being disposed coaxially with said shaft, said pole pieces having centrally disposed surfaces defining a central opening through which said shaft extends, said centrally disposed surfaces defining said opening extending circumferentially of said shaft and making contact circumferentially with the surface of said shaft, said central opening having a minimum possible diameter relative to the outside diameter of said pole pieces, a non-magnetic tubular shell fixed for rotation with said shaft disposed axially over said magnets and pole pieces and circumferentially thereof, and means for holding said pole pieces and magnetic units in position on said shaft and said magnetic members with axially directed compression forces applied thereto.

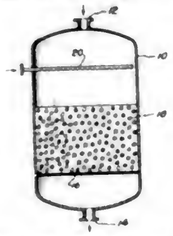
3,163,597
ION EXCHANGE PROCESS

Eberhard Thrun, Mainz, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg A.G., Nurnberg, Germany

Filed Mar. 30, 1961, Ser. No. 99,500
Claims priority, application Germany, Apr. 5, 1960, M 44,887
4 Claims. (Cl. 210—30)

1. In the operation of an ion exchanger in which a liquid such as water is passed through a bed of ion exchange material to prepare the liquid for use in boilers, breweries, dye works, nuclear reactors and the like, the improvement in that the process steps of forming the ion exchange bed, treating liquid passed through said bed, flushing the bed and regenerating the bed are performed with the active ion exchange material together with material inert to the ion exchange reaction and of substantially the same physical size and shape as said

ion exchange material and in an amount to increase the useful capacity of the ion exchange material to a value



above that existing when the ion exchange material is used alone.

3,163,598
METHOD FOR DISPOSAL OF INDUSTRIAL WASTE WATER

Akira Yoshihara, Tsutomu Yoshihara, Kenji Okada, and Shigeharu Sakaguchi, Tokyo, Japan (all % Glascock, Downing and Seebold, National Press Bldg., Washington, D.C.)

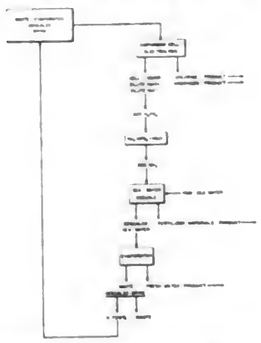
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,515
Claims priority, application Japan, Dec. 5, 1961, 36/43,476
3 Claims. (Cl. 210—47)

1. In a process for the disposal of industrial waste waters in which a waste water containing organic substances as main contaminants, such as waste water from pulping, raw wool washing, textile washing, hide tanning, slaughtering or the like, is clarified, the improvements which comprise: mixing the waste waters with zinc chloride and zinc sulfate to produce flocks of slime, separating the flocks thus formed from the remaining liquid; then drying, and then incinerating the separated flocks to produce an ash containing zinc oxide; dissolving the ash containing zinc oxide in an acid solution and using the resulting solution to provide the zinc salts used as the initial processing agent mixed with the waste waters.

3,163,599
PROCESS OF DESCALING SEA WATER

Murrell L. Salutsky, Silver Spring, Md., and Maria G. Dunseth, Arlington, Va., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Jan. 21, 1963, Ser. No. 252,887
2 Claims. (Cl. 210—47)



1. A cyclic process for the descaling of sea water comprising the steps of:

(*a*) electrolyzing concentrated waste brine which is free from scale-forming elements in a diaphragm cell;

(*b*) recovering the resulting cell liquor;

(*c*) adding to said cell liquor a quantity of phosphoric acid, such that disodium phosphate is quantitatively formed from the sodium hydroxide contained therein;

(*d*) adding to said disodium phosphate solution a sufficient quantity of ammonia to precipitate the scale-forming elements in a predetermined quantity of sea water;

(*e*) adding said solution to said predetermined quantity of sea water, thereby precipitating said scale-forming elements;

(*f*) separating the precipitate from the mother liquor;

(*g*) recovering said mother liquor of descaled sea water; and

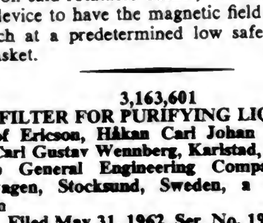
(*h*) evaporating said mother liquor to obtain fresh water and a residuum of concentrated, descaled brine; and

(*i*) recycling said concentrated descaled sea water to step (*a*) above.

3,163,600
COVER INTERLOCK FOR A CENTRIFUGAL SEPARATOR

Benjamin Alvin Buss, East Moline, Ill., assignor to Ametek, Inc., East Moline, Ill., a corporation of Delaware

Filed Oct. 19, 1960, Ser. No. 63,534
3 Claims. (Cl. 210—146)



1. In an extractor having a stationary housing and a rotating basket therein, an openable cover on said housing for access to said basket, the improvement comprising an interlocking means for said cover having open and closed positions, separate solenoids for opening and closing said interlocking means upon a manual signal, an interlock circuit means including said opening solenoid and a switch mounted on said stationary housing and operable to actuate said opening solenoid by a predetermined magnetic flux, a magnetic flux producing device mounted on said rotatable basket, and means for mounting said device to have the magnetic field thereof actuate said switch at a predetermined low safe rotating speed of said basket.

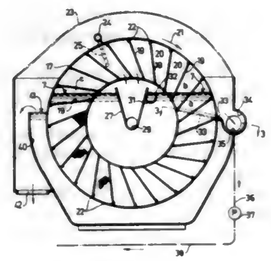
3,163,601
FILTER FOR PURIFYING LIQUIDS

Lars Olof Ericson, Håkan Carl Johan Wennberg, and Olov Carl Gustav Wennberg, Karlstad, Sweden, assignors to General Engineering Company Aktiebolag Brahevagen, Stocksund, Sweden, a corporation of Sweden

Filed May 31, 1962, Ser. No. 198,919
Claims priority, application Sweden June 2, 1961
8 Claims. (Cl. 210—196)

1. A filter of the drum type for purifying raw water, waste water from pulp mills, paper mills and the like, comprising a vat defining a discharge level for filtered liquid, a rotatable drum in the form of spaced parallel disks composed of spaced lateral walls formed by ring-shaped filter screen parts and of outer and inner peripheral walls interconnecting said screen parts, a tubular shaft carrying said drum and forming an inlet for unfiltered liquid to the interior of the drum, the spaces between said lateral walls of each disk being open inwardly, partitions mounted in said spaces to form inwardly open

cells therein, said partitions and said lateral walls bounding said cells and the inward openings of said cells, said partitions extending outwards in relation to the axis of the drum so as to have their outer ends adjacent said outer peripheral wall of the drum, the direction of each



partition deviating from the radial direction in such a manner that the outer edge of the partition is lagging behind the inner edge thereof as viewed in the direction of rotation of the drum, said cells communicating with each other adjacent the outer peripheral wall of the drum.

3,163,602

SUBSTITUTED HETEROPOLYSACCHARIDE

Gordon P. Lindblom and John T. Patton, Tulsa, Okla., assignors to Jersey Production Research Company, a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,695
16 Claims. (Cl. 252—8.55)

1. A process for preparing an improved thickening agent which comprises preparing an aqueous solution of a heteropolysaccharide produced by the action of bacteria of of genus Xanthomonas on a carbohydrate, reacting said heteropolysaccharide in solution with a quaternary ammonium compound capable of forming a heteropolysaccharide-quaternary ammonium compound reaction product substantially insoluble in said solution, said quaternary ammonium compound having substituent groups in the C_1 to C_{24} range, and recovering said reaction product from solution.

10. In a process wherein a brine is injected into a subsurface oil-bearing formation to displace crude oil contained therein, the improvement which comprises thickening said brine with a brine-soluble heteropolysaccharide quaternary ammonium compound reaction product produced by reacting a heteropolysaccharide derived by the action of bacteria of the genus Xanthomonas on a carbohydrate with a quaternary ammonium compound containing from 1 to 3 methyl groups and at least 1 long chain aliphatic group.

3,163,603

AMIDE AND IMIDE DERIVATIVES OF METAL SALTS OF SUBSTITUTED SUCCINIC ACIDS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,860
12 Claims. (Cl. 252—33.6)

1. A process for preparing an oil-soluble nitrogen-containing metal salt composition comprising reacting, at a temperature within the range of from about 20° C. to about 250° C., (A) about two equivalents of a succinic compound selected from the class consisting of hydrocarbon-substituted succinic acids and hydrocarbon-substituted succinic anhydrides wherein the hydrocarbon substituent has at least about 50 aliphatic carbon atoms, (B) about one equivalent of a basic metal reactant selected from the class consisting of alkali metal, alkaline earth metal, lead, cadmium and zinc oxides, hydroxides, carbonates and lower alcoholates and the successive combination of an alkali metal hydroxide and an inorganic metal salt selected from the class consisting of alkaline earth metal, lead, cadmium, zinc, nickel, and cobalt halides and nitrates, and (C) from one to about five equivalents of an amine selected from the class consisting of alkylene polyamines and hydroxyalkyl-substituted alkylene polyamines having up to about eight carbon atoms in the alkylene radical and up to about six carbon atoms in the hydroxyalkyl substituent.

3,163,604

SALT COMPOSITIONS AND THEIR PREPARATION

Alan Sander Dubin, Cincinnati, Ohio, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 29, 1961, Ser. No. 131,039
4 Claims. (Cl. 252—35)

1. A process for preparing salt compositions which comprises:

(*a*) heating a major proportion of oil and from 0.001 to 40 weight percent of a mixture of preformed metal acetate and C_7 to C_{30} carboxylic acid to an acetic acid releasing temperature of from 100 to 600° F., said oil being otherwise free of a basically reacting compound,

(*b*) said metal being selected from the group consisting of alkali metals, alkaline earth metals, and the heavy metals of Groups I, II and IV of the Periodic System, and

(*c*) said metal acetate and said carboxylic acid being present in amounts such that the mole ratio of the acetic acid precursor of the metal acetate to the carboxylic acid is from about 4:1 to 40:1.

3,163,605

LUBRICATING OIL ADDITIVES

Ernst Koch, Traisa uber Darmstadt, Rudi Otto Benz, Weiterstadt, and Nicolaus Jochum, Darmstadt, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Aug. 8, 1960, Ser. No. 47,919
Claims priority, application Germany, Aug. 12, 1959, R 26,148
4 Claims. (Cl. 252—51.5)

1. A lubricating composition consisting essentially of a major proportion of lubricating oil selected from the group consisting of mineral oils and synthetic ester oils, and from 1 to 10 percent by weight of an oil soluble, at least ternary copolymer of (1) 3 to 40 percent by weight of an ester formed between an alkanolamide of a fatty acid having 1 to 20 carbon atoms and a member selected from the group consisting of acrylic acid and methacrylic acid, (2) at least one member selected from the group consisting of (A) 10 to 20 percent by weight of an ester formed between a lower alkanol having up to 4 carbon atoms and a member selected from the group consisting of acrylic acid and methacrylic acid, and (B) up to 15 percent by weight of a nitrogenous monomer selected from the group consisting of amides of acrylic and methacrylic acid with a lower alkyl amine having up to 4 carbon atoms, acrylonitrile, and N-vinyl pyrrolidone, the balance of said at least ternary copolymer, comprising at least 40 percent by weight of said copolymer, being (3) an ester formed between an alcohol having 8 to 22 carbon atoms and a member selected from the group consisting of acrylic acid and methacrylic acid.

3,163,606

TEXTILE BLEACHING COMPOSITION

Wilhelmus J. C. Viveen and Cornelis U. Kloosterman, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij vorheen Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Filed June 2, 1960, Ser. No. 33,397
Claims priority, application Great Britain, June 19, 1959, 21,220/59; July 29, 1959, 26,061/59; Oct. 13, 1959, 34,695/59; Netherlands, June 6, 1959, 239,952
5 Claims. (Cl. 252—98)

1. A textile treating composition consisting essentially of an active oxygen releasing compound selected from the group consisting of inorganic perborates, percarbonates, perphosphates, persilicates, persulfates, and peroxides and an activator compound selected from the group consisting of N,N,N'N'-tetra-acetyl hydrazine and N,N,N'N'-tetra-acetylmethylenediamine, the said activator compound being present in such a quantity as corresponds to 0.5–4.0 nitrogen bound acetyl groups per atom of active oxygen in the active oxygen releasing compound.

3,163,607

METHOD FOR REMOVING OIL LUBRICANT FILM FROM STEEL

Herbert J. Drake, Nazareth, Pa., assignor to Bethlehem Steel Company, a corporation of Pennsylvania

No Drawing. Filed Aug. 2, 1962, Ser. No. 214,186
11 Claims. (Cl. 252—170)

1. The method of removing an oily lubricant film containing iron soaps from a steel surface coated with said film which comprises applying to said coated surface an aqueous mixture consisting essentially of water and a member of the group consisting of α-terpineol, geraniol, mixtures of α-terpineol and geraniol, water-insoluble fatty alcohols having from 6 to 18 carbon atoms and mixtures of said fatty alcohols wherein the weight ratio of water to said member ranges from 500:1 to 5:1.

3,163,608

LUMINESCENT MATERIALS

Perry N. Yocom, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

No Drawing. Filed Apr. 6, 1962, Ser. No. 185,530
5 Claims. (Cl. 252—301.1)

1. A luminescent material having the molar composition:

$$AHa_2{:}yU^{+3}$$

where:

A is at least one material of the group consisting of Ba, Ca, and Sr

Ha is at least one material of the group consisting of Cl, Br, and I

U^{+3} is trivalent uranium

y is between about 10^{-6} and 10^{-1} mol.

3,163,609

CRYSTALLINE SPHERULES

Harold G. Sowman, Maplewood, and James R. Johnson, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Mar. 16, 1961, Ser. No. 96,081, now Patent No. 3,129,188, dated Apr. 14, 1964. Divided and this application Feb. 5, 1963, Ser. No. 256,238
13 Claims. (Cl. 252—301.1)

1. The method for producing solid spherules of a crystalline material of the class consisting of uranium carbide, thorium carbide and uranium (thorium) carbide which comprises the transformation to spherical shape of small irregularly shaped discrete particles of a material of the group consisting of uranium, thorium, uranium carbide, uranium (thorium) carbide and compounds of uranium and thorium which react with carbon on heating to form uranium carbide, thorium carbide and uranium (thorium) carbide, said discrete particles being isolated from one another by an isolating medium characterized by low bulk density, resiliency, lack of undesirable reactivity and, when said small irregularly shaped particles are other than a carbide, by the presence of at least a sufficient amount of carbon to produce the corresponding carbide in addition to the isolating medium, by subjecting said particles and their matrix of isolating medium to rapid heating in a non-reactive atmosphere for a sufficient time and at a sufficient intensity to effect fusion of the discrete small particles in the isolating medium thereby subjecting said discrete particles to the action of surface tension forces inherent in said particles and rendering them substantially spherical, cooling the resultant discrete spherular particles and their matrix of isolating medium and separating said discrete spherular particles from said isolating medium.

3,163,610

RARE EARTH ACTIVATED ALKALINE EARTH HALOFLUORIDE LUMINESCENT MATERIALS

Perry N. Yocom, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,672
9 Claims. (Cl. 252—301.4)

1. A luminescent material having a tetragonal crystal structure and the molar composition:

$$AHaF{:}yM$$

where:

A is at least one of the group consisting of Ba, Ca, Sr

Ha is at least one of the group consisting of Cl, Br, I

F is fluorine

M is at least one of the group consisting of Sm^{+2}, Tm^{+2} and U^{+3}

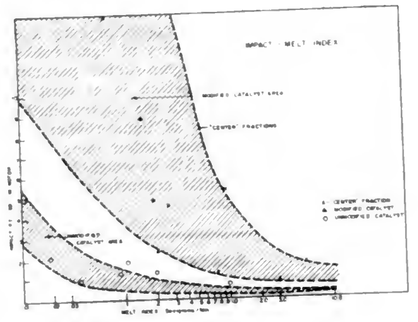
y is between about 10^{-6} and 10^{-1}.

3,163,611

METHOD OF PREPARING A MODIFIED ZIEGLER POLYMERIZATION CATALYST

Harry M. Andersen and William R. Richard, Jr., Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

Filed Nov. 7, 1957, Ser. No. 695,153
1 Claim. (Cl. 252—429)



The method of preparing a modified catalyst which comprises mixing triisobutyl aluminum with titanium tetrachloride and then adding isobutanol as modifier, the proportions being from 0.3 to 0.8 moles triisobutyl aluminum

and 0.1 to 1.5 moles isobutanol per mole of titanium tetrachloride.

3,163,612

METHOD FOR THE PRODUCTION OF A HYDROCARBON CONVERSION CATALYST

Erwin E. Meisinger, Elmhurst, and Ernest L. Pollitzer, Hinsdale, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 15, 1960, Ser. No. 42,987
5 Claims. (Cl. 252—438)

1. A method for the production of a hydrocarbon conversion catalyst which comprises treating a gamma-alumina support with an alkali metal nitrate, calcining the resultant promoted support at a temperature in the range of from about 500° to about 750° C., and thereafter impregnating said support with potassium amide to prepare the desired catalyst.

3,163,613

VANADIUM OXIDE - MOLYBDENUM OXIDE - COBALT OXIDE-ALKALI METAL HALIDE ON ALUMINA CATALYST COMPOSITION AND THE PREPARATION THEREOF

Ralph O. Kerr, Houston, Tex., and Wayne R. Decker, Moundsville, and Charles M. Dorsett, New Martinsville, W. Va., assignors, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Original application May 12, 1959, Ser. No. 812,577, now Patent No. 3,074,969, dated Jan. 22, 1963. Divided and this application Nov. 4, 1960, Ser. No. 71,116
3 Claims. (Cl. 252—441)

1. A catalyst composition comprising an alumina carrier impregnated with an oxide mixture of vanadium, molybdenum and cobalt and an alkali metal halide, the vanadium oxide component of said mixture being present in the predominant quantity by weight, the mole ratio of the metals to each other being vanadium 1 mole, molybdenum between .230 and .272 mole, cobalt between .07 and .108 mole and the alkali metal being between 0.014 and 0.042 mole.

3,163,614

METHOD OF PREPARING LIGNIN-RUBBER COPRECIPITATE AND PRODUCT

Mitchell S. Dimitri, Westwood, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 14, 1960, Ser. No. 68,631
9 Claims. (Cl. 260—17.5)

1. The improved method of preparing lignin-rubber coprecipitate which comprises coprecipitating a rubber latex with lignin to obtain a slurry of lignin-rubber particles, heating the slurry of lignin-rubber particles to a temperature above 170° F. which is at least 10° F. above the temperature at which the coprecipitation was conducted, adding the slurry of lignin-rubber particles after said heating to additional rubber latex containing rubber solids equal to at least 5% by weight of the rubber solids employed in the initial coprecipitation, and coagulating the additional latex.

3,163,615

AMIDE INTERPOLYMER CONTAINING UNSATURATED POLYESTER

Kazys Sekmakas, Chicago, Ill., assignor to DeSoto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 7, 1961, Ser. No. 115,330
13 Claims. (Cl. 260—22)

1. A non-gelled interpolymer of (A) from 4–45% by weight of an amide of a monoethylenically unsaturated carboxylic acid, (B) at least one other polymerizable monoethylenically unsaturated monomer copolymerizable with said amide, and (C) from 5–50% by weight of polyethylenically unsaturated polyester copolymerizable with said amide and said other monoethylenically unsaturated monomer, said unsaturated polyester having a viscosity in n-butanol at 80% solids in the range of from C to Z–6 measured on the Gardner-Holdt scale at 25° C., containing about 0.005 to 0.40 gram mol of ethylenically unsaturated component per 100 grams of polyester, and the unsaturation of said unsaturated polyester being selected from the group consisting of (1) alpha,beta-unsaturation; (2) beta,gamma-unsaturation; and (3) conjugated unsaturation, said interpolymer having amido hydrogen atoms replaced by the structure

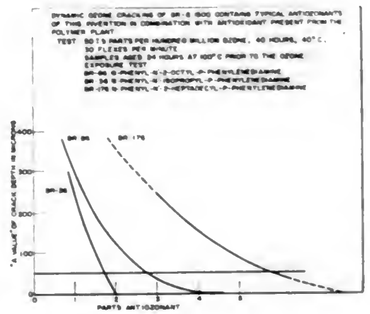
in which R is selected from the group consisting of hydrogen, furyl, and saturated lower aliphatic hydrocarbon radicals containing up to 10 carbon atoms, and R_1 is selected from the group consisting of hydrogen, and alkyl and alkoxy alkyl radicals containing up to 10 carbon atoms in the radical, said weight proportions being based on the total weight of said components (A), (B), and (C).

3,163,616

P-PHENYLENEDIAMINE STABILIZERS FOR ELASTOMERS AND COMPOSITIONS CONTAINING THE SAME

Eldon E. Stahly, Birmingham, Mich., assignor, by direct and mesne assignments, of three-fourths to Oliver W. Burke, Jr., Grosse Pointe, Mich., and one-fourth to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 31, 1956, Ser. No. 607,318
8 Claims. (Cl. 260—28.5)



1. The method of protecting from ozone attack under both static and dynamic conditions rubbery material selected from the class consisting of natural rubber, polybutadiene, polychloroprene, butadiene-styrene rubbery copolymer, butadiene-acrylonitrile rubbery copolymer, and blends of the foregoing, which consists essentially in incorporating into said rubbery material, per 100 parts by weight thereof, 2.25 to 7.5 parts by weight of substituted p-arylene diamine represented by the formula

R—NH—R'—NH—R''

wherein R is a phenyl radical, R' is a phenylene radical, and R'' is a radical selected from the class consisting of unsubstituted and phenyl-substituted straight chain and

branched chain secondary and tertiary alkyl radicals containing from 4 to 19 carbon atoms.

3,163,617

COMPOSITION FOR COATING FROZEN-FOOD CARTON BOARD

William H. J. Nussle, Jr., Broomall, Pa., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 4, 1962, Ser. No. 184,922
5 Claims. (Cl. 260—28.5)

1. A composition for coating frozen-food carton board consisting essentially of the following ingredients in weight percent based on the weight of the total composition:

Paraffin wax, M.P. 140° F. to 145° F.	12–16
Paraffin wax, M.P. 150° F. to 155° F.	40–50
Semi-microcrystalline wax, M.P. 153° F. to 166° F.	10–20
Polyethylenes, molecular weight range, 2,000 to 10,000	14–20
Terpene resin, M.P. about 100° C.	2.5–6.0
C_{18} amide	0.5–3.0

wherein the total quantity of wax does not exceed 80 weight percent, the terpene resin is polymerized pinenes, the major proportion of said pinenes comprising beta pinene, and the C_{18} amide is selected from the group consisting of oleamide and stearamide.

3,163,618

ADHESIVE COMPOSITION COMPRISING POLYVINYL ACETATE AND ALUMINUM SILICATE

David S. Nicol and Francis J. Shine, Richmond, Va., assignors to Colonial Chemical Corporation, Richmond, Va., a corporation of Virginia

No Drawing. Filed Oct. 20, 1960, Ser. No. 63,727
8 Claims. (Cl. 260—29.6)

5. A liquid adhesive comprising an aqueous dispersion of polyvinyl alcohol, aluminum silicate and powdered polyvinyl acetate, the proportions of polyvinyl alcohol, aluminum silicate and polyvinyl acetate, on a dry weight basis, being from 40 to 92 parts of polyvinyl alcohol, from 4 to 20 parts of aluminum silicate, and from 4 to 40 parts of polyvinyl acetate, the total parts of the named ingredients being 100 and the total solids content due to polyvinyl alcohol, aluminum silicate and polyvinyl acetate being about from 9 percent to 20 percent.

3,163,619

PROCESS FOR STABILIZING AND STORING AQUEOUS SOLUTIONS OF POLYACRYLAMIDE

George F. Sheats and William F. Linke, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 8, 1961, Ser. No. 94,144
10 Claims. (Cl. 260—29.6)

1. A process for stabilizing and storing aqueous solutions of polyacrylamide so as to inhibit viscosity degradation during storage comprising blending from about 0.1% to about 25% by weight of a non-solvent with an aqueous solution of polyacrylamide having a molecular weight of at least about 2 million and storing said solution while in the stabilized condition for a plurality of days, said solution having a solids content of polyacrylamide of between about 0.001% and 5% by weight, wherein said percentages are percentages by weight based on the total weight of said solution and wherein said non-solvent is at least partially soluble in water, is inert to said polymer and said polymer is substantially insoluble therein.

3,163,620

COMPOSITIONS CONTAINING POLYETHER-POLYTHIOETHERS AS PLASTICIZERS

Hanswilli von Brachel, Cologne-Sulz, Willi Wolff, Cologne-Mulheim, Hans Holtschmidt, Cologne-Stammheim, and Wilhelm Göbel, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 4, 1961, Ser. No. 100,529
Claims priority, application Germany Apr. 6, 1960
8 Claims. (Cl. 260—30.8)

1. As a new composition of matter, a polymer which is plasticized by the polyether-polythioether of the formula:

$$R_1—O—(CHR_2—CHR_3O)_m—(CHR_4—CHR_5—S—CHR_6—CHR_7O)_n(CHR_8—CHR_9—O)_pR_{10}$$

wherein R_1 and R_{10} each represents an alkyl radical containing from 1 to 22 carbon atoms; R_2 to R_9 each represent a member selected from the group consisting of a hydrogen atom and an alkyl radical containing from 1 to 12 carbon atoms and *m*, *n* and *p* are integers from 1 to 10, said polymer being a member selected from the group consisting of natural rubber, poly-cis-1,4-isoprene, polybutadiene, polychloroprene, a cellulose ester, a butadiene-styrene copolymer, a butadiene-acrylonitrile copolymer, and the homopolymers and copolymers of ethylene, propylene, vinyl chloride, vinylidene chloride, and styrene.

3,163,621

POLYAMIDES STABILIZED WITH STYRYL BENZENES OR STILBENES

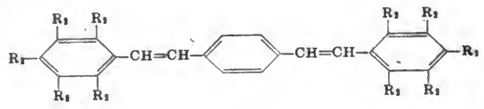
Walter Stilz and Horst Pommer, Ludwigshafen (Rhine), Franz Schmidt, Mannheim, and Hans Biczysko and Heinz Fessmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

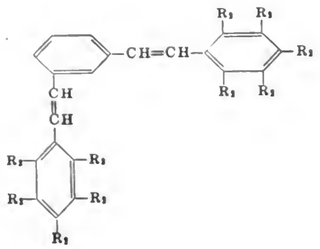
No Drawing. Filed Oct. 23, 1961, Ser. No. 147,030
Claims priority, application Germany, Oct. 26, 1960, B 59,875; Aug. 29, 1961, B 63,819
17 Claims. (Cl. 260—45.7)

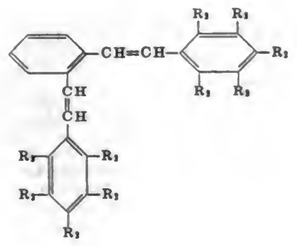
1. A composition of matter comprising a mixture of 99.99 to 95% by weight of a linear polyamide having recurring carbonamide groups in the molecule chain and being selected from the group consisting of diamine dicarboxylic acid polycondensation products and lactam polycondensation products and 0.01 to 5% by weight of a compound selected from the group consisting of

R—CH=CH—R_1

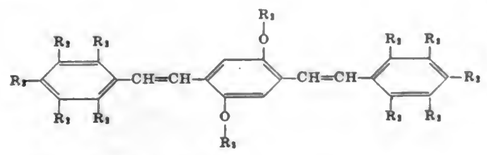
1,4,-bis(3',4'-methylenedioxy-β-cyanostyryl)-benzene.



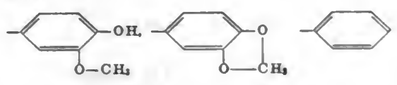




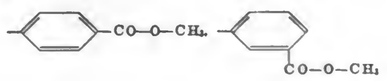
and



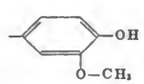
wherein R is a member selected from the group consisting of



wherein R_1 is a member selected from the group consisting of



and



wherein R_2 is a member selected from the group consisting of hydrogen, alkyl with 1 to 4 carbon atoms, cycloalkyl with 4 to 7 carbon atoms, benzyl; carboxyl, carboxyl esterified with butanol, amidated carboxyl, hydroxyl, alkoxyl with 1 to 4 carbon atoms, cycloalkoxyl with 4 to 7 carbon atoms, aralkoxyl with 7 to 10 carbon atoms, and alkylenedioxy with 1 to 4 carbon atoms, the oxygens being attached in ortho position to the benzene nucleus, with the proviso that each terminal benzene nuclei contain at least one R_2 group selected from the group consisting of hydroxyl, alkoxyl with 1 to 4 carbon atoms, cycloalkoxyl with 4 to 7 carbon atoms, aralkoxyl with 7 to 10 carbon atoms, and alkylenedioxy with 1 to 4 carbon atoms, the oxygens being attached in ortho position to the benzene nucleus; and wherein R_3 is an alkyl of 1 to 4 carbon atoms.

3,163,622
POLYCROTONALDEHYDE

Jerry N. Koral, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed June 27, 1961, Ser. No. 119,817
6 Claims. (Cl. 260—67)

4. A linear, vinyl homopolymer of crotonaldehyde having a molecular weight of at least about 1000.

3,163,623
SINGLE STEP PROCESS FOR PRODUCING ALKYLOLATED ACRYLAMIDE-CONTAINING INTERPOLYMERS

Kazys Sekmakas, Chicago, Robert E. Ansel, Berkeley, and Karolis Drunga, Chicago, Ill., assignors to DeSoto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 5, 1961, Ser. No. 100,804
14 Claims. (Cl. 260—72)

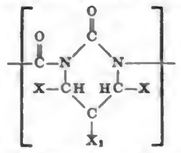
1. A method of producing heat-hardenable resinous, alkylolated acrylamide-containing interpolymer comprising forming an organic solvent solution comprising a mixture of polymerizable monoethylenically unsaturated monomers including an acrylamide, a compound providing aliphatic aldehyde, a free-radical generating polymerization catalyst, and at least 0.1% by weight, based on the total weight of monomers being copolymerized, of an alkaline catalyst, and maintaining said solution at elevated temperature to cause polymerization and simultaneous reaction of amido hydrogen atoms with the aldehyde contained in said solution.

3,163,624
CYCLIC POLYMERS FROM TRIMETHYLENE DIISOCYANATES

William B. Black and Wesley L. Miller, Raleigh, N.C., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 5, 1962, Ser. No. 200,062
18 Claims. (Cl. 260—77.5)

1. A linear polymer comprising regularly recurring structural units having the general formula:



wherein X is selected from the group consisting of hydrogen, alkyl radicals of from 1 to 10 carbon atoms and phenyl.

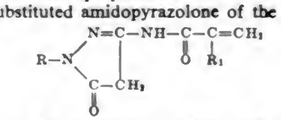
3,163,625
COLOR-FORMING MONOMERS AND POLYMERS OF ACRYLIC ACID AMIDES OF 3-AMINOPYRAZOLONE

John Charles Firestine, South River, and Jacob Quentin Umberger, Holmdel, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 13, 1960, Ser. No. 21,959
5 Claims. (Cl. 260—80.5)

1. An addition copolymer of

(*a*) a substituted amidopyrazolone of the formula:



wherein R is a benzene nucleus and R_1 is a member selected from the group consisting of hydrogen, and alkyl of 1–4 carbons, and at least one of the monomers:

(*b*) a normally non-gaseous, ethylenically unsaturated monomer selected from the group consisting of acrylic and methacrylic acid; styrene sulfonic acid and its salts; sodium vinyl sulfonate; vinyl pyridine and N-vinyl-2-pyrrolidone and their mineral acid and quaternary alkyl ammonium salts, and

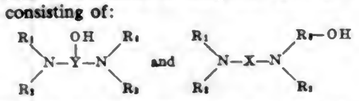
(*c*) a normally non-gaseous, ethylenically unsaturated monomer selected from the group consisting of styrene, acrylic and methacrylic amides and esters; vinyl ethyl ether and ureidoethyl vinyl ether.

3,163,626
CURING HALOGENATED ISOOLEFIN-MULTIOLEFIN COPOLYMERS

Leon S. Minckler, Jr., Metuchen, and Delmer L. Cottle, Highland Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 14, 1961, Ser. No. 102,917
15 Claims. (Cl. 260—85.3)

1. A composition comprising a halogenated rubbery copolymer having a viscosity average molecular weight of above 100,000 and prepared by copolymerizing a feed stock having a major proportion of a C_4 to C_8 isoolefin and a minor proportion of a C_4 to C_{14} multiolefin, said copolymer containing at least about 0.5 wt. % halogen but no more than about three combined atoms of halogen per double bond in the copolymer, and a minor proportion of a diamine-ol compound selected from the group consisting of:



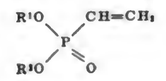
wherein Y is selected from the group consisting of C_3 to C_{20} alkylene, arylene, aralkylene, and alkarylene; X is selected from the group consisting of C_3 to C_{20} alkylene, arylene, aralkylene, and alkarylene; R_1, R_2, R_3, and R_4 are each selected from the group consisting of hydrogen, C_1 to C_{10} alkyl, aryl, aralkyl, and alkaryl; R_5 is selected from the group consisting of C_1 to C_{10} alkylene, arylene, aralkylene, and alkarylene; and R_2 and R_3 in the same molecule may be jointly alkylene; the hydroxyl group being attached to a carbon atom other than one directly attached to a nitrogen atom.

3,163,627
MODIFIED POLYESTER RESINS

John Kenneth Craver, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 6, 1957, Ser. No. 663,868
17 Claims. (Cl. 260—861)

1. A polymerizable composition of matter comprising from about 60 to 90 parts of (1) an unsaturated linear polyester obtained by the esterification of an alpha,beta-ethylenically unsaturated dicarboxylic acid and a saturated dihydric alcohol, said polyester having an acid number not greater than about 55, and correspondingly from about 40 to 10 parts of (2) a mixture of (A) a monomeric compound containing a $CH_2{=}C<$ group and having a boiling point of at least 60° C.; and from about 5 to 30%, based on the total weight of the polymerizable composition, of (B) a vinyl phosphonate containing at least one chlorine atom and having the structural formula:



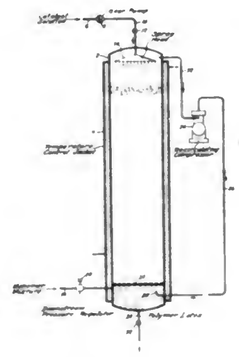
wherein R^1 and R^2 each represent the same chlorinated alkyl radicals containing from 2 to 4 carbon atoms; with the proviso that the ratio of said (A) to said (B) shall be not less than about 1:2 respectively.

3,163,628
POLYMERIZATION PROCESS FOR UNSATURATED FLUOROOLEFINS

Archibald N. Bolstad, Afton, Minn., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 475,385, Dec. 15, 1954. This application Feb. 28, 1961, Ser. No. 92,388
7 Claims. (Cl. 260—87.5)

1. A continuous copolymerization process comprising continuously charging a mixture of (1) an ethylenically unsaturated fluoroolefinic monomer having not more than about 8 carbon atoms and having at least one fluorine atom attached to a carbon atom of the ethylenically unsaturated monomer nucleus, and (2) a different ethylenically unsaturated copolymerizable monomer having not more than about 8 carbon atoms into the polymerization zone at a rate sufficient to maintain a constant pressure



in the polymerization zone, maintaining said polymerization zone at a preselected temperature between about 0° C. and about 100° C., the pressure in the zone being below the saturation pressure of both monomers at said preselected temperature, introducing an aqueous free radical catalyst solution into said polymerization zone, copolymerizing the monomers charged to said polymerization zone, and removing the copolymer product from said polymerization zone.

3,163,629
PROCESS OF OLEFIN POLYMERIZATION WITH A CATALYST CONTAINING AN ALLYL TIN COMPOUND, AN ORGANOALUMINUM COMPOUND AND TITANIUM TETRAHALIDE

Tsi T. Li, Milltown, N.J., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1960, Ser. No. 43,742
22 Claims. (Cl. 260—93.7)

22. The process for polymerizing olefins which comprises introducing at least one olefin into an inert hydrocarbon solvent containing, as a catalyst composition, the product obtained on admixing in an inert hydrocarbon solvent (i) the reaction product of an allyltin compound having the formula $A_nR_aSn_{4-(n+a)}$ wherein A is the allyl group, R is a hydrocarbon group selected from the class consisting of alkyls having 1 to 8 carbon atoms and monocyclic groups, X is selected from the group consisting of chloride and bromide, *n* is a whole number from 1 to 4, *a* is a whole number from 0 to 3, and $n+a$ equal 1–4; and an organoaluminum compound having the formula R'_bAlX_{3-b} wherein R' is an alkyl group having 1 to 8 carbon atoms and *b* is a whole number from 1 to 3, with (ii) a titanium compound selected from the group consisting of titanium tetrachloride, titanium tetrabromide, titanium esters, and titanium trichloride, in a ratio of 0.3 to 10 moles of the titanium compound per mole of the aluminum-tin reaction product.

3,163,630
POLYMERIZATION OF CONJUGATED DIOLEFINES

Gottfried Pampus and Heinz Grone, Leverkusen, and Josef Witte, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 17, 1960, Ser. No. 69,843
Claims priority, application Germany Nov. 25, 1959
4 Claims. (Cl. 260—94.2)

1. A process of polymerizing a conjugated diolefin having up to 8 carbon atoms which comprises contacting said conjugated diolefin with a calcium-containing catalyst of the formula:

$$Me_n[Ca_nR_{1_n}R_2X_n]\cdot A_m$$

wherein Me is a metal selected from the group consisting of lithium, sodium and potassium, R_1 and R_2 are selected from the group consisting of a saturated acyclic hydrocarbon radical, a saturated cyclic hydrocarbon radical, an aromatic hydrocarbon radical, and combinations of these radicals, X is a halogen, A is selected from the group consisting of an alkali metal halide and an alkaline earth metal halide, *n* is an integer from 1 to 4 and M is an integer from 0 to 3, said contacting being effected at a temperature of from −5° C. to +90° C. in the presence of an inert hydrocarbon diluent, and recovering the formed diolefin polymer.

3,163,631
PROCESS FOR THE PRODUCTION OF HALOGENATED OLEFIN POLYMERS AND COPOLYMERS

Jacques Schwander and Jean Fouré, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a Belgian company

No Drawing. Filed Jan. 24, 1961, Ser. No. 84,508
Claims priority, application Netherlands, Feb. 12, 1960, 248,355
5 Claims. (Cl. 260—94.9)

1. A two-stage process for the chlorination of a polymeric olefin selected from the group consisting of polymers and copolymers formed exclusively from acyclic alpha mono-olefins to produce a uniformly-chlorinated pliant and stable chlorinated polymeric olefin, which comprises treating said polymeric olefin in a first chlorination step by subjecting said polymeric olefin in a finely-divided state to the action of gaseous chlorine while in suspension in said gaseous chlorine, at a temperature below the temperature at which the crystallinity of the polymeric olefin begins to disappear, and subjecting the resultant partially-chlorinated polymeric olefin to a second chlorination step by treating the partially-chlorinated polymeric olefin in finely-divided form with gaseous chlorine while in suspension in said gaseous chlorine, in the presence of a quaternary ammonium salt selected from the group consisting of triethanolamine-lauryl sulphate, stearamidopropyl-dimethyl-B-hydroxyethyl-ammonium dihydrogen phosphate, dodecyl-trimethyl-ammonium chloride, octadecyl-trimethyl-ammonium chloride, and dimethyl-benzyl-lauryl-ammonium chloride at a temperature above the temperature at which the crystallinity of the polymeric olefin begins to disappear.

3,163,632
PROCESS FOR THE SEPARATION OF N-PARAFFINS

Arnold M. Leas and Edward A. Thompson, both of Ashland, Ky., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed June 2, 1961, Ser. No. 114,387
5 Claims. (Cl. 260—96.5)

1. A fixed bed process for separating n-paraffins having approximately 11 to 16 carbon atoms per molecule from a hydrocarbon stock containing the same, said process comprising continuously maintaining a fixed bed of particle-form urea while carrying out the steps of contacting said stock with said fixed bed of urea in the approximate ratio of three parts urea to each part of said n-paraffins present in said stock, at a temperature of about 30–120° F., in the presence of about three parts acetone to each part of said stock and an amount of pentane sufficient to effect thorough wetting contact between said urea and said stock, whereby said n-paraffins form hard, crystalline adducts with said urea in said bed, purging said acetone, pentane and the remainder of unreacted stock from said bed and adducts in said bed with a low boiling hydrocarbon gas, washing said adducts in said bed with pentane and thereafter purging the pentane from said adducts with a low boiling hydrocarbon gas, regenerating said fixed bed of urea in situ by circulating preheated pentane through said bed at about 200° F. and at pressure sufficient to maintain said pentane in the liquid phase, whereby said adducts are decomposed to liberate particle-form urea and said n-paraffins, said n-paraffins being dissolved by said pentane and removed therewith from said bed, and recovering said n-paraffins from said pentane.

3,163,633
METHOD FOR THE MANUFACTURE OF POLYFUNCTIONAL DIAZONIUM HALIDES

Hartmut Steppan, Wiesbaden-Dotzheim, and August Rebenstock and Wilhelm Neugebauer, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed July 18, 1961, Ser. No. 124,786
Claims priority, application Germany, Jan. 25, 1961, K 42,719
4 Claims. (Cl. 260—141)

1. A process for the preparation of a polyfunctional diazonium halide which comprises condensing a diphenylamine-4-diazonium salt selected from the group consisting of a halide and a sulfate with formaldehyde in solution in sulfuric acid, adding a solution of a barium halide to the reaction solution to convert sulfuric acid and sulfate ions to metal sulfates of low solubility, separating precipitated sulfates, and recovering the condensation product from the reaction solution.

3,163,634
DYESTUFFS CONTAINING METAL IN COMPLEX COMBINATION

Karl F. Conrad, Eggertsville, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 19, 1959, Ser. No. 854,025
3 Claims. (Cl. 260—145)

1. Metallized azo dyestuffs selected from the group consisting of chromium-containing and cobalt-containing metal complex derivatives of a mixture of at least 25 mol percent of:

(1) a monoazo dyestuff of the benzene-azo-naphthalene series in which the benzene and naphthalene components each contain a hydroxyl radical in ortho position to the azo radical, the benzene component further contains one to two substituents of the group consisting of nitro, chlorine, lower alkyl and lower alkoxy radicals as sole additional substituents, and the naphthalene component contains a lower alkoxy radical in para-position to the hydroxyl group as sole additional substituent,

and the remainder of

(2) another metallizable monoazo dyestuff selected from the group consisting of:

1-amino - 2 - hydroxy-6-nitronaphthalene-4-sulfonic acid→2-naphthol
4-sulfamido - 2 - aminophenol→1 - (3'-chloro)-phenyl-3-methyl-5-pyrazolone
4-nitro-2-aminophenol→2-naphthol
5-chloro-2-aminophenol→5,8-dichloro-1-naphthol
1-amino-2-naphthol - 6 - sulfonamide→acetoacetanilide
4-nitro-6-chloro-2-aminophenol→1-naphthol
2 - amino-1-hydroxy - 5 - sulfonamido-benzene →2,3-hydroxy-naphthoic anilide

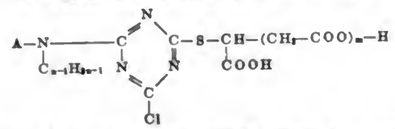
said metal being present in an amount equal to about one atom per one to two molecules of said mixture of monoazo dyestuffs.

3,163,635
WATER-SOLUBLE AZO DYESTUFFS

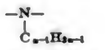
Henri Riat, Arlesheim, René de Montmollin, Neu-Allschwil, and Eugen Johann Koller, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 28, 1958, Ser. No. 751,147
Claims priority, application Switzerland, Aug. 22, 1957, 49,698/57
7 Claims. (Cl. 260—153)

1. An organic water-soluble dyestuff of the formula



wherein A is an organic azo dyestuff residue, a ring carbon atom of which is directly bonded to the nitrogen atom of the



group, *m* is one of the numerals 0 and 1, and *n* is one of the numerals 1 and 2, said dyestuff containing a total of at least two and at most five acid water-solubilizing groups, at least one of which is a sulfonic acid group.

3,163,636
GENUINE ESCIN FROM HORSE CHESTNUT EXTRACTS, AND PROCESS OF PRODUCING SAME

Josef Wagner and Joachim Bosse, Munich, Germany, assignors to Chemisch-Pharmazeutische Fabrik Adolf Klinge & Co., Munich, Germany, a corporation of Germany

No Drawing. Filed June 13, 1961, Ser. No. 116,676
Claims priority, application Germany, June 14, 1960, C 21,672
8 Claims. (Cl. 260—210.5)

1. In a process of producing the substantially pure genuine horse chestnut saponin escin, the steps which comprise mixing an aqueous horse chestnut extract with cholesterol, while heating, until the aqueous solution is substantially free of hemolytic activity, separating the resulting saponin-cholesterol precipitate from the solution, and exhaustively extracting the precipitate with ether, until free of cholesterol.

3,163,637
ELUTION OF VITAMIN B_{12} FROM CARBOXYLIC RESINS WITH AQUEOUS ALKALIES

Louis Chalet, Springfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed July 13, 1961, Ser. No. 123,635
3 Claims. (Cl. 260—211.5)

1. In the process of recovering vitamin B_{12}-active material from impure aqueous solutions thereof, the step that comprises contacting a resin-adsorborate comprising a cation-exchange, divinyl benzene-methacrylic acid copolymer resin, said resin being substantially completely in its hydrogen form and having vitamin B_{12}-active material adsorbed thereon, said vitamin B_{12}-active material having been adsorbed from an aqueous solution thereof having a pH within the range of about 2–3, with an aqueous alkaline solution that is free of organic solvents, thereby converting said resin to the salt form and eluting the vitamin B_{12}-active material therefrom.

3,163,638
EXTRACTION OF RIBONUCLEIC ACID

Manji Miwa and Tatsuro Kagami, Inuyama, Japan, assignors to Toyo Boseki Kabushiki Kaisha, and Takeda Chemical Industries Ltd., Osaka, Japan

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,392
Claims priority, application Japan, Dec. 28, 1960, 35/51,110
5 Claims. (Cl. 260—211.5)

1. A process for extracting ribonucleic acid from yeast, which comprises subjecting an aqueous yeast slurry having a pH of from 4 to 9 and containing about 0.2 to 5% solid matter present in waste sulfite liquor and from 3 to 15% yeast to a temperature of from 90° C. to 120° C. whereby ribonucleic acid is extracted from the yeast, separating the liquid from the yeast, and recovering the extracted ribonucleic acid contained in the separated liquid.

3,163,639
4-THIO-2'-DEOXYURIDINE

George H. Hitchings, Yonkers, Gertrude B. Elion, Bronxville, and Samuel Bieber, Spring Valley, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Jan. 22, 1963, Ser. No. 253,051
Claims priority, application Great Britain Jan. 24, 1962
1 Claim. (Cl. 260—211.5)

4-thio-2'-deoxyuridine.

3,163,640
PROCESS FOR THE PREPARATION OF HEXAKIS (1-AZIRIDINYL) PHOSPHONITRILE

Rudi F. W. Rätz, Hamden, and Miriam J. Gruber, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,566
3 Claims. (Cl. 260—239)

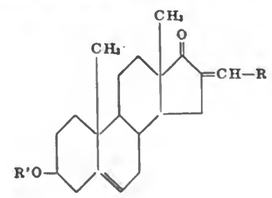
1. A process for preparing hexakis(1-aziridinyl)phosphonitrile which comprises reacting trimeric phosphonitrilic chloride with at least a stoichiometric amount of ethylenimine in chloroform solution, said chloroform solution containing at least six moles of ammonia based on each mole of trimeric phosphonitrilic chloride reactant.

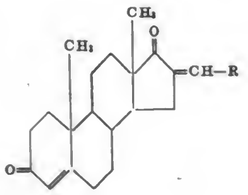
3,163,641
16-SUBSTITUTED ANDROSTANES AND ANDROSTENES

Robert G. Christiansen, Schodack, Raymond O. Clinton, East Greenbush, and John W. Dean, Sand Lake, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

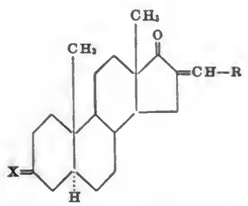
No Drawing. Filed Nov. 15, 1962, Ser. No. 238,029
19 Claims. (Cl. 260—239.5)

1. A compound selected from the group consisting of





and



wherein R is a member of the group consisting of pyridyl, thienyl, furyl, phenylvinyl and phenyl substituted by from one to three substituents selected from the group consisting of halogen, di-lower-alkylamino, lower-alkoxy and benzyloxy; R' is a member of the group consisting of hydrogen and Acyl; and X is a member of the group consisting of O, (H)(OH) and (H)(OAcyl); Acyl in each instance being a carboxylic acid acyl group having from one to ten carbon atoms and a molecular weight less than 200; and acid-addition and quaternary ammonium salts of basic members thereof.

3,163,642

17α-THIENYL- AND 17α-THIAZOLYL 3-LOWER ALKOXY-1,3,5(10)-ESTRATRIEN-17β-OLS

Taichiro Komeno, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,945
Claims priority, application Japan Apr. 26, 1962
4 Claims. (Cl. 260—239.5)

1. 3-lower alkoxy-17α-(2-thiazolyl)-1,3,5(10)-estratrien-17β-ol.

3. 3-lower alkoxy-17α-(2-thienyl)-1,3,5(10)-estratrien-17β-ol.

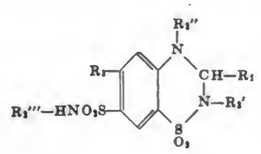
3,163,643

DERIVATIVES OF 3,4-DIHYDRO-2H-1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE

George de Stevens, New Providence, and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Apr. 17, 1959, Ser. No. 807,028
3 Claims. (Cl. 260—243)

1. A member of the group consisting of 3,4-dihydro-2H-1,2,4-benzothiadiazine-1,1-dioxides of the formula:



in which R_1 represents lower alkanoyl-lower alkyl, each of the radicals R_2', R_2'' and R_2''' represents a member of the group consisting of hydrogen and lower alkyl, and R_3 stands for a member of the group consisting of lower alkyl, chlorine and bromine, and alkali metal salts thereof.

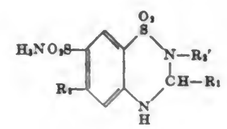
3,163,644

DERIVATIVES OF 2-H-1,2,4-BENZO THIADIAZINE-1,1-DIOXIDE

George de Stevens, New Providence, and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Oct. 16, 1959, Ser. No. 846,779
40 Claims. (Cl. 260—243)

1. A member of the group consisting of 3,4-dihydro-2H-1,2,4-benzothiadiazine-1,1-dioxides of the formula:



in which R_1 represents a member of the group consisting of hydrogen, lower alkyl, lower alkyl substituted by halogen, lower alkyl substituted by lower alkoxy, lower alkyl substituted by lower alkyl-mercapto, lower alkyl substituted by phenyl-lower alkyl-mercapto, lower alkenyl, cycloalkyl containing from three to seven ring carbon atoms and phenyl-lower alkyl, R_2' stands for a member of the group consisting of lower alkyl, allylic lower alkenyl and phenyl-lower alkyl, and R_3 represents a member of the group consisting of halogen and trifluoromethyl, and alkali metal salts thereof.

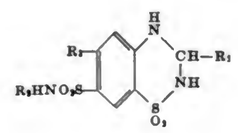
3,163,645

DERIVATIVES OF 3,4-DIHYDRO-2-H-[1,2,4]-BENZOTHIADIAZINE-1,1-DIOXIDES

George de Stevens and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,132
43 Claims. (Cl. 260—243)

1. A member selected from the group consisting of a 3,4 - dihydro-2-H-[1,2,4]-benzothiadiazine-1,1-dioxide of the formula.



in which R_1 is a member selected from the group consisting of hydrogen, lower aliphatic hydrocarbon, halogen-substituted lower aliphatic hydrocarbon, lower alkoxy substitiuted lower aliphatic hydrocarbon, monocyclic carbocyclic aryl, bicyclic carbocyclic aryl, monocyclic carbocyclic aryl-lower alkyl, bicyclic carbocyclic aryl-lower alkyl, and said aryl substituents substituted by a member selected from the group consisting of halogen, lower alkyl, hydroxy, lower alkoxy, lower alkyl-mercapto, sulfamyl and di-lower alkyl amino, furyl, thenyl, thienyl and pyridyl, R_2 is a member selected from the group consisting of hydrogen and lower alkyl and R_3 is a member selected from the group consisting of halogen, lower alkyl, amino, nitro and lower alkoxy, and a therapeutically useful alkali metal salt thereof.

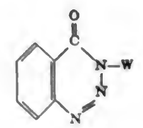
3,163,646

3-AMINOBENZOTRIAZINONES-(4)

Heinz Herlinger, Cologne-Flittard, Siegfried Petersen, Leverkusen, Ernst Tietze, Tubingen, and Friedrich Hoffmeister and Wolfgang Wirth, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 11, 1961, Ser. No. 109,239
Claims priority, application Germany, May 14, 1960, F 31,236
5 Claims. (Cl. 260—247.2)

1. A chemical compound of the formula:



wherein W is a radical substituent selected from the group consisting of dialkylamino, wherein each of the alkyl substituents contains up to 2 carbon atoms, and morpholino, thiomorpholino, piperidino, and hexamethylene imino.

2. The chemical compound, 3-N-morpholino-benzotriazinone-(4).

3,163,647

VINYL s-TRIAZINES, METHOD OF PREPARING THE SAME AND POLYMERS DERIVED THEREFROM

Frederic C. Schaefer, Darien, and Joseph J. Pellon, New Canaan, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Nov. 10, 1960, Ser. No. 68,368
6 Claims. (Cl. 260—248)

1. 2,4-dimethyl-6-vinyl-s-triazine.

6. A compound of the structural formula



in which R is vinyl and R' is selected from the group consisting of methyl and halogen substituted lower alkyl.

3,163,648

PREPARATION OF MELAMINE

Franz Kaess, Traunstein, Leo Reitter, Neu-Schalchen, and Kurt Scheinost, Tacherting, Germany, assignors to Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft, Trostberg, Germany

No Drawing. Filed June 14, 1961, Ser. No. 129,923
Claims priority, application Germany June 14, 1960
5 Claims. (Cl. 260—249.7)

1. A method of preparing melamine comprising mixing a member of the group consisting of urea and solid thermal decomposition products thereof with an active alumina catalyst having an inner surface of at least about 200 $m.^2/g.$ and containing ions selected from the group consisting of phosphate, borate, arsenate, and sulfate, heating the mixture under substantially normal pressure at a temperature of 200 to 450° C. in ammonia, and collecting the sublimed melamine.

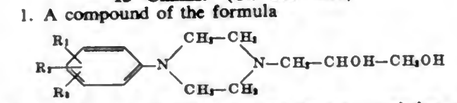
3,163,649

SUBSTITUTED PHENYL-PIPERAZINE COMPOUNDS

Henri Morren, Forest-Brussels, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven), S.A., Brussels, Belgium, a corporation of Belgium

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,549
Claims priority, application Belgium, Mar. 16, 1961, 478,601, Patent 601,394; Feb. 21, 1962, 489,964
15 Claims. (Cl. 260—268)

1. A compound of the formula



wherein R_1 is selected from the group consisting of H, Cl, lower alkyl and lower alkoxy, and R_2 and R_3 are independently selected from the group consisting of H, lower alkyl and lower alkoxy.

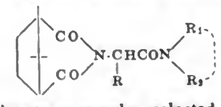
3,163,650

ALPHA-LOWER ALKYL, ALPHA CAMPHORIMIDO ACETAMIDES

Torizo Takahashi and Hajime Fujimura, Sakyo-ku, Kyoto-shi, and Yoshio Hamashima, Atsumi-cho, Atsumi-gun, Aichi-ken, Japan, assignors to Chugai Seiyaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,586
Claims priority, application Japan, Mar. 8, 1960, 7,092/60; June 16, 1960, 27,892/60, 27,893/60; July 7, 1960, 30,428/60, 30,429/60, 30,430/60
7 Claims. (Cl. 260—281)

1. A camphor imide selected from the group of camphor imides having the following Formula I:



wherein R designates a member selected from the group consisting of hydrogen and lower alkyl; R_1 and R_2 designate a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl and phenyl lower alkyl; and wherein R_1 and R_2, together with the nitrogen atom, is a member selected from the group consisting of pyrrolidino, piperidino, 2-methyl-piperidino and morpholino.

3,163,651

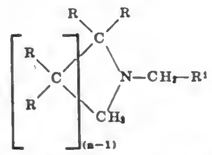
PROCESS FOR PREPARING HETEROCYCLIC TERTIARY AMINES

Augusto Segre and René Viterbo, Naples, Italy, assignors to S.p.A. Farmochimica Cutolo-Calosi, Naples, Italy, a company of Italy

No Drawing. Filed May 23, 1961, Ser. No. 111,903
Claims priority, application Italy, Oct. 15, 1957, 14,871/57, 14,875/57
12 Claims. (Cl. 260—293)

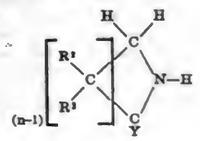
2. The method described in claim 11, wherein the heterocyclic compound is α-piperidone and the ester is benzyl benzoate.

11. Process for producing a tertiary amine of the formula



wherein *n* is an integer from 1 to 4, each R is a member selected from the group consisting of H and lower alkyl, and R^1 is a member selected from the group con-

sisting of lower alkyl, cycloalkyl, and monnuclear aromatic hydrocarbon, which comprises mixing a heterocyclic compound of the formula



wherein n is an integer of from 1 to 4, each R^2 is a member selected from the group consisting of H and lower alkyl, and CY is a member selected from the group consisting of CH_2 and C=O; with (*a*) an ester selected from the group consisting of lower alkyl and cycloalkyl esters of lower alkanoic acids, cycoalkanoic acids, and mononuclear aromatic hydrocarbon carboxylic acids, (*b*) lithium aluminum hydride and (*c*) inert organic solvent at a temperature of from 20° to 40° C.

3,163,652
PRODUCTION OF PIPERIDINE AND SUBSTITUTED PIPERIDINES FROM TETRAHYDROFURFURYL ALCOHOL

Donald G. Manly, Barrington, Joseph P. O'Halloran, Cary, and Fred J. Rice, Jr., Carpentersville, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,121
12 Claims. (Cl. 260—293.2)

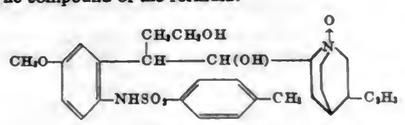
1. A process for producing piperidine and N-substituted derivatives thereof which comprises contacting tetrahydrofurfuryl alcohol in vapor phase with ammonia and hydrogen at elevated temperatures in the presence of a nickel catalyst which has been reduced at a temperature below about 450° C., reoxidized by passing a gas containing free oxygen over the reduced catalyst, and again reduced by passing a gas thereover containing free hydrogen at a temperature below about 250° C.

3,163,653
4 - (3 - ETHYLQUINUCLIDIN - 8 - YL)-4-HYDROXY-3 - (2 - TOLUENESULFONAMIDO - 5 - METHOXYPHENYL)-BUTANOL-N-OXIDE

Eiji Ochiai, 72 Myogadani-cho, Bunkyo-ku, Tokyo, Japan, and Ryonosuke Kido, 1679 Kamikeda-cho, Ikeda-shi, Osaka Prefecture, Japan

No Drawing. Original application Sept. 21, 1962, Ser. No. 225,386. Divided and this application July 29, 1963, Ser. No. 301,692
1 Claim. (Cl. 260—293.4)

The compound of the formula:



3,163,654
PYRIDINE DERIVATIVES AND THEIR PREPARATION (N - TERTIARY AMINOALKYL - N - ACYL)-AMINO PYRIDINES

Rudolf Hiltmann, Hartmund Wollweber, Friedrich Hoffmeister, and Wolfgang Wirth, Wuppertal-Elberfeld, and Hans-Gunther Kroneberg, Haan, Rhineland, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,312
Claims priority, application Germany Apr. 13, 1961
7 Claims. (Cl. 260—294)

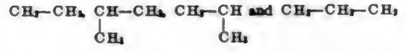
2. N-acetyl-2-(1-piperidino-isopropyl)-aminopyridine.

7. A compound selected from the group consisting of an acylaminopyridine and its pharmaceutically acceptable nontoxic acid salts, said acylaminopyridine having the formula:



in which

R is selected from the group consisting of



R' is selected from the group consisting of methyl, ethyl, benzyl and phenyl ethyl;

R'' is selected from the group consisting of methyl and ethyl;

R' and R'' together with the adjacent nitrogen atom form a member selected from the group consisting of pyrrolidino and piperidino; and

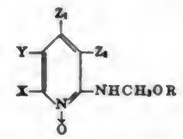
R''' is selected from the group consisting of acetyl, propionyl α-methylbutyryl, methoxy acetyl and ethoxy acetyl.

3,163,655
METHYLOLATED-2-AMINOPYRIDINE 1-OXIDES

Donald Victor Maier, Charlotte, N.C., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 27, 1961, Ser. No. 162,592
9 Claims. (Cl. 260—296)

1. 2-methylolaminopyridine 1-oxides of the formula:



wherein X represents a substituent selected from the group consisting of hydrogen, amino, lower alkyl, methylolamino and lower alkoxymethylamino; Y represents a substituent selected from the group consisting of hydrogen, lower alkyl or halogen; Z_1 and Z_2 are substituents selected from the group consisting of hydrogen and lower alkyl and R is a substituent selected from the group consisting of hydrogen and lower alkyl.

3,163,656
FLUOROSULTONES AND SULFITES, AND THE PREPARATION OF THE LATTER

John Lynde Anderson, Northwood, and David C. England, Holly Oak, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 9, 1955, Ser. No. 552,224
5 Claims. (Cl. 260—327)

4. 4,4,5,5-tetrafluoro-2-oxo-1,3,2-dioxathiolane.

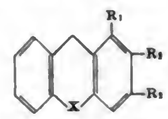
3,163,657
PROCESS FOR THE OXIDATION OF PARTIALLY HYDROGENATED POLYCYCLIC AROMATIC AND HETEROCYCLIC COMPOUNDS

Marcus S. Morgan, Mount Lebanon Township, Allegheny County, Albert W. Simon, White Oak Borough, and Myron H. Wilt, Monroeville Borough, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

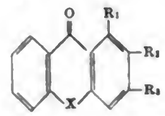
No Drawing. Filed June 13, 1962, Ser. No. 202,069
12 Claims. (Cl. 260—335)

1. A process for the oxidation of partially hydrogenated

polycyclic aromatic and heterocyclic compounds having the structure:



where when R_1, R_2 and R_3 are hydrogen, then X is chosen from the group consisting of CH_2, C=O and O, when R_1 and R_2 are chosen from the group consisting of CH_2 and hydrogen and R_3 is hydrogen then X is CH_2, and when R_1 is hydrogen and R_2 and R_3 are part of a benzo-linkage, then X is CH_2, comprising dissolving said compound in a solvent favorable to carbanion formation, containing a catalyst chosen from the group consisting of benzyltrimethylammonium hydroxide and benzyltrimethylammonium methoxide, contacting the solution with an acid-free, oxygen-containing gas and recovering a product having the structure:



where when R_1, R_2 and R_3 are hydrogen, then X is chosen from the group consisting of C=O and O, when R_1 and R_2 are chosen from the group consisting of CH_2 and hydrogen and R_3 is hydrogen then X is C=O, and when R_1 is hydrogen and R_2 and R_3 are part of a benzo-linkage, then X is C=O.

3,163,658
PROCESS FOR PREPARING ROSENOXYD AND ISOMERS THEREOF

Emile H. Eschinasi, Montclair, and Mary Lou Cotter, East Orange, N.J., assignors to The Givaudan Corporation, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,521
6 Claims. (Cl. 260—345.1)

1. The process for preparing a mixture comprising Rosenoxyd and isomers, which comprises heating 3, 7-dimethyloctane-1,6,7-triol with an acidic dehydration and cyclization catalyst selected from the group consisting of phosphoric acid, p-toluene sulfonic acid, sulfuric acid (40–70% concentration), alkali bisulfates, boron oxides and cupric chlorides at an elevated temperature.

3,163,659
PROCESS FOR THE MANUFACTURE OF 4,5-DICHLORO- AND 4,5-DIBROMO-NAPHTHALENE-1,8-DICARBOXYLIC ACIDS AND THEIR ANHYDRIDES

Heinrich Sieber, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 16, 1963, Ser. No. 273,286
Claims priority, application Germany, Apr. 19, 1962, F 36,599
2 Claims. (Cl. 260—345.2)

1. A process for preparing a member selected from the group consisting of 4,5-dichloro- and 4,5-dibromo-naphthalene-1,8-dicarboxylic anhydride, which comprises dissolving 1,4,5,8-naphthalene-tetracarboxylic acid in water with the addition of an alkaline reacting agent selected from the group consisting of alkali metal hydroxides, alkali metal carbonates, alkali metal acetates and alkali metal phosphates and reacting the solution so obtained within a pH-range between 4 and 6.5 at a temperature between 10° and 70° C. with a halogenating agent selected from the group consisting of chlorine, bromine, sodium hypochlorite and N-bromsuccinimide.

3,163,660
PURIFICATION OF 2,5-DIHYDROFURAN

Max Strohmeyer, Ludwigshafen (Rhine), Germany, and Herbert Friederich, Lake Jackson, Tex., assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,052
Claims priority, application Germany, Mar. 30, 1961, B 61,968
10 Claims. (Cl. 260—346.1)

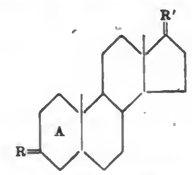
1. A process for purifying 2,5-dihydrofuran obtained by the catalytic dehydration of butene-(2)-diol-(1,4) which comprises heating said 2,5-dihydrofuran in an aqueous mixture having a pH value of from 0 to 6.5 to a temperature between 40° and 300° C. and recovering pure 2,5-dihydrofuran by distilling said mixture.

3,163,661
GEM-DIFLUOROSTEROIDS OF THE PREGNANE AND ANDROSTANE SERIES

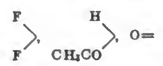
John S. Tadanier, Chicago, and John Wayne Cole, Deerfield, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 5, 1960, Ser. No. 60,558
10 Claims. (Cl. 260—397.3)

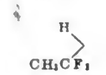
1. Gem-difluorosteroids of the formula



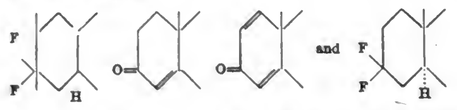
wherein R' is selected from the group consisting of



and



and wherein the A ring has a structure selected from the group consisting of



and wherein at least one of the radicals R and R' must include fluorine.

2. 17,17-difluoroandrosta-1,4-dien-3-one.

3,163,662
OXIDATION OF 19-HYDROXY-STEROIDS

Johannes Kloosterman, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,653
Claims priority, application Netherlands, Sept. 19, 1962, 283,418
1 Claim. (Cl. 260—397.3)

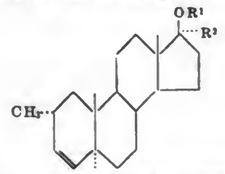
Method for the preparation of a 10-formyl-steroid selected from the group consisting of the androstane and pregnane series comprising oxidizing a 19-hydroxy-steroid selected from the group consisting of the androstane and pregnane series with chromium trioxide in the presence of a solvent and in the absence of oxygen.

3,163,663
2α-METHYL-Δ³-ANDROSTENE-17-HYDROCARBON DERIVATIVES

Alexander D. Cross and Albert Bowers, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,984
7 Claims. (Cl. 260—397.5)

7. A compound of the following formula:



wherein R^2 is a member of the group consisting of lower alkyl, lower alkenyl and lower alkynyl and R^1 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,163,664
21-HEMI-α,β-DIALKYLSUCCINATES OF CORTICOIDS

Erwin S. Gutsell, Jr., Muskegon, and Barney J. Magerlein, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,248
3 Claims. (Cl. 260—397.45)

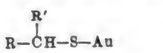
1. 11β,17α,21-trihydroxy-4-pregnene-3,20 - dione 21-hemi-α,β-dialkylsuccinate.

3,163,665
GOLD SECONDARY MERCAPTIDES

Howard M. Fitch, Summit, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,824
17 Claims. (Cl. 260—430)

1. A non-terpenoid gold secondary mercaptide having the formula



wherein R and R' are selected from the group consisting of alkyl, cycloalkyl, aryl, and aralkyl.

3,163,666
MANUFACTURE OF 4,4'-METHYLENE-BIS-(PHENYL ISOCYANATE)

Voldemar Kirss, Buffalo, and Richard G. Spaunburgh, Elma, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 15, 1960, Ser. No. 42,966
1 Claim. (Cl. 260—453)

A process for the manufacture of 4,4'-methylene-bis-(phenyl isocyanate) which comprises admixing formaldehyde and aniline in the proportion of 2–4 moles aniline per mole of formaldehyde, condensing the formaldehyde and aniline by heating at a temperature of 70° to 100° C. in the presence of hydrochloric acid to produce crude 4,4'-methylenedianiline, adding an aqueous alkaline solution to the crude 4,4'-methylenedianiline to neutralize the hydrochloric acid therein to form a lower aqueous layer containing the salt resulting from the neutralization and an upper organic layer containing 4,4'-methylenedianiline, heavier residual constituents having a boiling point higher than 4,4'-methylenedianiline and unreacted aniline and moisture more volatile than 4,4'-methylenedianiline, separating the lower aqueous layer from the upper organic layer, stripping the upper organic layer to remove only the more volatile constituents leaving as residue a stripped crude product containing at least 75% 4,4'-methylenedianiline and heavier residual constituents, said stripped crude product having a setting point with the range of 70° C. to 85° C. and containing less than about 1% aniline, admixing an inert solvent with said stripped crude product having a setting point within the range 70° C. to 85° C., introducing phosgene into the mixture of inert solvent and stripped crude product and heating to a temperature within the range of about 100° C. to 200° C. to effect reaction of 4,4'-methylenedianiline in the stripped crude product with the phosgene to produce 4,4'-methylene-bis-(phenyl isocyanate), separating the inert solvent from the resultant reaction products and distilling the reaction products after separation of the inert solvent to remove as overhead 4,4'-methylene-bis-(phenyl isocyanate) leaving as distillation residue an easily pourable mass which is fluid as low as 100° C.

3,163,667
PREPARATION OF β-SULFATO-ETHANE SULFONAMIDES AND AMINE SALTS THEREOF

Donald L. Klass, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Nov. 9, 1960, Ser. No. 68,151
10 Claims. (Cl. 260—458)

1. A method of preparing β-sulfato-ethane sulfonamides which comprises reacting carbyl sulfate with an amine selected from the group consisting of alkyl, aryl and cycloalkyl primary and secondary amines at a temperature of −10° to +50° C. in a solvent having low hydrogen-bonding power and a solubility parameter of about 9.3 to 10.5, in which the carbyl sulfate and amine are soluble and the sulfonamide product is insoluble and which is inert at reaction conditions to the carbyl sulfate, amine and sulfonamide product.

3,163,668
METHOD FOR THE MANUFACTURE OF O-ARYL O-LOWER ALKYL PHOSPHOROCHLORIDOTHIOATES

Edward J. Tabor, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 7, 1959, Ser. No. 832,153
4 Claims. (Cl. 260—461)

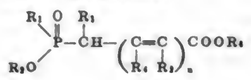
1. A method for the manufacture of a phosphorochloridothioate comprising reacting together at a temperature of from 10° to 50° C. substantially equimolecular proportions of an O-lower alkyl phosphorodichloridothioate, an alkali metal hydroxide and a phenolic compound having the formula ROH, wherein R represents a member of the group consisting of phenyl and substituted phenyl in which the substituents are selected from the group consisting of chlorine, bromine, loweralkyl, loweralkoxy, phenyl, benzyl, and cyclohexyl, said alkali metal hydroxide being employed in the form of an aqueous solution containing at least 10 percent by weight of the alkali metal hydroxide.

3,163,669
UNSATURATED CARBOXYLIC ACID ESTERS CONTAINING PHOSPHORUS

Walter Stilz and Horst Pommer, both of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 19, 1961, Ser. No. 117,810
Claims priority, application Germany, Oct. 17, 1958, B 50,760
7 Claims. (Cl. 260—461)

1. A compound of the formula:



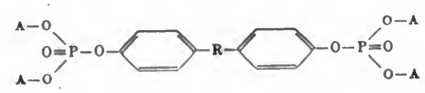
wherein R_1 represents a member of the group consisting of alkyl with 1 to 4 carbon atoms, alkoxy with 1 to 4 carbon atoms, phenyl, naphthyl, said aryls which are substituted by 1 to 2 alkyls with 1 to 4 carbon atoms, said aryls which are substituted by 1 to 2 halogen atoms, and said aryls which are substituted by 1 to 2 alkoxy with 1 to 4 carbon atoms; wherein R_2 is an alkyl with 1 to 4 carbon atoms; R_3, R_4 and R_5 are members of the group consisting of hydrogen and alkyl with 1 to 4 carbon atoms; R_6 is an alkyl with 1 to 10 carbon atoms; and n is an integer of from 1 to 3 inclusive.

3,163,670
AROMATIC p,p'-DIORTHOPHOSPHORIC ACID MONOESTERS

Hans Rosenmund, Biberlinstrasse 25, Zurich, Switzerland, and Ernst Zaugg, Dittingerstrasse 33, Basel, Switzerland

No Drawing. Filed July 3, 1961, Ser. No. 121,386
Claims priority, application Switzerland July 9, 1960
3 Claims. (Cl. 260—461)

1. A member selected from the class consisting of phosphoric acid esters of the formula



wherein

A represents a cation selected from the class consisting of hydrogen, sodium, potassium, ethanol ammonium and triethanol ammonium, with the proviso that not all the symbols need be alike, and

R represents a straight polymethylene chain having from 4 to 10 carbon atoms inclusive.

3,163,671
BENZOIC ACID RECOVERY BY CONTACTING GASIFORM AND LIQUID EFFLUENTS OF LIQUID PHASE OXIDATION WITH SATURATED AQUEOUS BENZOIC ACID

Nathan Fragen, Hammond, and John G. Hundley, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 6, 1961, Ser. No. 87,449
3 Claims. (Cl. 260—525)

1. A process for recovering benzoic acid product from the mixture obtained by the oxidation of a monoalkylbenzene hydrocarbon having from 1 to 8 carbon atoms in the alkyl group in the liquid phase in an oxidation zone at a temperature in the range of 50 to 275° C. and a pressure in the range of 0 to 1500 p.s.i.g. with molecular oxygen-containing gas in the presence of a heavy metal oxidation catalyst, comprising the steps: admixing in a contacting zone liquid effluent comprising water, benzoic acid and said monoalkylbenzene hydrocarbon and gasiform effluent comprising vapors of water, benzoic acid and said monoalkylbenzene with at least some unconsumed oxygen gas from the oxidation zone with a saturated aqueous solution of benzoic acid at a temperature in the range of 25 to 90° C. to crystallize benzoic acid from said effluents at said temperature range of 25 to 90° C., withdrawing uncondensed portion of said gasiform mixture from the contacting zone at a pressure in the range of 0 to 1500 p.s.i.g., withdrawing from the upper liquid level in the contacting zone a water-insoluble hydrocarbon layer and recycling this layer to the oxidation zone, withdrawing from the lower portion of the contacting zone crystallized benzoic acid slurried in the saturated aqueous solution of benzoic acid, separating crystallized benzoic acid from said slurry and recycling the aqueous solution portion of the slurry to the contacting zone.

3,163,672
PREPARATION OF DL-LYSINE

Robert J. Wineman, Concord, Mass., and Eu Phang T. Hsu, Crestwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 1, 1960, Ser. No. 46,331
3 Claims. (Cl. 260—534)

1. A method which comprises the steps of reacting 3-halogenated 2-oxohexamethyleneimine, in which the halogen is selected from the group consisting of chlorine and bromine, with an acylating agent selected from the group consisting of acetic anhydride and benzoyl and lower alkanoyl chloride to form an N-acyl-halogenated caprolactam, contacting said caprolactam with an aminating agent to produce an N-acyl lysine lactam, and hydrolyzing the latter to DL-lyine in the form of the mineral acid salt thereof by reacting said lactam with a mineral acid.

3,163,673
METHOD OF PREPARING DIBASIC ACIDS FROM NAPHTHALENE AND PRODUCTS OBTAINED

Giampaolo Chiusoli, Novara, and Francesco Minisci and Adolfo Quilico, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed May 13, 1957, Ser. No. 658,525
Claims priority, application Italy May 15, 1956
3 Claims. (Cl. 260—537)

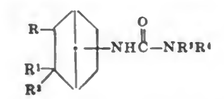
1. A process for making delta-keto-sebacic acid comprising treating gamma-(2-ketocyclohexyl) butyric acid with hydrogen peroxide in alkaline solution and decomposing the resulting peroxide with an acid.

3,163,674
PROCESS FOR PRODUCING SUBSTITUTED NORBORNYL UREAS

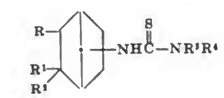
George A. Buntin, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 7, 1963, Ser. No. 263,402
6 Claims. (Cl. 260—553)

1. The method of preparing a urea compound of the formula



in which R, R^1, and R^2, when taken as individual radicals, are selected from the group consisting of hydrogen, chlorine, bromine, alkyl radicals having 1 to 4 carbon atoms and chloromethyl, and when taken as a group, R^2 is hydrogen, and R and R^1 taken together represent a divalent union of the group consisting of a chemical bond and $—CH_2CH=CH—$, and $CH_2CHCl—CHCl—$, and R^3 and R^4 are selected from the group consisting of alkyl radicals having 1 to 8 carbon atoms, which comprises reacting a thiourea compound of the formula



stepwise first with phosgene in a water-free organic solvent at a temperature in the range of 0 to 80° C. and then reacting the product of the first reaction with water in aqueous medium at a temperature in the range of 0° C. to 100° C. in the presence of an acid acceptor.

3,163,675
PREPARATION OF TRANS 1,2-DIAMINOCYCLOHEXANE

Andrew I. Smith, Raleigh, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,950
5 Claims. (Cl. 260—563)

1. A process for separating pure trans 1,2-diaminocyclohexane from a mixture comprising trans 1,2-diaminocyclohexane and cis 1,2-diaminocyclohexane, comprising reacting benzil with a solution of said mixture in an organic solvent selected from the group consisting of ethylene glycol monoethyl ether, toluene, xylene, and benzene, cooling the resulting reaction mixture to precipitate trans hexahydro-2,3-diphenyl quinoxaline therefrom, separating said precipitate from the reaction mixture, hydrolyzing the trans hexahydro-2,3-diphenyl quinoxaline in aqueous mineral acid solution to form the acid salt of trans 1,2-diaminocyclohexane, and thereafter treating said salt with an aqueous alkaline hydroxide solution to liberate substantially pure trans 1,2-diaminocyclohexane.

3,163,676
NITRILE HYDROGENATION MANUFACTURE OF PRIMARY AMINES

Ralph H. Potts, La Grange, Ill., assignor, by mesne assignments, to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 13, 1959, Ser. No. 833,392
13 Claims. (Cl. 260—583)

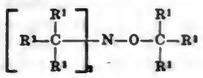
1. A process for the continuous catalytic hydrogenation of nitriles to form long chain aliphatic primary amines comprising contacting continuously, in a hydrogenation zone containing at least one hydrogenation catalyst and a base, an aliphatic nitrile containing from about 8 to about 24 carbon atoms with hydrogen at temperatures of about 50 to about 200° C. and pressures of about 50 to about 1500 p.s.i.g. until hydrogenation of the nitrile to the long chain aliphatic primary amine is substantially complete; removing said amine from the hydrogenation zone; cooling said amine; and recycling a portion of the cooled amine to the hydrogenation zone; said recycled amine containing no less than about 95% of long chain aliphatic primary amines.

3,163,677
PROCESS FOR PREPARING N,N,O-TRISUBSTITUTED HYDROXYL AMINES AND N,N-DISUBSTITUTED NITROXIDES AND PRODUCTS

Arthur Kentaro Hoffman and Audrey Tesch Henderson, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,560
9 Claims. (Cl. 260—583)

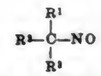
3. A process for preparing an N,N,O-trisubstituted hydroxylamine of the formula



which comprises treating a compound selected from the group consisting of nitro alkanes and nitroso alkanes of the formulae



and

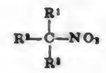


with an alkali metal, said compound and said metal being present in approximately equimolar amounts, at a temperature of from about −80° C. to about 100° C. in an inert reaction medium, and recovering the resultant N,N,O-trisubstituted hydroxylamine, R^1, R^2 and R^3 in each of said formulae representing a radical selected from the group consisting of alkyl radicals having from one to fifteen carbon atoms.

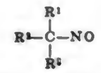
4. A process for preparing an N,N-disubstituted nitroxide of the formula



which comprises treating a compound selected from the group consisting of nitro alkanes and nitroso alkanes of the formulae



and



with an alkali metal, said compound and said metal being present in approximately equimolar amounts, at a temperature of from about −80° C. to about 100° C. in an inert reaction medium and recovering the resultant N,N-disubstituted nitroxide, R^1, R^2 and R^2 in each of said formulae representing a radical selected from the group consisting of alkyl radicals having from one to fifteen carbon atoms.

3,163,678
PROCESS FOR THE PRODUCTION OF MONOCHLORACETALDEHYDE

Waldemar Gunther, Marl, Kreis Recklinghausen, Germany, assignor to Chemische Werke Hüls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,474
Claims priority, application Germany, June 20, 1961, C 24,410
3 Claims. (Cl. 260—601)

1. A process for the production of monochloracetaldehyde which comprises heating liquid monochlorethylene carbonate to temperatures between 100 and 250° C. to bring about thermal decomposition of the same and release of monochloracetaldehyde, said reaction being conducted in the presence of a catalyst selected from the group consisting of tetraethyl ammonium bromide, diethyl aniline hydrochloride, and pyridine hydrochloride.

3. A process for the production of monochloracetaldehyde, which process comprises heating liquid monochlorethylene carbonate to temperatures between about 175° C. and 250° C. to bring about thermal decomposition of the same and release of monochloracetaldehyde.

3,163,679
PROCESS FOR THE PRODUCTION OF ALKALI BORON TETRAALKYLS

Roland Koster, Mulheim (Ruhr), Germany, assignor to Karl Ziegler, Mulheim (Ruhr), Germany

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,275
Claims priority, application Germany Nov. 17, 1959
19 Claims. (Cl. 260—606.5)

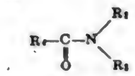
1. A process of producing a complex alkali metal boron tetraalkyl which comprises reacting a complex alkali metal boron triorgano hydride with an olefin at a temperature in excess of 120° C. and in the absence of any catalyst, and recovering the complex alkali metal boron tetraalkyl thereby formed.

3,163,680
PROCESS FOR THE PREPARATION OF POLYALCOHOLS

Bernard Audouze, Royat, Pierre Grancher, Saint-Chamas, and Simone Marsaule and Maurice Ortigues, Toulouse, France, assignors to Etat Francais, represente par le Ministre des Armees (Direction des Poudres), Paris, France

No Drawing. Filed Jan. 26, 1961, Ser. No. 84,985
Claims priority, application France, Jan. 30, 1960, 817,149
5 Claims. (Cl. 260—637)

1. In a process for the production of a polyalcohol selected from the group consisting of trimethylolethane, trimethylolpropane and pentaerythritol, wherein formaldehyde and an aliphatic carbonyl compound are reacted in an aqueous alkaline medium to form a solution containing the desired polyalcohol and the formate of a basic metal, the steps of adjusting the pH of said solution to 4 to 7, removing any unreacted formaldehyde from the solution, adding to the solution a N-dialkyl-substituted amide of the formula



wherein R_4 represents a member selected from the group consisting of hydrogen and lower alkyl and R_2 and R_3 each represent lower alkyl, concentrating the resulting mixture at a temperature of from 50° to 130° C. to eliminate water and precipitate said metal formate therefrom, separating the precipitated metal formate from the resultant liquor, and recovering the desired polyalcohol from said liquor by crystallization.

3,163,681
METHOD FOR POLYMERIZATION OF OLEFINS

Leon B. Gordon, Valparaiso, Ind., and Truman P. Moore, Jr., Tulsa, Okla., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Mar. 27, 1958, Ser. No. 724,248. Divided and this application June 30, 1961, Ser. No. 120,956
6 Claims. (Cl. 260—669)

1. In a process for the polymerization of an olefinic hydrocarbon, the improvement which comprises contacting said hydrocarbon containing a terminal methylene group under polymerization conditions with a catalyst prepared by mixing a tin halide with a member selected from the group consisting of an alkali metal hydride of aluminum, trialkyl aluminum, alkyl magnesium halide and aryl magnesium halide, said tin halide and said member selected from said group being present in respective molar ratios of from 5:1 to 1:5.

3,163,682
HYDROGENATION EMPLOYING SUPPORTED NICKEL AND CHROMIUM CONTAINING METALLO-ORGANIC CATALYSTS

Darrell W. Walker and Edward L. Czenkusch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 13, 1961, Ser. No. 123,649
19 Claims. (Cl. 260—683.9)

1. The process of hydrogenating a hydrogenatable unsaturated hydrocarbon which comprises contacting a mixture of said hydrocarbon and hydrogen under hydrogenating conditions in a non-oxidizing and water-free ambient with a catalyst formed by depositing on a dry porous support selected from the group consisting of silica, alumina, titania, zirconia, thoria, boria, and mixtures thereof, a compound selected from the group consisting of biscyclopentadienyl chromium and biscyclopentadienyl nickel so as to hydrogenate said hydrocarbon, said catalyst having been unexposed to an oxidizing and water-containing ambient and unreduced and uncalcined.

3,163,683
TERNARY BLENDS OF VINYL CHLORIDE POLYMER - BUTADIENE / ACRYLONITRILE COPOLYMER RUBBER-ETHYLENE POLYMER AND PROCESSES FOR MAKING THE SAME

Ival O. Salyer and Harry Philip Holladay, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

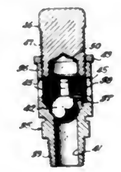
No Drawing. Filed July 22, 1960, Ser. No. 44,576
9 Claims. (Cl. 260—889)

1. A rigid, high impact resistant vinyl chloride resin composition comprising from 40% to 96% by weight of a polyvinyl chloride resin, from 2% to 30% by weight of a butadiene/acrylonitrile copolymer rubber, and from 2% to 30% by weight of a normally solid ethylene polymer selected from the group consisting of ethylene homopolymer and copolymers of ethylene with up to 15 weight percent of a comonomer selected from the group consisting of propylene, butene-1, butadiene, isoprene, styrene, vinyl acetate, vinyl chloride, vinylidene chlorofluoride and methyl methacrylate.

3,163,684
GAS DIFFUSION APPARATUS

Joseph J. Gilbert, Abington, Pa., assignor to Link-Belt Company, a corporation of Illinois

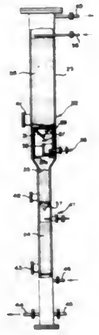
Filed Dec. 22, 1961, Ser. No. 161,606
5 Claims. (Cl. 261—42)



2. Apparatus for diffusing a gas into a liquid, comprising a liquid confining treatment chamber, a source of gas under pressure, a conduit connected to said source for supplying gas under pressure to the lower portion of the liquid in the chamber, a diffuser submerged in the liquid including a diffuser body having wall means defining a cylindrical cavity opening outwardly at one end of said body, means on said body for mounting the diffuser in communication with the conduit, said body having a gas passage formed therein extending from said cavity to communicate with the conduit to conduct gas to said cavity, a check valve member disposed within said cavity for free movement to open and close said passage, said check valve member being moved by gravity in the absence of gas flow from the gas conduit to close said passage and prevent flow of liquid from the chamber into the gas conduit, said wall means being threaded along the interior of said cylindrical cavity, a member threaded into said cavity and projecting outwardly of said diffuser body, the outwardly projecting portion of said member having an irregularly formed surface for engagement to selectively screw the member into and out of said cavity, said wall means having aperture means formed therein and extending therethrough from said cylindrical cavity to the exterior of said body, said member having a recess formed in its inner end to receive said check valve member when the latter is in its fully open position to thereby permit unrestricted flow of gas from said gas passage to said aperture means, movement of said member into and out of said cavity selectively positioning the member rela-

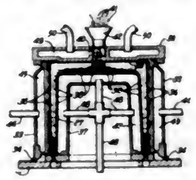
tive to said aperture means to vary the flow area of said aperture means, and means for retaining said member in a fixed selected position.

3,163,685
PACKED COLUMN WITH SIDE STREAM WITHDRAWAL
Virgil E. Gaede, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 25, 1960, Ser. No. 45,043
3 Claims. (Cl. 261—97)



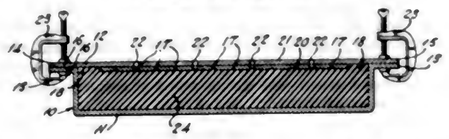
1. A fractionation column comprising an upper packed contact section comprising a first substantially cylindrical vertical shell containing a suitable packing material, a removable cover for the upper end of said first shell, said cover when removed opening substantially the entire cross section of said first shell, a lower packed contact section comprising a second substantially cylindrical vertical shell having a smaller diameter than said first shell and communicating with said first shell at the lower end thereof, tubular transition means connecting the lower end of said first shell and the upper end of said second shell, a removable intermediate collecting and distribution section comprising a substantially cylindrical wall sleeve having an outside diameter substantially equal to but slightly smaller than the inside of said first shell, a horizontal packing support grate attached to and covering the top of said sleeve, inclined baffle means in said sleeve attached to said sleeve below said grate, a collecting sump in said sleeve below said baffle means attached to said sleeve, said baffle extending across and completely covering a portion of the cross section of said sleeve, said sump extending completely across the remainder of the cross section of said sleeve and being vertically spaced from said baffle means to permit vapor flow therebetween, said baffle serving to direct downwardly flowing liquid into said sump, support means adjacent the bottom of said first shell for supporting said sleeve, a side-draw conduit, an opening in said sleeve, an aperture in said first shell and receiving means in said sump, said opening, said aperture and said receiving means being aligned to receive said conduit to provide a fluid flow path from said sump to the space outside said first shell, sealing means on said first shell adjacent said sump to permit insertion of said conduit and to seal around said side draw conduit between said conduit and said first shell, packing means supported by said grate, means communicating with said column to feed a fluid to be fractionated, means to supply vapor to the interior of said column, an overhead product removal conduit connected with said column and a bottoms product removal conduit connected with said column.

3,163,686
ART OF FORMING COMPOSITE PLASTIC DEVICES
Robert O. Dusel, Brookfield, and John H. Olsen, Milwaukee, Wis., assignors to Pulp Reproduction Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 2, 1962, Ser. No. 184,222
3 Claims. (Cl. 264—45)



1. The method of producing an article of considerable depth and provided with irregular surface design contours in which the body is formed of a heat expandable material having a thermoplastic protective covering sheet laminated to any covering the embossed surface to thus provide an integral coposite structure, which method comprises, initially pre-forming a flat impervious thermoplastic sheet by drawing it to the desired depth and general shape of the body by application of heat and vacuum, then forming an aperture in a wall of said initially preformed sheet to provide an entrance opening therein, placing the initially pre-formed sheet in a mold having an adjacent mold surface contoured to embody the irregularities to be imparted to the surface of the article, introducing a quantity of heat expandable material into the mold through the entrance opening formed in said initially pre-formed sheet, and finally subjecting the heat expandable material and the initially pre-formed sheet within the mold to heat to thereby expand said material and force said sheet into snug conformity with the contoured mold surface to thus provide the final composite surface embossed and protectively covered article.

3,163,687
MOLDING ELASTIC POLYMERIC FOAMS
Stanley C. Einhorn, Dover, N.J., assignor, by mesne assignments, to American Urethane, Inc., Franklin, N.J., a corporation of Delaware
Filed Jan. 9, 1959, Ser. No. 785,869
14 Claims. (Cl. 264—54)



12. A process of producing an article of elastic polyurethane foam comprising pouring the reaction mixture for said foam on the bottom of a mold bowl having a peripheral seat, placing on said seat a lid provided on its inner face with a network of intersecting channels terminating short of the inner peripheral sides of said bowl by at least one-quarter of an inch, sealing the junction between said lid and said seat, and curing the molded foam article.

3,163,688
SLIP CASTING METHOD
John W. Lindenthal, Red Bank, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Apr. 4, 1962, Ser. No. 184,942
7 Claims. (Cl. 264—56)

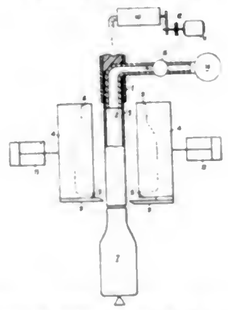
4. A method for casting a silica slip, which comprises grinding vitreous silica grains in the presence of water for a period of from about 60–80 hours to a particle size of about .1–10 microns, adding ammonia to the silica-water mixture before the grinding in amount within the weight ratio range of from 1:6000 to 1:20,000 of NH_3 to SiO_2 respectively, introducing the resultant slurry into a porous mold, forming a wet casting in the porous mold, followed by drying the casting and separating same from the mold, and firing the casting to strengthen same.

7. A method for forming and casting a silica slip, which comprises grinding vitreous silica grains and water for a period of about 60–80 hours to a particle size of about .1–10 microns, adding ammonia to the silica-water mixture prior to the completion of the grinding, cooling the resulting slurry to a temperature within the range of about 5° C.–18° C., introducing the thus-treated slurry into a porous mold, forming a wet casting within the mold followed by drying the casting, removing the casting from the mold, and firing the casting to strengthen same.

3,163,689
METHOD OF MANUFACTURING PLASTIC PANELS AND APPARATUS THEREFOR
Frank E. Ives, 15820 Benson Road, Renton, Wash.
Filed Sept. 16, 1957, Ser. No. 684,099
7 Claims. (Cl. 264—90)

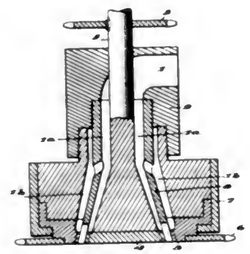
4. A process for making a plastic, said process comprising applying two resins to a first flexible carrier sheet, in the application of said two resins mixing the same after the resins have left their respective containers, applying a fibrous material on top of said two mixed resins so that the two mixed resins can rise in the material and expel entrapped gas, the flexible sheet and resin-impregnated fibrous mat being a composite structure, bending said composite structure so that the fibrous mat is on the outside of the bend thereby permitting the liquid resin to work its way through the mat and expel air from the mat, placing said composite structure on a mold with the flexible sheet in contact with the mold, forcing said composite structure to conform to the configuration of the mold by applying a vacuum to the mold so that the flexible sheet assumes the configuration of the mold, curing said resin and said plastic comprising the resin-impregnated fibrous mat free of the flexible sheets.

3,163,690
METHOD OF AND APPARATUS FOR MANUFACTURING HOLLOW ARTICLES FROM ORGANIC PLASTIC MATERIAL
Graham Walter Scott, Northwood Hills, Middlesex, England, assignor to E. Shipton & Co. (Engineering) Limited, Northwood Hills, England, a British company
Filed Mar. 5, 1962, Ser. No. 177,522
Claims priority, application Great Britain, Mar. 7, 1961, 8,269/61
4 Claims. (Cl. 264—98)



1. The method of manufacturing blown hollow articles from organic plastic materials, which consists in extruding a length of plastic tube downwardly through an annular nozzle, stopping extrusion, closing a mould thereabout so as to pinch the walls of the extruded length of tube together at the bottom of the mould cavity, blowing the length of tube enclosed within the mould cavity by admitting blowing fluid through a passage in the core of the annular nozzle, opening the mould, restarting extrusion to extrude another length of plastic tube with the previously formed article suspended from the bottom thereof, again stopping extrusion and repeating the cycle of operations, and cutting the previously formed article from said another length of plastic tube thereabove simultaneously with the closing of the mould around said another length of plastic tube.

3,163,691
PROCESS AND APPARATUS FOR THREE LAYER NET EXTRUSION
Samuel P. Anderson, Wilmington, Del., and Christian B. Lundsager, Buffalo, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 25, 1960, Ser. No. 71,506
10 Claims. (Cl. 264—167)

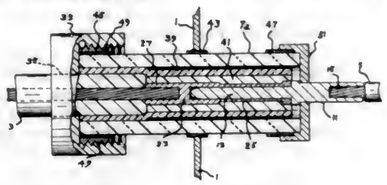


1. A method of manufacturing an integral plastic net-like structure composed of three layers of parallel strands and integral intersections thereof which comprises extruding streams of plastic to form said layers of strands from three adjacent die-carrying members each having a set of extrusion orifices cooperative with those of each adjacent member, forming integrally extruded unitary intersections between the first and second layers and between the second and third layers of strands by uniting adjacent streams as they are extruded into unitary intersection-forming streams, continuing the extrusion while dividing each intersection-forming stream to form separate strand-forming streams and reuniting said adjacent streams into further unitary intersection-forming streams.

3,163,692
METHOD FOR MAKING HIGH VOLTAGE HIGH ALTITUDE BUSHING
Willard A. Smith and Earl M. Klemer, Elizabethtown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Original application May 2, 1955, Ser. No. 505,292. Divided and this application Apr. 25, 1960, Ser. No. 30,704
4 Claims. (Cl. 264—249)

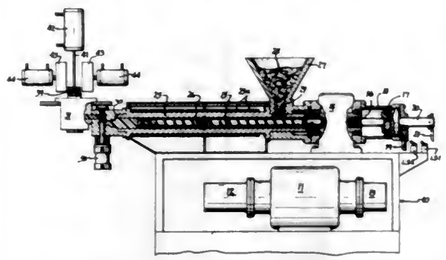
1. The method of insulating a contact assembly having mating elements including the steps of exposing the end of the wire core of an insulated lead, affixing the wire end to the contact element having exposed surfaces upon joining the contact assembly in mating relationship, loosening the

insulation of the lead relative to the wire core, and moving the insulation along the wire core to cover substantially



the exposed surfaces of the contact element and wire core with insulation continuous with the insulation of the lead.

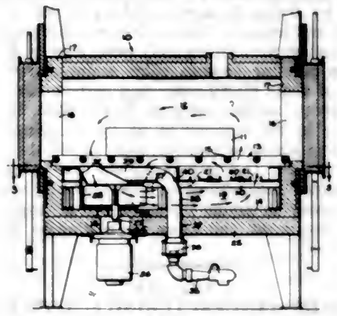
3,163,693
APPARATUS FOR AND METHOD OF PLASTICIZING AND DISPENSING PLASTIC MATERIAL
Hans G. Stenger, Lambertville, Mich., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 29, 1962, Ser. No. 206,290
9 Claims. (Cl. 264—329)



2. In a method of expressing plastic material through a discharge opening by means of a continuously rotating plasticizing screw axially displaceable in a barrel towards and away from said opening, the steps of interrupting communication between said barrel and said opening, displacing the screw away from said opening to accumulate a body of material between the screw and the opening, axially halting the screw at a first position, flowing material from the discharge end of the screw interiorly of the screw for passage alternatively to (1) said accumulated body of material and (2) the screw periphery medially of the screw length dependent solely upon the resistance of material flow, and displacing the screw toward the opening to (1) prevent flow from the discharge end of the screw to the screw periphery and (2) to discharge accumulated material from said body through the opening.

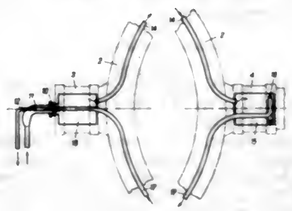
3,163,694
RECIRCULATING HEAT TREATING FURNACE
Harold N. Ipsen, 715 S. Main St., Rockford, Ill.
Filed Feb. 5, 1960, Ser. No. 6,910
3 Claims. (Cl. 266—5)

1. In a heat treating apparatus, the combination of, a furnace having a heating chamber defined by top, bottom, side and end walls, an impeller disposed within said chamber and comprising a shaft and a plurality of vanes angularly spaced around and radiating from the shaft, mechanism operable to turn said impeller thereby to circulate the atmosphere within said chamber, means in said chamber defining a predetermined path of circulation for said atmosphere, a thin-walled tube projecting through one of said walls and into said chamber and terminating in an outlet adjacent the axis of said impeller, substantially the entire portion of the tube within said chamber extending transversely across said path, a burner tip disposed adjacent said one wall and coaxial with said tube, and means for supplying a combustible gas to and burning



the same at said tip thereby to burn the gas along the length of the tube portion in said chamber and deliver hot gases to the axis of said impeller, said tube extending across said path to be cooled by the atmosphere circulating within said chamber.

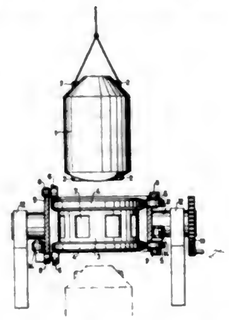
3,163,695
COOLING SYSTEM FOR COOLING HOLLOW TRUNNIONS ON TRUNNION RINGS OF REFINING CRUCIBLES
Horst Bumberger, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Mar. 12, 1962, Ser. No. 178,919
Claims priority, application Austria, Mar. 15, 1961, A 2,175/61
4 Claims. (Cl. 266—36)



1. In an installation for refining crude iron comprising a refractory-lined, tiltable refining crucible and a trunnion ring surrounding and being secured to the shell of said crucible, two hollow trunnions rigidly connected to said ring, each trunnion having a cavity therein, one of said trunnions being driven, a cooling system for cooling the hollow trunnions comprising a first conduit connecting said cavities, means for supplying coolant to the cavity in the first of said trunnions for flow therethrough and through said first conduit into the cavity in the second trunnion, a coil in said cavity in said second trunnion extending substantially completely around said cavity adjacent to its periphery and having an inlet for discharging coolant from said cavity in said second trunnion, a second conduit connected to said coil and passing through said cavity in said first trunnion for discharging coolant from said cavity in said second trunnion, said coil maintaining said cavity substantially full of coolant in all positions of said crucible.

3,163,696
ARRANGEMENT FOR TILTABLE FURNACES
Folke Karl Evald Johansson and Sven Erik Bergström, Borlange, Sweden, assignors to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a company of Sweden
Filed May 2, 1962, Ser. No. 193,059
Claims priority, application Sweden, May 9, 1961, 4,911/61
5 Claims. (Cl. 266—36)

1. A tiltable rotary furnace which comprises a support;
a tilting frame pivotally mounted in said suport;
a ring-shaped holder;
at least one ring-member, including at least one tread ring, exteriorly secured to said ring-shaped holder;
support and guide rollers and at least one drive member, rotatably mounted in said tilting frame, said drive member engaging said ring-member;
said ring-shaped holder being supported on and guided by said support and guide rollers and rotated by said drive member;
a furnace body adapted to be encircled by said ring-shaped holder; and
a securing means, carried on said ring-shaped holder, for centering said furnace body within, and detachably securing said furnace body in, said ring-shaped holder.



ELECTRICAL

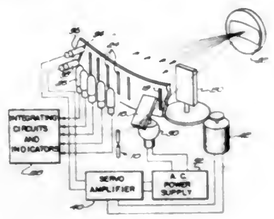
3,163,697
ARCHERY BOW SIGHT UTILIZING OPTICAL RANGEFINDER AND COUPLED SIGHTING ELEMENT
David S. White, Eddy St., Norton, Mass.
Filed July 13, 1961, Ser. No. 123,875
1 Claim. (Cl. 88—2.4)

In combination, a bow, a sight mounted thereon, said sight comprising an elongated housing located substantially centrally of said bow on the convex side thereof and in spaced, substantially parallel relation thereto, a sight opening extending sideways through said housing adjacent one end thereof through which a target may be viewed, an angularly disposed, semi-reflective mirror mounted in said housing in alignment with said sight opening, a reflecting device pivotally mounted in the opposite end of said housing, a second opening in said housing in alignment with said reflecting device, so that upon looking through said sight opening a real image will be seen directly by looking through said semi-reflective mirror, and a reflected image will be simultaneously seen, said reflected image being picked up by said reflecting device and reflected to said semi-reflective mirror and then to the eye of the viewer, means movable longitudinally along said housing for changing the pivotal position of said reflecting device, said movable means having a sighting element attached thereto and extending sideways from said housing, the pivotal mounting for said reflecting device comprising a rotatable shaft to which said device is fixed, an elongated arm fixed to said shaft and extending along the interior of said housing, said arm being pivotally movable with said shaft as an axis whereby pivotal movement of said arm causes corresponding rotation of said shaft and pivotal movement of said reflecting device, said movable means comprising a slide movable longitudinally along the outside of said housing, a longitudinal slot in said housing and a guide member carried by said slide and extending into said housing through said slot, resilient means urging one edge of said arm into engagement with said guide member, said one edge being inclined with respect to the path of movement of said slide and guide member, whereby movement of the latter longitudinally along said housing causes pivotal movement of said arm, and means for manually adjusting the pivotal position of said arm with respect to any given position of said slide and guide member, said adjusting means comprising a plurality of set screws threadedly mounted in said arm in alignment with said guide member, whereby manipulation of said screws causes them to bear against said guide member and force said arm to move pivotally away therefrom against the action of said resilient means, and an opening in said housing in alignment with said set screws for permitting access thereto from outside said housing.

3,163,698
SPECTROSCOPIC APPARATUS HAVING AN OBLIQUE MONITOR RADIATION EXIT SLIT
Jason L. Saunderson, Lexington, and Eliot Du Bois, Lincoln, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 20, 1960, Ser. No. 63,785
2 Claims. (Cl. 88—14)

1. Spectroscopic apparatus comprising horizontally extending base means, source means on said base means for exciting chemical material to emit characteristic radiation, monitor means on said base for emitting monitor radiation, spectral means on said base means oriented and positioned to receive said characteristic radiation from said source means and to disperse said characteristic radiation horizontally into a spectrum and to receive said monitor radiation from said monitor means and to redirect said monitor radiation predeterminedly with respect

to said spectrum, characteristic radiation detecting means on said base means oriented and positioned to receive individual components of said spectrum in order to produce signals indicating characteristics of said chemical material, monitor radiation detecting means on said base means oriented and positioned to receive monitor radiation redirected by said spectral means in order to produce signals in response thereto, said source means, said spectral means, said characteristic radiation detecting means and said monitor radiation detecting means having geometrical relationships that are subject to change, said spectral means having a vertical axis of rotation perpendicular to said base means, entrance means providing at least a first given slit disposed in the path of said characteristic radiation and said monitor radiation between said source means and said monitor means on one side and said spectral means on the other side, said first given slit extending vertically and being parallel to said axis, said characteristic radiation detecting means including exit means providing a plurality of slits disposed in the paths of said



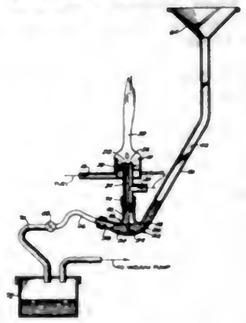
individual components of characteristic radiation between said spectral means and remaining components of said characteristic radiation detecting means, said plurality of slits being substantially parallel to said given slit of said entrance means, said monitor radiation detecting means including exit means providing a slit disposed in the path of said monitor radiation between said spectral means and remaining components of said monitor radiation detecting means, said slit of said monitor radiation detecting means being oblique with respect to said axis, said detecting means including first photodetecting means to receive a first portion of radiation transmitted through said slit of said monitor radiation detecting means and second photodetecting means to receive a second portion of radiation transmitted through said slit of said monitor radiation detecting means, said monitor radiaton detecting means responding to said monitor radiation through said slit thereof to produce error signals, and servo means responsive to said error signals to alter said geometrical relationships in order to eliminate said error signals.

3,163,699
SAMPLING APPARATUS FOR FLAME PHOTOMETER

John J. J. Staunton, Oak Park, Ill., assignor, by mesne assignments, to Coleman Instruments Corporation, Maywood, Ill., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,218
3 Claims. (Cl. 88—14)

1. Sampling apparatus for a flame photometer comprising a container having a vertically arranged neck and a sump below the neck, a capillary tube mounted in said neck for conducting liquid samples from said sump to an atomizer, a horizontally arranged inlet arm connecting to said container for introducing liquid samples into said sump, a horizontally arranged outlet arm connecting to said container for carrying fluids from said sump, differential pressure fluid-withdrawing means connected to said outlet arm, and valve means mounted in said outlet arm

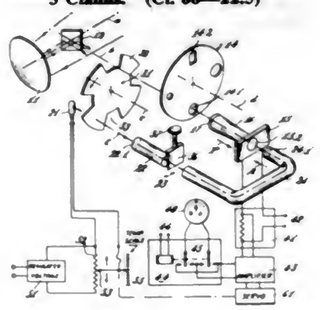


between said container and said fluid-withdrawing means for controlling fluid-flow through said sump.

3,163,700
RADIATION METER UTILIZING A DUAL SURFACED DETECTING CELL

Donald E. Williamson, Lexington, Mass. (% Williamson Development Co., Inc., 317 Main St., West Concord, Mass.)

Filed July 26, 1960, Ser. No. 45,437
3 Claims. (Cl. 88—22.5)



1. A radiation measuring device of the type wherein beams of radiations from a primary source to be measured and from an adjustable auxiliary source, respectively, are photoelectrically detected to furnish intensity proportionate electric signals which are in conventional circuitry sensed for comparison by metering means, comprising:

a unitary radiation detecting cell having two opposite faces at the front and rear thereof responding with a signal output essentially in the same manner to radiation impinging on either of said faces;

an optical system for defining a beam of radiation from said primary source to said cell, said system including radiation concentrating means which are opaque to radiation from without the beam and extend closely to said front face of the cell;

an auxiliary radiation source outside said radiation concentrating means;

means for directing a beam of radiation from said auxiliary source towards said rear face of the cell in a path avoiding said radiation concentrating means;

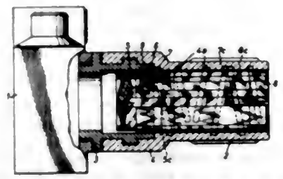
optical modulating means common to both beams for alternatingly obstructing said source radiation and said auxiliary radiation, causing said cell alternately to detect energy values of said radiations, respectively, and to furnish signals proportionate thereto; and

means for controlling the radiation of said auxiliary source for said comparison of signals.

3,163,701
VARIABLE FOCAL LENGTH OBJECTIVE MOUNT

Heinrich Staubach, Midland, Ontario, Canada, assignor to Ernst Leitz Gesellschaft mit beschrankter Haftung, Wetzlar (Lahn), Germany

Filed Jan. 6, 1961, Ser. No. 81,100
Claims priority, application Germany, Jan. 7, 1960, L 35,073
7 Claims. (Cl. 88—57)

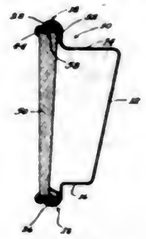


1. A pancratic objective mount comprising a plurality of lens mountings, there being a plurality of axially extending guide arms on each of said mountings, the adjacent edges of adjacent guide arms being in sliding relationship so that all of said arms of said mountings are slidably interengaging for relative linear movement therebetween whereby said mountings are axially displaceable with respect to each other, only one of said plurality of lens mountings being fixedly mounted in an objective mount.

3,163,702
PRISMOIDAL MIRROR ASSEMBLY

John G. Warhol, Oak Park, Mich., assignor to Nelmor Corporation, Harper Woods, Mich., a corporation of Illinois

Filed May 1, 1961, Ser. No. 106,740
2 Claims. (Cl. 88—96)

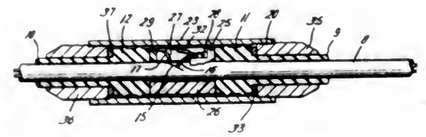


1. A prismoidal mirror assembly including a housing having a continuous bezel which includes a channel provided with a vertically extending rear flange wall, a rear housing wall connected to said rear flange wall, said channel having a forwardly extending lip, a retaining strip supported in said channel and a prismoidal mirror supported in said retaining strip, said prismoidal mirror having a thicker and a thinner generally horizontal edge, said retaining strip comprising a preformed and preshaped member having a body portion nesting within said channel, a neck portion extending forwardly of the body and positioned within the forwardly extending lip of the bezel and receiving the edge of the mirror, means on the retainer between said neck and said body for engaging the edge of the mirror, said means engaging the rear of the mirror on said thinner edge and engaging the periphery of the mirror on said thicker edge, an enlarged head extending forwardly of the neck portion, said head having portions extending in opposite directions, one portion of said enlarged head extending outwardly substantially at right angles to said neck and covering the edge of the lip of the bezel and the other enlarged oppositely extending portion extending inwardly and forming a lip against which the front of the mirror rests, said strip having a distortable flange extending rearwardly of the body portion and resting against the rear of the mirror, said flange being formed of a distortable material and having a thickness less than said body portion so that it may accommodate itself to the difference in the thickness of the mirror so that where the retainer strip engages the thicker edge of the mirror the distortable flange will be positioned substantially parallel with the rear edge of the mirror and will engage the rear flange wall of the casing, and where the retainer strip engages the thinner edge of the mirror the rear edge of the mirror will engage the means between said neck and said body and only the extremity of the flange will engage the rear of the mirror.

3,163,703
MOUNTING FOR ELECTRICAL SENSING DEVICES ON CABLES

Kenneth W. McLoad, Houston, Tex., assignor, by mesne assignments, to Vector Cable Company, Houston, Tex., a corporation of Texas

Filed June 11, 1962, Ser. No. 201,658
4 Claims. (Cl. 174—11)



2. A detachable mounting for providing a connection between a sensing device and cable conductor ends projecting laterally from a continuous cable comprising a pair of collar members for positioning on the cable in a spaced apart relationship; said collar members being made of a resilient material and having annular seal members formed on their outer surfaces; a split housing comprising two members for positioning about the continuous cable between said collars; one of said housing members having a cut-out portion formed therein for positioning over the laterally projecting conductor ends and for receiving the sensing device; screw-type terminal means formed on said one housing member adjacent said cut-out portion for providing a connecting terminal between the sensing device and the conductor ends; a rigid tubular casing sized to receive said collar members, said housing members and said terminal connections therein; and end members for reception within and detachable connection to the opposite ends of said casing to close said casing ends and compress said collars against said housing members and to expand said collar seal members on said collars into sealing engagement with said casing.

3,163,704
WELDING CABLE WITH PRESSED LUGS

Chester F. Leathers, Portage Township, Kalamazoo County, Mich., assignor to Cal Manufacturing Company, Kalamazoo, Mich., a partnership

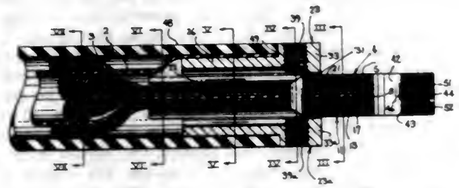
Filed June 20, 1963, Ser. No. 289,791
17 Claims. (Cl. 174—15)

1. In an electrically conductive connecting cable, the combination comprising:

a pair of conductors and means electrically insulating said conductors from each other;

a band of conductive material circumferentially encircling the ends of each of said conductors and in electrical contact therewith;

means electrically insulating said bands from each other; coolant headers independent of, and located outside of, said bands and arranged respectively on opposite sides of said bands;

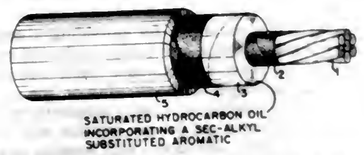


a nonconductive casing arranged around said conductors and encircling at least a portion of said coolant headers, said casing being radially spaced from said bands and said coolant headers being disposed between said casing and said bands and a passageway from an exposed portion of said coolant headers extending therethrough to the interior of said casing.

3,163,705
OIL INSULATED IMPREGNANT FOR HIGH VOLTAGE ELECTRICAL APPARATUS

George Feick III, Needham, and Walter F. Olds, Arlington, Mass., assignors, by mesne assignments, to Anaconda Wire and Cable Company, Hastings on Hudson, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 21, 1959, Ser. No. 835,198
3 Claims. (Cl. 174—25)



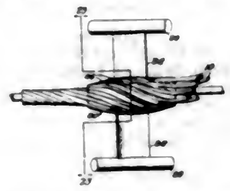
1. In high voltage electrical apparatus in which metallic conductors are surrounded by insulation comprising a substantially saturated hydrocarbon oil, the improvement which comprises incorporating in the oil from about 0.5 to about 20 percent by weight of a sec-alkyl-substituted aromatic hydrocarbon compound having a boiling point, at atmospheric pressure, of not less than 200° C. and selected from the group consisting of diisopropylbenzenes, triisopropylbenzenes, and tetraisopropylbenzenes, thereby imparting a negative gassing coefficient to the oil and minimizing an increase in the power factor of the oil during operation of the apparatus.

3,163,706
METHOD AND MEANS FOR UTILIZING HELICAL ARMOR RODS

Thomas F. Peterson, Shaker Heights, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio

Original application Apr. 27, 1949, Ser. No. 89,986, now Patent No. 3,007,243, dated Nov. 7, 1961. Divided and this application Aug. 2, 1960, Ser. No. 47,107
5 Claims. (Cl. 174—42)

3. A vibration damper for suspended lines comprising, in combination, a protuberating means coaxially disposed about the line having an internal bore for the accommodation of the latter that is oversize with respect to the outside diameter of the line, a plurality of helically-preformed reinforcements enclosing said means and extending along the line at each end thereof, a pair of diametrically opposed vanes projecting from said protuberating means at an angle agreeing with the natural parting of said rein-

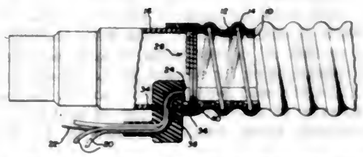


forcements, said vanes adapted to exert torque upon said protuberating means in response to conditions of wind impressed thereupon.

3,163,707
NON-STRETCH FLEXIBLE TUBE WITH CONDUCTORS THEREIN

Ralph E. Darling, 7805 Fairfax Road, Bethesda, Md.

Filed Dec. 27, 1962, Ser. No. 247,722
12 Claims. (Cl. 174—47)

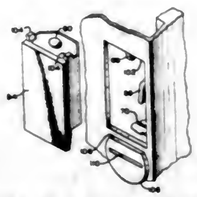


7. A flexible tube comprising, a corrugated impervious carcass of non-metallic material, a partially expanded coil spring embedded in the outer crests of the corrugated carcass along the length thereof, and the end coils of said spring being directly interconnected independently of the intermediate coils to limit further expansion of the spring axially of the carcass.

3,163,708
ILLUMINATED WARNING DEVICE WITH REPLACEABLE COMPONENT

Billy D. McMains, Anaheim, Calif., assignor, by mesne assignments, to Master Specialties Company, Gardena, Calif., a corporation of California

Filed Dec. 19, 1960, Ser. No. 76,918
1 Claim. (Cl. 174—52)

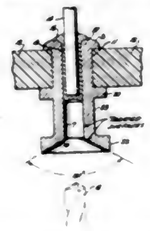


In an electrical device, a housing having a wall with an opening therein, means forming an electrical circuit in said housing, said circuit being discontinuous adjacent said opening with two portions thereof terminating in two contacts adjacent said opening, a cartridge carrying an electrical component connected to two contacts on said cartridge, said cartridge having an outer flat surface which is substantially flush with said housing wall when said cartridge extends through said opening into said housing, said cartridge contacts engaging said circuit contacts and connecting said component into said circuit when said cartridge extends through said opening into said housing, said cartridge having a projection on a portion thereof adapted to fit under said housing wall adjacent said opening, and a quick release member rotatably attached to said housing wall adjacent said opening and rotatable on an axis generally perpendicular to said housing wall, said rotatable member including a disc lying close to said housing wall and having a first position in which a portion of said disc is over said opening and is engageable with the outer surface of said cartridge when in said opening to hold said cartridge with the outer surface substantially flush with said housing wall, said disc having a second position in which said disc portion is spaced from said cartridge so that said cartridge can be withdrawn from said opening.

3,163,709
HOLLOW SOLDER TERMINAL HAVING A DRILL GUIDE OPENING

Carl Edward Fox, Playa del Rey, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 2, 1962, Ser. No. 170,562
6 Claims. (Cl. 174—68.5)

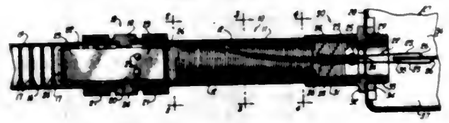


1. A solder terminal for mounting an electrical component to a circuit board comprising: a generally tubular electrically conductive body adapted to be fastened in a hole in a circuit board and having a bore extending completely through the center thereof, said bore having a conical portion opening outwardly at one end thereof with a predetermined angle, said conical portion and a portion of said bore adjacent thereto having a treated surface to which solder will not adhere, the remainder of said bore having a surface to which solder will adhere, thereby providing a solder-free opening to serve as a guide for a drill for removal of an electrical component soldered to said terminal.

3,163,710
CONNECTION MEANS FOR DIVIDED ELECTRICAL RACEWAYS

William W. Witort, 1480 N. Milwaukee, Libertyville, Ill.

Filed Jan. 17, 1962, Ser. No. 166,819
4 Claims. (Cl. 174—84)

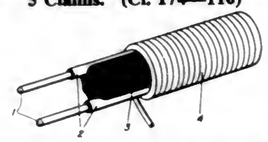


3. Connection means for use with multiple wire service distribution divided conduit wherein the conduit is provided with longitudinal divider means establishing at least a pair of raceways to maintain wire service separation, said connection means comprising a rigid tubular member including a transverse internal divider means extending longitudinally thereof and subdividing the interior of said tubular member into at least a pair of longitudinally continuous raceways for distribution of separate wire services therethrough, said divider means being fully rotatably translatable in said tubular member relative to said tubular member and being formed with a plurality of transverse rib-like sections which provide longitudinal continuity to said divider means but permit longitudinal twisting of said divider means between the opposite ends of said divider means for spiral translation of said raceways in said connection means for communicating alignment thereof with corresponding raceways of divided conduit, said divider means being in the form of a D-shaped coil with the convolutions thereof being tightly wound.

3,163,711
CABLE-CONTROLLED FLYING OBJECTS AND CABLES THEREFOR

Werner Schindler, Ottobrunn, near Munich, Germany, assignor to Ludwig Bolkow, doing business as Bolkow-Entwicklungen K.G., Ottobrunn, Germany

Filed Aug. 19, 1959, Ser. No. 834,836
Claims priority, application Germany Aug 20, 1958
5 Claims. (Cl. 174—116)

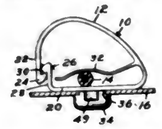


1. A control line for connecting a comparatively fast moving flying object and a control point with each other, comprising at least two wires of high electrical conductivity and low weight per length unit, said wires extending in spaced and substantially parallel relationship, a plurality of filaments extending parallel to each other and to said wires and forming a tensile member, said filaments being made of an insulating material and having a tensile strength higher than said wires and being less extensible than said wires, a helically wound coil, said coil surrounding commonly said wires and said filaments in a tight manner so that said filaments and said wires are in frictional engagement with each other, said coil having a higher tensile strength and a higher flexibility than said wires.

3,163,712
WIRING CLIP HAVING A STUD ENGAGEMENT MEANS

Clarence W. Cochran, deceased, late of Belmont, Mass., by Lois F. Cochran, administratrix, Belmont, Mass., assignor to United-Carr Incorporated, a corporation of Delaware

Original application Jan. 26, 1960, Ser. No. 4,783, now Patent No. 3,090,826, dated May 21, 1963. Divided and this application Apr. 2, 1963, Ser. No. 270,509
3 Claims. (Cl. 174—164)

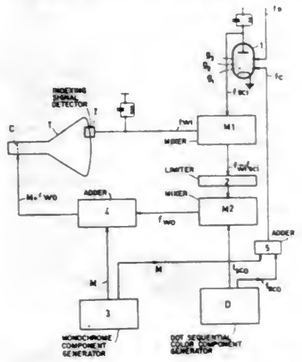


1. A resilient adjustable electrically nonconductive clamping device adapted to retain a plurality of wires or the like on a support comprising a base, one end of said base being curved backwards on itself forming a loop having its distal free end formed into a locking member for cooperative snap engagement with a shoulder formed on a substantially right angular extension of the other end of said base and a tensioning arm formed integral with said loop extending within the area between said loop and said base and said tensioning arm spaced from said base and said base having a stud extending therefrom in a direction away from said loop, said stud having a major and minor axis and having longer sides on each side of said major axis and having a cutout portion formed on the extenral surface of each of said longer sides.

3,163,713
BEAM-INDEXING PICTURE DISPLAY SYSTEM

Dennis Arthur Rudd, Redhill, Surrey, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1961, Ser. No. 89,141
Claims priority, application Great Britain Mar. 30, 1960
6 Claims. (Cl. 178—5.4)

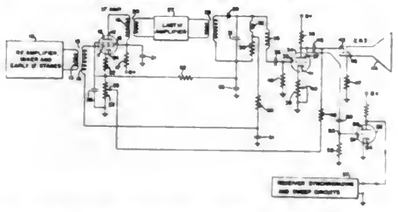


1. A beam indexing color television display system comprising a cathode ray tube having an electron gun for producing an electron beam, said gun having a beam intensity control electrode, and a screen disposed in the path of said beam, said screen having an iterative pattern of parallel groups of at least two parallel stripes of material luminescent at different colors, means for deflecting said beam whereby said beam scans said groups of stripes in a continuous sequence, means for deriving an indexing signal from said screen responsive to the scanning of said stripes by said beam, a source of a composite color signal, means for correcting phase errors of said indexing signal due to intensity modulation of said beam, means for applying said composite color signal to said intensity color electrode, and means responsive to the phase corrected indexing signal for maintaining a predetermined relationship between the position of said beam and the modulation of said beam, said means for correcting phase errors comprising means providing an additional signal having phase errors simulating the phase errors of said indexing signal, and means for combining said indexing signal with said additional signal for substantally canceling the phase errors of said indexing signal.

3,163,714
AUTOMATIC BRIGHTNESS CONTROL

Robert B. Dome, Geddes Township, Onondaga County, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 30, 1961, Ser. No. 99,441
8 Claims. (Cl. 178—7.5)

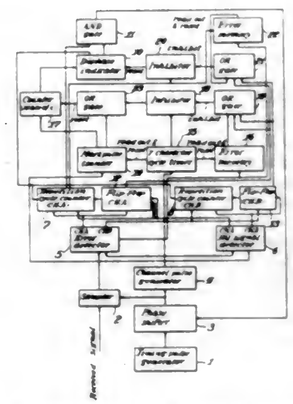


1. In a television receiver, automatic brightness control means comprising: a cathode-ray tube for displaying a video signal modulation component of a received radio frequency signal; said cathode-ray tube including first and second video signal input electrodes; circuit means for establishing a direct-current bias voltage between said input electrodes; said bias establishing circuit means including an intermediate frequency amplifier arranged for providing direct-current voltage amplification of a direct-current input voltage; said amplifier including a resistive load impedance and means direct-current intercoupling said load impedance and one of said cathode-ray tube input electrodes; circuit means providing a direct-current voltage having an amplitude which on the average is proportional to the maximum amplitude of a received radio frequency signal; and means direct-current coupling said latter direct-current voltage to said intermediate frequency amplifier in a manner for causing said latter direct-current voltage to be generated in amplified form across said load impedance whereby the background brightness of a reproduced image is increased and decreased when a respective increase and decrease occurs in the amplitude of a received radio frequency signal.

3,163,715
PHASE CONTROL SYSTEM

Ko Kumagai, Kitatama-gun, and Hiroichi Teramura, Ota-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 15, 1961, Ser. No. 89,462
Claims priority application Japan, Feb. 22, 1960, 35/5,235
3 Claims. (Cl. 178—23)

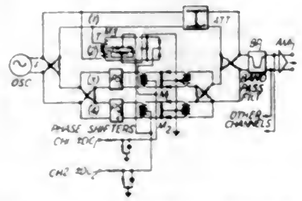


1. A phase correcting system for a synchronous telegraph system employing a telegraph code having a constant mark-to-space ratio and affording error correction by automatic repetition wherein erroneous characters in a received telegraph signal are detected in order to request automatically the transmitting station to re-transmit correct characters, said phase correcting system comprising, first means for detecting said erroneous characters by examining the mark-to-space ratio during each character period of a received signal, second means connected to the first means for detecting the existence of error detected by said first means in a fixed period which is equal to an integral multiple of the repetition cycle of said synchronous telegraph system, third means for detecting whether the number of mark or space element pulses of the received signal during said fixed period corresponds to a pretermined number, means comprising pulse generating means connected to said first means for generating character timing pulses for testing said received signal, fourth means connected to said second means and said third means for detecting whether phases of signals corresponding to the received characters are in-phase or out-of-phase with said character timing pulses, said fourth means comprising means for detecting only when said second means detects the existence of error during said fixed period and said third means detects that the number of mark or space elements is equal to said predetermined number, and fifth means connected to said fourth means for shifting the phase of the character timing pulses until the phase of said character timing pulses is brought in-phase with the phase of the signals corresponding to the received characters.

3,163,716
MULTI-CHANNEL PHASE SHIFT CODE TRANSMISSION SYSTEM

Takeo Matsuzaki, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed June 8, 1961, Ser. No. 115,708
Claims priority, application Japan, July 7, 1960, 35/30,755
6 Claims. (Cl. 178—66)

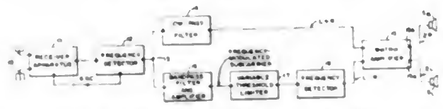


1. A code transmission system for providing two binary code signal channels on separate phases of a single frequency three phase carrier wave, the third phase of which serves as a synchronizing channel, comprising means to provide three phase carrier frequency wave, means for keying two phases of said wave on-and-off in accordance with binary signals of individual channels, and means for keying off the third of said phases in response to simultaneous keying on of said two phases.

3,163,717
SIGNAL-PROCESSING APPARATUS UTILIZING VARIABLE THRESHOLD LIMITING MEANS FOR AN FM/FM MULTIPLEX SIGNAL

Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois

Filed Jan. 24, 1961, Ser. No. 89,895
8 Claims. (Cl. 179—15)

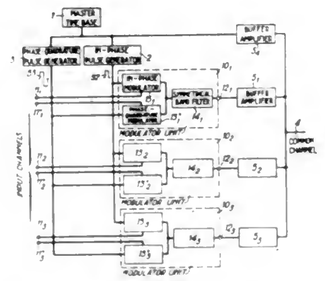


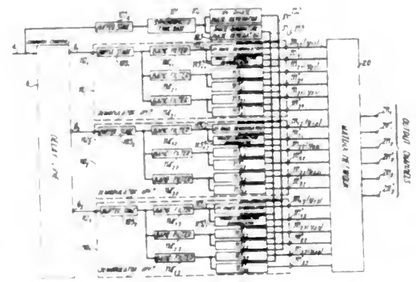
1. Signal-processing apparatus for a radio receiver adapted to receive a frequency-modulation multiplex signal having a main carrier wave signal frequency-modulated by a first information signal and by a subcarrier wave signal which is frequency-modulated by a second information signal, said apparatus comprising: means including a first frequency detector responsive to said multiplex signal for supplying a composite signal comprising said first information signal and said modulated subcarrier signal, said composite signal being subject to variations in its average amplitude; and signal-translating means including a second frequency detector for detecting said second information signal from the subcarrier and means for maintaining the average amplitude of the second information signal, for a given percentage modulation of the subcarrier, proportional to the strength of the subcarrier; whereby variations in the average amplitude of the first information signal, resulting from said variations in the composite signal, are followed by corresponding variations in the average amplitude of the second information signal.

3,163,718
FREQUENCY AND TIME ALLOCATION MULTIPLEX SYSTEM

Pierre Deman, 56 Rue Fondary, Paris, France

Filed June 28, 1962, Ser. No. 205,976
4 Claims. (Cl. 179—15)

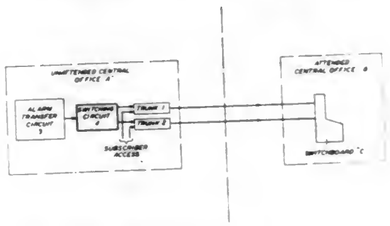




1. A multiplex system comprising means for simultaneously and recurrently sampling a plurality of μ modulation signals and producing input recurrent modulated sample pulses, a plurality of μ first resonant symmetrical band-filter means having center frequencies spaced apart from one another and frequency pass-bands over-lapping one another, said plurality of first resonant symmetrical band-filter means being equal in number to said modulation signal plurality, means for respectively applying said input recurrent modulated sample pulses to said first band-filter means and deriving therefrom elementary signals, said elementary signals having respectively as their carrier frequencies the center frequencies of said first band-filter means, as their bandwidths the pass-bands thereof and a time-duration comprised between ν and $(\nu+1)$ times the recurrence period of said recurrent modulated sample pulses, means for adding the elementary signals derived from said first band-filter means and applying the resultant signal to a single communication channel, a delay line connected to said communication channel and having taps for distributing said resultant signal into ν delay line outputs, a plurality of μ second resonant symmetrical band-filter means respectively identical to said first resonant symmetrical band-filter means, connected in parallel to each of said ν delay line outputs, means for sampling the output signals of said $\mu\nu$ second resonant symmetrical band-filter means and deriving therefrom output recurrent samples whereby said $\mu\nu$ output recurrent samples are related to $\mu\nu$ input samples pulses

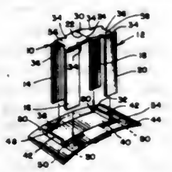
applied at ν recurrent sampling cycles to μ first band-filter means by a matrical constant coefficient relationship, and matrix means having $\mu\nu$ lines connected to said second output sampling means and μ columns and crosspoint elements proportional to said constant coefficients, whereby the modulation signals are restored at the outputs of said columns.

3,163,719
TRUNK TRANSFER CIRCUIT
Ralph A. Schluttenhofer, Reynoldsburg, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 31, 1962, Ser. No. 234,449
10 Claims. (Cl. 179—18)



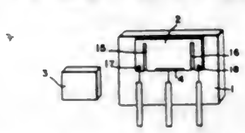
1. In a communication system,
a plurality of trunks interconnecting an unattended location and another location,
alarm transfer means at said unattended location comprising means responsive to a trouble condition for seizing one of said trunks,
timing means activated after a predetermined interval upon failure to complete a connection through said one of said trunks,
means enabled by said activated timing means for repeatedly attempting seizure of another of said trunks until said other trunk is seized, and
means operative only upon seizure of said other trunk for releasing said one trunk.

3,163,720
MAGNETIC HEAD
Frederick P. Netznik, Skokie, Ill., assignor to Webcor, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 5, 1959, Ser. No. 791,393
2 Claims. (Cl. 179—100.2)



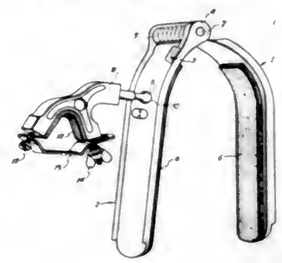
1. A magnetic tape recorder head assembly comprising two opposing pole pieces of high magnetic permeable material, each pole piece having a flat tape engaging shoe portion with its gap face surface coated with a film of material of low magnetic permeability, said pole pieces having two flat substantially parallel core arms extending therefrom and located in a plane disposed transversely to said gap face surface, a spacer plate of low magnetic permeability holding the pole pieces in fixed relationship with said coated gap faces and including means urging said pole pieces into contact with each other, and a fuse metal of low magnetic permeability holding said pole pieces and spacer plate in an integrated unitary assembly.

3,163,721
TRANSDUCER FOR MAGNETIC RECORDINGS
Friedrich Kuhrt and Gustav Stark, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed June 23, 1960, Ser. No. 38,150
Claims priority, application Germany, July 2, 1959, S 63,723
2 Claims. (Cl. 179—100.2)



1. A transducer device for reproducing magnetic signals from magnetogram carriers movable relative to the transducer device, comprising a magnetizable core structure having a portion adapted for engagement by the magnetogram carrier and having in said portion a substantially planar field gap with a gap edge extending up to the place of carrier engagement, a substantially rectangular semiconductor plate disposed in said gap so as to be subjected to magnetic field variations due to the signals to be reproduced, said plate having an electrode-free edge substantially flush with the carrier-adjacent edge of said gap, three mutually spaced electrodes joined with said plate at locations away from said edge, one of said electrodes being located centrally on the plate edge opposite said electrode-free edge, said plate having two slits extending from said opposite plate edge to near said electrode-free edge, said two slits being spaced from said one electrode on opposite sides thereof, said other two electrodes being located at places separated by said respective slits from said one electrode, and an electric sensing circuit having three leads connected to said respective electrodes.

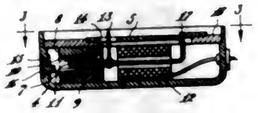
3,163,722
SHOULDER SUPPORT FOR TELEPHONE HANDSET
Ricardo Gómez, Monte de Piedad 15 Desp. 309, Mexico City, Mexico
Filed Mar. 7, 1961, Ser. No. 93,990
Claims priority, application Mexico, Mar. 8, 1960, 62,193
4 Claims. (Cl. 179—157)



1. A shoulder support for a telephone handset comprising a pair of rigid arms constructed from plastic material and each having a slightly arched shape, one of said arms having an opening therethrough, said arms being articulated together about a pivot at one of their ends, a spring coiled about said pivot and urging said pair of arms toward each other for clamping a shoulder of a wearer, a strip of sponge rubber affixed to the inner side of each said arms and covering only the lower portion thereof, a spindle having a ball at one end and passing through said opening in said one arm, means for clamping said ball rotatably under pressure against said arm having

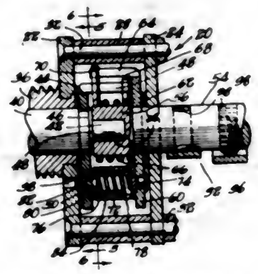
the opening, a forked member secured to the outer end of said spindle, and a bracket releasably secured across the arms of said forked member to retain a telephone handset clamped within said forked member.

3,163,723
DAMPING MEANS FOR MAGNETIC TRANSLATING DEVICE
George C. Tibbetts, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine
Filed July 17, 1962, Ser. No. 210,338
6 Claims. (Cl. 179—180)



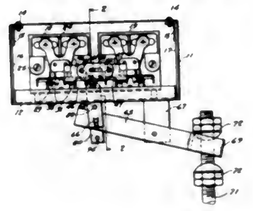
1. A damping member for a magnetic translating device which has a folded armature having a fixed end and an end free to vibrate, comprising an element of vibration damping material having one portion attached to a substantially fixed portion of a magnetic translating device and having another portion attached to the armature between the fixed and free ends thereof in the vicinity of the folded region.

3,163,724
ROTARY SNAP ACTION SWITCHING MECHANISM WITH LOCKING MEANS
John O. Roeser, Park Ridge, Ill., assignor to Illinois Tool Works, Inc., a corporation of Delaware
Filed Aug. 13, 1959, Ser. No. 833,413
13 Claims. (Cl. 200—18)



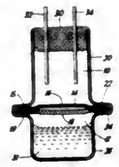
1. A snap action device comprising a driving shaft, a driven shaft coaxial with said driving shaft and extending axially rearwardly therefrom, fixed base means rotatably mounting said driving and driven shafts, a driver fixed on said driving shaft, a driven member on said driven shaft to the rear of said driver, torsion spring means acting between said driver and said driven member and resiliently tending to bring said driver and said driven member into predetermined rotational alignment, said fixed base means having fixed locking formations thereon axially forwardly of said driven member, locking means on said driven member extending forwardly therefrom in the direction of said driver and selectively engageable with said locking formations to lock said driven member and said driven shaft in fixed position, rotation of said driving shaft and said driver applying tension on said spring means, and said driver having means thereon effective after predetermined rotation of said driver operatively to engage and to shift said locking means axially of said shafts and thereby to release said locking means from one of said locking formations whereby said spring means rotates said driven member and said driven shaft with a snap action to bring said driven member back into said predetermined rotational alignment with said driver.

3,163,725
ELECTRIC SWITCH MECHANISM FOR SELECTIVE OPERATION OF PLURAL SWITCHES
Josef J. Zeller, Asheville, N.C., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 1, 1961, Ser. No. 136,402
6 Claims. (Cl. 200—18)



1. Control means for operating a pair of electric motors including a pair of electric switches, each of said electric switches controlling the operation of one of said motors and having relatively movable contacts and an operating lever for ececting movement of said contacts comprising; means connected with said levers for operating said switches in one mode of operation wherein the switches operate alternately and in sequence opening either one of said switches before the other is closed during normal operations and for sequentially closing both switches under abnormal conditions, and means selectively positionable in a pluralty of positions and operably connected with the first mentioned means for operating said switches in said one mode of operation when said second mentioned means is in one of said positions and for selectively operating only one of said switches during said normal conditions when the second mentioned means is in another of said positions.

3,163,726
DISCS FOR THE MERCURY UNSHORTER SWITCH
Herbert S. Kalish, Jackson Heights, and John Gilbert Ray, Mineola, N.Y., assignors, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed Nov. 22, 1952, Ser. No. 322,052
6 Claims. (Cl. 200—32)

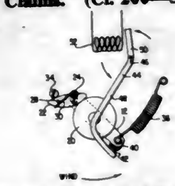


1. A mercury type switch having a plurality of compartments separated by a pair of spaced barrier members, a pair of spaced electrodes projecting into at least one compartment of said switch, and an electrical conducting fluid medium within the walls of said switch, said barrier members being made of the combination of a pressed and sintered porous metal disc and a solid disc containing an opening and being adapted to permit the passage of said electrical conducting fluid medium from one compartment to another under a definite pressure time relationship.

3,163,727
SNAP CLOSURE SWITCH FOR ONE-WAY CLUTCH DRIVES

Ralph G. Eshleman, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Oct. 8, 1962, Ser. No. 228,994
13 Claims. (Cl. 200—38)

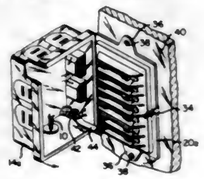


1. A snap closure switch for a unidirectional drive comprising drive means and a driven member, clutch means including a movable contact coupling said drive means to said driven member, a second contact positioned in the path of movement of said movable contact, and means for disengaging said clutch means just prior to the engagement of said contacts, said movable contact being mounted on a rotor, said drive means including a spring for driving said rotor.

3,163,728
COMBINATION SAFETY SOCKET AND FUSE BOX

Howard F. Martin, 250 S. Nelson Ave., Wilmington, Ohio

Filed Mar. 28, 1962, Ser. No. 183,099
5 Claims. (Cl. 200—50)



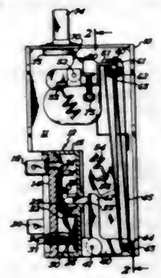
1. An electrical extension; an electric cord, a plug at one end of the cord, a box-like structure into which the other end of the cord leads, a plurality of receptacles in said box-like structure accessible through the walls of the structure, and circuit means interconnecting said plurality of receptacles with said electric cord and comprising fuse means in circuit with each said receptacle and located in said box-like structure, an on-off switch in said box-like structure operable for disconnecting the circuit means to said receptacles from said electric cord, the said box-like structure including a movable lid portion for gaining access to the interior of said box-like structure for replacement of fuses therein, and means operable in response to opening of said lid for disconnecting the said circuit means to the receptacles from said electric cord.

3,163,729
HUMIDITY CONTROL APPARATUS EMPLOYING LEVER MEANS TO ACTUATE A PUSH BUTTON SWITCH

Raymond P. Flagg, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 191,082
4 Claims. (Cl. 200—61.04)

1. In a humidity control device, a base, a switch having a push button operator and mounted on said base, a first bell crank lever pivotally mounted at a lower end of said base, said lever having a first extremity for engaging said push button operator when said crank is moved in a first direction and a second extremity extending parallel to said lever end of the base, a second bell crank lever pivotally mounted at an upper end of said base, said second lever having a first extremity extended in spaced relationship with said second extremity of said first lever, a whiffle-tree like member having two curved support members, said member being supported by said first extremity of said second lever, a third curved support member mounted on said second extremity of said first lever, a continuous ribbon humidity responsive element which changes in length as the moisture level of the surrounding air changes, said element being supported by said curved members whereby four effective lengths of element extend between said spaced levers, a cam, a shaft mounted

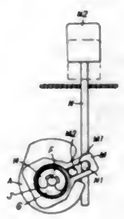


in an upper end of said base, means connecting said cam to said shaft, a third bell crank lever pivotally supported on said base, said third lever having an extremity engaging said second lever, said cam engaging an extremity of said third lever to select a position depending upon the rotation of said shaft to a predetermined position, said position establishing a humidity level at which said switch of the device is operated, a strain release spring connected between said second lever and said base, said spring maintaining tension on said element and allowing movement of said second lever independently of said third lever upon said humidity responsive element shortening in total length beyond a predetermined amount.

3,163,730
ROTARY ELECTRICAL SWITCHES

James John Drage, London, England, assignor to Bell Punch Company Limited, London, England, a British Company

Filed Apr. 5, 1962, Ser. No. 185,286
Claims priority, application Great Britain Apr. 7, 1961
7 Claims. (Cl. 200—61.58)

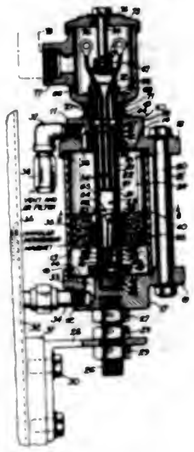


1. A key-operated electrical switch comprising a base of insulating material, at least two fixed contacts mounted on said base, a shaft fixed to and projecting perpendicularly from said base, a contact plate rotatable on said shaft and cooperating with said fixed contacts, spring means carried on said shaft and urging said plate along said shaft towards said fixed contacts, a flexibly resilient coupling arm secured to said plate for rotation therewith on said shaft and provided with a slot extending in a direction generally perpendicular to the axis of said shaft, and a key stem mounted for movement in the direction of its longitudinal axis and provided with an operating lug slidable in said slot.

3,163,731
LIQUID LEVEL CONTROL HAVING AN ANNULAR PERMANENT MAGNET FOR ACTUATING A MERCURY SWITCH

Frank J. Lyden, 1115 N. 9th St., Manitowoc, Wis.

Filed July 25, 1961, Ser. No. 126,570
5 Claims. (Cl. 200—84)

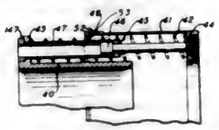


1. In a liquid level control, a float housing including a vertical transparent tubular shell and upper and lower heads between which said shell is secured, a tubular switch housing extending vertically within said shell and rigidly connecting the upper and lower heads, said float housing having therein a liquid-receiving float chamber of annular cross-section, said shell and switch housing defining the side walls of said float chamber, said lower head having a liquid passage communicating with said chamber, a magnetically actuated mercury tube switch mounted in stationary position in said tubular switch housing, said switch housing having non-magnetic side walls, an annular float vertically movable in said chamber and surrounding said tubular switch housing, and an annular magnet carried by said annular float at the inner portion thereof and surrounding said switch housing in adjacent relation thereto for actuating said switch upon a change of liquid level in said chamber.

3,163,732
ELECTRICALLY FUSED SPRING PACKAGE

John R. Abbott, Sherman Oaks, and John J. Phillips, Rolling Hills, Calif., assignors to Gray & Huleguard, Inc., Santa Monica, Calif., a corporation of California

Filed Nov. 20, 1961, Ser. No. 153,291
5 Claims. (Cl. 200—116)

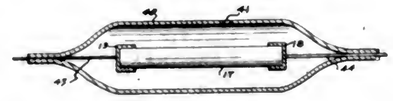


1. An electromechanical actuator package, comprising a pair of endwise relatively movable bodies extending in endwise collapsed relation and defining an endwise extending axis, spring means exerting loading tending to relatively oppositely bodily move said bodies, and means for controlling said body relative movement by said spring means and including a series of endwise extending cantilever fingers on one body and spaced about said axis, the fingers and the other body having cam shoulders in latching interengagement holding the bodies against relatively opposite bodily movement, the shoulders having cam angularity with respect to said axis to transmit force tending to flex the fingers with respect to said axis and thereby release said latching interengagement, and means extending about said axis and controllably blocking and unblocking said flexing of the fingers and including an electrically energizable element operable to effect unblocking of finger flexing.

3,163,733
SLOW BLOW FUSE

Bernard Ostrofsky, Highland, Ind., and James W. Ballard, Dayton, Ohio, assignors, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York

Filed Sept. 23, 1959, Ser. No. 841,797
3 Claims. (Cl. 200—135)

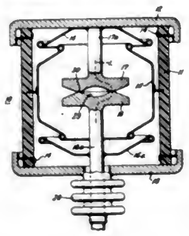


1. A slow blow fuse comprising a base of a refractory, substantially electrically non-conductive material, electrical terminals spaced apart on the base, and a film of metal deposited from the vapor phase on the base engaging the terminals and forming an electrically conductive path between the terminals, said film of metal deposited by thermal decomposition of a heat-decomposable metal bearing compound, said metal film having a low ohmic resistance and the metal of said film having a resistivity greater than that of the material of said terminals and having the property of opening said electrically conductive path without fusion of the film when glowed at red heat in an oxidizing atmosphere.

3,163,734
VACUUM-TYPE CIRCUIT INTERRUPTER WITH IMPROVED VAPOR-CONDENSING SHIELDING

Thomas H. Lee, Media, Pa., assignor to General Electric Company, a corporation of New York

Filed Jan. 26, 1962, Ser. No. 168,959
15 Claims. (Cl. 200—144)



1. In a vacuum type circuit interrupter rated to interrupt commercial power frequency currents in excess of 10,000 symmetrical available R.M.S. amperes with any degree of asymmetry within one cycle of arcing time:

(*a*) a highly evacuated envelope,

(*b*) a pair of relatively movable contacts that are separable to establish an arcing gap therebetween, said contacts being of a non-refractory metal that is

free of sorbed gases and contaminants to such an extent that if the contacts are deeply eroded by arcing in a two liter chamber evacuated to 10^{-6} mm. of mercury, the pressure in the chamber is no higher than its initial level 1/60 of a second after arcing,

(*c*) a metallic shield surrounding said arcing gap and spaced therefrom, said shield having a restricted portion of its surface area aligned with said arcing gap and extending beyond said gap for ¾ inch on either side of said gap,

(*d*) said shield being sufficiently spaced from said gap to limit the average power input into said restricted portion of the shield surface to 100 kilowatts per square inch during the most severe interruptions within the interrupting rating of said interrupter;

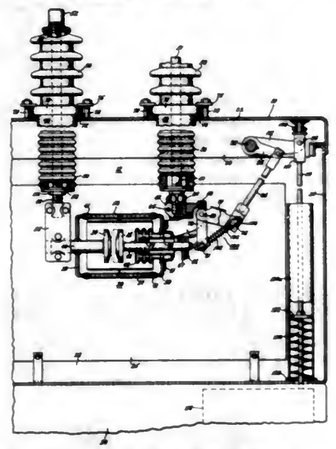
(*e*) the metal of said restricted portion of the shield being of such a character that $\sqrt{k/K}$ is less than .085, where k is the thermal diffusivity of the metal in inches square per second and K is the thermal conductivity in watts per inch-degrees centigrade, both at normal room temperature, the thickness of said restricted portion of the shield being at least as great as about $\frac{1}{4}\sqrt{k}$ inches.

3,163,735

ELECTRIC CIRCUIT BREAKER WITH SEALED INTERRUPTING UNIT

Richard H. Miller, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Filed June 29, 1962, Ser. No. 206,310
23 Claims. (Cl. 200—144)



1. An electric circuit breaker comprising:

(*a*) a metallic housing,

(*b*) a pair of spaced apart terminal bushings extending through a wall of said housing, each of said bushings comprising a conductor for carrying current between opposite ends of the bushing and means for insulating said conductor from said wall,

(*c*) an electric circuit interrupter comprising a sealed envelope and a pair of separable contacts located within said envelope, one of said contacts being movable,

(*d*) means for mounting said envelope between the inner ends of said terminal bushings with one end of said envelope mounted on one of said bushings and the other end mounted on the other of said bushings,

(*e*) means for connecting the conductor of a first one of said bushings to the movable one of said contacts,

(*f*) means for connecting the conductor of the other of said bushings to the other of said contacts,

(*g*) a rotatable operating shaft extending generally perpendicular to a reference plane including said bushings, said shaft being located adjacent said wall and at a side of said first bushing opposite to the location of said other bushing,

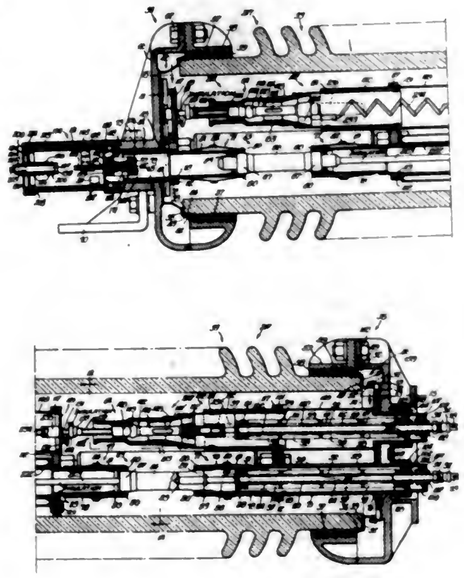
(*h*) and insulating means for transmitting motion from said rotatable operating shaft to said movable contact to produce opening and closing movement of said movable contact.

3,163,736

HIGH VOLTAGE GAS TYPE CIRCUIT INTERRUPTER

John J. Mikos, Highland Park, and Leonard V. Chabala, Maywood, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware

Filed May 23, 1961, Ser. No. 111,998
33 Claims. (Cl. 200—145)



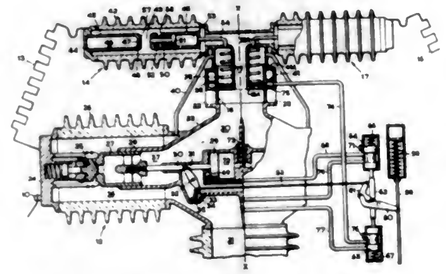
1. In a circuit interrupter, in combination, a cylindrical frangible insulating housing, hermetic sealing means closing off each end of said housing, an arc extinguishing gas within said housing at a pressure above atmospheric pressure, a terminal having a bottom portion surrounded by an annular flange telescoped over each end of said housing, cement securing each flange to the respective end of said housing, said hermetic sealing means at each end of said housing being independent of the attachment by cement of the terminal and annular flange to the respective end of said housing, separable contact means within said housing interconnecting said terminals, an operator for opening and closing said contact means extending out of one end of said housing through the hermetic sealing means thereat, said hermetic sealing means at said one end including a seal between said operator and the hermetic sealing means through which it extends.

3,163,737

GAS BLAST CIRCUIT BREAKER AND OPERATING MEANS THEREFOR

Stanislaw Mieczyslaw Gosek and Henry Rowlinson, Stafford, England, and Artur Goldner, Geneva, Switzerland, assignors to The English Electric Company Limited, London, England, a British company

Filed Mar. 21, 1961, Ser. No. 97,186
Claims priority, application Great Britain, Mar. 23, 1960, 10,291/60
8 Claims. (Cl. 200—148)



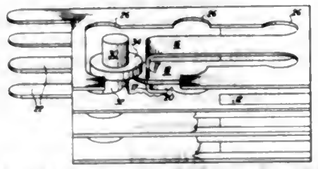
1. A gas-blast electric circuit-breaker having a main circuit interrupter, a resistor connected electrically in parallel with said main circuit interrupter, a resistor circuit interrupter connected in series with said resistor, closed chamber means enclosing said main and resistor circuit interrupters, a source of gas under pressure connected to said closed chamber means, first pressure-responsive means connected to said main circuit interrupter to operate it, second pressure-responsive means connected to said resistor circuit interrupter to operate it, an exhaust valve operable independently of said interrupters, first passage means connecting said first pressure-responsive means to said exhaust valve, second passage means connecting said second pressure-responsive means to said exhaust valve, whereby opening of said exhaust valve causes operation of both said main circuit interrupter and said resistor circuit interrupter, and further passage means connecting said closed chamber means on the side of said main circuit interrupter remote from said pressure source with said exhaust valve, whereby on opening of said main circuit interrupter a blast of said gas under pressure passes over said main interrupter and through said exhaust valve.

3,163,738

ELECTRICAL SWITCH CONSTRUCTION

Guy M. Farrell, Elmhurst, Ill., assignor to F & F Enterprises, Inc., Chicago, Ill., a corporation of Illinois

Filed June 1, 1961, Ser. No. 114,262
9 Claims. (Cl. 200—166)



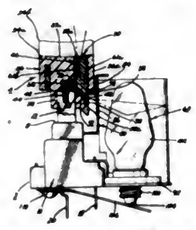
1. A spring contact assembly comprising a plurality of of flat springs stacked one above the other and each having a portion protruding into a central aperture, an insulator arranged between each pair of successive springs, each of said insulators having a central aperture aligned with the central aperture of said springs, and a movable actuator extending into said aperture and adapted to engage said springs whereby said actuator is adapted to operate any of said portions either into or out of engagement with another portion, and wherein the position of said actuator is maintained by said springs and an adjacent insulator without being fastened to either.

3,163,739

SWITCH WITH SELECTIVELY LIGHTED PUSH-BUTTON ACTUATORS

Philip Hutt, Milford, Conn., assignor to General Electric Company, a corporation of New York

Filed Sept. 13, 1961, Ser. No. 137,768
6 Claims. (Cl. 200—167)



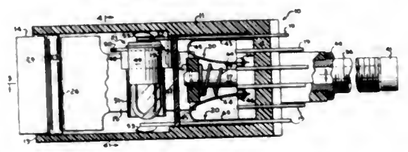
1. A pushbutton switch comprising a housing, contact means disposed in said housing, and a plurality of reciprocating members operating said contact means by the selective positioning thereof, at least one of said members having a handle section including an outer face manually engageable to depress said one member and operate said contact means, said handle section being of a relatively opaque material with a tunnel formed therein, said tunnel opening at one of its ends into the outer face of said handle section, a light transmitting element inserted in the tunnel, said element having an inner reflective surface disposed in said tunnel reflecting light to the outer face of said handle section, a light source mounted on the exterior of said housing emitting light along a path external of the switch housing toward said reflective surface through another end of said tunnel, means positioned between said light source and said handle section preventing the impingement of light from said source upon the inner reflective surface of said element when the associated reciprocating member is in one position thereby to indicate the positioning of said member, and means retaining said light transmitting element in the tunnel of said handle section solely by cooperation of said element and said section.

3,163,740

PUSH-BUTTON SWITCH ASSEMBLY

Philip C. Ross, Costa Mesa, Calif., assignor to Patent License Corporation, Chicago, Ill., a corporation of Illinois

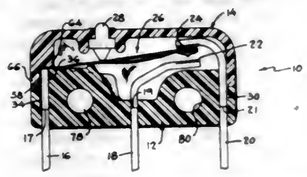
Filed Mar. 19, 1962, Ser. No. 180,499
9 Claims. (Cl. 200—168)



1. A switch assembly of the push-button type comprising a hollow body portion having an open end and a closed end, a transverse plate in said body portion dimensioned for sliding movement longitudinally thereof, push rod means journaled through the closed end of said body portion for reciprocal movement therethrough and fixed to said plate, push-button means slidably received in the open end of said body portion, said push-button means being generally cup-shaped with a continuous transverse end wall portion joined with an axial peripheral skirt portion and provided with resilient finger-like members

projecting axially therefrom along inner surface portions of said body portion into releasable connection with edge portions of said plate, the end wall portion of said push-button means projecting from the open end of said body portion, said skirt portion inwardly of said end wall portion being circumferentially recessed to define a groove opposed to the inner surface portions of said body portion inwardly of said open end, a continuous sealing ring mounted in said groove and in resilient sliding sealing engagement with said inner surface portions, a plurality of electrical contact plates projecting through said closed end on either side thereof internally and externally of said body portion, and at least one reversely arcuately folded switch blade in said housing formed from resilient material and having one end thereof fixed to define a circuit connection and the other end thereof provided with a multiple face contact thereon and freely movable between spaced inner ends of a pair of contact plates for alternate electrical connection therewith, said switch blade being positioned for camming engagement of the free end thereof by said transverse plate during movement thereof toward said closed end to move said face contact out of engagement with one contact plate and into engagement with another.

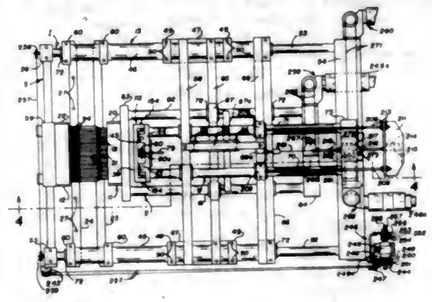
3,163,741
LOW TRAVEL SWITCH MECHANISM MOUNTING
George Bury, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,852
7 Claims. (Cl. 200—168)



1. A snap switch mechanism comprising a movable switch structure having an elongated switch arm and a leg generally parallel thereto, each of said arm and leg being formed with an end portion generally transverse to the respective elongated planes thereof, said leg being initially formed so as to be slightly longer than said arm and both said arm and said leg tending to be substantially flat, means for maintaining a corresponding free end of said arm and of said leg in fixed relationship to one another but free for movement, anchor means comprising terminal means engaging said transverse end portions and being operable to maintain said transverse end portions of said arm and leg respectively coplanar and parallel to each other to thereby place said arm in stressed form, said arm being placed in tension, said leg being placed in compression and assuming a serpentine shape, a fixed contact means toward and away from which said switch structure is snapable, an actuating member engageable with said switch structure for effecting a snapping action, and electrical terminal means connected to said fixed contact means.

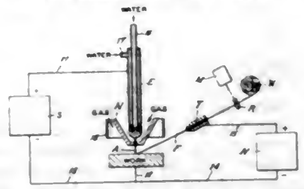
3,163,742
DRIVE SYSTEM FOR HONEYCOMB CORE MACHINE
Fred H. Rohr, San Diego, Elbert M. Lacey, Chula Vista, William F. Rethwish, National City, and Dale S. Harding, Chula Vista, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed June 29, 1962, Ser. No. 207,162
19 Claims. (Cl. 219—82)

1. In a drive system, a stop member, a driven member, drive means including a yieldable driving connection with said driven member for moving said driven member to position the same precisely and positively against said stop member, means for deenergizing said drive means in response to predetermined yielding of said driving con-



nection when the drive means has positioned said driven member against said stop member, and means effective on deenergization of said drive means for locking said driving connection and thereby holding the driven member in position against the stop member.

3,163,743
ELECTRIC ARC WORKING WITH HOT WIRE ADDITION
Robert S. Wroth, Santa Monica, Calif., and Norman Reis, Fords, and August F. Manz, Newark, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed June 26, 1962, Ser. No. 205,284
5 Claims. (Cl. 219—137)



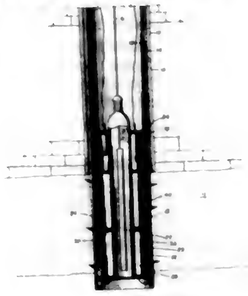
1. An electric arc working process comprising establishing an arc between a nonconsumable electrode and a workpiece; introducing an arc gas into the region of said arc to produce an arc plasma; constricting and collimating said arc and arc plasma; directing said constricted and collimated arc and arc plasma as an arc effluent against said workpiece to form a molten puddle therein; feeding a wire from a source thereof to said molten puddle; continuously forming an arcless short circuit between said wire and said molten puddle to energize the end of such wire with current sufficient to melt such wire flowing through such end to thereby continuously deposit molten material supplied by the so-fed wire on the workpiece while shielding the zone of said molten puddle.

3,163,744
NON-CONSUMABLE ARC-MELTING AND ARC-WELDING ELECTRODES
Simon S. Aconsky, Westport, and James R. Doyle, Middletown, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed Feb. 23, 1962, Ser. No. 175,306
11 Claims. (Cl. 219—145)

1. A non-consumable, arc-melting and arc-welding electrode for use in melting or welding reactive and refractory metallic compositions, the electrode being formed of a composition comprising from 3 to 25 volume percent

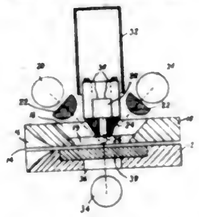
cerium and the balance of the electrode composition being a metal selected from the group of reactive and refractory metals consisting of titanium, zirconium, and metals having a melting point of at least 1875° C., the metal selected being the same as the base of the metallic composition to be melted or welded.

3,163,745
HEATING OF AN EARTH FORMATION PENETRATED BY A WELL BOREHOLE
William G. Boston, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Feb. 29, 1960, Ser. No. 11,747
2 Claims. (Cl. 219—277)



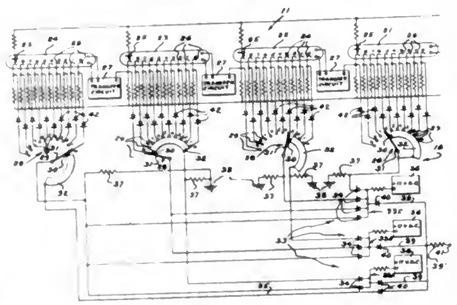
1. A heater for an earth formation penetrated by a well borehole comprising a heater housing, a heating element within said housing, collars mounted upon said housing and provided with perforations for the passage of a fluid, and a jacket surrounding said housing and mounted upon said collars whereby said collars separate said housing from said jacket to provide a fluid conducting annulus between said housing and said jacket, said jacket having an inner surface facing said housing reflective of thermal radiation and a transparent coating of vitreous material fixed to the inner surface of said jacket.

3,163,746
MARK SENSING DEVICE
Manfred Hoeser, Frankfurt am Main-Roedelheim, Germany, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 15, 1959, Ser. No. 827,395
Claims priority, application Germany July 18, 1958
7 Claims. (Cl. 235—61.11)



1. A device for sensing marks on a record feeding past a sensing station comprising, a first light source directed to illuminate one surface of a record being conveyed past such sensing station, photo-cell means disposed to receive the light of said source reflected from said one surface of said record, said photo-cell means producing a control signal in response to a significant variation in the intensity of the light reflected from said one surface of the record resulting from a mark on said one surface, and an additional light source disposed to illuminate the other opposed surface of said record feeding past said sensing station, said additional light source being directed towards said photo-cell means and providing an intensity at said photo-cell means, when unobstructed by the record at said sensing station, substantially equal to the intensity of light from said first light source reflected by an unmarked area of said one surface.

3,163,747
CIRCUIT FOR ANALYZING SELECTED PATTERNS OF MULTIPLE INTELLIGENCE SIGNALS
George C. Veverka, Berwyn, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 15, 1962, Ser. No. 194,896
7 Claims. (Cl. 235—92)



1. A circuit for indicating when selected pattern relationships are present in a variable multiple intelligence signal, which comprises:

a bank of multicontact switches, each having one specific contact to which the intelligence signal is applied at any one time in accordance with a pattern relationship to be analyzed;

a movable selector arm associated with each switch and preset to make electrical connection with a selected reference contact of the associated switch;

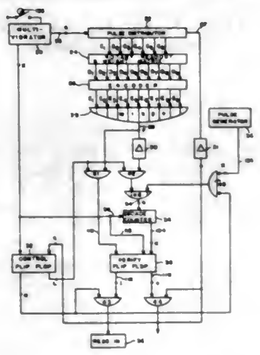
a shunting member associated with each switch and preset in accordance with the position of the selector arm to make electrical connection with any contacts of the associated switch which bear a predetermined position with respect to the reference contact, the selector arm and the shunting members thereby establishing the selected pattern relationships; and

a coincidence circuit connected (1) to the shunting member of at least one switch in the bank and (2) to the selector arm of at least one other switch to provide an output signal when the pattern relationship of the intelligence signal applied is one of the selected pattern relationship established by the selector arms and shunting members of the switches connected to the coincidence circuit.

3,163,748
DATA CHECKING APPARATUS
Robert H. Schafer, Farmington, Mich., and David C. Schlick, Waltham, Mass., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 21, 1961, Ser. No. 153,877
19 Claims. (Cl. 235—153)

1. In a cyclically operable accounting machine for calculating a check digit for a multidigit number to which the digit to be calculated is to be assigned, said machine having numerical input means for storage of information during a first cycle of operation of said accounting machine and pulse emitting and encoding elements to convert the numerical representations of the multidigit

amounts to a first series of pulses according to a predetermined code, a counter operably connected to said encoder to receive serially the pulse trains from said encoder, said counter cyclically operable to the base "*n*" and producing an output and resetting itself for every "*n*" count, a bistable control means operably connected to said encoder and said counter and receiving said first series of pulses from said encoder and the "*n*" count outputs from said counter, said control means triggered to one of its stable states by said first series of pulses and to its second stable state by said "*n*" count outputs, complementing pulse means connected to said "*n*" counter



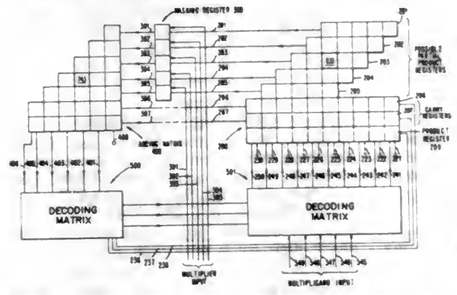
and activated by the second cycle of operation of said accounting machine and supplying a train of pulses to said "*n*" counter sufficient to reset said counter, sensing means operably connected to said bistable control means, activated in a second cycle of operation of said accounting machine and producing output signals corresponding to the number of pulses supplied by said complementing means to bring said "*n*" counter to a full count, and cyclically operable and differentially positionable means operably connected to said sensing means and advanceable in accordance with the number of output pulses of said sensing means signifying said check digit.

3,163,749

PHOTOCONDUCTIVE COMBINATIONAL MULTIPLIER

Robert I. Roth, Briarcliff Manor, and Harold Fleisher, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 15, 1961, Ser. No. 117,332
12 Claims. (Cl. 235—164)



1. In a device for generating data manifestations representing a product from data manifestations representing a multiplicand and data manifestations representing a multiplier, said product, multiplicand and multiplier each having a plurality of digital positions;

a memory for storing data manifestations, said memory having a plurality of multiplicand storage registers, one for each digit of said multiplier, each of said multiplicand storage registers having one storage position for each digit of said multiplicand, each storage position being associated with a particular digital position, said multiplicand storage registers arranged in series from a first to a last, the lowest order storage position of each multiplicand storage register beyond the first being associated with a digital position higher by one than the lowest order digital position of the preceding multiplicand storage register,

a product storage register having a plurality of storage positions, each storage position being associated with a particular digital position, the lowest order storage position of said product register being associated with the same digital position as the lowest order storage position of said first multiplicand storage register, and

a plurality of carry storage registers for storing carries between digital positions, each carry register being associated with a different order carry,

means for storing the data manifestations representing said multiplicand in each of said multiplicand storage registers,

register output means for each multiplicand register and for each carry register,

a plurality of read out means, one for each digital position of said memory, for controlling each register output means in response to data stored in the respective digital position of the associated register,

a multiplier register for storing the data manifestations representing said multiplier, said register having one storage position associated with each digit of said multiplier,

means for respectively masking the multiplicand register output means in response to data stored in associated positions of said multiplier register,

sum output means,

a plurality of carry output means, each carry output means being associated with a different order carry,

logical adding means responsive to the masked register output means for generating data manifestations on said sum and on said carry output means representing the sum and carries of the data manifestations from all of said register output means,

means responsive to said carry output means for storing the respective carries in the respective carry registers at the respective carry digit positions appropriately displaced from the respective position which was read out,

means responsive to said sum output means for storing data manifestations representing the sum generated by said logical circuits in the respective digital position of the product register which was read out to activate the register output lines,

whereby after each of said read out means has been successively activated the data manifestations in said product register will represent the product of said multiplicand and said multiplier.

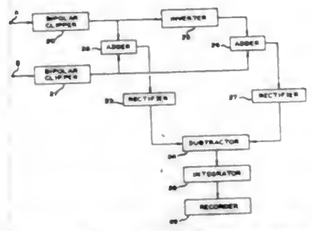
3,163,750

SIGNAL CORRELATION MEASUREMENT

Joe P. Lindsey and Jack O. Rice, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 1, 1960, Ser. No. 5,935
5 Claims. (Cl. 235—181)

4. Apparatus for correlating first and second electrical signals comprising means to clip said first and second signals to establish third and fourth signals, respectively, means to sum said third and fourth signals to establish a fifth signal, means to rectify said fifth signal to establish a sixth signal, means to subtract one of said third and



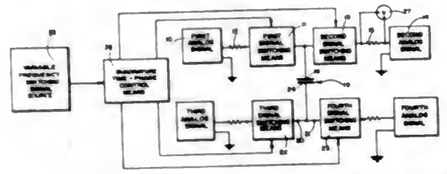
fourth signals from the other to establish a seventh signal, means to rectify said seventh signal to establish an eighth signal, and means to subtract one of said sixth and eighth signals from the other to establish a ninth signal.

3,163,751

RELAY TACHOMETER AND ANALOG MULTIPLIER CIRCUIT

Larry R. Millsap, South Gate, and Walter Hochwald, Downey, Calif., assignors to North American Aviation, Inc.

Filed Aug. 2, 1961, Ser. No. 128,751
10 Claims. (Cl. 235—194)



1. A computer comprising a plurality of analog inputs, a capacitor, switching means for connecting opposite sides of said capacitor to different ones of said inputs, means for initiating successive operation of respective ones of said switching means at like frequency at successive instants mutually spaced by intervals equal to the period of said frequency divided by the number of said switching means, each said switch means having a duration of operation greater than one of said intervals, and output means for providing an indication of current flowing through one of said switching means.

3,163,752

ION ACCELERATION APPARATUS FOR COINCIDENCE TIME-OF-FLIGHT MASS SPECTROMETERS

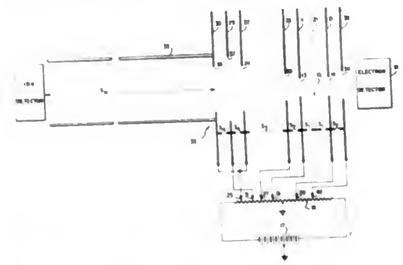
Austin L. Wahrhaftig, Salt Lake City, Utah, and Marvin L. Vestal, Sparks, and Manfred Krause and William H. Johnston, Baltimore, Md., assignors to William H. Johnston Laboratories, Inc., Baltimore, Md., a corporation of Maryland

Filed Aug. 20, 1962, Ser. No. 217,806
10 Claims. (Cl. 250—41.9)

1. In an ion accelerator position between a source of ions and an ion detector,

divergent lens means positioned adjacent the source and including means for establishing an electrostatic field urging the ions toward the detector, said divergent lens means being operable to slightly diverge ions from the source to cause them to appear to have originated at a virtual source farther from the detector than the actual source,

and a convergent lens positioned between the divergent lens and the detector and including means for establishing a second electrostatic field of higher intensity urging the ions toward the detector,



the distance between the two lenses and the voltage difference therebetween being such as to change the divergent ion beam into a substantially parallel beam as it passes through said convergent lens,

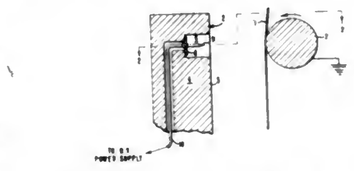
the convergent lens being separated from the ion detector by a field-free drift region.

3,163,753

PROCESS AND APPARATUS FOR ELECTROSTATICALLY APPLYING SEPARATING AND FORWARDING FORCES TO A MOVING STREAM OF DISCRETE ELEMENTS OF DIELECTRIC MATERIAL

Charles Alfred Di Sabato, Philadelphia, Pa., and John Edward Owens, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 12, 1961, Ser. No. 137,575
13 Claims. (Cl. 250—49.5)

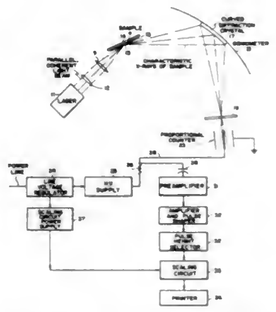


13. Improved apparatus for electrically separating and forwarding discrete elements of dielectric materials generally in a given direction between a first position and a second position spaced therefrom, said apparatus comprising in combination, a first electrode unit near the first position a second electrode near said first position, means connected to said electrodes for applying a high potential electrical charge to said first electrode unit and a significantly different level electrical potential to said second electrode, the electrode units so constructed, arranged, and spaced relative to each other, and the differential charge between said electrode units of such a magnitude, that a corona charging zone is established between said electrode units with region of unipolar ion flow maintained in the vicinity of said first position and said second electrode, and means for introducing discrete elements of dielectric material into the corona charging zone and directing said elements through the vicinity of said second electrode to be acted upon by said unipolar ion flow and receive maximum separating and accelerating action toward said second position.

3,163,754
THERMALLY EXCITED X-RAY SPECTROMETER

John E. Bigelow, Hales Corners, Wis., assignor to General Electric Company, a corporation of New York

Filed Dec. 10, 1962, Ser. No. 243,304
6 Claims. (Cl. 250—51.5)

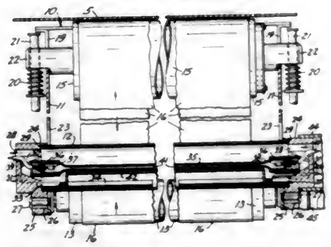


6. X-ray apparatus for analyzing a test sample for an element having an atomic number up to that of calcium, comprising: a laser focused upon said test sample having the capacity to produce a five million degree Kelvin temperature at said test sample; and X-ray diffraction apparatus positioned to receive X-rays from said test sample.

3,163,755
THERMOGRAPHIC COPY MACHINE WHEREIN THE INFRARED RADIATION SOURCE IS A FLASH LAMP WITH A CAPILLARY BORE

Arthur R. Kotz, Madison, Wis., and Roger H. Appeldorn, White Bear, Emil W. Grieshaber, White Bear Township, Ramsey County, Elmer J. Peterson, Minneapolis, and Norman L. Giorgini, West St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Oct. 20, 1958, Ser. No. 768,328, now Patent No. 3,056,904, dated Oct. 2, 1962. Divided and this application Nov. 28, 1961, Ser. No. 155,428
7 Claims. (Cl. 250—65)



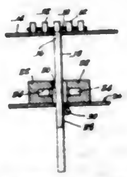
1. A machine for reproducing graphic originals, comprising means defining an inlet, an outlet and a copy station, means for conveying a composite of a graphic original and a copy sheet from said inlet through said copy station toward said outlet, means for irradiating a composite at said copy station, said irradiating means comprising a flash lamp, capacitor means in a circuit with said lamp, a charging circuit for storing energy in said capacitor means, and means for discharging the stored energy through said lamp including a triggering switch, a power cut-off switch in said charging circuit, switch actuating cam means, drive means tending to rotate said cam means in one direction, electro-responsive cam locking means operable to prevent rotation of said cam means beyond a given position, power switch-activating shoulder means on said cam means positioned to actuate said power switch to power cut-off position at a predetermined short time interval prior to said cam means reaching said given position, said shoulder means holding said switch in said power cut-off position until said cam means is rotated beyond said given position following subsequent release by said cam locking means, trigger switch actuating shoulder means on said cam means positioned to actuate said trigger switch after actuation of said power cut-off switch by its actuating shoulder means and momentarily preceding disposition of said cam means in said given position, and time delay switch means having a member positioned at said inlet for actuation by insertion of a composite, said last mentioned switch means being connected to effect, on actuation of said member, a release of said cam locking means for rotation of said cam means by its said drive means, said rotation of said cam means affording cycling actuation of said trigger switch and corresponding generation of radiation pulses by said flash lamp in timed relation to the advance of said composite through said copy station for irradiation of successive longitudinal areas of said composite, said time delay switch means being operable, after a predetermined time interval following disengagement of the trailing edge of said composite from said member, to render said cam locking means operative to prevent rotation of said cam means beyond said given position, the disposition of said cut-off and trigger switch actuating shoulder means insuring interruption of said charging circuit and discharge of said capacitor means when said cam means is in said given position.

3. In a machine for reproducing graphic originals, having means defining an arcuately-shaped copy station and having means for positioning a composite of a graphic original and a heat-sensitive copy sheet in copying position at said copy station, the combination of: means disposed coaxially with said copy-station for subjecting said composite while at said copy station to a brief radiation pulse, said means comprising an hermetically sealed envelope formed with an elongated transparent tubular main body portion having a capillary bore, electrodes within said envelope at opposite ends of said bore, and an ionizable fluid within said envelope; and means in circuit with said electrodes for impressing a predetermined voltage thereon to produce a radiation pulse; the reduced diameter of said capillary bore causing, for a given peak current and pulse length, the radiation pulse thus produced to be richer in shorter wavelength rays than said pulse would be if said bore were of larger diameter.

3,163,756
SAMPLE-CONVEYING AND LIGHT-SEALING MECHANISM FOR SCINTILLATION COUNTING

Raymond L. Meeder, Palos Heights, and Joseph E. Kus, Mount Prospect, Ill., assignors to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 3, 1962, Ser. No. 184,765
25 Claims. (Cl. 250—71.5)

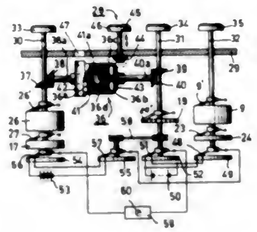


1. A device for scintillation counting and analogous purposes comprising wall means defining a chamber, a light-responsive detector exposed to light appearing within the chamber, an elongated passage connecting the chamber with the exterior, a sample-holder movable through the passage, a light-tight resilient seal member extending between the outer surface of the holder and the inner surface of the passage in light-tight sliding engagement, and means for moving the holder between an innermost position at a point positioning a sample thereon in the chamber and an outermost position wherein the sample is on the exterior of the chamber, a shutter in the passage having a closed position blocking the entry of exterior light into the chamber and an open position withdrawn from the passage, and means for operating the shutter as the holder moves through the passage.

3,163,757
X-RAY TUBE CONTROL APPARATUS

Jacobus Fransen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 5, 1961, Ser. No. 108,098
Claims priority, application Netherlands May 30, 1960
6 Claims. (Cl. 250—95)



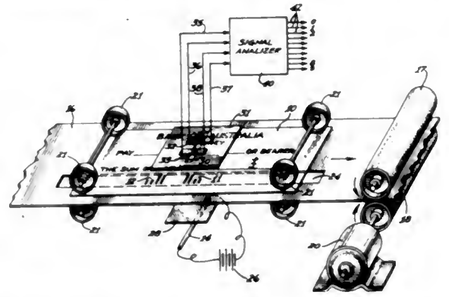
6. Control apparatus for a radiographic device comprising an electron discharge device having a collector electrode and an emitter electrode and adapted to produce a beam of electromagnetic energy for radiographic inspection of an object, said control apparatus comprising means for energizing said discharge device, said energizing means comprising means for supplying an operating potential to said electrodes and means for supplying a current to said emitter electrode, timing means for de-energizing said discharge device after a given time period, first adjusting means for varying the magnitude of said operating potential, second adjusting means for varying the magnitude of said emitter current, said timing means comprising third adjusting means for varying said time period, and coupling means having a first position for coupling said second and third adjusting means in relative responsive relationship with each other to maintain the product of the magnitude of the emitter current and time period constant whenever either of said second and third adjusting means is adjusted and having a second position for decoupling said second and third adjusting means from each other whereby either of said second and third adjusting means can be adjusted independently of the other.

3,163,758
AUTOMATIC CHARACTER READER UTILIZING INFRARED RADIATION

Clement J. Treacy, Balgowlah, New South Wales, Australia, assignor to General Electric Company, a corporation of New York

Filed Mar. 16, 1961, Ser. No. 95,408
8 Claims. (Cl. 250—83.3)

1. The combination comprising a document bearing data in the form of characters imprinted with a material absorbent to infrared radiation, a source of predominantly infrared radiation disposed proximate said document for directing a beam of infrared radiation onto said characters, a detector disposed proximate said document and responsive to infrared radiation received therefrom and for generating corresponding electrical signals, and means

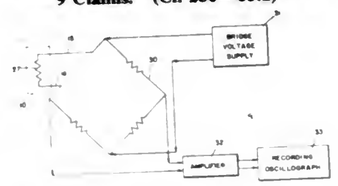


for analyzing said electrical signals to deliver output signals identifying said characters.

3,163,759
NEUTRON FLUX DETECTOR

Robert N. Cordy, Sherman Oaks, Calif., and John W. Flora, Denver, Colo., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed May 24, 1962, Ser. No. 197,470
9 Claims. (Cl. 250—83.1)



1. A neutron flux detector comprising,
(*a*) an enclosure means,
(*b*) a fissionable resistance material positioned within said enclosure means, and
(*c*) means electrically joining said resistance material to a measuring means,
(*d*) said material fissioning upon exposure to a neutron source to internally generate heat, thereby indicating the intensity of the neutron source.

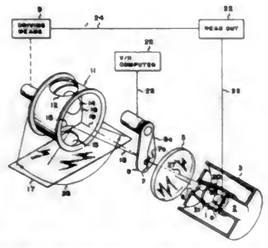
3,163,760
REFRACTIVE OPTICS INFRARED SCANNING SYSTEM

Elvin S. Brumfield, Temple City, Calif., and Michael F. Braun, Burlington, Iowa, assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Dec. 28, 1961, Ser. No. 162,810
11 Claims. (Cl. 250—83.3)

1. An infrared detector system comprising: rotatable optical scan means, means for driving said rotatable optical scan means, field stop means having an aperture therein in optical association with said rotatable optical scan means, detector housing means comprising a Dewar flask having an entrance window in optical association with said rotatable optical scan means, cold shield means within said detector housing means having an opening therethrough in optical association with both said rotatable optical scan means and said aperture of said field stop means, cold field stop means within said detector housing means in optical association with said rotatable optical scan means, said aperture of said field stop means and said opening of said cold shield means, a detector shielded by said shield

means in optical association with said cold field stop means, and means for cooling said cold shield means, said cold field stop means and said detector, whereby radiant energy



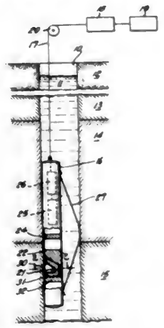
within the field of view of said rotatable optical scan means is folded thereby through the aperture of said field stop means, through said opening of said cold shield means and through said cold field stop means onto said detector.

3,163,761

RADIOLOGICAL WELL LOGGING USING NEUTRON COLLIMATOR TO REDUCE THE EFFECT OF WELL FLUID ON THE LOG

Allen D. Garrison, La Jolla, Calif., and Elmer Eisner, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 594,583, June 28, 1956. This application Oct. 29, 1962, Ser. No. 236,758
5 Claims. (Cl. 250—83.3)



1. A device for logging a bore hole traversing subsurface earth formations and containing a hydrogenous well fluid comprising an instrument housing adapted to be passed through the bore hole, means for supporting said housing in the bore hole, a source of neutrons and a detector of secondary radiations positioned in spaced relation along the longitudinal axis of the instrument, resilient means for continuously urging the housing toward one side of the well bore and means for directing neutrons outwardly from the source toward the formations on said side of the well bore, said directing means comprising a neutron shield generally enclosing said source and having a collimating aperture facing said one side, said shield including an inner shielding member comprising deuterium oxide characterized as both a moderator and reflector of neutrons whereby said inner shielding member is adapted and arranged to thermalize and reflect neutrons toward said one side and an outer shielding member comprising boron and hydrogen in substantially uniform distribution generally enclosing the side of said inner member remote from said aperture, said outer member being characterized as both a moderator and absorber of neutrons whereby said outer member is adapted and arranged to thermalize neutrons and to capture thermal neutrons, whereby neutrons are directed outwardly from the source into the formation to the substantial exclusion of the well fluid.

3,163,762

X-RAY CONE

Leonard F. Peyser, White Plains, N.Y., assignor to Howdon Videx Products Corporation, Califon, N.J., a corporation of New Jersey

Filed June 8, 1962, Ser. No. 201,203
7 Claims. (Cl. 250—105)



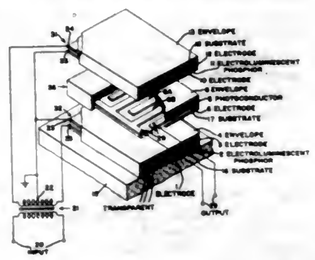
1. An X-ray cone comprising upper and lower pairs of aperture plates, means for adjustably supporting the said pairs of plates for defining a rectangular aperture, the said means comprising a linkage supporting each said pair of plates and operating means for moving the plates of each pair between a wide open position in which the plates of the pair are substantially vertical and a closed position in which they are substantially horizontal, the said operating means comprising means supporting the lower pair of plates with their upper edges in substantially the same horizontal plane as the lower edges of the upper pair of plates when the plates are in wide open position and for turning the plates toward horizontal position so as to move the said upper and lower edges away from each other, as the aperture is adjusted toward closed position.

3,163,763

ELECTROLUMINESCENT - PHOTOCONDUCTOR DEVICES HAVING IMPROVED INPUT-OUTPUT ISOLATION

Thomas E. Bray, Clay, and Richard D. Stewart, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed Nov. 7, 1961, Ser. No. 150,713
6 Claims. (Cl. 250—206)



1. An electroluminescent-photoconductor device in a sandwich-like configuration with improved input-output isolation comprising:

(*a*) a planar photoconductor element;

(*b*) a planar electroluminescent element arranged to illuminate said photoconductor element;

(*c*) a planar capacitor element arranged proximate said photoconductor element with mirror symmetry relative to said electroluminescent element and having a construction which produces an electric field pattern similar to that of said electroluminescent element;

(*d*) input means to derive substantially equal and out of phase voltages from input signals; and

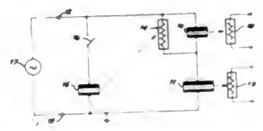
(*e*) means coupling said input means to both said electroluminescent element and said capacitor element to produce excitation fields which are neutralized in said photoconductor element.

3,163,764

ELECTROLUMINESCENT SWITCHING CIRCUIT

Hans G. Blank, New York, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Jan. 3, 1961, Ser. No. 80,222
7 Claims. (Cl. 250—208)



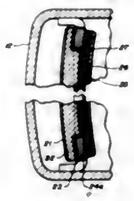
1. A switching circuit comprising first and second series-connected electroluminescent cells, said second electroluminescent cell having a substantially lower impedance than said first electroluminescent cell, photoconductor means electrically connected in parallel with said first electroluminescent cell, said photoconductor means being optically isolated from said first and second electroluminescent cells, said first electroluminescent cell emitting light when a voltage is impressed across said first and second electroluminescent cells and said photoconductors means is dark, and said second electroluminescent cell emitting light when a voltage is impressed across said first and second cells and said photoconductor means is illuminated.

3,163,765

GAMMA RAY IMAGE CONVERTERS

Wilfrid F. Niklas, Park Ridge, Ill., assignor to The Rauland Corporation, a corporation of Illinois

Filed June 14, 1961, Ser. No. 117,051
11 Claims. (Cl. 250—213)



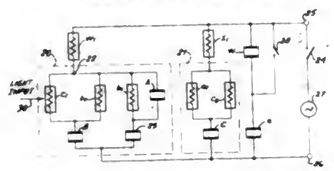
1. A gamma ray image converter comprising, within an evacuated envelope: a composite pick-up screen comprising an alkali-metal activated electron emissive layer; means including a heavy metal target layer having one surface in juxtaposition with said emissive layer and responsive to incident gamma radiation for energizing said first-mentioned layer to emit electrons; means including an inert coating at least on the surface of said target layer opposed to said one surface for inhibiting interaction between said alkali metal and said target layer; and means for utilizing the electrons emitted by said first-mentioned layer to produce a visible image.

3,163,766

COMPLEMENTING CIRCUIT EMPLOYING ELECTROLUMINESCENT AND PHOTOCONDUCTIVE ELEMENTS

Hans G. Blank, New York, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,544
7 Claims. (Cl. 250—213)



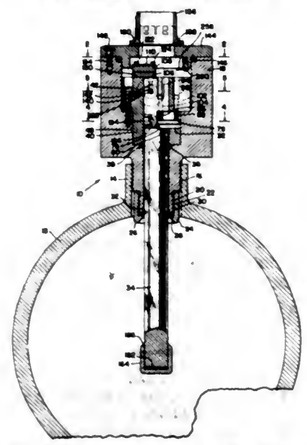
1. A complementing circuit comprising a pair of terminals; a main storage unit including first and second light emitting elements, first photoconductive means electrically connected in parallel with said first light emitting element and optically coupled to said second light emitting element, second photoconductive means electrically connected in series with said second light emitting element, and impedance means electrically connected in series with said first light emitting element, said series-connected means and said first light emitting element being coupled in parallel with said series-connected second light emitting element and second photoconductive means; a temporary storage unit including a third light emitting element, said third light emitting element being optically coupled to the second photoconductive means of said main storage unit, and third photoconductive means electrically connected in series with said third light emitting element and optically coupled to said first light emitting element; and switching means for alternately connecting said main and temporary storage units across said pair of terminals.

3,163,767

MEASURING APPARATUS

Walter Witt and Kurt A. Mellentin, Philadelphia, Pa., assignors to Honeywell Inc., a corporation of Delaware

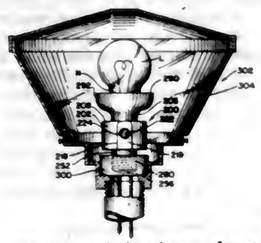
Filed Feb. 17, 1960, Ser. No. 9,260
15 Claims. (Cl. 250—218)



1. An apparatus for instantaneously and continuously measuring changes in radiant energy loss taking place at an interface between a flowing fluid and a transparent probe in contact therewith, comprising a means for adapting a conduit through which said fluid is flowing to receive said probe, a radiant energy source positioned ex-

ternal to said conduit and immediately adjacent a portion of one end of said probe to transmit radiant energy at different angles which are greater, equal to or less than the critical angle existing between said fluid and said probe against one side wall portion of said probe, a mirror surface on the other end of said probe to reflect said radiant energy passing through said probe in a reverse direction at different angles which are greater than, equal to or less than the critical angle existing between said fluid and said probe against the side wall portion of said probe that has not been refracted into said flowing fluid, a radiant energy detecting means positioned immediately adjacent another portion of said first-mentioned end of said probe to measure that portion of said radiant energy that has not been refracted into said flowing fluid after it has been reflected from said mirror in said reverse direction by said internal reflections against the side wall of said probe.

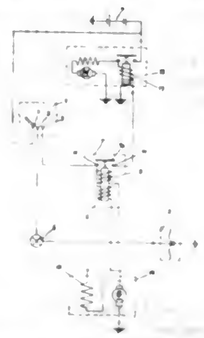
3,163,768
PHOTOELECTRIC SWITCH ADAPTER FOR LAMPS, LANTERNS AND THE LIKE
George W. Bernheim, New York, N.Y. (4499 Henry Hudson Parkway, Bronx, N.Y.)
Filed Feb. 27, 1962, Ser. No. 176,052
6 Claims. (Cl. 250—238)



1. A photoelectric switch adapter for a lamp having a tapered neck and a plug at one end of the tapered neck, comprising a generally cylindrical hollow casing, said casing having an axial neck extension at one end providing a socket for receiving said plug and for supporting said lamp, a plug structure engaged in axial alignment with the casing, said plug structure having an axially extending end for connection to a power supply outlet, said casing having a radial extension provided with a lateral opening, a photoelectric cell exposed at said opening, said casing and radial extension having a common cavity therein, said cell being disposed in said cavity, said casing and radial extension having other openings communicating with said cavity for passing streams of air therethrough for cooling the cell, and a funnel-like reflector having a tubular neck frictionally engaged on said neck extension of the casing, said reflector having a large annular bowl axially aligned with the tubular neck and extending axially away from said casing to surround the neck of the lamp, the axial length of the reflector being greater than the neck of the lamp to shield the photoelectric cell from both light and heat rays emitted by said lamp.

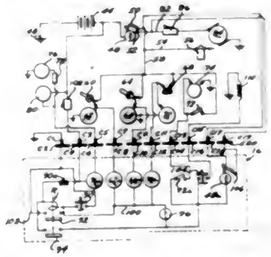
3,163,769
STARTER SYSTEM OF AN INTERNAL COMBUSTION ENGINE
Erich Keuchen, Aachen, and Wilhelm Hoven, Wuerselen, Germany, assignors to Garbe, Lahmeyer & Co. Aktiengesellschaft, Aachen, Germany
Filed May 11, 1960, Ser. No. 28,255
Claims priority, application Germany May 14, 1959
13 Claims. (Cl. 290—38)

1. In a starter system of an internal combustion engine, in combination, starter relay means for starting the engine when said relay means is energized; an energy supply circuit for said starter relay means including manually operable starter switch means connected between one pole of a source of electric energy and said starter relay means for closing and interrupting said supply circuit for said starter relay means depending upon open and closed position, respectively, of said starter switch means; safety relay means having normally open contact means connected in said supply circuit between said starter switch means and said starter relay means, and having two coil means for moving, when simultaneously energized, said contact means to closed position, said coil



means being connected between said starter switch means and the other pole of said source; and combined control means inserted between said coil means and said other pole of said source and being capable of assuming two alternative conditions, in one of which the energization of both said two coil means is effected when said starter switch means is in closed position, while in the other condition the energization of said coil means is prevented, said combined control means assuming said conditions only in response to the simultaneous occurrence of two phenomena characteristic of predetermined operating conditions, respectively, of the engine.

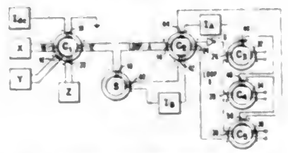
3,163,770
REMOTE STARTING ARRANGEMENT FOR AUTOMOBILE ENGINES
James L. Smedley, 113 Barbour St., Moorehead, Ky.
Filed Nov. 28, 1961, Ser. No. 155,435
3 Claims. (Cl. 290—38)



1. In a remote starting arrangement for the engine of an automobile having a battery, a starter motor, and an ignition system; a first connector device carried by the automobile and including first contact elements and conductors connecting said elements to said battery and starter motor and ignition system, a second connector device stationarily mounted independently of said automobile, and also including second contact elements, a remote control panel, a switch on the panel, conductors

connecting said switch to said second contact elements, said first and second contact elements in contact with one another in response to parking of the automobile in a predetermined position thereby operatively to connect the switch on the remote control panel in circuit with the battery and starter motor and ignition system, a relay on the panel interrupting the connection between the switch and the said second contact element of the second connector device pertaining to the connection of the switch to the battery, switch means on the panel operable for energizing said relay thereby to complete the connection from said switch to the said contact element, and said relay including a holding circuit extending through said connector devices whereby movement of said automobile from said parked position will interrupt said holding circuit and de-energize said relay.

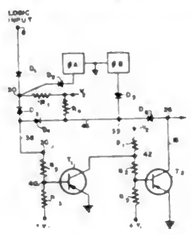
3,163,771
LOGICAL TRANSFER CIRCUIT
Robert C. Paulsen, Poughkeepsie, and Allan A. Kahn, Bronx, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 27, 1958, Ser. No. 757,482
12 Claims. (Cl. 307—88)



1. A logical information handling device comprising, a storage magnetic core, control winding means on said storage core, an input coupling core and an intermediate coupling core, input and output winding means on each of said coupling cores, each of said storage and coupling cores being capable of attaining bistable states of residual flux density, circuit means consisting of the output winding means on said input coupling core connected with the control winding means on said storage core in one sense and connected with said input winding means on said intermediate coupling core in an opposite sense in a closed series loop, a first signal means operably connected with the input winding means on said input coupling core, said intermediate coupling core having a second input winding means and a second signal means operably connected thereto, biasing means for biasing said input coupling core in a datum stable state, said first signal means being selectively operable to jointly cause said input coupling core to switch to an information representative stable state and to set said intermediate coupling core to said information representative stable state, said biasing means thereafter jointly resetting said input coupling core to said datum stable state and setting said storage core to said information representative stable state, and means for thereafter establishing said storage and intermediate coupling cores in said datum stable state simultaneously.

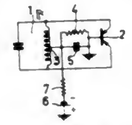
3,163,772
REGENERATIVE CIRCUIT
Seymour R. Cray, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 24, 1959, Ser. No. 855,188
3 Claims. (Cl. 307—88.5)

1. For use in a synchronous binary computer, in combination: a source of a pair of symmetrical oppositely-phased synchronizing signals, each of said signals repetitively alternating between an "on" and "off" condition; a logic stage comprising input means for receiving logic signals from other stages and for locally combining said received logic signals to develop a stage logic signal, amplifying means including signal delay means for amplifying said stage logic signal for providing a stage output logic signal, and means for applying at least part of said stage output logic signal to said input means; and means for gating the logic signals received from other



stages with one of the pair of synchronizing signals and for gating the applied stage output logic signal with the other of said synchronizing signals such that the stage logic signal is developed during the "on" condition of the one of the synchronizing signals and the stage output logic signal is maintained during the "on" condition of the other of the synchronizing signals.

3,163,773
CIRCUIT ARRANGEMENT FOR LIMITING ELECTRICAL SIGNALS
Johannes Meyer Cluwen, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 6, 1960, Ser. No. 27,307
Claims priority, application Germany May 9, 1959
6 Claims. (Cl. 307—88.5)

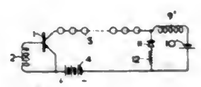


1. A circuit for suppressing amplitude variations of electrical signal oscillations comprising a parallel resonant circuit, a transistor having base, emitter and collector electrodes, means connecting the emitter-collector path of said transistor in parallel with at least a portion of said resonant circuit, and biasing means connecting said base electrode to a point on said resonant circuit centrally disposed with respect to said portion, said biasing means comprising means preventing base current flow in said transistor until the voltage across said resonant circuit has attained a predetermined value.

3,163,774
TRANSISTOR CIRCUIT FOR PRODUCING CURRENT PULSES THROUGH A VARIABLE IMPEDANCE
Theodorus Joannes Tulp and Heine Andries Rodrigues de Miranda, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Original application July 22, 1957, Ser. No. 673,365, now Patent No. 2,956,174, dated Oct. 11, 1960. Divided and this application Aug. 5, 1960, Ser. No. 60,238
4 Claims. (Cl. 307—88.5)

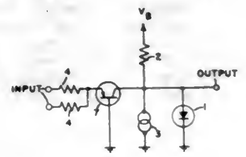
1. A transistor circuit for producing current pulses of substantially constant amplitude through a variable load impedance, comprising a transistor having base, emitter

and collector electrodes, means for applying control pulses to said base electrode, a source of collector voltage, a variable load impedance connected in the collector-emitter circuit of the transistor in series with said source of collector voltage, a controllable impedance comprising an inductance connected in series with said load impedance, said inductance being coupled to a control circuit



comprising a rectifier shunting said inductance and at least a portion of said collector voltage source, the polarity of said rectifier being in the forward direction with respect to said portion of the voltage source, whereby a current flows through said rectifier and said inductance when the transistor is nonconducting, the amplitude of said current being substantially equal to the desired constant value of the amplitude of the current pulses.

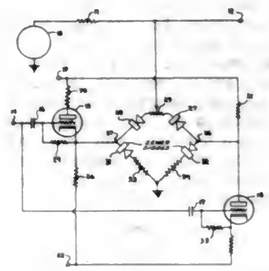
3,163,775
TUNNEL DIODE LOGIC CIRCUIT
William Pell, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 4, 1961, Ser. No. 80,621
9 Claims. (Cl. 307—88.5)



1. A logic circuit comprising: a bistable two terminal regenerative gain element exhibiting a negative resistance to applied signals; clock means for supplying a periodic signal of a first amplitude to said gain element; a source of information signals digitally coded in discrete amplitudes and having a repetition rate compatible with the periodicity of said clock; input logic means for applying said information signals to said gain element timed to coincide with said periodic clock signals in amplitudes selected in accordance with a desired logic operation, the combined amplitudes of the signals at said gain element being adjusted to effect a firing of said gain element dependent on the digital coding of said information signal and said desired logic; and isolating means comprising a transistor, connected in common base configuration for linear, non-gainful operation connected between said input means and said gain element to provide unilateral propagation of signals from said gain element to subsequent circuits.

3,163,776
GATE CIRCUIT
Thomas S. Teetor, Fort Wayne, Ind., assignor to Magnavox Corporation, Fort Wayne, Ind., a corporation of Delaware
Filed Feb. 16, 1961, Ser. No. 89,795
4 Claims. (Cl. 307—88.5)

1. An electronic gating device comprising a source of gating signals, a pair of drivers having input circuits coupled to said source, a pair of diodes series connected between the output circuits of said drivers, a pair of Zener type diodes series connected across said pair of diodes, said drivers being arranged to respond to gating

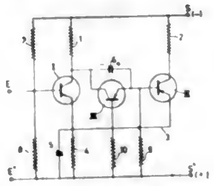


signals from said source for changing the direction of conduction of certain of said diodes.

3,163,777
DRIVER CIRCUIT EMPLOYING CHARGED TUNED LOAD FOR CONVERTING VOLTAGE LEVEL CHANGES TO CURRENT PULSES
Raymond C. Corbell, Canoga Park, and Robert N. Mellott, Northridge, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,844
9 Claims. (Cl. 307—88.5)

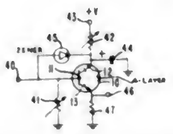
2. A circuit arrangement capable of discriminating between voltage input levels above and below a threshold voltage level for generating a first output pulse when said input level changes from below to above said threshold level and a second output pulse distinguishable from said first output pulse when said input level changes from above to below said threshold level comprising: a difference amplifier including a pair of transistors; means connecting a first of said transistors to said voltage input; means connecting a second of said transistors to a voltage source equal to said threshold level; means coupling said first and second transistors such that when said first transistor is biased "on" by said input being above said threshold level said second transistor is biased "off" and when said second transistor is biased "off" by said input being below said threshold level said first transistor is biased "on"; an inductor connected in series with each transistor; a pair of loads; and a discharge path respectively connecting each inductor to each load.

3,163,778
MONOSTABLE TRANSISTORIZED TRIGGER CIRCUIT
Max Seurot, Carrieres-sous-Bois, France, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,264
Claims priority, application France July 12, 1961
3 Claims. (Cl. 307—88.5)



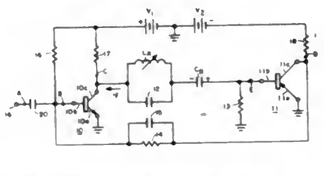
1. A monostable trigger circuit having a first transistor and a second transistor of the same conductivity type and a capacitor included between the collector of the first transistor and the base of the second transistor, the charging time of said capacitor determining the time during which the trigger brought out of its stable condition by a control pulse remains in its unstable condition with the second transistor conducting, the capacitor being shunted by the collector-emitter path of a third transistor, said third transistor being of the same conductivity type as that of the first and second transistors, the collector of the third transistor being directly connected to the collector of the first transistor and its emitter being directly connected to the base of the second transistor, and the base of the third transistor is connected to a point of constant potential.

3,163,779
PULSE DIVIDER EMPLOYING THRESHOLD DEVICE TRIGGERED BY COINCIDENCE OF TRY-OUT PULSES AND SYNCHRONIZED RC-DELAYED PULSES
Robert A. Leightner, Tioga Center, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 21, 1962, Ser. No. 204,262
11 Claims. (Cl. 307—88.5)



1. A pulse frequency divider producing an output pulse train having a pulse period of P_2 from an input pulse train having a pulse period of P_1 wherein P_1 and P_2 are integers denoting units of time, said pulse frequently divider comprising:
an input terminal and an output terminal;
a four layer semiconductor device having a base, an emitter and a collector;
said input terminal being connected with said base of said semiconductor device;
a Zener diode having an anode and a cathode;
the anode of said Zener diode being connected with said base and the cathode of said Zener diode being connected with said collector of said semiconductor device;
an energy storage element connected to said collector of said semiconductor device;
means to supply energy to said energy storage device at a preselected rate so that the energy stored in said energy storage element tends to render said Zener diode conductive after a time interval equal to NP_1 where N is an integer;
said preselected rate being such that, when said Zener diode is rendered conductive, the bias on the base of said semiconductor rises rapidly towards the level necessary to change the state of conductivity of said semiconductor said emitter of said semiconductor device being connected with said output terminal; and
level setting means for said base of said semiconductor device adjusted so that after said time interval, NP_1, an input pulse, combined with said bias on said base, is sufficient to change the state of conductivity of said semiconductor device and thereby produce a pulse at said output terminal.

3,163,780
PULSE GENERATOR EMPLOYING CROSS-COUPLED COMPLEMENTARY TRANSISTORS WITH PARALLEL LC IN ONE CROSS COUPLING
Martin Fischman, Wantagh, and William Geller, Plainview, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Nov. 21, 1962, Ser. No. 239,265
3 Claims. (Cl. 307—88.5)

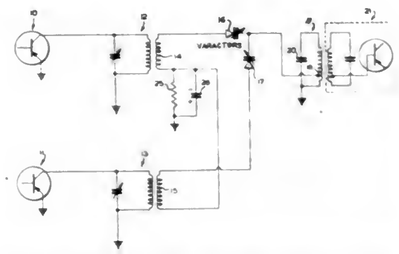


1. A pulse generator for producing an output voltage pulse comprising
(*a*) first and second transistors of opposite conductivity types each having emitter, base, and collector electrodes, the emitter electrodes of said first and second transistors being coupled together,
(*b*) a series resonant circuit coupled between the collector electrode of said first transistor and the base electrode of said second transistor, said series resonant circuit consisting of an inductor and a capacitor,
(*c*) a bypass capacitor coupled across said inductor, and
(*d*) feedback means coupling the collector electrode of said second transistor to the base electrode of said first transistor, said output voltage pulse being produced between the collector and emitter electrodes of said second transistor when a trigger signal is applied between the base and emitter electrodes of said first transistor.

3,163,781
ISOLATING AND FREQUENCY MULTIPLYING CIRCUIT EMPLOYING VARACTOR DIODES
Jerry Monroe Barringer, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1962, Ser. No. 240,921
5 Claims. (Cl. 307—88.5)

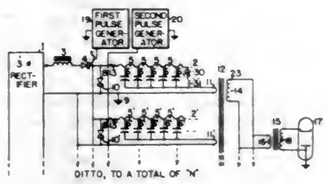
1. A frequency multiplying arrangement for multiplying the frequency of a selected one of a plurality of input signals while simultaneously preventing interaction between the activated multiplying circuit and the remaining nonactivated circuit means, the combination comprising:
(*a*) an input circuit arranged to have a first input from a first source of signals of frequency F_1 coupled thereto,

(*b*) a second input circuit arranged to have an input from a second source of signals of frequency F_2 selectively coupled thereto, said input signals being applied to only one of the input circuits at a time,
(*c*) a common output circuit selectively resonant at a harmonic of either of the input frequencies,



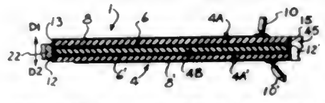
(*d*) a first and a second non-linear reactance element for coupling respectively said first and second input circuits to said output circuit and for converting the frequency of the selectively provided input signals to a signal enriched in harmonic content, and
(*e*) means for preventing interaction and loading of the input circuit having a signal impressed thereon by the other input circuit including means for establishing a bias voltage in response to an input signal impressed on one of the input circuits to bias the nonlinear element associated with the other input circuit to isolate the other of said input circuits while coupling said one of said input circuits to the output circuit.

3,163,782
MULTIPLE DELAY LINE SOLID STATE PULSE MODULATOR
James A. Ross, Villa Park, Calif., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,579
17 Claims. (Cl. 307—88.5)



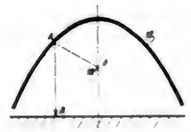
2. An electrical modulator comprising;
(*a*) inductive charging means,
(*b*) at least one transformer having plural primaries and a secondary,
(*c*) a plurality of pulse modulators, having;
first triggerable means to initiate charging of the pulse modulator,
individual chargeable means connected to said first triggerable means,
second triggerable means connected to individually short said chargeable means through one of said plural primaries,
(*d*) first pulse means to trigger said first triggerable means of said plurality of pulse modulators at staggered times, and
(*e*) second pulse means to trigger all of said second triggerable means at the same time to form an output pulse from said modulator.

3,163,783
HIGH CAPACITY TRANSDUCER UNIT
Glenn N. Howatt and Edith M. Gulton, Metuchen, N.J., assignors to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed June 10, 1963, Ser. No. 286,575
8 Claims. (Cl. 310—8.6)



1. A transducer unit comprising: a monolithic laminate body comprising a pair of thin, flat piezoelectric elements each having conductive layers on the opposite sides thereof forming electrodes therefor, a thin, flat capacitor element having conductive layers on the opposite sides thereof forming capacitor plates on the opposite sides thereof, the capacitor element being sandwiched between said pair of piezoelectric elements with the capacitor plates and the adjacent inner electrodes of the piezoelectric elements forming common conductive layers of the laminate body, a pair of terminals for connecting the transducer unit to an external circuit, means electrically connecting one of said terminals to the outer electrode of one of said piezoelectric elements and the inner electrode of the other piezoelectric element, and means electrically connecting the outer electrode of the latter piezoelectric element to the inner electrode of the former piezoelectric element.

3,163,784
APPARATUS FOR CONTINUOUS INSPECTION OF SHEETS AND LEAVES
Paul Renaut, Saint-Maur, France, assignor to Societe Realisations Ultrasoniques, a corporation of France
Filed July 31, 1957, Ser. No. 675,408
Claims priority, application France, Aug. 11, 1956, 9,657, Patent Add. 70,023
2 Claims. (Cl. 310—8.7)

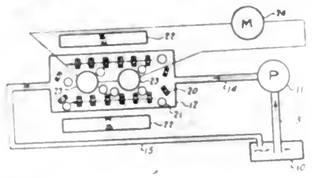


2. In an apparatus for nondestructive testing of a preselected portion of an object by ultrasonic vibrations, in combination: a parabolic reflector for reflecting ultrasonic vibrations supported over said object; a signal source arranged substantially at the focus of and directed toward said parabolic reflector and adapted for the transmission of a narrow beam of ultrasonic vibrations which beam of ultrasonic vibrations is reflected by said parabolic reflector, said reflected beam impinging on said object at right angles thereto; and means for imparting rotational movement to said source whenever desired whereby said beam of penetrating ultrasonic vibrations is reflected by said parabolic reflector and impinges on various portions of said object at right angles thereto.

3,163,785
POWER TRANSFER CIRCUIT
Nils O. Rosaen, Detroit, Mich. (% Rosaen Co., 1776 E. Nine Mile Road, Hazel Park, Mich.)
Filed May 8, 1961, Ser. No. 108,547
10 Claims. (Cl. 310—12)

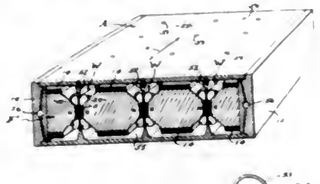
1. A current generating device comprising
(*a*) a housing having a fluid chamber,
(*b*) a fluid in said chamber,

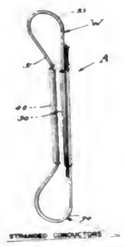
(*c*) means effecting unidirectional motion of said fluid in said chamber,
(*d*) said fluid having magnetic particles therein,
(*e*) means effecting molecular magnetic alignment of said particles,



(*f*) and a conductor disposed in said chamber and extending normal to the direction of movement of said fluid whereby electric current flow is induced in said conductor,
(*g*) said means effecting particle alignment comprising permanent magnets disposed on opposite sides of said chamber and arranged with like poles directed toward each other.

3,163,786
ELECTRO-MECHANICAL TRANSDUCER
William Dickinson, Los Angeles, Calif., assignor to McCullough and Associates, Culver City, Los Angeles, Calif., a partnership
Filed May 15, 1961, Ser. No. 119,765
8 Claims. (Cl. 310—27)

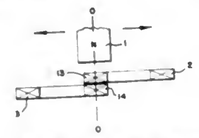




1. An electro-mechanical transducer including, a field magnet comprising spaced pole faces, an armature comprising a winding having a fixed portion and a reciprocable portion, said two portions being joined by flexible loop portions, the fixed portion of the winding being positioned between the pole faces, and the reciprocable portion of the winding being secured to a body for free reciprocatory movement.

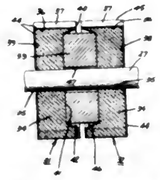
3,163,787
DRIVING MECHANISM FOR THE MOVEMENT REGULATOR OF AN ELECTRIC CLOCK
Günther Glaser, Parzelle Buhle 5, and Fritz Herr, Kolpingstrasse 18, both of Schramberg, Wurttemberg, Germany
Filed Dec. 13, 1960, Ser. No. 75,599
Claims priority, application Germany Dec. 15, 1959
5 Claims. (Cl. 310—38)

1. A driving mechanism for the movement regulator of an electric clock without moving electrical contacts, comprising an air core control coil, an air core driving coil, said movement regulator comprising a permanent magnet pendulum, having a pole face, mounted to swing in an arc adjacent the coils and creating a magnetic field extending axially from the pole face, the magnetic field cutting the coils transverse thereto, said coils each having two coil sides arranged transverse to the swinging path



of the pendulum, a first coil side of each coil overlapping within the swinging arc of the pendulum such that the magnetic flux passes through the overlapped coil sides of the two coils simultaneously when the pendulum is axially aligned with the latter coil sides, the second coil sides of each coil positioned such that the coil sides are beyond the influence of the magnetic field created by the magnetic flux.

3,163,788
SYNCHRONOUS INDUCTOR MOTOR INCLUDING AN ELECTRICALLY CONDUCTIVE COATING ON THE ROTOR
Wesley R. Powers, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed May 8, 1961, Ser. No. 108,417
6 Claims. (Cl. 310—45)

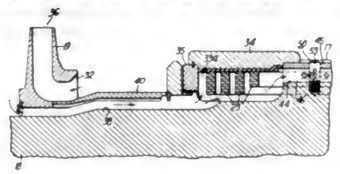


1. An alternating current synchronous inductor motor operable in a selected direction of rotation comprising a stator having a plurality of poles extending inwardly terminating in teeth to define a rotor receiving bore and having windings arranged on said poles; a rotor disposed in said bore formed to minimize the backward torque characteristics of the motor comprising a shaft, a cylindrical permanent magnet mounted on the shaft and polarized axially, at least one substantially cylindrical member mounted on the shaft with an end face in abutting relation to the side of said magnet, said member including a core formed of magnetic material with spaced apart teeth provided entirely around its periphery, a layer of conductive material disposed between said teeth, and conductive material electrically joining said layers together on each side of said teeth, said rotor tending to prevent backward torque from controlling rotor rotation during inductor starting conditions thereby assuring operation of the motor in the selected direction.

3,163,789
THERMALLY BALANCED ROTOR
Leon T. Rosenberg, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 2, 1962, Ser. No. 234,979
8 Claims. (Cl. 310—53)

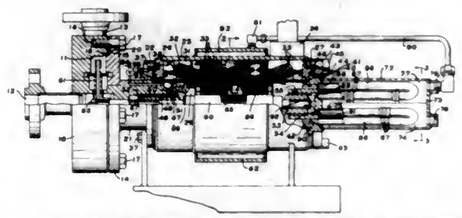
1. A rotor for a gas cooled generator comprising: a shaft having an enlarged core section, said core section having arcuately spaced pole portions and longitudinally extending winding slots formed in the area between said

poles, conductors positioned in said winding slots, cooling ducts formed in said core; longitudinally extending grooves formed in said pole portions of said core, cover means positioned in the top of said grooves to form thermal balancing ducts, means for forcing cooling gas into said cool-



ing ducts and said balancing ducts, longitudinally spaced apertures in said cover means for discharging cooling fluid from said balancing ducts, and valve means mounted in said balancing ducts for controlling the amount of gas admitted into said balancing ducts.

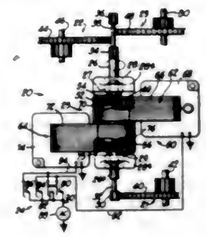
3,163,790
MOTOR DRIVEN PUMPS
Howard T. White, Melrose Park, Pa., assignor to Fostoria Corporation, Warrington, Pa., a corporation of Ohio
Filed Nov. 10, 1961, Ser. No. 151,500
10 Claims. (Cl. 310—54)



1. A heat exchange system for a motor driven pump having a motor housing with a cylindrical sleeve longitudinally axially mounted therein and separating a motor stator chamber from an interior motor rotor chamber, a motor rotor in said motor rotor chamber having a clearance with respect to said sleeve for cooling fluid flow, a shaft on which said motor rotor is mounted, said shaft having a central longitudinal passageway therein for cooling fluid flow, a motor housing closure at one end of said sleeve having a bearing for said shaft, a heat exchanger mounted on and longitudinally axially disposed with respect to said motor housing closure having heat exchange elements therein in communication with said motor rotor chamber and with the interior of said shaft longitudinally through said motor housing closure, a fluid connection for supplying fluid for cooling said heat exchange elements, a fluid delivery connection for the delivery of cooling fluid from said heat exchanger, and members interiorly disposed in said sleeve and contiguous to the other end of said sleeve for impelling fluid in said clearance and through said exchange elements and said shaft passageway.

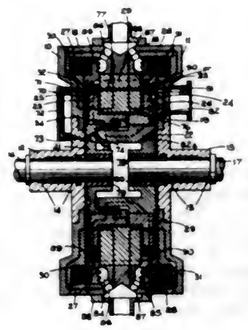
3,163,791
MOTOR SYSTEM
Reuben C. Carlson, Bensenville, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 4, 1960, Ser. No. 19,716
4 Claims. (Cl. 310—83)

1. A prime mover apparatus comprising an axially movable shaft, drive means on at least one end of said shaft, a plurality of driven means positioned for selective engagement with said drive means, a pair of separately excitable stators, a rotor operatively connected with said shaft, energizing means for said pair of separately excitable stators, said energizing means exciting one of said stators of rotating said rotor and shaft and for axially moving said rotor and shaft into a selected position to obtain a driving connection between said drive means and a first one of said plurality of driven means, exciting the other one of said stators for rotating said rotor and shaft and for axially moving said rotor and shaft in the opposite direction into a selected position to obtain a driving connection between said drive means



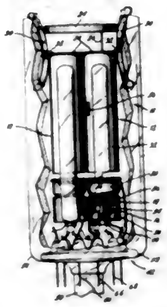
and a second one of said plurality of driven means and exciting both of said stators simultaneously for rotating said rotor and shaft and for holding said rotor and shaft in a neutral position between said pair of stators to obtain a driving connection between said drive means and a third one of said plurality of driven means, whereby a driving connection between said drive means and a predetermined one of said plurality of driven means is obtained merely by exciting a predetermined one or both of said pair of separately excitable stators.

3,163,792
ELECTRICAL LIQUID BRUSH DEVICES IN A DYNAMOELECTRIC MACHINE
James Sayers, 25 Twatling Road, Barnt Green, England
Filed Jan. 27, 1961, Ser. No. 85,317
Claims priority, application Great Britain, Feb. 5, 1960, 4,095/60, 4,096/60, 4,098/60
19 Claims. (Cl. 310—102)



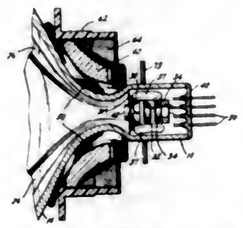
1. In a rotary electrical machine the combination of; a plurality of brush devices each comprising relatively rotatable conductor members disposed at one pair of opposed boundaries of a gap and defining an inlet and an outlet to said gap, an electrically conductive liquid in said gap, and duct means connecting said brush devices in fluid circuit with each other and defining a passageway including branches extending from the outlet of each of said brush devices to the inlet of the next successive of said brush devices in said circuit.

3,163,793
ELECTRON DISCHARGE DEVICE HAVING A STAND-BY CATHODE
Samuel H. Borman, Willow Grove, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,725
10 Claims. (Cl. 313—71)



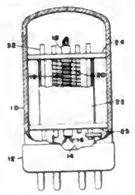
2. The method of extending the emission life of electron-discharge devices of a type in which the electron-generating and control elements, inclusive of a first cathode, are housed in an evacuated enclosure, which method comprises: incorporating within said enclosure during fabrication of the device, a standby cathodic element coated with air-stable material chemically convertible from a non-electron-emissive state to an electron-emissive state; maintaining said material in an unconverted state during the useful emission life of said first cathode; chemically converting said material, by thermal activation thereof, to an electron-emissive state on emission failure of said first cathode; and including said cathodic element in said electron-generating and control assemblage in electrical substitution for the first cathode.

3,163,794
DEFLECTION YOKE WITH SEPARABLE PORTIONS FOR CRT WITH CONSTRICTED NECK
Ralph A. Bloomsburgh, Lafayette Hill, and Wilson P. Boothroyd and Robert C. Moore, Huntingdon Valley, Pa., assignors, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 20, 1960, Ser. No. 37,447
9 Claims. (Cl. 313—76)



8. In combination, a cathode-ray tube having an envelope formed with a relatively short, large diameter neck region, means for generating an electron beam and a multi-element electrostatic accelerating lens disposed within said neck region, a constricted yoke region contiguous with said neck region and immediately adjacent the end of said electrostatic lens which is remote from said beam generating means, said constricted yoke region having an outer diameter substantially smaller than the outer diameter of said neck region, a flared region contiguous with said constricted yoke region, and a rectangular screen spaced from said flared region, said flared region being formed with inner surfaces substantially parallel to and closely adjacent the paths of the electron beam of said tube which terminate at the corners of said rectangular screen, and deflection means having first and second pairs of beam deflection coils, said first pair being saddle-shaped deflection coils, said second pair being toroidal deflection coils, said saddle-shaped deflection coils having the active conductors thereof in close juxtaposition with said constricted yoke region and at least a portion of said flared region, one deflection coil of each pair lying entirely on one side and the other deflection coil of each pair lying entirely on the other side of a plane passing through the longitudinal axis of said neck region and said contiguous yoke region, said deflection means being formed of two relatively movable sections separable along said plane whereby the assembled deflection means may be readily positioned over said constricted yoke region.

3,163,795
ELECTRON TUBE
Harry Bender, Albertson, and Harry P. Kling, Wantagh, N.Y., assignors, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Original application Mar. 14, 1957, Ser. No. 646,010. Divided and this application Mar. 29, 1960, Ser. No. 23,593
2 Claims. (Cl. 313—270)

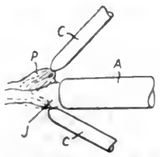


1. A cathode provided with a nickel substrate and an electron emissive layer in intimate contact with said substrate, said substrate having an oxygen content as expressed in percent by weight of said substrate which ranges between a minimum of about 0.01% and a maximum on the order of 0.1%.

ERRATUM

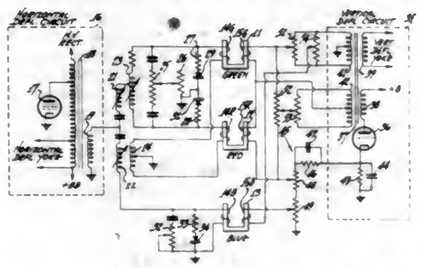
For Class 314—22 see:
Patent No. 3,163,799

3,163,796
ELECTRODE SYSTEMS FOR ELECTRIC ARCS
Jean Adrien Perrin, Pagny-sur-Moselle, Meurthe-et-Moselle, France, assignor to Societe le Carbone-Lorraine, Paris, France, a French company
Filed Mar. 2, 1960, Ser. No. 12,322
Claims priority, application France Mar. 3, 1959
2 Claims. (Cl. 314—45)



1. An electric arc lamp system comprising a central anode, three cathodes mounted about said anode in equally radially spaced relationship and with the tips of said cathodes co-planar with the crater formed in the tip of said anode during operation, and means for feeding pulsed direct current to said cathodes in succession.

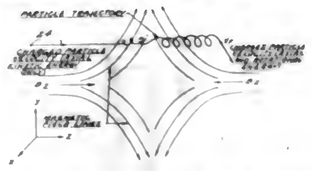
3,163,797
ELECTRON BEAM CONVERGENCE APPARATUS
George W. Singleback, Pennsauken, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 24, 1960, Ser. No. 51,747
12 Claims. (Cl. 315—22)



1. In a color television receiver including a color kinescope having a screen luminescing in different colors when impinged by a plurality of electron beams adapted to be deflected together over said screen in successive trace scansion periods and alternating retrace scansion periods, a beam convergence system comprising: a plurality of beam convergence electromagnets having coils which effect the convergence of said beams when energized by respective parabolic current waves each having crests occurring during beam retrace scansion periods and troughs occurring substantially at the middle of beam trace scansion periods, and each having direct current and alternating current components related to one another in a predetermined ratio such that, at the troughs of said parabolic current waves, the respective parabolic waves always have the same magnitudes irrespective of the particular shapes and peak-to-peak amplitudes of said parabolic waves; a beam deflection system traversed by a sawtooth current wave for effecting said beam scansions over said screen, said sawtooth current wave having direct current and alternating current components related to one another in a ratio greater than said predetermined parabolic current wave ratio; two current dividing circuits including respective impedance means and connected to said deflection system for traversal by respective portions of said sawtooth current wave, the impedance means of one of said circuits comprising a resistor-capacitor network, said respective impedance means having such values as to enable proper operation of said beam deflection system and being proportioned relative to one another such that the sawtooth current wave traversing said one current dividing circuit has said predetermined ratio of direct current and alternating current components; and means connecting said one current dividing circuit to said electromagnet coils to cause the traversal of said coils by respective parabolic current waves having said predetermined ratio of direct current and alternating current components, whereby said beam convergence system can be adjusted to provide dynamic beam convergence at the edges of the kinescope screen without materially changing the beam convergence at the center of the screen.

3,163,798
PARTICLE RANDOMIZER
Frank Salz, West Hartford, and Russell G. Meyerand, Jr., Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 3, 1961, Ser. No. 80,101
7 Claims. (Cl. 315—111)

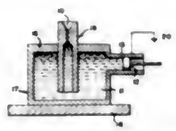
1. In an energy converting device, a chamber, a pair of co-axial coils associated with said chamber, said coils having opposing magnetic poles when carrying current, means for passing current through each of said coils to generate a cusped magnetic field in said chamber of selected length and strength, and means for directing a charged particle into said chamber along a lineal path removed from the axis of said coils and through said cusped magnetic field, the selected length and strength



of said magnetic field being based on the initial energy of the charged particle such that the radius of gyration of said charged particle when passing through said cusped magnetic field is greater than the length of said cusped magnetic field, at least part of the lineal kinetic energy of the charged particle being converted to rotational energy in a one pass transmission through said magnetic field.

3,163,799
EXPLODING SQUIRTED WIRE PULSED LIGHT SOURCE
William W. Buchman, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,491
2 Claims. (Cl. 314—22)



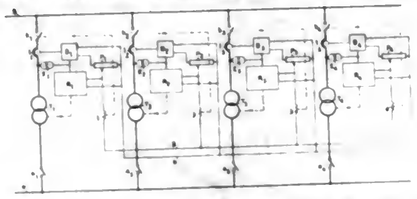


1. An exploding-wire light source which comprises:
(*a*) a body of liquid electrical conductor;
(*b*) container means for enclosing the body of liquid electrical conductor;
(*c*) an orifice means immovably mounted in the container means and establishing communication between the body of liquid electrical conductor and the exterior of the container means;
(*d*) an activator means for applying a pressure pulse upon the body of liquid electrical conductor and forming a jet thereof by ejection of liquid conductor through the orifice means; and
(*e*) electrical wire-exploding means for exploding the wire-jet of liquid electrical conductor.

3,163,800
PROTECTION DEVICE FOR TRANSFORMERS OPERATING IN PARALLEL
René Pensis, Jumet, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium
Filed Nov. 1, 1961, Ser. No. 149,388
2 Claims. (Cl. 317—14)

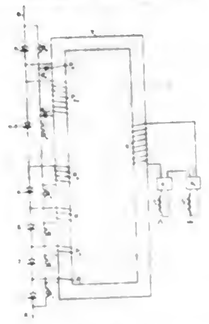
1. A protection device for parallel connected transformers, comprising: an on-load tap changer controlling each transformer primary; a voltage regulator controlling the action of each tap changer in response to the secondary

voltage of the transformer; a discriminator also controlling each voltage regulator by applying thereto a D.C. voltage substantially proportional to the reactive current of the transformer secondary; the polarity of said D.C. voltage representing the direction of the reactive current of the transformer; the said discriminators having terminals connected in parallel on a common line and other terminals



connected in parallel on another common line, each through a relay, each said relay arranged to be sensitive to the direction of the current energizing it; each said relay thereby being adapted to cause disconnection of the transformer from the remaining said transformers under predetermined conditions of intensity and of direction of the exchange current between said transformers.

3,163,801
DEVICE FOR DETECTING SHORTED SEMICONDUCTOR CELLS IN RECTIFIERS
Georges Vansteenkiste, Mons, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium
Filed Aug. 1, 1962, Ser. No. 214,109
1 Claim. (Cl. 317—14)



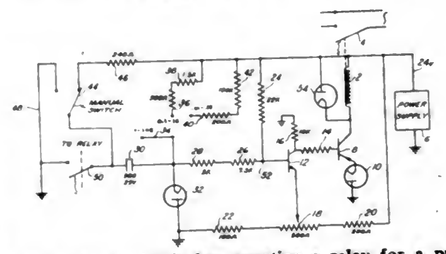
In a rectifier leg consisting of a plurality of rectifier cells in series whereby an inverse voltage balancing chain of equal resistances in series is connected in parallel with said rectifier leg, a device for detecting the shorting of respectively one or any two cells of the rectifier leg, comprising a transformer having separate primary windings wound in the same direction and respectively connected between the successive connecting points of the cells and the successive corresponding connecting points of said equal resistances, the number of turns of said primary windings increasing in arithmetical progression from the positive end of the leg to the other, said transformer including a supplementary winding having the same number of turns as that of the first winding but wound in opposite direction, a first diode in series with the connection of the last winding to the chain of resistances opposite to the current from this point, connections of said supplementary winding to the same points of the leg and of the chain of resistances where the last winding is connected, including in series a second diode conductive for the current from the connecting point to the chain of resistances, a secondary winding on said transformer, first signalling or protective means connected to said secondary winding, responsive to the shorting of one cell and second signalling or protective means connected to said secondary winding, responsive to the shorting of two cells.

3,163,802
CIRCUIT ARRANGEMENT FOR HIGH SPEED DISTANCE RELAYING
Lutz Seguin, Bergdietikon, and Fritz Kesselring, Kusnacht, Zurich, Switzerland, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed May 9, 1962, Ser. No. 193,389
Claims priority, application Germany, May 16, 1961, S 73,976
7 Claims. (Cl. 317—36)



1. For use in protecting power systems in the event of trouble arising along a line section, a distance relaying circuit arrangement cooperatively associated with a line section to be protected, said circuit arrangement responding quickly to a fault arising along the respective line section for the purpose of forming a criterion for the operative tripping of a power control device, means for conducting to said circuit arrangement the voltage (u) at the line section and the voltage (u_0) at a comparison impedance, means for forming the difference voltage ($\Delta u = u_0 - u$), and means for evaluating in each current half wave the polarities of said voltages or values derived therefrom only during a time interval in which the fault current (i) and its temporal derivation (di/dt) have the identical sign.

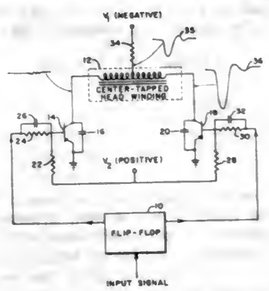
3,163,803
ELECTRICAL TIMING CIRCUIT
James Laurence Luckadoo, Buckeystown, Md., assignor to Metronics, Corp., Frederick, Md., a corporation of Maryland
Filed May 21, 1962, Ser. No. 196,103
7 Claims. (Cl. 317—142)



1. A control circuit for operating a relay for a predetermined length of time comprising a source of electric potential having one terminal connected to ground, a capacitor, first means for selectively connecting one terminal of said capacitor to the other terminal of said source and to ground, a relay, second means connecting one terminal of said relay to such other terminal of said source, third means connected to the other terminal of said capacitor for connecting the other terminal of the relay to ground when said first capacitor terminal is connected to ground, resistance means connecting such other capacitor terminal to such other terminal of said source, fourth means normally grounding such other terminal of the capacitor, said fourth means being nonconductive when the potential at such other capacitor

terminal exceeds a predetermined value, and switch means connected to the first capacitor terminal and operated by energization of said relay to connect said first capacitor terminal to ground.

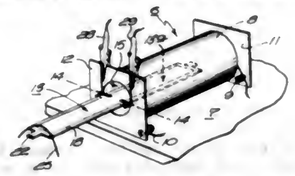
3,163,804
CIRCUIT FOR DRIVING A CENTER TAPPED HEAD WINDING
James R. Cox, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed Mar. 1, 1961, Ser. No. 92,557
3 Claims. (Cl. 317—148.5)



2. A circuit for driving a center tapped head winding which comprises in combination:
- a first switching transistor having a base, a collector, and an emitter;
- a second switching transistor having a base, a collector, and an emitter;
- a first relatively resistant-free conductor connecting the collector of said first switching transistor to one end of said head winding;
- a second relatively resistant-free conductor connecting the collector of said second switching transistor to the other end of said head winding;
- a flip-flop means having a first output and a second output;
- a negative voltage source;
- means, including a limiting resistor, connecting the center tap of said head winding to said negative voltage source;
- a positive voltage source;
- a first circuit means, having a resistor therein, and connecting said positive voltage source to the base of said first switching transistor;
- a second circuit means, having a second resistor therein, and connecting said positive voltage source to the base of said second switching transistor;
- a third circuit means connecting the first output of said flip-flop with the base of said first switching transistor;
- means providing impedance for said third circuit means;
- fourth circuit means connecting the second output of said flip-flop means with the base of said second switching transistor; and
- means providing impedance for said fourth circuit means.

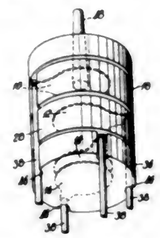
3,163,805
ELECTRICAL CURRENT-BALANCE APPARATUS
Arthur M. Vash, Newton Center, Elbert P. Little, West Newton, and Wesley G. Perry, Wayland, Mass., assignors to Macalaster Scientific Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 27, 1962, Ser. No. 219,640
7 Claims. (Cl. 317—197)

1. Current-balance apparatus for use with an air-core solenoid of the type having a helical winding on a cylindrical body, comprising an equal-arm balance armature including an elongated thin and flat plastic blade, said blade having cylindrical pivot means of conductive material extending laterally and collinearly outwardly from opposite side edges of said blade about a pivot axis transverse to the elongated blade and substantially midway therealong, said blade also having applied to a face thereof two substantially like shaped strips of conductive material one on either side of said pivot axis, said cylindrical pivot means being attached to opposite ends of one of said conductive strips for current flow therebetween, said



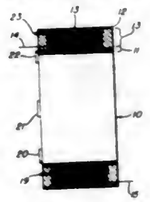
plastic blade and conductive strips on each side of said transverse pivot axis being substantially symmetrical with one another and of substantially the same configurations and surface areas, a pair of pivot supports each including a cylindrical conductive element, and means for mounting each of said supports on an end of the solenoid in spaced relation to the other with said element extending substantially parallel with the central axis of the solenoid, whereby said cylindrical armature pivot means may be rested transversely on said cylindrical elements of said pivot supports to make low-friction contact therewith through a range of relative angular movements.

3,163,806
STRUCTURALLY IMPROVED ELECTRICAL READOUT INTEGRATOR
Nelson N. Estes, Austin, Tex., and Edward J. Zeltz, Parma Heights, and William E. Morley, Bay Village, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 19, 1961, Ser. No. 83,680
6 Claims. (Cl. 317—231)



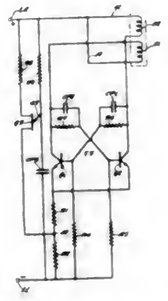
1. In an electrical readout integrator of the type which comprises two compartments separated by a capillary, but electrically connected by an electrolyte in said compartments and said capillary which comprises a reversible redox system, and in which one of said compartments contains an input electrode and the other of said compartments contains a shield electrode, a readout electrode, and a common electrode, said readout electrode and said common electrode being positioned in close proximity; the improved construction characterized in that inert heat fusible blocks chosen from the group consisting of Multiform glass and plastics are located between said input electrode and said shield electrode, between said shield electrode and said readout electrode respectively and adjacent the under surface of said common electrode; said block located between said input electrode and said shield electrode being provided with two electrolyte reservoirs connected by a capillary; said block located between said shield electrode and said readout electrode also being provided with a central aperture therein; said closely proximate readout electrode and common electrode being physically separated by a thin washer chosen from the group consisting of ceramics and aluminum oxide; said input, shield, readout, and common electrode each being provided with at least one wire lead which passes through means provided in said blocks and out of said electrical readout integrator to serve as terminals thereof; said leads being fused to said blocks which are also fused to one another thereby serving as a one member exterior body for said components of said electrical readout integrator.

3,163,807
WOUND SERIES CAPACITOR
Sven O. Linderholm, Ludvika, Sweden, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Nov. 3, 1959, Ser. No. 45,253
7 Claims. (Cl. 317—260)



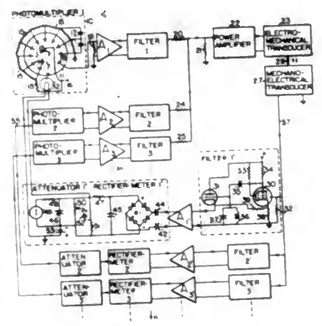
1. A capacitor comprising a wound multi-layer of conductive foils and sheet insulating material in the form of an annular roll in which a succession of first foils on one side of a dielectric layer of said sheet material are opposed by an associated succession of second foils on the remaining side of the said sheet material, and in which each of the said second foils is disposed opposite two of the foils of the said first foils, and interconnecting means between the initial end of one foil and the final end of a succeeding foil of the said first foils, comprising a conductive tab extending from the foil to the exterior of the multi-layer through a radial interval of the roll and into the multi-layer to contact the said succeeding foil.

3,163,808
TIMED ELECTROMAGNETIC OSCILLATING TO ROTARY DRIVE
George Peterson, Jr., 319 S. Wayne Ave., Wayne, Pa.
Filed Aug. 21, 1962, Ser. No. 218,406
6 Claims. (Cl. 318—130)



1. An elapsed time indicator, comprising in combination, a drive motor having an oscillating polarized rotor, an armature for said motor having a pair of coils wound thereon, a flip-flop circuit having alternate outputs for opposite states connected to the coils such that current flow will polarize the armature in one direction for one coil and in the opposite direction for the other, a pair of direct current terminals across which the coils and the flip-flop circuit are connected, and a pulse generating circuit connected to the flip-flop such that the pulse generator circuit generates a pulse actuating the flip-flop.

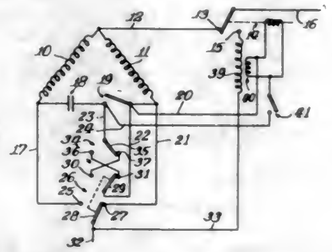
3,163,809
RANDOM NOISE SYSTEM FOR VIBRATION TESTING
Charles Theodore, Los Angeles, and James A. Ross, Orange, Calif., assignors to Ling-Temco-Vought, Inc., a corporation of Delaware
Filed Jan. 10, 1961, Ser. No. 81,731
15 Claims. (Cl. 318—132)



14. In an electromechanical system with adjustable amplitude response as a function of frequency having an electromechanical transducer and a mechanoelectric transducer coactive therewith, plural electrical means devoid of phase cancellation over a frequency spectrum connecting said transducers in plural separate feedback loops comprising plural frequency-selective filters having certain frequencies in common therebetween, plural separate equivalent sources of random electrical noise, separate said sources connected to those filters having frequencies in common so that said electrical noise is random at said common frequencies, and plural separate feedback control means connected between corresponding filters and equivalent sources of noise to provide feedback control of the noise output of said sources.

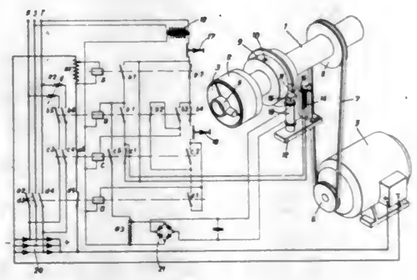
3,163,810
MULTISPEED ELECTRIC MOTORS
Edward J. Schaefer, Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed May 1, 1961, Ser. No. 115,842
20 Claims. (Cl. 318—203)

1. An electric motor comprising main windings, an auxiliary winding, switch means responsive to motor speed and operable at a predetermined speed, means for shifting from said main windings to said auxiliary winding in response to operation of said switch means, means for inoperable, reversing means operable to condition said main windings to operate said motor in a reverse direction, and said shifting means being operable in response



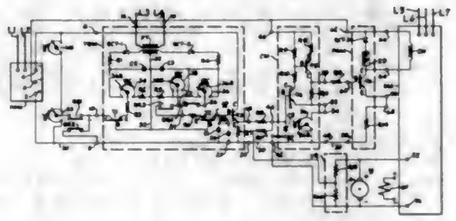
to the operation of said reversing means for shifting from said auxiliary winding to said main windings for applying a reverse torque to stop the motor.

3,163,811
MACHINE TOOL
Benjamin Vaucher, Tramelan, Switzerland, assignor to Kummer Freres S.A. Fabrique de Machines, Tramelan, Switzerland, a joint-stock company
Filed Mar. 8, 1961, Ser. No. 94,231
Claims priority, application Switzerland, Mar. 31, 1960, 3,619/60
2 Claims. (Cl. 318—275)



1. A power control stop for a rotatable spindle arranged for rotation about an axis, a direct current motor to drive said spindle and electromagnetic means comprising a ferromagnetic piece fixed on the periphery of said spindle and revolving therearound along a predetermined circular path when said spindle is rotating, a fixed electromagnet having a pole extending on one side of said circular predetermined path and spaced adjacent thereto, a fixed magnetic control switch having a movable contact facing said pole of the electromagnet and extending on the opposite side of and in alignment with said pole, a motor feeding main circuit to cause said motor to rotate at high speed, a motor feeding auxiliary circuit to cause said motor to rotate at a constant low speed, a braking circuit to brake said motor, and controlling means energized by said braking circuit to switch off immediately said motor feeding main circuit, to switch on said motor feeding auxiliary circuit after said braking circuit has braked said motor and to energize said electromagnet, said magnetic switch switching off said motor feeding auxiliary circuit upon arrival of said ferromagnetic piece between said movable contact of the magnetic switch and said pole of the electromagnet, when the latter is energized.

3,163,812
MOTOR SPEED AND ACCELERATION CONTROL SYSTEMS
Donald J. Greening, Thiensville, Norman L. Peterson, Wauwatosa, and Charles E. Smith, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 6, 1959, Ser. No. 804,300
7 Claims. (Cl. 318—331)



1. In an adjustable voltage drive, the combination comprising:

(*a*) a direct current motor having a shunt field winding energized from a source of unidirectional electrical power and an armature winding,

(*b*) means providing a source of constant but adjustable first voltage,

(*c*) means comprising adjustably controllable substantially constant current passing semiconductor means and an energy storage device and being responsive to said first voltage to provide a second voltage which changes in magnitude linearly at a timed rate in response to change in magnitude of said first voltage,

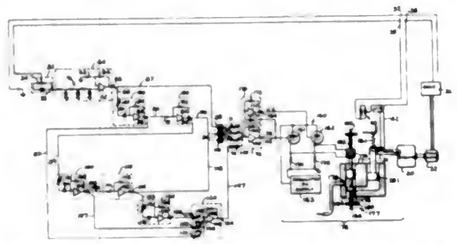
(*d*) means controlled by said second voltage for supplying to said armature winding a unidirectional energizing current to cause operation of the motor,

(*e*) and means for controlling said semi-conductor means comprising adjustable means effective when adjusted in uniform steps for causing corresponding adjustments in proportion thereto of the magnitude of the current passing through said semi-conductor means whenever the magnitude of said first voltage is changed thereby to cause proportional adjustments in the rate of change of the magnitude of said second voltage,

(*f*) and said adjustments in the rate of change of the magnitude of said second voltage modifying the control of said armature supplying means to cause proportional changes in said armature energizing current thereby to afford adjustments in the rate of change of motor speed proportional to said adjustments of said adjustable means.

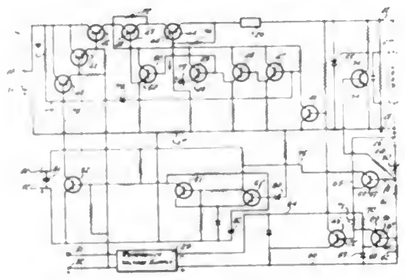
3,163,813
AUTOMATIC CONTROL SYSTEM
Rufus Oldenburger, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 8, 1953, Ser. No. 384,957
38 Claims. (Cl. 318—448)

24. In a servo control system for reducing a difference in status between a controlled element and a controlling element, said system including sensing means producing signals respectively representative of the status of said controlled and controlling elements, the combination of: error-signal means connected to said sensing means producing an error signal substantially equal to said difference in status; computer means producing an output which is a continuous non-linear differential function of its input; means for supplying said error signal as the input to said computer means; a power system producing an output that is continuously variable in magnitude between two predetermined limits; means connecting the output of said computer means to said power system for controlling said power system so that said output of said power system can be varied from one of said limits



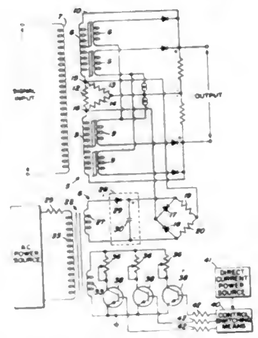
through a proportional region to the other of said limits in response to corresponding variations in said output of said computer means; and means connecting said output of said power system to said controlled element.

3,163,814
VOLTAGE REGULATOR POWER SUPPLY
Paul G. Todd, Glen Head, N.Y., assignor to Trygon Electronics Inc., a corporation of New York
Filed Jan. 11, 1961, Ser. No. 81,978
10 Claims. (Cl. 323—22)



3. A D.C. voltage regulator comprising a source of D.C. voltage having a pair of terminals, a pair of output terminals, first and second variable impedance means connected in series one with the other and between one terminal of said source and one output terminal, a connection between the other terminal of said source and the other output terminal, a first circuit connected with the first said impedance means to maintain normally its impedance at a minimum value, a second circuit connected with said second impedance means for varying the impedance of the second impedance means to control the voltage at said output terminals, a reference voltage supply, a voltage divider having at least two discrete series connected impedances, said voltage divider, output terminals and reference supply being connected in series to produce a current through the voltage divider proportional to the magnitude of the combined output and reference voltages, a connection between said first circuit and one point on the voltage divider, a connection between said second circuit and another point on said voltage divider, one of said voltage divider impedances being adjustable to select a predetermined output voltage by influencing said second circuit to modify said second variable impedance means and automatically maintain said selected output voltage, said one voltage divider impedance further influencing said first circuit to maintain said first variable impedance at said normal minimum value when the output voltage is at a selected value and to trip said first circuit to change said first variable impedance to a maximum value should the output voltage rise to a predetermined level above the selected output voltage.

3,163,815
ADJUSTABLE SIGNAL RANGE LIMITING DEVICE UTILIZING TRANSFORMER LOADING
Don E. Meier, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 29, 1962, Ser. No. 169,246
3 Claims. (Cl. 323—89)

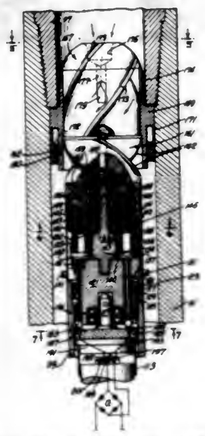


1. An adjustable level electronic bypassing device utilizing transformer loading, said device comprising: a transformer having a primary winding and a pair of secondary windings; means adapting said primary winding for connection to an alternating current source; rectifying means connected to one of said secondary windings; diode means connected to receive the direct voltage output from said rectifying means to backbias said diode means; resistance means; means for connecting said resistance means to the other said secondary winding in a manner so as to adjustably control the loading of said transformer to thereby control the backbias on said diode means; and terminal means connected to said diode means so that a short substantially exists across said terminal means whenever a signal impressed thereon exceeds the backbias of said diode means.

3,163,816
GEOPHYSICAL PROSPECTING APPARATUS WITH FLUID OPERATED ELECTRICAL GENERATOR FOR LOGGING WHILE DRILLING
Roy John Clements and Gerhard Herzog, Houston, and William R. McEvers, Jr., Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 31, 1959, Ser. No. 863,156
17 Claims. (Cl. 324—1)

4. Apparatus for drilling a borehole through earth formations and concurrently logging a physical characteristic comprising, in combination, a drill tube having a bit on one end thereof and an outlet for drilling fluid adjacent said bit, said drill tube being adapted to conduct a stream of drilling fluid therethrough; an impeller in said tube in the line of flow of such fluid and rotatable in response to force exerted thereon by said fluid; an electrical generator comprising a stationary first body having a shaft projecting therefrom, a second body rotatably mounted to said shaft, magnet means arranged in a first plane extending transversely of said drill tube, and coil means arranged in a second plane extending transversely of said drill tube and spaced longitudinally from said first plane, one of said means being included in said second body and rotatable therewith, the other of said

means being included in said stationary first body; said impeller being mechanically coupled to said second body; a load circuit; and electrical conductors leading from said coil means to said load circuit; said apparatus also comprising a hollow capsule non-rotatably mounted within said drill tube, and an inner case member containing said load circuit rotatably mounted within said capsule and journalled at the opposite ends thereof to permit free



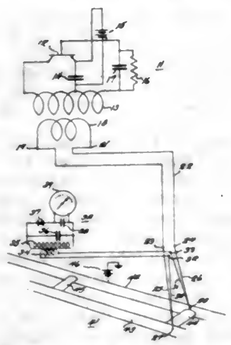
rotation, the upper end of said inner case member being journalled in said stationary body member; and means for conducting electricity from said generator to said load circuit while said inner case member is rotating with respect to said stationary body member, said last-named means comprising brush means on one of said members and conductor means on the other of said members in contact with said brush means.

3,163,817

METHOD FOR DETECTING SHORT CIRCUITS BETWEEN INSULATED PIPE SECTIONS UTILIZING RADIO FREQUENCY SKIN EFFECT CURRENTS

Orvin D. Simpson, 815 W. Turner, Springfield, Mo.

Filed Dec. 13, 1960, Ser. No. 75,550
1 Claim. (Cl. 324—52)



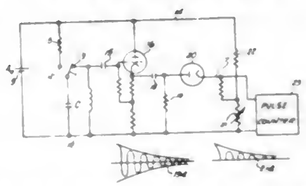
A method for determining an electrical short circuit between adjacent, underground electrically conducting pipe sections normally insulated from each other by an insulating section, one of said pipe sections being connected to a D.C. source to prevent electro-chemical corrosive effects between it and the surrounding soil, comprising generating R.F. power with a source of sufficiently high frequency to cause substantial skin effect currents to flow in said pipe sections, applying a portion of said power between said sections by connecting one of a pair of leads between a terminal of said source and a first point on one of said pipe sections immediately adjacent said insulating section and by connecting the other of said pair of leads between the second terminal of said source and a second point on the other of said pipe sections immediately adjacent said insulating section, and detecting with a meter only the R.F. potential at said frequency between said points by connecting one terminal of said meter to said first point via a first lead and by connecting the other meter terminal to said second point via another lead, said potential being relatively large when said sections are insulated through said insulating section and relatively small when said pipe sections are short circuited together.

3,163,818

DIGITAL Q METER

William J. Spaven, Pompton Plains, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware

Filed Mar. 27, 1961, Ser. No. 98,473
2 Claims. (Cl. 324—57)



1. A device to measure the Q of an LC circuit, comprising in combination,

a power source circuit to deliver a fixed initial voltage across a capacitor of an LC circuit under test;

switch means, which in a first position will place said capacitor of said LC circuit under test in the power source circuit, and in a second position will discharge said capacitor into the inductance of said LC circuit under test, starting a train of damped oscillations;

an amplifier stage coupled to said LC circuit under test amplifying the damped wave output of said LC circuit;

a diode clipper stage coupled on its input side to said amplifier stage furnishing on its output side, voltage output pulses which exceed a predetermined level;

resistor bias cut-off means on the output side of said clipper stage to cut off the diode clipper stage at a voltage of a value of 0.0432 times said initial voltage; and,

counter means counting the pulses between said fixed initial voltage and said cut-off voltage value.

3,163,819

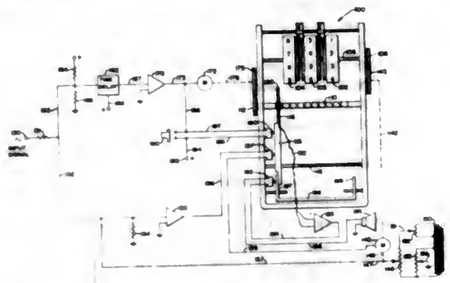
CONDITION RESPONSIVE APPARATUS WITH VISUAL AND AUDIBLE READOUT

Thomas S. Calhoun, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 29, 1960, Ser. No. 79,256
3 Claims. (Cl. 324—99)

1. Apparatus for audibly indicating the value of a condition comprising, in combination: a counter mechanism having a plurality of movable members each with a suitable signal recorded thereon; first movable means operable in response to an electrical signal of magnitude indicative of the condition to move said members to a position indicative of the condition; feedback means

operated by said first movable means to null the electrical signal; pickup means operable to scan the plurality of movable members and audibly reproduce the signals recorded thereon; second movable means op-



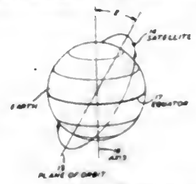
erable to move said pickup means; time delay means connected to receive the electrical signal and to operate said second movable means; and switch means operable by said pickup means to disconnect said first movable means when said second movable means is in operation.

3,163,820

SATELLITE COMMUNICATION SYSTEM EMPLOYING A RETROGRADING ORBIT

Stuart C. Hight, South Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 22, 1961, Ser. No. 111,703
12 Claims. (Cl. 325—4)



2. A long distance communications system comprising an artificial earth satellite circuiting about the earth and at least one microwave radio station located upon the surface of the earth for communication with and by way of said satellite, said satellite circuiting in the same direction as the rotation of earth at an angular speed that is less than the angular speed of the earth and in an orbit, the plane of which is inclined to the axis of the earth by less than the angle whose sine is the ratio of said angular speeds.

3,163,821

PHASE SHIFT BINARY DATA TRANSMISSION SYSTEM INCLUDING CARRIER TRANSMISSION ACCORDING TO THE DATA

Emil Hopner, San Jose, and Constantin Michael Melas, Saratoga, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 16, 1961, Ser. No. 117,673
10 Claims. (Cl. 325—38)

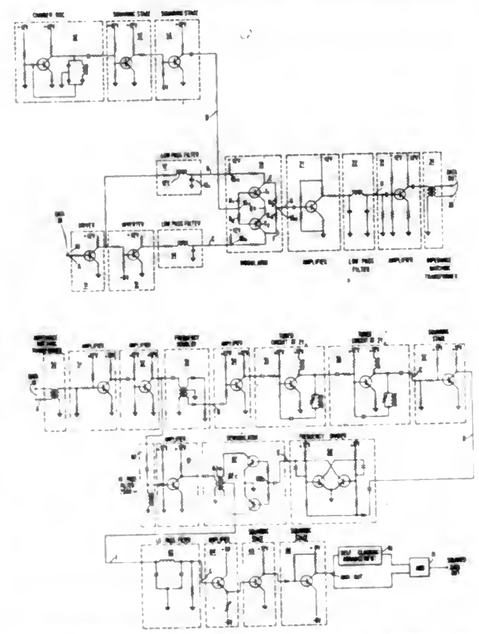
9. In a transmitter responsive to a source of a nonreturn to zero binary signal, signal generating means, comprising:

a square wave carrier signal generator;

means to provide from the source the binary signal and its complement;

filtering means responsive to the binary signal and its complement to provide separate signals representing the fundamental components thereof;

a modulator connected to said filtering means and to said carrier signal source and having an output signal



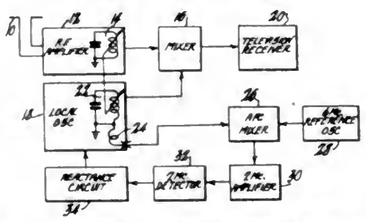
characterized by a D.C. component proportional to the frequency of transitions in the binary signal; and a filter to pass only selected low frequency components of the output signal of said modulator.

3,163,822

AUTOMATIC FREQUENCY CONTROL SYSTEM UTILIZING A REFERENCE OSCILLATOR

David J. Carlson, Haddon Heights, N.J., and George B. Waters, Philadelphia, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,715
2 Claims. (Cl. 325—421)



1. In an automatic frequency control system for a superheterodyne television receiver, in combination,

channel selecting means for selecting any one of a plurality of television signal transmission channels, each of said channels corresponding respectively to a different radio frequency signal, the radio frequencies of a first group of said channels differing from one another by a fixed frequency or multiple thereof and the radio frequencies of a second group of said channels differing from the radio frequencies of said first group of channels by frequencies other than said fixed frequency or multiples thereof;

a variable frequency local oscillator;

means coupled to said channel selecting means and said oscillator for adjusting the frequency of said local oscillater at least approximately to that required for proper receiver response for said selected channel;

a crystal-controlled reference oscillator producing a signal of said fixed frequency and a plurality of signals at harmonic frequencies of said fixed frequency, said fixed frequency being selected so that the frequency of one of said plurality of signals differs by a given nominal frequency from the local oscillator frequency required for proper receiver response to each of said plurality of television signal transmission channels, said signals at harmonic frequencies having higher frequencies than said local oscillator frequency for one of said groups of channels and having lower frequencies than said local oscillator frequency for the other of said groups of channels;

a frequency mixer;

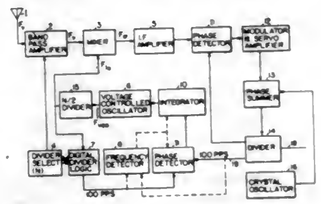
means coupling said local oscillator and said reference oscillator to said mixer to produce an output signal having said nominal frequency and which only deviates from said nominal frequency to the extent that said local oscillator frequency may differ from that required for said proper receiver response;

means coupled to said mixer for detecting any deviation in said output signal from said nominal frequency so as to produce opposite polarities of a control signal, each representative of the magnitude of said deviation;

reactance circuit means including a variable capacitance diode and responsive to said control signal for adjusting the frequency of said local oscillator precisely to that required for the transmission channel selected by said channel selecting means;

and means including a reversing switch coupled to said channel selecting means and connecting said detecting means to said reactance circuit means to impress upon said diode a selected polarity of said control signal dependent upon which one of said local oscillator and harmonic frequencies is the higher in the production of said output signal.

3,163,823
DIGITAL RECEIVER TUNING SYSTEM
James T. Kellis, Tustin, and Robert W. Pargee, San Clemente, Calif., assignors to Electronic Engineering Company of California, Santa Ana, Calif., a corporation of California
Filed Dec. 4, 1963, Ser. No. 328,071
11 Claims. (Cl. 325—421)



1. The method of receiver tuning which includes the steps of:

(*a*) receiving a transmitted carrier frequency,

(*b*) generating an on-off waveshape at said receiver that is related to said transmitted carrier frequency by a fixed increment of frequency,

(*c*) mixing said transmitted carrier frequency and said on-off waveshape to produce phase inversions of said transmitted carrier frequency during alternate half-cycles on said on-off waveshape,

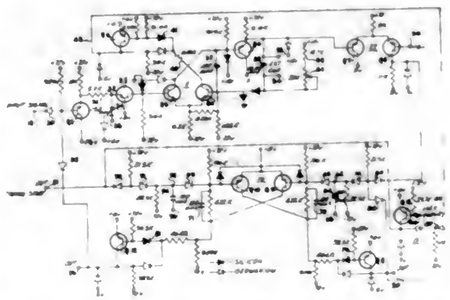
(*d*) digitally dividing said on-off waveshape by a number N to produce a first given frequency, which first given frequency is a lower frequency than the frequency of said on-off waveshape,

(*e*) forming a second given frequency proportional to said transmitted carrier frequency by employing said mixed transmitted carrier frequency and said on-off waveshape,

(*f*) comparing the phase of said first and said second given frequencies, and

(*g*) adjusting the phase of said on-off waveshape as a result of said comparison to phase-lock said on-off waveshape to the phase of said transmitted carrier frequency.

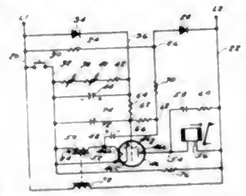
3,163,824
SYNCHRONOUS TIMING CIRCUIT
Norman R. Crain, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Sept. 11, 1961, Ser. No. 137,405
10 Claims. (Cl. 328—58)



3. A synchronous timing circuit comprising, a first circuit means including a timing capacitor, a source of charging potential for charging said timing capacitor, means responsive to signals applied thereto for discharging said capacitor through a resistance to provide a predetermined time delay independent of the duration of said signals, means responsive to said time delay for providing a timing signal, a second circuit means responsive to a first triggering signal for assuming a first stable state and responsive to a second triggering signal for assuming a second stable state, means responsive to said first and second stable states for providing, respectively, a first and a second output signal, gating means responsive to said timing signal for applying a first triggering signal to said second circuit means, and means responsive to the charged condition of said timing capacitor for applying a second triggering signal to said second circuit means.

3,163,825
REVERSIBLE TIMING CIRCUIT
Clarence W. Porter and Marvin A. Guettel, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 15, 1960, Ser. No. 75,973
4 Claims. (Cl. 328—86)

1. A timing circuit for use with a gas filled tube having an anode, a cathode and a control grid wherein the timing circuit provides a substantially constant interval timing regardless of the conductive state of the tube and wherein the gas filled tube is rendered respectively conductive and non-conductive when a bias voltage between the grid and cathode is respectively greater and less than a value other than zero volts, comprising; an alternating current source, a first circuit arranged for connecting the anode and the cathode across the source, a first and a second capacitor connected in individual bias circuits between the grid and cathode, an impedance means, individual charging circuits connecting the capacitors to the source through the impedance means, means in circuit with each of the charging circuits arranged so the charge on the first capacitor is greater than and opposes the bias on the grid by the second capacitor, an adjustable discharge circuit for the first capacitor for varying the time interval of the timing circuit, an initiating switch having closeable contacts in the first circuit



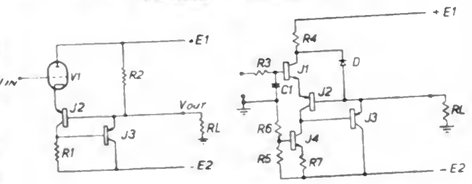
for completing said first circuit with said contacts being in circuit with the impedance means for shunting the charging circuits through said impedance means when the contacts of the initiating switch are closed and means including a transformer having a secondary winding connected in the bias circuit of the second capacitor and a primary winding in circuit with the source for supplying an alternating current voltage between the grid and cathode which is shifted in phase from the voltage impressed across the anode and cathode by the first circuit.

3,163,826
FREQUENCY MODULATION DETECTOR HAVING A LINEAR SLOPE OUTPUT
Arthur L. Kemper, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 2, 1962, Ser. No. 206,913
7 Claims. (Cl. 329—103)



1. A frequency modulation detector having a solid state signal amplifying section; a diode signal rectifying output section; a transformer coupling connecting the solid state amplifying section and the diode signal rectifying output portion; a secondary coil of said transformer coupling being part of a tuned circuit; signal input means providing a signal input path to the solid state amplifying portion of the detector; a tuned LC circuit connected to said signal input means; said secondary coil tuned circuit being tuned to a frequency spaced from the desired center frequency, the tuned LC circuit being tuned to a different frequency than the tuned frequency of the secondary coil circuit and in the same direction from the tuned frequency of the secondary coil circuit as the desired center frequency; the Q of the secondary coil circuit being chosen for a desired degree of slope in the output characteristic curve; the tuned frequency of the secondary coil tuned circuit being carefully selected to bring the output characteristic curve into proper operational relation to the desired center frequency; the Q and the tuned frequency of said tuned LC circuit being so selected that the effect on the input signal to the solid state amplifying section results in a rectified signal output from the detector having a substantially linear sloped output characteristic curve properly positioned about the chosen center frequency and at the desired degree of slope; wherein said secondary coil tuned circuit includes a capacitor as well as the secondary coil at least one of which is adjustable; and wherein, said tuned LC circuit is part of a frequency sensitive voltage divider including, a resistor in series with the input signal path, and in the LC circuit a coil and a capacitor connected in series between the signal input path and ground; and at least one of the components of said frequency conscious voltage divider being adjustable.

3,163,827
CATHODE-FOLLOWER AND EMITTER-FOLLOWER CIRCUITS
Kathirkamathamby Kandiah, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 22, 1962, Ser. No. 218,653
Claims priority, application Great Britain, Aug. 22, 1961, 30,279/61; Dec. 13, 1961, 44,703/61
4 Claims. (Cl. 330—3)

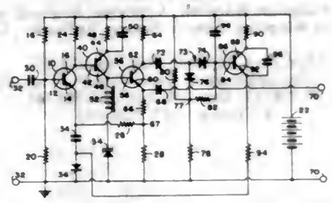


1. A circuit for matching a high impedance signal source to a low impedance load comprising a thermionic valve which has an anode, a cathode and a control grid and which is connected as a cathode-follower, an input connection to said control grid, first and second supply lines, a connection from said anode to the first supply line, a first junction transistor having its emitter connected to said cathode such that any change in the cathode current of said valve appears as a change of equal magnitude in the emitter current of the first transistor, a resistive collector load for the first transistor connected between the collector electrode of the first transistor and the second supply line, a second junction transistor, connections between the collector of the first transistor and the base of the second transistor and between the emitter of the second transistor and the base of the first transistor such that any change in the collector current of the first transistor is fed back to oppose the change, a connection between the collector of the second transistor and the second supply line, a resistive connection between the base of the first transistor and the first supply line, and an output connection from the emitter of the second transistor.

4. A circuit for matching a high impedance signal source to a low impedance load comprising a first junction transistor which is connected as an emitter-follower, an input connection to the base of the first transistor, first and second supply lines, a resistive connection from the collector of the first transistor to the first supply line, a second transistor having its emitter connected to the emitter of the first transistor such that any change in the emitter current of the first transistor appears as a change of equal magnitude in the emitter current of the second transistor, a third junction transistor, connections between the collector of the second transistor and the base of the third transistor and between the emitter of the third transistor and the base of the second transistor such that any change in the collector current of the second transistor is fed back to oppose the change, a constant-current network formed by a fourth junction transistor the emitter-collector path of which is connected in series with resistance between the collector of the second transistor and the second supply line, and the base of which is connected to a point on a potentiometer connected between the second supply line and earth, a constant-voltage device connected

between said anode and the base of the second transistor such that the collector current of the first transistor is maintained substantially constant, and an ouput connection from the emitter of the third transistor.

3,163,828
GAIN COMPRESSED AMPLIFIER
Laughton T. Fine, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,663
15 Claims. (Cl. 330—17)



9. In a gain controlled amplifier, the combination comprising:

a first electron flow control device having a first emitting electrode, a first collecting electrode and a first control electrode;

a variable impedance device, said variable impedance device having impedance characteristics which vary as an inverse function of applied current;

a source of direct current biasing potential;

means connecting said first emitting and collector electrodes in series with said variable impedance device across said source;

means for applying signal between said first control and emitting electrodes;

means for deriving amplified signals from between said first collecting and emitting electrodes;

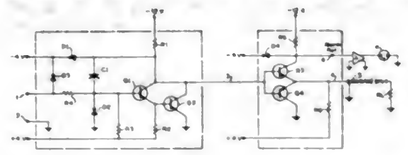
a second electron flow control device having a second emitting electrode, a second collecting electrode and a second control electrode, said variable impedance device being connected in series with said second emitting and collecting electrodes and said source;

means for forwardly biasing said second control electrode in the absence of signal whereby maximum currents from said source flow through said variable impedance device to establish a minimum dynamic impedance for said variable impedance device;

and rectifier means coupling said amplified signals to said second control electrode for back biasing said second control electrode to reduce conduction through said variable impedance device, thereby increasing said dynamic impedance.

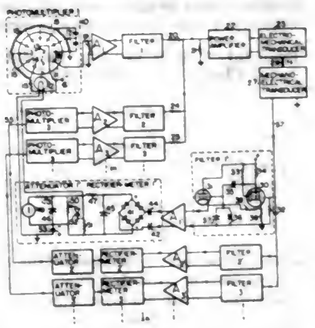
3,163,829
SHORTPROOF EMITTER FOLLOWER PROTECTIVE CIRCUIT
Frederick F. Ladd, Jr., Newbury, Mass., assignor to Anelex Corporation, Boston, Mass., a corporation of New Hampshire
Filed May 10, 1962, Ser. No. 193,801
7 Claims. (Cl. 330—24)

3. In combination, a signal voltage source having an output terminal and a reference terminal, a load voltage source having a first terminal connected to said reference terminal, a second terminal at a first potential with respect to said first terminal, and a third terminal at a potential intermediate the potentials of the first and second terminals, a pair of complementary transistors each having an emitter, a collector and a base, said emitters being connected together, a load impedance connected between the emitters and said reference terminal, means connecting said output terminal to the bases of said transistors, a resistor connected between said second terminal and the collector of a first of said transistors, clamping means connected between the collector of said first transistor and said third terminal to limit the excursions of the collector to a voltage range bounded by the potentials of said first and said third terminals,



means connecting the collector of the second transistor to said reference terminal, and means for biasing said emitters with respect to said bases to cause the emitter of said first transistor to follow the potential of said output terminal within said range, the value of said resistor being sufficient to prevent damage to said first transistor if its emitter is connected to said reference terminal.

3,163,830
METHOD OF GENERATING A VARIABLE AMPLITUDE NOISE SPECTRUM
Charles Theodore, Los Angeles, and James A. Ross, Orange, Calif., assignors to Ling-Temco-Vought, Inc., a corporation of Delaware
Original application Jan. 10, 1961, Ser. No. 81,731. Divided and this application Oct. 6, 1961, Ser. No. 149,801
6 Claims. (Cl. 331—78)



1. The method of producing vibration according to a noise spectrum with selectable amplitudes for contiguous frequency bands of said spectrum in which said bands have frequencies in common which includes the steps of;

(*a*) forming electrical noise signals for each of said frequency bands so that said noise signals are noncoherently random in adjacent said frequency bands at said common frequencies,

(*b*) separately adjusting the amplitudes of said noise signals in selected said frequency bands,

(*c*) combining the electrical noise signals of each of said frequency bands to form said noise spectrum,

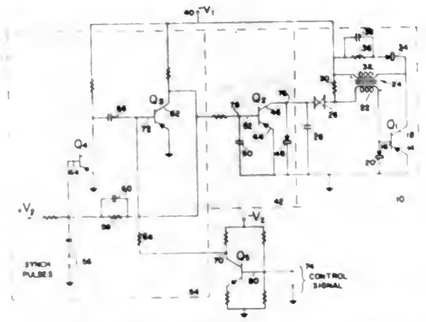
(*d*) converting the electrical noise spectrum into mechanical vibrations proportional to said noise spectrum,

(*e*) converting said mechanical vibrations to a corresponding electrical signal spectrum,

(*f*) separating said signal spectrum into frequency bands corresponding to the first mentioned said frequency bands, and

(*g*) individually controlling the amplitudes of said noise signals by a corresponding separated signal of said signal spectrum to thereby maintain the adjusted said amplitudes.

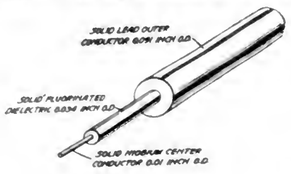
3,163,831
VARIABLE FREQUENCY CRYSTAL-CONTROLLED OSCILLATOR
Martin Fischman, Wantagh, and Edward A. Murphy, Farmingdale, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,401
3 Claims. (Cl. 331—116)



1. In an oscillator, a resonant circuit for determining the oscillator frequency by the average capacitance thereof and including a crystal operative in a series resonant mode and a capacitor in series with said crystal, said crystal having a predetermined bandwidth of frequency response which includes the series resonant frequency of the crystal transistor, switching means connected across said capacitor and having first and second mutually exclusive electric states, said switching means being effectively isolated electrically from said capacitor when in said first state and effectively short-circuiting said capacitor when in said second state, and means to supply a pulse train of equidistantly spaced pulses to said switching means, the recurrence frequency of said train being much higher than the frequency bandwidth of said crystal, said switching means, upon receiving a pulse in said train, being triggered from a selected state into the other state and thereafter being returned to the selected state within a time interval always less than the time separation between adjacent pulses in said train, said time interval controlling the duty cycle of said switching means to determine the average capacitance of said resonant circuit.

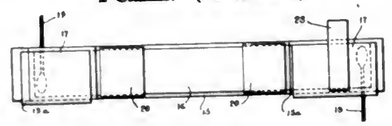
3,163,832
SUPERCONDUCTIVE COAXIAL LINE USEFUL FOR DELAYING SIGNALS
Norris S. Nahman and Guy M. Gooch, Lawrence, Kans., assignors to The Kansas University Endowment Association, Lawrence, Kans., a non-profit corporation of Kansas
Filed Sept. 15, 1961, Ser. No. 138,465
5 Claims. (Cl. 333—31)

5. A flexible unitary coaxial line having an outside diameter less than ½ inch capable of transmitting nanosecond electrical pulses comprising an inner superconductive metal conductor and an outer superconductive metal conductor insulated from each other with an extruded solid plastic dielectric, in which said superconductive metals are different materials and the outer superconductor is relatively soft and said inner superconductor is relatively strong in tensile strength and in which



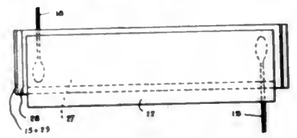
the dielectric and both conductors are of substantially uniform geometry.

3,163,833
FILTER
Bob O. Burson, Longmeadow, Mass., assignor, by mesne assignments, to Three Rivers Industries, Inc., Three Rivers, Mass., a corporation of Massachusetts
Filed Oct. 13, 1960, Ser. No. 62,367
2 Claims. (Cl. 333—79)



1. In a device of the character described, a winding consisting of a through conducting layer, insulating material for insulating the turns of said winding, a grounded layer extending beyond an edge of said insulating material, said conducting layer being connected in a closed circuit by a pair of terminals adjacent the opposite ends of said conducting layer, said terminals being isolated from each other, said conducting layer forming an inductance in the closed circuit in which it is connected and a distributed capacitance with said grounded layer, and a plurality of spaced portions of magnetic material in spaced relation in said winding for increasing the reactance of the device.

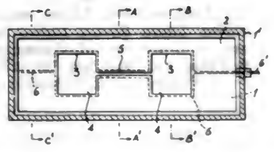
3,163,834
FILTER
Richard W. Malmstrom, Springfield, Mass., assignor, by mesne assignments, to Three Rivers Industries, Inc., Three Rivers, Mass., a corporation of Massachusetts
Filed Oct. 27, 1960, Ser. No. 65,505
2 Claims. (Cl. 333—79)



1. In a device of the character described, a pair of oppositely disposed elements connected in series relation forming a pi filter, each of said elements comprising a winding consisting of a through conducting layer, insulating material for insulating the turns of said winding from each other, and a grounded layer extending beyond an end of said insulating material and being grounded substantially throughout its length, said conducting layer being connected in a closed circuit by a pair of terminals adjacent the opposite ends of said conducting layer, said terminals being isolated from each other, said conducting layer forming an inductance in the closed circuit in which it is connected and a distributed capacitance with said grounded layer, and a plurality of spaced magnetic por-

tions in spaced relation upon said conducting layer for increasing the reactance of the device, each of said elements having one of its pair of terminals electrically connected to one of the pair of terminals of the other element such as to connect said elements in said series relation.

3,163,835
VOLTAGE-TUNEABLE MICROWAVE REACTIVE ELEMENT UTILIZING SEMICONDUCTOR MATERIAL
William Joseph Scott, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 17, 1962, Ser. No. 217,750
Claims priority, application Great Britain, Sept. 11, 1961, 32,527/61
5 Claims. (Cl. 333—83)



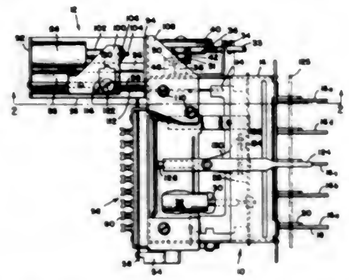
1. In combination with a waveguide, a microwave reactive element across the width of the waveguide, said reactive element comprising a wafer of semiconductor material having first and second substantially parallel faces, a covering of electrically conductive material in ohmic contact with and covering part of said first face with said covering defining at least one uncovered aperture, and an electrode in injecting contact with said second face substantially at the projection onto said second face of the periphery of said aperture in a direction normal to the planes of said faces.

3,163,836
COAXIAL CONDUCTOR HAVING PARALLEL CONNECTED STRANDED LAYERS OF DIFFERENT PITCH FOR EQUALIZING INDUCTANCE AND CURRENT DISTRIBUTION
Masao Sugi, Osaka-fu, and Kaoru Murai, Hyogo-ken, Japan, assignors to Sumitomo Electric Industries, Ltd., Konohana-ku, Osaka, Japan
Continuation of abandoned application Ser. No. 347,052, Apr. 6, 1953. This application Jan. 13, 1961, Ser. No. 82,592
Claims priority, application Japan, Apr. 14, 1952, 27/5,746
21 Claims. (Cl. 333—96)



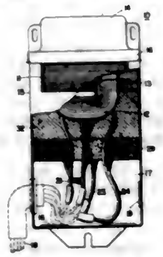
6. A high frequency coaxial cable comprising a central core of insulating material, an inner conductor, an outer conductor and insulating material between these two conductors, in which said inner conductor comprises a plurality of concentric layers of helical elemental conductors forming a composite of layers, each such layer consisting of at least one elemental conductor of a thickness related to the equivalent thickness due to skin effect, and insulating material between successive layers, each individual layer having at least one line of insulating means along the direction of the elemental conductor, the average radius of said composite of said layers being large with respect to the total thickness of all said layers, and the helical pitch of said layers decreasing from the inside outwardly approximately in inverse proportion to the square of the distance from the innermost layer to provide substantially equal effective inductive impedances for each layer, and said inner conductor being designed independently of the dielectric constant and permeability of the medium between the inner and outer conductors.

3,163,837
MULTI-BAND, GANGED-CARRIAGE-DRIVEN SLUG TUNER EMPLOYING FLEXIBLE CONNECTION BETWEEN CARRIAGES
John H. Teaf, Merchantville, N.J., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio
Filed Dec. 18, 1961, Ser. No. 159,878
9 Claims. (Cl. 334—7)



1. A multi-band tuning assembly including first and second sets of tuning coils for tuning first and second wave bands, first and second sets of slugs, first and second carriages mounting said first and second sets of slugs for tuning movements relative to said first and second sets of coils respectively, individual adjustment means connecting each of said slugs to its respective carriage for adjusting the position of each slug relative to the other slugs to effect proper tracking, and a rod interconnecting said first and second carriages for joint reciprocation, said rod being sufficiently stiff to transmit by both pushing and pulling actions reciprocating movement of said first carriage to said second carriage while being sufficiently flexible so as to compensate for relative misalignment between said carriages.

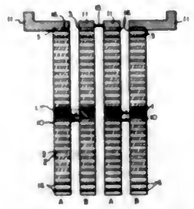
3,163,838
INDUCTIVE DEVICE EMPLOYING FOAMED RESIN THERMAL BARRIER
Stanley J. Antalis and Don C. Wood, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Mar. 28, 1962, Ser. No. 183,188
7 Claims. (Cl. 336—55)



1. An inductive device comprised of a magnetic core, at least one electrical coil disposed on said magnetic core and having a plurality of electrical conductors

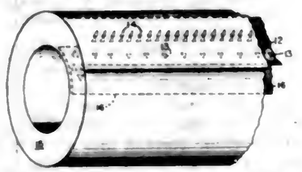
brought from said coil, a thermally conductive sleeve means encasing at least a part of said magnetic core and coil, said sleeve means also forming a wiring compartment for housing the ends of said electrical conductors brought out from said coil, and a thermally insulating wall disposed within said sleeve means between said wiring compartment and said core and coil and providing a thermal barrier therebetween to prevent the temperature of said wiring compartment from exceeding 60 degrees centigrade, said thermally insulating wall being formed of foamed resin and said electrical conductors extending through said thermally insulating wall and being adapted for connection to the external leads within said compartment.

3,163,839
ELECTROMAGNETIC COILS
Albert Zack, Danvers, Mass., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Original application Dec. 30, 1953, Ser. No. 401,333, now Patent No. 3,113,374, dated Dec. 10, 1963. Divided and this application Jan. 3, 1961, Ser. No. 93,826
2 Claims. (Cl. 336—192)



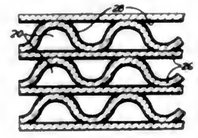
1. A spiral electromagnetic coil comprising a spiral of thin aluminum foil with a thin layer of solid insulating material between the turns of the coil and spacing said turns apart, and a short length of thin copper foil overlapping an end portion of the aluminum foil near the outer circumference of the coil and in direct close contact therewith to act as a terminal contact for said aluminum foil.

3,163,840
ELECTROMAGNETIC COILS AND TERMINAL STRIPS FOR SUCH COILS
Albert Zack, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 75,836, Dec. 14, 1960, which is a continuation of application Ser. No. 51,333, Aug. 23, 1960. This application July 12, 1963, Ser. No. 294,639
4 Claims. (Cl. 336—192)



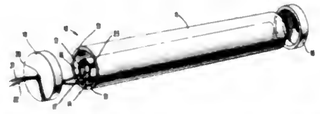
3. A wafer coil comprising: a convoluted winding of foil; a lead-in wire and a metallic strip contacting an end of said foil, said metallic strip having a first and a second series of tabs, at least one tab of said first series passing through and overlapping said foil to form a firm mechanical connection thereto; said second series of tabs including at least two tabs spaced apart by substantially the width of said lead-in wire, said two tabs overlapping said lead-in wire to form a firm mechanical attachment thereto.

3,163,841
ELECTRIC RESISTANCE HEATER
Frank C. Willett, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,494
7 Claims. (Cl. 338—292)



1. A heater comprising a sintered ceramic thin walled honeycomb shape with opposed major surfaces and having a plurality of open channels extending therethrough from one of said surfaces to the other, said channels being defined and separated from one another by sintered ceramic walls, an electrically conductive film on the surfaces of said walls in each channel extending to the said major surfaces, a low resistivity electrically conductive film over the edges of said ceramic walls at each of said major surfaces, said low resistivity films being in electrical contact at each surface with said films in said channels, and an electrical lead from each of said low resistivity films.

3,163,842
HOUSING FOR ELECTRICAL UNIT
John C. Wittwer, R.F.D. 2, Mount Kisco, N.Y.
Filed Jan. 29, 1962, Ser. No. 172,040
14 Claims. (Cl. 338—317)



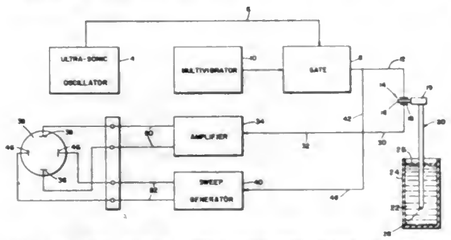
4. A housing for an electrical unit comprising
an outer tubular portion of predetermined length and diameter,
a partition formed integrally along one edge of said outer tubular portion and having a length extending substantially throughout the predetermined length of said outer tubular portion,
the width of said partition being less than the diameter of said tubular portion to define a slot extending throughout the length of said outer tubular portion,
and said partition and said outer tubular portion defining two communicating chambers extending throughout the length of said housing to receive an electrical unit,
and a flexible tape-like electrical element supported within said tubular portion,
said electrical element having conductive means along the longitudinally extending edges and coextensive therewith,
said conductive means being supported in each of said respective chambers.

3,163,843
LIQUID LEVEL INDICATOR
Herman M. Dieckamp, Canoga Park, Calif., assignor to North American Aviation, Inc.
Filed Oct. 2, 1961, Ser. No. 142,321
2 Claims. (Cl. 340—1)

1. A liquid level indicator comprising:
(*a*) a source of ultrasonic frequency electrical energy,
(*b*) first means transmuting said electrical energy to corresponding signal mechanical vibrations,

(*c*) second means intermittently feeding said electrical energy to said first means,

(*d*) third means cooperating with said first means and having at least one end submersed in a liquid,



(*e*) said third means conducting said signal vibrations and further conducting respective mechanical vibrations reflected from the surface of the liquid and from said submersed end,

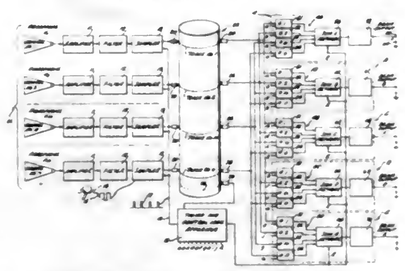
(*f*) said first means further transmuting said reflected mechanical vibrations to corresponding electrical pulses, and

(*g*) fourth means comparing the relative positions of said electrical energy and said electrical pulses so that the level of the liquid is determined.

3,163,844
MULTIPLE-BEAM ANALOG BEAM-FORMING SYSTEM FOR SONAR ARRAYS

Lynn A. Martin, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 3, 1960, Ser. No. 60,125
4 Claims. (Cl. 340—6)

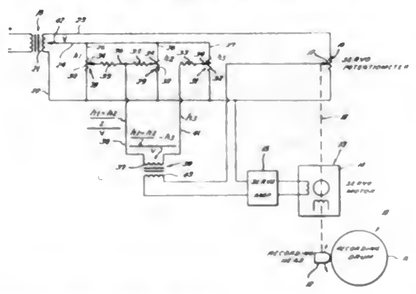


1. A multiple-beam beam-forming apparatus for an array of hydrophones capable of converting acoustical waves incident thereon into electrical signals, said apparatus comprising means responsive to each one of said hydrophones for amplifying only the frequency components of said electrical signals which are of frequencies less than a predetermined frequency that is no more than 1000 cycles per second; means for periodically sampling each of said amplified electrical signals; a magnetic drum having a track for each of said hydrophones; means for recording a predetermined number of the most recent samples from each of said signals in sequence along corresponding tracks of said magnetic drum; means for sequentially reading samples from each of said tracks having delays therebetween proportional to the spacing of the hydrophones in said array thereby to produce successive sets of samples having predetermined relative delays to correspond to a selected direction with respect to the axis of said array; means for successively producing output pulses of amplitudes representative of the sum of the amplitudes of the samples contained in each of said sets thereby to generate samples of acoustical energy received from said selected direction; and means responsive to said output pulses for producing an output signal representative of the envelope of said output pulses thereby to enhance the reception of acoustical energy from said selected direction.

3,163,845
ANALOG COMPUTER FOR USE IN SEISMIC EXPLORATION

Charles L. Kimbell, Houston, Tex., assignor to Independent Exploration Company, Houston, Tex., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,038
7 Claims. (Cl. 340—15.5)



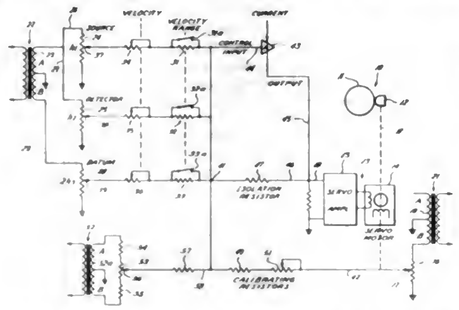
7. Apparatus comprising, a recording drum having a movable recording head, a servo-motor system drive connected to the recording head, a first transformer having a movable tap, a potentiometer connected across the secondary of said first transformer and having its contact point ganged with said movable recording head, three potentiometers connected in parallel with said movable tap and one of the secondary output lines of said first transformer, connecting means between the contact points of two of said three potentiometers, and means including the primary of a second transformer connecting the contact point of the third of said three potentiometers and said connecting means, said second transformer generating a voltage in its secondary winding twice the potential across its primary, said servo-motor system responsive to any difference between said voltage from the fixed tap potentiometer and said first output voltage and moving said recording head and fixed tap potentiometer until said voltages are the same.

3,163,846
ANALOG COMPUTER FOR USE IN SEISMIC EXPLORATION

Charles L. Kimbell, Houston, Tex., assignor to Independent Exploration Company, Houston, Tex., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,111
9 Claims. (Cl. 340—15.5)

1. Apparatus comprising, a recording drum having a movable recording head, a servo-motor system drive connected to the recording head, current source means providing for two-phase current, first means for tapping off a selected first phase voltage from said current source means proportional to the elevation of a seismic wave source, second means for tapping off a selected first phase voltage from said current source means proportional to the elevation of seismic detector means, third means for tapping off a selected second phase voltage from said current source means proportional to twice the elevation of a datum plane, means reducing said tapped off voltages by an amount proportional to the velocity of a seismic wave, means for connecting said three means for tapping off voltages to a common point, fourth means for tapping off a selected voltage from said current source means, means connecting said fourth means to said common point, said fourth means ganged to said recording head, means controlled by the voltage at said common point generating an output voltage 180° out of phase with the

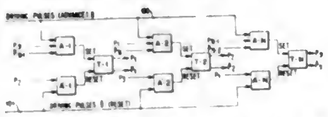


voltage at said common point, means including isolating means connecting the output of said generating means to said common point, and means connecting the side of the isolating means adjacent the generating means to the servo-motor.

3,163,847
CHECK CIRCUIT FOR RINGS WITH OVERLAPPING OUTPUTS

Leo T. O'Connor, Jr., Elbridge, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 3, 1961, Ser. No. 80,168
4 Claims. (Cl. 340—146.1)



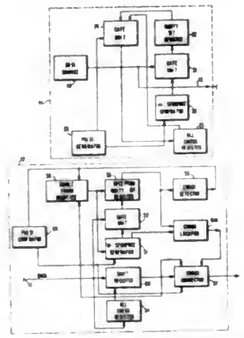
4. Monitoring means for a plurality of rings that are driven in tandem with respect to a source of drive pulses, wherein each of said rings can have any number of stages greater than two, a plurality of error checking circuits respectively associated with outputs of respective rings; each of said error checking circuits comprising: a first OR gate connected to even-numbered stages of its associated ring, a second OR gate connected to odd-numbered stages of its associated ring, AND gate means receiving outputs of said first and second OR gate means, sampling pulse means providing one set of pulses during driving pulses to a first of said tandem driven rings, and providing a second set of pulses between said driving pulses; comparator means in said checking circuit associated with said first ring being connected to said AND gate means and to said sampling means; and another AND gate means in each of the other checking circuits having an output connected to a comparator means of its checking circuit, and said another AND gate means having inputs received from said sampling pulse means and from the input to its associated ring.

3,163,848
DOUBLE ERROR CORRECTING SYSTEM

Norman M. Abramson, Woodside, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 22, 1959, Ser. No. 861,268
13 Claims. (Cl. 340—146.1)

1. In combination with an information handling system having a source of binary coded multi-bit data signals and a device for utilizing said signals, an error correcting system interconnecting said data source and said utilization device operable to detect, locate and correct two types of related errors occurring during the translation of said data signals to said device, said correcting system including an encoder, a decoder and signal translating means connected therebetween, said encoder comprising means for supplying to said signal translating means a code group signal consisting of a predetermined number of data bits, a predetermined number of locator parity bits and an error-type parity bit, said supplying means including means for generating said locator parity bits from bit

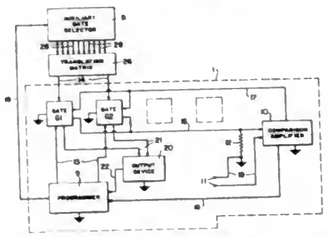


positions of said code group signal determined by a complemented m-sequence and means for generating said error-type parity bit from each bit position of said code group signal, said decoder comprising means for generating reception parity bits from said code group signal as received over bit positions determined by said complemented m-sequence, means for generating a reception error-type parity bit, and means under the control of said generated reception parity bits operable to correct any one of said different types of related errors in any position of said code group prior to supplying an erroneous data bit to said utilization device.

3,163,849
ALARM SENSING

Saul Meyer, Havertown, Del., assignor to Honeywell Inc., a corporation of Delaware

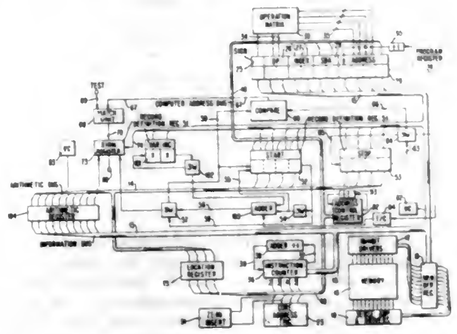
Filed Apr. 21, 1958, Ser. No. 729,961
18 Claims. (Cl. 340—146.2)



13. An alarm system for sensing abnormal values of a plurality of measured variables comprising an input signal digitizing device having incremental signal level gates, primary control means for sequentially actuating said gates, input signal selecting means for sequentially connecting signals representative of said measured variables to said input signal digitizing device, means for comparing incremental signals from said gates with said sequentially selected signals representative of said measured variables to provide digitized values corresponding

to the values of said measured variables, and auxiliary control means for said gates for sequentially establishing reference level signals, said reference level signals being sequentially selected to correspond to said sequentially selected measured variables, corresponding ones of said reference level signals being compared by said comparison means with said input signals representative of said sequentially selected measured variables to determine the presence or absence of abnormalities of said measured variables.

3,163,850
RECORD SCATTER VARIABLE
John M. Austin, Poughkeepsie, Armand E. Cloutier, Hyde Park, and Michael J. Mastrianni, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1960, Ser. No. 78,678
1 Claim. (Cl. 340—172.5)



In a data processing system having a memory provided with addressable locations for storing data words and a variety of instruction words, programming means controlled by the instructions for controlling the manipulation of the data words; the combination of means for effecting, in the memory, record scatter or record gather operations plus variable open-sequence operations in the scatter or gather sequences under the control of record definition words, each constituted of a sign, a variable increment, a start and a stop address, and each stored in other addressable locations of the memory comprising:

a location address register for receiving and storing the address of a record definition word derived from an instruction in said programming means;

a record definition register constituted of a sign register, a variable increment register, a start address register and a stop address register, respectively, for receiving and storing the sign, the variable increment, the start and stop address of a programmed record definition word;

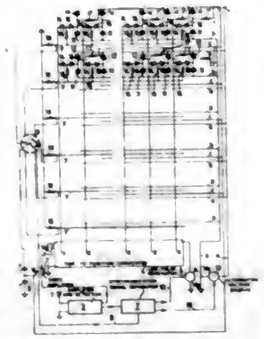
address selection control means responsive to the address settings in said start register for selecting a data word location in the memory for record read or write;

address comparing means connected to said start and stop registers for comparing the address settings and providing an equal signal in response to an equal comparison between said address settings;

a record definition word sign interrogating means operable in response to an equal comparing signal to provide a control to continue or disable the scatter read or write operations depending upon the character of the sign interrogated;

a summing means to vary the start address in said start address register by summing the variable increment in said variable increment register to the present start address in said start address register whereby the scatter or gather sequences are opened in increments the size of the variable increment read into the system by the record definition word.

3,163,851
CIRCUIT ARRANGEMENT COMPRISING A CONTROLLING CROSS-BAR SYSTEM
Edward Fokko de Haan, Johannes Gerrit van Santen, Simon Duinker, Gersinus Diemer, and Leonard Johan Tummers, all of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1960, Ser. No. 59,255
Claims priority, application Netherlands Oct. 2, 1959
11 Claims. (Cl. 340—173)

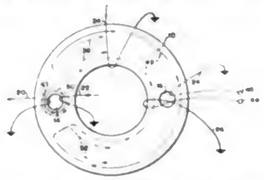


2. A cross-bar system comprising first and second groups of parallel conductors, the conductors of said first group being arranged transversely of the conductors of said second group to define a plurality of conductor crossings, a variable impedance storage element and a reproducing element for each of said crossings, a common source of activation potential, means connecting each reproducing element to the respective storage element and to said common source whereby said reproducing elements are substantially continuously activated to an extent dependent upon the impedance of the respective storage element, a source of electric signals, means connecting said source of electric signals to said first conductors, separate unilateral conducting means for connecting each storage element to the respective first conductor whereby the impedances of said storage elements are varied in response to the electric signal on the respective first conductors, a source of blocking potential, a plurality of resistors for separately connecting said source of blocking potential to said unilateral conducting means for preventing conduction thereof, a point of constant potential with respect to said source of blocking potential, means sequentially connecting said second conductors to said point, and means connecting said second conductors to the unilateral conducting means of the respective crossings, whereby blocking potential is removed from the unilateral conducting means of the crossings of the second conductor connected to said point to permit the respective storage elements to assume impedances corresponding to the electric signal on the respective first conductor.

3,163,852
MAGNETIC CORE HALF ADDER
Edwin W. Bauer, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 6, 1956, Ser. No. 608,227
26 Claims. (Cl. 340—174)

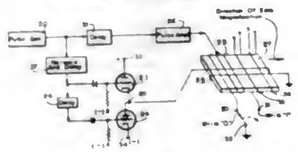
1. A logical circuit comprising a magnetic core having first, second, third and fourth openings therethrough, said

core being capable of assuming first, second and third different stable states of flux remanence, a pair of input windings inductively associated with said magnetic core, said pair of input windings being positioned through said first and second openings, means for energizing said input windings to thereby apply information to said magnetic core, each of said input windings being effective when input information is applied exclusively thereto when said magnetic core is in said first stable state to cause said magnetic core to assume said second stable state, said input windings being effective when input in-



formation is applied coincidently thereto when said magnetic core is in said first stable state to cause said magnetic core to assume said third stable state, and a pair of output windings inductively associated with said magnetic core for respectively manifesting outputs indicative of the information applied to said core by said input windings, one of said output windings being positioned through said third opening to link a portion of said core on one side of said third opening, the other of said output windings being positioned through said fourth opening to link portions of said core on both sides of said fourth opening in opposite senses.

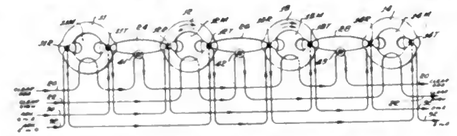
3,163,853
MAGNETIC STORAGE THIN FILM
Henry S. Belson, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1958, Ser. No. 716,365
5 Claims. (Cl. 340—174)



4. In combination a thin magnetic film having a rectangular hysteresis characteristic and a direction of easy magnetization, and means for remagnetizing said film comprising first means producing a first magnetic field in said film which varies in accordance with a sine function, said first field being disposed substantially parallel to said direction of easy magnetization, and second means for producing a second magnetic field in said film which varies in accordance with a cosine function, said second field being disposed transverse to said direction of easy magnetization.

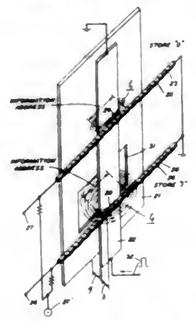
3,163,854
MAGNETIC FLUX TRANSFER IN CORE SYSTEMS
Douglas C. Engelbart, Palo Alto, Calif., assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
Filed Oct. 30, 1959, Ser. No. 849,776
8 Claims. (Cl. 340—174)

7. A magnetic remanence transfer system including a first and second magnetic core each having two states of magnetic remanence and being drivable from one to the other thereof, each core being toroidal in shape and having a main aperture, a transmit aperture, and a receive aperture, a third toroidal core having a main aperture, a closed-loop transfer winding threaded through said first core transmit aperture, said second core receive aperture and said third core main aperture, and means for applying transfer current to said closed-loop transfer winding for driving said second core to the same state



of remanence as said first core, the sense of the transmit winding threaded through said third core being such as to drive it to a state of remanence when said second core is driven to said state of remanence, said third core material being such as to enable its being driven to its state of remanence in response to the transfer current before said second core is driven.

3,163,855
MAGNETIC MEMORY CIRCUITS
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 10, 1959, Ser. No. 858,636
27 Claims. (Cl. 340—174)

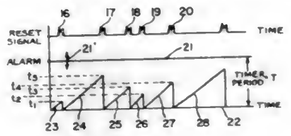


7. A memory circuit comprising a wire memory element capable of having a magnetic flux switched therein, a plurality of inductive winding means coupled on one side to said wire memory element an defining a plurality of information addresses thereon, means for applying energizing pulses to said winding means to generate magnetic fields at said information addresses, an electrically conductive sheet positioned on the other side of said plurality of winding means for limiting said fields and prevent flux switching in said wire memory element at particular ones of said information addresses, said conductive sheet being apertured at others of said information addresses for permitting said fields to cause a flux switching in said wire memory element at said last-mentioned addresses, and means for sensing flux switching in said memory element at each of said plurality of information addresses.

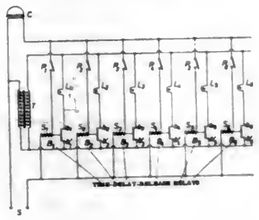
3,163,856
ALARM DEVICE FOR INDICATING LACK OF MOTION
Frederick G. Kirby, 28861 Selfridge Drive, Malibu, Calif.
Filed Nov. 14, 1961, Ser. No. 152,309
4 Claims. (Cl. 340—279)

1. An alarm device for indicating lack of motion of an external portion of a person's body, comprising, in com-

bination: a casing structure adapted to be attached to an external portion of a person's body; a radio frequency transmitter incorporated within said casing structure; a source of energy for triggering said transmitter disposed in said casing structure; inertial responsive electrical contact means in said casing structure responsive to random movement of said casing structure resulting from random movement of said portion of said person's body to connect said source to said transmitter and effect triggering of said transmitter to effect wireless transmitting of signals; time delay means disposed at a stationary location removed from said casing and responsive to said signals to reset itself and initiate the running of a given time period each time one of said signals is received, said time delay means including means for adjusting said given time period to any arbitrary value between three and twenty minutes; and, alarm means connected to said time delay means and responsive to completion of said given time period by said time delay means to operate an alarm, whereby lack of motion for a length of time longer than said given time period results in operation of said alarm.

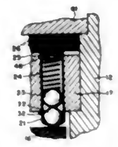


3,163,857
ACOUSTIC-OPTICAL CALL INDICATOR PANEL HAVING TIME DELAY RELEASE OF THE OPTICAL INDICATORS
Gaetano Conforzi, Via G. Mercalli 80, Rome, Italy
Filed Oct. 23, 1961, Ser. No. 147,022
1 Claim. (Cl. 340—322)



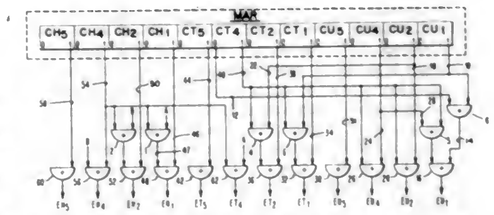
An acoustic-optical call indicating system, comprising, in combination: a plurality of optical indicating devices, the number of which corresponds to a number of call stations; a common acoustic call indicator; a step-down transformer for supplying current to the optical indicating devices; a push-button switch at each call station to operate the associated indicating device and the common acoustic call indicator; and a time-delay-release relay associated with each indicating device circuit so that its contact completes the circuit when the relay is energized, each relay energizing coil being arranged to be connected by the switch to a source of electrical energy; each circuit comprising a switch and the exciting windings of an associated relay being connected in parallel with all other such circuits, the plurality of the latter circuits being connected in series with the acoustic call indicator; and each such circuit closing two contacts, when actuated, for connecting the primary winding of the transformer to the power supply and completing the secondary circuit of the transformer.

3,163,858
ANALOG-TO-DIGITAL CONVERTER
Frederick M. Kirr, Altadena, Clarence J. Klosterman, Tujunga, and Walter D. Spray, Glendale, Calif., assignors to General Precision, Inc., a corporation of Delaware
Filed Mar. 18, 1960, Ser. No. 15,896
1 Claim. (Cl. 340—347)



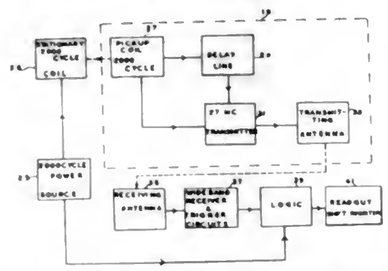
In an analog-to-digital converter having a coded information disc with a plurality of concentric circular tracks on one surface thereof with alternate conductive and non-conductive segments in each track to form a binary code representing any particular position of said member and a readout head mounted with one surface adjacent the coded surface of the disc, the improvement comprising a plurality of ball point electrical contact elements adapted to be mounted in bores extending through said readout head, each of said contact elements having a cylindrical holder open at one end and closed at the opposite end, a pair of balls mounted in the open end of said cylindrical holder and adjacent the coded surface of the information disc, a compression spring engaging the closed end of said holder and resiliently urging said balls toward said open end with the outer one of said balls in contact with the coded surface of the disc, a flexible circuit having conductive areas corresponding to and contacting the other end of said contact elements and conductive strips extending outwardly from each of said conductive areas, and resilient means for urging said flexible circuit against said holders, said resilient means adapted to establish electrical continuity between a conductive segment on said information disc and a conductive strip on said flexible circuit.

3,163,859
CODE CONVERSION DEVICE
Lloyd W. Stowe, Broomall, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,279
8 Claims. (Cl. 340—347)



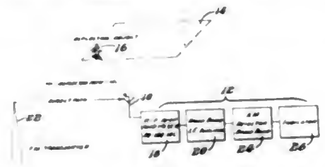
8. A translating device in which data coded in a first system of notation is translated into further separate and distinct systems of notation during successive operating cycles comprising: a register means for accepting and storing data coded in said first system of notation; gating means having output lines, said gating means being connected to said register means for receiving the output thereof; means operative during a first operating cycle to control said gating means according to the data stored in said register means to permit the contents of said register means to be gated unchanged if certain data is present in said register means and to permit partial gating if other data is present in said register means; first means to insert data at the outputs of said gating means for any portion of data of the register means not gated; second means to insert data at the outputs of said gating means during a second operating cycle in accordance with the data originally stored by said register means to provide data coded in a second system of notation; third means to insert data at the outputs of said gating means during a third operating cycle in accordance with the data originally stored by said register means to provide data coded in a third system of notation; means to provide signals indicative of said three distinct operating cycles to said respective first, second and third means; and means to read out and utilize each of said three distinct data groups in their respective systems of notation.

3,163,860
OBJECT IDENTIFICATION SYSTEM
Francis M. Bailey, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Aug. 21, 1962, Ser. No. 218,305
5 Claims. (Cl. 343—6.5)



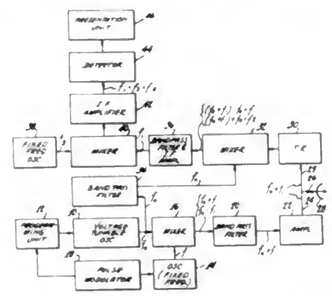
1. In an identification system for moving objects wherein a receiving element and a transmitting element are provided on each such object, means on each such object having a plurality of stages for producing identification data, each stage of said identification means having a saturating magnetic core with two output windings responsive to the signal received by said carrier for imposing one bit of identification data from one output winding on the signal transmitted and imposing a second bit of identification data from the second output winding on the signal transmitted.

3,163,861
ELECTROMAGNETIC FIELD DISTURBANCE INTRUDER DETECTION APPARATUS
Henry Suter, 80 Crooked Billet Road, Hatboro, Pa.
Continuation of application Ser. No. 856,124, Nov. 30, 1959. This application May 2, 1962, Ser. No. 193,892
3 Claims. (Cl. 343—14)



1. Object detection apparatus operable in combination with a remotely located relatively inaccessible commercial frequency modulation broadcast transmitter having frequency modulating means for normally producing only a frequency modulated radio frequency carrier signal of a predetermined carrier frequency and having antenna means connected to said transmitter for radiantly propagating said carrier signal into a predetermined area including at least one zone protected by object detection apparatus comprising; receiver means remotely located from said transmitter and antenna means and having a tuner for selecting one said frequency modulated radio frequency carrier signal and having wide band amplifier means connected to said tuner for substantially linearly reproducing said selected frequency modulated radio frequency carrier signal, receiver antenna means for picking up and feeding signals propagated within said zone to said receiver means, including said frequency modulated radio frequency carrier signal produced by said remote transmitter and reflected from any object within said protected zone, indicator means for providing a perceptible alarm to the entrance of an object into said protected zone, an amplitude modulation detector having an output connected to said indicating means and an input connected to said amplifier means for energizing said indicator means solely in response to the detection of any amplitude modulation of said carrier signal and for preventing the transmission of any frequency modulation to said indication means.

3,163,862
RADAR SYSTEM AND COMPONENT APPARATUS
Hans K. Jenny, Whippany, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 9, 1955, Ser. No. 545,951
22 Claims. (Cl. 343—17.1)

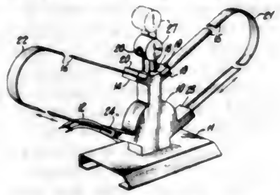


3. A radar system comprising, in combination, means including a voltage tunable oscillator for generating and radiating carrier frequency pulses; means for maintaining the frequency of said oscillator substantially constant during the pulse intervals, comprising means for maintaining the voltage applied to tune said oscillator constant during said intervals; means for changing the carrier frequency of said pulses from pulse-to-pulse, including a noise generator for changing the voltage applied to tune said oscillator in a random manner during each period between the time equivalent of the furthest radar range of interest and the time at which a pulse is radiated; and means for receiving and displaying said pulses after reflection from reflecting objects.

3,163,863
ADJUSTABLE FOLDED DIPOLE
Yoshio Fujino, % Kansai Televi Kogyo K.K., 1751–14 Aza-Kamiumegatani, Nishi-tarumi cho, Tarumi-ku, Kobe, Japan
Filed July 3, 1962, Ser. No. 207,194
Claims priority, application Japan Dec. 29, 1961
8 Claims. (Cl. 343—752)

1. An antenna comprising a support, U-shaped flexible receiving elements each having one leg secured to said support and extending outwardly therefrom, said support including a pair of channels extending therethrough and slidably receiving the other legs of said receiving

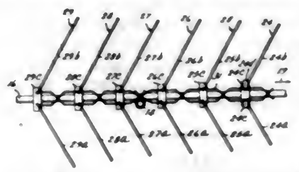
elements with the ends of the last said legs extending from said channels, means carried by the ends of said other legs for movement toward and away from said



support to adjust the length of said elements, and means on said antenna for attachment of an antenna cable thereto.

3,163,864
END FIRE PLANAR ARRAY OF V-SHAPED MULTI-BAND DIPOLES
Harry Greenberg, Kerhonkson, N.Y., assignor to Channel Master Corporation, Ellenville, N.Y., a corporation of New York
Original application Oct. 19, 1960, Ser. No. 63,520, now Patent No. 3,086,206, dated April 16, 1963. Divided and this application Oct. 30, 1962, Ser. No. 242,863
4 Claims. (Cl. 343—809)

2. A directive antenna array having a direction of greater effectiveness extending from its front end comprising a group of at least three adjacent active V-shaped dipole antenna elements arrayed in file in horizontally, substantially equally spaced relation with corresponding arms of said dipole antenna elements disposed in a common substantially horizontal plane, said elements being of graduated electrical length decreasing toward the front of said array, said V-shaped antenna elements individually having frontward directivity characteristics for at least



one odd harmonic of the fundamental antenna element frequency, means for connecting a signal transmission line to the front one of said elements, harness means for electrically connecting each other antenna element of said group to the antenna element forward thereof, the last said means comprising a transmission line harness having a line transposition between each pair of adjacent antenna elements of said group.

DESIGNS

DECEMBER 29, 1964

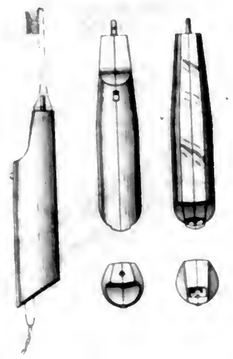
199,891
TRANSPARENT MITT FOR SERVING CAKE
Gladys L. Hay, 2709 26th St., Lubbock, Tex.
Filed Nov. 15, 1962, Ser. No. 72,507
Term of patent 14 years
(Cl. D3—11)



199,892
SHOE BUCKLE
Carmen S. Felch, Cranston, R.I., assignor to Felch-Anderson Co., a corporation of Rhode Island
Filed June 5, 1963, Ser. No. 75,233
Term of patent 14 years
(Cl. D7—6)



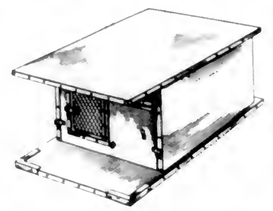
199,893
POWER HANDLE FOR A TOOTHBRUSH
Beverly Bond, South Norwalk, Conn., and David E. Eberhart, Bound Brook, N.J., assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Jan. 7, 1964, Ser. No. 78,099
Term of patent 14 years
(Cl. D9—2)



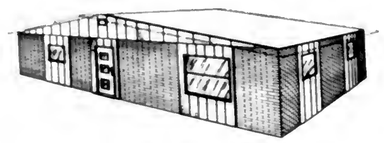
199,894
ADJUSTABLE DOOR HOOK
Nordell N. Huffaker, 655 Galisteo St., Santa Fe, N. Mex.
Filed Oct. 17, 1962, Ser. No. 72,157
Term of patent 14 years
(Cl. D10—7)



199,895
ANIMAL HOUSE
Mark L. Morris, Topeka, Kans., assignor to Mark Morris Associates, Inc., a corporation of Kansas
Filed June 19, 1963, Ser. No. 75,457
Term of patent 14 years
(Cl. D12—2)



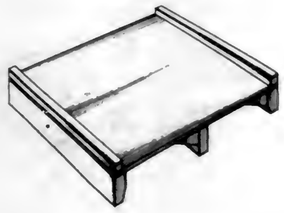
199,896
PREFABRICATED HOUSE
David C. Seman, 638 Brown Ave., Colman J. Seman, 1409 Springlake Drive, and Fredrick P. Seman, 1034 Montpelier Ave., all of Erie, Pa., and John G. Seman, E. Main Road, North East, Pa.
Filed Mar. 8, 1962, Ser. No. 69,149
Term of patent 14 years
(Cl. D13—1)



199,897
GAME BUILDING FOR GOLF OR THE LIKE
Edward G. Urban, 6673 Orchard Blvd., Parma Heights, Ohio
Filed July 3, 1962, Ser. No. 70,803
Term of patent 14 years
(Cl. D13—1)



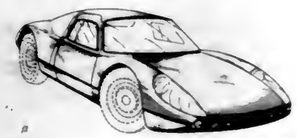
199,898
BEER KEG PALLET
Thomas N. De Pew and Edward D. Bement, Jr., St. Louis County, Mo., assignors to Arrowhead Products, Inc., St. Louis, Mo., a corporation of Arkansas
Filed Feb. 3, 1964, Ser. No. 78,491
Term of patent 14 years
(Cl. D14—3)



199,899
CHAIR CARRIER
Ivan L. Loesch, Huron, S. Dak., assignor to Spacer Furnishings Corp., Huron, S. Dak., a corporation of South Dakota
Filed Feb. 5, 1964, Ser. No. 78,535
Term of patent 14 years
(Cl. D14—3)



199,900
AUTOMOBILE
Ferdinand Alexander Porsche, Jr., Doffingen, Kreis Boblingen, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche KG., Stuttgart-Zuffenhausen, Germany
Filed Mar. 5, 1964, Ser. No. 78,884
Claims priority, application Germany Sept. 10, 1963
Term of patent 14 years
(Cl. D14—3)



199,901
AUTOMOBILE
Estee Spencer, 311 Trowbridge St., Detroit, Mich.
Filed Aug. 20, 1962, Ser. No. 71,369
Term of patent 14 years
(Cl. D14—27)

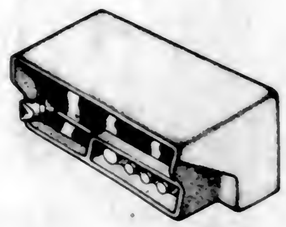


199,902
CHAIR
Warren D. Petersen, Redondo Beach, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), Houston, Tex., a corporation of the Netherlands Antilles
Filed Dec. 3, 1963, Ser. No. 77,651
Term of patent 14 years
(Cl. D15—1)



199,903
STRAP BUCKLE
Morris D. Gandelman, Fort Lee, N.J., assignor to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Oct. 4, 1963, Ser. No. 76,871
Term of patent 7 years
(Cl. D17—1)

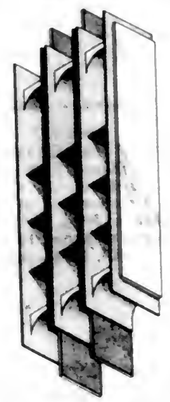
199,904
CONTROL SWITCH UNIT FOR EMERGENCY VEHICLES
Ewing D. Nunn, Jr., 1108 Raymond Way, Anaheim, Calif.
Filed Oct. 30, 1963, Ser. No. 77,212
Term of patent 14 years
(Cl. D26—13)



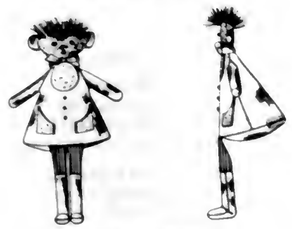
199,905
FISHING LURE
Kenneth H. Knight, 1247 N. 43rd St., Milwaukee, Wis.
Filed Feb. 26, 1962, Ser. No. 68,962
Term of patent 7 years
(Cl. D31—4)



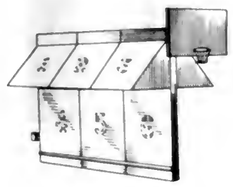
199,906
BOOKCASE
John M. Garber, 2929 Wold, Cincinnati, Ohio
Filed Mar. 19, 1964, Ser. No. 79,078
Term of patent 14 years
(Cl. D33—2)



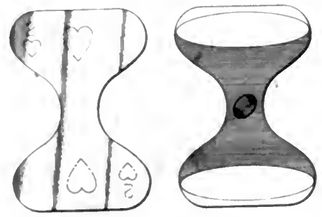
199,907
PAJAMA BAG DOLL
Florence Journer, 276 1st Ave, New York, N.Y.
Filed Mar. 12, 1964, Ser. No. 78,977
Term of patent 3½ years
(Cl. D34—4)



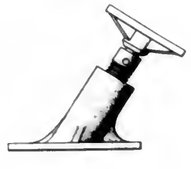
199,908
GAME WALL
Martin Seligson, 404 E. 66th St., New York, N.Y.
Filed May 14, 1963, Ser. No. 74,881
Term of patent 14 years
(Cl. D34—5)



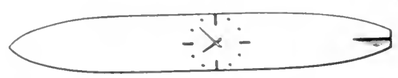
199,909
PLAYING CARD
Alfred J. Bedard, Jr., Apt. 514, Wiltshire Parkway Apartments, 3701 Connecticut Ave. NW., Washington, D.C.
Filed May 27, 1964, Ser. No. 80,172
Term of patent 14 years
(Cl. D34—13)



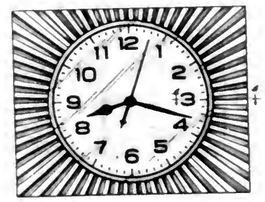
199,910
BOAT CRADLE LEG
Max Greenberg, Newark, N.J., assignor to Empire Machine Products, Inc., Newark, N.J., a corporation of New Jersey
Filed Feb. 12, 1964, Ser. No. 78,610
Term of patent 14 years
(Cl. D41—1)



199,911
CLOCK
Neil G. Remington, 1727 S. Pacific St., Oceanside, Calif.
Filed Nov. 4, 1963, Ser. No. 77,259
Term of patent 14 years
(Cl. D42—7)



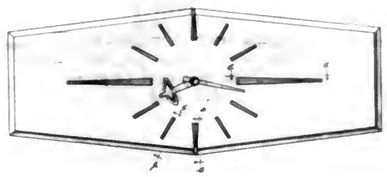
199,912
CLOCK
Frederick A. Burke, Mamaroneck, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 26, 1964, Ser. No. 80,591
Term of patent 14 years
(Cl. D42—7)



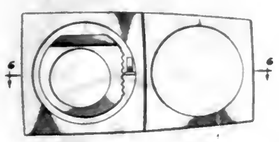
199,913
CLOCK
Benjamin Levy, 1703 Exeter Road, Hewlett, Long Island, N.Y.
Filed June 29, 1964, Ser. No. 80,610
Term of patent 7 years
(Cl. D42—7)



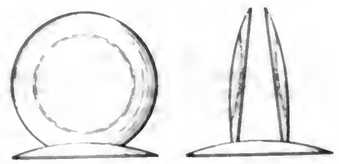
199,914
CLOCK
Gordon Florian, Fairfield, Conn., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1964, Ser. No. 80,614
Term of patent 14 years
(Cl. D42—7)



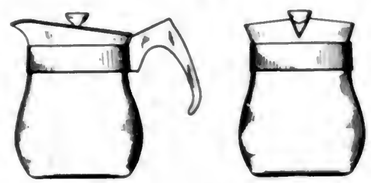
199,915
COMBINED HAMBURGER MOLD, SCOOP, AND TAMPER
George G. Larson, 8424 Rindge Ave., Playa del Rey, Calif.
Filed May 11, 1964, Ser. No. 79,921
Term of patent 14 years
(Cl. D44—1)



199,916
NAPKIN HOLDER OR SIMILAR ARTICLE
Margaret Lester, Rte. 28a, West Shoken, N.Y.
Filed Apr. 13, 1964, Ser. No. 79,452
Term of patent 3½ years
(Cl. D44—24)



199,917
BEVERAGE MAKER OR THE LIKE
Herbert I. Dann, Jr., Painted Post, and Ronald G. De Puy, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 6, 1964, Ser. No. 78,074
Term of patent 14 years
(Cl. D44—26)



199,918
LIQUID FILTER
Chester A. Vander Pyl, Warwick, R.I., assignor to Fram Corporation, Providence, R.I., a corporation of Rhode Island
Filed Mar. 18, 1963, Ser. No. 74,011
Term of patent 14 years
(Cl. D46—1)



199,919
COMBINED TABLE LAMP AND SIGNAL FOR RESTAURANTS AND THE LIKE
Eugene Hervey, 4847 Don Drive, Dallas, Tex.
Filed May 10, 1963, Ser. No. 74,835
Term of patent 14 years
(Cl. D48—20)



199,920
COMBINED LAMP AND FLOWER HOLDER
Simon Wilson, 8103 S. Hooper Ave., Los Angeles, Calif.
Filed Dec. 5, 1963, Ser. No. 77,682
Term of patent 7 years
(Cl. D48—20)



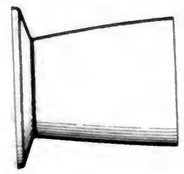
199,921
TABLE GAS LIGHTER FOR CIGARETTES AND THE LIKE
Shinjiro Kobayashi, Edogawa-ku, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi-shi, Saitama, Japan
Filed Nov. 22, 1963, Ser. No. 77,540
Term of patent 14 years
(Cl. D48—27)



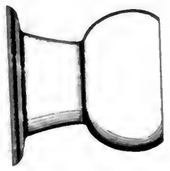
199,922
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,668
Term of patent 14 years
(Cl. D50—3)



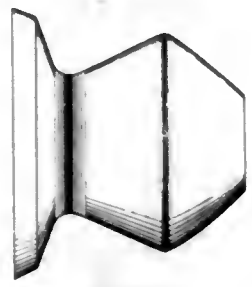
199,923
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,673
Term of patent 14 years
(Cl. D50—3)



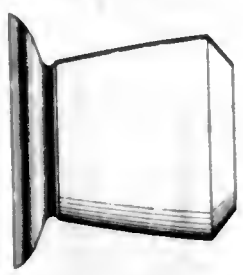
199,924
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,678
Term of patent 14 years
(Cl. D50—3)



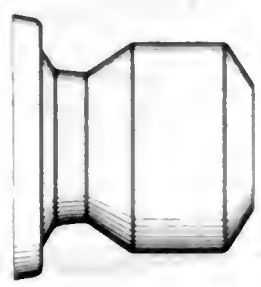
199,925
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,679
Term of patent 14 years
(Cl. D50—3)



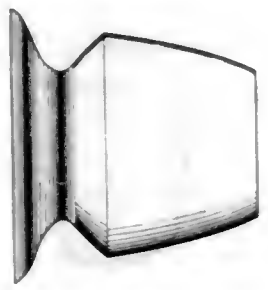
199,926
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,680
Term of patent 14 years
(Cl. D50—3)



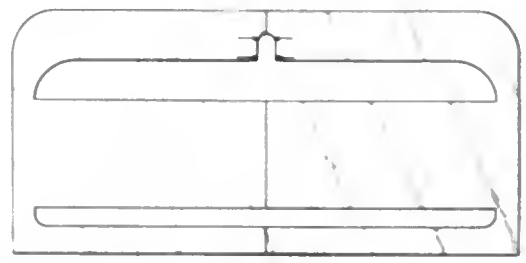
199,927
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,683
Term of patent 14 years
(Cl. D50—3)



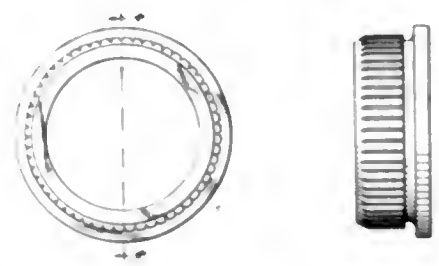
199,928
DOOR KNOB
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 2, 1964, Ser. No. 80,685
Term of patent 14 years
(Cl. D50—3)



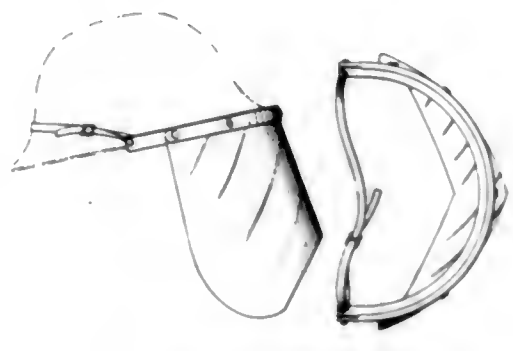
199,929
PANTS CUFF MARKER TEMPLATE
Joseph Kaniuk, 8933 N. Nashville Ave., Morton Grove, Ill.
Filed Dec. 26, 1962, Ser. No. 72,948
Term of patent 14 years
(Cl. D52—6)



199,930
LOCKING ELEMENT FOR MOUNTING ELECTRONIC TERMINALS AND THE LIKE
James V. Murphy, 100 Sherwood Ave., Warwick, R.I.
Filed Apr. 8, 1963, Ser. No. 74,324
Term of patent 14 years
(Cl. D54—9)



199,931
PROTECTIVE FACE SHIELD
Maurice Kline, Elkins Park House, Apt. 305A, Elkins Park, Pa.
Filed May 1, 1963, Ser. No. 74,709
Term of patent 14 years
(Cl. D57—1)



199,932
SPECTACLE FRONT
Anthony Shindler, Brighton, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed May 13, 1963, Ser. No. 74,854
Term of patent 7 years
(Cl. D57—1)



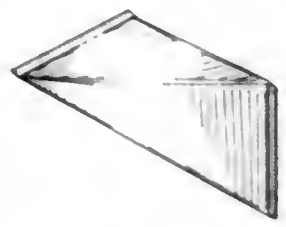
199,933
SPECTACLE FRONT
Anthony Shindler, Brighton, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed May 13, 1963, Ser. No. 74,867
Term of patent 7 years
(Cl. D57—1)



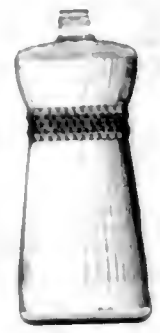
199,934
PAIR OF SPECTACLES
Farnham Blair, Arlington, Va., assignor to The Mini Company, Washington, D.C.
Filed Jan. 29, 1964, Ser. No. 78,404
Term of patent 14 years
(Cl. D57—1)



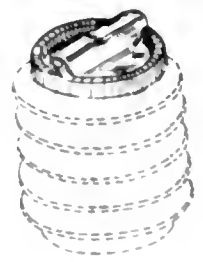
199,935
TETRAHEDRAL CONTAINER
Ralph E. Dykes, Saddle Brook, N.J., and Robert M. Mitchell, South Norwalk, Conn., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed June 24, 1963, Ser. No. 75,501
Term of patent 14 years
(Cl. D58—2)



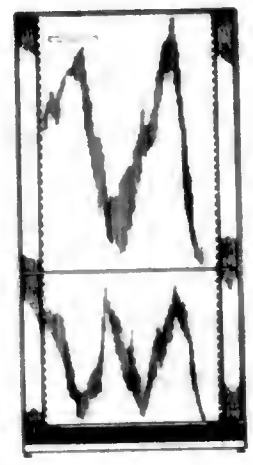
199,936
BOTTLE
Ray O. Neyman, Kansas City, Mo., assignor to Consolidated Thermoplastics Company, Stamford, Conn., a corporation of Delaware
Filed May 7, 1963, Ser. No. 74,782
Term of patent 14 years
(Cl. D58—6)



199,937
MANUALLY OPERATED AIR BRUSH
Anthony J. Palmer and Robert Lee Palmer, Grove City, Pa., assignors to Palmer Products Co.
Filed Feb. 7, 1964, Ser. No. 78,554
Term of patent 14 years
(Cl. D62—2)



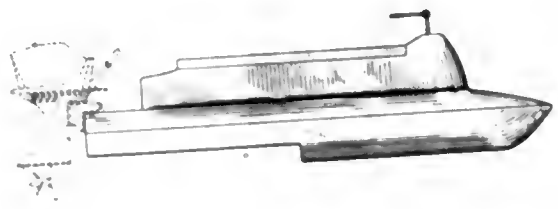
199,938
REFRIGERATOR CABINET
Edward D. Lucey, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 76,787
Term of patent 7 years
(Cl. D67—3)



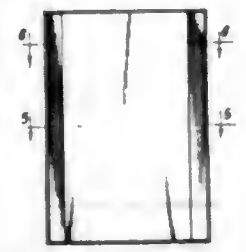
199,939
ROOFING SHINGLE
Webster Stringer Sidwell, 1029 W. 123rd St., Los Angeles, Calif.
Filed June 18, 1962, Ser. No. 70,573
Term of patent 14 years
(Cl. D68—1)



199,940
CATAMARAN
Robert P. Kauffman, Jr., 13101 Sycamore Ave., Grandview, Mo.
Filed Apr. 13, 1964, Ser. No. 79,463
Term of patent 14 years
(Cl. D71—1)



199,941
DOOR CHIME OR SIMILAR ARTICLE
Norman William Stevenson, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company
Filed Dec. 18, 1963, Ser. No. 77,848
Term of patent 14 years
Claims priority, application Great Britain, June 19, 1963, 911,807/63
(Cl. D72—1)



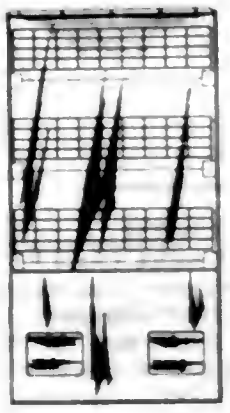
199,942
COMBINED DISPLAY AND MERCHANDISING RACK
Raymond Tintary, Covina, Calif., assignor to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California
Filed Dec. 30, 1963, Ser. No. 77,963
Term of patent 3½ years
(Cl. D80—9)



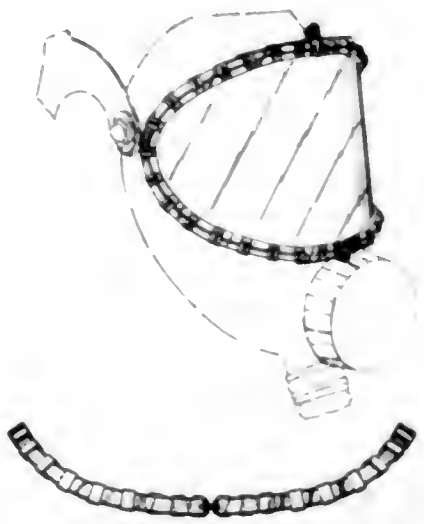
199,943
DISPLAY RACK FOR MAGAZINES, BROCHURES AND THE LIKE
Leif Johan Elvestad, Skogfaret 17C, Haslum, Norway
Filed Aug. 13, 1963, Ser. No. 76,198
Term of patent 14 years
Claims priority, application Norway, Apr. 30, 1963, 45,378
(Cl. D80—10)



199,944
COMBINED SPEAKER AND DISPLAY CABINET FOR JEWELRY OR THE LIKE
Henry A. Schwartz, Valley Stream, N.Y., assignor, by mesne assignments, to D. & D. Special Tools, Inc., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 72,680
Term of patent 3½ years
(Cl. D80—11)



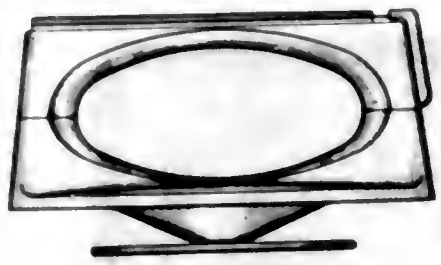
199,945
EYE SHIELD FOR A GAS MASK OR SIMILAR APPARATUS
Guy G. Klinger, Shillington, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Dec. 24, 1963, Ser. No. 77,918
Term of patent 14 years
(Cl. D83—1)



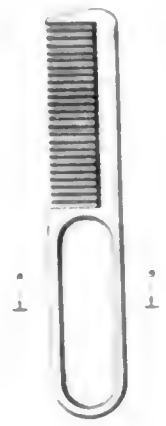
199,946
TONGUE BLADE
Edward J. Hill, 1660 Lochridge, Bloomfield Hills, Mich.
Filed Dec. 9, 1963, Ser. No. 77,725
Term of patent 14 years
(Cl. D83—12)



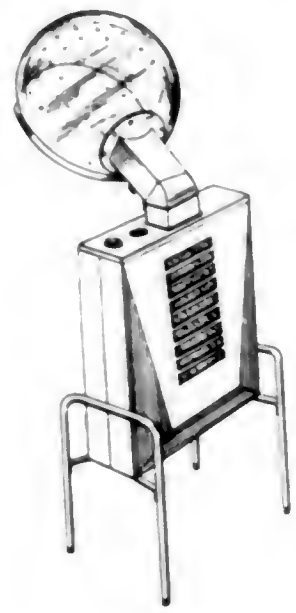
199,947
DEFIBRILLATOR ELECTRODE
David P. Chuboff, Mount Prospect, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 79,593
Term of patent 14 years
(Cl. D83—12)



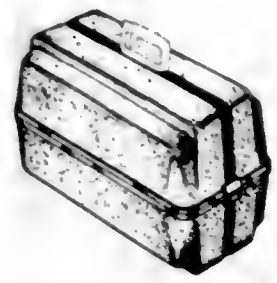
199,948
COMB
Carl F. Hilldring, Butler, N.J., assignor to Amerace Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 76,502
Term of patent 7 years
(Cl. D86—8)



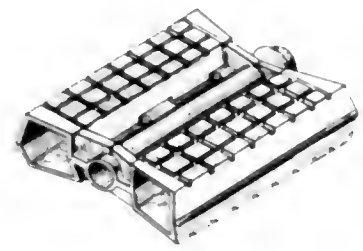
199,949
HAIR DRIER
Lee S. Watlington, 1204 N. Linden, Bloomington, Ill.
Filed Jan. 23, 1963, Ser. No. 73,288
Term of patent 7 years
(Cl. D86—10)



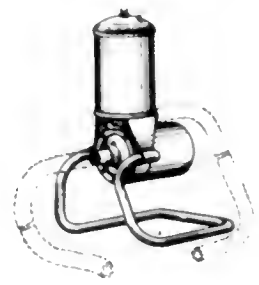
199,950
CARRYING CASE
Robert Louis Deschamps, near West Chicago, and Raymond A. Massaccesi, Chicago, Ill., assignors to Shure Brothers, Incorporated, a corporation of Illinois
Filed Sept. 18, 1963, Ser. No. 76,622
Term of patent 14 years
(Cl. D87—5)



199,951
PEDAL FOR VELOCIPEDES
Harry Golden, New York, N.Y., assignor to Ideas for Auto & Bike Specialties, Inc., New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 77,605
Term of patent 3½ years
(Cl. D90—14)



199,952
WATER FILTER UNIT FOR SWIMMING POOLS
Martin Hoffinger, 990 Alabama Ave., Brooklyn, N.Y.
Filed Apr. 5, 1963, Ser. No. 74,313
Term of patent 3½ years
(Cl. D91—1)



199,953
COUNTERPANE
Jesús Periago Perán, Lorca-Murcia, Spain, assignor to Sucesores de Jose-Manuel Periago, S.L., Lorca-Murcia, Spain, a company of Spain
Filed July 11, 1963, Ser. No. 75,737
Claims priority, application Spain Jan. 26, 1963
Term of patent 7 years
(Cl. D92—2)



199,954
COUNTERPANE
Jesús Periago Perán, Lorca-Murcia, Spain, assignor to Sucesores de Jose-Manuel Periago, S.L., Lorca-Murcia, Spain, a company of Spain
Filed July 11, 1963, Ser. No. 75,738
Claims priority, application Spain Jan. 26, 1963
Term of patent 7 years
(Cl. D92—2)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29TH DAY OF DECEMBER, 1964

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Kurt, Ewald H.: *See*—
Oelke, Erwin S., and Kurt. Re. 25,705.
Oelke, Erwin S., and E. H. Kurt (by Ingersoll-Rand Co.). Valving arrangement for rock drills. Re. 25,705, 12–29–64, Cl. 173—73.
Peterson, Seymour, to Storm Industries, Inc. Egg collecting device. Re. 25,706, 12–29–64, Cl. 198—131.
Storm Industries, Inc.: *See*—
Peterson, Seymour. Re. 25,706.

LIST OF DESIGN PATENTEES

Ajax Hardware Mfg. Corp.: *See*—
Tintary, Raymond. 199,942.
Amerace Corp.: *See*—
Hilldring, Carl F. 199,948.
American Optical Co.: *See*—
Shindler, Anthony. 199,932.
Shindler, Anthony. 199,933.
Arrowhead Products, Inc.: *See*—
De Pew, Thomas N., and Bement. 199,898.
Bedard, Alfred J., Jr. Playing card. 199,909, 12–29–64, Cl. D34—13.
Bement, Edward D., Jr.: *See*—
De Pew, Thomas N., and Bement. 199,898.
Blair, Farnham, to The Mini Co. Pair of spectacles. 199,934, 12–29–64, Cl. D57—1.
Bond, Beverly, and D. E. Eberhart, to Ronson Corp. Power handle for a toothbrush. 199,893, 12–29–64, Cl. D9—2.
Burke, Frederick A., to Sunbeam Corp. Clock. 199,912, 12–29–64, Cl. D42—7.
Consolidated Thermoplastics Co.: *See*—
Neyman, Ray O. 199,936.
Corning Glass Works: *See*—
Dann, Herbert I., Jr., and De Puy. 199,917.
Chuboff, David P., to Zenith Radio Corp. Defibrillator electrode. 199,947, 12–29–64, Cl. D83—12.
D & D Special Tools, Inc.: *See*—
Schwartz, Henry A. 199,944.
Dann, Herbert I., Jr., and R. G. De Puy, to Corning Glass Works. Beverage maker or the like. 199,917, 12–29–64, Cl. D44—26.
De Pew, Thomas N., and E. D. Bement, Jr., to Arrowhead Products, Inc. Beer keg pallet. 199,898, 12–29–64, Cl. D14—3.
De Puy, Ronald G.: *See*—
Dann, Herbert I., Jr., and De Puy. 199,917.
Deschamps, Robert L., and R. A. Massaccesi, to Shure Brothers, Inc. Carrying case. 199,950, 12–29–64, Cl. D87—5.
Dykes, Ralph E., and R. M. Mitchell, to General Foods Corp. Tetrahedral container. 199,935, 12–29–64, Cl. D58—2.
Eberhart, David E.: *See*—
Bond, Beverly, and Eberhart. 199,893.
Electric Storage Battery Co., The: *See*—
Klinger, Guy G. 199,945.
Elvestad, Leif J. Display rack for magazines, brochures and the like. 199,943, 12–29–64, Cl. D80—10.
Empire Machine Products, Inc.: *See*—
Greenberg, Max. 199,910.
Felch-Anderson Co.: *See*—
Felch, Carmen S. 199,892.
Felch, Carmen S., to Felch-Anderson Co. Shoe buckle. 199,892, 12–29–64, Cl. D7—6.
Florian, Gordon, to Sunbeam Corp. Clock. 199,914, 12–29–64, Cl. D42—7.
Fram Corp.: *See*—
Vander Ply, Chester A. 199,918.
Friedland, V. & E., Ltd.: *See*—
Stevenson, Norman W. 199,941.
Gandelman, Morris D., to Jaques Kreisler Mfg. Corp. Strap buckle. 199,903, 12–29–64, Cl. D17—1.
Garber, John M. Bookcase. 199,906, 12–29–64, Cl. D33—2.
General Foods Corp.: *See*—
Dykes, Ralph E., and Mitchell. 199,935.
General Motors Corp.: *See*—
Lucey, Edward D. 199,938.
Golden, Harry, to Ideas for Auto & Bike Specialties, Inc. Pedal for velocipedes. 199,951, 12–29–64, Cl. D90—14.
Greenberg, Max, to Empire Machine Products, Inc. Boat cradle leg. 199,910, 12–29–64, Cl. D41—1.
Hay, Gladys L. Transparent mitt for serving cake. 199,891, 12–29–64, Cl. D3—11.
Hervey, Eugene. Combined table lamp and signal for restaurants and the like. 199,919, 12–29–64, Cl. D48—20.
Hill, Edward J. Tongue blade. 199,946, 12–29–64, Cl. D83—12.
Hilldring, Carl F., to Amerace Corp. Comb. 199,948, 12–29–64, Cl. D86—8.
Hoffinger, Martin. Water filter unit for swimming pools. 199,952, 12–29–64, Cl. D91—1.
Huffaker, Nordell N. Adjustable door hook. 199,894, 12–29–64, Cl. D10—7.
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Golden, Harry. 199,951.
Journer, Florence. Pajama doll. 199,907, 12–29–64, Cl. D34—4.
Kahluk, Joseph. Pants cuff marker template. 199,929, 12–29–64, Cl. D52—6.
Kauffman, Robert P., Jr. Catamaran. 199,940, 12–29–64, Cl. D71—1.
Kline, Maurice. Protective face shield. 199,931, 12–29–64, Cl. D57—1.
Klinger, Guy G., to The Electric Storage Battery Co. Eye shield for a gas mask or similar apparatus. 199,945, 12–29–64, Cl. D83—1.
Knight, Kenneth H. Fishing lure. 199,905, 12–29–64, Cl. D31—4.
Kobayashi, Shinjiro, to Mansei Kogyo Kabushiki Kaisha. Table gas lighter for cigarettes and the like. 199,921, 12–29–64, Cl. D48—27.
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Larson, George G. Combined hamburger mold, scoop, and temper. 199,915, 12–29–64, Cl. D44—1.
Lester, Margaret. Napkin holder or similar article. 199,916, 12–29–64, Cl. D44—24.
Levy, Benjamin. Clock. 199,913, 12–29–64, Cl. D42—7.
Loesch, Ivan L., to Spacer Furnishings Corp. Chair carrier. 199,899, 12–29–64, Cl. D14—3.
Lucey, Edward D., to General Motors Corp. Refrigerator cabinet. 199,938, 12–29–64, Cl. D67—3.
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Murphy, James V. Locking elements for mounting electronic terminals and the like. 199,930, 12–29–64, Cl. D54—9.
Neyman, Ray O., to Consolidated Thermoplastics Co. Bottle. 199,936, 12–29–64, Cl. D58—6.
Nunn, Ewing D., Jr. Control switch unit for emergency vehicles. 199,904, 12–29–64, Cl. D26—13.
Palmer, Anthony J. and R. L., to Palmer Products Co. Manually operated air brush. 199,937, 12–29–64, Cl. D62—2.
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Palmer, Robert L.: *See*—
Palmer, Anthony J. and R. L. 199,937.
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Periago Perán, Jesús, to Sucesores de Jose-Manuel Periago, S.L. Counterpane. 199,954, 12–29–64, Cl. D92—2.
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Porsche, Dr. Ing. h.c.F., KG., Firma: *See*—
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Porsche, Ferdinand A., Jr., to Dr. Ing. h.c.F. Porsche, KG., Firma. Automobile. 199,900, 12–29–64, Cl. D14—3.
Remington, Neil G. Clock. 199,911, 12–29–64, Cl. D42—7.
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Seligson, Martin. Game wall. 199,908, 12–29–64, Cl. D34—5.
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Seman, David C., C. J., F. P., and J. G. 199,896.
Seman, David C., C. J., F. P., and J. G. Prefabricated house. 199,896, 12–29–64, Cl. D13—1.
Seman, Frederick P.: *See*—
Seman, David C., C. J., F. P., and J. G. 199,896.
Seman, John G.: *See*—
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Shindler, Anthony, to American Optical Co. Spectacle front. 199,933, 12–29–64, Cl. D57—1.
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Sidwell, Webster S. Roofing shingle. 199,939, 12–29–64, Cl. D68—1.
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Periago Perán, Jesús. 199,954.
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Korte, Alfred C. 3,163,355.
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Adams, James E., to The Bishop and Babcock Corp. Capacitor clip. 3,163,391, 12–29–64, Cl. 248—223.
Adelman, Roger A. Automatic oiler for manually actuated pipe threading tool. 3,162,872, 12–29–64, Cl. 10—126.
Adkins, Floyd M.: *See*—
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Carlson, Reuben C. 3,163,791.
Ages, Frederik J., to Honeywell, Inc. Thermostatic valve. 3,163,359, 12–29–64, Cl. 236—48.
Agostino, Michael. Pipe cleaning machine. 3,162,878, 12–29–64, Cl. 15—104.3.
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Conrad, Karl F. 3,163,634.
Kirss, Voldemar, and Spaunburgh. 3,163,666.
Allinquant, Fernand S. Hydraulic telescopic shock absorbers. 3,163,262, 12–29–64, Cl. 188—100.
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Alziari, Louis. Temporary supports for concrete floors. 3,163,267, 12–29–64, Cl. 189—37.
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Anderson, Samuel P., and C. B. Lundsager, to E. I. du Pont de Nemours and Co. Process and apparatus for three layer net extrusion. 3,163,691, 12–29–64, Cl. 264—167.
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Austin, John M., A. E. Cloutier, and M. J. Mastrianni, to International Business Machines Corp. Record scatter variable. 3,163,850, 12–29–64, Cl. 340—172.5.
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Blackmon, Charles M. Apparatus for perforating acoustical plaster ceilings. 3,163,064, 12–29–64, Cl. 83—1.
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Blanshine, Allison W., to Sperry Rand Corp. Stock feeder. 3,163,334, 12–29–64, Cl. 222—412.
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Bobeck, Andrew H., to Bell Telephone Laboratories, Inc. Magnetic memory circuits. 3,163,855, 12–29–64, Cl. 340—174.
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Brundage, Clinton F., to Minnesota Mining and Mfg. Co. Appartaus and method for mounting adhesive material on a card. 3,163,570, 12–29–64, Cl. 156—108.
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Chisholm, John J., to David Clark Co., Inc. Stiffening material for brassieres and similar body confining garments. 3,163,167, 12–29–64, Cl. 128—477.

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Christiansen, Robert G., R. O. Clinton, and J. W. Dean, to Sterling Drug, Inc. 16-substituted androstanes and androstenes. 3,163,641, 12–29–64, Cl. 260—239.5.

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Comer, Marvin H., and C. W. Thomas, to Deering Milliken Research Corp. Method of processing monofilament yarn. 3,162,995, 12–29–64, Cl. 57—157.

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Conforzi, Gaetano. Acoustic-optical call indicator panel having time delay release of the optical indicators. 3,163,857, 12–29–64, Cl. 340—322.

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Conrad, Hans J., to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Hydrostatic converter. 3,163,090, 12–29–64, Cl. 91—126.

Conrad, Karl F., to Allied Chemical Corp. Dyestuffs containing metal in complex combination. 3,163,634, 12–29–64, Cl. 260—145.

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Consolidated Edison Co. of New York, Inc.: *See*—
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Weiss, Arthur J. 3,163,322.

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Corbin, Ashley R. Spectrographic electrode shaper. 3,163,191, 12–29–64, Cl. 144—46.

Cordy, Robert N., and J. W. Flora, to United States of America, Atomic Energy Commission. Neutron flux detector. 3,163,759, 12–29–64, Cl. 250—83.1.

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Gutridge, Jack E., and J. W. Borger, to Pullman Inc. Cushion container support platform for railroad flatcars. 3,163,127, 12–29–64, Cl. 105—368.

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Haeber, John A., and L. G. Otteman, to Shell Oil Co. Underwater well drilling apparatus and method. 3,163,220, 12–29–64, Cl. 166—46.

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Heckethorn, John E., to C. M. L. L. Bourcier de Carbon. Auxiliary spring suspensions. 3,163,411, 12–29–64, Cl. 267—8.

Hedgegaard, Kristen, to G. M. Pfaff, Ag. Method for sewing a waist band or the like onto a garment. 3,163,139, 12–29–64, Cl. 112—262.

Hegmon, Rudolph R., to Centre Circuits, Inc. Rotary difference gage. 3,162,952, 12–29–64, Cl. 33—125.

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Hilpert, Conrad R., to Twin Disc Clutch Co. Torque converter, lock up clutch, master clutch and operator control to provide cushion engagement. 3,163,271, 12–29–64, Cl. 192—3.2.

Hiltmann, Rudolf, H. Wollweber, F. Hoffmeister, W. Wirth, and H.-G. Kroneberg, to Farbenfabriken Bayer Aktiengesellschaft. Pyridine derivatives and their preparation (N-tertiary aminoalkyl-N-acyl)-amino pyridines. 3,163,654, 12–29–64, Cl. 260—294.

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Hines, Russell J. 3,162,911.

Hines, Russell J., to The Hines Flash Co. Apparatus for making sand molds for castings. 3,162,911, 12–29–64, Cl. 22—101.

Hintz, Lawrence R., to The Mead Corp. Hermetically sealed carton. 3,163,346, 12–29–64, Cl. 229—87.

Hintze, Johannes, and H. Ehrich, to Anschutz & Co., G.m.b.H. Stationary gyroscopic compass. 3,162,951, 12–29–64, Cl. 33—72.

Hitchings, George H., G. B. Elion, and S. Bieber, to Burroughs Wellcome & Co. (U.S.A.) Inc. 4-thio-2'-deoxyuridine. 3,163,639, 12–29–64, Cl. 260—211.5.

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Hobson, H. M., Ltd.: *See*—
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Hodgson, Dennis J.: *See*—
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Hoeser, Manfred, to Sperry Rand Corp. Mark sensing device. 3,163,746, 12–29–64, Cl. 235—61.11.

Hoffman, Stuart B. Automatic step for beds. 3,162,867, 12–29–64, Cl. 5—317.

Hoffmann, Arthur K., and A. T. Henderson, to American Cyanamid Co. Process for preparing N,N,O-trisubstituted hydroxyl amines and N,N-disubstituted nitroxides and products. 3,163,677, 12–29–64, Cl. 260—583.

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Hogue, Marcus P., to General Electric Co. Encapsulated motor for waste disposal apparatus. 3,163,369, 12–29–64, Cl. 241—46.

Hohnstein, Paul. Collapsible rack. 3,163,296, 12–29–64, Cl. 211—126.

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Holladay, Harry P.: *See*—
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Calhoun, Thomas S. 3,163,819.
Flagg, Raymond P. 3,163,729.
Grier, David G. 3,163,091.
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Hopner, Emil, and C. M. Melas, to International Business Machines Corp. Phase shift binary data transmission system including carrier transmission according to the data. 3,163,821, 12–29–64, Cl. 325—38.

Horn, Lutz, and F. Philipp, to Varta Aktiengesellschaft. Method of and apparatus for the manufacture of condensers and electrodes for cells in storage batteries and the like. 3,163,374, 12–29–64, Cl. 242—56.1.

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Hornberger, Clarence L., and E. W. Stanley, to Armstrong Cork Co. Fire protection system for rotary printing press. 3,163,108, 12–29–64, Cl. 101—154.

Horne, Arthur L., and C. D. Johnson, to Richard Lloyd Ltd. Milling cutters. 3,162,929, 12–29–64, Cl. 29—105.

Horrocks, Rex A., to United Aircraft Corp. Heat exchanger. 3,163,210, 12–29–64, Cl. 165—163.

Hottenroth, Fred W., to Z. Z. Corp. Refrigeration system employing expandable refrigerant. 3,163,022, 12–29–64, Cl. 62—168.

Houilleres du Bassin du Nord et du Pas-de-Calais, and Commissariat a l'Energie Atomique: *See*—
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Vollink, Willard L., and Hunt. 3,163,549.

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Hunter, Everett C., to Pittsburgh Steel Co. Apparatus for continuously drawing, knurling and coiling travelling wire. 3,163,088, 12–29–64, Cl. 80—4.

Huppert, Merle C., and J. R. Parker, to North American Aviation, Inc. Inducer. 3,163,119, 12–29–64, Cl. 103—89.

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Huston, Paul O., and W. T. Fleming, to The Singer Co. Vacuum cleaner with nozzle height adjusting mechanism. 3,163,439, 12–29–64, Cl. 280—43.17.

Huston, William D. Pressure gauge. 3,163,046, 12–29–64, Cl. 73—418.

Hutchins, Kenneth A., B. S. Harrington, Sr., F. M. Adkins, and R. W. Illsley, to Chemetron Corp. Stuffing apparatus for viscous materials. 3,162,894, 12–29–64, Cl. 17—35.

Hutt, Phillip, to General Electric Co. Pushbutton switch with selectively lighted actuators. 3,163,739, 12–29–64, Cl. 200—167.

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I-T-E Circuit Breaker Co.: *See*—
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Paulsen, Robert C., and Kahn. 3,163,771.
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Ipsen, Harold N. Recirculating heat treating furnace. 3,163,694, 12–29–64, Cl. 266—5.

Ireland, John V. H. Self locking buckle. 3,162,914, 12–29–64, Cl. 24—170.

Irwin, George W., and E. H. Mumford, to Owens-Illinois Glass Co. Turret locking mechanism. 3,163,263, 12–29–64, Cl. 188—151.

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Isikawa, Humio. Uterotube-closing instrument. 3,163,165, 12–29–64, Cl. 128—303.17.

Ives, Frank E. Method of manufacturing plastic panels and apparatus therefor. 3,163,689, 12–29–64, Cl. 264—90.

Ivey, Lee R. Mobile washer for laboratory animal cages. 3,163,149, 12–29–64, Cl. 119—15.

Jackson, Gerald D. Stock exchange game. 3,163,423, 12–29–64, Cl. 273—134.

Jackson, James A. and W. L. One-piece balloon valve and holder. 3,162,974, 12–29–64, Cl. 46—32.

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Jackson, James A. and W. L. 3,162,974.

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Jenkins, Walter N., and A. G. Shakespeare, to The British Iron and Steel Research Assn. Continuous heat treatment of elongate metal material. 3,163,566, 12–29–64, Cl. 148—150.

Jenks, Howard E. Semaphore for electric toy trains. 3,163,125, 12–29–64, Cl. 104—149.

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Buck, Henry M. 3,163,487.
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Johansson, Folke K. E., and S. E. Bergstrom, to Stora Kopparbergs Bergslags Aktiebolag. Arrangement for tiltable furnaces. 3,163,696, 12–29–64, Cl. 266—36.

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Johnson, Charles A., to John W. Bolton & Sons, Inc. Bottom drive pulper with stationary blades. 3,163,368, 12–29–64, Cl. 241—46.

Johnson, Charles D., to Fairmont Railway Motors, Inc. Apparatus for setting and driving railroad spikes. 3,163,122, 12–29–64, Cl. 104—17.

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Johnston, William H., Laboratories, Inc.: *See*—
Wahrhaftig, Austin L., Vestal, Krause, and Johnston. 3,163,752.

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Kaess, Franz, L. Reitter, and K. Scheinost, to Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft. Preparation of melamine. 3,163,648, 12–29–64, Cl. 260—249.7.

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Kalish, Herbert S., and J. G. Ray, to Sylvania Electric Products, Inc. Discs for the mercury unshorter switch. 3,163,726, 12–29–64, Cl. 200—32.

Kallenberg, Karl J., to Pako Corp. Intermittent drive unit for photographic printer machine. 3,163,342, 12–29–64, Cl. 226—141.

Kandiah, Kathirkamathamby, to United Kingdom Atomic Energy Authority. Cathode-follower and emitter-follower circuits. 3,163,827, 12–29–64, Cl. 330—3.

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Kaveckas, Benedictus K., and E. C. Raney, to The Wilcolator Co. Thermally responsive power means. 3,163,045, 12–29–64, Cl. 73—368.2.

Kawabata, James S. Dynamic torque meter. 3,163,037, 12–29–64, Cl. 73—136.

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Kearney & Trecker Corp.: *See*—
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Keith, Garland B., to Pid Corp. Combined sheet support roll and sheet gripper assembly. 3,163,558, 12–29–64, Cl. 118—503.

Kelch, Heinz, and E. Schuh, to Kienzle Apparate G.m.b.H. Clockwork drive for taximeters. 3,163,357, 12–29–64, Cl. 235—30.

Kellis, James T., and R. W. Pargee, to Electronic Engineering Co. of California. Digital receiver tuning system. 3,163,823, 12–29–64, Cl. 325—421.

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Kennedy, Edwin C., to General Electric Co. Split refrigeration system including charge measuring means. 3,163,016, 12–29–64, Cl. 62—129.

Kenny, John M. Earring guard chain and means for securement to the hair. 3,163,026, 12–29–64, Cl. 63—14.

Kerr, Ralph O. W. R. Decker, and C. M. Dorsett, to Pittsburgh Plate Glass Co. Vanadium oxide-molybdenum oxide-cobalt-oxide-alkali metal halide on alumina catalyst composition and the preparation thereof. 3,163,613, 12–29–64, Cl. 252—441.

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Kestell, Thomas A., to United Shoe Machinery Corp. Shoe bottom roughing machines. 3,163,031, 12–29–64, Cl. 69—6.5.

Keuchen, Erich, and W. Hoven, to Garbe, Lahmeyer & Co. Aktiengesellschaft Starter system of an internal combustion engine. 3,163,769, 12–29–64, Cl. 290—38.

Key, Edward D., to Producto, Inc. Pipe and conduit threading machine. 3,163,082, 12–29–64, Cl. 90—11.58.

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Kierstead, Friend H., Jr., to Goodyear Aerospace Corp. Velocity-altitude ratio computer and camera control apparatus. 3,163,098, 12–29–64, Cl. 95—12.5.

Kimbell, Charles L., to Independent Exploration Co. Analog computer for use in seismic exploration. 3,163,846, 12–29–64, Cl. 340—15.5.

Kimbell, Charles L., to Independent Exploration Co. Analog computer for use in seimic exploration. 3,163,846, 12–29–64, Cl. 340—15.5.

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Kinzie, Ora A., and H. J. Watts, to Continental Oil Co. Apparatus for pressure testing fittings. 3,163,035, 12–29–64, Cl. 73—49.8.

Kirby, Frederick G. Alarm device for indicating lack of motion. 3,163,856, 12–29–64, Cl. 340—279.

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Kirk, Joseph R., E. L. Allen, A. Johnson, deceased (by O. Nelson, administrator), to Atwood Vacuum Machine Co. Trailer couplings. 3,163,445, 12–29–64, Cl. 280—513.

Kirr, Frederick M., C. J. Klosterman, and W. D. Spray, to General Precision, Inc. Analog-to-digital converter. 3,163,858, 12–29–64, Cl. 340—347.

Kirss, Voldemar, and R. G. Spaunburgh, to Allied Chemical Corp. Manufacture of 4,4-methylene-bis (phenyl isocyanate). 3,163,666, 12–29–64, Cl. 260—453.

Klass, Donald L., and T. W. Martinek, to The Pure Oil Co. Preparation of β-sulfato-ethane sulfonamides and amine salts thereof. 3,163,667, 12–29–64, Cl. 260—458.

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Knapp, Robert S., to Knapp-Monarch Co. Steam iron. 3,162,963, 12–29–64, Cl. 38—77.

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Knott, Charles W., to T. P. Hart, and N. M. Shalhoob, Jr. Fish catcher. 3,162,969, 12–29–64, Cl. 43—15.

Knowles, Dennis H., L. S. Tyma, Jr., and F. J. Doyle, to Miehle-Goss-Dexter, Inc. Ink fountain. 3,163,111, 12–29–64, Cl. 101—350.

Koch, Charles R., to Crawford Mfg. Co., Inc. Adjustable foot-rest or hassock. 3,163,468, 12–29–64, Cl. 297—439.

Koch, Ernst, R. O. Benz, and N. Jochum, to Rohm & Haas G.m.b.H. Lubricating oil additives. 3,163,605, 12–29–64, Cl. 252—51.5.

Koci, Ludvik J., to Sunbeam Corp. Electric motor control. 3,163,252, 12–29–64, Cl. 180—65.

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Kohorst, Joseph, and V. J. Scoop and loader attachment for tractors. 3,163,304, 12–29–64, Cl. 214—140.

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Koller, Eugen J.: *See*—
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Kolodgy, Robert W., and W. L. Roberts, to United States Steel Corp. Apparatus for automatically adjusting the stop of hot-metal cutting machine. 3,163,065, 12–29–64, Cl. 83—72.

Komeno, Taichiro, to Shionogi & Co., Ltd. 17α-thienyl-and 17α-triazolyl 3-lower alkoxy-1,3,5,(10)-estratrien-17β-ols. 3,163,642, 12–29–64, Cl. 260—239.5.

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Konrad, Erich H., and C. A. Currie, to Engelhard Industries, Inc. Sandwich composite bearing alloy. 3,163,500, 12–29–64, Cl. 29—194.

Koral, Jerry N., to American Cyanamid Co. Polycrotonaldehyde. 3,163,622, 12–29–64, Cl. 260—67.

Korte, Alfred C., to ACF Industries Inc. Fuel pump. 3,163,354, 12–29–64, Cl. 230—172.

Korte, Alfred C., to ACF Industries, Inc. Fuel pump. 3,163,355, 12–29–64, Cl. 230—188.

Koster, Roland, to K. Ziegler. Process for the production of alkali boron tetraalkyls. 3,163,679, 12–29–64, Cl. 260—606.5.

Kotz, Arthur R., R. H. Appeldorn, E. W. Grieshaber, E. J. Peterson, and N. L. Giorgini, to Minnesota Mining and Mfg. Co. Thermographic copy machine wherein the infrared radiation source is a flash lamp with a capillary bore. 3,163,755, 12–29–64, Cl. 250—65.

Kracht, Otto, to Kracht Pumpen- und Motorenfabrik K.G. Device for the automatic control of the volume of the air cushion in the pressure tank of water supply systems. 3,163,114, 12–29–64, Cl. 103—6.

Kracht Pumpen- und Motorenfabrik K.G.: *See*—
Kracht, Otto. 3,163,114.

Kraft, Jack A.: *See*—
Kraft, Harold D. and J. A. 3,163,404.

Kraft, Harold D. and J. A., to Scientific Industries, Inc. Rotary apparatus for agitating fluids. 3,163,404, 12–29–64, Cl. 259—57.

Kratt, Henry J., to The Plastic Contact Lens Co. Apparatus for producing contact lenses. 3,162,985, 12–29–64, Cl. 51—217.

Kraus, Charles E., to Excelermatic, Inc. Toroidal transmission bearing means. 3,163,050, 12–29–64, Cl. 74—200.

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Kruitwagen, Reinirus A. L., and A. B. Pasteuning, to AMP Inc. Connector pins. 3,163,485, 12–29–64, Cl. 339—272.

Kruse, Otto, to Wilhelm Fette Firma. Machine tool cutter and process for assembling the same. 3,162,928, 12–29–64, Cl. 29—105.

Kugel, Fritz, to J. M. Voith, G.m.b.H. Torque converter with symmetrical blading, mechanical clutch, and means to fill and partially empty the working chamber. 3,163,269, 12–29–64, Cl. 192—3.2.

Kugel, Fritz, and M. Schrag, to Voith-Getriebe KG. Internal combustion engine driven rail vehicle. 3,163,126, 12–29–64, Cl. 105—96.2.

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Kuhrt, Friedrich, and G. Stark, to Siemens-Schuckertwerke Aktiengesellschaft. Transducer for magnetic recordings. 3,163,721, 12–29–64, Cl. 179—100.2.

Kumagai, Ko., and H. Teramura, to Kokusai Denshin Denwa Kabushiki Kaisha. Phase control system. 3,163,715, 12–29–64, Cl. 178—23.

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Leathers, Chester F., to Cal Mfg. Co. Welding cable with pressed lugs. 3,163,704, 12–29–64, Cl. 174—15.

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Lindaberry, Harold L. Valve means for agricultural feeders and spreaders. 3,163,333, 12–29–64, Cl. 222—268.

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Lyden, Frank J. Liquid level control having an annular permanent magnet for actuating a mercury switch. 3,163,731, 12–29–64, Cl. 200—84.

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Martin, Lynn A., to Hughes Aircraft Co. Multiple-beam analog beam-forming system for sonar arrays. 3,163,844, 12–29–64, Cl. 340—6.

Martin, Wayne. Producing edible oil from grain. 3,163,545, 12–29–64, Cl. 99—192.

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Mihalek, Emery, to Hershey Mfg. Co. Vending machine for groceries, bread or the like and having a plurality of selectively operable columns of swing shelves. 3,163,325, 12–29–64, Cl. 221—90.

Mikos, John J., and L. V. Chabala, to S & C Electric Co. High voltage gas type circuit interrupter. 3,163,736, 12–29–64, Cl. 200—145.

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Miller, Leon M. Method and means for transplanting. 3,162,981, 12–29–64, Cl. 47—58.

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Siegmund, Gerhard, and J. Schaberger, to Jos. Schaberger & Co., G.m.b.H. Accelerometer. 3,163,048, 12–29–64, Cl. 73—516.

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Simon, Ralph: *See*—
Vagins, Milton, and Simon. 3,163,246.

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Skerry, George A., to Lincoln Precision Machining Co. Hoist. 3,163,400, 12–29–64, Cl. 254—167.

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Smith, Willard A., and E. M. Kiemer, to AMP Inc. Method for making high voltage high altitude bushing. 3,163,692, 12–29–64, Cl. 264—249.

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Snediker, Robert R., to Chicago Show Printing Co. Display holder. 3,162,965, 12–29–64, Cl. 40—10.

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Spillmann, Werner, and H. Frutschi, to Escher Wyss Aktiengesellschaft. Dual-circuit thermal power plant. 3,163,004, 12–29–64, Cl. 60—39.75.

Spofford, Warren A., to General Electric Co. Refrigeration system including charge checking. 3,163,015, 12–29–64, Cl. 62—129.

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Stanton, Lon. Arrow trueness tester. 3,163,305, 12–29–64, Cl. 214—340.

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Staubach, Heinrich, to Ernst Leitz Gesellschaft mit beschrankter Haftung. Variable focal length objective mount. 3,163,701, 12–29–64, Cl. 88—57.

Staunton, John J. J., to Coleman Instruments Corp. Sampling apparatus for flame photometer. 3,163,699, 12–29–64, Cl. 88—14.

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Stelling, Walter R., Jr., and F. H. Wittel, to Faustel, Inc. Web temperature control apparatus. 3,163,406, 12–29–64, Cl. 263—3.

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Stilz, Walter, H. Pommer, F. Schmidt, H. Biczysko, and H. Fessmann, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Polyamides stabilized with styryl benzenes or stilbenes. 3,163,621, 12–29–64, Cl. 260—45.7.

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Sumida, Kunio A., and R. C. Sadler, to B. F. Ambrosio. Data register with plural recording means. 3,163,107. 12–29–64, Cl. 101—90.

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Swardlick, Murray. Shuffleboard cue. 3,163,422, 12–29–64, Cl. 273—129.

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Lynn, Philip F. 3,163,186.
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Sylvester, Edmund Q. Mold shut-off and riser arrangement. 3,162,912, 12–29–64, Cl. 22—134.

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Tabor, Edward J., to The Dow-Chemical Co. Method for the manufacture of O-aryl O-lower alkyl phosphorochloridothioates. 3,163,668, 12–29–64, Cl. 260—461.

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Taguchi, Satoru, A. Sakakura, and T. Yasunari, to Yawata Iron and Steel Co., Ltd. Method for producing silicon steel strips having cube-on-face orientation. 3,163,564, 12–29–64, Cl. 148—111.

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Tanner, Charles L. Seal ring means. 3,163,431, 12–29–64, Cl. 277—206.

Tanner, Troy B. Applicator. 3,162,885, 12–29–64, Cl. 15—541.

Tatter, Ernest O. P., to Warwick Electronics Inc. Record changer. 3,163,427, 12–29–64, Cl. 274—10.

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Theodore, Charles, and J. A. Ross, to Ling-Temco-Vought, Inc. Method of generating a variable amplitude noise spectrum. 3,163,830, 12–29–64, Cl. 331—78.

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Thomas, Thomas R., to Auto Research Corp. Lubrication. 3,163,258, 12–29–64, Cl. 184—7.

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Thompson, Ivan P., and E. H. Mousted, to Union Carbide Corp. Water jet method of deslagging a metal surface. 3,163,559, 12–29–64, Cl. 134—34.

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Thompson, T. C., & Son Ltd.: *See*—
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Tibbetts, George C., to Tibbetts Industries, Inc. Damping means for magnetic translating device. 3,163,723, 12–29–64, Cl. 179—180.

Tibbetts Industries, Inc.: *See*—
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Tigrett, John B., to Tigrett Industries, Inc. Nursery unit. 3,162,865, 12–29–64, Cl. 5—3.

Tigrett, John B., and J. L. Cupples, to Tigrett Industries, Inc. Expansible nursery unit. 3,162,866, 12–29–64, Cl. 5—98.

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Townsend, Ray T., to Townsend Engineering Co. Casing end closer. 3,162,893, 12–29–64, Cl. 17—34.

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Traugott, Wilfred F., deceased (by B. D. Traugott, executrix). Adjustable pivotal wheel mounting. 3,163,441, 12–29–64, Cl. 280—96.2.

Travis, Ralph L. Combination fog, straight stream, and spray nozzle. 3,163,363, 12–29–64, Cl. 239—441.

Trax, Alan M., and J. J. Monagle, to Radio Corp. of America. Method of processing cathode ray tubes. 3,162,933, 12–29–64, Cl. 29—155.5.

Treacy, Clement J., to General Electric Co. Automatic character reader utilizing infrared radiation. 3,163,758, 12–29–64, Cl. 250—83.3.

Treacy, John J., & Co., Inc.: *See*—
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Vickers, Stanley E., to Vickers Machine & Tool, Inc. Right angle milling head. 3,163,081, 12–29–64, Cl. 90—11.

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Wallace, Jeffrey J., to J. T. Gordin, J. R. Gillian, and G. G. Potts. Cotton gin with novel hulling and ginning rib construction. 3,162,903, 12–29–64, Cl. 19—59.

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Williams, David E. Supercharged internal combustion engines. 3,162,998, 12–29–64, Cl. 60—13.

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Williamson, Floyd M., to National Bank of Detroit. Hydraulic cushions for dies of ram type presses. 3,163,144, 12–29–64, Cl. 113—45.

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Wroth, Robert S., N. Reis, and A. F. Manz, to Union Carbide Corp. Electric arc working with hot wire addition. 3,163,743, 12–29–64, Cl. 219—137.

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Wyld, Sydney A., to Construction Equipment Co. Pty. Ltd. Detachable self-counterbalanced tractor powered crane. 3,163,298, 12,29–64, Cl. 212—49.

Xenis, Constantine P., and J. Russo, to Consolidated Edison Co. of New York, Inc. Method and apparatus for sealing joints in conduit systems. 3,163,161, 12–29–64, Cl. 138—97.

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Zack, Albert, to Sylvania Electric Products Inc. Electromagnetic coils and terminal strips for such coils. 3,163,840, 12-29-64, Cl. 336—192.

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97 : 3,163,319	248– 37.6 : 3,163,385	211.5 : 3,163,637	87.2 : 3,163,417	37 : 3,163,475	340– 1 : 3,163,843
102 : 3,163,320	71 : 3,163,386	3,163,638	102 : 3,163,418	187.1 : 3,163,476	6 : 3,163,844
113 : 3,163,321	183 : 3,163,387	3,163,639	105 : 3,163,419	217 : 3,163,477	15.5 : 3,163,845
115 : 3,163,322	201 : 3,163,388	239 : 3,163,640	105.2 : 3,163,420	235 : 3,163,478	3,163,846
221– 4 : 3,163,323	211 : 3,163,389	239.5 : 3,163,641	106 : 3,163,421	310– 8.6 : 3,163,783	146.1 : 3,163,847
68 : 3,163,324	221 : 3,163,390	3,163,642	129 : 3,163,422	8.7 : 3,163,784	3,163,848
90 : 3,163,325	223 : 3,163,391	243 : 3,163,643	134 : 3,163,423	12 : 3,163,785	146.2 : 3,163,849
3,163,326	3,163,392	3,163,644	135 : 3,163,424	27 : 3,163,786	172.5 : 3,163,850
114 : 3,163,327	3,163,393	3,163,645	136 : 3,163,425	38 : 3,163,787	173 : 3,163,851
133 : 3,163,328	250– 41.9 : 3,163,752	247.2 : 3,163,646	142 : 3,163,426	45 : 3,163,788	174 : 3,163,852
222– 1 : 3,163,329	49.5 : 3,163,753	248 : 3,163,647	274– 10 : 3,163,427	53 : 3,163,789	3,163,853
79 : 3,163,330	51.5 : 3,163,754	249.7 : 3,163,648	3,163,428	54 : 3,163,790	3,163,854
151 : 3,163,331	65 : 3,163,755	268 : 3,163,649	23 : 3,163,429	83 : 3,163,791	3,163,855
180 : 3,163,332	71.5 : 3,163,756	281 : 3,163,650	277– 19 : 3,163,430	102 : 3,163,792	279 : 3,163,856
268 : 3,163,333	83.1 : 3,163,759	293 : 3,163,651	206 : 3,163,431	312–234.1 : 3,163,479	322 : 3,163,857
412 : 3,163,334	83.3 : 3,163,758	293.2 : 3,163,652	209 : 3,163,432	319 : 3,163,480	347 : 3,163,858
455 : 3,163,335	3,163,760	293.4 : 3,163,653	279– 46 : 3,163,433	313– 71 : 3,163,793	3,163,859
505 : 3,163,336	3,163,761	294 : 3,163,654	280– 5 : 3,163,434	76 : 3,163,794	343– 6.5 : 3,163,860
534 : 3,163,337	95 : 3,163,757	296 : 3,163,655	3,163,435	270 : 3,163,795	14 : 3,163,861
224– 42.01: 3,163,338	105 : 3,163,762	327 : 3,163,656	11.37: 3,163,436	314– 22 : 3,163,799	17.1 : 3,163,862
42.03: 3,163,339	206 : 3,163,763	335 : 3,163,657	3,163,437	45 : 3,163,796	752 : 3,163,863
225– 6 : 3,163,340	208 : 3,163,764	345.1 : 3,163,658	43 : 3,163,438	315– 22 : 3,163,797	809 : 3,163,864
100 : 3,163,341	213 : 3,163,765	345.2 : 3,163,659	43.17: 3,163,439	111 : 3,163,798	346– 33 : 3,163,486
226–141 : 3,163,342	3,163,766	346.1 : 3,163,660	80 : 3,163,440	317– 14 : 3,163,800	3,163,487
199 : 3,163,343	218 : 3,163,767	397.3 : 3,163,661	96.2 : 3,163,441	3,163,801	3,163,488
229– 16 : 3,163,344	238 : 3,163,768	3,163,662	104.5 : 3,163,442	36 : 3,163,802	76 : 3,163,489
29 : 3,163,345	251–120 : 3,163,394	397.45: 3,163,664	124 : 3,163,443	142 : 3,163,803	139 : 3,163,490
37 : 3,163,346	252– 8.55: 3,163,602	397.5 : 3,163,663	492 : 3,163,444	148.5 : 3,163,804	140 : 3,163,491
39 : 3,163,347	33.6 : 3,163,603	430 : 3,163,665	513 : 3,163,445		

CLASSIFICATION OF DESIGNS

D 3– 11 : 199,891	D15– 1 : 199,902	D42– 7 : 199,913	D50– 3 : 199,924	D58– 2 : 199,935	D83– 1 : 199,945
D 7– 6 : 199,892	D17– 1 : 199,903	199,914	199,925	6 : 199,936	12 : 199,946
D 9– 2 : 199,893	D26– 13 : 199,904	D44– 1 : 199,915	199,926	D62– 2 : 199,937	199,947
D10– 7 : 199,894	D31– 4 : 199,905	24 : 199,916	199,927	D67– 3 : 199,938	D86– 8 : 199,948
D12– 2 : 199,895	D33– 2 : 199,906	26 : 199,917	199,928	D68– 1 : 199,939	10 : 199,949
D13– 1 : 199,896	D34– 4 : 199,907	D46– 1 : 199,918	D52– 6 : 199,929	D71– 1 : 199,940	D87– 5 : 199,950
199,897	5 : 199,908	D48– 20 : 199,919	D54– 9 : 199,930	D72– 1 : 199,941	D90– 14 : 199,951
D14– 3 : 199,898	13 : 199,909	199,920	D57– 1 : 199,931	D80– 9 : 199,942	D91– 1 : 199,952
199,899	D41– 1 : 199,910	27 : 199,921	199,932	10 : 199,943	D92– 2 : 199,953
199,900	D42– 7 : 199,911	D50– 3 : 199,922	199,933	11 : 199,944	199,954
27 : 199,901	199,912	199,923	199,934		

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 29, 1964 Volume 809 Number 5

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Diet Foods, Inc., San Francisco, Calif., Reg. No. 577,615, Canc. No. 8327.

Joan Kenley, Inc., New York, N.Y., Reg. No. 425,866, Canc. No. 8346.

Willows Manufacturing Company, New York, N.Y., Reg. No. 422,857, Canc. No. 8347.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 145,335 (SUNBEAM), Chicago Flexible Shaft Company, Electric flatirons; **Reg. No. 267,557**, same, Electric percolators and electric lighters for pipes, cigars and cigarettes; **Reg. No. 280,756**, same, Electrical food mixers, electric waffle irons, and electric clocks; **Reg. No. 281,291** (MIXMASTER), same, Electric food mixers; **Reg. No. 283,524** (CLIPMASTER), same, Electric clippers and animal shears; **Reg. No. 297,079** (IRONMASTER), same, Electric sadirons; **Reg. No. 297,388** (SHEARMASTER), same, Electrical animal shears and parts therefor; **Reg. No. 318,056** (SUNBEAM), same, Electrically operated devices consisting of room and space heaters, desk fans, scissors, etc.; **Reg. No. 327,314** (MIXMASTER), same, Food mixers, fruit juice extractors, mayonnaise makers, etc.; **Reg. No. 328,171** (COFFEEMASTER), same, Electrical coffee makers and parts thereof; **Reg. No. 339,993** (SHAVEMASTER), same, Safety shaving devices of the nature of safety razors and blades therefor; **Reg. No. 367,025** (DRILLMASTER), same, Hand operated electrically driven drills; **Reg. No. 370,742** (SUNBEAM), same, Electric dry shavers and parts thereof; **Reg. No. 390,181**, same, Electrical appliances comprising electric flatirons, electric toaster grills, etc.; **Reg. No. 418,993**, same, Industrial furnaces for heat treating, hardening, carburizing, annealing and tempering metals; **Reg. No. 428,410**, same, Chicago Flexible Shaft Company, now by change of name Sunbeam Corporation, Electric clocks; **Reg. No. 429,154**, same, Merchandise display stands, tables, and cabinets, kitchen cabinets, and kitchen appliance cabinets; **Reg. No.**

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15, 327
Date of oldest new application	Mar. 23, 1964
Date of oldest amended application	Mar. 10, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	4–1–64	4–6–64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	3–23–64	3–10–64
Renewals (All Classes)	10–9–64	10–27–64
Sec. 12 (c) Publications (All Classes)	10–15–64	----

Applications filed during the month of October 1964—2,218

Registrations Issued	394—No. 782,222 to No. 782,615
Renewals Issued	50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

436,571, same, Receptacles for household use—namely, bowls, dishes, and trays of glass for carrying foods, dishes and kitchen appliances; **Reg. No. 432,058,** same, Lawn sprinklers; **Reg. No. 432,059,** same, Receptacles for household use—namely, base metallic bowls, and metallic cream and sugar sets; **Reg. No. 433,547,** same, Animal shearing and clipping machines, handpieces for shearing and clipping machines, and parts thereof; **Reg. No. 433,548,** same, Lawn mowers; **Reg. No. 439,886,** same, Sunbeam Corporation, Electric hedge trimmers and parts thereof; **Reg. No. 442,875,** same, Replaceable filter elements for coffeemakers of cloth and other porous material; **Reg. No. 537,859,** same, Electric egg cookers; **Reg. No. 539,425,** same, Electric toasters; **Reg. No. 546,165,** same, Portable electric radiant heaters for general use; **Reg. No. 588,806,** same, Electric bottle warmers; **Reg. No. 588,809,** same, Electric cookers and deep fryers; **Reg. No. 594,171,** same, Electric blankets; **Reg. No. 599,967** (MIXMASTER), same, Glass receptacles for household use—namely, food mixer bowls, juice extractor bowls, and beverage mixing glasses; **Reg. No. 602,277** (SUNBEAM), same, Hose couplings; **Reg. No. 606,316,** same, Electric frying pans; **Reg. No. 625,235,** same, Electric sheets; **Reg. No. 626,412** (DRILLMASTER), same, Cases and chests for carrying and storing portable tools; **Reg. No. 627,674** (MIXMASTER) same, Electrical blenders, disintegrators, and liquefiers and parts thereof; **Reg. No. 627,675** (DRILLMASTER), same, Electric motor driven grinders, sanders, polishers, etc.; **Reg. No. 627,680** (SUNBEAM), same; **Reg. No. 627,681,** same, Electric water kettles and tea brewing apparatus; **Reg. No. 627,682,** same, Electric drilling machines and parts therefor; **Reg. No. 627,683,** same, Electrical blenders, disintegrators, and liquefiers and parts thereof; **Reg. No. 627,756,** same, Lawn maintenance equipment—namely, machines for pulverizing and mulching leaves; **Reg. No. 628,052,** same, Cases and chests for carrying and storing portable tools; **Reg. No. 629,382,** same, Hose nozzles; **Reg. No. 629,833,** same, Lubricating greases; **Reg. No. 629,834** (MIXMASTER), same; **Reg. No. 630,663** (SHAVMASTER), same, Sharpening compound; **Reg. No. 630,664** (SUNBEAM), same; **Reg. No. 631,920** (SHAVEMASTER), same, Shaving lotion; **Reg. No. 632,613** (SUNBEAM), same, Stands for use with portable electric tools; **Reg. No. 632,614** (DRILLMASTER), same; **Reg. No. 637,637** (SUNBEAM), same, Portable electric saws and parts thereof; **Reg. No. 642,230,** same, Paints; **Reg. No. 642,897,** same, Drill bits; **Reg. No. 642,899,** same, Saw blades; **Reg. No. 644,151** (DRILLMASTER), same, Drill bits; **Reg. No. 653,373** (SUNBEAM), same, Tables for supporting portable tools; **Reg. No. 656,272,** same, Abrasive wheels, discs, and sheets; **Reg. No. 656,273,** same, Polishing and buffing wheels; **Reg. No. 656,652,** same, Sealing compounds; **Reg. No. 656,659** (IRONMASTER), same; **Reg. No. 659,004** (SUNBEAM), same, Plastic articles—namely, handles, knobs, cases, bases, housings, covers, etc.; **Reg. No. 659,933,** same, Service and repair of household appliances, portable tools, lawn maintenance equipment, and furnaces belonging to customers; **Reg. No. 661,875,** same, Utility carts; **Reg. No. 665,123,** same, Combs; **Reg. No. 665,985,** same, Ironing boards; **Reg. No. 668,626,** same, Wire brush wheels; **Reg. No. 668,931,** same, Light bulbs; **Reg. No. 672,396,** same, Varnish; **Reg. No. 673,511,** same, Temperature indicating instruments including thermocouples, thermometers and pyrometers; **Reg. No. 674,957,** same, Electrical and mechanical measuring and testing instruments, including devices for measuring current, voltage, resistance and power, etc.; **Reg. No. 675,555,** same, Floor cleaning, polishing and conditioning machines and rug scrubbing machines; **Reg. No. 680,401,** same, Electric hair clippers and parts thereof; **Reg. No. 684,749,** same, Scissors; **Reg. No. 685,130,** same, Duster brushes; **Reg. No. 687,705,** same, Service and repair of animal clipping and shearing machinery belonging to customers; **Reg. No. 696,711,** same, Radios and parts thereof; **Reg. No. 696,712,** same, Electric vacuum cleaners, parts and accessories therefor; **Reg. No. 697,426,** same, Plastic articles—namely, handles, knobs, cases, housings, etc.; **Reg. No. 705,886,** same, Electrical distribution centers including electrical outlets with circuit breakers and timing devices for controlling electric circuits; **Reg. No. 707,174,** same, Tools, wrenches, and vises; **Reg. No. 722,078,** same, Shaving lotion, **filed** Mar. 26, 1963, D.C., E.D. Mich. (Detroit), Doc. 23675, *Sunbeam Corp. v. Armin H. Vogel and Robert A. Geiger, doing business as Sunburst Manufacturing Co., et al.* Final judgment; complaint dismissed as to defendants Armin H. Vogel and Robert A. Geiger; defendants Manchester Mfg. Co. and Murray Industries, Inc. enjoined as to "Sunburst" or "Sunburst Manufacturing Co." (notice Aug. 17, 1964).

Erratum

In the OFFICIAL GAZETTE, issue of December 8, 1964, volume 809, page TM 55, line 14 of the right-hand column, for "Reg. No. 704,722" read *Reg. No. 704,772.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 154,599. Edward Gideseg, Jamaica, N.Y. Filed Oct. 5, 1962.

DEFIANCE

Class 24—Laundry Appliances and Machines

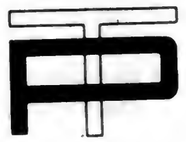
For Clothes Dryers (Gas or Electric), Clothes Washers, and Combination Washer-Dryer Units (Gas or Electric).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Ranges (Gas or Electric), and Range Hoods.

First use Sept. 6, 1962.

SN 156,157. Para-Tone Incorporated, La Grange, Ill. Filed Oct. 29, 1962.



Class 26—Measuring and Scientific Appliances

For Blocking Film.

Class 37—Paper and Stationery

For Transfer Tone Screen Sheets.

Class 50—Merchandise Not Otherwise Classified

For Tapes for Use by Artists, Draftsmen and the Like, and Instruments for Applying the Same; Characters, Symbols, Signs, Configurations, Shadings, and Similar Elements Printed in Sets on a Carrier Sheet; Color Sheets for Use in the Graphic Arts; and Single Sheets and Pads of Sheets Receiving Pen, Pencil or Artists Color.

First use December 1959.

SN 156,807. Fama & Famin Gesellschaft mit beschrankter Haftung, Hannover-Hainhols, Germany. Filed Nov. 7, 1962.



Owner of German Reg. No. 265,725, dated May 23, 1921.

Class 4—Abrasives and Polishing Materials

For Steel Cuttings, Steel Wool, and Lubricating and Abrasive Fluids Used To Finish and Polish Concrete, Mortar, Terrazzo, and Cast Artificial Marble.

Class 6—Chemicals and Chemical Compositions

For Mortar Additives—Namely, Chemical Air Entraining Agents and Plasticisers.

Class 12—Construction Materials

For Precast Slabs, Plates, Sheets, Blocks, Molding, and Decorative Relief Panels Used for Building Construction; Precast Building Stones; Terrazzo Flooring and Flooring Made of Mortar With Wood Fiber and Chips; Precast Artificial Marble Slabs and Sheets; Slabs, Plates, Sheets, Blocks, Panels and Molding Made of Chemically Bound Wood Shavings Used for Building Construction; Precast Fireplaces; Sheet Composition Material From Which Table Tops Are Made; Expansion Rollers, and Columns Used for Building Construction; Fibrous Wood Insulation; Wood Pulp, Chips, and Fibers for Mixing With Mortar; Xylolith; and Portland Cement.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Sinks, Wash Stands, Troughs, and Cast Pipes.

Class 16—Protective and Decorative Coatings

For Interior and Exterior Paints; and Sealants for Cast Floors.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools for the Production of Cast in Place Floors—Namely, Trowels for Primarily Coating and Smoothing, Hoes, Shovels, Monkey Wrenches, Scrapers, Spatulas, Spirit Levels, Hand Operated and Motor Driven Tampers.

Class 26—Measuring and Scientific Appliances

For Hydrometers.

Class 30—Crockery, Earthenware, and Porcelain

For Dishes and Plates.

Class 32—Furniture and Upholstery

For Table Tops.

Class 37—Paper and Stationery

For Paperweights, Picture Frames, and Inkwells.

SN 170,671. The Powers Regulator Company, Skokie, Ill. Filed June 10, 1963.



The drawing is lined for red and grey. Applicant disclaims any rights in the word "Control" apart from the mark as shown. Owner of Reg. Nos. 549,408, 701,205, and others.

Class 12—Construction Materials

For Construction Materials—Namely, Pipe Hangers and Roughing In Box Forms.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fluid Mixing Valves; Air Mixing Valves; Pressure Regulators and Reducing Valves; Self-Cleaning Fluid Strainers; Steam Traps for Steam Pressure Uses; and Pressure Equalizing Valves.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Control Switches, Electrical Measuring Switches and Instruments, and Electrical Components.

Class 26—Measuring and Scientific Appliances

For Temperature Recording Thermometers; Thermostatic Temperature Regulators; Pneumatic, Bulb, and Hygro Thermostats for Control of Valves and Dampers Used To Regulate the Flow of Heating and Cooling Mediums; Room Control Thermostats; Pneumatic Thermostats; Thermostatically Controlled Steam Traps; Thermostatically Controlled Fluid Mixing Valves; and Hydrostats.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hand and Power Operated Dampers for Control of Air or Gas Flow, Including Such Types as Louver, Constant Velocity, Hand Quadrant, Single Blade and Round Dampers; Heating Equipment Dampers; and Humidifiers.

First use Dec. 10, 1959; 1888 as to the word "Powers"; Oct. 7, 1959, as to the design.

SN 180,113. Jean Naté, Inc., New York, N.Y. Filed Oct. 30, 1963.

Jean Naté

"Jean Naté" is a living individual whose consent to register the name has been obtained. Owner of Reg. Nos. 299,041, 537,288, and 727,098.

Class 51—Cosmetics and Toilet Preparations

For Bath Oil and Bath Crystals.
First use at least as early as December 1959.

Class 52—Detergents and Soaps

For Bath Soap.
First use 1935.

SN 188,609. American Desk Manufacturing Company, Temple, Tex. Filed Mar. 13, 1964.



In the drawing the letters "ad" are formed by diagonal lines, and such lines are not for color per se. Owner of Reg. No. 737,335.

Class 21—Electrical Apparatus, Machines, and Supplies

For Self-Contained Amplifying Headsets, Electronic Control Panels, Consoles and Booths Fitted With Electronic Equipment for Use in Instruction in Schools and the Like and Electronic Equipment for Use in Such Control Panels and Consoles.
First use Aug. 21, 1962.

Class 32—Furniture and Upholstery

For Furniture—Namely, Chairs, Chair Desks, Tablet Arm Chairs, Stools, Desks, Combination Chair and Desk Units, Tables, and Auditorium and Stadium Seats.
First use December 1960.

Class 36—Musical Instruments and Supplies

For Tape Recorders.
First use Aug. 21, 1962.

Class 50—Merchandise Not Otherwise Classified

For Chalkboards and Tackboards.
First use December 1960.

SN 192,352. Caneel Bay Plantation, Inc., St. John, Virgin Islands. Filed Apr. 30, 1964.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags.
First use on or before Jan. 1, 1959.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Trays.
First use on or before Jan. 1, 1959.

Class 22—Games, Toys, and Sporting Goods

For Playing Cards.
First use on or before Jan. 1, 1959.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candles.
First use on or before Jan. 1, 1959.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Tablecloths and Napkins.
First use on or before Jan. 1, 1959.

Class 100—Miscellaneous

For Operation and Management of Resort Hotel.
First use September 1955.

SN 198,474. William J. Graham Company, Lowell, Mass. Filed July 24, 1964.

Gramco

Class 7—Cordage

For Twine.

Class 22—Games, Toys, and Sporting Goods

For Toys—Namely, Jump Ropes.
First use on or about June 1, 1930.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 164,916. Tenneco Corporation, Houston, Tex. Filed Mar. 18, 1963.

TENNECO

Owner of Reg. No. 713,035.
For Chemicals—Namely, Vinyl Chloride Monomer Benzene, Toluene, Xylene, Orthoxylene, Metaxylene, Paraxylene, Ethylbenzene, and Aromatic Solvent Compositions.
First use June 23, 1961.

SN 179,208. Royalmetal Corporation, New York, N.Y., assignee of Decor Plastics Corp., New Bedford, Mass. Filed Oct. 17, 1963.

TRI-LITE

For Vinyl Plastic.
First use Sept. 9, 1963.

SN 182,486. Import Enterprises, Inc., Rogers, Ark. Filed Dec. 6, 1963.

KLOZAID

For Polyesterene Foam Packaged for Use as Cleaning Device for Clothing, Hats, Suede Shoes, and Other Fabrics.
First use Oct. 2, 1963.

SN 186,384. Mushroom Supply Company, Toughkenamon, Pa. Filed Feb. 10, 1964.

MSCo

For Mushroom Growing Kits, Pre-Grown Compost and Casing Material.
First use Jan. 31, 1964.

Class 2—Receptacles

SN 182,163. Diamond National Corporation, New York, N.Y. Filed Dec. 2, 1963.

OVALTAINER

Owner of Reg. No. 753,912.
For Food Packaging Trays Made of Molded Pulp.
First use Oct. 10, 1963.

SN 189,492. Irwin E. Nathan, Chicago, Ill. Filed Mar. 24, 1964.

SPLITAINER

For Folding Cartons for Packaging Produce Such as Tomatoes.
First use Mar. 1, 1962.

SN 194,776. The Brearley Company, Rockford, Ill. Filed June 3, 1964.

Premiere

For Hampers.
First use Mar. 1, 1964.

SN 197,590. Eli Lilly and Company, Indianapolis, Ind. Filed July 10, 1964.

LOK-CAPS

For Locking Pharmaceutical Capsules.
First use June 15, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 167,802. Coniker Enterprises, Chicago, Ill. Filed Apr. 30, 1963.

DATAMASTER

For Portfolios and Pocketbooks.
First use Sept. 17, 1962.

SN 167,803. Coniker Enterprises, Chicago, Ill. Filed Apr. 30, 1963.

TASKMASTER

For Portfolios and Pocketbooks.
First use May 10, 1962.

SN 176,596. Whitman Saddle Manufacturing Company, Cincinnati, Ohio. Filed Sept. 9, 1963.

WHITMAN

For Riding Saddles, Riding Bridles, Fancy Cavessons, Fronts and Nosebands, Halters, Martingales, Saddle Blankets, Numnahs, Girths, Bits, Saddle Trees, and Carrying Cases.
First use 1878.

SN 184,643. Morris White Fashions, Inc., New York, N.Y. Filed Jan. 15, 1964.

WHITCORD

For Ladies' Handbags.
First use Aug. 1, 1940.

Class 4 — Abrasives and Polishing Materials

SN 184,118. Vitro Corporation of America, New York, N.Y. Filed Jan. 6, 1964.

VITROX

Owner of Reg. Nos. 184,300 and 643,814.
For Polishing Compounds for Polishing Optical Glass, Including Lenses, Prisms and Mirrors, Curved and Flat Glass Articles, Including Television and Ophthalmic Glass, Table Glassware and Dinnerware, Natural and Synthetic Gems for Lapidary and Monument Uses, Plastic and Resin Articles for Optical Purposes, Metals and Other Materials Requiring a High Degree of Surface Finishing and Consisting Principally of or Containing Rare Earth Oxides, Including Cerium or Zirconium Oxides and Mixtures of the Same.
First use January 1957.

SN 196,726. Scientific Supply Company, Inc., Denver, Colo. Filed June 29, 1964.

SUPER GOLD

For Floor Waxes.
First use Oct. 10, 1958.

SN 203,176. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Furniture Creams and Polishes.
First use Jan. 1, 1962.

Class 5 — Adhesives

SN 178,855. A.P.M.-Hexseal Corporation, Englewood, N.J. Filed Oct. 14, 1963.

SILHESIVE

For Adhesives for Bonding Silicone Rubber and Similar Materials.
First use Oct. 3, 1963.

Class 6 — Chemicals and Chemical Compositions

SN 150,082. Lin-Gas, Inc., Evansville, Ind. Filed July 30, 1962.

Lin-gas

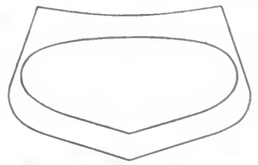
For Bottled and Bulk Gas.
First use June 1950.

SN 164,914. Tenneco Corporation, Houston, Tex. Filed Mar. 18, 1963.

TENNECO

Owner of Reg. No. 713,035.
For Chemicals—Namely, Vinyl Chloride Monomer, Benzene, Toluene, Xylene, Orthoxylene, Metaxylene, Paraxylene, Ethylbenzene, and Aromatic Solvent Compositions.
First use June 23, 1961.

SN 164,915. Tenneco Corporation, Houston, Tex. Filed Mar. 18, 1963.



Owner of Reg. No. 713,035.
For Chemicals—Namely, Vinyl Chloride Monomer, Benzene, Toluene, Xylene, Orthoxylene, Metaxylene, Paraxylene, Ethylbenzene, and Aromatic Solvent Compositions.
First use June 23, 1961.

SN 170,483. The Lea Manufacturing Company, Waterbury, Conn. Filed June 6, 1963.

LEABOND

Owner of Reg. Nos. 411,018 and 539,247.
For Silicone Preparations Used as a Surface Primer for Securing Silicone Rubber and Fluorosilicone Rubber to Surfaces Such as Metals, Ceramics, and Fabrics.
First use on or about Jan. 10, 1963.

SN 180,250. United Sanitary Chemicals Company, Incorporated, Baltimore, Md. Filed Oct. 31, 1963.

KONSECTO

For Insecticide.
First use June 1940.

SN 182,020. George J. Zafiras, d.b.a. Pan American Company, Des Moines, Iowa. Filed Nov. 27, 1963.

PAC LAST SUPPER

For Rat and Mouse Bait.
First use Sept. 11, 1963.

SN 187,803. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company, St. Louis, Mo. Filed Mar. 2, 1964.



For Insecticides, Herbicides, Household Deodorants and Disinfectants.
First use 1916.

SN 189,367. Produits Chimiques Pechiney-Saint-Gobain, Paris, France. Filed Mar. 23, 1964.

ORCED

Owner of French Reg. No. 511,025, dated Jan. 31, 1963 (Paris); Natl. Inst. No. 198,954.
For Preparation for Preventing Shrinkage and Felting of Wool.
First use May 1963.

SN 193,271. Fairmount Chemical Co., Inc., Newark, N.J. Filed May 12, 1964.

AZOCEL

For Chemical Composition, 1,1'-Azobisformamide or Azodicarbonamide, as a Blowing Agent for Producing Expanded Rubber and Plastic Products.
First use Nov. 18, 1963.

SN 196,690. Mayo-Reese Company, Inc., New York, N.Y. Filed June 29, 1964.

MEDACTON

For Room Deodoriser.
First use Apr. 23, 1964.

SN 196,885. Miles Laboratories, Inc., Elkhart, Ind. Filed July 1, 1964.

D-PLUS

For Chemicals for Use in the Paper and Pulp Industry.
First use on or before Sept. 27, 1963.

SN 196,886. Miles Laboratories, Inc., Elkhart, Ind. Filed July 1, 1964.

J-PLUS

For Chemicals for Use in the Paper and Pulp Industry.
First use on or before Nov. 1, 1963.

SN 196,887. Miles Laboratories, Inc., Elkhart, Ind. Filed July 1, 1964.

Z-PLUS

For Chemicals for Use in the Paper and Pulp Industry.
First use on or before Nov. 1, 1963.

SN 197,082. Cities Service Oil Company, Tulsa, Okla. Filed July 6, 1964.

VISI-JET

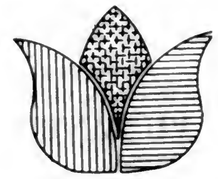
For Flame Colorant.
First use on or about May 6, 1964.

SN 197,113. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 6, 1964.

ALFATOX

For Chemical Compound Used as an Ingredient of Insecticides.
First use Apr. 24, 1964.

SN 197,289. Holland Color and Chemical Company, Holland, Mich. Filed July 7, 1964.



The drawing is lined for the colors red, yellow, and blue.
Owner of Reg. Nos. 550,018, 569,261, 574,706, and 574,707.
For Chemical Colors—Namely, Pigments, Lakes and Toners in Both Dry and Liquid Forms, and Chemical Intermediates for the Same.
First use in or about January 1959.

SN 197,467. Betz Laboratories, Inc., Philadelphia, Pa. Filed July 9, 1964.

CORMASTER

For Corrosion Inhibitor for Producing Oil Wells, Transmission Lines and Water Injection Wells.
First use Sept. 5, 1956.

SN 197,468. Betz Laboratories, Inc., Philadelphia, Pa. Filed July 9, 1964.

BREAKMASTER

For Water-Oil Emulsion Breaker.
First use Oct. 10, 1957.

SN 197,469. Betz Laboratories, Inc., Philadelphia, Pa. Filed July 9, 1964.

SCALEMASTER

For Scale Inhibitor for Oil Wells, Water Injection Wells and Surface Piping and Equipment.
First use June 4, 1957.

SN 197,470. Betz Laboratories, Inc., Philadelphia, Pa. Filed July 9, 1964.

PARAMASTER

For Paraffin Deposit Inhibitor for Oil Well and Surface Piping and Equipment.
First use Nov. 4, 1957.

SN 197,471. Betz Laboratories, Inc., Philadelphia, Pa. Filed July 9, 1964.

BIOMASTER

For Slimicide Used in Water Injection Wells in Waterflooding and Water Disposal Wells.
First use Feb. 7, 1964.

SN 198,616. Wilkens Instrument & Research, Inc., Walnut Creek, Calif. Filed July 27, 1964.

AEROGRAPH

Owner of Reg. No. 672,789.
For Chemicals for Packing Gas Chromatography Columns.
First use on or about July 10, 1956.

SN 201,881. Scripto, Inc., Atlanta, Ga. Filed Sept. 14, 1964.

VU-TANE

For Cigarette Lighter Fuel.
First use July 31, 1964.

Class 7 — Cordage

SN 193,347. FMC Corporation Philadelphia, Pa. Filed May 13, 1964.

AVISTRAP

Owner of Reg. Nos. 705,795, 708,075, and 715,646.
For Strapping Made of Plastic Material.
First use Dec. 3, 1963.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 201,882. Scripto, Inc., Atlanta, Ga. Filed Sept. 14, 1964.

VU-TANE

For Cigarette Lighters.
First use July 31, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 190,228. Aerojet-General Corporation, El Monte, Calif. Filed Apr. 3, 1964.

AEREX

Owner of Reg. No. 674,049.
For Liquid Explosives and Solid Explosives.
First use March 1954.

Class 10 — Fertilizers

SN 177,228. Carolina Nitrogen Corporation, Wilmington, N.C. Filed Sept. 18, 1963.

NITREX

For Solid and Liquid Fertilizers Containing Ammonium Nitrate.
First use July 16, 1963.

SN 179,570. Western Garden Industries Inc., Hayward, Calif. Filed Oct. 22, 1963.

SIN

For Fertilizer and Soil Conditioner.
First use Feb. 1, 1963.

SN 179,986. Allied Chemical Corporation, New York, N.Y. Filed Oct. 29, 1963.

GOLD-AN

For Fertilizer.
First use Sept. 10, 1963.

SN 186,653. U.S. Distributing Corporation, Houston, Tex. Filed Feb. 13, 1964.

TRI-X

For Liquid Plant Food or Fertilizers.
First use Jan. 1, 1964.

Class 12 — Construction Materials

SN 167,096. Amerada Glass Corp., Chicago, Ill. Filed Apr. 19, 1963.

TWI LITE

For Multiple Pane Glass Sheet Glazing Units for Buildings, Display Windows, and the Like, Having a Colored Interlayer.
First use February 1961.

SN 172,019. Timber Structures, Inc., Portland, Oreg. Filed June 27, 1963.

TIM-PLANK

Owner of Reg. No. 609,410.
For Lumber Structures—Namely, Laminated Wooden Decking and Planking.
First use June 7, 1963.

SN 178,605. The B. F. Goodrich Company, Akron, Ohio. Filed Oct. 9, 1963.

RIGICELL

For Rigid Cellular Plastic Building Panels.
First use Dec. 17, 1962.

SN 179,567. Tupelo Dimension Manufacturing Company, d.b.a. The Plywood Company, Sumter, S.C. Filed Oct. 22, 1963.

PANELPLANK

For Hardwood Paneling.
First use on or about June 14, 1956.

SN 180,802. The Flintkote Company, New York, N.Y. Filed Oct. 24, 1963.

FIRE-EX

For Fire Rated Gypsum Wallboard and Gypsum Backing Board Wherein Glass Fiber Strands and Unexpanded Vermiculite Are Dispersed Throughout the Gypsum Core.
First use Nov. 5, 1958.

SN 180,803. The Flintkote Company, New York, N.Y. Filed Oct. 24, 1963.

WELD-TITE

Owner of Reg. No. 508,200.
For Fluid-Tight Couplings for Asbestos Cement Pipe Which Provide for Positive Separation of the Ends of Adjacent Sections of Pipe While Permitting Flexure at the Resultant Pipe Joint.
First use Apr. 14, 1962.

SN 181,795. Radiator Specialty Company, Charlotte, N.C. Filed Nov. 22, 1963.

SETTING SEAL

Owner of Reg. No. 408,893.
For Caulking Compound for Sealing Toilet Bowls to Sewer Joints and the Like, Said Compound Remaining Permanently Soft and Gummy.
First use Oct. 20, 1942.

SN 182,784. Corhart Refractories Company, Louisville, Ky. Filed Dec. 11, 1963.

SKD

For Refractory Bricks and Blocks.
First use Aug. 8, 1963.

SN 183,902. Dickey & Clauson, Inc., Seattle, Wash., assignee of Farrell Lumber Co., Seattle, Wash. Filed Jan. 2, 1964.

SPEEDGETS Inc.

Owner of Reg. No. 172,134.
For Construction Materials, Building Components and Sub-Assemblies—Namely, Lumber, Plywood, Siding, Roofing, Flooring, Wallboard, Kitchen Cabinets, Building Insulation, Building Paper, Pre-Hung Window and Door Units, Moldings, Trim, Louvers, Shutters, Weather Stripping, Prefabricated Fireplaces and Masonry Materials.
First use July 1, 1930.

SN 184,474. Johns-Manville Corporation, New York, N.Y. Filed Jan. 13, 1964.

TOP-LOC

For Thermal Insulating Roofing Boards.
First use July 1, 1962.

SN 184,775. C. L. Eddleblute, Chapman, Ala. Filed Jan. 7, 1964.

TIM FAB

Owner of Reg. No. 649,541.
For Structural Wooden and Timber Components—Namely, Trusses, Towers, Prefabricated Panels, Glued Laminated Structural Members, Frames, Arches, Beams, Columns, and Bents.
First use in 1943.

SN 189,055. Dierks Forests, Inc., Kansas City, Mo. Filed Mar. 19, 1964.

DIERKS CREOSOTE

No claim is made to the exclusive use of the word "Creosote" apart from the mark as shown. Owner of Reg. Nos. 605,994 and 619,304.
For Fence Posts and Barn Poles.
First use Dec. 15, 1963; Apr. 15, 1952, in a different form.

SN 189,056. Dierks Forests, Inc., Kansas City, Mo. Filed Mar. 19, 1964.

DIERKS PENTA

No claim is made to the exclusive use of the word "Penta" apart from the mark as shown. Owner of Reg. Nos. 605,994 and 619,304.
For Fence Posts and Barn Poles.
First use Dec. 15, 1963; Apr. 3, 1954, in a different form.

SN 189,172. Hoffman Tile Mfg. Co., Inc., Ontario, Calif. Filed Mar. 20, 1964.

DECQUA

For Floor, Wall, and Ceiling Ceramic and Clay Tiles for Interior and Exterior Uses.
First use June 25, 1963.

SN 189,717. Morgan Refractories Limited, Neston, England. Filed Mar. 26, 1964.

MORLITE

Owner of British Reg. No. 839,918, dated Oct. 2, 1962.
For Shaped Refractory Furnace Linings, Having Insulating Properties.

SN 189,773. Everdure, Inc., Orange, Va. Filed Mar. 27, 1964.

MAN O' WAR

For Wood Fences and Wood Fencing Materials.
First use May 1960.

SN 190,017. William R. McMurray, d.b.a. Riness Tile Tie, Reseda, Calif. Filed Mar. 31, 1964.

RINESS TILE TIE
"THE TIE THAT BINDS"

The words "Tile" and "Tie" are disclaimed apart from the mark as shown.
For Ties for Roofing Tile.
First use at least as early as 1940.

SN 190,121. The South Dakota Cement Plant, Rapid City, S. Dak. Filed Apr. 1, 1964.

DACOTAH

For Cement and Lime Products—Namely, Portland and Masonry Cements.
First use December 1923.

SN 190,652. The South Dakota Cement Plant, Rapid City, S. Dak. Filed Apr. 8, 1964.

DACOTAH BRAND PORTLAND CEMENT

The words "Portland Cement" and "Brand" are disclaimed apart from the mark as shown.
For Cement and Lime Products—Namely, Portland and Masonry Cements.
First use December 1923.

SN 190,656. The Standard Oil Company, Cleveland, Ohio. Filed Apr. 8, 1964.

DUCTAC

For Rubber Additive for Asphalt Cement.
First use June 24, 1963.

SN 195,591. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Elastomeric Pads Used To Accommodate Expansion of Steel and Concrete Beams in Bridge Construction Insulating Material and Concrete Reinforcing Bars.
First use on or prior to Apr. 7, 1964, on insulating material.

SN 198,413. The Gilman Brothers Company, Gilman, Conn. Filed July 23, 1964.

GILCOTE

For Mooring Buoys, Marker Buoys, and Flotation Cylinders.
First use July 17, 1963.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 176,765. Nukem Products Corporation, Buffalo, N.Y. Filed Sept. 11, 1963.

NU-KAST

For Resinous Pipe, Drains, and Fittings.
First use Feb. 21, 1953.

SN 183,169. Hydro-Line Manufacturing Co., San Leandro, Calif. Filed Dec. 17, 1963.

Flair-Line

For Industrial Pneumatic Cylinders.
First use Nov. 21, 1963.

SN 187,129. Mueller Co., Decatur, Ill. Filed Feb. 20, 1964. Owner of Reg. No. 735,901.

PERFSAFE

For Self-Tapping Service T's Having Automatic Shut-Off Valves Associated Therewith To Prevent Excess Flow of Air, Gas, or Liquids.
First use Dec. 4, 1963.

SN 189,101. Queen Manufacturing Co., Inc., Chicago, Ill. Filed Mar. 19, 1964.

THE TIE SERVER

For Tie Racks for Closets.
First use June 1953.

SN 189,103. Queen Manufacturing Co., Inc., Chicago, Ill. Filed Mar. 19, 1964.

THE SHOE SERVER

For Shoe Racks for Closets.
First use November 1953.

SN 192,427. Philstone Nail Corporation, Hanover, Mass. Filed Apr. 30, 1964.

PHILSTONE

For Nails.
First use Apr. 10, 1964.

SN 194,526. Sloan Valve Company, Chicago, Ill. Filed May 28, 1964.

DOLPHIN

For Flush Valves.
First use May 15, 1964.

SN 194,604. Grinnell Corporation, Providence, R.I. Filed June 1, 1964.

GRINNELL-SAUNDERS

Owner of Reg. No. 406,315.
For Diaphragm Valves.
First use at least as early as 1947.

SN 195,592. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Relief Valves, Safety Valves and Regulating Valves for Controlling Pressure Direction and Volume of Flow of Fluids or Gasses, and Parts of Said Valves for Replacement and Repair; Lavatories; Sinks, Washtubs, Bathtubs and Bathroom Fixtures; Plumbing Fixtures; Shower Receptors and Enclosures; and Fence Posts and Sign Posts.
First use on or prior to Apr. 6, 1964, on lavatories.

SN 197,306. José Jungbecker, d.b.a. Jos. Zimmermann, Aachen, Germany. Filed July 7, 1964.



EISBÄR

Owner of U.S. Reg. No. 632,178.
For Decorative and Upholstery Nails.
First use June 1953; in commerce Dec. 16, 1960.

SN 198,678. Timberland-Ellicott Limited, Woodstock, Ontario, Canada. Filed July 28, 1964.

TWITCHOOK

For Hooks for Cables.
First use July 1, 1963; in commerce Jan. 25, 1964.

SN 198,859. Monovalve Corporation, Houston, Tex. Filed July 30, 1964.

MONO

For Valves.
First use Dec. 17, 1963.

SN 198,977. Republic Steel Corporation, Cleveland, Ohio. Filed July 31, 1964.

FARROWTEST

Owner of Reg. No. 410,252.
For Electrically Tested Metallic Tubing.
First use Apr. 8, 1948.

SN 198,989. Vereinigte Baubeschlag-Fabriken Gretsch & Co., G.m.b.H., Leonberg, Wurttemberg, Germany. Filed July 31, 1964.

GEZE

Owner of German Reg. No. 700,379, dated Feb. 23, 1957.
For Construction Fittings, Door Fittings, Window Fittings, Furniture Fittings, Vehicle Fittings, Sliding Door Fittings, Fittings and Mountings for Sporting Equipment, Ski Bindings, Ski Poles and Cleaning Apparatus for Skis, Locks, Sheet Metal Goods, and Door Closers.

Class 14—Metals and Metal Castings and Forgings

SN 177,416. Gilro Machine & Stamping Company, Oakland, Calif. Filed Sept. 20, 1963.

GILRO

For Metal Stampings.
First use 1911.

SN 184,560. A/S Norsk Jernverk, Oslo, Norway. Filed Jan. 14, 1964.

NORIRON

Owner of Norwegian Reg. No. 53,026, dated Mar. 3, 1959.
For Pig Iron.

SN 195,593. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Ingots, Plate and Sheet Steel; Porcelain Enamel Steel; Formed and Drawn Steel Vehicle Stampings, Including Implement Seats, and Discs for Vehicle Wheels; Merchant Bars Including Round, Square, Flat, Angle and Special Sections; and Structural Steel Tubing.
First use on or prior to Apr. 7, 1964, on merchant bars.

SN 201,711. Magnolia Metal Company, Inc., Auburn, Nebr. Filed Sept. 11, 1964.

PYRAMID

For Lead-Base Babbitt Metal.
First use in or about February 1942.

Class 15—Oils and Greases

SN 173,392. Snowden-Pencer Corporation, Los Gatos, Calif. Filed July 19, 1963.

INSTRUMENT-MILK

For Rust Prevention Lubricant, Such as an Oil and Water Emulsion in Which Surgical Instruments Are Dipped.
First use Oct. 23, 1956.

SN 184,238. Humble Oil & Refining Company, Houston, Tex. Filed Jan. 8, 1964.

TRANSGLIDE

Owner of Reg. Nos. 623,894 and 633,861.
For Transmission Fluids and Lubricating Oils.
First use Aug. 12, 1963.

Class 16—Protective and Decorative Coatings

SN 165,796. The Lubrizol Corporation, Wickliffe, Ohio. Filed Apr. 1, 1963.

STRATABOND

For Organic Phosphate Compositions in the Nature of a Resin or Varnish, for Application to Metal Surfaces To Form a Corrosion Proof Coating.
First use on or before Feb. 6, 1963.

SN 173,986. U.S. Marine Coatings, Inc., Sarasota, Fla. Filed Oct. 10, 1963.

KL-990

For Anti-Fouling Marine Growth Inhibiting Coating Composition.
First use on or about Oct. 31, 1956.

SN 183,607. The Marblette Corporation, Long Island City, N.Y. Filed Dec. 26, 1963.

MARBLETTE MARATHANE

Owner of Reg. Nos. 330,377 and 347,606.
For Protective Coatings Comprising Synthetic Resins.
First use Nov. 18, 1963.

SN 195,594. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.

For Resins for Paints, Enamels, Lacquers and Coating Materials for Waterproofing Fabrics and Paper Materials.

First use on or prior to May 12, 1964.

SN 203,178. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Floor Finish, Paint and Floor Seal.
First use Nov. 1, 1961.

Class 17—Tobacco Products

SN 194,864. The American Tobacco Company, New York, N.Y. Filed June 4, 1964.



Owner of Reg. No. 311,962.
For Smoking Tobacco.
First use August 1963.

SN 194,865. The American Tobacco Company, New York, N.Y. Filed June 4, 1964.

BLUE BOAR

Owner of Reg. No. 311,962.
For Smoking Tobacco.
First use Mar. 10, 1890.

SN 196,804. Reemtsma Cigarettenfabriken G.m.b.H., Hamburg-Othmarsohen, Germany. Filed June 30, 1964.

ATIKAH

Owner of German Reg. No. 398,744, dated Feb. 16, 1929; and U.S. Reg. No. 659,157.
For Cigarettes.

SN 200,319. Arnold Böninger Tabakfabrik G.m.b.H. & Co., Duisburg, Germany. Filed Aug. 21, 1964.

van Doorn

For Crude Tobacco and Tobacco Products—Namely, Pipe Tobacco, Cigars, Cigarettes, and Cigarette Paper.
First use on or about July 1, 1964; in commerce on or about July 1, 1964.

SN 201,666. John Cotton Limited, Edinburgh, Scotland. Filed Sept. 11, 1964.

John Cotton International

Owner of British Reg. No. 848,553, dated May 2, 1963; and U.S. Reg. Nos. 720,872, 726,650, and others.
For Cigarettes, Cigars, and Smoking Tobacco.
First use May 2, 1963; in commerce July 22, 1964.

SN 201,747. Stephano Brothers, Philadelphia, Pa. Filed Sept. 11, 1964.

DAKOTA

For Filter Tip Cigarettes.
First use Sept. 1, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 160,820. Aberdeen Pharmacals Corp., Englewood, N.J. Filed Jan. 17, 1963.

COLSPAN

For Pharmaceutical Preparation Designed To Provide Antihistiminic Decongestant Relief From Colds and Hay Fever.
First use Dec. 19, 1962.

SN 197,211. U.S. Ethicals Inc., Long Island City, N.Y. Filed July 6, 1964.

ETNACYCLIN

Owner of Reg. Nos. 734,474, 734,825, and 756,326.
For Pharmaceutical Preparation—Namely, an Antibiotic.
First use July 3, 1964.

SN 197,937. American Home Products Corporation, New York, N.Y. Filed July 16, 1964.

DUO-PAK

For Combination Package Containing Pharmaceutical Preparations for Initial and Subsequent Therapy.
First use June 25, 1964.

Class 19—Vehicles

SN 181,840. Arnold, Schwinn & Co., Chicago, Ill. Filed Nov. 26, 1963.

SPRINT

For Bicycles and Parts and Accessories Therefor—Namely, Derailleur Assemblies Comprising Levers, Cables, Pulleys, and Front Changers, Multi-Speed Changer Levers, Cable Guides, Cable Clamps, Quick-Release Hubs, Brake Assemblies, Bicycle Carriers, Handlebars, Handlebar Grips, Handlebar Stems, Chain Guards, Bicycle Saddles and Saddle Covers, and Pedals.
First use Oct. 18, 1963.

SN 183,011. AB Bygg- Och Transportekonomi, Stockholm, Sweden. Filed Dec. 16, 1963.

BT

Owner of Swedish Reg. No. 102,515, dated Apr. 6, 1962.
For Trucks and Other Vehicles and Parts Therefor.

SN 192,089. The Snyder Trailer Company, Butler, Ohio. Filed Apr. 27, 1964.

VOYAGER

For Automobile Trailers—Namely, Travel and Camping Trailers.
First use January 1960.

SN 192,090. The Snyder Trailer Company, Butler, Ohio. Filed Apr. 27, 1964.

BON VOYAGE

For Automobile Trailers—Namely, Travel and Camping Trailers.
First use Apr. 1, 1964.

SN 192,179. Industrial Shipping Company Limited, Mahone Bay, Nova Scotia, Canada. Filed Apr. 28, 1964.

MOUETTE

The French word "Mouette" translated is "sea gull."
For Sailing Yachts.
First use October 1963; in commerce October 1963.

SN 195,595. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.

For Power and Manually Actuated Brakes for Vehicles, Vehicle Radiators, Seat Belt Retractors, Vehicle Seat Belts and Buckles, Disc Wheels for Vehicles, Automobile Springs, Steering Column Mechanisms, Vehicle Hitches, Bumper Assemblies, and Brakes and Brake Assemblies for Vehicles.

First use on or prior to Mar. 16, 1964, on seat belt retractors.

Class 20—Linoleum and Oiled Cloth

SN 180,266. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Nov. 1, 1963.

Amtico

BOLERO

Owner of Reg. Nos. 385,013 and 773,995.
For Vinyl Flooring.
First use Oct. 9, 1963.

SN 180,267. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Nov. 1, 1963.

Amtico

NOB HILL

Owner of Reg. Nos. 385,013 and 773,995.
For Vinyl Flooring.
First use Oct. 14, 1963.

SN 180,268. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Nov. 1, 1963.

Amtico

PETITE PEARL

Owner of Reg. Nos. 385,013, 689,050, and 773,995.
For Vinyl Flooring.
First use Oct. 14, 1963.

SN 182,024. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Nov. 29, 1963.

Amtico

FOOTLITE

Owner of Reg. Nos. 385,013 and 773,995.
For Vinyl Flooring.
First use Nov. 1, 1963.

SN 191,055. Kentile Floors Inc., Brooklyn, N.Y., by change of name from Kentile, Inc., Brooklyn, N.Y. Filed Apr. 14, 1964.

GRAVURA

For Vinyl Tile.
First use Feb. 5, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 178,102. Cerro Corporation, New York, N.Y. Filed Oct. 1, 1963.

ROCKTHERM

Owner of Reg. No. 517,487.
For Silicone Rubber Insulated Wires and Cables.
First use Sept. 13, 1963.

SN 178,540. Federal Pacific Electric Company, Newark, N.J. Filed Oct. 8, 1963.

LI-TROL

For Electric Illumination Control Systems.
First use at least as early as November 1962.

SN 179,522. Elgin National Watch Company, Elgin, Ill. Filed Oct. 22, 1963.

ELGIN

Owner of Reg. No. 47,470.
For Electrical Apparatus—Namely, Radios, Electric Clocks, and Radio-Electric Clock Combinations.
First use on or about Aug. 16, 1963.

SN 182,759. Aquariums Incorporated, Maywood, N.J. Filed Dec. 11, 1963.



For Electric Lamps and Lamp Fixtures for Aquariums.
First use June 28, 1963.

SN 184,661. Southwire Company, Carrollton, Ga. Filed Jan. 15, 1964.



For Electric Conductor Jacketing Compounds and Finished Wire and Electric Cable Products.
First use Mar. 26, 1963.

SN 184,662. Southwire Company, Carrollton, Ga. Filed Jan. 15, 1964.

VIP

For Electric Conductor Jacketing Compounds and Finished Wire and Electric Cable Products.
First use Mar. 26, 1963.

SN 186,105. Merchants Buying Syndicate, Inc., New York, N.Y. Filed Feb. 5, 1964.



For Electric Blankets.
First use June 1963.

SN 195,596. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Electric Motors, Power Supplies, Static Inverters, Frequency Changers, Alternators, Pressure Switches, Electric Water Heaters, Electric Ranges, Switches, Metal Cabinets for Electronic Apparatus, Vehicle Ignition and Electrical Systems and Parts Thereof for Replacement and Repair, and Electric Motor Controls.
First use on or prior to Mar. 4, 1964, on electric ranges.

SN 197,447. Union Carbide Corporation, New York, N.Y. Filed July 8, 1964.

SUPREX

For Arc Carbons.
First use on or about Feb. 2, 1934.

SN 197,980. Perry Laboratories, Buffalo, N.Y. Filed July 16, 1964.

PRIVA-COM

For Frequency Selective Signaling Apparatus.
First use Mar. 19, 1963.
Subj. to Intf. with SN 190,624.

SN 198,385. Tung-Sol Electric Inc., Newark, N.J. Filed July 22, 1964.



Owner of Reg. No. 767,477.
For Sealed Beam Head Lamps.
First use June 24, 1964.

SN 198,414. Golden Shield Corporation, Batavia, N.Y. Filed July 23, 1964.

ASTRO MAID

For Electrical Appliances—Namely, Vacuum Cleaners, Blenders, Mixers, Toasters, Coffee Makers, and Can Openers and Knife Sharpeners.
First use June 16, 1964.

SN 198,755. Meinecke & Company, Inc., Cockeysville, Md. Filed July 29, 1964.

HAEMO-SONIC

Owner of Reg. Nos. 402,007, 639,113, and 670,380.
For Multi-Frequency Ultrasonic Electrical Apparatus for Cleaning Surgical and Laboratory Equipment, Instruments and Accessories.
First use November 1963.

SN 199,789. Celco, Mahwah, N.J. Filed Aug. 13, 1964.

DEFLECTRON

For Deflectron Yokes for the Control of Electron Beams in Cathode Ray Tubes.
First use August 1961.

Class 22 — Games, Toys, and Sporting Goods

SN 165,912. Ed-U-Cards Manufacturing Corporation, Long Island City, N.Y. Filed Apr. 2, 1963.

LEARNING LADDERS

For Educational Aids and Games—Namely, Boards, Cards, Books, and Playing Pieces.
First use August 1962.

SN 167,333. Spin-A-Bowl, Inc., Seattle, Wash. Filed Apr. 22, 1963.

SPIN A-BOWL

For Apparatus Sold as a Unit for Playing a Parlor-Type Bowling Game.
First use Apr. 10, 1963.

SN 179,963. Turco Manufacturing Co., Duquoin, Ill. Filed Oct. 28, 1963.

ORBI-TWIRL

For Children's Self-Propelled Round-A-Bouts.
First use Oct. 14, 1963.

SN 180,752. Manson Metal Sales, Inc., Reading, Pa. Filed Nov 8, 1963.



For Barbells.
First use Aug. 5, 1963.

SN 189,789. Mattel, Inc., Hawthorne, Calif. Filed Mar. 27, 1964.

ALLAN

For Boy Doll.
First use Jan. 17, 1964.

SN 189,852. Atlantic Lures, Inc., Providence, R.I. Filed Mar. 30, 1964.

RINNOW

For Fishing Lures.
First use Jan. 29, 1964.

SN 190,336. Clark Publishing Company, Evanston, Ill. Filed Apr. 6, 1964.



For Mediumistic Message Board and Planchette.
First use on or about Sept. 20, 1963.

SN 190,909. John D. English, Denver, Colo. Filed Apr. 13, 1964.

GREENIE BEANIE

The terminal word feature "Beanie" is disclaimed apart from the mark as shown.
For Children's Hats That Grow Grass.
First use on or about Jan. 5, 1964.

SN 191,091. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Apr. 14, 1964.

WISPY WALKER

The word "Walker" is disclaimed apart from the mark as shown.
For Dolls.
First use Mar. 9, 1964.

SN 191,278. General Recreation Industries, Inc., Minneapolis, Minn. Filed Apr. 16, 1964.

SNUGGLER

For Sleeping Bags for Outdoor or Campers or Similar Recreational Use.
First use Oct. 5, 1963.

SN 192,088. Standard Packaging Corporation, New York, N.Y. Filed Apr. 27, 1964.

MAVERICK

For Playing Cards.
First use Oct. 2, 1963.

SN 192,581. Fli-Back Company, Inc., High Point, N.C. Filed May 4, 1964.

PINEHURST

For Hand and Wrist Strengthening Exercise Balls.
First use Apr. 1, 1964.

SN 192,775. William L. Windsor, d.b.a. Micro-Line Company, Pacific Palisades, Calif. Filed May 5, 1964.

MICRO-LINE

For Golf Clubs.
First use Apr. 10, 1964.

SN 192,844. Emilio Parrella, d.b.a. Emilio Parrella Co., Medway, Mass. Filed May 6, 1964.

PARAMOUNT

For Bowling Balls.
First use Mar. 3, 1964.

SN 193,046. Michael P. Rokos and Marie I. Rokos (partnership), Oak View, Calif. Filed May 8, 1964.

BONANZA

For Fishing Lures.
First use on or before Apr. 15, 1964.

SN 193,070. Victor Comptometer Corporation, Chicago, Ill. Filed May 8, 1964.

COMMANDER

For Golf Balls and Golf Clubs.
First use Apr. 15, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 179,094. ALD, Inc., Chicago, Ill. Filed Oct. 16, 1963.

SOFSPRA

For Automatic Coin-Operated Car Wash Equipment and Parts Therefor.
First use Sept. 8, 1963.

SN 181,916. Oteco Equipment Co., Houston, Tex. Filed Nov. 26, 1963.

FLEX-A-COIL

For Swab and Packer Cups for Use in Oil and Gas Wells.
First use at least as early as Oct. 14, 1963.

SN 182,069. Ferraloy, Inc., Salem, Ind. Filed Nov. 29, 1963.

FERRALOY

For Gears, Cams, Bushings, Bearings, and Filters and Finished and Partly Finished Shapes and Bodies Made of Powdered Metals.
First use June 15, 1954.

SN 182,877. Hughes Tool Company, Houston, Tex. Filed Dec. 12, 1963.

RAM-BLAST

For Rock Bits.
First use Oct. 29, 1963.

SN 184,514. Sanders Associates, Inc., Nashua, N.H. Filed Jan. 13, 1964.



The drawing is lined for red, but no claim is made to color.
For Hydraulic Servo Mechanisms Which Provide Fluid Flow Control.
First use Nov. 21, 1963.

SN 185,905. Lamina, Inc., Oak Park, Mich. Filed Feb. 3, 1964.

HYDRA-DRILL

For Machine Tools, Specifically, Portable Rotary Drilling Appliances.
First use on or about Nov. 1, 1963.

SN 188,995. Mitsubishi Electric Corporation, Chiyoda-ku, Tokyo, Japan. Filed Mar. 18, 1964.

MITSUBISHI

Owner of Japanese Reg. No. 493,406, dated Dec. 14, 1956.
For Sewing Machines.

SN 190,923. Hartman Metal Fabricators, Inc., Waterloo, N.Y. Filed Apr. 13, 1964.

ACCESS

For Remotely Controlled Apparatus for Storing Articles on and Removing Them From Storage Racks Including Remote, Electrically Operated Control for Governing the Direction and Extent of Movement of the Crane Used in Transporting the Articles.
First use Apr. 6, 1964.

SN 191,403. Samuel M. Langston Company, Camden, N.J. Filed Apr. 16, 1964.

SHEETMASTER

For Rotary Cutoff Machines for Sheeting Paperboard and for Paper Mill Equipment.
First use Aug. 19, 1963.

SN 191,844. Duquesne Mine Supply Company, Pittsburgh, Pa. Filed Apr. 23, 1964.



For Trolley Splicers, Trolley Sliders, Cable Splicers, Frogs, Switches, Cable Hooks, Trolley Taps, Fuse Cable Protectors, Fuses, Electrical Pliers, Bolts and Other Types of Fasteners, Brake Bar Bushings and Pins, Mine Car Pins, Mine Car Links, Mine Jack Equipment, Rail and Track Accessories, Forged Hand Tools and Mining Machinery Replacement Parts.
First use Nov. 23, 1963.

SN 193,182. A. F. Klinsing Co., Inc., Milwaukee, Wis. Filed May 11, 1964.

AGRO-MATIC

For Farm Machinery and Agricultural Implements—Namely, Conveyors, Distributors, Stock Waterers, Cattle Restrainers, and Accessories Therefor.
First use on or about Apr. 23, 1964.

SN 193,461. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed May 14, 1964.

SAPHIR

Owner of Reg. No. 515,255.
For Pencil and Lead Sharpeners, and Replacement Single and Double Edged Blades for Same.
First use February 1931.

SN 193,670. Marvin P. Harrigan, Franklin Park, Ill. Filed May 18, 1964.

COOL COOK

For Cooking Utensil in the Nature of a Ladle or Spoon.
First use Apr. 21, 1964.

SN 195,597. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546 and 761,183, and others.
For Vehicle and Industrial Clutches and Parts; Power Take-Off Assemblies; Torque Control Mechanisms; Gear Reduction Assemblies; Vehicle Transmission Systems; Universal Joints; Drive Shaft Assemblies; Timing Belts; Flexible Couplings; Propeller Shafts; Torque Converters; Bearings; Gear Boxes; Gears; Clutch Discs; Clutch Facings; Chain and Sprocket Drive Mechanisms; Clutch Springs; Overdrive and Synchroniser Units for Transmissions and Industrial Uses; Power Drive Mechanisms; Differentials; Mechanical Transfer Drives for Vehicles and Machinery; Control Units for Transmissions; Fluid Drive Systems; Brakes and Brake Assemblies for Industrial Machinery; Carburetors and Parts; Superchargers; Compressors; Timing Gear Mechanisms; Timing Chains; Cylinder Heads; Torsional Vibration Dampers; Valve Stem Oil Deflectors; Agricultural Implements and Machinery; Shovels; Spades; Hand Operated Scoops; Discs for Agricultural Machines and Implements Including Plow Discs, Harrow Discs, Seeder Discs, Coulter Blades, Pressed Steel Implement Wheels and Tapered Discs for Wheels; Plows and Plowshares, Mold Boards and Coulters; Harrows, Rakes, Seeders, Hoes; Hand Saws; Power Saws; Saw Chain; Saw Blades; Files; Rasps; Machine Tools; Vehicle Washers; Mechanical Seals; Lapping Machines; Springs; Hydraulic Drive Mechanisms; Hydraulic Motors; Hydraulic Cylinders; Hydraulic and Pneumatic Apparatus for Aircraft and Guided Missiles; Hydraulic Couplings and Fluid Drive Wheels for Drive Wheel Transmissions; Hydraulic Accumulators; Pumps; Vacuum Pumps; Centrifugal and Turbine Pumps for Agriculture, Municipal Water Supply, Utilities, Petroleum, Chemical Cryogenic and Nuclear Applications and General Industry; Oil Well Tools and Products—Namely, Hooks, Links, Gas Separators, Elevator Tongs, Casing Tongs, Well Cementing and Acidizing Equipment; Axial Flow Fans; Garbage Disposal Units; Dishwashers; Oil Coolers; Operators' Seats for Farm Vehicles; Water Lubricated Marine Rubber Bearing; and Oil Well Drill Pipe Wipers and Protectors.
First use on or prior to Mar. 4, 1964, on dishwashers.

SN 197,551. Forgedtrue Piston Corporation, Pasadena, Calif. Filed July 10, 1964.

FORGEDTRUE

For Pistons for Use in Internal Combustion Engines for Motor Vehicles.
First use 1945.

SN 200,388. Tap-A-Keg Co., Chicago, Ill. Filed Aug. 21, 1964.

HOME TAP

For Dispensing Device for Drawing Liquids From Containers.
First use Aug. 5, 1964.

SN 200,626. Cambridge Scientific Industries, Inc., Cambridge, Md. Filed Aug. 26, 1964.

VIBRAZOR

For Electric Razor.
First use July 21, 1964.

SN 200,904. Bostitch, Inc., East Greenwich, R.I. Filed Aug. 31, 1964.

B12

Owner of Reg. Nos. 588,798 and 590,029.
For Wire Stitching and Stapling Machines and Parts Thereof.
First use Jan. 2, 1959.

SN 200,964. Orendorff Manufacturing Company, Los Angeles, Calif. Filed Aug. 31, 1964.

ORMCO

For Ground Working Implements for Agricultural and Construction Equipment—Namely, Buckets, Scrapers, Ditcher Blades, Rippers, Scarifiers, Grader Blades, Digging Teeth, Tooth Shanks, Digging Shovels, Plows, Chisels, Agricultural Sweeps, Bed Knives, Tines, Tool Bar Clamps, Tool Bar Spacers, Grain Drill Shoes, Cultivator Standards, Supporting Racks for Agricultural Sweeps, Furrowers, and Gauge Wheels.
First use October 1957.

SN 201,749. Stoeger Arms Corporation, South Hackensack, N.J. Filed Sept. 11, 1964.

ZEPHYR

For Hunting Knives.
First use July 15, 1956.

SN 202,108. Simonds Saw and Steel Company, d.b.a. The Atrax Company, Newington, Conn. Filed Sept. 17, 1964.

Atrax

Owner of Reg. No. 756,383.
For Boring and Grinding Tools.
First use January 1956.

SN 202,410. Bryant Chucking Grinder Co., Springfield, Vt. Filed Sept. 23, 1964.

CENTA-FORM

For Machine Tool Grinders.
First use Apr. 30, 1964.

SN 202,499. J. C. Penney Company, New York, N.Y. Filed Sept. 23, 1964.

PENNCRAFT

For Hammers, Braces, Levels, Saws, Drills, Chisels, Mitre Boxes, Saw Sets, Saw Horse Brackets, Axes, Hatchets, Vises, Screw Drivers, Planes, Lining-Up Bars, Bevels, Marking Gauges, Tape Rules, Chalk Line Reels, Plumb Bobs, Utility Knives, Clamps, Tack Claws, Bits and Squares.
First use June 8, 1964.

SN 202,756. J. P. Burroughs & Sons, Inc., Saginaw, Mich. Filed Sept. 28, 1964.

TURN TUFF

For Rolls for Use in Grain Roller Mills, Spice and Experimenting Mills, Cracking Mills, Flaking and Flour Mills, Bean Cracking Mills, Grain Crimping and Steamers.
First use January 1958.

SN 202,776. Curtis Industries, Inc., Eastlake, Ohio. Filed Sept. 28, 1964.

FMD

For Accessory Fixtures for Key-Cutting Machines.
First use Aug. 21, 1964.

SN 202,801. Imperial International Corp., New York, N.Y. Filed Sept. 28, 1964.

ROSEDAWN

For Stainless Steel Flatware.
First use June 1, 1964.

SN 203,139. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

CAMBRIDGE

For Lawn Mowers.
First use Apr. 13, 1960.

SN 203,140. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

AMHERST

For Lawn Mowers.
First use Apr. 13, 1960.

SN 203,141. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

UNIVERSITY PARK

For Lawn Mowers.
First use Apr. 13, 1960.

SN 203,142. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

WESTMINISTER

For Lawn Mowers.
First use Apr. 13, 1960.

SN 203,145. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

MT. VERNON

For Lawn Mowers.
First use Apr. 13, 1960.

Class 24 — Laundry Appliances and Machines

SN 195,598. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Laundry Equipment—Namely, Washing Machines and Dryers; Coin Operated and Commercial Laundry and Dry Cleaning Equipment, Consisting of Washers, Dryers, Dry Cleaning Machines, Extractors, Filter Sludge Reclaimers, Solvent Reclaimers, Pressers, and Parts Thereof for Replacement and Repair.
First use on or prior to Mar. 3, 1964, on gas dryers.

SN 202,171. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Sept. 18, 1964.

REVOLON

Owner of Reg. Nos. 356,941, 679,965, and 681,124.
For Nylon Covers for Laundry Press Pads.
First use May 20, 1958.

Class 26 — Measuring and Scientific Appliances

SN 165,447. Technical Measurement Corporation, North Haven, Conn. Filed Mar. 26, 1963.

MNEMOTRON

For Electronic Computers.
First use May 4, 1961.

SN 172,507. Meopta, Narodni Podnik, Prerov, Czechoslovakia. Filed July 5, 1963.

meopta

Owner of Czechoslovakian Reg. No. 154,963, dated Jan. 17, 1962; and U.S. Reg. Nos. 535,968, 535,969, and 670,580.
For Cameras and Parts Thereof; Aero-Cameras; Motion-Picture Cameras and Projectors; Lantern, Film Slide and Stereoscopic Projectors; Photographic Developing, Printing, and Retouching and Enlarging Apparatus, and Parts Thereof; Photographic Exposure Measuring Instruments; Optical View Finders, Shutters; Photogrammetric Instruments and Parts Thereof; Electrically Controlled, Weighting and Assorting Apparatus; Mechanical Drawing Instruments and Apparatus; Slide Rules; Talking Picture Machines; Phonometers; Phonophones; Phonoscopes; Phonophotoscopes; Phonotelemeters; Tonometers; Tonographs; Tonoscopes; Stroboscopes; Photogrammeters; Graphometers; Heliographs; Heliometers; Photometers; Photopitometers; Photoptometers; Photoscopes; Photosyntheometers; Phototelegraphs; Microscopes; Microtomes; Telescopes; Periscopes; Collimators; Telescopic Sights; Optical Sights for Guns and Firearms; Telescopic Bomb Sights; Ballistic Instruments; Speedometers; Speed Recorders; Tachometers; Anemometers; Telemeters; Laboratory Chronographs Used To Graphically Indicate Data; Altimeters; Range Finders; Aerotachometers; Aerocartographers; Chromoscopes; Colorimeters; Polarimeters; Polariscopes; Spectrometers; Spectroscopes; Spectrographs; Refractometers; Interferometers; Spherometers; Compasses; Stereoscopes; Stereoscopic Comparators; Stereotachographs; Stereoplanigraphs; Triangulators; Theodolites; Sextants; Octants; Goniometers; Weather Indicators; Barometers; Seismographs; Height Measuring Instruments; Wind Direction Indicators; Wind Velocity Measuring Apparatus; X-Ray Machines for Measuring and Scientific Purposes; Alcoholometers; Titration Apparatus; Analytical Weighting and Measuring Instruments; Balances; Scales; Dimensional Gauges, Water Gauges, Pressure Gauges and Parts Thereof; Calipers; Calipering Instruments and Parts Thereof; Thermometers; Thermostats; Thermostatic Valves; Temperature Responsive Electrical Switches; Hydrometers; Galvanometers; Voltmeters; Amperemeters; Wattmeters; Potentiometers; Gyroscopes; Gyrometers; Gyrographs; Gyrostabilizers; Glassware for Laboratory Use; Optical Lenses; Magnifying Glasses; Spectacles; Goggles; Field, Marine and Opera Glasses; Prisms; Glass and Metallic Mirrors for Laboratory Use; Parabolic, Concave and Convex Reflectors and Ophthalmoscopes; Light Absorbing Filters; Colored Glass Screens for Optical and Photographic Apparatus; Light Measuring Apparatus; Glare Reducing Lenses; Optical Filters and Screens.

SN 178,299. Radio Electronics Corporation, New York, N.Y. Filed Oct. 3, 1963.

communitype

For Telecommunications Equipment Comprising an Electric Typewriter Plus Transistorized Circuitry and Magnetic Tape Transport Utilizing Coded Pulses for Transmission and Reception.
First use November 1961.

SN 180,724. Foster Grant Co., Inc., Leominster, Mass. Filed Nov. 8, 1963.

OPTI SLIP-ON

No registration rights are claimed for the term "Slip-On" apart from the mark shown; but the applicant waives none of the common law rights in the mark shown or any feature thereof. Owner of Reg. Nos. 615,752 and 666,855.
For Sunglasses of the Clip-On Type and Sunglass Carrying Cases.
First use Apr. 1, 1963.

SN 181,645. Instruments, Inc., Tulsa, Okla. Filed Nov. 21, 1963.

ANOD

For System for Measuring the Amounts of Oil and Water in Liquids Produced From an Oil Well.
First use on or about Nov. 26, 1962.

SN 182,418. General Electric Company, Pittsfield, Mass. Filed Dec. 5, 1963.

DIREK READ

For Capacitance Bridges.
First use on or about Mar. 15, 1963.

SN 182,419. General Electric Company, Pittsfield, Mass. Filed Dec. 5, 1963.



For Capacitance Bridges.
First use on or about Mar. 15, 1963.

SN 188,007. Estimatic Corporation, Denver, Colo. Filed Mar. 5, 1964.

ESTIMAT

Owner of Reg. No. 670,024.
For Electronic Machine for Counting and Measuring Items.
First use on or about Apr. 15, 1962.

SN 189,234. Compudyne Corporation, Hatboro, Pa. Filed Mar. 10, 1964.

CompuDyne

For Automatic Process Control Systems Functioning Responsively to Fluctuations of Varying Magnitude of a Condition Such as Temperature, Pressure, Flow Positioning, Weighing of Materials, Electrical Energy, Time, etc., for Use in Chemical, Utility, Mining, Pulp and Paper, Petroleum, Metal and Fuel Processing, Aeronautical and Aerospace Testing Facilities, and Kindred Subject Matter.
First use Aug. 22, 1956.

SN 190,139. Ilford, Limited, Ilford, Essex, England. Filed Mar. 31, 1964.

ILFOPRINT

Owner of British Reg. Nos. 834,768, dated May 17, 1962, and 849,199, dated May 16, 1963; and U.S. Reg. Nos. 757,287 and 758,084.

For Films, Plates and Papers, All Being Sensitized and All Being for Photographic Purposes, and Photographic Apparatus and Instruments and Parts Thereof.

SN 193,002. Gregory S. Dolgorukov, d.b.a. Dolgorukov Manufacturing Company, Detroit, Mich. Filed May 8, 1964.



DOLGORUKOV
DETROIT

Applicant disclaims the word "Detroit" apart from the trademark.

For Drafting Instruments and Drafting Supplies—Namely, Lettering Guides and Lettering Instruments, Drafting Triangles, Irregular Curves and Sweeps, Drafting Templates, T-Squares, Drafting Pads or Tablets, Straight Edges, Drafting Machine Edges and the Like.

First use on or about Nov. 27, 1951.

SN 193,091. Art-Craft Optical Company, Inc., Rochester, N.Y. Filed May 11, 1964.

FASHION LADY

Owner of Reg. Nos. 663,443, 746,891, and others.

For Ophthalmic Mountings and Parts Thereof.

First use Jan. 27, 1964.

SN 194,084. Union Carbide Corporation, New York, N.Y. Filed May 22, 1964.

UNION CARBIDE

For Lasers and Laser Systems, and Accessory Equipment Therefor.

First use on or about Aug. 16, 1963.

SN 195,599. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.

For Volt-Ohm Meters, Voltmeters, Transducers for Measuring Pressures and Other Scientific Applications, Data Handling Systems—Namely, Magnetic Tape Recorders and Reproducers, Tape Printers and Punchers and Photoelectric Tape Recorders, Ignition Testers, Tape Recorders for Scientific Purposes, Accelerometers and Parts Thereof for Replacement and Repair, Control Rod Drive Mechanisms for Nuclear Power Plants, Apparatus for Testing Optical Flats; and Signaling Drift Indicators.

First use on or prior to Mar. 23, 1964, on ignition testers.

SN 197,044. Bloomingdale Instruments, Inc., Hicksville, N.Y. Filed June 26, 1964.

NUMERCOM

For Electronic Equipment for Furnishing and Displaying Information, Such as Race Tarck Odds, Football Results, and Airport Information, Such as Time Scheduling, and for Similar Purposes for Reading Like Information.

First use Feb. 2, 1964.

SN 197,150. Maxson Electronics Corporation, Great River, N.Y. Filed July 6, 1964.

FERMAX

For Radio Energy Receivers, in Particular Battery Powered, Portable Radar Receivers.

First use Apr. 27, 1964.

SN 197,660. Bendix-Blasers Vacuum, Inc., Rochester, N.Y. Filed July 13, 1964.

EXHALOGRAPH

For Vacuum Gas Analysis Apparatus.

First use May 12, 1964.

SN 197,752. Nuclear-Chicago Corporation, Des Plaines, Ill. Filed July 13, 1964.

NANOLYZER

For Electronic Apparatus for Pulse Height Analysis.

First use June 19, 1964.

SN 197,841. Ostradyne, Inc., New Haven, Conn. Filed July 14, 1964.

OSTRADYNE

For Dynamometers for Vehicle and Engine Testing.

First use Feb. 13, 1963.

SN 197,896. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 15, 1964.

TIDAX

For Recorder and Reproducer of Electronic Signals for Telemetric Use.

First use June 2, 1964.

SN 198,030. Cole National Corporation, Cleveland, Ohio. Filed July 17, 1964.

VITA-LITE

For Plastic Lenses for Eyeglasses.

First use on or about May 15, 1964.

SN 198,412. The General Gilbert Corporation, Winsted, Conn. Filed July 23, 1964.

CRED-O-MATIC

For Calculating Devices—Namely, Adding Machines and Parts Thereof.

First use on or about May 15, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 194,644. Velva L. Owen, d.b.a. Sunshine Lapidary Service, Tucson, Ariz. Filed June 1, 1964.



For Semi-Precious Gem Stones.

First use on or about Jan. 15, 1964.

SN 196,619. Chains Unlimited, Inc., New York, N.Y. Filed June 29, 1964.



For Neck Chains, Ankle Chains, and Pendants.

First use Feb. 21, 1964.

SN 202,357. Coro Incorporated of Rhode Island, Providence, R.I. Filed Sept. 22, 1964.

ANTIQUITA

For Jewelry.

First use June 15, 1964.

SN 202,474. Hamilton Watch Company, Lancaster, Pa. Filed Sept. 23, 1964.

SPANISH LACE

For Sterling Silver Flatware.

First use Aug. 7, 1964.

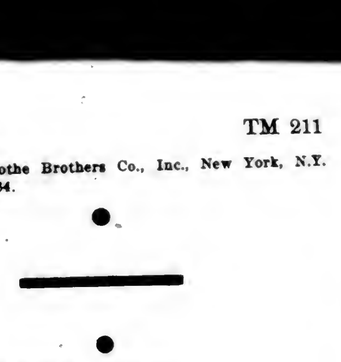
SN 202,859. Star of Siam, Lakewood, Calif. Filed Sept. 28, 1964.



For Jewelry and Precious, Semi-Precious, and Manufactured Stones.

First use Sept. 1, 1964.

SN 203,187. Knothe Brothers Co., Inc., New York, N.Y. Filed Oct. 2, 1964.



For Belt Buckles Made of Precious Metal.

First use Sept. 17, 1964.

SN 203,285. James H. Hall Co., Inc., Providence, R.I. Filed Oct. 5, 1964.

YANKEE SILVERSMITHS

For Costume Jewelry.

First use on or about Aug. 29, 1964.

SN 203,291. Hedison Corp., Providence, R.I. Filed Oct. 5, 1964.



For Lapel Pins, Earrings, Necklaces, Bracelets, Tie Tacks, Cuff Links, Tie Slides, Charms, and Religious Jewelry.

First use May 21, 1964.

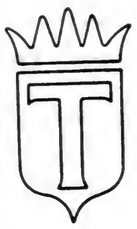
SN 203,371. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed Oct. 6, 1964.

marquise MAGIC

For Diamond Rings.

First use on or about June 1, 1964.

SN 203,445. Towle Manufacturing Company, Newburyport, Mass. Filed Oct. 6, 1964.



Owner of Reg. No. 47,551.

For Silver Plated Hollowware.

First use Sept. 23, 1964.

Class 29 — Brooms, Brushes, and Dusters

SN 186,306. Zimmerman Brush Works, Inc., Chicago, Ill. Filed Feb. 7, 1964.

SATIN TIP

For Hand Operated Industrial Brushes.
First use Jan. 10, 1964.

SN 202,224. Briardale Co., Richmond, Calif. Filed Sept. 21, 1964.

BRIARDALE

For Brooms.
First use about January 1945.

SN 202,225. Briardale Co., Richmond, Calif. Filed Sept. 21, 1964.

WESTLAKE

For Brooms.
First use about January 1945.

Class 30 — Crockery, Earthenware, and Porcelain

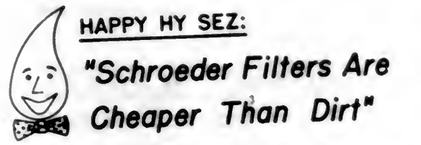
SN 185,924. Nichimen Co., Inc., New York, N.Y. Filed Feb. 3, 1964.



Applicant disclaims the word "China" apart from the mark as shown.
For Chinaware—Namely, Plates, Cups, Saucers, Platters, and Other Dinnerware Items.
First use Apr. 15, 1963.

Class 31 — Filters and Refrigerators

SN 149,879. Schroeder Brothers Corporation, McKees Rocks, Pa. Filed July 26, 1962.



For Filters and Filter Elements for Hydraulic Systems.
First use Feb. 23, 1962.

SN 181,913. Michigan-Dynamics, Inc., Detroit, Mich. Filed Nov. 26, 1963.

TWIN WARP

For Wire Cloth Used as Filtering Media in Strainers.
First use July 16, 1963.

SN 195,600. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Refrigerating Equipment for Domestic and Industrial Use—Namely, Ice Making Machinery, Freezers, and Refrigerators.
First use on or prior to Mar. 3, 1964, on refrigerators.

Class 32 — Furniture and Upholstery

SN 184,791. Butler Industries, Inc., Newark, N.J. Filed Jan. 17, 1964.

BUTLER

For Display Stands and Racks and Material Handling and Storage Equipment for Goods and Articles of Merchandise Such as Books, Magazines, Greeting Cards, Phonograph Records, Wearing Apparel, and the Like.
First use August 1958.

SN 192,602. Lewisburg Chair and Furniture Corporation, Lewisburg, Pa. Filed May 4, 1964.

PENNSYLVANIA HOUSE

Owner of Reg. No. 728,998.
For Chairs, Settees, Tables, Beds, Mirrors, Desks, General Living Room, Dining Room, and Bedroom Furniture.
First use July 1, 1940.

SN 195,601. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.



The drawing is lined for the color red but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Cabinets and Parts—Namely, Cabinet Frames, Panels, Drawers, Doors and Case and Cradle Sides; Tables, Chairs, Bar Stools, Outdoor Furniture, Hospital Room Cabinets, Chests, Chairs, Dressers and Tables.
First use on or prior to June 8, 1964.

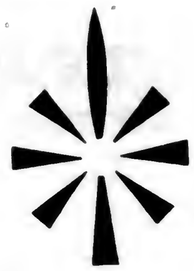
SN 203,179. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Mattresses and Box Springs, Pillows, Living Room Furniture, Bedroom Furniture, Mirrors, and Occasional Tables.
First use Jan. 1, 1961.

Class 33 — Glassware

SN 164,216. Corning Glass Works, Corning, N.Y. Filed Mar. 8, 1963.



For Glass-Ceramic and Semicrystalline Culinary Vessels and Utensils.
First use on or about Mar. 1, 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 149,827. Ray Eberhart, Mishawaka, Ind. Filed July 26, 1962.

Heat General

For Heaters for Mobile Homes, Trailers and the Like.
First use June 1962.

SN 174,599. McGraw-Edison Company, Milwaukee, Wis. Filed Aug. 7, 1963.

THOMPSON

For Gas Space Heaters and Parts Therefor.
First use at least as early as Oct. 1, 1930.

SN 184,515. Sanders Associates, Inc., Nashua, N.H. Filed Jan. 13, 1964.



The drawing is lined for red, but no claim is made to color.
For Electric Blowers Which Provide a Discharge of Air To Cool Heat Emanating Mechanisms.
First use Dec. 10, 1963.

SN 186,906. Tenex Corporation, Houston, Tex. Filed Feb. 17, 1964.

TENEX

For Inert Gas Generation Systems.
First use Jan. 4, 1964.

SN 193,476. Leslie Welding Co., Inc., Franklin Park, Ill. Filed May 14, 1964.

PLAS-T-VENT

For Roof Ventilators.
First use Mar. 3, 1964.

SN 193,477. Leslie Welding Co., Inc., Franklin Park, Ill. Filed May 14, 1964.

PLAS-T-RIDGE

For Roof Ridge Ventilators.
First use Apr. 23, 1964.

SN 194,385. Hardwick Stove Company, Cleveland, Tenn. Filed May 27, 1964.

OCCIDENTAL

For Gas and Electric Ranges.
First use May 7, 1964.

SN 194,760. Vanadium-Alloys Steel Company, Latrobe, Pa. Filed June 2, 1964.

REDI-WELD

For Alloy Steel Welding Wire.
First use May 13, 1964.

SN 195,903. Vapor-Vane, Inc., Peekskill, N.Y. Filed June 17, 1964.



Applicant disclaims the wording "Decreased Fuel Consumption" and "Increased Boiler Efficiency" apart from the mark as shown.
For Oil Burner Attachments To Increase Air Turbulence.
First use Apr. 15, 1964.

SN 195,953. The McKay Company, Pittsburgh, Pa. Filed June 18, 1964.

CHROME-MANG

For Welding Electrodes.
First use on or about Feb. 1, 1955.

SN 196,197. Robbins & Myers, Inc., Springfield, Ohio. Filed June 22, 1964.

HUNTER

For Portable Fans, Ventilating Fans, and Electric Heat Units.
First use at least as early as Sept. 1, 1962.

SN 203,558. The Valor Company Limited, Birmingham, England. Filed Oct. 8, 1964.

VALOR

For Oil Heaters and Oil Cooking Stoves.
First use Oct. 3, 1927; in commerce on or about July 1, 1949.

SN 203,559. The Valor Company Limited, Birmingham, England. Filed Oct. 8, 1964.



For Oil Heaters and Oil Cooking Stoves.
First use Oct. 3, 1927; in commerce on or about July 1, 1949.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 173,996. American Brake Shoe Company, New York, N.Y. Filed July 30, 1963.

AMERICAN BRAKEBLOK

Owner of Reg. Nos. 362,651, 665,741, and others.
For Powdered Metal Friction Elements for Use in Brakes and Clutches.
First use June 1957.

SN 195,603. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Oil Seals and Water Pump Seals.
First use on or prior to Apr. 3, 1964.

Class 36 — Musical Instruments and Supplies

SN 174,634. Aeolian Corporation, New York, N.Y. Filed Aug. 8, 1963.



The words "New York" are disclaimed apart from the mark as used.
For Pianos, Player Pianos, and Parts Thereof.
First use July 17, 1963.

SN 190,282. Prestige Records, Inc., Bergenfield, N.J. Filed Apr. 3, 1964.



For Phonograph Records.
First use Aug. 3, 1963; Feb. 1, 1950, as to "Prestige" with a different design.

Class 37 — Paper and Stationery

SN 177,653. Oxford Paper Company, New York, N.Y. Filed Sept. 24, 1963.

DEPENDOWEB

For Web Offset Printing Papers.
First use July 9, 1962.

SN 189,341. Milprint, Inc., Milwaukee, Wis. Filed Mar. 23, 1964.

LUSTERLAM

For Laminated, Transparent Packaging Film for Commercial Applications.
First use Aug. 6, 1963.

SN 194,828. Oxford Paper Company, New York, N.Y. Filed June 3, 1964.



For Printing Papers for Books, Magazines, Commercial Printing, Business Forms, and Packaging.
First use Mar. 24, 1964.

SN 195,080. Weber Marking Systems, Inc., Mount Prospect, Ill. Filed June 5, 1964.

STENMARK

For Stencils.
First use on or about Apr. 21, 1964.

SN 195,745. Weyerhaeuser Company, Tacoma, Wash. Filed June 15, 1964.

TUFBAK

For Paperboard.
First use Aug. 19, 1961.

SN 198,273. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed July 21, 1964.

THERMO-KOTE

For Bleached Sulphate Board.
First use July 11, 1964.

SN 203,180. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Toilet Tissue.
First use July 1, 1963.

Class 38 — Prints and Publications

SN 152,401. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Sept. 4, 1962.

A SPECTACULAR GUIDEBOOK

For Booklets in the Nature of Greeting Cards.
First use during June 1960.

SN 167,032. W. Wallace Orr, Inc., Philadelphia, Pa. Filed Apr. 18, 1963.

WORLD SERIES SPOTLIGHT

No claim is made to the words "World Series" apart from the mark as presented.
For Motion Picture Films.
First use on or about Oct. 1, 1960.

SN 167,035. W. Wallace Orr, Inc., Philadelphia, Pa. Filed Apr. 18, 1963.

PRO FOOTBALL KICKOFF

No claim is made to the words "Pro Football" apart from the mark as presented.
For Motion Picture Films.
First use on or about Sept. 1, 1957.

SN 183,049. The Foundation for Business Education, Inc., New York, N.Y. Filed Dec. 16, 1963.

FBE BULLETIN

Applicant disclaims the word "Bulletin" apart from the mark as shown.
For Periodical Publication Presenting Information Relating to Business Education and Containing Material for Use in Business Education.
First use on or about Dec. 28, 1954.

SN 193,191. Missouri Historical Society, St. Louis, Mo. Filed May 11, 1964.

SIGNATURE COLLECTION

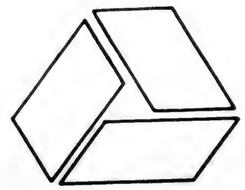
For Souvenir Packets of Printed Material, Printed Souvenir Items Such as Pictures and Historical Documents, Historical Picture Cards and Historical Booklets.
First use Mar. 29, 1964.

SN 193,599. AAA Printing Company, d.b.a. Van Wold-Stevens Company, Minneapolis, Minn. Filed May 18, 1964.



For Calendars.
First use on or about May 15, 1963.

SN 193,956. The Hearst Corporation, New York, N.Y. Filed May 21, 1964.



For Series of Books.
First use Jan. 28, 1964.

SN 194,362. Chicago Decal Company, Chicago, Ill. Filed May 27, 1964.



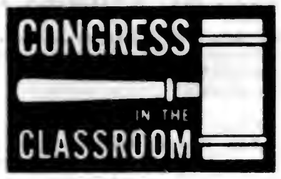
Applicant disclaims the words "Chicago Decal."
For Decalcomania Labels.
First use May 1961.

SN 194,376. Educational Teaching Services, Inc., Washington, D.C. Filed May 27, 1964.

CONGRESS IN THE CLASSROOM

For Educational Publications in the Nature of Text Materials and Teaching Manuals.
First use Mar. 15, 1964.

SN 194,377. Educational Teaching Service, Inc., Washington, D.C. Filed May 27, 1964.



For Educational Publications in the Nature of Text Materials and Teaching Manuals.
First use Mar. 15, 1964.

Class 39 — Clothing

SN 137,179. Youthful Shoes, Inc., Des Plaines, Ill. Filed Feb. 2, 1962.

YOUTHFUL SHOES

The word "Shoes" is disclaimed apart from the mark.
For Leather Shoes.
First use 1937.

SN 168,960. Sarong, Inc., Dover, Del. Filed May 15, 1963.



The portrait on the drawing is a representation of one Ingrid Werner whose consent is of record.
For Foundation Garments Including Girdles.
First use Oct. 25, 1962.

SN 173,133. Joseph Siegel Co., Inc., New York, N.Y. Filed July 16, 1963.

STRETCH-ALL

For Ladies' Hosiery.
First use Mar. 1, 1962.

SN 175,111. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Aug. 15, 1963.

SIERRA

For Apparel Belts.
First use Oct. 24, 1952.

SN 177,491. S.p.A. Calsificio Milanese Luigi Clocca, Milan, Italy. Filed Sept. 23, 1963.



The drawing is lined for red.
For Socks, Stockings; Knitwear—Namely, Vests, Pullovers, Singlets, Pants, Slips; and Wearing Apparel—Namely, Overcoats, Jackets, Trousers, Waistcoats, Petticoats, Shirts, Cravats, and Tailored Suits.
First use May 16, 1925; in commerce Apr. 13, 1927.

SN 181,605. Arnold Stretchmates Corporation, Boston, Mass. Filed Nov. 21, 1963.

CHRISTENETS

For Coveralls and Two-Piece Sets Comprising an Overall and T-Shirt Combination, and Two-Piece Pajamas, for Infants, Made of Stretch or Nonstretch Fabrics.
First use Oct. 3, 1963.

SN 181,786. Marlene Industries Corporation, New York, N.Y. Filed Nov. 22, 1963.

SUPER 220

For Men's, Women's, and Children's Wearing Apparel, Consisting of Shirts, Pants, Shorts, Jackets, Coats, Suits, Pajamas, Gloves, Sneakers, Two-Piece Sets Consisting of Matching and Contrasting Skirts and Blouses, Blouses, Dresses, Brassieres, Jumpers and Stockings.
First use Feb. 7, 1962.

SN 182,485. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Dec. 6, 1963.

THPC

Owner of Reg. No. 683,844.
For Articles of Wearing Apparel Made of Fabrics Containing, in Whole or in Part, Cellulosic Textile Materials That Have Been Chemically Treated To Render Them Fire Retardant—Namely, Uniforms, Work Clothes, Coats, Jackets, Shirts, Pants, Dresses, Diapers, Layette Articles, Aprons, Sleepwear, and Headwear.
First use Nov. 26, 1963.

SN 187,285. The S. E. Hyman Company, Fremont, Ohio. Filed Feb. 24, 1964.

SCUPPER-JACK

For Men's, Women's, and Children's Wearing Apparel Namely, Parkas, Jackets, and Coats.
First use Dec. 31, 1963.

SN 188,668. The Servus Rubber Company, Rock Island, Ill. Filed Mar. 13, 1964.

STRETCHEROOS

For Rain Boots and Rubbers.
First use before Feb. 25, 1964.

SN 189,996. Fownes Brothers & Co., Incorporated, New York, N.Y. Filed Mar. 31, 1964.

Royale by fownes

Owner of Reg. Nos. 23,017, 739,758, and others.
For Gloves.
First use Feb. 27, 1964.

SN 191,240. The Asher Company, Fitchburg, Mass. Filed Apr. 16, 1964.

SKI APPEAL BY ASHER

The word "Ski" is disclaimed apart from the mark as shown. Owner of Reg. No. 721,055.
For Ski Pants for Men, Women, and Boys.
First use Mar. 25, 1964.

SN 191,816. Wellco Ro-Search Industries, Inc., Waynesville, N.C. Filed Apr. 22, 1964.

ROAD HOGS

For Shoes, Boots, and Sandals for Men, Women, and Children.
First use Jan. 10, 1964.

SN 191,817. Dr. Domenica Wells, St. Louis, Mo. Filed Apr. 22, 1964.



For Girdles.
First use Apr. 10, 1964.

SN 192,043. The Juvenile Shoe Corporation of America, Aurora, Mo. Filed Apr. 27, 1964.

FOOT THRILLS

Owner of Reg. No. 371,115.
For Ladies' and Children's Shoes.
First use Apr. 3, 1964.

SN 193,596. Weldon Pajamas, Inc., New York, N.Y. Filed May 15, 1964.

BAL-TUCK

For Men's, Women's, and Children's Pajamas and Underwear.
First use in or about 1938.

SN 194,120. Barron, Anderson Company, Boston, Mass. Filed May 25, 1964.

CHARLES ALLEN

The name "Charles Allen" is fictitious.
For Outer Coats.
First use Mar. 1, 1961.

SN 194,194. Liberty Hosiery Mills, Inc., Gibsonville, N.C. Filed May 25, 1964.

CURTAIN CALL

For Tights, Leotards, and Hosiery.
First use May 18, 1964.

SN 194,253. Stetson Shoe Company, Incorporated, South Weymouth, Mass. Filed May 25, 1964.

HOBNOBBERS

For Boots and Shoes and Hats and Caps for Men, Women, and Children.
First use Aug. 20, 1940.
Subj. to Intf. with SN 197,351.

SN 195,576. Angelica Uniform Company, St. Louis, Mo. Filed June 15, 1964.

SUPER 100

Owner of Reg. Nos. 744,873 and 744,874.
For Garments for Clean-Room Usage, Being Resistant to Dust, Lint and Like Atmospheric Impurities, Including Jackets, Shirts, Pants, Smocks, Frocks, Dresses, Skirts, Protective Suit Coverings, Headwear of All Types, Caps, Gowns, Gloves, Socks, Stockings, and Leg Coverings.
First use Dec. 17, 1963.

SN 196,790. Jacobs, Baslow & Ringer Co., New York, N.Y. Filed June 30, 1964.

JBR

For Men's Shirts.
First use Apr. 1, 1964.

SN 196,800. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division, Greenville, S.C. Filed June 30, 1964.

FLEX-PLEET

For Boys' Shirts and Girls' Blouses.
First use June 15, 1964.

SN 196,837. Joseph Bancroft & Sons Company, New York, N.Y. Filed July 1, 1964.

BUDGETEER

For Hosiery.
First use on or about June 3, 1964.

SN 196,996. U.S. Industries, Inc., New York, N.Y. Filed July 2, 1964.

SHEER-HI

For Ladies' Hosiery.
First use June 5, 1964.

SN 197,351. Wells Lamont Corporation, Chicago, Ill. Filed July 7, 1964.

HOB-NOB

For Work Gloves.
First use Jan. 19, 1954.
Subj. to Intf. with SN 194,253.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 179,739. Scovill Manufacturing Company, Waterbury, Conn. Filed Oct. 24, 1963.

TRILOK

For Snap Fasteners.
First use Feb. 11, 1943.

SN 179,940. San Francisco Leather Products, San Francisco, Calif. Filed Oct. 28, 1963.

BLACK TIPS

For Leather Lacings for Work Shoes, High Boots, Leather Aprons, and Power Belts and Like Uses.
First use Aug. 1, 1928.

SN 179,941. San Francisco Leather Products, San Francisco, Calif. Filed Oct. 28, 1963.

RED TIPS

For Leather Lacings for Work Shoes, High Boots, Leather Aprons, and Power Belts and Like Uses.
First use Aug. 1, 1928.

SN 181,898. Jet-Clip Corporation, New York, N.Y. Filed Nov. 26, 1963.

JET-CLIP

Applicant disclaims any right to the exclusive use of the word "Clip" except as used in conjunction with the word "Jet."
For Polystyrene Fasteners Which Are Used as Clips as a Substitute for Pins and as a Device for the Packaging of Various Types of Soft Goods—i.e., Clipping Together the Folds of Lingerie, Blouses, Waistbands on Trousers, Slacks, and the Like in Order to Hold the Same in Place for More Convenient and Easier Packaging and Handling.
First use Feb. 3, 1958.

SN 189,578. The Governor Fastener Company, Meriden, Conn. Filed Mar. 25, 1964.

JEWELOK

For Buckles for Shortening and Lengthening Straps and Supporters for Lingerie.
First use Feb. 17, 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 186,420. Waumbec Mills Incorporated, New York, N.Y. Filed Feb. 10, 1964.

CHAMANEL

For Piece Goods of Synthetic Fibers.
First use Jan. 27, 1964.

SN 186,433. Atlantic Products Corporation, Trenton, N.J. Filed Feb. 11, 1964.

QUEEN'S RIFLES

For Fabric Used for Hand Luggage, Golf Bags, Bowling Ball Bags, and the Like.
First use July 31, 1963.

SN 187,488. The Felters Company, Boston, Mass. Filed Feb. 26, 1964.

FELDEEN

For Needled Felt Products—Namely, Fabrics in the Piece.
First use Feb. 4, 1964.

SN 188,290. Stevcoknit Textile Co., New York, N.Y. Filed Mar. 9, 1964.

STEVERINO

For Cotton Fabric.
First use Feb. 21, 1964.

SN 188,705. Artvale, Inc., New York, N.Y. Filed Mar. 16, 1964.

Chifozetté

For Knitted Fabric Used for Making Veilings, Ladies' Undergarments, Dresses, Millinery Articles, and the Like.
First use Jan. 27, 1964.

SN 189,822. Waumbec Mills Incorporated, New York, N.Y. Filed Mar. 27, 1964.

CHAMACRYL

For Piece Goods of Synthetic Fibers and Blends and Combinations Thereof.
First use Mar. 5, 1964.

SN 190,927. Hockmeyer Bros. Inc., New York, N.Y. Filed Apr. 13, 1964.

SKI-ROY

For Textile Fabrics in the Piece Composed of Corduroy.
First use Nov. 12, 1962.

SN 190,928. Hockmeyer Bros. Inc., New York, N.Y. Filed Apr. 13, 1964.

A-CORD

For Textile Fabrics in the Piece Composed of Corduroy.
First use Nov. 12, 1963.

SN 190,929. Hockmeyer Bros. Inc., New York, N.Y. Filed Apr. 13, 1964.

ELASTICORD

For Textile Fabrics in the Piece Composed of Corduroy.
First use Nov. 22, 1963.

SN 191,555. Hockmeyer Bros. Inc., New York, N.Y. Filed Apr. 20, 1964.

SENIOROY

For Textile Fabrics in the Piece Composed of Corduroy.
First use Mar. 10, 1964.

SN 195,679. The Kendall Company, Walpole, Mass. Filed June 15, 1964.

THRIFTY DRY

For Towels.
First use Oct. 31, 1957.

SN 195,817. The Showeray Company, New York, N.Y. Filed June 16, 1964.

WASHDAY SAVER

For Plastic Table Cloths, Shower Curtains, Mattress Covers, Pillow Covers, Blanket Bags, Laundry Dampening Bags, Place Mates, and Drapes.
First use March 1947.

SN 196,309. Saks & Company, New York, N.Y. Filed June 23, 1964.

TINGLE TOWEL

Applicant disclaims the word "Towel" apart from the mark as shown.
For Coarse Linen and Cotton Bath Towels.
First use June 10, 1964.

SN 196,325. Woodward, Baldwin & Co., Inc., New York, N.Y. Filed June 23, 1964.

TEPEE

For Bleached Muslins.
First use 1927.

SN 196,327. Woodward, Baldwin & Co., Inc., New York, N.Y. Filed June 23, 1964.

LUCKY STRIKE

For Bleached Muslins.
First use 1927.

Class 43 — Thread and Yarn

SN 195,812. B. Garfield Rae, Jr., Newton, Mass. Filed June 16, 1964.

COTLON

For Thread.
First use May 12, 1964.

Class 46 — Foods and Ingredients of Foods

SN 151,478. Dean Foods Company, Franklin Park, Ill., by change of name from Dean Milk Company, Franklin Park, Ill. Filed Aug. 20, 1962.

READY SHAKE

For Chocolate-Flavored Milk Drink.
First use Apr. 5, 1956.

SN 160,672. Standard Chocolates, Inc., d.b.a. Donna Deane, Boston, Mass. Filed Jan. 14, 1963.



Applicant disclaims the designation "Boston" and the words "Exceptional Candy" except for the use of these terms in the mark as a whole. The name "Donna Deane" is fanciful.
For Packaged Candy Products—Namely Assorted Chocolates.
First use in or about September 1948.

SN 162,480. Ozark Candy Cabin, Inc., Camdenton, Mo. Filed Feb. 11, 1963.



The term "Candy" is disclaimed, said term being the name of one of the goods to which the mark is applied.
For Candy, Jellies, Honey, and Sorghum.
First use Feb. 6, 1963.

SN 162,494. Sandy Bottom Beef for Freezers of Rockville, Inc., Rockville, Md. Filed Feb. 11, 1963.



SANDY'S DELUXE

For Fresh Meats, Frozen and Unfrozen.
First use Dec. 11, 1961.

SN 167,145. Imperia Foods, Inc., New York, N.Y. Filed Apr. 19, 1963.

IMPERIA

For Flavored Bread Crumbs.
First use July 1955.

SN 172,815. Filler Products, Inc., Atlanta, Ga. Filed July 11, 1963.

SWEETEES

For Snack Food Products—Namely, Corn Puffs.
First use June 7, 1963.

SN 175,251. Coastal Valley Canning Co., Oxnard, Calif., assignee of Coastal Valley Canning Co., Oxnard, Calif. Filed Aug. 19, 1963.

SNAP-E-TOM

Owner of Reg. Nos. 385,662 and 385,849.
For Canned Tomato Juice Drink.
First use Nov. 20, 1930.

SN 175,929. Murray-Allen Imports, Inc., New York, N.Y. Filed Aug. 28, 1963.



For Confections—Namely, Candies, Chocolates, and Biscuits.
First use 1953 on candies.

SN 176,601. Carson Pirie Scott & Co., Chicago, Ill. Filed Sept. 4, 1963.



The word "Mints" is hereby disclaimed apart from the mark as shown. Owner of Reg. No. 757,469.
For Mint Candies.
First use Aug. 7, 1963.

SN 176,602. Carson Pirie Scott & Co., Chicago, Ill. Filed Sept. 4, 1963.



The word "Toffee" is hereby disclaimed apart from the mark as shown. Owner of Reg. No. 757,469.
For Toffee Candies.
First use Aug. 7, 1963.

SN 178,679. Jaime M. Dickter, d.b.a. Mexican Import Co., Laredo, Tex. Filed Oct. 10, 1963.

LA CUMBRE

"La Cumbre" is translated into English as "the top."
For Canned Peppers.
First use Mar. 31, 1955.

SN 179,399. Cosby-Hodges Milling Company, Birmingham, Ala. Filed Oct. 21, 1963.

MO-BISCUIT

For Wheat Flour.
First use Feb. 10, 1930.

SN 179,400. Cosby-Hodges Milling Company, Birmingham, Ala. Filed Oct. 21, 1963.

JAZZ

Owner of Reg. Nos. 627,965, 656,188, and 683,376.
For Poultry Feed, Dairy and Cattle Feed, Laying-Mash, Growing-Mash, Horse Feed, Hog Feed, Dog Food, and Rabbit Feed.
First use Nov. 15, 1920.

SN 179,401. Cosby-Hodges Milling Company, Birmingham, Ala. Filed Oct. 21, 1963.

WHITE TULIP

For Wheat Flour, Hominy Grits, and Corn Meal.
First use January 1928 on wheat flour.

SN 179,402. Cosby-Hodges Milling Company, Birmingham, Ala. Filed Oct. 21, 1963.

Jazz
GREEN PASTURES

Owner of Reg. Nos. 627,965, 656,188, and 683,376.
For Dairy and Cattle Feed, Horse Feed, and Hog Feed.
First use in or about 1938; Nov. 15, 1920, as to the word "Jazz."

SN 183,462. Santa Clara Produce Inc., Oxnard, Calif. Filed Dec. 23, 1963.



Owner of Reg. No. 757,861.
For Fresh Vegetables.
First use Nov. 19, 1963.

SN 184,842. Mrs. Smith's Pie Company, Pottstown, Pa. Filed Jan. 17, 1964.

MRS. SMITH'S

For Bakery Products—Namely, Frozen Pies, Cakes, and Pretzels.
First use August 1926.

SN 186,592. Andomia Products Limited, Bradford, England. Filed Feb. 13, 1964.

MINUS

Priority claimed under Sec. 44(d) on British Reg. No. 856,851, dated Nov. 21, 1963.
For Artificial Sweetening Substances for Foods.

SN 188,340. Continental Enterprises, Inc., Twin Falls, Idaho. Filed Mar. 10, 1964.

POLAR ROLLER

For Frozen Ice Milk Confection.
First use Sept. 23, 1963.

SN 188,626. M. Fitzgerald & Son Dairy Products Co., Watertown, Wis. Filed Mar. 13, 1964.

BUTTERCUP

Owner of Reg. No. 183,101.
For Cheese Other Than Processed Cheese, Powdered Milk, and Butter.
First use 1905 on cheese.

SN 189,086. La Vida Foods, Inc., Los Angeles, Calif. Filed Mar. 19, 1964.

CHARLIE'S

For Chocolate Flavored Food Drink.
First use June 16, 1963.

SN 189,692. Exeter Orchards Association, Exeter, Calif. Filed Mar. 26, 1964.

GOLDEN ARROW

Owner of Reg. No. 226,104.
For Fresh Citrus Fruits.
First use Dec. 21, 1963.

SN 191,370. Dolly Madison Foods, Inc., Philadelphia, Pa. Filed Apr. 17, 1964.



Owner of Reg. Nos. 337,039, 657,517, and 657,518.
For Ice Cream, Ice Milk and Fruit Ice.
First use Mar. 2, 1964; Nov. 28, 1930, as to the "Silhouette" alone; Dec. 6, 1935, as to the mark "Darlene" alone.

SN 191,428. National Brands, Inc., Miami, Fla. Filed Apr. 17, 1964.

ROYAL ROSE

Owner of Reg. No. 762,843.
For Canned Shellfish, Flake Coconut, and Breakfast Cocoa.
First use Feb. 11, 1964.

SN 191,605. Ralph Rosenthal, Richmond, Va. Filed Apr. 20, 1964.

SWEETHIN

For Artificial Food Sweetener.
First use Apr. 10, 1964.

SN 191,606. Ralph Rosenthal, Richmond, Va. Filed Apr. 20, 1964.

SWEETRIM

For Artificial Food Sweetener.
First use Apr. 10, 1964.

SN 191,640. Wilsey-Bennett Co., San Francisco, Calif. Filed Apr. 17, 1964.

WESTERN BLEND

The word "Blend" is disclaimed apart from the mark as shown.
For Margarine.
First use Nov. 21, 1963.

SN 191,966. Uncle Bert's Snacks, Inc., Oceanside, N.Y. Filed Apr. 24, 1964.



The words "Cartoon" and "Popcorn" are disclaimed apart from their use in the mark as shown.
For Popped Popcorn.
First use Apr. 21, 1964.

SN 195,151. Recipe Foods, Inc., Baltimore, Md. Filed June 8, 1964.

CHEF O'NAISE

For Salad Dressing.
First use Dec. 26, 1963.

SN 195,152. Recipe Foods, Inc., Baltimore, Md. Filed June 8, 1964.

COMBINAISE

For Salad Dressing.
First use Mar. 27, 1964.

SN 195,231. Luden's Inc., Reading, Pa. Filed June 9, 1964.

LUDEN'S

Owner of Reg. Nos. 150,455, 154,616, and 502,663.
For Candies.
First use May 5, 1964.

SN 195,658. Eckhart Milling Co., Chicago, Ill. Filed June 15, 1964.

WHITE SWAN

For Wheat Flour.
First use Jan. 22, 1897.

SN 197,154. Milko Products, Inc., Chicago, Ill. Filed July 6, 1964.

KOPPER KETTLE

For Candy.
First use Dec. 20, 1963.

SN 198,162. Haas-Davis Packing Company, Inc., Mobile, Ala. Filed July 20, 1964.

DIXIE HONEYSUCKLE

For Meat Food Products—Namely, Sliced Bacon, Bacon Sides, Hams, and Smoked Pork Shoulders.
First use 1927.
Subj. to Intf. with SN 178,733.

SN 198,163. Haas-Davis Packing Company, Inc., Mobile, Ala. Filed July 20, 1964.

JUBILEE

For Meat Food Product—Namely, Sliced Bacon.
First use May 25, 1961.
Subj. to Intf. with SN 182,515.

SN 199,052. General Grocer Company, St. Louis, Mo. Filed Aug. 3, 1964.

TOPMOST

Owner of Reg. Nos. 137,068, 739,484, and others.
For Fresh Eggs and Sliced Bacon.
First use June 1957.

SN 199,057. The Griffith Laboratories, Inc., Chicago, Ill. Filed Aug. 3, 1964.

HAMZYME

For Seasoning for Meats.
First use about 1944.

SN 199,115. Mario Saikhon, El Centro, Calif. Filed Aug. 3, 1964.

JEFF

For Fresh Vegetables.
First use Dec. 20, 1963.

SN 199,116. Mario Saikhon, El Centro, Calif. Filed Aug. 3, 1964.

little jeff

For Fresh Vegetables.
First use Dec. 28, 1963.

SN 199,349. Bio-Pak Fruit Company, Inc., d.b.a. Bio-Pak Corp., Biola, Calif. Filed Aug. 6, 1964.

BIO-PAK

For Fresh Deciduous Fruits; Fresh Grapes.
First use Apr. 30, 1964.

SN 199,428. Anco Food Products (1961) Inc., Montreal, Quebec, Canada. Filed Aug. 7, 1964.

ANCO

For Cheese.
First use 1961; in commerce Mar. 23, 1964.

Class 47 — Wines

SN 171,940. Vintage Wines, Inc., New York, N.Y. Filed June 26, 1963.

VINYA

For Wine.
First use May 25, 1963.

SN 182,102. Monsieur Henri Wines, Ltd., Brooklyn, N.Y. Filed Nov. 29, 1963.

MONSIEUR HENRI

For Wines.
First use July 11, 1963.

SN 191,592. Jack Poust & Company, Inc., New York, N.Y. Filed Apr. 20, 1964.

JACPOUST

Owner of Reg. No. 669,069.
For Wine Specialties.
First use Nov. 30, 1959.

SN 193,217. John Aquino Sons, Inc., New York, N.Y. Filed May 13, 1964.

VULCAN RED

The word "Red" is disclaimed. Owner of Reg. No. 118,736.
For Wine.
First use January 1917.

Class 48 — Malt Beverages and Liquors

SN 188,593. Verenigde Nederlandse Brouwerijen d'Oranjeboom N.V., d.b.a. d'Oranjeboom Breweries, Rotterdam, Netherlands. Filed Mar. 12, 1964.

MILL BEER

The exclusive use of the word "Beer" as shown in applicant's mark is disclaimed apart from the mark as a whole.
For Beer.
First use 1926; in commerce September 1961.

Class 49 — Distilled Alcoholic Liquors

SN 163,970. Societe Anonyme des Etablissements Louis Regnier, Dijon, Cote d'Or, France. Filed Mar. 5, 1963.



Priority claimed under Sec. 44(d) on French Reg. No. 6,631, dated Oct. 19, 1962 (Dijon); Natl. Inst. No. 194,242.
For Brandy and Liqueur.

SN 179,939. T. W. Samuels Distillery, Inc., d.b.a. T. W. Samuels Distillery, Deatsville, Ky. Filed Oct. 28, 1963.

CORN-CRACKER

For Kentucky Straight Corn Whiskey.
First use Sept. 26, 1963.

SN 192,951. Schenley Distillers, Inc., d.b.a. James Hard & Co., New York, N.Y. Filed May 7, 1964.

JAMES HARD & CO.

For Blended Whiskey.
First use Oct. 31, 1963.

SN 193,442. Jas. Barclay & Co. Limited, Peoria, Ill. Filed May 14, 1964.

BROOKMERE

For Whiskey.
First use May 1, 1964.

SN 193,443. Jas. Barclay & Co. Limited, Peoria, Ill. Filed May 14, 1964.

NEWBROOK

For Whiskey.
First use May 1, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 164,022. Dard Products, Inc., Chicago, Ill. Filed Mar. 6, 1963.

LIVING IMAGE

For Advertising Material—Namely, a Picture That Changes on Tilting, and Which Is Placed on Various Products, Such as Key-Tags, Pins, and Pocket Protectors.
First use Jan. 2, 1963.

SN 184,227. Nadine Fortune, Baltimore, Md. Filed Jan. 8, 1964.

"FORTUNETTE"

For Nameplates and Badges.
First use Sept. 1, 1962.

SN 187,949. Morgan Adhesives Company, Stow, Ohio. Filed Mar. 4, 1964.

MACMOUNT

For Foam Material Having Pressure Sensitive Adhesive Applied to Each Face Thereof for Use as a Fastening and Shock Absorbing Material.
First use Jan. 9, 1964.

SN 189,593. Joan Lane, Inc., Buffalo, N.Y. Filed Mar. 25, 1964.

Metal Magic

No claim is made to the use of the word "Metal" per se.
For Packaged Assortments of Metal Sheets and Accessories for Use by Artists, Hobbyists, and Craft Workers.
First use Feb. 27, 1964.

SN 195,828. A. G. Vara and Son, Inc., Hamburg, N.Y. Filed June 16, 1964.

OCTOPUS

For Non-Electrical Portable Warning Standard for Highway and Like Use.
First use June 1, 1964.

SN 198,984. Sweetheart Plastics, Inc., Wilmington, Mass. Filed July 31, 1964.

GUILDWARE

Owner of Reg. No. 707,654.
For Disposable Plastic Straws.
First use on or about July 12, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 162,346. La Maur, Inc., Minneapolis, Minn. Filed Feb. 8, 1963.

'NAMEL DRY

For Nail Coating and Enamel Drying Composition.
First use June 21, 1954; Aug. 7, 1945, as to "Namel."

SN 173,020. Maradel Products, Inc., New York, N.Y. Filed July 15, 1963.

SPECIAL M

For Lipstick.
First use July 10, 1963.

SN 173,102. Eau de Colognefabriek J. C. Boldoot N.V., Amsterdam, Netherlands. Filed July 16, 1963.

BOLDOOT

Fleurs de Hollande

Priority claimed under Sec. 44(d) on Dutch application filed July 8, 1963; Reg. No. 148,870, dated Aug. 6, 1963. Owner of U.S. Reg. Nos. 293,396, 298,707, and 580,443.
For Eau de Cologne, Toilet Water, Perfume, and Toilet Powder.

SN 191,649. American Home Products Corporation, d.b.a. Whitehall Laboratories, New York, N.Y. Filed Apr. 21, 1964.

SUDDEN BEAUTY

Owner of Reg. No. 659,912.
For Preparation for Grooming the Hair.
First use Mar. 13, 1964.

SN 192,206. Helena Rubinstein, Inc., New York, N.Y. Filed Apr. 28, 1964.

SUPER BIODORANT

Owner of Reg. No. 707,292.
For Anti-Perspirant and Deodorant.
First use Mar. 9, 1964.

SN 192,475. Helene Curtis Industries, Inc., d.b.a. LKM Div., Chicago, Ill. Filed May 1, 1964.

ROYAL SEAL

For Cologne and After Shave Lotion.
First use on or about Apr. 2, 1964.

SN 194,021. Avon Products, Inc., New York, N.Y. Filed May 22, 1964.

PRETTY PEACH

For Cream Sachet, Cream Lotion, Cologne, Cologne Mist, Bubble Bath, Beauty Dust, Talc, Pomade, and Hand Cream.
First use May 6, 1964.

SN 194,368. Dark-Eyes Company, Chicago, Ill. Filed May 27, 1964.

DARK-EYES

For Eyebrow and Eyelash Coloring Material.
First use Oct. 22, 1934.

SN 194,446. Viviane Woodard Corporation, Panorama City, Calif. Filed May 27, 1964.

RARE GLOW

For Rouge.
First use May 7, 1964.

Class 52 — Detergents and Soaps

SN 180,285. C-Z Chemical Co., Inc., Beloit, Wis. Filed Nov. 1, 1963.

Thrust

For Liquid Chemical Preparation for Opening Up Clogged Pipe Drains.
First use Aug. 22, 1963.

SN 182,239. Arrow Chemical Products, Inc., Detroit, Mich. Filed Dec. 3, 1963.

Finesse

For Cold Water Laundry Soap.
First use on or about Nov. 20, 1963.

SN 186,440. Cee-Bee Chemical Company, Inc., Downey, Calif. Filed Feb. 11, 1964.

CEE BEE

The drawing is lined for red, but color is not claimed as a feature of the mark. Owner of Reg. Nos. 288,110 and 581,231.
For Degreasing and Paint Stripping Compounds; Soil and Carbon Removing Compounds; Floor Cleaner; Rug Cleaner; Plating Cleaner; Steam Cleaning Compounds; Cleaners for Aircraft, Engines, Industrial Equipment and Parts; and Waterless Cleaners.
First use on or about June 3, 1931.

SN 188,671. Simonis Company, Chicago, Ill. Filed Mar. 13, 1964.

REDDI CLEAN

No claim is made to the exclusive use of the word "Clean" alone.
For Wall and Woodwork Cleaner.
First use Sept. 25, 1963.
Subj. to Intf. with SN 187,072.

SN 189,312. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

SURGI-SEPT

For Antiseptic Liquid Hand Soap.
First use June 10, 1960.

SN 189,318. L. H. Kellogg Chemical Company, Minneapolis, Minn. Filed Mar. 23, 1964.

KELCO PLUS

Owner of Reg. No. 602,009.
For Liquid Soap for the Hands and Body.
First use June 10, 1960.

SN 190,568. Zurn Industries, Inc., Erie, Pa. Filed Apr. 7, 1964.

POLY-ZYME

For Cleaning and Degreasing Compounds for Use in Grease Traps, Drain Pipes, Septic Tanks, and Cesspools.
First use Sept. 1, 1963.

SN 191,296. ITT Bell & Gossett Inc., Morton Grove, Ill. Filed Apr. 16, 1964.

PURJET

For Detergent for Cleaning Filters.
First use Sept. 25, 1963.

SN 191,721. Rust-Oleum Corporation, d.b.a. Crete-Treat Co., Chicago, Ill. Filed Apr. 21, 1964.

CRETE-TREAT

Owner of Reg. No. 554,230.
For Chemical Cleaner for Masonry, Concrete, Brick, Tile, and Other Hard Surfaces.
First use on or about Aug. 1, 1949.

SN 194,022. Avon Products, Inc., New York, N.Y. Filed May 22, 1964.

PRETTY PEACH

For Toilet Soap.
First use May 6, 1964.

SN 199,672. Hartz Mountain Products Corp., New York, N.Y. Filed Aug. 11, 1964.

HARTZ MOUNTAIN

Owner of Reg. No. 726,805.
For Detergent for Removing Stains From Rugs and Carpets Having Incidental Deodorant Properties.
First use June 8, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 125,577. Americana Nursing Homes, Inc., Monticello, Ill. Filed Aug. 8, 1961.

AMERICANA NURSING HOME

No claim is made to the words "Nursing Home" or to the map representation of the United States apart from the mark.
For Making Feasibility Studies and Market Site Analyses for Clients Proposing To Construct and Operate Nursing Homes.
First use May 1, 1961.

SN 146,706. John R. Chandler, Quincy, Fla. Filed June 12, 1962.

Thanks CHANDLER'S

No claim is made to the words "Served Quick as a Wink," "Chandler's," and "Thanks," except in the association shown.
For Self-Service Drive-In Restaurant Service.
First use Aug. 23, 1961.

SN 169,090. Weather Services, Inc., Boston, Mass. Filed May 16, 1963.

WESER

For Weather Forecasting and Advice Concerning the Application of Weather Information Compiled by Applicant.
First use August 1960.

SN 173,374. Charles J. Loveless, d.b.a. Loveless Tem-Ployee Service, Tulsa, Okla. Filed July 19, 1963.

TEM-PLOYEE

For Employment Agency Services—Namely, Furnishing Temporary Employees for Business Firms.
First use Apr. 15, 1963.

SN 183,578. The Gates Rubber Company, Denver, Colo. Filed Dec. 26, 1963.

A BAR A RANCH

The word "Ranch" is disclaimed except as used in connection with the trademark as shown.
For Dude and Working Ranch Services.
First use Dec. 6, 1963.

Class 101 — Advertising and Business

SN 180,360. Instant-List (joint venture), Pawtucket, R.I. Filed Nov. 4, 1963.

INSTANT-LIST

For Real Estate Listing Service.
First use on or about July 8, 1963.

Class 102 — Insurance and Financial

SN 183,055. Grodins of California, Oakland, Calif. Filed Dec. 16, 1963.

SUPER G

For Charge Account Services and Financing of Purchases—Namely, the Extension of Credit on a Revolving Basis.
First use Apr. 25, 1957.

Class 103 — Construction and Repair

SN 176,927. Lone Star Roofing Co., Houston, Tex. Filed Sept. 18, 1963.

DON'T MONKEY WITH CHEAP ROOFS

For Roofing Services—Namely, Installation and Repair of Roofs.
First use during the year 1932.

SN 178,293. Merchandise Mart, Incorporated, Dallas, Tex. Filed Oct. 8, 1963.

PERMA TRAN

For Installing and Operation of Trade Show Exhibitions To Display the Merchandise of Others.
First use Sept. 30, 1963.

SN 179,095. ALD, Inc., Chicago, Ill. Filed Oct. 16, 1963.

SOFSPRA

For Automatic Coin-Operated Car Wash Service.
First use Sept. 8, 1963.

Class 106 — Material Treatment

SN 181,854. California-Doran Heat Treating Co., d.b.a. Calif-Doran Heat Treating Co., Los Angeles, Calif. Filed Nov. 26, 1963.

PETRO-GLAS

For Glass Coating the Interior Surfaces of Steel Pipe for Others.
First use June 25, 1963.

Class 107 — Education and Entertainment

SN 159,492. Howe Sound Company, New York, N.Y. Filed Dec. 20, 1962.

DYNA-CENTRIC

For Training Course in Processing Dentures Utilizing Special Dental Material and Equipment.
First use Jan. 13, 1962.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 178,954. National Assistance League, Hollywood, Calif. Filed Oct. 14, 1963.

ASSISTEENS

Owner of Reg. Nos. 725,168 and 725,169.
For Indicating Membership in an Auxiliary Composed of Junior Members of Applicant's Chartered Chapters.
First use September 1961.

SN 189,720. National Independent Automobile Dealers Association, Washington, D.C. Filed Mar. 26, 1964.



For Indicating Membership in Applicant.
First use during October 1960.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

782,222. UNIVERSAL JEWEL ETC. AND DESIGN. Clyborne, Inc. SN 110,598. Pub. 5–1–62. Filed 12–21–60.

782,223. K/M. Kerr-McGee Oil Industries, Inc. SN 130,361. Pub. 10–13–64. Filed 10–20–61.

782,224. McCULLOUGH'S SEED AND DESIGN. George W. Hill and Company. SN 176,733. Pub. 10–13–64. Filed 9–11–63.

782,225. STORMONT. Howard Smith Paper Mills, Limited. SN 179,506. Pub. 10–13–64. Filed 10–21–63.

782,226. KUSHION-KIT. Wood Conversion Company. SN 184,555. Pub. 10–13–64. Filed 1–13–64.

782,227. BG. Stackpole Carbon Company. SN 184,845. Pub. 10–13–64. Filed 1–17–64.

782,228. FULTON 404. Liquid Nitrogen Processing Corporation. SN 185,224. Pub. 10–13–64. Filed 1–23–64.

Class 2 — Receptacles

782,229. HMP AND DESIGN. Home Metal Products Company. SN 184,467. Pub. 10–13–64. Filed 1–13–64.

782,230. THERMOLITE. Thermo-Plastics, Inc. SN 186,907. Pub. 10–13–64. Filed 2–17–64.

782,231. 1-PAK AND DESIGN. KVP Sutherland Paper Company. SN 187,293. Pub. 10–13–64. Filed 2–24–64.

782,232. GULF STATES ETC. Gulf States Casket Corporation. SN 193,664. Pub. 10–13–64. Filed 5–18–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

782,233. MARTHA WEST. Martha Shapiro, d.b.a. Martha West. MULTIPLE CLASS (Classes 3, 28, and 39). SN 182,836. Pub. 10–13–64. Filed 12–11–63.

Class 4 — Abrasives and Polishing Materials

782,234. SCRUB-STIK. Scrubbee Products Corp. SN 176,237. Pub. 10–13–64. Filed 9–3–63.

Class 5 — Adhesives

782,235. WICABOND. Wica Chemicals, Incorporated. SN 190,458. Pub. 10–13–64. Filed 4–6–64.

Class 6 — Chemicals and Chemical Compositions

782,236. ANNEEL-PAK. Barium and Chemicals, Inc. SN 182,971. Pub. 10–13–64. Filed 11–29–61.

782,237. LARSYNOL. Apex Chemical Co., Inc. MULTIPLE CLASS (Classes 6 and 52). SN 186,332. Pub. 10–13–64. Filed 1–23–62.

782,238. CLINIC. J. I. Holcomb Manufacturing Company, Inc. SN 143,959. Pub. 5–14–63. Filed 5–7–62.

782,239. UNITHANE. Thiokol Chemical Corporation. SN 154,648. Pub. 10–13–64. Filed 10–5–62.

782,240. A-D-A. Chas. Pfizer & Co., Inc. SN 154,998. Pub. 10–13–64. Filed 10–11–62.

782,241. GLO-CIDE. Chas. Pfizer & Co., Inc. SN 155,003. Pub. 10–13–64. Filed 10–11–62.

782,242. SEMERON. Geigy Chemical Corporation. SN 164,964. Pub. 10–13–64. Filed 3–19–63.

782,243. KINGSWAY. Rexall Drug and Chemical Company, d.b.a. Kingsway Products Company. MULTIPLE CLASS (Classes 6 and 18). SN 167,165. Pub. 9–22–64. Filed 4–19–63.

782,244. CAVALITE. E. I. du Pont de Nemours and Company. SN 171,341. Pub. 10–13–64. Filed 6–19–63.

782,245. BLO. General Aniline & Film Corporation. SN 171,638. Pub. 10–13–64. Filed 6–24–63.

782,246. M-PYROL. General Aniline & Film Corporation. SN 171,641. Pub. 10–13–64. Filed 6–24–63.

782,247. 2-PYROL. General Aniline & Film Corporation. SN 171,644. Pub. 10–13–64. Filed 6–24–63.

782,248. PENNSTOP. Pennsalt Chemicals Corporation. SN 175,786. Pub. 10–13–64. Filed 8–26–63.

782,249. RUSSELL R AND DESIGN. L. B. Russell Chemicals, Inc. SN 176,462. Pub. 10–13–64. Filed 9–6–63.

782,250. HARVEST KING. Mid-States Distributing Company, Inc. SN 176,558. Pub. 10–13–64. Filed 9–9–63.

782,251. SYLODEX. W. R. Grace & Co. SN 177,789. Pub. 10–13–64. Filed 9–26–63.

782,252. STAY STEEL. Chas. Pfizer & Co., Inc. SN 179,255. Pub. 10–13–64. Filed 10–17–63.

782,253. TRESITOPE. Olin Mathieson Chemical Corporation. SN 185,305. Pub. 10–13–64. Filed 1–24–64.

782,254. DERMATON. William Cooper & Nephews, Inc. SN 185,363. Pub. 10–13–64. Filed 1–27–64.

782,255. DYCOR. Dynacolor Corporation. MULTIPLE CLASS (Classes 6 and 26). SN 187,735. Pub. 10–13–64. Filed 3–2–64.

782,256. HARDENE. Kay Chemical Company. SN 188,887. Pub. 10–13–64. Filed 3–17–64.

782,257. ROBLACK. R. O. Hull & Company, Inc. SN 189,474. Pub. 10–13–64. Filed 3–24–64.

782,258. BAROID. National Lead Company. SN 189,493. Pub. 10–13–64. Filed 3–24–64.

782,259. ROYAL. Midway Ink Corporation. SN 190,020. Pub. 10–13–64. Filed 3–31–64.

782,260. TRUFLEX. Thompson Chemical Company. SN 190,039. Pub. 10–13–64. Filed 3–31–64.

782,261. SEMERONE. Geigy Chemical Corporation. SN 197,114. Pub. 10–13–64. Filed 7–6–64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

782,262. ACADEMY AWARD. H. Comoy & Co., Limited. SN 191,253. Pub. 10–13–64. Filed 4–16–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

782,263. EAGLE (DESIGN). Federal Cartridge Corporation. SN 182,716. Pub. 10–13–64. Filed 12–10–63.

Class 10 — Fertilizers

782,264. SULFASOIL. Western Agricultural Chemicals Co. SN 194,687. Pub. 10–13–64. Filed 6–1–64.

Class 12 — Construction Materials

782,265. FSPI AND DESIGN. Fabricated Steel Products, Inc. MULTIPLE CLASS (Classes 12, 34, and 50). SN 163,621. Pub. 10–13–64. Filed 2–28–63.

782,266. DUOWELD. Sandell Manufacturing Company, Inc. SN 168,035. Pub. 10–13–64. Filed 5–2–63.

782,267. CELO-FLOW. The Celotex Company, assignee of The Celotex Corporation. SN 189,047. Pub. 10–13–64. Filed 3–19–64.

782,268. KAISER. Kaiser Aluminum & Chemical Corporation. SN 189,308. Pub. 10–13–64. Filed 3–23–64.

782,269. SANDEX. Wood Conversion Company. SN 189,646. Pub. 10–13–64. Filed 3–25–64.

782,270. DFPA ETC. AND DESIGN. American Plywood Association, by change of name from Douglas Fir Plywood Association. SN 189,882. COLLECTIVE MARK. Pub. 10–13–64. Filed 3–30–64.

782,271. DOMINIQUE. National Gypsum Company. SN 189,919. Pub. 10–13–64. Filed 3–30–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

782,272. SILUX. Jerren Affiliated Companies Limited. SN 156,446. Pub. 4–14–64. Filed 11–1–62.

782,273. W AND DESIGN. Western American Plastics Corporation. MULTIPLE CLASS (Classes 13 and 19). SN 157,584. Pub. 10–13–64. Filed 11–19–62.

782,274. FLAV-R-FLO. Boyd Coffee Company. SN 175,628. Pub. 10–13–64. Filed 8–23–63.

782,275. HI-SERT. Hi-Shear Corporation. SN 175,753. Pub. 10–13–64. Filed 8–26–63.

782,276. SOLITAIRE. Speakman Company. SN 176,842. Pub. 10–13–64. Filed 9–12–63.

782,277. PROPERTYGUARD FENCE. Propertyguard Fence, Inc., assignee of Wm. F. Wittel & Co. SN 182,912. Pub. 10–13–64. Filed 12–12–63.

782,278. KRAVEX. Kravex Manufacturing Corp. SN 186,541. Pub. 10–13–64. Filed 2–12–64.

782,279. THE LITTLE DRINKER FOUNTAIN . . . ON A FAUCET AND DESIGN. Knight Enterprises, Inc. SN 191,566. Pub. 10–13–64. Filed 4–20–64.

782,280. KE ETC. AND DESIGN. Knight Enterprises, Inc. SN 191,694. Pub. 10–13–64. Filed 4–21–64.

782,281. TRU-SPUN. Glamorgan Pipe & Foundry Company, Inc. SN 193,355. Pub. 10–13–64. Filed 5–13–64.

Class 14 — Metals and Metal Castings and Forgings

782,282. MONOCAST. Consolidated Foundries & Mfg. Corp. SN 181,190. Pub. 10–30–62. Filed 11–2–61.

782,283. MONOCAST X. Consolidated Foundries & Mfg. Corp. SN 181,191. Pub. 10–30–62. Filed 11–2–61.

782,284. TRUE TEMPER. True Temper Corporation. SN 177,885. Pub. 10–13–64. Filed 9–19–63.

782,285. CHECKWATE S. Allegheny Ludlum Steel Corporation. SN 179,686. Pub. 10–13–64. Filed 10–24–63.

782,286. CFC AND DESIGN. Consolidated Foods Corporation. MULTIPLE CLASS (Classes 14 and 46). SN 187,562. Pub. 10–13–64. Filed 2–27–64.

782,287. SOLFER. Societe Lorraine de Laminage Continu "Sollac." SN 192,856. Pub. 10–13–64. Filed 5–4–64.

Class 15 — Oils and Greases

782,288. KEYDRAW. Keystone Lubricating Company. SN 163,371. Pub. 10–13–64. Filed 2–25–63.

782,289. CIP LUBE. The McGlaughlin Oil Co. SN 185,147. Pub. 10–13–64. Filed 1–22–64.

782,290. DYTIN. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 191,260. Pub. 10–13–64. Filed 4–16–64.

782,291. FIVE-STAR CIMCOOL AND DESIGN. The Cincinnati Milling Machine Co. SN 193,630. Pub. 10–13–64. Filed 5–18–64.

782,292. SOHIQUENCH. The Standard Oil Company. SN 194,432. Pub. 10–13–64. Filed 5–27–64.

Class 17 — Tobacco Products

782,293. MAC BAREN'S. Harald Halberg. SN 189,290. Pub. 10–13–64. Filed 3–23–64.

782,294. FOUR MONKS. Lane Limited. SN 191,989. Pub. 10–13–64. Filed 4–24–64.

Class 18 — Medicines and Pharmaceutical Preparations

782,243. (See Class 6 for this trademark.)

782,295. RECUPERATE AND DESIGN. Carland Chemical Company. SN 167,982. Pub. 10–13–64. Filed 5–2–63.

782,296. SOLU-TUSS. Fellows Medical Mfg. Co., Inc. SN 168,179. Pub. 10–13–64. Filed 5–6–63.

782,297. BACTOPEN. Beecham Research Laboratories Limited. SN 169,103. Pub. 10–13–64. Filed 5–17–63.

782,298. TRIPLE DIAMOND DESIGN. Cargill, Incorporated. SN 170,985. Pub. 10–13–64. Filed 6–14–63.

782,299. HEMINEVRIN. Astra Pharmaceutical Products, Inc. SN 173,808. Pub. 10–13–64. Filed 7–26–63.

782,300. WORM FREE EDDIE AND DESIGN. Atomic Basic Chemicals Corporation. SN 177,330. Pub. 10–13–64. Filed 9–19–63.

782,301. PRENOMISER. Benger Laboratories Limited. SN 179,860. Pub. 10–13–64. Filed 10–28–63.

782,302. TRIRINSIN. Prescripto Pharmaceuticals Inc. SN 180,757. Pub. 10–13–64. Filed 11–8–63.

782,303. TONHORMON. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 188,840. Pub. 10–13–64. Filed 3–17–64.

782,304. DE-NIC-LETS. Jack Cameron, d.b.a. Destroy Laboratories. SN 190,698. Pub. 10–13–64. Filed 4–9–64.

782,305. MISCELLANEOUS DESIGN. B. F. Ascher & Company, Inc. SN 190,857. Pub. 10–13–64. Filed 4–13–64.

782,306. PROBATE. Vita Elixir Company, Inc. SN 191,980. Pub. 10–13–64. Filed 4–23–64.

782,307. HALORTRON. Vita Elixir Company, Inc. SN 191,983. Pub. 10–13–64. Filed 4–23–64.

782,308. CORDROL. Vita Elixir Company, Inc. SN 191,984. Pub. 10–13–64. Filed 4–23–64.

782,309. CHERO-TRISULFA-5. Vita Elixir Company, Inc. SN 191,985. Pub. 10–13–64. Filed 4–28–64.

782,310. VILIVA. Vita Elixir Company, Inc. SN 191,991. Pub. 10–13–64. Filed 4–28–64.

782,311. K–L. Milton S. Lebos, d.b.a. The K-L Remedy Company. SN 192,296. Pub. 10–13–64. Filed 4–29–64.

782,312. EFOSORB. E. Fougera & Co., Inc. SN 192,384. Pub. 10–13–64. Filed 4–30–64.

782,313. BANDREA. Chas. Pfizer & Co., Inc. SN 192,940. Pub. 10–13–64. Filed 5–7–64.

782,314. DINARIN. Sterling Drug Inc. SN 193,302. Pub. 10–13–64. Filed 5–12–64.

782,315. LIPRINAL. Bristol-Myers Company. SN 194,695. Pub. 10–13–64. Filed 6–2–64.

782,316. KIE. Laser, Inc. SN 195,947. Pub. 10–13–64. Filed 6–18–64.

Class 19—Vehicles

782,273. (See Class 13 for this trademark.)

782,317. UAP AND DESIGN. United Aircraft Products, Inc. SN 183,477. Pub. 10–13–64. Filed 12–23–63.

782,318. WHITE SQUARE WITHIN BLACK CIRCLE. S. L. Kaye Company, Inc. SN 183,914. Pub. 10–13–64. Filed 1–2–64.

782,319. TALSTAR. Talbert Manufacturing, Inc. SN 191,455. Pub. 10–13–64. Filed 4–17–64.

782,320. MFG AND DESIGN. Molded Fiber Glass Body Company. SN 191,581. Pub. 10–13–64. Filed 4–20–64.

782,321. PEARSON HAWK. Grumman Allied Industries, Inc. SN 191,857. Pub. 10–13–64. Filed 4–23–64.

782,322. LOG BRONC. Nelson Log Bronc Co. SN 192,611. Pub. 10–13–64. Filed 5–4–64.

782,323. DUKANE AND DESIGN. Dukane Textiles, Inc. SN 196,365. Pub. 10–13–64. Filed 6–24–64.

Class 21—Electrical Apparatus, Machines, and Supplies

782,324. HYPO-GYRO AND DESIGN. Planetary Sciences Incorporated. SN 186,968. Pub. 10–13–64. Filed 2–18–64.

782,325. RELIANCE. The Reliance Electric and Engineering Company. SN 188,030. Pub. 10–13–64. Filed 3–5–64.

782,326. ZIG-A-LOG. JFD Electronics Corporation. SN 188,110. Pub. 10–13–64. Filed 3–6–64.

782,327. JBL. James B. Lansing Sound, Inc. SN 188,245. Pub. 10–13–64. Filed 3–9–64.

782,328. JBL AND DESIGN. James B. Lansing Sound, Inc. SN 188,246. Pub. 10–13–64. Filed 3–9–64.

782,329. ANKOSEAL. The Ansonia Wire & Cable Company. SN 188,508. Pub. 10–13–64. Filed 3–12–64.

782,330. WEBALCO. The West Bend Company. SN 188,595. Pub. 10–13–64. Filed 3–12–64.

782,331. MERCURY. Mid-States Distributing Company, Inc. SN 188,648. Pub. 10–13–64. Filed 3–13–64.

782,332. GEMINI. General Motors Corporation. SN 194,797. Pub. 10–13–64. Filed 6–3–64.

Class 22—Games, Toys, and Sporting Goods

782,333. SOCCER SPORT SUPPLY N.Y. AND DESIGN. Soccer Sports Supply Co., Inc. SN 145,296. Pub. 10–13–64. Filed 5–23–62.

782,334. TIMMY TIME. Sifo Company. SN 171,182. Pub. 10–13–64. Filed 6–17–63.

782,335. A-OKAY. Koring Bros., Inc. SN 178,770. Pub. 10–13–64. Filed 7–25–63.

782,336. HOJ-POJ. Mary E. Harris. SN 173,912. Pub. 10–13–64. Filed 7–29–63.

782,337. TINA-MARIE. F. W. Woolworth Co. SN 174,814. Pub. 10–13–64. Filed 8–9–63.

782,338. BABY MARIE. F. W. Woolworth Co. SN 174,926. Pub. 10–13–64. Filed 8–12–63.

782,339. MISS MARIE. F. W. Woolworth Co. SN 174,928. Pub. 10–13–64. Filed 8–12–63.

782,340. WALK A WASH. Joseph Buklet. SN 178,852. Pub. 10–13–64. Filed 10–10–63.

782,341. P. J. HOFF. P.J. Products, Inc. SN 183,333. Pub. 10–13–64. Filed 12–20–63.

782,342. KITTY CHARMER. Christopher Longworth. SN 184,392. Pub. 10–13–64. Filed 1–10–64.

782,343. CHOW-TIME. Dun-Wel, Inc. SN 186,824. Pub. 10–13–64. Filed 2–17–64.

782,344. SUR-FIN AND DESIGN. Everett M. Olson, d.b.a. Pacific Combers, Inc. SN 186,887. Pub. 10–13–64. Filed 2–17–64.

782,345. WHIP-A-TOP. E.S.R. Inc. SN 186,934. Pub. 10–13–64. Filed 2–18–64.

782,346. HIGH-BID. Minnesota Mining and Manufacturing Company. SN 187,128. Pub. 10–13–64. Filed 2–20–64.

782,347. PROBE. Parker Brothers, Inc. SN 187,374. Pub. 10–13–64. Filed 2–24–64.

782,348. FB AND DESIGN. Feurer Bros., Inc. SN 187,859. Pub. 10–13–64. Filed 3–3–64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

782,349. NELCO. Nelco Corporation. SN 155,433. Pub. 6–18–63. Filed 10–18–62.

782,350. HYDRA-EXTRACTOR. Somat Corporation, by change of name from Wandel Machine Co., Inc. SN 162,213. Pub. 10–13–64. Filed 2–6–63.

782,351. REX SUPER CUT. Crucible Steel Company of America. SN 165,753. Pub. 10–13–64. Filed 4–1–63.

782,352. AUTOCLEAR. International Equipment Co. SN 177,527. Pub. 10–13–64. Filed 9–23–63.

782,353. DEB AND DESIGN. Diamond Expansion Bolt Company, Inc. SN 178,116. Pub. 10–13–64. Filed 10–1–63.

782,354. B (FANCIFUL). The Barden Corporation. SN 178,323. Pub. 10–13–64. Filed 10–4–63.

782,355. HILL ACME AND DESIGN. The Hill Acme Company. SN 178,351. Pub. 10–13–64. Filed 10–4–63.

782,356. PAVE-R-SHAVER. A.C.M.I., Inc. SN 178,393. Pub. 10–13–64. Filed 10–7–63.

782,357. THE IOWA. The Greater Iowa Corporation. SN 181,773. Pub. 10–13–64. Filed 11–22–63.

782,358. SAFOLD AND DESIGN. Savage, Incorporated. SN 185,246. Pub. 10–13–64. Filed 1–23–64.

782,359. AEROTRAN. Aeronca Manufacturing Corporation. SN 185,260. Pub. 10–13–64. Filed 1–24–64.

782,360. BAKE SHOP. Coffee Chef Corporation. SN 185,759. Pub. 10–13–64. Filed 1–31–64.

782,361. BORE BACK. Drilco Oil Tools, Inc. SN 185,762. Pub. 10–13–64. Filed 1–31–64.

782,362. ZIP SHIFT. The American Tool Works Company. SN 187,168. Pub. 10–13–64. Filed 2–21–64.

782,363. COPYSET. Dura Corporation, assignee of Dura Business Machines, Inc. SN 191,753. Pub. 10–13–64. Filed 4–23–64.

782,364. GARCO. The Garrett Corporation. SN 191,923. Pub. 10–13–64. Filed 4–24–64.

782,365. GARCO AND DESIGN. The Garrett Corporation. SN 191,924. Pub. 10–13–64. Filed 4–24–64.

782,366. PERPRO. Production Tool Alloy Company Limited. SN 192,074. Pub. 10–13–64. Filed 4–27–64.

782,367. FAB-PAK. The Eagle-Picher Company. SN 193,945. Pub. 10–13–64. Filed 5–21–64.

782,368. GREAT GRIP. Great Neck Saw Manufacturers, Inc. SN 194,298. Pub. 10–13–64. Filed 5–26–64.

782,369. CINPAK. The Cincinnati Milling Machine Co. SN 194,363. Pub. 10–13–64. Filed 5–27–64.

782,370. MULLVEYOR. Pettibone Mulliken Corporation. SN 194,416. Pub. 10–13–64. Filed 5–27–64.

782,371. DYNA-CHUTE. Monarch Road Machinery Company. SN 194,819. Pub. 10–13–64. Filed 6–3–64.

782,372. DYNA-JACK. Monarch Road Machinery Company. SN 194,823. Pub. 10–13–64. Filed 6–3–64.

782,373. MONARCH. Monarch Road Machinery Company. SN 194,824. Pub. 10–13–64. Filed 6–3–64.

Class 24—Laundry Appliances and Machines

782,374. GEMINI. General Motors Corporation. SN 194,798. Pub. 10–13–64. Filed 6–3–64.

Class 25—Locks and Safes

782,375. THE CONFIDENT. American Binder Company of California. SN 188,941. Pub. 10–13–64. Filed 3–18–64.

782,376. CAMDUCTOR. J. Austin Smith & Son. SN 193,228. Pub. 10–13–64. Filed 5–11–64.

Class 26—Measuring and Scientific Appliances

782,255. (See Class 6 for this trademark.)

782,377. AUTOMATION DYNAMICS. Automation Dynamics Corporation. SN 107,545. Pub. 1–7–64. Filed 11–1–60.

782,378. XENOMETER. Quarzlampen Gesellschaft m.b.H. SN 158,270. Pub. 10–13–64. Filed 9–19–63.

782,379. ALDWEIGH. ALD, Inc. SN 173,542. Pub. 10–13–64. Filed 7–23–63.

782,380. R. C. ALLEN. R. C. Allen Business Machines, Inc. SN 173,545. Pub. 10–13–64. Filed 7–23–63.

782,381. LOOK-SEE. Hester A. Pittman. SN 175,209. Pub. 10–13–64. Filed 8–16–63.

782,382. SPEEDGUIDE. Frank J. Bachmann, d.b.a. Bachmann Construction and Supply Company. SN 175,543. Pub. 10–13–64. Filed 8–22–63.

782,383. HOWE AND DESIGN. Howe Richardson Scale Company. SN 175,756. Pub. 10–13–64. Filed 8–26–63.

782,384. DOT-KUP. Tolco Corporation. SN 177,107. Pub. 10–13–64. Filed 9–16–63.

782,385. BALOPTIK. Bausch & Lomb Incorporated. SN 178,250. Pub. 10–13–64. Filed S.R. 10–3–63; Am. P.R. 8–19–64.

782,386. GRAPH-CHECK. Photogrammetry, Inc. SN 179,256. Pub. 10–13–64. Filed 10–17–63.

782,387. HEMO-DILUTER. Hewlett-Packard Company, assignee of Sanborn Company. SN 179,865. Pub. 10–13–64. Filed 10–18–63.

782,388. PEAC. Barnes Engineering Company. SN 181,452. Pub. 10–13–64. Filed 11–19–63.

782,389. PEAT. Steeline Engineering Company. SN 183,710. Pub. 10–13–64. Filed 12–27–63.

782,390. DEFCO. Decatur Foundry & Machine Company, Inc. SN 185,582. Pub. 10–13–64. Filed 1–29–64.

782,391. SNIFFER. Johnson-Williams, Inc. SN 186,855. Pub. 10–13–64. Filed 2–17–64.

782,392. EP CONTROLS AND DESIGN. Electronic Processes Corporation of California. SN 187,406. Pub. 10–13–64. Filed 2–25–64.

782,393. VITRONA. Voigtländer, A.G. SN 187,446. Pub. 10–13–64. Filed 2–25–64.

782,394. FLEX GRIP. Ace Glass Incorporated. SN 187,456. Pub. 10–13–64. Filed 2–26–64.

782,395. ELECTROLET. Da-Lite Screen Company, Inc. SN 187,916. Pub. 10–13–64. Filed 3–4–64.

782,396. VIDEOMASTER. Shirley Schwarsberger, d.b.a. A-B Mfg. Co. SN 188,583. Pub. 10–13–64. Filed 3–12–64.

782,397. PICKETT AND DESIGN. Pickett & Eckel, Inc. SN 188,914. Pub. 10–13–64. Filed 3–17–64.

782,398. MULTICHEM. Milton Roy Company. SN 188,992. Pub. 10–13–64. Filed 3–18–64.

782,399. MINI-V. Milton Roy Company. SN 188,993. Pub. 10–13–64. Filed 3–18–64.

782,400. SEKO. Seederer-Kohlbusch Inc. SN 190,044. Pub. 10–13–64. Filed 2–20–64.

782,401. FRAME-TITES. Ortho-Spec Products. SN 190,152. Pub. 10–13–64. Filed 4–2–64.

782,402. PORTAMETRIC. Electro Scientific Industries, Inc. SN 190,503. Pub. 10–13–64. Filed 4–7–64.

782,403. ATMOTECTOR. Barber Manufacturing Company. SN 190,583. Pub. 10–13–64. Filed 4–8–64.

782,404. TITRALYZER. Fisher Scientific Company. SN 190,603. Pub. 10–13–64. Filed 4–8–64.

782,405. LITE GUARD. Keystone Camera Company, Inc. SN 190,622. Pub. 10–13–64. Filed 4–8–64.

782,406. AUTO-ADD. School House Products, Inc. SN 190,650. Pub. 10–13–64. Filed 4–8–64.

782,407. TWIN TACH. Sparkomatic Corporation. SN 190,653. Pub. 10–13–64. Filed 4–8–64.

782,408. SPEED SERVO. Esterline Angus Instrument Company, Inc. SN 190,707. Pub. 10–13–64. Filed 4–9–64.

782,409. HORIZON LINE. General Electric Company. SN 190,715. Pub. 10–13–64. Filed 4–9–64.

782,410. FRIDEN AND DESIGN. Friden, Inc. SN 190,800. Pub. 10–13–64. Filed 4–10–64.

782,411. TRU POR AND DESIGN. A & M Experimental Labs. SN 191,008. Pub. 10–13–64. Filed 4–14–64.

782,412. BOOZ-STIR. Gaydell, Inc. SN 191,044. Pub. 10–13–64. Filed 4–14–64.

782,413. TEMP-T-SPOON. Gaydell, Inc. SN 191,045. Pub. 10–13–64. Filed 4–14–64.

782,414. DD AND DESIGN. Gregory S. Dolgorukov, d.b.a. Dolgorukov Manufacturing Company. SN 191,144. Pub. 10–13–64. Filed 4–15–64.

782,415. ELECTROSPOT ANALYZER. Robert F. Stearn, d.b.a. Wescott Laboratories. SN 191,221. Pub. 10–13–64. Filed 4–15–64.

782,416. ICP. Gunnar Guddal, d.b.a. King Neptune Co. SN 191,548. Pub. 10–13–64. Filed 4–20–64.

782,417. KK AND DESIGN. Kalvar Corporation. SN 191,562. Pub. 10–13–64. Filed 4–20–64.

782,418. FOREMOST. J. C. Penney Company. SN 191,949. Pub. 10–13–64. Filed 4–24–64.

782,419. DISCREET. Textron Inc. SN 192,100. Pub. 10–13–64. Filed 4–27–64.

782,420. GLEEBLE. Duffers Associates, Inc. SN 192,161. Pub. 10–13–64. Filed 4–28–64.

782,421. PROSTAR. Eastman Kodak Company. SN 192,377. Pub. 10–13–64. Filed 4–30–64.

782,422. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,127. Pub. 10–13–64. Filed 5–11–64.

Class 27—Horological Instruments

782,428. GALCO. Jules Racine & Company, Inc. SN 187,961. Pub. 10–13–64. Filed 3–4–64.

Class 28—Jewelry and Precious-Metal Ware

782,238. (See Class 3 for this trademark.)

782,424. XX (DESIGN). Julius Garfinckel & Co., Incorporated. SN 148,963. Pub. 10–13–64. Filed 7–6–62.

782,425. GL AND DESIGN. Georg Lauer. SN 178,288. Pub. 10–13–64. Filed 10–3–63.

782,426. PLUNGING PEARLS. Richelieu Licensing Corp. SN 180,449. Pub. 10–13–64. Filed 11–4–63.

782,427. ROSE SONG. Oneida Ltd. SN 193,399. Pub. 10–13–64. Filed 5–13–64.

782,428. RENAISSANCE. Coro, Inc. SN 193,455. Pub. 10–13–64. Filed 5–14–64.

782,429. YOUNG RENAISSANCE. Coro, Inc. SN 193,456. Pub. 10–13–64. Filed 5–14–64.

782,430. S AND DESIGN. Sylvania Jewelry Mfg. Co. SN 193,825. Pub. 10–13–64. Filed 5–19–64.

782,431. TLC. The Lee Company. SN 193,966. Pub. 10–13–64. Filed 5–21–64.

782,432. B AND DESIGN. B. Brown Jewelers. SN 194,028. Pub. 10–13–64. Filed 5–22–64.

782,433. LYRIC. Medco, Inc. SN 194,200. Pub. 10–13–64. Filed 5–25–64.

782,434. B AND HORSESHOE DESIGN. Joseph Zeller, d.b.a. Belmont Jewelry Mfg. Co. SN 194,546. Pub. 10–13–64. Filed 5–28–64.

Class 29 — Brooms, Brushes, and Dusters

782,435. CORONET. Johnson & Johnson, d.b.a. Tek-Hughes. SN 189,839. Pub. 10–13–64. Filed 3–26–64.

782,436. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,128. Pub. 10–13–64. Filed 5–11–64.

Class 30 — Crockery, Earthenware, and Porcelain

782,437. CELEBRITY. Quality Enterprises, Inc. SN 137,275. Pub. 1–22–63. Filed 2–5–62.

Class 31 — Filters and Refrigerators

782,438. GEMINI. General Motors Corporation. SN 194,799. Pub. 10–13–64. Filed 6–3–64.

Class 32 — Furniture and Upholstery

782,439. DATATRAY. Steelcase, Inc. SN 140,399. Pub. 10–13–64. Filed 3–21–62.

782,440. SECURITY VIEWER. Joseph A. Curtis, Jr., d.b.a. Security Viewer Company. SN 166,074. Pub. 10–13–64. Filed 4–4–63.

782,441. VINEWOOD BY HURRICANE AND DESIGN. Hurricane Import Company. SN 168,927. Pub. 10–13–64. Filed 5–15–63.

782,442. HAPPY HOME. F. W. Woolworth Co. SN 170,011. Pub. 10–13–64. Filed 5–29–63.

782,443. TREXILOY. Habitat, Inc. SN 172,487. Pub. 10–13–64. Filed 7–5–63.

782,444. MC. McDowell & Craig Mfg. Co., assignee of McDowell-Craig Chair Co., d.b.a. McDowell/Craig, McDowell-Craig, and McDowell & Craig. SN 182,097. Pub. 10–13–64. Filed 11–29–63.

782,445. PYRENEES. Monitor Furniture Co., Inc. SN 190,411. Pub. 10–13–64. Filed 4–6–64.

782,446. DOODLE IT YOURSELF. Purofied Down Products Corp. SN 191,597. Pub. 10–13–64. Filed 4–20–64.

782,447. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,129. Pub. 10–13–64. Filed 5–11–64.

782,448. POLY-PAD. William F. Niemi Co. SN 195,134. Pub. 10–13–64. Filed 6–8–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

782,265. (See Class 12 for this trademark.)

782,449. ZIP. Bow Solder Products Co. Inc. SN 191,033. Pub. 10–13–64. Filed 4–14–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

782,450. TRANSILON. Sieglingriemen Vertriebsgesellschaft der Ernst Siegling Spezialtreibriemenfabrik G.m.b.H. SN 175,883. Pub. 10–13–64. Filed 8–27–63.

782,451. SILVERTOWN. The B. F. Goodrich Company. SN 187,747. Pub. 10–13–64. Filed 3–2–64.

782,452. CUSTOM 360. United States Rubber Company. SN 190,669. Pub. 10–13–64. Filed 4–8–64.

782,453. CUSTOM 240. United States Rubber Company. SN 190,671. Pub. 10–13–64. Filed 4–8–64.

782,454. STALWART. United States Rubber Company. SN 190,997. Pub. 10–13–64. Filed 4–13–64.

782,455. SNOWDRIFT. James L. Cook, Jr., d.b.a. E. M. Blumenthal & Co. SN 191,510. Pub. 10–13–64. Filed 4–20–64.

782,456. DAYVENT. Dayco Corporation. SN 191,514. Pub. 10–13–64. Filed 4–20–64.

Class 36 — Musical Instruments and Supplies

782,457. TELEHUE. Telehue, Inc. SN 171,587. Pub. 10–13–64. Filed 6–21–63.

Class 37 — Paper and Stationery

782,458. GUARD-WRAP. Monsato Company. SN 192,420. Pub. 10–13–64. Filed 4–30–64.

Class 38 — Prints and Publications

782,459. THE NEW SETTLER'S GUIDE. New Settler's Guide, Inc., assignee of The New Settler's Guide. SN 135,405. Pub. 10–13–64. Filed 1–8–62.

782,460. HI-LITE. Standard Packaging Corporation. SN 164,476. Pub. 10–13–64. Filed 3–12–63.

782,461. OPERATING MANAGEMENT ETC. AND DESIGN. Putman Publishing Company. SN 172,411. Pub. 10–13–64. Filed 7–3–63.

782,462. OTTENHEIMER WHEEL (DESIGN). Ottenheimer Publishers, Inc. SN 181,266. Pub. 10–13–64. Filed 11–15–63.

782,463. CUBE CARD. Cube Card Corp. SN 184,442. Pub. 10–13–64. Filed 1–13–64.

782,464. VIP AND DESIGN. HMH Publishing Co., Inc. SN 189,466. Pub. 10–13–64. Filed 3–24–64.

Class 39 — Clothing

782,233. (See Class 3 for this trademark.)

782,465. HARRIS SLACKS AND DESIGN OF H. Union Manufacturing Company. SN 142,232. Pub. 6–30–64. Filed 4–13–62.

782,466. CONTEX. Continental Gummi-Werke Aktiengesellschaft. SN 146,023. Pub. 10–13–64. Filed 6–4–62.

782,467. CONTEX VKL. Continental Gummi-Werke Aktiengesellschaft. SN 146,024. Pub. 10–13–64. Filed 6–4–62.

782,468. CONTILAN. Continental Gummi-Werke Aktiengesellschaft. SN 146,025. Pub. 10–13–64. Filed 6–4–62.

782,469. WESTOVER. Stephen Putney Shoe Company. SN 161,214. Pub. 10–13–64. Filed 1–22–63.

782,470. GRAND PRIX. Hart Schaffner & Marx. SN 164,000. Pub. 10–13–64. Filed 3–4–63.

782,471. KODIAK KING AND DESIGN. L. S. Brown Company. SN 168,686. Pub. 10–13–64. Filed 5–17–63.

782,472. WINTER SETS. P. H. Hanes Knitting Company. SN 170,189. Pub. 10–13–64. Filed 6–3–63.

782,473. KANLON "CLOUD 88" AND DESIGN. Cathay Trading Corporation. SN 179,693. Pub. 8–25–64. Filed 10–24–63.

782,474. CHATITAS. Lucerna Sociedad de Responsabilidad Limitada. SN 180,417. Pub. 10–13–64. Filed 11–4–63.

782,475. THE FLORSHEIM SHOE IMPERIAL AND DESIGN. International Shoe Company, d.b.a. The Florsheim Shoe Company. SN 180,811. Pub. 10–13–64. Filed 11–8–63.

782,476. LADY IN WAITING. Fitwel Dress Co., Inc. SN 181,347. Pub. 10–13–64. Filed 11–18–63.

782,477. KHADI. India Tradelines, Inc. MULTIPLE CLASS (Classes 39 and 42). SN 181,481. Pub. 10–13–64. Filed 11–19–63.

782,478. MISS O.G. (FANCIFUL). O'Connor & Goldberg. SN 181,994. Pub. 10–13–64. Filed 11–27–63.

782,479. SUEDAMOUR. Sultime Inc. SN 182,514. Pub. 10–13–64. Filed 12–6–63.

782,480. SELF-CONTROL. Benjamin & Johnes, Inc. SN 184,077. Pub. 10–13–64. Filed 1–6–64.

782,481. AUGUSTA. Jones Knitting Corporation. SN 184,243. Pub. 10–13–64. Filed 1–8–64.

782,482. HANESET. P. H. Hanes Knitting Company. SN 184,622. Pub. 10–13–64. Filed 1–15–64.

782,483. HANESHRUNK. P. H. Hanes Knitting Company. SN 184,623. Pub. 10–13–64. Filed 1–15–64.

782,484. THE PRESTO SPACE AGE DIAPER. Cora Ann Jenkins. SN 184,676. Pub. 10–13–64. Filed 12–30–63.

782,485. FRIEDKNIT. I. & L. Friedman. SN 184,804. Pub. 10–13–64. Filed 1–17–64.

782,486. DARCURA. The Enro Shirt Company, Inc. SN 185,588. Pub. 10–13–64. Filed 1–29–64.

782,487. BOOTMAKER GUILD 800'S. Freeman Shoe Corporation. SN 185,664. Pub. 10–13–64. Filed 1–30–64.

782,488. L'IL EASE. Lily of France, Inc. SN 187,765. Pub. 10–13–64. Filed 3–2–64.

782,489. BRIAN BLAKE. Lebow Bros., Inc. SN 188,247. Pub. 10–13–64. Filed 3–9–64.

782,490. ELAS-T-R-E-T-C-H. Stardust, Inc. SN 188,397. Pub. 10–13–64. Filed 3–10–64.

782,491. DOEVELVA. The Enro Shirt Company, Inc. SN 188,525. Pub. 10–13–64. Filed 3–12–64.

782,492. JAYCODA. F. Jacobson & Sons, Inc. SN 188,982. Pub. 10–13–64. Filed 3–18–64.

782,493. TRULY FAIR. Apparel, Inc. SN 189,135. Pub. 10–13–64. Filed 3–20–64.

782,494. SUPER STAR. Globe Mills, Inc. SN 189,167. Pub. 10–13–64. Filed 3–20–64.

782,495. STAG. Robert Reise & Co. SN 189,239. Pub. 10–13–64. Filed 3–23–64.

782,496. SHERPA. Avon Sole Company. SN 189,426. Pub. 10–13–64. Filed 3–24–64.

782,497. BREEFER. Miss Youth Form Creations Corp. SN 189,793. Pub. 10–13–64. Filed 3–27–64.

782,498. BLACK WATCH. Wembley, Inc. SN 190,132. Pub. 10–13–64. Filed 4–1–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

782,477. (See Class 39 for this trademark.)

782,499. GEISHA TAFFETA. Charles Bloom Inc. SN 174,823. Pub. 10–13–64. Filed 8–12–63.

782,500. DOUBLE DUTY. Klopman Mills, Inc. SN 177,178. Pub. 10–13–64. Filed 9–17–63.

782,501. CRIMSETTE. Stretch Fabrics, Inc. SN 184,267. Pub. 10–13–64. Filed 1–8–64.

782,502. PITEX. Pitchon & Co., Limited. SN 188,915. Pub. 10–13–64. Filed 3–17–64.

782,503. DELTASTRETCH. J. P. Stevens & Co., Inc. SN 188,925. Pub. 10–13–64. Filed 3–17–64.

782,504. LORENCEAU. Fieldcrest Mills, Inc. SN 189,063. Pub. 10–13–64. Filed 3–19–64.

782,505. REGAL-LON. Lay-Cee Corporation. SN 189,329. Pub. 10–13–64. Filed 3–23–64.

782,506. BB AND DESIGN. B. Berger Company. SN 189,414. Pub. 10–13–64. Filed 3–4–64.

782,507. REPRESENTATION OF A CANNON AND CANNON BALLS. Cannon Mills Company. SN 189,651. Pub. 10–13–64. Filed 3–26–64.

782,508. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,131. Pub. 10–13–64. Filed 5–11–64.

Class 43 — Thread and Yarn

782,509. FILATURES DES 3 SUISSES. Filatures des Trois Suisses, Societe Anonyme. SN 120,197. Pub. 2–5–63. Filed 5–17–61.

782,510. MELROSE ETC. AND DESIGN. Melrose Yarn Co., Inc. SN 185,306. Pub. 10–13–64. Filed 1–24–64.

782,511. LINTELLA. Beaunit Corporation. SN 185,338. Pub. 10–13–64. Filed 1–22–64.

782,512. SYN FLEX. Globe Manufacturing Company. SN 188,539. Pub. 10–13–64. Filed 3–12–64.

782,513. REYNOLDS SONATA. Reynolds Yarns, Inc. SN 189,729. Pub. 10–13–64. Filed 3–26–64.

Class 44 — Dental, Medical, and Surgical Appliances

782,514. MALE-BAG. Melville Keim. SN 177,640. Pub. 10–13–64. Filed 9–24–63.

782,515. ACME SPEAK-EZEE. Acme Protection Equipment Co., by change of name and assignment of Acme Protection Equipment Company. SN 180,815. Pub. 10–13–64. Filed 11–12–63.

782,516. ATRICOR. Cordis Corporation. SN 181,016. Pub. 10–13–64. Filed 11–13–63.

782,517. BEND-A-BAND. Lynne Jolly. SN 182,426. Pub. 10–13–64. Filed 12–5–63.

782,518. TONOGRAFILM. American Bio-Chemical Laboratory, Inc. SN 189,973. Pub. 10–13–64. Filed 3–31–64.

782,519. TONOGARD. American Bio-Chemical Laboratory, Inc. SN 189,974. Pub. 10–13–64. Filed 3–31–64.

782,520. SAUNA AIRE. Sauna Aire Sales Co. SN 192,084. Pub. 10–13–64. Filed 4–27–64.

782,521. MASSAGE-A-MATIC. Dr. Richard W. Jackson, d.b.a. Massage-A-Matic. SN 192,290. Pub. 10–13–64. Filed 4–29–64.

782,522. WANDNAPS. Wolf & Dessauer Company. SN 198,107. Pub. 10–13–64. Filed 7–17–64.

Class 45 — Soft Drinks and Carbonated Waters

782,523. MORINAGA AND JAPANESE CHARACTERS. Morinaga Confectionery Company Limited. SN 178,020. Pub. 10–13–64. Filed 9–30–63.

782,524. ANGEL (DESIGN). Morinaga Confectionery Company Limited. SN 178,021. Pub. 10–13–64. Filed 9–30–63.

782,525. GOLD STANDARD. The Tru-Ade Company. SN 185,955. Pub. 10–13–64. Filed 2–3–64.

782,526. GLOW. Deri-Del of Maryland, Inc. SN 188,084. Pub. 10–13–64. Filed 3–6–64.

Class 46 — Foods and Ingredients of Foods

782,286. (See Class 14 for this trademark.)

782,527. CORNISH BROASTER. Lambrecht Farms Incorporated. SN 96,964. Pub. 9–11–62. Filed 5–12–60.

782,528. SLEEPY EYE. A. J. Pietrus & Sons Co. SN 108,375. Pub. 10–13–64. Filed 11–14–60.

782,529. ROYAL AND DESIGN. Pan-Alaska Fisheries, Inc., d.b.a. Alaska Fresh Co. SN 136,279. Pub. 9–18–62. Filed 1–22–62.

782,530. LITTLE FRESHIE. Milwaukee Cheese Co. SN 153,096. Pub. 10–13–64. Filed 9–13–62.

782,531. GOLDEN HEART ETC. AND DESIGN. Dixie Lily Milling Co. SN 155,393. Pub. 10–13–64. Filed 10–18–62.

782,532. DREWMULSE. Drew Chemical Corporation. SN 162,830. Pub. 10–13–64. Filed 2–15–63.

782,533. ELWELL FARMS. David M. Elwell, d.b.a. Elwell Farms. SN 167,715. Pub. 10–13–64. Filed 4–29–63.

782,534. IFM AND DESIGN. International Flavor Machines, Inc. SN 170,538. Pub. 10–13–64. Filed 6–7–63.

782,535. NELA AND DESIGN. N. Polanco, Inc. SN 174,234. Pub. 10–13–64. Filed 8–1–63.

782,536. MALENA. Cia. Agricola del Humaya, S. de R.L. SN 176,989. Pub. 10–13–64. Filed 9–16–63.

782,537. HOOTENANNY. United States Tobacco Company. SN 177,668. Pub. 10–13–64. Filed 9–24–63.

782,538. TOPS. United States Baking Company, Inc., by change of name from Miller-Parrott Baking Company, Inc. SN 178,360. Pub. 10–13–64. Filed 10–4–63.

782,539. SMIC'S. Unox Naamlose Vennootschap. SN 179,374. Pub. 10–13–64. Filed 10–18–63.

782,540. ZIM-LAC. Wisconsin-Zinn Malting Corporation. SN 179,377. Pub. 5–12–64. Filed 10–18–63.

782,541. SILVERCUP ROUND. Gordon Baking Company. SN 179,414. Pub. 10–13–64. Filed 10–21–63.

782,542. INTER-COFFI ETC. AND DESIGN. Ritoni-Import G.m.b.H. SN 180,609. Pub. 10–13–64. Filed 11–6–63.

782,543. MCP. Mutual Citrus Products Company. SN 185,805. Pub. 10–13–64. Filed 1–31–64.

782,544. VP. General Mills, Inc. SN 186,620. Pub. 10–13–64. Filed 2–13–64.

782,545. TOP FRESH. Topco Associates, Inc. SN 188,160. Pub. 10–13–64. Filed 3–6–64.

782,546. SKY HARBOR. Martin Produce, Inc. SN 190,942. Pub. 10–13–64. Filed 4–13–64.

782,547. DOG (DESIGN). Allied Mills, Inc. SN 191,475. Pub. 10–13–64. Filed 4–20–64.

782,548. KITCHEN RICH. United Biscuit Company of America. SN 191,632. Pub. 10–13–64. Filed 4–20–64.

782,549. VIR DEL. George P. Chapman, d.b.a. Millers Dog Food Company. SN 193,447. Pub. 10–13–64. Filed 5–14–64.

782,550. GROTESQUE FIGURE OF A MAN. Associated Blue Lake Green Bean Canners, Inc. SN 196,589. COLLECTIVE MARK. Pub. 10–13–64. Filed 6–29–64.

Class 47 — Wines

782,551. LANZERAC. The Stellenbosch Farmers' Winery Limited. SN 186,201. Pub. 10–13–64. Filed 2–6–64.

782,552. RED ROGUE. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 188,006. Pub. 10–13–64. Filed 3–5–64.

Class 48 — Malt Beverages and Liquors

782,553. HARLEQUIN. Plains Distributing Company, d.b.a. Wellington Beverage Company. SN 181,063. Pub. 10–13–64. Filed 11–13–63.

782,554. WALDECH. Theo. Hamm Brewing Co. SN 184,271. Pub. 10–13–64. Filed 1–8–64.

Class 49 — Distilled Alcoholic Liquors

782,555. CANADIAN SEAL. Canadian Distillers Limited. SN 185,981. Pub. 10–13–64. Filed 2–4–64.

782,556. CARRIAGE. Schenley Distillers, Inc., d.b.a. Park & Tilford Distillers Co. SN 188,396. Pub. 10–13–64. Filed 3–10–64.

782,557. ALI BABA. The Huntington Creek Corporation, d.b.a. Leroux & Company. SN 188,444. Pub. 10–13–64. Filed 3–11–64.

Class 50 — Merchandise Not Otherwise Classified

782,265. (See Class 12 for this trademark.)

782,558. WOODCRAFT. The Woodcraft Corporation. SN 154,317. Pub. 10–13–64. Filed 10–1–62.

782,559. PLASTISEAL. Anchor Hocking Glass Corporation. SN 155,680. Pub. 7–28–64. Filed 10–23–62.

782,560. DAY-LITE NEON. Hill International Display Corporation. SN 159,653. Pub. 10–13–64. Filed 12–24–62.

782,561. CRAFT HOUSE AND DESIGN. International Assemblix Corporation. SN 161,883. Pub. 10–13–64. Filed 2–1–63.

782,562. CRAFT HOUSE. International Assemblix Corporation. SN 161,884. Pub. 10–13–64. Filed 2–1–63.

782,563. SHEIDOW-MEMORIAL-BRONZE AND DESIGN. Sheidow Bronze Corporation. SN 165,003. Pub. 10–13–64. Filed 3–19–63.

782,564. CELL-O-CORE. Cell-O-Core Manufacturing Co. SN 170,732. Pub. 10–13–64. Filed 6–11–63.

782,565. LUCKY LADY AND DESIGN. D.C. May Ma-Crepe Corporation, d.b.a. Lucky Lady Products Company. SN 184,036. Pub. 10–13–64. Filed 1–6–64.

782,566. MH STANDARD AND DESIGN. M-H Standard Corporation. SN 187,298. Pub. 10–13–64. Filed 2–24–64.

782,567. THUNDERBIRD. H. Wensel Tent & Duck Co. SN 191,464. Pub. 10–13–64. Filed 4–17–64.

782,568. CROWN (DESIGN). Crown Coin Co. SN 194,470. Pub. 10–13–64. Filed 5–28–64.

782,569. ARCTIC SEAL. The Hettrick Manufacturing Company. SN 196,662. Pub. 10–13–64. Filed 6–29–64.

782,570. GUILD. Sweetheart Plastics, Inc. SN 198,985. Pub. 10–13–64. Filed 7–31–64.

Class 51 — Cosmetics and Toilet Preparations

782,571. FONTANNA. Ellen Kaye Laboratories, Inc. SN 159,825. Pub. 8–11–64. Filed 12–27–62.

782,572. IZOD. Isod, Ltd. SN 167,267. Pub. 10–13–64. Filed 4–22–63.

Class 52 — Detergents and Soaps

782,237. (See Class 6 for this trademark).

782,573. CORAL. The Sinclair Manufacturing Company, assignee of H. M. Sinclair, Jr., trustee for the Ohio partnership, The Sinclair Manufacturing Company. SN 21,090. Pub. 10–1–57. Filed 12–14–56.

782,574. CULLIGAN. Culligan, Inc. SN 178,887. Pub. 10–13–64. Filed 10–14–63.

782,575. US AND DESIGN. U.S. Sanitary Specialties Corporation. SN 185,829. Pub. 10–13–64. Filed 1–31–64.

782,576. DID. Cheesebrough-Pond's Inc. SN 187,856. Pub. 6–30–64. Filed 3–5–64.

782,577. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,132. Pub. 10–13–64. Filed 5–11–64.

Service Marks

Class 101 — Advertising and Business

782,578. MATERIAL HANDLING SPECIALISTS AND DESIGN. A. Mather Reed, d.b.a. Reed Equipment Co. SN 150,664. Pub. 10–13–64. Filed 8–6–62.

782,579. KWIK CHEK AND DESIGN. Winn-Dixie Stores, Inc. SN 180,141. Pub. 10–13–64. Filed 10–30–63.

Class 102 — Insurance and Financial

782,580. T AND UMBRELLA DESIGN. The Travelers Insurance Company. SN 178,061. Pub. 10–13–64. Filed 9–30–63.

782,581. REPRESENTATION OF AN INDIAN HEAD, ARROW AND PEACE PIPE ETC. Kanawha Insurance Company. SN 183,599. Pub. 10–13–64. Filed 12–26–63.

782,582. PPG AND DESIGN. Pittsburgh Plate Glass Company. SN 186,275. Pub. 10–13–64. Filed 2–7–64.

Class 103 — Construction and Repair

782,583. SYMBOL RESEMBLING XX. Julius Garfinckel & Co., Incorporated. SN 148,497. Pub. 10–13–64. Filed 7–6–62.

782,584. SERVICEMASTER. Wade, Wenger Servicemaster Co. SN 159,632. Pub. 10–13–64. Filed 12–21–62.

Class 104 — Communication

782,585. METRONOME (DESIGN). The Wright Broadcasting Company. SN 169,894. Pub. 10–13–64. Filed 5–28–63.

Class 105 — Transportation and Storage

782,586. REPRESENTATION OF A STRAWBERRY AND DESIGN. Berry World Travel, Inc. SN 188,876. Pub. 10–13–64. Filed 1–2–64.

782,587. FINNAIR. Aero O/Y. SN 185,546. Pub. 10–13–64. Filed 1–29–64.

Class 106 — Material Treatment

782,588. ROC-LONIZED AND DESIGN. Rockland Bleach and Dye Works, Inc. SN 179,737. Pub. 10–13–64. Filed 10–24–63.

Certification Mark

Class A — Goods

782,589. UL AND DESIGN. Underwriters' Laboratories, Inc. SN 185,169. Pub. 10–13–64. Filed 1–22–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

782,590. A. E. Chronister, d.b.a. Virginia Mills Specialties, Fairfield, Pa. SN 188,613. Filed P.R. 3–13–64; Am. S.R. 10–27–64.

LOG LITER

For Kindling Briquettes.
First use at least as early as Oct. 22, 1963.

Class 10 — Fertilizers

782,591. Red Barn Chemicals, Inc., Pecos, Tex. SN 127,796. Filed P.R. 9–13–61; Am. S.R. 10–6–64.

Phos – Fe – Zn

For Liquid Fertilizers.
First use Apr. 14, 1961.

782,592. Red Barn Chemicals, Inc., Shreveport, La. SN 151,363. Filed P.R. 8–16–62; Am. S.R. 10–6–64.

Phos - Fe - Zn "PLUS"

For Liquid Fertilizers.
First use Apr. 18, 1962.

782,593. Red Barn Chemicals, Inc., Shreveport, La. SN 151,365. Filed P.R. 8–16–62; Am. S.R. 10–16–64.

K - Fe - Zn "PLUS"

For Liquid Fertilizers.
First use Apr. 18, 1962.

782,594. Shattuck Denn Mining Corporation, New York, N.Y. SN 153,330. Filed P.R. 9–17–62; Am. S.R. 10–20–64.

SUPERFERRITE

For Soil Supplements and Soil Additives.
First use Aug. 28, 1961.

Class 12 — Construction Materials

782,595. Vetter Stone Company, Kasota, Minn. SN 165,721. Filed P.R. 3-29-63; Am. S.R. 4-15-64.

MINNESOTA MOSAIC

For Quarried Stone.
First use Jan. 30, 1963.

Class 22 — Games, Toys, and Sporting Goods

782,596. Perry-Austen Manufacturing Company, Inc., Staten Island, N.Y. SN 132,579. Filed P.R. 11-22-61; Am. S.R. 10-19-64.

COLOR PLUG

For Bowling Ball Drilling Compound.
First use Nov. 1, 1961.

782,597. Sifo Company, St. Paul, Minn. SN 169,077. Filed P.R. 5-16-63; Am. S.R. 10-12-64.

QUACKITY QUACK BOAT

For Child's Toy.
First use Mar. 4, 1963.

782,598. Anderson Golf Clubs Inc., Garden City, N.Y. SN 180,992. Filed P.R. 11-13-63; Am. S.R. 10-19-64.

ANDERSON UPRIGHT

For Golf Putter.
First use Sept. 17, 1963.

Class 38 — Prints and Publications

782,599. DMS Inc., Greenwich, Conn., assignee of Defense Marketing Services, Inc., Beverly Hills, Calif. SN 135,265. Filed P.R. 1-5-62; Am. S.R. 11-4-63.

MARKET INTELLIGENCE REPORTS

For Market Reports, Issued Periodically.
First use July 24, 1961.

782,600. Science Research Associates, Inc., Chicago, Ill. SN 138,234. Filed P.R. 2-19-62; Am. S.R. 10-28-64.

MATH DISCOVERY BOARD

No claim is made to exclusive use of the word "Math" apart from the mark as shown.
For Sets of Printed Materials for Classroom Teaching and Self-Improvement in Elementary Mathematics, Including Teaching Manuals and a Board and Number Strips of Unit Length for Disposition Thereon.
First use Mar. 24, 1961.

782,601. Sterling Drug Inc., d.b.a. Winthrop Laboratories, New York, N.Y. SN 174,451. Filed P.R. 8-5-63; Am. S.R. 10-23-64.

THE ALLERGIC PATIENT

For Medical News Periodical Published From Time to Time.
First use August 1960.

782,602. The Progressive Farmer Company, Birmingham, Ala. SN 178,478. Filed P.R. 10-7-63; Am. S.R. 10-22-64.

SOUTHERN LIVING

For Section of a Monthly Magazine Containing Articles, Information and Features of Particular Interest to Persons Residing in the Southern Part of the United States.
First use Sept. 11, 1963.

Class 46 — Foods and Ingredients of Foods

782,603. Unifranck Lebensmittelwerke GmbH, Ludwigsburg, Germany, by change of name from Franck und Kathreiner G.m.b.H., Ludwigsburg, Germany. SN 67,338. Filed P.R. 2-9-59; Am. S.R. 9-8-61.

KNEIPP

Owner of German Reg. No. 50,795, dated Sept. 25, 1901; and U.S. Reg. No. 312,094.
For Coffee; Coffee Additives—Namely, Roasted Chicory, Roasted Figs, and Roasted Sugar; Tea, Cocoa; Chocolate in Solid, Powder and Liquid Form for Cooking, Baking, and for Consumption as Candy; Baked Goods—Namely, Cakes, Pies, Cookies, Crackers, and Pastry.

782,604. Crystal Pure Candy Company, Chicago, Ill. SN 153,071. Filed P.R. 9-13-62; Am. S.R. 10-22-64.

CRYSTAL PURE

For Candy.
First use at least as early as 1922.

782,605. Etablissements Lefevre Utile, Nantes, France. SN 170,053. Filed P.R. 5-31-63; Am. S.R. 8-17-64.



The drawing is lined for gold.
For Cookies and Biscuits.
First use Nov. 28, 1962; in commerce Nov. 28, 1962.

782,606. Etablissements Lefevre Utile, Nantes, France. SN 172,649. Filed P.R. 7-9-63; Am. S.R. 8-17-64.

GATEAU NANTAIS

The French words "Gateau Nantais" mean "cake of Nantes."
For Cakes.
First use Feb. 1, 1963; in commerce Feb. 1, 1963.

782,607. Beer Nuts, Inc., Bloomington, Ill. SN 177,222. Filed P.R. 9-18-63; Am. S.R. 7-16-64.

AMERICA'S FAVORITE NUTS

For Shelled and Salted Peanuts.
First use Apr. 28, 1960.

782,608. McCleary Industries, Inc., South Beloit, Ill. SN 180,934. Filed P.R. 11-12-63; Am. S.R. 10-28-64.

NERTZ

For Shelled Peanuts.
First use Oct. 25, 1963.

782,609. L. S. Heath & Sons, Inc., Robinson, Ill. SN 183,838. Filed P.R. 12-31-63; Am. S.R. 10-28-64.



For Candy.
First use Oct. 23, 1963.

Class 49 — Distilled Alcoholic Liquors

782,610. Katz Drug Company, Kansas City, Mo. SN 26,284. Filed P.R. 3-15-57; Am. S.R. 12-29-58.



Vodka Supreme

The lining appearing in the drawing is for purposes of indicating shading only.
For Vodka.
First use June 1, 1953.

Class 50 — Merchandise Not Otherwise Classified

782,611. Lyon Rural Electric Company, San Diego, Calif. SN 156,003. Filed P.R. 10-26-62; Am. S.R. 10-21-64.

BEAK HEAT TREATOR

For Poultry Equipment Items for Treatment of Beaks, and Kits Including or Consisting of a Bracket, Adjustable Tube, Hose and a Blade.
First use Oct. 9, 1962.

782,612. Caldwell Lace Leather Company, Inc., d.b.a. Caldwell Gasket Division, Auburn, Ky. SN 160,092. Filed P.R. 1-3-63; Am. S.R. 10-23-64.

Cushionette

For Adhesive Backed Cushioning Material Cut in Circles, Squares, Strips, Rolls and Other Various Shapes.
First use Nov. 26, 1962.

782,613. Union Bag-Camp Paper Corporation, New York, N.Y. SN 178,063. Filed P.R. 9-30-63; Am. S.R. 10-29-64.

CAPSULE-PAK

For Display Packages Consisting of a Display Card or Holder for Various Products.
First use Aug. 7, 1963.

Class 52 — Detergents and Soaps

782,614. Heatbath Corporation, Springfield, Mass. SN 190,259. Filed P.R. 4-3-64; Am. S.R. 10-29-64.

SOKLEEN

For Cleaning Chemicals—Namely, Chemicals for Preparing Alkaline Soak Baths for Cleaning Ferrous and Non-Ferrous Metals.
First use about July 10, 1963.

Service Mark

Class 100 — Miscellaneous

782,615. McKales Corporation, Seattle, Wash. SN 186,181. Filed P.R. 2-6-64; Am. S.R. 10-26-64.

SAFE-T-CHEK

For Motor Vehicle Lubrication Service.
First use Dec. 15, 1961.

TRADEMARK REGISTRATIONS RENEWED

187,901. CHRYSLER AND DESIGN. Cl. 43. 8–12–24.
190,978. MILL COT. Cl. 15. 10–28–24.
191,145. SANFURA. Cl. 20. 11–4–24.
191,412. LOXCHEX. Cl. 37. 11–11–24.
192,049. TANGEE. Cl. 51. 11–25–24.
192,125. PERFECTO. Cl. 6. 11–25–24.
192,266. WALK-STRATE. Cl. 44. 12–2–24.
192,268. ROCKFORD. Cl. 39. 12–2–24.
192,521. FOOT-EAZER. Cl. 44. 12–9–24.
192,917. UP-LIFT. Cl. 44. 12–16–24.
193,088. CUSHMAN. Cl. 23. 12–16–24.
193,101. FORMOPED. Cl. 39. 12–16–24.
193,204. MOHICAN. Cl. 46. 12–23–24.
193,852. LIQUI-GLOVE. Cl. 51. 1–6–25.
194,001. WILSHIRE. Cl. 15. 1–13–25.
194,624. GOOD WILL AND DESIGN. Cl. 46. 2–3–25.
194,880. LITTLE BO-BEEP. Cl. 6. 2–10–25.
195,059. COPEG-ARCH. Cl. 39. 2–17–25.
195,794. LINSEAL AND DESIGN. Cl. 15. 3–3–25.
196,039. FLORAGOLD. Cl. 46. 3–10–25.
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409,923. SOVA-KOTE. Cl. 15. 10–31–44.
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411,262. PLASTAPED. Cl. 44. 1–9–45.
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411,547. THE ASSOCIATED PRESS. Cl. 38. 1–23–45.
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669,457. TWO FOR THE MONEY. Cl. 3.
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669,467. DIAMINOGEN. Cl. 6.
669,468. OXYDIAMINOGEN. Cl. 6.
669,474. HALOID XEROX. Cl. 6.
669,476. THIOPON. Cl. 6.
669,477. AMOCO. Cl. 6.
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669,623. F. W. DODGE CORP. AND DESIGN. Cl. 38.
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669,742. PLAYING WITH FIRE. Cl. 51.

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189,041. GRAPE DEW AND DESIGN. Cl. 45. 9–9–24. Grape-Dew Company of America. Brandimist, Inc., Atlanta, Ga. Amended to appear:

GrapeDew

508,063. MOOSE BRAND. Cl. 46. 3–29–49. Kraft Foods Company. National Dairy Products Corporation, Chicago, Ill. Amended to appear:

MOOSE BRAND

641,233. DIAMID. Cl. 6. 2–12–57. Diamond Alkali Company, Cleveland, Ohio. Amended to appear:

DIAMID

669,346. TRILOK. Cl. 42. 11–4–58. United States Rubber Company, New York, N.Y. Amended: In the statement, column 2, lines 2, 3 and 4, ", or synthetic fibers and natural fibers, for example, cotton or linen or mohair" is deleted.

695,970. SANYO. Cl. 21. 4–12–60. Sanyo Electric Co., Ltd., Osaka, Japan. Amended to appear:

SANYO

708,779. PROPYLON. Cl. 48. 12–20–60. Canadian Celanese Limited. Chemcell (1963) Limited, Montreal, Quebec, Canada. Amended: In the statement, column 1, line 1, after "Limited", *now by change of name Chemcell (1963) Limited* is inserted.

768,223. STRETCH LEV'S. Cl. 39. 4–14–64. Levi Strauss & Co., San Francisco, Calif. Amended to appear:

S-T-R-E-T-C-H
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776,801. KINORA. Cl. 49. 6–1–64. Glen Keith-Glenlivet Distillery Company, Limited, Keith, Scotland. Amended to appear:

KINORA

779,567. FARGO. Cl. 46. 11–3–64. Dairy Technics, Inc., Kalamazoo, Mich. Corrected: In the statement, column 1, line 2, "Glending" should be deleted and *Glendening* should be inserted.

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A & M Experimental Labs, Pomona, Calif. 782,411, pub. 10–13–64. Cl. 26.
Ace Glass Inc., Vineland, N.J. 782,394, pub. 10–13–64. Cl. 26.
Acme Protection Equipment Co., from Acme Protection Equipment Co., South Haven, Mich. 782,515, pub. 10–13–64. Cl. 44.
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American Enka Corp., Enka, N.C. 669,668, canc. Cl. 43.
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Federal Cartridge Corp., Minneapolis, Minn. 782,268, pub. 10–13–64. Cl. 9.
Fellows Medical Mfg. Co., Inc., Detroit, Mich. 782,296, pub. 10–13–64. Cl. 18.
Feltcraft Co., Inc., Paulsboro, N.J., to Sandura Co., Jenkintown, Pa. 191,145, ren. 12–29–64. Cl. 20.
Feurer Bros., Inc., North White Plains, N.Y. 782,348, pub. 10–13–64. Cl. 32.
Fieldcrest Mills, Inc., Spray, N.C. 782,504, pub. 10–13–64. Cl. 42.
Filatures des Trois Suisses, Societe Anonyme, Croix (Nord), France. 782,509, pub. 2–5–63. Cl. 43.
Fisch, Richard A., d.b.a. Anchor Plastics Co., New York, N.Y., to Anchor Plastics Co., Inc., Long Island City, N.Y. 410,308, ren. 12–29–64. Cl. 1.
Fischer Scientific Co., Pittsburgh, Pa. 782,404, pub. 10–13–64. Cl. 26.
Fitwel Dress Co., Inc., Boston, Mass. 782,476, pub. 10–13–64. Cl. 39.
Florsheim Shoe Co., The: *See*—
International Shoe Co.
Fougera, E., & Co., Inc., Hicksville, N.Y. 782,312, pub. 10–13–64. Cl. 18.
Franck und Kathreiner G.m.b.H.: *See*—
Unifranck Lebensmittewerke G.m.b.H.
Freeman Shoe Corp., Beloit, Wis. 782,487, pub. 10–13–64. Cl. 39.
Friden, Inc., San Leandro, Calif. 782,410, pub. 10–13–64. Cl. 26.
Funco Products: *See*—
Beauty Products, Ltd.
Gallo, E. & J., Winery, Modesto, Calif. 669,707, canc. Cl. 47.
Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 782,552, pub. 10–13–64. Cl. 47.
Gallo Vineyards: *See*—
Gallo, E. & J., Winery.
Garfinckel, Julius, & Co., Inc., Washington, D.C. 782,424, pub. 10–13–64. Cl. 28.
Garfinckel, Julius, & Co., Inc., Washington, D.C. 782,583, pub. 10–13–64. Cl. 103.
Garrett Corp., The, Los Angeles, Calif. 782,364–5, pub. 10–13–64. Cl. 23.
Gaydell, Inc., Pacific Palisades, Calif. 782,412–13, pub. 10–13–64. Cl. 26.
Geigy Chemical Corp., Ardsley, N.Y. 782,242, pub. 10–13–64. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 782,261, pub. 10–13–64. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 669,467–8, canc. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 782,245–7, pub. 10–13–64. Cl. 6.
General Electric Co., Schenectady, N.Y. 782,409, pub. 10–13–64. Cl. 26.
General Mills, Inc., Minneapolis, Minn. 782,544, pub. 10–13–64. Cl. 46.
General Motors Corp., Detroit, Mich. 782,332, pub. 10–13–64. Cl. 21.
General Motors Corp., Detroit, Mich. 782,374, pub. 10–13–64. Cl. 24.
General Motors Corp., Detroit, Mich. 782,438, pub. 10–13–64. Cl. 31.
Geneseo Inc.: *See*—
Schober, Laird, & Co., Inc.
"Givenchy" (Societe Anonyme), Paris, France. 669,610, canc. Cl. 28.
Glafey, G. A., Nurnberg, Germany. 669,615, canc. Cl. 34.
Glamorgan Pipe & Foundry Co., Lynchburg, Va. 782,281, pub. 10–13–64. Cl. 13.
Glen Keith-Glenlivet Distillery Co., Ltd., Keith, Scotland. 776,901. Am. 7(d). Cl. 49.
Globe Mfg. Co., Fall River, Mass. 782,512, pub. 10–13–64. Cl. 43.
Globe Mills, Inc., Leesport, Pa. 782,494, pub. 10–13–64. Cl. 39.
Glu-Down Products Co., Chicago, Ill. 669,740, canc. Cl. 50.
Golden Age Macaroni Corp., Los Angeles, Calif., to Grocery Store Products Co., West Chester, Pa. 412,501, ren. 12–29–64. Cl. 46.

Goldsmith, John R., Berkeley, Calif. 669,608, canc. Cl. 26.
Good-All Electric Mfg. Co., Ogallala, Nebr. 669,547, canc. Cl. 21.
Goodrich, B. F., Co., The, Akron, Ohio. 782,451, pub. 10–13–64. Cl. 35.
Gordon Baking Co., Detroit, Mich. 782,541, pub. 10–13–64. Cl. 46.
Grace, W. R., Co., New York, N.Y. 782,251, pub. 10–13–64. Cl. 6.
Grape-Dew Co. of America, Brandimist, Inc., Atlanta, Ga. 189,041. Am. 7(d). Cl. 45.
Grayson-Robinson Stores, Inc., New York, N.Y. 669,643, canc. Cl. 39.
Greater Iowa Corp., The, Waterloo, Iowa. 782,357, pub. 10–13–64. Cl. 23.
Great Neck Saw Manufacturers, Inc., Mineola, N.Y. 782,368, pub. 10–13–64. Cl. 23.
Grocery Store Products Co.: *See*—
Golden Age Macaroni Corp.
Grumman Allied Industries, Inc., Garden City, N.Y. 782,321, pub. 10–13–64. Cl. 19.
Guddal, Gunnar, d.b.a. King Neptune Co., Seattle, Wash. 782,416, pub. 10–13–64. Cl. 26.
Gulf States Casket Corp., Alexandria, La. 782,232, pub. 10–13–64. Cl. 2.
HMH Publishing Co., Inc., Chicago, Ill. 782,464, pub. 10–13–64. Cl. 38.
Haas-Lieber Grocery Co., St. Louis, Mo. 197,918, ren. 12–29–64. Cl. 46.
Habitat, Inc., New York, N.Y. 782,443, pub. 10–13–64.
Halberg, Harald, Svendborg, Denmark. 782,293, pub. 10–13–64. Cl. 17.
Haloid Co., The: *See*—
Haloid Xerox Inc.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 669,474, canc. Cl. 6.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 669,736–7, canc. Cl. 52.
Hamm, Theo., Brewing Co., St. Paul, Minn. 782,554, pub. 10–13–64. Cl. 48.
Hanes, P. H., Knitting Co., Winston-Salem, N.C. 782,472, pub. 10–13–64. Cl. 39.
Hanes, P. H., Knitting Co., Winston-Salem, N.C. 782,482–3, pub. 10–13–64. Cl. 39.
Harris, Mary E., San Francisco, Calif. 782,336, pub. 10–13–64. Cl. 22.
Heathcraft Corp., Springfield, Mass. 782,614. Cl. 52.
Heath, L. S., & Sons, Inc., Robinson, Ill. 782,609. Cl. 46.
Heesling, Paul F., d.b.a. T.T. Products Co., Brooklyn, N.Y. 669,560, canc. Cl. 22.
Hercules Plastics Corp., New York, N.Y. 669,506, canc. Cl. 13.
Hettrick Mfg. Co., The, Toledo, Ohio. 669,558, canc. Cl. 22.
Hettrick Mfg. Co., The, Statesville, N.C. 782,569, pub. 10–13–64. Cl. 50.
Hewlett-Packard Co., Palo Alto, Calif., from Sanborn Co., Waltham, Mass. 782,387, pub. 10–13–64. Cl. 26.
Higbie Mfg. Co., Rochester, Oakland County, Mich. 669,553, canc. Cl. 22.
Hill Acme Co., The, Cleveland, Ohio. 782,355, pub. 10–13–64. Cl. 23.
Hill, George W., and Co., Covington, Ky. 782,224, pub. 10–13–64. Cl. 1.
Hill International Display Corp., Grand Rapids, Mich. 782,500, pub. 10–13–64. Cl. 50.
Hi-Shear Corp., Torrance, Calif. 782,375, pub. 10–13–64. Cl. 13.
Holcomb, J. L., Mfg. Co., Inc., Indianapolis, Ind. 782,238, pub. 5–14–63. Cl. 6.
Home Metal Products Co., Plano, Tex. 782,239, pub. 10–13–64. Cl. 6.
Horawood Warp Knitting Corp., Wadesboro, N.C. 669,653, canc. Cl. 43.
Houston Oil Field Material Co., Inc., Houston, Tex. 669,725, canc. Cl. 52.
Hub-O-Matic, Inc., Spokane, Wash. 669,586, canc. Cl. 19.
Hudson House, Inc., Portland, Oreg. 669,580, canc. Cl. 19.
Hull, R. O., & Co., Inc., Cleveland, Ohio. 782,357, pub. 10–13–64. Cl. 6.
Humble Oil & Refining Co.: *See*—
Standard Oil Co.
Huntington Creek Corp., The, d.b.a. Leroux & Co., Ruffsdale, Pa. 782,557, pub. 10–13–64. Cl. 49.
Hurricane Import Co., San Francisco, Calif. 782,441, pub. 10–13–64. Cl. 32.
I. & L. Friedman, Brooklyn, N.Y. 782,485, pub. 10–13–64. Cl. 39.
India Tradelines, Inc., New York, N.Y. 782,477, pub. 10–13–64. Multiple Class (Classes 39 and 42).
International Assemblix Corp., Chicago, Ill. 782,561–2, pub. 10–13–64. Cl. 50.
International Elevator Co., Minneapolis, Minn., to Farmers Union Grain Terminal Association, St. Paul, Minn. 406,754, ren. 12–29–64. Cl. 46.
International Equipment Co., Needham Heights, Mass. 782,352, pub. 10–13–64. Cl. 23.
International Flavor Machines, Inc., St. Louis, Mo. 782,584, pub. 10–13–64. Cl. 46.
International Shoe Co., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 782,475, pub. 10–13–64. Cl. 39.
Irwill Knitwear Corp., New York, N.Y. 669,736, canc. Cl. 39.
Isod, Ltd., New York, N.Y. 782,572, pub. 10–13–64. Cl. 51.
JFD Electronics Corp., Brooklyn, N.Y. 782,336, pub. 10–13–64. Cl. 21.
Jackson, Dr. Richard W., d.b.a. Massage-A-Matic, St. Louis, Mo. 782,531, pub. 10–13–64. Cl. 44.
Jacobson, F., & Sons, Inc., New York, N.Y. 782,492, pub. 10–13–64. Cl. 39.
Jenkins, Cora A., Houston, Tex. 782,484, pub. 10–13–64. Cl. 39.
Jerron Affiliated Companies Ltd., Toronto, Ontario, Canada. 782,272, pub. 4–14–64. Cl. 18.
Johnson & Johnson, d.b.a. Tak-Hughes, New Brunswick, N.J. 782,435, pub. 10–13–64. Cl. 39.
Johnson, Milton C., Co., New York, N.Y. 191,412, ren. 12–29–64. Cl. 37.
Johnson-Williams, Inc., Mountain View, Calif. 782,391, pub. 10–13–64. Cl. 26.
Johnston, R., & Co. Proprietary Ltd., Collingwood, Victoria, Australia. 669,631, canc. Cl. 39.
Jolly Lyons, Tempe, Ariz. 782,517, pub. 10–13–64. Cl. 44.
Jones Knitting Corp., New York, N.Y. 782,481, pub. 10–13–64. Cl. 39.
K-L Remedy Co., The: *See*—
Lebos, Milton S.
KVP Sutherland Paper Co., Kalamazoo, Mich. 782,231, pub. 10–13–64. Cl. 2.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 782,268, pub. 10–13–64. Cl. 12.
Kalvar Corp., New Orleans, La. 782,417, pub. 10–13–64. Cl. 26.
Kanawha Insurance Co., Lancaster, S.C. 782,581, pub. 10–13–64. Cl. 102.
Karell Lingerie, Inc., New York, N.Y. 669,649, canc. Cl. 39.
Katz Drug Co., Kansas City, Mo. 782,610. Cl. 49.
Kay Chemical Co., High Point, N.C. 782,256, pub. 10–13–64. Cl. 6.
Kaye, Ellen, Laboratories, Inc., St. Paul, Minn. 782,571, pub. 6–11–64. Cl. 51.
Kaye, S. L., Co., Inc., New York, N.Y. 782,318, pub. 10–13–64. Cl. 19.
Kearo Products, Lake View, Iowa. 669,718, canc. Cl. 50.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 782,223, pub. 10–13–64. Cl. 1.
Keystone Camera Co., Inc., Boston, Mass. 782,405, pub. 10–13–64. Cl. 26.
Keystone Lubricating Co., Calumet City, Ill. 782,288, pub. 10–13–64. Cl. 15.
King Neptune Co.: *See*—
Guddal, Gunnar.
Kingsway Products Co.: *See*—
Rexall Drug and Chemical Co.
Klasi, J., Nuxo-Werk A.-G., Kempraten Rapperswil, Switzerland. 669,701, canc. Cl. 46.
Klopman Mills, Inc., New York, N.Y. 782,500, pub. 10–13–64. Cl. 42.
Knight Enterprises, Inc., Alhambra, Calif. 782,279–80, pub. 10–13–64. Cl. 13.
Koleraft Products, Inc., Chicago, Ill. 669,537, canc. Cl. 19.
Koring Bros., Inc., Long Beach, Calif. 782,335, pub. 10–13–64. Cl. 23.
Kraft Foods Co. National Dairy Products Corp., Chicago, Ill. 508,062. Am. 7(d). Cl. 46.
Kravex Mfg. Corp., Brooklyn, N.Y. 782,278, pub. 10–13–64. Cl. 13.
Lakeland Mfg. Co., Sheboygan, Wis. 669,630, canc. Cl. 39.
Lambrecht Farms Inc., Brookfield, Wis. 782,527, pub. 9–11–62. Cl. 46.
Lane Ltd., New York, N.Y. 782,294, pub. 10–13–64. Cl. 17.
Lansing, James B., Sound, Inc., Los Angeles, Calif. 782,327–8, pub. 10–13–64. Cl. 21.
Laser, Inc., Crown Point, Ind. 782,316, pub. 10–13–64.
Lasting Building Supply & Equipment Co., Baltimore, Md. 669,716, canc. Cl. 50.
Lauer, Georg, Pforsheim, Germany. 782,425, pub. 10–13–64. Cl. 28.
Lay-Cee Corp., New York, N.Y. 782,505, pub. 10–13–64. Cl. 42.
Lebos, Milton S., d.b.a. The K-L Remedy Co., Atlanta, Ga. 782,311, pub. 10–13–64. Cl. 18.
Lebow Bros., Inc., Baltimore, Md. 782,489, pub. 10–13–64. Cl. 39.
Lee Co., The, Providence, R.I. 782,431, pub. 10–13–64. Cl. 26.
Lennox Mfg. Co., St. Louis, Mo. 412,724, ren. 12–29–64. Cl. 3.
Leroux & Co.: *See*—
Huntington Creek Corp., The.
Liebmann Breweries, Inc., Brooklyn, N.Y. 781,254, canc. Cl. 48.
Lilly of France, Inc., New York, N.Y. 782,488, pub. 10–13–64. Cl. 39.
Lipka, Stephen, Melbourne, Fla. 669,562, canc. Cl. 22.
Liquid Nitrogen Processing Corp., Malvern, Pa. 782,228, pub. 10–13–64. Cl. 1.
Liqui-Glove Co. (Not Inc.): *See*—
Nachtrieb, H. A.
Loma Machine Mfg. Co., Inc., New York, N.Y. 413,131, ren. 12–29–64. Cl. 23.
Longworth, Christopher, Camden, Maine. 782,342, pub. 10–13–64. Cl. 22.
Lorraine de Laminage Continu "Sollac," Societe, Paris, France. 782,287, pub. 10–13–64. Cl. 14.
Lovsted, C. M., & Co.: *See*—
Lovsted, C. M., & Co. Inc.
Lovsted, C. M., & Co. Inc., to C. M. Lovsted, Inc., d.b.a. C. M. Lovsted & Co., Seattle, Wash. 409,586, ren. 12–29–64. Cl. 21.
Lovsted, C. M., Inc.: *See*—
Lovsted, C. M., & Co. Inc.
Lucerna Sociedad de Responsabilidad Limitada, Buenos Aires, Argentina. 782,474, pub. 10–13–64. Cl. 39.
Lucky Lady Products Co.: *See*—
May, D. C., Ma-Crepe Corp.
Ludlow Corp.: *See*—
Ludlow Mfg. Associates.
Ludlow Mfg. Associates, Boston, to Ludlow Corp., Needham, Mass. 197,378, canc. Cl. 7.

Luft, George W., Co., Inc., The, to The George W. Luft Co., Inc., Long Island City, N.Y. 192,049, ren. 12–29–64. Cl. 51.
Lyon Rural Electric Co., San Diego, Calif. 782,611. Cl. 50.
M-H Standard Corp., Hamilton, Ohio. 782,566, pub. 10–13–64. Cl. 50.
Manhattan Shirt Co., The, New York, N.Y. 669,646, canc. Cl. 39.
Martin Produce, Inc., Salinas, Calif. 782,546, pub. 10–13–64. Cl. 46.
May, D. C., Ma-Crepe Corp., d.b.a. Lucky Lady Products Co., Durham, N.C. 782,565, pub. 10–13–64. Cl. 50.
McCleary Industries, Inc., South Beloit, Ill. 782,608. Cl. 46.
McDowell & Craig: *See*— McDowell & Craig Mfg. Co.
McDowell & Craig Mfg. Co., from McDowell-Craig Chair Co., d.b.a. McDowell/Craig, McDowell-Craig, and McDowell & Craig, Norwalk, Calif. 782,444, pub. 10–13–64. Cl. 32.
McDowell-Craig: *See*— McDowell & Craig Mfg. Co.
McDowell-Craig Chair Co.: *See*— McDowell & Craig Mfg. Co.
McGlaughlin Oil Co., The, Columbus, Ohio. 782,289, pub. 10–13–64. Cl. 15.
McKales Corp., Seattle, Wash. 782,615. Cl. 100.
Medco, Inc., Kansas City, Mo. 782,433, pub. 10–13–64. Cl. 28.
Melrose Yarn Co., Inc., Brooklyn, N.Y. 782,510, pub. 10–13–64. Cl. 43.
Melville, Kelm, Palm Springs, Calif. 782,514, pub. 10–13–64. Cl. 44.
Mid-States Distributing Co., Inc., St. Paul, Minn. 782,250, pub. 10–13–64. Cl. 6.
Mid-States Distributing Co., Inc., St. Paul, Minn. 782,331, pub. 10–13–64. Cl. 21.
Midway Ink Corp., Hoboken, N.J. 782,259, pub. 10–13–64. Cl. 6.
Miller-Parrott Baking Co., Inc.: *See*— United States Baking Co., Inc.
Millers Dog Food Co.: *See*— Chapman, George P.
Milwaukee Cheese Co., Brookfield, Wis. 782,530, pub. 10–13–64. Cl. 46.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 782,346, pub. 10–13–64. Cl. 22.
Miss Youth Form Creations Corp., New York, N.Y. 782,497, pub. 10–13–64. Cl. 39.
Mitchell, Philip, & Sons, Inc., Brooklyn, N.Y. 669,457, canc. Cl. 3.
Molded Fiber Glass Body Co., Union City, Pa. 782,320, pub. 10–13–64. Cl. 19.
Monarch Road Machinery Co., Grand Rapids, Mich. 782,371–3, pub. 10–13–64. Cl. 38.
Monitor Furniture Co., Inc., Jamestown, N.Y. 782,445, pub. 10–13–64. Cl. 32.
Monsanto Co., St. Louis, Mo. 782,458, pub. 10–13–64. Cl. 37.
Morinaga Confectionery Co. Ltd., Minato-ku, Tokyo, Japan. 782,523–4, pub. 10–13–64. Cl. 45.
Mutual Citrus Products Co., Anaheim, Calif. 782,543, pub. 10–13–64. Cl. 46.
Nachtrieb, H. A., d.b.a. Liqui-Glove Co. (Not Inc.), Chicago, Ill., to The Benjamin Ansehl Co., St. Louis, Mo. 193,852, ren. 12–29–64. Cl. 51.
National Dairy Products Corp.: *See*— Kraft Foods Co.
National Gypsum Co., Buffalo, N.Y. 669,499, canc. Cl. 12.
National Gypsum Co., Buffalo, N.Y. 782,271, pub. 10–13–64. Cl. 12.
National Lead Co., New York, N.Y. 782,258, pub. 10–13–64. Cl. 6.
Nelco Corp., New York, N.Y. 782,349, pub. 6–18–63. Cl. 23.
Nelson Knitting Co., Rockford, Ill. 192,268, ren. 12–29–64. Cl. 39.
Nelson Log Bronc Co., Coos Bay, Oreg. 782,322, pub. 10–13–64. Cl. 19.
New Settler's Guide, Inc., from The New Settler's Guide, Cambridge, Mass. 782,459, pub. 10–13–64. Cl. 38.
New Settler's Guide, The: *See*— New Settler's Guide, Inc.
Niemi, William F., Co., Seattle, Wash. 782,448, pub. 10–13–64. Cl. 32.
Oakes Ranches, Chicago, Ill. 669,446, canc. Cl. 1.
Oakton Engineering Corp., Skokie, Ill. 669,592, canc. Cl. 26.
O'Connor & Goldberg, Chicago, Ill. 782,478, pub. 10–13–64. Cl. 39.
Olin Mathieson Chemical Corp., New York, N.Y. 782,253, pub. 10–13–64. Cl. 6.
Olson, Everett M., d.b.a. Pacific Combers, Inc., San Jose, Calif. 782,344, pub. 10–13–64. Cl. 22.
Oneida Ltd., Oneida, N.Y. 782,427, pub. 10–13–64. Cl. 28.
Organics, Inc., Denver, Colo. 669,485, canc. Cl. 10.
Ortho-Spec Products, Brookline, Mass. 782,401, pub. 10–13–64. Cl. 26.
Ottenheimer Publishers, Inc.: *See*— Stenso Lettering Co.
Ottenheimer Publishers, Inc., Owings Mills, Md. 782,462, pub. 10–13–64. Cl. 38.
P.J. Products, Inc., Lincolnwood, Ill. 782,341, pub. 10–13–64. Cl. 22.
Pacific Combers, Inc.: *See*— Olson, Everett M.
Pan-Alaska Fisheries, Inc., d.b.a. Alaska Fresh Co., Seattle, Wash. 782,529, pub. 9–18–62. Cl. 46.
Park & Tilford Distillers: *See*— Schenley Distillers, Inc.
Parker Brothers, Inc., Salem, Mass. 782,347, pub. 10–13–64. Cl. 22.
Penney, J. C., Co., New York, N.Y. 782,418, pub. 10–13–64. Cl. 26.
Pennsalt Chemicals Corp., Philadelphia, Pa. 782,248, pub. 10–13–64. Cl. 6.
Perry-Austen Mfg. Co., Inc., Staten Island, N.Y. 782,596. Cl. 22.
Peters, Paul, Co. Inc., d.b.a. The Town Crier, Boston, Mass. 669,688, canc. Cl. 46.
Pettibone Mulliken Corp., Chicago, Ill. 782,370, pub. 10–13–64. Cl. 23.
Pfizer, Chas., & Co., Inc., New York, N.Y. 782,240–1, pub. 10–13–64. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 782,252, pub. 10–13–64. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 782,313, pub. 10–13–64. Cl. 18.
Photogrammetry, Inc., Rockville, Md. 782,386, pub. 10–13–64. Cl. 26.
Pickett & Eckel, Inc., Alhambra, Calif. 782,397, pub. 10–13–64. Cl. 26.
Pietrus, A. J., & Sons Co., Sleepy Eye, Minn. 782,528, pub. 10–13–64. Cl. 46.
Pitchon & Co., Ltd., Bradford, England. 782,502, pub. 10–13–64. Cl. 42.
Pittman, Hester A., Lomita, Calif. 782,381, pub. 10–13–64. Cl. 26.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 782,582, pub. 10–13–64. Cl. 102.
Plains Distributing Co., d.b.a. Wellington Beverage Co., Santa Monica, Calif. 782,553, pub. 10–13–64. Cl. 48.
Planetary Sciences Inc., Santa Clara, Calif. 782,324, pub. 10–13–64. Cl. 21.
Plough, Inc., Memphis, Tenn. 669,524, canc. Cl. 18.
Polanco, N., Inc., Miami, Fla. 782,535, pub. 10–13–64. Cl. 46.
Pomerants, A., & Co., Philadelphia, Pa. 669,622, canc. Cl. 38.
Prescripto Pharmaceuticals Inc., Brooklyn, N.Y. 782,302, pub. 10–13–64. Cl. 18.
Production Tool Alloy Co., Ltd., Sharpenhoe, England. 782,366, pub. 10–13–64. Cl. 23.
Progressive Farmer Co., The, Birmingham, Ala. 782,602. Cl. 38.
Propertyguard Fence, Inc., from Wm. F. Wittel & Co., Irvington, N.J. 782,277, pub. 10–13–64. Cl. 13.
Puhl, John, Products Co., The, Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 194,880, ren. 12–29–64. Cl. 6.
Purex Corp., Ltd.: *See*— Puhl, John, Products Co., The.
Puroded Down Products Corp., New York, N.Y. 782,446, pub. 10–13–64. Cl. 32.
Putman Publishing Co., Chicago, Ill. 782,461, pub. 10–13–64. Cl. 38.
Putney, Stephen, Shoe Co., Richmond, Va. 782,469, pub. 10–13–64. Cl. 39.
Quality Enterprises, Inc., Shawnee Mission, Kans. 782,437, pub. 1–22–64. Cl. 30.
Quarzlampen Gesellschaft m.b.H., Hanau (Main), Germany. 782,378, pub. 10–13–64. Cl. 26.
Quixet, Inc., Dayton, Ohio. 669,712, canc. Cl. 50.
Racine, Jules, & Co., Inc., New York, N.Y. 782,428, pub. 10–13–64. Cl. 27.
Red Barn Chemicals, Inc., Pecos, Tex. 782,591–3. Cl. 10.
Red Fox Orchards, to Consolidated Orange Growers, Orange, Calif. 193,204, ren. 12–29–64. Cl. 46.
Reed, A. Mather, d.b.a. Reed Equipment Co., Glens Falls, N.Y. 782,578, pub. 10–13–64. Cl. 101.
Reed Equipment Co.: *See*— Reed, A. Mather.
Reise, Robert, & Co., New York, N.Y. 782,495, pub. 10–13–64. Cl. 39.
Reliance Electric and Engineering Co., The, Cleveland, Ohio. 782,325, pub. 10–13–64. Cl. 21.
Rexall Drug and Chemical Co., d.b.a. Kingsway Products Co., Los Angeles, Calif. 782,243, pub. 9–22–64. Multiple Class (Classes 6 and 18).
Reynolds Yarns, Inc., Plainview, N.Y. 782,513, pub. 10–13–64. Cl. 26.
Richardson, Howe, Scale Co., Clifton, N.J. 782,383, pub. 10–13–64. Cl. 26.
Richelieu Licensing Corp., Holbrook, N.Y. 782,426, pub. 10–13–64. Cl. 28.
Ritonl-Import G.m.b.H., Bremen, Germany. 782,542, pub. 10–13–64. Cl. 46.
Robertson Mfg. Co., Inc., Moberly, Mo. 669,538, canc. Cl. 19.
Rockland Bleach and Dye Works, Inc., Baltimore, Md. 782,588, pub. 10–13–64. Cl. 106.
Rosenhols, J., Inc., to Rosewood Fabrics, Inc., New York, N.Y. 411,040, ren. 12–29–64. Cl. 42.
Rosewood Fabrics, Inc.: *See*— Rosenhols, J., Inc.
Roy, Milton, Co., Philadelphia, Pa. 782,398, pub. 10–13–64. Cl. 26.
Roy, Milton, Co., Philadelphia, Pa. 782,399, pub. 10–13–64. Cl. 26.
Rubinatein, Helena, Inc., New York, N.Y. 669,742, canc. Cl. 51.
Russell, L. B., Chemicals, Inc., Long Island City, N.Y. 782,249, pub. 10–13–64. Cl. 6.
Sanborn Co.: *See*— Hewlett-Packard Co.
Sandell Mfg. Co., Inc., Cambridge, Mass. 782,266, pub. 10–13–64. Cl. 12.
Sandura Co.: *See*— Feltcraft Co., Inc.
Sanyo Electric Co., Ltd., Osaka, Japan. 695,970. Am. 7(d). Cl. 21.
Sauna Aire Sales Co., Des Moines, Iowa. 782,520, pub. 10–13–64. Cl. 44.

Savage, Inc., Elverson, Pa. 782,358, pub. 10–13–64. Cl. 28.
Schaffner, Hart, & Marx, Chicago, Ill. 782,470, pub. 10–13–64. Cl. 39.
Schenley Distillers, Inc., d.b.a. Park & Tilford Distillers Co., New York, N.Y. 782,556, pub. 10–13–64. Cl. 49.
Schnelerson, L., & Sons, Inc., New York, N.Y. 669,629, canc. Cl. 39.
Schober, Laird, & Co., Inc., Haverhill, Mass., to Genesco Inc., Nashville, Tenn. 411,051, ren. 12–29–64. Cl. 39.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,266, ren. 12–29–64. Cl. 44.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,521, ren. 12–29–64. Cl. 44.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 192,917, ren. 12–29–64. Cl. 44.
Scholl Mfg. Co., Inc., to The Scholl Mfg. Co., Inc., Chicago, Ill. 193,101, ren. 12–29–64. Cl. 39.
Scholl Mfg. Co., Inc., The: *See*— Scholl Mfg. Co., Inc.
School House Products, Inc., New York, N.Y. 782,406, pub. 10–13–64. Cl. 26.
Schwarsberger, Shirley, d.b.a. A-B Mfg. Co., Chicago, Ill. 782,396, pub. 10–13–64. Cl. 26.
Science Research Associates, Inc., Chicago, Ill. 782,600. Cl. 38.
Scrubbee Products Corp., Newark, N.J. 782,284, pub. 10–13–64. Cl. 4.
Security Viewer Co.: *See*— Curtis, Joseph A., Jr.
Seederer-Kohlbusch Inc., Englewood, N.J. 782,400, pub. 10–13–64. Cl. 26.
Shapiro, Martha, d.b.a. Martha West, New York, N.Y. 782,233, pub. 10–13–64. Multiple Class (Classes 3, 28, and 39).
Shattuck Denn Mining Corp., New York, N.Y. 782,594. Cl. 10.
Shattuck, Frank G., Co., New York, N.Y. 196,039, ren. 12–29–64. Cl. 46.
Sheldow Bronze Corp., Farmingdale, N.Y. 782,563, pub. 10–13–64. Cl. 50.
Shoe Covers Corp., to Spraylat Corp., New York, N.Y. 412,448, ren. 12–29–64. Cl. 1.
Sieglingriemen Vertriebsgesellschaft der Ernst Siegling Spezialtreibriemenfabrik G.m.b.H., Hannover, Germany. 782,450, pub. 10–13–64. Cl. 35.
Sifo Co., St. Paul, Minn. 782,334, pub. 10–13–64. Cl. 22.
Sifo Co., St. Paul, Minn. 782,597. Cl. 22.
Sinclair, H. M., Jr.: *See*— Sinclair Mfg. Co., The.
Sinclair Mfg. Co., The, from H. M. Sinclair, Jr., trustee for the Ohio partnership, The Sinclair Mfg. Co., Toledo, Ohio. 782,573, pub. 10–1–57. Cl. 52.
Skelly Mfg. Co.: *See*— Brenner, Milton L.
Smith, Howard, Paper Mills, Ltd., Montreal, Quebec, Canada. 782,225, pub. 10–13–64. Cl. 1.
Smith, J. Austin, & Son, Loudonville, Ohio. 782,376, pub. 10–13–64. Cl. 25.
Soccer Sports Supply Co., Inc., New York, N.Y. 782,333, pub. 10–13–64. Cl. 22.
Socony-Vacuum Oil Co., Inc., to Socony-Mobil Oil Co., Inc., New York, N.Y. 409,922, ren. 12–29–64. Cl. 15.
Somat Corp., from Wandel Machine Co., Inc., Pomeroy, Pa. 782,350, pub. 10–13–64. Cl. 23.
South Lake Apopka Citrus Growers Association, Oakland, Fla. 194,624, ren. 12–29–64. Cl. 46.
Sparkomatic Corp., Milford, Pa. 782,407, pub. 10–13–64. Cl. 26.
Speakman Co., Wilmington, Del. 782,276, pub. 10–13–64. Cl. 13.
Sperry Rand Corp., New York, N.Y. 669,588, canc. Cl. 26.
Spraylat Corp.: *See*— Shoe Covers Corp.
Stackpole Carbon Co., St. Marys, Pa. 782,227, pub. 10–13–64. Cl. 1.
Stadler Fertilizer Co., The, Cleveland, Ohio. 669,481, canc. Cl. 10.
Standard Knitting Mills, Inc., Knoxville, Tenn. 669,638, canc. Cl. 39.
Standard Oil Co., Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 190,978, ren. 12–29–64. Cl. 15.
Standard Oil Co., The, Cleveland, Ohio. 782,292, pub. 10–13–64. Cl. 15.
Standard Packaging Corp., New York, N.Y. 782,460, pub. 10–13–64. Cl. 38.
Standard Register Co., The, Dayton, Ohio. 669,593, canc. Cl. 26.
Stanley Research Corp., The, Fairfield, Conn. 669,528, canc. Cl. 18.
Stardust, Inc., New York, N.Y. 782,490, pub. 10–13–64. Cl. 39.
Stearn, Robert F., d.b.a. Wescott Laboratories, Pinehurst, N.C. 782,415, pub. 10–13–64. Cl. 26.
Steelcase, Inc., Grand Rapids, Mich. 782,489, pub. 10–13–64. Cl. 32.
Steeline Engineering Co., York, Pa. 782,389, pub. 10–13–64. Cl. 26.
Stein, A., & Co., to A. Stein & Co., Inc., Chicago, Ill. 197,644, ren. 12–29–64. Cl. 39.
Stein, A., & Co., Inc.: *See*— Stein, A., & Co.
Stellenbosch Farmers' Winery Ltd., Stellenbosch, Cape Province, Republic of South Africa. 782,551, pub. 10–13–64. Cl. 47.
Stenso Lettering Co., Baltimore, Md., to Ottenheimer Publishers, Inc., Owings Mills, Md. 409,667, ren. 12–29–64. Cl. 37.
Sterling Drug Inc., New York, N.Y. 782,314, pub. 10–13–64. Cl. 18.
Sterling Drug Inc., New York, N.Y. 782,601. Cl. 38.
Stevens, J. P., & Co., Inc., New York, N.Y. 782,508, pub. 10–13–64. Cl. 42.
Strasenburgh, R. J., Co., Rochester, N.Y., to Wallace & Tiernan Inc., Belleville, N.J. 410,698–9, ren. 12–29–64. Cl. 18.
Strauss, Levi, & Co., San Francisco, Calif. 768,223. Am. 7(d). Cl. 39.
Stretch Fabrics, Inc., New York, N.Y. 782,501, pub. 10–13–64. Cl. 42.
Suitime Inc., New York, N.Y. 782,479, pub. 10–13–64. Cl. 39.
Sweetheart Plastics, Inc., Wilmington, Mass. 782,570, pub. 10–13–64. Cl. 50.
Sylvania Jewelry Mfg. Co., New York, N.Y. 782,480, pub. 10–13–64. Cl. 28.
T.T. Products Co.: *See*— Henning, Paul F.
Tailored Junior Dress Co., New York, N.Y. 669,642, canc. Cl. 39.
Talbert Mfg., Inc., Rensselaer, Ind. 782,319, pub. 10–13–64. Cl. 19.
Tek-Hughes: *See*— Johnson & Johnson.
Telehue, Inc., Ferndale, Mich. 782,457, pub. 10–13–64. Cl. 36.
Tennessee Corp., New York, N.Y. 669,476, canc. Cl. 6.
Textron Inc., Rochester, N.Y. 782,419, pub. 10–13–64. Cl. 26.
Thermo-Plastics, Inc., Worthington, Ohio. 782,280, pub. 10–13–64. Cl. 2.
Thiokol Chemical Corp., Bristol, Pa. 782,239, pub. 10–13–64. Cl. 6.
Thompson Chemical Co., Pawtucket, R.I. 782,260, pub. 10–13–64. Cl. 6.
Tolco Corp., Toledo, Ohio. 782,384, pub. 10–13–64. Cl. 26.
Topco Associates, Inc., Skokie, Ill. 782,545, pub. 10–13–64. Cl. 46.
Town Crier, The: *See*— Peters, Paul, Co. Inc.
Travelers Insurance Co., The, Hartford, Conn. 782,580, pub. 10–13–64. Cl. 102.
Tru-Ade Co., The, Elgin, Ill. 782,525, pub. 10–13–64. Cl. 45.
True Temper Corp., Cleveland, Ohio. 782,284, pub. 10–13–64. Cl. 14.
Tru-Space, Inc., Renton, Wash. 669,590, canc. Cl. 26.
Twin City Shellac Co. Inc., Brooklyn, N.Y. 409,743, ren. 12–29–64. Cl. 16.
Underwood Corp., New York, N.Y. 669,568, canc. Cl. 28.
Underwriters' Laboratories, Inc., Chicago, Ill. 782,589, pub. 10–13–64. Cl. A.
Unifex Engineering, Inc., Elgin, Ill. 669,574, canc. Cl. 23.
Unifranck Lebensmittewerke G.m.b.H., from Franck und Kathreiner G.m.b.H., Ludwigsburg, Germany. 782,603. Cl. 46.
Union Bag-Camp Paper Corp., New York, N.Y. 782,613. Cl. 50.
Union Mfg. Co., Los Angeles, Calif. 782,465, pub. 6–30–64. Cl. 39.
United Aircraft Products, Inc., Dayton, Ohio. 782,317, pub. 10–13–64. Cl. 19.
United Biscuit Co. of America, Melrose Park, Ill. 669,672, canc. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 782,548, pub. 10–13–64. Cl. 46.
United Candle Co., Inc., New York, N.Y. 669,518, canc. Cl. 15.
United Mills Corp., Mt. Gilead, N.C. 669,658, canc. Cl. 42.
United Oil & Natural Gas Products Corp., The, Monroe, La., to Ashland Oil & Refining Co., Ashland, Ky. 192,125, ren. 12–22–64. Cl. 6.
United States Baking Co., Inc., from Miller-Parrott Baking Co., Inc., Terre Haute, Ind. 782,538, pub. 10–13–64. Cl. 46.
United States Rubber Co., New York, N.Y. 669,346. Am. 7(d). Cl. 42.
United States Rubber Co., New York, N.Y. 782,452–4, pub. 10–13–64. Cl. 35.
U.S. Sanitary Specialties Corp., Chicago, Ill. 782,575, pub. 10–13–64. Cl. 52.
United States Tobacco Co., New York, N.Y. 782,587, pub. 10–13–64. Cl. 46.
Universal Oil Products Co., Des Plaines, Ill. 669,515, canc. Cl. 15.
Unox Naamlose Vennootschap, Oss, Netherlands. 782,539, pub. 10–13–64. Cl. 46.
Vacuum Cleaner Corp. of America, The, Philadelphia, Pa. 410,926, ren. 12–29–64. Cl. 21.
Vetter Stone Co., Kasota, Minn. 782,595. Cl. 12.
Virginia Mills Specialties: *See*— Chronister, A. E.
Vita Elixir Co., Inc., Atlanta, Ga. 782,306–10, pub. 10–13–64. Cl. 18.
Voigtlander, A.G., Braunschweig, Germany. 782,393, pub. 10–13–64. Cl. 26.
Wade, Wenger Servicemaster Co., Chicago, Ill. 782,584, pub. 10–13–64. Cl. 108.
Wallace & Tiernan Inc.: *See*— Strasenburgh, R. J., Co.
Wellington Beverage Co.: *See*— Plains Distributing Co.
Wembly, Inc., New York, N.Y. 782,498, pub. 10–13–64. Cl. 39.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 782,567, pub. 10–13–64. Cl. 50.
Wescott Laboratories: *See*— Stearn, Robert F.
West Bend Co., The, West Bend, Wis. 782,330, pub. 10–13–64. Cl. 21.

West, Martha: *See*—
Shapiro, Martha.
Western Agricultural Chemicals Co., Colorado Springs, Colo. 782,264, pub. 10–13–64. Cl. 10.
Western American Plastics Corp., Mesa, Ariz. 782,273, pub. 10–13–64. Multiple Class (Classes 13 and 19).
Wheelabrator Corp., The: *See*—
American Foundry Equipment Co.
White Laboratories, Inc., Kenilworth, N.J. 412,002, ren. 12–29–64. Cl. 18.
Whitsitt, James W., d.b.a. Jim Whitsitt Textiles Co., Kansas City, Mo. 669,666, canc. Cl. 42.
Whitsitt, Jim, Textiles Co.: *See*—
Whitsitt, James W.
Wica Chemicals, Inc., Charlotte, N.C. 782,235, pub. 10–13–64. Cl. 5.
Wilder, Shepard J., Concord, N.H. 669,609, canc. Cl. 26.
Wilshire Oil Co., Inc., to Wilshire Oil Co. of California, Los Angeles, Calif. 194,001, ren. 12–29–64. Cl. 15.
Wilshire Oil Co. of California: *See*—
Wilshire Oil Co., Inc.
Winn-Dixie Stores, Inc., Jacksonville, Fla. 782,579, pub. 10–13–64. Cl. 101.
Wisconsin-Zinn Malting Corp., Milwaukee, Wis. 782,540, pub. 5–12–64. Cl. 46.
Wittel, Wm. F., & Co.: *See*—
Propertyguard Fence, Inc.
Wolf & Dessauer Co., Fort Wayne, Ind. 782,522, pub. 10–13–64. Cl. 44.
Wolfram & Molybdene Societe Anonyme, Nyon, Switzerland. 669,564, canc. Cl. 28.
Wood Conversion Co., St. Paul, Minn. 782,226, pub. 10–13–64. Cl. 1.
Wood Conversion Co., St. Paul, Minn. 782,269, pub. 10–13–64. Cl. 12.
Woodcraft Corp., The, York, Ala. 782,558, pub. 10–13–64. Cl. 50.
Woolworth, F. W., Co., New York, N.Y. 782,337–9, pub. 10–13–64. Cl. 22.
Woodworth, F. W., Co., New York, N.Y. 782,442, pub. 10–13–64. Cl. 32.
Wright Broadcasting Co., The, New York, N.Y. 782,585, pub. 10–13–64. Cl. 104.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 411,271, ren. 12–29–64. Cl. 18.
Zeller, Joseph, d.b.a. Belmont Jewelry Mfg. Co., New York, N.Y. 782,434, pub. 10–13–64. Cl. 28.

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